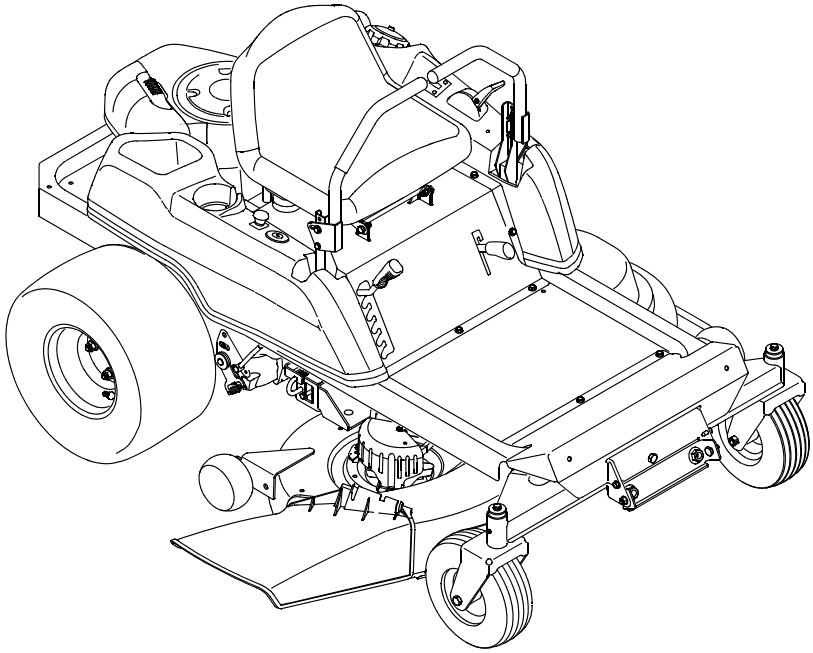
OPERATOR'S MANUAL



RZT SERIES
TRACTOR
Model Number
RZT 17
w/42" Mower Deck

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 361131 Cleveland, Ohio 44136-0019.

CUB CADET LLC P.O. BOX 361131 CLEVELAND, OHIO 44136-0019 [www.cubcadet.com]

PRINTED IN U.S.A.

FORM NO. 769-01124
(2/04)

TABLE OF CONTENTS

TRACTOR PREPARATION 2
IMPORTANT SAFE OPERATION PRACTICES 3
SAFETY DECALS AND LABELS 6
TO THE OWNER 8
CALLING SERVICE INFORMATION 8
RECORDING MODEL AND SERIAL NUMBER INFORMATION 8
SECTION 1: CONTROLS AND FEATURES 9
SECTION 2: OPERATION 12
SECTION 3: ADJUSTMENTS 19
SECTION 4: MAINTENANCE 20
SECTION 5: MOWER DECK 25
SLOPE GAUGE 29
ENGINE MANUAL 31
WARRANTY ..... BACK PAGE

TRACTOR PREPARATION

Remove the upper crating material from the shipping pallet, and cut any bands or tie straps securing the tractor to the pallet. Use the lift handle to raise the deck to its highest position; engage the transmission bypass rods (Refer to SECTION 1, CONTROLS AND FEATURES); and carefully roll the tractor off the shipping palltet. Disengage the bypass rods.

CONNECT THE BATTERY

WARNING

Battery posts, terminals and related accessories contain lead and lead compounds. **Wash hands after handling**.

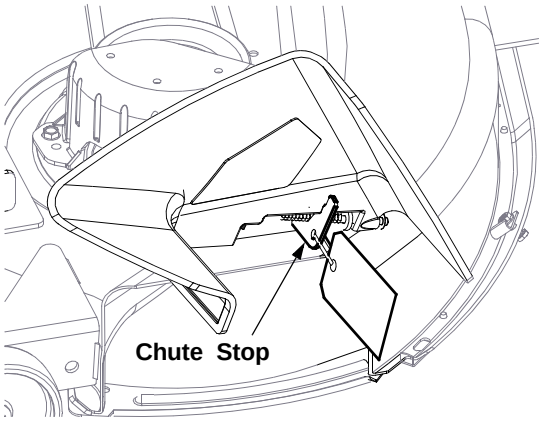
The tractor is shipped with an activated sealed battery, with the positive battery cable factory connected. The negative cable must be connected.

Note: *Make sure the ignition switch is in the "OFF" position before attaching the battery cable.*

1. Pull the protective cap off the negative terminal of the battery, and remove the hex cap screw and nut from the free end of the negative battery cable.
2. Connect the negative battery cable (heavy black) to negative terminal (NEG) of the battery using the hex cap screw and nut. Slide the black terminal cover over the negative terminal of the battery.

REMOVE THE CHUTE STOP

- Locate the chute stop on the right side of the mower, between discharge chute and cutting deck.
- While holding the discharge chute up, rotate the chute stop clockwise and remove.
- Discard the chute stop.



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.
- This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered, or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.
- In the State of California, the above is required by law (Section 4442 of the California Public Resources Code). Other States may have similar laws. Federal laws apply to federal lands. A spark arrester muffler is available at your nearest engine authorized service center.

IMPORTANT

SAFE OPERATION PRACTICES

THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL— **HEED ITS WARNING**.

DANGER Your lawn mower 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 injury. This lawn mower is capable of amputating hands and feet or throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

I. GENERAL OPERATION

1. Read, understand and follow all instructions in the manual and on the machine before starting. Keep this manual in a safe place for future and regular reference.
2. Only allow responsible individuals familiar with the instructions to operate the machine. Know the controls and how to stop the machine quickly.
3. Do not put hands or feet under the cutting deck or near rotating parts.
4. Clear the area of objects such as rocks, toys, wire, etc. which could be picked up and thrown by the blades. A small object may have been overlooked and could be accidentally thrown by the mower in any direction and cause injury to you or a bystander. To help avoid a thrown objects injury, keep children, animals, bystanders and helpers at least 75 feet from the mower while it is in operation. Always wear safety glasses with side shields or safety goggles during operation or while performing an adjustment or repair, to protect eyes from foreign objects. Stop the blades when crossing gravel drives, walks or roads.
5. Be sure the area is clear of other people before mowing. Stop machine if anyone enters the area.
6. Never carry passengers.
7. Disengage the blades before shifting into reverse and backing up. Always look down and behind before and while backing.
8. Be aware of the mower and attachment discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass catcher or the chute guard in place.
9. Slow down before turning. Operate the machine smoothly. Avoid erratic operation and excessive speed.
10. Never leave a running machine unattended. Always turn off the blades, place the transmission in neutral, set the parking brake, stop the engine and remove key before dismounting.
11. Turn off blades when not mowing.
12. Stop the engine and wait until the blades come to a complete stop before (a) removing the grass catcher or unclogging chute, or (b) making any repairs, adjusting or removing any grass or debris.

13. Mow only in daylight or good artificial light.
14. Do not operate the machine while under the influence of alcohol or drugs.
15. Watch for traffic when operating near or crossing roadways.
16. Use extra care when loading or unloading the machine into a trailer or truck. This unit should not be driven up or down a ramp onto a trailer or truck under power, because the unit could tip over causing serious personal injury. The unit must be pushed manually on a ramp to load or unload properly.
17. Never make a cutting height adjustment while the engine is running if the operator must dismount to do so.
18. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Do not wear loose fitting clothes or jewelry. They can be caught in moving parts. Never operate a unit in bare feet, sandals or sneakers.
19. Check overhead clearance carefully before driving under power lines, wires, bridges or low hanging tree branches, before entering or leaving buildings, or in any other situation where the operator may be struck or pulled from the unit, which could result in serious injury.
20. Disengage all attachment clutches, set the parking brake in the on position, and put the lap bars to the neutral or out position before attempting to start the engine.
21. Your mower is designed to cut normal residential grass of a height no more than 10". Do not attempt to mow through unusually tall, dry grass (e.g. pasture) or piles of dry leaves. Debris may build up on the mower deck or contact the engine exhaust presenting a potential fire hazard.
22. Use only accessories approved for this machine by *Cub Cadet*. Read, understand and follow all instructions provided with the approved accessory.

II. SLOPE OPERATION

Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. **All** slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it.

For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15° as shown on the slope gauge, do not operate this unit on that area or serious injury could result.

DO:

Mow across slopes, not up and down.

Remove obstacles such as rocks, limbs, etc.

Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. **Tall grass can hide obstacles.**

Use slow speed. Choose a low enough speed so that you will not have to stop while on the slope.

Follow the manufacturer's recommendations for counterweights with attachments to improve stability.

Use extra care with grass catchers or other attachments. These can change the stability of the machine.

Keep all movement on the slopes **slow** and **gradual**. Do not make sudden changes in speed or direction. Rapid acceleration or deceleration 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 the tires lose traction, disengage the blades and proceed slowly **straight** down the slope.

DO NOT:

Do not turn on slopes unless necessary; then, turn slowly and gradually downhill, if possible.

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

Do not mow on wet grass. Reduced traction could cause sliding.

Do not try to stabilize the machine by putting your foot on the ground.

Do not use the grass catcher on steep slopes.

III. CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. **Never** assume that children will remain where you last saw them.

1. Keep children out of the mowing area and in watchful care of an adult other than the operator.
2. Be alert and turn the machine off if children enter the area.
3. Before and when backing up, look behind and **down** for small children.
4. Never carry children, even with the blades off. They may fall off and be seriously injured or may interfere with safe machine operation.

5. Never allow children under 14 years old to operate the machine. Children 14 years and over should only operate the machine under close parental supervision and proper instruction.
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. Remove the key when the machine is left unattended to prevent unauthorized operation.

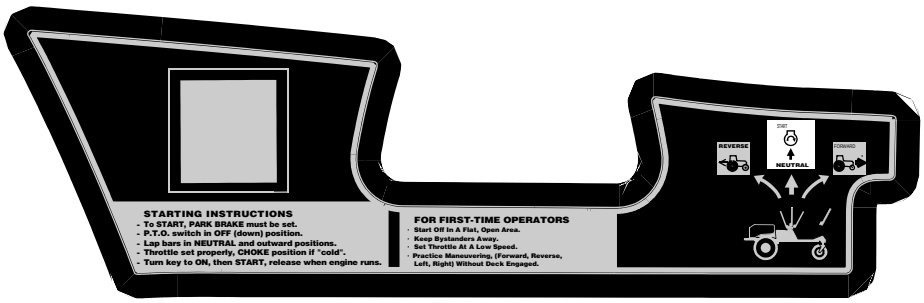
IV. SERVICE

1. Use extreme care in handling gasoline and other fuels. They are extremely flammable and the vapors are explosive.
   a. Use only an approved container.
   b. Never remove fuel cap or add fuel with the engine running. Allow the engine to cool at least two minutes before refueling.
   c. Replace the fuel cap securely and wipe off any spilled fuel before starting the engine as it may cause a fire or explosion.
   d. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
   e. Never refuel the machine indoors because fuel vapors will accumulate in the area.
   f. 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.
2. Never run a machine inside a closed area.
3. To reduce fire hazard, keep the machine free of grass, leaves or other debris build-up. Clean up oil or fuel spillage. Allow the machine to cool at least 5 minutes before storing.
4. Before cleaning, repairing or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the spark plug to prevent accidental starting.
5. Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also visually inspect blades for damage (e.g., excessive wear, bent, cracked). Replace with blades which meet original equipment specifications.
6. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
7. Never tamper with safety devices. Check their proper operation regularly. Use all guards as instructed in this manual.
8. After striking a foreign object, stop the engine, remove the wire from the spark plug and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
9. Grass catcher components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For your safety protection, frequently check the components and replace with manufacturer's recommended parts when necessary.
10. Mower blades are sharp and can cut. Wrap the blades or wear gloves, and use extra caution when servicing blades.
11. Check the park brake operation frequently. Adjust and service as required.
12. Muffler, engine and belt guards become hot during operation and can cause a burn. Allow to cool down before touching.
13. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
14. Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment and the ecology.
    a. Prior to disposal, contact your local Environmental Protection Agency to determine the proper method for disposing of the waste. Recycling centers are established to properly dispose of materials in an environmentally safe fashion.
    b. 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.
    c. 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.
15. 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.

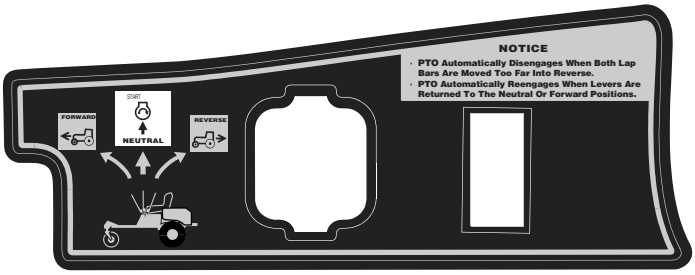
WARNING - YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

SAFETY DECALS AND LABELS

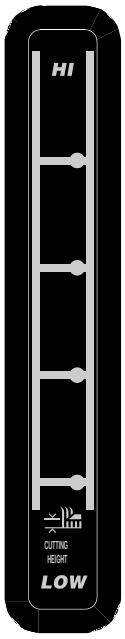
Keep product safety graphics (decals) clean. Replace any safety graphic that is damaged, destroyed, missing, painted over or can no longer be read. Replacement safety graphics are available through your dealer.



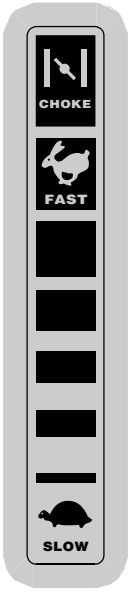
GENERAL SAFETY INSTRUCTIONS – LOCATED ON LEFT CONSOLE ASIDE OPERATOR'S SEAT



GENERAL OPERATING INSTRUCTIONS – LOCATED ON RIGHT CONSOLE ASIDE OPERATOR'S SEAT



DECK HEIGHT INDICATOR – LOCATED ON RIGHT SIDE OF SEAT BOX FRAME



THROTTLE CONTROL INDICATOR – LOCATED ON LEFT CONSOLE

PARK BRAKE INDICATOR – LOCATED ON LEFT SIDE OF SEAT BOX FRAME

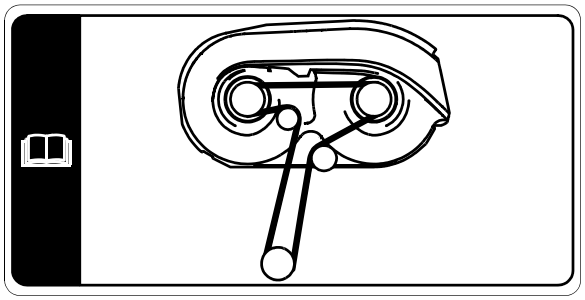
SAFETY DECALS AND LABELS

GENERAL SAFETY INSTRUCTIONS WARNING – LOCATED IN CENTER OF SEAT BOX FRAME

HANDS AND FEET SAFETY GRAPHIC– LOCATED ON DEFLECTOR CHUTE

DEFLECTOR and SAFETY GRAPHIC – LOCATED ON RIGHT SIDE OF DECK

SAFETY GRAPHIC – LOCATED ON LEFT SIDE OF MOWER DECK



INFORMATION GRAPHIC – BELT ROUTING LOCATED ON LEFT SIDE OF MOWER DECK

TO THE OWNER

This Operator's Manual is an important part of your new tractor. The information contained in this manual has been prepared in detail to help you better understand the features, correct operation, adjustments, and maintenance of your tractor. The performance and dependability of this tractor rely greatly on the manner in which it is operated and maintained. Therefore, it is recommended that all operators of the tractor carefully read this manual and fully understand its operation. Also keep the manual available for reference to ensure proper operation, and that maintenance procedures are performed as scheduled to assure the tractor's optimal mechanical condition.

NOTE: *All references to LEFT, RIGHT, FRONT, and REAR, unless specifically stated otherwise, indicate that relative position on the tractor when facing forward while seated in the operator's seat.*

CAUTION: DO NOT tow your Model RZT 17 tractor. Towing may damage the transmissions. Place the tractor on a LEVEL SURFACE before pulling the transmission bypass rods to the engaged position (transmission disengaged).

Your local authorized *Cub Cadet* dealer is interested in the performance you receive from your tractor, and with the maintenance needed to ensure the satisfactory operation of your tractor. The dealer has trained service personnel familiar with the latest servicing information, is equipped with the latest tools, and has a complete line of genuine *Cub Cadet* service parts which assure proper fit and high quality.

CALLING SERVICE INFORMATION

The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, and specifications.

If you have difficulties with the tractor and/or equipment; have any questions regarding the operation or maintenance of this equipment; or desire additional information not found in this manual, contact your nearest authorized *Cub Cadet* dealer. If you need assistance in locating a dealer in your area, contact the Customer Dealer Referral Line by calling:

1-877-282-8684

Or you may contact Cub Cadet via the internet by logging on to our Web Site at:

www.cubcadet.com

To obtain top performance and assure economical operation, the tractor should be inspected by your authorized dealer periodically or at least once a year, depending on its hours of use. Before calling your dealer, make sure that you have your model number(s) and manufacturing date available for the dealer.

RECORDING MODEL AND SERIAL NUMBER INFORMATION

Product identification plates are provided for major components of your tractor. The numbers on these plates are important if your tractor should require dealer service, or if you need additional information on your tractor. Prior to using your tractor for the first time, record the numbers from the identification plates in the appropriate spaces provided below.

The chassis model plate, showing the factory model number and Mfg. Date (See Figure 1) can be found either on the underside of the seat mounting base or on the right frame rail near the right front tire.

The engine information is stamped in the upper surface of the of the valve cover (See Figure 2).

Model _____ Factory Model No. _____ Mfg. Date _____

Delivery Date _____ Engine Model/Type No._____ Engine Code No. _____

Figure 1

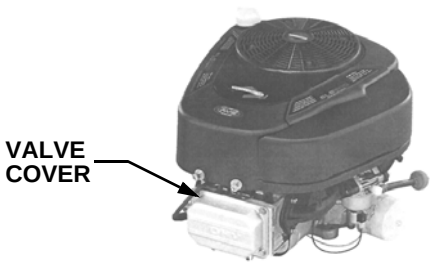


Figure 2

SECTION 1: CONTROLS AND FEATURES

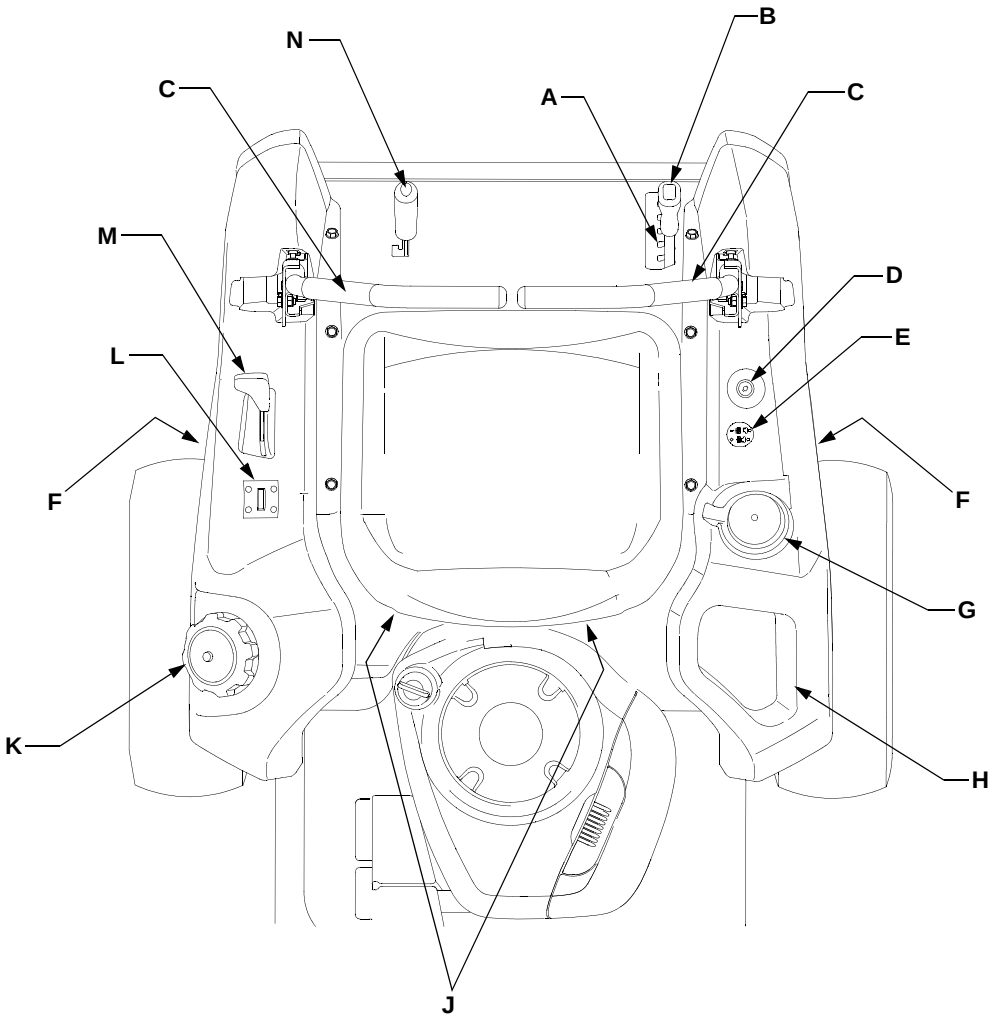


Figure 3

A. Deck Height Index
B. Deck Lift Handle
C. RH and LH Drive Control Levers
D. Ignition Switch
E. PTO Switch
F. Transmission Bypass Rod (Not Shown)
G. Cup Holder
H. Storage Tray
J. Seat Adjustment Wing Knobs (Not Shown)
K. Fuel Tank Cap
L. Hour Meter / Indicator Panel
M. Throttle Control
N. Parking Brake Engagement Lever

NOTE: *References to LEFT, RIGHT, FRONT, and REAR indicate that position on the tractor when facing forward while seated in the operator's seat.*

A. Deck Height Index

The deck height index consists of six index notches located on the front/right of the seat box frame. Each notch corresponds to a 1/2 inch change in the deck height position ranging from 1-1/2 inches at the lowest notch to 4 inches at the highest notch.

B. Deck Lift Handle

The deck lift handle is located on the front/right of the seat box frame, and is used to raise and lower the mower deck.

Pull the handle to the left out of the index notch and push downward to lower the deck, or pull upward to raise the deck. When the desired height is attained, move the lift handle to the right until fully in the index notch.

C. RH and LH Drive Control Levers

The RH and LH control levers are located to each side of the operator's seat. These hinged levers open out to the side in the neutral position to permit the operator to be seated or to leave the tractor seat. The levers must be fully opened out in the neutral position to start the tractor engine.

Each lever controls the respective RH or LH transmission. Consequently, these levers control all of the movements of the tractor. Driving and steering utilizing these control levers is quite different from conventional tractors, and will take some practice to master. Refer to **SECTION 2: OPERATION** for instructions on using the control levers.

D. Ignition Switch

The ignition switch is located on the RH console to the right of the operator's seat.

The ignition switch has three positions as follow:

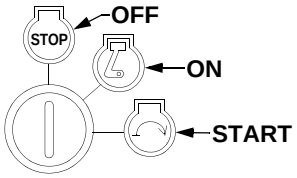


Figure 4

OFF - The engine and electrical system is turned off.

ON - The tractor electrical system is energized.

START - The starter motor will turn over the engine. Release the key immediately when the engine starts

NOTE: *To prevent accidental starting and/or battery discharge, remove the key from the ignition switch when the tractor is not in use.*

E. Power Take-Off (PTO) Switch

The PTO switch is located on the RH console to the right of the operator's seat.

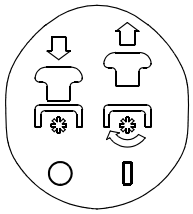


Figure 5

The PTO switch operates the electric PTO clutch mounted on the bottom of the engine crankshaft. Pull the switch knob upward to engage the PTO clutch, or push the knob downward to disengage the clutch.

The PTO switch must be in the "disengaged" position when starting the engine.

F. Transmission Bypass Rods (Not Shown)

The transmission bypass rods (one for each the RH and LH transmission) are located beneath the frame platform, just inside each rear wheel.

When engaged, the two rods open a bypass within the hydrostatic transmissions, which allows the tractor to be pushed short distances by hand. Refer to **SECTION 2: OPERATION** for instructions on using the bypass feature.

WARNING: Never tow your tractor. Towing the tractor with the rear wheels on the ground may cause severe damage to the transmissions.

G. Cup Holder

The cup holder is located toward the rear of the RH console to the right of the operator's seat.

H. Storage Tray

The storage tray is located at the rear of the RH console.

J. Seat Adjustment Wing Knobs (Not Shown)

The seat adjustment wing knobs are located underneath the seat hinge bracket. The wing knobs allow for tool free adjustment of the fore and aft position of the operator's seat. Refer to **SECTION 3: ADJUSTMENTS** for instructions on adjusting the seat position.

K. Fuel Tank Cap

The fuel tank cap is located at the rear of the LH console. Turn the cap counterclockwise to unscrew and remove from the fuel tank. Always re-install the fuel cap tightly onto the fuel tank after removing.

WARNING: Never fill the fuel tank when the engine is running. If the engine is hot from recently running, allow to cool for several minutes before refueling. Highly flammable gasoline could splash onto the engine and cause a fire.

L. Hour Meter/Indicator Panel

The hour meter/indicator panel is located on the LH console to the left of the operator's seat.

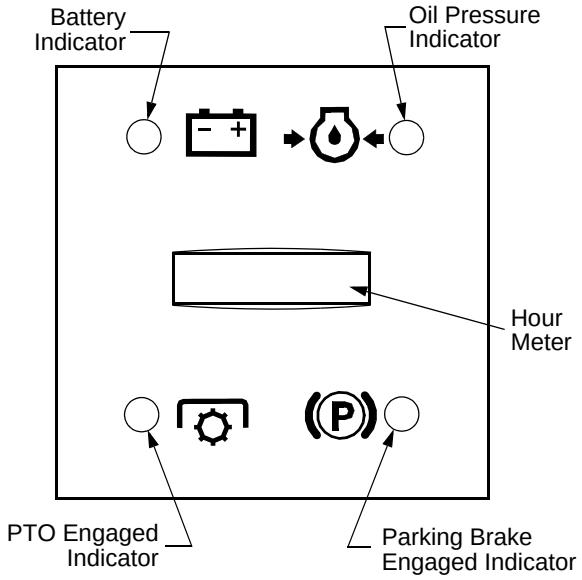


Figure 6

Hour Meter Feature

The purpose of the hour meter is to record the hours (tenths of an hour-*right* most digit) that the tractor has been operated.

- The hour meter is activated whenever the ignition switch is turned to the "ON" position. Because of this, a record of the actual hours of operation should be kept to assure all maintenance procedures are completed according to the schedule in this manual.
- When key is turned to the "ON" position, the battery indicator light briefly illuminates and the battery voltage is briefly displayed. The display then changes to the accumulated hours.

Indicator Panel Feature

Battery Indicator (Refer to Figure 6)

- Illuminates and the battery voltage is displayed briefly when the ignition switch it turned to the "ON" position.
- Illuminates to indicate the battery voltage has dropped below 11.5 (+0.5/-1.0) volts. The battery voltage is also displayed on the hour meter. If this indicator and display come on during operation, check the battery and charging system for possible causes and/or contact your Cub Cadet dealer.

Oil Pressure Indicator (Refer to Figure 6)

- This warning lamp indicates low engine oil pressure. If the indicator comes on while the engine is running, stop the engine immediately and check for possible causes. Do not run the engine while this indicator is illuminated. Contact your Cub Cadet dealer to have the tractor and engine inspected.

NOTE: *The oil pressure indicator may illuminate when the ignition switch is in the ON position, but should turn off when the engine is started*.

PTO Engaged Indicator (Refer to Figure 6)

- This indicator illuminates any time the PTO switch is pulled upward in the "ENGAGED" position and the ignition switch is in the "ON" or "START" position. Check this indicator if the engine will not crank with the ignition switch in the "START" position; then move the PTO switch to the "DISENGAGED" position if necessary.

Parking Brake Engaged Indicator (Refer to Figure 6)

- This indicator illuminates any time the parking brake is in the "ENGAGED" position and the ignition switch is in the "ON" or "START" position. When starting the engine, the parking brake must be engaged and this indicator should be illuminated.

M. Throttle Control

The throttle control is located on the LH console to the left of the operator's seat. When set in a given position, a uniform engine speed will be maintained.

This symbol indicates the fast position.

This symbol indicates the slow position.

This symbol indicates the choke position.

CHOKE

Figure 7

- Push the control handle forward to increase the engine speed. The tractor is designed to operate with the control handle in the fast position (full throttle) when the tractor is driven and the mower deck is engaged.
- Pull the control handle rearward to decrease the engine speed.
- When starting the engine, push the control handle fully forward into the "CHOKE" position. See Figure 7. After starting and warming the engine, move the control handle rearward until you feel it move past the choke detent.

N. Parking Brake Engagement Lever

The parking brake engagement lever is located on the front/left of the seat box frame, and is used to engage the parking brake.

- Pull the lever fully upward and to the left and lower into the "J" slot to engage the parking brake.
- Pull the lever up out of the "J" slot and to the right; then lower completely to disengage the parking brake.

IMPORTANT: *If the LH and RH drive control levers are not fully opened out in the neutral position when engaging the parking brake, the engine will stop. The parking brake must be placed in the engaged position when starting the tractor engine.*

SECTION 2: OPERATION

GENERAL SAFETY

- RECEIVE INSTRUCTION - Read the operator's manual. Learn to operate this machine SAFELY. Don't risk INJURY or DEATH. Allow only those who have become competent in its usage to operate this tractor .
- Familiarize yourself with the operations of all the instruments and controls.
- Before starting the engine or beginning operation, be familiar with the controls. The operator should be in the operator's seat. The PTO switch must be in the disengaged position, the parking brake engaged, and the RH and LH drive control levers moved fully outward in the neutral position.
- Keep all shields in place. Keep away from moving parts.
- NO RIDERS! Keep all people and pets a safe distance away. Look behind to both sides before backing up.
- DO NOT direct the mower discharge at people.
- Avoid slopes where possible. Never operate on slopes greater than 15°. Slopes with a greater incline present dangerous operating conditions. Tractors can be rolled over.
- Before leaving the operator's seat: Shut off the PTO, move the RH and LH drive control levers fully outward in the neutral position, engage the parking brake, shut off the engine and remove the ignition key. Wait for all movement to stop before servicing or cleaning.
- Operate the drive control levers smoothly and avoid any sudden movements of the levers when starting and stopping. Keep a firm grip on the control levers; do not allow the levers to return to neutral on their own.
- Be careful when operating near roadways. Stop the tractor motion and wait for vehicles to pass before operating along the road.
- Do not operate the tractor with the mower deck removed. Removal of the deck will change the balance of the tractor, and could contribute to a tractor rollover.
- Avoid operation or use extreme care if the traction surface is, unstable, or slippery.
- Slow down before turning and come to a complete stop before any zero turn maneuver.
- Do not stop the tractor or park the tractor over combustible materials such as dry grass, leaves, debris, etc.
- Do not fill the fuel tank when the engine is running or while the engine is hot. Allow the engine several minutes to cool before refueling. Tighten the fuel cap securely.

BEFORE OPERATING YOUR TRACTOR

- Before you operate the tractor, study this manual carefully. It has been prepared to help you operate and maintain your tractor efficiently.
- Familiarize yourself with the operations of all the instruments and controls.
- This engine is certified to operate on unleaded gasoline. For best results, fill the fuel tank with only clean, fresh, unleaded gasoline with a pump sticker octane rating of 85 or higher. Unleaded gasoline is recommended because it leaves less combustion chamber deposits.
  Some fuels are gasoline blended with alcohols or ethers. Excessive amounts of the these blends can damage the fuel system or cause engine performance problems. If undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether. Do not use gasoline that contains Methanol.
- Check the engine oil level.
- Clean the air cleaner element if necessary.
- Check the tire inflation pressures.
- Adjust the seat for operator's maximum comfort, visibility and for maintaining complete control of the tractor.

SAFETY INTERLOCK SYSTEM

This tractor is equipped with a safety interlock system for the protection of the operator. If the interlock system should ever malfunction, do not operate the tractor. Contact your authorized *Cub Cadet* Dealer.

- The safety interlock system prevents the engine from cranking or starting unless the RH and LH drive control levers are moved fully outward in the neutral position, the parking brake is engaged, and the PTO is disengaged.
- To avoid sudden movement when disengaging the parking brake, the safety interlock system will shut off the engine if the RH and/or LH drive control levers are moved to a position other than the fully out in neutral position when the parking brake is engaged
- The safety interlock system will shut off the engine if the operator leaves the seat before engaging the parking brake.
- The safety interlock system will shut off the engine if the operator leaves the seat with the PTO engaged, regardless of whether the parking brake is engaged.
  NOTE: *The PTO switch must be moved to the "OFF" position to restart the engine.*
- The safety interlock system will shut off the PTO and the mower blades will stop if both drive control levers are moved into the reverse position. The PTO will re-engage when one or both of the levers are moved back to the neutral or forward position.

STARTING THE ENGINE

WARNING: For personal safety, the operator must be sitting in the tractor seat when starting the engine.

WARNING: This unit is equipped with a safety interlock system designed for the protection of the operator. Do not operate the tractor if any part of the interlock system is malfunctioning. Periodically check the functions of the interlock system for proper operation.

- Move the RH and LH drive control levers fully outward in the neutral position. Refer to Figure 8.
- Operator must be sitting in the tractor seat.
- Engage the parking brake. Refer to Figure 8.
- Make certain the PTO switch is in the disengaged (down) position. Refer to Figure 8.
- Move the throttle control lever fully forward into the "CHOKE" position. **NOTE:** *If the engine is warmed up, it may not be necessary to place the throttle control in the choke position.*

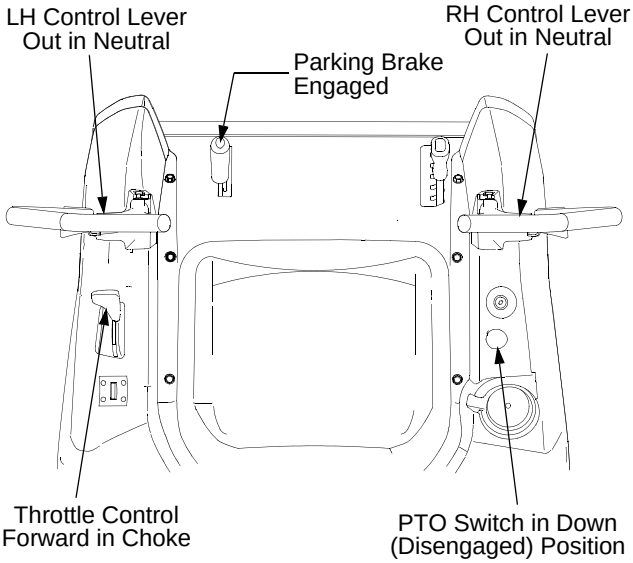


Figure 8

- Turn the ignition key clockwise to the "START" position and release it as soon as the engine starts; however, do not crank the engine continuously for more than 5 seconds at a time. If the engine does not start within this time, turn the key to "OFF" and wait a minute to allow the engine's starter motor to cool. Try again after waiting. If after a few attempts the engine fails to start, do

not keep trying to start it with the choke closed as this will cause flooding and make starting more difficult.

- As the engine warms up, gradually pull the throttle control lever rearward past the choke detent position. Do not use the choke to enrich the fuel mixture, except as necessary to start the engine.
- Allow the engine to run for a few minutes at mid throttle before putting the engine under load.
- Observe the hour meter/indicator panel. If the battery indicator light or oil pressure light come on, immediately stop the engine. Have the tractor inspected by your *Cub Cadet* dealer.

COLD WEATHER STARTING

Be sure to use the proper oil for the expected temperatures (Check the table in the engine section at the back of this manual). Follow the normal engine starting instructions above. However, allow the engine ample time to warm up before putting the tractor under load.

USING JUMPER CABLES TO START ENGINE

WARNING: Batteries contain sulfuric acid and produce explosive gasses. Make certain the area is well ventilated, wear gloves and eye protection, and avoid sparks or flames near the battery.

If the battery charge is not sufficient to crank the engine, recharge the battery. If a battery charger is unavailable and the tractor must be started, the aid of a booster battery will be necessary. Connect the booster battery as follows:

- Connect the end of one cable to the disabled tractor battery's positive terminal; then connect the other end of that cable to the booster battery's positive terminal.
- Connect one end of the other cable to the booster battery's negative terminal.
- Connect the other end of that cable to the frame of the disabled tractor, as far from the battery as possible.
- Start the disabled tractor following the normal starting instructions previously provided; then disconnect the jumper cables in the exact reverse order of their connection.
- Have the tractor's electrical system checked and repaired as soon as possible to eliminate the need for jump starting.

STOPPING THE ENGINE

- Place the PTO switch in the "OFF" position.
- Engage the parking brake.
- Move the RH and LH drive control levers fully outward in the neutral position.
- Place the throttle control lever to the fast (high idle) position.
- Turn the ignition key to the "OFF" position and remove the key from the ignition switch.

NOTE: *Always remove the key from the ignition switch to prevent accidental starting or battery discharge if the equipment is left unattended.*

PRACTICE OPERATION (INITIAL USE)

Operating a zero-turn tractor is not like operating a conventional type riding tractor. Although and because a zero-turn tractor is more maneuverable, getting used to operating the control levers takes some practice.

We strongly recommend that you locate a reasonably large, level and open "practice area" where there are no obstructions, pedestrians, or animals. You should practice operating the tractor for a minimum of 30 minutes.

Carefully move (or have moved) the tractor to the practice area. When performing the practice session, it not necessary operate with the PTO engaged. While practicing operate the tractor at approximately 1/2 throttle and at less than full speed in both forward and reverse.

Carefully practice maneuvering the tractor using the instructions in the following section "Driving the Tractor." Practice until you are confident that you can safely operate the tractor.

DRIVING THE TRACTOR

WARNING: Avoid sudden starts, excessive speed and sudden stops.

WARNING: Do not leave the seat of the tractor without disengaging the PTO, moving drive control levers fully outward in the neutral position, and engaging the parking brake. If leaving the tractor unattended, turn the ignition key off and remove key.

- Adjust the operator's seat to the most comfortable position that allows you to operate the controls. See seat adjustment in the **ADJUSTMENTS** section.
- Release the parking brake.
- Move the RH and LH drive control levers inward in the neutral position. See Figure 9.

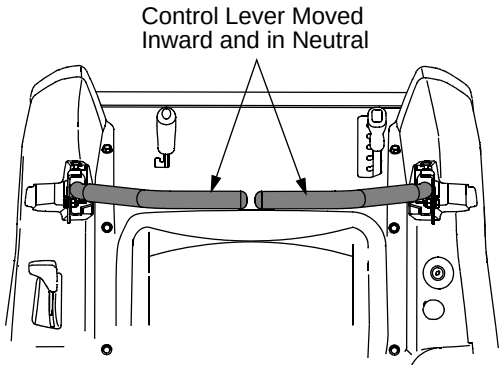


Figure 9

- Move the throttle control lever forward to the full throttle position (3500-3600 RPM). Make certain the throttle control has not been moved too far forward into the "Choke" position.

NOTE: *The tractor and engine are designed to run at full throttle. However, if performing a practice session, it is preferable that the tractor is operated at half throttle (approximately 2500-2600 RPM), but this only applies to practice operation.*

- To drive the tractor, firmly grasp the respective drive control levers with your right and left hands and proceed as follows :

WARNING: Always maintain a firm grip on the control levers. DO NOT release the control levers to slow or stop the tractor; move the levers to the neutral position using your hands.

Driving the Tractor Forward

WARNING: Keep all movement of the drive control levers slow and smooth. Abrubt movement of the control levers can affect the stability of the tractor and could cause the tractor to flip over, which may result in serious injury or death to the operator.

- Slowly and evenly move both drive control levers forward. The tractor will start to move forward. See Figure 10.
- As the control levers are pushed farther forward the speed of the tractor will increase.

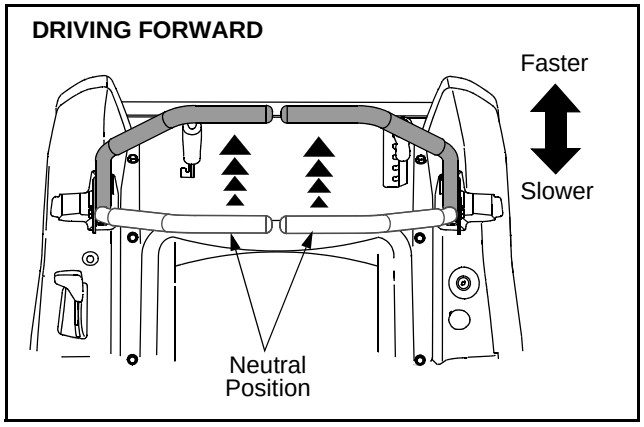


Figure 10

- To slow the tractor move the controls lever rearward to attain the desired speed, or move the levers to the neutral position to stop the tractor.

IMPORTANT: ***Always maintain your grasp on the drive control levers. Do not release the levers to slow the tractor or to return to neutral.***

Turning the Tractor While Driving Forward

WARNING: When reversing the direction of travel, we recommend performing gradual 'U' turns where possible. Sharper turns increase the possibility of turf defacement, and could affect control of the tractor. ALWAYS slow the tractor before making sharp turns.

- To turn the tractor while driving forward, move the control levers as necessary so that one lever is rearward of the other. The tractor will turn in the direction of the rearward control lever.
  - To turn to the left, move the left drive control lever rearward of the right lever. See Figure 11.

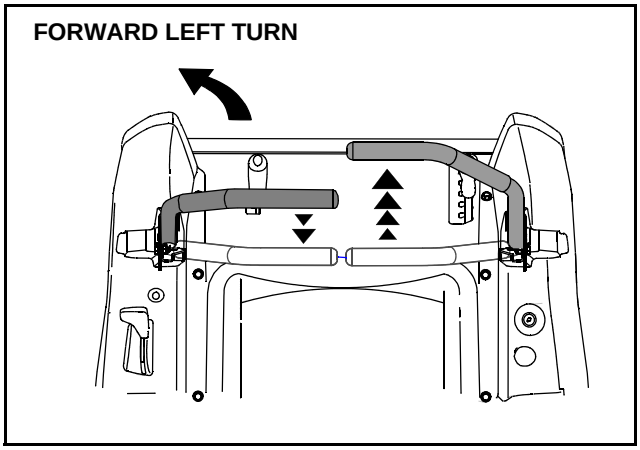


Figure 11

- To turn to the right, move the right drive control lever rearward of the left lever. See Figure 12.

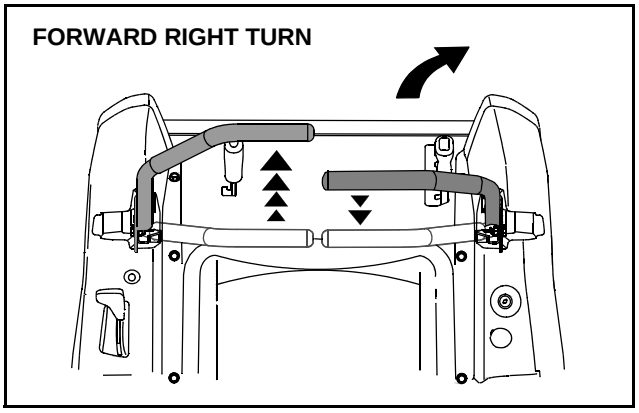


Figure 12

- The greater the fore-to-aft distance between the two levers, the sharper the tractor will turn.
- To execute a "pivot turn," move the turn side drive control lever to the neutral position, while moving the other control lever forward.
  IMPORTANT: ***Making a "pivot turn" on grass will greatly increase the potential for defacement of the turf.***

Driving the Tractor In Reverse

WARNING: Always look behind and down on both sides of the tractor before backing up. Always look behind while traveling in the reverse direction.

- Slowly and evenly move both drive control levers rearward. The tractor will start to move in the reverse direction. See Figure 13.

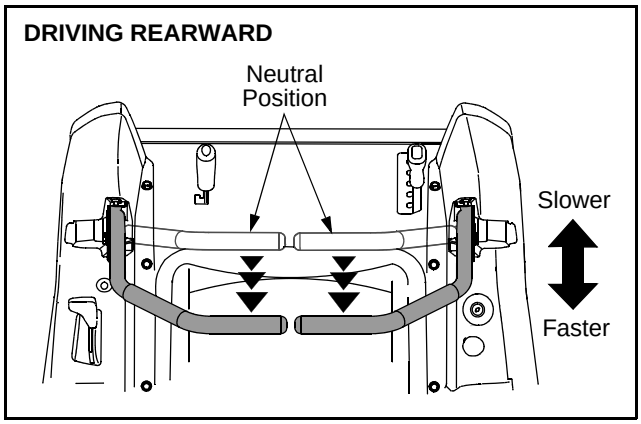


Figure 13

- As the control levers are pushed farther rearward the speed of the tractor will increase.
- To slow the tractor move the controls lever forward to attain the desired speed, or move the levers to the neutral position to stop the tractor.

IMPORTANT: ***Always maintain your grasp on the drive control levers. Do not release the levers to slow the tractor or to return to neutral.***

Turning While Driving Rearward

- To turn the tractor while driving rearward, move the control levers as necessary so that one lever is forward of the other. The tractor will turn in the direction of the forward control lever.
  - To turn to the left while traveling in reverse, move the left drive control lever forward of the right lever. See Figure 14.

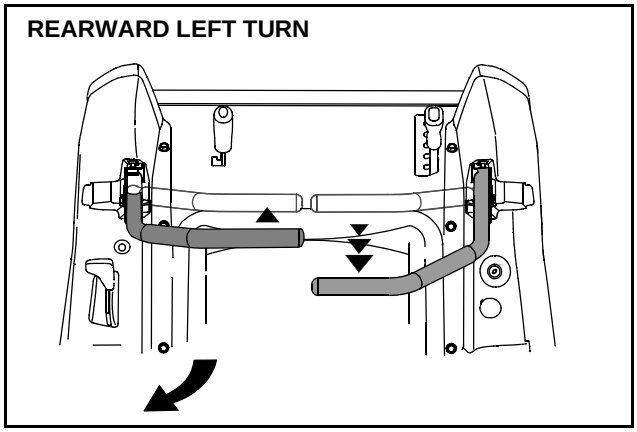


Figure 14

  - To turn to the right while traveling in reverse, move the right drive control lever forward of the left lever. See Figure 15.

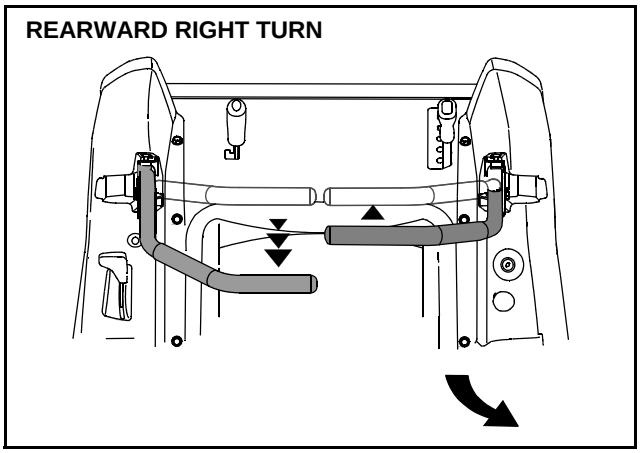


Figure 15

- The greater the fore-to-aft distance between the two levers, the sharper the tractor will turn.
- To execute a "pivot turn," move the turn side drive control lever to the neutral position, while moving the other control lever rearward.
  IMPORTANT: ***Making a "pivot turn" on grass will greatly increase the potential for defacement of the turf.***

Executing a Zero Turn

WARNING: When executing a zero turn, the tractor MUST BE STOPPED. Executing a zero turn while the tractor is moving can significantly reduce your control of the tractor and will cause severe turf defacement to occur.

- Stop the forward or reverse motion of the tractor by moving the two drive control levers to neutral.
- To turn clockwise, slowly move the left control lever forward while simultaneously moving the right control lever rearward. See Figure 16.

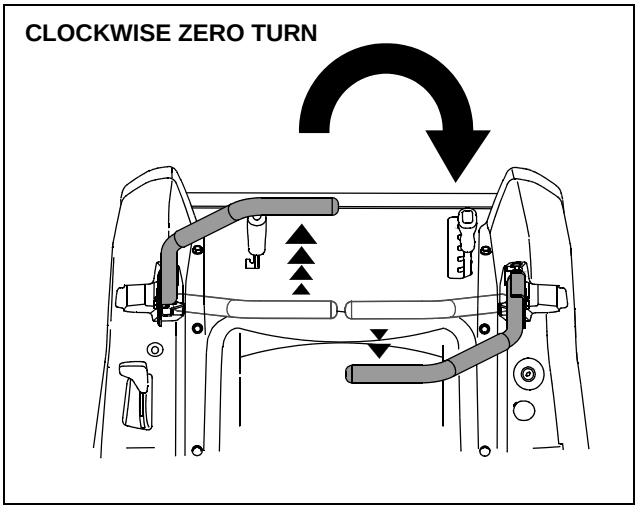


Figure 16

- To turn counterclockwise, slowly move the right control lever forward while simultaneously moving the left control lever rearward. See Figure 17.

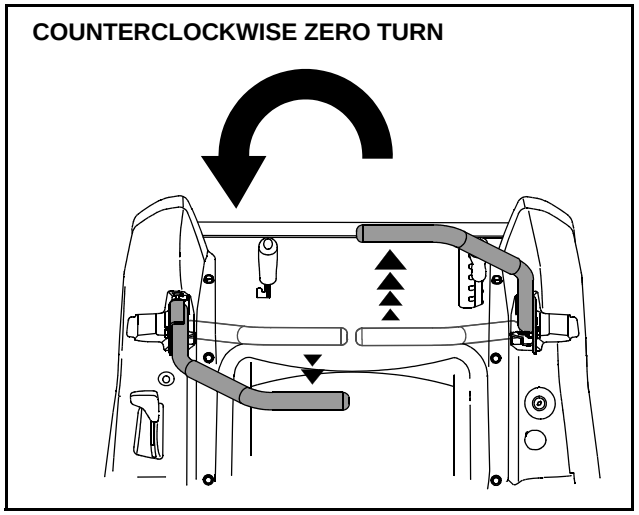


Figure 17

STOPPING THE TRACTOR

- Move both drive control levers to the neutral position to stop the motion of the tractor.
- Push the PTO switch downward to the disengaged position.
- Use the deck lift handle to raise the deck to its highest position.
- If dismounting the tractor, move the drive control handles fully outward in the neutral position, engage the parking brake, move the throttle control lever to the fast position, turn the ignition switch to “OFF’” and remove the key from the switch.

DRIVING ON SLOPES

Refer to the SLOPE GAUGE on page 29 to help determine slopes where you may not operate safely.

WARNING: Do not operate on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). The tractor could overturn and cause serious injury.

- Always drive across slopes, NEVER UP AND DOWN.
- Always turn uphill where possible. Start at the bottom of a slope and work upward.
- Always slow down before turning.
- Avoid turning downhill if possible. Use extra care and go slowly when turning downhill.

OPERATING THE PTO

Operate the PTO clutch as follows:

- Move the throttle control lever to approximately the mid throttle position.
- Pull the PTO switch upward to the “ENGAGED” position.
- Advance the throttle lever to the operating speed (full engine speed).
- The operator must remain in the tractor seat at all times. If the operator should leave the seat without turning off the power take-off switch, the tractor’s engine will shut off.
- The PTO clutch cannot be operated when the tractor is driving in the reverse direction. The PTO will disengage when both drive control levers are moved to the reverse position, and will re-engage when one (or both) control levers are moved to the neutral or forward position.

USING THE MOWER DECK

WARNING: Make certain the area to be mowed is free of debris, sticks, stones, wire or other objects that can be thrown by the rotating blades.

- Mow across slopes, not up and down. If mowing a slope, start at bottom and work upward to ensure turns are made uphill.
- On the first pass pick a point on the opposite side of the area to be mowed.
- Lower the mower deck to the desired height setting using the lift handle.
- Engage the PTO clutch using the PTO switch and move the throttle control to the fast position.
- Slowly and evenly push the RH and LH drive control levers forward to move the tractor forward, and keep the tractor headed directly toward the alignment point.
  NOTE: *The speed of the tractor will affect the quality of the mower cut. Mowing at full speed with adversely affect the cut quality. Control the ground speed with the control levers.*
- When approaching the other end of the strip, slow down or stop before turning. A U-turn is recommended unless a pivot or zero turn is required.
- Align the mower with an edge of the mowed strip and overlap approximately 3 inches.
- Direct the tractor on each subsequent strip to align with a previously cut strip.
- To prevent rutting or grooving of the turf, if possible, change the direction that the strips are mowed by approximately 45° for the next and each subsequent mowing.

WARNING: Be careful when crossing gravel paths or driveways. Disengage the PTO and raise the deck to the highest position before crossing.

CHECKING THE SAFETY INTERLOCK CIRCUITS

Periodically check the safety interlock circuits to ensure they are working properly. If a safety circuit is not working as designed, contact you Cub Cadet dealer to have the tractor inspected. DO NOT operate the tractor if any safety circuit is not functioning properly. To check the safety circuits, proceed as follows:

- Sitting in the tractor seat with both drive control levers opened fully outward, disengage the parking brake and momentarily turn the ignition switch to the start position. The engine should not crank.
- Engage the parking brake and pull the PTO switch upward to the engaged position. Momentarily turn the ignition switch to the start position; the engine should not crank.
- Push the PTO switch downward to the disengaged position and engage the parking brake. Start the engine and move one of the drive control levers from the fully outward neutral position. The engine should stop running. Repeat the procedure with the opposite control lever.
- Move both control levers fully outward in the neutral position and disengage the parking brake; then lift upward from the operator's seat. The engine should stop.
- With both control levers fully outward in the neutral position and the parking brake engaged, engage the PTO. Lift upward from the operator's seat; the engine should stop.
- Start the tractor, disengage the parking brake, and move the control levers inward to the neutral operating position. Engage the PTO and move both control lever slowly into the slow reverse position; the PTO should disengage and the mower deck should stop until one or both of the control levers are moved to the neutral or forward position.

SECTION 3: ADJUSTMENTS

ADJUSTING THE OPERATORS SEAT

The seat may be adjusted fore and aft for the comfort of the operator. To adjust the seat proceed as follows:

- Pivot the seat partially forward and hold in a position that allows you to access the wing knobs on the bottom of the seat.
- Loosen the two wing knobs and slide the seat forward or backward in the adjustment slots to the desired position, then retighten the wing knobs. See Figure 18.

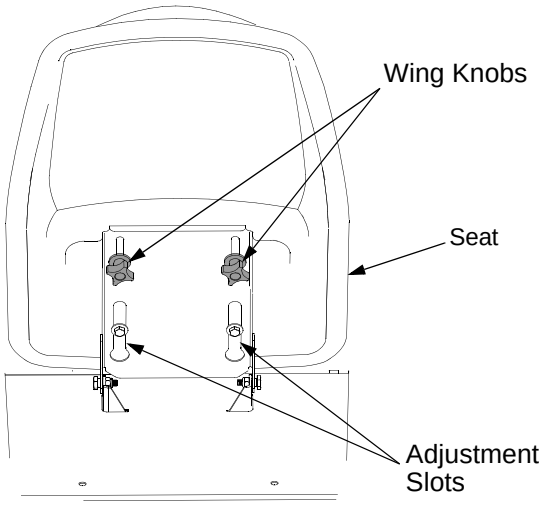


Figure 18

ADJUSTING RH & LH DRIVE CONTROL LEVERS

The RH and LH drive control levers can be adjusted up or down and fore-and-aft for the comfort of the operator. The drive control levers can be placed in either of two height positions, or can be moved forward or rearward within the range of the upper slots on each control lever mounting bracket.

To adjust the drive control lever height, proceed as follows:

- Remove the two hex insert lock nuts securing the hex cap screws fastening the control lever to the control pivot bracket. Refer to Figure 19.
- While holding the hex cap screws in the control lever mounting bracket, remove the control lever w/screws from the control pivot handle and reposition by inserting the screws in the other pair of holes.
- If repositioning the control levers forward or rearward proceed to the next step. If not, fully tighten the hex cap screws and hex insert lock nuts to secure the control levers.

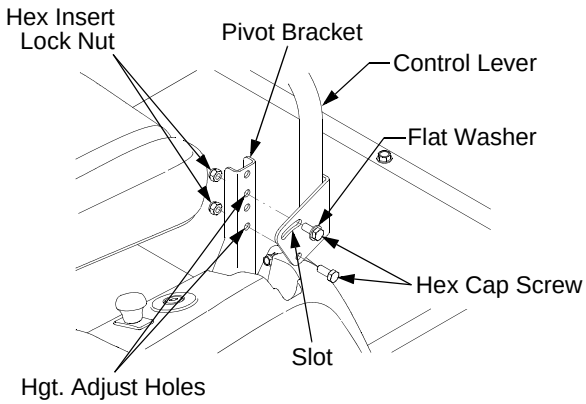


Figure 19

To adjust the drive control levers forward or rearward, proceed as follows:

- Loosen the two hex insert lock nuts and hex cap screws securing the control lever to the control pivot bracket. Refer to Figure 19.
- Rotate the control lever either forward or rearward to the desired position.
- Tight the two hex insert lock nuts and hex cap screws to secure in the control lever.

SECTION 4: MAINTENANCE

ENGINE MAINTENANCE

Engine maintenance procedures and schedules can be found in the engine manual found at the back of this manual. Follow these schedules for performing engine maintenance.

Using the Engine Oil Drain Valve

- Locate the oil drain valve on the left side of the engine.
- Pop open the protective cap on the end of the oil drain valve to expose the oil drain port. See Figure 20.
- Push the oil drain hose (packed with this manual) onto the oil drain port. Route the opposite end of the hose into an appropriate oil collection container with a capacity great enough to collect the used oil (48 oz.; 1.4 liters).

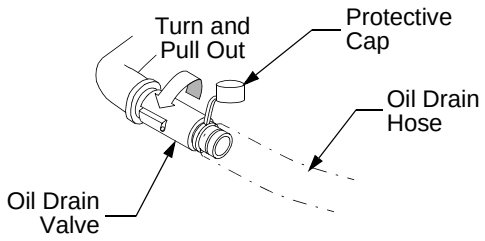


Figure 20

- Push the oil drain valve in slightly, then rotate counterclockwise and pull outward to begin draining oil. See Figure 20.

HYDROSTATIC TRANSMISSION MAINTENANCE

The zero turn tractor is equipped with dual integrated hydrostatic pumps, motors, and transaxles that are sealed and do not require regular maintenance. All service work on the hydrostatic transmissions should be performed by your Cub Cadet dealer.

GENERAL BATTERY INFORMATION

WARNING:

- Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.
- Should battery acid accidentally splatter into the eyes or onto the skin, rinse the affected area immediately with clean cold water. If there is any further discomfort, seek prompt medical attention.
- If acid spills on clothing, first dilute it with clean water, then neutralize with a solution of ammonia/water or baking soda/water.
- NEVER connect (or disconnect) battery charger clips to the battery while the charger is turned on, as it can cause sparks.
- Keep all sources of ignition (cigarettes, matches, lighters) away from the battery. The hydrogen gas generated during charging can be combustible.
- As a further precaution, only charge the battery in a well ventilated area.
- Always shield eyes and protect skin and clothing when working near batteries.

WARNING: Batteries contain sulfuric acid and may emit explosive gases. Use extreme caution when handling batteries. Keep batteries out of the reach of children.

BATTERY REMOVAL

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

The battery is located on the right/rear of the tractor beneath the seat box frame.

To remove the battery:

- Grasp the bottom of the battery holddown strap and pull downward and rearward to release it from the tab in the frame.
- Remove the hex cap screw and sems nut securing the black negative battery lead to the negative battery post (marked NEG). Move the cable away from the negative battery post.
- Remove the hex cap screw and sems nut securing the red positive battery lead to the positive battery post (marked POS).
- Carefully lift the battery out of the tractor.

Install the battery by repeating the above steps in the reverse order.

WARNING: Always connect the positive lead to the battery before connecting the negative lead. This will prevent sparking or possible injury from an electrical short caused by contacting the tractor body with tools being used to connect the cables.

CHARGING THE BATTERY

Test and, if necessary, recharge the battery after the tractor has been stored for a period of time.

- A voltmeter or load tester should read 12.6 volts (DC) or higher across the battery terminals.
- Charge the battery with a 12-volt battery charger at a **MAXIMUM** rate of 10 amps.

Voltmeter Reading	State of Charge	Charging Time
12.7	100%	Full Charge
12.4	75%	90 Min.
12.2	50%	180 Min.
12.0	25%	280 Min.

BATTERY MAINTENANCE

The battery is filled with battery acid and then sealed at the factory. However, even a “maintenance free” battery requires some maintenance to ensure its proper life cycle.

- Spray the terminals and exposed wire with a battery terminal sealer, or coat the terminals with a thin coat of grease or petroleum jelly, to protect against corrosion.
- Always keep the battery cables and terminals clean and free of corrosion.
- Avoid tipping. Even a sealed battery will leak electrolyte when tipped.

BATTERY STORAGE

- When storing the tractor for extended periods, disconnect the negative battery cable. It is not necessary to remove the battery.
- All batteries discharge during storage. Keep the exterior of the battery clean, especially the top. A dirty battery will discharge more rapidly.
- The battery must be stored with a full charge. A discharged battery can freeze sooner than a charged battery. A fully charged battery will store longer in cold temperatures than hot.
- Recharge the battery before returning to service. Although the tractor may start, the engine charging system may not fully recharge the battery.

SERVICING ELECTRICAL SYSTEM

A fuse is installed to protect the tractor’s electrical system from damage caused by excessive amperage. Always use the same capacity fuse for replacement. If the electrical system does not function, check for a blown fuse. See Figure 21

If you have a recurring problem with blown fuses, have the tractor’s electrical system checked by your Cub Cadet dealer.

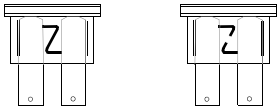


Figure 21

Relays and Switches

There are several relays and safety switches in the electrical system. If a function of the safety interlock system described earlier is not functioning properly, have the electrical system checked by your Cub Cadet dealer.

LUBRICATION

- Using a pressure lubricating gun, lubricate the front castor axles with Cub Cadet 251H EP grease after every 10 hours of service.
- From underneath the left rear of the tractor, locate the tractor drive belt idler pulley and idler bracket. Using a pressure lubricating gun, lubricate the idler bracket with Cub Cadet 251H EP grease after every 10 hours of service.
- Refer to the "MOWER DECK" section later in this manual for deck lubrication procedures.
- Periodically lubricate all other pivot points with a quality lubricating oil.

TIRE MAINTENANCE

Check the tire air pressure after every 50 hours of operation or weekly. Keep the tires inflated to the recommended pressures. Improper inflation will shorten the service life of a tire. See the tire side wall for proper inflation pressures. Observe the following guidelines:

- Do not inflate a tire above the maximum pressure shown on the sidewall of the tire.
- Do not reinflate a tire that has been run flat or seriously under inflated. Have a qualified tire mechanic inspect and service the tire.

USING THE TRANSMISSION BYPASS RODS

If for any reason the tractor will not drive or you wish to move the tractor, the two hydrostatic transmissions are equipped with bypass rod that will allow you to manually move the tractor short distances.

WARNING: Do not tow the tractor, even with the bypass rod engaged. Serious transmission damage will result from doing so.

- From just in front of the two rear tires, locate the transmission bypass rods. See Figure 22.
- Pull one rod toward the front of the tractor until the flange on the rod is forward of the keyhole slot in the frame assembly.
- Lower the bypass rod into the keyhole slot and release so the rod flange is against the front of the frame bracket.
- Repeat the above procedure to engage the other bypass rod.

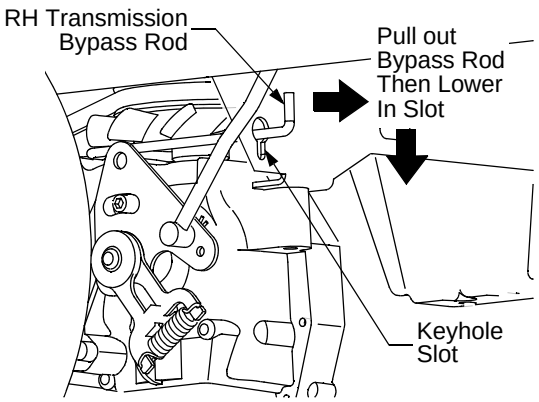


Figure 22

- After moving the tractor, disengage both bypass rods. Lift the rod and guide the flange of the rod back through the larger circular opening of the keyhole, then release the rod.

IMPORTANT: ***The tractor will not drive with the bypass rods in the engage position.***

TRACTOR CREEPING

Creeping is the slight forward or backward movement of the tractor when the engine is running at high idle and the drive control levers are opened out in the neutral position.

If after operating the tractor for some time, it begins to creep while in the neutral position, adjust the transmission control rods as follows.

- Place the front of the tractor against an immovable object (e.g. wall, post, etc.).
- Jack up the rear of the tractor so that both rear wheels are approximately one inch of the ground.
- With the engine running at high idle and the drive control levers opened out in the neutral position, and the parking brake disengaged, check the rear wheels for rotation.
- If only one wheel is rotating, locate the transmission control rod beneath the frame at the front of the rear tire. If both wheels rotate, locate both control rods. See Figure 23.

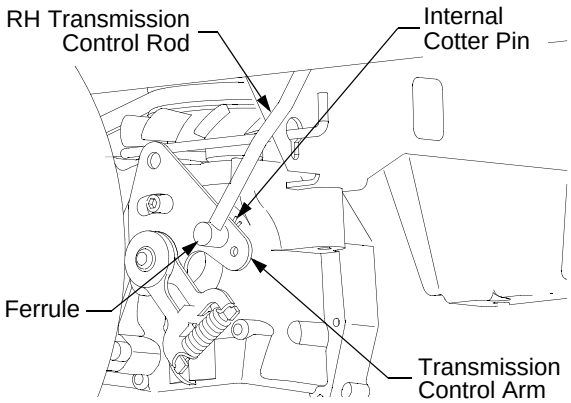


Figure 23

- Remove the internal cotter pin securing the ferrule to the transmission control arm and withdraw the ferrule. Wheel rotation should stop. If it does not, contact your Cub Cadet dealer.
- If the rotation stops, adjust the ferrule up or down the control rod as necessary to align with the hole in the transmission control arm. Re-insert the ferrule into the hole in the control arm and secure with the internal cotter pin.
- If necessary, repeat the previous two steps to adjust the other transmission control rod.
- Lower the tractor and remove the jack.

TRACTOR HIGH SPEED TRACKING

If the tractor tracks to one side with both drive control levers fully forward, adjust the control levers as follows:

- Check for proper and balanced air pressure in both front and rear tires. Refill tires if necessary.
- Perform the first three steps in the previous sub-section, Tractor Creeping, to verify that the tractor is not creeping. If creeping, adjust following the instructions in that sub-section.
- Recheck the tracking after making any adjustments to the transmission control rods.
- If uneven tracking persists, note which direction the tractor is tracking.
  - If the tractor tracks to the right, adjust the control lever stop bolt on the left side.
  - If the tractor tracks to the left, adjust the control lever stop bolt on the right side.

- Locate the applicable stop bolt on the left or right console. See Figure 24.

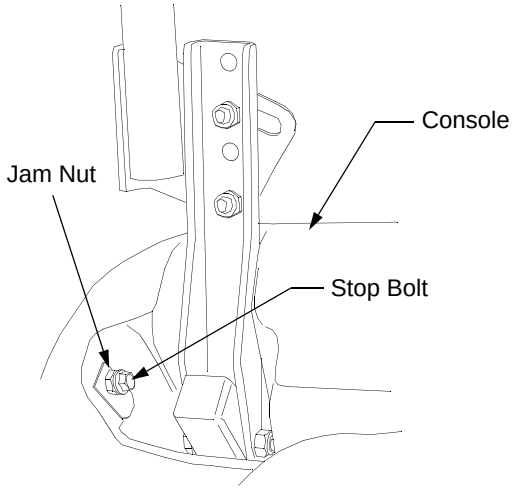


Figure 24

- Loosen the jam nut on the stop bolt, then turn the stop bolt counterclockwise to make it longer. Recheck the tracking and fine tune the adjustment as necessary.
  NOTE: *If the stop bolt is adjusted too far, the tracking problem will change sides. Make fine tuning adjustments by shortening the same bolt.*
- Tighten the jam nut against the console and reposition the control lever if necessary.

TRANSMISSION DRIVE BELT

If the transmission drive belt becomes worn and causes the drive transmissions to slip, the drive belt must be replaced. To replace the drive belt, proceed as follows:

- Remove the deck drive belt from the PTO clutch on the bottom of the engine following the instructions in Deck Removal, SECTION 5: MOWER DECK.
- From beneath the rear of the tractor, insert a 3/8 inch drive ratchet into the square hole of the drive idler bracket. See Figure 25.

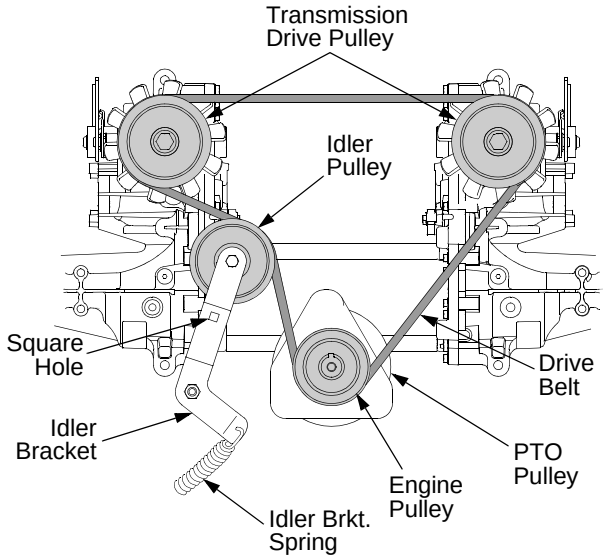


Figure 25

- Using the ratchet for leverage, pivot the idler bracket and idler pulley away from the backside of the 'V" belt; then lift the belt off and **above** the engine pulley and off the idler pulley.
- With the belt loose, lift the belt off, up and over the two transmission drive pulleys. Remove the belt from the engine and idler pulleys.
- Loop the new belt and slide over and onto the two transmission pulleys.
- Route the belt above the idler bracket back to the engine drive pulley. Lift the belt over the PTO pulley and above the engine drive pulley.
- Using the ratchet for leverage, pivot the idler bracket and idler pulley against the spring tension; then slip the belt down into the engine drive pulley and onto the idler pulley.
- Release the idler bracket so that the idler pulley tightens against the back side of the belt and tensions the drive belt.
- Reinstall the deck drive belt.

TRACTOR STORAGE

If your tractor is not going to be operated for an extended period of time (thirty days to approximately six months), the tractor should be prepared for storage. Store the tractor in a dry and protected location. If stored outside, cover the tractor (including the tires) to protect it from the elements. The procedures outlined below should be performed whenever the tractor is placed in storage.

1. Change the engine oil and filter following the instructions provided in the engine information at the back of this manual.

WARNING: Never store the tractor with fuel in the tank indoors or in poorly ventilated enclosures, where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, etc.

WARNING: Fuel left in the fuel tank deteriorates and will cause serious starting problems.

2. **If storing the tractor for 30 days or more:**
   To prevent gum deposits from forming inside the engine's carburetor and causing possible malfunction of the engine, the fuel system must be either completely emptied, or the gasoline must be treated with a stabilizer to prevent deterioration.

   Using a fuel stabilizer:

   - Read the product manufacturer's instructions and recommendations.
   - Add to clean, fresh gasoline the correct amount of stabilizer for the capacity (approximately 3 gallons) of the fuel system.
   - Fill the fuel tank with treated fuel and run the engine for 2-3 minutes to get stabilized fuel into the carburetor.

   Emptying the fuel system:

   - Prior to putting the tractor in storage, monitor fuel consumption with the goal of running the fuel tank empty.
   - Run the engine until it begins to stall. Use the choke to keep the engine running until all fuel in the carburetor has been exhausted.
3. Clean the engine and the entire tractor thoroughly.
4. Fully charge the battery, then disconnect the negative cable at the battery to prevent possible discharge. Recharge the battery periodically when in storage.

NOTE: *Remove the battery if exposed to prolonged periods of sub-freezing temperatures. Store in a cool, dry location where temperatures are above freezing.*

5. Lubricate all lubrication points.

NOTE: *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*.

REMOVING THE TRACTOR FROM STORAGE

- Check the engine oil.
- Fully charge the battery and inflate the tires to the recommended pressure.
- Start the engine and allow to idle for a few minutes to ensure engine is operating properly.
- Drive the tractor without a load to make certain all the tractor systems are functioning properly.

SECTION 5: MOWER DECK

This section contains removal, installation, adjustment, and maintenance information for the 42-inch mower deck.

DECK REMOVAL

Remove the mower deck from the tractor as follows:

- Move the tractor to a level surface, disengage the PTO, stop the engine, and set the parking brake.
- Move the deck gauge wheels to their highest setting (lowest deck setting).
- Lower the deck to the ground using the deck lift handle.
- From beneath the middle of the tractor, insert a 1/2 inch ratchet into the square hole of the deck idler bracket. See Figure 26.
- Using the ratchet for leverage, pivot the idler bracket and movable idler pulley away from the backside of the 'V" belt; then lift the belt off of both the movable and fixed idler pulleys. See Figure 26.

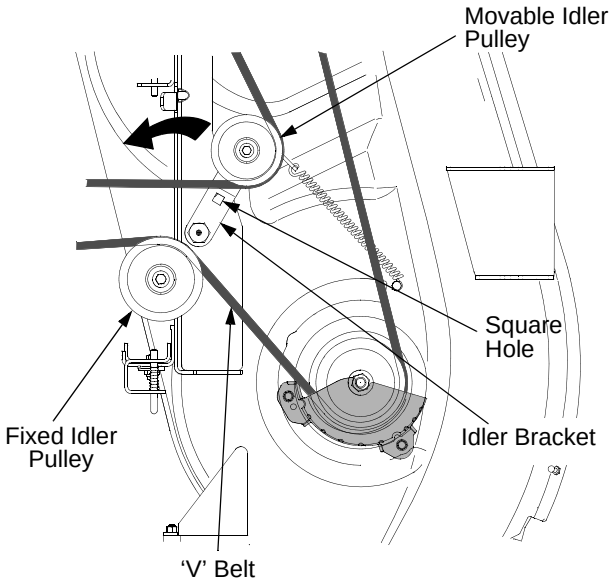


Figure 26

- From beneath the rear of the tractor, slide the belt off of the PTO pulley on the bottom of the engine.
- Looking at the cutting deck from the right side of the tractor, locate the deck support pin on the rear right side of the deck. See Figure 27.
- Pull the deck support pin outward to release the right side of the deck from the deck lift arm. See Figure 27.

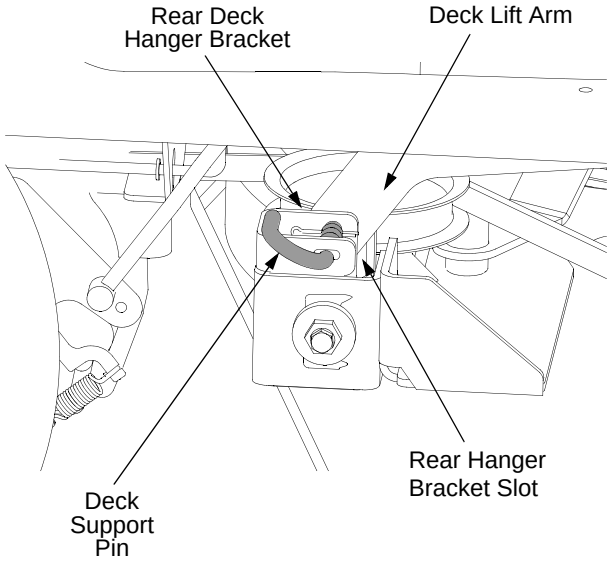


Figure 27

- From the left side of the tractor release the left side of the deck by pulling the left deck support pin outward.
- Raise the deck lift arms out of the rear hanger bracket slots by raising the deck lift handle on the tractor to its highest position.
- Slide the deck forward so that the deck front hanger rod can be lifted out of the two slots of the front deck bracket. After lifting the front hanger rod out of the slots, slide the deck rearward so that the rod can no longer engage the slots.
- Using care to prevent the front hanger rod from falling back into the deck slots, gently slide the cutting deck (from the right side) out from underneath the tractor.

DECK INSTALLATION

To install the mower deck, proceed as follows:

- While holding up the deck front hanger rod, carefully slide the deck underneath the right side of the tractor.
- While still holding the front hanger rod, slide the deck forward until the front hanger rod can be lowered into the slots at the front of the deck.
- Lower the front hanger rod into the slots of the front deck bracket, then slide the deck rearward.
- Maneuver the deck so that the slots in the two rear deck hanger brackets approximately align with the deck lift arms of the tractor. Refer to Figure 27.

- Use the deck lift handle of the tractor to lower the deck lift arms into the slots of the rear deck hanger brackets.
- Pull the deck support pins outward and maneuver the deck as necessary to align the holes in the deck lift arm with the pins. Refer to Figure 27.
- When aligned, push each pin fully inward through the lift arms to secure the arms in the rear hanger bracket slots.
- Route the 'V' belt rearward beneath the tractor frame and install the belt in the pulley of the PTO clutch.
- Route the backside of the belt around the fixed idler pulley of the deck. Refer to Figure 26.
- Insert a 1/2 inch ratchet into the square hole of the deck idler bracket. Refer to Figure 26.
- Using the ratchet for leverage, pivot the idler bracket rearward against the spring tension and slide the backside of the belt onto the movable idler pulley. Refer to Figure 26.

LEVELING THE MOWER DECK

When leveled correctly the mower deck should be level side to side, and should be approximately a 1/8 to 1/4 inch lower in the front of the deck.

Side to Side Leveling

If the cutting deck appears to be mowing unevenly, a side to side adjustment can be performed. Adjust if necessary as follows:

- With the tractor parked on a firm, level surface, place the deck lift handle in the top notch (highest position) and rotate both blades so that they are perpendicular to the tractor frame.
- Measure the distance from the outside left blade tip to the ground and the distance from the outside right blade tip to the ground. The measurements should be equal. If they're not, proceed to the next step.
- Comparing the two measurements, determine whether the right side of the deck must be raised or lowered.
- Loosen, but do not remove, the hex cap screw on the right deck hanger bracket. Refer to Figure 28.
- Level the deck by using a wrench to turn the adjustment gear (found immediately behind the hex cap screw just loosened) clockwise to lower the right side of the deck, or counterclockwise to raise the right side of the deck. Refer to Figure 28.
- The deck is properly leveled when both blade tip measurements taken earlier are equal.
- Retighten the hex cap screw on the left deck hanger bracket when proper adjustment is achieved.

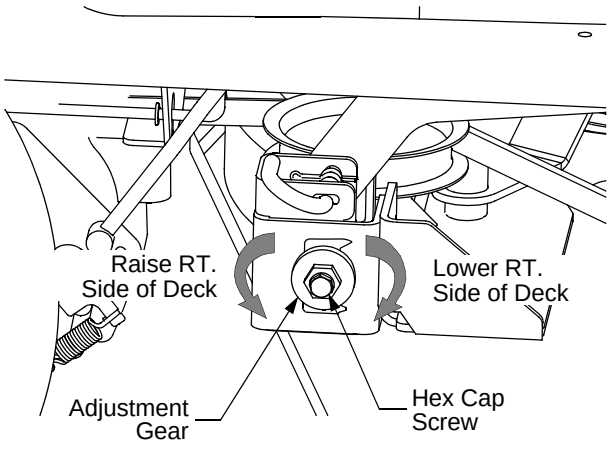


Figure 28

Front to Back Leveling.

The front of the deck should be approximately 1/8 to 1/4 inch lower than the rear of the deck. Adjust if necessary as follows:

- With the deck raised off of the ground, rotate the blades so that they are parallel to the frame of the tractor.
- If the side to side leveling was done correctly, measuring just the right blade should be acceptable to attain the correct back to front pitch of the deck.
- Measure the distance from the front tip of the blade to the ground and the distance from the rear tip to the ground. The front distance should be 1/8 to 1/4 inch less than the rear. If it is not, proceed to the next step.
- From the front of the tractor, on the rearward side of the front hanger rod bracket, locate the two hex jam nuts on the deck front hanger rod. See Figure 29.

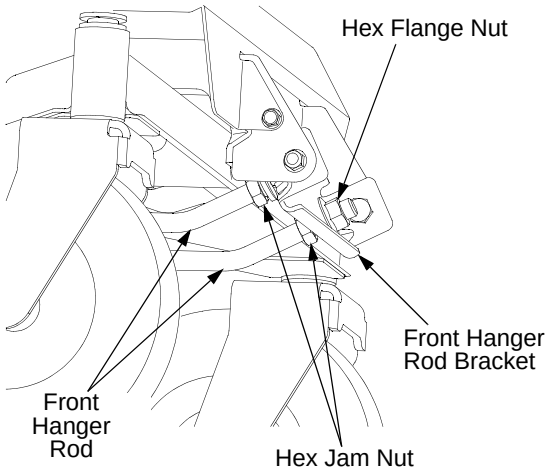


Figure 29

- Loosen the two hex jam nuts and turn them away from the backside of the front hanger rod bracket.
- If the front of the deck was too low, turn the hex flange nuts on the ends of the front hanger rod clockwise to raise the front of the deck. See Figure 29.
- If the front of the deck was too high, turn the hex flange nuts counterclockwise to lower the front of the deck.

IMPORTANT: ***The deck front hanger rod should be at the front of the slots of the front deck bracket. If one side of the rod is not at the front of its slot, turn the hex flange nut on the that side until rod just touches the front of the slot. Then re-measure and re-adjust the front hanger rod as necessary.***

- When the correct pitch of the deck is acquired, tighten the hex jam nuts against the front hanger rod bracket.

ADJUSTING THE GAUGE WHEELS

The cutting height of the mower deck can be set in any of six height settings using the deck lift handle of the tractor. The deck heights range from 1-1/2 inches to 4 inches. The deck gauge wheel position should be approximately 1/4 to 1/2 inch above the ground when the deck is set in the desired height setting.

WARNING: Keep hands and feet away from the discharge opening of the cutting deck.

NOTE: The deck wheels are an anti-scalp feature of the deck and are not designed to support the weight of the cutting deck.

Using the lift handle, set the deck in the desired height setting, then check the gauge wheel and if necessary adjust as follows.

- With the deck set at the desired height, visually check the distance between the gauge wheels and the ground. If the gauge wheels are near or touching the ground, they should be raised. If the gauge wheels are too high, they should be lowered.
- Remove the lock nut securing one of the gauge wheel shoulder screws to the deck. Remove the gauge wheel and shoulder screw. See Figure 30.
- Insert the shoulder screw in the one of four index holes that will give the gauge wheel a 1/4 to 1/2 inch clearance with the ground.
- Note the index hole of the just adjusted wheel, and adjust the other gauge wheel into the respective index hole on the other side of the deck.

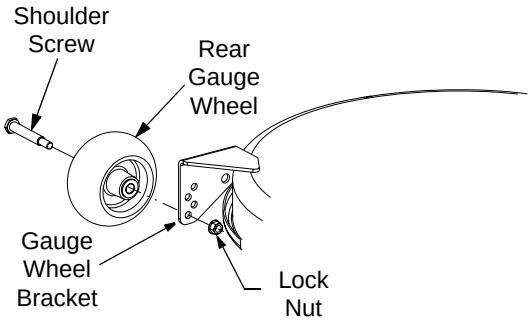


Figure 30

DECK MAINTENANCE

Cleaning And Blade Care

WARNING: Before performing any maintenance, place the PTO switch in the "OFF" position, engage the parking brake lever, turn the ignition key to the "OFF" position and remove the key from the switch. When servicing the mower deck, be careful not to cut yourself on the sharpened blades.

Clean the underside of the mower deck at the end of the mowing season or when buildup of cut material on the underside is noticed.

Once a month remove the belt covers to remove any accumulation of grass clippings from around the spindle pulleys and V-belt. Clean more often when mowing tall, dry grass.

The cutting blades must be kept sharp at all times. Sharpen the cutting edges of the blades evenly so that the blades remain balanced and the same angle of sharpness is maintained. If the cutting edge of a blade has been sharpened to within 5/8 inch of the wind wing radius, it is recommended that new blades be installed. See Figure 31.

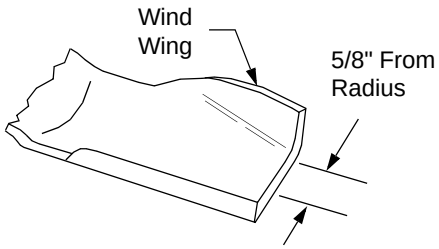


Figure 31

The blades may be removed as follows.

- Remove the deck from beneath the tractor, (refer to **Deck Removal** on page 25) then gently flip the deck over to expose its underside.

- Use a 15/16 inch wrench to hold the hex nut on top of the spindle assembly when loosening the hex nut securing the blade. A block of wood may be placed between the deck housing and the cutting edge of the blade to assist in removal of the hex nut securing the blade. Refer to Figure 32.
- When reinstalling the blades, be sure they are installed so that the wind wings are pointing upward toward the top of the deck.
- Reinstall the deck (refer to **Deck Installation** on page 25).

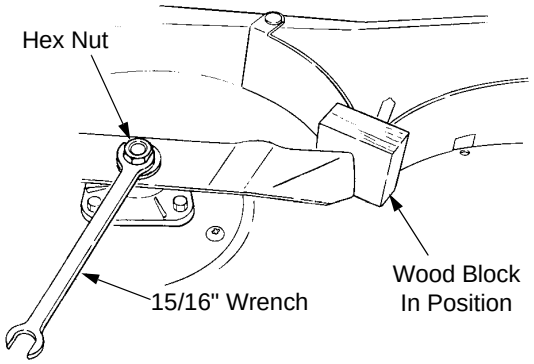


Figure 32

DECK LUBRICATION

- After every 10 hours of operation and/or before putting the deck into winter storage, lubricate the spindle assemblies with 251H EP grease or an equivalent No. 2 multipurpose lithium grease. The lube fittings are located in the spindle housing and can be accessed from underneath the deck.
- After every 10 hours of operation and/or before putting the deck into winter storage, lubricate the spindle belt idler bracket with 251H EP grease or an equivalent No. 2 multipurpose lithium grease. The lube fitting is located in the top of the shoulder bolt securing the idler bracket.
- After every 25 hours of operation and/or before putting the deck into winter storage, lubricate the deck gauge wheels with 251H EP grease or an equivalent No. 2 multipurpose lithium grease.

REPLACING THE DECK DRIVE BELT

- Remove the deck from beneath the tractor, (refer to **Deck Removal** on page 25).
- Remove the hex tapping screws securing the belt covers to the deck and remove the belt from the spindle pulleys. Refer to Figure 33.
- Install the new belt around the spindle pulleys and reinstall the belt covers.
- Route the belt rearward between the two idler pulleys and reinstall the deck following the instructions in **Deck Installation** on page 25.

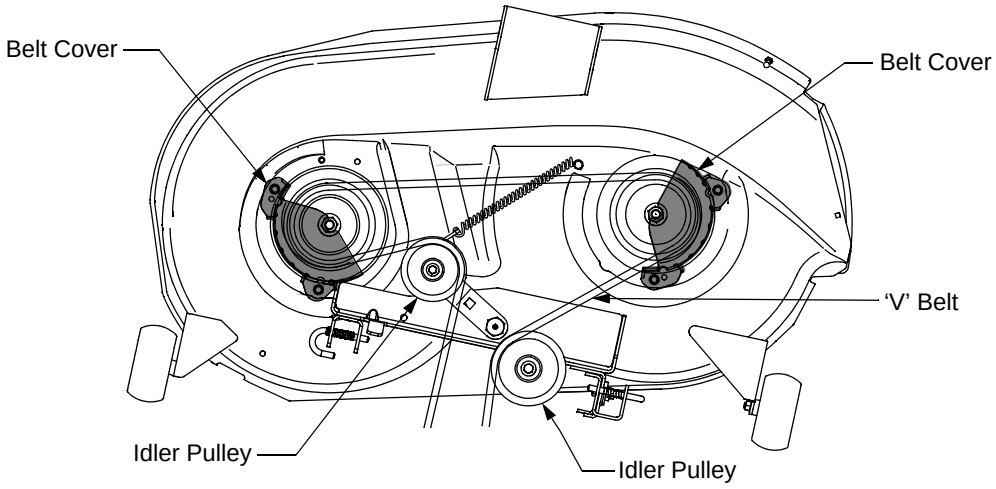
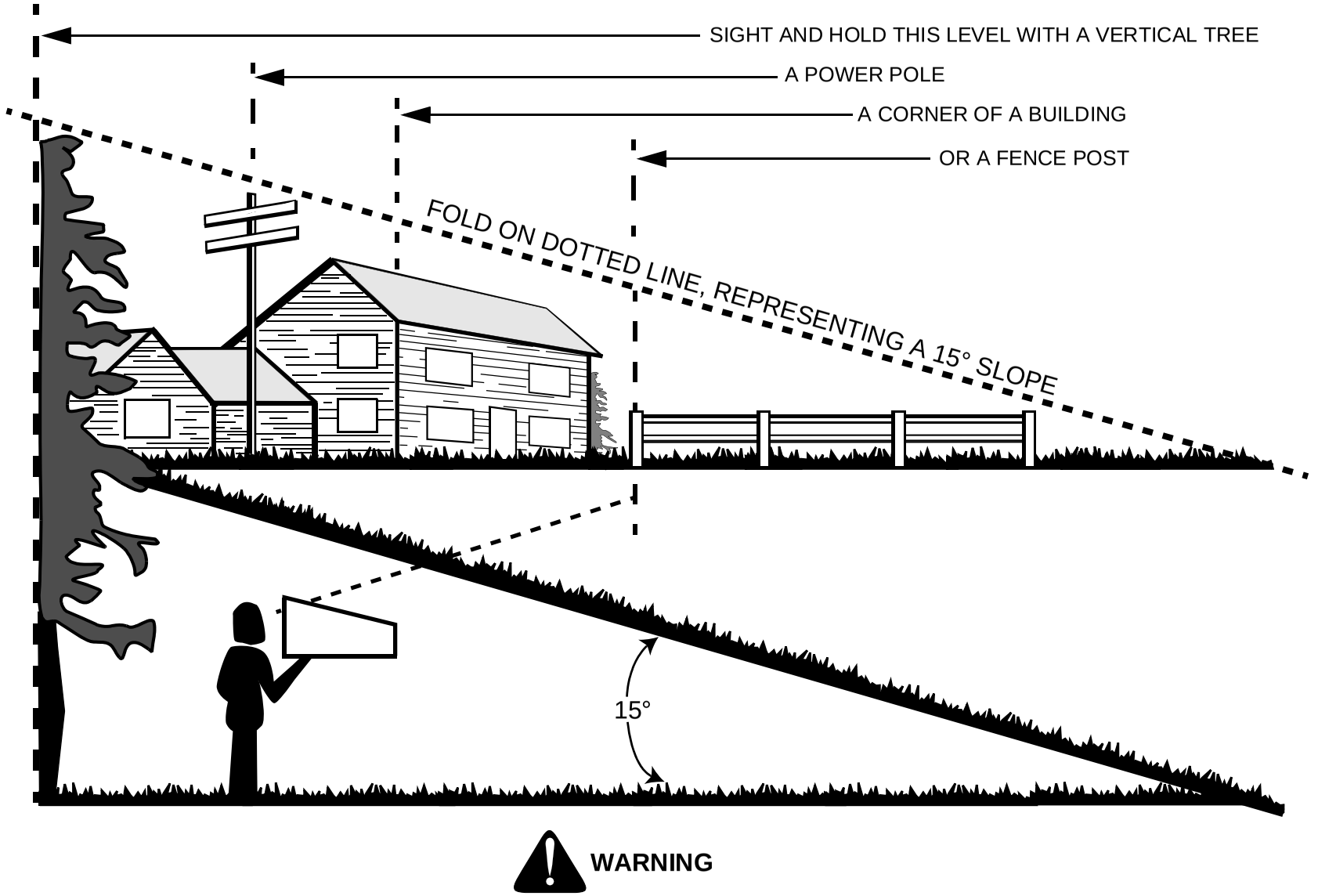


Figure 33

USE THIS PAGE AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.

SLOPE GAUGE

(Keep this sheet in a safe place for future reference.)



WARNING

Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.
Operate RIDING mowers up and down slopes, never across the face of slopes.
Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

ENGINE MANUAL

The Briggs & Stratton model 31F777-0318-E1 engine is used on this RZT model tractor. The following section is a reproduction of the Briggs & Stratton engine manual that applies to the above engine.

Read this manual in its entirety. Observe all warnings and follow all operation and maintenance instructions provided in the manual. However, if you experience any engine problems, or have any questions regarding your engine, contact your Cub Cadet dealer first.

Operating & Maintenance Instructions

Model Series Covered in This Manual Include Gasoline, Natural Gas and Liquid Propane Gas Engines

210000
280000
310000

Model	Type	Code

Month	Day	Year

Note: General Model Series numbers noted above are inclusive of the specific model number found on your engine. To get replacement parts or technical assistance in the future, write your engine Model, Type, Code and date of purchase here.

TABLE OF CONTENTS

Safety 3-5
Engine Information 6
Oil 7
Fuel and Starting Information 8
Starting and Stopping 9-10
Maintenance 11-13
Adjustments 14
Parts and Service & Storage 15-16
Warranty Information 17

⚠ WARNING

Briggs & Stratton does not approve or authorize the use of these engines on 3-wheel All Terrain Vehicles (ATVs), motor bikes, aircraft products or vehicles intended for use in competitive events. Use of these engines in such applications could result in property damage, serious injury (including paralysis), or even death.

Need assistance? Go to **www.briggsandstratton.com** for detailed information regarding Briggs & Stratton engines.
Or call, **1-800-233-3723**, (U.S.A. and Canada) to hear a menu of pre-recorded messages offering engine maintenance information.

PRINTED IN U.S.A.

FORM NO. 275935-11/03

The Power That Works For You.™

Look For Relevant Emissions Durability Period and Air Index Information On Your Engine Emissions Label

Engines that are certified to meet the California Air Resources Board (CARB) Tier 2 Emission Standards must display information regarding the Emissions Durability Period and the Air Index. Briggs & Stratton makes this information available to the consumer on our emission labels.

The **Emissions Durability Period** describes the number of hours of actual running time for which the engine is certified to be emissions compliant, assuming proper maintenance in accordance with the Operating & Maintenance Instructions. The following categories are used:

Moderate: Engine is certified to be emission compliant for 125 hours of actual engine running time.

Intermediate: Engine is certified to be emission compliant for 250 hours of actual engine running time.

Extended: Engine is certified to be emission compliant for 500 hours of actual engine running time.

For example, a typical walk-behind lawn mower is used 20 to 25 hours per year. Therefore, the **Emissions Durability Period** of an engine with an **intermediate** rating would equate to 10 to 12 years.

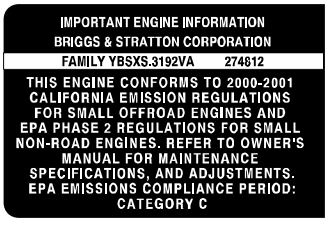
The **Air Index** is a calculated number describing the relative level of emissions for a specific engine family. The lower the **Air Index**, the cleaner the engine. This information is displayed in graphical form on the emissions label.

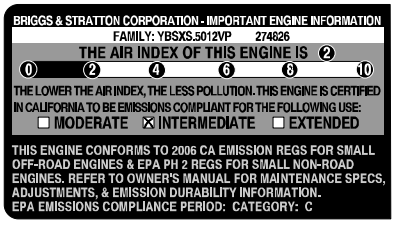
After July 1, 2000, Look For Emissions Compliance Period On Engine Emissions Compliance Label

After July 1, 2000 certain Briggs & Stratton engines will be certified to meet the United States Environmental Protection Agency (USEPA) Phase 2 emission standards. For Phase 2 certified engines, the Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements. For engines less than 225 cc displacement, Category C = 125 hours, B = 250 hours and A = 500 hours. For engines of 225 cc or more, Category C = 250 hours, B = 500 hours and A = 1000 hours.

The displacement engines of Model Series 210000 is 344 cc, 280000 is 465 cc, 310000 engines is 501 cc.

This is a generic representation of the emission label typically found on a certified engine.





BEFORE OPERATING ENGINE

- Read entire Operating & Maintenance Instructions AND the instructions for the equipment this engine powers.*
- Failure to follow instructions could result in serious injury or death.

THE OPERATING & MAINTENANCE INSTRUCTIONS CONTAIN SAFETY INFORMATION TO

- Make you aware of hazards associated with engines
- Inform you of the risk of injury associated with those hazards, and
- Tell you how to avoid or reduce the risk of injury.

The safety alert symbol (⚠) is used to identify safety information about hazards that can result in personal injury.

A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

⚠ **DANGER** indicates a hazard which, if not avoided, **will result in death or serious injury.**

⚠ **WARNING** indicates a hazard which, if not avoided, **could result in death or serious injury.**

⚠ **CAUTION** indicates a hazard which, if not avoided, **might result in minor or moderate injury.**

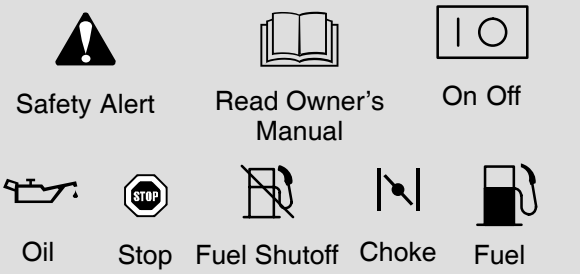
CAUTION, when used **without** the alert symbol, indicates a situation that **could result in damage to the engine.**

⚠ WARNING ⚠

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

HAZARD SYMBOLS AND MEANINGS

THE INTERNATIONAL SYMBOLS USED ON THE ENGINE OR IN THIS MANUAL INCLUDE:



* Briggs & Stratton does not necessarily know what equipment this engine will power. For that reason, you should carefully read and understand the operating instructions for the equipment on which your engine is placed.

SAFETY

WARNING

Fuel and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

WHEN FUELING

- Turn engine OFF and let engine cool at least 2 minutes before removing cap or refueling engine.
- Fill fuel tank outdoors or in well-ventilated area.
- On **GASOLINE** operated engines, do not overfill fuel tank. Fill tank to approximately 1-1/2 inches below top of neck to allow for fuel expansion.
- Keep fuel away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

WHEN STARTING ENGINE

- Make sure spark plug, muffler, fuel cap and air cleaner are in place, and firmly secured by equipped fasteners.
- Do not crank engine with spark plug, air cleaner cartridge or air cleaner cover removed.
- If fuel spills, wait until it evaporates before starting engine.
- If **GASOLINE** engine floods, set choke to OPEN/RUN position, place throttle in FAST and crank until engine starts.

WHEN OPERATING EQUIPMENT

- Do not tip engine or equipment at angle which causes gasoline to spill.
- Do not choke carburetor to stop engine.

WHEN TRANSPORTING EQUIPMENT

- On GASOLINE engine, transport with fuel tank EMPTY or with fuel shut-off valve OFF.
- On **NATURAL / LIQUID PETROLEUM (LP) GAS** engines transport with fuel cylinder empty or valve closed, or tank disconnected.

WHEN STORING GASOLINE OR EQUIPMENT WITH FUEL IN TANK

- Store away from furnaces, stoves, water heaters or other appliances that have pilot light or other ignition source because they can ignite gasoline vapors.

WARNING

Gaseous fuels are extremely flammable and readily form explosive air-vapor mixtures at ambient temperatures.

IF YOU SMELL GAS:

- DO NOT start the engine.
- DO NOT actuate any electrical switches.
- DO NOT use the phone in the vicinity.
- Evacuate the area.
- Contact the gas supplier or fire department.

REMEMBER:

- LPG vapor is heavier than air and trends to collect in low areas. NG vapor is lighter than air and tends to collect in high areas. Both may travel to remote locations.
- Keep all flames, sparks, pilot lights, and other ignition sources away from the area where the engine is operated or repaired.
- DO NOT smoke when operating or repairing the engine.
- DO NOT store gasoline or other flammable vapors or liquids in the vicinity of the engine.
- BEFORE doing any service work to the engine, shut off the gas supply.
- After initial installation or servicing, check for gas leaks. DO NOT use an open flame. Apply very soapy water or leak test solution with a brush and look for bubbles.
- Keep the equipment and the area surrounding the engine free of debris.
- Install the fuel system according to applicable fuel/gas codes.

WARNING

Wear eye protection when doing repair work.

Frostbite can result from skin/eye contact with leaking LP liquid.

- Installation, adjustment and repair work should be done by a qualified technician.
- Flexible supply lines should be checked regularly to make sure they are in good condition. Replace damaged or leaking components.

WARNING

Starting engine creates sparking.

Sparking can ignite nearby flammable gases.

Explosion and fire could result.

- If there is natural or LP gas leakage in area, do not start engine.
- Do not use pressurized starting fluids because vapors are flammable.

WARNING

Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go.

Broken bones, fractures, bruises or sprains could result.

- When starting engine, pull cord slowly until resistance is felt, then pull rapidly.
- Remove all external equipment/engine loads before starting engine.
- Direct coupled equipment components such as, but not limited to, blades, impellors, pulleys, sprockets, etc., must be securely attached.

WARNING

Rotating parts can contact or entangle hands, feet, hair, clothing, or accessories.

Traumatic amputation or severe laceration can result.

- Operate equipment with guards in place.
- Keep hands and feet away from rotating parts.
- Tie up long hair and remove jewelry.
- Do not wear loose-fitting clothing, dangling drawstrings or items that could become caught.

WARNING

Engines give off carbon monoxide, an odorless, colorless, poison gas.

Breathing carbon monoxide can cause nausea, fainting or death.

- Start and run engine outdoors.
- Do not start or run engine in enclosed area, even if doors or windows are open.

WARNING

Running engines produce heat. Engine parts, especially muffler, become extremely hot.

Severe thermal burns can occur on contact.

Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, engine cylinder and fins to cool before touching.
- Remove accumulated combustibles from muffler area and cylinder area.
- Install and maintain in working order a spark arrester before using equipment on forest-covered, grass-covered, brush-covered unimproved land. The state of California requires this (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal land.

WARNING

Unintentional sparking can result in fire or electric shock.

Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

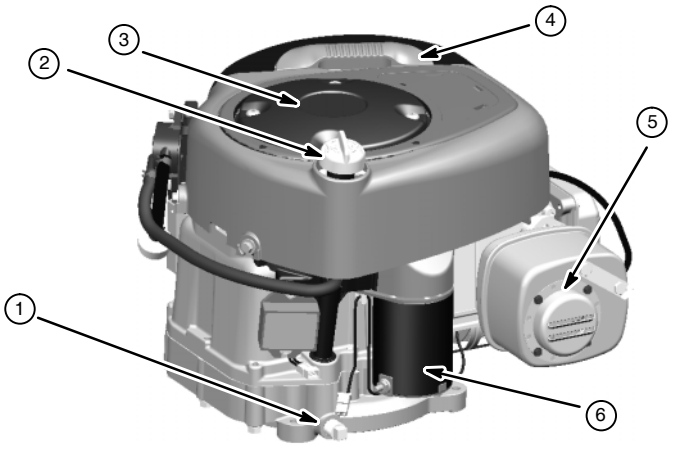
BEFORE PERFORMING ADJUSTMENTS OR REPAIRS

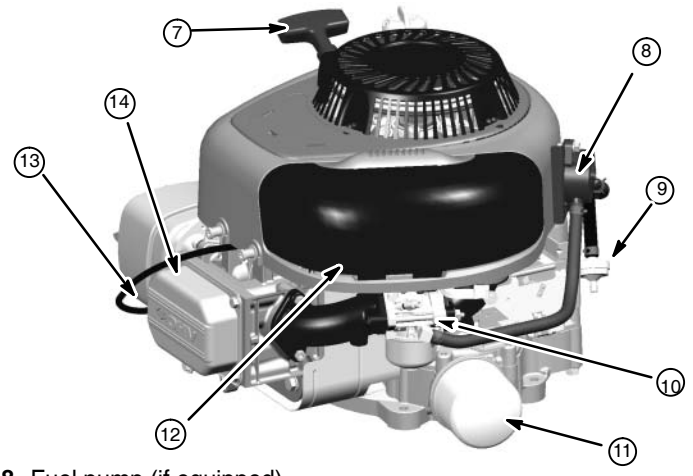
- Disconnect spark plug wire and keep it away from spark plug.
- Disconnect battery at negative terminal (only engines with electric start).

WHEN TESTING FOR SPARK

- Use approved spark plug tester.
- Do not check for spark with spark plug removed.

ENGINE INFORMATION





1. Oil drain
2. Oil fill/Dipstick
3. Rotating screen
4. Air cleaner handle
5. Muffler/(Muffler guard, if equipped)/ (Spark arrester, if equipped)
6. 12 V electric starter
7. Rewind starter handle
8. Fuel pump (if equipped)
9. In-line fuel filter (if equipped)
10. Carburetor or LPG / NG Mixer
11. Oil filter (if equipped)
12. Air cleaner cover
13. Spark plug wire
14. Engine Model Type Code
    xxxxx xxxx xx xxxxxxxx

GENERAL INFORMATION

ENGINE MODEL: This is a single cylinder, overhead valve (OHV), air-cooled engine. It is a low emissions engine.

In the state of California, OHV Model Series 210000, 280000 and 310000 engines are certified by the California Air Resources Board to meet emissions standards for 250 hours. Such certification does not grant the purchaser, owner or operator of this engine any additional warranties with respect to the performance or operational life of this engine. This engine is warranted solely according to the product and emissions warranties stated elsewhere in this manual.

TUNE-UP SPECIFICATIONS

Armature air gap ..... 0.010 – 0.014 in. (0.25 – 0.36 mm)

Spark plug gap ..... 0.030 in. (0.76 mm)

Valve clearance with valve springs installed and piston 1/4 in. (6 mm) past top dead center (check when engine is cold). See Repair Manual P/N 272147.

Intake ..... 0.003 – 0.005 in. (0.08 – 0.13 mm)

Exhaust ..... 0.005 – 0.007 in. (0.13 – 0.18 mm)

MODEL SERIES 210000

Bore ..... 3-7/16 in. (87.31 mm)

Stroke ..... 2-17/64 in. (77.78 mm)

Displacement ..... 21.00 cu. in. (344.1 cc)

MODEL SERIES 280000

Bore ..... 3-7/16 in. (87.31 mm)

Stroke ..... 3-1/16 in. (77.78 mm)

Displacement ..... 28.42 cu. in. (465.7 cc)

MODEL SERIES 310000

Bore ..... 3-9/16 in. (90.60 mm)

Stroke ..... 3-1/16 in. (77.78 mm)

Displacement ..... 30.59 cu. in. (501.2 cc)

Note: For practical operation, the horsepower loading should not exceed 85% of rated horsepower. Engine power will decrease 3-1/2% for each 1,000 feet (300 meters) above sea level and 1% for each 10° F (5.6° C) above 77° F (25° C). Engine will operate satisfactorily at an angle up to 15°.

TECHNICAL INFORMATION

POWER RATINGS: The power ratings for an individual engine model are initially developed by starting with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure) (Revision 2002-05). Given both the wide array of products on which our engines are placed, and the variety of environmental issues applicable to operating the equipment, it may be that the engine you have purchased will not develop the rated horsepower when used in a piece of power equipment (actual “on-site” power). This difference is due to a variety of factors including, but not limited to, the following: differences in altitude, temperature, barometric pressure, humidity, fuel, engine lubrication, maximum governed engine speed, individual engine to engine variability, design of the particular piece of power equipment, the manner in which the engine is operated, engine run-in to reduce friction and clean out of combustion chambers, adjustments to the valves and carburetor, and other factors. The power ratings may also be adjusted based on comparisons to other similar engines utilized in similar applications, and will therefore not necessarily match the values derived using the foregoing codes.

OIL

CAUTION: This engine is shipped from Briggs & Stratton **without oil**. Check oil level before starting engine. If you start the engine without oil, the engine will be damaged beyond repair and will not be covered under warranty.

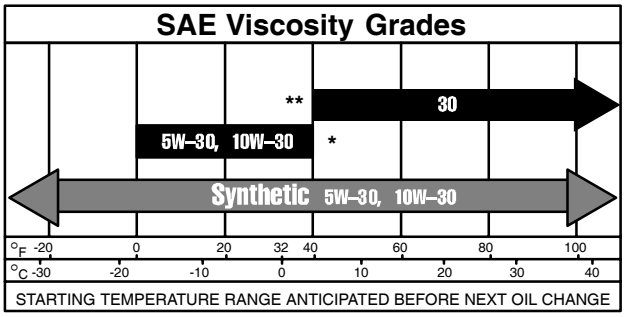
OIL CAPACITY

Engine without oil filter holds approximately 1-1/2 quarts (48 ounces; 1.4 liters).

TYPE OF OIL TO USE

- Use a high quality detergent oil classified “For Service SF, SG, SH, SJ” or higher, such as Briggs & Stratton 30W, Part Number 100005 (20 oz) or 100028 (48 oz).
- Do not use special additives.
- Choose a viscosity according to the table opposite.

Note: Synthetic oil meeting ILSAC GF-2, API certification mark and API service symbol (shown at left) with “SJ/CF ENERGY CONSERVING” or higher, is an acceptable oil at all temperatures. **Use of synthetic oil does not alter required oil change intervals**.

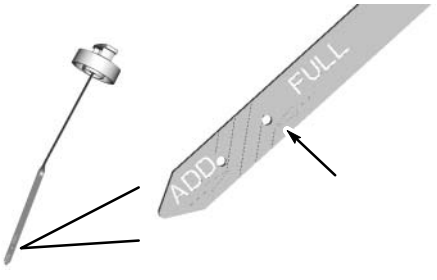


* **CAUTION:** Air cooled engines run hotter than automotive engines. The use of non-synthetic multi-viscosity oils (5W-30, 10W-30, etc.) in temperatures above 40° F (4° C) will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently.

** **CAUTION:** SAE 30 oil, if used below 40° F (4° C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

CHECKING AND ADDING OIL

- Check oil level ***before*** starting the engine.
- Check level daily, or after every eight (8) hours.
- Keep oil level at FULL.
- Do not overfill.



[1] Place engine level and clean around oil fill area.

[2] Remove dipstick and wipe clean with cloth.

[3] Replace and tighten dipstick. Remove and check oil level.

[4] Oil level should be at FULL line on dipstick.

[5] If needed, add oil slowly - recheck. Do not over fill.

[6] Replace and tighten dipstick.

FUEL

TYPE OF FUEL TO USE

GASOLINE POWERED ENGINES

- Use clean, fresh, regular unleaded gasoline with a minimum of 85 octane. Fresh fuel prevents gum from forming in the fuel system or on essential carburetor parts. Purchase fuel in quantity that can be used within 30 days.
- Do not use gasoline which contains Methanol.
- Do not mix oil with gasoline.
- For engine protection use Briggs & Stratton Gasoline Additive available from your Authorized Briggs & Stratton Dealer (P/N 5041 or single use pouch).
- The gasoline engine is certified to operate on gasoline. Exhaust Emission Control System: EM (Engine Modifications).

CAUTION: Some fuels, called oxygenated or reformulated gasoline, are gasoline blended with alcohols or ethers. Excessive amounts of these blends can damage the fuel system or cause performance problems. If any undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether.

NATURAL / LIQUID PROPANE GAS POWERED ENGINES

- Use clean, dry fuel, free of moisture or any particulate material. Using fuels outside the following recommended values may cause performance problems.
- In engines set up to run on LPG, commercial grade HD5 LPG is recommended. Recommended fuel composition is fuel with a minimum fuel energy of 2500 BTU's/ft^3 with maximum propylene content of 5% and butane and heavier gas content of 2.5% and minimum propane content of 90%.
- NG or LPG engines are certified to operate on natural or liquid propane gas.

WARNING

The equipment on which this engine is mounted is equipped with an automatic safety gas "fuel lock-off" valve. DO NOT operate the equipment if the "fuel lock-off" valve is missing or inoperative.

ADDING FUEL

GASOLINE POWERED ENGINES

WARNING

- Turn engine OFF and let engine cool at least 2 minutes before removing gas cap.
- Fill fuel tank outdoors or in well-ventilated area.
- Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.
- If fuel spills, wait until it evaporates before starting engine.

[1] Remove cap. Fill tank to approximately 1-1/2 inches below top of neck to allow for fuel expansion. Be careful not to overfill.
Briggs & Stratton ***Smart-fill***® **F*uel Can*** fills to the correct level and automatically shuts off, reducing spills and emissions.

[2] Replace cap before starting.

NATURAL / LIQUID PROPANE GAS POWERED ENGINES

- Read the operating instructions supplied by the equipment manufacturer for information on refueling natural or LP gas engine.

WARNING

- Do not use pressurized starting fluids.
- Vapors are flammable.

WARNING

- DO NOT start engine with air filter or cover not properly installed. Serious injury or death could result from backfire.

OIL PRESSURE SWITCH

If engine is equipped with an oil pressure switch, the switch will either activate a warning light or stop the engine when the engine runs low on oil. (Read the operating instructions supplied by the equipment manufacturer to determine which way your engine is equipped because the equipment manufacturer supplies the oil pressure gauge.) See **OIL PRESSURE** on page 12 for oil filling instructions.

STARTING AND OPERATING TIPS

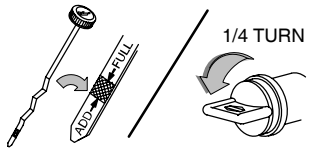
- Store and fuel equipment in level position.
- Use fresh fuel. (See Fuel.)
- Use correct type of oil for expected starting temperature. (See Oil.)
- Remove external equipment/engine loads. (See equipment operating instructions.)
- Start lawn mower on hard surface or over previously cut grass.
- Periodically remove grass buildup under mower deck. (See Maintenance.)
- After engine has started, let it warm up several seconds to several minutes, depending on outside temperature.
- For maximum performance and life, operate engine with choke in RUN and throttle in FAST.

BEFORE STARTING

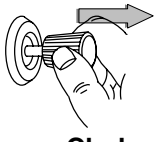
GASOLINE POWERED ENGINES

[1] Check oil level.

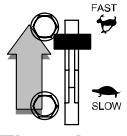
[2] Open fuel shut-off valve (if equipped).



[3] If choke and throttle controls are separate, move choke control to CHOKE. Move throttle to FAST.



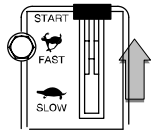
Choke



Throttle

[4] If choke and throttle are on the same control, move control to CHOKE or START.

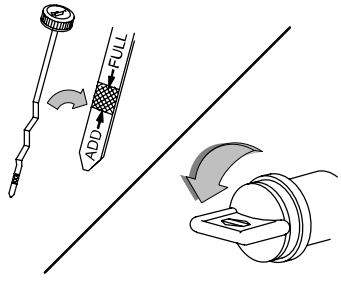
Combined Choke/Throttle control



NATURAL / LIQUID PROPANE GAS POWERED ENGINES

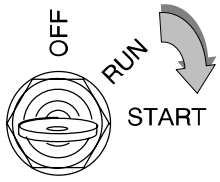
[1] Check oil level.

[2] Open fuel valve.



STARTING

ELECTRIC (KEY) STARTER

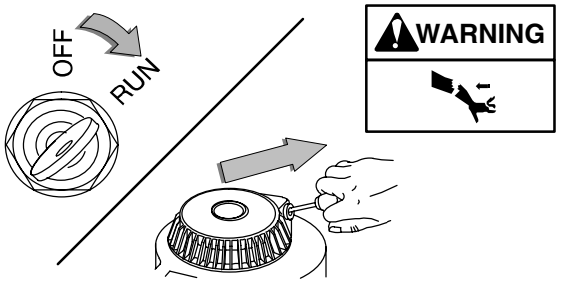


[1] Insert key and turn to START.

[2] Let engine warm up.
If choke equipped: Slowly adjust toward RUN position. Wait until engine runs smoothly before each choke adjustment.

CAUTION:
To prolong starter life, use short starting cycles (5 seconds maximum, then wait one minute). Follow equipment manufacturer's recommendations for charging battery.

REWIND (MANUAL) STARTER (auxiliary)



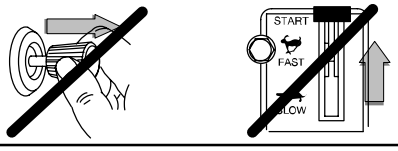
[1] Insert key (if equipped) and turn to RUN.

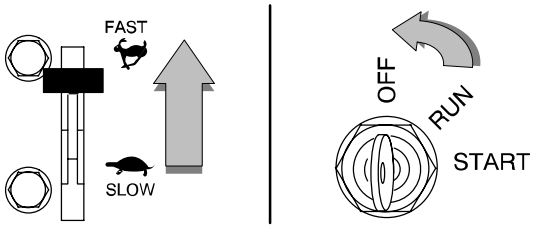
[2] Grasp rope handle. Pull slowly until resistance is felt, then pull rapidly to start engine and avoid kickback.

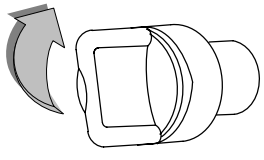
[3] Let engine warm up.
If choke equipped: Slowly adjust toward RUN position. Wait until engine runs smoothly before each choke adjustment.

STOPPING

CAUTION:
Do not stop engine by moving choke control to CHOKE. Backfire, fire or engine damage could occur.







1/4 TURN

[1] With throttle in FAST, turn key to OFF.

[2] Remove key and store out of reach of children.

[3] Close fuel shut-off valve (if equipped).

MAINTENANCE

Regular maintenance will improve the performance and extend the life of the engine. See any Authorized Briggs & Stratton Dealer for service. **Use only genuine Briggs & Stratton parts. Other parts may not perform as well, may damage the engine, and may result in injury.** In addition, use of other parts may void your warranty.

EMISSION CONTROL

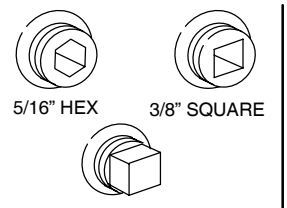
Maintenance, replacement or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual. However, to obtain no charge repairs under the terms and provisions of the Briggs & Stratton warranty statement, any service or emission control part repair or replacement must be performed by a factory authorized dealer.

Task *Perform task at hourly or calendar interval, whichever comes first.*	Every 8 Hours or Daily	25 Hours or Every Season	50 Hours or Every Season	100 Hours or Every Season	200 Hours or Every Season	Yearly
Check Oil Level	✓					
Change Oil			✓*			
Change oil filter (if equipped)				✓*		
Service air cleaner pre-cleaner (if equipped)		✓**				
Replace air cleaner cartridge (if not equipped with pre-cleaner)		✓**				
Replace air cleaner cartridge (if equipped with pre-cleaner)				✓**		
Clean Extended Life Series™ air cleaner cartridge			✓**			
Replace Extended Life Series™ air cleaner cartridge					✓**	
Inspect spark arrester (if equipped)			✓			
Replace spark plug				✓		
Replace in-line fuel filter (if equipped)				✓		
Clean cooling system				✓**		
Check valve clearance						✓
Check valve clearance on **NG / LPG Engines**				✓		

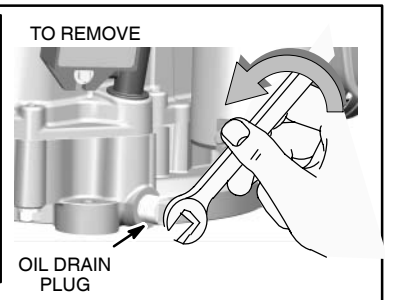
* **Change oil after first 5 to 8 hours of use**, then every 50 hours or every season. Change oil every 25 hours when operating the engine under heavy load or in high temperatures.

** Clean more often under dusty conditions or when airborne debris is present. Replace air cleaner parts, if very dirty.

CHANGING OIL



Typical drain plugs



WARNING

[1] Place engine level.

[2] Disconnect spark plug wire and keep away from spark plug. Disconnect battery (if equipped with electric starter) at negative terminal.

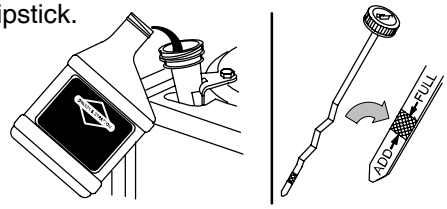
[3] With engine OFF but still warm remove oil drain plug and drain oil into appropriate receptacle.

[4] Reinstall drain plug. Remove dipstick.

[5] Fill to FULL mark on dipstick with new oil. **Do not overfill.**

Note: Engine without oil filter holds approximately 1-1/2 quarts (48 ounces; 1.4 liters). Engine equipped with filter holds approximately 1-3/4 quarts (56 ounces; 1.7 liters).

[6] Replace dipstick.



CAUTION: Used oil is a hazardous waste product. Dispose of used oil properly. Do not discard with household waste. Check with your local authorities, service center, or dealer for safe disposal/recycling facilities.

AIR CLEANER

CAUTION: Do not use pressurized air or solvents to clean cartridge. Pressurized air can damage cartridge; solvents will dissolve cartridge.

FLAT AIR CLEANER REMOVAL/ INSTALLATION

[1] Pull up on air cleaner cover handle, and rotate toward engine.

[2] Remove air cleaner cover.

[3] Carefully lift air cleaner cartridge and pre-cleaner, if equipped, from blower housing.

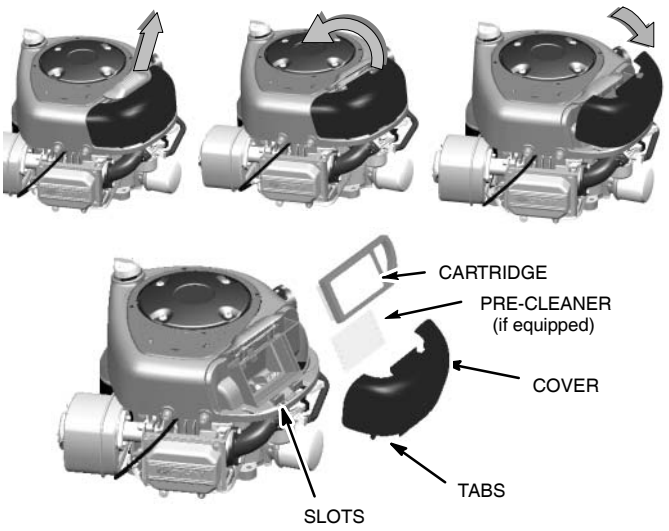
Note: To clean pre-cleaner, wash in soapy water. Squeeze dry in a clean cloth. DO NOT OIL.

[4] Clean base of air cleaner cartridge area carefully to prevent debris from entering engine.

[5] Place air cleaner pre-cleaner, if equipped, and cartridge into blower housing. Cartridge must fit securely in base.

[6] Align tabs on cover with slots of blower housing and replace cover.

[7] Hook handle and close cover.



WARNING

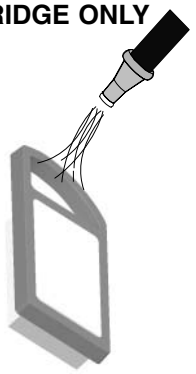
If filters, or covers are not installed correctly serious injury or death could result from backfire. Do not attempt to start your engine with them removed.

EXTENDED LIFE SERIES™ CARTRIDGE ONLY

This filter, IF STAMPED 'WASHABLE', can be washed with warm water and mild soap.

IMPORTANT: Rinse in tap water with **SCREEN** side up allowing dirt and debris to filter out.

Leave filter to dry overnight before reinstalling.



HIGH FLOW AIR CLEANER MAINTENANCE

Perform this maintenance every 25 hours or every season, clean more often under dusty conditions or when airborne debris is present. This filter is made of cotton, which is different from a standard paper filter, therefore it MUST be oiled.

[1] Remove clamp and pull air cleaner from intake manifold.

[2] Remove as much dirt from the filter as possible.

[3] Using the High Flow Air Filter Cleaner Kit, Briggs & Stratton part no. 5089D, spray the filter with cleaner. Allow the solution to soak in to the filter for about 15 minutes.

CAUTION: Never use strong detergents, high pressure water, or gasoline to clean this filter.

[4] Rinse the filter with warm water, inside first and then outside. (Let the water run from the clean side to the dirty side.)

[5] Allow the filter to dry completely. It is best to allow the filter to dry naturally. Don't use heat, this might shrink the cotton.

[6] Use only air filter oil, such as the oil included in the cleaning kit (P/N 5089D), to re-oil the filter.

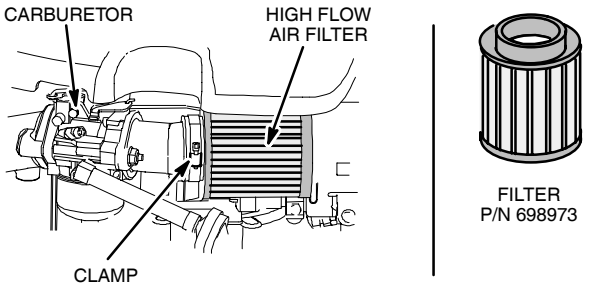
WARNING

Never use motor oil, transmission fluid, WD40, or other oils. Failure to follow instructions can cause fires resulting in death or serious injury. Use only air filter oil designed specifically for air filters.

[7] Spray the filter with oil, or pour small amount onto each pleat and allow filter to stand for 20 minutes. The filter is correctly oiled when the cotton changes from white to the color of the oil.

CAUTION: DO NOT over-oil air filter, it will interfere with engine performance and may cause engine damage. If the filter is placed on cardboard for 10 minutes and leaves a stain, it is over oiled. Wash/clean and re-oil per above instructions.

[8] Re-install air filter.



OIL FILTER (IF EQUIPPED)

Replace oil filter after every 100 hours of operation.

[1] Drain engine oil and remove oil filter.

[2] Before installing new filter, lightly oil filter gasket with fresh, clean engine oil.

[3] Screw filter on by hand until gasket contacts oil filter adapter. Tighten 1/2 to 3/4 turn more.

[4] Add fresh oil. Fill to FULL line on dipstick.

[5] Start and run engine at idle to check for oil leaks.

[6] Stop engine. Recheck oil level and add oil if required.

OIL PRESSURE

If oil pressure drops too low, an oil pressure switch (if engine is equipped) will either activate a warning light or stop the engine. Check oil level with dipstick. If oil level is between **ADD** and **FULL** mark on dipstick, Do not try to restart engine. Contact an Authorized Briggs & Stratton Service Dealer. Do not operate engine until oil pressure is corrected.

If oil level is below **ADD** mark on dipstick, add oil to bring level to **FULL** mark. Restart engine and check oil pressure. If pressure is normal, continue to operate engine.

Note: Oil pressure gauge, if engine is equipped, is supplied by manufacturer of equipment.

MAINTENANCE

ENGINE AND ENGINE PARTS

We recommend that you see an authorized Briggs & Stratton Service Dealer for all maintenance and service of the engine and engine parts. Use only genuine Briggs & Stratton parts.

WARNING

WARNING

If you perform any maintenance on the engine, first disconnect the spark plug wire from the spark plug, and disconnect the battery at the negative terminal (electric starter engines only) to prevent unintentional sparking. Unintentional sparking can result in fire or electric shock. Unintentional start-up can result in entanglement, traumatic amputation or laceration. Use only correct tools.

- Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.
- Do not tamper with governor spring, links or other parts to increase engine speed.

MUFFLER

WARNING

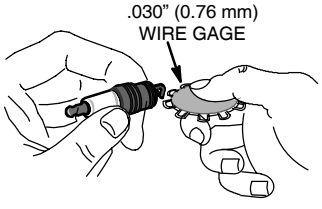
Replacement parts for the muffler must be the same and installed in the same position as the original parts, otherwise fire can occur.

If muffler is equipped with spark arrester screen, remove screen for inspection. Replace screen if damaged or plugged.

SPARK PLUG

Use only Briggs & Stratton Spark Tester (part number 19368) to check for spark.

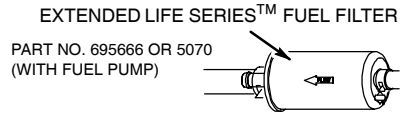
Note: In some areas, local law requires using resistor spark plug to suppress ignition signals. If this engine was originally equipped with resistor spark plug, use same type for replacement.

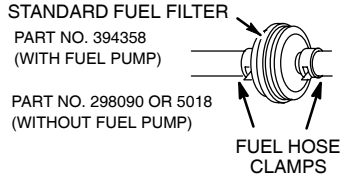


REPLACE FUEL FILTER (if equipped)

WARNING

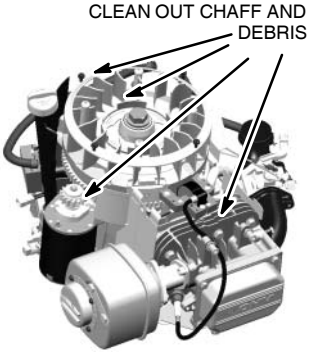
Drain fuel tank or close fuel shut-off valve before replacing fuel filter. Otherwise, fuel can leak out, creating a fire/explosion hazard.





AIR COOLING SYSTEM

Debris may clog the engine's air cooling system. Remove blower housing and clean area shown to prevent overheating and engine damage.



CLEANING DEBRIS

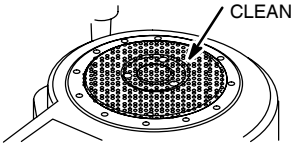
WARNING

Engine parts should be kept clean to reduce the risk of overheating and ignition of accumulated debris. This is especially important if cutting tall grass.

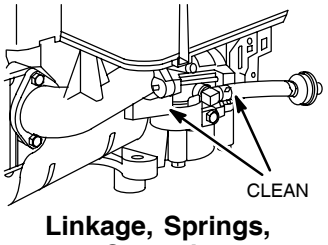
CAUTION: Do not use water to clean engine parts. Water could contaminate fuel system. Use a brush or dry cloth.

Daily or before every use, clean grass, chaff or accumulated debris from engine. Keep linkage, spring and controls clean. Keep area around and behind muffler free of any combustible debris.

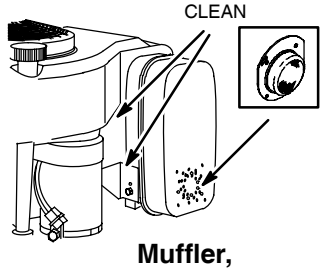
Finger Guard



Rotating Screen



Linkage, Springs, Controls



Muffler, Spark Arrester

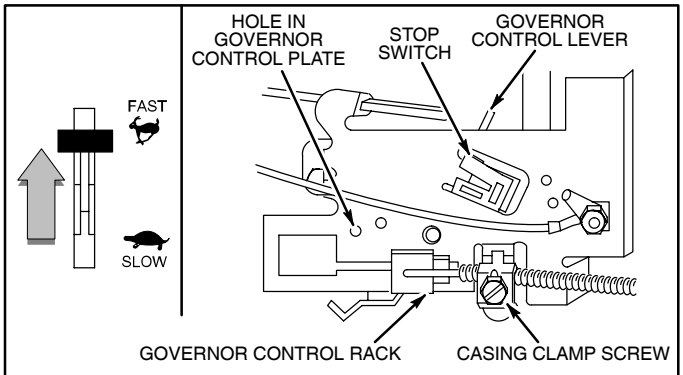
ADJUSTMENTS

CONTROL ADJUSTMENTS

WARNING

TO ADJUST REMOTE THROTTLE

If the engine does not start or if it runs roughly, the remote throttle control may need adjustment. See your authorized Briggs & Stratton dealer or follow the instructions below.



[1] Move remote throttle control to FAST position.

[2] Hole in governor control lever (located just behind governor control plate) must align with hole in governor control plate, as illustrated above.

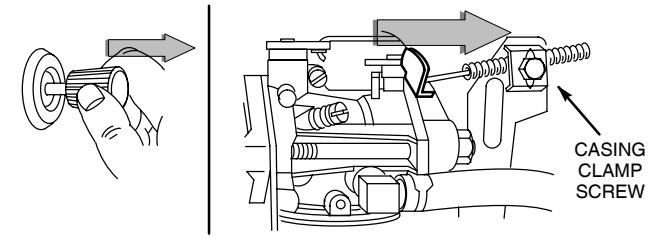
[3] If holes do not line up, loosen casing clamp screw and then move governor control rack until it does.

[4] Tighten casing clamp screw.

[5] Check operation of throttle. Move throttle control to STOP position.

[6] Governor control lever must make good contact with stop switch (if equipped). Readjust if necessary.

TO ADJUST REMOTE CHOKE



[1] Hold choke control to CHOKE or START position.
[2] Loosen casing clamp screw.
[3] Pull casing, wire and choke lever in direction of arrow to end of travel.
[4] Tighten casing clamp screw.

CARBURETOR ADJUSTMENT

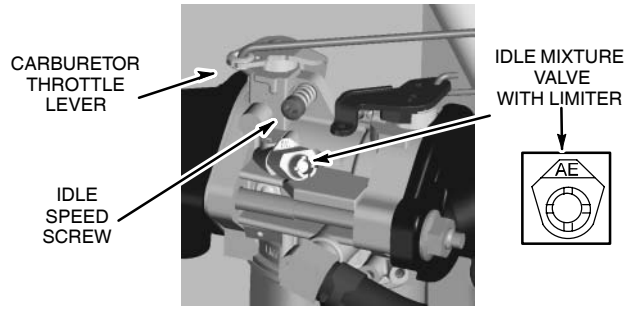
WARNING

The manufacturer of the equipment on which this engine is installed specifies top speed at which the engine will be operated. DO NOT EXCEED this speed.

Differences in fuel, temperature, altitude or load may require minor carburetor adjustment. Air cleaner and its cover must be assembled to carburetor before starting engine.

The carburetor on this engine is equipped with an idle mixture valve with a limiter (see inset), which allows some adjustment, and an idle speed adjustment screw.

TO ADJUST CARBURETOR



[1] To adjust idle speed, start engine and warm up about 5 minutes.

[2] With engine running, place equipment throttle control in SLOW position.

[3] Rotate carburetor throttle lever against the idle speed screw and hold it. Turn idle speed screw to obtain 1750 rpm (use a tachometer).

[4] Then rotate idle mixture valve full travel clockwise and then counterclockwise.

Note: DO NOT remove limiter caps. DO NOT force beyond limits.

[5] Then, position idle mixture valve in middle of travel.

[6] Check idle speed. Re-adjust to 1750 rpm, if needed.

[7] Move throttle control to FAST position. Engine should accelerate smoothly. If it does not, adjust idle mixture valve counterclockwise 1/8 turn.

Note: Engines operated at approximately 3000 to 5000 feet (900 to 1500 meters) above sea level may require a high altitude carburetor nozzle. If erratic performance is observed, contact a Briggs & Stratton Authorized Service Dealer for cost to install/purchase a high altitude carburetor nozzle.

SERVICE & STORAGE

PARTIAL LIST OF BRIGGS & STRATTON PARTS

Models 280000, 310000 AVS™ series

Extended Life Series™ flat air cleaner cartridge 697153
(washable, no pre-cleaner required)
Extended Life Series™ Maintenance Kit 5128
(Includes oil, A/C filter, spark plug, gas additive)
Flat air cleaner cartridge and pre-cleaner kit 5077
Flat air cleaner cartridge 698083
Flat air cleaner pre-cleaner 697015
Maintenance Kit 5127
(Includes oil, A/C filter, spark plug, gas additive)

Model 210000 AVS™ series

Flat air cleaner cartridge and pre-cleaner kit 5079
Flat air cleaner cartridge 698413
Flat air cleaner pre-cleaner 697292
Maintenance Kit 5126
(Includes oil, A/C filter, spark plug, gas additive)

Oval air cleaner cartridge and pre-cleaner kit 5053
Oval air cleaner cartridge 496894
Oval air cleaner pre-cleaner 272403
High Flow Air Filter (cylinder) 698973
High Flow Air Filter Cleaning Kit 5089D
Synthetic Oil (32 oz.) 100074
Oil (20 oz.) 100005
Oil (48 oz.) 100028
Oil filter (3-1/2 in. long) 491056
Oil filter (2-1/4 in. long) 492932
Fuel filter ..... 298090 -or- 5018
(for engines without fuel pump installed)
Extended Life Series™ fuel filter ..... 695666 -or- 5070
(for engines equipped with fuel pump)
Fuel filter 394358
(for engines equipped with fuel pump)
Gas additive 5041
Resistor spark plug 491055
Long life platinum spark plug 5066
(used on most OHV engines)
Spark plug wrench ..... 89838 -or- 5023
Spark tester 19368
Oil pump kit 5056
(uses standard electric drill to remove oil from engine quickly)

SERVICE

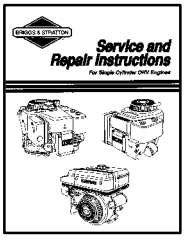
See an Authorized Briggs & Stratton Service Dealer. Each one carries a stock of Genuine Briggs & Stratton Parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines. Only dealers advertising as "Authorized Briggs & Stratton" are required to meet Briggs & Stratton standards.

When you purchase equipment powered by a Briggs & Stratton engine, you are assured of highly skilled, reliable service at more than 30,000 Authorized Service Dealers worldwide, including more than 5,000 Master Service Technicians. Look for these signs wherever Briggs & Stratton service is offered.

You may locate your nearest Authorized Briggs & Stratton Service Dealer in our dealer locator map on our web site **www.briggsandstratton.com** or in the "Yellow Pages™" directory under "Engines, Gasoline" or "Gasoline Engines," or "Lawn Mowers" or similar category.

Note: Walking fingers logo and "Yellow Pages" are registered trademarks in various jurisdictions.

An illustrated shop manual includes common specifications and detailed information covering adjustment, tune-up and repair of Briggs & Stratton single cylinder, OHV, 4 cycle engines. It is available for purchase from an Authorized Briggs & Stratton Service Dealer or you can order it from the factory. Write:
Briggs & Stratton Corporation
Attn: Service Division
P. O. Box 1144
Milwaukee, WI 53201



Part No. 272147

STORAGE

Engines stored over 30 days need special attention.

[1] To prevent gum from forming in fuel system or on essential carburetor parts:
a) if fuel tank contains oxygenated or reformulated gasoline (gasoline blended with an alcohol or an ether), run engine until it stops from lack of fuel, **or** b) if fuel tank contains gasoline, either run engine until it stops from lack of fuel, or add a gasoline additive to the gas in the tank. (See parts list. Single – use pouches of gas additive are available from your service dealer.) If you use a gas additive, run the engine for several minutes to circulate the additive through the carburetor. Then, engine and fuel can be stored up to 24 months.

[2] While engine is still warm, change oil.

[3] Remove spark plug and pour about 1 oz. (30 ml) of engine oil into cylinder. Replace spark plug and crank slowly to distribute oil.

[4] Clean engine of surface debris, chaff or grass.

[5] 

Store in a clean, dry area. Do not store in same area as a stove, furnace, water heater, or other appliance that uses a pilot light or has a device that can create a spark.

BRIGGS & STRATTON ENGINE OWNER WARRANTY POLICY

Effective January 1, 2003 replaces all undated Warranties and all Warranties dated before January 1, 2003

LIMITED WARRANTY

Briggs & Stratton Corporation will repair or replace, free of charge, any part(s) of the engine that is defective in material or workmanship or both. Transportation charges on parts submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for the time periods and subject to the conditions stated below. For warranty service, find the nearest Authorized Service Dealer in our dealer locator map at www.briggsandstratton.com, or by calling 1-800-233-3723, or as listed in the 'Yellow Pages™'.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM PURCHASE, OR TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state and country to country.

OUR PRODUCT

	Vanguard™	**ELS™** **I/C®** **Industrial Plus™** **Intek™** (Sleeve Bore)	**Fource™** **Intek™** (Kool Bore) **Power Built™ OHV** **Quantum®** **Quattro™** **Q45™** **Sprint™**	**Classic™**	**Etek™**
WARRANTY PERIOD*					
Consumer Use	2 years	2 years	2 years	1 year	1 year
Commercial Use		1 year	90 days	90 days	

* **Note the following special warranty periods: 2 years** for Classic™ engines in the European Union and Eastern European countries, for all consumer products in the European Union, and for emission control systems on engines certified by EPA and CARB. **5 years** for consumer use, 90 days for commercial use of Touch-N-Mow® starter on Quantum® and Intek™ engines. **Engines used in competitive racing or on commercial or rental tracks are not warrantied.**

The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above. "Consumer use" means personal residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Once an engine has experienced commercial use, it shall thereafter be considered as a commercial use engine for purposes of this warranty.

NO WARRANTY REGISTRATION IS NECESSARY TO OBTAIN WARRANTY ON BRIGGS & STRATTON PRODUCTS. SAVE YOUR PROOF OF PURCHASE RECEIPT. IF YOU DO NOT PROVIDE PROOF OF THE INITIAL PURCHASE DATE AT THE TIME WARRANTY SERVICE IS REQUESTED, THE MANUFACTURING DATE OF THE PRODUCT WILL BE USED TO DETERMINE THE WARRANTY PERIOD.

ABOUT YOUR ENGINE WARRANTY

Briggs & Stratton welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate. For example, warranty would not apply if engine damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, warranty is void if the serial number of the engine has been removed or the engine has been altered or modified.

If a customer differs with the decision of the Service Dealer, an investigation will be made to determine whether the warranty applies. Ask the Service Dealer to submit all supporting facts to his Distributor or the Factory for review. If the Distributor or the Factory decides that the claim is justified, the customer will be fully reimbursed for those items that are defective. To avoid misunderstanding which might occur between the customer and the Dealer, listed below are some of the causes of engine failure that the warranty does not cover.

Normal wear:

Engines, like all mechanical devices, need periodic parts service and replacement to perform well. Warranty will not cover repair when normal use has exhausted the life of a part or an engine.

Improper maintenance:

The life of an engine depends upon the conditions under which it operates, and the care it receives. Some applications, such as tillers, pumps and rotary mowers, are very often used in dusty or dirty conditions, which can cause what appears to be premature wear. Such wear, when caused by dirt, dust, spark plug cleaning grit, or other abrasive material that has entered the engine because of improper maintenance, is not covered by warranty.

This warranty covers engine related defective material and/or workmanship only, and not replacement or refund of the equipment to which the engine may be mounted. Nor does the warranty extend to repairs required because of:

1. PROBLEMS CAUSED BY PARTS THAT ARE NOT ORIGINAL BRIGGS & STRATTON PARTS.
2. Equipment controls or installations that prevent starting, cause unsatisfactory engine performance, or shorten engine life. (Contact equipment manufacturer.)
3. Leaking carburetors, clogged fuel pipes, sticking valves, or other damage, caused by using contaminated or stale fuel. (Use clean, fresh, lead-free gasoline and Briggs & Stratton Fuel Stabilizer, Part No. 5041.)
4. Parts which are scored or broken because an engine was operated with insufficient or contaminated lubricating oil, or an incorrect grade of lubricating oil (check oil level daily or after every 8 hours of operation. Refill when necessary and change at recommended intervals.) OIL GARD® may not shut down running engine. Engine damage may occur if oil level is not properly maintained. Read Operating & Maintenance Instructions.
5. Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by Briggs & Stratton.
6. Damage or wear to parts caused by dirt, which entered the engine because of improper air cleaner maintenance, re-assembly, or use of a non-original air cleaner element or cartridge. (At recommended intervals, clean and re-oil the Oil-Foam® element or the foam pre-cleaner, and replace the cartridge.) Read Operating & Maintenance Instructions.
7. Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs or clogs the cooling fins, or flywheel area, or damage caused by operating the engine in a confined area without sufficient ventilation. (Clean fins on the cylinder, cylinder head and flywheel at recommended intervals.) Read Operating & Maintenance Instructions.
8. Engine or equipment parts broken by excessive vibration caused by a loose engine mounting, loose cutter blades, unbalanced blades or loose or unbalanced impellers, improper attachment of equipment to engine crankshaft, over-speeding or other abuse in operation.
9. A bent or broken crankshaft, caused by striking a solid object with the cutter blade of a rotary lawn mower, or excessive v-belt tightness.
10. Routine tune-up or adjustment of the engine.
11. Engine or engine component failure, i.e., combustion chamber, valves, valve seats, valve guides, or burned starter motor windings, caused by the use of alternate fuels such as, liquified petroleum, natural gas, altered gasolines, etc.

Warranty is available only through service dealers which have been authorized by Briggs & Stratton Corporation. your nearest Authorized Service Dealer is listed in the "Yellow Pages™" of your telephone directory under "Engines, Gasoline" or "Gasoline Engines," "Lawn Mowers," or similar category.

Briggs & Stratton Corporation (B&S), the California Air Resources Board (CARB) and the United States Environmental Protection Agency (U.S. EPA) Emission Control System Warranty Statement (Owner's Defect Warranty Rights and Obligations)

EMISSION CONTROL WARRANTY COVERAGE IS APPLICABLE TO CERTIFIED ENGINES PURCHASED IN CALIFORNIA IN 1995 AND THEREAFTER, WHICH ARE USED IN CALIFORNIA, AND TO CERTIFIED MODEL YEAR 1997 AND LATER ENGINES WHICH ARE PURCHASED AND USED ELSEWHERE IN THE UNITED STATES (AND AFTER JANUARY 1, 2001 IN CANADA).

California and United States Emission Control Defects Warranty Statement

The California Air Resources Board (CARB), U.S. EPA and B&S are pleased to explain the Emission Control System Warranty on your model year 2002 and later small off-road engine (SORE). In California, new small off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards.

Elsewhere in the United States, new non-road, spark-ignition engines certified for model year 1997 and later must meet similar standards set forth by the U.S. EPA. B&S must warrant the emission control system on your engine for the periods of time listed below, provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emission control system includes parts such as the carburetor, air cleaner, ignition system, muffler and catalytic converter. Also included may be connectors and other emission related assemblies.

Where a warrantable condition exists, B&S will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

Briggs & Stratton Emission Control Defects Warranty Coverage

Small off-road engines are warranted relative to emission control parts defects for a period of two years, subject to provisions set forth below. If any covered part on your engine is defective, the part will be repaired or replaced by B&S.

Owner's Warranty Responsibilities

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Operating and Maintenance Instructions. B&S recommends that you retain all your receipts covering maintenance on your small off-road engine, but B&S cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should however be aware that B&S may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to an Authorized B&S Service Dealer as soon as a problem exists.

The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a B&S Service Representative at 1-414-259-5262.

The emission warranty is a defects warranty. Defects are judged on normal engine performance. The warranty is not related to an in-use emission test.

Briggs & Stratton Emission Control Defects Warranty Provisions

The following are specific provisions relative to your Emission Control Defects Warranty Coverage. It is in addition to the B&S engine warranty for non-regulated engines found in the Operating and Maintenance Instructions.

1. Warranted Parts

   Coverage under this warranty extends only to the parts listed below (the emission control systems parts) to the extent these parts were present on the engine purchased.

   a. Fuel Metering System
      - Cold start enrichment system
      - Carburetor and internal parts
      - Fuel Pump

   b. Air Induction System
      - Air cleaner
      - Intake manifold

   c. Ignition System
      - Spark plug(s)
      - Magneto ignition system

   d. Catalyst System
      - Catalytic converter
      - Exhaust manifold
      - Air injection system, Pulse valve

   e. Miscellaneous Items
      - Vacuum, temperature, position, time sensitive valves and switches
      - Connectors and assemblies

2. Length of Coverage

   B&S warrants to the initial owner and each subsequent purchaser that the Warranted Parts shall be free from defects in materials and workmanship which caused the failure of the Warranted Parts for a period of two years from the date the engine is delivered to a retail purchaser.

3. No Charge

   Repair or replacement of any Warranted Part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a Warranted Part is defective, if the diagnostic work is performed at an Authorized B&S Service Dealer. For emissions warranty service contact your nearest Authorized B&S Service Dealer as listed in the "Yellow Pages" under "Engines, Gasoline," "Gasoline Engines," "Lawn Mowers," or similar category.

4. Claims and Coverage Exclusions

   Warranty claims shall be filed in accordance with the provisions of the B&S Engine Warranty Policy. Warranty coverage shall be excluded for failures of Warranted Parts which are not original B&S parts or because of abuse, neglect or improper maintenance as set forth in the B&S Engine Warranty Policy. B&S is not liable to cover failures of Warranted Parts caused by the use of add-on, non-original, or modified parts.

5. Maintenance

   Any Warranted Part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any Warranted Part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the B&S Operating and Maintenance Instructions.

6. Consequential Coverage

   Coverage hereunder shall extend to the failure of any engine components caused by the failure of any Warranted Part still under warranty.

Briggs & Stratton Engines Are Made Under One Or More Of The Following Patents: Design D-247,177 (Other Patents Pending)

6,325,036	6,077,063	5,819,513	5,606,948	5,497,679	5,235,943	5,138,996	4,996,956	4,633,556	4,430,984	DES. 308,871
6,284,123	6,064,027	5,813,384	5,606,851	5,320,795	5,197,425	5,086,890	4,977,879	4,630,498		DES. 308,872
6,260,529	6,014,808	5,765,713	5,548,955	5,271,363	5,197,422	5,070,829	4,971,219	4,522,080		DES. 309,457
6,230,678	5,894,715	5,645,025	5,546,901	5,269,713	5,191,864	5,058,544	4,895,119	4,520,288		DES. 356,951
6,202,616	5,852,951	5,642,701	5,503,125	5,265,700	5,188,069	5,040,644	4,819,593	4,512,499		DES. 361,771
6,116,212	5,823,153	5,619,845	5,501,203	5,243,878	5,186,142	5,009,208	4,719,682	4,453,507		DES. 375,963

(Cette page ne s'applique que pour le Canada et les Etats-Unis)

La Corporation Briggs & Stratton (B&S), le California Air Resources Board (CARB) et le Bureau de protection environnementale des Etats-Unis (US EPA)

Garantie sur le système d'échappement (Garantie contre les défectuosités, droits et obligations du propriétaire)

LA GARANTIE SUR LE SYSTÈME D'ÉCHAPPEMENT EST APPLICABLE SUR LES MOTEURS CERTIFIÉS ACHETÉS EN CALIFORNIE EN 1995 ET LES ANNÉES SUIVANTES ET QUI SONT UTILISÉS EN CALIFORNIE, AINSI QU'AUX MODÈLES CERTIFIÉS DE 1997 ET LES ANNÉES SUIVANTES QUI ONT ÉTÉ ACHETÉS ET UTILISÉS AILLEURS AUX ETATS-UNIS (ET APRÉS LE 1ER JANVIER 2001 AU CANADA).

Déclaration de garantie sur le système d'échappement pour la Californie, les Etats-Unis

Le California Air Resources Board (CARB), le Bureau américain de protection environnementale (U.S. EPA) et B& S sont heureux d'expliquer la garantie sur le système d'échappement des petits moteurs hors-route de votre modèle 2000 et des années ultérieures (SORE). En Californie, les nouveaux petits moteurs hors route doivent être conçus, construits et équipés pour rencontrer les standards rigoureux d'antipollution. Ailleurs aux Etats-Unis, les nouveaux moteurs hors route à bougie d'allumage certifiés pour les modèles de 1997 et plus, doivent rencontrer des normes similaires mises de l'avant par le U.S. EPA. Briggs & Stratton garantit le système de contrôle d'échappement de votre moteur pour la période de temps mentionnée ci-contre, sauf s'il a fait l'objet d'abus, de négligence ou d'un entretien inapproprié.

Votre système de contrôle d'échappement comprend des pièces telles que le carburateur, le filtre à air, le système d'ignition, le silencieux et le convertisseur catalytique. Il peut aussi comprendre les connecteurs et autres pièces reliées à l'émission.

Lorsqu'il y a condition à garantie, B&S réparera gratuitement votre petit moteur hors-route incluant le diagnostic, les pièces et la main d'œuvre.

Couverture de garantie Briggs & Stratton contre toute défectuosité du système de contrôle d'échappement

Les petits moteurs hors route sont garantis contre la défectuosité des pièces du système de contrôle d'échappement pour une période de 2 ans, sujette aux conditions stipulées ci-contre. Si n'importe quelle pièce de votre moteur couverte par cette garantie est défectueuse, elle sera réparée ou remplacée par B&S.

Responsabilités du propriétaire

En tant que propriétaire d'un petit moteur hors route, vous êtes responsable de veiller à l'exécution de l'entretien requis tel que stipulé dans votre manuel d'opération et d'entretien. B&S vous recommande de conserver tous les reçus couvrant les travaux d'entretien de votre petit moteur hors route, mais B&S ne peut refuser la garantie en raison d'absence de reçus ou pour défaut d'avoir suivi tout l'échéancier du programme d'entretien.

En tant que propriétaire d'un petit moteur hors route, vous devez être informé que B&S peut refuser d'honorer cette garantie si la défectuosité de votre moteur ou d'une partie de votre moteur est due à un emploi abusif, une négligence, un entretien incorrect ou une modification non approuvée.

Vous avez la responsabilité d'apporter votre petit moteur hors route à un détaillant autorisé B&S aussitôt que survient un problème. Les réparations sous garantie doivent être complétées dans un délai raisonnable ne devant pas excéder 30 jours.

Si vous avez des questions relativement à votre garantie, vos droits et responsabilités, veuillez communiquer avec un représentant de service B&S au numéro 1-414-259-5262.

La garantie du système d'échappement est une garantie contre les défectuosités. Les défectuosités sont jugées en fonction d'une utilisation normale du moteur. La garantie n'est pas reliée à un test d'échappement effectué à l'intérieur.

Dispositions de la garantie du système d'échappement Briggs & Stratton

Ce qui suit concerne les dispositions spécifiques relativement à votre garantie sur le système de contrôle d'échappement. C'est une addition à la garantie B&S pour les moteurs non réglementés contenue dans le manuel d'entretien et d'utilisation.

1. **Pièces sous garantie**
   La couverture de cette garantie ne s'applique que sur les pièces listées ci-contre (les parties du système de contrôle d'échappement) dans la mesure où ces pièces étaient présentes sur le moteur au moment de l'achat.
   a. Système de dosage du carburant
      - Système d'enrichissement de démarrage à froid
      - Carburateur et parties internes
      - Pompe à essence

   b. Système d'induction d'air
      - Filtre à air
      - Tubulure d'admission

   c. Système d'ignition
      - Bougies d'allumage
      - Système d'allumage électromagnétique

   d. Système catalyseur
      - Convertisseur catalytique
      - Collecteur d'échappement
      - Système d'injection d'air ou à pulsion

   e. Autres pièces utilisées dans les systèmes ci-haut mentionnés
      - Soupapes et interrupteurs de dépression, de température, de position.
      - Connecteurs et assemblages.

2. **Durée de la couverture**
   B&S garantit le propriétaire initial et tous les acheteurs subséquents que les pièces sous garantie sont exemptes de vice de matière ou de fabrication qui pourraient causer des défectuosités des pièces sous garantie pour une période de deux ans à partir de la date à laquelle le moteur a été livré à l'acheteur.

3. Aucuns Frais
   La réparation ou le remplacement de toute pièce sous garantie sera effectuée sans aucuns frais pour le propriétaire, incluant les frais de main d'œuvre pour le diagnostic afin de déterminer si la pièce sous garantie est défectueuse, conditionnel à ce que le diagnostic soit effectué chez un détaillant autorisé B&S. Pour la garantie relative au système d'échappement, communiquez avec le détaillant autorisé B&S le plus proche tel que listé dans les pages jaunes de votre localité sous la rubrique moteur à essence, tondeuse ou autre catégorie similaire.

4. Réclamations et exclusions de la couverture.
   Les réclamations de garantie doivent être complétées en accord avec les dispositions de la politique de garantie B&S. La garantie ne couvre pas les défectuosités de pièces qui ne sont pas des pièces d'origine B&S ou dans le cas d'abus, négligence ou d'un entretien inapproprié. La garantie B&S ne couvre pas les défectuosités de pièces sous garantie qui ont fait l'objet d'ajouts, ont été modifiées ou de pièces qui ne sont pas des pièces B&S d'origine.

5. Entretien
   Toute pièce sous garantie qui n'est pas remplacée au moment requis selon le manuel d'entretien ou qui est planifiée seulement pour une inspection régulière sous la mention « réparer ou remplacer si nécessaire » est garantie contre toute défectuosité pour la période de garantie. Toute pièce sous garantie qui est planifiée pour un remplacement tel que requis dans l'entretien est garantie contre toute défectuosité seulement pour la période de temps qui va jusqu'au premier remplacement prévu pour cette pièce. Toute pièce de remplacement équivalente en performance et durabilité peut être utilisée pour l'entretien ou la réparation. Le propriétaire est responsable de l'exécution de tout entretien requis tel que défini dans le manuel d'instruction B&S sur l'entretien et la réparation.

6. Couverture indirecte
   La couverture ci-contre s'étend à toute défectuosité des composantes du moteur causée par la défectuosité de n'importe quelle pièce couverte par la garantie et dont la garantie est encore en vigueur.

Consultez les informations sur la période de durabilité d'émission et l'INDICE d'air sur l'étiquette d'émission de votre moteur

Les moteurs qui sont certifiés conformes aux normes standards d'émission du California Air Resources Board (CARB) Tier 2, doivent afficher l'information concernant la période de durabilité du système d'émission et l'INDICE d'air. Cette information est indiquée sur les étiquettes apposées sur les moteurs par Briggs & Stratton. L'étiquette du moteur indiquera les renseignements concernant la certification.

La **période de durabilité d'émission** indique le nombre d'heures d'utilisation normale pour lequel le moteur est certifié conforme aux normes d'émission sous réserve d'un entretien approprié tel qu'indiqué dans le manuel d'opération et d'entretien. Les catégories suivantes sont utilisées :

Modéré le moteur est certifié conforme pour 125 heures d'utilisation normale.
Intermédiaire le moteur est certifié conforme pour 250 heures d'utilisation normale.
Prolongé le moteur est certifié conforme pour 500 heures d'utilisation normale.

Par exemple, une tondeuse de modèle standard est utilisée environ 20 à 25 heures par année. Par conséquent, la **période de durabilité d'émission** d'un moteur dans la catégorie intermédiaire pour ce type de tondeuse équivaut à 10 à 12 ans.

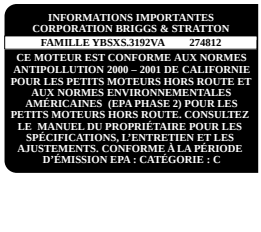
L'**indice d'air** est un nombre qui décrit le niveau relatif d'émission pour une catégorie spécifique de moteur. Plus l'**indice d'air** est bas, plus le moteur est écologique. Cette information est indiquée sous une forme graphique sur l'étiquette d'émission.

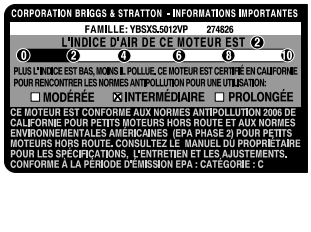
À compter du 1er juillet 2000, surveillez la période de conformité d'émission sur les étiquettes

Après le 1er juillet 2000, certains moteurs B&S seront certifiés conformes aux normes environnementales d'émission standard du United States Environmental Protection Agency (US EPA) Phase 2. Pour les moteurs certifiés pour la Phase 2, la période de conformité d'émission mentionnée sur les étiquettes indique le nombre d'heures d'utilisation pour lequel le moteur rencontre les normes fédérales. Pour les moteurs de force moindre que 225 cc, la catégorie C = 125 heures, B = 250 heures et A = 500 heures. Pour les moteurs de 225 cc et plus, la catégorie C = 250 heures, B = 500 heures et A = 1000 heures.

Le remplacement du moteur portant le modèle de série 210000 est 344 cc, 280000 est 465 cc, et 310000 est 501 cc.

Ceci est une représentation des étiquettes d'émission que vous retrouverez sur les moteurs certifiés :






BRIGGS & STRATTON
®

MANUFACTURER'S LIMITED WARRANTY FOR:

Cub Cadet®

The limited warranty set forth below is given by Cub Cadet LLC with respect to new merchandise purchased and used in the United States, its possessions and territories.

"Cub Cadet" warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water, or damage because of other peril or natural disaster. Damage resulting from the installation or use of any part, accessory or attachment not approved by Cub Cadet for use with the product(s) covered by this manual will void your warranty as to any resulting damage.

Normal wear parts or components thereof are subject to separate terms as follows: All normal wear parts or component failures will be covered on the product for a period of 30 days regardless of cause. After 30 days, but within the two year period, normal wear part failures will be covered ONLY IF caused by defects in materials or workmanship of OTHER component parts. Normal wear parts and components include, but are not limited to: batteries, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates, auger spiral rubber, and tires.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE, through your local authorized service dealer. To locate the dealer in your area, check your Yellow Pages, or contact Cub Cadet LLC at P.O. Box 361131, Cleveland, Ohio 44136-0019, or call 1-877-282-8684, or log on to our Web site at www.cubcadet.com.

This limited warranty does not provide coverage in the following cases:

a. The engine or component parts thereof. These items may carry a separate manufacturer's warranty. Refer to applicable manufacturer's warranty for terms and conditions.
b. Log splitter pumps, valves, and cylinders have a sepa rate one year warranty.
c. Routine maintenance items such as lubricants, filters, blade sharpening, tune-ups, brake adjustments, clutch adjustments, deck adjustments, and normal deterioration of the exterior finish due to use or exposure.
d. Cub Cadet does not extend any warranty for products sold or exported outside of the United States, its possesions and territories, except those sold through Cub Cadet's authorized channels of export distribution.
e. Replacement parts that are not genuine Cub Cadet parts.
f. Service completed by someone other than an authorized service dealer.
g. Transportation charges and service calls.

No implied warranty, including any implied warranty of merchantability of fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind Cub Cadet. During the period of the warranty, the exclusive remedy is repair or replacement of the product as set forth above.

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sale. Cub Cadet shall not be liable for incidental or consequential loss or damage including, without limitation, expenses incurred for substitute or replacement lawn care services or for rental expenses to temporarily replace a warranted product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. **Alteration of safety features of the product shall void this warranty.** You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser or to the person for whom it was purchased as a gift.

HOW STATE LAW RELATES TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

IMPORTANT: Owner must present Original Proof of Purchase to obtain warranty coverage.