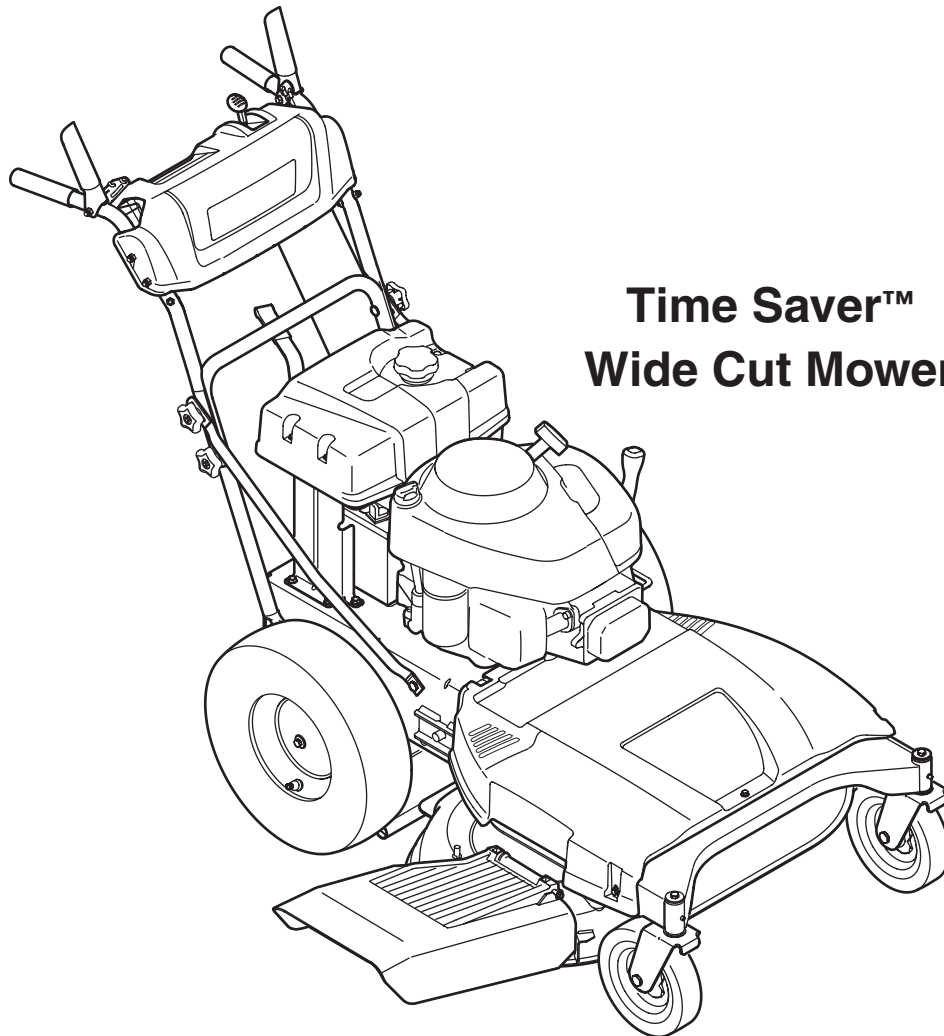


OPERATOR'S MANUAL

Cub Cadet®



**Time Saver™
Wide Cut Mower**

IMPORTANT

READ SAFETY RULES AND INSTRUCTIONS CAREFULLY BEFORE OPERATION

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.

This Operator’s Manual is an important part of your new mower. It will help you assemble, prepare, and maintain the unit for best performance. Please read and understand what it says.

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		Warranty	Back Cover

This Operator’s Manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable to all models. The right is reserved to change product specifications, designs, and equipment without notice and without incurring obligation.

Finding and Recording Model Number

Before assembling your new equipment, please locate the model plate on the equipment and copy the information to the sample model plate provided to the right. You can locate the model plate by standing at the operating position and looking down at the rear of the frame. This information will be necessary to use the manufacturer’s web site, to obtain assistance from the Customer Support Department, or when contacting an authorized service dealer.

Model Number	Serial Number
	CUB CADET LLC
www.cubcadet.com	P. O. BOX 361131
	CLEVELAND, OH 44136
DEALER LOCATOR PHONE NUMBER: 877-282-8684	

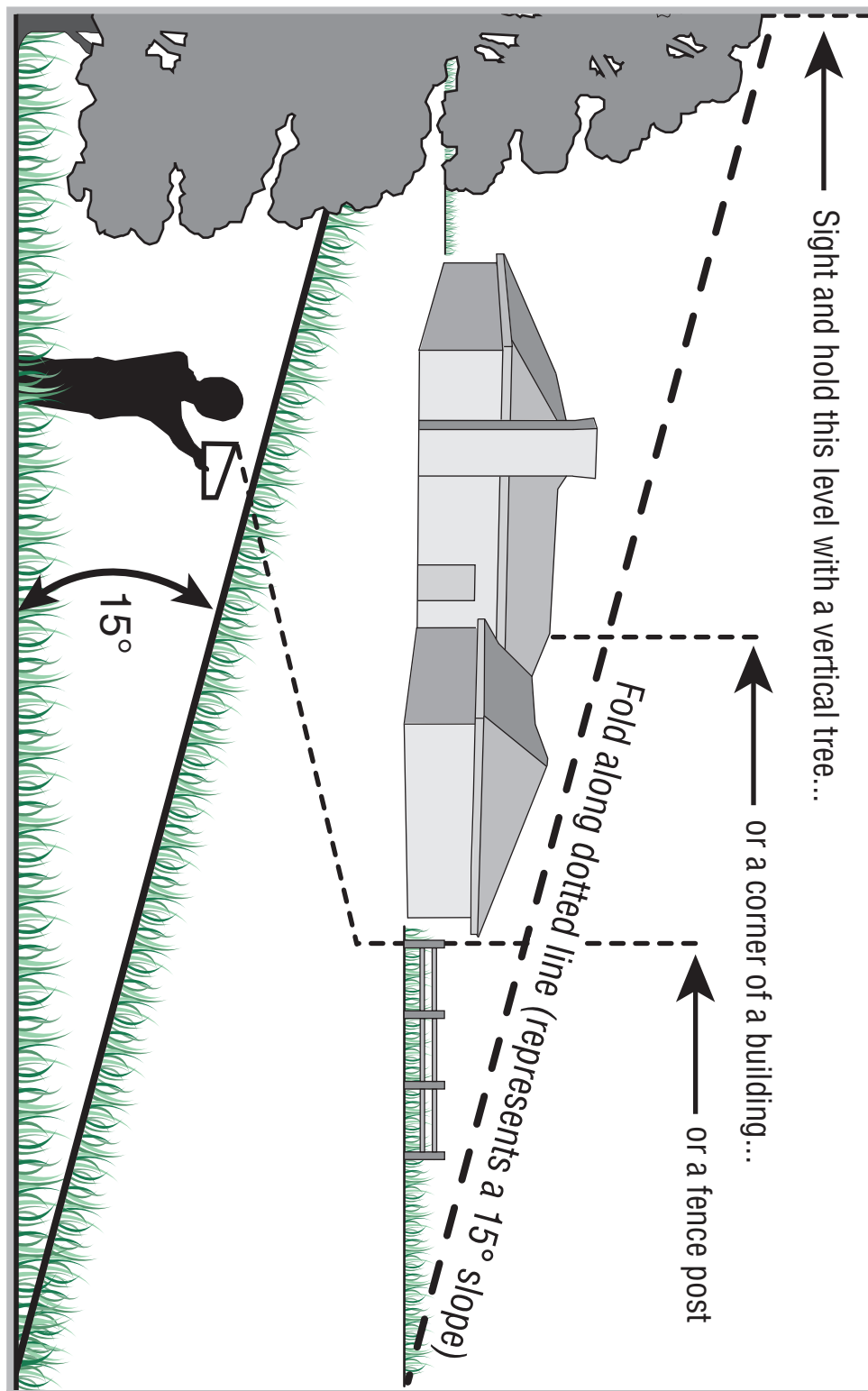
Customer Support

Please do not return the unit to the retailer from which it was purchased, without first contacting Customer Support.

- If you have difficulty assembling this product or have any questions regarding the controls, operation, or maintenance of this unit, you can seek help from the experts. Choose from the options below:
- Visit www.cubcadet.com
 - Call a Customer Support Representative at 1-800-965-4CUB.
 - The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty, and service. Please refer to the engine manufacturer’s Owner’s/Operator’s Manual, packed separately with the unit, for more information.

Use this page as a guide to determine slopes where you may not operate safely.

Do not operate your lawn mower on such slopes.



1

Slope Gauge



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).

Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

2

Safe Operation Practices



WARNING

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 this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol.

HEED ITS 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.



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

DANGER: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

Children

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

1. Keep children out of the mowing area and under watchful care of a responsible adult other than the operator.
2. Be alert and turn mower off if a child enters the area.
3. Before and while moving backwards, look behind and down for small children.
4. Use extreme care when approaching blind corners, doorways, shrubs, trees, or other objects that may obscure your vision of a child who may run into the mower.
5. Keep children away from hot or running engines. They can suffer burns from a hot muffler.
6. Never allow children under 14 years old to operate a power mower. Children 14 years old and over should read and understand operation instructions and safety rules in this manual and should be trained and supervised by a parent.

General Operation

1. Read this operator's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manual(s) before operation. Be completely familiar with the controls and the proper use of this machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. This machine is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. Your unit has been designed to perform one job: to mow grass. Do not use it for any other purpose.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the instructions in this manual and should be trained and supervised by a parent. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use this machine.
4. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones, toys and other foreign objects, which could be tripped over or picked up and thrown by the blade. Thrown objects can cause serious personal injury. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, bystanders and the like. Also, avoid discharging material against a wall or obstruction, which may cause discharged material to ricochet back toward the operator.
5. To help avoid blade contact or a thrown object injury, stay in operator zone behind handles and keep children, bystanders, helpers and pets at least 75 feet from mower while it is in operation. Stop machine if anyone enters area.
6. Always wear safety glasses or safety goggles during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
7. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended. Never operate this machine in bare feet, sandals, slippery or light-weight (e.g. canvas) shoes.
8. Do not put hands or feet near rotating parts or under cutting deck. Contact with blade can amputate hands and feet.
9. A missing or damaged discharge cover can cause blade contact or thrown object injuries.
10. Many injuries occur as a result of the mower being pulled over the foot during a fall caused by slipping or tripping. Do not hold on to the mower if you are falling; release the handle immediately.
11. Never pull the mower back toward you while you are walking. If you must back the mower away from a wall or obstruction first look down and behind to avoid tripping and then follow these steps:
 - a. Step back from mower to fully extend your arms.
 - b. Be sure you are well balanced with sure footing.
 - c. Pull the mower back slowly, no more than half way toward you.
 - d. Repeat these steps as needed.
12. Do not operate the mower while under the influence of alcohol or drugs.
13. Do not engage the self-propelled mechanism on units so equipped while starting engine.
14. The blade control handle is a safety device. Never attempt to bypass its operation. Doing so makes the safety device inoperative and may result in personal injury through contact with the rotating blade. The blade control handle must operate easily in both directions and automatically return to the disengaged position when released.
15. Never operate the mower in wet grass. Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your footing, release the blade control handle immediately and the blade will stop rotating within three seconds.
16. Mow only in daylight or good artificial light. Walk, never run.
17. Stop the blade when crossing gravel drives, walks or roads.
18. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.

19. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging the chute.

The cutting blade continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.

20. Never operate mower without proper trail shield, discharge cover, grass catcher, blade control handle or other safety protective devices in place and working. Never operate mower with damaged safety devices. Failure to do so can result in personal injury.
21. Muffler and engine become hot and can cause a burn. Do not touch.
22. Only use parts and accessories made for this machine by manufacturer. Failure to do so can result in personal injury.
23. If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer for assistance.

Slope Operation

Slopes are a major factor related to slip and fall accidents, which can result in severe injury. Operation on slopes requires extra caution. If you feel uneasy on a slope, 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 degrees, do not mow it.

Do:

1. Mow across the face of slopes; never up and down. Exercise extreme caution when changing direction on slopes.
2. Watch for holes, ruts, rocks, hidden objects, or bumps which can cause you to slip or trip. Tall grass can hide obstacles.
3. Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your balance, release the blade control handle immediately, and the blade will stop rotating within 3 seconds.

Do Not:

1. Do not mow near drop-offs, ditches or embankments, you could lose your footing or balance.
2. Do not mow slopes greater than 15 degrees as shown on the slope gauge.
3. Do not mow on wet grass. Unstable footing could cause slipping.

Service

Safe Handling Of Gasoline:

1. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes, which can ignite. Wash your skin and change clothes immediately.
2. Use only an approved gasoline container.
3. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
4. Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
5. Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
6. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
7. Never fuel machine indoor because flammable vapors will accumulate in the area.
8. Never remove gas cap or add fuel while engine is hot or running. Allow engine to cool at least two minutes before refueling.
9. Never over fill fuel tank. Fill tank to no more than 1/2 inch below bottom of filler neck to provide for fuel expansion.
10. Replace gasoline cap and tighten securely.
11. If gasoline is spilled, wipe it off the engine and equipment. Move unit to another area. Wait 5 minutes before starting engine.
12. Never store the machine or fuel container near an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.
13. To reduce fire hazard, keep mower free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
14. Allow a mower to cool at least 5 minutes before storing.

General Service:

1. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
2. Before cleaning, repairing, or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
3. Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also, visually inspect blade for damage (e.g., bent, cracked, worn) Replace blade with the original equipment manufacturer's (O.E.M.) blade only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
4. Mower blades are sharp and can cut. Wrap the blade or wear gloves, and use extra caution when servicing them.
5. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
6. Never tamper with safety devices. Check their proper operation regularly.
7. After striking a foreign object, stop the engine, disconnect the spark plug wire and ground against the engine. Thoroughly inspect the mower for any damage. Repair the damage before starting and operating the mower.
8. Never attempt to make a wheel or cutting height adjustment while the engine is running.
9. Grass catcher components, discharge cover, and trail shield are subject to wear and damage which could expose moving parts or allow objects to be thrown. For safety protection, frequently check components and replace immediately with original equipment manufacturer's (O.E.M.) parts only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
10. Do not change the engine governor setting or over-rev the engine. The governor controls the maximum safe operating speed of the engine.
11. Maintain or replace safety labels, as necessary.
12. Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment.

2

Safe Operation Practices



WARNING

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 this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol.

HEED IT'S 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.

3

Assembly



All references to left, right, front, and rear of the machine are determined by standing behind the handlebars and facing the direction of forward travel.

This operator's manual may cover various models. The units illustrated may vary slightly from your unit.



WARNING

WARNING: The mowing deck is capable of throwing objects. Failure to operate the mower without the discharge chute in the proper operating position could result in serious personal injury and/or property damage.

WARNING: The chute holder must be removed and discarded before operating the mower.

Please carefully follow these assembly steps to properly prepare your machine for use. We recommend that you read this section in its entirety before beginning assembly.



WARNING: Disconnect the spark plug wire and ground it against the engine to prevent unintended starting.

Unpacking the Mower

1. Cut straps, if present, securing unit to pallet. Leave unit on pallet during assembly. Remove any protective packaging and tie straps if present.
2. Remove any loose parts, including the bag holding the Operator's Manual, oil drain hose, water hose coupler, and Engine Manual
3. Use the deck height lever (refer to Operation section) to raise the cutting deck to its highest position.

Handle Setup

1. Remove lower star knobs and carriage screws from lower handle, Figure 3-1.
2. Pivot upper handle into operating position. Be careful not to crimp cables, Figure 3-2.
3. Install carriage screws and knobs removed earlier.
4. Tighten the upper and lower star knobs and carriage screws to secure the upper handle to the lower handle, Figure 3-2.
5. After assembling the handle, to safely remove unit from pallet, first remove screws to free the mower from the crate.

Removing the Chute Holder

1. Locate the chute holder which secures the discharge chute in a vertical position, Figure 3-3.
2. Pull chute back towards engine. While holding the chute with one hand, remove the chute holder with your other hand.
3. Carefully lower the chute against the deck and discard the chute holder.



WARNING: The chute holder, used for packaging purposes only, must be removed and discarded before operating the mower.



WARNING: The mowing deck is capable of throwing objects. Failure to operate the mower without the discharge chute in the proper operating position could result in serious personal injury and/or property damage.

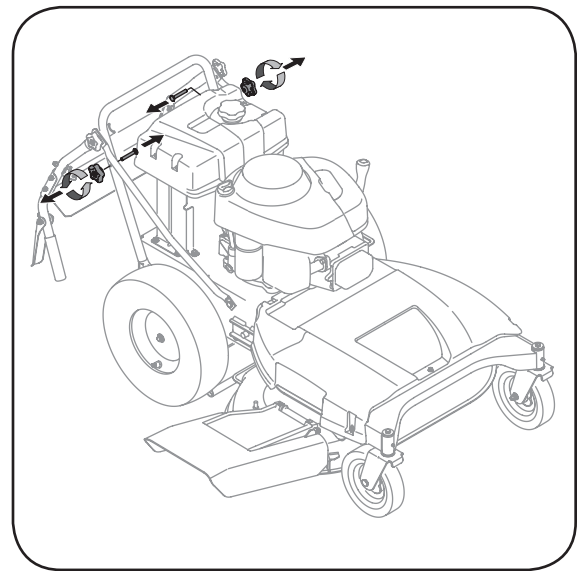


Figure 3-1: Remove lower star knobs and carriage screws.

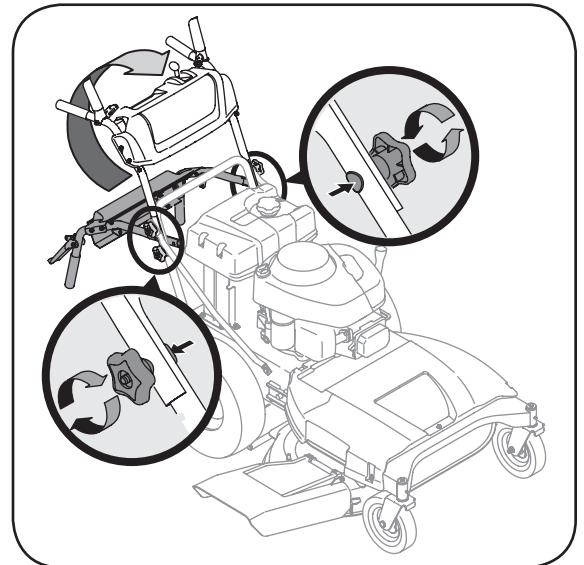


Figure 3-2: Pivot upper handle into position and secure with knobs and screws.

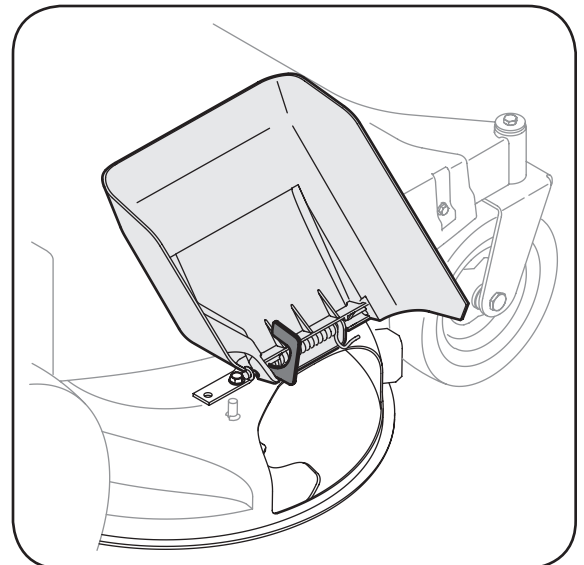


Figure 3-3: Remove the chute holder.

Shift Lever Setup

1. Remove the 5/16-18 screw and the lock nut that hold the shift lever to the shift lever plate, Figure 3-4.
2. Remove the remaining screw and nut from the lower shift lever plate, Figure 3-4.

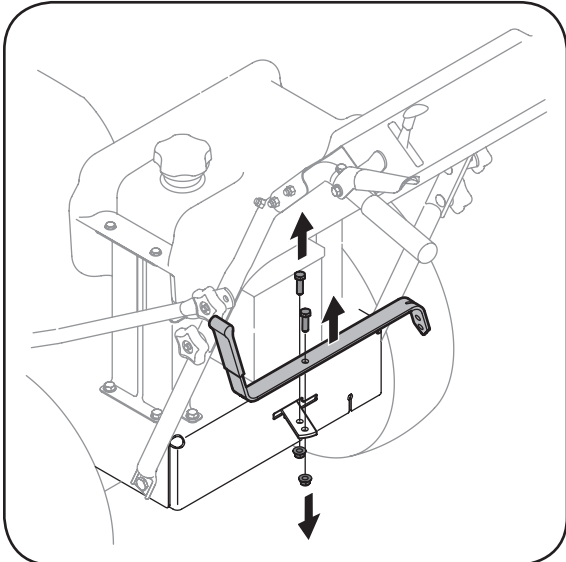


Figure 3-4: Remove shift lever and hardware from plate.

3. Position the upper shift lever into a vertical position aligning the holes in the lever to the holes in the shift plate, Figure 3-5.
4. Secure the lever to the plate using the two screws and two nuts removed earlier, Figure 3-5.

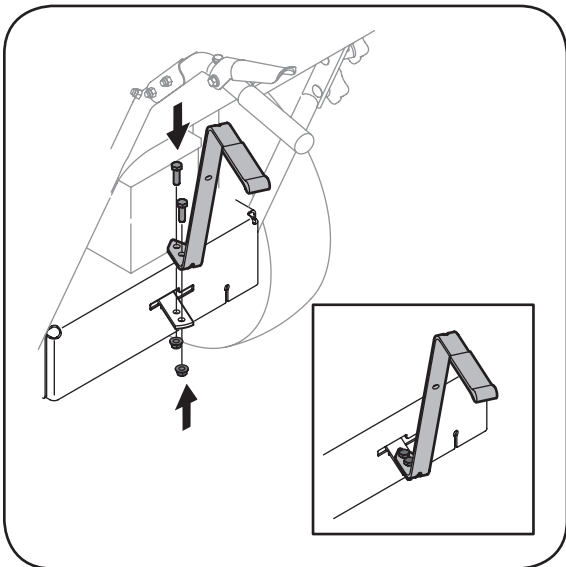


Figure 3-5: Attach the shift lever.

Attaching the Battery Cables

NOTE: Some models may be shipped with the battery cables already connected.

NOTE: The positive battery terminal is marked Pos. (+). The negative battery terminal is marked Neg. (-).

NOTE: If the battery is put into service after the date shown on top/side of battery, charge the battery as instructed in the Maintenance section of this manual prior to operating the mower.

The positive cable (heavy red wire) is secured to the positive battery terminal (+) with a bolt and hex nut at the factory. Make certain that the rubber boot covers the terminal to help protect it from corrosion.

1. Remove the wing nut and bolt from the negative cable, Figure 3-6.
2. Remove the plastic terminal cover, if present, from the negative battery terminal and attach the negative cable (heavy black wire) to the negative battery terminal (-) with the nut and bolt.

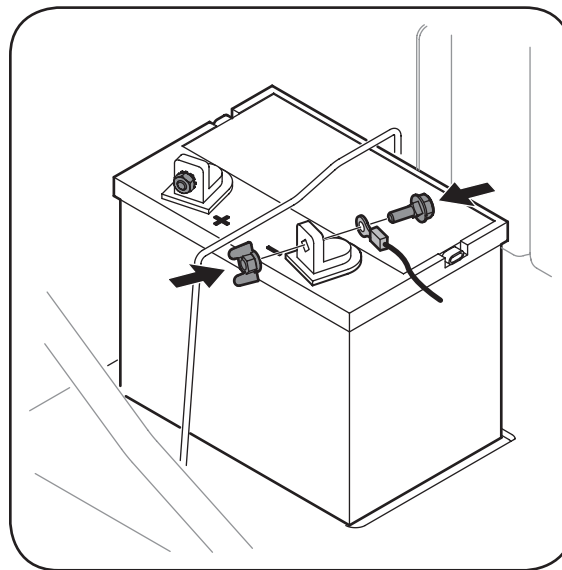


Figure 3-6: Connect negative cable to negative terminal.

Rear Tire Pressure



WARNING: Never exceed the maximum inflation pressure shown on the sidewall of tire.

The recommended operating rear tire pressure is approximately 20 psi for the rear tires. Check the tire pressure periodically and maintain equal pressure in both rear tires at all times.

IMPORTANT: Refer to the tire sidewall for exact tire manufacturer's recommended or maximum psi. Do not overinflate. Uneven tire pressure could cause the cutting deck to mow unevenly.

3

Assembly



WARNING

WARNING: To prevent personal injury or property damage, do not attempt to start the engine until all assembly steps are complete and you have read the safety and operating sections in this manual.

WARNING: The mowing deck is capable of throwing objects. Failure to operate the mower without the discharge cover in the proper operating position could result in serious personal injury and/or property damage.

WARNING: Never exceed the maximum inflation pressure shown on the sidewall of tire.

4

Operating the Lawn Mower



WARNING

WARNING: Always remove the ignition key when leaving mower unattended or when performing any type of maintenance on the machine.

WARNING: If you strike a foreign object, stop the engine, disconnect the spark plug wire(s) and ground against the engine. Thoroughly inspect the machine for any damage. Repair the damage before restarting and operating.

WARNING: Read, understand, and follow all instructions and warnings posted on the machine and in this manual before operating.

WARNING: Never move the key into the Start position while the engine is running.

Know Your Lawn Mower

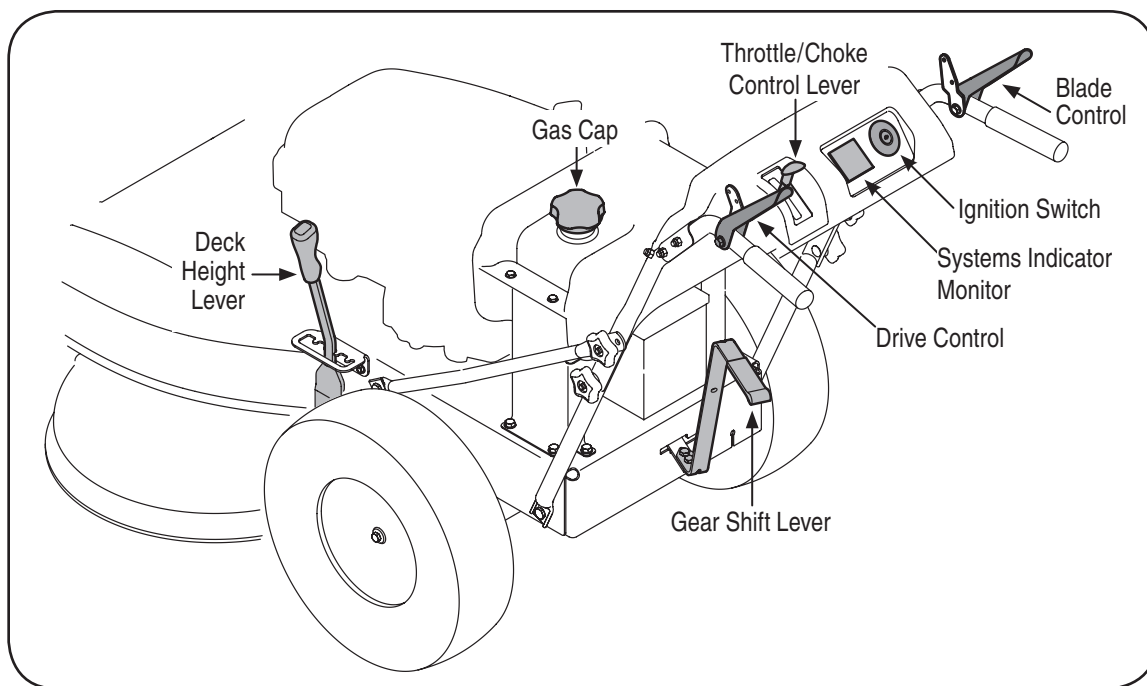


Figure 4-1



WARNING: Be familiar with all the controls and their proper operation; know how to stop the machine and disengage them quickly.



WARNING: The operation of any lawn mower can result in foreign objects being thrown into the eyes, which can damage your eyes severely. Always wear safety glasses while operating the mower, or while performing any adjustments or repairs on it.



WARNING: Be sure no one other than the operator is standing near the lawn mower while starting engine or operating mower. Never run engine indoors or in enclosed, poorly ventilated areas. Engine exhaust contains carbon monoxide, an odorless and deadly gas. Keep hands, feet, hair and loose clothing away from any moving parts on engine and lawn mower.

Drive Control

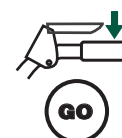
The drive control is used to engage and disengage drive to the wheels. To engage this control, squeeze the drive control against the handlebar grip. To stop the drive, release the drive control.

IMPORTANT: Always release the drive control before changing speeds.



Blade Control

The blade control is used to engage the mower deck. To engage this control, press and hold the lever against the handlebar grip. To stop the blades, release the blade control. Always disengage the blade control before starting the engine. This helps to ensure that the blades will not start turning when the engine starts.



Deck Height Lever

Use this lever to adjust the cutting height. To use, move the lever to the left, then place the lever in the notch best suited for your application.

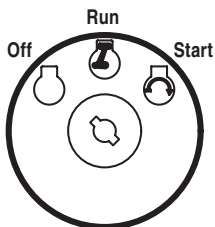


Ignition Switch



WARNING: Never move the key into the Start position while the engine is running; doing so may cause damage to the engine's starter.

The three-position switch is used to start and stop the engine on electric start models. Insert the key into the ignition switch and turn clockwise to the START position. Release key into the RUN position once the engine has started. Turn the key to OFF to stop the engine. Always remove the ignition key when leaving mower unattended or when performing any type of maintenance on the machine.



Gear Shift Lever

Use this lever to select any of four forward ground speeds, neutral, or reverse.



Forward

Four forward speeds are available. Position one (1) is the slowest and position four (4) is the fastest.

Reverse

To select reverse, put the lever in the Reverse (R) position.

Neutral

Place the lever in neutral (N) before starting the mower, and when the mower is not in use. In addition, the mower can be manually pushed or pulled by placing the gear shift lever into N (neutral) position and pressing the drive control against the handlebar grip.



WARNING: To avoid damaging the transmission, do not shift gears when the mower is moving – release the drive control before shifting gears.

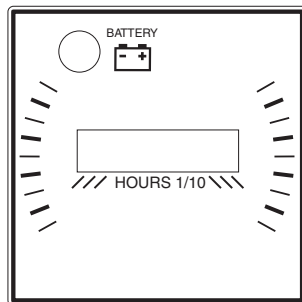


WARNING: Look behind the mower before and during reverse operation. Stop the mower blades before operating in reverse.

Systems Indicator Monitor

LCD Display

The systems indicator monitor records and displays, on the LCD, hours of mower operation whenever the ignition key is rotated out of the STOP position. The Indicator Monitor will also remind the operator of maintenance intervals for changing the engine oil. The LCD will alternately flash the recorded hours, "CHG" and "OIL" for five minutes, after every 50 hours of recorded operation elapse. The maintenance interval lasts for two hours (from 50-52, 100-102, 150-152, etc.). The LCD will also flash as described above for five minutes every time the engine has been started during this maintenance interval. Before the interval expires, change the engine oil as instructed in this Operator's Manual.



Battery Light

It is normal for the battery light to illuminate while the engine is cranking during start-up, but if it illuminates during operation, while the engine is running, the battery is in need of a charge or the engine's charging system is not generating sufficient amperage. Refer to the maintenance section in this manual for the proper battery charging procedure or have the charging system checked by a service dealer.

Throttle/Choke Control Lever

IMPORTANT: When operating the mower with the cutting deck engaged, be certain that the throttle/choke control lever is in the fast position.

This lever is used to adjust engine speeds, to apply the engine choke, and to stop the engine. Always run engine at fast speed setting for best mower performance.

Choke: Use when starting a cold engine

Fast: Use during mower operation.

Slow: Use when idling engine.

Stop: Stops the engine.



Choke



Fast



Slow/Idle



Engine Off

4

Operating the Lawn Mower



WARNING

WARNING: The operation of any lawn mower can result in foreign objects being thrown into the eyes, which can damage your eyes severely. Always wear safety glasses while operating or servicing the mower.

WARNING: Be sure no one other than the operator is standing near the lawn mower while starting engine or operating mower. Never run engine indoors or in enclosed, poorly ventilated areas. Engine exhaust contains carbon monoxide, an odorless and deadly gas. Keep hands, feet, hair and loose clothing away from any moving parts on engine and lawn mower.

4

Operating the Lawn Mower



WARNING

WARNING: If you strike a foreign object, stop the engine. Remove wire from the spark plug, thoroughly inspect mower for any damage, and repair damage before restarting and operating. Extensive vibration of mower during operation is an indication of damage. The unit should be promptly inspected and repaired.



Refer to the engine manual for help with engine controls and maintenance.

Engine Controls

Refer to Figure 4-2 for locations of the engine controls. Refer to the engine manual for more detailed information.

Recoil Starter

The recoil starter is used to pull-start the engine.

Oil Drain Valve

Use the oil drain valve to drain oil from the engine. Refer to the Maintenance section for instructions.

Air Cleaner Handle

The air cleaner handle is used to gain access to the air cleaner. The air cleaner cartridge can be removed and cleaned or replaced. Refer to the Maintenance section for instructions.

Spark Plug/Spark Plug Wire

Refer to the Maintenance section for instructions on spark plug replacement.

Oil Cap/Dipstick

Refer the Maintenance section for instructions on changing the oil.

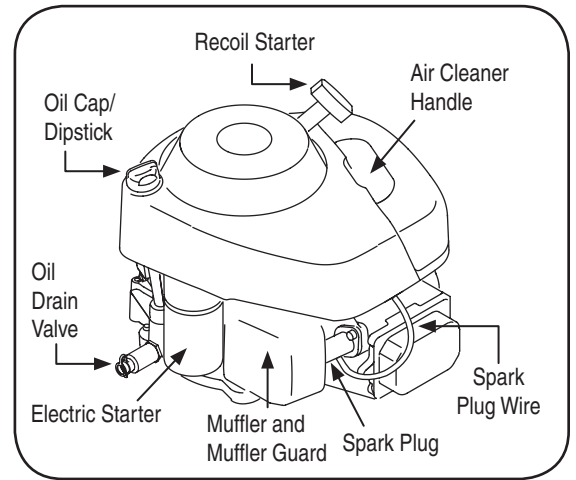


Figure 4-2: Engine components



WARNING: The operation of any lawn mower can result in foreign objects being thrown into the eyes, which can damage your eyes severely. Always wear safety glasses while operating the mower, or while performing any adjustments or repairs on it.



WARNING: Be sure no one other than the operator is standing near the lawn mower while starting engine or operating mower. Never run engine indoors or in enclosed, poorly ventilated areas. Engine exhaust contains carbon monoxide, an odorless and deadly gas. Keep hands, feet, hair, and loose clothing away from any moving parts on engine and lawn mower.



WARNING: Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes, and other sources of ignition.

Gas and Oil Fill-up

Gas Fill

The mower is shipped without gas in the fuel tank.



WARNING: Alcohol blended fuels (called gasohol or using ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage.



WARNING: To avoid engine problems, the fuel system should be emptied before storage for 30 days or longer. Drain the gas tank, start the engine and let it run until the fuel lines and carburetor are empty. Use fresh fuel next season. See STORAGE Instructions for additional information.



WARNING: Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.

- Never fill the fuel tank completely. Fill the tank to no more than 1/2-inch below bottom of filler neck to provide space for fuel expansion.
- Always use clean, fresh, unleaded grade automotive gasoline. Fill the fuel tank outdoors and use a funnel or spout to prevent spilling. Make sure that the container from which you pour the gasoline is clean and free from rust or other foreign particles. Make sure to wipe off any spilled fuel before starting the engine.
- At the end of the job, empty the fuel tank if the mower is not going to be used for 30 days or longer. Store gasoline in a clean container and keep the cap in place on the container. See STORAGE instructions for additional information.

Oil Fill

IMPORTANT: The mower is shipped with motor oil in the engine; however, you must check the oil level before operating. For future oil fills, use the grade of engine oil specified in the Maintenance section.

1. Remove the oil fill cap/dipstick from the oil fill tube.
2. Check that the level of oil is up to the FULL mark on the dipstick. If needed, pour oil slowly into the oil fill tube until a FULL oil level is achieved.
3. Replace the oil fill cap/dipstick.

4

Operating the Lawn Mower



WARNING

WARNING: Keep hands and feet clear of mower blades or other rotating parts.

WARNING: Look behind you to be sure there are no obstacles before starting the unit.

4

Operating the Lawn Mower



WARNING

WARNING: If you strike a foreign object, stop the engine. Remove wire from the spark plug, thoroughly inspect mower for any damage, and repair damage before restarting and operating. Extensive vibration of mower during operation is an indication of damage. The unit should be promptly inspected and repaired.

WARNING: Keep hands and feet clear of mower blades or other rotating parts.

WARNING: Look behind you to be sure there are no obstacles before starting the unit.

Starting the Mower

1. Release all controls on the mower to prevent wheels or blades from rotating.
2. Move gear shift lever to neutral (N) position.
3. Move the throttle/choke control lever fully upward to the choke setting to start a cold engine or to the fast (rabbit) setting to start a warm engine.
4. To start engine using recoil starter:
 - a. Stand on left side (as viewed from behind handlebars) of machine. Be sure your feet are safely away from the underside of the mower deck and all mower controls are released.
 - b. Grasp starter rope handle and pull slowly until rope pulls slightly harder. Let rope rewind slowly. Then pull rope with a rapid, full arm stroke. Let rope return slowly. If engine fails to start after three pulls, repeat instructions (try setting throttle at fast setting).
 - c. When engine starts, operate in fast throttle setting (move throttle/choke control lever from the choke setting to the fast setting).
4. To start engine using electric starter:
 - a. Stand behind the handlebars and release all mower controls.
 - b. Turn ignition key fully clockwise to the START position. To avoid damage to starter motor, do not crank engine for longer than five seconds at a time. Also, allow 15 seconds between each start attempt. If engine fails to start after three attempts, repeat instructions with Step 3 (try setting throttle/choke lever at fast setting).
 - c. When engine starts, release key and it will return to the run (middle) position.
 - d. Operate engine at fast throttle setting (move throttle/choke control lever from choke setting to fast setting).

NOTE: If the electric start system is not functioning, the engine can be started with the recoil starter. To do so, first put the ignition key in the run (middle) position. Leave the key in the run position during engine operation.



WARNING: Look behind the mower before and during reverse operation. Stop the mower blades before operating in reverse.

Stopping the Mower

1. Release blade and drive control to stop wheels and deck blades.
2. Move throttle/choke control lever down to slow (turtle) position. Whenever possible, gradually reduce engine speed before stopping engine.
3. Move throttle/choke control lever all the way down to stop position or turn the ignition key fully counter-clockwise to OFF position.
4. On electric start models, remove the ignition key before leaving the mower unattended.
5. Disconnect spark plug wire from spark plug and ground against the engine.



WARNING: Wait for the blade to stop completely before performing any type of maintenance on the mower.

Using the Lawn Mower

Refer to "Know your Mower" section for mower control details.

Be sure lawn is clear of stones, sticks, wire, or other objects which could damage lawn mower or engine. Such objects could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator and others. For best results, do not cut wet grass and never cut off more than one-third of the total length of the grass.

IMPORTANT: Be aware that when engaging the drive control lever with the gear shift lever in 3rd or 4th gear, the power and torque generated may cause the unit to lurch forward. To avoid this, slowly squeeze the drive control lever against the upper handle.

1. Once the engine is running, squeeze the drive control against the upper handle to propel the unit. To activate the cutting blades, squeeze the blade control against the upper handle.
2. To change gears, release the drive control lever and move the gear lever to the desired setting. When first practicing with the mower, put the lever in No. 1 position. Select forward speeds according to mowing conditions and terrain. Use slower speeds on rough terrain or when grass is heavy or thick. The forward speed can be increased on smooth terrain or if the grass cover is light. Allow the wheels to stop completely before shifting from one forward speed into another.
3. To stop the blades, release the blade control. To stop the drive control to the wheels, release the drive control.

Moving the Mower without Engine Power

The mower can be manually pushed or pulled by placing the gear shift lever into N (neutral) position and pressing the drive control against the handlebar grip.

Mulching or Side-Discharge Mowing

You can use the mower either as a mulching mower or as a side-discharge mower. To use the mulching feature, insert the mulch plug as described below. Remove the mulch plug to side-discharge grass clippings. The mulch plug is designed to keep the discharge chute raised up while mowing. When the plug is removed, the discharge chute will lower itself for side-discharge mowing.



WARNING: Before installing or removing mulch plug, stop engine, wait for parts to stop moving, and disconnect spark plug wire. Remove ignition key on electric start models.



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

To install or remove mulch plug:

1. Stop the engine and wait for all parts to stop moving.
2. Disconnect the spark plug wire from the spark plug.
3. Remove the ignition key on electric start models.
4. To install the mulch plug, insert the right-side tab (A) of the plug into the bracket on the deck, Figure 4-3.
5. Insert the mulch plug into the discharge opening (B), Figure 4-3.
6. After the mulch plug has been placed into the deck opening, push the plug towards the rear of the mower (C) to fit the plug properly into the opening, Figure 4-3.
7. To remove the plug, slide the cover to the right (front of mower) to disengage the slot from the mower deck and then pry the left-side of the plug out and off.

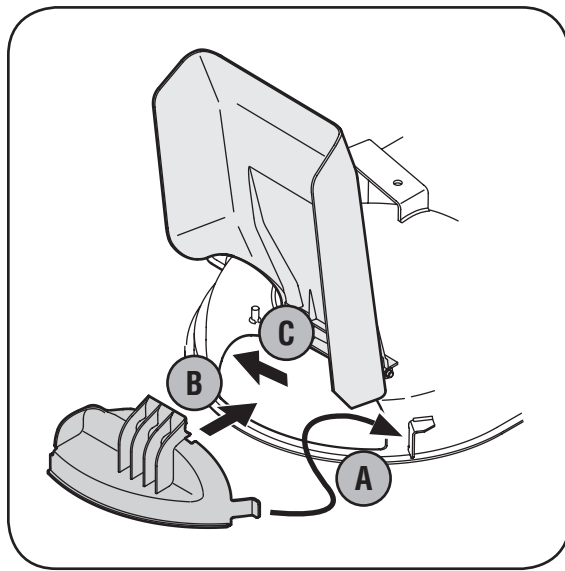


Figure 4-3: Installation of the mulch plug.

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Operating the Lawn Mower



WARNING

WARNING: Before installing or removing mulch plug, stop engine, wait for parts to stop moving, disconnect spark plug wire, and remove ignition key.

WARNING: Keep hands and feet clear of mower blades or other rotating parts.

WARNING: Look behind you to be sure there are no obstacles before starting the unit.

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Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Check oil level in engine before every use.

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



Do not use a pressure washer or garden hose to clean your unit. These may cause damage to electric components, spindles, pulleys, bearings, or the engine. The use of water will result in shortened life and reduced serviceability.

General Recommendations

- Always observe safety rules when performing any type of maintenance on the mower.
- The warranty on this lawn mower does not cover items that have been subjected to operator abuse or negligence. To receive full value from warranty, operator must maintain the lawn mower as instructed here.
- Changing of engine-governed speed will void engine warranty.
- All adjustments should be checked at least once each season.
- Periodically check all fasteners and make sure they are tight.



WARNING: Before performing any type of maintenance or service on the mower, stop engine, disconnect spark plug, and ground against engine. Remove ignition key from the keyswitch.

Engine Maintenance



WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower.

Refer to engine manual for more detailed maintenance and service instructions.

Spark Plug

Clean spark plug and reset the electrode gap to 0.030" at least once a season; replace every 100 hours of operation. Spark plug should be cleaned by scraping or wire brushing and washing with a commercial solvent.

1. Clean area around the spark plug base.
2. Remove and inspect the spark plug. Check gap to make sure it is set at .030". See Figure 9.
3. Replace the spark plug if electrodes are pitted, burned, or the porcelain is cracked.

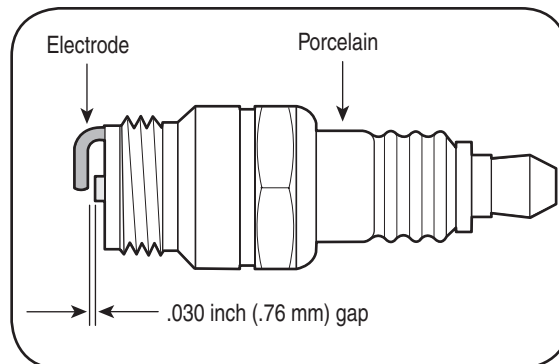


Figure 5-1: Spark plug

Servicing the Air Cleaner



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



CAUTION: Do not use pressurized air or solvents to clean the air cleaner cartridge.

1. Pull up on air cleaner handle, Figure 5-2, and pull back towards the engine.
2. Remove the air cleaner cover, Figure 5-2.
3. Carefully remove air cleaner cartridge and pre-cleaner (if equipped) from the blower housing.
4. Clean the base of the air cleaner cartridge carefully to prevent debris from entering the engine.
5. Place the pre-cleaner, if equipped, and cartridge back into the blower housing. The cartridge must be placed securely into position.
6. Align tabs on cover with slots in blower housing and replace the cover.

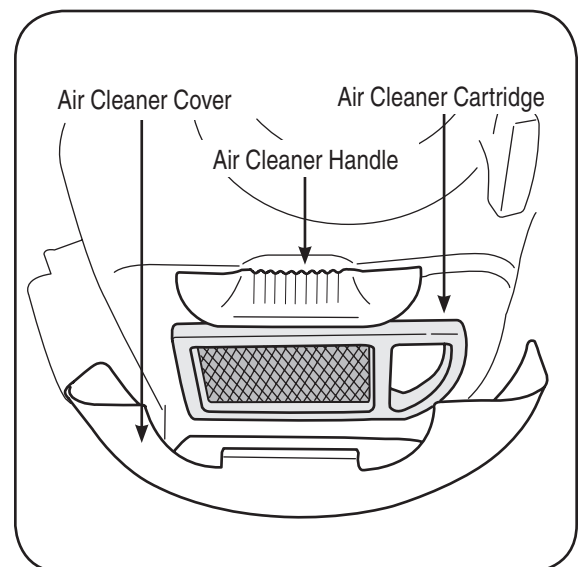


Figure 5-2: Use the air cleaner handle to access the air cleaner cartridge.

Changing the Engine Oil



CAUTION: Check oil level in engine before every use.

- To gain access to the oil drain valve on the engine, the right handle brace tube should be pivoted forward.
 - Remove the upper star knob and carriage screw on the right side of the handle, Figure 5-3.
 - Pivot the brace tube forward towards the front of the mower to allow room to connect the oil drain hose to the oil drain valve, Figure 5-3.
- Pop off the protective cap on the end of the oil drain valve to expose the drain port, Figure 5-4.
- Remove the oil fill cap/dipstick from the oil fill tube, Figure 5-4.
- 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.
- Release the valve by pressing the two tabs inward while pulling the valve out. The oil will begin to drain out of the engine.
- After the oil has finished draining, press the two tabs inward and push the oil drain valve back in to lock the valve closed. Remove the hose, and re-cap the end of the oil drain valve to keep debris from entering the drain port.
- Refill the engine with new motor oil until the oil level on the dipstick reads FULL. Replace the oil fill cap/dipstick.
- Pivot the right handle brace tube back into position. Align the middle hole in the brace tube with the hole in the handle. Secure with the star knob and carriage screw removed earlier.

Only use high quality detergent oil rated with API service classification SF or SG. Select the oil's SAE viscosity grade according to your expected operating temperature, Figure 5-5. Although multi-viscosity oils (5W30, 10W30 etc.) improve starting in cold weather, these multi-viscosity oils will result in increased oil consumption when used above 32°F. Check your engine oil level more frequently to avoid possible engine damage from running low on oil.

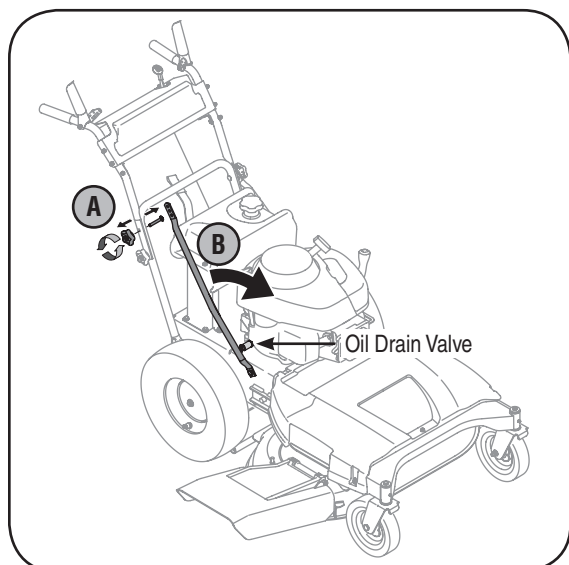


Figure 5-3: Pivot the right brace support tube forward to gain access to the oil valve.

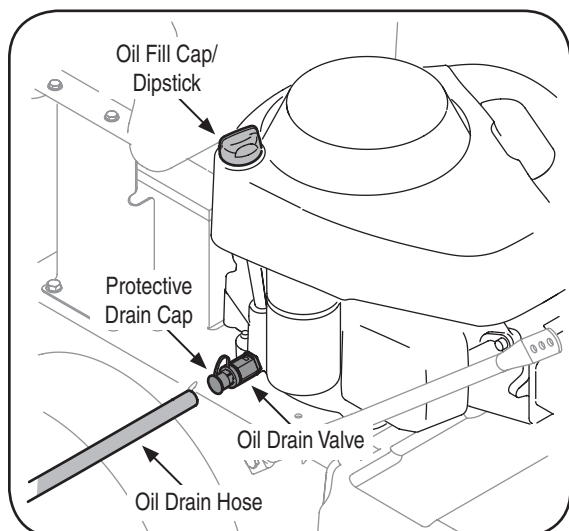


Figure 5-4: Use the drain hose to drain oil from engine.

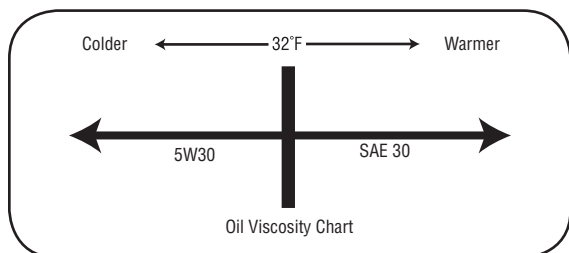


Figure 5-5: Oil Viscosity Chart

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Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Check oil level in engine before every use.

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Maintaining the Lawn Mower



WARNING

WARNING: Before performing any type of maintenance on the machine, wait for all parts to stop moving, disconnect the spark plug wire, and remove the ignition key from the ignition switch. Failure to follow this instruction could result in personal injury and/or property damage.

Mower Maintenance



WARNING: Before performing any type of maintenance/service, disengage all controls and stop the engine. Wait until all moving parts have come to a complete stop. To prevent unintended starting, disconnect spark plug wire and ground it against the engine and remove ignition key. Always wear safety glasses during operation or while performing any adjustments or repairs.

Removing the Belt Cover



WARNING: Do not operate unit without belt cover installed. Failure to follow this instruction could result in personal injury or property damage.

The belt cover must be removed to perform several maintenance procedures. Follow the instructions below to remove the belt cover.

1. Stop engine, wait for all parts to stop moving, and disconnect spark plug wire.
2. Remove the three screws and washers holding the cover to the frame, Figure 5-6.
3. Remove the belt cover.
4. To reinstall the cover, place the cover in position and fasten using screws and washers removed earlier.

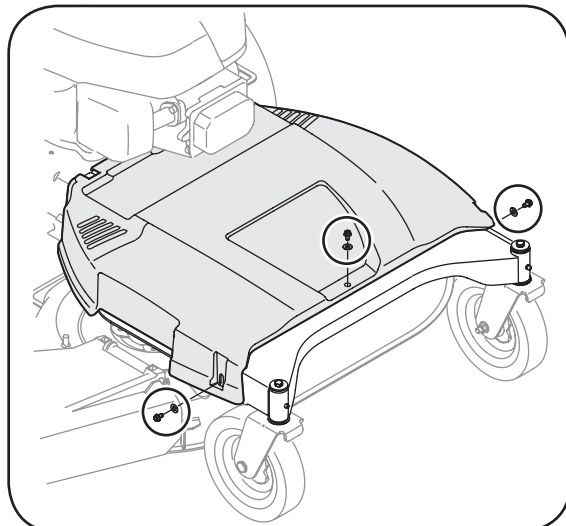


Figure 5-6: Remove screws and washers to remove belt cover.

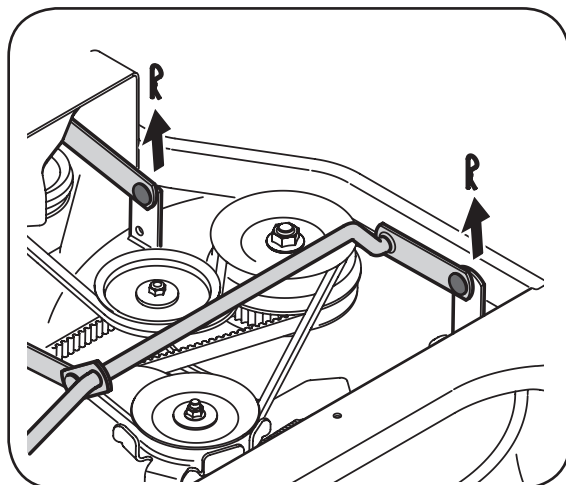


Figure 5-7: Remove hairpin clips.

Removing the Mower Deck

When servicing the underside of the mower deck for any reason, the cutting deck should first be removed. Follow the instructions below to remove the cutting deck:

1. Stop the engine, wait for all parts to stop moving, and disconnect spark plug wire.
2. Release all mower controls.
3. Remove belt cover as instructed under "Removing the Belt Cover."
4. Use the deck height lever to move the cutting deck to its highest position.
5. Place small wooden blocks under the deck.
6. Use the deck height lever to lower the deck so that it rests upon the wooden blocks.
7. Looking at the cutting deck from the left side of the mower, located the hairpin clip that secures the deck support rod on the rear left side of the deck, Figure 5-7.
8. Remove the hairpin clip that secures the support rod, and carefully remove the deck support from the deck lift arm, Figure 5-7.
9. Repeat steps 7 and 8 on the mower's right side. When complete, all four hairpin clips should be removed.
10. Push the cutting deck to the left to unhook the lift assembly from the deck.
11. Use the deck height lever to raise the cutting deck to its highest position.
12. Remove the wooden blocks from under the deck.
13. Remove the drive belt as instructed under "Replacing the Drive Belt" instructions.
14. Slide the cutting deck towards the rear of the unit.
15. Unhook the drive spring cable from the idler arm assembly, Figure 5-8.
16. Remove the cutting deck.
17. To install the cutting deck, follow the above steps in reverse order to reattach deck and belt cover.

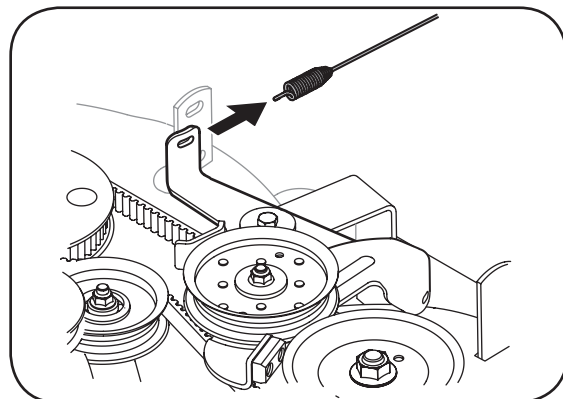


Figure 5-8: Unhook spring.

Lubrication

Pivot Points & Linkage

Lubricate all the pivot points on the drive system and lift linkage at least once a season, or 25 hours of operation, with light oil.

Rear Wheels

The rear wheels should be removed from the axles once a season. Lubricate the axles and the rims well with an all-purpose grease before reinstalling them.

Front Wheel Bearings

Grease fittings are located on each caster wheel and on the frame above each front caster wheel, Figure 5-9. Lubricate these areas using a grease gun after every 50 hours of mower operation.

To lubricate a caster wheel bearing, rotate the wheel so that the grease fitting is in alignment with the notch in the bracket, Figure 5-9 – doing this will allow room to connect the grease gun coupler onto the grease fitting. You will not need to use the grease fitting on the opposite side of the wheel.

Cleaning the Engine and Deck

Any fuel or oil spilled on the machine should be wiped off promptly. Do NOT allow debris to accumulate around any components on the mower. Do not use a pressure washer to clean the mower. It may cause damage to electrical components, spindles, pulleys, bearings, or the engine.

Deck Wash System™

Use the Deck Wash System™ to rinse grass clippings from the deck's underside and prevent the buildup of corrosive chemicals.

1. Thread the hose coupler (packaged in a bag with the Operator's Manual) onto the end of your garden hose, Figure 5-10.
2. Attach the hose and coupler to the water port on the deck surface, Figure 5-10.
3. Turn the water on.
4. Point the discharge chute away from any objects or persons.
5. Start the mower and engage the blades for a minimum of two minutes. Do not engage the drive control.
6. When complete, disengage the blade control (release the blade control lever) and turn the engine off.
7. Turn the water off and detach the hose coupler from the water port.

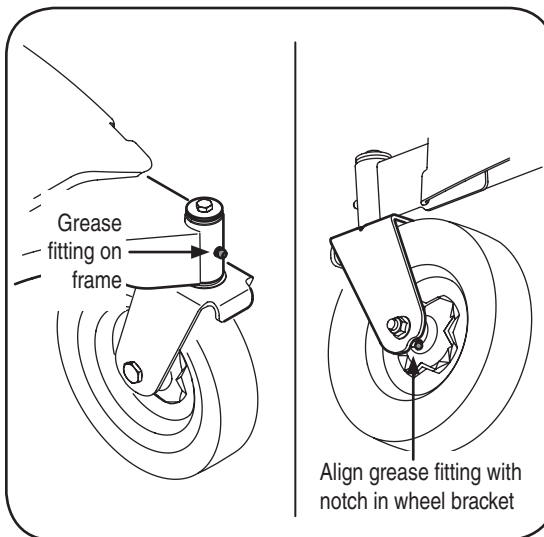


Figure 5-9: Grease fittings for caster wheels.

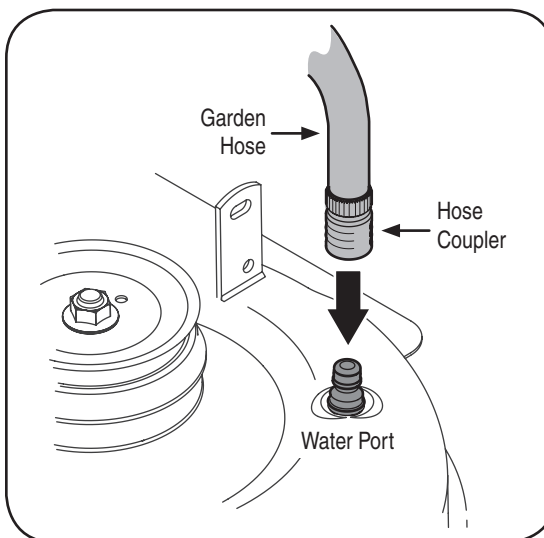


Figure 5-10: Use the Deck Wash System™ to clean the underside of the cutting deck.

Replacing the Trailing Shield

1. If screws are located at each side of the trailing shield, remove the two screws. Bend (bow) the trailing shield inward on each side to release tabs from the holes in the mower frame, Figure 5-11.
2. Replace with new trailing shield by bending the shield to allow each tab to fit into hole in mower frame. Replace the two screws (if present).

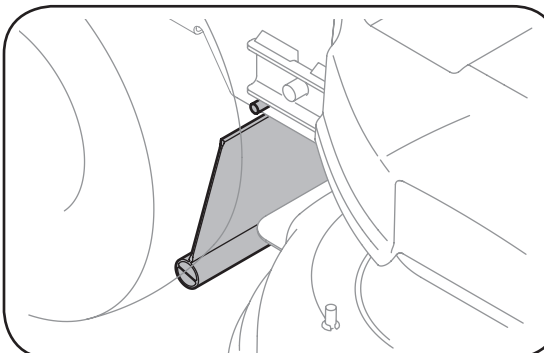


Figure 5-11: The trailing shield

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Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Do not use a pressure washer to clean the mower. It may cause damage to electrical components, spindles, pulleys, bearings, or the engine.

WARNING: Do not operate the mower without the trailing shield properly installed.

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Maintaining the Lawn Mower



WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Never exceed the maximum inflation pressure shown on the sidewall of the tire.

Rear Tire Pressure



WARNING: Never exceed the maximum inflation pressure shown on the sidewall of tire.

The recommended operating rear tire pressure is approximately 20 psi for the rear tires.

IMPORTANT: Refer to the tire sidewall for exact tire manufacturer's recommended or maximum psi. Do not overinflate. Uneven tire pressure could cause the cutting deck to mow unevenly.

Servicing the Cutting Blades



WARNING: Be sure to shut the engine off and disconnect the spark plug wire and ground against the engine to prevent unintended starting before removing the cutting blade(s) for sharpening or replacement. Protect your hands by using heavy gloves or a rag to grasp the cutting blade.



WARNING: Periodically inspect the blade spindles for cracks or damage, especially if you strike a foreign object. Replace immediately if damaged.



WARNING: Mower blades are sharp. When working near blades, wear heavy leather gloves or wrap blades in thick rags to protect yourself from the sharp edges

Blade Removal

1. Remove the deck from beneath the mower and gently flip the deck over to expose its underside. Refer to "Removing the Mower Deck" for instructions.
2. Place a block of wood between the deck housing and the cutting blade to act as a stabilizer, Figure 5-12.
3. Remove the hex flange nut that secures the blade to the spindle assembly, Figure 5-12.

Blade Sharpening

IMPORTANT: If any metal separation is present, replace the blades with new ones.

1. To properly sharpen the cutting blades, remove equal amounts of metal from both ends of the blades along the cutting edges, parallel to the trailing edge, at a 25° to 30° angle, Figure 5-13.
- It is important that each cutting blade edge be ground equally to maintain proper blade balance. A poorly balanced blade will cause excessive vibration and may cause damage to the mower and result in personal injury. The blade can be tested by balancing it on a round shaft screwdriver. Grind metal from the heavy side until it balances evenly.

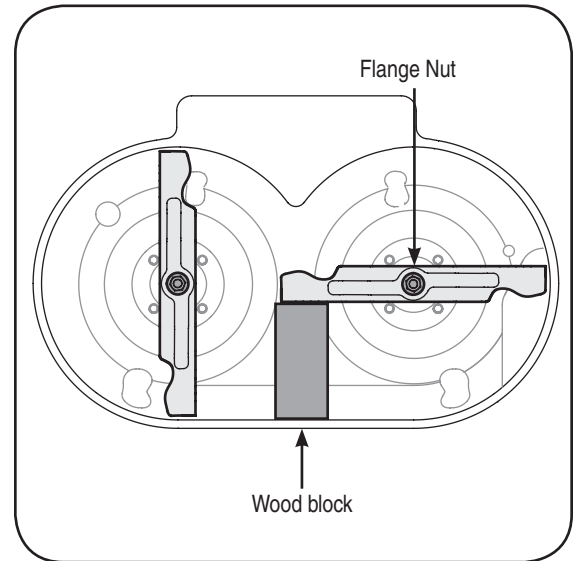


Figure 5-12: Use a block of wood to stabilize blade.

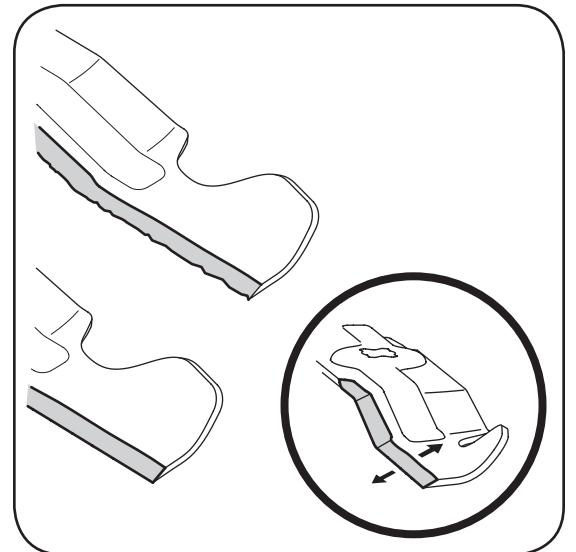


Figure 5-13: Grind cutting edges following angle.

Blade Installation

1. When installing a blade, be sure to install the blade with the side of the blade with a part number stamped in it facing the ground when the mower is in the operating position.
2. Use a torque wrench to tighten the spindle flange nut to between 70-90 foot-pounds.

Battery Maintenance

Battery

The battery is sealed and is maintenance-free. Acid levels cannot be checked.

- Always keep the battery cables and terminals clean and free of corrosive build-up.
- After cleaning the battery and terminals, apply a light coat of petroleum jelly or grease to both terminals.
- Always keep the rubber boot positioned over the positive terminal to prevent shorting.

IMPORTANT: If removing the battery for any reason, disconnect the **NEGATIVE (Black)** wire from its terminal first, followed by the **POSITIVE (Red)** wire. When re-installing the battery, always connect the **POSITIVE (Red)** wire its terminal first, followed by the **NEGATIVE (Black)** wire. Be certain that the wires are connected to the correct terminals; reversing them could change the polarity and result in damage to your engine's alternating system.

Charging

IMPORTANT: When charging the battery, use only a charger designed for 12V lead-acid batteries. Read your battery charger's Owner's Manual prior to charging the battery. Always follow its instructions and heed its warnings.

If the mower has not been put into use for an extended period of time, charge the battery as follows:

- Set the battery charger to deliver a maximum of 10 amperes. If the battery charger is automatic, charge the battery until the charger indicates that charging is complete.

NOTE: If the charger is not automatic, charge for no fewer than eight hours.



WARNING: Batteries give off an explosive gas while charging. Charge battery in a well ventilated area and keep away from an open flame or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.

Jump Starting



WARNING: When removing or installing the battery, follow these instructions to prevent the screwdriver from shorting against the frame.

IMPORTANT: Never jump the mower's dead battery with the battery of a running vehicle.

1. Connect end of one jumper cable to the positive terminal of the good battery, then the other end to the positive terminal of the dead battery.
2. Connect the other jumper cable to the negative terminal of the good battery, then to the frame of the unit with the dead battery.



WARNING: Failure to use this procedure could cause sparking, and the gas in either battery could explode.

Cleaning

Clean the battery by removing it from the mower and washing with a baking soda and water solution. If necessary, scrape the battery terminals with a wire brush to remove deposits. Coat terminals and exposed wiring with grease or petroleum jelly to prevent corrosion.

Battery Failures

Some common causes for battery failure are:

- incorrect initial activation
- undercharging
- overcharging
- corroded connections
- freezing

These failures are **NOT** covered by the mower warranty.

Fuse

One 20 AMP fuse is installed in the mower's wiring harness to protect the electrical system from damage caused by excessive amperage. If the electrical system does not function, or the engine will not crank, first check to be certain that the fuse has not blown. The fuse is located near the battery.



WARNING: Always use a fuse with the same amperage capacity for replacement.

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Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Always use a fuse with the same amperage capacity for replacement.

WARNING: Batteries give off an explosive gas while charging. Charge battery in a well ventilated area and keep away from an open flame or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.

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Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Avoid the possibility of a pinching injury. Do not place your fingers between belts and pulleys.



IMPORTANT: The belts on the mower are specially designed to engage and disengage safely. Substitute (non-OEM) belts can be dangerous by not disengaging completely. For a proper working machine, use factory approved belts.

Replacing Belts

The mower uses three belts: 1) drive belt, 2) deck engagement belt, 3) blade timing belt. Before removing belt, observe how the belt is routed around the pulleys and brackets to help when installing a replacement belt.

IMPORTANT: The belts on the mower are specially designed to engage and disengage safely. Substitute (non-OEM) belts can be dangerous by not disengaging completely. For a proper working machine, use factory approved belts.

Replacing the Drive Belt



WARNING: Before performing any type of maintenance on the machine, wait for all parts to stop moving, and disconnect the spark plug wire. Remove the ignition key from the ignition switch (if equipped). Failure to follow this instruction could result in personal injury or property damage.



Avoid the possibility of a pinching injury. Do not place your fingers between belts and pulleys.

1. Stop engine, wait for all parts to stop moving, and disconnect spark plug wire.
2. Release all mower controls.
3. Remove belt cover as instructed earlier in this section.
4. Loosen belt keeper (A). The belt keeper is attached to the underside of the mower frame, Figure 5-14.
5. Loosen the idler pulley (B) by loosening bolt and nut, Figure 5-14.
6. Remove belt (C) from around pulleys, Figure 5-14.
7. Route new belt around the pulleys making sure to tighten nuts, bolts, and belt keeper.
8. Replace the belt cover.

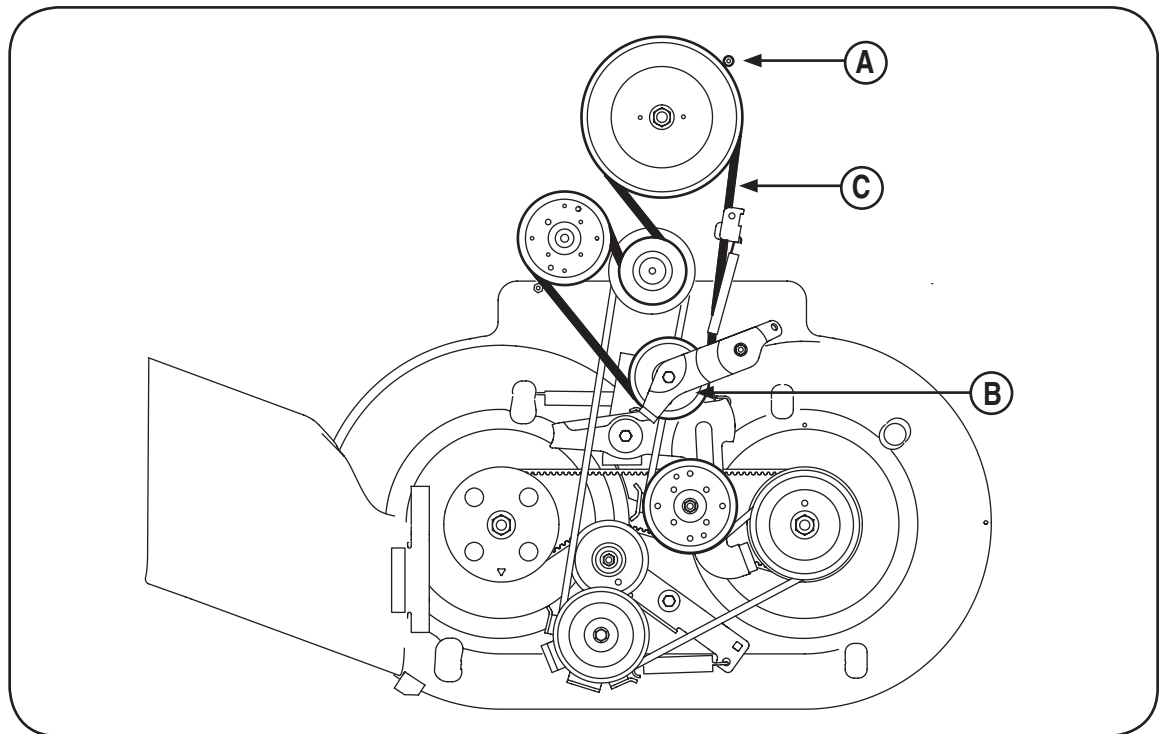


Figure 5-14: Top view of the drive belt orientation.

Replacing the Deck Engagement Belt



WARNING: Before performing any type of maintenance on the machine, wait for all parts to stop moving, and disconnect the spark plug wire. Remove the ignition key from the ignition switch (if equipped). Failure to follow this instruction could result in personal injury or property damage.



Avoid the possibility of a pinching injury. Do not place your fingers between belts and pulleys.

1. Stop engine, wait for all parts to stop moving, and disconnect spark plug wire.
2. Release all mower controls.
3. Remove belt cover as instructed earlier in this section.
4. Loosen the bolt and nut holding the belt keeper rod to the frame, Figure 5-15.
5. Loosen the idler pulley (A) by loosening the nut and bolt, Figure 5-16.
6. Loosen the idler pulley (B) by loosening nut, Figure 5-16.
7. Remove belt (C) from around pulleys, Figure 5-16.
8. Route new belt around the pulleys making sure to tighten nuts, bolts, and belt keeper.
9. Replace the belt cover.

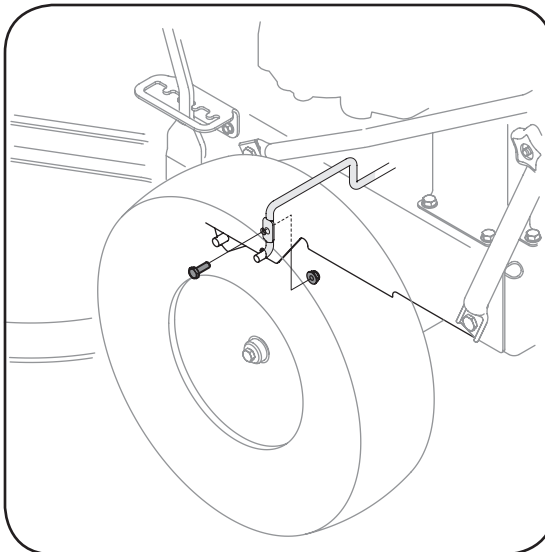


Figure 5-15: Loosen the belt keeper rod.

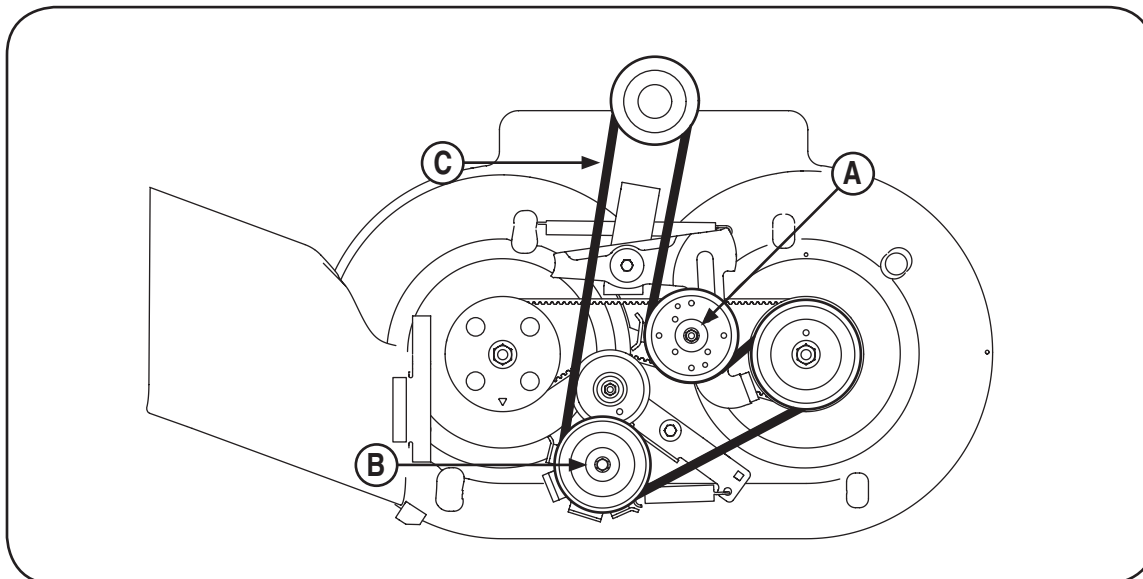


Figure 5-16: Top view of deck engagement belt orientation.

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Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Avoid the possibility of a pinching injury. Do not place your fingers between belts and pulleys.



IMPORTANT: The belts on the mower are specially designed to engage and disengage safely. Substitute (non-OEM) belts can be dangerous by not disengaging completely. For a proper working machine, use factory approved belts

5

Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

WARNING: Avoid the possibility of a pinching injury. Do not place your fingers between belts and pulleys.



IMPORTANT: The belts on the mower are specially designed to engage and disengage safely. Substitute (non-OEM) belts can be dangerous by not disengaging completely. For a proper working machine, use factory approved belts

Replacing the Blade Timing Belt



WARNING: Before performing any type of maintenance on the machine, wait for all parts to stop moving, and disconnect the spark plug wire. Remove the ignition key from the ignition switch (if equipped). Failure to follow this instruction could result in personal injury or property damage.

1. Stop engine, wait for all parts to stop moving, and disconnect spark plug wire.
2. Release all mower controls.
3. Remove belt cover as instructed earlier in this section.

Removing the Timing Belt

4. Remove spring (A) from timing bracket and deck, Figure 5-17.
5. Loosen 3/8-16 screw and nut attached to deck mount, Figure 5-18.
6. Pivot idler timing bracket (B) to route belt around idler pulley, Figure 5-17.
7. Pivot idler arm assembly (C) and remove belt (D) from spindle assemblies, Figure 5-17.

Installing the Timing Belt

8. Before installing a replacement timing belt, the marks on each spindle assembly must be positioned in such a way as to ensure the blades are perpendicular to each other, Figure 5-19.
 - a. Turn the spacer spindle assembly (E) so that the arrow punched on the spindle is facing the front of the mower, Figure 5-17.
 - b. Turn the drive spindle assembly (F) so that the arrow punched on the spindle is facing to the outside of the cutting deck, Figure 5-17.
9. Route the new belt around pulleys making sure to tighten nuts and bolts. Install the spring removed in step 4.
10. Replace the belt cover.

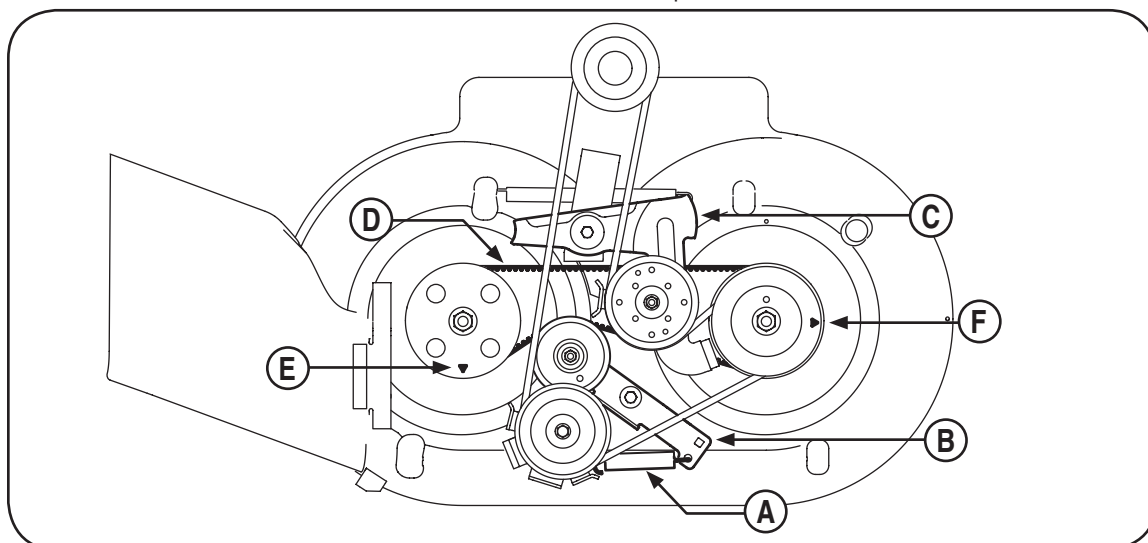


Figure 5-17: Top view of blade timing belt orientation.

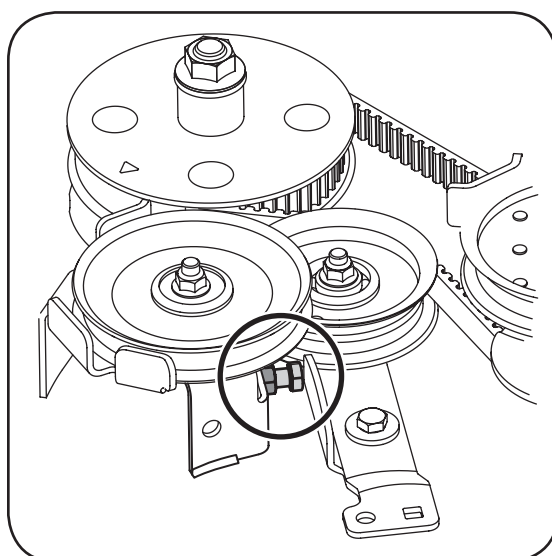


Figure 5-18: Loosen the screw and nut on deck mount.

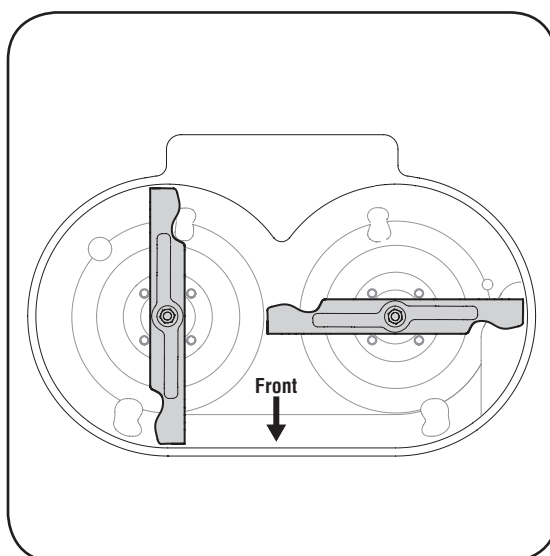


Figure 5-19: Blades must be perpendicular to each other after installing new timing belt.

Maintenance Schedule



WARNING: Before performing any type of maintenance/service, disengage all controls and stop the engine. Wait until all moving parts have come to a complete stop. To prevent unintended starting, disconnect spark plug wire and ground it against the engine and remove ignition key. Always wear safety glasses during operation or while performing any adjustments or repairs.

Follow the maintenance schedule given below. This chart describes general service guidelines only. Complete service is available from your authorized dealer. Before performing any type of maintenance procedure, refer to the appropriate information contained in this manual or in the engine manual (if provided) for the correct safety precautions and maintenance procedures.

Interval	Item	Service
Each Use	1. Mower blades 2. Loose or missing hardware 3. Belts 4. Engine oil level 5. Controls 6. Mulch plug (if fitted)	1. As required 2. Tighten or replace 3. Check 4. Check 5. Check for proper operation 6. Check for proper plug installation
1st 2 hours	1. Engine oil	1. Change
25 hours	1. Air cleaner 2. Mower blades 3. Control linkages and pivots	1. Clean or replace 2. Sharpen and balance 3. Lube with light oil
50 hours	1. Front Wheel Bearings 2. Engine Oil	1. Grease 2. Change
Annually or 100 hours	1. Air cleaner 2. Spark plug	1. Clean or replace 2. Clean, replace, re-gap
Before Storage	1. Fuel system	1. Empty fuel system

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Maintaining the Lawn Mower



WARNING

WARNING: Always stop engine, disconnect spark plug, and remove ignition key before performing any type of maintenance on the mower. Failure to follow this instruction could result in personal injury and/or property damage.

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Trouble-shooting



WARNING

WARNING: Before performing any type of maintenance on the machine, wait for all parts to stop moving, and disconnect the spark plug wire. Remove the ignition key from the ignition switch. Failure to follow this instruction could result in personal injury or property damage.

For repairs beyond the minor adjustments listed here, contact an authorized service dealer.

Troubleshooting



WARNING: Before performing any type of maintenance/service, disengage all controls and stop the engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting. Always wear safety glasses during operation or while performing any adjustments or repairs.

For repairs beyond the minor adjustments listed here, contact an authorized service dealer.

Problem	Cause	Remedy
Engine fails to start	1. Choke not activated 2. Throttle/choke control not in correct position 3. Spark plug wire disconnected 4. Faulty spark plug 5. Fuel tank empty or stale fuel 6. Battery or charging malfunction	1. Place throttle/choke control lever into choke position. 2. Place throttle/choke lever into fast position. 3. Connect wires to spark plug. 4. Clean, adjust gap, or replace. 5. Fill tank with clean, fresh gasoline. 6. Check fuse and battery.
Engine runs erratically	1. Unit running with choke applied 2. Spark plug wire loose 3. Blocked fuel line or stale fuel 4. Water or dirt in fuel system 5. Dirty air cleaner	1. Move throttle/choke lever out of choke position. 2. Connect and tighten spark plug wire. 3. Clean fuel line. Fill tank with fresh gasoline. 4. Drain fuel. Refill with fresh fuel. 5. Replace air cleaner cartridge.
Engine overheats	1. Engine oil level low 2. Air flow restricted	1. Fill engine with proper amount and type of oil. 2. Clean grass clippings and debris from around the engine's cooling fins and blower housing.
Engine hesitates at high RPMs	1. Spark plug gap set too close	1. Remove spark plug and adjust gap.
Engine idles poorly	1. Fouled spark plug 2. Dirty air cleaner	1. Replace spark plug and adjust gap. 2. Replace air cleaner cartridge.
Excessive vibration	1. Cutting blades loose or unbalanced 2. Damaged, dull, or bent cutting blade 3. Loose hardware	1. Tighten blade and spindle. Balance blade. 2. Replace blade. 3. Tighten all nuts and bolts.
Unit fails to propel itself	1. Drive belt loose or damaged	1. Replace drive belt.
Poor mowing performance	1. Dull blade(s) 2. Broken, loose, or worn belt(s) 3. Blade(s) out of balance	1. Sharpen or replace blade(s). 2. Replace belt(s). 3. Balance or replace blade(s).

Off-Season Storage



WARNING: Never store lawn mower with fuel in tank indoors or in poorly ventilated areas where fuel fumes may reach an open flame, spark, or pilot light as on a furnace, water heater, clothes dryer, or gas appliance.

Preparing the Engine

For engines stored over 30 days:

1. To prevent gum from forming in fuel system or on carburetor parts, run engine until it stops from lack of fuel or add a gasoline additive to the gas in the tank. If you use a gas additive, run the engine for several minutes to circulate the additive through the carburetor—after which the engine and fuel can be stored up to six months.
2. While engine is still warm, change the oil.
3. Remove spark plug and pour approximately 1 oz. (30 ml) of engine oil into the cylinder. Pull the recoil starter several times to distribute the oil, and reinstall the spark plug.
4. Clean engine of surface debris.

Preparing the Lawn Mower

- When storing the mower in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially any springs, bearings, and cables.
- Remove all dirt from exterior of engine and equipment.
- Follow lubrication recommendations.
- Store equipment in a clean, dry area. Do not store in an area where equipment is present that may use a pilot light or has a component that can create a spark.

Replacement Parts



Download a complete Parts Manual free of charge at www.cubcadet.com or call 1-800-965-4CUB to purchase a Parts Manual. Be sure to have the model number and serial number ready. Refer to page two for more information regarding model and serial number location.

Description	Part No.
Air Filter	BS-698413
Battery	725-1704A
Belt, Drive-Transmission (V-type)	954-04145
Belt, Deck Engagement (V-type)	954-04139
Belt, Timing	954-04136
Blade, Spindle Assembly LH	618-04438
Blade, Spindle Assembly RH	618-04439
Cable, Drive	746-04343
Cable, Trans Brake RH	746-04344

Description	Part No.
Cable, Blade Control	746-04346
Cable, Throttle/Choke	746-04355
Cable, Trans Brake LH	746-04361
Deck Blade	942-04154
Fuel Tank Cap	951-10514
Fuel Filter	751-3013
Ignition Key	725-2054
Spark Plug	759-3336
Tire, Rear 16 x 4 x 8 (rim and tire)	634-04349
Tire, Front Caster 8 x 1.75	634-04345

Accessories

33-inch Wide Cut Mower Accessories

Bagger Kit	19A-119
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Off-Season Storage & Parts and Accessories



This Operator's Manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable to all models.

NOTES

Use this page to make notes and write down important information.

NOTES

Use this page to make notes and write down important information.

CUB CADET LLC MANUFACTURER'S LIMITED WARRANTY FOR 33-INCH WIDE CUT MOWER

IMPORTANT: To obtain warranty coverage owner must present an original proof of purchase and applicable maintenance records to the servicing dealer. Please see the operator's manual for information on required maintenance and service intervals.

The limited warranty set forth below is given by Cub Cadet LLC with respect to new merchandise purchased or leased and used in the United States and/or its territories and possessions, and by MTD Products Limited with respect to new merchandise purchased or leased and used in Canada and/or its territories and possessions (either entity respectively, "Cub Cadet").

Cub Cadet warrants this product (excluding its *Normal Wear Parts and Battery*, as described below) against defects in material and workmanship for a period of three (3) years or one hundred twenty (120) operation hours, whichever comes first, commencing on the date of original retail purchase or lease and will, at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship.

Normal Wear Parts are warranted to be free from defects in material and workmanship for a period of thirty (30) days from the date of original purchase or lease. Normal wear parts include, but are not limited to items such as: belts, blades, blade adapters, grass bags, wheels and tires.

Batteries have a one-year prorated limited warranty against defects in material and workmanship, with 100% replacement during the first three months. After three months, the battery replacement credit is based on the months remaining in the twelve (12) month period dating back to the original date of original sale or lease. Any replacement battery will be warranted only for the remainder of the original warranty period.

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, 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. In addition, Cub Cadet may deny warranty coverage if the hour meter, or any part thereof, is altered, modified, disconnected or otherwise tampered with.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE AND APPLICABLE MAINTENANCE RECORDS, through your local authorized service dealer. To locate the dealer in your area:

In the U.S.A.:

Check your Yellow Pages, or contact Cub Cadet LLC at P.O. Box 361131, Cleveland, Ohio 44136-0019, call 1-877-282- 8684 or log on to our website at www.cubcadet.com.

In Canada:

Contact MTD Products Limited, Kitchener, ON N2G 4J1, call 1-800-668-1238 or log on to our website at www.mtdcanada.com.

Without limiting the foregoing, 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. 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.
- c. Service completed by someone other than an authorized service dealer.
- d. Cub Cadet does not extend any warranty for products sold or exported outside of the United States and/or Canada, and their respective possessions and territories, except those sold through Cub Cadet's authorized channels of export distribution.
- e. Replacement parts and/or accessories that are not genuine Cub Cadet parts.
- f. Transportation charges and service calls.

There are no implied warranties, including without limitation any implied warranty of merchantability or fitness for a particular purpose. No warranties shall apply after the applicable period of express written warranty above. No other express warranties beyond those mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind Cub Cadet. The exclusive remedy is repair or replacement of the product as set forth above. The terms of this warranty provide the sole and exclusive remedy arising from the sale and/or lease of the products covered hereby. Cub Cadet shall not be liable for any 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 jurisdictions 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 LOCAL LAWS RELATE TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights that vary in different jurisdictions.

**Cub Cadet LLC, P.O. BOX 361131 CLEVELAND, OHIO 44136-0019, Phone: 1-877-282-8684
MTD Products Limited, Kitchener, ON N2G 4J1, Phone: 1-800-668-1238**