

OPERATOR'S MANUAL

All Wheel Drive
Model Series N

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WARNING

**READ AND FOLLOW ALL SAFETY RULES AND INSTRUCTIONS IN THIS MANUAL
BEFORE ATTEMPTING TO OPERATE THIS MACHINE.
FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.**

NOTE: This Operator's Manual covers several models. Features may vary by model. Not all features in this manual are applicable to all models and the model depicted may differ from yours.





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!

CALIFORNIA PROPOSITION 65



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



DANGER: This machine was built to be operated according to the safe operation practices 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 fingers, hands, toes and feet and throwing foreign objects. Failure to observe the following safety instructions could result in serious injury or death.

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. Keep this manual in a safe place for future and regular reference.
2. Be completely familiar with the controls and the proper use of this machine before operating it.
3. This machine is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. This machine has been designed to perform one job: to mow grass. Do not use it for any other purpose.
4. Never allow children under 14 years of age to operate this machine. Children 14 and over should read and understand the instructions and safe operation practices in this manual and on the machine and should be trained and supervised by an adult.
5. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use this machine.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. Do not put hands or feet near rotating parts or under the cutting deck. Contact with blade can amputate fingers, hands, toes and feet.
12. A missing or damaged discharge cover can cause blade contact or thrown object injuries.
13. 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.
14. 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.
15. Do not operate the mower while under the influence of alcohol or drugs.
16. Do not engage the self-propelled mechanism on machines so equipped while starting engine.
17. The blade control 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 must operate easily in both directions and automatically return to the disengaged position when released.
18. 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.
19. Mow only in daylight or good artificial light. Walk, never run.
20. Stop the blade when crossing gravel drives, walks or roads.
21. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
22. 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 blade control is released. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.
23. Never operate mower without proper trail shield, discharge cover, grass catcher, blade control 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.
24. Muffler and engine become hot and can cause a burn. Do not touch.
25. Never attempt to make a wheel or cutting height adjustment while the engine is running.

26. Only use parts and accessories made for this machine by the manufacturer. Failure to do so can result in personal injury.
27. When starting engine, pull cord slowly until resistance is felt, then pull rapidly. 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.
28. If situations occur which are not covered in this manual, use care and good judgement. Contact Customer Support for assistance or the name of the nearest service dealer.

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. The machine is heavy and can speed up when going downhill. Be prepared to maintain control of the machine. 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 machine 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 to avoid loss of control.
2. Exercise extreme caution when changing direction on slopes; turn uphill not down.
3. Watch for holes, ruts, rocks, hidden objects, or bumps which can cause you to slip or trip. Tall grass can hide obstacles.
4. 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 three (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.

Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the mower and the 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 of age to operate this machine. Children 14 and over should read and understand the instructions and safe operation practices in this manual and on the machine and be trained and supervised by an adult.
7. After stopping engine, remove Electric Start Push Key (if equipped) and keep it in a safe place out of the reach of children.

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 indoors 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 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 machine 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 machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.

14. Allow machine to cool at least 5 minutes before storing.

General Service:

15. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
16. 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 and remove Electric Start Push Key (if equipped) to prevent unintended starting.
17. 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!"
18. Mower blades are sharp and can cut. Wrap the blade or wear gloves, and use extra caution when servicing them.
19. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
20. Never tamper with safety devices. Check their proper operation regularly.
21. 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.
22. Never attempt to make a wheel or cutting height adjustment while the engine is running.
23. 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!"
24. Do not change the engine's governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
25. Check fuel line, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.
26. Do not crank engine with spark plug removed.
27. Maintain or replace safety and instruction labels, as necessary.
28. Observe proper disposal laws and regulations. Improper disposal of fluids

and materials can harm the environment.

29. According to the Consumer Products Safety Commission (CPSC) and the U.S. Environmental Protection Agency (EPA), this product has an Average Useful Life of seven (7) years, or 140 hours of operation. At the end of the Average Useful Life have the machine inspected annually by an authorized service dealer to ensure that all mechanical and safety systems are working properly and not worn excessively. Failure to do so can result in accidents, injuries or death.

Do not modify engine

To avoid serious injury or death, do not modify engine in any way. Tampering with the governor

setting can lead to a runaway engine and cause it to operate at unsafe speeds. Never tamper with factory setting of engine governor.

Notice Regarding Emissions

Engines which are certified to comply with California and federal EPA emission regulations for SORE (Small Off Road Equipment) are certified to operate on regular unleaded gasoline, and may include the following emission control systems: Engine Modification (EM), Oxidizing Catalyst (OC), Secondary Air Injection (SAI) and Three Way Catalyst (TWC) if so equipped.

Spark Arrestor



WARNING: This machine 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 arrestor meeting applicable local or state laws (if any).

If a spark arrestor 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 arrestor 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.

Safety Symbols

This page depicts and describes safety symbols that may appear on this product. Read, understand, and follow all instructions on the machine before attempting to assemble and operate.

Symbol	Description
	READ THE OPERATOR'S MANUAL(S) Read, understand, and follow all instructions in the manual(s) before attempting to assemble and operate.
	DANGER — ROTATING BLADES To reduce the risk of injury, keep hands and feet away. Do not operate unless discharge cover or grass catcher is in its proper place. If damaged, replace immediately.
	DANGER — BYSTANDERS Do not mow when children or others are around.
	DANGER — HAND/ FOOT CUT Keep hands and feet away from rotating parts.
	DANGER — THROWN DEBRIS Remove objects that can be thrown by the blade in any direction. Wear safety glasses.
	DANGER — SLOPES Use extra caution on slopes. The machine is heavy and can speed up when going downhill. Be prepared to maintain control of the machine. To avoid loss of control, operate across slopes, not up and down. When turning, turn uphill, not down. Do not operate on slopes greater than 15°.
	WARNING—GASOLINE IS FLAMMABLE Allow the engine to cool at least two minutes before refueling.
	WARNING— CARBON MONOXIDE Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
	WARNING— HOT SURFACE Engine parts, especially the muffler, become extremely hot during operation. Allow engine and muffler to cool before touching.



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.

SAVE THESE INSTRUCTIONS!

Slope Gauge

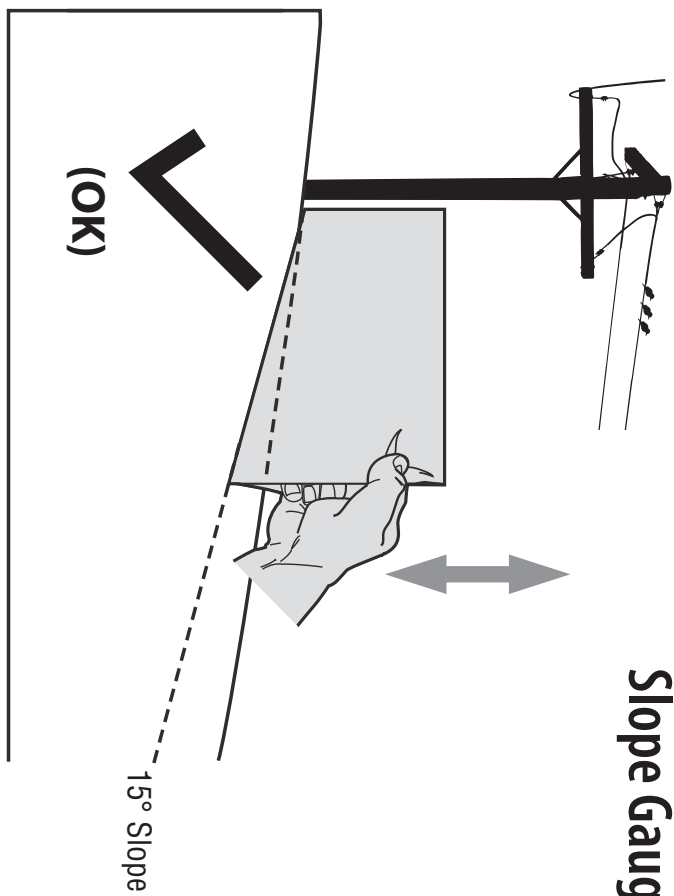


Figure 1

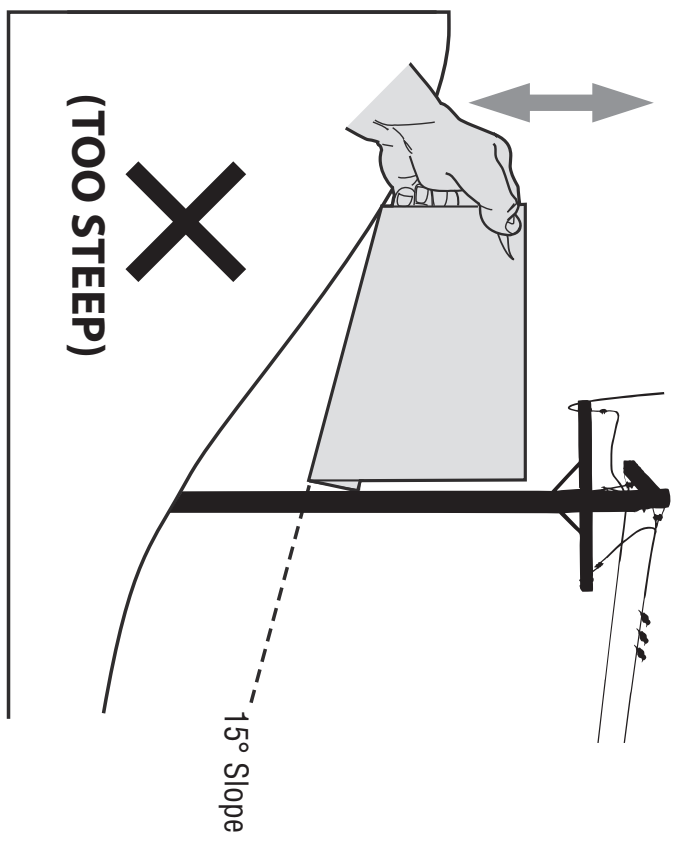


Figure 2

USE THIS SLOPE GAUGE TO DETERMINE IF A SLOPE IS TOO STEEP FOR SAFE OPERATION!

To check the slope, proceed as follows:

1. Remove this page and fold along the dashed line.
2. Locate a vertical object on or behind the slope (e.g. a pole, building, fence, tree, etc.)
3. Align either side of the slope gauge with the object (See Figure 1 and Figure 2).
4. Adjust gauge up or down until the left corner touches the slope (See Figure 1 and Figure 2).
5. If there is a gap below the gauge, the slope is too steep for safe operation (See Figure 2 above).

15° dashed line



WARNING! Slopes are a major factor related to slip and fall accidents which can result in severe injury or death.

The machine is heavy and can speed up when going downhill. Be prepared to maintain control of the machine. To avoid loss of control, operate across slopes, not up and down. When turning, turn uphill, not down. Do not operate machine on slopes in excess of 15 degrees.

Thank You

Thank you for purchasing this product. It was carefully engineered to provide excellent performance when properly operated and maintained.

Please read this entire manual prior to operating the equipment. It instructs you how to safely and easily set up, operate and maintain your machine. Please be sure that you, and any other persons who will operate the machine, carefully follow the recommended safety practices at all times. Failure to do so could result in personal injury or property damage.

All information in this manual is relative to the most recent product information available at the time of printing. Review this manual frequently to familiarize yourself with the machine, its features and operation. Please be aware that 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. We reserve the right to change product specifications, designs and equipment without notice and without incurring obligation.

If applicable, the power testing information used to establish the power rating of the engine equipped on this machine can be found at www.opei.org or the engine manufacturer's web site.

If you have any problems or questions concerning the machine, phone your local authorized service dealer or contact us directly. We want to ensure your complete satisfaction at all times.

Throughout this manual, all references to *right* and *left* side of the machine are observed from the operating position.

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 your machine, for more information.

Contents of Carton

- | | | |
|--|---------------------------------|---|
| • Lawn Mower (1) | • Grass Catcher † (1) | • Side Discharge Chute † (1) |
| • Cable Clips † (2) | • Electric Start Push Key † (1) | • Briggs & Stratton Battery Charger † (1) |
| • Briggs & Stratton Battery Pack † (1) | • Oil (1) | • Lawn Mower Operator's Manual (1) |
| • Engine Operator's Manual (1) | • Parts/Warranty Document (1) | • Fast Start Guide † (1) |
| • Product Registration Card † (1) | † If Equipped | |

NOTE: This Operator's Manual covers several models. Features may vary by model. Not all features in this manual are applicable to all models and the model depicted may differ from yours. Handle assembly is the same on all units, however, refer to Figure 3-1 in the Controls & Operation section to determine the handle controls your model has and pages 10-11 for instruction on how to use them.

NOTE: This unit is shipped without gasoline or oil in the engine. Fill up with gasoline and oil as instructed in the Engine Operator's Manual BEFORE operating your mower.

Handle Assembly

1. Remove any packing material which may be between upper and lower handles
2. Remove the T-bolts (a) from the handle brackets as shown in Figure 2-1.
3. Remove wing knobs (b) and carriage bolts (c) from handle as shown in Figure 2-1. Do not loosen or remove adjacent hex head screws.

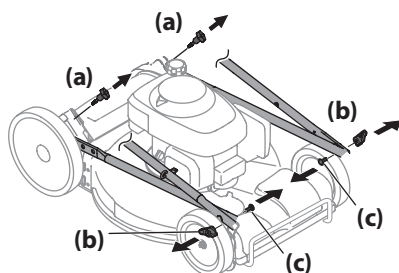


Figure 2-1

4. Gently lift and pivot the upper handle into the operating position as shown in Figure 1-2. Make certain the lower handle is seated securely into the handle brackets.
5. Reattach wing knobs (b) and carriage bolts (c) removed in Step 3 into lower holes of handle as shown in Figure 2-2.

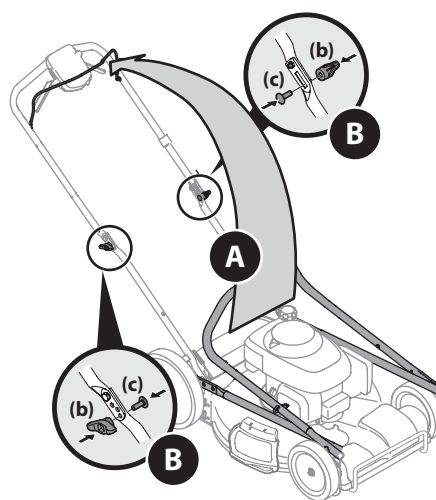


Figure 2-2

6. Using the T-bolts (a) removed in Step 2, secure the handle to the handle brackets as shown in Figure 2-3.

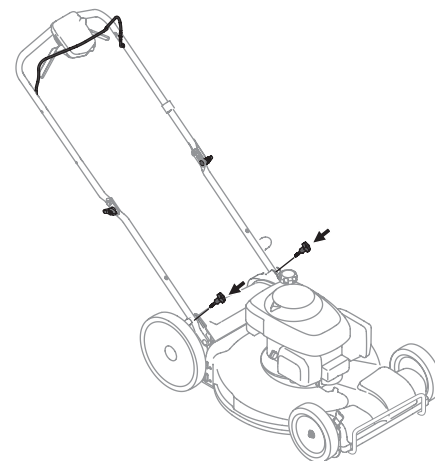


Figure 2-3

7. The rope guide is attached to the right side of the upper handle. Loosen the wing knob (a) which secures the rope guide and perform the following (See Figure 2-4):
 - a. Hold blade control against upper handle.
 - b. Slowly pull starter rope handle from engine and slip starter rope into the rope guide.
 - c. Tighten rope guide wing knob (a).

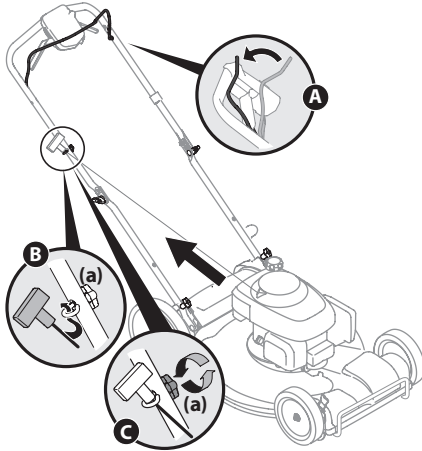


Figure 2-4

8. Locate the five cable ties loosely securing the drive control cables and blade control cable to the handle
9. Tighten cable ties and trim excess strip.

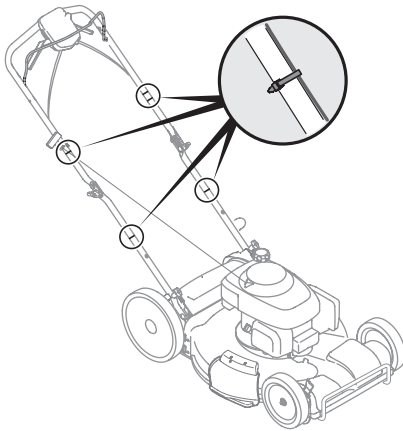


Figure 2-5

IMPORTANT: To reduce wear and allow for proper operation, make sure to leave some slack in the upper portion of the cables.

Grass Catcher (If Equipped)

1. Follow steps below to assemble the grass catcher (if needed). Make certain bag is turned right side out before assembling (warning label will be on the outside). See Figure 2-6.
 - a. Place bag over frame so that its black plastic side is at the bottom.
 - b. Slip plastic channel of grass bag over hooks on the frame.

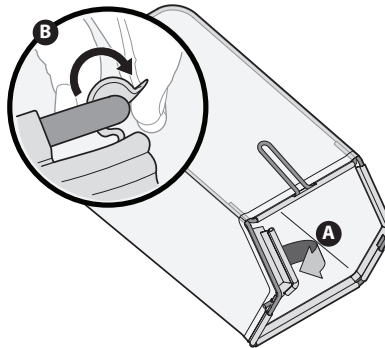


Figure 2-6

2. Follow steps below to attach grass catcher. See Figure 2-7.
 - a. Lift mower rear discharge door (a).
 - b. Remove the rear mulch plug (b).
 - c. Place grass catcher into the slots (c) in the handle brackets. Let go of discharge door so that it rests on the grass catcher.

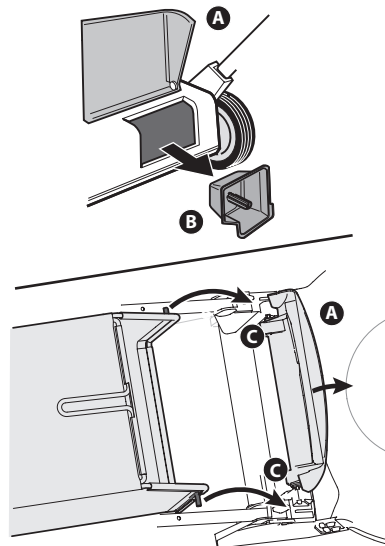


Figure 2-7

To remove grass catcher, lift mower rear discharge door. Lift grass catcher up and off the slots in the handle brackets. Reinstall the rear mulch plug. Release mower rear discharge door to allow it to close rear opening of mower.

Side Discharge Chute (If Equipped)

Your mower may be shipped as a mulcher. To convert to side discharge, make sure grass catcher (if equipped) is OFF the unit and mower rear discharge door (if equipped) is closed.

1. On the side of the mower, lift the mulch plug. See Figure 2-8.
2. Slide two hooks of side discharge chute under hinge pin on mulch plug assembly. Lower the mulch plug.

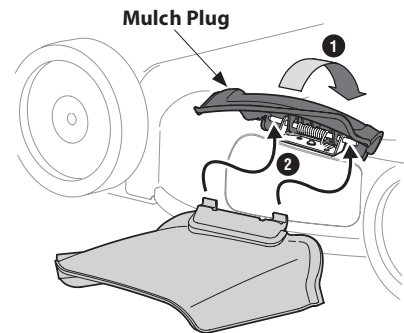


Figure 2-8

NOTE: Do not remove side mulch plug at any time.

3. When not using, you may secure side discharge chute to handle as shown in Figure 2-9.

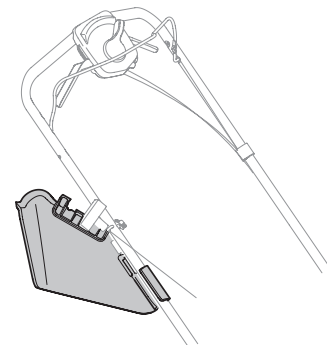


Figure 2-9

Adjustments

Cutting Height

Dual Lever

The front cutting height adjustment lever is located above the right front wheel. The rear cutting height adjustment lever is located above the left rear wheel.

1. Pull the height adjustment lever towards the wheel (unit will tend to fall when lever is moved outward). See Figure 2-10.

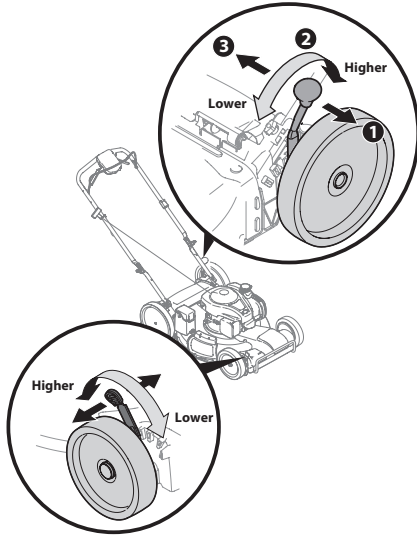


Figure 2-10

2. Slide lever to desired position for a change in cutting height.

NOTE: For mowers with low wheels, the height adjustment levers move in the opposite direction to adjust; for those with high wheels, the levers move in the same direction.

3. Release lever towards deck.

IMPORTANT: Both the front and rear wheels must be placed in the same relative position. For rough or uneven lawns, move the height adjustment levers to a higher position. This will stop scalping of grass.

Handle Pitch (If Equipped)

If equipped, the pitch of the handle can be adjusted as follows:

1. Remove wing nuts (a) and carriage bolts (b) from handle. See Figure 2-11.

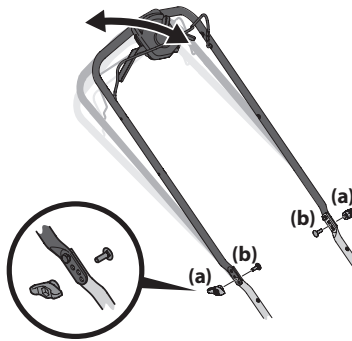


Figure 2-11

2. Position the handle in one of the three positions that is most comfortable. See Figure 2-11 inset.
3. Secure into position with wing nuts (a) and carriage bolts (b) removed in Step 1.

Drive Control

There are two drive control cable adjustment wheels (a) located on the bottom of the drive control housing (b). The adjustment wheels are used to loosen or tighten the front wheel drive and the rear wheel drive belts if:

- The mower does not self propel in the front wheel drive or rear wheel drive mode (tighten drive belt).
- The lever drive control (c) can not be fully squeezed against the upper handle (d) (loosen drive belt).

NOTE: Move the unit forward and backward then test the lever again before making any cable adjustment.

Use the left side wheel (f) to adjust the rear wheel drive belt. Use the right side wheel (g) to adjust the front wheel drive belt. See Figure 2-12.

NOTE: DO NOT overtighten the drive belt control cables (e). Turn the adjustment wheels 1/2 to 1 full turn at a time. Tighten each drive belt just enough to propel the mower when each drive is engaged.

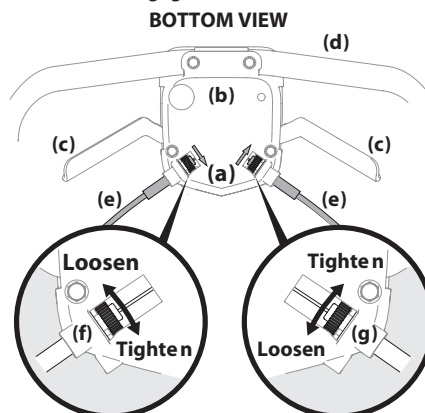


Figure 2-12

Set-Up

Gas and Oil Fill-Up

Refer to the Engine Operator's Manual for additional engine information.

1. Add provided oil before starting unit for the first time.
2. Service the engine with gasoline as instructed in the Engine Operator's Manual.



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

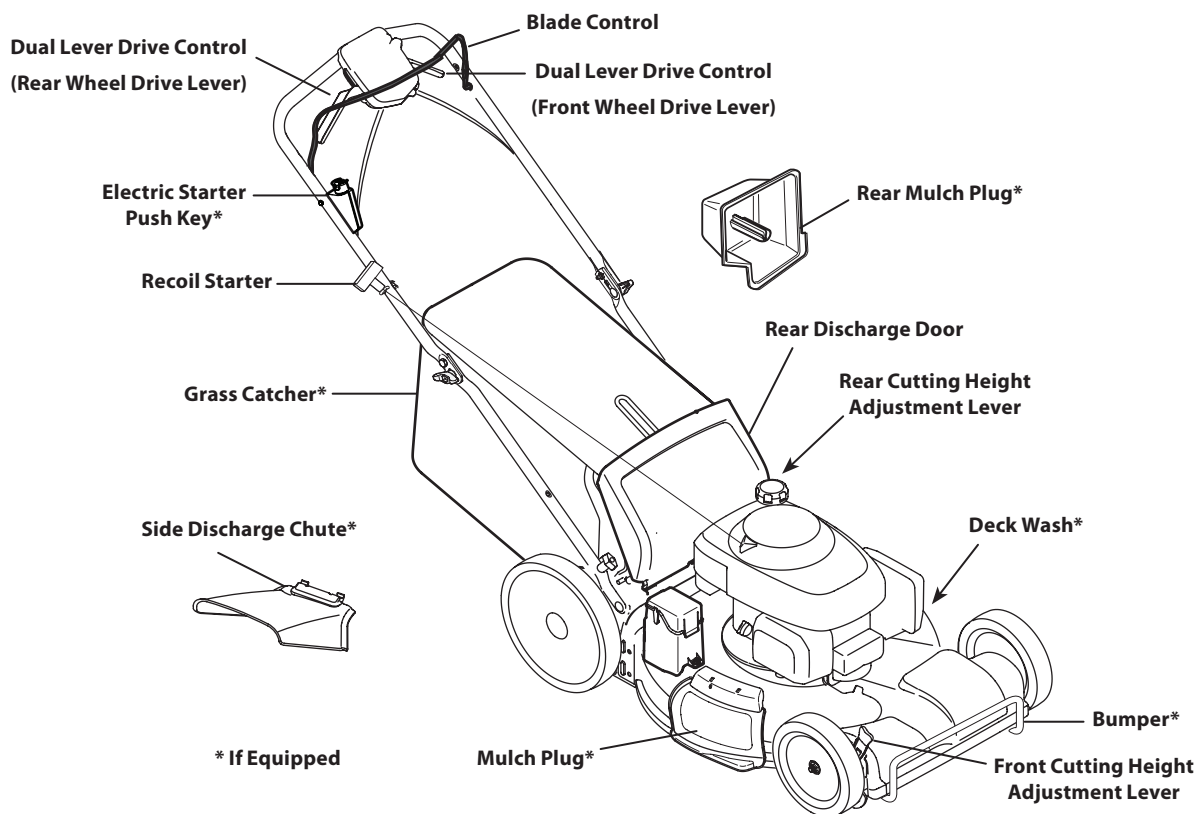


Figure 3-1

Controls and Features

Blade Control

The blade control is attached to the upper handle of the mower. Depress and squeeze it against the upper handle to operate the unit. Release it to stop engine and blade.



WARNING: The blade control is a safety device. Never attempt to bypass its operations.

Dual Lever Drive Controls

The dual lever drive controls are located on top of the upper handle and are used to engage the drives. Squeeze the right lever to engage the rear wheel drive. Squeeze the left lever to engage the front wheel drive. Completely releasing both levers will slow down or stop the mower from propelling.

Cutting Height Adjustment Lever

The front cutting height adjustment lever is located above the right front wheel. The rear cutting height adjustment lever is located above the left rear wheel. To adjust the cutting height, refer to Cutting Height Adjustment on page 8.

Grass Catcher (If Equipped)

The grass catcher, located at the rear of the mower, is used to bag the grass clippings for disposal. Once the bag is full, remove it up through the handles using the grass catcher handle and empty it.

Mulch Plugs (If Equipped)

The mulch plugs are used for mulching purposes. Instead of collecting the grass clippings in a grass catcher or using the side discharge chute, some mower models have the option of recirculating the clippings back to the lawn. This is called mulching.

Side Discharge Chute (If Equipped)

Your mower may be shipped as a mulcher. To discharge the grass clippings to the side, follow the instructions in the Side Discharge Chute section on page 7 to attach the side discharge chute.



WARNING: Keep hands and feet away from the chute area on cutting deck. Refer to warning label on the unit.

Deck Wash (If Equipped)

Your mower's deck may be equipped with a fast attach deck wash nozzle on its surface as part of its deck wash system. Use the deck wash to rinse grass clippings from the deck's underside.

Recoil Starter

The recoil starter is attached to the right upper handle. Stand behind the unit and pull the recoil starter rope to start the unit.

Electric Starter Push Key (If Equipped)

The electric starter push key is located on the right side of the upper handle. It is both a removable key and push button and is only provided on electric start models.

NOTE: On select units, the electric start is activated by a removable turn key.

Operation

Using Your Lawn Mower

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 injury to the operator, others, or the equipment.

Using as Mulcher (If Equipped)

For mulching grass, remove the side discharge chute (if equipped) or the grass catcher (if equipped). Ensure the rear mulch plug is installed and allow the rear discharge door to close the rear opening of mower. For effective mulching, do not cut wet grass. If the grass has been allowed to grow in excess of four inches, mulching is not recommended. Use the grass catcher to bag clippings instead.

Using Grass Catcher (If Equipped)

Use the grass catcher to collect clippings while you are operating the mower.

1. Attach grass catcher following instructions in the Grass Catcher section on page 7. Grass clippings will automatically collect in bag as you run mower. Operate mower until grass bag is full.
2. Stop engine completely by releasing the blade control. Make sure that the unit has come to a complete stop.
3. Lift discharge door and pull grass bag up and away from the mower to remove the bag. Dispose of the grass clippings and reinstall the bag when complete.



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.

Starting & Stopping Engine

Refer to the Engine Operator's Manual for instructions on starting and stopping the engine.

Dual Lever Drive Controls

NOTE: Do not engage the dual lever drive controls while starting the engine.

NOTE: Once the engine is running and while using the mower, continue holding the blade control (a) against the upper handle (b). See Figure 3-2.

NOTE: Release the blade control to stop the engine.

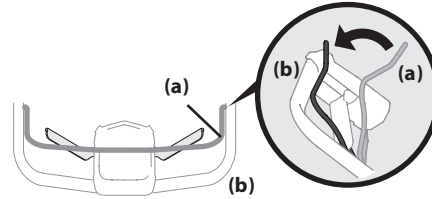
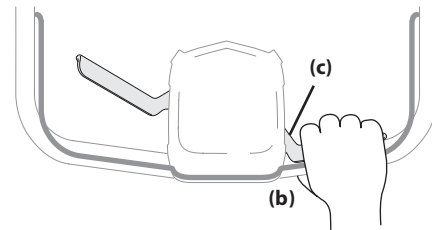


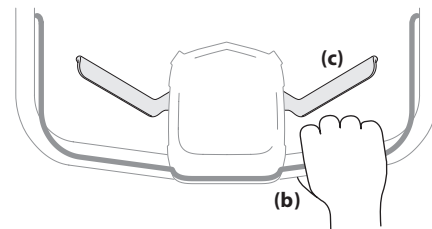
Figure 3-2

Using Mower as Rear Wheel Drive Only:

1. Squeeze the right lever drive control (c) against the upper handle (b) to engage the rear wheel drive.

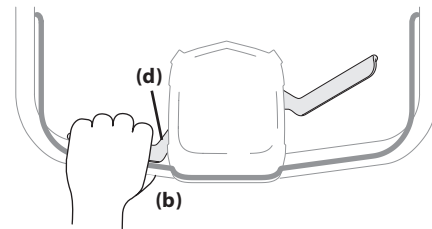


2. Release the right lever drive control (c) to disengage the rear wheel drive.

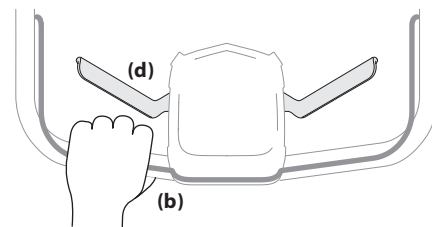


Using Mower as Front Wheel Drive Only:

1. Squeeze the left lever drive control (d) against the upper handle (b) to engage the front wheel drive.

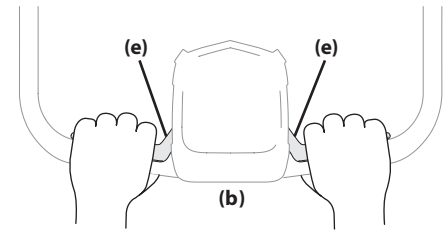


2. Release the left lever drive control (d) to disengage the front wheel drive.



Using Mower as All Wheel Drive:

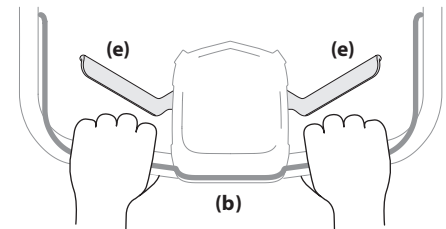
1. Squeeze both lever drive controls against the upper handle to engage all wheel drive.



NOTE: After all wheel drive is engaged only one of the lever drive controls must be held to keep both front and rear wheel drives engaged and propelling the mower.

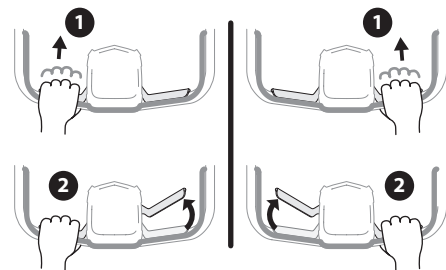


2. Release both lever drive controls to disengage all wheel drive.



NOTE: To disengage the front wheel drive (left lever) or rear wheel drive (right lever) while in all wheel drive perform the following:

- Allow the lever to move away from the upper handle.
- The opposite lever will unlock and drop away from the upper handle, disengaging the drive.
- Squeeze the lever to keep the drive engaged.



Maintenance

General Recommendations

- Always observe safety rules when performing any maintenance.
- 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 these are tight.



WARNING: Always stop engine, allow engine to cool, disconnect spark plug, and ground against engine before performing any type of maintenance on your machine.

Lubrication

1. Lubricate pivot points on the blade and drive controls at least once a season with light oil. These controls must operate freely in both directions. See Figure 4-1.

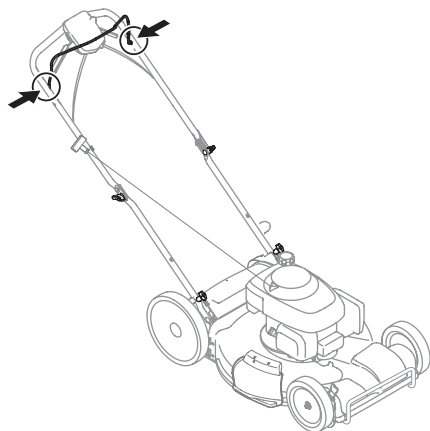


Figure 4-1

2. The transmission is pre-lubricated and sealed at the factory and does not require lubrication.
3. Follow the Engine Operator's Manual for lubrication schedule and instruction for engine lubrication.

Deck Care

Clean underside of the mower deck after each use to prevent build-up of grass clippings or other debris. Follow steps below for proper cleaning.

1. Allow the engine to run until it is out of fuel. Do not attempt to pour fuel from the engine. Disconnect spark plug wire. Refer to Engine Operator's Manual.
2. Tip mower so that it rests on the housing. Keep the side with the air cleaner facing up. Hold mower firmly.



WARNING: Never tip mower more than 90° in any direction and do not leave mower tipped for any length of time. Oil can drain into upper part engine causing a starting problem.

3. Scrape and clean the underside of the deck with a suitable tool.
4. Put the mower back on its wheels on the ground.

Engine Care

A list of key engine maintenance jobs required for good performance by the mower are listed below. Follow the Engine Operator's Manual for a detailed list and instructions.

- Maintain oil level as instructed in Engine Operator's Manual.
- Service air cleaner every 25 hours of use under normal conditions. Clean every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the Engine Operator's Manual.
- Clean spark plug and reset the gap once a season. Spark plug replacement is recommended at the start of each mowing season. Check Engine Operator's Manual for correct plug type and gap specifications.
- Clean engine regularly with a cloth or brush. Keep the top of the engine clean to permit proper air circulation. Remove all grass, dirt, and combustible debris from muffler area.
- Engines stored between 30 and 90 days need to be treated with a gasoline stabilizer to prevent deterioration and gum from forming in fuel system or on essential carburetor parts.

Deck Wash (If Equipped)

Your mower's deck may be equipped with a water port on its surface as part of its deck wash system.

Use the deck wash to rinse grass clippings from the deck's underside and prevent the buildup of corrosive chemicals. Complete the following steps **AFTER EACH MOWING**:

1. Push the mower to a level, clear location on your lawn. Ensure your garden hose can reach your mower.



CAUTION: Make certain the mower's discharge chute is directed **AWAY** from your house, garage, parked cars, etc.

2. Remove the fast attach deck wash nozzle from the mower deck and thread it onto the end of your garden hose.
3. Attach garden hose with the deck wash nozzle to the water port on your deck's surface. See Figure 4-2.

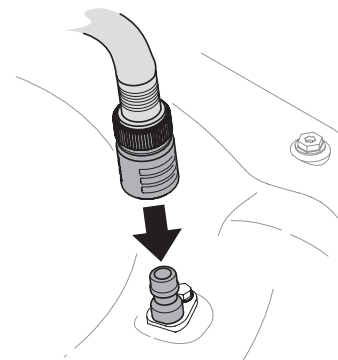


Figure 4-2

4. Turn the water ON.
5. Start the engine as described in the Engine Operator's Manual.
6. Run the engine for a minimum of two minutes, allowing the underside of the cutting deck to thoroughly rinse.
7. Release blade control to stop the engine and blade.
8. Turn the water OFF and detach the deck wash nozzle from the water port on your deck's surface.

After cleaning your deck, restart the mower. Keep the engine and blade running for a minimum of two minutes, allowing the underside of the cutting deck to thoroughly dry.

Blade Care



WARNING: When removing the cutting blade for sharpening or replacement, protect your hands with a pair of heavy gloves or use a heavy rag to hold the blade.

Periodically inspect the blade adapter for cracks, especially if you strike a foreign object. Replace when necessary. Follow the steps below for blade service.

1. Allow the engine to run until it is out of fuel. Do not attempt to pour fuel from the engine. Disconnect spark plug wire. Refer to Engine Operator's Manual.
2. Turn mower on its side making sure that the air filter and the carburetor are facing up.
3. Remove bolt (a) and blade bell support (b) which hold the blade and the blade adapter to the engine crankshaft. See Figure 4-3.
4. Remove blade (c) and adapter (d) from the crankshaft. See Figure 4-3.

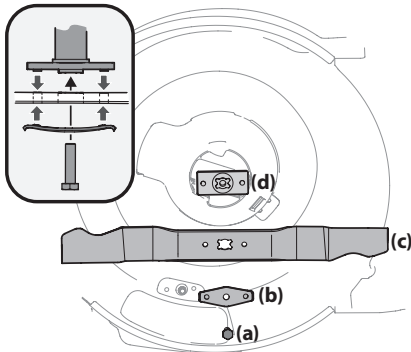


Figure 4-3

5. Remove blade from the adapter for testing balance. Balance the blade on a round shaft screwdriver to check. Remove metal from the heavy side until it balances evenly. When sharpening the blade, follow the original angle of grind. Grind each cutting edge equally to keep the blade balanced.



WARNING: An unbalanced blade will cause excessive vibration when rotating at high speeds. It may cause damage to mower and could break causing personal injury.

6. Lubricate the engine crankshaft and the inner surface of the blade adapter with light oil. Slide the blade adapter (d) onto the engine crankshaft. Place the blade on the adapter such that the side of the blade marked "Grass Side" (or with part number) faces the ground when the mower is in the operating position. Make sure that the blade is aligned and seated on the blade adapter flanges. See Figure 4-3 inset.
7. Place blade bell support (b) on the blade (c). Align notches on the blade bell support with small holes in blade.

8. Replace hex bolt (a) and tighten hex bolt to torque: 450 in-lb (min.), 600 in-lb (max.).

To ensure safe operation of your mower, periodically check the blade bolt for correct torque.

Belt Care

NOTE: Several components must be removed in order to change the mower's belt. See an authorized Service Dealer to have your belt replaced.

Replacing Battery (If Equipped)



WARNING: Batteries contain sulfuric acid which may cause burns. Do not short circuit or damage batteries in any way. Do not put batteries in fire as these may burst or release toxic materials.

1. Unhinge cover seal and remove battery cover.
2. Remove positive and negative leads from battery, and pull up on battery to remove. See .

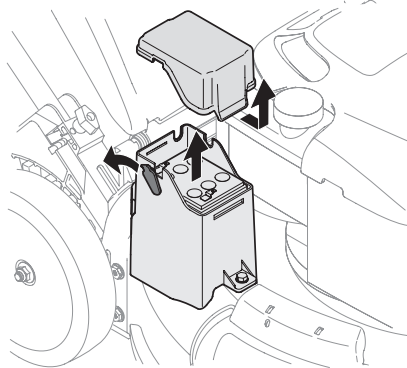


Figure 4-4

3. Replace with new battery. Connect the positive lead (red) to the positive side of the battery pack, then connect the negative lead (black) to the negative side. See Figure 4-5.

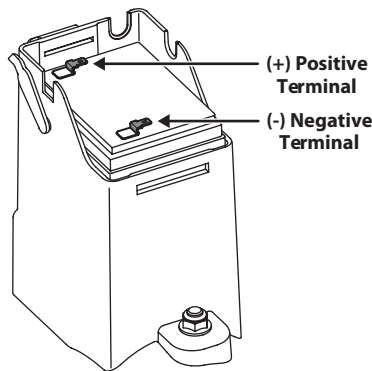


Figure 4-5

4. Reattach battery cover and cover seal.

Charging Battery (If Equipped)



WARNING: The battery contains corrosive fluid and toxic material; handle with care and keep away from children. Do not puncture, disassemble, damage or incinerate the battery. Explosive gases could be vented during charging or discharging. Use in a well ventilated area, away from sources of ignition.

NOTE: The special designed plug on the charger will only fit into plug on battery box.

1. Unhinge the cover seal and plug the battery charger into the port on the side of the battery housing. See Figure 4-6.

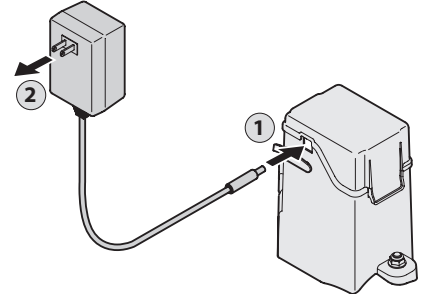


Figure 4-6

2. Insert the battery charger plug into a standard 120V household outlet. Charge battery for 8 to 10 hours before initial use. Do not charge longer than 12 hours. The battery should only need to be charged upon initial setup, at the end of the season, after any other extended periods of non-use, and as needed.

NOTE: If you frequently stop and restart the mower during each cut throughout the season (for instance when bagging), more frequent charging may be necessary.

3. After charging, disconnect charger plug from outlet first, then disconnect charger lead from battery and reattach cover seal.

IMPORTANT: Do not remove the battery pack from the electric starter housing for any reason other than replacement.

IMPORTANT: Always plug charger lead into battery pack lead first, and then insert battery charger plug into 120V standard household outlet. Follow this order of action every time you charge the battery.

Problem	Cause	Remedy
Engine fails to start	<ol style="list-style-type: none"> 1. Blade control disengaged. 2. Spark plug boot disconnected. 3. Fuel tank empty or stale fuel. 4. Engine not primed (if equipped with primer). 5. Faulty spark plug. 6. Blocked fuel line. 7. Engine flooded. 8. Fuel valve (if equipped) closed. 9. Engine not choked (if equipped with choke). 	<ol style="list-style-type: none"> 1. Engage blade control. 2. Connect wire to spark boot. 3. Fill tank with clean, fresh gasoline. 4. Prime engine as instructed in the Engine Operator's Manual. 5. Clean, adjust gap, or replace. 6. Clean fuel line. 7. Wait a few minutes to restart; do not prime. 8. Open fuel valve. See Engine Operator's Manual. 9. Choke engine. See Engine Operator's Manual.
Engine fails to start with electric starter (Electric Start Units Only)	<ol style="list-style-type: none"> 1. Electric starter push key not fully inserted. 2. Battery not charged. 3. Circuit breaker tripped. 4. Battery pack temperature too hot or current draw too high. (Briggs & Stratton Electric Start Units Only) 	<ol style="list-style-type: none"> 1. Insert electric starter push key into starter housing until it snaps into place. 2. Charge battery. 3. Debris may be blocking blade operation. Stop engine, remove electric starter push key, and disconnect spark plug boot. Verify grass or other debris are not obstructing the blade. Carefully clean out debris if necessary. Reattach spark plug boot and reinsert electric starter push key. Wait one minute after tripping for circuit breaker to automatically self-reset then reattempt start. 4. Allow battery to cool. Battery does not have a fuse but will automatically reset after 10 seconds.
Engine runs erratic	<ol style="list-style-type: none"> 1. Spark plug boot loose. 2. Blocked fuel line or stale fuel. 3. Vent in gas cap plugged. 4. Water or dirt in fuel system. 5. Dirty air cleaner. 6. Unit running with CHOKE (if equipped) applied. 	<ol style="list-style-type: none"> 1. Connect and tighten spark plug boot. 2. Clean fuel line; fill tank with clean, fresh gasoline. 3. Clear vent. 4. Drain fuel tank. Refill with fresh fuel. 5. Refer to Engine Operator's Manual. 6. Push CHOKE knob in.
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Air flow restricted. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil. 2. Clean area around and on top of engine.

Problem	Cause	Remedy
Occasional skips (hesitates) at high speed	1. Spark plug gap too close.	1. Adjust spark plug gap. Refer to Engine Operator's Manual.
Idles poorly	1. Spark plug fouled, faulty, or gap too wide. 2. Dirty air cleaner.	1. Reset gap or replace spark plug. 2. Refer to Engine Operator's Manual.
Excessive vibration/noise	1. Cutting blade loose or unbalanced. 2. Bent/damaged blade or blade adapter.	1. Tighten blade and adapter. Balance blade. 2. See an authorized service dealer.
Mower will not mulch grass (if equipped)	1. Wet grass. 2. Excessively high grass. 3. Dull blade.	1. Do not mow when grass is wet; wait until dry to cut. 2. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting path. 3. Sharpen or replace blade.
Uneven cut	1. Wheels not positioned correctly. 2. Dull blade.	1. Place front and rear wheels in same height position. (Dual lever height adjusters only) 2. Sharpen or replace blade.
Mower will not self propel	1. Belt not installed properly. 2. Debris clogging drive operation. 3. Damaged or worn belt. 4. Drive control out of adjustment.	1. Check belt for proper pulley installation and movement. 2. Stop engine, disconnect spark plug boot, and clean out debris. 3. Inspect and replace belt. 4. Adjust drive control. Refer to page 8 in Assembly and Set-Up.
High pullback effort	1. Pulling mower backwards before transmission disengages. 2. Drive control adjusted too tight.	1. Allow the unit to roll forward slightly without the drive lever(s) engaged before pulling backwards. 2. Readjust drive control. Refer to page 8 in the Assembly & Set-Up section.

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