

OPERATOR'S MANUAL

Push Mower

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Record Product Information

Before setting up and operating your new mower, please locate the model plate on the equipment and record the information in the provided area to the right. You can locate the model plate by standing at the operator's position and looking down at the rear of the deck. This information will be necessary, should you seek technical support via our web site, Customer Support Department, or with a local authorized service dealer.

Model Number

Serial Number

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 - SAVE THESE INSTRUCTIONS.

WARNING

CALIFORNIA PROPOSITION 65

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.

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.



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!**

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 debris. Failure to observe the following safety instructions could result in serious injury or death.

GENERAL INFORMATION

1. Read, understand, and follow all instructions on the mower and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation.
3. Never allow children under 14 years of age to operate this mower. Children 14 and over should read and understand the instructions and safe operation practices in this manual and on the mower and should be trained and supervised by an adult.
4. Never allow adults to operate this mower without proper instruction.
5. Store mower in a dry, clean area. Do not store next to corrosive materials, such as fertilizer.
6. If situations occur which are not covered in this manual, use care and good judgment. Contact your customer service representative for assistance.
7. According to the U.S. Consumer Products Safety Commission (CPSC) and the U.S. Environmental Protection Agency (EPA), this product has an estimated useful life of seven (7) years, under ordinary use conditions. At the end of its useful life, have the product inspected annually to ensure all mechanical and safety systems are operating properly, safely, and are not worn excessively. Failure to do so may result in accident, injury, or death.
3. Be aware of the mower and attachment discharge direction and do not point the mower discharge at anyone.
4. 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.
5. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Loose fitting clothes, jewelry and long hair can be caught in moving parts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended.
6. Never operate mower in bare feet, sandals, slippery or light-weight (e.g. canvas) shoes.
7. Never over fill fuel tank. Fill tank to no more than 1" (2.5 cm) below bottom of filler neck to allow space for fuel expansion.
8. Replace gasoline cap and tighten securely.
9. Use only accessories and attachments approved for this mower by the mower manufacturer. Read, understand and follow all instructions provided with the approved accessory or attachment.

OPERATING

PREPARATION BEFORE OPERATING

1. Thoroughly inspect the area where the mower 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(s). Thrown objects can cause serious personal injury.
2. To help avoid blade contact or a thrown object injury, stay in the operator zone behind the mower handles. Keep helpers at least 75 feet (23 meters) from the mower while it is in operation. Keep bystanders, children and pets inside while the mower is in operation. Stop mower if anyone enters the area.
3. 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 losing your balance or footing; immediately release the handle.
3. 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.

SAFE OPERATION PRACTICES

4. Do not engage the drive control (if equipped) while starting engine.
5. 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 freely in both directions and automatically return to the disengaged (off) position when released. The cutting blade continues to rotate for up to three seconds after the blade control is released. Never place any part of the body in the blade area until you are certain the blade has stopped rotating.
6. If the mower should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
7. Never operate mower without the 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.
8. 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.
9. Do not put hands or feet near rotating parts or under the cutting deck. Contact with the blade(s) can amputate hands and feet.
10. Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain or hidden objects could cause a slip and/or trip accident. Tall grass can hide obstacles.
11. Your mower is designed to cut normal residential grass of a height no more than 7" (17.5 cm). Do not attempt to mow through unusually tall, dry grass (e.g., pasture) or piles of dry leaves.
12. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, helpers and the like. Avoid discharging material against a wall or obstruction which may cause discharged material to ricochet back toward the operator.
13. 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 up to three seconds after the blade control is released. Never place any part of the body in the blade area until you are certain the engine is off and the blade has stopped rotating.
14. A missing or damaged discharge door, chute or mulch plug can cause blade contact or thrown object injuries.
15. Do not operate the mower without the discharge door, chute, mulch plug or the entire grass catcher in its proper place.
16. Stop the mower blade when crossing gravel drives, walks, or roads and while not cutting grass.
17. Mow only in daylight or good artificial light.

18. Do not operate the mower while under the influence of alcohol or drugs.
19. The muffler and engine become very hot and can cause serious burn injuries. Do not touch. Allow the mower to cool for at least five minutes before storing or attempting any service.
20. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.

CHILDREN

1. 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.
2. Keep bystanders, children and pets inside while the mower is in operation under watchful care of a responsible adult other than the operator. Stop mower if anyone enters the area.
3. Be alert and turn mower off if a child or bystander enters the area.
4. Never allow children under 14 years of age to operate this mower. Children 14 and over should read and understand the instructions and safe operation practices in this manual and on the mower and should be trained and supervised by an adult.
5. This mower is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. This mower has been designed to perform one job: to mow grass. Do not use it for any other purpose.
6. Use extreme care when approaching blind corners, doorways, shrubs, trees or other objects that may block your vision of a child who may run into the path of the mower.
7. Keep children away from hot or running engines. They can suffer burns from a hot engine or muffler.
8. If your mower is equipped with an Electric Start Push Key, remove the key when the mower is unattended to prevent unauthorized operation. Make certain the key is inaccessible to small children.

SLOPE OPERATION FOR WALK-BEHIND MOWERS

1. Slopes are a major factor related to slip and fall accidents which can result in severe injury or death. All slopes require extra caution. If you feel uneasy on the slope, do not mow it.
2. For your safety, measure any slope before using the mower on the sloped area. Use a slope measuring device in addition to the slope gauge included as part of this manual to measure slopes before operating this mower on a sloped or hilly area. Smart phone applications can be also utilized to measure slopes. If the slope is greater than 15 degrees (25%) as shown on the slope gauge or a slope measuring device, do not operate this mower on that area or serious injury could result.
3. Do not mow on slopes greater than 15 degrees (25%).

SAFE OPERATION PRACTICES

4. Only mow across slopes, never mow up and down slopes.
5. The mower may speed up when turning downhill, always turn uphill. Maintain control of the mower at all times.
6. Do not mow on wet grass. Unstable footing could cause slipping.
7. Do not operate the mower under any conditions where traction or stability is in question. Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your balance or footing, release the blade control handle immediately and the blade will stop rotating within three (3) seconds.
8. Stay at least 3 feet (1 meter) from drop-offs, ditches, embankments or the edge of water. You could lose your balance or footing.

FIRE & FUEL

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. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
3. Only use an approved portable fuel (gasoline) container. Use only containers certified by EPA, CARB, and/or OSHA.
4. Never remove gas cap or add fuel while the engine is hot or running. Allow engine to cool at least five minutes before refueling.
5. Never fuel the mower indoors.
6. Never store the mower or fuel container inside where there is an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.
7. If fuel is spilled, wipe it off the engine and mower. Clean up oil or fuel spillage and remove any fuel soaked debris. Move the mower to another area. Wait at least 5 minutes before starting the engine.
8. To reduce fire hazards, keep mower free of grass, leaves, or other debris build-up. Follow the instructions in the Service and Maintenance section to keep your mower free of debris.
9. Never over fill fuel tank. Fill tank to no more than 1" (25mm) below bottom of filler neck to allow space for fuel expansion.
10. Replace gas cap and tighten securely.
11. Allow a mower to cool at least five minutes before fueling or storing.
12. 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.
13. When practical, 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.
14. 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.

SERVICE

1. Keep the mower in good working order. Replace worn or damaged parts.
2. 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. Do not change the engine governor settings or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
3. Mower blades are sharp. Wrap the blade or wear gloves, and use extra caution when servicing them.
4. 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.
5. Ensure the blade comes to a complete stop within (3) three seconds after operating the blade control. If the blade does not stop in less than three seconds, your mower must be serviced professionally by an authorized service dealer. Check for proper operation per the Service and Maintenance section.
6. Regularly check the safety interlock system for proper function, as described later in this manual. If the safety interlock system does not function properly, have your mower serviced professionally by an authorized service dealer.
7. Never tamper with the blade control safety interlock or other safety devices. Check for proper operation per the Service and Maintenance section.
8. Check the mower blade and engine mounting bolt torque in accordance to the Service and Maintenance section in this manual. Also, visually inspect blade for damage (e.g., excessive wear, bent, cracked). Replace the blade with the original equipment manufacturer's (O.E.M.) blade only.
9. Use of service parts which do not meet the original equipment specifications may lead to improper performance and compromise safety.
10. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition. Check all hardware for tightness per the Service and Maintenance section.

SAFE OPERATION PRACTICES

11. After striking a foreign object, stop the engine, disconnect the spark plug wire(s) and ground against the engine. Thoroughly inspect the mower for any damage. Repair the damage before starting and operating
12. Never attempt to make wheel cutting height adjustments or repairs to the mower while the engine is running.
13. Grass catcher components and the discharge cover 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. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety."
14. Maintain or replace safety and instruction labels, as necessary.
15. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.

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) and Three Way Catalyst (TWC) if so equipped.

When required, models are equipped with low permeation fuel lines and fuel tanks for evaporative emission control. California models may also include a carbon canister. Please contact Customer Support for information regarding the evaporative emission control configuration for your model.

SPARK ARRESTOR

WARNING

This mower 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.

SLOPE GAUGE (BACK COVER)

WARNING








Slopes are a major factor related to slip and fall accidents which can result in severe injury or death. All slopes require extra caution. If you feel uneasy on the slope, do not mow it. Do not mow on slopes greater than 15 degrees (25%). Only mow across slopes, never mow up and down slopes.

USE THE SLOPE GAUGE ON THE BACK COVER AS SHOWN TO DETERMINE IF A SLOPE IS TOO STEEP FOR SAFE OPERATION! To check the slope, proceed as follows:

1. Open manual to 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.
4. Adjust gauge up or down until the left corner touches the slope.
5. If there is a gap below the gauge, the slope is too steep for safe operation.

SAFETY SYMBOLS

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

Symbol	Description
	WARNING — READ THE OPERATOR'S MANUAL(S) Read, understand and follow all the safety rules and instructions in the manual(s) and on the mower before attempting to operate this mower. Failure to comply with this information may result in personal injury or death. Keep this manual in a safe location for future and regular reference.
	DANGER — AVOID AMPUTATION INJURY Do not put hands or feet near or under the cutting deck. Contact with the blade can amputate hands and feet.
	DANGER — AVOID CHILD RUNOVER/BLADE INJURY Do not mow when children or others are around. To help avoid blade contact or a thrown object injury, stay in the operator zone behind the mower handles. Keep helpers at least 75 feet (23 meters) from the mower while it is in operation. Keep bystanders, children and pets inside while the mower is in operation. Stop mower if anyone enters the area.
	DANGER — AVOID THROWN OBJECT INJURY Keep helpers at least 75' (23 meters) from mower during operation. Remove all stones, sticks, wire, bones, toys, and other foreign objects which could be picked up and thrown by the blade(s). Do not operate the mower without the discharge cover or entire grass catcher in its proper place.
	DANGER — AVOID SLIP AND FALL ON SLOPES Slopes are a major factor related to slip and fall accidents which can result in severe injury or death. All slopes require extra caution. If you feel uneasy on the slope, do not mow it. Do not mow on slopes greater than 15 degrees (25%). Only mow across slopes, never mow up and down slopes.
	WARNING—GASOLINE IS FLAMMABLE Allow the engine to cool at least five minutes before refueling.
	WARNING— AVOID BURN INJURY The muffler and engine become very hot and can cause serious burn injuries. Do not touch. Allow the mower to cool for at least five minutes before storing or attempting any service.

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!**

ASSEMBLY

IMPORTANT: This mower is shipped without gasoline or oil in the engine. Be certain to service engine with gasoline and oil as instructed in the Operation section of the Engine Operator's Manual before starting or operating your mower.

NOTE: Reference to right and left hand side of the Lawn Mower is observed from the operating position.

Unpacking

OPENING CARTON

1. Cut each corner of the carton vertically from top to bottom.
2. Remove all loose parts:
 - Grass Catcher (if equipped)
 - Engine Oil
3. Remove loose packing material.

REMOVING MOWER FROM CARTON

1. Lift mower from the rear to detach it from underlying carton material and roll mower out of carton.
2. Check carton thoroughly for any other loose parts.

Mower Assembly

Perform the following Procedures to assemble and set up the mower:

- **Handle Assembly**
 - Pull-Out Handle. See page 7.
 - Vertical Storage Handle. See page 8.
- Recoil starter Rope Handle Assembly
- Attaching the Grass Catcher (if equipped)
- Attaching Side Discharge Cover (if equipped)

NOTE: If necessary, refer to the procedures in the Adjustments Section after assembling the mower.

Handle Assembly

PULL-OUT HANDLE

1. Remove any packing material which may be between upper and lower handles.
2. Remove knobs or wing nuts and carriage bolts from the handle (Figure 1). Do not loosen or remove adjacent hex head screws.

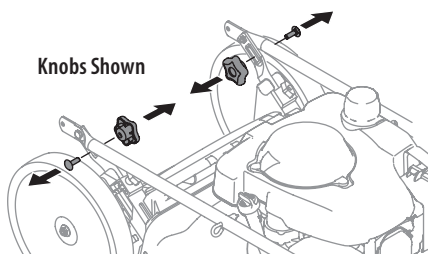


Figure 1

3. While stabilizing mower so it doesn't move, pivot upper handle up (Figure 2). Do not crimp blade control cable while lifting the handle up.

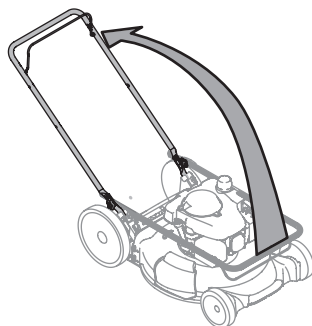


Figure 2

4. Remove T-bolts from the handle brackets (Figure 3).

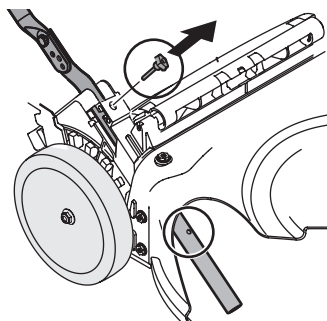


Figure 3

5. Pull upward on the handle (Figure 4) until holes in lower handle line up with holes in handle brackets (Figure 3 deck cutaway).

NOTE: When pulling upward on handle, do not pull handle all the way out of the handle brackets.

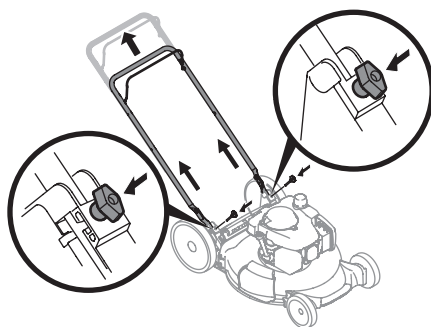


Figure 4

ASSEMBLY

6. Insert the T-bolts removed in STEP 4 through the handle brackets and lower handle (Figure 4) and tighten securely to secure the handle in place.
7. Reattach knobs or wing nuts and carriage bolts removed in STEP 2 into lower holes of the handle (Figure 5).

Knobs Shown

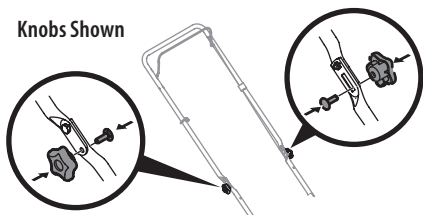


Figure 5

VERTICAL STORAGE HANDLE

1. Remove the four carriage bolts and nuts from the lower handles (Figure 6).

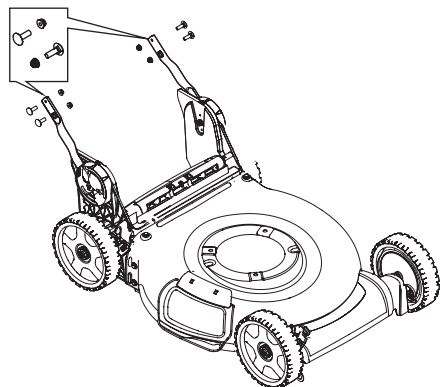


Figure 6

2. Unlock the two handle release levers. See inset, Figure 7.
3. Ensure the lower handles are folded forward towards the front of the mower.

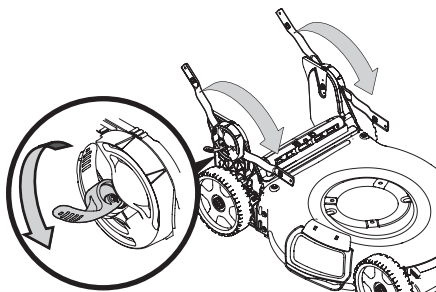


Figure 7

4. Using the four carriage bolts and nuts removed in STEP 2, secure the upper handle to the lower handle. Tighten hardware securely to secure the handle in place.

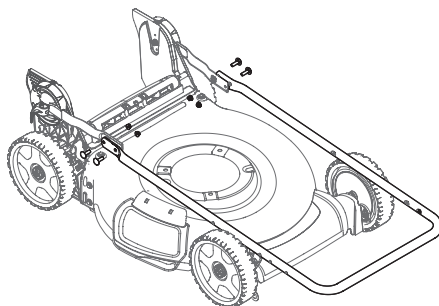


Figure 8

5. While stabilizing mower so it doesn't move, lift the upper handle up (a) (Figure 9). Do not crimp blade control cable while lifting the handle up.
6. When lifting the upper handle ensure the position indicator (b) aligns with one of three handle positions (c). See inset, Figure 9.
7. Lock the two handle release levers. See inset, Figure 9.
8. Ensure all hardware is securely tightened.

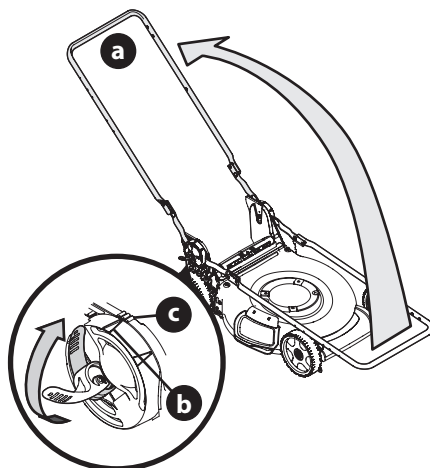


Figure 9

ASSEMBLY

Recoil Starter Rope Handle Assembly

NOTE: The rope guide is attached to the right side of the upper handle. Loosen the knob securing the rope guide (Figure 10).

NOTE: Vertical Storage Mowers Only: The recoil starter rope is equipped with a rope stop clamp to prevent the starter rope being pulled into the engine. Do not remove the rope stop clamp.

1. Hold blade control against upper handle.
2. Slowly pull recoil starter rope handle from engine and slip starter rope into the rope guide.
3. Tighten rope guide knob.

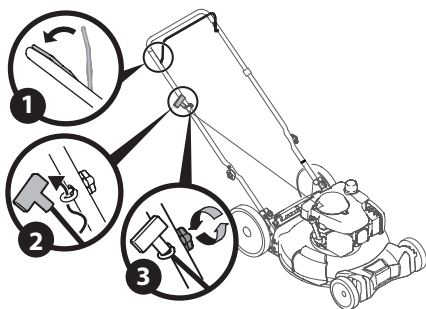


Figure 10

Attaching the Grass Catcher (if equipped)

1. Perform the following to assemble the grass catcher (Figure 11).

NOTE: Before assembling the grass catcher, ensure the grass bag is turned right side out, with the warning label showing on the outside.

- a. Place bag over frame so that its black plastic side is at the bottom.
- b. Slip plastic channels (a) of grass bag over the frame (b).

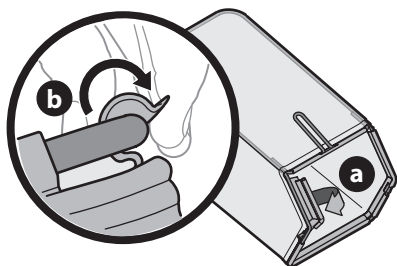


Figure 11

2. Follow steps below to attach grass catcher (Figure 12).
 - a. Lift mower rear discharge door (a).
 - b. Place grass catcher into the slots in the handle brackets (b). Lower the discharge door so that it rests on the grass catcher.

NOTE: To remove grass catcher reverse STEP 2. Lift mower rear discharge door. Lift grass catcher up and off the slots in the handle brackets and lower the rear discharge door.

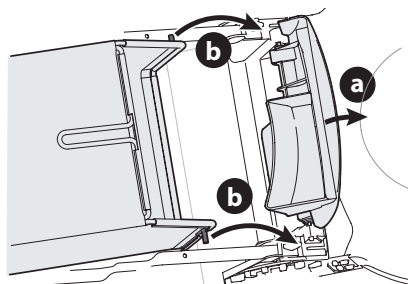


Figure 12

Attaching Side Discharge Cover (if equipped)

The mower is shipped as a mulcher. To convert to side discharge, ensure the grass catcher is removed and the rear discharge door is closed.

1. Lift the side mulch cover (Figure 13).
2. Slide the two hooks of the side discharge cover under the mulch cover hinge pin. Lower the side mulch cover.

IMPORTANT: Do not remove side mulch cover at any time.

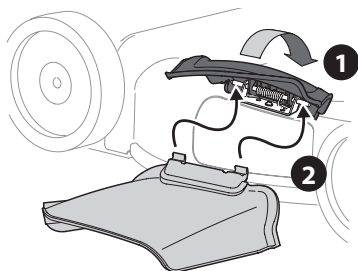


Figure 13

NOTE: Some side discharge chutes include a clip to secure the discharge chute to the handle. If equipped, the side discharge chute can be secured to the handle when not in use (Figure 14).

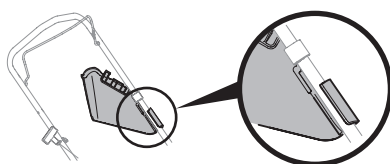


Figure 14

ADJUSTMENTS

Cutting Height Adjustment

There are two cutting height adjustment configurations. Refer to the section applicable to your mower.

SINGLE LEVER (IF EQUIPPED)

The single lever cutting height adjustment is located above the rear left wheel (Figure 15).

1. Carefully pull the height adjustment lever outward towards wheel (mower will tend to fall when lever is moved outward).
2. Move lever to desired position for a change in cutting height.
3. Release lever towards deck.

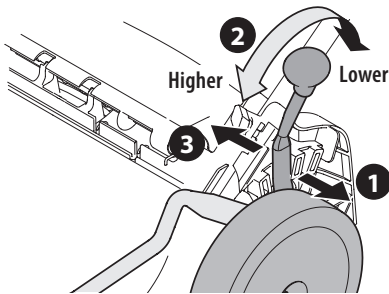


Figure 15

DUAL LEVER (IF EQUIPPED)

The dual lever cutting height adjustment levers are located above the front and rear right wheel (Figure 16).

1. Carefully pull the height adjustment lever outward towards wheel (mower will tend to fall when lever is moved outward).
- NOTE:** The front and rear height adjustment levers move in the opposite direction to adjust.
2. Move lever to desired position for a change in cutting height.
 3. Release lever towards deck.

IMPORTANT: To avoid uneven cutting, all wheels must be placed in the same cutting height position. For rough or uneven lawns, move each height adjustment lever to a higher position. This will prevent you from cutting the grass too close to the ground.

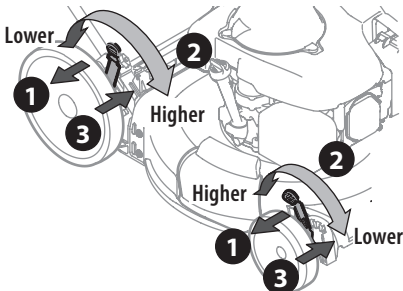


Figure 16

Handle Pitch Adjustment (If Equipped)

For convenience of operation, you may adjust the pitch of the handle. Perform one of the following.

PULL-OUT HANDLES

1. Remove two knobs or wing nuts and carriage bolts from handle (Figure 17).
2. Position the handle in one of the three positions that is most comfortable. See inset, Figure 17.
3. Secure into position with two knobs or wing nuts and carriage bolts removed in STEP 1.

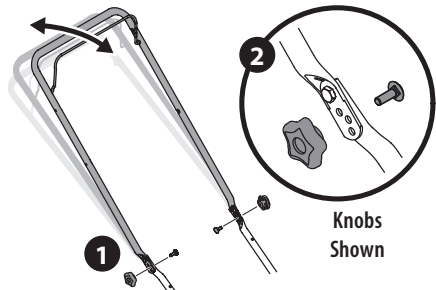


Figure 17

VERTICAL STORAGE HANDLES

1. Unlock the two handle release levers. See inset, Figure 18.
2. Move the upper handle (a) to align the position indicator (b) with the most comfortable of the three handle positions (c).
3. Lock the two handle release levers. See inset, Figure 18.

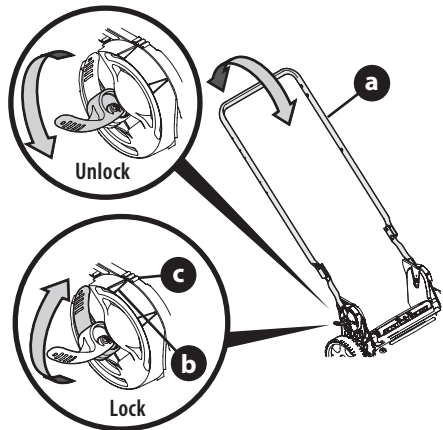


Figure 18

OPERATION

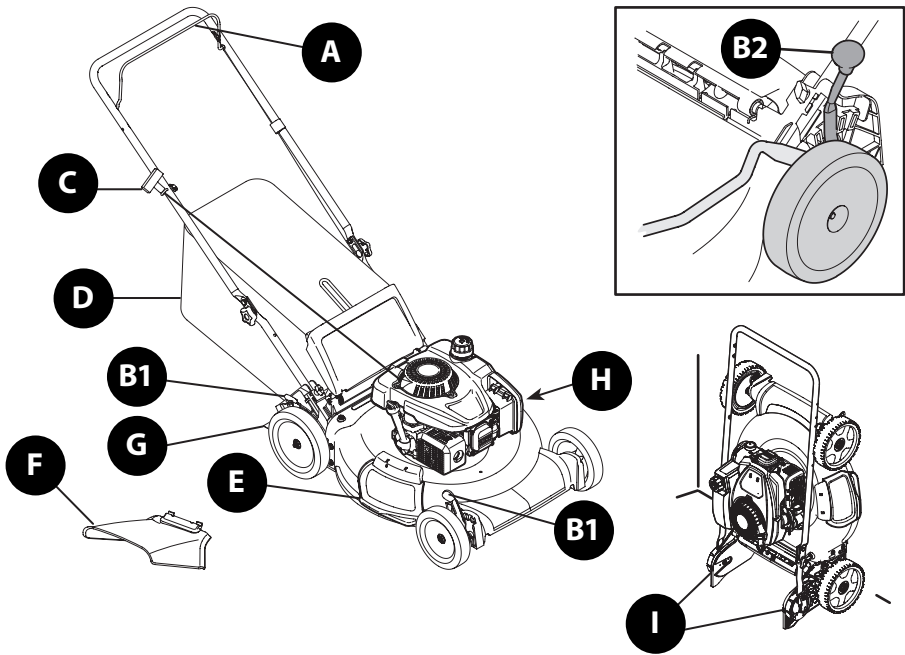


Figure 19

Features

A. 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 mower. Release the blade control to stop blade and engine.

WARNING

This blade control is a safety device. Never attempt to bypass its operation.

B. CUTTING HEIGHT ADJUSTMENT LEVER

There are two cutting height adjustment configurations.

- 1. Dual Lever** - The dual lever cutting height adjustment levers are located above the front and rear right wheels. To adjust the cutting height, refer to Cutting Height Adjustment on page 10.
- 2. Single Lever** - The cutting height adjustment lever is located above the rear left wheel. To adjust the cutting height, refer to Cutting Height Adjustment on page 10.

C. RECOIL STARTER

The recoil starter is attached to the right upper handle. Standing behind the mower and while holding the blade control down, pull the recoil starter handle to start the mower.

D. GRASS CATCHER (IF EQUIPPED)

The grass catcher, located at the rear of the mower, is used to collect the grass clippings for disposal. Once the bag is full, remove it up through the handles and empty it before any further mowing.

E. MULCH PLUG (IF EQUIPPED)

The mulch plug is located on the right side of the mower and is used for mulching purposes (recirculating the clippings back to the lawn).

OPERATION

F. SIDE DISCHARGE CHUTE (IF EQUIPPED)

The side discharge chute is used to discharge grass clippings to the side of the mower instead of collecting the clippings in the grass catcher or using the mower as a mulcher.

WARNING

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

G. TRAIL SHIELD

The trail shield is attached to the rear of the mower and is there to protect the operator from flying debris. Do not use the mower unless the shield is fully functional and in place.

H. 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.

I. VERTICAL STORAGE (IF EQUIPPED)

This feature allows the handle to be folded forward and the mower tipped back and stored vertically.

WARNING

Standing a mower without the vertical storage feature in the upright position may cause damage to the engine or cause a fuel or oil leak.

Only mowers with the vertical storage feature include an engine that can be stored in the upright position.

Gasoline And Oil Fill-up

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

This mower is shipped without gasoline (fuel) or oil in the engine. Be certain to service engine with gasoline and oil as instructed before starting or operating your lawn mower.

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

To Start Engine

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.

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

To Stop Engine

Release blade control to stop the engine and blade.

WARNING

Wait for the blade to stop completely before performing any work on the mower or to remove the grass catcher.

Check blade stopping time is within 3 seconds. If blade does not stop within 3 seconds contact your Service Center.

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 thrown by the blade in any direction and cause serious personal injury to the operator and helpers.

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.

Using Mower as a Mulcher

For mulching grass, remove the grass catcher from the mower. When you remove the grass catcher from the mower allow the rear discharge door to close completely. 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 collect clippings instead.

OPERATION

Using Mower with Grass Catcher

You can use the grass catcher to collect clippings while you are operating the mower.

1. Attach grass catcher following instructions in the Assembly section. Grass clippings will automatically collect in bag. Operate mower until grass bag is full.
2. Stop engine by releasing the blade control. Make sure that the engine has come to a complete stop.
3. Lift rear 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. Disconnect the spark plug wire, 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 mower should be promptly inspected and repaired.

Vertical Mower Storage (If Equipped)

⚠ WARNING

Storing a mower without the vertical storage feature in the upright position may cause damage to the engine or cause a fuel or oil leak.

Only mowers with the vertical storage feature include an engine that can be stored in the upright position.

Do not store the mower outside or in damp area. Store mower in a dry, clean area.

STORING THE MOWER

⚠ WARNING

Wait for engine to cool before wiping or storing.

IMPORTANT: Before storing the mower in the vertical position ensure the fuel level is at or below the recommended fill level. Refer to the Engine Operator's Manual.

1. Using compressed air or dry rag clean the outside of the mower and remove any debris from around the engine.
2. If equipped, remove the starting key.
3. Unlock the two handle release levers. See inset Figure 20.
4. Fold the handle (b) forward to the storage position (Figure 20). Do not crimp blade control cable or the drive control cable (if equipped) while lowering the handle.

5. Lock the two handle release levers. See inset Figure 20.

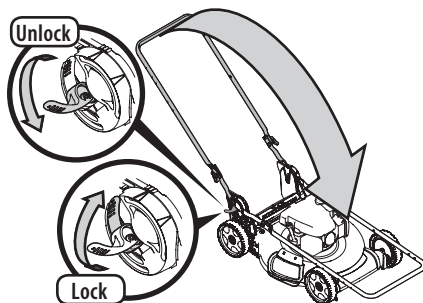


Figure 20

6. Lifting from the handle (a), tilt the mower up onto the rear wheels and back of the handle bracket (b) (Figure 21).
7. Position the mower so that the blade is facing a wall.

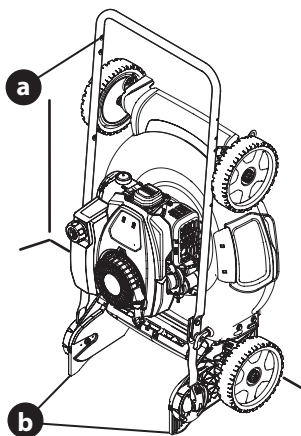


Figure 21

REMOVING THE MOWER FROM STORAGE

⚠ WARNING

When moving the mower or unfolding the handle do not put hands or feet near or under the cutting deck. Otherwise serious injury may occur.

To prevent accidentally starting the mower engine when unfolding the handle, do not hold the blade control against the upper handle. Otherwise serious injury may occur.

1. Holding the mower by the upper handle, gently set the mower down on all four wheels.
2. To unfold the handle, unlock the two handle release levers (inset, Figure 21) and perform STEPS 5-8 in ASSEMBLY, Vertical Storage Handle on page 8.

SERVICE AND 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. Allow the engine to cool. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

General Recommendations

- Always observe safety rules on the mower and in the manual(s) when performing any maintenance.
- The warranty on this mower does not cover items that have been subjected to operator abuse or negligence. To receive full value from warranty, operator must maintain the mower as instructed here.
- Changing of engine-governed speed will void engine warranty.
- Check that all hardware is in place & secure and tight before each use and before off season storage.

Lubrication

BLADE CONTROL

Lubricate pivot points on the blade control at least once a season and before storage with light oil. This control must operate freely in both directions (Figure 22).

WHEELS

Lubricate all wheel hubs/axles at least once a season and before storage with light oil (Figure 22).

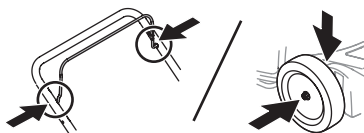


Figure 22

Engine Maintenance

Annually check the engine mounting bolts torque: Min. 29.2 ft-lbs (39.6 N-m), Max. 41.7 ft-lbs (56.3 N-m).

Refer to the Engine Operator's Manual packed with your mower for a detailed description of all engine-related service specifications and storage.

If engine runs erratic, overheats, skips (hesitates) or idles poorly refer to the Engine Operator's Manual.

IMPORTANT: Check engine oil level before each use. Refer to Engine Operator's Manual.

CLEAN ENGINE

- Before every use, clean grass, chaff or accumulated debris from engine. Keep linkage, spring, and controls clean. Keep area around and behind muffler free of any combustible debris.
- Keeping engine clean allows air movement around engine.
- Engine parts should be kept clean to reduce the risk of overheating and ignition of accumulated debris.

⚠ CAUTION

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

Mower Maintenance

DECK WASH (IF EQUIPPED)

Your mower's deck may be equipped with a 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 (Figure 23).
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.
9. 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.

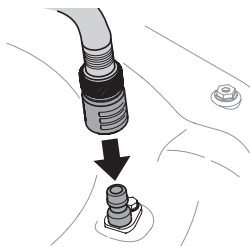


Figure 23

SERVICE AND MAINTENANCE

DECK CLEANING

At least once a season and before storage, clean the underside of the mower deck to prevent build-up of grass clippings or other debris.

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 keeping the muffler side down and making sure that the air filter and the carburetor are facing up. Hold mower firmly.
3. Scrape and clean the underside of the deck with a suitable tool. Do not spray with water.

IMPORTANT: Do not use a pressure washer or garden hose to clean your mower. These may cause damage to bearings or the engine. The use of water will result in shortened life and reduce serviceability.

4. Put the mower back on its wheels on the ground.

Blade Care

⚠ WARNING

Wait for the blade to stop completely before performing any work on the mower or to remove the grass catcher.

Check blade stopping time is within 3 seconds. If blade does not stop within 3 seconds contact your Service Center.

⚠ 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.

Annually check the mower blade mounting bolt torque: Min. 37.5 ft-lbs (50.8 N-m), Max. 50.0 ft-lbs (67.8 N-m).

Periodically inspect the blade and blade adapter for bends or cracks, especially if you strike a foreign object or experience excessive vibration. 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.
2. Disconnect spark plug wire. Refer to Engine Operator's Manual.
3. Turn mower on its side keeping the muffler side down and making sure that the air filter and the carburetor are facing up.
4. Remove bolt (a) and blade bell support (b) which hold the blade and the blade adapter to the engine crankshaft (Figure 24).
5. Remove blade (c) and blade adapter (d) from the crankshaft

6. Remove blade from the blade adapter for testing balance.
 - a. Balance the blade on a round shaft screwdriver to check.
 - b. Remove metal from the heavy side until it balances evenly.

NOTE: 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 engine and blade could break causing personal injury.

7. Lubricate the engine crankshaft and the inner surface of the blade adapter with light oil. See inset, Figure 24.
 - a. Slide the blade adapter (d) onto the engine crankshaft.
 - b. 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.
 - c. Make sure that the blade is aligned and seated on the blade adapter flanges.
8. Place blade bell support (b) on the blade (c). Align notches on the blade bell support with small holes in blade.
9. Replace hex bolt (a) and tighten hex bolt to torque: Min. 37.5 ft-lbs (50.8 N-m), Max. 50.0 ft-lbs (67.8 N-m).

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

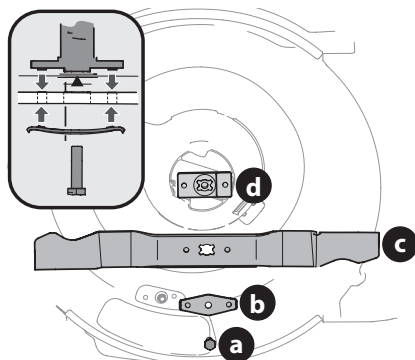


Figure 24