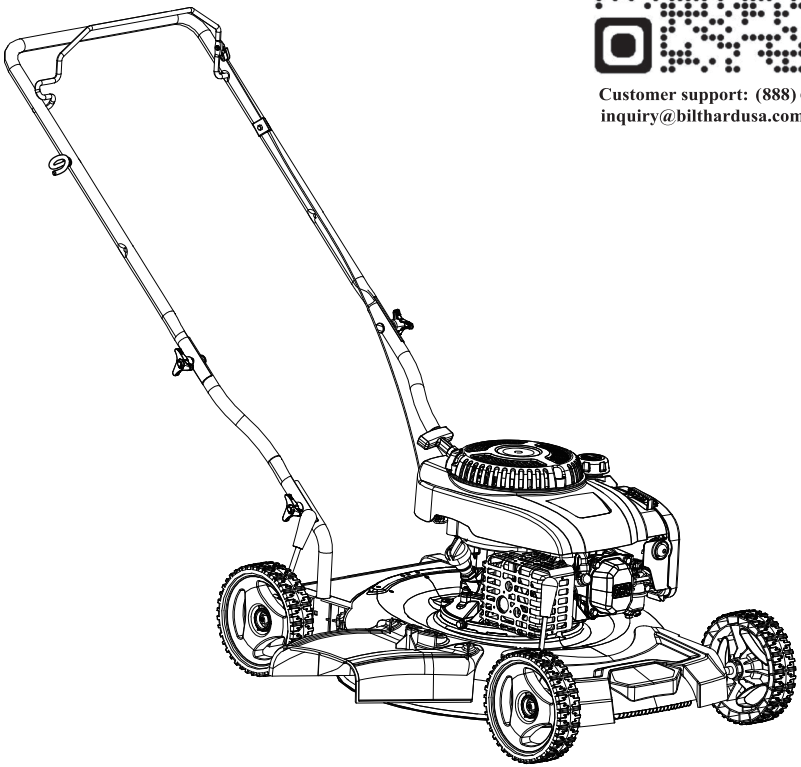
BILT HARD

SKU:TMA-0569

20'' Hand Push Lawn Mower

Using tips:
Video on Youtube

Customer support: (888) 680-2849
inquiry@bilthardusa.com



Thank you for ordering our product.If you have any issue,please email it and your order ID to inquiry@bilthardusa.com or call (888)680-2849

To the User

Welcome to your new lawn mower! To ensure safe and easy use of your machine, please read this entire manual carefully before operating it. This manual provides detailed instructions on how to properly set up, use, and maintain your lawn mower. It is crucial that you and any other individuals who will be operating the machine follow the recommended safety practices at all times to prevent personal injury or damage to property.

Please note that this Operator's Manual may cover a range of product specifications for various models, and the characteristics and features discussed may not apply to all models. We reserve the right to make changes to product specifications, designs, and equipment without prior notice or obligation.

Throughout this manual, all references to the right and left sides of the machine are observed from the operating position to ensure proper orientation.

Please keep in mind that the engine manufacturer is responsible for all engine-related issues, such as performance, power-rating, specifications, warranty, and service. For more information, please refer to the engine manufacturer's Owner's/Operator's Manual, which is packed separately with your machine.

IMPORTANT NOTICE:

1. Machines may not be fully assembled and may be sold in cartons. It is the user's responsibility to ensure that the assembly instructions in this manual are followed exactly.
2. Even if the machine is pre-assembled, the user must still check to ensure that it has been correctly assembled before every use.
3. Before starting the machine, the user must carefully inspect it to ensure that it is in good working condition. Do not operate the machine if it is damaged or not functioning properly."

Record Product Information

To order parts or seek technical help, the following information is necessary:

1. The required information can be found on the rear flap or rear area of the chassis.
2. Additional information including DATE MANUFACTURED may be obtained from your local dealer.

Model: _____

Date Manufactured(DD/MM/YYYY): _____

Date Purchased(DD/MM/YYYY): _____

Machine Parameters

Drive Type	Push Type
Engine Brand	Rato RV145-S
Engine Displacement	144cc
Engine Horsepower	3.4HP
Engine Max Power	2.5 kW/3600rpm
Engine Max Torque	7.8 N.m/2500rpm
Engine Oil Volume	16.9 fl.oz
Engine Fuel Volume	27.1 fl.oz
Blade Type	Straight Blade
Cutting Height	**0.6 - 2.4inch**
Height Adjustment	**Dual-Lever 6-Position Height Adjustment**
Cutting Width	20 inch
Catcher Type	**Side discharge**
Deck Type	**20 inch Steel Deck**

Important Safe Operation Practices

DANGER: This machine was designed to be operated in accordance with the safe operation practices outlined in this manual. As with any type of power equipment, operator error or carelessness can result in serious injury. This machine is capable of amputating fingers, hands, toes, and feet, and can also throw objects with great force. Failure to adhere to the following safety instructions could result in serious injury or even death.

General Operation

1. Please read this manual thoroughly before starting to assemble the machine. Make sure to carefully follow all instructions provided in the manual and on the machine before using it. Store this manual in a secure location for future reference and if replacement parts are needed.

2. Ensure that you have a thorough understanding of the controls and correct usage of the machine before operating it.

3. This machine is a powerful tool that requires careful handling. Please use caution at all times. Its purpose is to mow grass, and it should not be used for any other activities.

4. This machine is not intended for use by children under 14 years of age. Individuals aged 14 and above should carefully read and comprehend the operating instructions and safety guidelines provided in this manual and on the machine. They should also receive appropriate training and supervision from an adult before operating the machine.

5. This machine should only be operated by responsible individuals who are knowledgeable and follow the rules of safe operation.

6. Before using the equipment, carefully examine the area where it will be operated. Clear away any stones, sticks, wire, bones, toys or other debris that could cause tripping or be hurled by the blade. Flying objects can result in severe injury, so exercise caution.

7. When mowing, plan your pattern carefully to prevent debris from being discharged towards roads, sidewalks, bystanders, or other areas. Be sure to avoid discharging material against walls or obstructions, as it may bounce back towards the operator and cause injury.

8. Remain in the designated operator zone behind the handles to minimize the risk of blade contact or injury from thrown objects. Make sure children, bystanders, helpers, and pets are at least 75 feet away from the mower during operation. If anyone enters the area, stop the machine immediately.

9. It is crucial to wear safety glasses or goggles at all times while operating the machine or making any adjustments or repairs. This will provide protection to your eyes against any thrown objects that may cause serious eye injuries, especially those that ricochet.

10. It is recommended to wear durable work shoes with rough soles and close-fitting clothing, such as pants and shirts that cover the arms and legs. Steel-toed shoes are also recommended. Operating the machine in bare feet, sandals, or lightweight shoes like canvas should be avoided.

11. Keep your hands and feet away from rotating parts and underneath the cutting deck. Blades can cause serious injuries, including amputation of fingers, hands, toes, and feet.

12. Operating the machine without a discharge cover, or with a damaged one, can result in injuries from blade contact or thrown objects.

13. Falls caused by slipping or tripping can result in serious injuries if the mower is pulled over the foot. If you are falling, do not hold on to the mower. Release the handle right away.

14. Avoid pulling the mower towards you while walking. If you need to move the mower away from a wall or obstacle, take the following precautions:
    a. Step away from the mower to extend your arms fully.
    b. Make sure you are balanced and have secure footing.
    c. Pull the mower slowly, no more than halfway towards you.
    d. Repeat these steps as necessary.

15. Operating the mower while under the influence of alcohol or drugs is strictly prohibited.

16. Do not try to disable or bypass the safety stop lever, as it is a safety feature. Such action can render the safety device useless and lead to serious injury from the spinning blade. The safety stop lever should work smoothly in both directions and automatically return to the disengaged position when released.

17. Only mow during daylight hours or when there is good artificial lighting. Walk, never run, while operating the mower.

18. Make sure to disengage the blade when you need to cross gravel drives, walks or roads.

19. In case of abnormal vibrations, immediately turn off the engine and investigate the cause. Vibrations are usually an indication of a problem that needs to be addressed.

20. Always turn off the engine and wait for the blade to come to a complete stop before clearing the chute. Even after the safety stop lever is released, the cutting blade may continue to rotate for a few seconds. Never put any part of your body near the blade area until you are certain the blade has stopped rotating.

21. Always ensure that safety protective devices such as the discharge cover, safety stop lever are in place and working correctly before operating the mower. Do not operate the mower if any safety device is damaged as it can cause personal injury.

22. The muffler and engine of the mower can become hot and cause burns. Avoid touching them while in operation.

23. Never attempt to adjust the wheel or cutting height while the engine is running.

24. Use only manufacturer-made parts and accessories specifically designed for this machine. Failure to do so can result in personal injury.

25. When starting the engine, pull the cord slowly until you feel resistance, then pull rapidly. Avoid rapid retraction of the starter cord (kickback) as it can pull your hand and arm toward the engine faster than you can let go, resulting in fractures, bruises, or sprains.

Slope Operation

Slopes present a significant risk for slip and fall accidents that may result in severe injuries. Therefore, extra caution must be taken when operating the machine on slopes. The machine's weight and gravity can speed it up when going downhill, so it's essential to be prepared to maintain control of the machine. To ensure your safety, always use the slope gauge included in the manual to measure slopes before operating the machine on sloped or hilly areas. Do not mow slopes greater than **15** degrees.

Do:

1. Always mow across the face of slopes and never up and down to avoid losing control.
2. Exercise extreme caution when changing direction on slopes, turn uphill, not downhill.
3. Watch out for holes, ruts, rocks, hidden objects, or bumps that can cause you to slip or trip. Tall grass can obscure obstacles.

4. Always make sure of your footing. If you feel you are losing your balance, release the safety stop lever immediately.

Do Not:

1. Do not mow near drop-offs, ditches, or embankments as you could lose your footing or balance.
2. 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, who may be attracted to the mower and the mowing activity. To ensure the safety of children, follow these guidelines:
1. Keep children out of the mowing area and under the watchful care of a responsible adult other than the operator.

2. Be alert and turn off the mower if a child enters the area.

3. Before and while moving backwards, look behind and down for small children.

4. Use extreme caution when approaching blind corners, doorways, shrubs, trees, or other objects that may obstruct your vision of a child who may run into the mower.

5. Keep children away from hot or running engines, as they can suffer burns from a hot muffler.

6. Never allow children under 14 years of age to operate this machine. Children aged 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.

Service

Safe Handling of Gasoline

1. Gasoline should be handled with extreme care to avoid personal injury or property damage since it is extremely flammable, and its vapors are explosive. If gasoline spills on you or your clothes, it can ignite and cause serious personal injury. Therefore, it is essential to wash your skin and change clothes immediately.

2. Only approved gasoline containers should be used.

3. Gasoline containers should not be filled inside a vehicle, or on a truck or trailer bed with a plastic liner. They should be placed on the ground away from the vehicle before filling.

4. Gas-powered equipment should be removed from the truck or trailer and refueled on the ground. If this is not possible, then refueling should be done from a gasoline dispenser nozzle, but on a trailer with a portable container.

5. The nozzle should remain in contact with the rim of the fuel tank or container opening throughout the refueling process, and a nozzle lock-open device should not be used.

6. All sources of fire such as cigarettes, cigars, pipes, etc. should be extinguished.

7. Machines should not be fueled indoors since flammable vapors accumulate in the area.

8. Gas cap should not be removed, nor fuel added while the engine is hot or running. The engine should be allowed to cool for at least two minutes before refueling.

9. The fuel tank should not be overfilled. It should be filled to no more than 1 inch below the bottom of the filler neck to provide for fuel expansion.

10. The gasoline cap should be replaced and securely tightened.

11. Gasoline spills should be wiped off the engine and equipment, and the machine moved to another area. The engine should not be started until five minutes have passed.

12. The machine or fuel container should not be stored near an open flame, spark, or pilot light such as on a water heater, space heater, furnace, clothes dryer, or other gas appliances.

13. To reduce the fire hazard, the machine should be kept free of grass, leaves, or other debris build-up. Oil or fuel spillage should be cleaned up, and fuel-soaked debris should be removed.

14. The machine should be allowed to cool for at least five minutes before storing.

General Service

1. Engines should never be run indoors or in a poorly ventilated area since engine exhaust contains carbon monoxide, an odorless and deadly gas.

2. Before cleaning, repairing, or inspecting, it should be ensured that the blade and all moving parts have stopped. The spark plug wire should be disconnected and grounded against the engine, and Electric Start Push Key (if equipped) should be removed to prevent unintended starting.

3. The blade and engine mounting bolts should be checked at frequent intervals for proper tightness. The blade should also be visually inspected for damage (e.g., bent, cracked, worn), and replaced with the original equipment manufacturer's (O.E.M.) blade only.

4. Mower blades are sharp and can cut. It is recommended to wrap the blade or wear gloves and use extra caution when servicing them.

5. All nuts, bolts, and screws should be kept tight to ensure the equipment is in safe working condition.

6. Safety devices should not be tampered with, and their proper operation should be checked regularly.

7. After striking a foreign object, the engine should be stopped, the spark plug wire disconnected and grounded against the engine, and the mower thoroughly inspected for any damage. The damage should be

repaired before starting and operating the mower.

8. The wheel or cutting height adjustment should not be attempted while the engine is running.

9. Grass discharge components should be checked frequently as they are prone to wear and damage. This can lead to the exposure of moving parts or the potential for objects to be thrown. To ensure safety, it is important to replace any damaged components immediately with original equipment manufacturer's (O.E.M.) parts only.

10. The engine's governor setting should not be changed or over-speeded. The governor is responsible for controlling the maximum safe operating speed of the engine.

11. It is recommended to check the fuel line, tank, cap, and fittings regularly for cracks or leaks. If any damage is found, the parts should be replaced immediately.

12. Do not attempt to crank the engine with the spark plug removed.

13. Safety and instruction labels should be maintained or replaced as necessary.

14. Proper disposal laws and regulations should be observed to prevent harm to the environment. Improper disposal of fluids and materials can have negative consequences.

Do Not Modify Engine

To prevent the risk of severe injury or death, refrain from modifying the engine in any manner. Adjusting the governor setting can result in an uncontrolled engine and may cause it to run at hazardous speeds. It's crucial to never alter the factory settings of the engine governor.

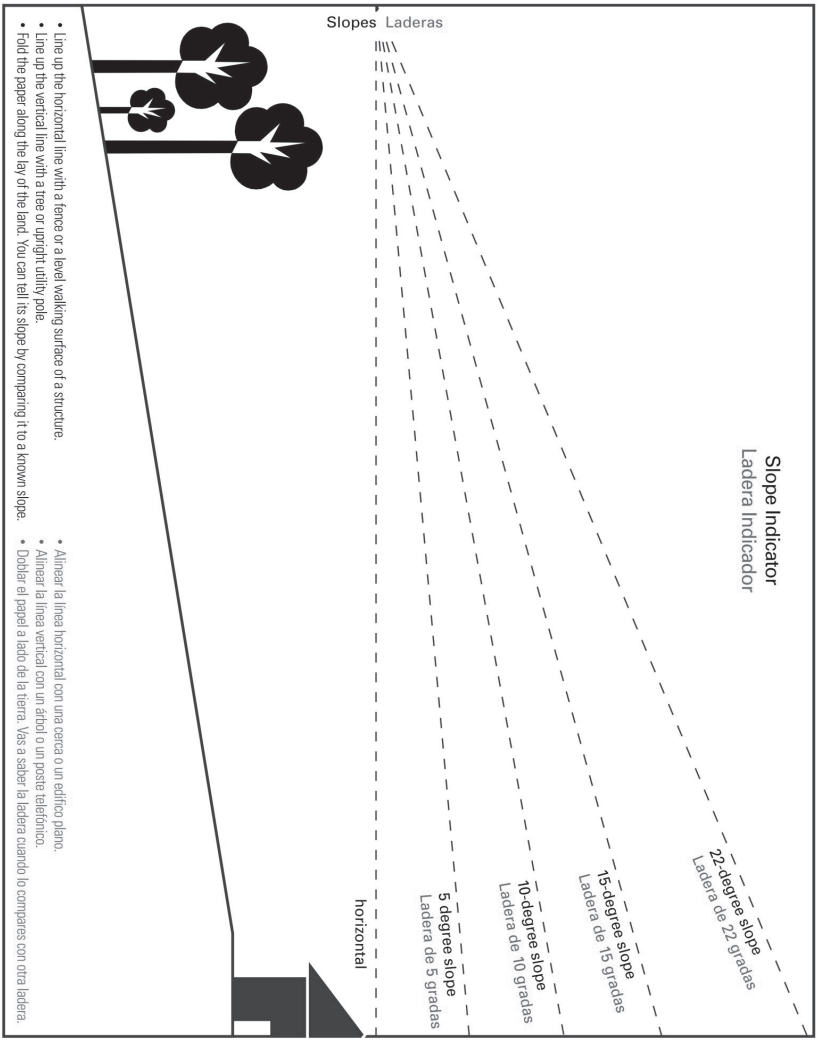
Safety Symbols

The following table illustrates and explains safety symbols that may be present on this product. It is important to carefully read, comprehend, and adhere to all instructions on the machine prior to attempting assembly and operation.

Symbol	Description
	**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.

Slope Gauge

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.

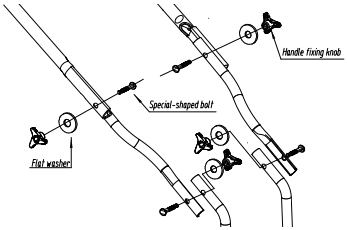


Preparation and Installation

Install Handle

1. Place the upper and lower handle in their respective positions to ensure that the insulating spacer sleeve is properly installed, and then tighten the knob using special-shaped bolt and bolt washer.

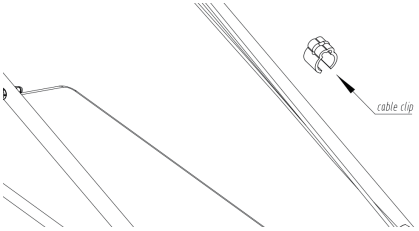
2. Secure the lower handle and the handle bracket with a round head square neck bolt and a flat washer, then tighten the lock nut and the knob nut to fix them completely.



Caution: When standing behind the lawn mower, ensure that the starter handle hook is located at the right handlebar.

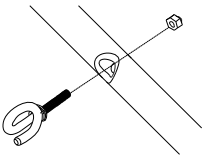
Secure the cable

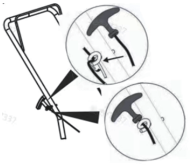
Secure the control cable to the handle by using the included cable clip, and put in order the cable.



Place the starter rope

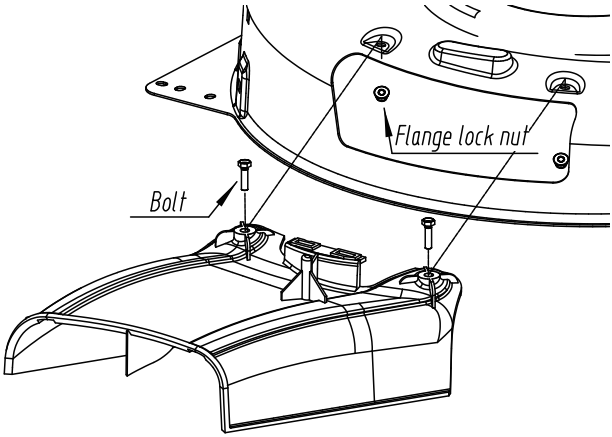
1. Pivot the control handle against the upper handle and pull the rope out of the engine.
2. Put the starter rope into the hook.
3. Before placing the starter rope, install the hook as shown below.





Install Side Discharge System

WARNING: The Side Discharge Chute is necessary for your safety consideration. In Side Discharge Mode, never operate the machine without this part fully installed.
Insert the bolt through the corresponding hole in the side discharge chute and the matching hole in the deck above, then tighten the nut from below. Repeat this process for the other installation hole.

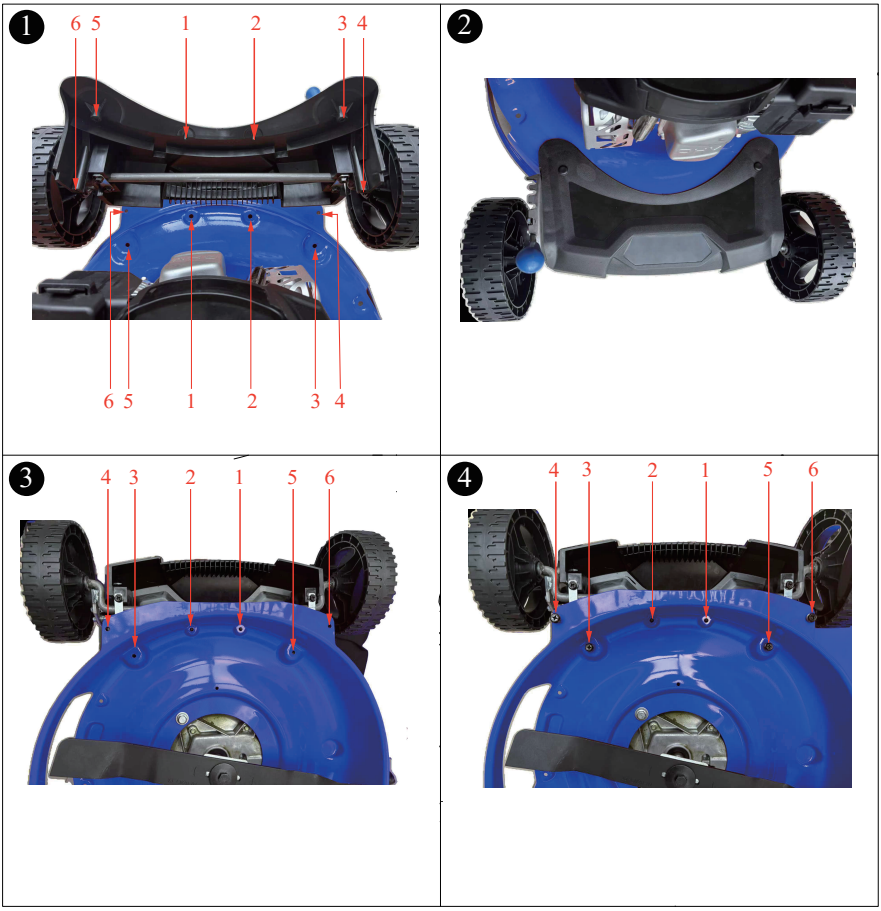


Side Discharge Function

To mow and not collect your cuttings, the machine is equipped with side discharge chute .
1. Recognize your model and install side discharge chute as Side Discharge Chute chapter described.
Please be noticed that side discharge chute must be installed in this mode. Warning:People are not allowed standing near discharge chute when the machine is started.
2. Start the machine and mow. The grass will be discharged from the side of the mower to the lawn

Install The Front Wheels Assy

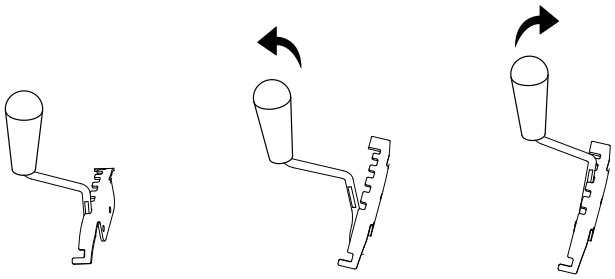
1. Install the front wheels assy at the designated position on the deck according to the numbering instructions in Figure 1. (Note: Install the locating pin 1 and 2 on the front wheels assy into the locating hole 1 and 2 on the deck.)
2. After the above intallation, the front view of the complete assy should match Figure 2. If not, check that all parts are properly seated.
3. Lift the front of the deck, referring to Figure 3. Check and adjust the locating pin 1 and 2, as well as the screw hole 3, 4, 5, and 6, to align them with the corresponding installation positions. If there are any deviations, please adjust immediately. Otherwise, the product may not operate properly
4. At position 3, 4, 5, and 6, use a screwdriver to tighten the hexagonal flange head self-tapping screws to secure the front wheels assy to the deck, as shown in Figure 4. (Note: Position 1 and 2 are only for locating, do not need hexagonal flange head self-tapping screws for fixation.).



Cutting Height Adjustment

(Dual-Lever Height Adjustment)

1. Pull the height adjusting handle outwards.
2. Move the handle to the corresponding position and select the desired cutting height.
3. Release the handle and ensure it clicks securely into position.
4. This model features a dual-lever 6-position height adjustment system, with positions ranging from Level 1 (lowest) to Level 6 (highest).
5. The height adjustment method for the front and rear levers is identical, and the front and rear cutting heights can be freely adjusted as needed.



Start the Lawn Mower

Start the Engine

Use the recoil starter handle to start the engine.

Caution:

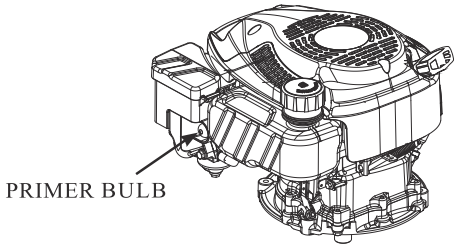
When the recoil starter is pulled, the blade will immediately start rotating.

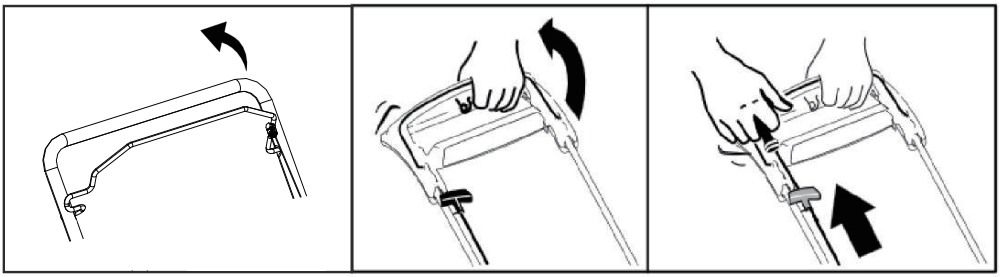
Caution:

1. Please do not use this machine in enclosed or poorly ventilated areas, as the exhaust gas contains toxic substances.
2. Keep hands, feet, and clothing away from all moving parts of the machine.
3. During use, the exhaust pipe and other engine components can become extremely hot. Avoid touch to prevent burns.
4. Before starting the engine, ensure that the blade is securely installed.

Recoil start

1. Fully press the primer bulb 3-5 times to prepare for engine start.
2. Stand behind the lawn mower. With one hand, pull the safety stop lever back to the upper handle grip position and hold it firmly.
3. Hold the recoil starter handle with the other hand.
4. Pull the recoil starter until you feel resistance, let it reset, and then firmly pull it to start the engine.





Caution

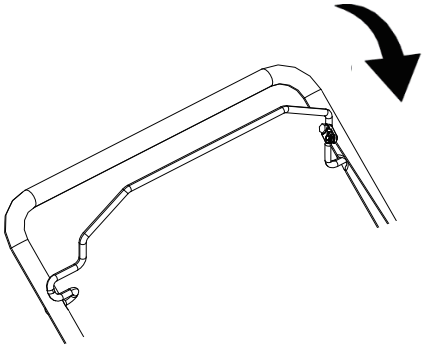
1. Pressing the primer bulb too many times may cause the engine to overflow with fuel.
2. When starting a warm engine, there is no need to use the primer bulb.
3. If the engine stalls due to insufficient fuel, refuel it, press the primer bulb 3-5 times, and then try to restart it again.
4. If the engine fails to start after three attempts, repeat steps 1 to 3.

Caution - when pulling the recoil starter handle

1. Slowly pull the handle until you feel resistance.
2. Reset it.
3. Then, pull hard and quickly to start the engine.
4. Gently put the recoil starter rope handle back in place.

Stop the engine

Release the safety stop lever, and it will automatically return to its initial position, then the engine will stop accordingly. When operating the lawn mower, do not release the safety stop lever.



Clean the engine

If the engine still fails to start after multiple attempts, it may be due to cylinder flooding caused by excessive fuel. Follow the steps below to clean and restart the engine:
1. Remove the spark plug.
2. Slowly pull the recoil starter rope several times.
3. Wipe the spark plug thoroughly and reinstall it.
4. As mentioned earlier, operate the recoil starter to restart the engine.

Caution

Be sure to manually install the spark plug carefully to avoid cross-threading. Once the spark plug is in place, tighten it by hand first, and then use a spark plug socket to tighten it an additional 1/8 to 1/4 turn to compress the washer.

General Tips for Lawn Mower

1. Check the area where the lawn mower will be used and remove obstacles such as branches and stones.
2. Avoid letting the blade hit hard objects, and do not intentionally use the blade to strike objects.
3. If the lawn mower hits an object or starts vibrating, immediately shut down the engine.
4. After all moving parts have stopped, disconnect the spark plug wire and check if the blade is damaged.
5. To ensure optimal performance, replace a new blade at the beginning of each cutting season or when necessary.

Grass cutting warning

1. Strictly follow safety procedures when operating the lawn mower. Carefully read and adhere to the safety instructions, and fully understand them before operation.
2. Never operate the machine without side discharge chute fully installed, the rotating blades may cause serious injury.

Caution

1. If there are grass clippings stuck in the grass discharge channel, use a brush to clean them. Do not attempt to remove grass clippings or other objects from the mower's housing or blades with your hands or feet.
2. Use appropriate tools (such as brushes, brooms) to clean up the grass clippings.
3. The grass discharging channel and the interior of the lawn mower housing must be unblocked.

Operation

Mowing: Cut a height of about one-third of the grass leaves each time. Unless the grass has gone dormant (growth has slowed down), avoid cutting it below 5cm (2 inches). When the grass height beyond 15cm (6 inches), first cut it at the highest cutting height to achieve a neat appearance, and then adjust the height to cut lower. Too long grass may cause the machine to become blocked or the engine to stall.
Wet grass and debris: Avoid cutting wet grass and leaves, as they tend to clump together and may cause the machine to become blocked or stall.
Dry environment: Be aware of fire hazards, follow local fire regulations, and keep the machine away from flammable materials such as dry grass and leaves.
Mowing direction: Alternate the mowing direction to evenly distribute the grass clippings, which is beneficial for lawn fertilization.
Poor lawn appearance: Try sharpening/replacing the blade, reducing speed, increasing cutting height, mowing more frequently, and not mowing the entire lawn one time (to avoid excessive rolling of the grass).
Mowing fallen leaves: After mowing, ensure that about half of the lawn surface is visible through the fallen leaves layer. If necessary, perform multiple operations. For thick fallen leaves, mow at a higher height first, then lower the height for a second mow. If the fallen leaves are not fully cut, slow down the mowing speed.

Warning

Before carrying out any maintenance or repair, shut down the engine and wait until the blade has completely stopped.

Maintenance Plan

Regular maintenance of the lawn mower is crucial for achieving reliable and trouble-free operation. Keep this manual properly for future reference.
We strongly recommend that you adhere to the maintenance schedule outlined in this manual. Following this schedule will help ensure that the lawn mower operates efficiently and safely.

	After 12 hours use	After 24 hours use	After 36 hours use
Air Filter	Clean	Clean	Replace
Spark Plug	Check	Clean	Replace
Engine Oil	Check	Replace	Check

Replace the engine oil after the first 5 hours of use.

Maintenance and safety

1. Before carrying out any maintenance, be sure to shut down the engine, wait for all moving parts to stop operating, and allow the engine to cool down before proceeding with adjustments, repairs, draining, or storage operations.
2. When repairing the lawn mower, wear gloves and take eye protection measures.
3. The blade is very sharp and may cause serious injury upon contact. Always wear gloves when operating or maintaining the blade. Do not attempt to repair or change the blade.
4. Do not tamper with safety devices without authorization. Conduct regular inspections to ensure their proper functioning.
5. Tilted lawn mower may lead to fuel leakage. Fuel is highly flammable and explosive, posing a serious risk of injury. Start the engine to burn off the fuel, or use a manual pump to drain the fuel. Do not suck it out through your mouth.
6. For optimal performance, always use original replacement parts and accessories. Using non-original parts may cause damage and void the warranty.

Spark Plug Maintenance

1. To achieve optimal performance, always use original replacement parts and accessories. Using non-original parts may cause damage and void the warranty.
2. Use a spark plug wrench to remove the spark plug.
3. Clean the spark plug with a wire brush (not provided in the attached tools).
4. Install the spark plug carefully by hand to avoid cross-threading.
5. Once the spark plug is in place, use a wrench to tighten it, ensuring that the washer is firmly compressed.

Replace Engine Oil

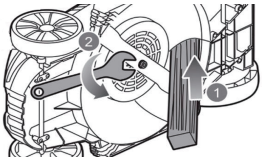
1. Tilt the lawn mower towards the air filter side and ensure that a container is ready to catch the engine oil.
2. Pull out the dipstick and allow the engine oil to drain completely into the container.
3. After draining the oil, wipe away all the spilled engine oil.
4. Fill the engine with engine oil or an equivalent oil product. Ensure that the oil level is between the "MIN" (minimum) and "MAX" (maximum) marks on the dipstick.
5. Start the engine and run it for a short period of time.
6. Shut down the engine, wait for 3 minutes, and then recheck the oil level. If necessary, add engine oil.

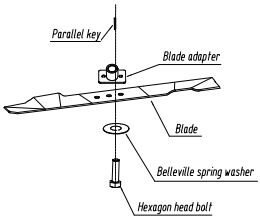
Warning

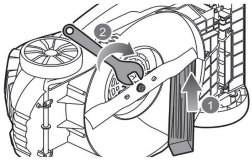
During operation, be careful to avoid contact with high-temperature components and prevent oil leakage that could cause fires and other hazards.

Replace Blade

1. To maintain optimal performance, inspect the blade at least once a year.
2. Tilt the machine to one side, ensuring that the air filter is facing upwards.
3. Fix the blade with a piece of wood to prevent it from rotating.
4. Remove the blade, retaining all installation hardware for reinstallation.
5. Install the new blade and all the saved installation hardware, ensuring that all components are securely fixed.







Store the Lawn Mower for a Short Period of Time

Store the lawn mower in a cool, clean, and dry area. Before storing, make sure to turn off the engine, wait for all moving parts to stop, allow them to cool down, and completely cease all operations before cleaning or adjusting.

The lawn mower can be srored for a short period (less than 30 days) without requiring complex storage maintenance. Before storage, the following steos need to be completed

1. Allow the engine to cool down completely.
2. Ensure that the grass collecting bag is empty.
3. Clear all debris from beneath the lawn mower's deck.
4. Store the lawn mower on a flat and level surface.
5. Properly store the lawn mower and keep it out of reach of children and those unfamiliar with its operation.

If the lawn mower needs to be stored for more than 30 days, the following storage maintenance steps should be followed. Failure to do so may make it difficult to start or require repairs the next time it is used

1. If there is a gasoline suction pump, empty the gasoline tank. If not, start the engine until the remaining fuel in the tank is exhausted.
2. Change the engine oil at the end of each season, drain the old oil while it is hot and add new oil.
3. Thoroughly clean the entire machine to protect the paint surface and prevent rusting.
4. Store the lawn mower in a well-ventilated area.

Warning

Please do not empty the fuel tank in enclosed areas, near open flames, or smoking areas. Gasoline vapor is flammable and explosive, posing a risk of fire or explosion.