

BILT HARD

Using tips:
Video on YouTube



HAND PUSH LAWNMOWER

SKU: TMA-0001

Read and keep this book for future reference.

This book contains important information on

SAFETY, ASSEMBLY, OPERATION, AND MAINTENANCE.

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

CONTENTS

● MACHINE PARAMETER	PAGE 1
● OWNER'S INFORMATION AND RESPONSIBILITY	PAGE 2
● IMPORTANT INFORMATION	PAGE 3-4
● SAFE MOWING GUIDE	PAGE 5-8
● STEP FOR MOWING	PAGE 9
● PARTS BAG FOR ASSEMBLE	PAGE 10
● HOW TO ACHIEVE THE SIDE DISCHARGE FUNCTION	PAGE 11
● ASSEMBLY	PAGE 12-14
● OPERATION	PAGE 15
● MAINTENANCE	PAGE 16-18
● TROUBLE SHOOTING CHART	PAGE 19
● REPAIR PARTS	PAGE 20-22
● WARRANTY	PAGE 23

Machine Parameter

Drive Type: Hand push

Engine Brand: Rato RV170-S

Engine Displacement: 170cc

Engine Horse Power: 3.8HP

Engine Max Power: 2.8kW/3600rpm

Engine Max Torque: 8.8N.m/2500rpm

Engine Oil Volume: 16.9 fl.oz

Engine Fuel Volume: 27 fl.oz

Blade Type: Straight Blade

Cutting Height: 1.2-3.2 inch

Height Adjustment: Central With 8 positions

Cutting Width: 20inch

Catcher Type: Side Discharge

Deck Type: Steel Deck

Wheel Diameter: Front 7", Rear 7"

OWNER'S INFORMATION

This instruction book is written for a person with some mechanical ability. Like most service books, not all the steps are described. Steps on how to loosen or tighten fasteners are steps anyone can follow with some mechanical ability. Read and follow these instructions before you use the unit.

Know your product: If you understand the unit and how the unit operates, you will get the best performance. As you read this manual, compare the illustrations to the unit. Learn the location and the function of the controls. To help prevent an accident, follow the operating instructions and the safety rules. Keep this manual for future reference.

IMPORTANT: Many units are not assembled and are sold in cartons. It is the responsibility of the owner to make sure the assembly instructions in this manual are exactly followed. Other units are purchased in an assembled condition. On assembled units, it is the responsibility of the owner to make sure the unit is correctly assembled. The owner must carefully check the unit according to the instructions in this manual before it is first used.

RESPONSIBILITY OF THE OWNER

The responsibility of the owner is to follow the instructions below.

1. Carefully read and follow the rules for safe operation.
2. Follow all the assembly and preparation instructions.
3. Inspect the unit.
4. Make sure that the operator of the unit knows how to correctly use all standard and accessory equipment.
5. Operate the unit only with guards, shields, and other safety items in place and working correctly.
6. Correctly adjust the unit.
7. Service the unit only with authorized or approved replacement parts.
8. Complete all maintenance on the unit.



WARNING:



Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the 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 birth defects or other reproductive harm. WASH HANDS AFTER HANDLING.

IMPORTANT

Safe Operation Practices for Walk Behind Mowers.

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

I. General Operation

1. Read, understand, and follow all instructions on the machine and in the manual(s). Be thoroughly familiar with the controls and the proper use of the mower before starting.
2. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
3. Only allow responsible individuals, who are familiar with the instructions, to operate the mower.
4. Thoroughly inspect the mower and area where the equipment is to be used. Clear the area of objects such as rocks, toys, wire, bones, sticks etc., which could be picked up and thrown by the blade.
5. Be sure the area is clear of other people before mowing. Stop mower if anyone enters the area.
6. Do not operate the mower when barefoot or wearing open sandals. Always wear substantial foot wear.
7. Do not pull mower backwards unless absolutely necessary. Look down and behind before and while moving backwards.
8. Do not operate the mower without proper guards, plates, grass catcher or other safety protective devices in place.
9. See manufacturer's instructions for proper operation and installation of accessories. Only use accessories approved by the manufacturer.
10. Stop the blade(s) when crossing gravel drives, walks, or roads.
11. Stop the engine (motor) whenever you leave the equipment, before cleaning the mower or unclogging the chute.
12. Shut the engine (motor) off and wait until the blade comes to complete stop before removing grass catcher.
13. Mow only in daylight or good artificial light.
14. Do not operate the mower while under the influence of alcohol, drugs or other medica-

tion which can cause drowsiness or affect your ability to operate this machine safely.

15. Never operate mower in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.
16. Disengage the self-propelled mechanism or drive clutch on mowers so equipped before starting the engine (motor).
17. If the equipment should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble such as a blade that is damaged, a loose blade, or the engine mounting bolts are loose.
18. Always wear safety goggles or safety glasses with side shields when operating mower to protect your eyes from foreign objects which can be thrown from the unit.
19. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, bystanders and the like.
20. After striking a foreign object, stop the engine. Remove the wire from the spark plug. Inspect the blade and mower for damage. If damaged, repair before starting and operating the mower.
21. Keep any washout ports and other mower housing service openings closed when mowing.

II. Slope Operation

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

DO:

Mow across the face of slopes; never up and down. Do not mow excessively steep slopes (maximum 15 degrees) or a reas where the ground is very rough. See the "Guide" in the back of this manual to check a slope. Exercise extreme caution when changing direction on slopes.

Remove objects such as rocks, tree limbs, etc.

Watch for holes, ruts, or bumps. Tall grass can hide obstacles.

(Continued Following Page)

IMPORTANT

DO NOT:

Do not mow near drop-offs, ditches, or embankments. The operator could lose footing or balance.

Do not mow excessively steep slopes.

Do not mow on wet grass. Reduced footing could cause slipping.

III. 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. *Never* assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of a responsible adult.
2. Be alert and turn mower off if children enter the area.
3. Before and while moving backwards, look behind and down for small children.
4. Never allow children to operate the mower.
5. Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

IV. Service

- *1. Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.
 - a. Use only an approved container.
 - b. Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling. Do not smoke.
 - c. Never refuel the machine indoors.
 - d. Never store the machine or fuel container inside where there is an open flame, such as a water heater.
- *2. Never run an engine indoors or inside a closed area.
3. Never make adjustments or repairs to items such as the height adjusters or grass catcher with the engine (motor) running. Discon-

nect the spark plug wire, and keep the wire away from the plug to prevent accidental starting. Always wear eye protection when you make adjustments or repairs.

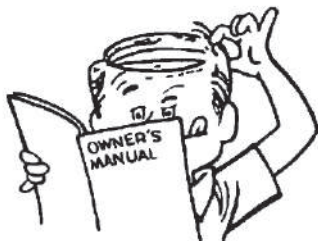
4. Keep all nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.
5. Never tamper with safety devices. Check their proper operation regularly.
6. To reduce fire hazard, keep mower free of grass, leaves, or other debris build up. Clean up oil or fuel spillage. Allow mower to cool before storing.
7. Stop and inspect the equipment if you strike an object. Repair, if necessary, before re-starting.
8. Never attempt to make wheel height adjustments while the engine (motor) is running.
9. Always disconnect electric mowers (live operated) before cleaning, repairing, or adjusting.
10. Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer recommended parts, when necessary. For storage, always make sure grass catcher is empty.
11. Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.
12. Do not change the engine governor setting or over-speed the engine.
13. Frequently check the blade for wear or damages such as cracks and nicks. A blade that is bent or damaged must be immediately replaced with a factory replacement blade. For safety and good cutting performance, replace the blade every two years. Frequently check the blade bolt and the engine mounting bolts. Replace damaged bolts and tighten loose bolts.
14. Use only original equipment or authorized replacement parts.

*A sterisked items do not apply to electric mowers.

SAFE MOWING GUIDE

Every person who uses power equipment must learn the difference between proper and improper use, safe and unsafe mowing practices. Read the next few pages carefully. They can help you learn. Too often the mower user is inexperienced, not properly instructed, or has not read the Instruction Book and instructions on the unit before using it for the first time. This can result in unsafe use endangering the operator, bystanders, and the equipment. Another result can be a poor appearance of the area mowed.

Read this Instruction Book. Read the instructions on the unit. Operate the mower according to the Safe Mowing Guide and other safety rules and recommendations in this Instruction Book and on the unit. Make sure anyone who uses the unit has read the instructions and has been told how to operate the mower safely.



Your mower is designed to provide good service and durability in normal residential cutting. If the mower is not properly serviced and maintained or used on unsuitable terrain or in conditions not suitable for mowing, product performance and safety will be reduced.

Proper attire is an important part of safe mowing. Safety glasses protect the eyes from thrown objects. Safety shoes with steel toes can protect a foot from being cut by the blade. Shirts and pants that cover the arms and legs can stop or deflect a thrown object.



Practice using the mower before you actually begin cutting grass. Select a large open level area. Learn the location and function of the controls and how they work. It is important that the blade can be stopped quickly in an emer-

gency. Learn how to cut and how to keep control of the mower at all times.

Many mowers are started manually. When using a pull start or rope start, place your feet firmly and away from the blade. Hold the rope handle securely, but never wrap the rope around your arm or fingers for a better grip.

The mower is designed for use by one person. Always mow alone. Never carry passengers. Carrying a passenger is dangerous for the passenger and the operator. A mower is not for amusement or for carrying objects.



Is the area you are planning to mow wet? Never cut a wet lawn. Cutting wet grass can cause an accident. It can affect mower performance and also cause problems with future lawn growth and appearance. Wet grass is slippery and might cause the operator to fall or the mower to slip. Someone could be hurt by touching the blade. Wet grass tends to clog the mower, causing poor discharge. Wet clippings bunch up on the lawn retarding the growth of grass. A wet mower can cause parts to rust and reduce the useful life of the unit.



When you look over the lawn, refresh your memory about hard, immovable obstacles such as pipes, stumps, and rocks and avoid them. They can cause damage to the mower or an accident injuring the operator or a bystander. Take a litter bag along and walk over the area to be cut. Pick up any stones, toys, wire, bones, or other loose objects. These items can damage the mower or they can become dangerous flying objects if the mower blade hits them. The blade of a power mower travels very fast. It can throw rocks and other objects with force over long distances. Objects thrown by mowers can break windows, cause

SAFE MOWING GUIDE

bruises, or even put out an eye. Often the person hurt by a thrown object is a bystander such as a child, another family member or a neighbor. Keep people and pets completely away from the mowing area. Direct the mowers discharge away from areas where people can be. Planning your mowing pattern has a double benefit. It can reduce chances of an injury and make the clean up after mowing easier.

Are there ditches, walls, or major inclines in the area to be cut? Plan the mowing pattern to avoid such danger areas. Inclines and rough terrain must be mowed carefully and some areas must not be cut with a mower at all. With walk behind equipment, mow across the incline so that if you or the mower slip, you won't run into each other.



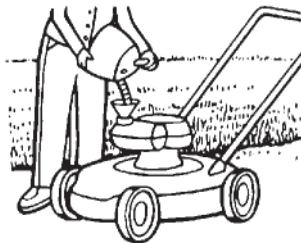
Never mow slopes greater than 15 degrees. See the Guide in the back of this Instruction Book to check any slopes.

Ready to start cutting? Not yet. Be sure the mower has been fully assembled according to directions in the Instruction Book. Even if assembly was done by a lawn and garden shop or the store where the unit was purchased, it must be checked. Are all nuts, bolts and screws tight? Does the engine have oil? These items must be checked periodically throughout the life of the mower.

Your mower has a gasoline engine. Gas is dangerous. Store fuel only in a approved gas container. Do not store large amounts of gas. Put out all cigarettes, pipes and cigars before working with gasoline. Store fuel and the mower itself in a well ventilated area away from any possible source of ignition such as pilot light on a furnace. If the mower is to be stored for an extended time, remove the gas from the tank. This minimizes the chance of a fire and keeps the tank clear of deposits and old gasoline, thus improving mower performance. Move the mower outside before adding gasoline. Use a funnel and wipe up any spilled fuel before starting. Remember, gasoline expands when heated so leave some expansion room. Also, most mower gas caps are vented to allow for expansion. Always use the proper cap. People are needlessly burned by fires, hurt in explosions, mowers and other property are damaged because of failure to follow basic safety rules related to gasoline and fueling.

Never add gasoline to an engine that is running or that is hot from recent use, this can cause an accident. Remove dry grass and other debris from the mower. Keeping the mower clean will

improve the performance, help the engine stay cooler, extend the life of moving parts, and minimize the danger of fire. People get burned working with and around their mowers for other reasons than fire and explosions. It takes only a few seconds of operation for the engine and the muffler to become hot. Do not touch these parts when the mower is running. Stop the engine and let it cool down before servicing the mower. Remember, exhaust fumes can be dangerous. Never operate the engine indoors or in an enclosed area.



Getting a new mower can be a big event for a family. Let family members satisfy their curiosity about the mower and at the same time, tell them about its dangers. Remember, a mower is not a toy and is not for use by children or anyone lacking in age, strength or experience.

As with any power equipment, a mower can be dangerous if not assembled, misused, or not properly maintained. The most important rule is to always use good judgement and common sense.

Your mower will cut thick grass and heavy plant stems with ease. Fingers and toes are no more resistant to the mower's blade. Many people are injured because they "forgot" and reached into the discharge chute. Always treat your lawn mower as if the blade is rotating. Never perform any service or try to make any adjustment, except carburetor, while the engine is running.



Use only accessories suited for your mower. Use of improper accessories can reduce the safety designed into both the mower and the accessory, it can even damage the unit. Read and follow the instructions which come with the accessory and the mower.

SAFE MOWING GUIDE

Use only original equipment or approved substitutions as service parts. If you need professional service, select a shop that is an Authorized Service Center for your brand of mower. If you plan to service the unit yourself, follow directions in the Instruction Book.



As you know, remember children and pets are sometimes attracted to the activity. Be especially careful when trimming around shrubbery or when backing up. If at all possible, don't mow when moving backwards. It is dangerous because vision is restricted. Also, blades are designed to cut while the unit is moving forward so cutting performance is reduced when mowing in reverse.

Never leave the mower running and unattended. Shut off the engine. Put the mower in a position so that it can not roll. If the unit is self-propelled, make sure the drive control is disengaged.



When mowing, be aware of your condition and the weather conditions. After mowing a long time, you will be tired. This is the time when reactions slow down, your attention wanders; the time when you are wide open for an accident. Take a short break. If temperatures are high, take precautions to avoid becoming dehydrated. If you are angry, tired, or unable to give your full attention to mowing, if you have been consuming alcohol, medicines, or drugs, do not use your mower or any type of power equipment.

If weather conditions become worse while you are cutting stop and finish later. Cutting grass

in the rain is no fun and it is dangerous. Always seek shelter in an electrical storm. In extremely dry mowing conditions, your safety glasses can serve a dual purpose by protecting your eyes from dust and thrown objects, also a dust or pollen mask can be helpful.



Your mower is equipped with a number of safety features which are important to the safety of the operator and bystanders and must never be altered or removed. If a safety feature becomes inoperable, lost, or damaged, it must be repaired or replaced before the mower is used.

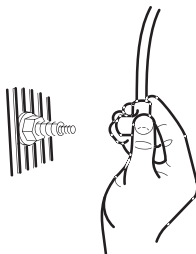
Engine speed is a key to safe mowing and a nice looking lawn. The maximum speed of the engine on your mower has been set at the factory. Do not change the engine governor in any way.

Select the maximum engine and ground speed that is right for the terrain and the height of grass. You get the best cutting and bagging performance when using a grass catcher by operating the engine at maximum speed. Never walk fast or run just to get the job done sooner. On inclines, reduce ground speed and exercise extreme care.

It is best to mow only during daylight hours; however, if you must mow in the late afternoon or evening, make sure there is good artificial light.

Your mower will require maintenance including service and adjustments before and after use as with any machine. The frequency of the maintenance is generally based on hours of use, however, the frequency can vary because of mowing conditions. Check the Instruction Book for more detailed instructions. Proper maintenance protects your investment in the mower and helps insure that it will function safely and reliably.

Never attempt any service (with the possible exception of carburetor adjustment) with the engine running. After turning the engine off, always disconnect the spark plug wire to prevent accidental restarting while the unit is being serviced.



SAFE MOWING GUIDE

While mowing, if you hit a foreign object, stop the engine. Remove the spark plug wire. Carefully and thoroughly inspect the mower for damage. Make necessary repairs before re-starting. If the unit starts to vibrate abnormally, stop the engine immediately and check for the cause. Vibration is generally a warning of trouble. Keep all nuts, bolts, and screws tight.

The blade is the most dangerous part of the mower and also the most important part in obtaining a nice lawn appearance. Check the blade and the blade mounting hardware frequently. Keep it tight. If the blade hits a solid object, check it thoroughly for deformation or cracks and replace if damaged. For safety, replace the blade every two years. A sharp blade reduces the work load on the engine and cuts grass more cleanly, for a better looking cut with less work. The blade is always close to the outside of the mower housing. For best trimming on side discharge mowers, cut with the left side of the housing toward the area that needs trimming.

A useful accessory for your mower is a grass catcher. There are grass catchers available for most models. For best performance and safety, be sure the grass catcher is approved for use with your mower. Assemble as directed and follow operating and safety instructions with the catcher and in the Instruction Book.

Before mounting, checking or emptying the grass catcher, always turn the engine off. Remember to check the grass catcher before each use for cracks, wear, or deterioration. Replace any part that is damaged with the manufacturer's recommended replacement part before using the grass catcher again.



Proper cutting technique is important if you want your lawn to look good. Avoid the temptation to cut grass too short. Cutting grass too short can kill the plant, cause grass to turn yellow, or make the lawn look brown and thatchy. Use the lower cutting heights in cool months when the grass is lush. Use the higher cutting heights in extremely dry periods. Cutting with a dull blade or low engine speed bruises, shreds, and can uproot some grass making the lawn look dull and brown a few days after cutting. Always put the throttle control in FAST

position when mowing and bagging. When bagging, slower ground speed will provide the best results.

Change the mowing pattern slightly each time you cut. If you always cut the same way, the grass will develop a set and clippings will accumulate more heavily in some areas more than in others causing grass to get thinner in those areas. Do not service your mower over the grass. Spilled oil and gas can kill the grass. In tall grass or very heavy grass, do not try to cut it all at once. Raise the height of cut on the first cutting and lower it for the next cutting the same day or within a few days. Another way is to cut only part of the width of the mower and adjust your ground speed (not the engine) to move more slowly so the mower can clear itself as it moves forward.



When cutting with a walk behind mower, always push the unit. Do not pull it. Pushing the unit keeps the operator behind the mower in the "operator's zone" for better control. Pushing the unit also gives you a chance to see exactly where and what you are mowing. There will be times while you are mowing that you will have to pull the mower backwards (such as when the front of the mower has come up against a wall or fence). If you must back up, make sure your feet are in the clear. Stand well back from the mower, plant your feet firmly with each step and back up being careful to look behind you. Resume normal mowing as soon as possible.

If your unit is self propelled, remember that the drive mechanism is not designed to do all the work, but the unit can move without your help. Always keep your hands on the handle near the controls when the engine is running. Remember too that the self propelled mechanism can be dangerous. Keep hands and feet away from belts and chains. Always turn off the engine before attempting to remove anything that becomes entangled in the self propelled system.

Remember, your mower is a useful tool, but it can be dangerous. Follow the instructions in this Instruction Book. Use the mower properly and carefully and it will give you many hours of trouble free, accident free operations.

STEPS TO FOLLOW BEFORE MOWING

- Be sure to dress correctly. Wear hard shoes, not sandals or tennis shoes.
- Examine the blade. A blade that is bent, cracked, or damaged must be replaced with a factory replacement blade.
- Fill the fuel tank outside. Clean off spilled fuel.
- Read and follow the Owners Manual, the instructions with the engine, and the instructions with any attachments. Owners Manual instructions are for your safety and the safety of others.
- Exhaust fumes are dangerous. Start the engine outside.
- Make sure all safety devices are in place and working correctly.
- Operation of the mower is only for a person that has experience.
- Wet grass can be dangerous. Let the grass dry.
- Instruct children and others to keep away from the work area.
- Never cut the grass without good light.
- Pick up loose objects. Remove them from the mowing area.

WHILE MOWING

- Watch for fixed objects and avoid them. They can damage the mower or cause injury.
- A hot engine and muffler will cause a burn. Do not touch.
- Inclines and slopes must be carefully mowed. See the “Guide” in the back of this book to check a slope.
- Lack of daylight or good artificial light is cause to stop mowing.
- Examine the mower, the blade, and other parts for damage after hitting a foreign object or if the unit vibrates excessively.
- Do not make adjustments or repairs without stopping the engine (except for carburetor). Disconnect the spark plug wire.
- On or near roads, watch out for traffic. Direct discharge away from roads.
- When mowing, avoid areas where traction is unsure. Before and while moving backwards, look behind and down for small children.
- In heavy grass, raise the cutting height. Cut slower. Stop the engine to remove clogged grass from the mower.
- Never remove any safety related parts.
- Do not pour gasoline into a engine that is hot or running.

AFTER MOWING

- Always let the mower cool before storing in an enclosed area.
- Foreign material on the mower is dangerous. Clean off grass, leaves, grease and oil before storing.
- Tighten all loose nuts, bolts and screws before you use the unit.
- Empty and clean any grass catcher or other accessory.
- Remove the key or disconnect the spark plug wire to prevent unauthorized use.
- Make sure the mower is not kept near a source of ignition. Gas fumes can cause an explosion.
- Only original parts or factory approved substitutes can be used to service the mower.
- When storing the mower for an extended period, remove the fuel from the fuel tank.
- Instruct children to leave the mower alone. It is not a toy.
- Never keep gasoline near a source of ignition. Always use an approved container. Keep gasoline away from children.
- Lubricate according to the Instruction Book. See “Lubrication”.

IMPORTANT – Read the Instruction Book. Keep this book for future use and reference.



WARNING: Look for this symbol to point out important safety precautions. It means: “Attention! Become Alert! Your Safety Is Involved.”

PARTS BAG FOR ASSEMBLE

Package Contents & assembly:

Package Contents:

Part 4 : Bolt,Carriage*4

Part 13 : Bolt*2

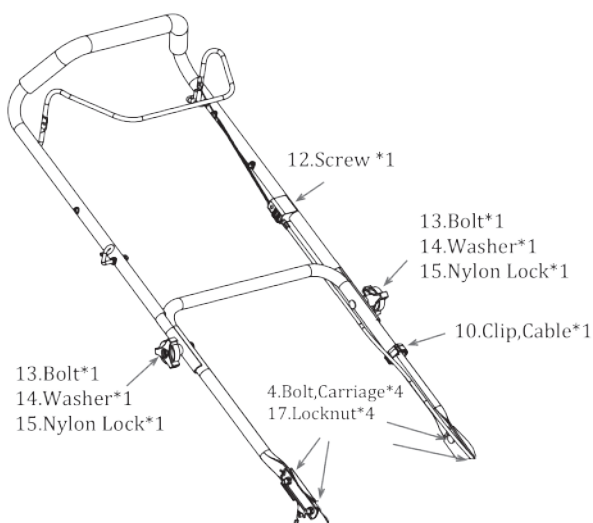
Part 15 : Nylon Lock*2

Part 12 : Screw*1

Part 10 : Clip,Cable*1

Part 14 : Washer*2

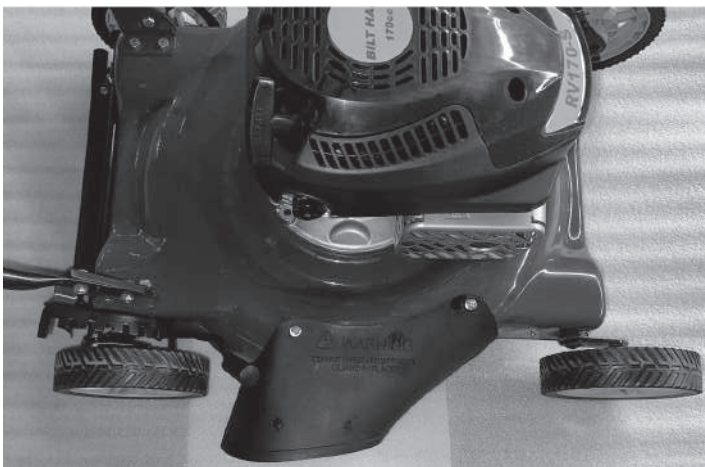
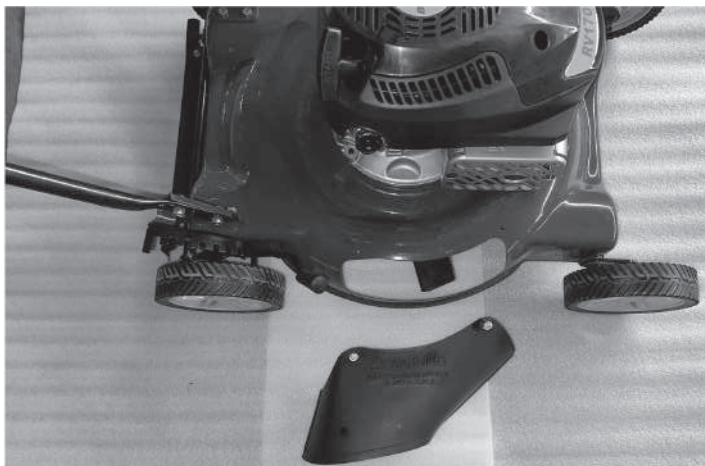
Part 17 : Locknut*4



Note: You need to assemble the parts in the parts package with the machine, and all the serial numbers correspond to the serial numbers in the HANDLE SYSTEM.

How to achieve the Side Discharge function

Load the side discharge guide with the deck as the pictures.



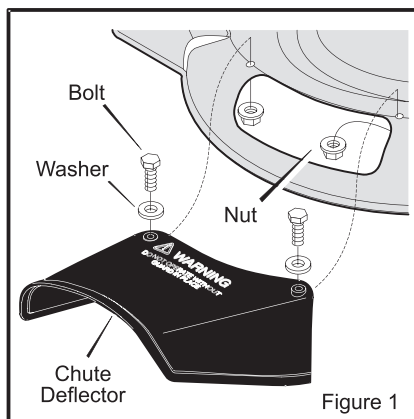
ASSEMBLY

HOW TO ASSEMBLE THE CHUTE DEFLECTOR



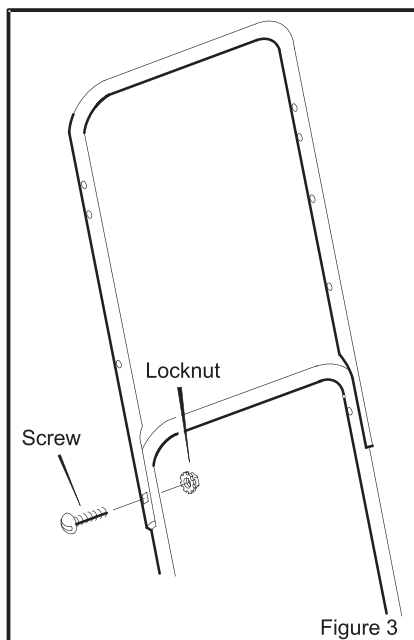
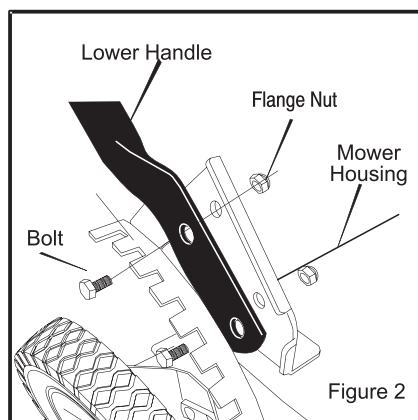
WARNING: The chute deflector is necessary for your safety and protection. Do not operate the mower if the chute deflector is missing or is not installed correctly.

1. Attach the **chute deflector** to the mower housing with a **bolt**, **washer**, and **nut** (Figure 1). Make sure the fasteners are tight.



HOW TO ASSEMBLE THE HANDLE

1. Put two **bolts** and two **nuts** in two sides, the **lower handle** is assembled on bracket flap (figure 2)
2. Assemble the upper part of the handle to the lower part with the **screws** and **lock-nuts** (Figure 3).



ASSEMBLY

HOW TO ASSEMBLE THE CONTROLS TO THE HANDLE

1. Mount the ends of the **engine stop lever** into the top holes of the **handle**.
2. Attach the the **stop cable** to the **handle** as shown in Figure 4.

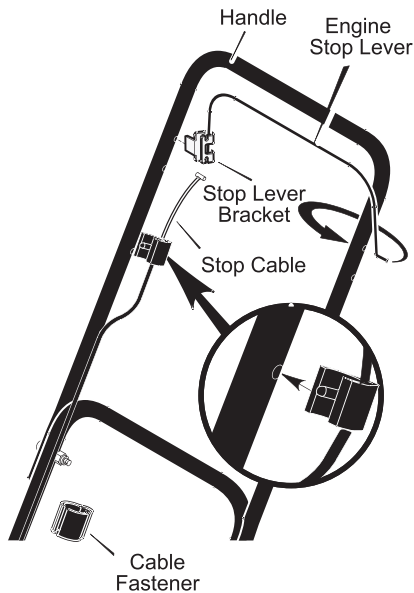


Figure 4

ASSEMBLY

HOW TO ASSEMBLE THE WHEELS WITH AXLE BOLTS

Assemble the wheels to the wheels axles lock the washer around the axles to fix the wheels.

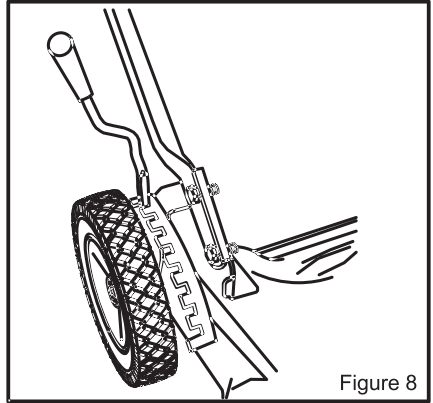


Figure 8

HOW TO PREPARE THE ENGINE

ENGINE DOES NOT CONTAIN OIL OR GASOLINE

See the engine manufacturer's instructions for the type of gasoline and oil to use. Before you use the unit, read the information on safety, operation, maintenance, and storage.



WARNING: Follow the engine manufacturers instructions for the type of gasoline and oil to use. Always use a safety gasoline container. Do not smoke when adding gasoline to the engine. When inside an enclosure, do not fill with gasoline. Before you add gasoline, stop the engine. Let the engine cool for several minutes.

IMPORTANT: This unit is equipped with an internal combustion engine and must not be used on or near any unimproved forest covered, brush covered or grass covered land unless the engines exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it must 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. See an Authorized Service Center for a spark arrester for the muffler.

NOTE: Actual sustained horsepower will likely be lower due to operating limitations and environmental factors.

FINAL ASSEMBLY

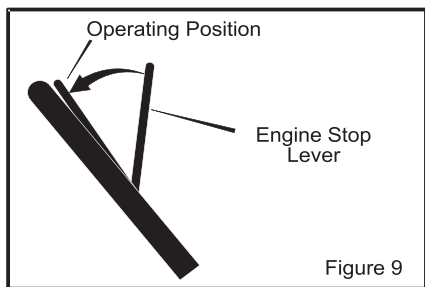
Before you use the mower, check the assembly of the wheels, the handle, the chute deflector, and the controls. Make sure all the fasteners are tight. Make sure the the engine stop lever works correctly.

OPERATION

ENGINE STOP LEVER

Release the **engine stop lever** and the engine and the blade will automatically stop. To run the engine, hold the **engine stop lever** in the **Operating position** (Figure 9).

Before you start the engine, operate the **engine stop lever** several times. Make sure the cable moves easily.



HOW TO STOP THE ENGINE

To stop the engine, release the **engine stop lever**. Disconnect the wire from the spark plug to prevent the engine from starting.

If the engine will not stop, hold a screwdriver against the spark plug and against the engine cooling fins. The spark will go to ground and the engine will stop. Before you start the engine, check the engine stop cable. Make sure the engine stop cable is assembled correctly. Before you operate the unit, replace a bent or damaged engine stop cable.

HOW TO START ENGINE



WARNING: The blade will rotate when the engine runs.

IMPORTANT: Before you start the engine, operate the engine stop lever several times. Make sure the engine stop cable moves freely.

NOTE: The engine design does not include a throttle control or an engine speed adjustment. The engine is set at the best speed for cutting grass, bagging grass, and for extended engine life.

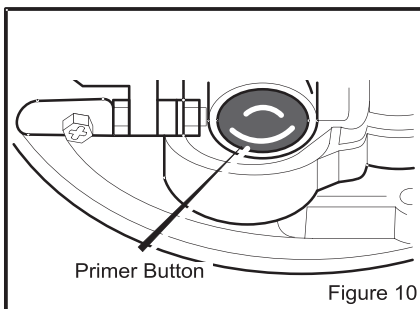
1. Check the oil.
2. Fill the fuel tank with regular unleaded gasoline. Make sure the gasoline is clean. Leaded gasoline will increase deposits and shorten the life of the valves.

NOTE: Do not use gasohol or methanol. Do not use premium unleaded gasoline.

WARNING: Always use a safety gasoline container. Do not smoke when adding gasoline to the fuel tank. When inside an enclosure, do not add gasoline. Before you add gasoline, stop the engine and let the engine cool for several minutes.

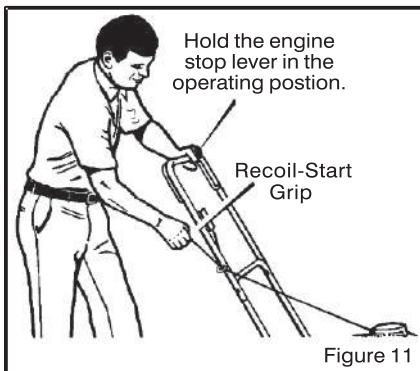


3. Make sure the spark plug wire is connected to the spark plug.
4. The **primer button** is on the engine (Figure 10). Push the **primer button**. Every time you push the **primer button**, wait two seconds. For the number of times required to push the **primer button**, see the engine manufacturer's instructions.



NOTE: Do not use the primer button to start a warm engine.

5. Stand behind the mower (Figure 11). Use one hand to hold the **engine stop lever** in the operating position as shown. Use the other hand to hold the **recoil-start grip**.
6. Rapidly pull the **recoil-start grip**. Slowly return the **recoil start grip**.
7. If the engine does not start in 5 or 6 tries, See the "Problem and Repair" Instructions.



MAINTENANCE

ENGINE MAINTENANCE

Use the following maintenance section to keep your unit in good operating condition. All the maintenance information for the engine is in the Engine Instruction Book. Before you start the engine, read this book.



WARNING: Before you make an inspection, adjustment (except carburetor), or repair, disconnect the wire from the spark plug.

LUBRICATION

1. For maximum performance, lubricate the wheels and all pivot points with engine oil every 25 hours.
2. To lubricate the engine, refer to the "Engine Instruction Book".

NOTE: Do not lubricate the engine stop cable. Lubricants will damage the cable and prevent the cable from moving freely. Replace the cable if bent or damaged.

HOW TO CLEAN THE MOWER HOUSING



WARNING: The blade will rotate when the engine runs. Before you clean the mower housing, stop the engine and disconnect the wire from the spark plug.

Grass and other debris can keep the mower from working correctly. After you mow, clean the mower housing as follows.

1. Stop the engine.
2. Disconnect the wire from the spark plug.
3. Clean the top and the bottom of the mower housing.

HOW TO ADJUST THE HEIGHT OF CUT



WARNING: The blade will rotate when the engine runs. Before you change the height of cut, disconnect the wire to the spark plug.

To change the height of cut, move the handle, and make it in the suitable grade of the height segment.

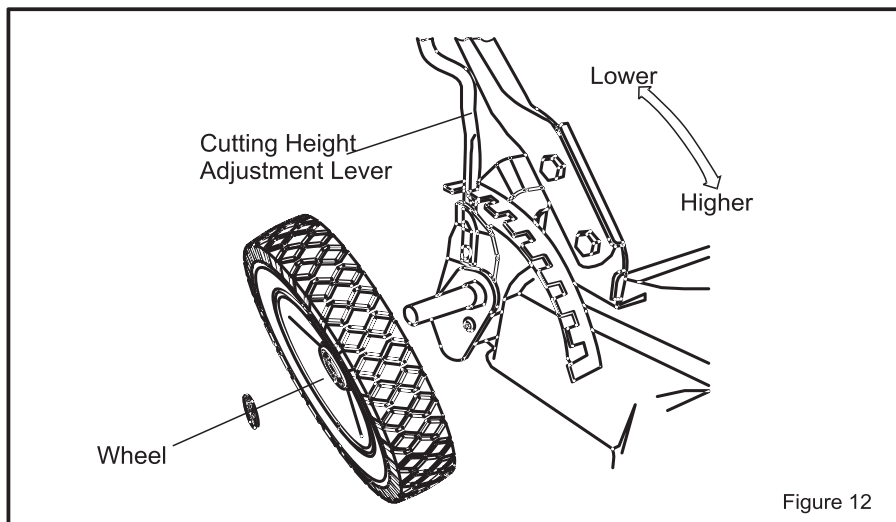


Figure 12

MAINTENANCE

BLADE SERVICE



WARNING: Before you inspect the blade or the blade adapter, disconnect the wire to the spark plug. If the blade hits an object, stop the engine. Disconnect the wire to the spark plug. Check the unit for damage.

Frequently check the blade for wear or damage such as cracks. Frequently check the bolt that holds the blade. Keep the bolt tight. If the blade hits an object, stop the engine. Disconnect the wire to the spark plug. Check the blade adapter for damage. Check for a bent or damaged blade, a badly worn blade, or other damage. Before you operate the unit, damaged parts must be replaced with factory replacement parts. For safety, replace the blade every two years. Keep a sharp edge on the blade. A blade that is not sharp will cause the ends of the grass to become brown. Remove the blade as follows.

HOW TO REMOVE THE BLADE



WARNING: Before you remove the blade, disconnect the wire to the spark plug. The blade has sharp edges. When you hold the blade, use gloves or cloth material to protect your hands.

1. Drain the fuel tank.
2. Lift the side of the mower that has the muffler or spark plug.
3. Use a piece of wood to keep the blade from rotating.
4. Remove the **bolt** that holds the **blade**.
5. Check the blade according to the "Blade Service" instructions. Replace a badly worn or damaged blade with a factory replacement blade.

6. Mount the blade with the curved edges toward the housing. If the blade is upside down, the blade will not cut correctly and can cause an accident.
7. Fasten the **blade** with the original **washers** and **bolt**. Make sure the outside rims of the **Belleville washers** are toward the **blade** (Figure 13).
8. Tighten the **bolt** that holds the **blade** to a torque of 30 foot pounds.



WARNING: Always keep the bolt that holds the blade tight. A loose bolt or blade can cause an accident.

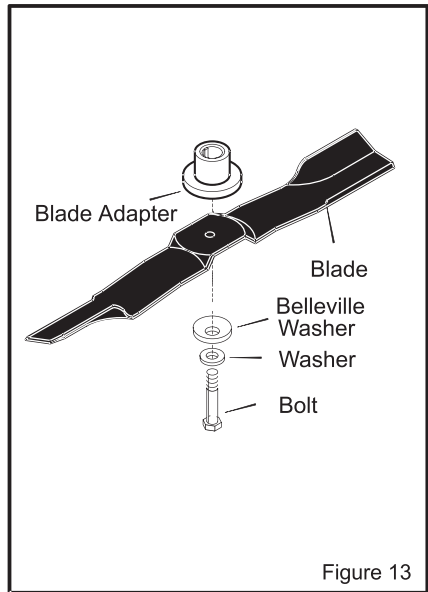


Figure 13

HOW TO SHARPEN THE BLADE



WARNING: Vibration is the result if the blade is not correctly balanced. A blade that is damaged with cracks can break and cause an accident.

1. Sharpen the blade two times a year or every 25 hours.

2. If the blade is on the unit, do not sharpen. Remove the blade according to the instructions in "How To Remove The Blade".
3. Clean the blade with a brush, soap, and water. Check the blade. Look for cracks, nicks, or other damage. Replace a blade that is badly worn, bent, or damaged with a factory replacement blade.
4. Sharpen the **blade** with a **file**. Make sure you keep the original beveled cutting edge (Figure 14).

(Continued following page)

MAINTENANCE

CHECK THE LEVEL OF CUT

Test the unit in a small area. If the height of cut is not level or if the cut grass is not discharged, the cause can be: (1) the blade is bent or damaged, (2) the blade is not sharp, (3) a worn blade, (4) or a broken **blade adapter**. Before you use the unit, correct the problem.

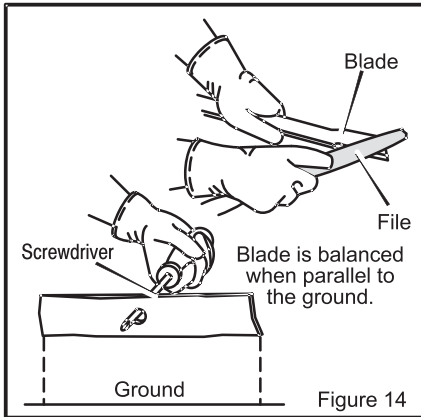


Figure 14

5. Make sure the **blade** is balanced. Use a **screwdriver** and hold the blade parallel to the ground as shown. A blade that is balanced will stay parallel to the ground. If the blade is not balanced, the heavy end will rotate toward the ground. Sharpen the heavy end until the blade is balanced.
6. A new blade will cut better than a badly worn blade. Every two years replace the old blade with a factory replacement blade.

HOW TO PREPARE THE MOWER FOR STORAGE



WARNING: Do not remove gasoline while inside a building, near a fire or while you smoke. Gasoline fumes can cause an explosion or a Fire

1. Drain the fuel tank.
2. Let the engine run until it is out of gasoline.
3. Drain the oil from the warm engine. Fill the engine crankcase with new oil.
4. Remove the spark plug from the cylinder. Pour one ounce of oil into the cylinder. Slowly pull the recoil-start grip so that the oil will protect the cylinder. Install a new spark plug in the cylinder.
5. Clean the dirt and debris from the cylinder cooling fins and the engine housing.
6. Clean the bottom of the mower housing.
7. Completely clean the mower to protect the paint.
8. Put the unit in a building that has good ventilation.

TROUBLE SHOOTING CHART

The Engine will not start.

1. Make sure the fuel tank is filled with clean gasoline. Do not use old gasoline.
2. On a cold engine, push the primer button (optional on some models). For the number of times required to push the primer button, see the engine manufacturers instructions.
3. Make sure the wire for the spark plug is connected to the spark plug.
4. Adjust the Carburetor. See the "Engine Instruction Book".
5. There is too much gasoline in the engine cylinder. Remove and dry the spark plug. Put the throttle control in the SLOW position. Pull the recoil -start grip several times. Install the spark plug. Connect the wire to the spark plug. Start the engine.
6. The engine is difficult to start in heavy or high grass. Move the mower to a clean dry surface.
7. Make sure the engine stop lever is in the operating position.
8. Make sure the fuel valve is in the ON position. See the "Engine Instruction Book".
9. On Electric Start models, charge the battery.

The Engine will not stop.

1. Release the engine stop lever.
2. Check the engine stop cable. Replace the cable if bent or damaged.

The Engine performance is bad.

1. Check the height of cut settings. Raise the height of cut if the grass is high.
2. Check the bottom of the blade housing. Clean the blade housing of grass and other debris.
3. Check the wire to the spark plug. Make sure the wire is connected.
4. Clean the engine cooling fins of grass and other debris.
5. Check the carburetor adjustments. See the "Engine Instruction Book".
6. Check the spark plug gap. Set the spark plug gap at 0.030".
7. Check the amount of oil in the engine. Fill with oil if necessary.
8. Check the engine air cleaner. See the "Engine Instruction Book".
9. The gasoline is bad. Drain and clean the fuel tank. Fill the fuel tank with clean gasoline.

Excessive Vibration.

1. Remove the blade. Check the blade and balance if necessary. See the blade maintenance instructions.
2. Check for a bent or broken blade. A DAMAGED BLADE IS DANGEROUS AND MUST BE REPLACED.
3. Check the blade adapter. REPLACE A BROKEN BLADE ADAPTER.
4. If the vibration continues, take the mower to an Authorized Service Center.

The grass will not discharge correctly.

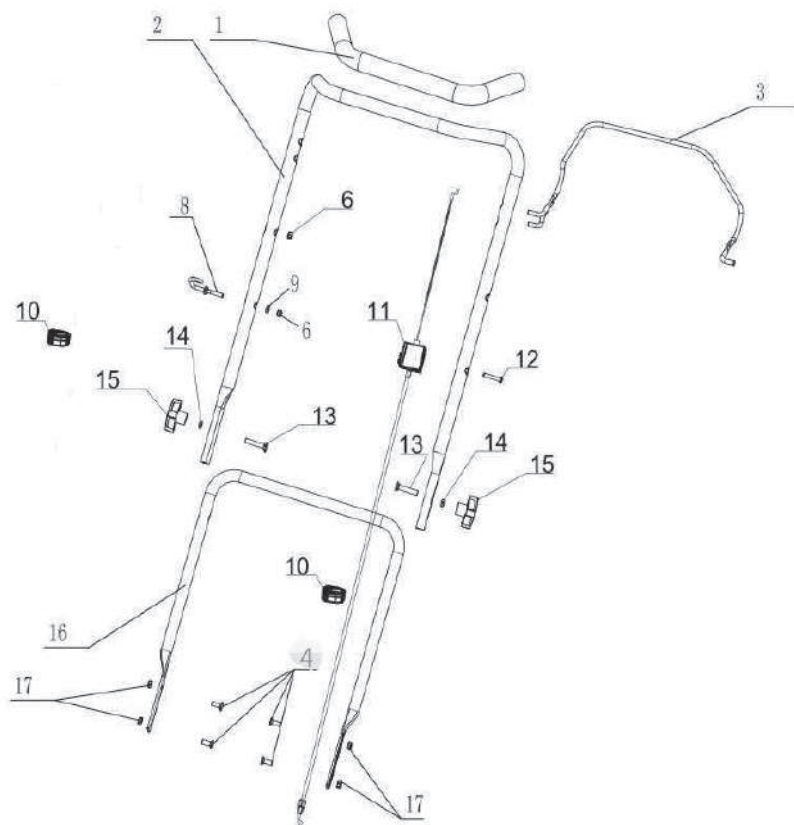
1. Clean the bottom of the mower housing.
2. Check for a badly worn blade. Remove and sharpen the blade. For safety, replace the blade every two years with a factory replacement blade.

The grass is not cut even.

1. Check the height adjustment at each wheel. The height adjustment must be the same for each wheel.
2. Make sure the blade is sharp.
3. Check for a bent or broken blade. A DAMAGED BLADE IS DANGEROUS AND MUST BE REPLACED.
4. Check for a broken blade adapter. REPLACE A BROKEN BLADE ADAPTER.

REPAIR PARTS

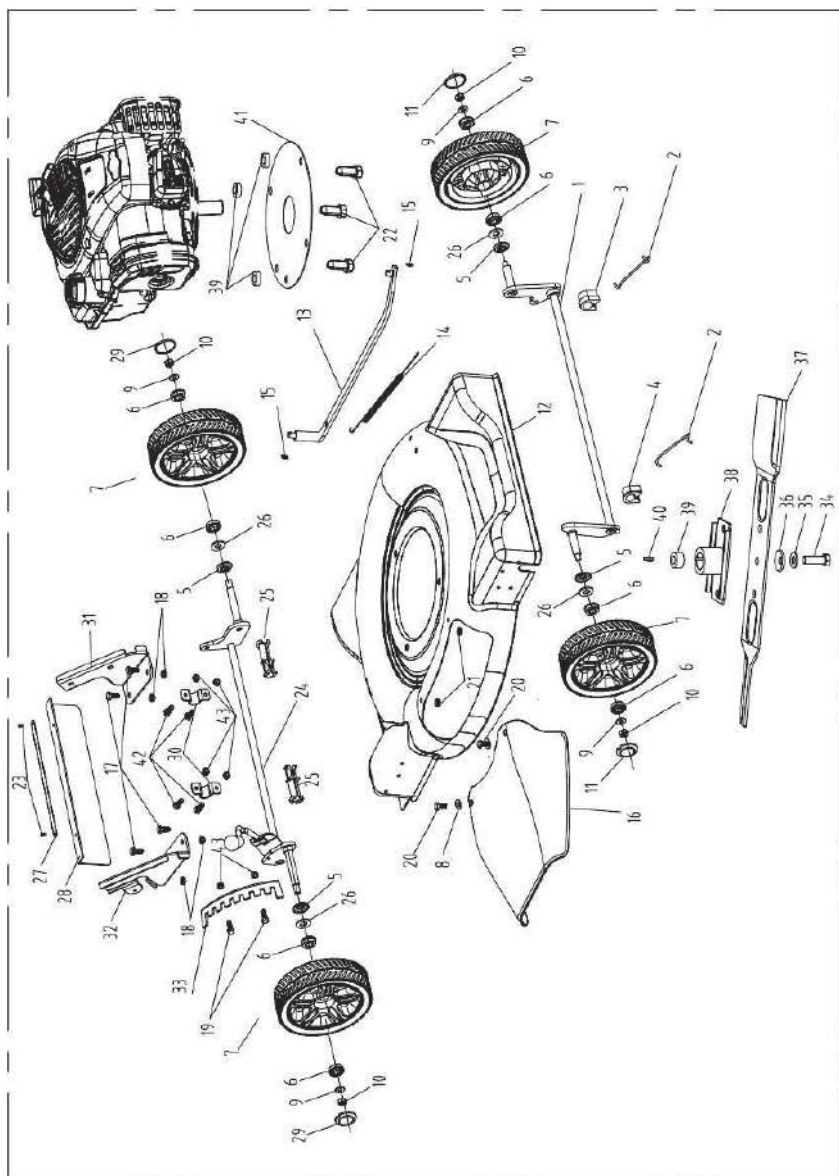
HANDLE SYSTEM



Item	Part Name	QTY
1	PVC Foam Tube	1
2	Handle, Upper (Black)	1
3	Lever, Stop	1
4	Bolt, Carriage	4
6	Lock Nut	2
8	Guide, Rope	1
9	Washer	1

Item	Part Name	Qty
10	Clip, Cable	1
11	Engine Stop Cable	1
12	Screw	1
13	Bolt	2
14	Washer	2
15	Nut, Nylon Lock	2
16	Handle, Lower (Black)	1
17	Lock Nut	4

PART LIST (NO MULCH)



Item	Part Name	Qty
1	weldment,Front Axle	1
2	U-shaped fixed spring	2
3	Plastic Linling	1
4	Plastic Linling	1
5	Axle dustproof sleeve	4
6	Bearing	8
7	Wheel and Tire-L	1
8	Washer	2
9	Washer	4
10	Locknut	4
11	Cover,Wheel	2
12	Chassis Welding Assembly	1
13	Lever,Linkage	1
14	Spring,Tension	1
15	Pin	2
16	Side guard plate	1
17	Bolt	4
18	Locknut	4
19	Bolt	2
20	Bolt	2
21	Locknut	2
22	Bolt,Engine Tapping	3

Item	Part Name	Qty
23	Screw,Tapping	2
24	weldment,Rear Axle	1
25	Plastic Linling	2
26	Washer	4
27	Rear skin plate	1
28	Rear skin	1
29	Cover,Wheel	2
30	Bracket	2
31	Bracket,Left Handle	1
32	Bracket,Right Handle	1
33	Height Adjust Bracket	1
34	Bolt,Axle	1
35	Washer	1
36	Washer, Dish	1
37	Blade	1
38	Adaper,Blade	1
39	Spacer	4
40	Key	1
41	Guard plate	1
42	Bolt	4
43	Locknut	6

LIMITED 30 DAY WARRANTY

BILT HARD makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 30 days from the date of purchase.

This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance.

We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you.

This warranty is expressively in lieu of all other warranties, express or implied, including the warranties of merchantability and fitness. To take advantage of this warranty, the product or part must be returned to us.

Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.