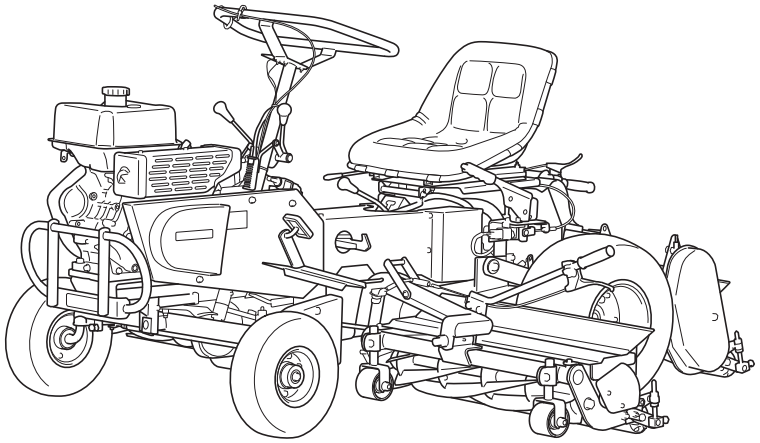
# LM180E

3-Unit Reel Mower

# Owner's Operating Manual



Serial No.　LM180E：21021-

"Required reading"
Read this manual before using the machine.

BARONESS®
Quality on Demand

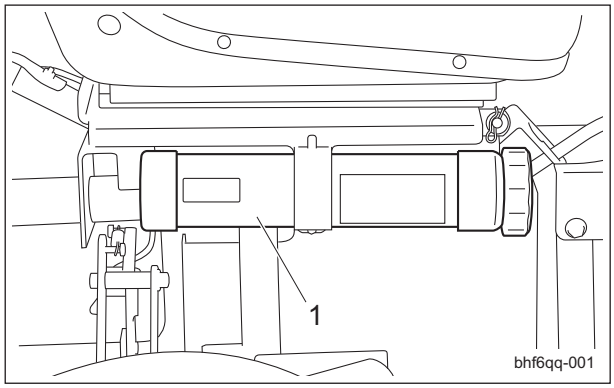
Original Instructions Ver.1.2

# Greeting

Thank you for purchasing the Baroness product.
This manual describes the proper handling, adjustment, and inspection of your product.
We hope you will use the product safely, and take advantage of its best performance.

## Keeping the Owner's Operating Manual

Keep this manual in the box on the right side of the seat.




Keeping the Owner's Operating Manual_001

| | |
|---|---|
| 1 | Box |

# Introduction

Read this manual carefully to ensure that you thoroughly understand how to properly operate and maintain the product, and to avoid causing injury to yourself or others.

The operator is responsible for operating the product properly and safely.

Maintenance service for this machine should be performed by a mechanic with expertise.

If you have any questions concerning maintenance or genuine parts, please contact a Baroness dealer or Kyoeisha.

When making inquiries about the product, please specify the product's model designation and serial number.

When loaning or transferring the product, please also provide this manual together with the product.

Kyoeisha Co., Ltd.

## Warning Symbols

This manual uses the following warning symbols for handling precautions that are important for your safety.

| | |
|---|---|
|  696cq5-001 | Warning symbol |

This symbol indicates the articles regarding “Danger,” “Warning,” or “Caution.”

Those articles describe important safety precautions and so read them carefully to understand completely before operating the machine.

Failure to adequately follow these safety precautions may cause an accident.

**⚠ Danger**

This symbol indicates that serious injury or death will occur if the warning is ignored.

⚠ Warning

This symbol indicates that serious injury or death may occur if the warning is ignored.

⚠ Caution

This symbol indicates that injury or damage to property may occur if the warning is ignored.

Important

This symbol indicates precautions on the mechanism of the machine.

# Introduction

## Precautionary Statement

⚠ Caution

The information described in this manual is subject to change for improvement without prior notice.
When replacing parts, be sure to use genuine Baroness parts or parts designated by Kyoeisha.
Note that the Baroness product warranty may not apply to defects caused by the use of parts from other companies.

Prior to use, carefully read the following manuals to thoroughly understand the contents for safe and correct operation.

- Baroness Owner's Operating Manual
- The Engine's Owner's Manual

## Purpose

This product is intended for cutting turf grass at golf courses.
Do not use this product in any way other than its intended purpose, and do not modify this product.
Operating this product for other purposes and modifying it may be very dangerous and may cause damage to the product.
In addition, this product is not authorized for operation as a special motor vehicle. Do not operate it on public roads.

# Contents

# Contents

Failure to adequately follow these safety precautions may cause an accident resulting in injury or death.

**⚠ Danger**

This product is designed to ensure safe operation and has been tested and inspected thoroughly before shipment from the factory.
The product is equipped with safety devices to prevent accidents.
However, whether the product demonstrates its original performance level depends on the manner in which it is operated and handled, as well as the manner in which it is managed on a daily basis.
Inappropriate use or management of the product may result in injury or death.
Observe the following safety instructions to ensure safe operation.

## Safe Operating Practices

### Training

1. Read this manual and other training material carefully.
   Be familiar with the controls, safety signs, and the proper use of the equipment.
2. If the operator or mechanic can not read the language used in this manual, it is the owner's responsibility to explain this material to them.
3. All operators and mechanics should seek and obtain professional and practical instruction.
   The owner is responsible for training the users.
   Such instruction should emphasize:
   [1] The need for care and concentration when working with ride-on machines.
   [2] Control of a ride-on machine sliding on a slope will not be regained by the application of the brake.
   The main reasons for loss of control are
   - Insufficient wheel grip
   - Being driven too fast
   - Inadequate braking
   - The type of machine is unsuitable for its task
   - Lack of awareness of the effect of ground conditions, especially slopes
   - Incorrect hitching and load distribution
4. Never allow children or people unfamiliar with these instructions to use or service the machine.
   Local regulations may restrict the age of the operator.
5. The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people, or property.
6. Keep in mind that the owner, operator, and mechanic are responsible for accidents or hazards occurring to other people or their property.
7. You can find additional safety information where needed throughout this manual.
8. Determine the left and right sides of the machine from the normal operating position.

### Preparation

1. Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job.
   Only use accessories and attachments approved by the manufacturer.
2. While operating, always wear substantial footwear, long trousers, hard hat, safety glasses, mask, and ear protection.
   Long hair, loose clothing, or jewelry may get tangled in moving parts.
   Do not operate the equipment when barefoot or wearing open sandals.
3. Inspect the area where the equipment is to be used and remove all objects such as rocks, toys and wire which can be thrown by the machine.
4. Keep children out of the operating area and under the watchful care of a responsible adult other than the operator.
5. Exercise care in the handling of fuel.

**⚠ Warning**

Fuel is highly flammable.
Take the following precautions:

[1] Store fuel in containers specifically designed for this purpose.
[2] Add fuel before starting the engine.
Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot.
[3] Refuel outdoors only and do not smoke while refueling.

[4] If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until petrol vapours have dissipated;

[5] Replace all fuel tanks and container caps securely.

6. Check that operator's presence controls, safety switches and shields are attached and functioning properly.
   Do not operate unless they are functioning properly.
7. If the brake operation is faulty, be sure to adjust or repair them before operating the machine.
8. Replace faulty mufflers.
9. On multi-cylinder/multi-reel machines, take care as rotating one cylinder/reel can cause other cylinders/reels to rotate.

## Operation

1. Do not operate the machine under the influence of alcohol or drugs.
2. Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
3. Be sure all drives and shift are in neutral and parking brake is engaged before starting engine.
   Only start engine from the operator's position.
   Use seat belts if provided.
4. Do not change the engine governor settings or overspeed the engine.
   Operating the engine at excessive speed may increase the hazard of personal injury.
5. Pay attention not to touch hot parts.
6. Never operate the machine with damaged guards, shields, or without safety protective devices in place.
   Be sure all interlocks are attached, adjusted properly, and functioning properly.
7. Keep hands and feet away from the rotating parts.
8. Do not carry passengers.
9. Never operate while people, especially children, or pets are nearby.
10. Only operate in good light, keeping away from holes and hidden hazards.
11. Do not operate the machine when there is the risk of lightning.
12. Do not stop or start suddenly.
13. Look behind and down before backing up to be sure of a clear path.
14. Slow down and use caution when making turns and crossing roads and sidewalks.
15. Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
16. Do not take your eyes off the road ahead. Do not operate the machine with no hands.
17. Remember there is no such thing as a safe slope.
    Travel on grass slopes requires particular care.
    To guard against overturning, follow these instructions.
    [1] Do not stop or start suddenly when going up or downhill.
    [2] Engage clutch slowly, always keep machine in gear, especially when traveling downhill.
    [3] Machine speeds should be kept low on slopes and during turns.
    [4] Stay alert for humps and hollows and other hidden hazards.
18. Never use the machine on a slope with an angle of gradient that is greater than that specified or in a place where there is a danger of the machine slipping.
19. Disengage drive to the cutting unit(s), when other than operating.
20. Do the following before leaving the operator's position.
    [1] Stop on level ground.
    [2] Disengage the all drives.
    [3] Set the parking brake.
    [4] Stop the engine.
21. Stop the engine in the following conditions.
    [1] Before refuelling.
    [2] Before making height or depth adjustment unless adjustment can be made from the operator's position.
    [3] Before clearing blockages.
    [4] Before checking, cleaning or working on the machine.
    [5] After striking a foreign object or if an abnormal vibration occurs.
    Inspect the machine for damage and make repairs before restarting and operating the equipment.

22. Reduce the throttle setting during engine run-out.
23. Do not direct discharge material toward anyone.
    Avoid discharging material against a wall or obstruction.
    Material may ricochet back toward the operator.
24. Take care when loading or unloading the machine into a trailer or a truck.
    Load or unload the machine in a flat and safe place.
    Before loading or unloading, set the parking brake on the truck or trailer, stop the engine, and chock the wheels.
    When transporting the machine on a truck or a trailer, set the parking brake, stop the engine, and fasten the machine to the truck with a rope or other suitable restraining device that has sufficient strength.
    When using a running board, select one with sufficient strength, length, and width and that will not cause the machine to slip.
25. Close the fuel valve before transporting the machine.

## Maintenance

1. Never allow untrained personnel to service machine.
2. Implement the following work before adjusting, cleaning or repairing.
   [1] Stop the machine on level ground.
   [2] Disengage drive to the cutting unit(s).
   [3] Lower the cutting unit(s) and attachment(s) if installed.
   [4] Set the parking brake.
   [5] Stop the engine.
   [6] Disconnect spark plug wire.
   [7] Wait for all movement to stop.
3. Allow the engine/muffler to cool before checking/maintenance.
4. To reduce the fire hazard, keep hot parts such as the engine and silencer/muffler, and fuel storage area free of grass, leaves, or excessive grease.
   Clean up oil or fuel spillage.
5. Appropriately manage and correctly use the tools necessary for servicing or adjusting the machine.
6. Use jack stands to support components when required.
7. Keep hands and feet away from moving parts.
   If possible, do not make adjustments with the engine running.
8. Make sure that parts such as wires are not touching each other and that their covers have not come off.
9. Keep all parts in good working condition and all hardware tightened.
   Replace all worn or damaged decals.
10. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
11. Carefully release pressure from components with stored energy.
12. Use care when checking the cylinders/reels and bed knives.
    Wear gloves and use caution when servicing them.
13. Be careful during adjustment of the machine to prevent entrapment of the fingers between moving blades and fixed parts of the machine.
14. On multi-cylinder/multi-reel machines, take care as rotating one cylinder/reel can cause other cylinders/reels to rotate.
15. If the fuel tank has to be drained, do this outdoors.

## Storage

1. When machine is to be parked, stored, or left unattended, lower the cutting unit(s) and attachment(s) if installed unless a positive mechanical lock is provided.
2. Allow the engine to cool before storing in any enclosure.
3. Only cover the machine with a sheet after hot parts have sufficiently cooled down.
4. Never store the equipment with fuel in the tank inside a building where fumes may reach an open flame or spark.
5. If the engine is provided with a shut-off valve, shut off valve while storing or transporting.
6. Do not store fuel near flames.

# Disposal

# Disposal

## Recycle and Waste Disposal

### About Recycle

Recycling battery etc. is recommended for environmental conservation and economical use of resources.
It may be required by local laws.

### About Waste Disposal

Make sure that waste generated when servicing or repairing the machine is disposed of in accordance with local regulations.
(e.g. waste oil, antifreeze, rubber products, and wires etc.)

## Specifications

### Specifications

| | | | |
|---|---|---|---|
| Type | | | LM180E |
| Dimensions | Total length | | 215 cm |
| | Total width | During operation | 208 cm |
| | | During transport | 185 cm |
| | Total height | Steering wheel | 102 cm |
| Total weight | Machine (empty fuel tank) | | 381 kg |
| Minimum turning radius | | | 230 cm |
| Engine | Model | | MITSUBISHI GB300LN |
| | Type | | Air-Cooled, 4-Cycle, Slant Single-Cylinder,Horizontal P.T.O. Shaft, OHC Gasoline Engine |
| | Total displacement | | 296 $cm^3$ (0.296 L) |
| | Maximum output | | 7.3 kW (10.0 PS)/2,000 rpm |
| Fuel tank capacity | | | Gasoline 6.0 $dm^3$ (6.0 L) |
| Fuel consumption | | | 315 g/kW・h (rated output) |
| Engine oil capacity | | | 1.0 $dm^3$ (1.0 L) |
| Coolant volume | | | - |
| Hydraulic tank capacity | | | - |
| Transmission oil capacity | | | 2.0 $dm^3$ (2.0 L) |
| Operating width (Mowing width) | | | 188 cm |
| Operating height (Mowing height) | | | 13.0 - 15.0 mm |
| Blades | | | 5,7 |
| Drive | Traveling | | Mechanical |
| | Mowing | | Mechanical |
| Speed (HST) | | | - |
| Speed (Mechanical) | Forward | 1st | 3.1 km/h |
| | | 2nd | 6.4 km/h |
| | | 3rd | 9.4 km/h |
| | Reverse | 1st | 3.1 km/h |
| Efficiency | | | 9,630 $m^2$/h (6.4 km/h x Mowing width x 0.8) |
| Maximum inclination for operation | | | 15 degrees |
| Tire size | Front wheel | | 4.00-5 |
| | Rear wheel | | 18 x 8.50-8 |
| Tire pneumatic pressure | Front wheel | | 200 kPa (2.0 $kgf/cm^2$) |
| | Rear wheel | | 80 kPa (0.8 $kgf/cm^2$) |
| Battery | | | - |
| Engine plug | | | BR5ES |

* The factory default maximum engine rpm is 1,800 rpm.

## Sound Pressure Level

Sound Pressure Level

This machine was confirmed to have a continuous A-weighted sound pressure level of 89dB by measuring identical machines in accordance with the procedure specified in ISO 5395-1:2013.

## Sound Power Level

Sound Power Level

This machine was confirmed to have a sound power level of 103 dB by measuring identical machines in accordance with the procedure specified in ISO 5395-1:2013.

## Vibration Level

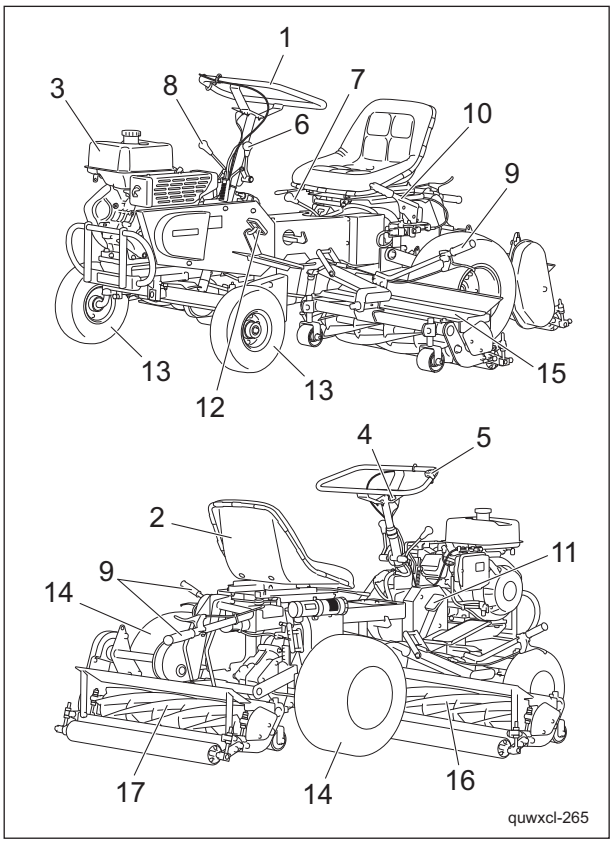
Hand-Arm Vibration

This machine was confirmed to transmit a vibration level of 2.86 $m/s^2$ to hands and arms by measuring identical machines in accordance with the procedure specified in ISO 5395-1:2013.

Whole Body Vibration

This machine was confirmed to transmit a vibration level of 0.65 $m/s^2$ to the whole body by measuring identical machines in accordance with the procedure specified in ISO 5395-1:2013.

## Names of Each Section

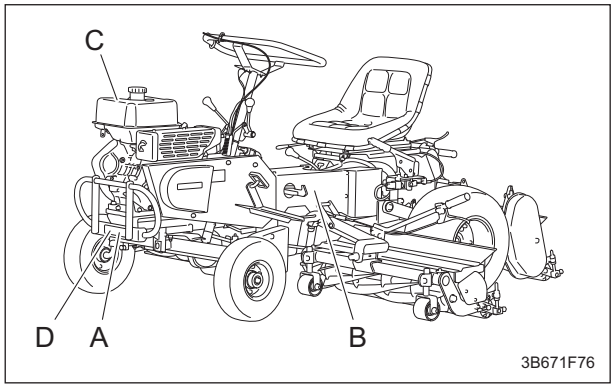



Names of Each Section_001

| | |
|---|---|
| 1 | Steering wheel |
| 2 | Seat |
| 3 | Engine |
| 4 | Engine switch |
| 5 | Throttle lever |
| 6 | Traveling clutch lever |
| 7 | Change lever |
| 8 | Reel rotation lever |
| 9 | Lifting lever |
| 10 | Parking brake lever |
| 11 | Brake pedal |
| 12 | Diff-lock pedal |
| 13 | Front tire |
| 14 | Rear tire |
| 15 | Left mower unit |
| 16 | Right mower unit |
| 17 | Rear mower unit |

## Regulation Decals

### Positions of Regulation Decals



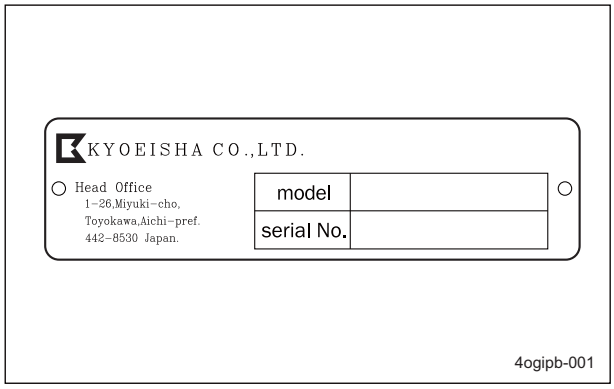

Positions of Regulation Decals_001

| | |
|---|---|
| A | Serial number plate |
| B | Specification decal |
| C | Noise emission decal |
| D | Year of manufacture decal |

### Description of Regulation Decals

Serial Number Plate

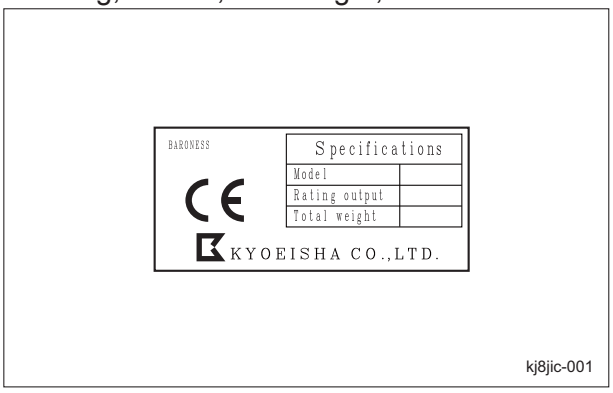
The serial number plate indicates the model and serial number of the machine.




Serial Number Plate_001

Specification Decal

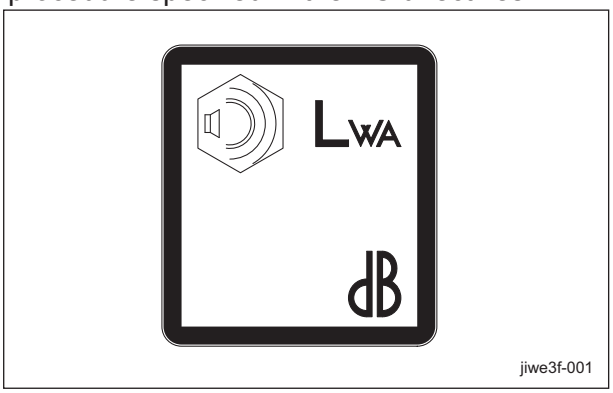
(For Europe)
CE mark indicates that the machine sold in the EU nations complies with the EU requirements.
The Specification decal indicates the CE marking, model , and weight, etc.




Specification Decal_001

Noise Emission Decal

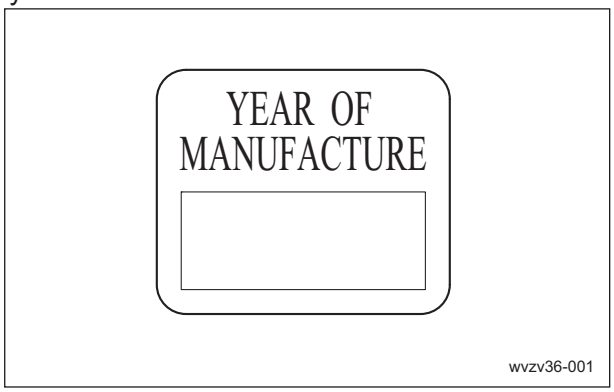
(For Europe)
The noise emission decal indicates the sound power level determined by measuring identical machines in accordance with the procedure specified in the EC directives.




Noise Emission Decal_001

Year of Manufacture Decal

(For Europe)
The year of manufacture decal indicates the year when this machine was manufactured.




Year of Manufacture Decal_001

## Safety Signs and Instruction Signs

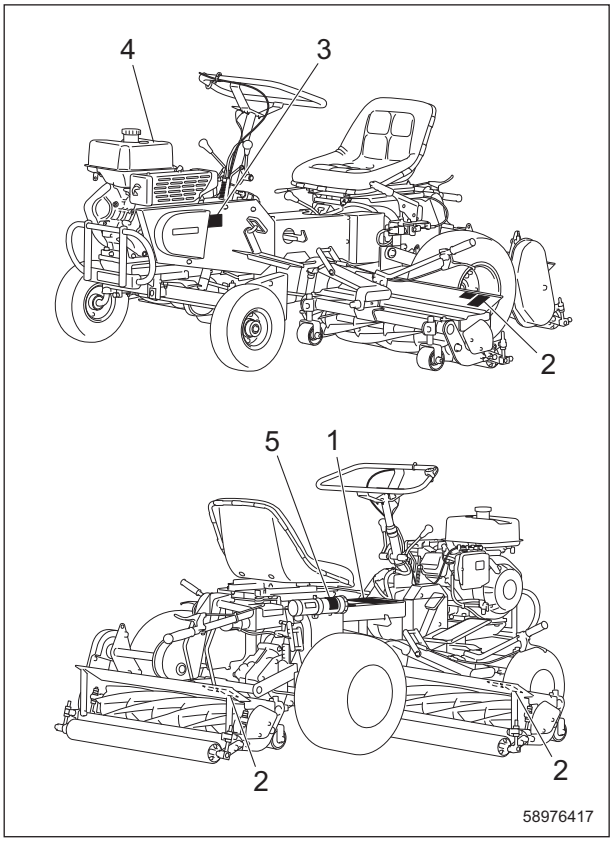
### About Safety Signs and Instruction Signs

Important

Safety decals and instruction decals are attached to this product.
Make sure that they are preserved in their entirety. If they are damaged, become dirty, or peel off, replace them with new ones.

Part numbers for decals that need to be replaced are listed in the parts catalog. Order them from a Baroness dealer or Kyoeisha.

### Positions of Safety Decals and Instruction Decals




Positions of Safety Decals and Instruction Decals_001

| | |
|---|---|
| 1 | Operation decal |
| 2 | Caution to mutilation decal |
| 3 | Caution to rotating object decal |
| 4 | Caution to noise decal |
| 5 | Decal on reading owner's operating manual |

# Product Overview

## Description of Safety Decals and Instruction Decals

Operation Decal

LM180E-1001Z0
STICKER, OPERATION

1.

**Warning**

Read the Owner's Operating Manual.

2.

**Caution**

Flying objects - Be sure that people around the machine keep a safe distance away.

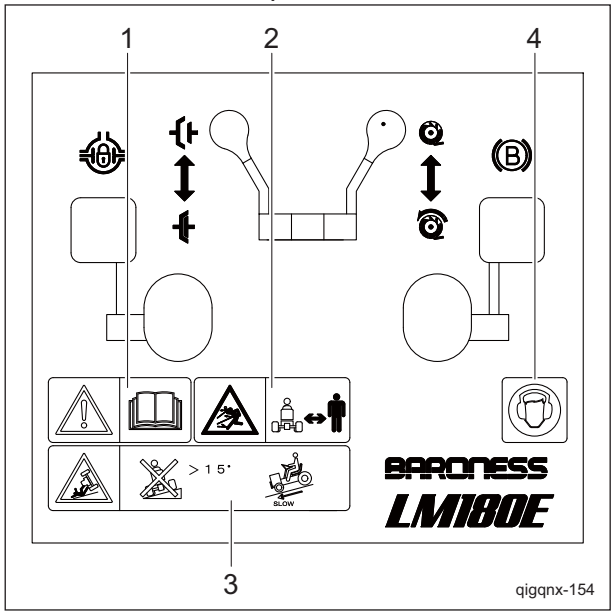
3.

**Warning**

Rollover - Do not work on slopes of 15 degrees or more.
When you descend a slope, lower the mower units and drive at low speed.

4.

Noise - Wear ear protection.



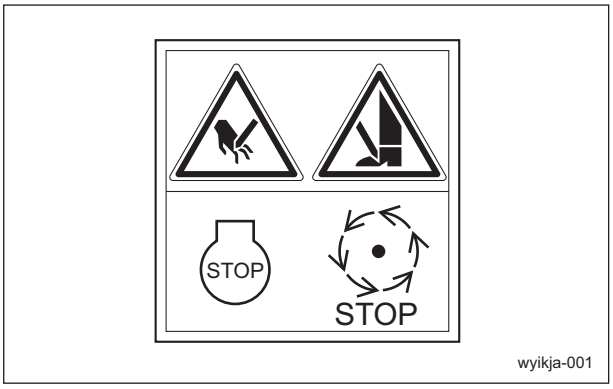

Operation Decal_001

Caution to Mutilation Decal

K4205001600
DECAL, CAUTION TO MUTILATION

**Warning**

May cut your hand or leg - Stop the cutter rotation and engine. Otherwise you may get injured.



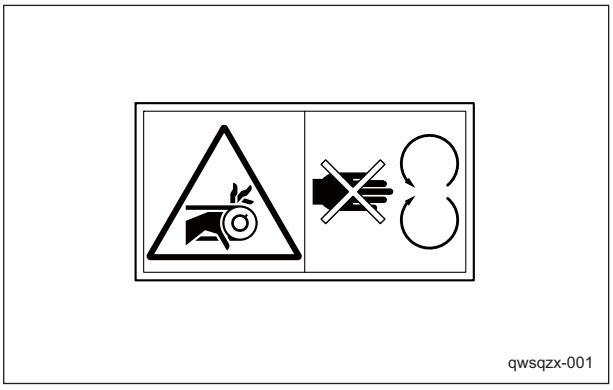

Caution to Mutilation Decal_001

Caution to Rotating Object Decal

K4205001530
Decal, caution to rotating object

**Warning**

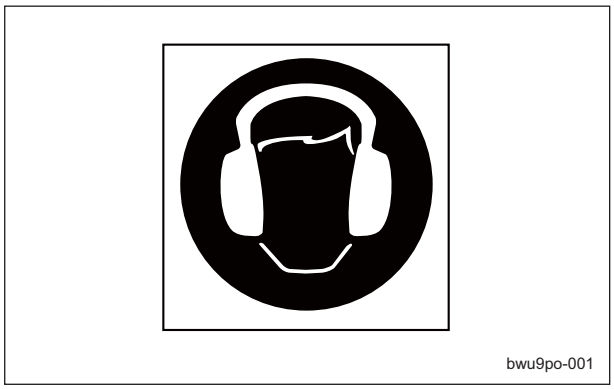
Watch for rotating parts - Keep your hands away from the belts while the engine is running.




Caution to Rotating Object Decal_001

Caution to Noise Decal

K4205001330
DECAL, CAUTION TO NOISE



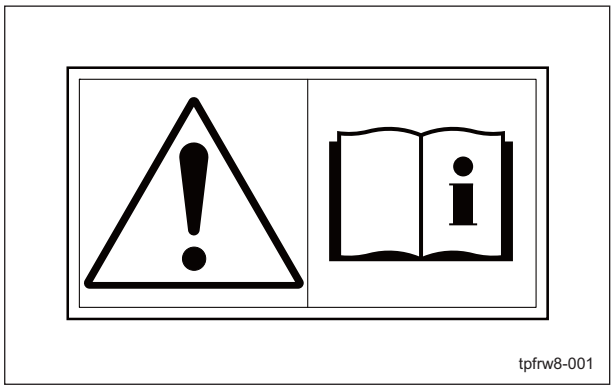

Caution to Noise Decal_001

Decal on Reading Owner's Operating Manual

K4205001560
Decal, read Owner's Operating Manual

Warning

Read the Owner's Operating Manual.




Decal on Reading Owner's Operating Manual_001

## Inspections

Inspect the machine according to the maintenance schedule so that you will be able to take advantage of its optimum performance for a long period of time.

### Reel Cutter (Cutting Cylinder) and Bed Knife (Bottom Blade)

Inspection of Reel Cutter (Cutting Cylinder) and Bed Knife (Bottom Blade)

> ⚠ Caution
>
> Wear gloves when touching edged tools to avoid cutting your hands.

The reel cutter (cutting cylinder) and bed knife (bottom blade) may become dull due to frequent use, objects crushed during mowing, or damage caused during transportation. Inspect the reel cutter (cutting cylinder) and bed knife (bottom blade), and if necessary, adjust the blade engagement, perform back lapping, or resharpen or replace the reel cutter (cutting cylinder) and the bed knife (bottom blade).

1. Check to see whether or not the edge of the reel cutter (cutting cylinder) and the bed knife (bottom blade) are too blunt to cut.
2. Make sure that the reel cutter (cutting cylinder) and the bed knife (bottom blade) are not cracked.
3. Check to see how much the reel cutter (cutting cylinder) and the bed knife (bottom blade) are worn.
4. Make sure that the reel cutter (cutting cylinder) and the bed knife (bottom blade) have not changed color due to heat from grinding.
5. Check to see whether or not the second edge face (relief) remains at the point of reel cutter (cutting cylinder).
6. Make sure that the welding between the reel cutter (cutting cylinder) and the disc has not come off.

### Cover

Inspection of Covers

> ⚠ Warning
>
> If you have removed the covers during inspection, be sure to securely install them in their original positions.
> If a cover remains removed, the operator may come into contact with rotating parts or belts and foreign objects may fly off, possibly resulting in injuries.

1. Make sure that there is no wear or deterioration of the reel cover and all other covers.
2. Make sure that there is no damage to the reel cover and all other covers.
3. Make sure that there is no interference with moving parts due to deformation of the reel cover and all other covers.
4. Make sure that the reel cover and all other covers are installed in their appropriate positions.

### Roller

Inspection of Rollers

Bearing wear due to frequent use or bearing damage caused by water infiltration may prevent the roller from rotating smoothly. Inspect the roller and, if necessary, replace parts such as oil seals and bearings.

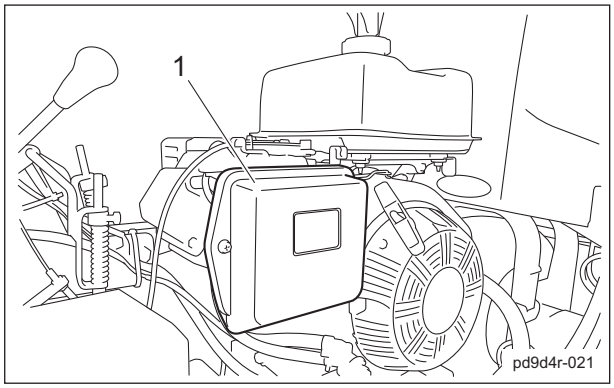
1. Make sure that there is no abrasion nor adhesion of the roller.
2. Make sure that there is no wear of the roller shaft.
3. Make sure that there is no wear nor damage of the oil seal.
4. Make sure that there is no wear nor rust of the bearing.
5. Make sure that there is no play in the roller shaft.

## Air Cleaner

Inspection of Air Cleaner

The air cleaner is a component that removes dirt from the intake air to prevent wear of the cylinder liners and piston rings so that the engine will always operate smoothly.
A contaminated air cleaner element may cause malfunction of the engine.

1. Make sure that there is no damage to the air cleaner.
2. Make sure that the air cleaner element is not contaminated.




Inspection of Air Cleaner_001

| | |
|---|---|
| 1 | Air cleaner |

Cleaning of Air Cleaner

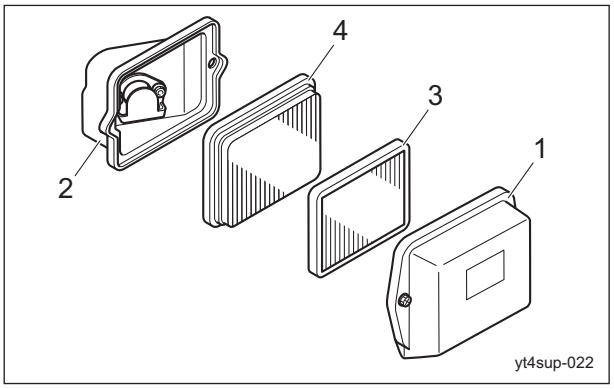
A contaminated air cleaner element may cause malfunction of the engine.
To maximize the life of the engine, clean the air cleaner properly.

1. Remove the air cleaner cover.
2. Remove the urethane element from the paper element.

> Important
>
> Do not use petroleum solvents to clean the paper element.

> Important
>
> If the air cleaner element is damaged or dirty, replace it.

3. Clean the urethane element with a solvent, such as a hardly flammable kerosene, and then soak it in the engine oil and wring out.
4. Remove dirt and dust from the paper element with blowing air or patting.
5. Install the urethane element into the paper element.
6. Install the air cleaner cover.




Cleaning of Air Cleaner_001

| | |
|---|---|
| 1 | Air Cleaner Cover |
| 2 | Air cleaner case |
| 3 | Urethane element |
| 4 | Paper element |

## Tire

Inspection of Tires

1. Check the pneumatic pressure of the tires.
2. Make sure that there are no cracks, damage or abnormal wear on the tires.

| Tire size | Pneumatic pressure |
|---|---|
| Front wheel (4.00 - 5) | 200 kPa (2.0 kgf/cm $^2$) |
| Rear wheel 8.50 - 8 | 80 kPa (0.8 kgf/cm $^2$) |

## Brake

Inspection of Parking Brake

1. Make sure that the brake is applied when you pull the parking brake lever.
2. Make sure that the brake is not applied even slightly when you press the push button to release the parking brake lever.

Inspection of Brake

While traveling, depress the brake pedal until the pedal hits the pedal stopper to make sure that the brake is applied effectively.

## Clutch

Inspection of Clutch

1. Operate the clutch levers and check that the clutch operates perfectly.
2. Make sure that the clutch levers function well.

## Belt

Inspection of Belt

> **Warning**
>
> The engine must be stopped when the belt is inspected.

> **Warning**
>
> If you have removed the covers, etc., during inspection, be sure to securely install them in their original positions.
> If covers, etc., remain removed, the operator may come in contact with rotating parts or belts, possibly resulting in injuries.

> **Important**
>
> A slacking or damaged belt may cause the cutter rotation speed or operation speed to be insufficient for operation.

1. Press the middle of the belt with your finger to check the belt tension.
2. Make sure that there are no cracks, damage or abnormal wear.

## Wire

Inspection of Wire

1. Make sure that the wire is not cracked or damaged.
2. If the wire is cracked or damaged, replace it with a new one immediately.

## Electrical Wiring

Inspection of Electrical Wiring

> **Important**
>
> Electrical short circuit will cause fire, electrical leakage and malfunction of electrical equipments.

Inspect electrical wiring for poor terminal connections, damaged wiring or terminals, loose connections, weather-related deterioration and chemical-related deterioration.
If necessary, repair before operating the machine.

## Around The Engine

Inspection around The Engine

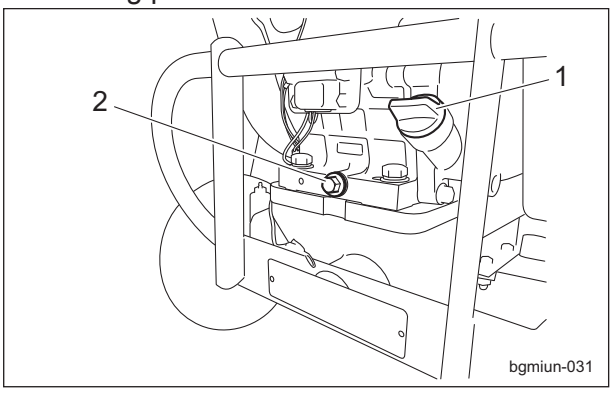
1. Check the fuel system parts for loosened or cracked joints and leakage. Replace the parts if necessary.
2. Blow the air to clean any grass or flammables attached on or around the muffler.
3. Blow air to clean any grass or flammables attached around the cooling fins or recoil starter.

## Engine Oil

Inspection of Engine Oil

> **Important**
>
> Securely tighten the oil level gauge.

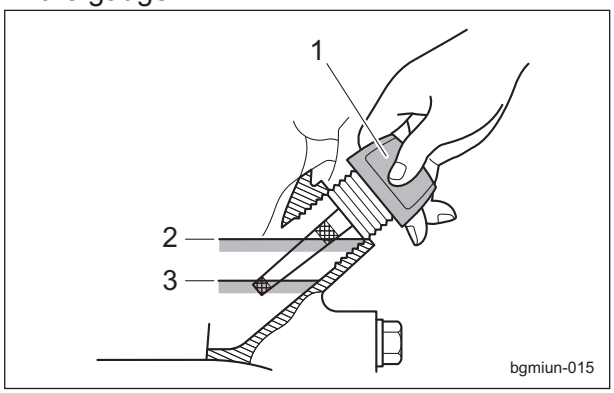
1. Stop the engine, wait 10 to 20 minutes for the engine to cool down, and then check the oil level.
2. Position the machine so that the engine is level, and then check the engine oil level without tightening the oil level gauge in the oil filling port.




Inspection of Engine Oil_001

| | |
|---|---|
| 1 | Oil level gauge (oil filling port) |
| 2 | Drain plug |

3. The appropriate engine oil level should be between the upper and lower limit lines on the gauge.




Inspection of Engine Oil_002

| | |
|---|---|
| 1 | Oil level gauge |
| 2 | Upper limit |
| 3 | Lower limit |

Supply of Engine Oil

Important

Do not supply too much engine oil. Otherwise, the engine may be damaged.

Important

Do not mix different types of engine oil.

Important

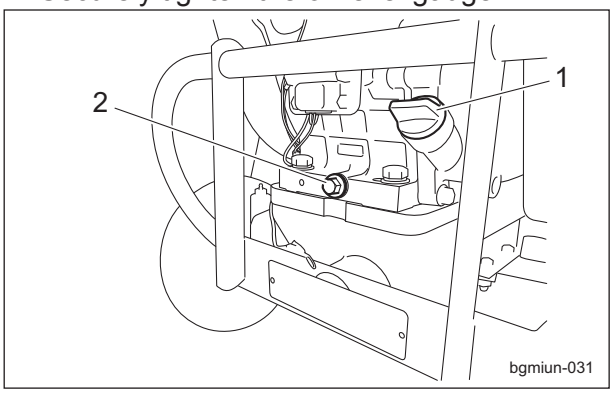
Be sure to use engine oil that is classified as API Service Grade SE or higher, with an SAE viscosity that is appropriate for the operating environment (ambient temperature).

Important

Securely tighten the oil level gauge.

1. Remove the oil level gauge.
2. Supply new engine oil from the oil filling port until it reaches the upper limit line on the oil level gauge.
3. Position the machine so that the engine is level, and then check the engine oil level without tightening the oil level gauge in the oil filling port.

4. Securely tighten the oil level gauge.




Supply of Engine Oil_001

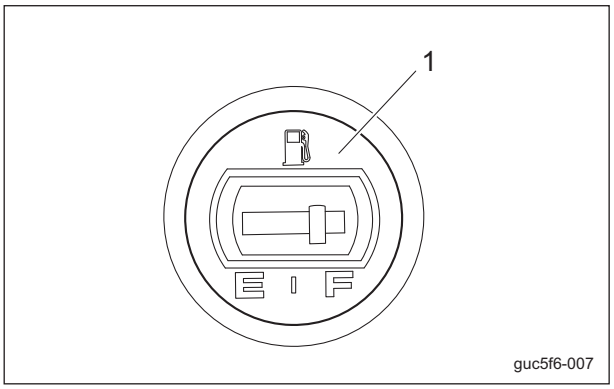
| | |
|---|---|
| 1 | Oil level gauge (oil filling port) |
| 2 | Drain plug |

5. It will take a while for the supplied engine oil to descend into the oil pan.
   Check the oil level again 10 to 20 minutes after replenishment.

## Fuel

Inspection of Fuel Quantity

With the machine on a level surface, observe the fuel gauge on the fuel tank to check the fuel level.




Inspection of Fuel Quantity_001

| | |
|---|---|
| 1 | Fuel gauge |

Supply of Fuel

**Warning**

Do not supply fuel above the FULL level of the fuel gauge.
If you supply too much fuel, it might overflow from the tank cap when you travel or work on a slope.

**Warning**

Keep away from fire while refueling.
Do not smoke while refueling.

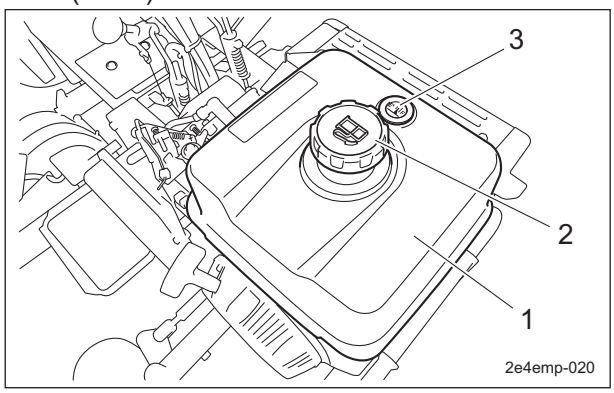
**Warning**

Supply fuel after stopping the engine and allowing it to cool down completely.

**Caution**

Be sure not to touch hot surfaces.

If the fuel gauge, located on the fuel tank, indicates a level close to EMPTY, supply fuel (gasoline) at your earliest convenience.
The fuel tank capacity is approximately 6.0 $dm^3$ (6.0 L).




Supply of Fuel_001

| | |
|---|---|
| 1 | Fuel tank |
| 2 | Tank cap |
| 3 | Fuel gauge |

## Fuel Strainer

Inspection of Fuel Strainer

The fuel strainer is installed near the fuel tank and cleans the fuel that enters the carburetor. If the fuel flow is insufficient, clean or replace the fuel strainer as necessary.

1. Make sure that there is no fuel leakage.
2. Make sure that the fuel strainer is not damaged or dirty.

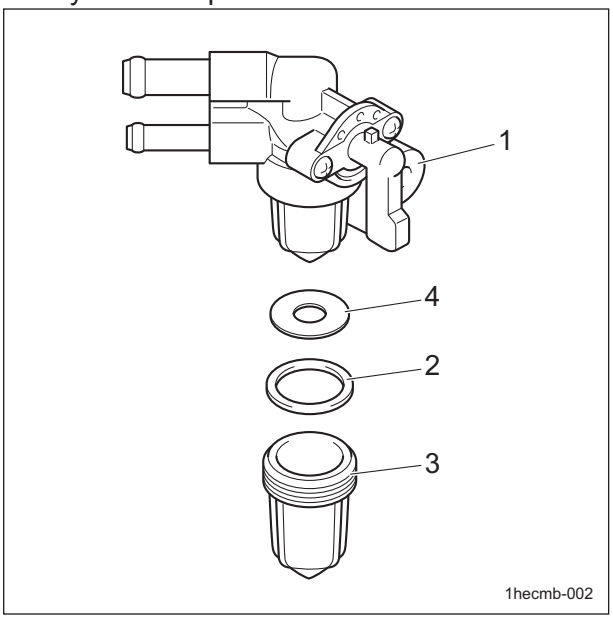
Cleaning of Fuel Strainer

If dust or dirt accumulates in the fuel strainer, the fuel flow will become insufficient. Periodically clean it.

**Important**

Clean the fuel strainer in a clean location, free of dust and dirt.

1. Close the fuel cock of the fuel filter.
2. Remove the strainer cup from the fuel cock.
3. Clean the filter and the inside of the strainer cup with a solvent, such as hardly flammable kerosene.
4. Dry with compressed air.




Cleaning of Fuel Strainer_001

| | |
|---|---|
| 1 | Fuel cock |
| 2 | Packing |
| 3 | Strainer cup |
| 4 | Filter |

Important

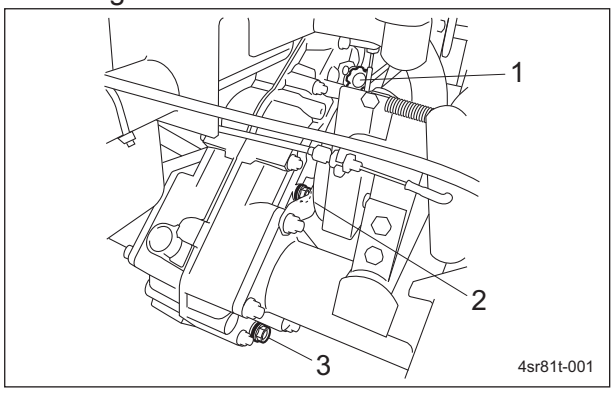
During installation, prevent contamination with dirt or dust.
If the fuel is contaminated with dirt, dust, etc., the fuel flow will become insufficient.

5. Correctly install all parts in their original positions.
6. Fill up the fuel tank with fuel, and then open the fuel cock.
7. Make sure that there is no fuel leakage.

## Transmission

Inspection of Transmission Oil

1. Place the machine so that its frame will be level, and then make sure that the transmission oil level is at the oil level plug at any time.
   The oil level plug is located on the right side of the transmission.
2. Check underneath the machine for oil leakage.




Inspection of Transmission Oil_001

| | |
|---|---|
| 1 | Oil filling port |
| 2 | Oil level plug |
| 3 | Drain plug |

Filling of Transmission Oil

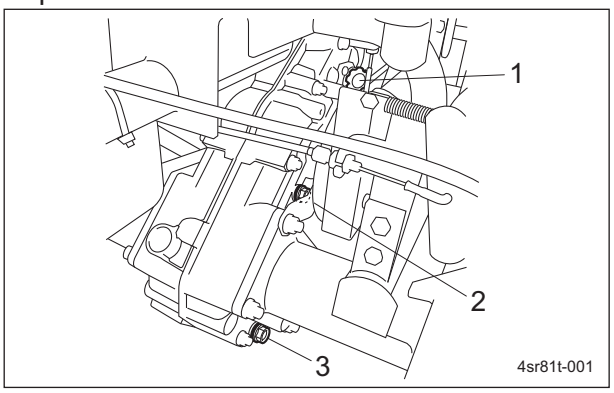
Important

Do not mix different types of transmission oil.

Important

Be sure to pour automobile gear oil that is classified as SAE Viscosity Grade #90 into the transmission.

1. Remove the oil filler cap.
2. Supply transmission oil through the oil filling port.




Filling of Transmission Oil_001

| | |
|---|---|
| 1 | Oil filling port |
| 2 | Oil level plug |
| 3 | Drain plug |

3. Check the oil level again 10 to 20 minutes after filling the oil.
4. Check underneath the machine for oil leakage.

## Oil Leakage

Inspection of Oil Leakage

After approximately 50 hours of operation, some joints may be loosened and oil and grease may leak.
Be sure to retighten the parts.
Check the bottom of the machine for oil and grease leakage.

## Tightening Torques

Important

Refer to the Tightening Torque table.
Note that the Baroness product warranty may not apply to defects caused by incorrect or overtorque tightening, etc.

### Standard Tightening Torques

Bolts and Nuts

Important

A number of bolts are used in each part of this machine.
Be sure to re-tighten the bolts and nuts, because they may be loosened at the earlier stage of the use.

As to the bolts and nuts without any special instruction, tighten them in appropriate tightening torque with proper tool.
Too much tightening may cause the looseness or damage of the screw.
The strength of tightening is determined by types of screws, strength, the friction of thread face or base face and others.
The table below is for the galvanized or parkerized bolts.
In case that the strength of internal thread is weak, it is not applied.
Do not use rusty or sand attached "screw."
Otherwise, it may cause insufficient tightening even if you apply the specified tightening torque.
The friction of the screw face becomes higher and the tightening torque is canceled out by the friction, therefore sufficient tightening cannot be applied.
If "screw" is wet by water or oil, do not tighten it with normal tightening torque.
If the screw is wet, the torque coefficient will get smaller and it may result in too much tightening.
Too much tightening may cause looseness by the screw stretched or result in damage.
Do not use a bolt experienced too much burden.
Using the impact wrench requires the skill.
Do exercise as much as possible for steady tightening.

| Nominal diameter | General bolt | | |
|---|---|---|---|
| | Strength classification 4.8 | | |
| |  tib3yb-001 | | |
| | N-m | kgf-cm | lb-in |
| M5 | 3 - 5 | 30.59 - 50.99 | 26.55 - 44.26 |
| M6 | 7 - 9 | 71.38 - 91.77 | 61.96 - 79.66 |
| M8 | 14 - 19 | 142.76 - 193.74 | 123.91 - 168.17 |
| M10 | 29 - 38 | 295.71 - 387.49 | 256.68 - 336.34 |
| M12 | 52 - 67 | 530.24 - 683.20 | 460.25 - 593.02 |
| M14 | 70 - 94 | 713.79 - 958.52 | 619.57 - 831.99 |
| M16 | 88 - 112 | 897.34 - 1142.06 | 778.89 - 991.31 |
| M18 | 116 - 144 | 1,182.85 - 1,468.37 | 1,026.72 - 1,274.54 |
| M20 | 147 - 183 | 1,498.96 - 1,866.05 | 1,301.10 - 1,619.73 |
| M22 | 295 | 3,008.12 | 2,611.05 |
| M24 | 370 | 3,772.89 | 3,274.87 |
| M27 | 550 | 5,608.35 | 4,868.05 |
| M30 | 740 | 7,545.78 | 6,549.74 |

| Nominal diameter | Heat-treated bolt | | | | | |
|---|---|---|---|---|---|---|
| | Strength classification 8.8 | | | Strength classification 10.9 | | |
| |  tib3yb-002 | | |  tib3yb-003 | | |
| | N-m | kgf-cm | lb-in | N-m | kgf-cm | lb-in |
| M5 | 5 - 7 | 50.99 - 71.38 | 44.26 - 61.96 | 7 - 10 | 71.38 - 101.97 | 61.96 - 88.51 |
| M6 | 8 - 11 | 81.58 - 112.17 | 70.81 - 97.36 | 14 - 18 | 142.76 - 183.55 | 123.91 - 159.32 |
| M8 | 23 - 29 | 234.53 - 295.71 | 203.57 - 256.68 | 28 - 38 | 285.52 - 387.49 | 247.83 - 336.34 |
| M10 | 45 - 57 | 458.87 - 581.23 | 398.30 - 504.51 | 58 - 76 | 591.43 - 774.97 | 513.36 - 672.68 |
| M12 | 67 - 85 | 683.20 - 866.75 | 593.02 - 752.34 | 104 - 134 | 1,060.49 - 1,366.40 | 920.50 - 1186.03 |
| M14 | 106 - 134 | 1,080.88 - 1,366.40 | 938.21 - 1,186.03 | 140 - 188 | 1,427.58 - 1,917.04 | 1,239.14 - 1,663.99 |
| M16 | 152 - 188 | 1,549.94 - 1,917.04 | 1,345.35 - 1,663.99 | 210 - 260 | 2,141.37 - 2,651.22 | 1,858.71 - 2,301.26 |
| M18 | 200 - 240 | 2,039.40 - 2,447.28 | 1,770.20 - 2,124.24 | 280 - 340 | 2,855.16 - 3,466.98 | 2,478.28 - 3,009.34 |
| M20 | 245 - 295 | 2,498.27 - 3,008.12 | 2,168.50 - 2,611.05 | 370 - 450 | 3,772.89 - 4,588.65 | 3,274.87 - 3,982.95 |
| M22 | - | - | - | 530 | 5,404.41 | 4,691.03 |
| M24 | - | - | - | 670 | 6,831.99 | 5,930.17 |
| M27 | - | - | - | 1,000 | 10,197.00 | 8,851.00 |
| M30 | - | - | - | 1,340 | 14,628.78 | 11,860.34 |

Note:
The same values are applied to "fine screw thread."

## Principal Tightening Torques

Tightening Torque by Model

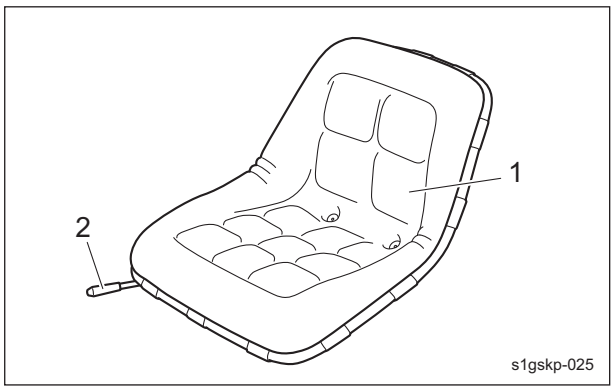
LM180E
Tighten the following bolts and nuts at the torque specified in the table.
For thread locking adhesive, apply a mild to high-strength thread locker (ThreeBond 1322 or equivalent anaerobic sealant).

| Portion | | Code | Part name | Tightening Torque | | | Thread locking adhesive |
|---|---|---|---|---|---|---|---|
| | | | | N-m | kgf-cm | lb-in | |
| Front wheel | Front wheel shaft | K0071000082 | Bolt, with nipple hole M12-15 | 36 - 40 | 371.13 - 407.92 | 318.64 - 354.04 | — |
| | Wheel mounting shaft | K0000100252 | Bolt, M10-25 | 29 - 38 | 295.71 - 387.49 | 256.68 - 336.34 | — |
| | Wheel | K0000080202 | Bolt, M8-20 | 14 - 19 | 142.76 - 193.74 | 123.91 - 168.17 | — |
| Rear wheel | Wheel | K0010100252 | Bolt, heat-treated M10-25 | 58 - 76 | 591.43 - 774.97 | 513.36 - 672.68 | — |
| Steering | | K1604120000 | Rod end, spherical bearing LHSA12 | 52 - 67 | 530.24 - 683.20 | 460.25 - 593.02 | ○ |
| Handle | | K0010060202 | Bolt, heat-treated M6-20 | 7 - 9 | 71.38 - 91.77 | 61.96 - 79.66 | — |
| Transmission pulley | | K0010060152 | Bolt, heat-treated M6-15 | 7 - 9 | 71.38 - 91.77 | 61.96 - 79.66 | ○ |
| Mower unit | Bed knife (Bottom blade) | K0071001182 | Screw, heat-treated flathead M10-16 | 29 - 38 | 295.71 - 387.49 | 256.68 - 336.34 | — |
| | Front roller | K0010100252 | Bolt, heat-treated M10-25 | 58 - 76 | 591.43 - 774.97 | 513.36 - 672.68 | — |

## Adjustment before Work

### Adjustment of Seat

Use the seat adjustment lever to adjust the seat back and forth.
Adjust the position according to the operator's body size.
The adjustment lever is located under the front side of the seat.




Adjustment of Seat_001

| | |
|---|---|
| 1 | Seat |
| 2 | Adjustment lever |

### Adjustment of Blade Engagement

**Warning**

Make sure that the parking brake is firmly applied before performing the operation.

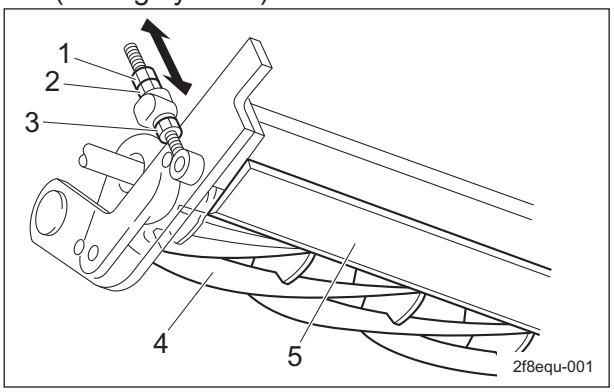
**Caution**

Be sure to perform this operation on your own.

**Caution**

When handling the reel cutter (cutting cylinder) or bed knife (bottom blade), wear gloves to protect your hands.
Pay attention not to let the reel cutter (cutting cylinder) catch your gloves. Otherwise, you may injure your hand or fingers.

1. Stop the engine.
2. Raise all the mower units.
3. Remove the belts in the right, left and rear mower units.
4. With the nuts A and B, adjust the engagement between the reel cutter (cutting cylinder) and the bed knife (bottom blade) so that newspaper (two to three sheets) will be cut by the edge of both blades when the blades in their entirety come slightly into contact with each other.
5. Insert two or three strips of newspaper into the space between the reel cutter (cutting cylinder) and the bed knife (bottom blade) at an angle of 90 degrees. Then, rotate the reel cutter (cutting cylinder) counter-clockwise (when you face the mower unit from the left) by hand to check the sharpness of the blades.
   Check the sharpness of the entire range (three or four points) of the reel cutter (cutting cylinder).
   - If a gap is created between edges:
     [1] Loosen the lock nut and slightly loosen nut B.
     [2] Contact the reel cutter (cutting cylinder) and bed knife (bottom blade) slightly, then tighten nut A.
   - If the reel cutter (cutting cylinder) is too tight to turn:
     [1] Loosen the lock nut and slightly loosen nut A.
     [2] Reduce the contact pressure between the reel cutter (cutting cylinder) and bed knife (bottom blade) , then tighten nut B.
   - If the blades still cannot cut well:
     Perform back lapping of the reel cutter (cutting cylinder).




Adjustment of Blade Engagement_001

| | |
|---|---|
| 1 | Lock nut |
| 2 | Nut A |
| 3 | Nut B |
| 4 | Reel cutter (Cutting cylinder) |
| 5 | Bed knife (Bottom blade) |

6. Install the belts for left and right mower units and for rear mower unit.

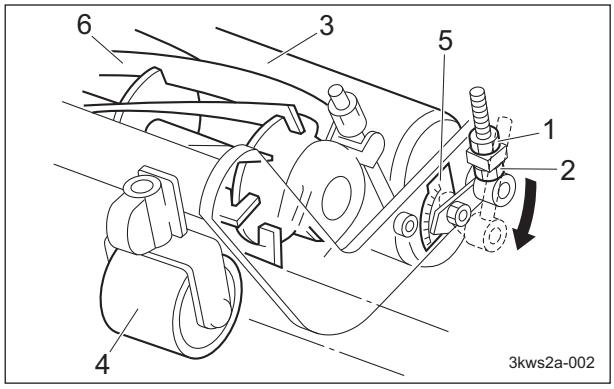
## Adjustment of Cutting Height

Important

The front wheel is provided to prevent the reel cutter (cutting cylinder) from damaging a convex portion of the lawn surface.
Adjust the height so that the front wheel will not be grounded but raised by 10 - 20 mm (0.39 - 0.79 in) off the ground.

The cutting height is adjusted by moving the roller up or down.
Refer to the cutting height scale plate to decide the height.

1. To increase cutting height:
   Loosen nut A, lower the roller, then tighten nut B.
2. To decrease cutting height:
   Loosen nut B, raise the roller, then tighten nut A.




Adjustment of Cutting Height_001

| | |
|---|---|
| 1 | Nut A |
| 2 | Nut B |
| 3 | Roller |
| 4 | Front wheel |
| 5 | Cutting height scale plate |
| 6 | Reel cutter (cutting cylinder) |

## Procedure to Start/Stop Engine

### Start/Stop of Engine

Procedure to Start Engine

> ⚠ Caution
>
> Before starting the engine, make sure that there are no other people or obstacles around the machine.

1. Sit on the seat.
2. Make sure that the parking brake is applied.
3. Make sure that the traveling clutch lever is set to the "OFF" position.
4. Make sure that the reel rotation lever is set to the "Stop" position.
5. Make sure that the change lever is set to the neutral position.
6. Set the fuel cock to the "Open" position.
   The fuel cock is located under the fuel tank.
7. Shift the throttle lever from the "Low speed" position halfway to the "High speed" position.
8. Pull the choke knob.
   Pull the knob half way for restarting, as necessary.
9. Set the engine switch to the "ON" position.
10. Pull the starter grip swiftly, and the engine will start.

> Important
>
> Return the starter grip slowly to its original position after the engine starts.
> Do not let go of the pulled starter grip since it may cause damage to the machine.

11. Make sure that the engine has started, and then slowly return the choke knob to its original position.
12. Shift the throttle lever to the "Low speed" position, and then warm up the engine for 1 to 2 minutes.
13. Gradually move the throttle lever to the "High speed" position.

Procedure to Stop Engine

1. Set the reel rotation lever to the "Stop" position.
2. Shift the throttle lever to the "Low speed" position , and continue idling for 1 to 2 minutes.
3. Shift the traveling clutch lever to the "OFF" position.
4. Depress the brake pedal.
5. Apply the parking brake.
6. Shift the change lever to the neutral position.
7. Set the engine switch to the "OFF" position.
8. Make sure that the engine has stopped.
9. Set the fuel cock to the "Close" position.
   The fuel cock is located under the fuel tank.
10. Leave the driver's seat.

Safety Mechanisms

This machine has the safety device for starting / stopping engine.

1. As for starting the engine, the safety device prevents the engine from starting unless it meets each of the following three conditions.
   - An operator is sitting on the seat.
   - The parking brake lever is pulled.
   - The traveling clutch lever is in the "OFF" position.
2. In the case that the operator leaves the seat with the engine running, the safety device makes the engine stop unless it meets each of the following two conditions.
   - The parking brake lever is pulled.
   - The traveling clutch lever is in the "OFF" position.

## Operation Method

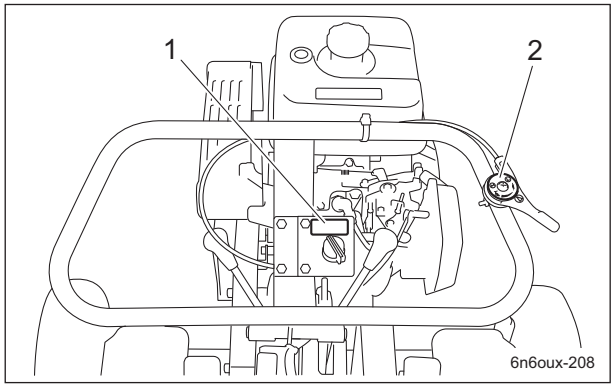
### Cautions for when You Leave The Machine

> **Caution**
>
> If the brakes are not sufficiently effective, use the wheel stoppers to secure the machine.

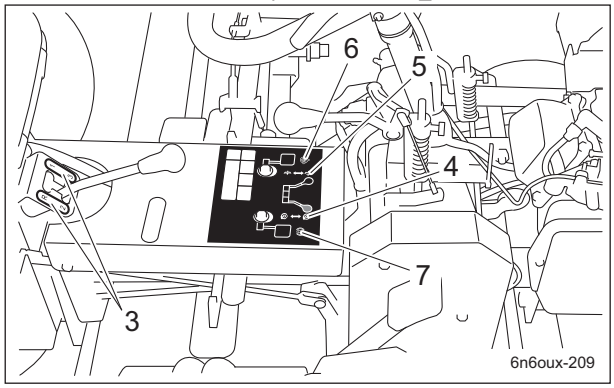
> **Caution**
>
> Never park the machine on a slope.

1. Park the machine on level ground.
2. Apply the parking brake.
3. Stop the engine.
4. Leave the machine.

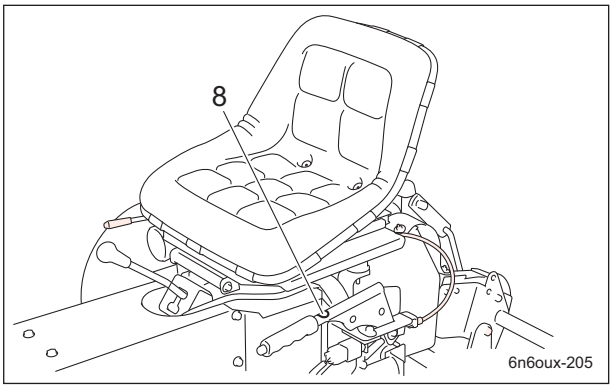
### Positions of Operation Decals




Positions of Operation Decals_001




Positions of Operation Decals_002



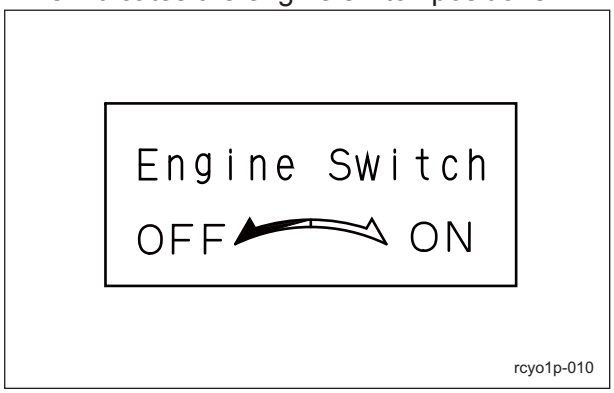

Positions of Operation Decals_003

| | |
|---|---|
| 1 | Engine switch mark |
| 2 | Engine rotation mark |
| 3 | Change mark |
| 4 | Reel rotation mark |
| 5 | Clutch operation mark |
| 6 | Differential lock mark |
| 7 | Brake mark |
| 8 | Brake mark |

## Description of Operation Decals

### Engine Switch Mark

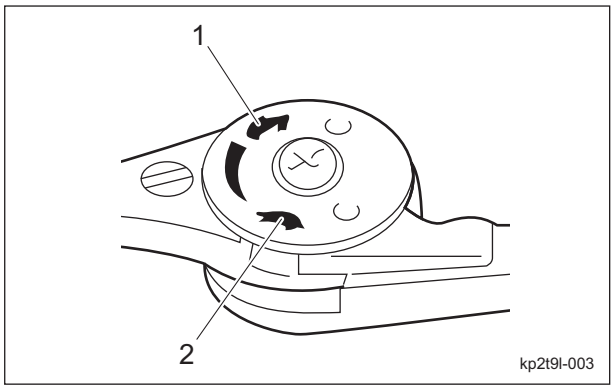
K4203000670
Decal, engine switch
This indicates the engine switch positions.




Engine Switch Mark_001

### Engine Rotation Mark

-
Engine rotation mark
This indicates low/high speed of engine rotation.

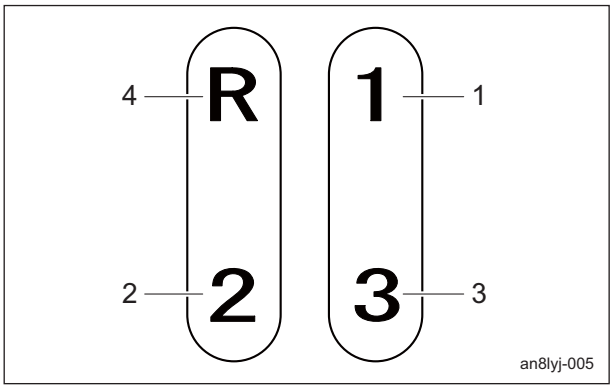



Engine Rotation Mark_001

| | |
|---|---|
| 1 | High speed |
| 2 | Low speed |

### Change Mark

LM180E-0802Z0
DECAL, SHIFTING
This indicates the positions of the change lever.

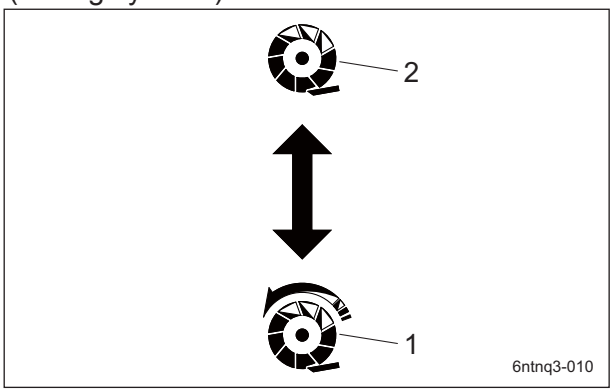



Change Mark_001

| | |
|---|---|
| 1 | Forward (1st speed) |
| 2 | Forward (2nd speed) |
| 3 | Forward (3rd speed) |
| 4 | Reverse |

### Reel Rotation Mark

Reel rotation mark
It illustrates Rotation/Stop of the reel cutter (cutting cylinder).

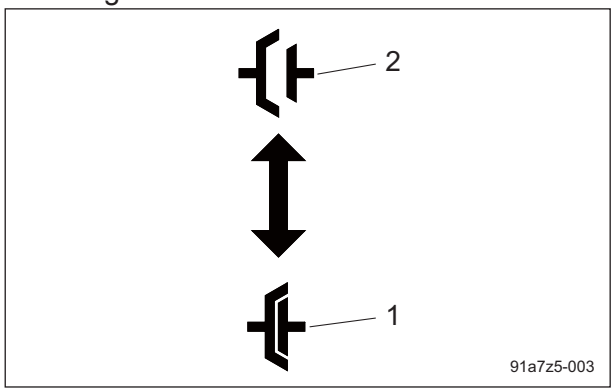



Reel Rotation Mark_001

| | |
|---|---|
| 1 | Rotation |
| 2 | Stop |

Clutch Operation Mark

Clutch operation mark
This illustrates “Engage/Disengage" of the traveling clutch.

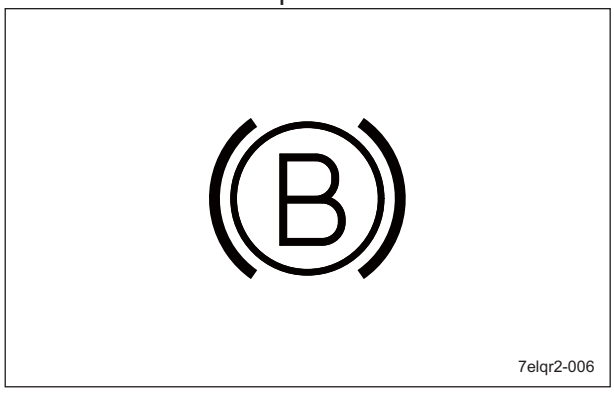



Clutch Operation Mark_001

| | |
|---|---|
| 1 | Engage |
| 2 | Disengage |

Brake Mark

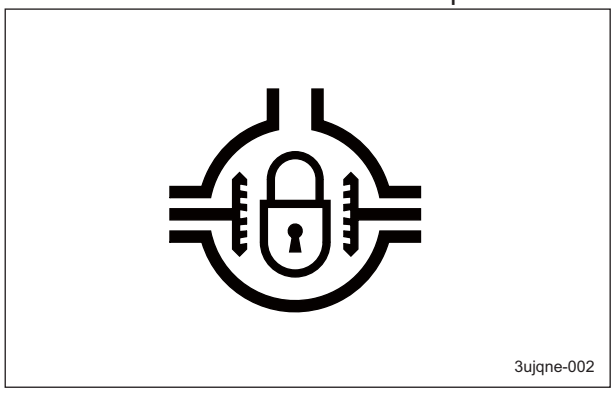
Brake mark
This indicates brake pedal.




Brake Mark_001

Differential Lock Mark

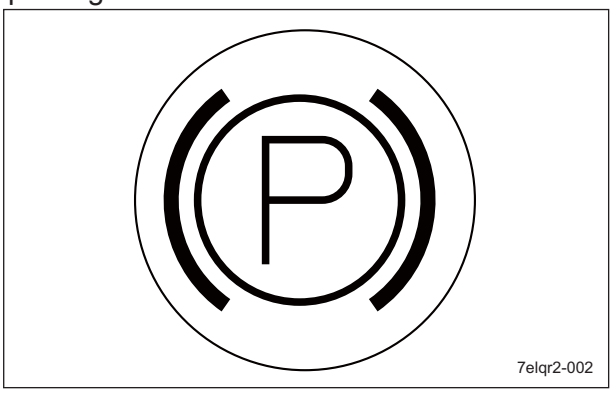
Differential Lock Mark
This indicates the differential lock pedal.




Differential Lock Mark_001

Brake Mark

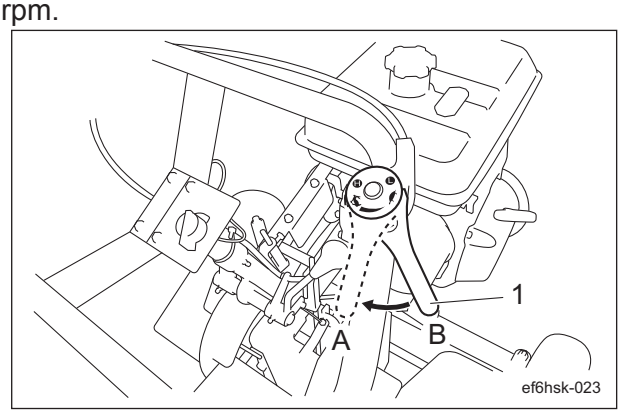
K4209001200
DECAL, BRAKE
It illustrates the locking position for the parking brake.




Brake Mark_001

## Throttle Lever

The throttle lever is located to the right of the steering handle and enables you to adjust the engine rpm.
Move the throttle lever toward the "High speed" position to increase the engine rpm, and toward the "Low speed" position to reduce the rpm.




Throttle Lever-001

| | |
|---|---|
| 1 | Throttle lever |
| A | High speed |
| B | Low speed |

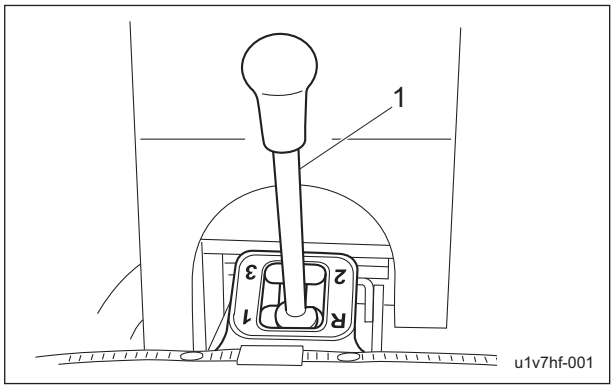
## Change Lever

**Important**

Do not change the lever position during traveling. Otherwise, the transmission will be damaged.

The change lever is a transmission device.
It was adapted from a direct change system.
To change the speed, park the machine on level ground, and then engage the lever in the desired position.
When the lever is not tilted to engage, it is in neutral.

| | | |
|---|---|---|
| Forward | 1 | 3.1 km/h |
| | 2 | 6.4 km/h |
| | 3 | 9.4 km/h |
| Backward | R | 3.1 km/h |




Change Lever_001

| | |
|---|---|
| 1 | Change lever |

## Traveling Clutch Lever

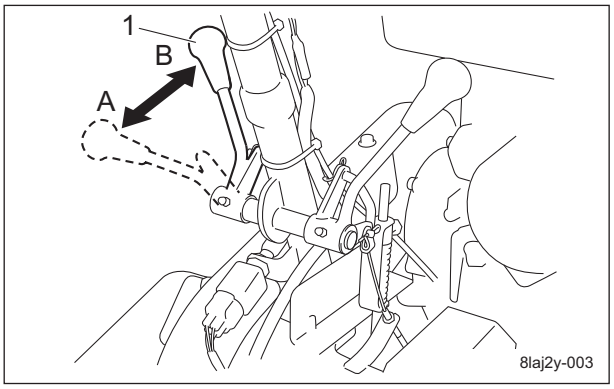
**Warning**

Be careful of the machine suddenly accelerating when the machine starts to travel if the throttle lever is set to the "High speed" position.

**Warning**

The machine may suddenly accelerate if the clutch is abruptly operated.

To prevent sudden acceleration, tilt the traveling clutch lever back slowly.
Start the machine while allowing the belt to slip in the same way as clutch-slipping.
When the traveling clutch is set to the "ON" position, the reel cutter automatically rotates when the mower unit is lowered.
When the traveling clutch is set to the "OFF" position, the reel cutter does not rotate, even if the mower unit is lowered.




Traveling Clutch Lever_001

| | |
|---|---|
| 1 | Traveling clutch lever |
| A | ON |
| B | OFF |

## Reel Rotation Lever

**Caution**

Set the reel rotation lever to the engaged position immediately before mowing. At all other times, be sure to leave the reel clutch lever in the disengaged position.

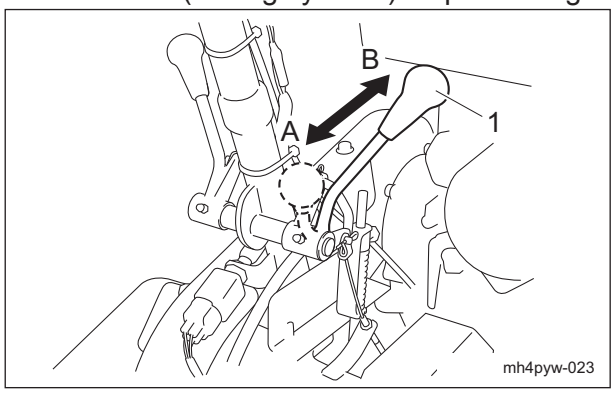
**Important**

Slowly set the reel rotation lever to the engaged position.
If the clutch is quickly engaged, the engine may stall.

**Important**

Unless both left and right mower units have been lowered all the way, you are not able to operate the reel rotation lever.

When the reel rotation lever is tilted back, the reel cutter (cutting cylinder) rotates.
When the reel rotation lever is tilted forward, the reel cutter (cutting cylinder) stops rotating.




Reel Rotation Lever_001

| | |
|---|---|
| 1 | Reel rotation lever |
| A | Rotation |
| B | Stop |

## Mower Unit Lifting lever

Left and Right Mower Units

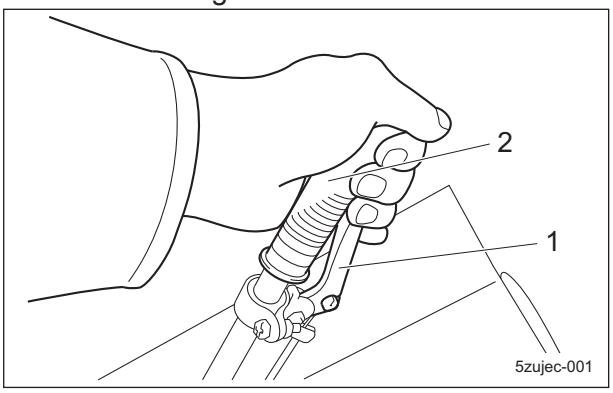
**Caution**

Before raising or lowering the mower units, make sure that there are no people around the machine.

**Important**

If the reel rotation lever is set to "Rotation," you will be unable to raise the mower units.

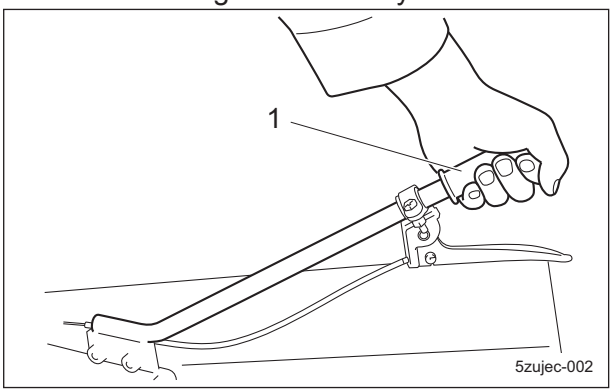
To lower the left and right mower units, squeeze the clutch lever and slowly move the mower unit lifting lever down.




Left and Right Mower Units_001

| | |
|---|---|
| 1 | Clutch lever |
| 2 | Mower unit lifting lever |

To raise the left and right mower units, raise the mower unit lifting lever slowly until the hook metal fitting is secured by the hook.




Left and Right Mower Units_002

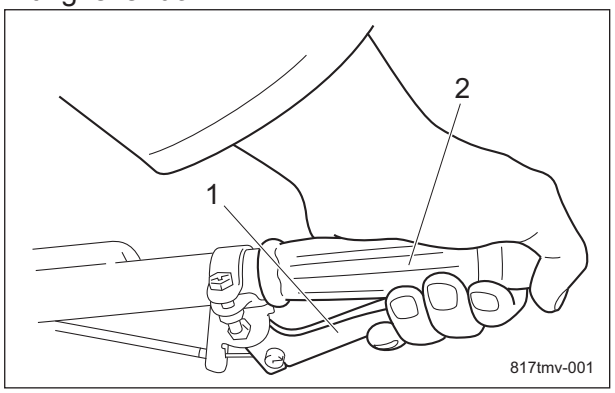
| | |
|---|---|
| 1 | Mower unit lifting lever |

Rear Mower Unit

Important

Before raising or lowering the mower units, make sure that there are no people around the machine.

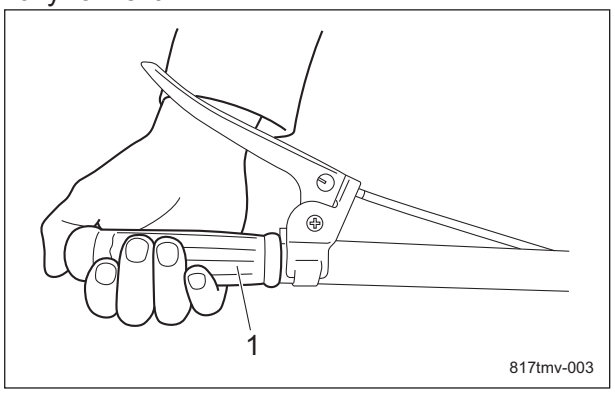
To lower the rear mower unit, squeeze the clutch lever and slowly move the mower unit lifting lever down.




Rear Mower Unit_001

| | |
|---|---|
| 1 | Clutch lever |
| 2 | Mower unit lifting lever |

To raise the rear mower units, raise the mower unit lifting lever slowly, and then tilt it fully forward.

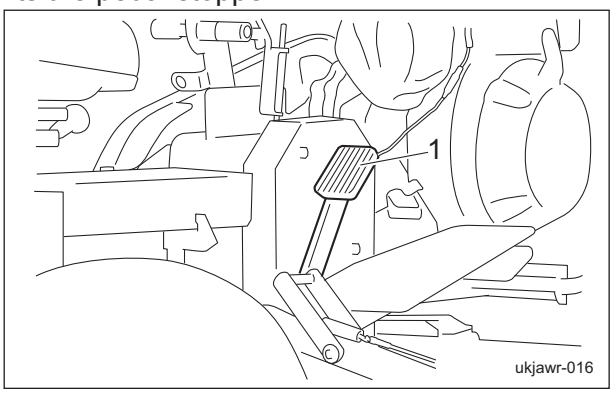



Rear Mower Unit_002

| | |
|---|---|
| 1 | Mower unit lifting lever |

## Brake Pedal

The brake pedal is located in the right foot area.
In order to stop the machine, depress the brake pedal with your right foot until the pedal hits the pedal stopper.

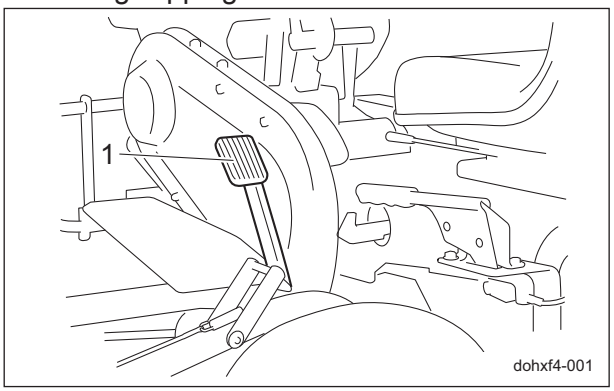



Brake Pedal_001

| | |
|---|---|
| 1 | Brake pedal |

## Diff-lock Pedal

The diff-lock pedal is located in the left foot area.
If you press the diff-lock pedal, the differential device is locked to enhance linearity, thus preventing slipping.




Diff-lock Pedal_001

| | |
|---|---|
| 1 | Diff-lock pedal |

## Parking Brake Lever

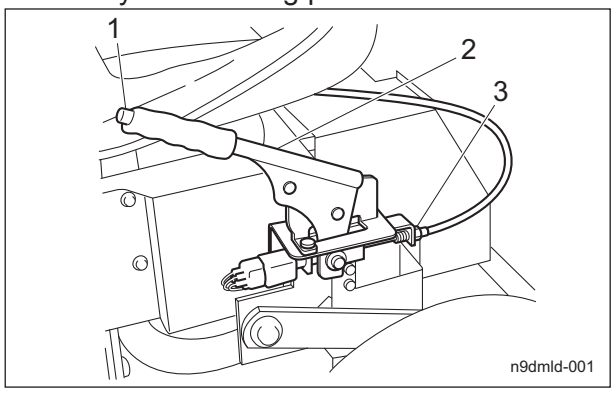
**Caution**

Never park the machine on a slope.

**Important**

Be sure to release the parking brake before driving.
It will result in the brakes malfunctioning.

The parking brake lever is located on the left side of the seat.
To park the machine, pull the parking brake lever completely.
To release the parking brake, press the push button while lowering the parking brake lever all the way to its resting position.




Parking Brake Lever_001

| | |
|---|---|
| 1 | Push button |
| 2 | Parking brake lever |
| 3 | Adjustment bolt |

# Move

## Traveling Operation

**Danger**

If the machine stops on a slope and the engine can not restart, keep the change lever set in the arbitrary position and use the foot brake to move to a flat place.
Shifting the change lever to the "Neutral" position will result in the machine running out of control.

**Caution**

Under any circumstances drive the machine at such a speed that you can stop it immediately for emergencies.

**Caution**

Make sure not to touch rotating tires with your hands or legs.

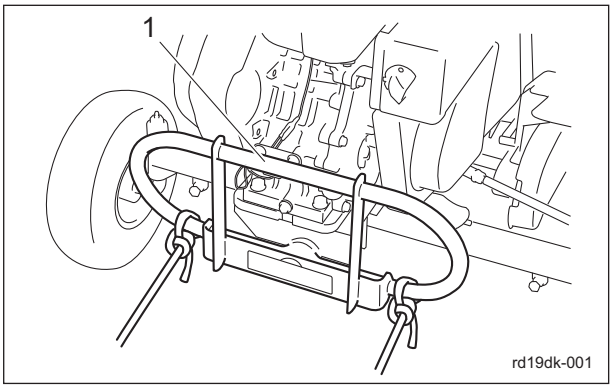
1. Make sure that all the mower units are raised.
2. Start the engine.
   "Procedure to Start Engine" (Page 4-13)
3. Shift the change lever in arbitrary position.
4. Depress the brake pedal, and release the parking brake.
5. Release the brake pedal.
6. Slowly tilt the traveling clutch lever back to set the "ON" position in the same way as half clutch.
7. The machine starts traveling.
8. Slowly tilt the traveling clutch lever forward to set to the "OFF" position.
9. The machine stops with the brake pedal depressed.

## Towing Operation

If the machine does not travel due to engine trouble, etc., you can move it in the following ways:

- Pushing by hand
- Towing (See the following instruction.)

1. Stop the engine.
2. Apply the parking brake.
3. Chock the wheels.
4. Secure the rope to the front part of the frame.




Towing Operation_001

| | |
|---|---|
| 1 | Frame |

5. Raise all mower units.
6. Set the change lever to the "Neutral" position.
7. Remove the wheel stoppers.
8. Release the parking brake.

> ⚠ Warning
>
> While towing, always keep your foot on the brake pedal and depress the brake pedal at any time to stop.

9. Tow the machine slowly.

## Cutting Work

### Cutting Operation

> ⚠ Caution
>
> Cutting work must be performed at an appropriate speed for the site and location. When cutting bumpy surfaces, keep the engine rpm steady, and slow down the cutting speed.

1. Lower all the mower units.
2. Start the engine.
   "Procedure to Start Engine" (Page 4-13)
3. Move the throttle lever to the "High speed" position.
4. Shift the change lever in arbitrary position.
5. Slowly pull the reel rotation lever in the same way as clutch-slipping to rotate the reel cutters (cutting cylinders) of the left and right mower units.
6. Slowly pull the traveling clutch lever in the same way as clutch-slipping to move the machine forward while rotating the reel cutter (cutting cylinder) of the rear mower unit.
7. Shift the traveling clutch lever to the "ON" position, and then start the operation.

## Transporting

### Transporting Procedure

When loading the machine into a trailer or a truck to transport it, drive the machine in reverse. When unloading, drive the machine forward.

## Storage

### Before Long-Term Storage

1. Cleaning
   - Remove dirt, grass clippings, oil stains etc. completely from the main vehicle and engine.
2. Replacing oil
   - Inspect and replace the engine oil and element.
3. Greasing and lubricating
   - Supply oil and apply grease to appropriate parts.
4. Fuel
   - Remove the fuel from the fuel tank.
5. Tire pneumatic pressure
   - Set the tire air pressure slightly higher than normal, and then place the machine on a board to avoid humidity.
6. Mower units
   - When storing this machine, lower all the mower units unless a positive mechanical lock is provided.
7. Storage location
   - Cover the machine and store it in a dry place where it will not be exposed to rain.

# Maintenance

## Maintenance Precautions

**⚠ Warning**

The chapter "Maintenance" in this manual describes practical measures which should be performed by a mechanic with expertise.
The owner should instruct the mechanic with expertise to perform maintenance service for this machine.

**⚠ Caution**

First, learn well the maintenance operations you plan to perform.

**Important**

Use tools appropriate for each maintenance operation.

**Important**

For the safe and best performance of your machine, use Baroness genuine parts for replacement and accessories.
Please note that our product warranty may be void if you use non-genuine parts for replacement or accessories.

Maintain the machine according to the maintenance schedule so that you will be able to take advantage of its optimum performance for a long period of time.

## Maintenance Schedule

LM180E
Follow the maintenance schedule below.
○ ・ ・ ・ Inspect, adjust, supply, clean
● ・ ・ ・ Replace (first time)
△ ・ ・ ・ Replace

| Maintenance Item | | | Before Work | After Work | Every 25 hrs. | Every 50 hrs. | Every 100 hrs. | Every 200 hrs. | Every 300 hrs. | Every 500 hrs. | Every month | Every year | Every 2 years | Every 4 years | When Required | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Engine | *2 | Check tightening bolts and nuts | ○ | | | | | | | | | | | | | |
| | *2 | Check fuel level | ○ | | | | | | | | | | | | | |
| | *2 | Check fuel and oil leaks | ○ | | | | | | | | | | | | | |
| | *2 | Check engine oil level | ○ | | | | | | | | | | | | | |
| | *2 | Check air cleaner | | ○ | | | | | | | | | | | △ | |

| | | Maintenance Item | Before Work | After Work | Every 25 hrs. | Every 50 hrs. | Every 100 hrs. | Every 200 hrs. | Every 300 hrs. | Every 500 hrs. | Every month | Every year | Every 2 years | Every 4 years | When Required | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Engine | *2 | Clean engine and circumference of the muffler cover | | ○ | | | | | | | | | | | | |
| | | Clean circumference of the recoil starter | | ○ | | | | | | | | | | | | |
| | *2 | Change engine oil | | | ● | △ | | | | | | | | | | |
| | *2 | Check spark plug | | | | | ○ | | | | | | | | △ | |
| | *2 | Clean sediment cup | | | | | ○ | | | | | | | | | |
| | *1 | Clean fuel tank & filter | | | | | | | ○ | | | | | | | |
| | *1 | Check valve clearance | | | | | | | ○ | | | | | | | |
| | *1 | Remove carbon in combustion chamber | | | | | | | ○ | | | | | | | |
| | | Check fuel hoses and clamp bands | | | | | | | | | | ○ | | | △ | |
| Main vehicle | | Check tire pressures and condition | ○ | | | | | | | | | | | | | |
| | | Check V belt | ○ | | | | | | | | | | | | | |
| | | Adjust V-belt tension | ○ | | | | | | | | | | | | | |
| | | Check actuation of traveling clutch lever | ○ | | | | | | | | | | | | | |
| | | Check actuation of reel rotation lever | ○ | | | | | | | | | | | | | |
| | | Check actuation of right and left mower stoppers | ○ | | | | | | | | | | | | | |
| | | Check throttle wire | ○ | | | | | | | | | | | | | |
| | | Check actuation of brake pedal | ○ | | | | | | | | | | | | | |
| | | Check brake function | ○ | | | | | | | | | | | | | |
| | | Check actuation of diff-lock pedal | ○ | | | | | | | | | | | | | |
| | | Check actuation of speed change lever | ○ | | | | | | | | | | | | | |
| | | Check oil leaks | ○ | | | | | | | | | | | | | |
| | | Check damaged parts | ○ | | | | | | | | | | | | | |
| | | Check tightening bolts and nuts | ○ | | | | | | | | | | | | | |
| | | Check interlock system safety function | ○ | | | | | | | | | | | | | By starting the engine |
| | | Clean machine exterior | | ○ | | | | | | | | | | | | |
| | | Check electrical wiring condition (Damage, defacement and joint looseness) | | | | ○ | ○ | | | | | | | | | 50 hours first check, every 100 hours thereafter |
| | | Check looseness of wheel mounting bolt | | | | ○ | ○ | | | | | | | | | 50 hours first check, every 100 hours thereafter |

# Maintenance

| | | Maintenance Item | Before Work | After Work | Every 25 hrs. | Every 50 hrs. | Every 100 hrs. | Every 200 hrs. | Every 300 hrs. | Every 500 hrs. | Every month | Every year | Every 2 years | Every 4 years | When Required | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Main vehicle | | Grease and Lubricate all moving parts | | | | ○ | | | | | | | | | | |
| | | Adjust brakes | | | | | | | | | | | | | ○ | |
| | | Replace brake shoe | | | | | | | | | | | | | △ | |
| | | Replace V-belt | | | | | | | | | | | | | △ | |
| | | Check transmission oil amount | | | | | | | | | | | | | ○ | |
| | | Replace transmission oil | | | | | ● | | | △ | | | | | | 100 hours first change, every 500 hours thereafter |
| | | Replace cables | | | | | | | | | | | | | △ | |
| Mower unit | | Check blade condition (Reel cutter and Bed knife) | ○ | | | | | | | | | | | | | |
| | | Check cover condition | ○ | | | | | | | | | | | | | |
| | | Check roller condition | ○ | | | | | | | | | | | | | |
| | | Check damaged parts | ○ | | | | | | | | | | | | | |
| | | Check tightening bolts and nuts | ○ | | | | | | | | | | | | | |
| | | Engage blades | ○ | | | | | | | | | | | | | |
| | | Check mowing height | ○ | | | | | | | | | | | | | |
| | | Adjust reel cover (Variable type) | ○ | | | | | | | | | | | | | |
| | | Clean mower unit | | ○ | | | | | | | | | | | | |
| | | Backlap blades | | ○ | | | | | | | | | | | | |
| | | Grease | | | | ○ | | | | | | | | | | |
| | | Regrind blades (Reel cutter and Bed knife) | | | | | | | | | | | | | ○ | Regrind/Replace blades as and when required |

- *1: Consult your local Baroness Dealer for this service.
- *2: Refer to the Engine's Owner's Manual.
- The values for consumables are not guaranteed.

## Adjusted Values

| | | | |
|---|---|---|---|
| Diff-lock wire | | Create a slight play | |
| Brake pedal | | 5 - 7 mm (0.20 - 0.28 in) | Clearance between pedal stopper and brake pedal |
| Belt | Traveling clutch | 7 - 8 mm (0.28 - 0.31 in) | Clearance between rod-tension metal fitting and collar |
| | Reel rotation lever | 7 - 8 mm (0.28 - 0.31 in) | Clearance between rod-tension metal fitting and collar |
| | Left and Right Mower Units | 1 mm (0.04 in) | Clearance between collar and mower lifting arm |
| | Transmission | Approximately 10 mm (0.39 in)/98 N (10 kgf) | Belt slack |
| | Rear mower tension | 1 mm (0.04 in) | Clearance of spring |
| | Rear Mower Unit | Approximately 10 mm (0.39 in)/98 N (10 kgf) | Belt slack |
| Left / right mower stopper | | 90° | Angle against the frame |
| Wire to hook the rear mower | | The hook metal fitting should contact with the lever mounting bracket slightly. | |
| Wire to hook the left / right mower | | Create a slight play | The hook metal fitting should contact with the bottom of the hook. |

## Jacking Up The Machine

### About Jacking Up The Machine

**Warning**

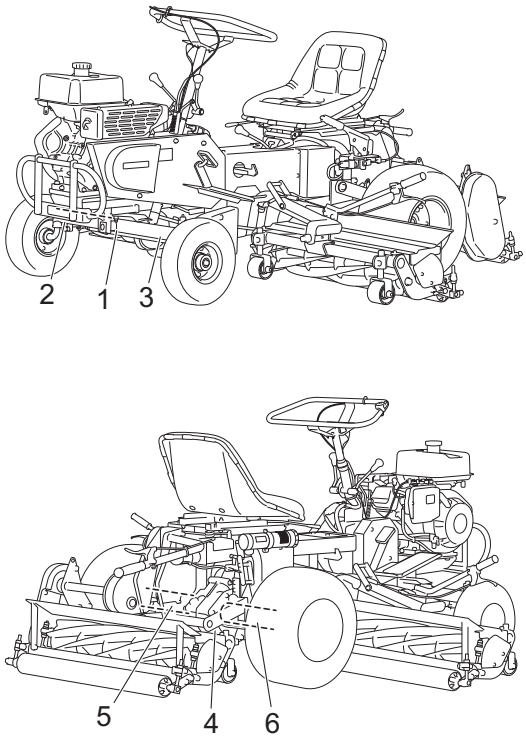
When replacing a tire or beginning any other maintenance or repairs, be sure to chock the wheels to prevent the machine from moving.
Before jacking up the machine, park it on a hard, flat surface such as a concrete floor and remove any obstacles that could prevent you from performing the work safely.
When necessary, use an appropriate chain block, hoist, or jack.
Support the machine securely with jack stands or appropriate blocks.
Failure to do so may cause the machine to move or fall, resulting in injury or death.

**Important**

Only place a jack under the jack-up points specified.
Placing a jack at any other point will result in damage to the frame or other parts.

Use the jack-up points identified in this manual when jacking up the machine.

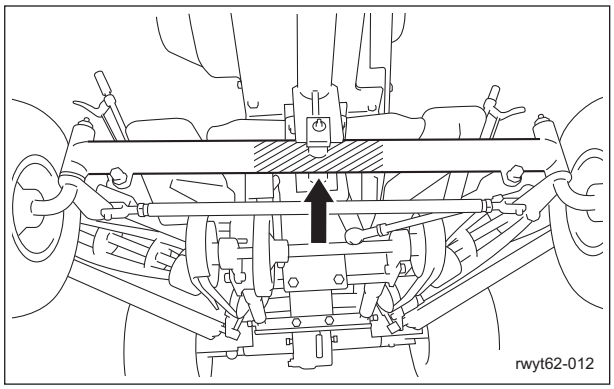
### Jack-up Points




Jack-up Points_001

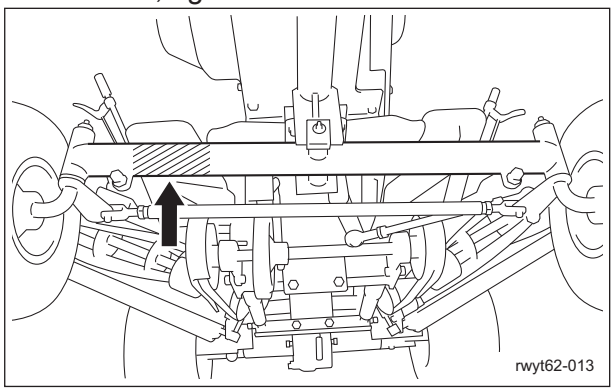
| | Jack-up Points |
|---|---|
| 1 | Front axle, center |
| 2 | Front axle, right |
| 3 | Front axle, left |
| 4 | Transmission case, lower |
| 5 | Transmission axle case, left |
| 6 | Transmission axle case, right |

1. Front axle, center



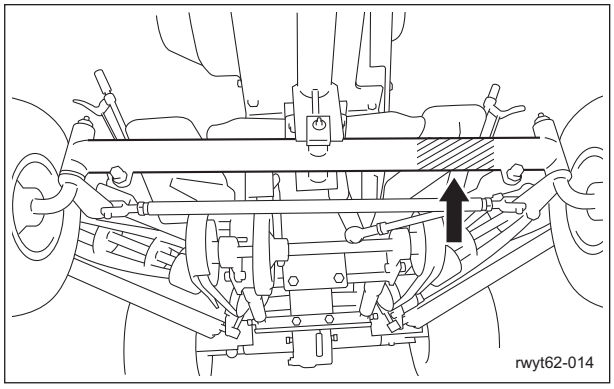

Jack-up Points_002

2. Front axle, right



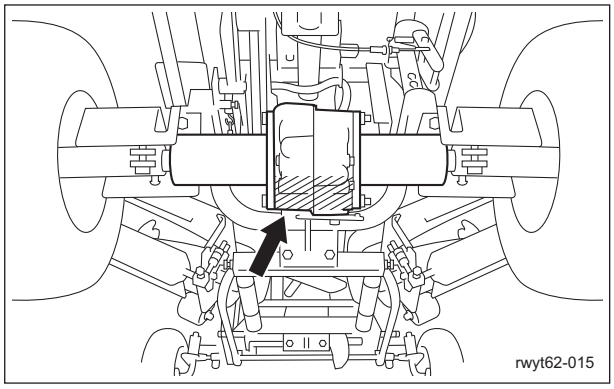

Jack-up Points_003

3. Front axle, left



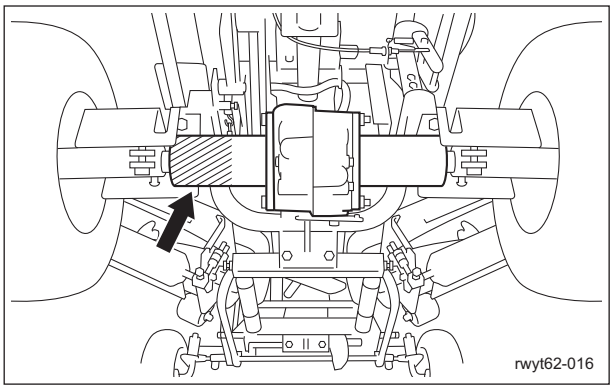

Jack-up Points_004

4. Transmission case, lower



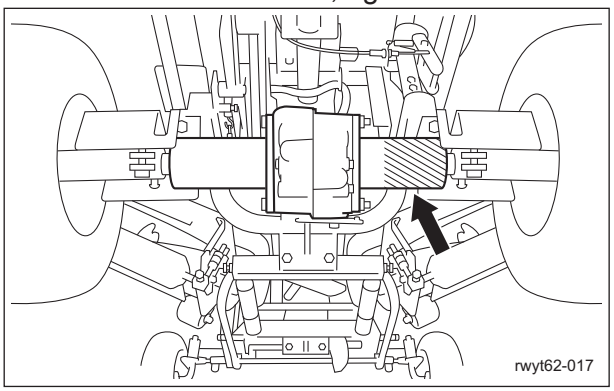

Jack-up Points_005

5. Transmission axle case, left




Jack-up Points_006

6. Transmission axle case, right




Jack-up Points_007

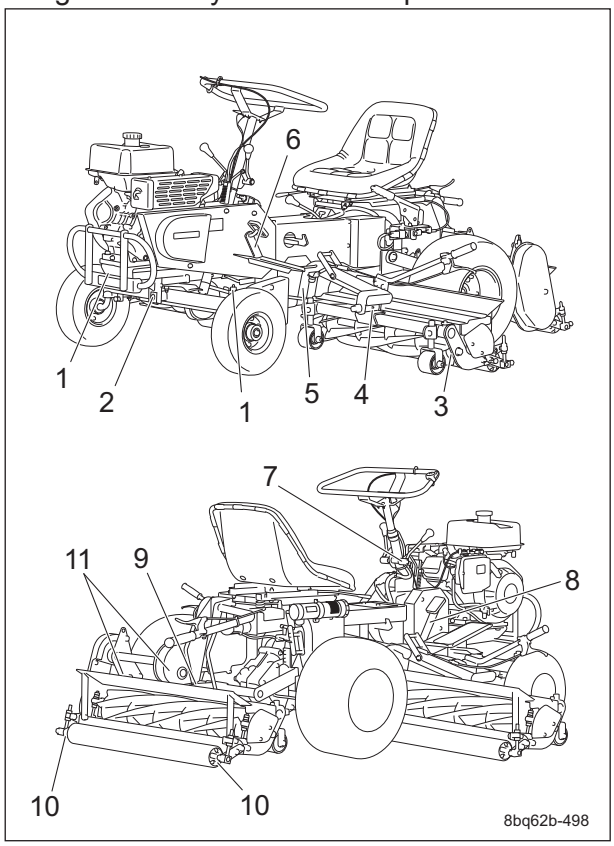
## Greasing

### About Greasing

Since there may be adhesion or damage due to lack of grease on moving parts, they must be greased.
Add urea-based No. 2 grease in accordance with the Maintenance Schedule.
Other locations where the specified grease or lubricant is used are indicated in "Greasing Points".
Add grease using the specified grease or lubricant.

## Greasing Points

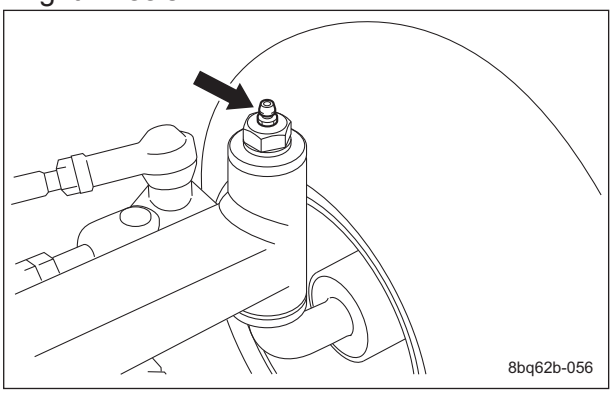
Grease nipples are installed in the following locations.
Add grease every 50 hours of operation.




Greasing Points_001

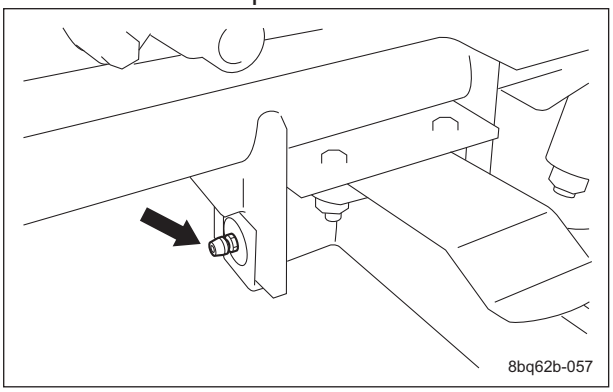
| | Portion | No. of Greasing Points |
|---|---|---|
| 1 | Front wheels | 2 |
| 2 | Front wheel front pin | 1 |
| 3 | Reel housing | 6 |
| 4 | Mower frame | 2 |
| 5 | Mower lifting arm | 2 |
| 6 | Diff-lock pedal | 1 |
| 7 | Handle tension | 4 |
| 8 | Brake pedal | 1 |
| 9 | Rear mower oscillating metal part | 1 |
| 10 | Rear roller | 6 |
| 11 | Mower tension | 2 |

1. Front wheels
   There is one point each on the left and the right wheels.



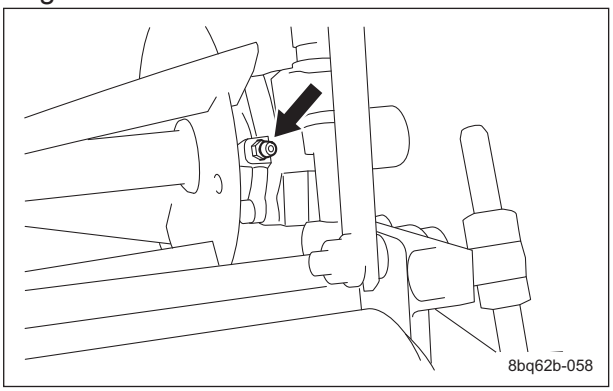

Greasing Points_002

2. Front wheel front pin



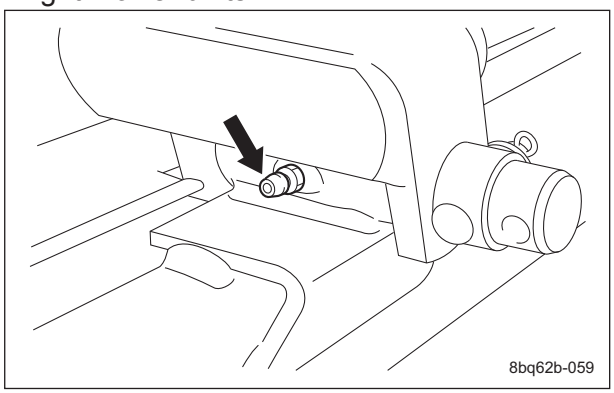

Greasing Points_003

3. Reel housing
   There is one point each on the left and the right of each unit.



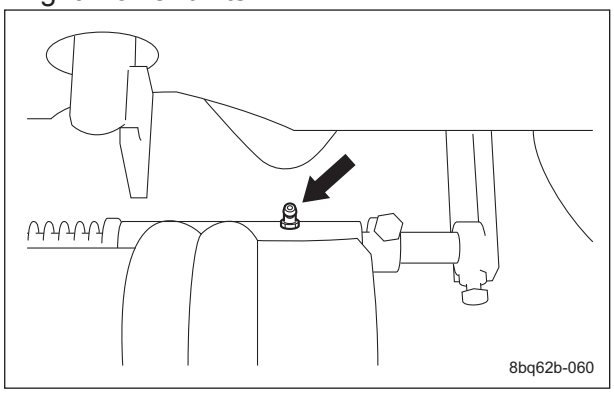

Greasing Points_004

4. Mower frame
   There is one point each on the left and the right mower units.



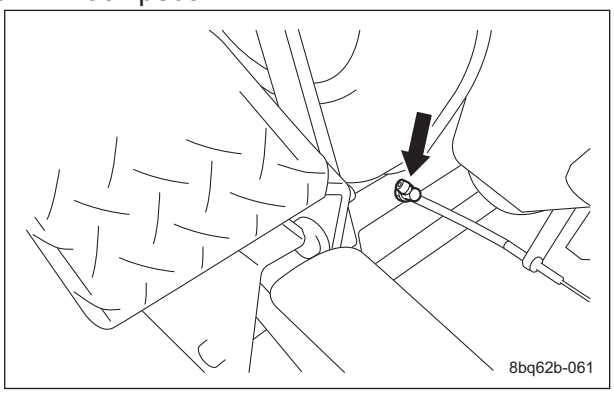

Greasing Points_005

5. Mower lifting arm
   There is one point each on the left and the right mower units.



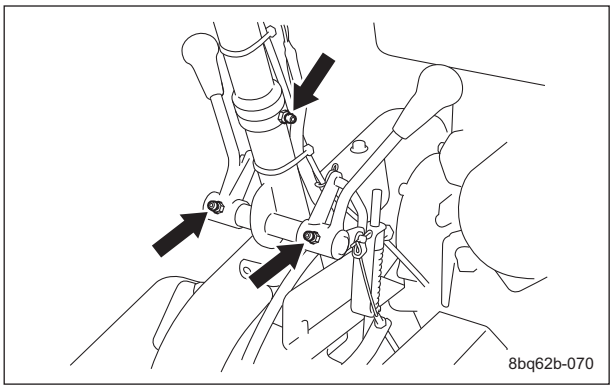

Greasing Points_006

6. Diff-lock pedal

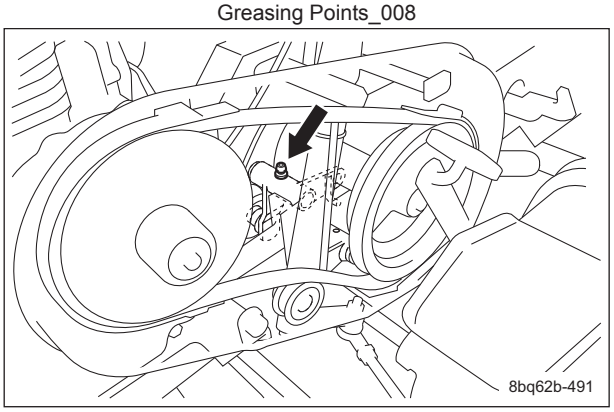



Greasing Points_007

7. Handle tension

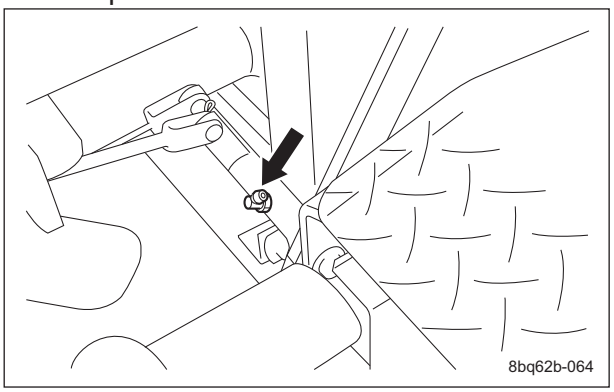



Greasing Points_008



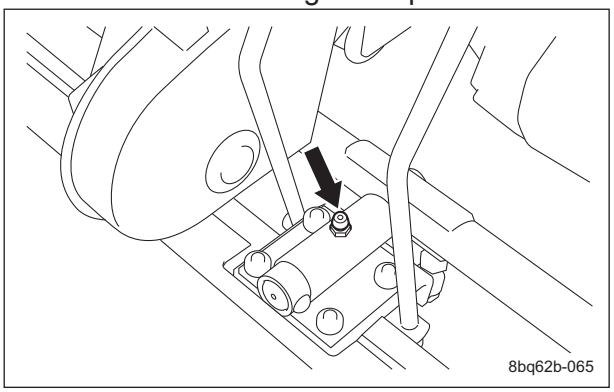

Greasing Points_009

8. Brake pedal



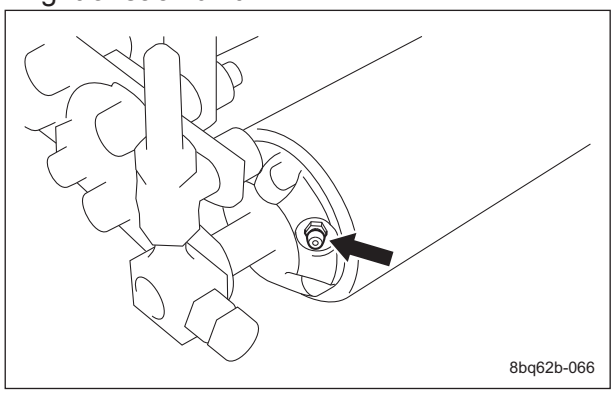

Greasing Points_010

9. Rear mower oscillating metal part



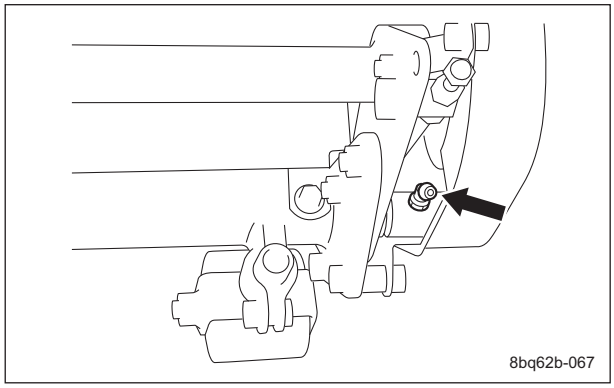

Greasing Points_011

10. Rear roller
    There is one point each on the left and the right of each unit.

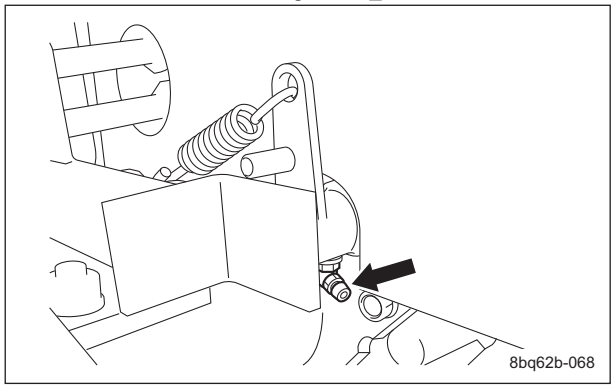



Greasing Points_012

11. Mower tension




Greasing Points_013




Greasing Points_014

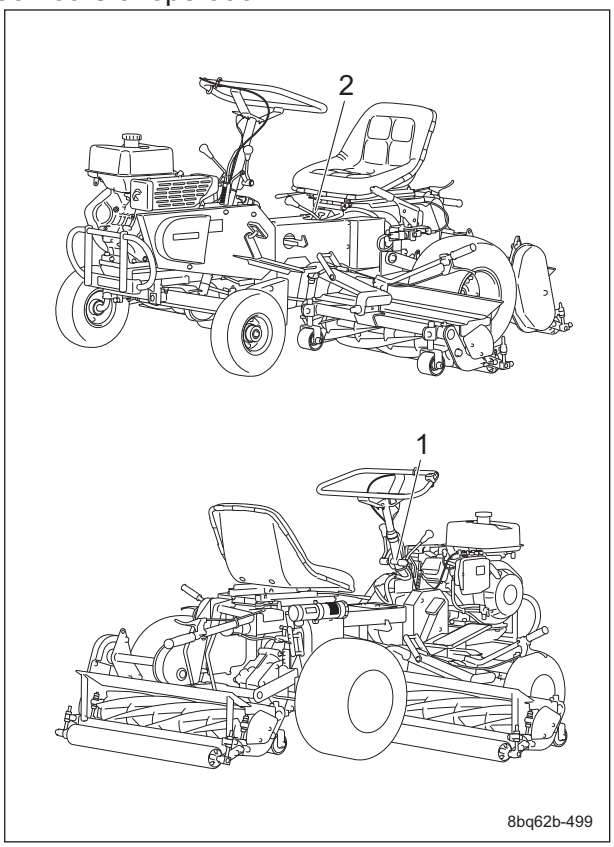
## Lubrication

### About Lubrication

It is necessary to lubricate moving parts so that they will not become stuck or damaged.
The locations where lubricant is used are indicated in "Lubricating Points".
Apply the lubricant.

### Lubricating Points

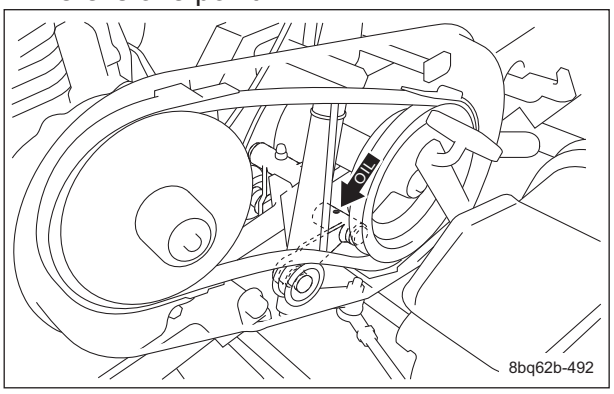
Apply lubricant at the following locations every 50 hours of operation.




Lubricating Points_001

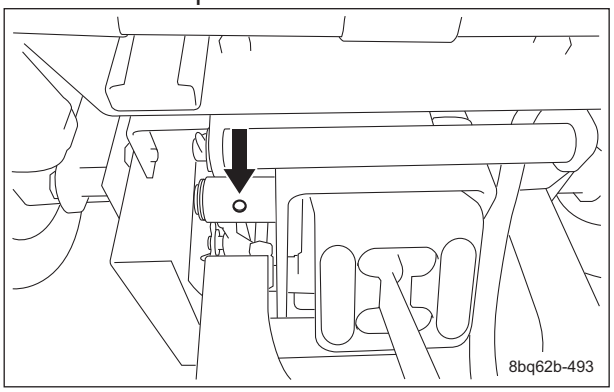
| | Location | No. of lubricating points |
|---|---|---|
| 1 | Handle tension | 1 |
| 2 | Brake lever | 1 |

1. Handle tension
   There is one point.




Lubricating Points_002

2. Brake lever
   There is one point.




Lubricating Points_003

## Maintenance Work

### Cleaning of Mower Unit

Important

While cleaning, do not allow water on the sealed parts of the reel shaft. (Avoid high-pressure water cleaning.)
Otherwise, it may cause damage to the machine.

Be sure to clean the mower unit after use.

1. Stop the engine.
2. Carefully clean the front and back of the mower unit with water or compressed air.
3. Remove any grass wrapped around the reel cutter (cutting cylinder).

## Back Lapping

Back lapping is work similar to sharpening a cooking knife. If the edges of the reel cutter (cutting cylinder) and the bed knife (bottom blade) become blunt and make cutting difficult, both the reel cutter (cutting cylinder) and the bed knife (bottom blade) should be simultaneously sharpened by reversing the reel cutter (cutting cylinder) with an abrasive paste applied.
However, back lapping is a temporary measure and would not restore the sharpness completely.
If the edges of the reel cutter (cutting cylinder) and the bed knife (bottom blade) become blunt and difficult to cut, follow the steps below to perform back lapping.

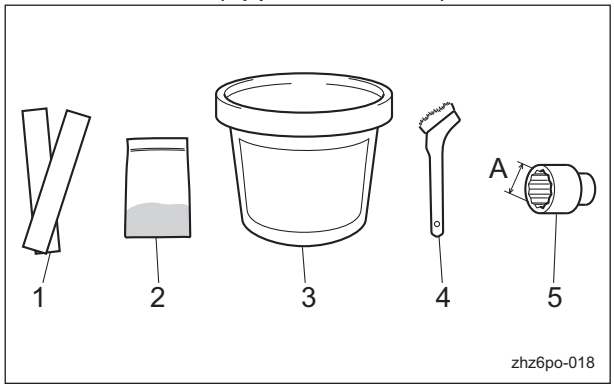
**Warning**

During back lapping, the reel cutter (cutting cylinder) rotates.
Keep hands and feet away from moving parts.

**Caution**

Do not perform back lapping with any other persons.

1. Have the following items ready: Back lapping machine, Strips of newspaper, Abrasive [Back lapping powder mixed with oil; or gel compound (Baroness genuine abrasive)], Brush, Socket (opposite side 27).




Back Lapping_001

| | |
|---|---|
| 1 | Newspaper |
| 2 | Back lapping powder |
| 3 | Gel compound |
| 4 | Brush |
| 5 | Socket (opposite side 27) |
| A | 27 mm (1.06 in) |

Note:
Mixing ratio for abrasive in volume is one part back lapping powder (#150 - #200) to three or four parts oil.

**Caution**

When handling the reel cutter (cutting cylinder) or bed knife (bottom blade), wear gloves to protect your hands.
Pay attention not to let the reel cutter (cutting cylinder) catch your gloves, etc. Otherwise, you may injure your hand or fingers.

**Important**

After cutting grass, adjust the engagement of the blades, before checking the sharpness of the blade.

2. Stop the engine.
3. Apply the parking brake.
4. Raise the mower unit that requires back lapping.
5. Remove the belt for the mower unit that requires back lapping.
6. Insert two or three strips of newspaper into the space between the reel cutter (cutting cylinder) and the bed knife (bottom blade) at an angle of 90 degrees, then rotate the reel cutter (cutting cylinder) counter-clockwise (when you face the mower unit from the left) by hand to check the sharpness.
7. Check the sharpness at entire range (three or four points from left edge to right one) of the reel cutter (cutting cylinder).
8. Using a piece of chalk, mark locations on the blade that are sharp.
9. Lower the mower unit that requires back lapping to the ground.
10. Connect the lapping machine and the shaft of reel cutter (cutting cylinder) with the socket (opposite side 27).
11. Turn on the switch of the lapping machine to rotate the reel cutter (cutting cylinder) in the direction opposite to the cutting direction.
12. Apply the abrasive evenly with the brush on the top side of reel cutter (cutting cylinder) where the newspaper was cut well or of chalk-marked locations. (Never apply to blunt areas.)

13. Idle the machine for a while, and then switch off the lapping machine to stop rotation of the reel cutter (cutting cylinder) when contact noise is no longer heard.
14. Raise the mower unit that requires back lapping.
15. Wash off or wipe off with cloth etc. the abrasive from the reel cutter (cutting cylinder), then check it for sharpness.
16. Repeat steps 6 to 15 until the entire range (three or four points) of the reel cutter (cutting cylinder) will be uniformly sharpened.
17. Lower the mower unit that requires back lapping to the ground.
18. Finally, apply the abrasive on the entire blade width of the reel cutter (cutting cylinder) and perform final back lapping.
19. Stop the rotation of the reel cutter (cutting cylinder), and then carefully and thoroughly wash off any remaining abrasive.
20. While checking the blade for sharpness, adjust blade engagement.
21. Raise the mower unit.
22. Install the belt for the mower unit.

## Sharpening of Reel Cutter (Cutting Cylinder)

The sharpening of the reel cutter (cutting cylinder) consists in maintaining its roundness and creating a relief (second edge face).
This work should be performed if the sharpness cannot be restored, even after back lapping, or if the relief (second edge face) has worn away.
Sharpen the reel cutter (cutting cylinder) when the sharpness cannot be restored, even after back lapping, or when the relief (second edge face) has worn away, there is full contact or back lapping takes too much time.
In addition, if the reel cutter (cutting cylinder) becomes worn and its shape conical, perform cylindrical grinding to return it to a cylindrical shape.
For sharpening the reel cutter (cutting cylinder), contact your dealer or Baroness unless you have a grinding machine.

**⚠ Caution**

Both the reel cutter (cutting cylinder) and the bed knife (bottom blade) are edged tools. Handle them carefully, since they could cut your hands and feet.

**⚠ Caution**

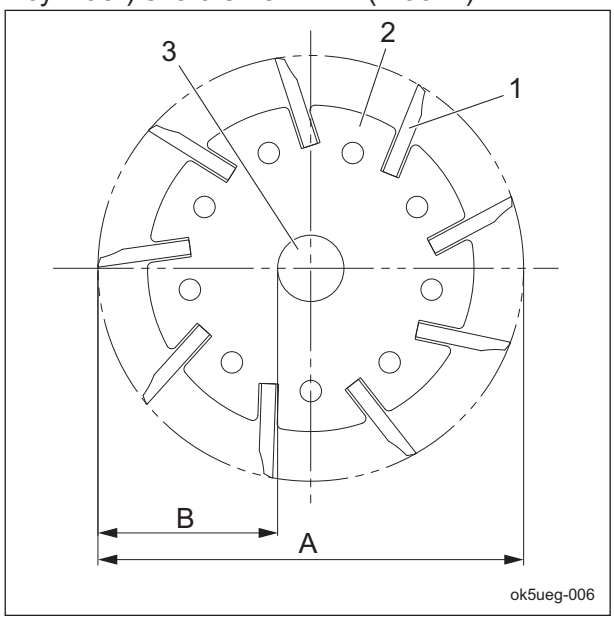
Wear gloves when touching edged tools to avoid cutting your hands.

The criteria for sharpening the reel cutter (cutting cylinder) are described below. However, these criteria are only a reference and do not guarantee performance of a reel cutter (cutting cylinder).

1. If the outer diameter of the reel cutter (cutting cylinder) after sharpening is more than the usage limit, the reel cutter (cutting cylinder) can be sharpened.

| New | | Usage limit | |
|---|---|---|---|
| Dimension A (Outer diameter of reel cutter (cutting cylinder)) | Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft) | Dimension A (Outer diameter of reel cutter (cutting cylinder)) | Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft) |
| 163 mm (6.42 in) | 68.8 mm (2.71 in) | 143 mm (5.63 in) | 58.8 mm (2.31 in) |

Note:
The outer diameter of the reel cutter (cutting cylinder) shaft is 25.4 mm (1.00 in).



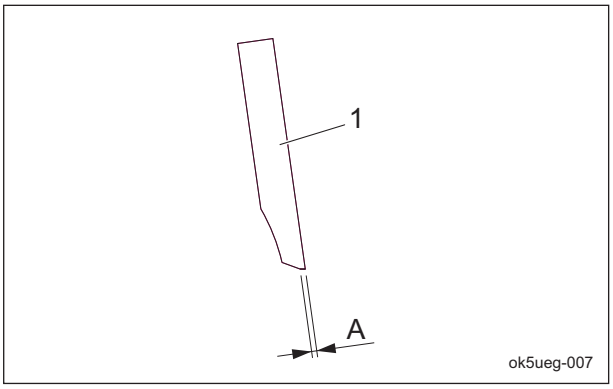

Sharpening of Reel Cutter (Cutting Cylinder)_001

| | |
|---|---|
| 1 | Reel cutter (cutting cylinder) blade |
| 2 | Reel cutter (cutting cylinder) disc |
| 3 | Reel cutter (cutting cylinder) shaft |
| A | Outer diameter of reel cutter (cutting cylinder) |
| B | Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft |

2. Sharpening is necessary when the reel cutter (cutting cylinder) reaches a condition described below.

[1] When the sharpening width (length of contacting surface of bed knife (bottom blade)) for the outer diameter of the reel cutter (cutting cylinder) is greater than the usage limit.

| Outer diameter of reel cutter (cutting cylinder) (new part) | Usage limit of sharpening width for outer diameter of reel cutter (cutting cylinder) |
|---|---|
| 163 mm (6.42 in) | 3.0 mm (0.12 in) (factory-recommended) |




Sharpening of Reel Cutter (Cutting Cylinder)_002

| | |
|---|---|
| 1 | Reel cutter (cutting cylinder) blade |
| A | Sharpening width for outer diameter of reel cutter (cutting cylinder) |

[2] When the edges become blunt or the blade edge cannot be formed with back lapping

[3] When the reel cutter (cutting cylinder) becomes worn and its shape conical, or when blade engagement adjustment cannot be performed

## Replacement of Reel Cutter (Cutting Cylinder)

> **Caution**
>
> Both the reel cutter (cutting cylinder) and the bed knife (bottom blade) are edged tools. Handle them carefully, since they could cut your hands and feet.

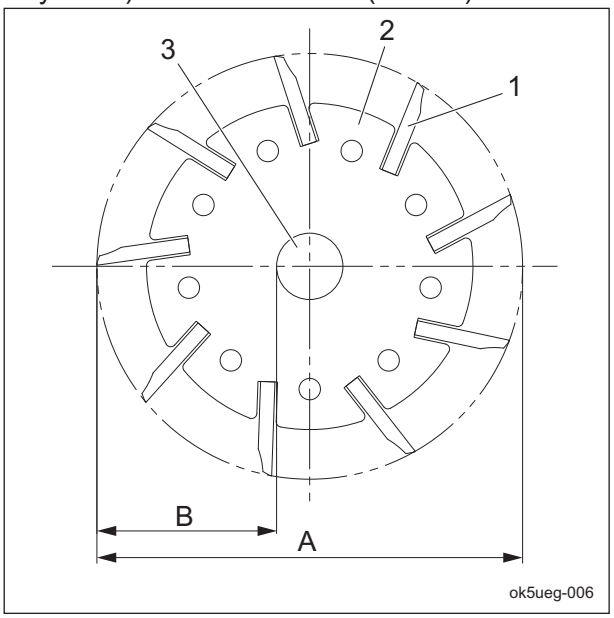
> **Caution**
>
> Wear gloves when touching edged tools to avoid cutting your hands.

The criteria for replacing the reel cutter (cutting cylinder) are described below.
However, these criteria are only a reference and do not guarantee performance like that of a new reel cutter (cutting cylinder).

1. When the outer diameter of the reel cutter (cutting cylinder) is less than the usage limit

| New | | Usage limit | |
|---|---|---|---|
| Dimension A (Outer diameter of reel cutter (cutting cylinder)) | Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft) | Dimension A (Outer diameter of reel cutter (cutting cylinder)) | Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft) |
| 163 mm (6.42 in) | 68.8 mm (2.71 in) | 143 mm (5.63 in) | 58.8 mm (2.31 in) |

Note:
The outer diameter of the reel cutter (cutting cylinder) shaft is 25.4 mm (1.00 in).




Replacement of Reel Cutter (Cutting Cylinder)_001

| | |
|---|---|
| 1 | Reel cutter (cutting cylinder) blade |
| 2 | Reel cutter (cutting cylinder) disc |
| 3 | Reel cutter (cutting cylinder) shaft |
| A | Outer diameter of reel cutter (cutting cylinder) |
| B | Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft |

## Replacement of Bed Knife (Bottom Blade)

**Caution**

Both the reel cutter (cutting cylinder) and the bed knife (bottom blade) are edged tools. Handle them carefully, since they could cut your hands and feet.

**Caution**

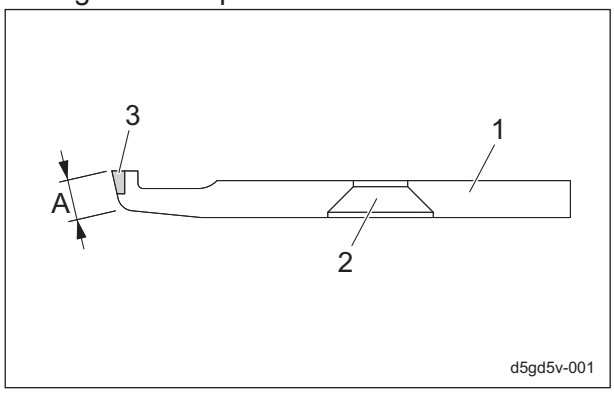
Wear gloves when touching edged tools to avoid cutting your hands.

The criteria for replacing the bed knife (bottom blade) are described below.

1. When the reel cutter (cutting cylinder) is ground
2. When the reel cutter (cutting cylinder) is replaced
3. When the bed knife (bottom blade) is worn

High-speed-steel-tipped blade

Replace the bed knife (bottom blade) before it no longer has a tip.




Replacement of Bed Knife (Bottom Blade)_001

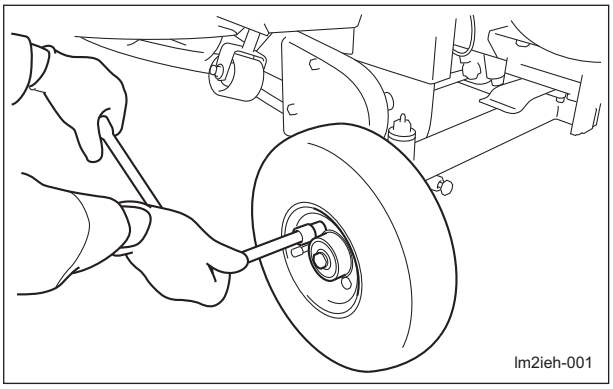
| | |
|---|---|
| 1 | Bed knife (bottom blade) |
| 2 | Mounting hole |
| 3 | Tip |
| A | Front face |

## Removing/Installing Tires

Front Tires

Follow the steps below to remove the front tires:

1. Loosen the bolts.




Front Tires_001

2. Place the tire jack beneath the jack-up point of the front axle area securely, then raise it until the tire lifts off the ground.
"Jack-up Points" (Page 5-6)
3. Remove the bolts.
4. Remove the tire from the wheel mounting shaft.

**Important**

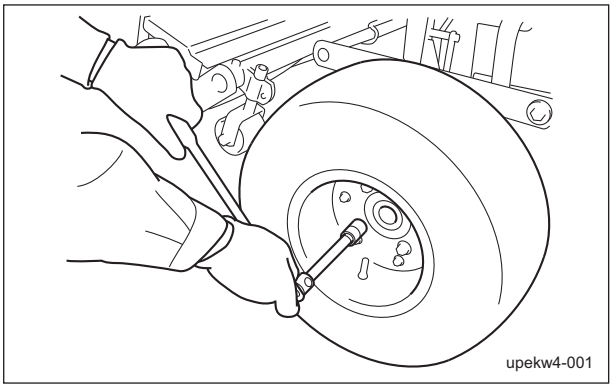
Tighten the bolts in the tightening order (crosswise).

For installing the front tires, reverse the removing procedure.

Rear Tires

Follow the steps below to remove the rear tires:

1. Loosen the bolts.




Rear Tires_001

2. Place the tire jack beneath the jack-up point of the rear wheel transmission area securely, then raise it until the tire lifts off the ground.
   "Jack-up Points" (Page 5-6)
3. Remove the bolts.
4. Remove the tire from the wheel mounting shaft.

**Important**

Tighten the bolts in the tightening order (crosswise).

For installing the rear tires, reverse the removing procedure.

## Adjustment of Belt Tension

**Warning**

Be sure to stop the engine before adjusting the belts.

**Warning**

If you have removed covers, etc., be sure to securely install them in their original positions. If covers, etc., remain removed, the operator may come in contact with rotating parts or belts, or foreign objects may fly off, possibly resulting in injuries.

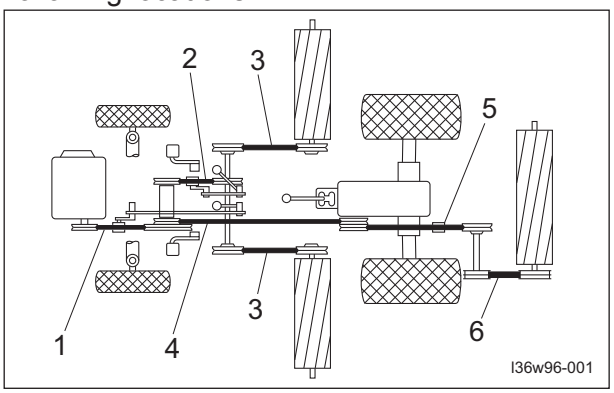
**Important**

For the specified value of belt tension, refer to Adjusted Values.
After rotating the belt several times, check that it has the specified tension.

If the belt becomes slack due to frequent use, it may jump or slip.
In addition, if it is overtightened, it may wear prematurely.
If necessary, adjust it, and always check the belt for appropriate tension.

### Belt Installation Locations

Belts are installed in this machine at the following locations.

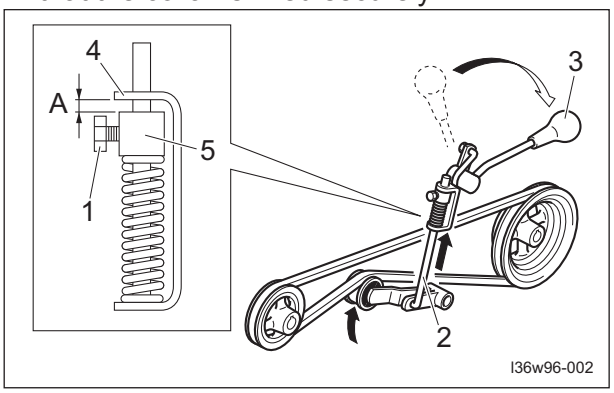



Belt Installation Locations_001

| | |
|---|---|
| 1 | Traveling clutch |
| 2 | Reel rotation lever |
| 3 | Left and Right Mower Units |
| 4 | Transmission |
| 5 | Rear mower tension |
| 6 | Rear Mower Unit |

### Traveling Clutch

1. Loosen the adjustment bolt, then change the length of the rod.
2. Adjust the clearance between the rod-tension metal fitting and the collar to be 7 - 8 mm (0.28 - 0.31 in), when the traveling clutch lever is engaged.
3. Tighten the adjustment bolt and make sure that the collar is fixed securely.

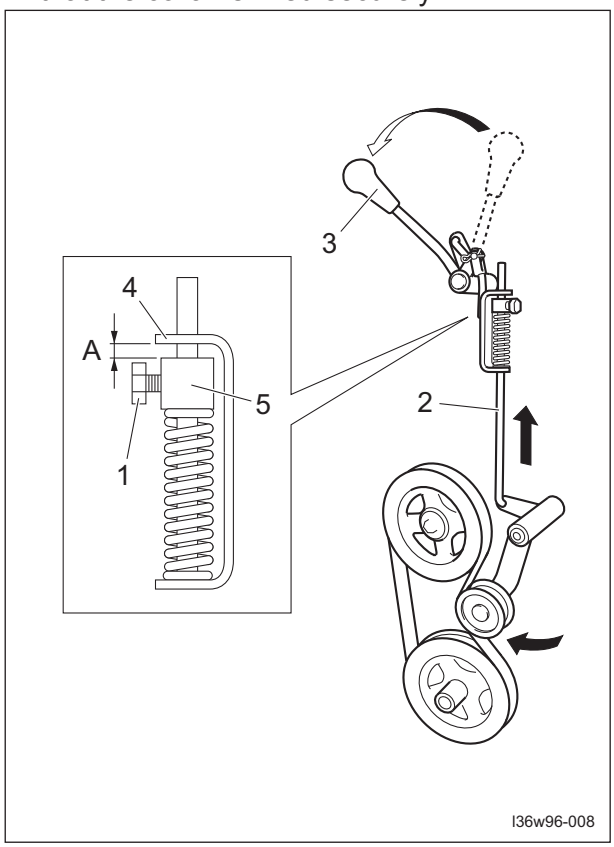



Traveling Clutch_001

| | |
|---|---|
| 1 | Adjustment bolt |
| 2 | Rod |
| 3 | Traveling clutch lever |
| 4 | Rod-tension metal fitting |
| 5 | Collar |
| A | 7 - 8 mm (0.28 - 0.31 in) |

Reel Rotation Lever

1. Loosen the adjustment bolt, then change the length of the rod.
2. Adjust the clearance between the rod-tension metal fitting and the collar to be 7 - 8 mm (0.28 - 0.31 in), when the reel rotation lever is engaged.
3. Tighten the adjustment bolt and make sure that the collar is fixed securely.

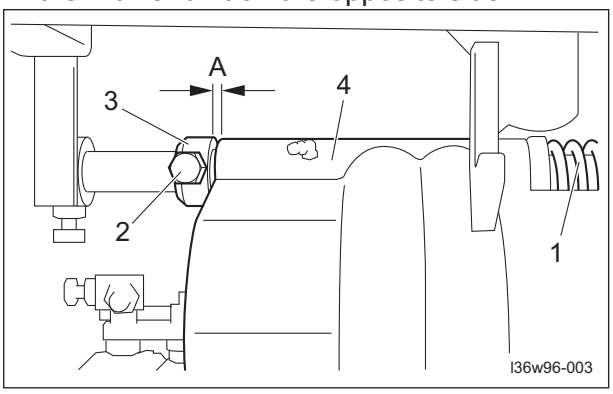



Reel Rotation Lever_001

| | |
|---|---|
| 1 | Adjustment bolt |
| 2 | Rod |
| 3 | Reel rotation lever |
| 4 | Rod-tension metal fitting |
| 5 | Collar |
| A | 7 - 8 mm (0.28 - 0.31 in) |

Left and Right Mower Units

1. Belts are always stretched at a constant tension by the springs.
   Loosen the adjustment bolt, then adjust the clearance between the collar and the mower lifting arm to be 1 mm (0.04 in).
2. Tighten the adjustment bolt and make sure that the collar is fixed securely.
3. Follow the same steps to adjust the belts on the mower unit on the opposite side.

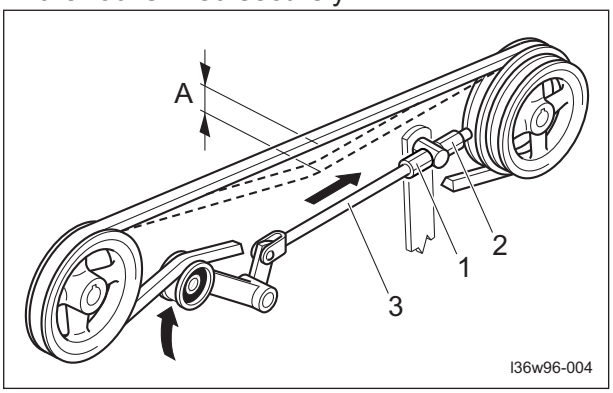



Left and Right Mower Units_001

| | |
|---|---|
| 1 | Spring |
| 2 | Adjustment bolt |
| 3 | Collar |
| 4 | Mower lifting arm |
| A | 1 mm (0.04 in) |

Transmission

1. Loosen adjusting nut A.
2. Tighten adjusting nut B, then change the length of the rod.
3. Adjust the belt tension so that the belt slacks by approximately 10 mm (0.39 in) when you press the middle of the belt with your finger at 98 N (10 kgf).
4. Tighten adjusting nut A and make sure that the rod is fixed securely.

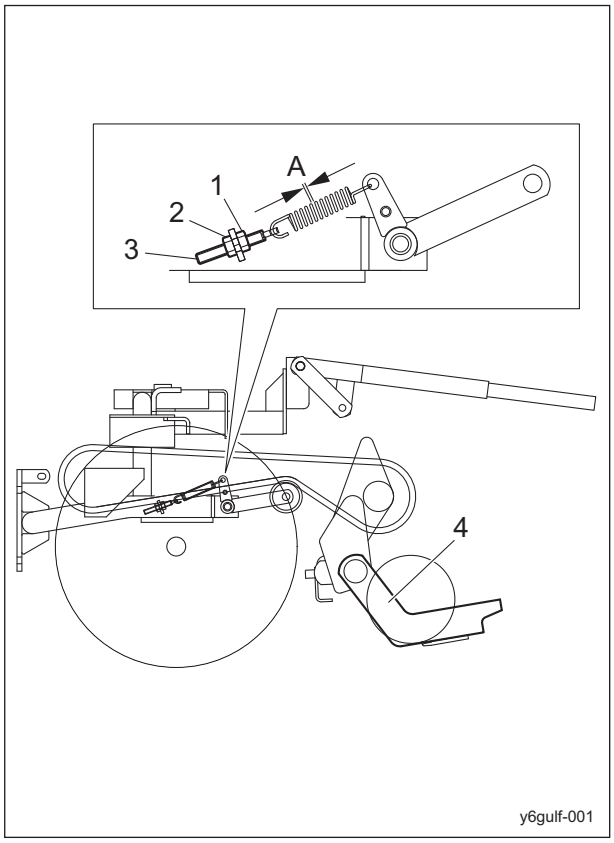



Transmission_001

| | |
|---|---|
| 1 | Adjusting nut A |
| 2 | Adjusting nut B |
| 3 | Rod |
| A | 10 mm (0.39 in) |

Rear Mower Tension

1. Loosen adjusting nut A.
2. Tighten adjusting nut B, then change the length of the rod.
3. Lower the rear mower unit on a level surface, then adjust the clearance of the spring to 1 mm (0.04 in).
4. Tighten adjusting nut A and make sure that the rod is fixed securely.
5. Raise the rear mower unit, then make sure that the reel cutter (cutting cylinder) will not rotate when the machine travels.

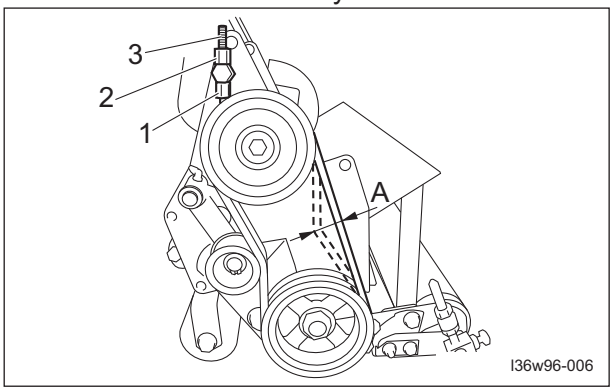



Rear Mower Tension_001

| | |
|---|---|
| 1 | Adjusting nut A |
| 2 | Adjusting nut B |
| 3 | Rod |
| 4 | Rear mower unit |
| A | 1 mm (0.04 in) |

Rear Mower Unit

1. Loosen adjusting nut A.
2. Tighten adjusting nut B, then change the length of the rod.
3. Adjust the belt tension so that the belt slacks by approximately 10 mm (0.39 in) when you press the middle of the belt with your finger at 98 N (10 kgf).
4. Tighten adjusting nut A and make sure that the rod is fixed securely.




Rear Mower Unit_001

| | |
|---|---|
| 1 | Adjusting nut A |
| 2 | Adjusting nut B |
| 3 | Rod |
| A | 10 mm (0.39 in) |

## Adjustment of Parking Brake

**Caution**

If the brake wire is cut, the machine will be unable to stop.
If the brake wire is cracked or damaged, replace it with a new one immediately.

**Caution**

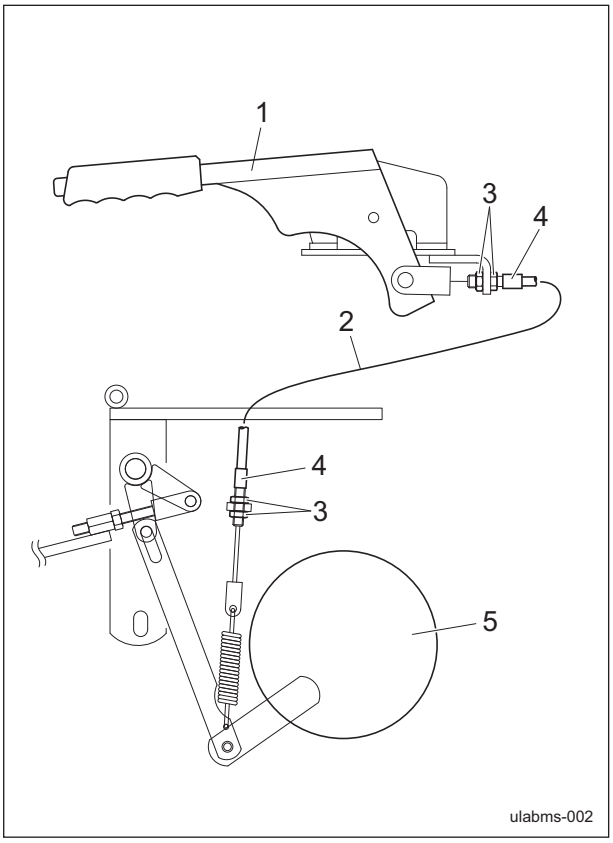
If the parking brake is not sufficiently effective when you pull the parking brake lever, adjust the brake wire.

**Important**

Make sure that the brake is effective on slopes and that it is not applied any longer when you release it.
Adjust the parking brake system whenever there is any abnormality.

Adjust the parking brake by the brake wire adjustment bolt.

1. While pressing the push button, return the parking brake lever to its resting position to release the parking brake.
2. Loosen the nut on the parking brake lever side.
3. Move the adjustment bolt toward the rear to increase the wire tension.
4. Tighten the nut securely to fix the adjustment bolt.
5. Make sure that the brake is applied properly when you pull the parking brake lever, and that there is no brake dragging when you release the parking brake lever.




Adjustment of Parking Brake_001

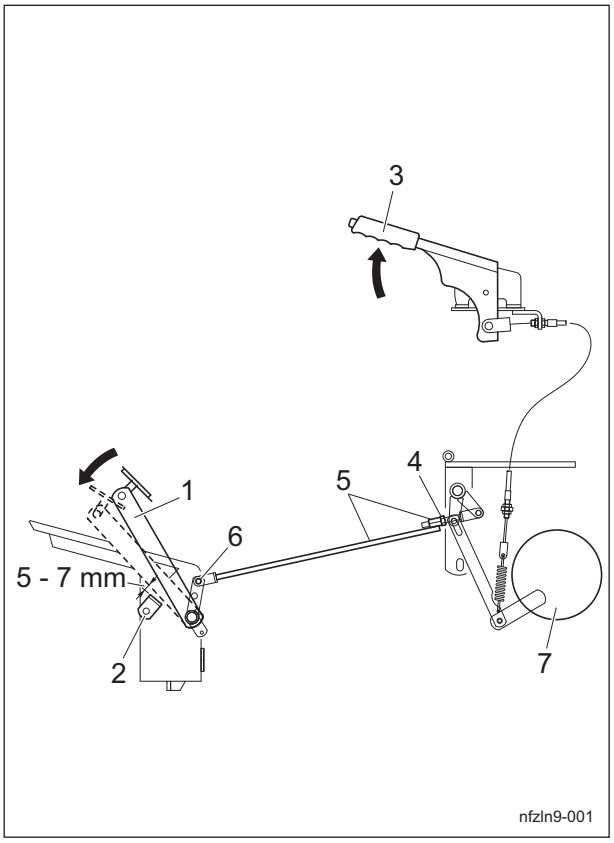
| | |
|---|---|
| 1 | Parking brake lever |
| 2 | Brake wire |
| 3 | Nut |
| 4 | Adjustment bolt |
| 5 | Brake drum |

Note:
You can also adjust the brake wire on the transmission side.

## Adjustment of Brake

> **Caution**
>
> If the brake is not applied effectively even if you depress the pedal up to the stopper, adjust the brake rod.

1. Pull the parking brake lever completely and make sure that the brake is effectively applied.
2. Loosen the lock nut.
3. Remove the cotter pin, washer and pin that affix the brake pedal to the front of the brake rod.
4. Screw in the nut on the front of the brake rod, then temporarily affix the brake pedal to the front of the brake rod using the pin.
5. Depress the brake pedal lightly, and adjust the clearance between the pedal stopper and brake pedal to 5 - 7 mm (0.20 - 0.28 in). (If the clearance is larger than 7 mm (0.28 in), the brake may be damaged.)
6. Affix the brake pedal to the front of the brake rod securely using the pin.
7. Tighten the lock nut to secure the front of the brake rod firmly.
8. Make sure that the brake is not applied any longer when you release the brake pedal.




Adjustment of Brake_001

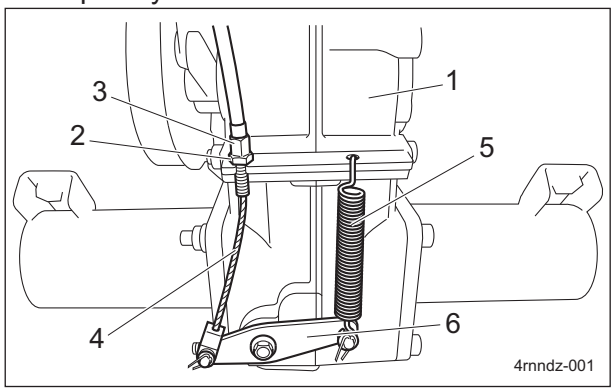
| | |
|---|---|
| 1 | Brake pedal |
| 2 | Pedal stopper |
| 3 | Parking brake lever |
| 4 | Lock nut |
| 5 | Brake rod (front) |
| 6 | Cotter pin, washer, pin |
| 7 | Brake drum |

## Adjustment of Diff-lock Wire

Important

If the diff-lock seems ineffective when you depress the diff-lock pedal, adjust the diff-lock wire.

1. Make sure that the diff-lock pedal has completely returned to its resting position.
2. Loosen the nut on the transmission side.
3. Loosen the adjustment bolt upward to increase the wire tension.
4. Adjust the wire so that the diff-lock wire and the diff-lock lever show a little play when the lever returns to its resting position under spring tension.
5. Tighten the nut and fix the adjustment bolt completely.



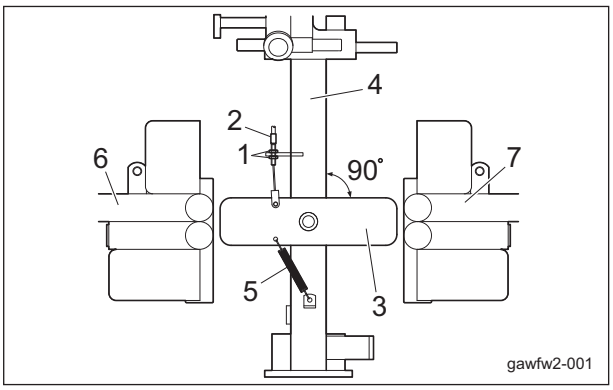

Adjustment of Diff-lock Wire_001

| | |
|---|---|
| 1 | Transmission |
| 2 | Nut |
| 3 | Adjustment bolt |
| 4 | Wire |
| 5 | Spring |
| 6 | Diff-lock lever |

Note:
You can also adjust the diff-lock wire on the pedal side.

## Adjustment of Mower Stopper

1. Lower the left and right mower units, then engage the reel rotation lever.
2. Loosen the nut, then adjust the position of the adjustment bolt so that the mower stopper will be positioned at 90 degrees against the frame.
3. Tighten the nut securely to fix the adjustment bolt.
4. Make sure that the mower stopper will spring back when you release the reel rotation lever.




Adjustment of Mower Stopper_001

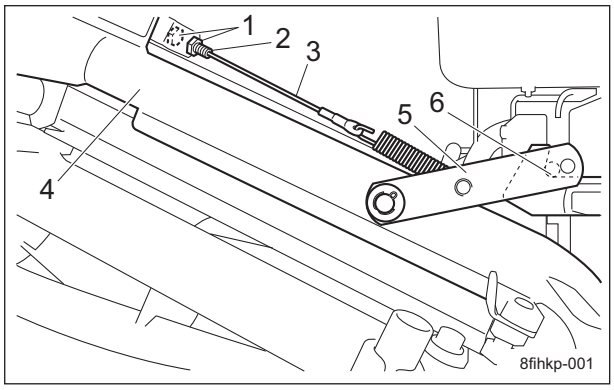
| | |
|---|---|
| 1 | Nut |
| 2 | Adjustment bolt |
| 3 | Mower stopper |
| 4 | Frame |
| 5 | Spring |
| 6 | Left mower lifting arm |
| 7 | Right mower lifting arm |

## Adjustment of Wire to Hook Mower

Wire to hook the left / right mower

1. Loosen the nuts and move the adjustment bolt toward the outside of the machine to increase the wire tension.
2. Without gripping the clutch lever, raise the right mower unit, then make adjustment so that the hook metal fitting will be in touch with the bottom of the hook and the wire will have a small play.
3. Tighten the nuts and fix the adjustment bolt securely.

4. Follow the same steps to adjust the hook wire of left mower.

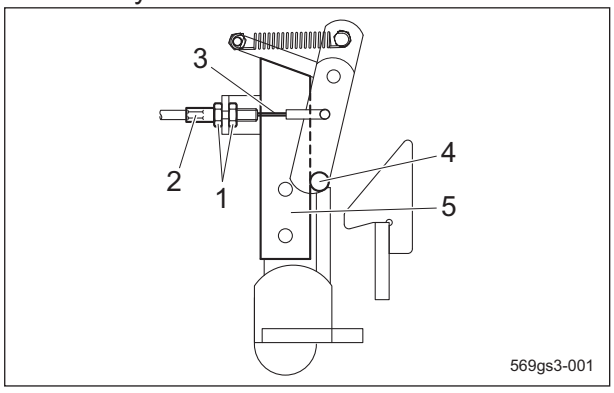



Wire to hook the left / right mower_001

| | |
|---|---|
| 1 | Nut |
| 2 | Adjustment bolt |
| 3 | Wire (to hook the mower) |
| 4 | Right mower unit |
| 5 | Hook metal fitting |
| 6 | Bottom of the hook |

Wire to hook the rear mower

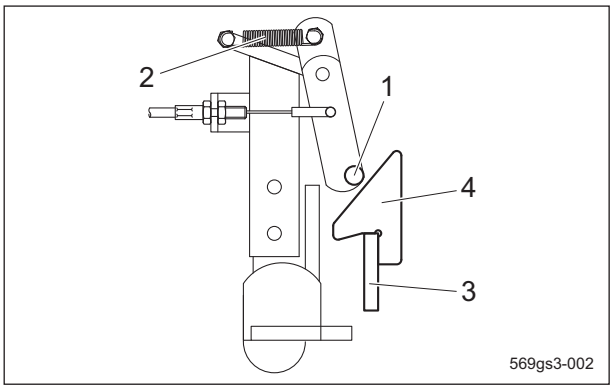
1. Loosen the nuts and move the adjustment bolt toward the center of the machine to increase the wire tension.
2. Lower the rear mower unit, then adjust the hook metal fitting to come into contact slightly with the lever mounting bracket when you grip the clutch lever completely.
3. Tighten the nuts and fix the adjustment bolt securely.




Wire to hook the rear mower_001

| | |
|---|---|
| 1 | Nut |
| 2 | Adjustment bolt |
| 3 | Wire |
| 4 | Hook metal fitting |
| 5 | Lever mounting bracket |

4. When the hook metal fitting returns to its original position by spring tension as soon as you release the lever, raise the rear mower lifting arm and make sure that the hook metal fitting is located closer to the center of the machine than the upper tip of the hook.




Wire to hook the rear mower_002

| | |
|---|---|
| 1 | Hook metal fitting |
| 2 | Spring |
| 3 | Rear mower lifting arm |
| 4 | Hook |

## Change of Air Cleaner

A contaminated air cleaner element may cause malfunction of the engine.
To maximize the life of the engine, replace the air cleaner element at the appropriate times.

1. The timing for replacing the air cleaner element is described below.
   [1] Replace the air cleaner element in accordance with the Maintenance Schedule.
   [2] If it is significantly contaminated, replace it, even if the hours of operation do not exceed the specified time.
2. Replace the air cleaner element by following the same steps as for cleaning the air cleaner.
   "Cleaning of Air Cleaner" (Page 4-3)

## Change of Engine Oil

**Caution**

Be careful with hot oil, which could cause burns if it contacts your skin.

**Important**

When changing the engine oil, be sure to drain it into a container and discard it in accordance with local laws and regulations.

**Important**

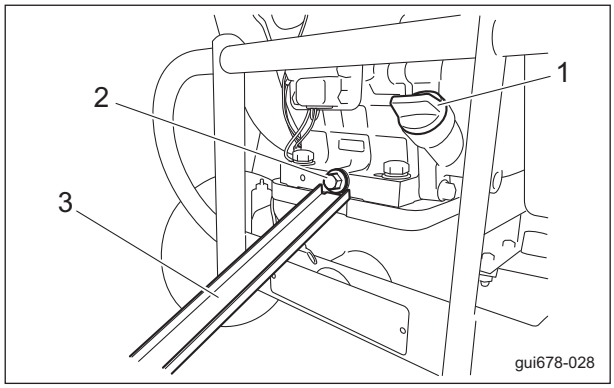
Be sure to use engine oil that is classified as API Service Grade SE or higher, with an SAE viscosity that is appropriate for the operating environment (ambient temperature).

**Important**

Securely tighten the oil level gauge.

Change the engine oil more frequently if it is contaminated and especially if you use the machine in dusty areas or operate the engine at high loads or in high temperatures.

1. Move the machine onto a level surface, and then stop the engine.
2. Install the drain gutter (accessory).
3. Remove the drain plug while the engine oil is warm, and then drain the oil into a container.




Change of Engine Oil_001

| | |
|---|---|
| 1 | Oil level gauge (oil filling port) |
| 2 | Drain plug |
| 3 | Drain gutter |

4. Install the drain plug on the engine.
5. Remove the oil level gauge.
6. Supply new engine oil through the oil filling port.
   The engine oil quantity is 1.0 $dm^3$ (1.0 L).
7. Position the machine so that the engine is level, and then check the engine oil level without tightening the oil level gauge in the oil filling port.
8. After checking the oil level with the oil level gauge, add more engine oil if it is insufficient.
9. Securely tighten the oil level gauge.
10. It will take a while for the supplied engine oil to descend into the oil pan.
    Check the oil level again 10 to 20 minutes after replenishment.
11. Check underneath the machine for oil leakage.

## Change of Transmission Oil

**Caution**

Be careful with hot oil, which could cause burns if it contacts your skin.

**Important**

When you change the transmission oil, be sure to drain it into a bowl and discard it in accordance with regional laws and regulations.

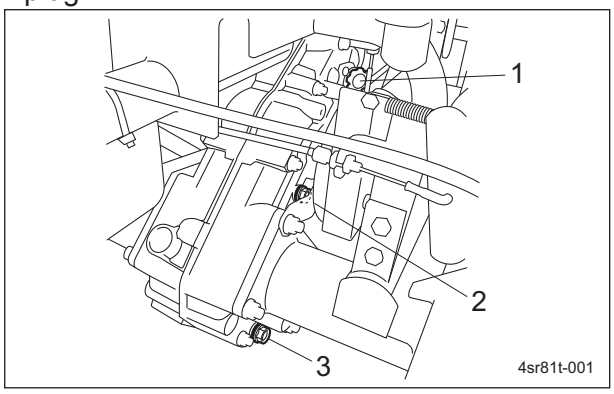
**Important**

Be sure to pour automobile gear oil that is classified as SAE Viscosity Grade #90 into the transmission.

Change the entire transmission oil according to the maintenance schedule.

1. Move the machine onto a level surface and stop the engine.
2. Remove the drain plug while the transmission oil is warm, and then drain the oil into a bowl.
3. Attach the drain plug to the transmission.
4. Remove the oil filling port cap and oil level plug.
5. Pour new transmission oil through the oil filling port.
   The transmission oil quantity is 2.0 $dm^3$ (2.0 liters).
6. Make sure that the transmission oil level is filled up to the tip of the oil level opening.

7. Attach the oil filling port cap and oil level plug.




Change of Transmission Oil_001

| | |
|---|---|
| 1 | Oil filling port |
| 2 | Oil level plug |
| 3 | Drain plug |

8. Check underneath the machine for oil leakage.

BARONESS
Quality on Demand

# EU Declaration of Conformity

Product Identification

| | | | |
|---|---|---|---|
| Product : | | Lawnmower | |
| Brand-Name : | | BARONESS | |
| Type : | | LM180E | |
| Starting Serial No. : | | **21021** | |
| Measured Sound Power Level : | | LWA 98.36 | dB |
| Guaranteed Sound Power Level : | | LWA 105 | dB |
| Manufacturer | Name : | Kyoeisha Co., Ltd. | |
| | Address : | 1-26 Miyuki-cho, Toyokawa, Aichi-pref.,Japan | |

Conforms to the following Directives

| | |
|---|---|
| 2006/42/EC | Machinery (MD) |
| 2014/30/EU | Electromagnetic compatability (EMC) |
| 2000/14/EC | Noise emissions from outdoor equipment |

We have been designed and manufactured under the following specifications

ISO 12100 : 2010 (2006/42/EC)
ISO 5395-1 : 2013 (2006/42/EC)
ISO 5395-3 : 2013 (2006/42/EC)
ISO 14982 :1998 (2014/30/EU)

Keeper of Technical Documentation

| | |
|---|---|
| Name : | Kyoeisha Co., Ltd. |
| Address : | 1-26 Miyuki-cho, Toyokawa, Aichi-pref.,Japan |

Compiler of the technical file (2006/42/EC)

| | |
|---|---|
| Name: | Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.) |
| Address: | Gerhard-Falk-Str. 1 21035 Hamburg Germany |

Conformity assessment procedures

Internal production control : Module A (2006/42/EC)
EC-type examination : Module B (2014/30/EU)
Internal control of production with assessment of technical documentation and periodical checking (2000/14/EC)

Involved Notified Body (2000/14/EC)

| | |
|---|---|
| Name : | TÜV SÜD Industrie Service GmbH |
| Address : | Westendstraße 199 80686 München |
| Certificate : | Notified Body NB0036 according 2000/14/EC |

Place : Japan
Date : 15 November 2021 (15 / 11 / 2021)

Signature : 林 昭男
Name : Akio Hayashi
Position : Quality Dept. Director

Traduction de la Déclaration de Conformité originale (fr)

# Déclaration de conformité UE

Identification du produit

| | | | |
|---|---|---|---|
| Produit : | | Tondeuse à gazon | |
| Fabriquant : | | BARONESS | |
| Type : | | LM180E | |
| Numéro de série de début : | | **21021** | |
| Niveau de puissance acoustique mesuré : | | LwA 98.36 | dB |
| Niveau de puissance acoustique garanti : | | LwA 105 | dB |
| Fabricant | Nom : | Kyoeisha Co., Ltd. | |
| | Adresse : | 1-26, Miyuki-cho, Toyokawa, préfecture d'Aichi, Japon | |

Conforme aux directives suivantes :

| | |
|---|---|
| 2006/42/CE | Machine (MD) |
| 2014/30/UE | Compatibilité électromagnétique (CEM) |
| 2000/14/CE | Émissions sonores de l'équipement de plein air |

Conception et fabrication en respect des spécifications suivantes :

ISO 12100 : 2010 (2006/42/CE)
ISO 5395-1 : 2013 (2006/42/CE)
ISO 5395-3 : 2013 (2006/42/CE)
ISO 14982 :1998 (2014/30/UE)

Fiche technique

| | |
|---|---|
| Marque : | Kyoeisha Co., Ltd. |
| Adresse de la marque : | 1-26, Miyuki-cho, Toyokawa, préfecture d'Aichi, Japon |

Compilateur de la fiche technique (2006/42/CE)

| | |
|---|---|
| Nom : | Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.) |
| Adresse : | Gerhard-Falk-Str. 1 21035 Hambourg Allemagne |

Procédures d'évaluation de la conformité

Contrôle de production interne : module A (2006/42/CE)
Examen de type CE : module B (2014/30/UE)
Contrôle interne de la production avec évaluation de la fiche technique et vérification périodique (2000/14/CE)

Organisme notifié impliqué (2000/14/CE)

| | |
|---|---|
| Nom : | TÜV SÜD Industrie Service GmbH |
| Adresse : | Westendstraße 199 80686 München |
| N° de certificat : | Notified Body NB0036 according 2000/14/EC |

Traducción de la Declaración de Conformidad original (es)

# Declaración de conformidad de la UE

Identificación del producto

| | | | | |
|---|---|---|---|---|
| Producto: | | Cortacésped | | |
| Marca: | | BARONESS | | |
| Tipo: | | LM180E | | |
| N.° de serie inicial: | | **21021** | | |
| Nivel de potencia sonora medido: | | LWA | 98.36 | dB |
| Nivel de potencia sonora garantizado: | | LWA | 105 | dB |
| Fabricante | Nombre: | Kyoeisha Co., Ltd. | | |
| | Dirección: | 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japón | | |

Cumple las siguientes Directivas

| | |
|---|---|
| 2006/42/CE | Maquinaria (MD) |
| 2014/30/UE | Compatibilidad electromagnética (EMC) |
| 2000/14/CE | Emisiones sonoras de máquinas de uso al aire libre |

Se ha diseñado y fabricado utilizando las siguientes especificaciones

ISO 12100 : 2010 (2006/42/CE)
ISO 5395-1 : 2013 (2006/42/CE)
ISO 5395-3 : 2013 (2006/42/CE)
ISO 14982 :1998 (2014/30/UE)

Documentación técnica

| | |
|---|---|
| Nombre del responsable: | Kyoeisha Co., Ltd. |
| Dirección del responsable: | 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japón |

Compilador del archivo técnico (2006/42/CE)

| | |
|---|---|
| Nombre: | Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.) |
| Dirección: | Gerhard-Falk-Str. 1 21035 Hamburgo Alemania |

Procedimientos de evaluación de conformidad

Control de fabricación interno: Módulo A (2006/42/CE)
Examen de tipo CE: Módulo B (2014/30/UE)
Control interno de fabricación con evaluación de documentación técnica y comprobaciones periódicas (2000/14/CE)

Organismo notificado implicado (2000/14/CE)

| | |
|---|---|
| Nombre: | TÜV SÜD Industrie Service GmbH |
| Dirección: | Westendstraße 199 80686 München |
| Certificado: | Notified Body NB0036 according 2000/14/EC |

Übersetzung der ursprünglichen Konformitätserklärung (de)

# EU-Konformitätserklärung

Produktbeschreibung

| | | | | |
|---|---|---|---|---|
| Produkt: | | Rasenmäher | | |
| Marke: | | BARONESS | | |
| Modell: | | LM180E | | |
| Startseriennummer: | | **21021** | | |
| Gemessener Schallleistungspegel: | | LWA | 98.36 | dB |
| Garantierter Schallleistungspegel: | | LWA | 105 | dB |
| Hersteller | Name: | Kyoeisha Co., Ltd. | | |
| | Adresse: | 1-26 Miyuki-cho, Toyokawa, Aichi-pref.,Japan | | |

Entspricht den folgenden Richtlinien

| | |
|---|---|
| 2006/42/EG | Maschinenrichtlinie |
| 2014/30/EU | Elektromagnetische Verträglichkeit (EMV) |
| 2000/14/EG | Geräuschemission von im Freien betriebenen Geräten |

Unter Anwendung der folgenden Bestimmungen entwickelt und hergestellt

ISO 12100 : 2010 (2006/42/EG)
ISO 5395-1 : 2013 (2006/42/EG)
ISO 5395-3 : 2013 (2006/42/EG)
ISO 14982 :1998 2014/30/EU)

Technische Dokumentation

| | |
|---|---|
| Name des Halters | Kyoeisha Co., Ltd. |
| Adresse des Halters | 1-26 Miyuki-cho, Toyokawa, Aichi-pref.,Japan |

Technische Unterlagen erstellt von (2006/42/EG)

| | |
|---|---|
| Name: | Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.) |
| Adresse: | Gerhard-Falk-Str. 1 21035 Hamburg Deutschland |

Konformitätsbewertungsverfahren

Interne Produktionskontrolle : Modul A (2006/42/EG)
EG-Baumusterprüfung : Modul B (2014/30/EU)
Interne Produktionskontrolle mit Bewertung der technischen Unterlagen und regelmäßiger Überprüfung (2000/14/EG)

Beteiligte benannte Stelle (2000/14/EG)

| | |
|---|---|
| Name: | TÜV SÜD Industrie Service GmbH |
| Adresse : | Westendstraße 199 80686 München |
| Bescheinigung. : | Notified Body NB0036 according 2000/14/EC |

Översättning av den ursprungliga försäkran om överensstämmelse (sv)

# EU-försäkran om överensstämmelse

Produktidentifikation

| | | | | |
|---|---|---|---|---|
| Produkt : | | Gräsklippare | | |
| Märke: | | BARONESS | | |
| Typ: | | LM180E | | |
| Serienummer startar på: | | **21021** | | |
| Uppmätt ljudeffektnivå: | | LWA | 98.36 | dB |
| Garanterad ljudeffektnivå: | | LWA | 105 | dB |
| Tillverkare | Namn: | Kyoeisha Co., Ltd. | | |
| | Adress: | 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan | | |

Uppfyller följande direktiv

| | |
|---|---|
| 2006/42/EG | Maskindirektivet |
| 2014/30/EU | Elektromagnetisk kompabilitet (EMC) |
| 2000/14/EG | Bulleremission från utomhusutrustning |

Följande kravspecifikationer har följts vid konstruktion och tillverkning

ISO 12100 : 2010 (2006/42/EG)
ISO 5395-1 : 2013 (2006/42/EG)
ISO 5395-3 : 2013 (2006/42/EG)
ISO 14982 : 1998 (2014/30/EU)

Teknisk dokumentation

| | |
|---|---|
| Innehavarens namn: | Kyoeisha Co., Ltd. |
| Innehavarens adress: | 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan |

Den tekniska filen(2006/42/EG) har tagits fram av

| | |
|---|---|
| Namn: | Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.) |
| Adress: | Gerhard-Falk-Str. 1 21035 Hamburg Tyskland |

Förfarande för bedömning av överensstämmelse

Intern produktionskontroll: Modul A (2006/42/EG)
EG-typprovning: Modul B (2014/30/EU)
Intern kontroll av produktion med fastställande av teknisk dokumentation och periodiska kontroller (2000/14/EG)

Anmält organ (2000/14/EG)

| | |
|---|---|
| Namn: | TÜV SÜD Industrie Service GmbH |
| Adress: | Westendstraße 199 80686 München |
| Certifikat : | Notified Body NB0036 according 2000/14/EC |

Oversættelse af den oprindelige Overensstemmelseserklæring (da)

# EU-overensstemmelseserklæring

Produktidentificering

| | | | | |
|---|---|---|---|---|
| Produkt : | | Plæneklipper | | |
| Mærkenavn: | | BARONESS | | |
| Type: | | LM180E | | |
| Startende serienr.: | | **21021** | | |
| Målt lydeffektniveau: | | LWA | 98.36 | dB |
| Garanteret lydeffektniveau: | | LWA | 105 | dB |
| Producent | Navn: | Kyoeisha Co., Ltd. | | |
| | Adresse: | 1-26 Miyuki-cho, Toyokawa, Aichi-præf.,Japan | | |

Er i overensstemmelse med følgende direktiver

| | |
|---|---|
| 2006/42/EF | Maskineri (MD) |
| 2014/30/EU | Elektromagnetisk kompatibilitet (EMC) |
| 2000/14/EF | Støjemissioner fra udendørs udstyr |

Vi har designet og produceret under følgende specifikationer

ISO 12100 : 2010 (2006/42/EF)
ISO 5395-1 : 2013 (2006/42/EF)
ISO 5395-3 : 2013 (2006/42/EF)
ISO 14982 :1998 (2014/30/EU)

Indehaver af teknisk dokumentation

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|---|---|
| Navn: | Kyoeisha Co., Ltd. |
| Adresse: | 1-26 Miyuki-cho, Toyokawa, Aichi-præf.,Japan |

Kompilator af den tekniske fil (2006/42/EF)

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|---|---|
| Navn: | Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.) |
| Adresse: | Gerhard-Falk-Str. 1 21035 Hamborg Tyskland |

Procedurer for overensstemmelsesvurdering

Intern produktionskontrol : Modul A (2006/42/EF)
EF-typeafprøvning : Modul B (2014/30/EU)
Intern fabrikationskontrol med vurdering af teknisk dokumentation og periodisk kontrol (2000/14/EF)

Berørt bemyndiget organ (2000/14/EF)

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|---|---|
| Navn: | TÜV SÜD Industrie Service GmbH |
| Adresse: | Westendstraße 199 80686 München |
| Certifikat: | Bemyndiget organ NB0036 ifølge 2000/14/EF |

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Quality on Demand

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