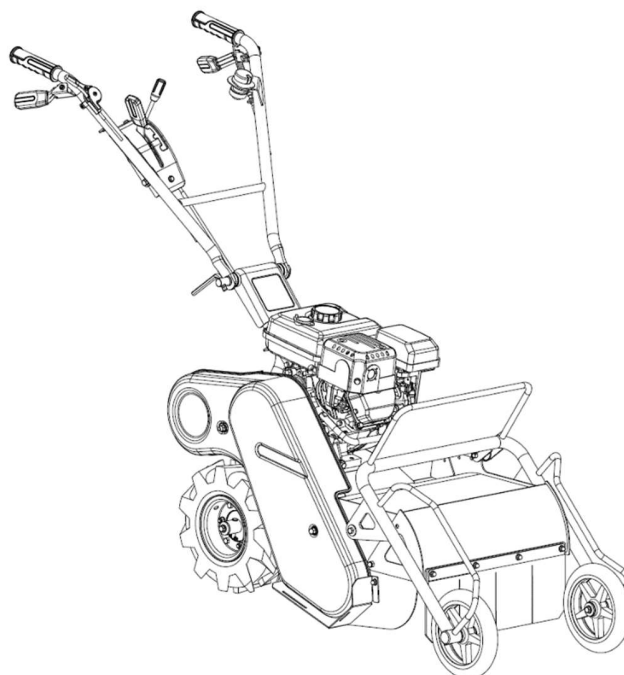


Instruction manual

Self-propelled mower **Bull Mower**

HR403



0365-70000



- Before using the product, carefully read and fully understand the important danger parts appearing in the text of the instruction manual.
- When purchasing this product, consult the retailer for safe usage..
- Keep the instruction manual in a safe place so that you can refer to it anytime..
- To maintain safety, please undergo an annual inspection. (Charged)
- When accepting various services, please be sure to specify genuine parts from the manufacturer.

//// OREC

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■ About the Instruction Manual




- Please read this instruction manual thoroughly before using this device.
- If you lend or transfer this unit to another person, be sure to provide this manual along with it.
- If lost or damaged, please order a replacement directly from your retailer.

《Introduction》

- ✓ Thank you very much for purchasing this product.
- ✓ This manual explains the correct handling methods and simple maintenance procedures to keep this product in optimal condition and ensure safe operation.
- ✓ Before use, please read this manual thoroughly to fully understand safe operation and proper handling methods, ensuring safe and efficient work.
- ✓ After reading, store it carefully for future reference. If lost or damaged, purchase a replacement from your retailer or download it from the manufacturer's website.

《Definitions and Symbols》

This manual uses the following definitions and symbol marks based on the level of danger (or severity of potential accidents). Fully understand the meaning of the symbol marks below and follow their instructions.

Symbol Mark	Definition
 Danger	Indicates that failure to follow the warning could result in death or serious injury.
 Warning	Indicates a situation where failure to follow the warning could result in death or serious injury.
 Caution	Indicates that failure to comply with the warning may result in injury. It also indicates that failure to comply or correct may damage the product itself.
Reference	Indicates useful product performance information and common operational errors to be aware of during operation and maintenance.

About Regulations for This Product

- 1) This product is developed as a dedicated machine for agricultural workers and for agricultural use. Do not use it for any other purpose (such as rental where the operator cannot be identified). Doing so may void the warranty.
- 2) It may not be able to cut vines, creepers, or other ground-hugging plants.
- 3) This product was developed and manufactured for use within Japan.

It does not comply with overseas laws, regulations, rules, or safety standards. Therefore, we cannot provide any services, including quality or performance guarantees, repair consultations, or any other support. We appreciate your understanding.

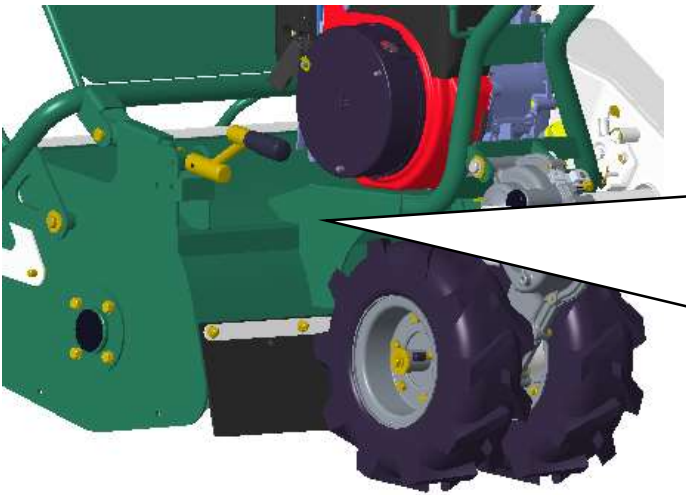
《Important Notice》

- 1) Please note that due to performance and durability improvements, as well as other specification changes, parts may be modified. Consequently, the specifications of your product may differ in part from the information in this manual.
- 2) Please note that unauthorized copying or reproduction of any part or all of this manual constitutes copyright infringement, except as permitted by law.
- 3) Photographs and illustrations are used in this manual to clearly show the parts being described. However, parts not being described may be omitted from the illustrations.
- 4) This manual is not intended for use by individuals whose native language is not Japanese.

《Warranty, Agreement, and Disclaimer》

- 1) The warranty period for this product is one year from the date of new purchase or 50 cumulative hours of use (for contracted commercial use, it is six months or 50 cumulative hours of use), whichever comes first.
- 2) It is impossible to anticipate all situations regarding the hazards associated with product handling.
When using this product, in addition to the precautions described in this manual, users must also exercise sufficient care regarding operating conditions, operation methods, inspections, cleaning, and other tasks to ensure safe daily use.
- 3) If you do not understand something after reading this manual, do not operate the product arbitrarily. Always consult the retailer where you purchased the product.
- 4) Regular inspection and maintenance are essential for continued safe and efficient use of the product. Be sure to request the regular inspections and maintenance listed in the "Periodic Inspection Schedule" and "Annual Inspection Schedule" from the retailer at least once a year (charges apply). Failures or accidents resulting from failure to perform these inspections and maintenance, or from use exceeding specifications, modifications, or other non-compliance with this manual are not covered under warranty.
- 5) The supply period for replacement parts for this product is 9 years after **production** discontinuation. However, even within this supply period, delivery times for special parts may require consultation.
- 6) For any questions or inquiries regarding our services, please consult your dealer. When doing so, please refer to the information below to confirm the 'product model number, serial number, and engine model name (engraved or affixed to the engine itself)', and provide this information when contacting us.

Location of the "Serial Number"
Label on This Unit



Type Description	Grass Trimmer (Walk-behind Type)
Model Name Model	HR403
Serial No. Serial No	JR0000000000
Distributor	Orec Co., Ltd.
Orec Co.,LTD.	FABRIQUE AU JAPON

1. Before using ‹Please read this carefully for safe use›

1.1 Operating Conditions

Warning

- 1) Do not use this machine if you cannot understand the contents of this manual.
- 2) As a general rule, only the owner should use this machine. If you must lend the machine to another person, explain the operating procedures and instruct them to thoroughly read both this manual and the "Operating Instructions" for the engine (if applicable). Ensure they fully understand the operating methods and safety points before operating the machine.
- 3) Do not operate the machine when unable to perform normal operation due to fatigue, illness, medication, or other influences.
- 4) Do not allow persons under the influence of alcohol, pregnant women, children (junior high school age and younger), or untrained persons to operate the machine.
- 5) Wear appropriate work clothing, such as a long-sleeved shirt and long pants with the hem tucked in, to prevent entanglement in rotating parts. Smoking while working and wearing a towel around the waist are strictly prohibited.
- 6) Depending on the product, use appropriate equipment such as safety boots (or boots) with slip-resistant soles (spikes), helmets (or hats), safety glasses, gloves, and shin guards.
- 7) Do not use the machine on steep slopes, uneven terrain, muddy areas, or any location where there is a risk of falling, slipping, or the machine becoming buried.

1.2 Before Work

1.2.1 Precautions Before Work

Danger

Exhaust gases may cause carbon monoxide poisoning. Do not operate or work in poorly ventilated areas such as indoors.

Warning

- 1) Never modify this machine in any way that could hinder safe operation.
(Cutting covers, attaching non-standard parts, using non-specified belts or oils, removing safety devices, etc.)
- ‹We cannot be held responsible for any accidents or malfunctions resulting from such modifications.›**
- 2) Ensure no people, animals, vehicles, equipment, buildings, or other tangible assets are present in the vicinity. Verify the surrounding safety and mark hazardous or caution-required areas within the field, such as obstacles, ditches, or unstable shoulders, to

 **Warning**

prevent access.

- 3) Remove stones and other foreign objects beforehand. If unremovable obstacles exist, set up warning signs or safety barriers indicating the restricted work area before starting operations. Additionally, in such fields, operate at a higher cutting height than usual for safety. Chipped blades or flying stones and other foreign objects pose a danger.
- 4) Remove rocks, metal, or other objects that could spark upon blade contact beforehand. If removal is impossible, place conspicuous markers to prevent approach.
- 5) When mowing dry grass, check areas around the engine and exhaust pipe (which become hot) once per hour for accumulated grass clippings and clean them.
- 6) Dry grass can spontaneously combust or catch fire from external sources. When mowing dry grass, designate a supervisor in addition to the operator and ensure constant monitoring.
- 7) Exercise particular caution when mowing during periods of dry weather warnings; in some cases, refrain from mowing altogether.
- 8) To prevent falls, when operating near rivers, cliffs, or uneven terrain (road shoulders), consider the risk of shoulder collapse or falling and operate only on sufficiently safe, level ground.
- 9) Using the machine in dark conditions or when visibility is poor is dangerous. Do not use it when you cannot fully assess the surrounding conditions.

 **Caution**

- 1) Avoid using the machine in rainy conditions or where it may be exposed to large amounts of water, such as puddles.
- 2) Pay attention to other weather conditions and carefully consider your decision to proceed with the work and your choice of equipment.

1.2.2 Pre-Work Inspection and Verification

 **Warning**

- 1) Before starting work, always verify that any areas requiring repair identified after the previous operation have been properly repaired. Never begin work until repairs are complete.
- 2) Operating the machine with safety covers, standard safety devices, or related components removed is extremely dangerous. To prevent accidents, always use the machine with these components securely installed. If any abnormalities are found, repair them and confirm normal operation before proceeding with work.

- 3) When the work clutch (knife clutch, etc.) is in the "disengaged" position, check that the V-belt is completely stationary. If it is moving even slightly, stop the engine and adjust the belt tensioner and wire.
- 4) Knife detachment is dangerous. Tighten the knife set bolts and nuts securely. Also, replace old knives with new ones.
- 5) Machines with an opening cover for blade replacement are dangerous to use when open. Always use the machine with the cover closed.
- 6) Before operation, always remove grass clogs from the engine cooling air intake, around the cylinder, especially near the high-temperature exhaust pipe, and any grass debris accumulated on the machine. This prevents engine seizure and fire.
Also, clean not only the exterior but also the interior of the air cleaner, HST fan cover (applicable models), and other areas where grass debris may accumulate.

1.2.3 No Open Flames / Fuel Refueling



Danger

- 1) **No open flames are permitted near the machine at any time, including during operation and refueling.** There is a risk of ignition and burns. Absolutely do not use open flames, such as lit cigarettes or bonfires, near the machine.
- 2) Refuel only after the engine has stopped and the muffler has cooled sufficiently.
- 3) For fuel tanks marked with a maximum fuel level, fill only up to the mark (use even less when operating on slopes). If you overfill, drain the excess until the level is below the mark. Also, wipe up any spilled fuel immediately.
- 4) Do not perform this operation if your body is charged with static electricity. Vaporized gasoline may ignite, potentially causing burns or fire.

1.3 During Operation

1.3.1 Precautions During Operation



Warning

- 1) For safety, drive with ample time and avoid sudden starts, stops, or turns.
- 2) Avoid working in awkward positions. Take breaks every 1-2 hours based on your physical condition.
- 3) Ensure no people (especially children) or pets enter the work area (within a 15-meter radius). Use signs indicating mowing operations or guard ropes to keep them away. If people or pets approach, immediately stop work and shut off the engine.
- 4) Do not place flammable or hazardous materials near the machine while operating. The exhaust muffler becomes extremely hot. Touching it during operation or immediately after use may cause burns.

- 5) When working on slopes, use the machine only on gradients of 10 degrees or less.
Work sideways (along contour lines) rather than up and down. Working up and down the slope risks the machine sliding downhill or the operator slipping and being caught in the machine.
- 6) Take sufficient precautions such as using anti-slip measures. Do not operate in areas that remain slippery even after taking these precautions.

1.3.2 Operating Precautions



Warning

- 1) When starting the machine, ensure the travel (main) clutch and work (knife/rotary) clutch are in the "OFF" position. If the machine has a neutral position, place the shift lever in "NEUTRAL". If the machine has a brake, apply the brake before starting.
- 2) Exercise extreme caution when turning or maneuvering on slopes. Loss of balance may cause you to fall and sustain injury.
- 3) On slopes, for safety, avoid unnecessary operation of the shift lever, clutch lever, and similar controls. There is a risk of slipping, falling, or sliding.
- 4) When backing up, ensure no people (especially children), animals, or obstacles are present. Pay attention to your footing to avoid being caught between the machine and obstacles or falling from cliffs or steps. (Applicable products)
- 5) When working near trees or walls, be extremely careful to avoid getting your body or hands caught between the machine and greenhouse pillars, tree branches, wire fencing, etc., and to prevent bruising or pinching from branches.
- 6) Pay particular attention to your footing during rotation to avoid entanglement with the working parts (knives, claws, etc.) or traveling parts (tires, crawlers, etc.).
- 7) When switching the cutting direction, confirm safety in both forward and reverse directions before proceeding.
- 8) Operate the work (knife/rotary) clutch only after confirming no people (including children) or animals are present and exercising sufficient caution for safety.


1.3.3 Inspection, Stopping, and Cleaning During Operation



Warning

- 1) If the machine collides with or bites into foreign objects during operation (e.g., mowing, tilling), immediately stop the operation and shut off the engine. Then, always inspect the knives, knife stays, Blads (if applicable), and covers for looseness, chips, or bends. Tighten, secure, repair, or replace as necessary.
- 2) Check the cooling air intake, grass buildup near the cylinder, and especially the high-temperature exhaust pipe area once per hour. Carefully remove any accumulated grass clippings. Failure to do so may cause engine seizure or fire.

Also, clean both the exterior and interior frequently. Simultaneously clean the inside of the air cleaner and remove accumulated grass debris from the HST fan cover (applicable products).

 **Caution**

- 1) When inspecting during operation, always stop the engine and wait for all parts to cool completely before proceeding. Wear sturdy gloves, such as leather gloves, to protect your hands.
- 2) Always stop the engine before leaving the machine. Also, ensure it is securely parked on stable ground.
- 3) When stopping the engine, perform the following steps for the applicable product:
 - ① Apply the brakes. ② Remove the key. ③ Close the fuel valve.
- 4) Abnormal noises, odors, or overheating during operation may cause fire. Immediately stop the engine and inspect or repair it.
- 5) If you notice any other abnormalities during operation, always stop the engine before inspecting it.
- 6) Carefully remove any grass or debris clogging the cooling air intake, around the cylinders, and especially around the exhaust pipe where temperatures are high. This can cause engine seizure or fire.

Also, clean both the exterior and interior frequently. Simultaneously clean the inside of the air cleaner and remove any accumulated grass debris from the HST fan cover (applicable products).

1.4 Precautions During Loading, Unloading, and Transport

 **Danger**

- 1) When transporting this machine, always stop the engine and set the fuel valve to the "Closed" position. Fuel leakage may cause spilled fuel to ignite.
- 2) Do not tilt the machine more than necessary. Fuel may leak out.

 **Warning**

- 1) Use a vehicle suitable for the product when transporting it. (Check load capacity, bed size, and potential interference.)
- 2) Select a flat, safe location for the transport vehicle. When loading, stop the engine, apply the parking brake, and secure wheel chocks to prevent movement.
- 3) When loading or unloading, securely attach the differential lock pins to both wheel hubs.
- 4) Adjust the height so the knife/tines do not contact the bridge. Additionally, for applicable models, perform the following:
 - ① Set the work clutch to the "OFF" position. ② Set the differential lock to the "ON" position.
- 5) Securely position a sturdy bridge meeting specifications on a gentle slope

(15 degrees or less). Reduce engine speed. Load using "Forward" gear and Unload using "Reverse" gear. Both Proceed slowly at low speed.

⟨Do not disengage the drive clutch while driving on the bridge. Also, do not operate the side clutch (if applicable), shift lever, or other controls. ⟩

- 6) When this machine crosses the boundary between the bridge and the truck bed, the center of gravity changes abruptly. Exercise extreme caution.
- 7) Secure the machine firmly with sturdy ropes during transport. Also, drive safely.

1.5 Inspection and Maintenance

◎ **Regular inspections are essential for maintaining quality and performance.**

Please perform pre-operation and monthly inspections yourself. For annual inspections, please request them from your dealer (for a fee).

⟨Please note that we cannot be held responsible for accidents or malfunctions resulting from failure to perform regular inspections.⟩



Warning

Failure to follow the instructions below may cause burns, injury, or machine failure.

- 1) In addition to performing daily inspections and maintenance before and after use, conduct regular inspections and maintenance to keep the product in a safe and comfortable condition at all times.
- 2) For inspections, adjustments, and maintenance, stop the engine and wait until the muffler section and other hot parts of the transmission case have cooled completely. Wear sturdy gloves, such as leather gloves, and use the correct tools properly.
- 3) Perform inspections, adjustments, and maintenance on a flat, hard, spacious, and well-lit surface. Always be mindful of the machine's balance and take great care to prevent it from tipping over.
- 4) When lifting the machine for inspection, always secure it to prevent falling.
- 5) After replacing or attaching/detaching working parts (knives/claws) or traveling parts (tires/track shoes), verify that they are securely installed in their designated locations and properly tightened.
- 6) When replacing working parts (knives/tines) or traveling parts (tires/track shoes) with new ones, replace all mounting bolts with new genuine manufacturer parts for safety.
- 7) Damage to belts, safety covers for the knife section or covers designed to prevent scattering is dangerous. If you notice any abnormalities during operation, do not continue working. Stop immediately, inspect the area, and perform any necessary repairs after completing the task.
- 8) Always reinstall removed covers correctly in their original positions.
- 9) Never install non-specified attachments or make modifications.
- 10) Fuel pipes become dangerous and cause fuel leaks when old. Replace them with new ones every 3 years or when damaged, along with the clamps.

**Caution**

Failure to follow the instructions below may cause machine malfunction.

- 1) When washing this vehicle, avoid getting water on the engine area (electrical components, air cleaner area, fuel cap, etc.) and warning label locations.
- 2) Thoroughly inspect and adjust the clutch components, throttle, gear shift, etc.
- 3) To prevent burns or fire when covering the seat, ensure the engine is completely stopped and all hot parts, such as the muffler and engine body, are fully cooled before proceeding.

1.6 Storage

**Warning**

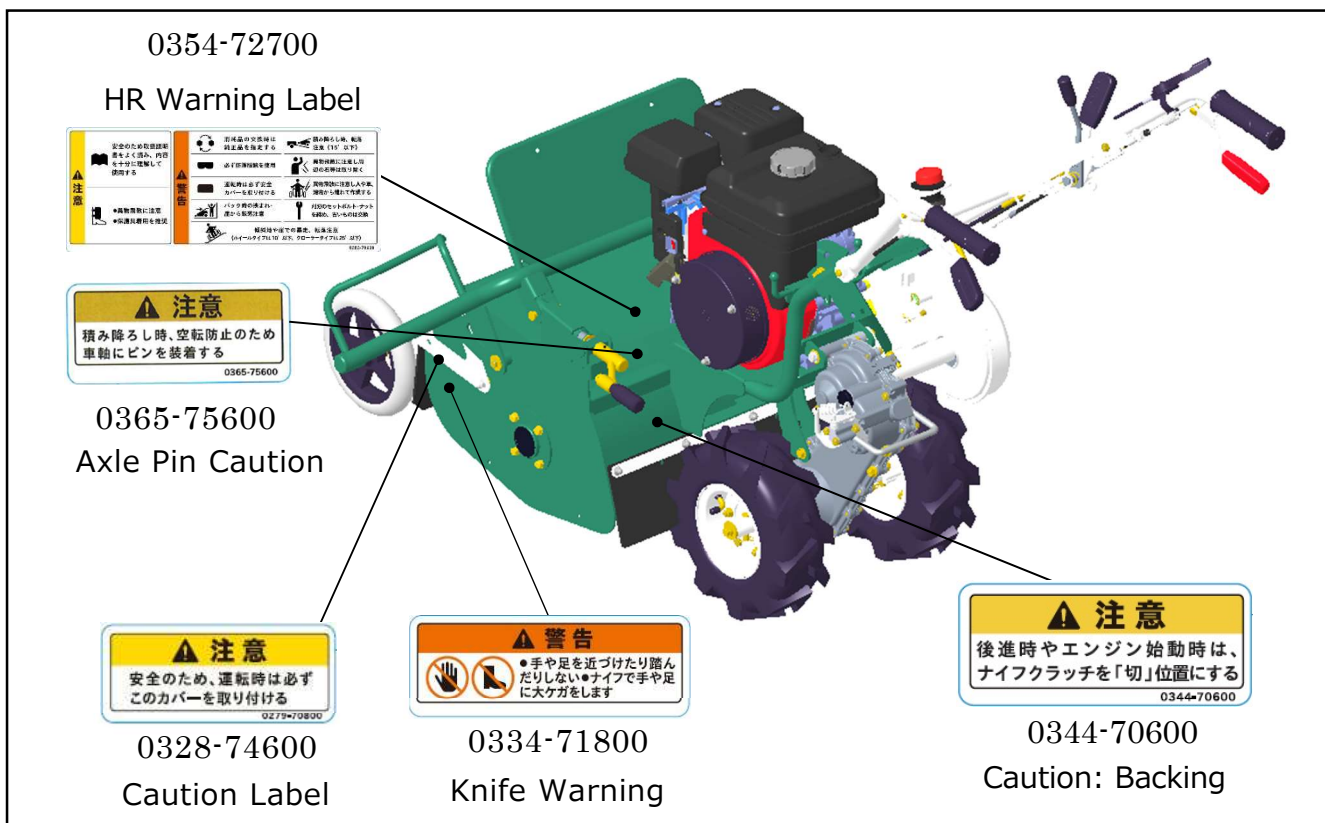
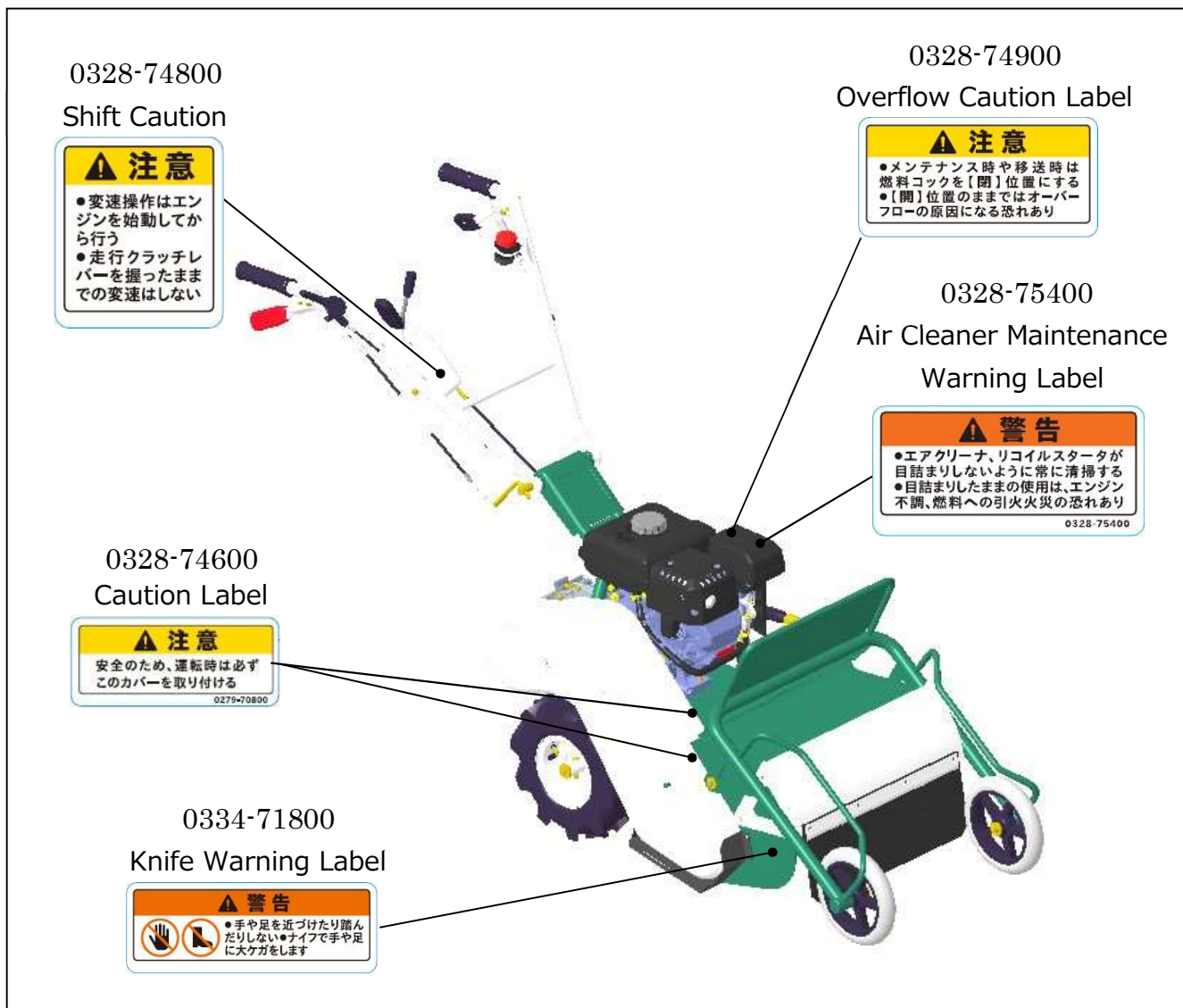
- 1) For safety, always close the fuel valve.
- 2) Store the machine indoors for long-term storage. (Refer to Section 5.5 Long-Term Storage Method)
- 3) Remove any dirt, deposits, or foreign objects from the main unit and working parts.

1.7 Warning Markings

**Warning**

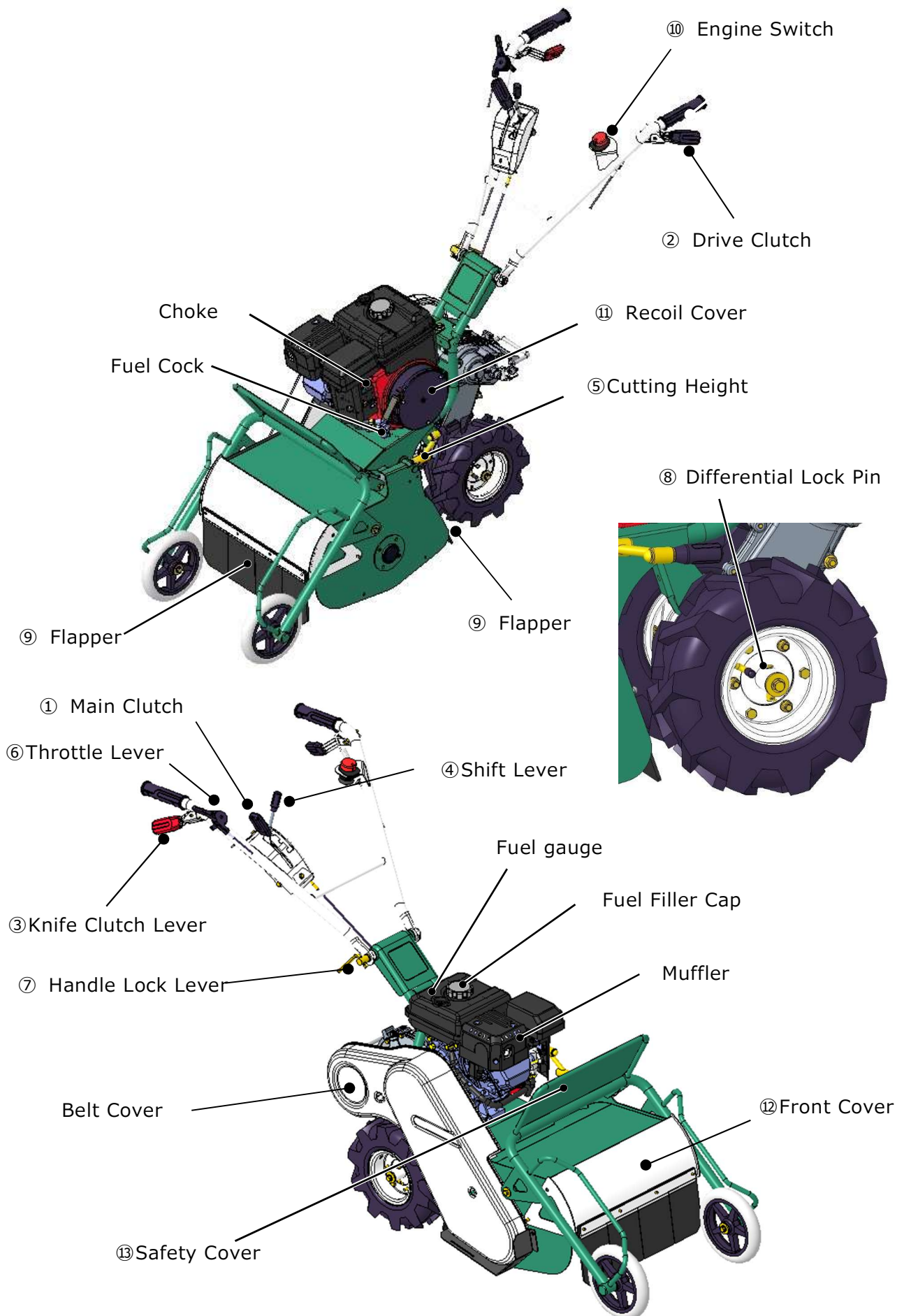
- Warning labels are carefully selected from the important hazards within this section and are affixed to the main unit. Be sure to read them before use, fully understand them, and strictly adhere to them.
- ※If a warning label becomes difficult to see, purchase an identical replacement from your dealer and affix it so it is always clearly visible. (Refer to 6.3 Consumable Parts List)

Warning Label Locations



2. Names and Functions of Each Part

2.1 Names of Components



2.2 Functions of Each Part

① Main Clutch Lever

Disconnects power transmission from the engine to the transmission. When the lever is pulled back, it is in the "Off" position, indicating neutral. Pushing it forward engages the clutch. In the "Off" position, you can move the vehicle by gently pushing it.

② Drive Clutch Lever

Disengages power transmission from the engine to the transmission. While gripping the handlebar, lift it upward from below to lock it in the "Engaged" position. From this locked position, press down with your thumb to move it to the "Disengaged" position.

③ Knife Clutch Lever

Disconnect power from the engine to the blade. While holding the handle, lift it upward from the bottom to lock it in the "ON" position. From this position, press down with your thumb to move it to the "OFF" position.



Caution

When starting the engine, ensure the main clutch, drive clutch, and blade clutch are all in the "OFF" position. Also, for safety, always ensure the blade clutch is in the "OFF" position when reversing.

④ Shift Lever

Select the travel speed. Forward has two speeds, reverse has one speed. Refer to the table below for each lever position and corresponding speed.

	Reverse 1	1st gear	2nd
Travel	1.6Km/h	1.1Km/h	2.1Km/h

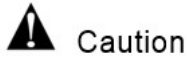


Caution

Always operate the shift lever with the engine running, the main clutch lever in the "engaged" position, and the drive clutch lever in the "disengaged" position. Operating the shift lever while the drive clutch lever is in the "engaged" position may cause malfunction.

⑤ Cutting Height Adjustment Handle

Adjusts the cutting height. Turning it to the right lowers the cutting height, while turning it to the left raises it. If the field has ridges, adjust the cutting height to match the convex side to prevent mud or stones from clogging the blades.



Setting the cutting height too low may cause the following problems. If any of the following symptoms occur, the cutting height is too low; raise it.

- (1) Increased scattering of stones and other foreign objects.
- (2) Scraping mud causes splattered mud to adhere inside the knife cover, impairing grass discharge and causing unnecessary horsepower loss.
- (3) Premature blade wear, breakage, loosening of mounting bolts/nuts, etc.

⑥ Throttle Lever

Adjust engine speed.

⑦ Handle Locking Lever

Adjusts handle height according to the operator's build or working conditions. To adjust, turn the bolt counterclockwise to loosen. Position the handle according to the operator or working conditions. Then, turn the bolt clockwise to tighten when the peaks and valleys of the hex nut engage, securing the handle.

⑧ Differential Lock Pin

Inserting or removing this pin changes the machine's driving behavior.

Inserting the lock pins on both left and right wheel hubs

Insert: Improves straight-line stability and slope stability. Always insert the pins when loading or unloading the machine.

Remove: Improves turning performance. Reduces driving responsiveness when switching between forward and reverse (error less than 1 second).

⑨ Flapper

Located in front of and behind the knife cover, it minimizes the scattering of stones and other foreign objects. It is extremely dangerous during operation, so always attach it. Also, if damaged, always replace the part.

⑩ Engine Switch

Operates the engine "Start" and "Stop" functions.

⑪ Recoil Cover

This cover prevents grass clippings, dust, and other debris from entering the engine.



Caution

If grass clippings or dust adhere to the recoil cover, clean it by brushing them off by hand. Operating with grass clippings or dust adhering to the cover may cause the engine to overheat.

⑫ Front Cover

Opens and closes automatically depending on the amount of grass.

It can be secured during blade replacement or cleaning inside the cover.

(refer to 5.4.1 Blade Inspection and Replacement)

⑬ Safety Cover

Prevents flying debris such as grass and foreign objects from reaching the operator.



Warning

Covers are essential components for suppressing foreign object scattering and ensuring safety.

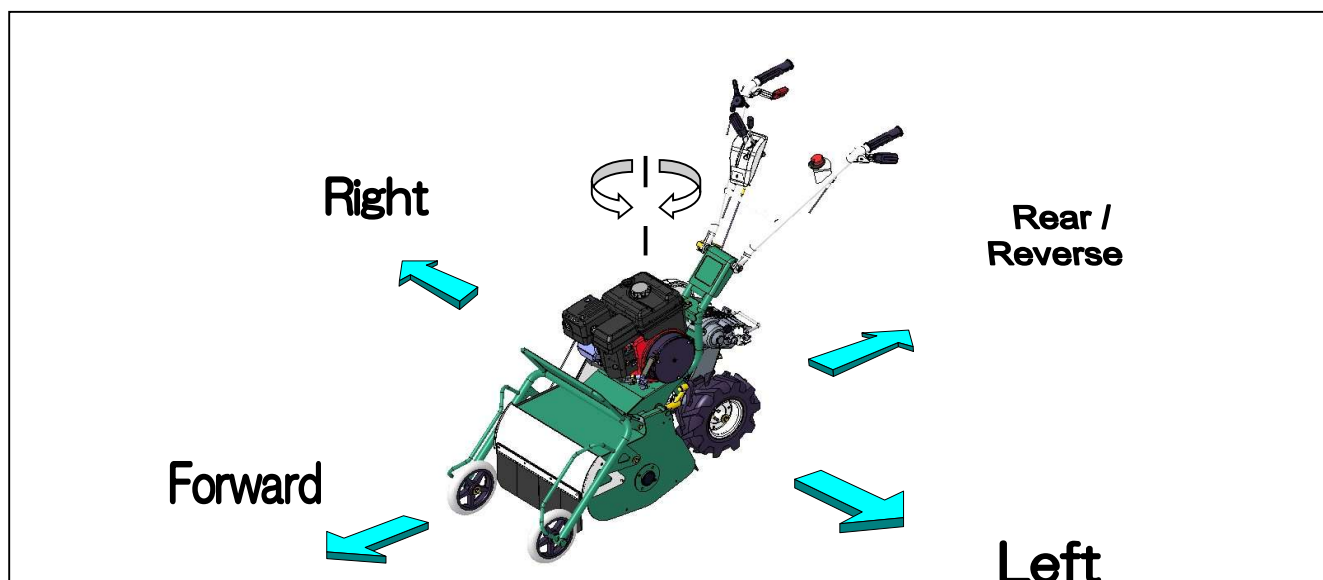
Using the machine in an abnormal state is extremely dangerous due to the risk of foreign object scattering. Always adhere to the following:

- 1) If the front cover or safety cover is damaged or deformed, repair or replace it immediately.
- 2) Always operate with the front cover in a free state. Secure the front cover only when replacing the blade or cleaning inside the cover.
- 3) Do not operate the machine with the safety cover removed.

2.3 Directional Indications

The front, rear, left, and right of this machine are indicated from the operator's perspective as shown in the figure below.

The terms "forward" and "reverse" in the text also refer to the direction as seen by the operator.



3. Pre-Work Inspection

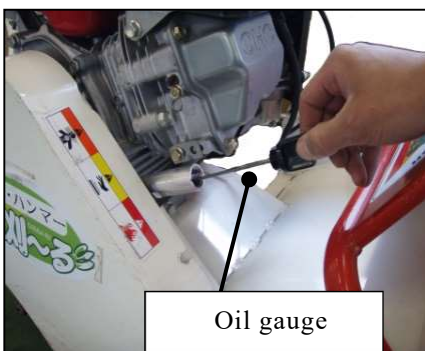
- Before starting work, review "1.2 Before Performing Work" and conduct the pre-work inspection using the "Pre-Work Inspection Checklist" below and "7.1 Periodic Inspection Sheet".
- ※ If you have any questions or notice any abnormalities, please consult the dealer where you purchased the product.

Pre-Work Inspection Checklist (Summary from the Periodic Inspection Checklist)		
	Item	Inspection Content
Engine	① Engine Oil	Check oil level and condition (see 3.1)
	② Air Cleaner	Check for dirt, clean (see 5.2.1)
	③ Engine Body	Check for "looseness" and "cracks"
	④ Muffler area	Check for "clogging by debris, etc." and clean
	⑤ Fuel Tubing, Fuel Filter	Check for fuel leaks, deterioration, deformation, or clogging; clean
This Unit	① Knife (Blade)	〈See 5. Inspection and Maintenance〉
	② Brakes (Applicable Products)	"1" Loose or missing bolts/nuts
	③ Tires (Crawler)	"2" Deformation, wear, interference
	④ Levers	"3" Smooth operation or sticking
	⑤ Covers	"4" Remove foreign objects such as dirt, grass, or straw
	⑥ HST oil (applicable products)	Check "Oil Level and Contamination"

Warning

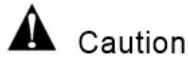
- 1) For inspection, lubrication, adjustment, and maintenance, place the machine on a flat, open area and ensure the engine is stopped before proceeding.
- 2) When starting the engine and checking the operation of the drive clutch lever, etc., confirm the position of each lever and the safety of the surrounding area before proceeding.
- 3) Read all warning labels affixed to the machine carefully.

3.1 Checking Engine Oil



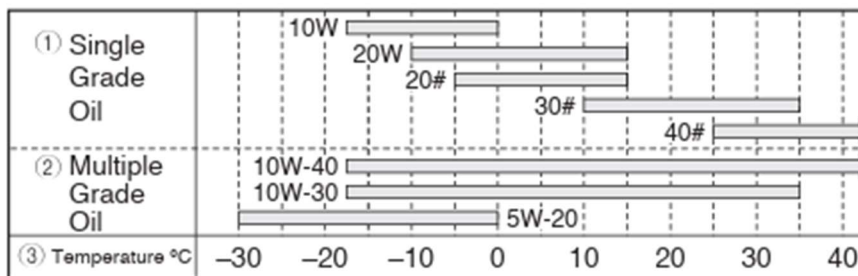
- ① Level the machine and remove the oil gauge.
- ② Insert the dipstick into the oil filler port without screwing it in, and confirm that the oil level is between the upper and lower marks on the dipstick.
(The oil filler plug doubles as the oil gauge.)
- ③ If the level is low, add oil until it reaches near the upper limit. Use the gauge as a reference for the amount of oil to add.

"Refilling can also be done using the funnel and hose included in the accessory tool bag."

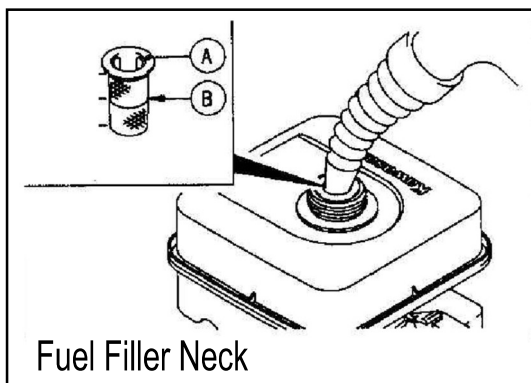
**Caution**

- 1) If checking engine oil after engine operation, wait until the muffler and engine body have completely cooled after stopping the engine.
- 2) A small amount of engine oil remains in the machine at shipment.
*Always check the engine oil level before starting the engine.
- 3) Use high-quality, new SE grade or higher engine oil, selecting the appropriate grade based on ambient temperature.
- 4) After refilling, securely tighten the oil gauge. If it is loose, engine oil may leak out.

Recommended Oil



3.2 Fuel Inspection and Refueling



- ① Level the machine, remove the fuel cap, and check the fuel level through the filler neck.
- ② If the level is low, refer to the diagram on the left. Refuel through the filler port up to the maximum level (B), taking care not to spill fuel.
 〈Fuel Type: Unleaded Regular Gasoline〉
 〈Fuel Tank Capacity: Refer to 6.1 Specifications〉
- ③ After refueling, securely tighten the fuel cap.


※When using on slopes, use even less fuel than indicated in B (use only enough to prevent spillage).

**Danger**

1) **No open flames during operation or refueling.**

There is a risk of ignition or burns. Absolutely do not use open flames near the machine, such as smoking while holding a lit cigarette or lighting a bonfire.

- 2) Refuel only after the engine has stopped and the muffler has cooled sufficiently.
- 3) If the fuel tank has a maximum fuel level mark, keep the fuel level below this mark (use even less fuel when operating on slopes). If you add too much fuel, drain it until the level is below the mark. Also, be sure to wipe up any spilled fuel.
- 4) Do not perform refueling while your body is charged with static electricity. Vaporized gasoline may ignite, potentially causing burns or fire.

 **Warning**

Perform these operations on a level, stable surface in a well-ventilated area.

 **Caution**

- 1) When refueling, prevent foreign objects such as dust, grass, rain, or snow from entering the fuel tank. This could cause engine malfunction.
- 2) Use only unleaded regular gasoline. Using other types may damage the engine.
- 3) Gasoline naturally degrades over time. Replace it with fresh gasoline if the tank has not been used for over a month. Also, do not use gasoline stored in plastic containers. This can cause engine problems.

4. Driving and Operating Instructions



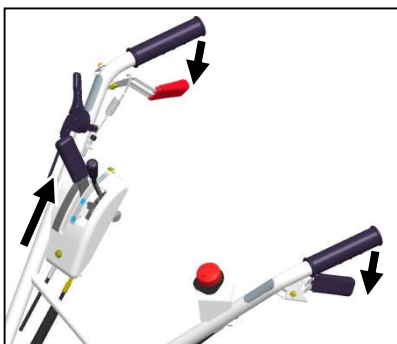
Warning

※ Be sure to read "1. Precautions for Use" before operating.

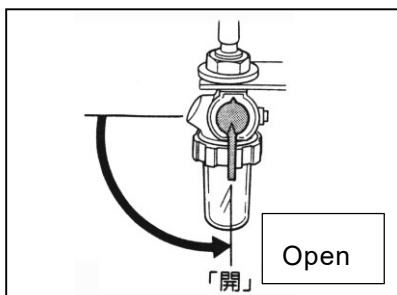
In particular, carefully read and understand "1.1 Operating Conditions," "1.2 Before Operating," and "1.3 During Operation" (before operating or working with the machine.)

4.1 Starting and Stopping the Engine

4.1.1 Starting the Engine



- ① Set the main clutch lever, drive clutch lever, and knife clutch lever all to the "OFF" position.




- ② Turn the fuel valve to the "Open ON" position.



- ③ Turn the engine switch button to the right to the "Run (ON)" position. (Push to Turn)

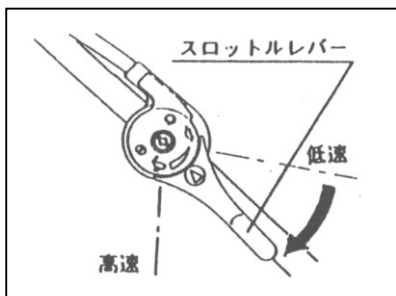


- ④ Operate the choke lever to close  the choke valve completely.

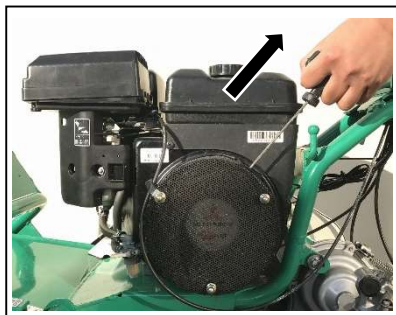
※ The operation method may vary depending on the engine type..

Note: When the engine is warm, operating the choke lever is not necessary.

4. Driving and Operating Procedures



- ⑤ Set the throttle lever to the midpoint between the "🐇" and "🐢" positions.



- ⑥ Grip the starter knob, pull it slowly until you feel resistance, then release it briefly before pulling it firmly. After the engine starts, slowly return the starter knob to its original position. If you pull the rope suddenly, the recoil may cause your arm to be pulled front.



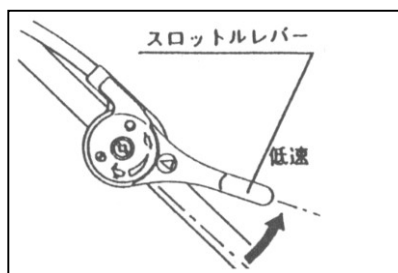
- ⑦ After starting the engine, return the choke lever and set the choke valve to the |●|
Run the engine at idle speed (low throttle position '🐢') for a while (about 5 minutes) to warm it up.
Warming up the engine extends its service life.
※Operation may vary depending on the installed engine.



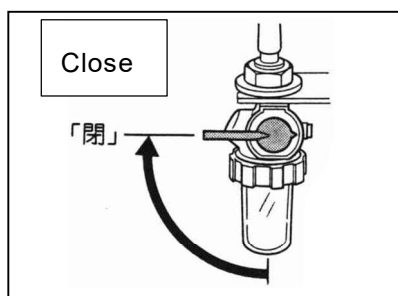
Caution

- 1) For the first week (3-4 hours) after purchasing a new product, treat it as a break-in period and operate it gently without overloading it.
- 2) Using the choke lever in the "fully closed" |●| position can adversely affect engine components and shorten engine life. Please be careful.

4.1.2 How to Stop the Engine



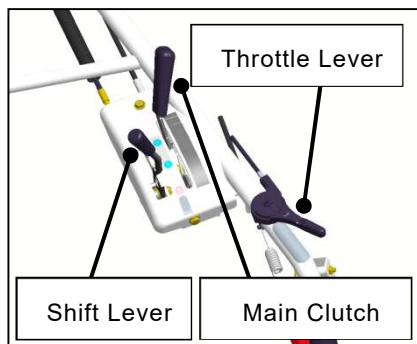
- ① Set the throttle lever to the low speed 🐢 position, then turn the engine switch to the "Stop (OFF)" position to stop the engine.



- ② Finally, turn the fuel cock to the "Close OFF" position.

4.2 How to Drive, Shift Gears, Turn, and Stop

4.2.1 How to Drive

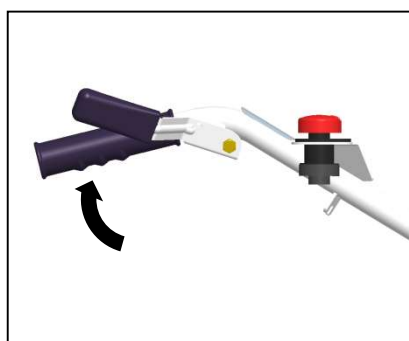


- ① Start the engine.
〈See 4.1.1 How to Start the Engine〉
- ② Place the main clutch lever in the "Engaged" position.
- ③ Operate the shift lever to securely engage the required gear position: "①", "②", or "R". 〈Refer to 4.2.2 How to Shift Gears〉



Caution

When in "R", there is a risk of falling or being crushed by rear obstacles. Pay close attention to your surroundings.



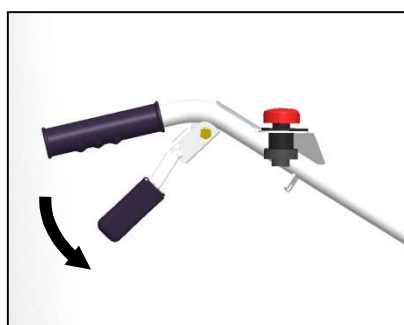
- ④ Set the throttle lever to the midpoint between "🐰" and "🐢", then raise the drive clutch lever to start moving.



Warning

- 1) For safety, set the cutting height to the highest position during travel and take care to prevent the blades from contacting stones or other obstacles.
- 2) Do not engage the blade clutch lever during travel or turning. There is a risk of entanglement with the high-speed rotating blades.

4.2.2 How to Shift Gears

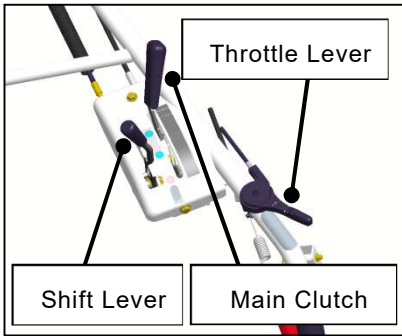


- ① Lower the drive clutch lever to the "**Off**" position.
(Main clutch lever in "Engaged" position)
- ② Set the throttle lever to the midpoint between "🐢" and "🐰"

Reference:

Repeatedly operating the shift lever while the drive clutch lever remains in the "**Engaged**" position may cause malfunction.

4. Driving and Operating Procedures



- ③ Operate the shift lever to securely engage the required gear position: "①", "②", or "R".



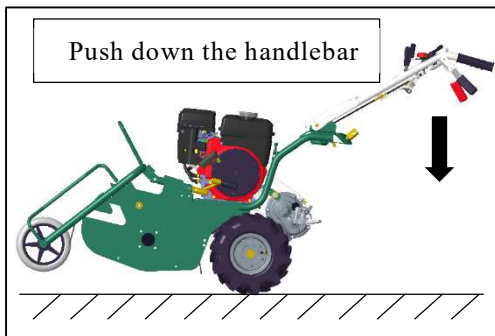
Caution

- Ⓢ Always perform gear changes after starting the engine. Insufficient gear shifting may cause gear disengagement, which is dangerous.

Reference:

- 1) If a gear is difficult to engage, move the drive clutch lever slightly toward the "engage" position and perform the shift operation firmly.
- 2) A "clattering" sound may occur from inside the transmission when in high gear "②". This is due to the mechanism of the high-speed gear rotation and is not abnormal. Please use it with confidence.
mechanism and is not an abnormality. Please use the vehicle with confidence.

4.2.3 How to Turn

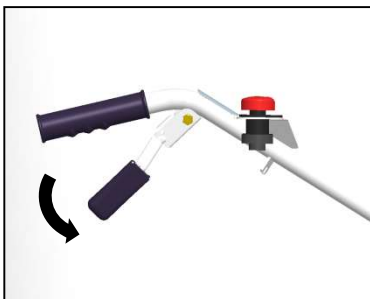


- ① Pushing down the handlebar slightly lifts the front wheel off the ground, allowing the rear wheel to turn more easily.

Additionally, removing the axle's differential lock pin can also make turning easier.

〈See 2.2 Functions of Each Part ⑧ Differential Lock Pin〉

4.2.4 Stopping Procedure



- ① Lower the drive clutch lever to the "OFF" position to stop the machine.



- ② Press the engine switch to the "Stop (OFF)" position to stop the engine.

〈See 4.1.2 How to Stop the Engine〉



Caution

- 1) Park this machine on level ground in a spacious area free of surrounding obstacles.
- 2) Always stop the engine before leaving the machine.
- 3) You can move the machine by pushing it lightly while the engine is off. (Main clutch lever in the **"OFF"** position)

4.3 Proper Work Procedures



Warning

- 1) For safety, always perform work with the standard covers and flaps securely attached. Working with them removed is extremely dangerous. Operating with a deformed or damaged safety cover risks projectiles like wire flying toward the operator.
- 2) Always stop the engine before removing grass, wire, or other foreign objects entangled in the blades.
- 3) The covers fitted to this machine are designed to minimize the scattering of foreign objects from the cutting section, but they do not completely prevent it. The operator is responsible for thoroughly removing any foreign objects (stumps, stones, wire, empty cans, scraps of cloth, etc.) from the field before operation.
- 4) If the blades are scraping mud or stones are flying frequently, adjust the cutting height to a position where these symptoms do not occur. Failure to do so may cause premature blade wear, chipping, breakage, loosening of mounting bolts/nuts, or blade detachment.



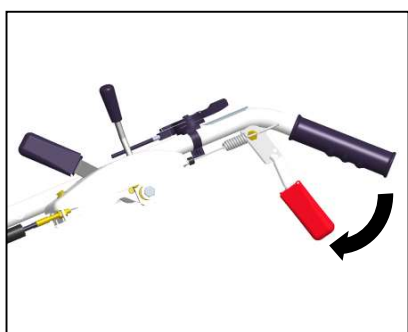
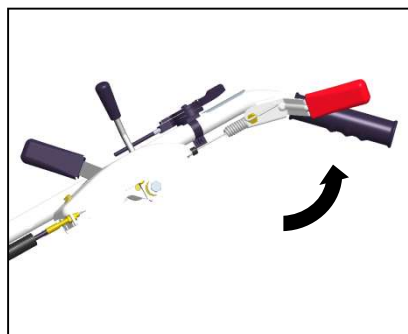
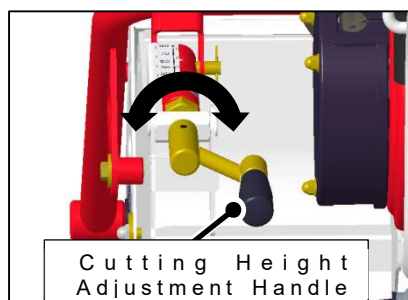
Caution

- 1) Always wear work clothing consisting of a long-sleeved top and long pants with a tightened hem. Also wear spiked boots, a hat or helmet, shin guards, and protective eyewear (included with the product).
- 2) Before operation, thoroughly remove foreign objects such as stumps, stones, wire, empty cans, and sticks from the cutting area.
- 3) When working in fields with many stones or other foreign objects, take sufficient safety precautions, such as cutting high, to prevent damage from flying debris.
- 4) Stones and other foreign objects may fly off around the entire cutting area. Keep a safe distance from people, vehicles, and buildings while operating.
- 5) The engine muffler becomes extremely hot during operation. Touching it accidentally may cause burns. Never touch the muffler while the engine is running or until it has cooled completely after shutdown.
- 6) Always operate the machine in forward motion. Operating in reverse is dangerous.

Reference:

- 1) When using this machine for the first time, select a flat area free of stones and other foreign objects. Secure the angle adjustment lever in the horizontal position and mow straight ahead slowly, slightly overlapping the cut path.
- 2) When mowing under trees or along hedges, set only the knife clutch lever to the **"ON"** position and push the machine by hand for smoother operation. However, pay close attention to the machine's movement.

4.3.1 Mowing Method



- ① Adjust the cutting height using the height adjustment handle according to the work conditions.
- ② Start the engine. (Refer to 4.1.1 How to Start the Engine)
- ③ Set the main clutch lever to the "Engaged" position.
- ④ Set the shift lever to the "①" position.
- ⑤ Set the throttle lever to the high-speed "🐎" position.
- ⑥ Push the knife clutch lever upward to the "**Engaged**" position.
 - Be extremely careful as the knife will rotate at high speed.**
- ⑦ Lifting the drive clutch lever to the "Engaged" position starts the machine and begins operation. (See 4.2.1 Driving Method)
- ⑧ To stop operation, first press down the knife clutch lever with your right thumb to stop the knife rotation.
- ⑨ Perform the driving and engine stop procedures. (Refer to 4.2.4 Stopping Method)

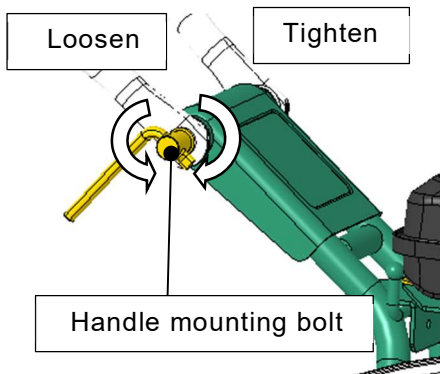
Warning

- 1) For safety, start from position "①" first, confirm the safety of the surroundings, and then adjust to the operating speed suitable for the work conditions.
- 2) Always operate in forward direction. Never operate in reverse "R" position. Not only does mowing performance decrease, but foreign objects are more likely to be thrown from the cutting unit, posing risks such as falling or being crushed by rear obstacles.
- 3) The interior of the knife cover is dangerous due to high-speed rotating blades. Never kick grass or other objects into the knife cover, and never stand in the direction of travel.
- 4) If the cutting deck contacts an obstacle during operation, stop the engine immediately, inspect for damage, and repair any abnormalities right away. Continuing operation without repairing damage can lead to unexpected accidents.
- 5) Do not allow grass clippings, leaves, or other debris to accumulate around the engine, especially the recoil cover, air cleaner, and muffler. This can cause overheating and fire.
- 6) For safety, always stop the engine when leaving the machine.

Reference:

- 1) Cut grass is finely shredded inside the knife cover and discharged from the rear. Operating with wet grass causes clippings to accumulate inside the knife cover, reducing discharge capacity. Consequently, even short grass can cause the engine to stall quickly. Therefore, regularly remove accumulated grass clippings from the knife cover or wait until the grass is dry before starting work.
- 2) If the engine is under high load, either reduce your speed or raise the cutting height and make two passes.

4.4 Adjusting the Handle Position for the Task and Operator's physique

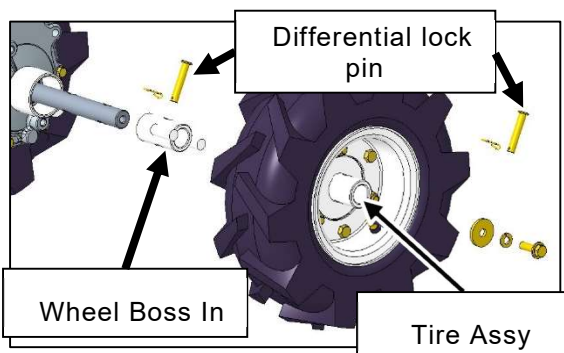


- The handle position can be adjusted up, down, left, or right according to the operator's physique and working conditions.

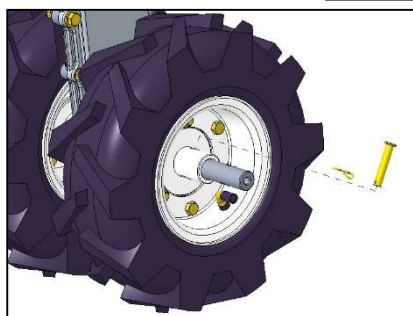
Handle height

Loosen the handle mounting bolt by turning it counterclockwise. After adjusting the height, tighten it clockwise until the peaks and valleys of the hex nut engage to secure the handle.

4.5 How to Change Tire Position

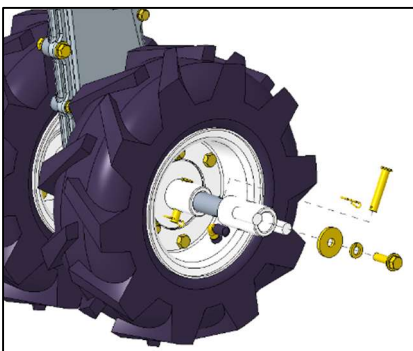


- ① Remove the mounting bolts, washers, and differential lock pins from both tires, then detach the tire assembly and wheel boss insert from the axle.



- ② Insert both tire assy onto the axle shaft without swapping left and right, paying attention to the lug orientation.

- ③ Align the inner axle hole with the wheel boss hole position and install the differential lock pin.



- ④ Insert the wheel boss into the axle shaft, align the outer holes of the axle shaft with the holes, and install the pins, bolts, and washers.

4.6 Loading, Unloading, and Handling



Danger

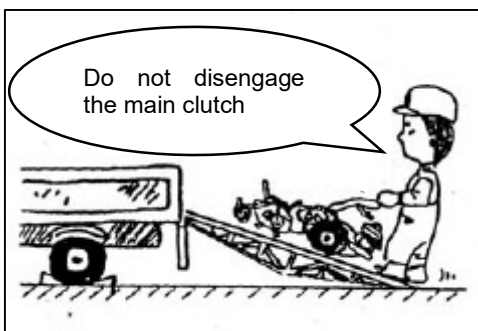
- 1) When transporting the machine, always stop the engine and set the fuel cock to the "Closed" position. Fuel leakage may cause spilled fuel to ignite.
- 2) Do not tilt the machine more than necessary. Fuel may leak out.



Warning

- 1) Use a transport vehicle appropriate for the product (load capacity, bed size, interference).
- 2) Select a flat, safe location for the transport vehicle. When loading, stop the engine, apply the parking brake, and secure wheel chocks to prevent movement.
- 3) When loading or unloading, securely attach the differential lock pins to both wheel hubs.
- 4) Adjust the height so the blades/tines do not contact the bridge. Additionally, for applicable models, perform the following: ① Set the work clutch to the "OFF" position. ② Set the differential lock to the "ON" position.
- 5) Ensure a sturdy bridge meeting specifications is securely placed at a gentle slope (15 degrees or less). Reduce engine speed. Load using "forward" gear and unload using "reverse" gear at low speed.
⟨Do not disengage the drive clutch while driving on the bridge. Also, do not operate the side clutch (if applicable) or shift levers.⟩
- 6) When this machine crosses the boundary between the bridge and the truck bed, the center of gravity shifts abruptly. Exercise extreme caution.
- 7) Secure the machine firmly with sturdy ropes during transport. Also, practice safe driving.

4.6.1 Loading and Unloading Method



- ① Select a flat location free of hazardous objects.
- ② Place the bridge securely on a gentle slope (15 degrees or less) and at a width appropriate for the product.
- ③ Position the machine's wheels at the center of the bridge.
- ④ Reduce engine speed and disengage the work clutch.
- ⑤ Load using "Forward" and unload using "Reverse" at low speed and slowly.

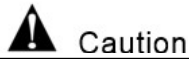
Reference: Bridge Standard

Use a bridge that meets the standard and has sufficient strength.

- Length: At least 3.5 times the height of the truck bed.
- Width... Must match the width of the machine's wheels.
- Strength... Must sufficiently withstand the combined weight of the machine and the operator.
- Surface treatment applied to prevent slipping.

5. Inspection, Maintenance, and Adjustment

5.1 Oil Inspection, Replacement, and Lubrication



Caution

- 1) This machine is shipped without oil. Before using this machine for the first time, be sure to lubricate the specified locations with the specified oil in the specified amount.
- 2) Regular oil changes are essential to keep this machine operating at its best.
- 3) Add oil gradually. Attempting to fill it all at once may cause oil to overflow from the filler hole without allowing air to escape. Ensure the oil level reaches the filler hole.
- 4) When inspecting, changing, or lubricating oil in any part, always place the machine on a flat, wide surface. Warm up the engine, then stop it. Wait until all parts of the machine have cooled completely to a temperature where they are not hot to the touch before performing any work.

... If you start work immediately after stopping the engine ...

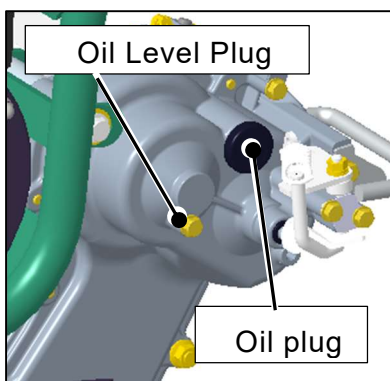
*** The engine body is extremely hot and poses a burn hazard.**

***Immediately after engine shutdown, residual oil remains in various parts, preventing accurate oil level indication.**

5.1.1 Transmission Fluid Inspection and Replacement

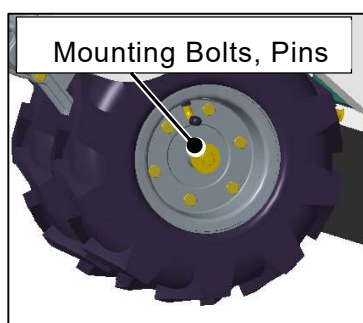
Note: When checking, topping off, or changing transmission fluid, shifting into gear ② makes the task easier.

◎ Inspection/Refill... Strictly adhere to the specified oil quantity.



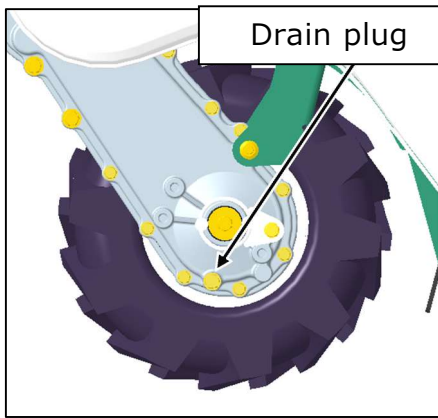
- ① Remove the oil inspection plug on the upper left side of the transmission case. If oil seeps out from the plug, the transmission contains approximately the specified amount of oil.
- ② Visually inspect the oil level and condition. If the oil is low or severely contaminated, top up or perform a complete oil change (see below).

◎ Replacement...



- ① Prepare a suitable container to catch the oil.
- ② Remove the tire mounting bolts and differential lock pins on the belt cover side, and remove the tire.

5. Inspection, Maintenance, and Adjustment



- ③ Remove the drain plug at the bottom of the transmission case (lower axle), drain the oil.

Note: Removing the oil filler plug at the same time makes draining the oil easier.

- ④ After securely reinstalling the drain plug, add 0.9 liters of transmission oil (#90).

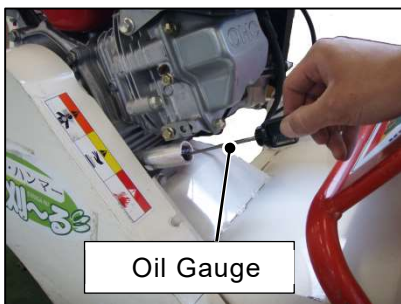
. After filling, reinstall the tire and securely tighten the mounting bolts securely.

Replacement Guidelines

Initial: 20 hours; Subsequent: Every 100 hours

5.1.2 Engine Oil Inspection and Replacement

◎ Inspection and Refill...

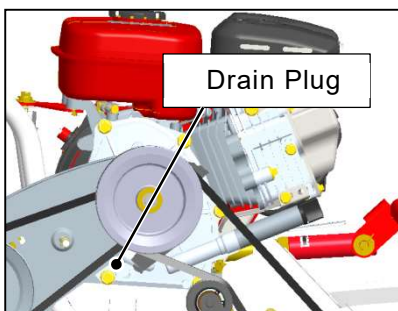


- ① Before each operation, visually inspect the engine oil level and condition as described in 〈3.1 Engine Oil Inspection〉. If the level is below the specified amount or the oil is severely contaminated, top up or perform a complete oil change (see below).

〈Refer to 3.1 Engine Oil Inspection for oil quality and quantity〉

- A small amount of engine oil remains at shipment.**

◎ Replacement...



- ② Prepare a suitable container to collect the oil.
- ③ Remove the belt cover, then remove the drain plug located on the lower front **or rear side** of the engine to drain the oil from the crankcase.

Note: Removing the oil filler cap at the same time makes draining the oil easier.

- ④ After draining the oil, securely reinstall the drain plug.
- ⑤ Refer to 〈3.1 Engine Oil Inspection〉 and fill with the specified engine oil.

Recommended Replacement Intervals

First change: After 5 hours of operation

Note:

- 1) When draining oil, tilting the unit slightly toward the drain plug side facilitates easier drainage.
- 2) After changing the oil, securely reinstall the cover, tire, drain plug, oil filler cap, etc.
- 3) When operating continuously under high load or high temperatures for extended periods, perform oil changes earlier than the above guidelines (approximately half the time).

5.1.3 Lubrication of Moving Parts



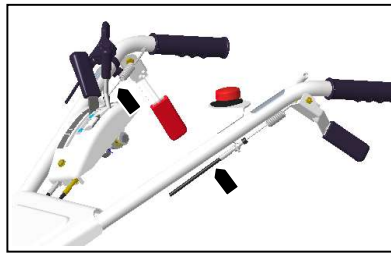
Caution

- 1) Apply grease approximately every 30 hours. Lubricate other parts with engine oil (#30) as needed. Neglecting grease lubrication may cause damage due to insufficient lubrication.

Shift Cable/Main Clutch Cable



Drive / Knife Clutch Wire



5.2 Engine-Related Cleaning, Inspection, and Adjustment

5.2.1 Air Cleaner Cleaning



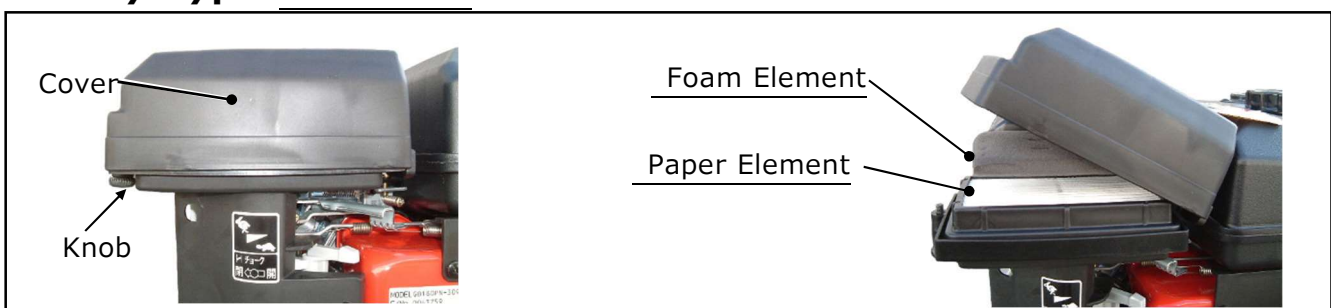
Warning

- Continuing operation with a clogged air cleaner or recoil starter due to grass clippings, etc., not only causes reduced output and increased fuel consumption but also poses a serious fire hazard. The elevated exhaust gas temperature can ignite the fuel. Always inspect and clean them regularly.

...Do not start the engine with the air cleaner removed. ...

Dust and debris sucked into the engine can cause engine malfunction and abnormal wear.

■ **Dry-type** MEiki GB131PN



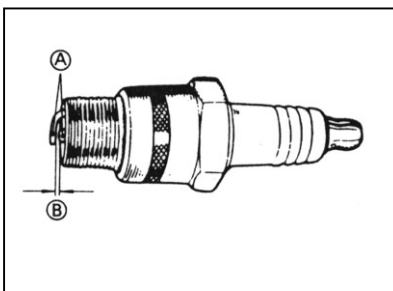
- 1) Remove the cover and carefully take out the foam element and paper element, being careful not to let dust or debris enter the vaporizer side.
- 2) Clean the foam element with white kerosene (or neutral detergent), wring it out thoroughly, and dry it.
- 3) For the paper element, blow compressed air from the inside or gently tap it to remove dirt.
- 4) Wipe the inside of the case with a rag to remove any dirt, then reassemble it as originally configured.

Air Cleaner Cleaning and Replacement Timing		
	Cleaning	Replacement
Foam Element	Before each	Within 100
Paper Element	Before each	Within 100

Reference:

- 1) When cleaning, do not pull or squeeze the foam element forcefully. This may tear the element, rendering it unusable.
- 2) When using dusty or dirty work environments, make sure to clean frequently.

5.2.2 Spark Plug Inspection and Adjustment

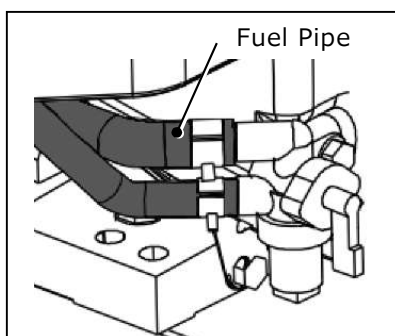


- 1) Remove the spark plug using a spark plug wrench. If carbon deposits are present on the electrode section (Ⓐ), remove them with a wire brush. If moisture is present, wipe it off.
- 2) Replace the spark plug with a new one if cracks are found in the ceramic body or wear is observed on the electrode.
- 3) Adjust the spark plug electrode gap (Ⓑ) to 0.6–0.7 mm.

Note: When tightening, first screw it in lightly by hand (until the gasket contacts the seat) before using a spark plug wrench.

- Be careful not to use the plug wrench to tighten it from the start, as this may strip the threads. <Refer to Ignition Plug Specifications...6.1>

5.2.3 Fuel Pipe Inspection



Danger

No smoking while working or using open flames

- 1) Rubber products such as fuel pipes deteriorate even when not in use.

Replace them with new ones every three years, along with the clamping bands, or whenever they show signs of damage.

- 2) Always check pipes and clamps for looseness or damage.



Caution

When replacing pipes, take care to prevent dust or debris from entering the pipe interior.

5.2.4 Cleaning the Fuel Filter Pot



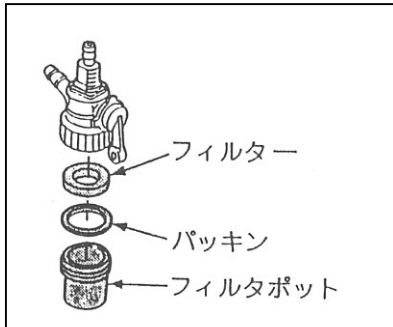
Danger

Do not work with a lit cigarette or open flame.



Warning

Do not use highly flammable cleaning oils such as gasoline or thinner, as they are dangerous.



- 1) Clean the inside of the fuel cock every 50 hours of use.
- 2) Perform cleaning in a clean area free of dust and debris.
 - ① Set the fuel valve to the "OFF" position.
 - ② Remove the fuel filter pot. Clean the sediment (dirt, water, etc.) accumulated at the bottom and the filter using a low-flammability solvent such as kerosene. Dry thoroughly.

5.3 Inspection and Adjustment of the Product



Warning

- 1) Always place the machine on a flat, open surface and stop the engine before performing inspections or adjustments.
- 2) Verify that each control lever operates correctly. (Perform this check at the start of each work session.)
- 3) Wire belts experience initial stretch, so readjust them after 2-3 hours of operation.
- 4) Wire belts are consumable parts. Replace with new ones if any abnormalities are found.
〈See [Section 6.1](#) for specifications〉
- 5) Move the machine slightly to check for abnormal noises or excessive heat.
- 6) After adjustment, always verify the operation of both clutch levers ("Engage" and "Disengage").
- 7) Check all bolts and nuts for looseness or missing parts and tighten them securely.
- 8) Reinstall any covers removed for adjustment exactly as they were originally.
- 9) To allow all parts to break in properly, avoid strenuous operation for the first 2-3 hours.
- 10) Do not forget to perform post-operation maintenance and regular inspections.
(Refer to 7.1 Regular Inspection Schedule)
- 11) Visually inspect the entire machine for oil leaks in all areas.
 - If an oil leak is detected, consult the dealer where you purchased the unit.
 - Continuing to use the machine with an oil leak is not only dangerous but can also lead to damage to the machine.

5.3.1 Adjusting Wires and Belts

① Drive Clutch Wire Adjustment

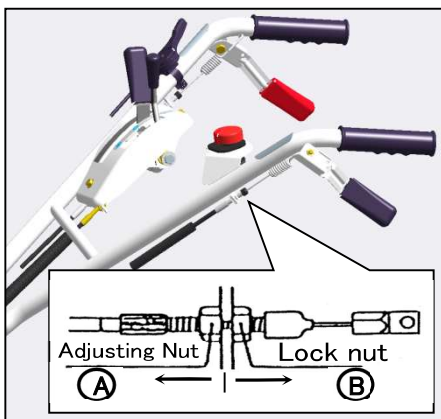


Figure 1

Refer to Figure 1 and adjust using the drive clutch wire's adjustment nut.

If the machine stops when load is applied even with the drive clutch engaged.

...Turn the adjustment nut toward the **B direction...**

If the machine does not stop easily even when the drive clutch lever is disengaged.

...Turn the adjustment nut in direction **A ...**

② Knife Clutch Wire Adjustment

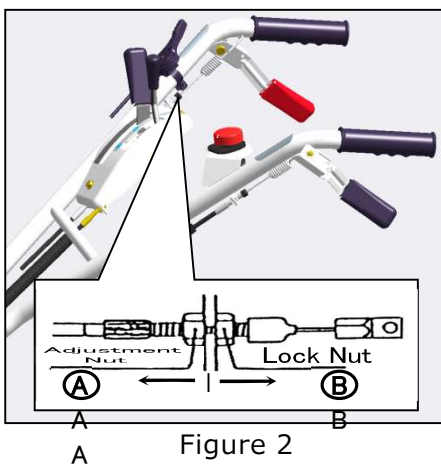


Figure 2

Refer to Figure 2 and adjust using the knife clutch wire's adjustment nut.

If the knife stops rotating when load is applied even after engaging the knife clutch lever

...Turn the adjustment nut in the direction of **B ...**

If the knife rotation does not stop even when the knife clutch lever is disengaged.

...Turn the adjustment nut in direction **A...**

③ Shift Cable Adjustment

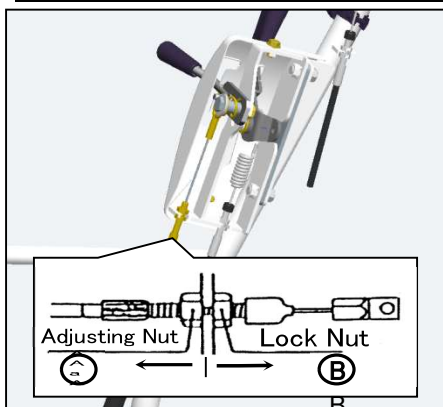


Figure 3

Refer to Figure 3 and adjust using the shift cable's adjustment nut.

If shifting to the "R" position is incomplete and shifting disengages under load, or if there is excessive lever play in the "②" position.

...Turn the adjustment nut toward the **B direction...**

If shifting to the "②" position is incomplete and shifting fails under load, or if the lever does not move to the "R" position.

...Turn the adjustment nut in direction **A ...**

Reference:

Always start the engine before performing any gear shift operations.

Forced operation of the shift lever with the engine off may cause malfunction.

With the shift lever in position ②, adjust the free play at the lever base to 0–1 mm.

5. Inspection, Maintenance, and Adjustment

④ Main Clutch Cable Adjustment

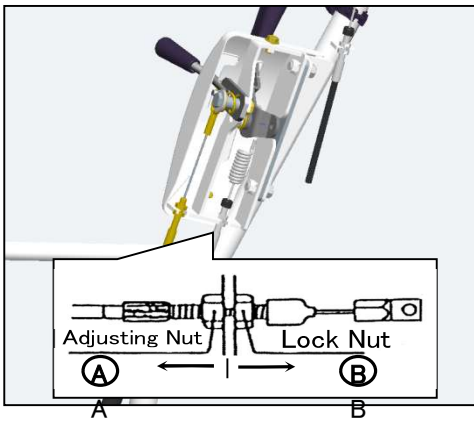


Figure 4

Refer to Figure 4 and adjust using the main clutch wire's adjustment nut. After adjustment, verify that it operates reliably.

- If the machine stops under load even after engaging the travel clutch with the lever in the "ON" position.

• Turn the adjustment nut toward the "B" direction.

- If the machine moves when the travel clutch is engaged while the lever is in the "Off" position.

...Turn the adjustment nut in direction "A"...

⑤ Travel Belt Adjustment

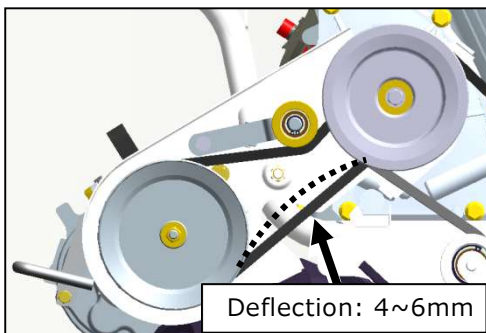


Figure 5

Adjust the belt tension after replacing the belt or if the travel clutch wire exceeds its adjustment range.

- Belt Tension Adjustment

With the drive clutch lever in the "engaged" position, press the center of the underside of the belt with your fingertip. A deflection of approximately 4–6 mm, or a gap of about 0.1 mm (roughly the thickness of one sheet of paper) in the drive clutch wire spring, indicates normal tension.

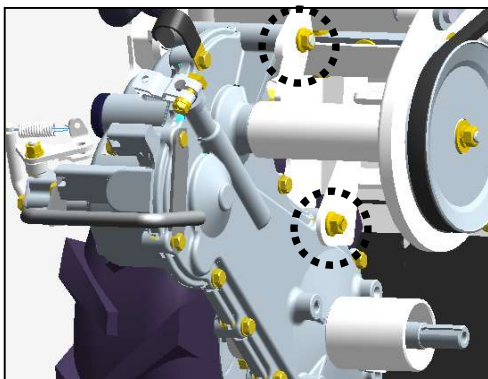


Figure 6

If the belt has excessive deflection or is too tight, loosen the two bolts shown in Figure 6 to change the fixed angle of the transmission case and adjust the belt tension.

Removing the drive belt will make this work easier.

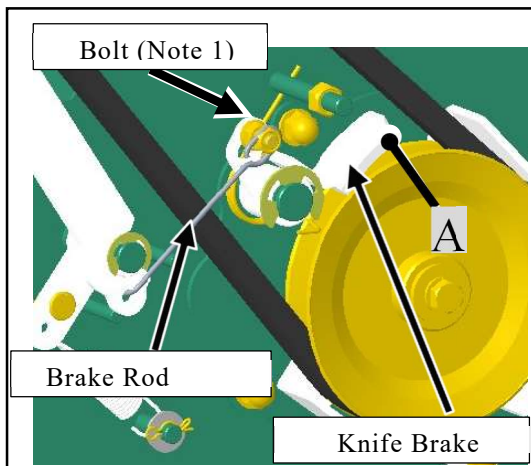
5.3.2 Adjusting Tire Air Pressure



- Adjust the tire pressure to 1.2 kg/cm². Uneven tire pressure may cause the steering wheel to pull during operation.

- The visual reference guide is shown in the left diagram.
A: Underinflated C: Overinflated
B: Proper

5.3.3 Knife Brake Adjustment



: Adjust the position of the bolt (Note 1) so that there is approximately 1 mm of play in the Brake Rod while the knife clutch is in the "disengaged" state.

Also, with the knife clutch engaged, confirm there is a gap (approximately 3-5mm) between the brake and pulley. (See: A)



Caution

- 1) Ensure the brake is fully disengaged when the belt rotates.
- 2) After adjustment, securely tighten the lock nut.
- 3) Reinstall all covers removed for adjustment in their original positions.
- 4) After adjustment, always verify the operation of both clutch levers in the "Engaged" and "Disengaged" positions.
- 5) The belt has initial stretch. After running for 2-3 hours with a new belt, readjust it.
- 6) Belts are consumable parts. Replace with new ones if any abnormalities are found.

5.4 Knife Inspection, Replacement, and Installation



Warning

■ For safety, inspect the knife before operation. ■

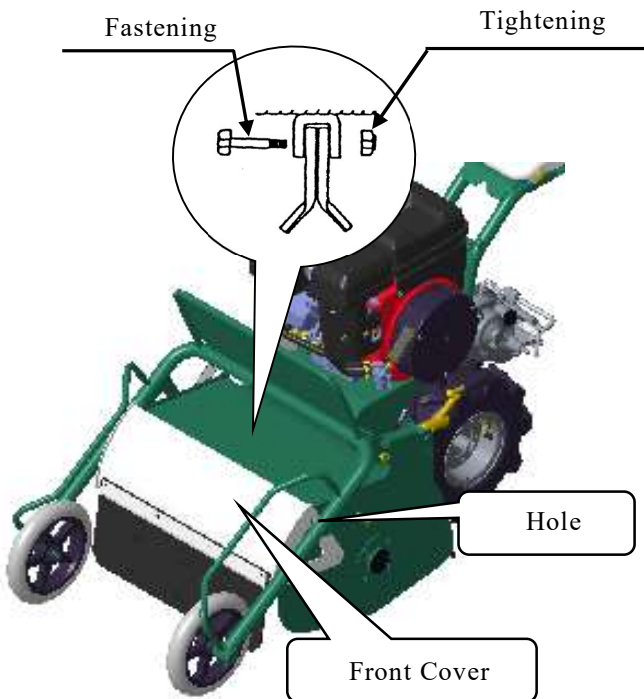
- 1) When replacing knives, always specify genuine manufacturer parts. Using non-genuine knives is not only dangerous but also avoids the warranty for any resulting malfunctions or accidents.
- 2) Before starting work, inspect the blades for bending, chipping, loose mounting bolts, or wear caused by contact with curbs, tree roots, etc., during previous operations.
- 3) Continuing operation with worn, cracked, bent, chipped blades, or loose mounting bolts may cause the blade to break, detach, and fly off during operation. This can lead to serious personal injury or damage to the machine.
- 4) Knives rotate at high speeds. Even a single chipped or broken knife can cause vibration. Continuing operation while vibrating is not only dangerous but can also cause cracks or fractures in various parts of the machine, significantly shortening its lifespan. Furthermore, vibration may cause the engine to catch fire.
- 5) Always replace all blades at the same time. Partial replacement can cause imbalance among the blades, leading to vibration and other issues.
- 6) To avoid injury, wear sturdy gloves or wrap the blade tips with cloth when inspecting or replacing them.



Caution

- 1) Knife replacement should be performed only by individuals with the appropriate tools and maintenance skills.
- 2) Knife mounting bolts and nuts also wear out. For safety, always replace the knife with mounting bolts and nuts simultaneously when replacing the knife. Never substitute other bolts or nuts; use genuine replacement parts.
- 3) When working, take great care to prevent your hands from slipping.
- 4) Using old and new blades together can cause abnormal vibrations.

5.4.1 Blade Inspection and Replacement



① Stop the engine and remove the spark plug cap as a precaution.

② Open the front cover upward and secure it by inserting a pin or bolt into the hole (Note 1) to prevent it from falling off.

③ Inspect the knife and its mounting condition (for cracks, bends, or wear).

※Tighten to a torque of approximately 15~20 (N·m) so that the knife does not to a degree where it does not jam.

※If the knife is in an abnormal state as shown in the figure below, either reverse the knife (front and back) for use or replace it.

Usable		Replacement required		
New	Wear (flip over)	Damaged	Bent	Wear limit

Note:

- 1) Use in areas containing dry soil or sand accelerates blade wear, so inspect frequently.
- 2) We recommend purchasing spare knives in advance and keeping them on hand.
- 3) Knife drum runout can also cause vibration. Since knife drums cannot be repaired, replacement requires exchanging the entire knife drum assembly.
- 4) Knives are double-edged. When the working edge wears down, it can be replaced with the opposite edge. However, when replacing, replace all knives at once.

5.5 Long-Term Storage Methods

5.5.1 Preparing for Long-Term Storage

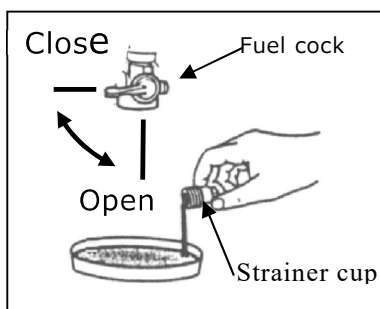
- Leaving fuel in the fuel tank or carburetor during long-term storage
→ may cause starting problems, reduced power, or other issues.



- 1) When draining fuel, working in a well-ventilated area, exercise extreme caution around open flames such as lit cigarettes or naked flames, and handle drained fuel with care.
- 2) When draining gasoline from the fuel tank or placing a cover over the unit, ensure that high-temperature parts such as the muffler and engine body have cooled completely before proceeding.

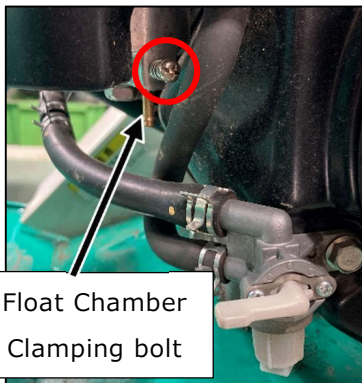
- 1) If the unit will not be used for more than 30 days, drain the fuel from the fuel tank and carburetor to prevent starting problems or poor operation due to fuel deterioration.

Drain all fuel from the fuel tank and carburetor.



① Fuel in the fuel tank

Remove the strainer cup, place a container underneath, then turn the fuel cock to the "Open" position and remove it.



② Fuel in the carburetor

Remove the float chamber clamping bolt at the bottom of the carburetor and drain the fuel from the carburetor.

*For safety, always close the fuel cock.

- 2) Thoroughly clean all parts. Especially remove any accumulated mud or dust from the recoil starter, air cleaner, muffler, carburetor area, and inside the belt cover. Remove rust from any rusted areas and apply rust-preventive paint.



Continuing operation with accumulated grass or dust can cause clogging due to debris, leading to engine overheating, seizure, or even fire.

Reference:

Mud and grass clippings adhering inside the knife cover can be relatively easily washed off using pressurized water from a hose before they dry.

When doing this, take care to cover the engine's electrical components, carburetor, air cleaner, and muffler exhaust port to prevent water from getting inside.

- 3) Lubricate and grease all parts and repair any malfunctioning areas.
- 4) Store the machine horizontally in a covered, well-ventilated, low-humidity location.
- 5) Cover the machine to prevent dust accumulation. Periodically check tire pressure during storage and inflate as needed. (*A cover is not included with this machine.)

5.5.2 Precautions for Next Use



Warning

- 1) Use fresh fuel.
- 2) Perform pre-operation checks.
- 3) Ensure all control levers operate correctly. (At the start of each work session)
- 4) Check all bolts and nuts for looseness or missing parts.
- 5) Move the machine slightly to check for abnormal noises or excessive heat.
- 6) To allow all parts to break in properly, avoid strenuous operation for the first 2 to 3 hours.

6. Appendix

6.1 Specifications (Reference Values)

Name		Bull Mower
Model		HR403
Length x Width x Height (mm)		1620 × 610 × 950
Cutting Width (mm)		400 (when working on flat surfaces)
Weight (kg)		72
Cutting Height (mm)		25-95 (Do not mow the ground.)
Blades (pcs)		Free Knife × 22
Belt(s)	Travel	SA30 × 1
	Harvesting	SB45 W800 × 1
Tire Size (Pcs)		Front: Plastic tires (2) Rear: 3.50-5 (2)
Handlebar height		Fixed to the seat base
Speed (km/h)	Forward	① 1.1 / ② 2.1 (Straight-line driving)
	Reverse	① 1.6
Clutch System	Driving	Belt Tension
	Harvesting	Brake-linked Belt Tension
Transmission Oil (L)		0.9 (90)
E N G I N E	Name	Willbe (MEeiki Power)
	Model	GB131PN-411
	Displacement (cc)	126
	Lubricant Capacity (L)	0.5
	Starting Method	Recoil starter
	Spark Plug	BP6HS
	Tank Capacity (L)	2.5

*Specifications are subject to change without notice for improvement.

6.2 Tool Bag and Included Items

No.	Part Name	Part Number	Quantity	Remarks
1.	Instruction Manual		1	
2.	Engine Tools		1	Engine Accessories
3.	Funnel for oiling	83-1517-992-00	1	
	" Hose	83-1517-993-00	1	
4.	Safety Glasses	0328-76100	1	Anti-fog Type
5.	Engine Operation		1	Applicable Products

6.3 Consumable Parts List

No.	Part Name	Part Number	Quantity /Unit	Remarks
1.	Drive Belt	89-6122-003000	1	SA-30
2.	Knife Belt	89-6123-004500	1	SB-45
3.	Hammer Knife M	0273-70100	22	
4.	Knife Mounting Bolt	0273-70300	11	
5.	Knife Mounting Nut	83-1484-255-00	11	
6.	Drive Clutch Cable	0365-73100	1	
7.	Knife Clutch Cable	0365-73200	1	
8.	Drive Shift Cable	0273-70600	1	
9.	Main Clutch Cable	0338-70500	1	
10.	Throttle Cable	0286-72500	1	
11.	HR Warning Label	0354-72700	1	When replacing consumables...
12.	Caution Label	0328-74600	3	For safety, ...
13.	Shift Caution Label	0328-74800	1	Shift operation...
14.	Overflow Caution Label	0328-74900	1	During maintenance or...
15.	Air Cleaner Maintenance Warning Label	0328-75400	1	Air cleaner, ...
16.	Knife Warning Mark	0334-71800	2	Do not bring hands or feet near...
17.	Backing Caution Label	0344-70600	1	When backing up or...
18.	Axle Pin Warning Label	0365-75600	1	When loading/unloading...

7. Inspection Checklist

7.1 Periodic Inspection Checklist

★ Failure to perform inspections and maintenance may cause accidents or malfunctions. Refer to this "Regular Inspection Schedule" to perform inspections, ensuring proper functioning and maintaining safe conditions at all times.

★ Perform annual inspections once a year, monthly inspections once a month, and pre-operation inspections every time before starting work.

Item		Inspection Item	Verification Items	Verification	Start-up	Monthly	Annual
Braking System	(Applicable Products) Brake	Parking Brake Effectiveness	Check for dragging or looseness	Brake Shackle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Brake rod Joint	Check for deformation or play	Rod Joint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		U-Nut W-nut	Check for loosening or detachment	U-nut W-nut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Split pin	Check for missing or damaged parts	Split pin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cutting Cutting Department	Cover	Cover Condition	Check for bends, cracks, or corrosion. Is the flapper rubber properly installed?	Cover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Flappers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Rotating part	Knife & Stay (Claw) and Mounting Condition (Applicable Product)	Check for warping or wear	Knife Knife Ste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Check for looseness, wear, or loss of bolts and nuts	Bolt and nut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Knife brake	Brake effectiveness (Does it stop within 5 seconds?)	Brake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E n J N	Main Unit	Acceleration, Exhaust, Choke Operation Status	Is acceleration smooth? Are exhaust color and odor normal? Is the choke operation smooth?	Acceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Exhaust	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			Choke	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Muffler, Battery	Check for debris, grass, or other obstructions around the area. Check for loose fittings or corrosion. Is the battery charged sufficiently?	Muffler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Battery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Engine	Check for looseness or cracks in engine mounting	Installation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Air Cleaner	Check for dirt, clogging, tears, or fraying	Air Cleaner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Lubricating oil	Engine Oil Oil Filter (Applicable Product)	Check for quantity, quality, leaks, and foreign matter contamination. Is the replacement timing appropriate?	Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Filter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	【Engine Oil: Initial at 5H, then every 50H thereafter; Filter every 100H】					/	
Oil supply line	Fuel Tubing, Filter	Check for fuel leaks, deterioration, deformation, or clogging	Fuel Path	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ignition system	Spark Plug	Check for cracks in the insulator and carbon buildup between the electrodes	Spark Plug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	High-voltage cord, spark plug cap	Check for deterioration, cracks, or breaks in the cap	Cord	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	





7. Inspection Checklist

	Cooling system	Engine Housing	Check for accumulation of grass clippings or debris inside the housing	Inside the cover		<input type="radio"/>	<input type="radio"/>
	Wiring	Harness	Check for looseness or damage	Harness		<input type="radio"/>	<input type="radio"/>
Transmission System	Belt	Operation, knife belt	Check for proper tension, cracks, damage, or significant dirt	Running	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
				Knife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Deceleration Hydraulic	Transmission Oil	Quantity, quality, oil leaks, contamination by foreign substances (moisture, air)	M Oil		<input type="radio"/>	<input type="radio"/>
		【Transmission Oil: Initial 20H. Thereafter, change every 100H】			/		
		HST Oil (Applicable Products)	Quantity, quality, oil leaks, contamination by foreign substances (moisture, air)	H Oil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
【HST Oil (VG46 equivalent): Initial fill - refer to the respective instruction manuals.】 Subsequent changes every 200 hours or once per year. (Replace HST oil filter simultaneously.)】			/				
Moving parts	Movable condition of levers, wires, etc. (Defrocker/Sub-transmission applies to relevant products)	Operation is smooth No sticking or rust	Defrocker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
			Cutting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
			Sub-gear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Shift	Shift Lever	Operation, Is N position correct? No looseness or play?	Lever	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Traveling parts	Tires (Crawler)	Is air pressure adequate? Are there any damages or uneven wear?	Tires	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Mounting condition	Check for loose bolts/nuts, play, or detachment	Installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Handle	Mounting Condition	Check for looseness, play, or detachment in bolts and nuts	Handle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Gauges	Hour Meter (Applicable Product)	Is the display time correct? Is the operating status appropriate?	Hour Meter			<input type="radio"/>	
Label	Warning Label and Nameplate	Is attachment appropriate (peeling)? Damage, soiling	Label			<input type="radio"/>	

※If you are unsure, please consult the retailer where you purchased the item.

7.2 Engine Malfunction and Troubleshooting

If the engine is not performing properly, diagnose the issue using the table below and take the appropriate action.

Symptom	Cause	Action
Difficulty Starting (When it won't start)	Throttle lever is not in the "Start" position.	Set the throttle lever to the "Start" position.
	Choke lever is not pulled.	When the engine is cold, set the choke lever to the position. 
	Fuel is not flowing.	Inspect the fuel tank and remove any sediment or water. Remove the fuel cock strainer, remove sediment from the cup, and clean off any adhering debris.
	Air or water has entered the fuel delivery system.	Remove foreign objects, inspect the clamp band, and replace it with a new one if damaged.
	During cold weather, oil viscosity increases, causing heavy engine rotation.	Use oil appropriate for the ambient temperature.
	Ignition coil or unit failure.	* Replace the ignition coil or unit.
	Malfunctioning spark plug.	Check and adjust the spark plug electrode gap. Replace with a new spark plug.
Insufficient output	Insufficient fuel.	Refuel.
	Clogged air cleaner.	Clean the element.
	Poor fuel quality.	Replace with high-quality fuel.
	Choke not fully open.	Return the choke lever fully to the open position. 
	The cooling system is clogged.	Clean the area around the recoil starter.
If the engine suddenly stops	Fuel shortage.	Refuel.
	Fuel cock is closed.	Open the fuel cock.
Abnormal exhaust color Black	The fuel quality is poor.	Replace with high-quality fuel.
	Too much engine oil.	Adjust to the proper oil level.
Black smoke from the muffler and power output decreases	Clogged air cleaner element.	Clean the element.
	The choke is not fully open.	Fully return the choke lever to the position  .
If blue-white smoke	Overfilling with engine oil.	Adjust to the proper oil level.
	Worn cylinder piston rings.	* Replace the rings.
Engine RPM is unstable (does not increase)	Choke is not fully open.	Return the choke lever fully to the off position. 
	Poor fuel quality.	Replace with high-quality fuel.
After a while, The engine stalls.	Ignition coil failure.	*Replace the ignition coil.
	Clogged fuel filter.	Clean the fuel filter.

7. Inspection Checklist

Exhaust emits a pungent odor.	Poor fuel quality.	Replace with high-quality fuel.
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※ For items marked with an asterisk (*), please consult your dealer. However, this service will incur a charge.

※If you are unsure, please consult the dealer where you purchased the vehicle.

7.3 Troubleshooting Guide

If any of the following phenomena occur, refer to the instruction manual and take appropriate action.

Symptom	Cause	Action
Grass clippings are not being discharged properly.	The grass is wet.	Wait until the grass is dry before
	Grass is too long.	Increase the cutting height and mow
	The cutting height is too low.	Increase the cutting height.
	Engine RPM is low.	Set to maximum RPM.
	Working speed is too fast.	Reduce the working speed.
Grass is left uncut.	Working speed is too fast.	Reduce the working speed.
	Engine RPM is low.	Set to maximum RPM.
	Knife wear or damage.	Replace with a new blade.
	Grass debris accumulation inside the blade	Clean the inside surface of the blade
	Grass is too long.	Perform a second cut.
Soil scraping occurs.	Cutting height is too low.	Increase the cutting height.
	The turning speed is too fast.	Reduce the speed during turns.
	The terrain has undulations.	Change the mowing pattern (cutting
	Terrain has many undulations (bumps and	Increase the cutting height.
	Knife bending.	Replace with a new blade.
The belt is slipping.	Belt tension is low.	Adjust belt tension.
	Foreign matter is clogged inside the knife	Clean inside the knife cover.
	Grass accumulation on the pulley.	Thoroughly clean the pulley.
	Belt wear.	Replace with a new belt.
Shifting not working.	Shift position is misaligned.	Adjust the shift guide position and shift cable. (Applicable products)
	Transmission malfunction.	Repair the transmission.
Excessive vibration.	Poor knife balance.	Replace the blades. (All blades)
	Damaged blades.	Replace with new knives.
	Knife drum is bent.	Replace the knife drum assembly.
	Belt damage.	Replace with a new belt.
	Old and new knives are mixed together.	Do not mix old and new knives.
	Grass or other debris is wrapped around the	Remove any material wrapped around the knife drum.
The harvesting workload is heavy.	Engine RPM is low.	Increase engine RPM.
	The operating speed is too fast.	Reduce the operating speed.
	Grass is accumulated or wrapped around the knife shaft.	Clean the knife thoroughly.
	Grass is too long.	Increase the cutting height and mow
	The cutting height is too low.	Increase the cutting height.
Tires/crawlers are slipping. (Applicable product)	The field is soft.	Suspend operation until the field dries.
The oil filler cap flew off	Excessive transmission oil (internal pressure	Adjust to the correct oil level.

※If you are unsure, please consult the dealer where you purchased the product.