



Zenoah Flail Mower

ZHM800

Instruction Manual

Applicable models: #16001 and later



When lending or borrowing the mower as rental equipment, make sure this manual is provided with it.



WARNING

Improper use of this mower may result in serious injury or death. Operators and service managers must read and understand the contents of this manual before operating, inspecting or servicing the mower. To enable reference by all operators and service managers who deal with the mower, store this manual in the storage space provided on the mower, enabling it to be read periodically.

To Users

Thank you for your purchase of a Zenoah flail mower.

This instruction manual provides information on how to handle the mower and the precautions to observe when using it.

Before using the mower, be sure to read this manual and become thoroughly familiar with its content to ensure proper and safe use of the mower.

After reading this manual, keep it in a readily accessible location next to the mower.

Mower Restrictions

This mower may not be operated on public roads. Zenoah assumes no liability for accidents or infractions involving the mower on public roads.

This product has been created for use as a hammer knife mower, and must not be used for other purposes.

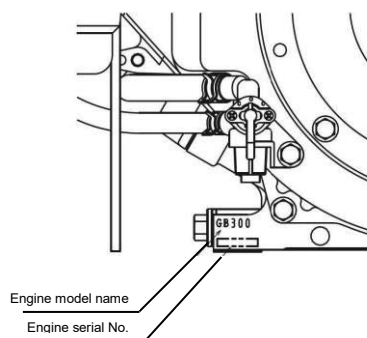
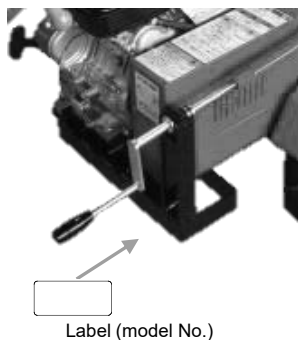
The mower does not have a light for night work, and must not be used at night.

Registration Information

Purchase date		
Mower	Model name	
	Serial No.	
Engine	Model name	
	Serial No.	

The information above will be needed when ordering consumable parts, so should be entered in the fields provided.

The mower model name and serial No. are shown on a label (model No. label) on the mower.




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1. SAFETY PRECAUTIONS

Failure to observe the precautions given in this section could result in injury or death, or cause accidents or damage to the mower.

Before operating the mower, read these precautions and the information in the labels on the mower. Be sure to follow these instructions carefully to ensure work is done safely and correctly.

 The items below marked with this symbol are important safety precautions that must always be followed.



DANGER

Precaution items that will result in death or serious injury if not followed.



WARNING

Precaution items that may result in death or serious injury if not followed.



CAUTION

Precaution items that may result in injury if not followed.

IMPORTANT

Operation procedures or conditions that may result in damage to the mower if not followed.

Instruction manual



DANGER

Read the instruction manual

Read the instruction manual before using the mower and become thoroughly familiar with the mower's methods of operation and precautions. Practice the methods of operation on a flat area with good visibility before starting actual work. Store the instruction manual in a readily accessible location next to the mower. When lending the mower to others, thoroughly explain how to handle it and make sure the borrower reads the instruction manual.

If not followed:

- Accidents caused by incorrect usage methods may result.



Instruction manual

Conditions for starting work



WARNING

The mower must not be operated by following person in following situations

Do not allow person who applies to any of the followings to use this mower.

- When overwork, illness, medication, or a similar influence will adversely affect operator concentration
- While intoxicated
- While pregnant
- Anyone under the age of 18
- Anyone unfamiliar with how to handle the mower

Clothing



WARNING

Wear appropriate work clothing

Wear appropriate close-fitting work clothing while working.

Do not wear clothing that is too large, or has flowing or billowing material.

Do not wear a headband, neck scarf or towel around the waist.

- Wear a long-sleeved shirt.
- Wear long trousers.
- Wear a helmet or work hat.
- Wear non-slip shoes.

If not followed:

- Improper clothing may interfere with mower operation, become caught in rotating parts, or cause slips and falls.

OK



NG



WARNING

Wear protective eyewear

Wear protective eyewear since dust or grass clippings may fly into the air while working and enter eyes, or tree branches may poke eyes.

Mower alteration



DANGER

Never alter the mower

Altering the mower is strongly discouraged. Never alter the mower.

When replacing parts for consumable part replacement or repair, always use genuine Zenoah parts.

If not followed:

- May lead to accidental death, injuries or mower damage.
- The warranty will be voided.

Inspection



WARNING

Have all mechanical problems repaired before use

Stop operation immediately if the blades strike a foreign object, or if you experience abnormal sounds, abnormal vibrations or abnormal odor while working. Inspect the mower parts and contact your place of purchase or a Zenoah sales office.

Have all mechanical problems repaired before use.

If not followed:

- May lead to mower damage or failure.

**WARNING****Stop operation immediately if abnormal vibrations occur**

The hammer knives rotate at high speed and create abnormal vibrations if they become unbalanced. Unbalanced hammer knives are dangerous to the operator and anyone nearby, and can damage mower parts.

If you experience abnormal vibrations, immediately stop operation, inspect the mower and have it repaired.

If not followed:

- May lead to mower damage or failure.

**WARNING****Prevent the cutter from falling when inspecting or servicing it**

Take steps to prevent the cutter from falling when inspecting or servicing the blades with the cutter raised.

If not followed:

- May cause accidents or injuries from being trapped by the cutter.

**CAUTION****Always attach the covers**

Always return the covers to the original position when removed for inspection or cleaning. Replace covers that have become misshapen.

If not followed:

- May result in accidents or injuries caused by being pulled into rotating parts.

**CAUTION****Wait for hot parts to cool before starting inspection or cleaning**

Wait for hot parts such as the engine block, muffler and rotating parts to cool completely before starting inspection or cleaning work.

If not followed:

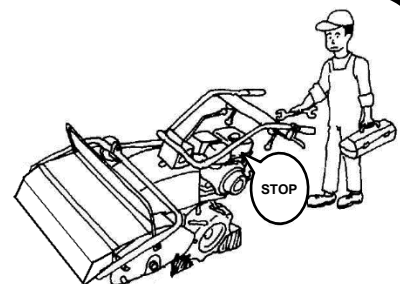
- May result in burns.

**CAUTION****Inspect and clean the mower**

Always inspect and clean the mower before use. Also carry out periodic inspection and cleaning. (See p. 22) Inspection and cleaning should be done on a flat, stable surface with the engine stopped.

If not followed:

- May result in accidents, injuries, mower failure or mower runaway.



**CAUTION****Always clean the mower after use on the same day**

Always clean the mower after use, on the same day that it was used. After washing the mower with water, always wipe the mower dry and apply machine oil or grease to sliding parts to prevent rusting. Start the engine to expel water that has accumulated inside the fan cover.

If not followed:

- Rust may prevent normal mower operation and lead to failure.

**CAUTION****Use compressed air with caution when cleaning**

When using compressed air for cleaning, flying dirt or debris may cause major injuries.

When using compressed air to clean parts such as elements, wear protective gear such as protective eyewear and dustproof gloves.

If not followed:

- Flying dirt or debris may lead to major injuries.

Fuel

**DANGER****Never fuel the mower near open flames.**

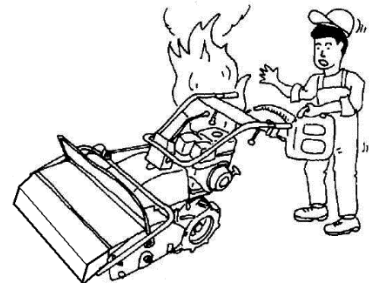
Never have an open flame when supplying fuel to the mower or when fuel is nearby.

Do not smoke or bring open flames near the mower.

Always fuel the mower with unleaded automotive gasoline. Do not use leaded gasoline, poor quality gasoline, degraded gasoline, or gasoline that was stored in a plastic container for an extended period.

If not followed:

- Fuel may ignite and start a fire.
- The engine may be adversely affected, leading to declining engine performance or failure.

**DANGER****Wait for the engine to cool before supplying fuel or oil to the mower**

Never remove the fuel tank cap, or supply fuel or oil to the mower while the engine is running or hot.

If not followed:

- Fuel may ignite and start a fire.

**DANGER****Watch out for fuel leaks**

The fuel hose is made of rubber, making it susceptible to UV and other types of damage. The hose needs to be inspected, since fuel will leak if it is damaged. If you find damage to the hose, contact your place of purchase or a Zenoah sales office to have it replaced. Always use genuine Zenoah parts when replacement is needed.

If not followed:

- Fuel may ignite and start a fire.

**DANGER****Make sure the fuel tank cap is attached properly, and wipe off spilled fuel**

After fueling the mower, fasten the fuel tank cap securely and completely wipe off any spilled fuel.

If not followed:

- Fuel may ignite and start a fire.

**CAUTION****Fuel the mower with unleaded automotive gasoline**

Always fuel the mower with unleaded automotive gasoline. Do not use leaded gasoline, poor quality gasoline or degraded gasoline.

If not followed:

- Engine parts may be adversely affected, leading to declining engine performance or failure.

In sealed indoor spaces

**WARNING****Watch out for the engine exhaust gas**

The engine exhaust gas is toxic. Do not start the engine in a closed indoor space.

Start the engine in a well-ventilated outdoor area. Provide adequate ventilation when starting the engine indoors is unavoidable.

If not followed:

- Exhaust gas poisoning may result, leading to accidental death.



Transport

**CAUTION****Drive the mower at low speed on a flat, stable surface when loading or unloading it**

Drive the mower at low speed on a flat, stable surface when loading or unloading it from a truck or van.

If not followed:

- The mower may become unbalanced, leading to falls or other accidents.



CAUTION

Use a running board of adequate strength, length and width.

The running board used to load the mower aboard a truck or van must have a loading capacity of at least 0.5 t, be long enough to tilt the mower by no more than 14° (at least 4 times the truck bed height), and have a width of at least 30 cm.

If not followed:

- May lead to falls or other accidents.



CAUTION

Never operate the side clutch levers on a running board

When loading or unloading the mower from a truck or van, drive the mower at the lowest speed, on a fixed course that prevents course changes on the running board. Never operate the side clutch levers or drive clutch lever to change course or stop. Do not set the gear shift lever to the neutral position.

If an emergency situation arises, stop the engine.

If not followed:

- May lead to falls or other accidents.



CAUTION

Fasten the mower to the truck securely with ropes.

When transporting the mower in a truck or van, lock the mower's wheels and fasten it securely in place with ropes.

If not followed:

- The mower may fall out of the vehicle.

Work precautions



DANGER

Watch out for obstacles behind you when reversing

Pay adequate attention to obstacles behind you when reversing the mower.

If not followed:

- The operator may become trapped by the obstacle, or suffer a fall resulting in injury or death.



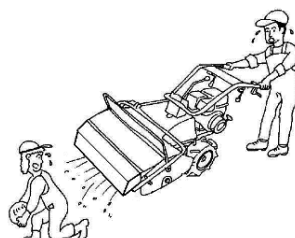
DANGER

Keep people away from the mower while working

Stop operation if people or pets come near the mower while you are working.

If not followed:

- Stones or other foreign objects struck by the running blades may fly out and cause death or injury.





DANGER

The blades are invisible when rotating at high speed

The blades are invisible when they are rotating at high speed. Do not place hands or feet inside the cutter housing when the blades are rotating.

If not followed:

- May lead to amputated limbs or other injuries.



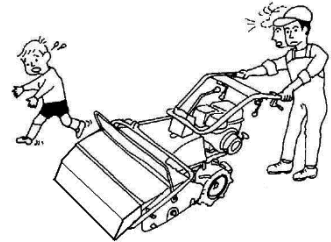
WARNING

Always ensure the safety of the surrounding area before starting the engine

Before starting the engine, always ensure the safety of the people and objects in the surrounding area, and make sure that the drive clutch lever and blade clutch lever are both in the OFF position.

If not followed:

- May lead to accidents such as mower runaway.



WARNING

Remove any trash from around the engine

Inspect the mower every day before starting work to make sure no grass, trash or other foreign objects are adhering to the engine cooling air intake, air cleaner air intake or muffler area.

If not followed:

- May lead to declining engine performance, overheating or fires.



WARNING

Set the blade clutch to the OFF position when moving the mower

When moving the mower under its own power, always set the blade clutch to the OFF position to stop the blades rotating.

If not followed:

- The blades may unexpectedly strike foreign objects, damaging the mower or causing injuries



WARNING

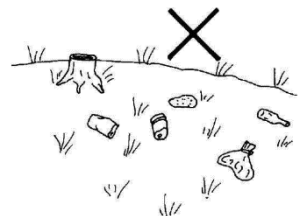
Always keep the work site clean

Always keep the work site clean.

Remove any stones, empty cans, nails, wire, trash and other debris.

If not followed:

- The blades may strike foreign objects, damaging the mower or causing injuries from flying objects.



**WARNING****Never start, stop or turn the mower suddenly, or speed excessively**

Start and stop the mower slowly. Decrease the mower's speed sufficiently before turning on uneven land.

If not followed:

- May lead to falls, toppling accidents or mower damage.

**WARNING****Before leaving the mower unattended, place it on flat ground and stop the engine**

Before leaving the mower unattended, place it on a flat, stable surface and stop the engine with the drive clutch and blade clutch both in the OFF position.

If not followed:

- The mower could start moving, leading to an accident.

**WARNING****Never operate the mower at night**

Do not operate the mower in dark or poor-visibility locations.

If not followed:

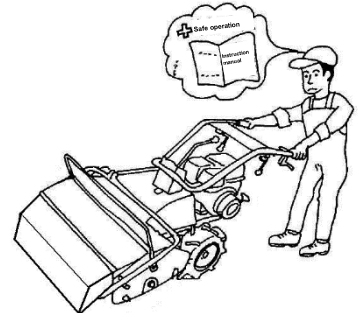
- Accidents or injuries could result.

**CAUTION****Be able to operate the mower calmly during emergency situations**

Incorrect operation methods lead to accidents. To ensure you will be able to stop the mower calmly if an emergency situation arises, pay careful attention when operating the mower and become thoroughly familiar with its operation methods.

If not followed:

- A lack of familiarity with the mower's operation methods could result in the wrong decision in an emergency, preventing hazard avoidance and resulting in unexpected accidents.

**DANGER****Do not completely fill the fuel tank**

Fuel may spill from the fuel tank when driving the mower on a gradient, so do not fill the tank completely. Use an amount of fuel that will avoid spilling.

If not followed:

- Could result in fires caused by spilled fuel.

**WARNING****Gradient pitch should be no more than 15° left or right**

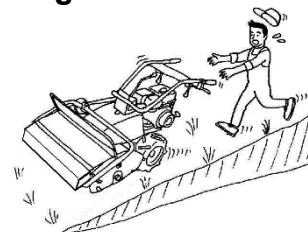
Working on gradients is very dangerous.

Gradients should have a pitch of no more than 15° left or right.

Do not use the mower on gradients steeper than 15°.

If not followed:

- May lead to falls, toppling accidents or mower damage.

**WARNING****Use low speed when driving on gradients**

Lower speed adequately when driving on gradients or uneven land, and before turns.

If not followed:

- May lead to falls, toppling accidents or mower damage.

**WARNING****Never park the mower on gradients**

Do not park the mower on a gradient.

If not followed:

- May lead to accidents.

Storage

**DANGER****Wait until the mower has cooled enough before using a sheet cover**

Wait until the engine block, muffler and other hot parts have cooled sufficiently before covering the mower with a sheet cover.

If not followed:

- May lead to fires.

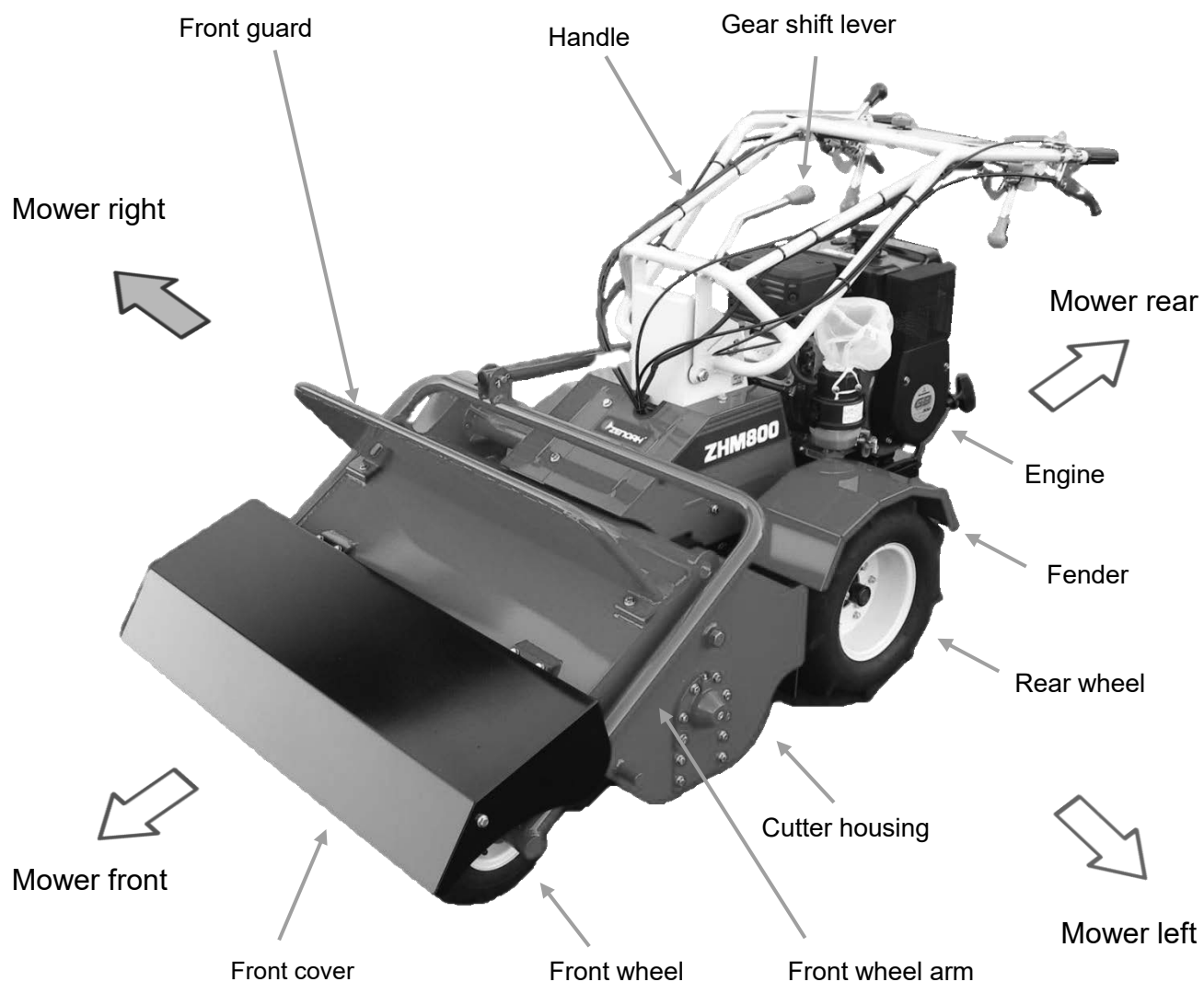
**CAUTION****Store the mower indoors**

Store the mower indoors. If outdoor storage is unavoidable, cover the mower with a sheet cover to protect it from rain.

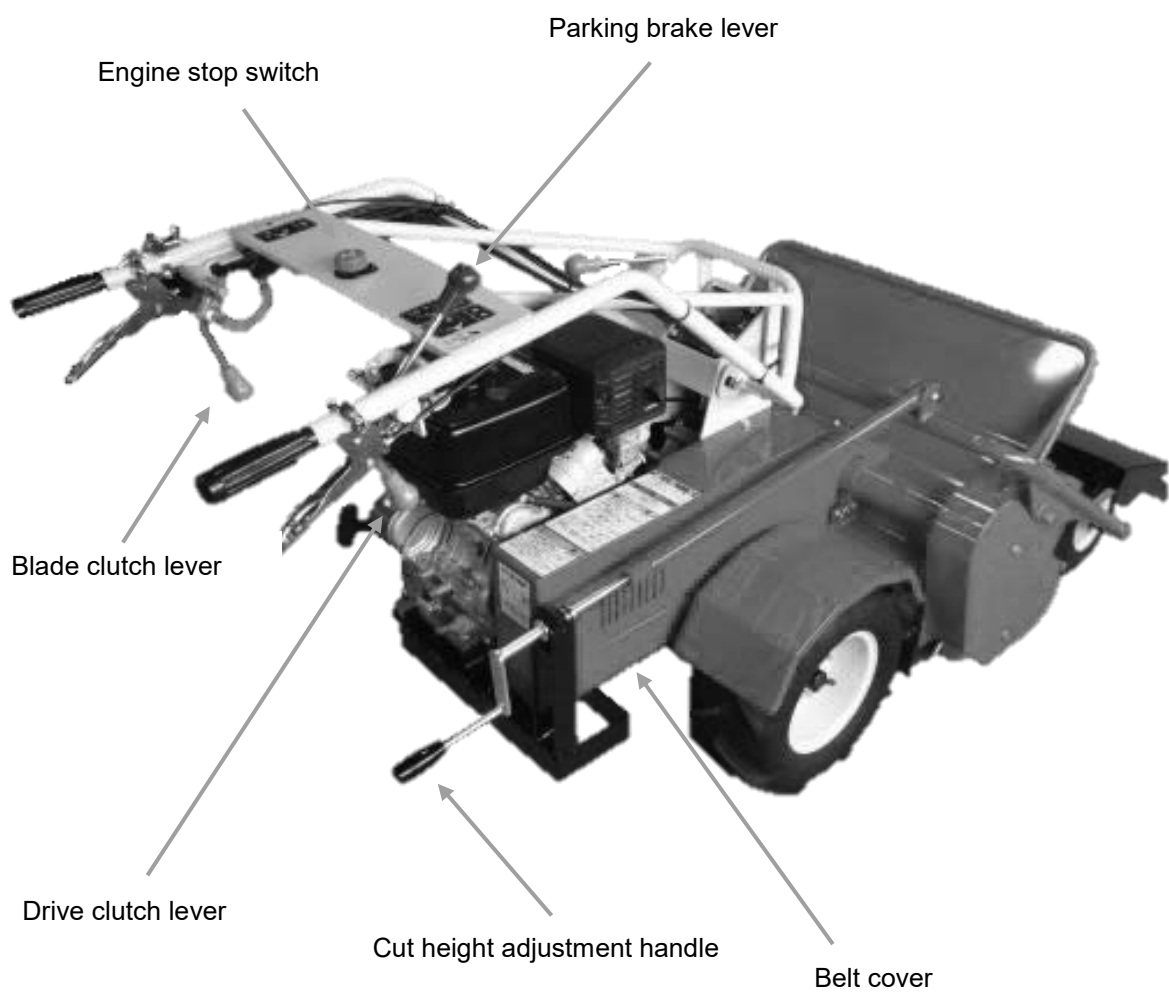
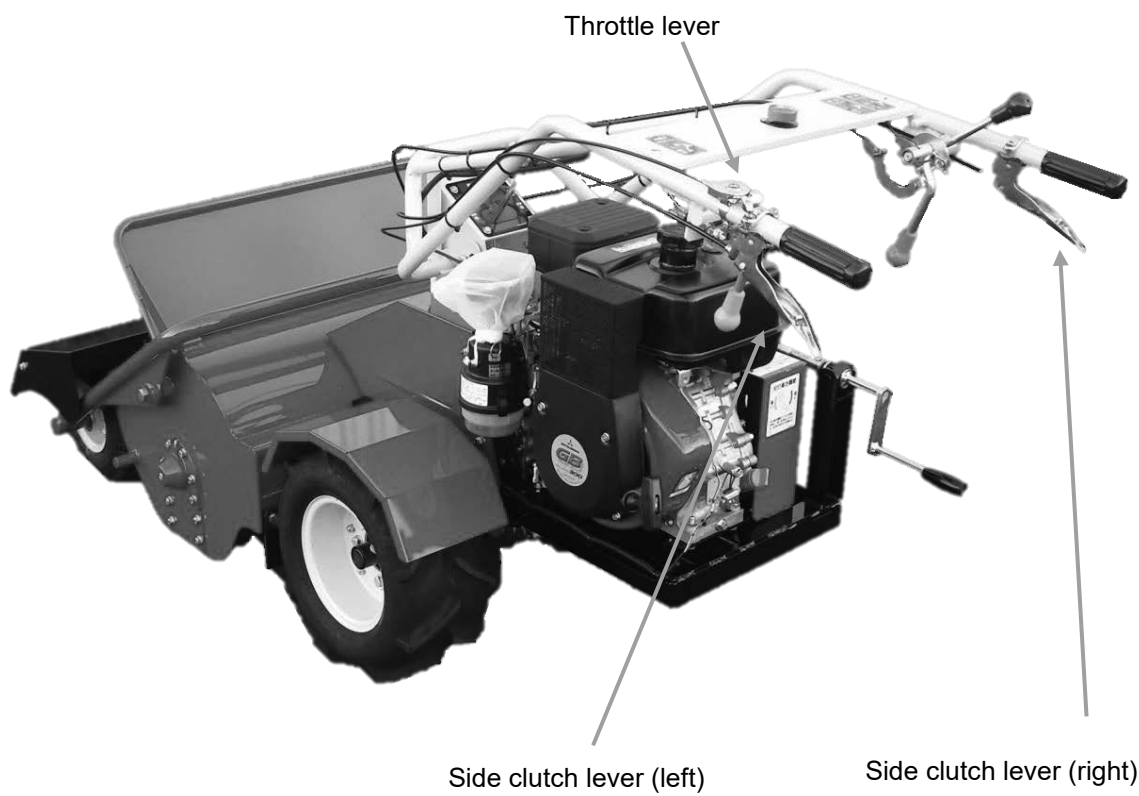
If not followed:

- The mower's life will be shortened.

2. NAMES OF COMPONENTS



* The front, rear, left and right directions in these diagrams apply when the cutter housing is at the front and the handles are at the rear.



3. SAFETY LABEL AND OPERATION LABEL POSITIONS

- To ensure safe operation, the positions of the safety labels and operation labels provided on the mower are shown below.

Keep these labels clean and undamaged. Replace any labels that become damaged or lost with new labels.

70932260005 (KW56256AA)

Handling precaution label

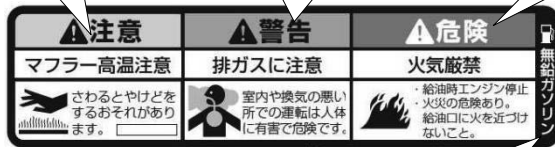
CAUTION
Hot muffler caution
Touching may cause burn injuries.

WARNING
Exhaust gas warning
Running engine indoors or in poorly ventilated area is hazardous and a health risk.

DANGER
No open flames
• Stop engine when fueling.
• Risk of fire.
• Keep flames away from fuel supply opening.

Belt size chart

Engine to transmission	LB37	1
Engine to intermediate shaft	B58	2
Intermediate shaft to cutter shaft	LB36	2



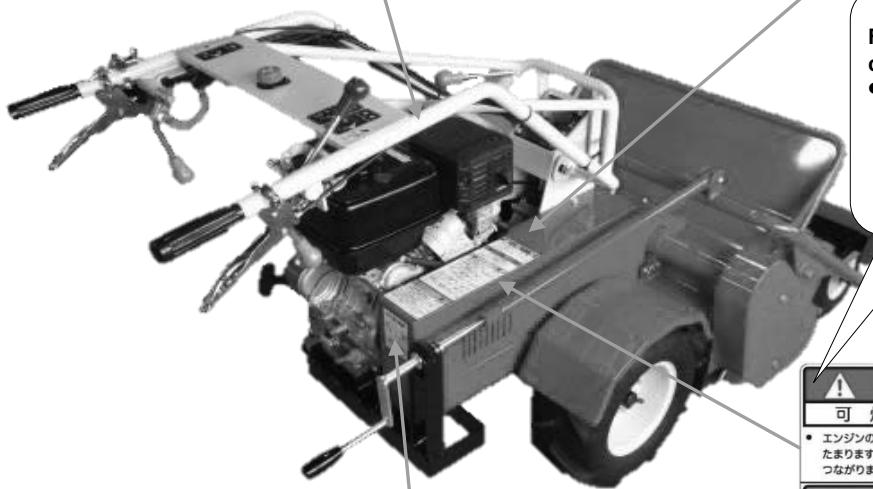
unleaded gasoline

ベルトサイズ 表

エンジン～ミッション	LB37	1本
エンジン～中間軸	B58	2本
中間軸～カッター軸	LB36	2本

70236561100

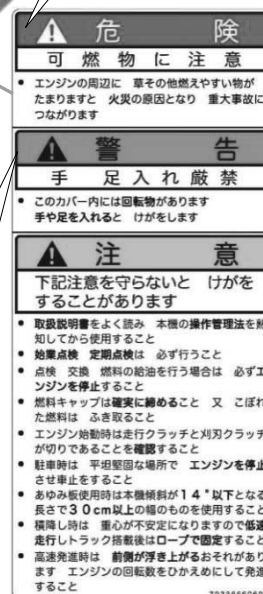
Label (belt size)



CAUTION
Flammable item caution
• Grass or other flammable items accumulating around the engine can lead to fires and major accidents.

70236560600

Label (flammable item)



Cut height adjustment

Shorter

Longer

70236561000

Label (cut height)

WARNING
Always keep hands and feet clear
• This cover encloses rotating parts. Placing hands or feet inside will result in injuries.

DANGER
Failure to observe the precautions below may lead to injuries

- Before using the mower, read this operation manual carefully to thoroughly familiarize yourself with the mower's operation and management methods.
- Always carry out the specified pre-work and periodic inspections.
- Always stop the engine before inspecting or fueling the mower, or replacing parts.
- Fasten the fuel tank cap securely, and wipe off any spilled fuel.
- Check that the drive clutch and blade clutch are OFF before starting the engine.
- When parking the mower, park it on a flat, stable surface, stop the engine and set the parking brake.
- When using a running board, it must be long enough to tilt the mower by no more than 14°, and have a width of at least 30 cm.
- Drive the mower at low speed when loading or unloading it, since its center of gravity will be unstable. Secure the mower with ropes after loading it aboard a truck.
- The front end of the mower may rise up off the ground if you start moving at high speed. Use a lower engine speed when starting to move.

WARNING

The front guard and blade cover are designed to protect the operator and prevent foreign objects from flying out of the mower. These parts should always be replaced with new ones if they become damaged.

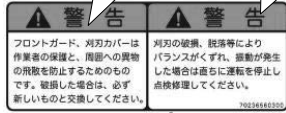
WARNING

Stop operation immediately and inspect/repair the mower if it loses balance or starts vibrating due to blades becoming damaged or falling off.

Caution in front
Check safety

DANGER

- Stones or other debris may fly out of the mower while working. Check that no people or vulnerable objects are in front of the mower while working.
- Contact with rotating parts may result in injuries. Keep away from rotating parts.

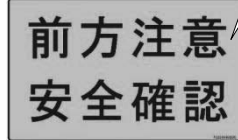


70236560300

Label (unbalanced loads)

70236560200

Label (caution in front)



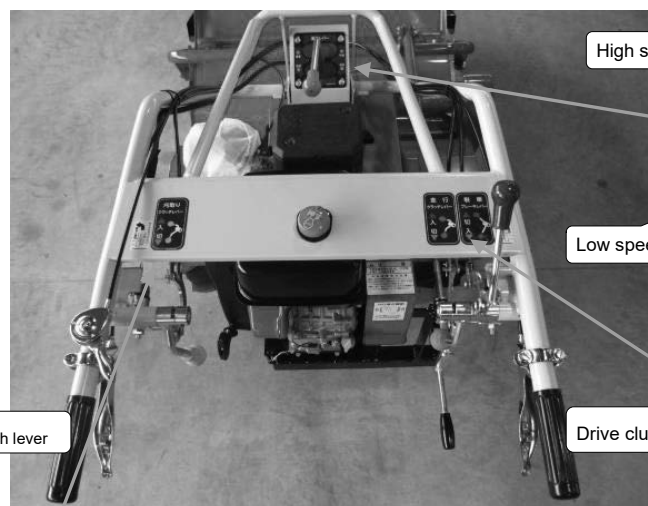
70236560400

Label (flying objects)



70236560900

Label (gear shift lever)



High speed

Low speed



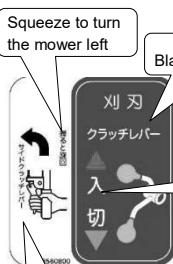
Gear shift lever

Medium speed

reverse

70236560700

Label (drive clutch lever)



Blade clutch lever

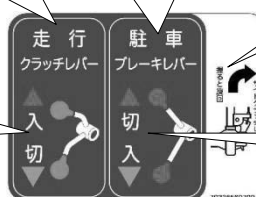
70236560800

Label (blade clutch lever)

Side clutch lever

Drive clutch lever

Parking brake lever



Squeeze to turn the mower right

Side clutch lever

OFF ON

4. PART HANDLING AND OPERATION

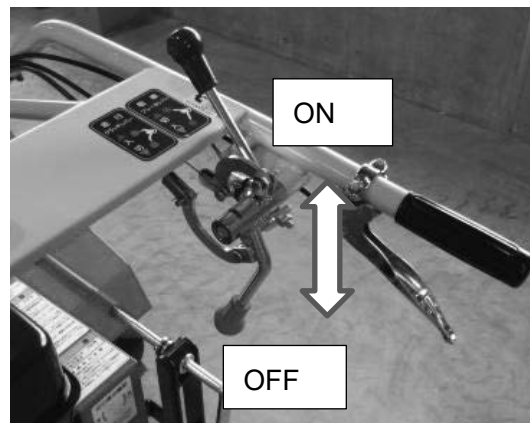
1. Drive clutch lever

Used to move or stop the mower.

Moving the drive clutch lever to the top (ON) position moves the mower forward if the gear shift lever is at the low, medium or high speed setting, or backward if the gear shift lever is at the reverse setting.

Moving the lever to the bottom (OFF) position stops the mower.

The lever springs back to its original position if not moved completely into place.



Drive clutch lever



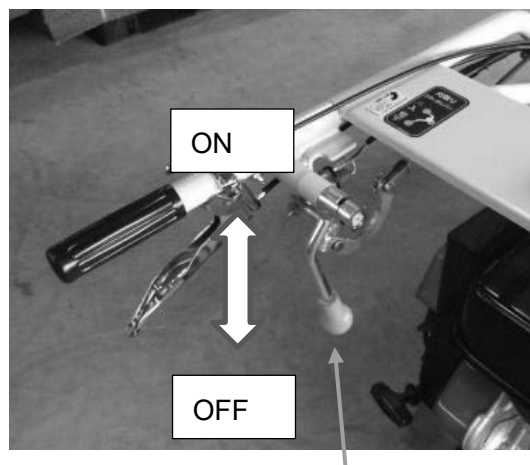
- The front end of the mower may rise up off the ground if you start moving at high speed. Use a lower engine speed when starting to move.
- Check that the drive clutch lever is in the OFF position before starting the engine.
- The engine will not start if the drive clutch lever is not in the OFF position.

2. Blade clutch lever

Used when cutting grass.

Moving the blade clutch lever to the top (ON) position starts the cutter shaft. Moving the lever to the bottom (OFF) position stops the cutter shaft.

The lever springs back to its original position if not moved completely into place.



Blade clutch lever



- Always set the lever to the OFF position when not cutting grass (such as when moving or storing the mower).
- Check that the drive clutch lever is in the OFF position before starting the engine.
- The engine will not start if the blade clutch lever is not in the OFF position.

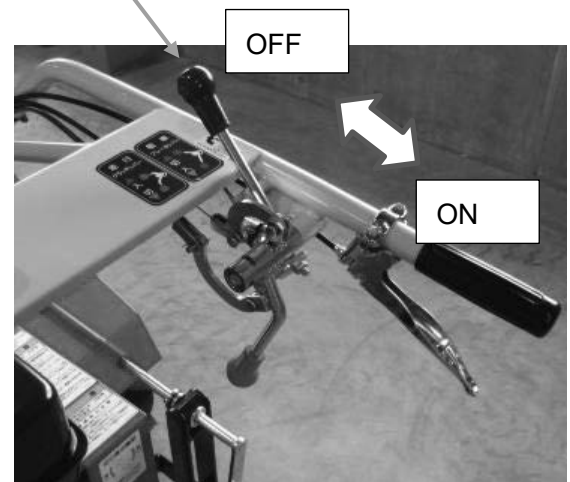
3. Parking brake lever

Used when parking the mower.

Moving the parking brake lever to the ON position sets the parking brake. Moving the lever to the OFF position releases the parking brake.

Moving the drive clutch lever to the ON position when the parking brake lever is in the ON position automatically switches the parking brake lever to the OFF position.

Parking brake lever



- The parking brake is only designed to prevent the mower from rolling while parked. Do not attempt to use the parking brake as a driving brake.
- Parking the mower on gradients is dangerous. Do not park the mower on a gradient.

4. Gear shift lever

Selects the drive speed and operation speed when cutting grass.

There are three forward speeds (low, medium and high), and one reverse speed.

Use only the low or medium speed setting when cutting grass.



Gear shift lever

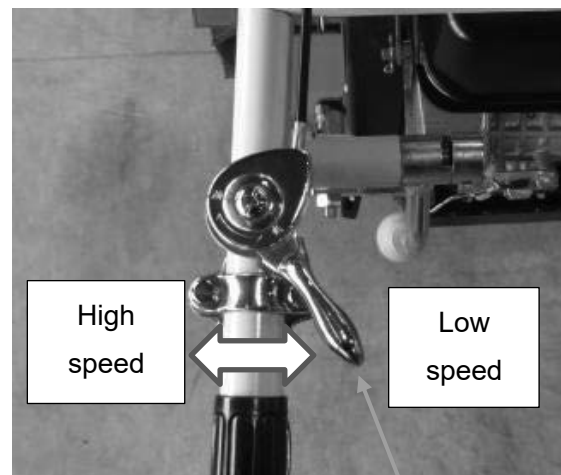


- Move the gear shift lever until it clicks into place. Not moving the lever completely into place is dangerous since the mower will not be in gear.
- Move the drive clutch lever to the OFF position to stop the mower before switching gears. If you have difficulty switching gears, try again after moving the gears in the transmission by moving the drive clutch lever slightly toward the ON position and back again.

5. Throttle lever

Increases or decreases the engine speed.

Operate the throttle lever by turning it in the arrow directions shown at right.



Throttle lever

6. Choke knob

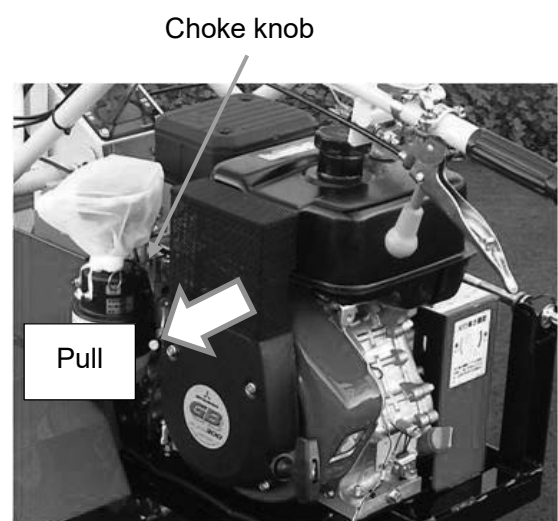
Helps start the engine.

Pull the choke knob out when starting the engine.

Once the engine has started, push the knob back in while monitoring the engine's operation.

IMPORTANT

- Do not operate the choke knob in summer or when the engine is hot.



7. Side clutch levers

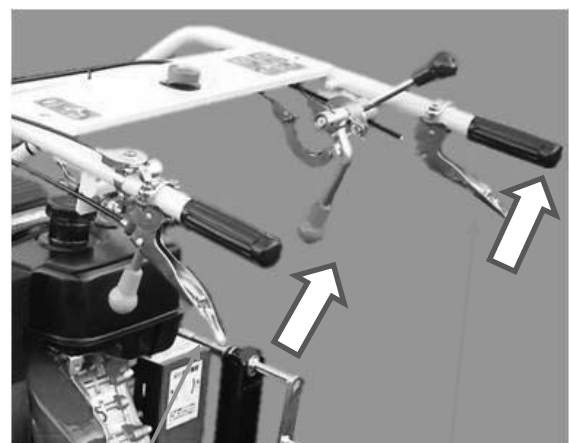
Used to change the mower's travel direction to the right or left.

Squeezing the right side clutch lever turns the mower right. Squeezing the left side clutch lever turns it left.

Raising the front wheels slightly off the ground makes turning easier.

WARNING

- The mower may turn suddenly to face downhill when turning on a gradient, so exercise ample caution when operating the levers.



Left side clutch lever

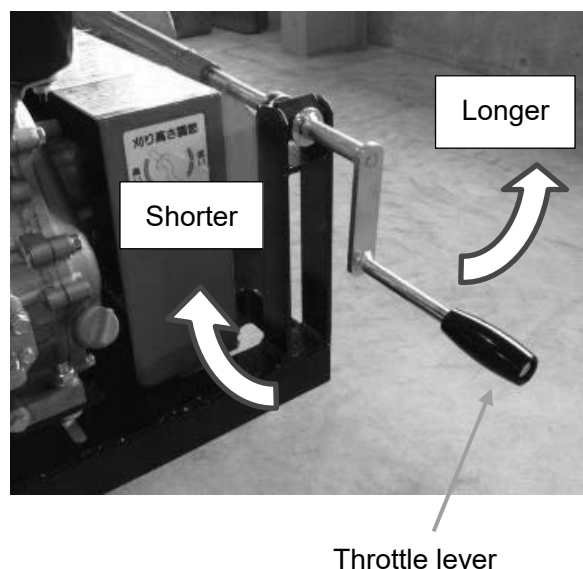
Right side clutch lever

8. Cut height adjustment handle

Used to adjust the grass height when cutting grass.
Turn the cut height adjustment handle clockwise for shorter grass or counterclockwise for longer grass.



- A short grass height setting increases resistance while working, which wears out mower parts faster.
A short setting also increases the risk of accidents from flying stones or other foreign objects.



9. Adjusting the mower handle height

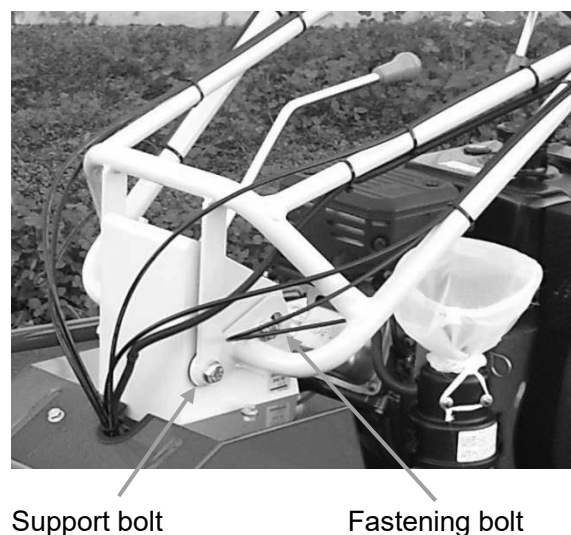
The height of the mower's handles can be adjusted to enable the optimum working posture for operators of different heights.

The handles can be adjusted to one of three different height settings by loosening the handle support bolts and removing the fastening bolts.

Fasten the support bolts and fastening bolts tightly again after adjusting the handle height.



- The fastening bolts have collars and rubber gaskets. Move the collars and rubber gaskets to the same position as the fastening bolts when adjusting the mower handles.



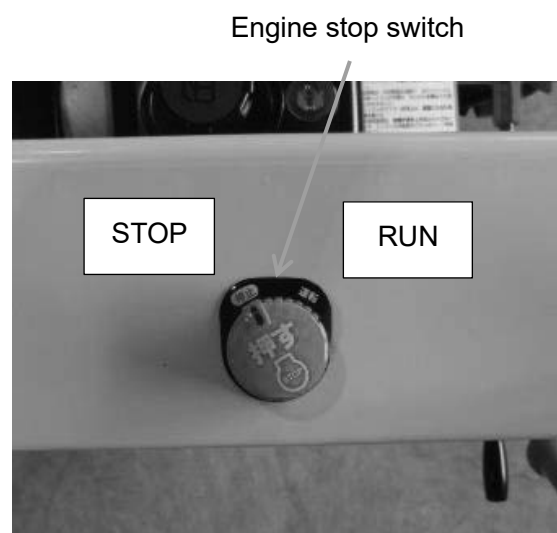
10. Engine stop switch

Used to start or stop the engine.

Press and turn the engine stop switch clockwise to enable the engine to be started. Press the switch from above to stop the engine.



- The engine will not start when the engine stop switch is not in the RUN position.



11. Engine

Fuel tank cap

The mower runs on unleaded automotive gasoline. Supply the mower with the proper amount of fuel, and fasten the fuel tank cap securely afterwards.

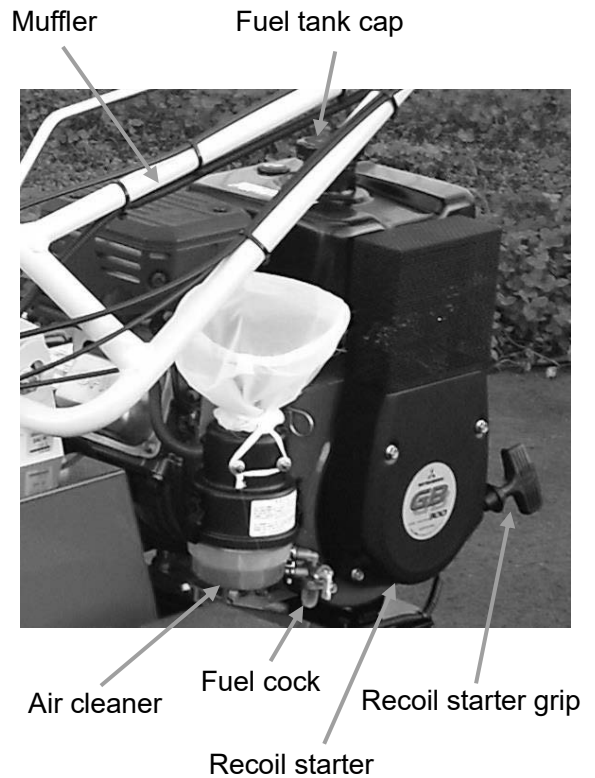
Recoil starter

Used to start the engine.

Turn the engine stop switch to the RUN position and pull the recoil starter to start the engine.

Fuel cock

Used to allow or prevent fuel entry to the carburetor. Open the fuel cock when starting the engine, and close it when stopping the engine.



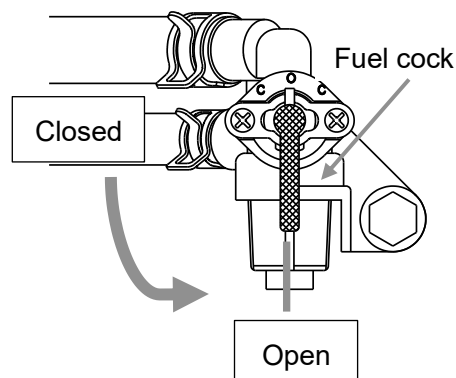
- Do not run the engine with the muffler or air cleaner removed.
- Keep hands away from the engine block, muffler and other hot parts when the engine is running or has just stopped. Burn injuries may result from contact with hot parts.

More information about the engine is available in the engine instruction manual provided with the mower.

5. OPERATING THE MOWER

1. Driving the Mower

- (1) Turn the engine fuel cock to the "O" (Open) position.
- (2) Check that the drive clutch lever and blade clutch lever are both in the OFF position.
- (3) Pull out the choke lever, and move the throttle lever slightly toward the high-speed position.
(Use only a small amount of choke if the engine is warm or the outside temperature is above 15°C.)
- (4) Press and turn the engine stop switch clockwise to the RUN position.
- (5) Tug firmly on the engine recoil starter.
- (6) Warm up the engine after it starts, pushing the choke lever back in and moving the throttle lever back to the low-speed position. To prevent the engine cutting out, wait for it to warm up sufficiently before pushing the choke lever back in.
- (7) Move the gear shift lever to the desired speed.
- (8) Use the throttle lever to adjust the engine speed, and slowly move the drive clutch lever to the ON position to start driving the mower.



WARNING

- Always make sure there are no people or obstacles nearby before starting the engine or starting to drive the mower.
- The engine will not start if the drive clutch lever and blade clutch lever are not both at the OFF position. Check that both levers are at the OFF position before starting the engine.
- Grass or other foreign objects in the engine cooling air intake, air cleaner air intake or muffler should be removed immediately to prevent the risk of declining engine performance, overheating or fires.
- Working on a gradient is extremely dangerous. Gradients should have a pitch of no more than 15° to the left or right. Do not use the mower on gradients with a pitch of more than 15°.
- Place the mower on a flat, stable surface before starting the engine.
- See the engine instruction manual provided with the mower for engine handling information.

2. Cutting Grass

- (1) Start the engine as described in Steps (1) to (6) of Section 1 above.
- (2) Set the gear shift lever to the desired speed.
- (3) Turn the cut height adjustment handle to set the desired cut height.
- (4) Move the throttle lever to the neutral position.
- (5) Slowly move the blade clutch lever to the ON position to start running the cutter shaft.
- (6) Move the throttle lever to the HIGH position to increase the cutter shaft speed.
- (7) Begin cutting the grass by slowly moving the drive clutch lever to the ON position to drive the mower.



- Always make sure there are no people or obstacles nearby before starting to cut grass.
- Grass, stones and other objects may fly out of the mower while cutting grass, so continually check that no one is in front of it while cutting grass.



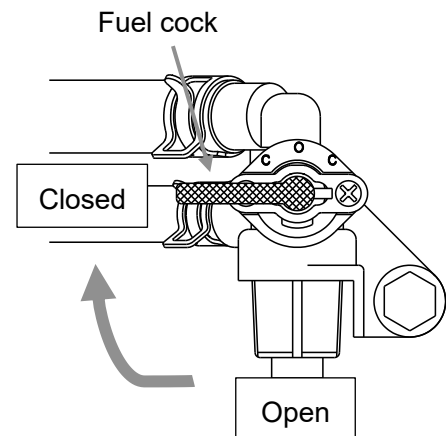
- Select the mower's operation speed and cut height to match the work site conditions. For long or dense grass, set a slow operation speed and high cut height.
If the engine speed drops while cutting grass, stop driving the mower and wait until the speed has recovered before resuming work.

3. Shutting down the mower

- (1) Move the blade clutch lever to the bottom (OFF) position.
- (2) Move the drive clutch lever to the OFF position to stop driving the mower.
- (3) Move the throttle lever to the low-speed position.
- (4) Press and turn the engine stop switch to the STOP position to stop the engine.
- (5) Move the parking brake lever to the ON position to set the parking brake.
- (6) Turn the engine fuel cock to the "C" (Closed) position.



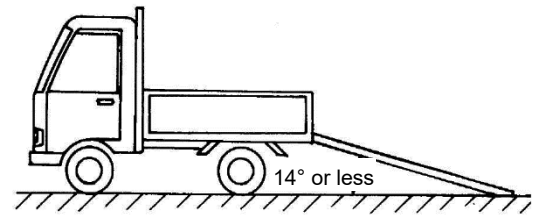
- Before leaving the mower unattended, place it on a flat, stable surface, set the parking brake lever to the ON position and turn the engine off.
- Parking the mower on gradients is dangerous. Do not park the mower on a gradient.



4. Transporting the mower

When transporting the mower, use a vehicle (truck or van) able to accommodate the mower's dimensions and weight load.

The running board used to load the mower aboard the vehicle must have a loading capacity of at least 0.5 t, be long enough to tilt the mower by no more than 14° (at least 4 times the vehicle bed height), and have a width of at least 30 cm.



4-1. Loading

- (1) Lateral placement of running board: Position the end of the running board on the vehicle bed so that the center line of the running board's width will align with the midpoint of the mower's rear wheels. Make sure the running board will not slide off the vehicle bed.
- (2) Check that the blade clutch lever is set to OFF, and turn the cut height adjustment handle to check that the knife cover is horizontal. Start the engine.
- (3) Drive the mower at low speed to bring it in parallel with the running board.
- (4) Drive the mower onto the running board at low speed and maintain low speed until the mower is completely aboard the vehicle.
- (5) The mower's balance will be at its most unstable just when the mower reaches the vehicle, so be especially careful at this time.
- (6) When the mower has been loaded completely aboard the vehicle, stop driving it and shut it down as described in Steps (3) to (6) of Section 3 above.
- (7) Secure the mower to the vehicle with ropes at two or more points.
- (8) The mower can now be transported to the desired destination aboard the vehicle.

4-2. Unloading

- (1) Untie the ropes securing the mower to the vehicle, and position the running board as described in Step (1) of Section 4-1 above.
- (2) Start the engine as described in Steps (1) to (6) of Section 1.
- (3) Drive the mower at low speed to bring it in parallel with the running board.
- (4) Drive the mower onto the running board at low speed and maintain low speed until the mower is completely on the ground.
- (5) The mower's balance will be at its most unstable just when the mower reaches the running board, so be especially careful at this time.
- (6) When the mower has completely reached the ground, stop driving it and stop the engine.

5. Storing the mower

Observe the points below when storing the mower.

- Wipe off any mud or grass adhering to the mower body. Wash the mower with water, then wipe it dry. Start the engine to expel water that has accumulated inside engine parts.
- Inspect the mower, covering all the items for periodic inspections and pre-work inspections.
- Completely remove any rust, and retouch any areas of peeling paint.
- Store the mower with a sheet cover over it, in a dry indoor space sheltered from rain.
- Turn the engine's fuel cock to the "C" (Closed) position. (See the engine's instruction manual)
- Store the mower on a flat, stable surface.

6. PERIODIC INSPECTIONS

Inadequate mower inspections or adjustments may lead to accidents. Routinely inspecting the mower to keep it in normal working order helps ensure safety, so be sure to inspect the mower.

- Pre-work inspections should be done by the operator.
- See Section 7 (p. 24) for the pre-work inspection procedure.
- Inspections after 20, 100 and 300 hours should be done by a dealer or repair shop.
- If problems are found during inspection, contact your dealer or repair shop right away for repairs.
- Contact your Zenoah sales office for answers to questions.
- See the engine instruction manual for information on the engine.

Item	What to inspect	Inspected by			
		User	Dealer or repair shop		
		Pre-work	After first 20 hours	Every 100 hours	Every year or 300 hours
Drive belt	Is the belt tension correct?		○	○	
	Is there any cracking or damage?		○	○	
Blade belt	Is the belt tension correct?		○	○	
	Is there any cracking or damage?		○	○	
Transmission	Is the oil level correct?		○	○	
	Is there any oil contamination?			○	
	Is there any oil leakage?	◎			
	Oil replacement				○
Fuel	Is the proper amount of fuel in the fuel tank?	◎			
	Is the fuel tank cap fastened properly?	◎			
	Is there any fuel leakage?	◎			
Adhering flammable items	Does the mower or engine have adhering grass, debris or other flammable items?	◎			
Engine stop switch	Does the engine start and stop?	●			
Labels	Are any labels peeling, missing or damaged?	◎			○
Frame	Is there any cracking, deformation or corrosion?				○
Tires	Have any tires collapsed excessively (from insufficient air pressure)?	◎			
	Is there any cracking or damage?	◎			○

○: Item requiring expert knowledge, inspected by a dealer or repair shop.

◎: Item inspected by the user before starting work and before starting the engine.

●: Item inspected by the user before starting work by starting the engine.

Item	What to inspect	Inspected by			
		User	Dealer or repair shop		
		Pre-work	After first 20 hours	Every 100 hours	Every year or 300 hours
Covers	Do covers have any cracking, deformation or damage?				○
	Have any covers fallen off?	◎			
Throttle lever	Does the engine speed change in response to lever operation?	●			
Gear shift lever	Can the lever be set to each gear position?	●			
Drive clutch lever	Can the mower be started and stopped smoothly?	●			
	Wire adjustment		○		○
	Support lubrication			○	
Blade clutch lever	Can the cutter shaft be run and stopped?	●			
	Wire adjustment		○		○
	Support lubrication			○	
Parking brake lever	Is the mower stationary?	●			
	Wire adjustment		○		○
	Support lubrication			○	
Blades	Is there any blade cracking, wear, damage or deformation?	◎			
Blade fastening bolts	Is there any looseness, cracking, wear, damage or deformation?	◎			
Blade component set	Blade component set replacement				○
Cut height adjustment handle	Can the cut height be adjusted by turning the handle?	◎			
Side clutch levers	Can the mower turn?	●			
	Do the levers have the proper amount of free play?		○		
	Wire adjustment		○		○
Engine	Has the proper amount of engine oil been supplied?	◎			
	Is there any engine oil leakage?	◎			
	Engine oil replacement		After first 25 hours ○	Every 50 to 100 hours ○	
	Air cleaner inspection/cleaning	◎			
	Recoil starter area cleaning	◎			
	Muffler cover area cleaning	◎			
	Spark plug inspection/cleaning			○	
	Fuel cock inspection/cleaning			○	

- : Item requiring expert knowledge, inspected by a dealer or repair shop.
- ◎: Item inspected by the user before starting work and before starting the engine.
- : Item inspected by the user before starting work by starting the engine.

7. PRE-WORK INSPECTIONS

Inadequate pre-work inspections may lead to accidents. Getting in the habit of routinely inspecting the mower to keep it in normal working order helps ensure safety, so be sure to inspect the mower.

WARNING

- Place the mower on a flat, stable surface when inspecting parts. Always turn the engine off for all inspection items not requiring engine operation.
- If problems are found during inspection, contact your dealer or repair shop right away for repairs. Do not use the mower until the repairs have been done.

1. Inspections Done Before Starting the Engine

1-1. Oil leakage

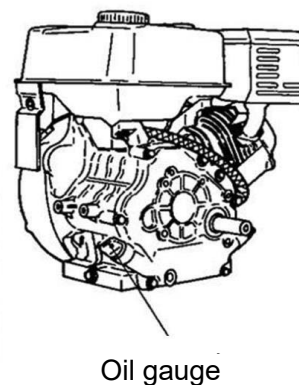
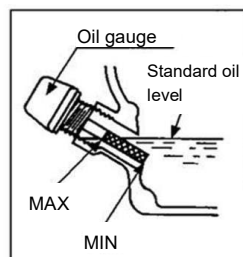
Check for any oil seepage or oil traces under the mower (on the ground).

1-2. Engine oil quantity

Check the oil quantity shown on the oil gauge. Remove the gauge, wipe it off with a cloth, then reinsert it and pull it out again to check the oil level adhering to the gauge.

The level should be between the MAX and MIN levels. Add more oil if the level is below the MIN level.

The type of oil to use is shown below.



Automotive gasoline engine oil	Multigrade	10W30
	Single grade	30 [#]

1-3. Fuel

(1) Fuel quantity inspection

Check the fuel gauge to see whether there is fuel in the fuel tank.

Do not use fuel purchased more than a month ago. Engine performance drops or failure may result.

(2) Fuel tank cap inspection

Inspect the fuel tank cap to check whether it is closed securely.

(3) Fuel leakage inspection

Check for fuel leaking from parts such as the fuel tank cap and fuel hose.



- After fueling the mower, close the fuel tank cap securely and completely wipe off any spilled fuel.

1-4. Adhering flammable items

Check for any flammable items such as grass, litter or other debris adhering to mower parts. Pay particular attention to the engine cooling air intake, air cleaner air intake and muffler area.

Remove all adhering flammable items you find.

1-5. Labels

Inspect the labels to check for dirty, peeling, missing or damaged labels.

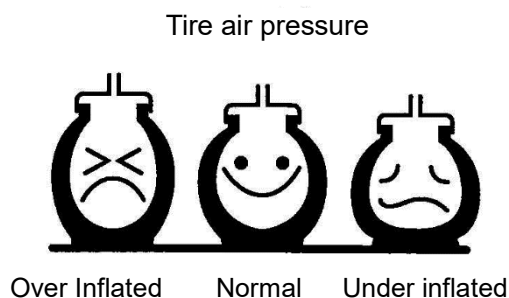
If labels need to be replaced, contact your place of purchase for new labels and stick them on the mower at the proper positions.

1-6. Tires

(1) Tire air pressure inspection

Check the amount of sag in the tire contact areas to see if air pressure is appropriate.

Tire air pressure	
Front wheels	200 kpa {2.0kgf/cm ² }
Rear wheels	140 kpa {1.4kgf/cm ² }



(2) Tire crack/damage inspection

Check for cracks and damage in the tire contact surfaces and side surfaces.

Also check for nails, glass, stones or other debris piercing or embedded in the tires.

1-7. Covers

Check for missing covers.

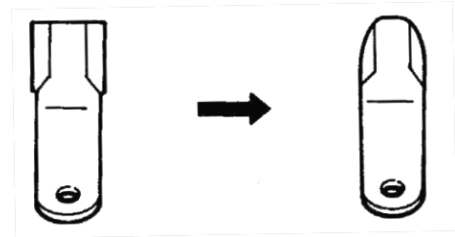
1-8. Blade components

(1) Blade, bolt and nut inspection

- Check for blade cracks, damage and wear.
Replace blades soon after the amount of wear exceeds roughly half.
- Check for looseness, cracks, deformation, damage and wear in blade fastening bolts and nuts.

New blade

Blade ready for replacement
(60% edge wear)



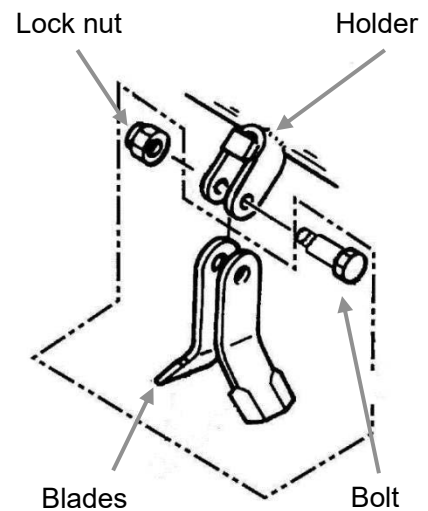
(2) Cutter shaft inversion

- The cutter shaft can be removed and reattached in the opposite left/right orientation to enable use of the blades on the non-worn side.
The procedure must be done by a dealer or repair shop.

(3) Blade replacement

- Both sides of the blades can be used. When blades have become worn, they can be inverted or replaced with new blades by following the steps below.

- (1) Loosen and remove the lock nut.
- (2) Remove the bolt and take out the blades.
- (3) Check the lock nut and bolt for cracks, damage, wear and deformation. If problems are found, contact your dealer to order genuine Zenoah replacement parts.
- (4) Reattach the blades and fasten the bolt and lock nut.
- (5) Tighten the lock nut securely.



Fastening torque 17 to 25 N-m {1.7 to 2.5 kgf-m}



- Blade components are important safety parts that must be replaced with new parts after at least every 300 hours of operation or once per season. (The important safety parts are the parts surrounded by [] in the diagram above.)
- Always use genuine Zenoah parts when replacing parts. Tighten bolts and lock nuts securely after replacement.

1-9. Cut height adjustment handle

Check that the handle turns smoothly and is effective at adjusting the cut height.

2. Inspections Done With the Engine Running

2-1. Engine stop switch

Press and turn the engine stop switch clockwise to the RUN position to check that the engine can be started, then press the switch to check that the engine stops.

2-2. Throttle lever

Start the engine. Move the throttle lever to the high engine speed position and check that the engine speed increases in response, then move the throttle lever to the low engine speed position and check that the engine speed decreases in response.

2-3. Side clutch levers

While driving the mower, check that the mower turns properly when each side clutch lever is applied, and that the mower travels straight when each side clutch lever is released.

2-4. Gear shift lever

Move the gear shift lever to each position. Check that the lever snaps properly into place at the low-speed, medium-speed, high-speed, reverse and neutral positions. Next, check how the mower responds (drives) when the gear shift lever is moved to each position with the drive clutch lever set to ON.

Also check that the mower does not move when the gear shift lever is in neutral, and stops when the drive clutch lever is set to OFF.

2-5. Blade clutch lever

Run the cutter shaft. Move the blade clutch lever to the OFF position and check that the cutter shaft stops completely. Also check that the blade clutch lever is not moved back to the OFF position by vibrations.

8. TROUBLESHOOTING

If you encounter a problem with the mower, start by reviewing the possible causes in the table below. The table below only covers problems that can be remedied by the user. For more serious problems, contact your dealer or repair shop.

Problem	Cause	Solution
Engine doesn't start.	No fuel.	Fuel the mower.
	The gasoline in the mower was purchased over a month ago.	Drain the gasoline in the fuel carburetor and supply new gasoline.
	Engine stop switch not set to RUN.	Set the engine stop switch to RUN.
	Weak tugging on recoil starter.	Tug the recoil starter more firmly.
	Closed fuel cock.	Open the fuel cock.
	Drive clutch lever ON.	Set the drive clutch lever to OFF.
	Blade clutch lever ON.	Set the blade clutch lever to OFF.
Engine doesn't stop.	Engine stop switch not set to STOP.	Set the engine stop switch to STOP.
Mower doesn't drive.	Gear shift lever in neutral.	Move the gear shift lever out of neutral.
	Drive clutch lever OFF.	Set the drive clutch lever to ON.
Mower doesn't stop.	Drive clutch lever not completely OFF.	Move the drive clutch lever completely to the OFF position.
Cutter shaft doesn't run.	Blade clutch lever OFF.	Set the blade clutch lever to ON.

9. OTHER

1. Main Specifications

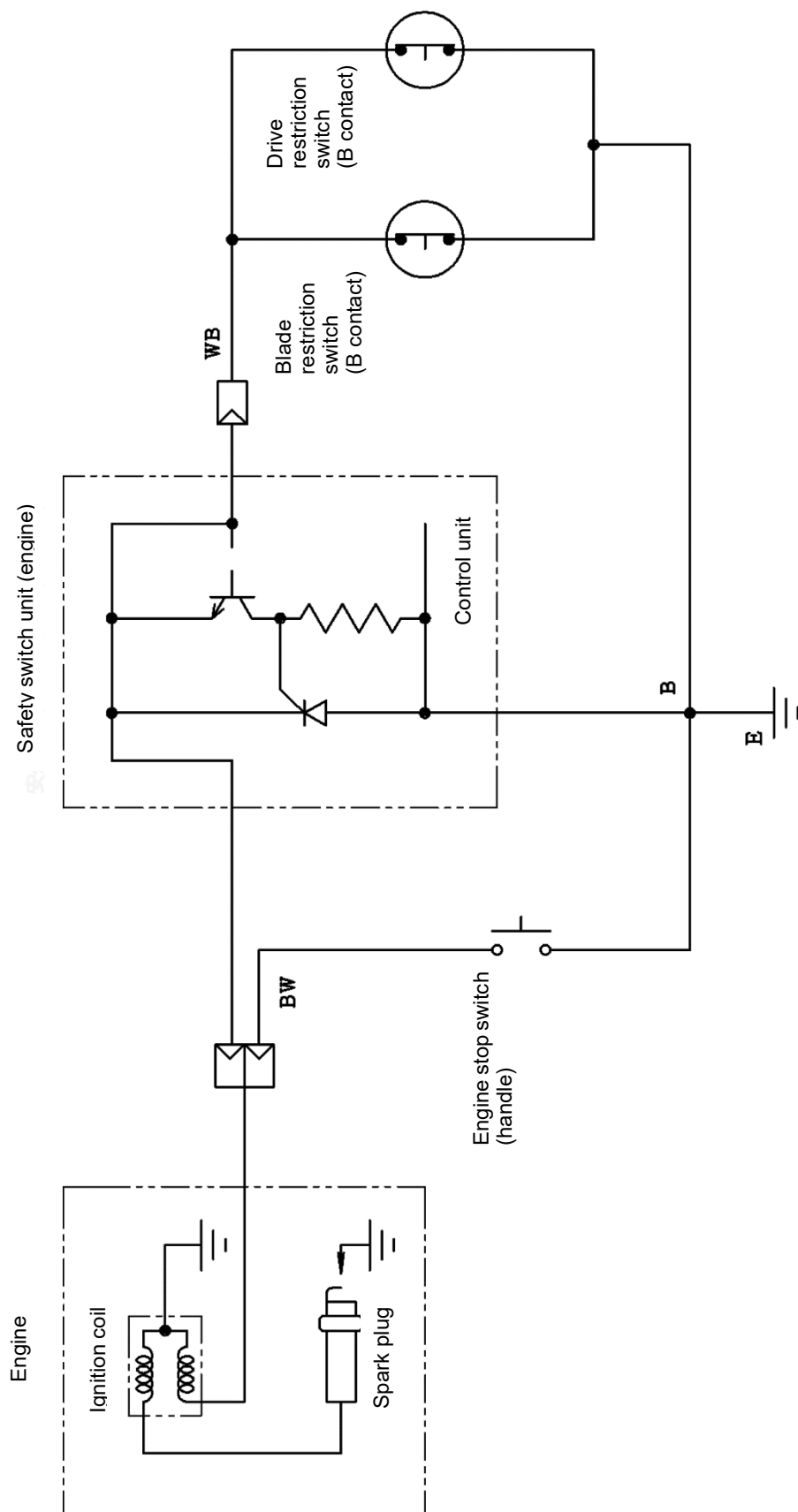
Model		ZHM800
Body dimensions	Total length (mm)	1,950
	Total width (mm)	990
	Total height (mm)	1,040
Body weight (kg)		230
Cut width (mm)		816
Cut height (mm)		0 to 95
Number of blades		64
Tires	Front wheels	3.50-5
	Rear wheels	16x7.00-8
Travel speeds	Low (km/h)	1.5
	Medium (km/h)	2
	High (km/h)	4.9
	Reverse (km/h)	2
Engine	Model name	Mitsubishi GB300LN
	Maximum output (kW (PS))	7.3 (10.0)
	Total displacement (L (cc))	0.296 (296)
	Fuel used	Unleaded automotive gasoline

* The specifications above are subject to change without prior notice for improvements or other reasons.

2. Main consumable parts

No.	Name	Code No.
1	V-belt (LB36)	0080320036
2	V-belt (LB37)	0080320037
3	V-belt (B58)	0080300058
4	Throttle wire	70922260100
5	Wire (side clutch)	70236060200
6	Wire (drive/blade clutch)	70236060000
7	Wire (parking brake)	70236060100
8	Front tire	70230260000
9	Right tire	70230260100
10	Left tire	70230260200
11	Front guard	70235320400
12	Front cover	70235320600
13	Rod (front cover)	70235320900
14	Knife	70235360000
15	Bolt	70235360100
16	Lock nut	70235360200
17	Rubber flap (center)	70235360300
18	Rubber flap (side)	70235360400

10.	WIRING DIAGRAM
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