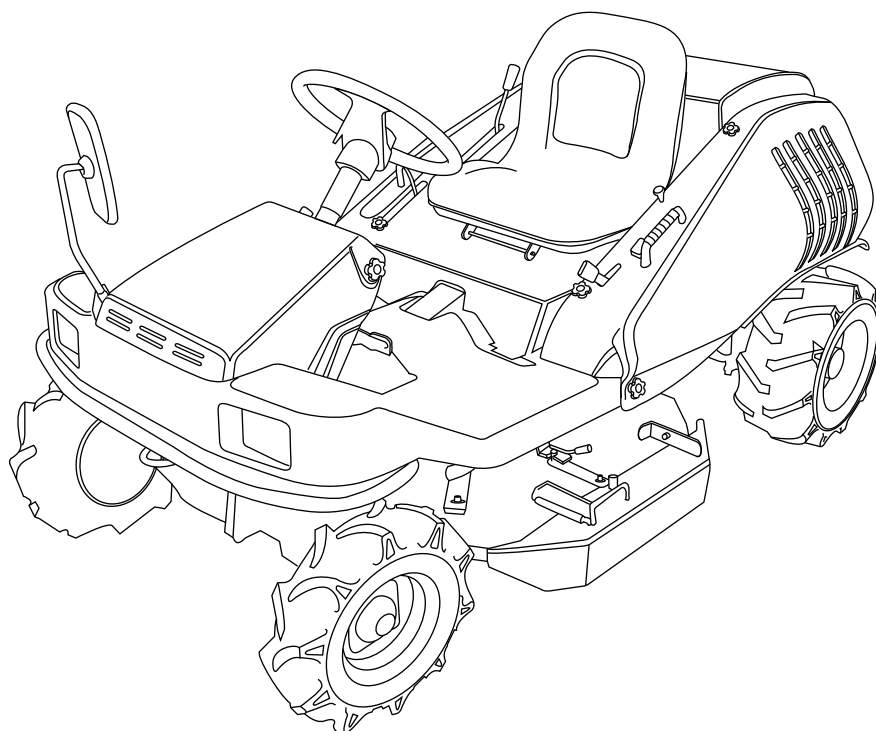


Ride-on Brushcutter

CM 2103

Operator's Manual



⚠ WARNING!

Read this manual completely before operating or maintaining this machine. Failure to follow safety precautions could result in serious injury or death. Keep this manual for future reference by you and by all those who operate and maintain this machine.

5314 5205 001

Original Instructions
(in English)

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Authorized Dealer

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< Guarantee Certificate >

Attached to the back of this manual.

* Keep the guarantee certificate together with machine purchase receipt after you have received instructions for handling this machine.

< Appendix >

"Instruction Manual for Engine"

* Be sure to read Appendix together with this manual.

Warning Words Used in This Manual

To indicate the level of danger (or the degree of the failure), the following four signal words are used to identify the safety messages in this manual. Their meanings are as follows:

Signal word	Meaning
 DANGER	Indicates an imminently hazardous situation which, if not avoided by following these instructions and precautions, could result in serious injury or death.
 WARNING	Indicates a potentially hazardous situation which, if not avoided by following these instructions and precautions, could result in serious injury or death.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided by following these instructions and precautions, may result in minor or moderate injury.
NOTICE	This word is used for precautions that are recommended or to emphasize the importance of information.

Notice to Users and Maintenance Personnel

Thank you for purchasing this machine.

Always be sure to read and understand this manual thoroughly before using your machine. This will enable you to use it correctly.

WARNING

- * **The machine can be very dangerous if the safety precautions in this manual and on the labels attached to this machine are not followed. Always follow the instructions and safety precautions or serious injury or death could result.**
- * **This machine is a work vehicle for mowing.**
- * **Do not use it for other purposes. Any other use could be dangerous.**
- * **driving this machine on a public road or a road regarded as a public road may be illegal, depending on local regulations.**

WARNING

- * **Do not modify this machine. Also do not remove the safety cover of the body before running. A serious accident could result.**

Introduction

1. Introduction

1.1 Purpose of This Manual

The purpose of this manual is to provide detailed information needed for the safe and effective use of this machine to those who operate or maintain the machine.

1.2 Structure of This Manual

This manual contains the following chapters.

1. Introduction

This section explains the purpose and structure of the manual and the warnings used in the manual. It also describes the warning labels attached to the machine.

2. Warranty and After-service

This section covers items related to the warranty and after-service for this machine.

3. Rules for Safe Operation and Maintenance

This section covers general safety items that must be followed when operating or using this machine.

4. Component Names and Locations

This section explains the names and functions of the parts of the machine.

5. Product Specification

This section gives the specifications of this machine. It also gives details about the tool bag.

6. Operation

This section explains the preparations required before operating the machine, the order of operation, and the method of operation.

7. Maintenance

This section gives information about periodic inspection, use of coolant, lubricants, and grease, and cleaning, replacing, adjusting, and maintaining the machine after use.

8. Storage (Long-term Storage)

This section gives information about storage (long-term storage) of the machine.

9. Troubleshooting

This section describes possible causes and actions to take if problems occur.

10. Transporting Machine

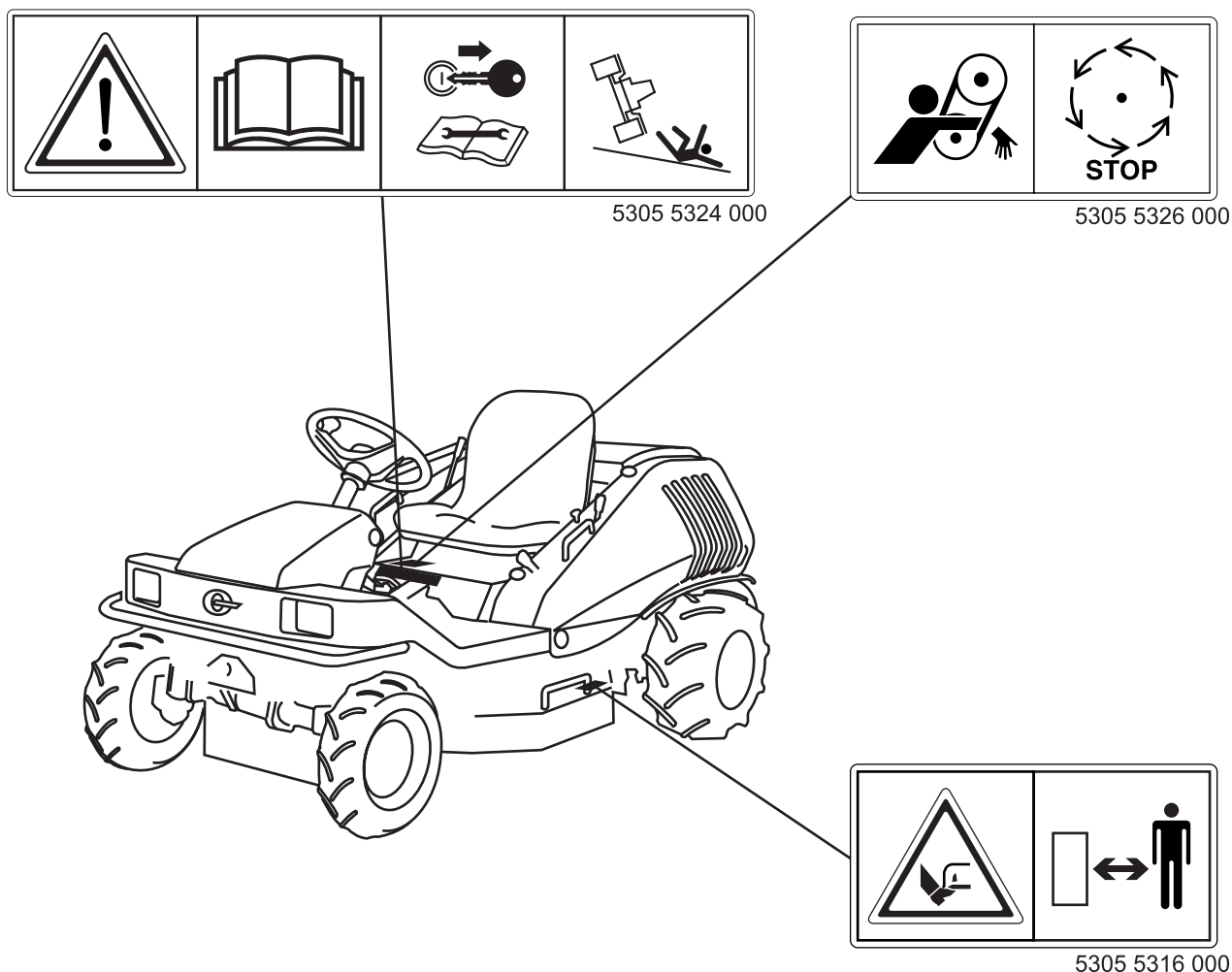
This section explains the methods and precautions to take when transporting the machine.

Introduction

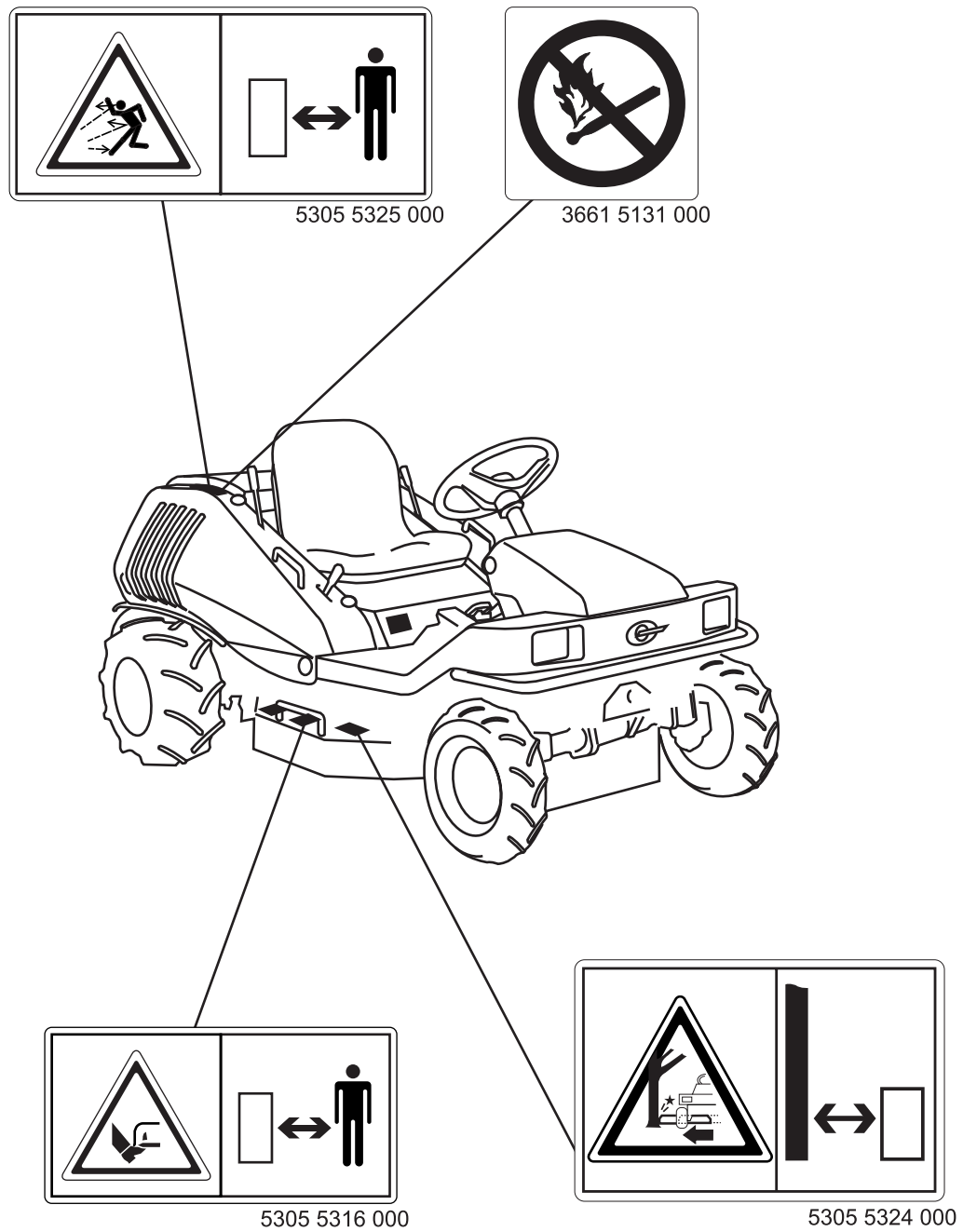
1.3 Warning Labels Attached to This Machine

NOTICE

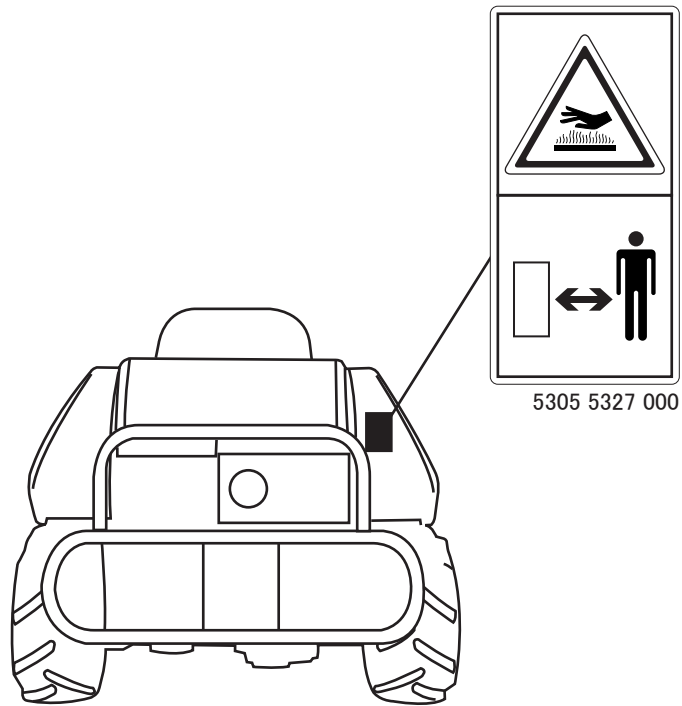
* Replace these labels immediately if they have been removed, have fallen off, or have become illegible. Use the part numbers on the label to order replacement labels from dealer.



Introduction



Introduction



5310M-0104-030E

Warranty and After-sales Service

2. Warranty and After-sales Service

Warranty

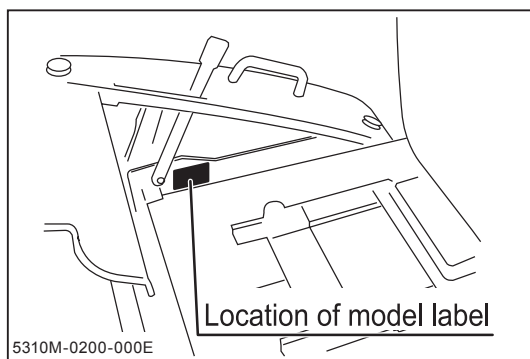
CHIKUSUI CANYCOM, Inc. provides warranties through local dealers. Consult your local dealer regarding the details of your warranty.

After-sales Service

Please contact your CANYCOM distributor from whom you purchased your machine or our Service Center regarding service orders or any questions or problems that may arise when using the Ride-on Brush cutter.

Please refer to the product model that you own or use, the product serial number specified on the model label (see illustration below for location of the label), the name of the manufacture of the engine installed in your machine, and the engine model (listed in chapter 5 of this manual "Specifications").

< Location of Model Label >



< Model Label >



Availability of Replacement Parts

CHIKUSUI CANYCOM will make replacement parts for this machine available for seven years after the end of this machine model's production.

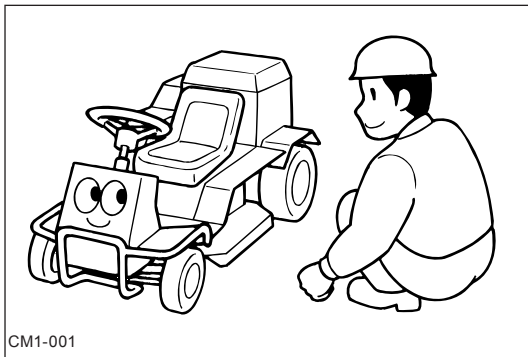
Rules for Safe Operation and Work

3. Rules for Safe Operation and Work

This chapter shows the general safety precautions to be observed during driving or operation.

Try to carry out driving or operation safely by being sure to follow the safety instructions in other chapters as well.

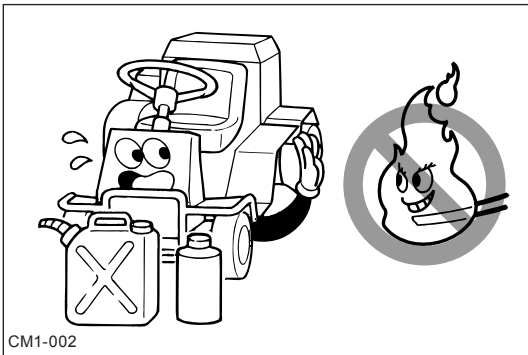
Safety Precautions Before Operation



Pre-work Check

Perform the daily pre-operation check before starting the machine.

Repair or replace damaged parts before starting the machine.



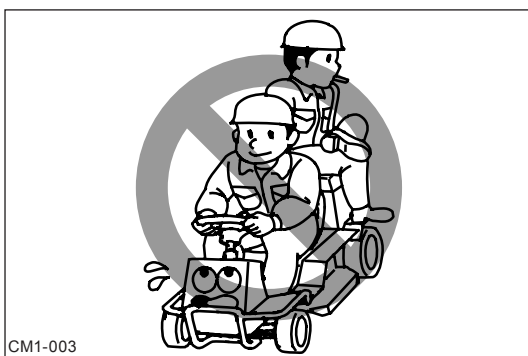
Fuel Handling

Do not handle fuel or grease, service the engine, or recharge the battery while smoking or when near an open flame.



Protective Clothing

Wear clothes suitable for the operation of heavy equipment. Protective footwear, long pants, and long-sleeved shirts are recommended.



Do Not Carry Passengers on This Machine

This machine has one seat only: the operator seat. It is extremely dangerous to drive this machine with passengers. Never allow a person or persons other than the operator to ride on the machine.

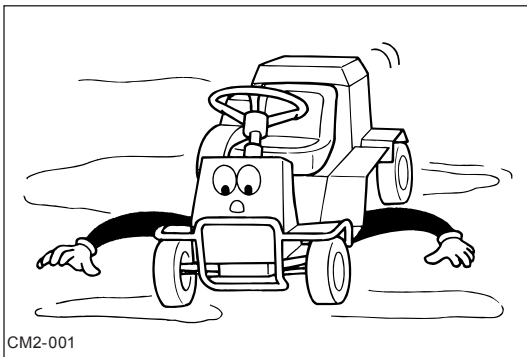
Rules for Safe Operation and Work



Do Not Drive Recklessly

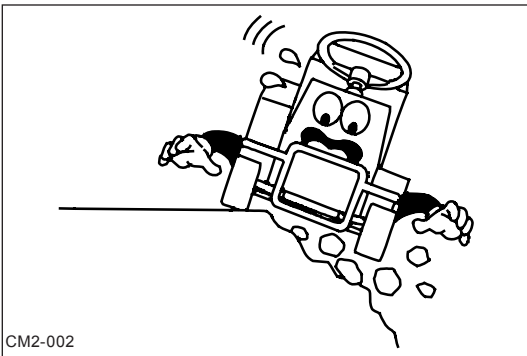
Do not operate this machine when under the influence of alcohol or drugs, or when fatigued.
No one under age 18 should operate this vehicle.

Avoid Starting, Accelerating, Turning, or Braking Quickly



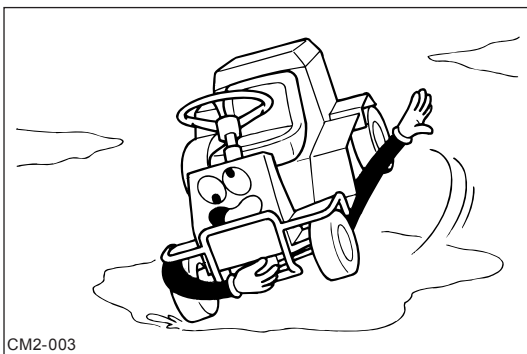
Maintain Safe Speeds

Always drive at a safe speed.



Precautions on Crumbling Ground

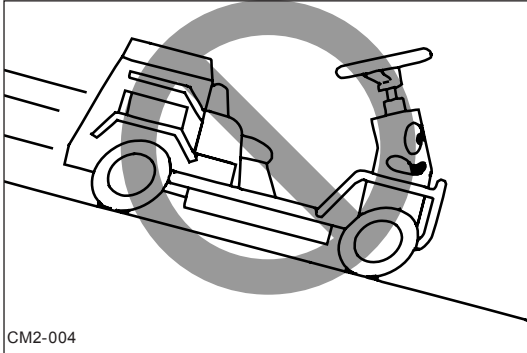
Beware of driving in trenches and on banks. There is a danger of the ground crumbling due to the machine weight. When travelling on soft ground, drive slowly and safely.



Avoid Quick Starting, Acceleration, Turning and Braking

Drive safely and avoid sudden changes of speed or direction. Make sure the area around the machine is safe for driving. Do not make sudden maneuvers or turn sharply when driving on soft or wet ground; this can cause the machine to lose traction or turn over.

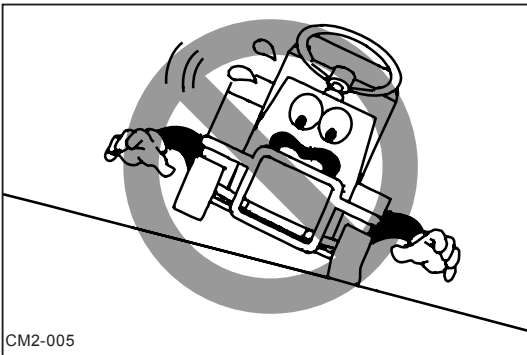
Rules for Safe Operation and Work



Use the Engine Speed to Help Brake When Driving Down a Slope

Before driving down a slope, stop the machine temporarily and lower the speed of the engine. Then, drive down the slope at a low speed. Let the engine speed help decelerate the machine.

Travel at a low speed on wet steel plates and in muddy places. The machine may slip even on a gentle slope, causing a serious accident. Stopping suddenly when driving down a slope can throw the operator from the machine or make the machine turn over, causing serious injury or death.



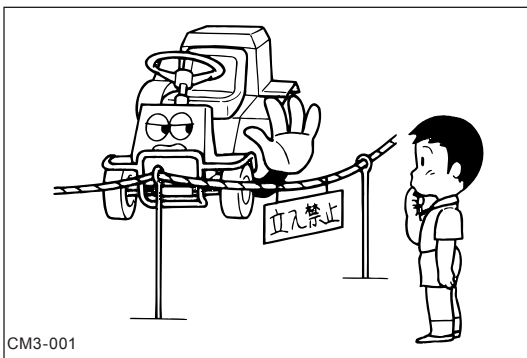
Avoid Driving Across Slopes

Always travel straight up or down slopes.

Never travel across slopes or along contour lines.

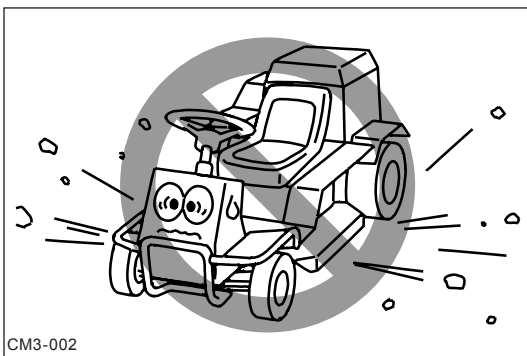
Driving across steep slopes or along contour lines is dangerous and may cause the machine to tip over, causing serious injury or death. Avoid operating the side clutch lever when the vehicle is positioned on sharply sloping ground. If the lever must be used do so quickly and carefully, taking care not to cause a reverse turn.

Safety Precautions When Operating



Secure Area (No Admittance) During Operation

Post notice boards before operation to show that job site is under operation. If necessary, apply guard ropes to enclose and restrict access so that people (especially children) may not enter the work area and safety may be ensured.



Beware of Flying Objects

Use care during operation to avoid throwing stones and small objects toward nearby persons, animals, crops, cars or other objects.

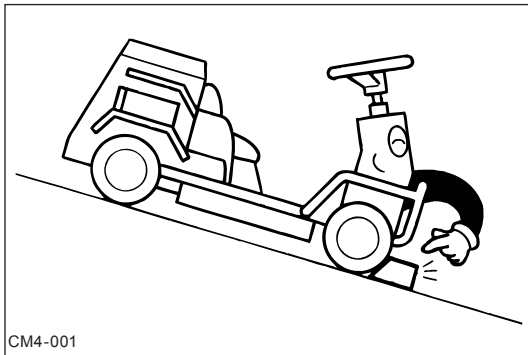
Rules for Safe Operation and Work



Avoid Operating in Dangerous Areas

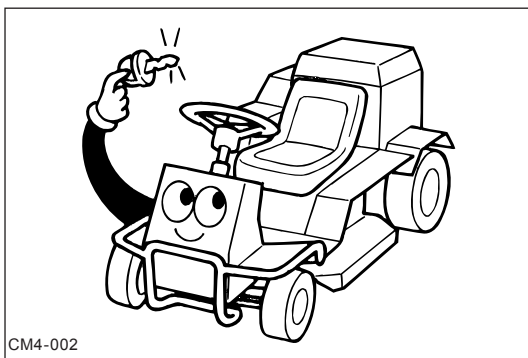
Remove all obstacles from operation area. Avoid operating on steep slopes or soft and rough ground and avoid dangerous areas.

Precautions When Parking



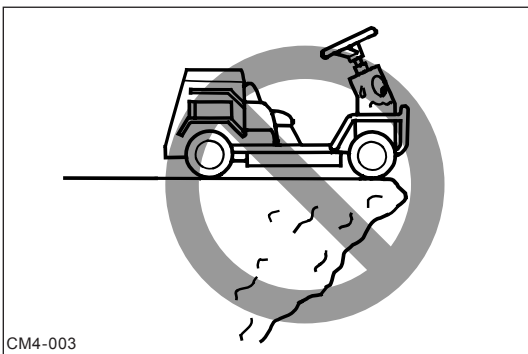
Avoid Parking on Slopes

Avoid parking the machine on slopes. If there are no other options, apply the parking brake securely and block the wheels at the lower end .



Safety Actions When Parking

When parking always apply brake and stop engine. Always remove key.

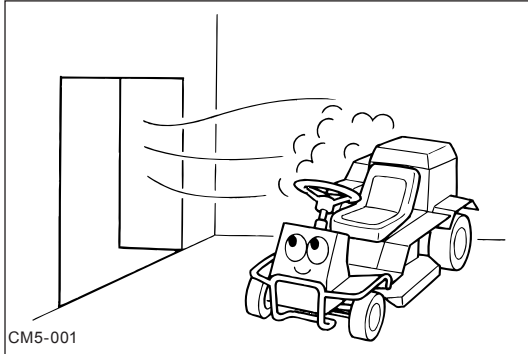


Do Not Park on Unstable or Inclined Surfaces

Park the machine on stable, level, flat surfaces. Do not park on unstable or inclined surfaces.

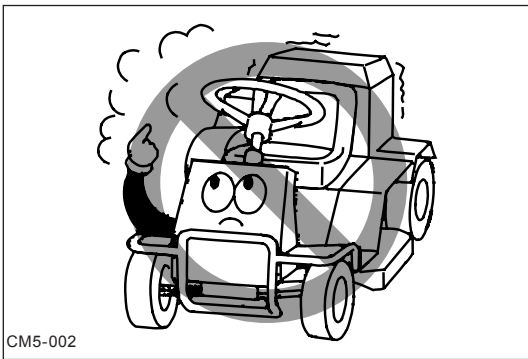
Rules for Safe Operation and Work

Precautions When Performing Maintenance



Ventilate Properly When Operating Indoors

When operating engine indoors, always ensure that there is adequate ventilation to prevent poisoning by exhaust gas.



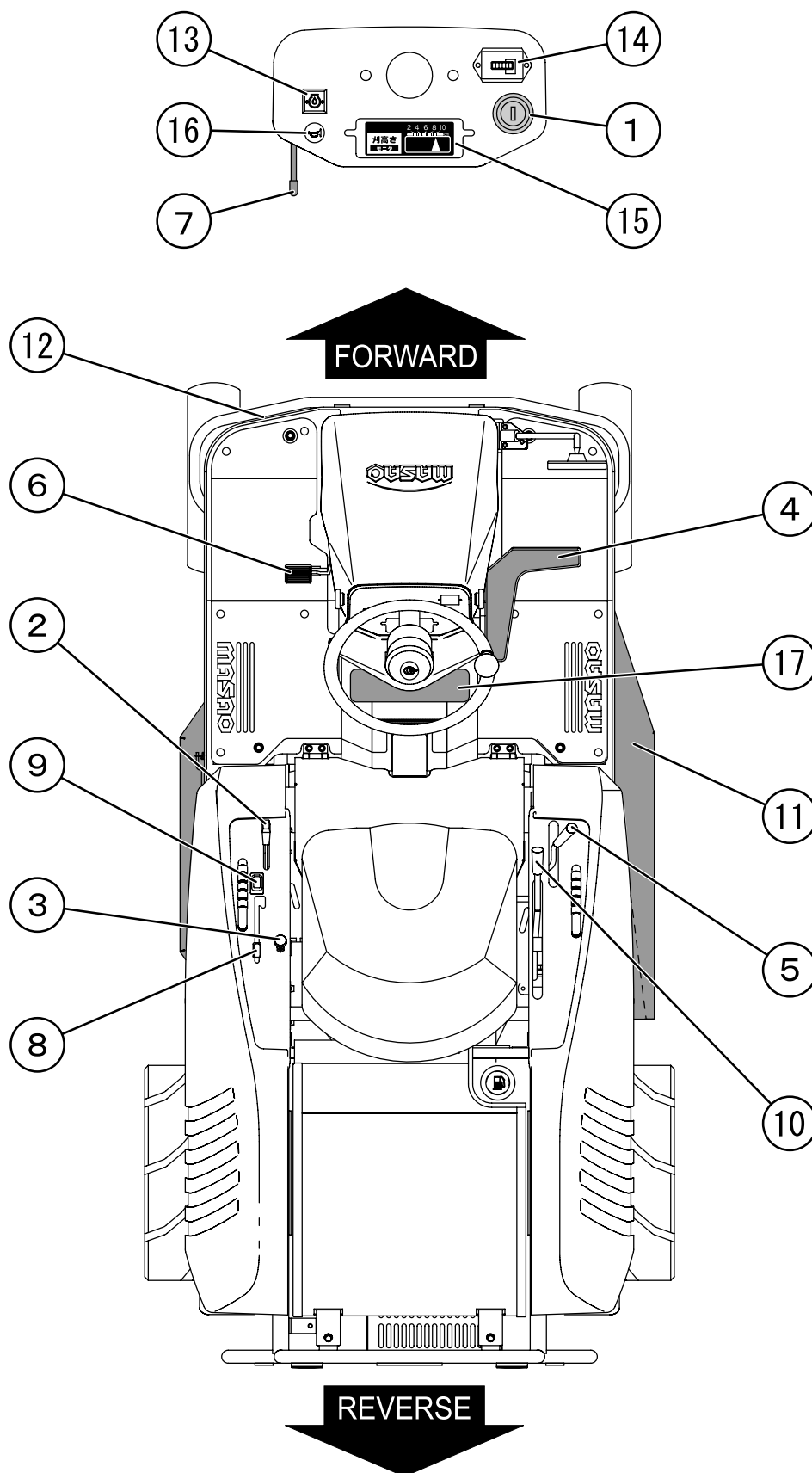
Never Carry Out Maintenance with Engine Running

Do not carry out maintenance with the engine running. Always stop the engine before starting maintenance.

Component Names and Locations

4. Component Names and Locations

Locations



Component Names and Locations

Component Names, Functions, and Operations

- | | |
|-------------------------------------|--|
| ① Main switch | Start or stop engine with this switch.
* When the machine is not used remove and keep the key. |
| ② Accelerator lever | Increases and decreases engine speed. |
| ③ Choke lever | When the lever is pulled out, the choke valve closes. When lever is pushed in, the choke valve opens. Pull the lever when starting the engine and push in after the engine is started. |
| ④ HST pedal | When the pedal is depressed forward from the neutral position, the machine moves forward. When the pedal is depressed backward, the machine moves backward. The running speed can be infinitely adjusted by changing the depressed angle of the pedal. |
| ⑤ Auxiliary speed change lever ... | Use this lever when shifting speed to high / low levels.
WARNING: Do not change gears while driving. |
| ⑥ Brake pedal | Press to stop the machine when driving. |
| ⑦ Parking brake lock lever | When the lock lever is lowered with the brake pedal pressed down, the brake pedal is locked. |
| ⑧ Differential lock lever | Use this lever when one of the rear wheels slips.
When the lever is moved to "ON", the differential lock is engaged. When the lever is moved to "OFF", the differential lock is disengaged (normal driving position).
* During normal driving, always put the lever to "OFF" position. |
| ⑨ Blade height adjusting switch ... | Adjusts the cutter blade height. |
| ⑩ Blade clutch lever | Turns blade power on and off.
When pushing this lever to "OFF", the cutter brake pulley is engaged and the brake is applied. |
| ⑪ Cutter blade cover | This cover prevents pebbles and foreign matter from shooting out during operation. When replacing the cutter blade, open this cover to facilitate the cutter blade replacement operation. |
| ⑫ Head lamp | This light automatically lights up when the main switch is set to "ON". |
| ⑬ Engine oil warning lamp | When the main switch is turned to "ON", this lamp lights up, and when the engine is started, it goes out. It also lights up when engine oil becomes too hot while the engine is running. |
| ⑭ Hour meter | This meter indicates the cumulative total operating time of this machine in 0.1 hour increments. |
| ⑮ Blade height monitor | The position (height) of the cutter blade is indicated by the monitor. |
| ⑯ Horn switch | Press this switch to sound the horn. |
| ⑰ Fire extinguisher | Use in emergencies to extinguish fires on or away from machine. |

Product Specifications

5. Product Specifications

5.1 Specifications of This Product

NOTICE

* Only use this product after understanding the specifications for this product.

Model/Type			CM2103
Machine weight		kg	415
Applicable job area		m ² /h	9000
Machine dimensions	Overall length	mm	2065
	Overall width	mm	1110
	Overall height	mm	980
	Wheel base	mm	1460
	Tread	mm	Front 810 / Rear 900
	Minimum freeboard	mm	115
Engine	Model	-	KAWASAKI FH641V
	Type	-	Air-cooled 4-cycle gasoline
	Cylinder (Bore × Stroke)	mm	75.2 × 76.0
	Total displacement	cm ³ (cc)	675
	Maximum output	KW[ps]/rpm	14.7/3600 (21/3600)
	Starting system		Self-starter type
	Fuel used		Gasoline
	Fuel tank capacity	liters	15
	Ignition plug no.	-	BPR4ES
Electrical device	Battery type	-	40B19R
	Battery capacity	V/AH	12 / 28

Product Specifications

Model/Type					CM2103
Travelling performance	Travelling speed	Number of speeds	F (Forward)	-	HST(variable speed)
			R (Reverse)	-	HST(variable speed)
		Low		km/h	0 - 6.7
		High		km/h	0 - 10.0
	Stability inclination angle (No-load)		Left	degree	45
			Right	degree	45
	Minimum turning radius			m	1.9
	Grade ability			degree	25
	Transmission oil capacity			liters	2.0
Differential oil capacity			liters	0.36	
Power transmission device	Main speed shift			-	HST
	Steering device			-	Rack and pinion type round steering wheel
	Brake type			-	Internal expanding type brake
	Tire	Front wheel		-	4.00-7
		Rear wheel		-	17 × 8.00-8
Cutter blade	Cutter blade width			mm	900
	Cutter blade height			mm	20 - 100 (free stage)
	Blade type			-	Free knife & stepped stay
	Amount of slide of cutter blade			mm	150

* These specifications are subject to change without notice, for product improvement.

5.2 Details of Tool Bag

No	Part name	Quantity	Remarks
1	Operator's manual	1	This book
2	Instruction manual for engine	1	
3	Plug wrench	1	
4	Closed wrench	1	

Operation

6. Operation

Before reading this section, be sure to read Section 3 “Rules for Safe Operation and Maintenance” (See pages 6-10).

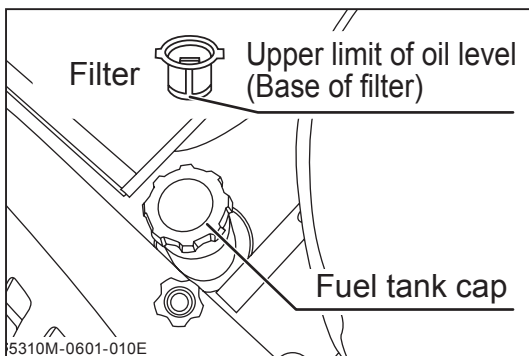
When operating the machine, always follow the instructions in this section. Do not operate the machine unless you are familiar with the operation of all controls and safety devices.

6.1 Preparation Before Operation

6.1.1 Adding Fuel

⚠ DANGER

- * When adding fuel, keep open flames (lighted cigarettes, etc.) away from fuel and engine. Flames will cause the fuel to ignite.
- * Always stop the engine before adding fuel.
- * Do not overfill so that fuel spills out of filler cap. Wipe up any spilled fuel before starting engine.

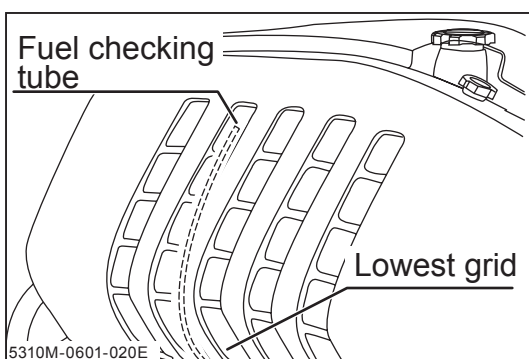


1. Visually check the liquid fuel level in the checking tube. If fuel is low, open the fuel tank cap, and add fuel.

Fuel to be used: Gasoline
Fuel tank capacity: 15 liters

NOTICE

- * For best results, add fuel before liquid level in the fuel checking tube reaches the lowest grid.



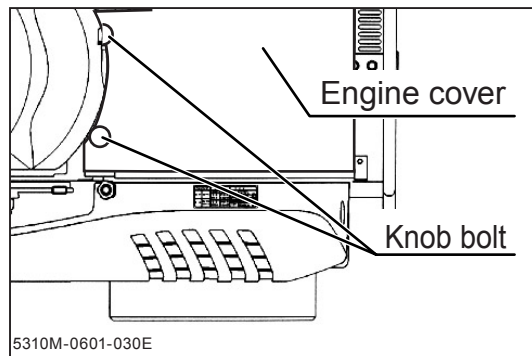
2. Firmly close the fuel tank cap after refueling.

⚠ CAUTION

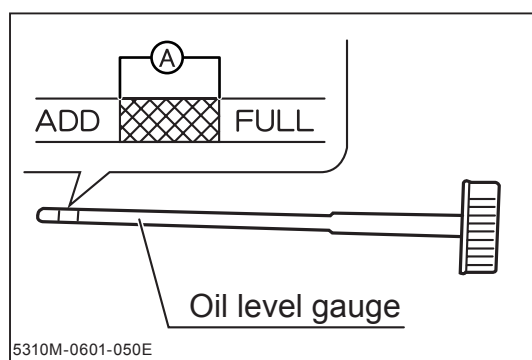
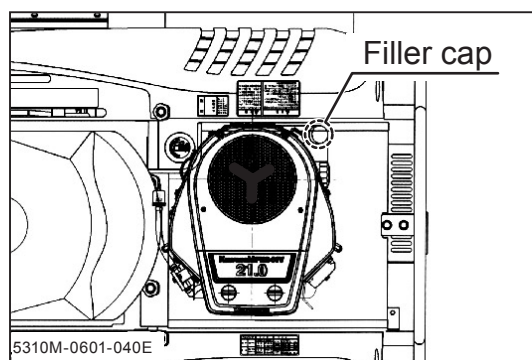
- * Added fuel should not exceed the upper limit of the oil level (at base of filter in lubricating port) to reduce risk of fire.

Operation

6.1.2 Checking Engine Oil Level and Adding Oil



1. Remove the knob bolt, open the engine cover.
2. Remove the engine oil filler cap (with oil level gauge). Clean the gauge with clean cloth. Reinsert to measure oil level.



3. Check the add engine oil level. If it is not in the range "A" (see illustration), add engine oil through the refueling port.

Fuel to be used: See page 32

NOTICE

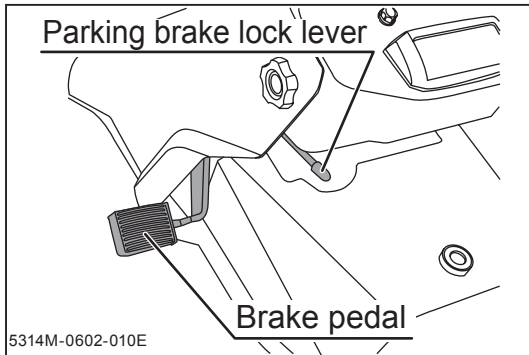
- * After checking and refueling are completed, replace and firmly tighten the oil gauge and filler cap.

Operation

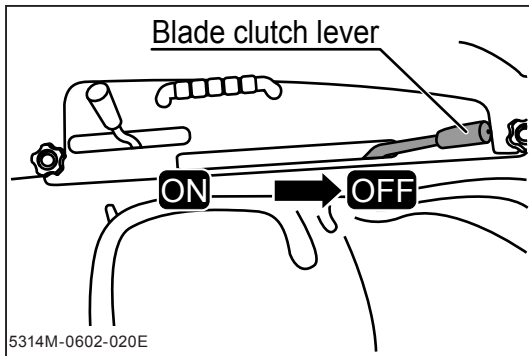
6.2 Starting

⚠ DANGER

* **Always start engine in area with adequate ventilation to prevent poisoning from exhaust gas.**



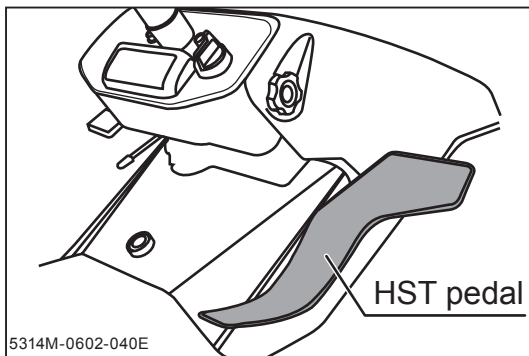
1. Lock the brake pedal by lowering lock lever with the brake pedal pressed down.



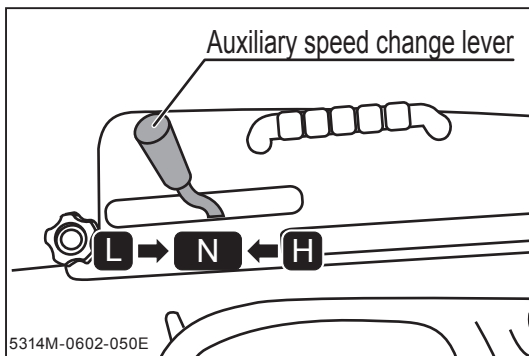
2. Push the blade clutch lever to "OFF".

NOTICE

* **When blade clutch lever is "ON", a safety switch is engaged and engine will not start.**

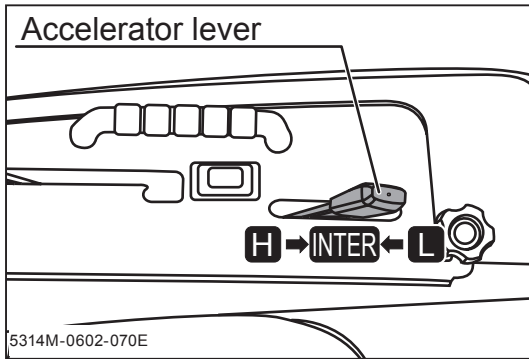


3. Release foot from the HST pedal.

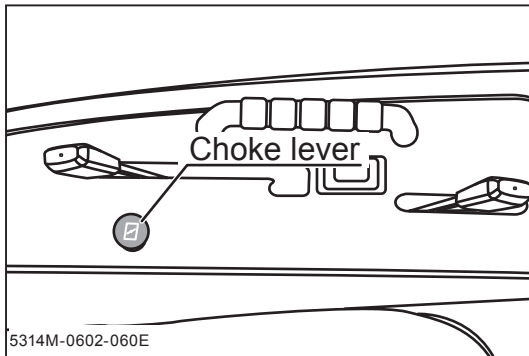


4. Confirm that the auxiliary speed change lever is at "NEUTRAL".

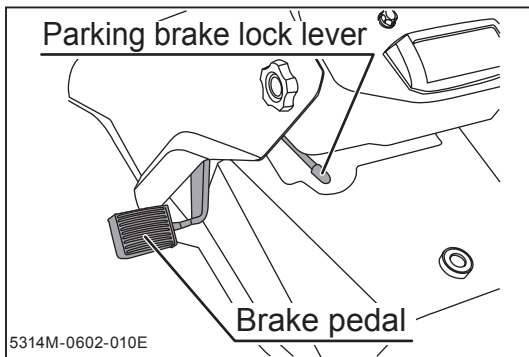
Operation



5. Shift the accelerator lever to the intermediate position between "LOW" and "HIGH " speed.



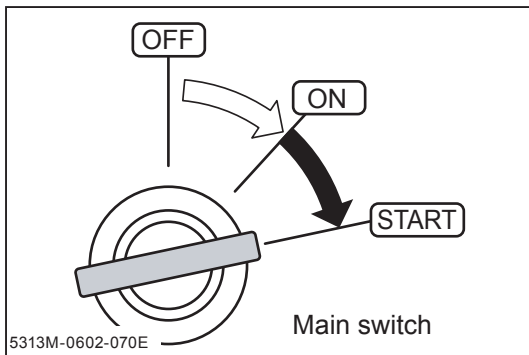
6. If the engine is cold and difficult to start, pull the choke lever.



7. Depress the foot brake pedal.

NOTICE

- * **Engine will start only when brake pedal is fully depressed, due to a safety switch.**



8. Insert the key into the main switch.
9. Turn the main switch to "START" to start the engine. (When the engine starts, release the key and it will spring back to "ON".)

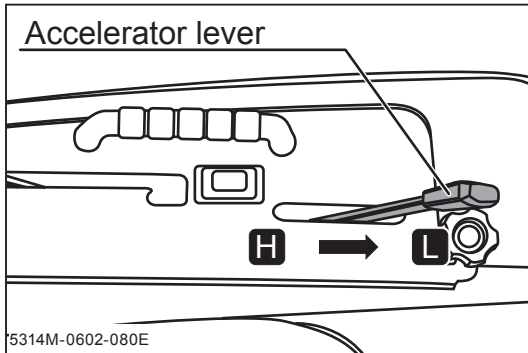
NOTICE

- * **Use start motor for short times to prolong motor life. If the engine fails to start after 15 seconds, wait about 1 minute before trying again.**
- * **When the engine fails to start, turn key switch to "OFF" and then try restarting the engine. Quick restarting may damage the starter gear.**

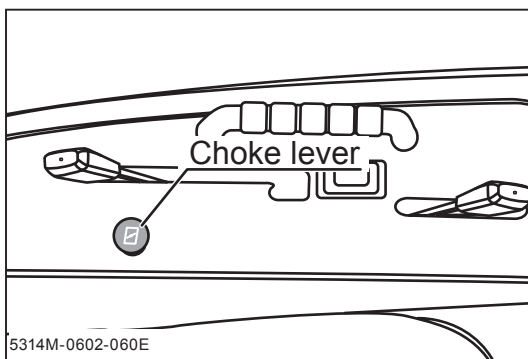
Operation

⚠ CAUTION

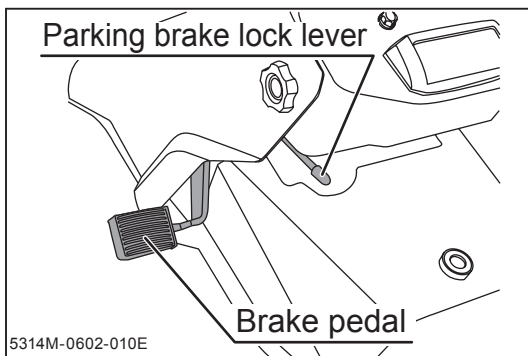
- * **Never turn the key to "START" when the engine is running. This will damage the starting motor or cause failure of the engine.**



10. Shift the accelerator lever to "LOW".



11. After using the choke lever, return the choke lever to the "FULL" position.



12. Lock brake pedal by lowering lock lever with brake pedal pressed down.

13. Warm-up engine without load according to the following table.

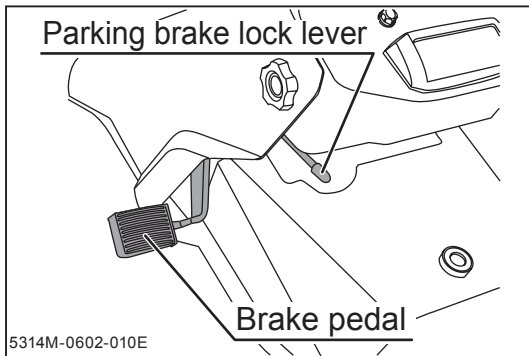
Air temperature	Recommended warm-up time
Over 0°C	About 10 minutes
0°C to -10°C	10 to 20 minutes
-10°C to -20°C	20 to 30 minutes
Under -20°C	More than 30 minutes

NOTICE

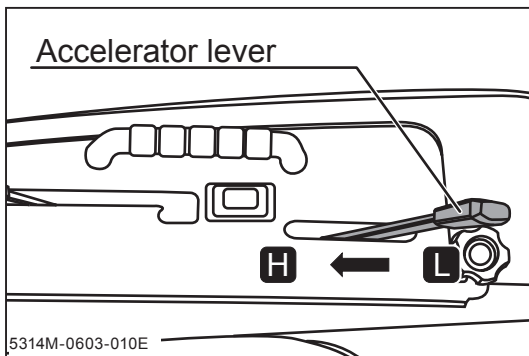
- * **Warm-up engine before using in cold environments to avoid engine seizure.**
- * **During the first 40 to 50 hours of new machine use, only use light loads and avoid severe operations.**

Operation

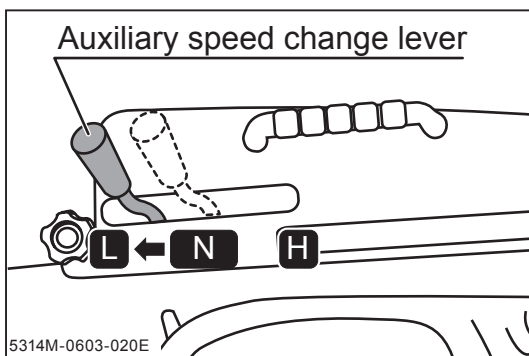
6.3 Operation Procedure



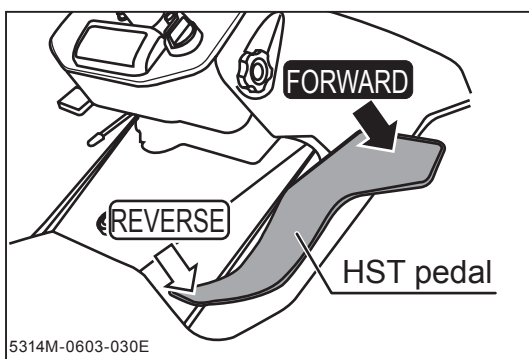
1. Check the area around the machine for safety.
2. Release the parking brake lock lever.



3. Shift the accelerator lever to "HIGH" to increase the engine speed.

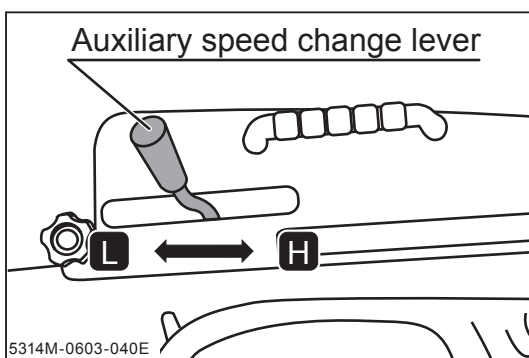


4. Shift the auxiliary speed change lever to "LOW" to decrease engine speed.



5. To accelerate, press the HST pedal slowly.

To move forward : Push the pedal top.
To move backward : Push the pedal bottom.



To change speeds:

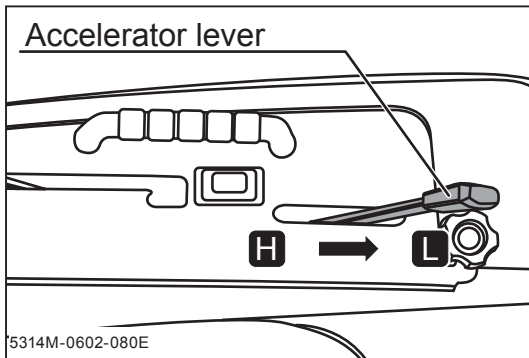
When conditions require speed changes, shift the auxiliary speed change lever between "HIGH" and "LOW".

CAUTION

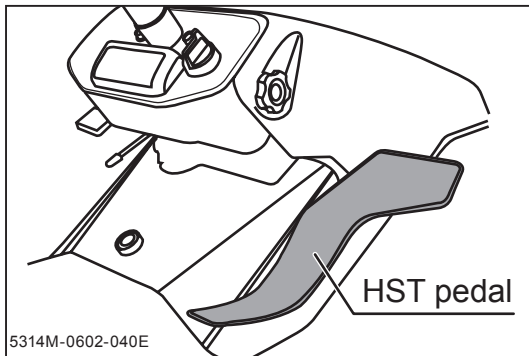
- * **Avoid shifting auxiliary speed change lever when machine is moving to prevent failure or damage.**

Operation

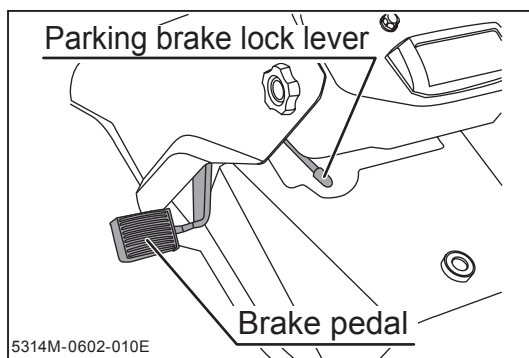
6.4 Stopping



1. Shift the accelerator lever to "LOW" to decrease engine revolution speed.



2. Move foot off the HST pedal to stop the machine.

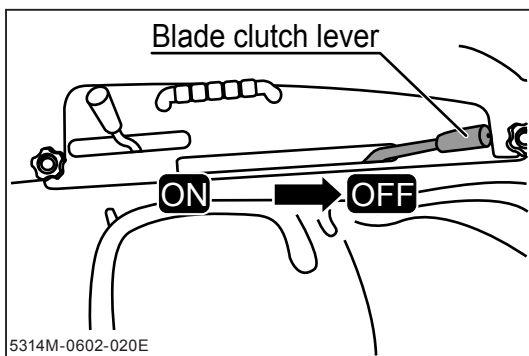


3. With the brake pedal depressed, pull the parking brake lock lever toward operator to lock the parking brake.

6.5 How to Park

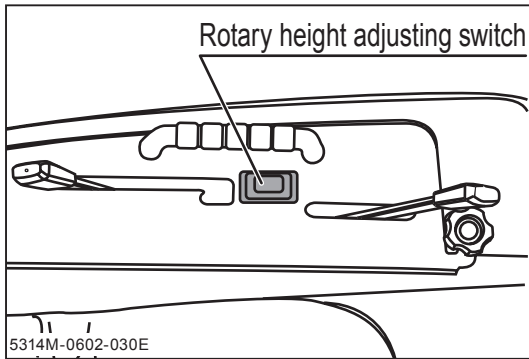
NOTICE

* Blade may still turn after brake is in "OFF" position due to inertia. Always confirm that blade has stopped turning before dismounting machine. Dismount after the blade has completely stopped.

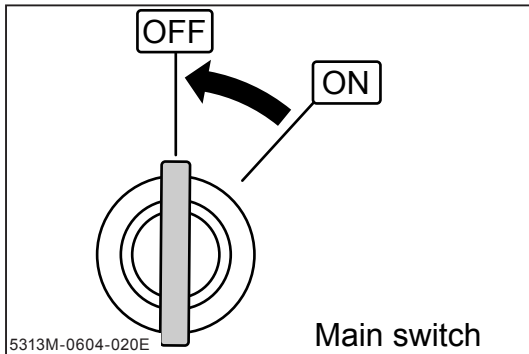


1. Stop the machine under the procedures shown in item 6.4 "Stopping Procedure".
2. Push the blade clutch lever to "OFF".

Operation



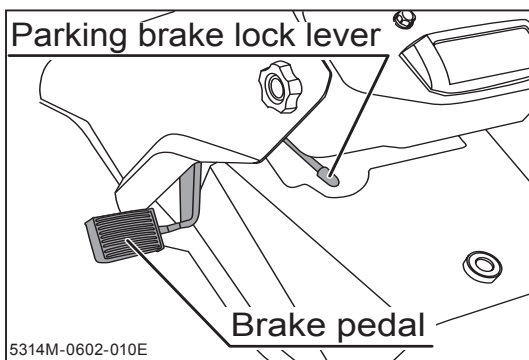
3. Push the "HIGH" side of the rotary height adjusting switch to set the rotary at highest position. (Check the rotary position on the blade height monitor.)



4. Turn off engine and remove key.

NOTICE

- * If the main switch is left "ON" after the engine is stopped, current will continue to flow from the battery to the circuits, and the battery will drain.

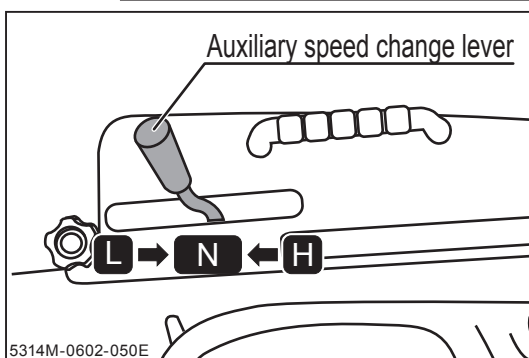


5. With the brake pedal depressed, pull the parking brake lock lever toward operator to lock the parking brake.

6.6 Emergency Transferring

NOTICE

- * If the machine does not operate with normal control due to engine failure or other problems, do not force the machine to move. Transport the machine with the following procedures.



1. Shift the auxiliary speed change lever to "NEUTRAL".
2. Push the "HIGH" side of the blade height adjusting switch to set rotary at highest position. (Check the rotary position on the blade height monitor.)
3. Release the parking brake lock lever and then move machine.

Operation

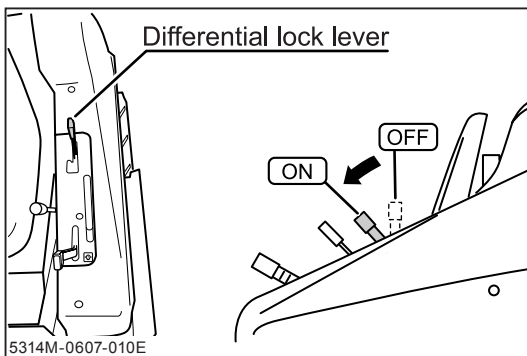
6.7 How to Avoid Slippage of Rear Wheels

NOTICE

- * If the rear wheels slip on muddy ground or steep slopes, operate the differential lock lever to eliminate the difference in rotational speed between the rear wheels.

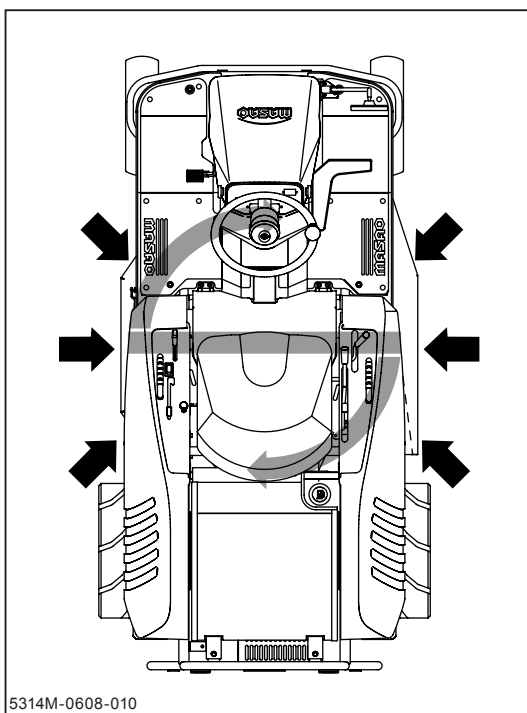
CAUTION

- * During normal driving, always move the differential lock lever to "OFF" position. Failure to do so may lead damage the differential gears.



1. Move the differential lock lever to "ON".
2. Shift the auxiliary speed change lever to the "Low speed" position and drive the machine slowly.
3. After you regain wheel control, return the differential lock lever to the "OFF" position.

6.8 How to Operate Blade



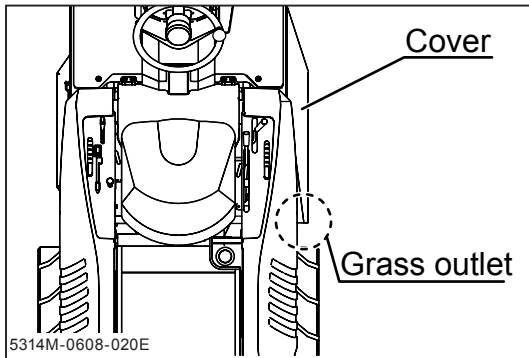
DANGER

- * Keep legs and arms away from cutter blade covers during operations. The cutter blade rotates close to each cover during operation.

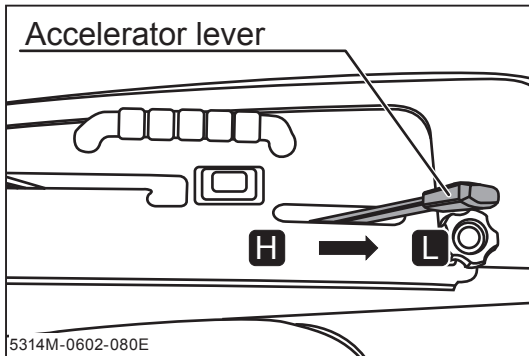
CAUTION

- * When using machine for the first time, select flat ground and operate slowly so that cutting paths overlap.
- * When cutting around obstacles, always position trees, posts, and other obstacles on the left side of the machine (turn counter clockwise around objects).
- * Before operating, read Chapter 3 "Rules for safe Operation and Work". (See pages 6 to 10)

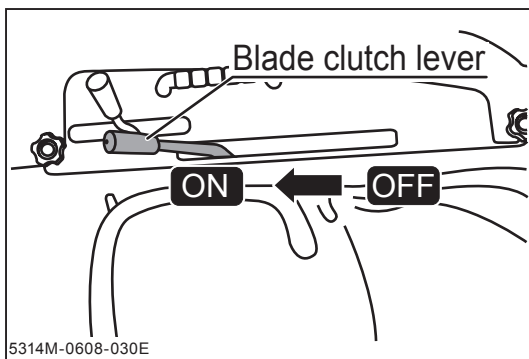
Operation



1. Confirm that the grass outlet cover closes.



2. Start the engine and shift the accelerator lever to the intermediate position between "HIGH" and "LOW".

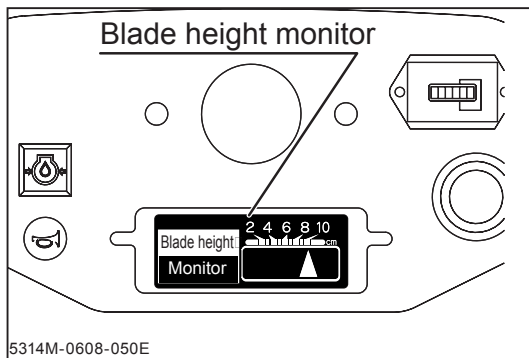
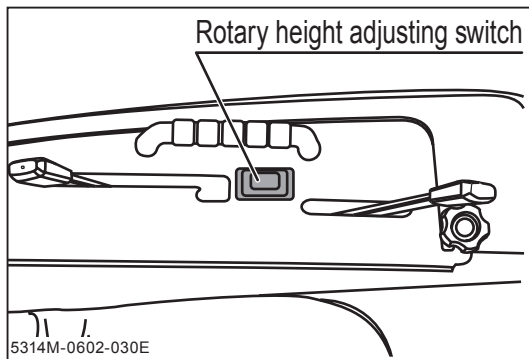


3. Push the blade clutch lever slowly to "ON".

CAUTION

- * When the rotary cutter is in highest position, the cutting blade clutch cannot be shifted "ON". Slightly lower rotary cutter before shifting blade clutch.

Operation

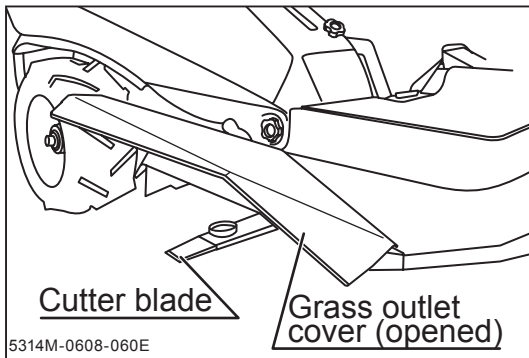


4. If necessary, change the blade height by adjusting the rotary height adjusting switch.

Blade height monitor indication	Cutting height
	10cm
	8cm
	6cm
	4cm
	2cm

5. Shift the accelerator lever to "HIGH" and increase the rotation speed of the engine.
6. Shift the auxiliary speed change lever to "LOW", and start the cutting work at low running speed. (Adjust the running speed according to work conditions.)
7. When the working load is heavy (due to cutting a large amount of material), reduce running speed, or raise cutting height and cut area two times.

Operation



8. Operate with slightly open grass outlet cover when grass discharge is poor or when cutting on inclined area, after checking surrounding area for safety.

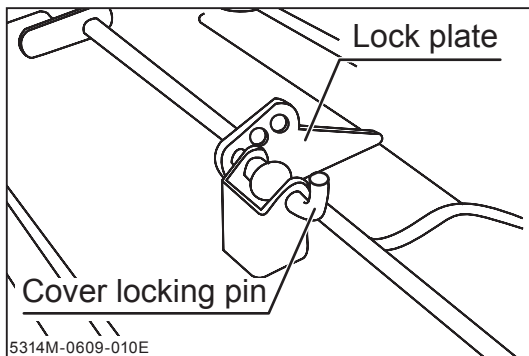
⚠ WARNING

- * **Open grass cover after with care to avoid stones or other objects in blade area.**

⚠ CAUTION

- * **Always perform mowing operation in forward direction. Mowing in backward direction may make grass discharge poor and cause stones or other objects to be thrown from machine.**

6.9 How to Open and Close the Grass Outlet Cover



⚠ DANGER

- * **Do not open or close the grass outlet cover while the cutter blade is rotating.**

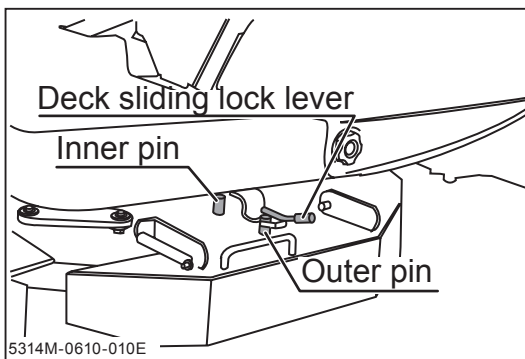
1. Move the blade clutch lever to "OFF".
2. Pull the cover locking pin.
3. There are three round holes in the lock plate. Insert the cover locking pin into any one of these round holes. The opening of the cover can be adjusted by changing the hole into which the cover locking pin is inserted.

Operation

6.10 How to Operate the Deck Sliding Mechanism

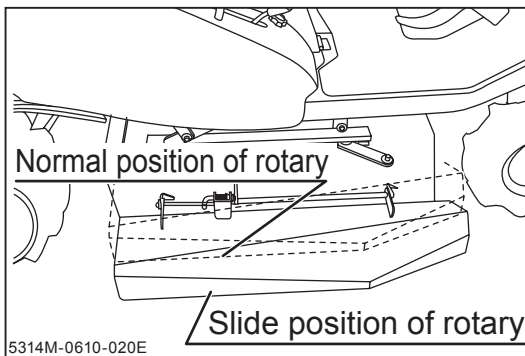
NOTICE

- * During normal work, use the machine without sliding the rotary.
- * The deck sliding mechanism makes it possible to perform close cutting work around obstacles on the right side of the machine.



1. Rotate and move the deck sliding lock lever towards the machine to disengage it from the inner pin.

2. Take hold of the grip and pull the rotary out of the machine.



3. Insert the deck sliding lock lever into the outer pin to lock the rotary in the slide position.

Operation

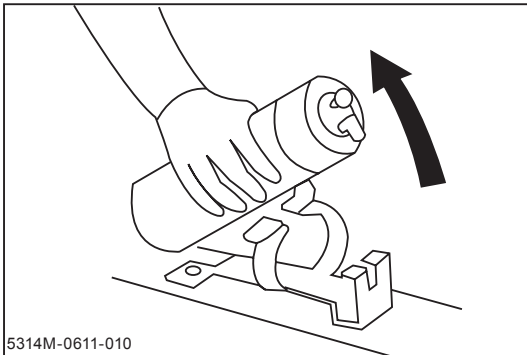
6.11 How to use extinguisher

NOTICE

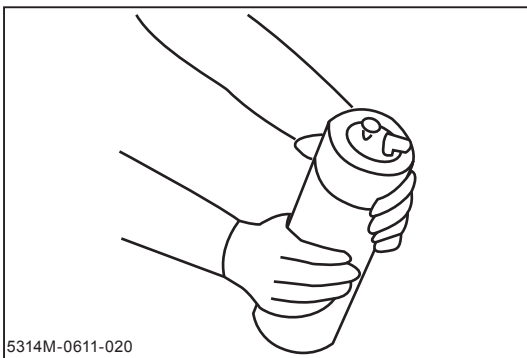
- * Periodically inspect fire extinguisher to confirm it is charged and ready to use.
- * Never wash an extinguisher with water.

⚠ WARNING

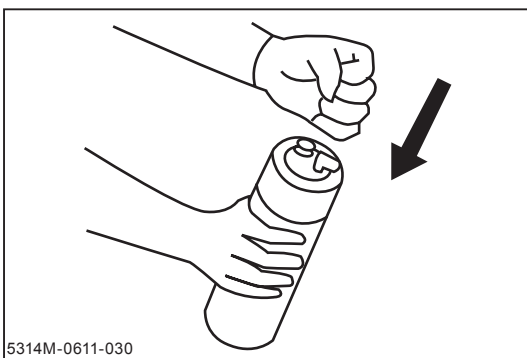
- * Never use fire extinguishers with rust defects or deformations. Avoid breaking the extinguisher to prevent injuries from fire-fighting chemicals.



1. Detach the fire extinguisher from the bracket.



2. Direct the nozzle toward the fire base.



3. Hit the push button on the head strongly, and spray fire-fighting chemicals in direction of fire.

Maintenance

7. Maintenance

7.1 Periodic Inspection Table

- * Performing periodic proper inspections and maintenance will improve machine performance, increase safety, and may help prevent accidents and breakdowns. Perform regular inspections according to the chart below.
- * The regular inspection schedule includes yearly and monthly inspections, and daily pre-operation checks.

NOTICE

- * The chart below includes inspections which require technical knowledge or special tools and measuring instruments. For difficult inspections, consult the dealer or a CANYCOM service center.

Item			Action	Acceptable condition	Timing			Remarks
					Per-operation	Monthly	Yearly	
Engine	Body	Starting	* Check if engine starts smoothly and makes abnormal noise.	Smooth start. No abnormal noise.	○	○	○	
		Engine speed	* Check if engine speed is proper at idling and unloaded maximum speed. Check for smooth operation.	Proper engine speed. Smooth and continuous engine operation.		○	○	Please contact your CANYCOM distributor
			* Accelerate engine and check for axle lever drag, engine stall, and knocking.	No drag, engine stall, or knocking.	○	○	○	
		Exhaust	* After warming up engine, run engine from idling to high speed and check exhaust gas color and noise.	Normal exhaust gas color / noise.	○	○	○	
			* Check for gas leak from muffler, exhaust pipe, etc.	No gas leak.		○	○	
		Air cleaner	* Check case for cracks and deformation, looseness at lid or connecting pipe.	No cracks or deformation in case. No looseness at lid and pipe.		○	○	
			* Check urethane foam paper element for contamination and damage.	No severe dirt. No damage.	○	○	○	Cleaning / Replacement: (See Page 40)
		Tightening	* Check cylinder head and manifold retaining bolts / nuts for looseness. * This check is not necessary if no gas or water leak is found at these areas.	No looseness.			○	
		Valve clearance	* Check valve clearance. * This check is not necessary if no valve-derived abnormal noise is heard and the engine operates smoothly.	Proper clearance.			○	Please contact your CANYCOM distributor

Maintenance

Item			Action	Acceptable condition	Timing			Remarks
					Per-operation	Monthly	Yearly	
Engine	Body	Compressing pressure	* Check compression pressure. * This check is not needed if no abnormality is found in engine operation and exhaust condition at idling and acceleration.	Proper pressure.			○	Please contact your CANYCOM distributor
		Engine mount	* Check engine base for cracks and deformation. * Check bolts and nuts for looseness or missing parts.	No cracks or deformation. No looseness or missing parts.	○	○	○	
	Lubricating system		* Check oil level and contamination.	Proper amount. No severe dirt.	○	○	○	Inspection / Replacement: (See page 34)
			* Check head cover, oil pan, and pipes for oil leak.	No severe oil leak.	○	○	○	
	Fuel system		* Check fuel tank, injection pump, hose, and pipes for fuel leak.	No fuel leak.	○	○	○	
			* Check fuel hose for damage and deterioration.	No damage or deterioration.	○	○	○	
			* Check fuel filter element for dirt and clogging.	No severe dirt. No clogging.		○	○	
	Electrical	Ignition plug	* Check electrode for wear and carbon deposit.	No wear or carbon deposit.			○	Inspection / Cleaning: (See page 41)
		Battery	* Check electrolyte level.	Proper amount.		○	○	Inspection / Adding: (See page 39)
			* Check terminals for looseness and corrosion.	No looseness or severe corrosion.		○	○	
		Wiring harness	* Check connections for looseness	No damage.		○	○	
			* Check wiring harness for damage.	No looseness.		○	○	
Power train	V-belt		* Check appearance for cracks, damage, and dirt.	No cracks, damage, or grease deposit.		○	○	Inspection: (See page 43)
			* Check belt tension.	Proper tension.		○	○	
	Transmission		* Drive vehicle forward and backward, and check operating condition and check for abnormal noise and overheat.	Normal operation. No abnormal noise or overheat.	○	○	○	
			* Check oil level in case.	Proper amount.		○	○	Inspection / Replacement: (See page 35)
			* Check oil for contamination.	No severe contamination.		○	○	Inspection / Replacement: (See page 35)
			* Check case for oil leak.	No oil leak.		○	○	
Speed adjustment	Accelerator lever		* Check if the lever fits into each speed position and moves smoothly when driving.	Proper fitness to each position and proper movement of the lever.	○	○	○	
			* Check connection for looseness or rattle.	No looseness or rattle.	○	○	○	
	HST Pedal		* Check the movement of HST pedal when driving.	Proper and smooth movement.	○	○	○	
			* Check connection for looseness or rattle.	No looseness or rattle.	○	○	○	

Maintenance

Item		Action	Acceptable condition	Timing			Remarks
				Per-operation	Monthly	Yearly	
Drive system	Steering wheel	* Drive vehicle and turn steering wheel right and left for firm steering operation.	Proper steering.	○	○	○	
	Tire, wheel	* Check tire pressure and groove depth.	Within criterion.	○	○	○	Inspection: (See page 45)
		* Check tire / wheel for crack, damage, and partial wear.	No cracks, damage, or partial wear.	○	○	○	
		* Check tire groove for foreign objects such as metal fragments and gravel.	No foreign objects.	○	○	○	
		* Check wheel bolt / hub nut for looseness or missing parts.	No looseness or missing parts.	○	○	○	
		* Check wheel bearing for looseness, abnormal noise and overheating.	No looseness, abnormal noise or overheating.		○	○	
Brake	Brake	* Drive vehicle and operate brake pedal and parking brake. Check the operation.	Proper brake effect.		○	○	
		* Check brake pedal free play.	Proper amount.	○	○	○	Adjustment: (See page 45)
	Rod, link, and wires	* Check rod / link / wires for damage and looseness at connection.	No damage or looseness.	○	○	○	
		* Repeatedly operate brake and check connection for looseness and missing split pins.	No looseness at connection or missing split pins.	○	○	○	
Body	Body, cover	* Check body and cover for cracks, deformation, and loose / missing bolts / nuts.	No cracks, deformation, or loose / missing bolts / nuts.		○	○	
Lamp system	Head lamp	* Start engine to check that head lamp lights up normally.	Normal operation.	○	○	○	
		* Check lamp for lens damage or water intrusion.	No damage or water intrusion.		○	○	
Rotary cutter	Cutting blade	* Check blade for damage, wear, or rattle.	No damage, wear, or rattle.	○			
	Slide	* Check that the slide is fixed by the lever without looseness.	The slide must be fixed without any looseness.	○			
	Cover	* Check the cover for damage, opening and closing.	No damage. The cover must open smoothly.	○			
Fire extinguisher	-	* Check container for rust, corrosion, or deformation.	No rust, corrosion, or deformation.	○	○	○	
Horn	-	* Check that the alarm horn operates normally when turning the key switch on.	The alarm horn must operate normally.			○	

Maintenance

7.2 Fuel / Grease / Lubricant / Fluid Chart

Item	Timing	Recommendation	Amount	Reference page
Fuel	As necessary.	Gasoline	15.0 liters	See page 15
Engine oil	Add : Check daily and add as necessary. Replace : 1st time after 8 operating hours 2nd time and later : every 50 operating hours (about every week)	API class : SE or higher #20~#30 SAE class: 10W-30	1.5 liters	See page 34
Transmission oil	1st time after 50 operating hours 2nd time and later : every 500 operating hours	Gear oil API class GL4 or 5 SAE class #80	2.0 liters	See page 35
HST oil	Every 500 operating hours	Engine oil SAE class: 20W-50	3.0 liters	See page 37
Oil for the cutter blade counter case	-	Gear oil API class GL4 or 5 SAE class #80	0.39 liters	
Oil for upper case for blade	-	Gear oil API class GL4 or 5 SAE class #80	0.83 liters	
Front differential gear oil (center)	-	Gear oil API class GL4 or 5 SAE class #80	0.36 liters	See page 36
Front knuckle gear oil (both sides)	-	Gear oil API class GL4 or 5 SAE class #80	Each 0.05 liters	See page 36
Each area to be lubricated	Every six months. * No need for lubrication for the first 6 months after purchase	Gear oil API class GL4 or 5 SAE class #80	-	See page 38
Each area to be greased	Every six months. * No need for greasing for the first 6 months after purchase	Chassis grease	-	See page 38
Battery fluid	Check every month and add as necessary.	Distilled water	-	See page 39

Maintenance

7.3 Consumable (Replacement Parts) Chart

Item			Part number	Replacement interval	Quantity	Reference page
Engine		Paper element	-	Inspect every 50 hours (weekly), and replace if defective.	1	See page 40
		Foam element	-		1	See page 40
		Oil filter	-		1	See page 46
		Fuel filter	-		1	See page 42
V-belt		Drive	0852 1300 040	1 set (The entire set is replaced) Replace if defective	1	Please contact your CANYCOM distributor for replacements
		Rotary	0858 1300 035		1	
Brake lining		7207 2157 100	1set (The entire set is replaced.)			
Battery		3705 3901 000	1		See page 39	
Tire	Tire assembly	Front (R)	5314 2201 000		1	Please contact your CANYCOM distributor for replacements
		Front (L)	5314 2205 000	1		
		Rear (R)	5314 2301 000	1		
		Rear (L)	5314 2302 000	1		
HST tank		Element Assembly	5310 2053 100	Replace the element assembly for every replacement of HST oil.	1	See page 46
Fuel hose (Fuel tank to fuel pump)			5310 0344 000	Every 3 years, or replace if defective.	2	-
Wire	Throttle wire		5310 0102 000	Replace if defective	1	-
	Choke wire		5310 0105 000		1	-
	Blade cutter wire		5310 2406 000		1	-
	Brake wire		5310 3315 000		1	-
	Differential lock wire		5310 3402 000		1	-
	Blade height monitor wire		5310 4085 000		1	-
	Cutter blade brake wire		5310 4306 000		1	-
Cutter blade	Cutter blade stay		5304 4201 000		1	-
	Cutter blade set		5309 6201 000		2	See page 47
	Bolt set		5310 9906 000		2	See page 47
	Brake lever		5310 4301 000		1	
Special replacement parts: Please contact your CANYCOM distributor (or our Service Center.)						

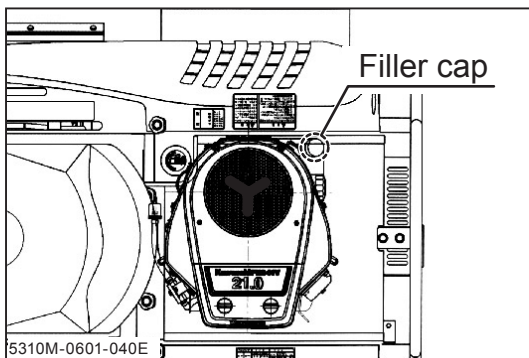
Maintenance

7.4 Adding Oil

NOTICE

- * Stop engine before inspecting and replacing parts.
- * Maintain proper oil levels to achieve best performance and prolong machine life.

7.4.1 Engine Oil

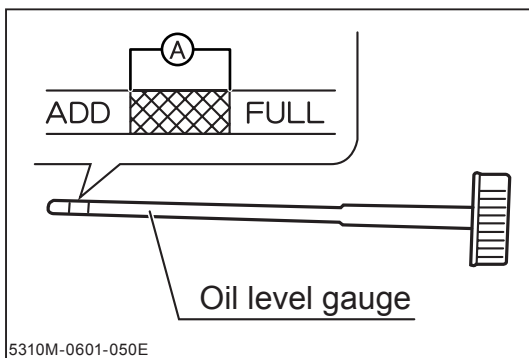


Inspection/Adding Oil

1. Park the machine on level ground.
2. Open the engine cover.
3. Pull out the oil filler cap (with oil level gauge).

NOTICE

- * Check the amount of oil before the engine is started or at least 10 minutes or more after the engine has stopped. Immediately after the engine is stopped, oil still remains in parts of the engine, so oil checks are not accurate.



4. Add specified engine oil when the oil level is lower than range indicated by "A" on the oil level gauge.
5. Replace present engine oil with new oil, if present oil is dirty or has deteriorated into poor viscosity.

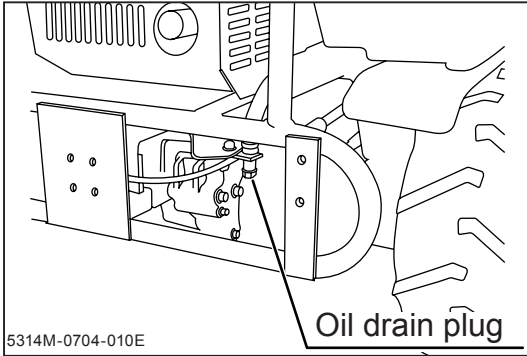
Fuel to be used : See page 32

Amount of engine oil :

Within the range "A" on the oil gauge

6. Reinsert oil gauge and tighten filler cap.

Maintenance



Replacement

1. Position a suitable container to collect drained oil under oil drain plug.
2. Remove oil drain plug and drain oil from crankcase.

CAUTION

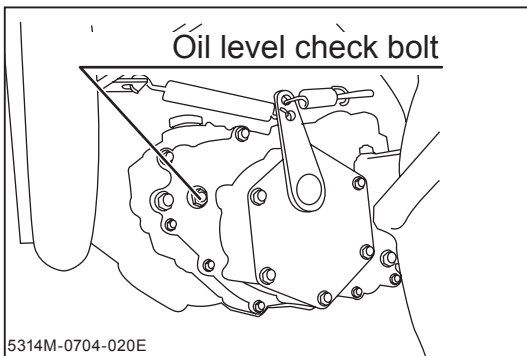
* **Avoid contact with high temperature oil to avoid burns.**

NOTICE

* **Dispose of the drained oil properly.**

3. Replace oil drain plug.
4. Remove the filler cap and pour the designated oil into the port.

7.4.2 Transmission Oil

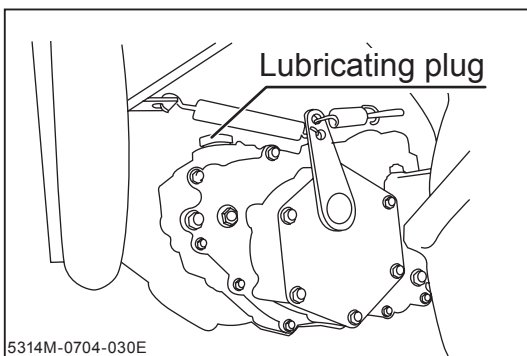


Inspecting Oil

1. Park the machine on level ground.
2. Remove the oil level check bolt from the oil-checking port, and confirm that oil drains from the port. (Confirm that the oil level reaches the oil-checking port.)

Amount of oil : See page 32

(Add oil until oil reaches the oil level check bolt hole)



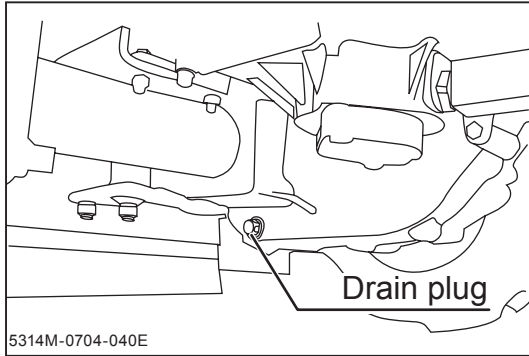
Adding Oil

1. Remove the lubricating plug.
2. Add the specified transmission oil to the oil port.

Replacing Oil

1. Position an appropriate container to collect oil under drain plug.
2. Remove drain plug and drain oil into container.

Maintenance



CAUTION

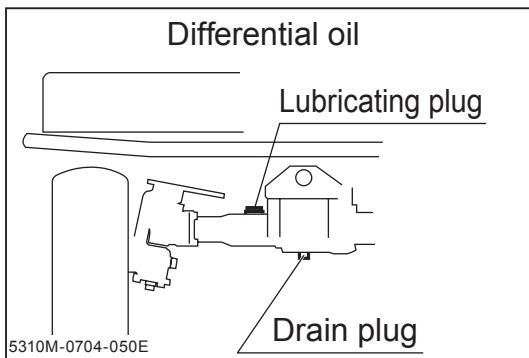
- * Avoid contact with high temperature oil to avoid burns.

NOTICE

- * Dispose of the drained oil properly.

3. Replace drain plug.
4. Open the oil plug and pour the designated oil into oil part.

7.4.3 Differential Oil and Knuckle Oil

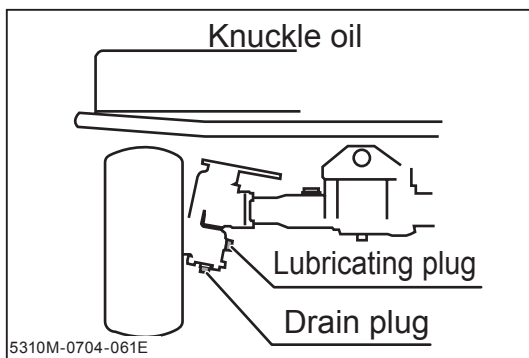


Inspecting Oil

1. Remove the lubricating plug.
2. Visually check oil level and color. When oil level is too low or oil is dirty, add or change oil.

Oil to be used: See Page 32

3. Replace the lubricating plug.



Replacing Oil

1. Position a suitable container to collect drained oil under drain plug.
2. Remove the drain plug and drain oil.

Note:

Oil will drain faster after lubricating plug is removed.

CAUTION

- * Avoid contact with high temperature oil to avoid burns.

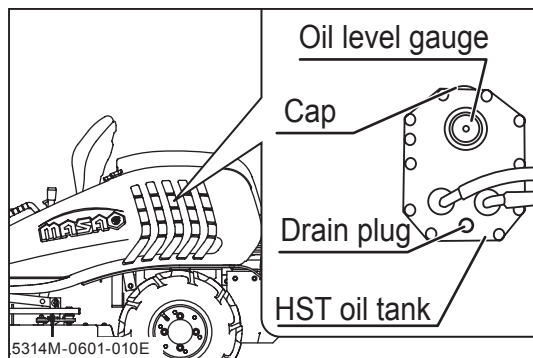
NOTICE

- * Dispose of the drained oil properly.

3. Replace the drain plug.
4. Open the oil cap and pour proper amount of designated oil into oil port.

Maintenance

7.4.4 HST Oil



Inspection/Adding Oil

1. Park the machine on level ground.
2. Remove the oil checking plug and check the level of HST oil in the HST oil tank. When level is below the specified value, open the cap of the oil tank and add HST oil until it reaches the oil checking plug position.

Oil to be used : See page 32

Amount of HST oil : Fill to "oil checking plug position" level when oil is cold

NOTICE

- * **Control oil flow to avoid overflows.**

Replacing Oil

1. Position a suitable container to collect drained oil under drain plug.
2. Remove the drain plug and drain oil.

NOTICE

- * **Dispose of the drained oil properly.**

3. Replace the drain plug.
4. Open the cap and pour proper amount of designated oil into oil port.

Maintenance

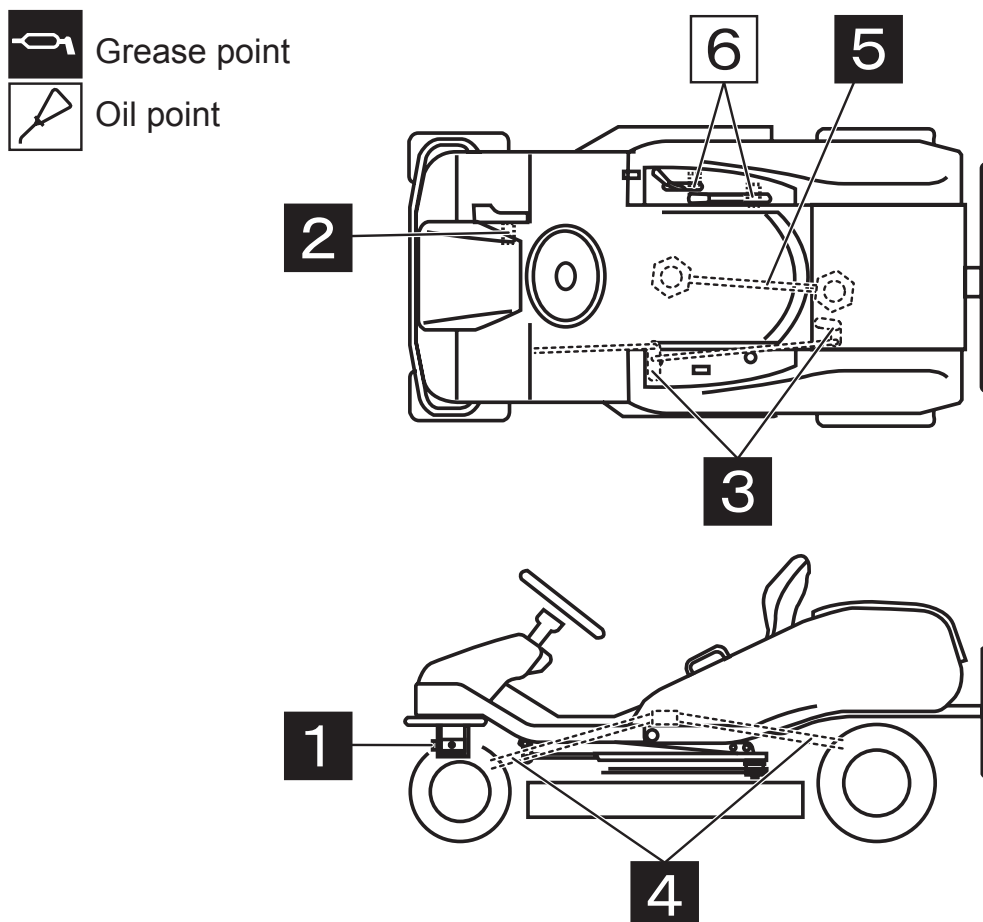
7.5 Lubrication and Greasing

NOTICE

* Insufficient or improper greasing and lubrication can cause seizures or rusting, and prevent smooth turning and operation.

Lubricate the areas indicated by arrows.

Oil to be used: See Page 32



5314M-0705-010E

No	Lubrication area	Quantity	Type
1	Front axle mounting pin section	1	Grease
2	HST pedal fulcrum	1	
3	Steering rod fulcrum(4WS)	2	
4	Drive shaft(4WD)	2	
5	Cutting blade drive shaft	1	Oil
6	Auxiliary speed change lever, Cutting blade clutch lever fulcrum	2	

When using a manual type grease pump, push its handle five to six times. When resistance becomes heavy immediately stop pushing. When using a pneumatic type grease pump, pumping for two to three seconds is enough.

Maintenance

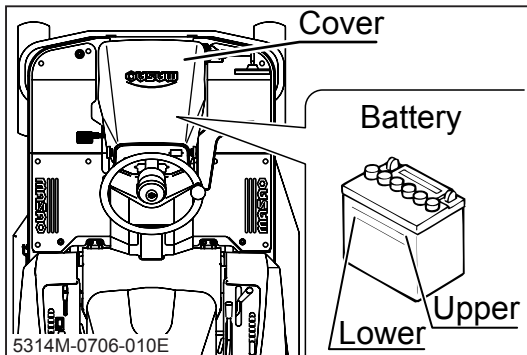
7.6 Adding Water to Battery

⚠ DANGER

- * Flammable gas is generated by the battery. Keep open flames away from battery to prevent explosions.

⚠ CAUTION

- * Avoid battery fluid contact with skin or clothes to avoid burns from sulfuric acid. In case of contact, immediately remove affected clothes and clean the affected skin with water. Immediately wash eyes with water if fluid enters eyes and call doctor.
- * Always stop engine and turn "OFF" the main switch before checking or removing the battery.



Inspecting Battery

1. Park machine on level ground.
2. Check the electrolyte level. If it is low, remove the head lamp cover, and add water.

Proper battery electrolyte level: between Upper and Lower reference lines.
Add only distilled water to battery

⚠ CAUTION

- * Always remove the battery from the machine before charging it to avoid damaging electrical components and wiring.
- * Connect battery cables to the correct positive(+) and negative(-) terminals. Reversing connections will blow the fuse and prevent charging.
- * For safety, always disconnect the negative(-) terminal first, and connect the positive(+) terminal first. Disconnecting or connecting in the opposite order may cause a short circuit.
- * When reinstalling the battery, connect the positive(+) and negative(-) to their original positions. Avoid contact between terminals and other surrounding machine parts.

NOTICE

- * Quick charging is a method to partially recharge a battery in a short time with a large amount of current. This method should be used only in emergencies. Quick charging will extremely shorten battery life. After quick charging, always fully recharge the battery with the normal method as soon as possible.

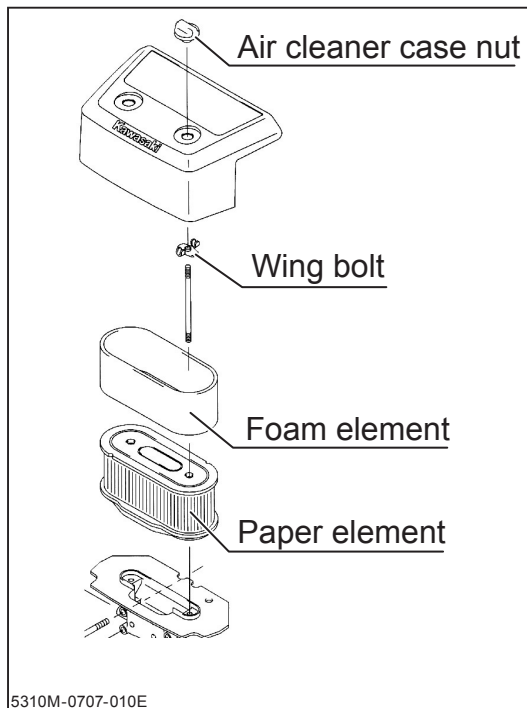
Maintenance

7.7 Cleaning

7.7.1 Air Cleaner Element

NOTICE

- * **Clean air cleaner element after each use. A contaminated air cleaner element will badly affect engine start ability, power and life.**
- * **Handle cleaner element with care to avoid breaking or deforming.**



1. Remove the air cleaner case nut and detach the case.
2. Remove the wing bolts and detach the elements. Wash the foam element in a vessel filled with detergent and water, and blow compressed air against it or shake it to dry. Then, soak the element with clean engine oil, and squeeze it to remove excess oil, drying it as much as possible. Remove dust from the paper element by beating it slightly against a flat floor. In both cases, replace any severely dirty or broken elements with new ones.
3. Cover the paper element with the foam element, then attach them to the bottom plate with the wing bolts.
4. Attach the air cleaner case to the element assembly.

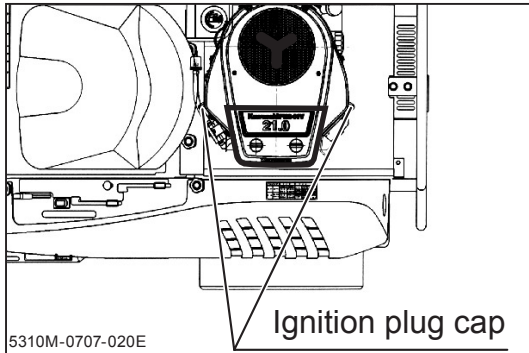
NOTICE

- * **The paper element should be tapped lightly on a flat surface to remove dust. Do not use oil or compressed air for cleaning. Replace element if damaged.**

The foam element of the air cleaner should be checked and cleaned every 25 hours and the paper element every 50 hours. Replace if damage is found.

Maintenance

7.7.2 Ignition Plug

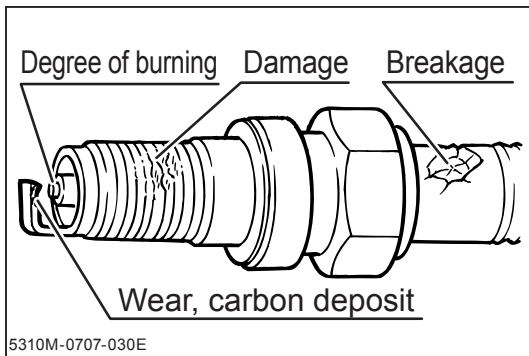


Inspecting Ignition Plug

1. Remove the ignition plug cap.

NOTICE

- * **Avoid pulling cord when removing the ignition plug cap.**

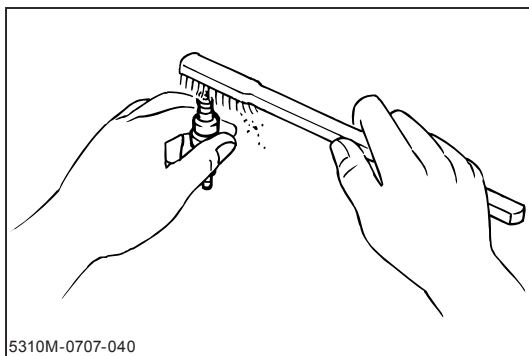


2. Remove the ignition plug with a plug wrench.

3. Check for the following defects or damage. Replace plug if damaged or cannot be cleaned.

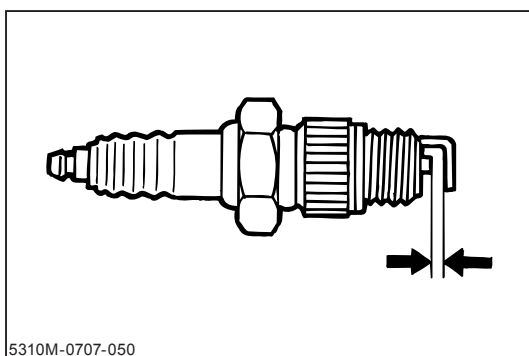
(See page 13 : Ignition plug No.BPR4ES)

- * Damage to insulator
- * Worn electrodes
- * Carbon deposits on electrodes
- * Damage or breakage of gasket
- * Burned insulator



Cleaning Ignition Plug

1. Clean the ignition plug with a wire brush and plug cleaner.



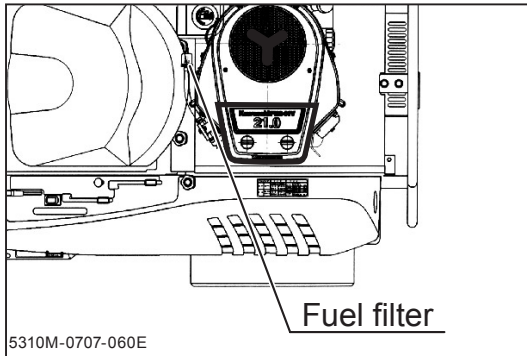
2. Adjust the electrode (spark) clearance with sandpaper, to keep the following clearance:

Standard clearance: 0.75 mm

3. Install the ignition plug.
4. Attach the ignition plug cap.

Maintenance

7.7.3 Fuel Filter



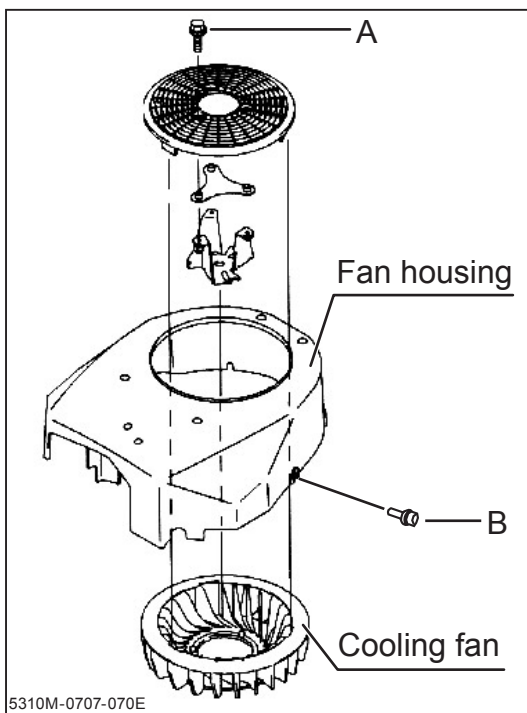
NOTICE

- * A black fuel filter is clogged and may prevent fuel from reaching engine, causing engine to stop.
- * A CHIKUSUI CANYCOM authorized dealer should replace the fuel filter to reduce risk of fire at fuel filter-fuel hose joint.

Inspecting Fuel Filter

1. Check the fuel filter color. The normal color of the filter is light brown.
2. When the fuel filter is severely dirty (black colors), ask a CHIKUSUI CANYCOM dealer to replace the filter.

7.7.4 Fan Housing and Cooling Fan



CAUTION

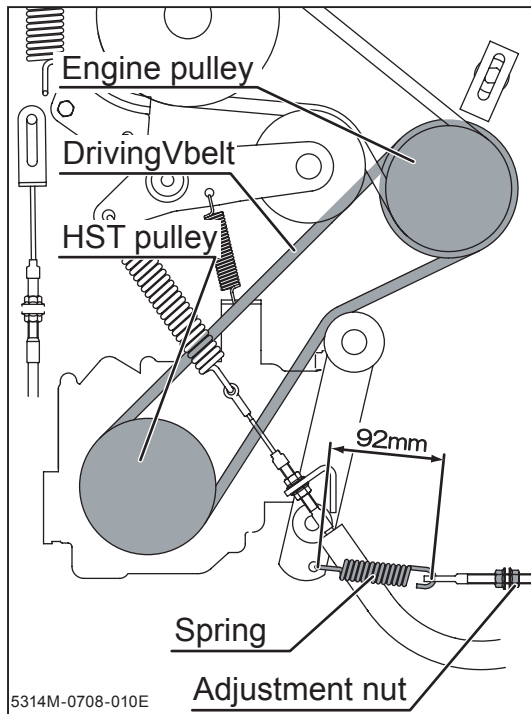
- * Always stop the engine before cleaning of the cooling fan housing and fan.
- * Remove the cooling fan housing after the engine has cooled.

1. Remove the hooks on both sides of the air cleaner cover and take off the cover.
2. Pull the precleaner out of the cartridge. Clean the precleaner in soapy water and remove water with a dry cloth. After cleaning, apply a small amount of clean engine oil and wipe off any excess oil with a dry cloth. When the precleaner is very dirty or damaged, replace it.

Maintenance

7.8 Adjustments

7.8.1 Driving V-Belt



Inspecting V-belt

Visually check for damage on V-belt. Replace any damaged V-belt.

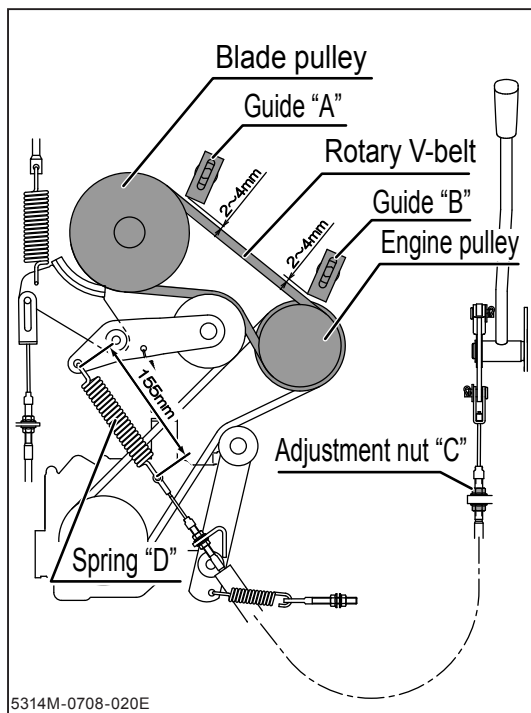
Adjusting V-belt

NOTICE

- * Perform maintenance without changing V-belt tension. Adjust V-belt tension only after it slips.

Adjust the adjusting nut to make the spring length 92 mm.

7.8.2 Blade Rotary V-Belt



Inspecting V-belt

Visually check for damage on V-belt. Replace any damaged V-belt.

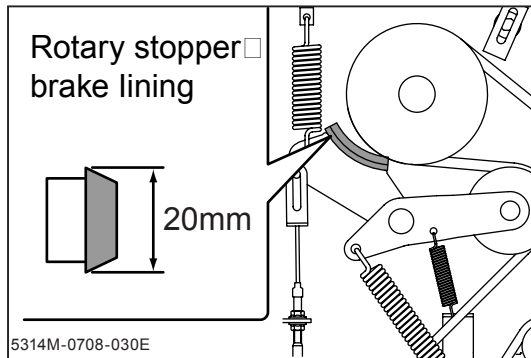
Adjusting V-belt

After replacing V-belt, make adjustment as follows ;

1. Set the clearance "A" between the V-belt and the guides "A" and "B" at 2 to 4 mm
2. Shift the blade clutch lever to "ON", loosen the adjusting nut "C", and adjust the length of the spring D to 160 mm. Then, tighten the adjusting nut "C".

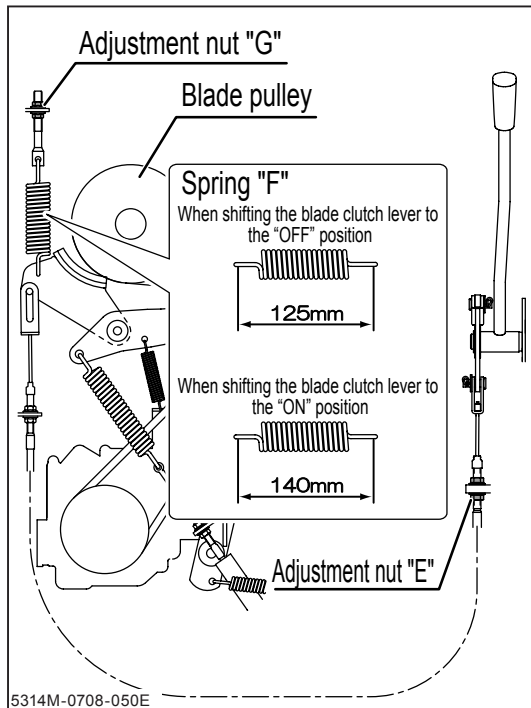
Maintenance

7.8.3 Rotary Stopper



Inspecting / Adjusting Rotary Stopper

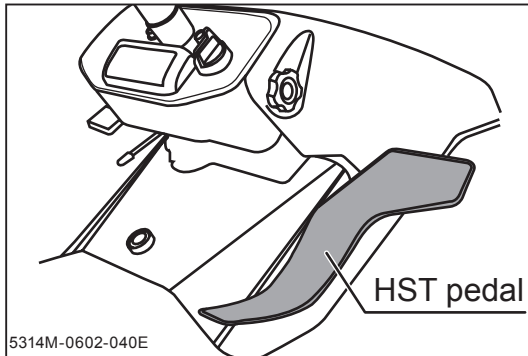
When the rotary cutter does not stop within about 4 seconds after shifting the cutting blade clutch lever to "OFF", and after the rotary stopper is replaced, adjust the rotary cutter brake according to the following procedure.



1. Confirm that the engine stops.
2. Adjust the length of the spring "F" to 125 mm with adjusting nut "G" when shifting the blade clutch lever to "OFF".
3. Adjust the length of the spring "F" to 140 mm with adjusting nut "E" when shifting the blade clutch lever to "ON".

Maintenance

7.8.4 HST Pedal



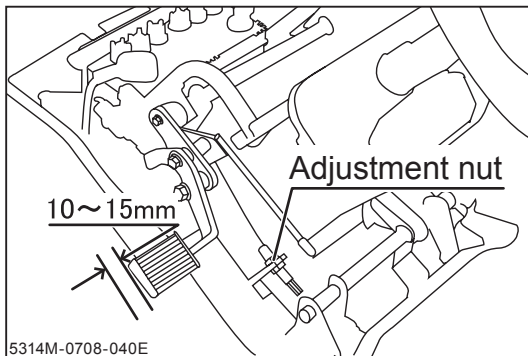
NOTICE

- * The HST pedal needs adjustment only when the machine is overhauled. When "NEUTRAL" position of HST pedal out of adjustment, the machine will slightly move forward or backward.

CAUTION

- * Ask dealer to adjust HST pedal when the "NEUTRAL" position of the HST pedal is out of adjustment to prevent the machine from moving slightly forward or backward, possibly causing an accident.
- * A CHIKUSUI CANYCOM dealer has the proper skills and tools to adjust HST pedal. Machine operator should not attempt to adjust HST pedal.

7.8.5 Brake Pedal

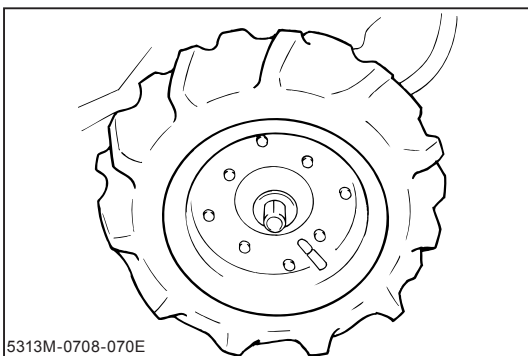


CAUTION

- * Adjust brake pedal if play increases. Excessive brake play may cause accidents.

Turn adjusting nut to make play 10 to 15 mm at pedal back when brake pedal is slightly depressed.

7.8.6 Tire Pressure



1. Check the air pressure of the front and rear tires. Adjust if required.

	Tire size	Air pressure (kgf/cm ³)
Front wheel	4.00 - 7	240(2.4)
Rear wheel	16 × 7.00 - 8	240(2.4)

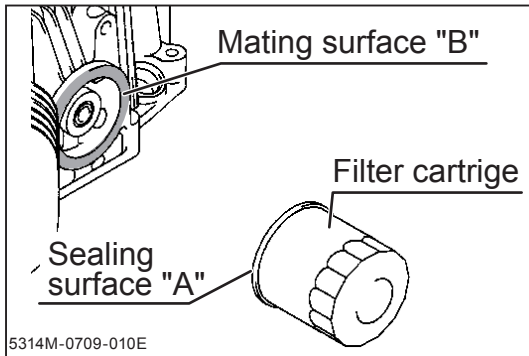
NOTICE

- * To prevent flat tires, the boundaries between the tires and hubs outside and inside the wheels are filled with a tire protective agent (Ultraseal).

Maintenance

7.9 Replacement

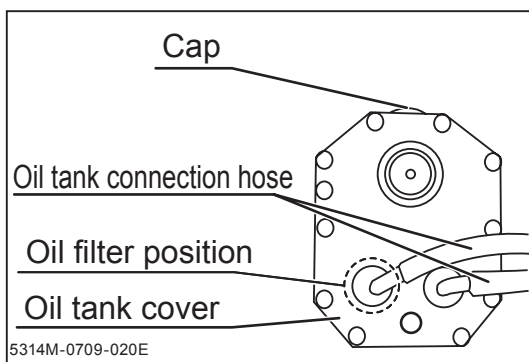
7.9.1 Oil Filter



Replace the engine oil filter every 100 operating hours.

1. Wipe new oil on filter gasket before installing new filter.
2. Turn the filter by hand until it comes into contact with filter adapter gasket, then use oil filter wrench to further tighten turning 1/2 to 3/4 turns.
3. Remove oil gauge and pour slowly new oil with appropriate grade and viscosity into oil port.
4. When checking oil level, insert the oil gauge completely before removing again and confirming the level.
5. Start engine and check for oil leakage.

7.9.2 HST Oil Filter



Replace the HST oil filter every 500 operating hours.

1. Drain oil in the tank.
2. Remove the oil tank connection hose.
3. Take off the oil tank cover and replace the inside oil filter with a new oil filter.
4. Install the oil tank cover and oil tank connection hose.
5. Add HST oil.

7.9.3 Fuel Pipe, Engine Oil Drain Pipe, and HST Oil Tank Connection Hose

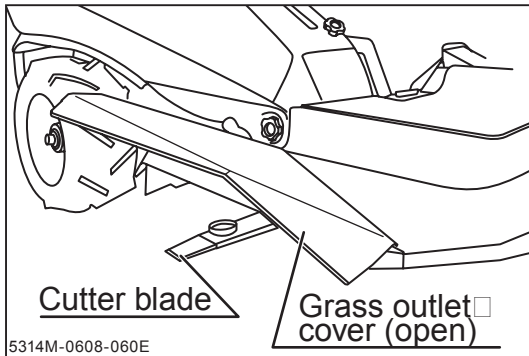
Rubber products, such as pipes and hoses, will deteriorate even when they are not used. Replace them, together with their tightening clamps, with new ones every three years. (Immediately replace whenever damaged.)

Maintenance

7.9.4 Cutter Blade

⚠ WARNING

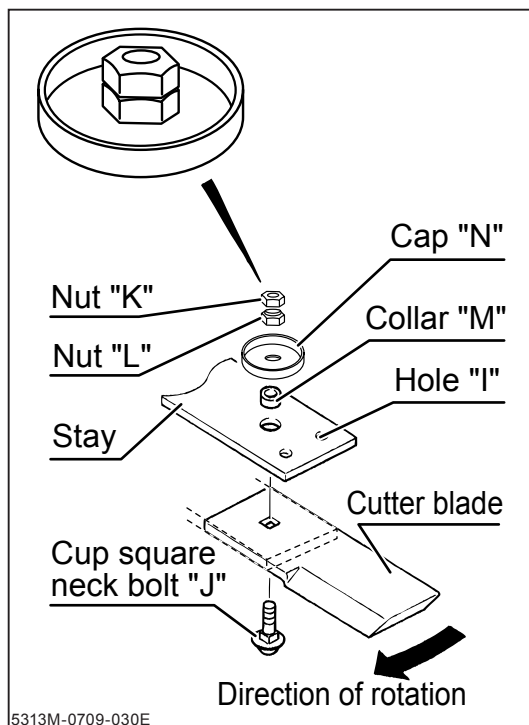
- * Always stop engine before inspecting and replacing the cutting blade to avoid accidents and injury.
- * Use a thick pair of gloves or wrap the cutter blade with a cloth when handling the cutter blade to avoid injuries.



1. Open the right side cutting blade cover.
2. To prevent the cutting blade from rotating during maintenance, rotate blade by hand and insert a strong bar such as a screwdriver into the hole (I) of the cutting blade stay.

⚠ CAUTION

- * Check and replace the cup square neck bolt after heavy wear.



3. Using a closed wrench or socket wrench, remove the nut "K" and the nut "L" in that order, and then remove the cutting blade.
4. Place a new cutting blade under the stay, and insert the square spherical head bolt into the blade from the underside.
5. Place the collar "M" and the cap "N" onto the cup square neck bolt.
6. Install the nut "L" and tighten it to specified torque.
7. Install the nut "K" and tighten it to specified torque.

Specified torque:
M12 : 450 ~ 550kgf . cm

Maintenance

7.10 Maintenance After Use

Normal use

Remove all dirt, water and foreign objects from the body. Do not use water to wash the engine, the operation panel, or the filling plugs / caps. Water will damage parts and cause rust.
Cover the vehicle with a water-proof sheet when placing it outdoors.

In cold season

Remove all dirt, water and foreign objects from the body. Any remaining dirt will freeze and may cause malfunctions. Place the vehicle on a concrete floor, dry firm ground or wooden blocks.
Cover the vehicle with a water-proof sheet when placing it outdoors.

NOTICE

- * If the vehicle freezes, do not operate or force movement. Melt ice with (hot) water or wait until the vehicle is not frozen to move. CANYCOM will not take responsibility for damage caused by forced movements.**

Storage

8. Storage (Long-term Storage)

When storing the vehicle for a long time, appropriate maintenance is required for future use. After performing the after-use maintenance (see page 48), follow the instructions below.

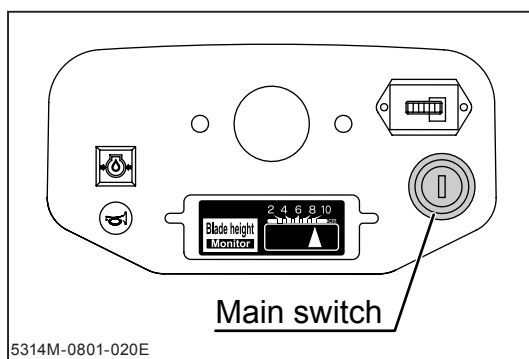
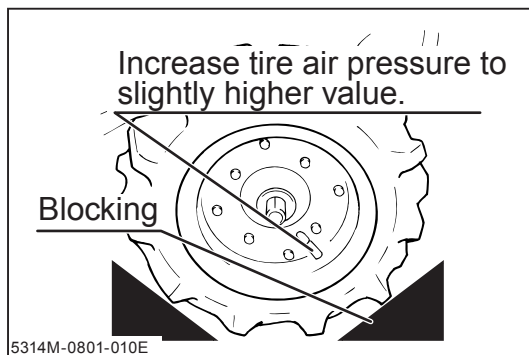
⚠ DANGER

- * **Do not store the vehicle, battery, or fuel near open flames or in a high temperature area to avoid accidental fires.**

NOTICE

- * **Store vehicle in a clean, dry place. Cover vehicle with water-proof cover after the engine has cooled.**

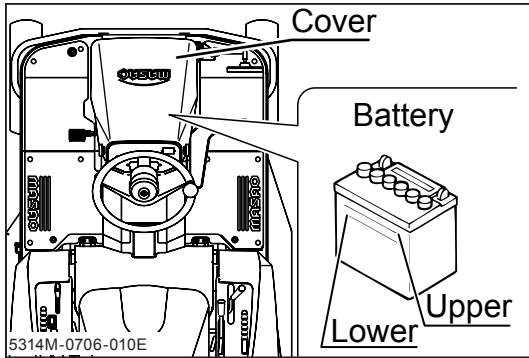
8.1 Vehicle Body



1. Inspect each area according to "Periodic Inspection Table" . (See Pages 29-31)
Perform servicing if defective conditions are found.
2. Clean the external surface with a cloth moistened with oil. Lubricate areas which may become rusty.
3. Increase air pressure of the tires to a value slightly higher than the standard value.
4. Apply blocks in front of and behind the front wheels.
5. Lubricate and grease areas to be lubricated and greased. (See Page 38)
6. Remove key from the main switch.

Storage

8.2 Battery

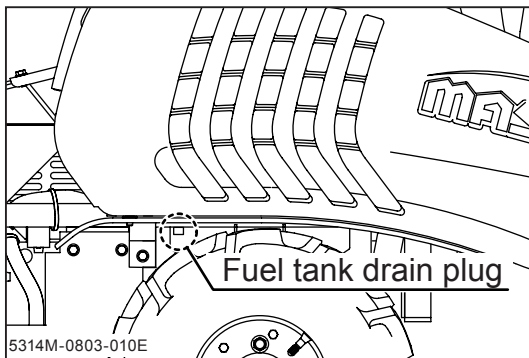


1. Remove the battery from the vehicle. (When storing vehicle with battery installed, disconnect the negative cable.)
2. Check the amount of battery fluid and add water when necessary.
3. Store the battery in a cool and dry area.

Reference:

Completely recharge battery before storage to maintain battery life.

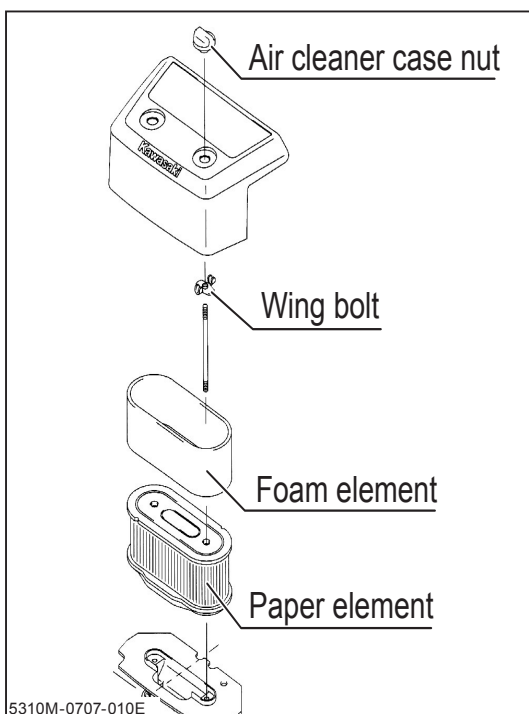
8.3 Engine



NOTICE

- * Remove all fuel from the carburetor and fuel tank before storing the vehicle for a long time. Fuel in the carburetor will deteriorate if left unused for a long time, causing poor starting or unstable operation of the engine. Do not use fuel which has been left unused for a long time.
- * Refer to the engine operation manual for more details about long term storage of the engine.

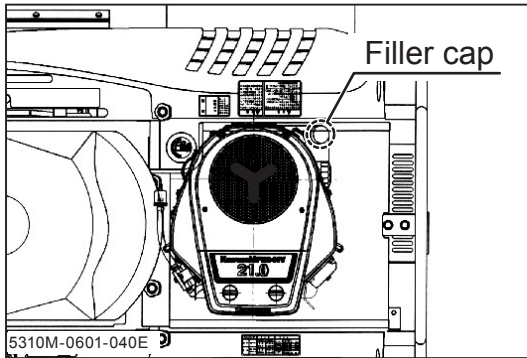
8.3.1 Cleaning Air Cleaner Element



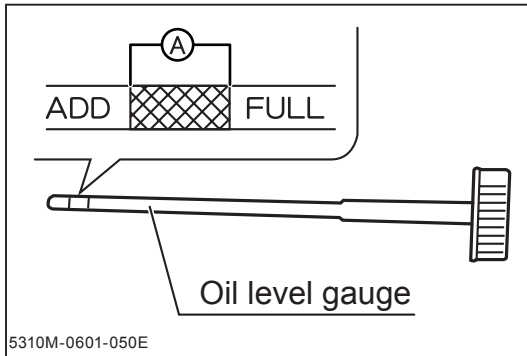
Remove the air cleaner element and thoroughly clean it. (See Page 40)

Storage

8.3.2 Replacing Engine Oil



Drain all engine oil and refill engine with new engine oil.
(See Page 34)



Troubleshooting

9. Troubleshooting

- * Stop using machine immediately after any malfunction or abnormal operation occurs. Use troubleshooting chart (below) to identify problems and corrective actions. Please contact dealer or CANYCOM service center for problems not listed in chart.
- * Contact dealer or CANYCOM service center for service requiring special tools or knowledge.

Troubleshooting Chart

Area	Malfunction	Possible cause	Corrective action
Engine	Engine does not start	* Blade clutch lever is not in "OFF". (Safety device is actuated.) * Brake pedal is not depressed. (Safety device is working.) * Battery is over-discharged. * Battery cable is disconnected. * Fuse is blown. * Open circuit or contact failure of wiring	→ Put the lever to "OFF". → Depress brake pedal. → Charge battery. (See page 40) → Replace battery. (See page 40) → Connect cable. → Replace. → Repair. (Consult dealer.)
	Difficulty starting	* Lack of fuel * Air or water in fuel * Excessive intake of fuel * Engine oil too low or poor quality (High oil viscosity) * Poor ignition due to dirt on spark plug or poor sparking * Insufficient capacity of battery (Poor electric starting) * Impurities in fuel circuit	→ Add. (See page 15) → Check pipe and tightening band. Repair or replace. → Start after interval. → Add or replace. (See page 34) → Clean or replace. (See page 41) → Replenish battery fluid. → Charge battery. (See page 39) → Replace the fuel filter. (Consult dealer.)
	Engine stalls soon	* Lack of fuel	→ Add. (See page 15)
	Engine stops abruptly	* No fuel * Burn due to insufficient or deteriorated engine oil	→ Add. (See page 15) → Check and add oil. (See page 34)
	Improper idling (Irregular engine speed)		→ Ask dealer for service.
	Poor power or acceleration	* V-belt loosened * Improper accelerator adjustment * Clogging of air cleaner	→ Adjust. → Ask dealer for service. → Clean or replace. (See pages 40)

Troubleshooting

Area	Malfunction	Possible cause	Corrective action
Engine	Abnormal noises or vibrations from in or around the engine	* Looseness of engine mounting bolts * Others	→ Check and carry out additional tightening. → Consult dealer
	Excessive engine oil	* Engine oil leak	→ Check and repair.
	Engine overheating	* Insufficient engine oil * Blower housing and cooling fan clogging	→ Replenish. (See page 34) → Clean. (See page 42)
	Excessive fuel consumption	* Fuel leak from fuel system * Clogged air cleaner	→ Check and repair. (Consult dealer.) → Clean or replace. (See pages 40)
	Excessive black smoke (Abnormal exhaust)	* Choke not opened completely * Poor compression * Clogged air cleaner * Excessive oil intake * Poor fuel	→ Put choke to FULL position. → Check and repair. (Consult dealer.) → Clean or replace. (See pages 40) → After checking adjust oil volume. (See page 34) → Replace fuel.
	White smoke or blue smoke comes out. (Abnormal exhaust)	* An excessive amount of engine oil added. * Improper fuel * Worn cylinder or piston ring	→ After checking adjust oil volume. (See page 34) → Replace fuel. → Check and repair. (Consult dealer.)
Power transmission system	Unit does not move with HST lever in forward or reverse.	* Insufficient HST oil * Parking brake is applied.	→ Add. (See page 37) → Release parking brake lock lever.
	Unit moves even when HST lever is in neutral position.	* HST speed shift neutral position adjustment not correct.	→ Adjust. (Consult dealer.)
Brake system	Not effective	* Worn out brake lining * Oil penetrates within brake drum. * Water penetrates inside of drum. * Worn out tire	→ Replace lining. (Consult dealer.) → Replace oil seal. (Consult dealer.) → Engine brake to dry water inside of drum. → Replace tire.
	Excessive play of brake pedal.	* Incorrect adjustment	→ Adjust. (See page 45)
Steering system	Heavy steering	* Incorrect tire air pressure * Malfunction inside of steering gear	→ Adjust. (See page 45) → Repair. (Consult dealer.)
	Cannot drive straight	* Incorrect tie-rod adjustment	→ Adjust.
Chassis	Abnormal vibration of the chassis	* Incorrect tire air pressure adjustment * Loose tire fixing bolt * Breakage of wheel bearing * Crack of tire	→ Adjust tire air pressure. (See page 45) → Retighten. → Replace. (Consult dealer.) → Replace.

Troubleshooting

Area	Malfunction	Possible cause	Corrective action
Lighting system	Head lamp failure	* Improper wiring * Bulb is disconnected. * Blown fuse	→ Connect properly. → Replace. → Replace.
	Mown grass not discharged well	* Wet grass * Grass too long * Mowing height too low * Low engine speed * High work speed	→ Perform the operation after grass becomes dry. → Mow twice with a higher mowing height → Set the mower to a higher mowing height. → Set the mower to the maximum motor speed. → Work more slowly.
Grass cutter devices	Some grass is left unmown.	* High work speed * Low engine speed * Grass too long * Wear and breakage of cutter * Accumulation of grass on the internal surface of the rotary cover	→ Work more slowly. → Set the mower to the maximum motor speed. (Check engine speed.) → Mow twice. → Replace the blade with a new one. (See page 47) → Clean the internal surface of the rotary cover.
	The mower cuts into the soil.	* Mowing height too low * High swing speed * Ground contours * Too many bumps and dips in the ground * Bent mowing blade	→ Set the mower to a higher mowing height. (See page 23) → Reduce swing speed. → Change the mowing pattern. (mowing direction, etc.) → Set the mower to a higher mowing height. → Replace the blade with a new one. (See page 47)
	Rotary cutter blade does not rotate.	* Broken driving pin for cutter blade driving propeller shaft	→ Replace the driving pin.
		* Slip in the rotary cutter V-belt	→ Adjust the tension of the V-belt.
	Extreme shaking	* Grass accumulated in the rotary cover and pulley * Damaged belt * Damaged pulley * Damaged blade	→ Clean the rotary cover and pulley. → Replace the belt with a new one. → Replace the pulley with a new one. → Replace the blade with a new one. (See page 47)
	Cutter overloaded	* Poor blade balance * Low engine speed * Operating speed too high * Grass accumulating or coiling around blade	→ Replace the blade with a new one or balance the blade properly. (See page 47) → Increase engine speed to maximum value. (Check engine speed.) → Slow down operating speed. → Clean blade.

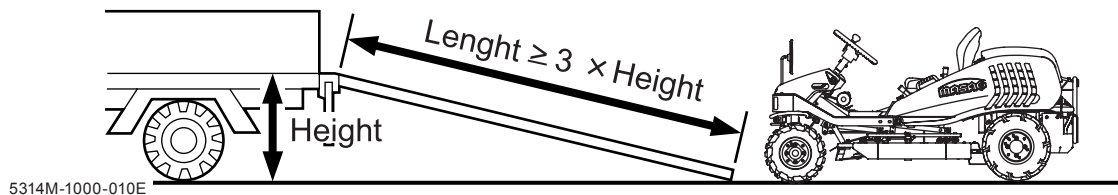
Transporting

10. Transporting This Vehicle

When loading and unloading the machine onto or off a truck, follow the procedures below.

Driving

1. Prepare running boards with enough strength to hold both machine and driver's weight, each boards width at least twice the width of machine's tire width, length more than three times longer than truck loading body height, and abrasive surface for traction. Place the boards as shown below so that the boards will not shift positions when the machine rides on them.
2. Securely hook the running boards to truck so boards are flush with truck's loading bed.



⚠ DANGER

- * Keep people away from the machine, truck, and running boards while loading or unloading the machine.
- * Do not turn on the running boards. The machine may drop off the running boards.
- * Drive slowly up or down the running boards.

⚠ CAUTION

- * Beware of tipping when machine crosses from running boards into truck bed.

NOISE LEVEL

Model	Engine		LwA
Type	Type	Speed rpm	
CM2103	KAWASAKI FH641V	3600 rpm	100 dB (A)

NOISE LEVEL evaluated based on factory standard.

VIBRATION

Model	Engine Rated revolution	Vibration			
		Mower Blade Clutch	Steering wheel (top)	Steering wheel (bottom)	Seat
CM2103	3600 rpm	ON	17.0 m/s ²	14.0 m/s ²	1.2 m/s ²
		OFF	12.0 m/s ²	14.0 m/s ²	1.1 m/s ²

VIBRATION evaluated based on factory standard.