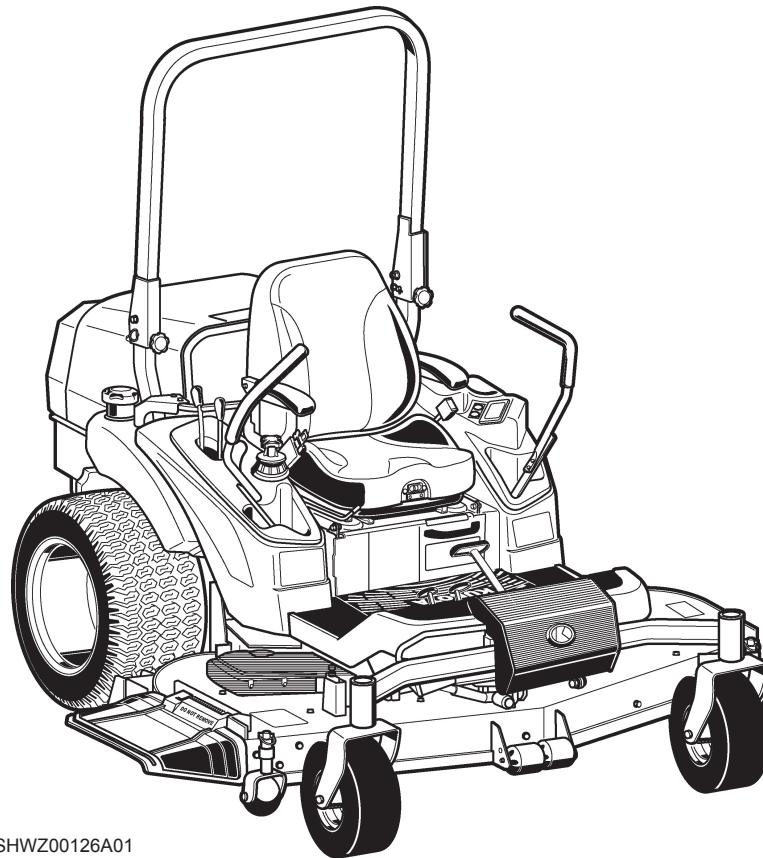


OPERATOR'S MANUAL

KUBOTA ZERO TURN MOWER

MODELS ZD1511LF
ZD1511RLF
ZD1511RL



1SHWZ00126A01

K3458-7125-3

READ AND SAVE THIS MANUAL

Kubota

ABBREVIATION LIST

Abbreviations	Definitions
API	American Petroleum Institute
ASTM	American Society for Testing and Materials, USA
fpm	Feet Per Minute
HST	Hydrostatic Transmission
m/s	Meters Per Second
PTO	Power Take Off
RH/LH	Right-hand and left-hand sides are determined by facing in the direction of forward travel
ROPS	Roll-Over Protective Structures
rpm	Revolutions Per Minute
r/s	Revolutions Per Second
SAE	Society of Automotive Engineers

California Proposition 65

WARNING

Engine exhaust, some of its constituents, certain vehicle components and fluids, contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Canadian Electromagnetic Compatibility (EMC):
This machine complies with Industry Canada ICES-002.

UNIVERSAL SYMBOLS

As a guide to the operation of your machine, various universal symbols have been utilized on the instruments and controls. The symbols are shown below with an indication of their meaning.

	Safety Alert Symbol		Fast
	Diesel Fuel		Slow
	Fuel-Level		Engine Speed Control
	Parking Brake		Neutral
	Engine-Stop		Battery
	Preheat		Oil Pressure
	Engine-Run		Coolant Temperature
	Starter Control		Regeneration
	Power Take-Off Clutch Control-Off Position (Disengaged)		DPF INHIBIT (Switch)
	Power Take-Off Clutch Control-On Position (Engaged)		Regeneration (Switch)
	Cutting Height		Parked Regeneration
	Mower-Lowered position		Master System Warning
	Mower-Raised position		Engine Warning

FOREWORD

You are now the proud owner of a KUBOTA ZERO TURN MOWER. This machine is a product of KUBOTA's quality engineering and manufacturing. It is made of excellent materials and under a rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your machine, please read this manual carefully. It will help you become familiar with the operation of the machine and contains many helpful hints about machine maintenance. It is KUBOTA's policy to utilize, as quickly as possible, every advance in our research. The immediate use of new techniques in the manufacturing of products may cause some small parts of this manual to become outdated. KUBOTA distributors and dealers will have the most up-to-date information. Please do not hesitate to consult them.



SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.



DANGER : Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING : Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION : Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

IMPORTANT : Indicates that equipment or property damage could result if instructions are not followed.

NOTE : Gives helpful information.

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SAFE OPERATION

Careful operation is your best insurance against an accident.

The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property. Read and understand this manual carefully before operating the machine. All operators, no matter how much experience they may have had, must read this and other related manuals before operating the machine or any implement attached to it. It is the owner's obligation to instruct all operators in safe operation.

If the operator(s) or mechanic(s) cannot understand the contents, it is the owner's responsibility to explain this material to them. This mowing machine is capable of amputating hands, feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

BEFORE OPERATING THE MACHINE

Know your equipment and its limitations. Read all instructions in this manual before attempting to start and operate the machine.

1. General

- The zero turn mowing machine has different steering characteristics than other machines with a steering wheel and does not have a service brake pedal (but, has a parking brake lock pedal that can be used to stop the machine in an emergency. Normal slowing down and stopping is done with the motion control levers.). Read and understand the operator's manual before operating the machine. Practice operating the machine at low engine speed in an unobstructed area without engaging the mower.
- Pay special attention to the safety labels on the machine itself.
- Do not operate the machine or any attachments while under the influence of alcohol, medication, controlled substances or when fatigued.
- Do not wear loose, torn, or bulky clothing around the machine. The clothing may catch on moving parts or controls, leading to the risk of an accident. Wear and use any additional safety items such as a hard hat, safety boots or shoes, eye and hearing protection, gloves and so on, as appropriate or required.
- Do not wear radio or music headphones while operating the machine. Do not operate the machine or any attachments while using or texting with a cellphone or any other electronic device. Safe operation requires your full attention.
- Carefully check the vicinity before operating machine or any implement attached to it. Clear the work area of objects (such as wires and rocks,) that might be picked up and thrown. Check for overhead clearance which may interfere with the grass catcher.
- Check brakes and other mechanical parts for correct adjustment and wear. Replace worn or damaged parts promptly. Check the tightness of all nuts and bolts regularly.
(See [PERIODIC SERVICE](#) on page 62 and [ADJUSTMENT](#) on page 99.)
- Keep all shields and guards in place. Replace any that are damaged or missing. Do not operate unless they are functioning properly.
- Before allowing other people to use your machine, explain how to operate and have them read this manual before operation.
- Do not allow any bystanders around or near machine during operation.
- Do not allow passengers, children or non-qualified operators on the machine at any time. The operator must remain in the machine seat throughout operation.
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern and prudence of personnel involved in the operation, transport, maintenance of facilities.
- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Keep the machine and attachments in good operating condition and keep safety devices in place and in proper working condition. Do not operate unless they are functioning properly.
- Do not modify the machine. Unauthorized modification may affect the function of the machine, which may result in personal injury.
- Use only implements recommended by KUBOTA. Use proper ballast on the front or rear of the machine to reduce the risk of upsets. Follow the safe operating procedures specified in the manuals of the equipment.
- Keep your machine clean. Accumulations of dirt, grease, and trash can contribute to fires and lead to personal injury.

SAFE OPERATION

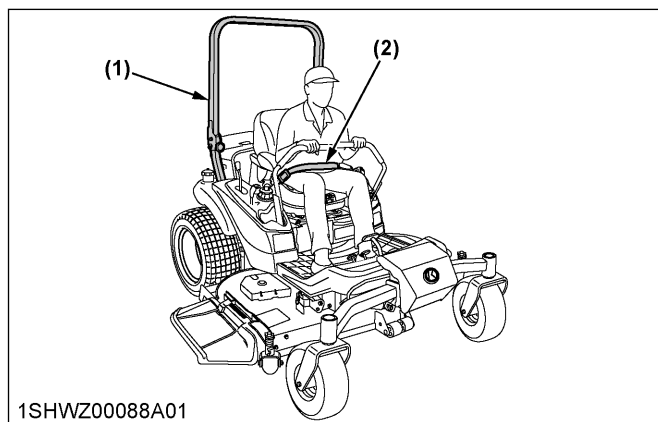
- The exhaust gas from the muffler is very hot. To prevent fire, do not expose dry grass, mowed grass, oil and any other combustible materials to the exhaust gas. Use a spark arrester where required. Keep the engine and muffler clean all the times.

2. ROPS

- The ROPS is an integral and effective safety device.
- KUBOTA recommends the use of a roll-over protective structure (ROPS) and seat belt in almost all applications. This combination will reduce the risk of serious injury or death, should the machine be upset.
- The machine is equipped with a foldable ROPS, which may be temporarily folded down only when absolutely necessary for areas with height constraints.

There is no operator protection provided by the ROPS in the folded position. For operator safety you must set the ROPS in the upright and locked position and put on the seat belt for all other operations.

- Do not remove the ROPS.
- If the ROPS is loosened or removed for any reason, make sure that all parts are reinstalled correctly before operating the machine.
- Never modify or repair a ROPS because welding, bending, drilling, grinding, or cutting may weaken the structure.
- If any structural member of the ROPS is damaged, replace the entire structure at your local KUBOTA Dealer. Any alterations to a ROPS must be approved by the manufacturer.
- Check the area to be mowed and never fold down a folding ROPS in areas where there are slopes, drop-offs or water.
- Check carefully for overhead clearances (such as branches, doorways and electrical wires) before driving under any objects and do not contact them.
- Keep the ROPS in safe operating condition by periodically and thoroughly inspecting for damage and keeping all mounting fasteners tight.
- Always use the seat belt when the ROPS is upright. Do not use the seat belt if the ROPS is down or if there is no ROPS. Check the seat belt regularly and replace if frayed or damaged. Be certain that the seat belt can be released quickly in the event of an emergency.



(1) ROPS
(2) Seat belt

OPERATING THE MACHINE

1. Starting to operate the machine

- Always sit in the operator's seat when starting the engine or operating levers or controls.
- Before starting the engine make sure that the motion control levers are in neutral lock, the parking brake is applied, and the power take-off (PTO) is disengaged (OFF).
- Do not start the engine by shorting across starter terminals. The machine may start in gear and move if the normal starting circuitry is bypassed.
- Do not operate or idle the engine in a non-ventilated area. Carbon monoxide gas is colorless, odorless, and deadly.
- Do not start the engine while tilting deck.

2. Working the machine

- Do not turn sharply when driving at high speed.
- To avoid tip-over accidents, slow down when turning on uneven terrain or before stopping.
- Do not operate near ditches, holes, embankments, or other terrain, which may collapse under the machine's weight. The risk of machine tip-overs increases when the ground is loose or wet.
- Park the machine on a firm and level surface.
- Watch where you are going at all times. Watch for and avoid obstacles. Be alert at curbs, shrubs, near trees, and other obstructions and hidden hazards. Obstacles can damage machine (fuel hoses, wire harness etc.).
- Know what is behind you before backing up. Look to the rear before and when backing. Do not mow while in reverse. Operate in reverse with the blades engaged only when absolutely necessary and make sure the area immediately behind you is clear of obstructions or holes, and small children. Use extra caution when the machine is equipped with a grass catcher as your view to the rear is restricted.

- When working in groups, always let others know what you are doing ahead of time.
- Do not drive the machine on streets or highways. Watch for traffic when you cross roads or operate near roads.
- Be aware of the mower discharge direction and do not point it at anyone.
Never operate with the discharge chute raised, removed or altered, unless using a grass catcher.
- When using any attachments, never direct discharge material toward bystanders. Do not allow people or pets near the attachments while in operation.
Do not mow when bystanders are present in the mowing area.
- To reduce fire hazards, keep the engine exhaust area free of grass or leaves.
- Be sure that the rotating blades and the engine are stopped and the key is removed before placing hands or feet near blades, cleaning blockages or unclogging the chute.
- Keep hands and feet away from the cutting units. Shut the engine off and wait for all movement to stop before removing the grass catcher or unclogging the chute.
- Always inspect the mower for damage after striking a foreign object. Repair or replace any damaged parts before restarting.
- Operate during daylight or in bright artificial light.
- If the machine starts to vibrate abnormally, disengage the drive to the attachments, stop the engine and remove the key. Then check the machine immediately.
- Do not operate the machine when there is a possibility of lightning. Even if the machine is equipped with a cabin, the operator is not protected from lightning.
- Never raise the deck with the blades running. Disengage the PTO and stop the blades from rotating if not mowing.

3. Safety for children

Tragic accidents can occur if the operator is not alert of the presence of children. Children are attracted to the machine and mowing activity.

- Never assume that children will remain where you last saw them.
- Keep children out of the mowing area and under the watchful care of another responsible adult.
- Be alert and turn the machine off if children enter the area.
- Before and when backing, look behind and down for small children.
- Never carry children. They may fall off and be seriously injured or interfere with safe machine operation.

- Never allow children to operate the machine, even under adult supervision. Local regulation can restrict the age of the operator.
- Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.
- Do not mow in reverse. Operate in reverse with the blades engaged only when it is absolutely necessary.

4. Operators, age 60 years and older

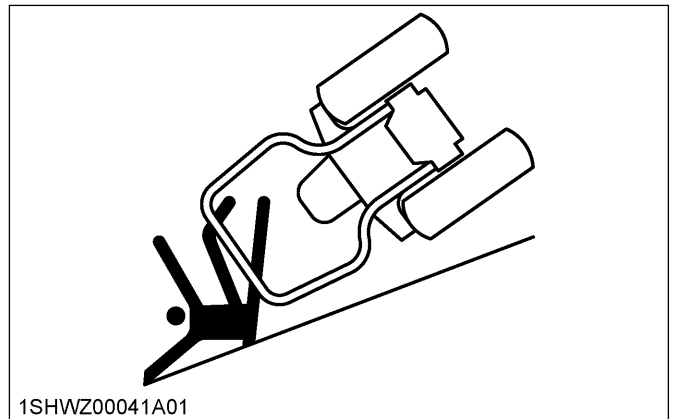
Data indicates that operators, age 60 years and older, are involved in a large percentage of machine-related injuries. These operators must evaluate their ability to operate the machine safely enough to protect themselves and others from serious injury.

5. Operating on slopes

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution.

If you cannot back up the slope or if you feel uneasy on it, do not mow it.

If the engine stops when operating on a slope, apply the parking brake immediately to prevent machine runaway.



Do

- To avoid tip-over accidents, operate across slopes, not up and down. Stay off hills and slopes too steep for safe operation.
- Remove obstacles such as rocks and tree limbs, weeds like hard stems and shrubs etc.
- Stay alert for holes in the terrain and other hidden hazards. Keep away from drop-offs. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Follow the manufacturer's recommendations for wheel weight or counterweights to improve stability.
- Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction.

SAFE OPERATION

If tires lose traction, disengage the PTO and proceed slowly straight down the slope.

- Reduce the speed and exercise extreme caution on slopes and in sharp turns to prevent tip-over accidents or loss of control.
- Use special caution when changing direction on slopes. Slow down, and use extra caution when changing direction on a slope.

Do not

- Do not turn on slopes unless necessary. If necessary, turn uphill slowly and gradually.
- Do not mow near drop-offs, ditches, or embankments. The mower could suddenly turn over if a wheel is over the edge of cliff or ditch, or if an edge caves in.
- Do not mow on wet grass. Reduced traction could cause sliding and loss of control.
- Do not try to stabilize the machine by putting your foot on the ground.
- Do not use the grass catcher on steep slopes.
- Do not start or stop suddenly on slopes. If tires lose traction, disengage the PTO and proceed slowly straight down the slope.
- Never “freewheel”. Do not let the machine travel downhill with motion control levers at the neutral lock position or in neutral.
- Do not operate the machine without the mower deck installed.

6. Stopping the machine

- Park the machine on level ground.
- Make sure that the machine and all attachments have come to a complete stop before you get off.
- Before you get off, apply the parking brake, place the motion control levers in their neutral lock positions, disengage the PTO, lower all attachments to the ground, turn off the engine, and remove the key.
- Do not park the machine on dry grass or leaves.

7. Using the PTO

- Before installing or using PTO-driven equipment, read the manufacturer's manual and review the safety labels attached to the equipment.
- Wait until all moving components have completely stopped before connecting, disconnecting, adjusting, cleaning, or servicing any PTO-driven equipment.
- Use the PTO with KUBOTA approved attachments.

The speed of PTO:

ZD1511RL/ZD1511LF/ZD1511RLF without mower:
2480 to 2580 rpm at 2500 engine rpm

8. Using the lift link

- Use lift link only with authorized attachments designed for lift link usage.

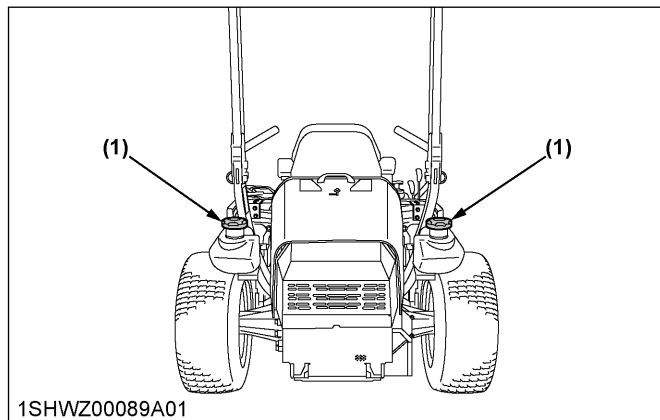
TRANSPORTING THE MACHINE

- Disengage power to attachment(s) when transporting or not in use.
- Do not tow this machine. Use a suitable truck or trailer when transporting on public roads.
- Use extra care when loading or unloading the machine into a trailer or truck. Use full width ramps for loading machine into a trailer or truck.
- This machine is not allowed to be used on public roads.
- Shut off fuel while storing or transporting.
- Tie the machine down securely using straps, chains, cables, or ropes.
- Both front and rear straps should be directed down and outward from the machine.

SERVICING AND STORAGE

1. Servicing the machine

- Before servicing, park the machine on a firm, level surface and apply the parking brake. Remove the key to prevent an accidental start-up.
- Allow the machine time to cool before touching the engine, muffler, radiator and so on.
- Always stop the engine before refueling. Avoid spills and overfilling. Wipe up spilled fuel immediately.



(1) Fuel tank cap

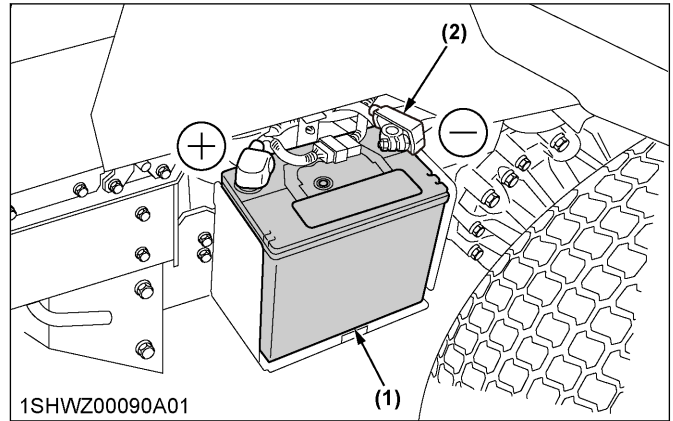
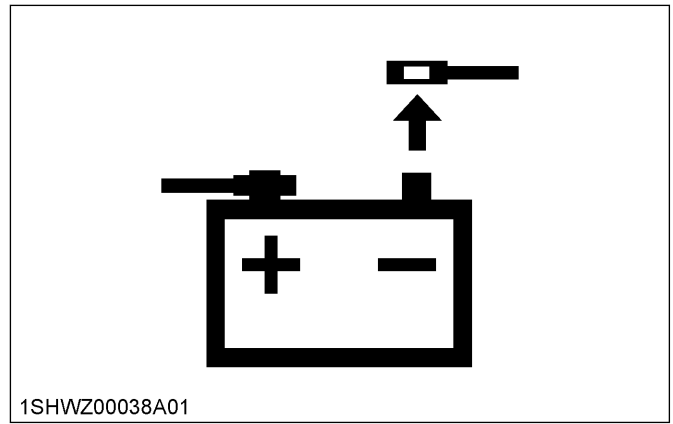
- Use extra care when handling diesel fuels. They are flammable.
 1. Use only an approved container.
 2. Do not remove the fuel cap or refuel with the engine running. Allow the engine to cool before refueling. Do not smoke while refueling or when standing near fuel.

⚠️ SAFE OPERATION

3. Do not refuel the machine indoors and always clean up spilled fuel or oil.
 4. Do not store the machine or fuel container inside where there is an open flame, such as in a water heater.
- Do not smoke when working around battery or when refueling. Extinguish all cigarettes, cigars, pipes, and other sources of ignition. Keep all sparks and flames away from battery and fuel tank.



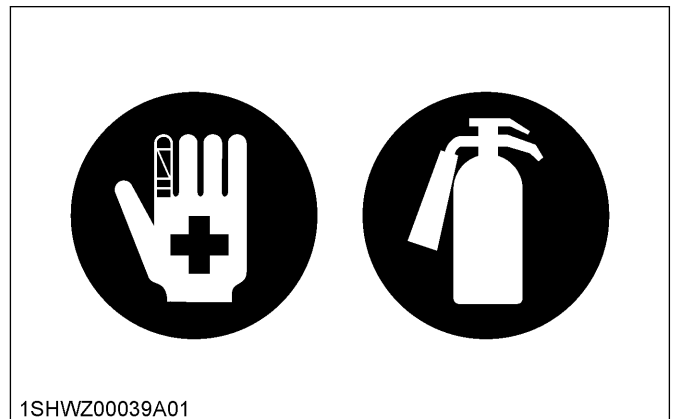
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
 - Remove equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather than from a fuel dispenser nozzle. Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock open device.
 - If fuel is spilled on clothing, change the clothing immediately. Replace the fuel cap and tighten securely.
 - Charge batteries in an open, well-ventilated area, away from spark and flames. A battery, especially when charging, will give off hydrogen and oxygen gases, which can explode and cause serious personal injury.
 - Unplug the charger before connecting or disconnecting from battery.
 - Before "jump starting" a dead battery, read and observe all of the instructions:
 - Disconnect the battery or remove the spark plug wire before making any repairs.
- Disconnect the negative terminal first and the positive last. Reconnect the positive first and negative last. Wear protective clothing and use insulated tools.



- (1) Battery
(2) Ground cable

- (+) Positive terminal
(-) Negative terminal

- Do not use or charge the refillable type battery if the fluid level is below the **[LOWER]** (lower limit level) mark. Otherwise, the battery component parts may prematurely deteriorate, which may shorten the battery's service life or cause an explosion. Check the fluid level regularly and add distilled water as required so that the fluid level is between the **[UPPER]** and **[LOWER]** levels.
- Keep a first aid kit and fire extinguisher handy at all times.

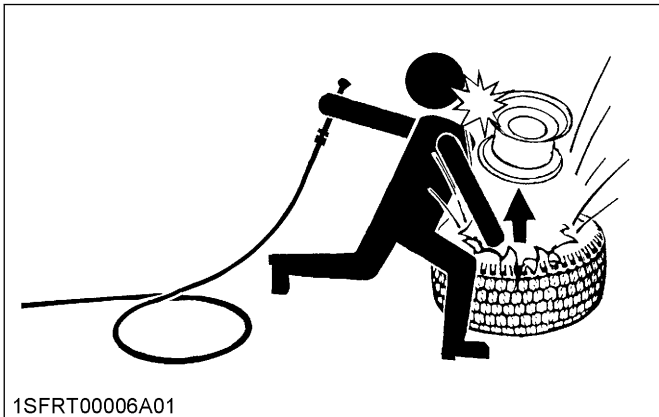


- Do not remove the radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely. If the machine

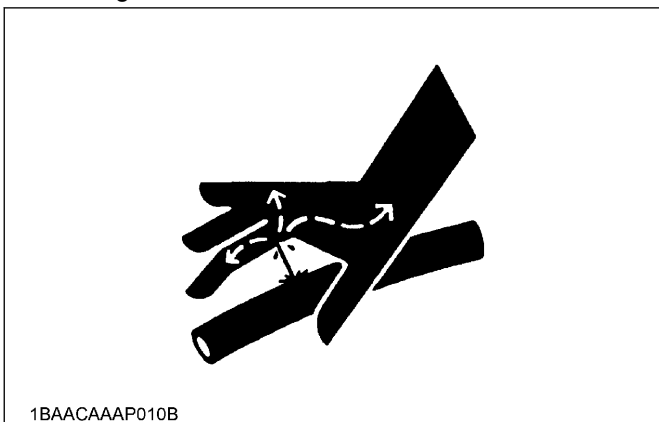
! SAFE OPERATION

has a coolant recovery tank, add coolant there instead of the radiator.

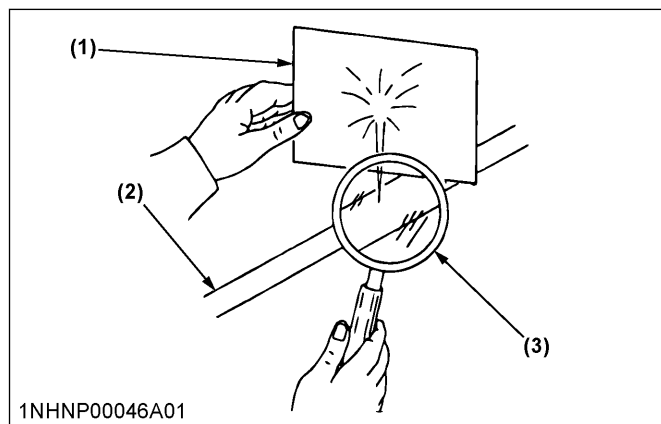
- Do not attempt to mount a tire on a rim unless qualified to do so and all proper safety precautions are followed. Never allow untrained personnel to service the machine.
- Always maintain the correct tire inflation pressure. Do not inflate tires above the recommended pressure shown in the operator's manual.



- Provide adequate support when changing wheels.
- Make sure that wheel nuts and bolts have been tightened to the specified torque.
- Escaping hydraulic fluid under pressure has sufficient force to penetrate the skin causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, make sure all connections are tight and that lines, pipes, and hoses are not damaged.



- Fluid escaping from pinholes may be invisible. Use a piece of cardboard or wood to search for suspected leaks: do not use hands. Use safety goggles or other eye protection. If you get injured by escaping fluid, see a medical doctor at once. Serious infection or reaction will result if proper medical treatment is not administered immediately. This fluid can produce gangrene or severe allergic reaction.



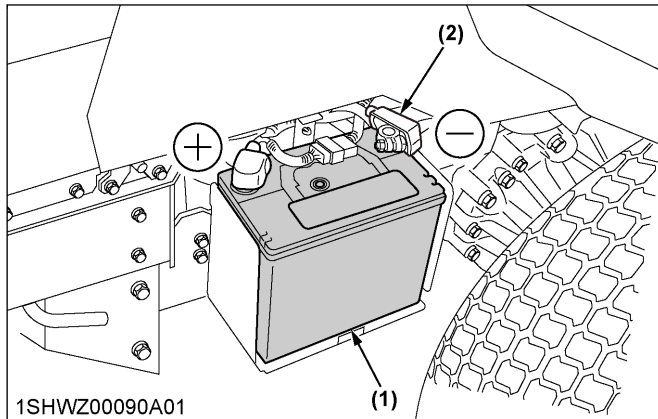
- (1) Cardboard
- (2) Hydraulic line

- (3) Magnifying glass

- Keep hands and feet away from moving parts. If possible, do not make adjustments or repairs with the engine running.
- Keep the machine free of grass, leaves, or other debris build-up.
- Do not change the engine governor setting or overspeed the engine.
- Do not run the machine inside a closed area.
- Mower blades are sharp and can cut your hands. Wrap the blade(s) or wear gloves, and use extra caution when servicing them. Never straighten or weld blades.
- Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.
- Never tamper with safety devices. Check their operation for proper function regularly.
- Waste products such as used oil, fuel, coolant, brake fluid, and batteries can harm the environment, people, pets and wildlife. Please dispose of the waste products properly.
- Do not use beverage containers for waste fluids or other products. Someone, particularly children, may drink them by mistake.
- Securely support the machine or any machine elements with stands or suitable blocking before working underneath. For your safety, do not rely on hydraulically supported devices as they may leak down, suddenly drop or be accidentally lowered.
- Consult your local recycling center or KUBOTA Dealer to learn how to recycle or get rid of waste products.
 - A material safety data sheet (MSDS) provides specific details on chemical products physical and health hazards, safety procedures, and emergency response techniques. The seller of the chemical products used with your machine is responsible for providing the MSDS for that product upon request.

2. Storage

- Keep the machine and supply of fuel in locked storage and remove the ignition key to prevent children or others from playing or tampering with them.
- To avoid sparks from an accidental short circuit, always disconnect the battery's ground cable (-) first and reconnect it last.

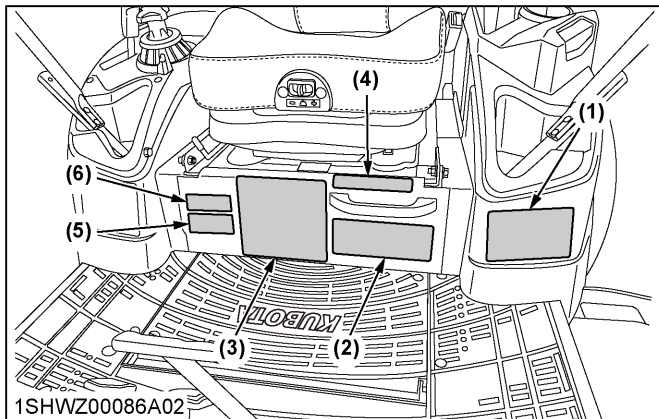


- (1) Battery (+) Positive terminal
(2) Ground cable (-) Negative terminal

- To avoid the danger of exhaust fume poisoning, do not operate the engine indoors without adequate ventilation.
- To reduce fire hazards, clean the machine thoroughly before storage. Dry grass and leaves around the engine and muffler may ignite.
- Let the engine cool before storing and do not store near flames.
- Shut off fuel while storing or transporting.

! SAFE OPERATION

SAFETY LABELS



(1) Part No. K3181-6585-1

! WARNING

TO AVOID SERIOUS INJURY OR DEATH

1. Park the machine on level ground.
2. If necessary to park on an incline,
 - ① Stop the machine.
 - ② Apply the parking brake.
 - ③ Stop the engine.
 If you stop the engine on an incline without applying the parking brake, the machine could move and runaway.
3. If the engine stops suddenly during operation, apply the parking brake immediately to prevent machine runaway.

! ADVERTENCIA

PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE

1. Estacione la máquina en la tierra del nivel.
2. Si es necesario estacionar en una cuesta,
 - ① Apagar la máquina.
 - ② Aplique el freno de estacionamiento.
 - ③ Luego apague el motor.
 Si apaga el motor en una cuesta sin aplicar el freno de estacionamiento, la máquina puede moverse sin control.
3. Si la máquina se detiene repentinamente durante la operación, enganche el freno de estacionamiento inmediatamente para evitar la pérdida de control.

1BDABCQAP093A

(2) Part No. K3181-6584-1

! WARNING

TO AVOID SERIOUS INJURY OR DEATH

1. Mow across slopes-Not up and down.
2. Use extreme caution when operating on slopes.
3. Loss of traction may occur when operating on slopes.
4. Drive slowly on slopes.
5. Do not operate on wet slopes.
6. Avoid sudden starts.
7. Execute turns slowly.

! ADVERTENCIA

PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE

1. Corte el césped de manera transversal en las colinas - No de arriba hacia abajo.
2. Tenga mucho cuidado durante la operación en colinas.
3. Se puede perder tracción durante la operación en colinas.
4. Conduzca lentamente en las colinas.
5. No use la máquina en colinas húmedas.
6. Evite arranques súbitos.
7. Realice las vueltas lentamente.

1BDABCQAP094A

(3) Part No. K3441-6582-1

! WARNING

TO AVOID SERIOUS INJURY OR DEATH

1. Read and understand the operator's manual before operation.
2. Do not operate this machine unless you are trained.
3. Before allowing other people to use the machine, have them read the operator's manual.
4. Check the tightness of all nuts and bolts regularly.
5. Before starting the engine, make certain that everyone is at a safe distance from the machine. PTO is disengaged and motion control levers are in neutral lock.
6. Remove objects that could be thrown by the blade.
7. Do not operate the machine when children and/or others are around.
8. Do not carry children or others on the machine at any time.
9. Before dismounting, disengage PTO clutch, lower the implement, place motion control levers in neutral lock position, set the parking brake, stop the engine and remove the key.
10. Keep safety devices (guards, shields and switches) in place, and working.
11. To reduce the fire hazard, keep the exhaust clear of dry grass, dry leaves or other combustible materials.
12. This machine is not for street or highway use.
13. Securely support the machine and implement before working underneath.

! ADVERTENCIA

PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE

1. Lea y entienda el manual del operador antes de efectuar la operación.
2. No ponga en funcionamiento la máquina a menos que esté capacitado para hacerlo.
3. Antes de permitir que otras personas usen la máquina, indíqueles que lean el manual del operador.
4. Verifique con regularidad el apriete de todas las tuercas y pernos.
5. Antes de arrancar el motor, asegúrese de que todos estén a una distancia segura de la máquina. La toma de fuerza debe estar desactivada y las palancas de control de movimiento bloqueadas en neutro.
6. Retire los objetos que pueden ser lanzados por la cuchilla.
7. No opere la máquina cuando hayan niños u otras personas alrededor.
8. No lleve a niños ni a otras personas en la máquina en ningún momento.
9. Antes de desmontar, desenganche el embrague de la toma de fuerza, baje el implemento, cambie a neutro, aplique el freno de estacionamiento, apague el motor y retire la llave.
10. Mantenga los dispositivos de protección (guardas, barreras de protección e interruptores) en su lugar y en buen estado de funcionamiento.
11. Para reducir los riesgos de incendio, mantenga el escape exento de hierba seca, hojas secas u otros materiales combustibles.
12. Esta máquina no está diseñada para uso en calles ni carreteras.
13. Use un soporte seguro para la máquina y el implemento antes de trabajar debajo de los mismos.

1BDABEJAP065A

1SHWZ00119A01enUS

(4) Part No. K3441-6569-1

! WARNING

When Engine is running, do not open this cover.

! ADVERTENCIA

Nunca abra el capó mientras el motor está en funcionamiento.

1BDABEJAP066A

(5) Part No. K3441-6598-1

Propuesta 65 de California

! ADVERTENCIA !

Los gases de escape del motor, algunos de sus elementos, y unos componentes y fluidos del vehículo contienen o despiden productos químicos conocidos por el Estado de California que causan el cáncer, los defectos de nacimiento o el otro daño reproductivo.

1BDABENAP115B

(6) Part No. K3441-6596-1

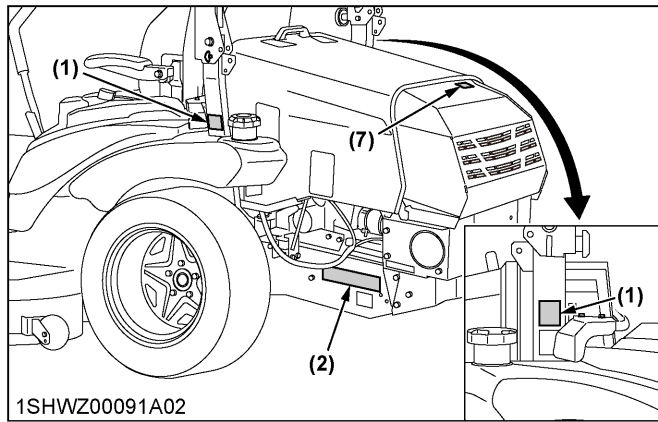
California Proposition 65

! WARNING !

Engine exhaust, some of its constituents, certain vehicle components and fluids, contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

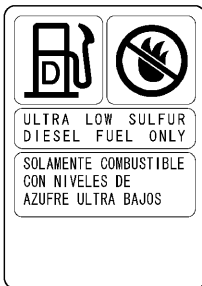
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⚠️ SAFE OPERATION



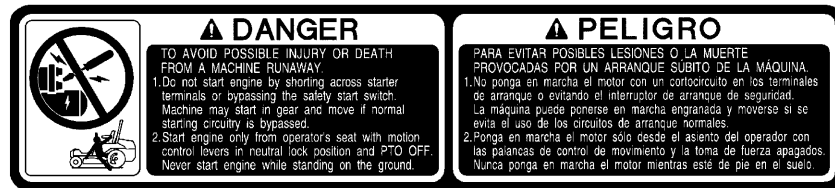
(1) Part No. K3181-6572-1

Diesel
fuel only No fire

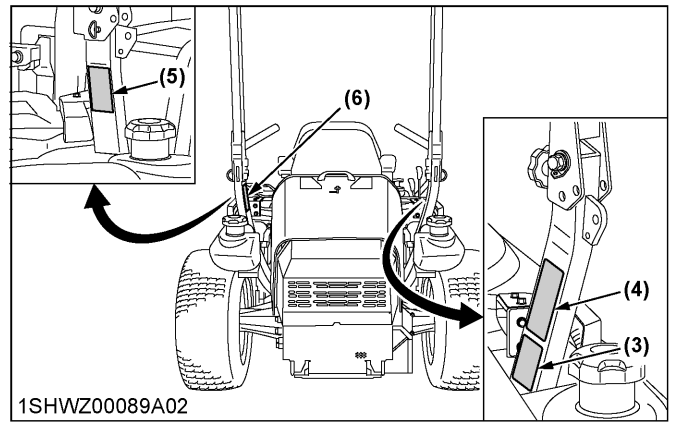


1BDABCQAP178A

(2) Part No. K3181-6583-2



1BDABCQAP103A



(3) Part No. K3441-6566-1

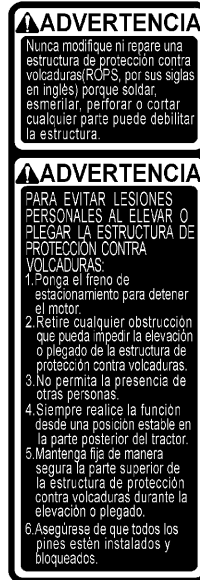


1BDABEJAP067A



1BDABCQAP101A

(5) Part No. K3441-6568-1



1BDABEJAP068A

(6) Part No. K3181-6565-1



1BDABCQAP134A

(7) Part No. K2110-6573-1

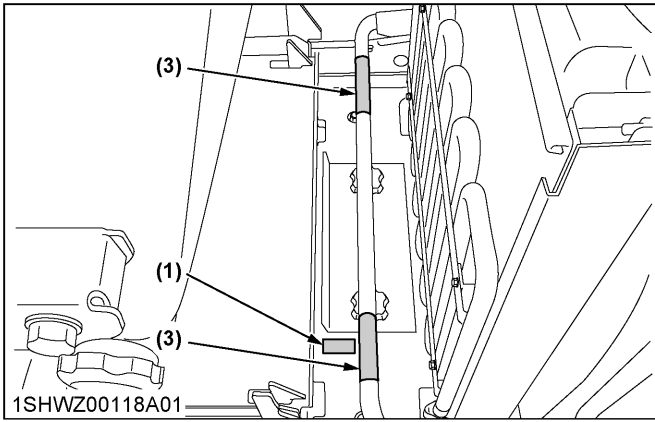
HOT SURFACE,
DO NOT TOUCH



1BDAFAOAP009A

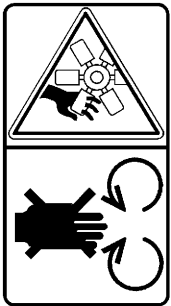
1SHWZ00120A01

! SAFE OPERATION

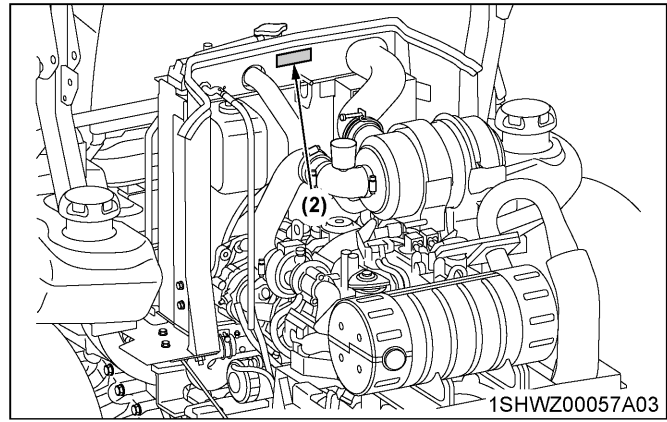


(1) Part No. K3111-6591-1

Do not get your hands close to fan belt.

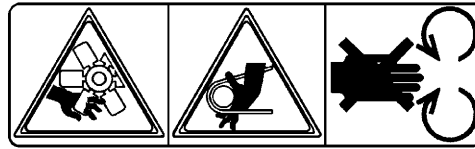


1BDABCQAP107A



(2) Part No. K3181-6586-1

Do not get your hands close to engine fan and fan belt.



1BDABCQAP108A

(3) Part No. K3441-6593-1



1BDABEJAP108A

1SHWZ00121A01

(1) Part No. K3181-6116-2

FLAMMABLES
SHIELD EYES
KEEP OUT OF THE REACH OF CHILDREN
CAUTION OF SULFURIC ACID
READ INSTRUCTION MANUAL CAREFULLY
EXPLOSIVE

DANGER EXPLOSIVE GASES
CIGARETTES, FLAMES OR SPARKS COULD CAUSE BATTERY TO EXPLODE. ALWAYS SHIELD EYES AND FACE FROM BATTERY. DO NOT CHARGE OR USE BOOSTER CABLES OR ADJUST POST CONNECTIONS WITHOUT PROPER INSTRUCTION AND TRAINING.

POISON CAUSES SEVERE BURNS
CONTAINS SULFURIC ACID. AVOID CONTACT WITH SKIN, EYES OR CLOTHING. IN EVENT OF ACCIDENT FLUSH WITH WATER AND CALL A PHYSICIAN IMMEDIATELY.

KEEP OUT OF REACH OF CHILDREN

SMF 51R
PART No. K3181-61145

NOMINAL VOLTAGE	12V
COLD CRANKING AMPS	430
CRANKING AMPS	540
RESERVE CAPACITY(MINUTES)	80
AMP HOURS(@20 hr Rate)	45

INDICATOR ⬢ OK ○ CHARGE ● REPLACE

FITTING DATE

0 1 2 3 4 5 6 7 8 9 YEAR

1 2 3 4 5 6 7 8 9 10 11 12 MONTH

MADE IN KOREA

California Proposition 65 WARNING : This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

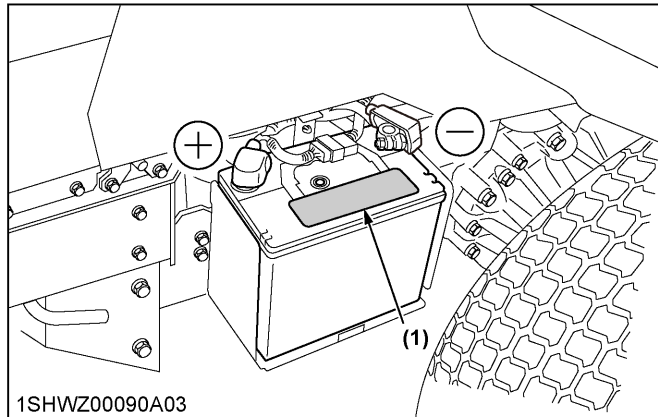
1BDAH0AP072A

TO AVOID INJURY FROM BATTERY GASES AND ACIDES



- Keep away cigarettes, flames or sparks.
- Always shield eyes and face from battery.
- Keep out of reach of children.
- Poison causes severe burns.
- Contains sulfuric acid.
- Read and understand operator's manual.
- Danger explosive gases.

1BDAIAEAP0200

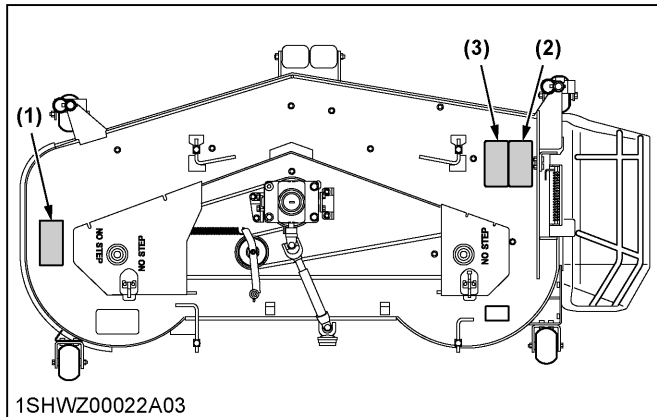


1SHWZ00090A03

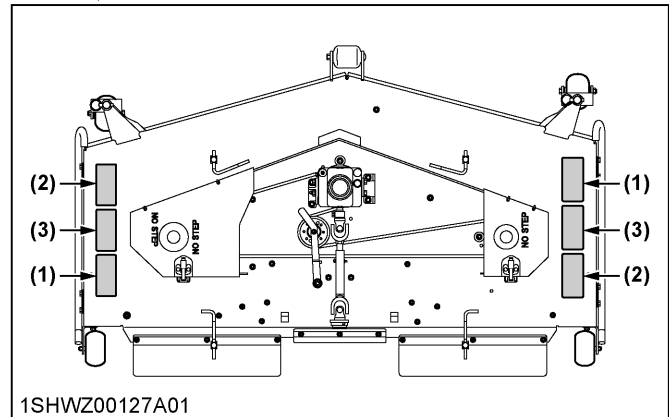
1SHWZ00122A01enUS

SAFE OPERATION

RCK72P



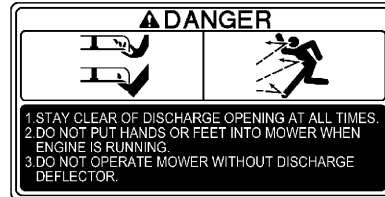
RCK60R, RCK72R



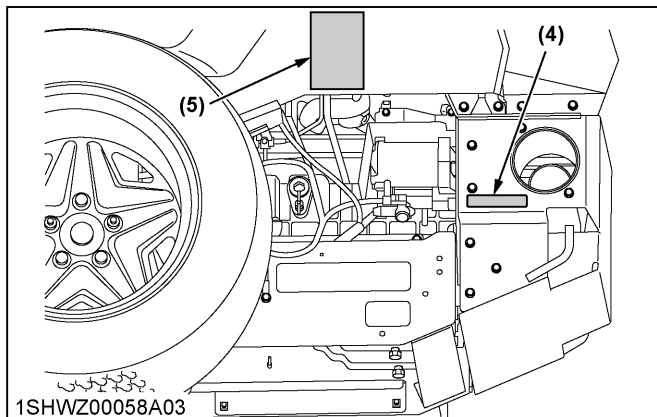
(1) Part No. K5681-7312-2



(2) Part No. K5681-7311-2



(3) Part No. K5681-7310-1



(4) Part No. K3441-6532-1



(5) Part No. K3615-4721-2



1SHWZ00123A01

CARE OF SAFETY LABELS

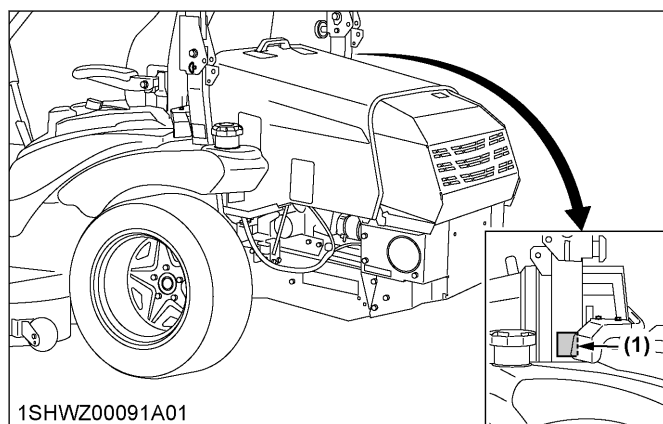
- Keep safety labels clean and free from obstructing material.
- Clean safety labels with soap and water, and dry with a soft cloth.
- Replace damaged or missing safety labels with new labels from your local KUBOTA Dealer.
- If a component with safety label(s) attached is replaced with a new part, make sure new label(s) is (are) attached in the same location(s) as the replaced component.
- Attach new safety labels by applying on a clean dry surface and pressing any bubbles to the outside edge.

SERVICING OF MACHINE

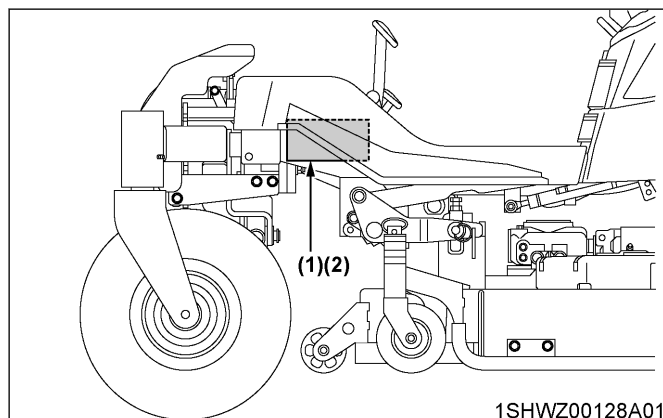
After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself. Your dealer has knowledge to help you get the best performance from your new machine and wants to help you get the most value from it. When in need of parts or major service, be sure to consult your local KUBOTA Dealer with the machine, engine and mower serial numbers.

Locate the serial numbers now and record them in the space provided.

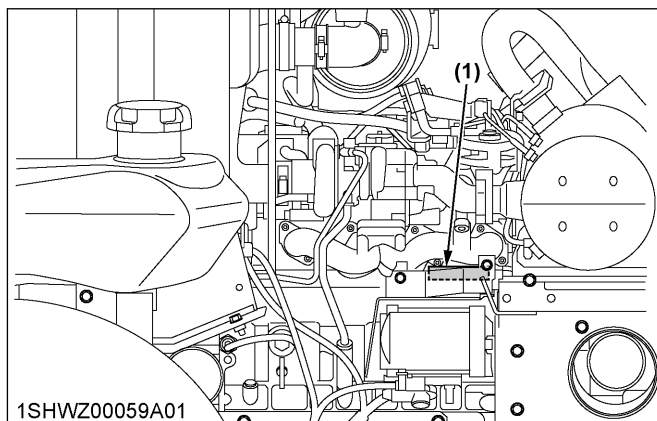
	Type	Serial no.
Machine		
ROPS		
Engine		
Mower		
Date of purchase		
Name of dealer		
(To be filled in by purchaser)		



(1) ROPS serial no.

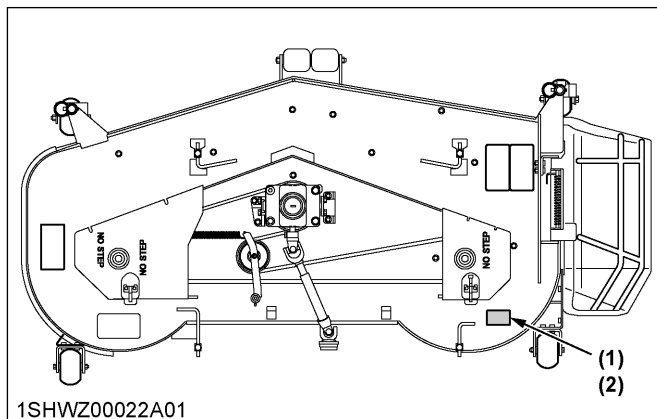


(1) Machine identification plate
(2) Machine serial no.



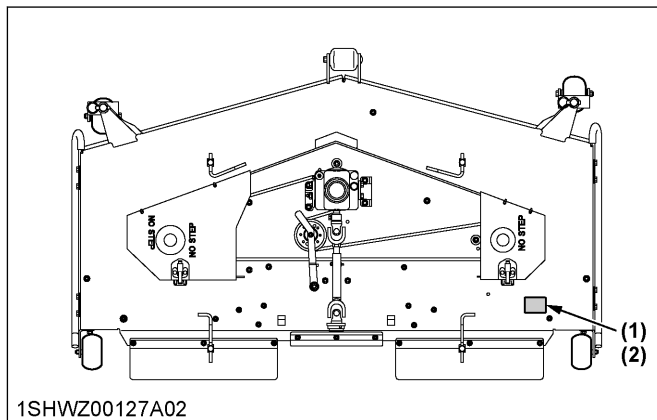
(1) Engine serial no.

RCK72P



(1) Mower identification plate
(2) Mower serial no.

RCK60R, RCK72R



(1) Mower identification plate
(2) Mower serial no.

WARRANTY

This machine is warranted under the **KUBOTA Limited Express Warranty**, a copy of which may be obtained from your selling dealer. No warranty shall, however, apply if the machine has not been handled according to the instructions given in the operator's manual, even if it is within the warranty period.

SCRAPPING THE MACHINE AND ITS PROCEDURE

To put the machine out of service, correctly follow the local rules and regulations of the country or territory where you scrap it. If you have questions, consult your local KUBOTA Dealer.

SPECIFICATIONS

SPECIFICATION TABLE

Model				ZD1511RL	ZD1511RLF	ZD1511LF
Engine	Model			V1505-T		
	Max. engine power (gross)		kW (HP)	23.0 (30.8) *1*2		
	Type			Liquid-cooled		
	Number of cylinders			4		
	Bore and stroke		mm (in.)	78 x 78.4 (3.07 x 3.09)		
	Total displacement		cm ³ (cu. in.)	1498 (91.41)		
	Rated revolution		rpm	2500		
	Low idling revolution		rpm	1300 to 1400		
	Fuel			Diesel fuel No.1 (below -10 °C (14 °F)) Diesel fuel No.2 (above -10 °C (14 °F))		
	Starter			Electric starter with battery, glow plug, 12 V, 1.4 kW		
	Lubrication			Forced lubrication by gear pump		
	Cooling			Liquid with pressurized radiator		
	Battery			SMF24R (12 V, RC: 115 min, CCA: 670 A)		
Capacities	Fuel tank		L (U.S.gals.)	49 (12.9)		
	Engine crankcase (with filter)		L (U.S.qts.)	6.4 (6.8)		
	Engine coolant		L (U.S.qts.)	4.6 (4.9)		
	Recovery tank		L (U.S.qts.)	1.1 (1.2)		
	Transmission case including rear axle gear case		L (U.S.qts.)	12.1 (12.8) *3		
Dimen- sions	Overall length		mm (in.)	2660 (104.7)		
	Overall width without mower deck		mm (in.)	1510 (59.4)	1540 (60.6)	
	Overall height	With ROPS upright	mm (in.)	2000 (78.7)		
		With ROPS folded	mm (in.)	1640 (64.6)		
	Wheelbase		mm (in.)	1560 (61.4)		
	Min. ground clearance		mm (in.)	135 (5.31) with 60"	135 (5.31) with 72"	
	Tread	Front	mm (in.)	1064 (41.9)	1250 (49.2)	
		Rear	mm (in.)	1210 (47.6)		
Weight (without fuel, with mower deck)			kg (lbs.)	910 (2006) with 60"	930 (2050) with 72"	910 (2006) with 72"
Traveling system	Tires	Front		15 x 6.5 - 8 Smooth semi-pneumatic tire		
		Rear		26 x 12.0 - 16 4PR turf low profile tire		
	Traveling speeds	Forward	mph (km/h)	0 to 10.6 (0 to 17.0) *2		
		Reverse	mph (km/h)	0 to 5.3 (0 to 8.5) *2		
	Steering			2 - hand levers		
	Transmission			2 - HST with gear		

(Continued)

SPECIFICATIONS

Model			ZD1511RL	ZD1511RLF	ZD1511LF
Traveling system	Parking brake		Wet multi disk/foot applied, released		
	Min. turning radius	mm (in.)	0 (0)		
PTO	Revolution		1 speed (2570 rpm at 2500 engine rpm)		
	Drive system		Shaft drive, KUBOTA 10 tooth involute spline		
	Clutch type		Wet multi disks		

Specifications and design subject to change without notice.

*1 Manufacturer's estimate, SAE J1940

*2 At 2500 engine rpm

*3 Oil amount when the oil level is at the upper level.

Model			RCK60RP-1500Z	RCK72RP-1500Z	RCK72P-1500Z	
PRO commercial deck (fabricated deck)	Suitable machine		ZD1511RL	ZD1511RLF	ZD1511LF	
	Mounting method		Quick joint, parallel linkage			
	Adjustment of cutting height		Dial gauge			
	Cutting width	mm (in.)	1524 (60.0)	1829 (72.0)		
	Cutting height	mm (in.)	25 to 127 (1.0 to 5.0)			
	Weight (approximation)	kg (lbs.)	145 (320)	170 (375)		
	Blade spindle speed	r/s (rpm)	52.4 (3145) ^{*1}	46.7 (2800) ^{*1}		
	Blade tip velocity	m/s (fpm)	88 (17300) ^{*1}	93 (18400) ^{*1}		
	Blade length	mm (in.)	523 (20.6)	625 (24.6)		
	Number of blades		3			
	Mower gear box capacity	L (U.S.qts.)	0.4 (0.42)		0.5 (0.53)	
	Dimensions	Total length	mm (in.)	1000 (39.4)	1155 (45.5)	1162 (45.8)
		Total width	mm (in.)	1600 (63.0)	1910 (75.2)	2180 (85.8)
		Total height	mm (in.)	420 (16.5)	413 (16.3)	421 (16.6)

*1 Engine maximum rpm

IMPLEMENT LIMITATIONS

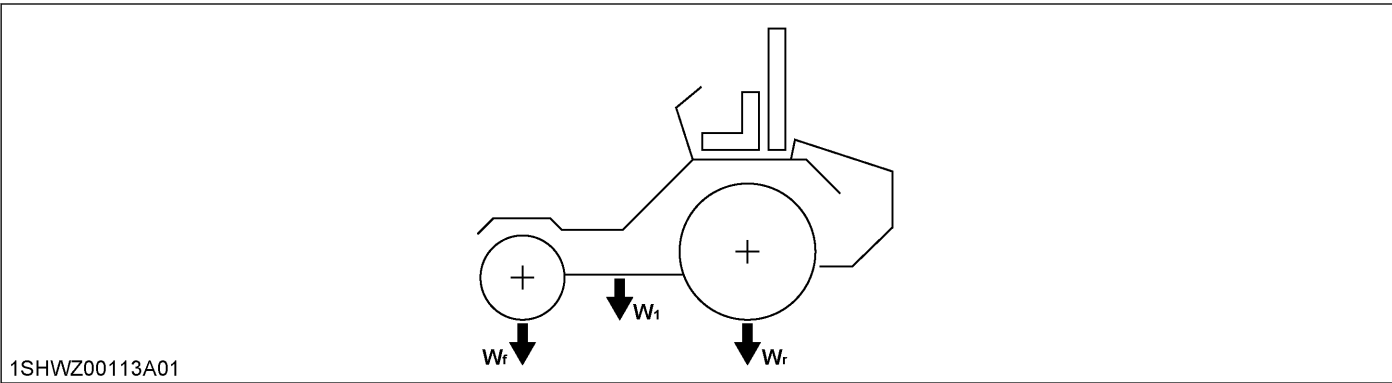
The KUBOTA Machine has been thoroughly tested for proper performance with implements sold or approved by KUBOTA.

Use with implements below may result in malfunctions or failures of the machine, damage to other property and injury to the operator or others.

- Implements which are not sold or approved by KUBOTA
- Implements which exceed the maximum specifications listed below, or
- Implements which are otherwise unfit for use with the KUBOTA Machine

Any malfunctions or failures of the machine resulting from use with improper implements are not covered by the warranty.

Unit	Maximum loading weight		Implement weight W_1	Maximum total weight
	Front axle W_f	Rear axle W_r		
ZD1511RL, ZD1511LF, ZD1511RLF	200 kg (440 lbs.)	870 kg (1918 lbs.)	170 kg (970 lbs.)	1070 kg (2359 lbs.)

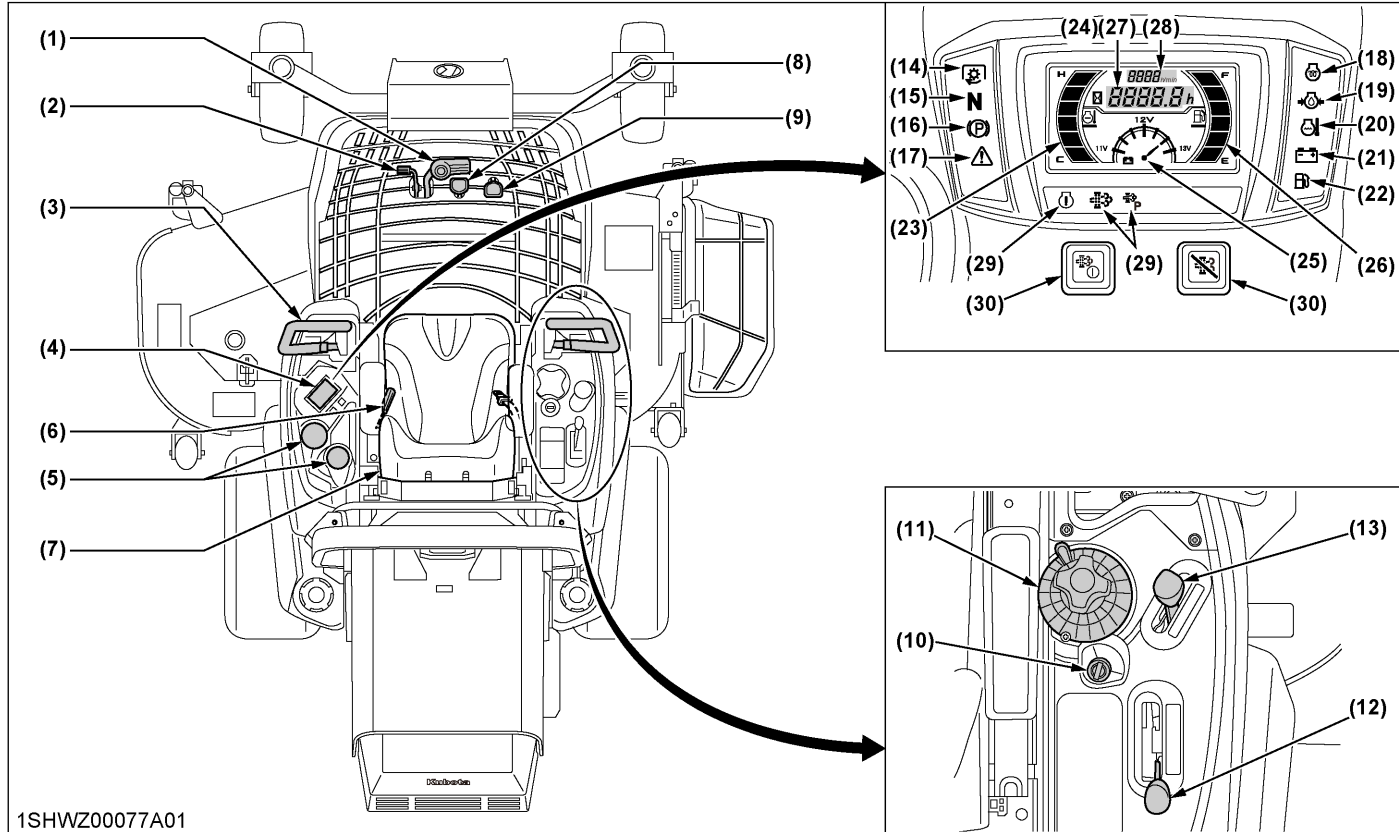


IMPORTANT :

- Do not attach attachment or implement such as hitch kit or grass catcher other than standard mower.

INSTRUMENT PANEL AND CONTROLS

INSTRUMENT PANEL, SWITCHES AND HAND CONTROLS



Illustrated contents

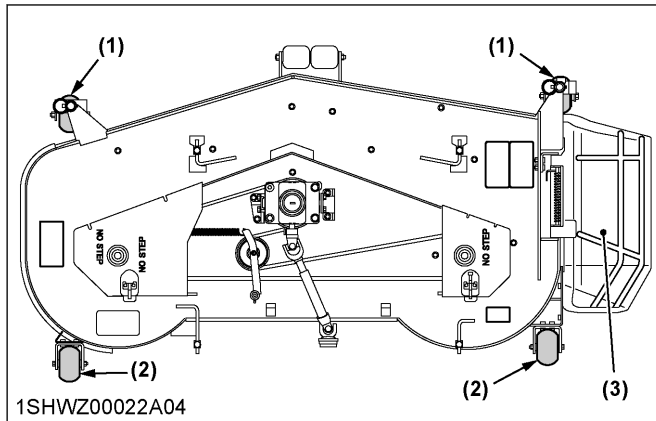
- | | |
|--|---|
| (1) Parking brake pedal...36, 49 to 51 | (16) Parking brake warning indicator...36 |
| (2) Parking brake lock pedal...36, 49 | (17) Master system warning indicator...39 |
| (3) Motion control lever...36, 49 | (18) Glow plug indicator...39, 39 |
| (4) LCD monitor...40 | (19) Engine oil pressure warning indicator...39, 39 |
| (5) Cup holder...- | (20) Engine overheat warning indicator...39, 39 |
| (6) Seat belt...47 | (21) Electrical charge warning indicator...39, 39 |
| (7) Operator's seat...47 | (22) Fuel level warning lamp...39, 39, 41 |
| (8) Hydraulic lift control pedal (DOWN)...48, 54 | (23) Coolant temperature gauge...40 |
| (9) Hydraulic lift control pedal (UP)...48, 54 | (24) Hour meter...40 |
| (10) Key switch...38 | (25) Battery voltage meter...41 |
| (11) Cutting height control dial...54 | (26) Fuel gauge...40, 41 |
| (12) PTO lever...36, 57 | (27) Service code display...41 |
| (13) Accelerator lever...36, 48 | (28) Tachometer...40 |
| (14) PTO clutch indicator...36 | (29) Engine warning indicator...31 to 35 |
| (15) Neutral indicator (Motion control lever)...36 | (30) DPF switch...30 to 35 |

NOTE :

- Items (17) to (22) correspond to the Easy Checker™.

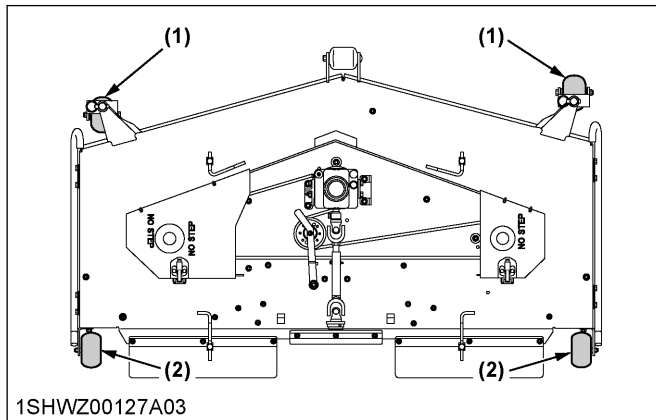
MOWER

RCK72P



- (1) Anti-scalp roller (front, swivel type)...54 to 57
(2) Anti-scalp roller (rear, bolt shift type) rear RH roller is only for **RCK72P**...27, 54 to 57
(3) Discharge chute

RCK60R, RCK72R



- (1) Anti-scalp roller (front, swivel type)...54 to 57
(2) Anti-scalp roller (rear, bolt shift type)...27, 54 to 57

MOWER MOUNTING

MOUNTING THE MOWER DECK

WARNING

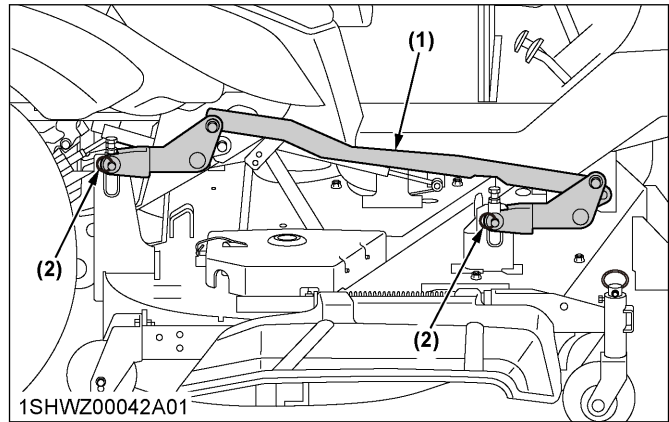
To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Apply the parking brake.
- Chock the rear tires.
- Stop the engine and remove the key.

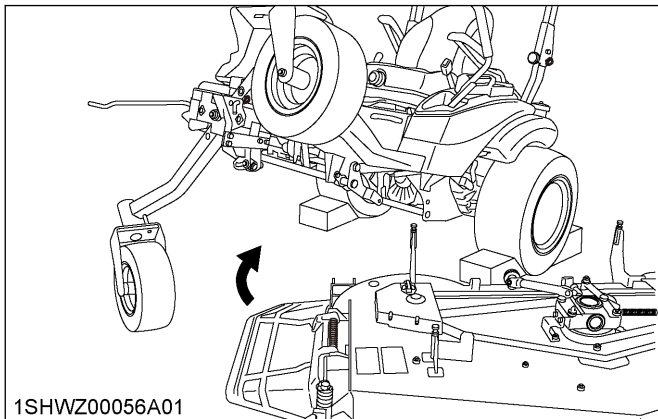
NOTE :

- You cannot attach a rear discharge mower RCK60R or RCK72R to a side discharge mower unit ZD1511LF.

1. Before mounting the mower deck, raise the lift links to the full up position.
(See [STARTING THE MACHINE](#) on page 46.)
2. Adjust the cutting height control dial to the 1 in. position.
3. Tilt up the machine with the maintenance lift system. (See [TILTING UP THE MACHINE](#) on page 63.)
4. Place the mower deck at the left side of the machine.



- (1) Lift link
(2) Clevis pin, plain washer, snap pin

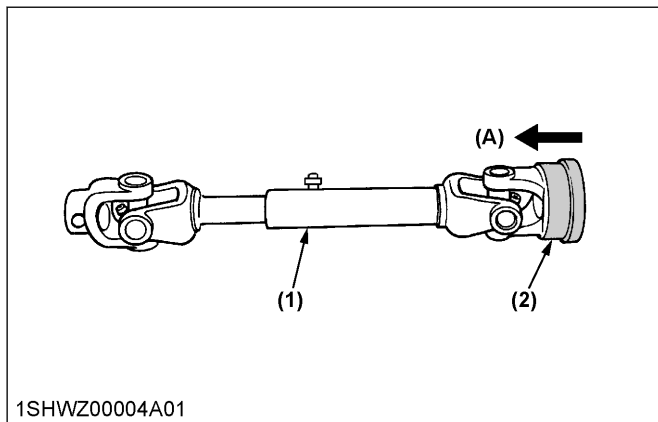
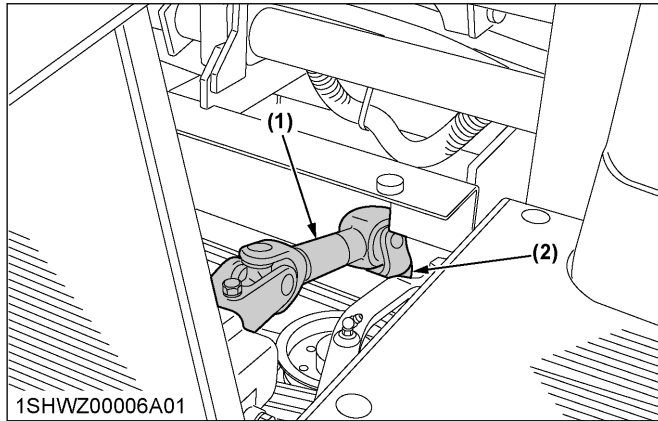


5. Slide the mower deck under the machine, and make sure that the mower gear case is placed properly in the center of the machine, lower the axle from the tilt-up position to the normal position.
6. Place 50 mm (2 in.) wood blocks under each side of the mower deck.
7. Depress the hydraulic lift control pedal (DOWN) and pull down the lift links.
8. Attach the lift links to the mower deck with attaching hardware.

9. Install universal joint.
Pull back the coupler of the universal joint.
Push the universal joint onto the PTO shaft until the coupler locks.

IMPORTANT :

- Tug the universal joint backward and forward to make sure it is locked securely.



- (1) Universal joint
(2) Coupler

(A) "PULL"

10. After mounting the mower, check the mower level. If necessary, adjust the mower level and anti-scalp rollers.

ADJUSTING THE MOWER

(See [OPERATING THE MOWER](#) on page 54 and [ADJUSTMENT](#) on page 99.)

DISMOUNTING THE MOWER DECK

For dismantling the mower deck, reverse the above procedures.

INSTALLING PARTS TO THE MOWER

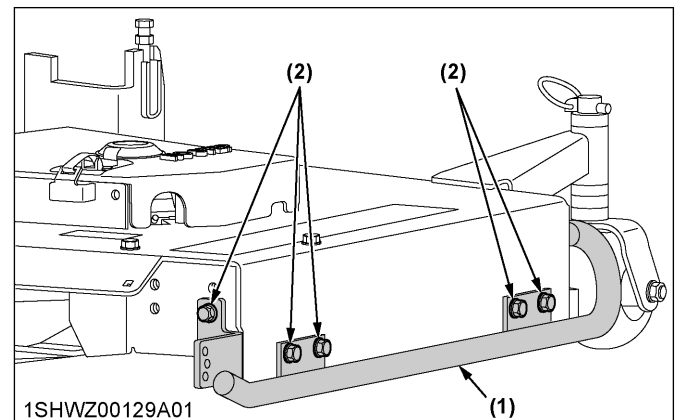
1. Installation of skid

RCK72R only

Install the skid with 5 flange bolts.

NOTE :

- Right side shown, left side similar



- (1) Skid (RH)
(2) Flange bolt (M10)

2. Installation of gauge wheel

RCK72P

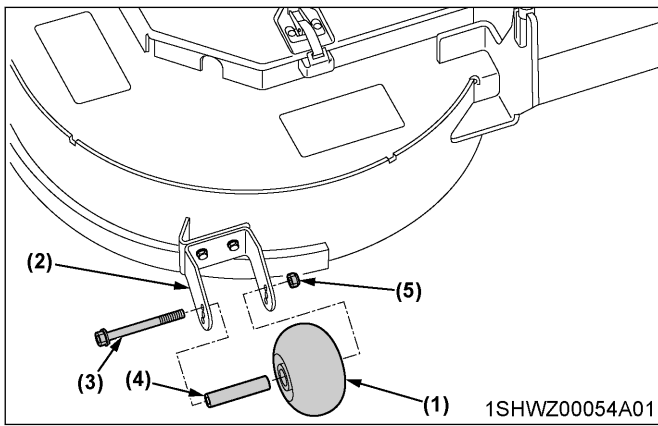
Install the gauge wheel to the stay (3L gauge) with gauge wheel boss, flange bolt and locking nut.

IMPORTANT :

- Choose the hole of the stay (3L gauge) by cutting height.
(See [ADJUSTING THE CUTTING HEIGHT](#) on page 54.)

NOTE :

- Left side of RCK72P shown, right side of RCK72P similar
- Install the flange bolt from outside.



- (1) Gauge wheel
- (2) Stay (3L gauge)
- (3) Flange bolt
- (4) Gauge wheel boss
- (5) Locking nut

RCK72R only

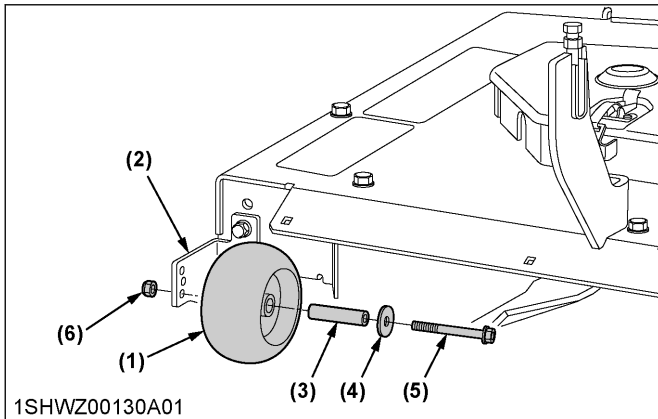
Install the gauge wheel with gauge wheel boss, plain washer, sems bolt and locking nut.

IMPORTANT :

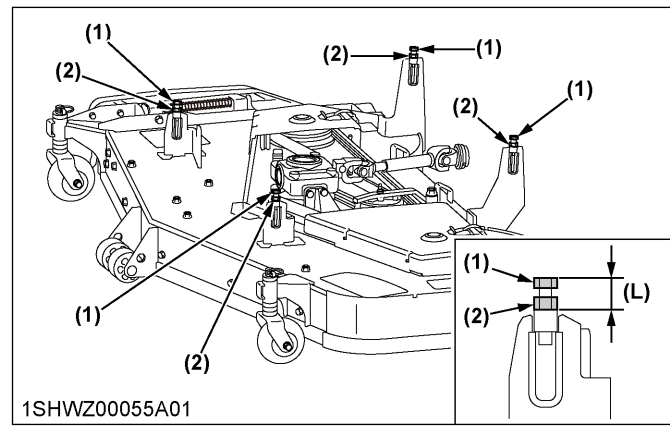
- Choose the hole of the skid by cutting height.
(See [ADJUSTING THE CUTTING HEIGHT](#) on page 54.)

NOTE :

- Left side of RCK72R shown, right side of RCK72R similar
- Install the sems bolt from inside.



- (1) Gauge wheel
- (2) Skid (left)
- (3) Gauge wheel boss
- (4) Plain washer
- (5) Sems bolt
- (6) Locking nut



- (1) Bolt (adjuster)
- (2) Nut
- (L) 25 mm (reference)

3. Installation of bolt (adjuster)

1. Install the bolt (adjuster) with the nut.
2. Adjust length (L).
3. Tighten the nut.

OPERATING THE ENGINE



WARNING

To avoid serious injury or death:

- Read and understand the safe operation section.
- Read and understand the safety labels located on the machine.
- To avoid the danger of exhaust fume poisoning, do not operate the engine indoors without proper ventilation.
- Never start the engine while standing on the ground. Start the engine only from the operator's seat.
- Make it a rule to set all shift levers to the "NEUTRAL" positions and to place the PTO lever in "OFF" position before starting the engine.

Details regarding safe operation can be found in a different section.

(See [SAFE OPERATION](#) on page 5.)

IMPORTANT :

- Do not use starting fluid or ether.
- To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.

EXHAUST AFTERTREATMENT DEVICES



WARNING

To avoid serious injury or death:

- During diesel particulate filter (DPF) regenerating operations, exhaust gases and exhaust filter components reach temperatures hot enough to burn people, or ignite or melt common materials.
- Keep machine away from people, animals or structures which may be susceptible to harm or damage from hot exhaust gases.
- During regeneration, white exhaust gases may be visible. Do not allow regeneration in a non ventilated garage or confined area.
- During regeneration, do not leave the machine.

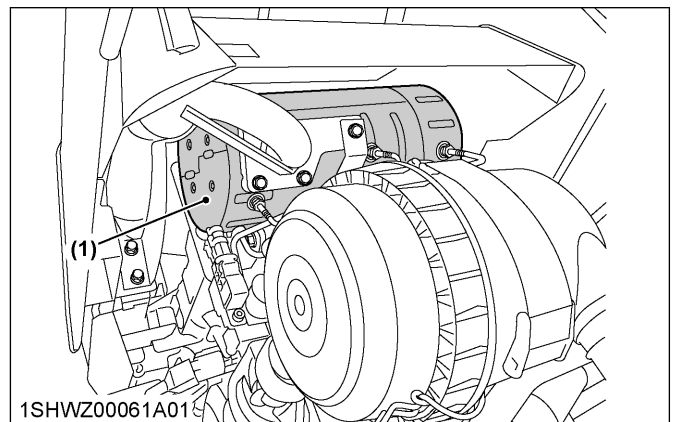
1. Diesel oxidation catalyst and diesel particulate filter (DPF) muffler

The diesel oxidation catalyst and diesel particulate filter (hereinafter called DPF) serve to reduce hydrocarbons, carbon monoxide and other toxic gases, all of which are contained in diesel engine emissions, to harmless carbon dioxide and water. The DPF also traps particulate matter (PM).

To meet the emission regulations in your country, the DPF is installed on your machine.

Be sure to read this operator's manual before running in your machine.

It is imperative for the machine owner and operator to handle the DPF in a safe and environmentally responsible manner.



1SHWZ00061A01

(1) Diesel particulate filter (DPF)

NOTE :

- When the DPF has trapped a specific amount of particulate matter (PM), the engine computer starts the process of regeneration or burning of soot collected by the filter. This burning process is called regeneration.

2. Handling points

When a specific amount of particulate matter (PM) has accumulated in the DPF muffler, it is necessary to refresh the DPF muffler by burning the PM inside it.

This burning off work is called "Regeneration".

To extend operating time to reach this regeneration, and to avoid DPF muffler trouble, make sure to observe the following handling matters.

Fuel

Be sure to use ultra low sulfur fuel (S15).

IMPORTANT :

- Use of diesel fuel other than ultra low sulfur fuel may adversely affect the engine and DPF performance.
- Use of fuels other than ultra low sulfur fuel (S15) may not meet regulations for your region.

Engine oil

Use DPF-compatible oil (CJ-4) for the engine.

IMPORTANT :

- If any engine oil other than CJ-4 is used, the DPF may become clogged earlier than expected and the fuel economy may drop.

Prohibition of unnecessary short-time operation

At the start of the engine, significant PM is generated. Avoid running the machine (turning on and off the engine) for a short period of time whenever possible, as this will increase PM accumulation.

Regeneration

When there is “Regeneration” instruction sign by lamp or buzzer, immediately perform the required procedure for regeneration.

IMPORTANT :

- Interrupting the regeneration cycle or continuing operation while ignoring the warning signs may cause DPF and engine damage.
- Operation with a clogged air cleaner can cause a regeneration failure and DPF damage.

DPF REGENERATION PROCESS

DPF regeneration process can be performed by choosing from “Auto regeneration” or “Regeneration inhibit” mode according to your job conditions.

For jobs not affected by hot gases emitted during regeneration, the “Auto regeneration” is advisable.

1. Auto regeneration mode



When starting the engine (switch operation is unnecessary), the “Auto regeneration” mode is automatically activated.

With the auto regeneration mode on, when a specific amount of PM has accumulated, and the regeneration conditions are satisfied, the DPF will be automatically regenerated whether the machine is in motion or parked.

(See [Tips on DPF regeneration on page 36.](#))

In this way, work efficiency is improved. For more details, read the “Auto regeneration” section of this manual.

(See [Operating procedure for auto regeneration mode on page 31.](#))

2. Regeneration inhibit mode



After starting the engine, if the “DPF inhibit switch” is pressed to turn on the switch lamp, the “Regeneration inhibit” mode will be activated.

With “Regeneration inhibit” mode on, the PM which has accumulated inside the DPF will not be burnt, unless the operator performs the regeneration work manually.

The “Regeneration inhibit” mode is effective for work in poorly ventilated work spaces.

For more details, read the regeneration prohibition section of this manual.

(See [Operating procedure for regeneration inhibit mode on page 33.](#))

NOTE :

- If the engine is stopped once, the “Auto regeneration” mode will be activated.

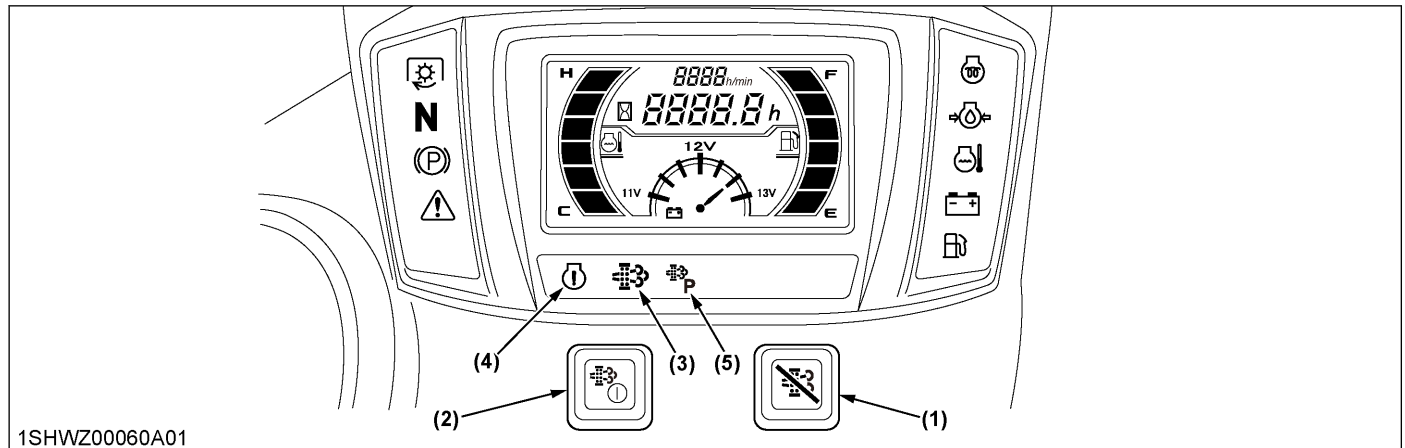
3. Parked regeneration



When an amount of PM more than specified built up in the DPF, the regeneration indicator starts flashing to notify the operator that the parked regeneration is necessary.

Stop PTO work, park and regenerate. Parking gives more power to “Regeneration” than in “Auto regeneration” mode.

4. Operating procedure for auto regeneration mode



(1) DPF inhibit switch
(2) Parked regeneration switch

(3) Regeneration indicator
(4) Engine warning indicator

(5) Parked regeneration indicator

Regeneration operating procedure

1. Start the engine.

Make sure that the DPF inhibit switch lamp  is "OFF".

Switch lamp "OFF": Auto regeneration mode activated.

Switch lamp "ON": Regeneration inhibit mode activated.

NOTE :

- When the engine is started, the "Auto regeneration" mode is automatically activated.
- "Regeneration inhibit" mode is activated when the DPF inhibit switch is pushed after the engine is started.

2.  When a specific amount of PM has built up in the DPF, the regeneration indicator turns "ON".

Continue to operate the machine, and the regeneration process will start automatically; make sure you are working in a safe area as DPF and exhaust temperature will rise.

When the regeneration cycle has completed, the regeneration indicator turns "OFF".

IMPORTANT :

- When ambient temperature is so low or when working with such extraordinary use of electricity that the regeneration conditions are not satisfied, the regeneration indicator starts flashing.

 If the regeneration indicator turns "ON" for a while and then starts flashing, keep on working and rev up the engine to the maximum rpm so that the regeneration indicator stops flashing and remains "ON".

4.1 PM warning level and required procedures

During auto regeneration mode when the PM level has built up in the DPF, the regeneration cycle will start automatically.

If the regeneration cycle is interrupted or the regeneration conditions are not satisfied, the buzzer starts sounding and the indicator display changes in response to the PM level in order to prompt the operator to perform the required procedure listed in the following table.

IMPORTANT :

- **Once PM warning level has been reached, immediately perform the required procedure for regeneration. Interrupting the regeneration cycle or continuing operation by ignoring the warning signs may cause DPF and engine damage.**
- **If the regeneration cycle is interrupted several times, parked regeneration will be required.**

Auto mode		
	DPF system status	Required procedure
PM warning level: 1 Buzzer: Not sounding	 The regeneration indicator turns "ON".	A specific amount of PM has accumulated in the DPF muffler. Continue to work the machine to raise the DPF temperature. The regeneration cycle starts until cycle is complete then the indicator will turn "OFF".
PM warning level: 2-1 Buzzer: Sounding every 5 seconds	If the regeneration cycle was interrupted or conditions are not satisfied for regeneration then DPF system is now in level 2:	
PM warning level: 2-2 Buzzer: Sounding every 3 seconds	 The regeneration indicator turns "ON".	Start the regeneration, referring to PM warning level: 1 above. Now the parked regeneration indicator starts flashing, and the parked regeneration can also be started. If the regeneration conditions are not met, perform the parked regeneration procedure. (See Operating procedure for parked regeneration on page 35.)
PM warning level: 3 Buzzer: Sounding every 1 second Engine output: 50%	If the regeneration fails in the warning level 2:	
	 The engine warning indicator starts flashing.  The parked regeneration indicator starts flashing.	Immediately discontinue working the machine and start the parked regeneration cycle process. (See Operating procedure for parked regeneration on page 35.) At this PM warning level, the auto regeneration mode does not function. If the machine is operated further, the regeneration cycle will be disabled.
PM warning level: 4 Buzzer: Sounding every 1 second Engine output: 50%	If the parked regeneration is interrupted or the machine is continuously operated in the warning level 3:	
	 The engine warning indicator remains constantly "ON".	Immediately move the machine to a safe place, park it there and turn the engine "OFF". Contact your local KUBOTA Dealer. • At this level, do not continue to operate the machine; otherwise, damage may result to the DPF and engine.

IMPORTANT :

- **When the regeneration interval becomes shorter, parked regeneration will be required as follows.**

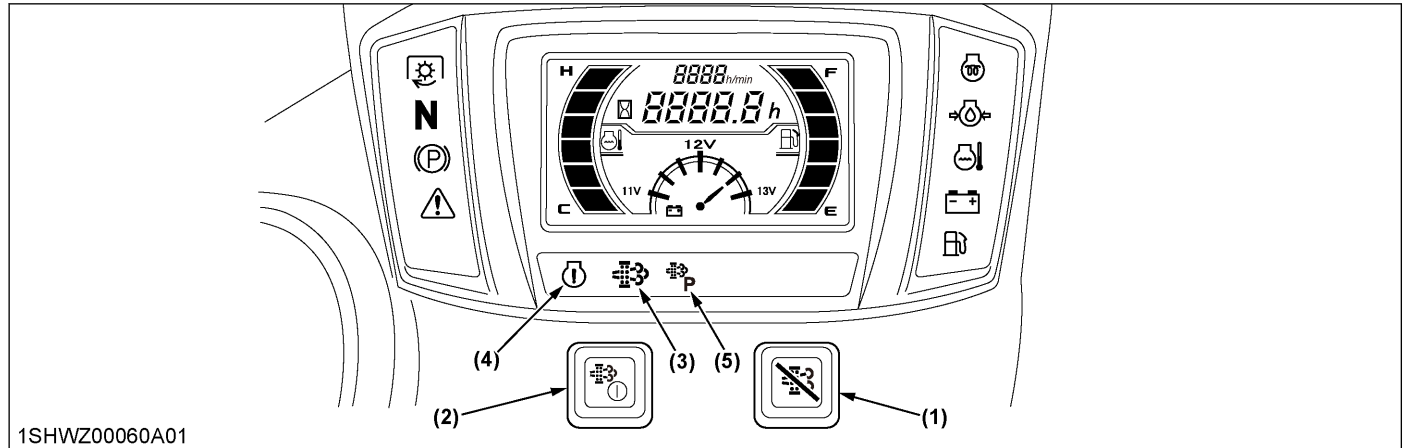
1.  If it takes shorter than 4 hours or so for the regeneration indicator to go out and light up again.

2.  Parked regeneration indicator starts flashing.

*Buzzer: Sounding every 5 seconds.

3. **Immediately discontinue working the machine and begin the parked regeneration cycle process.**

5. Operating procedure for regeneration inhibit mode



1SHWZ00060A01

(1) DPF inhibit switch
(2) Parked regeneration switch

(3) Regeneration indicator
(4) Engine warning indicator

(5) Parked regeneration indicator

Regeneration operating procedure

1. Start the engine.

2. Press the DPF inhibit switch , and the switch lamp turns on.

Switch lamp "ON": Regeneration inhibit mode selected.

Switch lamp "OFF": Auto regeneration mode selected.

3. When the parked regeneration indicator  starts flashing:

A specific amount of PM has accumulated in the DPF muffler.

Move the machine to a safe place and activate the DPF muffler.

(See [Operating procedure for parked regeneration on page 35.](#))

5.1 PM warning level and required procedures

In the regeneration inhibit mode, the buzzer starts sounding and the indicator display changes in response to the PM level in order to prompt the operator to perform the required procedure listed in the following table.

IMPORTANT :

- Once PM warning level has been reached, immediately perform the required procedure for regeneration. Interrupting the regeneration cycle or continuing operation by ignoring the warning signs may cause DPF and engine damage.

Regeneration inhibit mode		
	DPF system status	Required procedure
PM warning level: 1 Buzzer: Not sounding	 The regeneration indicator starts flashing.	A specific level of PM has built up in the DPF muffler. Continue with the operation as it is.
	 At PM warning levels range from 1 to 2-2, it is also possible to change DPF inhibit switch to auto regeneration mode, then perform regeneration.	
PM warning level: 2-1 Buzzer: Sounding every 5 seconds	 The regeneration indicator starts flashing.	Move the machine to a safe area, then begin the parked regeneration cycle process. (See Operating procedure for parked regeneration on page 35.)
PM warning level: 2-2 Buzzer: Sounding every 3 seconds	 The parked regeneration indicator starts flashing.	
PM warning level: 3 Buzzer: Sounding every 1 second Engine output: 50%	If the parked regeneration cycle is interrupted or the machine is continuously operated in the PM warning level 2:	
	 The engine warning indicator starts flashing.	Immediately stop working the machine, move the machine to a safe area, then begin the parked regeneration cycle process. (See Operating procedure for parked regeneration on page 35.) If the machine is operated further and the operator ignores the warning signs, then regeneration will be disabled.
	 The parked regeneration indicator starts flashing.	
PM warning level: 4 Buzzer: Sounding every 1 second Engine output: 50%	If the regeneration cycle is interrupted or the machine is continuously operated ignoring the warning signs, in the PM warning level 3:	
	 The engine warning indicator remains constantly "ON".	Immediately move the machine to a safe place, park it there and turn the engine "OFF". Contact your local KUBOTA Dealer. At this level, do not continue to operate the machine; otherwise, damage may result to the DPF and engine.

IMPORTANT :

- When the regeneration interval becomes shorter, parked regeneration will be required as follows.

1.  If it takes shorter than 4 hours or so for the regeneration indicator to go out and light up again.

2.  Parked regeneration indicator starts flashing.

*Buzzer: Sounding every 5 seconds.

3. Immediately discontinue working the machine and begin the parked regeneration cycle process.

(For more details about the procedure, see [Operating procedure for parked regeneration on page 35.](#))

6. Operating procedure for parked regeneration

1. Park the machine in a safe area away from buildings, people, and animals.
2. Set the motion control lever to “NEUTRAL” position.
3. Set the parking brake.
4. Set the PTO lever to “OFF” position.
5. Lower the implement to the ground.
6. Clean the hood screen and the radiator screen.
7. Return the engine rpm to the idle speed.

8. Press the DPF inhibit switch , and the switch lamp turns “OFF”.

9. When the regeneration conditions are satisfied (from 2 to 4 and 7, 8), the parked regeneration switch lamp  starts flashing.

10. Press the parked regeneration switch  to start the regeneration cycle.

The switch lamp will stop flashing and remain “ON” constantly during the cycle.

11. The engine rpm will automatically rise, and the regeneration process will start.

NOTE :

- For a while after the start of regeneration, the engine runs at high speed for warming it up and regeneration of electricity.

12. Both indicators   stay “ON” while regenerating the DPF.

They turn “OFF” when the cycle is complete.

13. After the lamp turns “OFF”, normal machine work may resume.

When driving in “Regeneration inhibit” mode, press the DPF inhibit switch to turn on the switch lamp.

NOTE :

- During the regeneration cycle, do not touch the above levers and switches (in steps 2, 3, 4), nor change the engine rpm other than for an emergency stop. Otherwise, the regeneration will be interrupted.
- Never leave the machine when the parked regeneration process is activated.
- If the parked regeneration cycle is interrupted, the engine rpm is fixed at the idling level for about 30 seconds. For this period, keep the hand accelerator lever at the idle position. Do not move it. It will function again in 30 seconds.

7. Tips on DPF regeneration

• Necessary conditions for “Regeneration”

If even one condition is deviated from, after starting regeneration, the regeneration will be interrupted.

- The engine coolant temperature
- The DPF temperature
- The battery voltage during regeneration

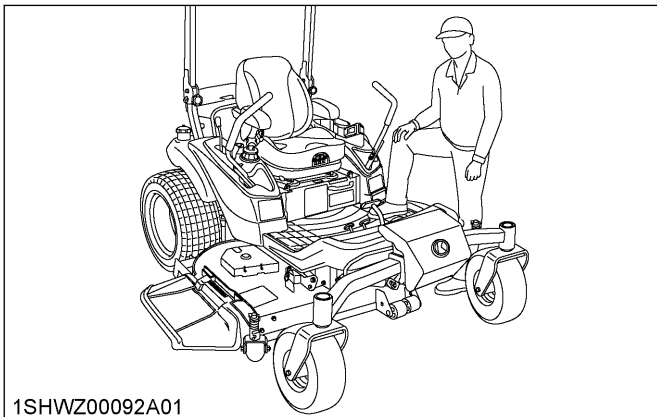
- Usually it takes 25-35 minutes to complete the regeneration cycle.

Actual regeneration time may depend on ambient temperature, exhaust temperature and engine speed.

- It is recommended to do the regenerating while the engine is warm and at high revolution.
- Do not unnecessarily start and interrupt the regeneration process. Otherwise, a small amount of fuel becomes smoke.
- Just after the regeneration has ended, the DPF muffler remains hot. It is advisable to keep the engine running for about 5 minutes to allow cooling of the exhaust components.
- During the regeneration, make sure the fuel level warning lamp stays off.
- When the engine warning indicator turns “ON” frequently in regeneration, consult your local KUBOTA Dealer.

GETTING ON AND OFF THE MACHINE SAFELY

Do not step on either side of the mower deck when you get on and off the machine. When you get on and off the machine from either side, step over the mower deck.

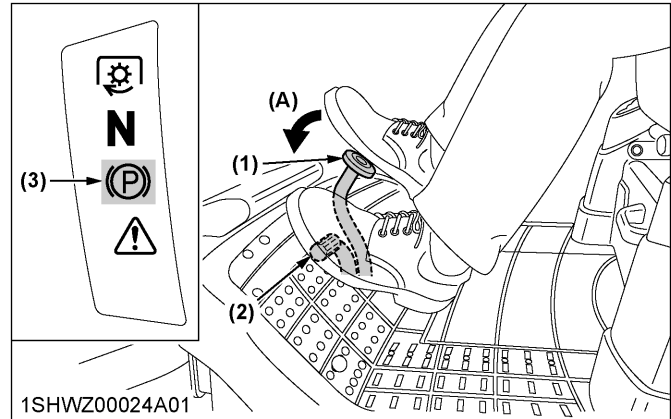


STARTING THE ENGINE

1. Sit on the operator's seat. Put on the seat belt.
2. Apply the parking brake.

To apply the parking brake:

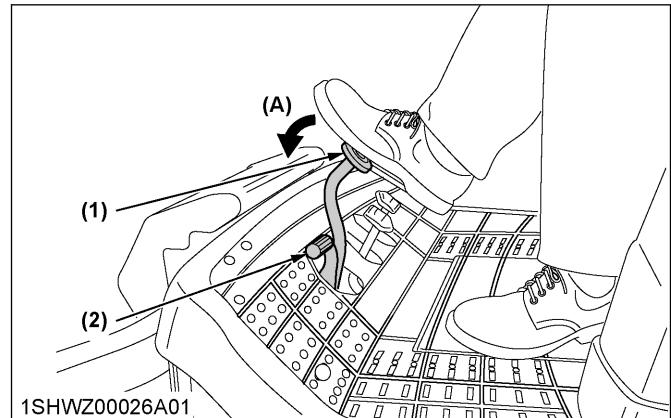
- a. Depress the parking brake pedal firmly with your right foot and the parking brake lock pedal simultaneously with your left foot.
- b. Then release the parking brake pedal while holding the parking brake lock pedal down.
- c. Parking brake warning indicator will come “ON”.



- (1) Parking brake pedal
- (2) Parking brake lock pedal
- (3) Parking brake warning indicator

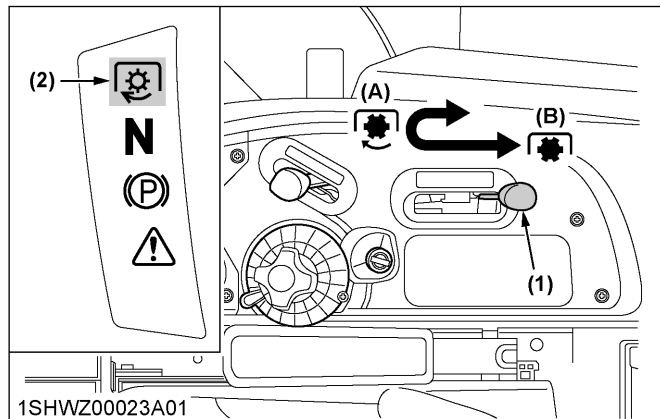
To release the parking brake:

Depress the parking brake pedal and release it slowly with your right foot without pressing the parking brake lock pedal.



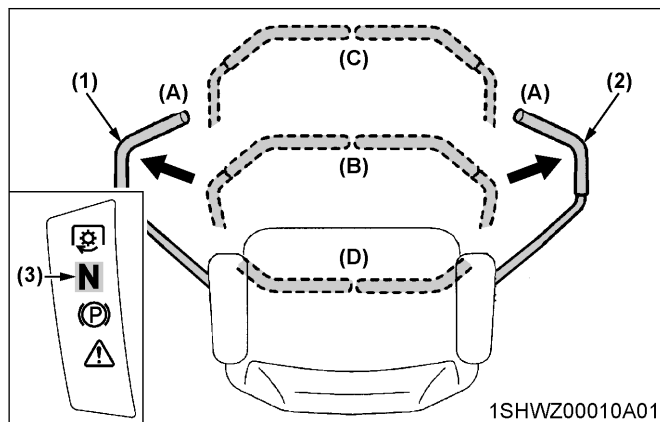
- (1) Parking brake pedal
- (2) Parking brake lock pedal

- Place the PTO lever in the “DISENGAGED” (OFF) position.
PTO clutch indicator will come “OFF”.



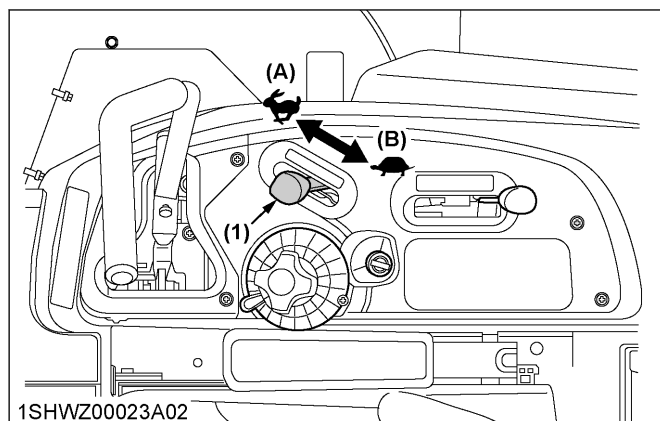
- (1) PTO lever (A) “ENGAGED” (ON)
(2) PTO clutch indicator (B) “DISENGAGED” (OFF)

- Place the motion control levers in the “NEUTRAL LOCK” position.
Neutral indicator will come “ON”.



- (1) Motion control lever (LH) (A) “NEUTRAL LOCK” position
(2) Motion control lever (RH) (B) “NEUTRAL” position
(3) Neutral indicator (C) “FORWARD”
(D) “REARWARD”

- Set the accelerator lever 1/2 way forward.



- (1) Accelerator lever (A) “FAST”
(B) “SLOW”

- Insert the key into the key switch and turn clockwise 1 notch.
Make sure the Easy Checker™ lights are “ON”.
(See [Key switch on page 38.](#))

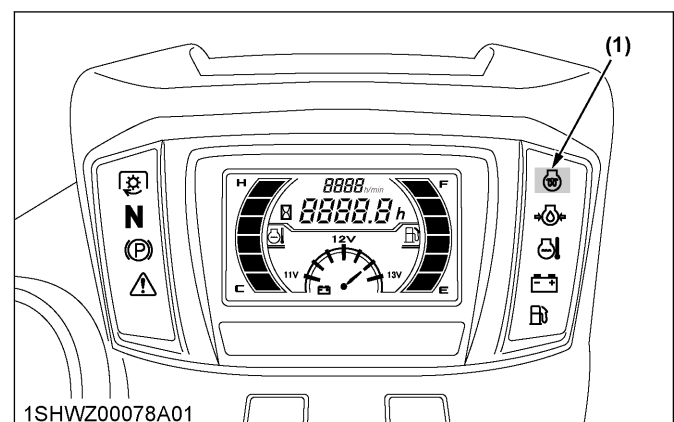
**WARNING**

To avoid serious injury or death:

- Do not depress the hydraulic lift control pedal.
When the engine is off, depressing the hydraulic lift control pedal (UP or DOWN) will lower the implement.

- Turn the key switch clockwise, and hold it for about 5 seconds. (at the “PREHEAT” position)
For the appropriate preheating time, refer to the table below:

Temperature	Preheating time
Over 0 °C (32 °F)	5 sec.
Below 0 °C (32 °F)	10 sec.



- (1) Glow plug indicator

NOTE :

- Glow plug indicator (1) comes on while the engine is being preheated.

8. Turn the key switch to the “**START**” position and release the key to the “**ON**” position when the engine starts.

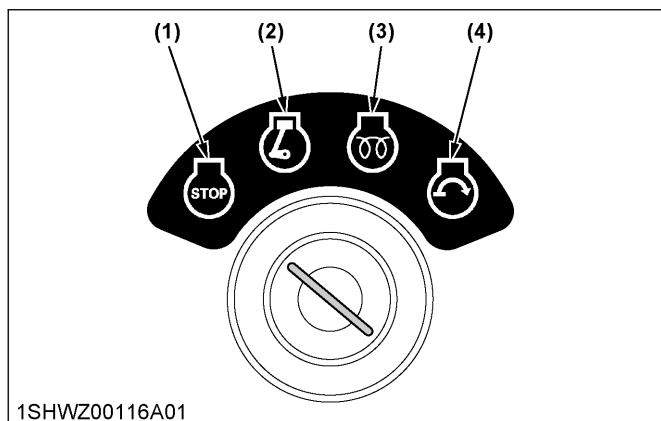
IMPORTANT :

- Do not use starting fluid or ether.
 - To protect the battery and the starter, make sure that the starter is not continuously turned for more than 10 seconds.
 - Do not turn the key switch while the engine is running.
 - When the temperature is below 0 °C (32 °F), run the engine at medium speed to warm up the lubricant of the engine and transmission for at least 10 minutes. If the machine is operated before the lubricant is warm enough, the machine life will be shortened.
 - Do not operate the machine under full load until it is sufficiently warmed up.
 - When the ambient temperature is less than -15 °C (5 °F), remove the battery from the machine and store it somewhere warm until next operation.
9. Make sure that the Easy Checker™ lights have gone off. If the light is still on, immediately stop the engine and check the remedy following the instruction.
(See [CHECK DURING OPERATING](#) on page 39.)
 10. Warm up the engine by running at medium speed.

1. Key switch

IMPORTANT :

- Because of the engine start system, the engine may not be started except when the PTO clutch is “**DISENGAGED**” (OFF), the parking brake lock pedal is applied, motion control levers are in “**NEUTRAL LOCK**” position and the operator is sitting in the seat.



(1) OFF

The position where the key can be inserted into or removed from the key switch. When the key is turned to this position, the engine shuts off.

(2) ON

The engine keeps running.

(3) PREHEAT

The glow plug is heated.

(4) START

Apply the parking brake and turn the key switch to this position to start the engine.

STOPPING THE ENGINE

1. Place the motion control levers in the “**NEUTRAL LOCK**” position.
2. Apply the parking brake.
3. After idling the engine, turn the key switch to the “**OFF**” position.
4. Remove the key.
5. Do not leave the key switch “**ON**” (key in the “**ON**” position) as the battery will discharge when the engine is not running.

1. Fuel valve (inside the hood)

The engine stops when the key switch is turned “**OFF**”.

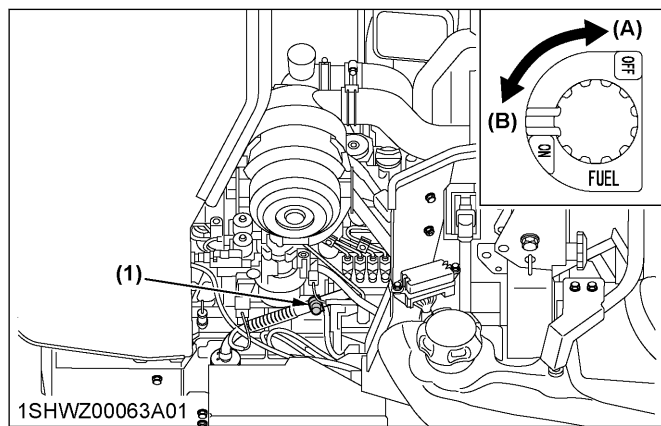
- If the engine does not stop, make sure the motion control levers are in the “**NEUTRAL LOCK**” position, the PTO lever is “**OFF**”, the mower lowered to the ground and apply the parking brake, then carefully get off the machine.
Open the hood and close the fuel valve, and wait for the engine to stop: step away from the machine a few minutes until the fuel of the hose is used up.
- Then contact your local KUBOTA Dealer immediately.



WARNING

To avoid serious injury or death:

- Do not operate the machine until the engine stop system is repaired.



(1) Fuel valve

(A) "OFF" (stop, close)

(B) "ON" (run, open)

CHECK DURING OPERATING

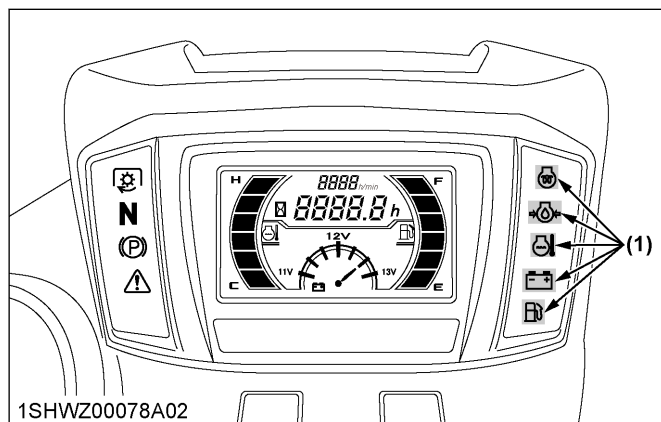
IMPORTANT :

Immediately stop the engine if:

- The engine suddenly slows down or accelerates.
- Unusual noises suddenly occur.
- Exhaust fumes suddenly become discolored.

While operating, make the following checks to see that all the parts are functioning normally:

- [Easy Checker™ on page 39](#)

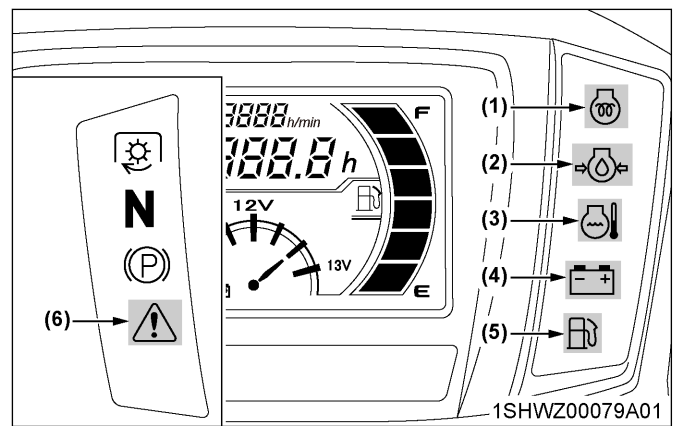


(1) Easy Checker™

1. Easy Checker™

If the warning lamps of the Easy Checker™ come on during operation, immediately stop the engine, and find the cause as shown below.

Never operate the machine while Easy Checker™ lamp is on.



(1) Glow plug indicator (pre-heating indicator)

When the key switch is in the "PREHEAT" position, the glow plug indicator turns on.

(2) Engine oil pressure

If the oil pressure in the engine goes below the prescribed level, the warning lamp in the Easy Checker™ will come on.

If this should happen during operation, and it does not go off when the engine is accelerated to more than 1000 rpm, check level of engine oil.

(See [Checking the engine oil level on page 69.](#))

(3) Engine overheat

If the water temperature gauge reads an unusual level and the warning lamp in the Easy Checker™ comes on, the engine may be overheated.

Check the machine by reading the troubleshooting section of this manual.

(See [TROUBLESHOOTING on page 108.](#))

(4) Electrical charge

If the alternator is not charging the battery, the warning lamp in the Easy Checker™ will come on. If this should happen during operation, check the electrical charging system or consult your local KUBOTA Dealer.

(5) Fuel level warning lamp

If the fuel in the tank goes below the prescribed level, the warning lamp in the Easy Checker™ will come on.

If this should happen during operation, refuel as soon as possible.

(See [Checking the amount of fuel and refueling on page 70.](#))

IMPORTANT :

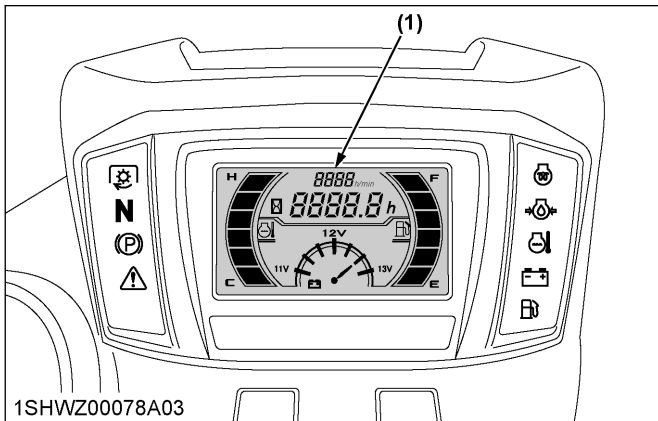
- When the fuel warning lamp lights up, refuel the tank as soon as possible. If the machine runs out of fuel and stalls, the engine and its components may be damaged.

(6) Master system warning

If trouble should occur at the disconnection of fuel sensor, coolant temperature sensor or LCD monitor malfunction, the indicator flashes as a warning. If the trouble is not corrected by restarting the machine, consult your local KUBOTA Dealer.

NOTE :

- For checking and servicing of your machine, consult your local KUBOTA Dealer for instructions.

LCD MONITOR

(1) LCD monitor

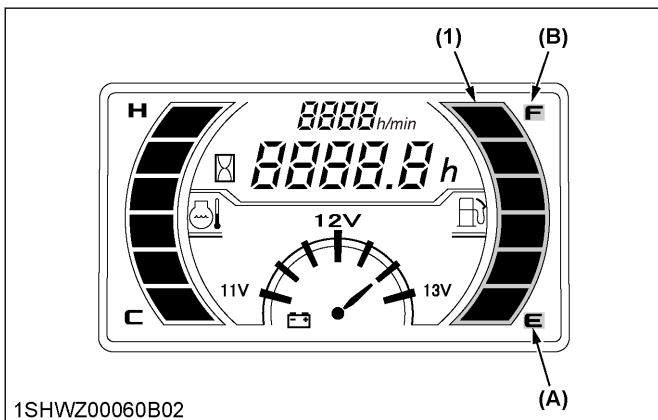
1. Fuel gauge

When the key switch is on, the fuel gauge indicates the fuel level.

Be careful not to empty the fuel tank. Otherwise air may enter the fuel system.

Should this happen, the system must be bled.

(See [Bleeding fuel system on page 96](#))



(1) Fuel gauge

(A) "EMPTY"
(B) "FULL"

2. Coolant temperature gauge**! WARNING**

To avoid serious injury or death:

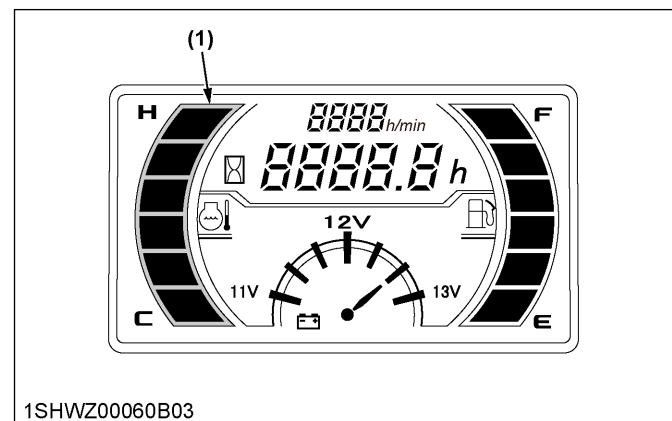
- Do not remove radiator cap until coolant temperature is well below its boiling point. Then loosen the cap slightly to relieve any pressure before removing the cap completely.

1. With the key switch "ON", this gauge indicates the temperature of the coolant. [C] for "cold" and [H] for "hot".

2. If the indicator reaches the [H] position, engine coolant is overheated.

Check the machine by reading the troubleshooting section of this manual.

(See [TROUBLESHOOTING on page 108.](#))

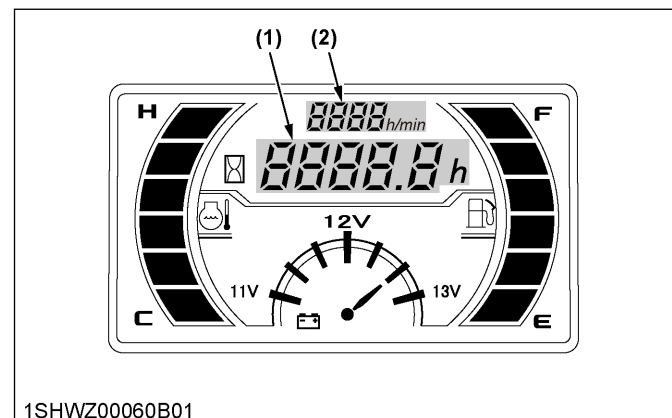


(1) Coolant temperature gauge

3. Hour meter, tachometer

This meter gives readings for engine speed and the hours the machine has been operated.

- The tachometer indicates the engine speed.
- The hour meter indicates in 5 digits the hours the machine has been used; the last digit indicates 1/10 of an hour.



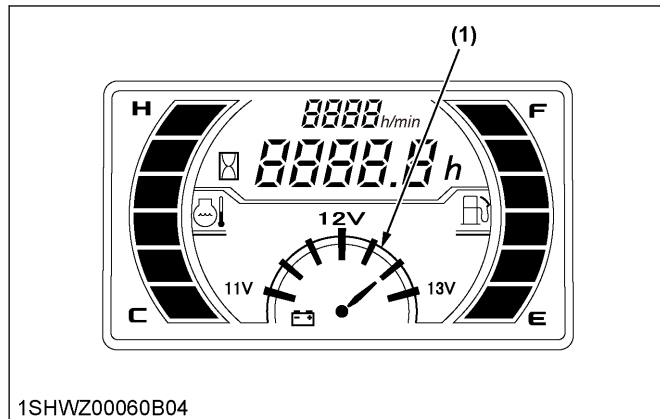
(1) Hours used
(2) Tachometer

4. Battery voltage meter

This meter gives readings for the battery voltage.

Specification: Battery voltage ≥ 12.0 V

If the battery voltage is below 12.0 V, charge the battery.

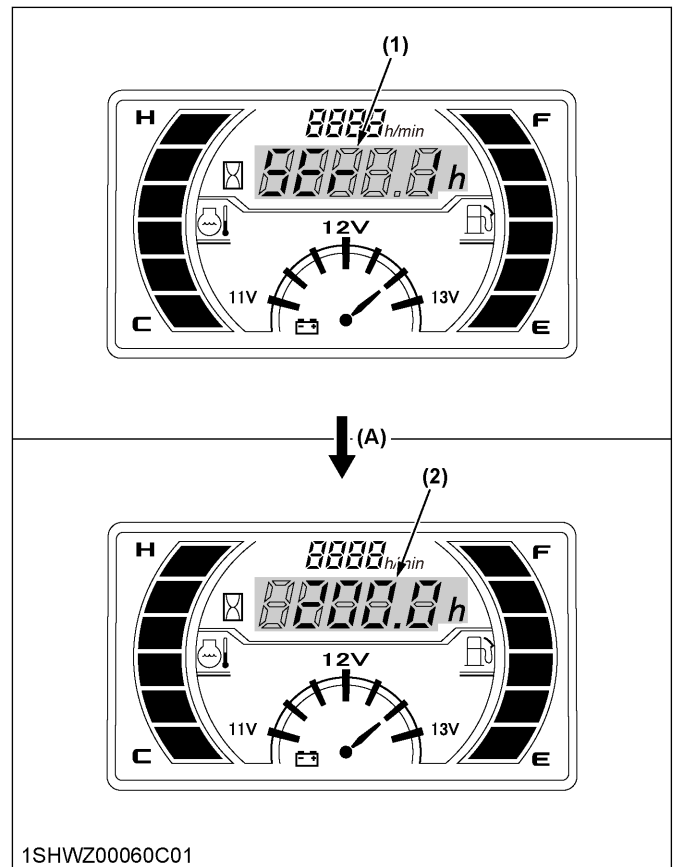


(1) Battery voltage meter

5. Service code display

The key switch is on, and if the service code (**58888** or **58882**) shown in the figure below is displayed on the LCD monitor, you must do the servicing jobs corresponding to the indication on hour meter (displayed at 10 seconds after that) on the machine. The service code will show at meter hour: 50 hr, 200 hr, 400 hr, 600 hr, 800 hr, 1000 hr....

(See [SERVICE INTERVALS](#) on page 75.)



(1) Service code

(2) Hours used

(A) At 10 seconds after the service code has displayed.

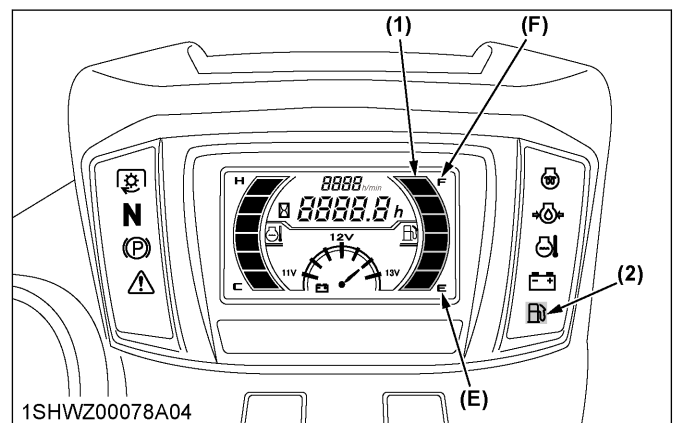
6. Overheat alarm

If the temperature of the coolant rises to overheat temperature, the overheat alarm whistles.

Check the machine by reading the troubleshooting section of this manual.

(See [TROUBLESHOOTING](#) on page 108.)

7. Fuel gauge, warning lamp and fuel valve



(1) Fuel gauge

(2) Fuel level warning lamp

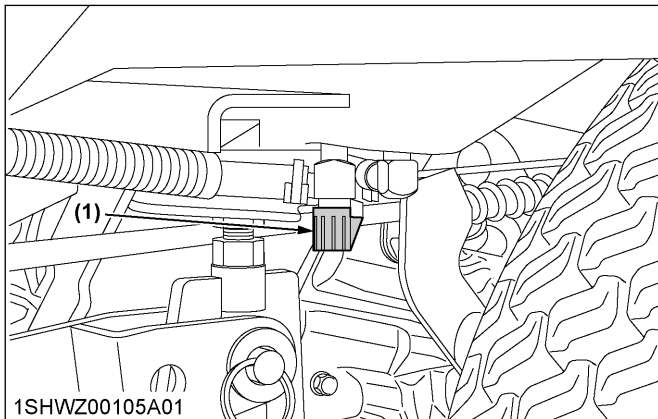
(E) "EMPTY"

(F) "FULL"

1. The fuel gauge shows the amount of fuel left in the RH tank.
2. Fuel level warning lamp flashes when fuel amount is below 7 L.

IMPORTANT :

- Fill the fuel tank only to bottom of the filler neck.
- Be careful not to empty the fuel tank. Otherwise air may enter the fuel system. Should this happen, you must bleed the system. (See [Bleeding fuel system on page 96.](#))
- When refueling, basically fill both fuel tanks full.
- In the case you have a small amount of fuel, if fuel is still in the fuel tank RH, fill the fuel tank LH first.
- The fuel gauge shows the fuel level of fuel tank RH. When the fuel gauge flashes, fill fuel as soon as possible.
- When the fuel gauge flashes, do not fill fuel on a slope. Air can get into the fuel system, causing the engine to stall.
- If the engine stalled with some remaining in the fuel tank RH, close the fuel valve of fuel tank LH and you can operate. (Refer to the following figures.)



(1) Fuel valve

COLD WEATHER STARTING

- When the ambient temperature is below -5°C (23°F) and the engine is very cold. (If the engine fails to start after 10 seconds, turn off the key for 30 seconds.), then repeat steps 7 and 8. Details regarding steps 7 and 8 can be found in a different section. (See [STARTING THE ENGINE on page 36.](#))
- To protect the battery and the starter, make sure not to turn the starter continuously for more than 10 seconds.

WARMING UP THE ENGINE**WARNING**

To avoid serious injury or death:

- Be sure to apply the parking brake during warm-up.

For 5 minutes after the engine start-up, allow the engine to warm up without applying any load. This is to allow oil to reach every part of the engine. If load is applied to the engine without this warm-up period, problems such as seizure, breakage or premature wear may appear.

1. Warm-up and transmission oil in the low temperature range

Hydraulic oil serves as transmission oil. In cold weather conditions, the oil may be cold with increased viscosity. This can cause delayed oil circulation or abnormally low hydraulic pressure for some time after engine start-up. This, in turn, result in trouble in the hydraulic system or damage to the hydraulic clutch.

To prevent this from happening warm up the engine at about 50% of rated rpm according to the following table.

Ambient temperature	Warm-up time requirement
Higher than 0°C (32°F)	Approximately 5 minutes
-10 to 0°C (14 to 32°F)	5 to 10 minutes
-20 to -10°C (-4 to 14°F)	10 to 15 minutes
Below -20°C (-4°F)	More than 15 minutes

IMPORTANT :

- Do not operate unless the engine is well warmed up. If operation is attempted while the engine is still cold, the hydraulic mechanism will not function properly and its service life will be shortened.
- If noises are heard after the hydraulic control lever (motion control levers, PTO lever, mower lift pedal) has been activated and the implement is lifting, the hydraulic mechanism is not adjusted properly. Unless corrected, the unit will be damaged. Contact your local KUBOTA Dealer for adjustment.

JUMP STARTING**WARNING**

To avoid serious injury or death:

- Keep cigarettes, sparks, and flames away from the battery.

- If the machine battery is frozen, do not jump start the engine.
- Do not connect the other end of the negative jumper cable to the negative terminal of the machine battery.

When jump starting the engine, observe the following instructions to start the engine safely:

1. Bring a helper vehicle with a battery of the same voltage as the disabled machine within easy cable reach.

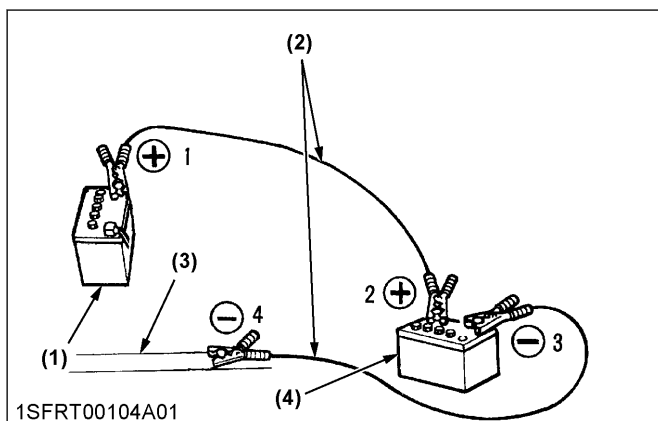
IMPORTANT :

- The vehicles must not touch.

2. Apply the parking brakes of both vehicles and put the shift levers in the neutral position. Shut the engine off.
3. Put on safety goggles and rubber gloves.
4. Ensure that vent caps are securely in place (if equipped).
5. Attach the red clamp to the positive (red, (+) or pos.) terminal of the dead battery and clamp the other end of the same cable to the positive (red, (+) or pos.) terminal of the helper battery.
6. Clamp the other cable to the negative (black, (-) or neg.) terminal of the helper battery.
7. Clamp the other end to the engine block or the frame of the disabled machine as far from the dead battery as possible.
8. Start the helper vehicle and let its engine run for a few moments. Start the disabled machine.
9. Disconnect the jumper cables in the exact reverse order of attachment (steps 7, 6 and 5).

Connect cables in numerical order.

Disconnect in reverse order after use.



- (1) Dead battery
(2) Jumper cables
(3) Engine block or frame
(4) Helper battery

IMPORTANT :

- This machine has a 12 volt negative (-) ground starting system.
- Use only same voltage for jump starting.

- Use of a higher voltage source on the machine could result in severe damage to the machine electrical system. Use only a matching voltage source when "jump starting" a low or dead battery.

OPERATING THE MACHINE

OPERATING A NEW MACHINE

How a new machine is operated and maintained will determine the operating life of the machine.

A new machine just off the factory production line has been tested, but the various parts are not accustomed to each other, so care should be taken to operate the machine for the first 50 hours at a slower speed and avoid excessive work or operation until the various parts become *“broken-in”*. The manner in which the machine is handled during the *“breaking-in”* period greatly affects the life of your machine. Therefore, to obtain the maximum performance and the longest operating life of the machine, it is very important to properly break-in your machine. In handling a new machine, the following precautions should be observed.

1. Changing lubricating oil for new machine

The lubricating oil is especially important in the case of a new machine. The various parts are not *“broken-in”* and are not accustomed to each other. Small metal grit may develop during the operation of the machine and this may wear out or damage the parts. Therefore, care should be taken to change the lubricating oil a little earlier than it would ordinarily be required.

Details regarding normal service intervals can be found in a different section.

(See [SERVICE INTERVALS on page 75.](#))

2. Engine break-in

After the first 50 hours of operation, change the engine oil and filter.

(See [EVERY 200 HOURS on page 87.](#))

3. Machine break-in

After the first 400 hours of operation, change the transmission oil.

(See [EVERY 400 HOURS on page 89.](#))

After the first 50 hours of operation, change the oil filter.
(See [EVERY 200 HOURS on page 87](#) and [EVERY 400 HOURS on page 89.](#))

- Do not operate the mower without the discharge chute in the down position.



WARNING

To avoid serious injury or death:

- The machine relies upon the engine driven transmission for speed, direction, and motion control. If the engine is not running, the machine cannot be driven or controlled. If the engine stops when operating on a slope, apply the parking brake immediately to prevent a machine runaway.
- Do not allow anyone other than the driver to ride on the machine.
- Do not drive the machine close to the edges of ditches or banks which may collapse under the weight of the machine, especially when the ground is loose or wet.
- When making a turn, be sure to reduce the travel speed and operate the motion control levers carefully.
- To avoid tip-over accidents, operate across slopes, not up and down. Avoid sudden starts and stops on slopes. Slow down and use extra caution when changing direction on a slope. Park the machine on a firm and level surface.
- Watch where you are going at all times. Watch for and avoid obstacles. Be alert at curbs, near trees, and other obstructions and hidden hazards.
- Do not mow near drop-offs, ditches or embankments. The mower could turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
- Do not drive the machine on streets or highways. Watch for traffic when you cross roads or operate near roads.
- Look to the rear before and when backing. Make sure the area immediately behind you is clear of obstructions or holes, and small children. Use extra caution when the machine is equipped with a grass catcher.
- Keep bystanders, especially children, and animals away from the mowing area.
- Clear the work area of objects which might be picked up and thrown by the blades.
- Do not direct the opening of the chute at bystanders or animals. Ejected objects may cause injury. Plan your mowing carefully before starting operation.



DANGER

To avoid serious injury or death:

- Be sure to disengage the PTO and sit on the operator's seat before starting the engine.

OPERATING THE FOLDABLE ROPS



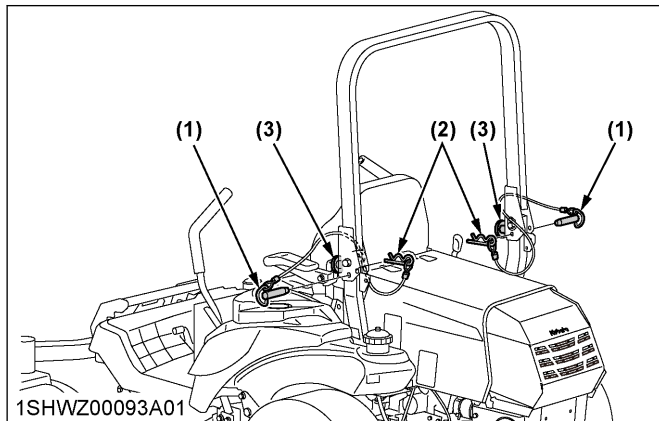
WARNING

To avoid serious injury or death:

- Always use the seat belt when the ROPS is installed.
- Do not use the seat belt if a foldable ROPS is down or if there is no ROPS.

1. Folding the ROPS

1. Loosen the knob bolts 1 to 2 turns.
2. Remove both lock pins.



- (1) Lock pin
(2) Snap pin
(3) Knob bolt

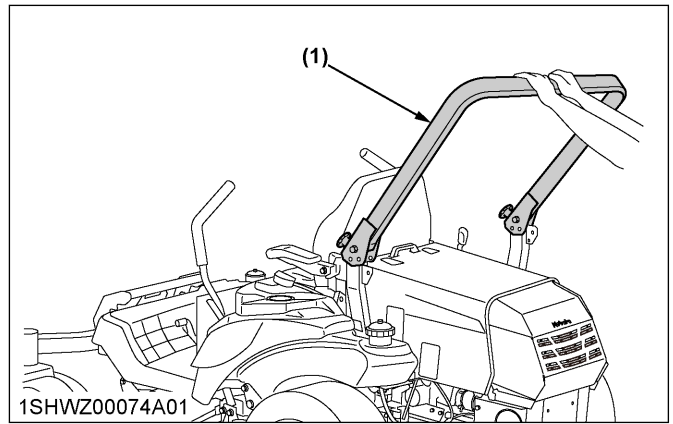
3. Fold the ROPS.



CAUTION

To avoid personal injury:

- Hold the ROPS tightly with both hands and fold the ROPS slowly and carefully.



- (1) ROPS

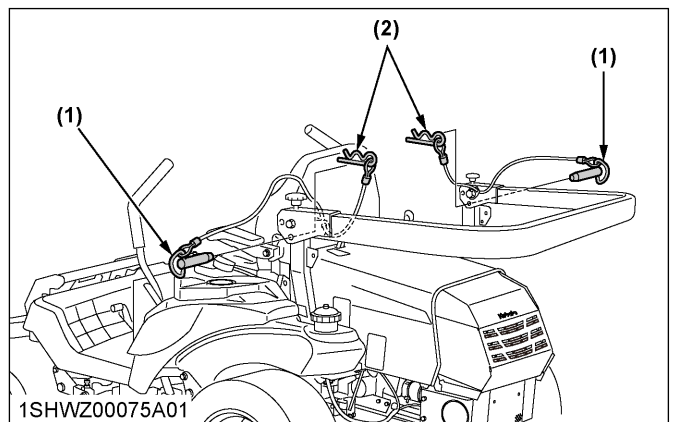
4. Align the lock pin holes and insert both lock pins and secure them with the snap pins.



CAUTION

To avoid personal injury:

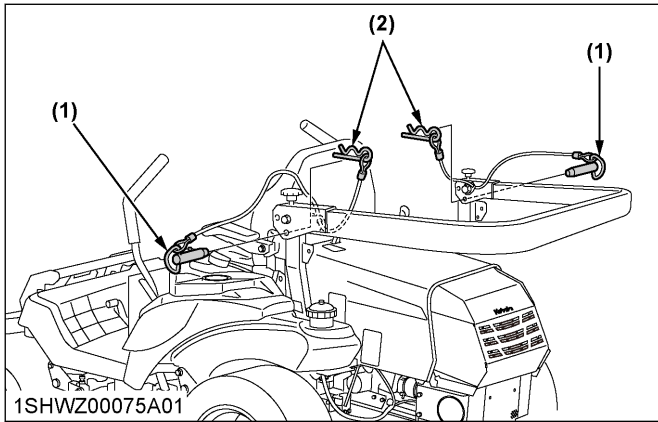
- Make sure that both lock pins are properly installed and secured with the snap pins.



- (1) Lock pin
(2) Snap pin

2. Raising the ROPS to the upright position

1. Remove both snap pins and lock pins.



- (1) Lock pin
(2) Snap pin

2. Raise the ROPS to the upright position.



CAUTION

To avoid personal injury:

- Hold the ROPS tightly with both hands and raise the ROPS slowly and carefully.

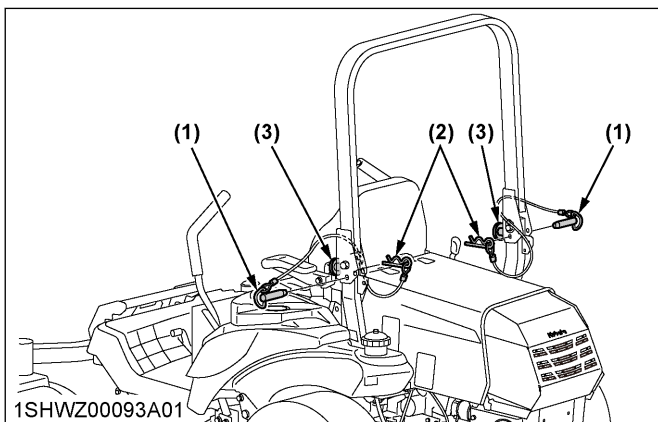
3. Align the lock pin holes, insert both lock pins and secure them with the snap pins.
4. Tighten the knob bolts slightly.



CAUTION

To avoid personal injury:

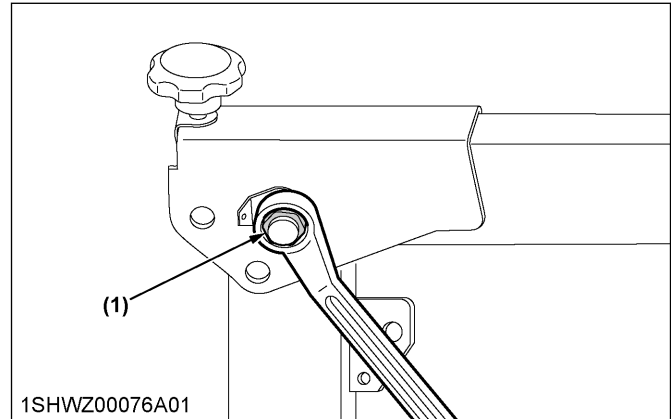
- Make sure that both lock pins are properly installed as soon as the ROPS is in the upright position and secured with the snap pins.



- (1) Lock pin
(2) Snap pin
(3) Knob bolt

3. Adjusting the foldable ROPS

1. Adjust the free fall of the ROPS upper frame regularly.
2. If you feel less friction when folding the ROPS, tighten the nut (1) until you feel the right friction when moving it. Then replace the hair pin.



- (1) Nut

STARTING THE MACHINE



WARNING

To avoid serious injury or death:

- Read and understand the safe operation section.
- Read and understand the safety labels located on the machine.
- To avoid the danger of exhaust fume poisoning, do not operate the engine indoors without proper ventilation.
- Never start the engine while standing on the ground. Start the engine only from the operator's seat.

1. Adjust the operator's position and apply the seat belt.
 - [Operator's seat on page 47](#)
 - [Seat belt on page 47](#)
2. Start the engine.
See [OPERATING THE ENGINE on page 29](#).
3. Raise the implement.
 - [Hydraulic lift control pedal on page 48](#)
4. Accelerate the engine.
 - [Accelerator lever on page 48](#)
5. Unlock the parking brake.
 - [Parking brake pedal on page 49](#)

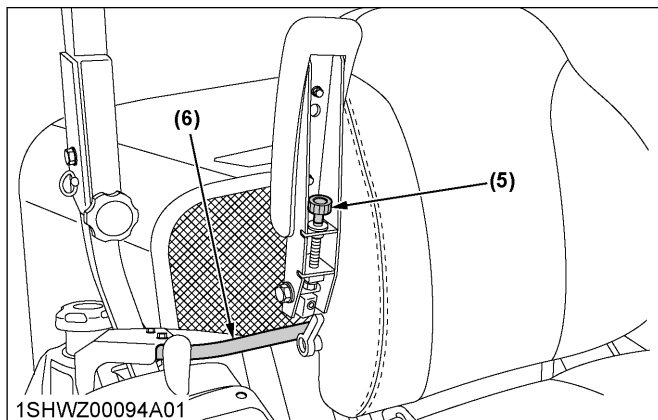
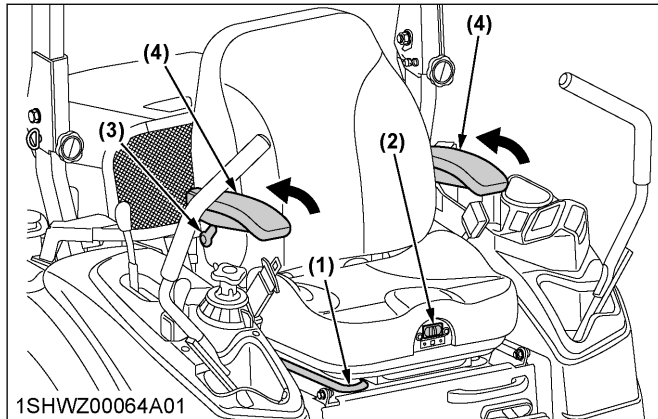
6. Operate the machine.
- Motion control lever on page 49
 - Stop position of the motion control lever on page 49
 - Operating position of the motion control lever on page 49
 - Re-start on slopes on page 51

1. Operator's seat

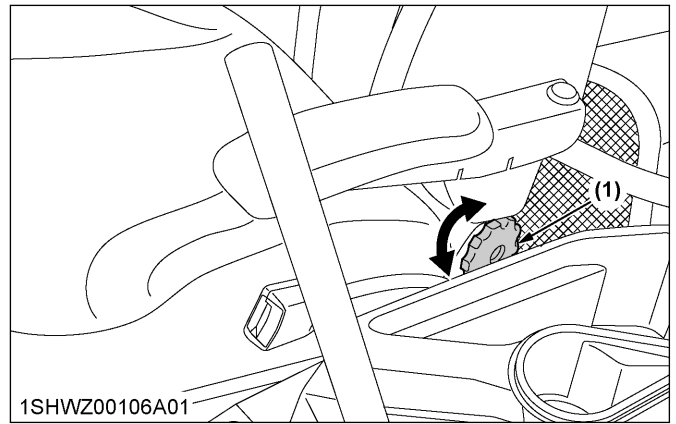
WARNING

To avoid serious injury or death:

- Make adjustments to the seat only while the machine is stopped.
- Make sure that the seat is completely secured after each adjustment.
- Do not allow anyone other than the driver to ride on the machine.



- (1) Travel adjust lever
 (2) Air suspension switch
 (3) Lumbar support adjust lever
 (4) Arm rest
 (5) Arm rest angle adjuster
 (6) Bypass pipe



(1) Backrest tilt adjust knob

WARNING

To avoid serious injury or death:

- Use extra caution when unlocking the travel adjust lever because the seat might slide forward by itself.

Travel adjustment

Unlock the travel adjust lever and slide the seat backward or forward, as required. The seat will lock in position when the lever is released.

Suspension adjustment

To get the optimum suspension setting, turn on the air suspension switch.

Lumbar support adjustment

Turn the lumbar support adjust lever to the desired position.

Arm rest

Arm rest may be set at upright position if desired.

Arm rest angle adjustment

Turn the arm rest angle adjuster to the desired angle.

Backrest tilt adjustment

Turn the backrest tilt adjust knob to the desired angle.

IMPORTANT :

- After adjusting the operator's seat, be sure to check to see that the seat is properly locked.

NOTE :

- Depending on the seat adjustment level, the seat may contact the bypass pipe during operating. In case of contact, readjust the travel adjust lever, the suspension adjust knob, the backrest tilt adjust knob or the lumbar support adjust lever.

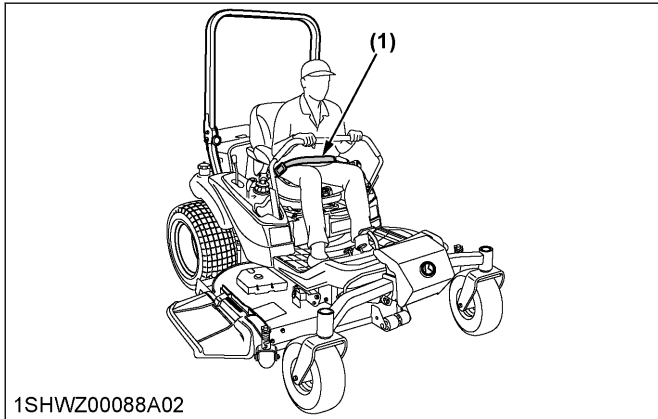
2. Seat belt

WARNING

To avoid serious injury or death:

- Always use the seat belt when the ROPS is installed.
- Do not use the seat belt if a foldable ROPS is down or if there is no ROPS.

Adjust the seat belt for proper fit and connect to the buckle. The seat belt is an auto-locking retractable type.



(1) Seat belt

3. Hydraulic lift control pedal

WARNING

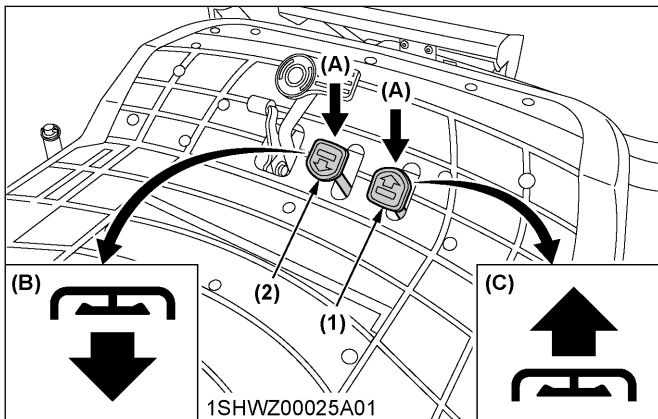
To avoid serious injury or death:

- When the engine is off, do not depress the hydraulic lift control pedal. When the engine is off, depressing the hydraulic lift control pedal (UP or DOWN) will lower the implement.

The hydraulic lift control pedal is used to raise and lower the implement used with the machine (mower).

To lower the implement, depress the hydraulic lift control pedal (DOWN).

To raise it, depress the hydraulic lift control pedal (UP).



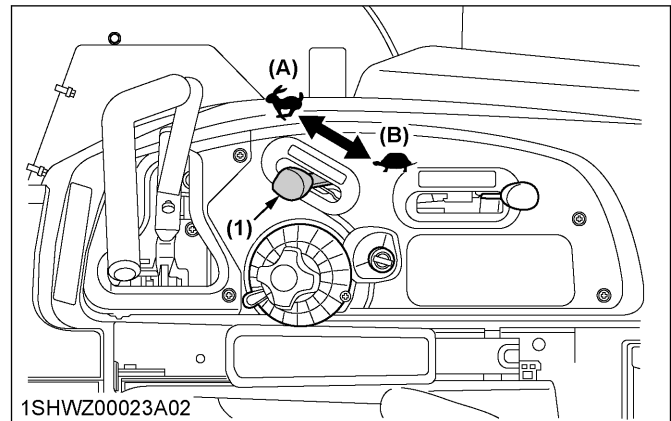
- | | |
|---|---------------|
| (1) Hydraulic lift control pedal (UP) | (A) "DEPRESS" |
| (2) Hydraulic lift control pedal (DOWN) | (B) "DOWN" |
| | (C) "UP" |

IMPORTANT :

- Do not operate until the engine is warmed up. If operation is attempted when the engine is still cold, the hydraulic system may be damaged.
- Do not operate at slow Engine rpm. Move the accelerator lever above 1/2.
- If noises are heard when implement is lifting after the hydraulic lift control pedal has been activated, the hydraulic mechanism is not adjusted properly. Contact your local KUBOTA Dealer for adjustment.

4. Accelerator lever

- Move the accelerator lever backward to decrease the engine speed.
- Move it forward to increase the engine speed.



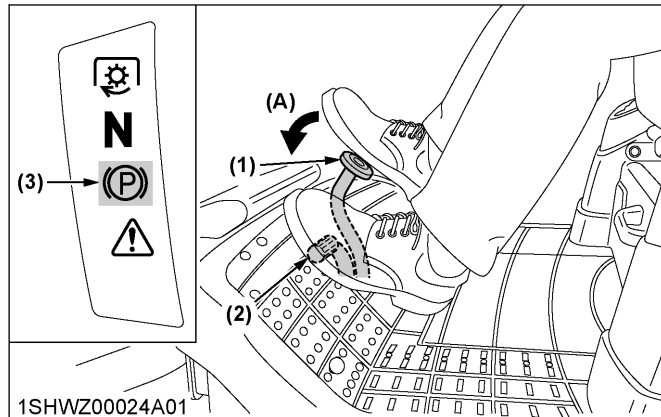
(1) Accelerator lever

- (A) "INCREASE"
(B) "DECREASE"

5. Parking brake pedal

To apply the parking brake:

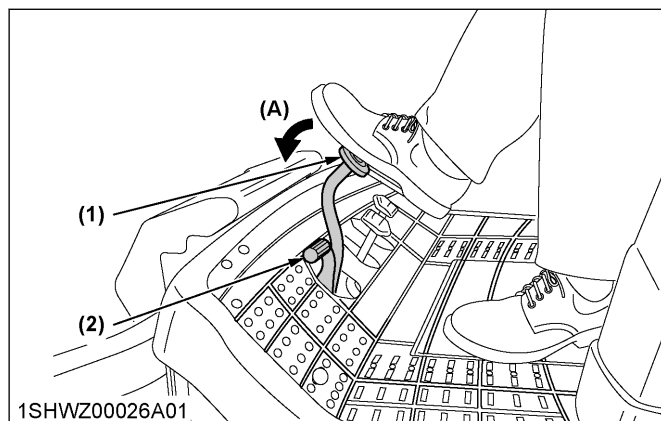
1. Depress the parking brake pedal firmly with your right foot and the parking brake lock pedal simultaneously with your left foot.
2. Then release the parking brake pedal while holding the parking brake lock pedal down.
3. Parking brake warning indicator will come "ON".



- 1SHWZ00024A01
- (1) Parking brake pedal (A) "DEPRESS"
 (2) Parking brake lock pedal
 (3) Parking brake warning indicator

To release the parking brake:

Depress the parking brake pedal and release it slowly with your right foot, without pressing the parking brake lock pedal.



- 1SHWZ00026A01
- (1) Parking brake pedal (A) "DEPRESS"
 (2) Parking brake lock pedal

6. Motion control lever



WARNING

To avoid serious injury or death:

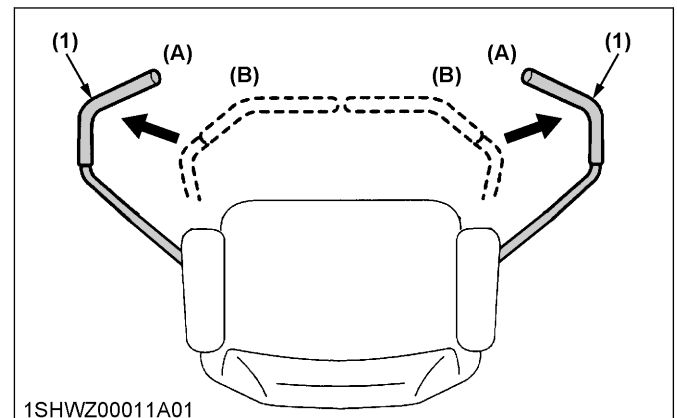
- Understand how to use the motion control levers and practice in an unrestricted area at slightly more than idle speed without the PTO engaged until becoming proficient in the operation of the machine.

- Do not move motion control levers from the forward to rearward or from the rearward to forward position rapidly. Sudden direction changes could cause the loss of control or damage to the machine or property.
- Do not make sharp turns at high speed. Fast and sharp turns could cause the loss of control.
- Motion control levers must be in the "NEUTRAL LOCK" position to safely enter and exit the operator's seat or to carry out maintenance and safety checks.
- This machine can make sharp turns. Always make sure your intended path is clear of obstructions or people.

6.1 Stop position of the motion control lever

Neutral lock position

Forward and rearward movements of the motion control levers are locked when these levers are in the "NEUTRAL LOCK" position (the engine can only be started with levers in this position).



- 1SHWZ00011A01
- (1) Motion control levers (A) "NEUTRAL LOCK" position
 (B) "NEUTRAL" position

6.2 Operating position of the motion control lever

Machine speed and steering is controlled by the motion control levers, when the engine is running and the parking brake is released.



WARNING

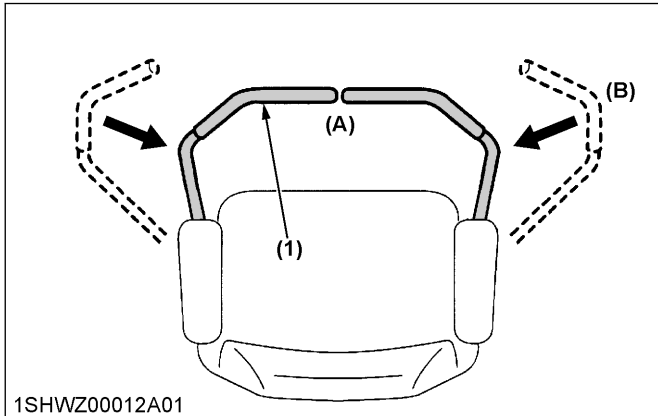
To avoid serious injury or death:

- No control is provided by the motion control levers when the engine is off.

Neutral position

Grasp the motion control levers and move them inward from the "NEUTRAL LOCK" position so that the

machine is in “NEUTRAL” (the engine cannot be restarted).



(1) Motion control levers (A) “NEUTRAL” position (B) “NEUTRAL LOCK” position

Forward and rearward motion:

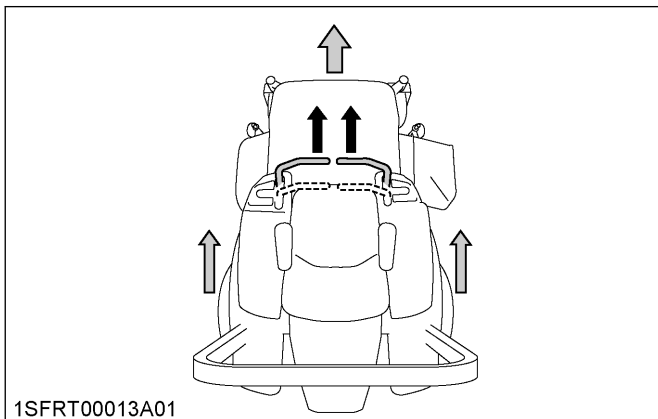
1. Move the accelerator lever to the “FAST” position.
2. Release the parking brake.
3. Move both motion control levers from the “NEUTRAL LOCK” position inward to the “NEUTRAL” position.
4. To move your machine, see the following figures.

To stop:

Move and hold both motion control levers to the “NEUTRAL” position until the machine comes to a stop.

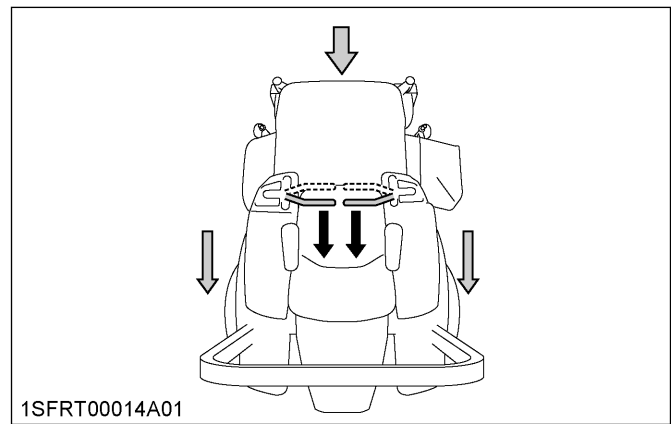
Forward:

For forward travel in a straight line, push both motion control levers forward equally and slowly.



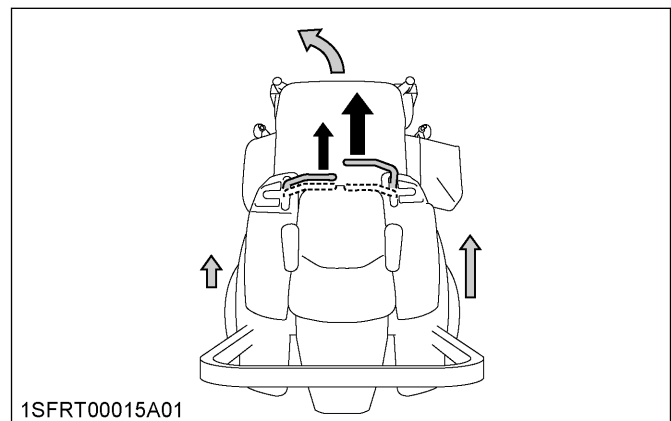
Rearward:

For rearward travel in a straight line, pull both motion control levers past center rearward equally and slowly.



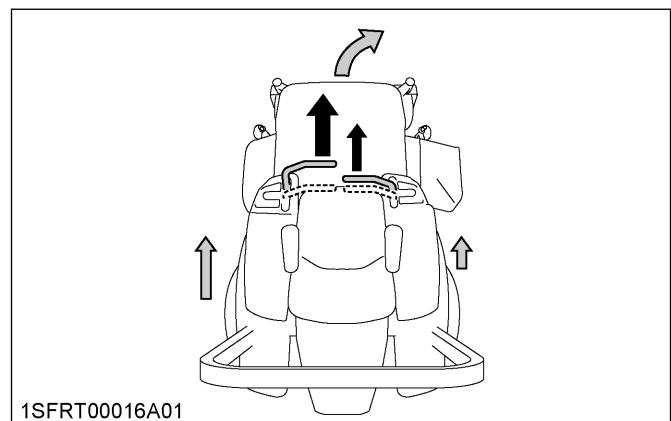
General left turn:

For forward travel to the left, push the right motion control lever further forward than the left motion control lever.



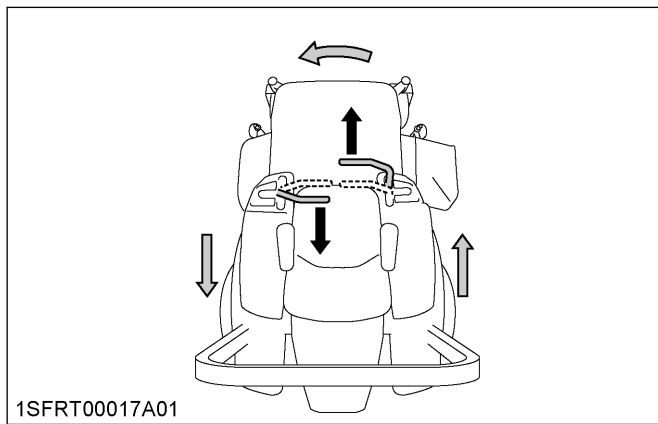
General right turn:

For forward travel to the right, push the left motion control lever further forward than the right motion control lever.

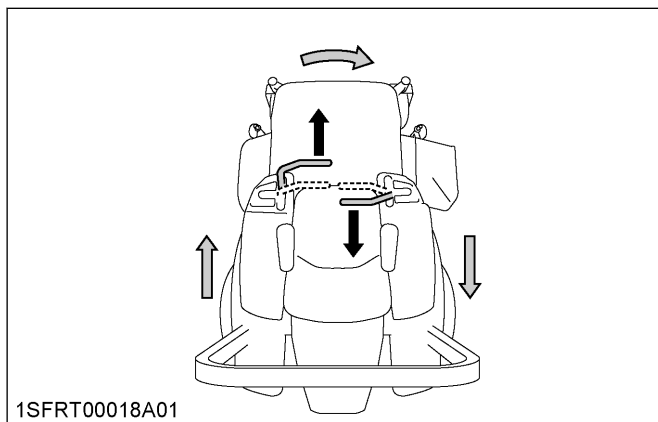


Sharp (zero) left turn:

Push the right motion control lever forward and pull the left motion control lever rearward at the same time.

**Sharp (zero) right turn:**

Push the left motion control lever forward and pull the right motion control lever rearward at the same time.

**Adjustment****! WARNING**

To avoid serious injury or death:

- The motion control lever adjustment is important to ensure the machine operates properly.

NOTE :

- If adjustment is required, the motion control linkages are adjustable.
(See [ADJUSTMENT](#) on page 99.)
We recommend you to contact your local KUBOTA Dealer.

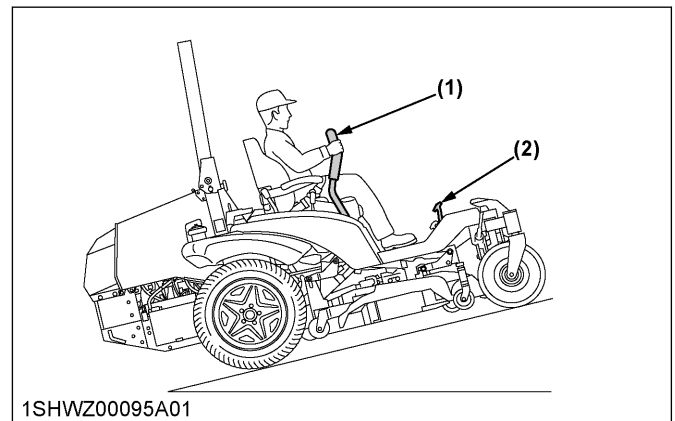
6.3 Re-start on slopes**! WARNING**

To avoid serious injury or death:

- Do not stop or change directions on slopes. These operations could cause loss of the machine traction or control.

- Starting procedure on slopes is different from the usual start mode on a flat surface, understand how to re-start on slopes and use extra caution.

If a situation occurs where it is necessary to stop and restart on a slope, refer to the following operational steps.



- (1) Motion control lever
(2) Parking brake pedal

How to re-start on the slopes:

1. Firmly apply parking brake (enough to prevent movement).
2. Start the engine.
3. Set the accelerator lever to the middle position.
4. Place the control levers inward to the "NEUTRAL" position gradually.
5. Release the parking brake within about 3 seconds. If you take more time, the engine will suddenly stop because of a safety device. (This is to prevent the machine from being operated with the parking brake applied.)
When the engine stops, start over by firmly reapplying the parking brake, and repeat steps 2 through 5 and then 6.
6. Move the machine slowly and carefully.

STOPPING THE MACHINE**! WARNING**

To avoid serious injury or death:

- Park the machine on level ground.
If necessary to park on an incline, stop the machine, apply the parking brake, and then stop the engine.
- If you stop the engine on an incline without applying the parking brake, the machine could move and run away.

IMPORTANT :

- The parking brake pedal is for parking and emergency use only. If the parking brake is applied when the motion control levers are not in the **"NEUTRAL LOCK"** position, the engine will stop within approximately 3 seconds. This feature is to prevent brake and transmission damage during operation.

1. Move both motion control levers to the **"NEUTRAL"** position to stop the machine.
2. Apply the parking brake.
3. Move both motion control levers to the **"NEUTRAL LOCK"** position.
4. Accelerator lever in slow position and shift PTO lever to the **"DISENGAGE"** (OFF) position.
5. Lower all implements to the ground.
6. Turn off the engine and remove the key.

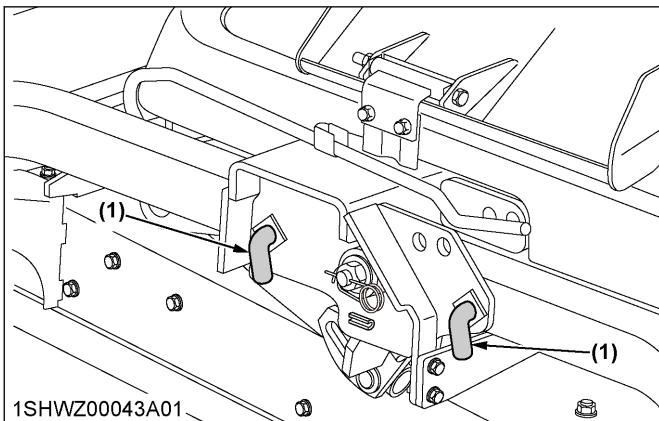
FIXING THE FRONT AXLE**WARNING**

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Stop the engine, remove the key and engage the parking brake.

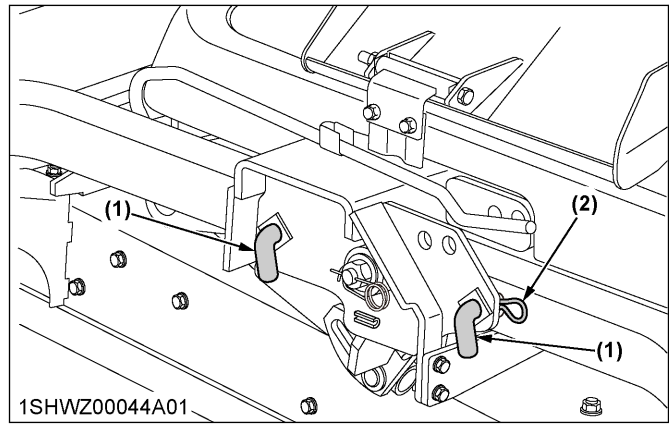
A rigid front axle is recommended for a more even cut under mowing the rough terrain.

1. Open the front cover.
2. Remove the two L-pins from their original position.
3. Insert L-pins into the holes on the front axle as shown below.



(1) L-pin

4. Install the hairpins between the axle mount frame and the front axle.



(1) L-pin
(2) Hairpin

OSCILLATING THE FRONT AXLE

For oscillating the front axle, reverse the above procedures.

The oscillating front axle provides a smoother ride than the rigid front axle and oscillates with the terrain.

PARKING THE MACHINE**WARNING**

To avoid serious injury or death:

Before leaving the operator's position:

- Apply the parking brake.
- Lower all implements to the ground.
- Shut off the engine.
- Remove the key.
- Place the motion control levers in the **"NEUTRAL LOCK"** position.

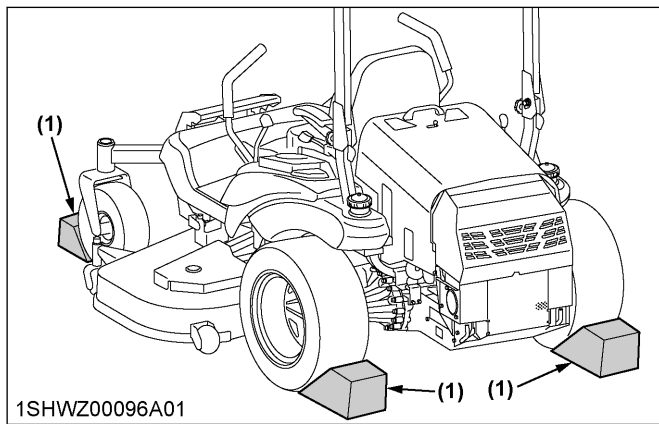
To lock:

1. Depress the parking brake pedal firmly with your right foot, and the parking brake lock pedal simultaneously with your left foot.
2. Then release the parking brake pedal while holding the parking brake lock pedal down.

To unlock:

Depress the parking brake pedal and release it slowly with your right foot without pressing the parking brake lock pedal.

If necessary to park on an incline, be sure to chock the wheels on the downhill side to prevent accidental rolling of the machine.

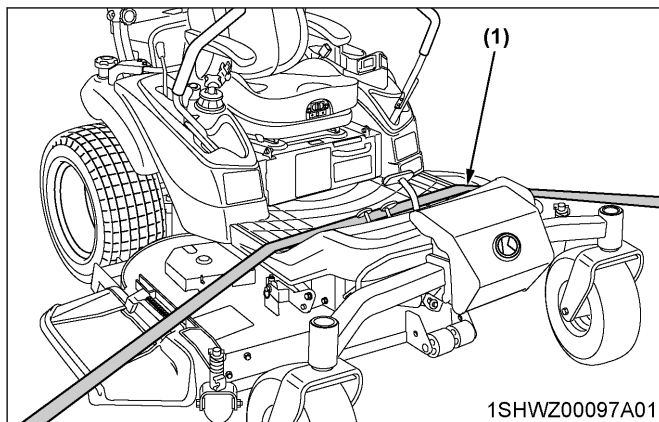


(1) Chock

TRANSPORTING THE MACHINE

- Transport the machine on a suitable trailer.
 - Shut off the fuel valves below the fuel tanks while transporting.
 - To prevent the hood from opening by wind while in transit, it is necessary to either load the machine backward or use a suitable tie down for the hood.
 - Apply the parking brake and lift down the mower deck to the lowest position.
 - Remove the key.
 - Secure the portions of the machine, which are shown in the figure below, by using heavy duty straps.

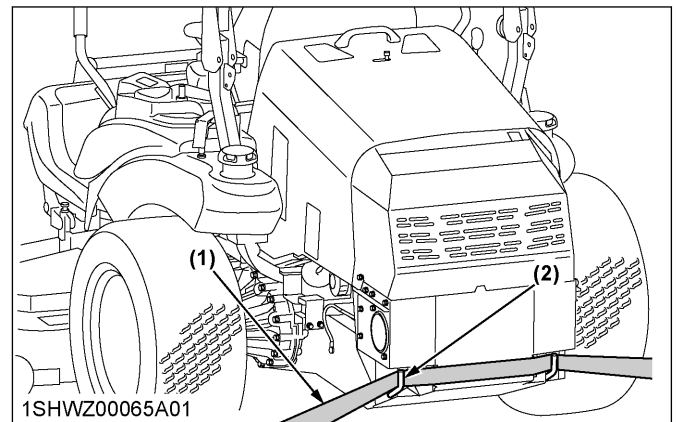
Front



(1) Heavy-duty strap

- When you drive the machine, for a long distance transit, set the mower deck to the 5 inch position.

Rear



(1) Heavy-duty strap
(2) Rear frame

- Do not attempt to tow this machine, or damage to the transmission may result.
- Follow all federal and local regulations for securement.

OPTIONAL EQUIPMENT

For the operation and precautions of option kit, obey the instructions of the manuals attached in the option kit.

OPERATING THE MOWER

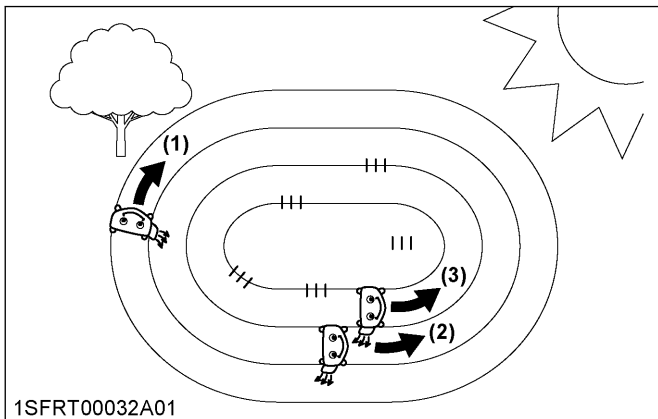
MOWING TIPS

WARNING

To avoid serious injury or death:

- Clear the work area of objects which might be picked up and thrown by the blades.
- Keep bystanders and animals away from the mowing area.
- Be sure to disengage the PTO and sit on the operator's seat before starting the engine.

1. When using the mower for the first time, choose a smooth level area and cut in straight and slightly overlapping strips.
2. The size and type of the area to be mowed will determine the proper mowing pattern. Take into account obstructions, such as trees, fences and buildings. To keep grass clippings off fences, sidewalks and so on, it is advisable to go over the outside of the area to be mowed several times in a clockwise direction. To mow the area remaining, work in a counterclockwise direction so that the clippings are dispersed onto the previously cut area.



3. Always keep the left side of the mower toward trees, posts or other obstacles on the first trip around the obstacle.
4. Most lawns must be mowed to keep the grass approximately 50 to 80 mm (2 to 3 in.) high. Best results are obtained by cutting often and not too short. To keep a green lawn, never mow more than 1/3 of the height of the grass or a maximum of 25 mm (1 in.) in 1 mowing.
For extremely tall grass, set the cutting height at maximum cutting height for the first mowing, then reset to the desired height and mow again. Allow

the grass to grow to 80 mm (3 in.), then cut off only the top inch (25 mm).

5. For best appearance, grass must be cut in the afternoon or evening when it is free of moisture.

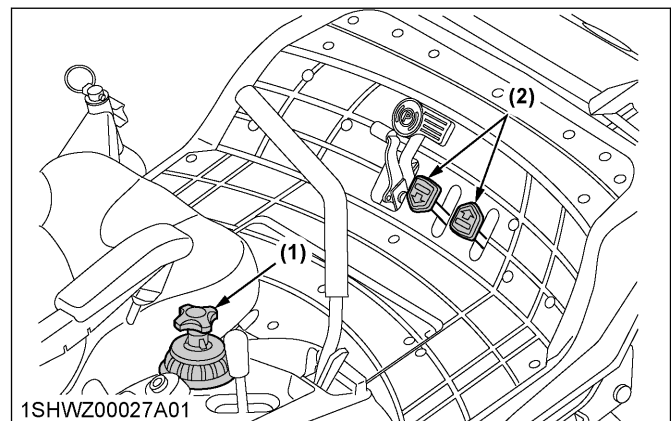
ADJUSTING THE CUTTING HEIGHT

DANGER

To avoid serious injury or death:

- Do not engage the mower in the transport position.

1. Before adjusting the cutting height, check that all tire pressures are correct. If necessary, adjust to the correct tire pressure.
2. To set the cutting height, start engine and depress the hydraulic lift control pedal (UP) to raise mower deck to the top position. Adjust the cutting height control dial to desired height.
Lower the mower deck by depressing the hydraulic lift control pedal (DOWN).
Then the mower deck will be set to the cutting height.
3. Use the higher settings for mowing in a rough area or when mowing tall grass. Lower settings must be used only for smooth lawns where short grass is desired.

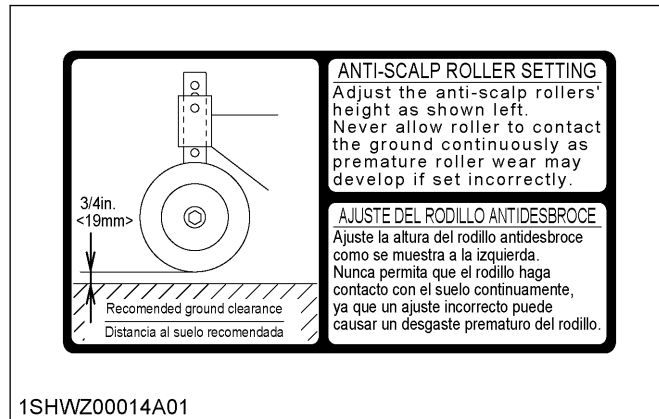
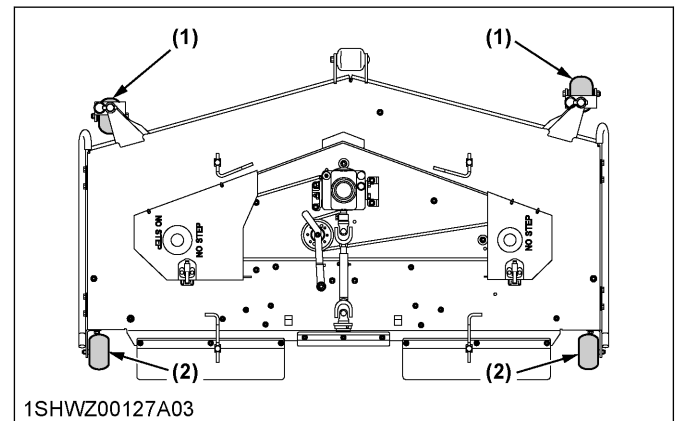


- (1) Cutting height control dial
- (2) Hydraulic lift control pedal

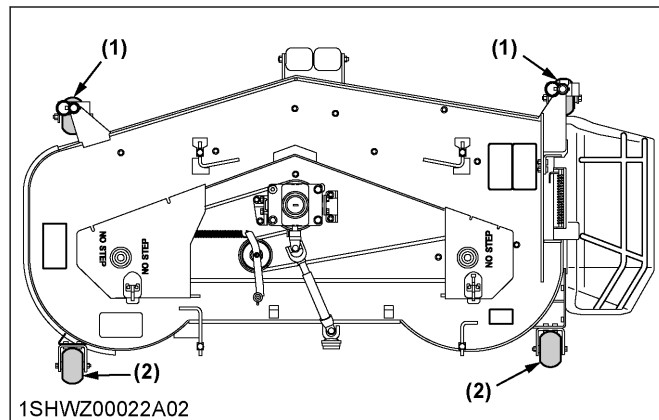
4. Adjust the anti-scalp rollers' height as recommended below for normal operating condition. To minimize gouging and roller damage or wear, the anti-scalp rollers will maintain the ground clearance of 19 mm (0.75 in.).

IMPORTANT :

- **Never allow the rollers to contact the ground continuously as premature roller wear may develop if set incorrectly.**
- **Anti-scalp rollers must maintain a minimum clearance of 6 mm (0.25 in.) to the ground.**

Bolt setting**RCK60R, RCK72R**

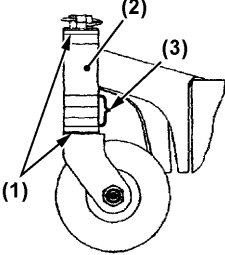
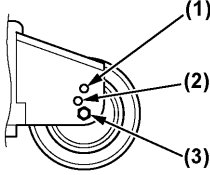
- (1) Anti-scalp roller (front, swivel type)
(2) Anti-scalp roller (rear, bolt shift type)

RCK72P

- (1) Anti-scalp roller (front, swivel type)
(2) Anti-scalp roller (rear, bolt shift type)

1. Cutting height reference chart

- Set position for recommended ground clearance 19 mm (0.75 in.).

Cutting height inch (mm)	The number of collars under the boss	Position of bolts	Ground clearance mm (Ref.)	
	 1SHWZ00005A01 (1) Plain washer (2) Boss (3) Collar	 1SHWZ00018A01	Anti-scalp roller	
			Pin shift type	Bolt shift type
1.00" (25)	0	1	6	6
1.25" (32)	0		13	12
1.50" (38)	0		19	19
1.75" (44)	1		13	25
2.00" (50)	1	2	19	19
2.25" (58)	2		13	25
2.50" (64)	2	3	19	19
2.75" (70)	3		13	25
3.00" (76)	3		19	(31) * ¹
3.25" (83)	4		13	(38) * ²
3.50" (89)	4		19 * ³	(44) * ²
3.75" (95)	4		13 * ²	(51) * ²
4.00" (102)	4		19 * ²	(57) * ²
4.25" (108)	4		13 * ²	(63) * ²
4.50" (114)	4		19 * ²	(70) * ²
4.75" (121)	4		25 * ²	(76) * ²
5.00" (127)	4		31 * ²	(83) * ²

*1 For cutting heights above 3.0". The anti-scalp rollers will still be effective against scalping.

*2 Use it if necessary.

*3 For cutting heights above 3.5". The anti-scalp rollers will still be effective against scalping.

OPERATING THE MOWER

DANGER

To avoid serious injury or death:

- Do not operate the mower without the discharge chute being in place properly.

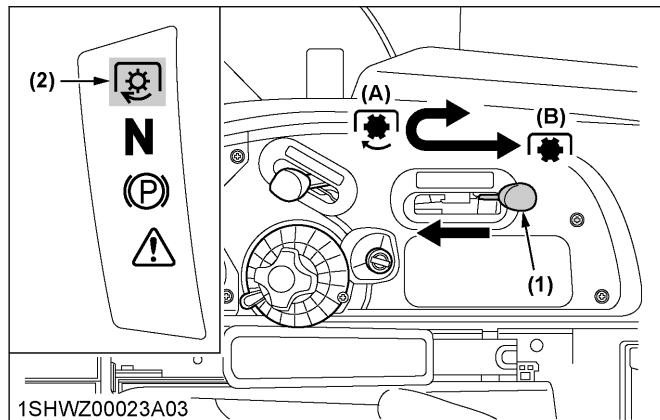
WARNING

To avoid serious injury or death:

- Clear the work area of objects which might be picked up and thrown.
- Do not direct the opening of the discharge chute at bystanders, especially children, or animals. Discharged objects may cause injury. Plan your mowing carefully before starting the operation.
- Keep bystanders and animals away from the mowing area.
- Be sure to disengage the PTO clutch of the mower before attempting to start the engine.

1. PTO lever

To engage the PTO, move the PTO lever to the “ENGAGED” (ON) position.



- (1) PTO lever (A) “ENGAGED” (ON)
(2) PTO clutch indicator (B) “DISENGAGED” (OFF)

1. If you get off the seat while the PTO is running, the engine will stop automatically. (Operator presence control)
2. Before starting the engine, pull the PTO lever to the “DISENGAGED” (OFF) position. If it is at the “ENGAGED” (ON) position, the engine will not start.

NOTE :

- These safety features are built-in.

2. Starting the machine

WARNING

To avoid serious injury or death:

- Engine components can get extremely hot from operation. To prevent severe burns, do not touch these areas while the engine is running, or immediately after it is turned off.
- Never operate the engine without heat shields or guards.

1. Sit on the operator's seat.
Put on the seat belt.
2. Start the engine.
3. Engage the PTO lever.
4. Disengage the parking brake.
5. Speed up the engine by moving the accelerator lever forward.
6. Push or pull the motion control levers to move forward or rearward.

IMPORTANT :

- Never attempt to move the machine with the parking brake “ON”.

NOTE :

- Keep the engine running at full throttle for best results. Control the travel speed with the motion control levers.
- During heavy duty use, operate the machine at a slower ground speed or go over the area twice.
- Keep the mower deck in the raised position when the mower is disengaged.
- The mower will not cut cleanly if the ground speed is too high or if the blade speed drops due to an overload.
- To prevent the engine from overheating, keep the radiator and radiator screen clean. Check the radiator and radiator screen as often as needed.

TREATMENT OF MOWER DECK INSIDE SKID

RCK60R, RCK72R

NOTE :

- If you wish to avoid the streaking of grass clippings which remain behind after the grass is cut, removing the skids will help prevent streaks of grass clippings from forming.

IMPORTANT :

- Mowing without the skids on a surface that is not properly flat may result in damage to the

mower deck. Use caution whenever mowing without the skids attached.

- Mowing without the skids must be done only in locations that are completely flat.

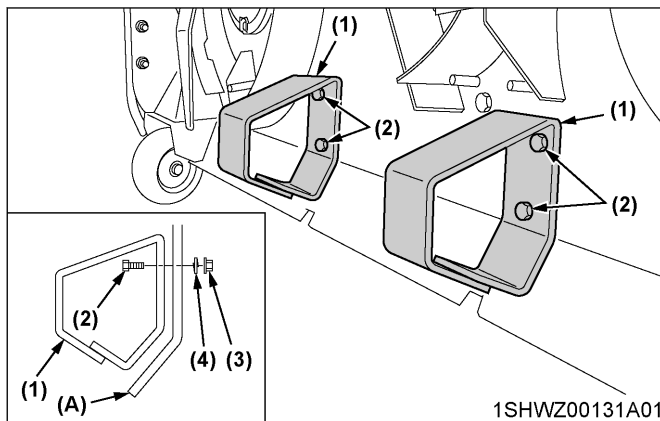
1. Removing skids

WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Apply the parking brake.
- Stop the engine and remove the key.

1. Dismount the mower deck.
(See [DISMOUNTING THE MOWER DECK on page 27.](#))
2. Stand up the mower deck.
3. Remove four bolts as shown in the figure and remove two skids.
4. Mount the mower deck.
(See [MOUNTING THE MOWER DECK on page 26.](#))



- (1) Skid
(2) Bolt
(3) Nut
(4) Spring washer

(A) Mower deck

PREVENTING GRASS CLIPPINGS AND DUST FROM SCATTERING

RCK60R, RCK72R

NOTE :

- Never remove the rubber plates off the mower deck. Grass clippings will scatter and pile up to the hood and surrounding area during mowing. Continuous mowing under these conditions may result in overheating. This machine is equipped with an overheat warning buzzer as standard.

Even when the rubber plates are installed, clean the areas around the hood and the transmission at a minimum once every five hours.

(See [Checking and cleaning radiator screen and hood screen on page 71.](#))

- Be aware that when mowing with the rubber plates installed onto the rear of the mower deck, the cut grass will be left in even clearer lines than usual.

1. Rubber plates installation

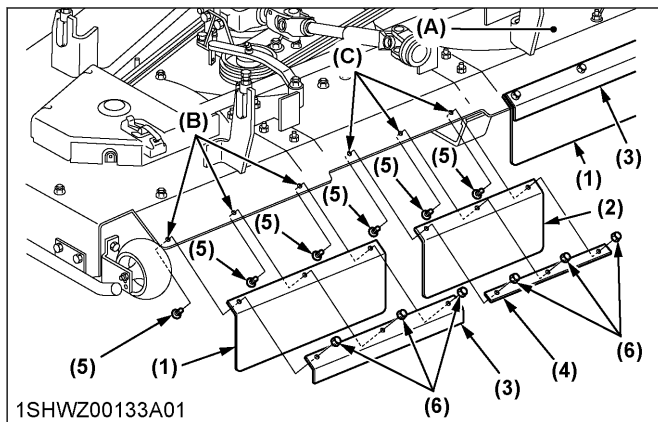
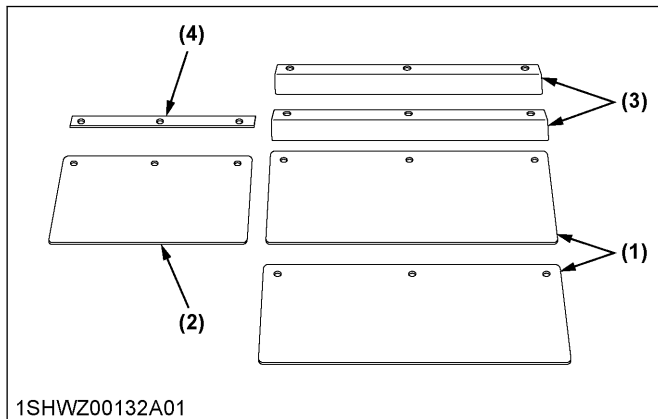
WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Apply the parking brake.
- Stop the engine and remove the key.

1. Dismount the mower deck.
(See [DISMOUNTING THE MOWER DECK on page 27.](#))
2. As shown in the figure, use three short square neck bolts and three flange nuts to install the rubber plate 2 and upper plate 2 onto the rear center of the mower deck. Tighten the bolts securely.
3. As shown in the figure, use six short square neck bolts and six flange nuts to install the two rubber plates 1 and the two upper plates 1 onto both sides of the mower deck. Tighten the bolts securely.

4. Mount the mower deck.
(See [MOUNTING THE MOWER DECK](#) on page 26.)



- | | |
|---------------------------------|---------------------------------------|
| (1) Rubber plate 1 (both sides) | (A) Mower deck |
| (2) Rubber plate 2 (center) | (B) Hole for installing upper plate 1 |
| (3) Upper plate 1 (both sides) | (C) Hole for installing upper plate 2 |
| (4) Upper plate 2 (center) | |
| (5) Short square neck bolt | |
| (6) Flange nut | |

TIRES AND WHEELS

TIRES

WARNING

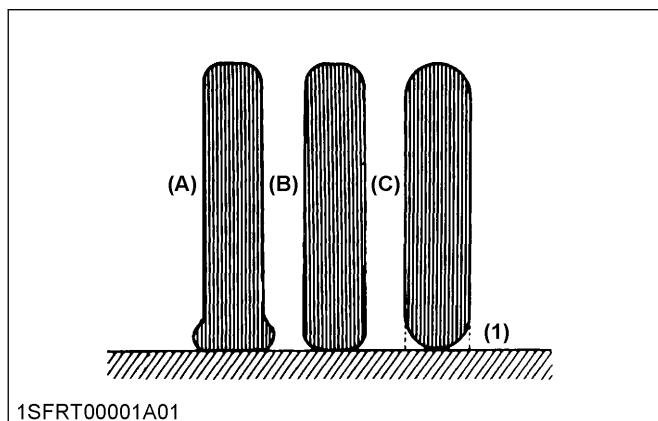
To avoid serious injury or death:

- Do not attempt to mount a tire. This should be done by a qualified person with the proper equipment.
- Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure shown in the operator's manual.
- The inflation pressure in the front tires rises quickly when using compressed air.
- Never operate the machine with a loose rim, wheel, or axle.
- Whenever bolts are loosened, retighten to the specified torque.
- Check all the bolts frequently and keep them tightened.

1. Inflation pressure

Even though the inflation pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Therefore, check it everyday and inflate as necessary.

	Tire sizes	Recommended inflation pressure
Front	15 x 6.5 - 8, Smooth semi-pneumatic tire	---
Rear	26 x 12.0 - 16, 4PR turf low profile tire	83 kPa 0.84 kgf/cm ² 12 psi



(1) Ground

(A) "INSUFFICIENT"

(B) "NORMAL"

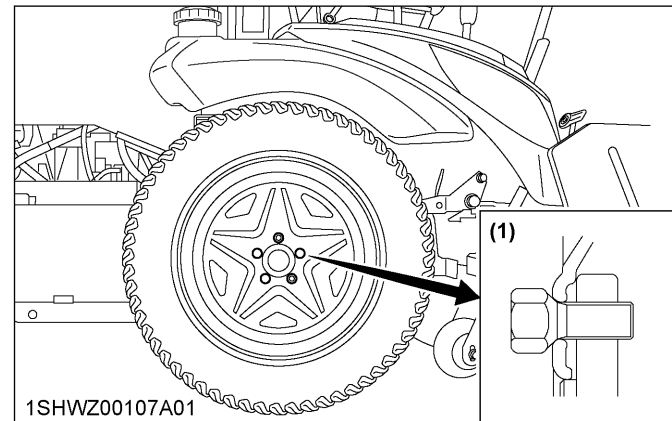
(C) "EXCESSIVE"

WHEELS

IMPORTANT :

- When refitting a wheel, tighten the wheel bolts and nuts to the following torques then recheck after traveling 200 m (200 yards), changing directions several times.

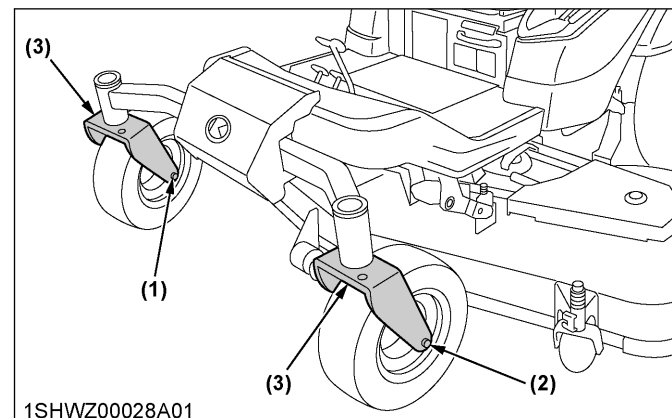
Rear



- (1) 108.5 to 130.2 N · m
80 to 96 lbf · ft
11.1 to 13.3 kgf · m

When using wheels with beveled or tapered holes, use tapered wheel bolts and nuts.

1. Removing the front caster wheels

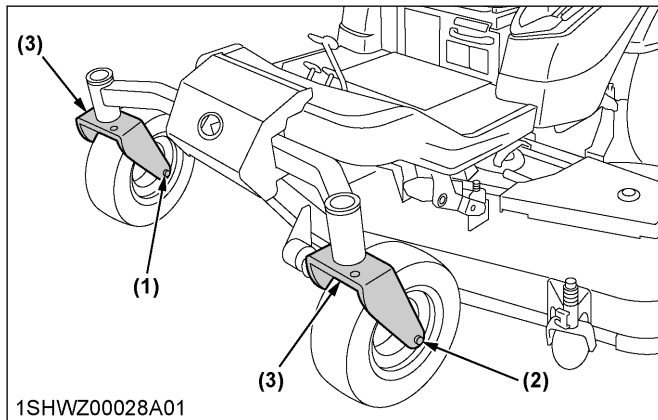


- (1) Lock nut
(2) Wheel bolt
(3) Yoke

1. Park the machine on a firm and level surface.
2. Stop the engine and apply parking brake.
3. Lift the front of machine with a safe lifting device.

4. Remove the lock nut and the wheel bolt. Then remove the wheel cap.
5. Remove the wheel from assembly yoke.

2. Installing the front caster wheels



- (1) Lock nut
(2) Wheel bolt
(3) Yoke

1. Install the replacement wheel.
2. Install the wheel cap with the wheel bolt and the lock nut.
3. Tighten the nut.

IMPORTANT :

- Insert the wheel bolt from the outside of the yoke.
- Tighten the nut gradually until the wheel bearing play is eliminated and the wheel turns freely by hand.

Tightening torque	20 to 25 N · m 14.8 to 18.4 lbf · ft 2 to 2.5 kgf · m
-------------------	---

4. Lower the machine.

PERIODIC SERVICE

OPEN THE HOOD, FRONT COVER AND STEP

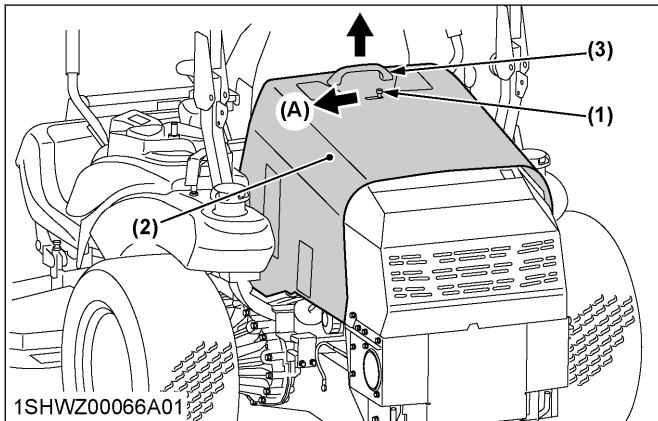
WARNING

To avoid serious injury or death from contact with moving parts:

- Never open the hood while the engine is running.
- Never open the step while the engine is running.
- Do not touch muffler or exhaust pipes while they are hot; Severe burns could result.

1. Hood

1. To open the hood, pull the latch lever to left. Lift the grip.

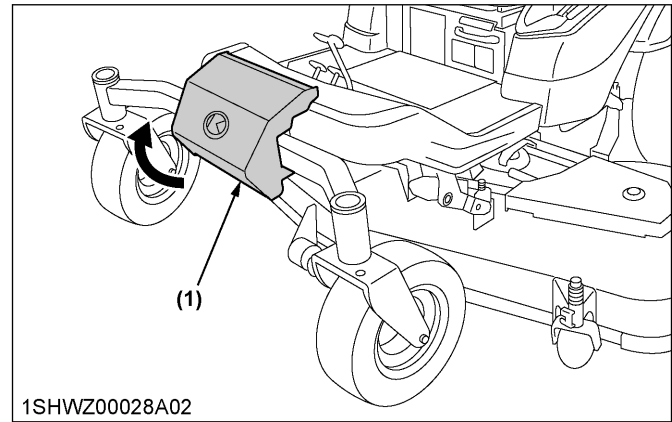


- (1) Latch lever
(2) Hood
(3) Grip

(A) "RELEASE"

2. Front cover

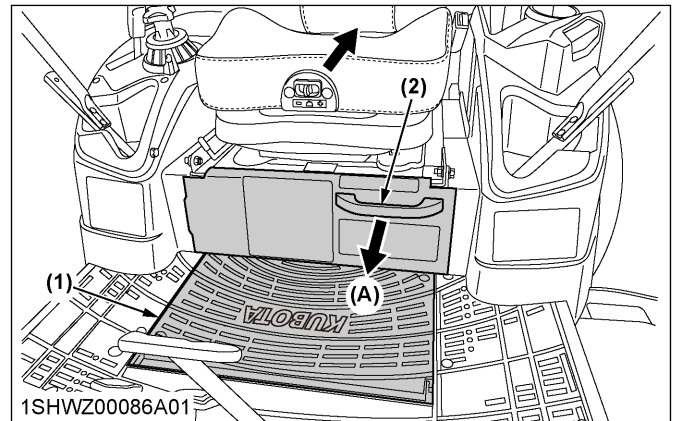
1. To open the front cover, pull the bottom edge of the front cover.



(1) Front cover

3. Step

1. To open the step, move the seat to the backmost position. Then pull the grip.



- (1) Step
(2) Grip

(A) "PULL"

RAISING AND LOWERING THE OPERATOR'S SEAT

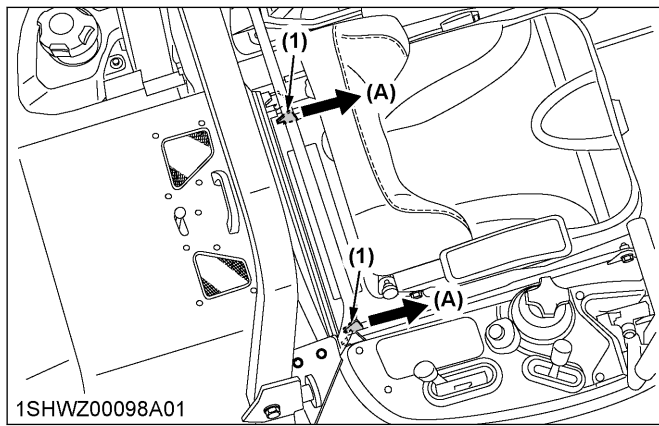
Raising

WARNING

To avoid serious injury or death:

- Fully raise the operator's seat.
(To the locked position)
Do not keep the seat halfway.

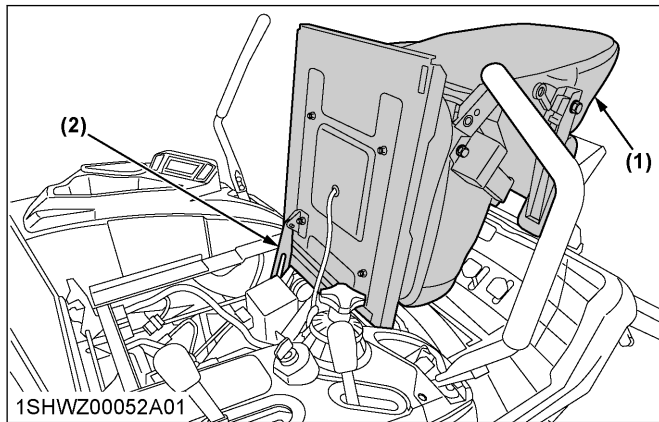
1. Seat must be all the way back before raising.
2. Pull the latch lever on the seat panel forward.



(1) Latch lever

(A) "PULL"

3. Raise the operator's seat to the "LOCK" position.



(1) Operator's seat

(2) Seat support

Lowering

! WARNING

To avoid serious injury or death:

- Do not drop the seat to close it.
- Watch your hands. Do not place your hands under the seat, when closing.

1. Pull up the seat support rod and release the "LOCK".
2. Lower the seat slowly to lock.
3. Slide the seat to proper position.

TILTING UP THE MACHINE

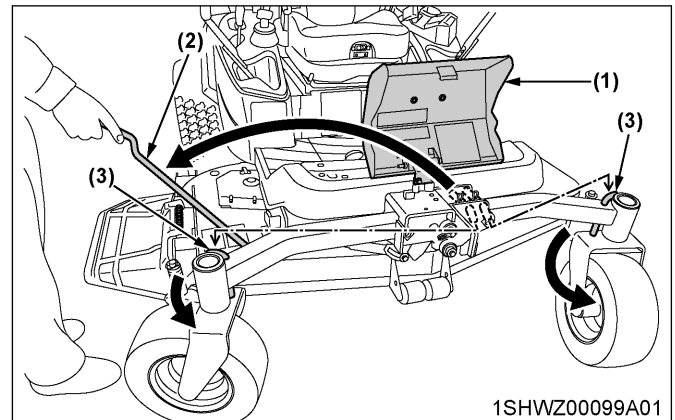
! WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Set the mower deck height to 5 inch.
- Stop the engine, remove the key and engage the parking brake.
- Be sure to chock the wheels.

- Lock the raised axle with an L-pin and Hairpin cotter before working under the machine.

1. Lower the forward right anti-scalp roller to the lowest position.
2. Fully open the front cover.
3. Unfold the tilt lever.
4. Keep the front cover opened.
5. Remove 2 L-pins.
6. Insert L-pins to both sides of the front axle to position the front wheels. As shown below.

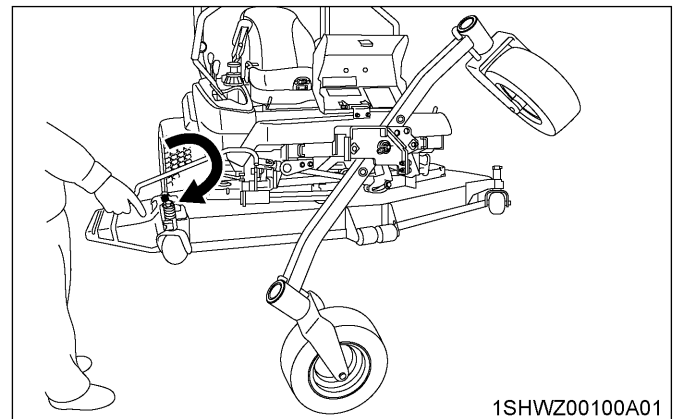


(1) Front cover

(2) Tilt lever

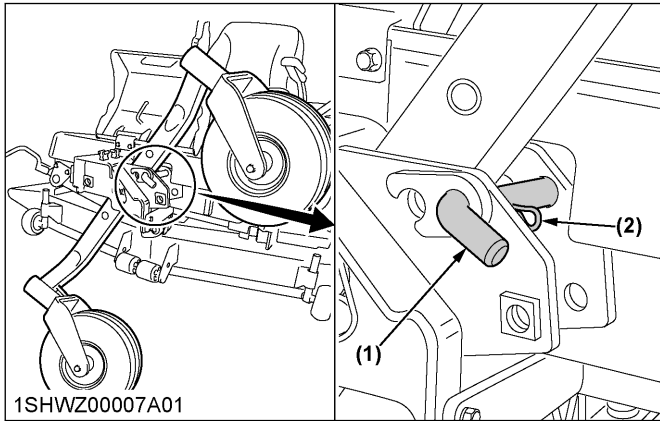
(3) L-pin

7. Turn the tilt lever clockwise to raise the axle to the stop.



8. Remove the L-pin of the raised wheel and insert it to the outside hole of the frame.

9. Insert the hairpin cotter.



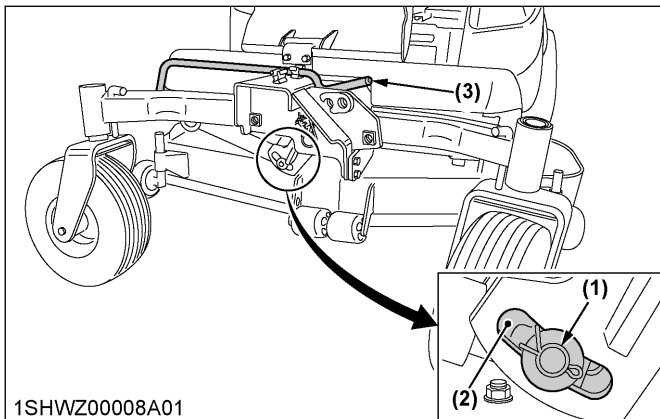
- (1) L-pin
(2) Hairpin cotter

Return to the normal position.

Reverse to the above procedure.

IMPORTANT :

- To ensure equal oscillation of the axle and prevent loss of parts.
Be sure the clevis pin returns to the center position of the front axle arm slot.
And be sure to install removed parts.



- (1) Clevis pin
(2) Slot
(3) Tilt lever

OPENING THE LEVER GUIDE

! WARNING

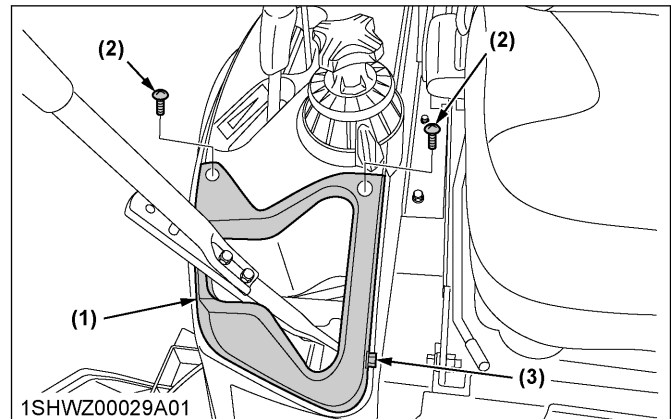
To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Stop the engine, remove the key and apply the parking brake.

- Remove the screw of the lever guide.
- Pull up the lever guide.

How to install the lever guide.

- Install the lever guide.
- Tighten the screw.



- (1) Lever guide
(2) Screw
(3) Screw

LIFT-UP POINT

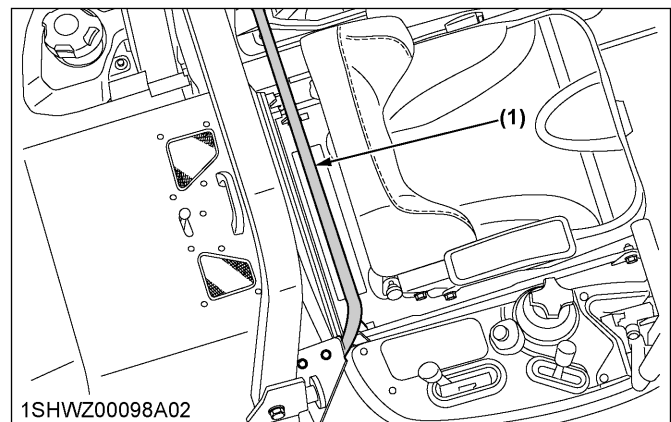
! WARNING

To avoid serious injury, death or machine damage:

- Do not work under the machine unless it is secured by safe stands or suitable blocking.

IMPORTANT :

- When you lift the unit, do not lift the bypass pipe between the fuel tanks LH and RH.



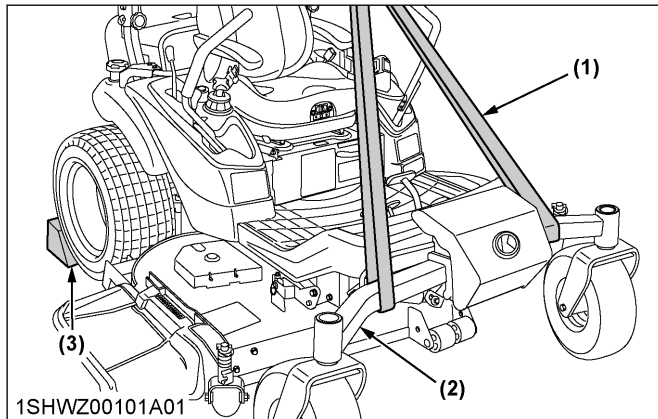
- (1) Bypass pipe

1. Front side:

1. Lift the front axle with nylon slings. Or jack up the front axle.
Never lift up the mower deck.

IMPORTANT :

- When you use nylon slings or a jack, make sure to block rear wheels with chocks.



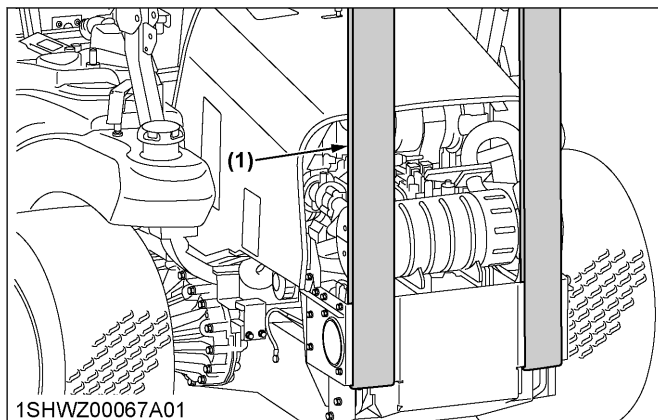
- (1) Nylon sling
(2) Front axle
(3) Chock

2. Rear side:

1. Remove the DPF cover with KUBOTA mark.
2. Lift the rear frame with a nylon sling.
Never lift up the engine oil pan or battery support.
3. When reassembling, make sure that flammable materials are not in contact with the DPF muffler and the surroundings of the exhaust pipe.

IMPORTANT :

- When you use a nylon sling or a jack, make sure to block front wheels with chocks.



- (1) Nylon sling

LUBRICANTS, FUEL AND COOLANT

Place	Capacities			Lubricants	
	ZD1511RL	ZD1511RLF	ZD1511LF		
Fuel	49 L (12.9 U.S.gals.)			- No.2-D diesel fuel - No.1-D diesel fuel if temperature is below -10 °C (14 ℉)	
Coolant	4.6 L (4.9 U.S.qts.)			Fresh clean water with antifreeze	
Recovery tank	1.1 L (1.2 U.S.qts.)				
Engine crankcase	6.4 L (6.8 U.S.qts.) *1			Engine oil: API service Classification CJ-4 Above 25 °C...SAE30, SAE10W-30 or 15W-40 (77 ℉) 0 to 25 °C.....SAE20, SAE10W-30 or 15W-40 (32 to 77 ℉) Below 0 °C.....SAE10W, SAE10W-30 or 15W-40 (32 ℉)	
Transmission case with filter and hose Rear axle gear case (RH and LH)	12.1 L (12.8 U.S.qts.)			KUBOTA SUPER UDT-2 fluid *2	
Mower gear box	0.4 L (0.42 U.S.qts.)		0.5 L (0.53 U.S.qts.)	ZD1511LF Engine oil: API service Classification SH, SJ or higher SAE10W-30	ZD1511RL, ZD1511RLF SAE90 gear oil (API service classification: more than GL-3)
Greasing	No. of greasing points		Capacity	Type of grease	
King pin	2		Until grease overflows	Multipurpose EP2 Grease (NLGI Grade No.2)	
Center pin	1				
Front wheel	2				
Rear mower link bushing	4				
Front mower link bushing	2				
Tilt lever	1				
Universal joint	3				
Seat adjuster	2				
Parking brake lock pedal	1				
	MOWER				
Universal joint	3		Until grease overflows	Multipurpose EP2 Grease (NLGI Grade No.2)	
Three spindle shafts	3				
Belt tension pulley	1				
Belt tension pivot	1				
Front anti scalp roller pivot boss	2				
Front anti scalp roller	2				

*1 Oil amount when the oil level is at the upper level of the oil level gauge.

*2 The product name of KUBOTA genuine UDT fluid may be different from that in the operator's manual depending on countries or territories. Consult your local KUBOTA Dealer for further detail.

IMPORTANT :

- To prevent serious damage to the hydraulic systems, use only KUBOTA genuine fluid or its equivalent.

Fuel:

- Cetane number of 45 is minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20 °C (-4 °F) or elevations above 1500 m (5000 ft).

- Diesel fuels specified to EN 590 or ASTM D975 are recommended.
- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service (SAE J313 JUN87).

Engine oil:

- Oil used in the engine should have an American Petroleum Institute (API) service classification and proper SAE Engine oil according to the ambient temperatures as shown in the previous table.
- Refer to the following table for the suitable API classification engine oil according to the engine type (with Diesel Particulate Filter (DPF) type engines) and the fuel.

Fuel used	Engine oil classification (API classification)
	Oil class of engines with DPF
Ultra low sulfur fuel <0.0015% (15 ppm)	CJ-4

Transmission oil:

- **KUBOTA Super UDT-2:** For an enhanced ownership experience, we highly recommend **Super UDT-2** to be used instead of standard hydraulic/transmission oil.
Super UDT-2 is a proprietary KUBOTA formulation that delivers superior performance and protection in all operating conditions.
Regular UDT is also permitted for use in this machine.
- Indicated capacities of water and oil are manufacturer's estimate.

1. Biodiesel fuel (BDF) B0-B5

B0-B5 Biodiesel fuels (BDF): mixed diesel fuels containing 5% or less biodiesel can be utilized under the following conditions.

IMPORTANT :

- **Concentrations greater than B5 (5%) are not approved for common rail engines. Such fuel use can cause damage and reduce engine life.**
- **Refueling and handling fuel should be done with caution in order to avoid contact with the fuel and spillage that could create a potential environmental or fire hazard. Wear appropriate protective equipment when refueling.**

Applicable BDF:

1. BDF concentration must not exceed 5% by volume (B5 blend). Greater concentrations increase the likelihood of corrosion and failure of the aluminum, zinc, rubber, and plastic parts of the fuel system.
2. Any mineral oil diesel fuel, if used, must conform to ASTM D975 (or the European EN590) Standard, as revised. B100 fuel used to make biodiesel blended fuels must meet ASTM D6751 (or EN14214) Standard, as revised. Straight vegetable oil is not allowed in any blended fuel.
3. Kubota strongly recommends that B5 blend be purchased from a BQ-9000 accredited producer or certified marketer. Kubota discourages local blending of BDF, because it is difficult to meet the quality requirements explained above.

Product warranty, emission and other precautions:

1. The engine emission control system was certified according to current regulations based on the use of non-BDF. When using BDF, the owner is advised to check applicable local and federal emission regulations and comply with all of them.
2. BDF may cause restricted or clogged fuel filters during cold weather conditions, resulting in the engine not operating properly.
3. BDF encourages the growth of microorganisms which may cause degradation of the fuel. This in turn may cause fuel line corrosion or reduce fuel filter flow earlier than expected.
4. BDF inherently absorbs moisture which may cause degradation of the fuel earlier than expected. To avoid this, drain the water separator and fuel filter port often.
5. Do not use biodiesel concentrations higher than 5% (meaning greater than B5). Engine performance and fuel consumption will be affected, and degradation of the fuel system components may occur.
6. Do not readjust the engine fuel control system as this will violate emission control levels for which the equipment was approved.
7. Compared with soybean-based and rapeseed-based feedstock, palm oil-based feedstock has a thicker consistency (meaning, higher viscosity) at lower temperatures. Consequently, fuel filter performance may be reduced, particularly during cold weather conditions.
8. The Kubota warranty, as specified in the owner's warranty information guide, only covers defects in product materials and workmanship. Accordingly, any problems that may arise due to the use of poor quality fuels that fail to meet the above requirements, whether biodiesel or mineral oil based, are not covered by the Kubota warranty.

Routine handling:

1. Avoid spilling BDF onto painted surfaces as this may damage the finish. If fuel is spilled immediately wipe clean and flush with soapy water to avoid permanent damage.
2. When using BDF, you are advised to maintain a full tank of fuel, especially overnight and during short term storage, to reduce condensation within the tank. Be sure to tighten the fuel cap after refueling to prevent moisture build up within the tank. Water in the biodiesel mixture will damage fuel filters and may damage engine components.
3. Follow the oil change intervals recommended by referring to the [MAINTENANCE on page 75](#) section. Extended oil change intervals may result in premature wear or engine damage.

Long term storage:

1. BDF easily deteriorates due to oxygen, water, heat and foreign substances. Do not store longer than 3 months.
2. When using B5 fuel and storing machine longer than 3 months, drain the fuel from the tanks and replace with light mineral oil diesel fuel. Subsequently, run the engine at least 30 minutes to remove all of the biodiesel from the fuel lines.

DAILY CHECK

To prevent trouble from occurring, it is important to know the condition of the machine. Check it before starting.



WARNING

To avoid serious injury or death:

- Be sure to check and service the machine on a level surface with the engine shut off, the key removed and the parking brake securely set or the rear wheels chocked.

	No.	Check item	Ref. page
Walking around the machine	1	Tire pressure, wear and damage	60, 72
	2	Oil and water leak	-
	3	Fuel level	70
	4	Engine oil level	69
	5	Transmission oil level	70
	6	Coolant level in the radiator and the recovery tank	71
	7	Damage of machine body, tightness of all bolts and nuts	-
	8	Machine body cleaning	-
	9	Radiator screen	71
	10	Hood screen	71
	11	Brake play	82
	12	Air cleaner primary element	81
	13	DPF muffler and its surroundings	72
	14	Clean cut grass in rubber sheet (ZD1511RL, ZD1511RLF)	73
Mower	1	Oil leak	79
	2	Make sure blade bolts are tight.	96
	3	Belt and blades wear or damage	96
	4	Check all hardware.	-
	5	Make sure all pins are properly in place.	-
	6	Mower deck cleaning	-

(Continued)

	No.	Check item	Ref. page
Mower	7	Greasing • Universal joint • 3 spindle shafts • Belt tension pulley • Belt tension pivot • Front anti-scalp roller pivot boss • Front anti-scalp roller	73
While sitting in the operator's seat	1	Motion control levers move smoothly.	-
	2	Parking brake turns "ON", "OFF" smoothly.	-
Turning the key switch "ON"	1	Performance of the Easy checker™ light	39
Starting the engine	1	Color of the exhaust fumes	-
	2	Engine start system/OPC system. If either of these do not operate properly, contact your local KUBOTA Dealer immediately.	78, 78
	3	Check for abnormal noise and vibration.	-
Others	1	Check the areas where previous trouble was experienced.	-

1. Checking the engine oil level



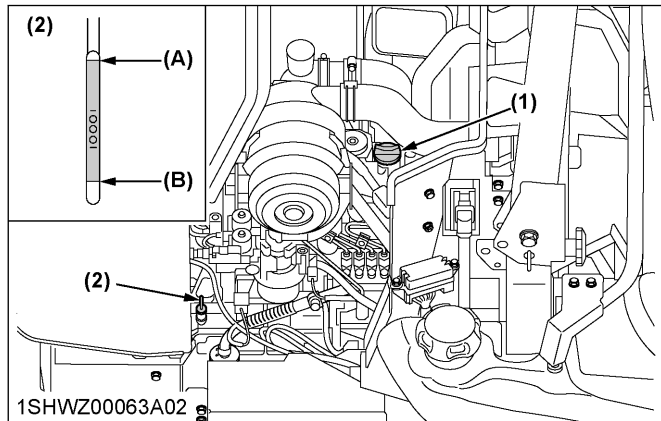
WARNING

To avoid serious injury or death:

- Always stop the engine and remove the key before checking the oil.

1. Check the engine oil before starting and 5 minutes or more after the engine has stopped.
2. Wipe the dipstick area clean.
3. To check the oil level, remove the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level is between the 2 notches.

4. Add new oil to the prescribed level at the oil port if necessary.



(1) Engine oil port
(2) Oil level dipstick

(A) "UPPER LEVEL"
(B) "LOWER LEVEL"

IMPORTANT :

- When using a different brand or viscosity oil from the previous one, remove all of the old oil and the oil filter. Never mix 2 different types of oil.
- Use the proper SAE engine oil according to the ambient temperature.
(See **LUBRICANTS, FUEL AND COOLANT** on page 66.)

2. Checking the amount of fuel and refueling

WARNING

To avoid serious injury or death:

- Handle the fuel carefully. If the engine is running, do not fill the fuel tank. If the engine is hot, let the engine cool down several minutes before adding fuel.
- Do not smoke while filling the fuel tank or servicing the fuel system. Fill the fuel tank only to the bottom of the filler neck.



1SFRT00004A01

Check the fuel level. Take care that the fuel tank does not become empty.

Fuel tank capacity	49 L (12.9 U.S.gals.)
--------------------	-----------------------

IMPORTANT :

- Use diesel fuel only

1. Use No.2 diesel fuel.
2. Use No.1 diesel fuel if the temperature is below -10 °C (14 °F).
3. Always use a strainer when refueling to prevent fuel injection pump contamination.

IMPORTANT :

- Do not permit dirt or trash or water to get into the fuel system.
- Be careful not to empty the fuel tank otherwise air will enter the fuel system, necessitating bleeding before next engine start.
- Be careful not to spill fuel during refueling. If a spill should occur, wipe it off at once, or it may cause a fire. Avoid generating any sparks, static or otherwise, during fueling.
- To prevent condensation (water accumulation) in the fuel tank, fill the tank before parking overnight.
- When refueling, basically fill both fuel tanks full.
- In the case you have a small amount of fuel, if fuel is still in the fuel tank RH, fill the fuel tank LH first.
- The fuel gauge shows the fuel level of fuel tank RH. When the fuel gauge flashes, fill fuel as soon as possible.
- When the fuel gauge flashes, do not fill fuel on a slope. Air can get into the fuel system, causing the engine to stall.
- If the engine stalled with some remaining in the fuel tank RH, close the fuel valve of fuel tank LH and you can operate.

3. Checking transmission oil level

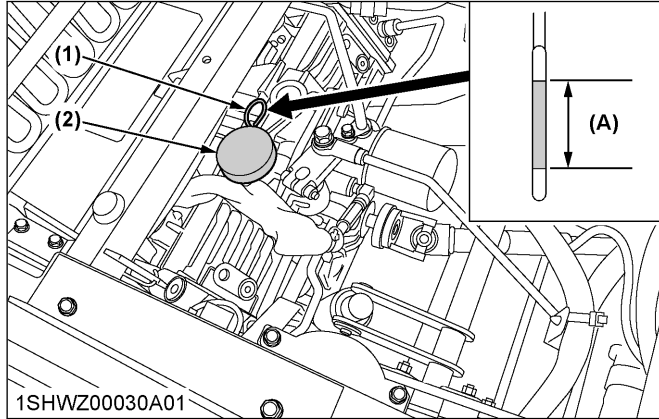
WARNING

To avoid serious injury or death:

- Allow the transmission case to cool down sufficiently when cleaning its surface.

1. Park the machine on a flat surface, lower the implement to the ground and shut off the engine and remove the key.
Allow the machine to idle for 1-3 minutes, and then check fluid.
2. Raise and lock the operator's seat.

- To check the oil level, draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the oil level lies between the two notches. If the level is too low, add the new oil to the prescribed level at the oil inlet.
(See [LUBRICANTS, FUEL AND COOLANT](#) on page 66.)



- 1SHWZ00030A01
- (1) Oil level dipstick (A) Oil level is acceptable within this range.
(2) Oil plug and breather cup

NOTE :

- If oil level is low, do not run engine.

4. Checking coolant level

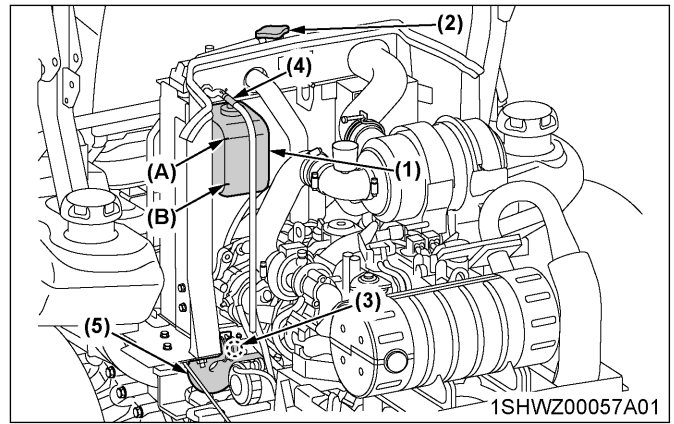
! WARNING

To avoid serious injury or death:

- Do not remove the radiator cap when the engine is hot. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.

Check the coolant level daily for both the radiator and the recovery tank before starting engine.

- Remove the radiator cap and check to see that the coolant level is just below the fill port.
- Check to see that the coolant level is between the **[FULL]** and **[LOW]** marks of recovery tank.
- When the coolant level drops due to evaporation, add water only up to just below the fill port of the radiator and the full level of the recovery tank. In case of leakage, add antifreeze and water in the specified mixing ratio up to the full level.
(See [Flushing cooling system and changing coolant](#) on page 91.)
- Check radiator hoses for wear, cracks, bubbles or leaks. If any such are found, repair immediately.
(See [Replacing radiator hose](#) on page 95.)



- 1SHWZ00057A01
- (1) Recovery tank (A) **[FULL]**
(2) Radiator cap (B) **[LOW]**
(3) Lower hose band
(4) Recovery tank cap
(5) Radiator hose

IMPORTANT :

- Start engine with the hood closed.
- If the radiator cap has to be removed, follow the caution above and securely retighten the cap.
- Use clean, distilled water and antifreeze to fill the radiator and the recovery tank.
- If water should leak, consult your local KUBOTA Dealer.

5. Checking and cleaning radiator screen and hood screen

! WARNING

To avoid serious injury or death:

- Be sure to stop the engine and remove the key before checking and cleaning.
- Engine components can get extremely hot from operation. To prevent severe burns, do not touch these areas while the engine is running, or immediately after it is turned off.
- Never operate the engine without heat shields or guards.

IMPORTANT :

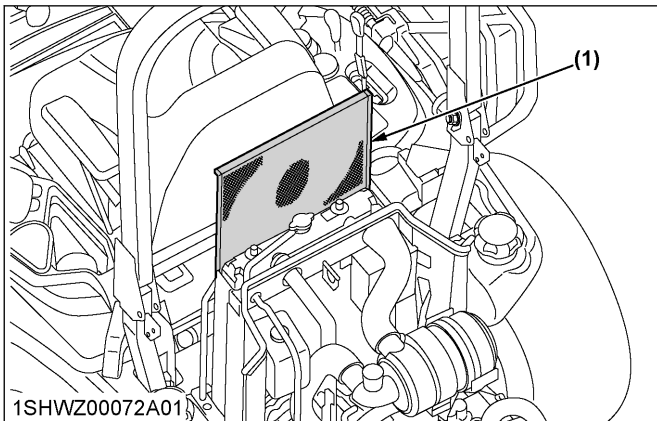
- The air intake area must be clear of debris to prevent the engine from overheating.

Daily or after every 5 hours of operation, check to be sure the radiator screen and the hood screen are clean (required more often in dusty conditions).

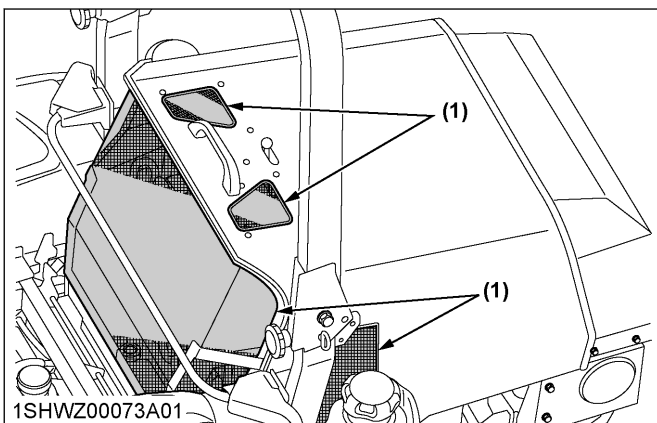
Dirt or chaff on the radiator screen, hood screen or radiator decrease cooling performance.

- Remove the radiator screen and remove all foreign material.
- Remove the dust from between the fins and the tube.

3. Tighten the fan drive belt as necessary. Details regarding this procedure can be found in a different section.
(See 3. [Adjusting fan drive belt tension on page 82.](#))
4. If the scale forms in the tube, clean with the scale inhibitor or its equivalent.
5. Each time the hood screen is covered with grass during operation, rub it off the screen with the hand. Check the radiator screen from time to time if grass accumulates.
6. If the dust or chaff has accumulated inside of the hood, remove the radiator screen and clean inside completely.
After cleaning, replace the radiator screens properly.
7. Check the radiator for dust or chaff build up.
If the dust or chaff has accumulated in the radiator, clear with air pressure (not to exceed 30 psi) or a hose.



(1) Radiator screen



(1) Hood screen

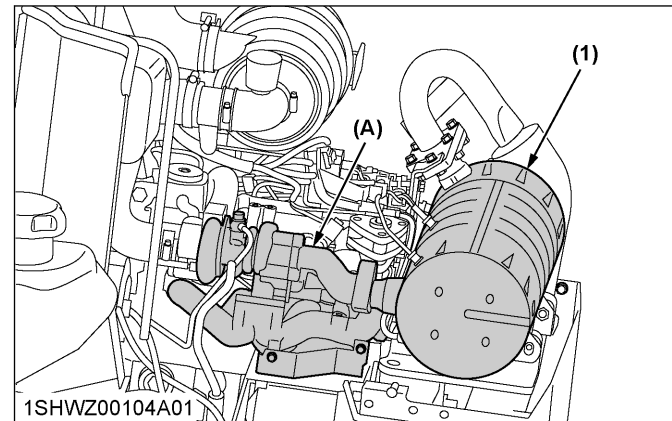
6. Checking and cleaning DPF muffler and its surroundings

WARNING

To avoid serious injury or death:

- Before checking or cleaning the DPF muffler, stop the engine and wait long enough until it is cooled down.

Check the DPF muffler and its surroundings for build-up of anything flammable. Otherwise a fire may result.



(1) DPF muffler

(A) Surrounding parts

7. Checking the tire pressure

WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Apply the parking brake.
- Stop the engine and remove the key before checking the tire pressure.
- Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.
- Always maintain the correct tire pressure.
The inflation pressure in the front tires rises quickly when using compressed air.
Do not inflate the tires above the recommended pressure shown in the operator's manual.

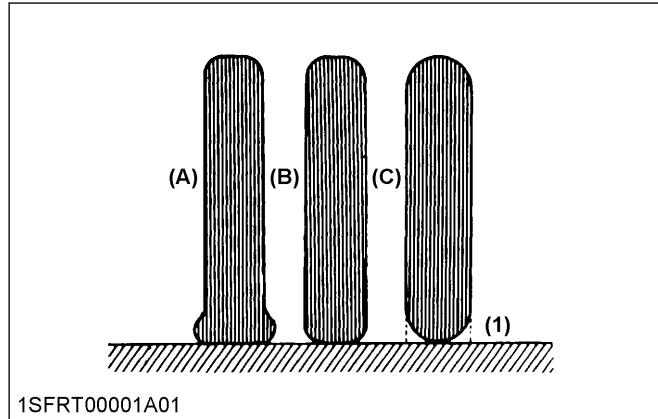
IMPORTANT :

- Do not use tires larger than specified.

7.1 Inflation pressure

Even though the inflation pressure is factory-set to the prescribed level, it naturally drops slowly in the course of time. Therefore, check it everyday and inflate as necessary.

	Tire sizes	Recommended inflation pressure
Front	15 x 6.5 - 8, Smooth semi-pneumatic tire	---
Rear	26 x 12.0 - 16, 4PR turf low profile tire	83 kPa 0.84 kgf/cm ² 12 psi



(1) Ground

(A) "INSUFFICIENT"
(B) "NORMAL"
(C) "EXCESSIVE"

8. Checking movable parts

If any of the movable parts, such as levers and pedals, cannot be smoothly moved because of rust or anything sticky, do not attempt to force it into motion. In this case, remove the rust or the sticky object, and apply oil or grease on the relevant spot. Otherwise, the machine may get damaged.

9. Cleaning cut grass in rubber sheet

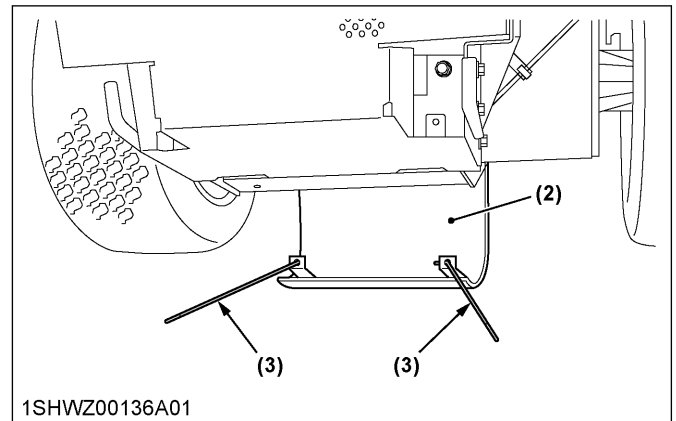
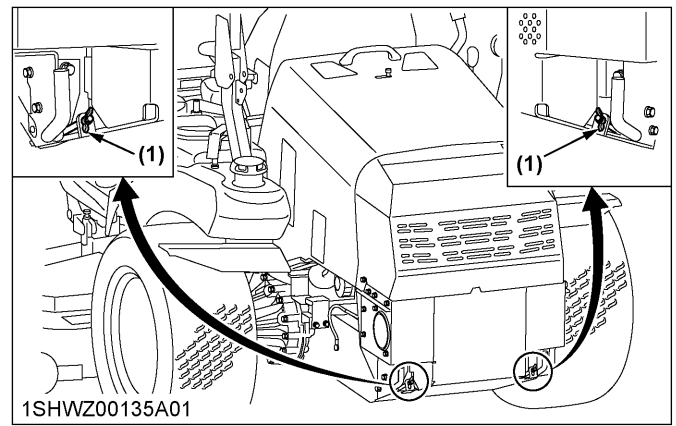
WARNING

To avoid serious injury or death:

- Be sure to stop the engine and remove the key before cleaning.

RCK60R, RCK72R

1. Remove the wing nuts at the rear part. The rubber sheet will come down.
2. Clean cut grass in there.
3. After cleaning, install back the rubber sheet.



- (1) Wing nut
(2) Rubber sheet
(3) Rod

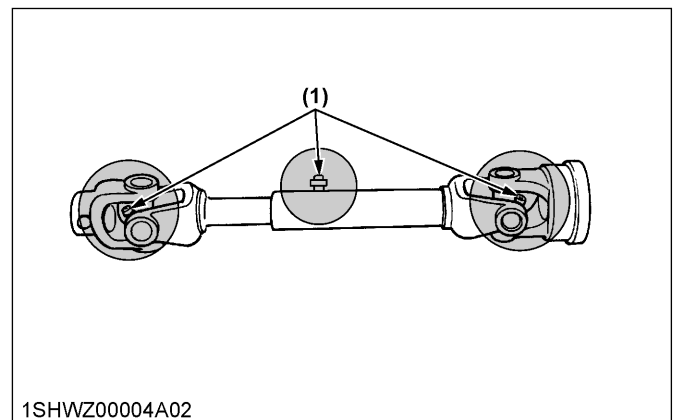
10. Lubricating all grease fittings

WARNING

To avoid serious injury or death:

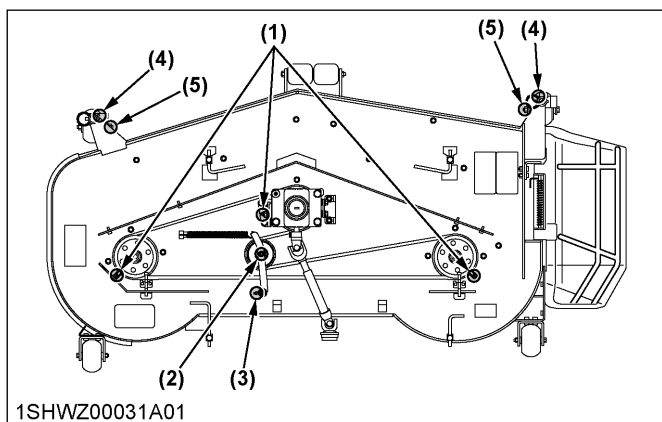
- Be sure to stop the engine and remove the key before greasing.

Grease the following locations.

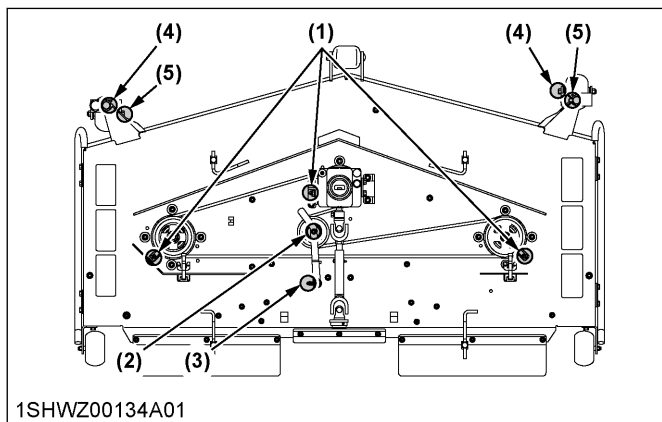


- (1) Mower universal joint

RCK72P



RCK60R, RCK72R



- (1) Spindle shaft
- (2) Belt tension pulley
- (3) Belt tension pivot
- (4) Front anti-scalp roller pivot boss
- (5) Front anti-scalp roller

MAINTENANCE

SERVICE INTERVALS

The following servicing tasks should be carried out on the machine at the stated running-time intervals.

No.	Items		Indication hour meter (Hr)													Ref. page		
			50	100	150	200	250	300	350	400	450	500	550	600	After since			
1	Engine start system	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	78		
2	OPC system	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	78		
3	Mower gear box oil	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	79		
		Change			○			○			○			○	every 150Hr	86		
4	Greasing (except mower and mower link bushings)	-	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	80		
5	Greasing (mower link bushings, pivot)	-		○		○		○		○		○		○	every 100Hr	84		
6	Air cleaner primary element	Clean		○		○		○		○		○		○	every 100Hr	81	*1	@
		Replace													every 1000Hr or 1 year	90	*2	
	Secondary element	Replace													every 1000Hr or 1 year	90	*2	
7	Fuel filter element	Check		○		○		○		○		○		○	every 100Hr	81		@
		Replace								○					every 400Hr	90	*3	
8	Fan belt	Adjust		○		○		○		○		○		○	every 100Hr	82		
9	Parking brake	Adjust		○		○		○		○		○		○	every 100Hr	82	*4	
10	Battery condition	Check		○		○		○		○		○		○	every 100Hr	84	*5	
11	Engine oil	Change	◎			○				○				○	every 200Hr	87	*6	
12	Engine oil filter	Replace	◎			○				○				○	every 200Hr	87	*6	
13	Transmission oil filter (HST)	Replace	◎			○				○				○	every 200Hr	87	*6	
14	Front axle pivot	Adjust		◎		○				○				○	every 200Hr	88	*7	
15	Transmission oil and rear axle gear case (RH and LH) fluid	Change								◎					every 400Hr	89		
16	Hydraulic oil filter	Replace								○					every 400Hr	89		
17	Engine valve clearance	Adjust													every 800Hr	90	*3	
18	Fuel injection nozzle injection pressure	Check													every 1500Hr	91	*3	@
19	Radiator	Clean													every 2000Hr or 2 years	91	*8	
20	Coolant	Change													every 2000Hr or 2 years	91	*8	
21	Injection pump	Check													every 3000Hr	93	*3	@
22	Turbo charger	Check													every 3000Hr	93	*3	@
23	Exhaust manifold	Check													every 1 year	93	*3	@
24	Fuel line	Check													every 1 year	93	*4 *9	@

(Continued)

MAINTENANCE

No.	Items		Indication hour meter (Hr)													Ref. page		
			50	100	150	200	250	300	350	400	450	500	550	600	After since			
24	Fuel line	Replace													every 4 years	94	*3	@
25	Radiator hose and clamp	Check													every 1 year	93	*4 *9	
		Replace													every 4 years	95	*4	
26	Hydraulic hose	Check													every 1 year	93	*4 *9	
		Replace													every 4 years	94	*3	
27	Intake air line	Check													every 1 year	94	*4 *9	@
		Replace													every 4 years	95	*4	
28	Engine breather hose	Check													every 1 year	94	*3 *9	
		Replace													every 4 years	94	*3	
29	Mower gear box oil seal	Check													every 1 year	94	*3 *9	
		Replace													every 4 years	95	*3	
30	Fuel system	Bleed													Service as re- quired	96		
31	Fuse	Replace														95		
32	Blade	Replace														96		
33	Mower belt	Replace														97		

*1 Air cleaner must be cleaned more often in dusty conditions than in normal conditions.

*2 Every 1000 hours or every 1 year whichever comes faster.

*3 Consult your local KUBOTA Dealer for this service.

*4 If you feel you are unable to make this service correctly and safely, contact your local KUBOTA Dealer.

*5 When the battery is used for less than 100 hours per year, check the battery condition by reading the indicator annually.

*6 The initial 50 hours should not be a replacement (change) cycle.

*7 The initial 100 hours should not be an adjustment cycle.

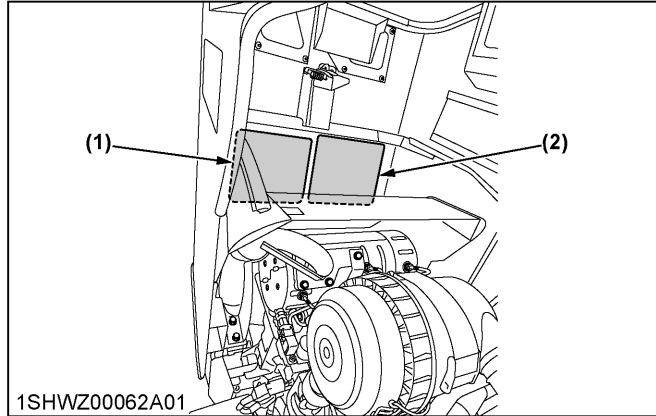
*8 Every 2000 hours or every 2 years whichever comes faster.

*9 Replace if any deterioration (crack, hardening, scar, or deformation) or damage occurred.

IMPORTANT :

- The jobs indicated by ☉ must be done initially.
- The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in the U.S.EPA non-road emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.
See the Warranty Statement in detail.

PERIODIC SERVICE CHART LABEL



(1) Part No. K3451-6552-4 (ENGLISH)

PERIODIC SERVICE CHART			
INTERVAL	RECOMMENDED SERVICE ※	INTERVAL	RECOMMENDED SERVICE ※
DAILY	CHECK	50 Hr.	CHECK • Mower gear box oil / Engine start system / OPC system • Throttle cable (2 places) • Front axle and wheel (5 places) / Universal joint (3 places) / • Grease adjuster (2 places) / Tilt lever / Parking brake lock pedal
	CHECK	100 Hr.	CHECK • Fuel filter element / Battery condition • Air cleaner primary element ★ • Fan belt / Parking brake dr • Grease
	CLEAN	150 Hr.	CHANGE • Mower gear box oil • Engine oil filter / HST transmission oil filter
	GREASE	200 Hr.	CHANGE • Engine oil • Front axle pivot / Motion control lever pivot
FIRST 50 Hr. (BREAK-IN) (MUST BE DONE)	REPLACE • Engine & HST Transmission oil filters (2 places) • Grease	400 Hr.	REPLACE • Fuel filter element ★ / Hydraulic oil filter • Grease
FIRST 100 Hr. (MUST BE DONE)	ADJUST • Front axle pivot	800 Hr.	ADJUST • Transmission & Rear axle gear case (RH & LH) fluid • Grease
FIRST 400 Hr. (MUST BE DONE)	REPLACE • Hydraulic oil filter • Transmission & Rear axle gear case (RH & LH) fluid	1500 Hr.	CHECK • Fuel Injection Nozzle Injection Pressure • Injection Pump / Turbo charger (ZD1511)
※: See Operator's Manual in details. ★: Should be serviced by KUBOTA Dealer. ★: Required more often in dusty conditions. ●: Replace if necessary. ●: Replace for maximum of every 4 years. ▲: Whichever comes first.			
Approximate fluid capacities, unit: L (qts.)			
Tire pressure and tightening torque recommendation:			
Front	15x 6.5-8 (NO FLAT)	NO NEED	Ensure smooth rotation of wheel <Do not over-tighten>
Rear	26x12-16	83 kPa (12.0 psi)	108.5-130.2 Nm (80.0-96.0 ft-lbs)

1SHWZ00114A01

1SHWZ00124A01

(2) Part No. K3451-6553-4 (SPANISH)

TABLA DE SERVICIO PERIODICO			
INTERVALO	SERVICIO RECOMENDADO ※	INTERVALO	SERVICIO RECOMENDADO ※
DIARIO	REVISAR	50 hr.	REVISAR • Aceite de la caja de cambios del cortacéspedes / Sistema de arranque del motor / Sistema OPC
	REVISAR	100 hr.	REVISAR • Cable de estrangulamiento (2 lugares) • Eje frontal y rueda (5 lugares) / Junta universal (3 lugares) / • Regulador del asiento (2 lugares) / Palanca de inclinación / • Pedal de bloqueo del freno de aparcamiento
	REVISAR	150 hr.	REVISAR • Elemento de filtro de combustible / • Condición de la batería
	REVISAR	200 hr.	REVISAR • Elemento primario del filtro de aire ★ • Correas del ventilador / Freno de estacionamiento dr
PRIMERAS 50 hrs. (Uso inicial) (Debe hacerse)	REVISAR	400 hr.	REVISAR • Aceite de la caja de cambios del cortacéspedes • Filtro de aceite del motor / Filtro de aceite de la transmisión (HST)
	REVISAR	800 hr.	REVISAR • Aceite de motor • Pivote del eje frontal / • Pivote de la palanca de control de movimiento
	REVISAR	1500 hr.	REVISAR • Elemento de filtro de combustible ★ / • Filtro del aceite hidráulico
	REVISAR	3000 hr.	REVISAR • Fluido de la caja de transmisión y cambio del eje posterior
PRIMERAS 100 hrs. (Debe hacerse)	REVISAR	1 año	REVISAR • Despeje de válvulas del motor • Presión de inyección de la boquilla de inyección de combustible (ZD1511)
	REVISAR	2 años / 2000 hr.	REVISAR • Manguera y abrazadera del radiador / Línea de toma de aire / • Manguera de sistema hidráulico / Línea de combustible / • Sello del aceite de la caja de cambios del cortacéspedes / • Manguera de respiradero del motor / Colector de escape (ZD1511)
	REVISAR	2 años / 2000 hr.	REVISAR • Ambos elementos filtro de aire • Radiador
	REVISAR	2 años / 2000 hr.	REVISAR • Refrigerante
Capacidades de fluido (aproximadas), unidades: L (cuartos de galón)			
Recomendación de presión para neumáticos y par de ajuste.			
Frontal	15x 6.5-8 (No pinchada nada)	Ninguna necesidad	Asegure rotación libre de la rueda <No apriete en exceso>
Posterior	26x12-16	83 kPa (12.0 psi)	108.5-130.2 Nm (80.0-96.0 ft-lbs)

1SHWZ00115A01

EVERY 50 HOURS

1. Checking the engine start system

The engine start system in your machine is designed to protect you while operating. Check the engine start system periodically (daily is best) to test the function of the engine start system before operation.

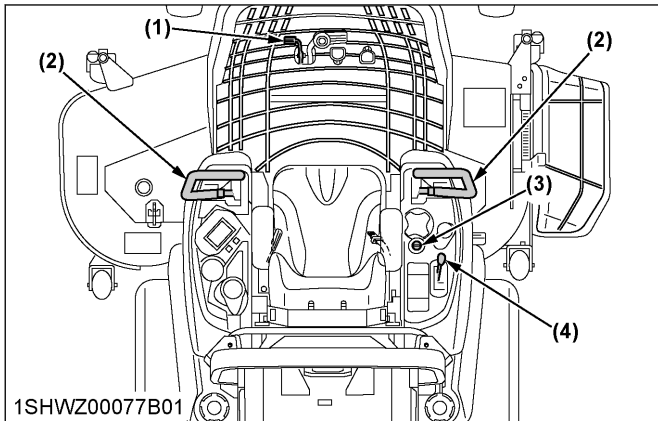
WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Do not allow anyone near the machine while testing.
- If the machine does not pass one of the following tests, do not operate the machine. See your local KUBOTA Dealer.
- Sit on the operator's seat for all tests except for test 1.

IMPORTANT :

- Test the following before operating the machine:



- (1) Parking brake lock pedal
- (2) Motion control lever
- (3) Key switch
- (4) PTO lever

Test 1 (operator not on the seat)

1. Securely set the parking brake.
2. Set the PTO lever to the "DISENGAGE" (OFF) position.
3. Set the motion control levers to the "NEUTRAL LOCK" position.
4. Turn the key switch to the "START" position.
5. The engine must not crank.

Test 2 (operator on the seat)

1. Do not set the parking brake (release it from test 1).
2. Set the PTO lever to the "DISENGAGE" (OFF) position.
3. Set the motion control levers to the "NEUTRAL LOCK" position.
4. Turn the key switch to the "START" position.
5. The engine must not crank.

Test 3 (operator on the seat)

1. Securely set the parking brake.
2. Shift the PTO lever to the "DISENGAGE" (OFF) position.
3. Grasp the motion control levers and move them inward from the "NEUTRAL LOCK" position to the "NEUTRAL" position and then release the levers.
4. Turn the key switch to the "START" position.
5. The engine must not crank.

Test 4 (operator on the seat)

1. Securely set the parking brake.
2. Shift the PTO lever to the "ENGAGE" (ON) position.
3. Set the motion control levers to the "NEUTRAL LOCK" position.
4. Turn the key switch to the "START" position.
5. The engine must not crank.

NOTE :

- If the engine cranks in tests 1 through 4, consult your local KUBOTA Dealer to have the unit checked before operation.

Test 5 (operator on the seat)

1. Start the engine.
2. Keep the parking brake securely set.
3. Shift the PTO lever to the "DISENGAGE" (OFF) position.
4. Grasp the motion control levers and move them inward from the "NEUTRAL LOCK" position to the "NEUTRAL" position and then release the levers.
5. The engine must shut off after a short time delay.

IMPORTANT :

- For this test only, the engine will shut off in a few seconds.

NOTE :

- If the engine keeps running in test 5, consult your local KUBOTA Dealer to have the unit checked before operation.

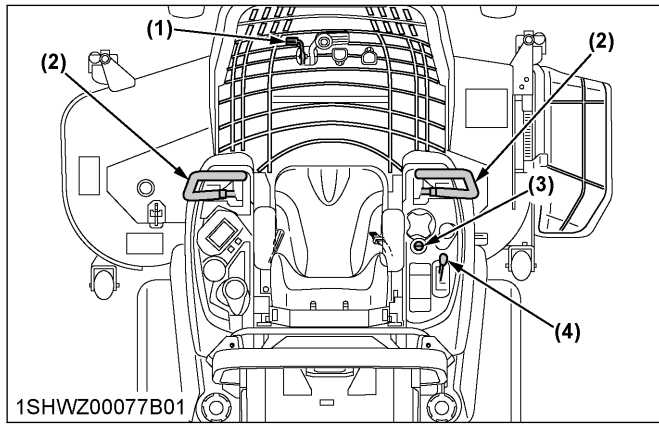
2. Checking the OPC system

The operator presence control (OPC) system in your machine is designed to protect you while operating. Check the OPC system periodically (daily is best) to test function of the OPC system before operation.

WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Do not allow anyone near the machine while testing.
- If the machine does not pass one of the following tests, do not operate the machine. See your local KUBOTA Dealer.



- (1) Parking brake lock pedal
(2) Motion control lever
(3) Key switch
(4) PTO lever

Test 1 (operator on the seat)

1. Start the engine.
2. Do not set the parking brake.
3. Shift the PTO lever to the "DISENGAGE" (OFF) position.
4. Grasp the motion control levers and move them inward from the "NEUTRAL LOCK" position to the "NEUTRAL" position and then release the levers.
5. Stand up. Do not get off the machine.
6. The engine must shut off.

Test 2 (operator on the seat)

1. Start the engine.
2. Do not set the parking brake.
3. Shift the PTO lever to the "ENGAGE" (ON) position.
4. Stand up. Do not get off the machine.
5. The engine must shut off.

NOTE :

- If the engine keeps running in tests 1 through 2, consult your local KUBOTA Dealer to have the unit checked before operation.

3. Checking gear box oil level

WARNING

To avoid serious injury or death:

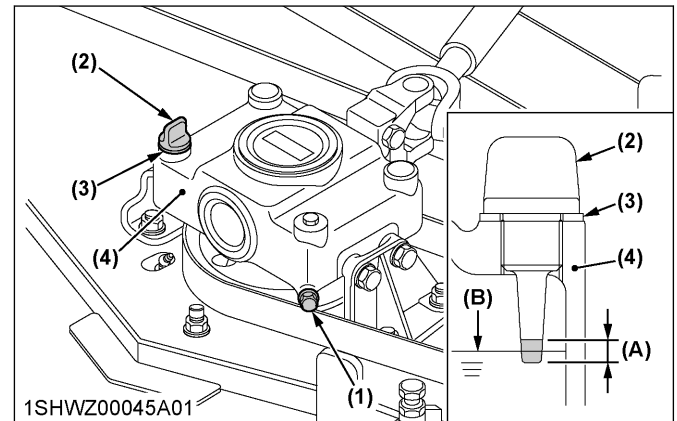
- Always stop the engine and remove the key before checking oil.

1. Park the machine on a flat surface and lower the mower to the ground.
To check the oil level, loosen the oil inlet plug with gauge, wipe it clean, reinstall it and loosen it again. (Refer to the following figure.)
Check to see if the oil level is between the notch and tip.
If the level is too low, add new oil to the prescribed level at the oil inlet.

(See [LUBRICANTS, FUEL AND COOLANT](#) on page 66.)

2. After checking, reinstall the oil inlet plug with gauge securely.

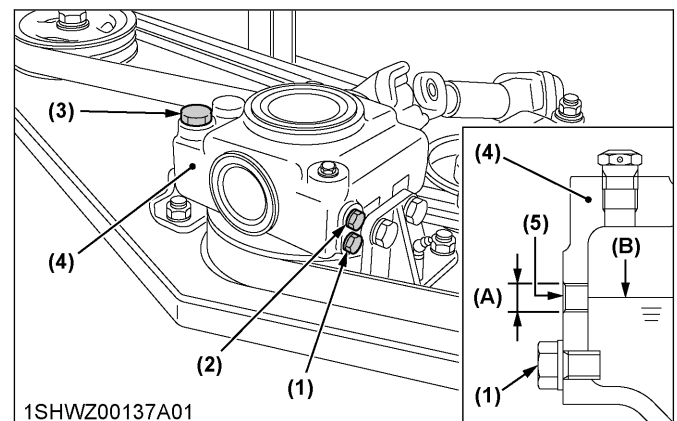
RCK72P



- (1) Drain plug
(2) Oil inlet plug with gauge
(3) Seal washer
(4) Gear case
(A) Oil level is acceptable within this range.
(B) Oil level

1. Park the machine on a flat surface and lower the mower to the ground.
To check the oil level, loosen the check plug and check to see if the oil level is in the range of the check plug port.
If the level is too low, add new oil to the prescribed level at the oil inlet.
(See [LUBRICANTS, FUEL AND COOLANT](#) on page 66.)
2. After checking, reinstall the check plug and oil inlet plug securely.

RCK72R



- (1) Drain plug
(2) Check plug
(3) Oil inlet plug
(4) Gear case
(5) Check plug port
(A) Oil level is acceptable within this range.
(B) Oil level

NOTE :

- RCK60R Similar

4. Greasing

WARNING

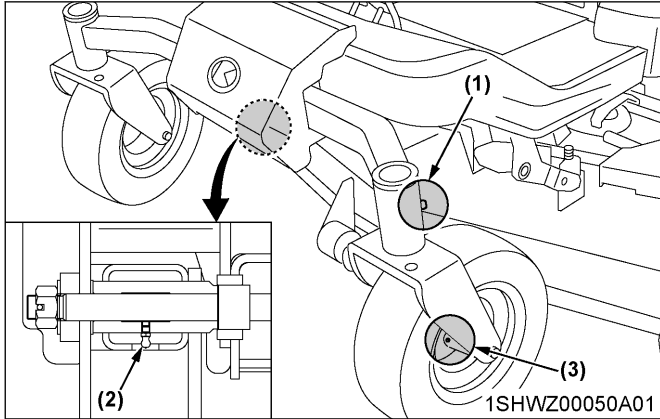
To avoid serious injury or death:

- Be sure to stop the engine and remove the key before greasing.

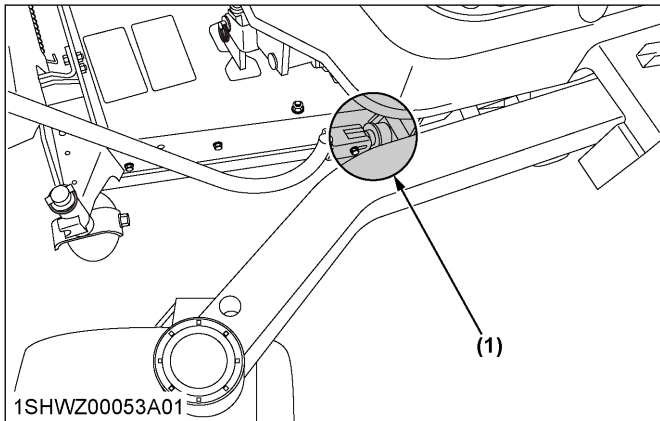
Grease the following locations.

IMPORTANT :

- Put grease into front wheel until grease overflows from both ends of the front wheel.



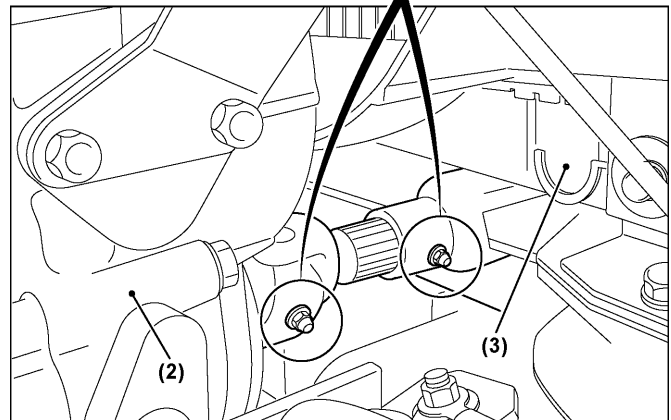
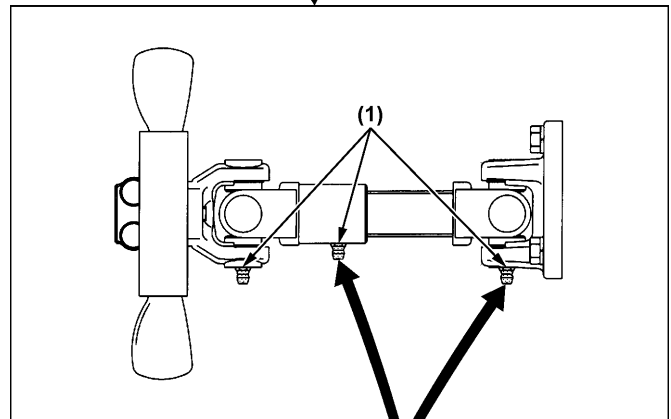
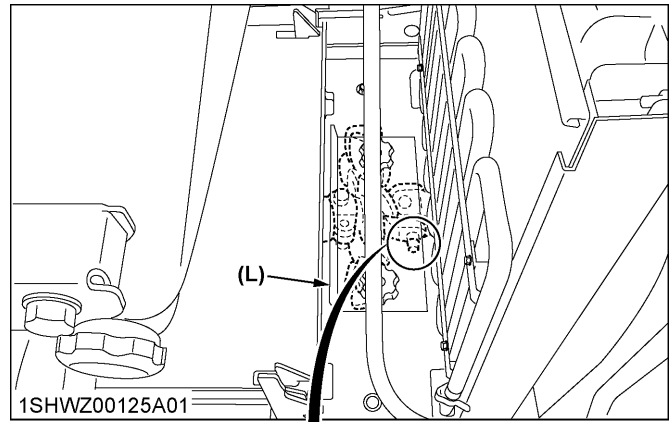
- (1) King pin (LH, RH)
(2) Center pin
(3) Front wheel (LH, RH)



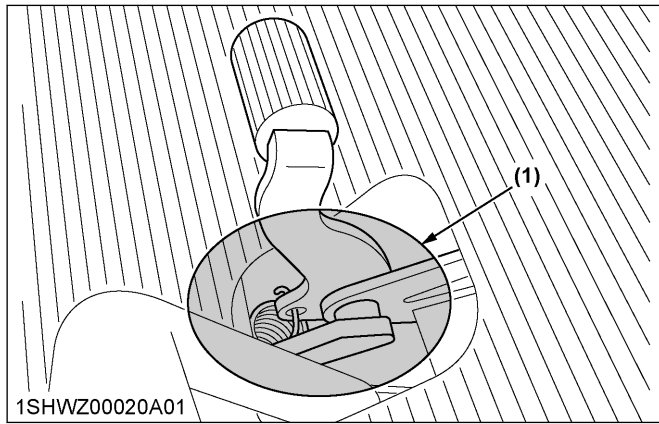
- (1) Tilt lever

When you put grease to the machine universal joint, remove the L-plate.

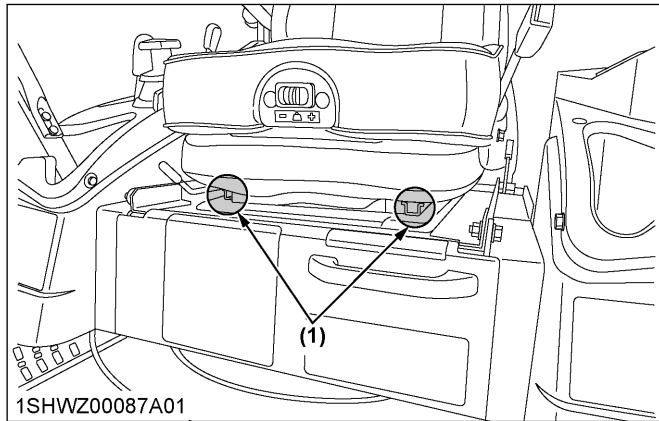
When reassembling, make sure to install it in the direction shown in the figure.



- (1) Machine universal joint (L) L-plate
(2) Engine
(3) Radiator



(1) Parking brake lock pedal



(1) Seat adjuster

EVERY 100 HOURS

1. Cleaning air cleaner primary element

WARNING

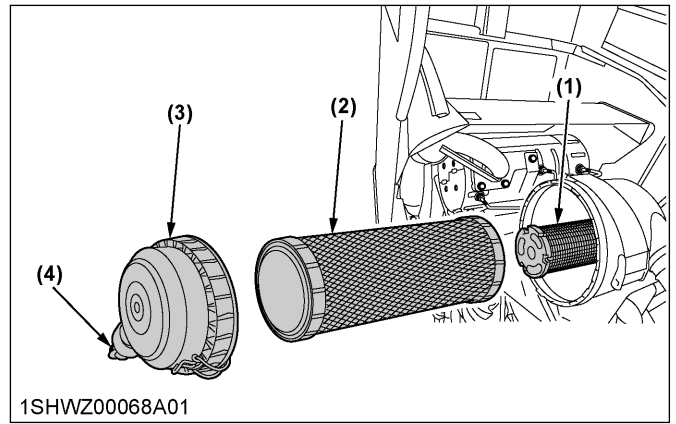
To avoid serious injury or death:

- Be sure to stop engine and remove the key before cleaning air cleaner element.

1. Remove the air cleaner cover and primary element.
2. Clean the primary element:
 - When dry dust adheres to the element, blow compressed air from the inside, turning the element. Pressure of compressed air must be under 205 kPa (2.1 kgf/cm², 30 psi).
3. Replace air cleaner primary element: Once yearly or every 1000 hours whichever comes first.

NOTE :

- Check to see if the evacuator valve is blocked with dust.



- (1) Secondary element
(2) Primary element
(3) Cover
(4) Evacuator valve

NOTE :

- The air cleaner uses a dry element, never apply oil.
- Do not run the engine with filter element removed.
- Operating in dusty conditions requires more frequent maintenance.
- Align the arrow marks when reinstalling the air cleaner cover.
- Do not touch the secondary element except in cases where replacing is required.
(See [Replacing air cleaner primary element and secondary element on page 90.](#))

Evacuator valve

Open the evacuator valve once a week under ordinary conditions - or daily when used in a dusty place - to get rid of large particles of dust and dirt.

2. Checking the fuel filter

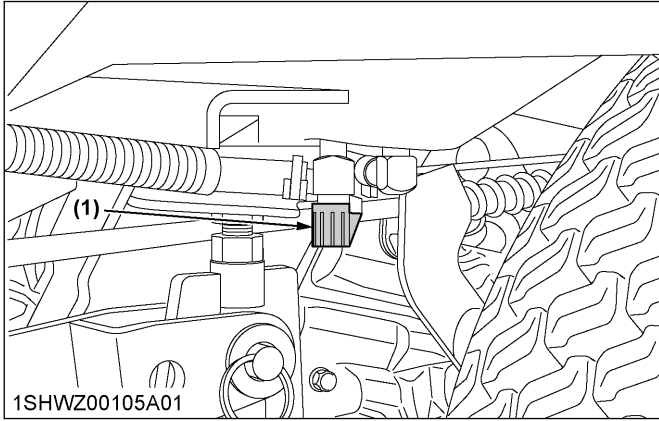
WARNING

To avoid serious injury or death:

- Be sure to stop the engine and remove the key when attempting to make the following checks and changes.
- Never fail to check the fuel lines periodically. The fuel lines are subject to wear and aging. Fuel may leak out onto the running engine, causing a fire.

1. Open the step and hood.

2. Close the fuel valves below the fuel tanks LH and RH.

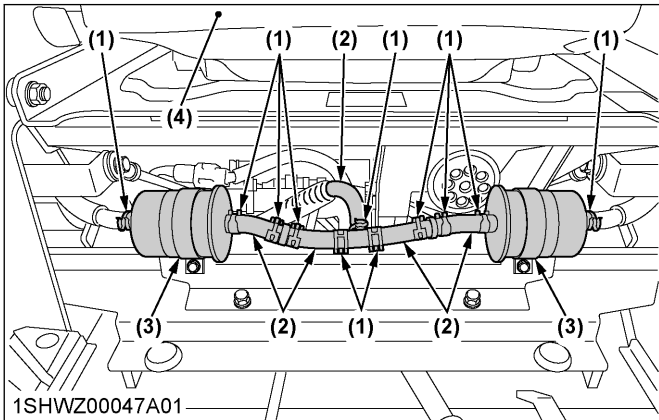


(1) Fuel valve

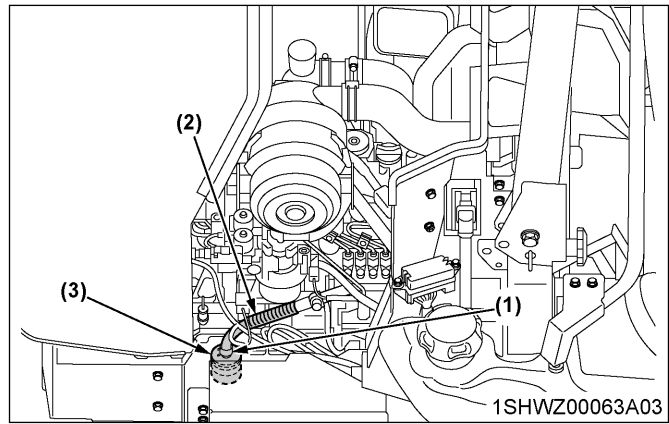
3. The fuel line is made of rubber and ages regardless of service period.
4. If the fuel line and clamps are found damaged or deteriorated, replace them.
5. Check fuel filter, if it is clogged by debris or contaminated with water, replace it.

IMPORTANT :

- When the fuel line is disconnected for maintenance or repairs, close both ends of the fuel line with a piece of clean cloth or paper to prevent dust and dirt from entering.
- Particular care must be taken not to allow dust and dirt to enter into the fuel pump. Entrance of even a small amount dust or dirt cause premature wear and malfunction of the fuel pump and injector components.



(1) Pipe clamps
(2) Fuel line
(3) Fuel filter
(4) Seat



(1) Pipe clamps
(2) Fuel line
(3) Fuel filter

3. Adjusting fan drive belt tension



WARNING

To avoid serious injury or death:

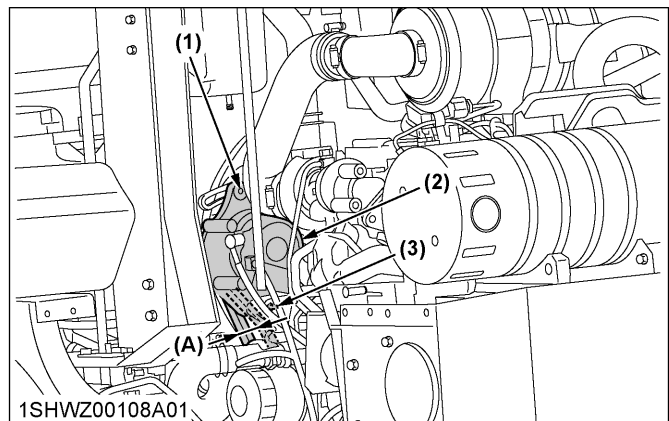
- Be sure to stop the engine and remove the key before checking belt tension.

If the fan drive belt becomes loose, the engine may overheat.

1. To adjust, loosen bolts and move the alternator outward to tighten the belt. After adjustment, securely tighten the bolts.

Moderate belt tension:

The belt must deflect approx. 10 mm (0.4 in.) when the center of the belt is depressed with finger pressure of 98 N (10 kgf, 22 lbs.).



(1) Tension bolt
(2) Alternator
(3) Adjusting bolt

(A) 10 mm (0.4 in.)

4. Adjusting parking brake

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer.

! WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Stop the engine and chock the wheels before checking or adjusting.

IMPORTANT :

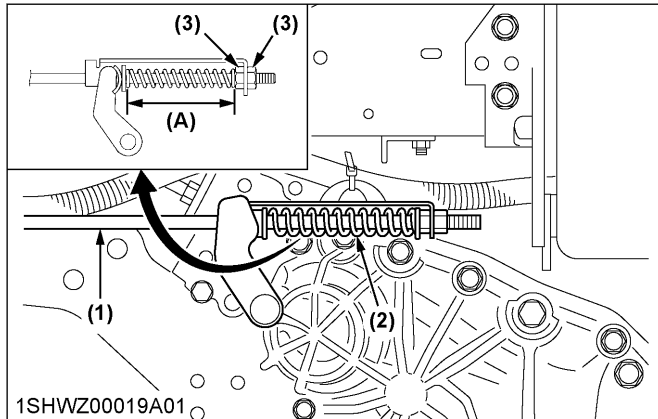
- Wrong adjustment may cause machine damage.

4.1 Check brake spring

1. Place the motion control levers to the “NEUTRAL LOCK” position.
2. Be sure to chock the rear wheels.
3. Apply the parking brake to the lock position.
4. Check the length of the brake springs on both sides.

(A): Proper brake spring length with the brake applied to the lock position	115 to 117 mm (4.53 to 4.61 in.)
---	-------------------------------------

When the parking brake is locked.

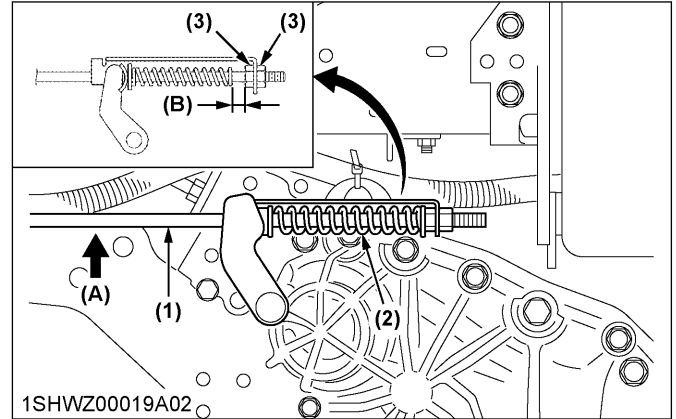


- (1) Brake rod (A) “Parking brake spring length”
(2) Brake spring
(3) Lock nut

5. If the length of the brake spring is not correct, adjust it.
(See “Adjustment of brake spring length” as follows.)
6. Release the parking brake completely.
7. Hold the brake rod lightly.
8. Check the brake spring play.

(B): Proper brake spring play	Reference: 0.5 to 1.0 mm (0.02 to 0.04 in.)
-------------------------------	--

When the parking brake is released.



- (1) Brake rod (A) “Hold the brake rod”
(2) Brake spring (B) “Parking brake spring play”
(3) Lock nut

9. If the brake spring play is not correct, adjust it.
(See “Adjustment of brake spring play” as follows.)

Adjustment of brake spring length

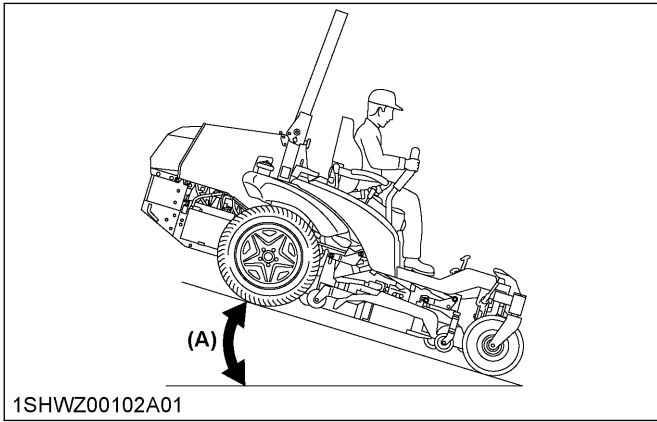
1. Place the motion control lever to the “NEUTRAL LOCK” position.
2. Apply the parking brake to the lock position.
3. Loosen the lock nuts.
4. Adjust the spring length to the recommendation.
5. Lock the nuts.
6. Check the brake spring play to the recommendation.
If there is no play, adjust the brake spring play again.
(See “Adjustment of brake spring play” as follows.)
7. Adjust the other side spring to the same dimension.

Adjustment of brake spring play

1. Place the motion control lever to the “NEUTRAL LOCK” position.
2. Be sure to chock the rear wheels.
3. Release the parking brake completely.
4. Loosen the lock nuts.
5. Hold the brake rod by hand.
6. Tighten the nut to the correct space between the end of the spring and the nut.
7. Lock the nuts.
8. Adjust the other side spring to the same dimension.

4.2 Check on the slope

1. Place the machine on a 17° ramp.
2. Apply the parking brake.
3. Place the motion control levers in “NEUTRAL LOCK” position and shut off the engine.
4. Check that the machine does not move.



(A) 17° ramp

NOTE :

- For parking brake test purposes, only use 17° ramp.

5. Greasing

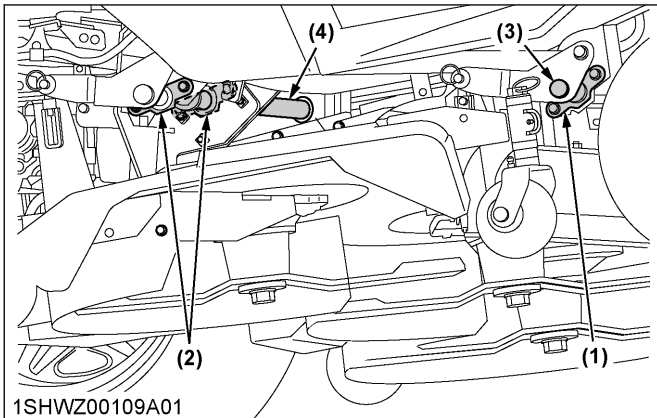
WARNING

To avoid serious injury or death:

- Be sure to stop the engine and remove the key before greasing.

Grease the following location.

If you operated the machine in extremely wet and muddy conditions, lubricate grease fittings more often.



- (1) Front mower link bushing (2 places)
- (2) Rear mower link bushing (4 places)
- (3) Front mower link
- (4) Rear mower link

6. Checking the battery condition

DANGER

To avoid the possibility of battery explosion:
For the refillable type battery, follow these instructions:

- Do not use or charge the refillable type battery if the fluid level is below the [LOWER] (lower

limit level) mark. Otherwise, the battery component parts may prematurely deteriorate, which may shorten the battery's service life or cause an explosion.

- Check the fluid level regularly and add distilled water as required so that the fluid level is between the [UPPER] and [LOWER] levels.
- When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.

WARNING

To avoid serious injury or death:

- Batteries, battery posts, terminals and related accessories contain lead, lead compounds and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.
- Never remove the battery cap while the engine is running.
- Keep electrolyte away from eyes, hands and clothes. If you are splattered with electrolyte, wash it away completely with water immediately and get medical attention.
- Keep open sparks and flames away from the battery at all times. Hydrogen gas mixed with oxygen becomes very explosive.
- Wear eye protection and rubber gloves when working around the battery.

NOTE :

- The factory-installed battery is a non-refillable type.
If the battery is weak, charge the battery or replace it with a new one.

IMPORTANT :

- Mishandling the battery shortens the service life and adds to maintenance costs.
The original battery is maintenance free, but needs some servicing.
If the battery is weak, the engine will be difficult to start and the lights will be dim. It is important to check the battery periodically.
- When exchanging an old battery with a new one, use a battery of equal specifications (as described in the following table).

Battery type	Volts (V)	Reserve capacity (min)	Cold cranking amps	Normal charging rate (A)
24R	12	115	670	6.6

Regarding non-accessible maintenance-free type batteries:

Maintenance-free, non-accessible batteries are designed to eliminate the need to add water. Yet the volume of electrolyte above the plates may eventually become depleted due to abnormal conditions such as high heat or improper regulator settings. Use LCD monitor or a voltmeter to check the state of charge. (See the following reference chart to determine if charging is necessary.)

Battery voltage	Reference state of charge
12.6	100% (full charge)
12.4	75%
12.2	50%
12.0	25%
11.8	0%

6.1 How to read indicator

Check the battery condition by reading the indicator.

Green	Specific gravity of electrolyte and quality of electrolyte are both in good condition.
Black	Battery needs charging.
White	Battery needs replacing.

NOTE :

- When viewing the indicator, check from directly above by removing the air cleaner cover or using a mirror.

6.2 Charging the battery



DANGER

To avoid serious injury or death:

- When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.



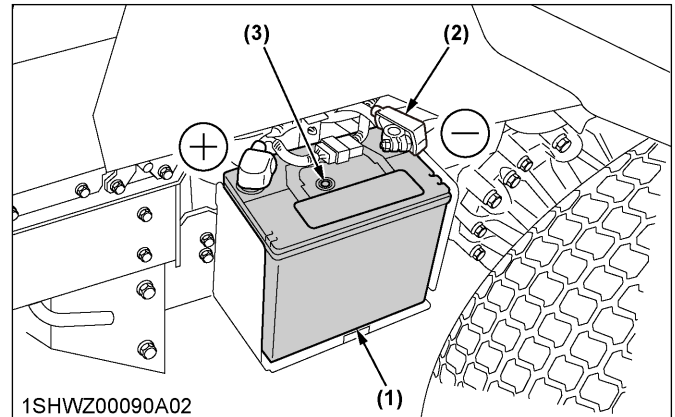
WARNING

To avoid serious injury or death:

- When disconnecting the cable from the battery, start with the negative terminal first. When connecting the cable to the battery, start with the positive terminal first.
- Never check the battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

IMPORTANT :

- Make sure that the wire harness is in the cover. See the figure below.



- (1) Battery
(2) Ground cable
(3) Indicator

- (+) Positive terminal
(-) Negative terminal

- To slow charge the battery, connect the battery positive terminal to the charger positive terminal and the negative to the negative. Then, charge for at least 1 hour at 4.5 amperes.
- A boost charge is only for emergencies. It will partially charge the battery at a high rate and in a short time. When using a boost-charged battery, it is necessary to recharge the battery as early as possible. Failure to do this will shorten the battery's service life.
- When the specific gravity of electrolyte is between 1.27 and 1.29, the charging is completed.

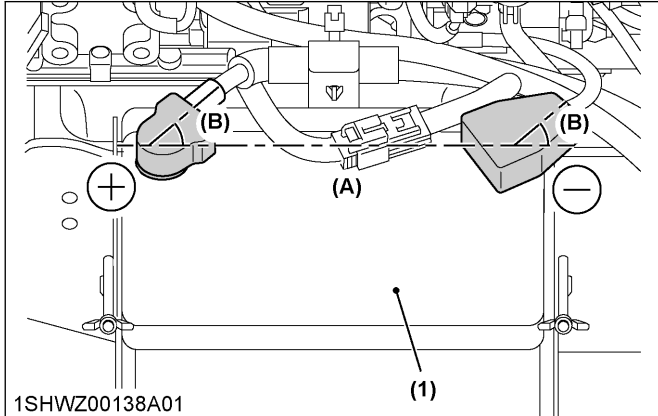
6.3 Storing the battery

1. When storing the machine for a long period, remove the battery from machine, adjust the electrolyte to the proper level and store in a dry place out of direct sunlight.

When disconnecting the cables from the battery, start with the negative terminal first.

When connecting the cables to the battery, start with the positive terminal first.

Tighten the positive and negative terminals with the angle 45° to the base line (A) as shown below.



(1) Base battery

(A) Base line

(B) 45°

(+) Positive terminal

(-) Negative terminal

2. The battery self-discharges while it is stored. Recharge it once every 3 months in the hot season and once every 6 months in the cold season.

EVERY 150 HOURS

1. Changing gear box oil



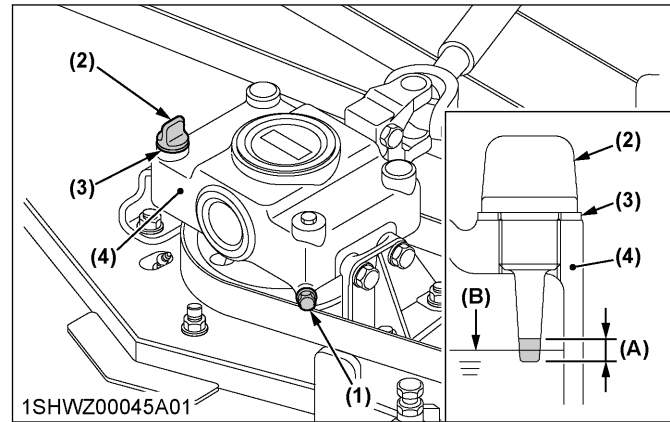
WARNING

To avoid serious injury or death:

- Always stop the engine and remove the key before checking oil.

1. To drain the used oil, remove the drain plug and oil inlet plug with gauge at the gear box and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Remove the oil level check plug. (Only **R** models)
4. Fill with the new oil up to the check plug port.
(See [LUBRICANTS, FUEL AND COOLANT](#) on page 66.)
5. After filling reinstall the check plug and oil inlet plug with gauge securely.

RCK72P



(1) Drain plug

(2) Oil inlet plug with gauge

(3) Seal washer

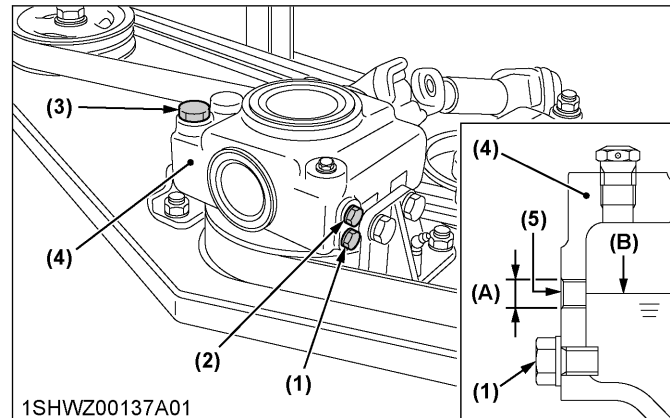
(4) Gear case

(A) Oil level is acceptable within this range.

(B) Oil level

1. Park the machine on a flat surface and lower the mower to the ground.
To check the oil level, loosen the check plug and check to see if the oil level is in the range of the check plug port.
If the level is too low, add new oil to the prescribed level at the oil inlet.
(See [LUBRICANTS, FUEL AND COOLANT](#) on page 66.)
2. After checking, reinstall the check plug and oil inlet plug securely.

RCK72R



(1) Drain plug

(2) Check plug

(3) Oil inlet plug

(4) Gear case

(5) Check plug port

(A) Oil level is acceptable within this range.

(B) Oil level

NOTE :
RCK60R Similar

EVERY 200 HOURS

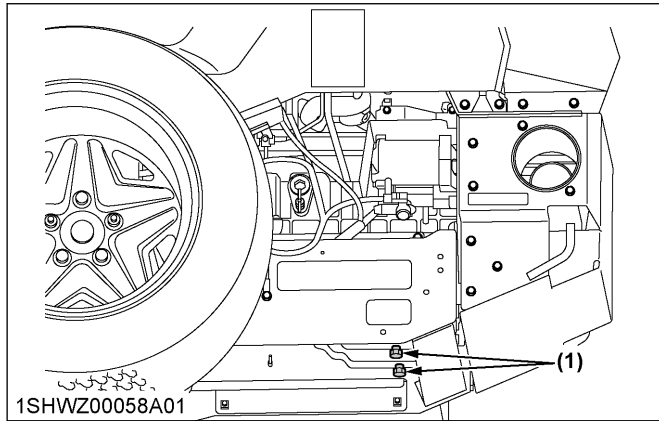
1. Changing engine oil

WARNING

To avoid serious injury or death:

- Be sure to stop the engine and remove the key before changing the oil.
- Allow the engine to cool down sufficiently. Oil can be hot and may cause burns.

1. To change the used oil, remove the drain plug at the bottom of the engine and drain the oil completely. The used oil can be drained out more easily if the engine is warm.
2. Fill with the new oil up to the upper notch on the dipstick.



(1) Drain plug

3. To check the oil level. Remove the dipstick, wipe it clean, insert it and draw it out again. Check to see that the oil level is between the two marks.

2. Replacing the engine oil filter

WARNING

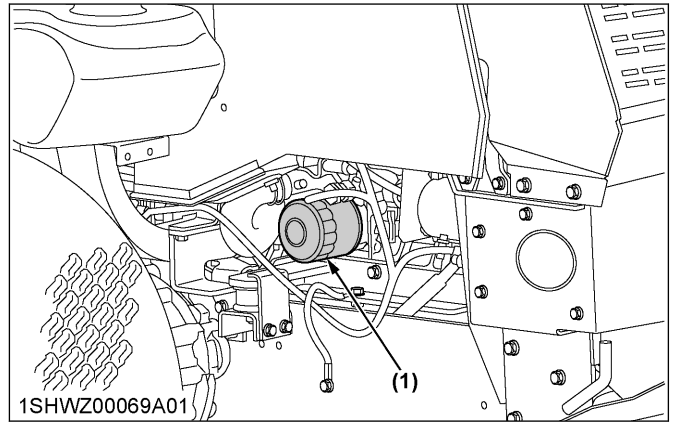
To avoid serious injury or death:

- Be sure to stop the engine and remove the key before changing the oil and the oil filter.
- Allow the engine to cool down sufficiently. Oil can be hot and may cause burns.

1. The oil filter must be changed every 200 service hours.
2. Apply a slight coat of oil onto the rubber gasket of new filter.
3. Tighten the filter quickly until it contacts the mounting surface. Tighten filter by hand an additional 1/2 turn only.
4. After the new filter has been replaced, the engine oil level normally lowers a little. Add engine oil to proper level. Check for oil leaks around filter gasket.

NOTE :

- To prevent serious damage to the engine, replacement element of the recommended type must be used. Use only a genuine KUBOTA filter or its equivalent.



(1) Engine oil filter

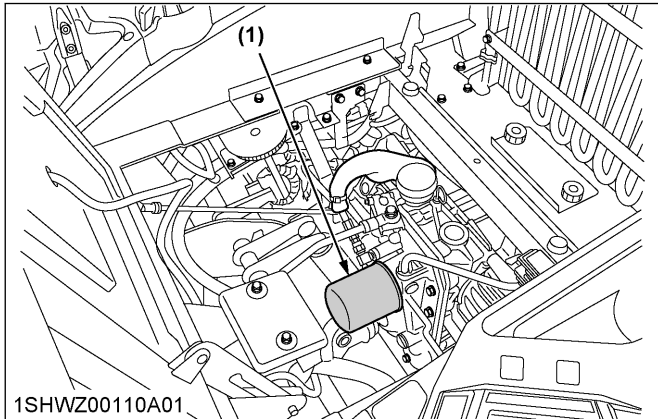
3. Replacing transmission oil filter (HST)

WARNING

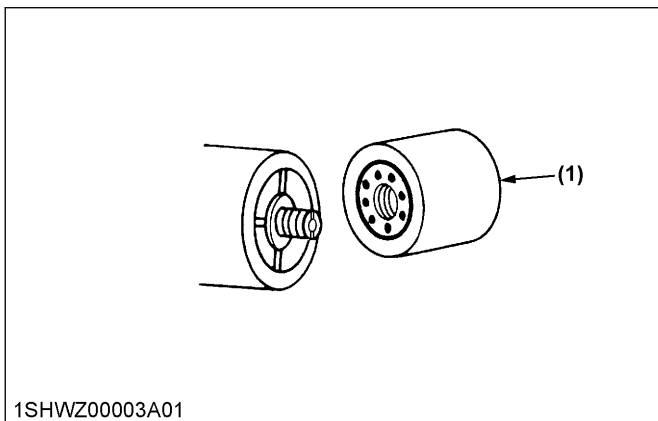
To avoid serious injury or death:

- Be sure to stop the engine and remove the key before changing the oil filter.
- Allow the transmission case to cool down sufficiently, as oil can be hot and may cause burns.

1. The oil filter must be changed every 200 service hours.



(1) Transmission oil filter (HST)



(1) Transmission oil filter (HST)

2. Place an oil pan underneath the oil filter. (Do not drain oil.)
3. Remove the oil filter by using the filter wrench.
4. Apply a slight coat of oil onto the filter gasket.
5. Tighten the filter quickly until it contacts the mounting surface. Tighten filter by hand an additional 1/2 turn only.
6. After the new filter has been replaced, the transmission oil level normally lowers a little. Add fluid to proper level. Check for oil leaks around filter gasket.

IMPORTANT :

- To prevent serious damage or premature failure to the hydraulic system, use only a KUBOTA genuine filter.

4. Adjusting front axle pivot



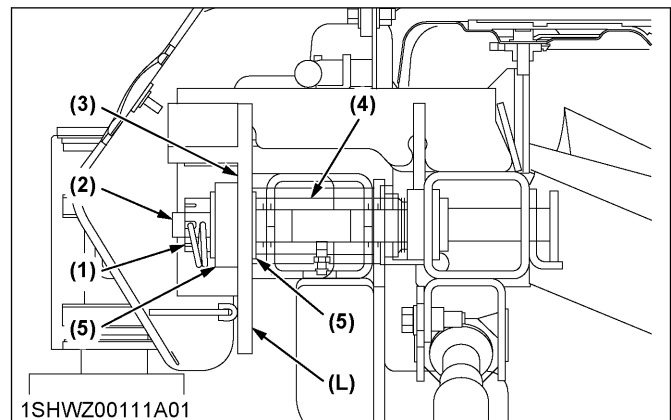
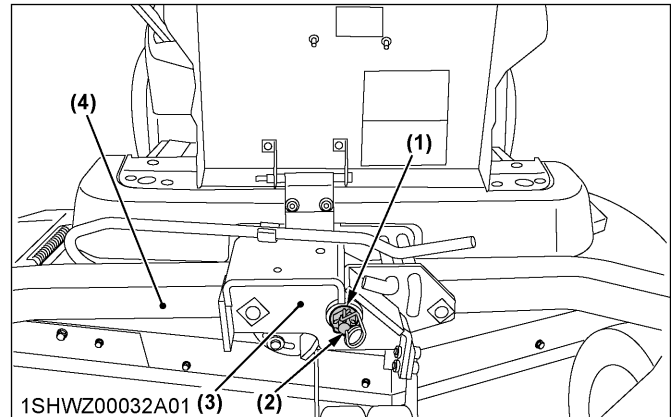
WARNING
To avoid serious injury or death:

- Be sure to stop the engine and remove the key before adjusting front axle pivot.

If the front axle pivot pin adjustment is not correct, vibration in the front wheel can occur.

Check and adjustment of the front axle end play

1. Lift up and securely block the front of the machine.
2. Measure the clearance (L) between the front axle (4) and front axle support (3).
3. If the measurement exceeds the allowable limit, adjust the nut (1).



- (1) Nut
- (2) Center pin
- (3) Front axle support
- (4) Front axle
- (5) Plain washer

(L) Front axle end play

NOTE :

- When fastening the center pin (2), tighten the nut so that the front axle can oscillate smoothly by hand.

Front axle end play (L)	Factory spec.	0 to 0.2 mm (0 to 0.008 in.)
	Allowable limit	0.5 mm (0.02 in.)

EVERY 400 HOURS

1. Changing transmission oil and rear axle gear case oil (RH and LH)



WARNING

To avoid serious injury or death:

- Be sure to stop the engine and remove the key before changing or checking the oil.
- Allow the transmission case to cool down sufficiently, as oil can be hot and may cause burns.

The fluid in the transmission case is also used for the hydrostatic drive system.

1. To drain the transmission oil, place oil pan underneath the transmission case and the rear axle gear case (RH and LH) and remove the drain plug at the bottom of the transmission case and the rear axle gear case (RH and LH).
2. After draining, reinstall the drain plugs.
3. Fill with UDT or **SUPER UDT** hydrostatic transmission oil or its equivalent up to the upper line of the gauge.

IMPORTANT :

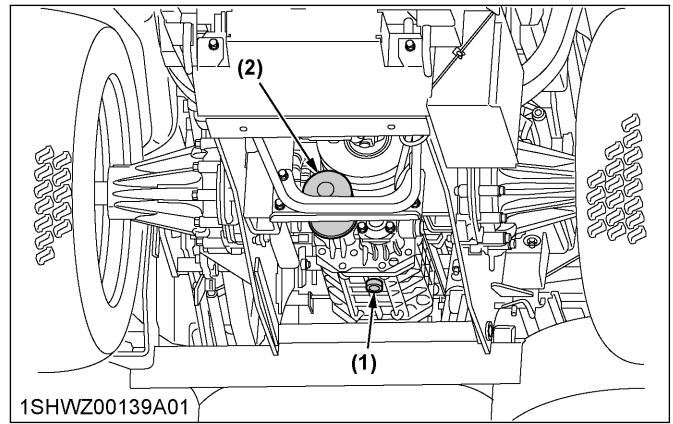
- It takes time to send the oil from the transmission case to the rear axle case (RH and LH).

Pour the regulated amount of oil slowly.

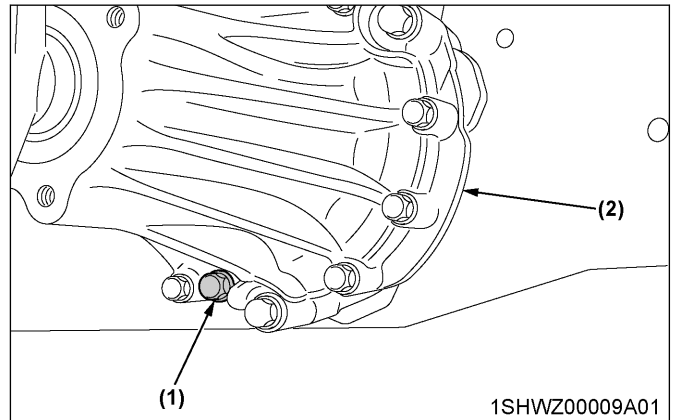
4. After running the engine for a few minutes, stop it and check the oil level again; add oil to the prescribed level.

IMPORTANT :

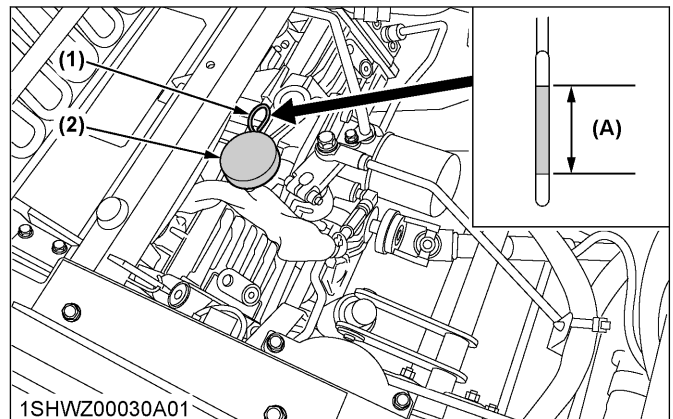
- Operate only at low rpms immediately after changing the transmission oil and filter.
- Keep the engine at medium speed for a few minutes to insure proper lubrication of all parts so there is no damage to transmission.



- (1) Drain plug
(2) Hydraulic oil filter



- (1) Drain plug
(2) Rear axle gear case LH



- (1) Oil level dipstick
(2) Oil plug and breather cup
(A) Oil level is acceptable within this range.

2. Replacing hydraulic oil filter



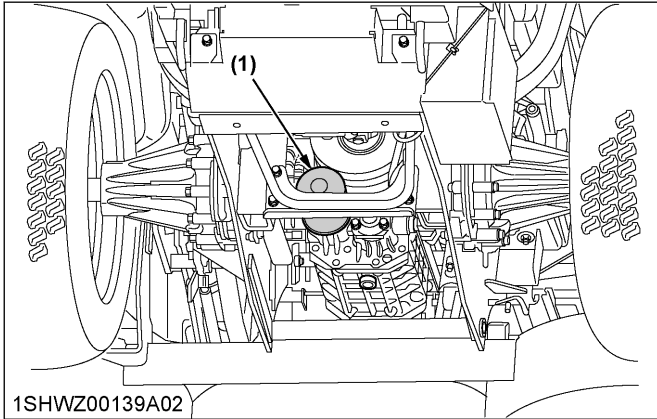
WARNING

To avoid serious injury or death:

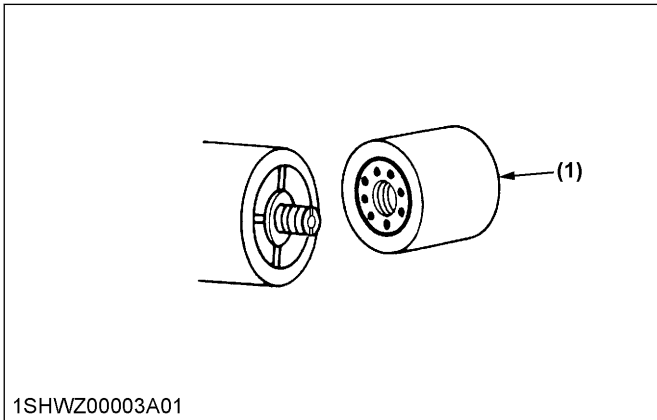
- Be sure to stop the engine and remove the key before changing the oil filter.

- Allow the transmission case to cool down sufficiently, as oil can be hot and may cause burns.

1. The oil filter must be changed every 400 service hours.



(1) Hydraulic oil filter



(1) Hydraulic oil filter

2. To drain the transmission oil, place oil pan underneath the transmission case and the rear axle gear case (RH and LH) and remove the drain plug at the bottom of the transmission case and the rear axle gear case (RH and LH).
3. After draining, reinstall the drain plugs.
4. Remove the oil filter by using the filter wrench.
5. Apply a slight coat of oil onto the filter gasket.
6. Tighten the filter quickly until it contacts the mounting surface. Tighten filter by hand an additional 1/2 turn only.
7. After the new filter has been replaced, the transmission oil level normally lowers a little. Add fluid to proper level. Check for oil leaks around filter gasket.

IMPORTANT :

- To prevent serious damage or premature failure to the hydraulic system, use only a KUBOTA genuine filter.

3. Replacing fuel filter

Consult your local KUBOTA Dealer for this service.

EVERY 800 HOURS

1. Adjusting engine valve clearance

Consult your local KUBOTA Dealer for this service.

EVERY 1000 HOURS OR EVERY 1 YEAR

Replace every 1000 hours or every 1 year whichever comes faster.

1. Replacing air cleaner primary element and secondary element

(See [Cleaning air cleaner primary element on page 81.](#))

IMPORTANT :

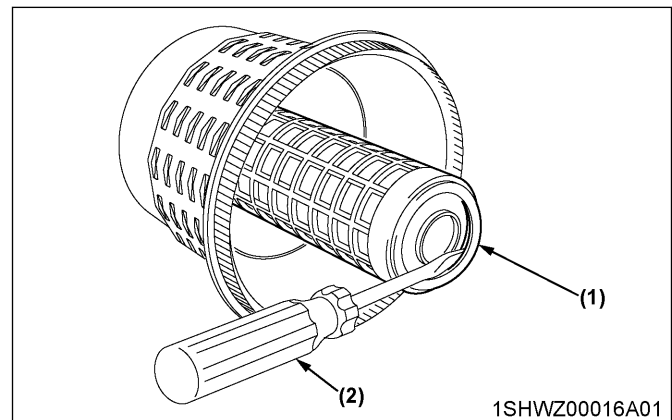
- To prevent serious damage to the engine, use only a KUBOTA genuine filter.

How to remove the secondary element

1. Pull out the two tabs of the secondary element using a suitable tool (e.g. Flat-blade screwdriver) as shown in the figure.

IMPORTANT :

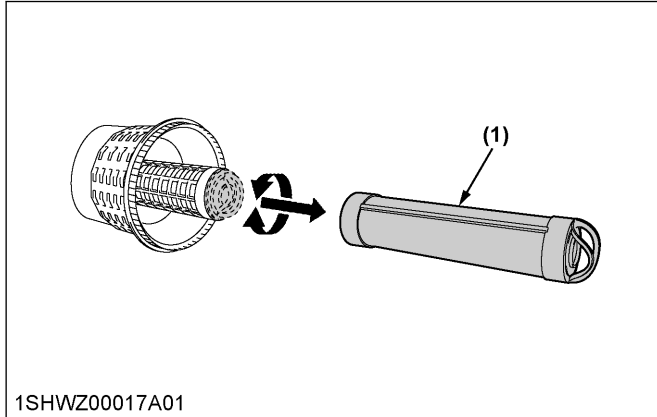
- Pull out the tabs only when replacing the secondary element.



(1) Tab

(2) Flat-blade screwdriver

2. While turning slightly, pull out the secondary element.



(1) Secondary element

EVERY 1500 HOURS

1. Checking fuel injection nozzle (injection pressure)

Consult your local KUBOTA Dealer for this service.

EVERY 2000 HOURS OR EVERY 2 YEARS

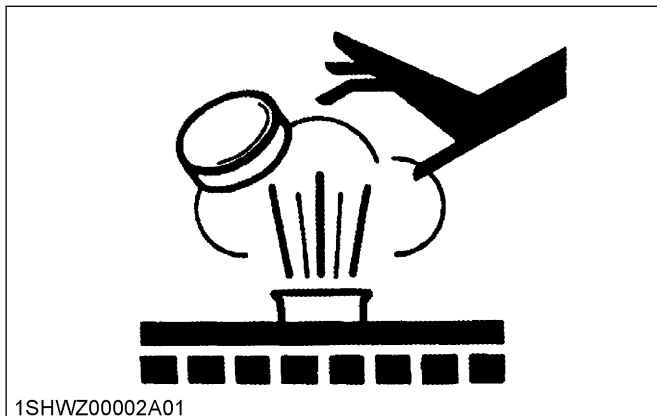
Be sure to do the following service once every 2000 hours or every 2 years whichever comes faster.

1. Flushing cooling system and changing coolant

WARNING

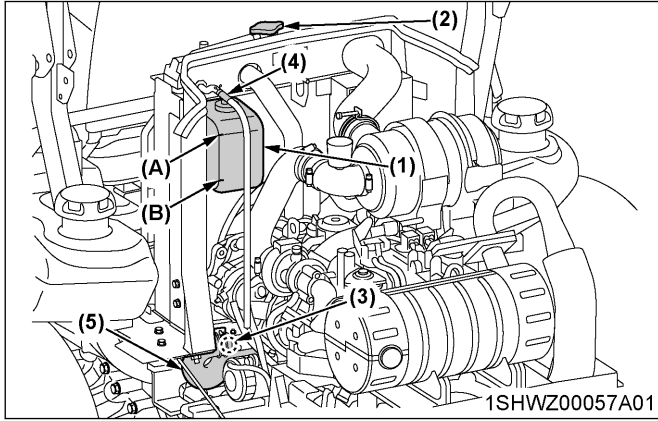
To avoid serious injury or death:

- Do not remove the radiator cap when the engine is hot. When cool, loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.

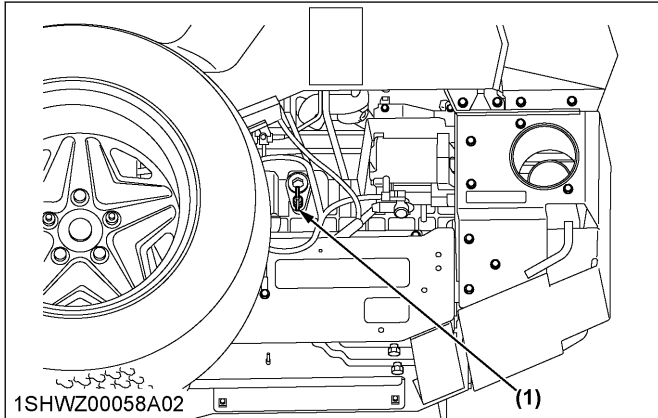


1. Stop the engine and let cool down.
2. To drain the coolant, open the drain valve (See the following figure.) and remove radiator cap. For the engine side, disconnect the lower hose and drain the coolant. The radiator cap must be removed to completely drain the coolant.
3. After all coolant is drained, close the drain valve and install the drain plug.
4. Fill with clean water and cooling system cleaner.
5. Follow directions of the cleaner instruction.
6. After flushing, fill with clean water and antifreeze until the coolant level is just below the fill port on the radiator. Install the radiator cap securely.
7. Fill with coolant up to the **[FULL]** mark on the recovery tank.
8. Start and operate the engine for a few minutes.
9. Stop the engine and let cool.

10. Check coolant level of recovery tank, add coolant if necessary.



- (1) Recovery tank
(2) Radiator cap
(3) Lower hose band
(4) Recovery tank cap
(5) Radiator hose
- (A) [FULL]
(B) [LOW]



- (1) Drain valve

IMPORTANT :

- Do not start engine without coolant.
- Start engine with the hood closed.
- Use clean, distilled water and antifreeze to fill the radiator and recovery tank.
- When the antifreeze is mixed with water, the antifreeze mixing ratio must be less than 50%.
- Securely tighten radiator cap. If the cap is loose or improperly fitted, water may leak out and the engine could overheat.

2. Antifreeze

WARNING

To avoid serious injury or death:

- When using antifreeze, put on some protection such as rubber gloves. (Antifreeze contains poison.)

- If someone drank antifreeze, seek immediate medical help. Do NOT make the person throw up unless you are told to do so by poison control or a health care professional. Use standard first aid and CPR for signs of shock or cardiac arrest. Call your local Poison Control Center or your local emergency number for further assistance.
- When antifreeze comes in contact with the skin or clothing, wash it off immediately.
- Do not mix different types of antifreeze. The mixture can produce chemical reaction causing harmful substances.
- Antifreeze is extremely flammable and explosive under certain conditions. Keep fire and children away from antifreeze.
- When draining fluids from the engine, place some container underneath the engine body.
- Do not pour waste onto the ground, down a drain, or into any water source.



- Also, observe the relevant environmental protection regulations when disposing of antifreeze.

Always use a 50/50 mix of long-life coolant and clean soft water in KUBOTA engines.

Consult your local KUBOTA dealer concerning coolant for extreme conditions.

1. Long-life coolant (hereafter LLC) comes in several types. Use ethylene glycol (EG) type for this engine.
2. Before employing LLC-mixed cooling water, fill the radiator with fresh water and empty it again. Repeat this procedure 2 or 3 times to clean up the inside.
3. Mixing the LLC
Premix 50% LLC with 50% clean soft water. When mixing, stir it up well, and then fill into the radiator.

4. The procedure for the mixing of water and anti-freeze differs according to the make of the anti-freeze and the ambient temperature. Refer to SAE J1034 standard, more specifically also to SAE J814c.

IMPORTANT :

- When mixing the antifreeze with water, the antifreeze mixing ratio is 50%.

Vol% Antifreeze	Freezing point		Boiling point *	
	°C	°F	°C	°F
50	-37	-34	108	226

* At 1.013 x 10⁵ Pa (760 mmHg) pressure (atmospheric).

A higher boiling point is obtained by using a radiator pressure cap which permits the development of pressure within the cooling system.

5. Adding the LLC
 - a. Add only water if the coolant level reduces in the cooling system by evaporation.
 - b. If there is a mixture leak, add the LLC of the same manufacturer and type in the mixing ratio 50%.

IMPORTANT :

- Never add any long-life coolant of different manufacturer. (Different brands may have different additive components, and the engine may fail to perform as specified.)
6. When the LLC is mixed, do not employ any radiator cleaning agent. The LLC contains anti-corrosive agent. If mixed with the cleaning agent, sludge may build up, adversely affecting the engine parts.
 7. Kubota's genuine long-life coolant has a service life of 2 years. Be sure to change the coolant every 2000 hours or every 2 years whichever comes faster.

NOTE :

- The above data represent industry standards that necessitate a minimum glycol content in the concentrated antifreeze.

EVERY 3000 HOURS**1. Checking injection pump**

Consult your local KUBOTA Dealer for this service.

2. Checking turbo charger

Consult your local KUBOTA Dealer for this service.

EVERY 1 YEAR**1. Checking exhaust manifold**

Consult your local KUBOTA Dealer for this service.

2. Checking fuel lines

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer. (See [Checking the fuel filter on page 81.](#))

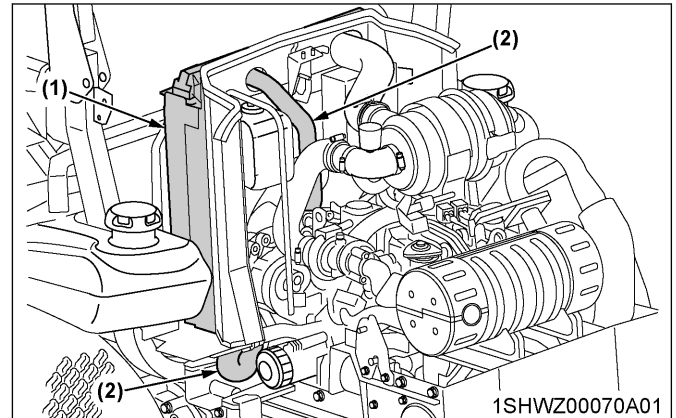
3. Checking radiator hose and clamp**WARNING**

To avoid serious injury or death:

- Be sure to stop the engine and remove the key before checking radiator hose and clamps.

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer.

1. If hose clamps are loose or water leaks, tighten clamps securely.
2. Replace hoses and tighten hose clamps securely. If radiator hoses are swollen, hardened or cracked, replace them immediately.



- (1) Radiator core
(2) Radiator hose

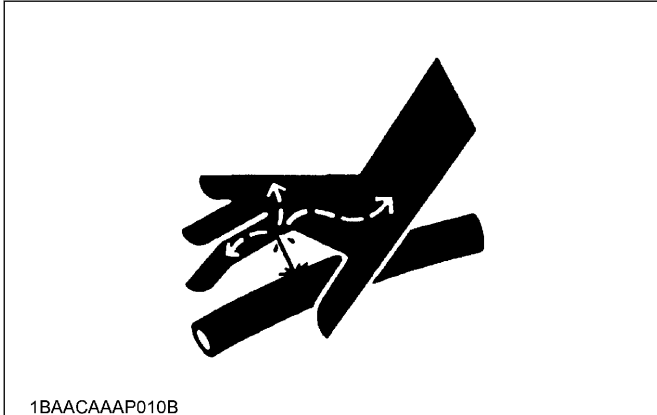
4. Checking hydraulic hoses**WARNING**

To avoid serious injury or death:

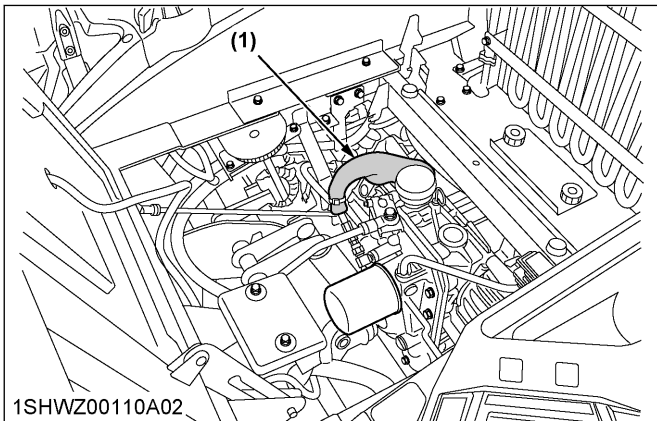
- Be sure to stop the engine and remove the key before checking and replacing the hydraulic hose.
- Allow the transmission case to cool down sufficiently as oil can be hot and may cause burns.

- Escaping hydraulic fluid under pressure has sufficient force to penetrate the skin causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure.
- Before applying pressure to the system, make sure all connections are tight and that lines, pipes, and hoses are not damaged.

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer.



1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.



(1) Mower lift cylinder hose

5. Checking intake air line



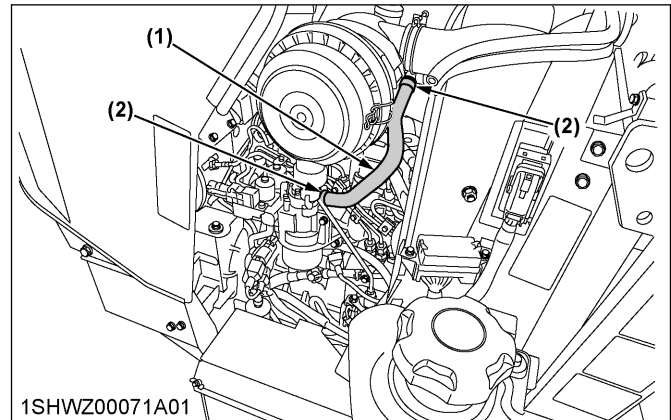
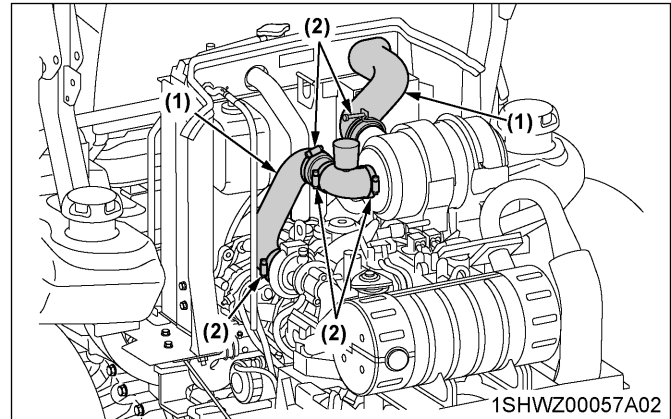
WARNING
To avoid serious injury or death:

- Be sure to stop the engine and remove the key before checking intake air line.

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer.

1. Check to see that hoses and hose clamps are tight and not damaged.

2. If hoses and clamps are found worn or damaged, replace or repair them at once.



(1) Hose
(2) Clamp

6. Checking engine breather hose

Consult your local KUBOTA Dealer for this service.

7. Checking mower gear box oil seal

Consult your local KUBOTA Dealer for this service.

EVERY 4 YEARS

1. Replacing hydraulic hoses

Consult your local KUBOTA Dealer for this service.

2. Replacing fuel lines

Consult your local KUBOTA Dealer for this service.

3. Replacing engine breather hose

Consult your local KUBOTA Dealer for this service.

4. Replacing radiator hose

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer.
(See [Checking radiator hose and clamp on page 93.](#))

5. Replacing mower gear box oil seal

Consult your local KUBOTA Dealer for this service.

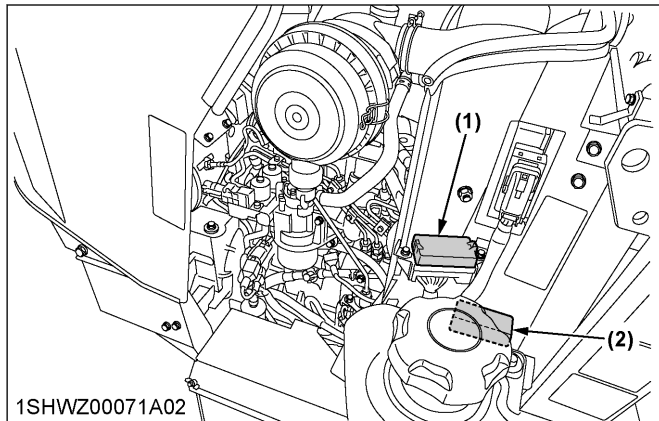
6. Replacing intake air line

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer.
(See [Checking intake air line on page 94.](#))

SERVICE AS REQUIRED

1. Replacing fuses

1. Open the hood.
2. Remove the blown fuse.
3. Place a new fuse of the same capacity in position.



- (1) Fuse location
(2) Slow blow fuse

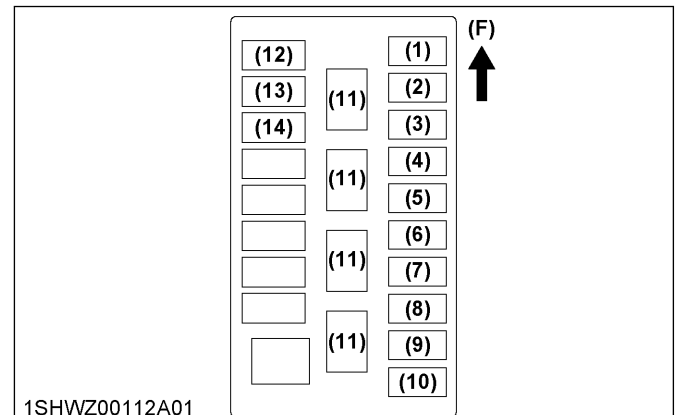
IMPORTANT :

- If the new fuse happens to blow out within a short time, contact your dealer for inspection and repair. Never “jump” the fuse with wire or foil, or install a larger capacity fuse than recommended.

Fuse no.	Capacity		Protected circuit	Capacity		Protected circuit
(1)	(12)	(20 A)	*(Work light)	(1)	5 A	Control system
						Diag tool
	(13)	10 A	Seat compressor	(2)	10 A	ECU
	(14)	5 A	Meter (glow)	(3)	10 A	Alternator
						Fuel pump
						Solenoid valve
				(4)	5 A	Engine run (ACC)
				(5)	10 A	Relay (horn)
				(6)	5 A	Meter (battery)
				(7)	10 A	Relay (reformulated glow)
				(8)	20 A	Relay (auxiliary)
(2)	Fuse puller			(9)	5 A	Relay (starter)
				(10)	5 A	Relay (glow)
	(15)	Slow blow fuse 60 A		Alternator		
	(16)	Slow blow fuse 40 A		ECU, glow		
	(17)	Slow blow fuse 40 A		Key switch, starter		

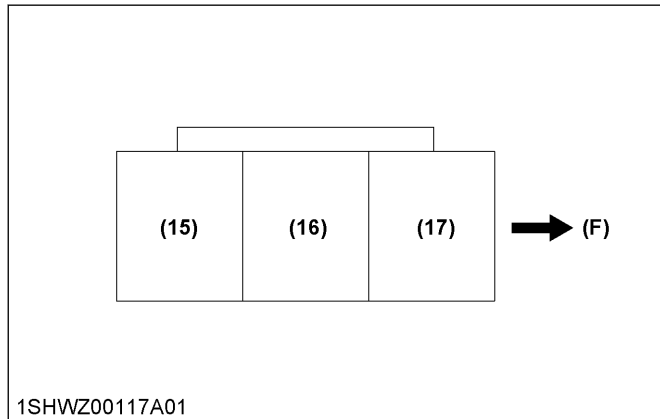
* Option: The fuse must be in only when the work light is attached.

Fuse box



(F) Front

Slow blow fuse box



(F) Front

2. Bleeding fuel system

Air must be removed:

1. When the fuel filter or lines are removed.
2. When tank is completely empty.
3. After the machine has not been used for a long period of time.

Bleeding procedure is as follows:

1. Fill the fuel tank with fuel.
2. Start the engine and run for about 30 seconds, and then stop the engine.

3. Checking and replacing blades

WARNING

To avoid serious injury or death:

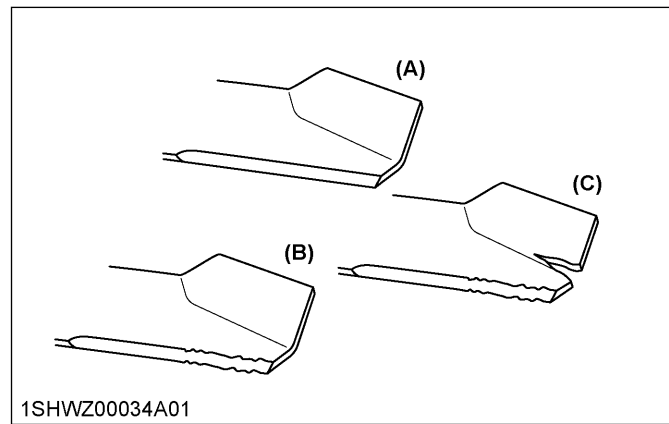
- Be sure to stop the engine and remove the key.
- Blades may be sharp. When you handle blades, wear heavy gloves or wrap the end of the blades with a rag.

NOTE :

- Before checking or replacing the blades, wipe grass and mud off the top and inside of the mower.
- Especially, clean up inside the belt cover, because otherwise the belt life will be reduced.

Checking

The blade cutting edges should be kept sharp at all times. Sharpen the cutting edges if they look like blade (B). Replace the blades if they appear similar to blade (C).



- (A) New blade
(B) Worn blade
(C) Cracked blade

Replacing

1. Tilt up the mower deck.
(See [TILTING UP THE MACHINE on page 63.](#))

2. RCK72P

Wedge a block of wood between the blade and the mower housing or use a box wrench over the pulley nut to prevent the spindle from rotating while removing the blade bolts. Then, loosen the blade bolt as illustrated.

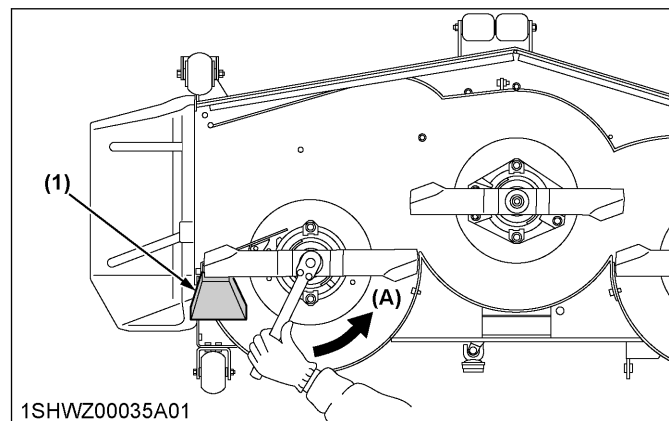
RCK60R, RCK72R

Set the pipe between the blade and the next blade or use a box wrench over the pulley nut to prevent the spindle from rotating while removing the blade bolts; loosen the blade bolt as illustrated.

IMPORTANT :

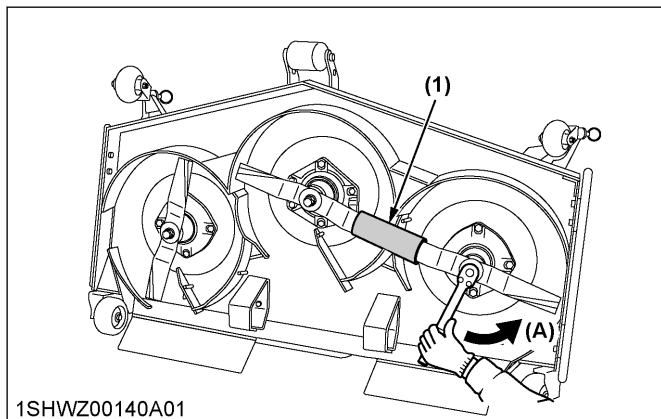
- Use the proper metric size box or socket wrench to tighten or loosen the blade mounting bolt.

RCK72P



(1) Block

(A) "LOOSEN"

RCK60R, RCK72R

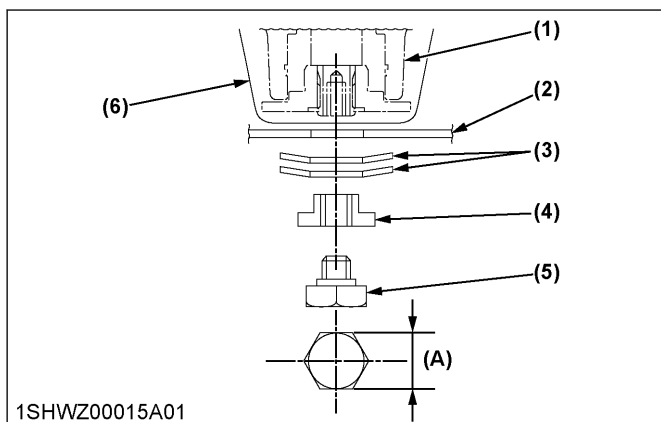
(1) Pipe

(A) "LOOSEN"

3. To sharpen the blades yourself, clamp the blade securely in a vise. Use a large mill file and file along the original bevel until sharp.
4. To check the blade for balance, place a small rod through the center hole. If the blade is not balanced, file the heavy side of the blade until balance is achieved.
5. Pass the spline boss through the blade and 2 cup washers, and tighten the bolt.

NOTE :

- **Make sure that the cup washer is not flattened out or worn; this will cause blade to slip excessively. Replace the 2 cup washers if either is damaged.**



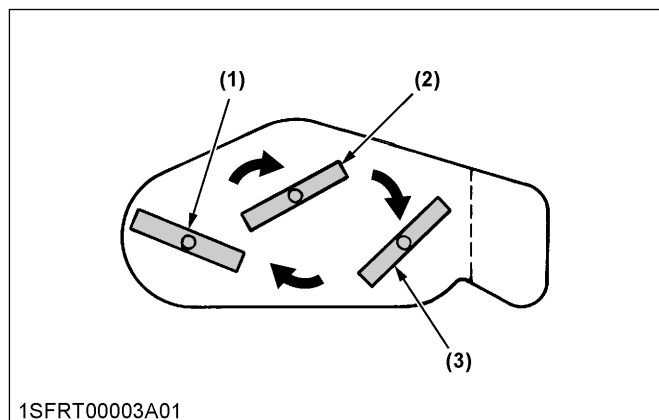
- (1) Spindle holder
- (2) Blade
- (3) 2-Cup washers
- (4) Lock washer
- (5) Bolt
- (6) Spindle guard

(A) 30 mm

IMPORTANT :

- **Tighten the three blade bolts to 102.9 to 117.6 N·m (10.5 to 12 kgf·m, 75.9 to 87 lbf·ft) of torque.**

- The blade bolts have right hand threads. Turn them counterclockwise to loosen.
- To prolong the service life of the blades, reposition them as shown in the following figure periodically.



- (1) LH blade
- (2) Center blade
- (3) RH blade

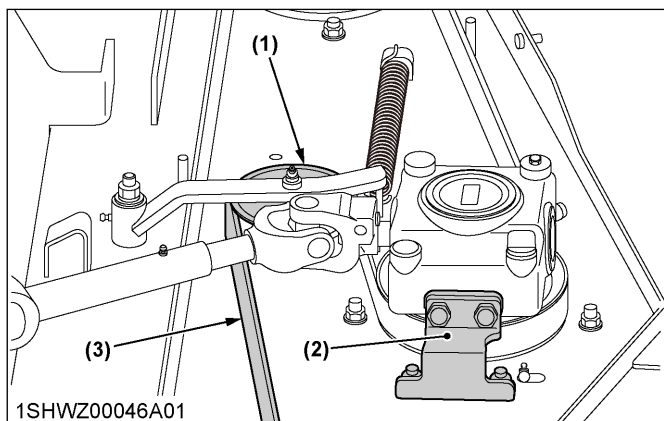
4. Replacing the mower belt

1. Remove the mower deck from the machine. (See [DISMOUNTING THE MOWER DECK](#) on page 27.)
2. Remove the left and right hand shield from the mower deck.
3. Clean around the gear box.
4. Remove the belt from the tension pulley.
5. Remove the right hand bracket which mounts the gear box to the mower deck and slip the belt over the top of the gear box.

6. To install a new belt, reverse the previous procedure.

NOTE :

- Tighten bracket bolts securely 77.5 to 90.2 N·m (8.0 to 9.2 kgf·m, 57.1 to 66.5 lbf·ft).



- (1) Tension pulley
(2) Bracket (RH)
(3) Belt

ADJUSTMENT

MOTION CONTROL LEVER



WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- If it is necessary to run the engine indoors, use a gas tight exhaust pipe extension to remove the fumes.
- Always try to work in a well-ventilated area.
- Lift up and secure with jack stands or by blocking the rear of the machine. Do not run the machine while adjusting.
- Remove the rear wheels.
- Do not make only one of the following adjustments (except **"MOTION CONTROL LEVER ALIGNMENT"**). They are interlinked.
- If you feel you are unable to make the following adjustments correctly and safely, contact your local KUBOTA Dealer.

Details regarding motion control lever alignment can be found in a different section.

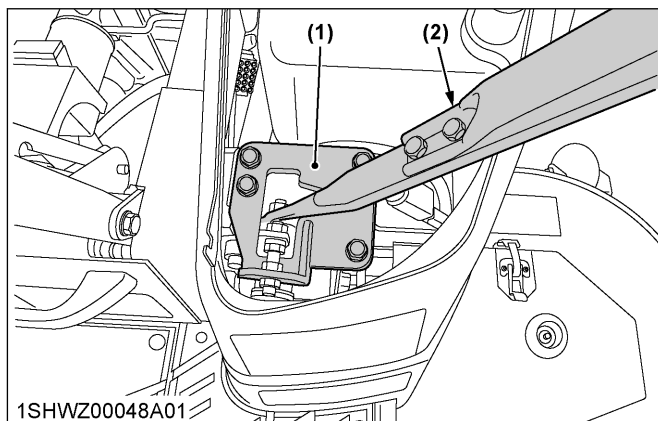
(See [Motion control lever alignment on page 100.](#))

IMPORTANT :

- Right and left motion control levers can be adjusted independently.

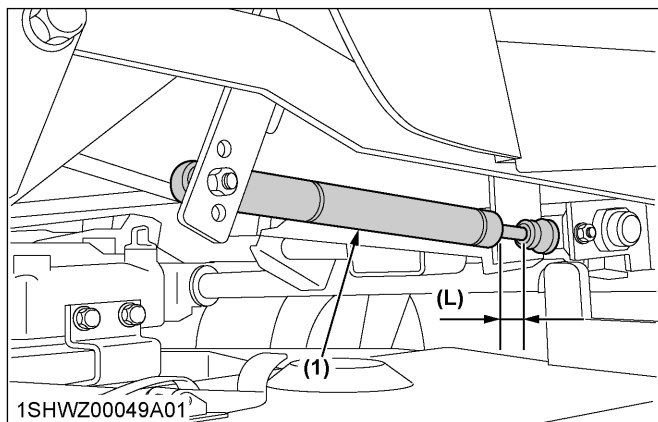
1. HST neutral

1. Lift up and secure with jack stands or by blocking the rear of the machine frame.
2. Remove both rear wheels.
3. Set the engine speed to maximum.
4. Place the motion control lever in the **"NEUTRAL LOCK"** position.
5. After forward and backward operation, tighten the guide control at the position when wheel axis stops.
6. Adjust the rod length L of the damper 28 to 32 mm (1.1 to 1.3 in.) and tighten.



(1) Guide control

(2) Motion control lever



(1) Damper

(L) 28 to 32 mm (1.1 to 1.3 in.)

2. Maximum speed (forward)

Consult your local KUBOTA Dealer for this service.

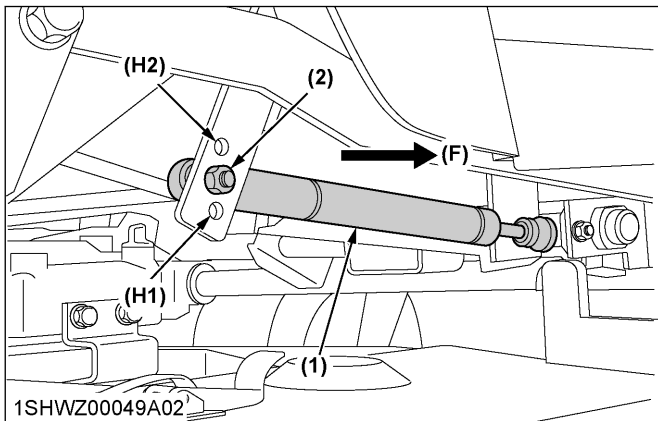
3. Adjusting the motion control lever operating strength

The strength required to move the motion control levers can be adjusted to 3 levels depending on operator preference.

NOTE :

- Adjust the dampers after adjusting HST neutral.
- Adjusting the motion control lever strength will affect the maneuverability.
- For adjustment of LH and RH, use the same hole location.

1. Change the rear side of the damper to the desired hole location.
Tighten the rear side damper nut.



- (1) Damper
(2) Damper nut
(F) Front
(H1) Hole for lighter setting
(H2) Hole for heavier setting

4. Motion control lever alignment

WARNING

To avoid serious injury or death:

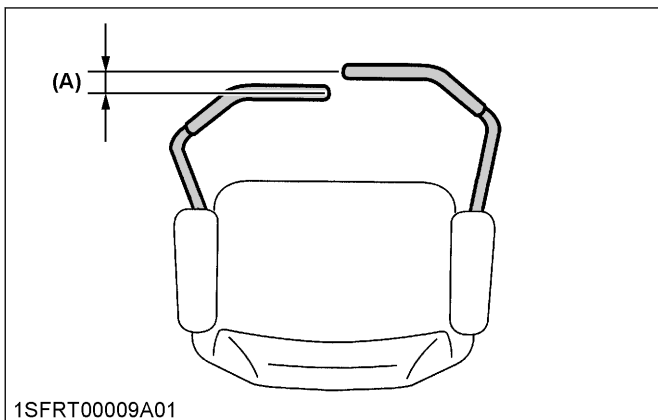
- Park the machine on a firm and level surface.
- Stop the engine, remove the key and apply the parking brake.

4.1 Checking the alignment

1. Check the gap and space between the levers at the maximum forward position.

Recommended gap:	0 to 4 mm 0 to 0.16 in.
------------------	----------------------------

If the positions of the motion control levers are unequal, adjustment is necessary.



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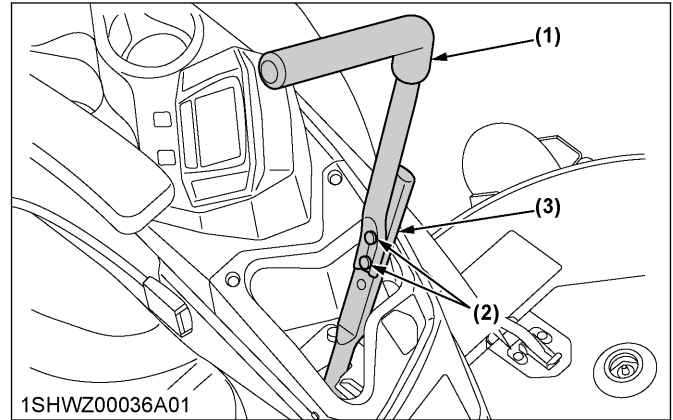
(A) "GAP"

4.2 Aligning the motion control levers

1. Stop the engine and apply the parking brake.

Lever position (high or low)

1. Remove the nut and select the motion control lever position, high or low.
2. Tighten the nut.



- (1) Motion control lever
(2) Bolt
(3) Nut, washer

Lever alignment (right and left)

1. Loosen the nut.
2. Slide both levers forward or rearward to the desired position within tab slots until the levers are aligned.
3. Tighten the nut.

NOTE :

- If the ends of the levers strike against each other while in the "NEUTRAL" position, move the levers outward to the "NEUTRAL LOCK" position and carefully bend them outward. Move them back to the "NEUTRAL" position and check for the recommended space.

MOWER DECK LEVEL

1. Anti-scalp rollers

WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Apply the parking brake.
- Stop the engine and remove the key.
- Wait for all moving parts to stop.

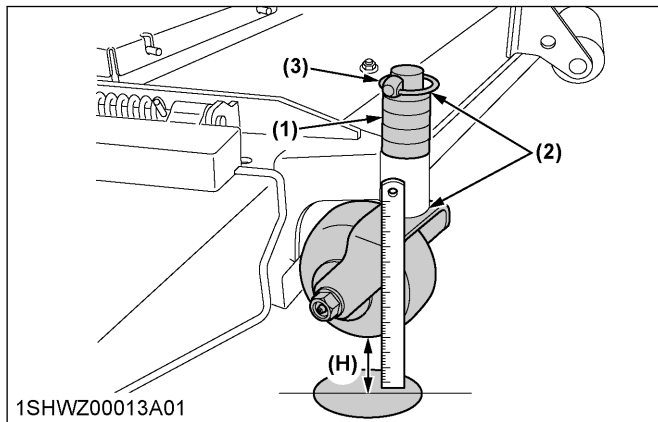
NOTE :

- The flattest cut can be achieved by having the anti-scalp rollers adjusted off the ground. Check the anti-scalp roller adjustments each time the mower deck cutting height is changed. It is recommended that all the anti-scalp rollers be kept off the ground to minimize scuffing.

1. Check the machine tire pressure.
Inflate tires to the correct pressure.
(See **TIRES AND WHEELS** on page 60.)
2. Start the engine.
3. Raise up the mower deck to the transport position (the top end of the lift).
4. Turn the cutting height control dial to adjust the height.
5. Lower the mower deck.
6. Adjust height of the anti-scalp roller.

a. **Front side anti-scalp roller**

Adjust height of the front side anti-scalp roller by replacing the collar (collar is raised and lowered) or shifting the pin to approximately 19 mm (0.75 in.) between rollers and ground. Adjust both side rollers to the same height.

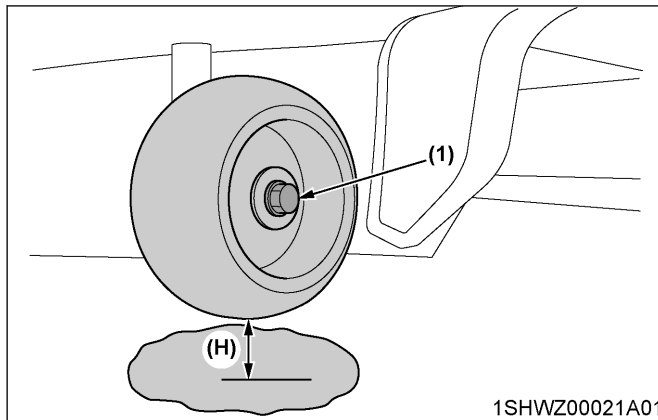


- (1) Collar
(2) Washer
(3) Set pin

(H) 19 mm (0.75 in.)

b. **Rear side anti-scalp roller**

Adjust height of the rear side anti-scalp roller by shifting the pin or the bolt to approximately 19 mm (0.75 in.) between rollers and ground. Adjust both side rollers to the same height.



- (1) Bolt

(H) 19 mm (0.75 in.)

2. Leveling the mower deck (side-to-side)

WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Apply the parking brake.
- Disengage the PTO (OFF).
- Stop the engine, remove the key and remove the mower universal joint while checking or adjusting the level of the mower deck.

IMPORTANT :

- Check the machine tire pressure.
Inflate the tires to the correct pressure.
(See **TIRES AND WHEELS** on page 60.)

Checking the level (side-to-side)

NOTE :

- The mower deck anti-scalp rollers should not contact the ground.

RCK72P

1. Raise the mower deck to the transport position (the top end).
2. Turn the cutting height set dial to the 3 in. cutting height position.
3. Lower the mower deck.
4. Position the right mower blade in the side-to-side position.
5. Measure from outside the blade tip to the level surface with a short ruler or leveling gauge.

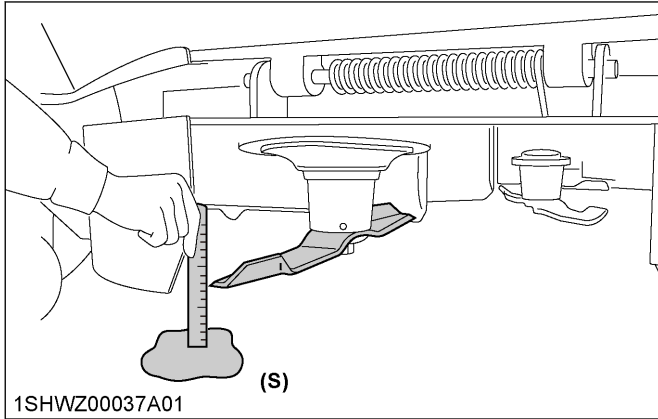
Reference

Height of the blade at the flat surface	76 mm (3 in.)
---	---------------

NOTE :

- There is a difference of blade height between flat surface and ground measurements.
6. Check that the left side blade has the same height. The difference between both measurements is less than 3 mm (0.12 in.).
 7. If the side-to-side adjustment is not within the given tolerance, adjustment is necessary.

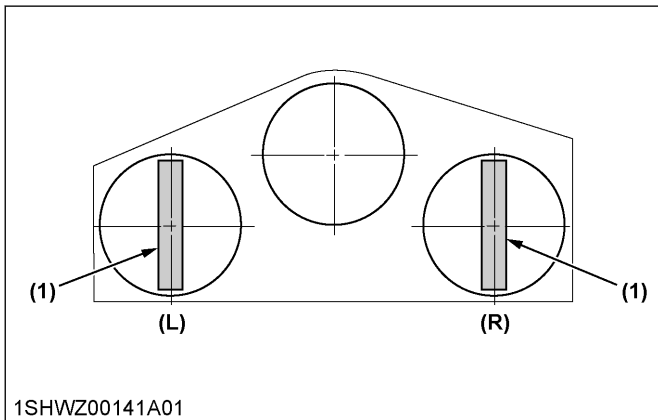
RCK72P



(S) Side

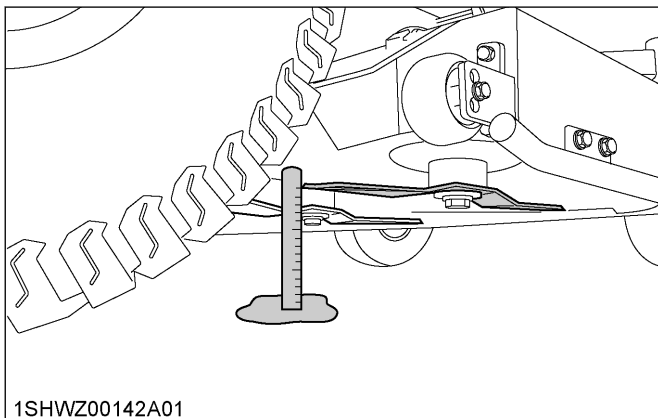
RCK60R, RCK72R

1. Raise the mower deck to the transport position. (Also the top end.)
2. Turn the cutting height set dial to the 3 in. cutting height position.
3. Lower the mower deck.
4. Turn left blade by hand parallel to machine and turn right blade parallel to machine to measure from the outside blade tip at (L) and (R) to the level surface. The difference between measurements should be less than 3 mm (0.12 in.).



(1) Blade

RCK60R, RCK72R



Reference

Height of the blade at the concrete surface	76 mm (3 in.)
---	---------------

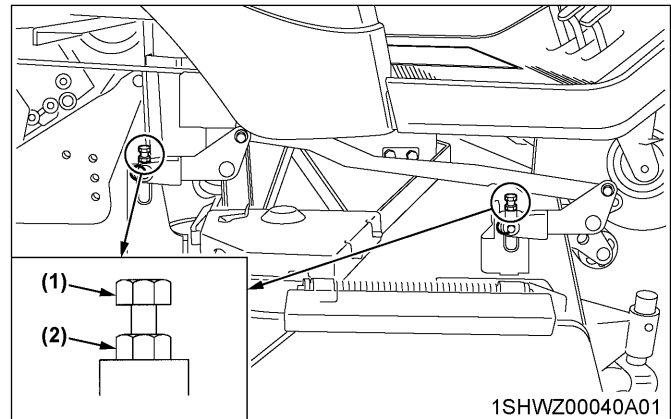
NOTE :

- There is a difference of the blade height between on the concrete and ground.

5. If the side-to-side adjustment is not within the given tolerance, adjustment is necessary.

Adjusting the level (side-to-side)

1. Raise up the mower deck to the transport position (the top end).
2. Turn the cutting height set dial to the 3 in. cutting height position.
3. Place 51 mm (2 in.) high wood blocks under each side of the mower deck. Anti-scalp rollers must not rest on the wood block.
4. Lower the mower deck.
5. Position the mower blade in the side-to-side position.
6. Loosen the lock nuts of the right side of the machine.
7. Adjust the cutting height fine tuning bolts to set 76 mm (3 in.) blade height. Front and rear side bolts must be adjusted.
8. Lock the nuts.
9. Adjust the left side equally.
10. Check the side-to-side level. If it is not level, adjustment is necessary.



- (1) Cutting height fine tuning bolt
- (2) Lock nut

3. Leveling the mower deck (front-to-rear)

! WARNING

To avoid serious injury or death:

- Park the machine on a firm and level surface.
- Engage the parking brake.
- Disengage the PTO.

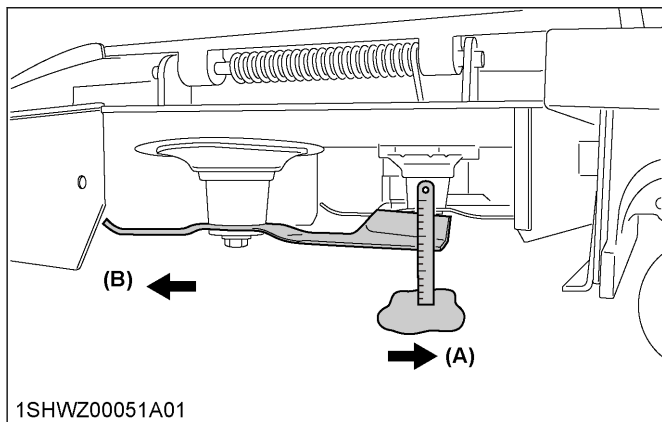
- Stop the engine, remove the key and remove the mower universal joint while checking or adjusting the level of the mower deck.

IMPORTANT :

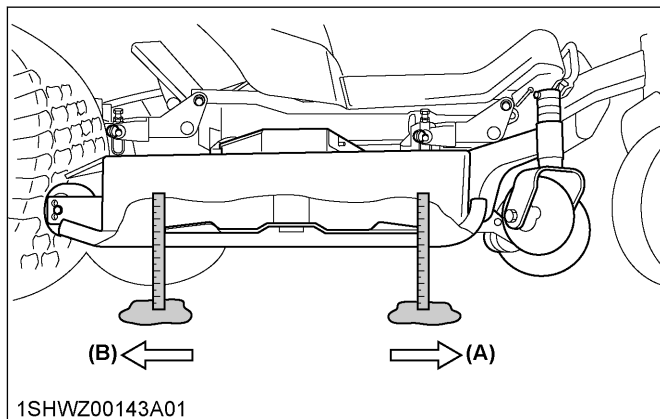
- Check the machine tire pressure.
Inflate the tires to the correct pressure.
(See **TIRES AND WHEELS** on page 60.)

Checking level (front-to-rear)**NOTE :**

- The mower deck anti-scalp rollers should not contact the ground.
1. Raise the mower deck to the transport position (the top end).
 2. Turn the cutting height set dial to the 3 in. cutting height position.
 3. Lower the mower deck.
 4. Position the right mower blade in the front-to-rear position.
 5. Measure from the right front blade tip to the level surface with a short ruler or leveling gauge.
 6. Turn the blade 180° and measure from the right rear blade tip to the level surface.
 7. Check that the left side blade has the same dimensions. The difference between both measurements should be less than 6 mm (0.24 in.). The front side must be lower than the rear side.
 8. If the front-to-rear adjustment is not within the given tolerance, adjustment is necessary.

RCK72P

(A) Front
(B) Rear

RCK60R, RCK72R

(A) Front
(B) Rear

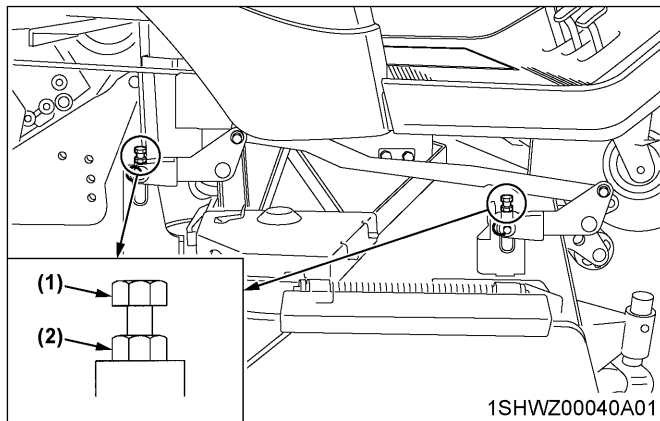
Adjusting the level (front-to-rear)

1. Raise up the mower deck to the transport position (the top end).
2. Turn the cutting height set dial to the 3 in. cutting height position.
3. Place 51 mm (2 in.) high wood blocks under each side of the mower deck.
Anti-scalp rollers must not rest on the wood block.
4. Lower the mower deck.
5. Loosen the lock nuts of the front side of the machine.
6. Adjust the cutting height fine tuning bolts to set 76 mm (3 in.) blade height.
Both front side bolts must be adjusted.
7. Lock the nuts.
8. Adjust the other side equally.

IMPORTANT :

- The difference between both measurements should be less than 6 mm (0.24 in.).
The front side must be lower than the rear side.

9. Check the front-to-rear level. If it is not level, adjustment is necessary.



(1) Cutting height fine tuning bolt
(2) Lock nut

GENERAL TORQUE SPECIFICATION

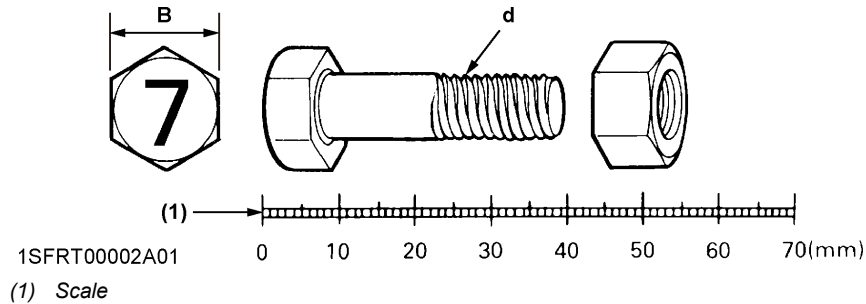
American standard cap screws with UNC or UNF threads			Metric cap screws		
SAE grade no.	GR.5 	GR.8 	Property class	Class 8.8 	Class 10.9 
1/4 (lbf · ft) (N · m) (kgf · m)	8-9.6 10.7-12.9 1.11-1.33	12-14.4 16.1-19.3 1.66-1.99	M6 (lbf · ft) (N · m) (kgf · m)	7.2-8.3 9.81-11.3 1.0-1.15	
5/16 (lbf · ft) (N · m) (kgf · m)	17-20.5 23.1-27.8 2.35-2.84	24-29 32.5-39.3 3.31-4.01	M8 (lbf · ft) (N · m) (kgf · m)	17.4-20.2 23.6-27.4 2.4-2.8	21.7-25.3 29.4-34.3 3.0-3.5
3/8 (lbf · ft) (N · m) (kgf · m)	35-42 47.5-57.0 4.84-5.82	45-54 61.0-73.2 6.22-7.47	M10 (lbf · ft) (N · m) (kgf · m)	35.5-41.2 48.1-55.8 4.9-5.7	44.9-52.1 60.8-70.5 6.2-7.2
1/2 (lbf · ft) (N · m) (kgf · m)	80-96 108.5-130.2 11.07-13.29	110-132 149.2-179.0 15.22-18.27	M12 (lbf · ft) (N · m) (kgf · m)	57.2-66.5 77.5-90.1 7.9-9.2	76.0-86.8 103-117 10.5-12.0
9/16 (lbf · ft) (N · m) (kgf · m)	110-132 149.2-179.0 15.22-18.27	160-192 217.0-260.4 22.14-26.57	M14 (lbf · ft) (N · m) (kgf · m)	91.2-108 124-147 12.6-15.0	123-144 167-196 17.0-20.0
5/8 (lbf · ft) (N · m) (kgf · m)	150-180 203.4-244.1 20.75-24.91	220-264 298.3-358.0 30.44-36.53	M16 (lbf · ft) (N · m) (kgf · m)	145-166 196-225 20.0-23.0	192-224 260-303 26.5-31.0

TIGHTENING TORQUE CHART

Thread size d (mm)	Hex. bolt head size B (mm)	No mark			7T		
		lbf·ft	N·m	kgf·m	lbf·ft	N·m	kgf·m
M8	12 or 13	13.0-15.2 (14.1 ± 1.1)	17.8-20.6 (19.2 ± 1.4)	1.9-2.1 (2.0 ± 0.1)	17.5-20.3 (18.9 ± 1.4)	23.5-27.5 (25.5 ± 2.0)	2.4-2.8 (2.6 ± 0.2)
M10	14 or 17	28.9-33.3 (31.1 ± 2.2)	39.3-45.1 (42.2 ± 2.9)	4.0-4.6 (4.3 ± 0.3)	35.4-41.2 (38.3 ± 2.9)	48.1-55.9 (52.0 ± 3.9)	4.9-5.7 (5.3 ± 0.4)
M12	17 or 19	46.3-53.5 (49.9 ± 3.6)	62.8-72.6 (67.7 ± 4.9)	6.4-7.4 (6.9 ± 0.5)	57.1-66.5 (61.8 ± 4.7)	77.6-90.2 (83.9 ± 6.3)	8.0-9.2 (8.6 ± 0.6)
M14	19 or 22	79.6-92.6 (86.1 ± 6.5)	107.9-125.5 (116.7 ± 8.8)	11.0-12.8 (11.9 ± 0.9)	91.1-108.5 (99.8 ± 8.7)	123.6-147.0 (135.3 ± 11.7)	12.6-15.0 (13.8 ± 1.2)

NOTE :

- Figure [7] on the top of the bolt indicates that the bolt is made of special material.
- Before tightening, check the figure on top of the bolt.



STORAGE

WARNING

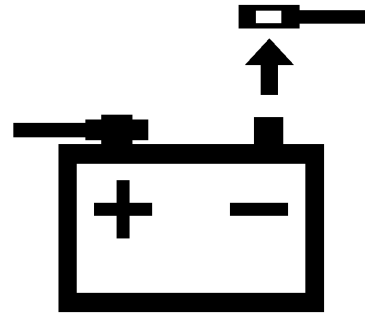
To avoid serious injury or death:

- Do not clean the machine with the engine running.
- To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.
- When storing, remove the key to avoid unauthorized persons from operating the machine and getting injured.

STORING THE MACHINE

If you intend to store your machine for an extended period of time, follow the procedures outlined below. These procedures will insure that the machine is ready to operate with minimum preparation when it is removed from storage,

1. Check for loose bolts and nuts, and tighten if necessary.
2. Apply grease to machine areas where bare metal will rust also to pivot areas.
3. Inflate the tires to a pressure a little higher than usual.
4. Change the engine oil and run the engine to circulate oil throughout the engine block and internal moving parts for about 5 minutes.
5. Shut off the fuel valves below the fuel tanks while storing.
6. With all implements lowered to the ground, coat any exposed hydraulic cylinder piston rods with grease.
7. Remove the battery from the machine, adjust the electrolyte to the proper level and store in a dry place out of direct sunlight. When disconnecting the cables from the battery, start with the negative terminal first. When connecting the cables to the battery, start with the positive terminal first. (See [Storing the battery on page 86.](#))



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8. Keep the machine in a dry place where the machine is sheltered from rain. Cover the machine.
9. Store the machine indoors in a dry area that is protected from sunlight and excessive heat. If the machine must be stored outdoors, cover it with a waterproof tarpaulin.
10. Jack the machine up and place blocks under the front and rear axles so that all 4 tires are off the ground. Keep the tires out of direct sunlight and extreme heat.

IMPORTANT :

- When washing the machine, be sure to stop the engine. Allow sufficient time for the engine to cool before washing.
- Cover the machine after the muffler and the engine have cooled down.

REMOVING THE MACHINE FROM STORAGE

1. Check the tire air pressure and inflate the tires if they are low.
2. Jack the machine up and remove the support blocks.
3. Install the battery. Before installing the battery, make sure it is fully charged.
4. Check the fan belt tension.
5. Check all fluid levels (engine oil, transmission/hydraulic oil, engine coolant and any attached implements).
6. Check all coolant, hydraulic and fuel hoses for cracks, hardening, bubbles and leaks.
7. Check all control levers and the brake for proper function, repair or lubricate as necessary.

8. Start the engine. Observe all gauges. If all gauges are functioning properly and reading normal, move the machine outside.
9. Once outside, park the machine securely set the parking brake, place the control levers in the neutral lock position and let the engine idle for at least 5 minutes.
10. Shut the engine off and walk around machine and make a visual inspection looking for evidence of oil or water leaks.
11. With the engine fully warmed up, release the parking brake and test the brakes for proper adjustment as you move forward. Adjust the brakes as necessary.

TROUBLESHOOTING

ENGINE TROUBLESHOOTING

If something is wrong with the engine, refer to the following table for the cause and its corrective measure.

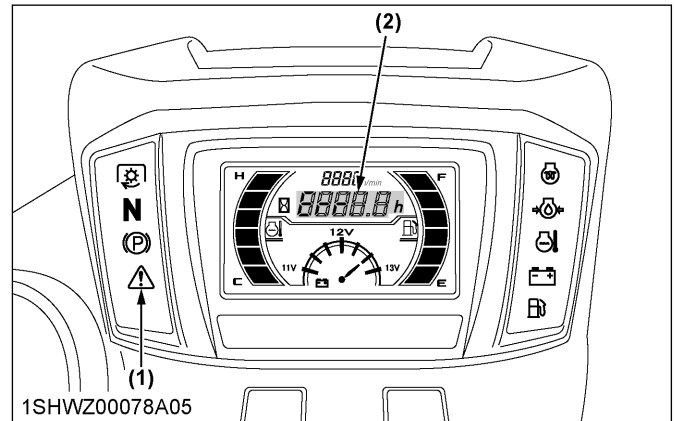
Symptom (if)		Cause	Remedy
The engine is difficult to start or will not start.		No fuel flow.	- Check the fuel tank and the fuel filter. Replace filter if necessary. - Check the fuel valve position.
		Air or water is in the fuel system.	- Check to see if the fuel line coupler bolt and nut are tight. - Bleed the fuel system. (See SERVICE AS REQUIRED on page 95.)
		In winter, oil viscosity increases, and engine revolution is slow.	Use oils of different viscosities, depending on ambient temperatures.
		The battery becomes weak and the engine does not turn over quick enough.	- Clean battery cables and terminals. - Charge the battery. - In cold weather, always remove the battery from the engine, charge and store it indoors. Install it on the machine only when the machine is going to be used.
Insufficient engine power.		Insufficient or dirty fuel.	- Check the fuel valve position. - Check the fuel system.
		Air cleaner clogged.	Clean the element.
The engine stops suddenly.		Insufficient fuel.	- Check the fuel valve position. - Refuel. - Bleed the fuel system if necessary.
Exhaust fumes are colored.	Black	- Fuel quality is poor. - Too much oil. - Engine is overloaded.	- Change the fuel and fuel filter. - Check the proper amount of oil. - Reduce engine load.
	Blue white	- The inside of exhaust muffler is damp from fuel. - Injection nozzle trouble. - Fuel quality is poor.	- Heat the muffler by applying load to the engine. - Check the injection nozzle. - Change the fuel and fuel filter.
Engine overheats.		Engine overloaded.	Lower speed or reduce load.
		Low coolant level.	Fill cooling system to the correct level; check radiator and hoses for loose connections or leaks.
		Loose or damaged fan belt.	Adjust or replace fan belt.
		Dirty radiator core or grille screens.	Remove all trash.
		Coolant flow route corroded.	Flush cooling system.

Trouble	Operator's action
Engine not overheated, but engine warning indicator  on.	Stop the engine and get it restarted. If the engine fails to restart or the indicator stays on, immediately contact your local KUBOTA dealer.
Engine warning indicator  is turned on repeatedly.	Immediately contact your local KUBOTA dealer.

If you have any questions, contact your local KUBOTA dealer.

POWER TRAIN TROUBLE SHOOTING

If something is wrong with the power train, the master system warning indicator starts blinking and the error code shown in the following table is displayed on the LCD. The error code indicates the location of the trouble. If an error code appears, immediately contact your local KUBOTA Dealer for repairs.



(1) Master system warning indicator

(2) Error code

Displayed error code	Trouble	Operator's action
[Err 2]	Fuel sensor trouble	Contact your local KUBOTA Dealer.
[Err 3]	Meter panel memory reading trouble	
[Err 21]	CAN communication trouble	
[OPC]	Check OPC engine stop error.	If you check and do not find any problem and error code continue to display, contact your local KUBOTA Dealer.
[b]	Check brake switch.	
[p]	Check PTO switch.	
[S]	Check SEAT switch.	
[L]	Check LEVER switch LH/RH.	

BATTERY TROUBLESHOOTING

Symptom (if)	Cause	Remedy	Preventive measure
The starter does not function.	• Battery overuse, dim lights.	• Charge the battery sufficiently. • Adjust the fan belt.	• Charge the battery properly.
	• The battery has not been recharged.		
	• Poor terminal connection.	• Clean the terminal and tighten securely.	• Keep the terminal clean and tight. Apply grease and treat with anti-corrosives.
	• The battery life has expired.	• Replace the battery.	
The starter does not function from the beginning, and lights soon become dim.	• Insufficient charging.	• Charge the battery sufficiently.	• The battery must be serviced properly before initial use.
When viewed from the top, the top of the plates look whitish.	• The battery was used with an insufficient amount of electrolyte.	• Add distilled water and charge the battery.	• Regularly check the electrolyte level.
	• The battery was used too much without recharging.	• Charge the battery sufficiently.	• Charge the battery properly.
Recharging is impossible.	• The battery life has expired.	• Replace the battery.	
Terminals are severely corroded and heated up.	• Poor terminal connection.	• Clean the terminal and tighten securely.	• Keep the terminal clean and tight. Apply grease and treat with anti-corrosives.
The battery electrolyte level drops rapidly.	• There is a crack or pin holes in the electrolytic cells.	• Replace the battery.	
	• Charging system trouble.	• Contact your local KUBOTA Dealer.	

If you have any questions, contact your local KUBOTA dealer.

MACHINE TROUBLESHOOTING

Symptom (if)	Cause	Remedy
The machine operation is not smooth.	• The hydrostatic transmission oil is insufficient.	• Fill with oil.
	• The filter is clogged.	• Replace the filter.
The machine does not move while the engine is running.	• The parking brake is on.	• Release the parking brake.
	• The transmission oil level is insufficient.	• Fill with oil.
The machine moves when the motion control levers are in the "NEUTRAL LOCK" position (operating the engine).	• The hydrostatic lever linkage is not correctly adjusted.	• Consult your dealer for hydrostatic lever linkage adjustment or pressure adjustment.
	• The control linkage pivots are sticking.	• Pull up and lubricate linkage.
Fuel decreases uneven in LH and RH tanks.	• Fuel filter is clogged.	• Replace fuel filter.
	• Fuel valve is closed.	• Open the fuel valve.
	• Check valve is clogged.	• Replace check valve.
	• Bypass hose kink in the pipe between LH and RH tanks.	• Remove the kink or replace the pipe.
Master system warning indicator flashes.	• Fuel sensor is disconnected.	• Check wire harness.
	• Coolant temperature sensor is disconnected.	• Check wire harness.
	• LCD monitor malfunction.	• Replace LCD monitor.
All electrical equipment do not operate.	• Slow blow fuse blown.	• Replace the slow blow fuse.

If you have any questions, contact your local KUBOTA dealer.

MOWER TROUBLESHOOTING

Symptom (if)	Cause	Remedy
Discharge chute plugged.	• Grass too wet.	• Wait for grass to dry.
	• Grass too long.	• Raise the cutting height and cut grass twice.
	• Cutting too low.	• Raise the cutting height.
	• Engine rpm too low.	• Mow at full throttle.
	• Ground speed too fast.	• Slow down.
Streaking of grass uncut.	• Ground speed too fast.	• Slow down.
	• Engine rpm too low.	• Mow at full throttle, check and reset the engine rpm.
	• Grass too long.	• Cut grass twice.
	• Blades dull or damaged.	• Replace blades or have blades sharpened.
	• Debris in mower deck.	• Clean the mower deck.
Uneven cut.	• Mower deck not level.	• Level the mower deck.
	• Ground speed too fast.	• Slow down.
	• Blades dull.	• Have blades sharpened.
	• Blades worn or damaged.	• Replace the blades.
	• Low tire inflation.	• Add air to correct pressure.
	• Anti-scalp rollers not adjusted correctly.	• Adjust the anti-scalp rollers.
	• Wheels pressure not adjusted correctly.	• Set both tire pressure to the correct pressure. (See TIRES on page 60.)
Blades scalping grass.	• Cutting height too low.	• Raise the cutting height.
	• Turning speed too fast.	• Reduce speed on turns.
	• Ridges in terrain.	• Change the mowing pattern.
	• Rough or uneven terrain.	• Adjust wheels pressure and anti-scalp rollers.
	• Anti-scalp rollers not adjusted correctly.	• Adjust wheels pressure and anti-scalp rollers.
	• Bent blade(s).	• Replace blade(s).
Mower belt slipping.	• Mower deck plugged.	• Unplug and clean the mower deck.
	• Debris in pulleys.	• Clean.
	• Worn mower belt.	• Replace.
Excessive vibration.	• Debris on mower deck or in pulleys.	• Clean the mower deck and pulleys.
	• Damaged mower belt.	• Replace the mower belt.
	• Damaged pulleys.	• Replace pulleys.
	• Pulleys out of alignment.	• Consult your local KUBOTA Dealer.
	• Blades out of balance.	• Have blades balanced.
Mower loads down machine.	• Engine rpm too low.	• Mow at full throttle, check and reset the engine rpm.
	• Ground speed too fast.	• Slow down.
	• Debris wrapped around mower spindles.	• Clean the mower.
	• Front of deck too low.	• Adjust the mower deck. (See MOWER DECK LEVEL on page 100.)

If you have any questions, contact your local KUBOTA dealer.

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