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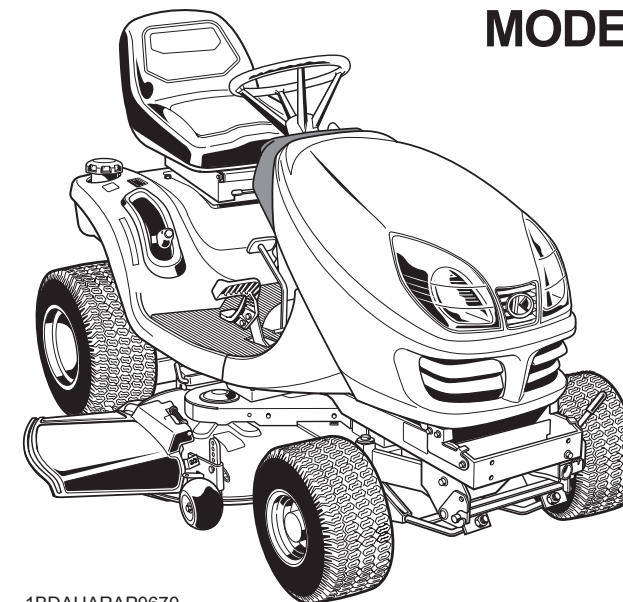
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OPERATOR'S MANUAL KUBOTA RIDING MOWER

MANUEL DE L'UTILISATEUR TONDEUSE AUTOPORTEE KUBOTA

BEDIENUNGSANLEITUNG KUBOTA AUFSITZMAHER

MODEL
MODELE GR1600-ID-2
MODELL



1BDAHARAP0670

GR-1600-ID-2

READ AND SAVE THIS MANUAL
MANUEL A LIRE ET A CONSERVER
DIESE ANLEITUNG SORGFÄLTIG
DURCHLESEN UND AUFBEWAHREN



KUBOTA Corporation C'EST ...

Depuis sa fondation en 1890, KUBOTA Corporation a progressé pour figurer au rang des plus grandes entreprises du Japon.

Pour parvenir à cette position, la Société a diversifié, au cours des années, la gamme de ses produits et services de façon remarquable.

Aujourd'hui, 30 usines et 35,000 employés produisent plus de 1,000 articles et produits différents petits et grands.

Tous ces produits et les services qui en dépendent sont toutefois liés à un souci majeur:

KUBOTA fabrique des produits qui, pris à une échelle nationale sont des nécessités de base, produits indispensables, produits conçus pour aider les hommes et leurs nations à tirer parti du potentiel inhérent à leur environnement, KUBOTA est le géant des nécessités de base.

Ce potentiel inclut l'approvisionnement en eau, la production d'aliments tirés du sol et de la mer, le développement industriel, l'architecture, la construction et les transports.

Des milliers de personnes font confiance au savoir faire de KUBOTA, à sa technologie, à son expérience et à son service après vente, vous aussi pouvez faire confiance à KUBOTA.

KUBOTA ist ...

Seit der Firmengründung im Jahre 1890 ist KUBOTA zu einem der wichtigsten Unternehmen in Japan angewachsen.

Hierzu hat zum großen Teil die ständige Erweiterung der Produktpalette und das ständig wachsende Angebot an Dienstleistungen beigetragen. Heute werden von 35000 Beschäftigten in 30 Werken mehr als 1000 verschiedene Produkte hergestellt.

Das vorrangige Ziel von KUBOTA ist es, mit seinen Produkten und den dazugehörigen Dienstleistungen Grundbedürfnissen gerecht zu werden, auch auf internationaler Ebene.

Die von KUBOTA hergestellten Produkte sind unverzichtbar; sie helfen einzelnen Personen, sogar ganzen Nationen die örtlich gegebenen Möglichkeiten in Bereichen wie Wasserversorgung, Landwirtschaft, Fischerei, Industrie, Architektur, Bau- und Transportwesen bestmöglich auszuschöpfen. Tausende bauen auf KUBOTA -und Sie?

KUBOTA Corporation is ...

Since its inception in 1890, KUBOTA Corporation has grown to rank as one of the major firms in Japan.

To achieve this status, the company has through the years diversified the range of its products and services to a remarkable extent, until today, 30 plants and 35,000 employees produce over 1,000 different items, large and small.

All these products and all the services which accompany them, however, are unified by one central commitment. KUBOTA makes products which, taken on a national scale, are basic necessities. Products which are indispensable, products intended to help individuals and nations fulfill the potential inherent in their environment. For KUBOTA is the Basic Necessities Giant.

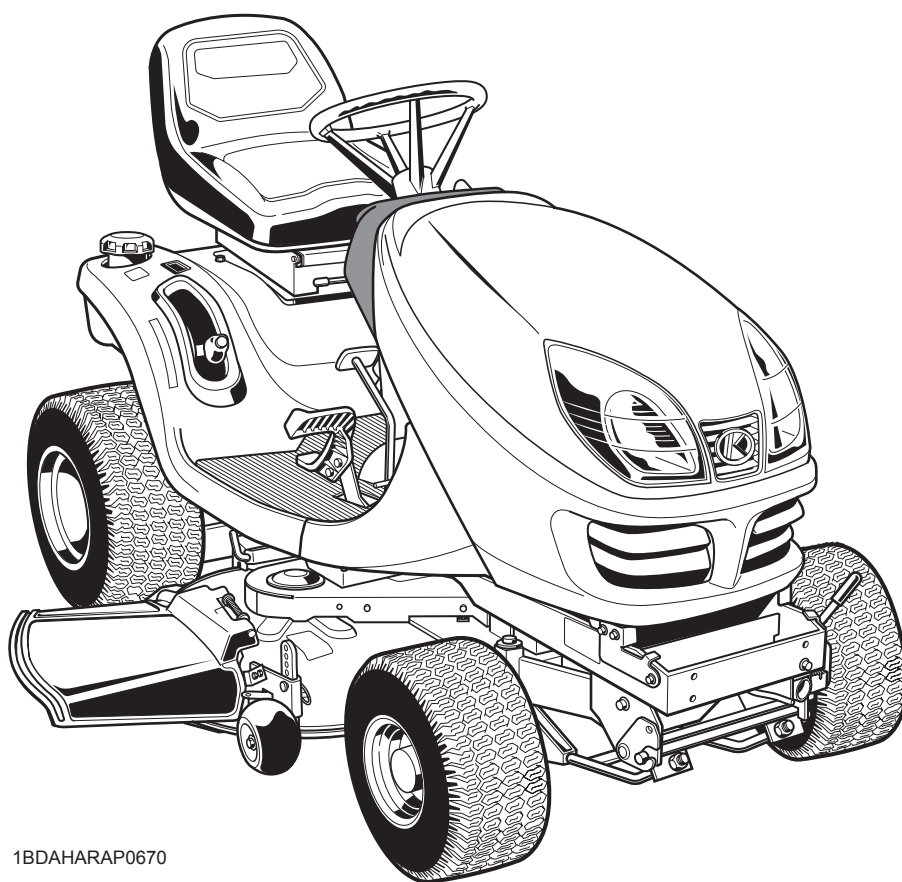
This potential includes water supply, food from the soil and from the sea, industrial development, architecture, construction and transportation.

Thousands of people depend on KUBOTA's know-how, technology, experience and customer service. You too can depend on KUBOTA.

OPERATOR'S MANUAL

KUBOTA RIDING MOWER

MODEL GR1600-ID-2



1BDAHARAP0670

READ AND SAVE THIS MANUAL
- Original instructions -

Kubota

ABBREVIATION LIST

Abbreviations	Definitions
API	American Petroleum Institute
PTO	Power Take Off
PT	Permanent Type (=Ethylene glycol anti-freeze)
rpm	Revolutions Per Minute
SAE	Society of Automotive Engineers

Intended use

This machine is designed solely for use in customary grass cutting operation. Use in any other way is considered as contrary to the intended use. Compliance with and strict adherence to the conditions of operation, service, and repair as specified by the manufacturer, also constitute essential elements of the intended use.

This machine should be operated, serviced, and repaired only by persons who are familiar with its particular characteristics and who are acquainted with the relevant safety procedures.























Accident prevention regulations, all other generally recognized regulations on safety and occupational medicine, and all road traffic regulations must be observed at all times.

Any arbitrary modifications carried out to this machine may relieve the manufacturer of liability for any resulting damage or injury.

manufacturer or distributor of the machine	Kubota Corporation
the model designation of the machine	GR1600-ID-2
the name or type of publication	Operator's Manual
the part number or publication number by which the manual may be ordered	K1249-7123-5
the date of issue	29 January 2014
the publication date	27 January 2021
the language in which the manual is written	English

UNIVERSAL SYMBOLS

As a guide to the operation of your tractor, 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
-  Diesel Fuel
-  Brake
-  Parking Brake
-  Engine-Stop
-  Preheat
-  Engine-Run
-  Starter Control
-  Power Take-Off Clutch Control-Off Position
-  Power Take-Off Clutch Control-On Position
-  Cutting Height
-  Mower-Lowered position
-  Mower-Raised position
-  Headlight
-  Headlight-ON
-  Headlight-OFF
-  Fast
-  Slow
-  Engine Speed Control
-  Battery
-  Oil Pressure
-  Coolant Temperature

FOREWORD

You are now the proud owner of a KUBOTA RIDING 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 riding mower, please read this manual carefully. It will help you become familiar with the operation of the machine and contains many helpful hints about riding mower 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. Read and understand this section carefully before operation. All operators, no matter how experienced they may be, should read this and other related manuals before operation of the machine or any implement attached to it. It is the owner's obligation to instruct all operators in safe operation.

This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

1. BEFORE OPERATING

1. Know your equipment and its limitations. Read, understand and follow all instructions in this manual before attempting to start and operate the machine.
2. Know the controls and how to stop quickly.
3. Pay special attention to the safety labels on the machine and mower.
4. The exhaust gas from the muffler is very hot. To prevent fire, do not expose dry grass, mowed grass, oil or any other combustible materials to exhaust gas. Use a spark arrester where required. Also keep the engine and muffler clean all the time.
5. Never wear loose, torn, or bulky clothing. It may catch on moving parts or controls, leading to the risk of accident. Safety boots or shoes, eye and hearing protection, gloves, etc. are recommended.
6. Do not operate machine or any implement attached to it while under the influence of alcohol, drugs, or other substances or while fatigued.
7. Check brakes, and other mechanical parts for faulty adjustment and wear. Replace worn or damaged parts promptly. Check the tightness of all nuts and bolts regularly. (For further details, see "MAINTENANCE" section.)
8. Keep the machine and attachments in good operating condition and keep safety devices in place and in proper working condition.
9. This machine is equipped with many safety devices. Do not attempt to remove or alter them.
10. Keep all shields and guards in place. Replace all missing or damaged items for your safety.
11. Never allow any bystanders around or near machine during operation.
Be sure the area is clear of other people before mowing.
Stop machine if anyone enters the area.
12. Before allowing other people to use your machine, explain proper operation to them and have them read this manual before operation.
13. Never allow passengers or non-qualified operators on the machine at any time. You must operate the machine from the seat only.
14. Carefully check the area to be mowed and clear any objects such as rocks, bottles, cans, toys, etc., that may damage the mower, the grass catcher or cause personal injury.
15. Keep your machine clean. Dirt, grease, and trash accumulations contribute to fires or lead to personal injury.
16. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
Check the mower blade mounting bolts for proper tightness at frequent intervals.
17. Use only attachments recommended by KUBOTA.
Use proper ballast to front or rear of machine to reduce the risk of upsets. Follow the "Safe Operation" procedures, specified in the Equipment's Manual.
18. Follow the maintenance recommendations. See "MAINTENANCE" section.
19. It is recommended that your machine be thoroughly inspected at least once a year by an authorized KUBOTA Dealer.

2. OPERATING

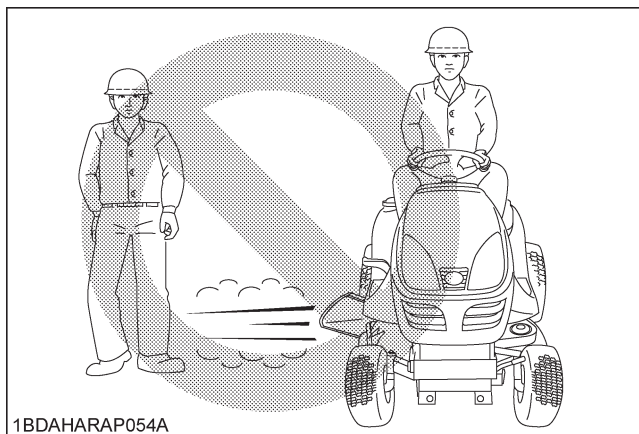
◆ Starting

1. Never start engine or operate levers from anywhere other than the seat.
2. Before starting the engine, make sure that all levers (including auxiliary control levers) are in their neutral positions, that the parking brake is engaged, and that both the mower clutch and the Power Take-Off (PTO) are disengaged.
3. Do not start engine by shorting across starter terminals or by by-passing the safety start switch. The machine may start and move if normal starting circuitry is bypassed.
4. Do not operate or idle engine in a poorly ventilated area. Exhaust contains poisonous carbon monoxide, a colorless and odorless gas.

◆ Working

1. Watch where you are going at all times. Watch for and avoid obstacles. Be alert near trees and other obstructions.
2. When working in groups, always let others know what you are doing ahead of time.
3. Never try to get on or off a moving machine.
4. When using any attachments, never direct discharge material toward bystanders. Do not allow anyone near the attachments while in operation.
Do not mow when bystanders are present in the mowing area.

▲-2 SAFE OPERATION



5. To reduce fire hazards, keep the engine exhaust area free of grass or leaves.
6. Slow down before turning.
7. Turn off blades when not mowing.
8. Mow only in daylight.
9. Be sure rotating blades and engine are stopped and the key is removed before placing hands or feet near blades.
10. Shut the engine off and wait for all movement to stop before unclogging chute.
11. Know what is behind you and disengage power to mower before backing up. Do not mow while in reverse unless absolutely necessary and only after observation of the entire area behind the mower.
12. Know what is behind you before overriding the KRA system. Do not override the KRA system unless absolutely necessary and safe to do so. KUBOTA strongly recommends against overriding the KRA system.
13. When mowing for the first time, cut the grass higher than desired.
This will uncover any unseen object that may damage the mower or grass catcher.
14. Always inspect the mower and grass catcher after striking any foreign object. This will insure that all mower and grass catcher parts are safe and secure and not damaged.
Repair or replace any damaged parts before re-starting.
15. Use only attachment recommended in this manual. Use proper ballast to front or rear of machine to reduce the risk of upsets. Follow the "SAFE OPERATION" procedures specified in the manuals included with the equipment.
16. Do not operate the mower without either the grass container or the guard in place.
Be aware of the mower discharge direction and do not point it at anyone.
17. Watch for traffic when operating near or crossing roadways.
18. Stop the blades rotating before crossing surface other than grass.

19. Never leave a running machine unattended.
Always turn off blades, set parking brake, stop engine, and remove the key before dismounting.
20. Be extremely alert for all other traffic when operating the mower and grass catcher near public roads or highways.
21. Do not operate where machine could tip or slip.
Do not operate near ditches, holes, embankments, or other terrain which may collapse under the machine's weight. The risk of machine tip-over is increased when the ground is loose or wet.
22. 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.
23. 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.

◆ Pulling loads

Use extra care when pulling loads to reduce the risk of serious personal injury or death due to a machine tip-over.

- a) Pull only from the hitch. Never attach loads to the axle housing or any other point above hitch.
- b) Limit loads to those you can safely control.
- c) Do not turn sharply.
- d) Use care when backing.
- e) Use front ballast or wheel weights when suggested in this Operator's Manual.

◆ Operation 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.

- Do not lift the grass container on a slope.

DO

1. Slowly mow up and down slopes, not across, to avoid machine tip-over. Stay off hills and slopes too steep for safe operation. Do not make sudden changes in speed or direction.
2. Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly straight down the slope.
3. If the machine stops going uphill, disengage PTO and back slowly down.
4. Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tip-over or loss of control.
5. Use special caution when changing direction on slopes.
6. Remove obstacles such as rocks, tree limbs, etc.
7. 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.

8. Follow KUBOTA's recommendations for wheel weights or counterweights to improve stability.
9. The weight of grass in the grass container may increase the possibility of tip over.

DO NOT

1. Do not turn on slopes unless necessary and then turn slowly and gradually downhill, if possible.
2. Do not use the machine on slopes of more than 11°.
3. Do not mow near drop-offs, ditches, or embankments. The machine could suddenly turn over if a wheel falls over the edge of a cliff or ditch, or if an edge caves in.
4. Do not mow on wet grass. Reduced traction could cause sliding.
5. Do not try to stabilize the machine by putting your foot on the ground.
6. Do not stop or start suddenly when going uphill or downhill.
7. Never "freewheel". Do not let the machine travel downhill with HST pedal at neutral position.
8. Do not modify or alter the riding mower and protective guards.

◆ Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are attracted to the machine and the mowing activity. Never assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of another responsible adult.
2. Be alert and turn the machine off if children enter the area.
3. Before and when backing, look behind and down for small children.
4. Never carry children. They may fall off and be seriously injured or interfere with safe machine operation.
5. Never allow children to operate the machine, even under adult supervision.
6. Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.

◆ Operators, age 60 years and above

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

◆ Stopping

1. Make sure that the machine has come to a complete stop before dismounting.
2. Before dismounting, disengage the PTO, lower all implements, place all control levers in their neutral positions, apply parking brake, turn off the engine and remove the key.

3. Do not park the machine on a steep incline. Park on a flat level surface.

3. USING THE PTO

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

4. USING THE LIFT LINK

1. Use lift link only with KUBOTA authorized attachments designed for lift link usage.

5. TRANSPORTING

1. Disengage power to attachment(s) when transporting or not in use.
2. Do not tow this machine. Use a suitable truck or trailer when transporting on public roads.
3. It is recommended that this machine not be used on public roads.
4. Use extra care when loading or unloading the machine into a trailer or truck.

6. SERVICING

1. Before servicing the machine, park the machine on a firm, level surface, set the parking brake, stop the engine and remove the key.
2. Securely support machine or any machine elements with stands or suitable blocking before working underneath. For your safety do not rely on hydraulically supported devices, they may leak down, suddenly drop or be accidentally lowered.
3. To avoid injury, do not adjust, unclog or service the mower or grass catcher with the engine running. Make sure rotating blades are stopped before dismounting the riding mower.
4. Disengage power to attachment(s), stop the engine and remove the key before making any repairs or adjustments.
5. Allow the machine to cool off before servicing the engine, muffler, etc.

▲-4 SAFE OPERATION

6. Keep your riding mower clean. Dirt and grass build-up can cause fires and may lead to serious personal injury.

Replace all safety labels that are damaged, lost or have otherwise become illegible. If a part to be replaced has a label on it, obtain a new safety label from your KUBOTA Dealer and install it in the same place as on the removed part.

7. Use extra care in handling diesel fuels. They are flammable.

- (1) Use only an approved container.
- (2) Do not remove fuel cap or refuel with the engine running. Allow engine to cool before refueling. Do not smoke while refueling or when standing near fuel.
- (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.
- (5) If the fuel tank has to be drained, this should be done outdoors.
- (6) Replace all fuel tanks and container caps securely.

8. Do not change the engine governor setting or overspeed the engine.

9. Never run a machine inside a closed area.

10. Mower blades are sharp and can cut your hands. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.

11. Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.

12. Do not smoke when working around the battery. Keep all sparks and flames away from battery. The battery presents an explosion hazard because it gives off hydrogen and oxygen...especially when recharging.

13. Before "JUMP STARTING" a dead battery, read and follow all of the instructions to help protect the alternator from damage due to extreme load changes. (See "JUMP STARTING" in "OPERATING THE ENGINE" section.)

Batteries contain sulfuric acid and produce explosive gases. Follow the instructions below to prevent personal injury.

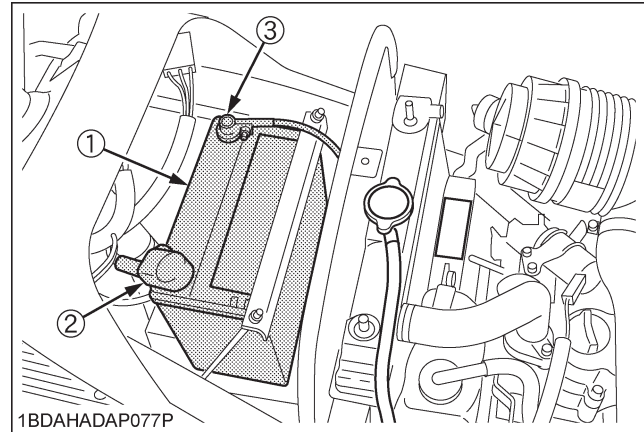
- Wear eye and skin protection.
- Keep sparks and flame away.
- Always have adequate ventilation while charging or using the battery.

14. Keep first aid kit and fire extinguisher available at all times.

15. Disconnect the battery's negative (-) cable before working on or near electric components.

16. 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.

17. To avoid sparks from an accidental short circuit, always disconnect the battery's negative (-) cable first and connect it last.



- (1) Battery
(2) Positive cable (+)
(3) Negative cable (-)

18. Make sure cir-clips, nuts and spring lock washers are properly secured on the front and rear wheels, respectively.

19. Never tamper with safety devices.

Check their proper operation regularly.

20. Check brake operation frequently. Adjust and service as required.

21. Properly dispose of used lubricants, filters, batteries, and other such components.

22. Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.

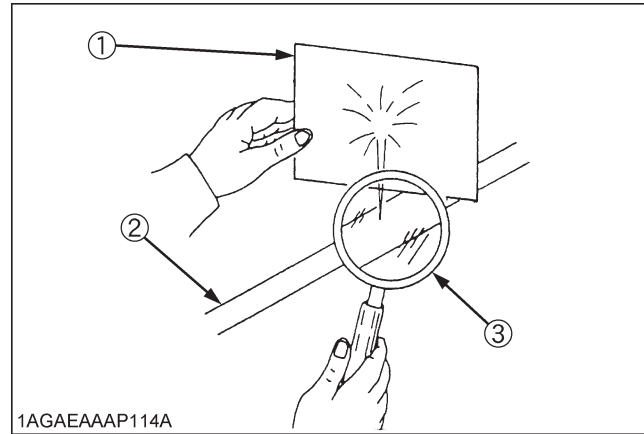
23. Always maintain the correct tire inflation pressure. Do not inflate tires above the recommended pressure shown in the Operator's Manual.



24. Securely support the machine when changing wheels.
25. Make sure that wheel bolts have been tightened to the specified torque.
26. 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.



27. 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 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.



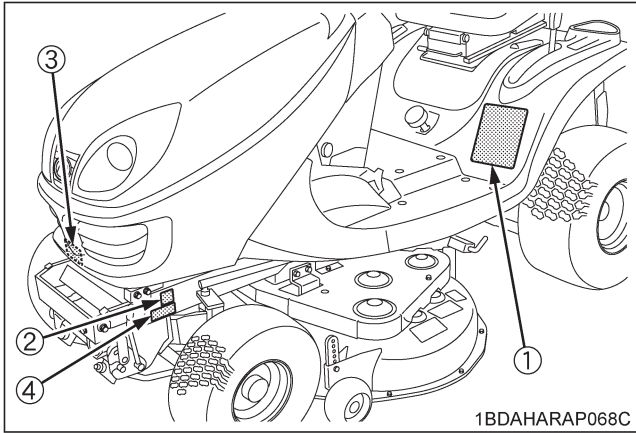
- (1) Cardboard
- (2) Hydraulic line
- (3) Magnifying glass

28. Waste products such as used oil, fuel, hydraulic fluid, and batteries, can harm the environment, people, pets and wildlife. Please dispose properly.
29. Do not use beverage containers for waste fluids or other products. Someone, particularly children, may drink them by mistake.
30. See 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.

7. STORAGE

1. Keep the machine and supply of fuel in locked storage and remove the key to prevent children or others from playing or tampering with them.
2. When machine is to be stored for a long time, disconnect battery cables or remove the battery. Always remove the negative (-) cable first and reinstall the negative (-) cable last.
3. Do not store the machine with fuel in the tank inside a building where fumes may ignite. Allow the engine to cool before storing.
4. To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without adequate ventilation.
5. To reduce fire hazards, clean the machine thoroughly before storage. Dry grass and leaves around the engine and mufflers may ignite.
6. Moisture content in most grasses can damage the mower and grass catcher if these components are not properly cleaned after use. Also, dry grass and leaves left in the container can be a fire hazard. Always make sure the container and the duct are clean and completely empty before storage.

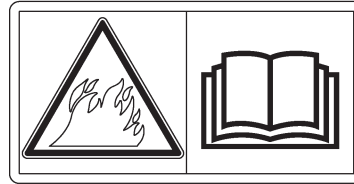
8. PICTORIAL SAFETY LABELS



(4) Part No. K2054-6545-2

TO AVOID FIRE HAZARD:

Before operating the machine, clean inside of the bonnet and around the mower belt. Especially, dry grass and leaves around the exhaust manifold, the muffler or around the mower belt may ignite. After using, air-blowing and pressure-washing, make sure there is nothing flammable around the exhaust manifold, the muffler or around the mower belt. Grass, twigs, dirt or chaff in the bonnet may cause fire.



1BDABANAP226A

(1) Part No. K1248-6581-1



1BDAHARAP063A

TO AVOID INJURY OR DEATH:

- Read and understand Operator's Manual.
- Stop the engine and remove key before servicing.
- DO NOT operate where machine could slip or tip.
- DO NOT operate on slopes of more than 11°.
- Mow up and down slopes, not across.
- DO NOT allow any bystanders or children around or near machine at any time when the engine is running.

(2) Part No. K2110-6573-1

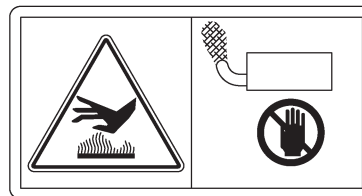
HOT SURFACE
DO NOT TOUCH



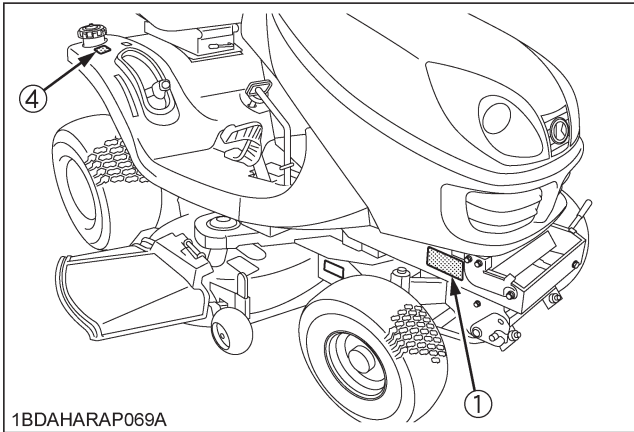
1BDAHAAAP0320

(3) Part No. K1248-6542-1

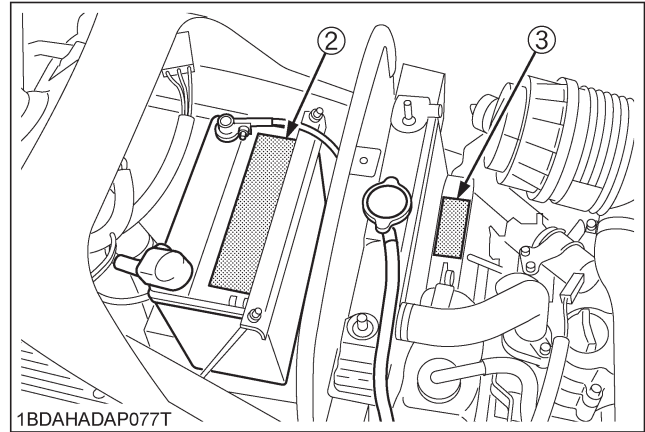
Do not touch hot surface like muffler, etc.



1BDAHARAP064A

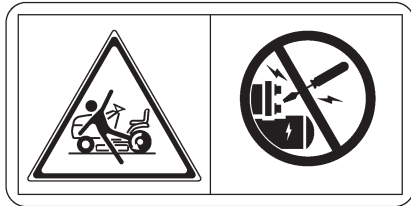


1BDAHARAP069A



1BDAHADAP077T

(1) Part No. K1248-6583-1



1BDAHARAP066A

TO AVOID MACHINE RUNAWAY:

- DO NOT start engine by shorting across starter terminals or bypassing the safety start switch.

(2) Part No. K3181-6116-2

						<p>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.</p>	<p>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.</p>	<p>SMF 51R PART No. K3181-61145</p> <table border="1"> <tr><td>NOMINAL VOLTAGE</td><td>12V</td></tr> <tr><td>COLD CRANKING AMPS</td><td>430</td></tr> <tr><td>CRANKING AMPS</td><td>540</td></tr> <tr><td>RESERVE CAPACITY(MINUTES)</td><td>80</td></tr> <tr><td>AMP HOURS(@20 hr Rate)</td><td>45</td></tr> </table>	NOMINAL VOLTAGE	12V	COLD CRANKING AMPS	430	CRANKING AMPS	540	RESERVE CAPACITY(MINUTES)	80	AMP HOURS(@20 hr Rate)	45
NOMINAL VOLTAGE	12V																	
COLD CRANKING AMPS	430																	
CRANKING AMPS	540																	
RESERVE CAPACITY(MINUTES)	80																	
AMP HOURS(@20 hr Rate)	45																	
<p>FITTING DATE 0 1 2 3 4 5 6 7 8 9 YEAR</p>		<p>1 2 3 4 5 6 7 8 9 10 11 12 MONTH</p>		<p>MADE IN KOREA</p>		<p>KEEP OUT OF REACH OF CHILDREN</p>	<p>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.P66Warnings.ca.gov.</p>	<p>INDICATOR OK CHARGE REPLACE</p>										

1BDAHAOAP072A

- 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.

(3) Part No. K1272-6558-1

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



1BDABARAP113A

(4) Part No. K2110-6585-1

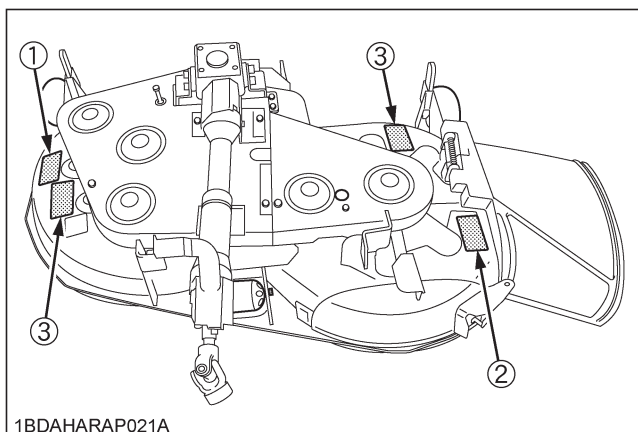
Diesel fuel only No fire



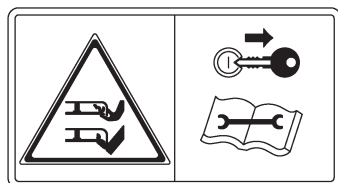
1BDAHADAP0300

1BDAHARAP083A

▲-8 SAFE OPERATION



(1) Part No. K5127-7311-1

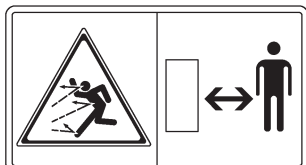


1BDAHARAP065A

ROTATING BLADES HAZARDOUS:

- DO NOT put hands or feet into mower when engine is running.
Beware of sharp blades.
- Stop the engine and remove key before servicing.

(2) Part No. K5125-7312-1



1BDADAIAP0230

- DO NOT allow any bystanders or children around or near machine at any time when the engine is running.

(3) Part No. K5622-4180-1



1BDABDDAP108A

- Hand and arm entanglement - Belt drive
- Do not get your hands close to driving belt.

9. CARE OF PICTORIAL SAFETY LABELS

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

SERVICING OF RIDING MOWER

DEALER SERVICE

After reading this manual thoroughly, you will find that you can do some of the regular maintenance yourself.

Your dealer has knowledge of your new machine and has the desire to help you get the best performance and the most value from it.

However, when in need of parts or major service, be sure to consult your local KUBOTA Dealer. When in need of parts, be prepared to give your dealer the product identification number (PIN), engine and mower serial numbers.

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

	Type	PIN/Serial number
Machine		
Engine		
Mower		
Date of Purchase		
Name of Dealer		

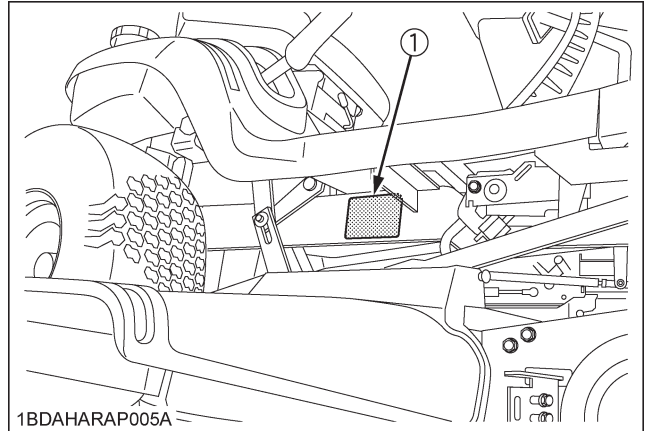
To be filled in by purchaser

◆ Warranty

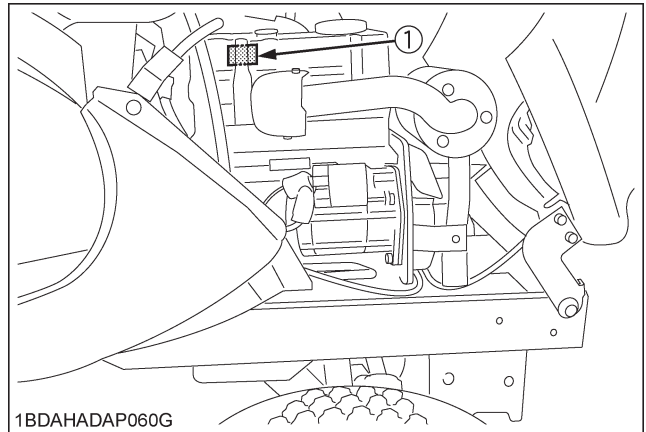
This machine is warranted under the Kubota Limited Express warranty a copy of which may be obtained from your selling dealer. No warranty shall, however, apply if the machine has not been handled according to the instruction given in the Operator's Manual even it is within the warranty period.

◆ 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.

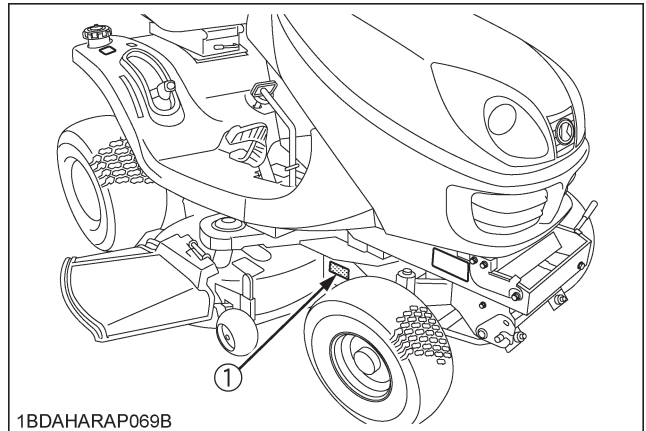


(1) Product identification number



(1) Engine serial number

[RCK42]



(1) Mower serial number

SPECIFICATIONS

	Model		GR1600-ID-2	
Engine	Model		Z482	
	Type		Liquid-cooled diesel	
	Total displacement	cm ³	479	
	Gross power *1	PS (kW)	13.6 (10.0)	
	Maximum operating engine speed	min ⁻¹ (rpm)	3300 to 3400	
	CO ₂ emission *2 (NRSC *3)	g/kWh	1019.8	
	No. of cylinders		2	
	Starter		Electric starter with battery	
	Battery		51R (12V, 475CCA)	
	Fuel		Diesel fuel No.1 (below -10 °C) Diesel fuel No.2 (above -10 °C)	
	Preheating system		Super glow	
	Engine stop		Key stop	
Capacity	Fuel tank	L	18	
	Engine oil	L	1.2	
	Radiator coolant	L	2.1	
	Hydrostatic transmission oil	L	2.8	
Machine	PTO		Shaft drive	
	PTO clutch		Mechanical Wet Multi Discs	
	PTO brake		Wet Multi Discs	
	Tires	Front		15 x 6.00 - 6
		Rear		20 x 10.0 - 8
	Steering type		Manual	
	Brake		Internal expanding brake	
	Travel speed control		Foot pedal	
	Transmission		Hydrostatic	
	Traveling speeds	Forward	km/h	0 to 10
Reverse		km/h	0 to 5	
Dimensions	Overall length		mm	1920
	Overall width (with mower deck)		mm	1365
	Overall height		mm	1210
	Wheel base		mm	1280
	Tread	Front	mm	750
		Rear	mm	825
	Weight (with mower deck)		kg	355

	Model		RCK42-GR16-2	
Mower	Cutting width	cm	106.7	
	Cutting height	mm	25 to 102	
	Adjustment of cutting height		Dial gauge	
	Mounting method		Quick joint, Parallel linkage	
	Weight	kg	65	
	Dimensions	Total length	mm	750
		Total width	mm	1365
		Total height	mm	280
	Discharge direction		Right side	
Gear box oil	L	0.35		

The company reserves the right to change the specifications without notice.

*1 Manufacturer's estimate

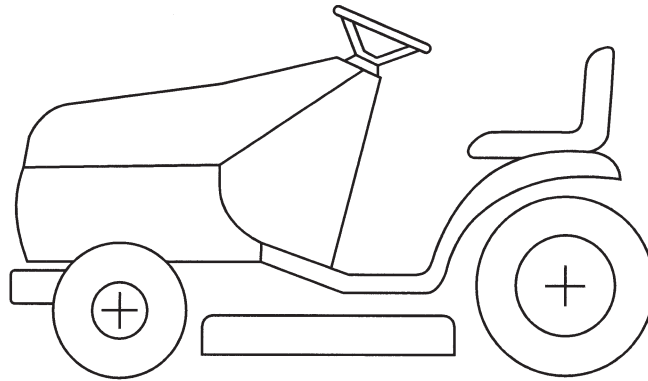
*2 Measured according to Regulation (EU) 2017/654. The CO₂ measurement is obtained from testing a(n) (parent) engine representative of the engine type (engine family) over a fixed test cycle under laboratory conditions. The CO₂ measurement shall not imply or express any guarantee of the performance of a particular engine.

*3 Non-road steady-state test cycle

IMPLEMENT LIMITATIONS

The KUBOTA Machine has been thoroughly tested for proper performance with implements sold or approved by KUBOTA. Use of implements which exceed the maximum loading weight listed below, or which are not recommended for use with the KUBOTA Machine may result in malfunctions or failures of the machine, damage to other property and injury to the operator or others. (Any malfunctions or failures of the machine resulting from use with improper implements are not covered by the warranty.)

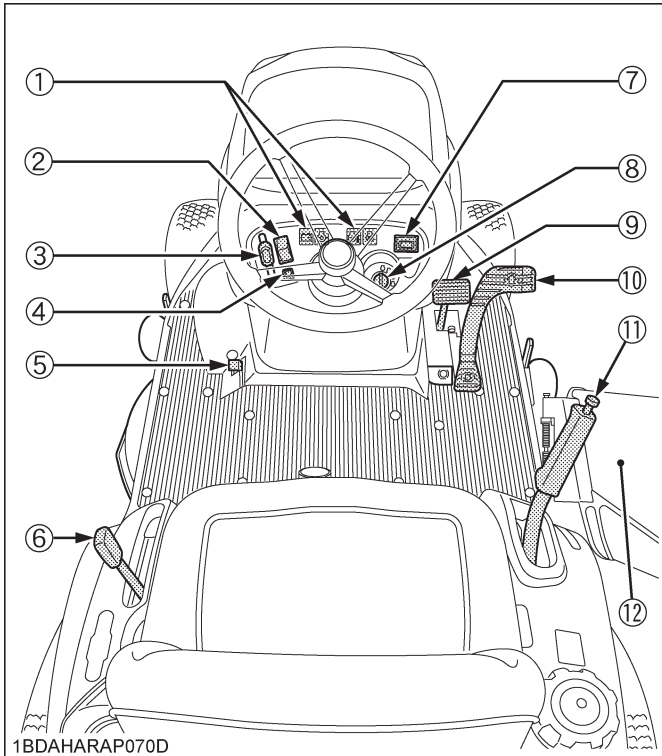
MODEL	Maximum axle loading weight		
	Front axle W_f	Rear axle W_r	Total gross weight
GR1600-ID-2	250 kg	450 kg	600 kg



↓
W_f

↓
W_r

INSTRUMENT PANEL AND CONTROLS



(1) Easy checker(TM).....	21
(2) Head light switch.....	18
(3) Throttle lever.....	19
(4) KRA system override switch.....	27
(5) Parking brake pedal.....	12
(6) PTO lever.....	26
(7) Hour meter.....	22
(8) Key switch.....	13
(9) Brake pedal.....	12
(10) Speed control pedal.....	20
(11) Mower lift lever.....	19
(12) Discharge deflector	

MOWER MOUNTING

ATTACHING THE MOWER



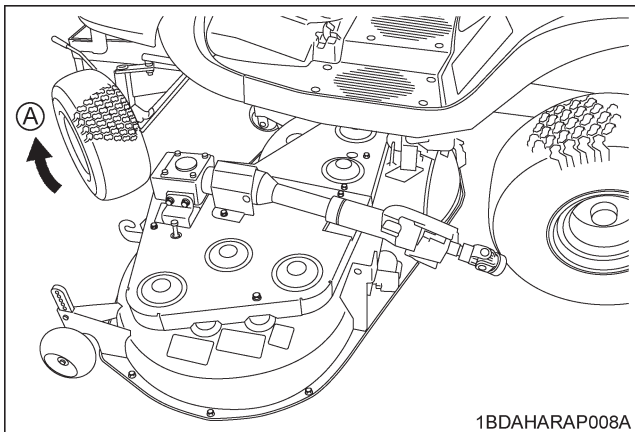
WARNING

To avoid serious injury:

- Shut off the engine and remove the key before attaching the mower.

■ Mounting the Mower Deck

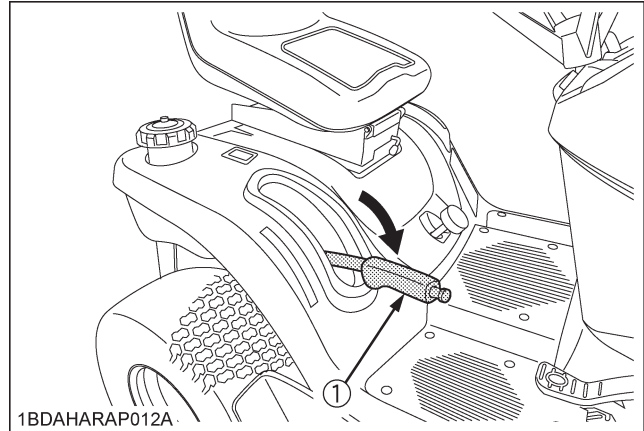
1. Park the machine on level ground and place the mower deck at the left side of the machine.
2. Set the front anti-scalp rollers at the topmost position. Turn the front wheel to the right.
3. Pull the mower lift lever to raise rear links.
4. Adjust the height control dial to "1". Slide the mower deck under the machine, and then return wheels to straight ahead position.



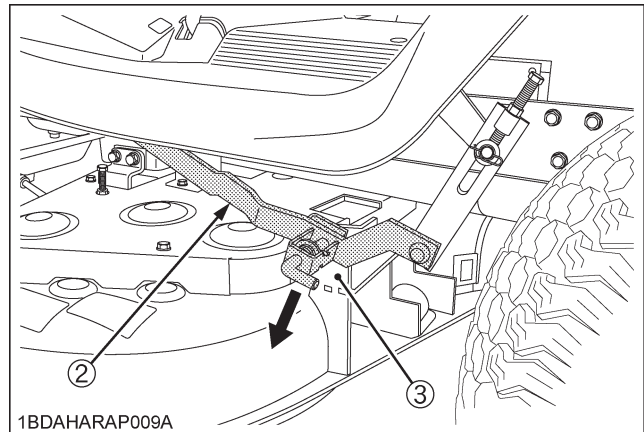
1BDAHARAP008A

(A) "RIGHT"

5. Place the mower lift lever in the "LOWER" position. Push down the rear links to align with the mower bracket.



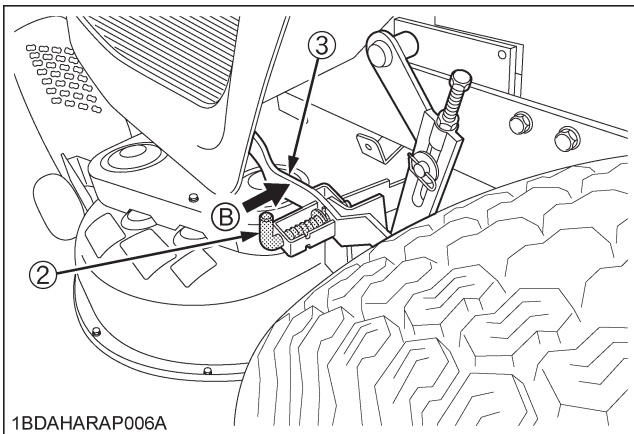
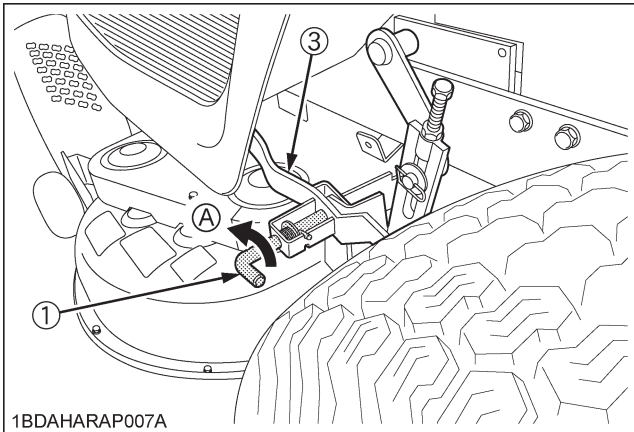
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1BDAHARAP009A

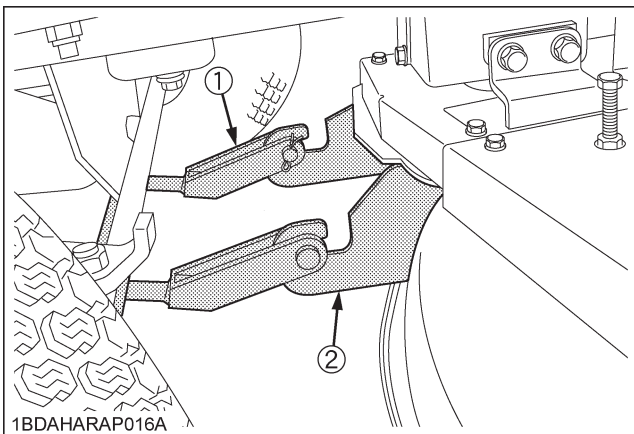
- (1) Mower lift lever
 (2) Mower's rear link
 (3) Mower bracket

6. Release the L pins lock to attach the rear links to the mower deck.



- (1) L pin (Unlock)
- (2) L pin (Lock)
- (3) Rear link
- (A) "UNLOCK"
- (B) "RELEASE"

7. Attach the front links to the front roller brackets.

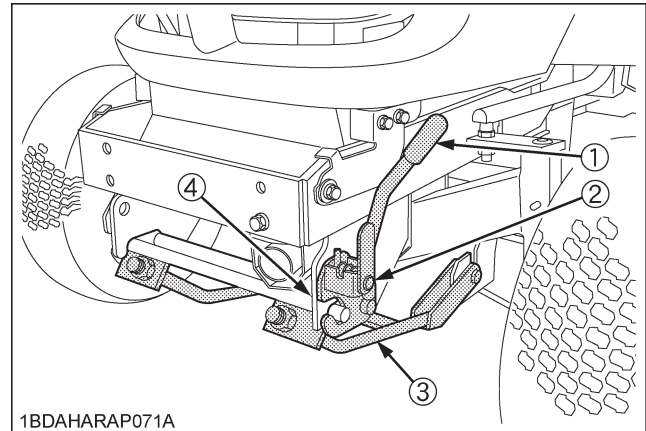


- (1) Front link
- (2) Front roller bracket

NOTE :

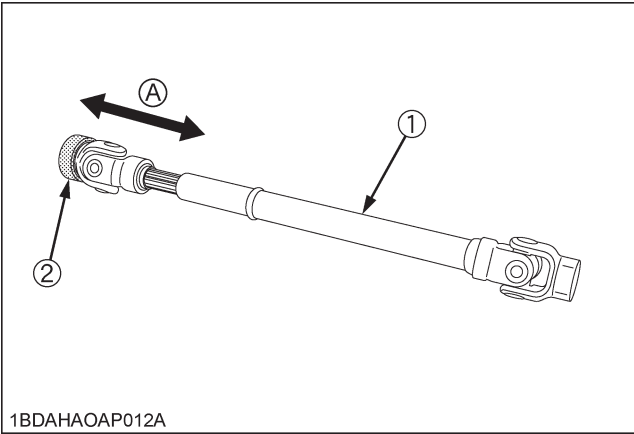
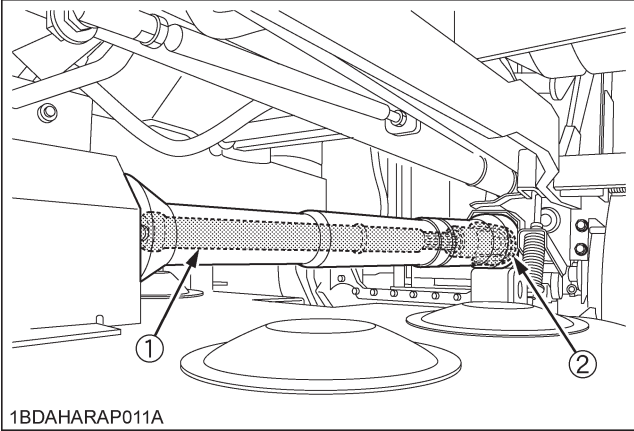
- Adjust the length (L) of the front link.
(See "ADJUSTING THE PARALLEL LINKAGE" in "MOWER MOUNTING" section.)

- 8. Pull the lever fulcrum fixing pin and turn it counter clockwise to lock.
- 9. Hook and raise the front link with the link fixing lever, and then lay the link fixing lever onto the front bracket of the machine.
- 10. Turn the lever fulcrum fixing pin clockwise and push it into position to fix the link fixing lever.



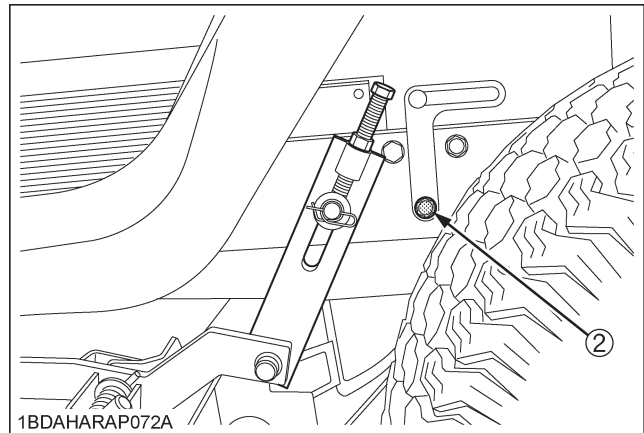
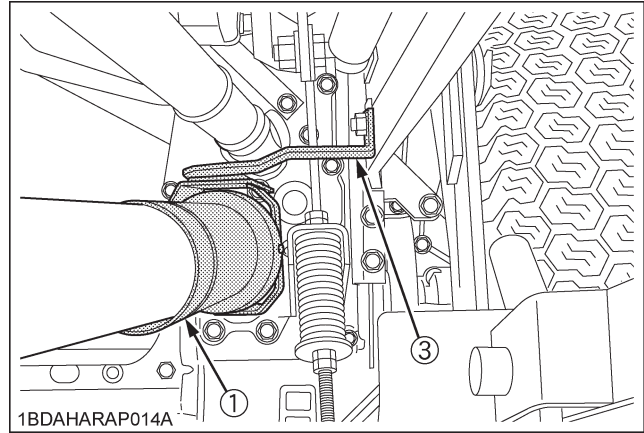
- (1) Link fixing lever
- (2) Lever fulcrum fixing pin
- (3) Front link
- (4) Front bracket

11. Pull back the coupler of the universal joint.
 Push the universal joint into the PTO shaft until the coupler locks.
 Tug the universal joint backward and forward to make sure it is locked securely.



- (1) Universal joint
 (2) Coupler
 (A) "TUG"

12. Extend the universal joint cover to the coupler of the universal joint, and then attach the stay to the frame with bolts.



- (1) Universal joint cover
 (2) Bolt
 (3) Stay

IMPORTANT :

- Make sure to install the stay to the frame with bolts.

NOTE :

- For dismantling the mower deck, reverse the above procedures.

ADJUSTING THE PARALLEL LINKAGE

WARNING

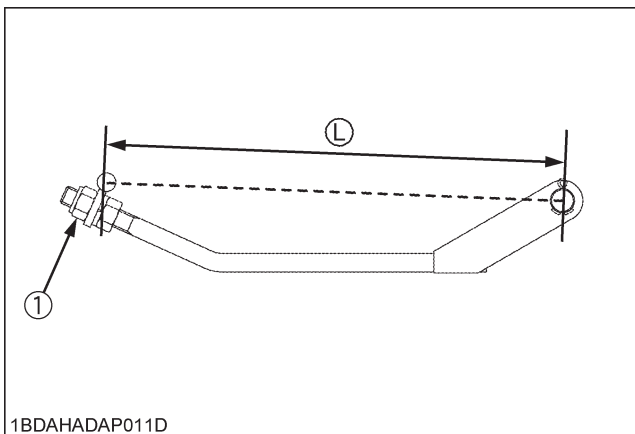
To avoid serious injury:

- Shut off the engine and remove the key.
- Set parking brake.
- Allow the blades to stop before making adjustments.
- Blades may be sharp, when you handle blades, wear heavy gloves or wrap end of blade with a rag.

1. Park the machine on a level surface.
2. Make sure the mower blades are level. Then tighten the lock nuts securely.
Adjust (L) of front links with lock nut so that (B) - (A) is 0 to 5 mm.

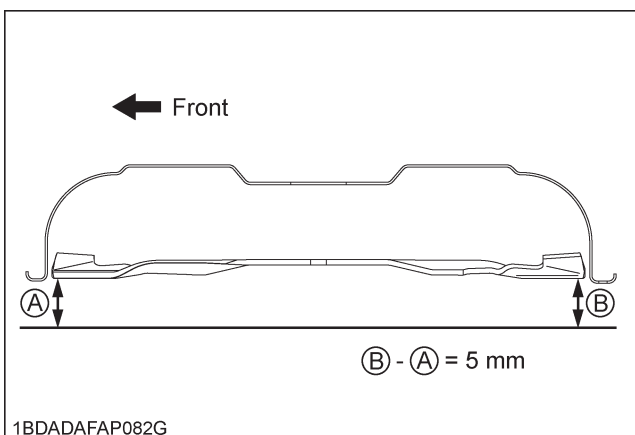
NOTE :

- Make sure the rear blade is higher than the front blade; otherwise beautiful finish cut can't be obtained.



1BDADADAP011D

(1) Lock nut



1BDADAFAP082G

(A) Front
(B) Rear

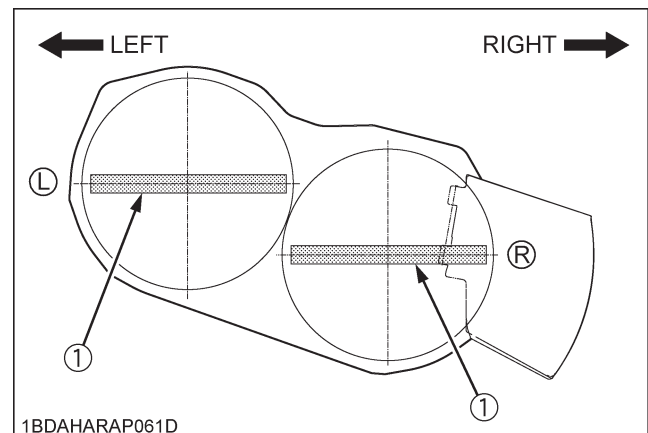
ADJUSTING THE MOWER DECK (SIDE TO SIDE)

WARNING

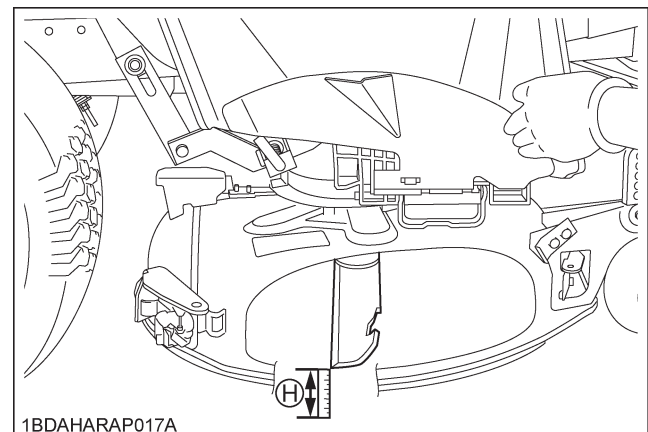
To avoid serious injury:

- Shut off the engine and remove the key.
- Set parking brake.
- Allow the blades to stop before making adjustments.
- Blades may be sharp. When you handle blades, wear heavy gloves or wrap end of blade with a rag.

1. Park the machine on a level surface.
2. Tire inflation pressure must be correct.
(See "TIRE AND WHEELS" section.)
3. Raise the mower lift lever to the top position.
4. Turn the cutting height control dial to adjust height to the desired height.
5. Lower the mower deck by pushing the mower lift lever forward.
6. Turn the left blade so that it is parallel to rear axle. Hold drive belt and turn the right blade so that it is parallel to axle.
7. Measure from each outside blade tip (L) and (R) to the level surface. The difference between measurements should be less than 3 mm.



1BDAHARAP061D



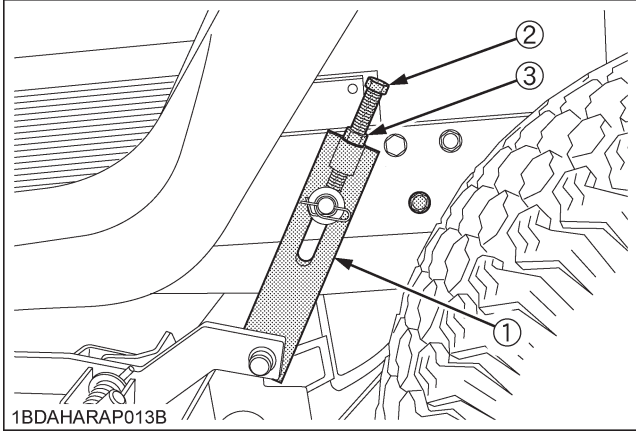
1BDAHARAP017A

(1) Blade

(H) Blade tip height

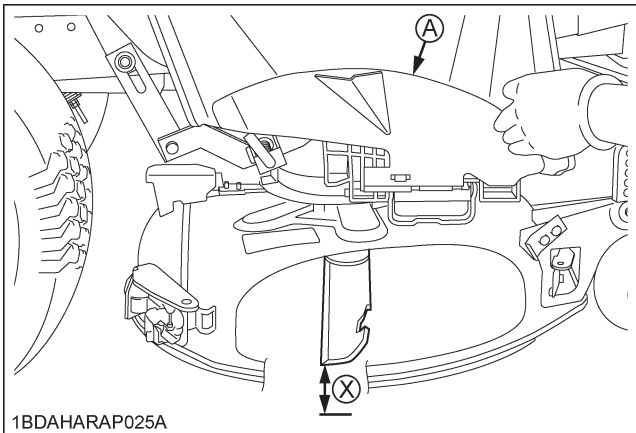
10 MOWER MOUNTING

8. Loosen the locknut at both sides of the machine. Adjust the cutting height fine tuning bolts so that the difference between measurements (L) and (R) is less than 3 mm.
9. Lock the nuts.



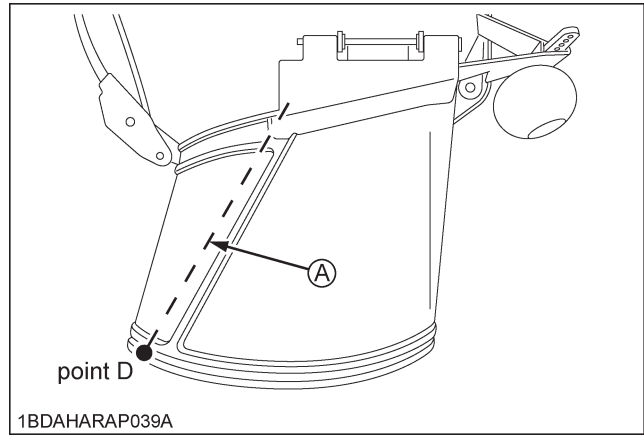
- (1) Lift link
- (2) Cutting height fine tuning bolt
- (3) Lock nut

10. Measure from the outside tip of the right blade to the level surface (while the blade is parallel to the rear axle). This will be measurement (X).

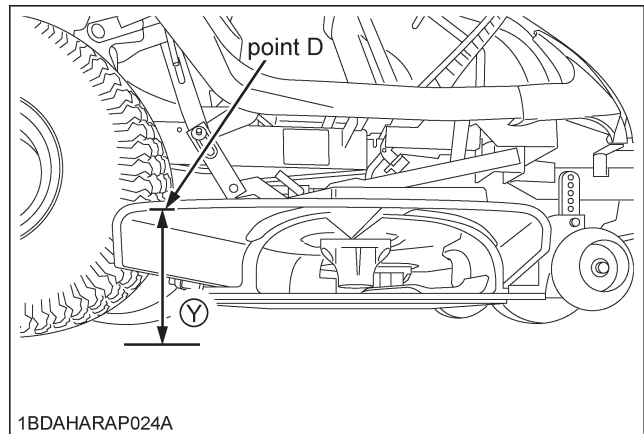


(A) Mower cover

11. Measure from the level surface to the bottom of the discharge cover at point D as shown in the figure below. This will be measurement (Y).



(A) Bent mark line



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12. The difference between measurement (Y) and (X) should be 88 mm.

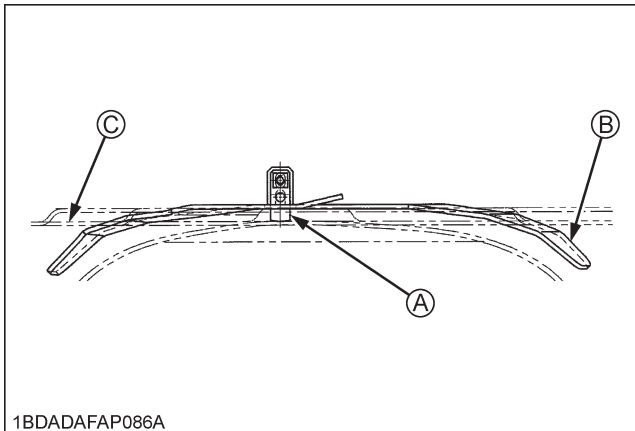
If not, adjust by loosening the bolt and moving the Plate Discharge Stopper.



WARNING

To avoid serious injury:

- Make sure (Y)-(X) is not more than 88 mm.



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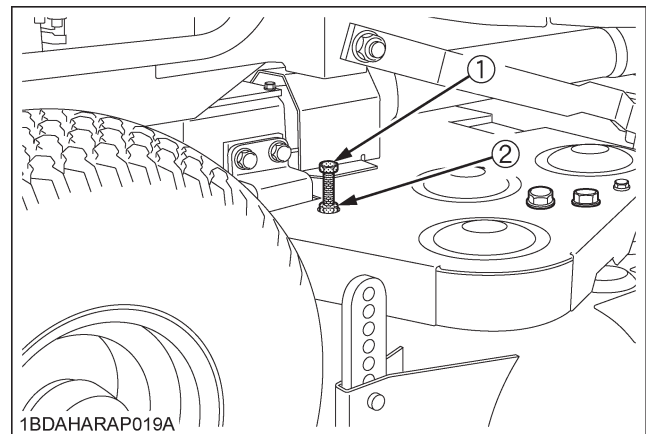
- (A) Plate discharge stopper
(B) Mower cover
(C) Mower deck upper surface

ADJUSTING THE MOWER LIFT STOPPER

The mower lift stoppers are designed for maintaining the balance of the mower deck, when lifting the mower to the highest position. Make sure that the stopper is in contact with the underside of the frame.

To adjust:

1. Lift the mower to the highest position.
2. Loosen the lock nut and adjust the stopper on left side so that the bolt head is in contact with the underside of the frame.
3. Lower the mower deck.
4. Turn the stopper counterclockwise a half turn, and then secure the lock nut.



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- (1) Mower lift stopper
(2) Lock nut

DISMOUNTING THE MOWER DECK

For dismantling the mower deck, reverse the above procedures.

OPERATING THE ENGINE



WARNING

To avoid serious injury:

- Read and understand "SAFE OPERATION" in the front of this manual.
- Understand the pictorial safety labels located on the machine.
- To avoid danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.
- Never start the engine while standing on the ground. Start the engine only from the operator's seat.

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 30 seconds.
- Operate, use and maintain the engine, including the emission control system, in accordance with the end user instructions, so that the engine's emission performance is kept within the thresholds applicable to the engine's category.
- Do not deliberately tamper with or misuse the engine emission control system, especially with regard to deactivating or not maintaining an exhaust gas recirculation (EGR) system or a reagent dosing system.
- When a warning lamp lights up, the engine is experiencing a problem, which may also cause problems with the emission control system. Take prompt action and rectify any incorrect operation, use or maintenance of the emissions control system in accordance with the rectification measures. (See "ENGINE TROUBLESHOOTING" in "TROUBLESHOOTING" section.)

STARTING THE ENGINE

1. Make sure that the hood is closed.

IMPORTANT :

- If the hood is opened, the engine does not start.
- If the hood has been opened while the engine is running, the engine stalls.

2. Sit on the operator's seat.

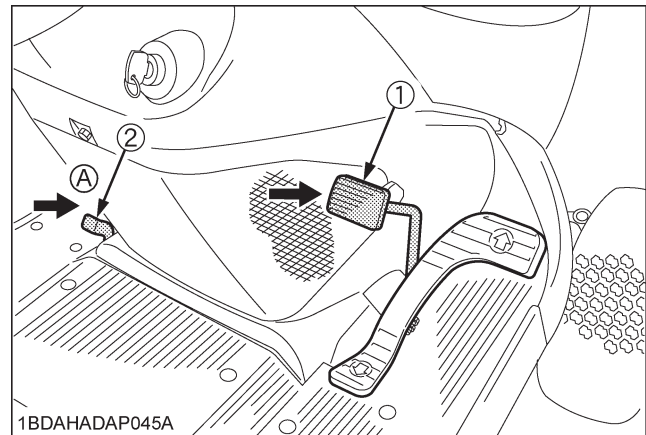
3. Apply the parking brake.

To apply the parking brake:

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

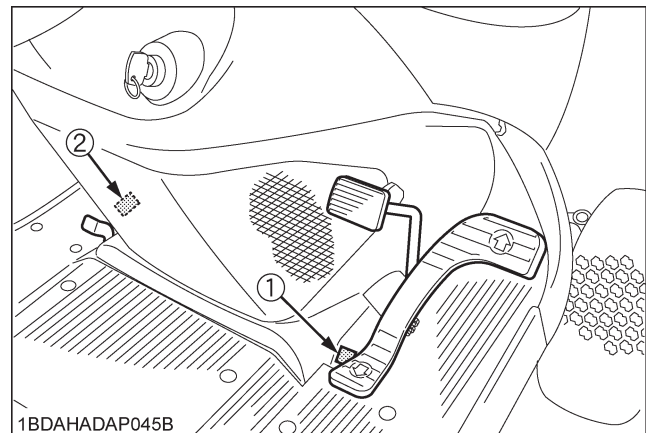
To release the parking brake:

Depress the brake pedal and release slowly.

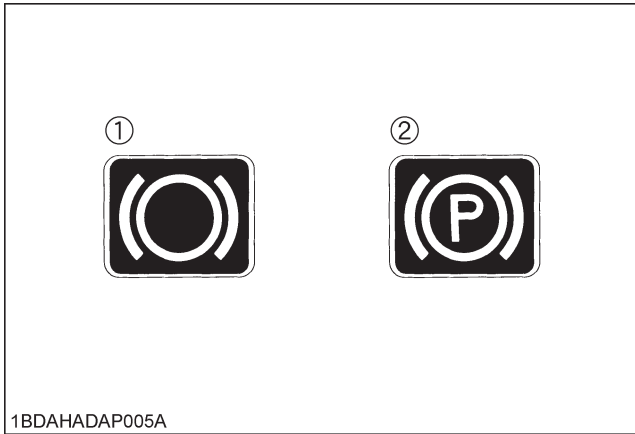


(1) Brake pedal
(2) Parking brake pedal

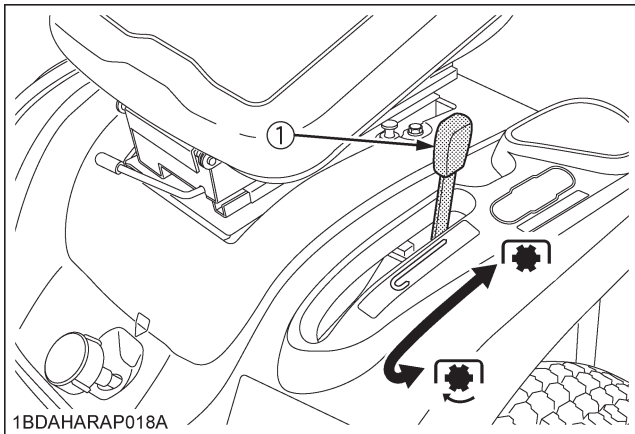
(A) "PARKING"



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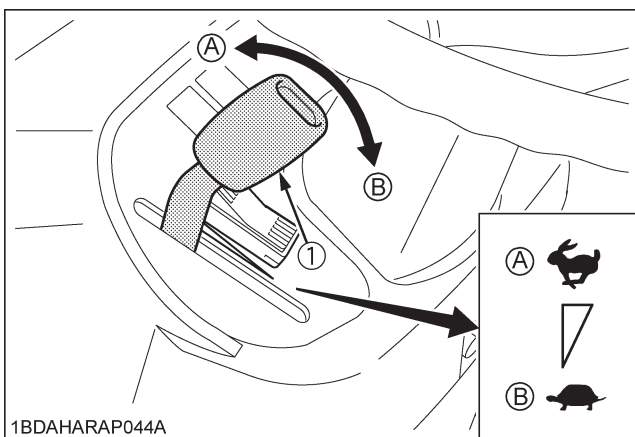


4. Make sure that the PTO lever is in the "DISENGAGED" position.



(1) PTO lever
 : "ENGAGED"
 : "DISENGAGED"

5. Set the throttle lever 1/2 way forward.

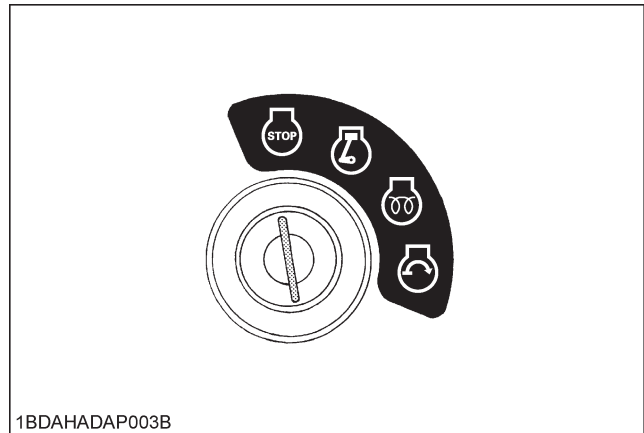


(1) Throttle lever
 : "FAST"
 : "SLOW"

6. Insert the key into the key switch and turn clockwise 1 notch. Make sure the easy checker lights are ON.

■ Key Switch

- 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.]
- ON..... The engine keeps running.
- PREHEAT... The super glow plug is heated.
- START..... Apply the parking brake and turn the key switch to this position to start the engine.



: "OFF"
 : "ON"
 : "PREHEAT"
 : "START"

IMPORTANT :

- Do not turn the key switch to the "START" position while the engine is running.
- When the temperature is below 0 °C , run the engine at medium speed to warm up the lubricant of the engine and the 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.
- Do not use starting fluid or ether.
- When the ambient temperature is less than -15 °C , remove the battery from the machine and store it somewhere warm until the next operation.

7. Turn the key switch to the "PREHEAT" position clockwise, and hold it for about 5 seconds.

For the appropriate preheating time, refer to the table below:

Temperature	Preheating Time
Over 0 °C	5 sec.
Below 0 °C	10 sec.

8. Turn the key switch to the "START" position and release the key to the "ON" position when the engine starts.

■ Cold Weather Starting

When the ambient temperature is below -5 °C 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. To protect the battery and the starter, make sure that the starter is not continuously turned for more than 30 seconds.)

■ Block Heater (Option)

A block heater is available as an option from your local dealer. It will assist you in starting your machine when the ambient temperature is below -15 °C.

9. Check to see that all the lamps on the Easy Checker(TM) are "OFF".

If the lamp is still on, immediately stop the engine and determine the cause.

10. Warm the engine by running at medium speed.

STOPPING THE ENGINE

1. After slowing the engine to idle, turn the key switch to the "OFF" position.
2. Remove the key.
3. Do not leave the key switch "ON" (key in the "ON" position) as the battery will discharge when the engine is not running.
4. Set the parking brake.

■ Engine Stop Lever (Inside the hood)

The engine stops when the key switch is turned "OFF". If the engine does not stop, make sure the speed control pedal is in the "NEUTRAL" position, the PTO lever is "OFF", the mower lowered to the ground and apply the parking brake, then carefully get off the machine.

Then open the hood and turn engine stop lever (red mark) and hold it until the engine stops.

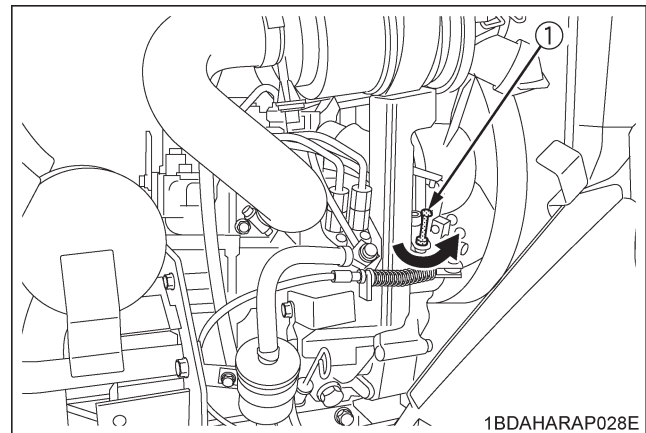
Then contact your local KUBOTA Dealer immediately.



WARNING

To avoid serious injury or death:

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



(1) Engine stop lever

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WARMING UP



WARNING

To avoid serious injury:

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

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

■ Warm-up and Transmission Oil in the Low Temperature Range

Hydraulic oil serves as transmission fluid. In cold weather, 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 can create problems with the hydraulic system or a damage to the hydraulic clutch.

To prevent the above, observe the following instructions: Warm up the engine at about 50% of rated rpm according to the table below:

Atmospheric temperature	Warm-up time requirement Higher
Higher than 0 °C	Approx. 5 minutes
-10 to 0 °C	5 to 10 minutes
-20 to -10 °C	10 to 15 minutes
Below -20 °C	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 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



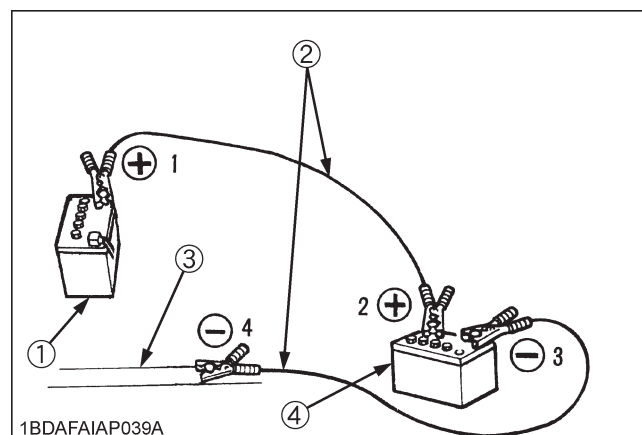
WARNING

To avoid serious injury:

- Keep cigarettes, sparks, and flames away from battery.
- If machine battery is frozen, do not jump start engine.
- Do not connect other end of negative (-) jumper cable to negative (-) terminal of machine battery.

When jump starting the engine, follow the instructions below to safely start the engine.

1. Bring helper vehicle with a battery of the same voltage as the disabled machine within easy cable reach. "THE VEHICLES MUST NOT TOUCH".
2. Apply the parking brakes of both vehicles and put the shift levers in neutral. Shut the engine off.
3. Put on safety goggles and rubber gloves.
4. Ensure the 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 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).



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

Connect cables in numerical order.
Disconnect in reverse order after use.

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 machine could result in severe damage to machine electrical system. Use only matching voltage source when "Jump starting" a low or dead battery condition.
-

OPERATING THE MACHINE

OPERATING NEW MACHINE

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

■ Changing Lubricating Oil for New Machines

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 would ordinarily be required.

For further details of change interval hours, see "SERVICE INTERVALS" in "MAINTENANCE" section.

■ Engine Break-in

After the first 50 hours of operation, change the engine oil and filter. (See "EVERY 100 HOURS" and "EVERY 200 HOURS" in "PERIODIC SERVICE" section.)

■ Machine Break-in

After the first 200 hours of operation, change the transmission fluid.

After the first 50 hours of operation, change the oil filter cartridge. (See "EVERY 200 HOURS" in "PERIODIC SERVICE" section.)



DANGER

To avoid serious injury or death:

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



WARNING

To avoid serious injury:

- Do not allow any person 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.
- Slow down before turning.
- To avoid tip over, operate up and down slopes, not across. Avoid sudden starts and stops on slopes. Slow down, and use extra caution when changing direction on a slope. Do not use the machine on a steep incline.
Park the machine on a firm, 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 drive a 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 obstruction, holes and small children. Use extra caution when a machine is equipped with Grass Catcher.



WARNING

To avoid serious injury:

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

STARTING

1. Adjust the operator's position.

■ Operator's Seat



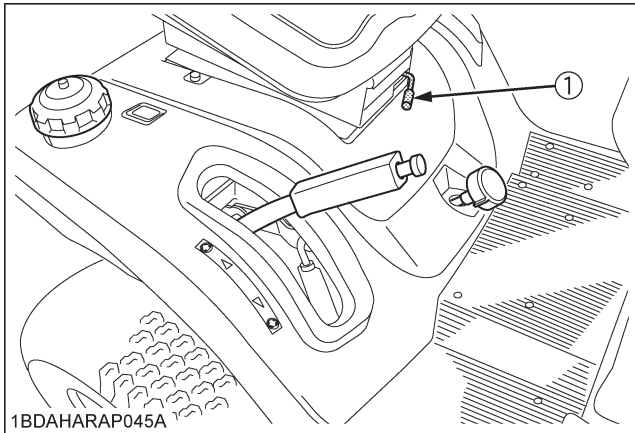
WARNING

To avoid serious injury:

- Make sure that the seat is completely secured after each adjustment.
- Do not allow any person other than the operator to ride on the machine.

◆ Travel adjustment

The operator's seat position can be adjusted forward and backward by 175 mm range by pulling the seat sliding lever.



(1) Seat sliding lever

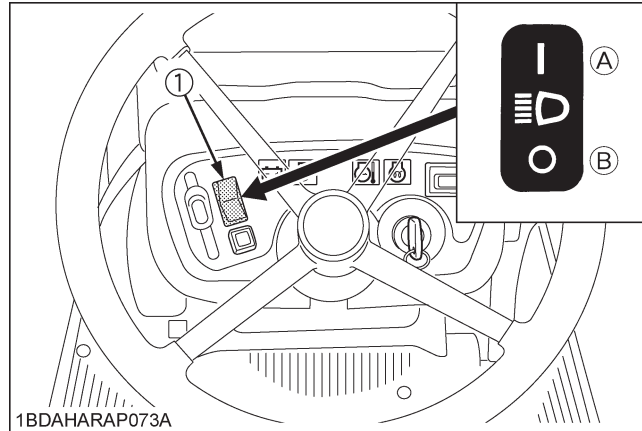
IMPORTANT :

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

2. Select Light Switch Positions

■ Head Light Switch

- (A).....Head lights ON.
- (B).....Head lights OFF.



(1) Head light switch

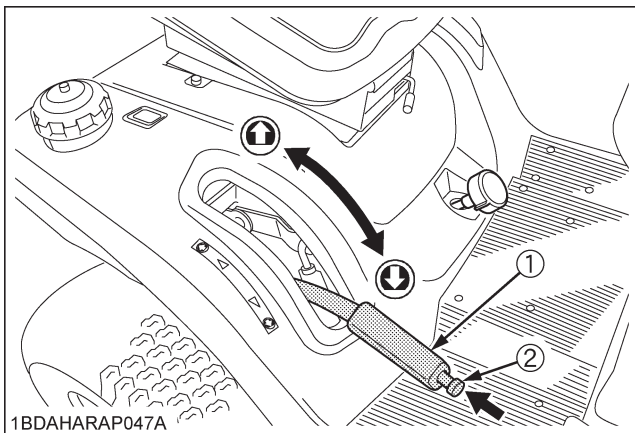
3. Start the engine.
See "OPERATING THE ENGINE" section.

4. Raise the implement.

Mower Lift Lever

The mower lift lever is used to raise and lower the mower deck. To raise the mower deck, lift the lever slightly, and then push the button at the top of the lift lever, and pull the lever upward.

To lower the mower deck, lift the lever slightly, and then push the button at the top of the lift lever, hold the button in and lower the lever down.

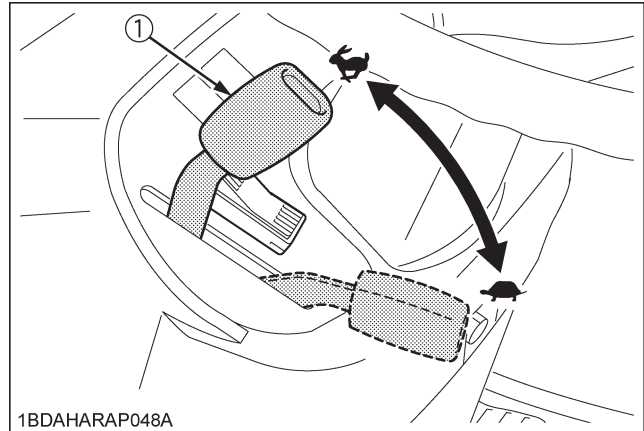


(1) Mower lift lever Ⓜ : "RAISE"
(2) Button Ⓜ : "LOWER"

5. Accelerate the Engine.

Throttle Lever

Pulling the throttle lever backward decreases the engine speed and pushing it forward increases the engine speed.

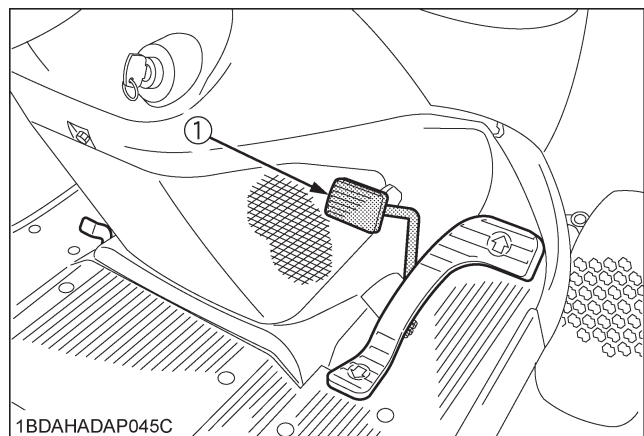


(1) Throttle lever Ⓜ : "FAST"
 Ⓜ : "SLOW"

6. Unlock the Parking Brake.

Parking Brake

To release the parking brake, depress the brake pedal again.



(1) Brake pedal

7. Depress the Speed Control Pedal.

■ Speed Control Pedal



WARNING

To avoid serious injury:

- Do not operate if the machine moves on a level ground with foot off Speed Control Pedal.

"FORWARD" (↑)

Depress the speed control pedal with the toe of your right foot to move forward.

"REVERSE" (↓)

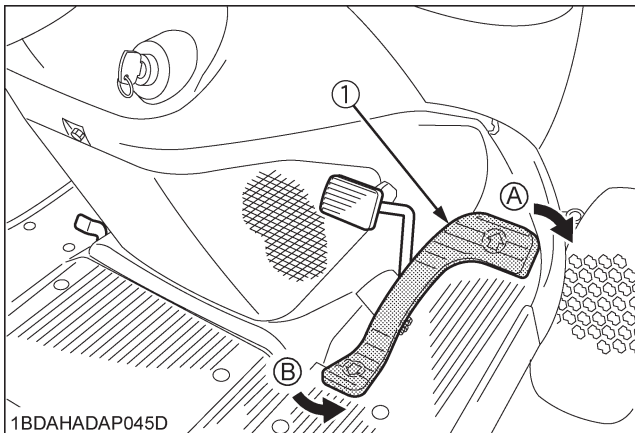
Depress the speed control pedal with the heel of your right foot to move in reverse.

Depress the speed control pedal a little and you can drive slowly.

To increase travel-speed, depress the speed control pedal more until the desired speed is reached.

NOTE :

- When the parking brake is applied, the speed control pedal is locked in the "NEUTRAL" position.



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(1) Speed control pedal

(A) "FORWARD"

(B) "REVERSE"

STOPPING

■ Stopping

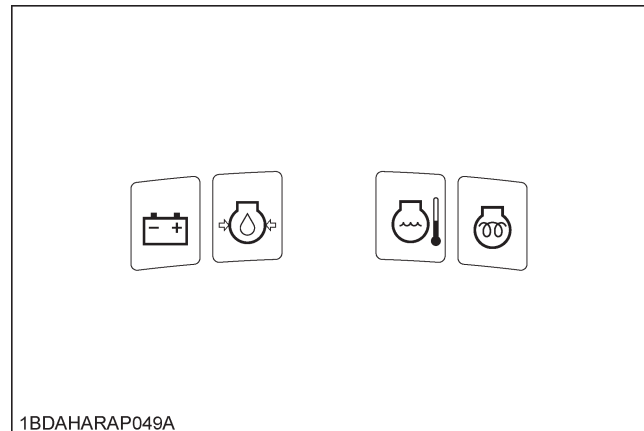
1. Slow down the engine.
2. Step on the brake pedal.
3. After the machine has stopped, disengage the PTO, lower the implement to the ground and set the parking brake.

CHECK DURING DRIVING

■ Immediately Stop the Engine if:

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

While driving, make the following checks to see that all the parts are functioning normally.




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(1) Easy Checker(TM)

■ Easy Checker (TM)

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

Never operate the machine while Easy Checker(TM) lamp is "ON".

: Engine oil pressure


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

If this should happen during operation, and it does not go off when the engine is accelerated to more than 1000 min⁻¹ (rpm), check the level of engine oil. (See "Checking Engine Oil Level" in "DAILY CHECK" in "PERIODIC SERVICE" section.)

: Electrical charge

If the alternator is not charging the battery, the warning lamp in the Easy Checker(TM) will come on.

If this should happen during operation, check the electrical charging system or consult your local KUBOTA Dealer.

: Coolant temperature

If this warning light comes on during operation, take the actions according to "Checking and Cleaning Radiator to Prevent Overheating".

: Glow plug Indicator (Pre-heating Indicator)

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

NOTE :

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

■ Engine Overheating Precautions

If the coolant temperature warning light come on or the buzzer sounds, take the following actions.

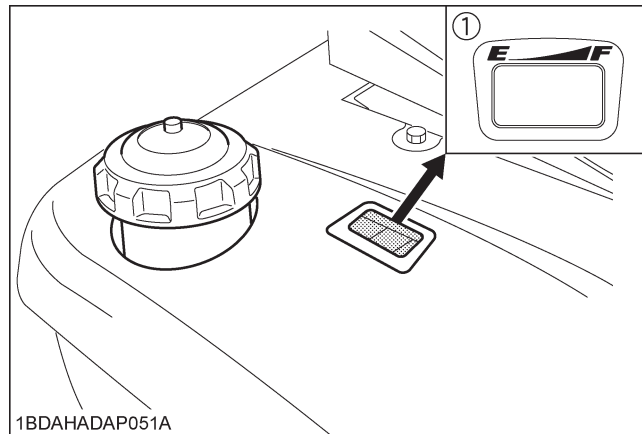
1. Stop machine operation in a safe place, disengage the mower deck and keep the engine idling.
2. Don't stop the engine immediately; stop it after about 5 minutes of unloaded idling.
3. Shut off the engine and keep well away from the machine for 10 minutes or while the steam is blown out.
4. Checking that there is no danger of being burned, get rid of the causes of overheating according to the manual, see "TROUBLESHOOTING" section.
Start the engine again.

■ Fuel Gauge

The fuel gauge indicates the fuel level.

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

If this should happen, the fuel system should be bled. (See "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)



(1) Fuel gauge

(E) "EMPTY"
(F) "FULL"

IMPORTANT :

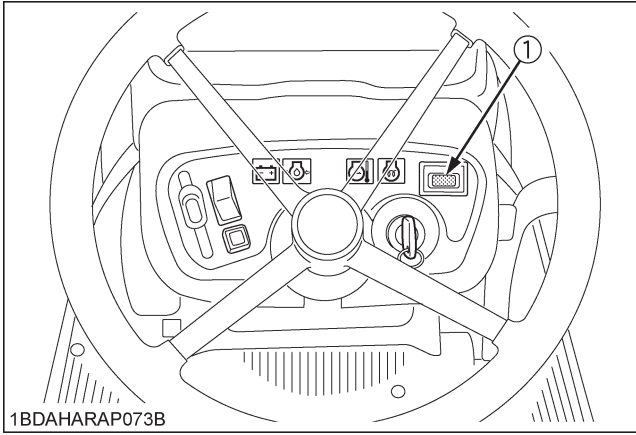
- Use proper fuel for your machine, or it damages the machine.
GR1600-ID-2: Diesel fuel
- Do not refuel over "F". Fill the tank only to the bottom of the filler neck in the fuel tank.

Hourmeter

The hourmeter indicates in 5 digits the hours the machine has been used; the last digit indicates 1/10 of an hour.

NOTE :

- As the hour meter works electrically, it starts to work when the key switch is turned to "ON", regardless of the engine running or not.



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(1) Hours used

PARKING

Parking



WARNING

To avoid serious injury:

Before leaving the operator's position:

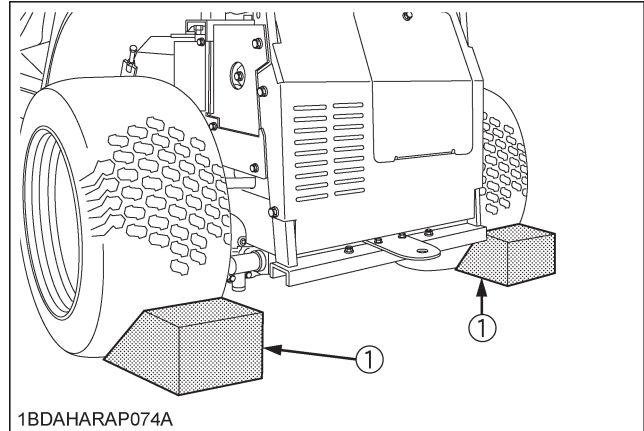
- Apply parking brake.
- Lower all implements to the ground.
- Shut off the engine.
- Remove the key.

1. When parking, be sure to set the parking brake.

To apply the parking brake;

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

2. Before getting off the machine, disengage the PTO, lower all implements to the ground, place all control levers in their "NEUTRAL" positions, set the parking brake, stop the engine and remove the key.
3. If it is necessary to park on an incline, be sure to chock the wheels to prevent accidental rolling of the machine.



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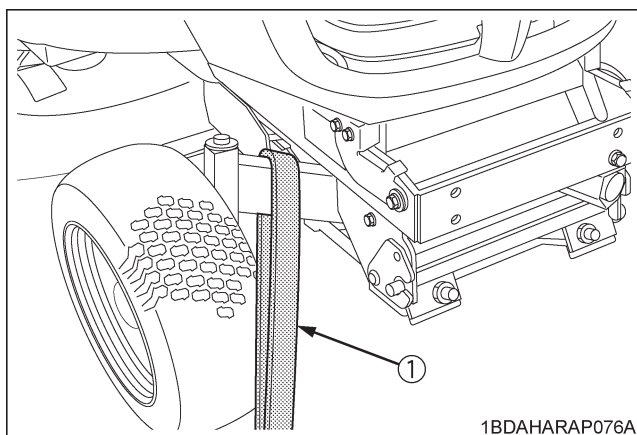
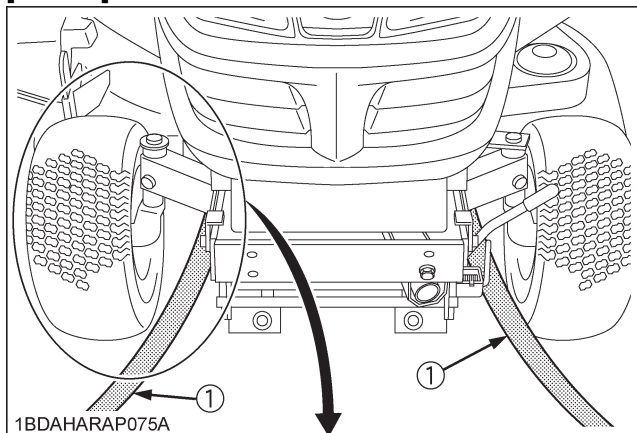
(1) Chocks

TRANSPORTING

IMPORTANT :

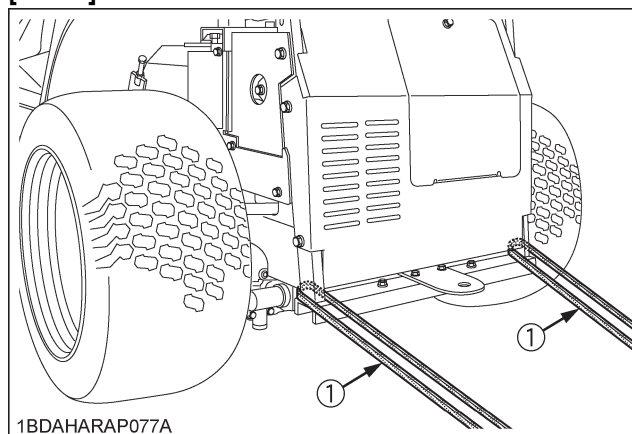
1. Transport the machine on a suitable truck or trailer.
 - To prevent the hood from opening by wind while in transit, it is necessary to either load the machine forward or use a suitable tie down for the hood.
 - Apply the parking brake and lift down the mower deck to the lowest position.
 - Remove 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

[REAR]



(1) Heavy-duty strap

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

OPERATING THE MOWER

MAKING THE MOST OF YOUR MOWER

1. When using your 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, etc., 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 should be mowed to keep the grass approximately 50 to 80 mm 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 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, then cut off only the top inch.
5. For best appearance, grass should be cut in the afternoon or evening when it is free of moisture.



WARNING

To avoid serious injury:

- Clear the work area of objects which might be picked up and thrown by 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.

ADJUSTING CUTTING HEIGHT



DANGER

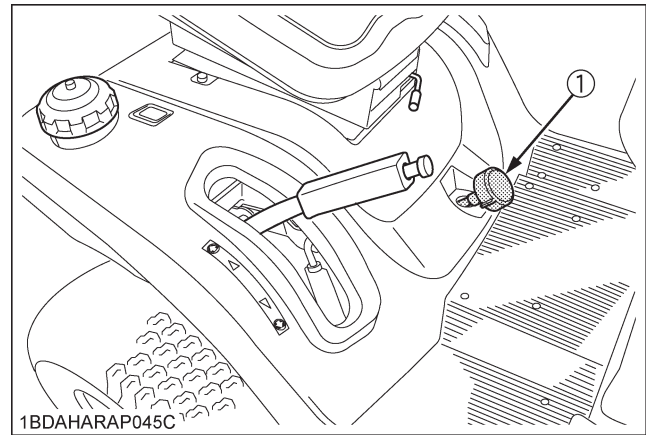
To avoid serious injury or death:

- Do not operate mower in the "TOP" position.

■ Cutting Height Control Dial

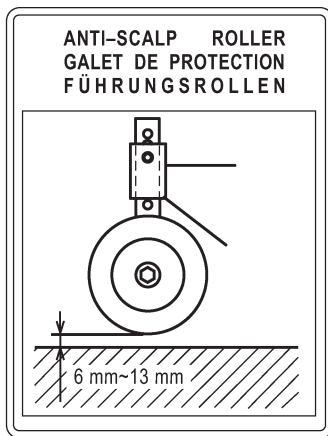
Raise the mower deck to the top position. Turn the cutting height control dial to the desired cutting height.

Lower the mower deck, and then the mower deck will be set to the cutting height.

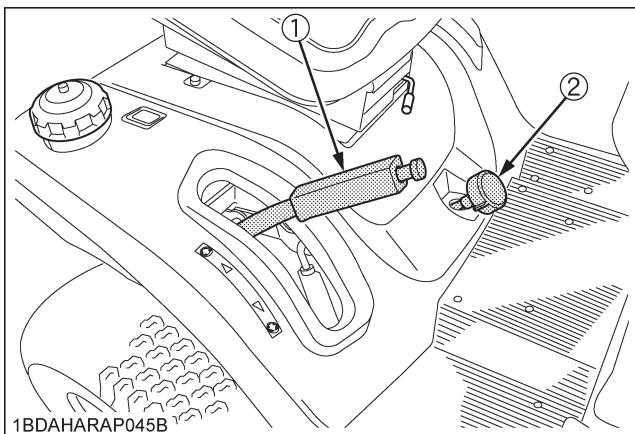


(1) Cutting height control dial

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, pull the mower lift lever up to raise the mower deck to the transport position.
3. Turn the cutting height control dial to adjust the height.
4. Set the anti-scalp rollers' height as shown to keep clearance between rollers and ground from 6 mm (0.25 in.) to 13 mm (0.5 in.).



1BDABANAP108A

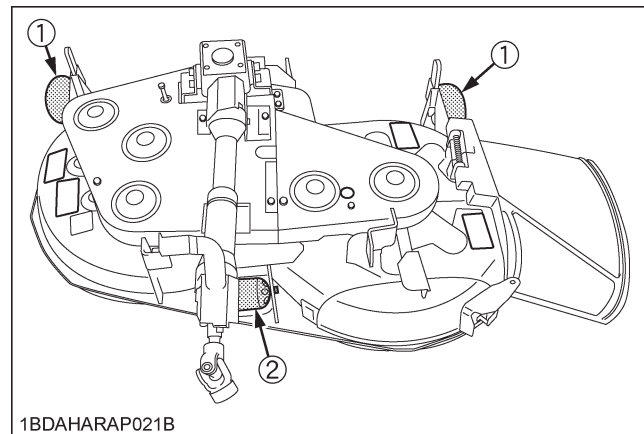


1BDAHARAP045B

- (1) Mower lift lever
(2) Cutting height control dial

5. Lower the mower deck by mower lift lever, pushing in the release button and lowering the lever while holding in the release button. This lowers the mower deck from the "Transport" position to the "Operating" position.
6. Use the higher settings for mowing in a rough area or when mowing tall grass. Lower settings should be used only for smooth lawns where short grass is desired.

[RCK42]



1BDAHARAP021B

- (1) Anti-scalp roller (Front)
(2) Anti-scalp roller (Rear)

OPERATING THE MOWER



DANGER

To avoid serious injury or death:

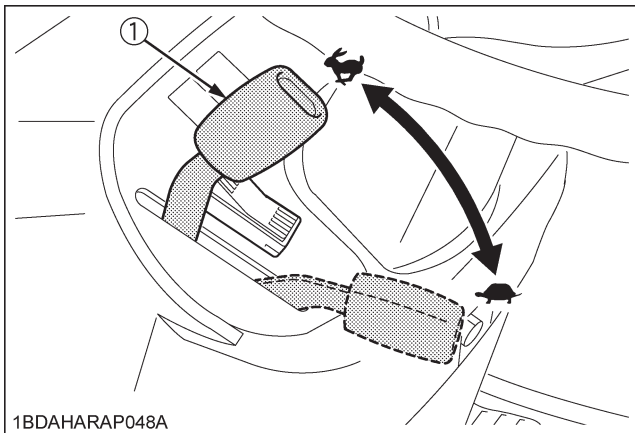
- Do not operate the mower without the discharge deflector being in place properly.

NOTE :

- This machine is equipped with the KRA (KUBOTA Reverse Awareness) system. This feature shuts down the engine if the operator attempts reverse travel while any PTO driven implement is engaged. The purpose of the KRA system is to increase operator awareness of the risk of back-over accidents. The KRA system incorporates an override switch on the dash that allows the operator to override the system and keep the PTO engaged during reverse travel. KUBOTA strongly recommends against overriding the KRA system, but if the operator deems it absolutely necessary and safe to do so, he may activate the override switch. The override switch light flashes while activated as a reminder to the operator that the PTO (i.e. mower, grass catcher, snowblower, etc.) remains engaged during reverse travel. The operator should return the KRA system to normal operating mode as soon as possible by momentarily disengaging the PTO.

■KRA system Normal Operating Mode

1. Start the engine.
2. Set the throttle lever to the "FAST" position.



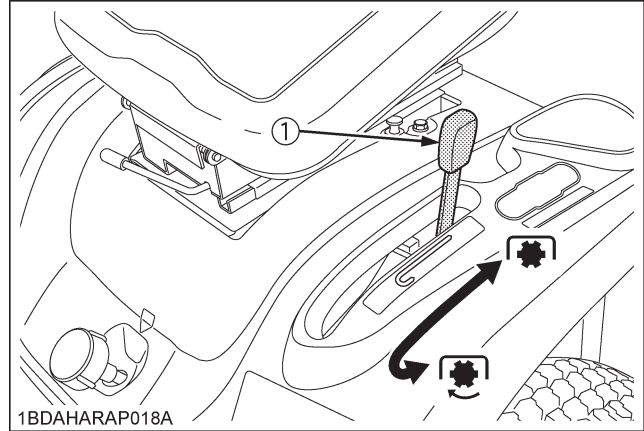
1BDAHARAP048A

- (1) Throttle lever
- ☛: "FAST" position
 - ☛: "SLOW" position

3. Push down the PTO lever to the "ENGAGED" position.

■PTO Lever

To engage mower blade, push the PTO lever to the "ENGAGED" position. To stop the mower blades, pull the PTO lever to the "DISENGAGED" position.



1BDAHARAP018A

- (1) PTO lever
- ☛: "ENGAGED"
 - ☛: "DISENGAGED"

NOTE :

- When attempting to operate the machine in reverse with the PTO engaged, the engine will shut down.
- If you dismount from the seat while the PTO is running, the engine will stop automatically. (Operator Presence Control)
- Before starting the engine, pull the PTO lever to the "DISENGAGED" position and depress brake pedal, otherwise, the starter will not operate.
- For best cut quality and performance, always mow with the throttle lever in "FAST" position.

Use the speed control pedal to select the desired mowing speed range.

- (1) During heavy duty use, operate the machine at a slower ground speed or go over the area twice. The first pass should be with the deck at the highest cutting position, then mow to desired height.
- (2) The mower will not cut cleanly if the ground speed is too high or if the blade speed drops due to an overload.

1. Control ground speed by using the speed control pedal of the machine.

NOTE :

- Keep the mower deck in the fully raised position when the mower is not engaged.

■ KRA system Override Mode



WARNING

To avoid serious injury:

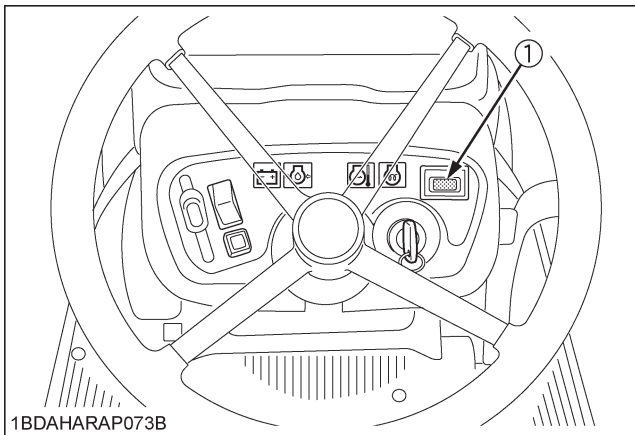
- Before and when backing, look down and behind the machine to be sure no bystanders, especially children, have entered the area.

NOTE :

- KRA system override switch allows the operator to mow or operate attachments while in reverse if the operator deems it absolutely necessary and safe to do so. (i.e. the operator should make sure that no bystanders, especially children, have entered the area.)

If the owner does not wish certain operators to utilize the override switch allowing mowing or implement operation in reverse, then he or she may remove the fuse from the system to prevent override. (See NOTE (4) below.)

1. Start the engine.
2. Set the throttle to the "FAST" position.
3. Push the PTO lever to the "ENGAGED" position.
4. Stop the machine (Set the speed control pedal to NEUTRAL) or depress the speed control pedal forward.
5. Push the KRA system override switch.

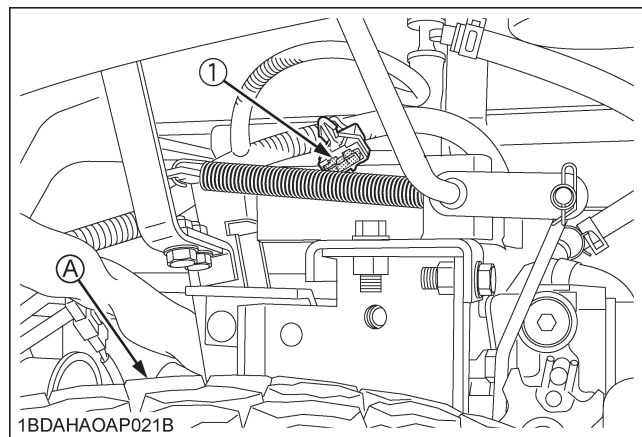


(1) KRA system override switch

6. Look down and behind the machine to be sure that no bystanders, especially children have entered the area.
7. Depress the speed control pedal with the heel of your right foot to move in the reverse direction.

NOTE :

- (1) The KRA system override mode can not be activated by pushing the switch while the speed control pedal is depressed to initiate rearward movement.
- (2) The override switch light flashes while activated as a reminder to the operator that PTO (i.e. mower, tiller, etc.) remains engaged during reverse travel.
- (3) The KRA system override mode will remain activated until the PTO lever is returned to the "DISENGAGED" position.
- (4) To prevent use of the KRA system override mode, remove the fuse located under the fender:
 - The engine can be started.
 - The machine PTO can be engaged if the speed control pedal is in the neutral or forward position.
 - Selection of PTO operation (i.e. mower, tiller etc.) during reverse travel is not possible.



(1) Fuse

(A) Left rear tire



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 with heat shields or guards removed.

WHEN OPERATING MULCHING FUNCTION



DANGER

To avoid serious injury or death:

- Never change the position of the mulching cover when engine is running or blades are turning.
- When mulching, operate mower with mulching cover securely locked in the "CLOSE" position.

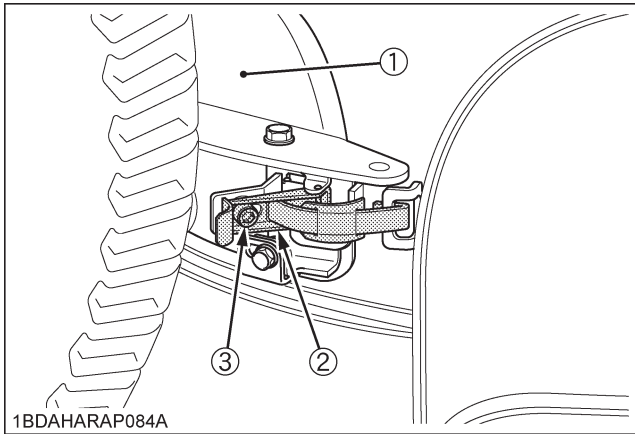


WARNING

To avoid serious injury:

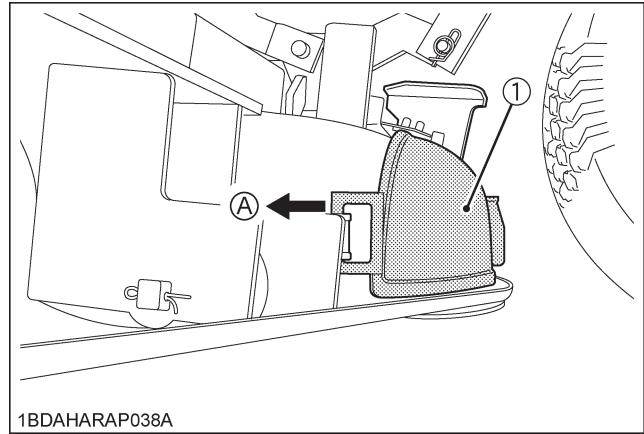
- Shut off the engine and remove the key.

1. Park the machine on the firm and level surface.
2. Loosen the bolt with a hexagonal hole (M6).
3. Unlatch the clamp holding the mulching cover.



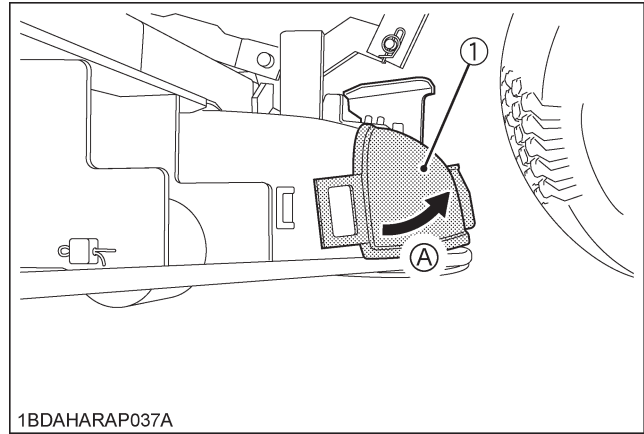
- 1BDAHARAP084A
- (1) Mulching cover
 - (2) Clamp
 - (3) Bolt with a hexagonal hole (M6)

4. Unhook the mulching cover in the back.
 - (1) Slide the mulching cover a little backward.



- 1BDAHARAP038A
- (1) Mulching cover
 - (A) "SLIDE"

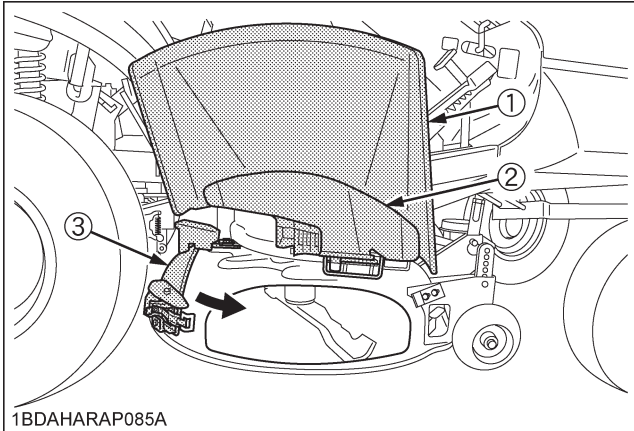
- (2) Lift the mulching cover slightly and unhook it.



- 1BDAHARAP037A
- (1) Mulching cover
 - (A) "LIFT"

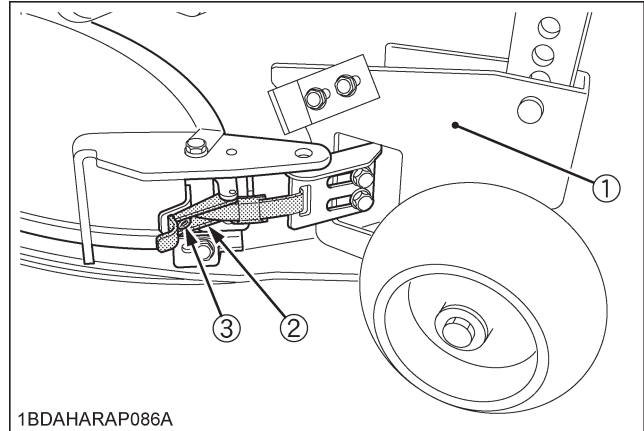
5. Lift the discharge deflector and the mower cover.

6. While lifting the mulching cover a little, move the mulching cover forward and hook the rear of the cover onto the deck.
Release the mower cover and discharge deflector then place them on the stay of mulching cover.

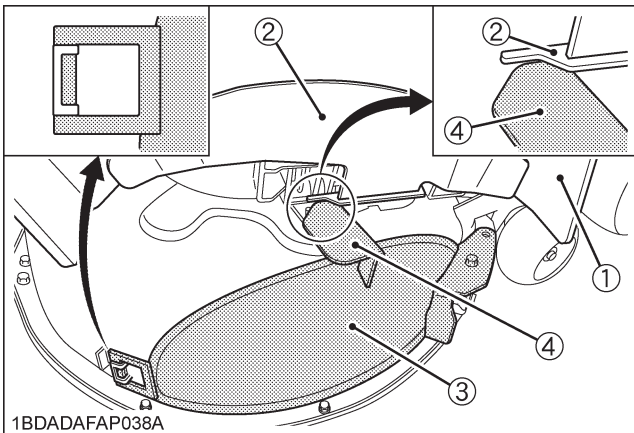


- (1) Discharge deflector
(2) Mower cover
(3) Mulching cover

7. Almost fasten the clamp of the mulching cover, and tighten the bolt with a hexagonal hole (M6) to 9.81 to 11.3 N-m (1.0 to 1.15 kgf-m).
Make sure the cover is fixed to the mower deck securely with no gap for discharge.



- (1) Mower deck
(2) Clamp
(3) Bolt with a hexagonal hole (M6)



- (1) Discharge deflector
(2) Mower cover
(3) Mulching cover
(4) Stay of mulching cover

WARNING
To avoid serious injury:
● Do not operate the mower with the mulching cover not certainly hooked.

TO CHANGE THE OPERATING MODE FROM MULCHING TO SIDE DISCHARGE



DANGER

To avoid serious injury or death:

- Never operate the mower with either the discharge deflector or the mower cover removed.
- When side discharging, operate mower with mulching cover securely locked in the "OPEN" position and discharge deflector "DOWN" and in place.



WARNING

To avoid serious injury:

- Shut off the engine and remove the key.

To change the mode, reverse the procedures in "WHEN OPERATING MULCHING FUNCTION".

1. Park the machine on the firm and level surface.
2. Lift the discharge deflector and the mower cover.
3. Unlatch the clamp of the mulching cover.
4. While lifting the mulching cover a little, move the mulching cover backward and hook in the back securely.
5. Put back the discharge deflector and the mower cover to the original position.
6. Fasten the clamp of the mulching cover and make sure it is fixed to the mower deck securely.



WARNING

To avoid serious injury:

- Do not operate the mower with the mulching cover not certainly hooked.

ADJUSTING THE CLAMP



WARNING

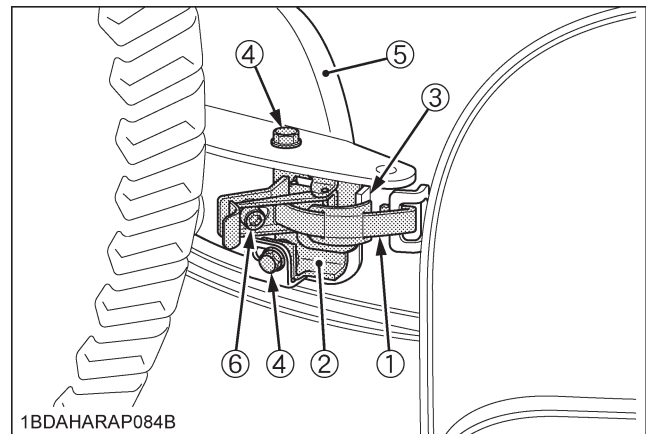
To avoid serious injury:

- Shut off the engine and remove the key.

Make sure the mulching cover is fixed securely. If not, adjust the clamp stay and the hook plate to fix it.

■ Side Discharge Position

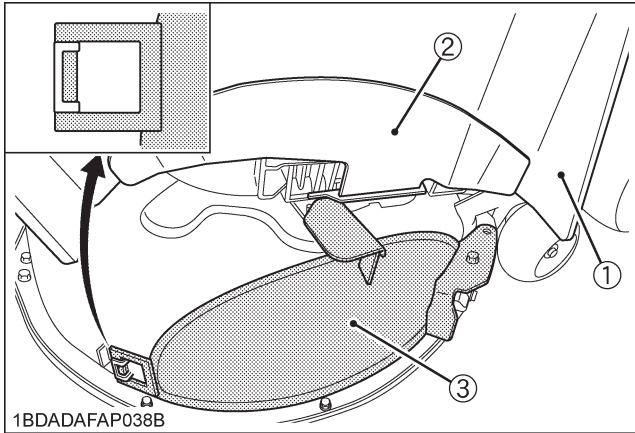
1. Hang the rear part of the mulching cover on the hook in the rear of the mower deck.
2. Loosen the bolts of the clamp stay.
3. While pushing the mulching cover to the mower deck stopper, almost fasten the clamp and tighten the bolt with a hexagonal hole (M6) to 9.81 to 11.3 N-m (1.0 to 1.15 kgf-m).
4. Adjust the clamp stay so that the clamp would not be loosen, and then fasten the bolts securely.



- 1BDAHARAP084B
- (1) Clamp
 - (2) Clamp stay
 - (3) Stopper
 - (4) Bolt
 - (5) Mulching cover
 - (6) Bolt with a hexagonal hole (M6)

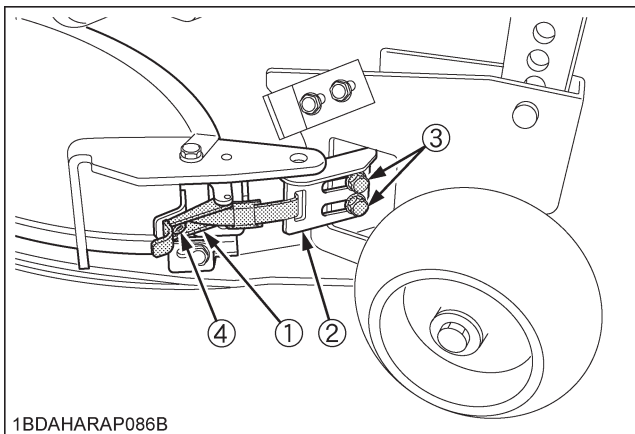
■ Mulching Position

1. Put the mulching cover in the mulching position.



- (1) Discharge deflector
- (2) Mower cover
- (3) Mulching cover

2. Loosen the bolts of the hook plate.
3. While pushing the mulching cover to the front fully, almost fasten the clamp and tighten the bolt with a hexagonal hole (M6) to 9.81 to 11.3 N-m (1.0 to 1.15 kgf-m).
4. Adjust the hook plate so that the clamp would not be loosen, and then fasten the bolts securely.



- (1) Clamp
- (2) Hook plate
- (3) Bolt
- (4) Bolt with a hexagonal hole (M6)

IMPORTANT :

- Do not touch the clamp stay for adjusting the clamp in the mulching position.

CLEANING



WARNING

To avoid serious injury:

- Do not clean the machine with engine running.
- Be sure to set the parking brake during cleaning.

CLEANING WITH WATER

The use of a high pressure cleaner is not recommended. However if you use one, take care not to splash water on engine parts such as the air filter, exhaust muffler, battery. Do not direct jet towards hydraulic elements.

CLEANING THE MOWING SYSTEM

After each use, carefully clean the mowing deck, particularly underneath. Switch the engine off before cleaning your machine.

Operate the mowing system for a few minutes after cleaning.

NOTE :

- If the mower was used under very difficult conditions (very wet grass, mowing in a very low position), it may be necessary to remove the cutting deck to clean it. At the same time, you should take the opportunity to check the condition of the blades, belts and bolts and replace them if needed.

TIRE AND WHEELS

TIRES



WARNING

To avoid serious injury:

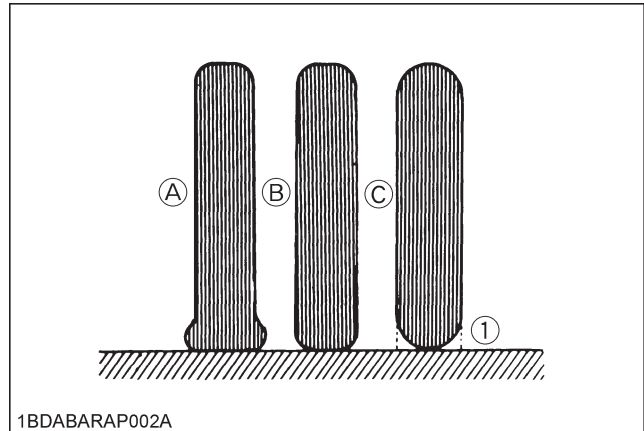
- Do not attempt to mount a tire. This should be done by a qualified person with the proper equipment.
- Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure shown in the Operator's Manual.
- Inflation pressure in front tires rises quickly when using compressed air.



WARNING

To avoid serious injury:

- Never operate machine with a loose rim, wheel, or axle.
- Whenever bolts are loosened, retighten to specified torque.
- Check all bolts frequently and keep them tightened.



(1) Ground

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

■ Inflation Pressure

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

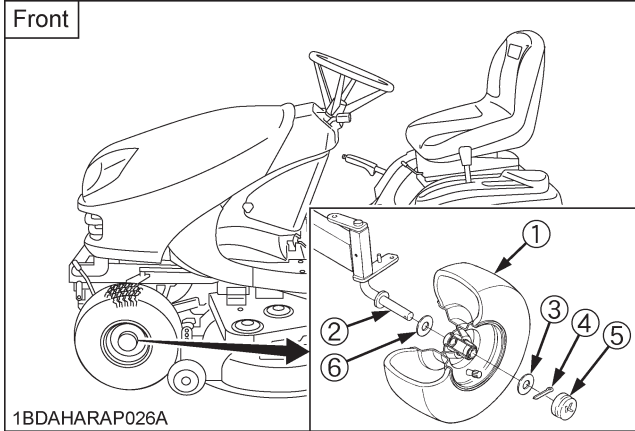
[Turf tire]

	Tire sizes	Recommended Inflation Max. Pressure
Front	15 x 6.00 - 6, 4PR	100 kPa (1.0 kgf/cm ²)
Rear	20 x 10.00 - 8, 4PR	70 kPa (0.7 kgf/cm ²)

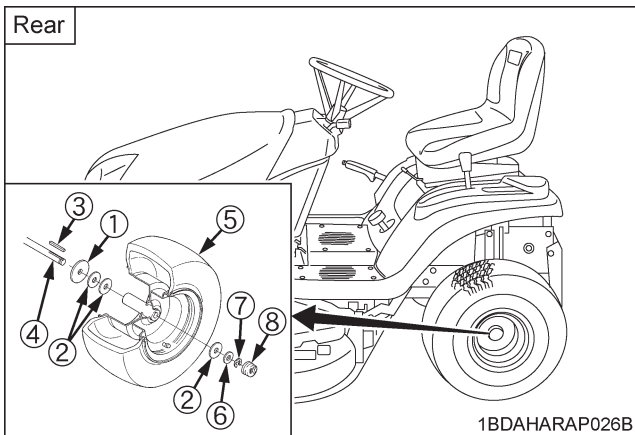
WHEELS

IMPORTANT :

- When re-fitting wheels, make sure the cotter pin of the front wheel and the retaining ring of the rear wheel are set properly.



- (1) Front tire assy
- (2) Axle
- (3) Plain washer
- (4) Cotter pin
- (5) Front wheel cap
- (6) Plain washer (Thin type)



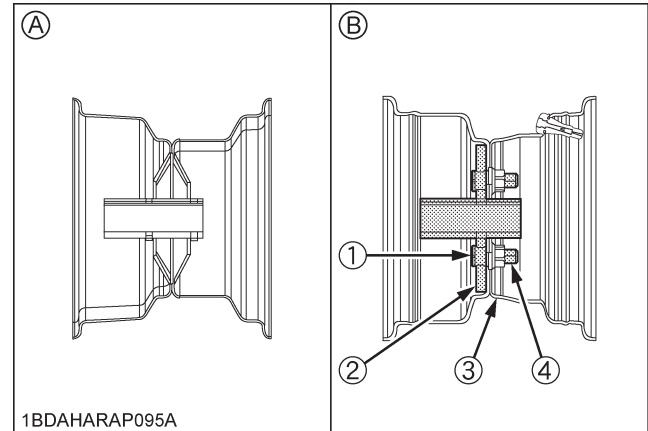
- (1) Plain washer
- (2) Plain washer
- (3) Key
- (4) Rear axle
- (5) Rear tire
- (6) Plain washer
- (7) Retaining ring
- (8) Rear wheel cap

NOTE :

- When removing the wheel, remove the retaining ring.

IMPORTANT :

- In case you loosen the nuts, tighten the wheel nut to the following torques then recheck after travelling 200 m, changing directions several times.



- (1) Bolt
 - (2) Adapter
 - (3) Wheel
 - (4) Nut: Outside 108 to 125 N-m
(11.1 to 12.7 kgf-m)
- (A) Without bolt and nut
(B) With bolt and nut

MAINTENANCE

ENGLISH

SERVICE INTERVALS

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

No.	Items		Indication on hour meter (Hr)											After since	Ref. page		
			50	100	150	200	250	300	350	400	450	500	550				600
1	Engine oil	Change	☉			○					○			○	every 200 Hr	54	*3
2	Engine oil filter	Replace	☉			○					○			○	every 200 Hr	54	*3
3	Transmission oil filter	Replace	☉			○					○			○	every 200 Hr	55	*3
4	Engine start system	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	45	
5	OPC system	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	46	
6	PTO control system	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	46	
7	Oiling	-	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	48	
8	Greasing	-	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	48	
9	Mower gear box oil	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	47	
		Change	○		○			○			○			○	every 150 Hr	53	
10	Air cleaner element	Clean	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	47	*1
		Replace													every 1 year	59	
11	Battery condition	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50 Hr	50	
12	Brake	Check		○		○		○		○		○		○	every 100 Hr	52	
13	Fan drive belt	Check		○		○		○		○		○		○	every 100 Hr	52	*2
14	Fuel filter element	Check		○		○		○		○		○		○	every 100 Hr	52	
		Replace								○					every 400 Hr	57	*2
15	Front axle pivot	Adjust		☉		○				○				○	every 200 Hr	56	*2 *5
16	Transmission fluid	Change								○					every 400 Hr	56	
17	Transmission strainer	Clean								○					every 400 Hr	57	
18	Fuel injection nozzle injection pressure	Check													every 1500 Hr	58	*2
19	Injection pump	Check													every 3000 Hr	59	*2

No.	Items		Indication on hour meter (Hr)											After since	Ref. page				
			50	100	150	200	250	300	350	400	450	500	550				600		
20	Radiator	Clean															every 2000 Hr or 2 years	58	*4
21	Coolant	Change															every 2000 Hr or 2 years	58	*4
22	Fuel line	Check															every 1 year	59	*R
		Replace															every 4 years	61	*2
23	Radiator hose and clamp	Check															every 1 year	59	*R
		Replace															every 4 years	61	*2
24	Intake air line	Check															every 1 year	60	*R
		Replace															every 4 years	61	
25	Mower gear box oil seal	Check															every 1 year	60	*R
		Replace															every 4 years	61	*2
26	Engine breather hose	Check															every 1 year	60	*R
		Replace															every 4 years	61	*2
27	Fuel system	Bleed															Service as Required	65	
28	Fuse	Replace														61			
29	Blade	Replace														63			
30	Mower belt	Replace														64			

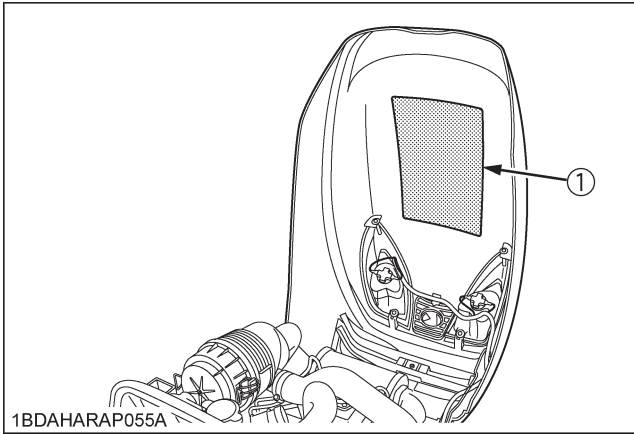
IMPORTANT :

- The jobs indicated by © must be done initially.
 - *1 This maintenance should be done daily more often in dusty conditions than in normal conditions.
Suggested cleaning interval is every 100 hours in normal conditions.
 - *2 These items should be serviced by an authorized KUBOTA Dealer.
 - *3 The initial 50 hours should not be a replacement (changing) cycle.
 - *4 Every 2000 hours or every 2 years whichever comes faster.
 - *5 The initial 100 hours should not be an adjustment cycle.
 - *R Replace if any deterioration (crack, hardening, scar, or deformation) or damage occurred.

PERIODIC SERVICE CHART LABEL

This label is for your quick reference. The label shows the recommended services from daily to every 4 years, including fluid capacities, tire pressure and so on.

For detail, refer to operator's manual.



(1) Periodic service chart label

LUBRICANTS, FUEL AND COOLANT

Place	Capacities	Lubricants, fuel and coolant
Fuel	18 L	<ul style="list-style-type: none"> • No.2-D diesel fuel • No.1-D diesel fuel if temperature is below -10 °C
Coolant	2.1 L	Fresh clean water with anti-freeze
Recovery tank	0.25 L	
Engine crankcase	1.2 L *1	<ul style="list-style-type: none"> • Engine oil: API Service Classification (See following "Engine Oil".) Above 25 °CSAE30, SAE10W-30 or 15W-40 0 to 25 °CSAE20, SAE10W-30 or 15W-40 Below 0 °CSAE10W, SAE10W-30 or 15W-40
Transmission case	2.8 L	<ul style="list-style-type: none"> • KUBOTA UDT or SUPER UDT fluid*2
Front axle case	---	
Mower gear box	0.35 L	

Note *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.

Greasing	No. of greasing points	Capacity	Type of grease
Engine transmission universal joint	1	Until grease overflows	<ul style="list-style-type: none"> • Multipurpose EP2 Grease (NLGI Grade No.2)
King Pin	2		
Front axle (Center Pin)	---		
Speed control pedal shaft	4	Moderate amount	<ul style="list-style-type: none"> • Oil
PTO lever	1		
Mower lift lever	1		
Seat adjuster	2		
Around the hole of the mower link	2		
Around the pin of the mower link	2		
Pivot of mower link	2		
Pivot of lift arm	2		
Front link	2		
Link fulcrum	2		
Throttle cable	2		
[MOWER]			
Mower universal joint	1		
Belt tension pivot	1		

NOTE :

◆ **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 above:
- With the emission control now in effect, the CF-4 and CG-4 lubricating oils have been developed for use of a low-sulfur fuel on on-road vehicle engines. When an off-road vehicle engine runs on a high-sulfur fuel, it is advisable to employ the "CF or better" lubricating oil with a high Total Base Number (TBN of 10 minimum).
- Refer to the following table for the suitable API classification engine oil according to the engine type (with internal EGR, external EGR or non-EGR) and the fuel (low-sulfur or high-sulfur fuel).

Fuel used	Engine oil classification (API classification)	
	Oil class of engines except external EGR	Oil class of engines with external EGR
High Sulfur Fuel [≥ 0.05% (500 ppm)]	CF (If the "CF-4, CG-4, CH-4 or CI-4" lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals. (approximately half))	---
Low Sulfur Fuel [<0.05% (500 ppm)] or Ultra Low Sulfur Fuel [<0.0015% (15 ppm)]	CF, CF-4, CG-4, CH-4 or CI-4	CF or CI-4 (Class CF-4, CG-4 and CH-4 engine oils cannot be used on EGR type engines)

EGR: Exhaust Gas Re-circulation

- The CJ-4 engine oil is intended for DPF (Diesel Particulate Filter) type engines, and cannot be used on this machine.

	except external EGR	with external EGR
Model	GR1600-ID-2	---

◆ **Fuel:**

- Cetane number of 45 is minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20 °C or elevations above 1500 m.
- If diesel fuel with sulfur content greater than 0.5% (5000 ppm) sulfur content is used, reduce the service interval for engine oil and filter by 50%.
- NEVER use diesel fuel with sulfur content greater than 0.05% (500 ppm) for EXTERNAL EGR type engine.
- DO NOT use diesel fuel with sulfur content greater than 1.0% (10000 ppm).
- 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)
- If the engine is to be operated within the European Union on diesel or non-road gas-oil, a fuel with sulphur content lower than 10 mg/kg (20 mg/kg at point of final distribution), a cetane number greater than 45 and a fatty acid methyl ester (FAME) content lower than 7% volume per volume (v/v) shall be used.

◆ **Transmission Oil:**

The oil used to lubricate the transmission is also used as hydraulic fluid. To insure proper operation of the hydraulic system and to complete lubrication of the transmission, it is important that a multi-grade transmission fluid is used in this system. We recommend the use of **KUBOTA UDT or SUPER UDT fluid** for optimum protection and performance. (Consult your local KUBOTA Dealer for further detail.)

Do not mix different brands together.

- Indicated capacities of water and oil are manufacturer's estimate.

PERIODIC SERVICE



WARNING

To avoid serious injury:

- Do not work under any hydraulically supported devices. They can settle, suddenly leak down, or be accidentally lowered. If necessary to work under the machine or any machine elements for servicing or adjustment, securely support them with stands or suitable blocking beforehand.

HOW TO OPEN THE HOOD

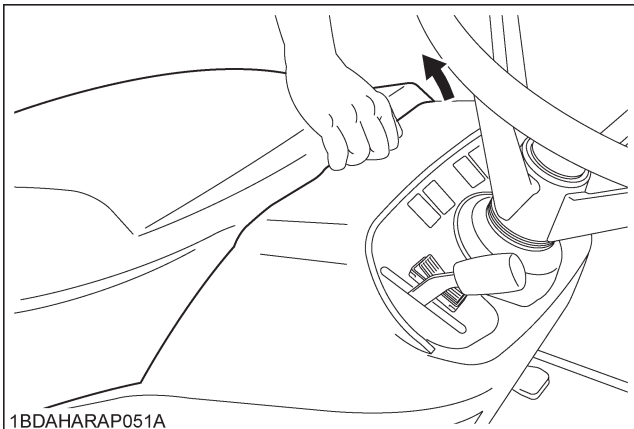


WARNING

To avoid serious injury from contact with moving parts:

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

To open the hood, lift the hood as shown in the figure.



1BDAHARAP051A

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:

- 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.

	No.	Check item	Ref. Page
Walking around the machine	1	Tire pressure, wear and damage	33, 43
	2	Oil and water leak	---
	3	Engine oil level	41
	4	Transmission fluid level	44
	5	Coolant level in the recovery tank	44
	6	Damage to machine body, tightness of all bolts and nuts	---
	7	Radiator screen	42
	8	Panel screen	42
	9	Inside of the bonnet	43
	10	Brake free travel	52
	11	Fuel level	42
	12	Check air cleaner	47
Mower	1	Oil leak	47
	2	Make sure blade cap screws are tight	63
	3	Blade wear or damage	63
	4	Around the mower belt	43
	5	Check all hardware.	---
	6	Make sure all pins are in place	---
	7	Mower deck cleaning	---
	8	Greasing <ul style="list-style-type: none"> ● Mower universal joint ● Belt tension pivot 	45

	No.	Check item	Ref. Page
While sitting in the operator's seat	1	Speed control pedal Brake pedal	52
	2	Brake lock	---
	3	Other movable parts	45
Turning the key switch "on"	1	Performance of the easy checker light	21
Starting the engine	1	Color of the exhaust fumes	---
	2	Engine start system, OPC system, PTO control system. If either of these do not operate properly, contact your local KUBOTA Dealer immediately.	45 46
	3	Check for abnormal noise and vibration.	---
Others	1	Check the areas where previous trouble was experienced.	---

■ Checking Engine Oil Level

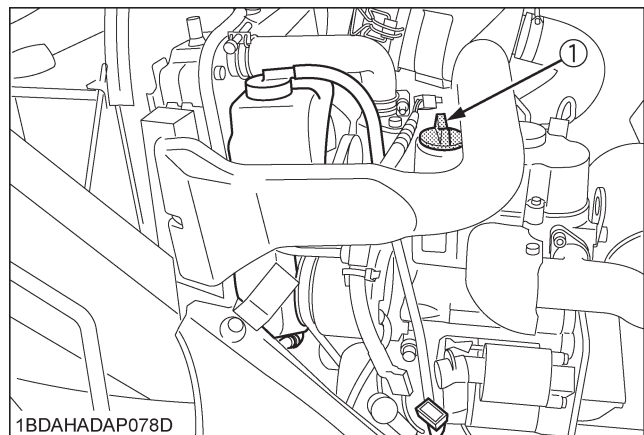


WARNING

To avoid serious injury:

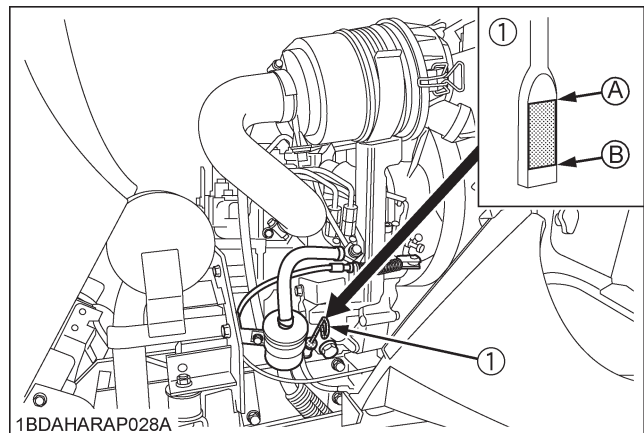
- Always stop the engine and remove the key before checking oil.

1. Check engine oil before starting and 5 minutes or more after the engine has stopped.
2. Wipe 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.



1BDAHADAP078D

(1) Engine oil port



1BDAHARAP028A

(1) 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 oil filter. Never mix 2 different types of oil.
- Use the proper Engine Oil SAE according to the ambient temperatures. (See "LUBRICANTS, FUEL AND COOLANT" in "MAINTENANCE" section.)

■ Checking Amount of Fuel and Refueling



WARNING

To avoid serious injury:

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



1BDABARAP121A

Check the fuel level. Take care that the fuel tank does not become empty. When refueling it, park the machine on a level surface.

Fuel tank capacity	18 L
--------------------	------

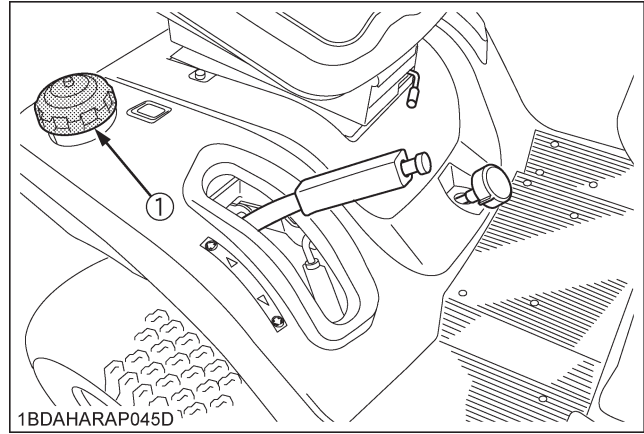
IMPORTANT :

- Use Diesel Fuel Only

1. Use No.2 diesel fuel.
2. Use No.1 diesel fuel if the temperature is below -10 °C .
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 let the fuel tank become empty, 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.
- To prevent condensation (water accumulation) in the fuel tank, fill the tank before parking overnight.



1BDAHARAP045D

(1) Fuel port

■ Checking and Cleaning Radiator and Screen to Prevent Overheating



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.



WARNING

To avoid serious injury:

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

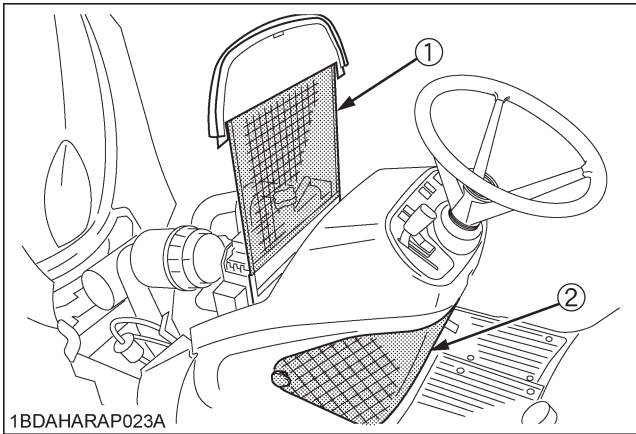
IMPORTANT :

- 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, radiator core and panel screen are clean.

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

1. Remove the radiator screen and panel screen and remove all foreign material.



(1) Radiator screen
(2) Panel screen

2. Remove the dust from between the fins and the tube.
3. Tighten the fan drive belt as necessary. For this, refer to "EVERY 100 HOURS" in "PERIODIC SERVICE" section.
4. If scale forms in the tube, clean with the scale inhibitor or its equivalent.
5. Each time the panel 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 the panel, remove the radiator screen and the panel screen, and clean inside completely. After cleaning, replace the radiator screen and panel screen properly.

■ Checking and Cleaning Inside of the Bonnet and Around the Mower Belt to Avoid Fire Hazard

! 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.

Check and clean inside of the bonnet and around the mower belt. Especially, dry grass and leaves around the exhaust manifold, the muffler or around the mower belt may ignite. After using, air-blowing and pressure-washing, make sure there is nothing flammable around the exhaust manifold, the muffler or around the mower belt. Grass, twigs, dirt or chaff in the bonnet may cause fire.

■ Checking Tire Pressure

! WARNING

To avoid serious injury:

- 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. Do not inflate tires above the recommended pressure shown in the Operator's Manual.
- Inflation pressure in front tires rises quickly when using compressed air.

! WARNING

To avoid serious injury:

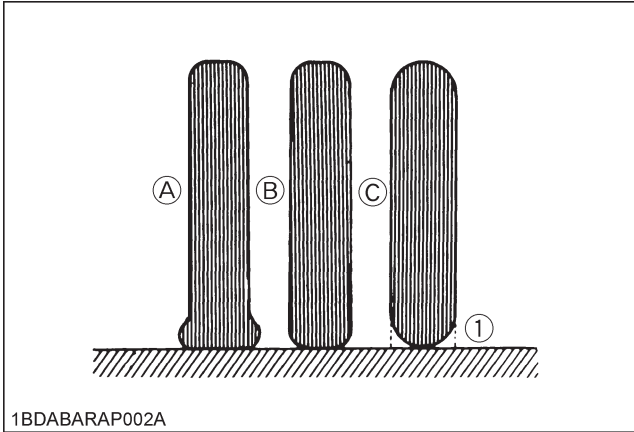
- Never operate machine with a loose rim, wheel, or axle.
- Whenever bolts are loosened, retighten to specified torque.
- Check all bolts frequently and keep them tightened.

◆ Inflation Pressure

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

[Turf tire]

	Tire sizes	Recommended Inflation Max. Pressure
Front	15 x 6.00 - 6, 4PR	100 kPa (1.0 kgf/cm ²)
Rear	20 x 10.00 - 8, 4PR	70 kPa (0.7 kgf/cm ²)



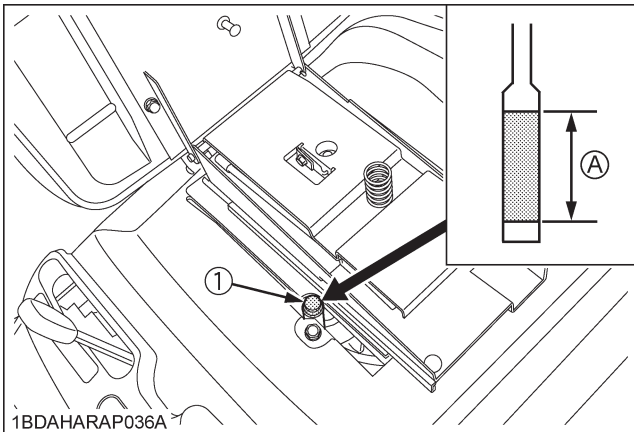
1BDABARAP002A

(1) Ground

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

■ Checking Transmission Fluid Level

1. Park the machine on a flat surface, lower the implement to the ground, shut off engine and remove the key.
2. Raise the operator's seat.
3. 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 2 notches. If the level is too low, add new oil to the prescribed level at the oil inlet.
 (See "LUBRICANTS, FUEL AND COOLANT" in "MAINTENANCE" section.)



1BDAHARAP036A

(1) Oil level dipstick

(A) Oil level is acceptable within this range.

IMPORTANT :

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

■ Checking Coolant Level



WARNING

To avoid serious injury:

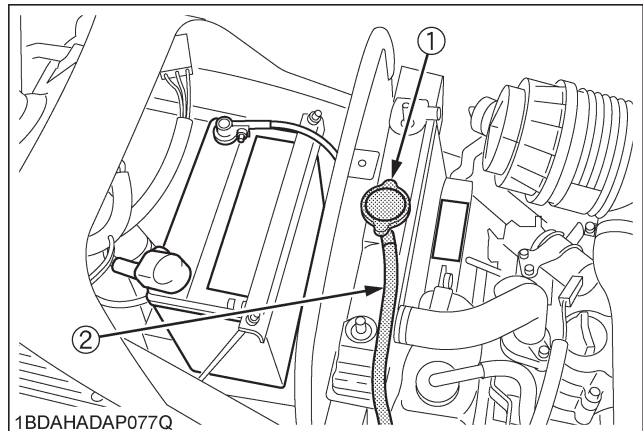
- Be sure to stop the engine and remove the key before checking coolant level.
- Do not remove the radiator cap while coolant is hot. When cool, slowly rotate cap to the first stop and allow sufficient time for excess pressure to escape before removing the cap completely.

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

1. Remove the radiator cap and check to see that the coolant level is just below the fill port.
2. Check to see that the coolant level is between the "FULL" and "LOW" marks of recovery tank.
3. 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.

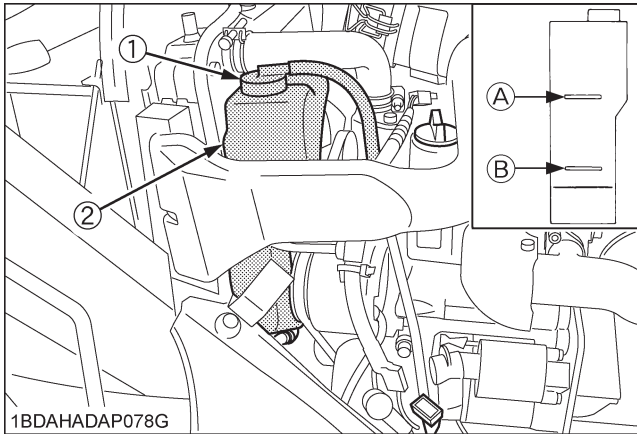
In case of leakage, add anti-freeze and water in the specified mixing ratio up to the full level.

(See "Flush Cooling System and Changing Coolant" in "EVERY 2000 HOURS or EVERY 2 YEARS" in "PERIODIC SERVICE" section.)



1BDAHADAP077Q

(1) Radiator cap
 (2) Over flow pipe



(1) Recovery tank cap (A) "FULL"
 (2) Recovery tank (B) "LOW"

IMPORTANT :

- If the radiator cap has to be removed, follow the caution above and securely retighten the cap.
- Use clean, distilled water and anti-freeze to fill the radiator and the recovery tank.
- If water should leak, consult your local KUBOTA Dealer.

■ Lubricating All Grease Fittings



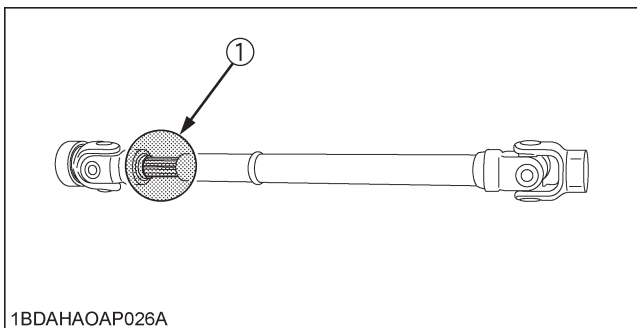
WARNING

To avoid serious injury:

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

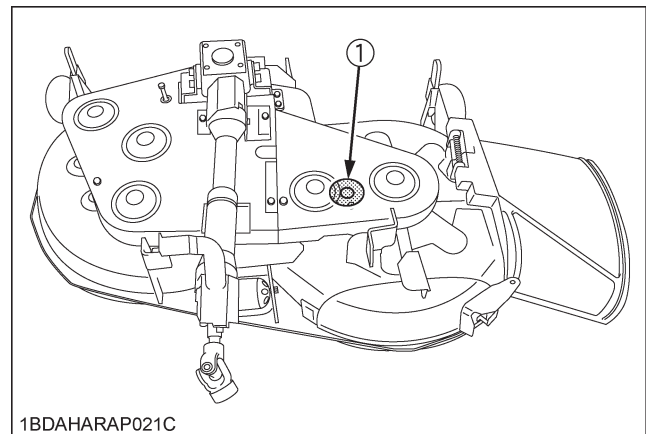
Grease the following locations.

To dismantle and mount the mower deck, see "MOWER MOUNTING" section.



(1) Mower universal joint (Apply grease on the spline shaft.)

[RCK42]



(1) Belt tension pivot

■ Checking Movable Parts

If any of the movable parts, such as levers and pedals, is not smoothly moved because of rust or anything sticky, do not attempt to force it into motion.

In the above case, remove the rust or the sticky object, and apply oil or grease on the relevant spot. Otherwise, the machine may get damaged.

EVERY 50 HOURS

■ Checking Engine Start System

The Engine Start System in your machine is designed to protect you while operating. Check the Engine Start System periodically. It is recommended to check the Engine Start System before daily operation.



WARNING

To avoid serious injury:

- 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 operator's seat for all tests.

IMPORTANT :

- Check the following tests before operating the machine.

Test 1 (Safety Start Control 1)

1. Depress the brake pedal fully.
2. Engage the PTO lever.
3. Turn the key switch to the "START" position.
4. The engine should not crank.

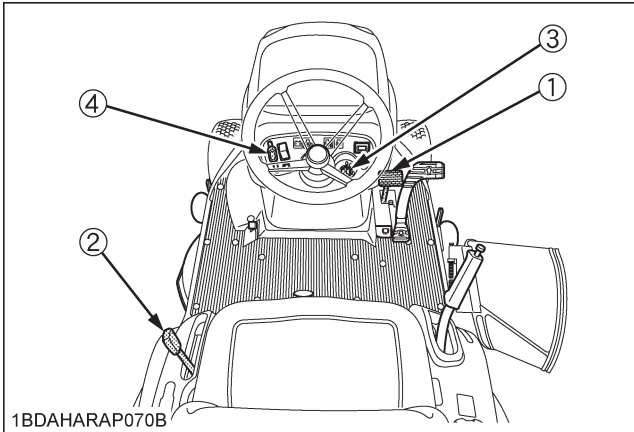
Test 2 (Safety Start Control 2)

1. Disengage the PTO lever.
2. Release the brake pedal.

3. Turn the key to the "START" position.
4. The engine should not crank.

Test 3 (Engine Safety Control)

1. Open the hood.
2. Sit on the operator's seat.
3. Depress the brake pedal fully.
4. Turn the key to the "START" position.
5. The engine should not crank.



- (1) Brake pedal
- (2) PTO lever
- (3) Key switch
- (4) Throttle lever

■Checking OPC System

The OPC (Operator Presence Control) system in your machine is designed to protect you while operating. Check the OPC system periodically. It is recommended to check the OPC system before daily operation.

**WARNING**

To avoid serious injury:

- 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.

IMPORTANT :

- Check the following tests before operating the machine.

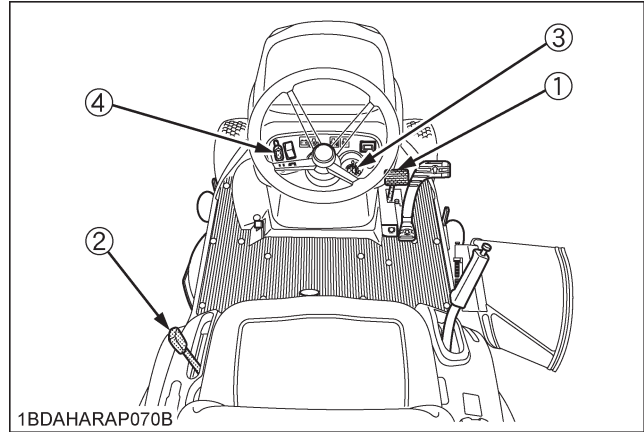
Test 1 (Seat Safety Control 1)

1. Run the engine at half throttle.
2. Engage the PTO lever.
3. Stand up. (DO NOT GET OFF THE MACHINE.)
4. Engine should shut off.

Test 2 (Seat Safety Control 2)

1. Run the engine at half throttle.
2. Disengage the PTO lever.
3. Release the brake pedal.

4. Stand up. (DO NOT GET OFF THE MACHINE.)
5. Engine should shut off.



- (1) Brake pedal
- (2) PTO lever
- (3) Key switch
- (4) Throttle lever

■Checking PTO Control System

The PTO control system in your machine is designed to protect you while operating. Check the PTO control system periodically. It is recommended to check the PTO control system before daily operation.

**WARNING**

To avoid serious injury:

- 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 operator's seat for all tests.

IMPORTANT :

- Check the following tests before operating the machine.

Test 1 (KUBOTA Reverse Awareness system (KRA system) 1)

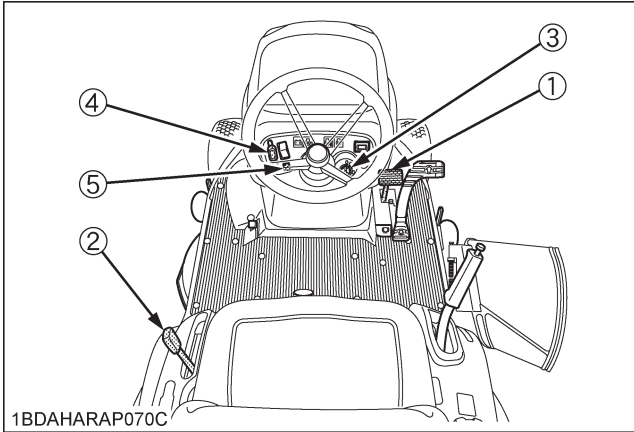
1. Start and run the engine at half throttle.
2. Engage the PTO lever.
3. Press slightly on reverse side of speed control pedal.
4. Engine should shut off.

Test 2 (KUBOTA Reverse Awareness system (KRA system) 2)

1. Start and run the engine at 1/4 throttle.
2. Engage the PTO lever.
3. Press the KRA system override switch.
4. The KRA indicator light should flash.
5. Press slightly on the reverse side of speed control pedal.
6. Engine should not shut off.

Remove the fuse from under the seat before Test 3
Test 3 (KUBOTA Reverse Awareness system (KRA system) 3)

1. Start and run the engine at 1/4 throttle.
2. Engage the PTO lever.
3. Press the KRA system override switch.
4. The KRA indicator light should not flash.
5. Press slightly on reverse side of speed control pedal.
6. Engine should shut off.



1BDAHARAP070C

- (1) Brake pedal
- (2) PTO lever
- (3) Key switch
- (4) Throttle lever
- (5) KRA system override switch

■ Cleaning Air Cleaner Element



WARNING

To avoid serious injury:

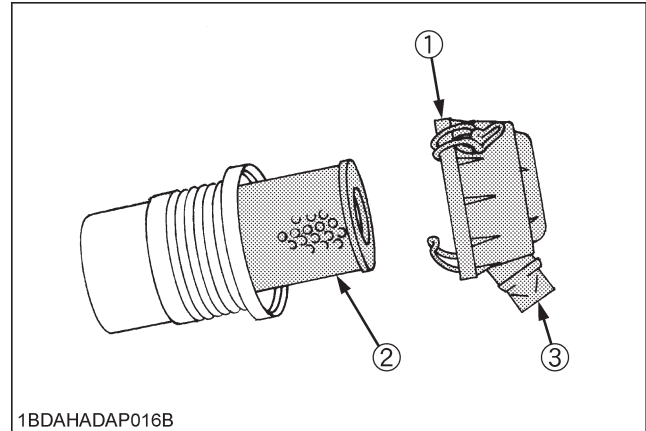
- Be sure to stop engine and remove the key before cleaning air cleaner element.

1. Remove the air cleaner cover and element.
 - (1) Undo the hook.
 - (2) Turn the cover clockwise and detach it.
2. Clean the element:
 - (1) 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).
 - (2) When carbon or oil adheres to the element, soak the element in detergent for 15 minutes, and then wash it several times in water, rinse with clean water and dry it naturally. After element is fully dried, inspect the inside of the element with a light and check if it is damaged or not. (referring to the instructions on the label attached to the case.)
3. Replace the air cleaner element if:

Once yearly or after every sixth cleaning, whichever comes first.

NOTE :

- Checked to see if the evacuator valve is blocked with dust.
- Operating in dusty conditions requires more frequent maintenance.



1BDAHADAP016B

- (1) Air cleaner cover
- (2) Air cleaner element
- (3) Evacuator valve

IMPORTANT :

- The air cleaner uses a dry element, never apply oil.
- Do not run the engine with the filter element removed.
- Align the arrow marks when reinstalling the cover. If the cover is improperly fitted, dust passes by the baffle and directly adheres to the element.

◆ Evacuator valve

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

■ Checking Gear Box Oil Level



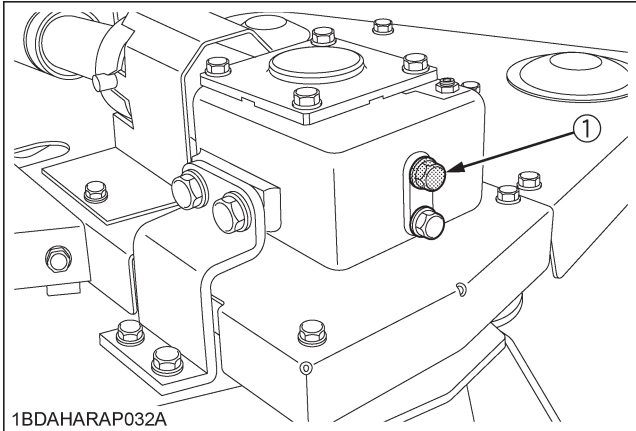
WARNING

To avoid serious injury:

- Always stop the engine and remove the key before checking oil.
- Be sure to reinstall the removed cover after checking oil.

1. Park the machine on a flat surface, dismount the mower deck and remove covers. (See "DISMOUNTING THE MOWER DECK" in "MOWER MOUNTING" section and "Mower Belt Replacement" in "SERVICE AS REQUIRED" in "PERIODIC SERVICE" section.)
2. To check the oil level, loosen the check plug and check to see that the oil level is just below 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" in "MAINTENANCE" section.)



1BDAHARAP032A

(1) Check plug, Oil filler plug

■ Greasing

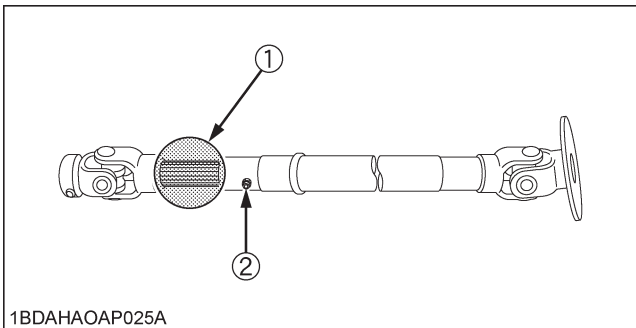


WARNING

To avoid serious injury:

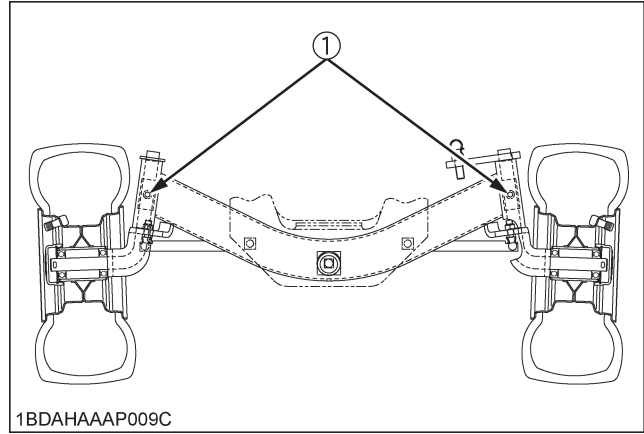
- Be sure to stop the engine and remove the key before greasing.

Grease the following locations.



1BDAHAOAP025A

- Engine transmission universal joint
(Apply grease on the spline shaft.)
- Engine transmission universal joint (Nipple)



1BDAHAAAP009C

(1) King pin (LH, RH)

■ Oiling

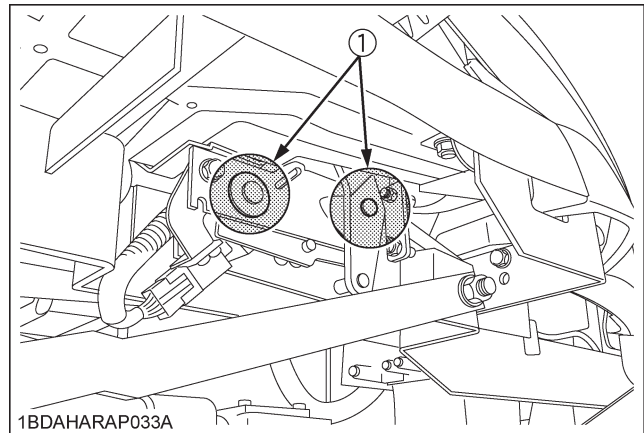


WARNING

To avoid serious injury:

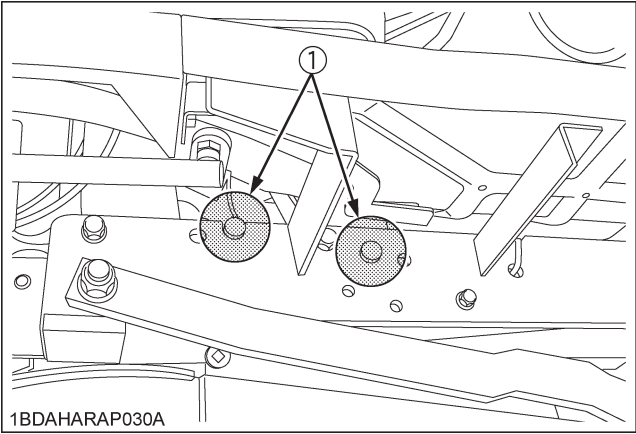
- Be sure to stop the engine and remove the key before oiling.

Oil the following locations.

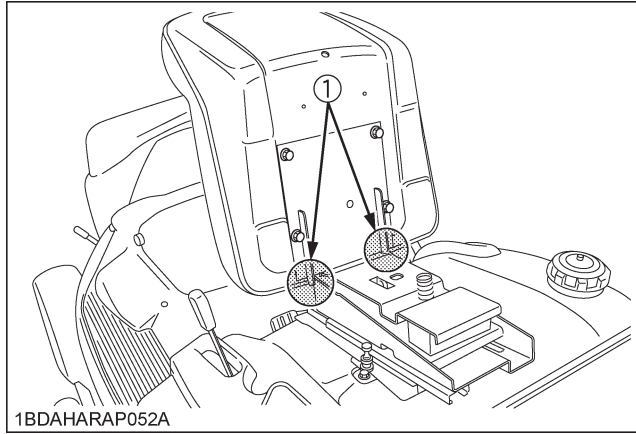


1BDAHARAP033A

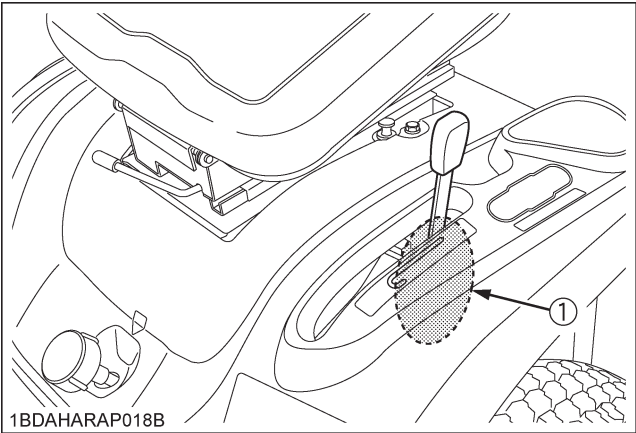
(1) Speed control pedal shaft (RH)



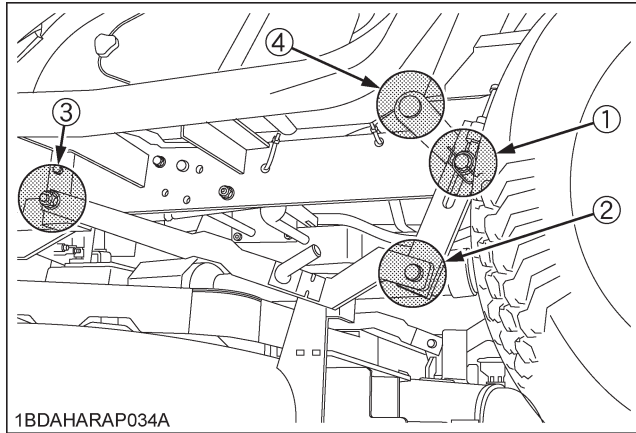
(1) Speed control pedal shaft (LH)



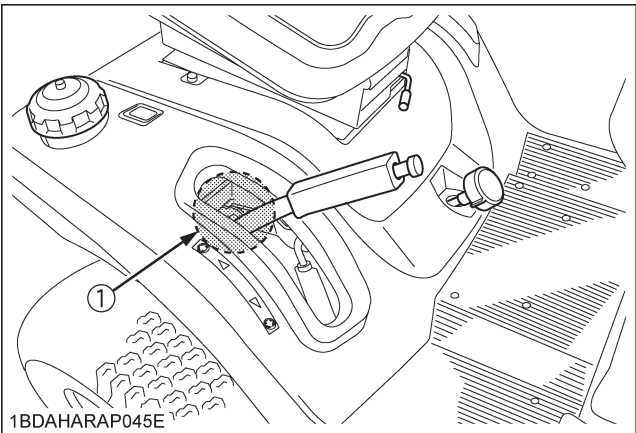
(1) Seat adjuster



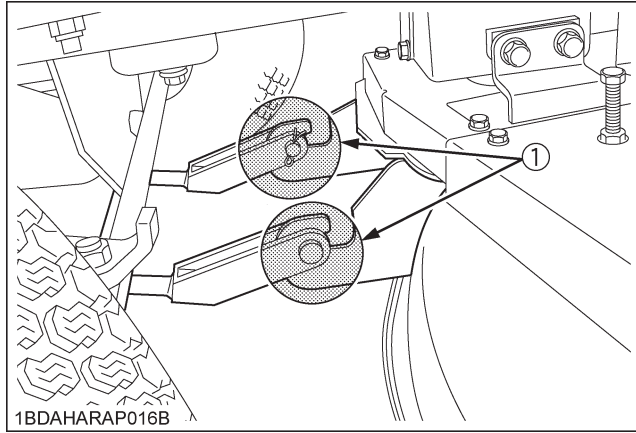
(1) PTO lever (fulcrum)



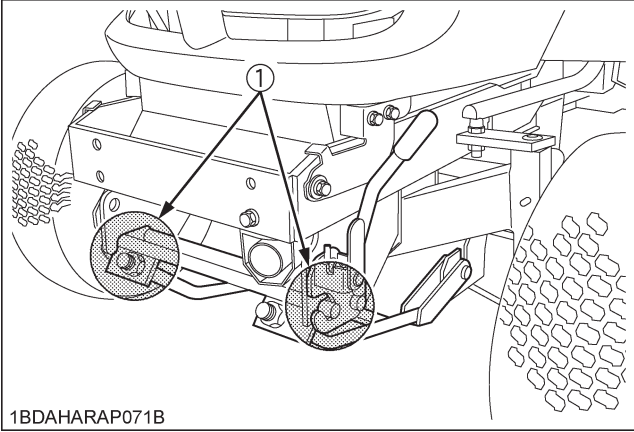
(1) Around the hole of the mower link (LH, RH)
 (2) Around the pin of the mower link (LH, RH)
 (3) Pivot of mower link (LH, RH)
 (4) Pivot of liftarm (LH, RH)



(1) Mower lift lever (fulcrum)

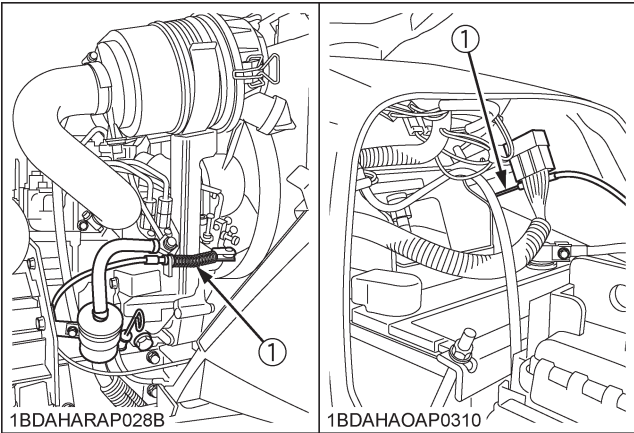


(1) Front link



1BDAHARAP071B

(1) Link fulcrum



1BDAHARAP028B

1BDAHAOAP0310

(1) Throttle cable

Battery Condition

! DANGER

To avoid the possibility of battery explosion:

For the refillable type battery, follow the instructions below.

- 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.

! 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:

- Batteries, battery posts, terminals and related accessories contain lead and 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 it, 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 battery.

The factory-installed battery is of non-refillable type. If the battery is weak, charge the battery or replace it with 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 for a new one, use battery of equal specification in table below.

Battery Type	Volts (V)	Reserve Capacity (min)	Cold Cranking Amps	Normal Charging Rate(A)
51R	12	80	430	4.5

(For 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 plates may eventually become depleted due to abnormal conditions such as high heat or improper regulator setting. Use a voltmeter to check the state of charge. (See reference chart below 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%

◆ **Battery Charging**



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

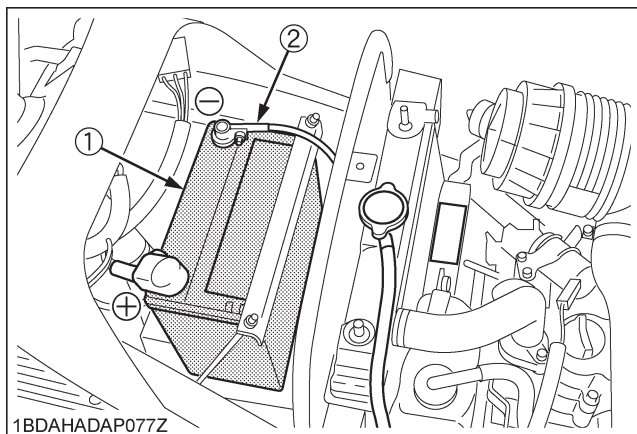
To avoid serious injury:

- 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 battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

1. 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.
2. 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.
3. When the specific gravity of electrolyte is between 1.27 and 1.29 the charging is completed.

◆ **Battery for storage**

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.
2. The battery self-discharges while it is stored. Recharge it once every 3 months in hot seasons and once every 6 months in cold seasons.
3. Nut size for the battery terminals: (+)10 mm (-)10 mm



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

EVERY 100 HOURS

■ Checking Fuel Filter



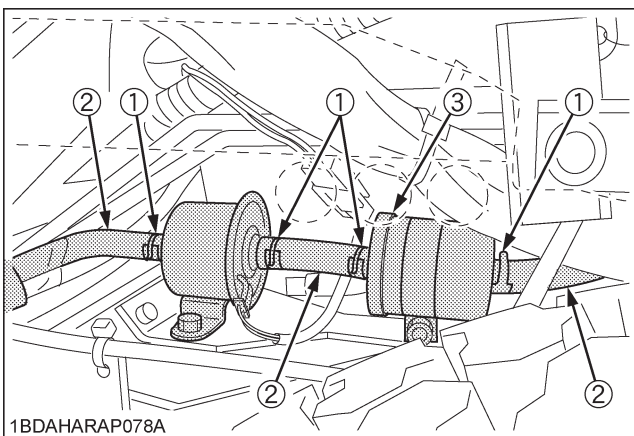
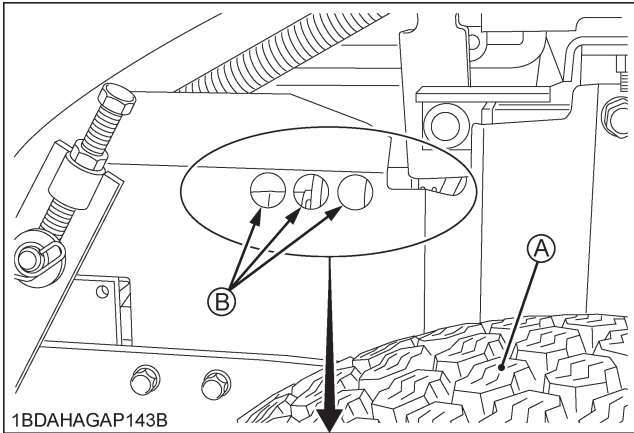
WARNING

To avoid serious injury:

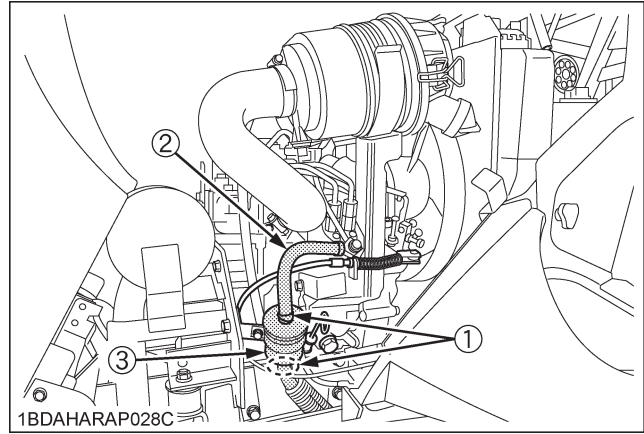
- Be sure to stop the engine and remove the key when attempting to make the following checks and changes.
- Never fail to check the fuel lines periodically. The fuel lines are subject to wear and aging. Fuel may leak out onto the running engine, causing a fire.

The fuel line is made of rubber and ages regardless of service period.

1. Check the fuel line connections.
If the fuel line and clamps are found to be damaged or deteriorated, consult your local KUBOTA Dealer to replace them.
2. Check fuel filter, if it is clogged by debris or contaminated with water, consult your local KUBOTA Dealer to replace it.



- | | |
|-----------------|--|
| (1) Pipe clamps | (A) Left rear tire |
| (2) Fuel line | (B) Holes to check fuel filter and lines |
| (3) Fuel filter | |



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

■ Checking Brake

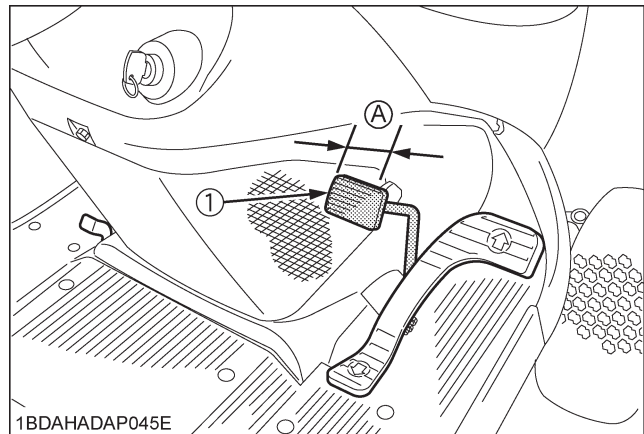


WARNING

To avoid serious injury:

- When checking brake, park the machine on a flat area, block wheels, stop the engine and remove the key.

Correct free travel ranges from 15 to 25 mm. If it is not correct, consult your local KUBOTA dealer to adjust.



- | | |
|-----------------|-----------------------------|
| (1) Brake pedal | (A) Free travel 15 to 25 mm |
|-----------------|-----------------------------|

■ Checking Fan Drive Belt Tension



WARNING

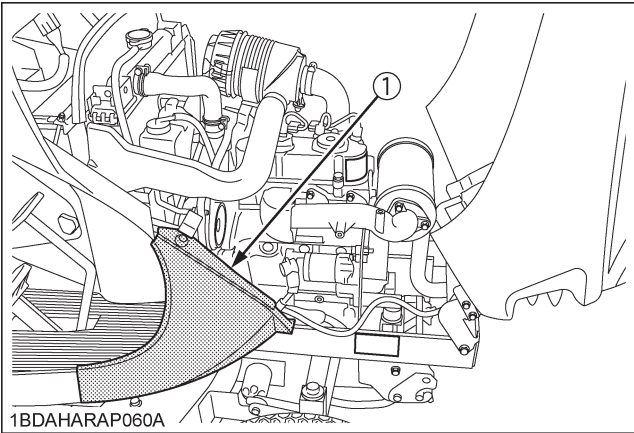
To avoid serious injury:

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

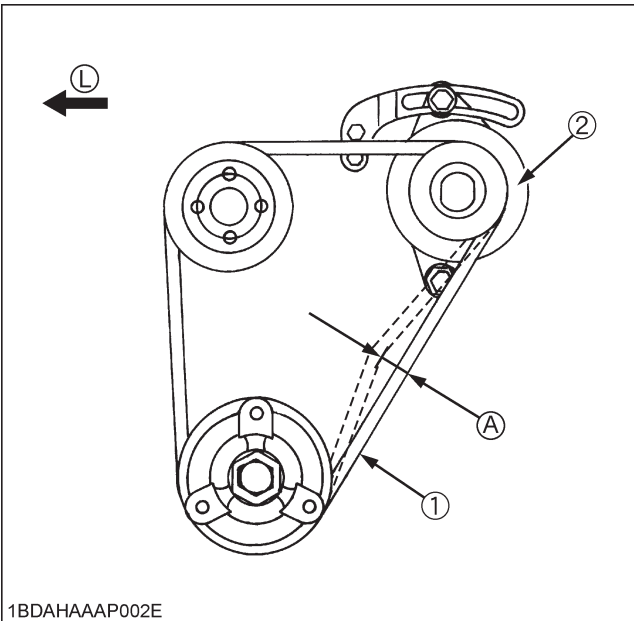
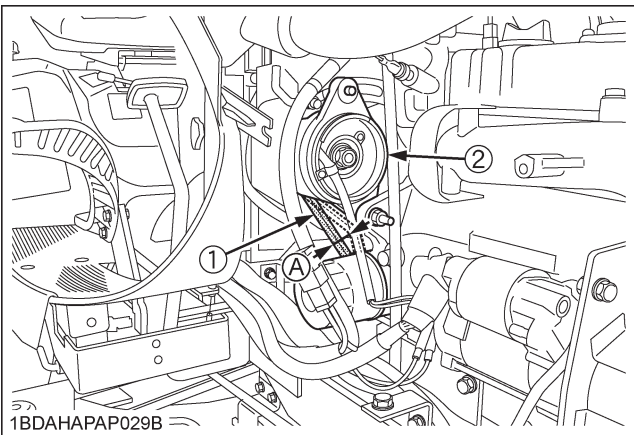
If the fan drive belt becomes loose, the engine may overheat. To adjust, consult your local KUBOTA dealer.

Moderate belt tension:

The belt should deflect approx. 10 mm when the center of the belt is depressed with finger pressure of 98 N (10 kgf).



(1) Right cover



(1) Fan drive belt
(2) Dynamo

(A) Approx. 10 mm
(L) "LEFT"

EVERY 150 HOURS

■ Changing Gear Box Oil

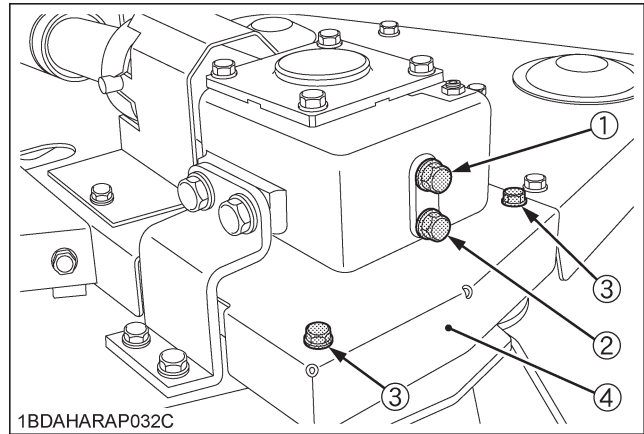


WARNING

To avoid serious injury:

- Be sure to stop the engine and remove the key before changing the oil.
- Remove the belt cover as shown in figure below by loosening the bolts as shown in figure below.

1. To drain the used oil, remove the filler plug and the drain plug at the gear box, tilt the mower deck and drain the oil completely into the oil pan.
2. Fill with the new oil.
(See "LUBRICANTS, FUEL AND COOLANT" in "MAINTENANCE" section.)
3. After filling reinstall the filler plug.



(1) Oil filler plug
(2) Drain plug
(3) Bolt
(4) Belt cover

EVERY 200 HOURS

■ Replacing Engine Oil Filter Cartridge



WARNING

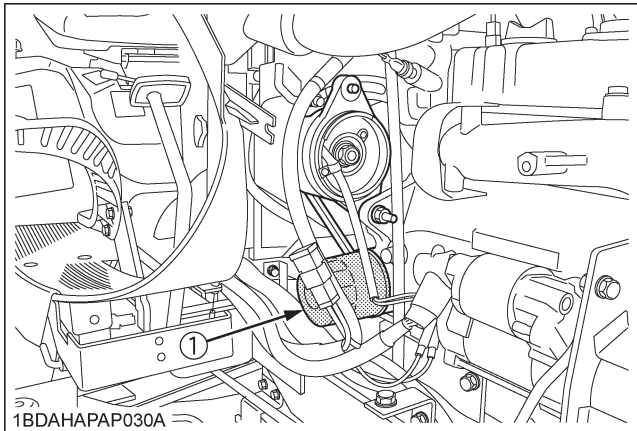
To avoid serious injury:

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

1. The oil filter cartridge must be changed every 200 service hours.
2. Apply a slight coat of oil onto the rubber gasket of new cartridge.
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 cartridge has been replaced, the engine oil level normally lowers a little. Add engine oil to proper level. Check for oil leaks around filter gasket.

IMPORTANT :

- 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 cartridge

■ Changing Engine Oil

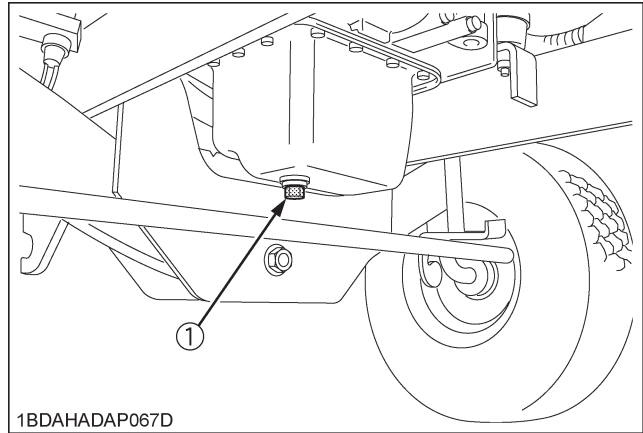


WARNING

To avoid serious injury:

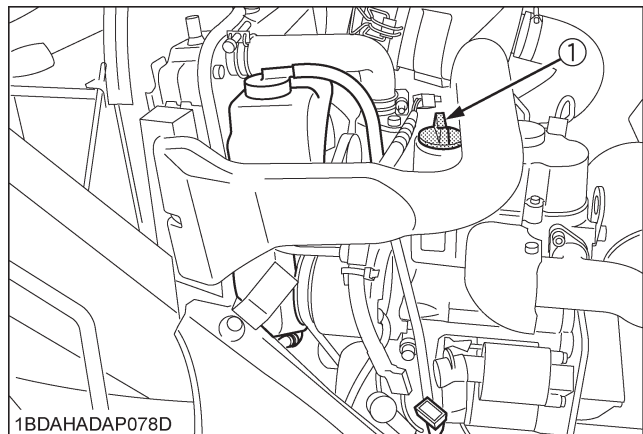
- Be sure to stop the engine and remove the key before changing the oil.
- Allow engine to cool down sufficiently; oil can be hot and may cause burns.

1. To keep dirt, debris, etc., out of the engine, clean the area around the oil fill cap/dipstick before removing it.
2. Remove the oil drain plug, the oil fill cap, and the dipstick. Be sure to allow ample time for complete drainage.

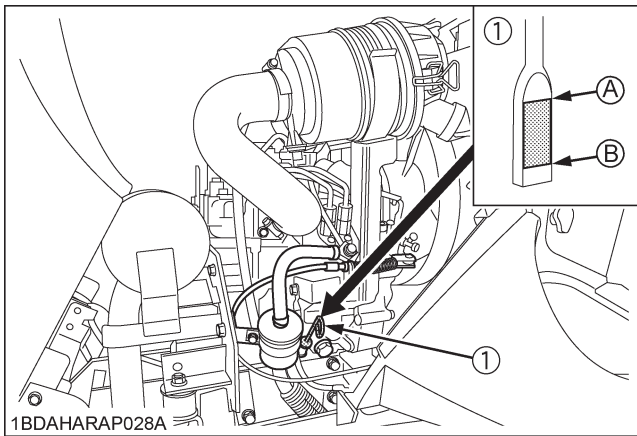


(1) Drain plug

3. The used oil can be drained out more easily if the engine is warm.
4. Reinstall the drain plug. Make sure it is tightened to **13.6 N·m** torque.
5. Fill the crankcase, with new oil of the proper type, to the "F" mark on the dipstick. (See "LUBRICANTS, FUEL AND COOLANT" in "MAINTENANCE" section.) Always check the level with the dipstick before adding more oil.



(1) Engine oil port



(1) Oil level dipstick (A) "UPPER LEVEL"
(B) "LOWER LEVEL"

6. 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 2 marks.
7. Reinstall the oil fill cap and tighten it securely. Reinstall the dipstick.

NOTE :

- To prevent extensive engine wear or damage, always maintain the proper oil level in the crankcase. Never operate the engine with the oil level below "LOWER LEVEL" or over "UPPER LEVEL" on the dipstick.

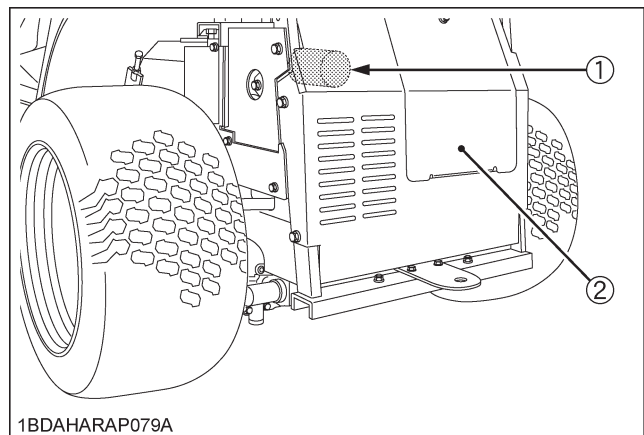
Replacing Transmission Oil Filter Cartridge

WARNING

To avoid serious injury:

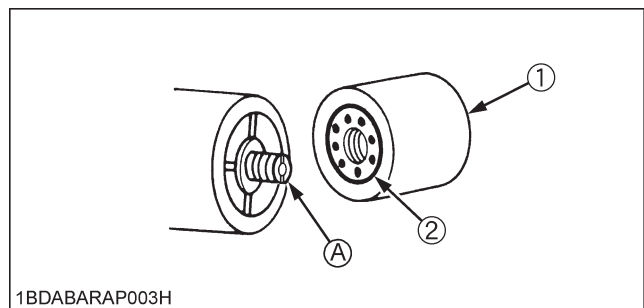
- Be sure to stop the engine and remove the key before changing the oil filter cartridge.
- Allow transmission case to cool down sufficiently; oil can be hot and may cause burns.

1. The oil filter cartridge must be changed every 200 service hours.
2. Remove rear cover.



(1) Transmission oil filter cartridge
(2) Rear cover

3. Remove the oil filter cartridge by using the filter wrench.
4. Lightly tighten the screw (A) by using a screwdriver.



(1) Transmission oil filter cartridge
(2) Gasket

5. Apply a slight coat of oil onto the gasket of new filter.
6. To install the new cartridge, screw it in by hand. Over tightening may cause deformation of the rubber gasket.
7. Assemble the rear cover.

8. After the new cartridge has been replaced, the transmission fluid 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, the replacement filter must be a highly efficient, 10 μ m filter. Use only a genuine KUBOTA filter or its equivalent.

■ Adjusting Front Axle Pivot

If the front axle pivot pin adjustment is not correct, vibration in the front wheel can occur. When vibration occurs contact your KUBOTA Dealer to adjust the free travel of front axle.

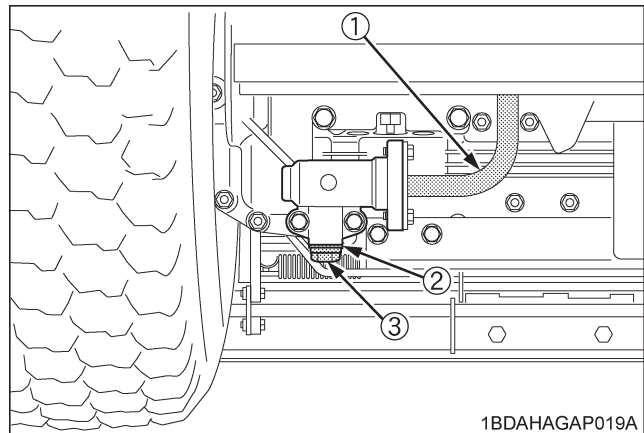
EVERY 400 HOURS**■ Changing Transmission Fluid****WARNING**

To avoid serious injury:

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

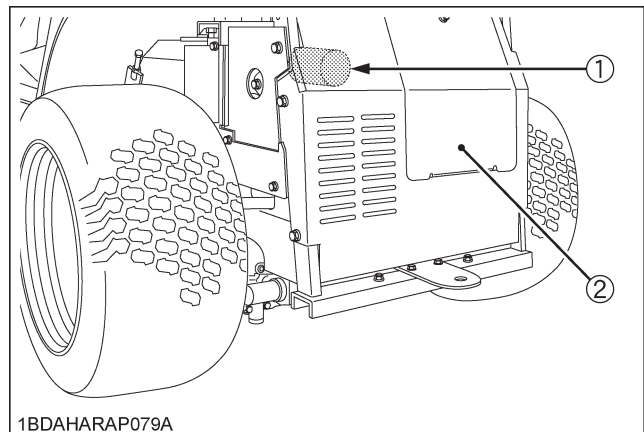
The fluid in the transmission case is also used for the hydrostatic drive system.

1. To drain the transmission oil, place oil pan underneath the transmission case and remove the drain plug.



- (1) Suction pipe
- (2) Seal washer
- (3) Drain plug

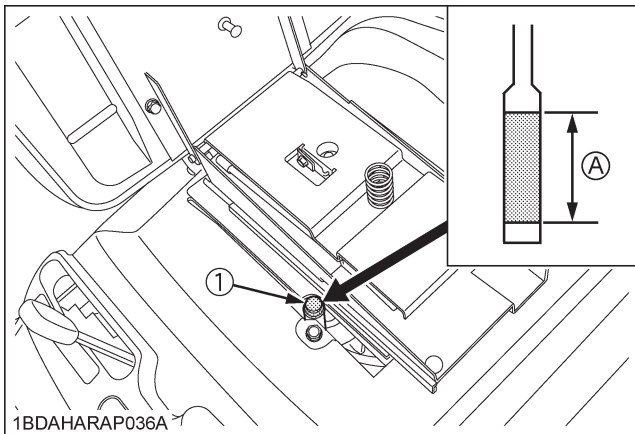
2. After draining, disassemble and clean the strainer and change the oil filter cartridge. After reassembling, fill with UDT or SUPER UDT hydrostatic transmission fluid, or its equivalent.



- (1) Transmission oil filter cartridge
- (2) Rear cover

3. Remove the dipstick and fill with the new oil.

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



(1) Dipstick (A) Oil level is acceptable within this range

IMPORTANT :

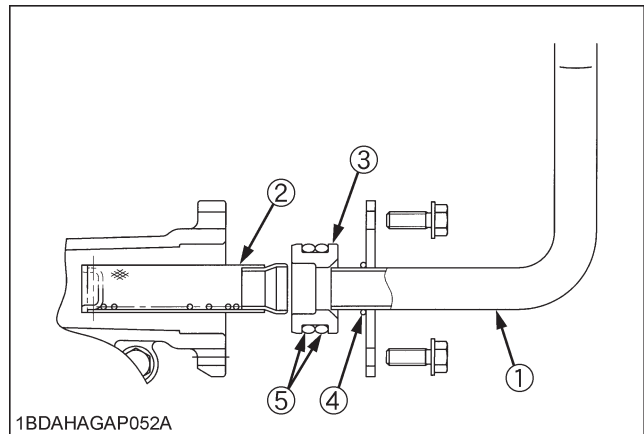
- Operate only at low rpms immediately after changing the transmission fluid and filter cartridge. Keep the engine at medium speed for a few minutes to insure proper lubrication of all parts so there is no damage to transmission.
- Do not engage PTO before checking the oil level.

■Cleaning Transmission Strainer

When changing the transmission fluid, disassemble and rinse the strainer with nonflammable solvent to completely clean off filings.

Check "O" rings. Replace it if damaged, cracked or hardened.

When reassembling be careful not to damage the parts.



1BDAHAGAP052A

- (1) Suction pipe
- (2) Strainer
- (3) Boss
- (4) O-ring (Small)
- (5) O-ring (Large)

NOTE :

- Since the fine filings in the oil can damage the precision component parts of the hydraulic system, the end of the suction line is provided with an oil strainer.

■Replacing Fuel Filter

Change fuel filter every 400 hours. Consult your local KUBOTA Dealer for this service.

EVERY 1500 HOURS

■ 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.

■ Flush Cooling System and Changing Coolant

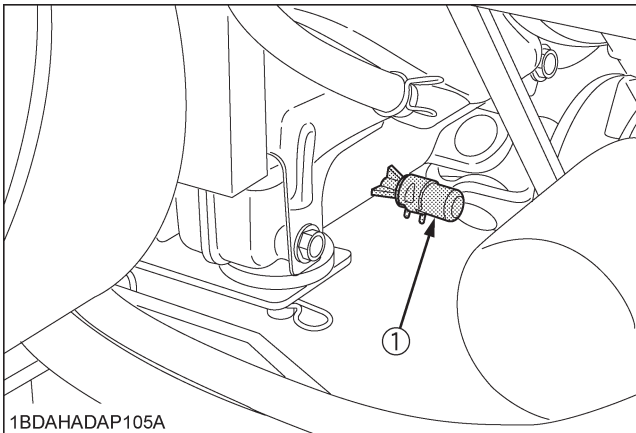


WARNING

To avoid serious injury:

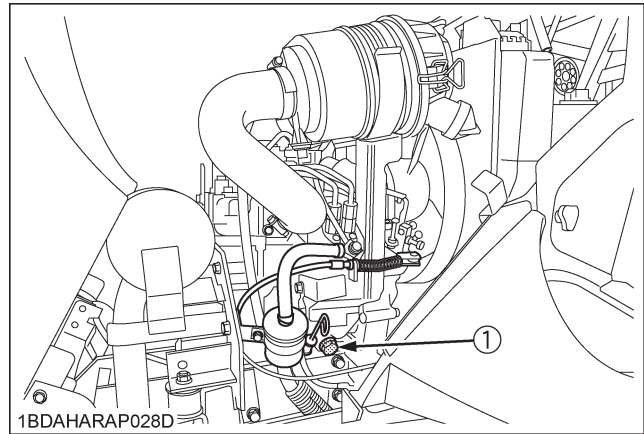
- Do not remove the radiator cap when the engine is hot. Then loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.

1. Stop the engine and let cool down.
2. To drain the coolant, remove the radiator drain plug and the engine drain plug, and remove the radiator cap. The radiator cap must be removed to completely drain the coolant.



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(1) Radiator drain plug



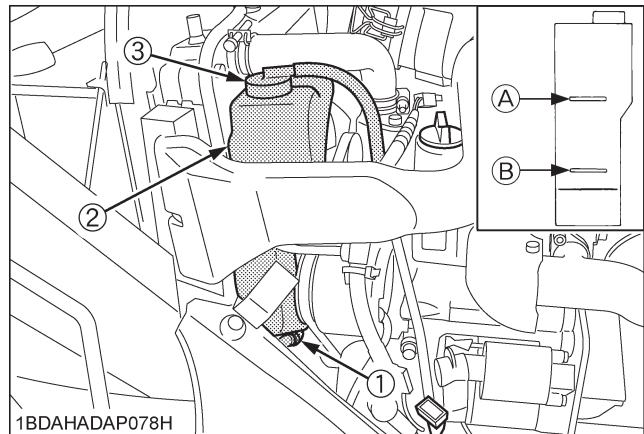
1BDAHARAP028D

(1) Engine drain plug

3. After all coolant is drained, install the drain plugs.
4. Fill with clean water and cooling system cleaner.
5. Follow directions of the cleaner instruction.
6. After flushing, fill with clean water and anti-freeze until the coolant level is just below the fill port on the radiator.

Install the radiator cap securely.

7. Fill with coolant up to "FULL" 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 and add coolant if necessary.



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- (1) Clamp
(2) Recovery tank
(3) Recovery tank cap

- (A) "FULL"
(B) "LOW"

IMPORTANT :

- Do not start engine without coolant.
- Use clean, distilled water and anti-freeze to fill the radiator and recovery tank.
- When mixing the anti-freeze with water, the anti-freeze mixing ratio is 50%.
- Securely tighten radiator cap. If the cap is loose or improperly fitted, water may leak out and the engine could overheat.

EVERY 3000 HOURS

■Checking Injection Pump

Consult your local KUBOTA Dealer for this service.

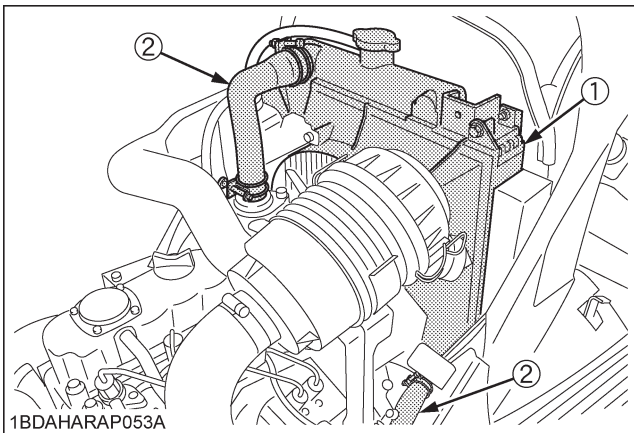
EVERY 1 YEAR

■Replacing Air Cleaner Element

Change the element once a year.

■Checking Radiator Hose and Clamp

1. Check to see if radiator hoses are properly fixed.
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.



(1) Radiator core
(2) Radiator hose

■Checking Fuel Lines



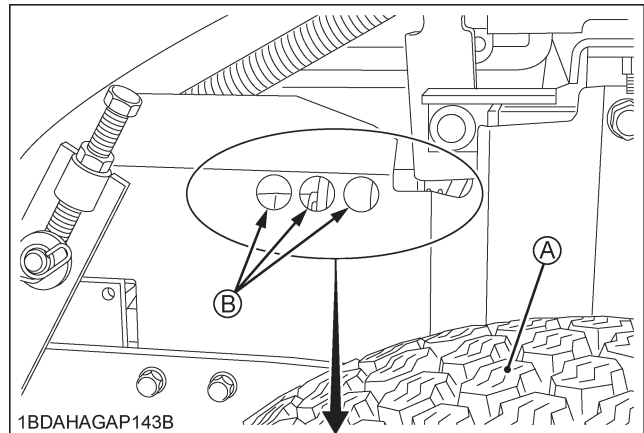
WARNING

To avoid serious injury:

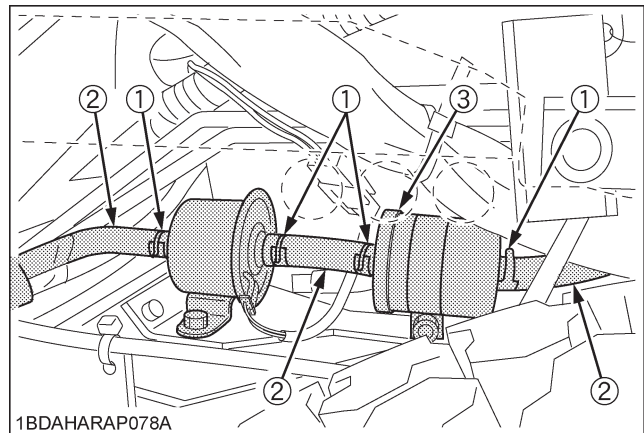
- Be sure to stop the engine and remove the key when attempting to make the following checks and changes.
- Never fail to check the fuel lines periodically. The fuel lines are subject to wear and aging. Fuel may leak out onto the running engine, causing a fire.

The fuel line is made of rubber and ages regardless of service period.

1. Check the fuel line connections.
If the fuel line and clamps are found to be damaged or deteriorated, consult your local KUBOTA Dealer to replace them.
2. Check fuel filter, if it is clogged by debris or contaminated with water, consult your local KUBOTA Dealer to replace it.

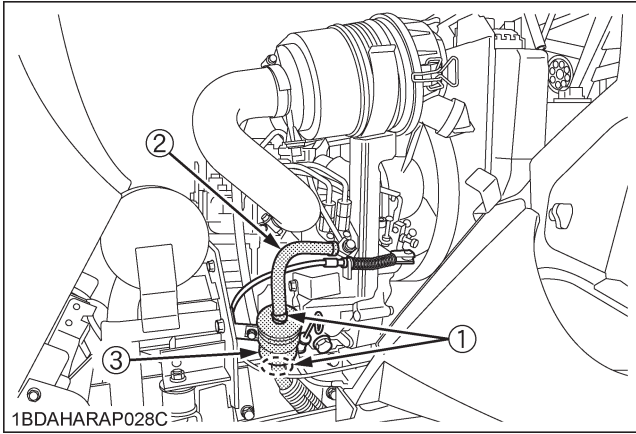


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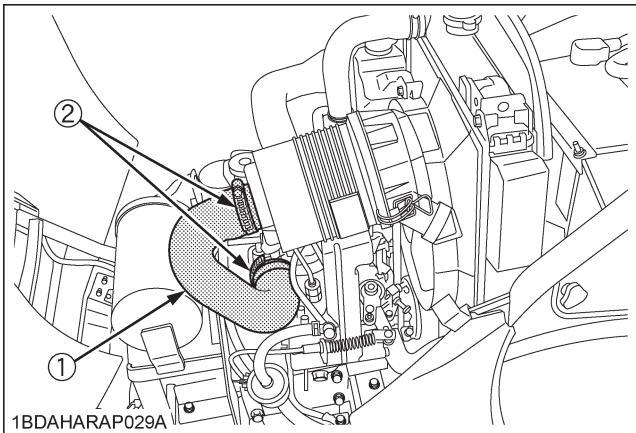
(1) Pipe clamps (A) Left rear tire
(2) Fuel line (B) Holes to check fuel filter and lines
(3) Fuel filter



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

■Checking Intake Air Line

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

■Checking Engine Breather Hose

Consult your local KUBOTA Dealer for this service.

■Checking Mower Gear Box Oil Seal

Consult your local KUBOTA Dealer for this service.

■Anti-freeze

⚠ WARNING

To avoid serious injury:

- When using anti-freeze, put on some protection such as rubber gloves. (Anti-freeze contains poison.)
- If it is swallowed, seek immediate medical help. Do NOT make a person throw up unless 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 anti-freeze comes in contact with the skin or clothing, wash it off immediately.
- Do not mix different types of Anti-freeze. The mixture can produce chemical reaction causing harmful substances.
- Anti-freeze is extremely flammable and explosive under certain conditions. Keep fire and children away from anti-freeze.
- 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 anti-freeze.

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 anti-freeze with water, the anti-freeze mixing ratio is 50%.

Vol % Anti-freeze	Freezing Point		Boiling Point*	
	°C	°F	°C	°F
50	-37	-34	108	226

* At 1.013 x 10⁵Pa (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

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

* 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 anti-freeze.

EVERY 4 YEARS

■ Replacing Fuel Lines

Consult your local KUBOTA Dealer for this service.

■ Replacing Engine Breather Hose

Consult your local KUBOTA Dealer for this service.

■ Replacing Radiator Hose

Replace hoses and clamp bands every 4 years or earlier if you checked and found that hoses are swollen, hardened or cracked.

■ Replacing Mower Gear Box Oil Seal

Consult your local KUBOTA Dealer for this service.

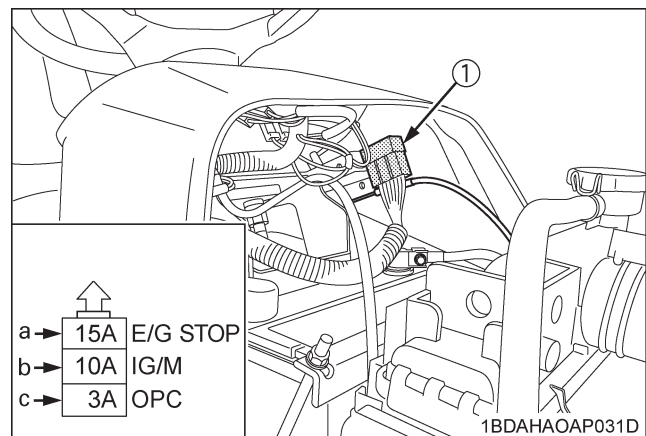
■ Replacing Intake Air Line

(See "Checking Intake Air Line" in "EVERY 1 YEAR" in "PERIODIC SERVICE" section.)

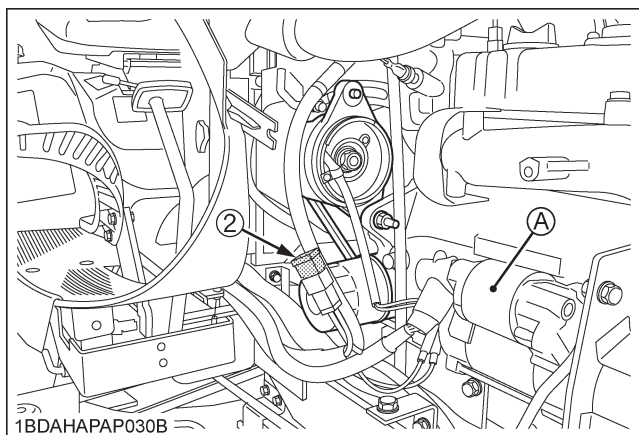
SERVICE AS REQUIRED

■ Replacing Fuses

1. Open the hood.
2. Remove the blown fuse.
3. Place a new 3A, 10A, 15A fuse or 40A slow blow fuse in position.

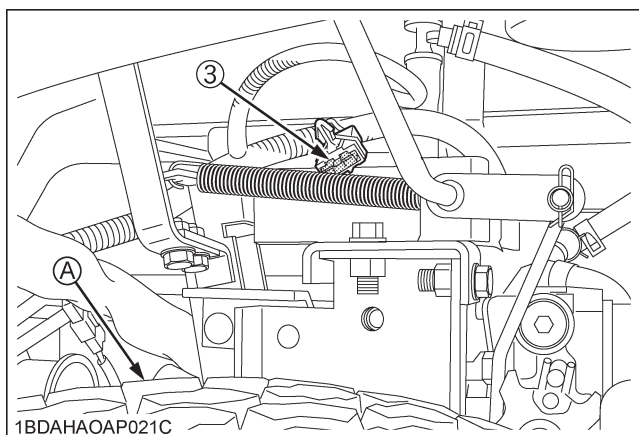


(1) Fuse location



(2) Slow blow fuse

(A) Starter



(3) KRA system

(A) Left rear tire

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 is recommended.

a: Stamp or stick label "E/G STOP"

b: Stamp or stick label "IG/M"

c: Stamp or stick label "OPC"

◆ **Protected circuit**

FUSE NO. (ID LABEL)	CAPACITY (A)	Protected circuit	
(1)	E/G STOP	15	Engine stop timer relay
	IG/M	10	Fuel pump, Head light, etc.
	OPC	3	Engine running circuit
(2)	---	Slow blow fuse 40	Check circuit against wrong battery connection
(3)	---	3	KRA system

■ **Replacing bulbs**

(A) Replacement of the headlight bulb

1. Open hood.
2. Turn bulb socket to remove socket from headlight housing.
3. Push bulb down and turn 1/4 turn to remove bulb from the socket.
4. Install new bulb to the socket.
5. Install the socket in housing.
6. Close hood.

Headlight bulb	24 W
----------------	------

(B) Replacement of the Indicator light bulb

1. Open hood.
2. Turn bad bulb socket to the left.
And remove it.
3. Pull bulb from the socket.
4. Push new bulb into the socket.
5. Install the socket.
6. Close hood.

Indicator light bulb	14.0 Rated Voltage/0.27 AMP/2 MSCP
----------------------	---------------------------------------

■ Checking and Replacing Blade

⚠ WARNING

To avoid serious injury:

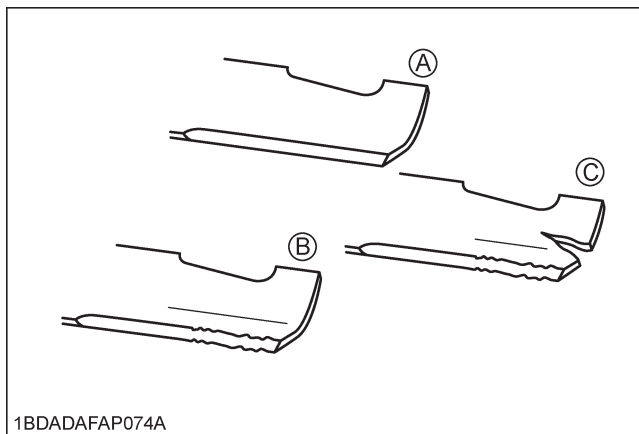
- Be sure to stop the engine and remove the key.
- Blades may be sharp. When you handle blades, wear heavy gloves or wrap end of blade with a rag.

IMPORTANT :

- Before checking or replacing the blade, wipe grass and mud off the top and inside of the mower. Especially clean up the inside of 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 resemble blade (B). Replace the blades if they appear similar to blade (C).



1BDADAFAP074A

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

◆ Replacing

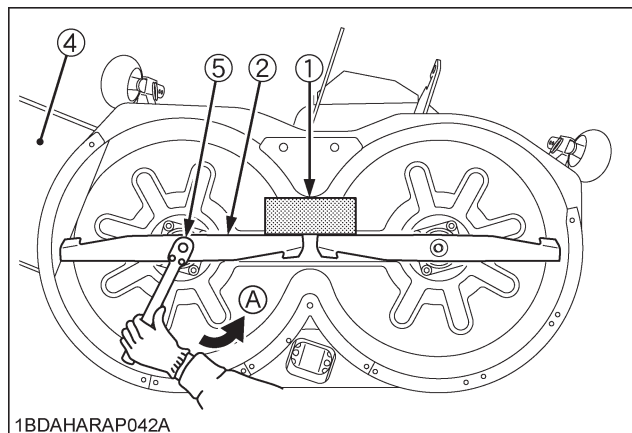
NOTE :

- Use the proper size box or socket wrench to tighten or loosen the blade mounting bolt.
- Black blade to be assembled at discharge deflector (Black color) side.
Red blade to be assembled at mower deck wall (Red color) side.
- Make sure to use the KUBOTA genuine blades.

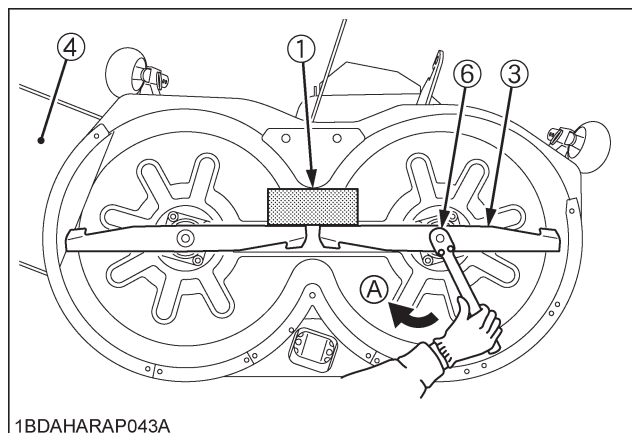
BLADE LH	K5124-7192-0
BLADE RH	K5124-7193-0

1. Remove the mower deck from the machine and turn it over to expose the blades.
2. Wedge a block of wood between the blade and mower housing as illustrated.

3. The bolt for black blade has right hand threads, turn counterclockwise to loosen.
The bolt for red blade has left hand threads, turn clockwise to loosen.



1BDARAP042A



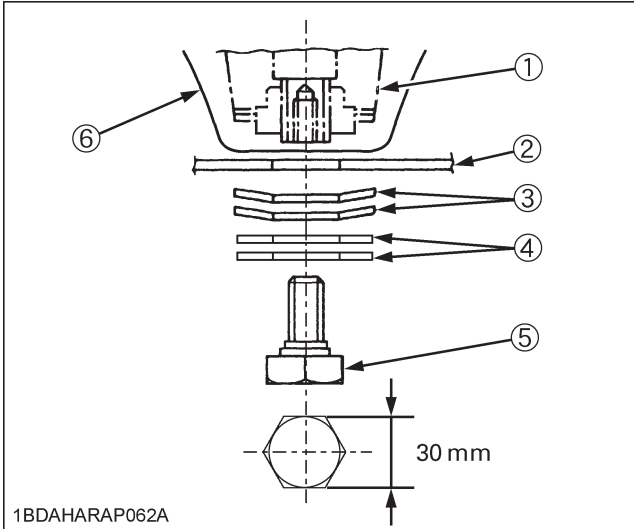
1BDARAP043A

- (1) Block
 - (2) Blade (Black)
 - (3) Blade (Red)
 - (4) Discharge deflector
 - (5) Bolt (Right hand thread)
 - (6) Bolt (Left hand thread)
- (A) "LOOSEN"

4. 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.
5. 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.
6. To attach blades, be sure to install the 2 cup washers and 2 plain washers between the blade and bolt head.

NOTE :

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



1BDAHARAP062A

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

IMPORTANT :

- Tighten the 2 blade bolts to 98 to 117.6 N-m (10 to 12 kgf-m) of torque.

Mower Belt Replacement

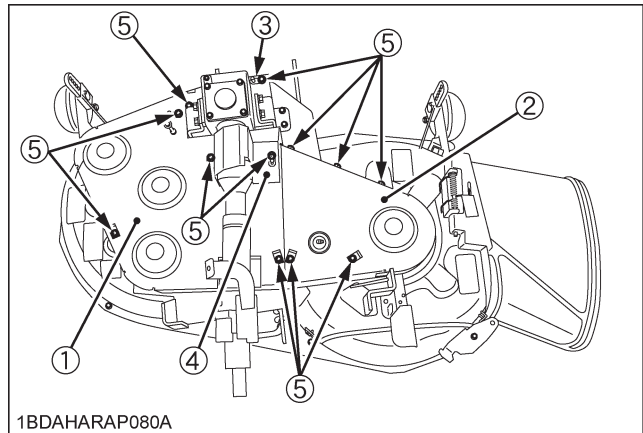


WARNING

To avoid serious injury:

- Be sure to reinstall the removed cover after replacing the belt.

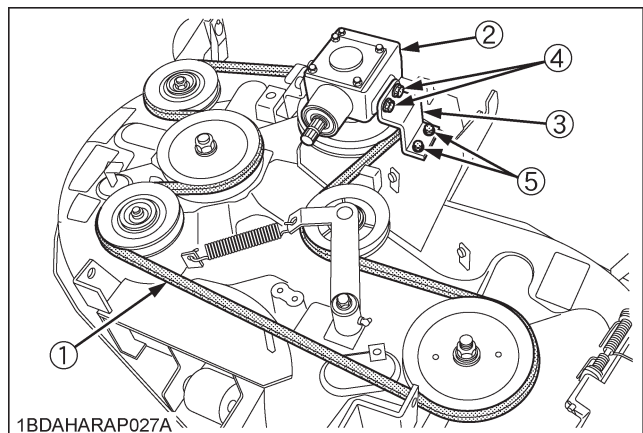
1. Remove the mower deck from the machine according to the procedure "DISMOUNTING THE MOWER DECK".
2. Loosen the bolts as shown in the figure below and remove cover A, B, C and D as shown in figure below.



1BDAHARAP080A

- (1) Cover A
- (2) Cover B
- (3) Cover C
- (4) Cover D
- (5) Bolt

3. Clean around the pulleys to remove the belt from the pulleys. Slip the belt over the top of the pulley.
4. Remove the right bracket which mount the gear box to the mower deck.



1BDAHARAP027A

- (1) Belt
- (2) Gear box
- (3) Right bracket
- (4) M12 bolt
- (5) M10 bolt

NOTE :

Tighten each bolt and nut with following torque.

- Bolt M12
77.6 to 90.2 N-m (8.0 to 9.2 kgf-m)
- Bolt M10 and Nut M10
48.1 to 55.9 N-m (4.9 to 5.7 kgf-m)

5. To install a new belt, reverse the above procedure.

■ 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. Turn the key switch to the "ON" position and hold it for about 10 seconds.
3. Start the engine and run for about 30 seconds, and then stop the engine.

ADJUSTMENT

GENERAL TORQUE SPECIFICATION

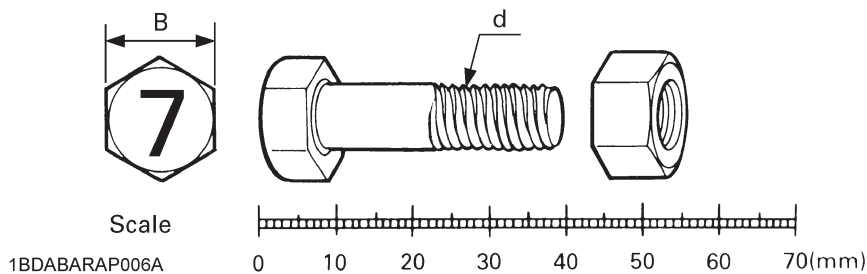
American standard cap screws with UNC or UNF threads				Metric cap screws		
SAE grade No.		GR.5 	GR.8 	Property class	Class 8.8 	Class 10.9 
1/4	(N-m) (kgf-m)	10.7 - 12.9 1.11 - 1.33	16.1 - 19.3 1.66 - 1.99	M6 (N-m) (kgf-m)	9.81 - 11.3 1.0 - 1.15	
5/16	(N-m) (kgf-m)	23.1 - 27.8 2.35 - 2.84	32.5 - 39.3 3.31 - 4.01	M8 (N-m) (kgf-m)	23.6 - 27.4 2.4 - 2.8	29.4 - 34.3 3.0 - 3.5
3/8	(N-m) (kgf-m)	47.5 - 57.0 4.84 - 5.82	61.0 - 73.2 6.22 - 7.47	M10 (N-m) (kgf-m)	48.1 - 55.8 4.9 - 5.7	60.8 - 70.5 6.2 - 7.2
7/16	(N-m) (kgf-m)	75.9 - 89.5 7.74 - 9.12	101.7 - 122 10.37 - 12.44	M12 (N-m) (kgf-m)	77.5 - 90.1 7.9 - 9.2	103 - 117 10.5 - 12.0
1/2	(N-m) (kgf-m)	108.5 - 130.2 11.07 - 13.29	149.2 - 179.0 15.22 - 18.27	M14 (N-m) (kgf-m)	124 - 147 12.6 - 15.0	167 - 196 17.0 - 20.0
9/16	(N-m) (kgf-m)	149.2 - 179.0 15.22 - 18.27	217 - 260.4 22.14 - 26.57	M16 (N-m) (kgf-m)	196 - 225 20.0 - 23.0	260 - 303 26.5 - 31.0
5/8	(N-m) (kgf-m)	203.4 - 244.1 20.75 - 24.91	298.3 - 358.0 30.44 - 36.53			

TIGHTENING TORQUE CHART

Thread size d (mm)	Hexa-Bolt Head size B (mm)	No mark		7T	
		N-m	kgf-m	N-m	kgf-m
M8	12 or 13	17.8 - 20.6 (19.2 ± 0.6)	1.9 - 2.1 (2.0 ± 0.1)	23.5 - 27.5 (25.5 ± 2.0)	2.4 - 2.8 (2.6 ± 0.2)
M10	14 or 17	39.3 - 45.1 (42.2 ± 2.9)	4.0 - 4.6 (4.3 ± 0.3)	48.1 - 55.9 (52.0 ± 3.9)	4.9 - 5.7 (5.3 ± 0.4)
M12	17 or 19	62.8 - 72.6 (67.7 ± 4.9)	6.4 - 7.4 (6.9 ± 0.5)	77.6 - 90.2 (83.9 ± 6.3)	8.0 - 9.2 (8.6 ± 0.6)
M14	19 or 22	107.9 - 125.5 (116.7 ± 8.8)	11.0 - 12.8 (11.9 ± 0.9)	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 of special material.
- Before tightening, check the figure on the top of bolt.



STORAGE



WARNING

To avoid serious injury:

- To reduce fire hazards, allow the engine and exhaust system to cool before storing the machine in an enclosed space or near combustible materials.
- To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.
- Do not clean the machine with engine running.
- To avoid fire hazards, Do not leave grass and leaves in the mower.
- When storing, remove the key from the key switch to avoid operation by unauthorized persons.

When the machine will not be operated for over 2 months, clean the machine and perform the following operations before storage.

1. Repair parts as necessary.
2. Check bolts and nuts and tighten as necessary.
3. Apply grease or engine oil to parts most likely to rust.
4. Inflate the tires to a little above the standard pressure levels. (Approximately 110%)
5. Lower the mower to the ground.
6. Remove the battery from the machine. Store the battery following the battery storage procedures. (See "Battery Condition" in "EVERY 50 HOURS" in "PERIODIC SERVICE" section.)
7. Drain fuel tank, fuel lines.
8. Store the machine where it is dry and sheltered from rain. Cover the machine with a tarpaulin.
9. Moisture content in most grasses can damage the mower if these components are not properly cleaned after use.
Make sure the mower is clean before storage.
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 MOWER FROM STORAGE

1. Check the tire inflation pressure and adjust as required.
2. Install the battery. Before installing the battery, be sure it is fully charged.
3. Do daily checking. (See "DAILY CHECK" in "PERIODIC SERVICE" section.)
4. Check all fluid levels. (engine oil, hydrostatic oil)
5. Start the engine. Shut the engine off and walk around the machine and make a visual inspection looking for evidence of oil or other fluids.
6. Run engine a couple of minutes before you put engine under load.
7. 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 the engine is not performing correctly, refer to the table below for the cause.

If	Probable cause
Engine is difficult to start.	● Fuel tank or fuel filter is clogged by dirt.
	● Air or water in the fuel system.
	● In winter, oil viscosity increases, and engine cranks slowly.
	● Battery is discharged.
Insufficient engine power.	<ul style="list-style-type: none"> ● Air cleaner element is clogged. ● Insufficient fuel flow or quality.
Engine stops suddenly.	● Insufficient fuel.
Exhaust fumes are colored.	● Fuel quality is poor.
Black smoke is emitted from the muffler during operation; power output is lowered.	● Air cleaner element clogged.
Bluish white smoke is emitted from the muffler during operation.	● Too much engine oil.
Engine will not idle.	● Fuel filter is clogged.
Engine overheats.	● Low coolant level.
	● Loose or defective fan belt.
	● Coolant flow route corroded.

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

BATTERY TROUBLESHOOTING

If	Probable cause
Starter does not function.	● Battery discharged.
	● Poor terminal connection.
	● Battery life expired.
When viewed from top, the top of plates looks whitish.	● Electrolyte level is low.
	● Battery was used too much without recharging.
Recharging is impossible.	● Battery life expired.
Terminals are severely corroded and heat up.	● Poor terminal connection or stained terminal.
Battery electrolyte level drops rapidly.	● There is a crack or pin holes in the electrolytic cells.
	● Charging system trouble.

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

MACHINE TROUBLESHOOTING

If	Probable cause
Machine operation is not smooth.	● Hydrostatic transmission oil is low.
Machine does not move while engine is running.	● Parking brake is on. ● Transmission oil is insufficient.
Machine moves when speed control pedal is not depressed. (Engine is operated.)	● Hydrostatic neutral system is not correctly adjusted.

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

MOWER TROUBLESHOOTING

If	Probable cause
Discharge deflector plugged.	<ul style="list-style-type: none"> ● Grass too wet. ● Grass too long. ● Cutting too low. ● Engine rpm too low. ● Ground speed too fast. ● Restricted airflow.
Streaking of uncut grass.	<ul style="list-style-type: none"> ● Ground speed too fast. ● Engine rpm too low. ● Grass too long. ● Blades dull or damaged. ● Debris in mower deck.
Uneven cut.	<ul style="list-style-type: none"> ● Mower deck not level. ● Ground speed too fast. ● Blades dull. ● Blades worn. ● Tire inflation. ● Mower rollers not adjusted correctly.
Blades scalping grass.	<ul style="list-style-type: none"> ● Cutting height too low. ● Blades speed too fast. ● Ridges in terrain. ● Rough or uneven terrain. ● Bent blade(s). ● Low tire inflation. ● Anti-scalp rollers not adjusted correctly.
Belt slipping.	<ul style="list-style-type: none"> ● Belt tension incorrect. ● Mower deck plugged. ● Debris in pulleys. ● Worn belt.
Excessive vibration.	<ul style="list-style-type: none"> ● Debris on mower deck or in pulleys. ● Damaged mower belt. ● Damaged pulleys. ● Pulleys out of alignment. ● Blades out of balance.
Mower loads down machine.	<ul style="list-style-type: none"> ● Engine rpm too low. ● Ground speed too fast. ● Debris wrapped around mower spindles.
Grass tips are jagged and turn grayish brown.	<ul style="list-style-type: none"> ● Blades dull. ● Blades worn. ● Mower deck is not level.

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

OPTION

Consult your KUBOTA Dealer for further details.

APPENDIX

SOUND AND VIBRATION MEASUREMENTS

◆ Sound Pressure Level Measured Per ISO5395

Model	Engine speed	Sound pressure at the operator's position	Uncertainty K
GR1600-ID-2 with RCK42-GR16-2	3383 min ⁻¹ (rpm)	84.57 dB (A)	2.6 dB (A)

NOTE :

- The published measurements were obtained through actual field data according to the standard test procedure in EN ISO 5395-1:2013/A1:2018.
The level when in use is dependent on the operating environment, driving style and condition of the machine.
Wear the appropriate hearing protection following its manufacturer's instructions.

◆ Hand/Arm Vibration Level Measured Per ISO5395

Model	Engine speed	Hand/Arm vibration	Uncertainty K
GR1600-ID-2 with RCK42-GR16-2	3383 min ⁻¹ (rpm)	1.93 m/s ²	0.30 m/s ²

◆ Whole Body Vibration Level Measured Per ISO5395

Model	Engine speed	Whole body vibration	Uncertainty K
GR1600-ID-2 with RCK42-GR16-2	3383 min ⁻¹ (rpm)	0.76 m/s ²	0.14 m/s ²

NOTE :

- The published measurements were obtained according to the standard test procedure in EN ISO 5395-1:2013/A1:2018.
The level when in use is dependent on the operating environment, driving style and condition of the machine.
Take steps to reduce vibration. eg. correct tire pressure, reducing speed over rough ground.

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EU-DECLARATION OF CONFORMITY
DECLARATION UE DE CONFORMITE
EU-KONFORMITÄTSEKLRÄRUNG



Manufacture :

Fabricant :

Hersteller :

KUBOTA Manufacturing of America Corporation

Address :

Adresse :

Adresse :

Industrial Park North, 2715 Ramsey Road, Gainesville, GA, 30501 U.S.A.

Name and address of the person in the European Community
authorized to compile the technical construction file :

Kazuo KOIKE

Nom et adresse de la personne, dans la Communauté européenne,
autorisée à compiler le dossier de construction technique :

Kubota Technical Center Europe
19 a 25 rue Jules Verceyruysse

Name und Adresse der Person in der Europäischen Gemeinschaft,
die dazu ermächtigt wird, die technische Dokumentation zu kompilieren :

95101 Argenteuil
France

Model:

Modèle:

Modell:

GR1600-ID-2

Lawn mower:

Tondeuse à gazon:

Mähwerk:

RCK42-GR16-2

Serial No.:

N° de série:

Serien-Nr.:

40062~99999

Lawn mower combination	Engine type	Cutting width cm	Measured sound power level dB (A)	Guaranteed sound power level dB (A)
GR1600-ID-2	Z482	107	99.0	100

Kubota Corporation keeps technical documentation.

64, Ishizu-Kitamachi, Sakai-ku, Sakai-City, Osaka, Japan 590-0823

Notified Body:

Organisme notifié:

Benannte Stelle:

TÜV SÜD Industrie Service GmbH

Westendstraße 199

80686 München

This machine complies with the essential health and safety requirements relating to design and construction of machinery, according to EC directive 2006/42/EC and conform to the directive 2000/14/EC amended by 2005/88/EC (ANNEX VI) and also complied with the electromagnetic compatibility according to EC directive 2014/30/EU and the restriction of the use of certain hazardous substances according to RoHS directive 2011/65/EU.

Cette machine est conforme aux exigences essentielles de santé et de sécurité relatives au design et à la construction de machines selon la directive CE 2006/42/CE et la directive 2000/14/CE modifiée par 2005/88/CE (ANNEXE VI) et satisfait également la compatibilité électromagnétique de la directive CE 2014/30/UE et à la limitation de l'utilisation de certaines substances dangereuses conformément à la directive RoHS 2011/65/UE.

Entwurf und Konstruktion dieser Maschine entsprechen den erforderlichen, grundlegenden Gesundheits- und Sicherheitsanforderungen der Richtlinien 2006/42/EG, sowie der Richtlinie 2000/14/EG, die entsprechend 2005/88/EG (ANHANG VI) geändert wurde; ebenso entspricht das Gerät den Vorschriften in Bezug auf elektromagnetische Kompatibilität, wie in der Richtlinie 2014/30/EU festgelegt und der Beschränkungsrichtlinie zur Verwendung bestimmter gefährlicher Stoffe gemäß RoHS-Richtlinie 2011/65/EU.

27 January 2021

Hirohiko Arai

President

Président

Geschäftsführer

KUBOTA Manufacturing of America Corporation

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