Kubota

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KUBOTA Corporation

Code No.
No de code. K2113-7121-3
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G2160

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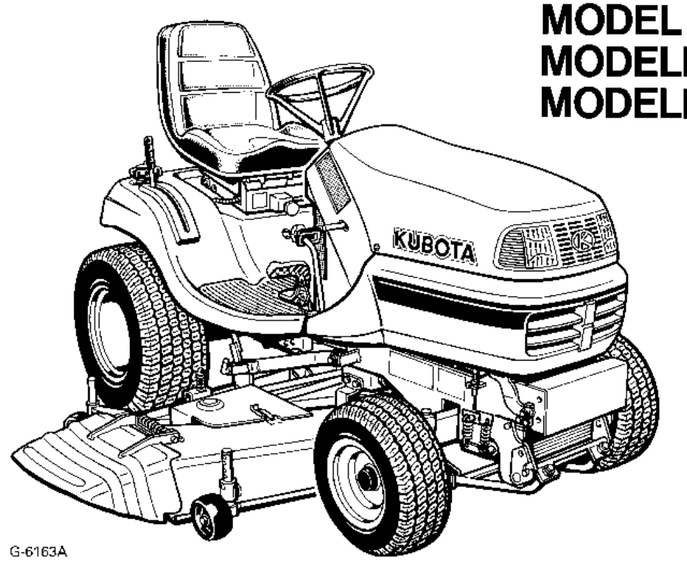
OPERATOR'S MANUAL
KUBOTA RIDING MOWER

MANUEL DE L'UTILISATEUR
TONDEUSE AUTOPORTEE KUBOTA

BEDIENUNGSANLEITUNG
KUBOTA AUFSITZMAHER

ENGLISH
FRANÇAIS
DEUTSCH

MODEL
MODELE **G2160**
MODELL



G-6163A

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

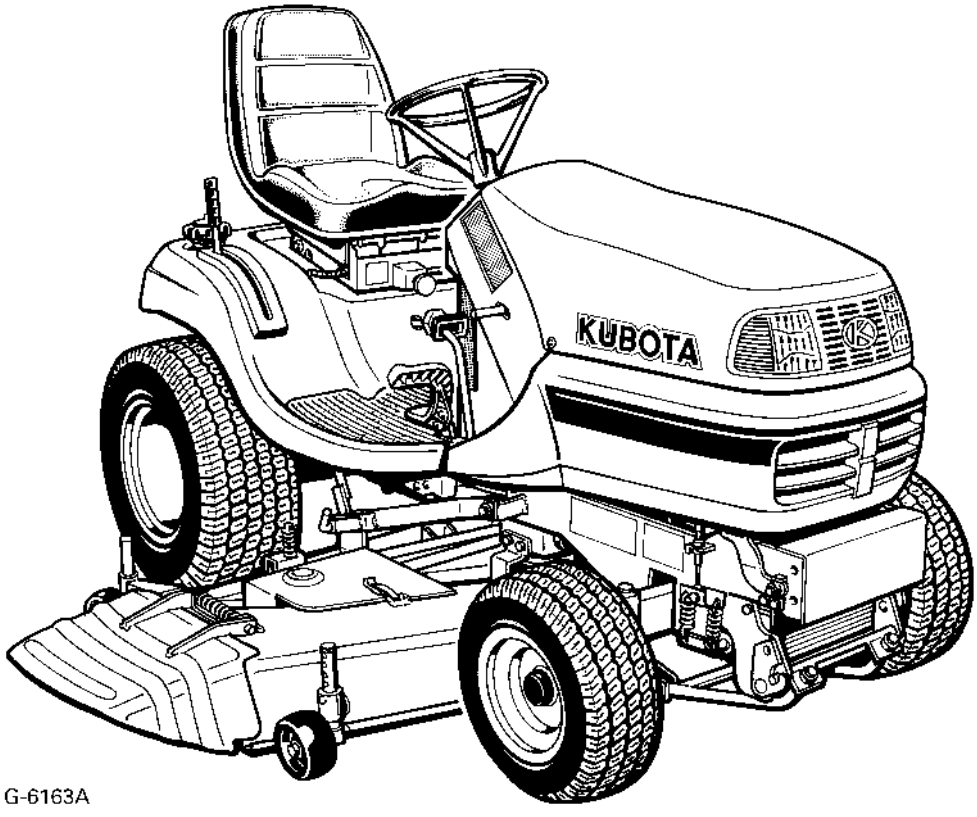
Kubota

ENGLISH

OPERATOR'S MANUAL

KUBOTA
RIDING MOWER

MODEL G2160



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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

UNIVERSAL SYMBOLS

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


Safety Alert Symbol


Diesel Fuel


Gasoline Fuel


Fuel-Level


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


Choke


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 fine materials and under a rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your machine, please read this manual carefully. It will help you become familiar with the operation of the machine and contains many helpful hints about machine maintenance. It is KUBOTA's policy to utilize, as quickly as possible, every advance in our research. The immediate use of new techniques in the manufacturing of products may cause some small parts of this manual to be 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, may result in minor or moderate injury.

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

NOTE : Gives helpful information.

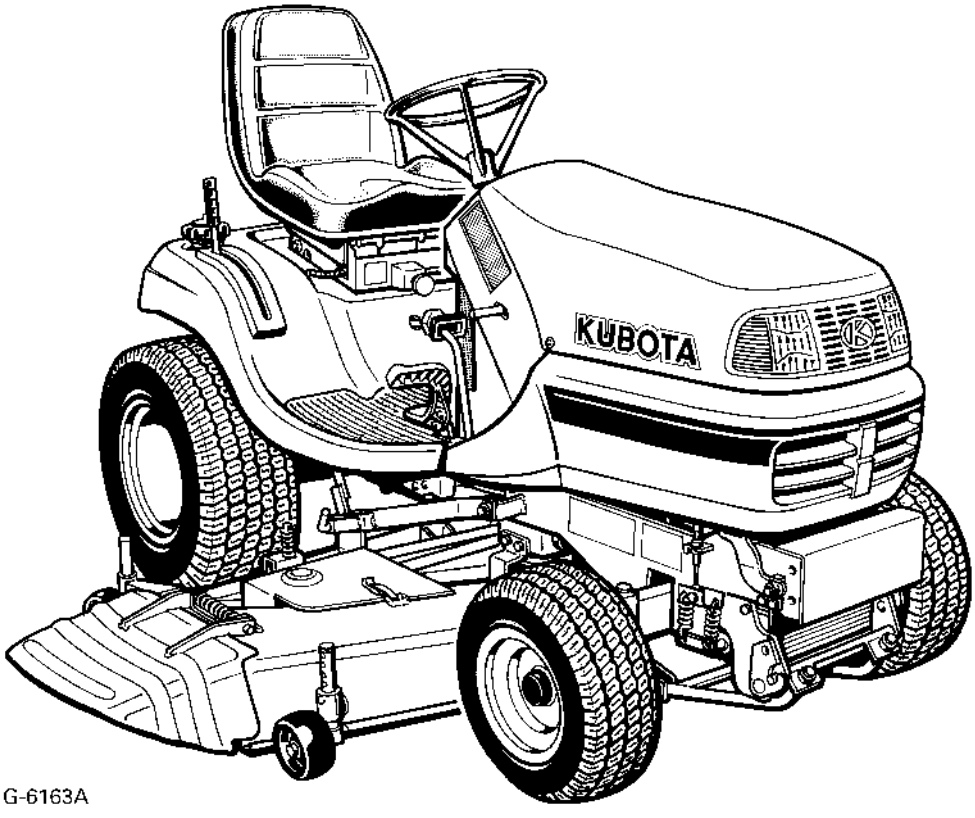
MANUEL DE L'UTILISATEUR

FRANÇAIS

KUBOTA

TONDEUSE AUTOPORTEE

MODELE G2160



G-6163A

MANUEL A LIRE ET A CONSERVER

Kubota

ABREVIATIONS

Abréviations	Définitions
API	Institut américain du pétrole
PDF	Prise de force
PT	Type permanent (=antigel au glycol éthylène)
tr/min	Tours par minute
SAE	Société des ingénieurs automobiles

SYMBOLES UNIVERSELS

Employés comme guide lors de l'utilisation de votre machine, des symboles universels variés ont été apposés sur les contrôles et les instruments. Ces symboles et leur significations sont montrés ci-dessous.


Symbole d'alerte à la sécurité


Carburant diesel


Essence


Niveau du carburant


Frein


Frein de stationnement


Arrêt du moteur


Préchauffage


Moteur en marche


Commande de démarrage


Embrayage de la prise de force-Position "DESENGAGEE"


Embrayage de la prise de force-Position "ENGAGEE"


Hauteur De Coupe


Tondeuse position "ABAISSEE"


Tondeuse position "RELEVEE"


Eclairage

Phares allumés

Phares éteints


Rapide


Lente


Commande de régime du moteur


Starter


Batterie


Pression d'huile


Température du liquide de refroidissement

AVANT-PROPOS

Vous êtes maintenant l'heureux propriétaire d'une TONDEUSE AUTOPORTEE. Cette machine est le produit de l'étude et de la fabrication de haute qualité KUBOTA. Elle est fabriquée avec les meilleurs matériaux et sous un système de contrôle qualité très rigoureux, et vous donnera de longues années de service satisfaisant. Pour tirer le meilleur parti de votre machine KUBOTA, lisez attentivement ce manuel. Il vous aidera à vous familiariser avec son fonctionnement et vous y trouverez de nombreux conseils sur l'entretien de la machine. Chez KUBOTA, nous avons pour principe d'appliquer, aussi tôt que possible, tous les progrès réalisés grâce à notre recherche. La mise en œuvre immédiate de nouvelles techniques dans la fabrication de certains produits pourra faire que de petites parties de ce manuel soient périmées. Les distributeurs et concessionnaires KUBOTA disposeront cependant des informations les plus récentes. N'hésitez pas à les consulter.

SYMBOLE DE DANGER

Ce symbole est celui utilisé dans l'industrie pour indiquer un danger. Il est utilisé pour attirer votre attention sur des éléments ou des opérations qui pourraient être dangereux pour vous-mêmes ou d'autres utilisateurs de cette machine. Lisez donc attentivement les consignes qu'il signale. Il est essentiel que vous lisiez les instructions et les réglementations de sécurité avant d'entreprendre l'assemblage ou l'utilisation de cette machine.

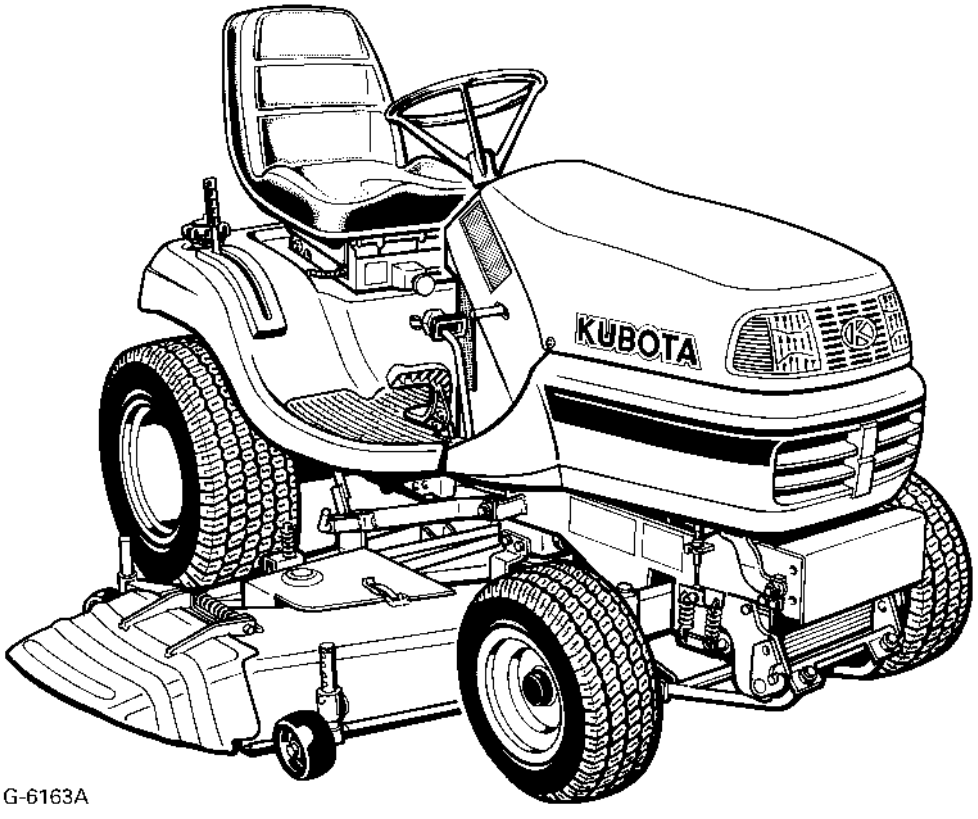
DANGER :	Indique une situation éminemment dangereuse, des blessures graves ou la mort peuvent survenir si cette situation n'est pas évitée.
AVERTISSEMENT :	Indique une situation potentiellement dangereuse, des blessures graves ou la mort peuvent survenir si cette situation n'est pas évitée.
ATTENTION :	Indique une situation potentiellement dangereuse, des blessures mineures ou graves peuvent survenir si cette situation n'est pas évitée.
IMPORTANT :	Si les instructions se sont pas suivies des dommages à l'équipement ou à la propriété peuvent survenir.
NOTE :	Donne des informations pertinentes.

BEDIENUNGSANLEITUNG

KUBOTA
AUFSITZMAHER

MODELLE G2160

DEUTSCH



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DIESE ANLEITUNG SORGFALTIG DURCHLESEN UND AUFBEWAHREN

Kubota

LISTE DER ABKÜRZUNGEN

Abkürzungen	Beschreibung
API	American Petroleum Institute
PTO	Zapfwelle
PT	Ganzjahrestyp (Äthylen-Glykol Frostschutz)
U/min	Umdrehungen per Minute
SAE	Society of Automotive Engineers

ALLGEMEINE SYMBOLE

Um Ihnen die Bedienung Ihres Traktors zu erleichtern wurden Instrumente und Bedienungselemente mit einer Reihe von Symbolen versehen. Diese Symbole sind nachfolgend mit ihren entsprechenden Beschreibungen aufgeführt.

 Sicherheits Warnsymbol

 Diesel Kraftstoff

 Kraftstoff

 Kraftstoffanzeige

 Bremse

 Parkbremse

 Motorstoppleuchte

 Vorglühen

 Motorlaufkontrolleuchte

 Anlasserkontrolleuchte

 Zapfwellen-Kontrolleuchte “AUS”

 Zapfwellen-Kontrolleuchte “EIN”

 Schnitthöhe

 Mähdeck “ABSENKEN”

 Mähdeck “ANHEBEN”

 Scheinwerfer

 Scheinwerfer “EIN”

 Scheinwerfer “AUS”

 Schnell

 Langsam

 Gashebel

 Batterie

 Öldruck

 Kühlflüssigkeitstemperatur

VORWORT

Sie sind nun stolzer Besitzer eines Aufsitzmähers von KUBOTA. Diese Maschine entspricht in bezug auf Konstruktion und Herstellung den hohen Qualitätsansprüchen von KUBOTA. Die strengen Qualitätskontrollen sowie die Verwendung bester Werkstoffe garantieren einen langen, störungsfreien Betrieb des Gerätes. Das vorliegende Handbuch soll dem Bediener helfen, mit der Bedienung und Wartung des Maschine vertraut zu werden, um diese bestmöglichst einsetzen zu können. Eine Hauptdevise von KUBOTA ist es, neue Erkenntnisse und Forschungsergebnisse unverzüglich zu verarbeiten. Es ist daher möglich, daß einige in diesem Handbuch aufgeführte Einzelteile bzw. technische Daten bereits veraltet sind. Die Vertragshändler von KUBOTA können jedoch jederzeit über die neuesten Entwicklungen und Veränderungen Auskunft geben.

DIE SICHERHEIT IST OBERSTES GESETZ

Dieses Sicherheits Warnsymbol finden Sie vor jedem speziellen Sicherheits Hinweis innerhalb dieses Handbuches und auf den speziellen Maschinenaufklebern, die vor Verletzungen durch Bedie nungsfehler und Unachtsamkeiten warnen. Beachten Sie diese Hinweise besonders sorgfältig. Lesen Sie diese Anweisungen und Sicherheitsvorschriften vor Zusammenbau und Inbetriebnahme Ihres Gerätes aufmerksam durch.

GEFAHR : Dieses Zeichen weist auf die Möglichkeit einer äußerst gefährlichen Situation hin die zu einem schweren Unfall führen kann, wenn sie nicht vermieden wird.

WARNUNG : Dieses Zeichen warnt davor, keine gefährlichen Situationen einzugehen, die zu schweren Unfällen führen können.

ACHTUNG : Dieses Zeichen macht Sie darauf aufmerksam, daß es durch unaufmerksames Verhalten zu Unfällen kommen kann.

WICHTIG : Dieses Zeichen macht Sie darauf aufmerksam, die entsprechenden Hinweise der Anleitung zu beachten, damit es nicht zu Beschädigungen von Traktor und Anbaugeräten kommen kann.

HINWEIS : Hinter diesem Zeichen finden Sie wichtige Informationen.

EC-DECLARATION OF CONFORMITY
DECLARATION CE DE CONFORMITE
EG-KONFORMITÄTSERKLÄRUNG

CE

Maker:
Fabricant:
Hersteller:

KUBOTA

Authorised Representative:
Représentatif légal:
Bevollmächtigter Vertreter:

Kubota Technical Center Europe
19 a 25 rue Jules Vercruysse
95101 Argenteuil
France

Model:
Modèle:
Modell:

G2160

Lawn mower:
Tondeuse à gazon:
Mähwerk:

RCK48 RCK54

Serial No.:
N° de série:
Serien-Nr.:

10001~

Lawn mower combination	Engine		Measured sound power level dB(A)	Guaranteed sound power level dB(A)	Cutting width cm	Blade speed rpm
	Type	RPM				
G2160 RCK48	D782	3200	102.4	105	122	3606
G2160 RCK54	D782	3200	103	105	137	3263

Kubota Corporation keeps technical documentation.
64, Ishizu-Kitamachi, Sakai-ku, Sakai-City, Osaka, Japan 590-0823

Notified Body:
Organisme notifié:
Benannte Stelle:

Société Nationale de Certification
et d'Homologation
11, route de Luxembourg
L-5230 Sandweiler

This machine complies with the essential health and safety requirements relating to design and construction of machinery, according to EC directive 98/37/EC and conform to the directive 2000/14/EC (ANNEX VI) and also complied with the electromagnetic compatibility according to EC directive 89/336/EEC.

Cette machine est conforme aux exigences essentielles de sécurité et de santé selon la Directive EC 98/37/CE et de la Directive EC 2000/14/CE (ANNEX VI) et satisfait aussi à la compatibilité électromagnétique de la directive EC 89/336/CEE.

Entwurf und Konstruktion dieser Machine entsprechen den erforderlichen, grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinien 98/37/EG, 2000/14/EG (ANNEX VI) und 89/336/EWG.

24 April 2006

Takashi Yoshii
President

KUBOTA Manufacturing of America Corporation
Industrial Park North, 2715 Ramsey Road, Gainesville, GA, 30501 U.S.A.

KUBOTA Corporation is ···

Since its inception in 1890, KUBOTA Corporation has grouwn 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, 19 plants and 16,000 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 and construction, transportation.
Thousands of people depend on KUBOTA's know-how, technology, experience and customer service. You too can depend on KUBOTA.

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, 19 usines et 16,000 employés produisent plus de 1,000 articles et produits différents petits et grands.
Tous ces produits et les services qui en dépendent sont cependant reliés par une organisation centralisée.
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 et la construction, 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 Corporation 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 ständing wachsende Angebot an Dienstleistungen beigetragen. Heute werden von 16000 Beschäftigten in 19 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, Archtitektur, Bau-und Transportwesen bestmöglich auszuschöpfen. Tausende bauen auf KUBOTA -und Sie?

ENGLISH

CONTENTS

ENGLISH

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. Replace the muffler if it has a fault.
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, dust mask, etc. are recommended.
6. While mowing, always wear substantial foot wear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
7. Do not operate machine or any implement attached to it while under the influence of alcohol, drugs, or other substances or while fatigued.
8. 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")
9. Keep the machine and attachments in good operating condition and keep safety devices in place and in proper working condition.
10. This machine is equipped with many safety devices. Do not attempt to remove or alter them.
11. Keep all shields and guards in place. Replace all missing or damaged items for your safety.
12. 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.
13. Before allowing other people to use your machine, explain proper operation to them and have them read this manual before operation.
14. Never allow passengers or non-qualified operators on the machine at any time. You must operate the machine from the seat only.
15. 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.
16. Keep your machine clean. Dirt, grease, and trash accumulations contribute to fires or lead to personal injury.
17. 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. On multi-bladed mowers, take care as rotating one blade can cause other blades to rotate.
18. Use only implements 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.
19. Follow the maintenance recommendations. See "MAINTENANCE ".
20. It is recommended that your machine be thoroughly inspected at least once a year by an authorized KUBOTA Dealer.

2. OPERATING

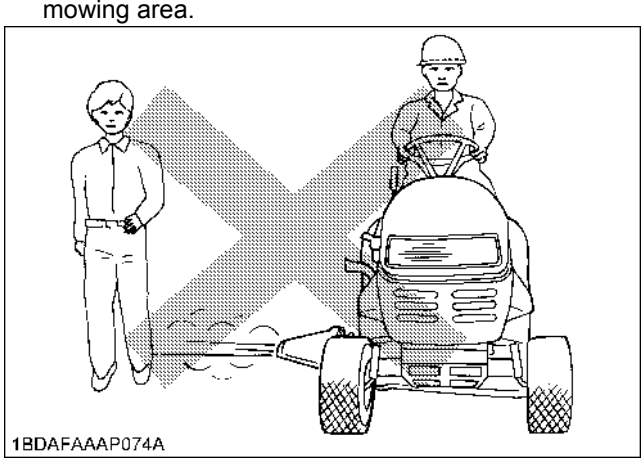
◆ **Starting**

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 bypassing 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.



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 and cleaning blockages or unclogging chute.
10. Shut the engine off and wait for all movement to stop before removing grass catcher or 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. 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.
13. 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.
14. Use only implements 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.
15. Do not operate the mower without either the entire grass catcher or the guard in place.
    Be aware of the mower discharge direction and do not point it at anyone.
16. Watch for traffic when operating near or crossing roadways.
17. Stop the blades rotating before crossing surface other than grass.
18. Never leave a running machine unattended. Always turn off blades, set parking brake, stop engine, and remove the key before dismounting.
19. Be extremely alert for all other traffic when operating the mower and grass catcher near public roads or highways.
20. 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.
21. 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.

◆ **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. The control of a ride-on machine sliding on a slope will not be regained by the application of the brake.

DO

1. Mow up and down slopes, not across, to avoid machine tip-over. Stay off hills and slopes too steep for safe operation.
2. Remove obstacles such as rocks, tree limbs, etc.
3. 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.
4. Use slow speed.
5. Follow KUBOTA's recommendations for wheel weights or counterweights to improve stability.
6. The weight of grass in the grass catcher may increase the possibility of tip over.
7. Keep all movement on slopes slow and gradual.
   Do not make sudden changes in speed or direction.
8. Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly straight down the slope.
9. If machine stops going uphill, disengage PTO and back slowly down.

10. Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tip-over or loss of control.
11. Use special caution when changing direction on slopes.

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 machine.

◆ **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 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. Local regulation can restrict the age of the operator.
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 safety 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 relatively flat areas.

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 authorized attachments designed for lift link usage.

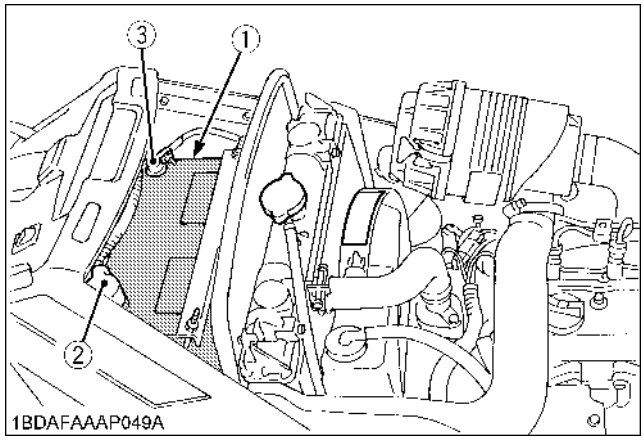
5. TRANSPORTING

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. This machine is not allowed to be used on public roads.
4. Use extra care when loading or unloading the machine into a trailer or truck.

6. SERVICING

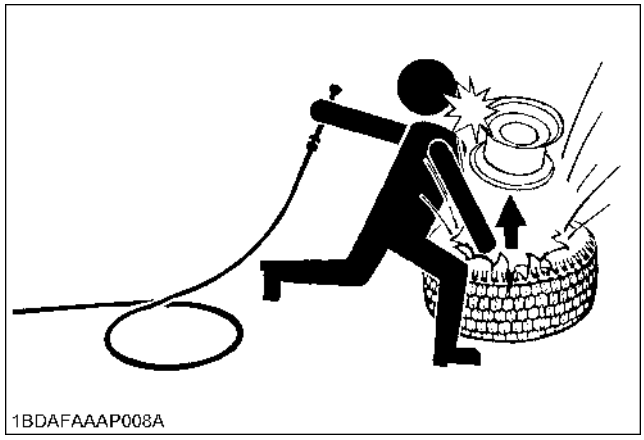
1. Before servicing the machine, park the machine on a firm, level surface, set the parking brake, stop the engine and remove the key.
2. Securely support machine or any machine elements with stands or suitable blocking before working underneath. For your safety do not rely or hydraulically supported devices, they may leak down, suddenly drop or be accidently 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 machine.
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.

6. Keep your machine clean. Dirt and grass build-up can cause fires and may lead to serious personal injury.
   Periodically wash the grass container to insure the safety signs can be read.
   Replace all safety signs that are damaged, lost or have otherwise become illegible. If a part to be replaced has a sign on it, obtain a new safety sign 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. Operating the engine at excessive speed can increase the hazard of personal injury.
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. On multi-bladed mowers, take care as rotating one blade can cause other blades to rotate.
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. To avoid sparks from an accidental short circuit, always disconnect the battery's negative (-) cable first and connect it last.



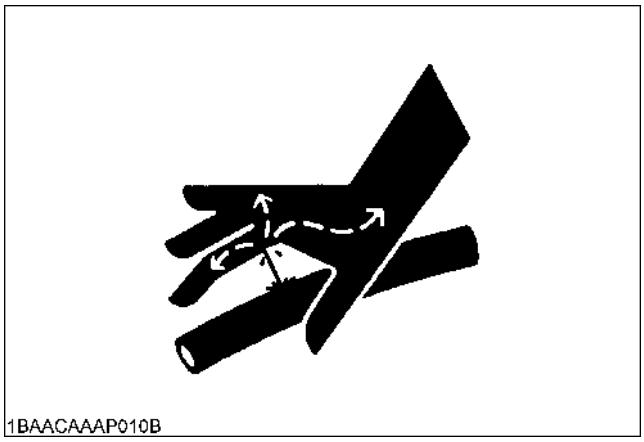
(1) Battery
(2) Positive cable (+)
(3) Negative cable (-)

17. Make sure circlips, nuts and spring lock washers are properly secured on the front and rear wheels, respectively.
18. Never tamper with safety devices.
    Check their proper operation regularly.
19. Check brake operation frequently. Adjust and service as required.
20. Properly dispose of used lubricants, filters, batteries, and other such components.
21. Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.
22. Always maintain the correct tire inflation pressure. Do not inflate tires above the recommended pressure shown in the Operator's Manual.

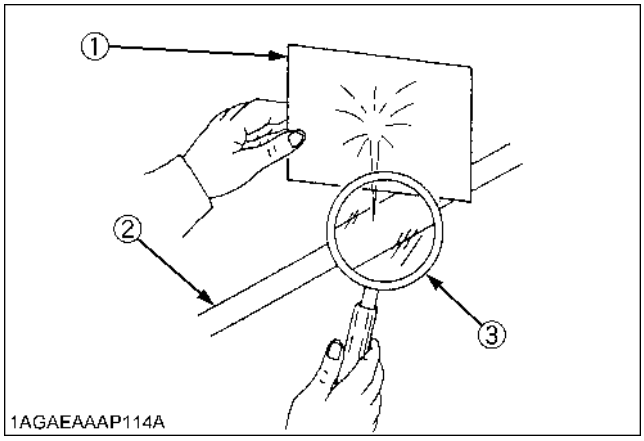


23. Securely support the machine when changing wheels.
24. Make sure that wheel bolts have been tightened to the specified torque.

25. 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.



26. 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

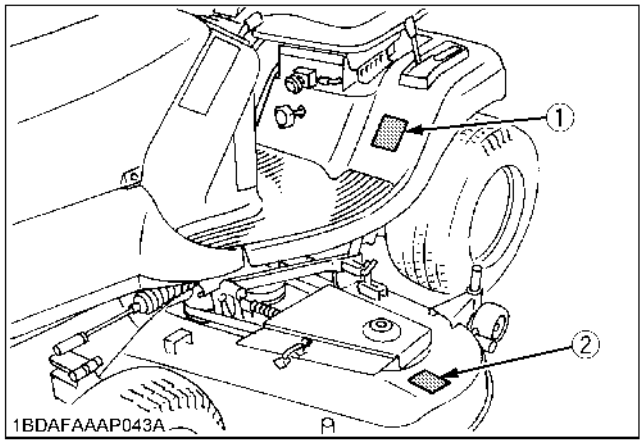
27. Waste products such as used oil, fuel, hydraulic fluid, and batteries, can harm the environment, people, pets and wildlife. Please dispose of properly.
28. Do not use beverage containers for waste fluids or other products. Someone, particularly children, may drink them by mistake.
29. See your local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

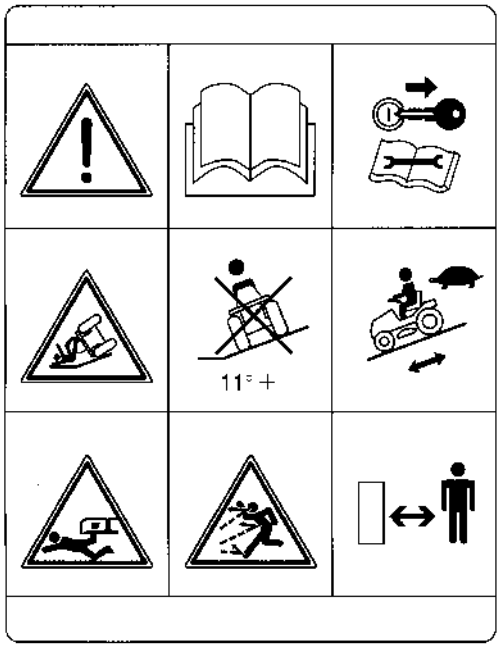
7. STORAGE

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. DANGER, WARNING AND CAUTION LABELS



(1) Part No. K1213-6581-1



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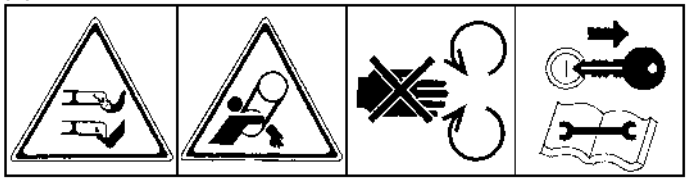
TO AVOID INJURY OR DEATH:

- 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. K5254-7311-1



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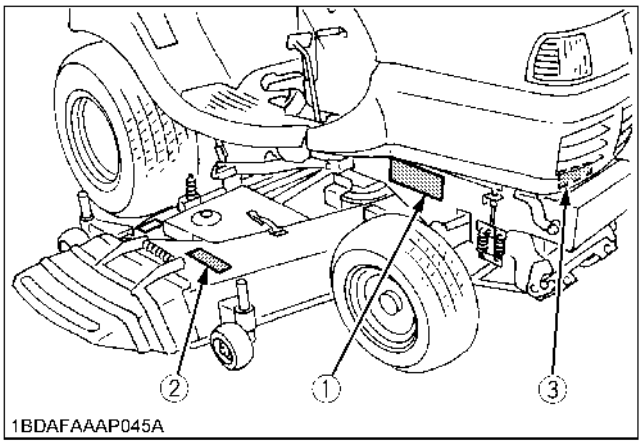
ROTATING BLADES HAZARDOUS:

- DO NOT put hands or feet into mower when engine is running.
- Keep all shields and guards in place.
- Stay clear of rotating parts.
- Stop the engine and remove key before servicing.



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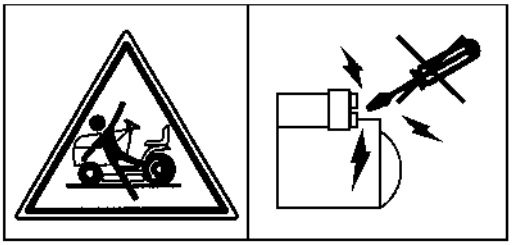
(1) Part No. K1213-6583-1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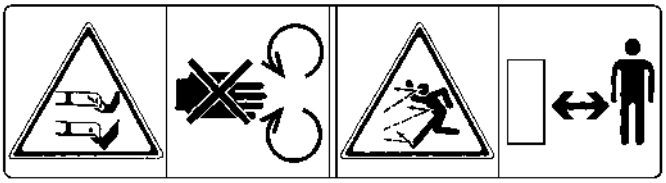
TO AVOID MACHINE RUNAWAY:
- DO NOT start engine by shorting across starter terminals or bypassing the safety start switch.

(2) Part No. K5652-4178-2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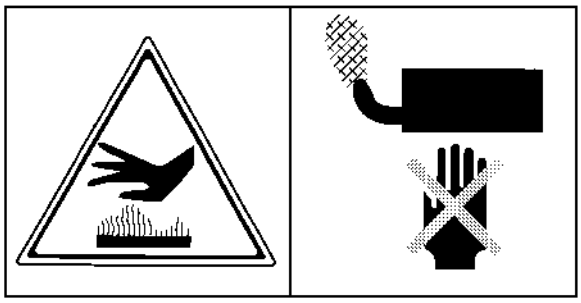
- DO NOT put hands or feet into mower when engine running.
- Stay clear of rotating parts.
- DO NOT allow any bystanders or children around or near machine at all times when the engine is running.

(3) Part No. K2561-6542-1
Do not touch hot surface like muffler, etc.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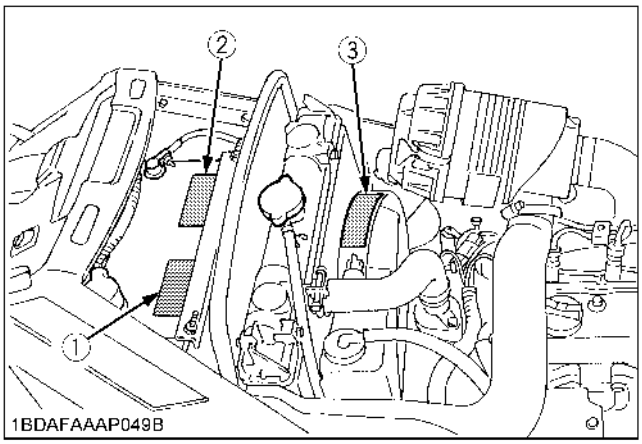

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(1) Part No. K1211-6115-1

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DANGER / POISON
- SHIELD EYES
  EXPLOSIVE GASES can cause blindness or injury.
- NO SPARKS / FLAMES / SMOKING
- SULFURIC ACID can cause blindness or severe burns.

(2) Part No. K1211-6116-1

1BDAFAAAP065A

KEEP OUT OF THE REACH OF CHILDREN.
DO NOT TIP.
DO NOT OPEN BATTERY!
- Flush eyes immediately with water.
- Get medical help fast.

(3) Part No. K1213-6586-1
Stay clear of engine fan and fan belt.


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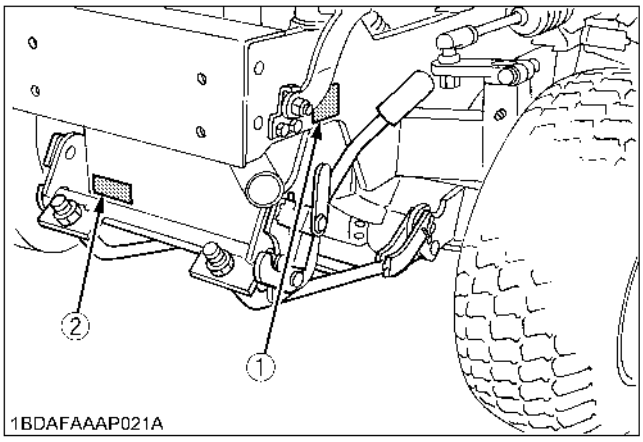

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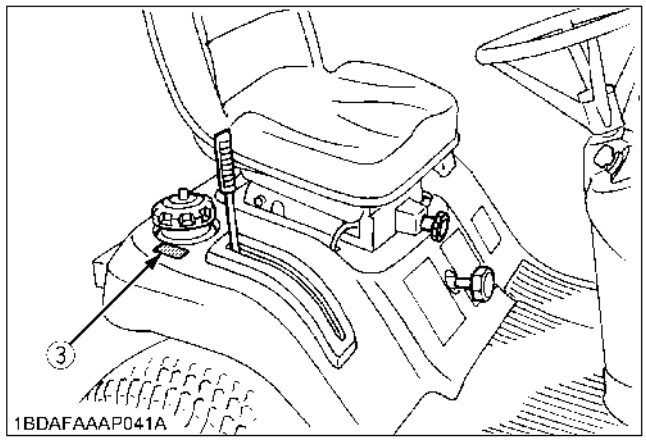

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(1) Part No. K1213-6532-1
Do not touch hot surface like muffler, etc.


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(3) Part No. K1310-6585-1
Diesel fuel only No fire


1BDAFAAAP069A

(2) Part No. K2113-6574-1

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9. CARE OF DANGER, WARNING, AND CAUTION LABELS

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

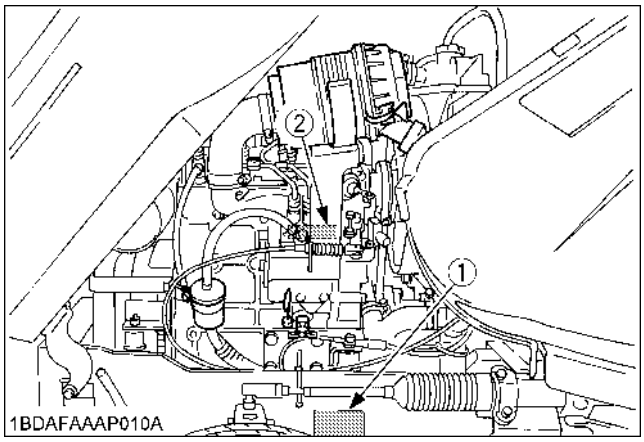
SERVICING OF MACHINE

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

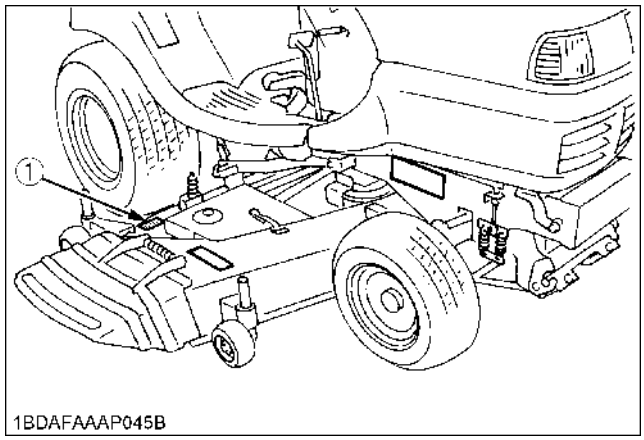
Locate the serial numbers now and record them in the space provided.

KUBOTA G2160

	Type	Serial No.
Machine		
Engine		
Mower		
Date of Purchase		
Name of Dealer (To be filled in by purchaser)		



(1) Machine serial No.
(2) Engine serial No.



(1) Mower serial No. (RCK48-21G, RCK54-24G)

SPECIFICATIONS

	Model			G2160
Engine	Model			D782-E2-G21
	Type			Water-cooled, Diesel engine
	Total displacement		cm^3	778
	Gross power		kW (PS)	15.6 (20.7)
	No.of cylinders			3
	Starter			Electric starter with battery
	Battery			51R (12V, 450CCA)
	Fuel			Diesel fuel No.1 [below -10℃] Diesel fuel No.2 [above -10℃]
	Preheating system			Super glow
	Engine stop			Key stop
Capacities	Fuel tank		L	22
	Engine oil		L	2.8
	Radiator coolant		L	2.1
	Hydrostatic transmission oil		L	4.5
Machine	PTO			Belt
	Direction of revolution			Clockwise viewed from top
	PTO Brake			Available
	PTO clutch			Belt tension
	Tires	Front		16 x 6.50-8
		Rear		23 x 10.50-12
	Steering type			Electric power steering
	Brake			Internal expanding brake
	Travel speed control			Foot pedal
	Transmission			Hydrostatic
	Traveling speeds	Forward	km/h	0 to 15.0
		Reverse	km/h	0 to 6.0
Dimensions	Overall length		mm	1885
	Overall width		mm	1045
	Overall height		mm	1280
	Wheel base		mm	1290
	Tread	Front	mm	825
		Rear	mm	780
	Weight (without mower)		kg	390

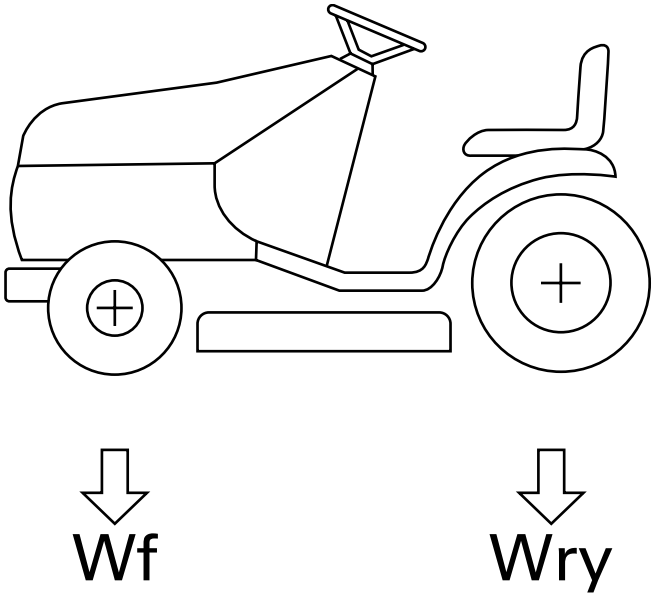
Mower	**Type**			**RCK48-21G**	**RCK54-24G**
	Cutting width		mm	1219	1372
	Cutting height		mm	25 to102	
	Adjustment of cutting height			Dial gauge	
	Mounting method			Quick joint, Parallel linkage	
	Weight (Approx.)		kg	71	95
	Dimensions	Total length	mm	900	946
		Total width	mm	1545	1690
		Total height	mm	264 Min.	273 Min.
	Discharge			Right side	

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

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.)

Maximum axle loading weight		
Front axle Wf	Rear axle Wry	Total gross machine weight
350 kg	550 kg	700 kg



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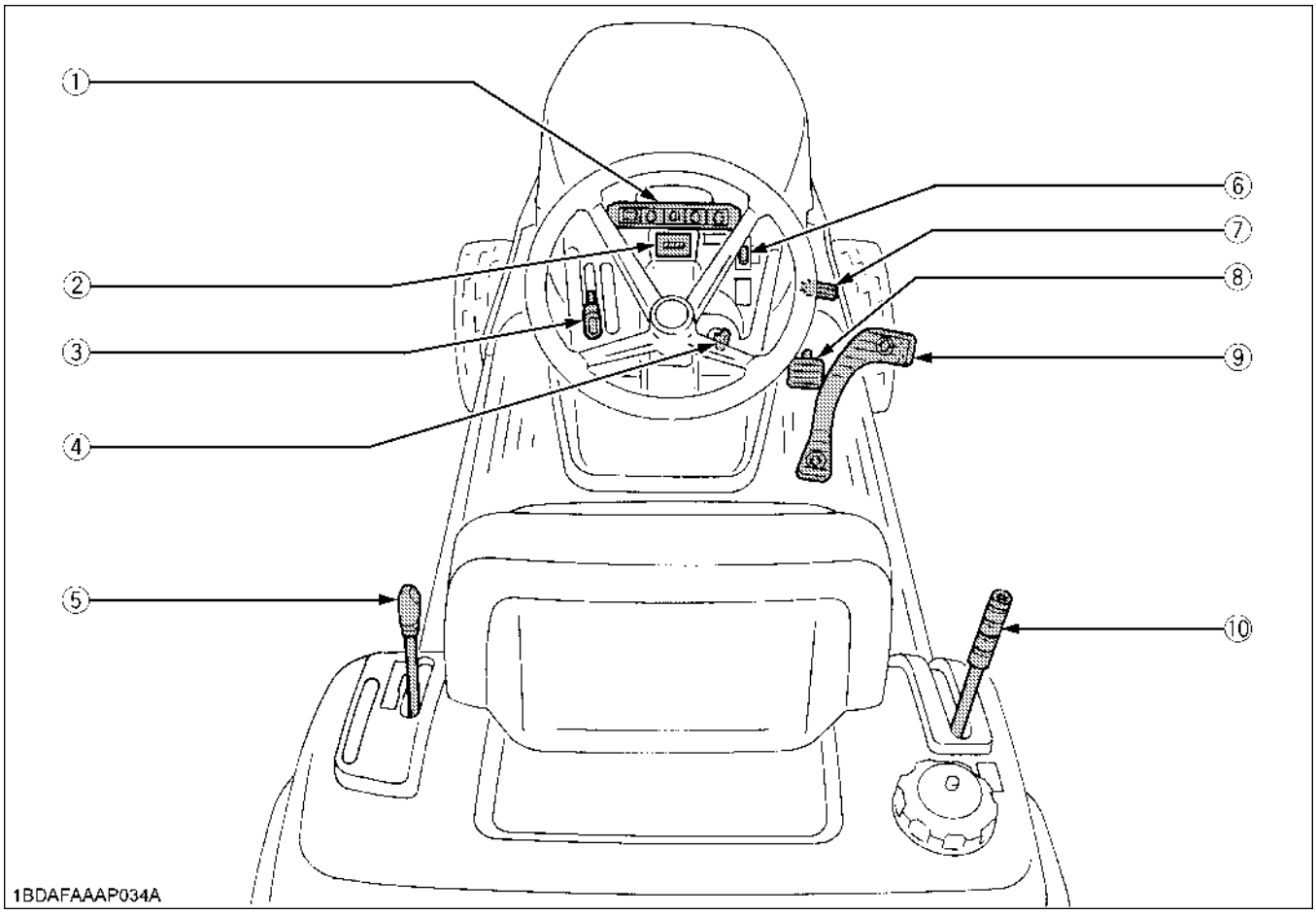
■Ballast

CAUTION

- **Additional ballast will be needed for operating heavy attachments. When the attachment is raised, drive slowly over rough ground, regardless of how much ballast is used.**
- **Add front ballast to increase front end stability and help prevent possible front end tip up.**
- **Always back up when going up a slope. Driving forward could cause the machine to tip over backward. Stay off hills and slopes too steep for safe operation.**

Front ballast is added for stability and steering control when heavy rear mounted equipment such as the rotary tiller is installed.
Front ballast also compensates for weight transferred to the rear wheels by the draft of towed implements through the hitch.
Add additional front ballast, if necessary, for stability and safety during transport of heavy rear mounted equipment.
Front end ballast may not always maintain the required stability if the machine is driven too fast over rough ground with heavy rear mounted equipment in the raised position. Use care and drive slowly under these conditions.
Limit ballast to machine operating capacity. Be sure to remove ballast when it is not needed.
Add ballast to rear end if needed for stability. Heavy front mounted attachments tend to lift rear wheels. Add enough ballast to maintain steering control and prevent tipover.The Attachment's Manual shows how much rear ballast is required for your application. Rear ballast is available from your KUBOTA Dealer.

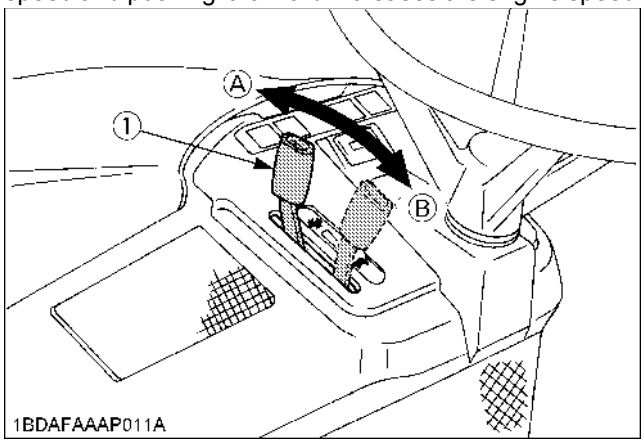
INSTRUMENT PANEL AND CONTROLS



(1) Easy checker™
(2) Hour meter
(3) Throttle lever
(4) Key switch
(5) Hydraulic lift lever
(6) Light switch
(7) Parking brake pedal
(8) Brake pedal
(9) Speed control pedal
(10) PTO lever

■ Throttle Lever

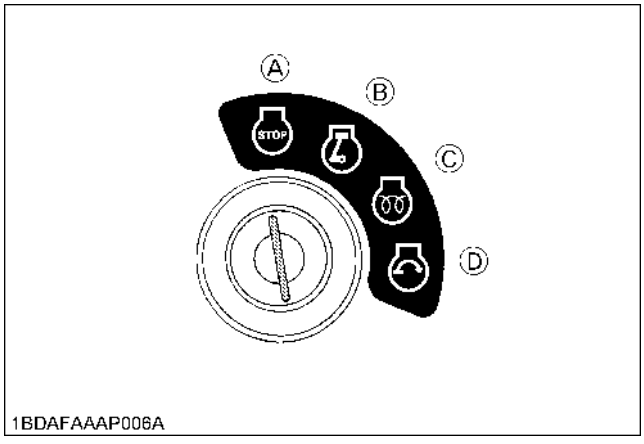
Pulling the throttle lever backward decreases the engine speed and pushing it forward increases the engine speed.



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

■ Key Switch

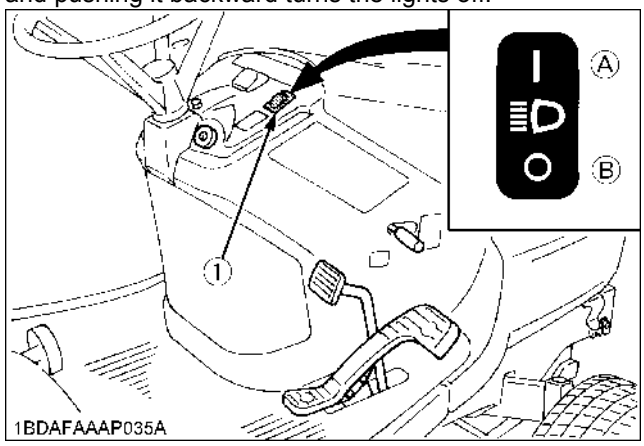
OFF.....	The position where the key can be inserted into or removed from the key switch. [When the key is turned to this position, the engine shuts off.]
ON.....	The engine is running.
Preheat....	The super glow plug is heated.
Start.....	Depress the brake pedal fully and pull the PTO lever to the "DISENGAGED" position, turn the key switch to this position to start the engine.



(A) "OFF":
(B) "ON":
(C) "PREHEAT":
(D) "START":

■ Light Switch

Pushing the light switch forward illuminates the headlights and pushing it backward turns the lights off.



(1) Light Switch
(A) "ON": I
(B) "OFF":

■ Speed Control Pedal

"FORWARD"

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

"REVERSE"

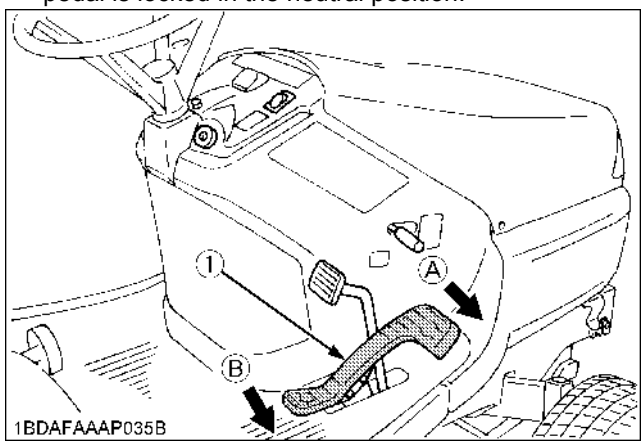
Depress the speed control pedal with the heel of your right foot to move in reverse.

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 :

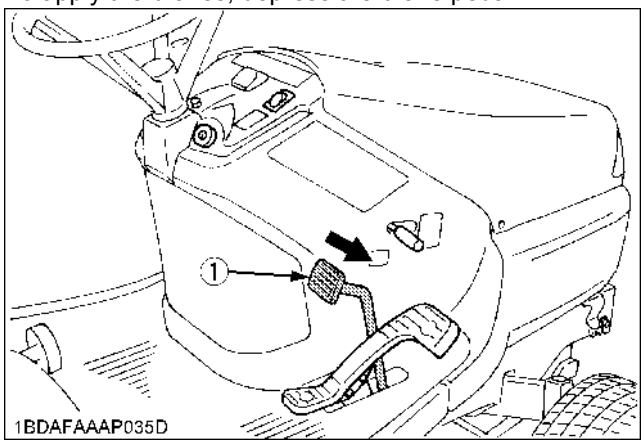
- When the parking brake is applied, the speed control pedal is locked in the neutral position.



(1) Speed control pedal
(A) "FORWARD"
(B) "REVERSE"

■ Brake Pedal

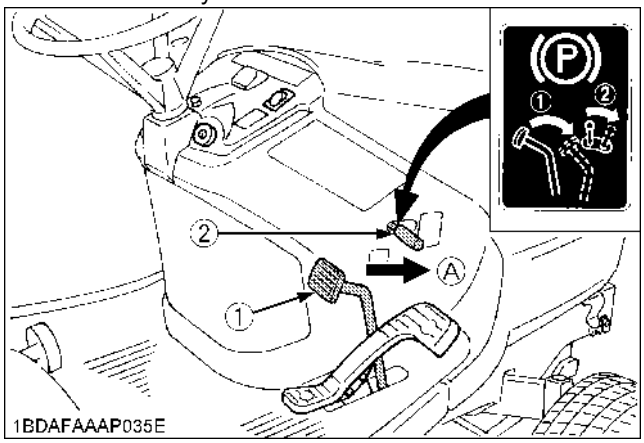
To apply the brakes, depress the brake pedal.



(1) Brake pedal

■ Parking Brake Pedal

To apply the parking brake, depress the brake pedal and the parking brake pedal simultaneously. 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"

NOTE :

- This machine is equipped with safety devices. If you dismount from the seat and the parking brake is not applied, the engine will stop automatically.

■ Seat

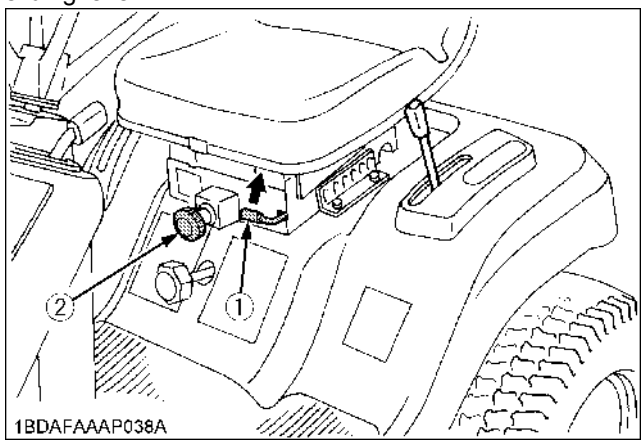
CAUTION

To avoid personal 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.**

◆ Position adjustment

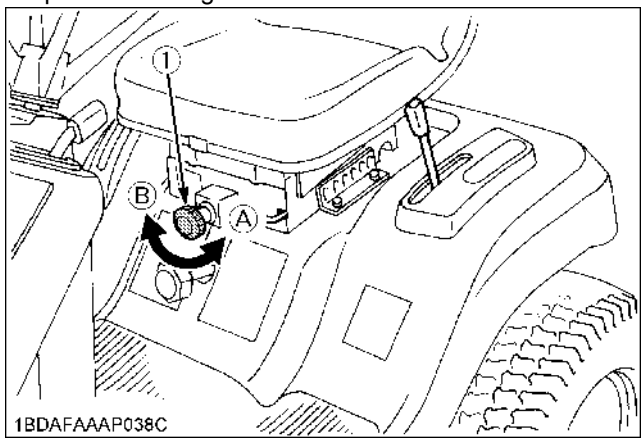
The operator's seat position can be adjusted forward and backward within a 102 mm range by pulling the seat sliding lever.



(1) Seat sliding lever
(2) Suspension adjust knob

◆ Suspension adjustment

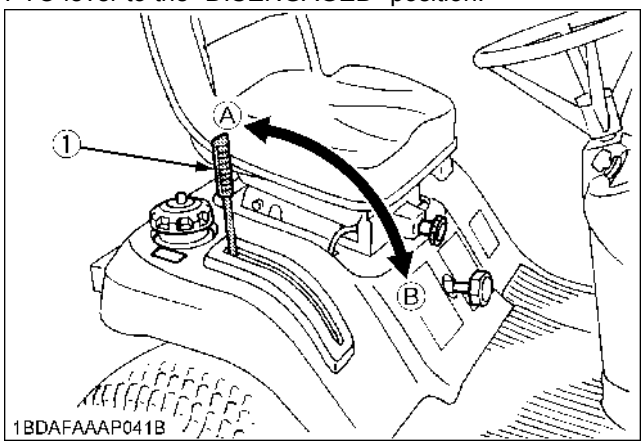
Turn the suspension adjust knob to achieve the optimum suspension setting.



(1) Suspension adjust knob
(A) To decrease tension
(B) To increase tension

■ PTO lever

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



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

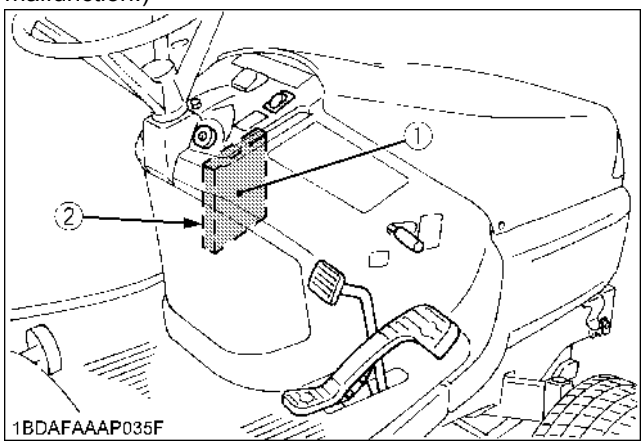
NOTE :

This machine is equipped with safety devices.

- 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.

■ Electric Power Steering

This machine is equipped with Electric Power Steering.
Even when power steering doesn't work for some reason, you can still steer the wheels.
(If some problem occurs, the control box sends a signal by a flashing red light.)
Should you have a problem, please contact your local KUBOTA Dealer.
(The flashing pattern shows the error code. Reporting the long or short flashing pattern helps the dealer to find the malfunction.)



(1) Power steering control box
(2) Indicator

NOTE :

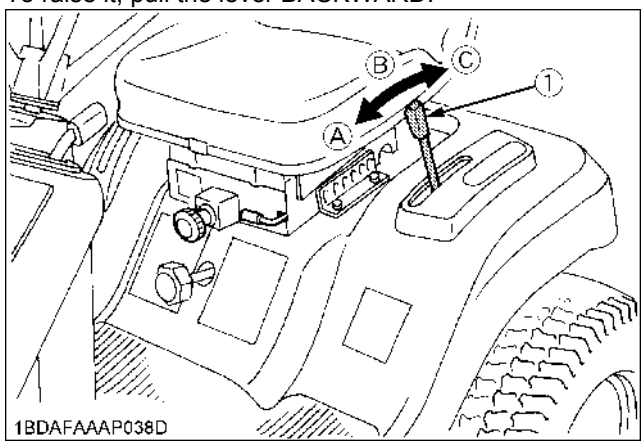
- Power steering only works with engine running.

IMPORTANT :

- Refrain from operating with steering at full lock. When steering is at full lock, the assist force will be reduced gradually to protect the electric circuit. When released from lock, assist force will regain force gradually.
- Avoid applying strong shock to the steering shaft to protect the sensor. Use correct puller when removing the steering wheel.

■ Hydraulic lift lever

The hydraulic lift lever is used to raise and lower implement used with the machine (ex.Mower).
To lower implement, push the lever FORWARD.
To raise it, pull the lever BACKWARD.



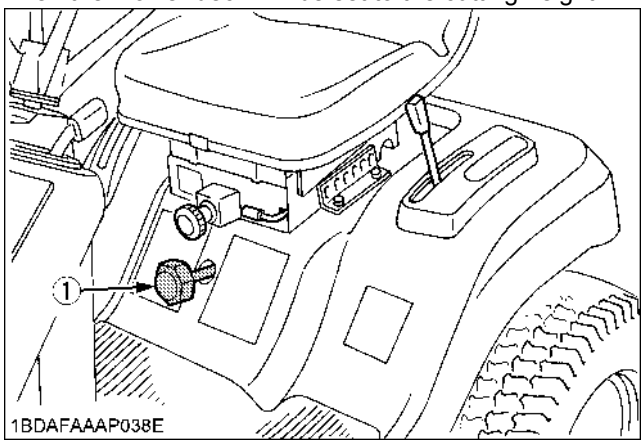
(1) Hydraulic lift lever
(A) "DOWN"
(B) "NEUTRAL"
(C) "UP"

IMPORTANT :

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

■ Cutting Height Control Dial

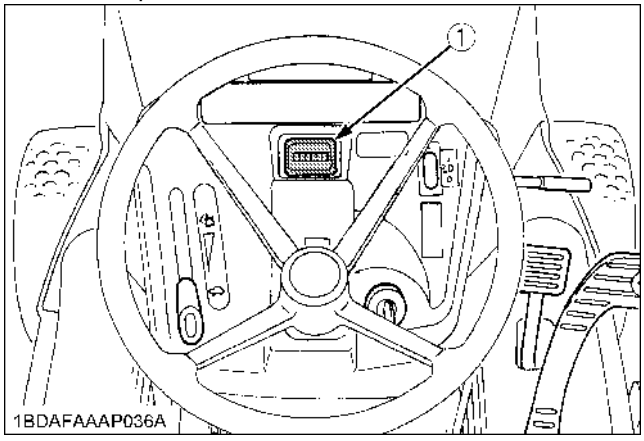
Raise the mower deck to the top position by pulling the hydraulic lift lever backward. Turn the cutting height control dial to the desired cutting height.
Lower the mower deck by pushing the hydraulic lift lever forward.
Then the mower deck will be set to the cutting height.



(1) Cutting height control dial

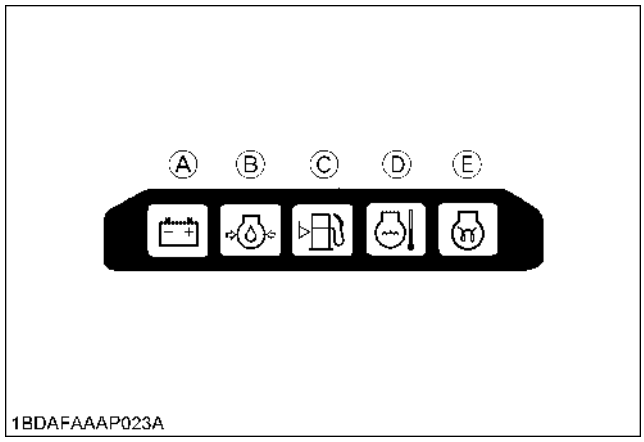
■ Hour meter

The hour meter starts to run when the key switch is turned to the "ON" position.



(1) Hour meter

■ Easy Checker™



(A) If this warning light comes on during operation, check the electrical charging system or consult your KUBOTA Dealer.

(B) If this warning light comes on during operation, check level of engine oil.

(C) If the fuel in the tank goes below the prescribed level, the warning lamp in the Easy Checker™ will come on.
If this should happen during operation, refuel as soon as possible.

(D) If this warning light comes on during operation, take the actions according to "Engine Overheating Precautions".

(E) Glow plug Indicator (Pre-heating Indicator)
When the key switch is in the "Preheat" position, the glow plug indicator illuminates. If the engine is preheated completely, the glow plug indicator turns off automatically.

ENGLISH

MOWER MOUNTING

ATTACHING THE MOWER

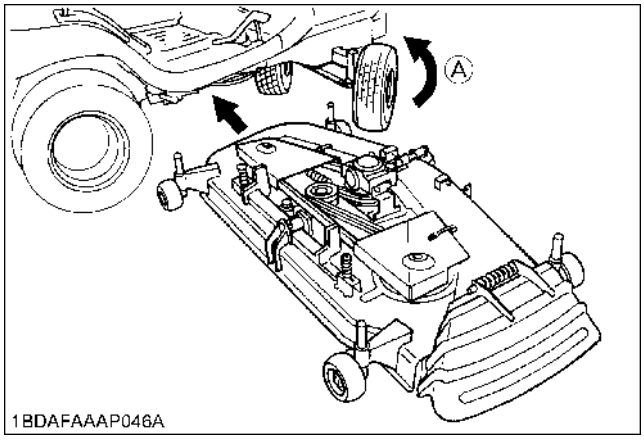
CAUTION

To avoid personal injury:

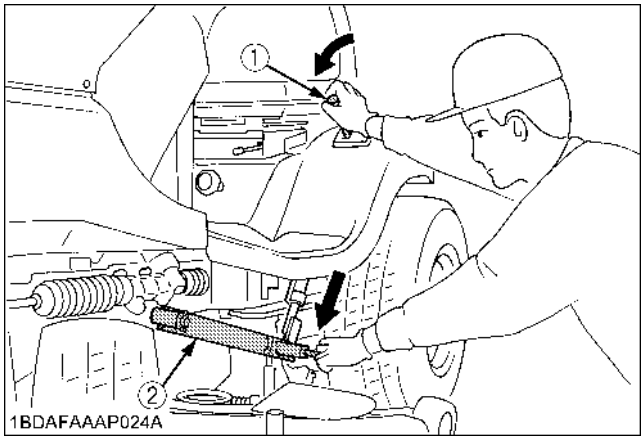
- **Shut off the engine and remove the key before attaching the mower.**

■Mounting the Mower Deck

1. Park the machine on level ground and place the mower deck at the right side of the machine.
2. Set the anti-scalp rollers sideways. **[RCK54-24G only]** Turn the front wheel to the left. Pull the hydraulic lift lever to raise rear links.

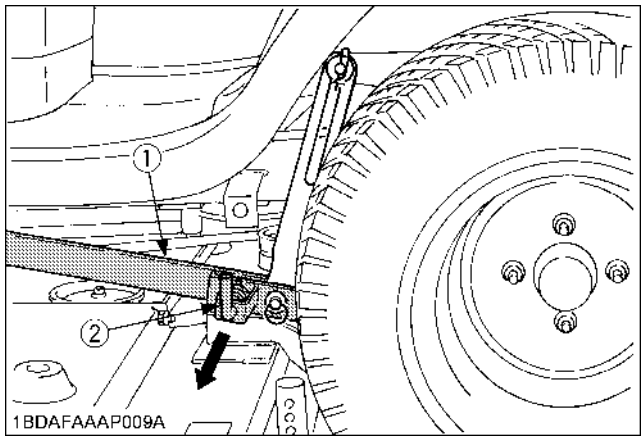


3. Slide the mower deck under the machine, then return wheels to straight ahead position.
4. Reset the front anti-scalp rollers to straight ahead position (Refer to ADJUSTING CUTTING HEIGHT section to set the anti-scalp rollers height.)
5. Place the hydraulic lift lever in the "DOWN" position. Push down the rear links to align with the mower bracket.



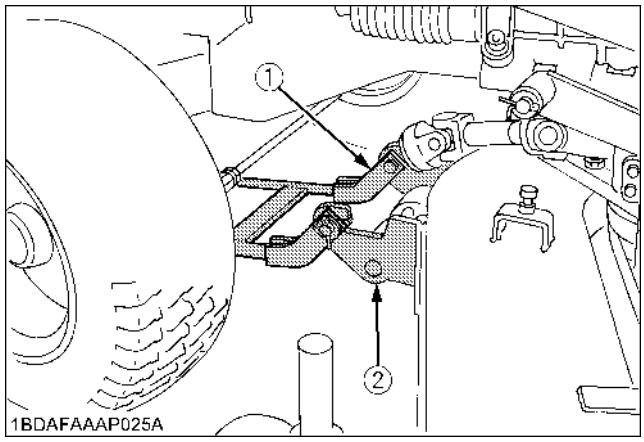
(1) Hydraulic lift lever
(2) Mower's rear link

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



(1) Mower's rear link
(2) L pin

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



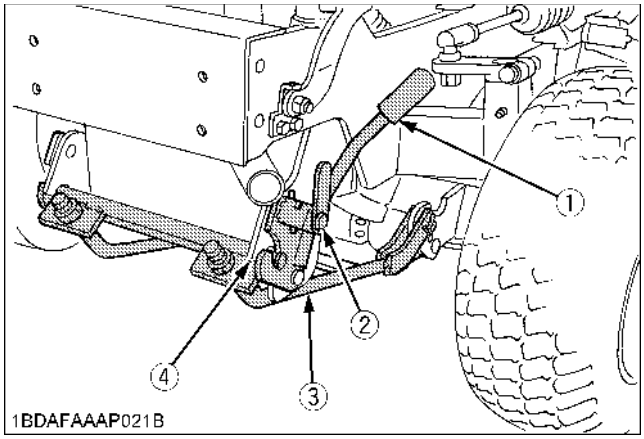
(1) Front link
(2) Front roller bracket

NOTE :

- Adjust the length (L) of the front link.
  (See "Adjusting The Parallel Linkage" section)

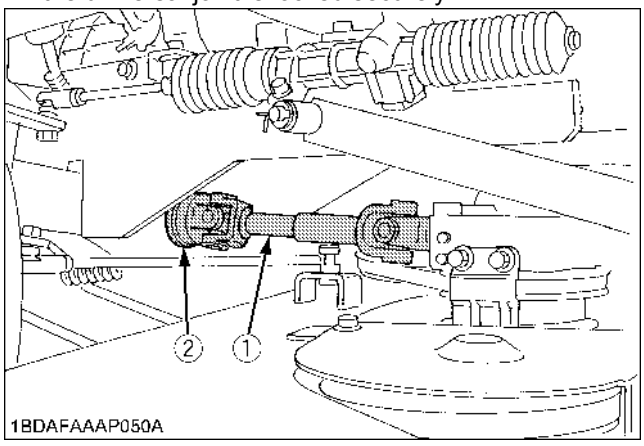
8. Pull the lever fulcrum fixing pin and turn it counter clockwise to lock.

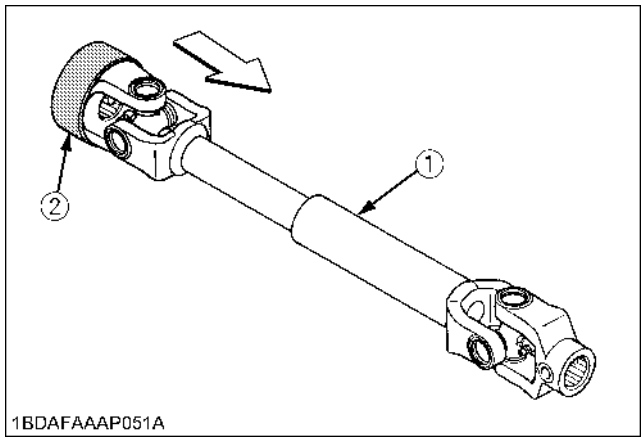
9. Hook and raise the front link with the link fixing lever, then lay the link fixing lever onto the front bracket of the machine.



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

10. Turn the lever fulcrum fixing pin clockwise and push it into position to fix the link fixing lever.
11. Pull back the coupler of the universal joint.
    Push the universal joint into the PTO shaft until the coupler locks.
    Slide the universal joint back and forth to make sure the universal joint is locked securely.





(1) Universal joint *(A) "PULL"*
(2) Coupler

IMPORTANT :
- Finally pull the universal joint to check if it is tight in position.

NOTE :
- For dismounting the mower deck, reverse the above procedures.

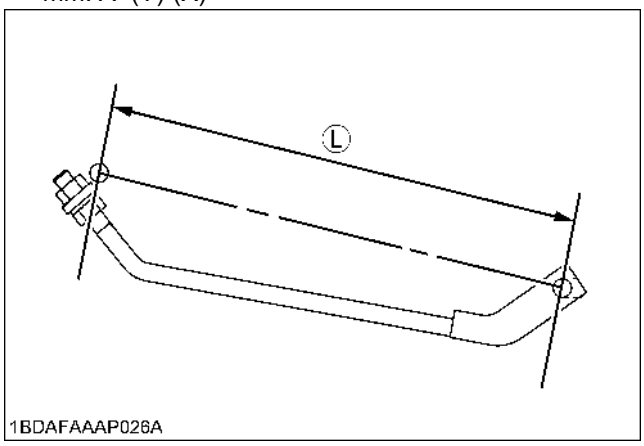
ADJUSTING THE PARALLEL LINKAGE

CAUTION

To avoid personal 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 rag.**

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



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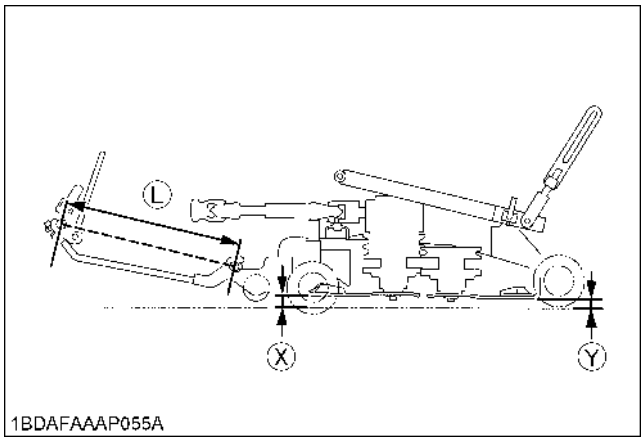

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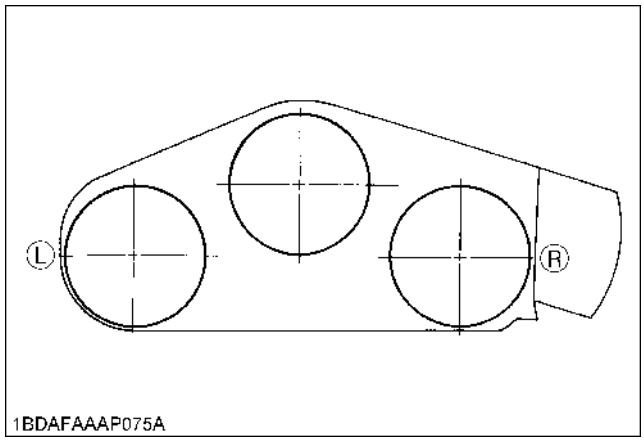
ADJUSTING THE MOWER DECK (SIDE-TO-SIDE)

CAUTION

To avoid personal 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" section.)
3. Raise the hydraulic lift lever to the top position. Turn the cutting height control dial to adjust height to the desired height.
4. Lower the mower deck by pushing the hydraulic lift lever forward.
5. 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.
6. Measure from each outside blade tip (L) to (R) to the level surface. The difference between measurements should be less than 3 mm.



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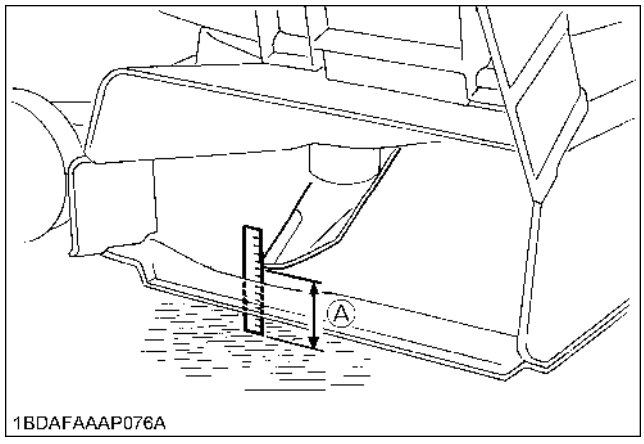

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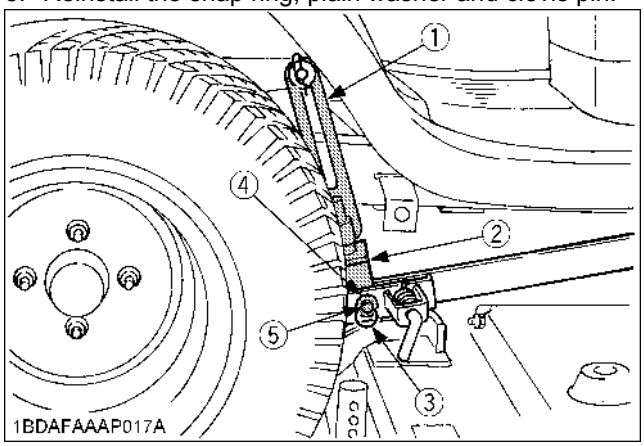
7. Remove the snap ring, plain washer and clevis pin. Adjust the lift link length so that the difference between measurements (L) and (R) is less than 3 mm.
8. Reinstall the snap ring, plain washer and clevis pin.



(1) Lift link (Upper)
(2) Lift link (Lower)
(3) Snap ring
(4) Plain washer
(5) Clevis pin

ENGLISH

OPERATING THE ENGINE

CAUTION

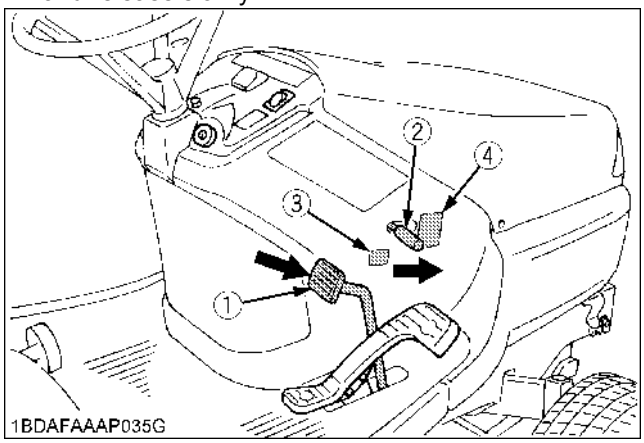
To avoid personal injury:

- **Read "Safe Operation" in the front of this manual.**
- **Read the danger, warning and caution 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 engine while standing on ground. Start engine only from operator's seat.**

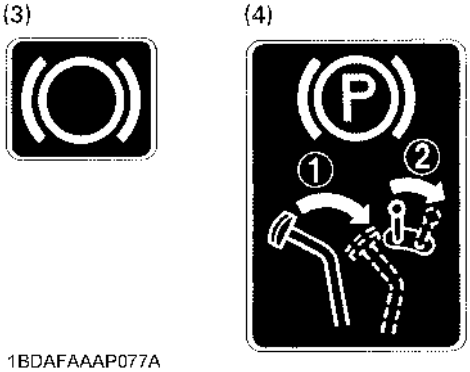
STARTING THE ENGINE

1. Set the parking brake.

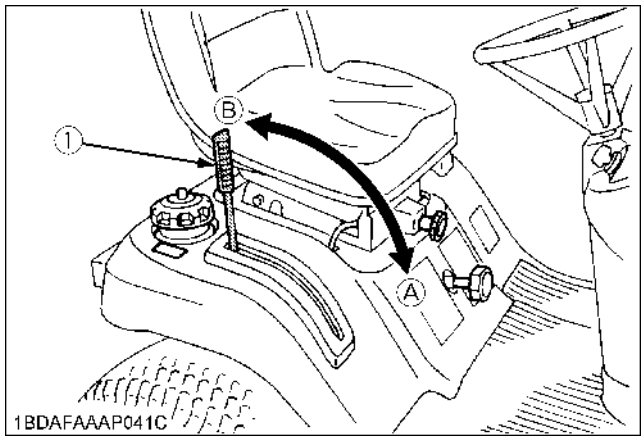
1. To set the parking brake, depress the brake pedal and the parking brake pedal simultaneously.
2. To release the parking brake, depress the brake pedal and release slowly.



(1) Brake pedal
(2) Parking brake pedal



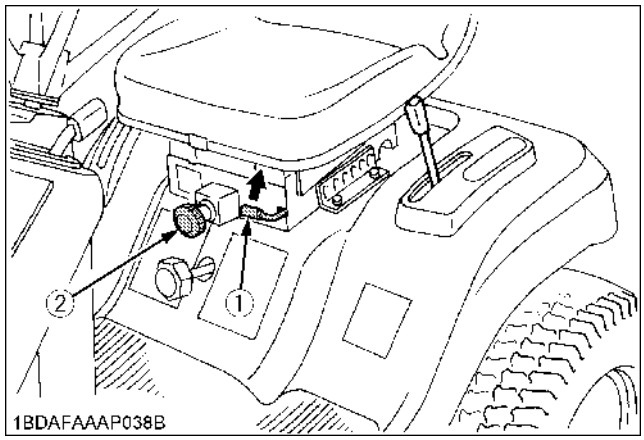
2. Make sure that the PTO lever is in the "DISENGAGED" position.



(1) PTO lever

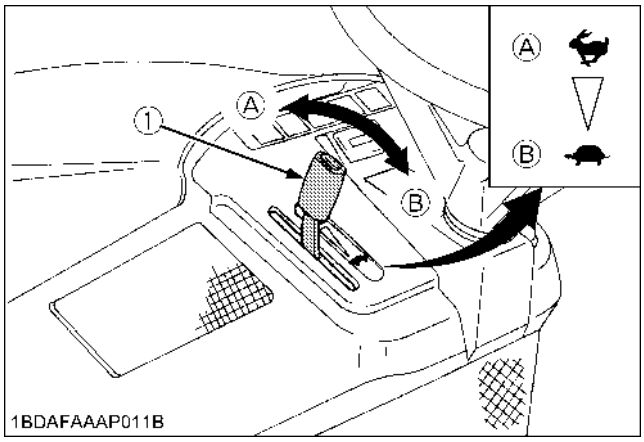
(A) "ENGAGED"
(B) "DISENGAGED"

3. Sit on the operator's seat and adjust the seat position and suspension.



(1) Seat sliding lever
(2) Suspension adjust knob

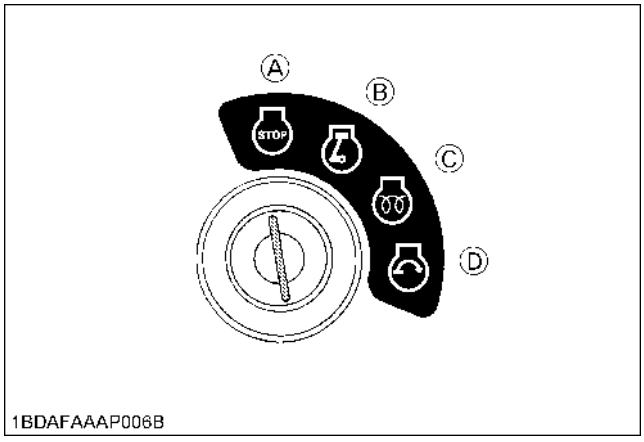
4. Set the throttle lever 1/2 way forward.



(1) Throttle lever *(A) "FAST" :* *(B) "SLOW" :*

5. Insert the key into the key switch and turn the key switch to "PREHEAT" position clockwise, and hold it for about 5 seconds.
The glow plug indicator turns off when the preheat is completed.
For the appropriate preheating time, refer to the table below:

Temperature	Preheating Time
Over 0℃	5 sec.
Below 0℃	10sec.



(A) "OFF" : *(C) "PREHEAT" :*
(B) "ON" : *(D) "START" :*

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

IMPORTANT :
1. Do not turn the key switch to the "START" position while the engine is running.
2. When the temperature is below 0℃, run the engine at medium speed to warm up the lubricant of the engine and transmission for at least 10 minutes. If the machine is operated before the lubricant is warm enough, the machine life will be shortened.
3. Do not operate the machine under full load until it is sufficiently warmed.
4. Do not use starting fluid.

IMPORTANT :
- When the ambient temperature is less than -15℃, remove the battery from the machine and store it somewhere warm until next operation.

CHECKING SAFETY DEVICES

1. Check the following tests before operating the mower. Sit on the operator's seat for all tests.
2. If the machine does not pass one of the following tests, do not operate the machine.
   Contact your KUBOTA Dealer.

◆ **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.

◆ **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.

◆ **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.

◆ **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.

CHECK WHILE OPERATING THE ENGINE

- Check color of the exhaust fumes.

- Check the headlights.

- Check performance of the PTO clutch.

- Check Safety Switch, Seat Safety Control, and PTO Safety Control.

  If one of these do not operate properly, contact your KUBOTA Dealer immediately.

- Check for abnormal noise and vibration.

- Check Easy Checker™.

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.**

WARMING UP

⚠ CAUTION

To avoid personal injury:

- **Be sure to set the parking brake during warm-up.**

For five minutes after engine start-up, allow engine to warm up without applying any load, this is to allow oil to reach every engine part. If load should be applied to the engine without this warm-up period, trouble 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 result in trouble in the hydraulic system.
To prevent the above, observe the following instructions:
Warm up the engine at about 50% of rated rpm according to the table below:

Ambient temperature	Warm-up time requirement
Higher than 0℃	Approx.5 minutes
0 to - 10℃	5 to 10 minutes
-10 to - 20℃	10 to 15 minutes
Below - 20℃	More than 15 minutes

IMPORTANT :

- Do not operate the machine under full load condition until it is sufficiently warmed up.

JUMP STARTING

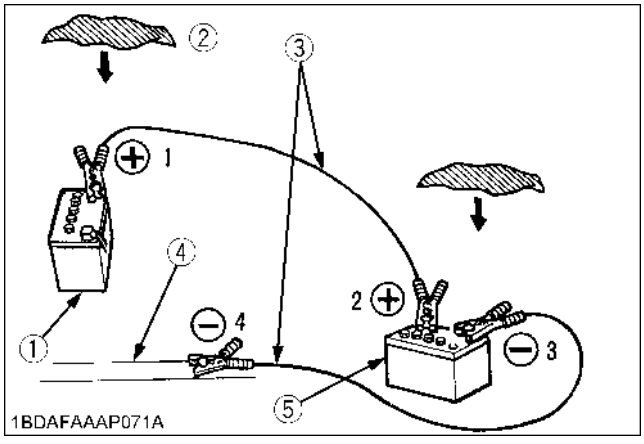
CAUTION

To avoid personal injury:

- **Battery gases can explode. 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 engine, follow the instructions below to safely start the engine.

1. Bring helper vehicle with a battery of the same voltage as disabled machine within easy cable reach. "THE VEHICLES MUST NOT TOUCH".
2. Engage the parking brakes of both vehicles and put the shift levers in neutral. Shut the engines off.
3. Put on safety goggles and rubber gloves.
4. Ensure the vent caps are securely in place. (if equipped)
5. Cover vent holes with damp rags. Do not allow the rag to touch the battery terminals.
6. 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.
7. Clamp the other cable to the negative (black, (-) or neg.) terminal of the helper battery.
8. Clamp the other end to the engine block or frame of the disabled machine as far from the dead battery as possible.
9. Start the helper vehicle and let its engine run for a few moments. Start the disabled machine.
10. Disconnect the jumper cables in the exact reverse order of attachment (steps 8, 7 and 6).
11. Remove and discard the damp rags.



(1) Dead battery
(2) Lay a damp rag over open vents
(3) Jumper cables
(4) Engine block or frame
(5) 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 electrical system could result in severe damage to machine electrical system.
  Use only matching voltage source when "Jump starting" a low or dead battery condition.

ENGLISH

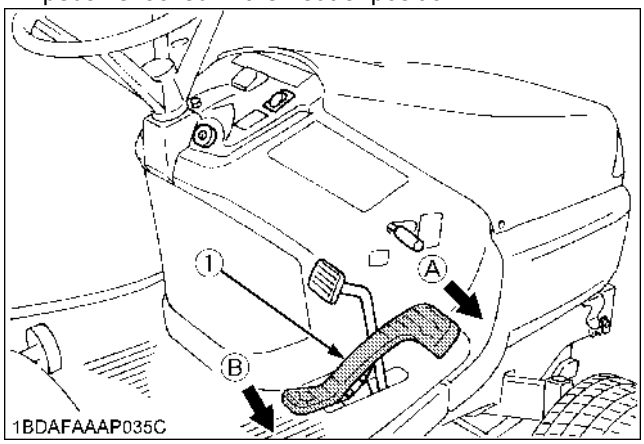
DRIVING THE MACHINE

DRIVING

1. **Depress the brake pedal to release the parking brake.**
2. **Depress the speed control pedal with your right foot to move forward or reverse.**

To move forward:
Depress the speed control pedal with the toe of your right foot to move forward.
To move backwards:
Depress the speed control pedal with the heel of your right foot to move in reverse.

NOTE :
- When the parking brake is applied, the speed control pedal is locked in the neutral position.



(1) Speed control pedal *(A) "FORWARD"* *(B) "REVERSE"*

STOPPING

1. **Release the speed control pedal and depress the brake pedal to stop the machine.**
2. **Push the PTO lever to the "DISENGAGED" position.**
3. **Slow the engine down.**

PARKING

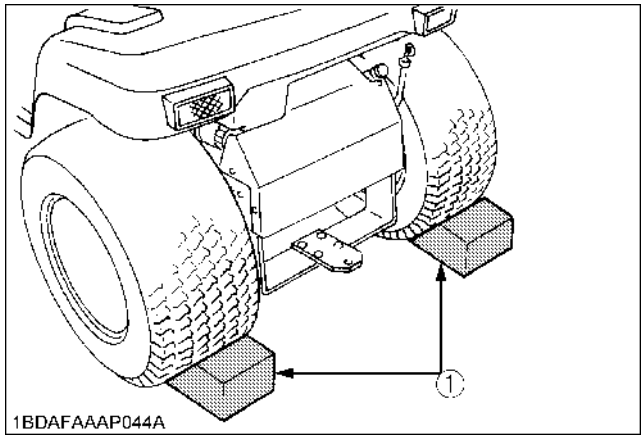
CAUTION

Before leaving the operator's position:
- **Set parking brake.**
- **Lower all implements to the ground.**
- **Shut off the engine.**
- **Remove the key.**

TO LOCK THE PARKING BRAKE
1. Depress the brake pedal and the parking brake pedal simultaneously.

TO UNLOCK THE PARKING BRAKE
1. Depress the brake pedal and release slowly.

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



(1) Blocks

TOWING

IMPORTANT :
- Do not tow this machine. Use a suitable truck or trailer when transporting on public roads.

OPERATING THE MOWER

DANGER

To avoid serious injury or death:

- **Do not operate mower without deflector shield.**

CAUTION

To avoid personal 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 and animals away from the mowing area.**
- **Be sure to disengage the PTO and sit on the operator's seat before starting the engine.**

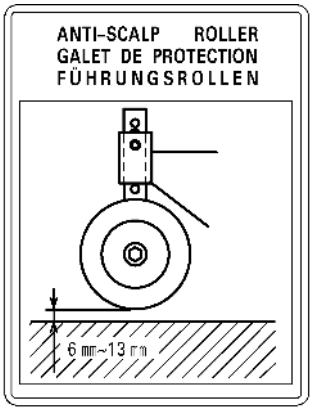
ADJUSTING CUTTING HEIGHT

DANGER

To avoid serious injury or death:

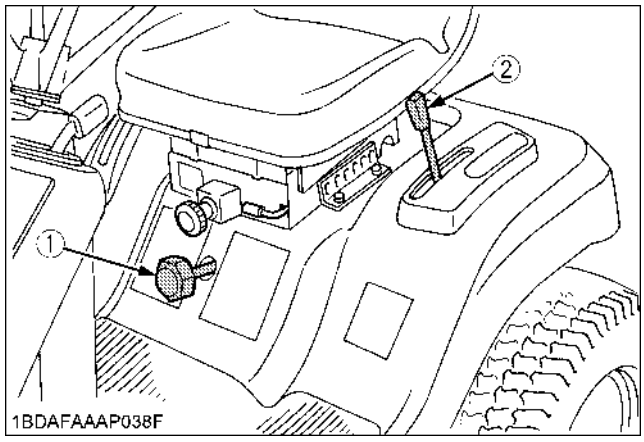
- **Do not operate mower in transport position.**

1. To set the cutting height, pull the hydraulic lift lever backward to raise mower deck to the top position. Turn the cutting height control dial to adjust height.
2. Set the anti-scalp rollers' height as shown to keep clearance between rollers and ground more than 6 mm.



1BDAFAAAP070A

3. Lower the mower deck by pushing the hydraulic lift lever downward. This lowers the mower deck from the "Transport" position to the "Operating" position.
4. 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.



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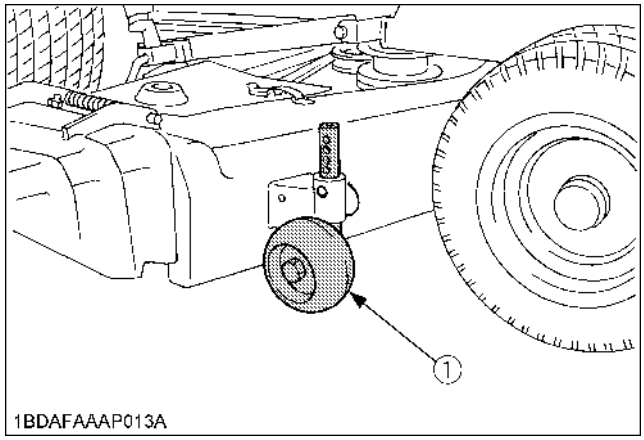
(1) Cutting height control dial
(2) Hydraulic lift lever



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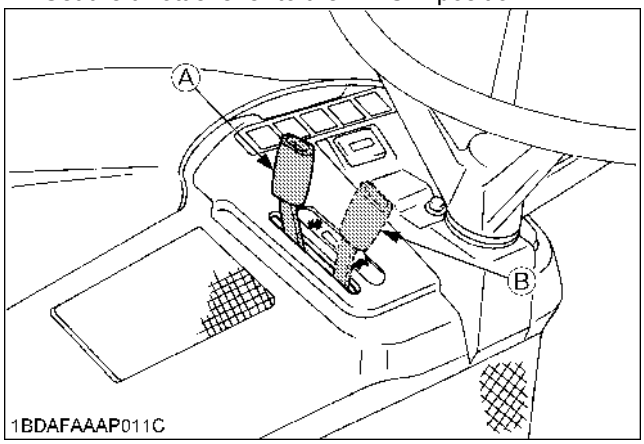
(1) Anti-scalp roller

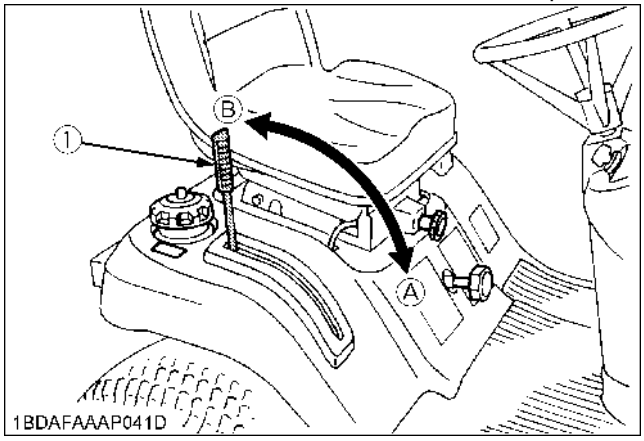
OPERATING THE MOWER

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



(A) "FAST" position
(B) "SLOW" position

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



(1) PTO lever

(A) "ENGAGED"
(B) "DISENGAGED"

NOTE :

- 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.

4. 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.

ENGLISH

MAINTENANCE

SERVICE INTERVALS

	Items		Every 50 Hr	Hour meter reading									Refer-ence page	
				50	100	150	200	300	400	450	500	After		
1	Tires	Check	○									Every 50 Hr	28	
2	Battery condition	Check			○		○	○	○		○	Every 100 Hr	34	
3	Engine oil	Change		◎	○		○	○	○		○	Every 100 Hr	32	
4	Engine oil filter cartridge	Change		◎			○		○			Every 200 Hr	32	
5	Transmission fluid	Change					○				○	Every 300 Hr	37	
6	Transmission oil filter cartridge	Replace		◎			○				○	Every 300 Hr	33	
7	Transmission oil strainer	Clean					○				○	Every 300 Hr	37	
8	Hydraulic hose	Check					○		○			Every 200 Hr	36	
		Replace										Every 2 Years*	40	
9	Fuel lines	Check			○		○	○	○		○	Every 100 Hr	33	@
		Replace ⚒										Every 2 Years*	40	
10	Fuel filter	Check			○		○	○	○		○	Every 100 Hr	33	@
		Replace ⚒									○	Every 500 Hr	38	
11	Fuel injection nozzle injection pressure	Check										Every 1500 Hr	38	@
12	Injection pump	Check										Every 3000 Hr	38	@
13	Intake air line	Check					○		○			Every 200 Hr	36	@
		Replace										Every 2 Years	40	
14	Radiator hose and clamp	Check					○					Every 200 Hr	36	
		Replace ⚒										Every 2 Years*	40	
15	Radiator core	Clean			○		○	○	○		○	Every 100 Hr**	34	
16	Cooling system	Clean										Every 1 Year	39	
17	Coolant	Change										Every 1 Year	38	
18	Air cleaner element	Clean	○**										31	@
		Replace										Every 1 Year**	38	
19	Fan belt tension	Adjust	○										29	
20	Front PTO belt tension	Adjust	○***										31	
21	Brake play	Adjust ⚒	○										29	
22	Greasing	---	○										30	
23	Mower gear box oil	Change		◎		○		○		○		Every 150 Hr	---	
24	Mower gear box oil seal	Replace ✈										Every 2 Years*	---	

IMPORTANT:

- The maintenance indicated by ⏣ must be done initially.
- * Replace only if necessary.
- ** This maintenance should be done more often in dusty conditions than in normal conditions.
- *** Initial elongation of the front PTO belt may occur prior to 25 hours. Adjust the tension spring length as needed to maintain belt tension.
- ☆ These items should be serviced by an authorized KUBOTA Dealer, unless the owner has the proper tools and is mechanically proficient.
- ★ Consult your local KUBOTA Dealer for this service.
- ● The items listed above (@ marked) are registered as emission related critical parts by KUBOTA in the U.S. EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.
  Please see the Warranty Statement in detail.

LUBRICANTS

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

Place	Capacity	Lubricants
Engine crankcase	2.8 L *	● Engine oil: API Service classification CD, CE or CF Below 0 ℃: SAE 10W or 10W - 30 0 to 25 ℃: SAE 20 or 10W - 30 Above 25 ℃: SAE 30 or 10W - 30
Transmission (Including HST & CYLINDER)	4.5 L	● KUBOTA UDT or SUPER UDT fluid *1
Mower gear box	0.4 L	● SAE #90 gear oil
King pin Center pin Universal joint Spindle shaft Belt tension pulley Belt tension pivot Balance shaft Tension lever	Until grease over flows	● Multipurpose Grease NLGI-2 OR NLGI-1 (GC-LB)
Link fulcrum PTO lever (fulcrum) Front PTO cable Brake pedal shaft Speed control pedal shaft Throttle cable Mower universal joint Front link Mower link	Moderate Amount	● Oil or Spray type grease
Fuel tank	22 L	● No.2-D diesel fuel ● No.1-D diesel fuel if temperature is below -10 ℃
Radiator	2.1 L	● Fresh clean water with anti-freeze
Radiator recovery tank	0.25 L	

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

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

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, CD or CE lubricating oil with a high total base number. **If the CF-4 or CG-4 lubricating oil is used with a high-sulfur fuel, change the lubricating oil at shorter intervals**.
  - Lubricating oil recommended when a low-sulfur or high-sulfur fuel is employed.

◌: Recommendable X: Not Recommendable

Lubricating oil class	Fuel		Remark
	Low-sulfur	High-sulfur	
CF	◌	◌	TBN ≧ 10
CF-4	◌	X	
CG-4	◌	X	

- Transmission oil (KUBOTA SUPER UDT *1):
  KUBOTA Original Transmission hydraulic fluid The oil used to lubricate the transmission is also used as hydraulic fluid. To insure proper operation of the hydraulic system and complete lubrication of the transmission, it is important that a multi-grade transmission fluid be used in this system. We recommend the use of **KUBOTA SUPER UDT fluid** for optimum protection and performance.
  (Consult your local KUBOTA Dealer for further detail.)
  Do not mix different brands together.
- Indicated capacity of water and oil are manufacturer's estimate.

ENGLISH

PERIODIC SERVICE

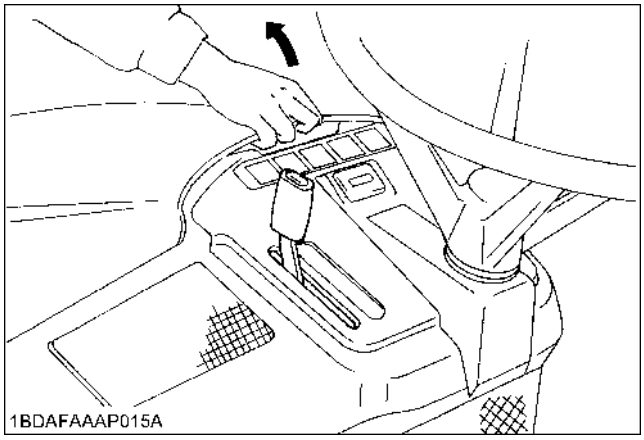
HOW TO OPEN THE HOOD

CAUTION

To avoid personal injury:

- **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 below.



DAILY CHECK

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

CAUTION

To avoid personal 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 "ENGAGED".**

	No.	Check item	Reference Page
Walking around the machine	1	Oil and water leak	---
	2	Engine oil level	25
	3	Fuel level	25
	4	Coolant level in the recovery tank	38
	5	Damage of machine body, tightness of all bolts and nuts	---
	6	Radiator screen	26
	7	Panel screen	26
	8	Check air cleaner	---
	9	Oiling	26
Mower	1	Make sure blade bolts are tight.	42
	2	Check blades for wear or damage.	42
	3	Check all hardware.	---
	4	Make sure all pins are in place.	---
Others	1	Check the areas where previous trouble was experienced.	---
While sitting in the Operator's Seat	1	Speed control pedal, Brake pedal	---
	2	Parking brake	---
Turning the key switch on	1	Headlights	---
Starting the engine	1	Color of the exhaust fumes	---
	2	Safety start switch and seat safety control if either of these do not operate properly, contact your KUBOTA Dealer immediately.	16
	3	Check for abnormal noise and vibration	---
	4	Check Easy Checker™	5

■Checking Engine Oil Level

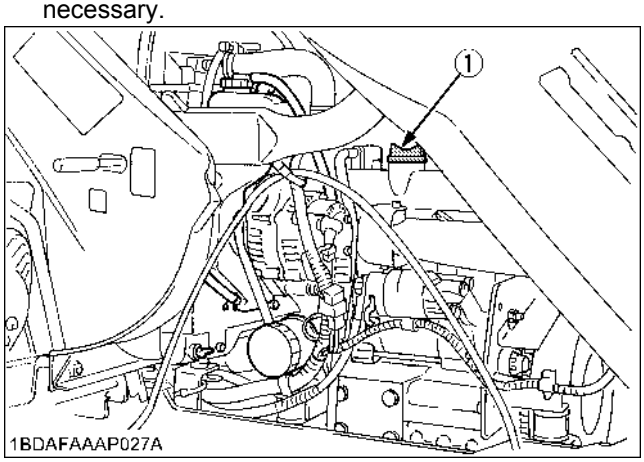
CAUTION

To avoid personal injury:

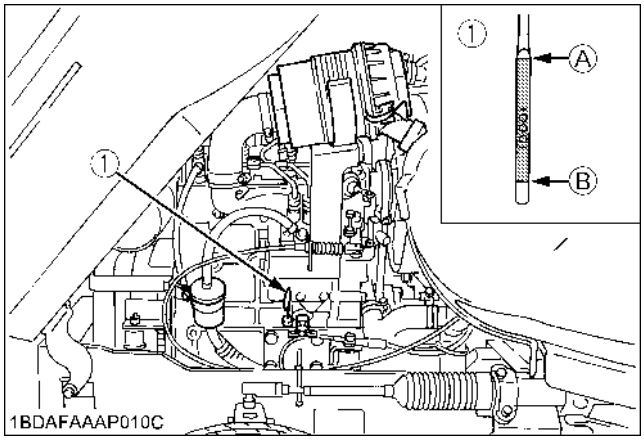
- **Always stop the engine and remove the key before checking oil.**

◆ **Oil level check**

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



(1) Engine oil port



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

5. When using a different brand or viscosity oil from the previous one, remove all of the old oil. Never mix two different types of oil.
6. Use the proper Engine Oil SAE according to the ambient temperatures. (See "LUBRICANTS".)

■Checking Amount of Fuel and Refueling

CAUTION

To avoid personal 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.**

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

Fuel tank capacity	22L

IMPORTANT :

- Use Diesel Fuel Only.

1. Use No.2 diesel fuel.
2. Use No.1 diesel fuel if the temperature is below -10℃.
3. Always use a strainer when refueling to prevent fuel injection pump contamination.

NOTE :

- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service.
  (SAE J313 JUN87)
  Grade of Diesel Fuel Oil according to ASTM D975

Flash Point ℃	Water and Sediment volume %	Carbon Residue on, 10 percent Residuum,%	Ash, weight %
Min	Max	Max	Max
52	0.05	0.35	0.01

Distillation Temperatures ℃ 90% Point		Viscosity Kinematic cSt or mm^2/s at 40 ℃		Viscosity saybolt, SUS at 100°F		Sulfur, weight %	Copper strip Corrosion	Cetane Number
Min	Max	Min	Max	Min	Max	Min	Max	Min
282	338	1.9	4.1	32.6	40.1	0.50	No.3	40

■Checking and Cleaning Radiator to Prevent Overheating

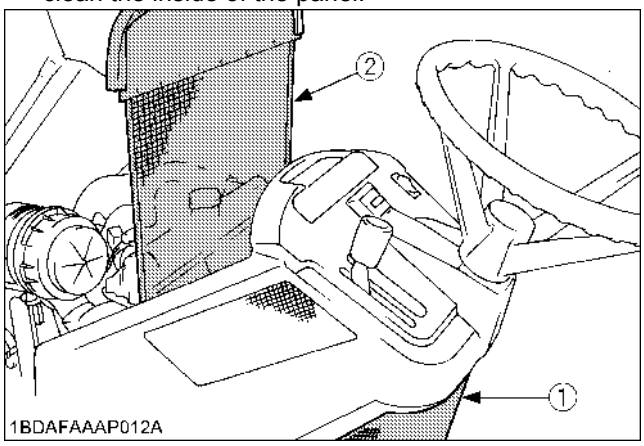
CAUTION

To avoid personal injury:

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

Daily or after every 5 hours of operation, check to be sure the radiator screen and panel screen are clean. Dirt or chaff on the radiator screen or radiator core decreases cooling performance.

1. Remove the radiator screen and remove all foreign material.
2. Remove the dust from between the fins and the tube.
3. If scale forms in the tube, clean with scale inhibitor or its equivalent.
4. Each time the panel screen is covered with grass during operation, wipe off the screen by hand.
   Check the radiator screen from time to time if grass often gets on it.
5. If dust or chaff is accumulated inside of the panel, clean the inside of the panel.



(1) Panel screen
(2) Radiator screen

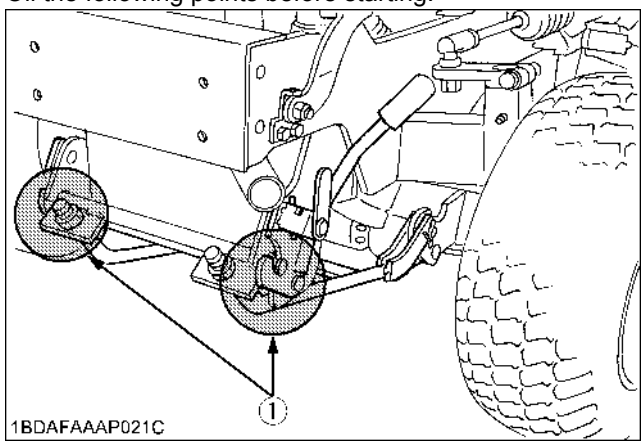
■Oiling

CAUTION

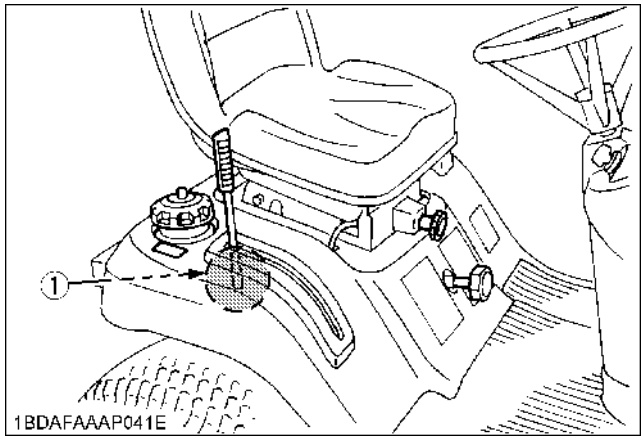
To avoid personal injury:

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

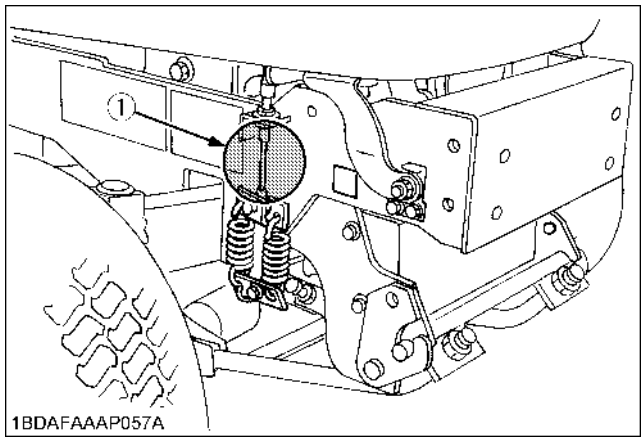
Oil the following points before starting.



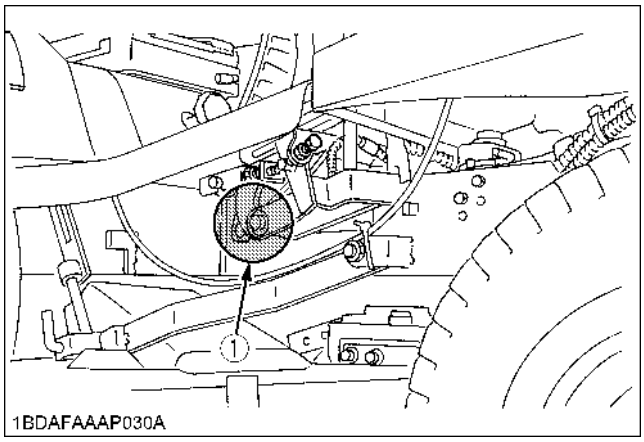
(1) Link fulcrum



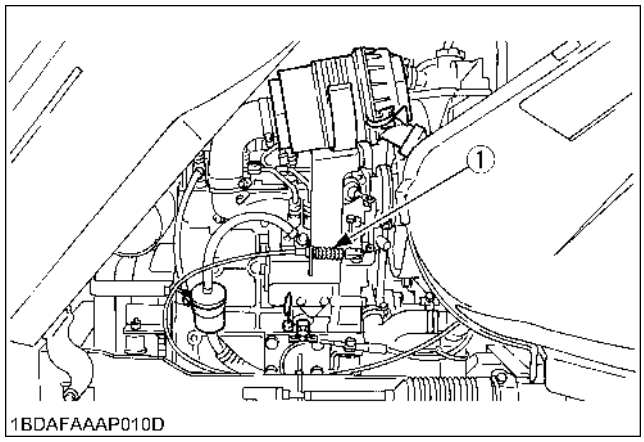
(1) PTO lever (fulcrum)



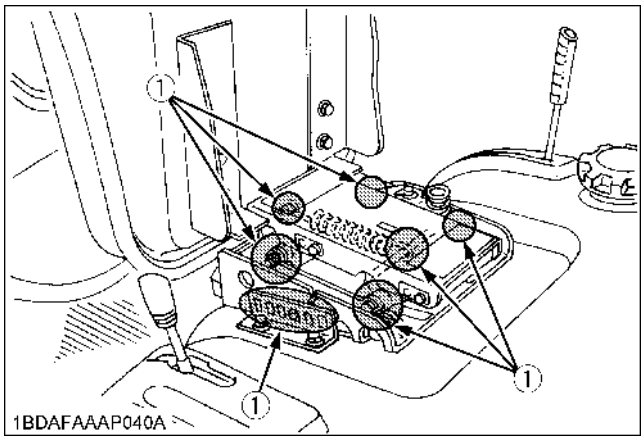
(1) Front PTO cable



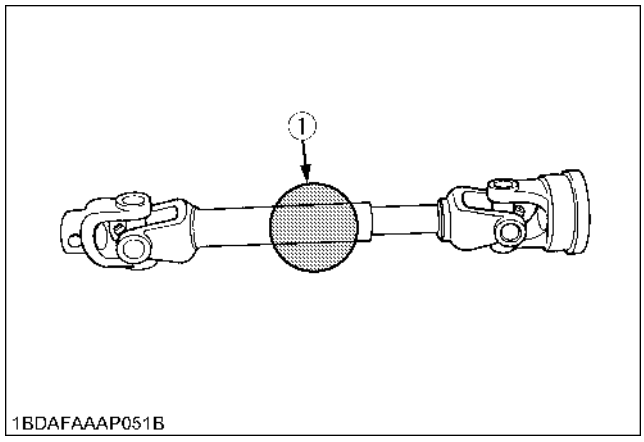
(1) Brake pedal



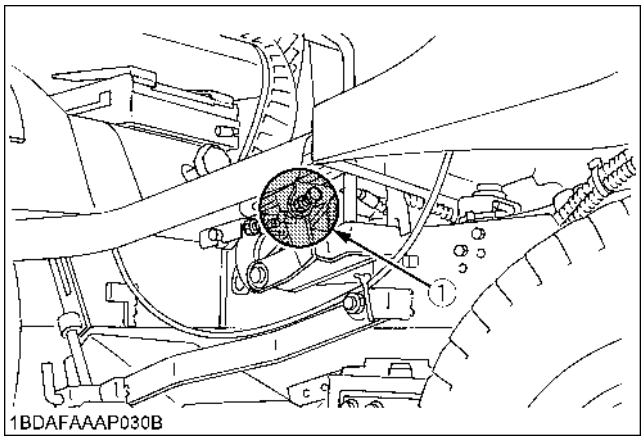
(1) Throttle cable



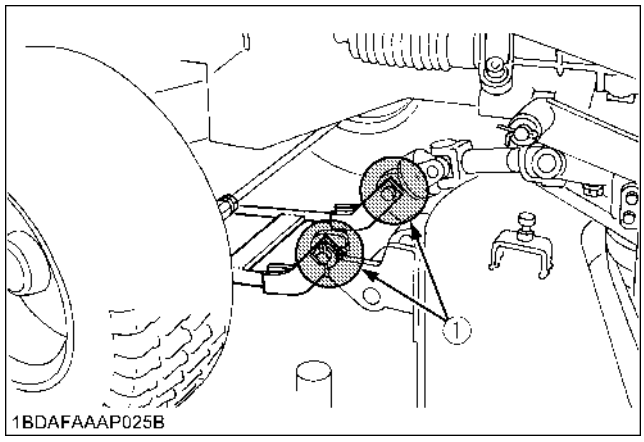
(1) Seat adjuster



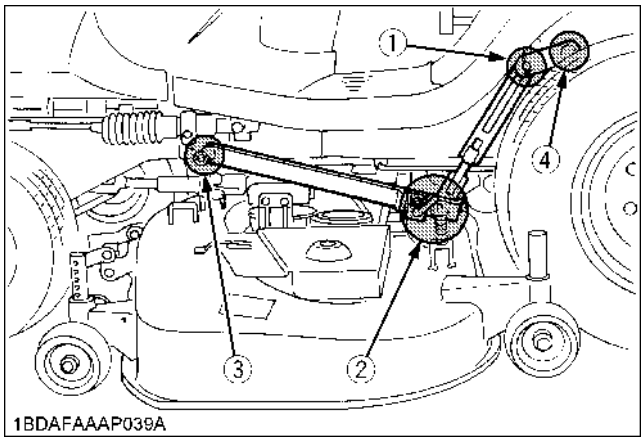
(1) Mower universal joint



(1) Speed control pedal shaft



(1) Front link



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

NOTE :
- Oil these points on both sides of the machine.

EVERY 50 HOURS

■Checking Tire Pressure

WARNING

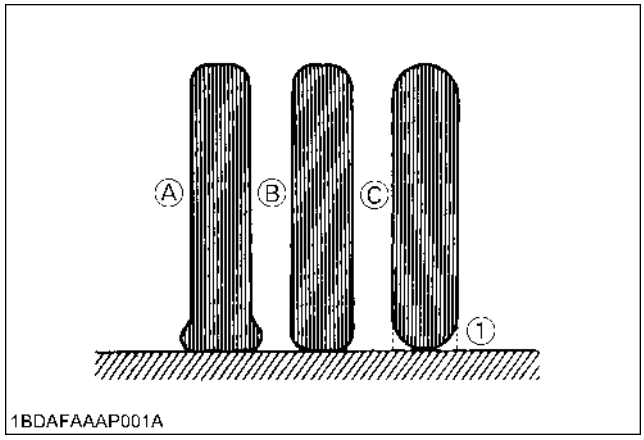
To avoid personal injury:
- **Do not attempt to mount a tire on a rim. This should be done by a qualified person with the proper equipment.**
- **Always maintain the correct tire pressure. Do not inflate tires above the recommended pressure shown in the Operator's Manual.**

IMPORTANT :
- Do not use tires larger than specified.

■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 and inflate as necessary.

	Tire Sizes	Inflation Pressure
Front	16x6.50-8Turf	200kPa (2.0kgf/cm²)
Rear	23x10.50-12Turf	140kPa (1.4kgf/cm²)



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

IMPORTANT :
- When jacking up the rear tires, be sure
  (1) To block the front tires.
  (2) To position a jack inside beside either of the supporting plates.

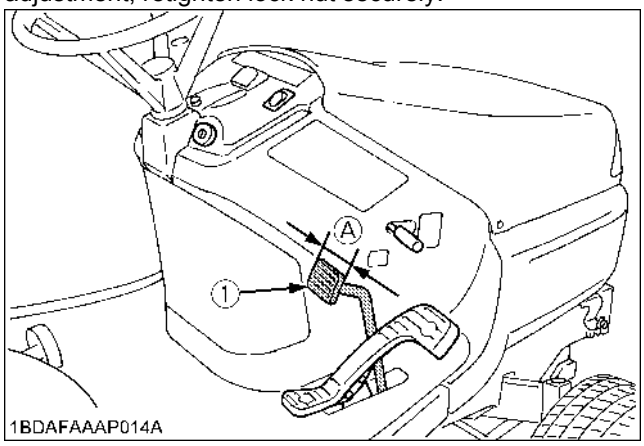
■Checking Brake Pedal

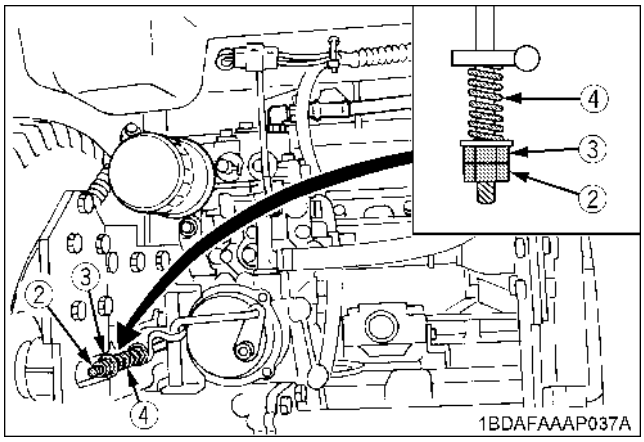
CAUTION

To avoid personal injury:

- **When making adjustments, park the machine on a flat area, block wheels, stop engine and remove the key.**

Correct play ranges from 15 to 25 mm. If it is not correct, loosen the lock nut (2) and turn the nut (3) in the desired direction until the proper play is achieved. After adjustment, retighten lock nut securely.





(1) Brake pedal *(A) Play 15 to 25 mm*
(2) Lock nut
(3) Nut
(4) Spring

■Checking Fan Drive Belt Tension

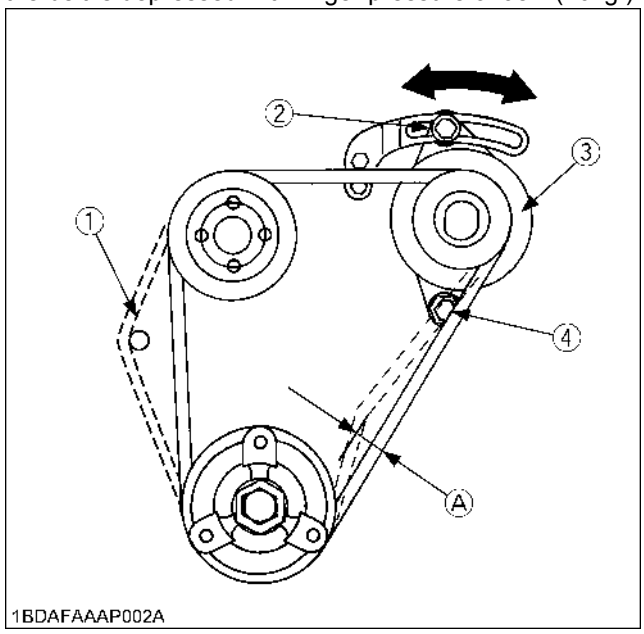
CAUTION

To avoid personal 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, loosen bolts and turn the alternator to tighten the belt. After adjustment, securely tighten the bolts.

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



(1) Cap *(A) 10 mm*
(2) Tension bolt
(3) Alternator
(4) Adjusting bolt

IMPORTANT :

- When replacing fan drive belt, be careful not to catch it on the cap under the water pump. See the illustration to the left.

ENGLISH

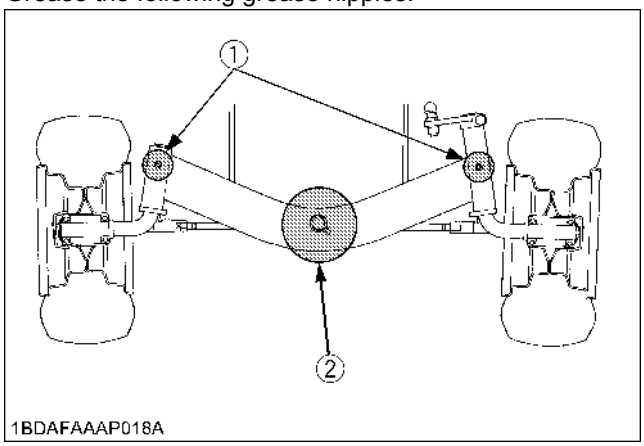
■Lubricating All Grease Nipples

CAUTION

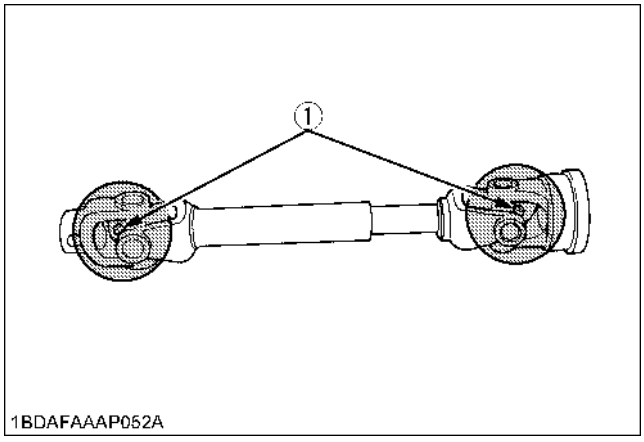
To avoid personal injury:

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

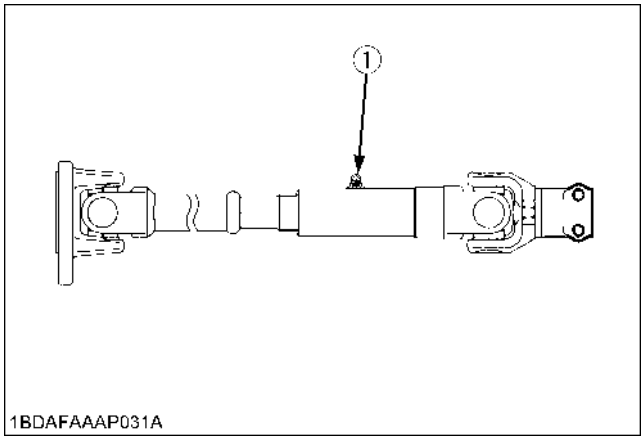
Grease the following grease nipples.



(1) King pin *(2) Center pin*

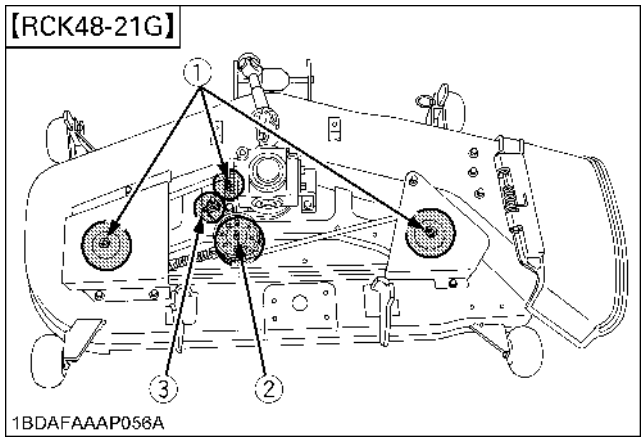


(1) Mower universal joint

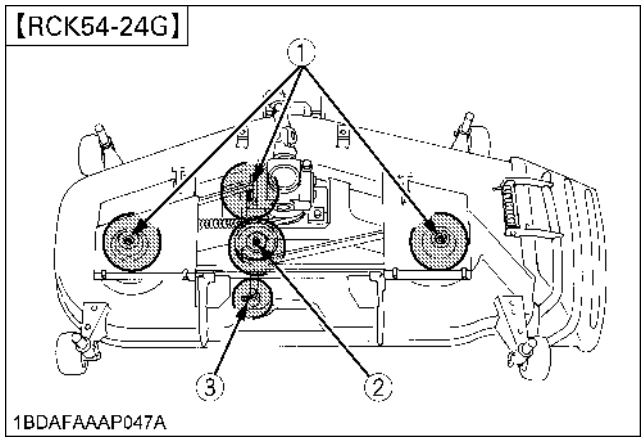


(1) Machine universal joint

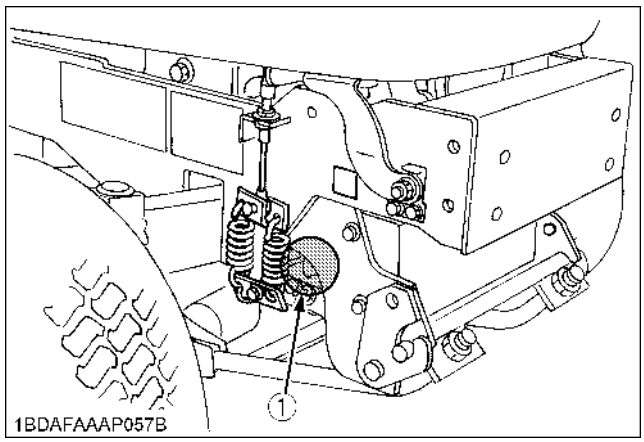
【RCK48-21G】



【RCK54-24G】



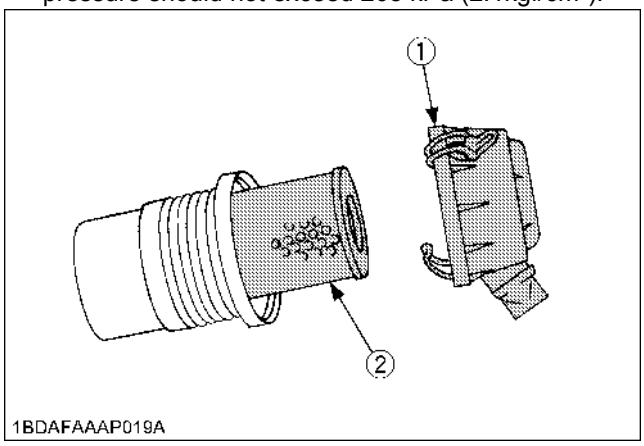
(1) Grease nipple (Spindle shaft)
(2) Grease nipple (Belt tension pulley)
(3) Grease nipple (Belt tension pivot)



(1) Tension lever

■Cleaning Air Cleaner Element

1. The air cleaner uses a dry element, never apply oil.
2. Do not touch the filter element except where cleaning is required. To clean the element, use clean and dry compressed air on the inside of the element. Air pressure should not exceed 205 kPa (2.1kgf/cm²).



(1) Air cleaner cover
(2) Air cleaner element

NOTE :

- Operating in dusty conditions requires frequent maintenance.

■Checking Front PTO Belt Tension

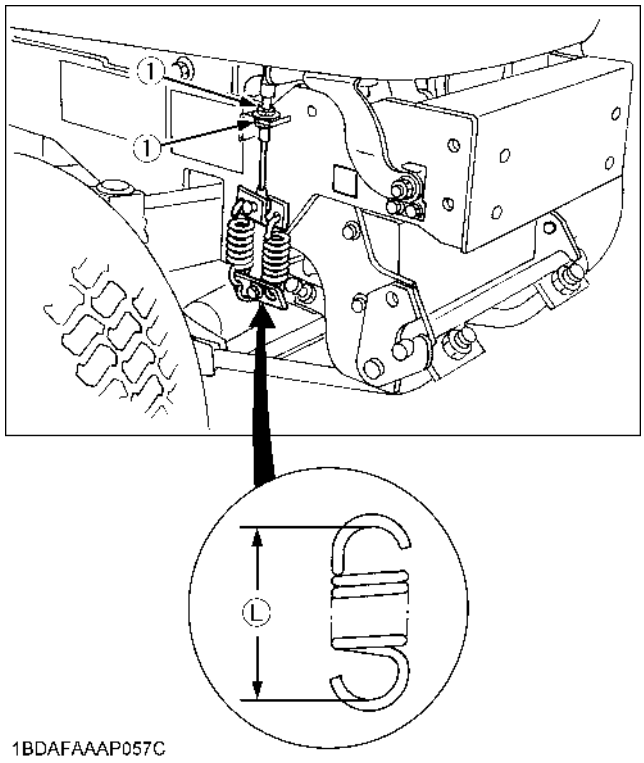
CAUTION

- **Always stop the engine, set the parking brake, remove the key, and disengage the PTO lever before working on the front PTO.**

◆ Adjusting

If the front PTO belts slip when the PTO is operating under load, check the front PTO belt tension and adjust the tension spring length, as explained below.

1. Engage the PTO lever.
2. Measure tension spring length (L).
3. If (L) is shorter than 87 mm adjust it with the tension clutch cable adjusting nut.
   - (L) should be 88 to 90 mm
4. After adjustment tighten the nut securely.
   - When replacing the new front PTO belts, (L) should be 91 to 92 mm



(1) Adjust nut

IMPORTANT :

- When replacing the front PTO belts, be sure to replace the complete set. These belts are a matched set.

EVERY 100 HOURS AFTER 50 HOURS

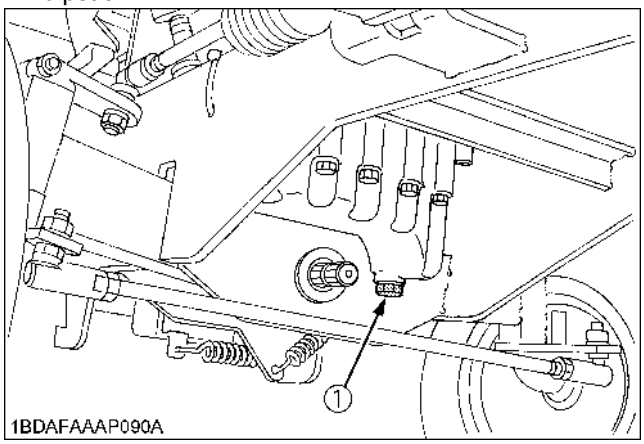
■Changing Engine Oil

CAUTION

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



(1) Drain plug

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

EVERY 200 HOURS AFTER 50 HOURS

■Engine Oil Filter Cartridge Change

CAUTION

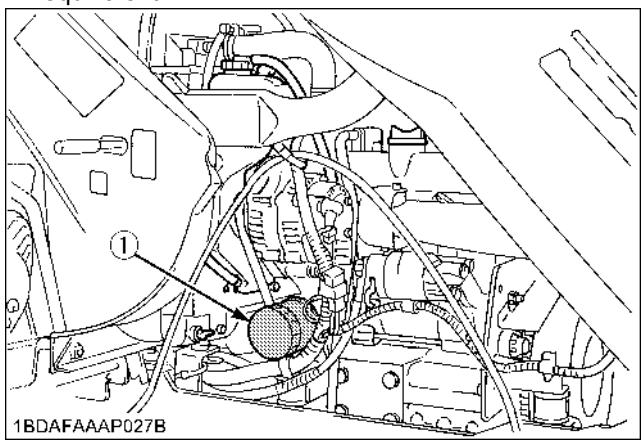
To avoid personal injury:

- **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. To install the new cartridge, screw it in by hand. Over tightening may cause deformation of the rubber gasket.
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

EVERY 300 HOURS AFTER 50 HOURS

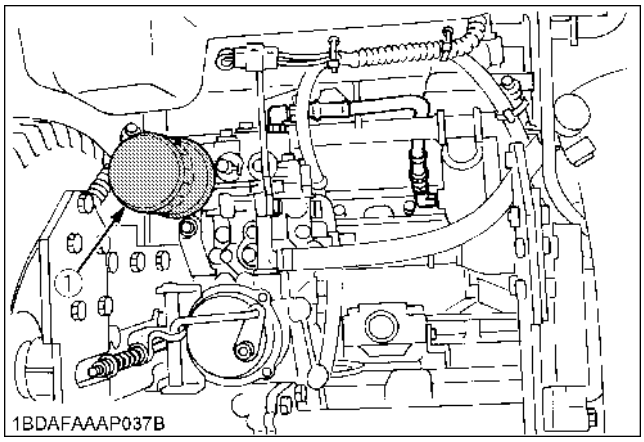
■Transmission Oil Filter Cartridge Change

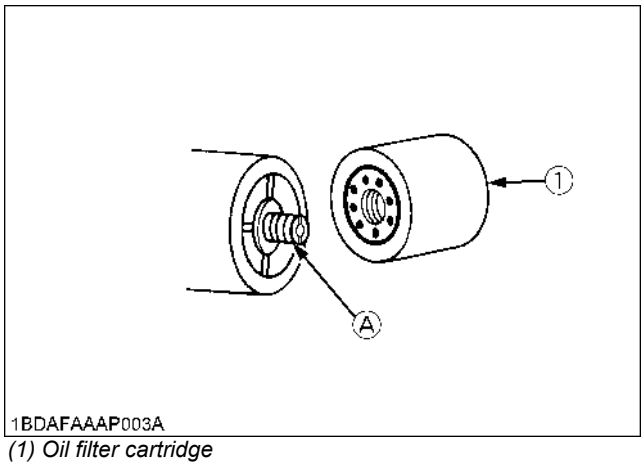
CAUTION

To avoid personal 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 300 service hours.





(1) Oil filter cartridge

2. Remove the oil filter cartridge by using the filter wrench.
3. Lightly tighten the screw (A) by using a screwdriver.
4. Apply a slight coat of oil onto the cartridge gasket.
5. To install the new cartridge, screw it in by hand. Over tightening may cause deformation of rubber gasket.
6. 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 to a hydraulic system, the replacement filter must be a highly efficient, 10 m filter. Use only a genuine KUBOTA filter or its equivalent.

EVERY 100 HOURS

■Checking Fuel Lines and Fuel Filter

CAUTION

To avoid personal injury:

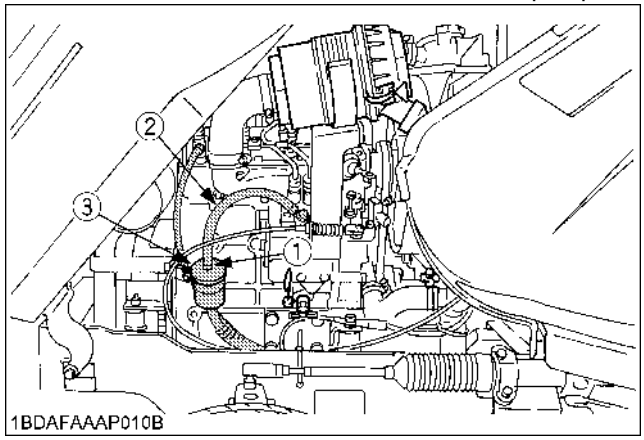
- **Be sure to stop the engine and remove the key when attempting to make the following checks and changes.**
- **Never fail to check the fuel lines periodically. The fuel lines are subject to wear and aging. Fuel may leak out onto the running engine, causing a fire.**

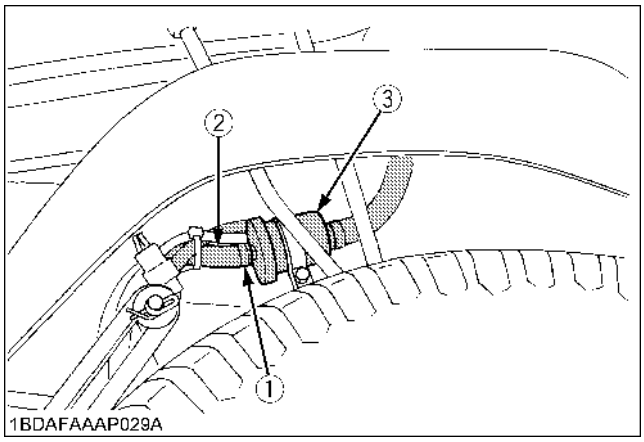
The fuel line connections should be checked annually or every 100 service hours, whichever comes first.

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

IMPORTANT :

- When the fuel line is disconnected for maintenance or repair, close both ends of the fuel line with a piece of clean cloth or paper to prevent dust and dirt from entering. In addition, particular care must be taken not to admit dust and dirt into the fuel pump. Entrance of dust and dirt causes malfunction of the fuel pump.





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

■Cleaning Radiator Core

1. The radiator core should be cleaned on the following occasions:
   (A) Every 100 Hr or 1 year service, whichever comes first.
   (B) When adding anti-freeze solution.
2. When cleaning the radiator core, the KUBOTA Scale inhibitor No.20 or its equivalent, is recommended to effectively wash away the scale build-up.

■Battery

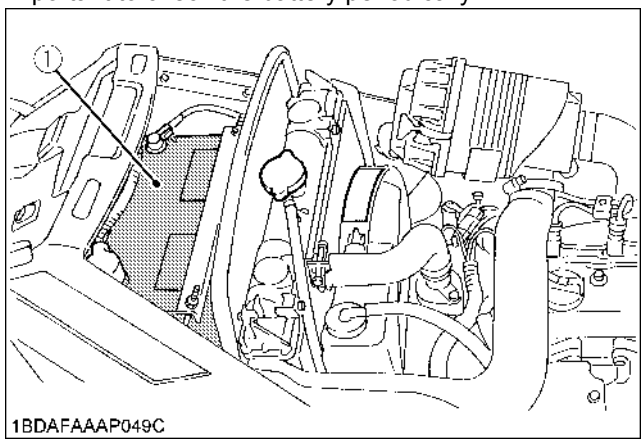
CAUTION

To avoid personal injury:

- **Never remove the vent cap while the engine is running. Keep electrolyte away from eyes, hands and clothes. If you are spattered with it, wash it away completely with water immediately and get medical attention.**
- **Wear eye protection and rubber gloves when working around battery.**

Mishandling the battery shortens the service life and adds to maintenance costs.

The original battery is a maintenance-free, non-accessible type battery.If the battery is weak, the engine will be difficult to start and the lights will become dim. It is important to check the battery periodically.



(1) Battery

◆ **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.**

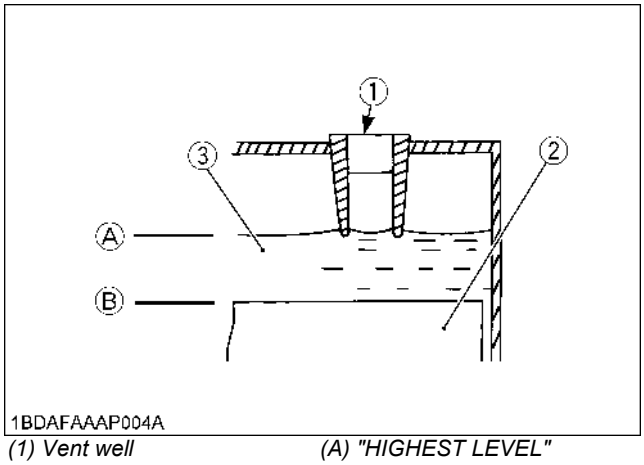
CAUTION

To avoid personal injury:

- **When charging battery, ensure that the vent caps are securely in place (if equipped).**
- **When disconnecting the cables from the battery, start with the negative terminal first. When connecting the cables to the battery, start with the positive terminal first.**
- **Never check battery charge by placing a metal object across the posts.Use a voltmeter or hydrometer.**

(For accessible maintainable type batteries with removable vent caps.)

1. Make sure each electrolyte level is at the bottom of vent wells, if necessary add distilled water in a well-ventilated area.



(1) Vent well
(2) Separator
(3) Electrolyte
(A) "HIGHEST LEVEL"
(B) "LOWEST LEVEL"

2. The water in the electrolyte evaporates during recharging. Liquid shortage damages the battery. Excessive liquid spills over and damages the machine body.
3. To slow charge the battery, connect the battery positive terminal to the charger positive terminal and the negative to the negative, then recharge in the standard fashion.
4. A boost charge is only for emergencies. It will partially charge the battery at a higher rate and in a short time. When using a boost-charged battery, it is necessary to recharge the battery as soon as possible. Failure to do this will shorten the battery's service life.
5. When the specific gravity of electrolyte reaches 1.27~1.29 charge has completed.
6. When exchanging an old battery with new one, use a battery of equal specification shown in "SPECIFICATIONS".

(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.)

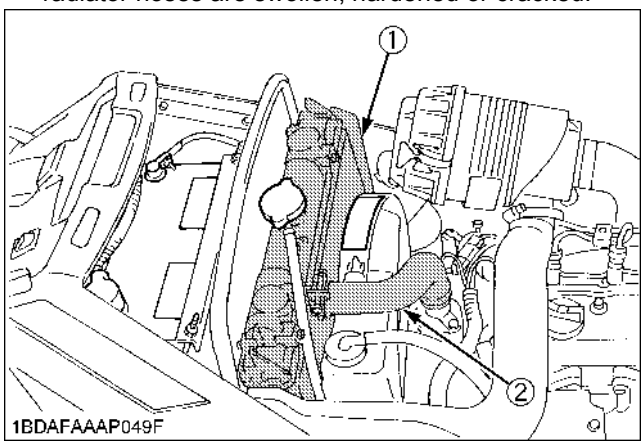
Battery voltage	Reference state of charge
12.6	100%(Full charge)
12.4	75%
12.2	50%
12.0	25%
11.8	0%

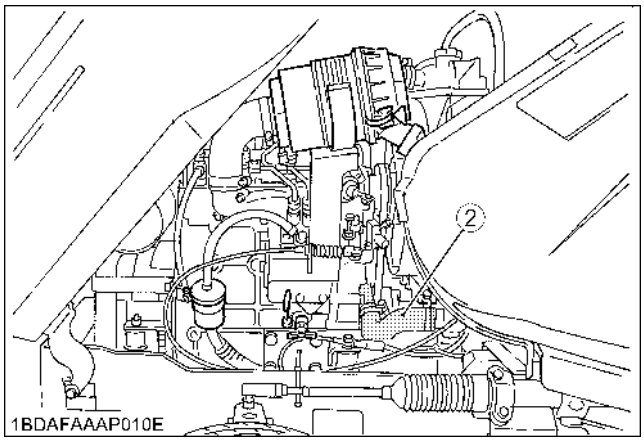
EVERY 200 HOURS

■Checking Radiator Hose and Clamp

Check to see if radiator hoses are properly fixed every 200 hours of operation or six months, whichever comes first.

1. If clamp bands are loose or water leaks, tighten bands securely.
2. Replace hoses and tighten clamp bands securely, if radiator hoses are swollen, hardened or cracked.





(1) Radiator core
(2) Radiator hose

■Checking Hydraulic Hose

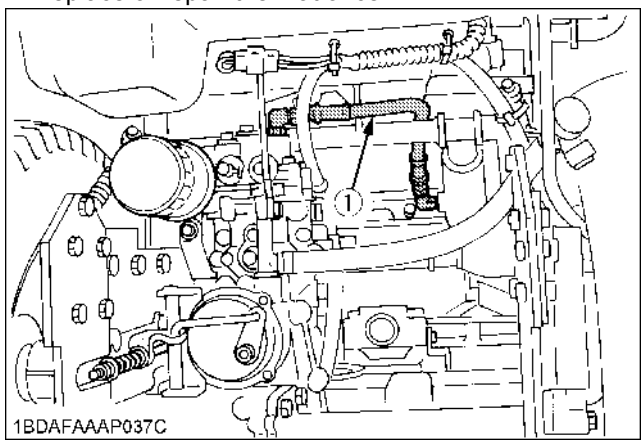
CAUTION

To avoid personal injury:

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

Check to see if hydraulic hoses are properly fixed every 200 hours of operation.

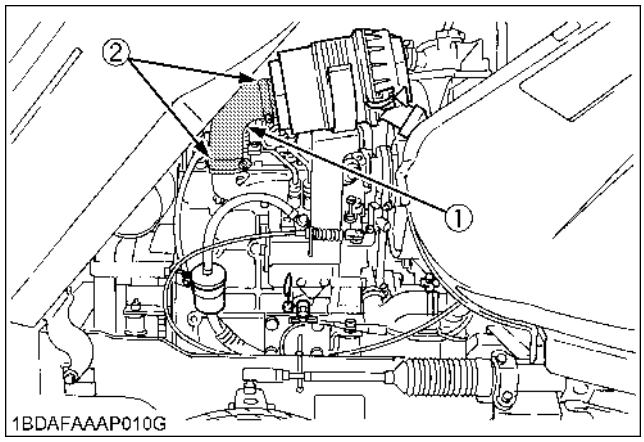
1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once.



(1) Mower lift cylinder hose

■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

EVERY 300 HOURS AFTER 200 HOURS

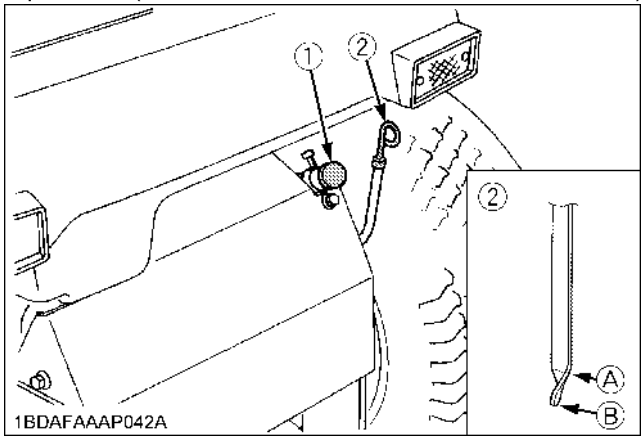
■Changing Transmission Fluid

CAUTION

To avoid personal 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.**

Draw out the dipstick, wipe it clean, replace it, and draw it out again. Check to see that the fluid level is on the upper notch. If low, replenish through the fluid port. Use UDT or SUPER UDT hydrostatic transmission fluid or its equivalent. (See "LUBRICANTS" in Maintenance Section)



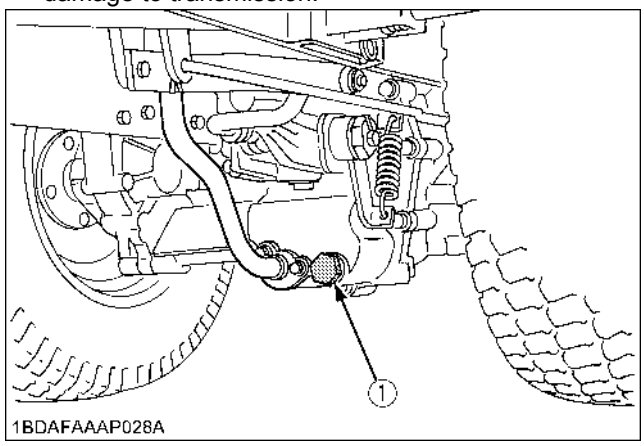
(1) Transmission fluid port
(2) Dipstick
(A) "UPPER LEVEL"
(B) "LOWER LEVEL"

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

1. To drain the transmission case, place oil pan underneath the transmission case and remove the drain plug at the bottom of the transmission case.
2. After draining, disassemble and clean the strainers and change the oil filter cartridge. After reassembling, fill with UDT or SUPER UDT hydrostatic transmission fluid, or its equivalent.
3. After running the engine for a few minutes, stop it and check the oil level again; add oil to the prescribed level.

IMPORTANT :

- Operate only at low RPM's 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.



(1) Drain plug

■Cleaning Transmission Oil Strainer

CAUTION

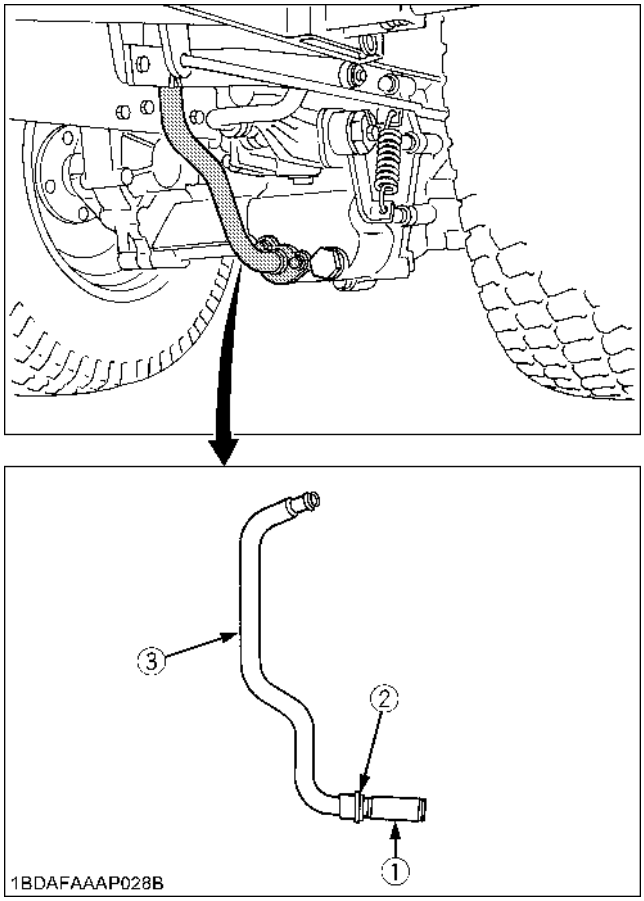
To avoid personal injury:

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

To clean:

1. Remove 2-M8 bolts.
2. Remove the suction pipe strainer with O ring.
3. Clean completely the oil strainer with kerosene with care, to avoid damage to the strainer parts.
4. Install the suction pipe strainer with O ring.

5. Install the bolts.



(1) Strainer
(2) O ring
(3) Suction pipe

EVERY 500 HOURS

■Replacing Fuel Filter

Change fuel filter every 500 hours. This should be done by your KUBOTA Dealer.

EVERY 1500 HOURS

■Checking Fuel Injection Nozzle (Injection Pressure)

Consult your local KUBOTA Dealer for this service.

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.

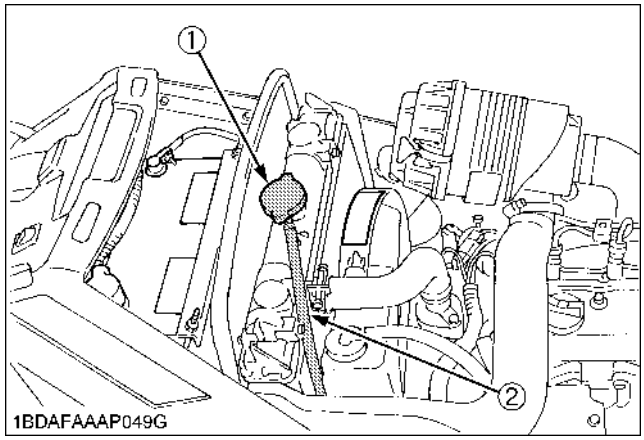
■Checking, Replenishing and Changing Coolant

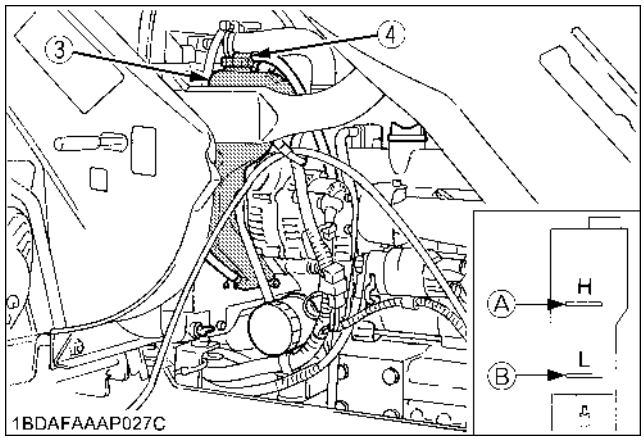
CAUTION

To avoid personal injury:

- **Never open radiator cap when engine is hot.**
- **When opening, loosen cap slightly to the stop to relieve any excess pressure before removing cap completely.**

1. The coolant level should be between the Low and High mark. If the level is below the Low mark, remove the recovery tank cap, and add fresh clean water and anti-freeze.





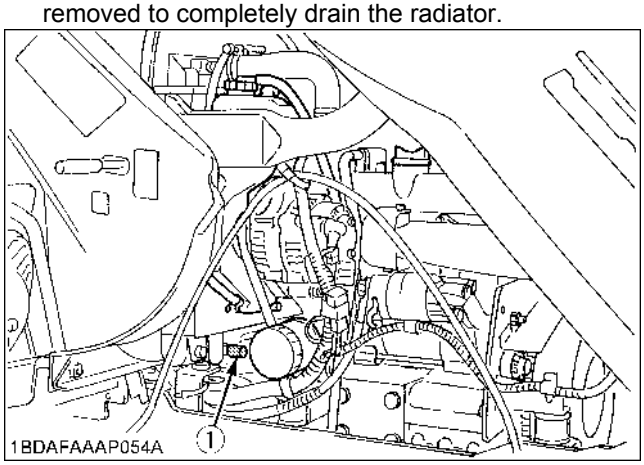
(1) Radiator cap
(2) Over flow pipe
(3) Recovery tank
(4) Recovery tank cap
(A) "HIGHEST LEVEL"
(B) "LOWEST LEVEL"

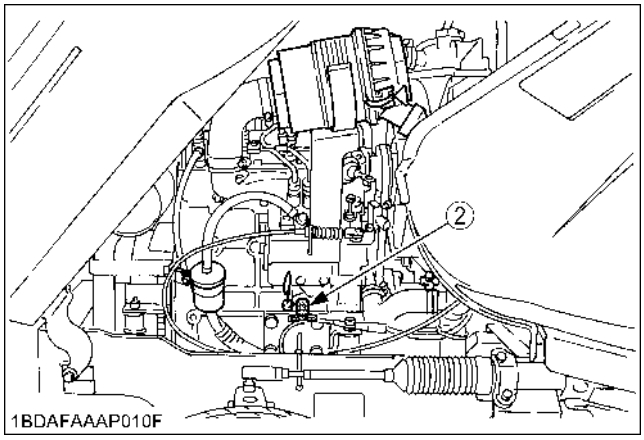
IMPORTANT :

- Use clean, fresh water and anti-freeze to fill the radiator and recovery tank.
- Securely tighten the radiator cap and recovery tank cap.

2. If the engine is stopped by over-load during operation, allow the engine to idle for a little while, for coolant to return from the recovery tank to the radiator.

3. Remove the radiator pressure cap and check to see that the coolant level is just below the port. If low, add coolant.
4. To drain the used coolant, open the drain cocks and remove radiator cap. The radiator cap must be removed to completely drain the radiator.





(1) Drain plug (Radiator)
(2) Drain cock plug (Engine)

5. Be sure to close the radiator cap securely. If the cap is loose or improperly closed, water may leak out and the engine could overheat.
6. The Radiator should be filled with part anti-freeze and part water at all times as recommended by the anti-freeze manufacturer. The anti-freeze contains a corrosion inhibitor and will allow a higher operating temperature in the radiator during the hot season.
7. Do not use an anti-freeze and scale inhibitor at the same time.

■Remedying Coolant Leakage

If coolant leakage should become extremely excessive, consult your KUBOTA Dealer.

■Engine Overheating Precautions

If the engine is overheated, 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.

■Cleaning Cooling System

1. The cooling system should be cleaned on the following occasions:
   (A) Every 1 year of service.
   (B) When adding anti-freeze solution.
2. When cleaning the cooling system, scale inhibitor is recommended to effectively wash away the scale build-up.

■Anti-Freeze

CAUTION

To avoid personal injury:

- **When using antifreeze, put on some protection such as rubber gloves (Antifreeze contains poison.).**
- **If should drink antifreeze, throw up at once and take medical attention.**
- **When antifreeze comes in contact with the skin or clothing, wash it off immediately.**
- **Do not mix different types of Antifreeze.**
  The mixture can produce chemical reaction causing harmful substances.
- **Antifreeze is extremely flammable and explosive under certain conditions. Keep fire and children away from antifreeze.**
- **When draining fluids from the engine, place some container underneath the engine body.**
- **Do not pour waste onto the grounds, down a drain, or into any water source.**
- **Also, observe the relevant environmental protection regulations when disposing of antifreeze.**

If it freezes, coolant can damage the cylinders and radiator. If the ambient temperature falls below 0℃(32℉) or before a long-term storage, let out cooling water completely, or mix fresh water with long-life coolant and fill the radiator and reserve tank with the mixture.

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
   Put the LLC in cooling water in the percentage (%) for a target temperature. When mixing, stir it up well, and then fill into the radiator.
4. The procedure for the mixing of water and antifreeze differs according to the make of the antifreeze and the ambient temperature. Refer to SAE J1034 standard, more specifically also to SAE J814c.

IMPORTANT :

- When the antifreeze is mixed with water, the antifreeze mixing ratio must be less than 50%

Vol % Anti-freeze	Freezing Point	Boiling Point*
	℃	℃
40	-24	106
50	-37	108

* At 1.013x10^{5}Pa(760mmHg) 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 mixture reduces in amount by evaporation.
   (2) If there is a mixture leak, add the LLC of the same manufacturer and type in the same mixture percentage.
   * 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 anticorrosive 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 2 years.

NOTE :

- The above data represent industry standards that necessitate a minimum glycol content in the concentrated antifreeze.
- When the coolant level drops due to evaporation, add water only to keep the antifreeze mixing ratio less than 50%. In case of leakage, add antifreeze and water in the specified mixing ratio before filling in to the radiator.

EVERY 2 YEARS

■Replacing Hydraulic Hose

Replace hoses and hose clamps every 2 years or earlier if checked and found that hoses are swollen, hardened or cracked.

■Replacing Fuel Lines

This should be done by your KUBOTA Dealer.

■Replacing Radiator Hose

Replace hoses and clamp bands every 2 years or earlier if checked and found that hoses are swollen, hardened or cracked.

■Replacing Intake Air Line

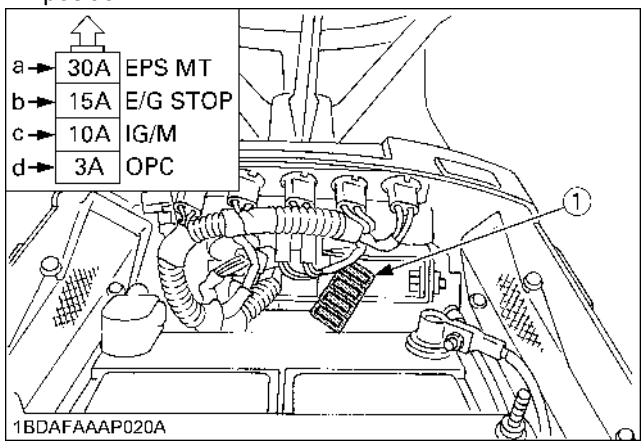
Consult your local KUBOTA Dealer for this service.

SERVICE AS REQUIRED

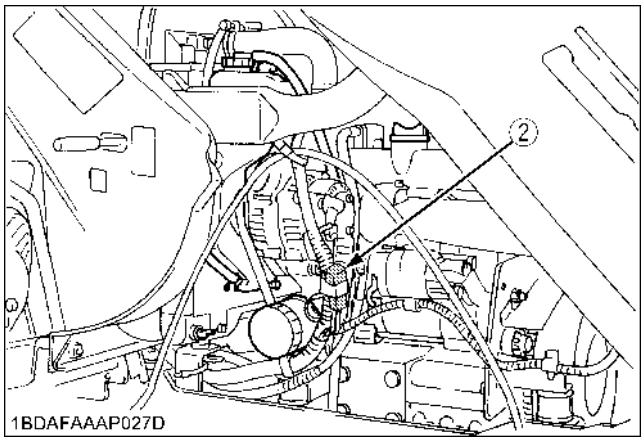
■Replacing Fuses

Replacement of the fuse

1. Open hood.
2. Remove the blown fuse.
3. Place a new 3A or 10A or 15A or 30A or 40A fuse in position.



(1) Fuse location



(2) Slow blow fuse

IMPORTANT :

- If the new fuse happens to blow out within a short time, contact your dealer for inspection and repair. Never "jump" the fuse with wire or foil, etc.

a : Stamp or stick label "EPS MT"
b : Stamp or stick label "E/G STOP"
c : Stamp or stick label "IG/M"
d : Stamp or stick label "OPC"

◆ **Protected circuit**

FUSE NO. (ID LABEL)		CAPACITY (A)	Protected circuit
(1)	EPS MT	30	Electric power steering Motor circuit
	E/G STOP	15	Engine stop timer relay
	IG/M	10	Fuel pump, Head light Power steering control unit, etc.
	OPC	3	Engine running circuit
(2)	---	Slow blow fuse 40	Check circuit against wrong battery connection

■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 one quarter 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	12.8 Rated Voltage/1.04 AMP/ 15 MSCP

(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

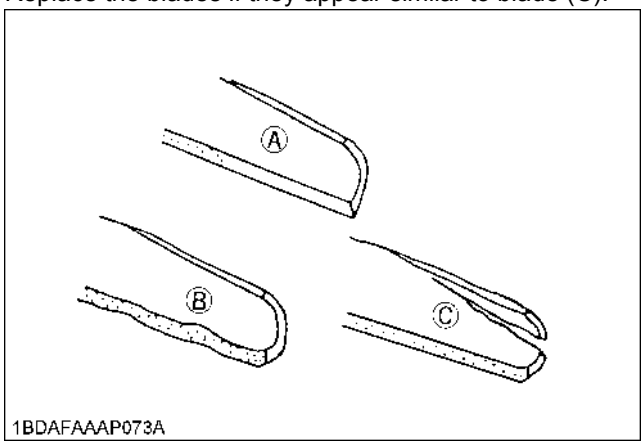
CAUTION

To avoid personal 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.**

◆ 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).



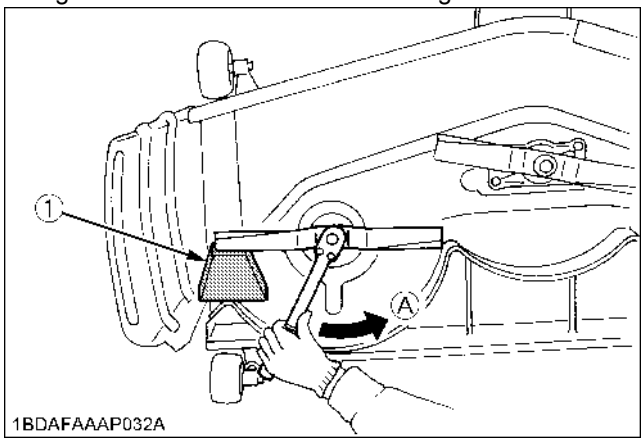
(A) New blade (B) Worn blade (C) Cracked blade

◆ Replacing

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

IMPORTANT :

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



(1) Block (A) "LOOSEN"

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

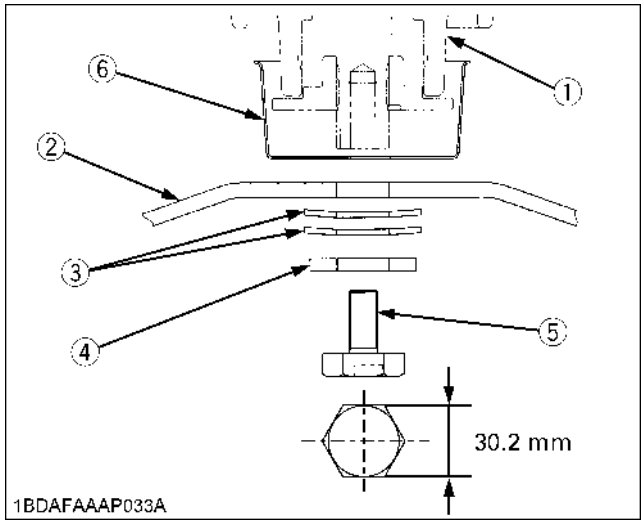
[RCK60B-24G, RCK54-24G]

5. Install the blade in position together with the lock washer and the 2 cup washers. Tighten them up with the bolts.

NOTE :

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

6. 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.



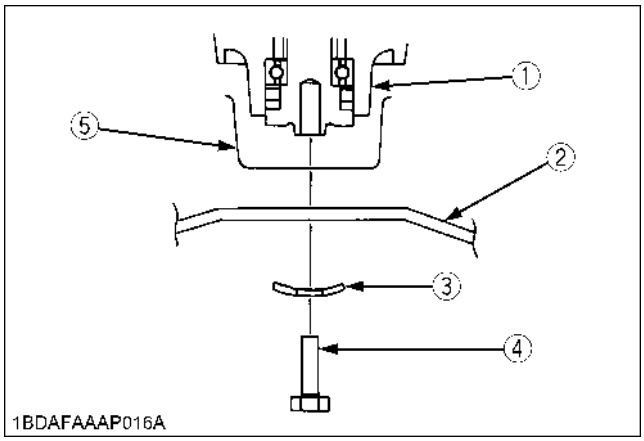
(1) Spindle holder
(2) Blade
(3) 2-Cup washers
(4) Lock washer
(5) Bolt
(6) Spindle guard

[RCK48-21G]

5. Install the blade in position together with the spindle guard and the cup washer. Tighten them up with the bolts.

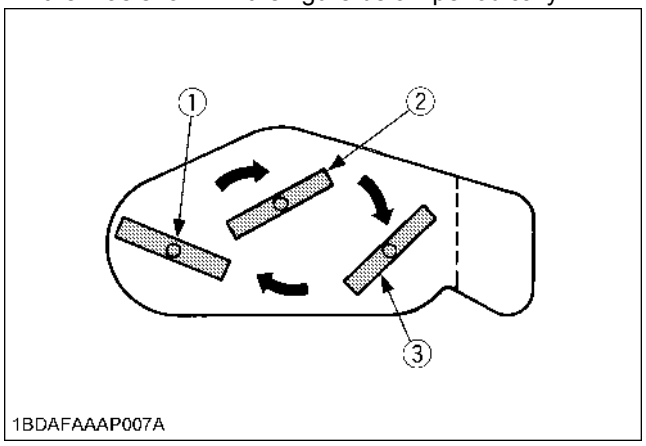
NOTE :
- Make sure that the cup washer is not flattened out or worn; this cause blade to slip excessively. Replace the cup washer if is damaged.

6. 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.



(1) Spindle holder
(2) Blade
(3) Cup washer
(4) Bolt
(5) Spindle guard

IMPORTANT :
- Tighten the three blade bolts to 98 to 117.6 N-m (10 to 12 kgf-m) of torque.
- The blade bolts have Right hand threads. Turn them counterclockwise to loosen.
- To prolong the service life of the blades, reposition them as shown in the figure below periodically.

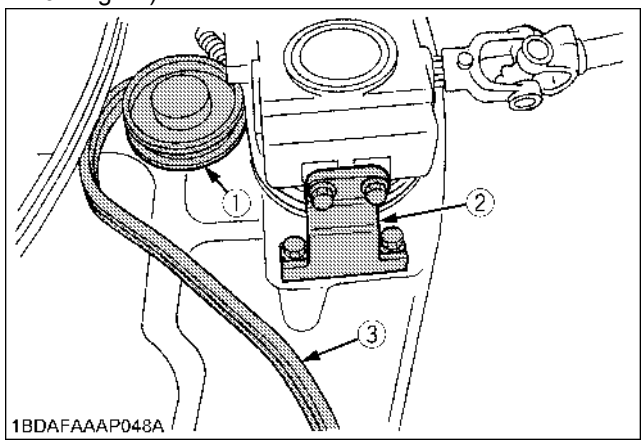


(1) LH blade *(2) Center blade* *(3) RH blade*

■Mower Belt Replacement

1. Remove the mower deck from the machine according to the procedure "ATTACHING THE MOWER".
2. Remove the left and right hand shield from the mower deck.
3. Clean around the gear box.
4. Remove the belt from the tension pulley.
5. Remove the right hand bracket which mounts the gear box to the mower deck and slip the belt over the top of the gear box.
6. To install a new belt, reverse the above procedure.

NOTE :
- Tighten bracket bolts securely 77.6 to 90.2 N-m (8.0 to 9.2 kgf-m).



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

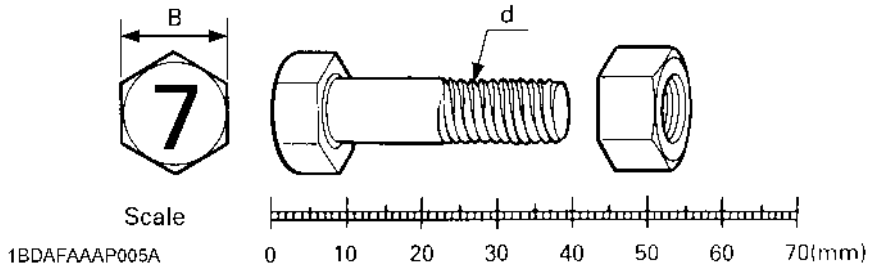
GENERAL TORQUE SPECIFICATION

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
1/2	(N-m) (kgf-m)	108.5 - 130.2 11.07 - 13.29	149.2 - 179.0 15.22 - 18.27	M12	(N-m) (kgf-m)	77.5 - 90.1 7.9 - 9.2	103 - 117 10.5 - 12.0
9/16	(N-m) (kgf-m)	149.2 - 179.0 15.22 - 18.27	217.0 - 260.4 22.14 - 26.57	M14	(N-m) (kgf-m)	124 - 147 12.6 - 15.0	167 - 196 17.0 - 20.0
5/8	(N-m) (kgf-m)	203.4 - 244.1 20.75 - 24.91	298.3 - 358.0 30.44 - 36.53	M16	(N-m) (kgf-m)	196 - 225 20.0 - 23.0	260 - 303 26.5 - 31.0

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 to 20.6**(19.2 ± 1.4)	**1.9 to 2.1**(2.0 ± 0.1)	**23.5 to 27.5**(25.5 ± 2.0)	**2.4 to 2.8**(2.6 ± 0.2)
M10	14 or 17	**39.3 to 45.1** (42.2 ± 2.9)	**4.0 to 4.6**(4.3 ± 0.3)	**48.1 to 55.9**(52.0 ± 3.9)	**4.9 to 5.7**(5.3 ± 0.4)
M12	17 or 19	**62.8 to 72.6**(67.7 ± 4.9)	**6.4 to 7.4** (6.9 ± 0.5)	**77.6 to 90.2**(83.9 ± 6.3)	**8.0 to 9.2**(8.6 ± 0.6)
M14	19 or 22	**107.9 to 125.5** (116.7 ± 8.8)	**11.0 to 12.8** (11.9 ± 0.9)	**123.6 to 147.0**(135.3 ± 11.7)	**12.6 to 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

CAUTION

To avoid personal 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 and the grass catcher.**
- **When storing, remove the key from the key switch to avoid operation by unauthorized persons.**

When the machine will not be operated for over two 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, recharge it, adjust the electrolyte to the proper level, and store in a cool dry place.
   The battery discharges over time even while in storage. Recharge it once a month in hot seasons and once every two months in cold seasons.
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 and grass catcher if these components are not properly cleaned after use.
   Make sure the mower and the grass catcher are clean and completely empty before storage.

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".)
4. Check all fluid levels. (engine oil, hydrostatic oil)
5. Start the engine. Shut the engine off and walk around 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 and its corrective measure.

If	Check
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.	● 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 KUBOTA Dealer.

BATTERY TROUBLESHOOTING

If	Check
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.

POWER STEERING TROUBLESHOOTING

If a problem occurs, the control box sends a signal by a flashing red light.
Should you have a problem, please contact your KUBOTA Dealer.
(The flashing pattern shows the error code. Reporting the long or short flashing pattern helps the dealer to find malfunctioning part.)

If	Check
Steering is Heavy.	● Control box indicator. ● Steering locked.

MACHINE TROUBLESHOOTING

If	Check
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 KUBOTA Dealer.

MOWER TROUBLESHOOTING

If	Check
Discharge chute plugged.	● Grass too wet. ● Grass too long. ● Cutting too low. ● Engine rpm too low. ● Ground speed too fast.
Streaking of uncut grass.	● Ground speed too fast. ● Engine rpm too low. ● Grass too long. ● Blades dull or damaged. ● Debris in mower deck.
Uneven cut.	● Mower deck not level. ● Ground speed too fast. ● Blades dull. ● Blades worn. ● Tire inflation. ● Mower rollers not adjusted correctly.
Blades scalping grass.	● 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.	● Belt tension incorrect. ● Mower deck plugged. ● Debris in pulleys. ● Worn belt.
Excessive vibration.	● Debris on mower deck or in pulleys. ● Damaged drive belt or PTO belt twisted. ● Damaged pulleys. ● Pulleys out of alignment. ● Blades out of balance.
Mower loads down machine.	● Engine rpm too low. ● Ground speed too fast. ● Debris wrapped around mower spindles.
Grass tips are jagged and turn grayish brown.	● Blades dull. ● Blades worn. ● Mower deck is not level.

If you have any questions, contact your KUBOTA Dealer.

VIBRATION

Model	Engine Rated Speed	Vibration (*1)	
		Arm	Body
G2160EC	3200 rpm	Below 2.6 m/s²	Below 0.5 m/s²

(*1) Arm Vibration evaluated based on ISO 5349.
Body Vibration evaluated in field based on ISO 5008.