

Product: Kubota RTV400Ci Service Manual

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WSM

WORKSHOP MANUAL
UTILITY VEHICLE

RTV400Ci

Kubota

KiSC issued 08, 2019 A

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TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the RTV400Ci. It contains 4 parts: "**Information**", "**General**", "**Mechanism**" and "**Servicing**".

■ **Information**

This section primarily contains information below.

- Safety First
- Safety Decal
- Specification
- Dimension

■ **General**

This section primarily contains information below.

- Engine Identification
- Model Identification
- General Precautions
- Maintenance Check List
- Check and Maintenance
- Special Tools

■ **Mechanism**

This section contains information on the structure and the function of the unit. Before you continue with the subsequent sections, make sure that you read this section.

Refer to the latest version of Workshop Manual (Code No. 9Y021-01870 / 9Y021-18200) for the diesel engine / tractor mechanism that this workshop manual does not include.

■ **Servicing**

This section primarily contains information below.

- Troubleshooting
- Servicing Specifications
- Tightening Torques
- Checking, Disassembling and Servicing

All illustrations, photographs and specifications contained in this manual are of the newest information available at the time of publication.

KUBOTA reserves the right to change all information at any time without notice.

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February 2012

Record of Revisions

For pdf, use search function {Search word} to find all the revised locations.

Last digit of the Code No.	Month of Revision	Main Revised Point and Corrective Measures {Search word}	Reference Page
2	2013.05	Add the safety decals for Europe model. {Europe}	I-9
3	2014.04	Change the shape of the power train support.	G-49
4	2016.01	Revised Maintenance Intervals.	G-13
5	2017.03	Revised Harness voltage of injector	7-S18
6	2017.12	Corrected the expression of lubricants.	G-9, G-18, G-40, G-43, 3-S13, 4-S6, 4-S7, 4-S8, 4-S18
		Corrected the "Changeing Engine Oil", "Checking Engine Start System", and "Checking Battery Condition" of Maintenance Intervals.	G-21, G-26, G-31

I INFORMATION

INFORMATION

CONTENTS

1. SAFETY FIRST	I-1
2. SAFETY DECALS	I-4
[1] North America and Oceania	I-4
[2] Europe	I-9
3. SPECIFICATIONS.....	I-14
4. TRAVELLING SPEEDS.....	I-15
5. DIMENSIONS	I-16

1. SAFETY FIRST

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 try to repair or use this unit.

DANGER

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

WARNING

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

CAUTION

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

■ IMPORTANT

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

■ NOTE

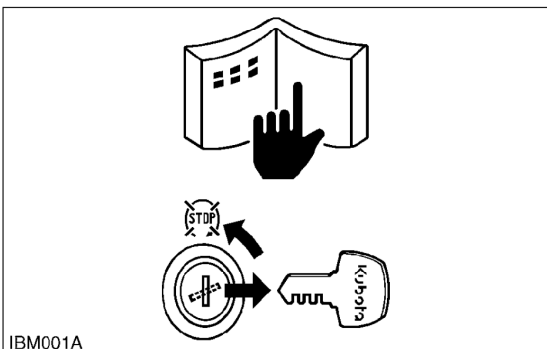
- Gives helpful information.

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BEFORE YOU START SERVICE

- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a stable and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, then remove the key.
- Disconnect the battery negative cable.
- Hang a "DO NOT OPERATE" tag in the operator station.

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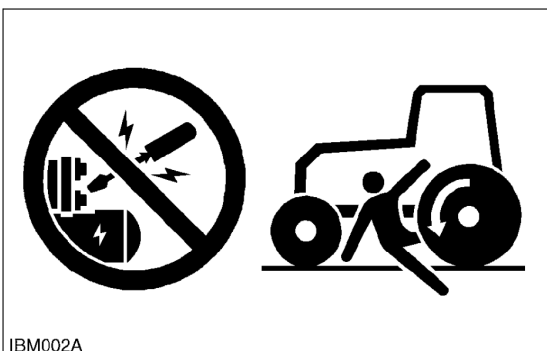


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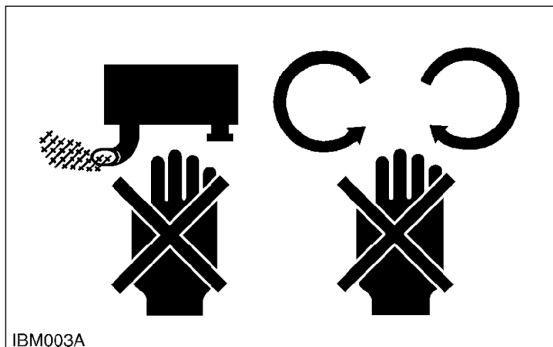
START SAFELY

- Do not do the procedures below when you start the engine.
 - short across starter terminals
 - bypass the safety start switch
- Do not alter or remove any part of machine safety system.
- Before you start the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Do not start the engine when you stay on the ground. Start the engine only from operator's seat.

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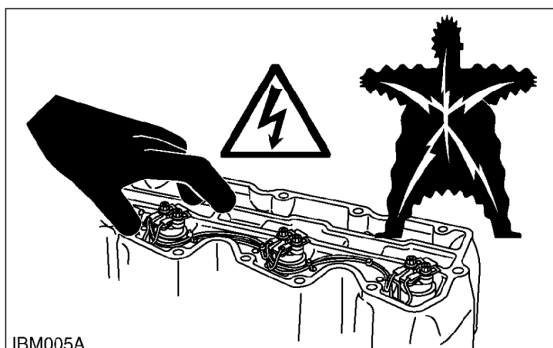
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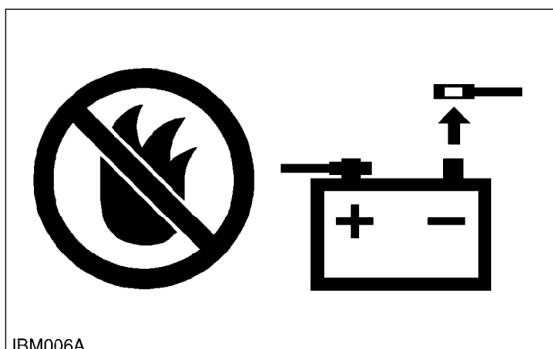
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OPERATE SAFELY

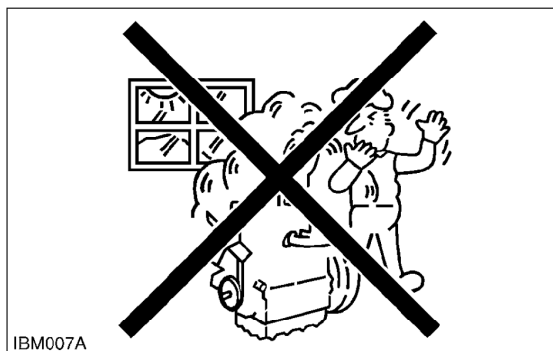
- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below the machine that only a jack holds. Always use a safety stand to hold the machine.
- Do not touch the hot parts or parts that turn when the engine operates.
- Do not remove the radiator cap when the engine operates, or immediately after it stops. If not, hot water can spout out from the radiator. Only remove the radiator cap when it is at a sufficiently low temperature to touch with bare hands. Slowly loosen the cap to release the pressure before you remove it fully.
- Released fluid (fuel or hydraulic oil) under pressure can cause damage to the skin and cause serious injury. Release the pressure before you disconnect hydraulic or fuel lines. Tighten all connections before you apply the pressure.
- Do not open a fuel system under high pressure. The fluid under high pressure that stays in fuel lines can cause serious injury. Do not disconnect or repair the fuel lines, sensors, or any other components between the fuel pump and injectors on engines with a common rail fuel system under high pressure.
- Put on an applicable ear protective device (earmuffs or earplugs) to prevent injury against loud noises.
- Be careful about electric shock. The engine generates a high voltage of more than DC100 V in the ECU and is applied to the injector.

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PREVENT A FIRE

- Fuel is very flammable and explosive under some conditions. Do not smoke or let flames or sparks in your work area.
- To prevent sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- The battery gas can cause an explosion. Keep the sparks and open flame away from the top of battery, especially when you charge the battery.
- Make sure that you do not spill fuel on the engine.

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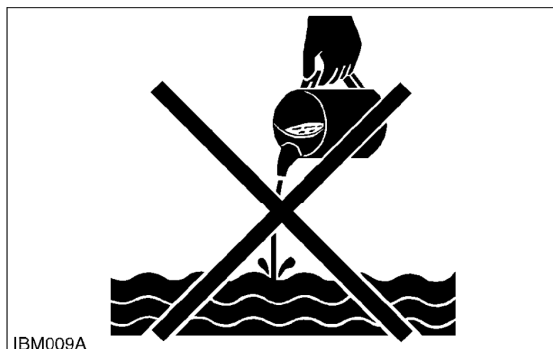


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KEEP A GOOD AIRFLOW IN THE WORK AREA

- If the engine is in operation, make sure that the area has good airflow. Do not operate the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

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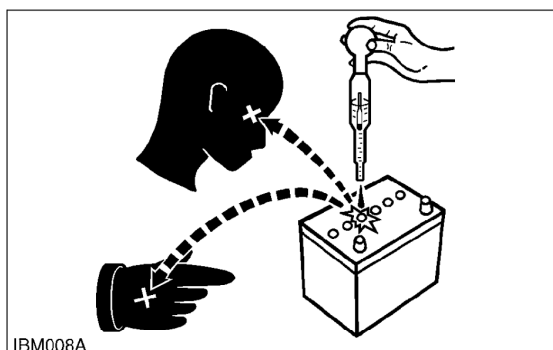


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DISCARD FLUIDS CORRECTLY

- Do not discard fluids on the ground, down the drain, into a stream, pond, or lake. Obey related environmental protection regulations when you discard oil, fuel, coolant, electrolyte and other dangerous waste.

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PREVENT ACID BURNS

- Keep electrolyte away from your eyes, hands and clothing. Sulfuric acid in battery electrolyte is poisonous and it can burn your skin and clothing and cause blindness. If you spill electrolyte on yourself, clean yourself with water, and get medical aid immediately.

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PREPARE FOR EMERGENCIES

- Keep a first aid kit and fire extinguisher ready at all times.
- Keep the emergency contact telephone numbers near your telephone at all times.

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2. SAFETY DECALS

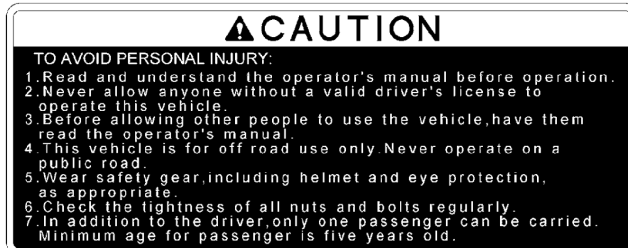
[1] North America and Oceania

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(2) Part No. 7311-6522-1



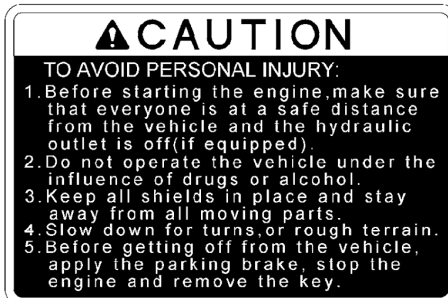
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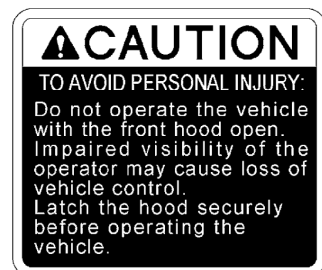
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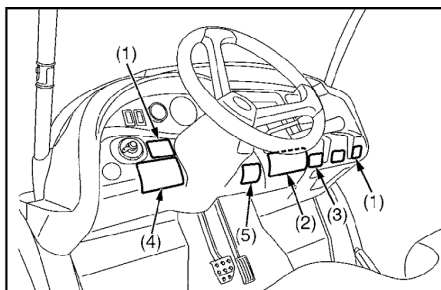


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(5) Part No. K7311-6530-1



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(1) Part No. K7211-6525-1



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(2) Part No. K7561-6541-2

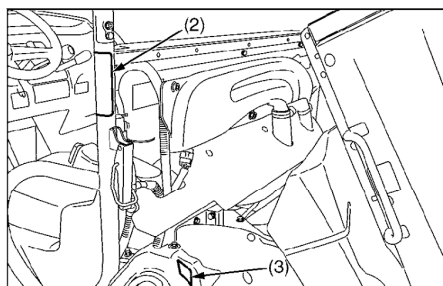
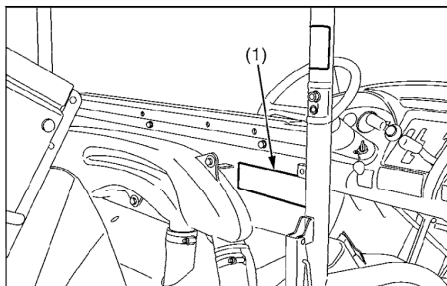


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(3) Part No. K7311-6537-1

Gasoline
fuel only No fire

1AYAAAYAP1000



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⚠ WARNING

TO AVOID PERSONAL INJURY:


1. Do not place gas container inside cargo box bed when filling.
2. Place gas container on ground when filling.

⚠ CAUTION

TO AVOID PERSONAL INJURY:

1. Before touching any part of an exhaust system, be absolutely sure that it has had sufficient time to cool.
2. Always wear safety goggles and a (face) mask.
3. The particulate matter contained in the muffler contains chemicals that are harmful to people, animal and marine life.
4. If you are unable to do this work, have it done by your KUBOTA Dealer.

(1) Part No. K7211-6526-2

<div><p>⚠ WARNING</p><p>TO AVOID PERSONAL INJURY:</p><ol style="list-style-type: none">1. Do not carry passengers in cargo bed.2. Do not travel with the cargo bed in the raised position.</div>	<div><p>⚠ WARNING</p><p>TO AVOID PERSONAL INJURY:</p><ol style="list-style-type: none">1. Do not place gas container inside cargo box bed when filling.2. Place gas container on ground when filling.</div>	<div><p>⚠ CAUTION</p><p>TO AVOID PERSONAL INJURY:</p><p>Do not raise the cargo bed while the engine is running above low idle.</p></div>	<div><p>⚠ CAUTION</p><p>TO AVOID PERSONAL INJURY:</p><ol style="list-style-type: none">1. Before touching any part of an exhaust system, be absolutely sure that it has had sufficient time to cool.2. Always wear safety goggles and a (face) mask.3. The particulate matter contained in the muffler contains chemicals that are harmful to people, animal and marine life.4. If you are unable to do this work, have it done by your KUBOTA Dealer.</div>	<div><p>⚙ Maintenance</p><p>The spark plug arrester should be covered, cleaned and inspected after every 100 hours of use.</p><p>The work needed to be done if it is broken in field, in the crown or weldments, replace the bolts and nuts with new one.</p><p>Do not use the spark arrester when working with flammable liquids.</p><p>Do not use the spark arrester to the muffler and tighten the bolts.</p></div>	<div><p>IMPORTANT</p><ol style="list-style-type: none">1. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.2. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.3. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.4. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.5. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.6. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.7. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.8. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.9. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.10. Max. cargo load should not exceed 400 kg (880 lb) for RTV400Ci.</div>
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⚠ WARNING

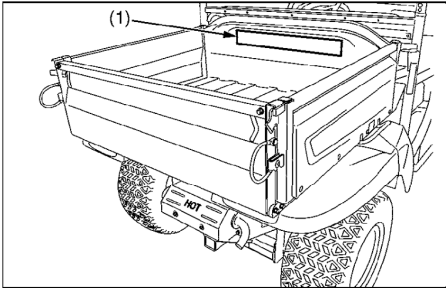
TO AVOID PERSONAL INJURY:

1. Do not carry passengers in cargo bed.
2. Do not travel with the cargo bed in the raised position.

⚠ CAUTION

TO AVOID PERSONAL INJURY:

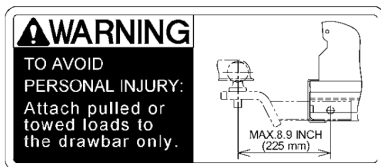
Do not raise the cargo bed while the engine is running above low idle.



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(1) Part No. K7311-6542-2



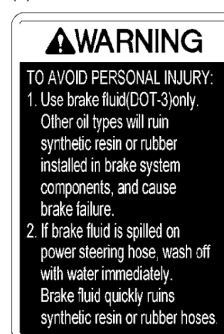
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(2) Part No. K7311-6559-1



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(3) Part No. K7311-6548-2



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(5) Part No. K1221-6118-1

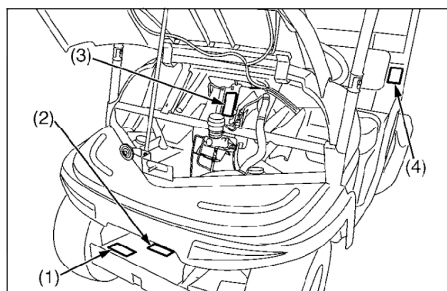
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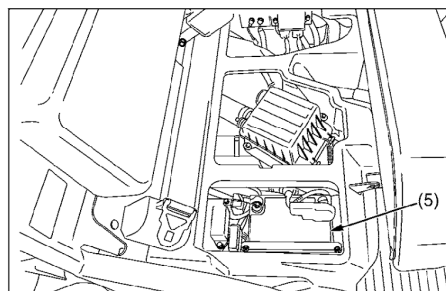
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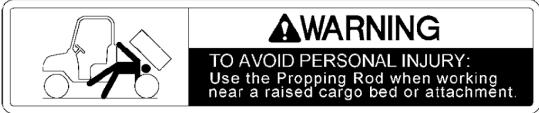


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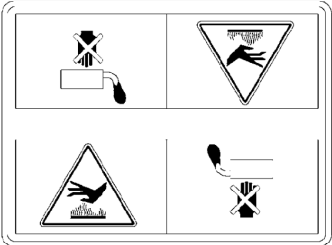
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(1) Part No. K7211-6546-1



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(2) Part No. K7311-6547-2
Do not touch hot surface like muffler, etc..

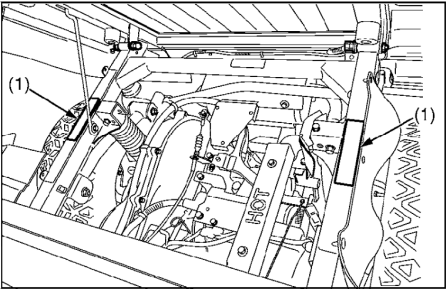


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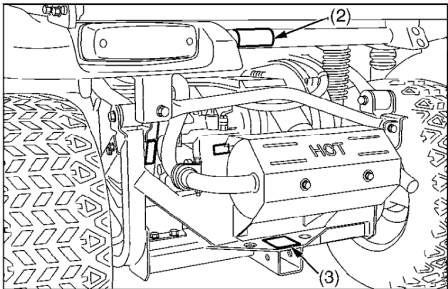
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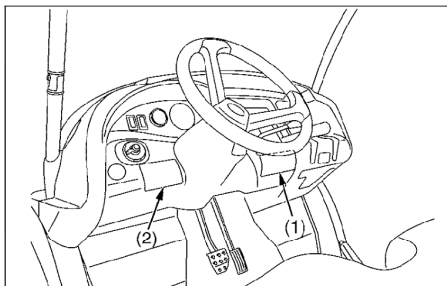


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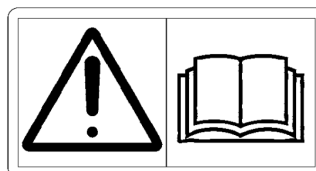


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[2] Europe

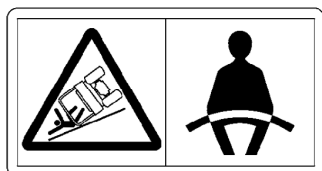


(2) Part No. K7583-6522-1



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(1) Part No K7583-6565-1



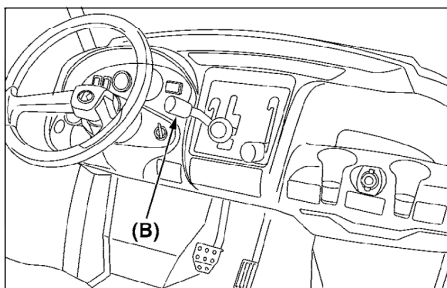
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- Always fasten your seat belt on drivers seat and passenger seat.

THIS LABEL INCLUDE 5 POINTS CAUTIONS BELOW.

(A) GENERAL CAUTIONS

1. Read and understand the operator's manual before operation.
2. Never allow anyone without a valid driver's license to operate this vehicle.
3. Before allowing other people to use the vehicle, have them read the operator's manual.
4. This vehicle is for off road use only. Never operate on a public road.
5. Wear safety gear, including helmet and eye protection, as appropriate.
6. Check the tightness of all nuts and bolts regularly.
7. In addition to the driver, only 1 passenger can be carried. Minimum age for passenger is 5 years old.
8. Before starting the engine, make sure that everyone is at a safe distance from the vehicle and the hydraulic outlet is off (if equipped)
9. Do not operate the vehicle under the influence of drugs or alcohol.
10. Keep all shields in place and stay away from all moving parts.
11. Slow down for turns, or rough terrain.
12. Before getting off from the vehicle, apply the parking brake, stop the engine and remove the key.

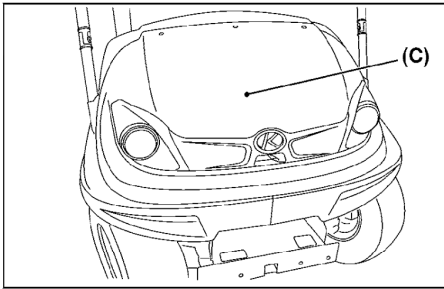


(B) DEFERENTIAL LOCK LEVER

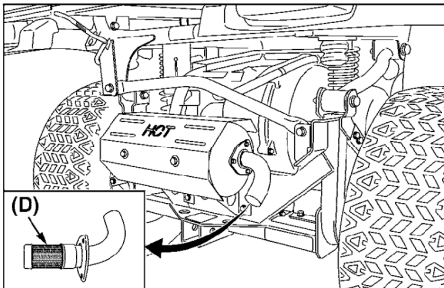
- Do not engage the differential lock while at high speed.

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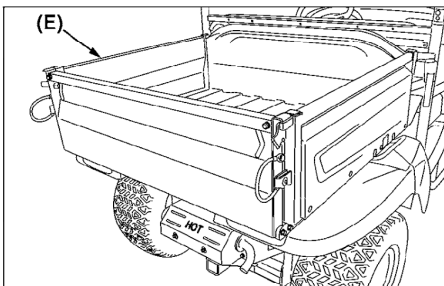
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**(C) FRONT HOOD**

- Do not operate the vehicle with the front hood open. Impaired visibility of the operator may cause loss of vehicle control.
Latch the hood securely before operating the vehicle.

**(D) SPARK ARRESTER**

1. Before touching any part of an exhaust system, be absolutely sure that it has had sufficient time to cool.
2. Always wear safety goggles and a (face) mask.
3. The particulate matter contained in the muffler contains chemicals that are harmful to people, animal and marine life.

**(E) CARGO BED**

1. Do not travel with the cargo bed in the raised position.
2. Do not raise the cargo bed while the engine is running above new idle.

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9Y1210710INI001US0

(1) Part No. K7313-6525-1



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1. Do not start engine by shorting across starter terminals or bypassing the safety start switch.
The vehicle may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operators seat with range shift lever in neutral position and hydraulic outlet off (if equipped).

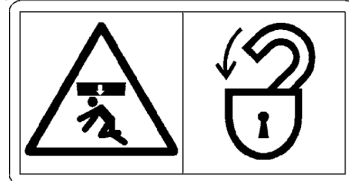
(2) Part No. K7583-6541-1



1AYAACHAP009A

1. Do not remove Roll-Over Protective Structures (ROPS) for any application.
2. Do not modify or repair a ROPS because welding, grinding, drilling or cutting any portion may weaken the structure.

(3) Part No. K7313-6546-1



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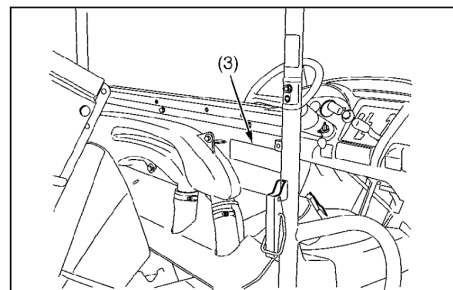
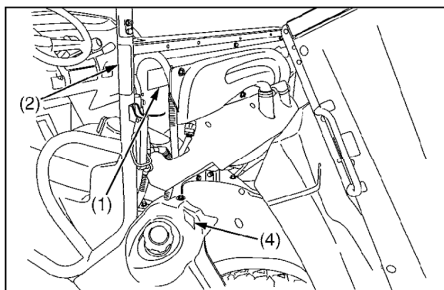
- Use the Propping Rod when working near a raised cargo bed or attachment.

(4) Part No. K7313-6537-1



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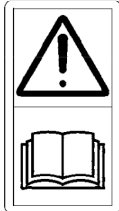
- GASOLINE FUEL ONLY
- NO FIRE



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(1) Part No. K7583-6546-1



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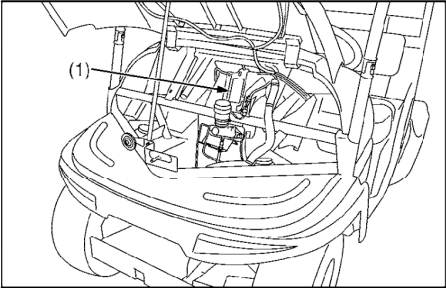
1. Use brake fluid (DOT-3) only.
Other oil types will ruin synthetic resin or rubber installed in brake system components, and cause brake failure.
2. If brake fluid is spilled on power steering hose, wash off with water immediately.
Brake fluid quickly ruins synthetic resin or rubber hoses.

(2) Part No. K1221-6118-1

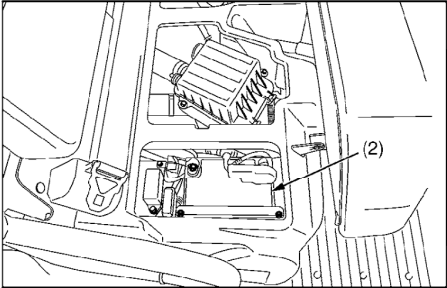


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- SHIELD EYES
EXPLOSIVE GASES can cause blindness or injury.
- NO SPARKS / FLAMES / SMOKING
- SULFURIC ACID can cause blindness or severe burns.
- Flush eyes immediately with water.
- Get medical help fast.

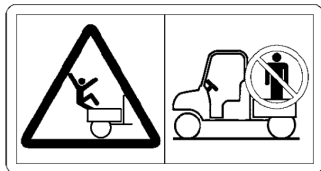


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(1) Part No. K7313-6526-1



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- Do not carry passengers in cargo bed.

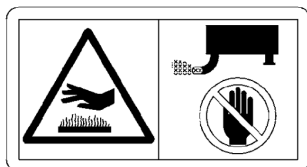
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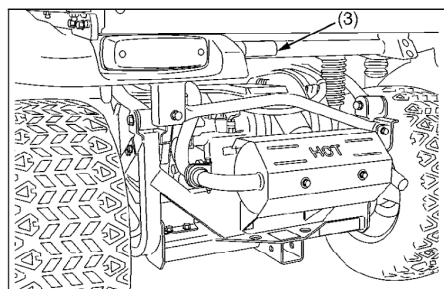
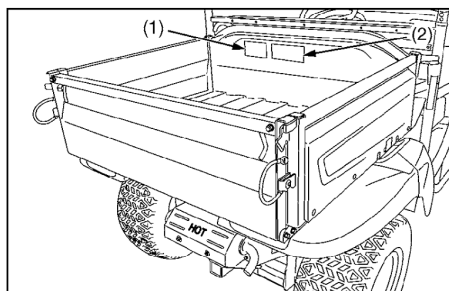
- Do not place gas container inside cargo box bed when filling.
- Place gas container on ground when filling.

(3) Part No. K7313-6547-1



1AYAACPA066A

- Do not touch hot surface like muffler, etc..



9Y1210710IC1010US

9Y1210710IN10014US0

CARE OF DANGER, WARNING AND CAUTION LABELS

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

9Y1210710IN10006US0

3. SPECIFICATIONS

Model			RTV400Ci	
Engine	Model		SUBARU GH4120	
	Type		1 cylinder OHC, Air-cooled, EFI Gas	
	Displacement		0.404 L (24.7 cu. in.)	
Fuel Capacity			20 L (5.3 U.S.gals, 4.4 Imp.gals)	
Transmission			Continuously variable transmission (CVT)	
Wheels, Drive system			4, Rear 2WD or 4WD	
Differential lock			Standard; hand operated with mechanical holder	
Gear selection			Hi-Lo range forward, neutral, reverse	
Brakes	Front / Rear		Dry disk brake	
	Parking brake		Rear wheel, hand lever	
Steering			Rack and Pinion	
Suspension	Front		Independent, Mac Pherson strut-type	
	Rear		Semi-independent, Multi-link	
Dimensions	Length		2690 mm (105.9 in.)	
	Width		1390 mm (54.7 in.)	
	Height, overall		1829 mm (72 in.)	
	Front tread centers		1016 mm (40 in.)	
	Rear tread centers		1041 mm (41 in.)	
	Wheelbase		1800 mm (70.9 in.)	
	Ground clearance	front axle	205 mm (8.1 in.)	
		rear axle	175 mm (6.9 in.)	
	Turning diameter		7 m (22.9 ft.)	
Max. rolling weight (Towing Capacity)			Rear: 500 kg (1102 lbs) / Front: 250 kg (551 lbs)	
Payload capacity			480 kg (1058 lbs)	
Weight			565 kg (1246 lbs) with ATV Tires / 570 kg (1257 lbs) with HDWS Tires	
Cargo bed	Width		1032 mm (40.6 in.)	
	Length		856 mm (33.7 in.)	
	Depth		290 mm (11.4 in.)	
	Volume		0.25 m ³ (9 cu.ft.)	
	Bed height (unloaded)		810 mm (31.9 in.)	
	Max. cargo bed load		200 kg (441 lbs)	
Tires	Front		24 × 9-12 HDWS, 6PLY	24 × 9-12 ATV, 6PLY
	Rear		24 × 11-12 HDWS, 6PLY	24 × 11-12 ATV, 6PLY
Front deluxe guard			Option	
Body color			Orange / Camouflage	
Speedometer			Option	
Rear net			Option	

■ NOTE

- The company reserves the right to change the specifications without notice.
- The values in "Ground clearance" and "Weight" are those of the machine equipped with the tires in the table above.

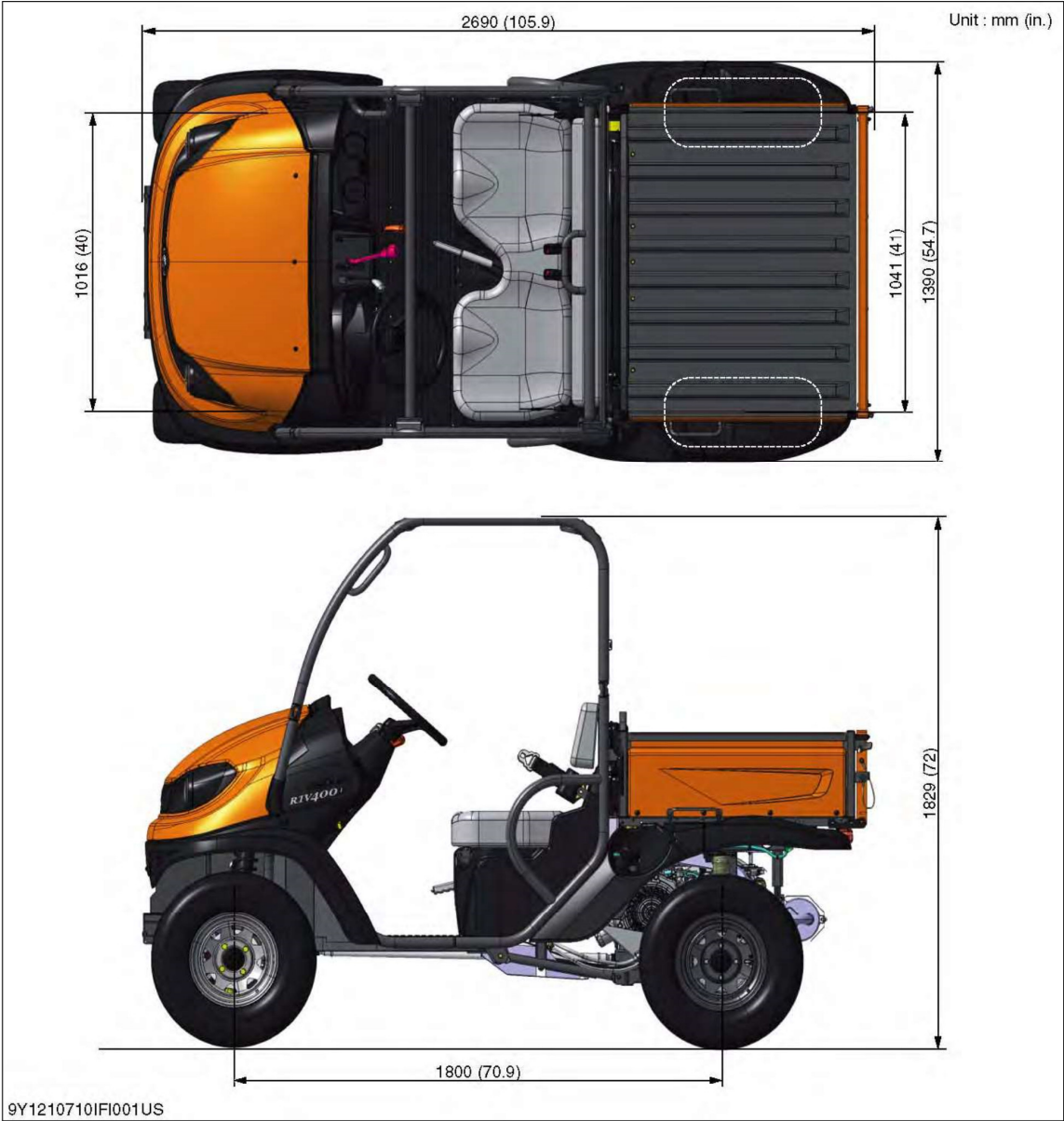
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4. TRAVELLING SPEEDS

	Model	RTV400Ci
	Gear position	km/h (mph)
Range gear shift lever	Low	24 (15)
	High	40 (25)
	Reverse	24 (15)

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5. DIMENSIONS



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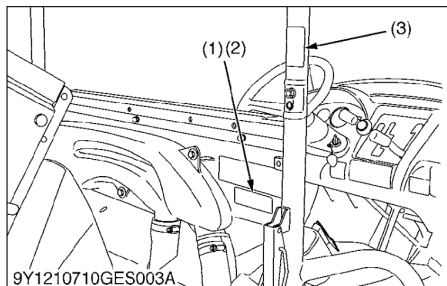
G GENERAL

GENERAL

CONTENTS

1. PRODUCT IDENTIFICATION	G-1
2. GENERAL PRECAUTIONS.....	G-2
3. HANDLING PRECAUTIONS FOR ELECTRICAL	G-3
[1] WIRING	G-3
[2] BATTERY	G-5
[3] FUSE	G-5
[4] CONNECTOR	G-5
[5] HANDLING OF CIRCUIT TESTER	G-6
[6] COLOR OF WIRING	G-7
4. LUBRICANTS AND FUEL	G-8
5. TIGHTENING TORQUES.....	G-10
[1] GENERAL USE SCREWS, BOLTS AND NUTS	G-10
[2] STUD BOLTS	G-10
[3] HYDRAULIC FITTINGS	G-11
(1) Hydraulic Hose Fittings.....	G-11
(2) Hydraulic Pipe Cap Nuts	G-11
(3) Adaptors, Elbows and Others.....	G-11
[4] METRIC SCREWS, BOLTS AND NUTS	G-12
[5] AMERICAN STANDARD SCREWS, BOLTS AND NUTS WITH UNC OR UNF THREADS	G-12
[6] PLUGS	G-12
6. MAINTENANCE CHECK LIST	G-13
7. CHECK AND MAINTENANCE	G-15
[1] DAILY CHECK.....	G-15
[2] CHECK POINTS OF INITIAL 20 HOURS	G-20
[3] CHECK POINTS OF INITIAL 50 HOURS	G-22
[4] CHECK POINTS OF EVERY 50 HOURS	G-25
[5] CHECK POINTS OF EVERY 100 HOURS	G-27
[6] CHECK POINTS OF EVERY 200 HOURS	G-36
[7] CHECK POINTS OF EVERY 300 HOURS	G-39
[8] CHECK POINTS OF EVERY 400 HOURS	G-40
[9] CHECK POINT OF EVERY 500 HOURS.....	G-40
[10]CHECK POINTS OF EVERY 1000 HOURS OR EVERY 1 YEAR	G-40
[11]CHECK POINTS OF EVERY 1 YEAR.....	G-41
[12]CHECK POINTS OF EVERY 2 YEARS	G-43
[13]CHECK POINT OF EVERY 4 YEARS.....	G-44
[14]OTHERS.....	G-45
8. SPECIAL TOOLS	G-48
[1] SPECIAL TOOLS FOR ENGINE.....	G-48
[2] SPECIAL TOOLS FOR MACHINE.....	G-48
9. TIRES	G-55
[1] TYPE OF TIRE	G-55
[2] TIRE PRESSURE.....	G-55
[3] VEHICLE LIMITATIONS.....	G-56
[4] CARGO BED	G-56
[5] SHOCK ABSORBERS	G-57

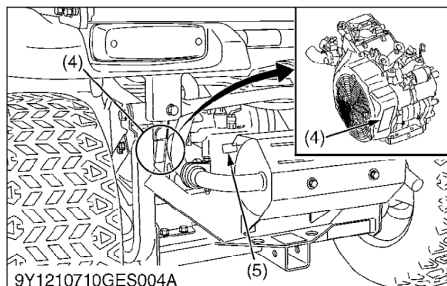
1. PRODUCT IDENTIFICATION



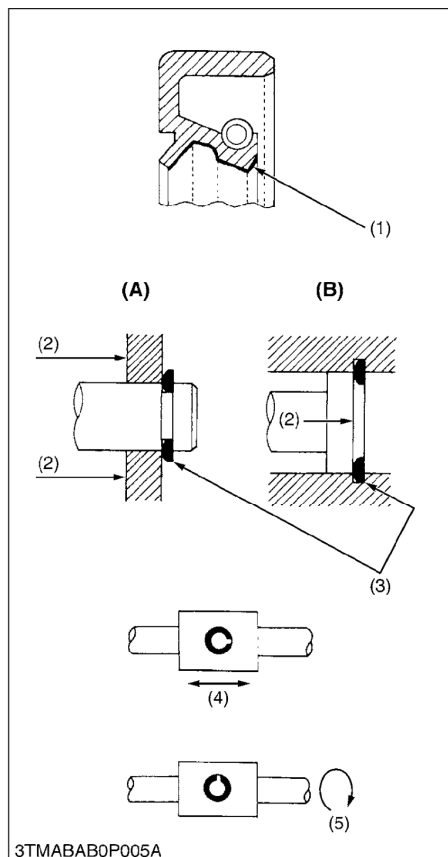
When contacting your local KUBOTA distributor, always specify engine serial number, product serial number and hour meter reading.

- | | |
|-----------------------------------|---|
| (1) Vehicle Serial Number | (4) Engine Serial Number |
| (2) Vehicle Identification Number | (5) Transmission Assembly Serial Number |
| (3) ROPS Serial Number | |

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2. GENERAL PRECAUTIONS



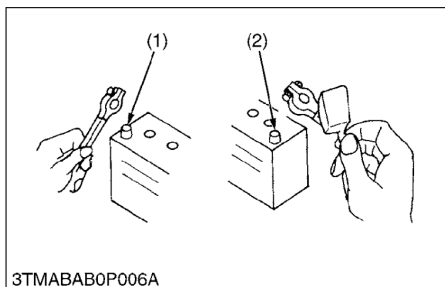
- When you disassemble, carefully put the parts in a clean area to make it easy to find the parts. You must install the screws, bolts and nuts in their initial position to prevent the reassembly errors.
- When it is necessary to use special tools, use KUBOTA special tools. Refer to the drawings when you make special tools that you do not use frequently.
- Before you disassemble or repair machine, make sure that you always disconnect the ground cable from the battery first.
- Remove oil and dirt from parts before you measure.
- Use KUBOTA genuine parts for replacement to keep the machine performance and to make sure of safety.
- You must replace the gaskets and O-rings when you assemble again. Apply grease **(1)** to new O-rings or oil seals before you assemble.
- When you assemble the external or internal circlips, make sure that the sharp edge **(3)** faces against the direction from which force **(2)** is applied.
- When inserting spring pins, their splits must face the direction from which a force is applied. See the figure on the left side.
- To prevent damage to the hydraulic system, use only specified fluid or equivalent.
- Clean the parts before you measure them.
- Tighten the fittings to the specified torque. Too much torque can cause damage to the hydraulic units or the fittings. Not sufficient torque can cause oil leakage.
- When you use a new hose or pipe, tighten the nuts to the specified torque. Then loosen (approx. by 45°) and let them be stable before you tighten to the specified torque (This is not applied to the parts with seal tape).
- When you remove the two ends of a pipe, remove the lower end first.
- Use two pliers in removal and installation. One to hold the stable side, and the other to turn the side you remove to prevent twists.
- Make sure that the sleeves of flared connectors and tapers of hoses are free of dust and scratches.
- After you tighten the fittings, clean the joint and apply the maximum operation pressure 2 to 3 times to check oil leakage.

- (1) Grease
- (2) Force
- (3) Sharp Edge
- (4) Axial Force
- (5) Rotating Movement

- (A) External Circlip**
- (B) Internal Circlip**

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3. HANDLING PRECAUTIONS FOR ELECTRICAL



To ensure safety and prevent damage to the machine and surrounding equipment, obey the following precautions in handling electrical parts and wiring.

■ IMPORTANT

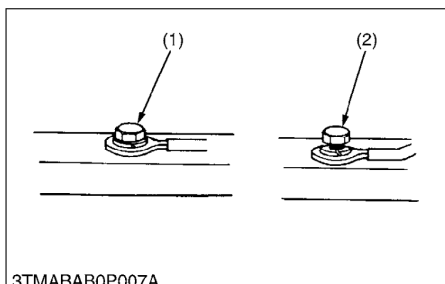
- Check electrical wiring for damage and loosened connection every year.
- When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.

(1) Negative Terminal

(2) Positive Terminal

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[1] WIRING

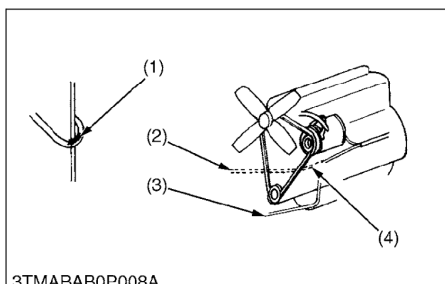


- Securely tighten wiring terminals.

(1) Correct
(Securely Tighten)

(2) Incorrect
(Loosening Leads to damaged Contact)

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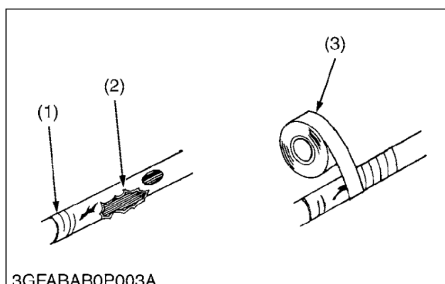


- Do not let wiring contact dangerous part.

(1) Dangerous Part (Sharp Edge)
(2) Wiring (Incorrect)

(3) Wiring (Correct)
(4) Dangerous Part

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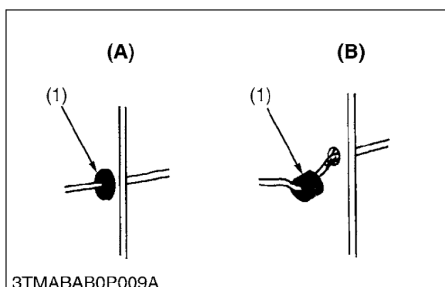


- Repair or change torn or aged wiring immediately.

(1) Aged
(2) Torn

(3) Electrical Tape

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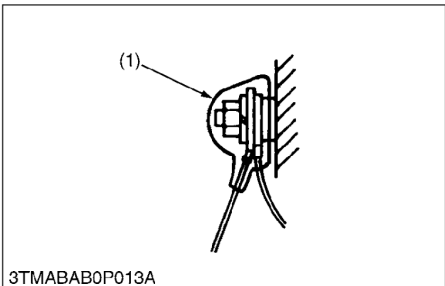
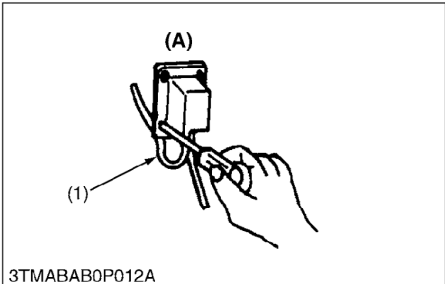
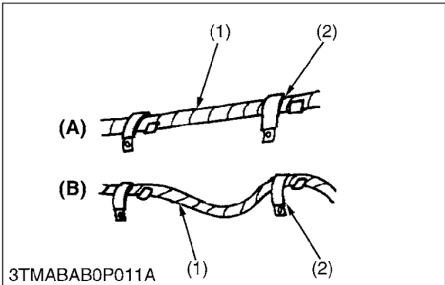
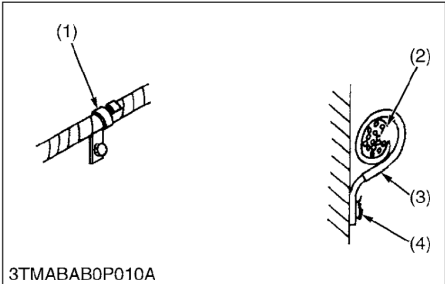


- Securely insert grommet.

(1) Grommet

(A) Correct
(B) Incorrect

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- Securely clamp, being careful not to damage wiring.

- (1) Clamp (Wind Clamp Spirally)
- (2) Wire Harness
- (3) Clamp
- (4) Welding Dent

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- Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

- (1) Wiring
- (2) Clamp
- (A) Correct
- (B) Incorrect

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- In installing a part, be careful not to get wiring caught by it.

- (1) Wiring
- (A) Incorrect

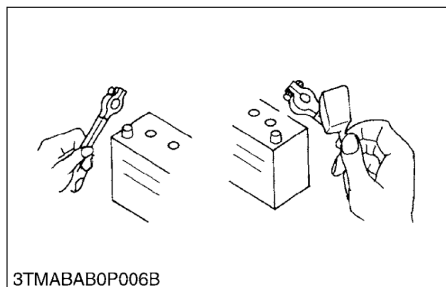
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- After installing wiring, check protection of terminals and clamped condition of wiring.

- (1) Cover (Securely Install Cover)

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[2] BATTERY



- Be careful not to confuse positive and negative terminal posts.
- When you remove battery cables, disconnect negative cable first. When you install battery cables, check for polarity and connect positive cable first.
- Do not install any battery with capacity other than is specified (Ah).
- After you connect cables to battery terminal posts, apply high temperature grease to them and securely install terminal covers on them.
- Do not allow dirt and dust to collect on battery.

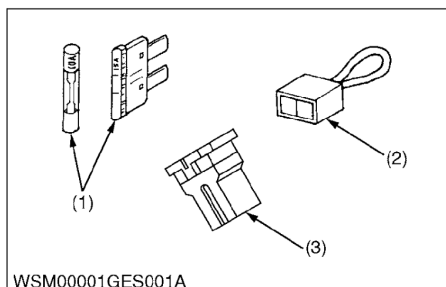
⚠ DANGER

To avoid serious injury or death:

- **Be careful not to let battery liquid spill on your skin and clothes. If contaminated, wash it off with water immediately.**
- **Before you recharge the battery, remove it from the machine.**
- **Before you recharge, remove cell caps.**
- **Recharge in a well-ventilated place where there is no open flame nearby, as hydrogen gas and oxygen are formed.**

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[3] FUSE



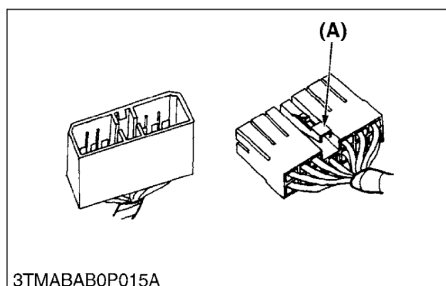
- Use fuses with specified capacity. Neither too large nor small capacity fuse is acceptable.
- Never use steel nor copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of reserve power supply is exceeded.

- (1) Fuse
(2) Fusible Link

- (3) Slow Blow Fuse

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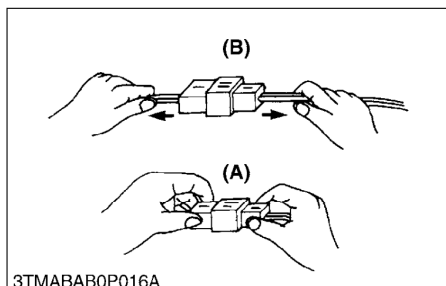
[4] CONNECTOR



- For connector with lock, push lock to separate.

(A) Push

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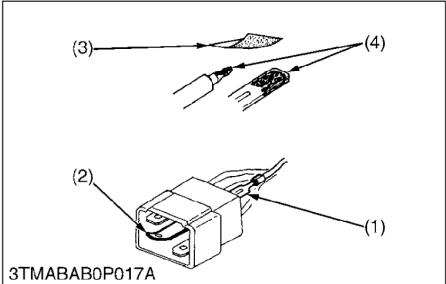


- In separating connectors, do not pull wire harnesses.
- Hold connector bodies to separate.

(A) Correct

(B) Incorrect

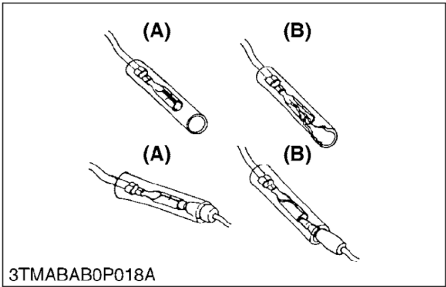
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- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make sure that there is no terminal being exposed or displaced.

(1) Exposed Terminal (3) Sandpaper
(2) Deformed Terminal (4) Rust

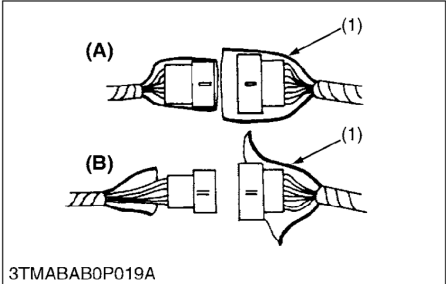
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- Make sure that there is no female connector being too open.

(A) Correct (B) Incorrect

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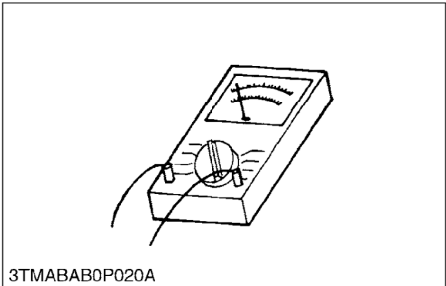


- Make sure that plastic cover is large enough to cover whole connector.

(1) Cover (A) Correct (B) Incorrect

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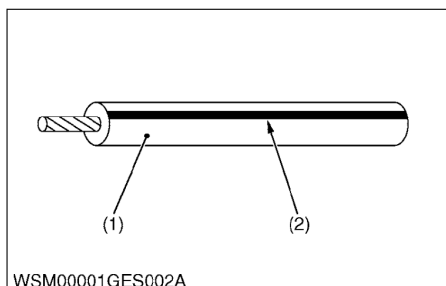
[5] HANDLING OF CIRCUIT TESTER



- Use tester correctly following manual provided with tester.
- Check for polarity and range.

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[6] COLOR OF WIRING



- Colors of wire are specified to the color codes.
- This symbol of "/" shows color with stripe (s).

(An example)

Red stripe on white color: W/R

Color of wiring	Color code
Black	B
Brown	Br
Green	G
Gray	Gy or Gr
Blue	L
Light Green	Lg
Orange	Or
Pink	P
Purple	Pu or V
Red	R
Sky Blue	Sb
White	W
Yellow	Y

(1) Wire Color

(2) Stripe

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