

Product: Kubota RTV-XG850 Service Manual

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WSM

WORKSHOP MANUAL
UTILITY VEHICLE

RTV-XG850

Kubota

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TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the *RTV-XG850*. It contains 4 parts: "Information", "General", "Mechanism" and "Servicing".

INFORMATION

This section primarily contains information below.

- Safety First
- Safety Decal
- Specification
- Dimensions

GENERAL

This section primarily contains information below.

- Loader Identification
- General Precautions
- Maintenance Check List
- Check and Maintenance

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.

SERVICING

This section primarily contains information below.

- Troubleshooting
- Service 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.

Since this manual includes many models, information or illustrations and photographs can show more than one model.

June 2018

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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 measure [Search word] | Reference page |
|--|-------------------|--|----------------|
| 1 | 2019 February | Revised for EVAPO model | — |
| 2 | 2019 May | Correction of Electric circuit | — |
| | | Revision of part names | — |
| 3 | 2020 October | Revised Electric circuit <ul style="list-style-type: none"> • Changed starter symbol • Changed safety switch to neutral safety switch • Added power source from key switch lines after ECU (Engine) relay | — |
| | | Revised part names | — |
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| | | Revised checking backlash between bevel pinion shaft and bevel gear | 7-21 |
| 4 | 2021 May | Revised to include AU model information | — |
| 5 | 2021 August | Added 200 hrs or 3000 km maintenance item ; Suspension arm bushings. | 2-17 2-36 |
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1. INFORMATION

SAFETY FIRST

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

DANGER

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

WARNING

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

CAUTION

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

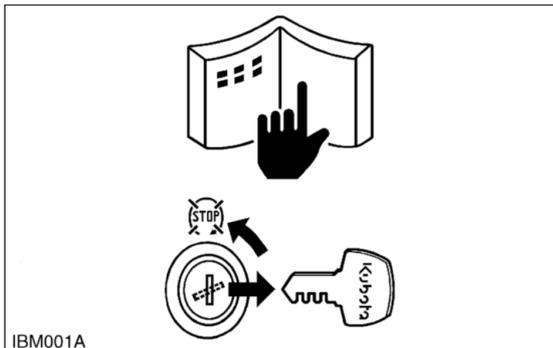
■ IMPORTANT

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

■ NOTE

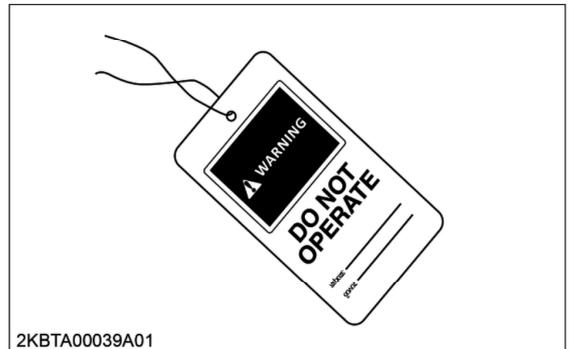
- Gives helpful information.

1. Working precautions



- Understand all safety instructions and safety labels in this manual.
- Park the machine on a stable and level ground then lower the attachment to check the machine safely.

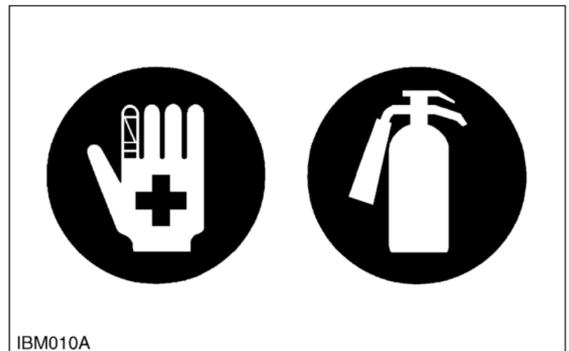
- Stop the engine and remove the key when leaving the operator's seat for cleaning, maintenance, and servicing.



2KBTA00039A01

- Hang a DO NOT OPERATE tag near the operator's seat.
- Do not use worn or cracked tools. Use tools in a proper way with enough strength.
- In regards to the facility which is used in the workshop, follow each safety instruction.

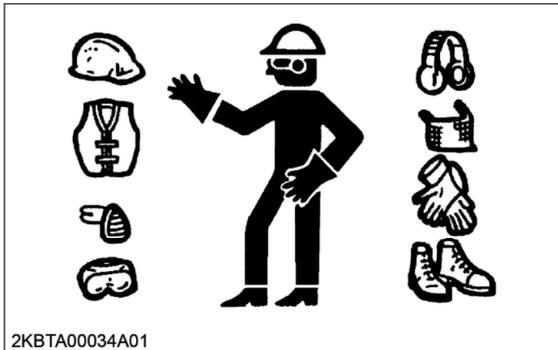
2. Preparing for emergencies



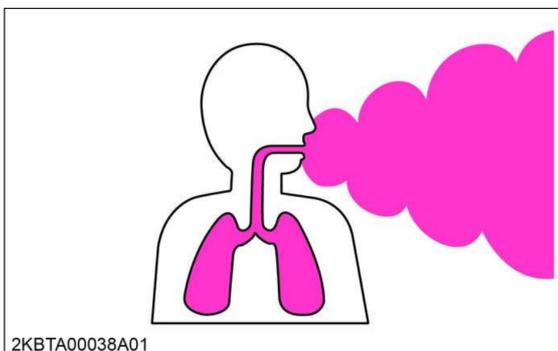
IBM010A

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

3. Working cautions



- Wear proper service attire when performing work. Do not wear loose clothing as they could get caught on machine components.
- Wear the proper protective equipment when working around the machine. For example helmet, eye protector and protective shoes.
- Do not work around the machine if you are tired or have consumed alcohol or drugs.



- Keep the machine away from obstacles and hazardous materials.
- Ensure the working environment is properly ventilated.
- Do not allow third parties to come near the machine.

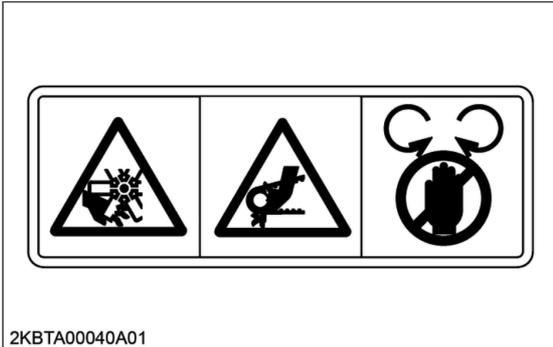


- Make sure you have the support of the 3 points with both hands holding the handle and one foot at the step when getting on and off the machine.
- When working under the machine, make sure the machine does not move back and forth or side-to-side.
- When working under the machine, provide secure support for the machine.
- When using a hydraulic jack, always use with a rigid rack to prevent the machine from falling.

4. Starting machine safely

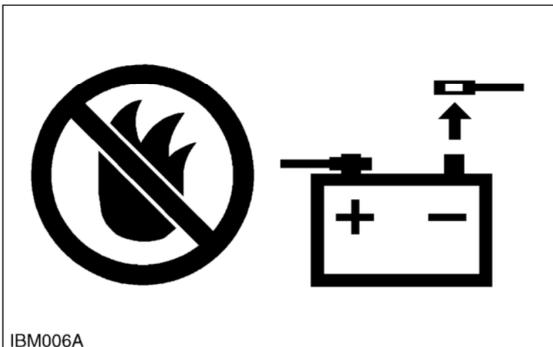


- Do not do the following work when starting the engine.
 - Short across starter terminals.
 - Bypass the safety start switch.
- Make sure there are no bystanders or obstacles present around the machine before starting the engine.
- Do not start the engine unless the operator is seated in the operator's seat.
- Make sure that the pilot levers are in neutral before starting the engine.



- Lock the covers before starting the machine.
- Keep away from rotating and moving objects.
- Keep tools and waste cloth away from rotating and moving objects.

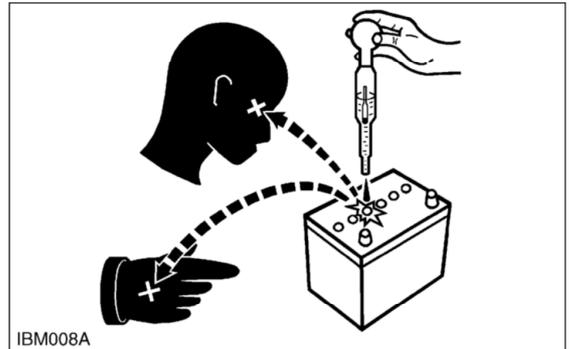
5. Preventing fires



- Keep fire (welding sparks, grinding sparks, cigarettes) away from the fuel.
- Wipe the fuel off when spilled.
- Keep fire (welding sparks, grinding sparks, cigarettes) away from the battery. The battery produces oxygen and hydrogen gas that are flammable.
- Disconnect the negative (-) terminal first when disconnecting the battery cable.

- Connect the positive (+) terminal first when connecting the battery cable.
- Do not short circuit the machine.
- Do not splash the hydraulic oil on the exhaust components.

6. Preventing acid burns



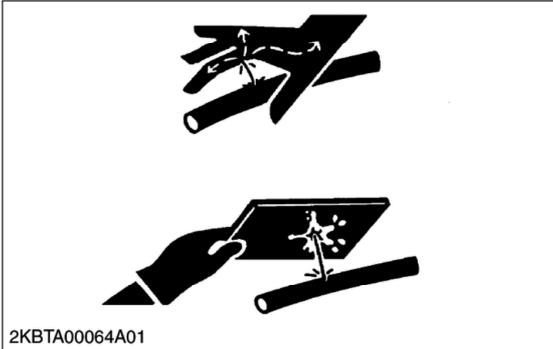
- Keep the electrolyte away from your eyes, hands, and clothes. Sulfuric acid in the battery electrolyte is poisonous: it can cause blindness and is strong enough to burn your skin and clothing. If you spill electrolyte on yourself, clean yourself with water and get a medical aid immediately.

7. Avoiding high pressure fluid



- Keep away from high pressure fluids bursting from a hose or pipe. The fluid can penetrate your skin and cause serious injuries.
- Get a medical aid immediately if an accident occurs.

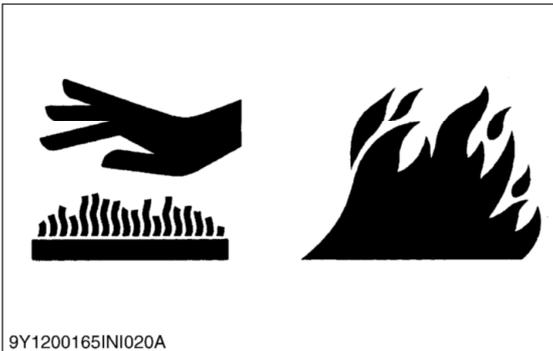
1. INFORMATION



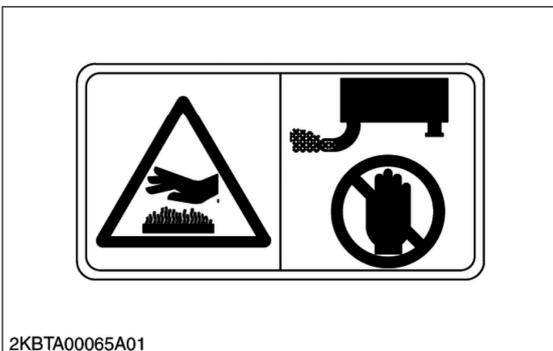
- Release residual pressure in the hydraulic circuit before removing the hydraulic components.
- Pay attention when releasing pressure in hydraulic circuit, because the machine or attachment might move unexpectedly.
- Check the coolant temperature and release the pressure before opening the radiator cap.

- Do not work immediately after stopping the engine. The engine, muffler, radiator, and hydraulic components are extremely hot.
- Do not remove caps and plugs soon after stopping the engine. The temperature and pressure of the coolant, hydraulic oil, and fuel are still high.

8. Avoiding hot exhaust



- Avoid skin exposure and contact with hot exhaust gas or components.
- Exhaust gas and components are extremely hot during operation.



SAFETY LABELS FOR RTV

The safety labels are installed on the machine. If a label becomes damaged, illegible or is not on the machine, replace it. The label part number is listed in the parts list.

1. INFORMATION

(1) Part No. K7811-6522-1

| | | |
|--|---|-----------------|
|  |  | ⚠ DANGER |
| <p>TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY:</p> <ol style="list-style-type: none"> 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 operator's seat with range shift lever in neutral position. | | |

1TMXL00087A01

(2) Part No. K7591-6541-1

| |
|--|
| ⚠ WARNING |
|  |
| <p>TO AVOID PERSONAL INJURY OR DEATH:</p> <ol style="list-style-type: none"> 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. |

1AYAACQAP006A

(3) Part No. K7421-6526-1

| | |
|---|--|
| ⚠ WARNING | <p>TO AVOID PERSONAL INJURY OR DEATH: Always fasten your seat belt.</p> |
|  | |
| ⚠ WARNING | <p>TO AVOID PERSONAL INJURY DUE TO LOSS OF STEERING CONTROL: Do not depress the differential lock pedal at high speed.</p> |

1AYAACQAP184A

(4) Part No. K7811-6528-1

| |
|---|
| ⚠ WARNING |
| <p>TO AVOID PERSONAL INJURY OR DEATH: 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.</p> |

1TMXL00088A01

(6) Part No. K7421-6577-2

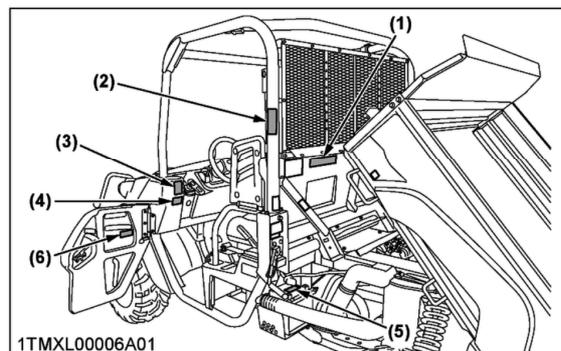
| | |
|---|---|
| ⚠ WARNING |  |
| <p>TO AVOID PERSONAL INJURY OR DEATH: Secure the door properly.</p> | |

1AYAACQAP021A

(5) Part No. K7811-6113-2

| | | | |
|---|---|---|---|
|  |  |  | <p>DANGER EXPLOSIVE GASES CIGARETTES, FLAMES OR SPARKS COULD CAUSE BATTERY TO EXPLODE. ALWAYS SHIELD EYES AND FACE FROM BATTERY. DO NOT CHARGE OR USE BOOSTER CABLES OR ADJUST POST CONNECTIONS WITHOUT PROPER INSTRUCTION AND TRAINING.</p> |
| FLAMMABLES | SHIELD EYES | KEEP OUT OF THE REACH OF CHILDREN | |
|  |  |  | <p>POISON CAUSES SEVERE BURNS CONTAINS SULFURIC ACID. AVOID CONTACT WITH SKIN, EYES OR CLOTHING. IN EVENT OF ACCIDENT FLUSH WITH WATER AND CALL A PHYSICIAN IMMEDIATELY.</p> |
| CAUTIOUS OF SULFURIC ACID | READ INSTRUCTION MANUAL CAREFULLY | EXPLOSIVE | |
| | | | <p>KEEP OUT OF REACH OF CHILDREN</p> <p>⚠ California Proposition 65 WARNING : This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.</p> |

1TMMA00010A01enUS



(1) Part No. K7811-6524-2

⚠ WARNING

TO AVOID PERSONAL INJURY OR DEATH:

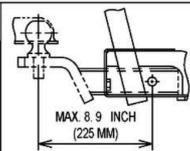
1. Use brake fluid(DOT-3) only. Other oil types will ruin synthetic resin or rubber installed in brake system components, and cause brake failure.
2. If brake fluid is spilled on other parts, wash off with water immediately. Brake fluid quickly ruins synthetic resin or rubber parts.

1TMXL00089A01

(2) Part No. K7591-6544-2

⚠ WARNING

TO AVOID PERSONAL INJURY:
Attach pulled or towed loads to the drawbar only.



MAX. 8.9 INCH
(225 MM)

1AYAACQAP007A

(3) Part No. K7811-6521-3

⚠ WARNING

TO AVOID PERSONAL INJURY OR DEATH:

1. Read and understand the operator's manual before operation.
2. Never allow anyone under age 16 or 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-highway use only. Never operate on a public road, as such operation could be a violation of the law and may be hazardous.
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 one passenger can be carried. Do not allow children to ride in the passenger's seat. Passenger must be able to grasp the handhold with seat belt on and both feet on floor.
8. Before starting the engine, make sure that everyone is at a safe distance from the vehicle.
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.
13. Do not operate unless driver and passenger are properly positioned and seat belts appropriately fastened.

1TMXL00090A01

(4) Part No. K7421-6527-1

⚠ WARNING

TO AVOID PERSONAL INJURY OR DEATH:
Always fasten your seat belt.



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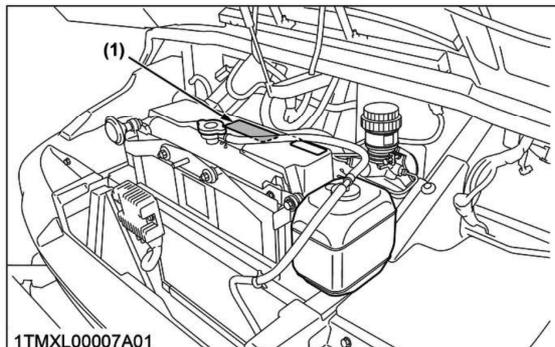
(5) Part No. K7421-6577-2

⚠ WARNING

TO AVOID PERSONAL INJURY OR DEATH:
Secure the door properly.



1AYAACQAP021A



1TMXL00007A01

(6) Part No. K7814-6594-1 (Australia model)



● Use ear protection to avoid damage to hearing.

(6) Part No. K7591-6596-1
Except for (Australia model)

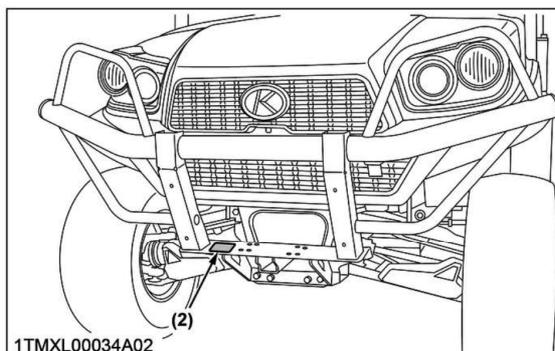
California Proposition 65

⚠ WARNING: Operating, servicing and maintaining off road equipment or off road vehicles can expose you to inhalation of or contact with chemicals including engine exhaust, carbon monoxide, phthalates, and lead which are known to the state of California to cause cancer and birth defects or other reproductive harm. To minimize exposure:

- Avoid breathing exhaust.
- Always start and operate the engine in a well ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.
- Service your equipment or vehicle in a well ventilated area.
- Wear gloves or wash your hands frequently when servicing your equipment or vehicle.

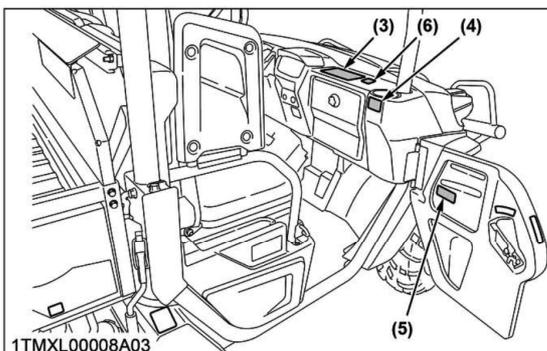
For more information go to: WWW.P65warnings.ca.gov

1TMXL00115A01



1TMXL00034A02

2QYSD00411A01enUS



1TMXL00008A03

1. INFORMATION

(1) Part No. K7811-6542-1



! WARNING
TO AVOID PERSONAL INJURY OR DEATH:
 Use the Safety Support or Propping Rod when working near a raised cargo bed or attachment.

1TMXL00092A01

(2) Part No. K7811-6574-2



! WARNING
TO AVOID PERSONAL INJURY OR DEATH:
 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.

1TMXL00093A01

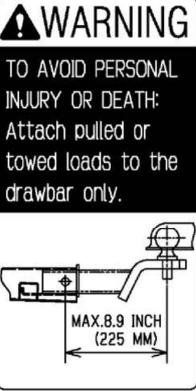
(3) Part No. K7811-6572-2

- Hot surface - burn to finger or hand
- Do not touch muffler while surface is hot.



1TMXL00094A01

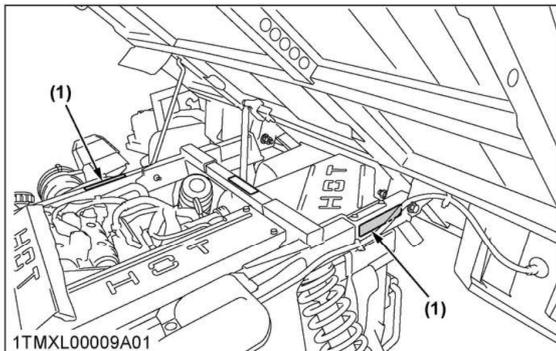
(4) Part No. K7811-6587-2



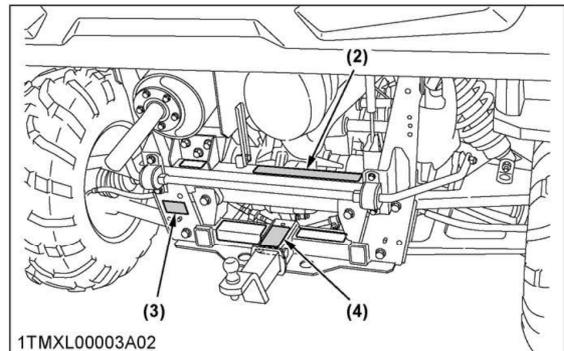
! WARNING
TO AVOID PERSONAL INJURY OR DEATH:
 Attach pulled or towed loads to the drawbar only.

MAX. 8.9 INCH
 (225 MM)

1TMXL00112A01



1TMXL00102A01enUS



(1) Part No. K7811-6591-4 (Except for California model)

| | |
|---|--|
| <p>⚠ WARNING</p>  <p>TO AVOID PERSONAL INJURY OR DEATH: 1. Do not place gas container inside the cargo box when filling. 2. Place gas container on ground when filling.</p> | <p>⚠ WARNING</p> <p>TO AVOID PERSONAL INJURY OR DEATH: 1. Do not carry passengers in cargo bed. 2. Do not travel with the cargo bed in raised position. 3. Do not overload the cargo bed.</p> <p>IMPORTANT</p> <p>Max. cargo load should not exceed "CBC" or "CL". CBC(Cargo Bed Capacity) : 454 kg (1000 lbs) CL(Cargo Load) : May vary on models. Refer to operator's manual for details. CL = (payload capacity) - (operator+passenger+oot.+acc.+cabin)weight</p> |
|---|--|

1TMXL00095A01

(1) Part No. K7812-6591-2 (California model)

| | |
|---|---|
| <p>⚠ WARNING</p>  <p>TO AVOID PERSONAL INJURY OR DEATH: 1. Do not place gas container inside the cargo box when filling. 2. Place gas container on ground when filling.</p> | <p>⚠ WARNING</p> <p>TO AVOID PERSONAL INJURY OR DEATH: 1. Do not carry passengers in cargo bed. 2. Do not travel with the cargo bed in raised position. 3. Do not overload the cargo bed.</p> <p>IMPORTANT</p> <p>Max. cargo load should not exceed "CBC" or "CL". CBC(Cargo Bed Capacity) : 272 kg (600 lbs) CL(Cargo Load) : May vary on models. Refer to operator's manual for details. CL = (payload capacity) - (operator+passenger+oot.+acc.+cabin)weight</p> |
|---|---|

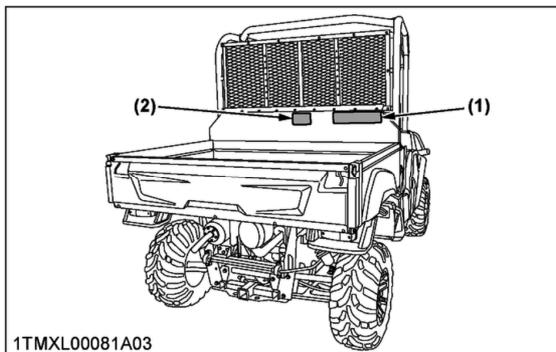
1TMXL00096A01

(2) Part No. K2871-6582-1

⚠ WARNING

TO AVOID EXPOSURE TO DUST CONTAINING SILICA PARTICLES:

- This dust can cause serious injury to the lungs under some exposure levels.
- Be aware of and follow the OSHA (or other regulatory body) guidelines for exposure to airborne crystalline silica.
- To meet OSHA silica guidelines, use appropriate Personal Protective Equipment and dust abatement systems, such as waterspray systems.



1TMXL00081A03

1TMMA00003A01enUS

1. INFORMATION

(1) Part No. K7811-6531-1



1TMXL00099A01

(2) Part No. K7811-6538-1



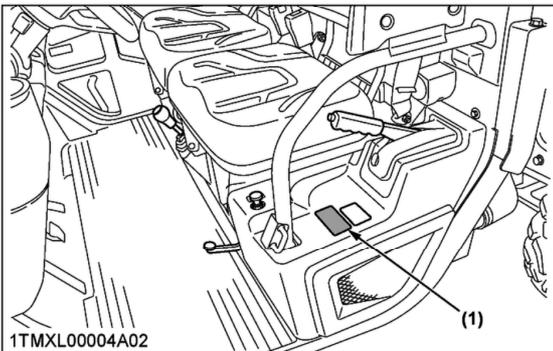
1TMXL00097A01

(3) Part No. K7811-6534-1



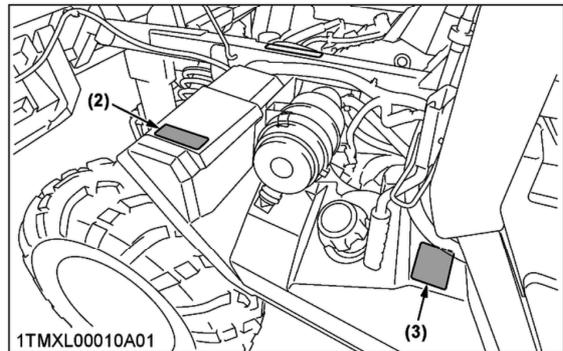
• No fire

1TMXL00098A01



1TMXL00004A02

1TMMA00016A01enUS



1TMXL00010A01

1. 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.

1. INFORMATION

SPECIFICATION TABLE

| Model | | | RTV-XG850 | | RTV-XG850 EVAP | | | |
|---------------------------------------|-----------------------|--------------|---|-------------|------------------------------|------------------------------|--------------|--|
| | | | 49 states | | California / AU | | | |
| | | | General Purpose | Worksite | General Purpose (California) | Worksite (California and AU) | | |
| | | | GZ8510 | | GZ8510-1 | | | |
| Engine | Model | | GZ8510 | | | | | |
| | Type | | 2 cylinder DOHC, 4-cycle, Liquid-cooled, EFI Gas | | | | | |
| | Displacement | | L (cu. in.) | | 0.851 (51.9) | | | |
| | Low idling revolution | | rpm | | 1200 to 1300 | | | |
| Fuel capacity*1 | | L (U.S.gals) | | 32.7 (8.6) | | | | |
| Transmission | | | Continuously variable transmission (CVT) with inertial clutch | | | | | |
| Wheels, drive system | | | 4, Rear 2WD or 4WD | | | | | |
| Differential lock | | | Front: LSD Rear: foot operated | | | | | |
| Gear selection | | | Hi-Low range forward, neutral, reverse | | | | | |
| Brakes | Front/rear | | Dry disk brake | | | | | |
| | Parking brake | | Rear mechanical/hand operated | | | | | |
| Steering | | | EPS (Electric power steering) | | | | | |
| Suspension | Front | | 4 wheel independent suspension | | | | | |
| | Rear | | | | | | | |
| Dimensions | Length | | mm (in.) | 2973 (117) | 3093 (119.6) | 2973 (117) | 3093 (119.6) | |
| | Width | | mm (in.) | 1605 (63.2) | | | | |
| | Height, overall | | mm (in.) | 2020 (79.5) | | | | |
| | Front tread centers | | mm (in.) | 1320 (52) | | | | |
| | Rear tread centers | | mm (in.) | 1320 (52) | | | | |
| | Wheelbase | | mm (in.) | 2045 (80.5) | | | | |
| | Ground clearance | front axle | | mm (in.) | 249 (9.8) | | | |
| | | rear axle | | mm (in.) | 251 (9.9) | | | |
| Turning diameter | | m (ft) | 8.0 (26.2) | | | | | |
| Max. rolling weight (towing capacity) | | kg (lbs.) | Level ground: 907.2 (2000) Steep ground: 703 (1550) | | | | | |
| Payload capacity | | kg (lbs.) | 660 (1455) | 643 (1417) | 657 (1448) | 640 (1411) | | |
| Weight (with fuel and fluids) | | kg (lbs.) | 837 (1845) | 854 (1883) | 840 (1852) | 857 (1889) | | |
| Gross Vehicle Weight Rating (GVWR) | | kg (lbs.) | 1497 (3300) | | | | | |
| Cargo bed | Width | | mm (in.) | 1465 (57.5) | | | | |
| | Length | | mm (in.) | 1030 (40.5) | | | | |
| | Depth | | mm (in.) | 290 (11.4) | | | | |
| | Volume | | m ³ (cu.ft.) | 0.43 (15.2) | | | | |
| | Bed height (unloaded) | | mm (in.) | 887 (34.9) | | | | |
| | Cargo bed capacity | | kg (lbs.) | 454 (1000) | | 272 (600) | | |

(Continued)