

Product: Kubota RTV-X900 RTV-X1120D Service Manual

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WSM

WORKSHOP MANUAL
UTILITY VEHICLE

RTV-X900, RTV-X1120D

Kubota

KiSC issued 08, 2021 A

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TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the RTV-X900, RTV-X1120D. It contains 4 parts: "**Information**", "**General**", "**Mechanism**" and "**Servicing**".

■ **Information**

This section primarily contains information below.

- Safety First
- Safety Decal
- Specifications
- Dimensions

■ **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) for the diesel engine 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.

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

October 2013

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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 Measures {Search word}	Reference Page
9Y121-26170	2021.04	The code number of this WSM has been changed from 9Y121-09469 to 9Y121-26170.	–
		Added 200 hrs or 3000 km maintenance item ; Suspension arm bushings	G-17, G-46
1	2021.08	Added HST return pipe bolt torque to tightening torque table	1-S17, 2-S5
		Revised linkage, muffler, starter and hydraulic pipe topic	1-S41, 2-S35
		Added removing muffler topics	1-S42, 1-S42, 2-S36, 2-S36
		Added idler gear nut and torque	1-S54
		Added seat belt lock nut torque	6-S3, 6-S6

I INFORMATION

INFORMATION

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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

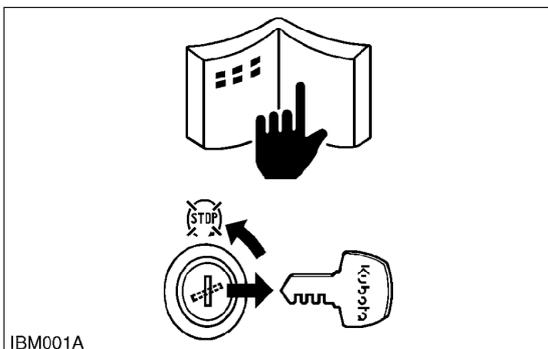
- Gives helpful information.

WSM000001INI0001US1

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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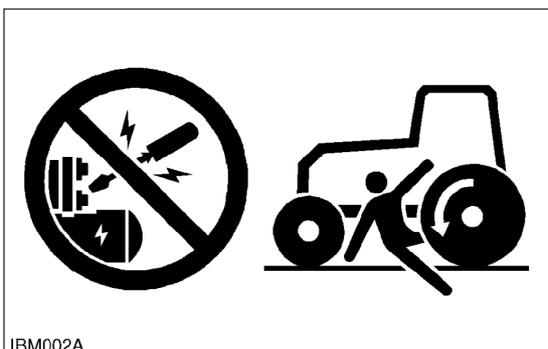


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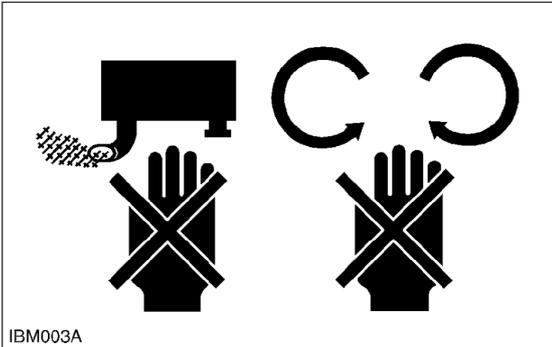
START SAFELY

- 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.

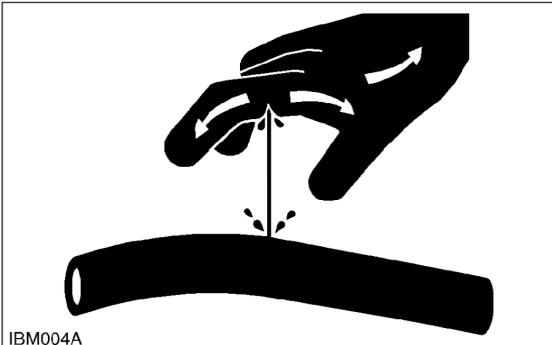
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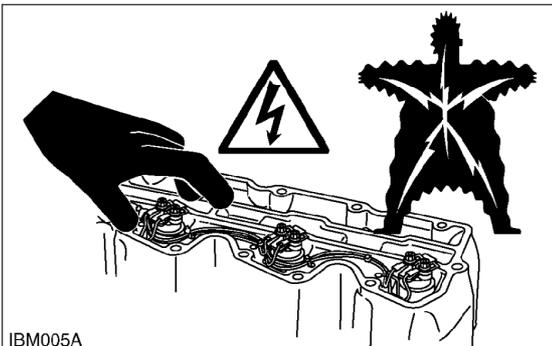
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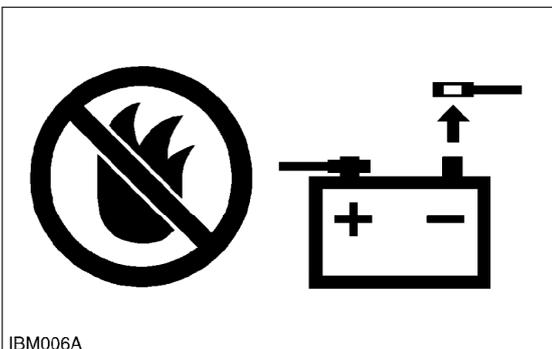
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IBM004A



IBM005A



IBM006A

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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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.

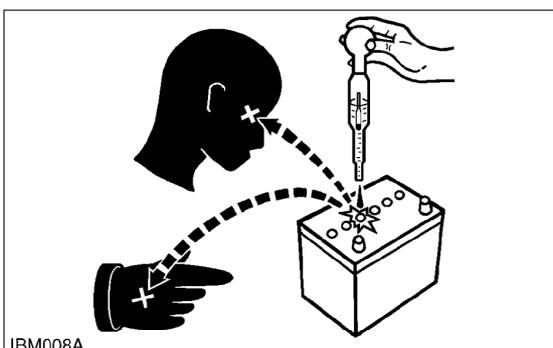
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DISCARD FLUIDS CORRECTLY

- 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

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

WSM000001INI0013US0

(1) Part No. K7591-6522-1



1AYAACQAP016A

(2) Part No. K7591-6541-1



1AYAACQAP006A

(5) Part No. K7591-6523-2



1AYAACQAP015A

(7) Part No. K7591-6549-1



1AYAACQAP008A

[3-point type seat belt]

(3) Part No. K7421-6526-1



1AYAACQAP184A

[2-point type seat belt]

(3) Part No. K7591-6526-1



1AYAACQAP014A

(4) Part No. K7591-6528-2

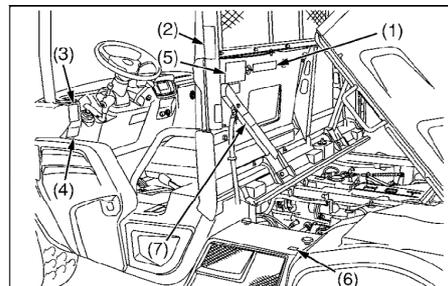


1AYAACQAP019A

(6) Part No. K7591-6538-2



1AYAACQAP004A



9Y1210946ICI001US

9Y1210946INI0001US0

(1) Part No. K7591-6524-1

⚠ WARNING

TO AVOID PERSONAL INJURY:

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.

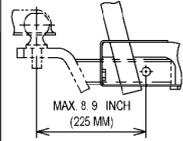
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(2) Part No. K7591-6544-2

⚠ WARNING

TO AVOID PERSONAL INJURY:

Attach pulled or towed loads to the drawbar only.



MAX 8.9 INCH
(225 MM)

1AYAACQAP007A

(3) Part No. K7591-9521-2

⚠ WARNING

TO AVOID PERSONAL INJURY:

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 road 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.
Minimum age for passenger is five 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.
13. Do not operate unless driver and passenger are properly positioned and seat belts appropriately fastened.

1AYAACQAP020A

[3 point type seat belt]
(4) Part No. K7421-6527-1

⚠ WARNING

TO AVOID PERSONAL INJURY OR DEATH:

Always fasten your seat belt.



1AYAACQAP185A

[2 point type seat belt]
(4) Part No. K7591-6527-1

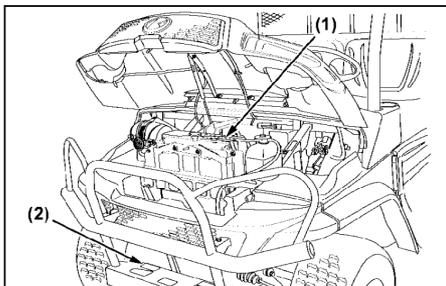
⚠ WARNING

TO AVOID PERSONAL INJURY OR DEATH:

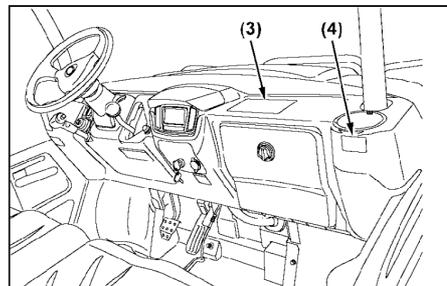
Always fasten your seat belt.



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9Y1210946INI0002USO

(1) Part No. K7591-6542-1

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

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(2) Part No. K7421-6577-2

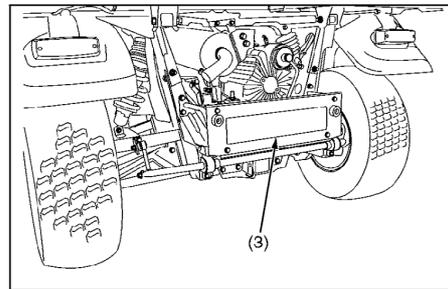
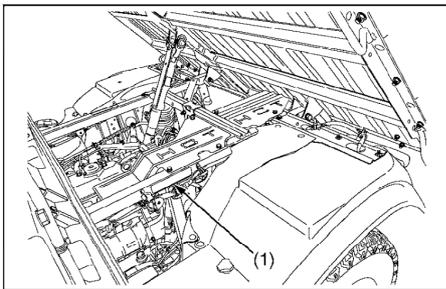
	WARNING
	TO AVOID PERSONAL INJURY OR DEATH: Secure the door properly.

1AYAACQAP021A

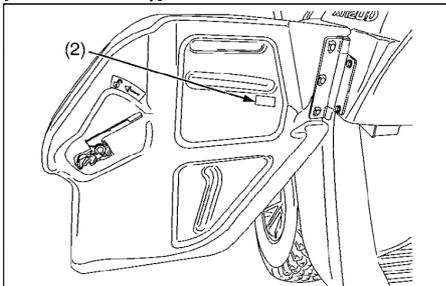
(3) Part No. K7591-6545-2

	WARNING	Maintenance The swirl type spark arrester should be cleaned after every 100 hours of use. 1. Set vehicle in an open area away from combustible materials and on flat surface. 2. Apply parking brake and shift range gear shift lever into N(neutral) position. 3. Remove the drain plug located on the bottom of the muffler body. 4. Start engine and raise and lower engine revolution while tapping on the muffler with a rubber mallet until the carbon particles are purged from the muffler. 5. Stop the engine. 6. Reinstall the drain plug.	IMPORTANT 1. Carefully read the loading information and trailer hitch sections in the Operator's Manual. 2. Towing Capacity • Max. Towing Load 590kg (1300lbs) • Max. Tongue Weight 50kg (110lbs)
	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.		

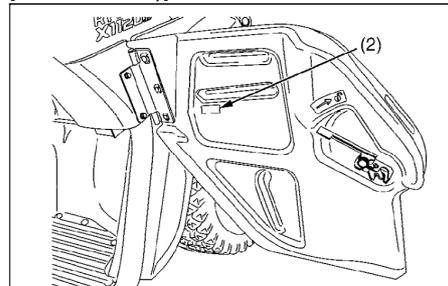
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[RTV-X1120D Only]



[RTV-X1120D Only]



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9Y12109461NI0003USO

(1) Part No. K7591-6534-3



1A1AACQAP003A

(4) Part No. K7591-6548-1



1A1AACQAP011A

(6) Part No. K7591-6542-1



1A1AACQAP005A

(2) Part No. K7591-6547-1



1A1AACQAP010A

(3) Part No. K7591-6533-1

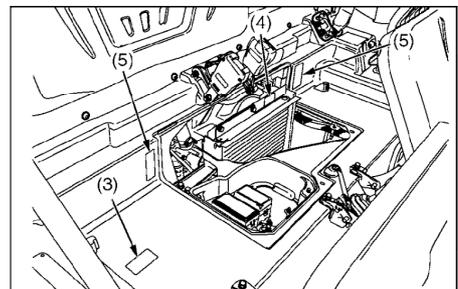
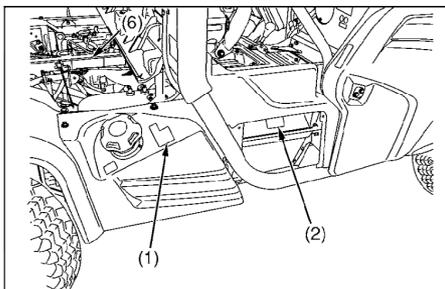


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(5) Part No. K7591-6532-1



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[RTV-X900]

(1) Part No. K7591-6114-2

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NOMINAL VOLTAGE	12V													
COLD CRANKING AMPS	560													
CRANKING AMPS	690													
RESERVE CAPACITY(MINUTES)	86													
FLAMMABLES	SHIELD EYES	KEEP OUT OF THE REACH OF CHILDREN	CAUTION OF SULFURIC ACID	READ INSTRUCTION MANUAL CAREFULLY	EXPLOSIVE									
DANGER EXPLOSIVE GASES CIGARETTES, FLAMES OR SPARKS COULD CAUSE BATTERY TO EXPLODE. ALWAYS SHIELD EYES AND FACE FROM BATTERY. DO NOT CHARGE OR USE BOOSTER CABLES OR ADJUST POST CONNECTIONS WITHOUT PROPER INSTRUCTION AND TRAINING. CALIFORNIA PROPOSITION 65 WARNING: Batteries, battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. WASH HANDS AFTER HANDLING.			POISON CAUSES SEVERE BURNS CONTAINS SULFURIC ACID. AVOID CONTACT WITH SKIN, EYES OR CLOTHING. IN EVENT OF ACCIDENT FLUSH WITH WATER AND CALL A PHYSICIAN IMMEDIATELY.											
KEEP OUT OF REACH OF CHILDREN BATTERIES, BATTERY POSTS, TERMINALS AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, AND OTHER CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.														
FITTING DATE: 0 1 2 3 4 5 6 7 8 9 YEAR 1 2 3 4 5 6 7 8 9 10 11 12 MONTH		INDICATOR <input type="radio"/> OK <input type="radio"/> CHARGE <input checked="" type="radio"/> REPLACE		MADE IN KOREA										

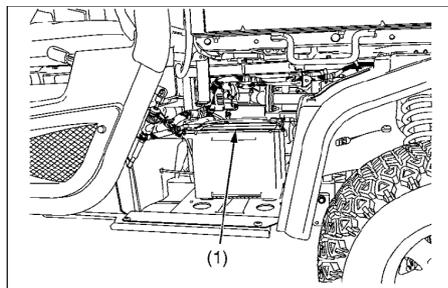
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[RTV-X1120D]

(1) Part No. K7731-6114-2

						<h2>SMF 24R-670</h2> <table border="1"> <tr> <td>NOMINAL VOLTAGE</td> <td>12V</td> </tr> <tr> <td>COLD CRANKING AMPS</td> <td>670</td> </tr> <tr> <td>CRANKING AMPS</td> <td>800</td> </tr> <tr> <td>RESERVE CAPACITY(MINUTES)</td> <td>115</td> </tr> <tr> <td>AMP HOURS(@20 hr Rate)</td> <td>66</td> </tr> </table>	NOMINAL VOLTAGE	12V	COLD CRANKING AMPS	670	CRANKING AMPS	800	RESERVE CAPACITY(MINUTES)	115	AMP HOURS(@20 hr Rate)	66
NOMINAL VOLTAGE	12V															
COLD CRANKING AMPS	670															
CRANKING AMPS	800															
RESERVE CAPACITY(MINUTES)	115															
AMP HOURS(@20 hr Rate)	66															
FLAMMABLES	SHIELD EYES	KEEP OUT OF THE REACH OF CHILDREN	CAUTION OF SULFURIC ACID	READ INSTRUCTION MANUAL CAREFULLY	EXPLOSIVE											
DANGER EXPLOSIVE GASES CIGARETTES, FLAMES OR SPARKS COULD CAUSE BATTERY TO EXPLODE. ALWAYS SHIELD EYES AND FACE FROM BATTERY. DO NOT CHARGE OR USE BOOSTER CABLES OR ADJUST POST CONNECTIONS WITHOUT PROPER INSTRUCTION AND TRAINING. CALIFORNIA PROPOSITION 65 WARNING: Batteries, battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. WASH HANDS AFTER HANDLING.			POISON CAUSES SEVERE BURNS CONTAINS SULFURIC ACID. AVOID CONTACT WITH SKIN, EYES OR CLOTHING. IN EVENT OF ACCIDENT FLUSH WITH WATER AND CALL A PHYSICIAN IMMEDIATELY.													
KEEP OUT OF REACH OF CHILDREN BATTERIES, BATTERY POSTS, TERMINALS AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS, AND OTHER CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.																
FITTING DATE: 0 1 2 3 4 5 6 7 8 9 YEAR 1 2 3 4 5 6 7 8 9 10 11 12 MONTH		INDICATOR <input type="radio"/> OK <input type="radio"/> CHARGE <input checked="" type="radio"/> REPLACE		MADE IN KOREA												

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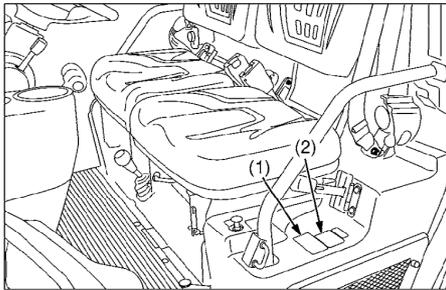


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(2) Part No. K7591-6583-3



1AYAACQAP183A



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9Y1210946INI0006US0

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, dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels.
4. 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 replace component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

9Y1210946INI0007US0

3. SPECIFICATIONS

Model		RTV-X900			RTV-X1120D					
		General Purpose	Worksite / Orange	Worksite / Camo	General Purpose	Worksite / Orange	Worksite / Camo	Deluxe / Orange	Deluxe / Camo	
Engine		D902			D1105					
		3 cylinders, 4-cycle, diesel, OHV								
		0.898 L (54.8 cu. in.)			1.123 L (68.53 cu. in.)					
		16.1 kw (21.6 HP)			18.5 kw (24.8 HP)					
		3200 min ⁻¹ (rpm)			3000 min ⁻¹ (rpm)					
		1300 to 1400 min ⁻¹ (rpm)			1350 to 1450 min ⁻¹ (rpm)					
Fuel Capacity		30 L (7.9 U.S.gals)								
Transmission		Continuously variable hydro transmission (VHT)								
Wheels, Drive system		4, Rear 2WD or 4WD								
Differential lock		Standard; foot operated with mechanical holder								
Gear selection		Hi-Low range forward, neutral, reverse								
Brakes	Front / Rear	Wet disk brake								
	Parking brake	Rear wheel, hand lever								
Steering		Hydrostatic power								
Suspension	Front	Independent, Dual A-Arm type								
	Rear									
Dimensions	Length	3055 mm (120.3 in.)	3110 mm (122.5 in.)	3055 mm (120.3 in.)	3110 mm (122.5 in.)					
	Width	1605 mm (63.2 in.)								
	Height, overall	2020 mm (79.5 in.)								
	Front tread centers	1240 mm (48.8 in.) HDWS, ATV, 1290 mm (50.8 in.) Turf								
	Rear tread centers									
	Wheelbase	2045 mm (80.5 in.)								
	Ground clearance	front axle	266 mm (10.5 in.)							
		rear axle	263 mm (10.4 in.)							
Turning diameter	8.0 m (26.2 ft)									
Max. Rolling weight (Towing capacity)		Rear: 590 kg (1300 lbs), Front: 295 kg (650 lbs)								
Payload capacity		755 kg (1664 lbs)	725 kg (1598 lbs)	690 kg (1521 lbs)	680 kg (1499 lbs)	685 kg (1510 lbs)				
Weight		865 kg (1907 lbs)	895 kg (1973 lbs)	930 kg (2050 lbs)	940 kg (2072 lbs)	935 kg (2061 lbs)				
Gross Vehicle Weight Rating (GVWR)		1620 kg (3571 lbs)								
Cargo bed	Width	1465 mm (57.7 in.)								
	Length	1030 mm (40.5 in.)								
	Depth	285 mm (11.2 in.)								
	Volume	0.43 m ³ (15.2 cu.ft.)								
	Bed height (unloaded)	887 mm (34.9 in.)								
	Cargo bed capacity	500 kg (1102 lbs)								
Sound level, operator ear		85 db (A)			84 db (A)					
Tire	Front	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 6PLY 25 x 12-12 Turf, 4PLY	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 6PLY	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 6PLY	25 x 10-12 ATV, 6PLY	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 6PLY	25 x 10-12 ATV, 6PLY			
	Rear	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 6PLY 25 x 12-12 Turf, 4PLY	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 6PLY	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 6PLY	25 x 10-12 ATV, 6PLY	25 x 10-12 ATV, 6PLY, 25 x 10-12 HDWS, 7PLY	25 x 10-12 ATV, 6PLY			
Tilt steering wheel		-	Standard	-	Standard					
Seat belt		2 point type			3 point type					
Front deluxe guard		-	Standard	Standard	-	Standard	Standard	-	-	
Front deluxe guard with light guard		-	-	-	-	-	-	Standard	Standard	
Body color		Orange	Orange	Camo	Orange	Orange	Camo	Orange	Camo	

Model	RTV-X900			RTV-X1120D				
	General Purpose	Worksite / Orange	Worksite / Camo	General Purpose	Worksite / Orange	Worksite / Camo	Deluxe / Orange	Deluxe / Camo
Bed lift	–	Standard	Standard	–	Standard	Standard	Standard	Standard
Speedometer	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Door	–	–	–	Standard	Standard	Standard	Standard	Standard
Seat slide	–	Standard	Standard	–	–	–	–	–

■ **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

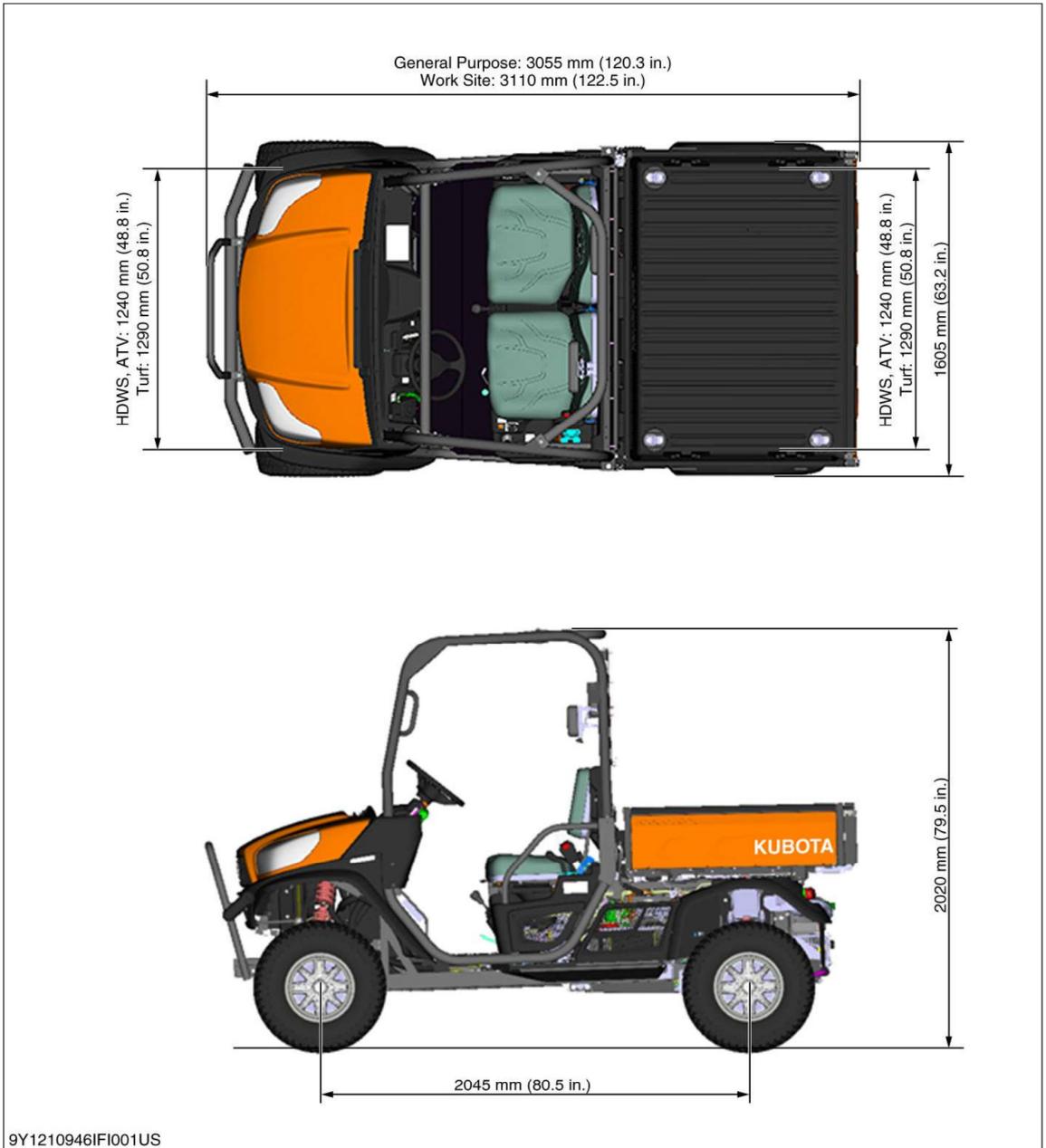
(At rated engine rpm)

Model	RTV-X900	RTV-X1120D
Range gear shift lever	km/h (mph)	km/h (mph)
Low	24 (15)	25 (16)
High	40 (25)	46 (29)
Reverse	27 (17)	35 (22)

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5. DIMENSIONS

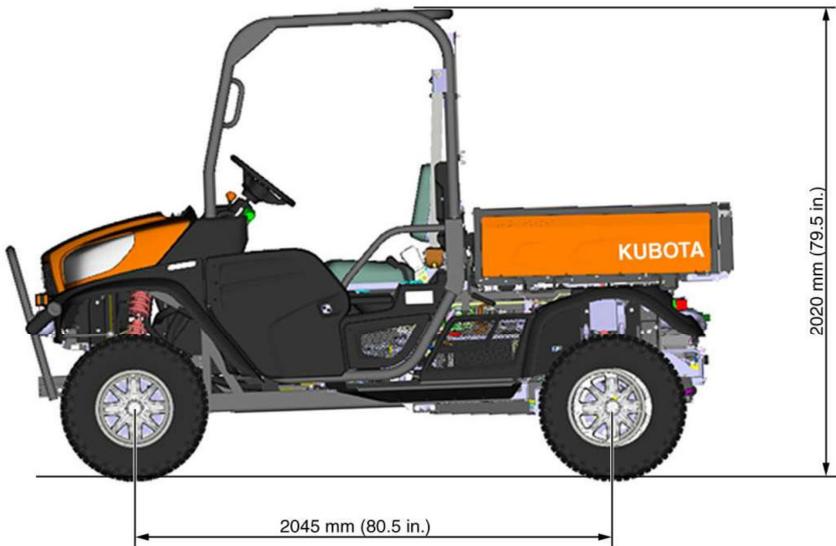
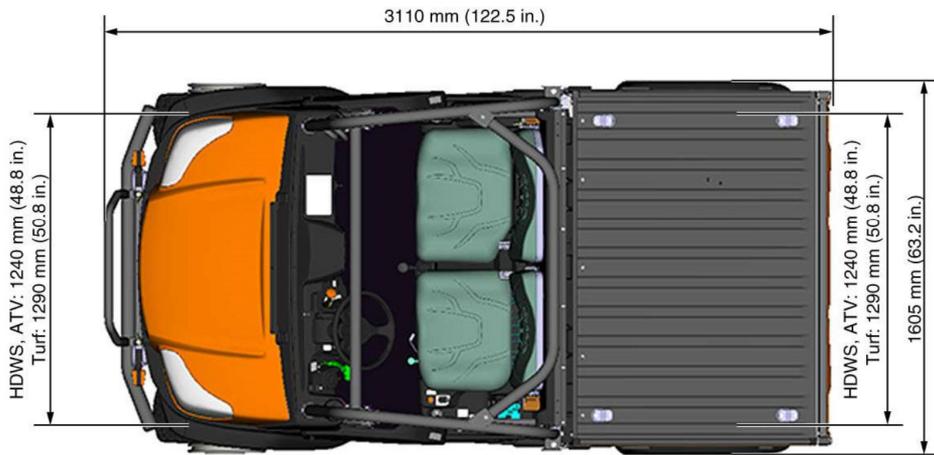
RTV-X900



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RTV-X1120D



9Y1210946IFI002US

9Y1210946INI0011US0

G GENERAL

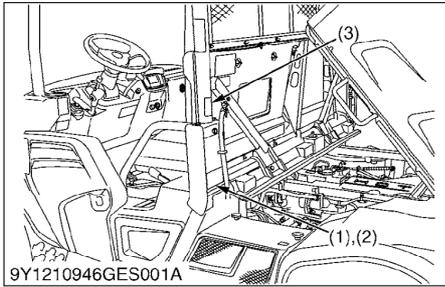
GENERAL

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1. PRODUCT IDENTIFICATION

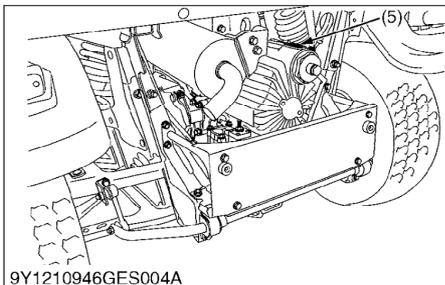
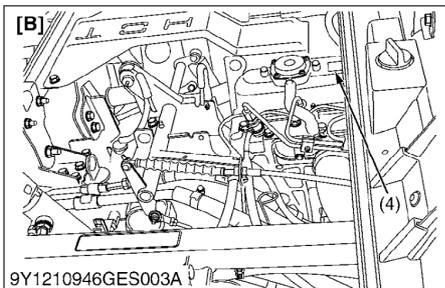
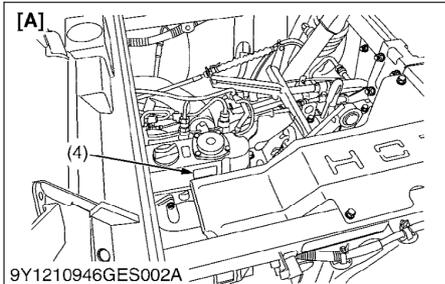


When contacting your local KUBOTA distributor, always specify engine serial number, product serial number and hour meter reading.

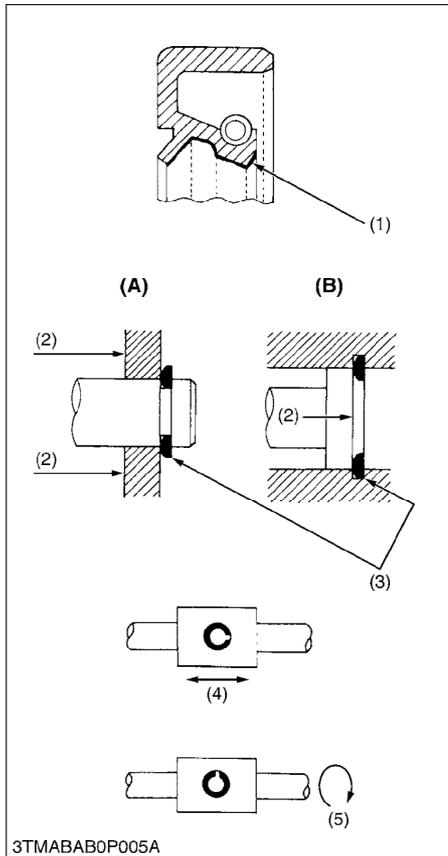
- (1) Vehicle Identification Plate
- (2) Product Identification Number
- (3) ROPS Serial Number
- (4) Engine Serial Number
- (5) Transmission Assembly Serial Number

[A] RTV-X900
[B] RTV-X1120D

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2. GENERAL PRECAUTIONS



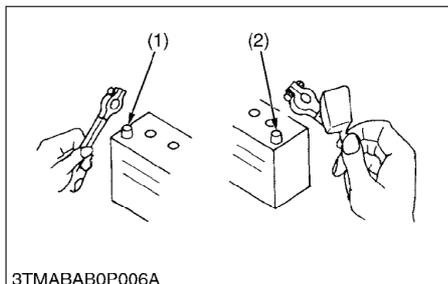
- When you disassemble, carefully put the parts in a clean area to make it easy to find the parts. You must install the screws, bolts and nuts in their initial position to prevent the reassembly errors.
- When it is necessary to use special tools, use KUBOTA special tools. Refer to the drawings when 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 PARTS AND WIRING



3TMABAB0P006A

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

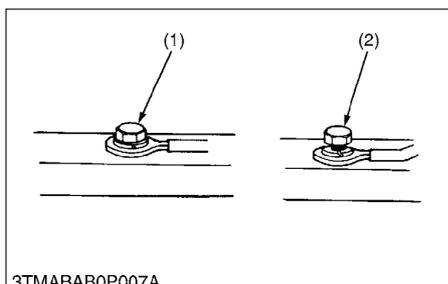
■ IMPORTANT

- 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

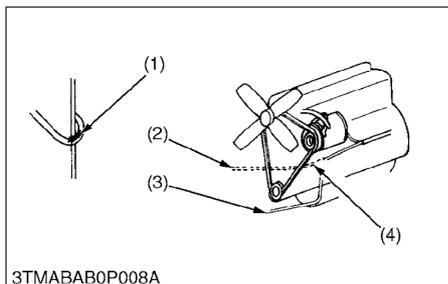


3TMABAB0P007A

- Securely tighten wiring terminals.

- (1) Correct (Securely Tighten) (2) Incorrect (Loosening Leads to damaged Contact)

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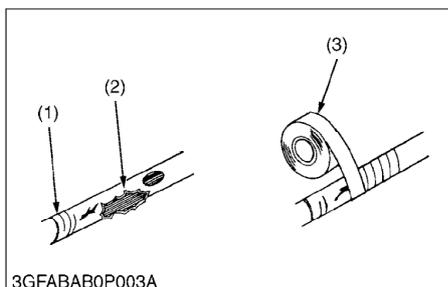


3TMABAB0P008A

- 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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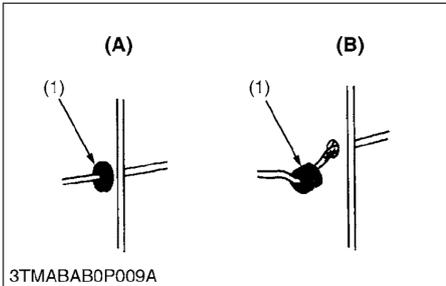


3GFABAB0P003A

- Repair or change torn or aged wiring immediately.

- (1) Aged (2) Torn (3) Electrical Tape

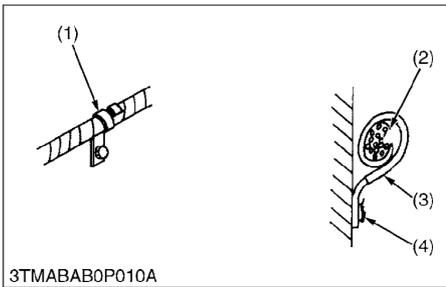
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• Securely insert grommet.

- (1) Grommet
- (A) Correct
- (B) Incorrect

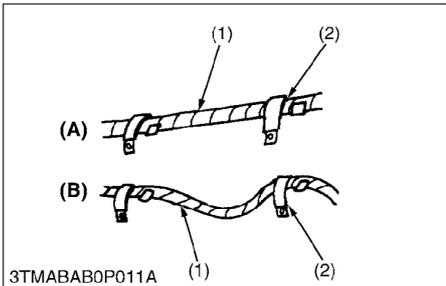
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• Securely clamp, being careful not to damage wiring.

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

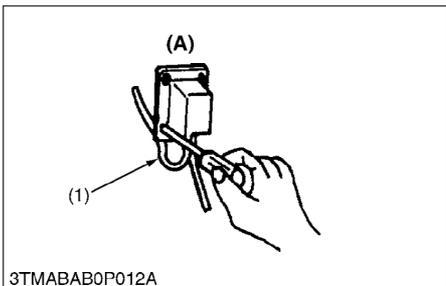
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• Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

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

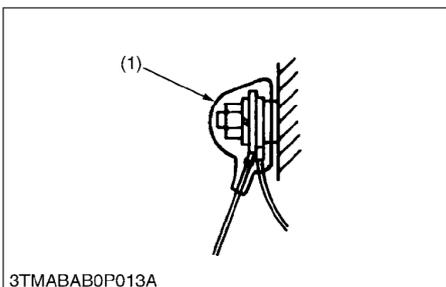
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• In installing a part, be careful not to get wiring caught by it.

- (1) Wiring
- (A) Incorrect

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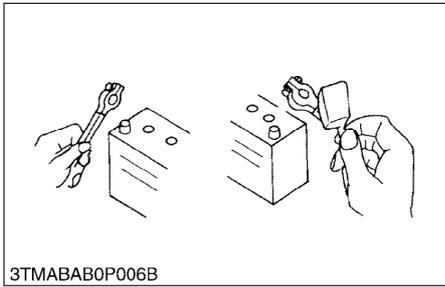


• After installing wiring, check protection of terminals and clamped condition of wiring.

- (1) Cover (Securely Install Cover)

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[2] BATTERY



3TMABAB0P006B

- 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.

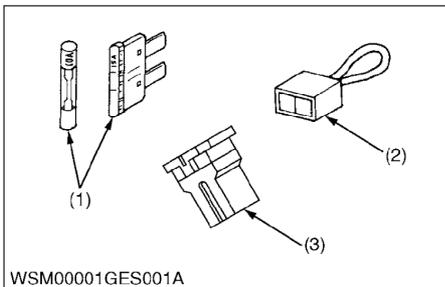
! DANGER

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



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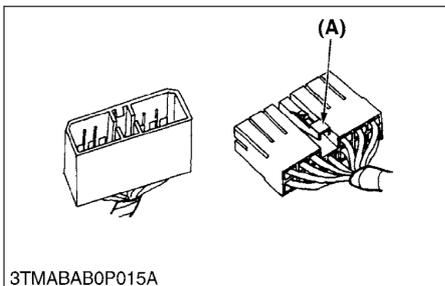
- Use fuses with specified capacity. Neither too large nor small capacity fuse is acceptable.
- Never use steel nor copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of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

- (1) Fuse
(2) Fusible Link

- (3) Slow Blow Fuse

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[4] CONNECTOR

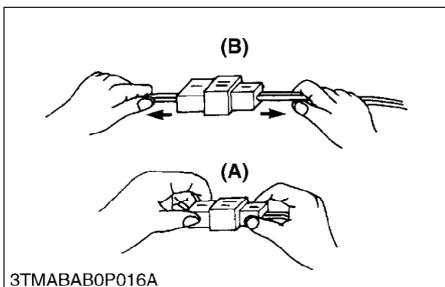


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- For connector with lock, push lock to separate.

(A) Push

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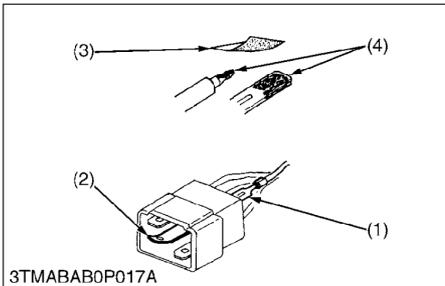
3TMABAB0P016A

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

(A) Correct

(B) Incorrect

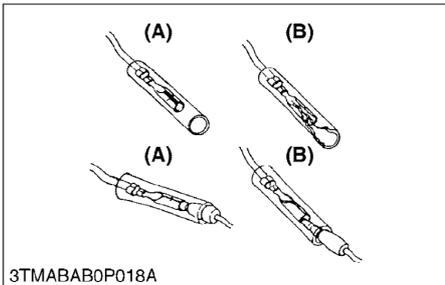
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- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make sure that there is no terminal being exposed or displaced.

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

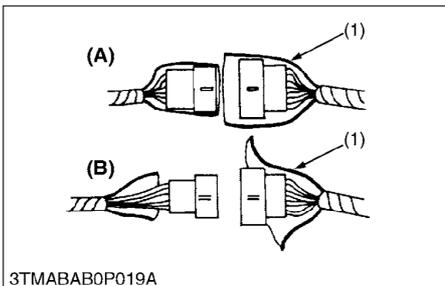
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- Make sure that there is no female connector being too open.

- (A) Correct
- (B) Incorrect

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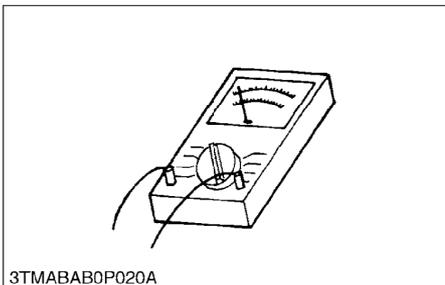


- Make sure that plastic cover is large enough to cover whole connector.

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

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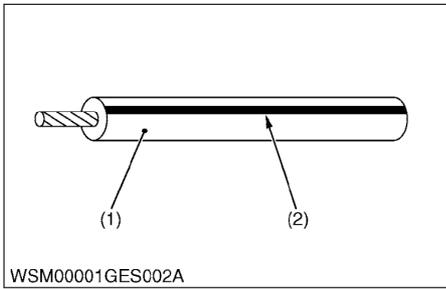
[5] HANDLING OF CIRCUIT TESTER



- 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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4. LUBRICANTS, FUEL AND COOLANT

No.	Place		Capacity		Lubricants, fuel and coolant
			RTV-X900	RTV-X1120D	
1	Fuel		30 L 7.9 U.S.gals 6.6 Imp.gals		<ul style="list-style-type: none"> No. 2-D diesel fuel No. 1-D diesel fuel if temperature is below -10 °C (14 °F)
2	Coolant (with reserve tank)		6.1 L 6.4 U.S.qts 5.4 Imp.qts		Fresh clean water with anti-freeze
3	Engine crankcase	Filter exchanged	3.1 L 3.3 U.S.qts 2.7 Imp.qts	4.1 L 4.3 U.S.qts 3.6 Imp.qts	Engine oil API Service Classification CF or higher <ul style="list-style-type: none"> Above 25 °C (77 °F) SAE30, SAE10W-30 or 15W-40 0 to 25 °C (32 to 77 °F) SAE20, SAE10W-30 or 15W-40 Below 0 °C (32 °F) SAE10W, SAE10W-30
		Filter non-exchanged	2.7 L 2.9 U.S.qts 2.4 Imp.qts	3.8 L 4.0 U.S.qts 3.3 Imp.qts	
4	Transmission case		7.0 L 1.8 U.S.gals 1.5 Imp.gals		For U.S.A. market: KUBOTA SUPER UDT2 fluid* For Canada market: Premium UDT fluid* For other than the above: KUBOTA UDT or SUPER UDT fluid*
5	Front axle case		0.6 L 0.6 U.S.qts 0.52 Imp.qts		For U.S.A. market: KUBOTA SUPER UDT2 fluid* For Canada market: Premium UDT fluid* For other than the above: KUBOTA UDT or SUPER UDT fluid*
6	Front knuckle case		(Reference) 0.25 L 0.26 U.S.qts 0.22 Imp.qts		For U.S.A. market: KUBOTA SUPER UDT2 fluid* For Canada market: Premium UDT fluid* For other than the above: KUBOTA UDT or SUPER UDT fluid*
7	Brake fluid (reservoir and lines)		0.4 L 0.4 U.S.qts 0.35 Imp.qts		KUBOTA DOT3 GENUINE BRAKE FLUID
8	Hydraulic tank oil		18.0 L 19.0 U.S.qts 15.8 Imp.qts		For U.S.A. market: KUBOTA SUPER UDT2 fluid* For Canada market: Premium UDT fluid* For other than the above: KUBOTA UDT or SUPER UDT fluid*