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WSM

WORKSHOP MANUAL
UTILITY VEHICLE

Z122R-AU

Kubota

TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the Z122R-AU. It contains 4 parts: "**Information**", "**General**", "**Mechanism**" and "**Servicing**".

For engines, refer to the workshop manuals below.

- GH739V KAWASAKI ENGINE SERVICE MANUAL.

■ **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.

■ **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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October 2015

Record of Revisions

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

Last digit of the Code No.	Month of Revision	Main Revised Point and Corrective Measures {Search word}	Reference Page
1	2019.01	Added battery label starting with serial number: 12491	I-7
		Changed PTO switch and main switch starting with serial number 11909.	5-M2, 5-S7, 5-S11
2	2019.02	Revise PTO switch connector illustration	5-S11
3	2020.08	Added transaxle oil specification to lubricants and fuel table	G-8
		Revised reassembly procedure for HST tension spring SN 13047	1-S7 2-S6

I INFORMATION

INFORMATION

CONTENTS

1. SAFETY FIRST	I-1
2. SAFETY DECALS	I-4
3. SPECIFICATIONS.....	I-9
4. DIMENSIONS	I-11

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

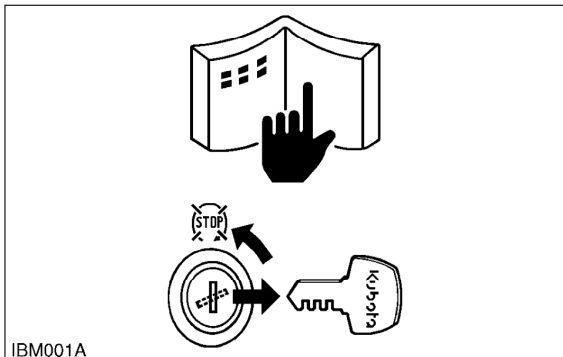
- Gives helpful information.

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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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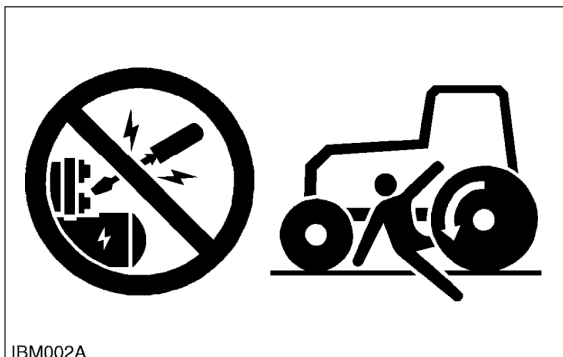


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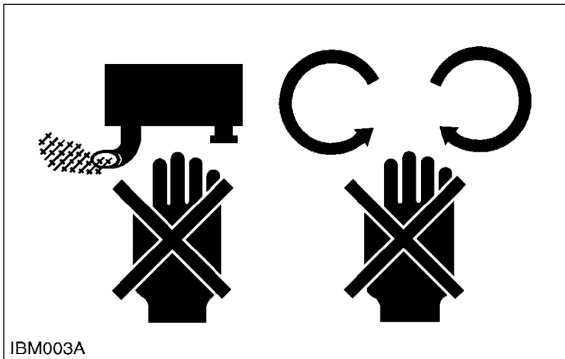
START SAFELY

- 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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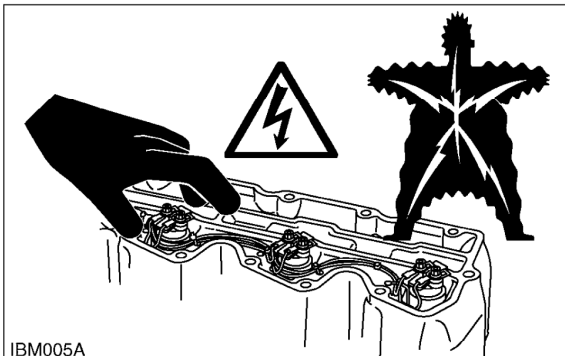
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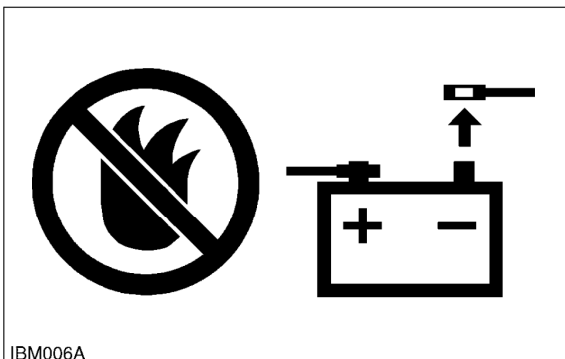
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OPERATE SAFELY

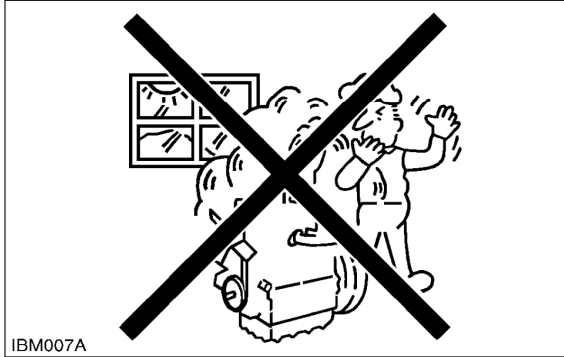
- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below 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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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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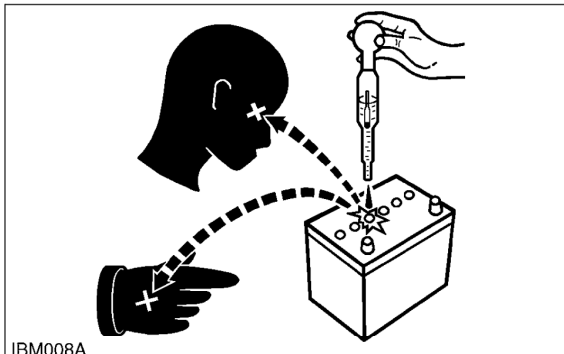


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DISCARD FLUIDS CORRECTLY

- 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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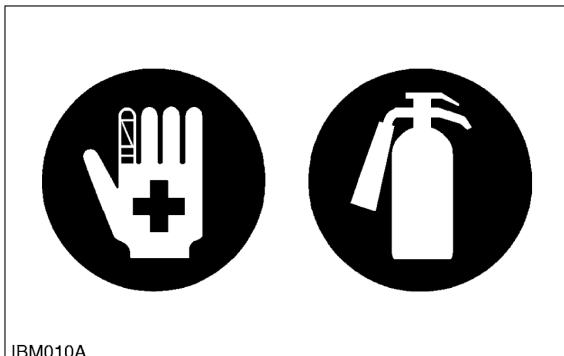


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PREVENT ACID BURNS

- 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

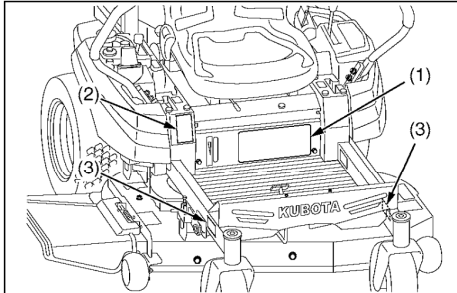
- Keep a first aid kit and fire extinguisher ready at all times.
- Keep the emergency contact telephone numbers near your telephone at all times.

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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.

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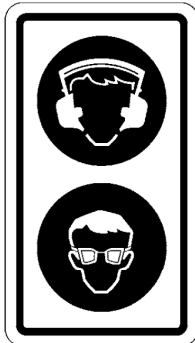


(1) Part No. K3001-6542-1

<p>▲WARNING</p>	<p>▲WARNING</p> <p>TO AVOID SERIOUS INJURY OR DEATH</p> <ol style="list-style-type: none"> Mow across slopes - Not up and down. Use extreme caution when operating on slopes. Loss of traction may occur when operating on slopes. Drive slowly on slopes. Do not operate on wet slopes. Avoid sudden starts. Execute turns slowly. 	<p>▲WARNING</p> <p>TO AVOID SERIOUS INJURY</p> <ol style="list-style-type: none"> Read and understand the operator's manual before operation. Do not operate this machine unless you are trained. Before allowing other people to use the machine, have them read the operator's manual. Check the tightness of all nuts and bolts regularly. Before starting the engine, make certain that everyone is at a safe distance from the machine, PTO is disengaged and motion control levers are in neutral lock. Remove objects that could be thrown by the blade. Do not operate the machine when children and/or others are around. Do not carry children or others on the machine at any time. Before dismounting, disengage PTO clutch, lower the implement, place motion control levers in neutral lock position, set the parking brake, stop the engine and remove the key. Keep safety devices (guards, shields and switches) in place, and working. To reduce the fire hazard, keep the exhaust clear of dry grass, dry leaves or other combustible materials. This machine is not for street or highway use. Securely support the machine and implement before working underneath. Look down and behind before and while backing.
<p>TO AVOID SERIOUS INJURY OR DEATH</p> <ol style="list-style-type: none"> Do not remove Roll-Over Protective Structures (ROPS) for any application. Do not modify or repair a ROPS because welding, grinding, drilling or cutting any portion may weaken the structure. Fasten SEAT BELT before operating. 	<p>▲WARNING</p> <p>TO AVOID SERIOUS INJURY OR DEATH</p> <ol style="list-style-type: none"> Park the machine on level ground. If necessary to park on an incline, <ol style="list-style-type: none"> Stop the machine. Apply the parking brake. Stop the engine. If you stop the engine on an incline without applying the parking brake, the machine could move and run away. If the engine stops suddenly during operation, apply the parking brake immediately to prevent machine runaway. 	

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(2) Part No. K3014-6569-1



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● Use ear protection to avoid damage to hearing.

● Always wear protective glasses.

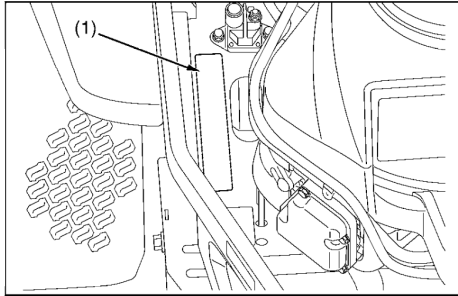
(3) Part No. K3004-6545-1



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(1) Part No. K3001-6541-1

⚠ DANGER

TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.

1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.

2. Start engine only from operator's seat with motion control levers in neutral lock position and PTO OFF.

Never start engine while standing on the ground.

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(2) Part No. K3011-6584-1

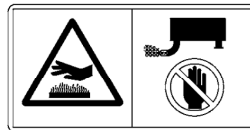
- Gasoline fuel only
- No fire



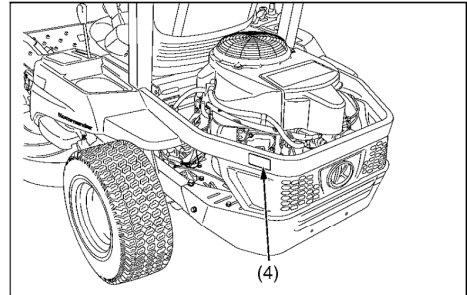
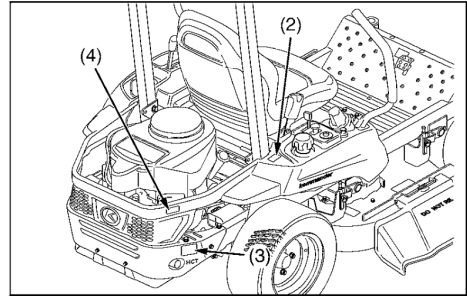
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(4) Part No. K3001-6548-1

- Hot surface - Burn to finger or hand
- Do not touch muffler.



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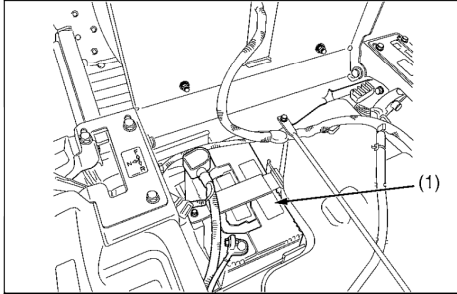


(3) Part No. K3011-6543-1

⚠ WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

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(1) Part No. K3011-6118-1

<p>FLAMMABLES</p>	<p>SHIELD EYES</p>	<p>KEEP OUT OF THE REACH OF CHILDREN</p>	<p>CAUTION OF SULFURIC ACID</p>	<p>READ INSTRUCTION MANUAL CAREFULLY</p>	<p>EXPLOSIVE</p>	<p>SMF U1-300</p> <table border="1"> <tr> <td>NOMINAL VOLTAGE</td> <td>12V</td> </tr> <tr> <td>COLD CRANKING AMPS</td> <td>300</td> </tr> <tr> <td>CRANKING AMPS</td> <td>410</td> </tr> <tr> <td>RESERVE CAPACITY(MINUTES)</td> <td>45</td> </tr> </table>	NOMINAL VOLTAGE	12V	COLD CRANKING AMPS	300	CRANKING AMPS	410	RESERVE CAPACITY(MINUTES)	45
NOMINAL VOLTAGE	12V													
COLD CRANKING AMPS	300													
CRANKING AMPS	410													
RESERVE CAPACITY(MINUTES)	45													
<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 AIRLIFT PUMP CONNECTIONS WITHOUT PROPER INSTRUCTION AND TRAINING. CALIFORNIA PROPRIETARY INFORMATION: Sulfuric, battery acids, hydrochloric acid, metallic arsenic, mercury, lead and lead compounds, and other chemicals known to the State of California to cause cancer, acid eyes, defects or other reproductive harm. WASH HANDS AFTER HANDLING.</p> <p>POISON CAUSES SEVERE BURNS CONTAINS SULFURIC ACID. AVOID CONTACT WITH SKIN, EYES OR CLOTHING. IN EVENT OF ACCIDENT FLUSH WITH WATER AND CALL A PHYSICIAN IMMEDIATELY.</p> <p>KEEP OUT OF REACH OF CHILDREN</p>														
<p>MADE IN KOREA</p> <p>YEAR (0) (1) (2) (3) (4) (5) (6) (7) (8) (9) MONTH (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)</p>														

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TO AVOID INJURY FROM BATTERY GASES AND ACIDES



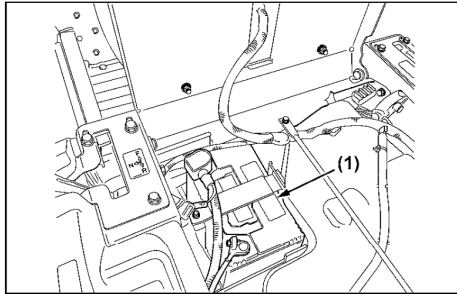
- Keep away cigarettes, flames or sparks.
- Always shield eyes and face from battery.
- Keep out of reach of children.
- Poison causes severe burns.
● Contains sulfuric acid.
- Read and understand operator's manual.
- Danger explosive gases.

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Starting Serial Number: 12491



(1) Part No. K3011-6118-4

			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 POLE CONNECTIONS WITHOUT PROPER INSTRUCTION AND TRAINING.	SMF U1-300 PART No. K3011-61144 <table border="1"> <tr> <td>NOMINAL VOLTAGE</td> <td>12V</td> </tr> <tr> <td>COLD CRANKING AMPS</td> <td>300</td> </tr> <tr> <td>CRANKING AMPS</td> <td>410</td> </tr> <tr> <td>RESERVE CAPACITY(MINUTES)</td> <td>45</td> </tr> <tr> <td>AMP HOURS(@20 hr Rate)</td> <td>29</td> </tr> </table>	NOMINAL VOLTAGE	12V	COLD CRANKING AMPS	300	CRANKING AMPS	410	RESERVE CAPACITY(MINUTES)	45	AMP HOURS(@20 hr Rate)	29
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CRANKING AMPS	410													
RESERVE CAPACITY(MINUTES)	45													
AMP HOURS(@20 hr Rate)	29													
			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 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														
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 MADE IN KOREA														

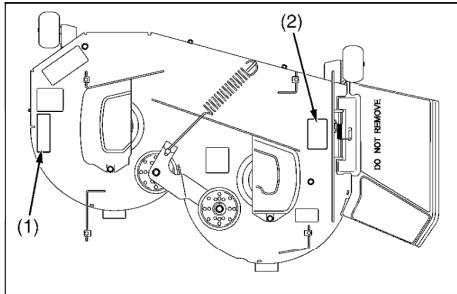
TO AVOID INJURY FROM BATTERY GASES AND ACIDES

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- Poison causes severe burns.
● Contains sulfuric acid.
- Read and understand operator's manual.
- Danger explosive gases.

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(1) Part No. K5617-7311-1



1BDABBSAP0030

(2) Part No. K5617-7312-1



1BDABBSAP0020

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9Y1211342INI0004US0

CARE OF DANGER, WARNING, AND CAUTION LABELS

1. Keep danger, warning and caution labels clean and free from obstructing material.
2. Clean danger, warning and caution labels with soap and water, and dry with a soft cloth.
3. Replace damaged or missing danger, warning and caution labels with new labels.
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 replaced component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

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3. SPECIFICATIONS

Model		Z122RKW-AU
Engine	Model	KAWASAKI GH739V
	Max. engine power (Gross)	16.0 kw (21.5 HP) *1*2
	Type	Air-cooled gasoline engine
	Number of cylinders	2 (V-Twin)
	Bore and stroke	76.0 × 78.0 mm (3.00 × 3.07 in.)
	Total displacement	726 cm ³ (44.3 cu. in.)
	Rated revolution	3600 min ⁻¹ (rpm)
	Fuel	Unleaded gasoline
	Starter	Electric
	Lubrication	Full pressure lubrication
	Cooling	Air cooled
Battery	U1 (12 V, RC: 45 min, CCA: 300, CA: 410)	
Capacities	Fuel tank	12.2 L (3.22 U.S.gals, 2.68 Imp.gals)
	Engine crankcase (with filter)	2.1 L (2.2 U.S.qts, 1.8 Imp.qts)
	Transmission case including Rear axle gear case	1.513 to 1.588 L (1.599 to 1.678 U.S.qts, 1.332 to 1.397 Imp.qts) *3
Dimensions	Overall length	1890 mm (74.41 in.)
	Overall width w/o mower deck	1076 mm (42.36 in.)
	Overall height	With ROPS 1652 mm (65.04 in.)
	Wheelbase	1236 mm (48.66 in.)
	Min. ground clearance	104 mm (4.06 in.)
	Tread	Front 616 mm (24.3 in.) Rear 885 mm (34.8 in.)
Weight (W/MOWER DECK)		282 kg (621 lbs)
Traveling system	Tread	Front 11 × 4 - 5 (4PR) Smooth Rear 18 × 7.5 - 10 (4PR)
	Traveling speeds	Forward 10.5 km/h (6.5 mph) Reverse 6.4 km/h (4.0 mph)
	Steering	2 - Hand levers
	Transmission	2 - HST w / Gear
	Parking brake	Hand lever applied, released
	Min. turning radius	0 mm (0 in.)
	PTO	Drive system
Clutch type		Electric

(Specifications and design subject to change without notice)

■ NOTE

- *1: Manufacturer's estimate

*2: These Kawasaki engines have been tested in accordance with SAE J1995, verified by TÜV Rheinland Group, and certified by SAE International. The gross power ratings of these engines were determined by using measurements according to SAE J1995 which were witnessed by SAE-approved witnesses from TÜV Rheinland Group. Torque ratings of these engines were not certified by SAE. Actual power and torque output will vary depending on numerous factors, including, but not limited to, the operating speed of the engine in application, environmental conditions, maintenance, and other variables.

*3: Oil amount when the oil level is at the upper level.

Model		RCK42P-122Z	
PRO Commercial Deck (Fabricated deck)	Suitable machine	Z122RKW-AU	
	Mounting method	Parallel linkage	
	Adjustment of cutting height	Dial gauge	
	Cutting width	1067 mm (42.01 in.)	
	Cutting height	38.1 to 108 mm (1.50 to 4.25 in.)	
	Weight (Approx.)	45.3 kg (100 lbs)	
	Blade spindle speed	52.2 r/s (3133 min ⁻¹ (rpm)) *1	
	Blade tip velocity	89.8 m/s (17700 min ⁻¹ (fpm)) *1	
	Blade length	548 mm (21.6 in.)	
	Number of blades	2	
	Dimensions	Total length	888 mm (35.0 in.)
		Total width	1401 mm (55.16 in.)
		Total height	293.5 mm (11.56 in.)

*1: Engine Max rpm

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