

Product: Kubota ZD1011-AU Zero Turn Mower Service Manual

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WSM

WORKSHOP MANUAL

ZD1011-AU

The Kubota logo, featuring the word "Kubota" in a stylized, bold, black font. The "K" is a simple block letter, the "u" is a downward-pointing arrow, the "b" is a block letter, and the "o" and "t" are block letters.

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KISC issued 10, 2019 A

TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the ZD1011-AU. 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 for diesel engine / tractor mechanism that this manual does not include.

- Booklet: Code No. 9Y021-01870 / 9Y021-18200
- PDF file in Kubota Web Site: Code No. 9Y011-01870 / 9Y011-18200

■ **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.

June 2016

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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
1	2016.07	Updated Maintenance Chart • Added Engine valve clearance	G-14
		Updated Greasing points	G-9
2	2018.10	Corrected errors	G-21, G-34
3	2019.02	Battery label added starting serial number 10508	I-8
4	2019.10	Revised the capacity of the radiator	G-9, G-39, 1-S20
		Added periodic service chart label	G-16
		Added information on fueling and refueling	G-19

I INFORMATION

INFORMATION

CONTENTS

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2. SAFETY DECALS	I-4
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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.

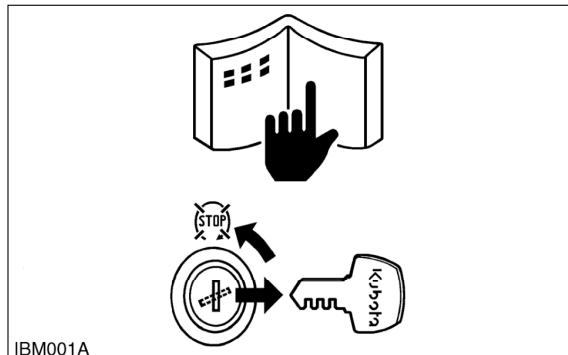
■ IMPORTANT

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

■ NOTE

- Gives helpful information.

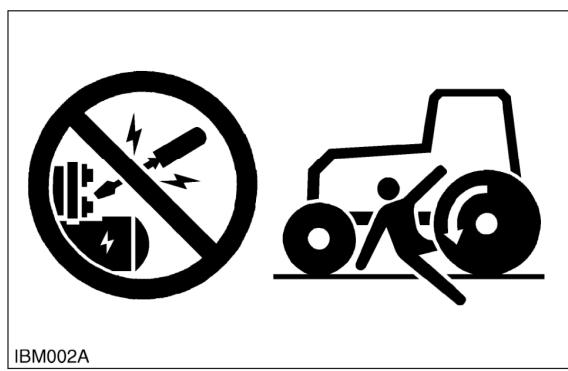
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BEFORE YOU START SERVICE

- 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.

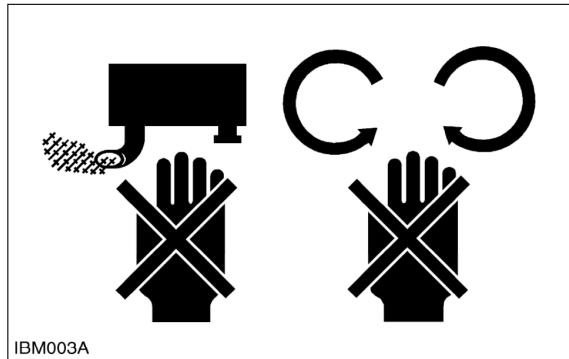
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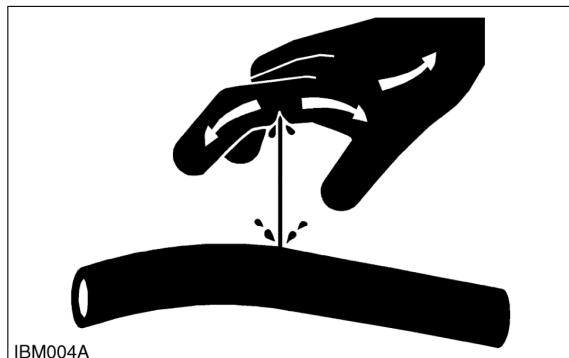
START SAFELY

- 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.

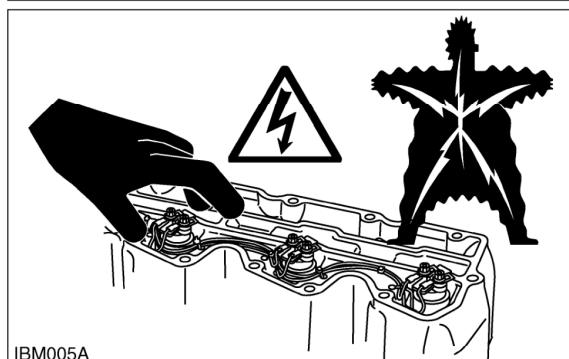
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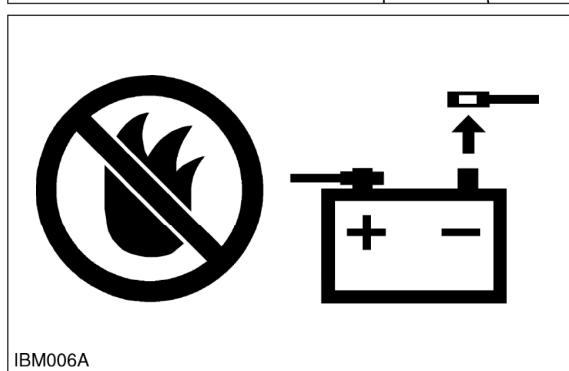
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IBM004A



IBM005A



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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.

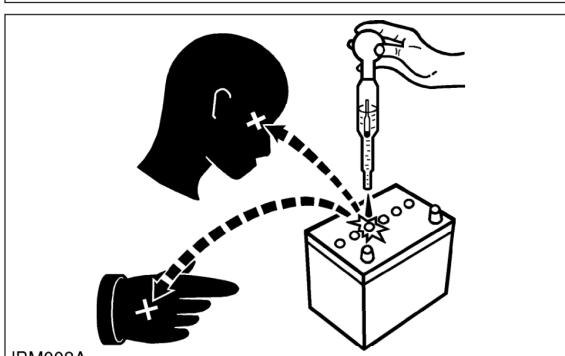
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DISCARD FLUIDS CORRECTLY

- 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.

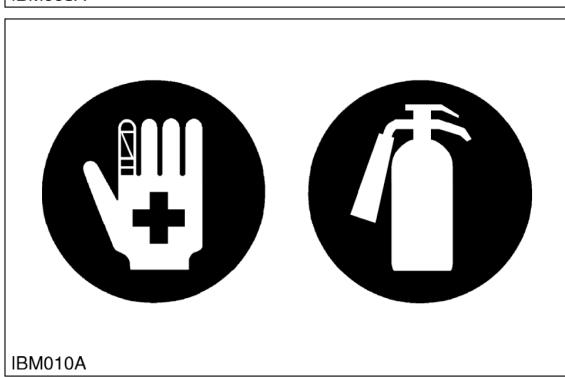
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PREVENT ACID BURNS

- 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

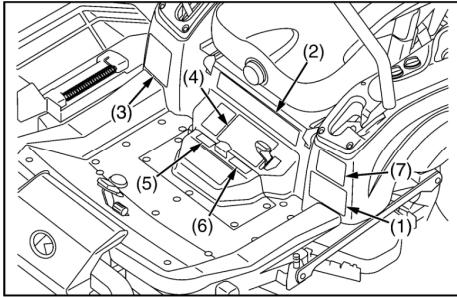
- Keep a first aid kit and fire extinguisher ready at all times.
- Keep the emergency contact telephone numbers near your telephone at all times.

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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. K3181-6585-1

⚠ WARNING

TO AVOID SERIOUS INJURY OR DEATH

1. Park the machine on level ground.
2. If necessary to park on an incline:
 - ① Stop the machine.
 - ② Apply the parking brake.
 - ③ Stop the engine.
 - If you stop the engine on an incline without applying the parking brake, the machine could roll and runaway.
3. If the engine stops suddenly during operation, apply the parking brake immediately to prevent machine runaway.

⚠ ADVERTENCIA

PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE

1. Estacione la máquina en la tierra del nivel.
2. Si es necesario estacionar en una cuesta:
 - ① Apagar la máquina.
 - ② Aplique el freno de estacionamiento.
 - ③ Luego apague el motor.
- Si apaga el motor en una cuesta sin aplicar el freno de estacionamiento, la máquina puede moverse sin control.
3. Si la máquina se detiene repentinamente durante la operación, enganche el freno de estacionamiento inmediatamente para evitar la pérdida de control.

1BDABCQAP093A

(2) Part No. K3411-6585-1

⚠ WARNING

TO AVOID SERIOUS INJURY OR DEATH

1. Read and understand the operator's manual before operation.
2. Do not operate this machine unless you are trained.
3. Before allowing other people to use this machine, have them read the operator's manual.
4. Do not drink alcohol.
5. 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.
6. Remove objects that could be thrown by the blade.

7. Do not operate the machine when children and/or others are around.
8. Do not carry children or others on the machine at any time.

9. Before operating the machine, set the motion control levers in neutral lock position, set the parking brake, stop the engine and remove the key.
10. Keep safety devices (guards, shields, and switches) in place, and working.
11. Do not use the first gear, keep the exhaust clear of dry grass, dry leaves or other combustible materials.
12. This machine is not for street or highway use.
13. Securely support the machine and implement before working underneath.

1BDABENAP066A

(3) Part No. K3411-6582-2

⚠ WARNING

TO AVOID SERIOUS INJURY OR DEATH

1. Mow across slopes-Not up and down.
2. Use extra caution when operating on slopes.
3. Drive in reverse may occur when operating on slopes.
4. Drive slowly on slopes.
5. Do not operate on wet slopes.
6. Avoid sudden starts.
7. Execute turns slowly.

⚠ ADVERTENCIA

PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE

1. Corte el césped de manera transversal en las colinas - No de arriba hacia abajo.
2. Tenga mucho cuidado durante la operación en colinas.
3. Se puede perder tracción durante la operación.
4. Conduzca lentamente en las colinas.
5. No use la máquina en colinas húmedas.
6. Evite arranques súbitos.
7. Realice las vueltas lentamente.

1BDABENAP064A

(4) Part No. K3411-6587-1

⚠ ADVERTENCIA

PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE

1. Lea y entienda el manual del operador antes de iniciar la operación.
2. No ponga en funcionamiento la máquina a menos que esté capacitado para hacerlo.
3. Antes de permitir que otras personas usen la máquina, indíquenles que lean el manual del operador.
4. Verifique que la regulación del apriete de todas las tuercas y pernos.
5. Antes de arrancar la máquina, mire alrededor para asegurarse de la existencia de una distancia segura de la máquina. La toma de fuerza debe estar desactivada y las palancas de control de movimiento bloqueadas en neutro.
6. Retire los objetos que pueden ser arrojados por la cuchilla.
7. No lleve a niños ni a otras personas en la máquina en ningún momento.
8. No lleve a niñas ni a otras personas en la máquina en ningún momento.
9. Antes de desmontar, desenganche el embrague de la toma de fuerza, baje el implemento, apague el motor y quite la llave de encendido. Luego, retire la llave.
10. Mantenga los dispositivos de protección (guardas, barreras de protección e interruptores) en su lugar y en buen estado de funcionamiento.
11. Para reducir los riesgos de incendio, mantenga el escape exento de hierba seca, hoja seca y otros materiales inflamables.
12. Esta máquina no está diseñada para uso en calles ni carreteras.
13. Use un soporte seguro para la máquina y el implemento antes de trabajar debajo de los mismos.

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(5) Part No. K3411-6568-1

⚠ WARNING

When Engine is running, do not open this cover.

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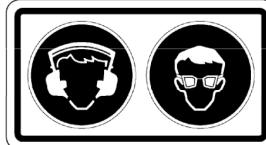
(6) Part No. K3411-6569-1

⚠ ADVERTENCIA

Nunca abra el capó mientras el motor está en funcionamiento.

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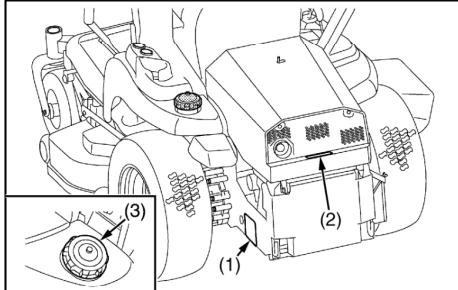
(7) Part No. K3284-6569-1



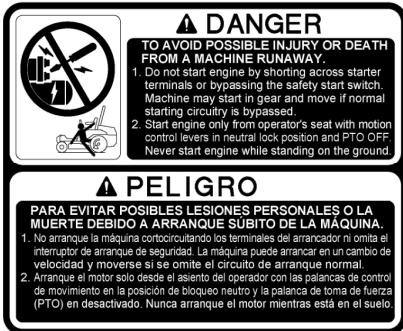
- Use ear protection to avoid damage to hearing.
- Always wear protective glasses.

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(1) Part No. K3271-6583-1



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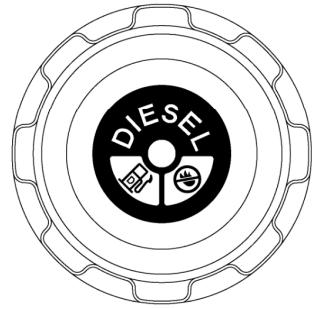
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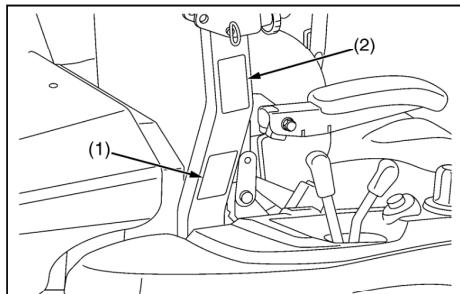
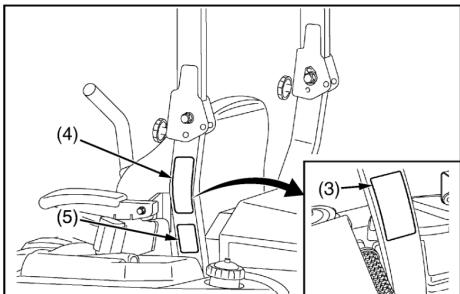
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(3) Part No. K3181-2491-4



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(1) Part No. K3441-6566-1



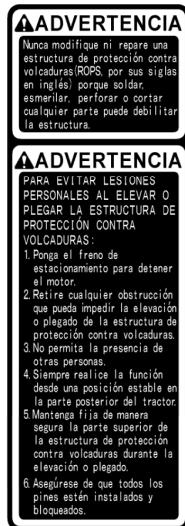
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(2) Part No. K3181-6563-1



1BDABCQAP101A

(3) Part No. K3441-6568-1



1BDABENAP072A

(4) Part No. K3181-6565-1



1BDABCQAP134A

(5) Part No. K3131-6587-1 and K7724-6566-1



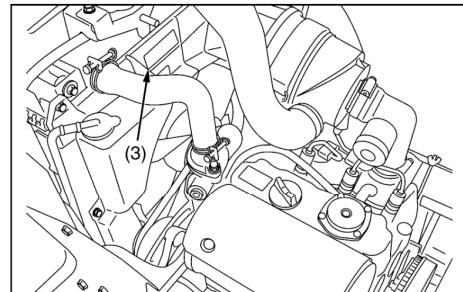
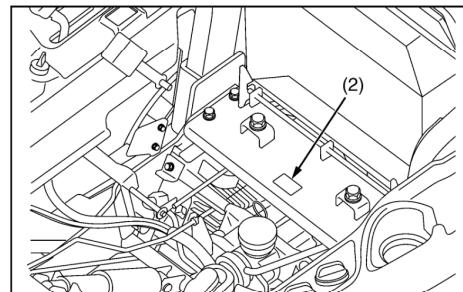
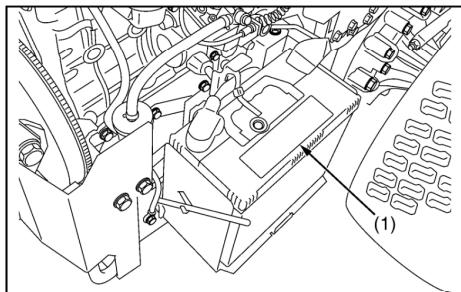
K3131-6587-1

K7724-6566-1

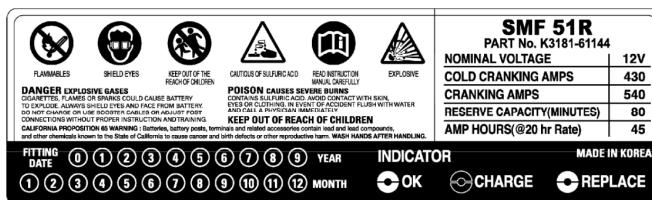
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9Y1211370INI10003US0



(1) Part No. K3181-6116-1



1BDAHAGAP127A

(2) Part No. K3111-6591-1

Do not get your hands close to fan.



1BDABCQAP107A

(3) Part No. K3181-6586-1

Do not get your hands close to engine fan and fan belt.



1BDABCQAP108A

TO AVOID INJURY FROM BATTERY GASES AND ACIDES



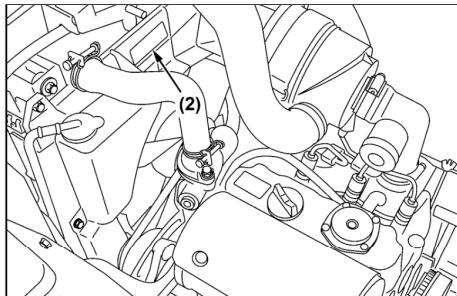
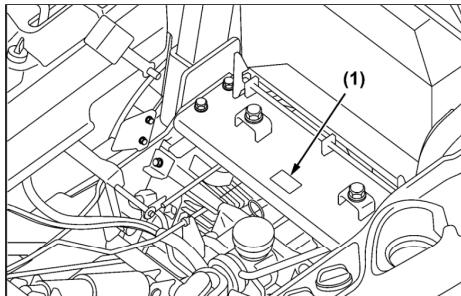
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- Keep away cigarettes, flames or sparks.
- Always shield eyes and face from battery.
- Keep out of reach of children.
- Poison causes severe burns.
- Contains sulfuric acid.
- Read and understand operator's manual.
- Danger explosive gases.

9Y1211370ICI004US

9Y1211370INI0004US0

Serial Number: 10508



(1) Part No. K3111-6591-1



Do not get
your hands
close to fan.

1BDABCQAP107A

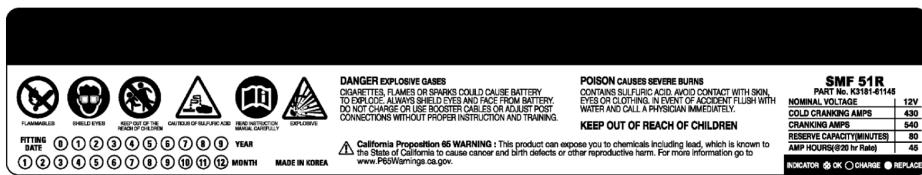
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Do not get your hands close to engine
fan and fan belt.



1BDABCQAP108A

(3) Part No. K3181-6116-2



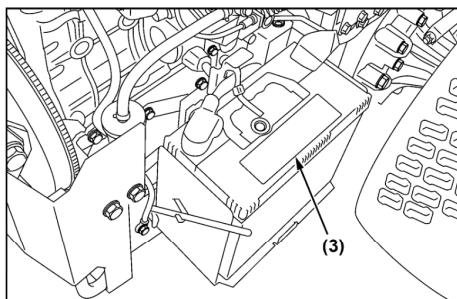
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TO AVOID INJURY FROM BATTERY GASES AND ACIDES



- Keep away cigarettes, flames or sparks.
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- Contains sulfuric acid.
- Read and understand operator's manual.
- Danger explosive gases.

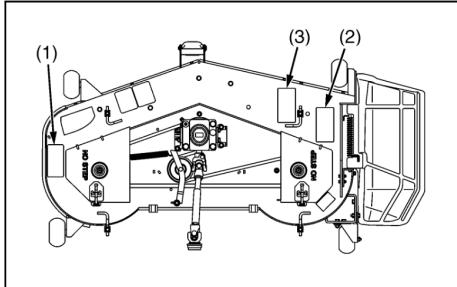
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[RCK54P]



(1) Part No. K5681-7312-2



1BDACAEAP015B

(2) Part No. K5681-7311-2



1BDACAEAP016B

(3) Part No. K5681-7310-1



1BDACAEAP017B

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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.

9Y1211370INI0006US0

3. SPECIFICATIONS

Model			ZD1011-AU
Engine	Model		
	Max. engine power (Gross)	kW (HP)	D782-E4
	Type		14.4 (19.3) (*1)(*2)
	Number of cylinders		
	Bore and stroke		3
	mm (in.)		67 × 73.6 (2.64 × 2.90)
	Total displacement	cm ³ (cu. in.)	778 (47.5)
	Rated revolution	rpm	3200
	Low idling revolution	rpm	1400 to 1500
	Fuel		Diesel fuel No. 2 Diesel fuel No. 1 [below -10 °C (14 °F)]
	Starter		
	Lubrication		
	Cooling		
Capacities	Battery		
	Fuel tank	L (U.S.gals.)	51R (12 V, RC:80 min, CCA:430 A)
	Engine crankcase (with filter)	L (U.S.qts.)	23 (6)
	Engine coolant	L (U.S.qts.)	2.8 (3.0)
	Recovery tank	L (U.S.qts.)	2.7 (2.85)
Dimensions	Transmission case including Rear axle gear case	L (U.S.qts.)	0.25 (0.26)
	Overall length	mm (in.)	7.5 (7.9) (*3)
	Overall width w/o mower deck	mm (in.)	2230 (87.8)
	Overall height	With ROPS upright	1210 (47.7)
		With ROPS folded	1890 (74.4)
	Wheel base	mm (in.)	1430 (56.3)
	Min. ground clearance	mm (in.)	1380 (54.3)
Travelling system	Tread	Front	130 (5.12) with 54"
		Rear	890 (35.0)
	Weight (W/MOWER DECK)	Front	930 (36.6)
		Rear	600 (1323) with 54"
	Tires	Front	0 (0)
		Rear	1 speed (2530 rpm at 3200 engine rpm)
PTO	Travelling speeds (*2)	Forward mph (km/h)	24 × 9.5 - 14 Low profile
		Reverse mph (km/h)	0 to 9.0 (0 to 14.5)
	Steering		
	Transmission		
Parking brake			2-Hand levers
Parking brake			2 - HST w / Gear
Min. turning radius			Wet multi disks / Foot applied, released
Min. turning radius			0 (0)
Revolution			Wet single disks
Drive system			Shaft drive, KUBOTA 10 tooth involute spline
Clutch type			Wet multi disks
PTO brake			Wet single disks

(Specifications and design subject to change without notice)

(To be continued)

(Continued)

■ NOTE

- *1: Manufacturer's estimate, SAE J1940
- *2: At 3200 engine rpm
- *3: Oil amount when the oil level is at the upper level.

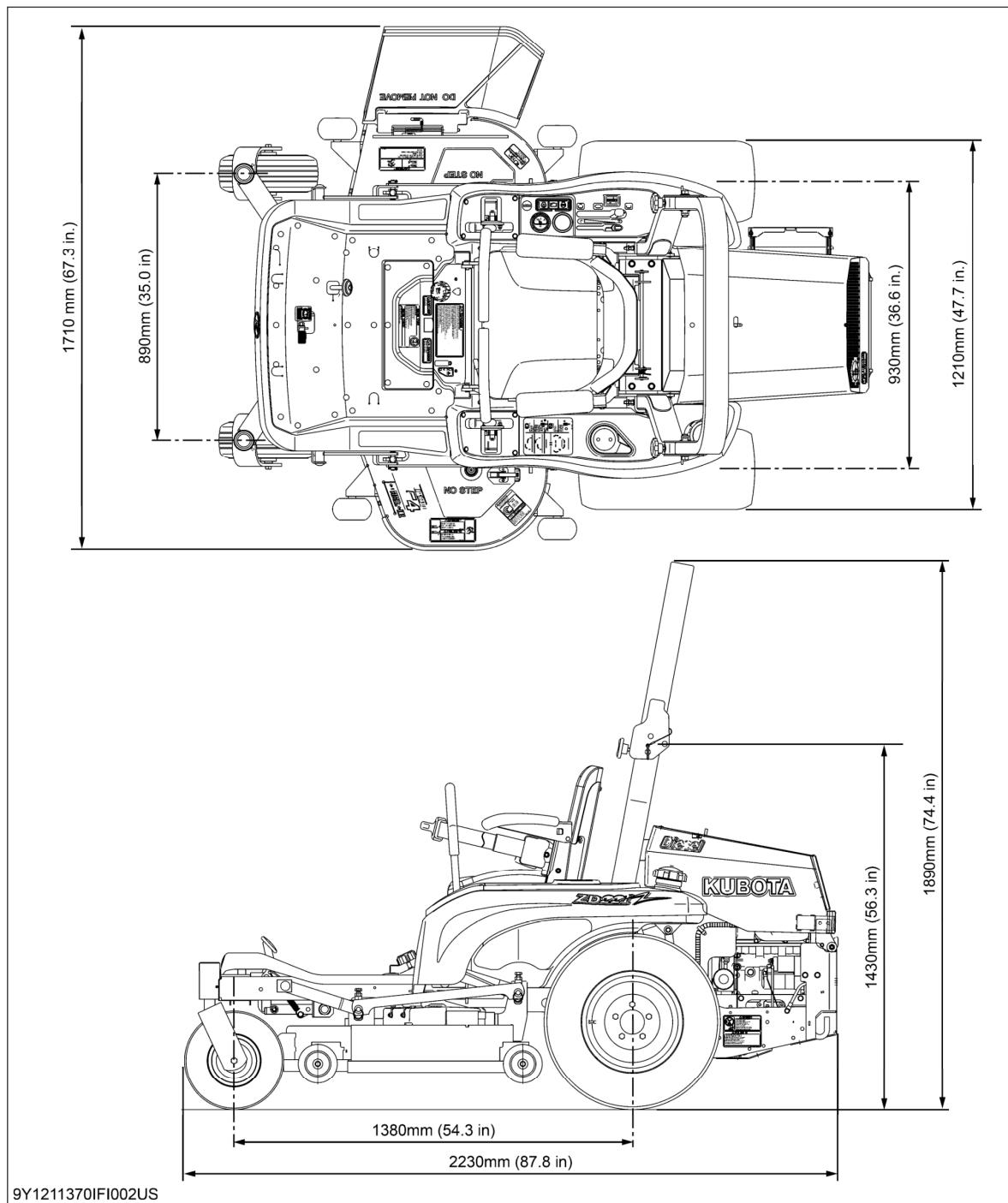
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Model			RCK54P-1000Z
PRO Commercial Deck (Fabricated deck)	Suitable machine		ZD1011-AU
	Mounting method		Quick joint, Parallel linkage
	Adjustment of cutting height		Dial gauge
	Cutting width	mm (in.)	1372 (54)
	Cutting height	mm (in.)	25 to 127 (1.0 to 5.0)
	Weight (Approx.)	kg (lbs)	119 (262)
	Blade spindle speed	r/s (rpm)	58.0 (3480) *1
	Blade tip velocity	m/s (fpm)	86.9 (17100) *1
	Blade length	mm (in.)	475 (18.7)
	Number of blades		3
Dimensions	Total length	mm (in.)	925 (36.4)
	Total width	mm (in.)	1710 (67.3)
	Total height	mm (in.)	340 (13.3)

*1: Engine Max rpm

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4. DIMENSIONS



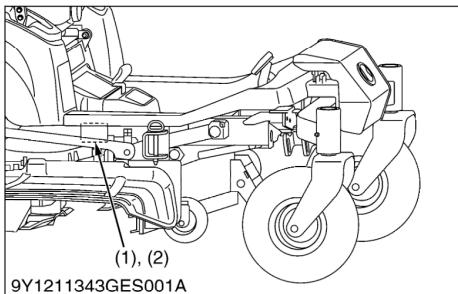
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GENERAL

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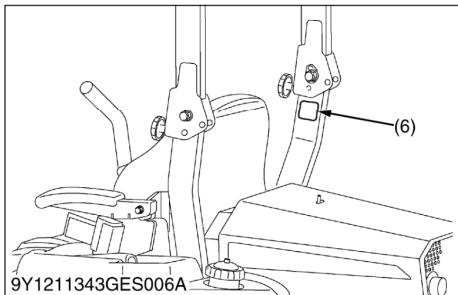
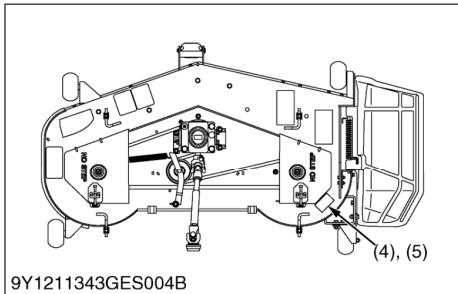
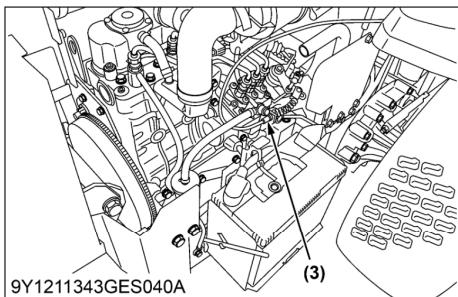
1. IDENTIFICATION



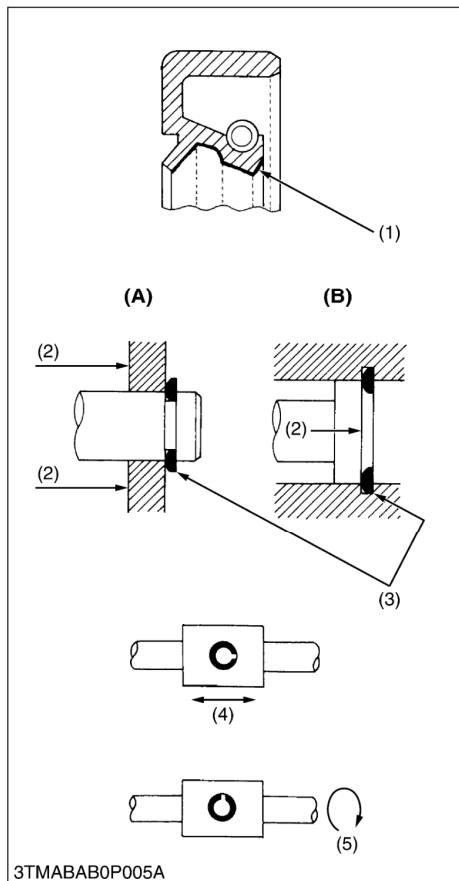
When contacting your local KUBOTA distributor, always specify engine serial number (3), machine serial number or product identification number (PIN) (2), mower serial number (4) and hour meter reading.

(1) Machine Identification Plate	(4) Mower Serial Number
(2) Machine Serial Number or Product Identification Number (PIN)	(5) Mower Identification Plate
(3) Engine Serial Number	(6) ROPS Serial Number

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2. GENERAL PRECAUTIONS

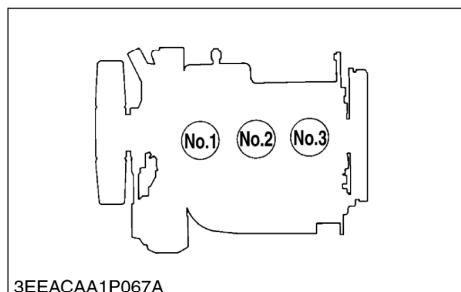


- During disassembly, carefully arrange removed parts in a clean area to prevent confusion later. Screws, bolts and nuts should be installed in their original position to prevent reassembly errors.
- When special tools are required, use KUBOTA genuine special tools. Special tools which are not frequently used should be made according to the drawings provided.
- Before disassembling or servicing electrical wires, always disconnect the ground cable from the battery first.
- Remove oil and dirt from parts before measuring.
- Use only KUBOTA genuine parts for parts replacement to keep machine performance and to assure safety.
- Gaskets and O-rings must be replaced during reassembly. Apply grease to new O-rings or oil seals before assembling. See the figure left side.
- When reassembling external snap rings or internal snap rings, they must be positioned so that sharp edge faces against the direction from which a force is applied. See the figure left side.
- When inserting spring pins, their splits must face the direction from which a force is applied. See the figure left side.
- To prevent damage to the hydraulic system, use only specified fluid or equivalent.

(A) External Cir-clip
(B) Internal Cir-clip

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3. CYLINDER NUMBER

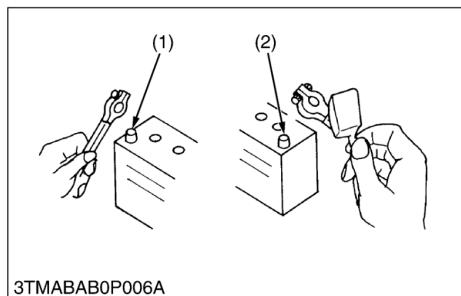


The cylinder numbers of KUBOTA diesel engine are designated as shown in the figure.

The sequence of cylinder numbers is given as No.1, No.2 and No.3 starting from the gear case side.

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4. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING



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

■ IMPORTANT

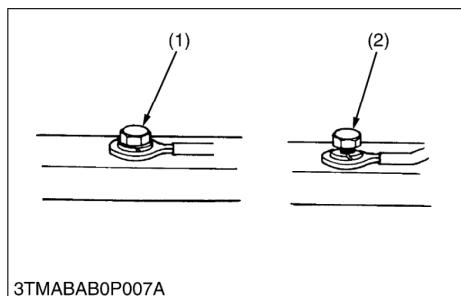
- Check electrical wiring for damage and loosened connection every year.
- When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.

(1) Negative Terminal

(2) Positive Terminal

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[1] WIRING

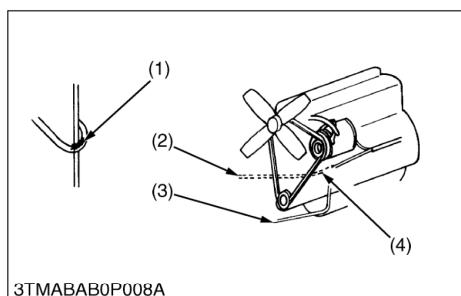


- Securely tighten wiring terminals.

(1) Correct
(Securely Tighten)

(2) Incorrect
(Loosening Leads to damaged Contact)

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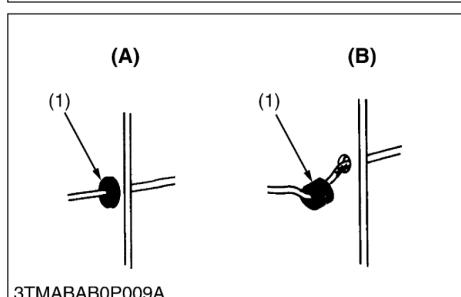


- Do not let wiring contact dangerous part.

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

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

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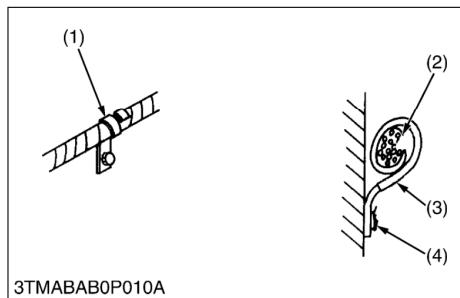


- Securely insert grommet.

(1) Grommet

(A) Correct
(B) Incorrect

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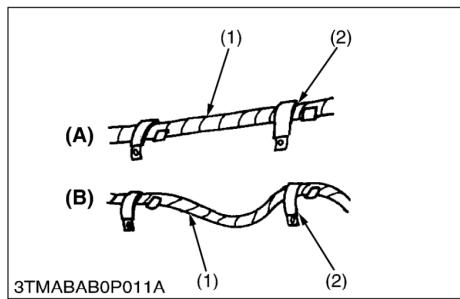


- Securely clamp, being careful not to damage wiring.

(1) Clamp
(Wind Clamp Spirally)
(2) Wire Harness

(3) Clamp
(4) Welding Dent

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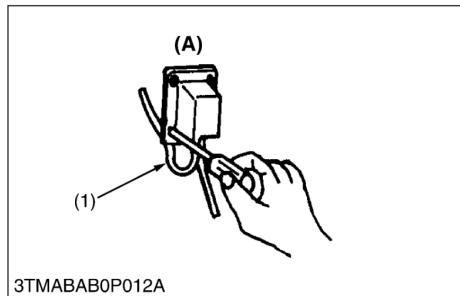


- Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

(1) Wiring
(2) Clamp

(A) Correct
(B) Incorrect

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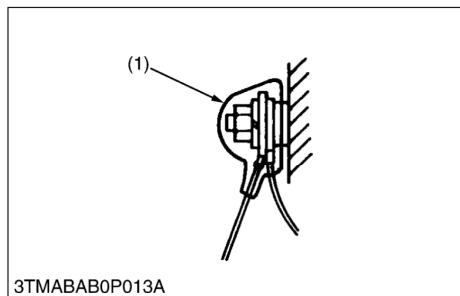


- In installing a part, be careful not to get wiring caught by it.

(1) Wiring

(A) Incorrect

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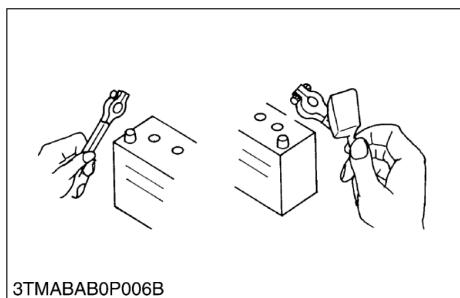


- After installing wiring, check protection of terminals and clamped condition of wiring.

(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.

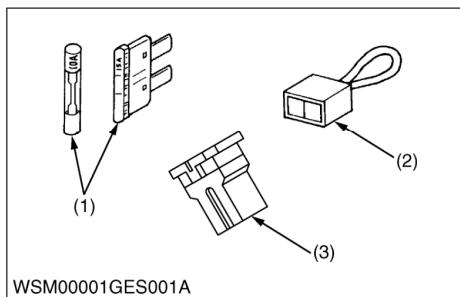
DANGER

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



WSM00001GES001A

- 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.

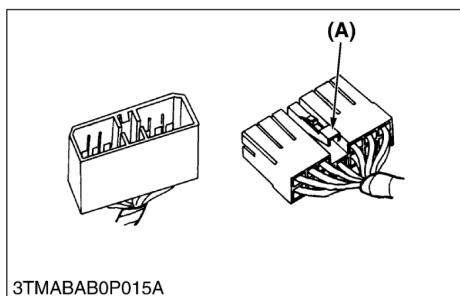
(1) Fuse

(3) Slow Blow Fuse

(2) Fusible Link

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[4] CONNECTOR

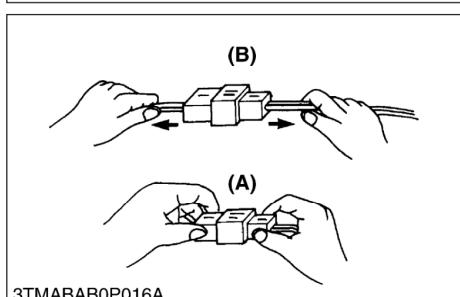


3TMABAB0P015A

- For connector with lock, push lock to separate.

(A) Push

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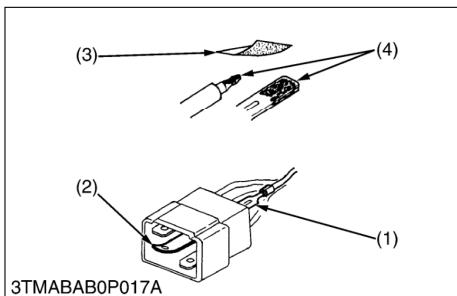
3TMABAB0P016A

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

(A) Correct

(B) Incorrect

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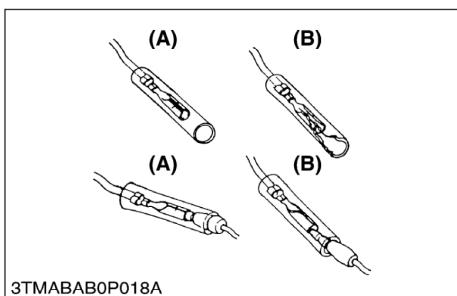


- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make sure that there is no terminal being exposed or displaced.

(1) Exposed Terminal
(2) Deformed Terminal

(3) Sandpaper
(4) Rust

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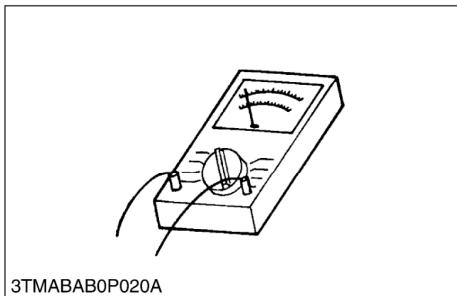
- Make sure that there is no female connector being too open.

(A) Correct

(B) Incorrect

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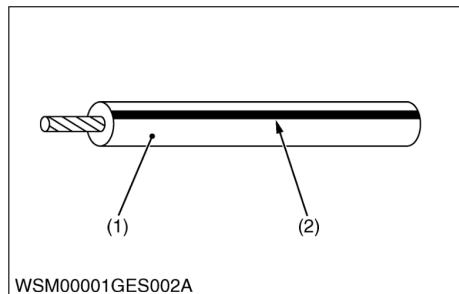
[5] HANDLING OF CIRCUIT TESTER



- 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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5. LUBRICANTS, FUEL AND COOLANT

No.	Place	Capacity	Lubricants
		ZD1011-AU	
1	Fuel	23 L (6.1 U.S.gals. 5.1 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	2.7 L (2.85 U.S.qts. 2.4 Imp.qts.)	Fresh clean water with anti-freeze
3	Recovery tank	0.25 L (0.26 U.S.qts. 0.2 Imp.qts.)	
4	Engine crankcase	3.5 L (3.7 U.S.qts. 3.1 Imp.qts.)*1	<ul style="list-style-type: none"> • Engine oil: API service Classification CF or better <p>Above 25 °C...SAE30, SAE10W-30 or 15W-40 (77 °F)</p> <p>0 to 25 °C.....SAE20, SAE10W-30 or 15W-40 (32 to 77 °F)</p> <p>Below 0 °C.....SAE10W, SAE10W-30 or 15W-40 (32 °C)</p>
5	Transmission case with filter and hose Rear axle gear case (R.H. and L.H.)	7.5 L (7.9 U.S.qts. 6.6 Imp.qts.)	<ul style="list-style-type: none"> • KUBOTA SUPER UDT-2 fluid*2
6	Mower gear box	0.4 L (0.42 U.S.qts. 0.4 Imp.qts.)	<p>Engine oil: API service Classification SH, SJ or higher SAE10W-30</p> <p>SAE90 gear oil (API service classification: more than GL-3)</p>

■ NOTE

- *1 Oil amount when the oil level is at the upper level of the oil level gauge.
- *2 The product name of KUBOTA genuine UDT fluid may be different from that in the Operator's Manual depending on countries or territories.

■ IMPORTANT

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

Greasing				
No.	Place	No. of greasing point	Capacity	Type of grease
7	Front axle	2	Until grease overflows	• Multipurpose EP2 Grease (NLGI Grade No.2)
8	Front wheel	2		
9	Parking brake lock pedal	1		
10	Front lift arm	2		
11	Universal joint	3		
12	Seat adjuster	2		
13	Mower link bushing	3		
14	Handle joint	1		
15	Cable (throttle, cable, mower lift cable)	3	Moderate amount	• Oil
	[Mower]			
16	Universal joint	3	Until grease overflows	• Multipurpose EP2 Grease (NLGI Grade No.2)
17	Three spindle shafts	3		
18	Belt tension pulley	1		
19	Belt tension pivot	1		
20	Anti scalp roller	1		
21	Front anti scalp roller pivot boss	2		

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Full Download: <https://www.arepairmanual.com/downloads/kubota-zd1011-au-zero-turn-mower-service-manual/>**■ NOTE****Fuel**

- Cetane number of 45 is minimum. Cetane number greater than 50 is preferred, especially for temperatures below -20 °C (-4 °F) or elevations above 1500 m (5000 ft).
- Diesel fuels specified to EN 590 or ASTM D975 are recommended.
- No.2-D is a distillate fuel of lower volatility for engines in industrial and heavy mobile service. (SAE J313 JUN87)

Engine Oil

- Oil used in the engine must have an American Petroleum Institute (API) service classification and Proper SAE Engine Oil according to the ambient temperatures as shown above:
- Refer to the following table for the suitable API classification engine oil according to the engine type (with internal EGR, external EGR or non-EGR) and the fuel.

Fuel used	Engine oil classification (API classification)	
	Oil class of engines except external EGR	Oil class of engines with external EGR
Ultra Low Sulfur Fuel [$<0.0015\%$ (15 ppm)]	CF, CF-4, CG-4, CH-4 or CI-4	CF or CI-4 (Class CF-4, CG-4 and CH-4 engine oils cannot be used on EGR type engines)

EGR: Exhaust Gas Re-circulation

- The CJ-4 engine oil is intended for DPF (Diesel Particulate Filter) type engines, and cannot be used on this machine.

	except external EGR	with external EGR
Models	ZD1011-AU	—

Transmission Oil

- **KUBOTA Super UDT-2:** For an enhanced ownership experience, we highly recommend Super UDT-2 to be used instead of standard hydraulic/transmission fluid.
Super UDT-2 is a proprietary KUBOTA formulation that delivers superior performance and protection in all operating conditions.
- Regular UDT is also permitted for use in this machine.
- Indicated capacities of water and oil are manufacturer's estimate.

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