

# WSM

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WORKSHOP MANUAL

# ZG332

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# Kubota

# TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the ZG332. It contains 4 parts: "**Information**", "**General**", "**Mechanism**" and "**Servicing**".

## ■ **Information**

This section primarily contains information below.

- Safety First
- Safety Decal
- Specification
- Dimension

## ■ **General**

This section primarily contains information below.

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

## ■ **Mechanism**

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

## ■ **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.

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March, 2011

# I INFORMATION

# INFORMATION

## CONTENTS

1. SAFETY FIRST .....	I-1
2. SAFETY DECALS .....	I-4
3. SPECIFICATIONS .....	I-8
4. DIMENSION .....	I-10

# 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 attempt 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, may result in minor or moderate injury.

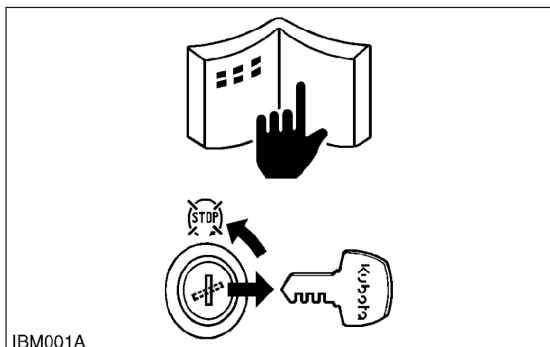
### ■ IMPORTANT

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

### ■ NOTE

- Gives helpful information.

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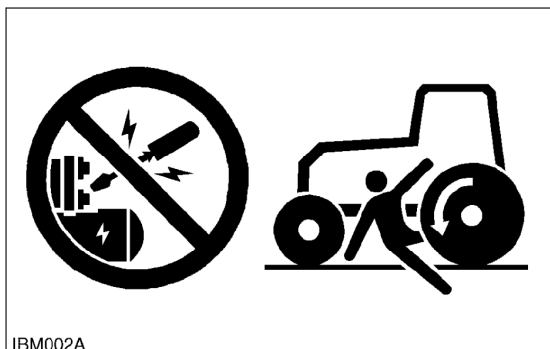


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## BEFORE YOU START SERVICE

- 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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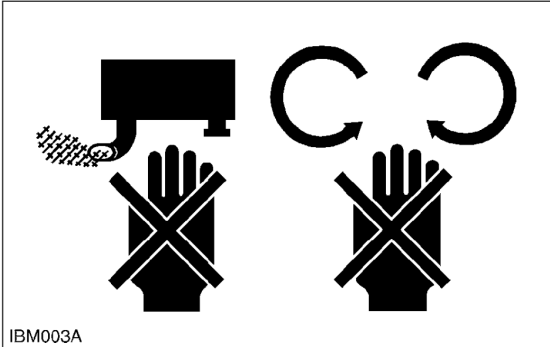


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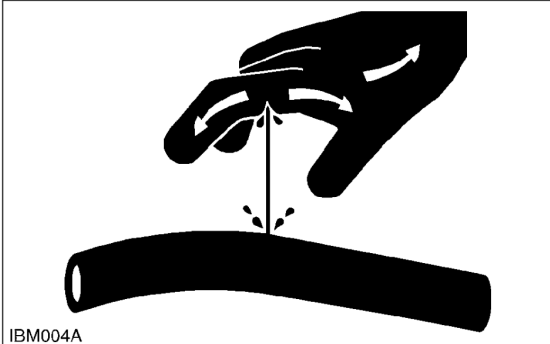
## START SAFELY

- 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.

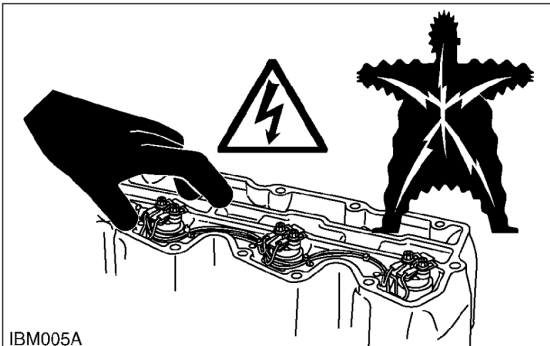
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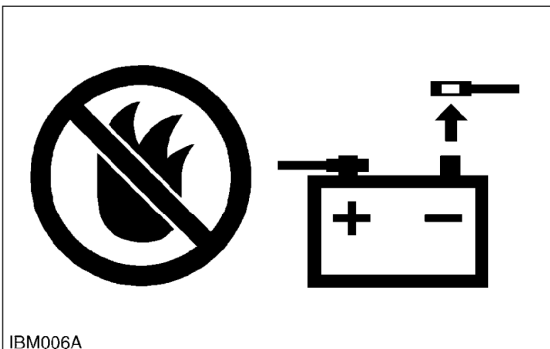
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**OPERATE SAFELY**

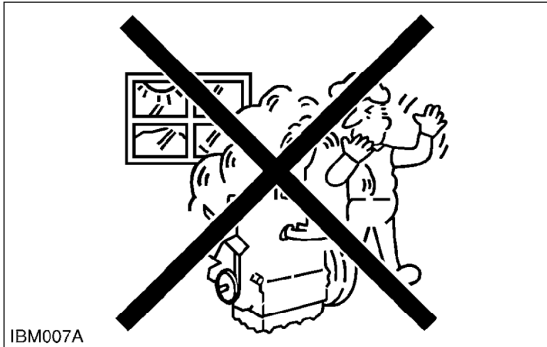
- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below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

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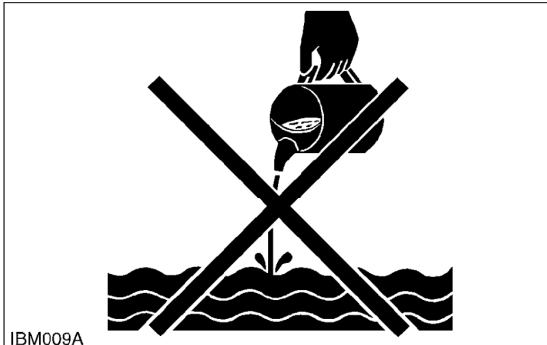
**PREVENT A FIRE**

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

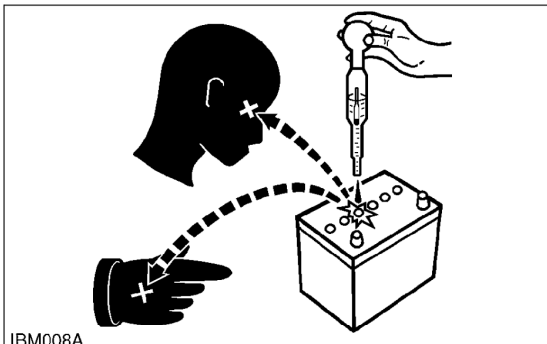
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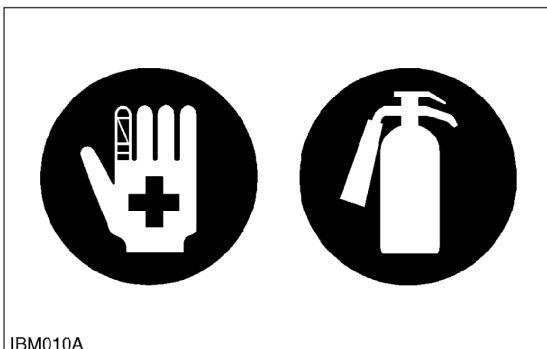
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### **KEEP A GOOD AIRFLOW IN THE WORK AREA**

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

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### **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

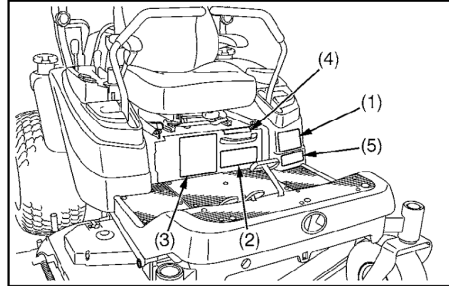
The following safety decals are installed on the machine. If a decal becomes damaged, illegible or is not on the machine, replace it. The decal part number is listed in the parts list.

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(1) Part No. K3181-6585-1

<p><b>⚠ WARNING</b>  <b>TO AVOID SERIOUS INJURY OR DEATH</b></p> <ol style="list-style-type: none"> <li>1. Park the machine on level ground.</li> <li>2. If necessary to park on an incline:                     <ol style="list-style-type: none"> <li>ⓐ Stop the machine.</li> <li>ⓑ Apply the parking brake.</li> <li>ⓒ Stop the engine.</li> </ol>                     If you stop the engine on an incline without applying the parking brake, the machine could move and runaway.                 </li> <li>3. If the engine stops suddenly during operation, apply the parking brake immediately to prevent machine runaway.</li> </ol>	<p><b>⚠ ADVERTENCIA</b>  <b>PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE</b></p> <ol style="list-style-type: none"> <li>1. Estacione la máquina en la tierra del nivel.</li> <li>2. Si es necesario estacionar en una cuesta:                     <ol style="list-style-type: none"> <li>ⓐ Apagar la máquina.</li> <li>ⓑ Aplique el freno de estacionamiento.</li> <li>ⓒ Luego apague el motor.</li> </ol>                     Si apaga el motor en una cuesta sin aplicar el freno de estacionamiento, la máquina puede moverse sin control.                 </li> <li>3. Si la máquina se detiene repentinamente durante la operación enganche el freno de estacionamiento inmediatamente para evitar la pérdida de control.</li> </ol>
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(2) Part No. K3181-6584-1

	<p><b>⚠ WARNING</b>  <b>TO AVOID SERIOUS INJURY OR DEATH</b></p> <ol style="list-style-type: none"> <li>1. Mow across slopes. Not up and down.</li> <li>2. Use extreme caution when operating on slopes.</li> <li>3. Loss of tractor may occur when operating on slopes.</li> <li>4. Drive slowly on slopes.</li> <li>5. Do not operate on wet slopes.</li> <li>6. Avoid sudden starts.</li> <li>7. Execute turns slowly.</li> </ol>	<p><b>⚠ ADVERTENCIA</b>  <b>PARA EVITAR LESIONES PERSONALES GRAVES O LA MUERTE</b></p> <ol style="list-style-type: none"> <li>1. Cuida el césped de manera transversal en las colinas. No de arriba hacia abajo.</li> <li>2. Tenés mucho cuidado durante la operación en colinas.</li> <li>3. Se puede perder tracción durante la operación en colinas.</li> <li>4. Conduzca lentamente en las colinas.</li> <li>5. No use la máquina en colinas húmedas.</li> <li>6. Evite arranques súbitos.</li> <li>7. Realice las vueltas lentamente.</li> </ol>
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(4) Part No. K3282-6569-1

<p><b>⚠ CAUTION</b>                  When Engine is running, do not open this cover.</p>	<p><b>⚠ ATENCIÓN</b>                  Nunca abra el capó mientras el motor está en funcionamiento.</p>
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(3) Part No. K3282-6582-1

<p><b>⚠ CAUTION</b>  <b>TO AVOID PERSONAL INJURY</b></p> <ol style="list-style-type: none"> <li>1. Read and understand the operator's manual before operation.</li> <li>2. Do not operate this machine unless you are trained.</li> <li>3. Before allowing other people to use the machine, have them read the operator's manual.</li> <li>4. Check the tightness of all nuts and bolts regularly.</li> <li>5. Before starting the engine, make certain that everyone is at a safe distance from the machine. PTO is damaged and motion control levers are in neutral lock.</li> <li>6. Remove objects that could be thrown by the blades.</li> <li>7. Do not operate the machine when children and/or others are around.</li> <li>8. Do not carry children or others on the machine at any time.</li> <li>9. 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.</li> <li>10. Keep safety devices (guards, shields and switches) in place and working.</li> <li>11. To reduce the fire hazard, keep the exhaust clear of dry grass, dry leaves or other combustible materials.</li> <li>12. This machine is not for street or highway use.</li> <li>13. Securely support the machine and implement before working underneath.</li> </ol>	<p><b>⚠ ADVERTENCIA</b>  <b>PARA EVITAR LESIONES PERSONALES</b></p> <ol style="list-style-type: none"> <li>1. Lea y entienda el manual del operador antes de efectuar la operación.</li> <li>2. No ponga en funcionamiento la máquina a menos que esté capacitado para hacerlo.</li> <li>3. Antes de permitir que otras personas usen la máquina, indíqueles que lean el manual del operador.</li> <li>4. Verifique con regularidad el estado de todas las tuercas y pernos.</li> <li>5. Antes de arrancar el motor, asegúrese de que todos están a una distancia segura de la máquina. La toma de fuerza debe estar desactivada y las palancas de control de movimiento bloqueadas en neutro.</li> <li>6. Retire los objetos que pueden ser lanzados por la cuchilla.</li> <li>7. No opere la máquina cuando hayan niños u otras personas al pededor.</li> <li>8. No lleve a niños ni a otras personas en la máquina en ningún momento.</li> <li>9. Antes de desmontar, desenganche el embrague de la toma de fuerza, baje el implemento, cambie a neutro, aplique el freno de estacionamiento, apague el motor y retire la llave.</li> <li>10. Mantenga los dispositivos de protección (guardas, barreras de protección e interruptores) en su lugar y en buen estado de funcionamiento.</li> <li>11. Para reducir los riesgos de incendio, mantenga el escape exento de hierba seca, hojas secas u otros materiales combustibles.</li> <li>12. Esta máquina no está diseñada para uso en calles ni carreteras.</li> <li>13. Use un soporte seguro para la máquina y el implemento antes de trabajar debajo de los mismos.</li> </ol>
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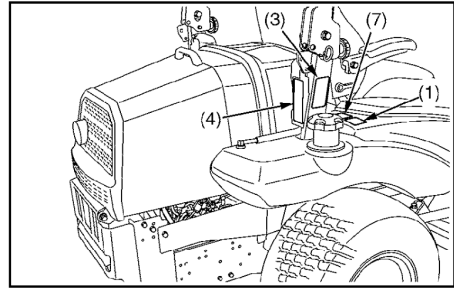
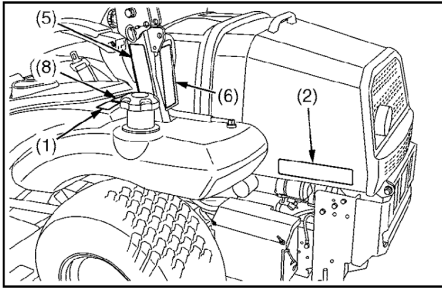
<p><b>⚠ WARNING</b>                  Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention/reduction.</p>	<p><b>⚠ ADVERTENCIA</b>                  La operación de este equipo puede generar chispas que pueden iniciar incendios en cercanías de vegetación seca. Podría requerirse un pararrayes. El operador deberá contactar a las agencias de bomberos locales para obtener sobre leyes o normas relacionadas con los requisitos de prevención de incendios.</p>
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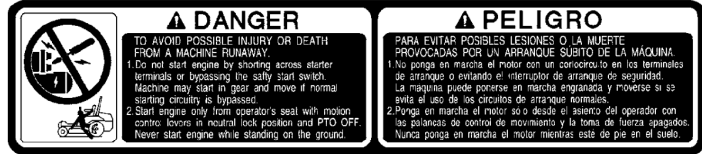
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Gasoline fuel only No fire



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(2) Part No. K3181-6583-2



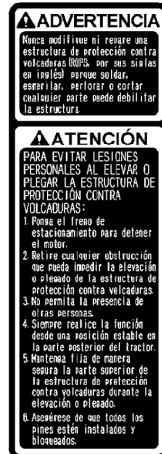
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(4) Part No. K3181-6563-1



1BDABCQAP101A

(5) Part No. K3282-6566-1



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(6) Part No. K3181-6565-1



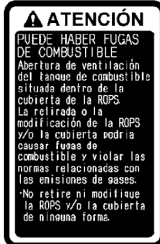
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(3) Part No. K3181-6564-1



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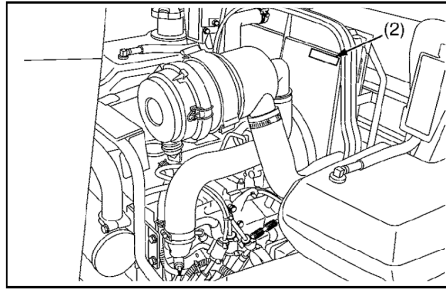
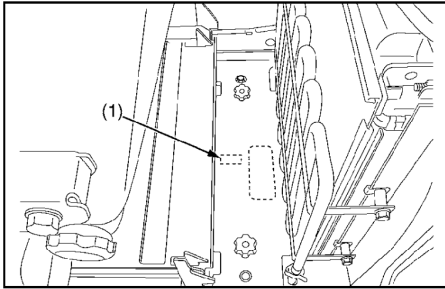


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(7) Part No. K3282-6573-1

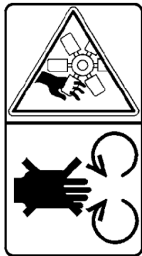


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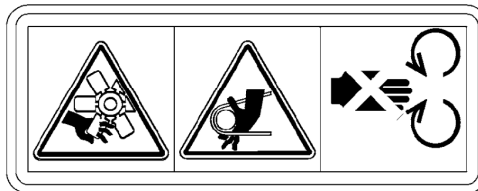


(1) Part No. K3111-6591-1  
Do not get your hands close to fan belt

(2) Part No. K2581-6543-1  
Do not get your hands close to engine fan and fan belt



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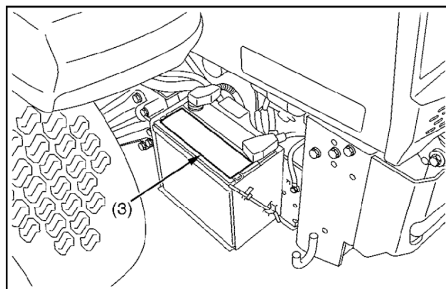
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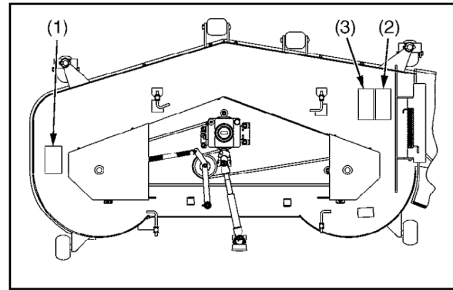
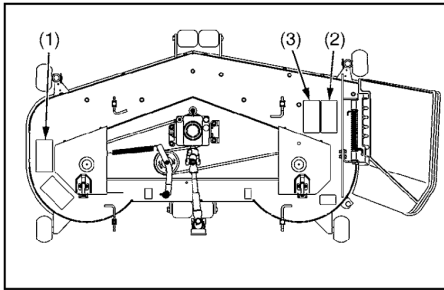
**DANGER / POISON**

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



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(1) Part No. K5681-7312-2



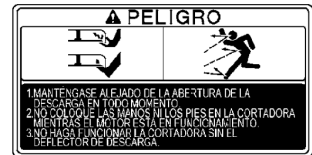
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(2) Part No. K5681-7311-2



1BDACAEAP016B

(3) Part No. K5681-7310-1



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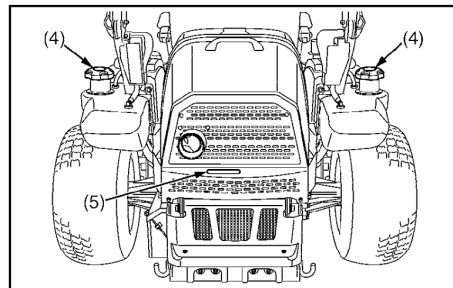
(4) Part No. K3272-2481-1



(5) Part No. K3282-6532-1



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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. Install new danger, warning and caution labels on a clean dry surface and push any bubbles to outside edge.

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### 3. SPECIFICATIONS

Model		ZG332P	ZG332LP	
Engine	Model	WG972-G-E3-ZG-1		
	Maximum engine power (Gross)	24.2 kW (32.5 HP) <sup>*1</sup>		
	Type	Liquid-cooled gasoline engine		
	Number of cylinders	3		
	Bore and stroke	74.5 × 73.6 mm (2.93 × 2.90 in.)		
	Total displacement	962 cm <sup>3</sup> (37.8 cu.in.)		
	Fuel	Automobile unleaded or regular gasoline		
	Starter	Electric starter with battery		
	Lubrication	Forced lubrication by gear pump		
	Cooling	Liquid with pressurized radiator		
Capacities	Battery	51R (12 V, RC: 70 min, CCA: 450A)		
	Fuel tank	49 L (12.9 U.S.gals, 11 Imp.gals)		
	Engine crankcase (with filter)	3.5 L (3.7 U.S.qts, 3.1 Imp.qts)		
	Engine coolant	2.7 L (2.9 U.S.qts, 2.4 Imp.qts)		
	Recovery tank	0.25 L (0.26 U.S.qts, 0.22 Imp.qts)		
Dimensions	Transmission case including Rear axle gear case		12.1 L (12.8 U.S.qts, 10.6 Imp.qts) <sup>*2</sup>	
	Overall length		2329 mm (91.7 in.)      2414 mm (95.0 in.)	
	Overall width w/o mower deck		1460 mm (57.5 in.)	
	Overall height	With ROPS upright	1915 mm (75.4 in.)	
		With ROPS folded	1645 mm (64.8 in.)	
	Wheel base		1410 mm (55.5 in.)      1495 mm (58.8 in.)	
	Minimum ground clearance		130 mm (5.12 in.) with 60", with 72"	
Tread	Front	975 mm (38.4 in.)	1070 mm (42.1 in.)	
	Rear	1150 mm (45.3 in.)		
Weight (with Mower Deck)		749 kg (1651 lbs) with 60"	800 kg (1763 lbs) with 72"	
Travelling system	Tires	Front	15 × 6.0-6 (Semi-pneumatic Non Flat Tire) Rib	
		Rear	26 × 12.0-12 (4PR) Turf	
	Travelling speeds	Forward	0 to 10.6 mph (0 to 17 km/h) <sup>*3</sup>	
		Reverse	0 to 5.3 mph (0 to 8.5 km/h) <sup>*3</sup>	
	Steering		2-Hand levers	
	Transmission		2-Hydrostatic transmission with gear	
	Parking brake		Wet multi disc / foot applied, released	
Min. turning radius		0 mm (0 in.)		
PTO	Revolution		1 speed (2715 rpm at 3620 engine rpm)	
	Drive system		Shaft drive, KUBOTA 10 tooth in involute spline	
	Clutch type		Wet multi discs	
	PTO brake		Wet single disc	

■ **NOTE**

- Specifications and design subject to change without notice.

\*1: Manufacturer's estimate

\*2: Oil amount when the oil level is at the upper level.

\*3: At 3200 min<sup>-1</sup> (rpm)

Model		RCK60P-327Z	RCK72P-332Z
PRO Commercial Deck (Fabricated deck)	Suitable machine	ZG332P	ZG332LP
	Mounting method	Quick joint, Parallel linkage	
	Adjustment of cutting height	Dial gauge	
	Cutting width	1524 mm (60.0 in.)	1829 mm (72.0 in.)
	Cutting height	25 to 127 mm (1.0 to 5.0 in.)	
	Weight (Approx.)	143 kg (315 lbs)	
	Blade spindle speed	94.0 r/s (5640 rpm) <sup>*4</sup>	
	Blade tip velocity	93.9 m/s (18500 fpm) <sup>*4</sup>	
	Blade length	523 mm (20.6 in.)	625 mm (24.6 in.)
	Number of blades	3	
	Dimensions	Total length	1002 mm (39.4 in.)
Total width		1911 mm (75.2 in.)	2224 mm (87.6 in.)
Total height		358 mm (14.1 in.)	

■ **NOTE**

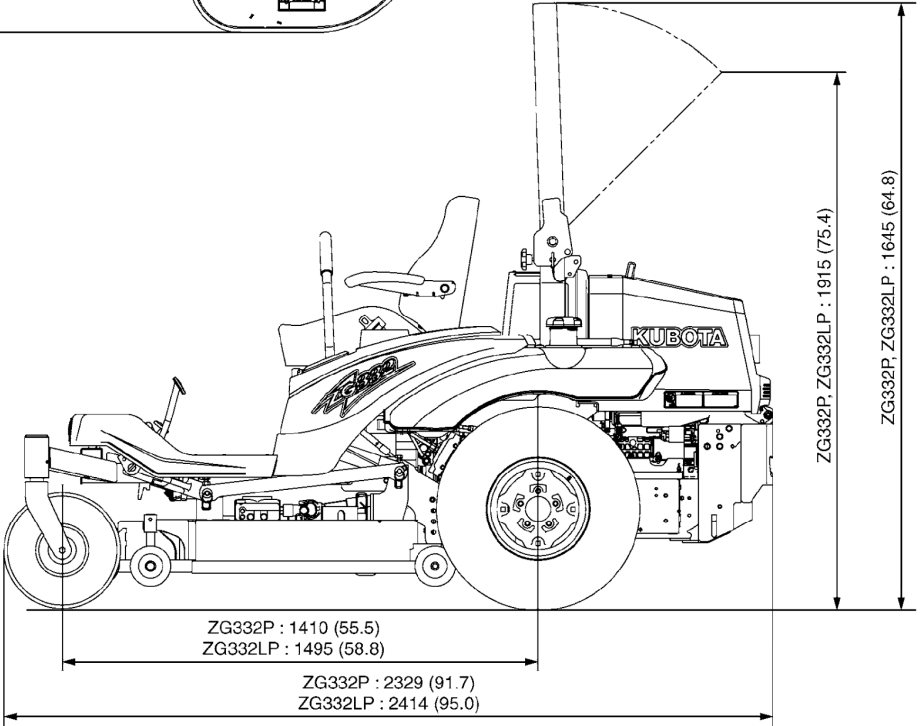
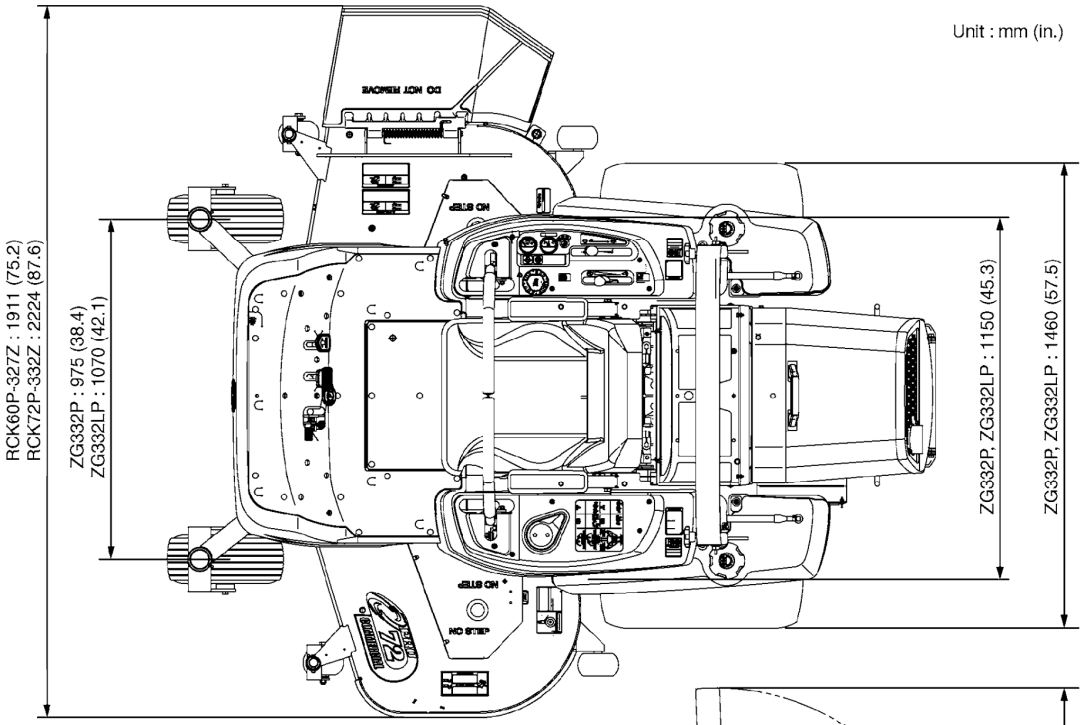
- Specifications and design are subject to change without notice.

\*4: Engine Max rpm

9Y1210589INI0005US0

# 4. DIMENSION

Unit : mm (in.)



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# **G GENERAL**