

Product: Kubota T2090BR-AU T2290KW-AU T2290KWT-AU Service Manual
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WSM

WORKSHOP MANUAL

**T2090BR-AU,
T2290KW-AU,
T2290KWT-AU**

Kubota

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KiSC issued 02, 2021 A

TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the *T2090BR-AU*, *T2290KW-AU*, *T2290KWT-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 (Code No. 9Y021-18200) for the *Tractor mechanism* 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.

March 2018

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RECORD OF REVISIONS

Main revised contents and corrective measures are described in a table.
Find the main revised point and corrective measure through the reference page.

Last digit of the code No.	Month of revision	Part name	Main revised point and corrective measure	Reference page
1	May 2019	Information	Updated battery label.	1-5
		Steering	Added related page for Dismounting mower	6-6
		Mower	Re-sized illustrations for Structure	10-1
			Added guide pin information for mower belt installation	2-40 10-12
2	2021 February	Engine	Revised the title to the "T2090BR, T2090BR-AU BRIGGS & STRATTON ENGINE(SUPPLEMENT)" from the 40U8 Briggs and Stratton Engine.	3-1 3-5 3-8 3-9

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1. INFORMATION

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, may result in minor or moderate injury.

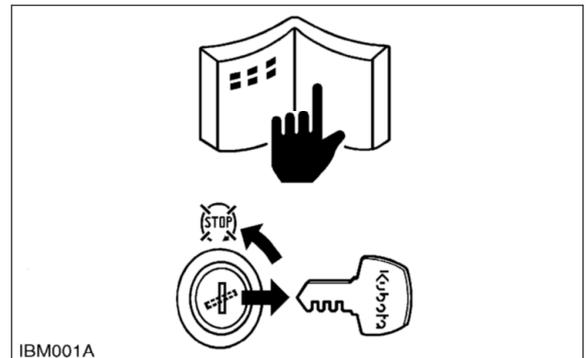
■ IMPORTANT

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

■ NOTE

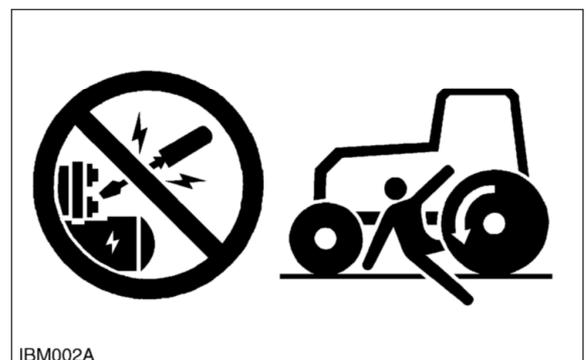
- Gives helpful information.

1. 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.

2. Start safely

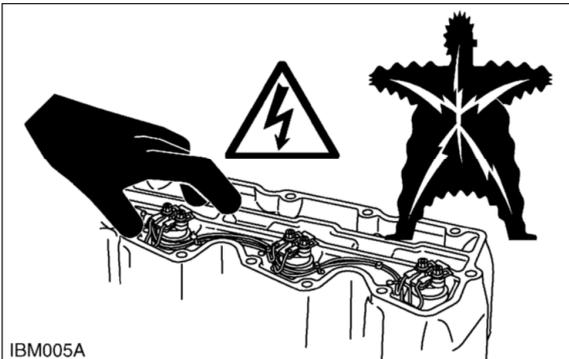
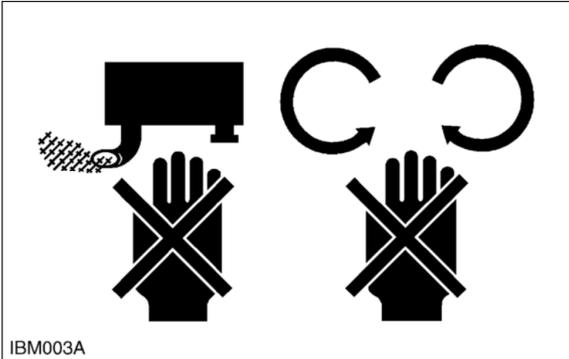


- Do not do the procedures below when you start the engine.
 1. Short across starter terminals.
 2. Bypass the safety start switch.
- Do not alter or remove any part of machine safety system.
- Before you start the engine, make sure that all shift levers are in neutral positions or in disengaged positions.

1. INFORMATION

- Do not start the engine when you stay on the ground. Start the engine only from operator's seat.

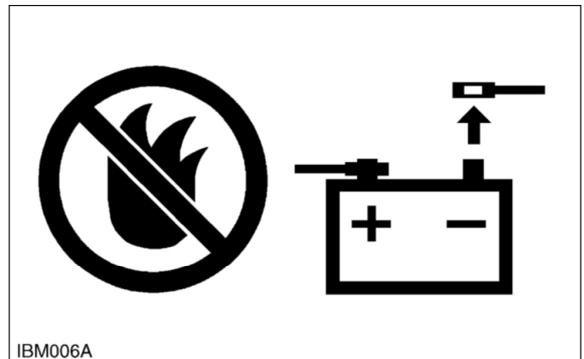
3. Operate safely



- 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.

4. 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.

5. Keep a good airflow in the work area



IBM007A

- 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.

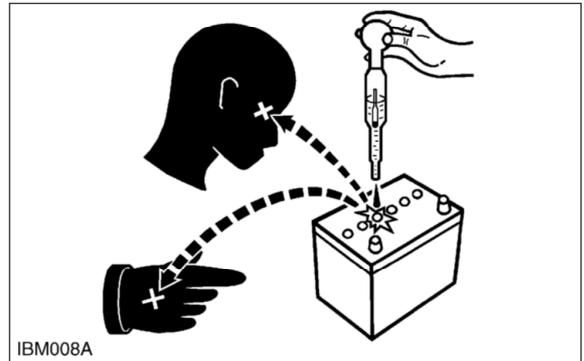
6. Discard fluids correctly



IBM009A

- 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.

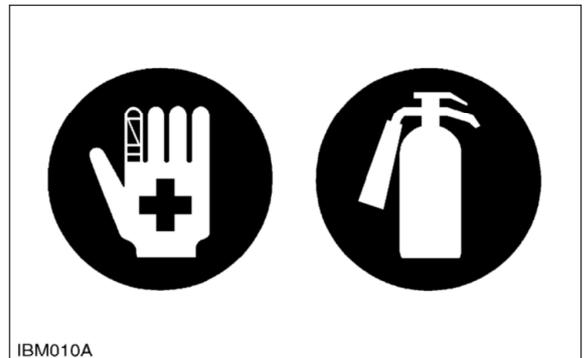
7. Prevent acid burns



IBM008A

- 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.

8. Prepare for emergencies



IBM010A

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

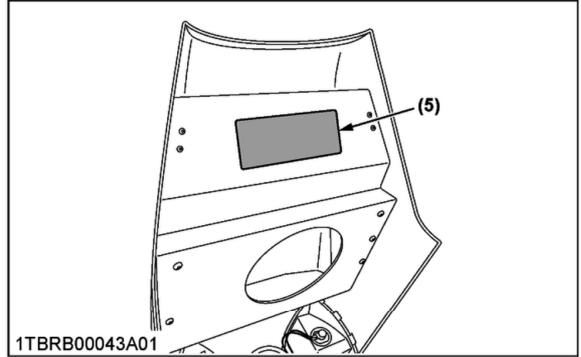
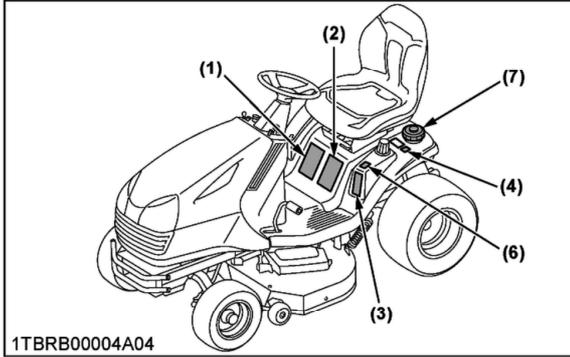
1. INFORMATION

SAFETY DECALS

1. Safety decals

The 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.

1. INFORMATION

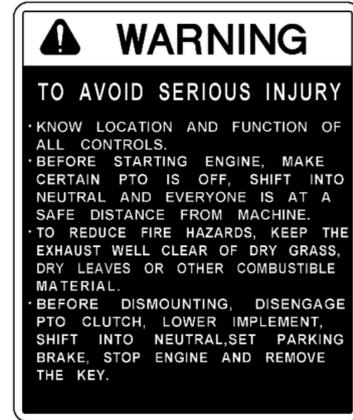


(1) Part No. K1122-6581-1



1BDADAFAP0510

(2) Part No. K1042-6534-1



1BDADAFAP129A

(3) Part No. K1122-6584-2



1BDADAFAP0530

(4) Part No. K1042-6585-1



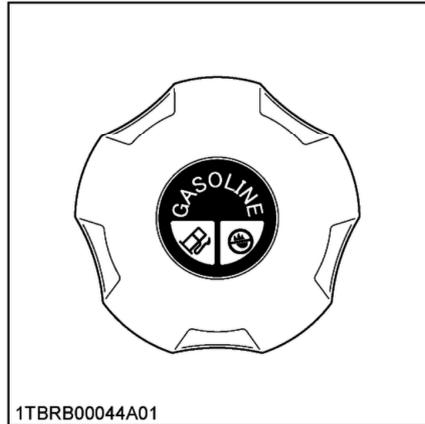
1BDABBSAP0060

(6) Part No. K2651-6568-1



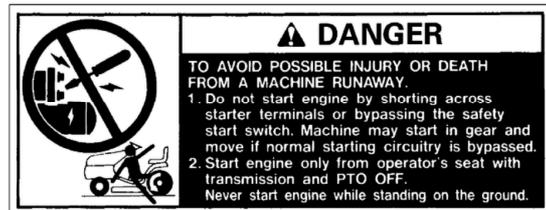
1AYAACAP1000

(7) Part No. K1032-3412-1



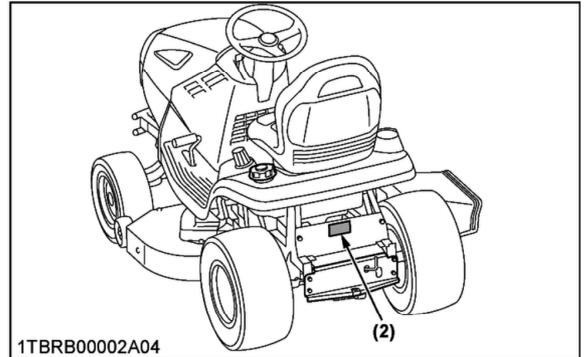
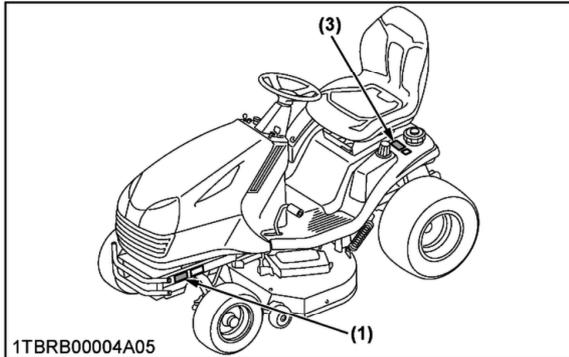
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(5) Part No. K1162-6583-1

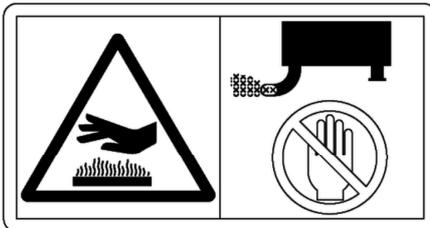


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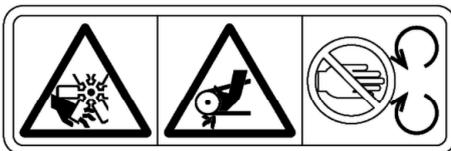
(1) Part No. K1025-6542-1



1TBRB00057A01

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

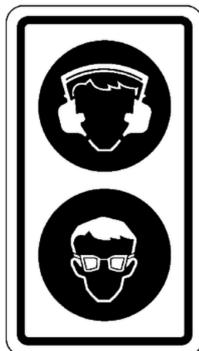
(2) Part No. K1025-6586-1



1TBRB00058A01

- Do not get your hands close to HST fan and fan belt.

(3) Part No. K3014-6569-1

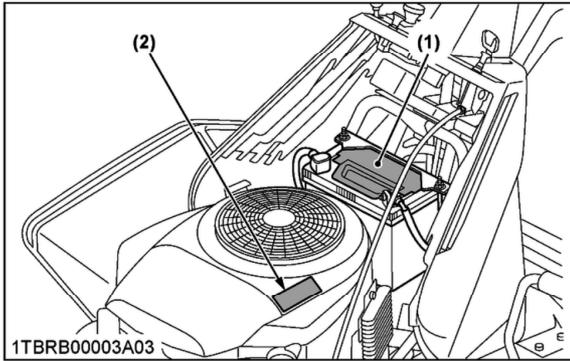


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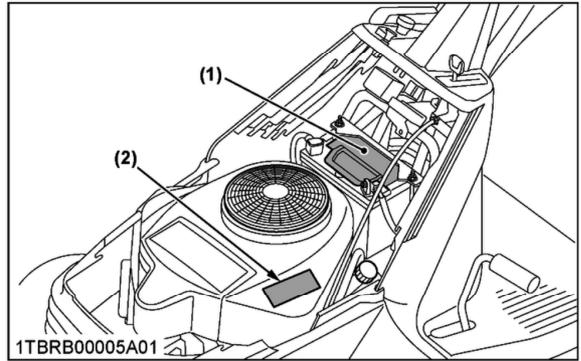
- Use ear protection to avoid damage to hearing.
- Always wear protective glasses.

1. INFORMATION

T2090BR



T2290KW, T2290KWT



(1) Part No. K3011-6118-4

 FLAMMABLES	 SHIELD EYES	 KEEP OUT OF THE REACH OF CHILDREN	<p>DANGER EXPLOSIVE GASES CIGARETTES, FLAMES OR SPARKS COULD CAUSE BATTERY TO EXPLODE. ALWAYS SHIELD EYES AND FACE FROM BATTERY. DO NOT CHARGE OR USE BOOSTER CABLES OR ADJUST POST CONNECTIONS WITHOUT PROPER INSTRUCTION AND TRAINING.</p> <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> California Proposition 65 WARNING : This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.</p>
 CAUTIONS OF SULFURIC ACID	 READ INSTRUCTION MANUAL CAREFULLY	 EXPLOSIVE	

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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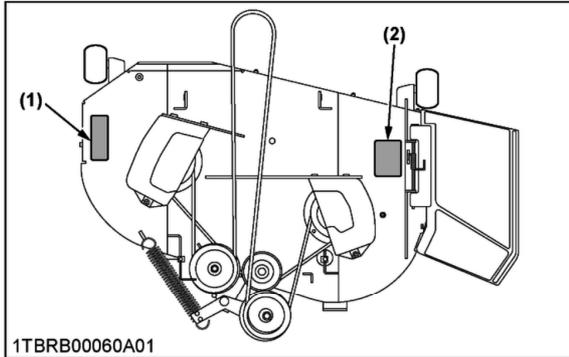
(2) Part No. K1025-6589-1



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RCK42P



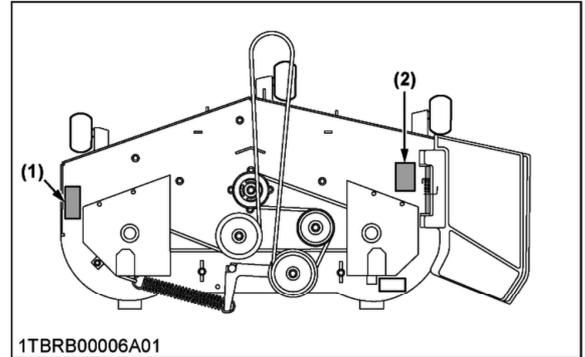
1TBRB00060A01

(1) Part No. K5617-7311-1



1BDABBSAP0030

RCK48P



1TBRB00006A01

(2) Part No. K5617-7312-1



1BDABBSAP0020

1TBRB00056A01enUS

2. Care of danger, warning and caution labels

- Keep danger, warning and caution labels clean and free from obstructing material.
- Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
- Replace damaged or missing danger, warning and caution labels with new labels.
- If a component with danger, warning and caution label(s) affixed is replaced with new part, make sure new label(s) is (are) attached in the same location(s) as the replaced component.
- Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

SPECIFICATIONS

1. Specifications

Model			T2090BR-AU	T2290KW-AU	T2290KWT-AU	
Engine	Model		GH660V		GH739V-3	
	Type		OHV air cooled gasoline engine			
	Number of cylinders		2			
	Total displacement	cm ³ (cu. in.)	656 (40.0)	726 (44.3)		
	Maximum horse power	kW (HP)	14.9 (20) ^{*1*2}	16.0 (21.5) ^{*1*3}		
	Cylinder bore and stroke	mm (in.)	75.4 × 73.4 (2.97 × 2.89)	78 × 76 (3.1 × 3.0)		
	Fuel		Automobile unleaded or regular gasoline			
	Starter		Electric starter with battery			
	Lubrication		Full pressure lubrication			
	Cooling		Forced air cooled			
	Battery type		U1-300 (12V, RC:45min, CCA300, CA:410)			
Spark plug		CHAMPION XC12YC		NGK BPR4ES		
Capacities	Fuel tank	L (U.S. gals.)	13.6 (3.6)			
	Engine crankcase	L (U.S. qts.)	1.9 (2.0)	2.1 (2.2)		
	Hydrostatic transmission case	L (U.S. qts.)	2.0 (2.1)		2.75 (2.9)	
Machine	PTO drive system		Belt			
	Direction of revolution		Clockwise viewed from top			
	Revolution (PTO speed)	rpm	3450			
	PTO clutch		Electric			
	Transmission		Hydrostatic transmission			
	Traveling speeds	Forward	km/h (mph)	0 to 9.2 (0 to 5.7)		0 to 10.8 (0 to 6.7)
		Reverse	km/h (mph)	0 to 5.6 (0 to 3.5)		0 to 6.4 (0 to 3.9)
	Brake		External disk type			
Tires	Front		15 × 6.00 - 8		16 × 6.00 - 8	
	Rear		20 × 10.0 - 10		22 × 10.0 - 10	
Dimensions	Overall length		mm (in.)	1900 (74.8)	1910 (75.2)	
	Overall width (with mower)		mm (in.)	1392 (54.8)	1540 (60.6)	
	Overall height		mm (in.)	1305 (51.4)	1310 (51.6)	
	Wheelbase		mm (in.)	1295 (51.0)		
	Treads	Front	mm (in.)	816 (32.1)		
		Rear	mm (in.)	760 (29.9)	755 (29.7)	
Weight (with mower)		kg (lbs.)	270 (595)	282 (622)	300 (661)	

(Specifications and design subject to change without notice)

*1 Manufacturer's estimate

*2 The gross power rating for individual gas engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure), and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Torque values are derived at 3060 RPM; horsepower values are derived at 3600 RPM. Actual gross engine power will be lower and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given both the wide array of products on which engines are placed and the variety of environmental issues applicable to operating the equipment, the gas engine will not develop the rated gross power when used in a given piece of power equipment (actual "onsite" or net power). This difference is due to a variety of factors including, but not limited to, accessories (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this Series engine.

1. INFORMATION

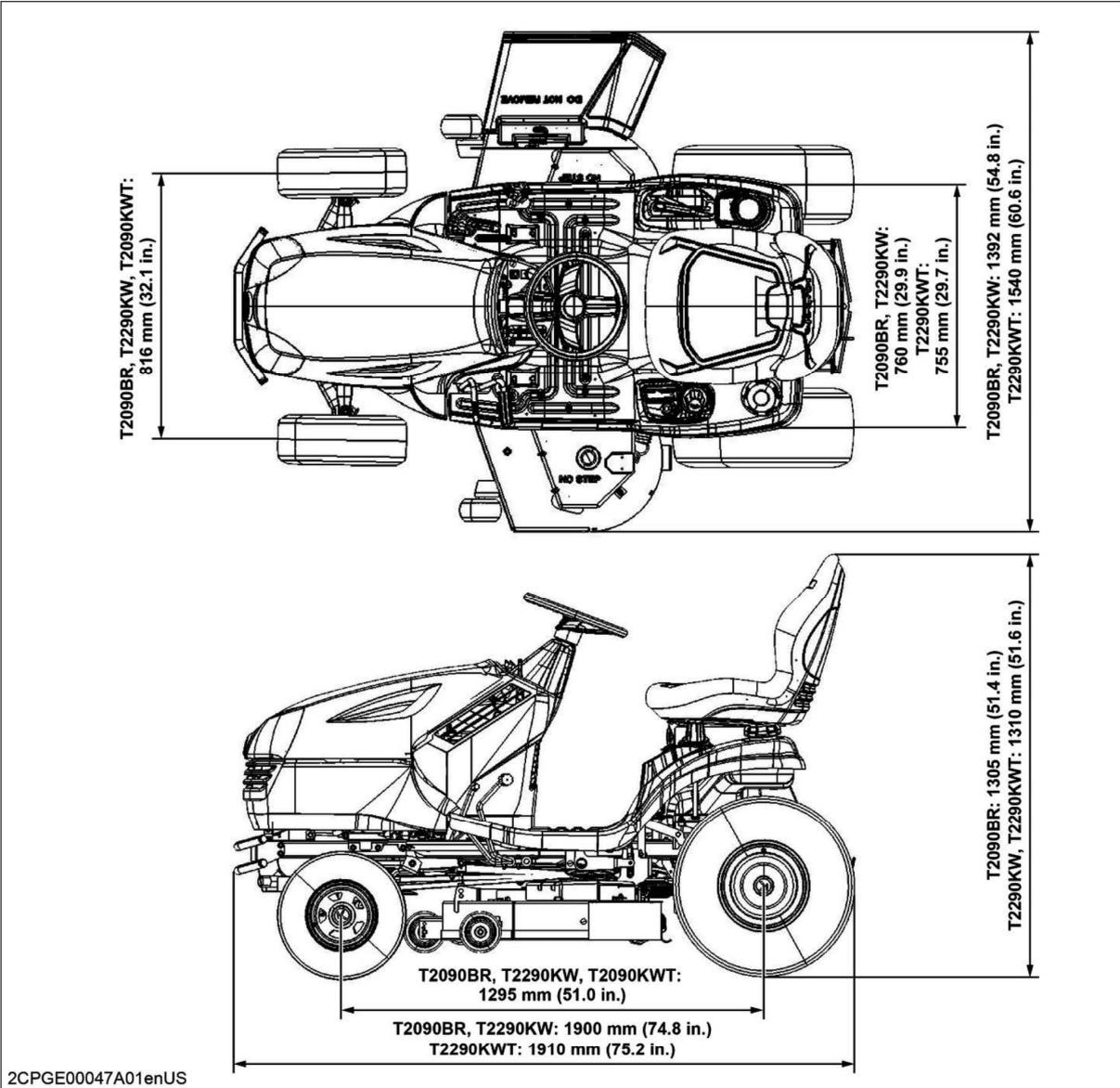
*3 These Kawasaki engines have been tested in accordance with SAE J1995, verified by TÜV Rheinland Group, and certified by SAE International. The gross power ratings of these engines were determined by using measurements according to SAE J1995 which were witnessed by SAE-approved witnesses from TÜV Rheinland 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.

Model			RCK42P-90T	RCK48P-90T	
PRO commercial deck (Fabricated deck)	Suitable machine		T2090BR-AU, T2290KW-AU	T2290KWT-AU	
	Mounting method		Parallel linkage		
	Adjustment of cutting height		Dial gauge		
	Cutting width	mm (in.)	1067 (42)	1219 (48)	
	Cutting height	mm (in.)	25 to 102 (1.0 to 4.0), 1/4" increment		
	Weight (approximation)	kg (lbs.)	50 (110)	60 (132)	
	Blade spindle speed	r/s (rpm)	52.8 (3170) *1	68.5 (4110) *1	
	Blade tip velocity	m/s (fpm)	91.0 (17900) *1		
	Blade length	mm (in.)	548 (21.6)	424 (16.7)	
	Number of blades		2	3	
	Dimensions	Total length	mm (in.)	950 (37.4)	830 (32.7)
		Total width	mm (in.)	1392 (54.8)	1540 (60.6)
Total height		mm (in.)	310 (12.2)		

The company reserves the right to change the specifications without notice.

*1 Engine max rpm

DIMENSIONS



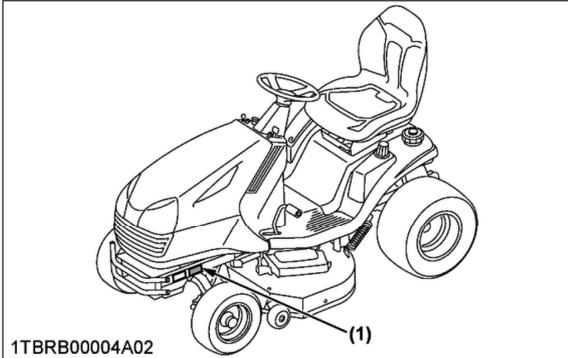
1. INFORMATION

2. GENERAL

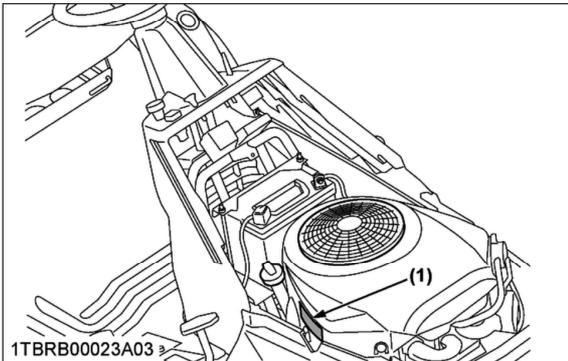
IDENTIFICATION

1. Serial number

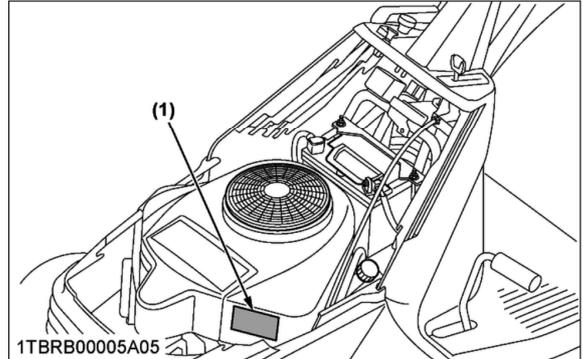
- When contacting your local Kubota distributor, always specify engine serial number, machine serial number, mower serial number, and hour meter reading.



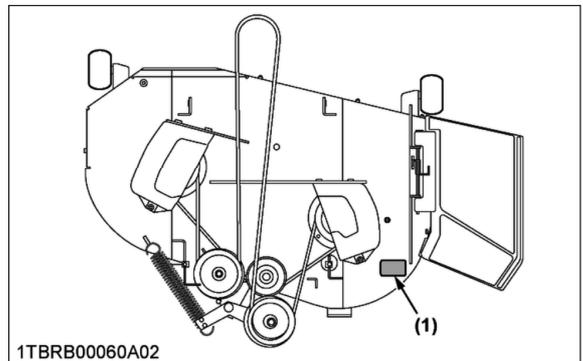
T2090BR-AU



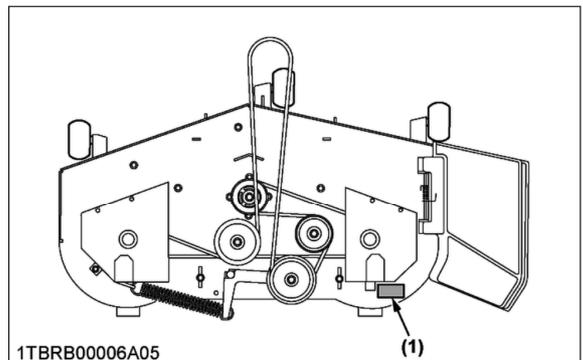
T2290KW-AU, T2290KWT-AU



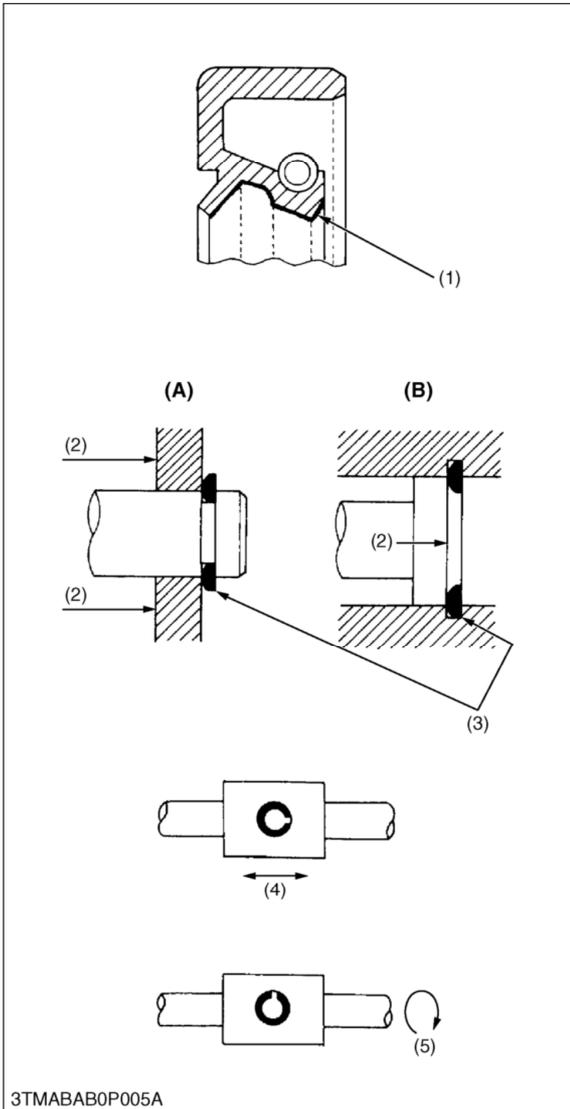
RCK42P



RCK48P



GENERAL PRECAUTIONS



3TMABAB0P005A

- | | |
|-----------------|-----------------------------|
| (1) Grease | (5) Rotating movement |
| (2) Force | (A) External retaining ring |
| (3) Sharp edge | (B) Internal retaining ring |
| (4) Axial force | |

- 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 only 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 retaining rings (A) or internal retaining rings (B), 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 (4), (5) is applied.
- 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.

- 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.

Product: Kubota T2090BR-AU T2290KW-AU T2290KWT-AU Service Manual

2. GENERAL

Full Download: <https://www.arepairmanual.com/downloads/kubota-t2090br-au-t2290kw-au-t2290kwt-au-service-manual/>
