

Product: Kubota F2890 F3690 RCK60P-F39 RCK60R-F36 RCK72P-F39 RCK72R-F36 Service Manual
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WSM

WORKSHOP MANUAL

**F2890, F3690, RCK60P-F39,
RCK60R-F36, RCK72P-F39,
RCK72R-F36**



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KISC issued 05.2018 A

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Full Download: <https://www.arepairmanual.com/downloads/kubota-f2890-f3690-rck60p-f39-rck60r-f36-rck72p-f39-rck72r-f36-service-manual/>

TO THE READER

This Workshop Manual tells the servicing personnel about the mechanism, servicing and maintenance of the F2890 and F3690, KUBOTA Mower RCK60P-F39, RCK60R-F36, RCK72P-F39 and RCK72R-F36. 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.

Refer to the latest version of Workshop Manual (Code No. 9Y021-01870) for the diesel engine / 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.

September, 2013

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KiSC issued 05, 2018 A

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 | 2014.10 | Adding the service code information | 8-M7 |
| 2 | 2016.04 | Revise Maintenance Intervals (Mower Deck) | 9-G6 |
| 3 | 2016.09 | Wrong Correction The value of cylinder length "A" and set angle "C" was corrected. The illustration of set angle "E" was corrected. | 6-S2, 6-S7 |
| 4 | 2018.05 | Added checking mower deck drop rate | 9-S9 |

I INFORMATION

INFORMATION

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1. MACHINE

[1] SAFETY FIRST

⚠ SAFETY FIRST

- This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully.
- It is essential that you read the instructions and safety regulations before you try to repair or use this unit.

⚠ DANGER

- Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

- Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

- Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

■ IMPORTANT

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

■ NOTE

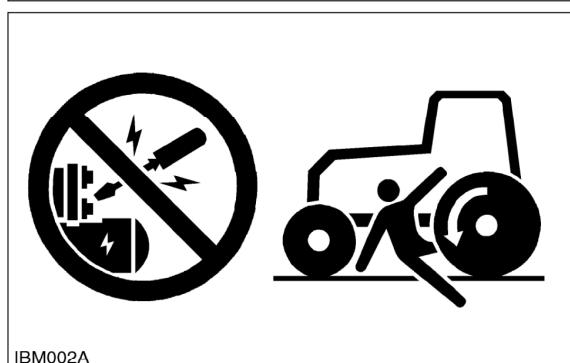
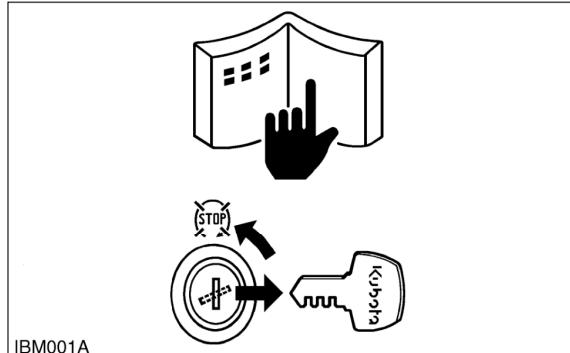
- Gives helpful information.

WSM000001INI0001US1

BEFORE YOU START SERVICE

- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a stable and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, then remove the key.
- Disconnect the battery negative cable.
- Hang a "DO NOT OPERATE" tag in the operator station.

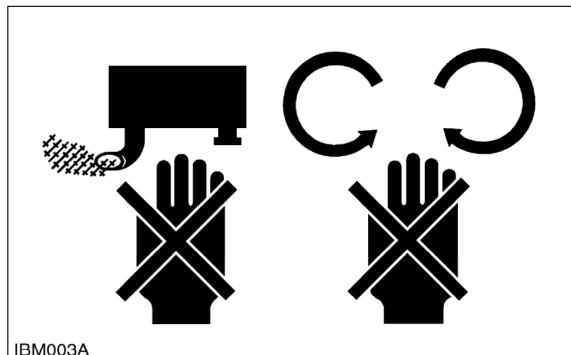
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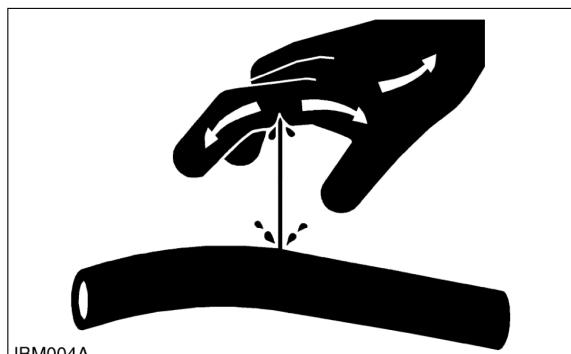
START SAFELY

- 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.

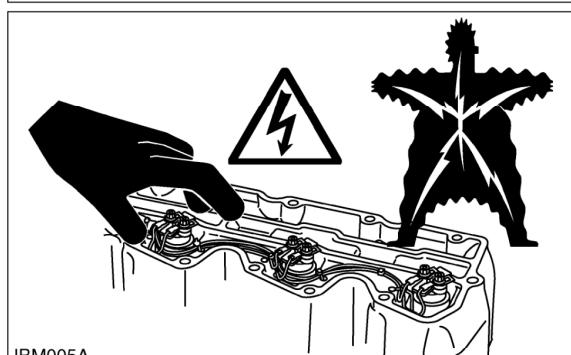
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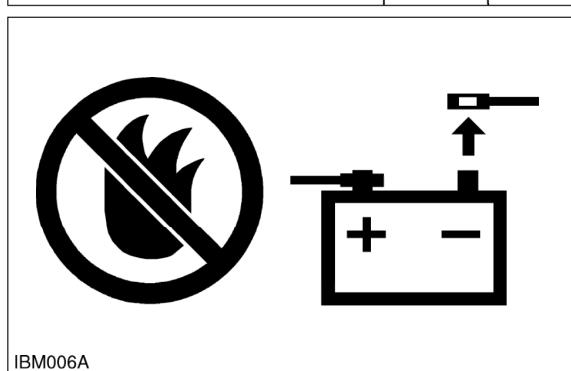
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IBM004A



IBM005A



IBM006A

OPERATE SAFELY

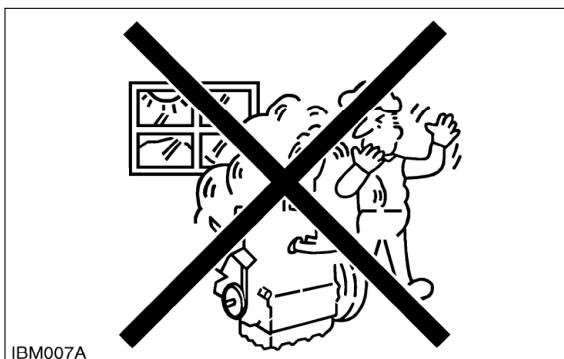
- Do not use the machine after you consume alcohol or medication or when you are tired.
- Put on applicable clothing and safety equipment.
- Use applicable tools only. Do not use alternative tools or parts.
- When 2 or more persons do servicing, make sure that you do it safely.
- Do not operate below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

WSM000001INI0012US0

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.

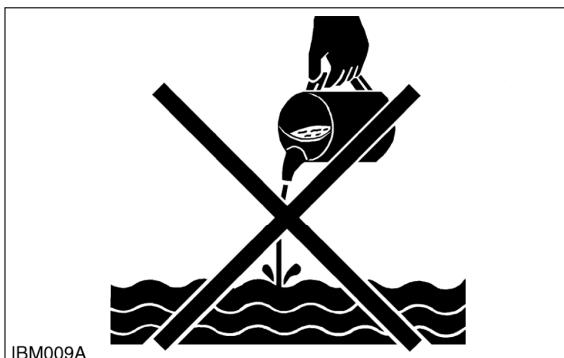
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KEEP A GOOD AIRFLOW IN THE WORK AREA

- 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.

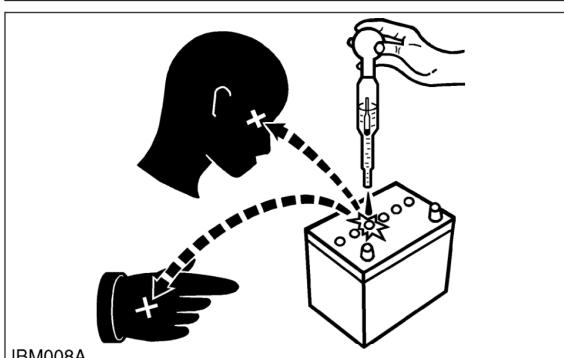
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DISCARD FLUIDS CORRECTLY

- 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.

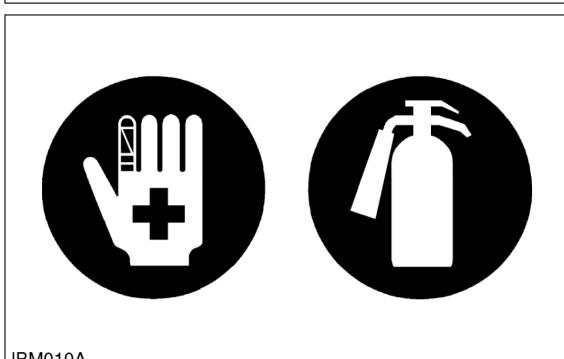
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PREVENT ACID BURNS

- 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.

WSM000001INI0008US0



PREPARE FOR EMERGENCIES

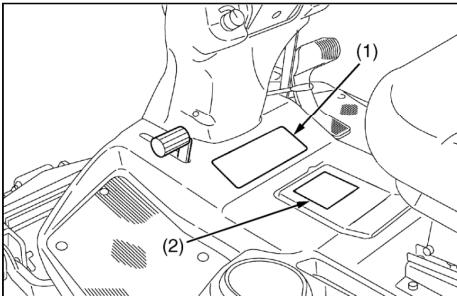
- Keep a first aid kit and fire extinguisher ready at all times.
- Keep the emergency contact telephone numbers near your telephone at all times.

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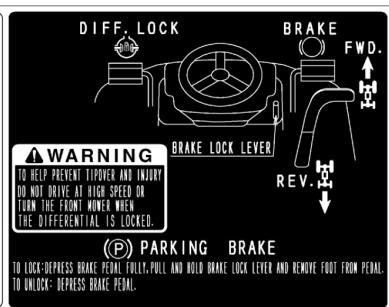
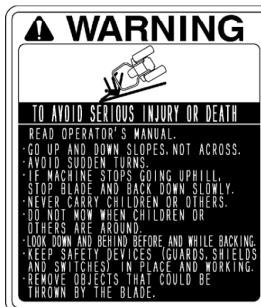
[2] SAFETY DECALS

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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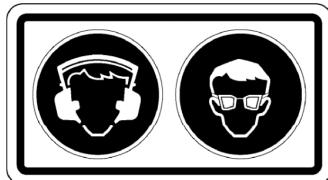


(1) Part No. K3601-4717-1



1BDAIAYAP071A

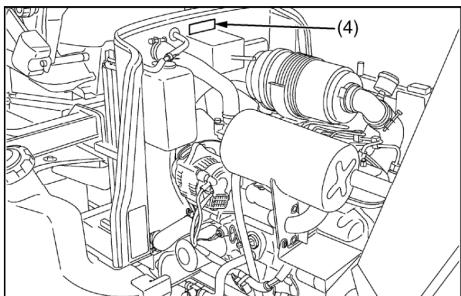
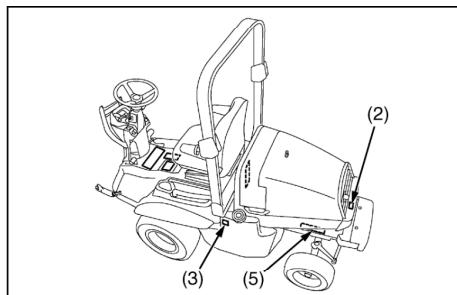
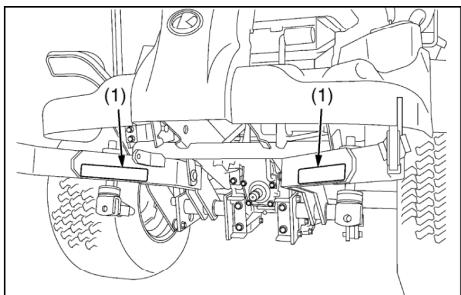
(2) Part No. K3603-4718-1



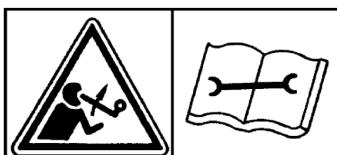
1BDABDMAP011A

9Y1210917ICI001US

9Y1210917INI0001US0



(1) Part No. K3512-4721-1
This arm can spring up upward.
See operator's manual when
disassembling.



1BDAIAEAP013B

(2) Part No. K3615-4728-1
HOT SURFACE
DO NOT TOUCH



1BDABANAP080B

(3) Part No. K3611-4744-1
Diesel fuel No fire
only



1BDAHADAP030A

(4) Part No. K2581-6543-1
Stay clear of engine
fan and fan belt.



1AGAJAXAP052E

(5) Part No. TA040-4965-2



1AGAMAAAP3810

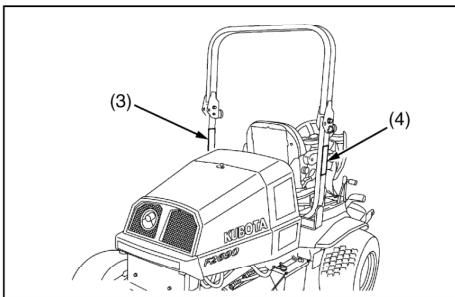
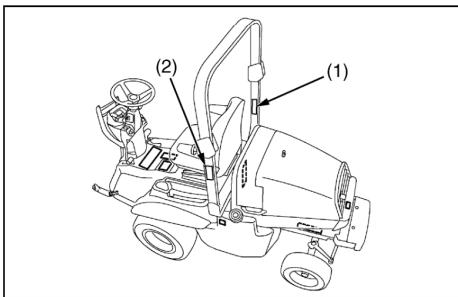
DANGER

TO AVOID POSSIBLE INJURY OR DEATH FROM A MACHINE RUNAWAY.

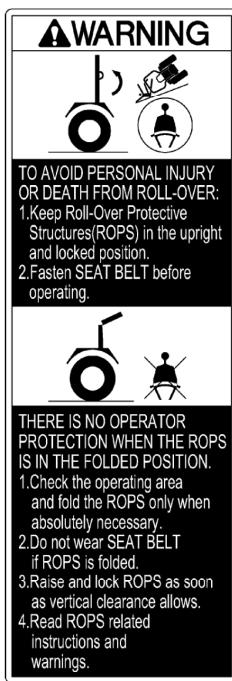
1. Do not start engine by shorting across starter terminals or bypassing the safety start switch. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission and PTO OFF. Never start engine while standing on the ground.

9Y1210917ICI002US

9Y1210917INI0002US0



(1) Part No. K3611-8143-1



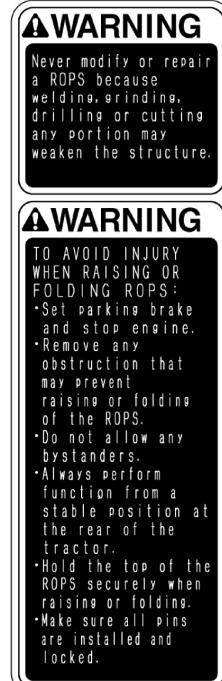
1BDAIAAAP053A

(2) Part No. K3611-8149-1



1BDAIAAAP052A

(3) Part No. K3615-8149-1



1BDAIAYAP079A

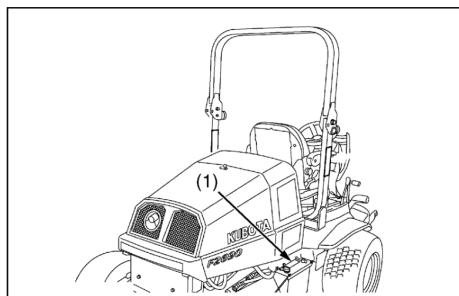
(4) Part No. K3615-8148-1



1BDAIAYAP080A

9Y1210917IC1003US

9Y1210917INI0003USO



(1) Part No. TD060-3012-3



- DUE TO HYDROGEN GAS GENERATED FROM BATTERY, HANDLING WITHOUT CARE CAN CAUSE FIRE AND EXPLOSION
- ⚠ THIS 12V BATTERY IS ONLY FOR STARTING ENGINE. DO NOT APPLY THIS PRODUCT FOR OTHER USES.
- ⚠ CHARGE THIS BATTERY ONLY AT WELL VENTILATED PLACES. AND AVOID SHORTS OR SPARKS.
- ⚠ REFER TO THE INSTRUCTION MANUAL OF VEHICLE OR BATTERY BEFORE USING BOOSTER CABLE.
- ⚠ SULFURIC ACID MAY CAUSE BLINDNESS OR SEVERE BURN. IN CASE EYES, SKIN, CLOTHES OR ANY ARTICLES ARE STAINED WITH ACID, FLUSH OBJECTS IMMEDIATELY WITH WATER. IF ACID BEING SWALLOWED, DRINK PLENTY OF WATER PROMPTLY. IN CASE OF ACCIDENTAL CONTACT, CONSULT A DOCTOR IMMEDIATELY.
- ⚠ BATTERY FILLED WITH ACID (DO NOT TILT OR SPILL) - FLAMMABLE: DO NOT CHARGE NEAR FIRE OR SPARKS
- ⚠ DO NOT CHARGE RAPIDLY. - DO NOT DISASSEMBLE THE BATTERY (SEALED TYPE)

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.

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

S.O.C INDICATOR OK CHARGE BATTERY REPLACE BATTERY

PROPOSITION 65 WARNING

BATTERY POSTS, TERMINALS, AND RELATED ACCESSORIES CONTAIN LEAD AND LEAD COMPOUNDS. CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND REPRODUCTIVE HARM. WASH HANDS AFTER HANDLING.

FITTING DATE 0 1 2 3 4 5 6 7 8 9 YEAR
 1 2 3 4 5 6 7 8 9 10 11 12 MONTH

80D26R
12V

582CCA (SAE)
70Ah(20HR)

550CCA (EN)
RC 133(MIN)



1AGASABAP108B



- 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.

1BDAIAEAP0200

9Y1210917IC1004US

9Y1210917IN10004US0

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 replace 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.

9Y1210917INI0005US0

[3] SPECIFICATIONS

| Model | | F2890 | F3690 |
|----------------------|-----------------------------------|--|---|
| Engine | Model | D1105 | V1505 |
| | Engine gross power (SAE) *1 | 20.6 kW (28 HP) | 26.5 kW (36 HP) |
| | Type | Indirect Injection, vertical, water-cooled, 4-cycle diesel | |
| | Number of cylinders | 3 | 4 |
| | Bore and stroke | 78.0 x 78.4 mm (3.07 x 3.09 in.) | |
| | Total displacement | 1123 cm ³ (68.58 cu.in.) | 1498 cm ³ (91.42 cu.in.) |
| | Rated revolution | 3000 min ⁻¹ (rpm) | |
| | Low idling revolution | 1300 to 1400 min ⁻¹ (rpm) | |
| | Starting system | Electric starter with battery, glow plug, 12 V, 1.4 kW | |
| | Lubricating system | Forced lubrication by gear pump | |
| Capacities | Cooling system | Pressurized radiator, forced circulation with water pump | |
| | Battery | 12 V, RC: 133 min, CCA: 582 A | |
| | Fuel | Diesel fuel No. 1-D [below -10 °C (14 °F)] Diesel fuel No. 2-D [above -10 °C (14 °F)] | |
| | Fuel tank | 61.0 L (16.1 U.S.gals, 13.4 Imp.gals) | |
| | Engine crankcase (with filter) *2 | 3.5 L (3.7 U.S.qts, 3.1 Imp.qts) | 5.0 L (5.3 U.S.qts, 4.4 Imp.qts) |
| Tire | Engine coolant | 4.6 L (4.9 U.S.qts, 4.0 Imp.qts) | |
| | Recovery tank | 0.6 L (0.6 U.S.qts, 0.5 Imp.qts) | |
| Travelling speeds *3 | Transmission case | 14.0 L (14.8 U.S.qts, 1.3 Imp.qts) | |
| | Rear axle differential case | 1.5 L (1.6 U.S.qts, 1.3 Imp.qts) | |
| | Rear axle gear case | 0.5 L (0.5 U.S.qts, 0.4 Imp.qts) | |
| | Front | 24 x 12-12 (4PR) Turf | |
| | Rear | 18 x 9.5-8 (4PR) Turf | |
| Dimensions | Forward | Low | 0 to 5.6 mph (0 to 9.0 km/h) |
| | | High | 0 to 12.5 mph (0 to 20 km/h) |
| | Reverse | Low | 0 to 3.0 mph (0 to 4.8 km/h) |
| | | High | 0 to 6.9 mph (0 to 11 km/h) |
| | Overall length | | 2450 mm (96.5 in.) |
| | Overall width | | 1370 mm (53.9 in.) |
| | Overall height | without ROPS | 1350 mm (53.1 in.) |
| | | with ROPS | 1985 mm (78.2 in.) |
| PTO | Wheel base | | 1300 mm (51.2 in.) |
| | Min. ground clearance | | 185 mm (7.3 in.) |
| | Tread | Front | 975 mm (38.4 in.) |
| | | Rear | 875 mm (34.4 in.) |
| | Weight (without mower deck) | | 770 kg (1698 lbs) |
| Traveling system | 788 kg (1740 lbs) | | |
| | Revolution | | 1 speed (2545 rpm at 3000 engine rpm) |
| | Drive system | | Shaft drive. KUBOTA 10-tooth involute spline (2545 rpm) |
| | Clutch type | | Wet multi plates |
| | PTO brake | | Wet single plate |
| | Steering | | Hydrostatic power steering |
| | Transmission | | Main-hydrostatic transmission, High-Low gear shift (2 forward, 2 reverse) |
| | Brake | | Wet disk type |
| | Minimum turning radius | | Less than 750 mm (29.5 in.) (inside of front tire) |
| | Differential | Front | Bevel gear |
| | | Rear | Bevel gear |
| | 4WD system | | Dual-acting overrunning 4WD |

■ NOTE

- Specifications and design subject to change without notice

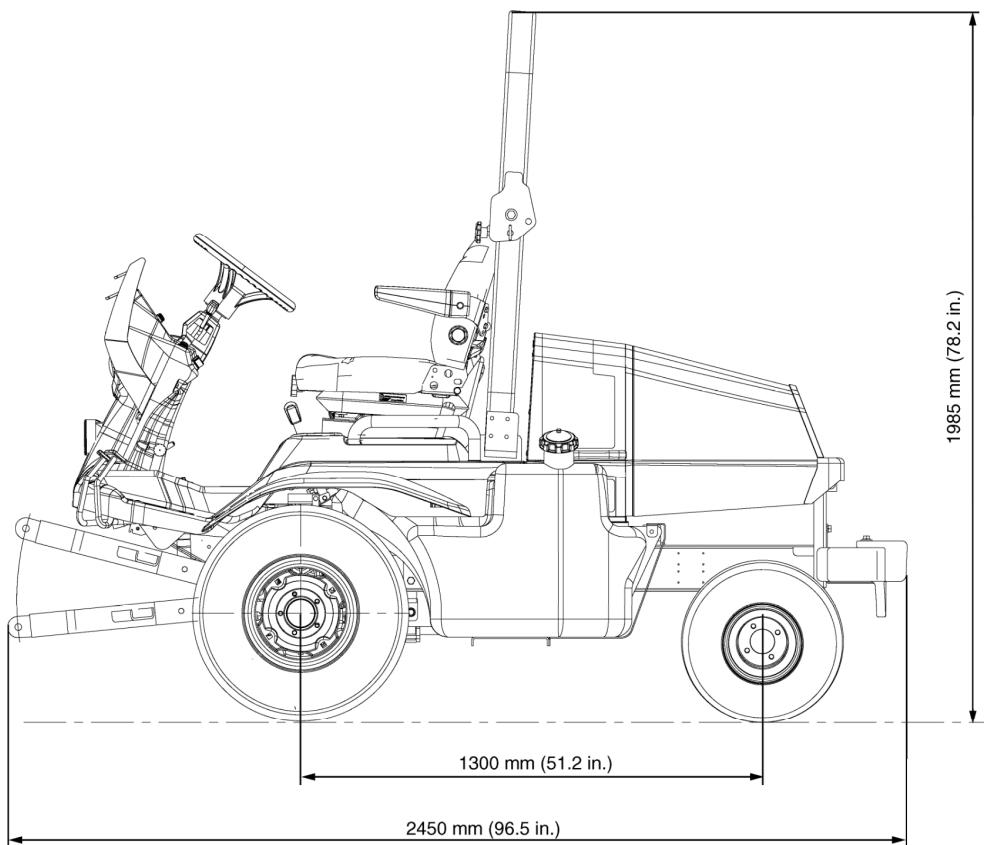
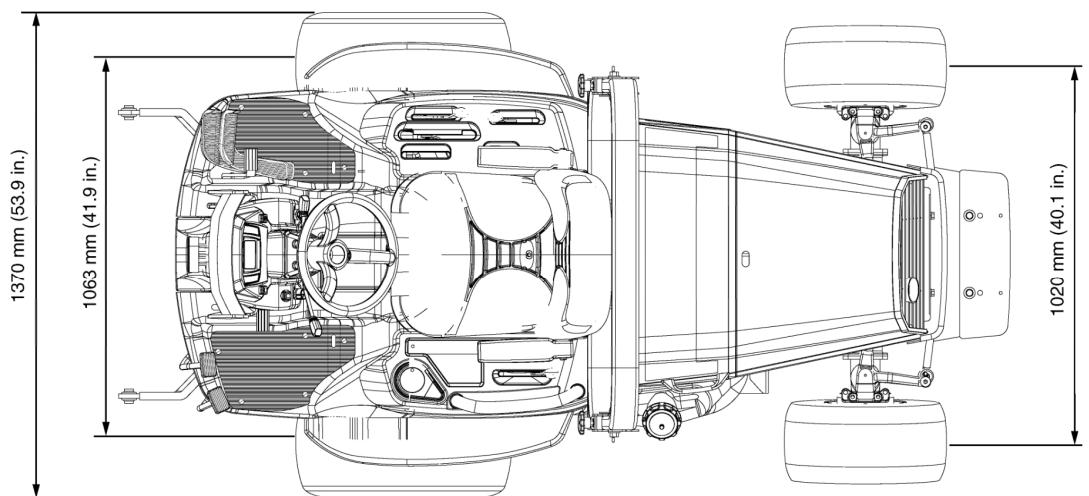
*1: Manufacturer's estimate.

*2: At the center of the oil level gauge.

*3: At 3000 engine min⁻¹ (rpm)

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[4] DIMENSIONS



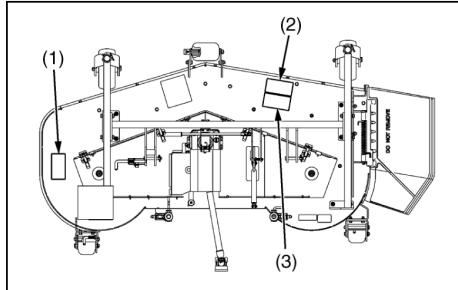
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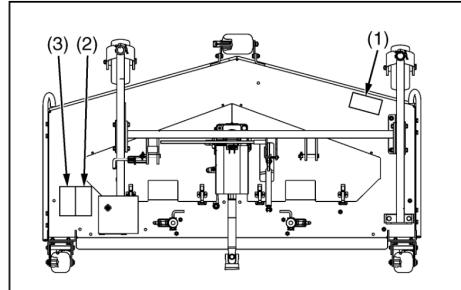
2. MOWER

[1] SAFETY DECALS

[RCK72P-F39]



[RCK72R-F36]



(1) Part No. K5681-7312-1



1BDACAEAP015A

(2) Part No. K5681-7311-1



1BDACAEAP016A

(3) Part No. K5681-7310-1

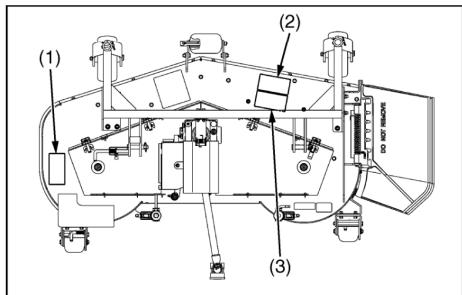


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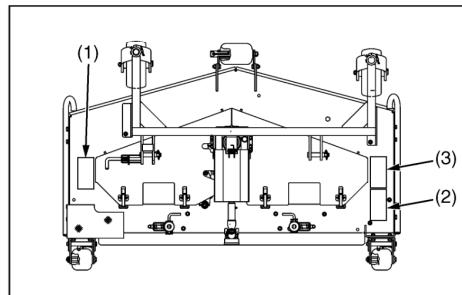
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9Y1210917INI0008US0

[RCK60P-F39]



[RCK60R-F36]



(1) Part No. K5681-7312-1



1BDACAEAP015A

(2) Part No. K5681-7311-1



1BDACAEAP016A

(3) Part No. K5681-7310-1



1BDACAEAP017A

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9Y1210917INI0009USO

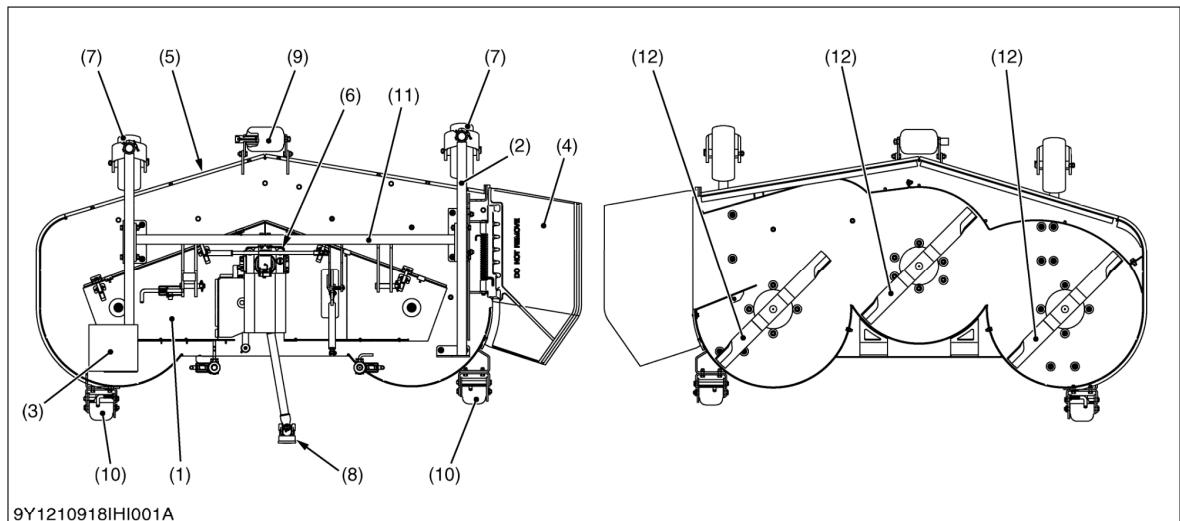
CARE OF DANGER, WARNING AND CAUTION LABELS

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 replace 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.

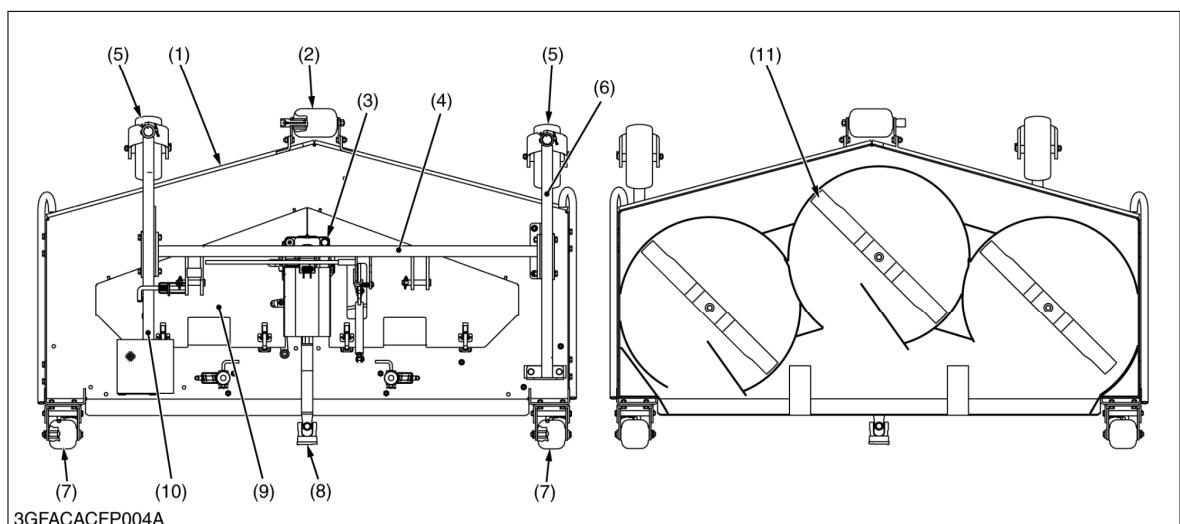
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[2] TERMINOLOGY

RCK72P-F39

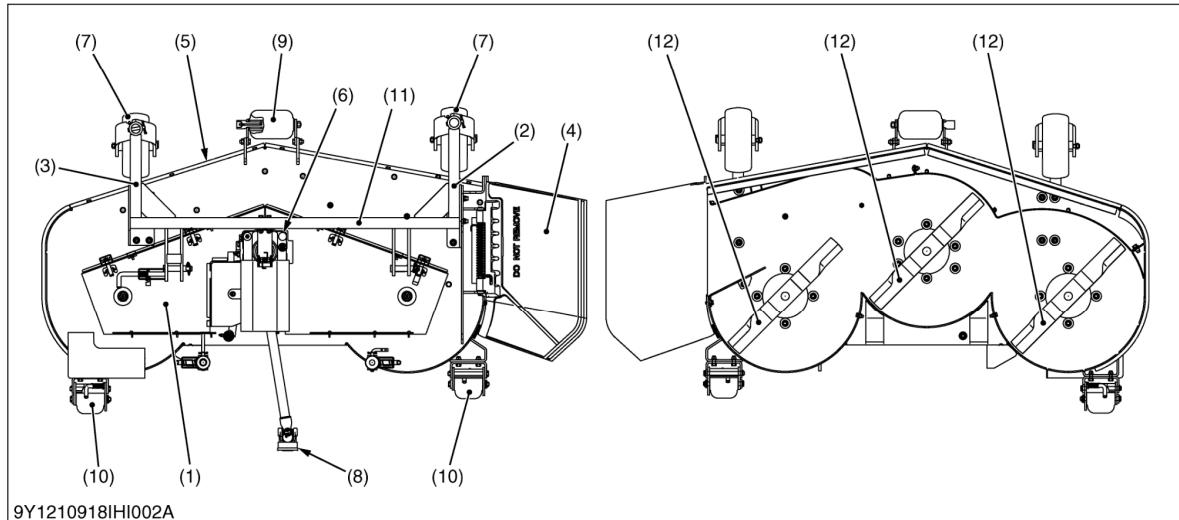


RCK72R-F36



9Y1210917INI0011US0

RCK60P-F39



(1) Shield

- (1) Shield
- (2) Gauge Wheel Arm Right
- (3) Gauge Wheel Arm Left

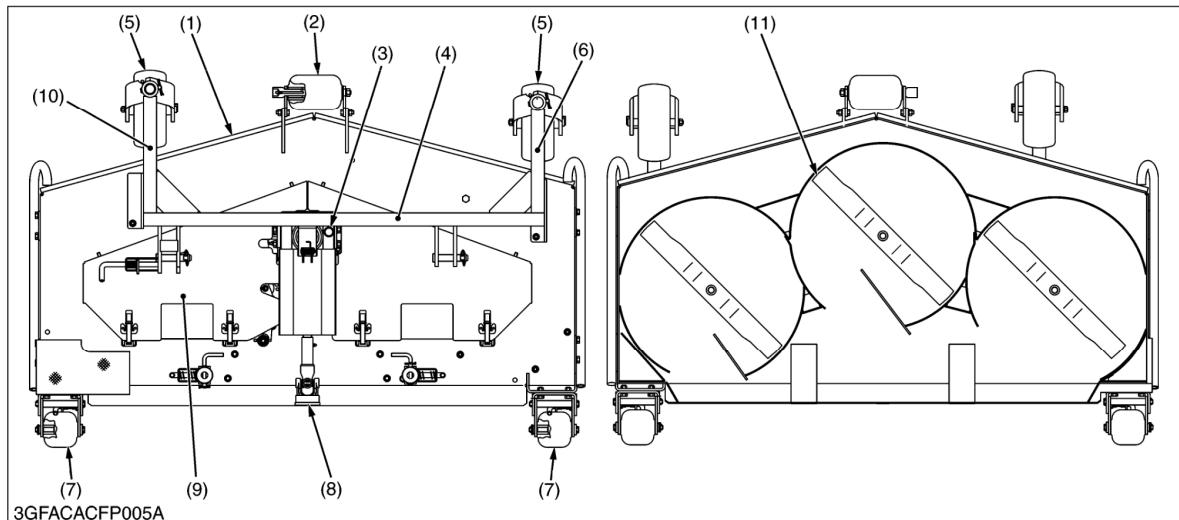
- (4) Discharge Deflector
- (5) Deck
- (6) Gear Box

- (7) Front Gauge Wheel
- (8) Universal Joint
- (9) Front Roller

- (10) Anti-scalp Roller
- (11) Center Frame
- (12) Blade

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RCK60R-F36



- (1) Mower Deck
- (2) Front Roller
- (3) Gear Box

- (4) Center Frame
- (5) Front Gauge Wheel
- (6) Gauge Wheel Arm RH

- (7) Anti-Scalp Roller
- (8) Universal Joint
- (9) Shield

- (10) Gauge Wheel Arm LH
- (11) Blade

9Y1210917TNT0013TTS0

[3] SPECIFICATIONS

| Model | RCK72P-F39 | RCK72R-F36 | RCK60P-F39 | RCK60R-F36 |
|------------------------------|------------------------------|-------------------------------|------------------------------|------------------------------|
| Suitable front mower | | F2890, F3690 | | |
| Mounting method | | 2 point linkage | | |
| Adjustment of cutting height | | Gauge wheel | | |
| Cutting width | 1829 mm (72.0 in.) | 1826 mm (71.9 in.) | 1524 mm (60 in.) | |
| Cutting height | | 25 to 129 mm (1.0 to 5.0 in.) | | |
| Discharge direction | Side | Rear | Side | Rear |
| Weight (Approx.) | 225 kg (496 lbs) | 210 kg (463 lbs) | 186 kg (410 lbs) | 170 kg (375 lbs) |
| Blade spindle speed | 2735 min ⁻¹ (rpm) | 2695 min ⁻¹ (rpm) | 3272 min ⁻¹ (rpm) | 3020 min ⁻¹ (rpm) |
| Blade tip velocity | 89.5 m/s (17620 fpm) | 88 m/s (17350 fpm) | 89.6 m/s (17640 fpm) | 82.7 m/s (16300 fpm) |
| Blade length | 625 mm (24.6 in.) | | 523 mm (20.6 in.) | |
| Number of blades | | | 3 | |
| Dimensions | Total length | 1216 mm (47.9 in.) | 1160 mm (45.7 in.) | 1078 mm (42.4 in.) |
| | Total width | 2222 mm (87.5 in.) | 1910 mm (75.2 in.) | 1907 mm (75.1 in.) |
| | Total height | 461 mm (18.1 in.) | 450 mm (17.7 in.) | 461 mm (18.1 in.) |
| | | | | 450 mm (17.7 in.) |

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G GENERAL

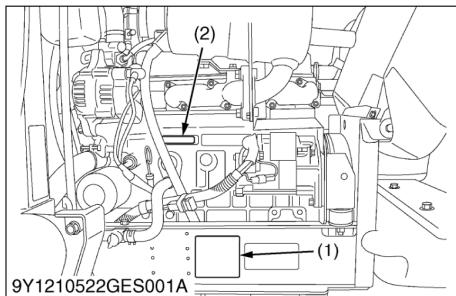
GENERAL

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1. IDENTIFICATION

[1] ENGINE AND MODEL SERIAL NUMBERS



When contacting your local KUBOTA distributor, always specify engine model name, engine serial number and machine serial number.

■ Engine Serial Number

The engine serial number is an identified number for the engine. It is marked after the engine model number.

It indicates month and year of manufacture as follows.

Engine Series

| Number or Alphabet | Series | Number or Alphabet | Series |
|--------------------|---------------------|--------------------|---------------------|
| 1 | 05 (include: WG) | 6 | GZ, OC, AC, EA, E |
| 2 | V3 | 7 | 03 |
| 3 | 08 | 8 | 07 |
| 4 | SM (include: WG) | A | EA, RK |
| 5 | Air Cooled Gasoline | B | 03 (KET Production) |

• Year of manufacture

| Alphabet or Number | Year | Alphabet or Number | Year |
|--------------------|------|--------------------|------|
| 1 | 2001 | F | 2015 |
| 2 | 2002 | G | 2016 |
| 3 | 2003 | H | 2017 |
| 4 | 2004 | J | 2018 |
| 5 | 2005 | K | 2019 |
| 6 | 2006 | L | 2020 |
| 7 | 2007 | M | 2021 |
| 8 | 2008 | N | 2022 |
| 9 | 2009 | P | 2023 |
| A | 2010 | R | 2024 |
| B | 2011 | S | 2025 |
| C | 2012 | T | 2026 |
| D | 2013 | V | 2027 |
| E | 2014 | | |

(1) Machine Serial Number

(2) Engine Serial Number

(To be continued)

(Continued)

Production Month and Lot Number

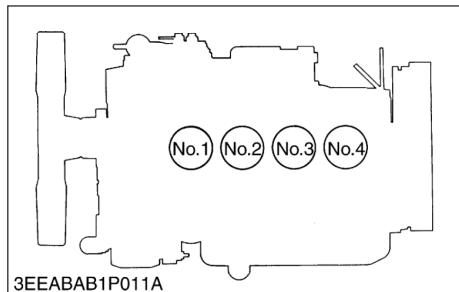
| Month | Engine Lot Number | |
|-----------|-------------------|---------|
| January | A0001 ~ A9999 | B0001 ~ |
| February | C0001 ~ C9999 | D0001 ~ |
| March | E0001 ~ E9999 | F0001 ~ |
| April | G0001 ~ G9999 | H0001 ~ |
| May | J0001 ~ J9999 | K0001 ~ |
| June | L0001 ~ L9999 | M0001 ~ |
| July | N0001 ~ N9999 | P0001 ~ |
| August | Q0001 ~ Q9999 | R0001 ~ |
| September | S0001 ~ S9999 | T0001 ~ |
| October | U0001 ~ U9999 | V0001 ~ |
| November | W0001 ~ W9999 | X0001 ~ |
| December | Y0001 ~ Y9999 | Z0001 ~ |

* Alphabetical letters "I" and "O" are not used.

(a) (b)(c)(d) (e)
e.g. V1505-T - 1 C L A001

- (a) Engine Model Name: **V1505-T**
- (b) Engine Series: 1 indicates 05 Series
- (c) Year: C indicates 2012
- (d) Month: L or M indicates June
- (e) Lot Number: (**0001 ~ 9999** or **A001 ~ Z999**)

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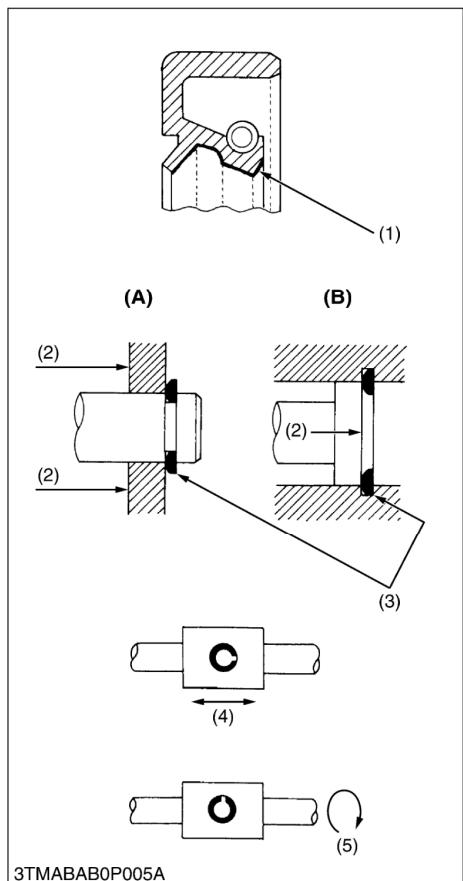
[2] CYLINDER NUMBER

You can see the cylinder numbers of KUBOTA diesel engine in the figure.

The sequence of cylinder numbers is No.1, No.2, No.3 and No.4 and it starts from the gear case side.

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2. GENERAL PRECAUTIONS



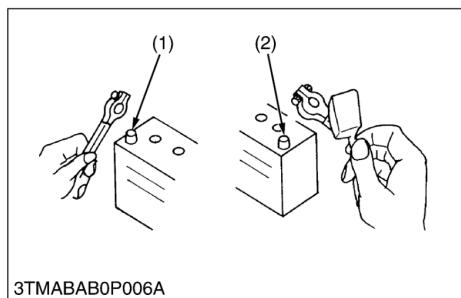
- When you disassemble, carefully put the parts in a clean area to make it easy to find the parts. You must install the screws, bolts and nuts in their initial position to prevent the reassembly errors.
- When it is necessary to use special tools, use KUBOTA special tools. Refer to the drawings when you make special tools that you do not use frequently.
- Before you disassemble or repair machine, make sure that you always disconnect the ground cable from the battery first.
- Remove oil and dirt from parts before you measure.
- Use KUBOTA genuine parts for replacement to keep the machine performance and to make sure of safety.
- You must replace the gaskets and O-rings when you assemble again. Apply grease (1) to new O-rings or oil seals before you assemble.
- When you assemble the external or internal circlips, make sure that the sharp edge (3) faces against the direction from which force (2) is applied.
- When inserting spring pins, their splits must face the direction from which a force is applied. See the figure on the left side.
- To prevent damage to the hydraulic system, use only specified fluid or equivalent.
- Clean the parts before you measure them.
- Tighten the fittings to the specified torque. Too much torque can cause damage to the hydraulic units or the fittings. Not sufficient torque can cause oil leakage.
- When you use a new hose or pipe, tighten the nuts to the specified torque. Then loosen (approx. by 45°) and let them be stable before you tighten to the specified torque (This is not applied to the parts with seal tape).
- When you remove the two ends of a pipe, remove the lower end first.
- Use two pliers in removal and installation. One to hold the stable side, and the other to turn the side you remove to prevent twists.
- Make sure that the sleeves of flared connectors and tapers of hoses are free of dust and scratches.
- After you tighten the fittings, clean the joint and apply the maximum operation pressure 2 to 3 times to check oil leakage.

(1) Grease
 (2) Force
 (3) Sharp Edge
 (4) Axial Force
 (5) Rotating Movement

(A) External Circlip
 (B) Internal Circlip

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3. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING



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

■ **IMPORTANT**

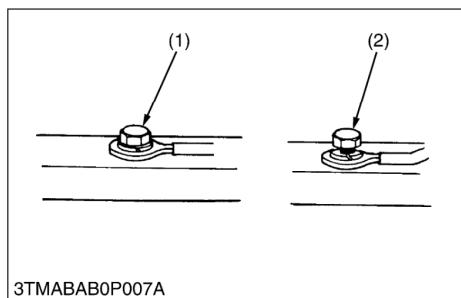
- Check electrical wiring for damage and loosened connection every year.
- When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.

(1) Negative Terminal

(2) Positive Terminal

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[1] WIRING

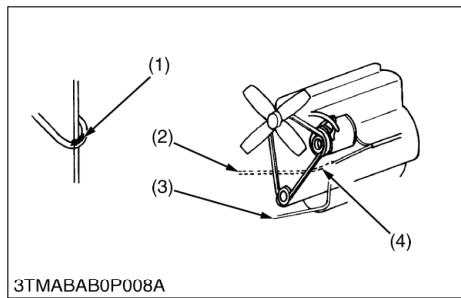


- Securely tighten wiring terminals.

(1) Correct
(Securely Tighten)

(2) Incorrect
(Loosening Leads to damaged Contact)

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- Do not let wiring contact dangerous part.

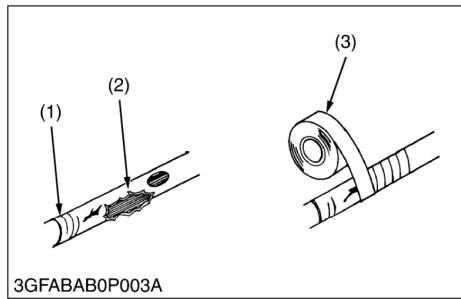
(1) Dangerous Part (Sharp Edge)

(3) Wiring (Correct)

(2) Wiring (Incorrect)

(4) Dangerous Part

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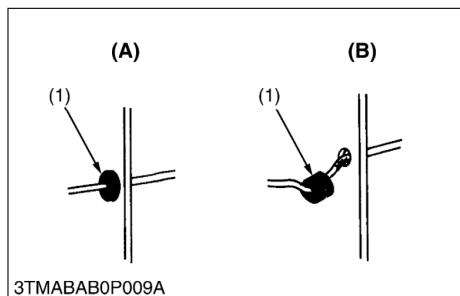
- Repair or change torn or aged wiring immediately.

(1) Aged

(3) Electrical Tape

(2) Torn

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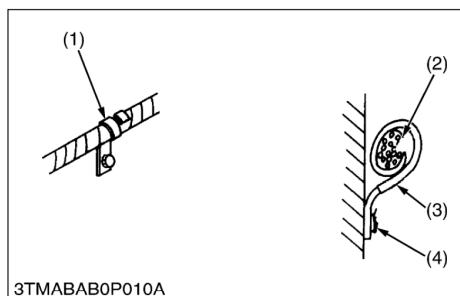


- Securely insert grommet.

(1) Grommet

(A) **Correct**
 (B) **Incorrect**

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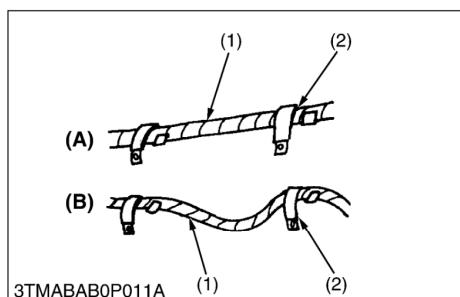


- Securely clamp, being careful not to damage wiring.

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

(3) Clamp
 (4) Welding Dent

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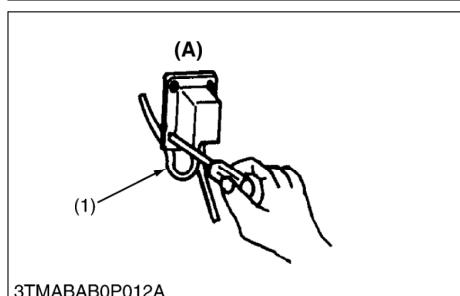


- Clamp wiring so that there is no twist, unnecessary sag, or excessive tension, except for movable part, where sag be required.

(1) Wiring
 (2) Clamp

(A) **Correct**
 (B) **Incorrect**

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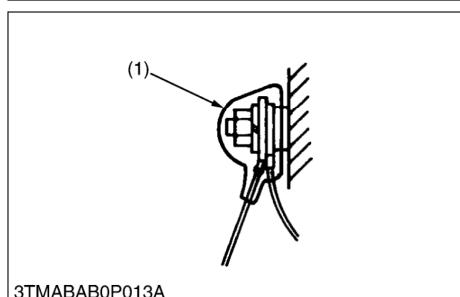


- In installing a part, be careful not to get wiring caught by it.

(1) Wiring

(A) **Incorrect**

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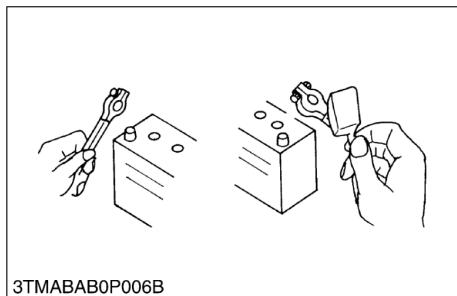


- After installing wiring, check protection of terminals and clamped condition of wiring.

(1) Cover
 (Securely Install Cover)

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[2] BATTERY



- 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.

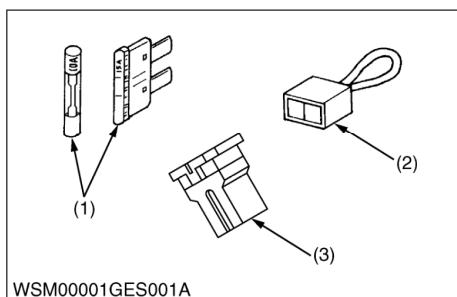
DANGER

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



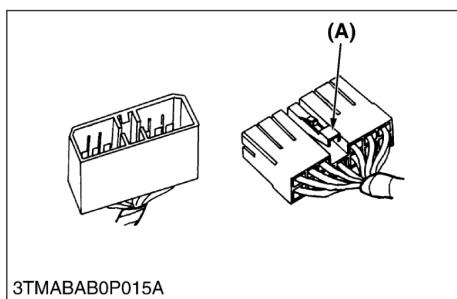
- Use fuses with specified capacity. Neither too large nor small capacity fuse is acceptable.
- Never use steel nor copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of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

(1) Fuse
(2) Fusible Link

(3) Slow Blow Fuse

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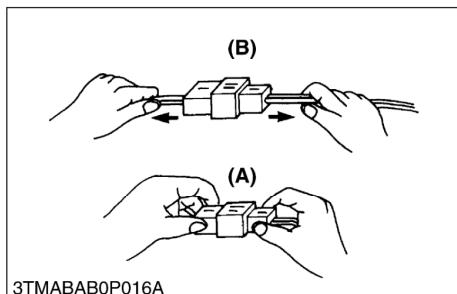
[4] CONNECTOR



- For connector with lock, push lock to separate.

(A) Push

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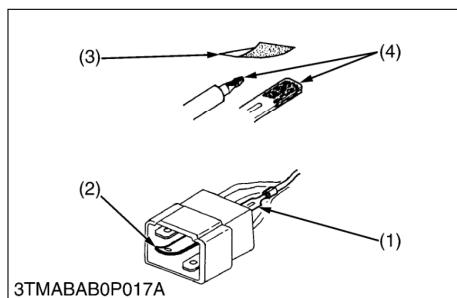


- In separating connectors, do not pull wire harnesses.
- Hold connector bodies to separate.

(A) Correct

(B) Incorrect

WSM000001GEG0074US0

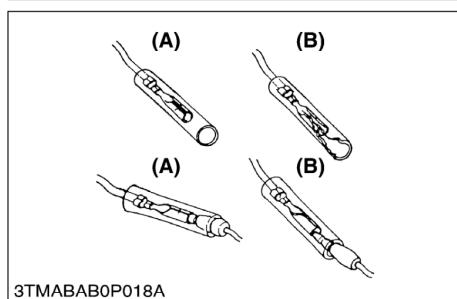


- Use sandpaper to remove rust from terminals.
- Repair deformed terminal. Make sure that there is no terminal being exposed or displaced.

(1) Exposed Terminal
(2) Deformed Terminal

(3) Sandpaper
(4) Rust

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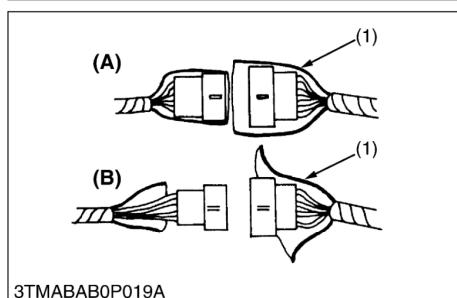


- Make sure that there is no female connector being too open.

(A) Correct

(B) Incorrect

WSM000001GEG0076US0



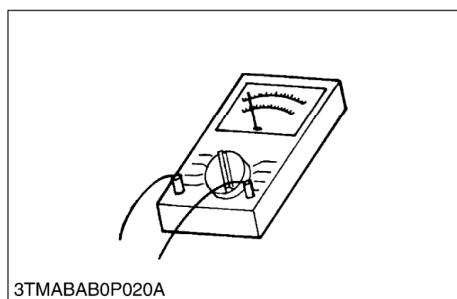
- Make sure that plastic cover is large enough to cover whole connector.

(1) Cover

(A) Correct
(B) Incorrect

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[5] HANDLING OF CIRCUIT TESTER

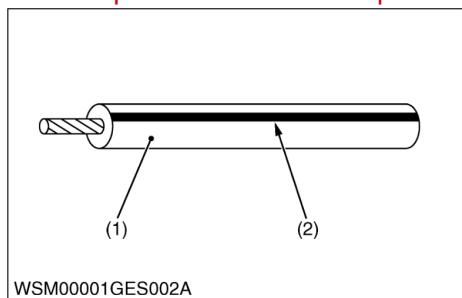


- Use tester correctly following manual provided with tester.
- Check for polarity and range.

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[6] COLOR OF WIRING

Full Download: <https://www.arepairmanual.com/downloads/kubota-f2890-f3690-rck60p-f39-rck60r-f36-rck72p-f39-rck72r-f36-service-manual/>



- 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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