

WSM

WORKSHOP MANUAL

GZD15

Kubota

TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of GZD15. It is divided into two parts, "Mechanism" and "Servicing" for each section.

■ Mechanism

Information on the features and new mechanisms are described. This information should be understood before proceeding with troubleshooting, disassembling and servicing.

■ Servicing

The heading "General" includes general precautions, check and maintenance and special tools. Other section, there are troubleshooting, checking and adjusting, disassembling and assembling, and servicing which cover procedures, precautions, factory specifications and allowable limits.

All information illustrations and specifications contained in this manual are based on the latest product information available at the time of publication.

The right is reserved to make changes in all information at any time without notice.

December 2003

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⚠ 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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BEFORE SERVICING AND REPAIRING

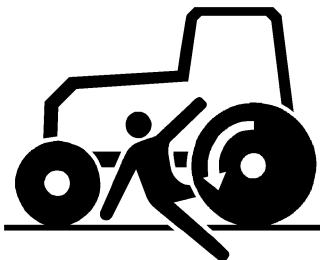
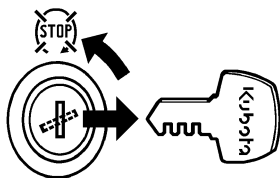
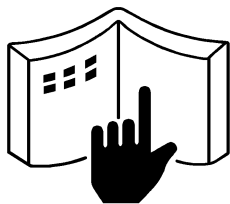
- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a firm and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, and remove the key
- Disconnect the battery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

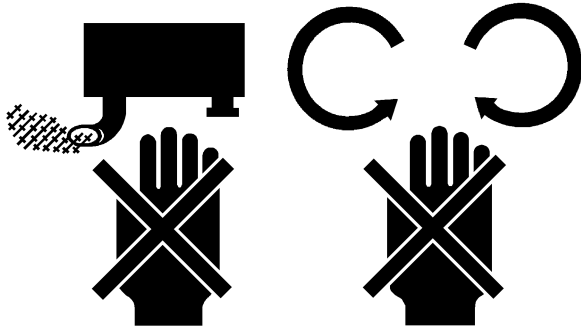
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SAFETY STARTING

- Do not start the engine by shorting across starter terminals or bypassing the safety start switch.
- Do not alter or remove any part of machine safety system.
- Before starting the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Never start the engine while standing on ground. Start the engine only from operator's seat.

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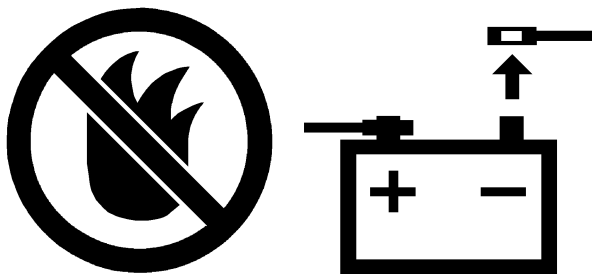


SAFETY WORKING

- Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- Wear close fitting clothing and safety equipment appropriate to the job.
- Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Do not work under the machine that is supported solely by a jack. Always support the machine by safety stands.
- Do not touch the rotating or hot parts while the engine is running.
- Never remove the radiator cap while the engine is running, or immediately after stopping. Otherwise, hot water will spout out from radiator. Only remove radiator cap when cool enough to touch with bare hands. Slowly loosen the cap to first stop to relieve pressure before removing completely.
- Escaping fluid (fuel or hydraulic oil) under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or fuel lines. Tighten all connections before applying pressure.

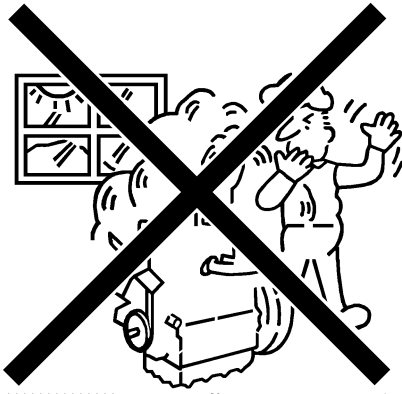
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AVOID FIRES



- Fuel is extremely flammable and explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.
- To avoid sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- Battery gas can explode. Keep sparks and open flame away from the top of battery, especially when charging the battery.
- Make sure that no fuel has been spilled on the engine.

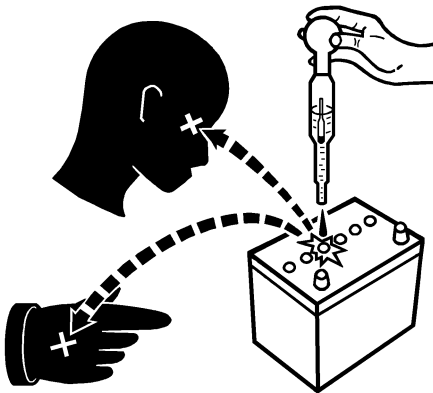
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VENTILATE WORK AREA

- If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

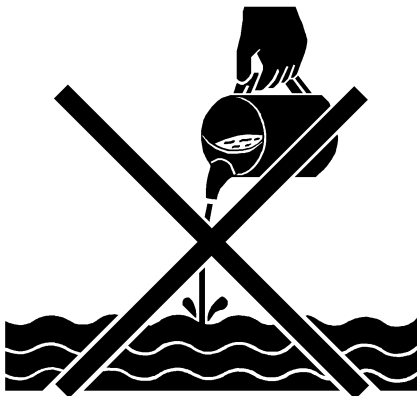
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PREVENT ACID BURNS

- Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, clothing and cause blindness if splashed into eyes. Keep electrolyte away from eyes, hands and clothing. If you spill electrolyte on yourself, flush with water, and get medical attention immediately.

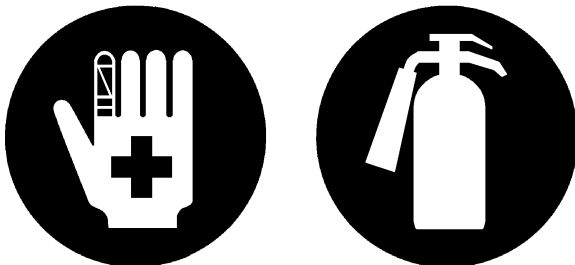
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DISPOSE OF FLUIDS PROPERLY

- Do not pour fluids into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, electrolyte and other harmful waste.

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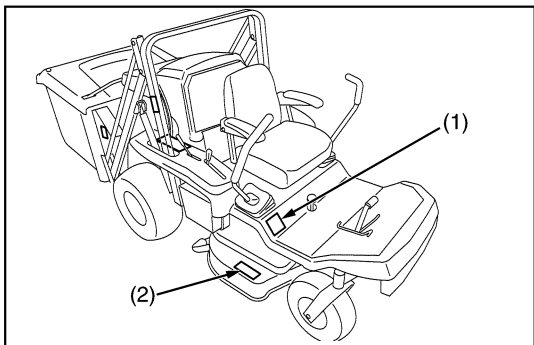
PREPARE FOR EMERGENCIES

- Keep a first aid kit and fire extinguisher handy at all times.
- Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

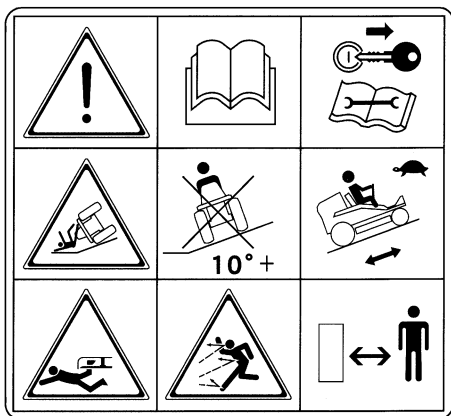
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SAFETY DECALS

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.



(1) Part No. K2011-6581-1



TO AVOID INJURY OR DEATH:

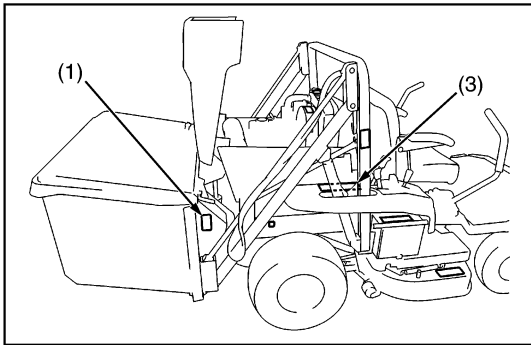
- Read and understand Operator's Manual.
- Shut off engine and remove key before servicing.
- DO NOT operate where machine could slip or tip.
- Mow across SLOPES-NOT UP and Down.
- DO NOT allow any bystanders or children around or near machine at all times when the engine is running.

(2) Part No. K5243-7311-1

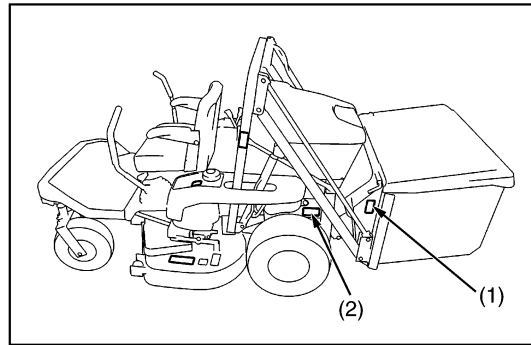


ROTATING BLADES HAZARDOUS:

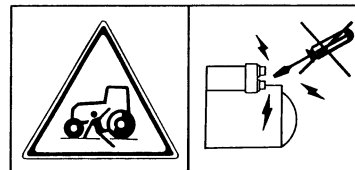
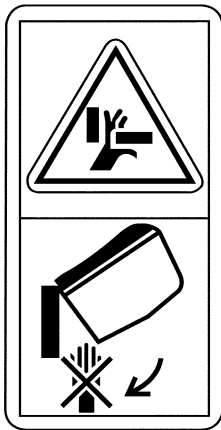
- DO NOT put hands or feet into mower when engine is running.
- Keep all shields and guards in place.



(1) Part No. K6082-6582-1



(1) Part No. K3512-4718-1



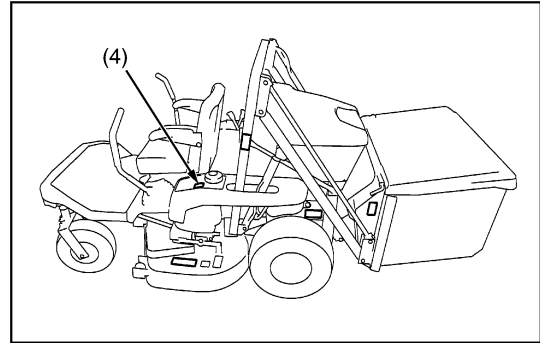
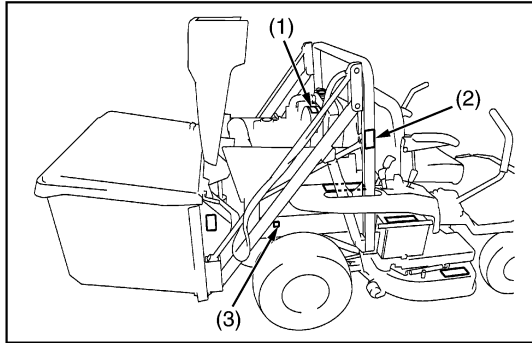
TO AVOID MACHINE RUNAWAY:

- DO NOT start engine by shorting across starter terminals or bypassing the safety start switch.

(3) Part No. K6082-6582-1

| ⚠ ATTENTION · CAUTION · ACHTUNG | | |
|--|---|--|
| <p>LORSQUE VOUS UTILISEZ CET APPAREIL, IL EST CONSEILLÉ DE... 1- REDUIRE LA VITESSE D'AVANCEMENT LORS DE LA COUPE D'HERBE LONGUE OU HUMIDE. 2- NE JAMAIS LEVER LE BAC LORSQUE LE TRACTEUR SE TROUVE SUR UNE SURFACE INSTABLE, INEGALE OU EN PENTE. 3- NE JAMAIS CONDUIRE LE TRACTEUR OU PRENDRE DES VIRAGES A VIVE ALLURE LORSQUE LE BAC EST EN POSITION HAUTE. 4- TOUJOURS DEBRAYER LA PRISE DE FORCE AVANT DE LEVER LE BAC. 5- ARRÊTER LE MOTEUR DU TRACTEUR AVANT TOUTE INTERVENTION SUR L'APPAREIL. 6- POSER DES CONTREPOIDS A L'AVANT DU TRACTEUR. 7- RAMENER LE BAC EN POSITION PRE-BENIVAGE AVANT DE LE REDESCENDRE.</p> | <p>WHEN USING THE UNIT YOU ARE ADVISED... 1- TO REDUCE FORWARD SPEED WHEN CUTTING LONG OR WET GRASS. 2- NEVER TO RAISE THE GRASSBOX WHILE THE TRACTOR IS ON SOFT, SLOPING OR UNEVEN GROUND. 3- NEVER DRIVE THE TRACTOR OR TURN SHARPLY WHILE THE GRASSBOX IS RAISED. 4- ALWAYS DISENGAGE THE PTO BEFORE RAISING THE GRASSBOX. 5- ALWAYS TO STOP THE TRACTOR ENGINE BEFORE CLEARING ANY BLOCKAGES. 6- TO FIT COUNTER WEIGHTS TO THE FRONT OF THE TRACTOR. 7- ALWAYS RETURN THE GRASSBAG TO THE PRE DUMP POSITION BEFORE LOWERING INTO THE WORKING POSITION.</p> | <p>BEIM EINSATZ FOLGENDE HINWEISE BEACHTEN: 1- BEI LANGEM ODER MASSEM GRAS FAHRGESCHWINDIGKEIT REDUZIEREN. 2- BEI WEICHEM, ABSCHÜSSIGEM ODER UNEBENEM GELANDE DEN FANGBEHÄLTER NICHT HOCHFÄHREN. 3- KEINE ENGEN KURVEN FAHREN MIT ANGEHOBEDEM FANGBEHÄLTER. 4- VOR DEM HOCHFÄHREN DES FANGBEHÄLTERS MÄHWERK AUSSCHALTEN. 5- WÄHREND DER BESEITIGUNG VON VERSTOPFUNGEN MOTOR ABSTELLEN. 6- KONTERGEWICHTE AM FRONTRAHMEN DES AFSITZMÄHERS ANBRINGEN. 7- VOR DEM HERUNTERFAHREN DEN FANGBEHÄLTER ZURÜCK IN AUSGANGSSTELLUNG KIPPEN.</p> |

K2011-65911



(1) Part No. 6C090-4958-2
Stay clear of engine fan and fan belt



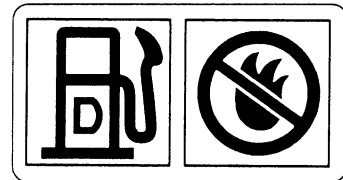
(2) Part No. K6082-6583-1
[HD type only]
● Do not put yourself below the grass container. If may fall accidentally

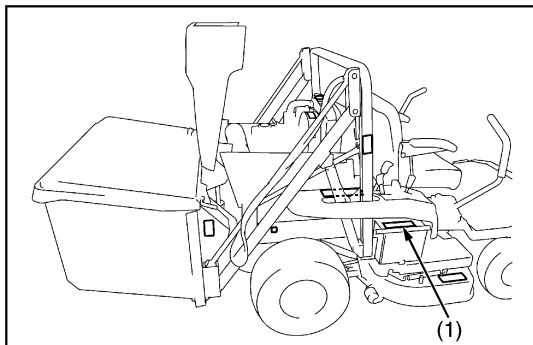


(3) Part No. K3512-4719-1
HOT SURFACE
DO NOT TOUCH



(4) Part No. K2011-6516-1
Diesel fuel No fire only





(1) Part No. 5H522-4112-1

TO AVOID INJURY FROM BATTERY GASES AND ACIDS



- 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.

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 or caution label (s) affixed is replaced with new part, make sure new label (s) is (are) attached in the same location (s) as the replaced component.
5. Mount new danger, warning and caution labels by applying on a clean dry surface and pressing any bubbles to outside edge.

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SPECIFICATIONS

| Model | | GZD15-LD | GZD15-HD |
|---------------------|---|--|----------|
| Maximum gross power | | 11.2 kW (15 HP) *1 | |
| Engine | Model | Z602-GZD15 | |
| | Type | Indirect injection. Vertical, water-cooled, 4-cycle diesel engine | |
| | Number of cylinder | 2 | |
| | Bore and stroke | 72.0 x 73.6 mm (2.83 x 2.90 in.) | |
| | Total displacement | 599 cm ³ (36.6 cu.in.) | |
| | Rated revolution | 3000 rpm | |
| | Combustion chamber | Spherical type (E-TVCS) | |
| | Fuel injection pump | Bosh MD type mini pump | |
| | Governor | Centrifugal ball mechanical governor | |
| | Injection nozzle | Bosh throttle type | |
| | Injection timing | 0.30 to 0.33 rad. (17° to 19°) before T.D.C. | |
| | Injection order | 1-2 | |
| | Injection pressure | 13.73 MPa (140 kgf/cm ² , 1990 psi) | |
| | Lubricating system | Forced lubrication by gear pump | |
| | Cooling system | Pressurized radiator, forced circulation with water pump | |
| | Lubricating oil | API Service classification CD, CE or CF, below 0 °C (32 °F) : SAE 10W, 10W-30 or 10W-40, 0 to 25 °C (32 to 77 °F) : SAE 20, 10W-30 or 10W-40, above 25 °C (77 °F) :SAE 30, 10W-30 or 10W-40 | |
| | Starting system | Electrical starter (12 V, 1.1 kW) | |
| Battery | 65D23L (12V, 52A.H. at 5H.R.) | | |
| Fuel | No.2-D Diesel fuel (ASTM D975) [No. 1-D diesel fuel, if temperature is below -10 °C (14 °F)] | | |
| Capacities | Fuel tank | 20 L (5.3 U.S.gals, 4.4 Imp.gals) | |
| | Engine crankcase | 2.1 L (2.2 U.S.qts, 1.8 Imp.qts) | |
| | Engine coolant | 1.4 L (1.5 U.S.qts, 1.2 Imp.qts) | |
| | Recovery tank | 0.25 L (0.26 U.S.qts., 0.22 Imp.qts.) | |
| | Transmission case & rear axle gear case (RH & LH) | 10.0 L (10.6 U.S.qts., 8.8 Imp.qts.) | |
| | Front PTO case | 0.13 L (0.14 U.S.gals, 0.11 Imp.gals) | |
| | Mower gear case oil | 0.15 L (0.16 U.S.qts, 0.13 Imp.qts) | |
| Tyres | Front | 15 x 6.0 - 6 (4 PR) Rib | |
| | Rear | 20 x 10.0 - 12 (4 PR) Turf | |
| Traveling speeds | Forward | 0 to 13.5 km/h (0 to 8.4 mph) | |
| | Reverse | 0 to 10.0 km/h (0 to 6.3 mph) | |

NOTE:

*1 Manufacture's estimate

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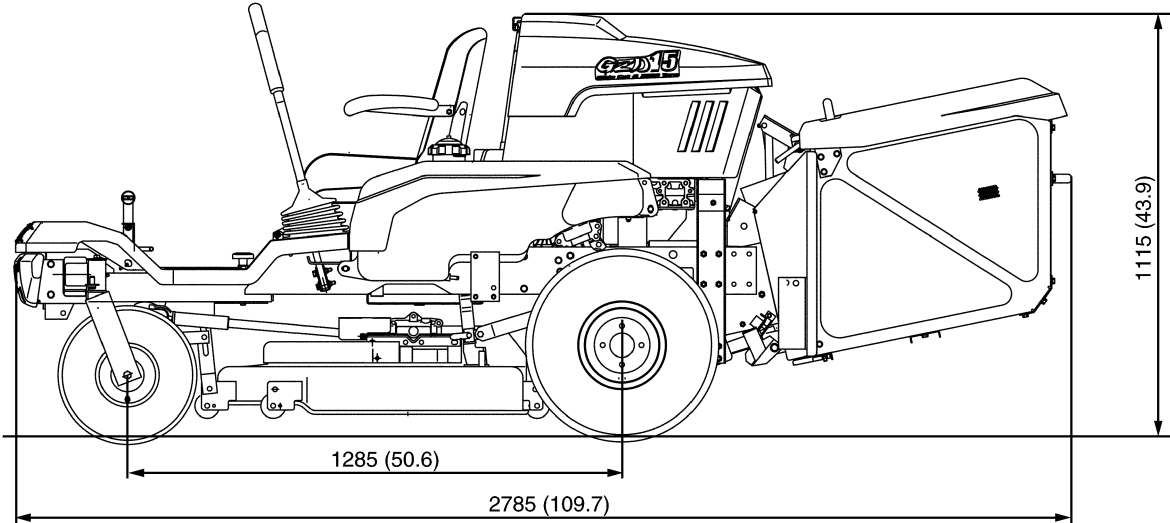
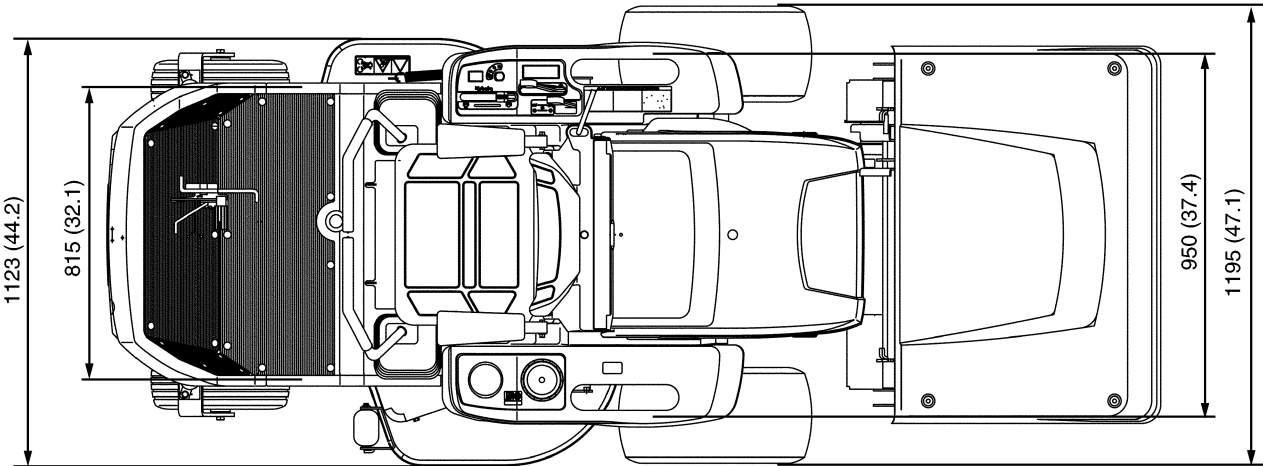
| Model | | GZD15-LD | GZD15-HD |
|--|---------------------------------------|--|--|
| Dimensions | Overall length (with grass collector) | 2785 mm (109.7 in.) | |
| | Overall width (with mower) | 1195 mm (47.1 in.) | |
| | Overall height (without ROPS) | 1115 mm (43.9 in.) | 1345 mm (53.0 in.) |
| | Wheel base | 1285 mm (50.6 in.) | |
| | Tread | Front | 815 mm (32.1 in.) |
| | Rear | 950 mm (37.4 in.), 850 mm (32.7 in.) | |
| Weight (with mower deck and grass collector) | | 510 kg (1124.6 lbs) / with 40 in. mower deck | 540 kg (1190.7 lbs) / with 40 in. mower deck |

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DIMENSIONS

[GZD15-LD]

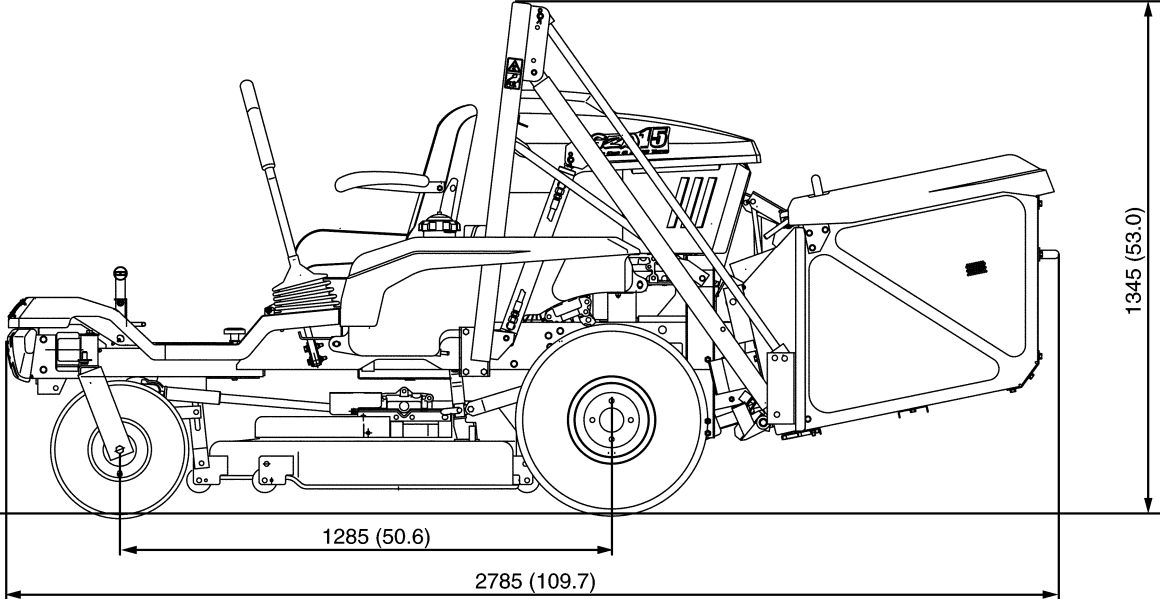
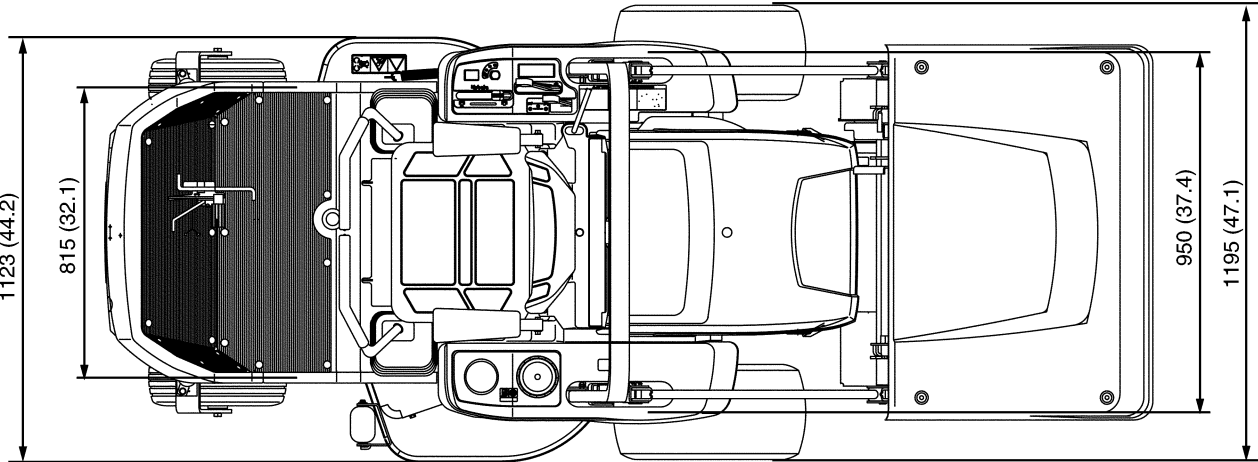
Unit: mm (in.)



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[GZD15-HD]

Unit: mm (in.)



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G GENERAL

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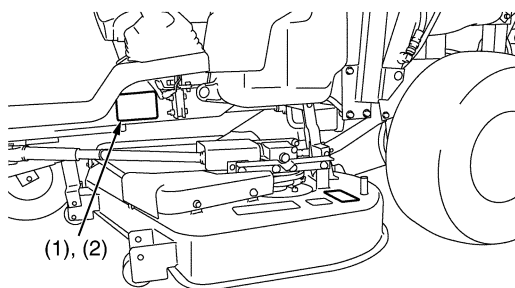
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1. IDENTIFICATION

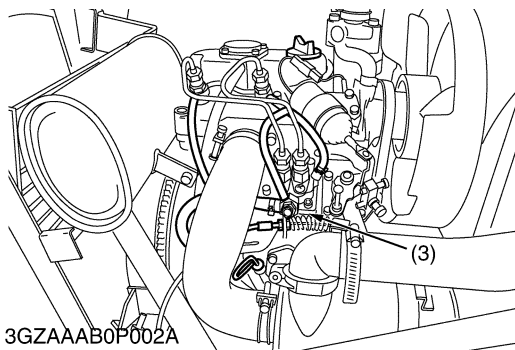
When contacting your local KUBOTA distributor, always specify engine serial number (3), machine serial number (2), mower serial number (4) and hour meter reading.

- | | |
|----------------------------------|--------------------------------|
| (1) Machine Identification Plate | (4) Mower Serial Number |
| (2) Machine Serial Number | (5) Mower Identification Plate |
| (3) Engine Serial Number | |

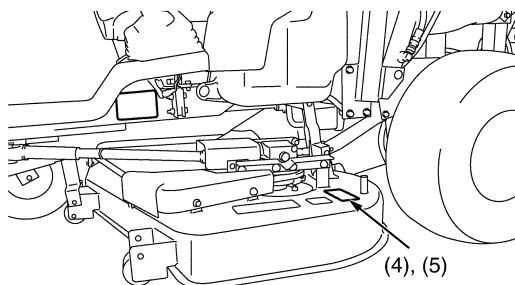
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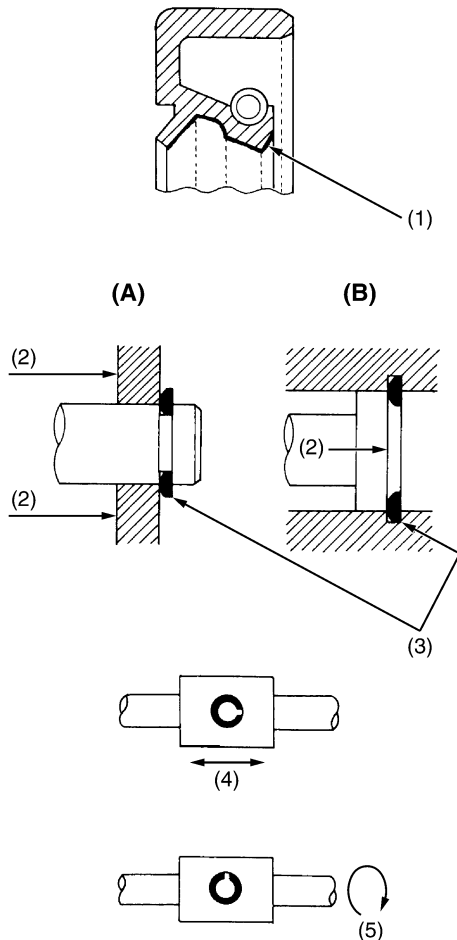


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2. GENERAL PRECAUTIONS



- 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 maintain 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.

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

- (A) External Snap Ring
- (B) Internal Snap Ring

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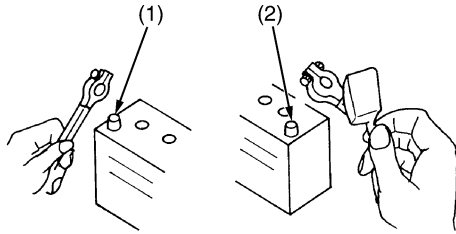
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3. HANDLING PRECAUTIONS FOR ELECTRICAL PARTS AND WIRING

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

■ IMPORTANT

- Check electrical wiring for damage and loosened connection every year. To this end, educate the customer to do his or her own check and at the same time recommend the dealer to perform periodic check for a fee.
- Do not attempt to modify or remodel any electrical parts and wiring.
- When removing the battery cables, disconnect the negative cable first. When installing the battery cables, connect the positive cable first.

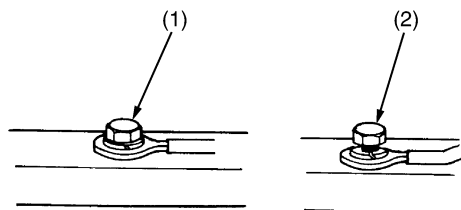


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- (1) Negative Terminal (2) Positive Terminal

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[1] WIRING

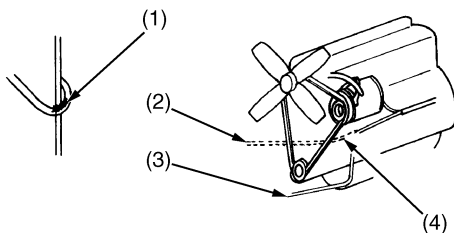


- Securely tighten wiring terminals.

- (1) Correct (Securely Tighten) (2) Incorrect (Loosening Leads to Faulty Contact)

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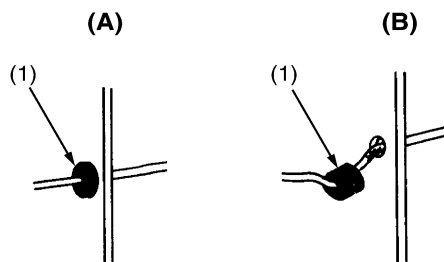


- Do not let wiring contact dangerous part.

- (1) Dangerous Part (3) Wiring (Correct)
 (2) Wiring (Incorrect) (4) Dangerous Part

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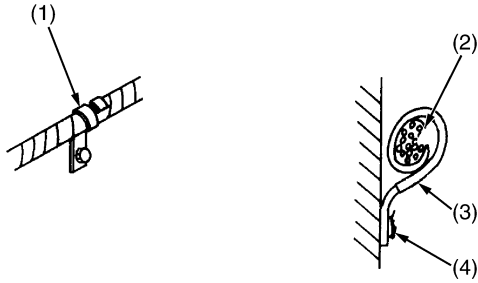


- Securely insert grommet.

- (1) Grommet (A) Correct
 (B) Incorrect

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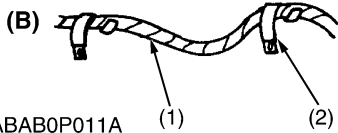
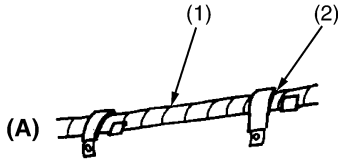


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- Securely clamp, being careful not to damage wiring.

- (1) Clamp
 - (2) Wire Harness
 - (3) Clamp
 - (4) Welding Dent
- *Wind Clamp Spirally

000000617E

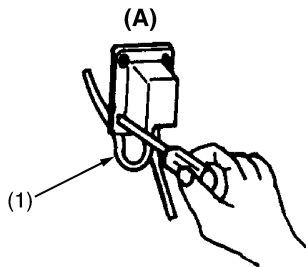


3TMABAB0P011A

- 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

000000618E

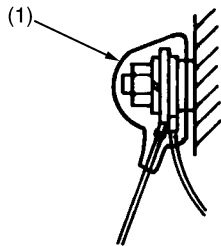


3TMABAB0P012A

- In installing a part, take care not to get wiring caught by it.

- (1) Wiring
- (A) Incorrect

000000619E



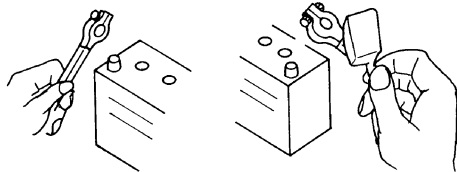
3TMABAB0P013A

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

- (1) Cover
- *Securely Install Cover

000000620E

[2] BATTERY



3TMABAB0P006B

- Take care not to confuse positive and negative terminal posts.
- When removing battery cables, disconnect negative cable first. When installing battery cables, check for polarity and connect positive cable first.
- Do not install any battery with capacity other than is specified (Ah).
- After connecting 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.

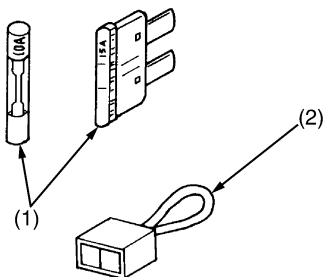


CAUTION

- Take care not to let battery liquid spill on your skin and clothes. If contaminated, wash it off with water immediately.
- Before recharging the battery, remove it from the machine.
- Before recharging, remove cell caps.
- Do recharging 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



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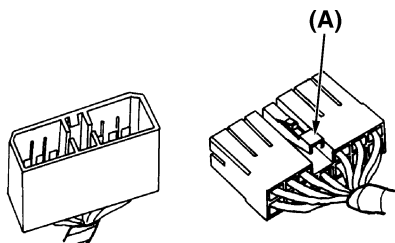
- Use fuses with specified capacity. Neither too large or small capacity fuse is acceptable.
- Never use steel or copper wire in place of fuse.
- Do not install working light, radio set, etc. on machine which is not provided with reserve power supply.
- Do not install accessories if fuse capacity of reserve power supply is exceeded.

(1) Fuse

(2) Fusible Link

000000622E

[4] CONNECTOR



3TMABAB0P015A

- For connector with lock, push lock to separate.

(A) Push

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