

Product: Kubota RC72-38 Service Manual

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# WSM

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**WORKSHOP MANUAL  
ROTARY MOWER**

**RC72-38**

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**Kubota**

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## TO THE READER

This Workshop Manual has been prepared to provide servicing personnel with information on the mechanism, service and maintenance of KUBOTA rotary mower RC72-38. It is divided into two parts, "Mechanism" and "Servicing"

### ■ Mechanism

Information on the Features and New Mechanisms are described. This information should be understood before proceeding with troubleshooting, disassembling and servicing.

### ■ Servicing

Under the heading "General" section comes general precautions, check and maintenance and special tools. Other section, there are troubleshooting, servicing specification lists, 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 production information available at the time of publication.

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

Due to covering many models of this manual, illustration being used have not been specified as one model.

September 2002

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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**

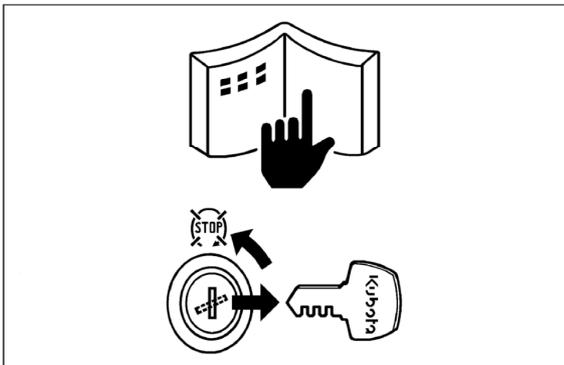
: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

■ **IMPORTANT**

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

■ **NOTE**

: Gives helpful information.



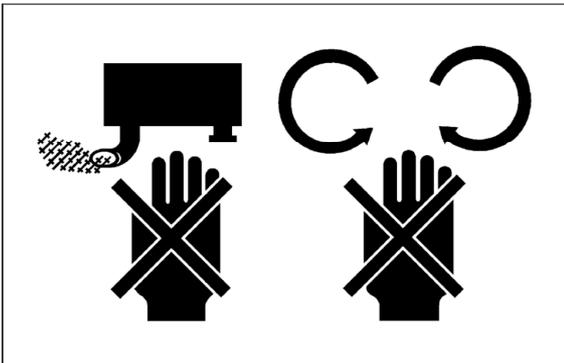
### BEFORE SERVICING AND REPAIRING

- 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.



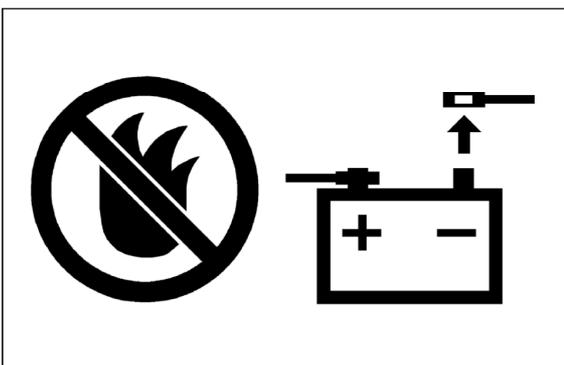
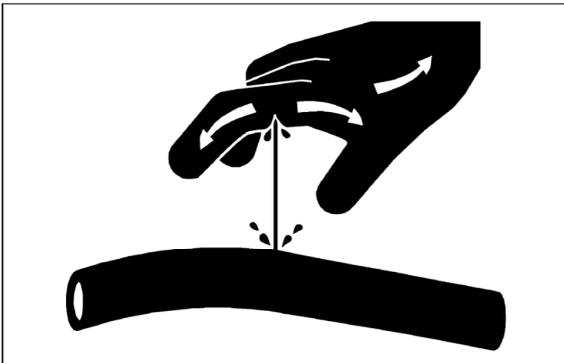
### SAFETY STARTING

- 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.



### 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.



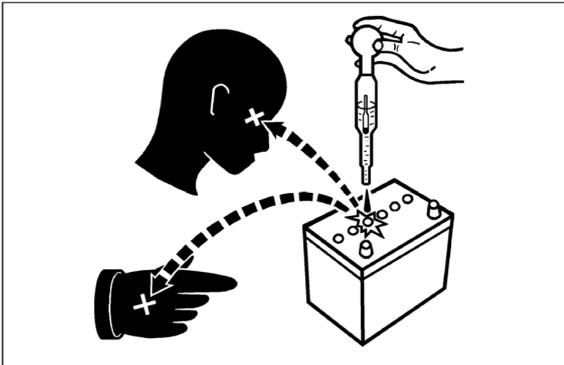
### AVOID FIRES

- 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.



### 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.



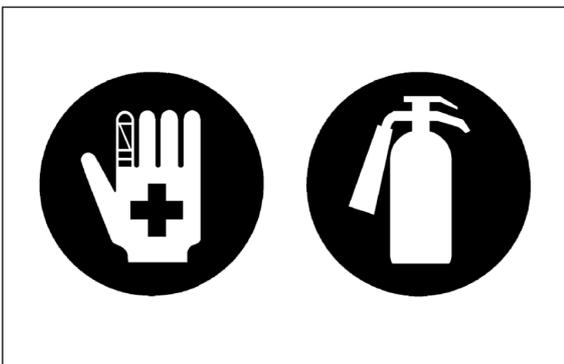
### PREVENT ACID BURNS

- 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.



### 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.



### PREPARE FOR EMERGENCIES

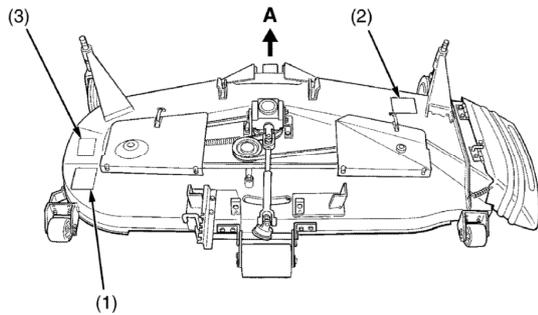
- Keep a first aid kit and fire extinguisher handy at all times.
- Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

# SAFETY DECALS

The following safety decals are installed on the mower.

If a decal becomes damaged, illegible or is not on the mower, replace it. The decal part number is listed in the parts list.

(1) Part No. 70720-4715-4



(2) Part No. 66071-6178-1



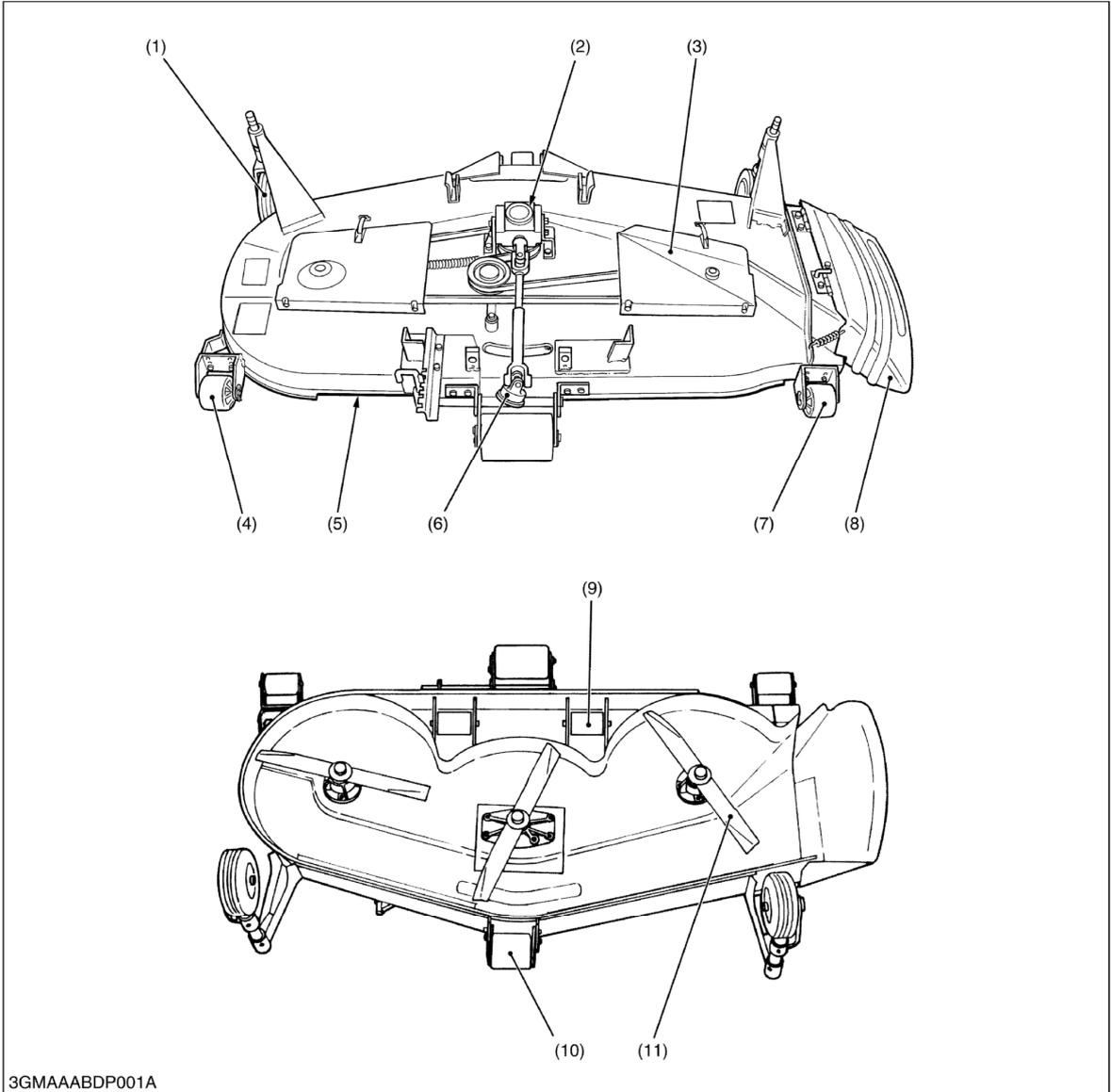
(3) Part No. 66071-6179-1



**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.

# TERMINOLOGY



3GMAAABDP001A

- |                       |                                 |                                 |                              |
|-----------------------|---------------------------------|---------------------------------|------------------------------|
| (1) Front Gauge Wheel | (4) Rear Anti-scalp Roller (LH) | (7) Rear Anti-scalp Roller (RH) | (10) Front Anti-scalp Roller |
| (2) Gear Box          | (5) Deck                        | (8) Discharge Chute             | (11) Blade                   |
| (3) Belt Cover        | (6) Universal Joint             | (9) Center Anti-scalp Roller    |                              |

## SPECIFICATIONS

Model		RC72-38
Suitable tractor		L3130, L3430, L3830
Type		Side discharge rotary mower
Mounting method		Parallel linkage
Adjustment of cutting height		Gauge wheel
Cutting width		1826 mm (72 in.)
Cutting height		38 to 114 mm (1.5 to 4.5 in.)
Weight (Approx.)		210 kg (463 lbs)
Blade spindle speed		49.7 s <sup>-1</sup> (r/s) [2980 min <sup>-1</sup> (rpm)]
Blade tip velocity		81.4 m/s (16013 fpm)
Blade length		625 mm (24.6 in.)
Number of blades		3
Dimensions	Total length	1203 mm (47.4 in)
	Total width	2235 mm (88.0 in.)
	Total height	376 mm (14.8 in.)

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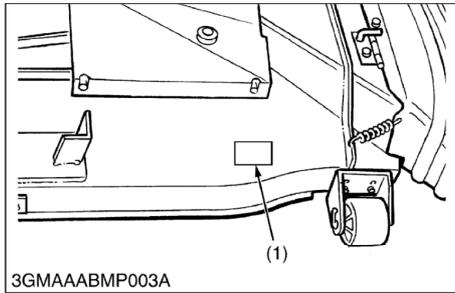
# **G GENERAL**

# GENERAL

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1. MOWER IDENTIFICATION.....	G-1
2. GENERAL PRECAUTION .....	G-2
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# 1. MOWER IDENTIFICATION



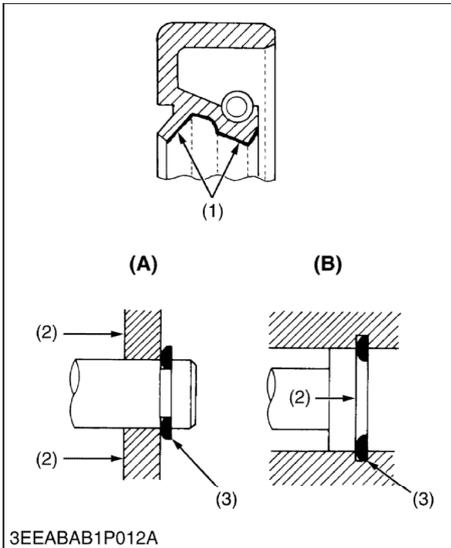
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When contacting your local KUBOTA distributor, always specify mower serial number.

(1) Mower Serial Number

W1020623

## 2. GENERAL PRECAUTION



- 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.
- Use KUBOTA genuine parts or KUBOTA-recommended parts and lubricants or their equivalents.
- Gaskets and o-rings must be replaced during reassembly.
- Apply grease to new O-rings or oil seals before assembling. See the figure.
- 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.
- Metric screws, bolts and nuts are not interchangeable with nonmetric fasteners.
- Remove oil and dirt from parts before measuring.

(1) Grease  
 (2) Force  
 (3) Sharp Edge

(A) Oil Seal  
 (B) External Snap Ring  
 (C) Internal Snap Ring

W1020761

### 3. LUBRICANTS

No.	Place	Capacity	Lubricants
1	Gear Box	0.36 L 0.38 U.S.qts. 0.32 Imp.qts.	SAE 90 gear oil (API Service GL-5 gear oil)
<b>Greasing</b>			
2	Universal joint	Until grease overflows	SAE multi-purpose type grease
3	Spindle shafts (Bevel gear shaft and blade shafts)		
4	Belt tension pulley		
5	Belt tension pivot		
6	Life arms		
7	Front gauge wheels		
8	Rear gauge wheel		
9	Front center anti-scalp roller		

# 4. TIGHTENING TORQUES (GENERAL USE SCREWS, BOLTS AND NUTS)

Screws, bolts and nuts whose tightening torques are not specified in this Workshop Manual should be tightened according to the table below.

Indication on top of bolt	 No-grade or 4T						 7T						 9T					
Material of bolt	SS400, S20C						S43C, S48C						SCr435, SCM435					
Material of opponent part	Ordinariness			Aluminum			Ordinariness			Aluminum			Ordinariness					
Unit	N·m			kgf·m			ft-lbs			N·m			kgf·m			ft-lbs		
Diameter	N·m			kgf·m			ft-lbs			N·m			kgf·m			ft-lbs		
M6 (6 mm, 0.24 in.)	7.85 to 9.31	0.80 to 0.95	5.79 to 6.87	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.85 to 8.82	0.80 to 0.90	5.79 to 6.50	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4			
M8 (8 mm, 0.31 in.)	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	16.7 to 19.6	1.7 to 2.0	12.3 to 14.4	23.6 to 27.4	2.4 to 2.8	17.4 to 20.2	17.7 to 20.5	1.8 to 2.1	13.1 to 15.1	29.5 to 34.3	3.0 to 3.5	21.7 to 25.3			
M10 (10 mm, 0.39 in.)	39.3 to 45.1	4.0 to 4.6	29.0 to 33.2	31.4 to 34.3	3.2 to 3.5	23.2 to 25.3	48.1 to 55.8	4.9 to 5.7	35.5 to 41.2	39.3 to 44.1	4.0 to 4.5	29.0 to 32.5	60.9 to 70.6	6.2 to 7.2	44.9 to 52.0			
M12 (12 mm, 0.47 in.)	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	-	-	-	77.5 to 90.2	7.9 to 9.2	57.2 to 66.5	62.8 to 72.5	6.4 to 7.4	46.3 to 53.5	103 to 117	10.5 to 12.0	76.0 to 86.7			
M14 (14 mm, 0.55 in.)	108 to 125	11.0 to 12.8	79.6 to 92.5	-	-	-	124 to 147	12.6 to 15.0	91.2 to 108	-	-	-	167 to 196	17.0 to 20.0	123 to 144			
M16 (16 mm, 0.63 in.)	167 to 191	17.0 to 19.5	123 to 141	-	-	-	197 to 225	20.0 to 23.0	145 to 166	-	-	-	260 to 304	26.5 to 31.0	192 to 224			
M18 (18 mm, 0.71 in.)	246 to 284	25.0 to 29.0	181 to 209	-	-	-	275 to 318	28.0 to 32.5	203 to 235	-	-	-	344 to 402	35.0 to 41.0	254 to 296			
M20 (20 mm, 0.79 in.)	334 to 392	34.0 to 40.0	246 to 289	-	-	-	368 to 431	37.5 to 44.0	272 to 318	-	-	-	491 to 568	50.0 to 58.0	362 to 419			

W1034542

Grade	SAE GR.5			SAE GR.8					
									
Unit	N·m			kgf·m			ft-lbs		
Nominal Diameter	N·m			kgf·m			ft-lbs		
5/16	23.1 to 27.8			2.35 to 2.84			17.0 to 20.5		
3/8	47.5 to 57.0			4.84 to 5.82			35.0 to 42.0		
1/2	108.5 to 130.2			11.07 to 13.29			80.0 to 96.0		
9/16	149.2 to 179.0			15.22 to 18.27			110.0 to 132.0		
5/8	203.4 to 244.1			20.75 to 24.91			150.0 to 180.0		

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## 5. MAINTENANCE CHECK LIST

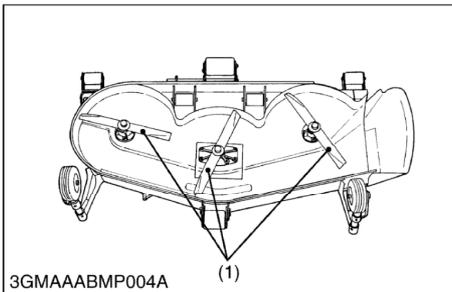
To keep the mower working in good condition as well as to avoid any accident and trouble, carry out periodic inspection and maintenance. Check the following points before use.

Service interval	Check points	Reference Page
Daily (Each use)	<ul style="list-style-type: none"> <li>• Anything unusual in previous day's operation</li> <li>• Make sure mower blade screws are tighten</li> <li>• Check mower blades for wear or damage</li> <li>• Check gear box oil level</li> <li>• Check oil leaks</li> <li>• Check all hardware</li> <li>• Make sure all pins are in place</li> <li>• Clean mower deck</li> <li>• Apply grease to universal joint</li> <li>• Apply grease to spindle shafts (Bevel gear shaft and blade shafts)</li> <li>• Apply grease to belt tension pulley</li> <li>• Apply grease to belt tension pivot</li> <li>• Apply grease to front center anti-scalp roller</li> <li>• Apply grease to lift arms</li> </ul>	– G-6 S-4 G-6 – – – – G-7 G-7 G-7 G-7 G-7 G-7
Initial 50 hours	<ul style="list-style-type: none"> <li>• Change gear box oil</li> </ul>	G-8
Every 50 hours	<ul style="list-style-type: none"> <li>• Apply grease to front and rear gauge wheels</li> <li>• Check mower belt</li> </ul>	G-8 S-4
Every 150 hours	<ul style="list-style-type: none"> <li>• Change gear box oil</li> </ul>	G-8
Every 2 years (After purchase)	<ul style="list-style-type: none"> <li>• Replace gear box oil seal</li> </ul>	G-9

W1013580

## 6. CHECK AND MAINTENANCE

### [1] CHECK POINTS OF DAILY OR EACH USE



#### Retightening Mower Blade Screw

#### **CAUTION**

- **To avoid injury, always handle the mower blade with care.**
1. Dismount the mower and turn it over to expose the mower blades.
  2. Wedge a block of wood securely between the mower blade and mower deck.
  3. Retighten the mower blade screw to the specified torque.
  4. If the mower blade screw is worn or broken, replace it.

Tightening torque	Mower blade screw	98.1 to 117.1 N·m 10.0 to 12.0 kgf·m 72.3 to 86.8 ft·lbs
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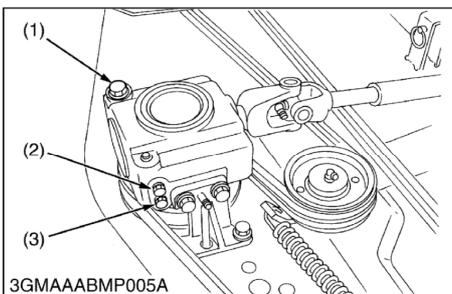
(1) Mower Blade Screw

W1025290

#### Checking Mower Blade

1. See page S-4.

W1025440



#### Checking Gear Box Oil Level

1. Place the mower on level ground.
2. Loosen the check plug (2), and check to see if oil seeps from the opening.
3. If the oil level is low, remove the oil filler plug (1) and add new gear oil.

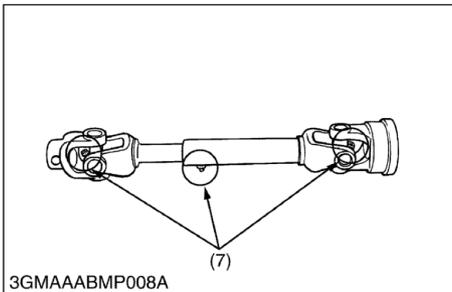
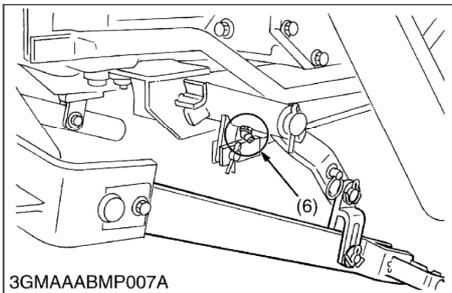
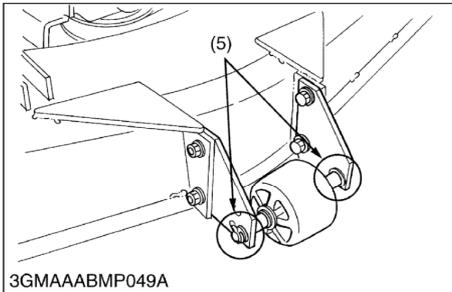
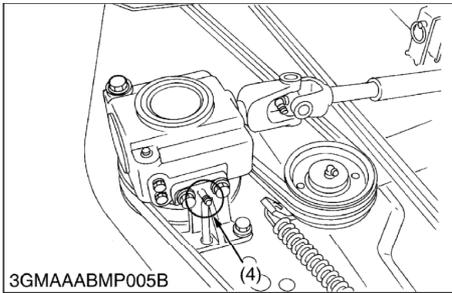
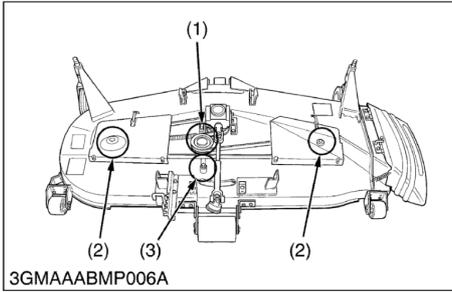
#### **IMPORTANT**

- **Use the specified gear oil.**  
**Refer to "LUBRICANTS". (See page G-3.)**

(1) Oil Filler Plug  
(2) Check Plug

(3) Drain Plug

W1025491



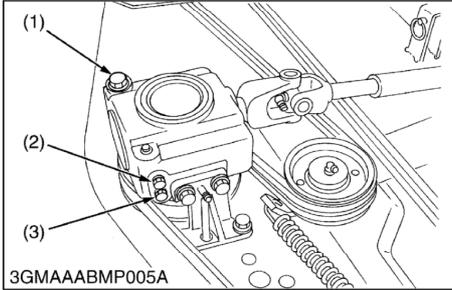
**Greasing**

1. Apply grease to the following points as figures.

- |                         |                       |
|-------------------------|-----------------------|
| (1) Belt Tension Pulley | (5) Anti-scalp Roller |
| (2) Blade Shaft         | (6) Lift Arm          |
| (3) Belt Tension Pivot  | (7) Universal Joint   |
| (4) Bevel Gear Shaft    |                       |

W1013577

**[2] CHECK POINT OF INITIAL 50 HOURS**



**Changing Gear Box Oil**

1. Dismount the mower from the tractor, and place the mower on level ground.
2. Remove the oil filler plug (1).
3. Remove the drain plug (3), and drain the used oil completely.
4. After draining the used oil, reinstall the drain plug.
5. Fill with new oil up to the specified level.

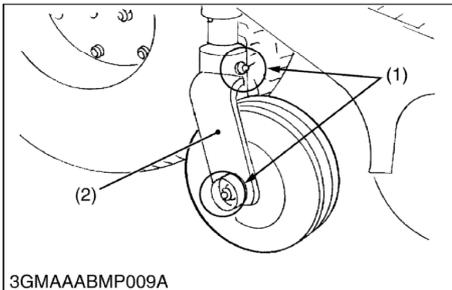
**■ IMPORTANT**

- Use the specified gear oil.  
Refer to "LUBRICANTS". (See page G-3.)

- |                     |                |
|---------------------|----------------|
| (1) Oil Filler Plug | (3) Drain Plug |
| (2) Check Plug      |                |

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**[3] CHECK POINTS OF EVERY 50 HOURS**

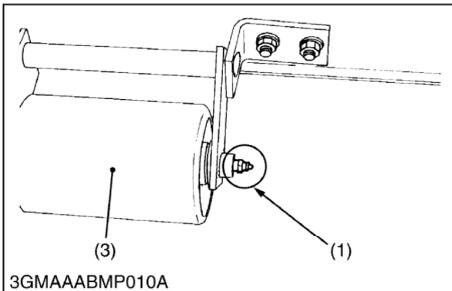


**Greasing**

1. Apply grease to the following position as figures.

- |                               |                      |
|-------------------------------|----------------------|
| (1) Grease Nipple             | (3) Rear Gauge Wheel |
| (2) Front Gauge Wheel Bracket |                      |

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**Checking Mower Belt**

1. See page S-4.

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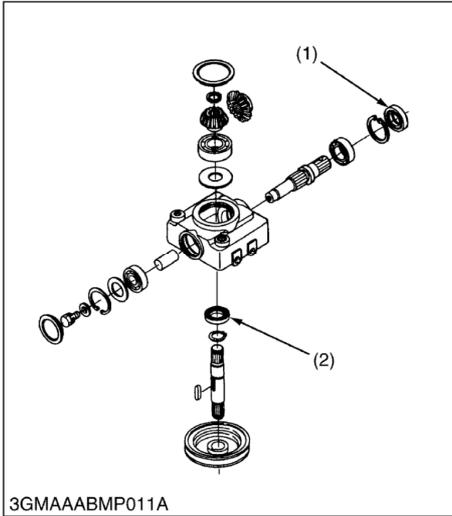
**[4] CHECK POINT OF EVERY 150 HOURS**

**Changing Gear Box Oil**

1. See page G-8.

W1029013

### [5] CHECK POINT OF EVERY 2 YEARS



#### **Replacing Gear Box Oil Seal**

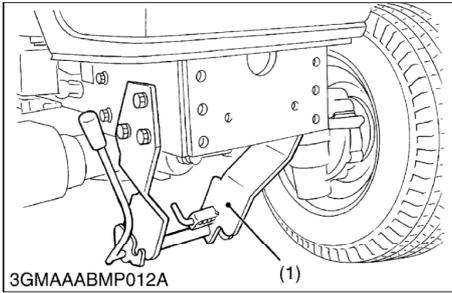
1. Replace the gear box oil seals (1), (2) with new ones. (See page S-7.)

(1) Oil Seal

(2) Oil Seal

W1029072

## 7. SETTING UP MOWER

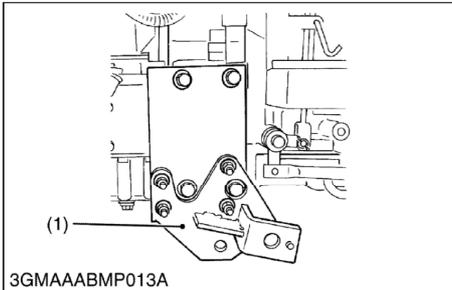


### **Front Hanger Bracket**

1. Attach the front hanger bracket (1) to the frame.

(1) Front Hanger Bracket

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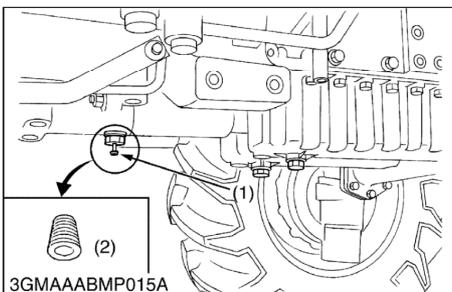
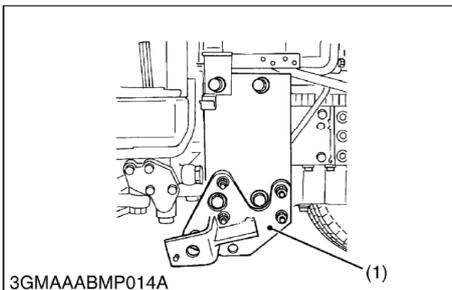


### **Mid Hanger Bracket**

1. Attach the mid hanger brackets (1) to the clutch housing.

(1) Mid Hanger Bracket

W1029421



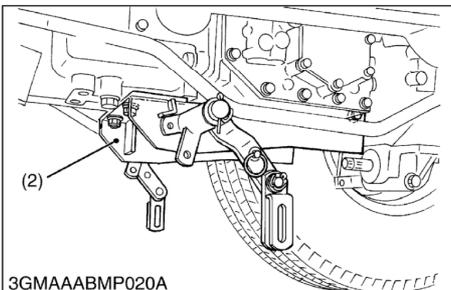
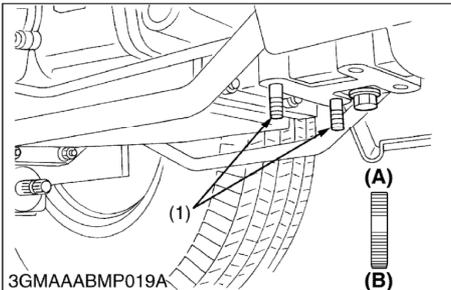
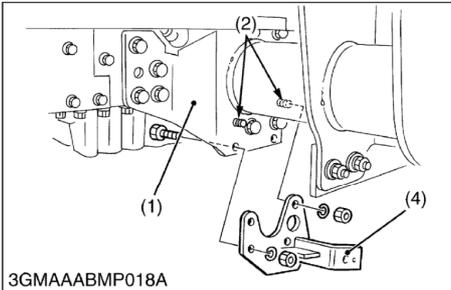
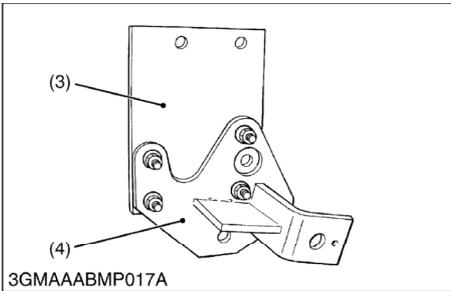
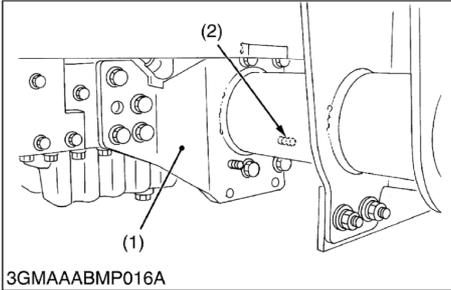
### **Socket Plug**

1. Remove the drain plug (1), then install the new socket plug (2).

(1) Drain Plug

(2) Socket Plug

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### Mid Hanger Bracket (for Tractor with Front Loader)

1. Dismount the front loader assembly from the loader main frame (1).
2. Set the M12 stud bolts (2) to the loader main frame (1).
3. Loosen the nuts of mid hanger bracket (4) and remove the spacers (3).
4. Install the mid hanger bracket to loader main frame (1).

- |                       |                        |
|-----------------------|------------------------|
| (1) Loader Main Frame | (3) Spacer             |
| (2) M12 Stud Bolt     | (4) Mid Hanger Bracket |

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### Rear Hanger Bracket

1. Set the M12 stud bolts (1).
2. Install the rear hanger bracket (2).

- |                         |                                       |
|-------------------------|---------------------------------------|
| (1) M12 Stud Bolt       | (A) Flat End (Transmission Case Side) |
| (2) Rear Hanger Bracket | (B) Round End                         |

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