

WSM

WORKSHOP MANUAL

MOWER

**RCK60-30BC,
RC72-30BC**

Kubota

TO THE READER

This workshop manual provides safety information for service activity, general information such as specifications and dimensions of the machine, mechanisms and structure descriptions of the machine, and service procedures.

Safety

This section contains safety service descriptions and safety label information.

General

This section contains general instructions, tightening torques, general machine information and special tools.

Maintenance

This section contains information for the recommended oil and general maintenance procedures.

Each section basically consists of mechanism and servicing.

Mechanism

Mechanism part contains information and explanations for the structure, functions, and specifications of the machine or component parts. This part should be comprehended before proceeding with troubleshooting, disassembling, assembling, and servicing works.

Servicing

Servicing part contains information and procedures for maintenance, troubleshooting and repair works. The reader should follow these instructions in order to satisfy any servicing work safely, correctly and quickly.

In this WSM, service specifications and service limits are defined as followings.

Service specifications:

Specification which corresponds to new machine's ex-factory. It is based on quality standard, drawings, or actual measurements conducted by Kubota. This value is used to determine whether there is a problem with the machine in the event of a troubleshooting. However, it is necessary to consider degradation due to wear, based on the operating time of the machine, application or maintenance condition.

Service limits:

Service limit is a value corresponding to the recommended performance limit by taking long term-use wear into account. When the service limit is reached, the machine is required to have proper repair, overhaul or replacement in order to keep safe and adequate performance.

All of the illustrations, photographs, specifications, and other information in this manual were created based on the latest model at the time of publication.

The parts names used in this manual are unified into names representing the functions of the parts. Therefore, it does not necessarily correspond to the names used in other materials (parts list, operators manual etc.) and the name on the label / identification plates on the product.

Kubota reserves the right to change all information at any time without notice.

November 2023

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SUPPLEMENTARY INFORMATION

Model name and related manuals

This manual applies to the following model.

Model name
RCK60-30BC, RC72-30BC

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1. SAFETY

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 assemble 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.

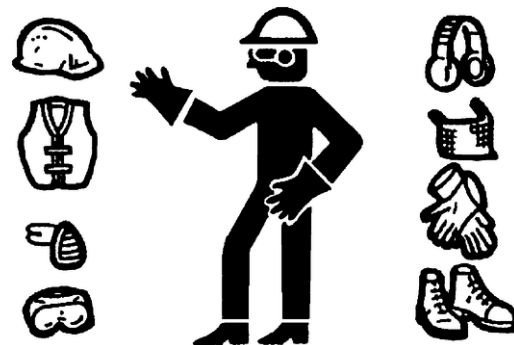
1. Preparing for emergencies



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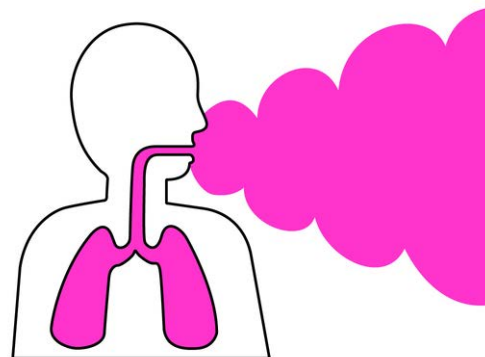
- Keep a first aid kit and fire extinguisher ready at all times.
- Keep emergency numbers near your telephone at all times.

2. Working cautions



2KBTA00034A01

- Wear proper service attire when performing work. Do not wear loose clothing as they could get caught on machine components.
- Wear the proper protective equipment when working around the machine. For example helmet, eye protector and protective shoes.
- Do not work around the machine if you are tired or have consumed alcohol or drugs.



2KBTA00038A01

- Keep the machine away from obstacles and hazardous materials.
- Ensure the working environment is properly ventilated.
- Do not allow third parties to come near the machine.



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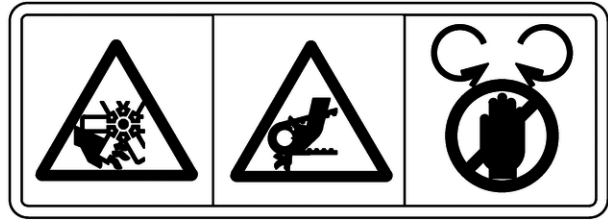
- Make sure you have the support of the 3 points with both hands holding the handle and one foot at the step when getting on and off the machine.
- When working under the machine, make sure the machine does not move back and forth or side-to-side.
- When working under the machine, provide secure support for the machine.
- When using a hydraulic jack, always use with a rigid rack to prevent the machine from falling.

3. Starting machine safely



2KBTA00036A01

- Do not do the following work when starting the engine.
 - Short across starter terminals.
 - Bypass the safety start switch.
- Make sure there are no bystanders or obstacles present around the machine before starting the engine.
- Do not start the engine unless the operator is seated in the operator's seat.
- Make sure that the pilot levers are in neutral before starting the engine.



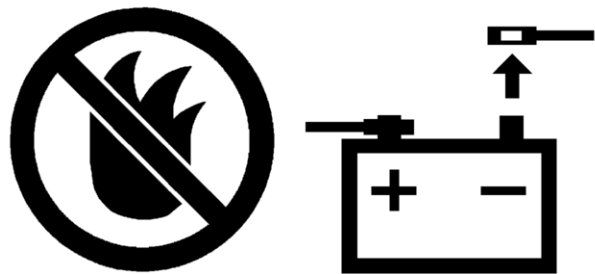
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- Lock the covers before starting the machine.
- Keep away from rotating and moving objects.
- Keep tools and waste cloth away from rotating and moving objects.

4. Preventing fires



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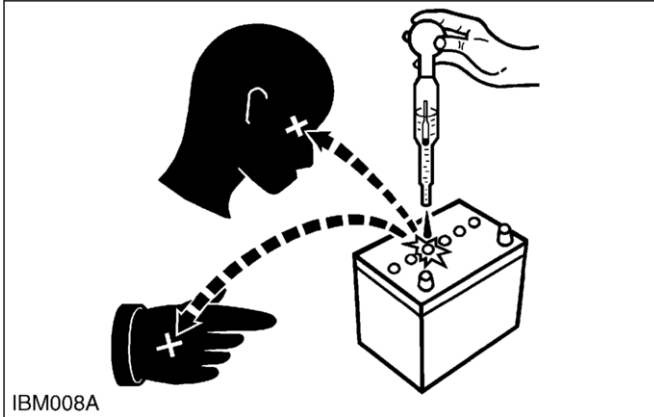


IBM006A

- Keep fire (welding sparks, grinding sparks, cigarettes) away from the fuel.
- Wipe the fuel off when spilled.
- Keep fire (welding sparks, grinding sparks, cigarettes) away from the battery. The battery produces oxygen and hydrogen gas that are flammable.
- Disconnect the negative (-) terminal first when disconnecting the battery cable.

- Connect the positive (+) terminal first when connecting the battery cable.
- Do not short circuit the machine.
- Do not splash the hydraulic oil on the exhaust components.

5. Preventing acid burns

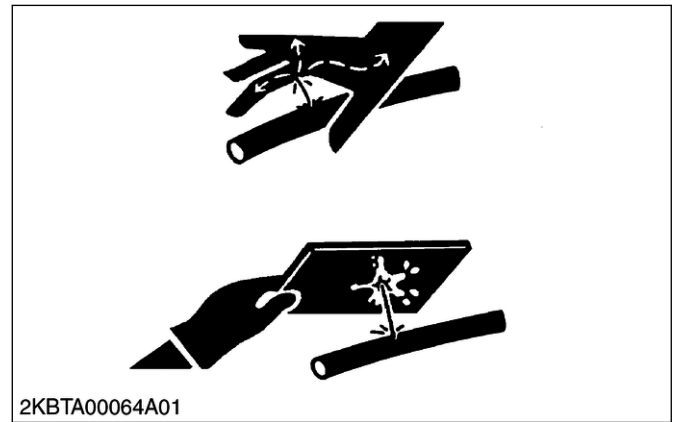


- Keep the electrolyte away from your eyes, hands, and clothes. Sulfuric acid in the battery electrolyte is poisonous: it can cause blindness and is strong enough to burn your skin and clothing. If you spill electrolyte on yourself, clean yourself with water and get a medical aid immediately.

6. Avoiding high pressure fluid

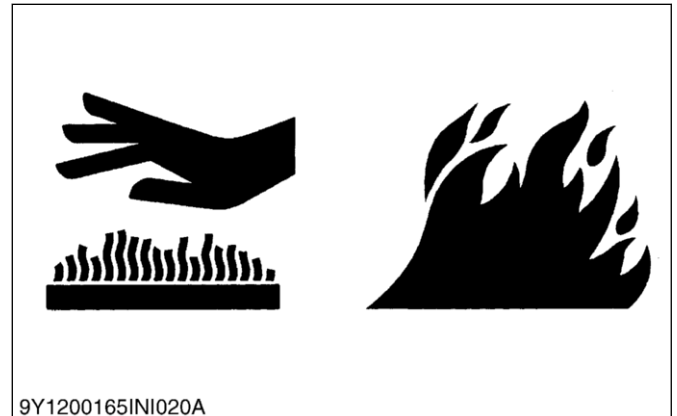


- Keep away from high pressure fluids bursting from a hose or pipe. The fluid can penetrate your skin and cause serious injuries.
- Get a medical aid immediately if an accident occurs.

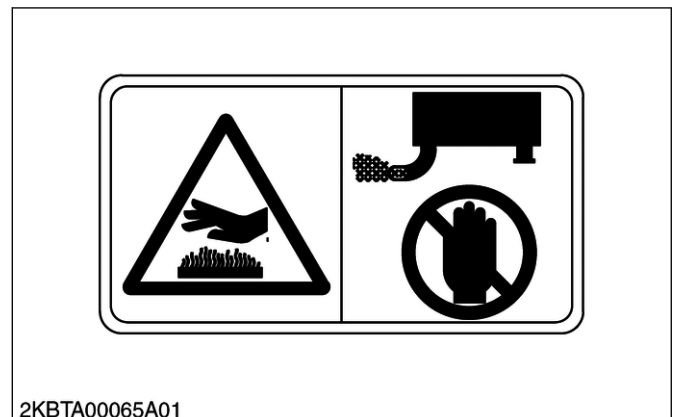


- Release residual pressure in the hydraulic circuit before removing the hydraulic components.
- Pay attention when releasing pressure in hydraulic circuit, because the machine or attachment might move unexpectedly.
- Check the coolant temperature and release the pressure before opening the radiator cap.

7. Avoiding hot exhaust



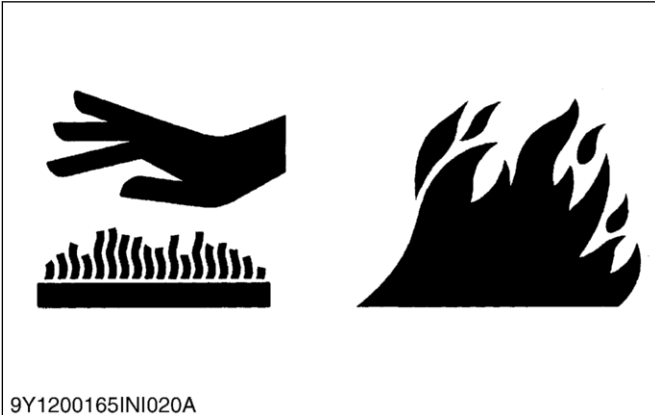
- Avoid skin exposure and contact with hot exhaust gas or components.
- Exhaust gas and components are extremely hot during operation.



1. SAFETY

- Do not work immediately after stopping the engine. The engine, muffler, radiator, and hydraulic components are extremely hot.
- Do not remove caps and plugs soon after stopping the engine. The temperature and pressure of the coolant, hydraulic oil, and fuel are still high.

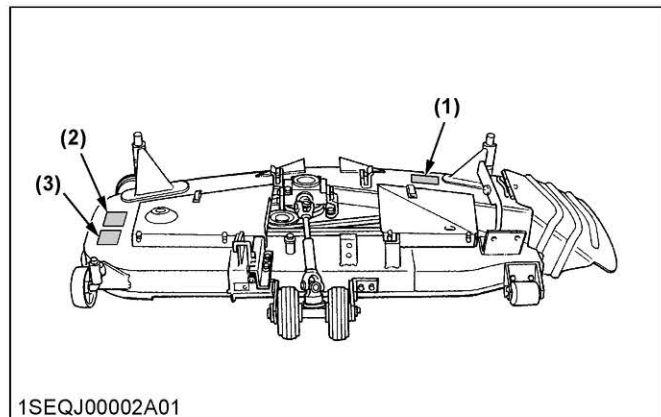
8. Cleaning exhaust filter



- Avoid skin exposure and contact with hot exhaust gas or components. Exhaust gas and components are extremely hot during regeneration of the diesel particulate filter (DPF).

SAFETY LABELS

RCK60-30BC



(1) Part No. K5112-7311-2



(2) Part No. K5112-7312-2



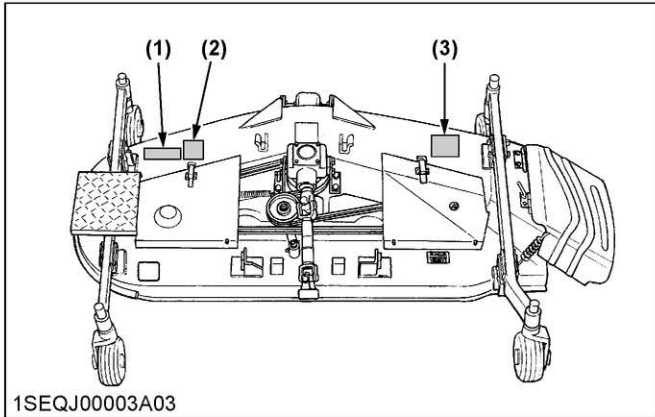
(3) Part No. K5384-4715-1



1SPNF00001A01enUS

1. SAFETY

RC72-30BC



(1) Part No. K5792-4112-1



(2) Part No. K5792-4114-1



(3) Part No. K5792-4113-1



1SPNF00002A01enUS

1. Care of danger, warning and caution labels

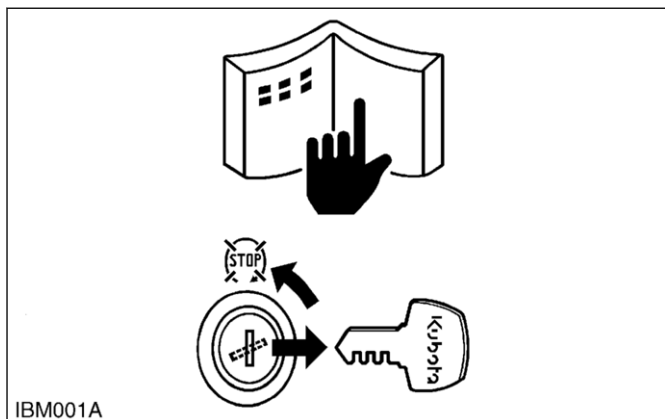
- Keep danger, warning and caution labels clean and free from obstructing material.
- Clean danger, warning and caution labels with soap and water, dry with a soft cloth.
- Replace damaged or missing danger, warning and caution labels with new labels.
- If a component with danger, warning and caution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

1. SAFETY

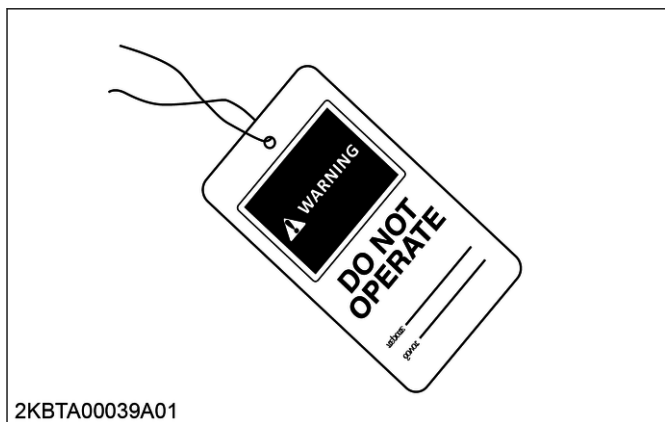
2. GENERAL

GENERAL WORKING INSTRUCTIONS

1. General working precautions



- When servicing, observe the safety instructions in the operator's manual and workshop manual.
- Clean the machine before maintenance.
- Service the machine at a clean location.
- Park the machine on a stable and level ground then lower the attachment to check the machine safely.
- Stop the engine and remove the key when leaving the operator's seat for cleaning, maintenance, and servicing.
- Before working, remove the negative (-) terminal from the battery or turn off the battery isolator switch.
- Whenever a special tool is required, use the special tool that Kubota recommends.
- Use genuine Kubota parts to ensure safety and machine performance.



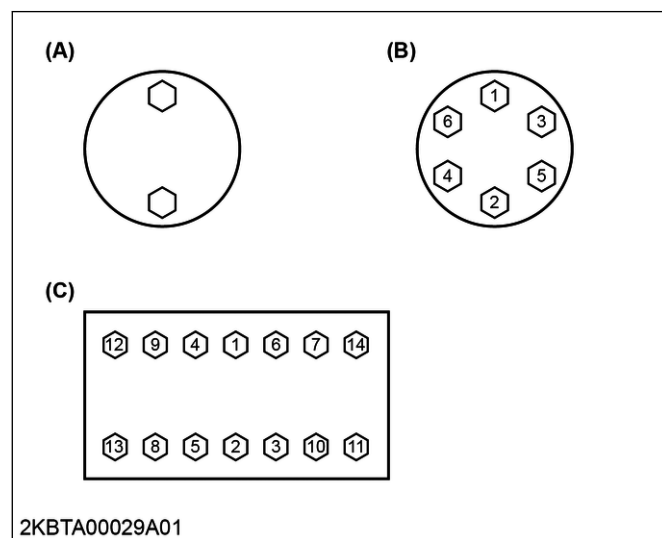
- Hang a DO NOT OPERATE tag near the operator's seat.
- Observe workplace safety rules when performing service and work.

2. Tightening bolts and nuts

- Tighten the bolts and nuts to their specified torque.

NOTE

- Tighten the bolts and nuts alternately from top to bottom and left to right so the torque is distributed evenly.
- Gradually tighten the bolts and nuts two or three times.

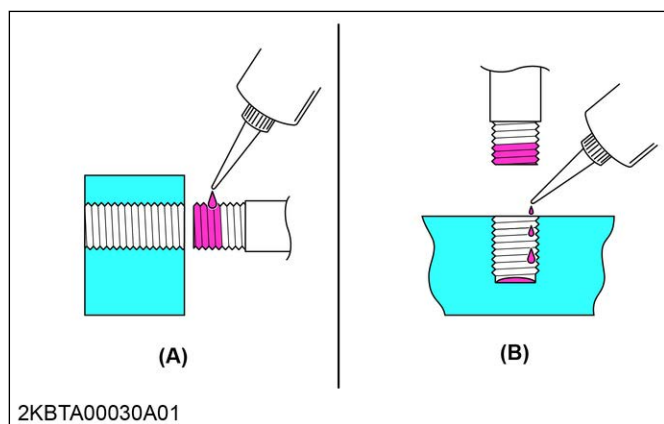


- (A) Alternately
(B) Diagonally

- (C) Diagonally from center to outside

3. Applying thread-locking fluid

1. Clean and dry the location where a thread-locking fluid will be applied with a solvent to remove moisture, oil, and dirt.
2. Apply the thread-locking fluid to the tip of the bolt.
3. If the threads are large, apply the thread-locking fluid all around the bolt hole.

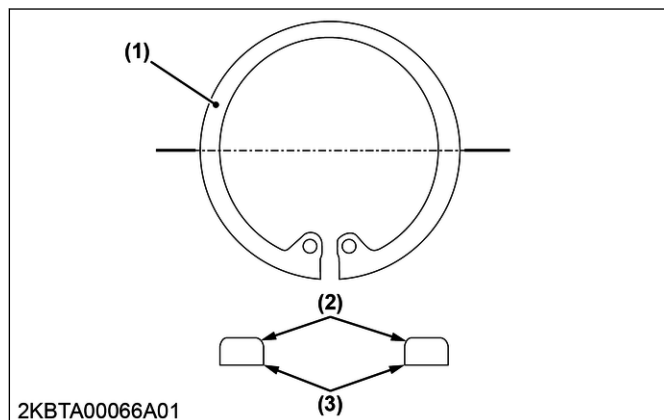


(A) Bolt hole (bolts, nuts)

(B) Screw hole

4. Installing circlips

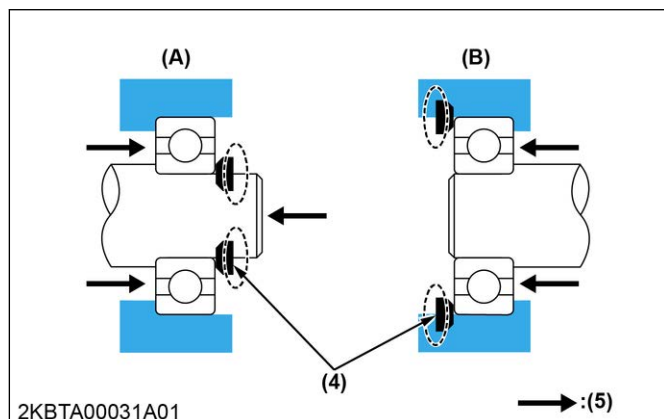
- When installing the circlip, assemble the circlip's angular side (3) toward the side that receives force (4) as shown in the figure.



(1) Circlip

(2) Rounded side

(3) Angular side



(4) Side that receives force

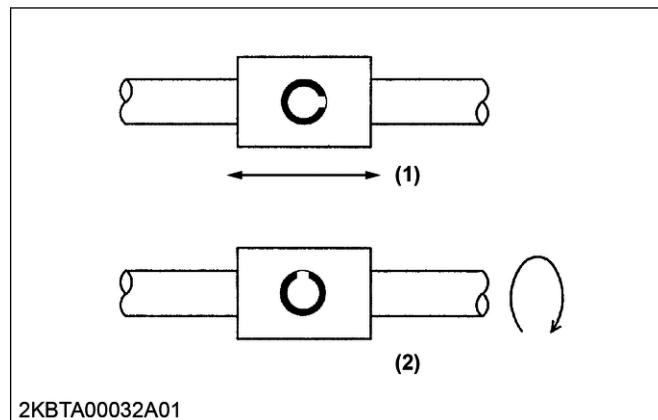
(A) External circlip

(5) Force

(B) Internal circlip

5. Installing spring pins

- When installing the spring pin, assemble the slit of the spring pin in the direction that receives force as shown in the figure.

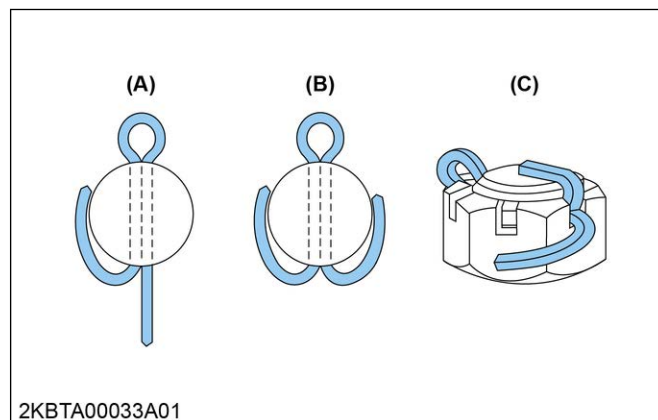


(1) Parallel movement

(2) Rotational movement

6. Handling split pin

- Bend the split pin as shown in the figure to prevent it from coming off.
- Tighten a grooved nut to the specified torque, align the hole of the split pin to the tighten direction and use an S-shaped split.



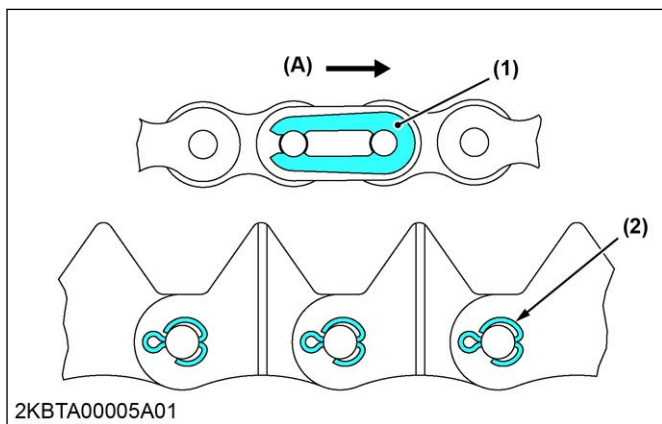
(A) Single side split

(B) Double side split

(C) S-shaped split

7. Handling chain joint and split pin

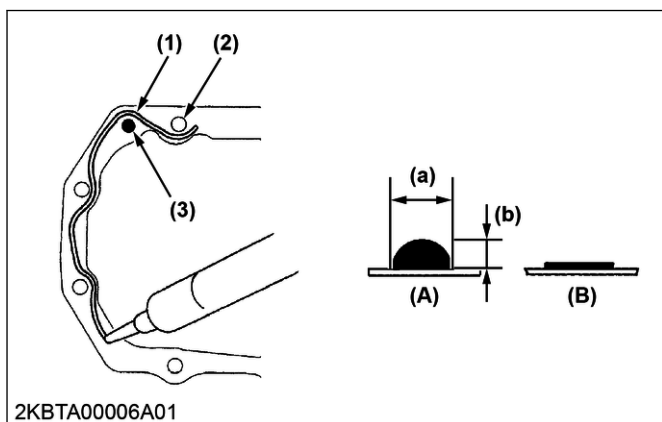
- Assemble the chain joint with its opening facing the opposite direction of travel.
- Assemble the split pin with its opening facing the direction of travel.



- (1) Chain joint
(2) Split pin
(A) Direction of chain moving

8. Handling liquid gasket

- Use the specified liquid gasket.
- When using liquid gasket, fully remove the old gasket and grease or oil.
- When applying liquid gasket, apply it on the joint surface with a thickness of 3.0 to 5.0 mm (0.12 to 0.13 in.) without making any gaps.
- When applying liquid gasket near the bolt hole (2), apply it in the inner side.
- If there is a risk of oil leakage or if the hole goes all the way through when applying liquid gasket near the dowel pin (3) hole, apply it in the inner side. If there is no concern of oil leakage, apply it on the outer side.
- Reassemble within 15 minutes after applying; wait for 30 minutes or more then fill with oil.



- (1) Application route
(2) Bolt hole
(3) Dowel pin
(A) Correct
(B) Incorrect
(a) 3.0 to 3.5 mm (0.12 to 0.13 in.)
(b) 3.0 to 5.0 mm (0.12 to 0.19 in.)

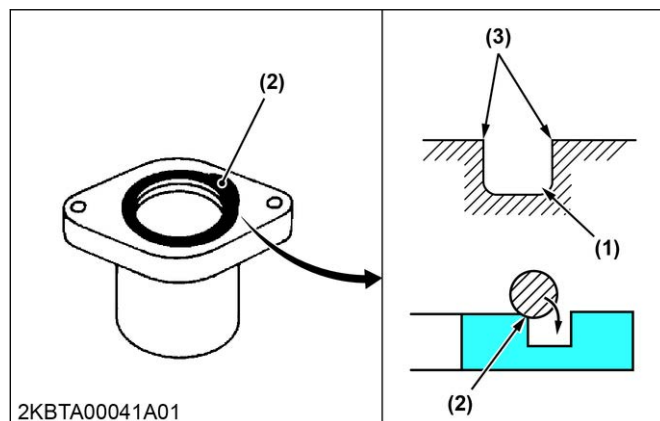
9. Replacing O-rings

1. Remove the burr and clean the O-ring groove.
2. Lubricate the O-ring. Do not apply any grease to the floating seal.

3. Put the O-ring in the groove.

NOTE

- Do not twist the O-ring.
- Remove the burr to avoid damage on the O-ring caused by the burr.



- (1) O-ring groove
(2) O-ring
(3) Burr

10. Replacing oil seals

1. If there are burrs, scratches, or rust on the inner surface of the housing hole, the chamfered part, or the surface of the shaft through which the oil seal passes, remove it with sandpaper.

NOTE

- If there is a risk of splines or key grooves of the shaft damaging the lip part of the seal, wrap masking tape around those parts to protect the seal.

2. Clean the inner surface of the housing hole and the surface of the shaft.
3. Lubricate the seal lip and dust lip.

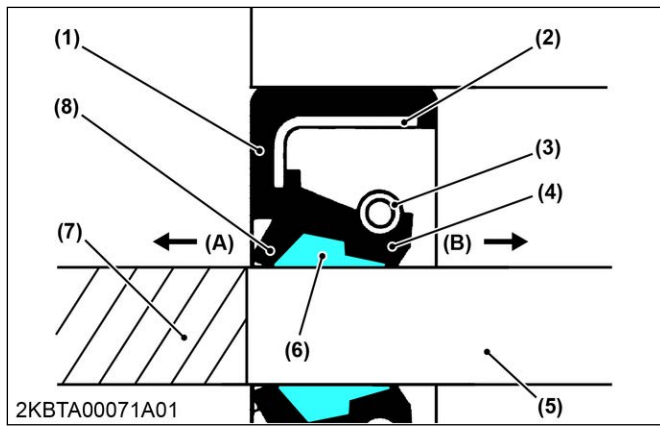
NOTE

- If the seal has a dust lip, grease the gap between the lips to prevent dry wear that occurs when the machine starts.
- Use the specified grease or oil to lubricate the lip.

4. With the seal lip facing the airtight side (B) of the object, use a press to press-fit the oil seal until it is fixed to the boss.

NOTE

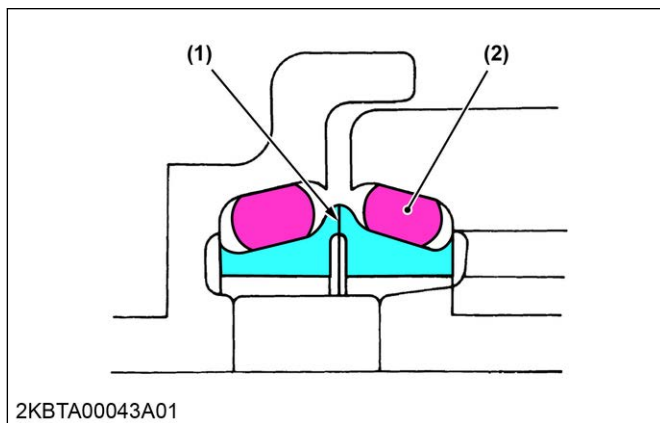
- In cases when installing an oil seal without a press, place a wooden board on the seal and gently tap the board with a hammer; install the oil seal straightly and evenly.



- | | |
|----------------|-------------------|
| (1) Packing | (6) Grease |
| (2) Metal ring | (7) Masking tape |
| (3) Spring | (8) Dust lip |
| (4) Seal lip | (A) Air side |
| (5) Shaft | (B) Airtight side |

11. Replacing floating seals

1. Apply oil appropriately to both sides of the O-ring and the contact surface.
2. Do not twist the O-ring when installing the floating seal.
3. Apply oil thinly to the sliding surfaces.
4. Install the floating seal in parallel to the sliding surfaces, O-rings, and housings.
5. After installation, rotate the floating seal for 3 times to make an oil film on the sliding surface.



- | | |
|---------------------|------------|
| (1) Sliding surface | (2) O-ring |
|---------------------|------------|

12. Connecting hydraulic hoses

1. Clean the inside of the hose fittings.
2. Tighten with the specified torque.
3. Apply pressure on the hydraulic hose to check for oil leakage.

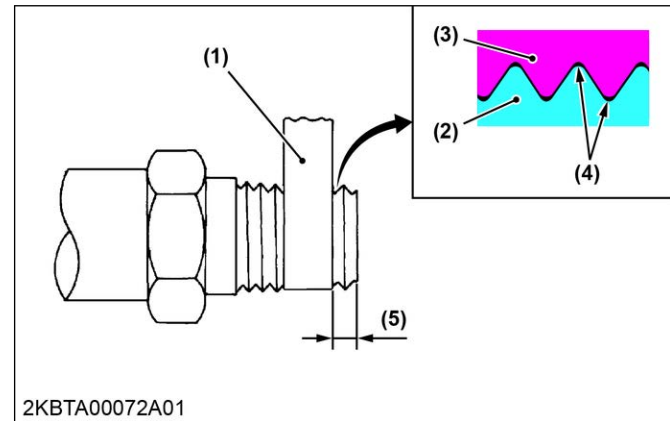
13. Wrapping thread seal tape

1. Wrap the thread seal tape around the taper threads two or three turns.

2. Tighten the taper thread with the specified torque.

NOTE

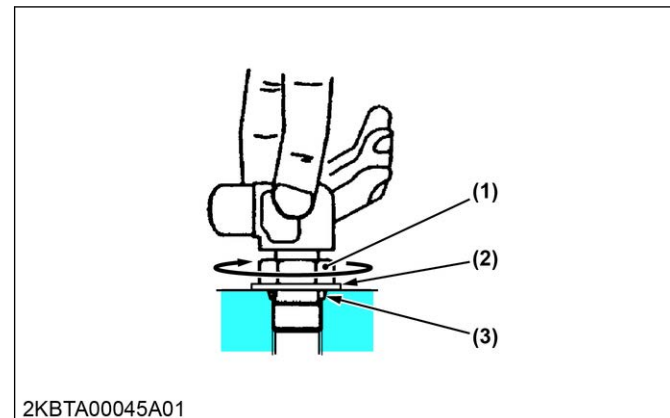
- Do not loosen the taper thread after tightening to avoid oil leakage.
- Do not wrap the thread seal tape on the first and second threads to avoid contamination in the hydraulic circuit.



- | | |
|----------------------|---|
| (1) Thread seal tape | (5) First and second threads from the screw tip |
| (2) Male thread | |
| (3) Female thread | |
| (4) Clearance | |

14. Installing elbows with male seat

1. Clean the male seat surface and seal.
2. Loosen the lock-nut until the top end.
3. Install and tighten the elbow by hand until the male seat touches the material surface.

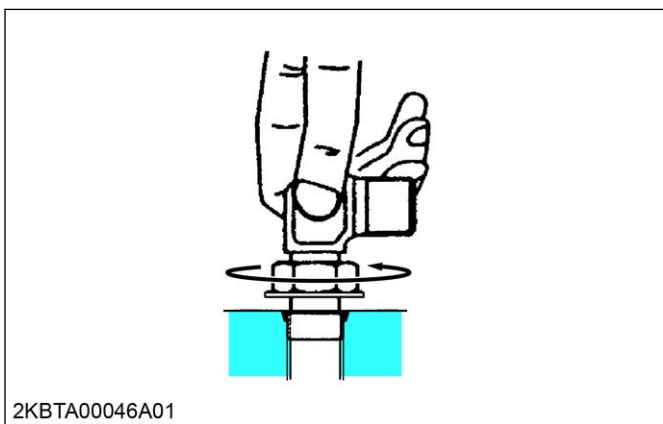


- | | |
|--------------|----------|
| (1) Lock-nut | (3) Seal |
| (2) Seat | |

4. Adjust the direction of the elbow.

NOTE

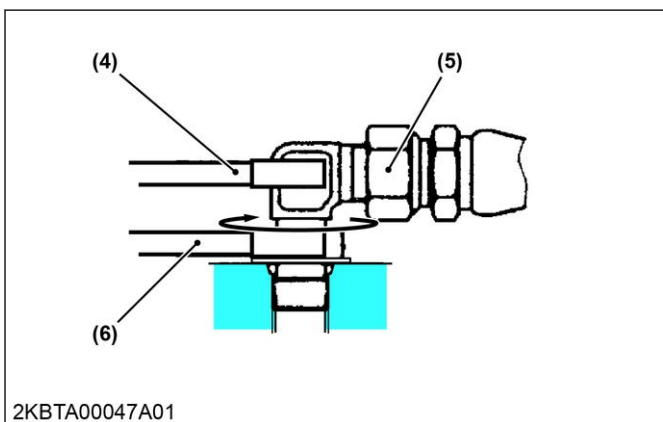
- Do not loosen to more than one turn.



5. Tighten the lock-nut with the specified torque.

NOTE

- Check for oil leakage.

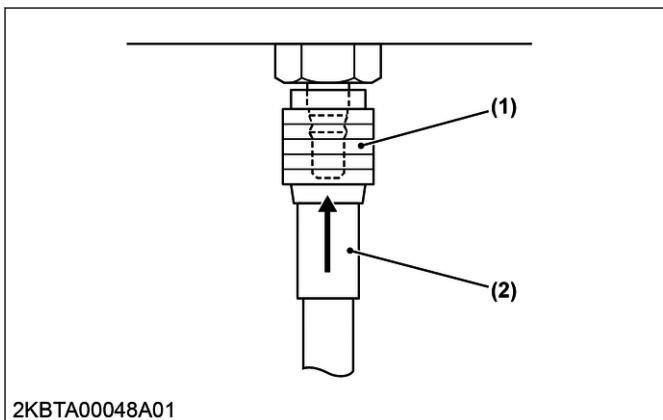


- (4) Wrench
(5) Hose

- (6) Torque wrench

15. Connecting and disconnecting quick hose couplings

1. Push the metal fittings in the direction of the arrow mark.



- (1) Plastic part

- (2) Metal fitting

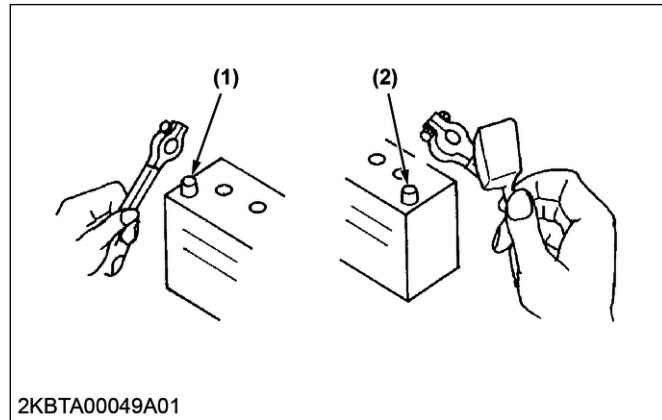
2. Pull the plastic part in the opposite direction of the arrow mark.
3. Disconnect the quick hose coupling.
4. Push the quick hose coupling in the direction of the arrow mark to connect.
5. Make sure that the hose is installed correctly.

16. Handling the battery



CAUTION

- When removing battery cables, disconnect negative (-) terminal first.
- When installing battery cables, connect positive (+) terminal first.
- Do not install any battery with a capacity (Ah) other than is specified.
- Securely attach the terminal covers on the cables when connecting the cables to the battery terminal posts. There is a danger of short-circuiting if the tip of the cables attached to the battery terminal post is exposed.
- Do not allow dirt and dust to collect on the battery.
- Connect the battery terminals after removing dust, old grease, blue rust and others.
- Apply conductive grease thinly to the battery terminal posts to prevent corrosion.



- (1) Battery negative (-) terminal (2) Battery positive (+) terminal

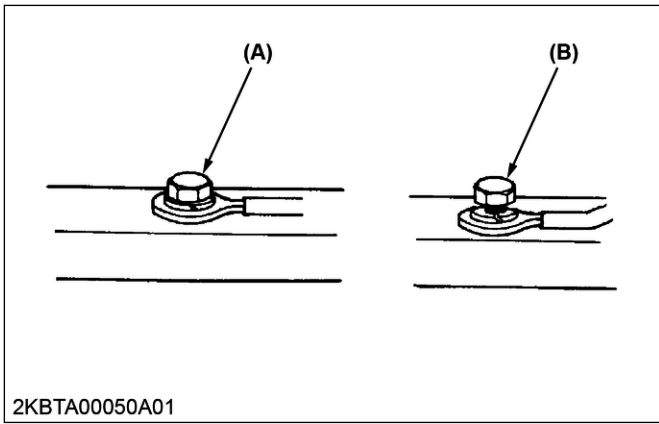
17. Handling wire harness



CAUTION

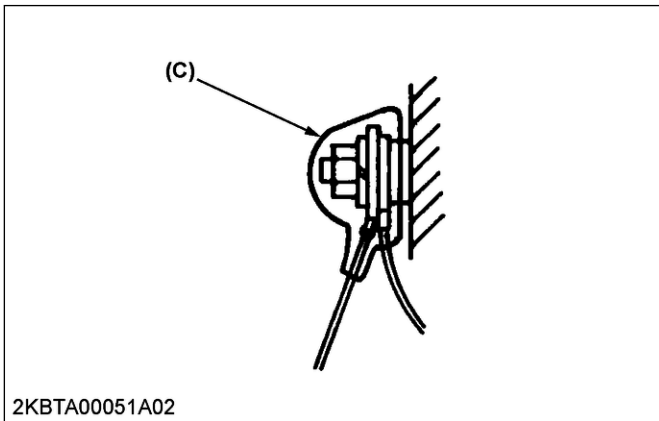
- Do not let an unprotected wire harness to come in contact with other components.
- Do not clamp the wire harness to fuel hoses.
- If the wire harness is damaged, replace it immediately with a new one.
- Do not alter the electrical device and wire harness.
- Tighten the electrical terminals securely.

2. GENERAL



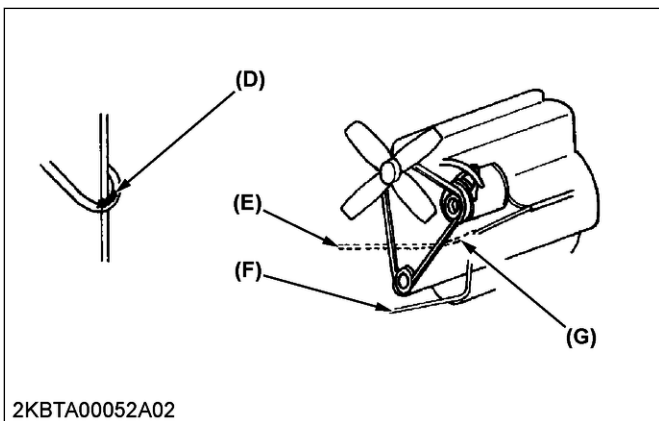
(A) Good (B) Bad: Loose bolt

- Check the electrical terminal protection and clamping conditions before connecting the battery cable.



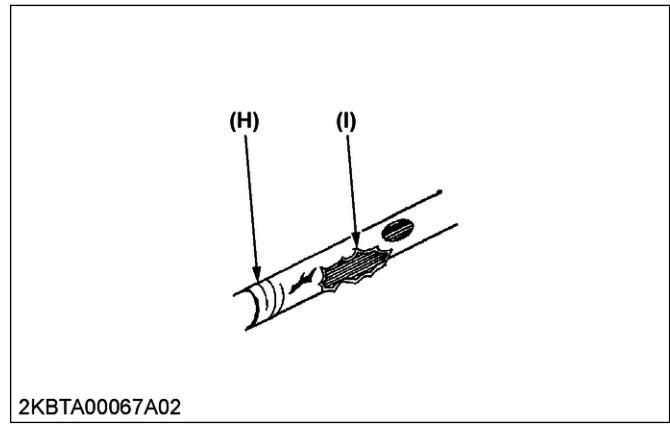
(C) Covered completely with a protection cover

- Keep the wire harness away from hazardous positions such as rotating parts or high-temperature sections.



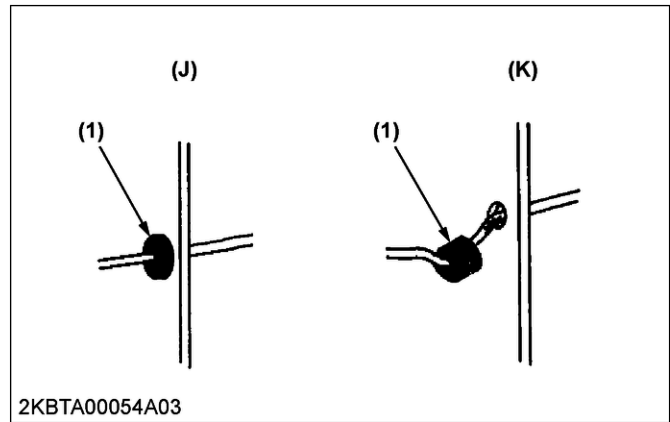
(D) Hazardous position (E) Wiring position: bad
(F) Wiring position: good (G) Hazardous position

- If wire harness is damaged or degraded, replace immediately.



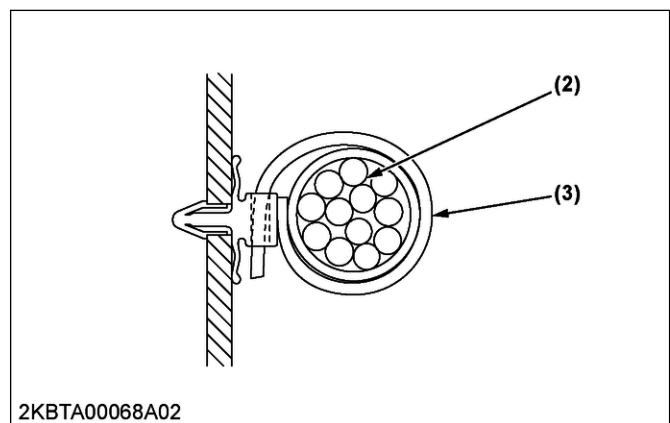
(H) Damaged (I) Torn

- Install the grommet securely.



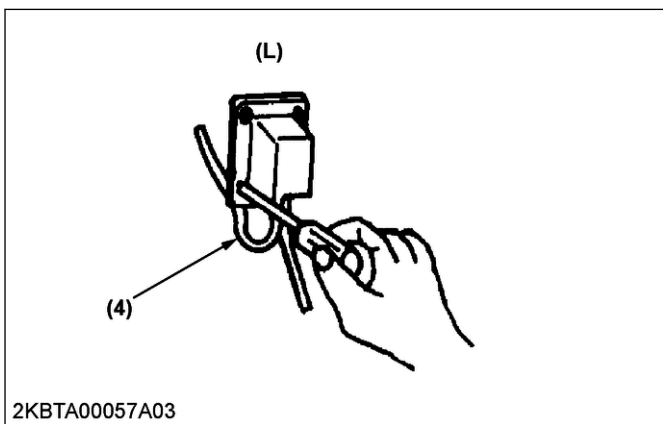
(1) Grommet (J) Good (K) Bad: poor installation

- Clamp the wire harness securely. Do not damage the wire harness by the clamp.
- Clamp the wire harness correctly. Do not slack, twist, and pull.



(2) Wire harness (3) Clamp

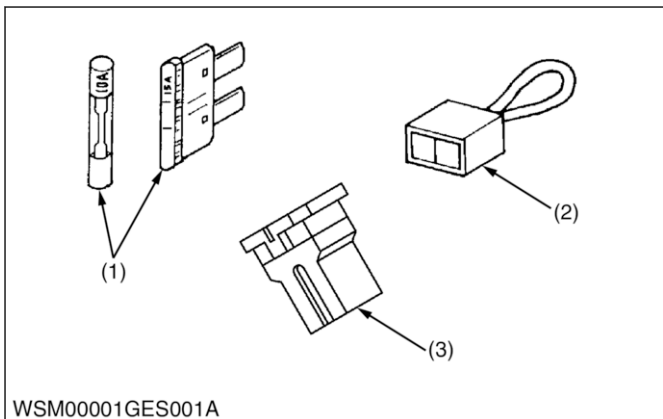
- Do not pinch the wire harness when installing parts.



(4) Wire harness (L) Bad

18. Handling fuses

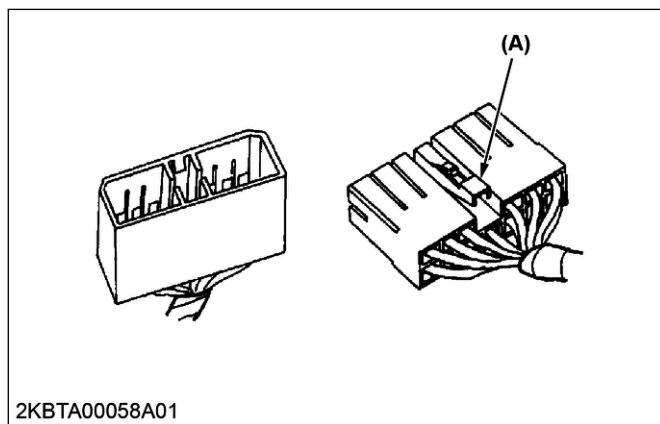
- Always use fuses of the specified capacity.
- Do not use steel or copper wiring instead of fuse.
- Do not install work light or radio without auxiliary power line.
- Do not install auxiliaries to the fuses. The fuses may blow.



(1) Fuse (2) Fusible link (3) Slow blow fuse

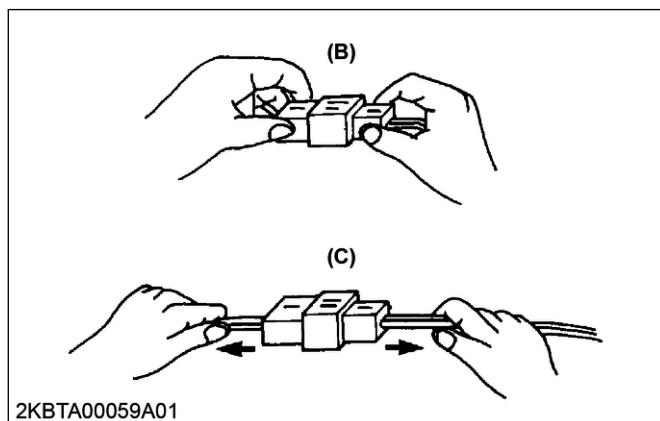
19. Handling connectors

- When disconnecting the locking connectors, be sure to disengage the lock before disconnecting. There are two kinds of locks: one requires pressing and the other requires pulling.



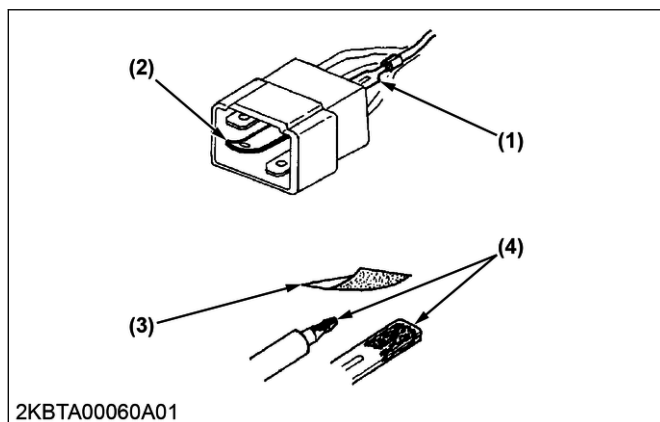
(A) Press

- Hold on tightly to the connectors when disconnecting them.
- Do not pull wire harness itself.



(B) Correct method (C) Incorrect method

- Make sure the terminal condition of the connectors is not bent, rusty, and so on.
 - If the terminal is rusted, remove rust with sandpaper.
- However, do not polish the terminal of the waterproof connector or the plated terminal.

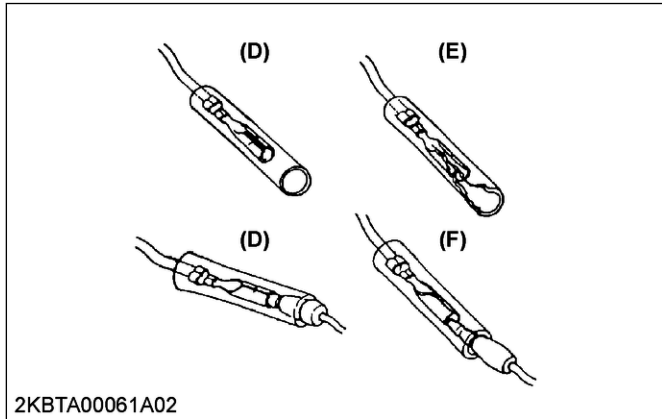


(1) Missing terminal (2) Bent terminal (3) Sandpaper (4) Rust

- Cover the female bullet terminals and male bullet terminals securely with the plastic covers.

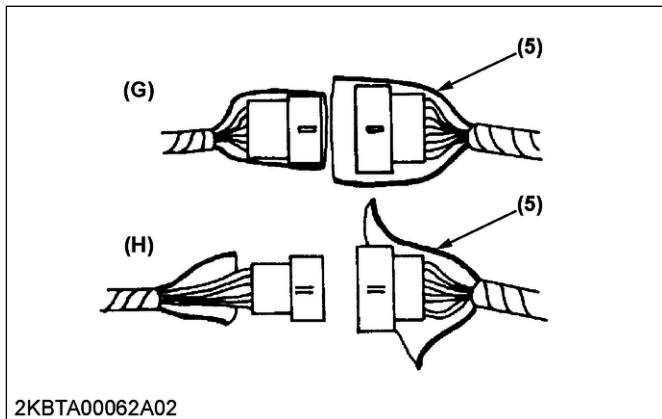
2. GENERAL

- Make sure that the bullet terminals are secure and connected securely to the tip.



(D) Good (F) Bad: poor connection
(E) Bad: damaged cover

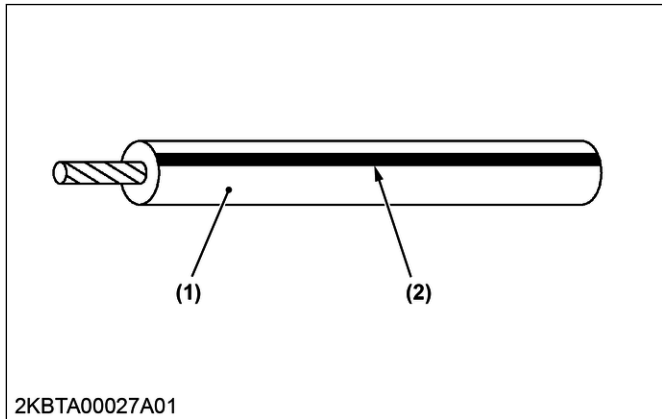
- Cover the female connectors and male connectors securely with the plastic covers.



(5) Cover (H) Bad: damaged cover
(G) Good

20. Wiring color

- Wire colors are specified in the color codes.



(1) Wire color (2) Stripe

Wiring Colors	Color code
Black	B
Brown	BR, Br
Green	G
Gray	GY, GR, Gr
Blue	L
Light green	LG, Lg
Orange	OR, Or
Pink	P
Purple	PU, Pu, V
Red	R
Sky blue	SB, Sb
White	W
Yellow	Y

- This symbol of "/" shows color with stripe(s).
(An example)

W/R:

White with red stripe

21. Washing the machine with a high pressure washer

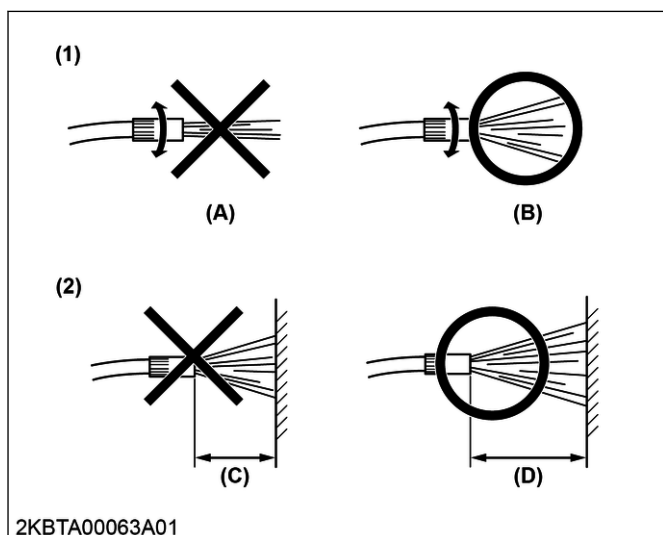
Use a high pressure washer properly to avoid personal injuries and damages to the machine.

CAUTION

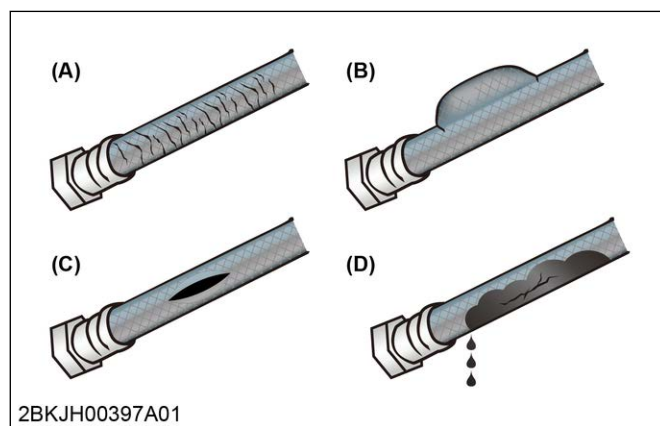
- Damaged or cut the wire harness may cause fire.
- Damaged hydraulic hoses or oil seals may cause injury due to hydraulic oil gushing out.

IMPORTANT

- Water infiltration may cause machine problems.
- Adjust the high pressure washer nozzle for a wide spray. Do not adjust to pencil point spray.
- Spray the water at least 2 m away from the machine.



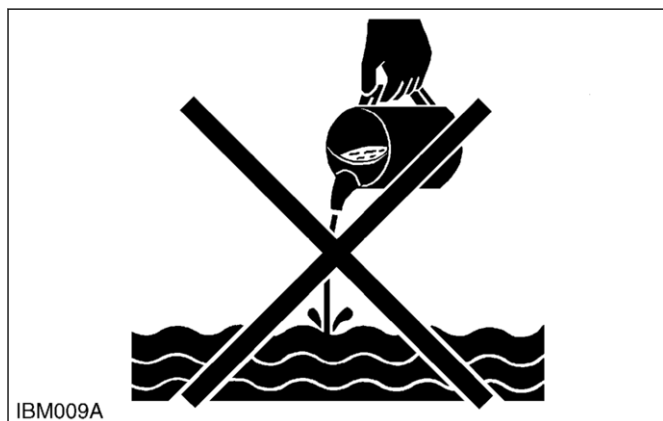
- (1) Adjusting the washer power (C) Less than 2 m (80 in.)
(2) Washing distance (D) Over 2 m (80 in.)
(A) Pencil point spray
(B) Wide spray



- (A) Cracks
(B) Blisters
(C) Tear
(D) Leakage

22. Dispose fluids correctly

- Do not dispose fluids on the ground, down the drain, into a stream, pond, or lake. Obey related environmental protection regulations when you dispose of oil, fuel, coolant, electrolyte, and other dangerous materials.



23. Checking hoses

- Inspect the hoses of cracks, hardening, blisters, corrosion, leakage, abrasion, tear, cut, kink and any other signs of wear or damage.
- If any damage is found, replace them.

2. GENERAL

TIGHTENING TORQUES

Refer to the following table if the tightening torques of screws, bolts and nuts are not specified in each part.

1. General use screws, bolts and nuts

Indication on top of bolt	  No-grade or 4T					
Indication on top of nut	  No-grade or 4T					
Material of opponent part	Ordinariness			Aluminum		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M6	7.9 to 9.3	0.80 to 0.95	5.8 to 6.8	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5
M8	18 to 20	1.8 to 2.1	13 to 15	17 to 19	1.7 to 2.0	13 to 14
M10	40 to 45	4.0 to 4.6	29 to 33	32 to 34	3.2 to 3.5	24 to 25
M12	63 to 72	6.4 to 7.4	47 to 53	—	—	—
M14	108 to 125	11.0 to 12.8	79.6 to 92.5	—	—	—
M16	167 to 191	17.0 to 19.5	123 to 141	—	—	—
M18	246 to 284	25.0 to 29.0	181 to 209	—	—	—
M20	334 to 392	34.0 to 40.0	246 to 289	—	—	—

Indication on top of bolt	  7T					
Indication on top of nut	  No-grade or 4T					
Material of opponent part	Ordinariness			Aluminum		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M6	9.81 to 11.2	1.00 to 1.15	7.24 to 8.31	7.9 to 8.8	0.80 to 0.90	5.8 to 6.5
M8	24 to 27	2.4 to 2.8	18 to 20	18 to 20	1.8 to 2.1	13 to 15
M10	48 to 55	4.9 to 5.7	36 to 41	40 to 44	4.0 to 4.5	29 to 32
M12	78 to 90	7.9 to 9.2	58 to 66	63 to 72	6.4 to 7.4	47 to 53
M14	124 to 147	12.6 to 15.0	91.2 to 108	—	—	—
M16	197 to 225	20.0 to 23.0	145 to 166	—	—	—
M18	275 to 318	28.0 to 32.5	203 to 235	—	—	—
M20	368 to 431	37.5 to 44.0	272 to 318	—	—	—

Indication on top of bolt	 9T		
Indication on top of nut	   6T		
Material of opponent part	Ordinariness		
Unit	N·m	kgf·m	lbf·ft
M6	12.3 to 14.2	1.25 to 1.45	9.05 to 10.4
M8	30 to 34	3.0 to 3.5	22 to 25
M10	61 to 70	6.2 to 7.2	45 to 52
M12	103 to 117	10.5 to 12.0	76.0 to 86.7
M14	167 to 196	17.0 to 20.0	123 to 144
M16	260 to 304	26.5 to 31.0	192 to 224
M18	344 to 402	35.0 to 41.0	254 to 296
M20	491 to 568	50.0 to 58.0	362 to 419

2. Stud bolts

Material of opponent part	Ordinariness			Aluminum		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8	12 to 15	1.2 to 1.6	8.7 to 11	8.9 to 11	0.90 to 1.2	6.5 to 8.6
M10	25 to 31	2.5 to 3.2	18 to 23	20 to 25	2.0 to 2.6	15 to 18
M12	30 to 49	3.0 to 5.0	22 to 36	31	3.2	23
M14	62 to 73	6.3 to 7.5	46 to 54	—	—	—
M16	98.1 to 112	10.0 to 11.5	72.4 to 83.1	—	—	—
M18	172 to 201	17.5 to 20.5	127 to 148	—	—	—

3. Hydraulic fitting

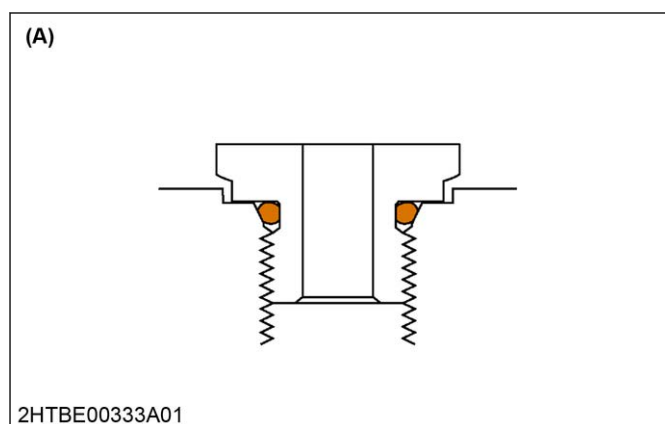
3.1 Hydraulic hose fittings

Hose size	Thread side	Tightening torque		
		N·m	kgf·m	lbf·ft
02	1/8	13.8 to 15.6	1.40 to 1.60	10.2 to 11.5
03	1/4	22.6 to 27.4	2.30 to 2.80	16.7 to 20.2
04				
05	3/8	45.2 to 52.9	4.60 to 5.40	33.3 to 39.0
06				

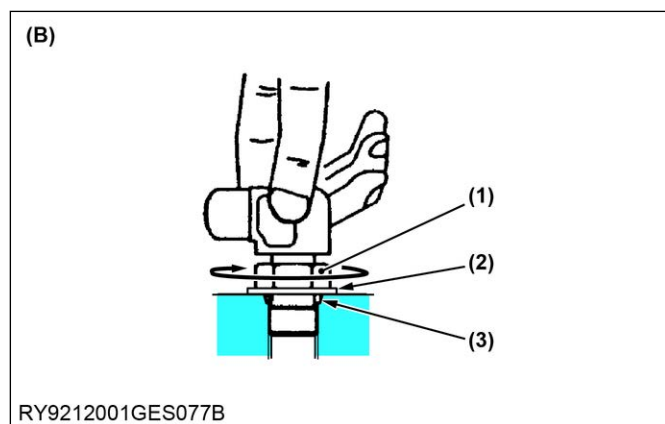
3.2 Hydraulic pipe cap nuts

Pipe size	Tightening torque		
	N·m	kgf·m	lbf·ft
φ4 × t1.0	19.7 to 29.4	2.00 to 3.00	14.5 to 21.6
φ6 × t1.0	24.6 to 34.3	2.50 to 3.50	18.1 to 25.3
φ8 × t1.0	29.5 to 39.2	3.00 to 4.00	21.7 to 28.9
φ10 × t1.0	39.3 to 49.0	4.00 to 5.00	29.0 to 36.1
φ12 × t1.5	49.1 to 68.6	5.00 to 7.00	36.2 to 50.6
φ15 × t1.6	108 to 117	11.0 to 12.0	79.6 to 86.7
φ18 × t1.6	108 to 117	11.0 to 12.0	79.6 to 86.7

3.3 Adapters, elbows and others



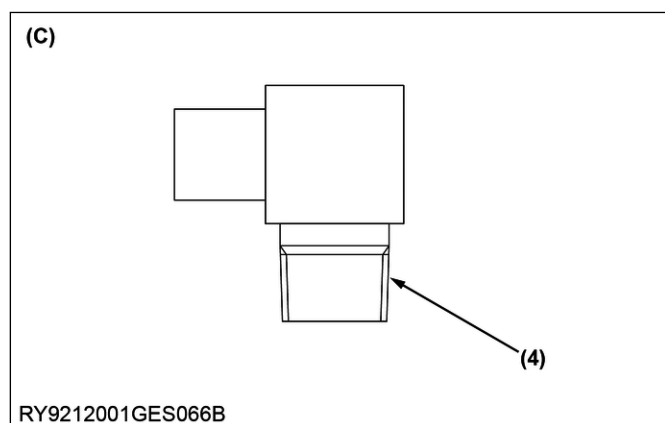
(A) Fitting with O-ring



(B) Lock nut of elbow with O-ring (1) Lock nut

(2) Seat

(3) Seal (O-ring)



(C) Adapter with taper thread (4) Taper thread

Item	Thread side	Tightening torque		
		N·m	kgf·m	lbf·ft
Fitting with O-ring (A)	G 1/8	15.0 to 16.5	1.53 to 1.68	11.1 to 12.1
	G 1/4	24.5 to 29.4	2.50 to 2.99	18.1 to 21.6
	G 3/8	49.0 to 53.9	5.00 to 5.49	36.2 to 39.7
	G 1/2	58.8 to 63.7	6.00 to 3.49	43.4 to 46.9
Lock nut of elbow with O-ring (B)	G 1/8	23 to 26	2.3 to 2.7	17 to 19
	G 1/4	36 to 43	3.6 to 4.4	26 to 31
	G 3/8	54 to 63	5.5 to 6.5	40 to 47
	G 1/2	73 to 83	7.4 to 8.5	54 to 61
Adapter with taper thread (C)	R 1/8	9.8 to 14	1.0 to 1.5	7.3 to 10
	R 1/4	30 to 34	3.0 to 3.5	22 to 25
	R 3/8	49 to 68	5.0 to 7.0	37 to 50
	R 1/2	69 to 88	7.0 to 9.0	51 to 65

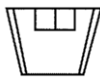
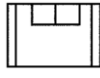
4. Metric screws, bolts and nuts

Grade	 Property class 8.8			 Property class 10.9		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
M8	24 to 27	2.4 to 2.8	18 to 20	30 to 34	3.0 to 3.5	22 to 25
M10	48 to 55	4.9 to 5.7	36 to 41	61 to 70	6.2 to 7.2	45 to 52
M12	78 to 90	7.9 to 9.2	58 to 66	103 to 117	10.5 to 12.0	76.0 to 86.7
M14	124 to 147	12.6 to 15.0	91.2 to 108	167 to 196	17.0 to 20.0	123 to 144
M16	197 to 225	20.0 to 23.0	145 to 166	260 to 304	26.5 to 31.0	192 to 224

5. American standard screws, bolts and nuts with UNC or UNF threads

Grade	 SAE GR.5			 SAE GR.8		
Unit	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
1/4	11.7 to 15.7	1.20 to 1.60	8.63 to 11.5	16.3 to 19.7	1.67 to 2.00	12.0 to 14.6
5/16	23.1 to 27.7	2.36 to 2.82	17.0 to 20.5	33 to 39	3.4 to 3.9	25 to 28
3/8	48 to 56	4.9 to 5.7	36 to 41	61 to 73	6.3 to 7.4	45 to 53
1/2	110 to 130	11.3 to 13.2	81.2 to 95.8	150 to 178	15.3 to 18.1	111 to 131
9/16	150 to 178	15.3 to 18.1	111 to 131	217 to 260	22.2 to 26.5	160 to 191
5/8	204 to 244	20.8 to 24.8	151 to 179	299 to 357	30.5 to 36.4	221 to 263

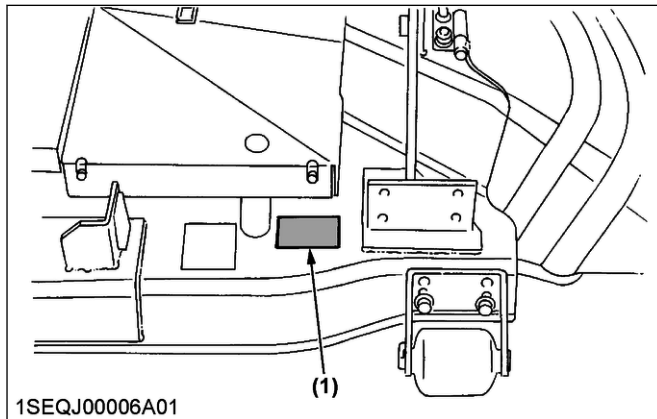
6. Plugs

Shape	Size	Material of opponent part					
		Ordinariness			Aluminum		
		N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
Tapered screw 	R1/8	13 to 21	1.3 to 2.2	9.4 to 15	13 to 19	1.3 to 2.0	9.4 to 14
	R1/4	25 to 44	2.5 to 4.5	18 to 32	25 to 34	2.5 to 3.5	18 to 25
	R3/8	49 to 88	5.0 to 9.0	37 to 65	49 to 58	5.0 to 6.0	37 to 43
	R1/2	58.9 to 107	6.00 to 11.0	43.4 to 79.5	59 to 78	6.0 to 8.0	44 to 57
Straight screw 	G1/4	25 to 34	2.5 to 3.5	18 to 25	—	—	—
	G3/8	62 to 82	6.3 to 8.4	46 to 60	—	—	—
	G1/2	49 to 88	5.0 to 9.0	37 to 65	—	—	—

GENERAL MACHINE INFORMATION

1. Mower identification

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



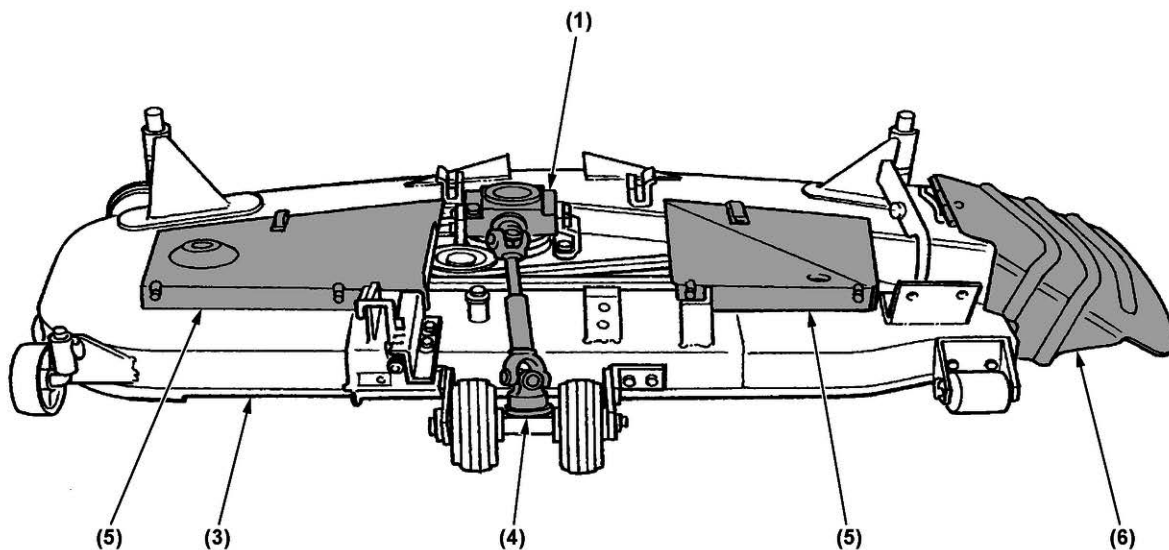
(1) Serial number

2. Specifications

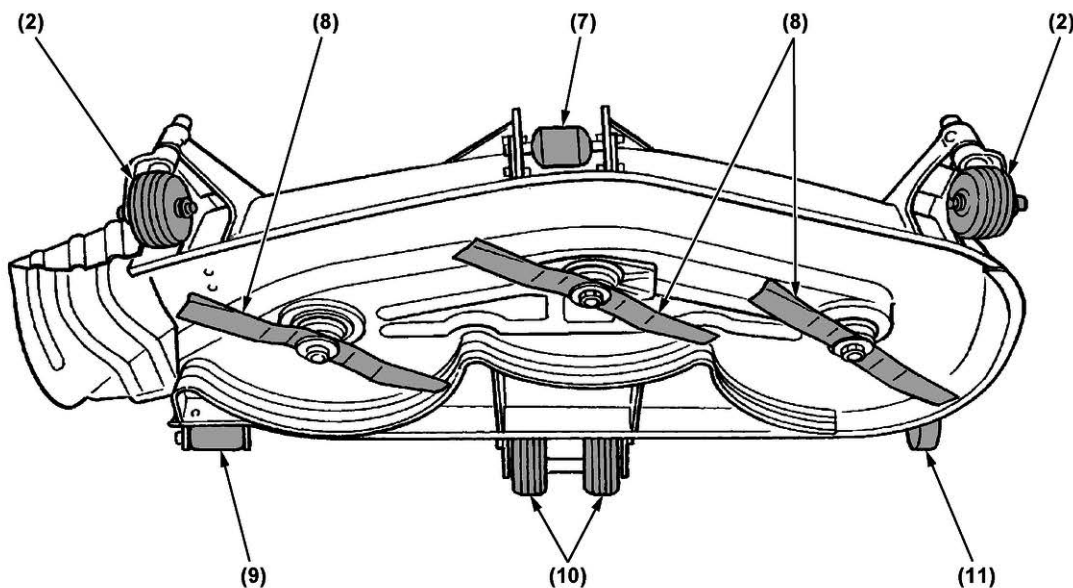
Model			RCK60-30BC	RC72-30BC
Suitable tractor			B2650, B3350, B3150, LX2610, LX2620, LX3310	
Mounting method			Parallel linkage	
Adjustment of cutting height			Gauge wheel	
Cutting width	mm (in.)		1524 (60)	1826 (72)
Cutting height	mm (in.)		38 to 102 (1.5 to 4.0)	
Weight (approximation)	kg (lbs.)		170 (375)	210 (463)
Blade spindle speed	r/s (rpm)		44.7 (2680)	40.0 (2400)
Blade tip velocity	m/s (fpm)		73.4 (14439)	78.4 (14680)
Blade length	mm (in.)		523 (20.6)	625 (24.6)
Number of blades			3	
Dimensions	Total length	mm (in.)	1060 (41.7)	1243 (48.9)
	Total width	mm (in.)	1881 (74.0)	2247 (88.5)
	Total height	mm (in.)	345 (13.6)	370 (14.6)

3. Terminology of the mower

RCK60-30BC



1SEQJ00007A02

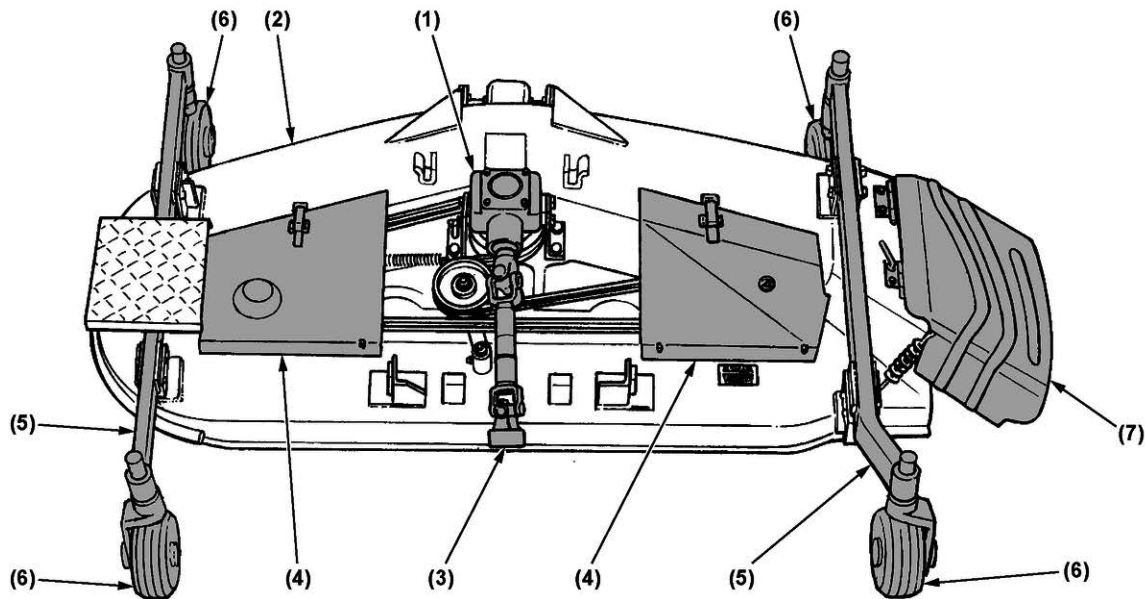


1SEQJ00008A02

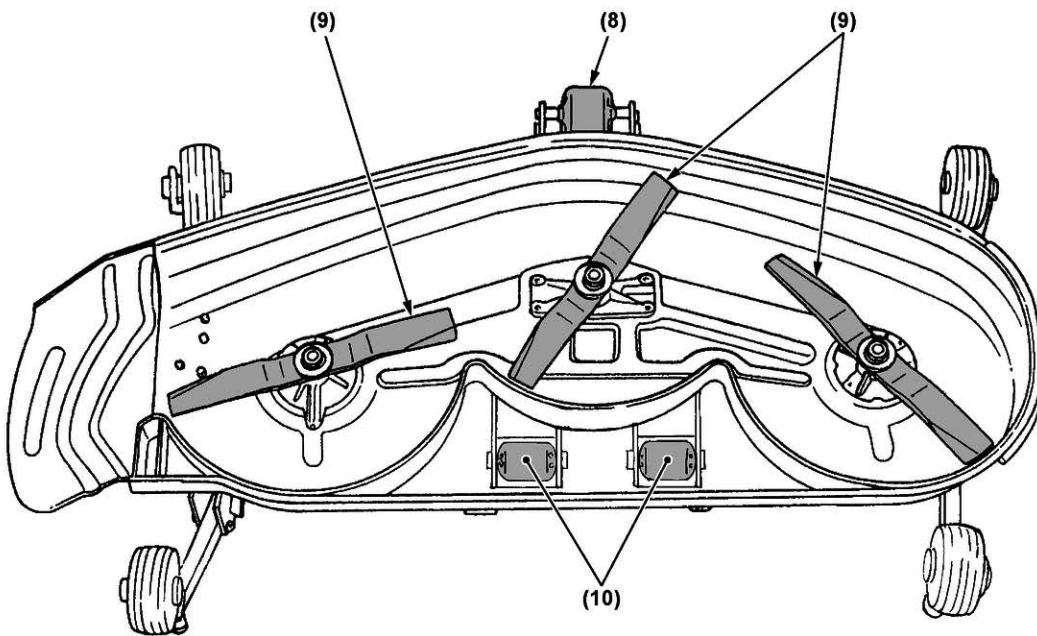
- | | | | |
|-----------------------|-------------------------|-----------------------------|-----------------------|
| (1) Gear box | (4) Universal joint | (7) Front anti-scalp roller | (10) Rear gauge wheel |
| (2) Front gauge wheel | (5) Belt cover | (8) Blade | (11) Anti-scalp wheel |
| (3) Mower deck | (6) Discharge deflector | (9) Rear anti-scalp roller | |

2. GENERAL

RC72-30BC



1SEQJ00009A02



1SEQJ00010A02

- | | | | |
|---------------------|----------------------|-----------------------------|-----------------------------|
| (1) Gear box | (4) Belt cover | (7) Discharge deflector | (10) Rear anti-scalp roller |
| (2) Mower deck | (5) Gauge wheel stay | (8) Front anti-scalp roller | |
| (3) Universal joint | (6) Gauge wheel | (9) Blade | |

4. Setting up of the mower

4.1 Setting-up procedure of the mower

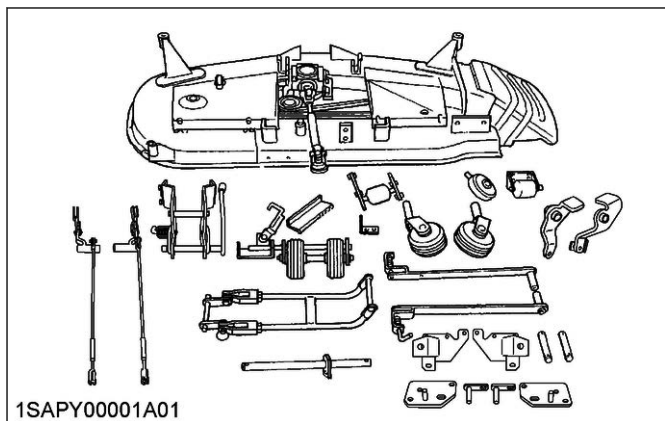
Some of the mower parts were packed separately.
Read the following procedure to properly assemble the mower.

1. **Pre-assembly**
(See [Checking the parts of the mower before assembly on page 2-21.](#))
2. **Setting up the mower**
(See [Setting up the mower RCK60-30BC on page 2-21.](#))
(See [Setting up the mower RC72-30BC on page 2-23.](#))
3. **Mounting the mower to the tractor with titan turf tires**
(See [Installing mower stopper extension on page 2-24.](#))

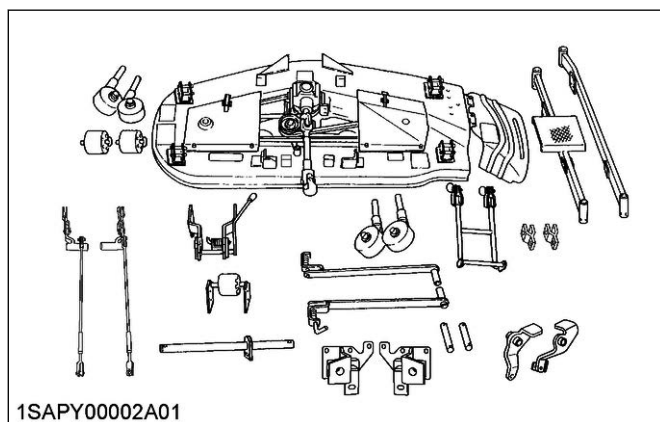
4.1.1 Checking the parts of the mower before assembly

1. Get all the mower components out from the case, and check the parts as illustrated in the following figures.
Some of these parts may already be assembled to the mower deck.

RCK60-30BC



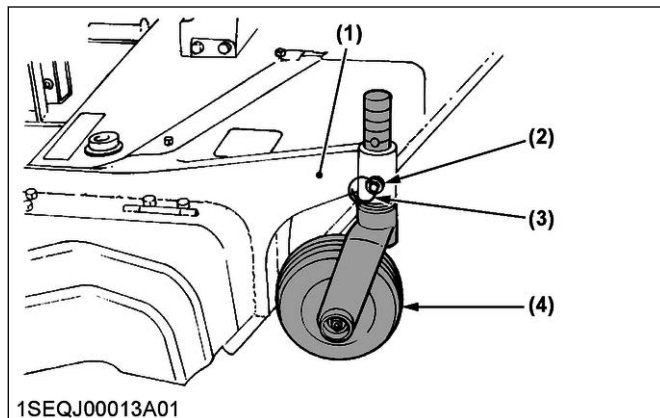
RC72-30BC



4.1.2 Setting up the mower

4.1.2.1 Setting up the mower RCK60-30BC

1. Attach the front gauge wheels to the arms of the mower deck with the clevis pins and snap rings.



- (1) Arm
- (2) Clevis pin $\varnothing 10 \times 50$
- (3) Snap ring $\varnothing 45$
- (4) Front gauge wheel

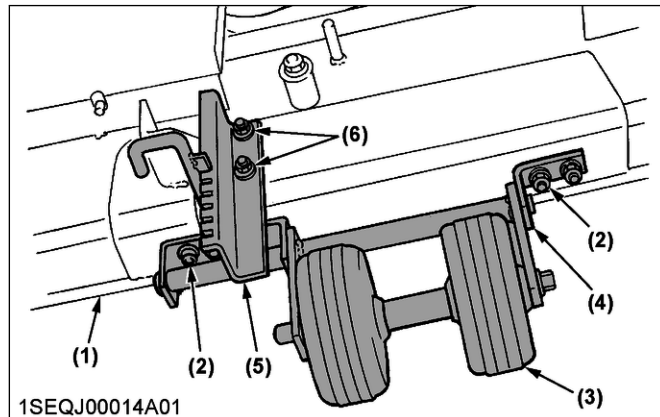
2. GENERAL

GENERAL MACHINE INFORMATION

4. Setting up of the mower

- Attach the bracket to the mower deck with M10 bolts, spring washers and nuts. Then attach the rear gauge wheel assembly to the mower deck with M10 bolts, spring washers and nuts. Attach the adjusting plate to the mower deck with M10 bolts, spring washers and nuts.

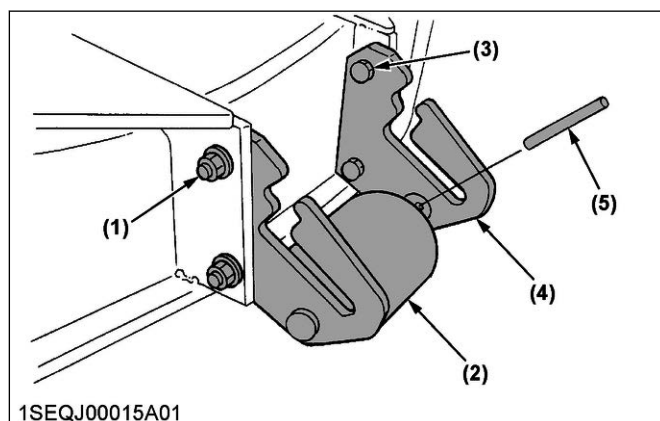
Tightening torque	M10	48.1 to 55.9 N·m 4.9 to 5.7 kgf·m 35.4 to 41.2 lbf·ft
-------------------	-----	---



- Mower deck
- 5-M10 × 25 bolt, spring washer, nut
- Rear gauge wheel assembly
- Bracket
- Adjusting plate
- 2-M10 × 25 bolt, spring washer, nut

- Attach the bracket to the mower deck with M10 bolts, spring washers and nuts, and the front center anti-scalp roller to the bracket with the spring pin.

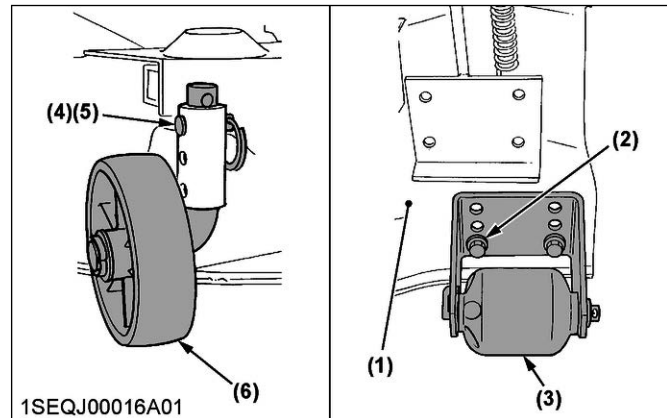
Tightening torque	M10	48.1 to 55.9 N·m 4.9 to 5.7 kgf·m 35.4 to 41.2 lbf·ft
-------------------	-----	---



- 4-Spring washer, nut (outside)
- Front center anti-scalp roller
- 4-M10 × 30 bolt
- 2-Bracket (LH and RH)
- Spring pin (ø5.6 × 19)

- Attach the anti-scalp wheel with the clevis pin and snap ring, and the rear anti-scalp roller with M10 bolts and spring washers to the mower deck.

(See tightening torque chart in step 3.)
Assemble the clevis pin as shown in the figure.



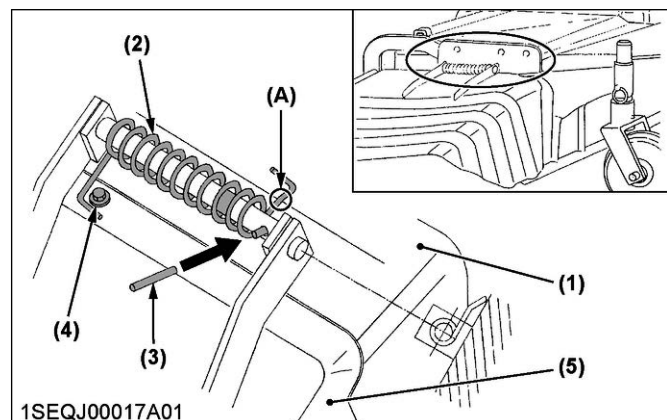
- Mower deck
- 2-M10x25 bolt, spring washer
- Rear anti-scalp roller
- Clevis pin (ø7.9 × 35)
- Snap ring
- Anti-scalp wheel

- Attach the discharge deflector to the mower deck with the spring, spring pin, M10 bolt, spring washer and nut. (See tightening torque chart in step 3.) Secure the spring to the discharge deflector as illustrated.

WARNING

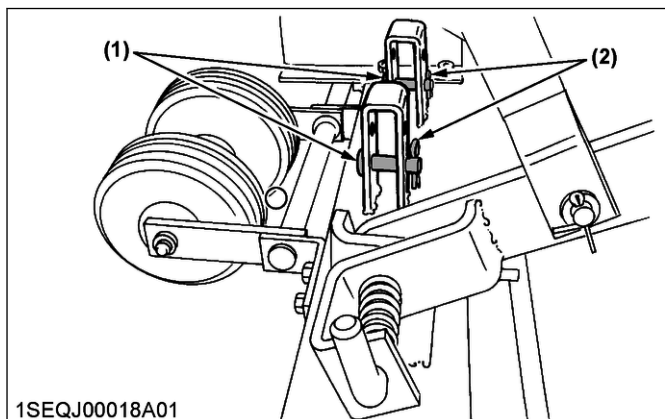
To avoid serious injury or death:

- Discharge deflector stopper should be set in place as shown below.



- Mower deck
 - Spring
 - Spring pin (ø5.6 × 19)
 - Discharge deflector stopper (M10 × 25 bolt, spring washer, nut)
 - Discharge deflector
- (A) Bent side

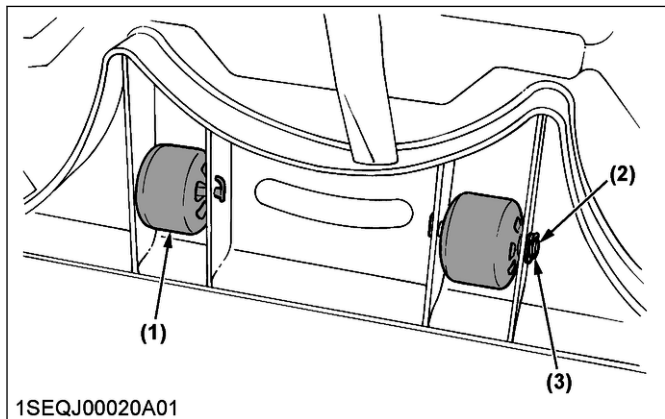
6. Install the clevis pins (for holding the mower when using 3 point hitch attachments) with the snap pin as illustrated below.



- (1) 2-Clevis pin ($\varnothing 12.7 \times 44$)
(2) 2-Snap pin

4.1.2.2 Setting up the mower RC72-30BC

1. Attach the rear anti-scalp roller to the mower deck as illustrated.



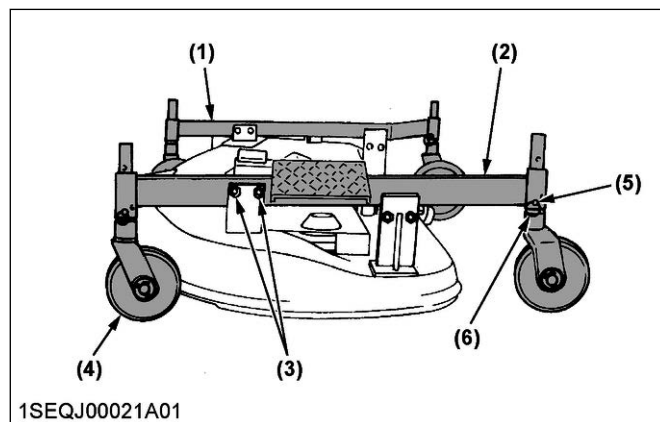
- (1) 2-Rear anti-scalp roller ($\varnothing 80$)
(2) 2-Cotter pin
(3) 2-Plain washer

2. Attach the gauge wheel stays to the mower deck with M12 bolts, spring washers and nuts. Then attach the gauge wheels to the mower deck with the clevis pins and snap rings.

■ IMPORTANT

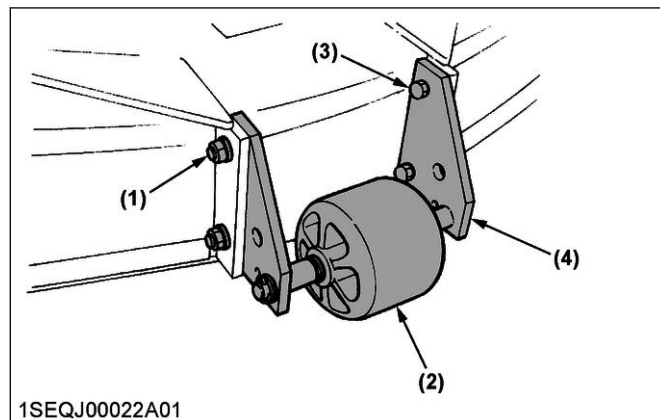
- Keep the gauge wheels at the same level when in contact with ground. Now tighten up the gauge wheel stays with bolts.

Tightening torque	M12	77.4 to 90.2 N·m 8.0 to 9.2 kgf·m 57.2 to 66.5 lbf·ft
-------------------	-----	---



- (1) Gauge wheel stay (RH)
(2) Gauge wheel stay (LH)
(3) 8-M12 $\times$ 70 bolt, spring washer, nut
(4) 4-Gauge wheel
(5) 4-Clevis pin
(6) 4-Snap ring

3. Attach the bracket to the mower deck with M10 bolts, spring washers and nuts.



- (1) 4-Spring washer and nut
(2) Front anti-scalp roller ($\varnothing 100$)
(3) 6-M10 $\times$ 30 bolt
(4) 2-Bracket (LH and RH)

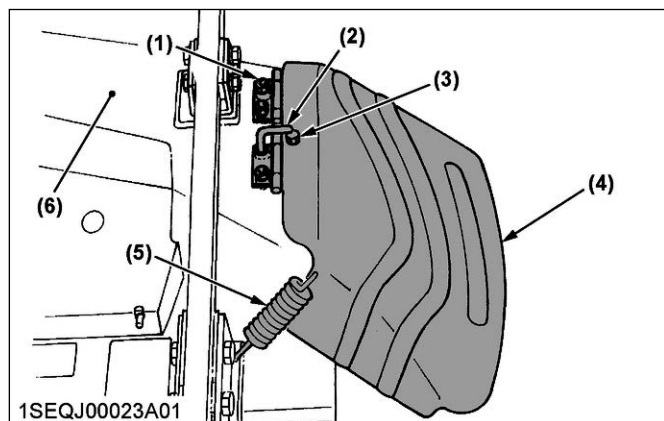
4. Attach the discharge deflector and discharge deflector stopper to the mower deck with M10 bolts, spring washers and nuts. Secure the spring to the discharge deflector as illustrated.

**WARNING**

To avoid serious injury or death:

- Discharge deflector stopper should be set in place as shown below.

(See tightening torque chart in step 2.)



- (1) 3-M10 × 25 bolt
(2) Discharge deflector stopper
(3) 3-M10 × 28 bolt
(4) Discharge deflector
(5) Spring/Diameter 22 mm (0.87 in.)
(6) Mower deck

4.2 Mounting RCK60-30BC to the tractor with titan turf tires

4.2.1 Installing mower stopper extension

■ IMPORTANT

- Installation of this parts is required when you mount RCK60-30BC mower to tractor with the ABR8742 front turf tire (24 × 8.50-14) and ABR8744 rear turf tire (13.6-16) to prevent interference between the mower and tires.

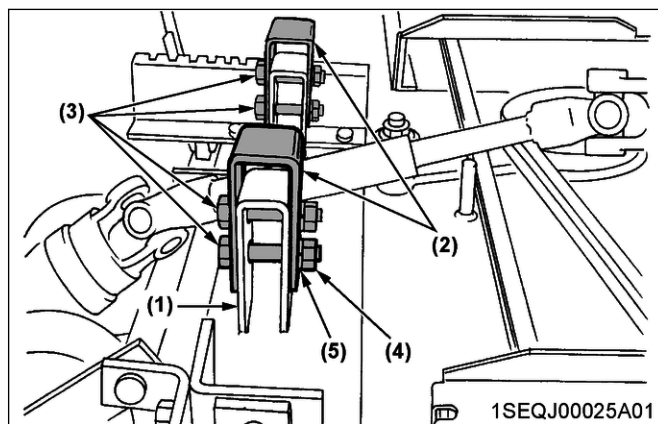


To avoid serious injury or death:

- Keep bystanders and animals away from the working area.
- Apply the parking brake.
- Shut off the engine and remove the key.

1. Attach the stopper plate extensions to the existing mower rear stopper plates using the M12 bolts, M12 washers, and M12 lock nuts provided.

Tightening torque	M12	77.4 to 90.2 N·m 8.0 to 9.2 kgf·m 57.2 to 66.5 lbf·ft
-------------------	-----	---



- (1) 2-Rear stopper plate
(2) 2-Stopper plate extension
(3) M12 × 1.25 × 60 hex bolt
(4) M12 × 1.25 lock nut
(5) M12 flat washer

5. Mounting the mower to the tractor

**WARNING**

To avoid serious injury or death:

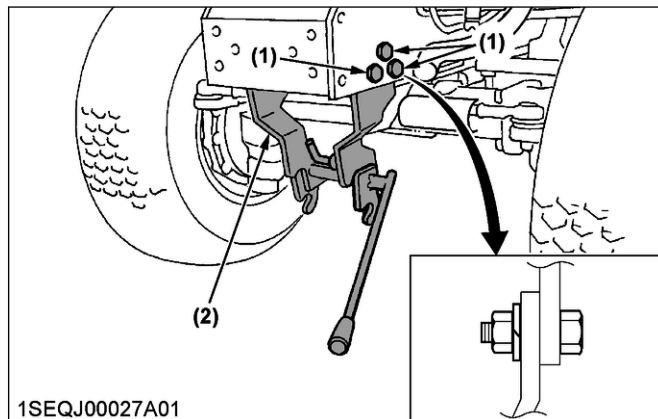
- Park the tractor on a firm, flat and level surface, set the parking brake, stop the engine and remove the key.

5.1 Mounting the front hanger bracket to the tractor

1. Attach the front hanger bracket assembly to the tractor with M14 bolts, nuts and spring washers.

Tightening torque	M14	123.6 to 147.0 N·m 12.6 to 15.0 kgf·m 91.1 to 108.5 lbf·ft
-------------------	-----	--

RCK60-30BC, RC72-30BC



- (1) 6-M14 × 35 bolt, spring washer, nut
(2) Front hanger bracket assembly

5.2 Mounting the mid and rear hanger brackets and shaft to the tractor

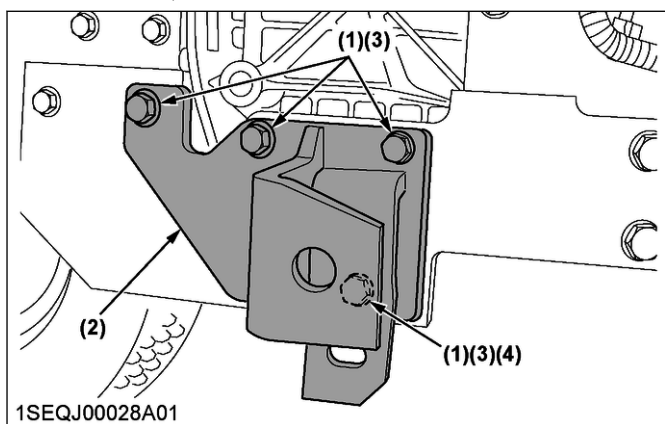
1. Attach the mid hanger brackets to the tractor with M12 bolts, plain washers and nuts.

■ IMPORTANT

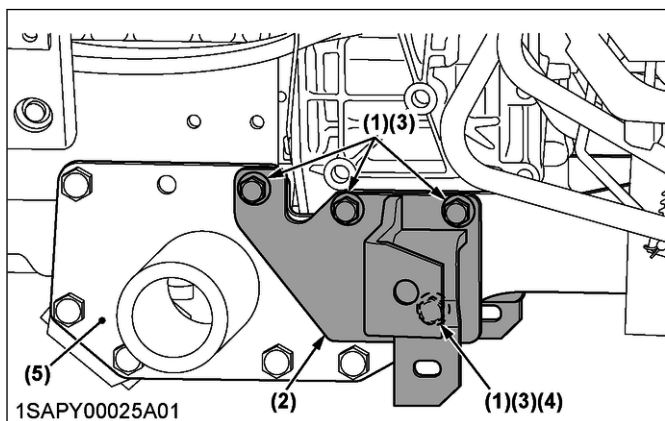
- **Check tractor model.**
Between LX2620 and all other models, the applied bolt and nut pitch is different. In the case of assembling different bolt, tractor frame damages.
Applied bolt and nut
LX2620: M12 × 1.25 (Black)
Other: M12 × 1.75 (Silver)

Tightening torque	M12	77.4 to 90.2 N·m 8.0 to 9.2 kgf·m 57.2 to 66.5 lbf·ft
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RCK60-30BC, RC72-30BC without loader frame



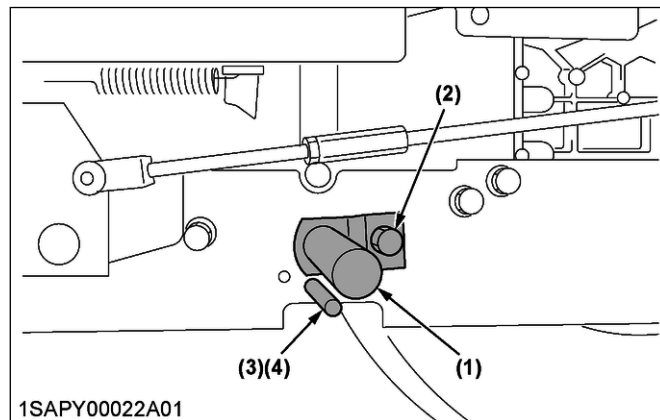
RCK60-30BC, RC72-30BC with loader frame



- (1) 8-M12 × 45 bolt
- (2) 2-Mid hanger bracket (LH and RH)
- (3) 8-plain washer
- (4) 2-nut
- (5) Loader frame

2. Install the rear hanger shaft from left side of the tractor stay holes.

3. Install the M12 stud bolts and nuts.
(See tightening torque chart in step 1.)



- (1) Rear hanger shaft
- (2) 1-M12 × 25 bolt (LH side only)
- (3) Nut
- (4) 2-M12 stud bolt

5.3 Setting up the rear links

1. Install the lift arms to the rear hanger shaft with link stoppers and cotter pins.

2. GENERAL

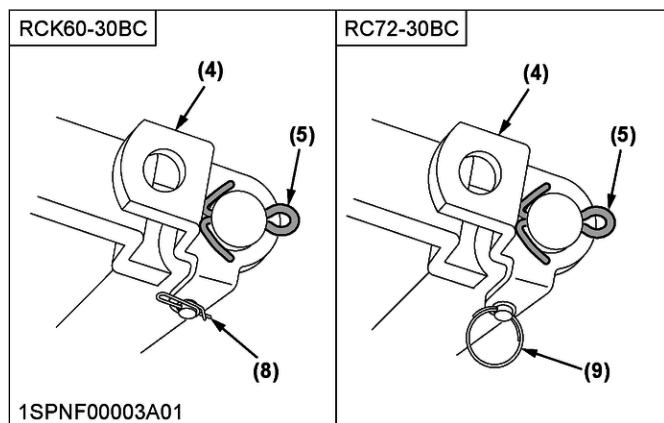
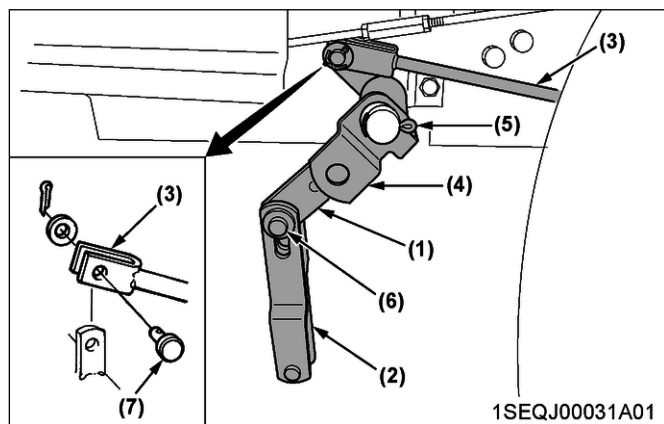
GENERAL MACHINE INFORMATION

5. Mounting the mower to the tractor

- Install the lift arms, lift links and connecting rods with clevis pins, plain washers and cotter pins as illustrated below.

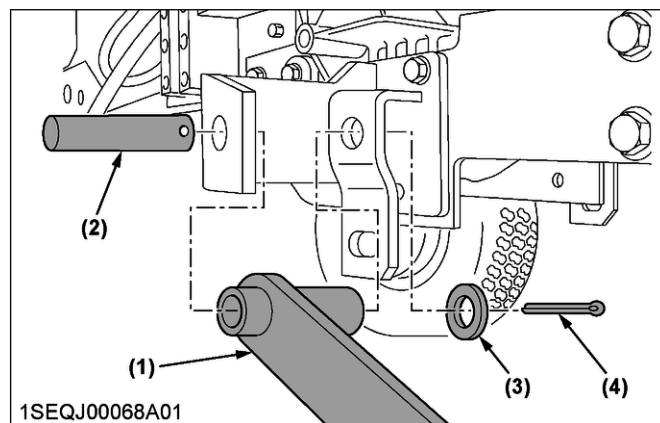
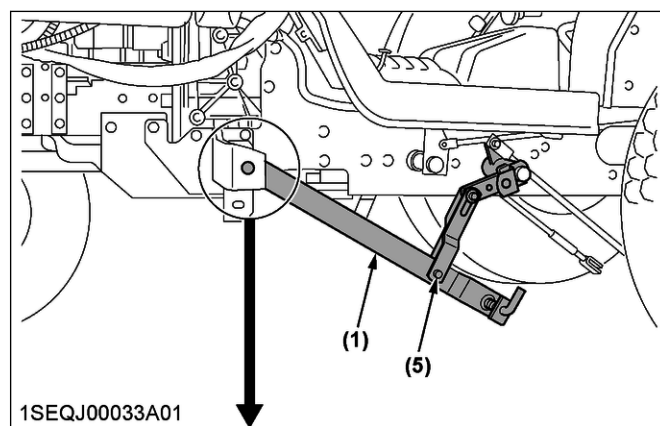
NOTE

- Completely bend the cotter pin (5) to prevent the contact with link stopper as shown below.
- When assembling the connecting rod, insert the clevis pin from the outside as shown, and properly bend the cotter pin.



- | | |
|--|---|
| (1) Lift arms | (6) Clevis pin ($\varnothing 12.7 \times 38$) |
| (2) Lift link | (7) Clevis pin ($\varnothing 12.7 \times 32$) |
| (3) Connecting rod | (8) Rue ring cotter pin |
| (4) Link stopper | (9) Snap ring |
| (5) Cotter pin ($\varnothing 5.6 \times 44$) | |

- Assemble the rear link with the stay pins, plain washers and cotter pins.
- Connect the rear link to the lift link with the clevis pins, plain washers and cotter pins.

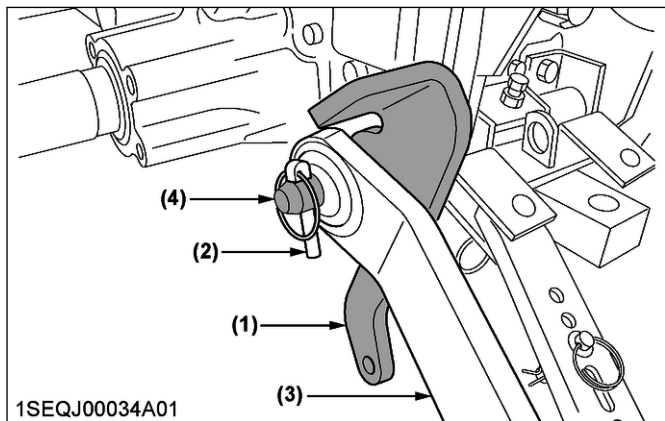


- | |
|---|
| (1) Rear link |
| (2) Stay pin |
| (3) Plain washers |
| (4) Cotter pins ($\varnothing 4 \times 32$) |
| (5) Clevis pin |

5. Install the lift brackets to the tractor.

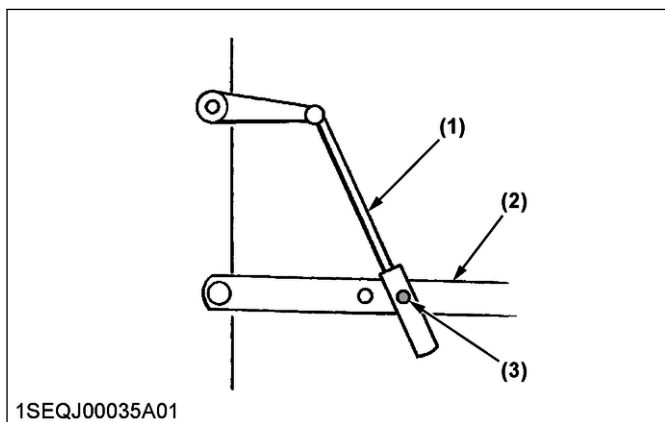
■ NOTE

- Pull out the set pin first and then the spacer and the lower link.
- Attach both lift brackets inside the lower links to the lower link pins with the set pins as illustrated below.



- (1) Lift bracket
(2) Set pin
(3) Lower link
(4) Lower link pin

- Connect the lifting rods and adjust the length of both lifting rods equally with the turnbuckle of the right connecting rods.



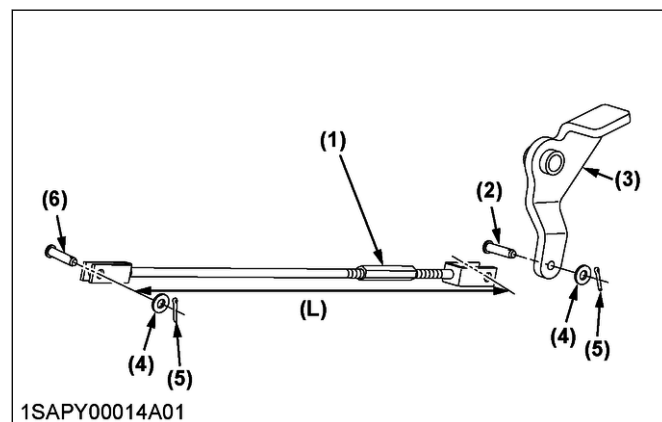
- (1) Lifting rods (3 point hitch)
(2) Lower link
(3) Setting position

6. Connect the connecting rods to the lift brackets with clevis pins, plain washers and cotter pins.

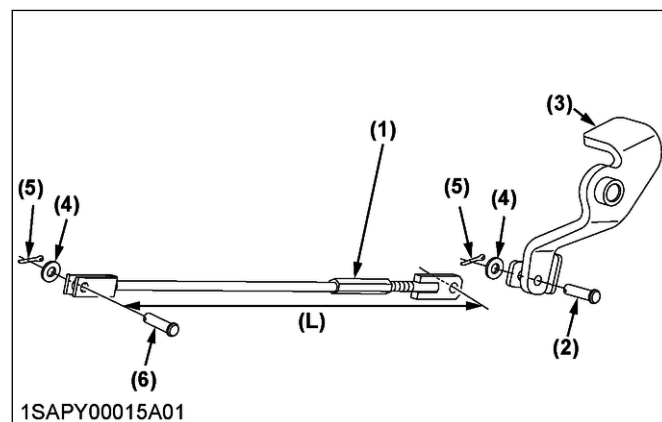
■ NOTE

- Make sure the lengths (L) of the mower connecting rods are as shown in the following table.

LH



RH



- (1) Connecting rod
(2) Clevis pin (ø12.7 × 44)
(3) Lift bracket
(4) Plain washer
(5) Cotter pin
(6) Clevis pin (ø12.7 × 32)

Mower	Connecting rod (L)
RCK60-30BC	665 mm (26.2 in.)
RC72-30BC	670 mm (26.4 in.)

5.4 Mounting the mower to the tractor

⚠ WARNING

To avoid serious injury or death:

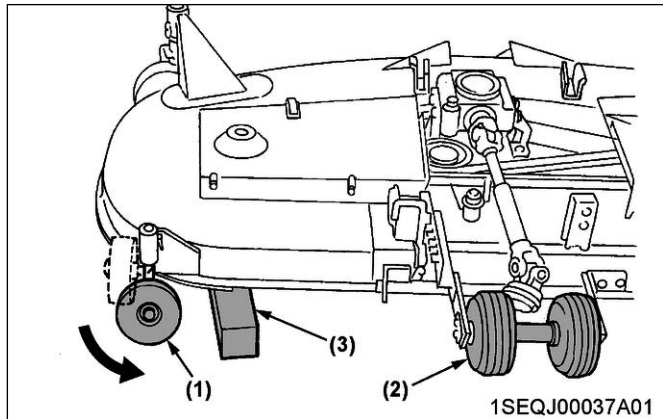
- Before starting the engine, make sure that all levers (including auxiliary control levers) are in their "NEUTRAL" positions, that the parking brake is engaged, and that both the clutch and the power take-off (PTO) are disengaged (OFF).

■ IMPORTANT

- You cannot mount the mower to the tractor with backhoe. Before mounting the mower, remove the backhoe from the tractor.

5.4.1 Mounting the mower to the tractor RCK60-30BC

- Place the mower on a block as illustrated.
 - Turn the anti-scalp wheel sideways and move the rear gauge wheel to the lowest cutting height. Remove the block.



- (1) Anti-scalp wheel
- (2) Rear gauge wheel
- (3) Block

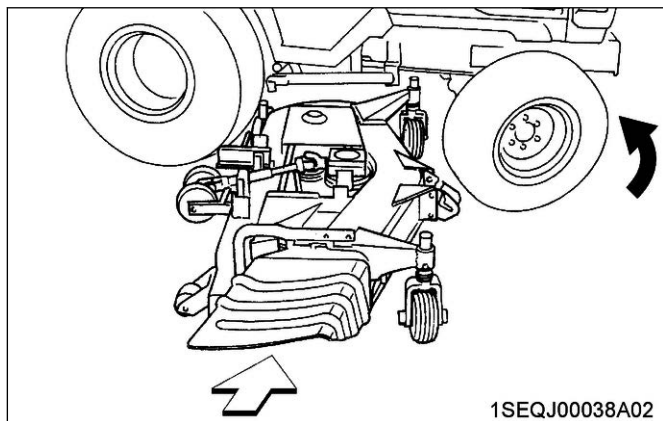


WARNING

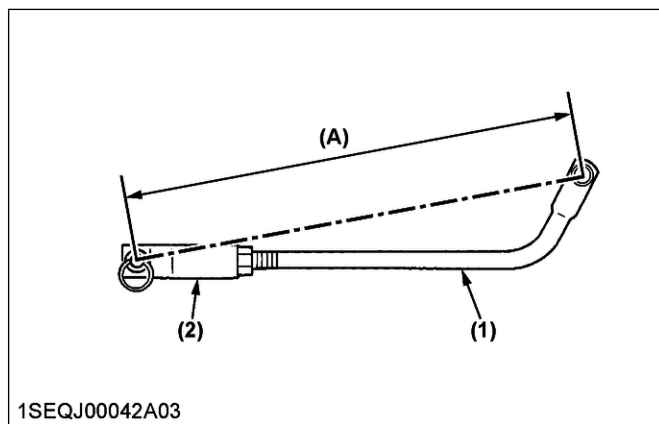
To avoid serious injury or death:

- Shut off the engine and remove the key.

- Turn the steering wheel fully left.
Roll the mower under the tractor from right side.



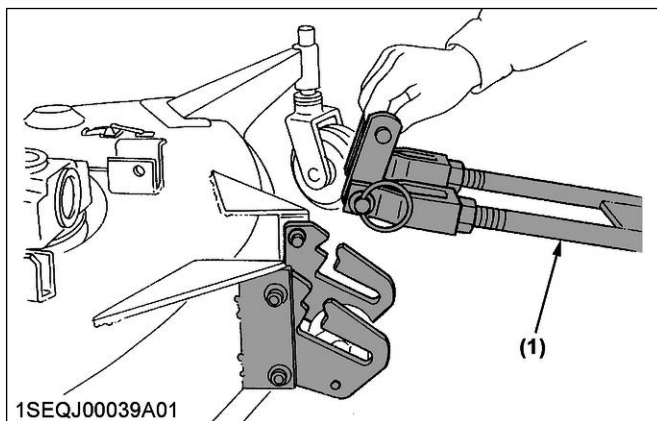
- Return the steering wheel to center.
- Check that the length of the front link is 505 mm (19.9 in.). If not, adjust the front link by turning the buckle.



- (1) Front link
- (2) Buckle

(A) 505 mm (19.9 in.)

- Hook the front link in the front bracket groove as shown.

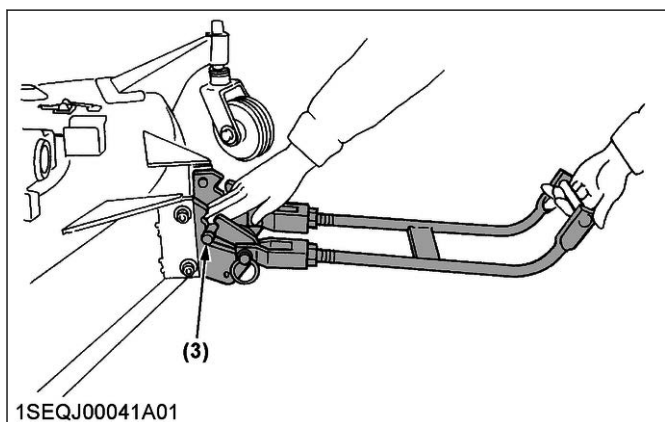
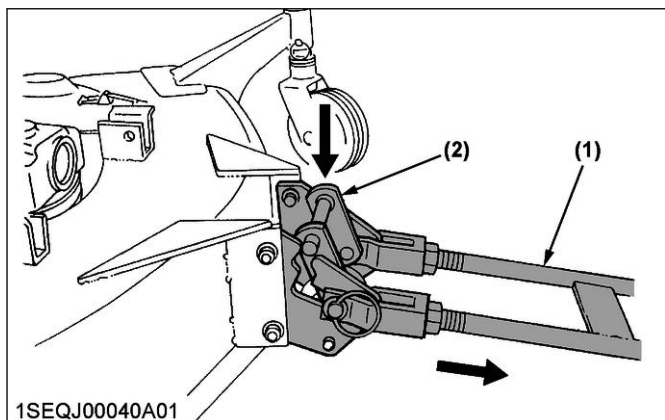


- (1) Front link

6. Lock the link in the groove with the stopper.

■ **NOTE**

- Fit the stopper in the groove properly.



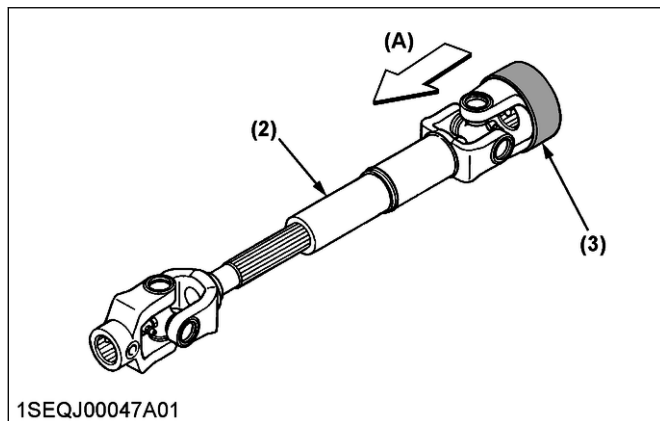
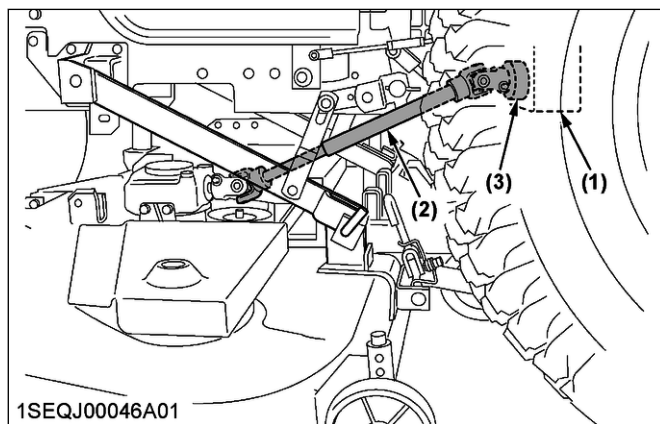
- (1) Front link
- (2) Stopper
- (3) Front bracket groove

7. Mounting the universal joint.

Pull back the coupler of the universal joint.
Push the universal joint onto the PTO shaft until the coupler locks.
Slide the universal joint back and forth until the universal joint is locked securely.

■ **IMPORTANT**

- Finally, tug on the universal joint to make sure it is locked on the PTO shaft.

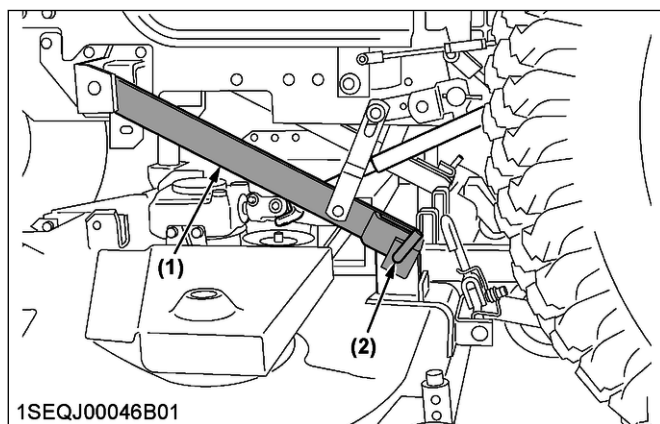


- (1) Mid PTO
- (2) Universal joint
- (3) Coupler

(A) "TUG"

8. Attaching the mower to the rear links.

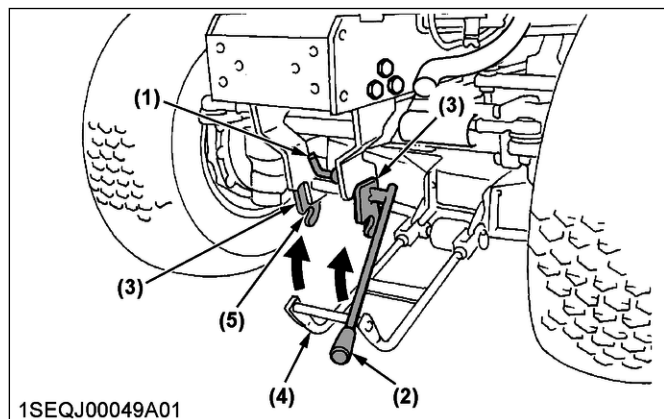
- Push down the position control lever to lower the mower's rear links.
- Attach the rear link to the mower with the L pins.



- (1) Rear link
- (2) L pin

9. Mounting the front link.

- Pull the front L pin and lock it. Then lower the front lever.



- (1) L pin
(2) Front lever
(3) Lever fulcrum
(4) Front link
(5) Lever fulcrum groove

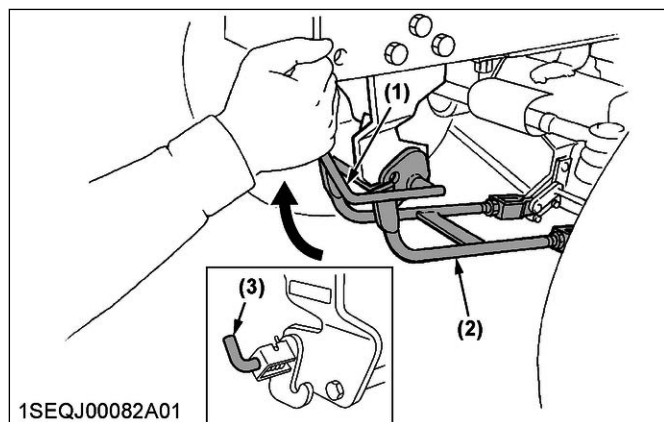
- Hook the front link to the lever fulcrum groove, and lift the front lever.
- Release the L pin to lock the front lever.

■ NOTE

- When hooking the front link to the lever fulcrum groove, normal position of the lever fulcrum groove is open to downward.

■ IMPORTANT

- Check that the front lever is locked securely with the L pin.
- Make sure that all 4 gauge wheels of the mower contact the ground.

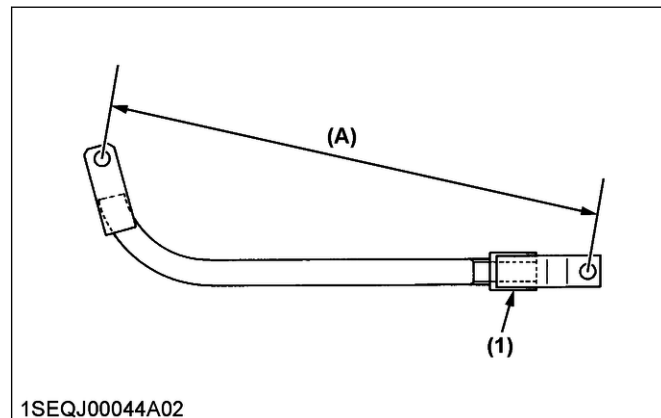


- (1) Front lever
(2) Front link
(3) L pin (Lock)

5.4.2 Mounting the mower to the tractor
RC72-30BC

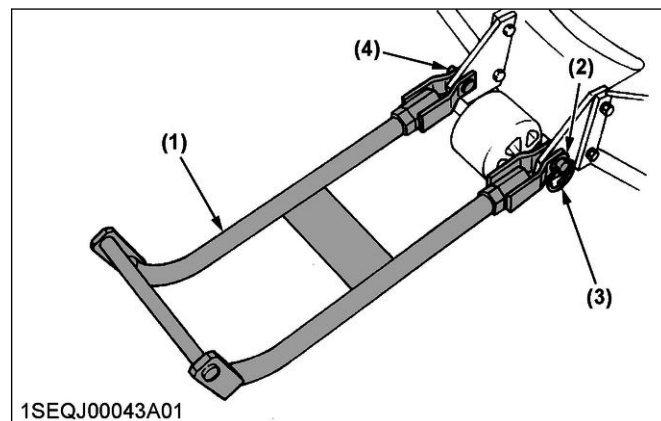
■ NOTE

- Make sure the length of the front link is 530 mm (20.9 in.). If not, adjust the front link by turning the buckle.



- (1) Buckle
(A) 530 mm (20.9 in.)

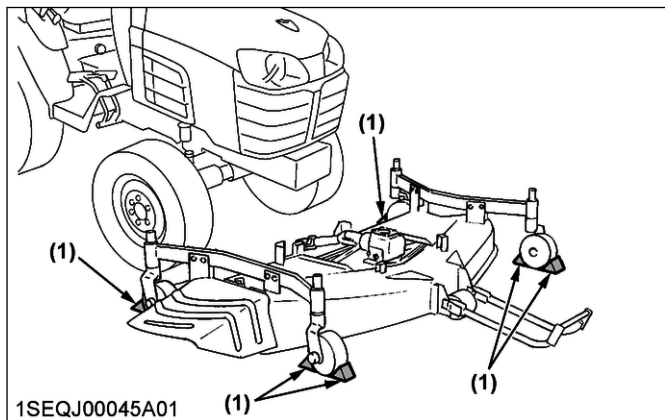
1. Attach the front link to the mower deck with clevis pins, plain washers and snap rings.



- (1) Front link
(2) Plain washer
(3) Snap ring
(4) Clevis pin

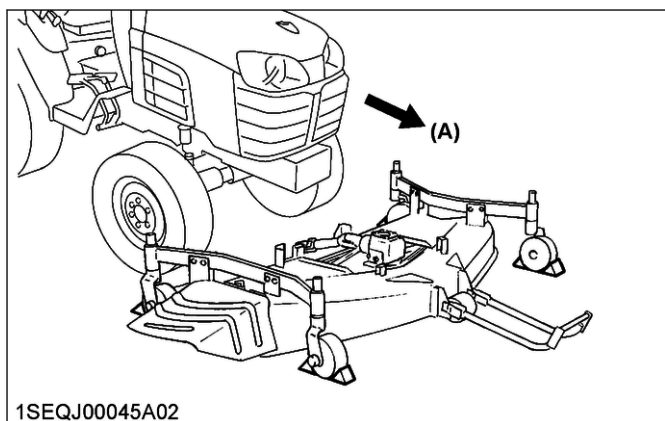
2. Set the mower deck to the minimum cutting height.

3. Put chocks at the mower gauge wheels as illustrated.



(1) Chock

4. Drive over the mower forward.
- Run the tractor at low speed when riding over the mower.
 - Make sure that the mower rear links are at highest position.
 - Attach the belt cover securely.

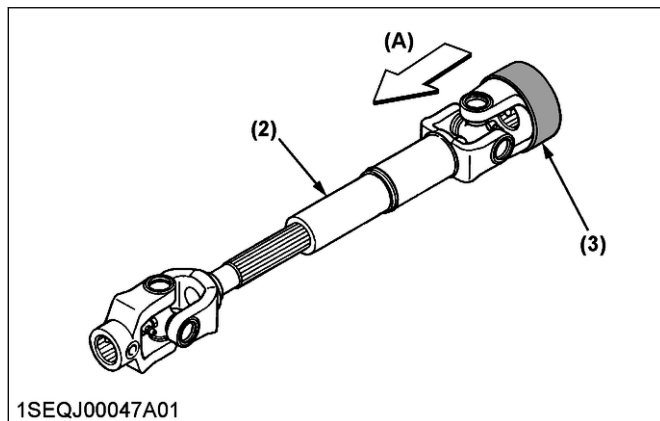
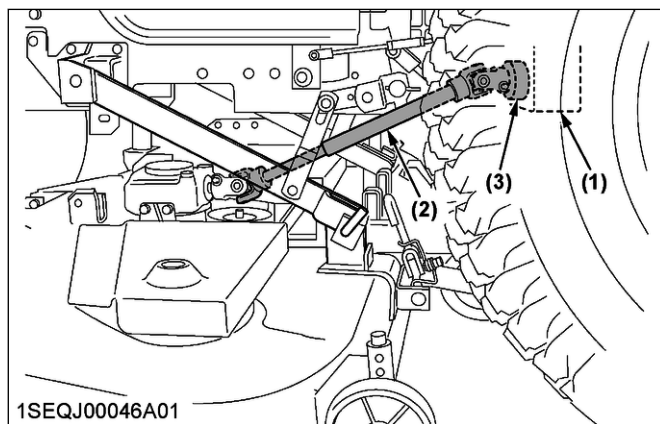


(A) "Drive over forward"

5. Mounting the universal joint.
- Pull back the coupler of the universal joint.
- Push the universal joint onto the PTO shaft until the coupler locks.
- Slide the universal joint back and forth until the universal joint is locked securely.

IMPORTANT

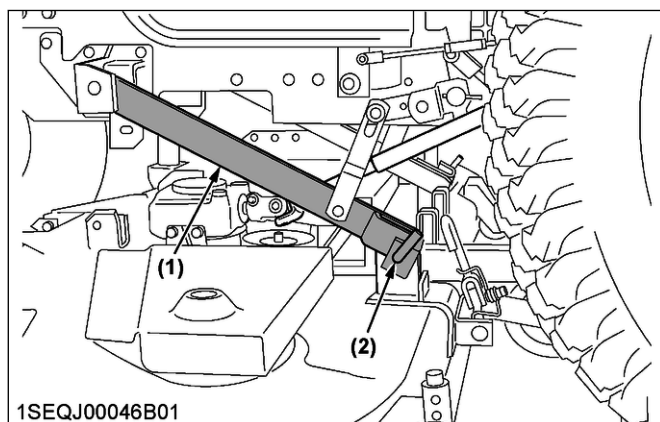
- Finally, tug on the universal joint to make sure it is locked on the PTO shaft.



(1) Mid PTO
(2) Universal joint
(3) Coupler

(A) "TUG"

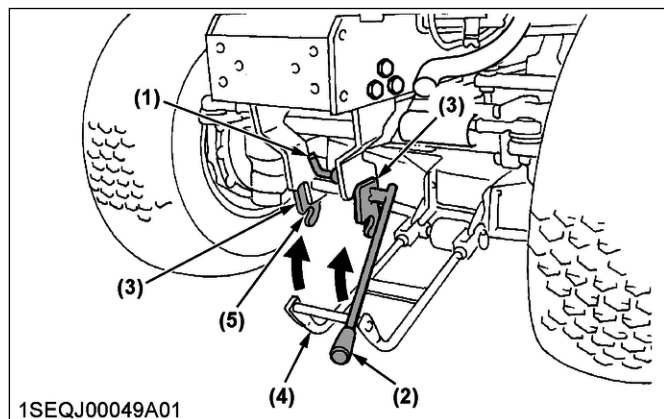
6. Attaching the mower to the rear links.
- Push down the position control lever to lower the mower's rear links.
 - Attach the rear link to the mower with the L pins.



(1) Rear link
(2) L pin

7. Mounting the front link.

- Pull the front L pin and lock it. Then lower the front lever.



- (1) L pin (4) Front link
(2) Front lever (5) Lever fulcrum groove
(3) Lever fulcrum

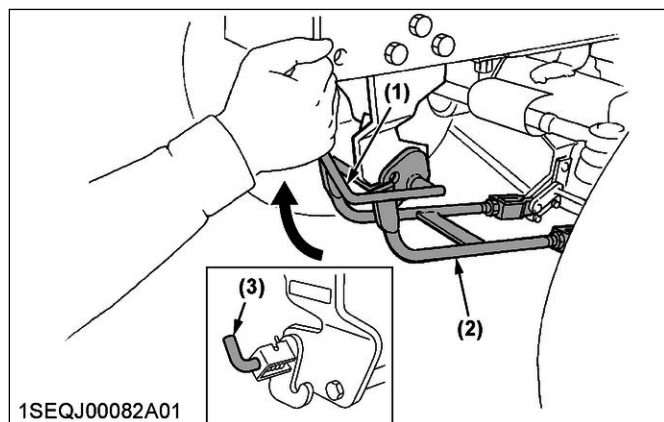
- Hook the front link to the lever fulcrum groove, and lift the front lever.
- Release the L pin to lock the front lever.

■ NOTE

- When hooking the front link to the lever fulcrum groove, normal position of the lever fulcrum groove is open to downward.

■ IMPORTANT

- Check that the front lever is locked securely with the L pin.
- Make sure that all 4 gauge wheels of the mower contact the ground.



- (1) Front lever
(2) Front link
(3) L pin (Lock)

5.5 Mounting the mower to the tractor with front loader

⚠ WARNING

To avoid serious injury or death:

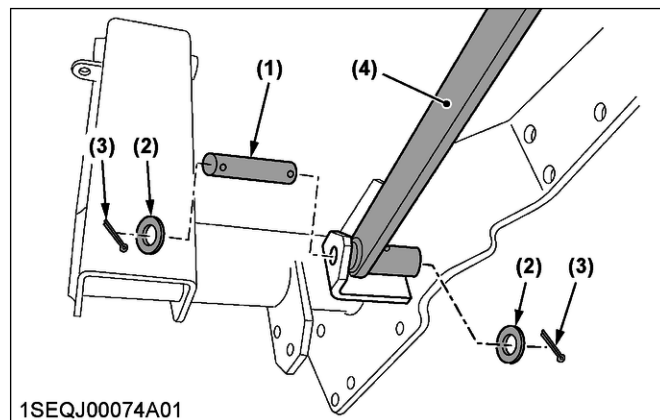
- Park the tractor on a firm, flat and level surface, set the parking brake, stop the engine and remove the key.

5.5.1 Installing the mower parts to the front loader frame

■ NOTE

- RCK60-30BC and RC72-30BC can be mounted to B3000, B2630, B3030, B3150, B2650, and B3350. But if your tractor is B3000, B2630 or B3030 with front loader, mower mounting procedure changes. See the following procedure.

1. Remove the front loader and the backhoe sub frame from the tractor. (Refer to the front loader operator's manual.)
2. Install the rear links to the front loader frame with the stay pins, plain washers and cotter pins.



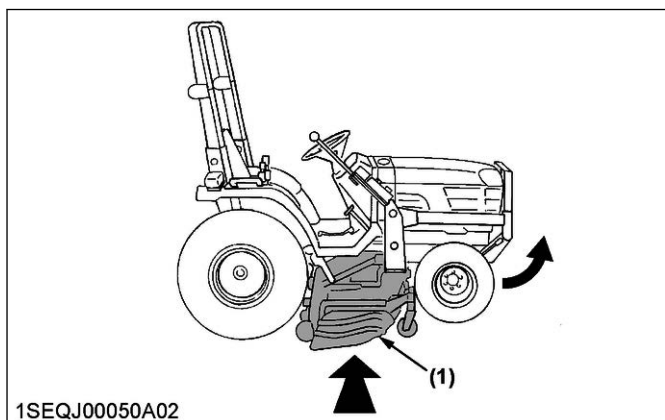
- (1) Stay pin
(2) Plain washer
(3) Cotter pin
(4) Rear link

3. **RCK60-30BC**

Turn the steering wheel fully left.

Mount the mower from the right side of the tractor.

(See [Mounting the mower to the tractor RCK60-30BC](#) on page 2-28.)

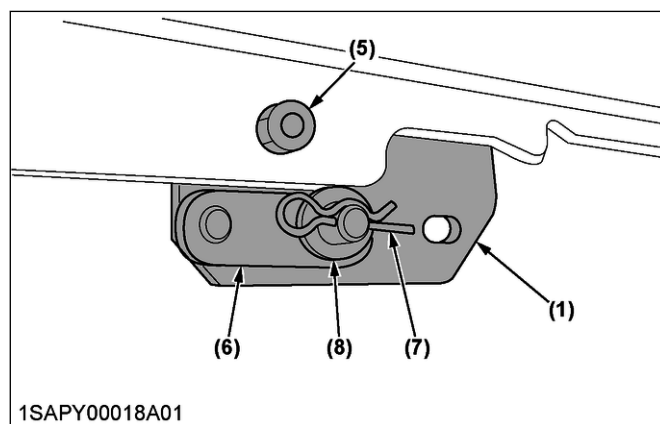
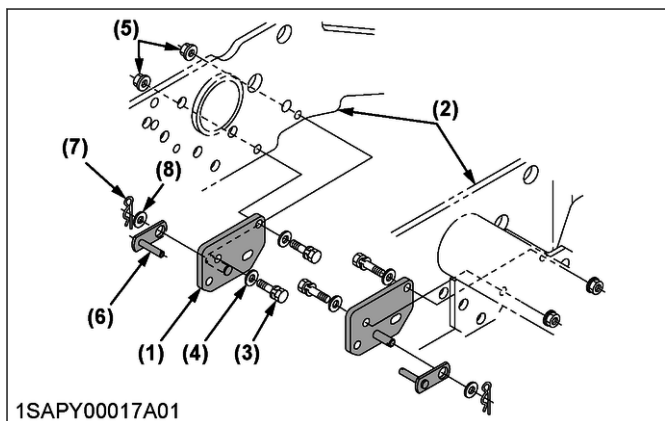


(1) Mower

4. **RCK60-30BC**

Attach the loader stoppers and loader stopper pin to the loader frame. See the following figure.

(Attaching the loader stoppers is not needed for **B2650**, **B3350** and **B3150**.)

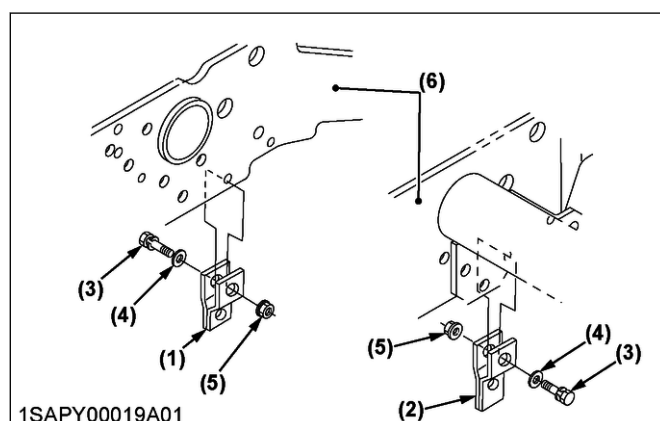


- (1) Loader stopper
- (2) Loader frame
- (3) M12 bolt
- (4) Plain washer
- (5) Nut
- (6) Loader stopper pin
- (7) Snap pin
- (8) Plain washer

5. **RC72-30BC**

Attach the loader stoppers to the loader frame. See the following figure.

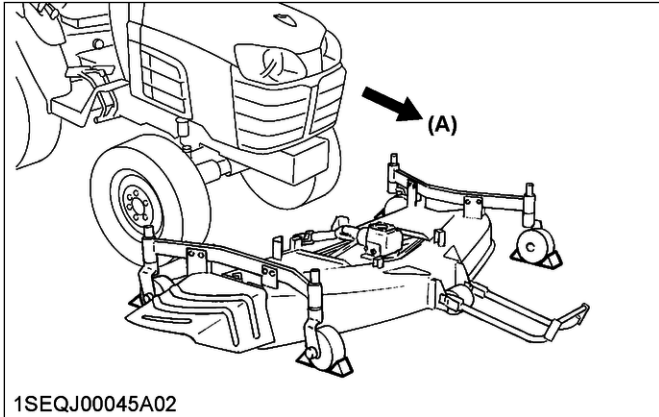
(Attaching the loader stoppers is not needed for **B2650**, **B3350** and **B3150**.)



- (1) Loader stopper (RH)
- (2) Loader stopper (LH)
- (3) M12 bolt
- (4) Plain washers
- (5) Nuts
- (6) Loader frame

6. Drive over the mower forward, and mount the mower.

(See [Mounting the mower to the tractor RC72-30BC](#) on page 2-30.)



(A) "Drive over forward"

5.5.2 Using the 3-point hitch attachment or the front loader

! WARNING

To avoid serious injury or death:

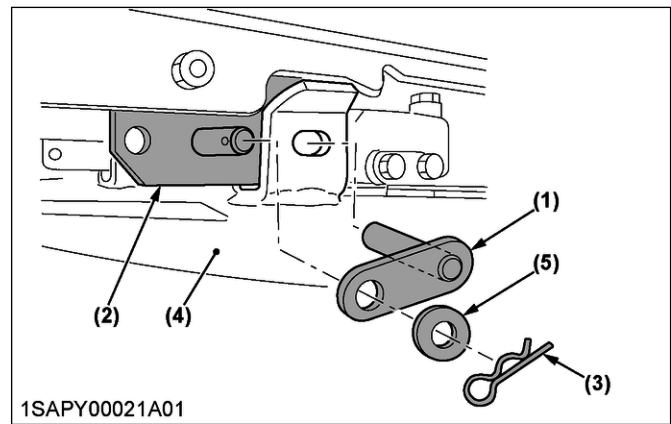
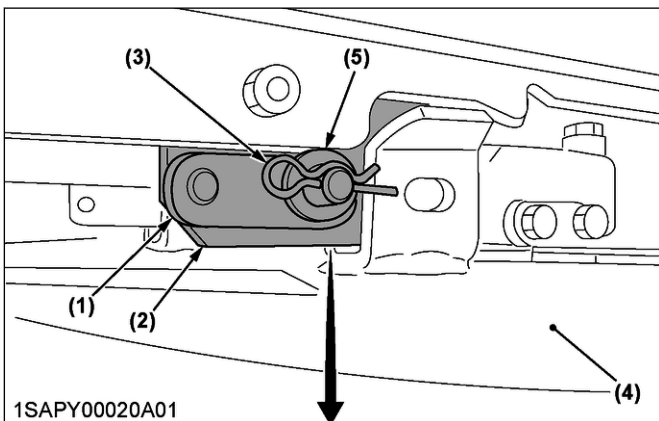
- When not using the mower, shift the PTO lever to "NEUTRAL" or "OFF" position.

To use a 3 point hitch mounted attachment or the front loader when the mower is attached, follow the procedure below.

1. Lift the mower deck to the fully raised position.
2. Remove the loader stopper pin. Insert the pins in the holes of the mower deck and loader stopper, then attach the snap pin (RCK60-30BC) and snap ring (RC72-30BC).

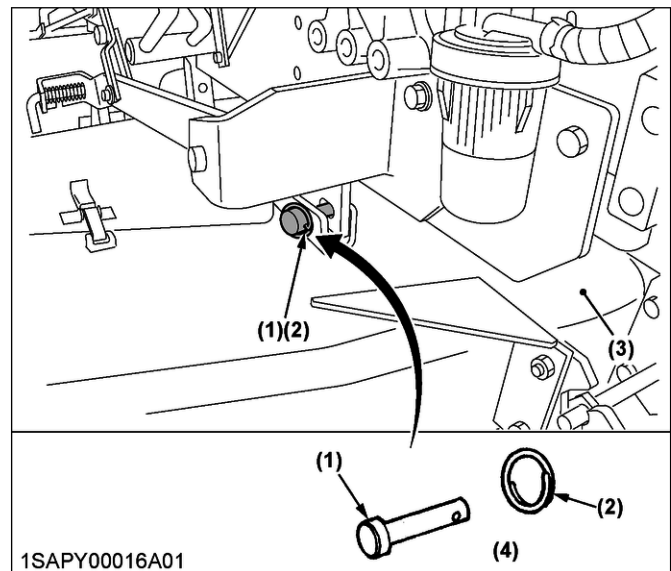
RCK60-30BC

Remove the loader stopper pin from the stay and reinstall it in the holes of mower deck as shown.



- (1) Loader stopper pin
- (2) Loader stopper
- (3) Snap pin
- (4) Mower deck
- (5) Plain washer

RC72-30BC



- (1) Clevis pin (ø12 × 35)
- (2) Snap ring
- (3) Mower deck
- (4) Tool box

3. Set the front gauge wheels and the rear gauge wheels in the lowest cutting position to get the maximum ground clearance.

■ IMPORTANT

- Do not change the length of the connecting rods.
- Set check chains to prevent implement driveline interference.
- With drawbar drawn implements, check for implement driveline interference through full LH and RH turns.

6. Adjustments of the mower



WARNING

To avoid serious injury or death:

- Park the tractor on a firm, flat, and level surface and set the parking brake.
- Stop the engine, remove the key and allow the blades to stop before adjustment of the mower.
- Wear heavy gloves or wrap end of blade with a rag when you handle blades.

6.1 Adjusting the front link and connecting rod

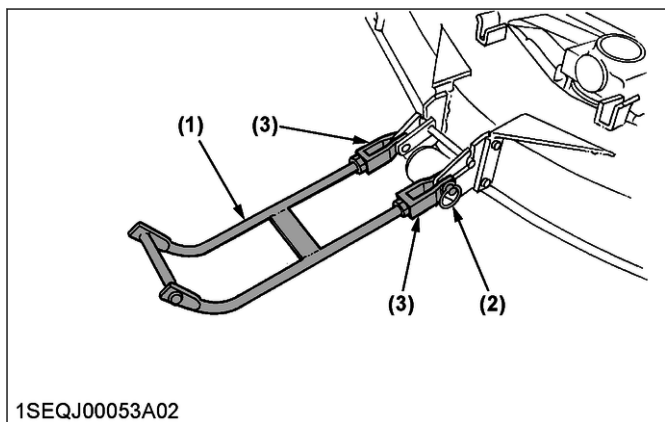


WARNING

To avoid serious injury or death:

- Before starting the engine, make sure that all levers (including auxiliary control levers) are in their “NEUTRAL” positions, that the parking brake is engaged, and that both the clutch and the power take-off (PTO) are disengaged (OFF).

1. Park the tractor on a firm, flat and level surface.
2. Set the mower gauge wheels to the same height and lower the mower to the ground.
3. If the front wheels are not on the ground, remove the front link from the mower and lengthen the front link by turning the buckle.
4. Attach the front link to the mower. If the front wheels still do not touch the ground, repeat step 3.



- 1SEQJ00053A02
- (1) Front link
 - (2) Clevis
 - (3) Buckle

5. Start the engine.
6. Raise the tractor lower links to the maximum lifting position and shut off the engine.
(See [Tractor hydraulic stop adjustment on page 2-35.](#))
7. Adjust the turnbuckles of the left and right connecting rods until the clearances are as follows:

L1:

Between front stopper and mid hanger bracket 2 to 4 mm (0.08 to 0.10 in.).

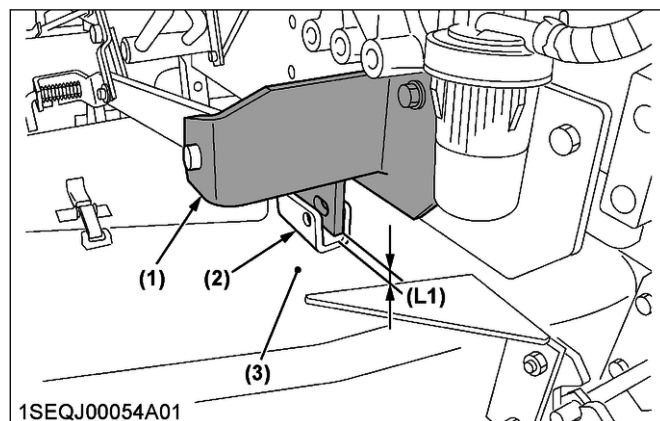
L2:

Between rear stopper and tractor frame 5 to 8 mm (0.20 to 0.30 in.).

■ IMPORTANT

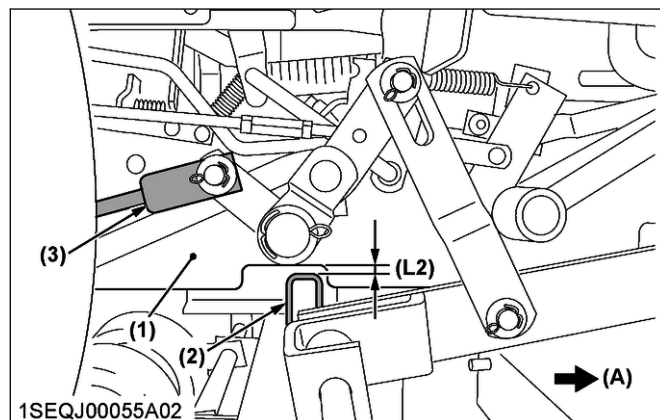
- Proper adjustment of the mower connecting rod length is very important to avoid damage to the mower lifting system.

Front stopper



- 1SEQJ00054A01
- (1) Mid hanger bracket
 - (2) Front stopper
 - (3) Mower deck
- (L1) 2 to 4 mm (0.08 to 0.10 in.)

Rear stopper

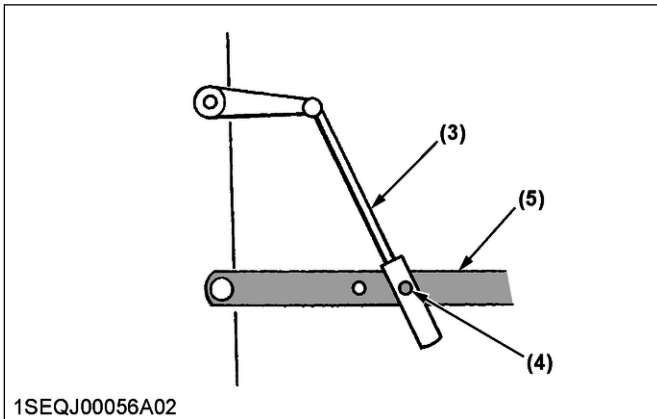
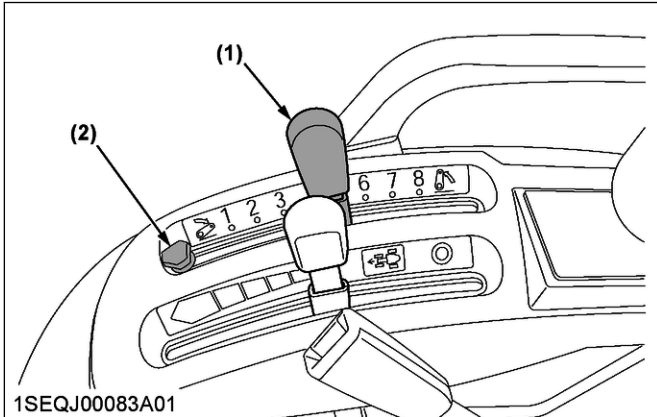


- 1SEQJ00055A02
- (1) Tractor frame
 - (2) Rear stopper
 - (3) Connecting rod
- (L2) 5 to 8 mm (0.20 to 0.30 in.)
(A) “Front”

6.2 Tractor hydraulic stop adjustment

1. Raise the hydraulic control lever of the tractor to get the lower links at a level.

2. Apply the stop bolt so that the lever will not be lowered further.
 - Setting position of the lower link and lifting rod is shown in the illustration below.



- (1) Hydraulic control lever
- (2) Stop bolt
- (3) Lifting rod
- (4) Setting position
- (5) Lower link

9. Move the hydraulic control lever rearward to raise the mower rear links.
10. Turn the steering wheel fully left.
11. Stop the engine and remove the key.
12. Pull back the coupler of the universal joint to unlock the coupler.

7. Dismounting mower from the tractor

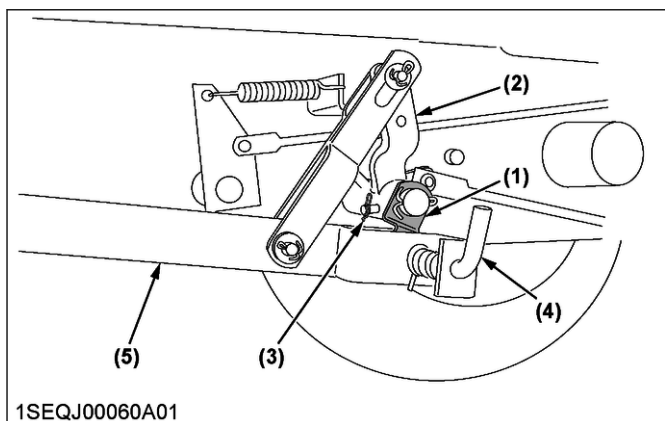
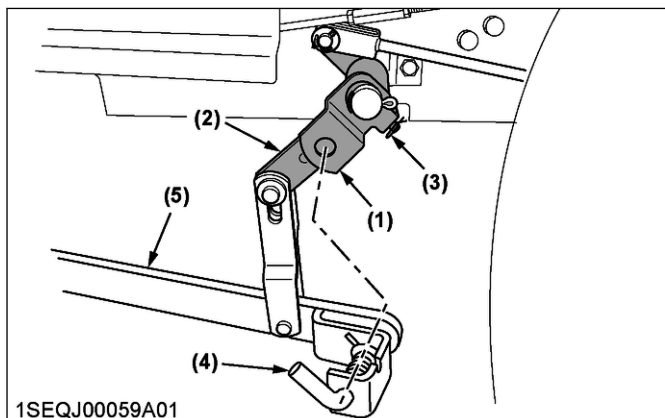
7.1 Dismounting the mower from the tractor RCK60-30BC

1. Park the tractor on a firm, flat and level surface and set the parking brake.
2. Move the hydraulic control lever rearward to raise the mower rear links to the highest position.
3. Turn the 3-point lowering speed knob to "LOCK" position. (Refer to the tractor operator's manual.)
4. Stop the engine and remove the key.
5. Turn the anti-scalp roller sideways and move the rear gauge wheel to the lowest cutting height.
6. Adjust the 3-point lowering speed knob (refer to the tractor operator's manual) and move the hydraulic control lever forward to lower the mower.
7. Remove the rear links from the mower.
8. Restart the engine.

13. Remove the front link, then remove the mower deck.

■ NOTE

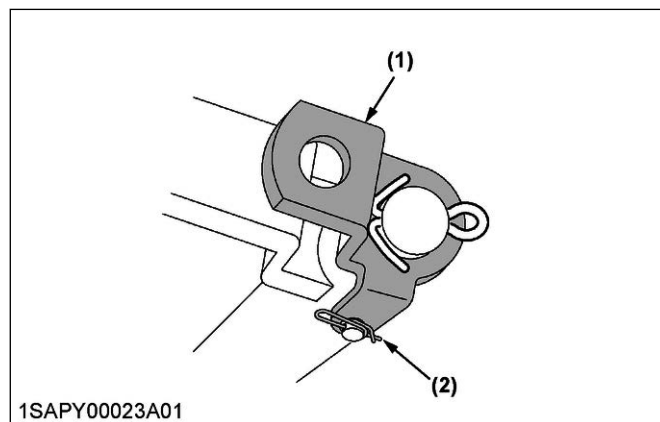
- To hold the mower links
 - a. Remove the rue ring cotter pin from the link stoppers.
Reinstall it to the lift arms.
 - b. Rehook the rear links to the link stoppers with the L pins. This will keep the rear links out of the way.
- Do not use the link stopper with the mower deck mounted.



- | | |
|-------------------------|---------------|
| (1) Link stopper | (4) L pin |
| (2) Lift arm | (5) Rear link |
| (3) Rue ring cotter pin | |

■ NOTE

- When remounting the mower deck, reinstall the link stopper as shown.



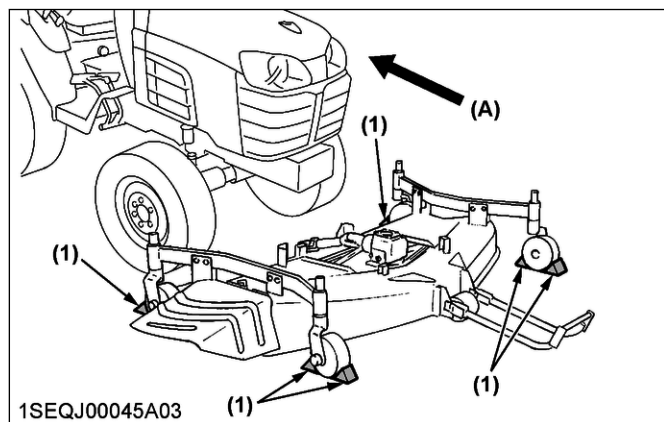
- (1) Link stopper
(2) Rue ring cotter pin

7.2 Dismounting the mower from the tractor RC72-30BC

1. Park the tractor on a firm, flat and level surface and set the parking brake.
2. Move the hydraulic control lever rearward to raise the mower rear links to the highest position.
3. Turn the 3-point lowering speed knob to "LOCK" position. (Refer to the tractor operator's manual.)
4. Stop the engine and remove the key.
5. Set the mower deck to the minimum cutting height.
6. Adjust the 3-point lowering speed knob (refer to the tractor operator's manual) and move the hydraulic control lever forward to lower the mower.
7. Remove the rear links from the mower.
8. Restart the engine.
9. Move the hydraulic control lever rearward to raise the mower rear links.
10. Stop the engine and remove the key.
11. Pull back the coupler of the universal joint to unlock the coupler.
12. Remove the front link.
13. Put chocks at the mower gauge wheels as illustrated.

14. Move the tractor backward.

- Move the tractor at low speed.
- Make sure that the mower rear links are at highest position.
- Attach the belt cover securely.

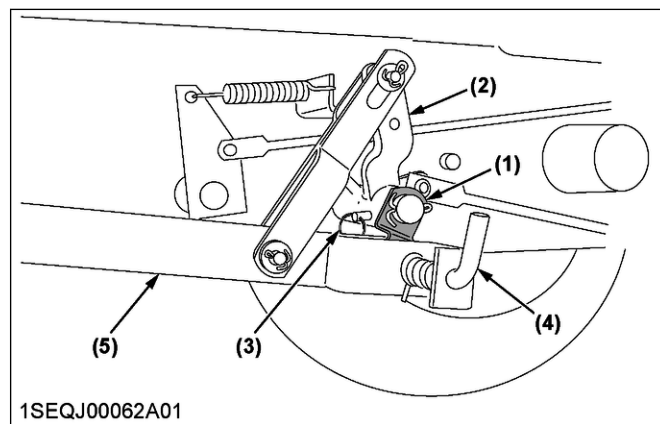
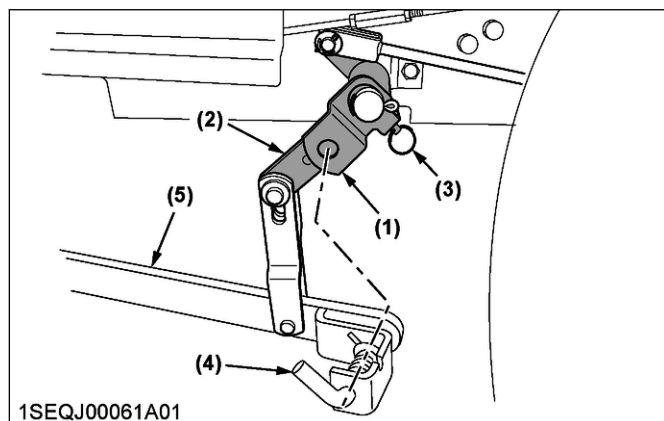


(1) Chock

(A) "Move the tractor backward"

■ NOTE

- To hold the mower links
 - a. Remove the snap ring from the link stoppers. Reinstall it to the lift arms.
 - b. Rehook the rear links to the link stoppers with the L pins. This will keep the rear links out of the way.
- Do not use the link stopper with the mower deck mounted.

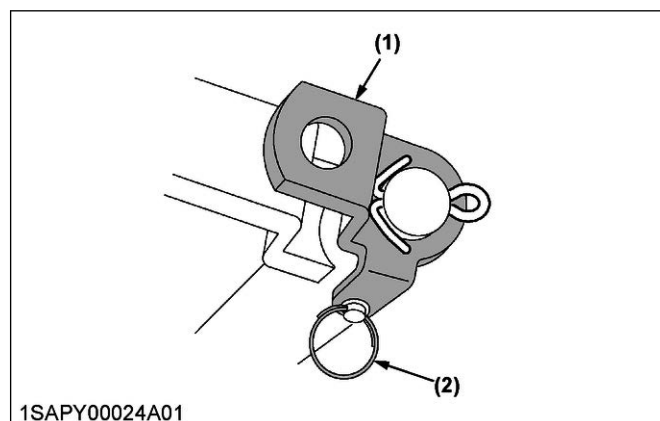


- (1) Link stopper
(2) Lift arm
(3) Snap ring (ø30)

- (4) L pin
(5) Rear link

■ NOTE

- When remounting the mower deck, reinstall the link stopper as shown.



- (1) Link stopper
(2) Snap ring

3. MAINTENANCE

MAINTENANCE CHECKLIST



WARNING

To avoid serious injury or death:

- Stop the engine and remove the key.

No.	Check point	Used hours (Change or check every interval)					Reference page
		Daily check	50 hrs	150 hrs	1 year	4 years	
1	Oil leakage check	•					3-5
2	Make sure blade bolts are tight.	•					3-9
3	Blade and belt wear check	•					3-9 3-11
4	All hardware check	•					—
5	Make sure all pins are in place.	•					—
6	Mower deck cleaning	•					3-9
7	Greasing • Universal joint • 3 spindle shafts • Belt tension pulley • Belt tension pivot • Front anti-scalp roller • Rear anti-scalp roller (72" only) • Lift arms	•					3-5
	• Front and rear gauge wheels • Link joint		•				3-5
8	Gear box oil check	•					3-5
9	Gear box oil change		◎	•			3-5
10	Gear box oil seal check				• ^{*1}		—
11	Gear box oil seal replace					•	—

IMPORTANT

- The jobs indicated by ◎ must be done the first time at 50 hrs.

*1 Replace if any deterioration (crack, hardening, scar, or deformation) or damage occurred.

LUBRICANTS

No.	Locations	Capacities	Lubricants
1	Gear box	0.36 L 0.38 U.S.qts 0.32 Imp.qts	SAE 90 API GL5 gear oil
Greasing			
2	Universal joint	Until grease over- flows	Multipurpose EP2 grease (NLGI grade No.2)
3	Spindle shafts (Bevel gear shaft and blade shafts)		
4	Belt tension pulley		
5	Belt tension pivot		
6	Front anti-scalp roller		
7	Rear anti-scalp roller		
8	Lift arm		
9	Link joint		
10	Rear gauge wheel (RCK60-30BC only)		
11	Front gauge wheel bracket (RCK60-30BC only)		
12	Front gauge wheel (RCK60-30BC only)		
13	Rear gauge wheel (RC72-30BC only)		
14	Gauge wheel bracket (RC72-30BC only)		
15	Gauge wheel (RC72-30BC only)		
16	Center spindle shaft (RC72-30BC only)		

CHECK AND MAINTENANCE

WARNING

To avoid serious injury or death:

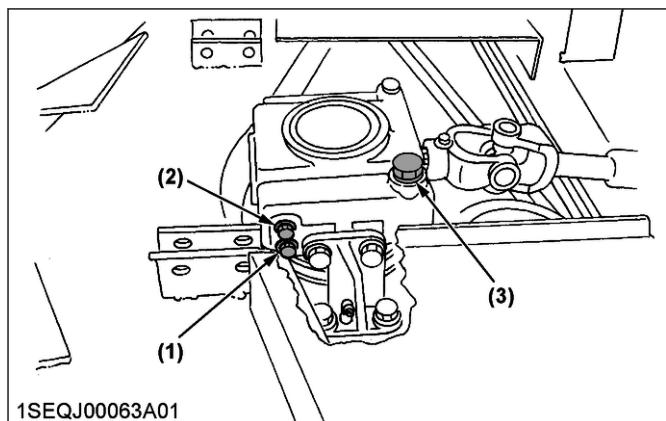
- Stop the engine, set the parking brake and remove the key.

1. Checking and changing the gear box oil

1. Place mower on level surface.
Remove check plug bolt. Oil should be visible through the opening.
If oil level is too low, add oil. If oil level is too high, drain oil with the check plug bolt.
(Use SAE 90 API GL5 gear oil.)
2. To change gear oil, remove the drain plug and drain oil.
3. Refill gear box.
 - 0.36 L (0.38 qts.)

■ IMPORTANT

- Use SAE 90 (API GL5) gear oil in all seasons.
- Change oil in gear box after first 50 hours and every 150 hours thereafter.

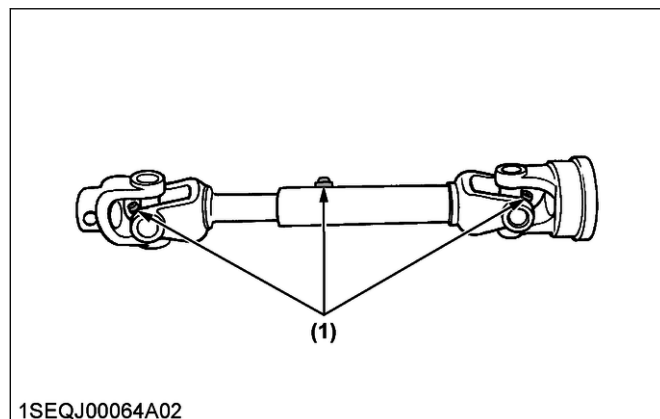


- (1) Drain plug (Bolt)
(2) Check plug (Bolt)
(3) Oil filler plug

2. Greasing

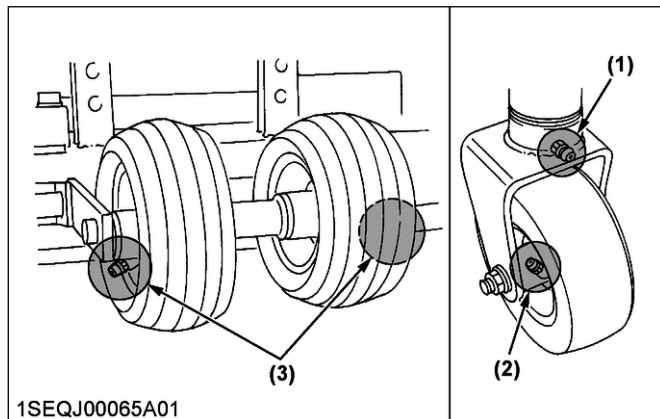
Use multipurpose EP2 grease (NLGI grade No.2).
Apply a small amount of multipurpose grease to the following points every day. If you operated the machine in extremely wet and muddy condition, lubricate grease fittings more often.

1. Universal joint.

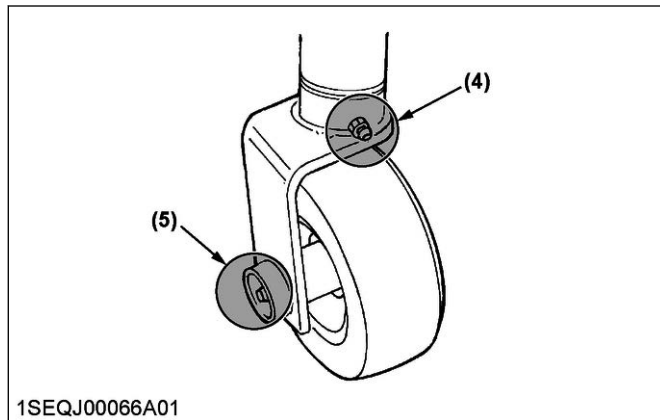


- (1) Grease fitting (Universal joint)
2. Front gauge wheel brackets.
Front and rear gauge wheels.

RCK60-30BC



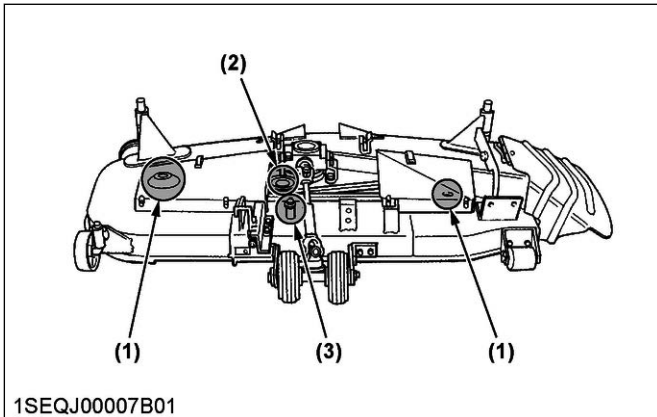
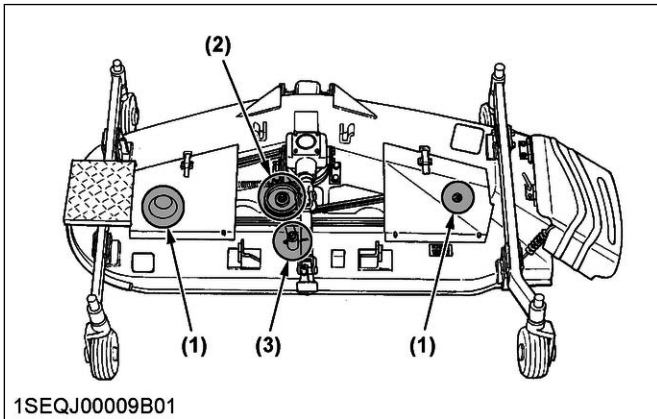
RC72-30BC



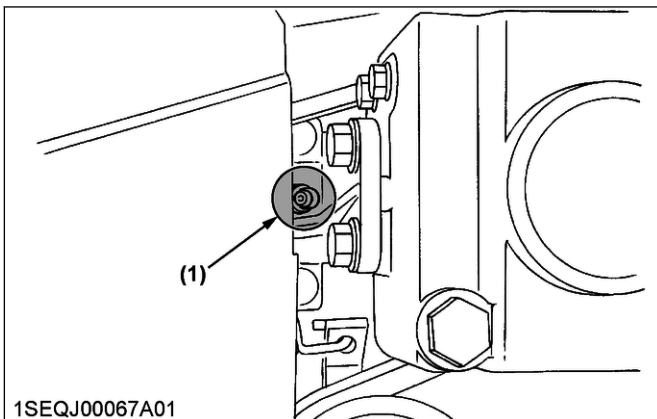
- (1) Grease fitting (Front gauge wheel bracket)
(2) Grease fitting (Front wheels)
(3) Grease fitting (Rear wheels)
(4) Grease fitting (Gauge wheel bracket)
(5) Grease fitting (Gauge wheel)

3. MAINTENANCE

3. Spindle shafts
4. Belt tension pivot and tension pulley.

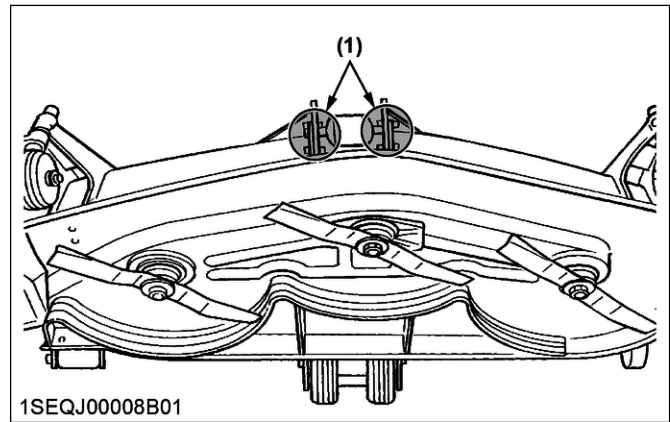
RCK60-30BC**RC72-30BC**

- (1) Grease fitting (Spindle shaft)
- (2) Grease fitting (Belt tension pulley)
- (3) Grease fitting (Belt tension pivot)



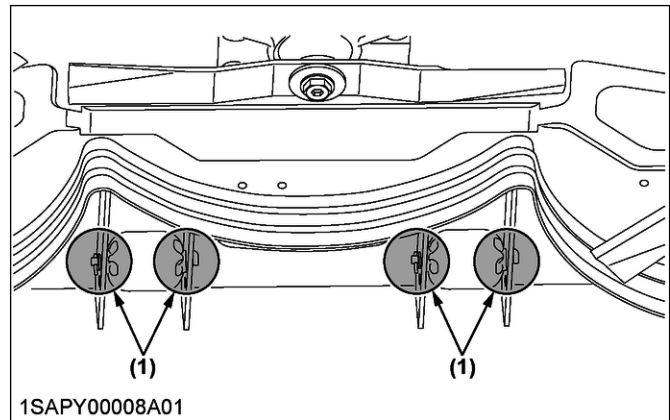
- (1) Grease fitting (Center spindle shaft)

5. Front anti-scalp roller.



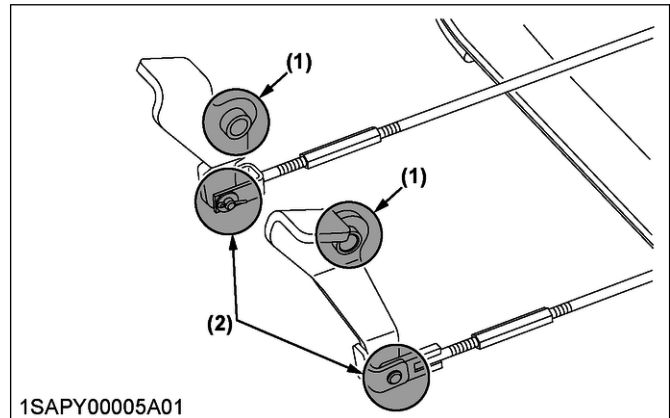
- (1) Roller pin

6. Rear anti-scalp roller.



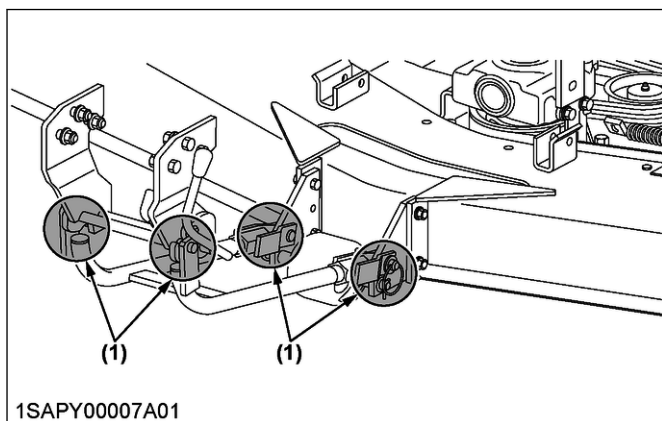
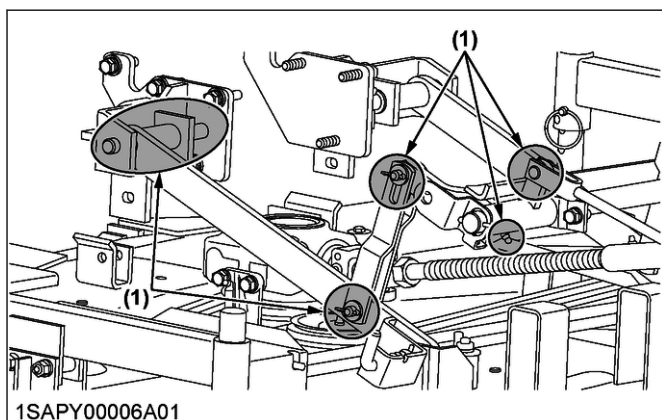
- (1) Roller pin

7. Lift arms and link joint.



- (1) Grease fitting (Lift arm)
- (2) Grease fitting (Link joint)

LH and RH



(1) Grease fitting (Link joint)

NOTE

- After checking above items, replace any worn, damaged or missing parts.
- Dry mower deck completely before storage, or pulleys become rusty and belt damage can result.

3. MAINTENANCE

CHECKING AND REPLACING THE BLADE

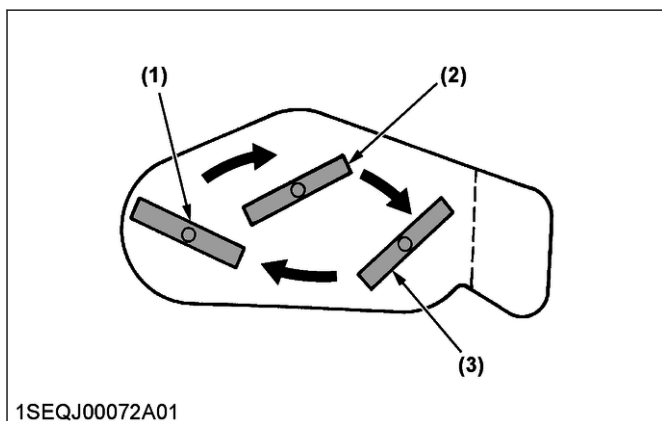
WARNING

To avoid serious injury or death:

- Stop the engine and remove the key.
- Blades may be sharp. When you handle the blades, wear heavy gloves or wrap the end of the blade with a rag.

■ IMPORTANT

- The blade bolts equip right-hand-threads. Turn the blade bolts counterclockwise to loosen.
- To prolong the service life of the blades, reposition them periodically as shown in the following figure.



- (1) LH blade
(2) Center blade
(3) RH blade

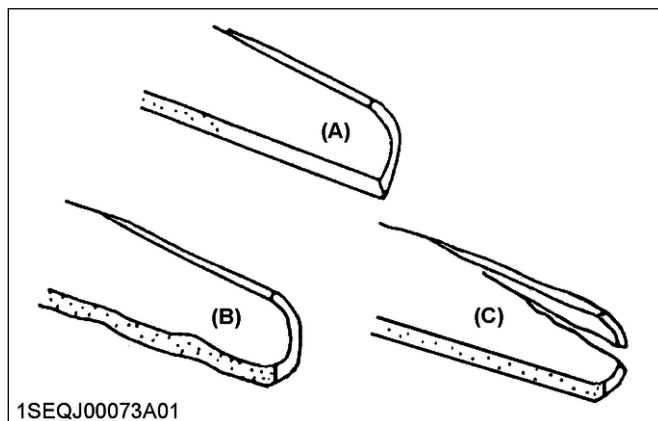
1. Cleaning the mower deck

Before checking or replacing the blade, wipe grass and mud off the top and inside of the mower. Especially clean up the inside of the belt cover, otherwise the belt life will be reduced.

2. Checking the blade

The blade cutting edges should be kept sharp at all times.

1. Sharpen the cutting edges if they look like the blade (B).
2. Replace the blades if they look like the blade (C).



- (A) New blade
(B) Worn blade
(C) Cracked blade

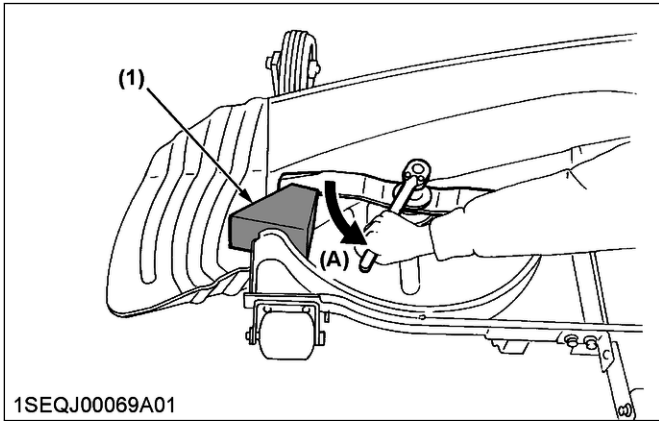
3. Replacing the blade

■ IMPORTANT

- Use the proper metric size box or socket wrench to tighten or loosen the blade mounting bolt.
1. Remove the mower from the tractor.
(See [Dismounting the mower from the tractor RCK60-30BC](#) on page 2-36.)
(See [Dismounting the mower from the tractor RC72-30BC](#) on page 2-37.)
 2. Turn the mower over to expose the blades.
 3. To prevent the spindle from rotating while removing the blade bolts, perform one of the following methods:
 - Wedge a block of wood between the blade and mower housing.
 - Use a box wrench over the pulley nut.

3. MAINTENANCE

4. Loosen the blade bolts as follows.



- (1) Block (A) "LOOSEN"

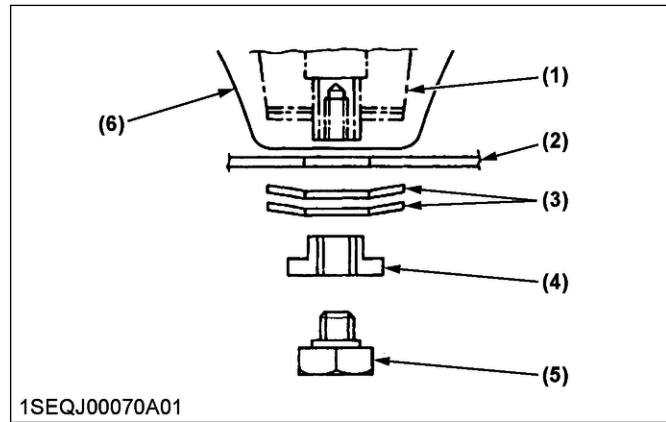
5. To sharpen the blades, clamp the blades one at a time securely in a vise.
Use a large mill file and file along the original bevel until sharp.
6. To check the blade for balance, place a small rod through the center hole.
The blade should balance on this rod. If the blade is not balanced, file the heavy side of the blade until balance is achieved.
7. Pass the spline boss through the blade and the 2 cup washers, and tighten the bolt.

NOTE

- Make sure that the cup washers are not flattened out or worn. Flattened or worn cup washers cause blade to slip excessively. Replace the 2 cup washers if either is damaged.

IMPORTANT

- Tighten the 3 blade bolts 102 to 117.6 N·m (10.4 to 12 kgf·m, 75.2 to 86.7 lbf·ft) of torque.
- Install the cup washers in the direction shown in the figure.



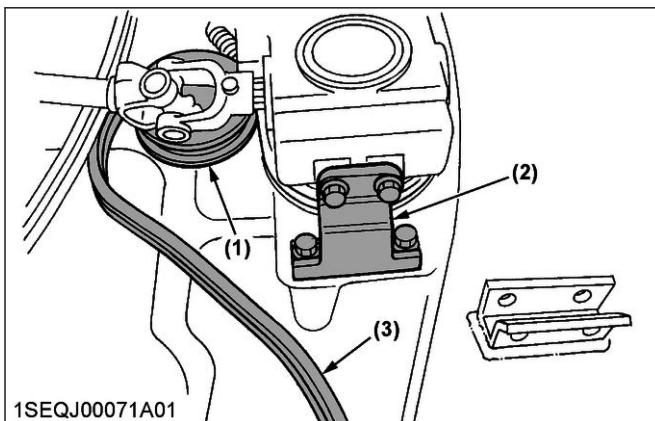
- (1) Spindle holder
(2) Blade
(3) 2-Cup washers
(4) Spline boss
(5) Bolt
(6) Spindle guard

REPLACING THE BELT

1. Remove the mower from the tractor.
(See [Dismounting the mower from the tractor RCK60-30BC](#) on page 2-36.)
(See [Dismounting the mower from the tractor RC72-30BC](#) on page 2-37.)
2. Remove the left and right hand belt cover from the mower deck.
3. Clean around the gear box.
4. Remove the belt from the tension pulley.
5. Remove the right hand bracket which mounts the gear box to the mower deck and slip the belt over the top of the gear box.
6. To install a new belt, reverse the above procedure.

NOTE

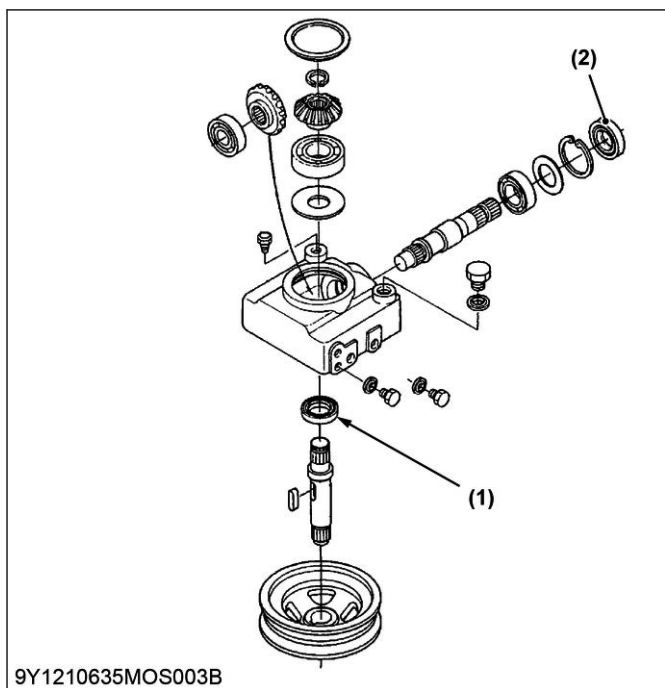
- Tighten bracket bolts securely 77.6 to 90.2 N·m (8.0 to 9.2 kgf·m, 57.1 to 66.5 lbf·ft) of torque.



- (1) Tension pulley
(2) Bracket (RH)
(3) Belt

CHECKING AND REPLACING THE GEAR BOX OIL SEAL

1. Replace the gear box oil seals (1), (2) with new ones.



9Y1210635MOS003B

- (1) Gear box oil seal
- (2) Gear box oil seal

4. MOWER

MECHANISM

1. Structure of power transmission of mower

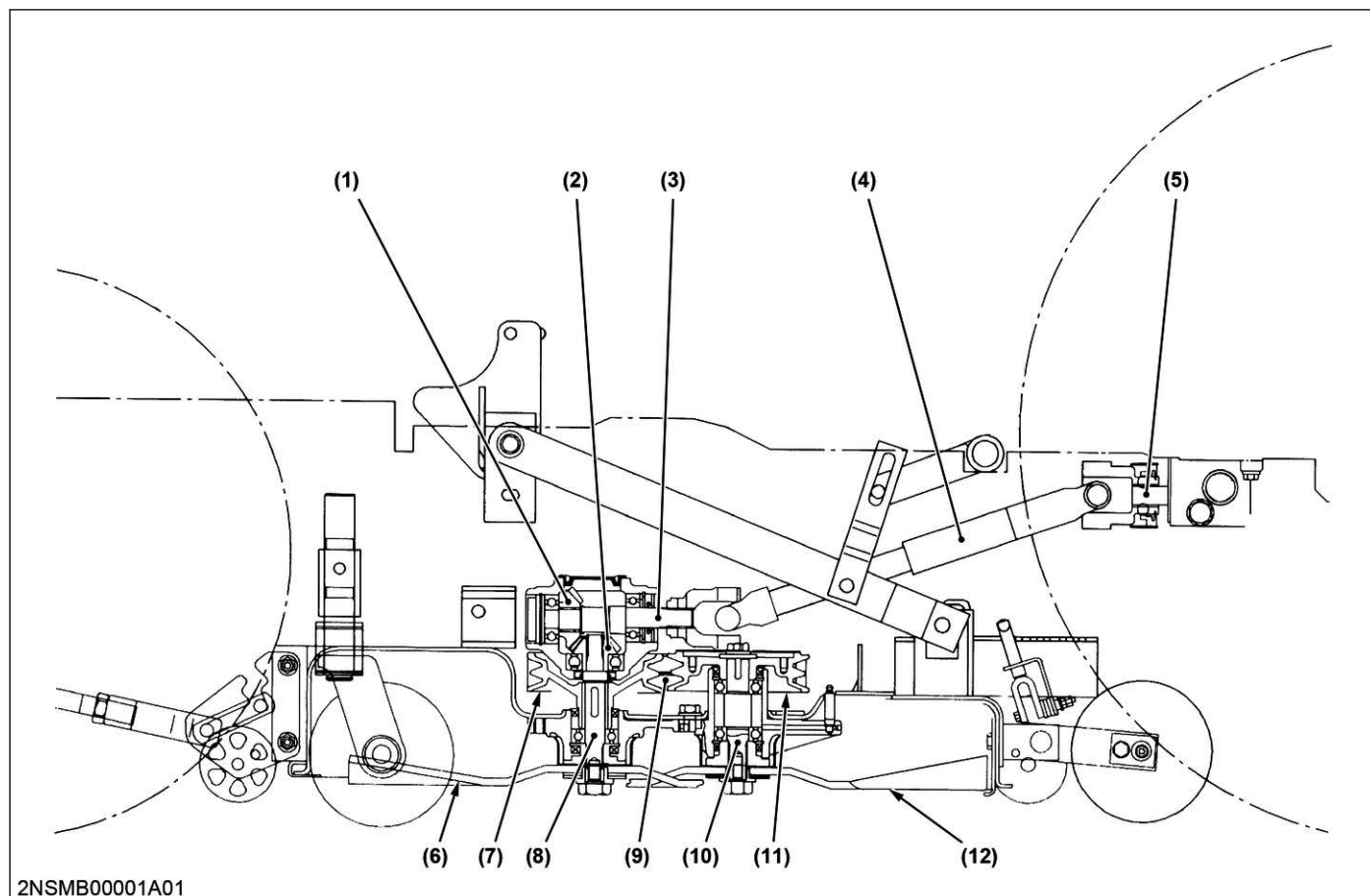
The power is transmitted from Mid-PTO to blades as follows:

Center blade

Mid-PTO shaft (5) → Universal joint (4) → Pinion shaft (3) → Bevel gear (1) → Bevel gear (2) → Bevel gear shaft (8) → Center blade (6)

Outer blade

Mid-PTO shaft (5) → Universal joint (4) → Pinion shaft (3) → Bevel gear (1) → Bevel gear (2) → Bevel gear shaft (8) → Center pulley (7) → Mower belt (9) → Outer pulley (11) → Blade shaft (10) → Outer blade (12)



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- | | | |
|---|----------------------|-------------------|
| (1) Bevel gear
18T: RCK60-30BC
18T: RC72-30BC | (3) Pinion shaft | (9) Mower belt |
| (2) Bevel gear
17T: RCK60-30BC
17T: RC72-30BC | (4) Universal joint | (10) Blade shaft |
| | (5) Mid-PTO shaft | (11) Outer pulley |
| | (6) Center blade | (12) Outer blade |
| | (7) Center pulley | |
| | (8) Bevel gear shaft | |

CAUTION

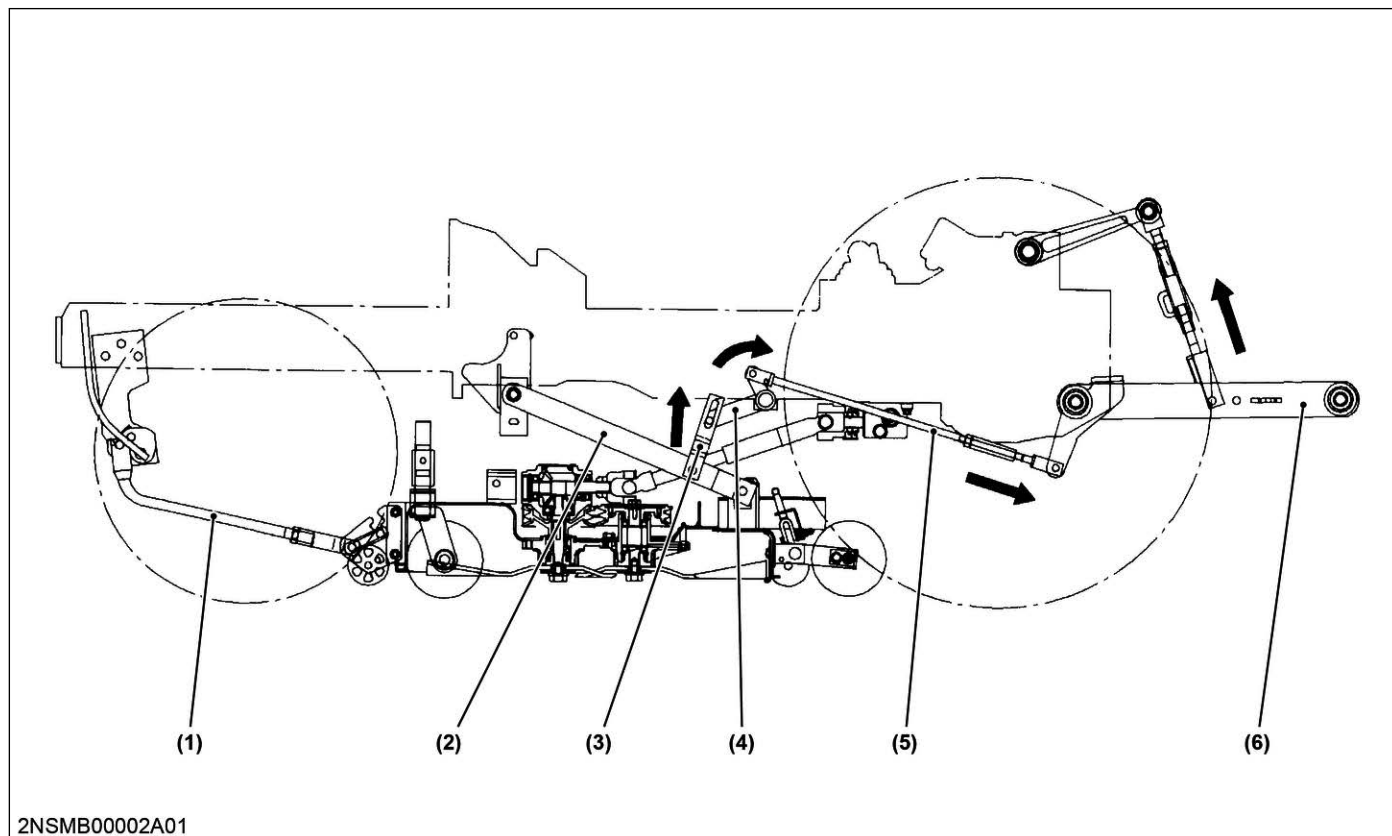
- Never operate mower in transport position.

The lifting of mower is performed by the hydraulic system installed on the tractor.

For avoiding danger, the mower should be kept lifting when traveling. When the position control lever is moved to lift position, the lower links (6) are risen by the oil pressure of hydraulic system, and the connecting rods (5) are pulled rearward.

Therefore, lift arms (4) round and the mower is lifted by the lift links (3) and rear links.

As this link system is a parallel linkage, the mower can be kept parallel at every position.



- (1) Front link
(2) Rear link

- (3) Lift link
(4) Lift arm

- (5) Connecting rod
(6) Lower link

SERVICING

1. Troubleshooting for mower

Symptom	Probable cause and checking procedure	Solution	Reference page
Discharge cover plugged	1. Grass too wet	Wait for grass to dry	—
	2. Grass too long	Raise cutting height and cut grass twice	—
	3. Cutting too low	Raise cutting height	—
	4. Engine rpm too low	Mow at full throttle	—
	5. Ground speed too fast	Slow down	—
Streaking of uncut grass	1. Ground speed too fast	Slow down	—
	2. Engine rpm too low	Mow at full throttle, check and re-set engine rpm	—
	3. Grass too long	Cut grass twice	—
	4. Blades dull or damaged	Replace blades or have blades sharpened	4-7
	5. Debris in mower deck	Clean mower deck	—
Uneven cut	1. Mower deck not level	Level mower deck	—
	2. Ground speed too fast	Slow-down	—
	3. Blades dull	Have blades sharpened	4-7
	4. Blades worn	Replace blades	4-7
	5. Low tire inflation	Add air to correct	—
	6. Gauge wheels not adjusted correctly	Adjust gauge wheels	4-8 4-8
Blades scalping grass	1. Cutting height too low	Raise cutting height	—
	2. Turning speed too fast	Reduce speed on turns	—
	3. Ridges in terrain	Change mowing pattern	—
	4. Rough or uneven terrain	Adjust gauge wheels and anti-scalp rollers	4-8 4-8
	5. Gauge wheels not adjusted correctly	Adjust gauge wheels and anti-scalp rollers	4-8 4-8
	6. Bent blade (s)	Replace blade (s)	4-9
Belt slipping	1. Mower deck plugged	Unplug and clean mower deck	—
	2. Debris in pulleys	Clean pulleys	—

(Continued)

4. MOWER

Symptom	Probable cause and checking procedure	Solution	Reference page
Belt slipping	3. Worn belt	Replace belt	4-7
Excessive vibration	1. Debris on mower deck or in pulleys	Clean mower deck and pulleys	—
	2. Damaged mower belt	Replace mower belt	4-7
	3. Damaged pulleys	Replace pulleys	—
	4. Pulleys out of alignment	Replace pulleys	—
	5. Blades out of balance	Have blades balanced	—
Mower loads down tractor	1. Engine rpm too low	Mow at full throttle check and re-set engine rpm	—
	2. Ground speed too fast	Slow down	—
	3. Debris wrapped around mower spindles	Clean mower	—
Mower is not lifted	1. Broken linkage system	Replace linkage system	—
	2. Trouble of hydraulic system	Check hydraulic system	—

2. Service specifications for mower

Item	Service specification	Service limit
Turning force of pinion shaft (without mower belt) [RCK60-30BC]	Less than 56 N 5.7 kgf 13 lbs	—
Turning torque of pinion shaft (without mower belt) [RCK60-30BC]	Less than 0.7 N·m 0.07 kgf·m 0.5 lbf·ft	—
Turning force of pinion shaft (without mower belt) [RC72-30BC]	Less than 118 N 12.0 kgf 26.5 lbs	—
Turning torque of pinion shaft (without mower belt) [RC72-30BC]	Less than 1.47 N·m 0.150 kgf·m 1.08 lbf·ft	—
Backlash between bevel gears	0.13 to 0.25 mm 0.0052 to 0.0098 in.	0.400 mm 0.0157 in.

3. Tightening torques for mower

Tightening torques of screws, bolts and nuts on the table below are especially specified.

(For general use screws, bolts and nuts: Refer to [General use screws, bolts and nuts on page 2-11](#), [Stud bolts on page 2-12](#).)

Item	N·m	kgf·m	lbf·ft
Gear box mounting bolt and nut (M12 standard type)	77.4 to 90.2	7.90 to 9.19	57.1 to 66.5
Blade bolt	102.9 to 117.7	10.5 to 12.0	75.9 to 86.8
Gear box mounting bolt and nut (M12 reamer type)	78.5 to 88.2	8.01 to 8.99	57.9 to 65.0
Center pulley holder bolt and nut	77.4 to 90.2	7.90 to 9.19	57.1 to 66.5
Outer pulley mounting nut (M16)	166.7 to 186.3	17.0 to 19.0	123.0 to 137.4
Pulley holder mounting bolt	78 to 88	8.0 to 9.0	58 to 65

4. Checking and adjusting

4.1 Mower blade

4.1.1 Checking mower blade

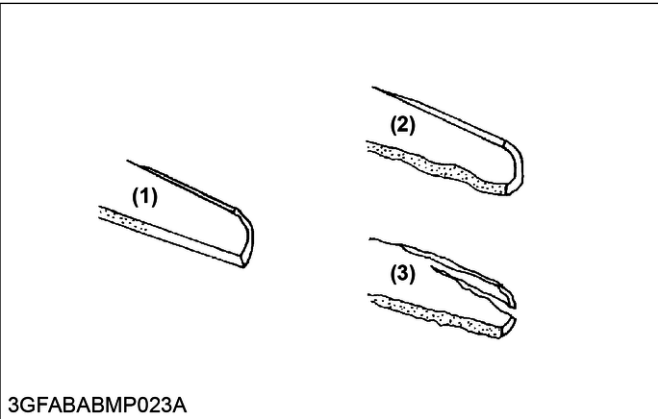
■ **IMPORTANT**

- Never forget to set the dust cover, two cup washers (belleville washers) and spline boss, when reassembling the mower blades.

■ **NOTE**

- To sharpen the mower blades by yourself, clamp the mower blade securely in a vise and use a large mill file along the original bevel.
- To balance the mower blade, place a small rod through the center hole and check to see if the blade balance evenly.
File heavy side of the blade until it balance out even.

1. Check the cutting edge of mower blade.
2. Sharpen the cutting edges, if the mower blades are as shown in figure (2).
3. Replace the mower blades, if they are as shown in figure (3).



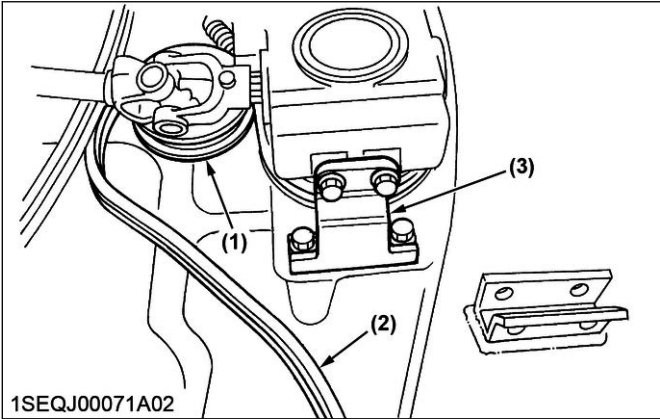
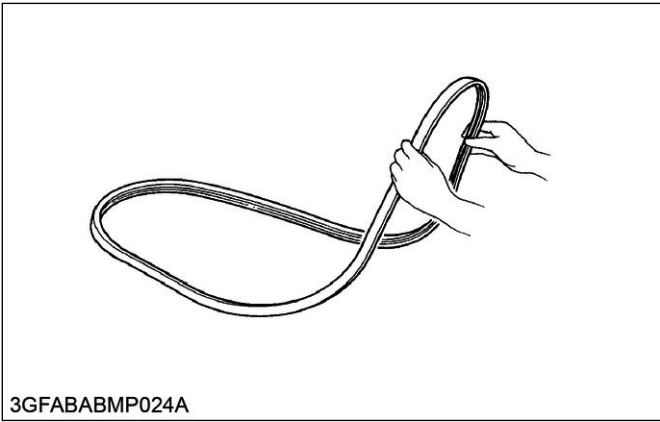
- (1) New blade (3) Cracked blade
(2) Worn blade

— RELATED PAGE —
[5.2 Removing mower blade \(center blade and outer blade\) on page 4-9](#)

4.2 Mower belt

4.2.1 Checking mower belt

1. Check to see the mower belt (2).
2. Replace the mower belt (2) with a new one, if there is found surface split at more than 3 positions.



- (1) Tension pulley (3) Gear box bracket (RH)
(2) Mower belt

(When replacing mower belt)

■ **IMPORTANT**

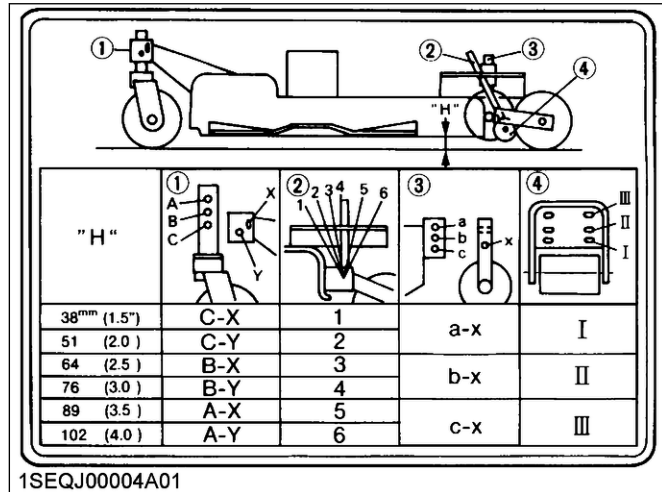
- After setting the gear box bracket mounting bolt on the deck without tightening, then mount the other screws on the gear box. And finally tighten them.
1. Dismount the mower from the tractor.
 2. Remove the universal joint cover stay, right and left shields from the mower deck.
 3. Clean around the gear box.
 4. Remove the mower belt (2) from the tension pulley.
 5. Remove the gear box bracket (RH) (3) which mounts the gear box to the mower deck and slip the belt over the top of the gear box.
 6. To install a new belt, reverse the above procedure.

Tightening torque	Gear box mounting bolt and nut (M12 standard type)	77.4 to 90.2 N·m 7.90 to 9.19 kgf·m 57.1 to 66.5 lbf·ft
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4.3 Cutting height

4.3.1 Adjusting cutting height RCK60-30BC

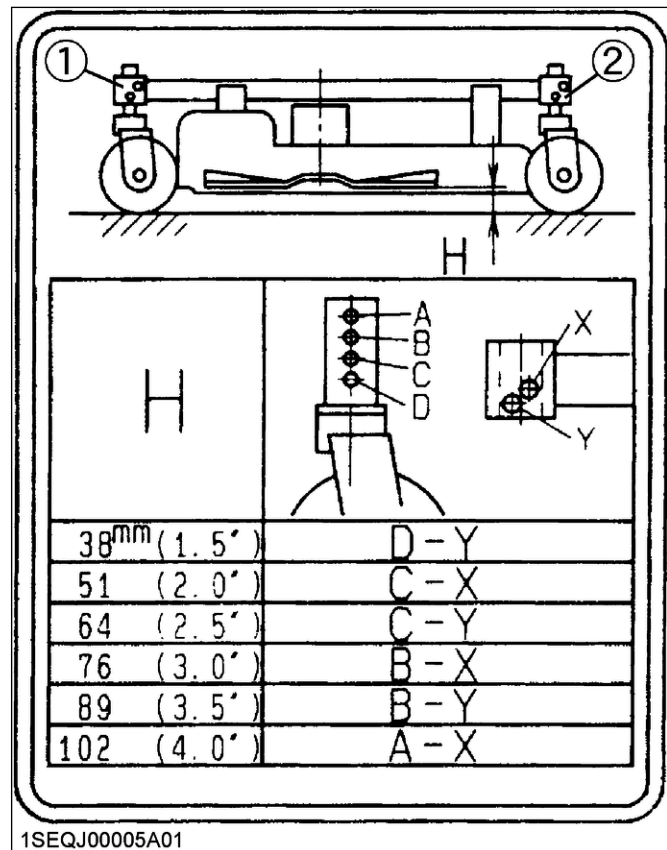
- To set the cutting height, move the remote control valve lever rearward to raise the mower to the highest position, and adjust both of the front gauge wheels (1), the rear gauge wheels (2) and the anti-scalp roller (4) and wheel (3) as shown in the figure. Cutting height can be adjusted from 38.0 to 102 mm (1.50 to 4.01 in.). The recommended cutting height is approximately 50 mm (2.0 in.).



- Front gauge wheel
 - Rear gauge wheel
 - Anti-scalp wheel
 - Anti-scalp roller
- Lower the mower deck by pushing the hydraulic control lever forward. This lowers the mower deck from the transport position to the operating position.
 - Use the higher settings for mowing in a rough area or when mowing tall grass. Lower settings should be used only for smooth lawns where short grass is desired.

4.3.2 Adjusting cutting height RC72-30BC

- To set the cutting height, move the hydraulic control lever rearward to raise the mower to the highest position, and adjust both of the front gauge wheels (1) and the rear gauge wheels (2) as shown in the figure. Cutting height can be adjusted from 38.0 to 102 mm (1.50 to 4.01 in.). The recommended cutting height is approximately 50 mm (2.0 in.).



(1) Front gauge wheel

(2) Rear gauge wheel

- Lower the mower deck by pushing the hydraulic control lever forward. This lowers the mower deck from the transport position to the operating position.
- Use the higher settings for mowing in a rough area or when mowing tall grass. Lower settings should be used only for smooth lawns where short grass is desired.

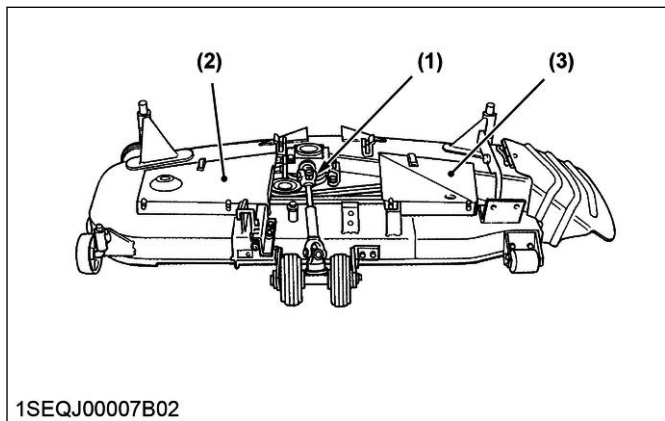
5. Disassembling and assembling

5.1 Removing universal joint and belt cover

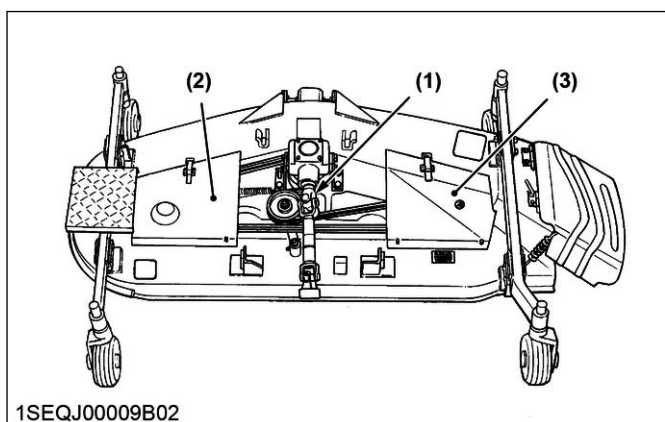
- Remove the universal joint (1).

2. Remove the left and right belt covers (2), (3).

RCK60-30BC



RC72-30BC



- (1) Universal joint
(2) Belt cover (left)
(3) Belt cover (right)

5.2 Removing mower blade (center blade and outer blade)



CAUTION

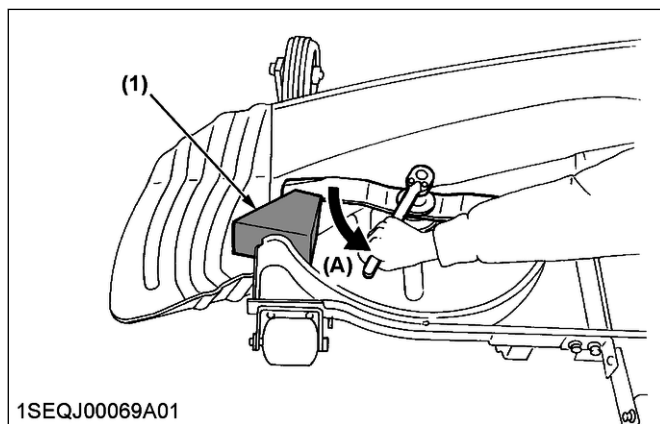
To avoid personal injury:

- Wear heavy gloves when removing blades.

IMPORTANT

- Use the proper metric size box or socket wrench to tighten or loosen the blade mounting bolt (6).

1. Turn over the mower.
2. Wedge a block (1) of wood between the blade and mower housing or use a box wrench over the pulley nut to prevent the spindle from rotating while removing the blade bolts; loosen the blade bolt as illustrated.



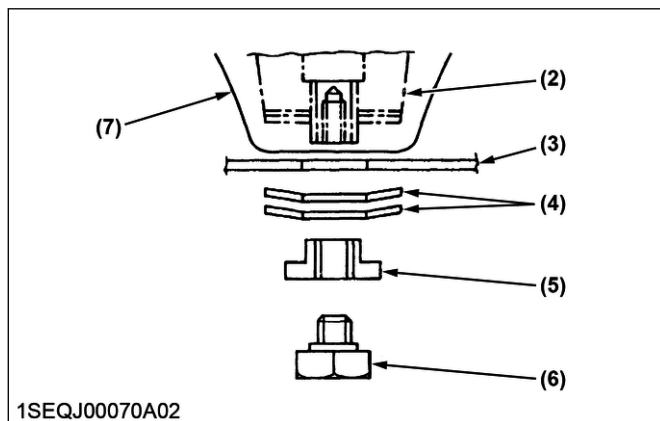
- (1) Block
(A) Loosen (Counterclockwise)

(When reassembling)

NOTE

- Make sure that the cup washers (belleville washers) (4) are not flattened out or worn; this cause blade to slip excessively. Replace cup washers (belleville washers) if either is damaged.
- Install the blade (3) in position together with the spindle guard (5) and the 2-cup washer (belleville washer) (4). Tighten them up with the bolt (6).
- Tighten to the specified tightening torque.

Tightening torque	Blade bolt	102.9 to 117.7 N·m 10.5 to 12.0 kgf·m 75.9 to 86.8 lbf·ft
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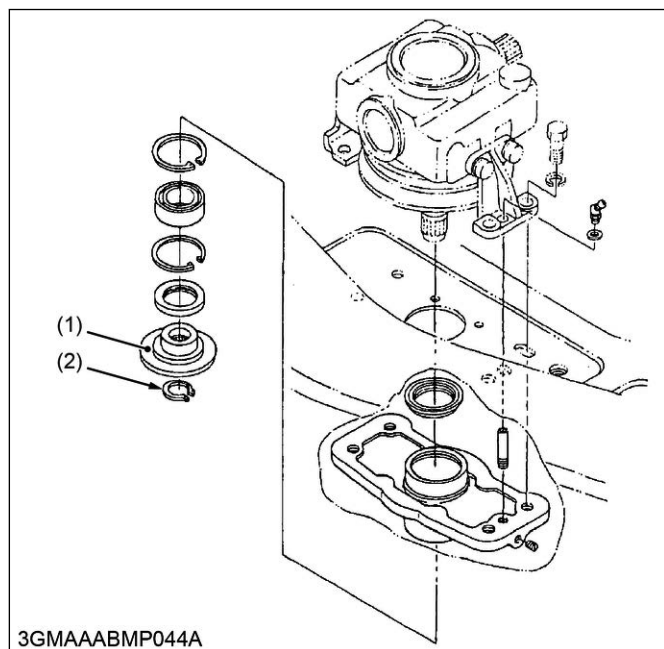


- (2) Spindle holder
(3) Blade
(4) 2-cup washer (belleville washer)
(5) Spindle guard
(6) Bolt
(7) Spline boss

5.3 Removing blade boss

1. Remove the external circlip (2).

2. Remove the blade boss (1).

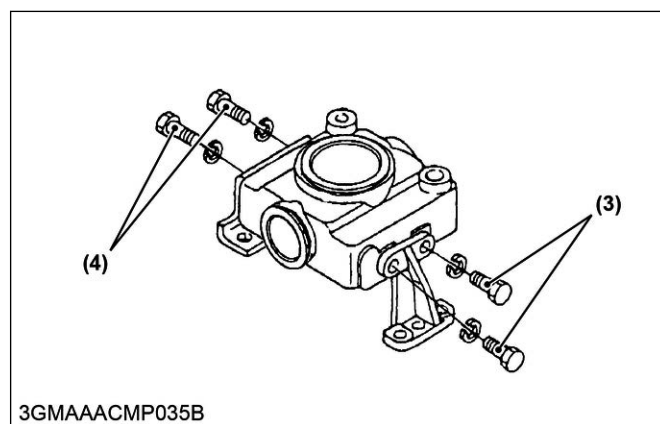
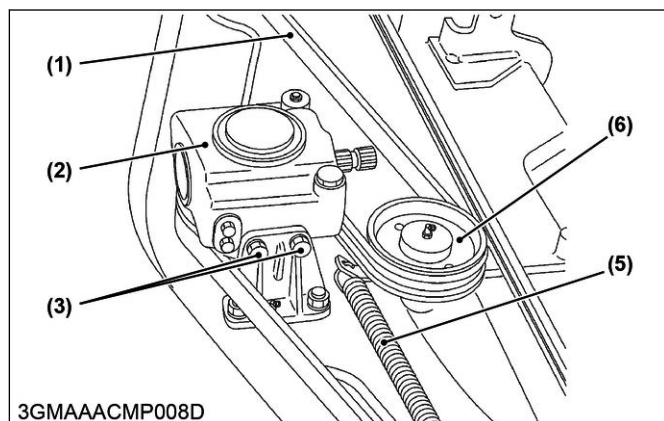


(1) Blade boss

(2) External circlip

5.4 Removing gear box and mower belt

1. Turn over the mower.
2. Remove the mower belt (1) from the tension pulley (6).
3. Remove the left and right gear box mounting bolts (3), (4) and remove the gear box (2) from the mower deck.



- | | |
|--|----------------------------|
| (1) Mower belt | (4) Gear box mounting bolt |
| (2) Gear box | (5) Tension spring |
| (3) Gear box mounting bolt (Reamer bolt) | (6) Tension pulley |

(When reassembling)

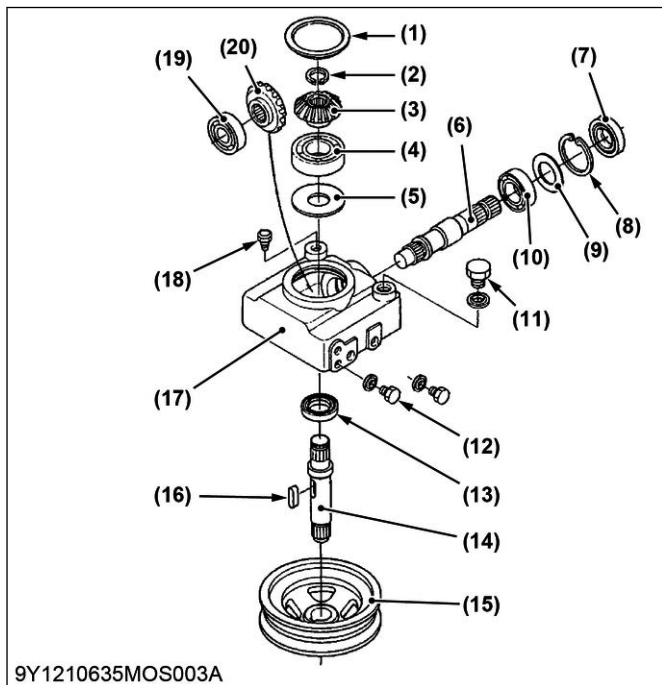
- Install the reamer bolts (3) at their original positions as shown in the figure.
- Tighten to the specified tightening torque.

Tightening torque	Gear box mounting bolt (M12 standard type)	77.4 to 90.2 N·m 7.90 to 9.19 kgf·m 57.1 to 66.5 lbf·ft
	Gear box mounting bolt (M12 reamer type)	78.5 to 88.2 N·m 8.01 to 8.99 kgf·m 57.9 to 65.0 lbf·ft

5.5 Disassembling gear box

1. Remove the drain plug (12), and drain the gear box oil.
2. Remove the center pulley (15) with a puller, and remove the feather key (16) on the bevel gear shaft (14).
3. Remove the gear box caps (1).
4. Remove the oil seal (7), internal circlip (8) and shim (9).
5. Remove the pinion shaft (6) with the ball bearing (10), and remove the bevel gear (20) with bearing (19).
6. Remove the external circlip (2), and draw out the bevel gear shaft (14).

7. Remove the bevel gear (3), ball bearing (4), shim (5) and oil seal (13).



- | | |
|----------------------|-----------------------|
| (1) Gear box cap | (12) Drain plug |
| (2) External circlip | (13) Oil seal |
| (3) Bevel gear | (14) Bevel gear shaft |
| (4) Ball bearing | (15) Center pulley |
| (5) Shim | (16) Feather key |
| (6) Pinion shaft | (17) Gear box |
| (7) Oil seal | (18) Breather |
| (8) Internal circlip | (19) Ball bearing |
| (9) Shim | (20) Bevel gear |
| (10) Ball bearing | |
| (11) Oil filler plug | |

(When reassembling)

- Replace the oil seals (7), (13) and gear box cap (1) with new ones.
- Check the backlash and turning torque.
If not proper, adjust with the shims (5) and (9).

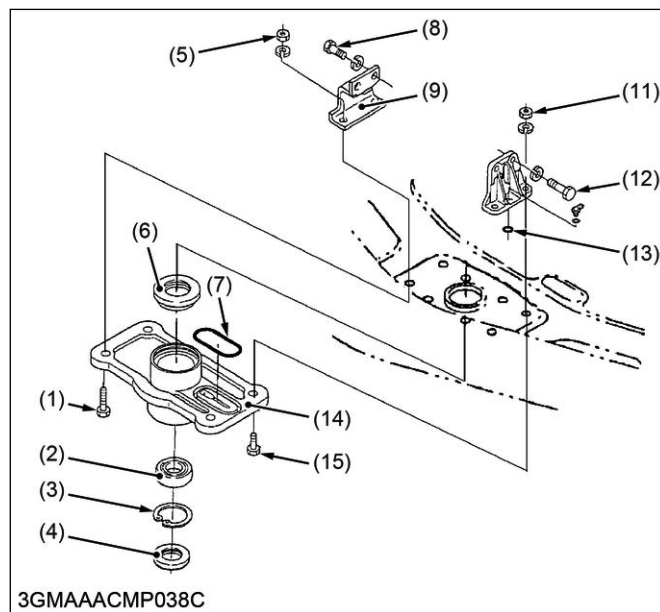
— RELATED PAGE —

[6.1 Adjusting turning torque of pinion shaft on page 4-12](#)

[6.2 Adjusting backlash between bevel gears on page 4-13](#)

5.6 Removing center pulley holder

- Remove the center pulley holder bolts (1), (15) / center pulley nut (5), (11).
- Remove the upper oil seal (6) and lower oil seal (4).
- Remove the internal circlip (3) and ball bearing (2).



- | | |
|-------------------------------|---------------------------------------|
| (1) Center pulley holder bolt | (10) Gear box stay L.H. |
| (2) Ball bearing | (11) Nut |
| (3) Internal circlip | (12) Gear box reamer bolt |
| (4) Lower oil seal | (13) O-ring |
| (5) Nut | (14) Center pulley holder |
| (6) Upper oil seal | (15) Center pulley holder reamer bolt |
| (7) O-ring | |
| (8) Gear box bolt | |
| (9) Gear box stay R.H. | |

(When reassembling)

■ NOTE

- When reassembling the center pulley holder (14), gear box and gear box stays (9), (10), tighten the bolts and nuts in the order as below, to prevent the incline the gear box.
- Tighten the gear box reamer bolt (12) to the gear box first, then tighten the center pulley holder reamer bolts (15) and nut (11) to the center pulley holder (14) with the specified torque.
- Tighten the gear box bolts (8) to the gear box, then tighten the center pulley holder bolts (1) and the nut (5) with the specified torque.
- Tighten to the specified tightening torque.

Tightening torque	Center pulley holder bolt and nut	77.4 to 90.2 N·m 7.90 to 9.19 kgf·m 57.1 to 66.5 lbf·ft
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5.7 Removing outer pulley and blade shaft

- Remove the outer pulley mounting nut (2), and remove the outer pulley (5) and feather key (10).
- Remove the pulley holder mounting bolts (17), and separate the left pulley holder (9) from the mower deck.

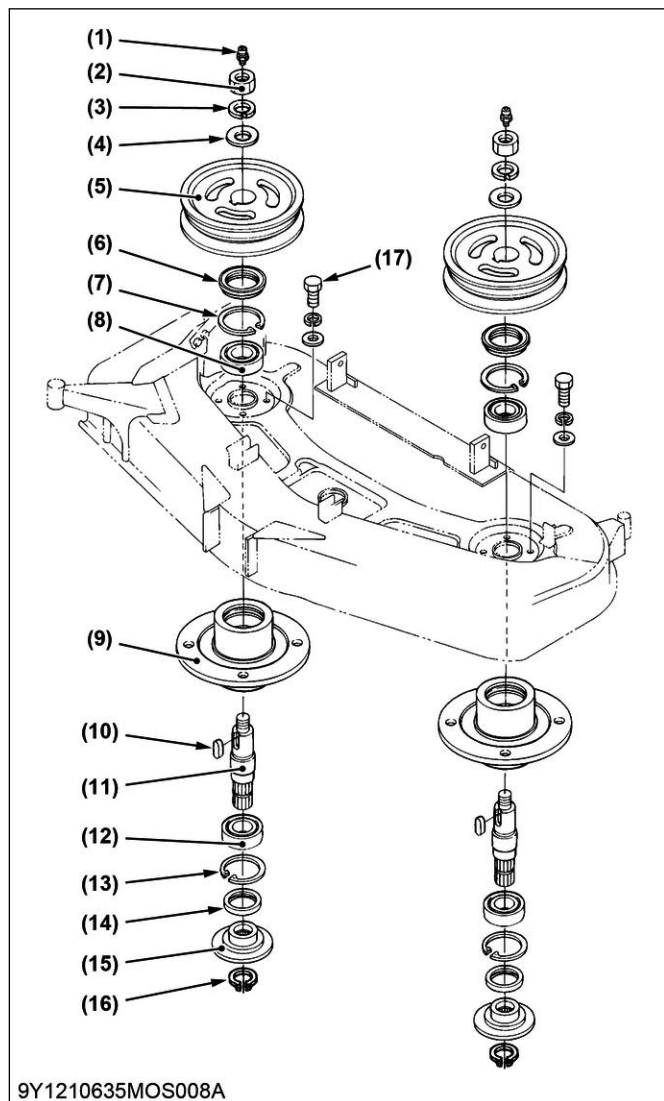
3. Remove the external circlip (16) on the left blade shaft (11).
4. Remove the blade boss (15) and oil seal (14).
5. Remove the internal circlip (13) and tap out the left blade shaft (11) with the ball bearings (8) and (12), being careful not to damage the grease fitting (1).
6. Remove the oil seal (6) and internal circlip (7).
7. Remove the ball bearings (8) and (12) from the blade shaft (11).

Tightening torque	Outer pulley mounting nut (M16)	166.7 to 186.3 N·m 17.0 to 19.0 kgf·m 123.0 to 137.4 lbf·ft
	Pulley holder mounting bolt	78 to 88 N·m 8.0 to 9.0 kgf·m 58 to 65 lbf·ft

6. Servicing

6.1 Adjusting turning torque of pinion shaft

1. Remove the mower belt, and reassemble the gear box to the mower deck.
2. Wind a string around the pinion shaft and set a spring balance (or push-pull gauge) to the tip of the string, and then slowly pull the spring balance horizontally to measure the turning force.



- 9Y1210635MOS008A
- | | |
|-------------------------------|----------------------------------|
| (1) Grease fitting | (10) Feather key |
| (2) Outer pulley mounting nut | (11) Left blade shaft |
| (3) Spring washer | (12) Ball bearing |
| (4) Plain washer | (13) Internal circlip |
| (5) Outer pulley | (14) Oil seal |
| (6) Oil seal | (15) Blade boss |
| (7) Internal circlip | (16) External circlip |
| (8) Ball bearing | (17) Pulley holder mounting bolt |
| (9) Left pulley holder | |

(When reassembling)

- Replace the oil seals (14) and (6) with new ones.
- Tighten to the specified tightening torque.

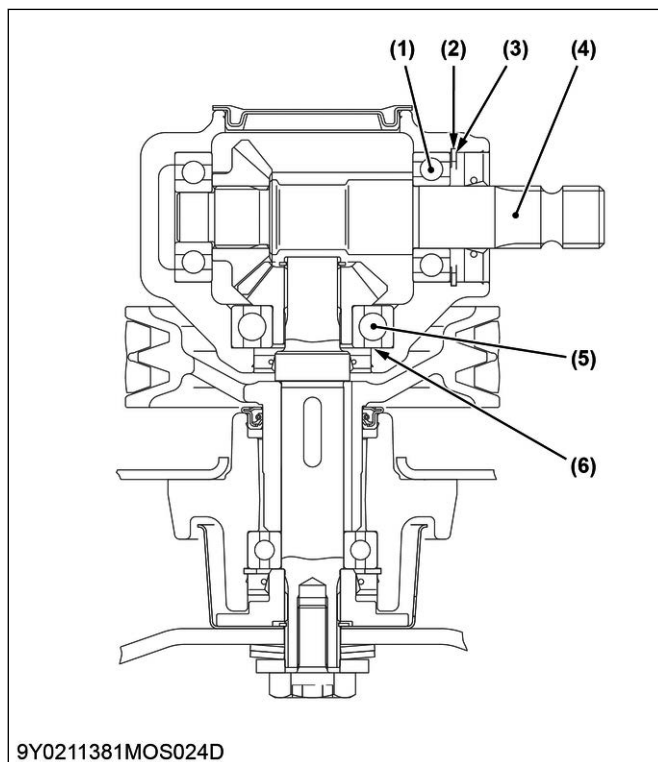
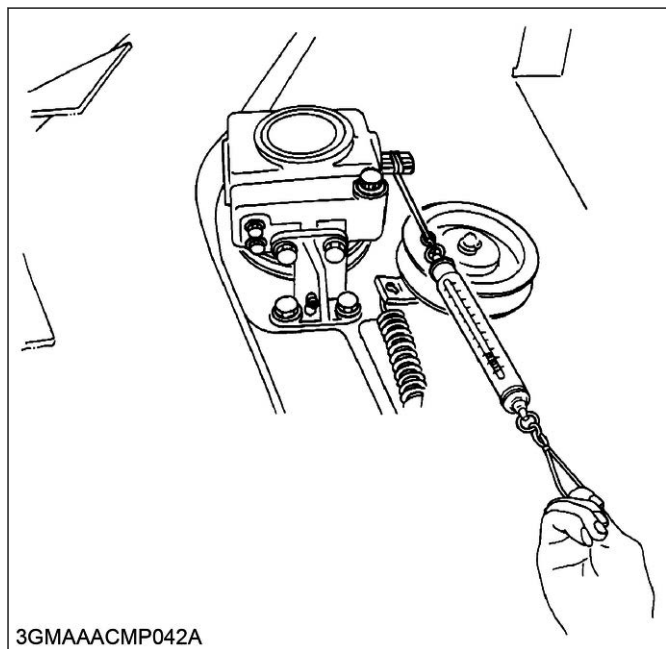
3. If the measurement exceeds the service specification, check the bearing and gears and adjust the adjusting shims (2) and (6).

RCK60-30BC

Turning force	Service specification	Less than 56 N 5.7 kgf 13 lbf
Turning torque		Less than 0.7 N·m 0.07 kgf·m 0.5 lbf·ft

RC72-30BC

Turning force	Service specification	Less than 118 N 12.0 kgf 26.5 lbf
Turning torque		Less than 1.47 N·m 0.150 kgf·m 1.08 lbf·ft



- (1) Bearing
(2) Adjusting shim
(3) Circlip
(4) Pinion shaft
(5) Bearing
(6) Adjusting shim

(Reference)

Thickness of adjusting shims (2)	0.20 mm 0.0079 in.
	0.300 mm 0.0118 in.
Thickness of adjusting shims (6)	0.10 mm 0.0039 in.
	0.20 mm 0.0079 in.

6.2 Adjusting backlash between bevel gears

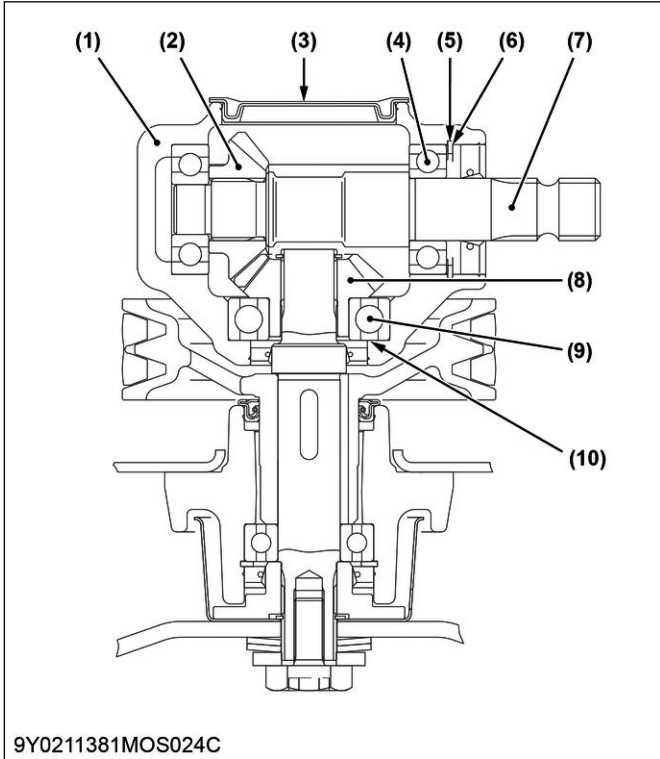
Tools required

- Plastigauge

- Remove the gear box cap (3).
- Place the plastigauges or wire of solder the bevel gear (2) on the pinion shaft (7).
- Turn the pinion shaft (7).

4. If the backlash exceeds the service limit, adjust with shims (5) and (10).

Backlash between bevel gears	Service specification	0.13 to 0.25 mm 0.0052 to 0.0098 in.
	Service limit	0.400 mm 0.0157 in.



- (1) Bevel gear case

(2) Bevel gear

(3) Gear box cap

(4) Bearing

(5) Shim

(6) Circlip
- (7) Pinion shaft

(8) Bevel gear

(9) Bearing

(10) Shim

(Reference)

Thickness of adjusting shims (5)	0.20 mm 0.0079 in.
	0.300 mm 0.0118 in.
Thickness of adjusting shims (10)	0.10 mm 0.0039 in.
	0.20 mm 0.0079 in.

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