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Telephone : (84)-650-3577-507

KUBOTA Corporation

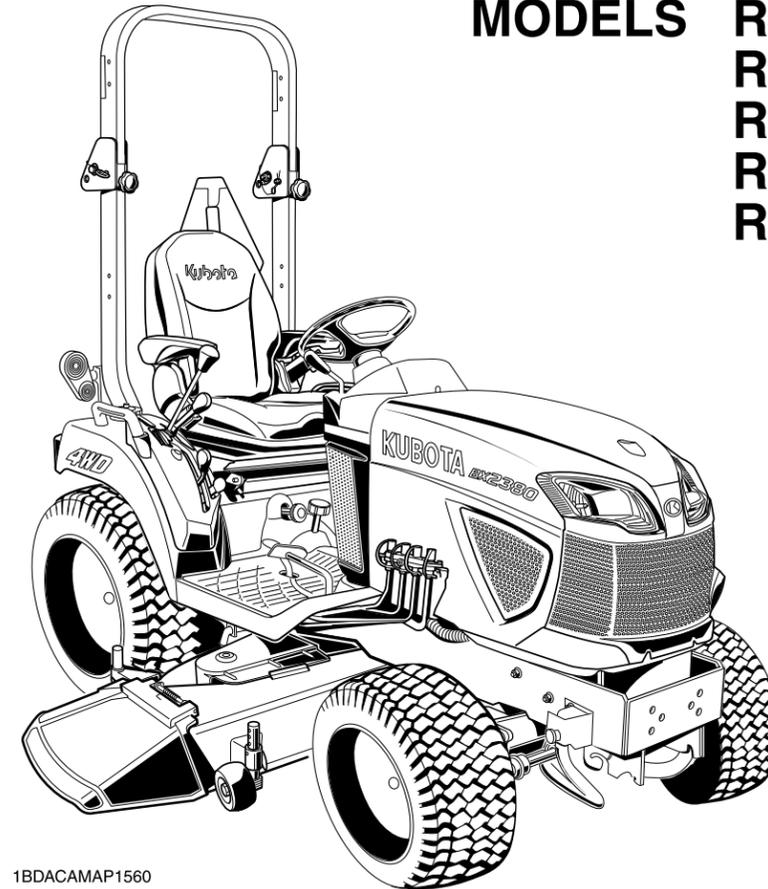
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Code No. K5381-7111-5

# OPERATOR'S MANUAL

# KUBOTA ROTARY MOWER

MODELS RCK60B-23BX  
RCK54P-23BX  
RCK54-23BX  
RCK48P-18BX  
RCK48-18BX



1BDACAMAP1560

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# ABBREVIATION LIST

Abbreviations	Definitions
DT	Dual Traction [4WD]
fpm	Feet per minute
G	Gear Transmission
Hi-Lo	High speed-Low speed
HST	Hydrostatic Transmission
LH	Left Hand (Standing in the direction of travel)
m/s	Meters per second
PTO	Power Take Off
RH	Right Hand (Standing in the direction of travel)
ROPS	Roll-Over Protective Structure
rpm	Revolutions per minute
r/s	Revolutions per second
SAE	Society of Automotive Engineers
2WD	2 Wheel Drive
4WD	4 Wheel Drive

## California Proposition 65

### **WARNING**

Engine exhaust, some of its constituents, certain machine components and fluids, contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

# FOREWORD

You are now the proud owner of a KUBOTA ROTARY MOWER. This rotary mower is a product of KUBOTA's quality engineering and manufacturing. It is made of the fine materials and under a rigid quality control system. It will give you long, satisfactory service. To obtain the best use of your rotary mower, please read this manual carefully. It will help you become familiar with the operation of the rotary mower and contains many helpful hints about rotary mower maintenance. It is KUBOTA's policy to utilize, as quickly as possible, every advance in our research. The immediate use of new techniques in the manufacture of products may cause some small parts of this manual to be outdated. KUBOTA distributors and dealers will have the most up-to-date information. Please do not hesitate to consult them.

## **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.

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# SAFE OPERATION

Careful operation is your best insurance against an accident. Read this section carefully before operating the mower. All operators, no matter how much experience they may have had, should read this manual, tractor manual and other related manuals before operating mower. It is the owner's obligation to instruct all operators in safe operation.

## ■ Before operation (Pre-operation)

### ● Operator

1. Do not operate the machine while under the influence of alcohol, medication, other substances or while fatigued.
2. Be thoroughly familiar with the controls and learn how to stop quickly in an emergency. Know your equipment and its limitations.
3. Do not wear loose, torn, or bulky clothing around machine. The clothing may catch on moving parts or controls, leading to the risk of accident.  
Wear and use any additional safety items such as hard hat, safety boots or shoes, eye and hearing protection, gloves, etc., as appropriate or required.
4. Never allow children to operate the mower, even under adult supervision.
5. Read and understand this manual and the tractor operator's manual before operating mower. Allow only a properly trained person to operate the tractor.

### ● Machine, blades and equipment

1. Never operate the mower without proper guards, shields, and the grass catcher bag or discharge deflector in place.
2. The mower is equipped with many safety devices. Do not alter or remove any part of safety system for your safety.
3. Keep all nuts, bolts and screws tight to be sure the mower is in safe working condition.
4. Check the blade bolts at frequent intervals for proper tightness.
5. Inspect the blades for wear and damage. A dull blade can be sharpened, but a blade that is worn out, bent, cracked, or otherwise damaged must be replaced.
6. KUBOTA recommends the use of ROPS and seat belt in almost all applications.  
Always use seat belt when the tractor is equipped with a ROPS.  
Never use the seat belt when the tractor is not equipped with a ROPS.
7. When using the mower, detach the backhoe beforehand. Otherwise the machine may get damaged during operation.
8. Replace damaged or illegible safety decals.  
See next page for required labels.

### ● Working area

1. Thoroughly inspect the area where the mower is to be used.  
Remove all stones, sticks, wires, bones and other objects that could be thrown at high speed.
2. Keep the area of operation clear of all persons, particularly small children, and pets.  
All people and pets should be kept at a safe distance from the work area.

## ■ Operation

### ● Starting

1. Never start engine or operate levers from anywhere other than the seat.
2. 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 PTO clutch lever and the range gear shift lever (Hi-Lo) are disengaged.

### ● Operation

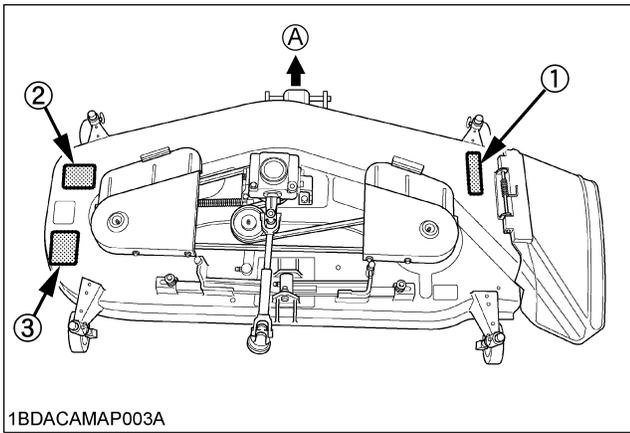
1. Keep bystanders at a safe distance from the machine during mowing operations.
2. Do not stand on the mower.
3. While making turns in rough terrain, reduce tractor speed.
4. Do not mow while in reverse unless absolutely necessary and then only after inspecting of the entire area behind the mower.  
Be extra careful of children.
5. Upon striking a foreign object, stop and inspect the tractor and the mower for damage. Repair the damage before resuming operation.
6. If the mower discharge deflector becomes clogged, stop the tractor; disengage the mower drive; shut off the engine and remove the key, and clean out the deflector before continuing.
7. Hillside operation is dangerous and is not recommended. If it is necessary to mow on a hillside, use extreme caution. Never mow across the face of a slope. Do not operate with the loader.
8. Do not mow on steep inclines, rough terrain or near drop-offs.

## ■ Maintenance and Storage

Never attempt to make adjustments or repairs of any kind while the tractor and mower are running. Shut off the engine, remove the key, set the parking brake and allow the blades to stop.

**DANGER, WARNING AND CAUTION LABELS**

[RCK60B-23BX, RCK54-23BX, RCK48-18BX]



1BDACAMAP003A

(A) "FORWARD"

(1) Part No. K5112-7311-1



1BDACADAP003E

(2) Part No. K5112-7312-1



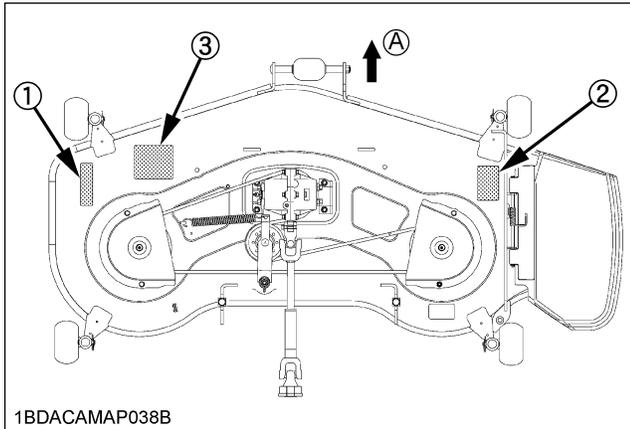
1BDACADAP004E

(3) Part No. K5384-4715-1



1BDACBLAP051A

[RCK54P-23BX]



1BDACAMAP038B

(A) "FORWARD"

(1) Part No. K5617-7311-1



1BDABBSAP0030

(2) Part No. K5617-7312-1



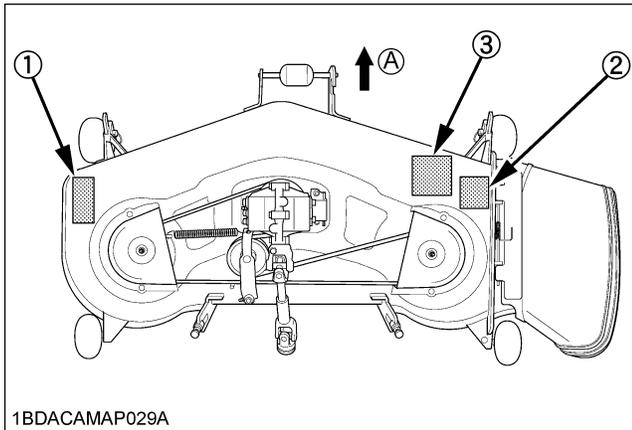
1BDABBSAP0020

(3) Part No. K5384-4715-1



1BDACBLAP051A

[RCK48P-18BX]



1BDACAMAP029A

(A) "FORWARD"

(1) Part No. K5617-7311-1



1BDABBSAP0030

(2) Part No. K5617-7312-1



1BDABBSAP0020

(3) Part No. K5384-4715-1



1BDACBLAP051A

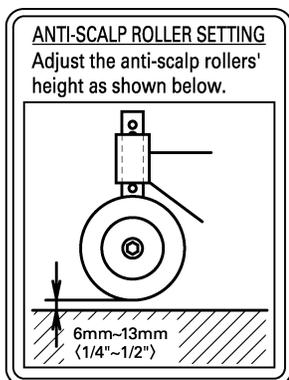
**CARE OF DANGER, WARNING AND CAUTION LABELS**

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

# IMPORTANT

To obtain maximum productivity from your mower, the following items should be read and observed.

1. Adjust the anti-scalp rollers and wheels according to the mowing height. Refer to the label below. This label is also affixed to the mower deck.

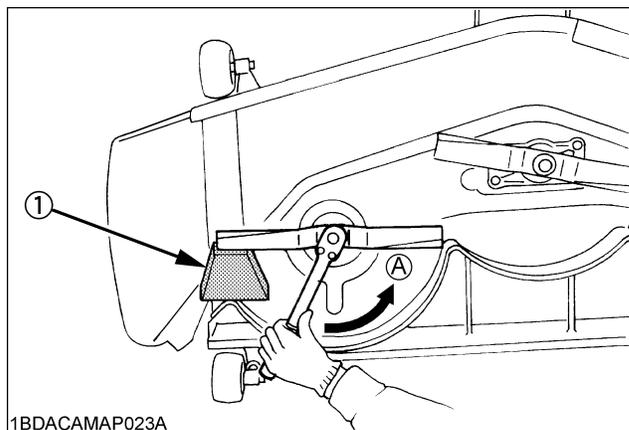


1BDAHADAP069A

2. Before attaching the mower links, adjust their lengths according to the table below. (See "MOUNTING THE MOWER TO THE TRACTOR" in "MOUNTING TO THE TRACTOR" section.)

	Length of front link (D)
RCK60B-23BX	47 mm (1.85 in.)
RCK54P-23BX	
RCK54-23BX	
RCK48P-18BX	
RCK48-18BX	

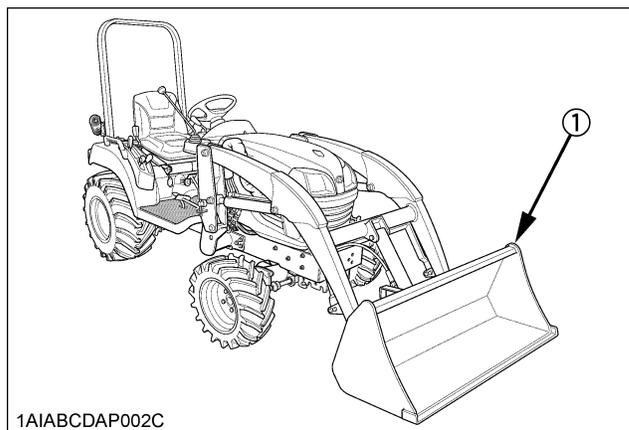
3. Grease the following parts. (See "CHECK AND MAINTENANCE" in "MAINTENANCE" section.)
  - Universal joint
  - Three spindle shafts
  - Belt tension pulley
  - Belt tension pivot
  - Balance shaft (For RCK60B-23BX only)
4. When necessary, remove the blades as shown. (See "BLADE REPLACEMENT" in "MAINTENANCE" section.)



1BDACAMAP023A

- (1) Block (A) "LOOSEN" (counterclockwise)

5. Operating with a loader  
When operating the loader in rough terrain, remove the mower to avoid interference between obstacles and mower and consequent damage of mower.



1AIABCDAP002C

- (1) Front loader

# SERVICE

1. When in need of parts or service, give the serial number of the mower to the dealer.
2. The serial number is located on the right side of the deck.
3. For your reference, please record the serial number in the space provided.

**KUBOTA MOWER**

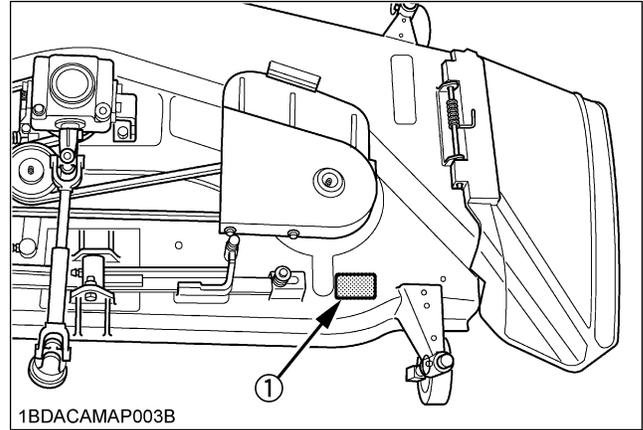
MODEL \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

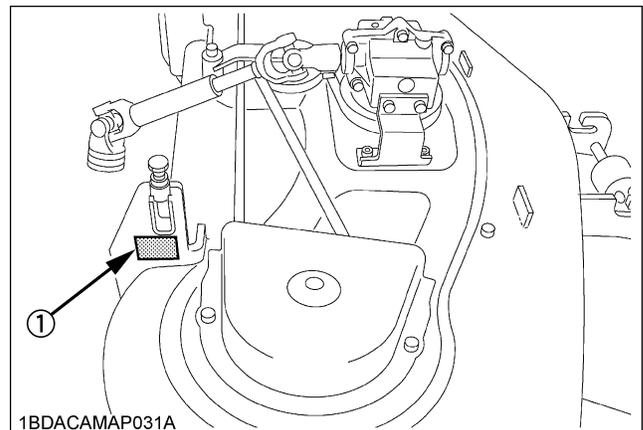
DATE OF PURCHASE \_\_\_\_\_

NAME OF DEALER \_\_\_\_\_

**[RCK60B-23BX, RCK54P-23BX, RCK54-23BX, RCK48-18BX]**



**[RCK48P-18BX]**



(1) Serial number

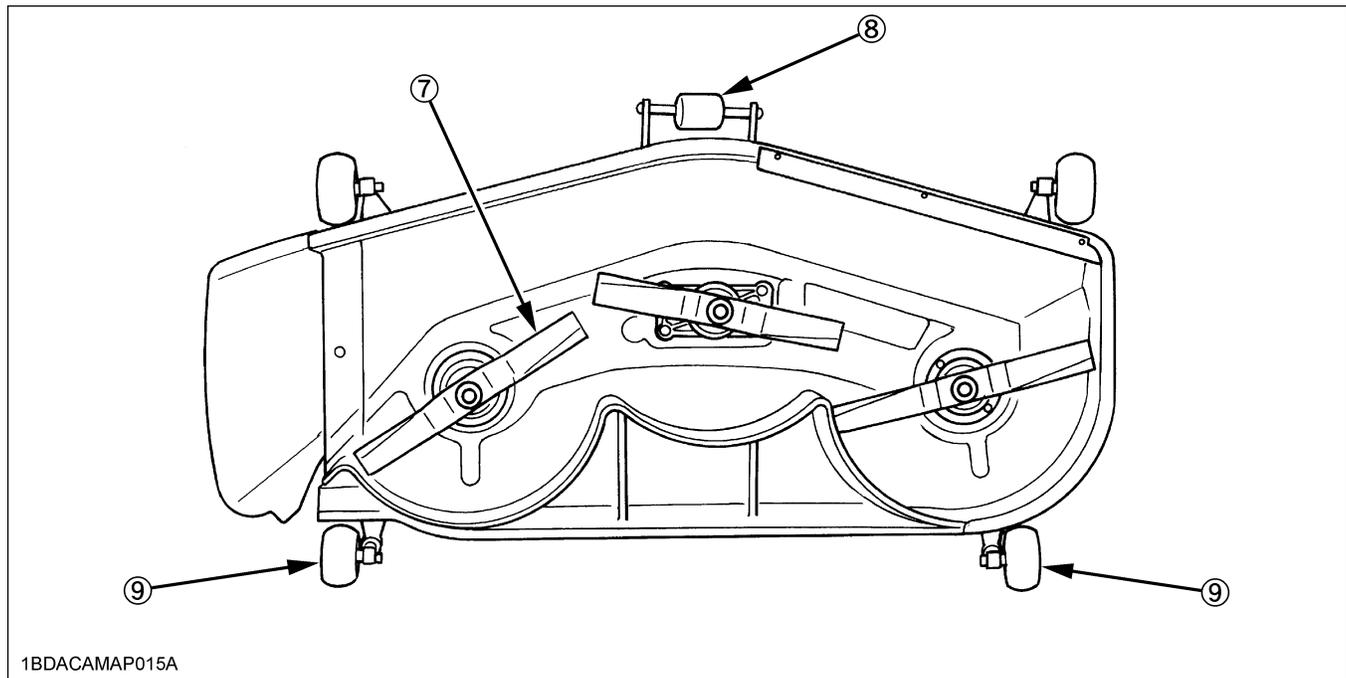
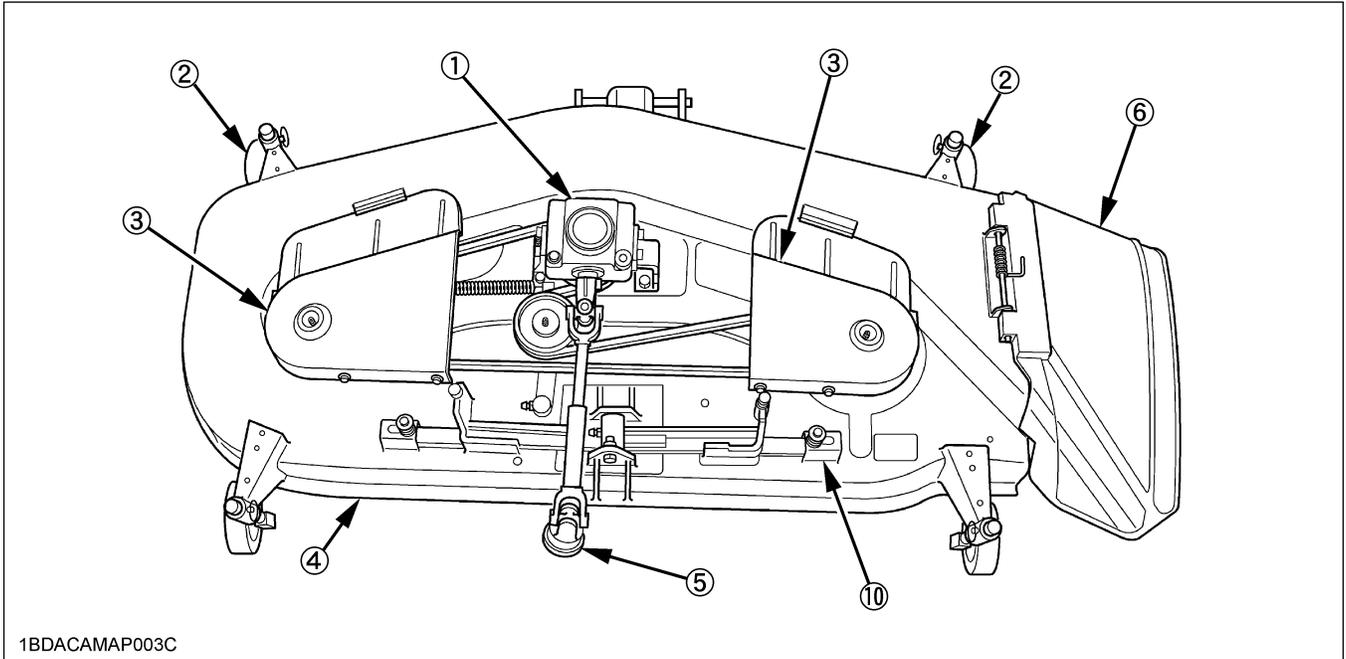
# INTRODUCTION

## SPECIFICATIONS

Model		RCK60B-23BX	RCK54P-23BX	RCK54-23BX	RCK48P-18BX	RCK48-18BX	
Suitable tractor		BX2350, BX2360, BX2660, BX24, BX2370D, BX2670D, BX25D, BX2380, BX2680	BX2350, BX2360, BX2660, BX24, BX2370D, BX25D	BX1850, BX1860, BX2350, BX2360, BX24, BX1870D, BX2370D, BX25D, BX1880, BX2380	BX1850, BX1860, BX1870D	BX1850, BX1860, BX1870D, BX1880	
Mounting method		Quick-Joint, Parallel linkage					
		Self-balance suspended linkage	Suspended linkage				
Adjustment of cutting height		Dial gauge					
Cutting width	mm (in.)	1524 (60)	1375 (54)	1372 (54)	1225 (48)	1219 (48)	
Cutting height	mm (in.)	25 to 102 (1.0 to 4.0)					
Weight (Approx.)	kg (lbs.)	115 (250)	86 (190)	95 (210)	82 (181)	75 (165)	
Blade spindle speed	r/s (rpm)	44.1 (2647)	49.5 (2969)		54.7 (3281)		
Blade tip velocity	m/s (fpm)	72.5 (14271)	73.8 (14527)		72.8 (14331)		
Blade length	mm (in.)	523 (20.6)	475 (18.7)		424 (16.7)		
Number of blades		3					
Dimensions	Overall length	mm (in.)	1000 (39.4)	908 (35.7)	928 (36.5)	881 (34.7)	895 (35.2)
	Overall width	mm (in.)	1930 (76.0)	1700 (67.0)	1780 (66.5)	1550 (61.0)	1544 (60.8)
	Overall height [Min.]	mm (in.)	281 (11.0)	291 (11.5)	281 (11.0)	291 (11.5)	268 (10.5)

## MOWER TERMINOLOGY

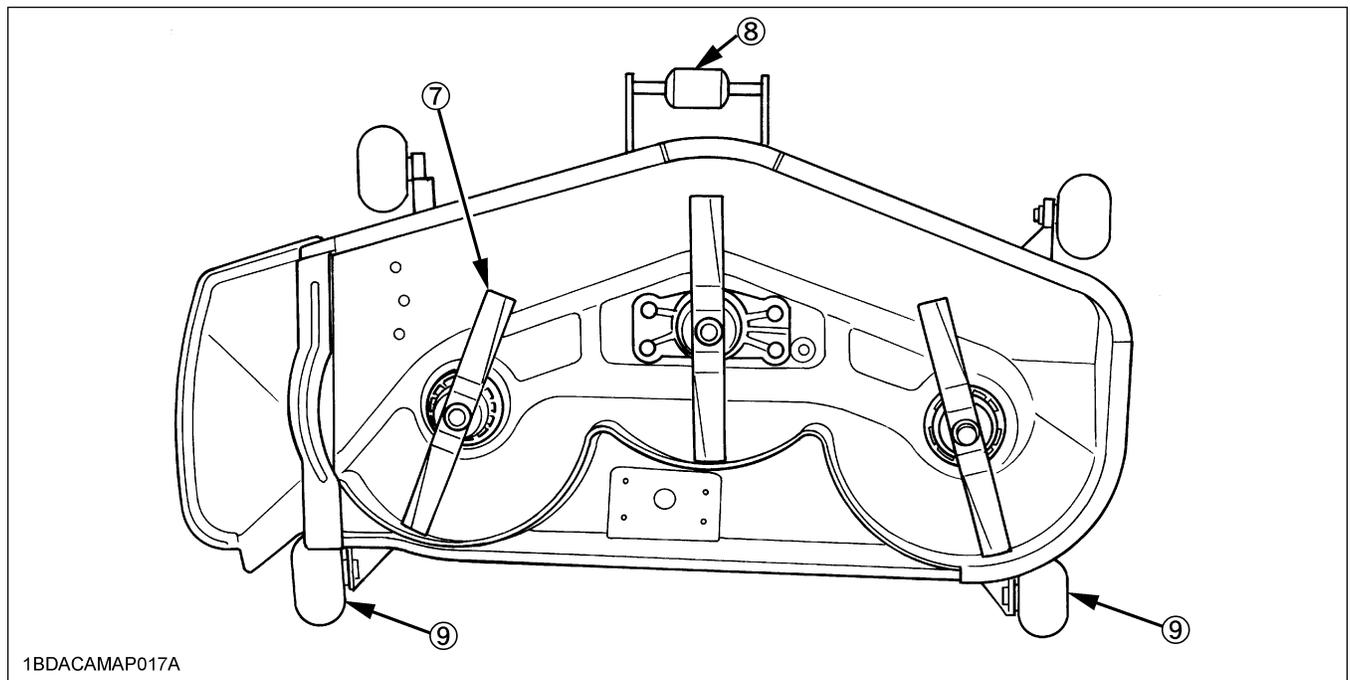
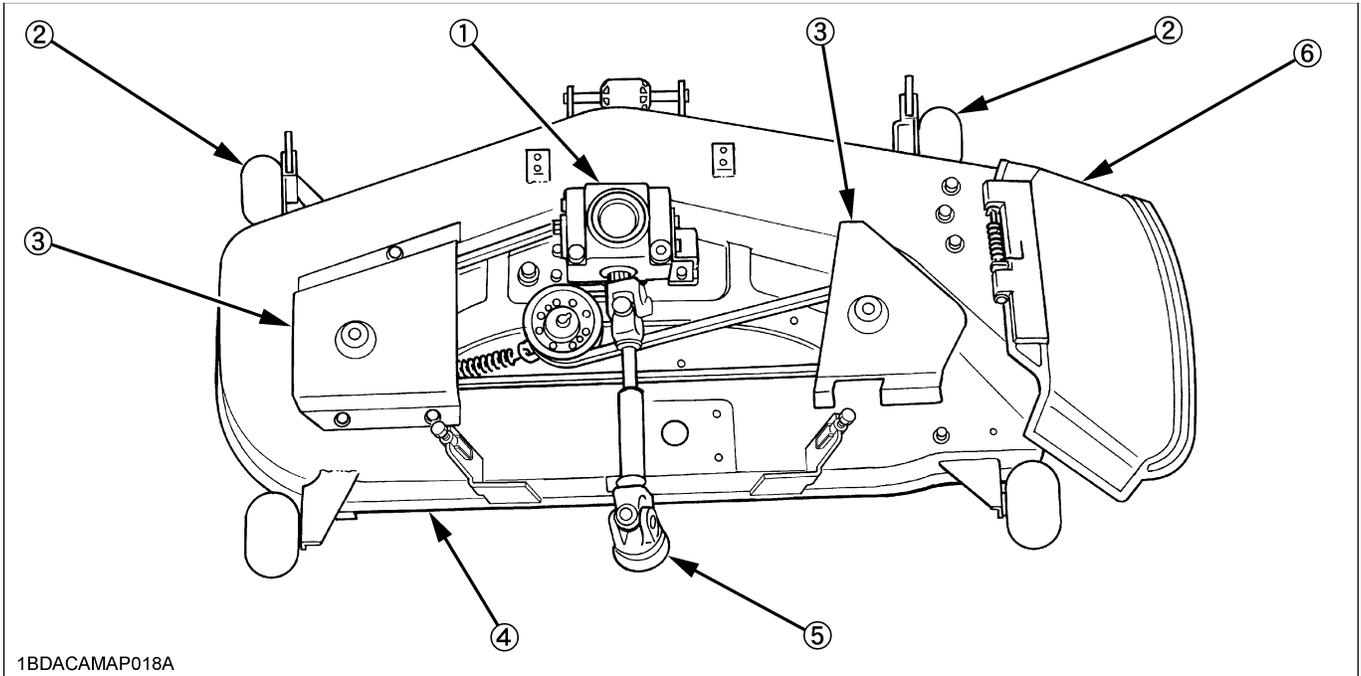
[RCK60B-23BX, RCK54-23BX]



- (1) Gear box
- (2) Front anti-scalp roller
- (3) Belt cover
- (4) Deck
- (5) Universal joint

- (6) Discharge deflector
- (7) Blade
- (8) Center anti-scalp roller
- (9) Rear anti-scalp roller
- (10) Self-balancer (RCK60B-23BX only)

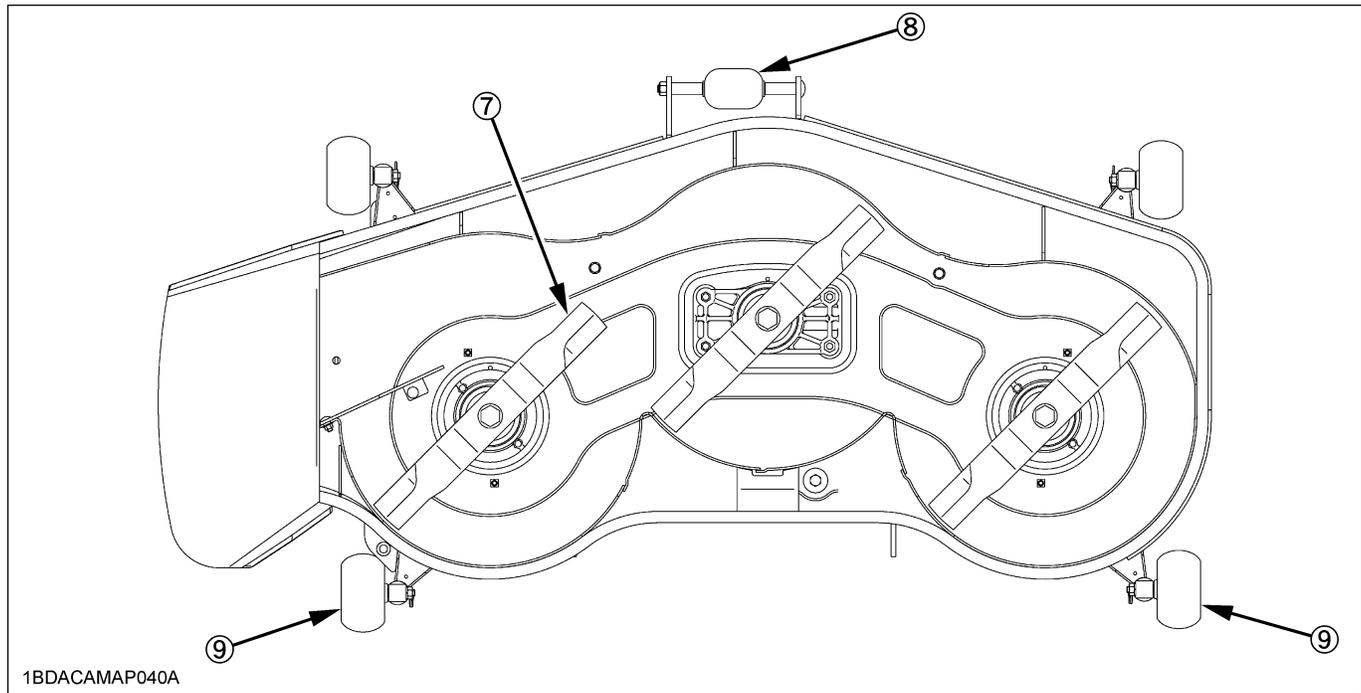
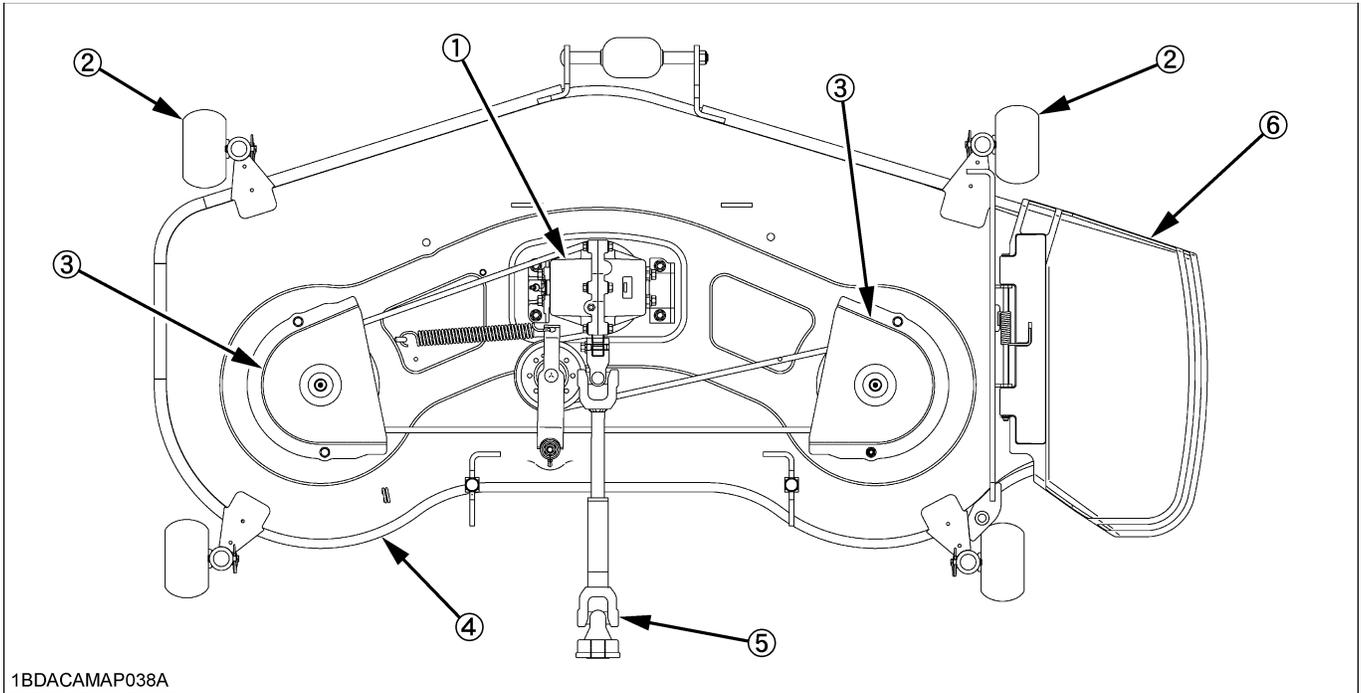
[RCK48-18BX]



- (1) Gear box
- (2) Front anti-scalp roller
- (3) Belt cover
- (4) Deck
- (5) Universal joint

- (6) Discharge deflector
- (7) Blade
- (8) Center anti-scalp roller
- (9) Rear anti-scalp roller

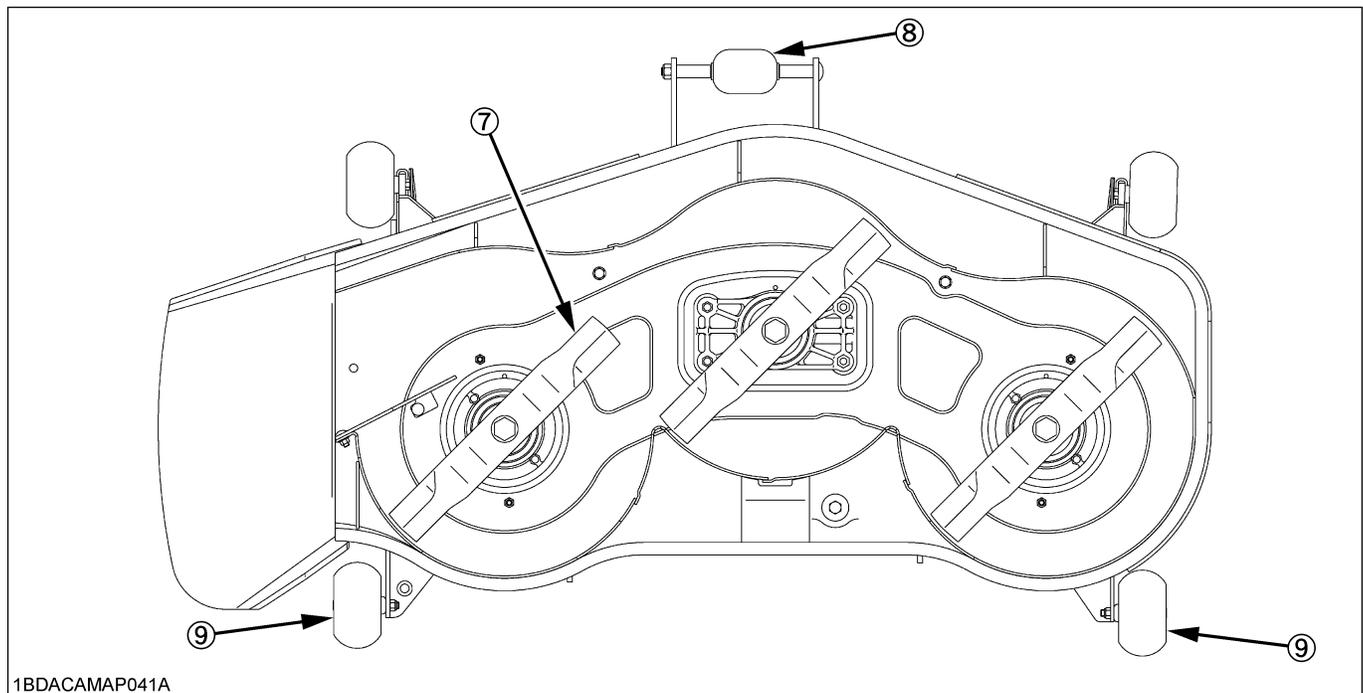
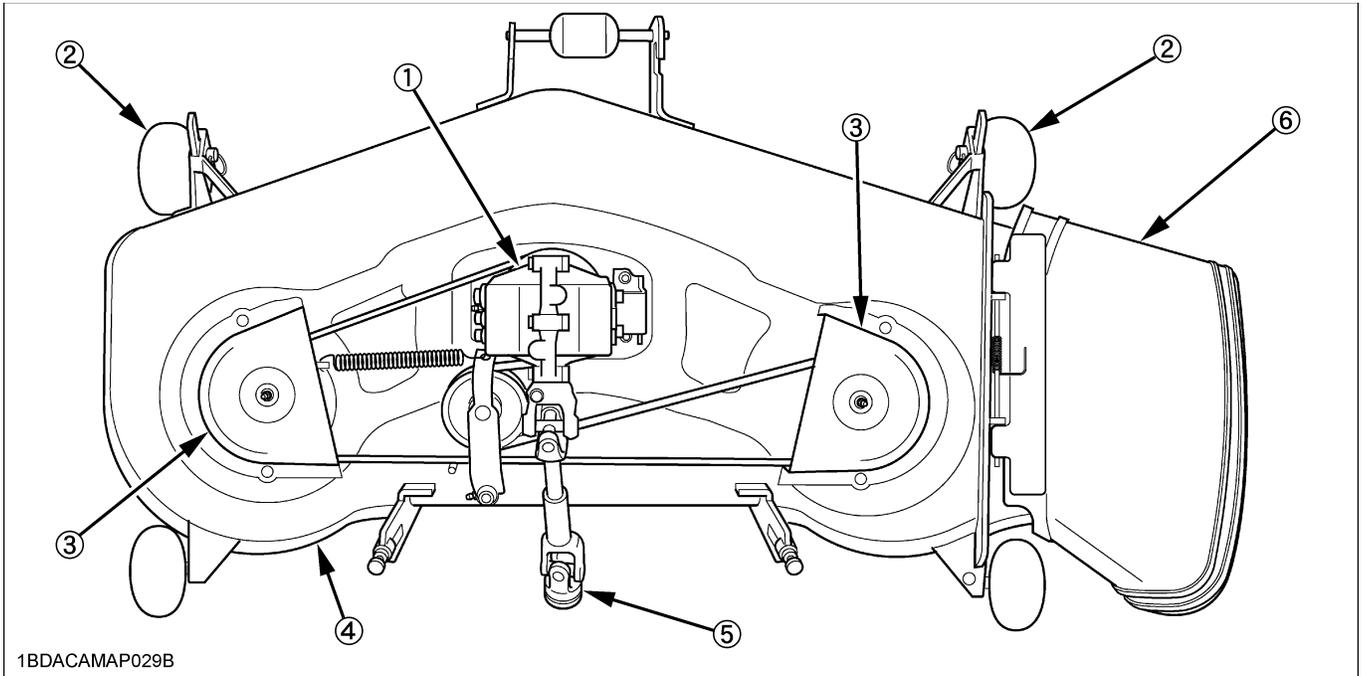
[RCK54P-23BX]



- (1) Gear box
- (2) Front anti-scalp roller
- (3) Belt cover
- (4) Deck
- (5) Universal joint

- (6) Discharge deflector
- (7) Blade
- (8) Center anti-scalp roller
- (9) Rear anti-scalp roller

[RCK48P-18BX]



- (1) Gear box
- (2) Front anti-scalp roller
- (3) Belt cover
- (4) Deck
- (5) Universal joint

- (6) Discharge deflector
- (7) Blade
- (8) Center anti-scalp roller
- (9) Rear anti-scalp roller

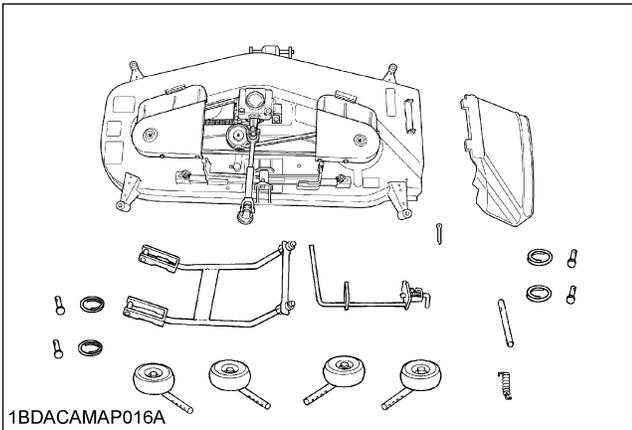
# SETTING UP

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

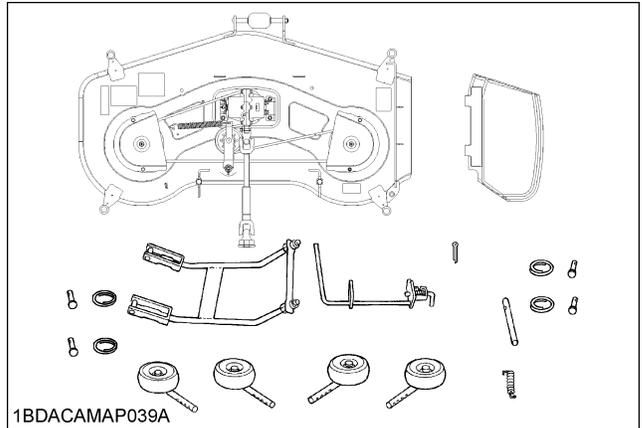
## PRE-ASSEMBLY

Take out all mower components from the case and check the parts as illustrated below. (Some of these parts may already be assembled to the mower deck.)

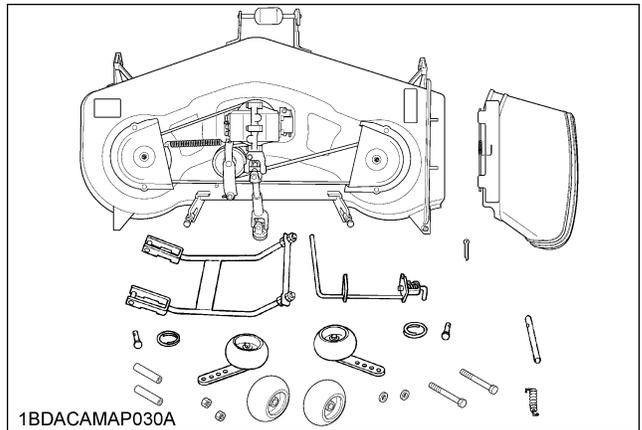
[RCK60B-23BX, RCK54-23BX]



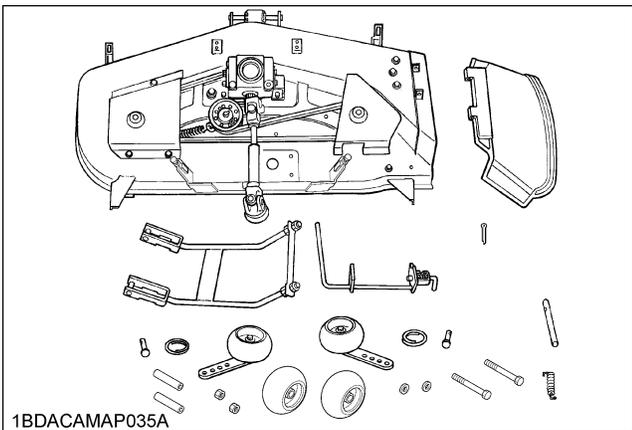
[RCK54P-23BX]



[RCK48P-18BX]



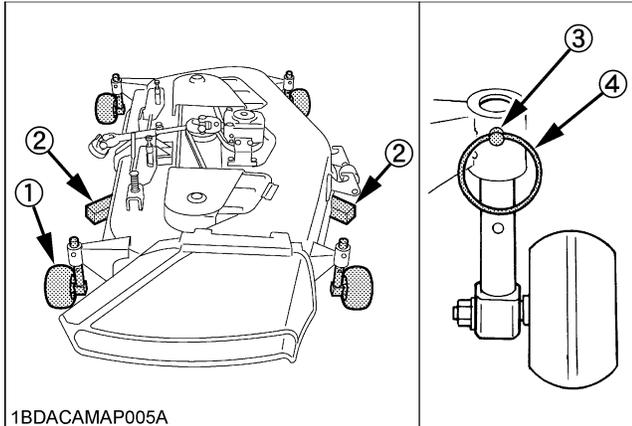
[RCK48-18BX]



## SETTING UP THE MOWER

[RCK60B-23BX, RCK54P-23BX, RCK54-23BX]

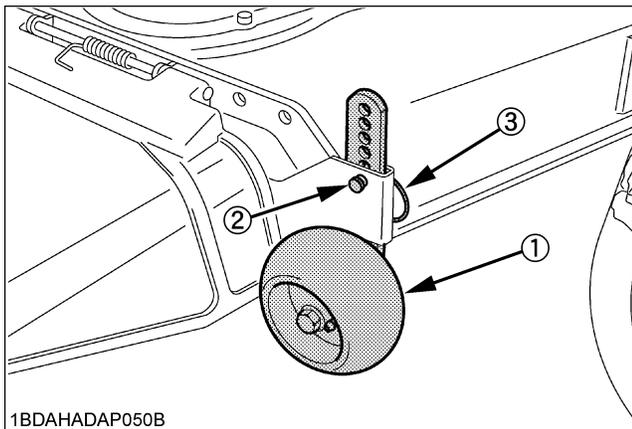
- Place the mower on blocks as illustrated.  
Turn the anti-scalp rollers sideways and attach to the arms of the deck at the upper position with clevis pins and snap rings.  
Remove the blocks.



- 1BDACAMAP005A
- Anti-scalp roller
  - Block
  - Clevis pin
  - Snap ring

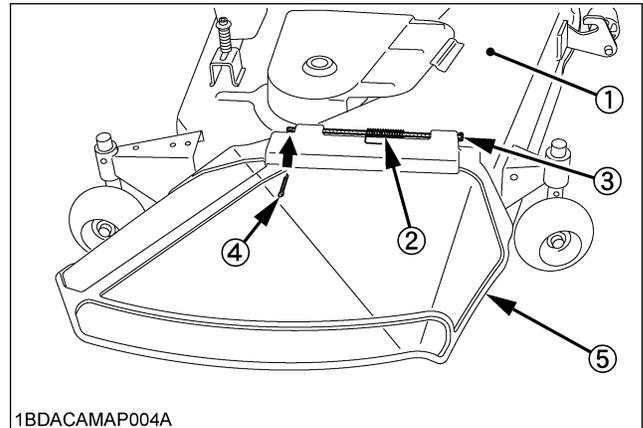
[RCK48P-18BX, RCK48-18BX]

- Attach the front anti-scalp rollers to the deck with clevis pins and snap rings.



- 1BDAHADAP050B
- Anti-scalp roller
  - Clevis pin (ø9.5 x 25.4)
  - Snap ring (ø45)

- Attach the discharge deflector to the deck with the spring, discharge pin and cotter pin.  
Secure the spring to the discharge deflector as illustrated.



- 1BDACAMAP004A
- Deck
  - Spring
  - Discharge pin
  - Cotter pin
  - Discharge deflector

# MOUNTING TO THE TRACTOR

## MOUNTING THE MOWER TO THE TRACTOR

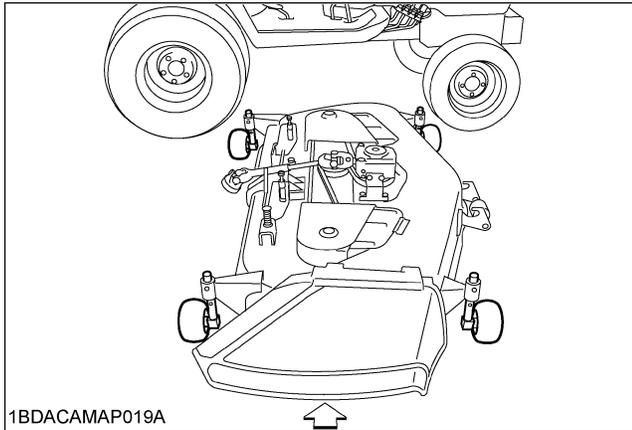


### WARNING

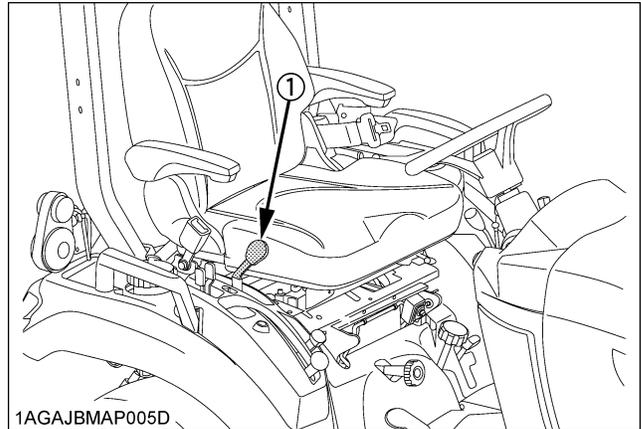
To avoid serious injury or death:

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

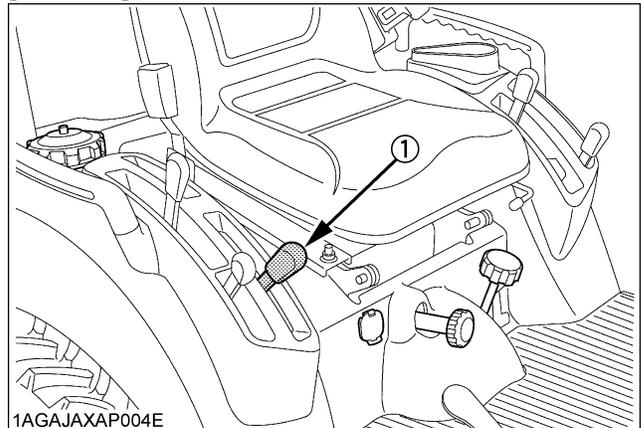
1. Park the tractor on a firm, flat and level surface and set the parking brake.
2. Move the hydraulic control lever rearward to raise the mower rear link to the highest position.
3. Stop the engine and remove the key.
4. Roll the mower under the tractor from right side.



[BX1880, BX2380, BX2680]



[OTHERS]

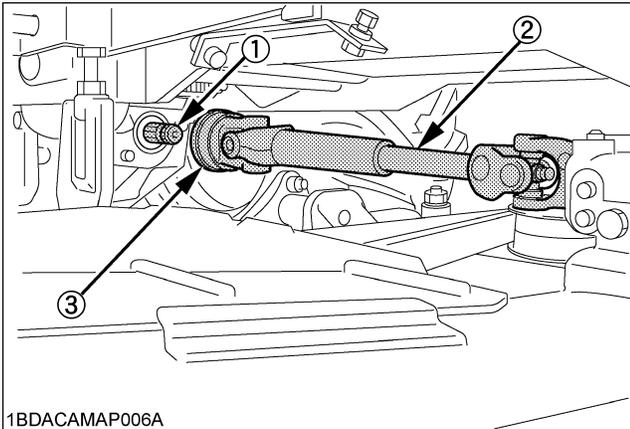


(1) Hydraulic control lever

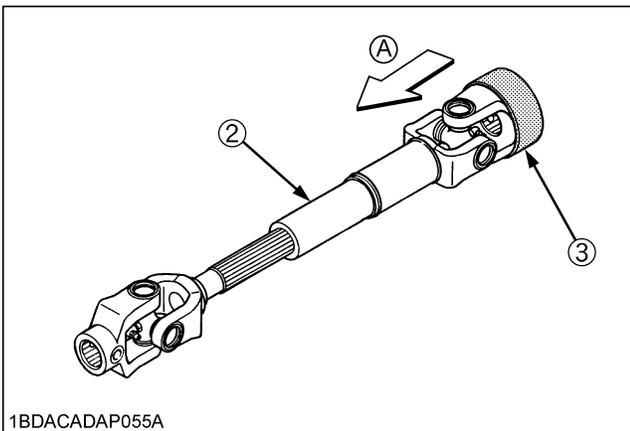
5. Mounting the universal joint.  
 Pull back the coupler of the universal joint.  
 Push the universal joint onto the PTO shaft until the coupler locks.  
 Slide the universal joint back and forth until the universal joint is locked securely.

**IMPORTANT :**

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



1BDACAMAP006A



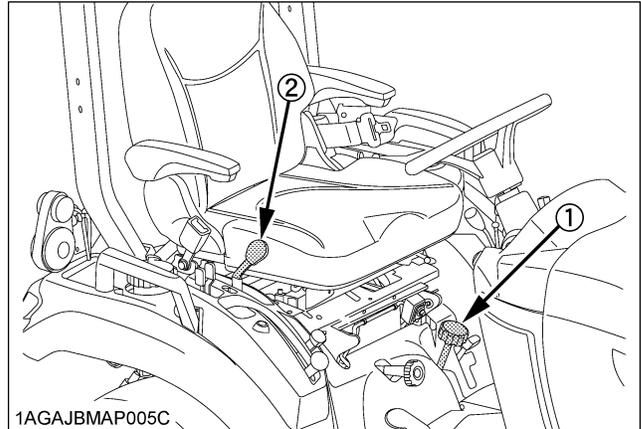
1BDACADAP055A

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

(A) "TUG"

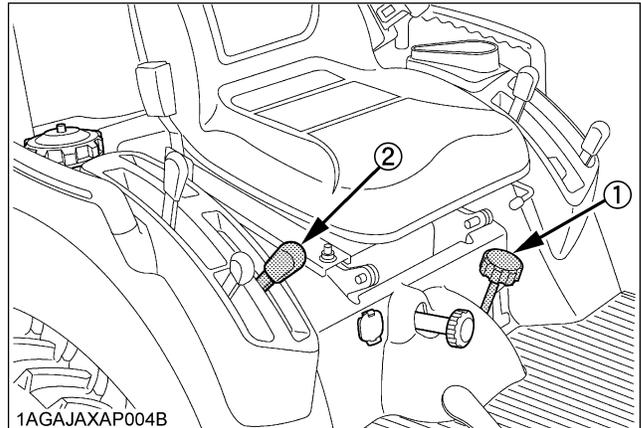
6. Attaching the mower to the rear links.  
 ● Set the cutting height control dial to zero inch position.

**[BX1880, BX2380, BX2680]**



1AGAJBMAP005C

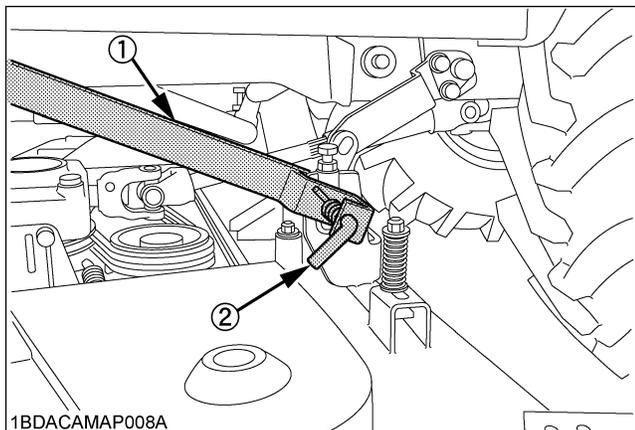
**[OTHERS]**



1AGAJAXAP004B

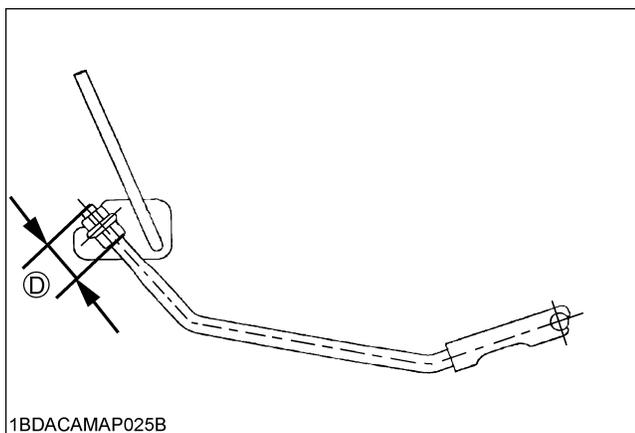
- (1) Cutting height control dial
- (2) Hydraulic control lever

- Move the tractor's hydraulic control lever forward to lower the mower rear links.
- Attach the rear link to the mower with the L pins.



(1) Rear link  
(2) L pin

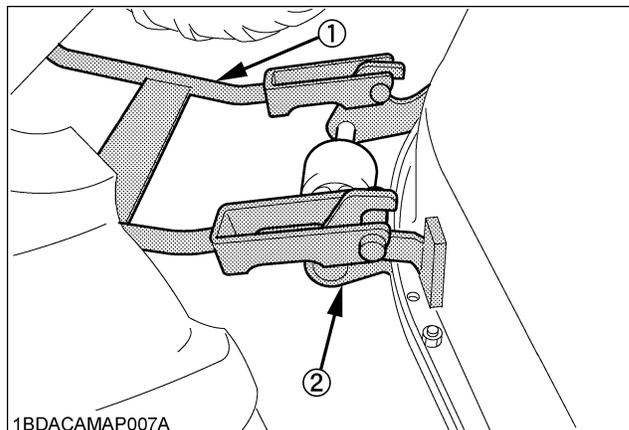
7. Check that the length (D) of the front link is 47 mm (1.85 in.) For fine adjustment, see "MOWER ADJUSTMENTS" section.



1BDACAMAP025B

RCK60B-23BX	47 mm (1.85 in.)
RCK54P-23BX	
RCK54-23BX	
RCK48P-18BX	
RCK48-18BX	

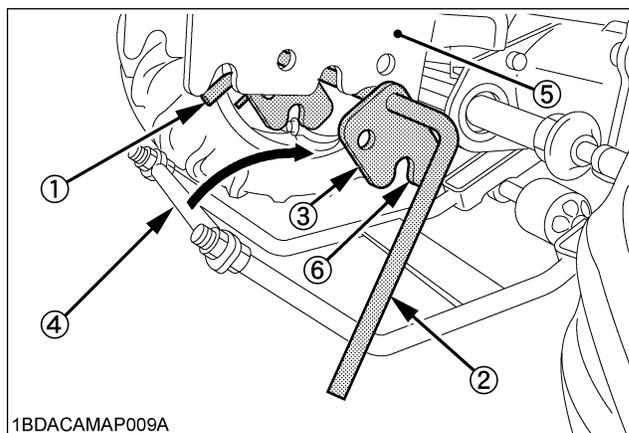
8. Attach the front link to the front bracket groove as shown.



(1) Front link  
(2) Front bracket groove

9. Mounting the front link.

- Position the front lever to the front link bracket.
- Pull and lock the L pin. Then lower the front lever.



1BDACAMAP009A

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

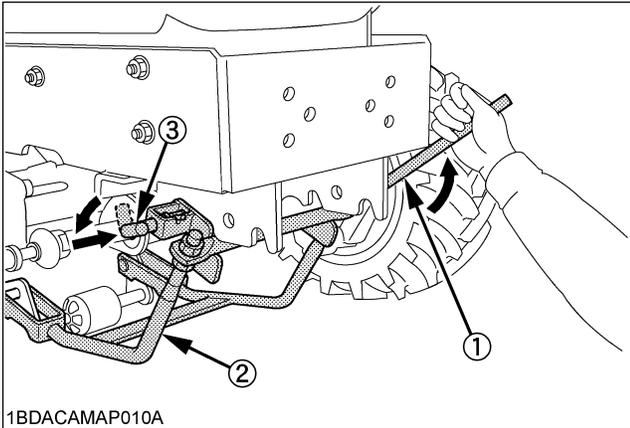
- Hook the front link to the lever fulcrum groove, and lift the front lever.
- Release the L pin to lock the front lever.

**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.



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

# MOWER ADJUSTMENTS



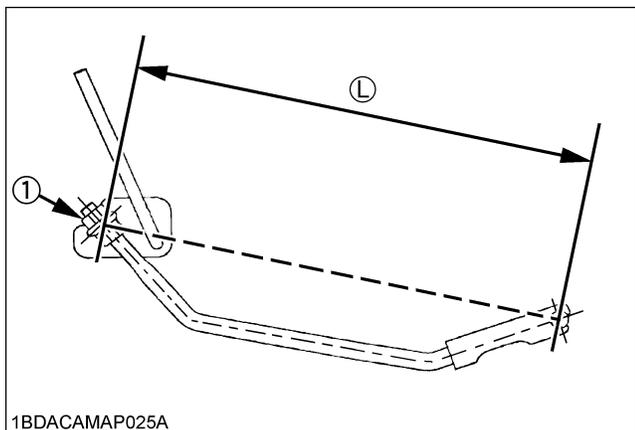
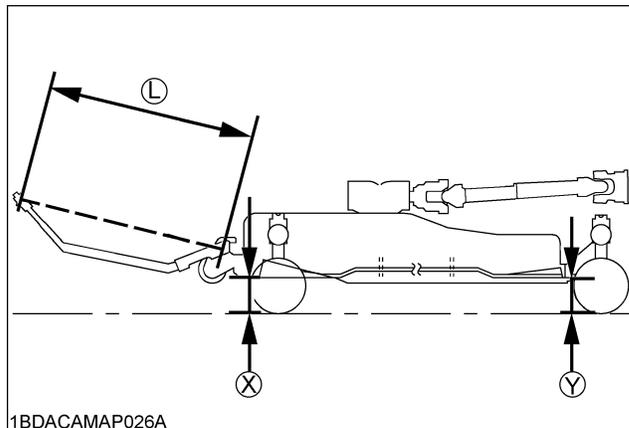
## WARNING

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 making adjustments.
- Wear heavy gloves or wrap end of blade with a rag when you handle blades.

## ADJUSTING THE PARALLEL LINKAGE

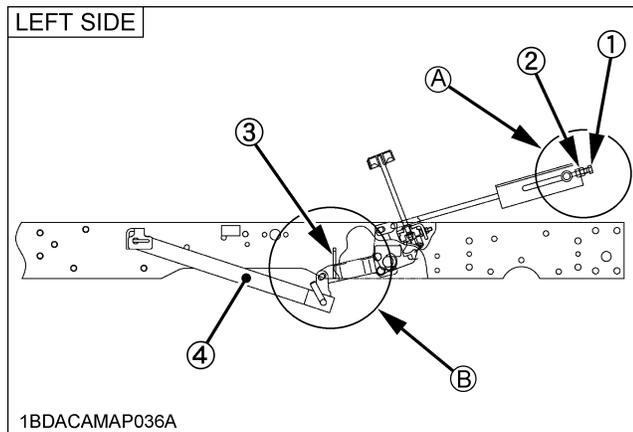
1. Park the machine on a firm, flat and level surface.
2. Tire pressure must be correct. (See Tractor Operator's Manual.)
3. Make sure the level of the mower blades is adjusted as shown below. Then tighten the lock nuts securely. Turn the cutting height control dial to "2.0" and the anti-scalp rollers' height to keep clearance between rollers and ground from 6 to 13 mm (0.25 to 0.5 in.) as shown in "OPERATION" section. Turn right blade by hand parallel to direction of travel. Adjust (L) of front links with lock nuts so that  $A$  is 0 to 5 mm (0 to 0.2 in.)  $A=(Y)-(X)$



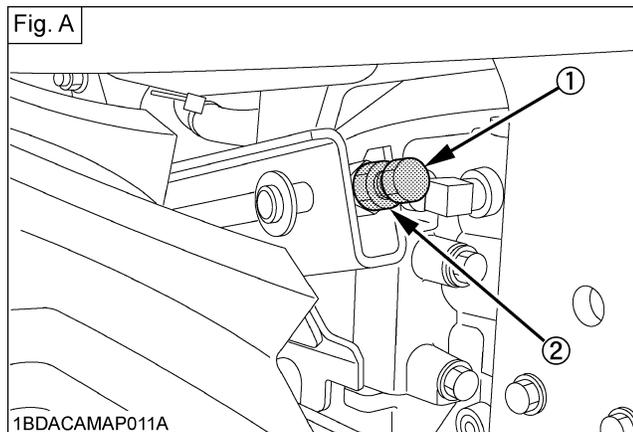
(1) Lock nut

## ADJUSTING THE MOWER LINKS

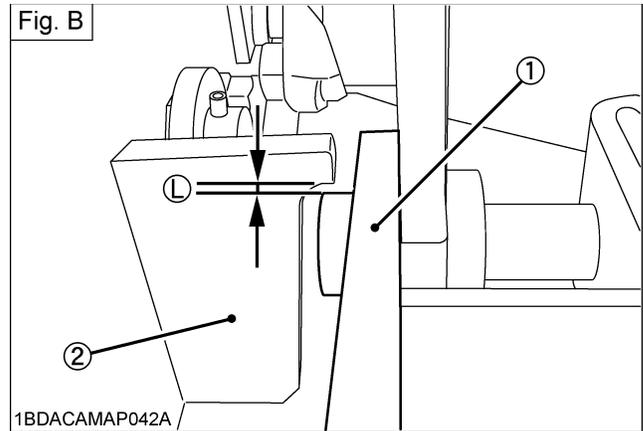
1. Park the machine on a firm, flat and level surface.
2. Tire pressure must be correct. (See Tractor Operator's Manual.)
3. Move the hydraulic control lever rearward to raise the mower to the highest position.
4. Stop the engine and remove the key.
5. Adjust the left side links with bolt so that the clearance (L) is as follows.



(A) Refer to Fig.A  
(B) Refer to Fig.B



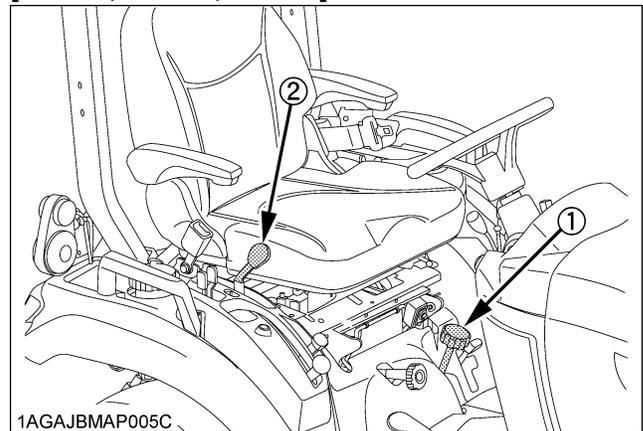
- (1) Bolt
- (2) Lock nut
- (3) Stopper
- (4) Rear link



- (1) Rear link
  - (2) Stopper
- (L) 0 to 0.5 mm (0 to 0.02 in.)

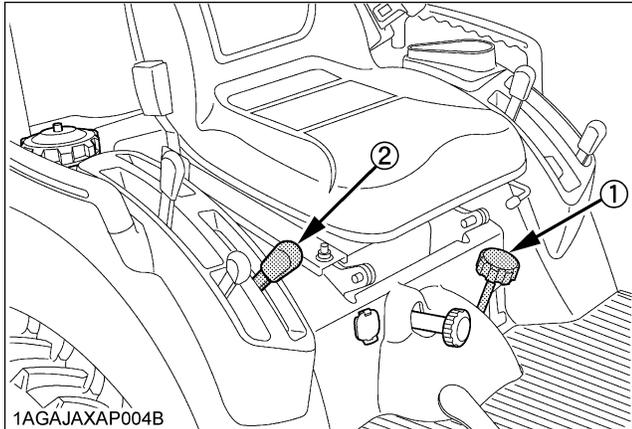
6. Turn the cutting height control dial to the desired height. Set the anti-scalp rollers' height to keep clearance between rollers and ground from 6 to 13 mm (0.2 to 0.5 in.) as shown in "OPERATION" section.

### [BX1880, BX2380, BX2680]



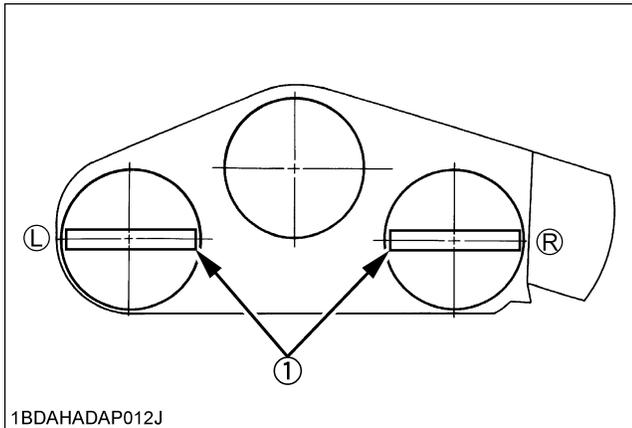
- (1) Cutting height control dial
- (2) Hydraulic control lever

[OTHERS]

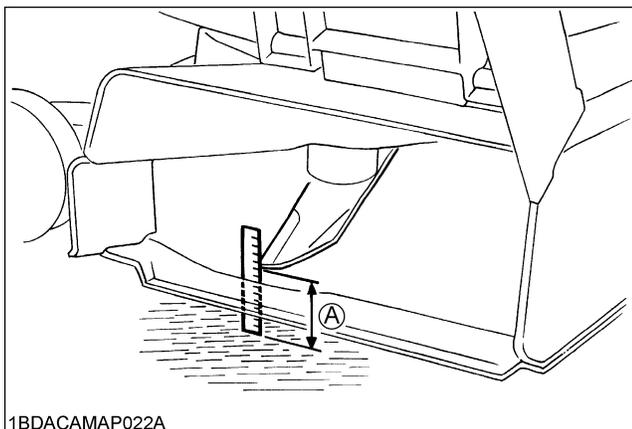


(1) Cutting height control dial  
(2) Hydraulic control lever

7. Lower the mower deck by moving the hydraulic control lever forward.
8. Turn left blade by hand parallel to tractor axle and turn right blade parallel to axle to measure from the outside blade tip at (L) and (R) to the level surface. The difference between measurements should be less than 3 mm (0.12 in.)



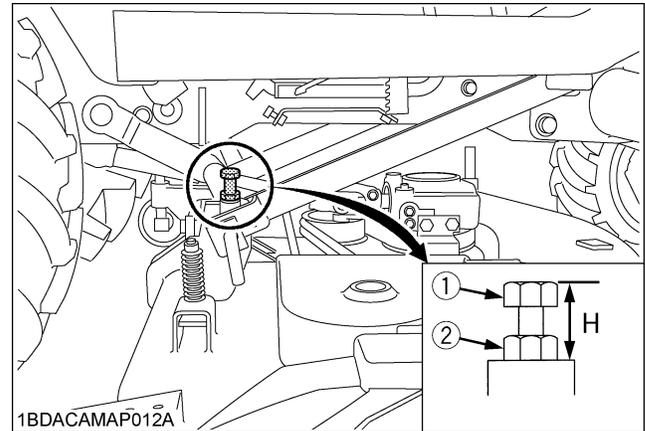
1BDAHADAP012J



1BDACAMAP022A

(1) Blade (A) Height of the blade at the concrete surface

9. If the difference between measurements is more than 3 mm (0.12 in.), loosen the lock nut of the left side. Adjust the cutting height fine tuning bolts so that the difference between measurements (L) and (R) is less than 3 mm (0.12 in.) Then lock the nut.



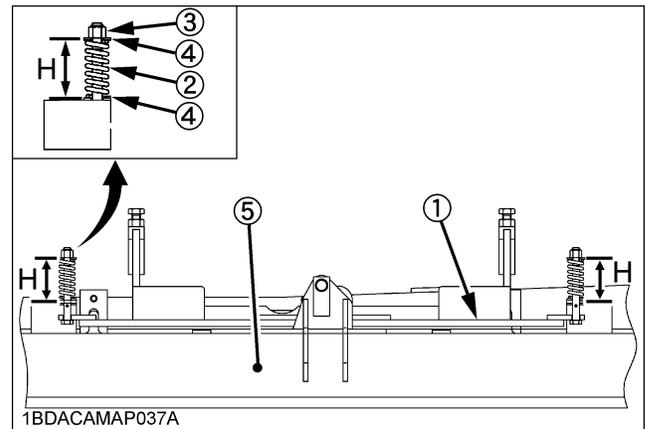
(1) Cutting height fine tuning bolt  
(2) Lock nut

## ADJUSTING THE SELF-BALANCE SUSPENDED LINKAGE

[RCK60B-23BX only]

- This system reduces the stepped differences in cutting height when mowing rolling terrain.

Adjust the height of springs so that (H) is 55 mm (2.17 in.)



(1) Self-balancer  
(2) Balancer spring  
(3) Lock nut  
(4) Plain washer  
(5) Mower deck

(H) 55 mm (2.17 in.)

# OPERATION

## MAKING THE MOST OF YOUR MOWER

1. When using your mower for the first time, choose a smooth level area and cut in straight and slightly overlapping strips.
2. The size and type of the area to be mowed will determine the proper mowing pattern. Take into account obstructions, such as trees, fences and buildings. To keep grass clippings off fences, sidewalks, etc., it is advisable to go over the outside of the area to be mowed several times in a clockwise direction. To mow the area remaining, work in a counterclockwise direction so the clippings are dispersed onto the previously cut area.
3. Always keep the left side of the mower toward trees, posts or other obstacles on the first trip around the obstacle.
4. Most lawns should be mowed to keep the grass approximately 50 to 80mm (2 to 3 in.) high. Best results are obtained by cutting often and not too short. To keep a green lawn, never mow more than one third of the height of the grass or a maximum of 25mm (1 in.) in one mowing.  
For extremely tall grass, set the cutting height at maximum for the first mowing, then reset to the desired height and mow again. Allow the grass to grow to three inches, then cut off only the top growth.
5. On thick or springy grass or soft ground, the mower rollers may sink into the ground, resulting in the cut being too low.  
Adjust the cutting height to get the desired height of cut.
6. For best appearance, grass should be cut in the afternoon or evening when it is free of moisture.

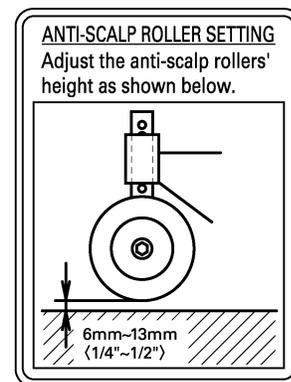
## CUTTING HEIGHT



### DANGER

To avoid serious injury or death:

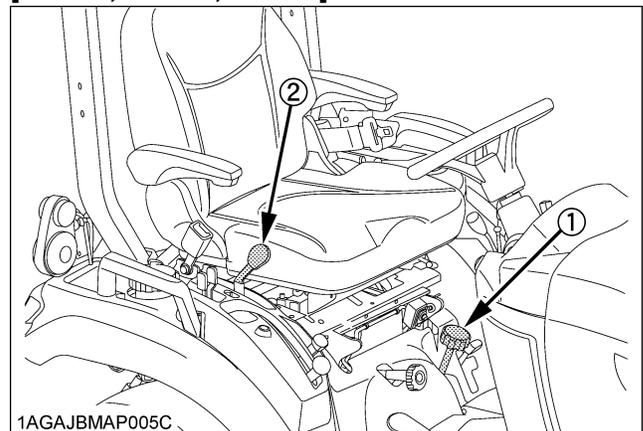
- Never operate the mower in transport position.
1. To set the cutting height, move the hydraulic control lever rearward to raise the mower to the highest position. Turn the cutting height control dial to adjust height.
  2. Set the anti-scalp rollers' height as shown to keep clearance between rollers and ground from 6 mm to 13 mm (0.2 to 0.5 in.)



1BDAHADAP069A

3. Lower the mower deck by moving the hydraulic control lever forward.
4. 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.

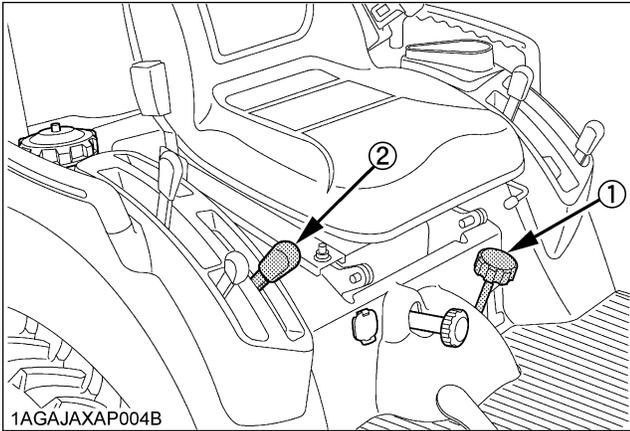
### [BX1880, BX2380, BX2680]



1AGAJBMAP005C

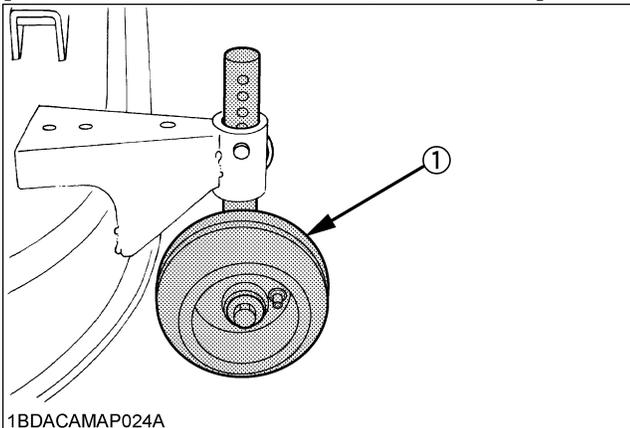
- (1) Cutting height control dial  
(2) Hydraulic control lever

**[OTHERS]**



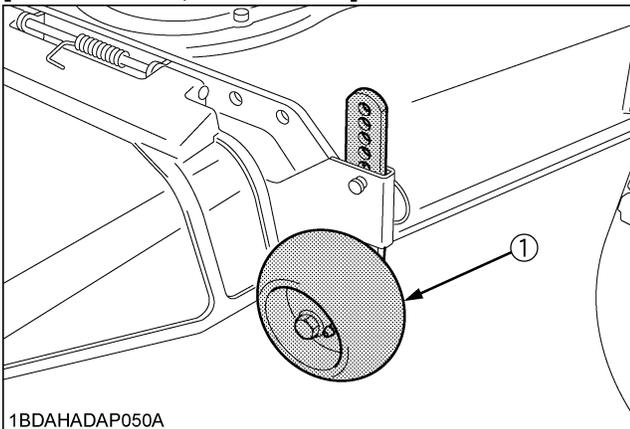
(1) Cutting height control dial  
(2) Hydraulic control lever

**[RCK60B-23BX, RCK54P-23BX, RCK54-23BX]**



(1) Anti-scalp roller

**[RCK48P-18BX, RCK48-18BX]**



(1) Anti-scalp roller

**IMPORTANT :**

**(for self-balance suspended linkage)**

- To reduce the stepped differences in cutting height when mowing rolling terrain, follow the procedure below.

1. To set the cutting height, move the hydraulic control lever rearward to raise the mower to the highest position. Turn the cutting height control dial to adjust height.
2. Set the anti-scalp rollers' position as shown to have the same cutting height.

DIAL (CUTTING HEIGHT)	ANTI-SCALP ROLLER
1.0 ( 25mm), 1.25 ( 32mm)	G
1.5 ( 38mm), 1.75 ( 45mm)	F
2.0 ( 51mm), 2.25 ( 57mm)	E
2.5 ( 64mm), 2.75 ( 70mm)	D
3.0 ( 76mm), 3.25 ( 83mm)	C
3.5 ( 89mm), 3.75 ( 95mm)	B
4.0 (102mm)	A

1BDACAMAP028A

## OPERATING MOWER



### DANGER

To avoid serious injury or death:

- Do not operate the mower without the discharge deflector properly.



### WARNING

To avoid serious injury or death:

- When operating the mower on a hillside, be sure to remove the loader to avoid the risk of roll over.



### WARNING

To avoid serious injury or death:

- Remove foreign objects, such as rocks, cans, bottles, etc., from the area to be mowed.
- Do not direct the opening of the deflector towards bystanders or animals. Thrown objects may cause injury. Plan your mowing pattern carefully before starting operations.
- Keep bystanders and animals away from the mowing area.
- When not using the mower, shift the PTO clutch control lever to the "OFF" position.

#### IMPORTANT :

- When operating the loader in rough terrain, remove the mower to avoid damage to the mower.
1. Keep the engine running at full throttle for best results. Control ground speed by using the speed control pedal of the tractor.
  2. During heavy duty use, operate the tractor at a slower ground speed or go over the area twice.
  3. Keep the mower deck in the fully raised position when the mower is not being used.
  4. The mower will not cut cleanly if the ground speed is too high or if the blade speed drops due to an overload, or if the blades are dull.

#### IMPORTANT :

- To prevent the engine from overheating, keep the radiator and radiator net clean.

## USING 3 POINT HITCH ATTACHMENT OR FRONT LOADER



### WARNING

To avoid serious injury or death:

- When not using the mower, shift the PTO clutch control lever to the "NEUTRAL" position.

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

1. Turn on the engine.
2. Move the hydraulic control lever rearward to raise the mower to the highest position.
3. Turn the cutting height control dial to "TOP" position, and lower the mower.
4. Stop the engine and remove the key.
5. Set the gauge wheels to the lowest hole to get the maximum ground clearance.

#### IMPORTANT :

- Do not change the length of the mower lift links.

## REMOVING THE MOWER DECK



### 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.

1. Park the tractor on a firm, flat and level surface and set the parking brake.
2. Move the hydraulic lever rearward to raise the mower rear links to the highest position.
3. Set the cutting height control dial to "TOP" position.
4. Stop the engine and remove the key.
5. Turn the anti-scalp roller sideways.  
**[RCK60B-23BX, RCK54P-23BX, RCK54-23BX]**
6. Restart the engine, move the hydraulic lever rearward to raise the mower rear links to the highest position, set the cutting height control dial to zero position and move the hydraulic lever forward to lower the mower rear links.
7. Remove the rear links from the mower.
8. Move the hydraulic lever rearward to raise the mower rear links.
9. Stop the engine and remove the key.
10. Pull back the coupler of the universal joint to unlock the coupler.
11. Remove the front link, then remove the mower deck.

# MAINTENANCE

## MAINTENANCE CHECK LIST

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	○					21
2	Make sure blade bolts are tight.	○					23
3	Blade and belt wear check	○					23,24
4	All hardware check	○					---
5	Make sure all pins are in place.	○					---
6	Mower deck cleaning	○					---
7	Greasing <ul style="list-style-type: none"> <li>● Universal joint</li> <li>● Three spindle shafts</li> <li>● Belt tension pulley</li> <li>● Belt tension pivot</li> <li>● Balance shaft [RCK60B-23BX only]</li> <li>● Front and Rear anti-scalp rollers</li> </ul>	○					21, 22
8	Gear box oil check	○					21
9	Gear box oil change		◎ *1	○			21
10	Gear box oil seal check				★		---
11	Gear box oil seal replace					○	---

**IMPORTANT :**

- The jobs indicated by ◎ must be done the first time at 50 hrs.
  - ★ Replace if any deterioration (crack, hardening, scar, or deroemination) or damage occurred.
- \*1 The initial 50 hours should not be a replacement cycle.

## CHECK AND MAINTENANCE



### WARNING

To avoid serious injury or death:

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

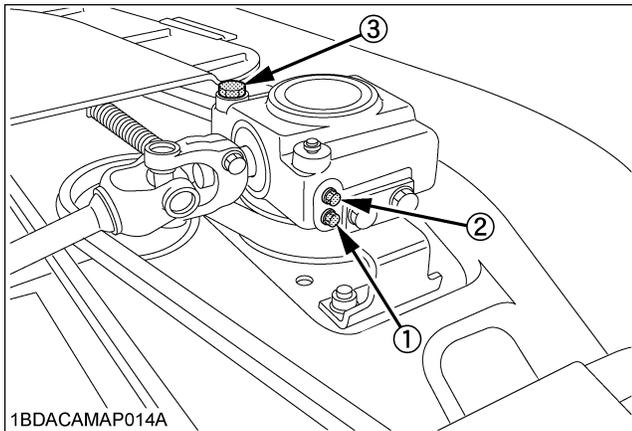
### ■ Gear box oil

[RCK60B-23BX, RCK54-23BX, RCK48-18BX]

1. To check the oil level, remove the check plug bolt.
  - Place mower on level surface.  
Loosen 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 case.
  - 0.40 L (0.42 qts.)

#### IMPORTANT :

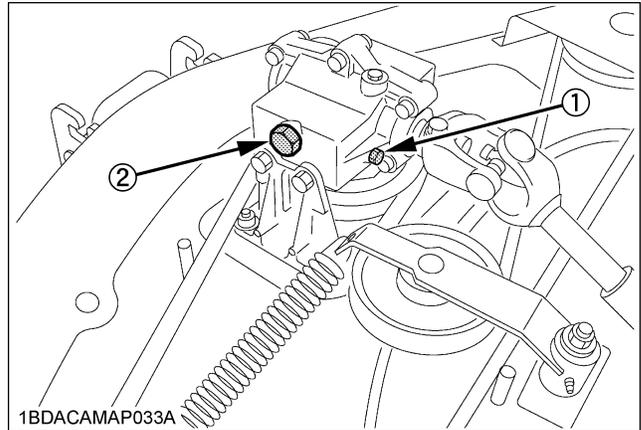
- Use SAE 90 (API GL5) gear oil in all seasons.
- Change oil in gear box after first 50 hours and every 150 hours thereafter.



- 1BDACAMAP014A
- (1) Drain plug (Bolt)
  - (2) Check plug (Bolt)
  - (3) Oil filler plug

[RCK54P-23BX, RCK48P-18BX]

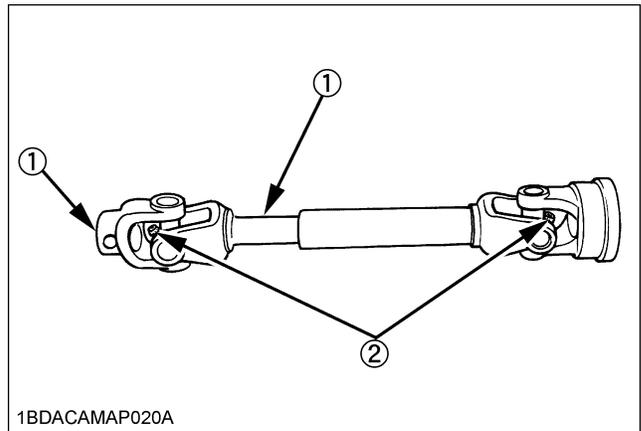
1. To check the oil level, loosen the check plug bolt.
  - Place mower on level surface.  
Check to see that the oil level is just below the check plug port. If the level is too low, add new oil to the prescribed level at the oil inlet.
2. To change gear oil, remove the filler plug at the gear box, tilt the mower deck and drain the oil completely.
3. Refill gear case.
  - 0.15 L (0.16 qts.)



- 1BDACAMAP033A
- (1) Check plug (Bolt)
  - (2) Oil filler plug

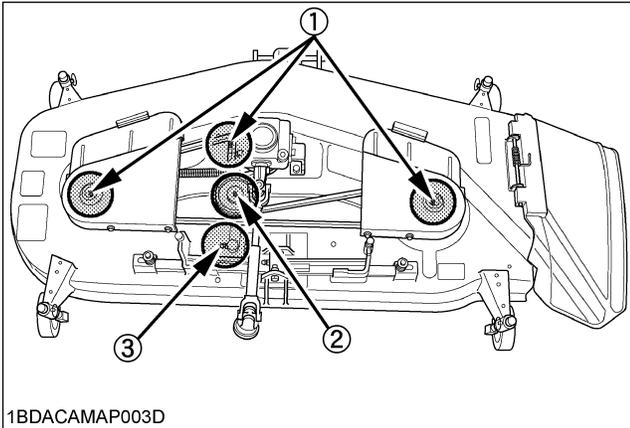
### ■ Greasing (Use multipurpose EP2 grease (NLGI Grade No. 2).)

1. Universal joint.



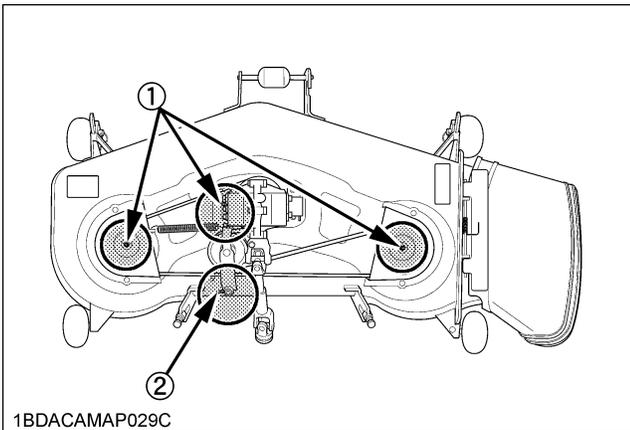
- 1BDACAMAP020A
- (1) Spline
  - (2) Grease nipple (Universal joint)

2. Spindle shafts, belt tension pivot and tension pulley.  
**[RCK60B-23BX, RCK54-23BX, RCK48-18BX]**



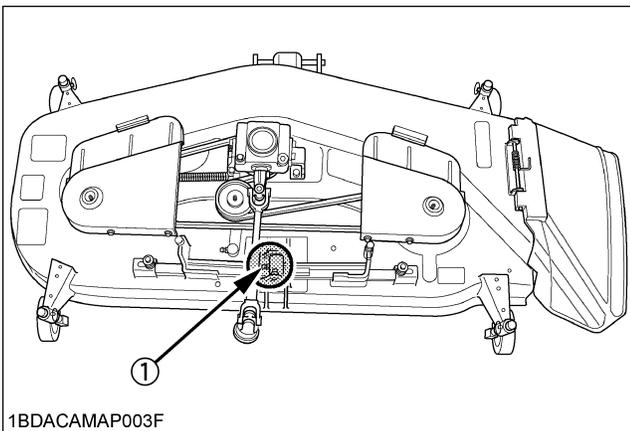
- (1) Grease nipple (Spindle shaft)  
 (2) Grease nipple (Belt tension pulley)  
 (3) Grease nipple (Belt tension pivot)

**[RCK54P-23BX, RCK48P-18BX]**



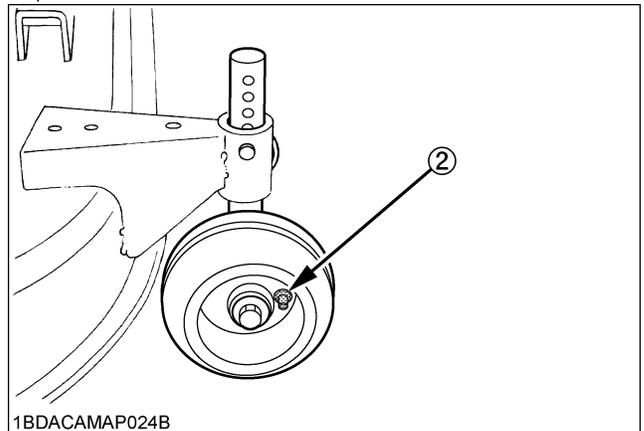
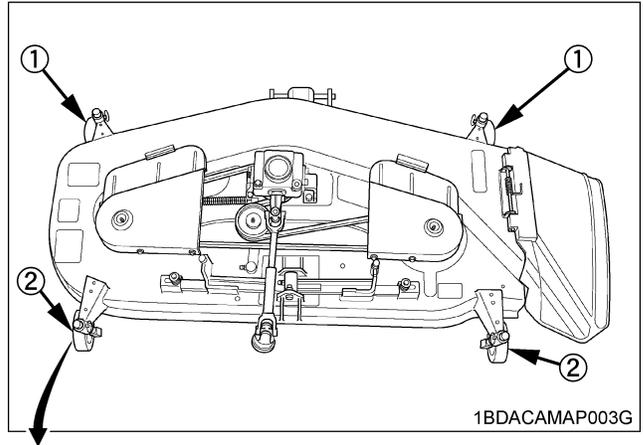
- (1) Grease nipple (Spindle shaft)  
 (2) Grease nipple (Belt tension pivot)

3. Balance shaft.  
**[RCK60B-23BX]**



- (1) Grease nipple (Balance shaft)

4. Front and Rear anti-scalp rollers.  
**[RCK60B-23BX, RCK54P-23BX, RCK54-23BX]**



- (1) Grease nipple (Front anti-scalp rollers)  
 (2) Grease nipple (Rear anti-scalp rollers)

**IMPORTANT :**

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

## BLADE REPLACEMENT



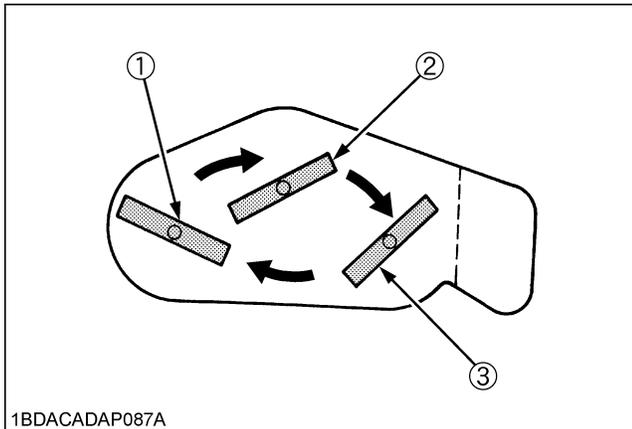
### WARNING

To avoid serious injury or death:

- Wear heavy gloves or wrap end of blade with a rag when you handle blades.

### IMPORTANT :

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

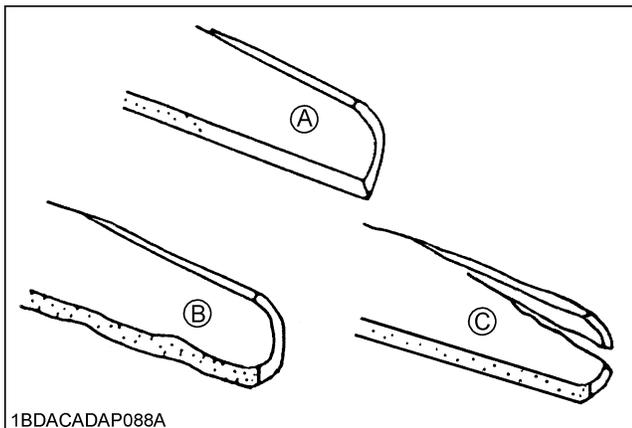


1BDACADAP087A

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

The blade cutting edges should be kept sharp at all times. Sharpen the cutting edges, if they resemble the blade in figure (B).

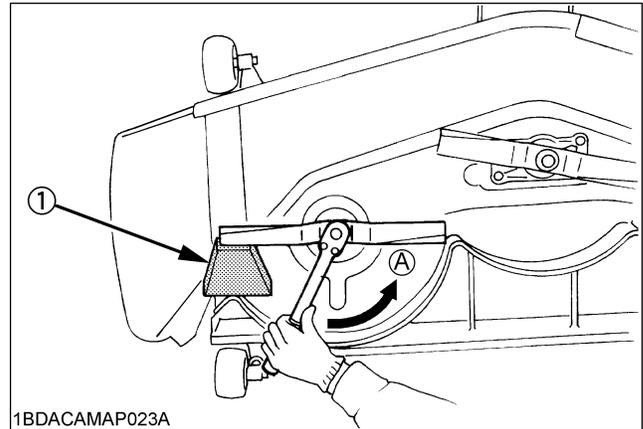
Replace the blades if they appear similar to the blade as shown in figure (C).



1BDACADAP088A

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

1. Remove the mower from the tractor (See "REMOVING THE MOWER DECK" in "OPERATION" section.) and turn it over to expose the blades.
2. Wedge a block 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.



1BDACAMAP023A

(1) Block

(A) "LOOSEN"

### IMPORTANT :

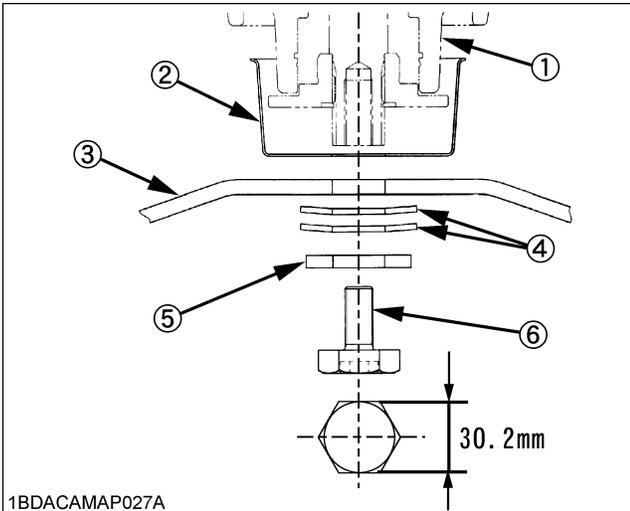
- Use the proper metric size box or socket wrench to tighten or loosen the blade mounting bolt.
3. To sharpen the blades, clamp the blades one at a time securely in a vise. Use a large mill file and file along the original bevel until sharp.
  4. To check the blade for balance, place a small rod through 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.
  5. **[RCK60B-23BX, RCK54-23BX]**  
Install the blade in position together with the lock washer and two cup washers. Tighten them up with the bolts.

### NOTE :

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

### IMPORTANT :

- Tighten the 3 blade bolts 103 to 117 N-m (10.5 to 12 kgf-m, 76 to 86.7 ft-lbs.) of torque.



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

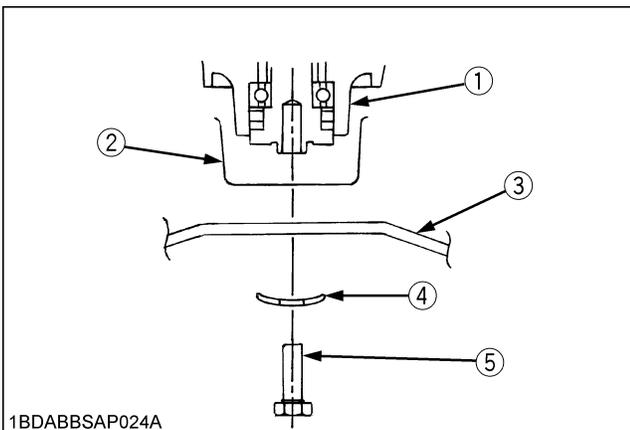
5. **[RCK54P-23BX, RCK48P-18BX, RCK48-18BX]**  
Install the blade in position together with the spindle guard and the cup washer. Tighten them up with the bolts.

**NOTE :**

- Make sure that the cup washer is not flattened out or worn; this causes blade to slip excessively. Replace the cup washer if is damaged.

**IMPORTANT :**

- Tighten the 3 blade bolts 103 to 117 N-m (10.5 to 12 kgf-m, 76 to 86.7 ft-lbs.) of torque.



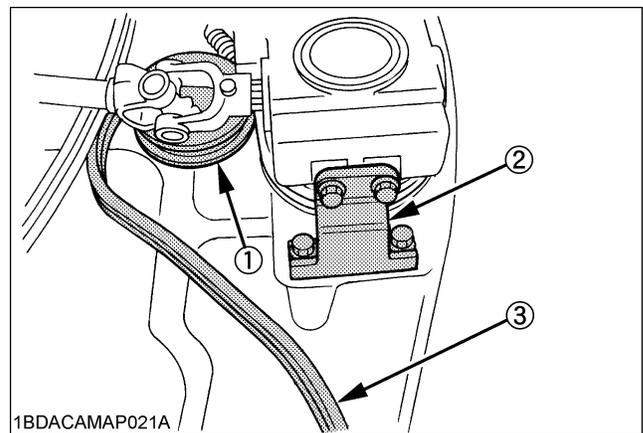
- (1) Spindle holder
- (2) Spindle guard
- (3) Blade
- (4) Cup washer
- (5) Bolt

**BELT REPLACEMENT**

1. Remove the mower from the tractor.  
(See "REMOVING THE MOWER DECK" in "OPERATION" section.)
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 77.5 to 90.2 N-m (7.9 to 9.2 kgf-m, 57.1 to 66.5 ft-lbs) of torque.



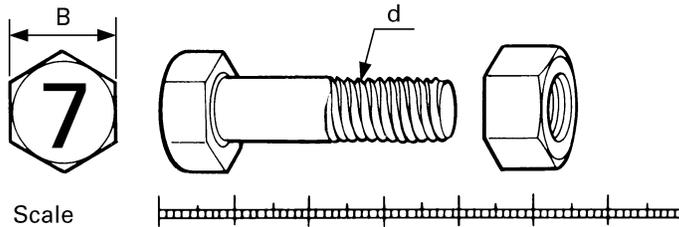
- (1) Tension pulley
- (2) Bracket (RH)
- (3) Belt

# TIGHTENING TORQUE CHART

Thread Size d (mm)	Hexa-Bolt Head size B (mm)	No mark			7T		
		ft-lbs	N-m	kgf-m	ft-lbs	N-m	kgf-m
M8	12 or 13	<b>13.0 to 15.2</b> (14.1 ± 1.1)	<b>17.8 to 20.6</b> (19.2 ± 1.4)	<b>1.9 to 2.1</b> (2.0 ± 0.1)	<b>17.5 to 20.3</b> (18.9 ± 1.4)	<b>23.5 to 27.5</b> (25.5 ± 2.0)	<b>2.4 to 2.8</b> (2.6 ± 0.2)
M10	14 or 17	<b>28.9 to 33.3</b> (31.1 ± 2.2)	<b>39.3 to 45.1</b> (42.2 ± 2.9)	<b>4.0 to 4.6</b> (4.3 ± 0.3)	<b>35.4 to 41.2</b> (38.3 ± 2.9)	<b>48.1 to 55.9</b> (52.0 ± 3.9)	<b>4.9 to 5.7</b> (5.3 ± 0.4)
M12	17 or 19	<b>46.3 to 53.5</b> (49.9 ± 3.6)	<b>62.8 to 72.6</b> (67.7 ± 4.9)	<b>6.4 to 7.4</b> (6.9 ± 0.5)	<b>57.1 to 66.5</b> (61.8 ± 4.7)	<b>77.6 to 90.2</b> (83.9 ± 6.3)	<b>8.0 to 9.2</b> (8.6 ± 0.6)
M14	19 or 22	<b>79.6 to 92.6</b> (86.1 ± 6.5)	<b>107.9 to 125.5</b> (116.7 ± 8.8)	<b>11.0 to 12.8</b> (11.9 ± 0.9)	<b>91.1 to 108.5</b> (99.8 ± 8.7)	<b>123.6 to 147.0</b> (135.3 ± 11.7)	<b>12.6 to 15.0</b> (13.8 ± 1.2)

**NOTE :**

- Figure "7" on the top of the bolt indicates that the bolt is of special material.
- Before tightening, check the figure on the top of bolt.



1BDACAAAP0180

0 10 20 30 40 50 60 70(mm)

American standard cap screws with UNC or UNF threads			Metric cap screws		
SAE grade No.	GR.5 	GR.8 	Property class	class 8.8 	class 10.9 
5/16	(ft-lbs) 17 to 20.5 (N-m) 23.1 to 27.8 (kgf-m) 2.35 to 2.83	24 to 29 32.5 to 39.3 3.31 to 4.01	M8	(ft-lbs) 17.4 to 20.2 (N-m) 23.6 to 27.4 (kgf-m) 2.4 to 2.8	21.7 to 25.3 29.4 to 34.3 3.0 to 3.5
3/8	(ft-lbs) 35 to 42 (N-m) 47.5 to 57.0 (kgf-m) 4.84 to 5.81	45 to 54 61.0 to 73.2 6.22 to 7.46	M10	(ft-lbs) 35.5 to 41.2 (N-m) 48.1 to 55.8 (kgf-m) 4.9 to 5.7	44.9 to 52.1 60.8 to 70.5 6.2 to 7.2
1/2	(ft-lbs) 80 to 96 (N-m) 108.5 to 130.2 (kgf-m) 11.06 to 13.28	110 to 132 149.2 to 179.0 15.21 to 18.25	M12	(ft-lbs) 57.2 to 66.5 (N-m) 77.5 to 90.1 (kgf-m) 7.9 to 9.2	76.0 to 86.8 103 to 117 10.5 to 12.0
9/16	(ft-lbs) 110 to 132 (N-m) 149.2 to 179.0 (kgf-m) 15.21 to 18.25	160 to 192 217.0 to 260.4 22.13 to 26.55	M14	(ft-lbs) 91.5 to 108.4 (N-m) 124 to 147 (kgf-m) 12.6 to 15.0	123 to 144 167 to 196 17.0 to 20.0
5/8	(ft-lbs) 150 to 180 (N-m) 203.4 to 244.1 (kgf-m) 20.74 to 24.89	220 to 264 298.3 to 358.0 30.42 to 36.51	M16	(ft-lbs) 145 to 166 (N-m) 196 to 225 (kgf-m) 20.0 to 23.0	192 to 224 260 to 303 26.5 to 31.0

# LONG-TERM STORAGE

## WINTER STORAGE

After the grass cutting season it is recommended that you perform the following procedures.

1. Remove the mower deck covers.
2. Slack the mower drive belt.
3. Clean all pulleys and wipe with a dry cloth and oil.
4. Clean all grass and dirt from the mower deck.

### NOTE :

- Leave the drive belt slack.
- Clean pulleys and reinstall the drive belt just prior to the next grass cutting season.

# TROUBLESHOOTING

Any service item refer to operator's manual for proper maintenance procedure.

Trouble	Cause	Remedy
Discharge cover plugged.	<ul style="list-style-type: none"> <li>● Grass too wet</li> <li>● Grass too long.</li> <li>● Cutting too low.</li> <li>● Engine rpm too low.</li> <li>● Ground speed too fast.</li> </ul>	<ul style="list-style-type: none"> <li>● Wait for grass to dry.</li> <li>● Raise cutting height and cut grass twice.</li> <li>● Raise cutting height.</li> <li>● Mow at full throttle.</li> <li>● Slow down.</li> </ul>
Streaking of uncut grass.	<ul style="list-style-type: none"> <li>● Ground speed too fast.</li> <li>● Engine rpm too low.</li> <li>● Grass too long.</li> <li>● Blades dull or damaged.</li> <li>● Debris in mower deck.</li> </ul>	<ul style="list-style-type: none"> <li>● Slow down.</li> <li>● Mow at full throttle, check and reset engine rpm.</li> <li>● Cut grass twice.</li> <li>● Replace blades or have blades sharpened.</li> <li>● Clean mower deck.</li> </ul>
Uneven cut.	<ul style="list-style-type: none"> <li>● Mower deck not level.</li> <li>● Ground speed too fast.</li> <li>● Blades dull.</li> <li>● Blades worn.</li> <li>● Low tire inflation.</li> <li>● Anti-scalp rollers not adjusted correctly.</li> </ul>	<ul style="list-style-type: none"> <li>● Level mower deck.</li> <li>● Slow-down.</li> <li>● Have blades sharpened.</li> <li>● Replace blades.</li> <li>● Add air to correct.</li> <li>● Adjust anti-scalp rollers.</li> </ul>
Blades scalping grass.	<ul style="list-style-type: none"> <li>● Cutting height too low.</li> <li>● Turning speed too fast.</li> <li>● Ridges in terrain.</li> <li>● Rough or uneven terrain.</li> <li>● Anti-scalp rollers not adjusted correctly.</li> <li>● Bent blade(s).</li> </ul>	<ul style="list-style-type: none"> <li>● Raise cutting height.</li> <li>● Reduce speed on turns.</li> <li>● Change mowing pattern.</li> <li>● Adjust anti-scalp rollers.</li> <li>● Adjust anti-scalp rollers.</li> <li>● Replace blade(s).</li> </ul>
Belt slipping.	<ul style="list-style-type: none"> <li>● Mower deck plugged.</li> <li>● Debris in pulleys.</li> <li>● Worn belt.</li> </ul>	<ul style="list-style-type: none"> <li>● Unplug and clean mower deck.</li> <li>● Clean pulleys.</li> <li>● Replace belt.</li> </ul>
Excessive vibration.	<ul style="list-style-type: none"> <li>● Debris on mower deck or in pulleys.</li> <li>● Damaged drive belt.</li> <li>● Damaged pulleys.</li> <li>● Pulleys out of alignment.</li> <li>● Blades out of balance.</li> </ul>	<ul style="list-style-type: none"> <li>● Clean mower deck and pulleys.</li> <li>● Replace drive belt.</li> <li>● Replace pulleys.</li> <li>● See your KUBOTA Dealer.</li> <li>● Have blades balanced.</li> </ul>
Mower loads down tractor.	<ul style="list-style-type: none"> <li>● Engine rpm too low.</li> <li>● Ground speed too fast.</li> <li>● Debris wrapped around mower spindles.</li> </ul>	<ul style="list-style-type: none"> <li>● Mow at full throttle, check and reset engine rpm.</li> <li>● Slow down.</li> <li>● Clean mower.</li> </ul>

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## **KUBOTA Corporation is ...**

Since its inception in 1890, KUBOTA Corporation has grown to rank as one of the major firms in Japan.

To achieve this status, the company has through the years diversified the range of its products and services to a remarkable extent. Nineteen plants and 16,000 employees produce over 1,000 different items, large and small.

All these products and all the services which accompany them, however, are unified by one central commitment. KUBOTA makes products which, taken on a national scale, are basic necessities. Products which are indispensable. Products which are intended to help individuals and nations fulfill the potential inherent in their environment. KUBOTA is the Basic Necessities Giant.

This potential includes water supply, food from the soil and from the sea, industrial development, architecture and construction, and transportation.

Thousands of people depend on KUBOTA's know-how, technology, experience and customer service. You too can depend on KUBOTA.