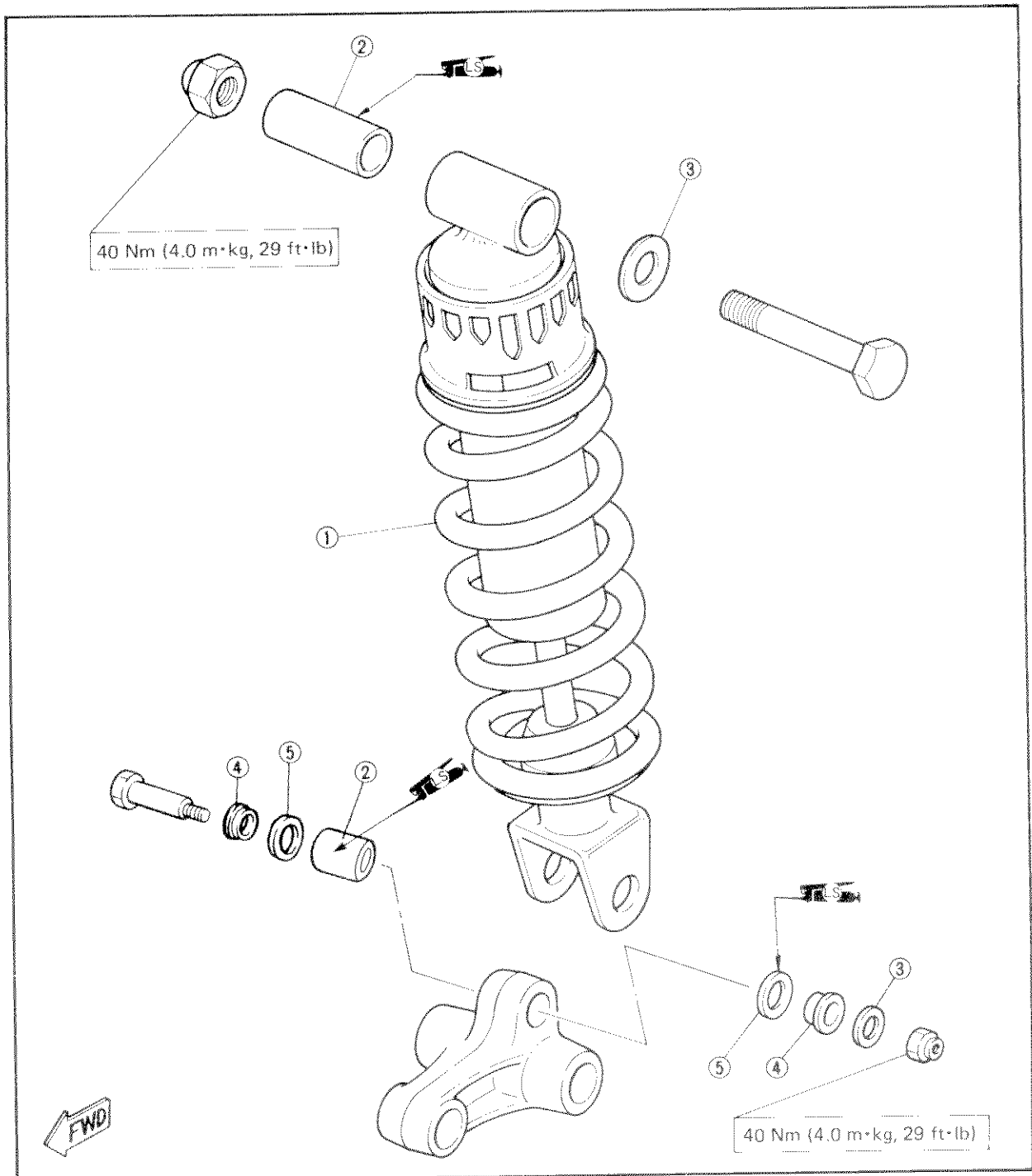




## REAR SHOCK ABSORBER AND SWINGARM

### Rear Shock Absorber

- ① Shock absorber
- ② Collar
- ③ Washer
- ④ Spacer
- ⑤ Oil seal

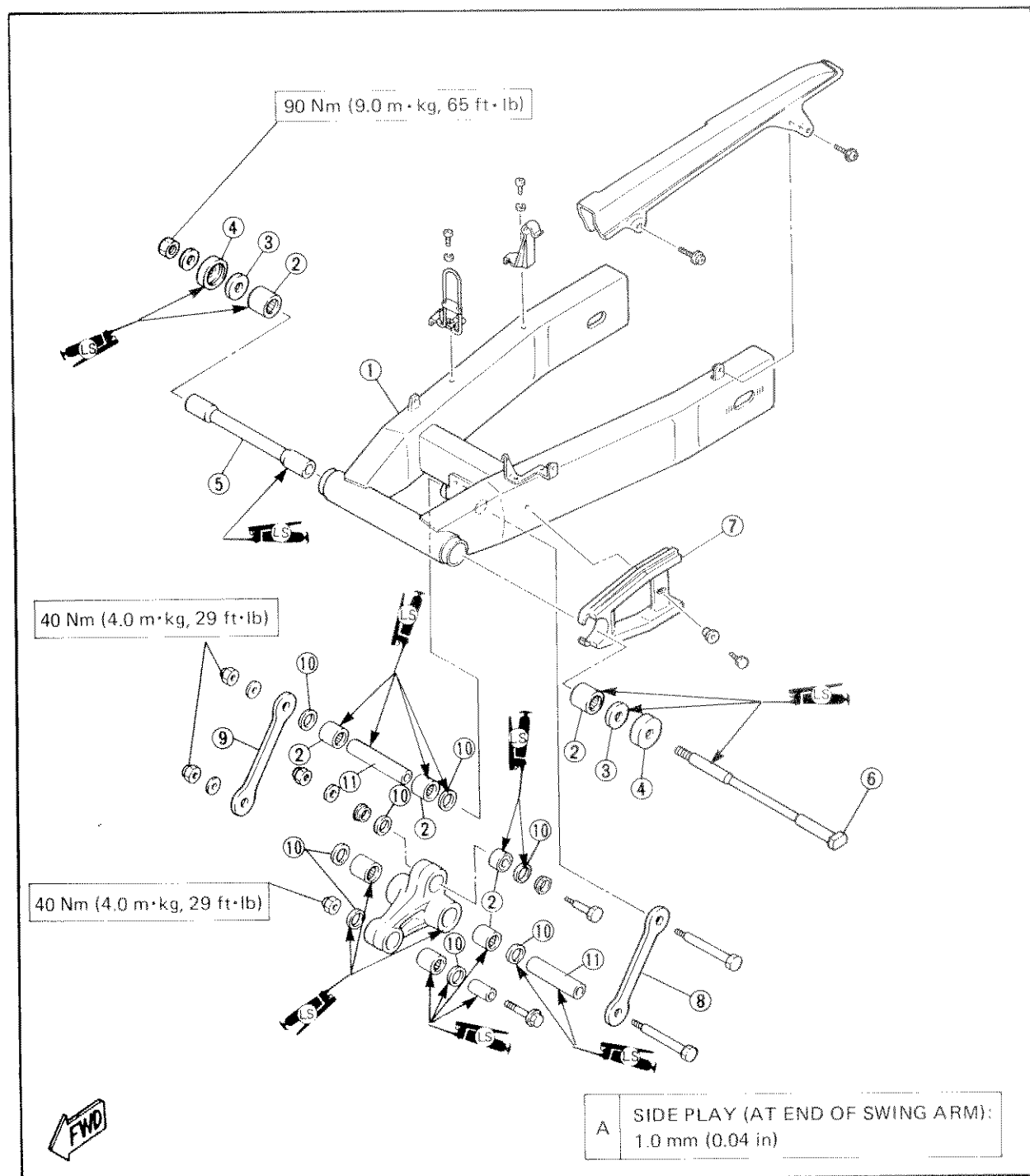


## Swingarm

- |                 |                          |
|-----------------|--------------------------|
| ① Swingarm      | ⑦ Guard seal             |
| ② Bearing       | ⑧ Connecting rod (Left)  |
| ③ Thrust washer | ⑨ Connecting rod (Right) |
| ④ Thrust cover  | ⑩ Oil seal               |
| ⑤ Bush          | ⑪ Collar                 |
| ⑥ Pivot shaft   | ⑫ Relay arm              |

### NOTE:

Coat the bearings, bushings, thrust covers, oil seals, and collars with a liberal amount of light weight lithium-soap base grease before installing. After installing, thoroughly wipe off excess grease.



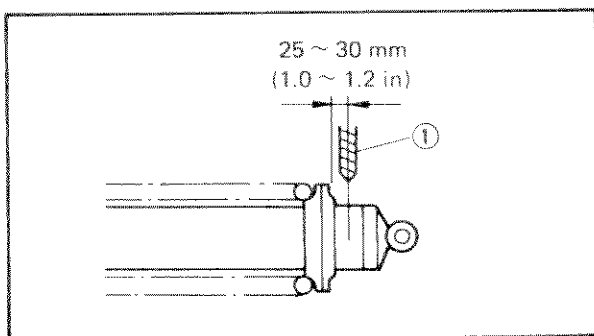


### HANDLING NOTES

#### ⚠ WARNING:

This shock absorber contains highly compressed nitrogen gas. Read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.

1. Do not tamper or attempt to open the cylinder assembly.
2. Do not subject shock absorber to an open flame or other high heat. This may cause the unit to explode due to excessive gas pressure.
3. Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.



### DISPOSAL NOTES

#### Shock absorber disposal steps:

Gas pressure must be released before disposing the shock absorber. To do so, drill ① a 2 ~ 3 mm (0.08 ~ 0.12 in) hole through the cylinder wall at a point 25 ~ 30 mm (1.0 ~ 1.2 in) under the spring seat.

#### ⚠ CAUTION:

Wear eye protection to prevent eye damage from escaping gas and/or metal chips.

### REMOVAL

#### Rear shock absorber

##### 1. Remove:

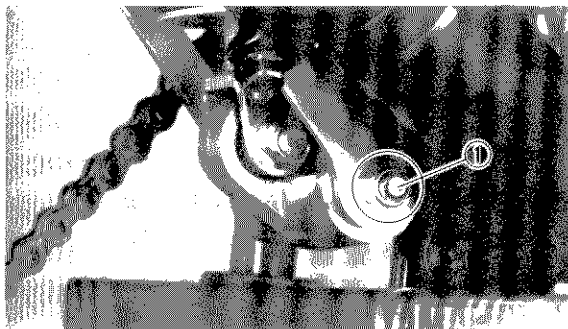
- Lower cowlings (left and right)  
Refer to the "COWLING/COVERS REMOVAL AND INSTALLATION — REMOVAL" section in the CHAPTER 3.



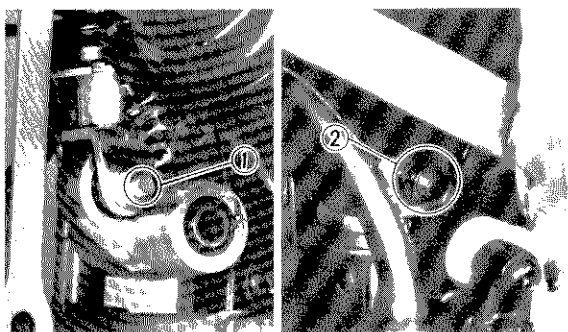
2. Place the motorcycle on a level place, and elevate the rear wheel by placing the suitable stand under the frame.

### ⚠ WARNING:

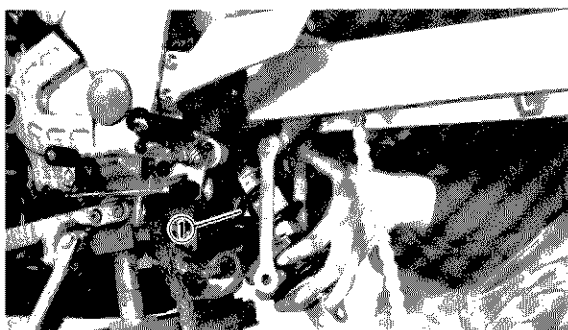
Securely support the motorcycle so there is no danger of it falling over.



3. Remove:
  - Bolt (connecting rod) ①
  - Collar



4. Remove:
  - Bolt (rear shock absorber – lower) ①
  - Spacers
  - Collar
  - Bolt (rear shock absorber – upper) ②



5. Remove:
  - Rear shock absorber ①

### NOTE:

Lift up the swingarm to remove the rear shock absorber.

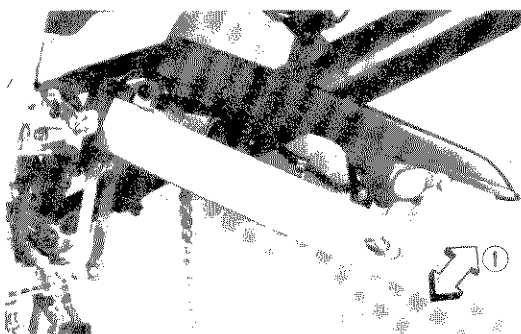
### Swingarm

1. Remove:
  - Rear wheel

Refer to the "REAR WHEEL" section.

### ⚠ WARNING:

Securely support the motorcycle so there is no danger of it falling down.

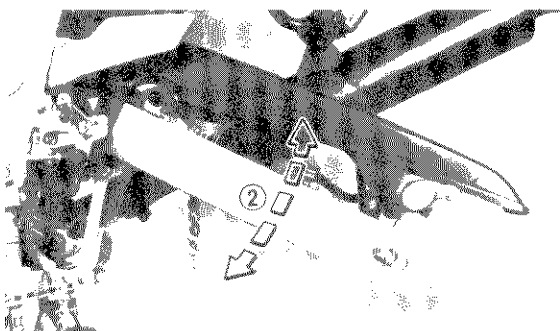


### 2. Check:

- Swingarm (side play) ①  
Side play → Replace the bearings and collar.  
Move the swingarm from side to side.  
There should be no noticeable side play.

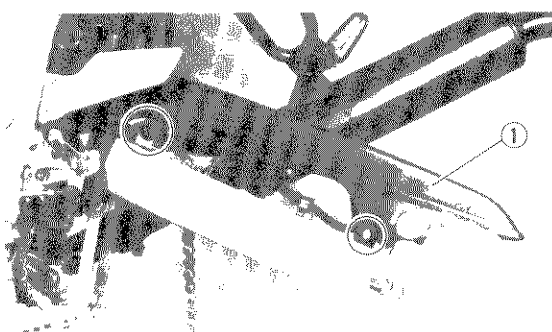


Side play (at end of swingarm):  
1.0 mm (0.04 in)



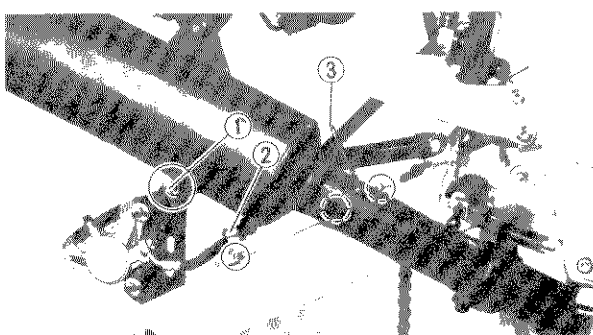
### 3. Check:

- Swingarm (vertical movement) ②  
Tightness/Binding/Rough spots → Grease the swingarm pivot or replace bearings/collars if necessary.  
Move the swingarm up and down.



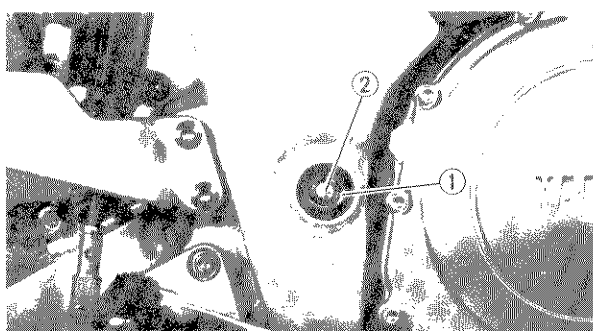
### 4. Remove:

- Chain case ①



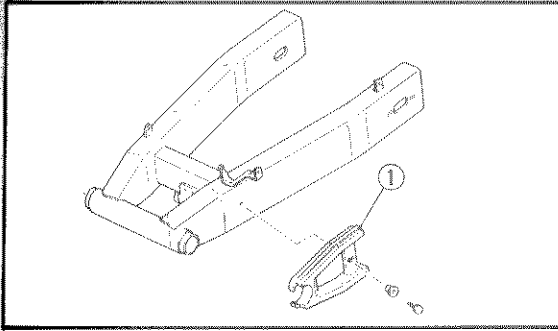
### 5. Remove:

- Cotter pin
- Nut (tension bar — front) ①
- Bolt
- Clamp (brake hose) ②
- Holder (brake hose) ③

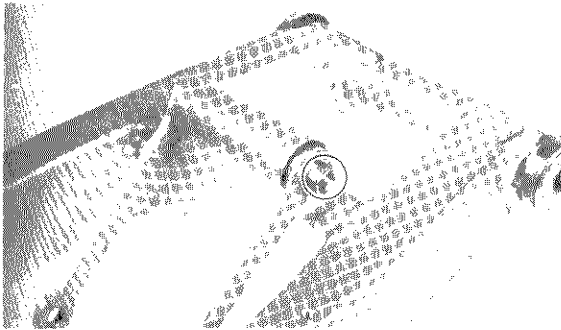


### 6. Remove:

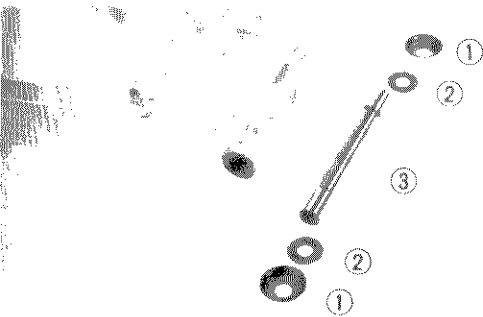
- Nut (pivot shaft) ①
- Pivot shaft ②
- Swingarm



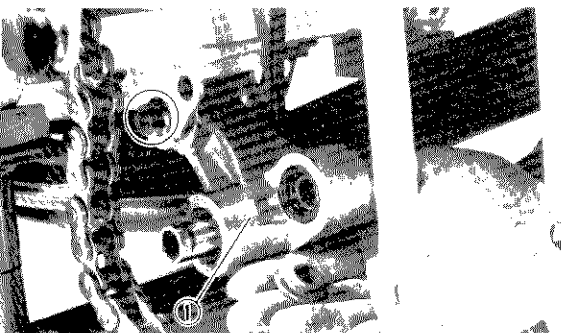
7. Remove:
- Chain guide ①



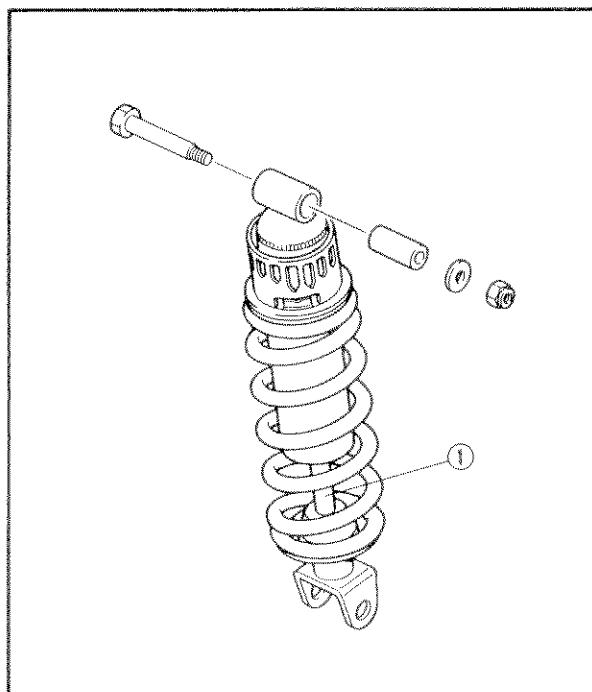
8. Remove:
- Arms (left and right)



9. Remove:
- Thrust covers ①
  - Thrust washer ②
  - Bush ③



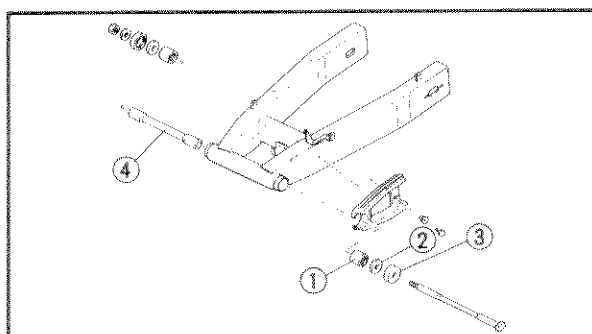
10. Remove:
- Relay arm ①



### INSPECTION

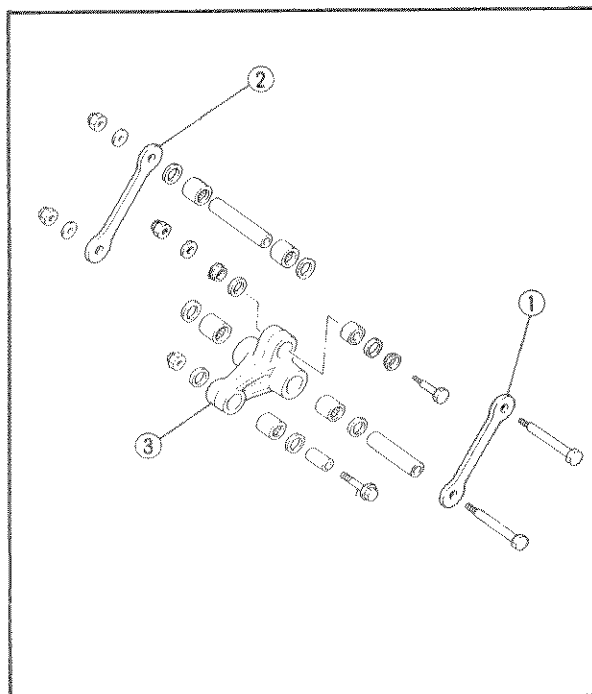
#### Rear shock absorber

1. Inspect:
  - Rear shock absorber
  - Rod (rear shock absorber) ①
  - Oil leaks/Damage → Replace.
2. Inspect:
  - Bushings
  - Oil seals
  - Wear/Damage → Replace.



#### Swingarm

1. Wash the swingarm pivoting parts in a solvent.
2. Inspect:
  - Bearings (race/rollers) ①
  - Pitting/Damage → Replace.
  - Thrust washers ②
  - Thrust covers ③
  - Wear/Damage → Replace.
  - Inner collar ④
  - Pivot shaft
  - Wear/Bents/Damage → Replace.
  - Swingarm
  - Crack/Damage → Replace.
3. Inspect:
  - Connecting rod (left) ①
  - Connecting rod (right) ②
  - Relay arm ③
  - Damage → Replace.
  - Bearings
  - Pitting/Damage → Replace.
  - Oil seals
  - Inner collars
  - Damage → Replace.





### INSTALLATION

Reverse the "REMOVAL" procedure.

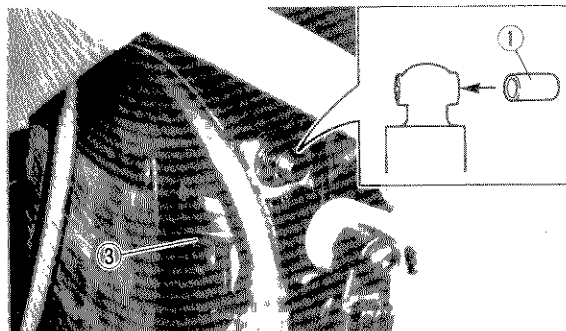
Note the following points.

#### 1. Lubricate:

- Bearings
- Oil seals
- Collars



Lithium-soap base grease



### Rear shock absorber

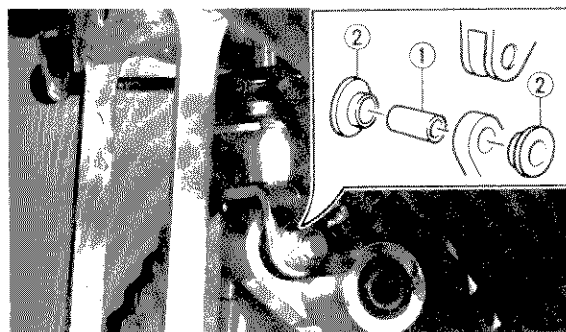
#### 1. Install:

- Collars ①
- Spacers ②
- Rear shock absorber ③



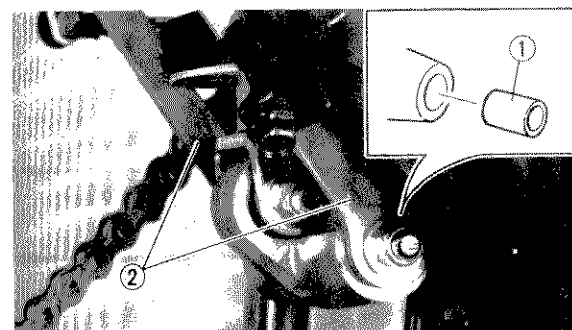
Bolt (rear shock absorber — upper):  
40 Nm (4.0 m · kg, 29 ft · lb)

Bolt (rear shock absorber — lower):  
40 Nm (4.0 m · kg, 29 ft · lb)



#### NOTE:

Lift up the rear wheel to install the rear shock absorber.

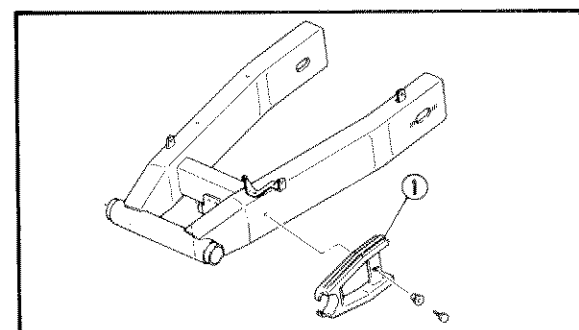


#### 2. Install:

- Collar ①
- Connecting rod ②



Bolt (connecting rod — lower):  
40 Nm (4.0 m · kg, 29 ft · lb)



### Swingarm

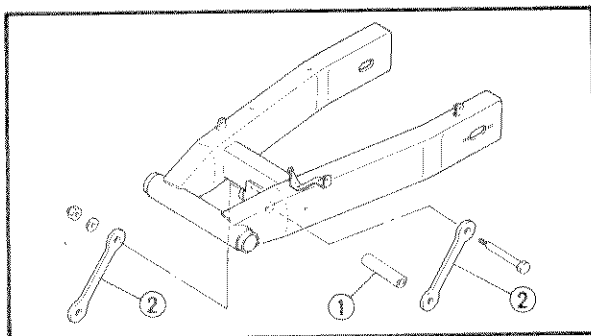
#### 1. Install:

- Chain guide ①



Bolt (chain guide):  
5 Nm (0.5 m · kg, 3.6 ft · lb)



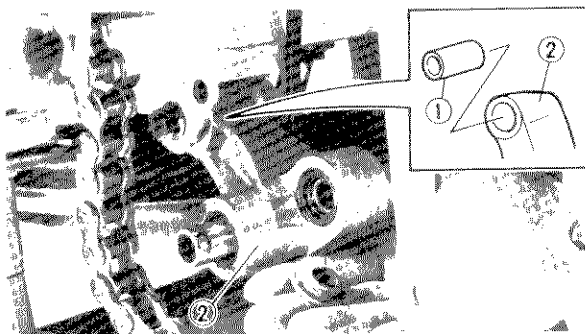


2. Install:

- Collar (1)
- Connecting rod (left and right) (2)



**Nut (connecting rod):**  
40 Nm (4.0 m · kg, 29 ft · lb)

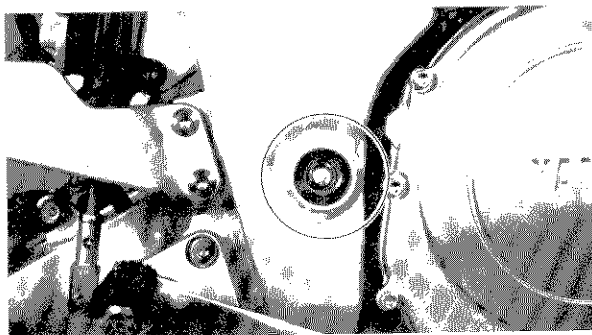


3. Install:

- Collar (1)
- Relay arm (2)



**Nut (relay arm):**  
40 Nm (4.0 m · kg, 29 ft · lb)

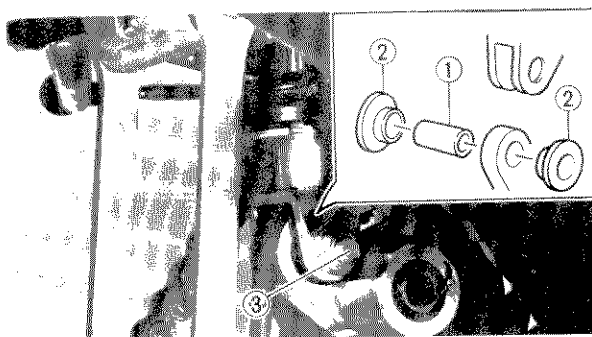


4. Install:

- Swingarm



**Nut (pivot shaft):**  
90 Nm (9.0 m · kg, 65 ft · lb)



5. Install:

- Collar (1)
- Spacer (2)
- Bolt (rear shock absorber – lower) (3)



**Nut (rear shock absorber – lower):**  
40 Nm (4.0 m · kg, 29 ft · lb)

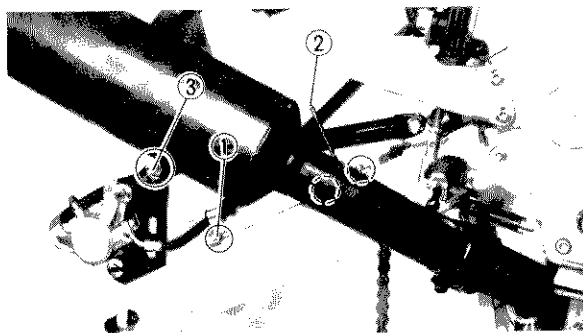


6. Install:

- Collar (1)
- Connecting rod (2)



**Nut (connecting rod):**  
40 Nm (4.0 m · kg, 29 ft · lb)



## 7. Install:

- Clamp (brake hose) ①
- Holder (brake hose) ②
- Bolt
- Nut (tension bar – front) ③
- Cotter pin



Nut (tension bar – front):  
23 Nm (2.3 m·kg, 17 ft·lb)

## ⚠ WARNING:

- Always use a new cotter pin.
- Proper hose routing is essential to ensure safe motorcycle operation. Refer to "CABLE ROUTING" in the CHAPTER 2.

## 8. Install:

- Rear wheel

Refer to the "REAR WHEEL – INSTALLATION" section.



Nut (rear axle):  
107 Nm (10.7 m·kg, 77 ft·lb)  
Bolts (brake caliper):  
35 Nm (3.5 m·kg, 25 ft·lb)

## 9. Adjust:

- Drive chain slack

Refer to the "DRIVE CHAIN SLACK ADJUSTMENT" section in the CHAPTER 3.



Drive chain slack:  
20 ~ 30 mm (0.8 ~ 1.2 in)

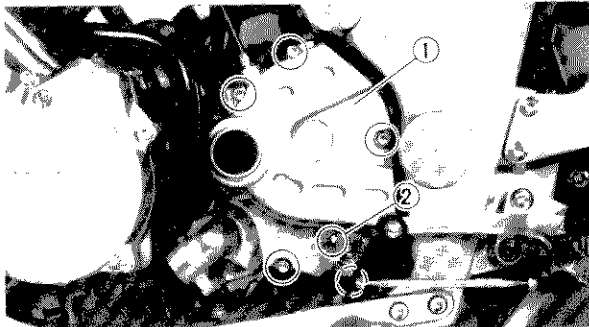


### DRIVE CHAIN AND SPROCKET REMOVAL

1. Place the motorcycle vertically on a level place.

#### **⚠ WARNING:**

Securely support the motorcycle so there is no danger of it falling over.



2. Remove:

- Bolt (shift arm) ①  
Pull out the shift arm.

3. Remove:

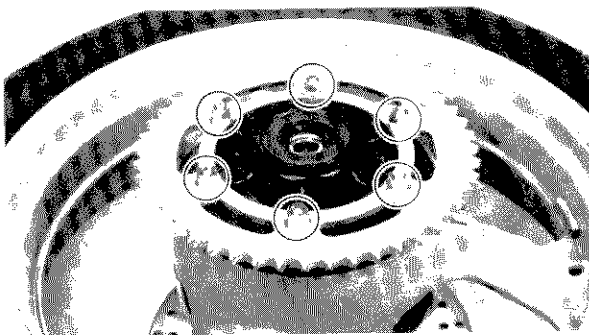
- Crankcase cover (left) ②
- Nut (drive sprocket)
- Lock washer
- Drive sprocket

Refer to the "ENGINE – REMOVAL" section in the CHAPTER 4.

4. Remove:

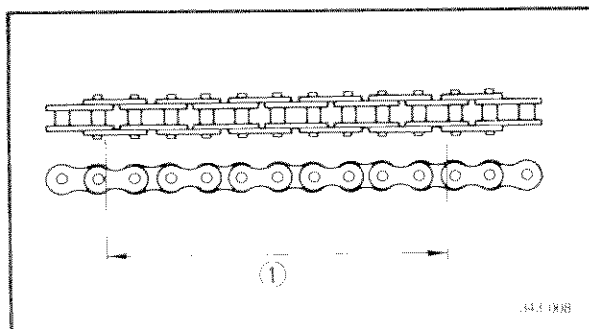
- Rear wheel
- Swingarm
- Drive chain

Refer to the "REAR WHEEL – REMOVAL" and REAR SHOCK ABSORBER AND SWINGARM – REMOVAL".



5. Remove:

- Driven sprocket



### INSPECTION AND CLEANING

1. Measure:

- Drive chain wear ①
- Length of 10 links

Over specified limit → Replace the drive chain, drive sprocket and driven sprocket as a set.



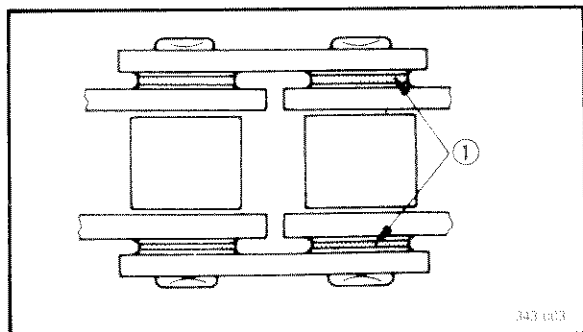
**Drive chain wear limit (10 links):  
150.1 mm (5.91 in)**



### 2. Clean:

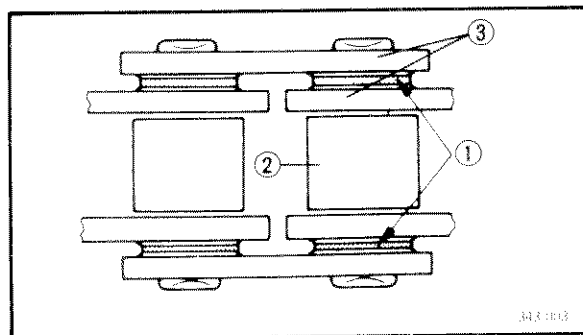
- Drive chain

Driven chain cleaner:  
Kerosene



### ⚠ CAUTION:

- Do not use steam cleaning, high-pressure washes, and certain solvent of O-ring ① damage may occur.
- This machine has a drive chain with small rubber O-rings ① between the chain plates. Steam cleaning, high-pressure washes, and certain solvent can damage these O-rings. Use only kerosene to clean the drive chain.



### 3. Inspect:

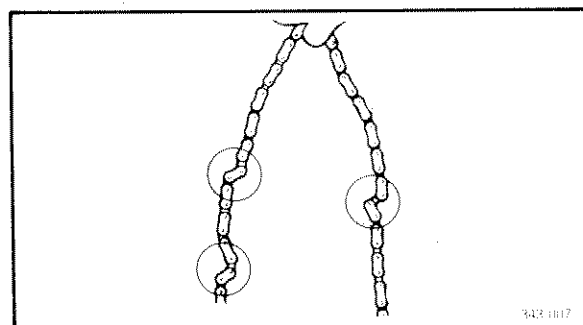
- O-rings ① (drive chain)  
Damage → Replace drive chain.
- Rollers ②
- Side plates ③  
Damage/Wear → Replace drive chain.

### 4. Lubricate:

- Drive chain

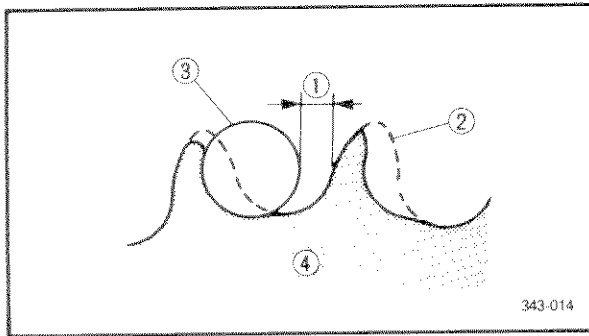


Drive chain lubricant:  
SAE 30 ~ 50 Motor oil



### 5. Inspect:

- Drive chain stiffness.  
Stiff → Clean and lubricate or replace.



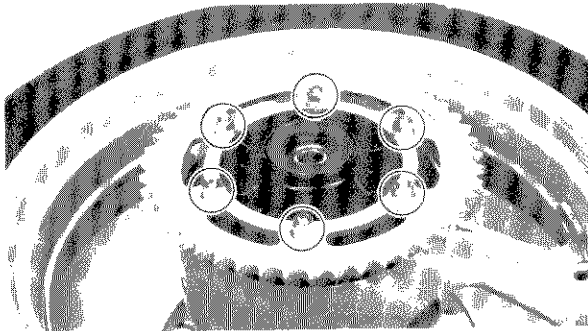
### 6. Inspect:

- Drive sprocket
- Driven sprocket

More than 1/4 teeth ① wear → Replace sprocket.

Bent teeth → Replace sprocket.

- ② Correct
- ③ Roller
- ④ Sprocket



### Driven sprocket replacement steps:

- Remove the self-locknuts ①, bolts ② and driven sprocket ③.
- Clean the hub, especially on the surfaces contact with the sprocket, using clean cloth.
- Install the new driven sprocket.

### NOTE:

Tighten the bolts in stage, using a crisscross pattern.



Self-locknut (driven sprocket):  
32 Nm (3.2 m · kg, 2.3 ft · lb)

## INSTALLATION

Reverse the removal procedure.

Note the following points.

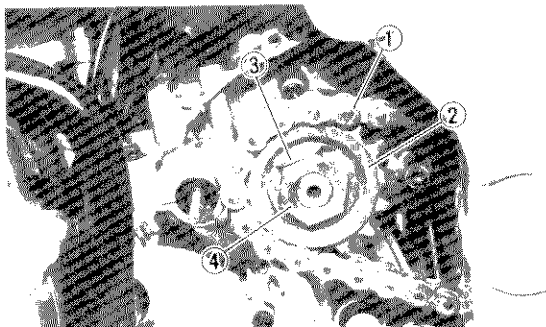
### 1. Install:

- Rear wheel
- Drive chain

Refer to "REAR WHEEL" section.

### 2. Install:

- Drive chain ①
- Drive sprocket ②
- Lock washer ③
- Nut (drive sprocket) ④



Nut (drive sprocket):  
60 Nm (6.0 m · kg, 43 ft · lb)

**NOTE:**

When tightening the nut (drive sprocket), apply the rear brake pedal and transmission gear to the 5th position.

**⚠ WARNING:**

Always use a new lock washer.

**3. Install:**

- Collar
- Crankcase cover (left)
- Shim arm



Bolts (crankcase cover — left):  
10 Nm (1.0 m·kg, 7.2 ft·lb)

Bolt (shift arm):  
10 Nm (1.0 m·kg, 7.2 ft·lb)

**NOTE:**

Align the punch mark on shift shaft with the slot of the shift arm.

**4. Adjust:**

- Drive chain slack

Refer to the "DRIVE CHAIN SLACK ADJUSTMENT" section in the CHAPTER 3.



Drive chain slack:  
20 ~ 30 mm (0.8 ~ 1.2 in)

**⚠ CAUTION:**

Too small chain slack will overload the engine and other vital parts; keep the slack within the specified limits.

**⚠ WARNING:**

Always use a new cotter pin on the axle nut.