

## Section 3

## Driveline / Axle

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# Precautions

## Precautions

### Precautions for Driveline / Axle

B718H1300001

Refer to “General Precautions in Section 00 (Page 00-1)”.

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#### **⚠ WARNING**

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**Never inspect or adjust the drive chain while the engine is running.**

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#### **⚠ CAUTION**

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- Do not use trichloroethylene, gasoline or such similar solvent. These fluids will damage the O-rings of the drive chain.
  - Clean the drive chain with a spray-type chain cleaner and blow dry with compressed air. If the drive chain cannot be cleaned with a spray cleaner, it may be necessary to use a kerosine. Always follow the chemical manufacturer’s instructions on proper use, handling and storage.
  - Lubricate the drive chain with a heavy weight motor oil. Wipe off any excess oil or chain lubricant. Do not use any oil sold commercially as “drive chain oil”. Such oil can damage the O-rings.
  - The standard drive chain is RK GB50GSVZ3. Suzuki recommends to use this standard drive chain as a replacement.
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# Drive Chain / Drive Train / Drive Shaft

## Diagnostic Information and Procedures

### Drive Chain and Sprocket Symptom Diagnosis

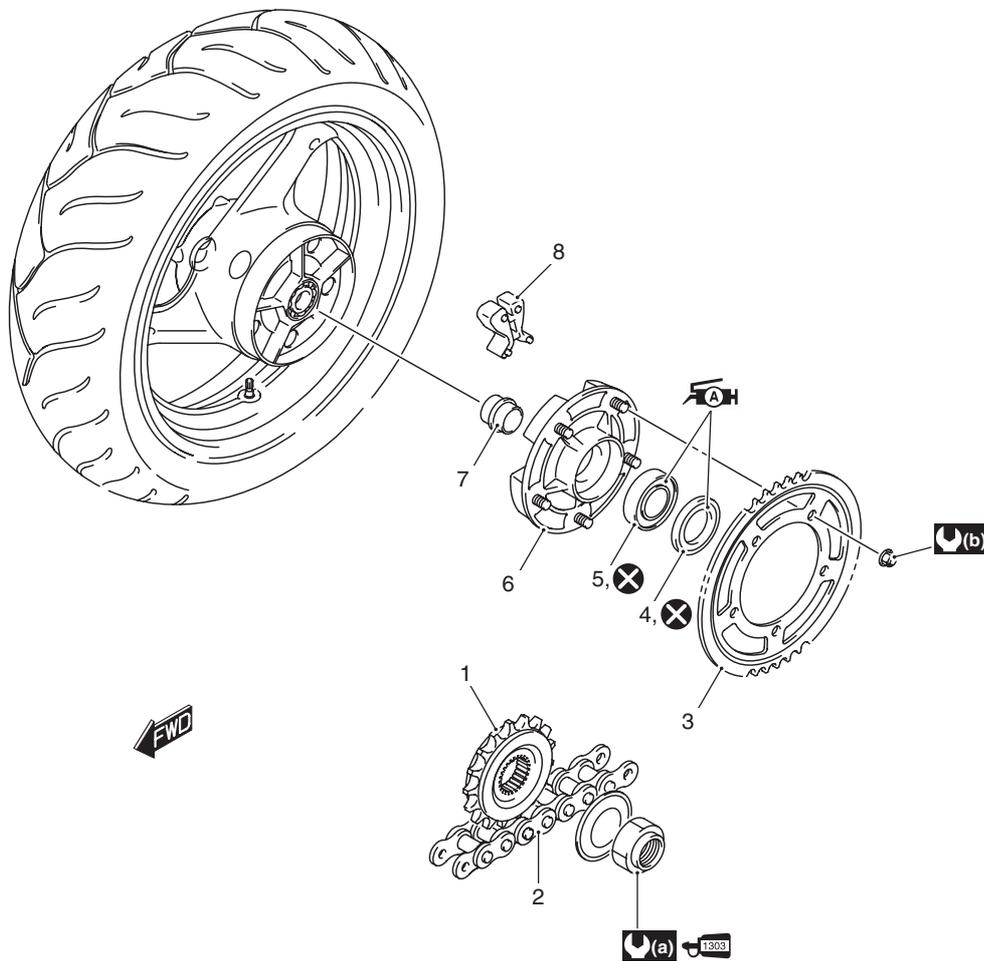
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Condition	Possible cause	Correction / Reference Item
<b>Noisy Drive Chain</b>	Worn sprocket.	Replace.
	Worn drive chain.	Replace.
	Stretched drive chain.	Replace.
	Too large drive chain slack.	Adjust.
	Drive chain out of adjustment.	Adjust.

## Repair Instructions

### Drive Chain Related Components

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1. Engine sprocket	5. Bearing	: 115 N·m (11.5 kgf·m, 83.0 lb·ft)
2. Drive chain	6. Sprocket mounting drum	: 60 N·m (6.0 kgf·m, 43.5 lb·ft)
3. Rear sprocket	7. Retainer	: Apply grease.
4. Dust seal	8. Wheel damper	: Apply thread lock to thread part.

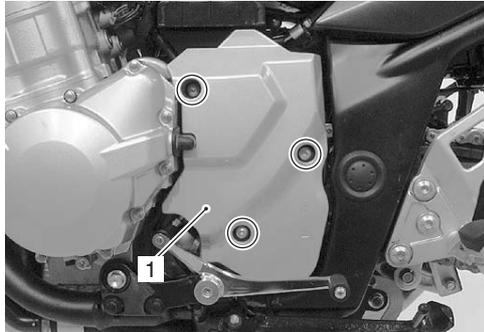
## 3A-2 Drive Chain / Drive Train / Drive Shaft:

### Engine Sprocket Removal and Installation

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#### Removal

- 1) Support the motorcycle with the center stand.
- 2) Remove the engine sprocket outer cover (1).



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- 3) Remove the regulator/rectifier bracket mounting bolts.

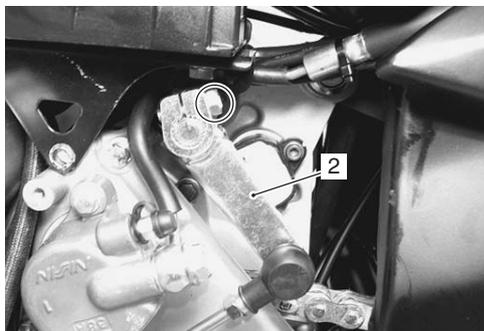


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- 4) Disengage the gearshift link arm (2) by removing the bolt.

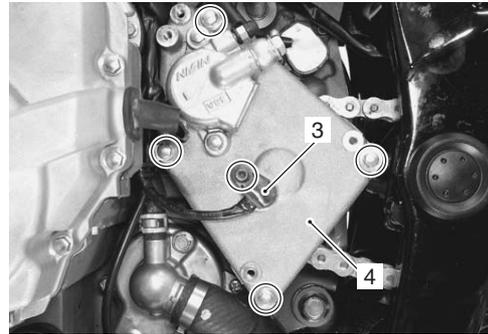
#### NOTE

Mark the gearshift shaft head at which the gearshift link arm slit set for correct reinstallation.



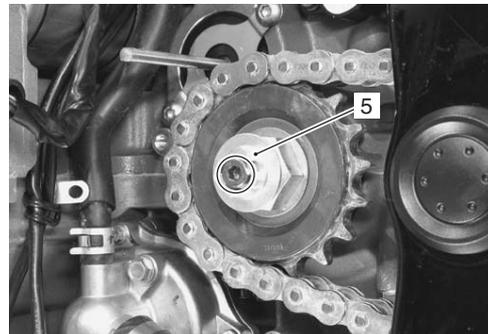
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- 5) Remove the speed sensor (3).
- 6) Remove the engine sprocket inner cover (4) along with the clutch release cylinder.



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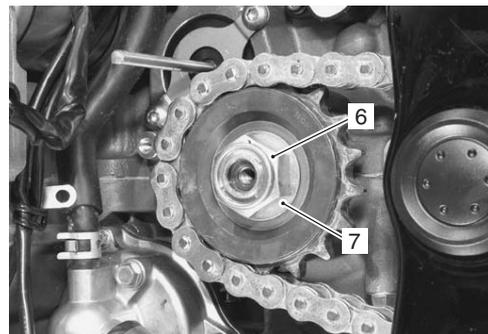
- 7) Remove the speed sensor rotor (5) by removing its bolt while depressing the rear brake pedal.



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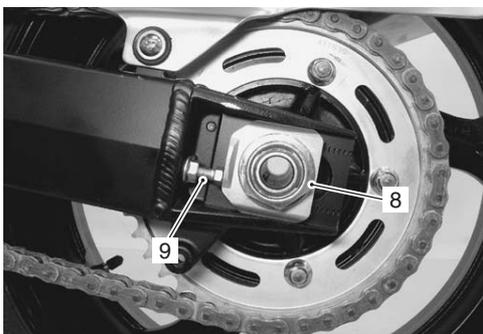
- 8) Remove the engine sprocket nut (6) while depressing the rear brake pedal.

- 9) Remove the washer (7).



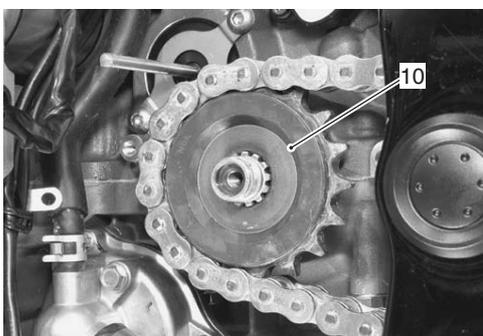
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- 10) Loosen the rear axle nut (8).
- 11) Loosen the chain adjusters (9) to provide additional chain slack.



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- 12) Remove the engine sprocket (10).



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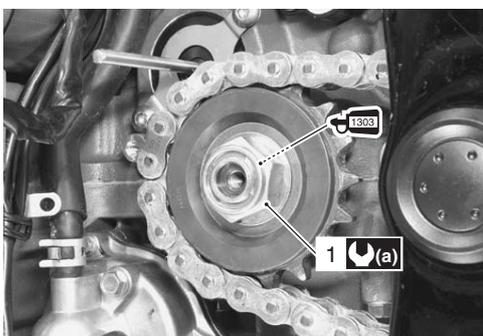
**Installation**

Install the engine sprocket in the reverse order of removal. Pay attention to the following points:

- Apply THREAD LOCK SUPER to the driveshaft.
  - 🔧**1303** : Thread lock cement 99000-32030 (Thread Lock Cement Super 1303 or equivalent)
- Tighten the engine sprocket nut (1) to the specified torque.

**Tightening torque**

**Engine sprocket nut (a): 115 N·m (11.5 kgf-m, 83.0 lb-ft)**



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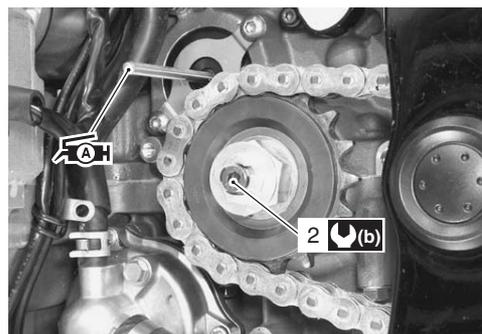
- Tighten the speed sensor rotor bolt (2) to the specified torque.

**Tightening torque**

**Speed sensor rotor bolt (b): 25 N·m (2.5 kgf-m, 18.0 lb-ft)**

- Before installing the engine sprocket inner cover, apply a small quantity of SUZUKI SUPER GREASE to the clutch push rod.

🔧**AH** : Grease 99000-25010 (SUZUKI SUPER GREASE A or equivalent)



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- Install the engine sprocket inner cover (3).

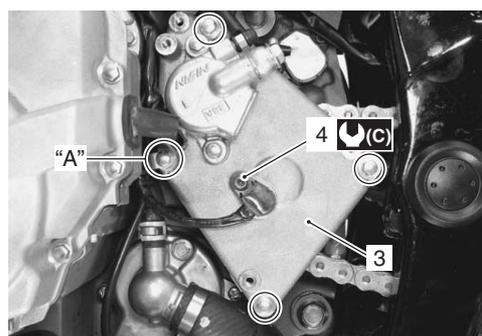
**NOTE**

**Fit the clamp to the bolt "A".**

- Tighten the speed sensor mounting bolt (4) to the specified torque.

**Tightening torque**

**Speed sensor bolt (c): 6.5 N·m (0.65 kgf-m, 4.7 lb-ft)**



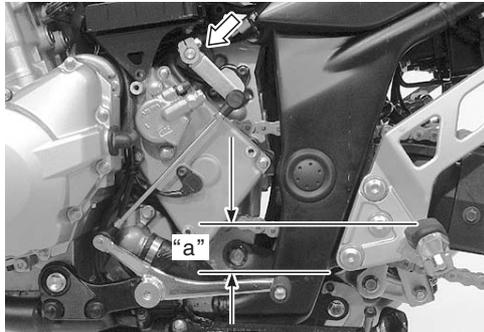
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### 3A-4 Drive Chain / Drive Train / Drive Shaft:

- Fit the gearshift link arm to the gearshift shaft so that the gearshift lever is located at height “a” above the footrest.

#### **Gearshift lever height “a”**

**Standard: 45 – 55 mm (1.8 – 2.2 in)**



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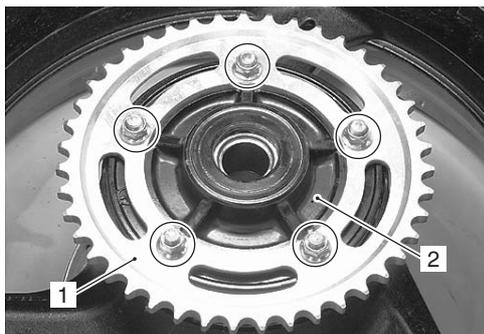
- Adjust the drive chain slack. Refer to “Drive Chain Inspection and Adjustment in Section 0B (Page 0B-15)”.

### Rear Sprocket / Rear Sprocket Mounting Drum Removal and Installation

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#### **Removal**

- 1) Remove the rear wheel assembly by disengaging the drive chain. Refer to “Rear Wheel Assembly Removal and Installation in Section 2D (Page 2D-16)”.
- 2) Remove the rear sprocket nuts and separate the rear sprocket (1) from its mounting drum (2).
- 3) Draw out the mounting drum (2) from the wheel hub.



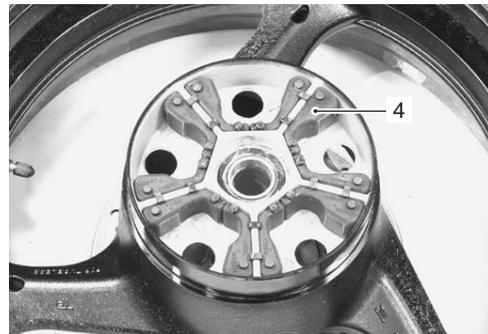
I718H1310014-03

- 4) Remove the retainer (3).



I718H1310015-02

- 5) Remove the wheel dampers (4).



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#### **Installation**

Install the rear sprocket and rear sprocket mounting drum in the reverse order of removal. Pay attention to the following points:

- Apply grease to the contacting surface between the rear wheel hub and the mounting drum.

**FAH**: Grease 99000-25010 (SUZUKI SUPER GREASE A or equivalent)

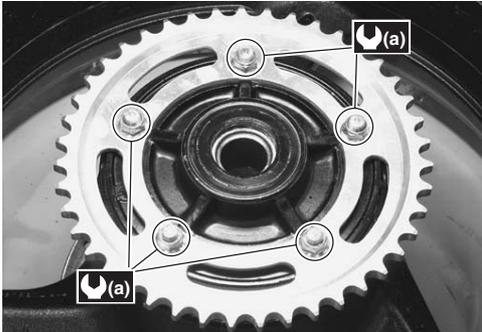


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- Tighten the rear sprocket nuts to the specified torque.

**Tightening torque**

**Rear sprocket nut (a): 60 N·m (6.0 kgf-m, 43.5 lb-ft)**



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- Install the rear wheel assembly. Refer to “Rear Wheel Assembly Removal and Installation in Section 2D (Page 2D-16)”.

**Drive Chain Related Parts Inspection**

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Refer to “Rear Sprocket / Rear Sprocket Mounting Drum Removal and Installation (Page 3A-4)”

**Dust Seal**

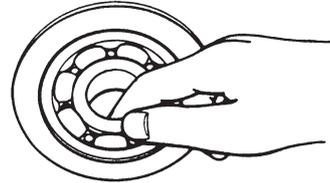
Inspect the sprocket mounting drum dust seal for wear or damage. If any damage is found, replace the dust seal with a new one.



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**Bearing**

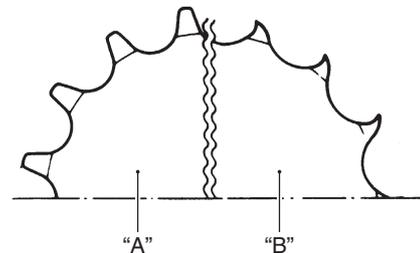
Inspect the play of the sprocket mounting drum bearings by hand while they are in the wheel and drum. Rotate the inner race by hand to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual.



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**Engine Sprocket and Rear Sprocket**

Inspect the sprocket teeth for wear. If they are worn as shown, replace the engine sprocket, rear sprocket and drive chain as a set.



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"A": Normal wear	"B": Excessive wear
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**Wheel Damper**

Inspect the dampers for wear and damage. Replace the damper if there is anything unusual.



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**Drive Chain**

Refer to “Drive Chain Inspection and Adjustment in Section 0B (Page 0B-15)”.

**Sprocket Mounting Drum Dust Seal / Bearing Removal and Installation**

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**Removal**

- 1) Remove the rear sprocket mounting drum assembly from the rear wheel hub. Refer to "Rear Sprocket / Rear Sprocket Mounting Drum Removal and Installation (Page 3A-4)".
- 2) Remove the retainer (1).

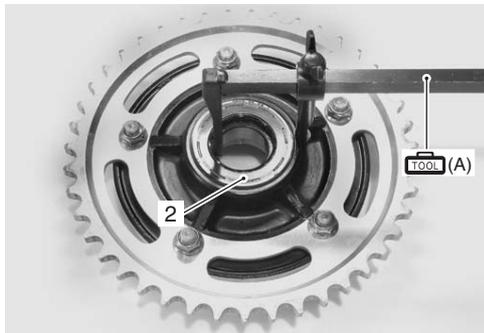


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- 3) Remove the sprocket mounting drum dust seal (2) using the special tool.

**Special tool**

**TOOL (A): 09913-50121 (Oil seal remover)**

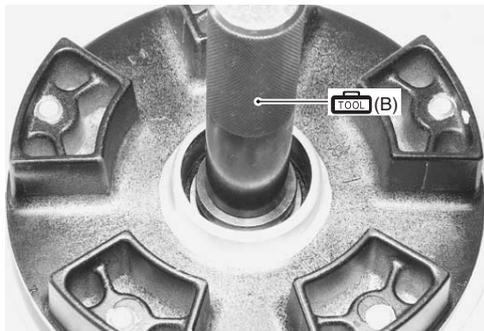


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- 4) Remove the sprocket mounting drum bearing using the special tool.

**Special tool**

**TOOL (B): 09913-70210 (Bearing installer set)**



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**Installation**

**CAUTION**

The removed dust seal and bearing must be replaced with new ones.

- 1) Apply grease to the bearing before installing.

**⚠️: Grease 99000-25010 (SUZUKI SUPER GREASE A or equivalent)**



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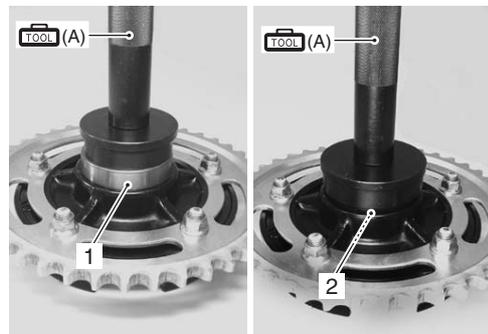
- 2) Install the bearing (1) and dust seal (2) to the sprocket mounting drum using the special tool.

**CAUTION**

The sealed cover of the bearing must face outside.

**Special tool**

**TOOL (A): 09913-70210 (Bearing installer set)**



I718H1310021-03

- 3) Apply grease to the dust seal lip.

**⚠️: Grease 99000-25010 (SUZUKI SUPER GREASE A or equivalent)**



I718H1310022-02

- 4) Apply grease to the retainer before installing the rear sprocket mounting drum.
- 5) Install the rear sprocket mounting drum assembly to rear wheel hub. Refer to "Rear Sprocket / Rear Sprocket Mounting Drum Removal and Installation (Page 3A-4)".
- 6) Install the rear wheel assembly. Refer to "Rear Wheel Assembly Removal and Installation in Section 2D (Page 2D-16)".

### Drive Chain Replacement

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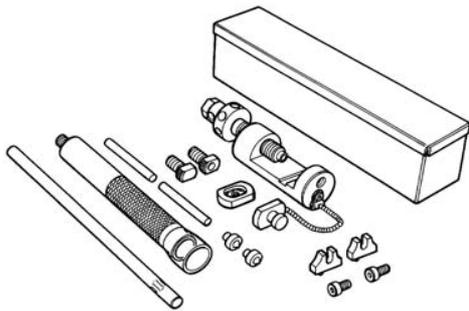
Use the special tool in the following procedures, to cut and rejoin the drive chain.

#### NOTE

When using the special tool, apply a small quantity of grease to the threaded parts of the special tool.

#### Special tool

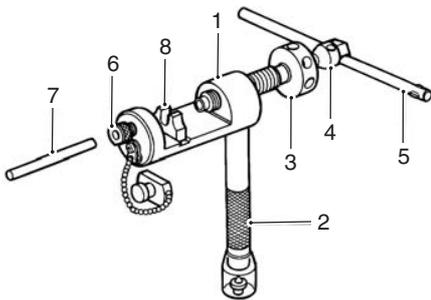
 : 09922-22711 (Drive chain cutting and joining tool)



I649G1310023-01

#### Drive Chain Cutting

- 1) Set up the special tool as shown in the illustration.

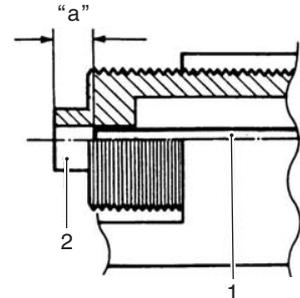


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1.	Tool body
2.	Grip handle
3.	Pressure bolt [A]
4.	Pressure bolt [B]
5.	Bar
6.	Adjuster bolt (With through hole)
7.	Pin remover
8.	Chain holder (Engraved mark 500) with reamer bolt M5 x 10

#### NOTE

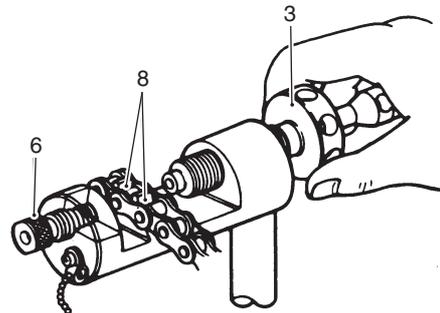
The tip of pin remover (1) should be positioned inside "a" approximately 5 mm (0.2 in) from the end face of pressure bolt [A] (2) as shown in the illustration.



I649G1310025-01

"a": 5 mm (0.2 in)

- 2) Place the drive chain link being disjointed on the holder part (8) of the tool.
- 3) Turn in both the adjuster bolt (6) and pressure bolt [A] (3) so that each of their end hole fits over the chain joint pin properly.
- 4) Tighten the pressure bolt [A] (3) with the bar.



I718H1310032-01

- 5) Turn in the pressure bolt [B] (4) with the bar (5) and force out the drive chain joint pin (9).

#### ⚠ CAUTION

Continue turning in the pressure bolt [B] (4) until the joint pin should be completely pushed out of the chain.

#### NOTE

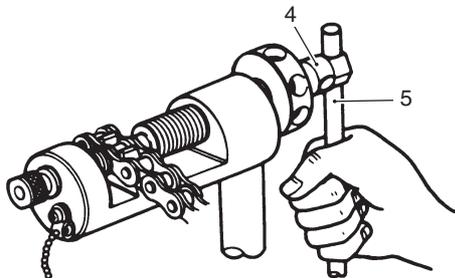
After the joint pin (9) is removed, loosen the pressure bolt [B] (4) and then pressure bolt [A] (3).

### 3A-8 Drive Chain / Drive Train / Drive Shaft:

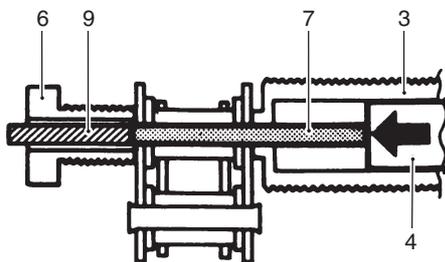
- 6) Remove the joint pin (9) of the other side of joint plate.

**⚠ CAUTION**

**Never reuse joint pins, O-rings and plates.**



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I649G1310028-01

#### Drive Chain Connecting

**⚠ WARNING**

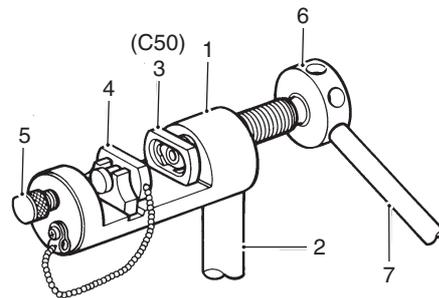
Do not use joint clip type of drive chain. The joint clip may have a chance to drop which may cause severe damage to motorcycle and severe injury.

**⚠ CAUTION**

Replace the joint pins (8), O-rings (9) and plates (10) with new ones.

#### Joint plate installation

- 1) Set up the special tool as shown in the illustration.



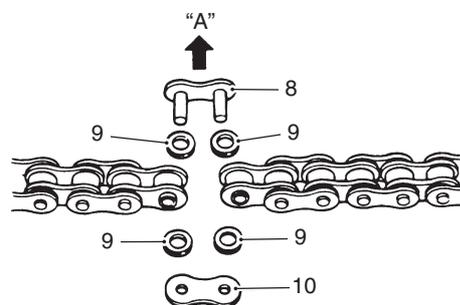
I718H1310027-03

1.	Tool body
2.	Grip handle
3.	Joint plate holder (Engraved mark "C50")
4.	Wedge holder & wedge pin
5.	Adjuster bolt (Without hole)
6.	Pressure bolt [A]
7.	Bar

- 2) Apply grease to the joint pins (8), O-rings (9) and plates (10).  
 3) Connect both ends of the drive chain with the joint pin (8) inserted from the wheel side "A" as installed on the motorcycle.

#### Joint set part number

**RK: 27620 – 24F00**



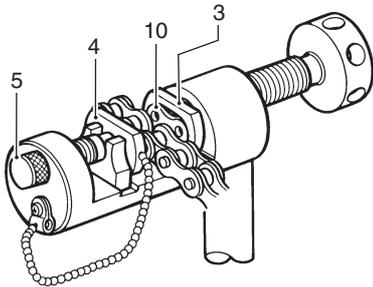
I649G1310030-01

- 4) Apply grease on the recessed portion of the joint plate holder (3) and set the joint plate (10).

#### NOTE

**When positioning the joint plate (10) on the tool, its stamp mark must face the joint plate holder (3) side.**

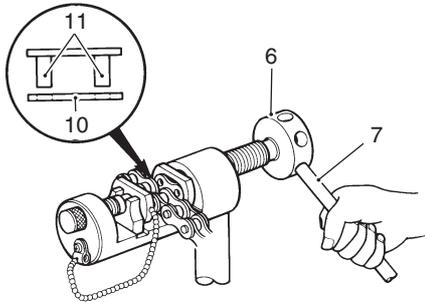
5) Set the drive chain on the tool as illustrated and turn in the adjuster bolt (5) to secure the wedge holder and wedge pin (4).



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6) Turn in the pressure bolt [A] (6) and align two joint pins (11) properly with the respective holes of the joint plate (10).

7) Turn in the pressure bolt [A] (6) further using the bar (7) to press the joint plate over the joint pins.



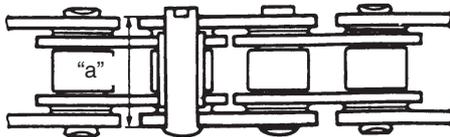
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8) Continue pressing the joint plate until the distance between the two joint plates comes to the specification.

**Joint plate distance specification "a"**  
21.85 – 22.15 mm (0.860 – 0.872 in)

**CAUTION**

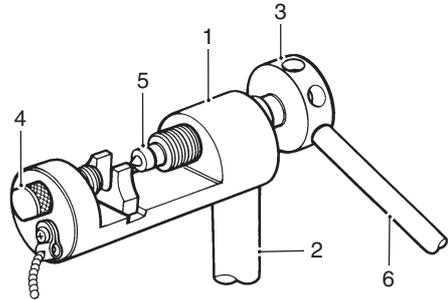
If pressing of the joint plate makes the dimension out of specification excessively, the work must be carried out again by using new joint parts.



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**Joint pin staking**

1) Set up the special tool as shown in the illustration.



I649G1310034-01

1. Tool body
2. Grip handle
3. Pressure bolt "A"
4. Adjuster bolt (Without hole)
5. Staking pin (Stowed inside grip handle behind rubber cap)
6. Bar

**NOTE**

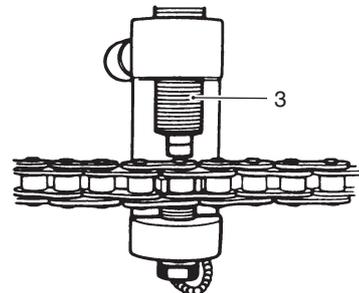
Before staking the joint pin, apply a small quantity of grease to the staking pin (5).

2) Stake the joint pin by turning (approximately 7/8 turn) the pressure bolt [A] (3) with the bar until the pin end diameter becomes the specified dimension.

**CAUTION**

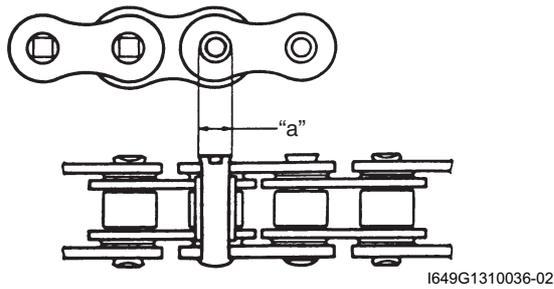
- After joining of the chain has been completed, check to make sure that the link is smooth and no abnormal condition is found.
- Should any abnormal condition be found, reassemble the chain link using the new joint parts.

**Pin end diameter specification "a"**  
RK: 5.45 – 5.85 mm (0.215 – 0.230 in)



I649G1310035-01

### 3A-10 Drive Chain / Drive Train / Drive Shaft:



- 3) Adjust the drive chain slack, after connecting it.  
Refer to "Drive Chain Inspection and Adjustment in Section 0B (Page 0B-15)".

## Specifications

### Service Data

B718H13107001

#### Drive Chain

Unit: mm (in)

Item	Standard		Limit
Final reduction ratio	2.388 (43/18)		—
Drive chain	Type	RK GB50GSVZ3	—
	Links	118 links	—
	20-pitch length	—	319.4 (12.57)
Drive chain slack (on center stand)	20 – 30 (1.8 – 2.2)		—

### Tightening Torque Specifications

B718H13107002

Fastening part	Tightening torque			Note
	N·m	kgf·m	lb·ft	
Engine sprocket nut	115	11.5	83.0	☞ (Page 3A-3)
Speed sensor rotor bolt	25	2.5	18.0	☞ (Page 3A-3)
Speed sensor bolt	6.5	0.65	4.7	☞ (Page 3A-3)
Rear sprocket nut	60	6.0	43.5	☞ (Page 3A-5)

#### NOTE

The specified tightening torque is also described in the following.  
"Drive Chain Related Components (Page 3A-1)"

#### Reference:

For the tightening torque of fastener not specified in this section, refer to "Tightening Torque Specifications in Section 0C (Page 0C-7)".

## Special Tools and Equipment

### Recommended Service Material

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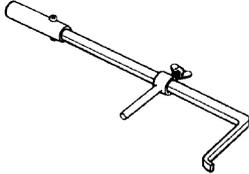
Material	SUZUKI recommended product or Specification	P/No.:	Note
Grease	SUZUKI SUPER GREASE A or equivalent	99000-25010	☞ (Page 3A-3) / ☞ (Page 3A-4) / ☞ (Page 3A-6) / ☞ (Page 3A-6)
Thread lock cement	Thread Lock Cement Super 1303 or equivalent	99000-32030	☞ (Page 3A-3)

### NOTE

Required service material is also described in the following.  
 “Drive Chain Related Components (Page 3A-1)”

### Special Tool

B718H13108002

09913-50121 Oil seal remover ☞ (Page 3A-6)		09913-70210 Bearing installer set ☞ (Page 3A-6) / ☞ (Page 3A-6)	
09922-22711 Drive chain cutting and joining tool ☞ (Page 3A-7)	