

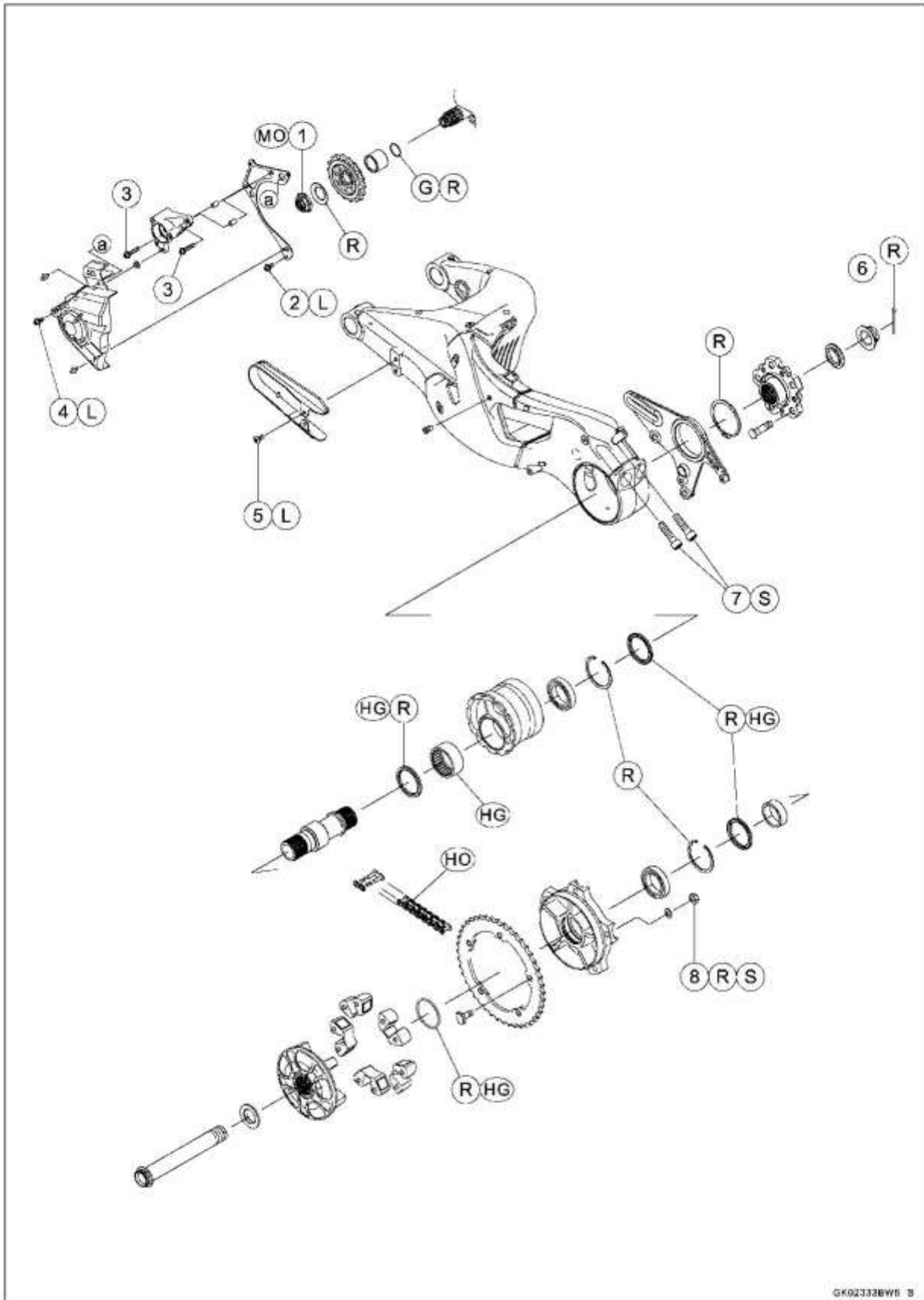
Final Drive

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Exploded View



Exploded View

No.	Fastener	Torque			Remarks
		N·m	kgf·m	ft·lb	
1	Engine Sprocket Nut	145	14.8	107	MO
2	Drive Chain Guide Bolt (L = 14 mm)	10	1.0	89 in·lb	L
3	Drive Chain Guide Bolts (L = 30 mm)	10	1.0	89 in·lb	
4	Engine Sprocket Cover Bolt	10	1.0	89 in·lb	L
5	Chain Guide Bolts	1.75	0.178	15 in·lb	L
6	Rear Axle Nut	200	20.4	148	
7	Bearing Housing Clamp Bolts	33	3.4	24	S
8	Rear Sprocket Nuts	60	6.1	44	R, S

G: Apply grease.

HG: Apply high-temperature grease.

HO: Apply heavy oil (for seal chain).

L: Apply a non-permanent locking agent.

MO: Apply molybdenum disulfide oil solution.

(mixture of the engine oil and molybdenum disulfide grease in a weight ratio 10:1)

R: Replacement Parts

S: Follow the specified tightening sequence.

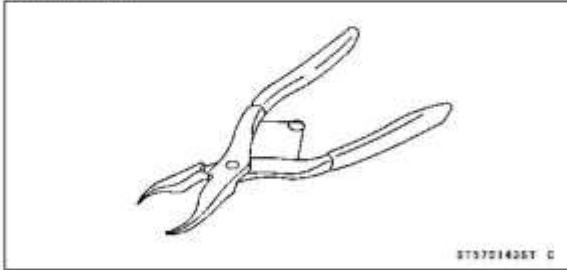
11-4 FINAL DRIVE

Specifications

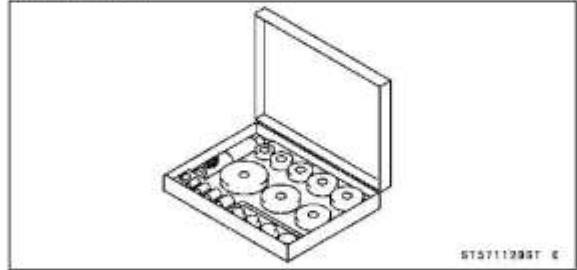
Item	Standard	Service Limit
Drive Chain		
Drive Chain Slack	25 ~ 35 mm (1.0 ~ 1.4 in.)	---
Drive Chain Wear (20-link Length)	317.5 ~ 318.2 mm (12.50 ~ 12.53 in.)	319 mm (12.6 in.)
Standard Chain:		
Make	ENUMA	---
Type	EK525RMXZ/3D	---
Link	120 links	---
Link Pin Outside Diameter (When drive chain replacing)	5.9 ~ 6.2 mm (0.23 ~ 0.24 in.)	---
Link Plates Outside Width (When drive chain replacing)	20.75 ~ 20.90 mm (0.8169 ~ 0.8228 in.)	---
Sprockets		
Rear Sprocket Warp	TIR 0.4 mm (0.016 in.) or less	TIR 0.5 mm (0.020 in.)

Special Tools

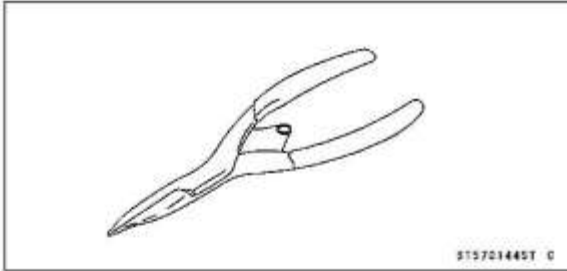
Inside Circlip Pliers:
57001-143



Bearing Driver Set:
57001-1129



Outside Circlip Pliers:
57001-144



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Drive Chain

Drive Chain Slack Inspection

- Refer to the Drive Chain Slack Inspection ([see Drive Chain Slack Inspection\(2-44\)](#)).

Drive Chain Slack Adjustment

- Refer to the Drive Chain Slack Adjustment ([see Drive Chain Slack Adjustment\(2-45\)](#)).

Drive Chain Wear Inspection

- Refer to the Drive Chain Wear Inspection ([see Drive Chain Wear Inspection\(2-45\)](#)).

Drive Chain Lubrication

- Refer to the Drive Chain Lubrication Condition Inspection ([see Drive Chain Lubrication Condition Inspection\(2-44\)](#)).

Drive Chain Removal

- Refer to the Drive Chain Replacement ([see Drive Chain Lubrication Condition Inspection\(2-44\)](#)).

Drive Chain Installation

- Refer to the Drive Chain Replacement ([see Drive Chain Lubrication Condition Inspection\(2-44\)](#)).

Drive Chain Replacement

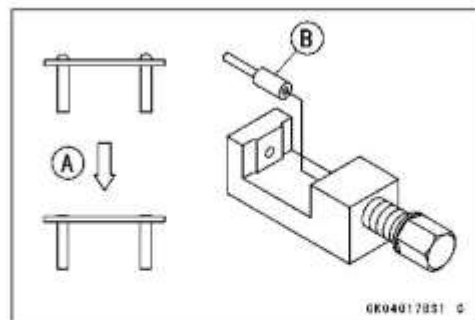
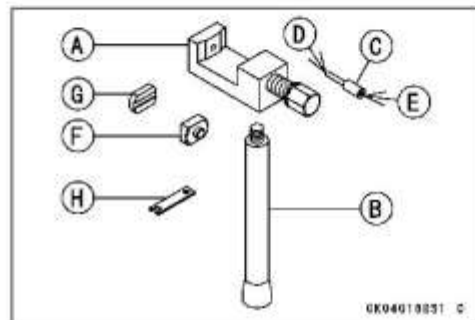
NOTICE

For safety, if the drive chain shall be replaced, replace it using a recommended tool.

Recommended Tool - Type: EK Joint Tool #50
Brand: ENUMA

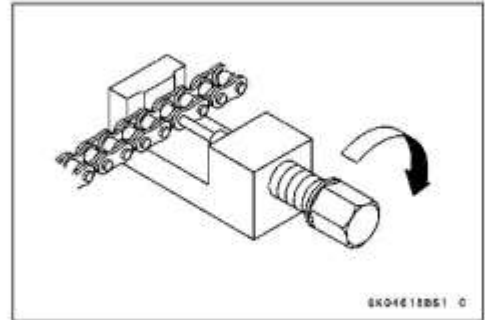
Body [A]
Handlebar [B]
Cutting and Riveting Pin [C]
For Cutting [D]
For Riveting [E]
Plate Holder (A) [F]
Plate Holder (B) [G]
Gauge [H]

- Grind [A] the pin head to make it flat.
- Set the cutting and riveting pin [B] as shown.

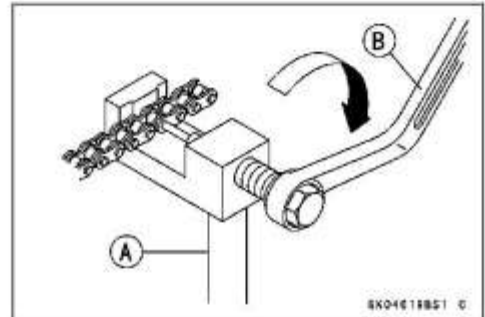


Drive Chain

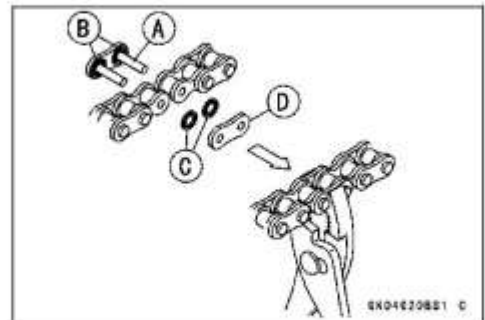
- Screw the pin holder until it touches the chain pin.
- Be sure that the cutting pin hits center of the chain pin.



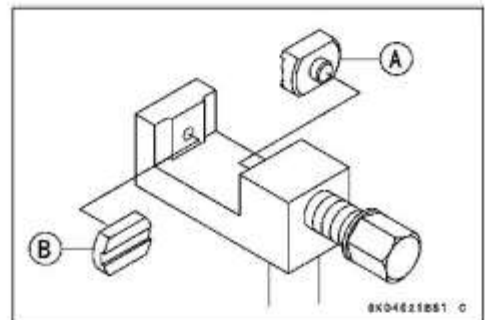
- Screw the handlebar [A] into the body.
- Turn the pin holder with the wrench [B] clockwise to extract the chain pin.
- Remove the drive chain from the motorcycle.



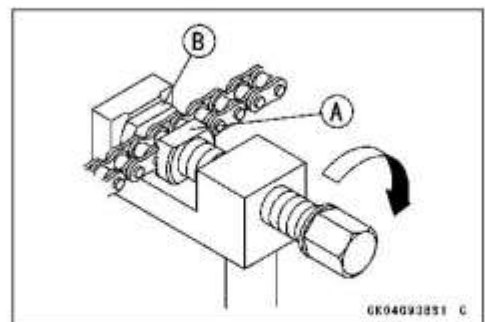
- Replace the link pins, link plate and grease seals with new ones.
- Apply grease to the link pins [A] and grease seals [B] [C].
- Engage the drive chain on the engine and rear sprockets.
- Insert the link pins in the drive chain ends.
- Install the grease seals.
- Install the link plate [D] so that the mark faces out.
- Push the link plate by hand or plier to fix it.
- Be sure to set the grease seals correctly.



- Set the plate holder (A) [A] and plate holder (B) [B] on the body.



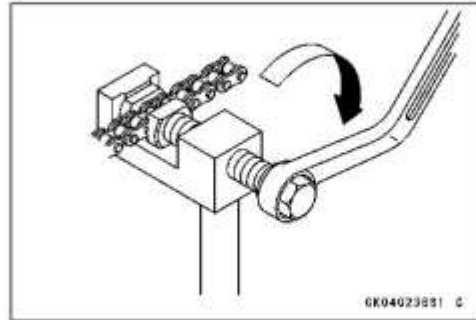
- Fit the plate holder (A) [A] to the link plate.
- Turn the pin holder by hand until the plate holder (B) [B] touches the other link plate.



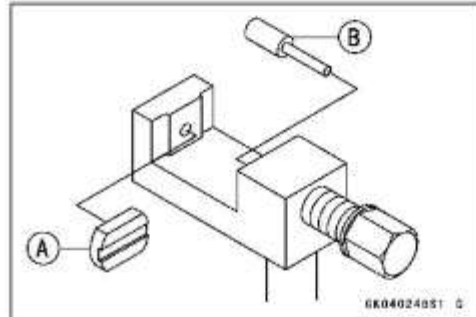
11-8 FINAL DRIVE

Drive Chain

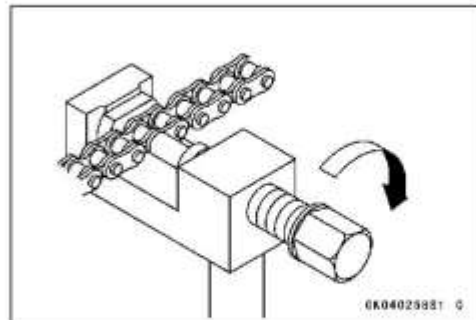
- Turn the pin holder by a wrench clockwise until two pins of link come into groove of the plate holder (A).
- Take off the plate holder.



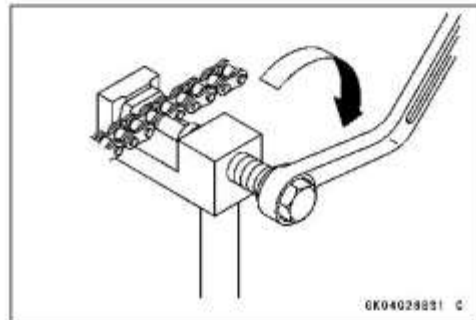
- Set the plate holder (B) [A] and cutting and riveting pin [B] as shown.



- Turn the pin holder until the riveting pin touches the link pin.



- Turn the wrench clockwise until the tip of riveting pin hits to the link pin.
- Rivet it.
- Same work for the other link pin.



Drive Chain

- After staking, check the staked area of the link pin for cracks.
- Measure the outside diameter [A] of the link pin and link plates width [B].

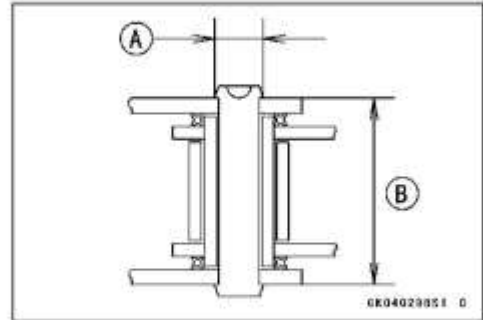
Link Pin Outside Diameter

Standard: 5.9 ~ 6.2 mm (0.23 ~ 0.24 in.)

Link Plates Outside Width

Standard: 20.75 ~ 20.90 mm (0.8169 ~ 0.8228 in.)

- ★ If the reading exceeds the specified length, cut and rejoin the chain again.
- Check:
Movement of the Rollers
- Adjust the drive chain slack after installing the chain (see [Drive Chain Slack Adjustment\(2-45\)](#)).



11-10 FINAL DRIVE

Sprocket, Coupling

Engine Sprocket Removal

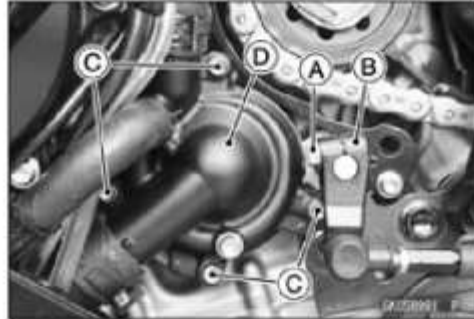
- Loosen the drive chain (see [Drive Chain Slack Adjustment\(2-45\)](#)).

- Remove:

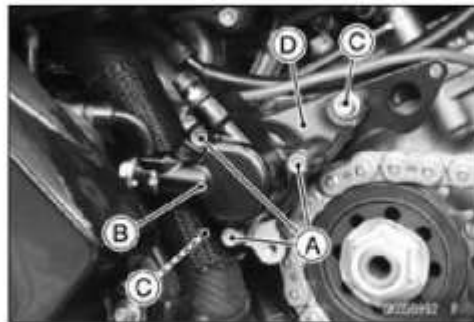
- Engine Sprocket Cover Bolt [A]
- Quick Rivets [B]
- Engine Sprocket Cover [C]



- Drain the coolant (see [Coolant Change\(2-28\)](#)).
- Remove the shift lever bolt [A], and take the shift lever [B] off the shift shaft.
- Remove the water pump cover bolts [C] to free the water pump cover [D].



- Remove the clutch slave cylinder mounting bolts [A] to free the clutch slave cylinder [B].
- Remove:
 - Chain Guide Bolts (L = 30 mm) [C]
 - Clutch Slave Cylinder Holder [D]



NOTE

○If the clutch slave cylinder is removed and left alone, the piston will be pushed out by spring force and the clutch fluid will drain out.

- Push [A] the piston into the cylinder as far as it will go.

NOTICE

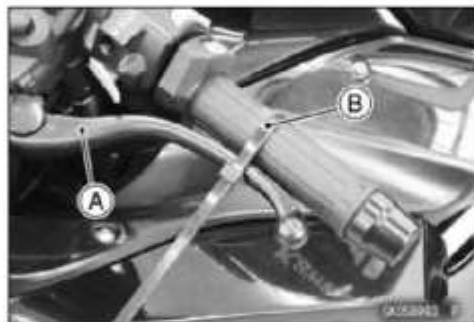
Immediately wash away any clutch fluid that spills. It may damage painted surfaces.



- Apply the clutch lever [A] slowly with the piston pushed and hold it with a band [B].

NOTE

○Holding the clutch lever keeps the piston from coming out.



Sprocket, Coupling

- Remove:
 - Chain Guide Bolt (L = 14 mm) [A]
 - Dowel Pins [B]
 - Chain Guide [C]

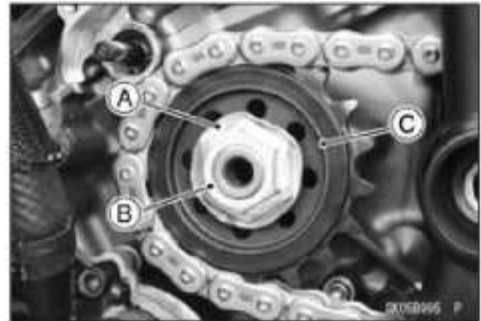


- Flatten out the bended washer [A].
- Remove the engine sprocket nut [B] and washer.

NOTE

○When loosening the engine sprocket nut, hold the rear brake on.

- Pull the engine sprocket [C] and drive chain off the output shaft.
- Disengage the drive chain from the engine sprocket.



Engine Sprocket Installation

- Replace the sprocket washer with a new one.
- Engage the drive chain and engine sprocket.
- Install the engine sprocket to the output shaft.
- Apply molybdenum disulfide oil solution to the threads and the seating surface of the engine sprocket nut.

- Tighten:

Torque - Engine Sprocket Nut [A]: 145 N·m (14.8 kgf·m, 107 ft·lb)

NOTE

○Tighten the engine sprocket nut while applying the rear brake.

- Bend the two sides [B] on a straight line of the washer.
- Adjust the drive chain slack (see Drive Chain Slack Adjustment(2-45)).



- Install:

Chain Guide [A]
Dowel Pins [B]

- Apply a non-permanent locking agent to the threads of chain guide bolt (L = 14 mm) [C].
- Tighten:

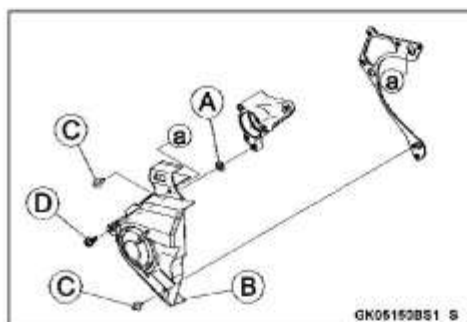
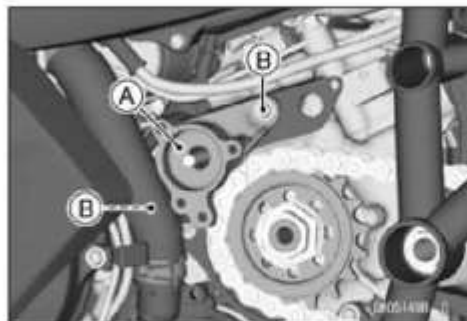
Torque - Drive Chain Guide Bolt (L = 14 mm): 10 N·m (1.0 kgf·m, 89 in·lb)



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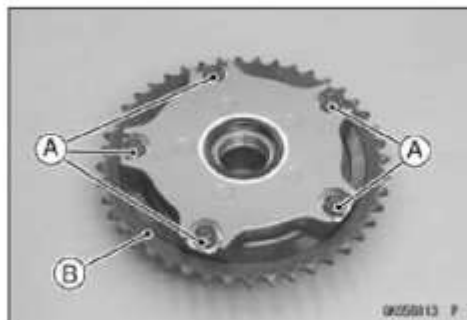
Sprocket, Coupling

- Install:
Clutch Slave Cylinder Holder [A]
- Tighten:
Torque - Drive Chain Guide Bolts (L = 30 mm) [B]: 10 N·m (1.0 kgf·m, 89 in·lb)
- Install:
Clutch Slave Cylinder ([see Clutch Slave Cylinder Installation\(6-9\)](#))
Water Pump Cover ([see Water Pump Installation\(4-11\)](#))
- Install:
Collar [A]
Engine Sprocket Cover [B]
Quick Rivets [C]
- Apply a non-permanent locking agent to the engine sprocket cover bolt [D].
- Tighten:
Torque - Engine Sprocket Cover Bolt: 10 N·m (1.0 kgf·m, 89 in·lb)



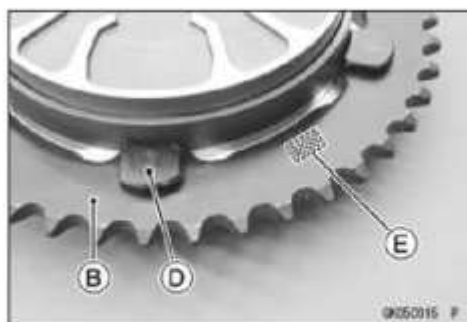
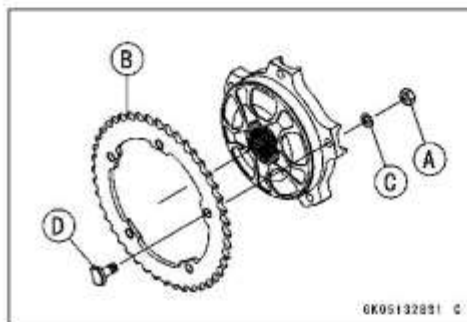
Rear Sprocket Removal

- Remove:
Coupling ([see Coupling Removal\(11-13\)](#))
Rear Sprocket Bolts and Nuts [A]
Washers
Rear Sprocket [B]



Rear Sprocket Installation

- Replace the rear sprocket nuts [A] with new ones.
- Install:
Rear Sprocket [B]
Washers [C]
Rear Sprocket Bolts [D]
- The tooth number marking [E] faces to the outside of the vehicle.



Sprocket, Coupling

- Tighten the rear sprocket nuts to a snug fit following the specified sequence [1 ~ 6].
- Tighten the rear sprocket nuts to the specified torque with the same sequence.

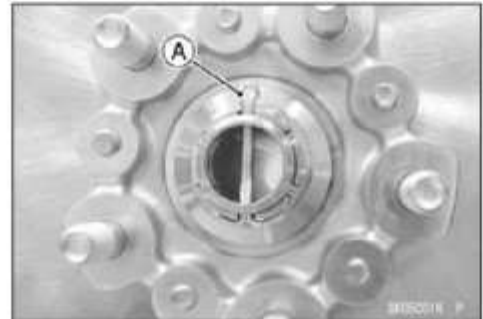
Torque - Rear Sprocket Nuts: 60 N·m (6.1 kgf·m, 44 ft·lb)

- After tightening, check that the bolt ends protrude from the nuts.
- Install the coupling ([see Coupling Installation\(11-13\)](#)).

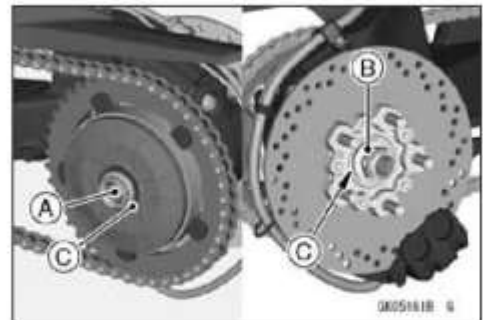


Coupling Removal

- Loosen the drive chain ([see Drive Chain Slack Adjustment\(2-45\)](#)).
- Remove:
 - Rear Sprocket Guard ([see Rear Sprocket Guard Removal\(15-36\)](#))
 - Rear Wheel ([see Rear Wheel Removal\(10-8\)](#))
 - Cotter Pin [A]



- Support the swingarm using a suitable stand.
- While holding the inner rear axle [A], remove the rear axle nut [B].
- Remove:
 - Collars [C]
- Disengage the drive chain and remove the coupling.

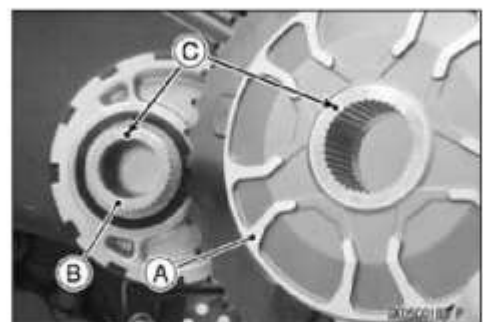


Coupling Installation

- Be sure to install the sleeve [A].
- Apply grease to the outside of the sleeve.



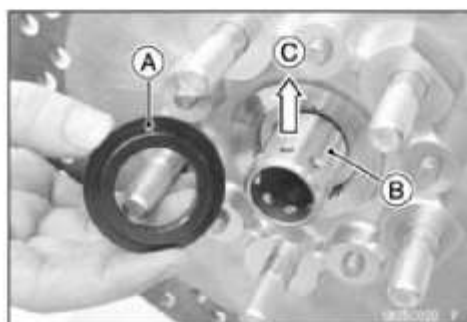
- Engage the drive chain and install the coupling [A] to the outer rear axle [B].
- Align the paint marks [C].



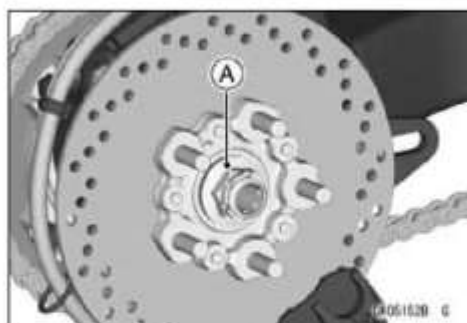
11-14 FINAL DRIVE

Sprocket, Coupling

- Install:
 - Collars [A]
 - Face the stepped side inward.
- Insert the inner rear axle [B] from the coupling side.
- Face the one of the hole on the axle upward [C].



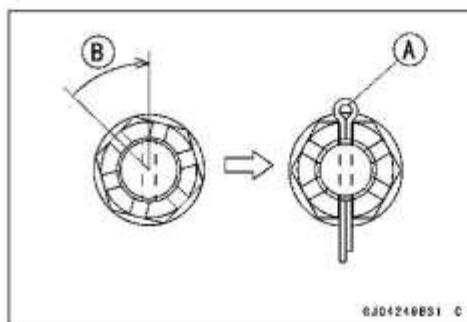
- Support the swingarm using a suitable stand.
 - While holding the inner rear axle, tighten the rear axle nut [A].
- Torque - Rear Axle Nut: 200 N·m (20.4 kgf·m, 148 ft·lb)**



- Insert a new cotter pin [A] from the upper side.

NOTE

- When inserting the cotter pin, if the slots in the nut do not align with the cotter pin hole in the axle, tighten the nut clockwise [B] up to next alignment.
- It should be within 60 degrees.
- Loosen once and tighten again when the slot goes past the nearest hole.

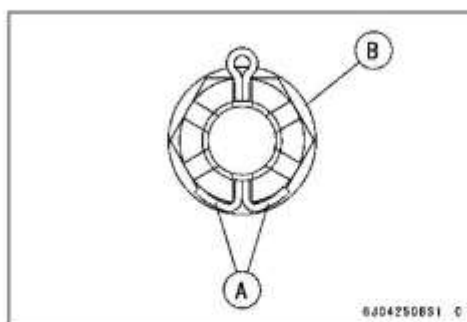


- Bend the cotter pin [A] along the nut [B].

WARNING

A loose axle nut can lead to an accident resulting in serious injury or death. Tighten the axle nut to the proper torque and install a new cotter pin.

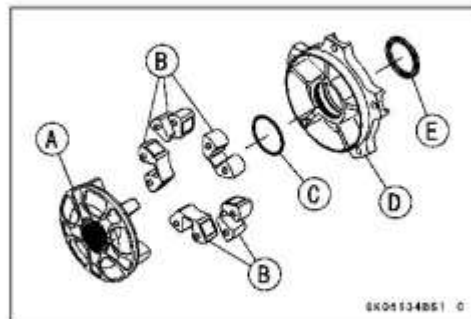
- Install the removed parts.



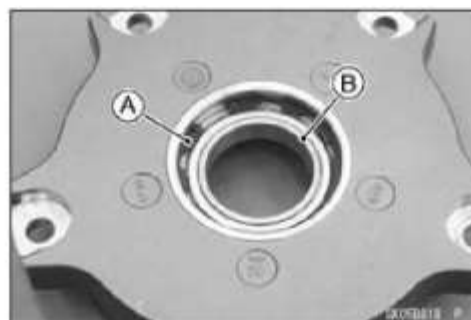
Sprocket, Coupling

Coupling Bearing Removal

- Remove:
 - Coupling (see [Coupling Removal\(11-13\)](#))
 - Rear Sprocket (see [Rear Sprocket Removal\(11-12\)](#))
 - Outer Coupling [A]
 - Coupling Dampers [B]
 - O-ring [C]
 - Inner Coupling [D]
 - Grease Seal [E]

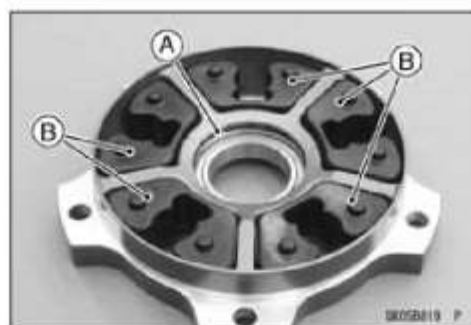
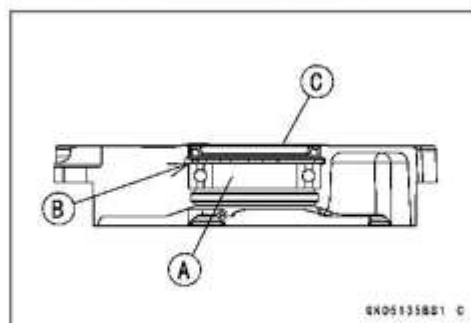


- Remove:
 - Snap Ring [A]
 - Ball Bearing [B]
- Special Tools - Inside Circlip Pliers: 57001-143**
Bearing Driver Set: 57001-1129



Coupling Bearing Installation

- Replace the O-ring, grease seal, snap ring and ball bearing with new ones.
- Press the ball bearing [A] until it is bottomed.
 - Special Tool - Bearing Driver Set: 57001-1129**
- Install the snap ring [B].
 - Special Tool - Inside Circlip Pliers: 57001-143**
- Press the grease seal [C] so that the seal surface is flush with the end of the hole.
 - Special Tool - Bearing Driver Set: 57001-1129**
- Apply grease to the grease seal lips.
- Apply grease to the O-ring [A] and install it.
- Install the coupling dampers [B] so that its projections facing upward.
- Install the outer coupling to the inner coupling.
- Install the removed parts.



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Sprocket, Coupling

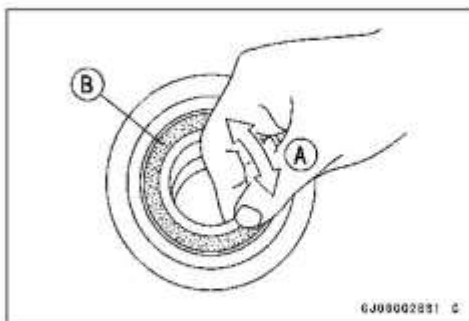
Coupling Bearing Inspection

Since the bearing is made to extremely close tolerances, the clearance can not normally be measured.

NOTE

○It is not necessary to remove the bearing for inspection.
If the bearing is removed, it will need to be replaced with a new one.

- Turn the bearing in the coupling back and forth [A] while checking for plays, roughness or binding.
- ★ If the bearing play, roughness or binding is found, replace the bearing.
- Examine the bearing seal [B] for tears or leakage.
- ★ If the seal is torn or is leaking, replace the bearing.



Coupling Bearing Lubrication

NOTE

○Since the coupling bearing is packed with grease and sealed, lubrication is not required.

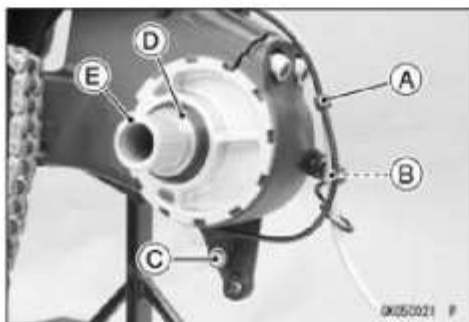
Coupling Damper Inspection

- Remove the outer coupling (see [Coupling Bearing Removal\(11-15\)](#)).
- Visually inspect the coupling dampers [A] for damage or deterioration.
- ★ If it appears damaged or deteriorated, replace the dampers.



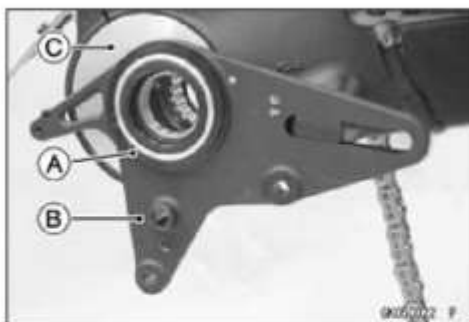
Bearing Housing Removal

- Remove:
 - Coupling (see [Coupling Removal\(11-13\)](#))
 - Rear Wheel (see [Rear Wheel Removal\(10-8\)](#))
 - Rear Brake Disc (see [Rear Brake Disc Removal\(12-22\)](#))
 - Clamp [A]
 - Bolt [B]
 - Rear Wheel Rotation Sensor Bolt [C] and Spacer Collar [D]
 - Outer Rear Axle [E]



- Remove:
 - Circlip [A]
 - Rear Caliper Holder [B]
 - Bearing Housing [C]

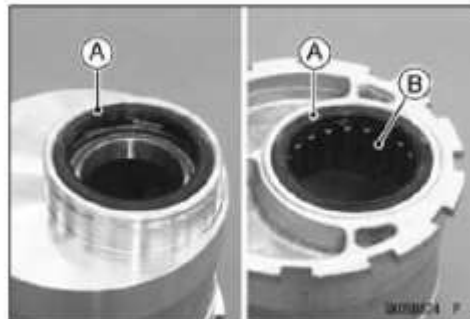
Special Tool - Outside Circlip Pliers: 57001-144



Sprocket, Coupling

Bearing Housing Installation

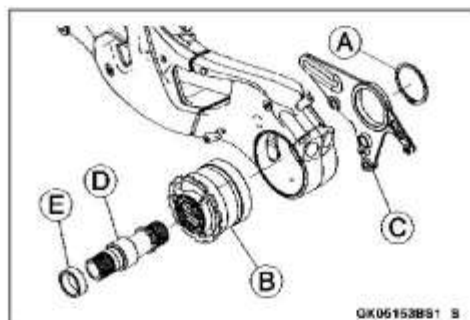
- Apply high-temperature grease to the lips of grease seals [A] and needle bearing [B].



- Replace the circlip [A] with a new one.
- Install:
 - Bearing Housing [B]
 - Rear Caliper Holder [C]
 - Circlip
 - Outer Rear Axle [D]
 - Collar [E]

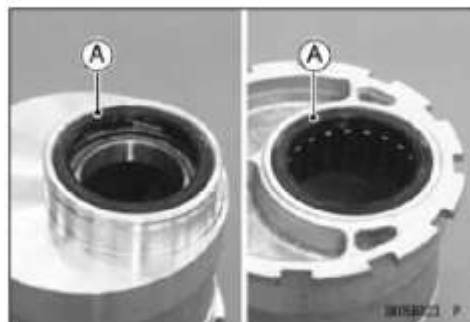
Special Tool - Outside Circlip Pliers: 57001-144

- Install the removed parts.

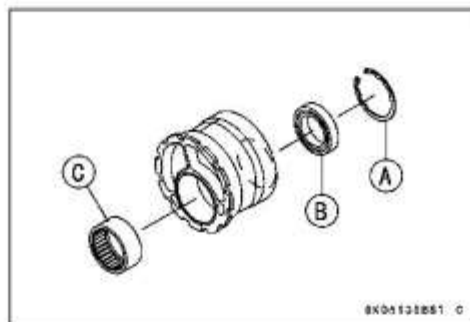


Bearing Housing Bearing Removal

- Remove:
 - Bearing Housing (see [Bearing Housing Removal\(11-16\)](#))
 - Grease Seals [A]



- Remove:
 - Circlip [A]
- **Special Tool - Inside Circlip Pliers: 57001-143**
- Remove the ball bearing [B] and needle bearing [C] using a suitable tool.



11-18 FINAL DRIVE

Sprocket, Coupling

Bearing Housing Bearing Installation

- Replace the needle bearing, ball bearing, circlip and grease seals with new ones.
- Press in the needle bearing [A].
6.0 ±0.4 mm (0.24 ±0.02 in.) [B]

Special Tool - Bearing Driver Set: 57001-1129

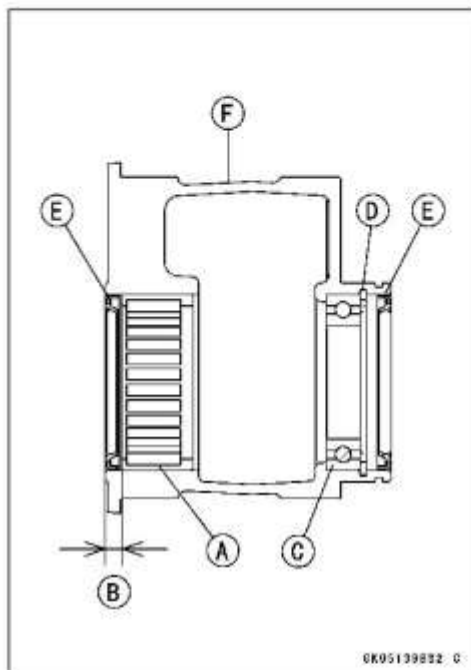
- Apply high-temperature grease to the needle bearing.
- Press in the ball bearing [C] until it is bottomed.

Special Tool - Bearing Driver Set: 57001-1129

- Install the circlip [D].

Special Tool - Inside Circlip Pliers: 57001-143

- Install the grease seals [E] so that their surfaces are flush with the bearing housing [F].
- Apply high-temperature grease to the grease seal lips.

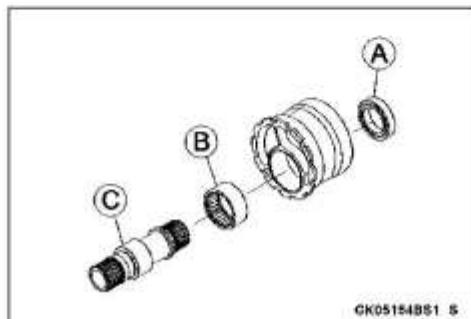


Bearing Housing Bearing Inspection

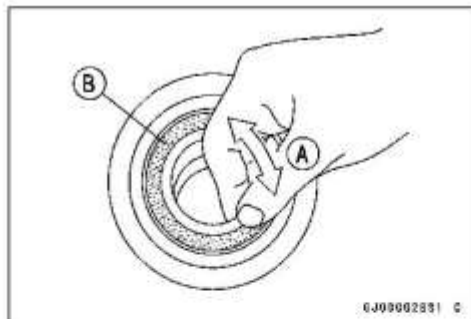
NOTE

○It is not necessary to remove the bearing for inspection.
If the bearing is removed, it will need to be replaced with a new one.

- Inspect the ball bearing [A] and needle bearing [B] installed in the bearing housing.
- The rollers and balls in a bearing normally wear very little, and wear is difficult to measure. Instead of measuring, visually inspect the bearing for abrasion, discoloration, or other damage.
- ★If the needle bearing and outer rear axle [C] show any signs of abnormal wear, discoloration, or damage, replace them as a set.



- Turn the ball bearing in the bearing housing back and forth [A] while checking for plays, roughness, or binding.
- ★If bearing play, roughness or binding is found, replace the bearing.
- Examine the bearing seal [B] for tears or leakage.
- ★If the seal is torn or is leaking, replace the bearing.



Sprocket, Coupling

Sprocket Wear Inspection

- Visually inspect the engine and rear sprocket teeth for wear and damage.
- ★ If the teeth are worn as illustrated, replace the sprocket, and inspect the drive chain wear (see [Drive Chain Wear Inspection\(2-45\)](#)).

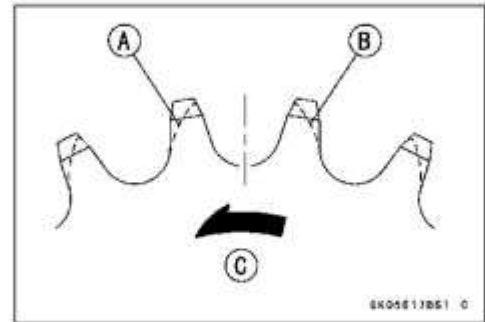
Worn Tooth (Engine Sprocket) [A]

Worn Tooth (Rear Sprocket) [B]

Direction of Rotation [C]

NOTE

○ If a sprocket requires replacement, the chain is probably worn also. When replacing a sprocket, inspect the chain.



Rear Sprocket Warp Inspection

- Raise the rear wheel off the ground with the stand so that it will turn freely.
- Set a dial gauge [A] against the rear sprocket [B] near the teeth as shown, and rotate [C] the rear wheel to measure the sprocket runout (warp). The difference between the highest and lowest dial gauge readings is the amount of runout (warp).

Rear Sprocket Warp

Standard: TIR 0.4 mm (0.016 in.) or less

Service Limit: TIR 0.5 mm (0.020 in.)

- ★ If the runout exceeds the service limit, replace the rear sprocket.

