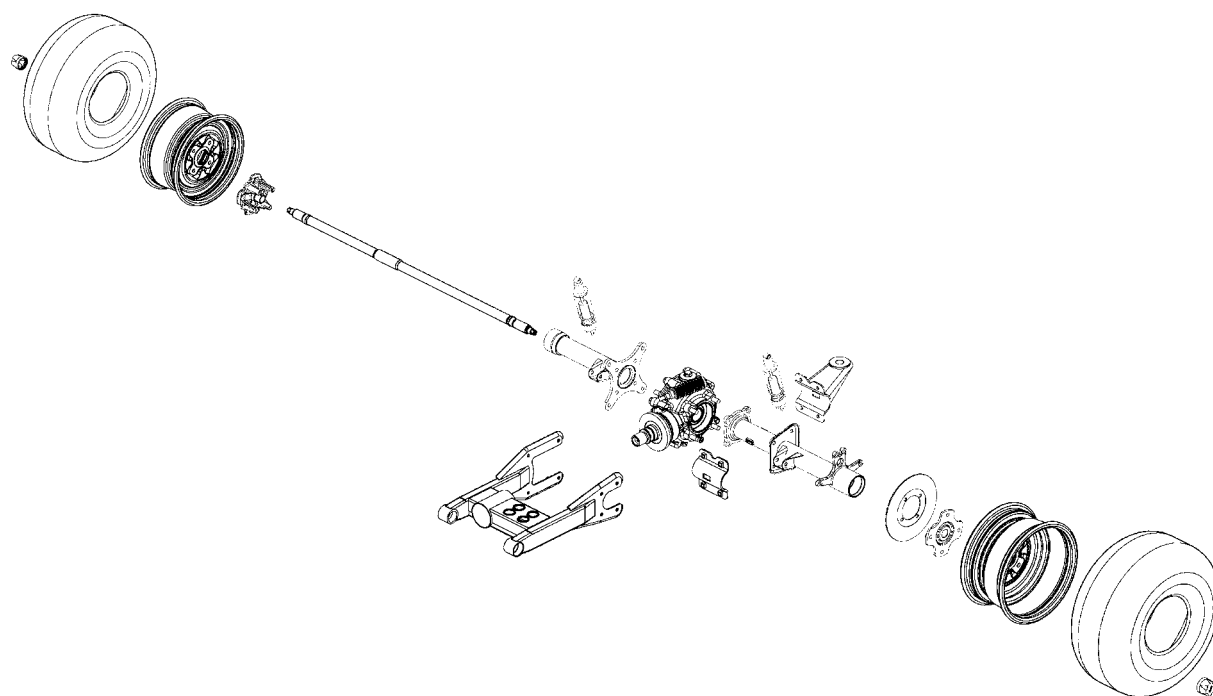


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15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

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15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM



SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Jack the machine front wheel off the ground and be careful to prevent the machine from falling down.
- During servicing, keep oil or grease off the brake disk
- Inspect the brake system before riding.

SPECIFICATIONS

Unit: mm (in)

Item			Standard	Service Limit
Rear wheel	Rim run out	Radial	—	2 (0.08)
		Axial	—	2 (0.08)

TORQUE VALUES

Rear wheel nut	6.5 kgf-m (65 N-m, 46 lbf-ft)
Rear shock absorber upper mount bolt	4 kgf-m (40 N-m, 29 lbf-ft)
Rear shock absorber lower mount bolt	4 kgf-m (40 N-m, 29 lbf-ft)
Rear wheel hub nut	10 kgf-m (100 N-m, 72 lbf-ft)
Right pivot bolt	11.8 kgf-m (118 N-m, 85 lbf-ft)
Left pivot bolt	1.1 kgf-m (11 N-m, 8 lbf-ft)
Left pivot lock nut	11.8 kgf-m (118 N-m, 85 lbf-ft)
Final gear case mounting bolt	5.5 kgf-m (55 N-m, 40 lbf-ft)
Axle housing mounting bolt	5.5 kgf-m (55 N-m, 40 lbf-ft)

SPECIAL TOOLS

Oil seal & bearing driver	A120E00014
Lock nut wrench	A120F00013

TROUBLESHOOTING

Rear wheel wobbling

- Bent rim
- Faulty tire
- Axle not tightened properly

Soft rear shock absorber

- Weak shock absorber spring
- Faulty damper

15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

REAR WHEEL REMOVAL/INSPECTION/ INSTALLATION

REMOVAL

Place the machine on a level place.
Remove four nuts from rear wheel.

Elevate the rear wheels by placing a suitable stand under the frame.

- *

Support the machine securely so there is no danger of it falling over.

Remove the rear wheel and wheel hub nut cap together.



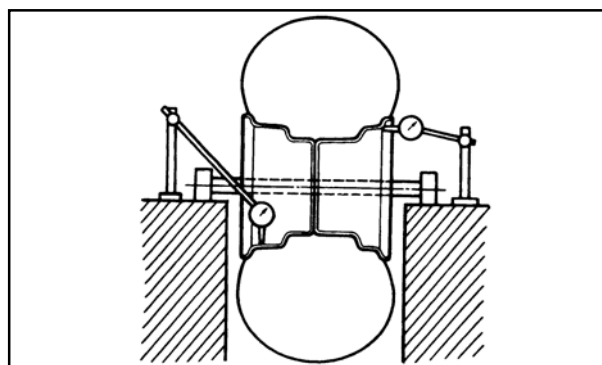
INSPECTION

Measure the wheel run out.
Replace wheel or check bearing play if out of specification

Rim run out limits:

Vertical: 2 mm (0.08 in)

Lateral: 2 mm (0.08 in)



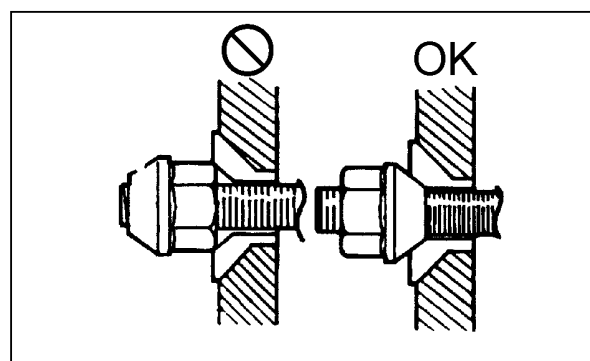
INSTALLATION

When reinstalling a wheel, tighten the wheel nuts in a crisscross (rather than a circular) pattern.

Torque: 6.5 kgf-m (65 N-m, 46 lbf-ft)

- *

Be sure the tapered side of the wheel nuts face the wheel rim.



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

REAR WHEEL HUB REMOVAL/INSPECTION/ INSTALLATION

REMOVAL

Place the machine on a level place.
Remove the rear wheel (refer to the “**REAR WHEEL REMOVAL/INSPECTION/INSTALLATION**” section in this chapter)
Elevate the rear wheels by placing a suitable stand under the frame.

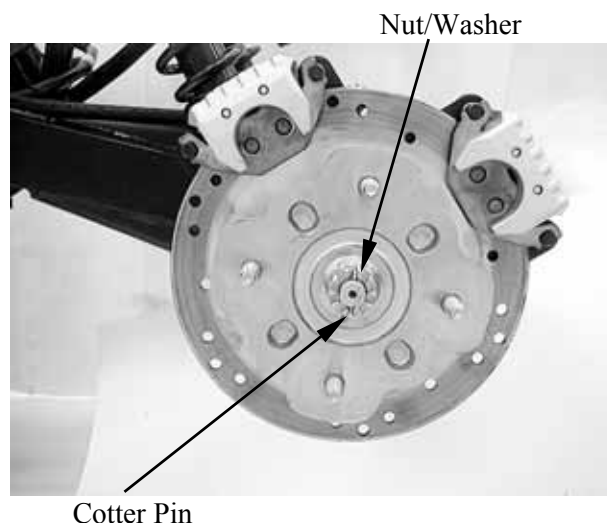
- * Support the machine securely so there is no danger of it falling over.

Remove the cotter pin.

Apply the rear brake and then remove nut and rear wheel hub.

INSPECTION

Check the wheel hub for cracks or deamage.
Check the wheel hub splines for wear or damage.



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

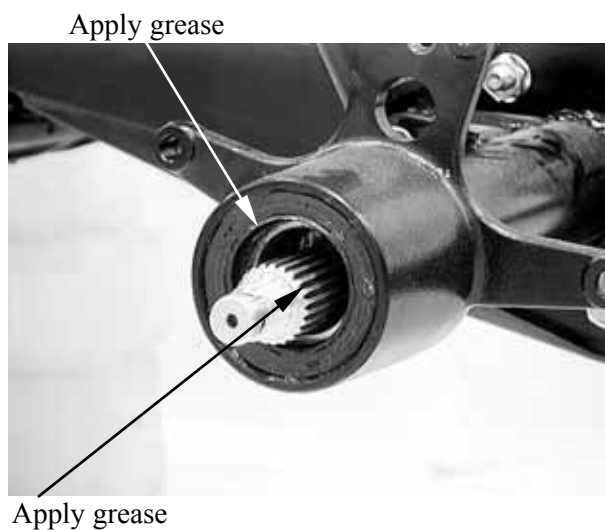
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INSTALLATION

Install the wheel hub and nut.

★

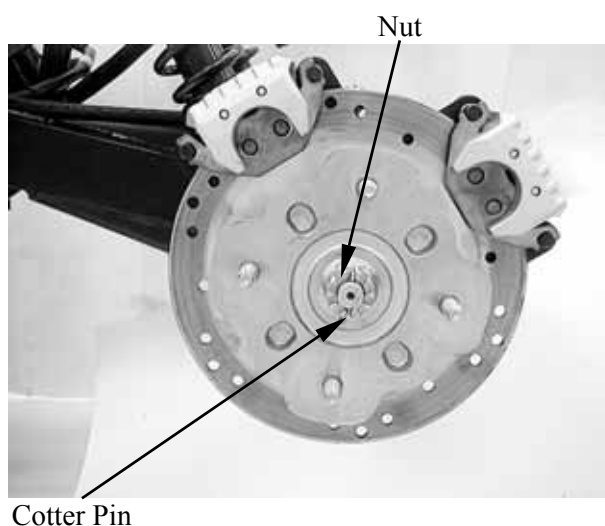
Apply lightweight lithium-soap base grease onto the wheel hub splines, rear axle splines and dust seal lips of the axle housing.



Apply the front brake and then tighten the nut to the specified torque.

Torque: 10 kgf-m (100 N-m, 72 lbf-ft)

Install the cotter pin and band ends of cotter pin.

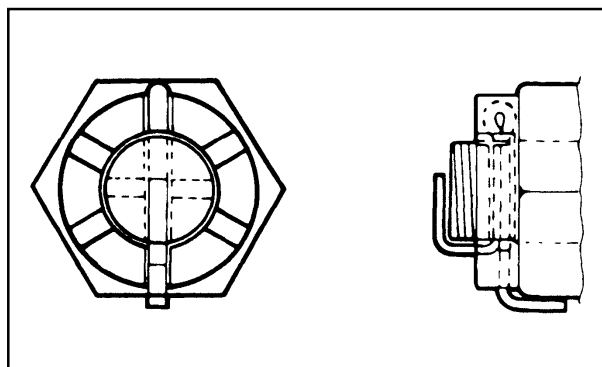


★

- Do not apply oil to the seat of the nut.
- Do not loosen the wheel hub nut after torque tightening. If the wheel hub nut groove is not aligned with the cotter pin hole, align groove with the hole by tightening up on the wheel hub nut.

★

Always use a new cotter pin.



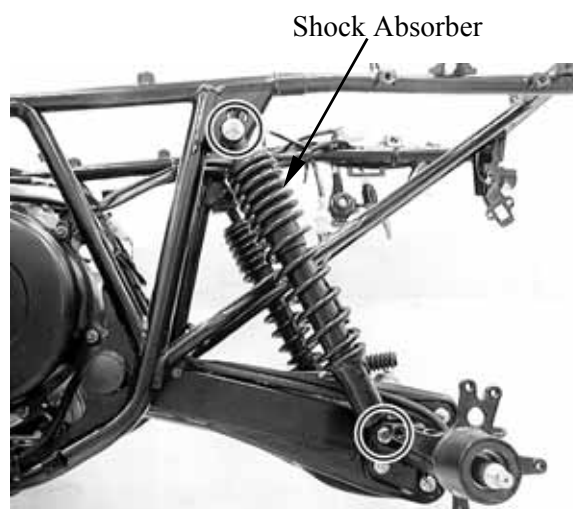
15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

REAR SHOCK ABSORBER REMOVAL/INSPECTION/ INSTALLATION

REMOVAL

Remove the rear shock absorber upper mount nut and washer.

Remove the lower mount bolt/nut, then remove the rear shock absorber.



INSPECTION

Inspect the shock absorber rod.

Bends/damage → Replace the shock absorber assembly.

Inspect the shock absorber.

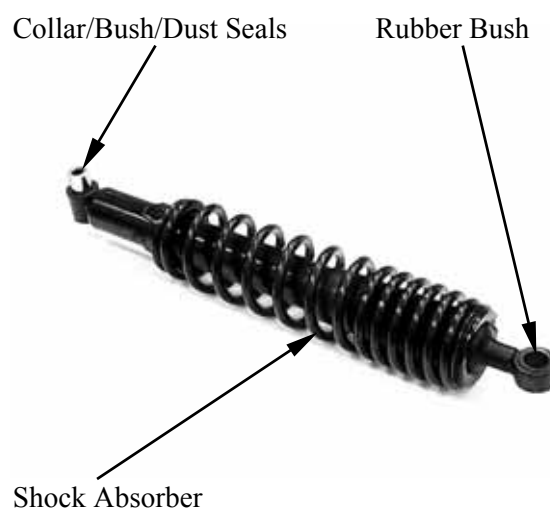
Oil leaks → Replace the shock absorber assembly.

Inspect the spring of the shock absorber by move the spring up and down.

Fatigue → Replace the shock absorber assembly.

Inspect bushes, collar and dust seals.

Wear/damage → Replace.



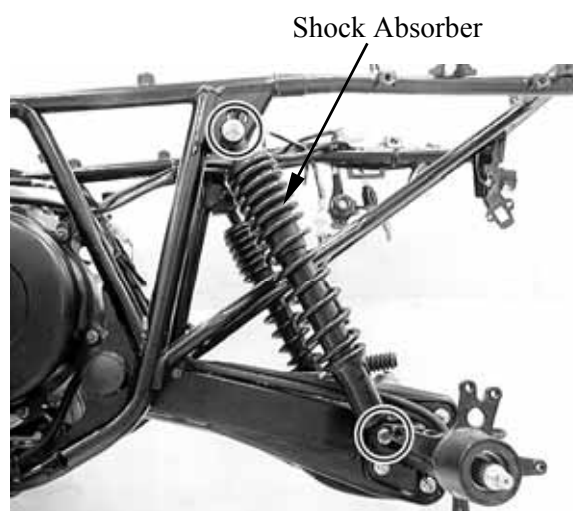
INSTALLATION

Apply the grease onto the bushes then install the shock absorber and tighten the lower mount bolt/nut to the specified torque.

Torque: 4 kgf-m (40 N-m, 29 lbf-ft)

Install and tighten the upper mounting nut to the specified torque.

Torque: 4 kgf-m (40 N-m, 29 lbf-ft)



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

REAR AXLE REMOVAL/INSPECTION/ INSTALLATION

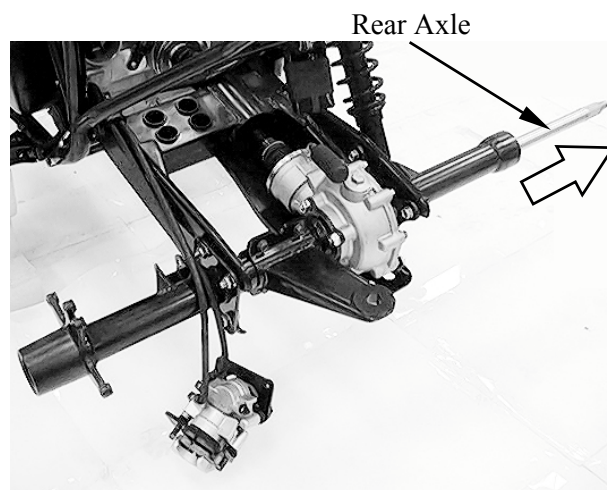
REMOVAL

Remove the rear wheel hubs (refer to the “**REAR WHEEL HUB REMOVAL/INSPECTION/INSTALLATION**” section in this chapter).

Remove the rear axle from axle housing right side.



Tap the axle and with a rubber hammer, this will avoid damage the axle thread.



INSPECTION

Check the axle splines for wear or damage.

Set the axle in V-blocks and measure the runout with a dial indicator.

Axle runout is 1/2 the total indicator reading.

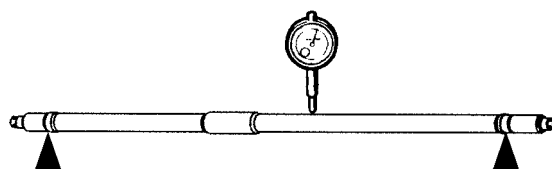
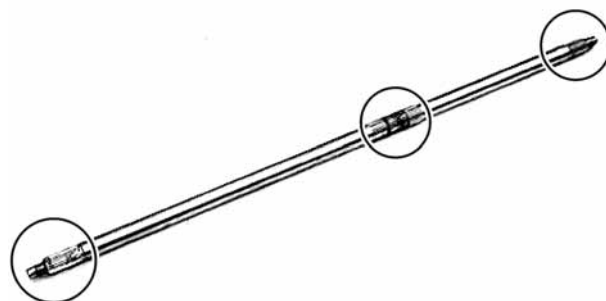
Service limit: 3 mm (0.12 in)

INSTALLATION

Apply lightweight lithium-soap base grease to the rear axle splines, then install the rear axle into the housing from right.



Do not attempt to straighten a bent axle.



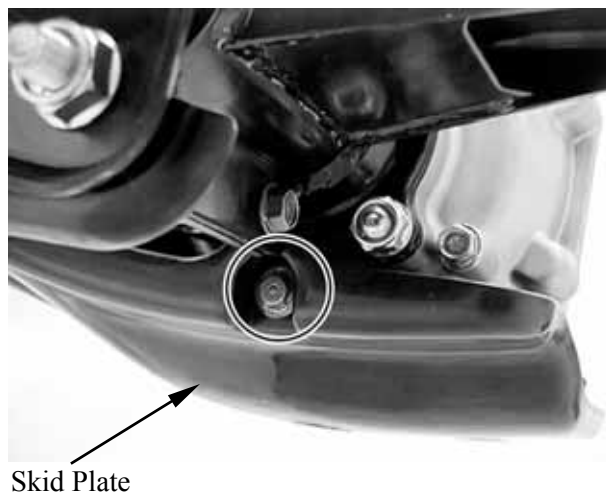
15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

REAR AXLE HOUSING REMOVAL/INSPECTION/ INSTALLATION

REMOVAL

Remove the rear axle (refer to the “**REAR AXLE REMOVAL/INSPECTION/INSTALLATION**” section in this chapter).

Remove the bolt from skid plate under the left axle housing.



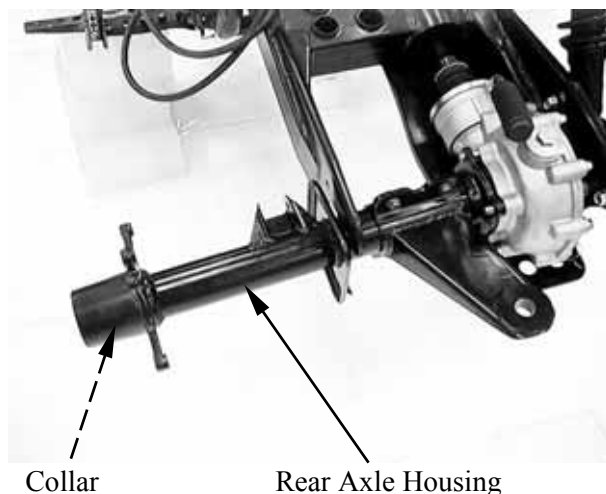
Remove the four nuts/bolts from the left housing (attaching the rear swing arm).

Remove the four nuts from the left housing (attaching the rear drive case).



Remove the left rear axle housing from the rear drive case.

* Do not lose the axle collar in the left rear axle housing.



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

Remove the rear drive case assembly (refer to the “**REAR DRIVE REMOVAL/INSPECTION/INSTALLATION**” section in the chapter 13).

Remove the four nuts/bolts from right housing.

Remove the shock absorber lower mounting bolt/nut, then remove the right rear axle housing.



Right Rear Axle Housing

INSPECTION

Inspect the rear axle housing for distortion or damages.

If any damages are found, replace the rear axle housing.

Inspect the dust seal lips for wear or damage.

If any damages are found, replace a new one.

Inspect the inner race play of the bearing by hand while it is in the rear axle housing.

Rotate the inner race by hand to inspect for abnormal noise and smooth rotation.

If there is anything unusual, replace the bearing with a new one.

Left Rear Axle Housing



Bearings/Dust Seal

Right Rear Axle Housing



Bearing/Dust Seal

15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

INSTALLATION

Install the right rear axle housing and four bolts onto the rear swing arm.

Install and tighten the four nuts to the specified torque in a crisscross pattern in 2 or 3 steps.

Torque: 5.5 kgf-m (55 N-m, 40 lbf-ft)

Install rear shock absorber and lower mounting bolt onto the right axle housing.
Install and tighten the lower mounting nut to the specified torque

Torque: 5.5 kgf-m (55 N-m, 40 lbf-ft)

Install the rear drive case assembly onto the right rear axle housing (refer to the “**REAR DRIVE CASE ASSEMBLY REMOVAL/INSPECTION/INSTALLATION**” section in the chapter 13).

Install the left rear axle housing onto the rear drive case assembly.

★ Do not lose the axle collar in the left rear axle housing.

Install and tighten the four nuts/bolts (attaching the rear swing arm) to the specified torque in a crisscross pattern in 2 or 3 steps.

Torque: 5.5 kgf-m (55 N-m, 40 lbf-ft)

Install and tighten the four nuts (attaching the rear drive assembly) to the specified torque in a crisscross pattern in 2 or 3 steps.

Torque: 5.5 kgf-m (55 N-m, 40 lbf-ft)

Install and tighten the bolt at the skid plate securely.



Right Rear Axle Housing



Skid Plate

15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

REAR AXLE HOUSING DISASSEMBLY/ASSEMBLY

DISASSEMBLY/ASSEMBLY

Remove the rear axle housing (refer to the “**REAR AXLE HOUSING REMOVAL/INSPECTION/INSTALLATION**” section in this chapter).

Left rear axle housing

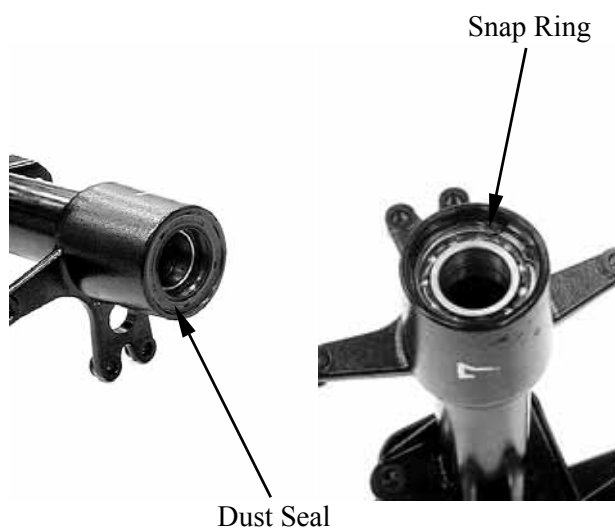
Remove the rear axle collar from axle housing.



Collar

Remove the dust seal from the axle housing.

Remove the snap ring from the axle housing.



Dust Seal

Remove the two bearings using the proper shaft.



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

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Apply lightweight lithium-soap base grease to the new bearings of the axle housing and lips of the new dust seal before install them.



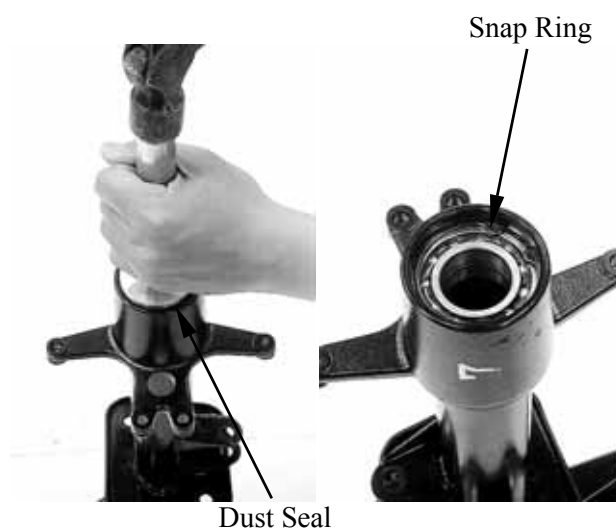
Install the new bearings by using the special tool.

Special tool:

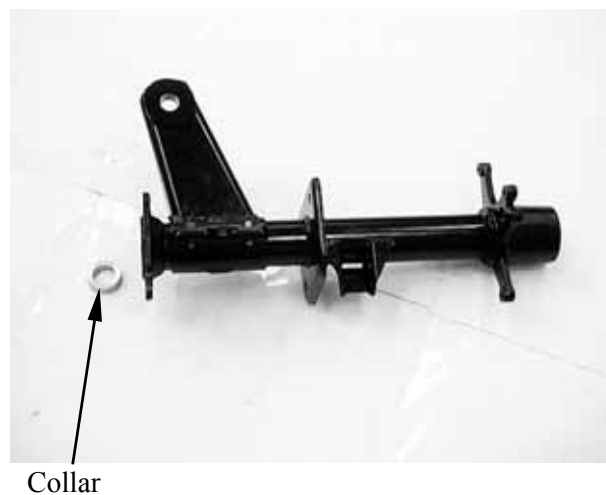
Oil seal & bearing driver A120E00014

Install the snap ring.

Install a new dust seal.



Install the rear axle collar into the axle housing.



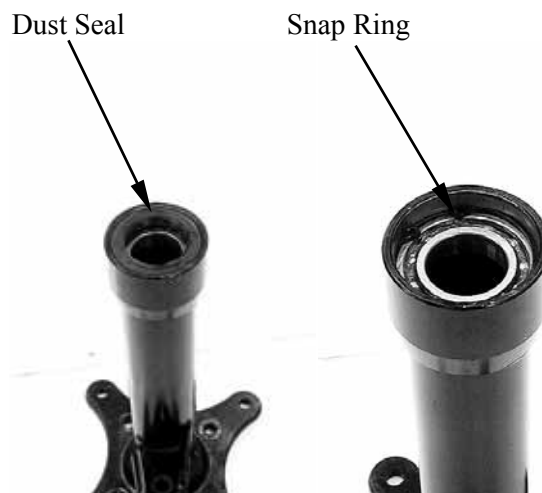
15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

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Right rear axle housing

Remove the dust seal from the axle housing.

Remove the snap ring from the axle housing.



Remove the bearing using the proper shaft.



Apply lightweight lithium-soap base grease to the new bearings of the axle housing and lips of the new dust seal before install them.



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

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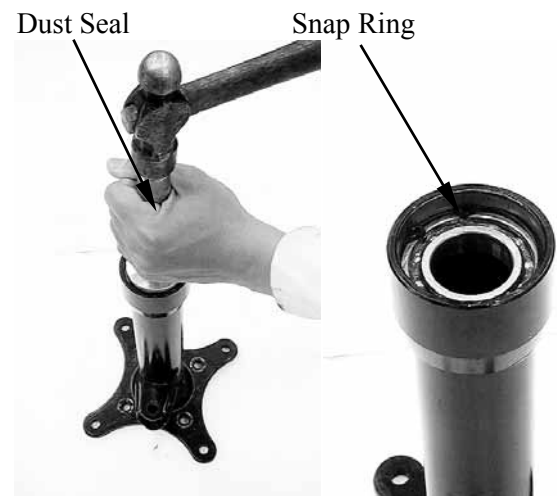
Install the new bearing by using the special tool.

Special tool:

Oil seal & bearing driver A120E00014

Install the snap ring.

Install a new dust seal.



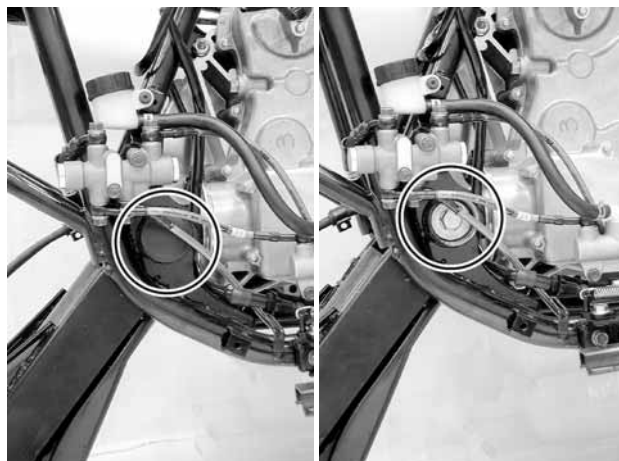
15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

REAR SWING ARM REMOVAL/INSTALLATION

REMOVAL

Remove the rear axle housing (refer to the “**REAR AXLE HOUSING REMOVAL/INSPECTION/INSTALLATION**” section in this chapter).

Remove the swing arm pivot bolt cap.
Remove the right pivot bolt.



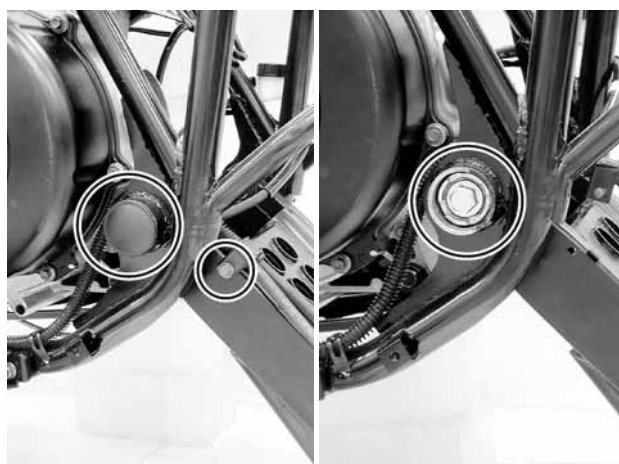
Remove the bolt and band, then remove the rear brake fluid hoses from swing arm.

Remove the swing arm pivot bolt cap.
Remove the left pivot lock nut using the special tool.

Special tool:

Lock nut wrench A120F000013

Remove the left pivot adjusting bolt.



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

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INSTALLATION

Install the right pivot bolt and the left pivot adjusting bolt.

Tighten the right pivot bolt to the specified torque.

Actual: 11.8 kgf-m (118 N-m, 85 lbf-ft)

Tighten the left pivot adjusting bolt to the specified torque.

Torque: 1.1 kgf-m (11 N-m, 8 lbf-ft)

Move the swing arm up and down several times to seat the pivot bearings.
Retighten the pivot bolts to the same torque.

Install the left pivot lock nut.
Tighten the lock nut while holding the left pivot adjusting bolt to the specified torque.

Special tool:

Lock nut wrench A120F00013

Torque:

Actual: 11.8 kgf-m (118 N-m, 85 lbf-ft)

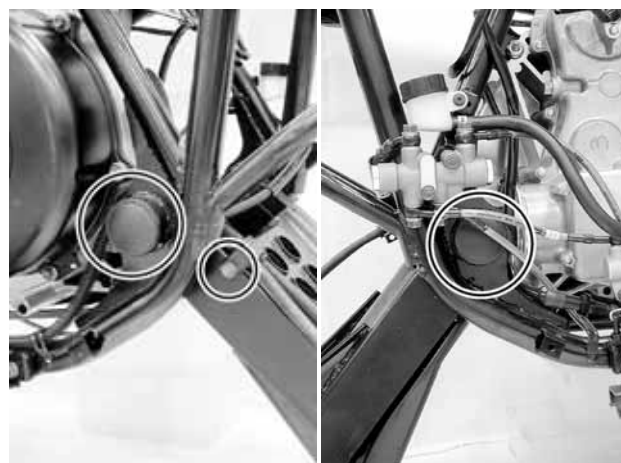
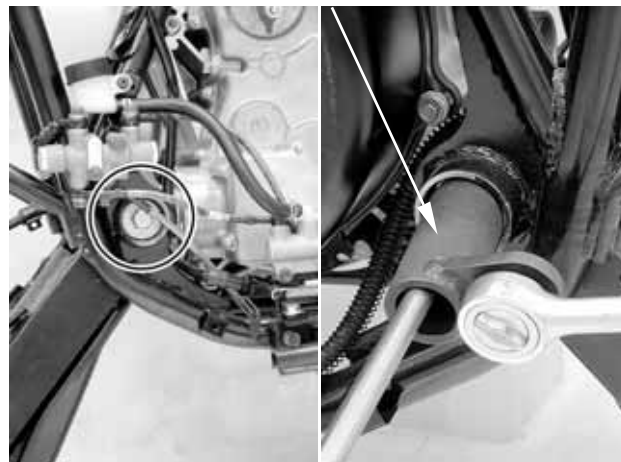
Special tool indicated:

10.5 kgf-m (105 N-m, 76 lbf-ft)

Install the brake fluid hose band and tighten the bolt securely.

Install the pivot bolt caps.

Lock Nut Wrench



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

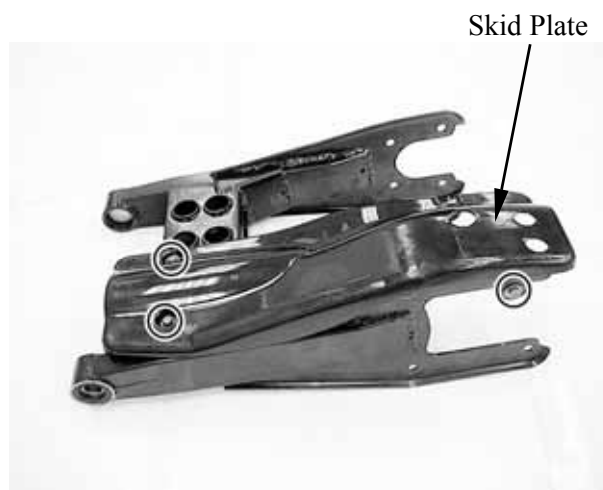
REAR SWING ARM DISASSEMBLY/INSPECTION/ ASSEMBLY

DISASSEMBLY/INSPECTION

Remove the three bolts and then remove the skid plate from swing arm.

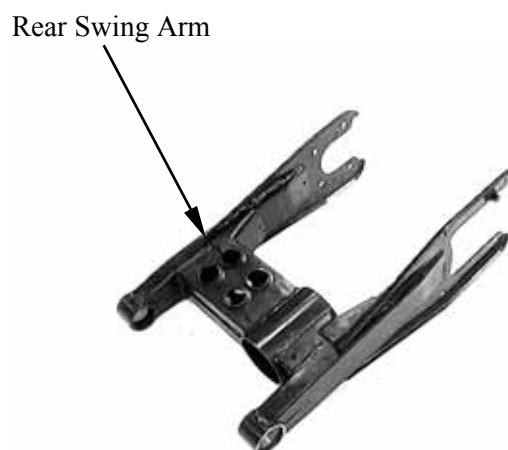
Inspect the skid plate for damage.

If any damages are found, replace the skid plate with a new one.



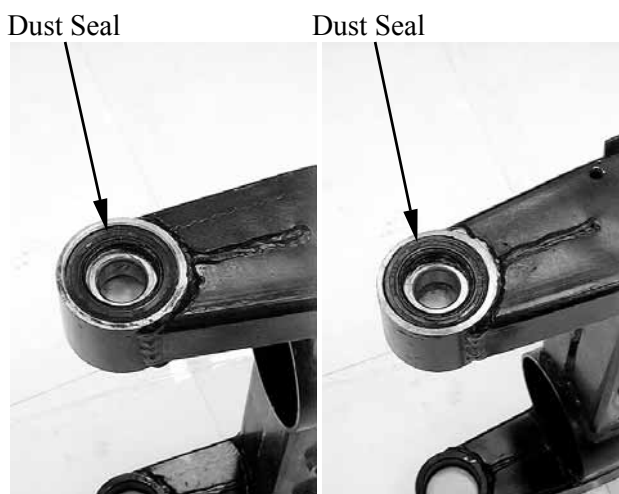
Inspect the swing arm for distortion or damage.

If any damage are found, replace the swing arm with a new one.



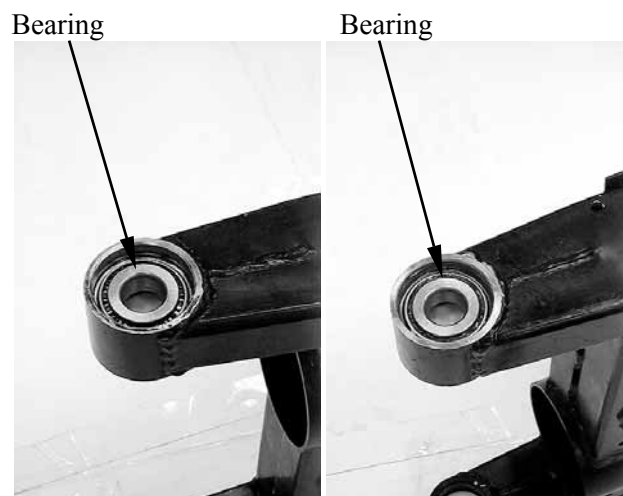
Inspect the dust seals for wear or damage.
If any damages are found, replace them with new ones.

Remove the dust seals.

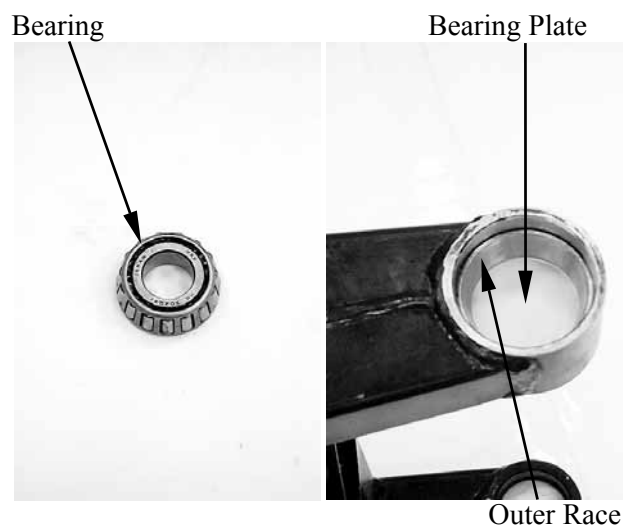


15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

Remove the bearings.

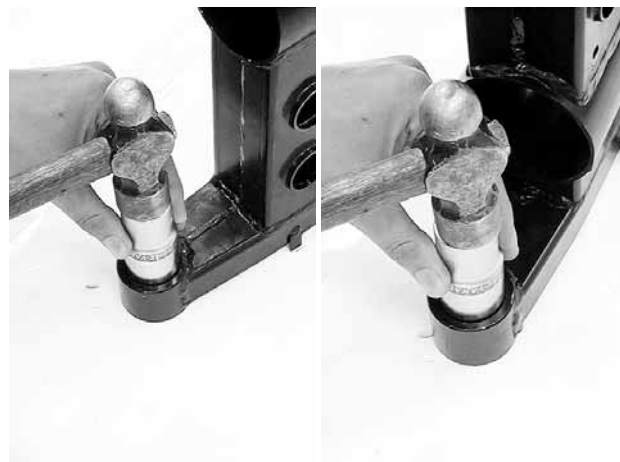


Inspect the swing arm bearings, outer races and bearing plates, if any damages are found, replace the them with new ones.



Remove the swing arm bearings outer races and bearing plates by using a proper pipe.

The removed dust seal, bearing, outer race and bearing plate must be replaced with new ones.



15. REAR WHEEL/AXLE/SHOCK ABSORBER/SWING ARM

ASSEMBLY

Install the new swing arm bearing outer race and its new plate to the swing arm by using the special tool.

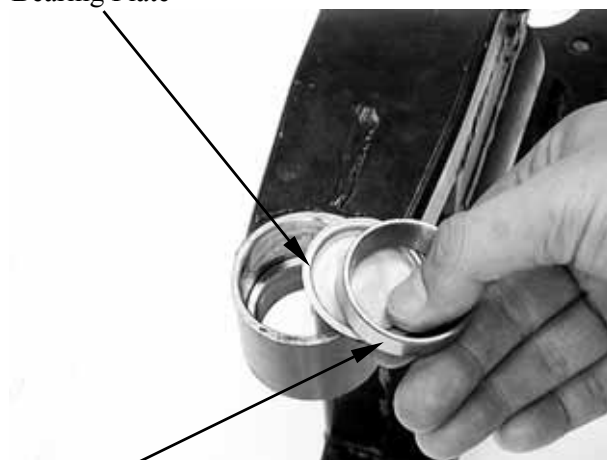
Special tool:

Oil seal & bearing driver A120E00014

★

When installing the bearing plate, make sure that the bulge of bearing plate faces inside.

Bearing Plate



Bearing Outer Race



Apply lightweight lithium-soap base grease to the swing arm bearings and lips of dust seals, then install them into the swing arm.

Dust Seal



Dust Seal

