

14. REAR WHEEL/SUSPENSION

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SERVICE INFORMATION

GENERAL

- A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.
- After the rear wheel installation, check brake operation by applying the brake pedal.
- The shock absorber contains nitrogen under high pressure. Do not allow fire or heat near the shock absorber.
- Before disposal of the shock absorber, release the nitrogen (page 14-13).
- When servicing the rear wheel and suspension, support the motorcycle using a safety stand or hoist.
- Use only tires marked "TUBELESS" and tubeless valves on rims marked "TUBELESS TIRE APPLICABLE".
- Use genuine Honda replacement bolts and nuts for all suspension pivot and mounting point.
- When using the lock nut wrench for the adjusting bolt lock nut, use a 20 inches long deflecting beam type torque wrench. The lock nut wrench increases the torque wrench's leverage, so the torque wrench reading will be less than the torque actually applied to the lock nut. The specification later in the text gives both actual and indicated.
- When installing the swingarm, be sure to tighten the swingarm pivot fasteners to the specified torque in the specified sequence. If you make a mistake during the tightening torque or sequence, loosen all pivot fasteners, then tighten them again to the specified torque in the correct sequence.
- Refer to section 15 for brake system information.

SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Minimum tire tread depth			—	2.0 (0.08)
Cold tire pressure	Up to 90 kg (200 lb) load		290 kPa (2.90 kgf/cm ² , 42 psi)	—
	Up to maximum weight capacity		290 kPa (2.90 kgf/cm ² , 42 psi)	—
Axle runout			—	0.2 (0.01)
Wheel rim runout	Radial		—	2.0 (0.08)
	Axial		—	2.0 (0.08)
Wheel balance weight			—	60 g (2.1 oz) max.
Drive chain	Size/link	DID	DID525HV-108LE	—
		RK	RKGB525ROZ1-108LE	—
	Slack		25 - 35 (1 - 1-3/8)	—
Shock absorber	Spring adjuster standard position		Position 3	—
	Rebound adjuster initial setting		1-1/2 turns out from full hard	—
	Compression adjuster initial setting		1-1/2 turns out from full hard	—

REAR WHEEL/SUSPENSION

TORQUE VALUES

Rear brake disc bolt	42 N•m (4.3 kgf•m, 31 lbf•ft)	ALOC bolt: replace with a new one.
Final driven sprocket nut	64 N•m (6.5 kgf•m, 47 lbf•ft)	U-nut.
Rear axle nut	93 N•m (9.5 kgf•m, 69 lbf•ft)	U-nut.
Rear shock absorber mounting nut	44 N•m (4.5 kgf•m, 33 lbf•ft)	U-nut.
Shock link plate-to-swingarm nut	44 N•m (4.5 kgf•m, 33 lbf•ft)	U-nut.
Shock link-to-shock link plate nut	44 N•m (4.5 kgf•m, 33 lbf•ft)	U-nut.
Shock link-to-bracket nut	44 N•m (4.5 kgf•m, 33 lbf•ft)	U-nut.
Drive chain slider flange bolt	9 N•m (0.9 kgf•m, 6.5 lbf•ft)	ALOC bolt: replace with a new one.
Swingarm pivot adjusting bolt	7 N•m (0.7 kgf•m, 5.1 lbf•ft)	See page 14-22.
Swingarm pivot adjusting bolt lock nut	64 N•m (6.5 kgf•m, 47 lbf•ft)	
Swingarm pivot nut	93 N•m (9.5 kgf•m, 69 lbf•ft)	U-nut.

TOOLS

Bearing remover shaft	07746-0050100
Bearing remover head, 20 mm	07746-0050600
Driver	07749-0010000
Driver head	07946-MJ00200
Attachment, 32 x 35 mm	07746-0010100
Attachment, 37 x 40 mm	07746-0010200
Attachment, 42 x 47 mm	07746-0010300
Attachment, 52 x 55 mm	07746-0010400
Attachment, 24 x 26 mm	07746-0010700
Attachment, 22 x 24 mm	07746-0010800
Pilot, 17 mm	07746-0040400
Pilot, 20 mm	07746-0040500
Pilot, 25 mm	07746-0040600
Pilot, 28 mm	07746-0041100
Attachment, 28 x 30 mm	07946-1870100
Lock nut wrench	07908-4690003
Bearing remover handle	07936-3710100
Bearing remover head	07936-3710600
Remover weight	07741-0010201
Driver	07949-3710001 or 07946-MJ00100
Attachment, 34 mm	07ZMD-MBW0100
Attachment, 37 mm	07ZMD-MBW0200
Bearing remover set	07LMC-KV30100

TROUBLESHOOTING

Soft suspension

- Weak shock absorber spring
- Incorrect suspension adjustment
- Oil leakage from damper unit
- Insufficient tire pressure

Hard suspension

- Incorrect suspension adjustment
- Damaged rear suspension pivot bearings
- Bent damper rod
- Incorrect swingarm pivot fasteners tightening
- Tire pressure too high

Rear wheel wobbles

- Bent rim
- Worn or damaged rear wheel bearings
- Faulty rear tire
- Unbalanced rear tire and wheel
- Insufficient rear tire pressure
- Faulty swingarm pivot bearings

Rear wheel turns hard

- Faulty rear wheel bearings
- Bent rear axle
- Rear brake drag
- Drive chain too tight

Rear suspension noise

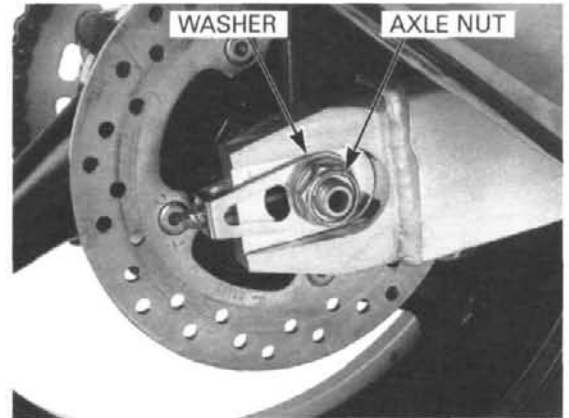
- Faulty rear shock absorber
- Loose rear suspension fasteners
- Worn rear suspension pivot bearings

REAR WHEEL

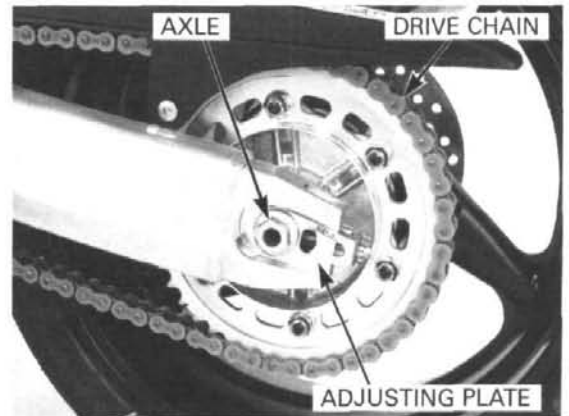
REMOVAL

Support the motorcycle using a safety stand or a hoist, so the rear wheel is off the ground.

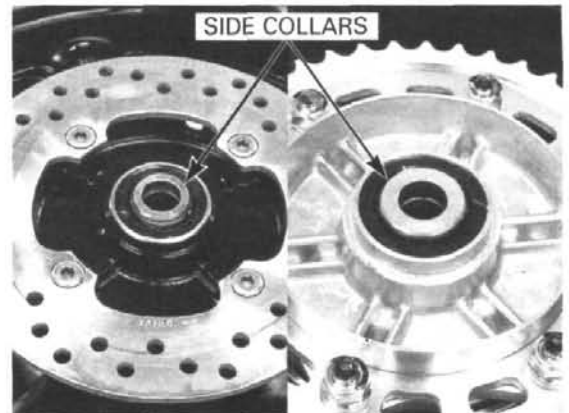
Remove the axle nut and washer.



Remove the rear axle.
Remove the drive chain from the driven sprocket, then remove the rear wheel.



Remove the side collars.

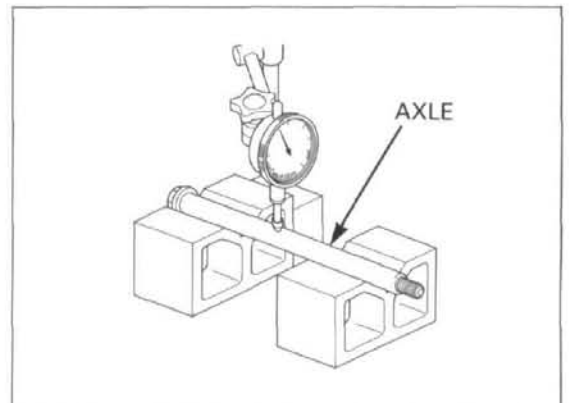


INSPECTION

Axle

Place the axle in V-blocks and measure the runout. Actual runout is 1/2 the total indicator reading.

SERVICE LIMIT: 0.2 mm (0.01 in)



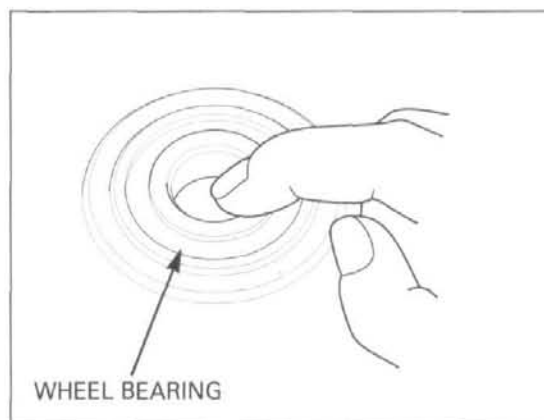
REAR WHEEL/SUSPENSION

Wheel bearing

Turn the inner race of each bearing with your finger. Bearings should turn smoothly and quietly. Also check that the bearing outer race fits tightly in the hub.

Replace the wheel bearings in pairs.

Remove and discard the bearings if the races do not turn smoothly and quietly, or if they fit loosely in the hub.



Wheel rim runout

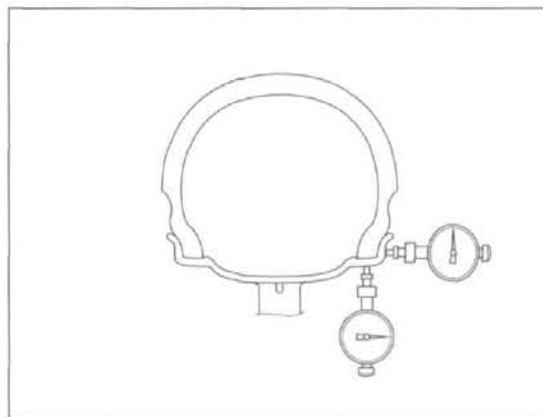
Check the rim runout by placing the wheel in a truing stand.

Spin the wheel slowly and read the runout using a dial indicator.

Actual runout is 1/2 the total indicator reading.

SERVICE LIMITS: Radial: 2.0 mm (0.08 in)

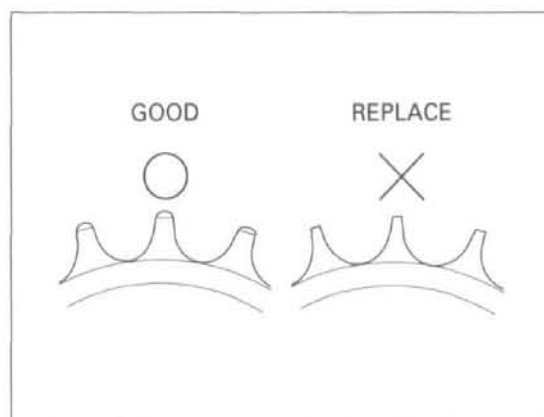
Axial: 2.0 mm (0.08 in)



Driven sprocket

Check the condition of the final driven sprocket teeth. Replace the sprocket if worn or damaged.

- If the final driven sprocket requires replacement, inspect the drive chain and drive sprocket.
- Never install a new drive chain on a worn sprocket or a worn chain on new sprockets. Both chain and sprocket must be in good condition or the replacement chain or sprocket will wear rapidly.

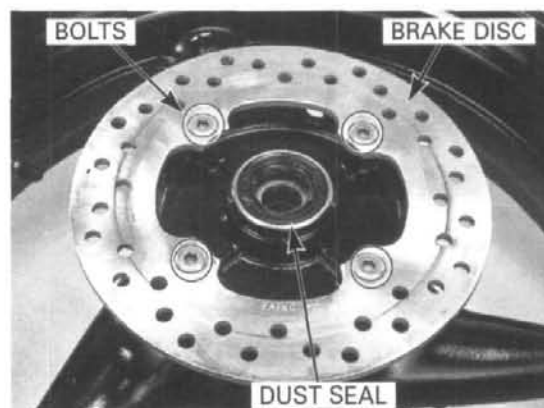


Wheel balance

See page 13-11 for wheel balance.

DISASSEMBLY

Remove the bolts and brake disc.
Remove the right dust seal.



If you disassemble the driven flange, loosen the driven sprocket nuts before removing the driven flange from the wheel hub.

Remove the driven flange assembly from the left wheel hub.



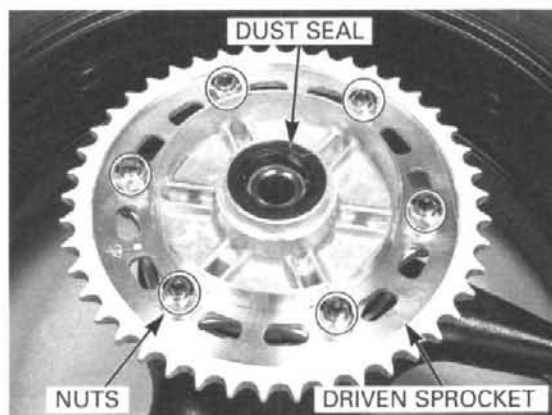
Remove the wheel rubber dampers.
Remove the O-ring.



Driven flange bearing removal
Loosen the driven sprocket nuts.

Remove the driven flange from the wheel hub, then remove the driven sprocket nuts and sprocket.

Remove the dust seal.



Drive the driven flange collar out from the driven flange bearing.

TOOLS:

Driver

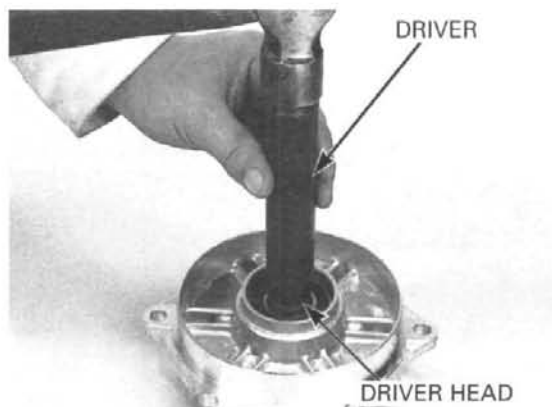
Attachment, 24 x 26 mm

Pilot, 20 mm

07749-0010000

07746-0010700

07746-0040500



REAR WHEEL/SUSPENSION

Drive the driven flange bearing out using the special tools.

TOOLS:

Driver

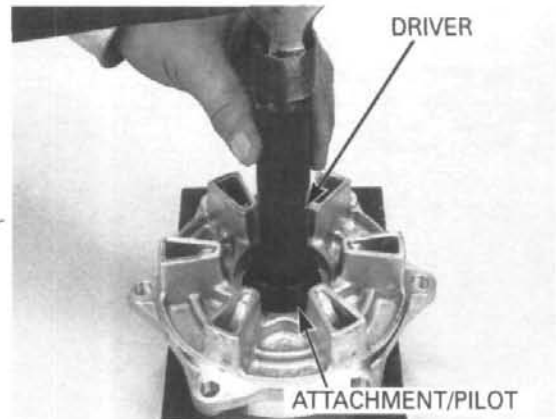
07749-0010000

Attachment, 37 x 40 mm

07746-0010200

Pilot, 25 mm

07746-0040600



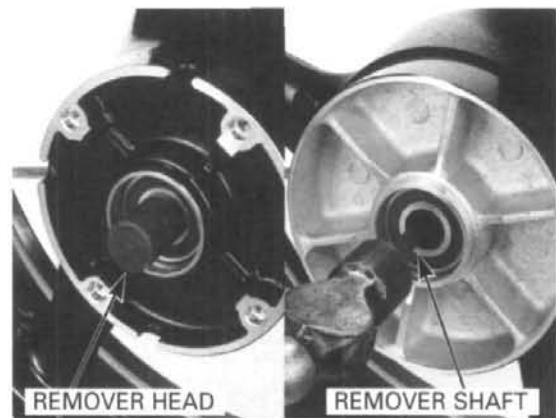
Wheel bearing removal

Install the bearing remover head into the bearing. From the opposite side install the bearing remover shaft and drive the bearing out of the wheel hub. Remove the distance collar and drive out the other bearing.

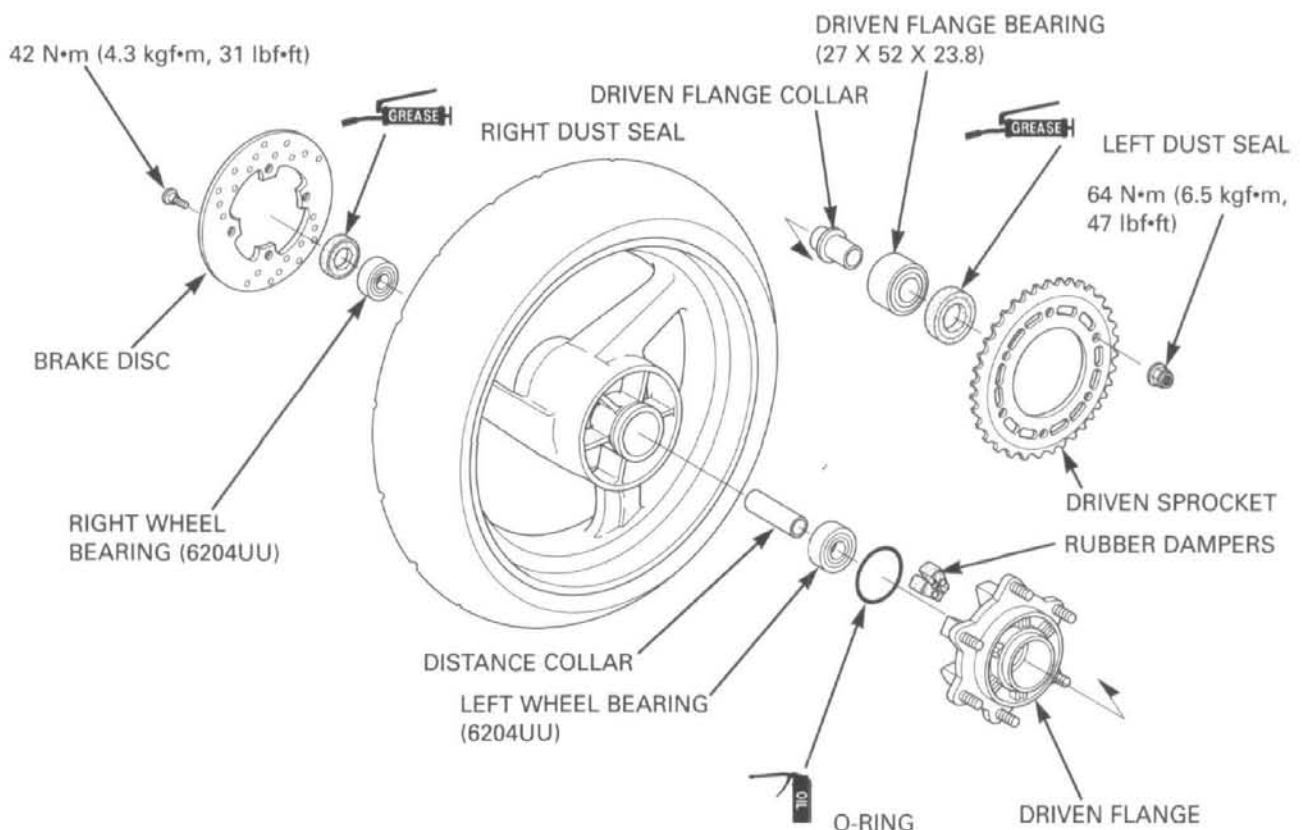
TOOLS:

Bearing remover head, 20 mm 07746-0050600

Bearing remover shaft 07746-0050100



ASSEMBLY



Never install the old bearings. Once the bearings have been removed, the bearing must be replaced with new ones.

Wheel bearing installation

Drive in a new right bearing squarely.

TOOLS:

Driver	07749-0010000
Attachment, 42 x 47 mm	07746-0010300
Pilot, 20 mm	07746-0040500

Install the distance collar

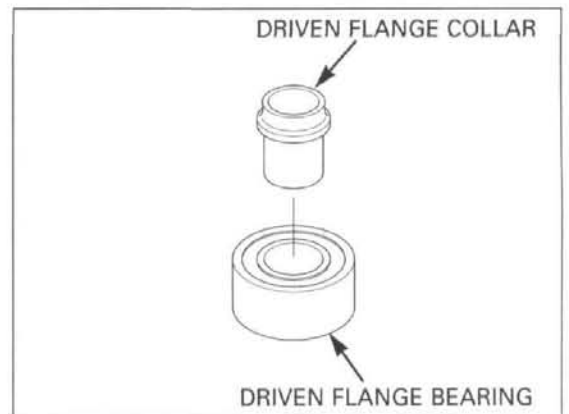
Drive in the left side bearing using the same tools.



Press the driven flange collar in the new driven flange bearing until it is fully seated.

TOOLS:

Driver	07749-0010000
Attachment, 28 x 30 mm	07746-1870100
Pilot, 20 mm	07746-0040500

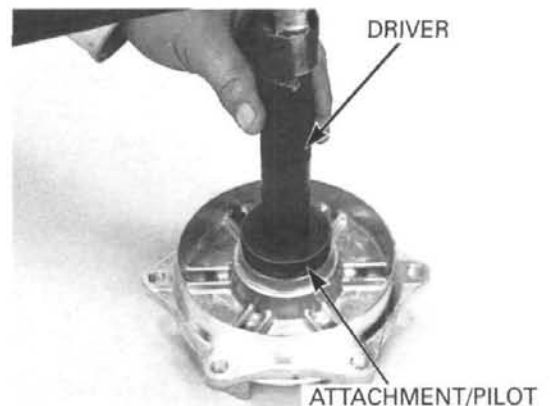


Driven flange bearing installation

Drive the new driven flange bearing into the driven flange using the special tools.

TOOLS:

Driver	07749-0010000
Attachment, 52 x 55 mm	07746-0010400
Pilot, 20 mm	07746-0040500



Install the wheel rubber dampers into the wheel hub. Apply oil to the new O-ring and install it into the groove of the wheel hub.



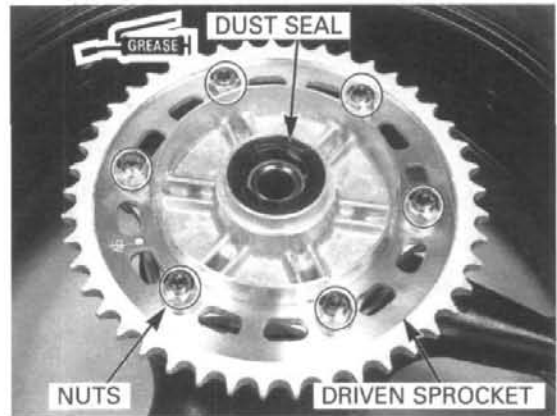
REAR WHEEL/SUSPENSION

Install the driven flange assembly into the left wheel hub.

If the driven sprocket was removed, install the driven sprocket and tighten the nuts.

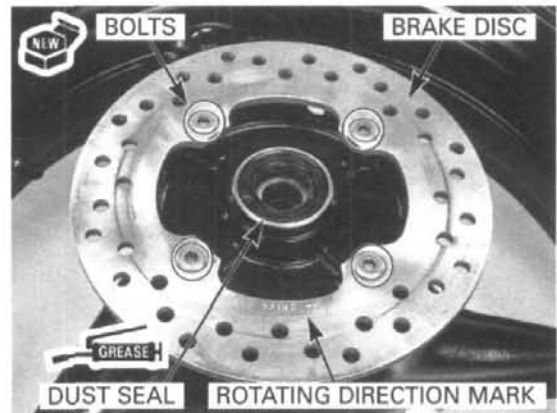
TORQUE: 64 N·m (6.5 kgf·m, 47 lbf·ft)

Apply grease to the dust seal lips, then install it into the driven flange.



Install the brake disc with the mark facing out. Install and tighten the new bolts to the specified torque.

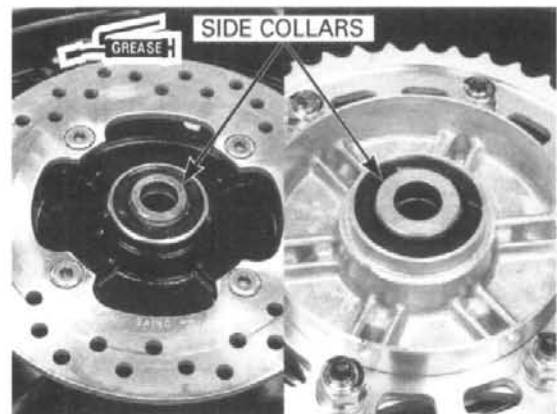
TORQUE: 42 N·m (4.3 kgf·m, 31 lbf·ft)



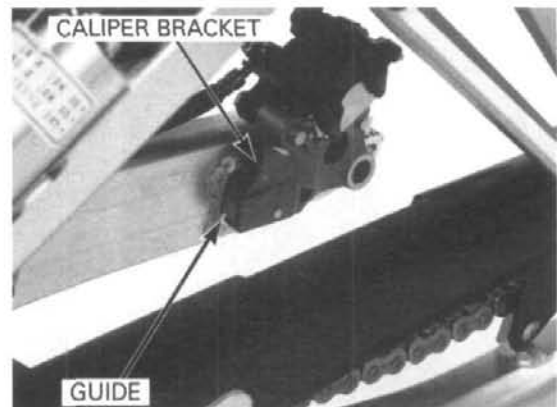
INSTALLATION

Apply grease to the side collar inside and grooves.

Install the side collars.

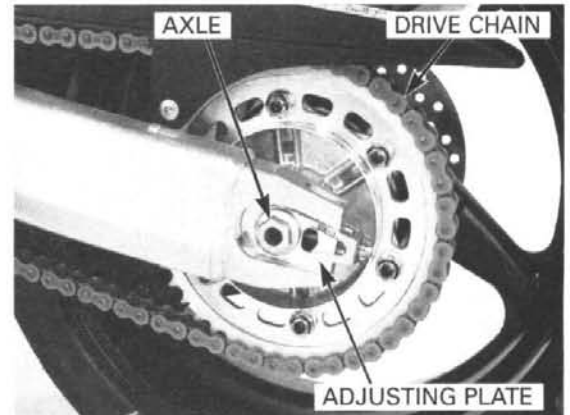


Install the rear brake caliper bracket onto the guide of the swingarm.



Be careful not to damage the brake pads.

Place the rear wheel into the swingarm.
Install the drive chain over the driven sprocket.
Install the rear axle from the left side.

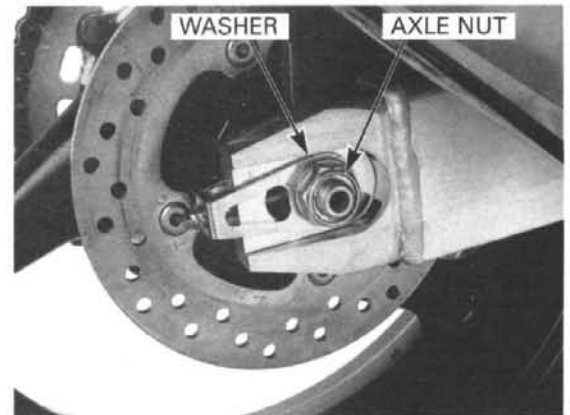


Install the washer and axle nut.

Adjust the drive chain slack (page 3-19).

Tighten the axle nut to the specified torque.

TORQUE: 93 N·m (9.5 kgf·m, 69 lbf·ft)



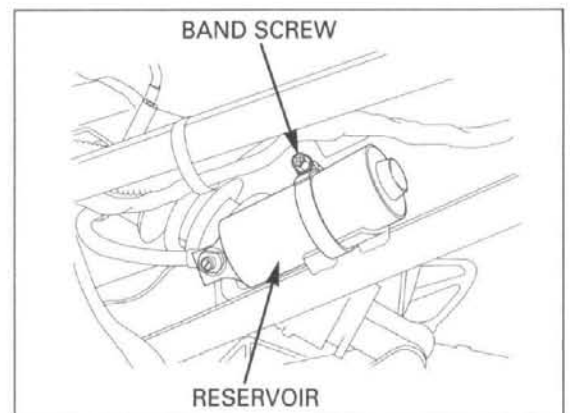
SHOCK ABSORBER

REMOVAL

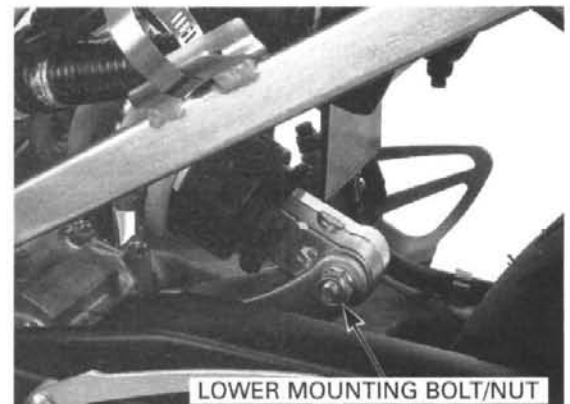
Remove the rear cowl (page 2-3).

Support the motorcycle using a hoist or an equivalent.

Loosen the shock absorber reservoir band screw and remove the reservoir from the seat rail.

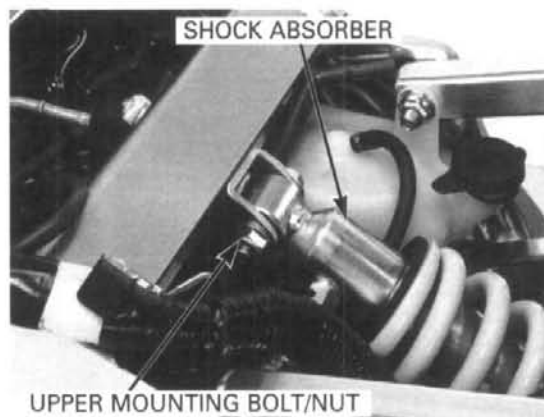


Remove the shock absorber lower mounting bolt/nut.



REAR WHEEL/SUSPENSION

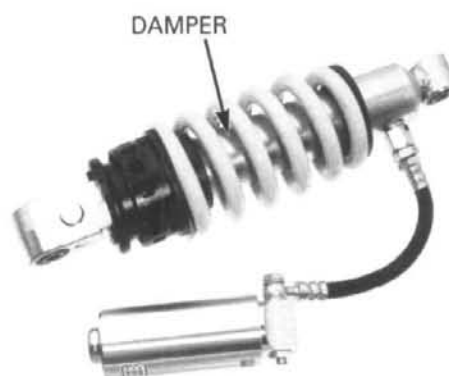
Remove the shock absorber upper mounting bolt/nut and the shock absorber.



INSPECTION

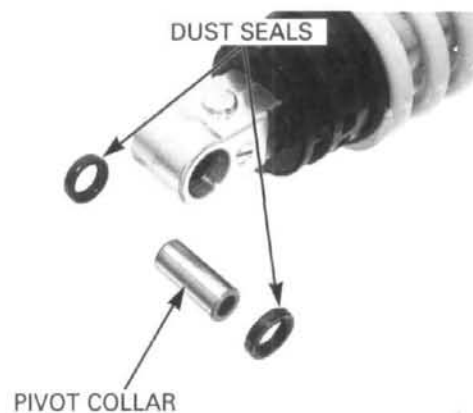
Check the damper unit, reservoir hose and reservoir for leakage or other damage.
Check the upper joint bushing for wear or damage.
Replace the shock absorber assembly if necessary.

Remove the lower joint pivot collar.
Check the needle bearing, pivot collar and dust seals for wear or damage.



NEEDLE BEARING REPLACEMENT

Remove the pivot collar and dust seals.



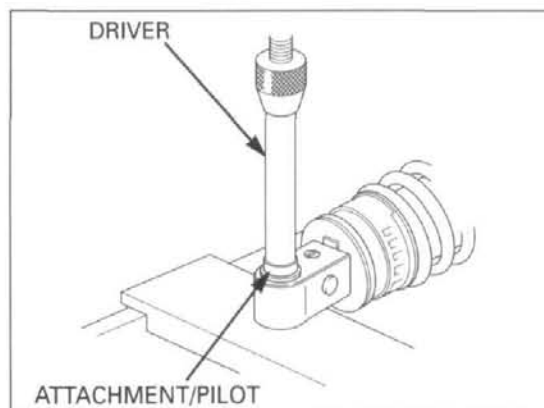
Press the needle bearing out of the shock absorber lower mount using the special tools.

TOOLS:

Driver

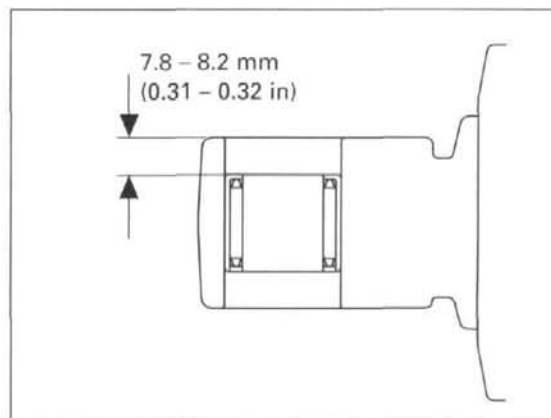
Attachment, 22 x 24 mm
Pilot, 17 mm

04949-3710001 or
07946-MJ00100
07746-0010800
07746-0040400



Press the needle bearing into the lower mount with the marked side facing out.

Press a new needle bearing into the lower mount so the needle bearing surface is 7.8 – 8.2 mm (0.31 – 0.32 in) lower from the end of the lower mount using the same tools.



Apply grease to the new dust seal lips and install them into the lower mount. Install the pivot collar.



SHOCK ABSORBER DISPOSAL PROCEDURE

Center punch the reservoir tank end to mark the drilling point.

Wrap the damper unit inside a plastic bag.

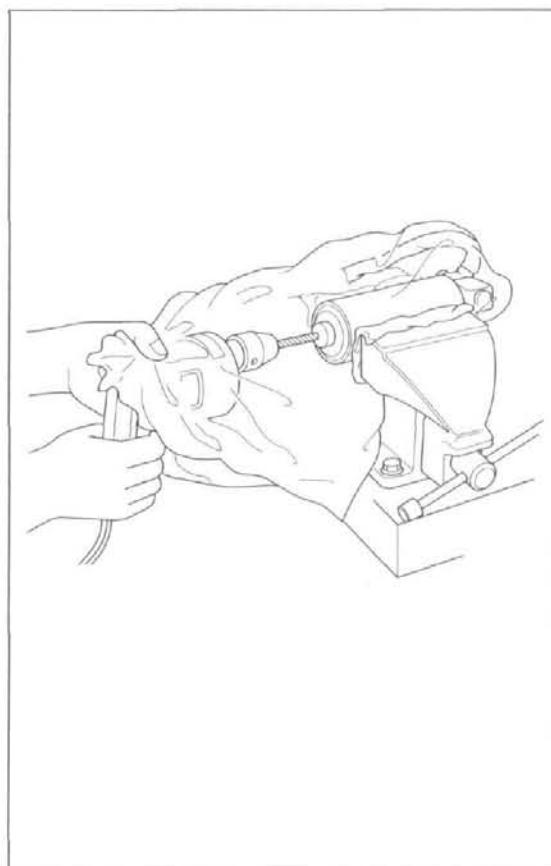
Support the reservoir tank in a vise as shown.

Through the open end of the bag, insert a drill motor with a sharp 2 – 3 mm (5/64 – 1/8 in) drill bit.

NOTICE

- Do not use a dull drill bit which could cause a build-up of excessive heat and pressure inside the damper, leading to explosion and severe personal injury.
- The shock absorber contains nitrogen gas and oil under high pressure. Do not drill any farther down the damper case than the measurement given above, or you may drill into the oil chamber; oil escaping under high pressure may cause serious personal injury.
- Always wear eye protection to avoid getting metal shaving in your eye when the gas pressure is released. The plastic bag is only intended to shield you from the escaping gas.

Hold the bag around the drill motor and briefly run the drill motor inside the bag; this will inflate the bag with air from the motor and help keep the bag from getting caught in the bit when your start.

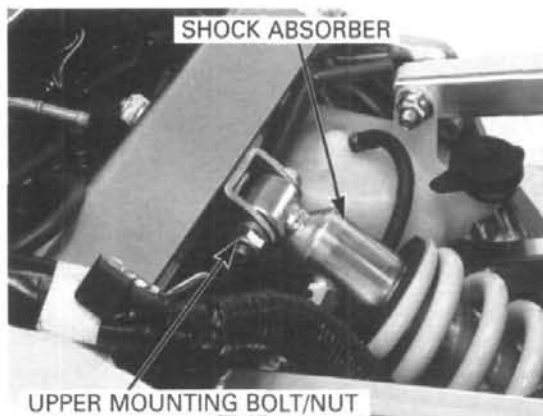


REAR WHEEL/SUSPENSION

INSTALLATION

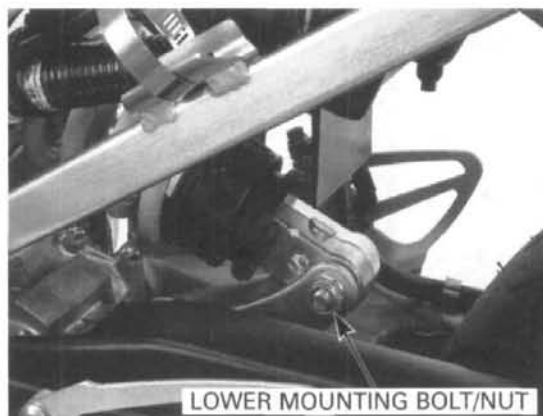
Install the shock absorber into the frame with the reserve tank outlet facing to the left.
Install the upper and lower mounting bolt/nut.
Tighten the upper mounting nut to the specified torque.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)



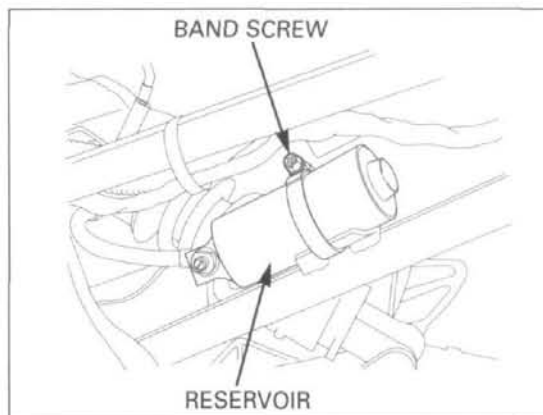
Tighten the lower mounting nut to the specified torque.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)



Install the reservoir into the reservoir band.
Tighten the band screw securely.

Install the removed parts in the reverse order of removal.



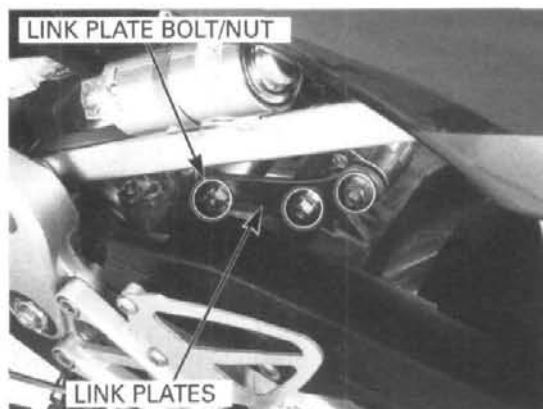
SUSPENSION LINKAGE

REMOVAL

Support the motorcycle using a hoist or equivalent.

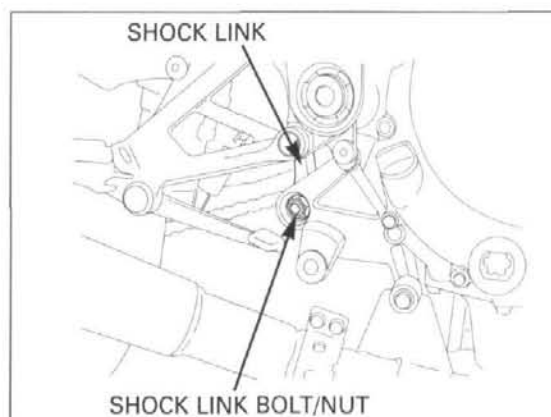
Remove the following:

- Shock absorber lower mounting bolt/nut
- Shock link plate-to-swingarm bolt/nut
- Shock link plate-to-shock link bolt/nut
- Shock link plates



If the shock link cannot be removed, support the motorcycle securely with a hoist or equivalent and loosen the shock link bracket nuts to get the clearance between the shock link and brackets (page 7-4).

- Shock link-to-bracket bolt/nut
- Shock link

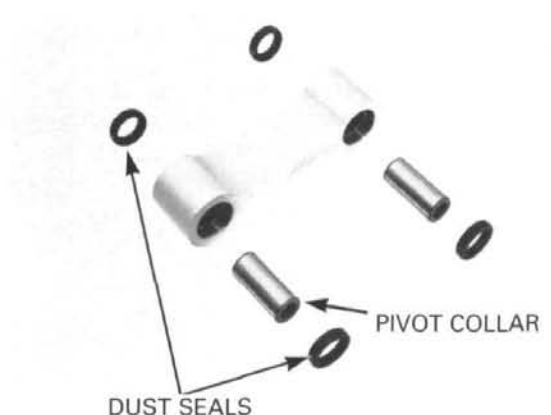


INSPECTION

Check that the suspension linkage components for damage, replace any damaged components.

SHOCK LINK BEARING REPLACEMENT

Remove the pivot collar and dust seals.



Press the needle bearing out of the shock link using the special tools.

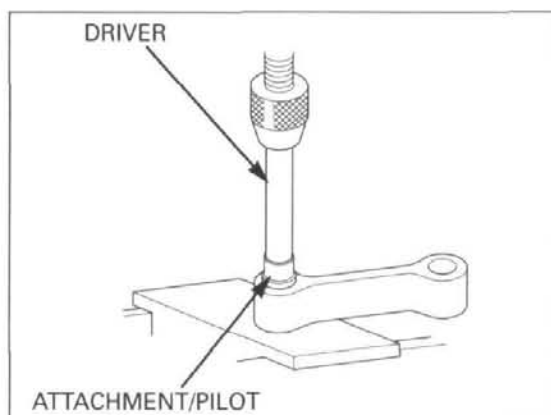
TOOLS:

Driver

04949-3710001 or
07946-MJ00100
07746-0010800
07746-0040400

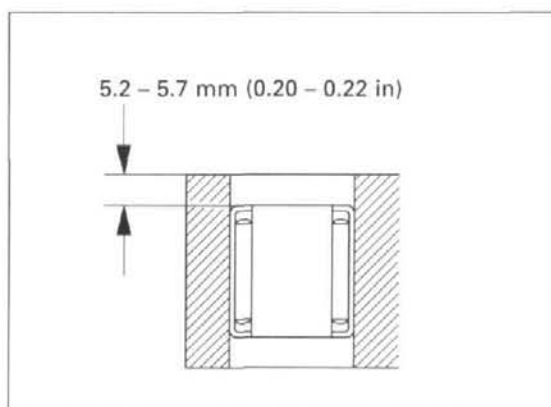
Attachment, 22 x 24 mm

Pilot, 17 mm



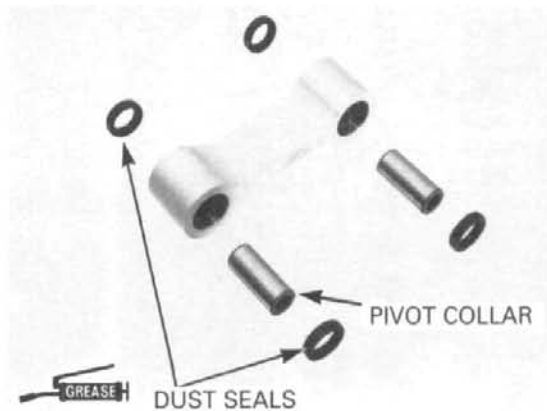
Press the needle bearing into the shock link with the marked side facing out.

Press a new needle bearing into the shock link so the needle bearing surface is 5.2 – 5.7 mm (0.20 – 0.22 in) lower from the end of the shock link using the same tools.



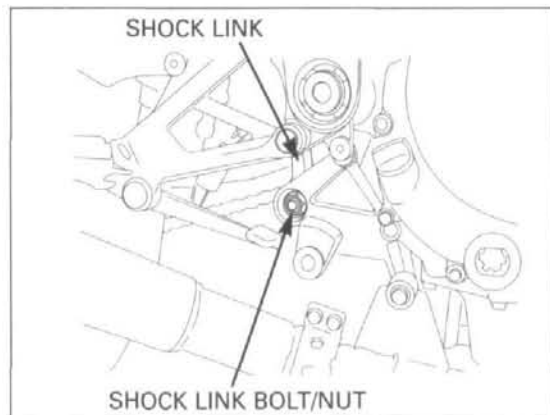
REAR WHEEL/SUSPENSION

Apply grease to the new dust seal lips and install them into the shock link.
Install the pivot collar.



INSTALLATION

Install the shock link into the link brackets.
Install the shock link socket bolt from the left side.
Install the nut.

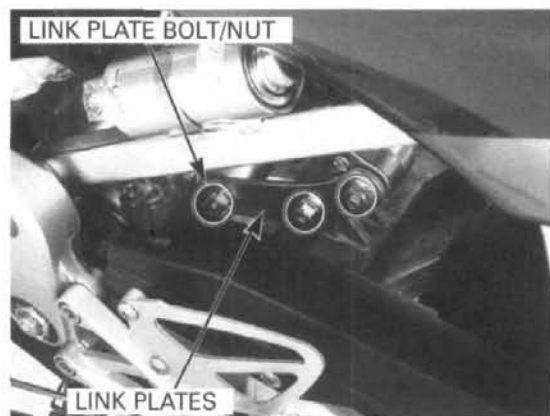


Install the shock link plates with the arrow facing the left and front side.
Install the shock link plate bolt from the right side.
Install the nut.

Tighten the link bracket nuts if they were loosened (page 7-17).

Tighten the suspension linkage nuts to the specified torque.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)

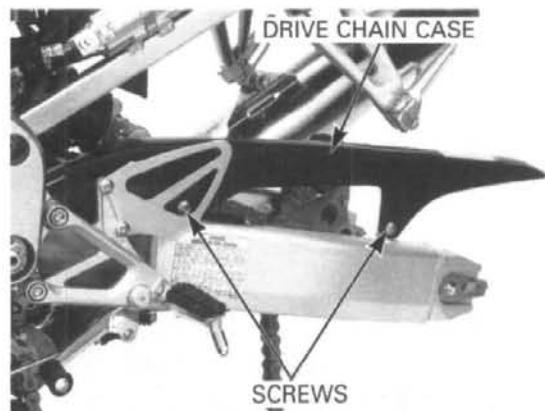


SWINGARM

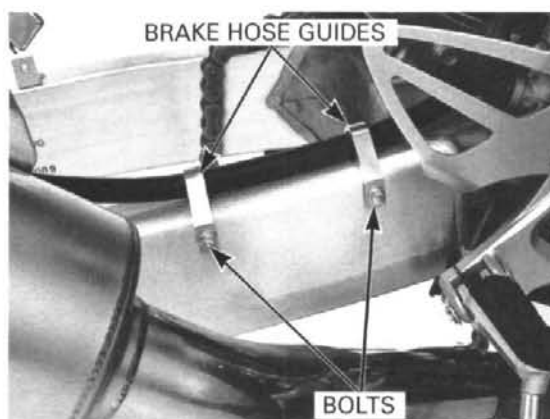
REMOVAL

Remove the rear wheel (page 14-3)

Remove the two screws and drive chain case.



Remove the bolts and brake hose guides.

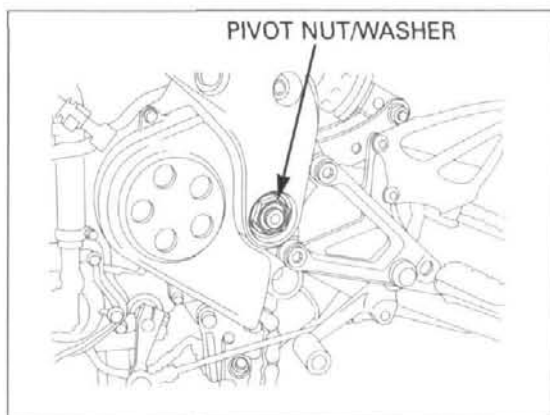


Remove the shock link plate-to-swingarm bolt/nut.



Remove the swingarm pivot nut and washer.

Remove the swingarm pivot bolt.

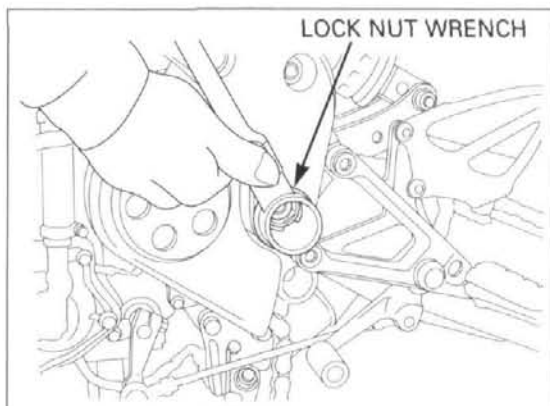


Loosen the left pivot adjusting bolt lock nut using the special tool.

TOOL:

Lock nut wrench

07908-4690003



REAR WHEEL/SUSPENSION

Loosen the right pivot adjusting bolt lock nut using the special tool.

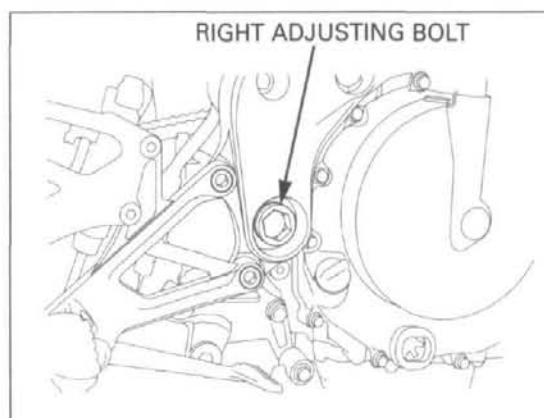
TOOL:

Lock nut wrench

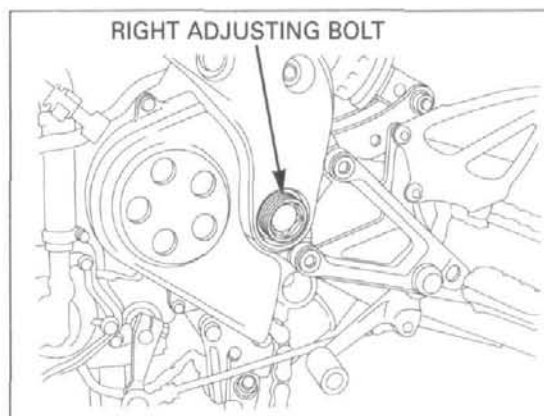
07908-4690003



Loosen the right pivot adjusting bolt.



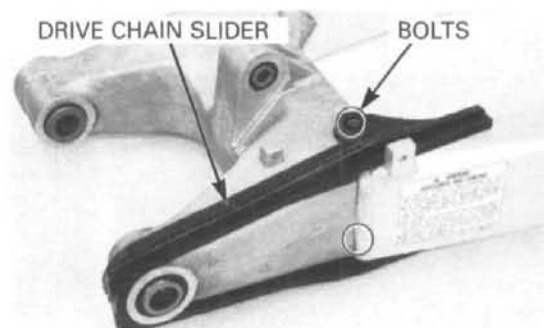
Loosen the left pivot adjusting bolt, then remove the swingarm.



DISASSEMBLY/INSPECTION

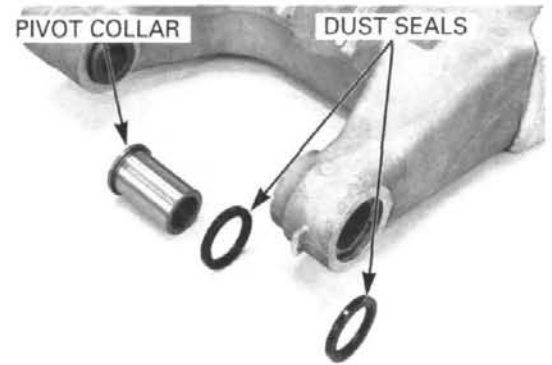
Remove the three SH bolts and drive chain slider.

Check the drive chain slider for wear or damage.



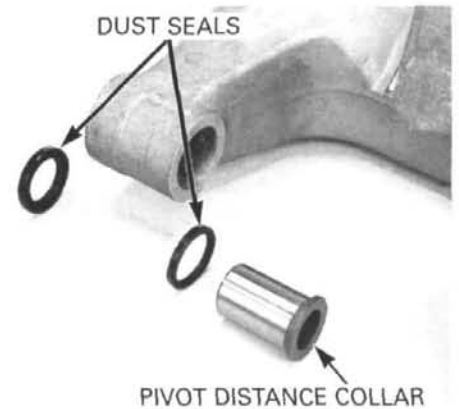
Remove the pivot collar and dust seals from the left swingarm pivot.

Check the dust seals and collars for damage or fatigue.



Remove the pivot distance collar and dust seals from the swingarm right pivot.

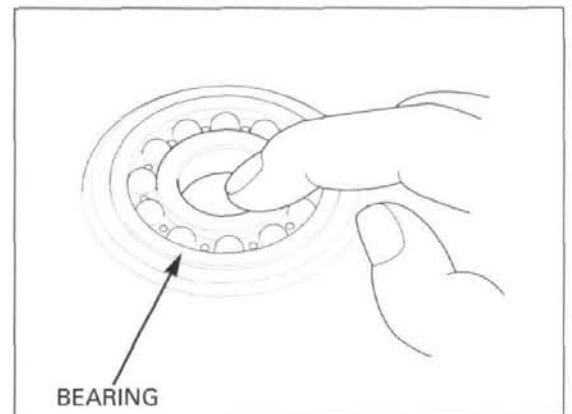
Check the dust seals and collars for damage or fatigue.



Turn the inner race of the right pivot bearings with your finger.

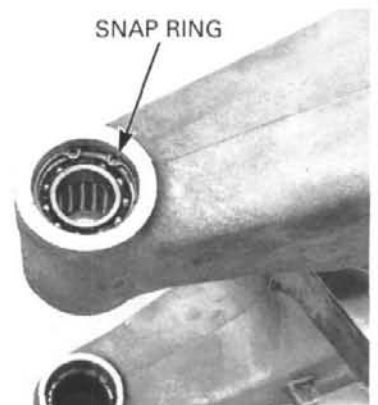
The bearings should turn smoothly and quietly. Also check that the bearing outer race fits tightly in the swingarm pivot.

Remove and discard the bearings if the races do not turn smoothly and quietly, or if they fit loosely in the swingarm pivot.



PIVOT BEARING REPLACEMENT

Remove the snap ring.



REAR WHEEL/SUSPENSION

Remove the right pivot radial ball bearing using the special tools.

TOOLS:

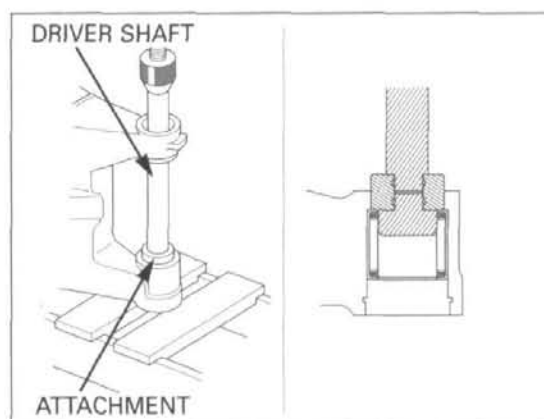
Bearing remover handle	07936-3710100
Bearing remover head	07936-3710600
Remover weight	07741-0010201



Press the right pivot needle bearing out using the special tools and a hydraulic press.

TOOLS:

Driver	07949-3710001
Attachment, 34 mm	07ZMD-MBW0100
or	
Driver shaft	07946-MJ00100
Attachment, 34 mm	07ZMD-MBW0100

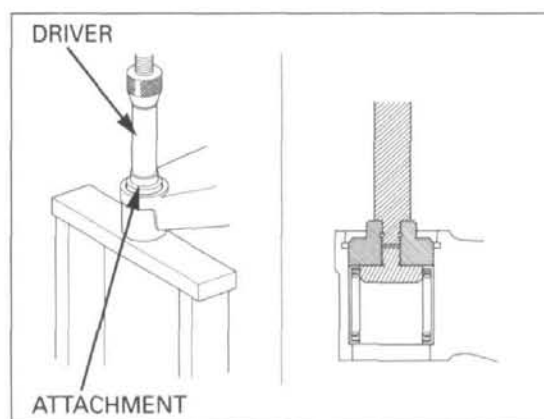


Pack a new needle bearing with grease.

Press the needle bearing into the right swingarm pivot until it seats using the special tools and a hydraulic press.

TOOLS:

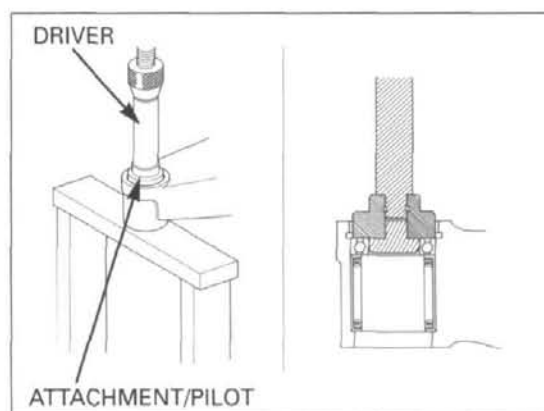
Driver	07749-0010000
Attachment, 37 mm	07ZMD-MBW0200
Pilot, 28 mm	07746-0041100



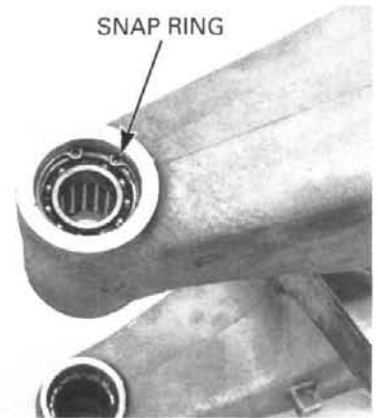
Press in the radial ball bearing using the special tools and a hydraulic press.

TOOLS:

Driver	07749-0010000
Attachment, 32 x 35 mm	07746-0010100
Pilot, 20 mm	07746-0040500
or	
Driver	07749-0010000
Attachment, 37 mm	07ZMD-MBW0200
Pilot, 20 mm	07746-0040500



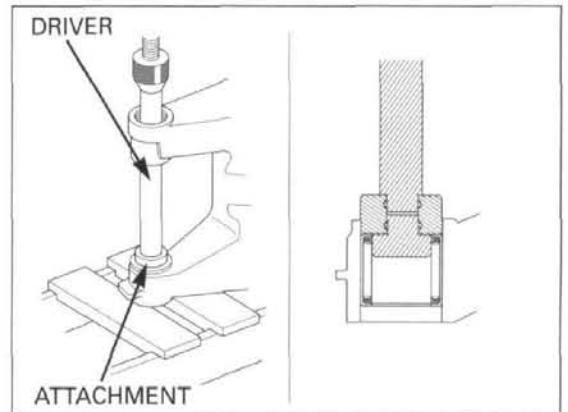
Install the snap ring into the groove securely.



Remove the left pivot needle bearing from the swingarm pivot using the special tools.

TOOLS:

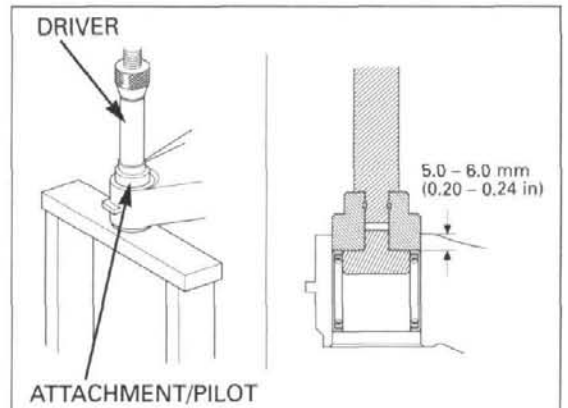
Driver	07949-3710001
Attachment, 37 mm	07ZMD-MBW0200
or	
Driver shaft	07946-MJ00100
Attachment, 37 mm	07ZMD-MBW0200
or	
Driver shaft	07946-MJ00100
Needle bearing remover	07HMC-MR70100



Press a new left pivot needle bearing into the swingarm pivot so the needle bearing surface is 5.0 – 6.0 mm (0.20 – 0.24 in) lower from the end of the swingarm pivot surface using the special tools and a hydraulic press.

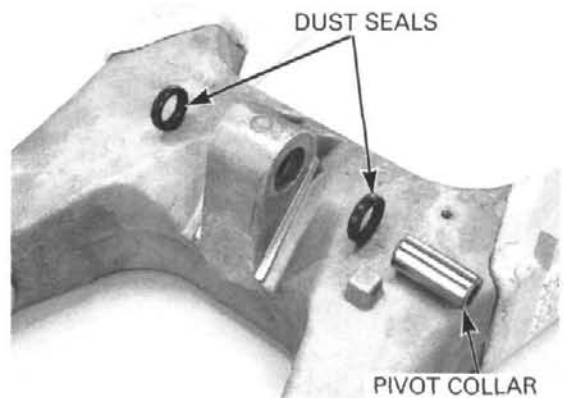
TOOLS:

Driver	07749-0010000
Attachment, 37 x 40 mm	07746-0010200
Pilot, 28 mm	07746-0041100
or	
Driver	07749-0010000
Attachment, 37 mm	07ZMD-MBW0200
Pilot, 28 mm	07746-0041100



Shock link plate bearing replacement

Remove the pivot collar and dust seals from the shock link plate pivot of the swingarm.



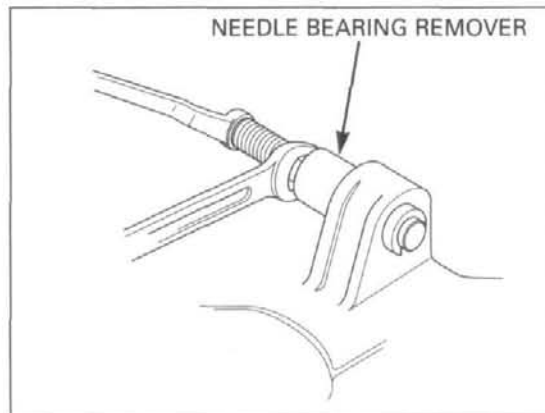
REAR WHEEL/SUSPENSION

Draw the needle bearing out of the swingarm using the special tool.

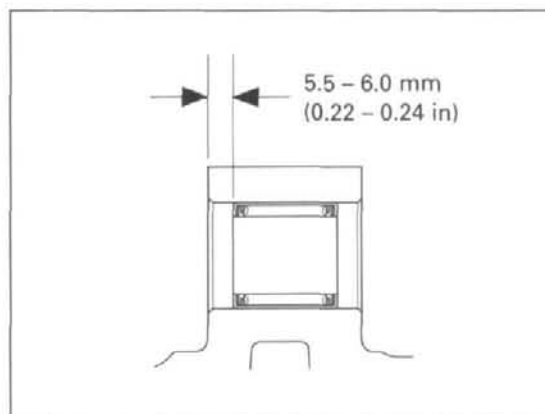
TOOL:

Bearing remover set

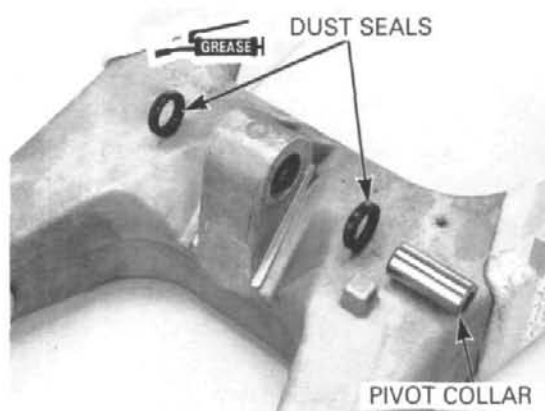
07LMC-KV30100



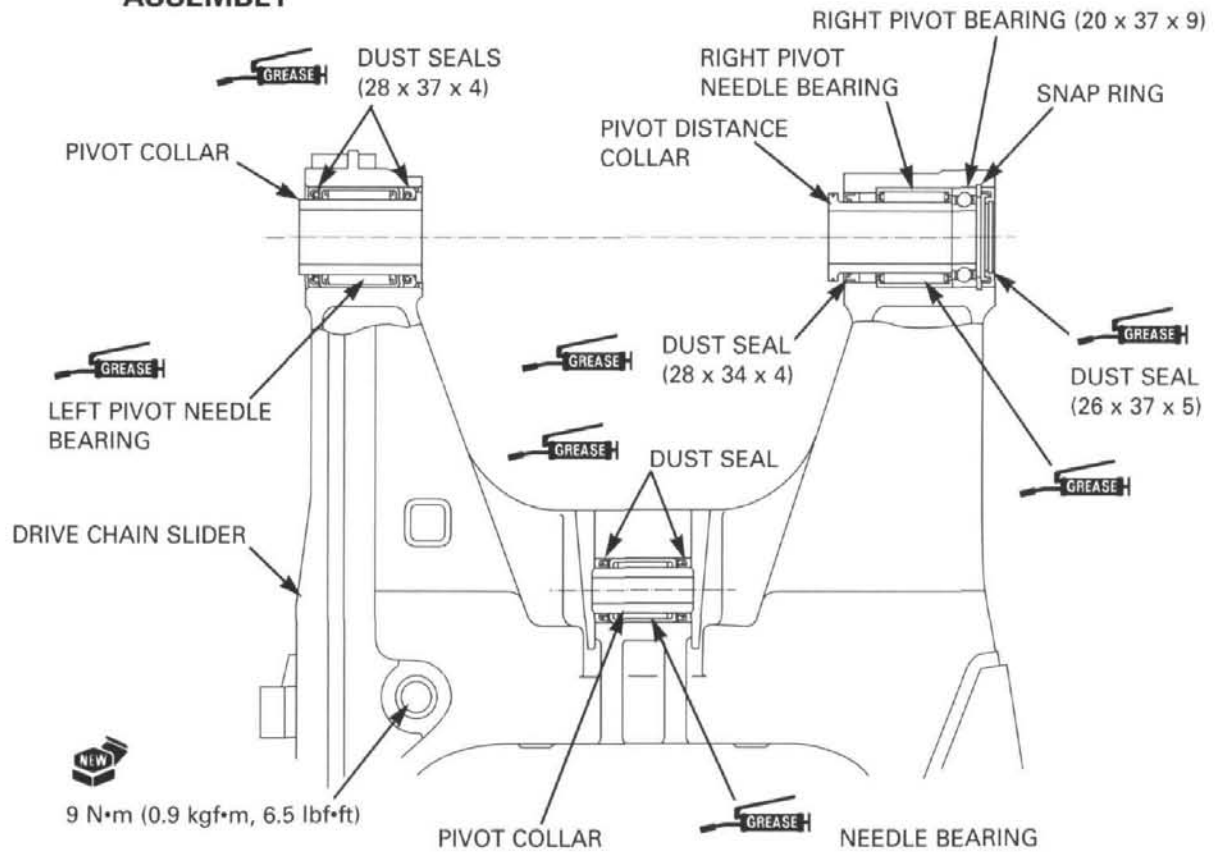
Apply grease to the needle rollers of the new bearing. Install the needle bearing into the pivot until the depth from the swingarm outer surface is 5.5 – 6.0 mm (0.22 – 0.24 in), using the same tool.



Apply grease to the dust seal lips, then install the dust seals and pivot collar into the swingarm.

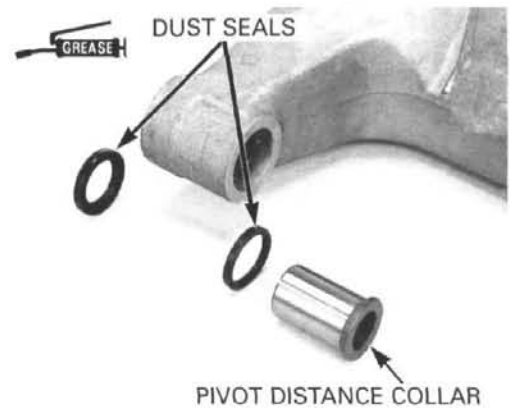


ASSEMBLY

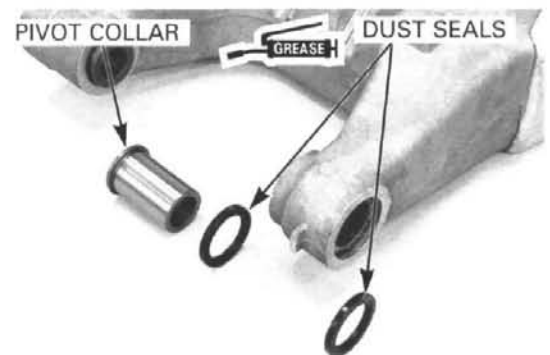


Apply grease to the dust seal lips, then install the dust seals into the right swingarm pivot. Fill the grease up between the inner dust seal and needle bearing. Install the pivot distance collar.

The right pivot distance collar has an identification groove on the flange.

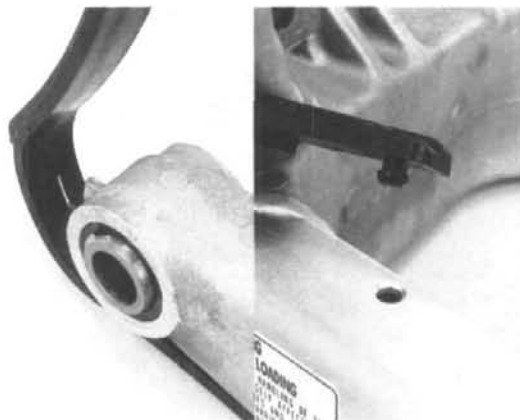


Apply grease to the dust seal lips, then install the dust seals and pivot collar into the left swingarm pivot.



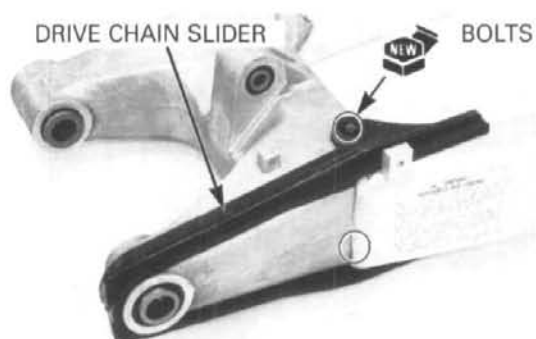
REAR WHEEL/SUSPENSION

Install the drive chain slider aligning the slit with the boss on the swingarm.
Install the drive chain slider bosses into the hole in the swingarm.



Install and tighten the new drive chain slider mounting bolts to the specified torque

TORQUE: 9 N·m (0.9 kgf·m, 6.5 lbf·ft)

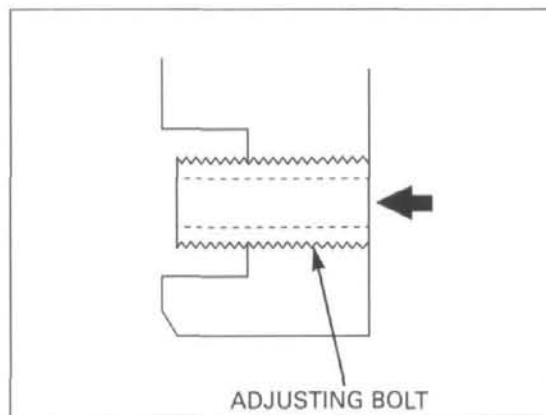


INSTALLATION

When tightening the lock nut with the lock nut wrench, refer to torque wrench reading information on page 14-1 "SERVICE INFORMATION".

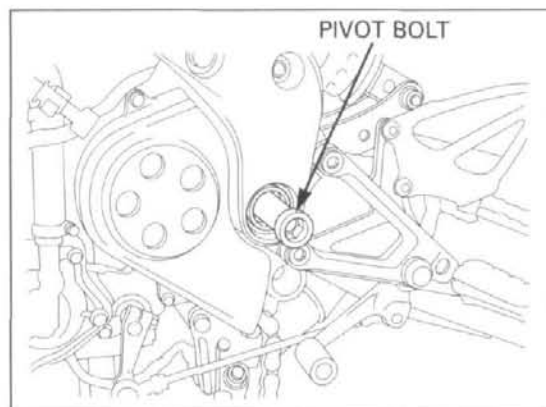
Be sure to tighten the swingarm pivot fasteners to the specified torque in the specified sequence. If you do not tighten the fasteners to the correct torque or in the proper sequence, loosen all pivot fasteners, then tighten them again to the specified torque in the correct sequence.

1. Install the left and right adjusting bolts so they do not project out of the frame inner surface.



2. Obtain a spare pivot bolt (P/N 52101-MBW-000) or use a 20 mm (0.8 in) O.D. shaft.

Set the swingarm into the frame and the shock link plates and temporarily insert the pivot bolt from the left side to support the swingarm.

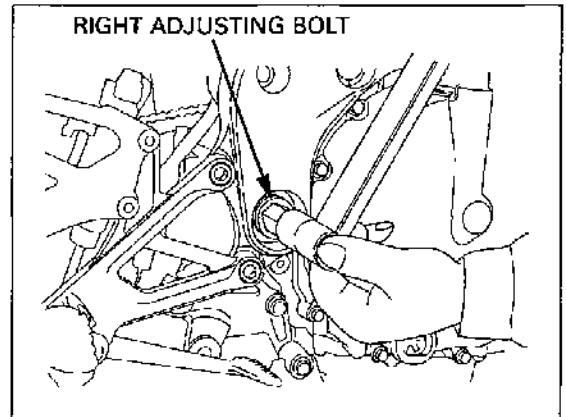


3. Tighten the right pivot adjusting bolt to the initial torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Loosen the right pivot adjusting bolt, and retighten it to the specified torque.

TORQUE: 7 N·m (0.7 kgf·m, 5.1 lbf·ft)



4. Install the right pivot lock nut.
Hold the right pivot adjusting bolt, then tighten the lock nut to the specified torque using the special tool.

TOOL:

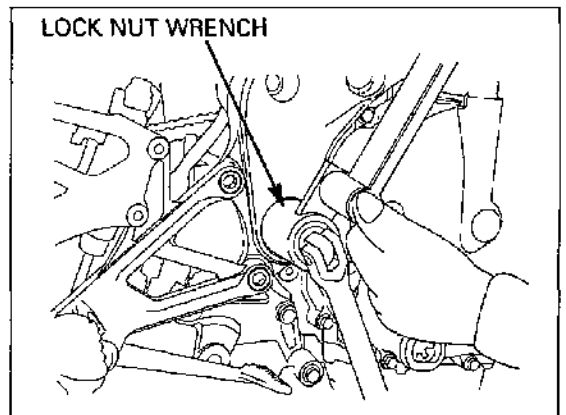
Lock nut wrench

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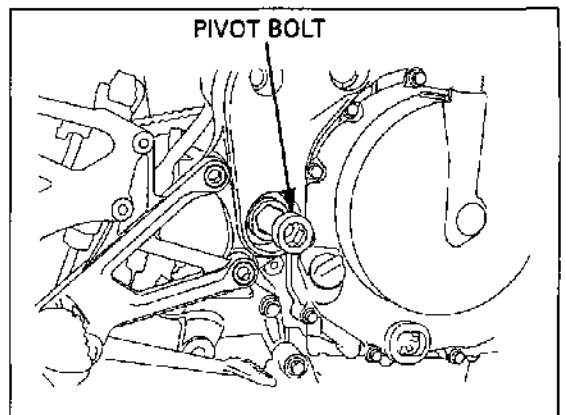
TORQUE:

Actual: 64 N·m (6.5 kgf·m, 47 lbf·ft)

Indicated: 58 N·m (5.9 kgf·m, 43 lbf·ft)



5. Insert the other pivot bolt from the right side, gradually pushing the left side pivot bolt out from the left side.

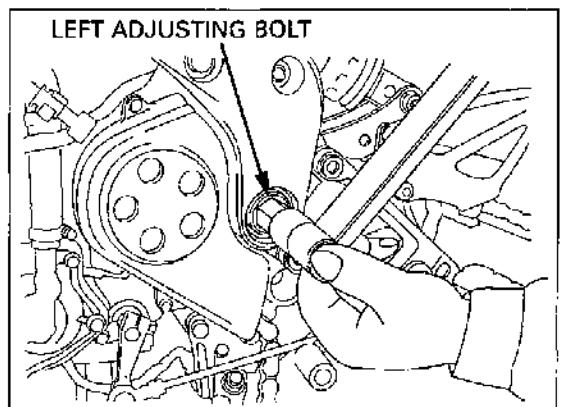


6. Tighten the left pivot adjusting bolt to the initial torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Loosen the left pivot adjusting bolt and retighten it to the specified torque.

TORQUE: 7 N·m (0.7 kgf·m, 5.1 lbf·ft)



REAR WHEEL/SUSPENSION

7. Install the left lock nut.

Hold the left pivot adjusting bolt, then tighten the lock nut to the specified torque using the special tool.

TOOL:

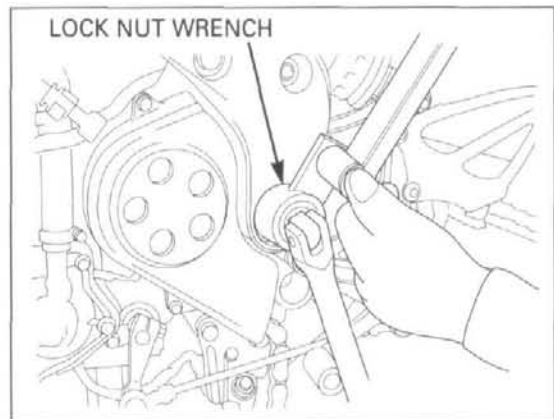
Lock nut wrench

07908-4690003

TORQUE:

Actual: 64 N·m (6.5 kgf·m, 47 lbf·ft)

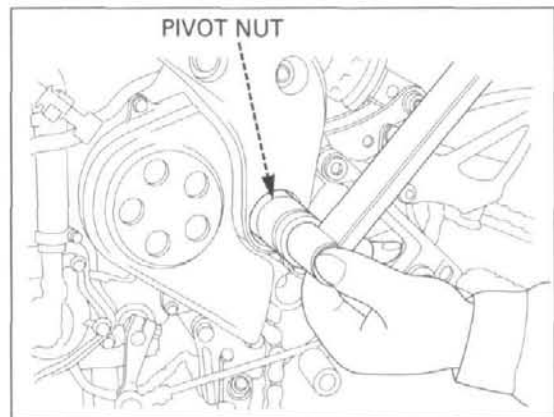
Indicated: 58 N·m (5.9 kgf·m, 43 lbf·ft)



8. Push the pivot bolt until it is seated.

Install the pivot nut with the washer and tighten the pivot nut to the specified torque.

TORQUE: 93 N·m (9.5 kgf·m, 69 lbf·ft)

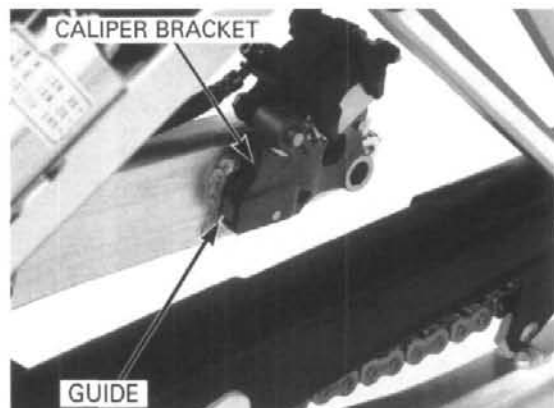


Install the shock link plate-to-swingarm bolt/nut, then tighten the nut to the specified torque.

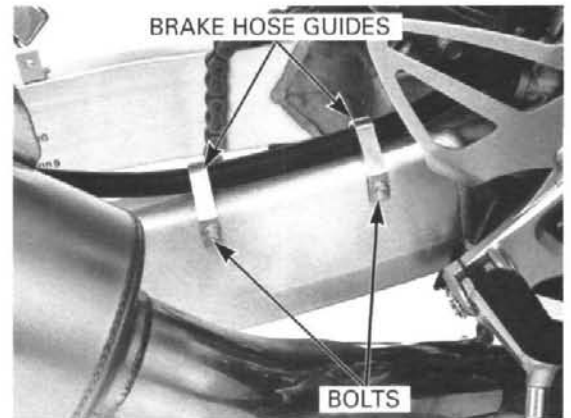
TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)



Route the brake hose properly, then install the rear brake caliper/bracket onto the boss of the swingarm.



Install the brake hose guide and tighten the bolts.



Install the drive chain case aligning the hole with the boss of the swingarm.
Tighten the drive chain case screws securely.

Install the rear wheel (page 14-8).

