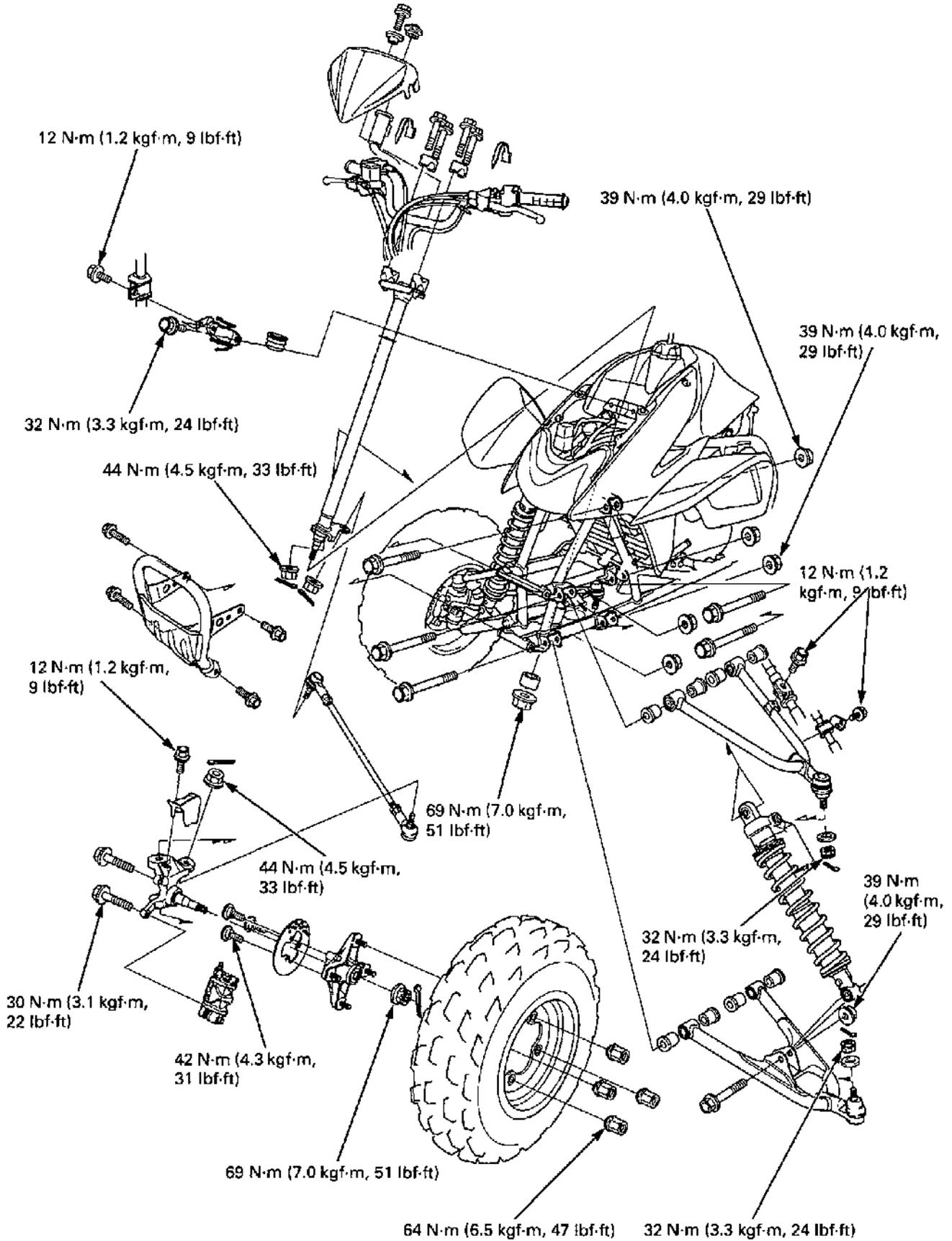


17. FRONT WHEEL/SUSPENSION/STEERING

SYSTEM COMPONENTS	17-2	TIRES.....	17-11
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FRONT WHEEL	17-11	TIE-ROD.....	17-30

FRONT WHEEL/SUSPENSION/STEERING SYSTEM COMPONENTS



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.
- A jack or other support is required to support the vehicle.
- Adjust toe whenever the tie-rod, knuckle or steering shaft are replaced or removed (page 4-33).
- Do not twist or bend the brake hose and pipe when servicing.
- Use genuine Honda replacement bolts and nuts for all suspension pivots and mounting points.
- For brake system information (page 19-2).
- For handlebar switch inspection ('04 – '05: page 20-19, After '05: page 24-7).

SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		-	4.0 (0.16)
Cold tire pressure ('04 – '05)	Standard	27.5 kPa (0.275 kgf/cm ² , 4.0 psi)	-
	Minimum	23.5 kPa (0.235 kgf/cm ² , 3.4psi)	-
	Maximum	31.5 kPa (0.315 kgf/cm ² , 4.6 psi)	-
Cold tire pressure (After '05)	Standard	27.5 kPa (0.275 kgf/cm ² , 4.0 psi)	-
	Minimum	25.0 kPa (0.250 kgf/cm ² , 3.6psi)	-
	Maximum	30.0 kPa (0.300 kgf/cm ² , 4.4 psi)	-
Compression damping adjuster standard position	'04 – '05	1-7/8 turns out from full in	-
	After '05	1/2 ± 1/8 turns out from full in	-
Rebound damping adjuster standard position	'04 – '05	1-3/8 turns out from full in	-
	After '05	7/8 ± 1/8 turns out from full in	-
Tie-rod distance between the ball joints	'04 – '05	409.5 (16.12)	-
	After '05	398.0 (15.67)	-
Toe	'04 – '05	Toe-in: 11.4 ± 15 (0.45 ± 0.6)	-
	After '05	Toe-in: 14 ± 15 (0.6 ± 0.6)	-

TORQUE VALUES

Handlebar grip end bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)
Throttle housing cover screw ('04 – '05)	4 N·m (0.4 kgf·m, 2.9 lbf·ft)
Throttle housing cover screw (After '05)	3.4 N·m (0.4 kgf·m, 2.5 lbf·ft)
Throttle lever switch screw (After '05)	1 N·m (0.1 kgf·m, 0.7 lbf·ft)
Handlebar switch housing screw	2 N·m (0.2 kgf·m, 1.4 lbf·ft)
Clutch lever pivot bolt	1 N·m (0.1 kgf·m, 0.7 lbf·ft)
Clutch lever pivot nut	5.9 N·m (0.6 kgf·m, 4.3 lbf·ft)
Parking brake lever pivot screw ('04 – '05)	9 N·m (0.9 kgf·m, 6.5 lbf·ft)
Parking brake lever pivot screw (After '05)	9 N·m (0.9 kgf·m, 6.5 lbf·ft)
Front wheel nut	64 N·m (6.5 kgf·m, 47 lbf·ft)
Front wheel hub nut	69 N·m (7.0 kgf·m, 51 lbf·ft)
Front brake disc bolt	42 N·m (4.3 kgf·m, 31 lbf·ft)
Front brake disc cover bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)
Caliper bracket mounting bolt	30 N·m (3.1 kgf·m, 22 lbf·ft)
Shock absorber mounting nut	39 N·m (4.0 kgf·m, 29 lbf·ft)
Front brake hose clamp bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)
Upper and lower arm pivot nut	39 N·m (4.0 kgf·m, 29 lbf·ft)
Upper and lower arm ball joint nut	32 N·m (3.3 kgf·m, 24 lbf·ft)
Tie-rod ball joint nut	44 N·m (4.5 kgf·m, 33 lbf·ft)
Handlebar lower holder nut	39 N·m (4.0 kgf·m, 29 lbf·ft)
Steering shaft end nut	69 N·m (7.0 kgf·m, 51 lbf·ft)
Steering shaft holder bolt	32 N·m (3.3 kgf·m, 24 lbf·ft)

Apply locking agent to the threads.

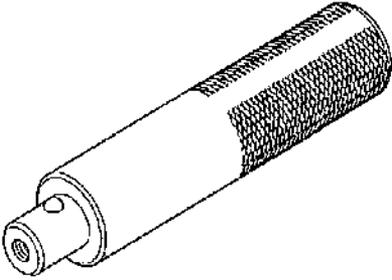
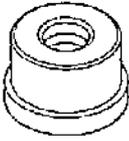
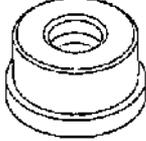
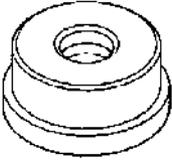
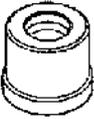
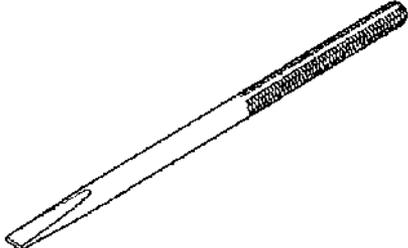
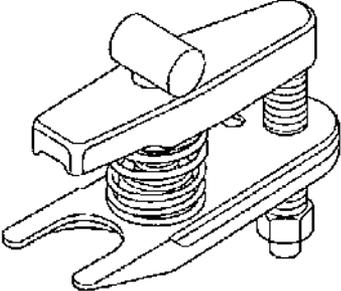
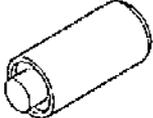
Castle nut: tighten to the specified torque and further tighten until its grooves aligns with the cotter pin hole.
ALOC bolt: replace with a new one.
ALOC bolt: replace with a new one.
ALOC bolt: replace with a new one.

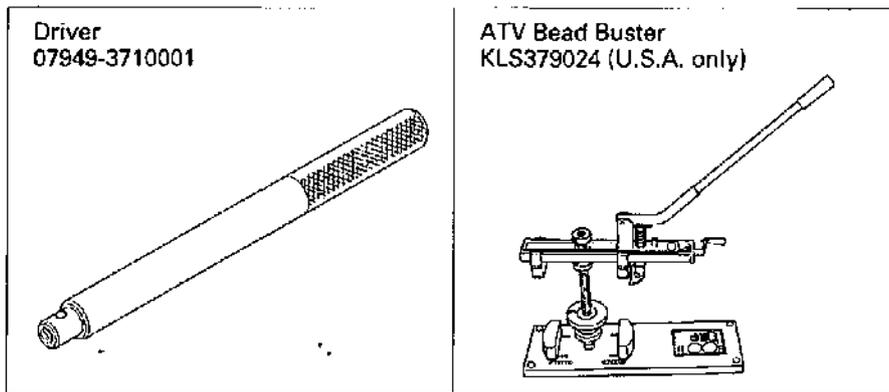
ALOC bolt: replace with a new one.

Castle nut: tighten to the specified torque and further tighten until its grooves aligns with the cotter pin hole.

FRONT WHEEL/SUSPENSION/STEERING

TOOLS

<p>Driver 07749-0010000</p>  A long, cylindrical tool with a textured grip section and a small circular opening at one end.	<p>Attachment, 32 x 35 mm 07746-0010100</p>  A cylindrical metal component with a central hole and a flange at the top.	<p>Attachment, 37 x 40 mm 07746-0010200</p>  A cylindrical metal component with a central hole and a flange at the top, similar to the previous one but larger.
<p>Attachment, 42 x 47 mm 07746-0010300</p>  A cylindrical metal component with a central hole and a flange at the top, larger than the previous ones.	<p>Attachment, 24 x 26 mm 07746-0010700</p>  A smaller cylindrical metal component with a central hole and a flange at the top.	<p>Pilot, 15 mm 07746-0040300</p>  A small, short cylindrical metal component with a threaded top.
<p>Pilot, 17 mm 07746-0040400</p>  A small, short cylindrical metal component with a threaded top, slightly larger than the 15 mm one.	<p>Pilot, 20 mm 07746-0040500</p>  A small, short cylindrical metal component with a threaded top, larger than the 17 mm one.	<p>Bearing remover shaft 07746-0050100</p>  A long, thin shaft with a textured grip section and a pointed end.
<p>Bearing remover head, 15 mm 07746-0050400</p>  A small, cylindrical metal component with a textured grip section.	<p>Ball joint remover, 28 mm 07MAC-SL00200</p>  A complex mechanical tool with a long handle, a threaded rod, and a specialized head for removing ball joints.	<p>Spherical bearing driver 07HMF-HC00100</p>  A cylindrical metal component with a textured grip section and a small opening at one end.



TROUBLESHOOTING

Hard steering

- Steering shaft holder too tight
- Damaged steering shaft bearing/bushing
- Insufficient tire pressure

Steers to one side or does not track straight

- Incorrect wheel alignment
- Unequal tire pressure
- Bent tie-rod, suspension arm or frame
- Worn or damaged wheel hub bearing
- Weak shock absorber

Front wheel wobbling

- Bent rim
- Worn or damaged wheel hub bearing
- Faulty tire
- Loose wheel hub nut

Soft suspension

- Weak shock absorber spring
- Faulty shock absorber damper

Stiff suspension

- Bent shock absorber damper rod
- Improperly installed suspension arms
- Faulty suspension arm spherical bearings

Front suspension noise

- Binding suspension link
- Loose front suspension fasteners

HANDLEBAR

REMOVAL

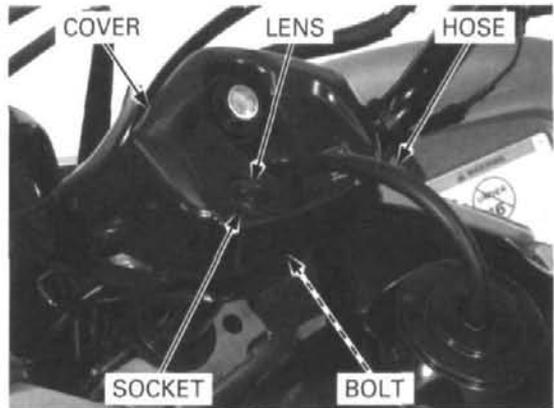
Remove the fuel tank breather hose from the steering shaft.

Be careful not to let the bolt fall into the steering shaft.

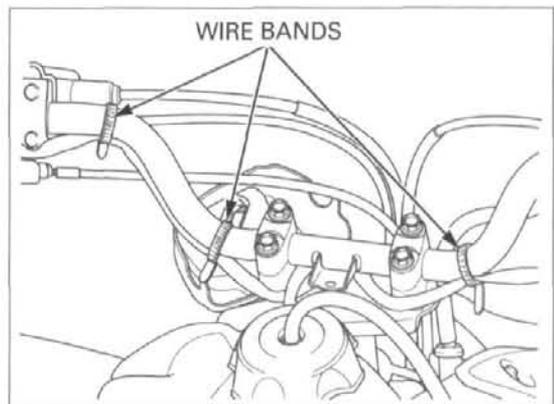
Remove the handlebar cover attaching bolt. Remove the coolant temperature indicator lens and neutral indicator lens (TRX450ER only) from the socket, then remove the socket from the handlebar cover.

Remove the following:

- handlebar cover from the handlebar

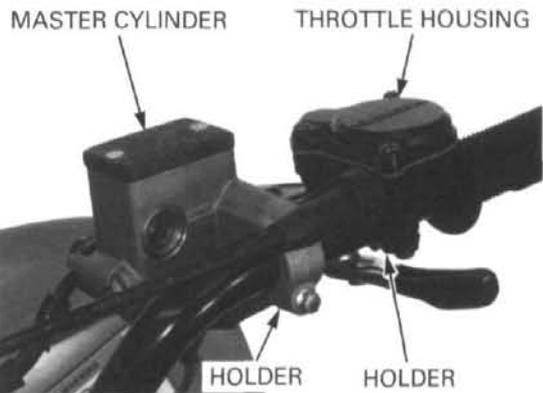


- three wire bands

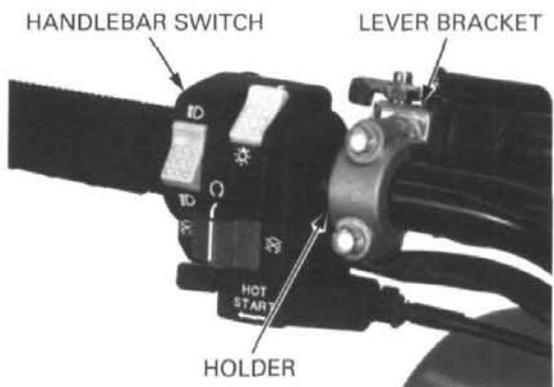


Keep the master cylinder upright to prevent air from entering the hydraulic system.

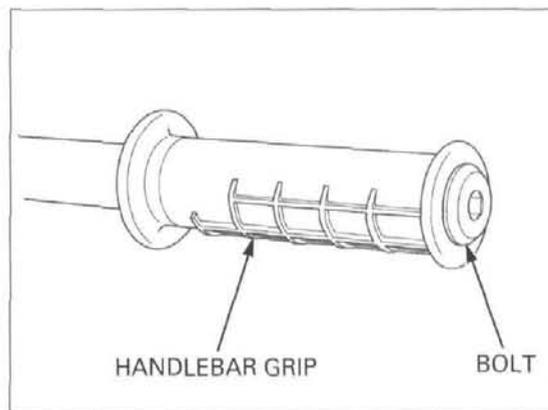
- two screws
- throttle housing holder
- throttle housing
- connectors
- two bolts
- master cylinder holder
- front brake master cylinder



- two bolts
- bracket holder
- clutch lever bracket
- two screws
- handlebar switch



- grip end bolts
- handlebar grips

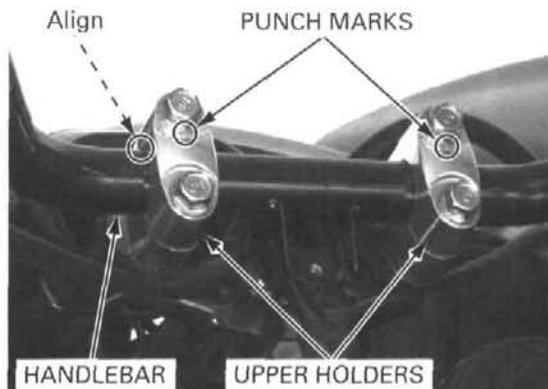


- four bolts
- upper holders
- handlebar

INSTALLATION

Align the punch mark on the handlebar with the top edge of the lower holder.

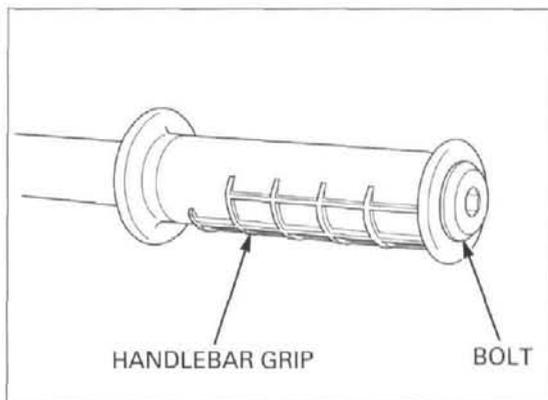
Install the handlebar and upper holders with the punch marks facing forward. Tighten the front bolts first, then tighten the rear bolts.



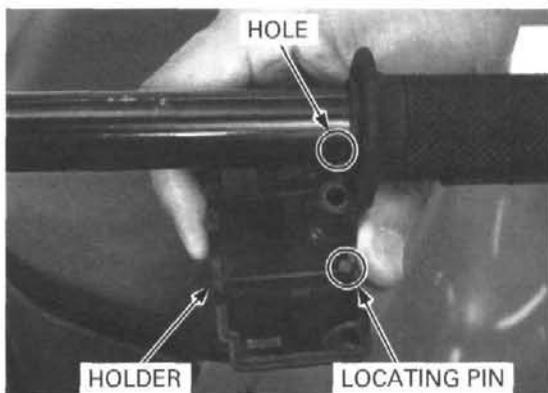
Apply Honda Bond A, Pro Honda Hand Grip Cement or equivalent to the inside surface of each handlebar grip and to the clean surfaces of the handlebar. Wait 3 – 5 minutes and install the grips. Rotate the grips for even application of the adhesive.

Install the grip end bolts and tighten them.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



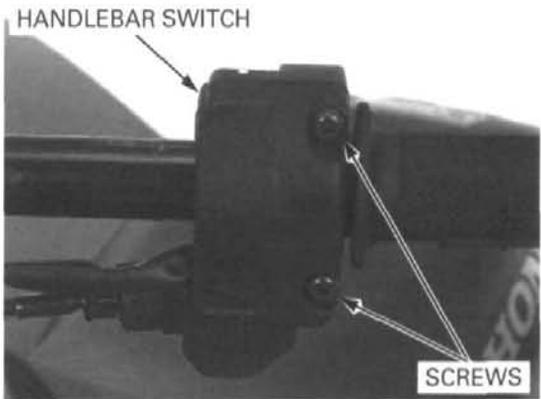
Install the handlebar switch holder by aligning the locating pin with the hole in the handlebar.



FRONT WHEEL/SUSPENSION/STEERING

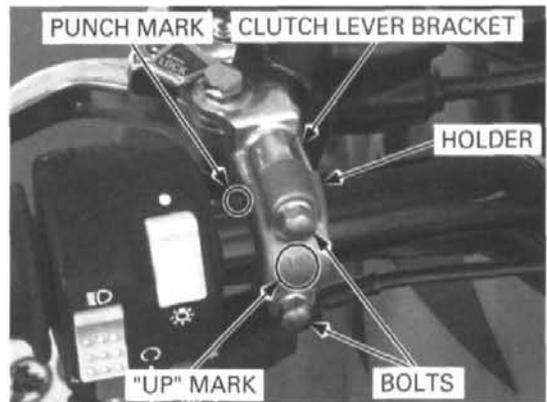
Install the handlebar switch onto the handlebar and holder, and tighten the upper screw first, then tighten the lower screw.

TORQUE: 2 N·m (0.2 kgf·m, 1.4 lbf·ft)



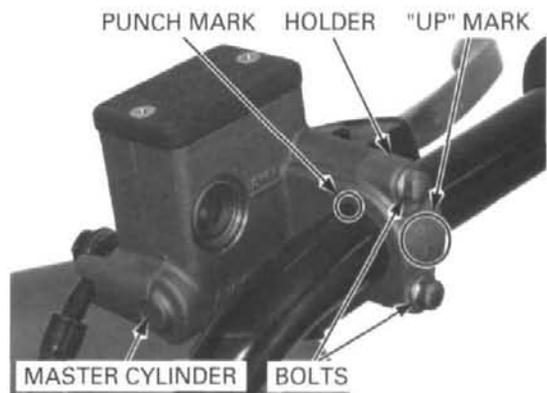
Align the edge of the clutch lever bracket with the punch mark on the handlebar.

Install the clutch lever bracket and holder with the "UP" mark facing up. Tighten the upper bolt first, then tighten the lower bolt.



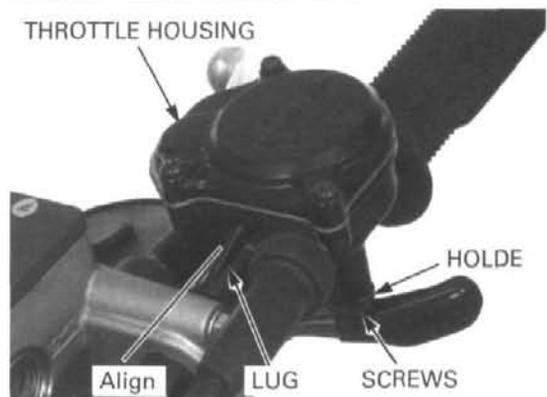
Align the edge of the master cylinder with the punch mark on the handlebar.

Install the front brake master cylinder and holder with the "UP" mark facing up. Tighten the upper bolt first, then tighten the lower bolt.

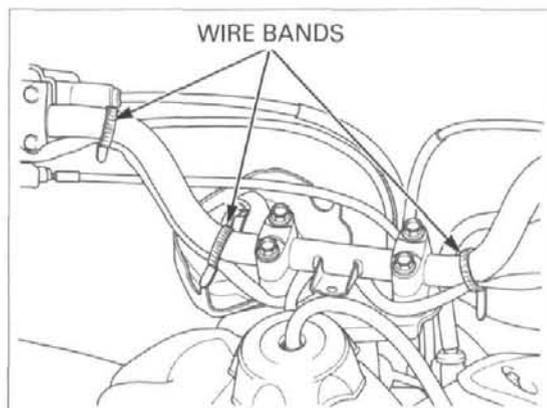


Align the lug on the throttle housing with the mating line of the master cylinder.

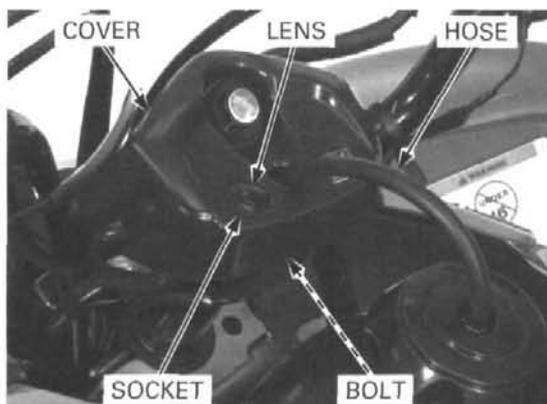
Install the throttle housing and holder against the master cylinder. Tighten the front screw first, then tighten the rear screw.



Secure the switch wires with the three wire bands.



Install the handlebar cover onto the handlebar.
 Install the coolant temperature indicator socket and neutral indicator socket (TRX450ER only) into the handlebar cover.
 Install the indicator lens into the socket and set the socket into the cover.
 Install the handlebar cover attaching bolt.
 Insert the fuel tank breather hose into the steering shaft.

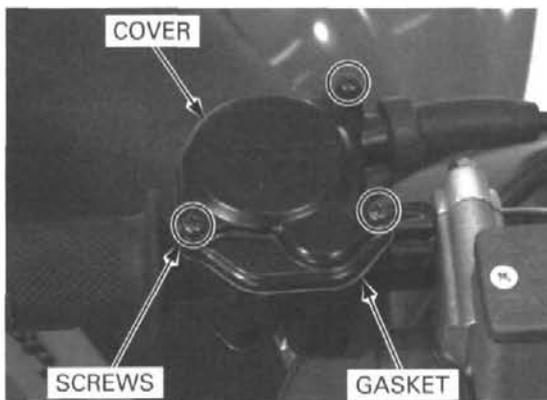


THROTTLE HOUSING

DISASSEMBLY

Remove the following:

- three screws
- throttle housing cover
- gasket

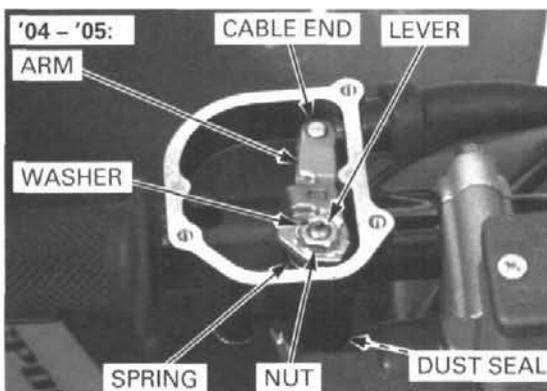


'04 - '05: Bend down the lock washer tab.
 Remove the nut and lock washer.

Pull the throttle lever out of the throttle arm and housing.
 Remove the plastic washer.

Disconnect the throttle cable end from the throttle arm and remove the throttle arm and return spring.

Remove the dust seal from the throttle housing.



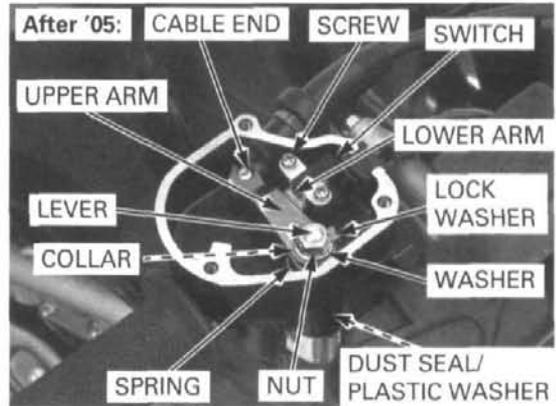
FRONT WHEEL/SUSPENSION/STEERING

After '05: Bend down the lock washer tab.
Remove the nut, lock washer and washer.

Disconnect the throttle cable end from the throttle upper arm and remove the throttle upper arm, collar, throttle lower arm and return spring.

Pull the throttle lever out of the throttle housing.
Remove the plastic washer.
Remove the dust seal from the throttle housing.

Remove the mounting screws and throttle lever switch assembly.



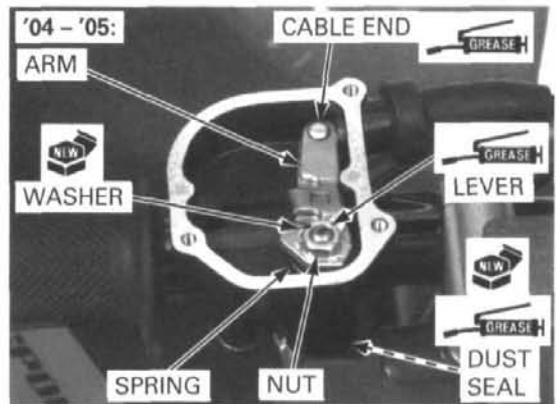
ASSEMBLY

'04 - '05: Apply grease to a new dust seal lip and install it into the throttle housing.

Apply grease to the throttle cable end and connect it to the throttle arm.
Install the return spring onto the throttle arm.

Install the plastic washer onto the throttle lever.
Apply grease to the throttle lever pivot and insert it into the throttle housing and throttle arm.

Install a new lock washer and the nut, and tighten the nut.
Bend the lock washer tab against the nut.



After '05: Apply grease to a new dust seal lip and install it into the throttle housing.

Install the plastic washer onto the throttle lever.
Insert the throttle lever into throttle housing.

Install the return spring onto the throttle lower arm.
Install the throttle lower arm, collar and throttle upper arm.

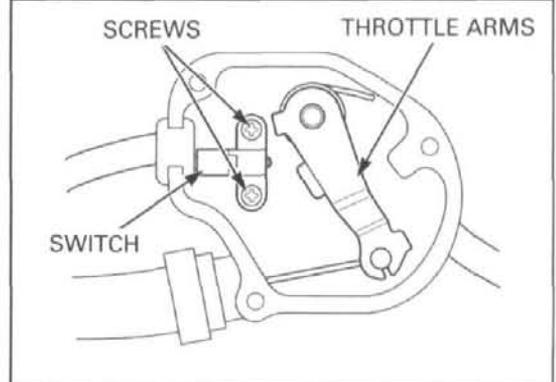
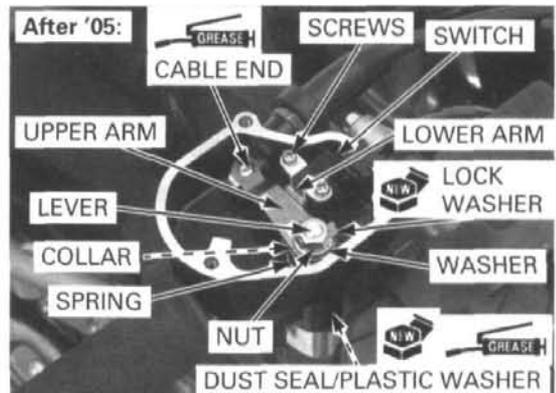
Apply grease to the throttle cable end and connect it to the throttle upper arm.

Be careful not to damage the throttle lever switch.

Install throttle lever switch assembly and tighten the mounting screws while holding the throttle arms at the full open as shown.

TORQUE: 1N-m (0.1 kgf-m, 0.7 lbf-ft)

Install the washer, a new lock washer and the nut, and tighten the nut.
Bend the lock washer tab against the nut.

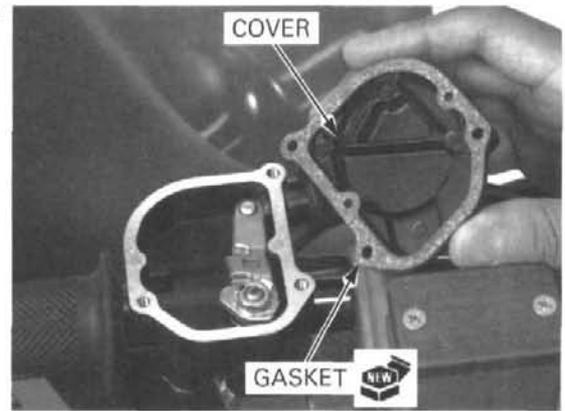


Install the throttle housing cover with a new gasket and tighten the three screws.

'04 - '05: **TORQUE: 4 N·m (0.4 kgf·m, 2.9 lbf·ft)**

After '05: **TORQUE: 3.4 N·m (0.4 kgf·m, 2.5 lbf·ft)**

Adjust the throttle lever free play (page 4-6).



FRONT WHEEL

REMOVAL

Loosen the wheel nuts.

Support the vehicle using a hoist or equivalent and raise the front wheels off the ground.

Remove the wheel nuts and front wheel.

INSTALLATION

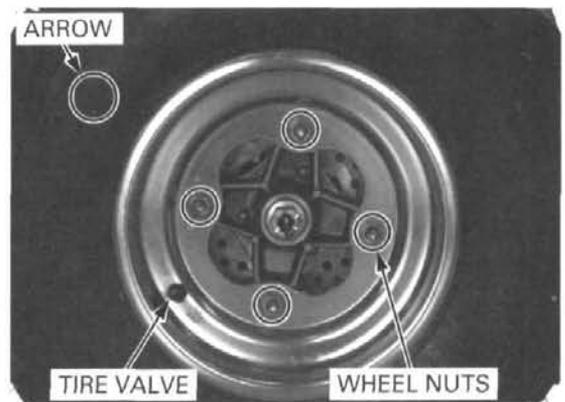
NOTE:

- Do not interchange the left and right tires.

Install the front wheel with the tire valve facing out and the arrow mark facing in the normal rotating direction.

Install the wheel nuts with the tapered side facing inward and tighten them.

TORQUE: 64 N·m (6.5 kgf·m, 47 lbf·ft)



TIRES

REMOVAL

NOTE:

- This service requires the ATV Bead Buster (KLS379024).
- Remove and install the tire from the rim side opposite the valve stem.

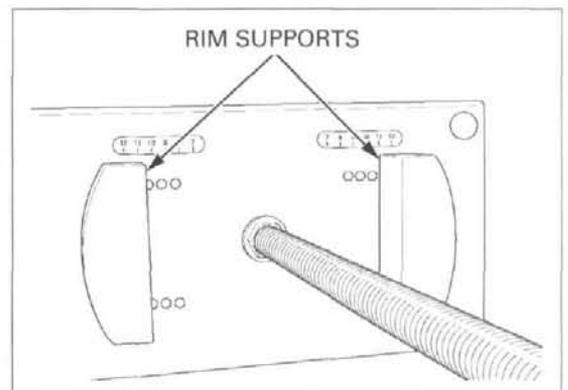
Remove the core from the valve stem.

Use a pneumatic tire changer or equivalent to remove the tire from the rim. If a tire changer is not available, rim protectors and tire irons may be used.

Adjust the bottom rim supports to the proper rim size. Align the flat side of the support with the corresponding rim size indicator.

Lube the bead area of the tire with water, pressing down on the tire sidewall/bead area in several places to allow the water to run into and around the bead.

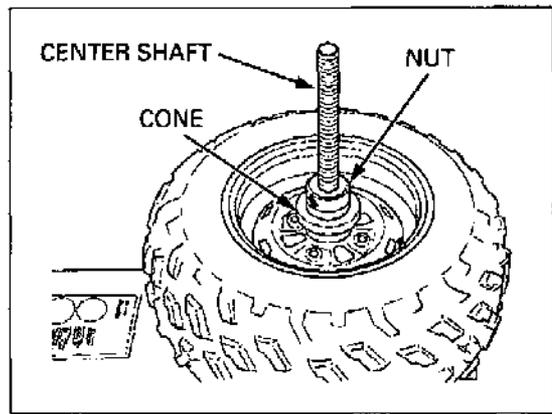
Use only water as a lubricant when removing or mounting tires. Soap or some mounting lubricants may leave a slippery residue which can cause the tire to shift on the rim and lose tire pressure during riding.



FRONT WHEEL/SUSPENSION/STEERING

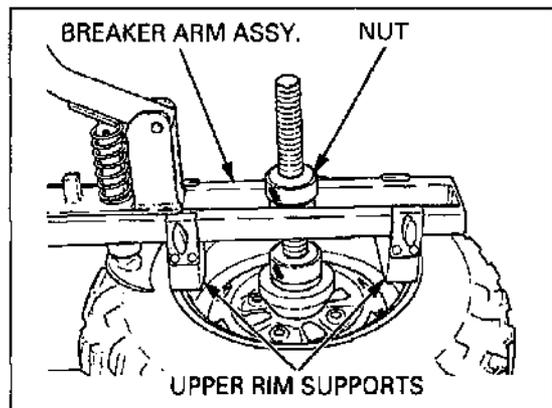
Place the wheel assembly over the center shaft and use the correct size cone to keep the wheel centered during operation.

Install the bottom hold down nut, bearing side down, and finger tighten it so the wheel can rotate freely during operation.



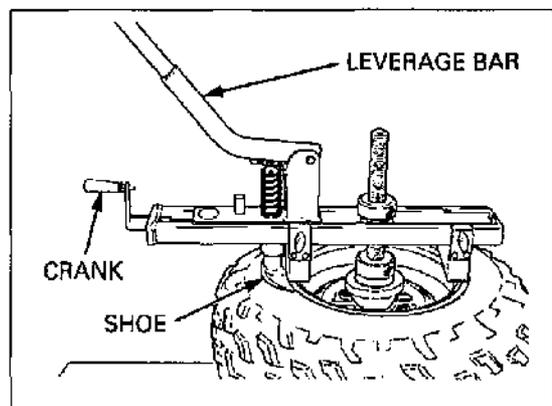
Install the breaker arm assembly over the center shaft and adjust the upper rim supports to fit the outside rim diameter.

Install the top hold down nut and tighten it finger tight.



Failure to back out the breaker shoe two turns will cause the shoe to scratch the bead lock, which may cause the tire to leak.

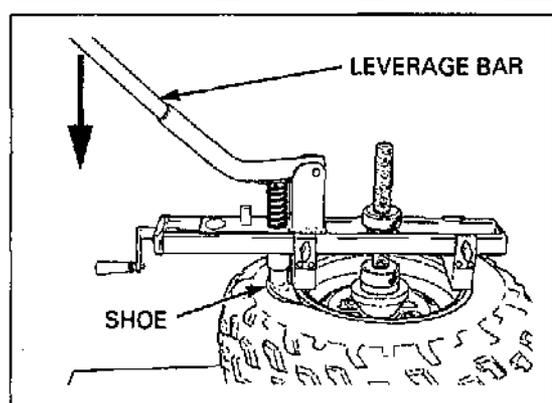
Pull the leverage bar down so the breaker shoe is just below the rim lip. Turn the crank to fully push the breaker shoe between the tire bead and rim. Once the shoe contacts the rim, back the crank out two turns to allow the shoe to clear the rim's bead lock.



Push down on the leverage bar to push the tire bead over the bead lock. Use only short strokes on the handle. While the shoe is still engaged, turn the wheel as far as it will go between strokes as you break the bead around the rim.

Remove the breaker arm assembly and flip the wheel over. Install the breaker arm assembly, adjust the shoe properly and break the other bead by following the above procedures.

Remove the tire from the rim using a tire changing machine or tire irons and rim protectors.



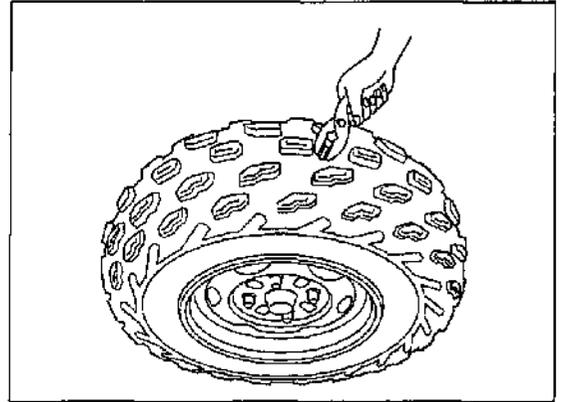
TIRE REPAIR

NOTE:

- Use the manufacturer's instructions for the tire repair kit you are using. If your kit does not have instructions, use the procedures described below.

Check the tire for puncturing objects. Chalk mark the punctured area and remove the puncturing objects.

Inspect and measure the injury. Tire repairs for injuries larger than 15 mm (5/8 in) should be a section repair. Section repairs should be done by a professional tire repair shop. If the injury is smaller than 15 mm (5/8 in), proceed with the repair as described here.



Install a rubber plug into the injury as follows: Apply a cement to a plug inserting needle and work the needle into the injury to clean and lubricate it. Do this three times. Do not let the cement dry.

Insert and center a rubber plug through the eye of the inserting needle.

Apply cement to rubber plug. Push the inserting needle with plug into the injury until the plug is slightly above the tire.

Twist the needle and remove it from the tire; the plug will stay in the tire.

Trim the plug 6 mm (1/4 in) above the tire surface. Repeat the above procedure if the puncture is large. Do not use more than two plugs per injury.

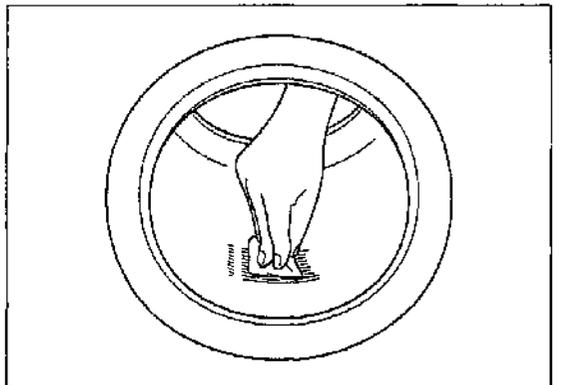
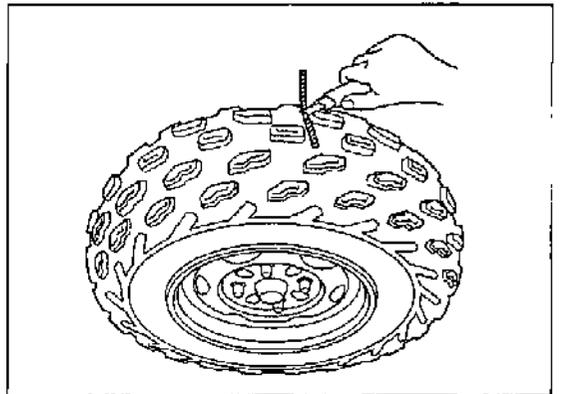
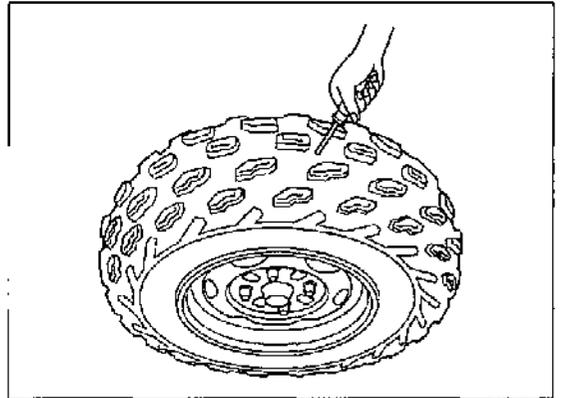
Allow the repair to dry. Drying time will vary with air temperature. Refer to the tire repair kit manufacturer's recommendations.

Inflate the tire and test the seal by dabbing a small amount of cement around the plug. Escaping air will cause a bubble in the cement. If there is leakage, remove the tire (page 17-11) and apply a cold patch to the inside of the tire.

If a plug has been inserted, trim it even with the inner tire surface.

Temporarily place a rubber patch that is at least twice the size of the puncture over the injury. Make a mark around the patch, slightly larger than the patch itself.

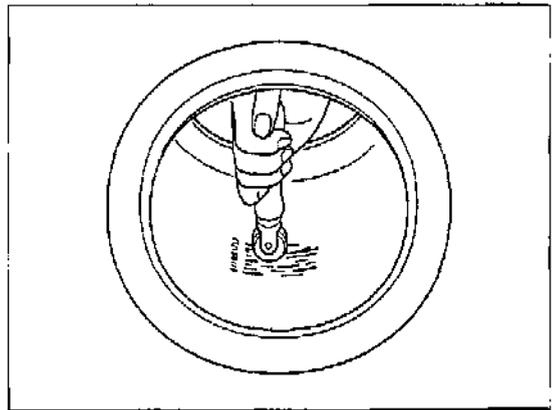
Rough the area marked inside the tire with a tire buffer or a wire brush. Clean the rubber dust from the buffed area.



Be careful not to push the plug all the way into the tire to prevent from falling inside.

FRONT WHEEL/SUSPENSION/STEERING

Apply cement over the area marked and allow it to dry until tacky.
Do not touch the cement with dirty or greasy hands.
Remove the lining from the patch and center over the injury.
Press the patch against the injury using a special roller.



ASSEMBLY

Install the tire onto the rim, where the rim shoulder width is the narrowest, to simplify installation.

Clean the rim bead seat and flanges.

Apply clean water to the rim flanges, bead seat and base.

Install the valve core in the valve stem.

Install the tire with the arrow mark facing in the normal rotating direction.

Inflate the tire to seat the tire bead.

Deflate the tire. Wait 1 hour and inflate the tire to the specified pressure.

RECOMMENDED TIRE PRESSURE:

'04 - '05;

FRONT:

Standard: 27.5 kPa (0.275 kgf/cm, 4.0 psi)

Minimum: 23.5 kPa (0.235 kgf/cm, 3.4 psi)

Maximum: 31.5 kPa (0.315 kgf/cm, 4.6 psi)

REAR:

Standard: 32.5 kPa (0.325 kgf/cm, 4.7 psi)

Minimum: 28.5 kPa (0.285 kgf/cm, 4.1 psi)

Maximum: 36.5 kPa (0.365 kgf/cm, 5.3 psi)

After '05;

FRONT:

Standard: 27.5 kPa (0.275 kgf/cm, 4.0 psi)

Minimum: 25.0 kPa (0.250 kgf/cm, 3.6 psi)

Maximum: 30.0 kPa (0.300 kgf/cm, 4.4 psi)

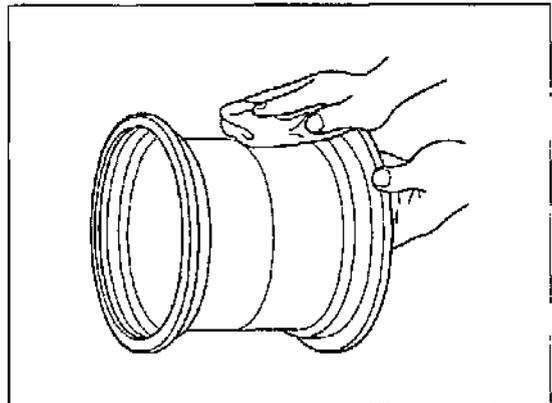
REAR:

Standard: 32.5 kPa (0.325 kgf/cm, 4.7 psi)

Minimum: 30.0 kPa (0.300 kgf/cm, 4.3 psi)

Maximum: 35.0 kPa (0.350 kgf/cm, 5.1 psi)

Check for air leaks and install the valve cap.



Use only water as a lubricant when removing or mounting tires. Soap or some mounting lubricants may leave a slippery residue which can cause the tire to shift on the rim and lose air pressure during riding.

FRONT WHEEL HUB

REMOVAL

Remove the front wheel (page 17-11).

Remove the bolt and disc cover.

Support the caliper so that it does not hang from the brake hose. Do not twist or bend the brake hose.

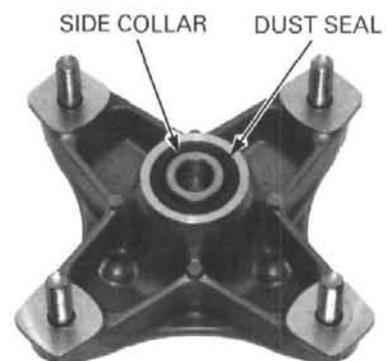
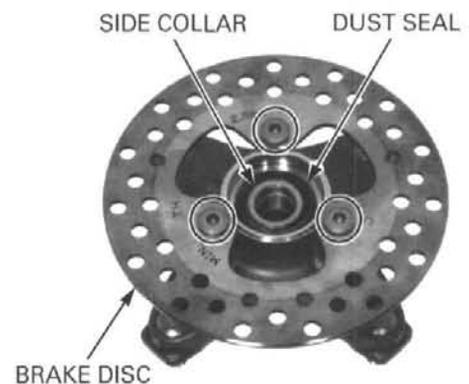
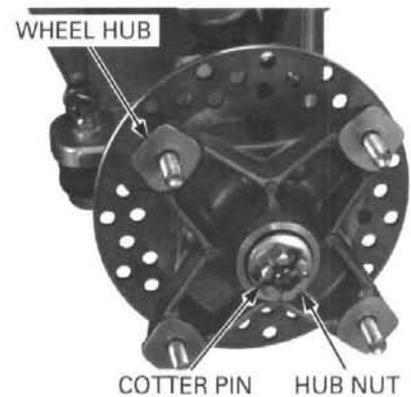
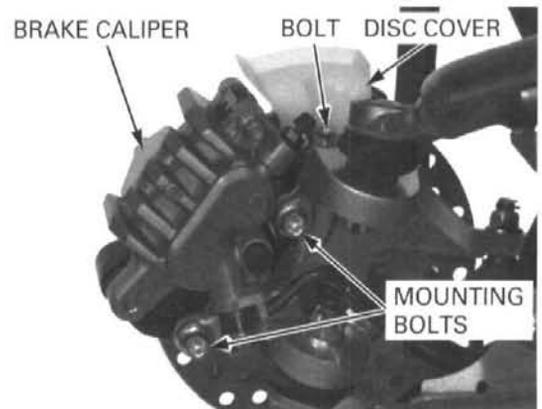
Remove the two mounting bolts and the front brake caliper assembly.

Remove the cotter pin, hub nut and wheel hub.

DISASSEMBLY

Remove the following:

- three bolts and brake disc
- side collars
- dust seals



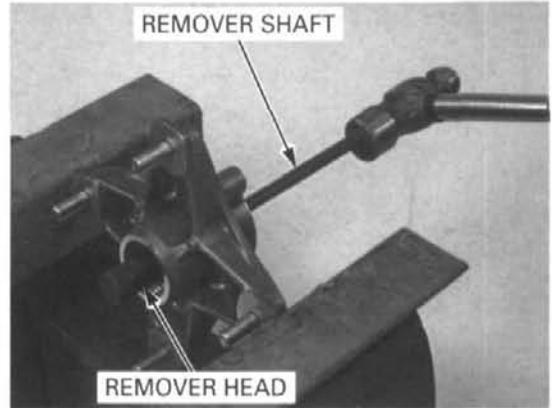
FRONT WHEEL/SUSPENSION/STEERING

Replace the bearings in pairs.

Install the bearing remover head into the bearing. From 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 shaft 07746-0050100
 Bearing remover head, 15 mm 07746-0050400



ASSEMBLY

Drive a new inner (disc side) bearing in the hub squarely with the markings facing up until it is fully seated.

Install the distance collar with the large diameter side facing the inner bearing.

Drive a new outer bearing in the hub squarely with the marking facing up until it is fully seated.

TOOLS:

Inner bearing:

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

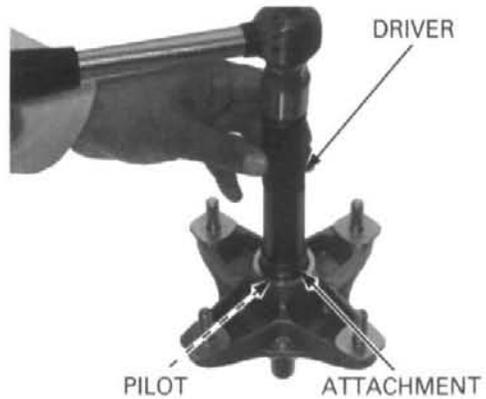
Outer bearing:

Driver 07749-0010000
 Attachment, 32 x 35 mm 07746-0010100
 Pilot, 15 mm 07746-0040300

Apply grease to new dust seal lips.

Install the dust seals into the wheel hub until they are flush with the hub surface.

Install the side collars.

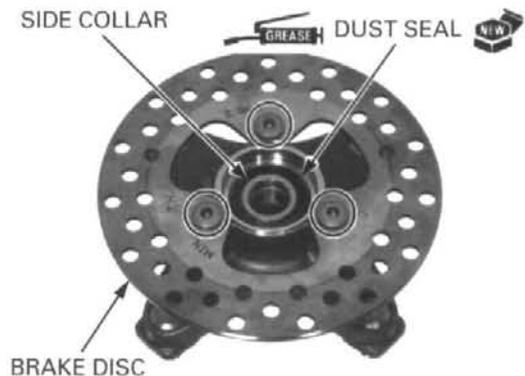


Do not get grease on the brake disc or stopping power will be reduced.

Install the brake disc onto the wheel hub with the markings facing up.

Install new disc bolts and tighten them.

TORQUE: 42 N·m (4.3 kgf·m, 31 lbf·ft)

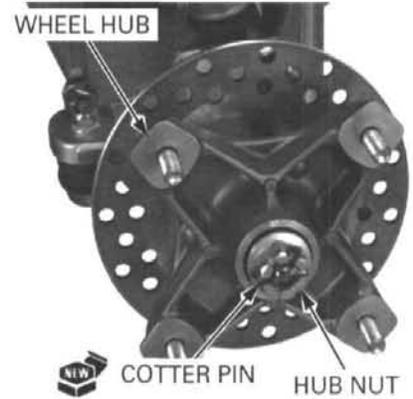


INSTALLATION

Install the wheel hub and hub nut onto the knuckle. Tighten the hub nut to the specified torque and further tighten it until its grooves align with the cotter pin hole.

TORQUE: 69 N·m (7.0 kgf·m, 51 lbf·ft)

Install a new cotter pin.



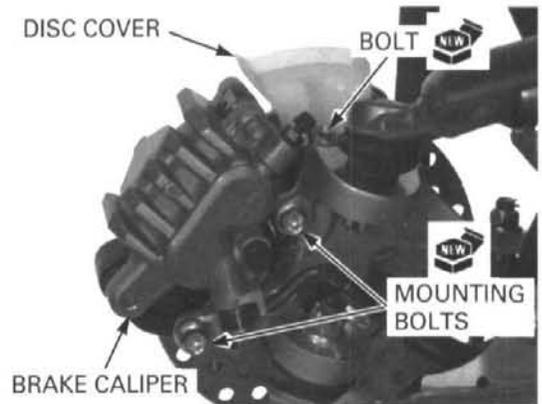
Install the front brake caliper assembly with new mounting bolts, and tighten the bolts.

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)

Install the disc cover with a new bolt and tighten the bolt.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Install the front wheel (page 17-11).



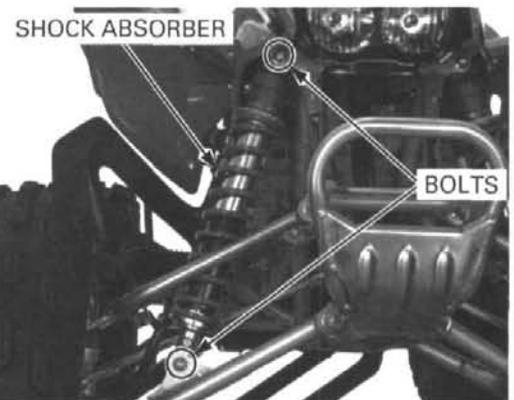
FRONT SHOCK ABSORBER

REMOVAL

Remove the four trim clips and the headlight under cover.

Support the vehicle using a hoist or equivalent and raise the front wheel off the ground.

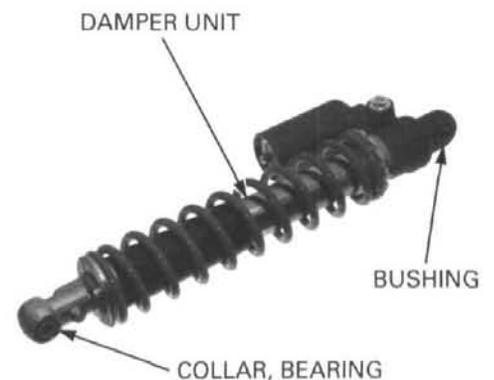
Support the lower arm. Remove the mounting nuts, bolts and shock absorber.



INSPECTION

Remove the lower pivot collar and check the needle bearing for wear or damage. Replace the bearing if necessary.

Check the upper pivot bushing for wear or damage. Check the damper unit for leaks or other damage. Replace the shock absorber assembly if necessary.



FRONT WHEEL/SUSPENSION/STEERING

BEARING REPLACEMENT

Remove the pivot collar and dust seals.



Press the needle bearing out of the shock absorber lower pivot using the special tool.

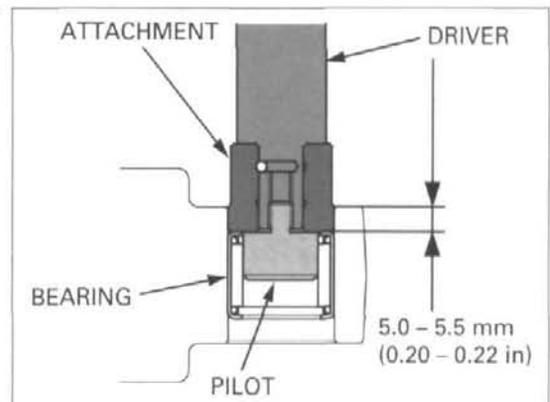
TOOLS:

Driver	07949-3710001
Attachment, 24 x 26 mm	07746-0010700
Pilot, 17 mm	07746-0040400

Apply grease to new needle bearing rollers.

Press in the bearing with the marked side facing up.

Press the needle bearing into the lower pivot until the depth from the outer surface is 5.0 – 5.5 mm (0.20 – 0.22 in), using the same special tools.



Apply grease to new dust seal lips and install them into the lower pivot until they are flush with the pivot surfaces.
Install the pivot collar.



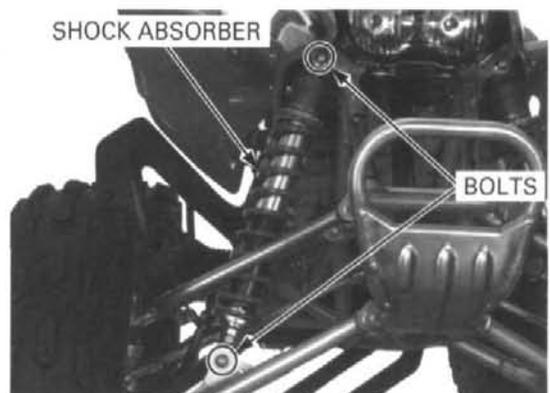
INSTALLATION

Install the shock absorber in the frame and lower arm, and insert the mounting bolts from the front side.

Install the mounting nuts and tighten them.

TORQUE: 39 N·m (4.0 kgf·m, 29 lbf·ft)

Install the headlight under cover with the four trim clips.



SUSPENSION ARM

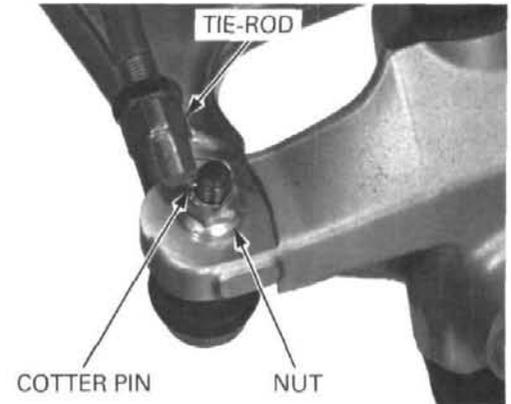
REMOVAL

Remove the wheel hub (page 17-15).

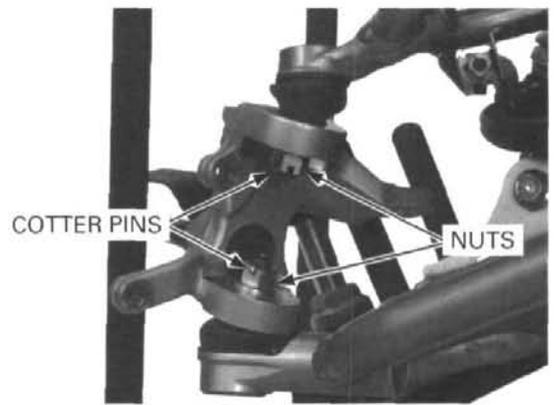
Remove the cotter pin from the tie-rod ball joint stud.

Remove the ball joint nut while holding the joint stud flat surfaces with an open end wrench.

Remove the tie-rod from the knuckle.



Remove the cotter pins and loosen the castle nuts, but do not remove them yet.

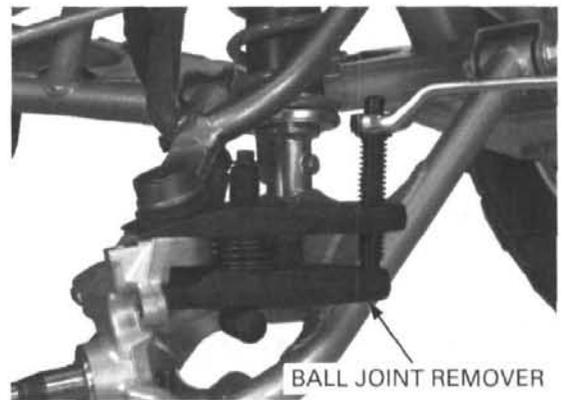


Release the ball joints, using the special tool according to the instructions described below.

TOOL:

Ball joint remover

07MAC-SL00200



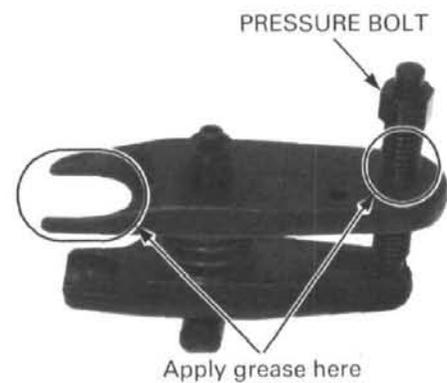
Apply grease to the ball joint remover at the point shown.

This will ease installation of the tool and prevent damage to the pressure bolt threads.

Insert the jaws carefully, making sure that you do not damage the ball joint boot.

Adjust the jaw spacing by turning the pressure bolt.

If necessary, apply penetrating type lubricant to loosen the ball joint.

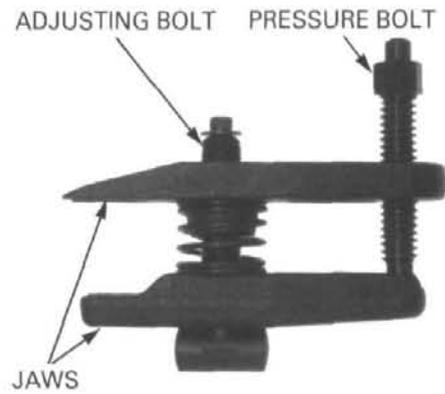


FRONT WHEEL/SUSPENSION/STEERING

Once the tool is in place, turn the adjusting bolt as necessary to make the jaws parallel. Then hand-tighten the pressure bolt and recheck the jaws to make sure they are still parallel.

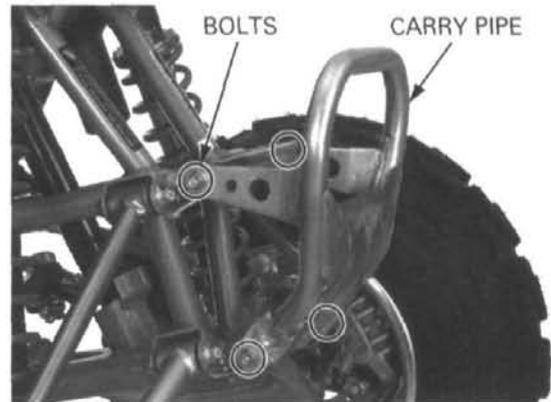
Tighten the pressure bolt with a wrench until the ball joint stud pops loose.

Remove the ball joint nuts, washers and knuckle from the upper and lower arms.

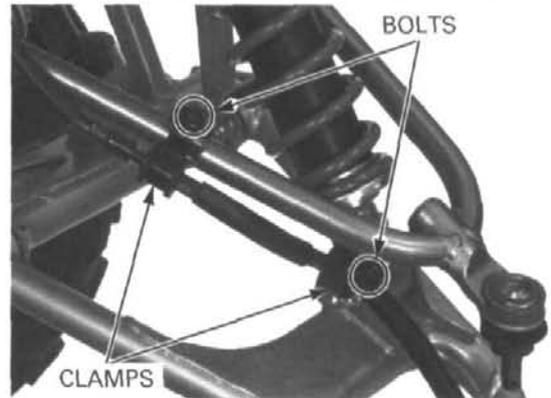


Remove the following:

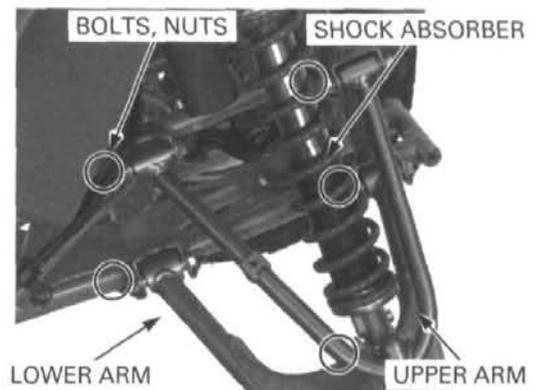
- four bolts and carry pipe



- bolts and brake hose clamps



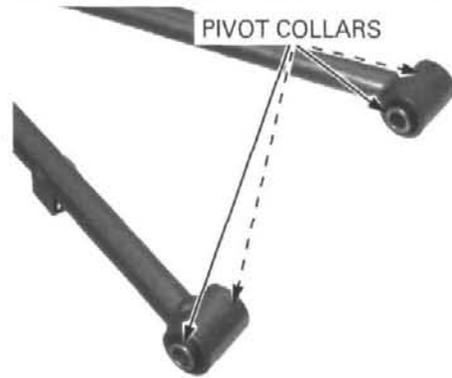
- pivot nuts, bolt and upper arm
- shock absorber lower mounting nut and bolt
- pivot nuts, bolt and lower arm



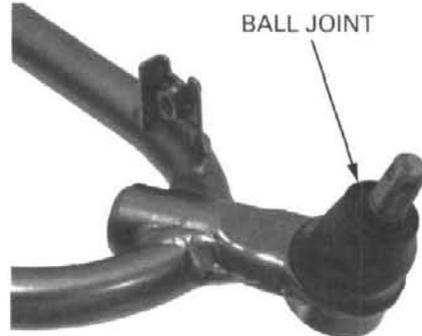
- pivot collars from the arm pivots

INSPECTION

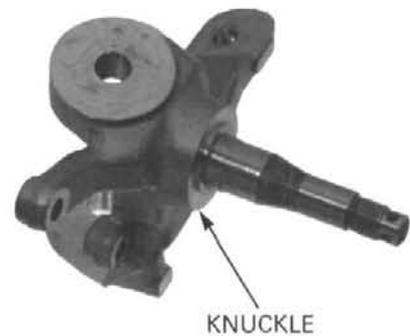
Check the spherical bearings in the arm pivots for wear or damage.



Inspect the ball joint boot for tears or other damage by moving the ball joint stud. It should move freely and smoothly.



Inspect the knuckle for damage or cracks.



PIVOT BEARING REPLACEMENT

Remove the dust seals.

Remove the stopper rings.



FRONT WHEEL/SUSPENSION/STEERING

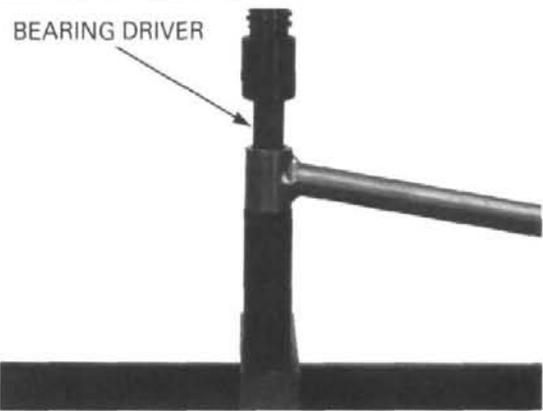
Press the spherical bearing out of the arm using the special tool.

TOOL:
Spherical bearing driver **07HMF-HC00100**

Install a new stopper ring into the arm pivot groove properly.

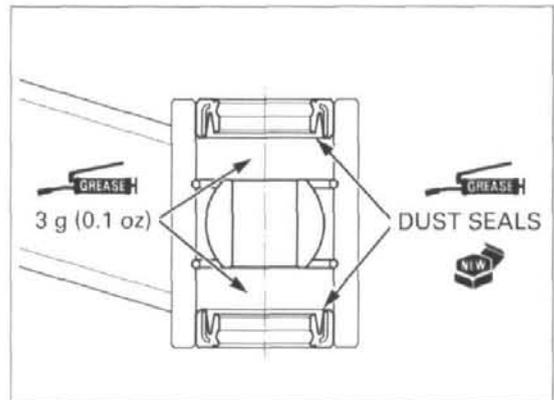
Press a new bearing into the arm pivot until it contacts the stopper ring, using the same tool.

Install a new stopper ring into the opposite side groove.



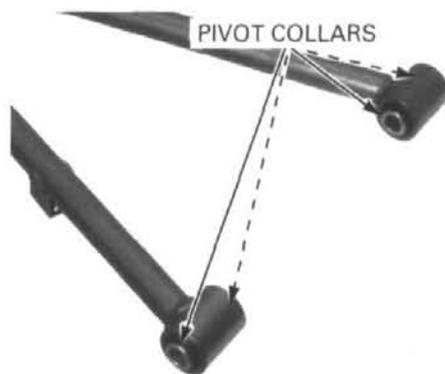
Pack 3 g (0.1 oz) of grease into the arm pivot as shown.

Apply grease to new dust seal lips and install them into the arm pivot until they are flush with the pivot ends.



INSTALLATION

Install the pivot collars into the arm pivots.



Install the lower arm into the frame, insert the pivot bolts from the front side and tighten the pivot nuts.

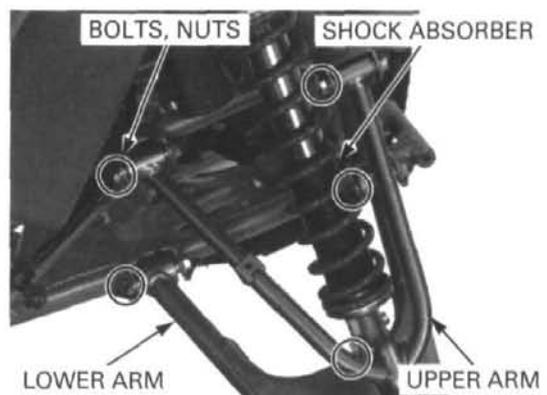
TORQUE: 39 N·m (4.0 kgf·m, 29 lbf·ft)

Install the shock absorber lower mount into the lower arm, insert the bolt from the front side and tighten the pivot nut.

TORQUE: 39 N·m (4.0 kgf·m, 29 lbf·ft)

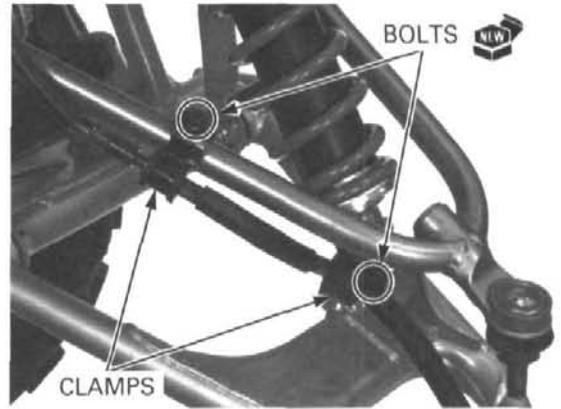
Install the upper arm into the frame, insert the pivot bolts from the front side and tighten the pivot nuts.

TORQUE: 39 N·m (4.0 kgf·m, 29 lbf·ft)

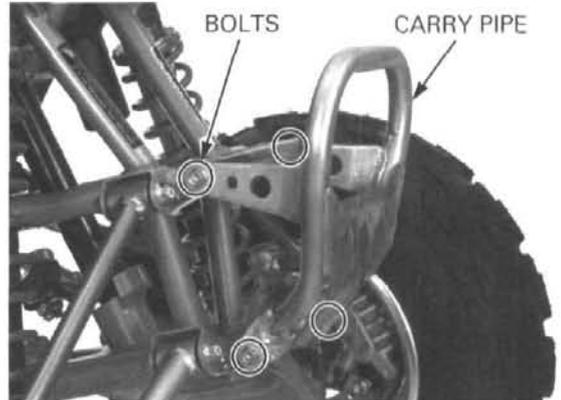


Install the brake hose clamps with new bolts and tighten the bolts.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



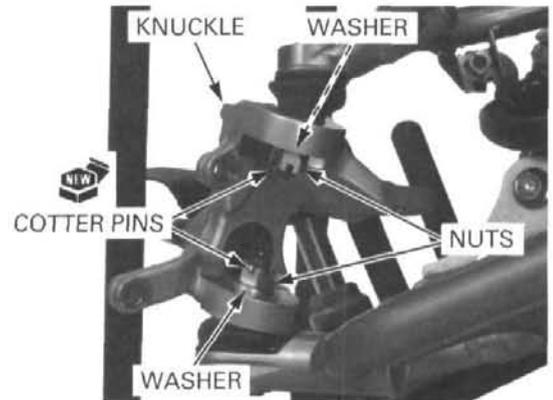
Install the carry pipe and tighten the four bolts securely.



Install the knuckle onto the upper and lower arms with the washers and castle nuts. Tighten the nuts to the specified torque and further tighten them until the grooves align with the cotter pin holes.

TORQUE: 32 N·m (3.3 kgf·m, 24 lbf·ft)

Install new cotter pins.

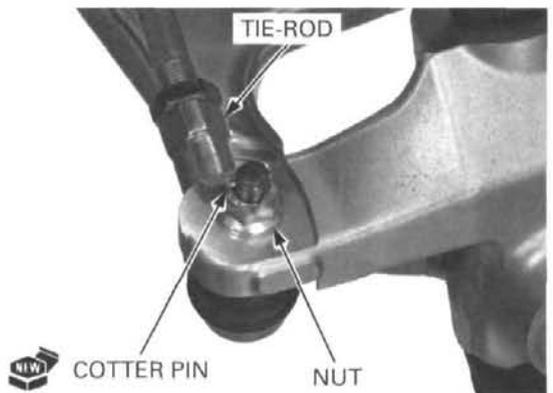


Install the tie-rod onto the knuckle. Install and tighten the ball joint nut while holding the joint stud flat surfaces with an open end wrench.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)

Install new cotter pin.

Install the wheel hub (page 17-17).
Adjust the toe (page 4-33).



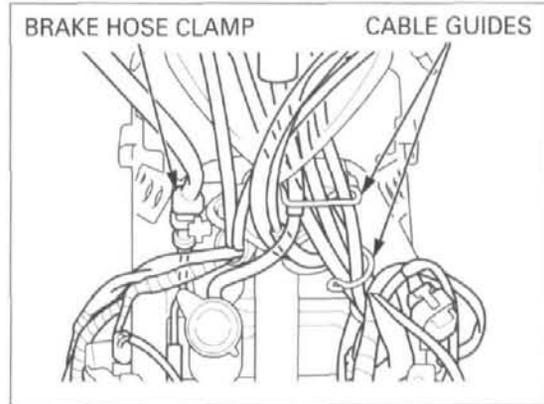
STEERING SHAFT

REMOVAL

Remove the top cover (page 3-5).

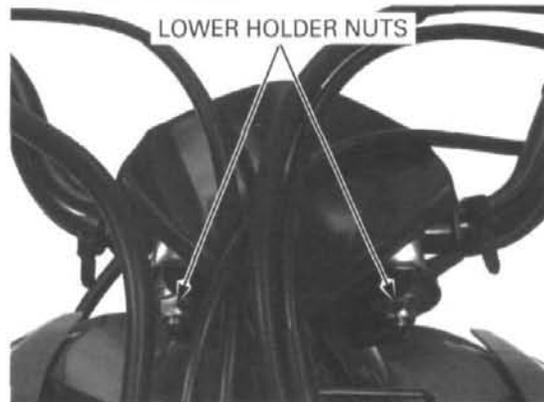
Release the cables and wires from the cable guides.

Remove the bolt and brake hose clamp from the steering shaft holder.

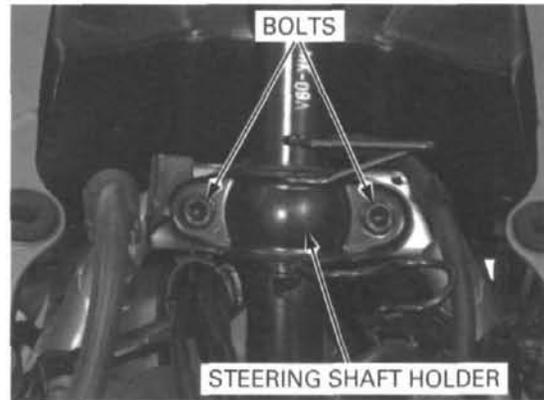


Do not twist or bend the brake hose and pipe.

Remove the handlebar lower holder nuts, washers and the handlebar assembly from the steering shaft.

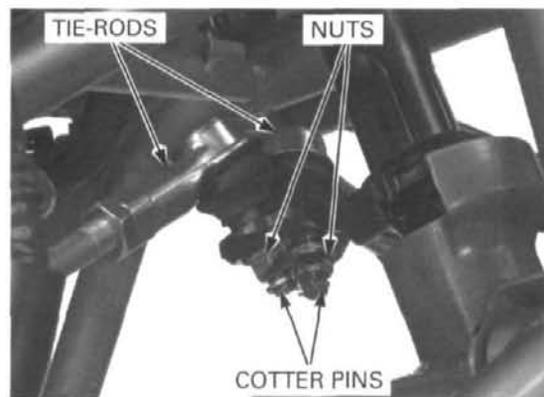


Remove the two bolts and steering shaft holder.

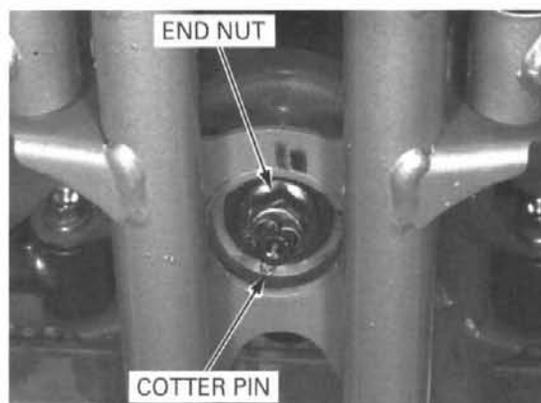


Remove the cotter pins from the tie-rod ball joint studs.

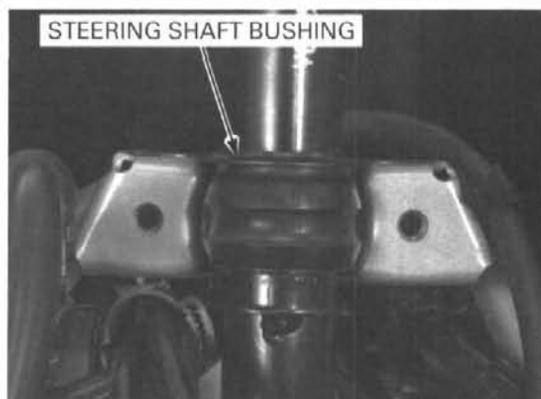
Remove the ball joint nuts while holding the joint stud flat surfaces with an open end wrench. Remove the tie-rods from the steering shaft.



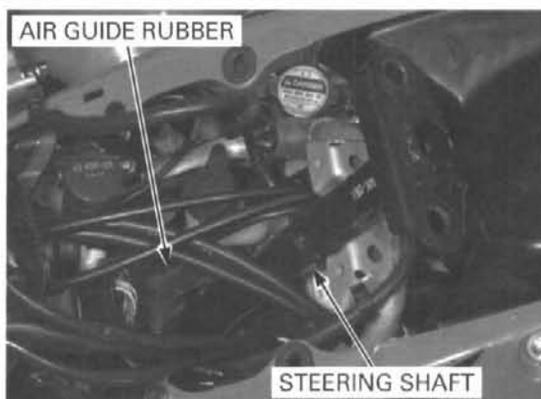
Remove the cotter pin and steering shaft end nut.



Remove the steering shaft bushing from the shaft.

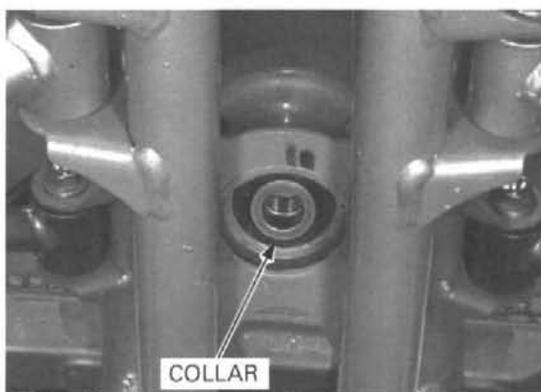


'04 - '05: Remove the steering shaft from the frame through the air guide rubber.
Be careful not to damage the air guide rubber.



After '05: Remove the steering shaft from the frame.

Remove the steering shaft collar.



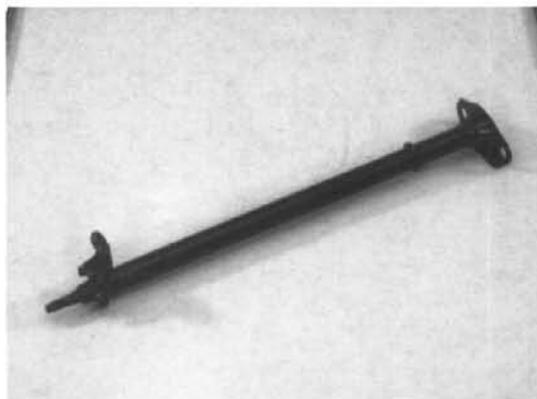
FRONT WHEEL/SUSPENSION/STEERING

INSPECTION

Check the steering shaft bushing for wear or damage.

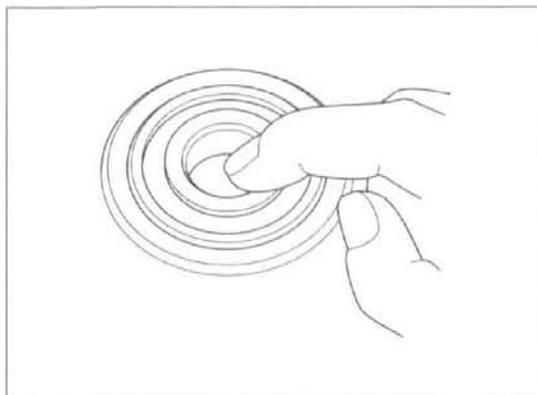


Check the steering shaft for distortion or damage.



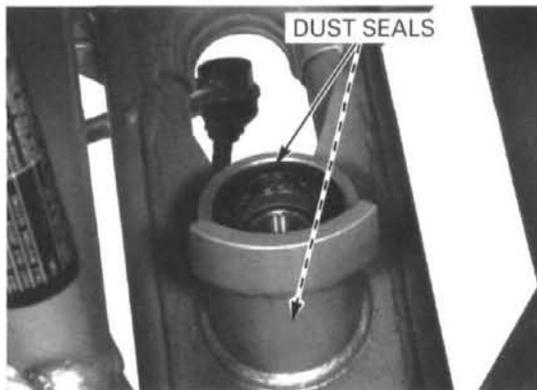
Turn the inner race of the steering shaft bearing with your finger. The bearing should turn smoothly and quietly. Also check that the bearing outer race fits tightly in the frame.

Replace the bearing if the inner race does not turn smoothly and quietly, or if the outer race fits loosely in the frame.

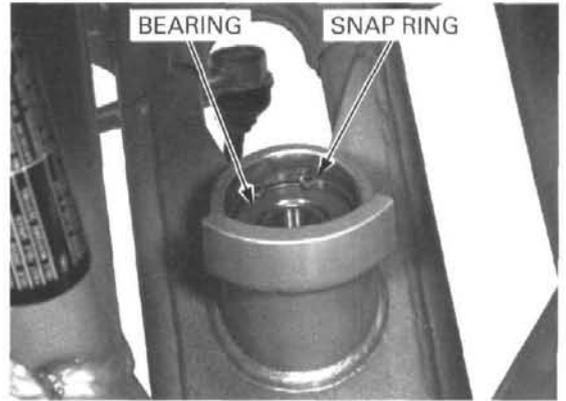


BEARING REPLACEMENT

Remove the upper and lower dust seals.



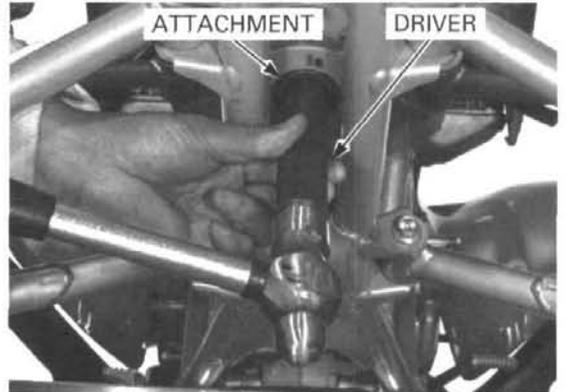
Remove the snap ring.



Drive the steering shaft bearing out of the frame using the special tools.

TOOLS:

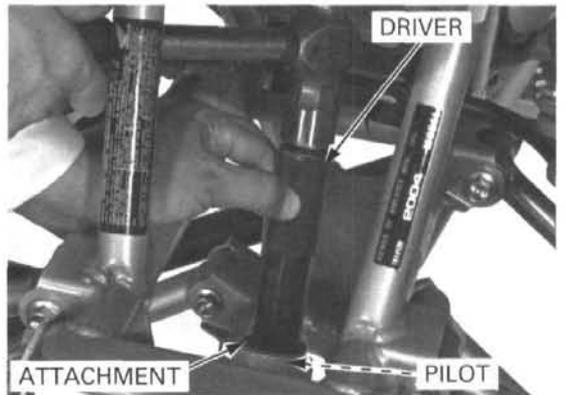
Driver 07749-0010000
Attachment, 32 x 35 mm 07746-0010100



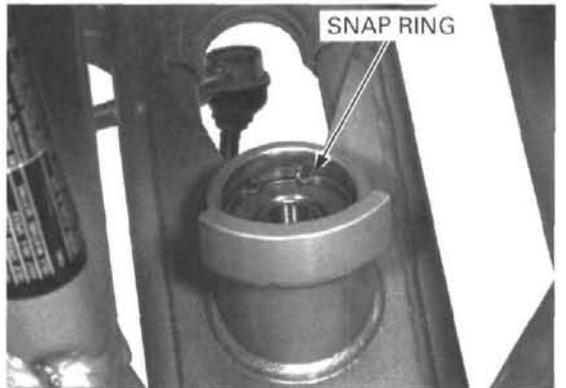
Drive a new bearing squarely into the frame with the marks facing up until it is fully seated.

TOOLS:

Driver 07749-0010000
Attachment, 37 x 40 mm 07746-0010200
Pilot, 17 mm 07746-0040400



Install the snap ring into the frame groove properly.



FRONT WHEEL/SUSPENSION/STEERING

Apply grease to new dust seal lips and install them into the frame.



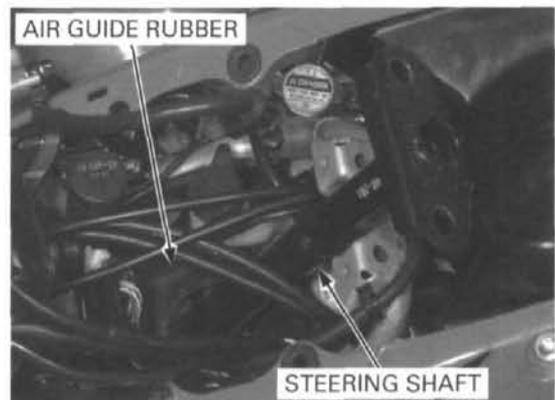
INSTALLATION

NOTE:

- Route the wires, hose and cables properly (page 1-24).

'04 - '05: *Be careful not to damage the air guide rubber.* Install the steering shaft in the frame through the air guide rubber.

After '05: Install the steering shaft in the frame.



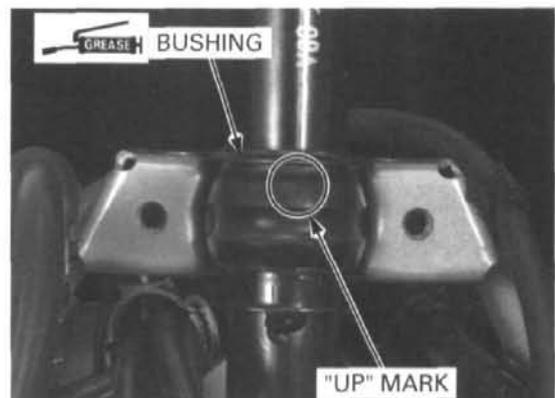
Apply grease to the steering shaft bushing inner surface.

NOTE:

- Use Shell Alvania EP-LF-2 or equivalent for steering shaft bushing.

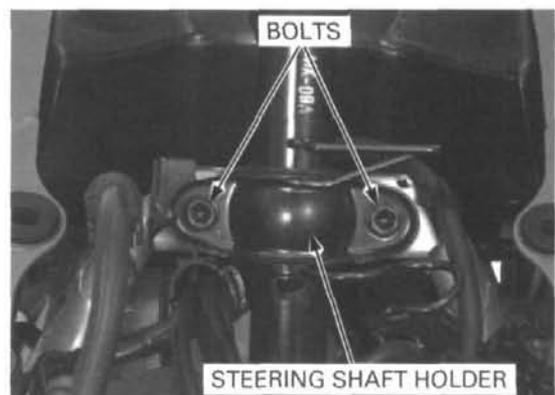
Install the bushing onto the steering shaft with the "UP" mark facing up.

Install the steering shaft end into the steering shaft bearing.

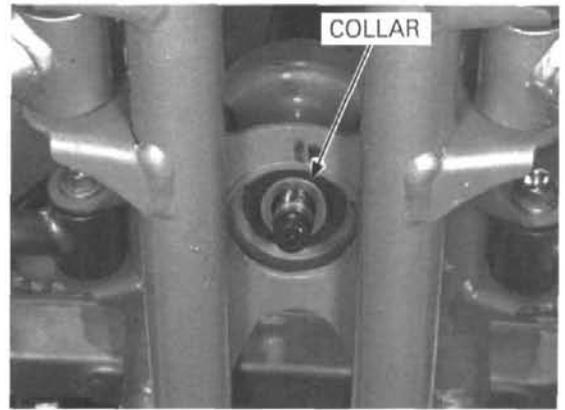


Install the steering shaft holder and tighten the two bolts alternately.

TORQUE: 32 N-m (3.3 kgf-m, 24 lbf-ft)



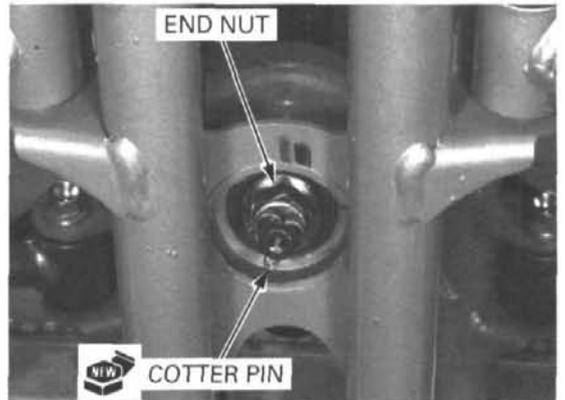
Install the steering shaft collar.



Install the steering shaft end nut and tighten it.

TORQUE: 69 N·m (7.0 kgf·m, 51 lbf·ft)

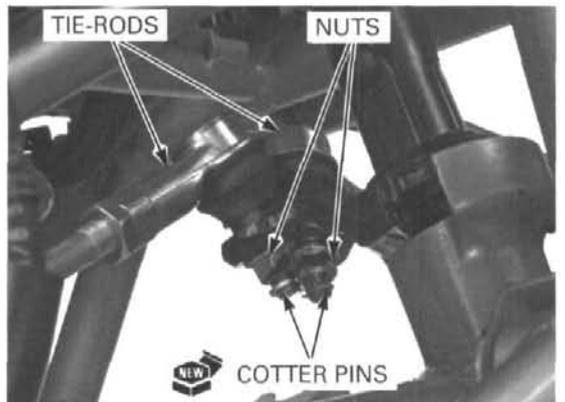
Install a new cotter pin.



Install the tie-rods onto the steering shaft.
Install the ball joint nuts and tighten them while holding the ball joint stud flats with an open end wrench.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)

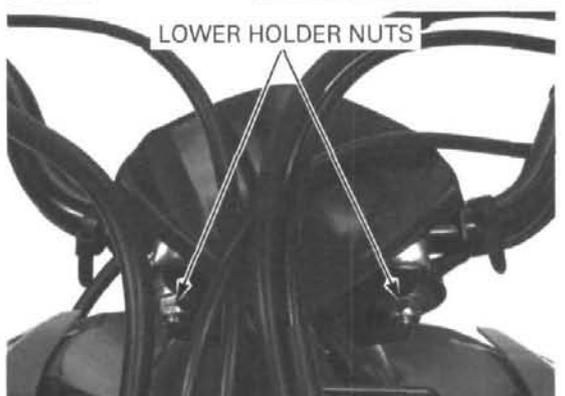
Install new cotter pins.



Do not twist or bend the brake hose and pipe.

Install the handlebar assembly onto the steering shaft with the washers and lower holder nuts. Tighten the nuts.

TORQUE: 39 N·m (4.0 kgf·m, 29 lbf·ft)



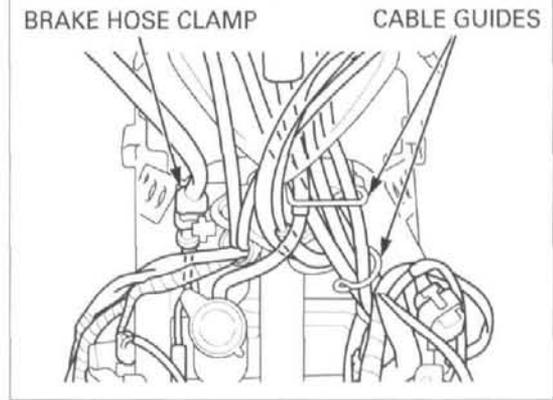
FRONT WHEEL/SUSPENSION/STEERING

Install the brake hose clamp onto the steering shaft holder with a new bolt and tighten the bolt.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Install the cables and wires into the cable guides properly (page 1-24).

Install the top cover (page 3-5).
Adjust the toe (page 4-33).



TIE-ROD

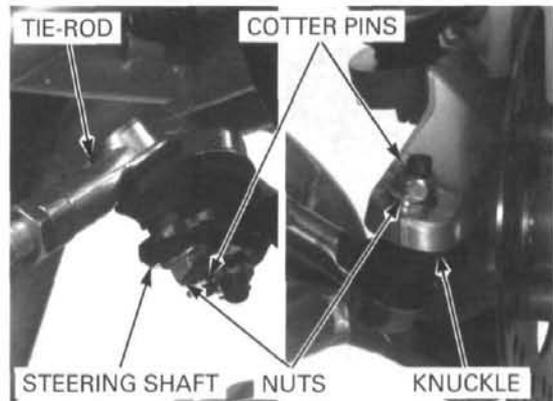
REMOVAL

Remove the front wheel (page 17-11).

Remove the cotter pins.

Remove the ball joint nuts while holding the joint stud flats with an open end wrench.

Remove the tie-rod from the knuckle and steering shaft arm.



INSPECTION

Inspect the tie-rod for distortion or damage.
Inspect the ball joint boots for tears or other damage by moving the ball joint studs. They should move freely and smoothly.

Replace the ball joint if necessary.

DISASSEMBLY/ASSEMBLY

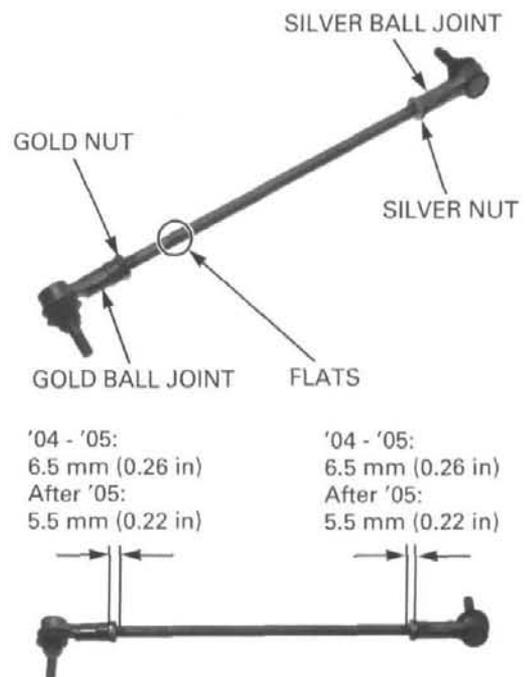
Loosen the lock nuts and remove the ball joints and lock nuts from the tie-rod.

Install the gold ball joint and nut on the flat (wrench holding area) side of the tie-rod, and the silver ball joint and nut on the opposite side.

'04 - '05: Adjust the tie-rod length so that the distance between each lock nut and thread end is 6.5 mm (0.26 in).
A difference of both distances should be 3.0 mm (0.12 in) or less.

After '05: Adjust the tie-rod length so that the distance between each lock nut and thread end is 5.5 mm (0.22 in).
A difference of both distances should be 3.0 mm (0.12 in) or less.

The ball joint positions are 180° from each other. Tighten these nuts after installing the tie-rod.



INSTALLATION

Install the tie-rod onto the steering shaft and knuckle with the flat side of the rod toward the knuckle.

Install and tighten the joint nuts while holding the ball joint stud flats with an open end wrench.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)

Install new cotter pins.

Install the front wheel (page 17-11).

Adjust the toe and ball joint angle (page 4-33).

