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◆ Service Information

● General



A contaminated brake disc or pad reduces braking performance. Replace contaminated pads and clean a contaminated disc with brake degreasing agent.

- The handlebar is made out of Aluminium Alloy. Replace the handlebar if it was bent or damaged.
- Support the bottom part of the engine with jacks when servicing the front wheel and suspension.
- Do not operate the brake lever after removing/installing the wheel.
- Refer to sec. 13 for the brake system inspection.
- Refer to sec. 17 for lamps/instruments/switches inspection.
- Do not step on spokes and avoid overstressing the wheel. Do not damage the wheel.
- When removing/installing the tyre from the rim, use a tyre lever and a rim protector to avoid damaging the rim.

● Specifications

Item				Standard	Service Limit	
Front Wheel	Axle runout			-	0.2mm	
	Wheel rim runout	Radial		-	2.0mm	
		Axial		-	2.0mm	
	Tyre	Tread depth			-	3.0mm
		Pressure	Driver only	Normal	125kPa (1.25kgf/cm ²)	-
				High speed	125kPa (1.25kgf/cm ²)	-
Driver & passenger			Normal	125kPa (1.25kgf/cm ²)	-	
Fork	Spring free length			563.6mm	558.0mm	
	Oil quantity			300 ± 2.5cm ³	-	
	Oil level			148mm	-	
	Oil type			Honda Ultra cushion oil # 10	-	
	Tube runout			-	0.2mm	
Steering load				11 - 17 N (1.1 - 1.7kgf)	-	

• Torque Settings

Handlebar upper holder bolt	20N.m (2.0kgf-m)
Steering stem nut	48N.m (10.0kgf-m)
Steering top thread	4N.m (0.45kgf-m)
Spoke nipple	4N.m (0.4kgf-m)
Front brake disc bolt	20N.m (2.0kgf-m) Alloc bolt
Front axle	74N.m (7.5kgf-m)
Front axle holder nut	12N.m (1.2kgf-m) U-Nut
Fork pinch bolt (upper)	27N.m (2.8kgf-m)
(lower)	32N.m (3.3kgf-m)
Fork centre bolt	20N.m (2.0kgf-m)]
Fork bolt	22N.m (2.2kgf-m)] apply screw locker
Front caliper mount bolt	30N.m (3.1kgf-m)]

• Special Tools

Steering stem socket	07916-KA50100
Steering stem driver	07946-4300101
Ball race remover	07953-MJ10000
- driver attachment	07953-MJ10100
- driver handle	07953-MJ10200
Fork seal driver	07947-KA50100
Fork seal driver attachment	07947-KL40100
Bearing remover shaft	07746-0050100
Bearing remover head 15mm	07746-0050400
Driver handle A	07749-0010000
Outer driver 32 x 35mm	07746-0010200
Pilot 15mm	07746-0040300
Outer driver 42 x 47mm	07746-0010300
Wrench C 5.8 x 6.1mm	07701-0020300

• Troubleshooting

Hard to steer

- Steering top thread overtightened
- Steering head bearing damaged/worn
- Tyre worn
- Insufficient tyre pressure
- Fork bent
- Frame bent

Hard to track straight

- Fork bent
- Steering head bearing damaged/undertightened
- Unequal left-right cushions
- Frame bent
- Tyre worn/tilted
- Loose wheel bearing
- Front axle bent

Front wheel wobbling

- Wheel rim runout
- Wheel bearing damaged

Too soft front suspension

- Cushion spring deformed
- Insufficient oil
- Oil contaminated
- Oil viscosity low
- Tyre pressure low

Too hard front suspension

- Tyre pressure high
- Fork tube bent
- Excessive amount of oil
- Oil passage clogged
- Oil viscosity high

Noise from front suspension

- Front tube and bottom case contact
- Insufficient oil
- Undertightened around the suspension

Wheel rotation heavy

- Wheel bearing fault
- Front axle bent
- Brake dragged (13-3)
- Speedometer gear box fault

◆ Handlebar

● Removal

Remove wire straps and rear view mirrors.
Remove a master cylinder (13-14).

Note:
Keep the master cylinder in level after removing in order to prevent air entering the brake system.

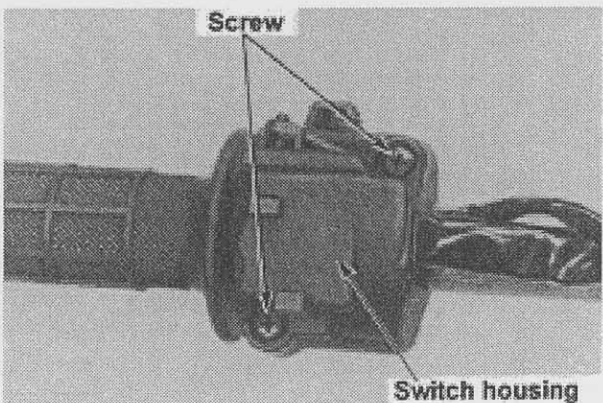
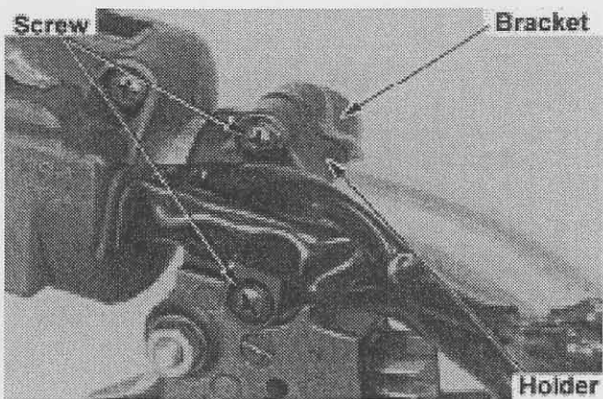
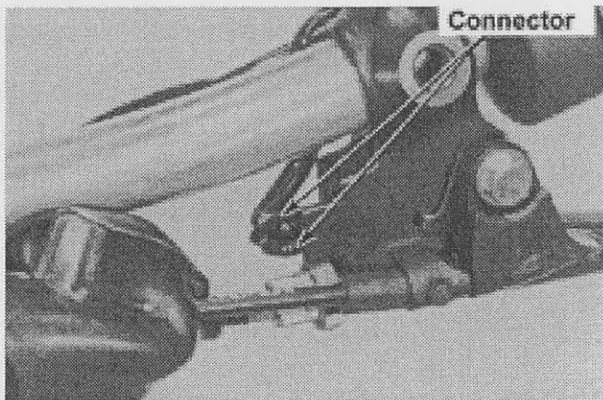
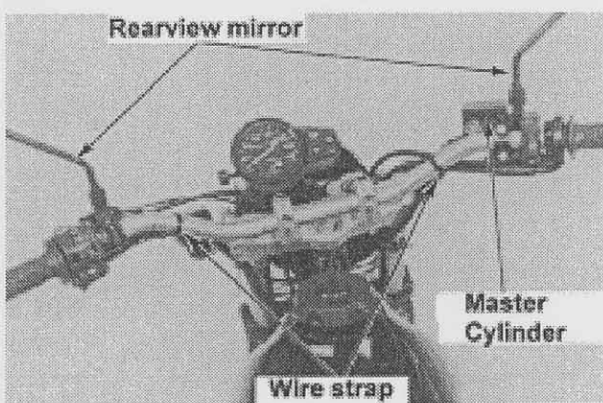
Disconnect the clutch switch connector.

Note:
Prior to unscrewing, mark the position of mating surface of the clutch lever bracket on the handlebar.

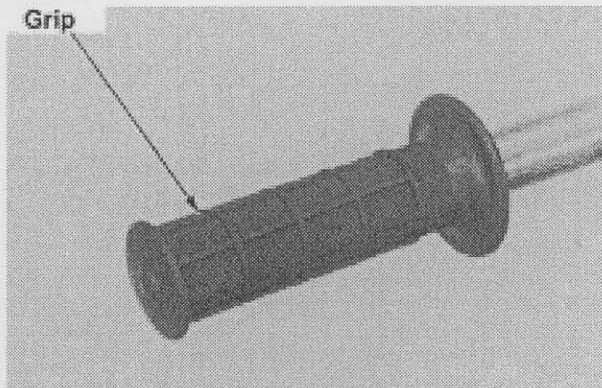
Unscrew to remove a bracket holder and the clutch lever bracket.

Note:
Prior to unscrewing, mark the position of mating surface of the handlebar switch housing on the handlebar.

Unscrew to remove the left handlebar switch housing.



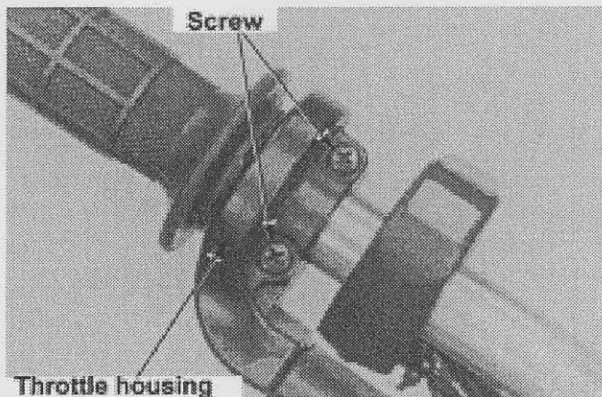
Remove a left handlebar grip.



Note:

Prior to unscrewing, mark the position of the mating surface of the throttle housing on the handlebar.

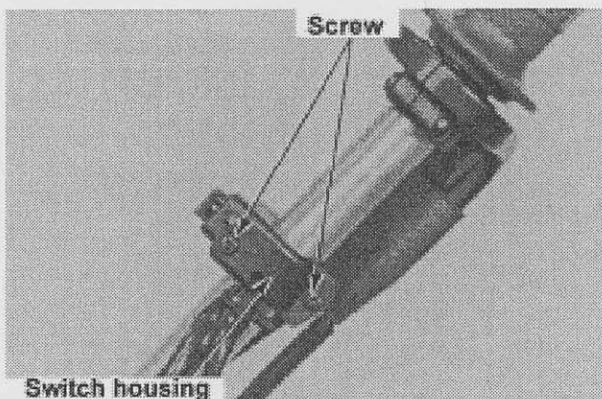
Loosen the throttle housing screw and move the housing until the right handlebar switch housing screw can be observed.



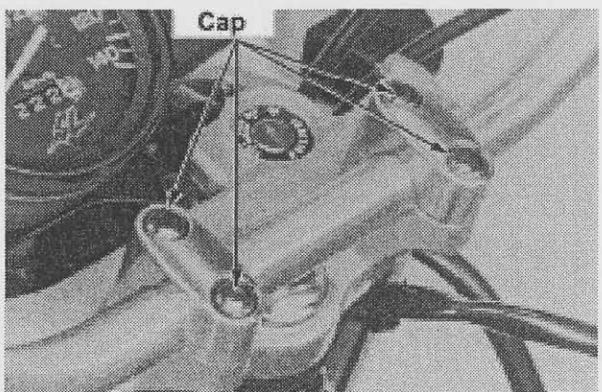
Note:

Prior to loosening the screw, mark the position of mating surface of the handlebar switch housing on the handlebar.

Unscrew to remove the right handlebar switch housing.

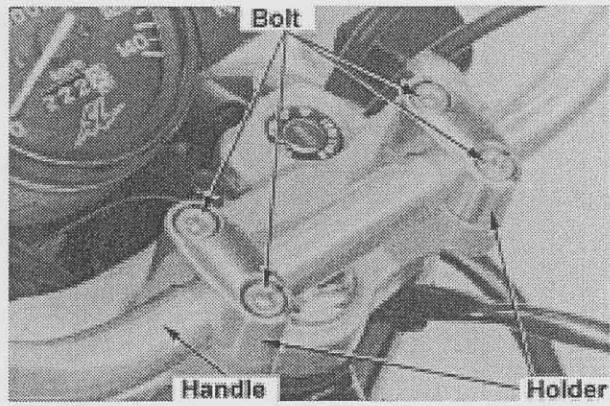


Remove upper holder bolt caps.



Note:

Prior to unscrewing the bolts, mark the position of the handlebar upper holder mating surface on the handlebar.

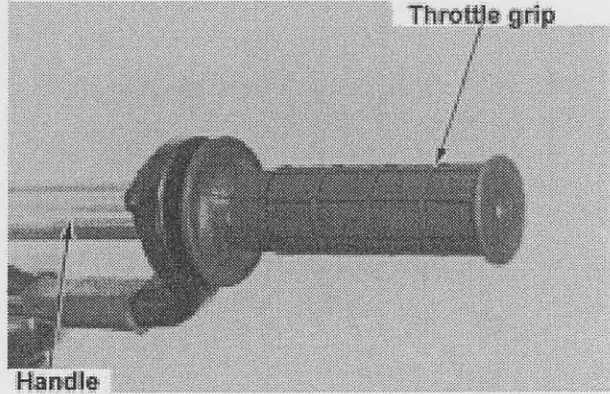


Unscrew bolts to remove the upper holder.
Remove the handlebar.

Pull out the throttle grip Assy from the handlebar.

Note:

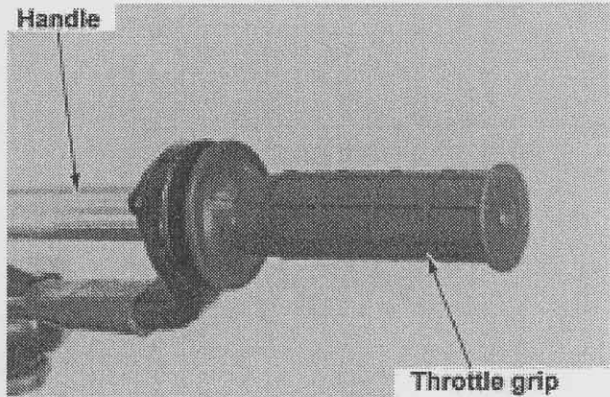
Refer to 11-8 for the throttle housing disassembly / assembly.



Installation

Note:

Route cables, wires and harness in accordance to the routing diagrams (1-21).



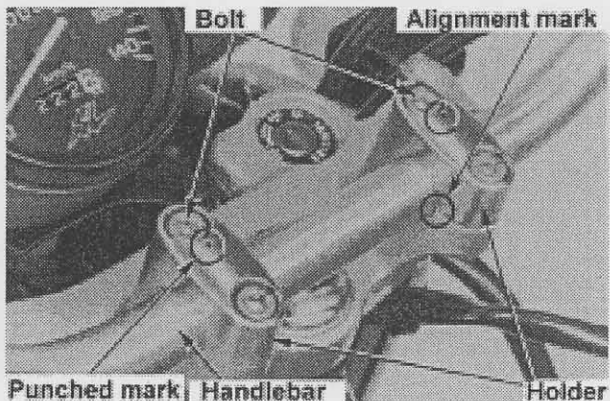
Apply grease to the contact surface between the handlebar and the throttle grip and install the throttle grip Assy.

Set the handlebar to the top bridge and align the holder top surface to the mark on the handlebar.

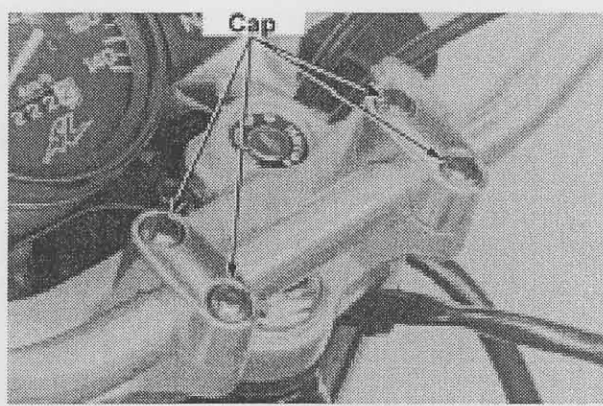
Face the punched mark on an upper holder and install the holder by temporarily tightening the bolts.

Tighten the front bolts first, then the rear bolts.

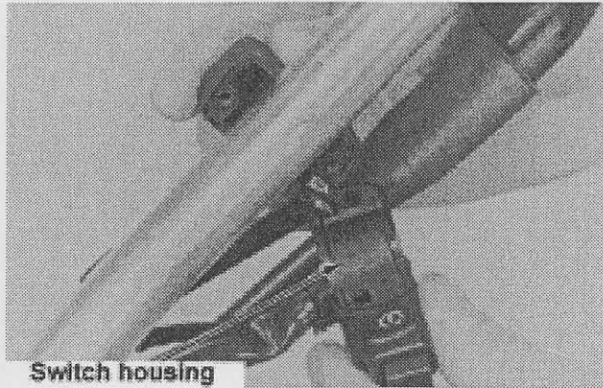
Torque: 20N.m (2.0kgf-m)



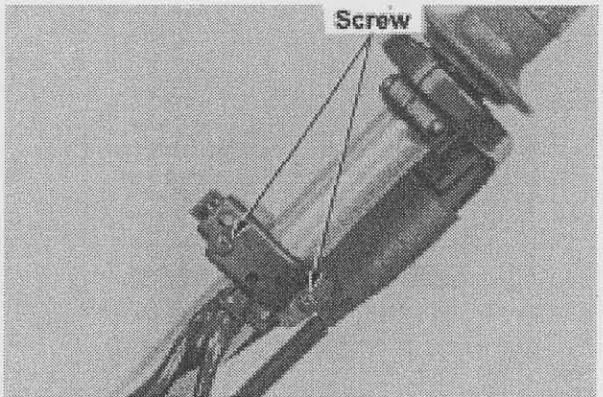
Install upper holder bolt caps.



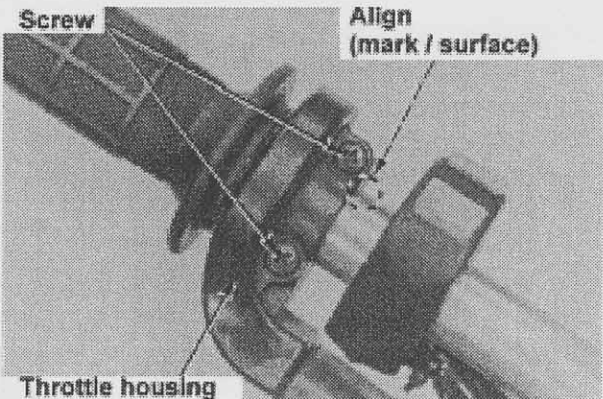
Install the right switch housing by aligning the mark on the handlebar.



Screw the switch housing.
Front screw first, then rear screw.



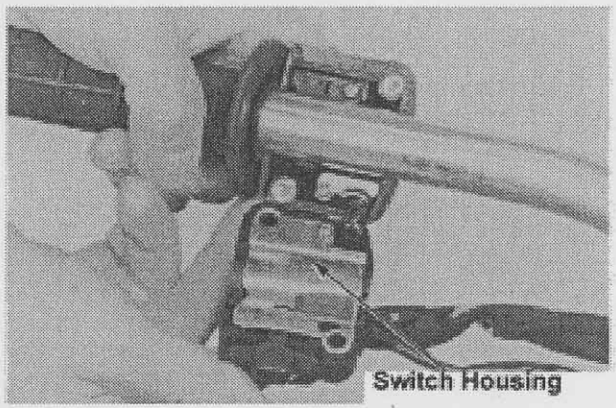
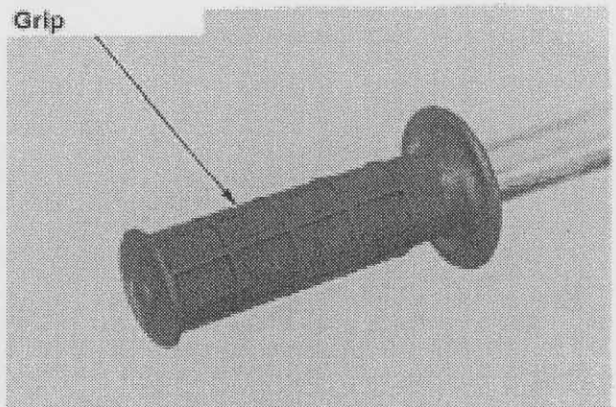
Align the throttle housing mating surface to the mark on the handlebar.
Screw the top screw first, then the bottom screw.



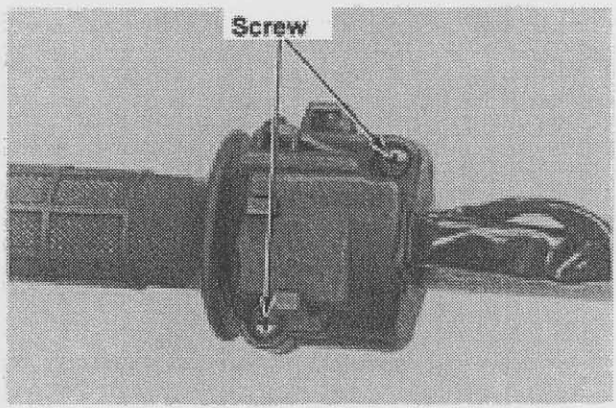
Clean the interior surface of the left handlebar grip and the contact area on the handlebar.
After drying the surface, apply genuine Honda Bond A or Cemedine 540 and install the grip by turning it.

- Notes:**
- Follow the instructions of the bond.
 - Leave the grip for a few hours to let the bond dry.

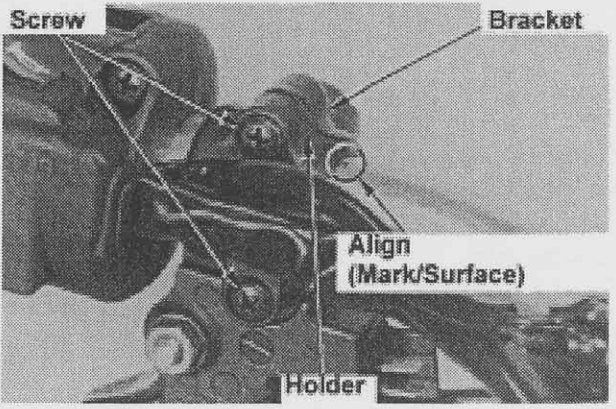
Install the left handle switch housing by aligning it to the mark on the handlebar.



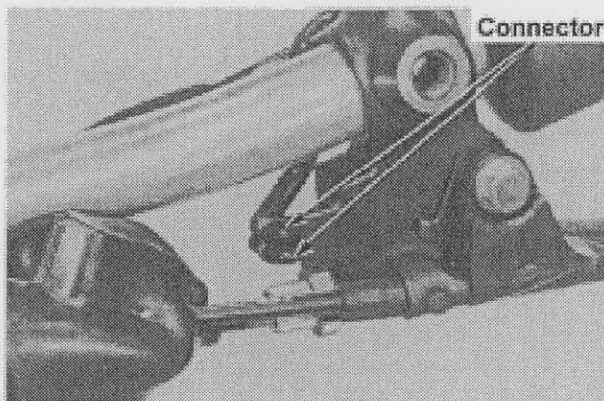
Screw the front first then the rear screw.



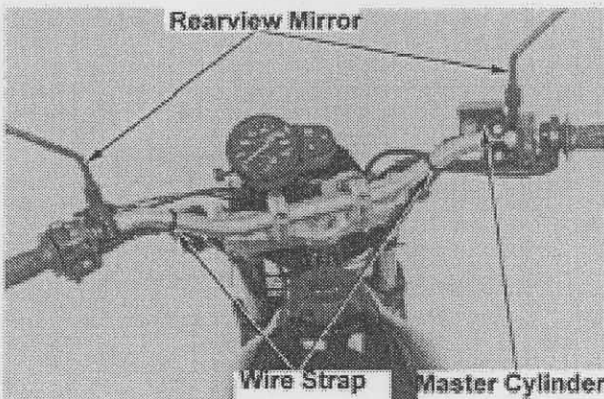
Install a clutch lever bracket and a bracket holder, by aligning the bracket with the mark on the handlebar.
Screw the front first, then the rear.



Connect a clutch switch connector.



Install wire straps and rear view mirrors.
Install a master cylinder (13-18).

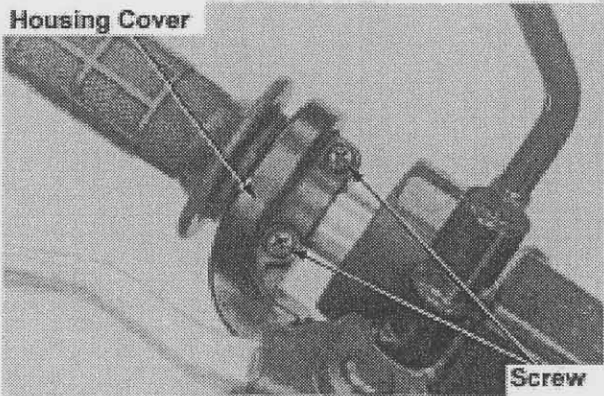


◆ Throttle Housing disassembly / assembly

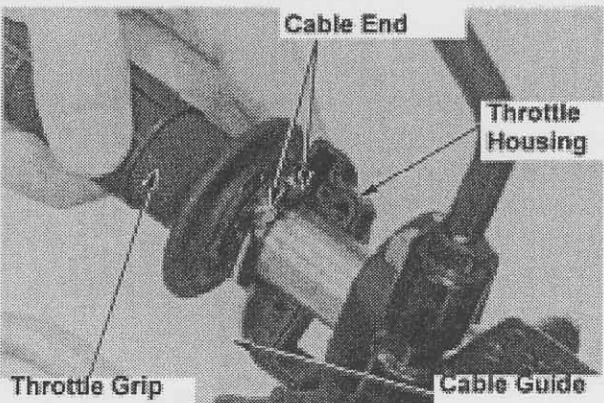
● Disassembly

Note:
Prior to unscrewing, mark the position of the throttle housing mating surface on the handlebar.

Unscrew to remove the throttle housing cover.

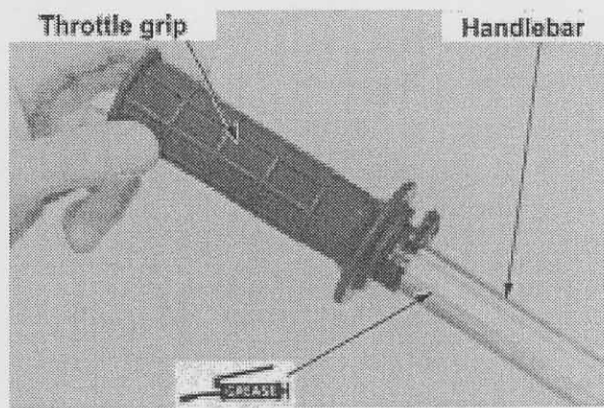


Remove the throttle cable guide.
Disconnect the cable end from the grip.
Remove the throttle housing and the throttle grip.

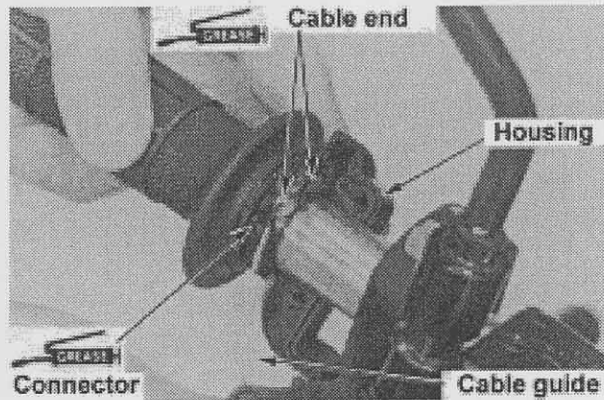


- **Installation**

Apply grease to the interior surface of the throttle grip and the contact surface on the handlebar.
Set the throttle grip to the handlebar.



Apply grease to the throttle cable end and the cable connector.
Install the throttle housing and connect the cable end to the connector on the grip.
Install the throttle cable guide.
Install the throttle housing cover.



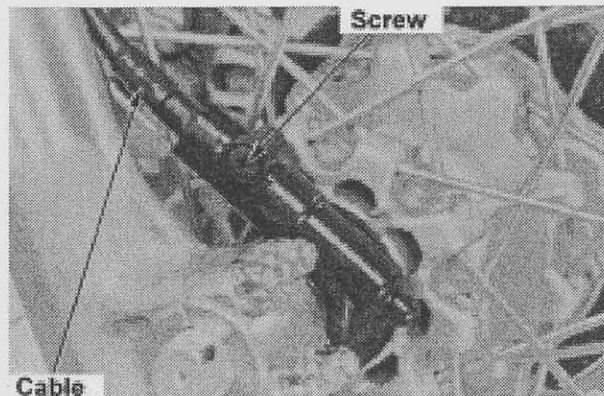
Align the mating surface of the throttle housing to the mark on the handlebar.
Screw the top first, then the bottom.



- ◆ **Front Wheel**

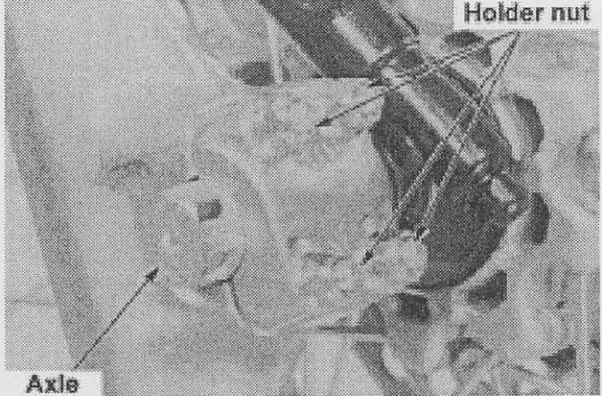
- **Removal**

Unscrew and disconnect a speedometer cable.



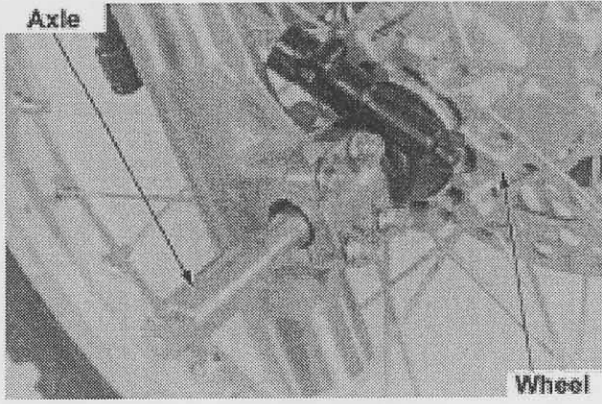
Loosen the front axle holder nuts.
Loosen the front axle.

Note:
No need to remove the holder nuts.

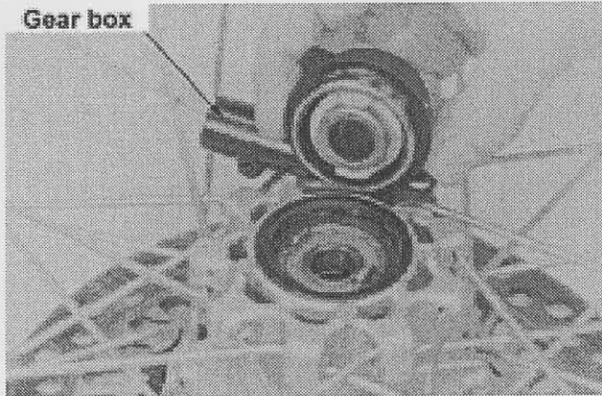


Support the bottom part of the engine to lift the front wheel.
Remove the front axle to remove the front wheel.

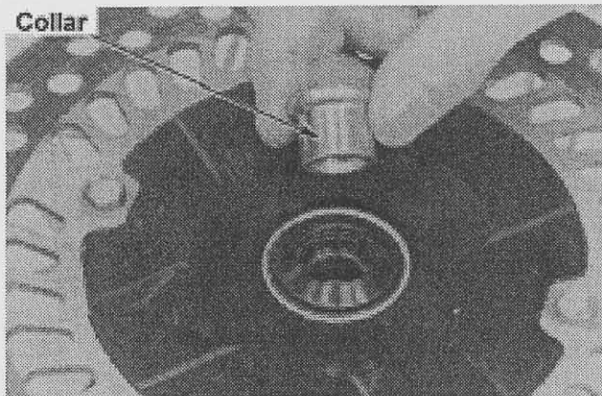
Note:
Do not operate the brake lever after removing the front wheel.



Remove a speedometer gear box.



Remove a side collar.



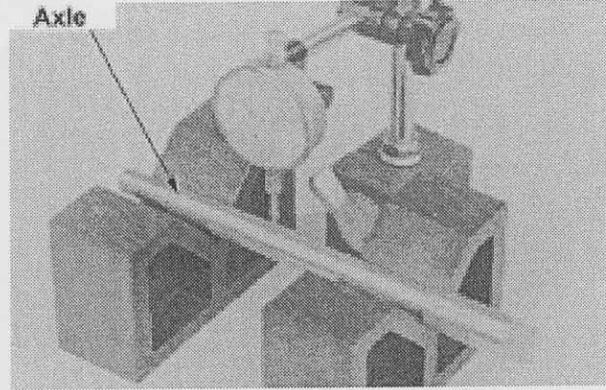
- **Inspection**

- **Axle**

Support the front axle with V-blocks and measure the runout with a dial gauge.

Service limit: 0.2mm or above → replace

Take the ½ of the measured value.



- **Wheel Rim**

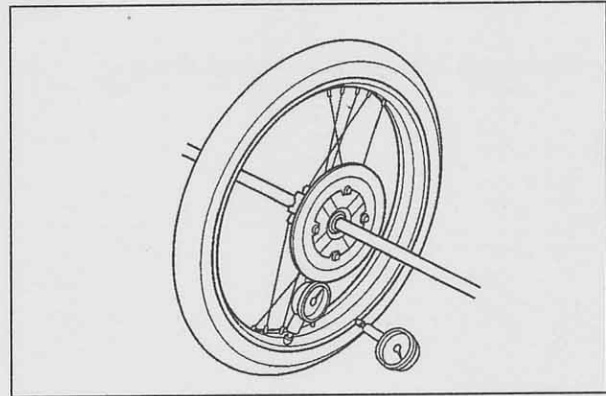
Turn the wheel slowly. Measure the runout of the wheel rim with a dial gauge.

Service limit:

Axial: 2.0mm or above) adjust or

Radial: 2.0mm or above) replace

Replace the rim if it has a local deformation. Inspect spokes for bend and damage.

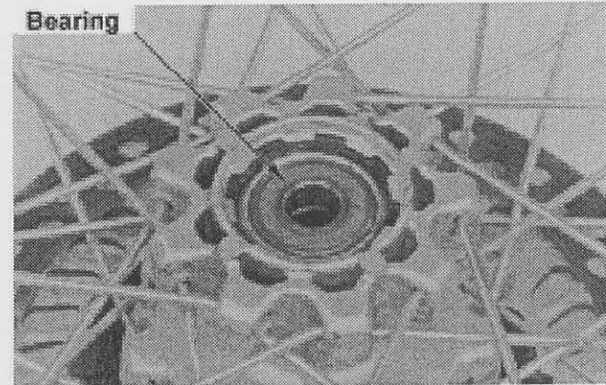


- **Wheel Bearings**

Rotate the inner race of the bearing with a finger to check smooth rotation.

Replace if it is not smooth or there is any loose fit or damage on the outer race or the hub.

Note:
Replace both bearings at the same time.

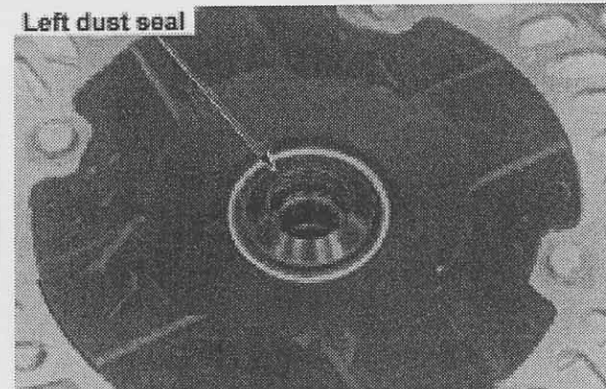


- **Disassembly**

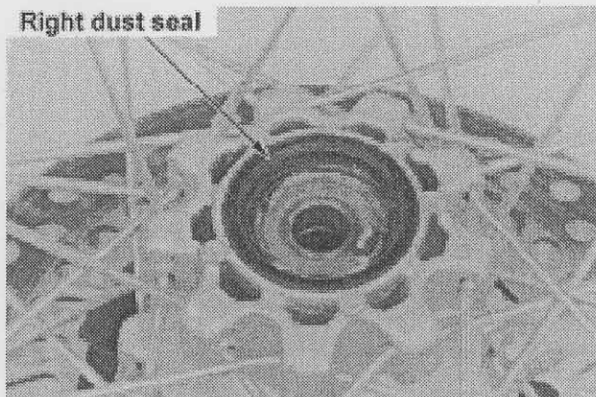
Warning

A contaminated brake disc or pad reduces braking performance. Replace the contaminated pads and clean a contaminated disc with brake degreasing agent.

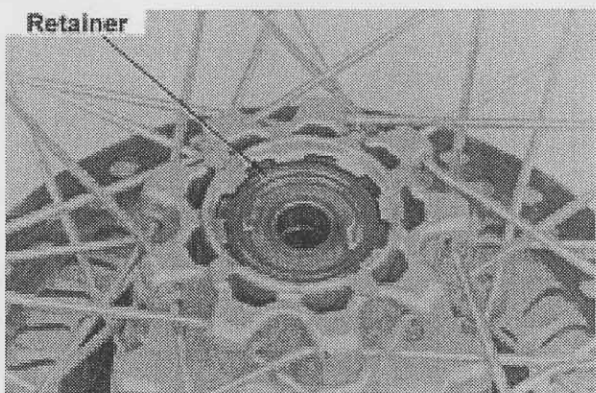
Remove a left dust seal from the left side of the wheel.



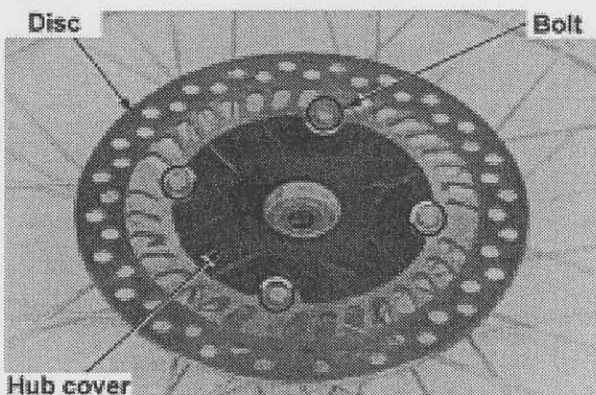
Remove a right dust seal from the right side of the wheel.



Remove a speedometer gear retainer.



Unscrew bolts to remove a brake disc and a hub cover.

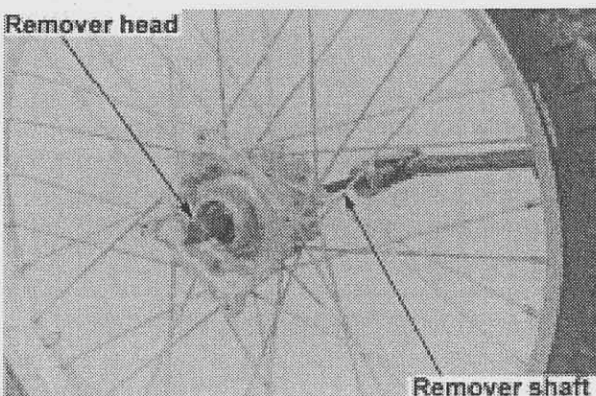


Remove a bearing and a distance collar by using the following tools:

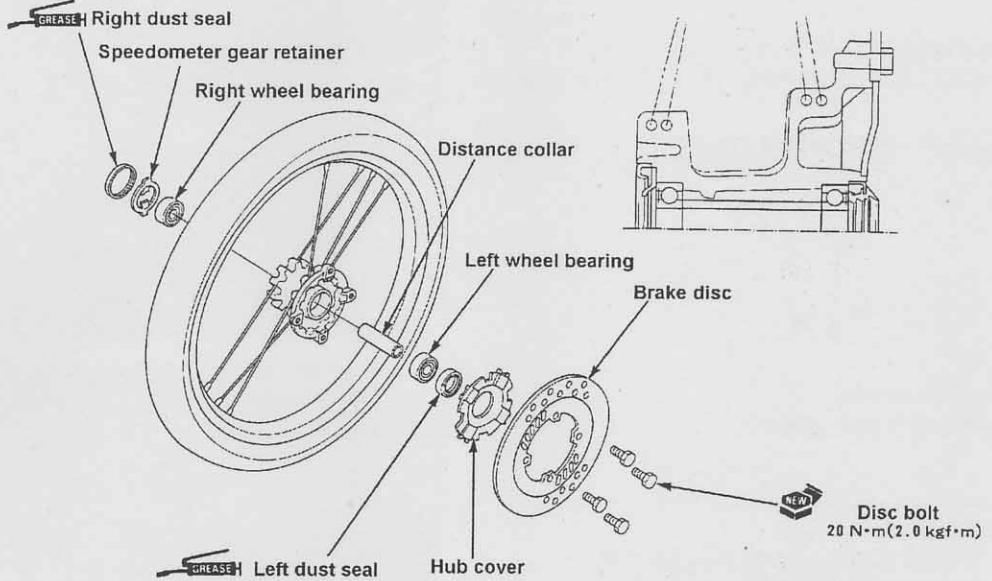
Special tools:

- Bearing remover shaft 07746-0050100
- Bearing remover head 15mm 07746-0050400

Note:
Replace both bearings on each side at the same time and do not re-use the removed bearings.



• **Assembly**

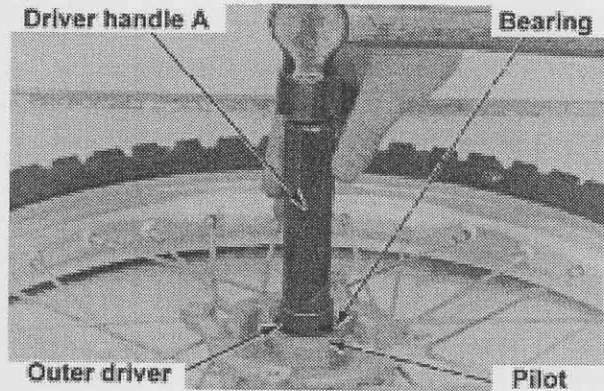


Install the new wheel bearing to the right side of the wheel hub until the bearing touches the hub.

Use the following tools:

Special tools:

- Driver handle A 07749-0010000
- Outer driver, 32 x 35mm 07746-0010200
- Pilot 15mm 07746-0040300



- Notes:**
- Face the sealed surface of the bearing outwards.
 - Set the right bearing until it touches the hub.
 - Do not tilt the bearing when installing.

Install the distance collar.

Install a new bearing from the left side until it touches the distance collar.

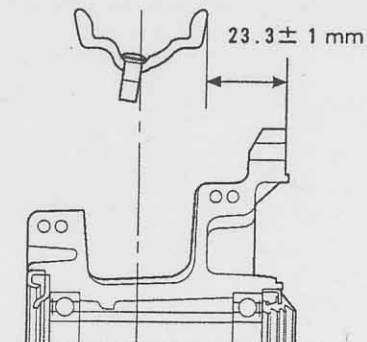
If the wheel was disassembled, assemble in the following order:

- clean the thread of spoke nipples
- equally tighten the spoke nipples and adjust the distance between the hub left bearing housing end and the rim crossing surface. Adjust the rim runout to standard at the same time.

Rim – hub standard distance: 23.3 ± 1 mm

Rim runout: Radial 2.0mm

Axial 2.0mm

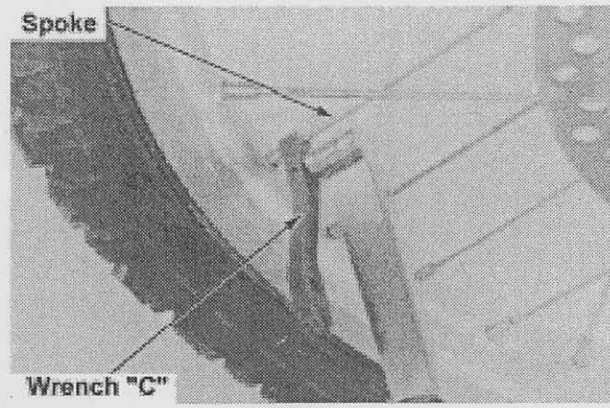


Tighten spoke nipples equally in 2 ~ 3 times.

Special tools:

Wrench "C", 5.8 x 6.1mm 07701-0020300

Torque: 4.0N.m (0.4kgf-m)

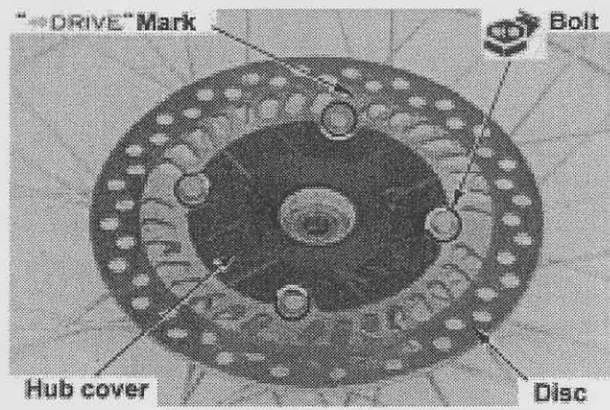


Install a hub cover.
Install a front brake disc.

Note:
The "DRIVE" mark on the disc should face outward.

Tighten the new front brake disc bolts.

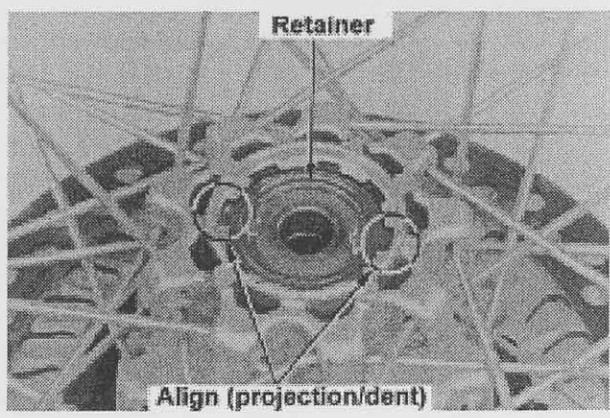
Torque: 20N.m (2.0kgf-m)



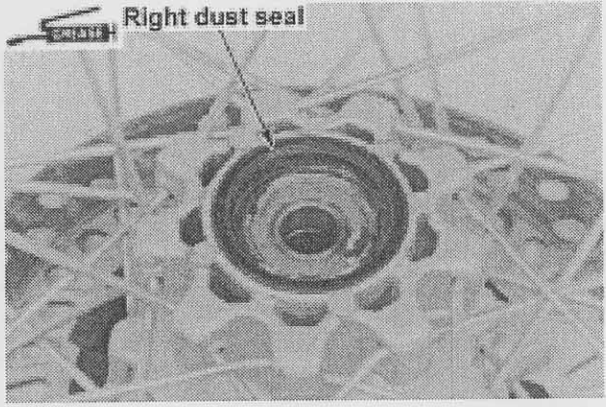
Apply grease to the left dust seal lip.
Install the left dust seal lip.



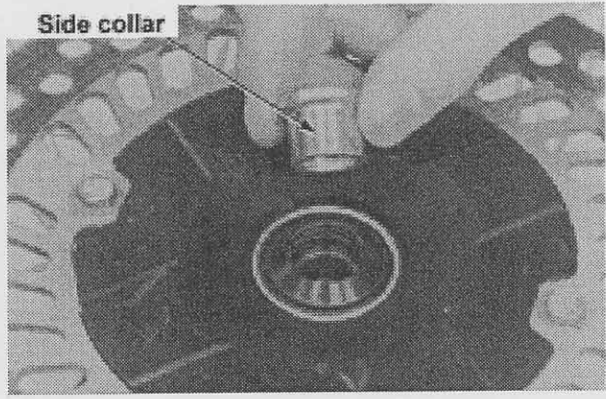
Install the speedometer gear retainer by fitting its projection to the dent on the hub.



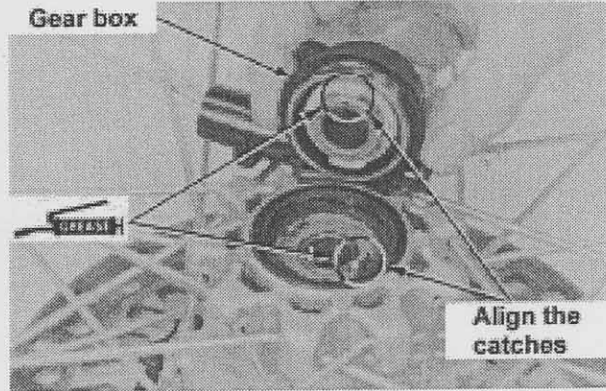
Apply grease to the right dust seal lip.
Install the dust seal.



Install a side collar.



Apply grease to the speedometer gear box and gear retainer catches.
Install the speedometer gear box to the retainer by setting the catches.

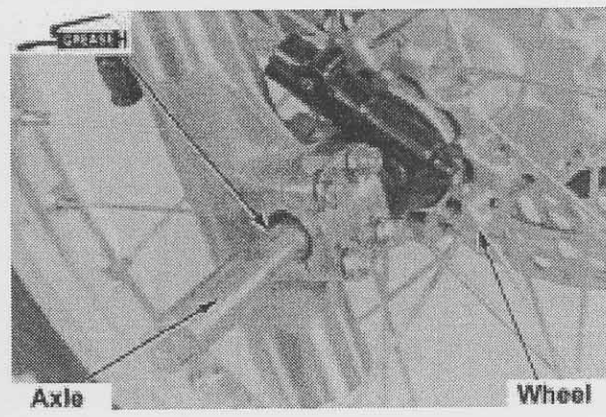


• Installation

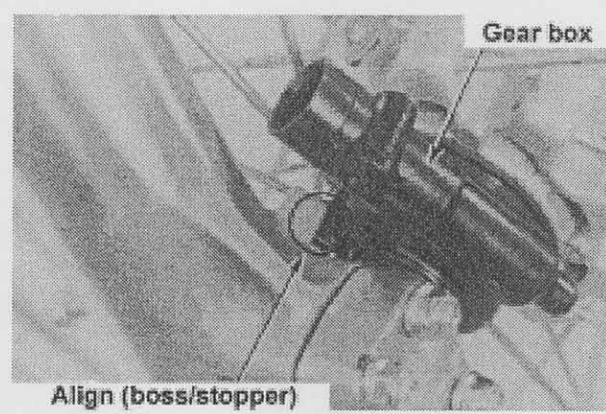
Set the brake disc between the brake pads and install the front wheel.

- Notes:**
- Do not damage the brake pad.
 - If the axle holder is to be re-installed, point "↑" mark upwards.

Apply grease to the contact area of the front axle and install it.

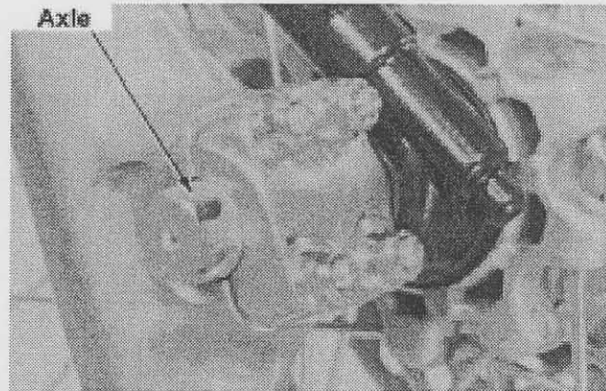


Confirm that the tube plate speedometer gearbox boss is aligned to the right front fork stopper.

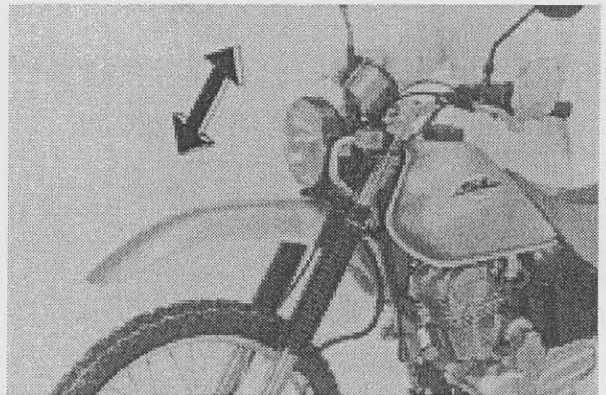


Tighten the front axle.

Torque: 74N.m (7.5kgf-m)

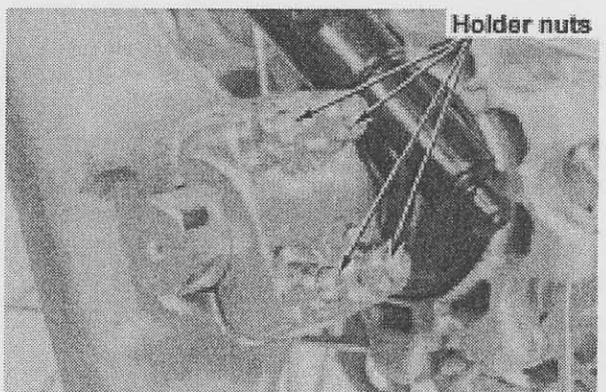


Support the bottom of the engine and apply the front brake. Move the front forks for 5 ~ 6 strokes to smoothen the front axle and its axle holders.

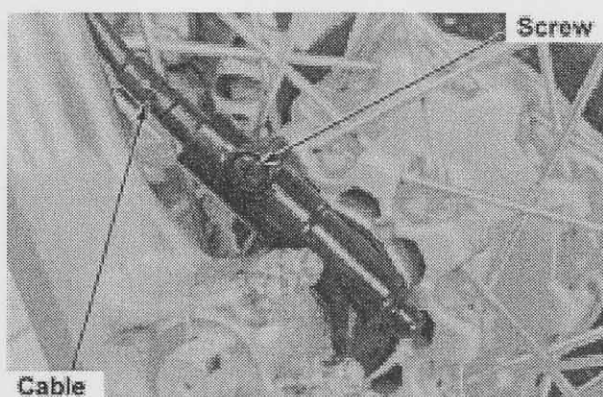


Tighten the upper axle holder bolts first, then the lower bolts.

Torque: 12N.m (1.2kgf-m).



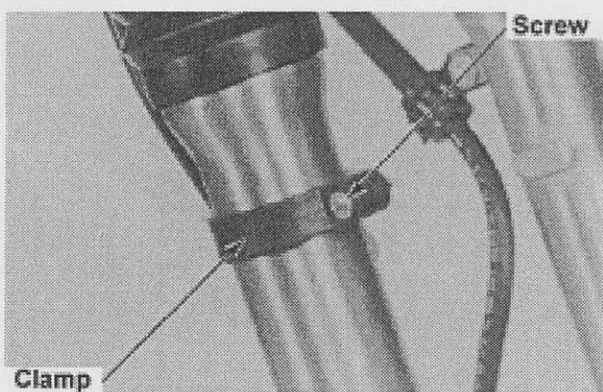
Connect a speedometer cable and secure with a screw.



- Forks

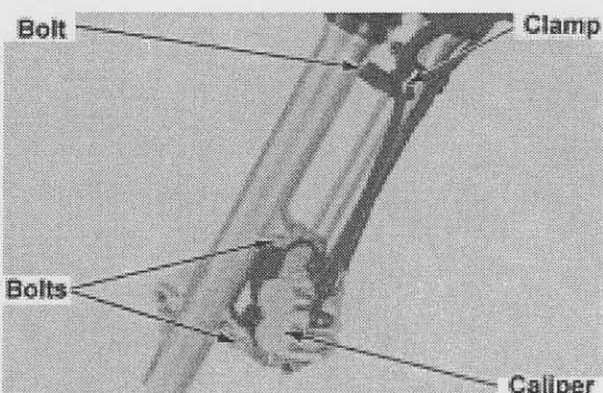
- Removal

Remove a front wheel (11-9).
Unscrew to remove the speedometer cable clamp (right side only).



Remove bolts to remove the front brake caliper.

Remove a bolt to remove a brake hose clamp (left side only).

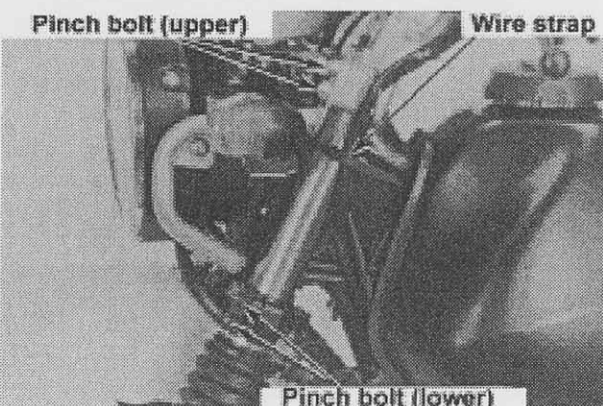


Notes:

- Do not sling the caliper with a brake hose.
- Bleed air after servicing if the brake hose was disconnected.

Remove a wire band.

Loosen the upper fork pinch bolts.



Note:

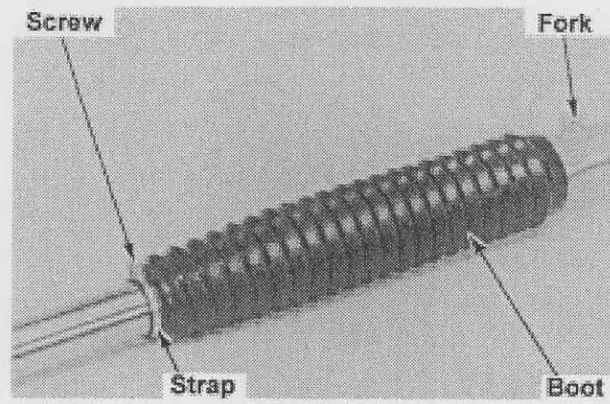
When disassembling the forks, it is recommended to loosen the fork bolts after loosening the upper pinch bolts.

Loosen the lower fork pinch bolts while supporting the fork.

Remove the fork.

◆ Disassembly

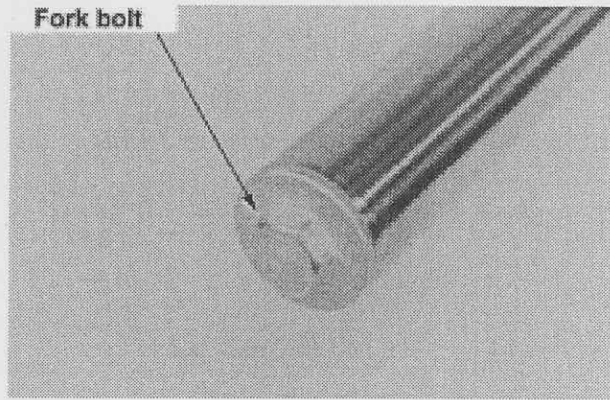
Loosen a fork boot screw.
Remove a fork boot and a fork boot strap.



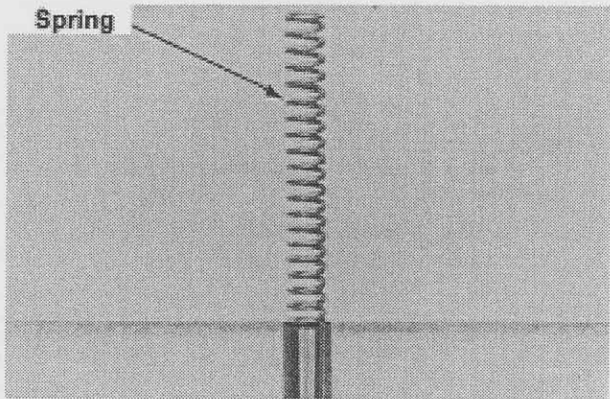
Remove a fork bolt from the fork tube.



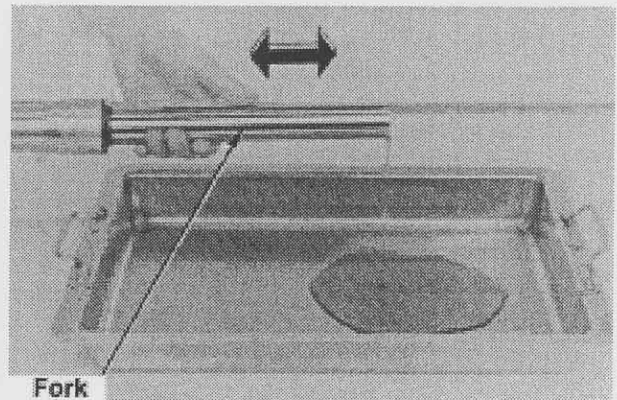
The fork bolt may pop out by the spring inside.



Remove a spring.



Stroke the fork for 8 ~ 10 times to drain oil.



Protect the rear caliper bracket of the bottom case with a cloth and fix it with a vice.



Do not overstress when holding with a vice.

Remove a fork centre bolt and a sealing washer.

Note:
If the piston turns together with the centre bolt and unable to unscrew, temporarily install the spring and the fork bolt.

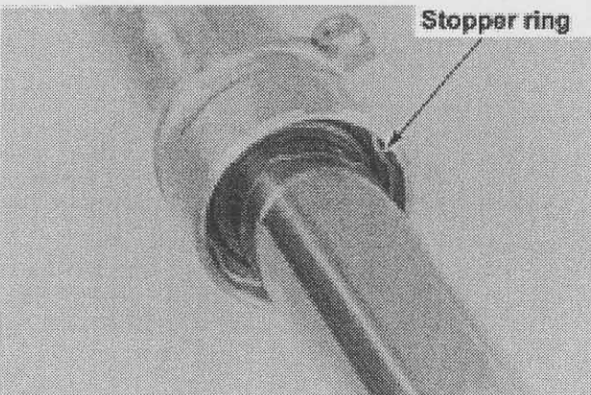
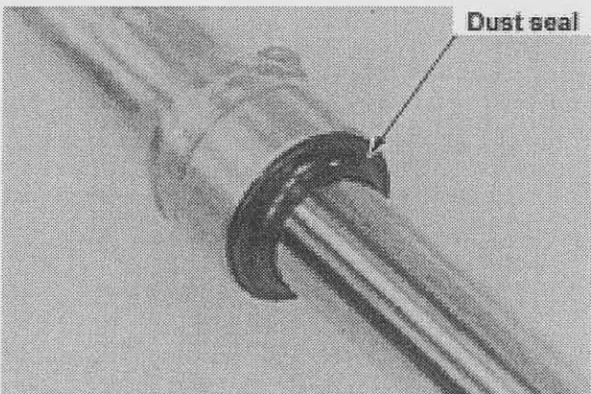
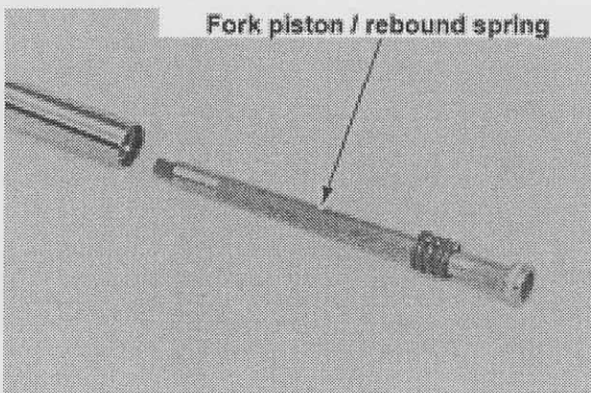
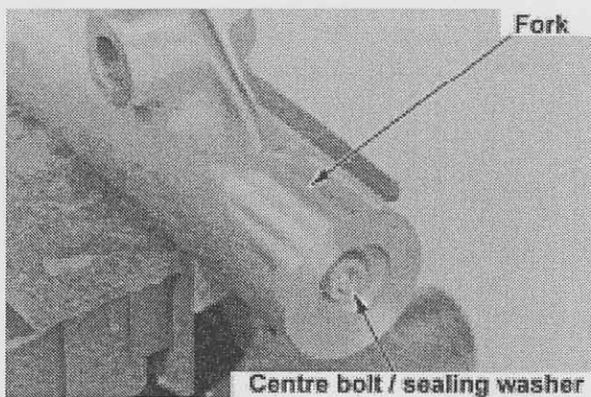
Remove a fork piston and a rebound spring from the fork tube.

Remove a dust seal.

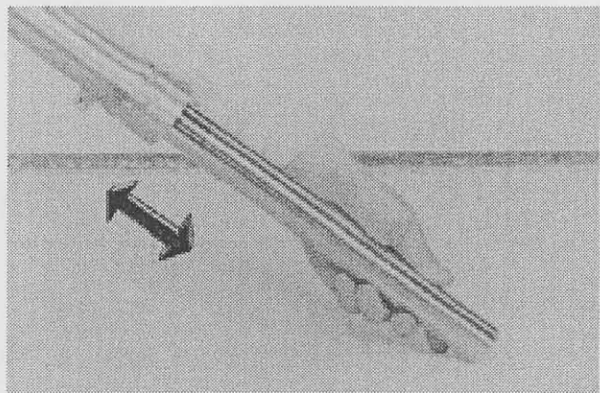
Remove a stopper ring from the groove on a bottom case.



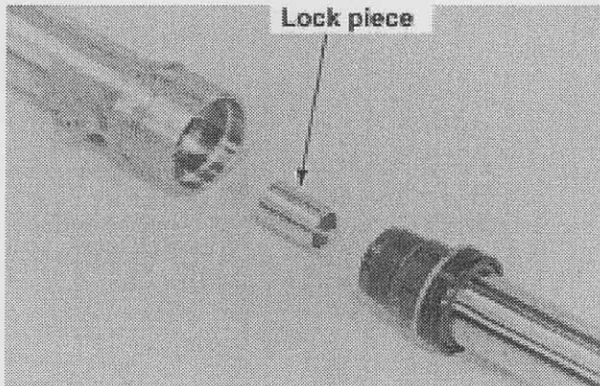
Take care not to allow any scratches on the fork tube.



Stroke the fork tube for a few times to remove the tube from the bottom case.

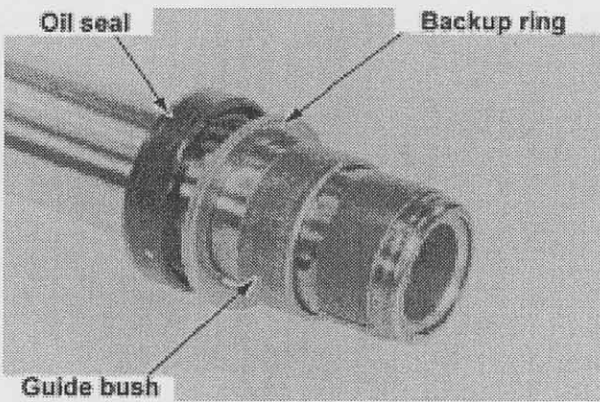


Remove an oil lock piece from the bottom case.

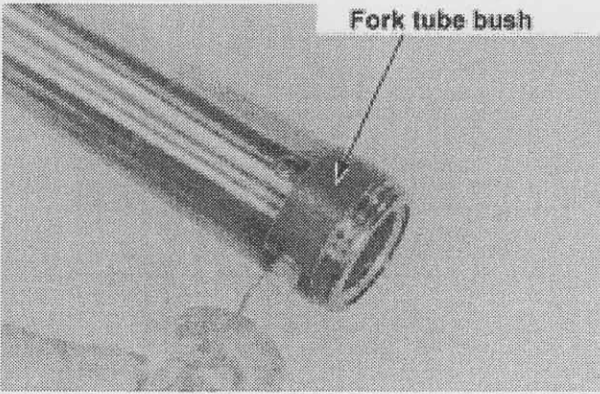


Remove the following parts:
- oil seal
- back up ring
- guide bush

Note:
Do not remove a fork tube bush unless replacing it with a new one.



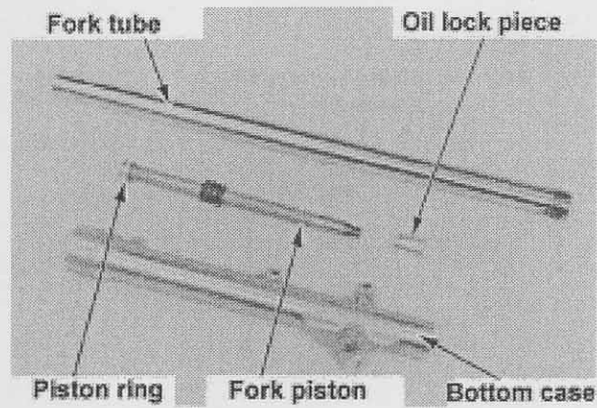
When replacing the fork tube bush, remove it by expanding its end gap with a screwdriver.



◆ Inspection

• Fork tube, bottom case and piston

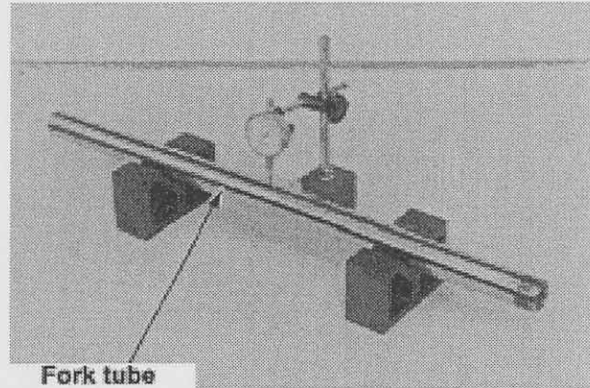
Fork tube damaged → replace.
Extreme deformation of the external diameter or deformation/damage of the bore of the bottom case → replace.
Fork piston ring wear/damage → replace.
Oil lock piece damage → replace.



Support the fork tube with Vee-blocks and measure the runout of the tube with a dial gauge.

Service limit: 0.2mm or above → replace

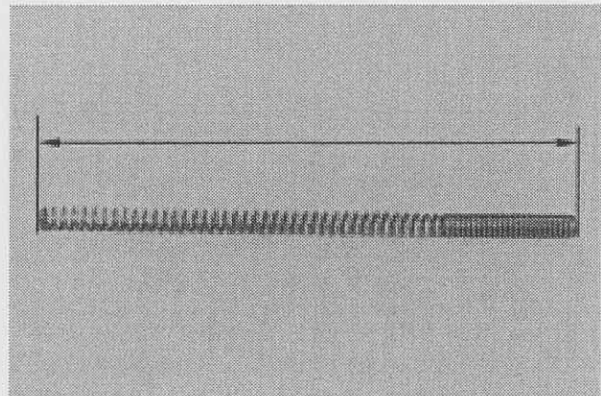
Runout is ½ of the measured value.



• Fork Spring

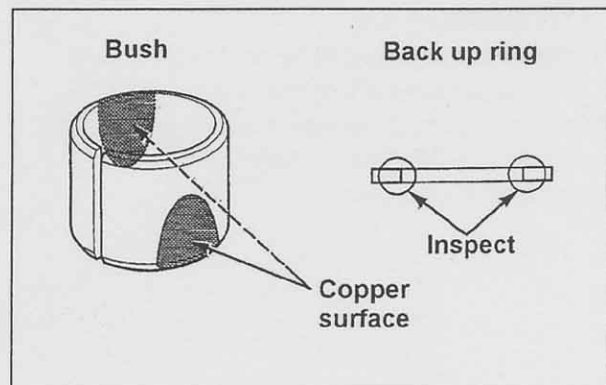
Measure the free (relaxed) length of the fork spring.

Service limit: 558.0mm or less → replace



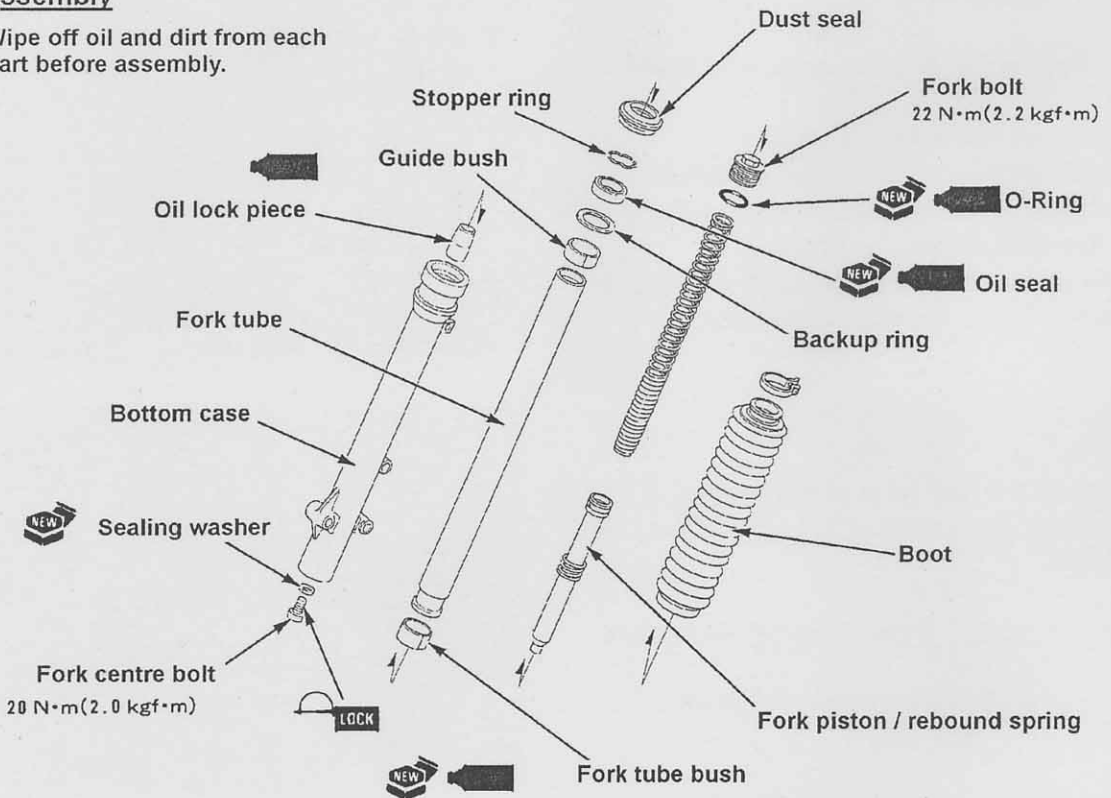
• Fork tube bush and guide bush

Visually inspect surfaces of the fork tube bush and the guide bush.
Replace if the copper surface is exposed (Teflon coating has peeled off) for more than ¾ of the surface area, or there are significant scratch marks.
Replace the back up ring if there is any damage on the areas shown in the figure.



Assembly

Wipe off oil and dirt from each part before assembly.



Install a new fork tube bush.



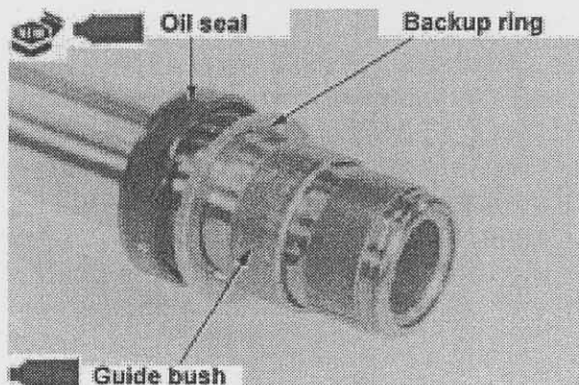
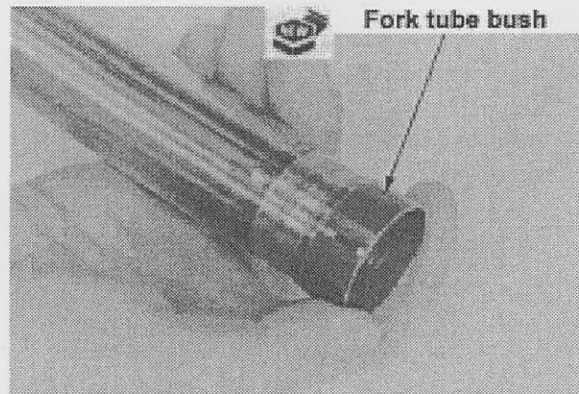
- Clean the edge of the fork tube bush end gap with a cutting knife. Do not peel off the Teflon coat.
- Do not over-expand the end gap.
- Do not damage the Teflon coat.

Apply fork oil to the guide bush and install it to the fork tube.

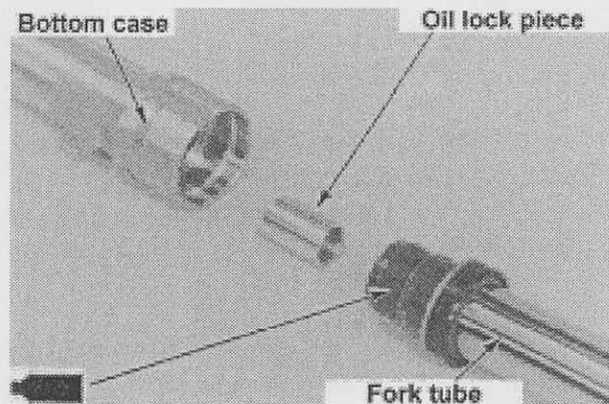
Install a backup ring.

Apply vinyl adhesive tape around the fork tube end to protect the seal lip.

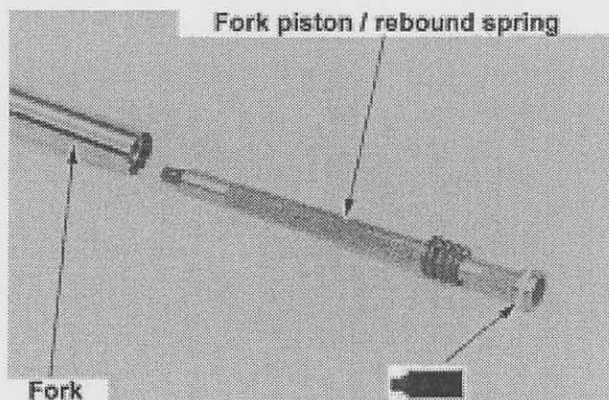
Apply fork oil to a new oil seal lip and install it. The manufacturers name on the seal should face upwards.



Install an oil lock piece to the fork tube.
Apply fork oil to the fork tube bush and
install the tube to the bottom case.



Install a rebound spring to the fork piston.
Apply fork oil to the fork piston ring and
install the piston to the fork tube.

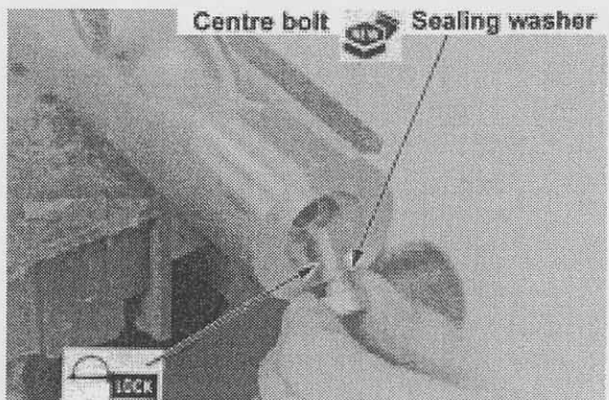


Protect the caliper bracket of the bottom
case with a cloth and fix it with a vice.



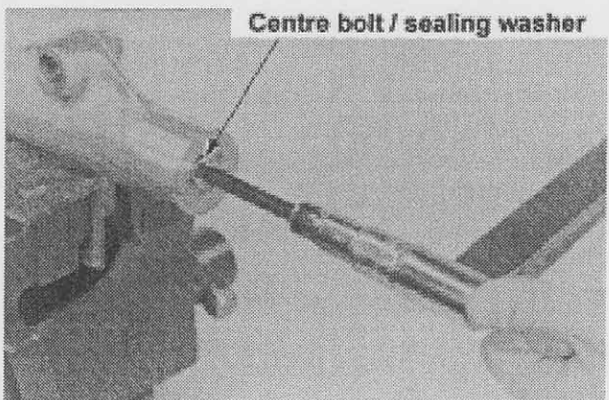
Do not overstress when fixing with a vice.

Replace the sealing washer with a new one.
Apply screw locker to the fork centre bolt
and tighten.



Torque: 20N.m (2.0kgf-m)

Note:
If the fork piston turns together with the
centre bolt, temporarily install a spring and a
fork bolt.



Apply fork oil to the guide bush and install the guide bush and the backup ring to the fork tube.

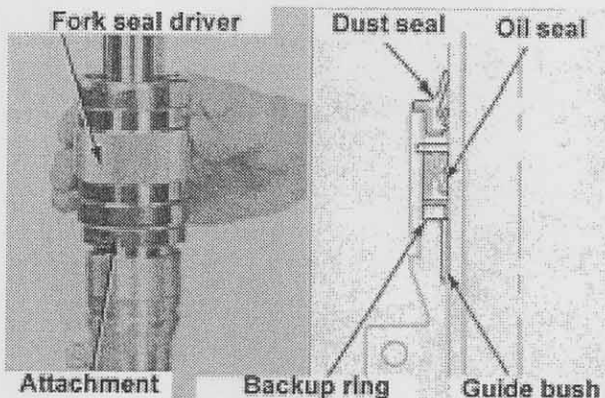
Install the guide bush to the bottom case through the back up ring.

Install the oil seal until the stopper ring groove can be observed.

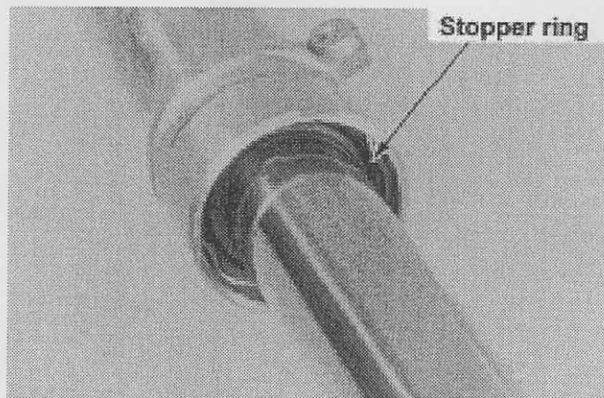
Special tools:

Fork seal driver 07947-KA50100

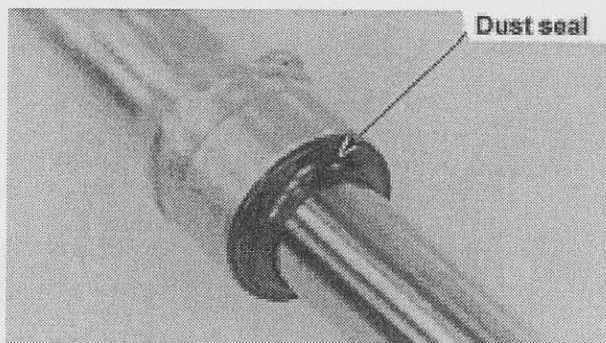
Fork seal driver attachment 07947-KL40100



Install a stopper ring to the bottom case groove.



Apply fork oil to the dust seal lip and install it to the bottom case.

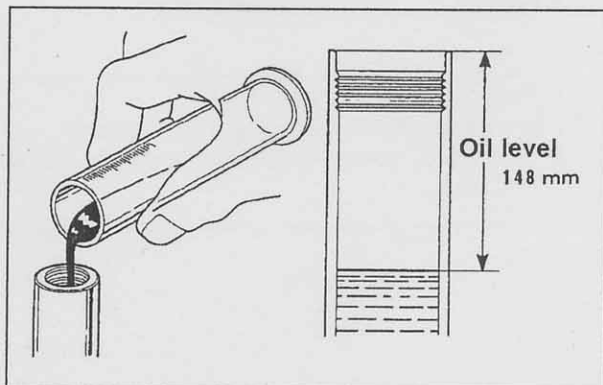


Note:
Fill fork oil. - Recommended fork oil:
Honda Ultra Cushion Oil # 10
Oil capacity (reference): 300 ± 2.5cm³

Gently stroke the fork tube for a few times to bleed air inside.

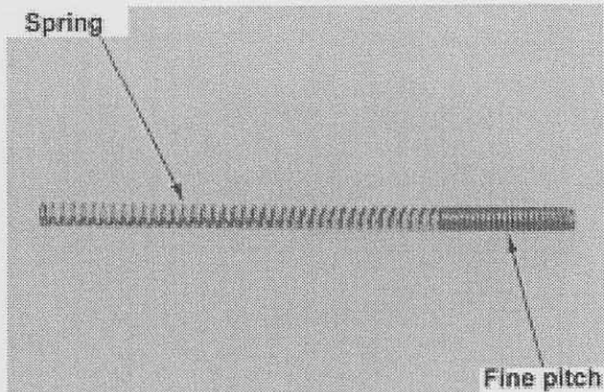
Fully compress the fork tube and stabilise the oil level.

Measure the oil level from the top.



Oil level: 148mm

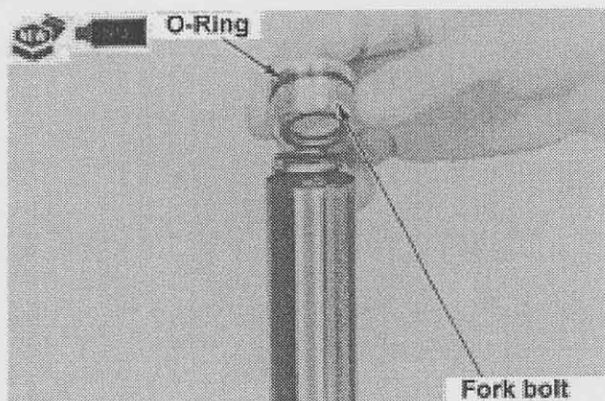
Stretch the fork tube.
Install the spring to the fork tube.
Fine pitch should come to the bottom.



Replace the O-Ring at the fork bolt with a new one and apply fork oil.

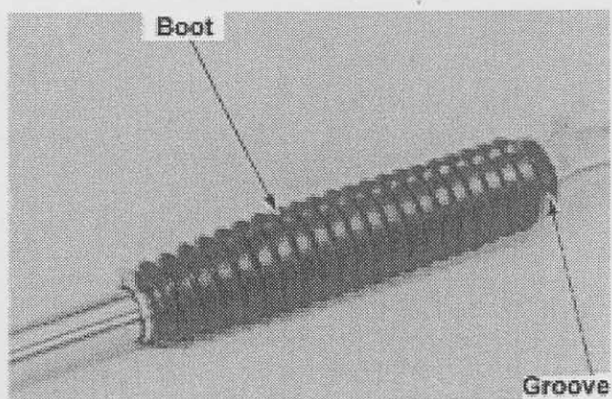
Temporarily tighten the first bolt.

Note:
The fork bolt is to be tightened to specific torque after installing the fork tube to the stem.



Set the fork boot to the groove on the bottom case.

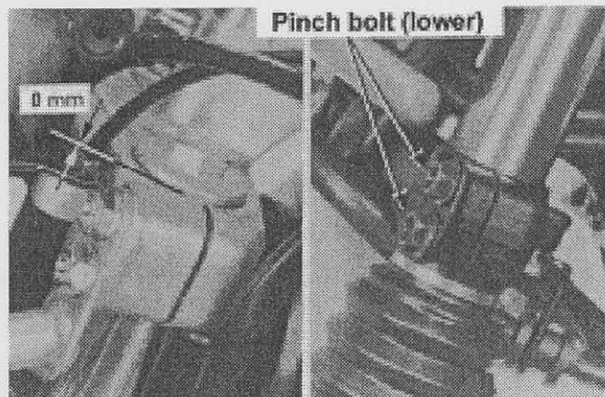
Note:
Do not tighten the fork boot strap screw yet.



• Installation

Install the fork to the stem and the top bridge.
Align the tube top end with the top bridge surface and tighten the lower fork pinch bolts.

Torque: 32N.m (3.3kgf-m)

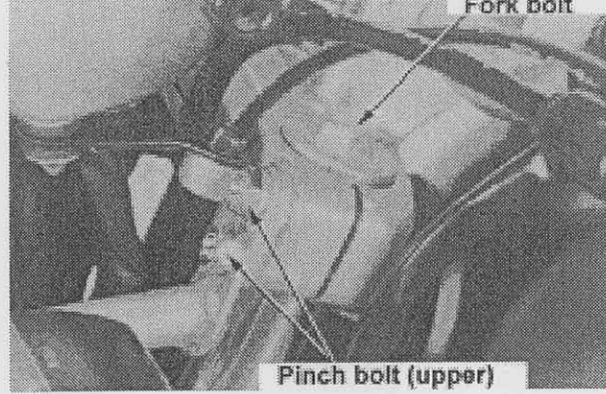


Tighten the fork bolt if it was removed.

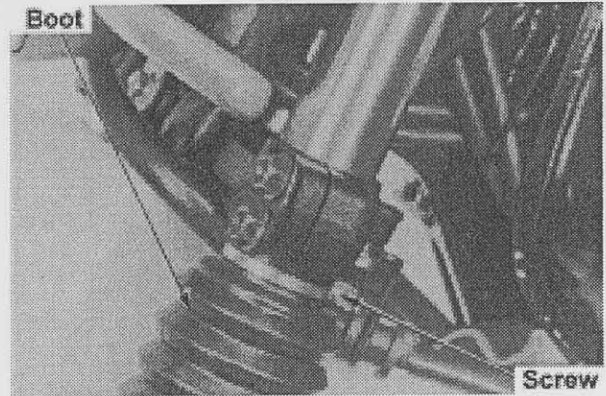
Torque: 22N.m (2.2kgf-m)

Tighten the upper fork pinch bolts.

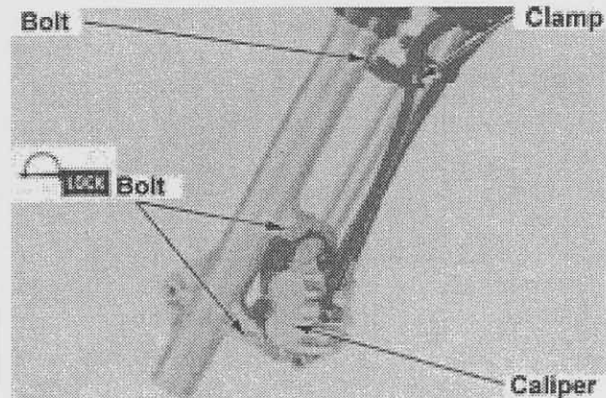
Torque: 27N.m (2.8kgf-m)



Pull up the fork boot until it touches the bottom bridge and tighten the fork boot strap screw in the direction shown in the figure.



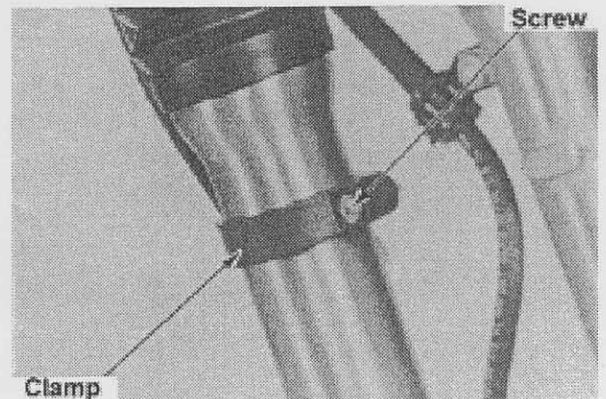
Install the front brake caliper to the fork. Clean and apply screw locker to the front brake caliper mount bolt. Tighten the bolts.



Torque: 30N.m (3.1kgf-m)

Note:
If the brake hose has been disconnected, bleed air after servicing (13-5).

Install a brake hose clamp and screw the bolt (left side only).



Connect a speedometer cable install a clamp.
Tighten the screw (right side only).
Install the front wheel (11-15).
Apply front brake and compress/stretch the forks for several times to check their operation.

◆ Steering Stem

• Removal

Remove the following parts:

- front wheel (11-9)
- headlamp, headlamp case (17-2)
- speedometer (17-4)

Unscrew upper fork pinch bolts and a bolt to remove a headlamp case stay.

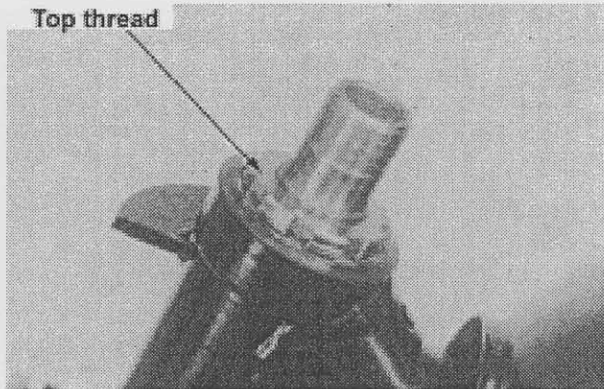
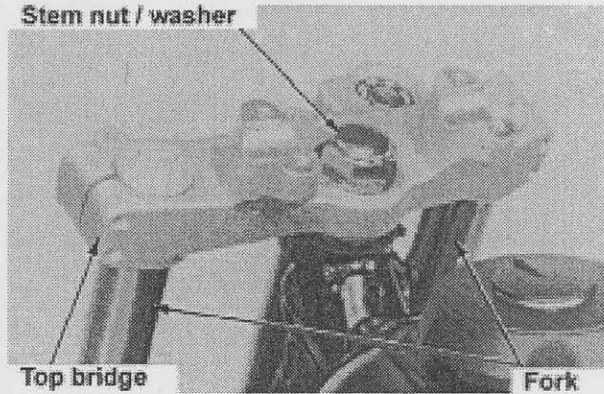
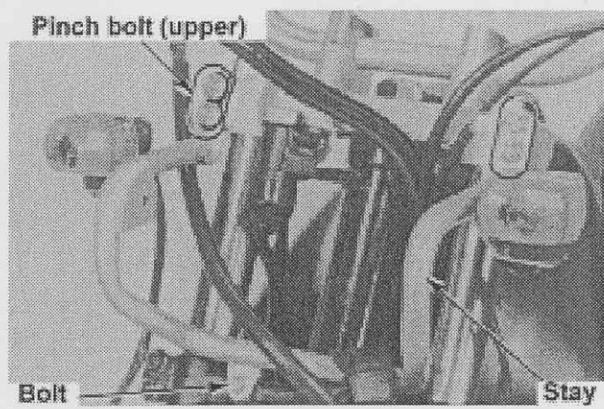
Remove a handlebar (11-3)

Remove a front fender (2-3)

Unscrew a steering stem nut/washer.

Remove forks

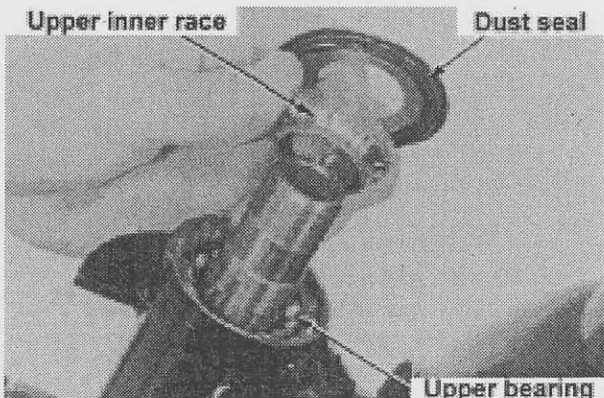
Remove a top bridge.



Hold the steering stem to remove the top thread.

Special tools:

Steering stem socket 07916-KA50100



Remove a dust seal and an upper inner race.

Remove an upper bearing.

Remove a steering stem and a lower bearing.

◆ Inspection

Bearings worn/damaged → replace
Outer race, inner race wear/damage → replace

• Steering head bearing replacement

Note:

When replacing the bearing, replace the bearing and both outer/inner race at the same time.

By using the following tools, remove the upper/lower outer race for the steering head.

Special tools:

Ball race remover	07953-MJ10000
driver attachment	07953-MJ10100
driver handle	07953-MJ10200

By using the following tools, install the upper/lower outer race for the steering head.

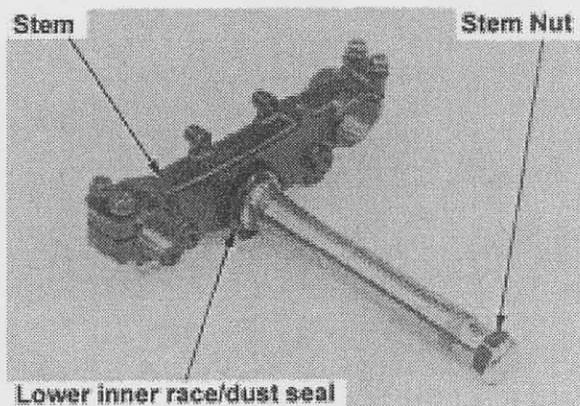
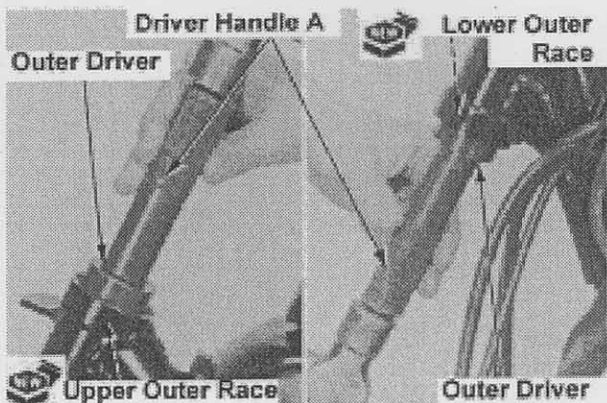
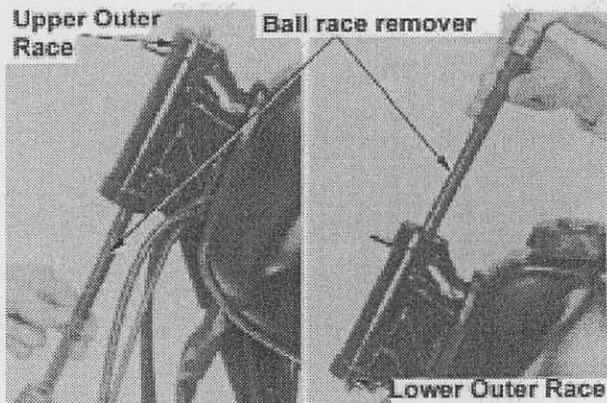
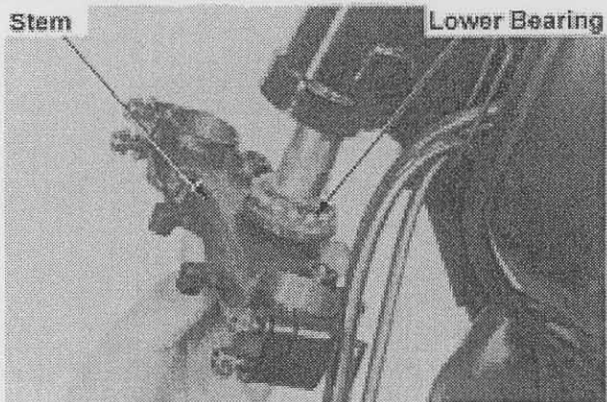
Special tools:

Driver handle A	07749-0010000
Outer driver 42 x 47mm	07746-0010300

Remove a lower inner race and a dust seal.



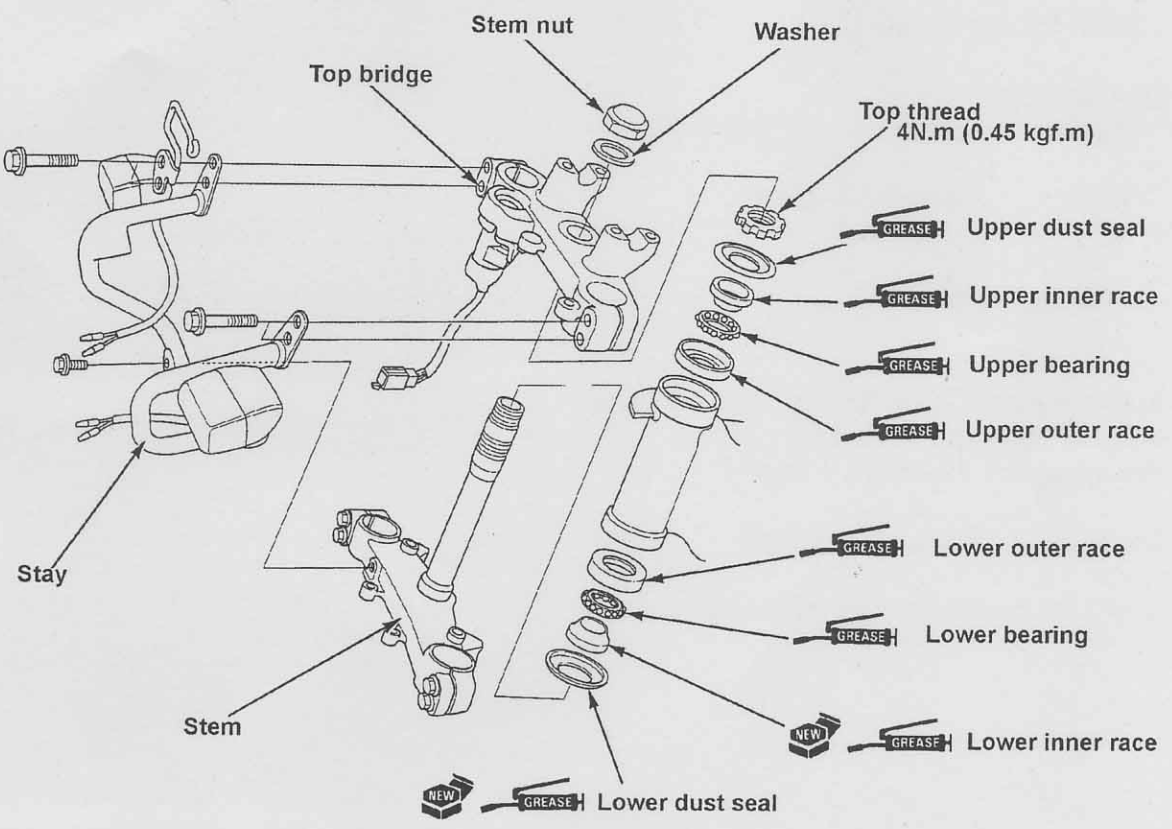
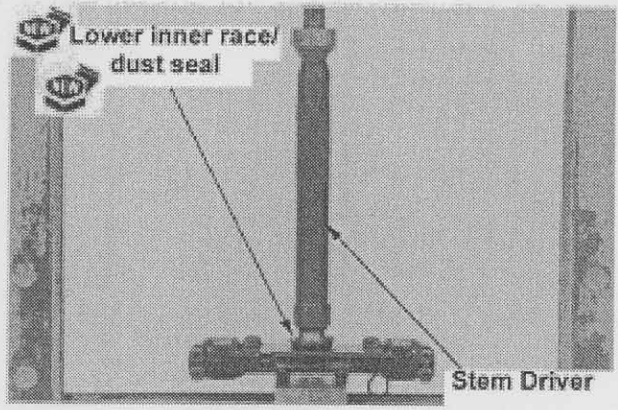
- Temporarily set the stem nut to the stem and protect its thread.
- Do not damage the stem.



Install new dust seal and lower inner race to the steering stem.

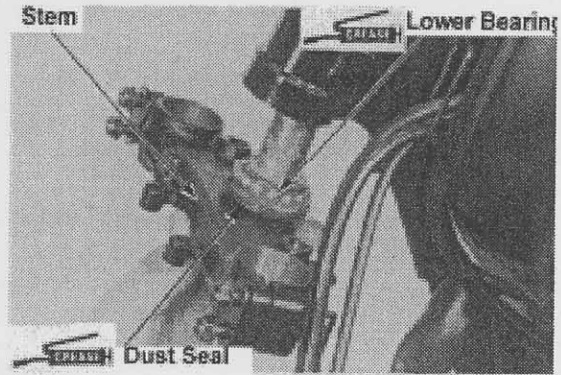
Special tools:

Steering stem driver 07946-4300101

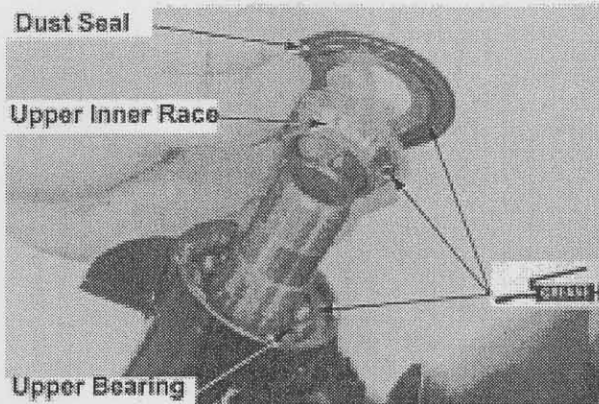


Apply grease to upper/lower bearings.
Apply grease to the dust seal lip.

Install the lower bearing to the stem.



Insert the stem to the head pipe and install the upper bearing, the upper inner race, and the dust seal.

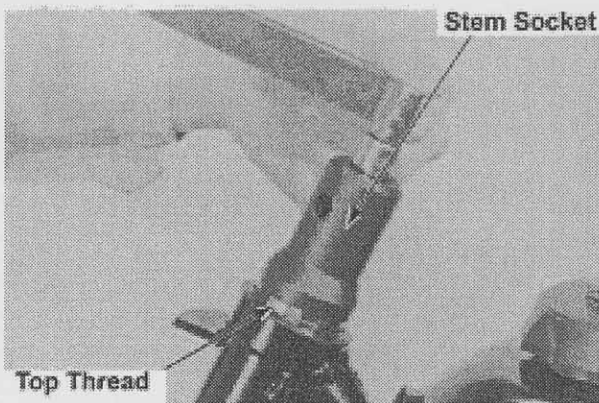


Tighten the top thread.

Special tools:

Steering stem socket 07916-KA50100

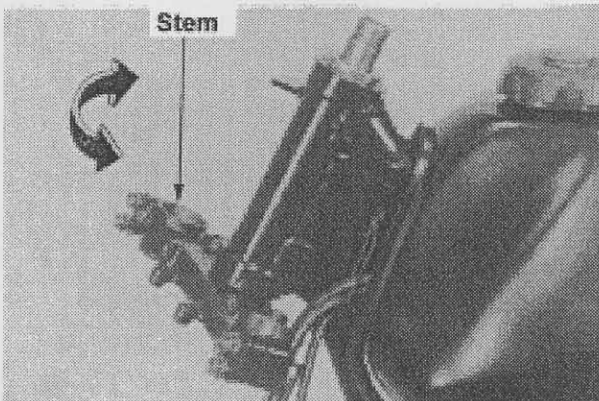
Torque: 4N.m (0.45kgf-m)



Turn the stem to both left and right for more than 5 times to smoothen the bearing.
Re-tighten the steering top thread.

Torque: 4N.m (0.45kgf-m)

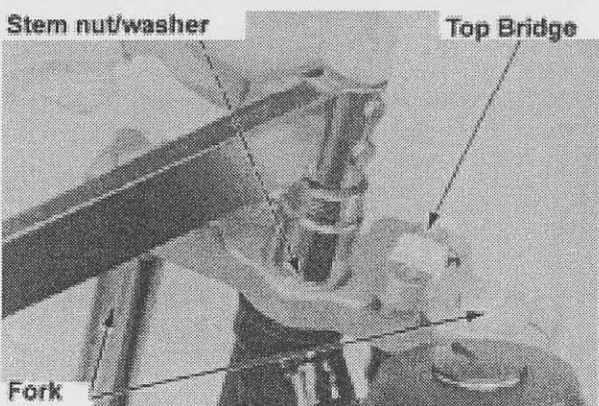
Check for its smooth operation and fit.



Install the top bridge, the stem nut/washer.
Temporarily the front fork.
Tighten the stem nut.

Torque: 98N.m (10.0kgf-m)

Check the smooth operation of the steering stem.



Install a front fender (2-3).
Install a front wheel (11-15).

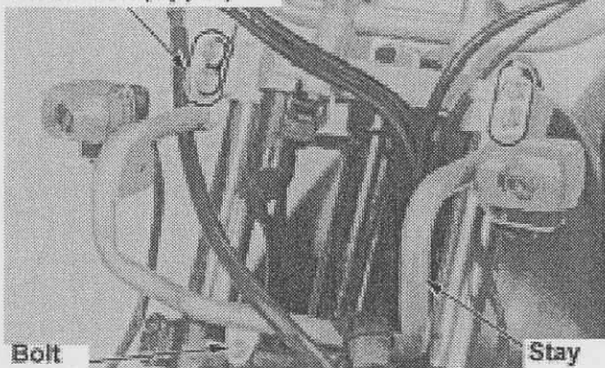
Install a headlamp case stay and tighten the upper fork pinch bolts and a bolt.

Install the forks to ordinary position and tighten the pinch bolts (11-25).

Install the following parts:

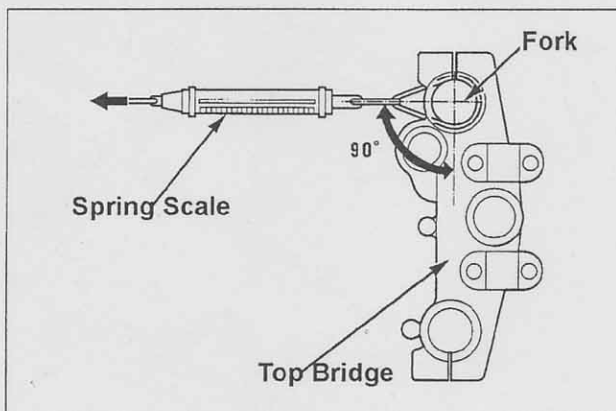
- handlebar (11-5)
- headlamp and headlamp case (17-2)
- speedometer (17-6)

Pinch bolt (Upper)



Steering load

Note:
Clear all wire harness and cables from the steering movement area when measuring the load.



Lift the front wheel.

Set the spring scale to the fork pipe.

Maintain 90° between the scale and the stem in straight position and pull the scale until the stem starts to move.

Take the scale reading.

Steering load: 11 ~ 17 N (1.1 ~ 1.7kgf-m)

If the measured load is out of the range, re-tighten the top thread.