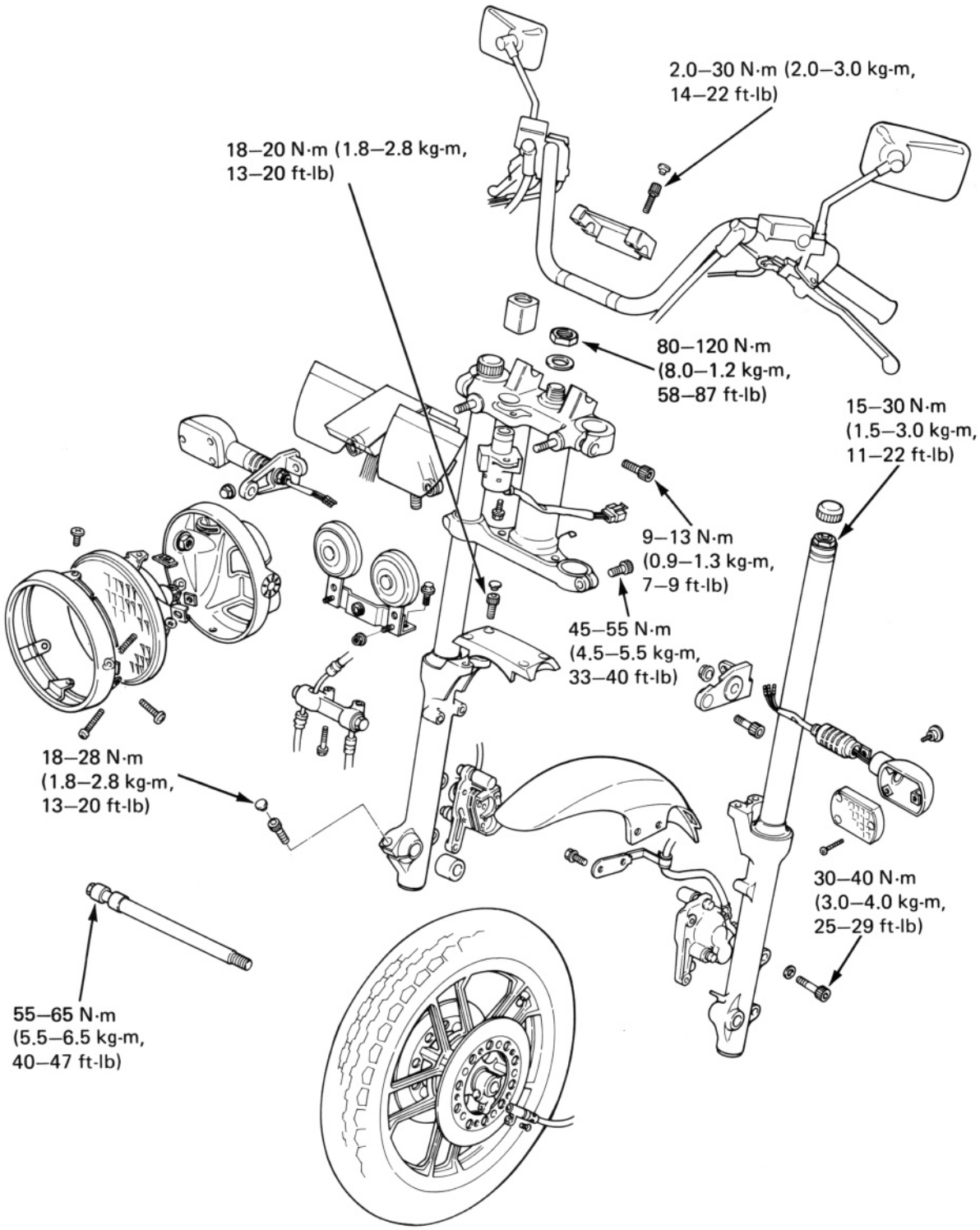

2.0–30 N·m (2.0–3.0 kg-m,
14–22 ft-lb)
18–20 N·m (1.8–2.8 kg-m,
13–20 ft-lb)
80–120 N·m
(8.0–1.2 kg-m,
58–87 ft-lb)
15–30 N·m
(1.5–3.0 kg-m,
11–22 ft-lb)
9–13 N·m
(0.9–1.3 kg-m,
7–9 ft-lb)
45–55 N·m
(4.5–5.5 kg-m,
33–40 ft-lb)
18–28 N·m
(1.8–2.8 kg-m,
13–20 ft-lb)
30–40 N·m
(3.0–4.0 kg-m,
25–29 ft-lb)
55–65 N·m
(5.5–6.5 kg-m,
40–47 ft-lb)

15. FRONT WHEEL/SUSPENSION

SERVICE INFORMATION	15–1	HANDLEBARS	15–9
TROUBLESHOOTING	15–2	FRONT WHEEL	15–13
HEADLIGHT	15–3	FRONT FORKS	15–20
IGNITION SWITCH	15–4	STEERING STEM	15–28
INSTRUMENTS	15–6		

SERVICE INFORMATION

GENERAL

- A jack or other support is required to support the motorcycle.
- Never ride on the rim.

SPECIFICATIONS

		STANDARD	SERVICE LIMIT
Axle shaft runout		—	0.2 mm (0.01 in)
Front wheel rim runout	Radial	0.3 mm (0.01 in) max.	2.0 mm (0.08 in)
	Axial	0.3 mm (0.01 in) max.	2.0 mm (0.08 in)
Wheel bearing play		—	0.03 mm (0.001 in)
Fork spring free length		465.6 mm (18.33 in)	456.3 mm (18.0 in)
Fork tube runout		—	0.2 mm (0.01 in)
Front fork fluid capacity		467.5–472.5 cc (15.82–15.99 ozs)	———
Front fork air pressure		0–6 psi (0–40 kPa, 0–0.4 kg/cm^2)	———

TORQUE VALUES

Handlebar upper holder	20–30 N·m (2.0–3.0 kg-m, 14–22 ft-lb)
Caliper mounting bolt	30–40 N·m (3.0–4.0 kg-m, 22–29 ft-lb)
Front axle	55–65 N·m (5.5–6.5 kg-m, 40–47 ft-lb)
Axle pinch bolt	18–28 N·m (1.8–2.8 kg-m, 13–20 ft-lb)
Front fork socket bolt	15–25 N·m (1.5–2.5 kg-m, 11–18 ft-lb)
Fork tube cap	15–30 N·m (1.5–3.0 kg-m, 11–22 ft-lb)
Steering stem nut	80–120 N·m (8.0–12.0 kg-m, 58–87 lb-ft)
Brake disc	35–40 N·m (3.5–4.0 kg-m, 25–29 ft-lb)
Front fork top pinch bolt	9–13 N·m (0.9–1.3 kg-m, 7–9 ft-lb)
Front fork bottom pinch bolt	45–55 N·m (4.5–5.5 kg-m, 33–40 ft-lb)
Front fork brace socket bolt	18–28 N·m (1.8–2.8 kg-m, 13–20 ft-lb)

TOOLS

Special

Hex. wrench, 6 mm	07917–3230000 or commercially available
Snap ring pliers	07914–3230001 or commercially available
Fork seal driver	07947–4630100
Race remover/installer	07946–3710400
Steering stem driver	07946–MB00000 or 07946–3710100 and 07964–MB00200

Common

Driver	07749–0010000
Pilot, 15 mm	07746–0010300
Lock nut wrench, 30 x 32 mm	07716–0020400 or commercially available

Common

Driver	07749–0010000
Attachment, 42 x 47 mm	07746–0010300
Pilot, 15 mm	07746–0040300
Lock nut wrench, 30 x 32 mm	07716–0020400 or commercially available
Extension bar	07716–0020500 or commercially available
Wheel bearing remover expander	07746–0050100 or commercially available
Wheel bearing remover collet, 15 mm	07746–0050400 or commercially available
Pin spanner	07702–0010000

TROUBLESHOOTING

Hard steering
1. Steering bearing adjustment nut too tight.
2. Faulty steering stem bearings.
3. Damaged steering stem bearings.
4. Insufficient tire pressure.

Steers to one side or does not track straight
1. Unevenly adjusted right and left shock absorbers.
2. Bent front forks.
3. Bent front axle; wheel installed incorrectly.

Front wheel wobbling
1. Bent rim.
2. Worn front wheel bearings.
3. Faulty tire.
4. Axle nut tightened properly.

Soft suspension
1. Weak for springs.
2. Insufficient fluid in front forks.
3. Front fork air pressure incorrect.

Hard suspension
1. Incorrect fluid weight in front forks.
2. Front fork air pressure incorrect.
3. Bent fork tubes.
4. Clogged fluid passage.

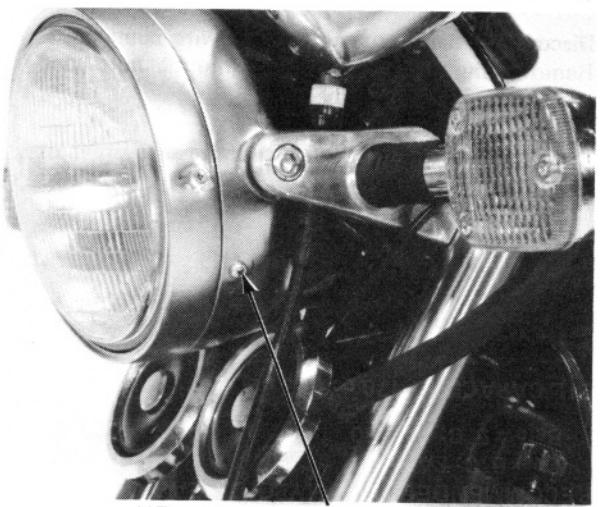
Front suspension noise
1. Worn slider or guide bushings.
2. Insufficient fluid in forks.
3. Loose front fork fasteners.
4. Lack of grease in speedometer gearbox.

HEADLIGHT

REMOVAL

Remove the two headlight mounting screws.

Disconnect the wire coupler and remove the headlight.

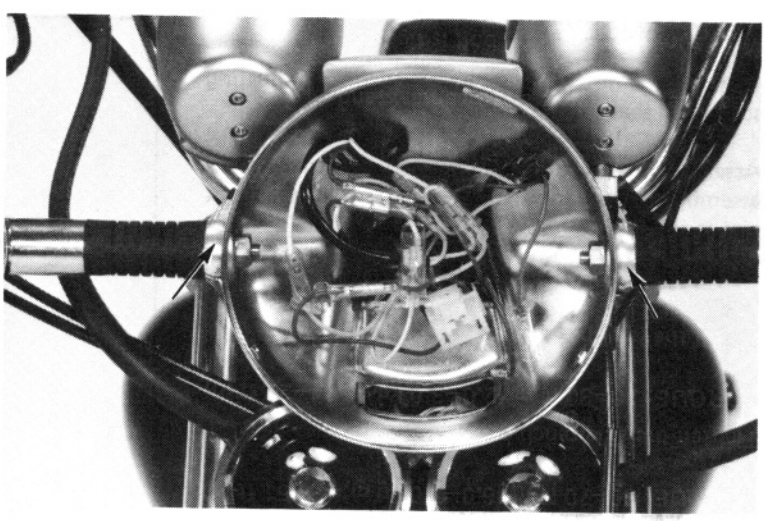


HEADLIGHT MOUNTING SCREW

CASE REMOVAL/INSTALLATION

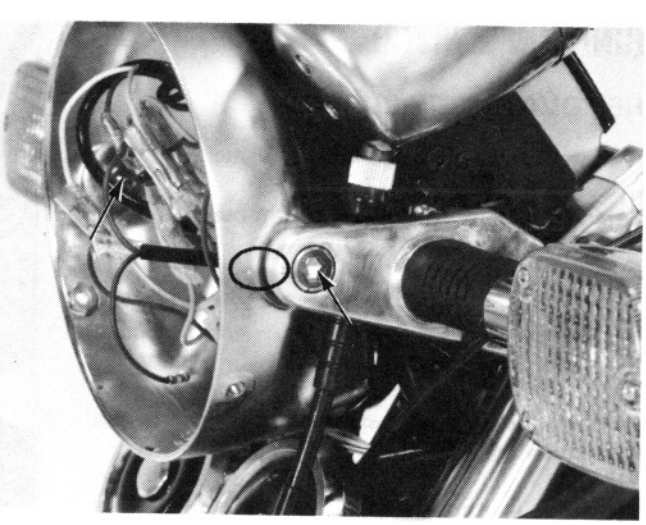
Disconnect the wire connectors in the headlight case.

Remove the headlight case mounts and headlight case.



Install the headlight case in the reverse order of removal.

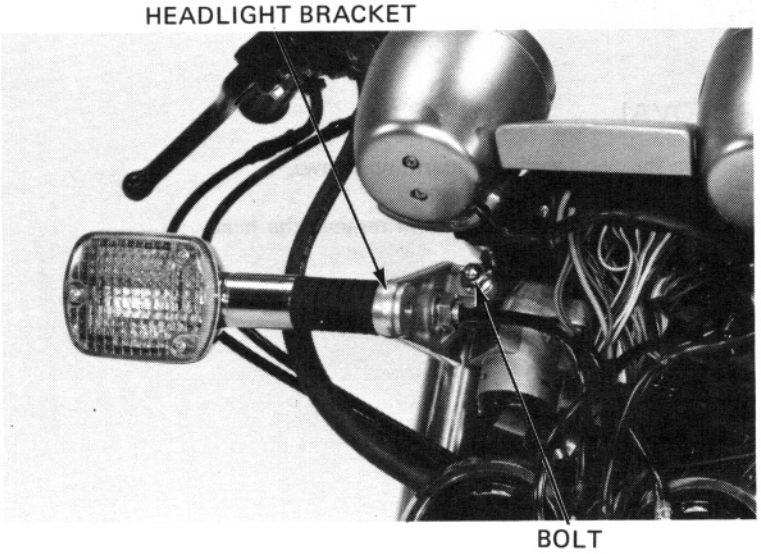
Align the index mark on the headlight case with index mark on the headlight bracket.



BRACKET REMOVAL/INSTALLATION

Disconnect the front turn signal wire connectors. Remove the headlight bracket mount bolts and bracket/turn signal assemblies.

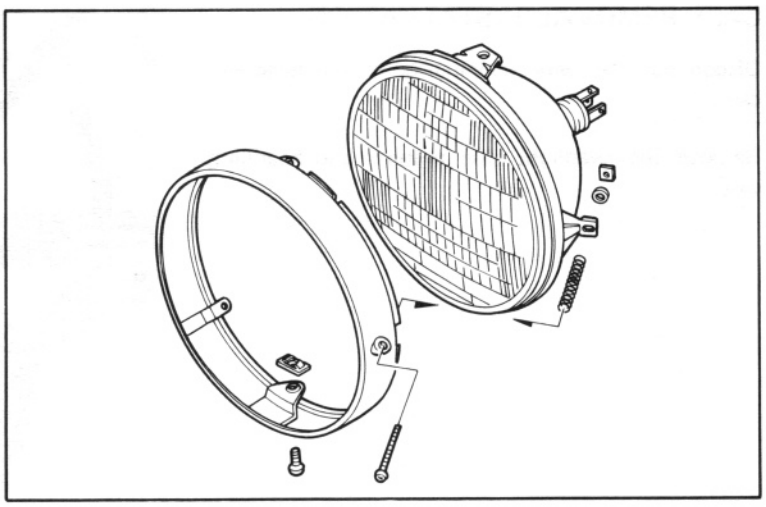
Install the headlight bracket in the reverse order of removal.



DISASSEMBLY/ASSEMBLY

Remove the retaining screws, horizontal adjusting screw and sealed beam unit from the rim.

Assemble the headlight in the reverse order of disassembly. After installation, adjust the headlight aim (page 3-16).



IGNITION SWITCH

REMOVAL/INSTALLATION

Remove the headlight and headlight case.

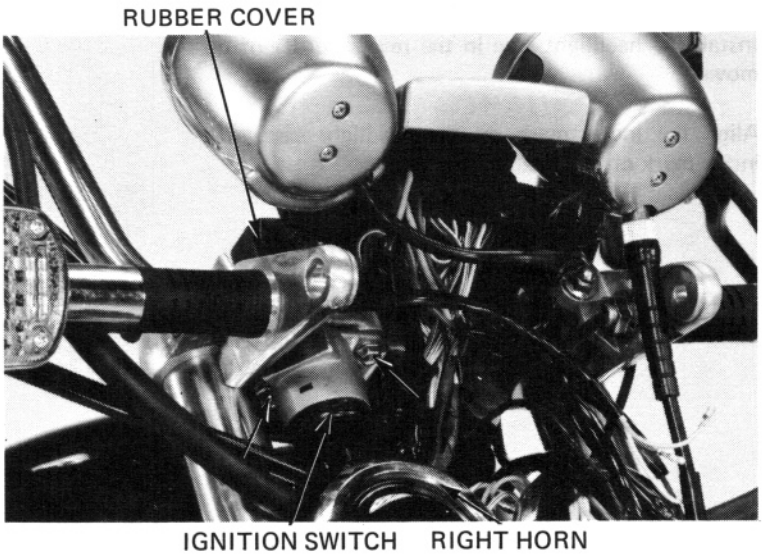
Remove the bolt attaching the right horn and horn.

Remove the ignition switch rubber cover.

Remove the instrument lower cover and disconnect the ignition switch wire couplers.

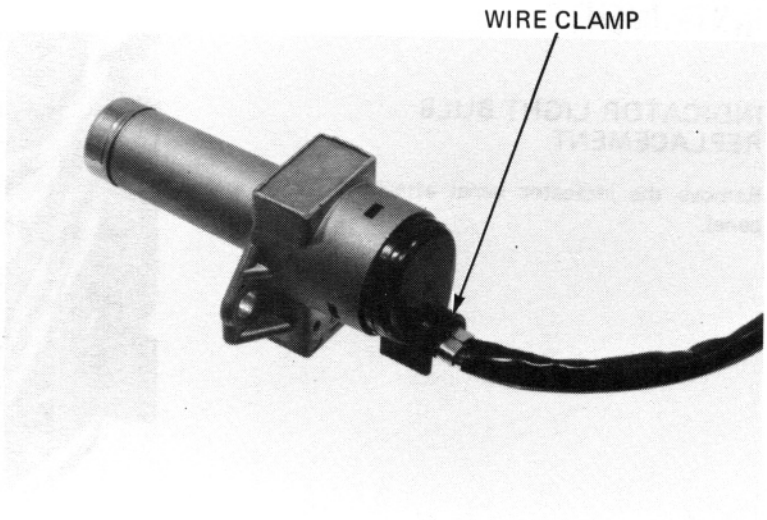
Remove the ignition switch mounting bolts, and ignition switch.

Install the ignition switch in the reverse order of removal.

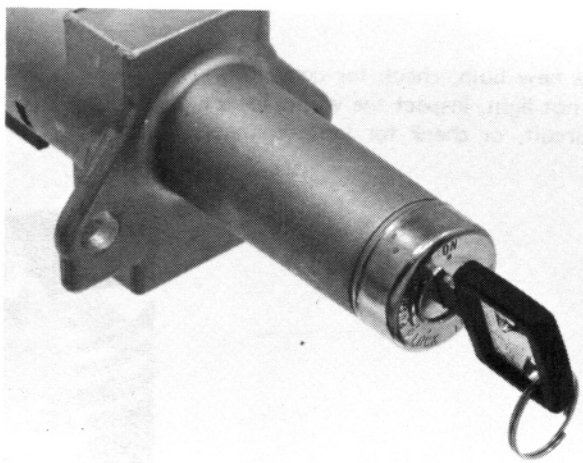


DISASSEMBLY/ASSEMBLY

Open the wire clamp.

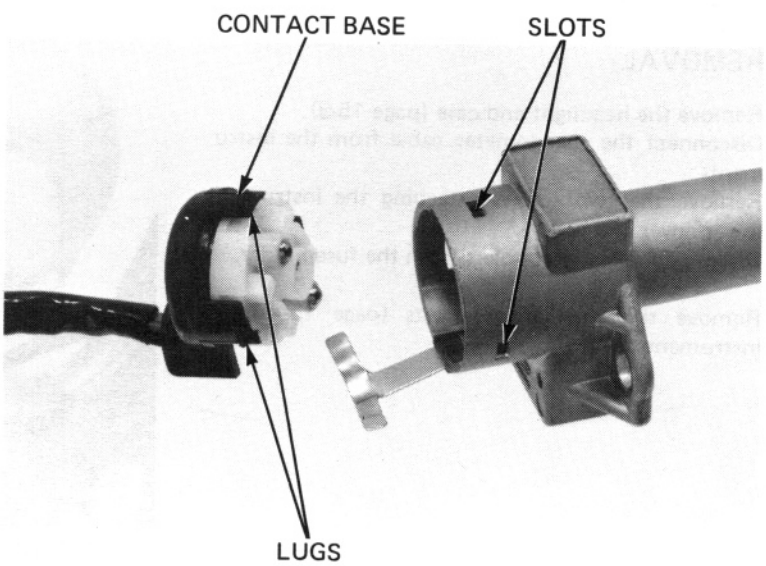


Insert the ignition key and turn it to between the ON and OFF detent positions.



Push in the lugs in the slots and pull the contact base from the switch.

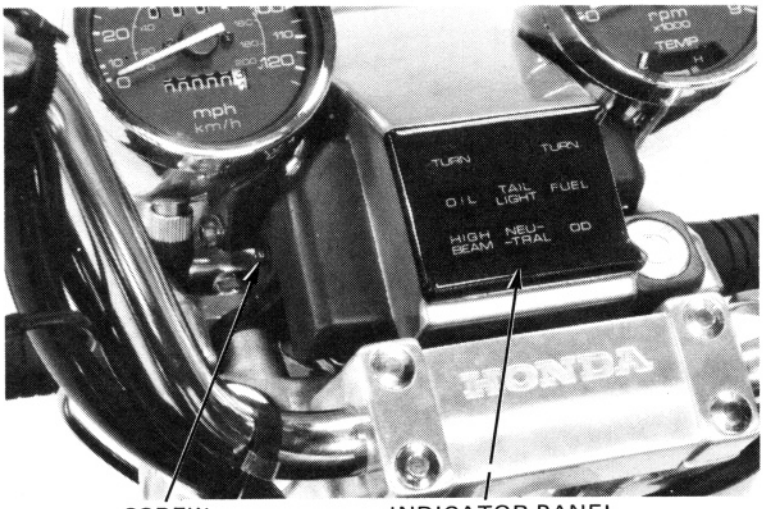
Assemble the ignition switch in the reverse order of disassembly.



INSTRUMENTS

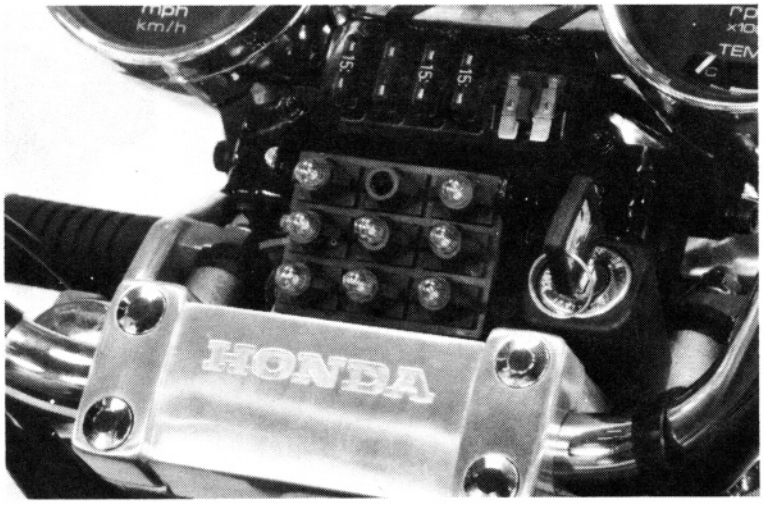
INDICATOR LIGHT BULB REPLACEMENT

Remove the indicator panel attaching screws and panel.



Replace the bulb.

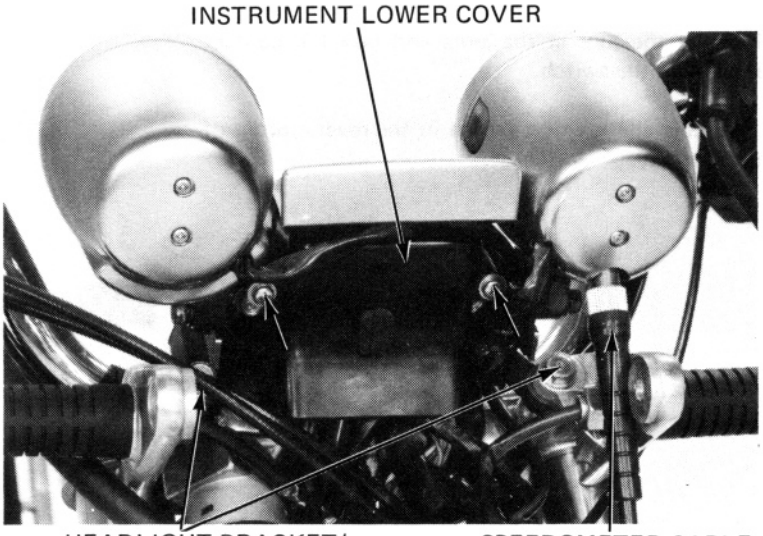
After installing a new bulb, check for continuity. If the bulb does not light, inspect the wiring for an open or short circuit, or check for loose connections.



REMOVAL

Remove the headlight and case (page 15-3).
Disconnect the speedometer cable from the instruments.
Remove the two screws attaching the instrument lower cover and cover.
Disconnect all wire couplers from the fuse holder.

Remove the headlight brackets (page 15-4) and instruments.

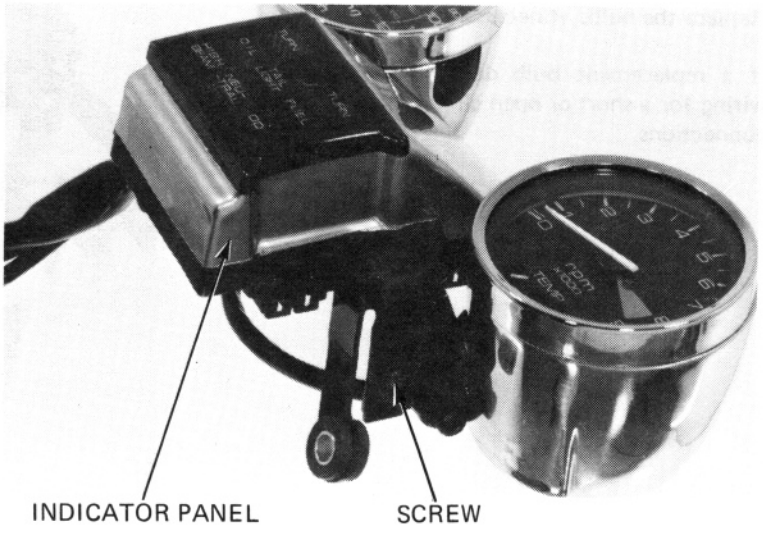


DISASSEMBLY

CAUTION:

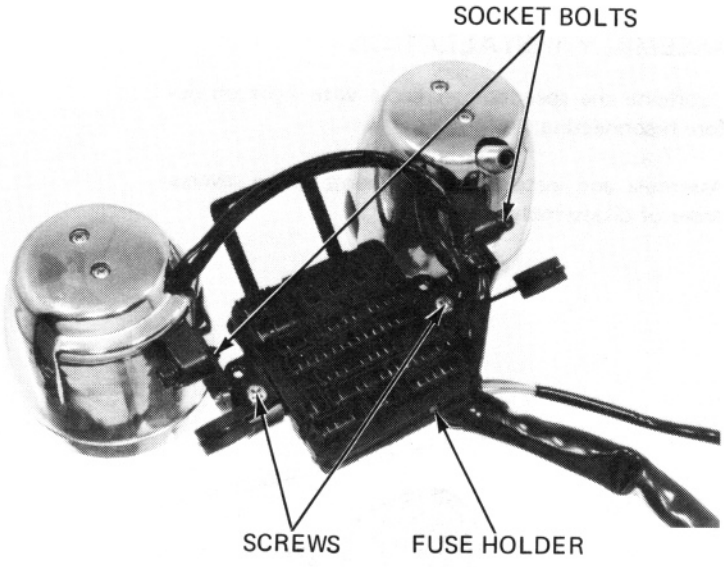
> *Do not leave the instruments upside down or damping fluid will leak onto the inside of the lens.*

Remove the screws attaching the indicator panel and panel.

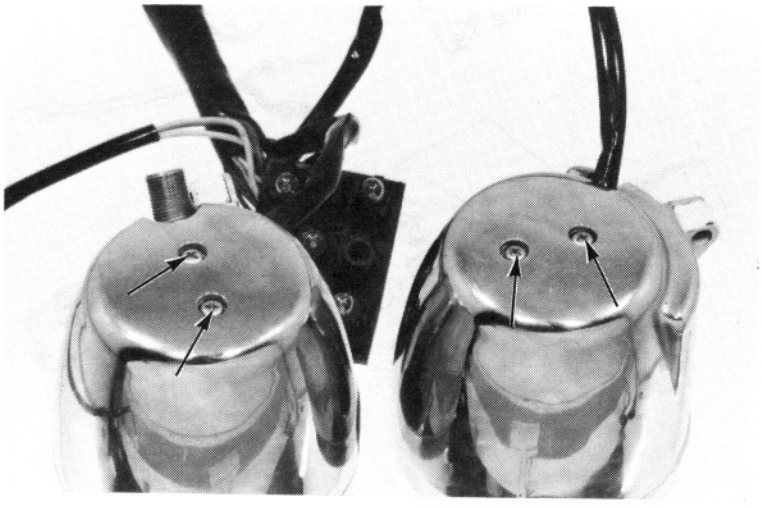


Remove the screws attaching the fuse holder and fuse holder from the instruments.

Remove the socket bolts attaching the instruments to the bracket.

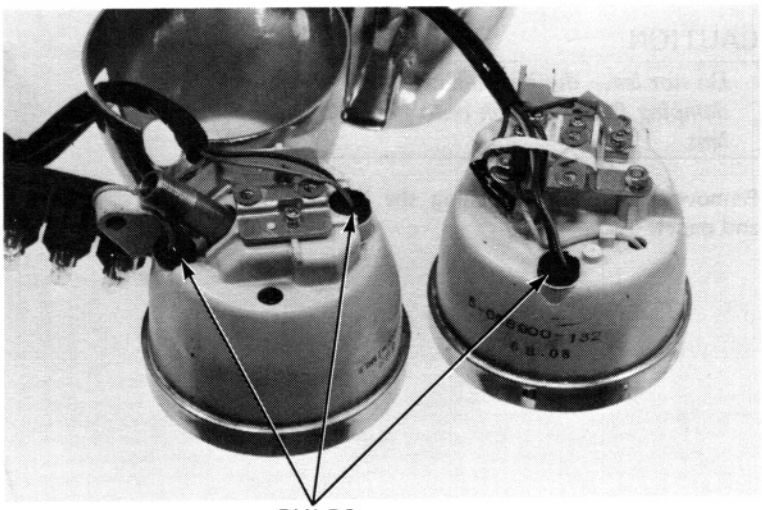


Remove the meter lower cover screws.



Replace the bulbs, if necessary.

If a replacement bulb does not light, check the wiring for a short or open circuit, or check for loose connections.

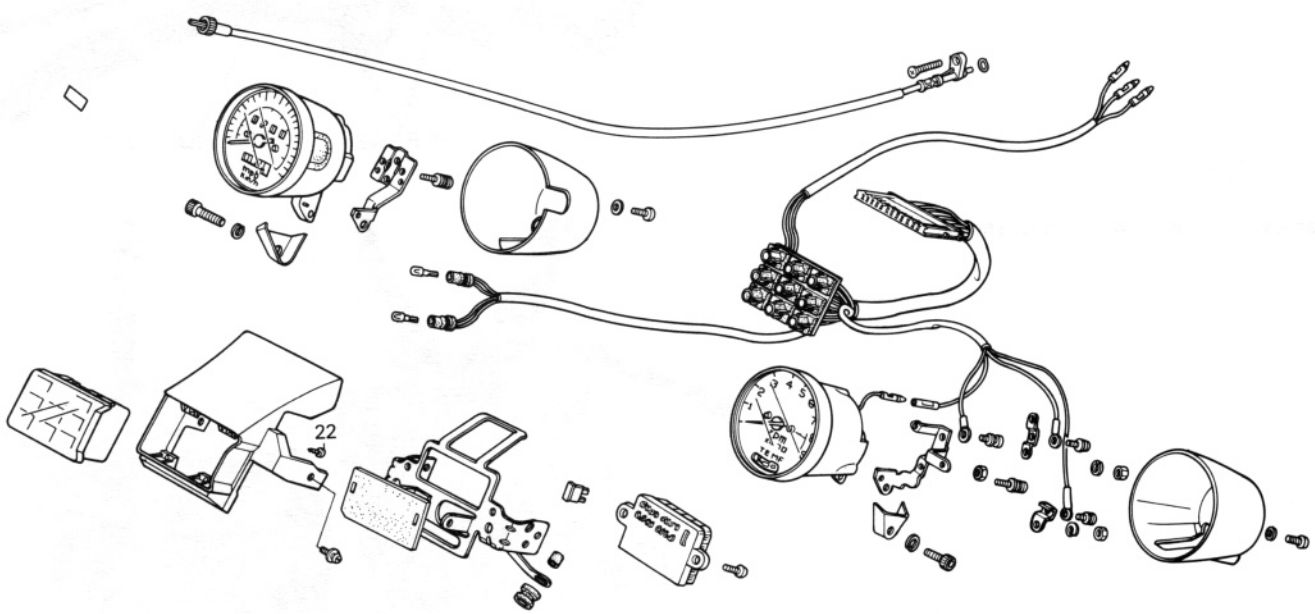


BULBS

ASSEMBLY/INSTALLATION

Lubricate the speedometer cable with light oil before reconnecting.

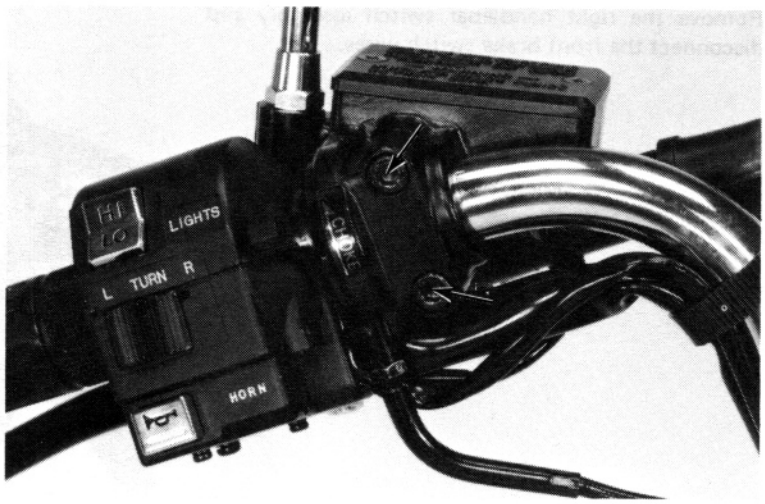
Assemble and install the instruments in the reverse order of disassembly and removal.



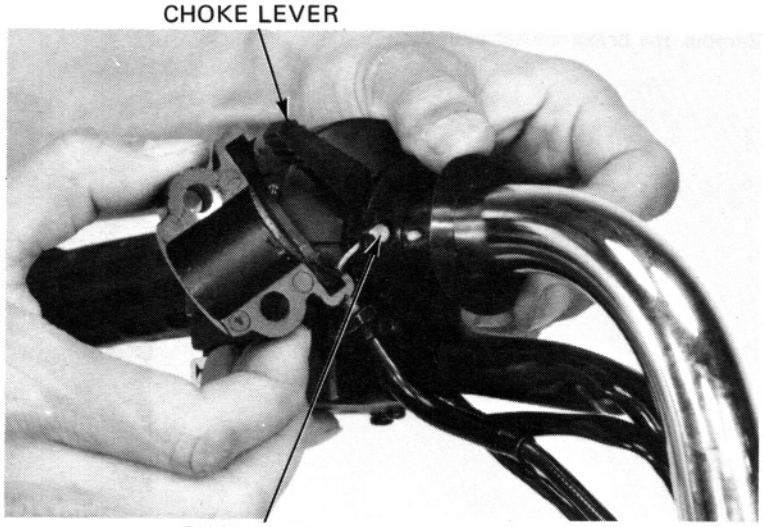
HANDLEBARS

REMOVAL

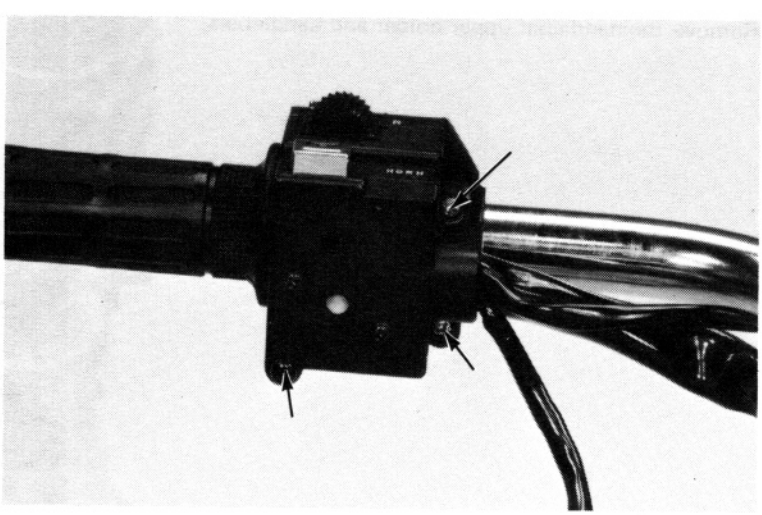
Disconnect the clutch switch wires and remove the clutch master cylinder.



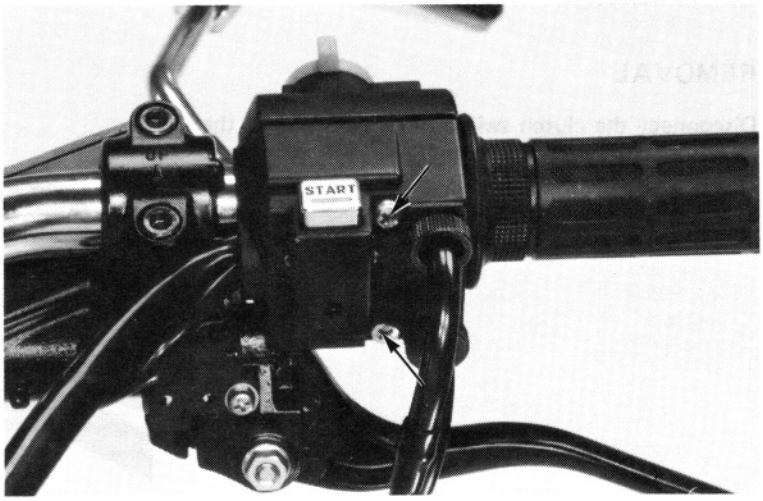
Disconnect the choke cable from the choke lever.



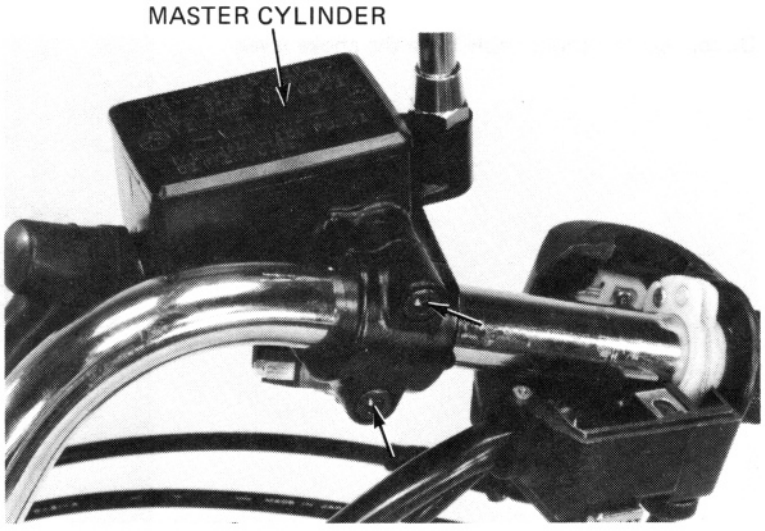
Remove the left handlebar switch assembly.



Remove the right handlebar switch assembly and disconnect the front brake switch wires.



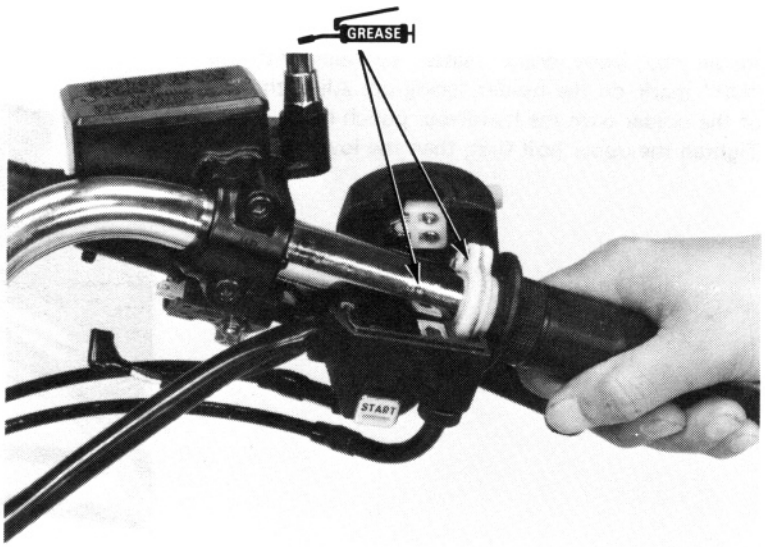
Remove the brake master cylinder.



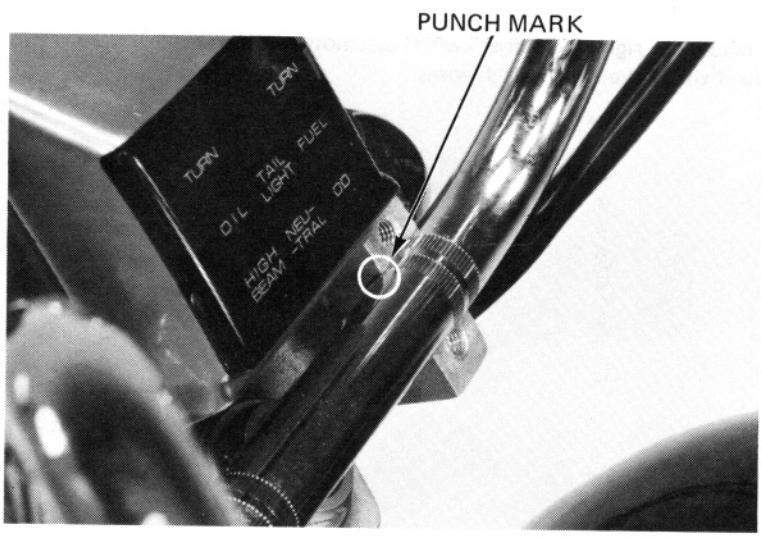
Remove the handlebar upper holder and handlebars.

INSTALLATION

Apply grease to the throttle grip sliding surface and slide the throttle grip over the handlebar.

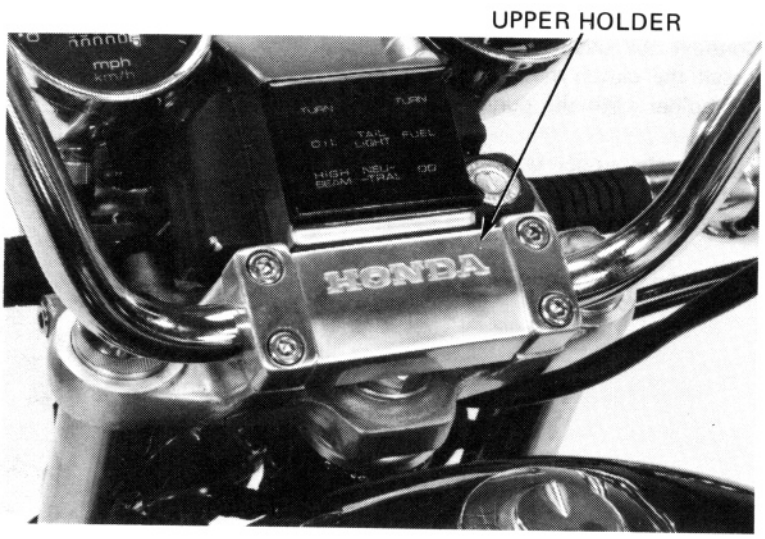


Place the handlebar onto the lower holder aligning the punch mark with the upper face of the lower holder.

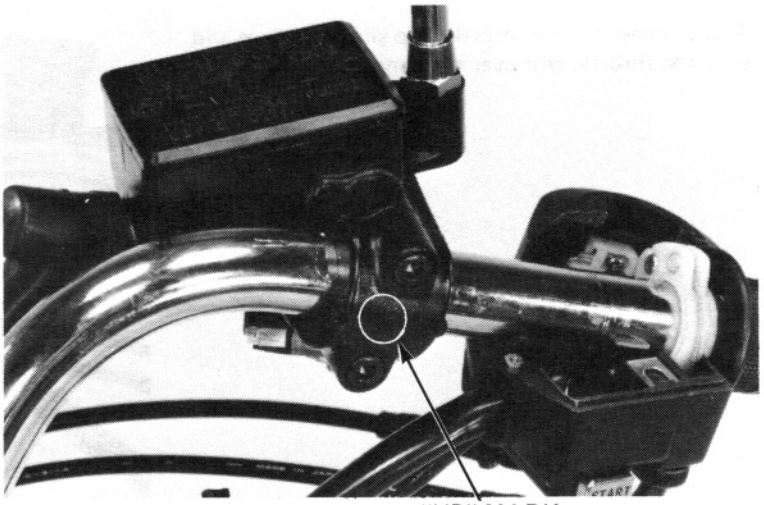


Install the upper holder, tighten the forward bolts first, then tighten the rear bolts.

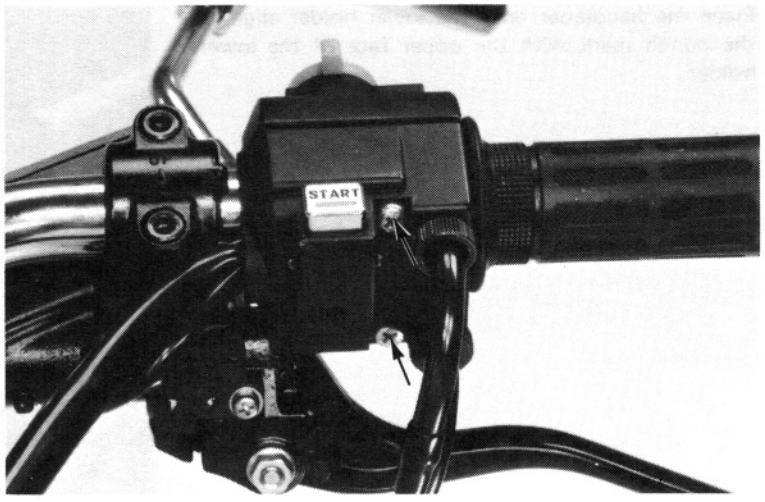
TORQUE: 20–30 N·m (2.0–3.0 kg-m, 14–22 ft-lb)



Install the front brake master cylinder with the "UP" mark on the holder facing up. Align the end of the holder with the handlebar punch mark. Tighten the upper bolt first, then the lower bolt.



Install the right handlebar switch assembly and connect the brake light switch wires.



Connect the choke cable to the choke lever and install the clutch master cylinder. Align the end of the holder with the punch mark on the handlebar.

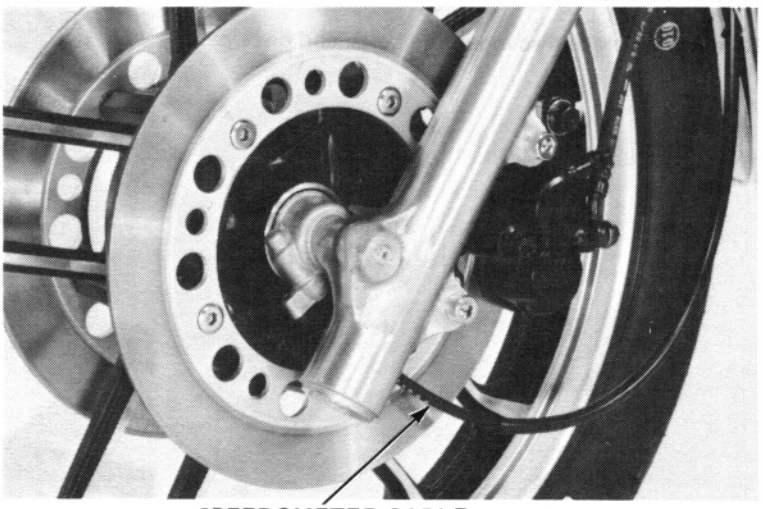
Tighten the upper bolt first, then the lower bolt. Install the left handlebar switch and connect the clutch switch wires.

Route the switch wires properly (page 1-9).

FRONT WHEEL

REMOVAL

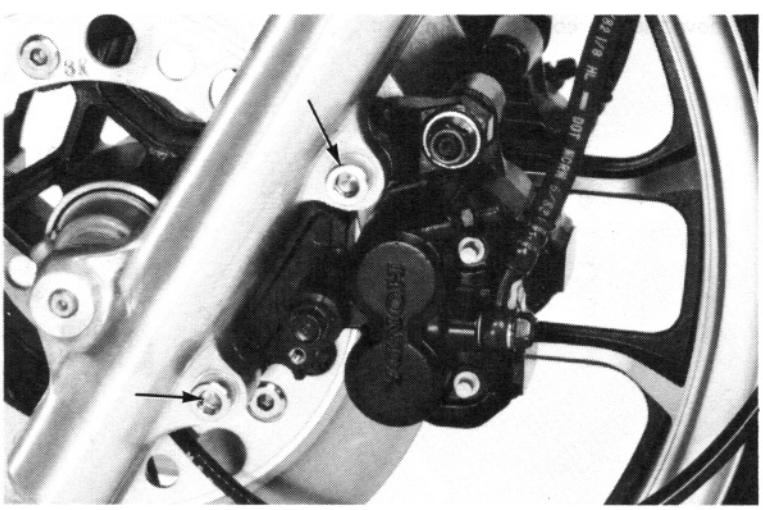
Place the motorcycle on its center stand.
Place a jack under the engine and raise the front wheel off the ground.
Remove the speedometer cable set screw and the speedometer cable.


SPEEDOMETER CABLE

Remove the left brake caliper mounting bolts and remove the caliper from the fork leg.

NOTE:

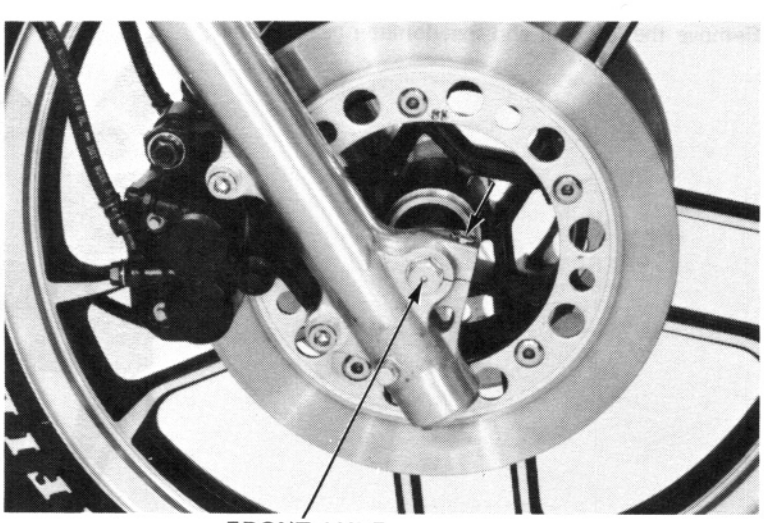
> Do not operate the front brake lever after removing the caliper. To do so will cause difficulty in refitting the brake disc between the brake pads.



Loosen the axle pinch bolt.

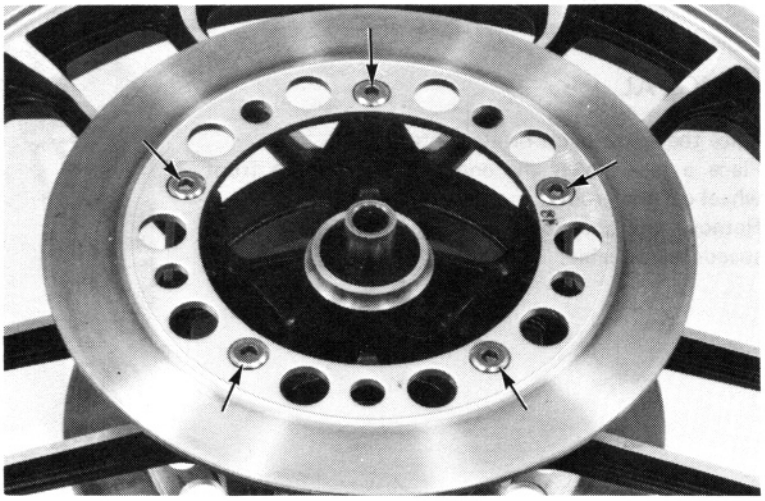
Loosen and remove the front axle.

Remove the front wheel.

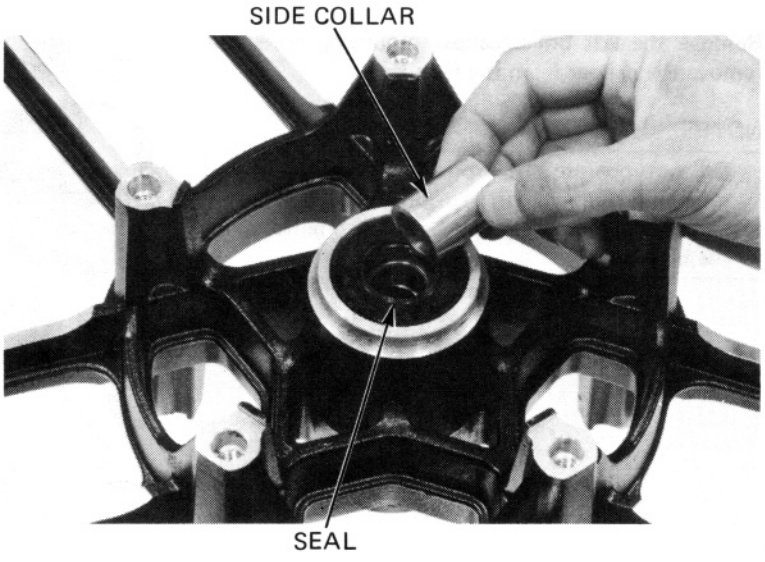

FRONT AXLE

DISASSEMBLY

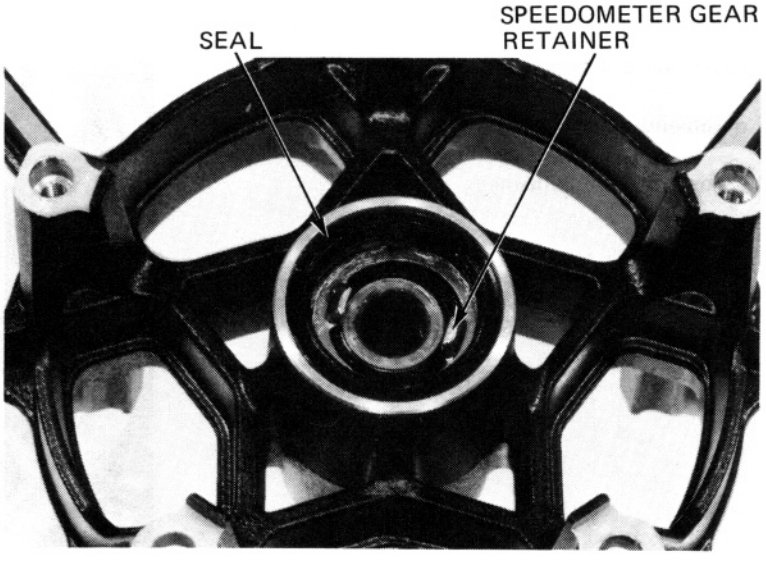
Remove the brake disc mounting bolts, and discs.



Remove the side collar and right seal.



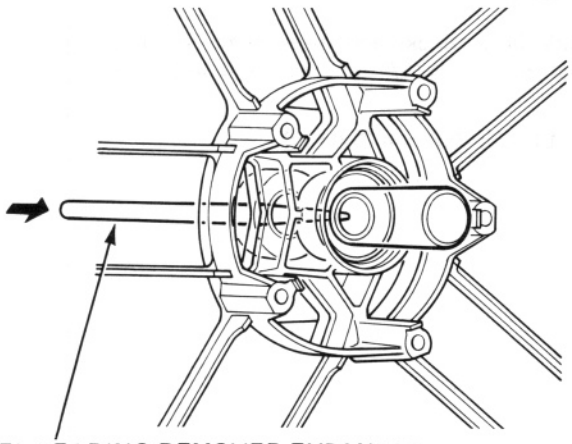
Remove the left seal and speedometer gear retainer.



Remove the wheel bearings and the distance collar from the hub.

NOTE:

> If the bearings are removed, they should be replaced with new ones.

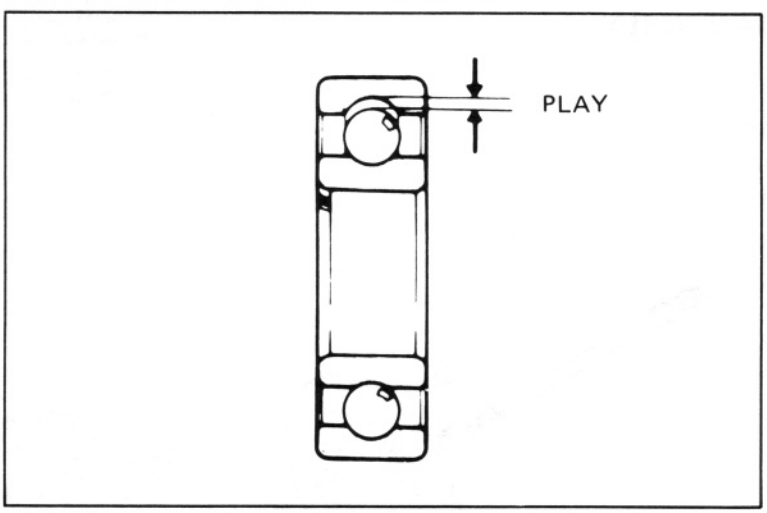


WHEEL BEARING REMOVER EXPANDER
07746–0050100
WHEEL BEARING REMOVER COLLET,
15 mm 07746–0050400 OR
COMMERCIALLY AVAILABLE IN U.S.A.

WHEEL BEARING INSPECTION

Check wheel bearing play by placing the wheel in a truing stand and spinning the wheel by hand. Replace the bearings with new ones if they are noisy or have excessive play.

SERVICE LIMIT: 0.03 mm (0.001 in)



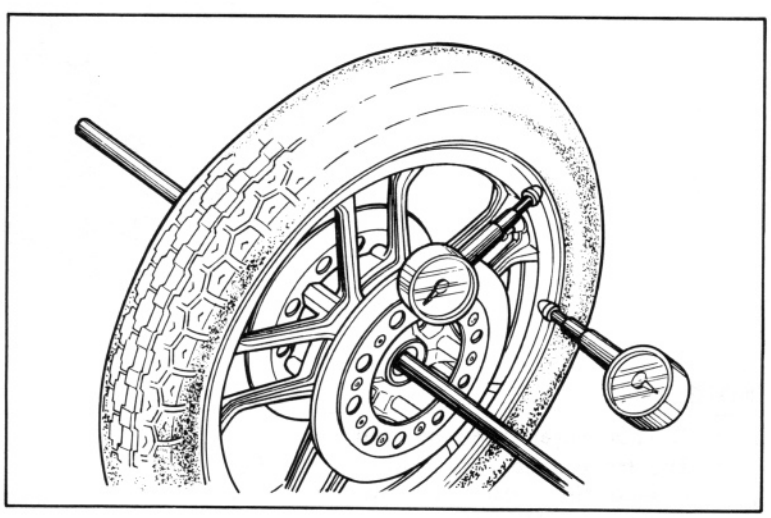
WHEEL INSPECTION

Check the rim runout by placing the wheel in a truing stand. Spin the wheel slowly and read the runout using a dial indicator.

SERVICE LIMITS:
RADIAL RUNOUT: 2.0 mm (0.08 in)
AXIAL RUNOUT: 2.0 mm (0.08 in)

NOTE:

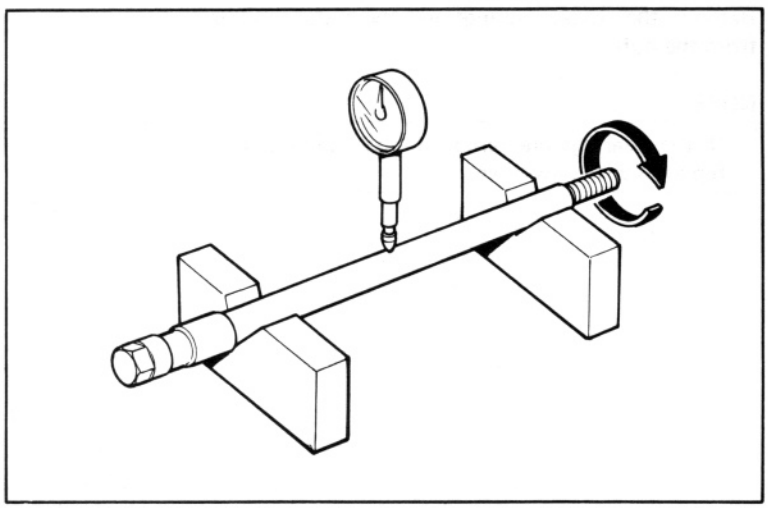
> The wheel cannot be repaired and must be replaced with a new one if the service limits are exceeded.



AXLE INSPECTION

Set the axle in V blocks and measure the runout. The actual runout is 1/2 of the total indicator reading.

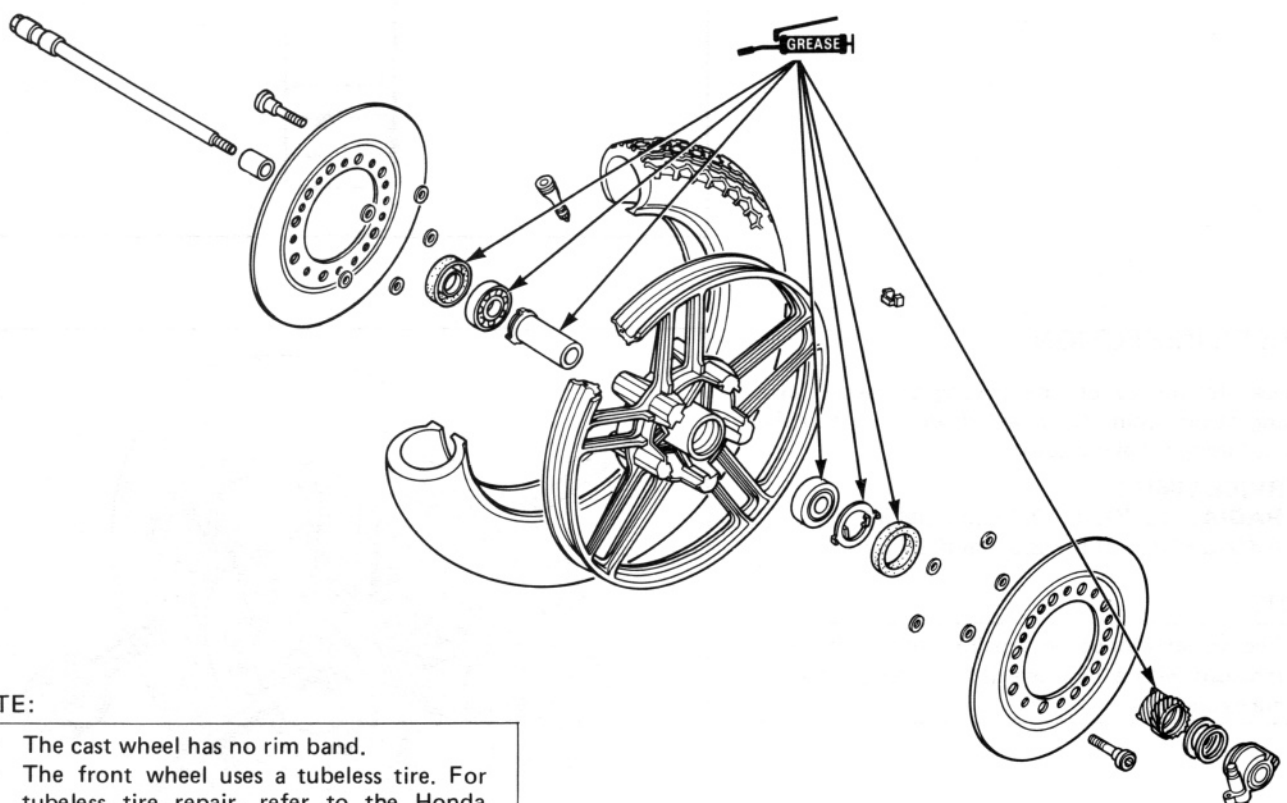
SERVICE LIMIT: 0.2 mm (0.01 in)



ASSEMBLY

WARNING

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



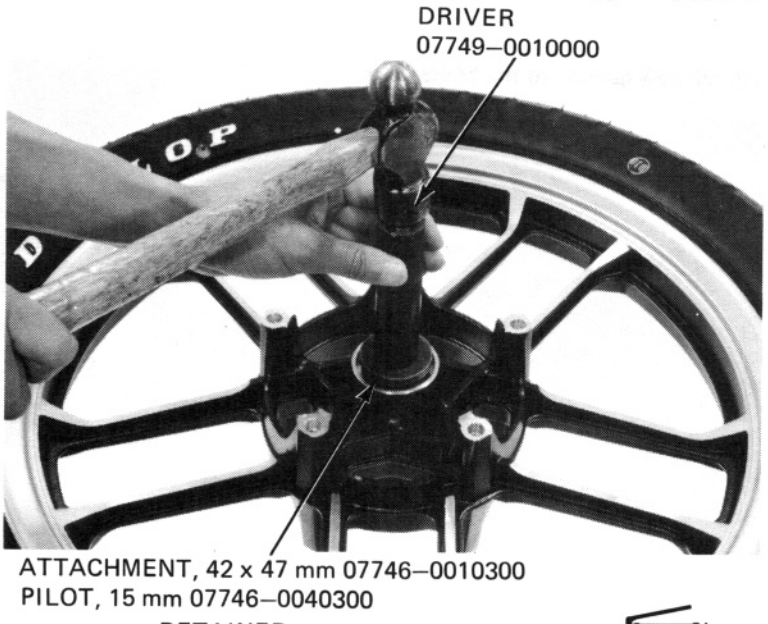
NOTE:

- The cast wheel has no rim band.
- The front wheel uses a tubeless tire. For tubeless tire repair, refer to the Honda Tubeless Tire Manual.

Pack all bearing cavities with grease.

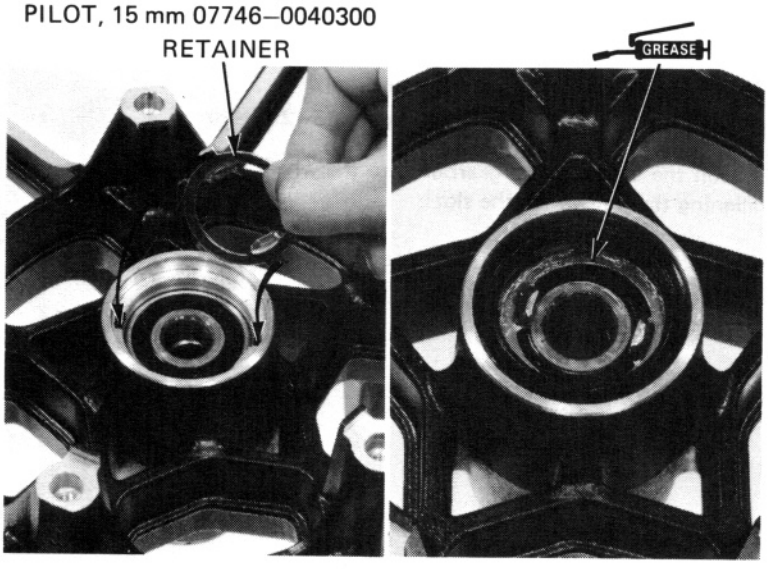
Drive in the right bearing first and press the distance collar into place.

Drive in the left bearing squarely making sure that it is fully seated and that the sealed side is facing out.

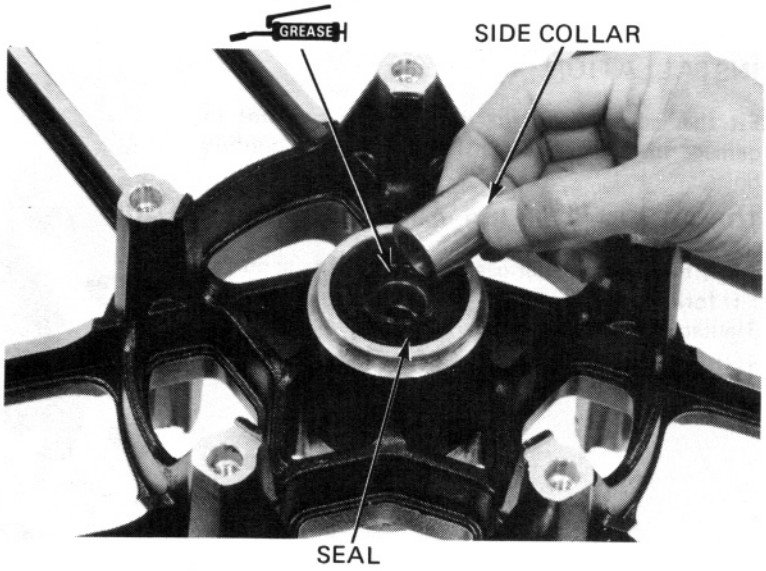


Install the speedometer gear retainer into the wheel hub, aligning the tangs with the slots.

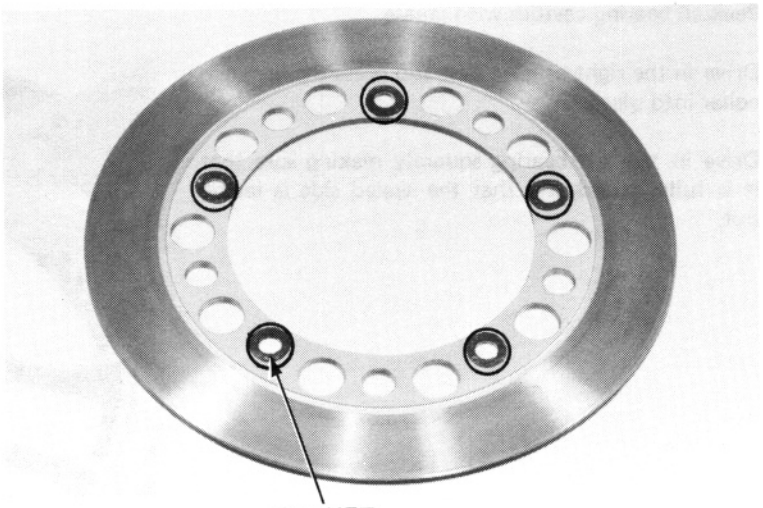
Install the left seal.



Install the right seal and side collar.



Attach new gaskets to the brake discs.

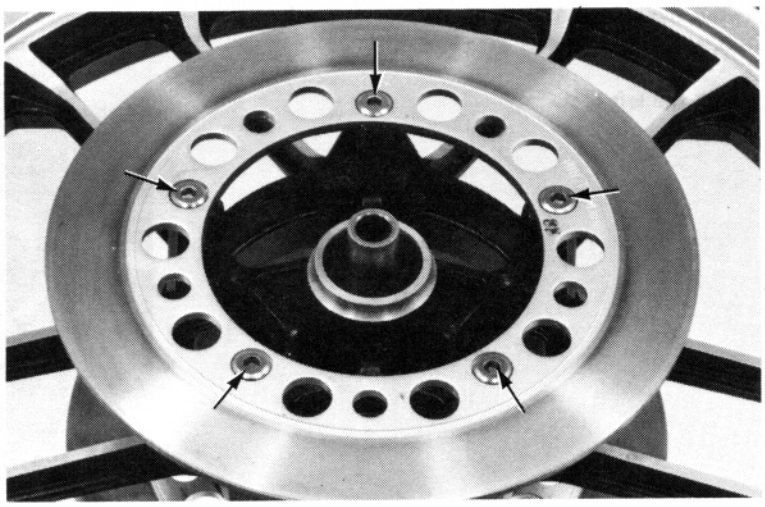


Install the brake discs onto the wheel hub.

TORQUE: 35–40 N·m (3.5–4.0 kg-m, 25–29 ft-lb)

Install the speedometer gearbox into the wheel hub, aligning the tangs with the slots.

Clean the brake discs with a high quality degreasing agent.



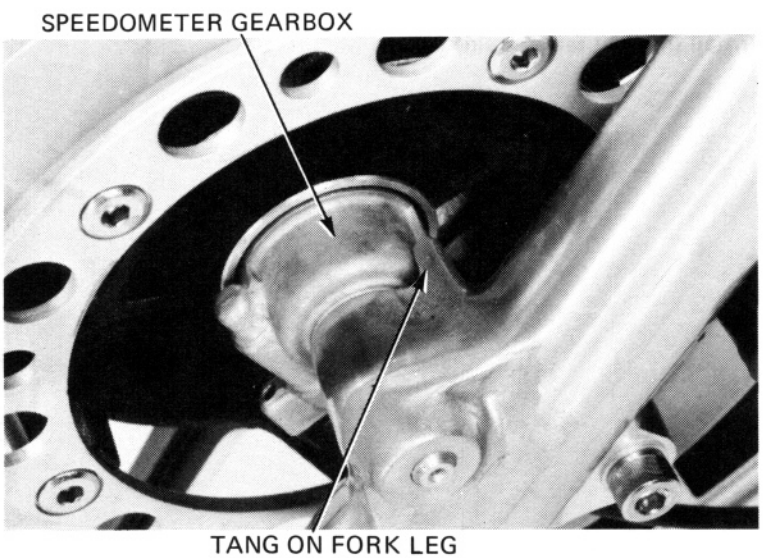
INSTALLATION

Fit the calipers over the discs, taking care not to damage the brake pads. Install the caliper mounting bolts.

TORQUE: 30–40 N·m (3.0–4.0 kg-m, 22–29 ft-lb)

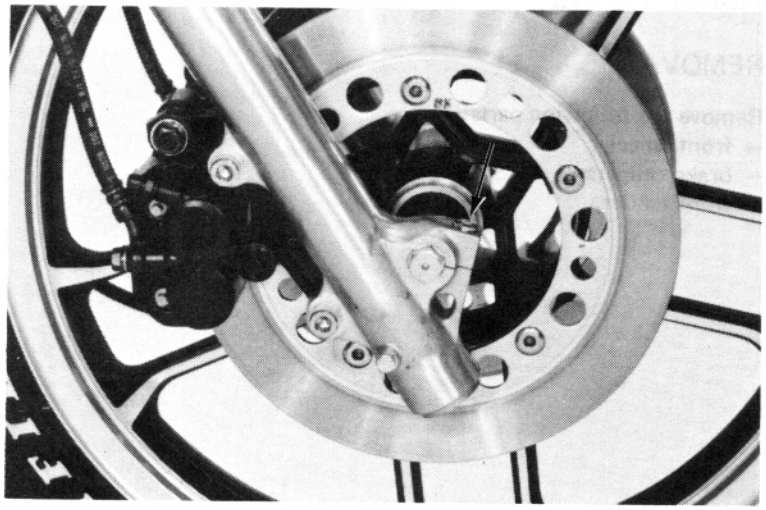
Align the speedometer gearbox with the tang on the left fork leg as shown.
Tighten the axle to the specified torque.

TORQUE: 55–65 N·m (5.5–6.5 kg-m, 40–47 ft-lb)

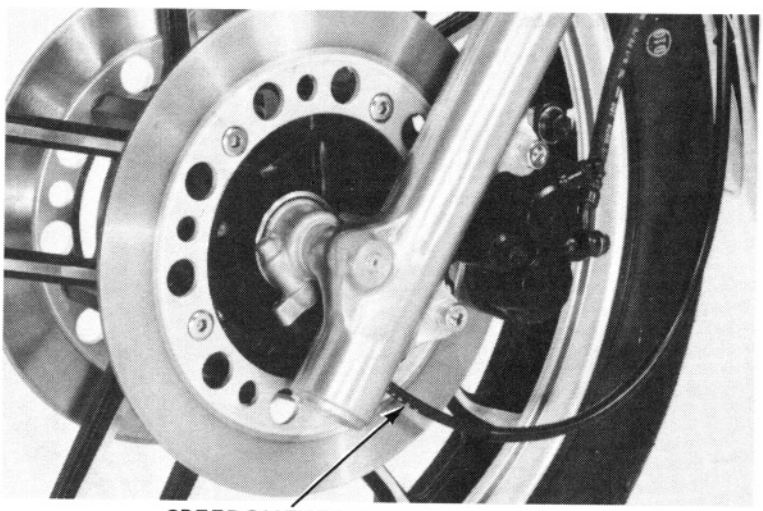


Tighten the axle pinch bolt to the specified torque.

TORQUE: 18–28 N·m (1.8–2.8 kg-m, 13–20 ft-lb)



Install the speedometer cable into the speedometer gearbox and tighten the set screw.

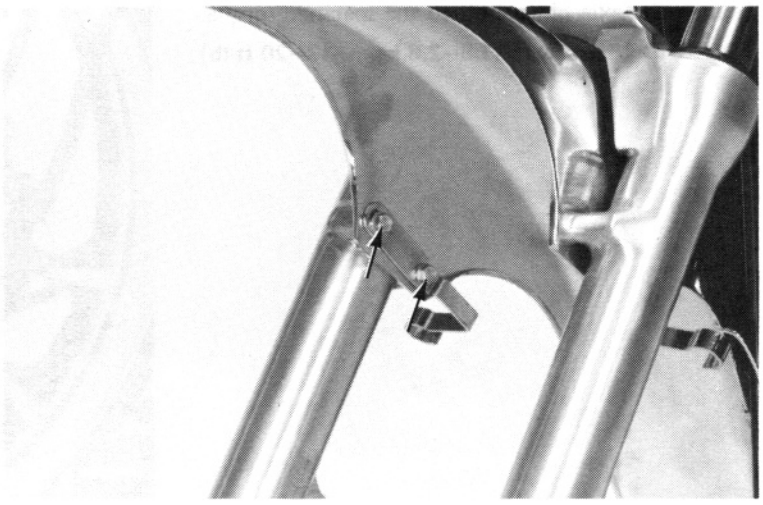


SPEEDOMETER CABLE

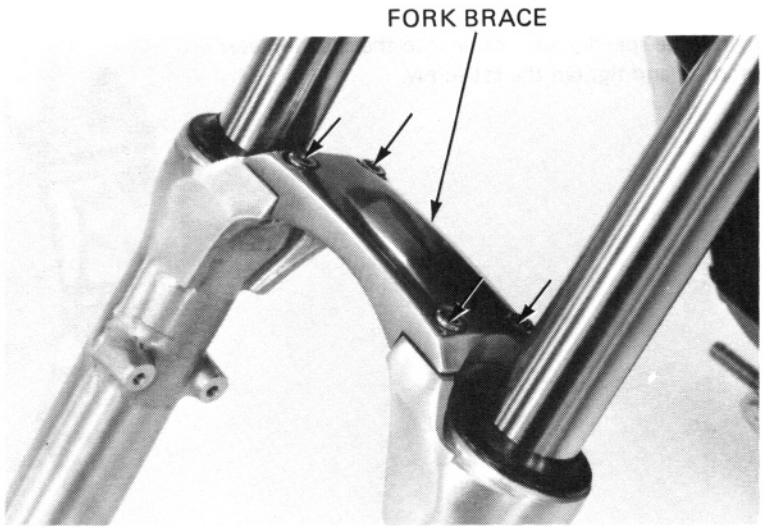
FRONT FORKS

REMOVAL

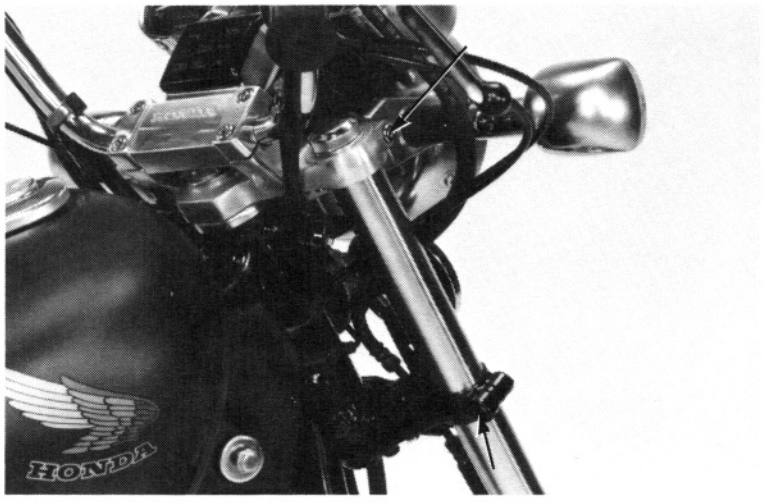
Remove the following parts:
- front wheel.
- brake calipers.
- front fender.



Remove the fork brace.



Loosen the fork upper and lower pinch bolts and remove the front fork tube.



DISASSEMBLY

Depress the air valve and release front fork air pressure.

CAUTION:

- *If air pressure is not released before disassembling, the fork tube cap may become a projectile.*
- *The cap is also under spring pressure. Use care when removing and wear eye and face protection.*

Hold the fork tube in a vise, with soft jaws or a shop towel and remove the fork tube cap.

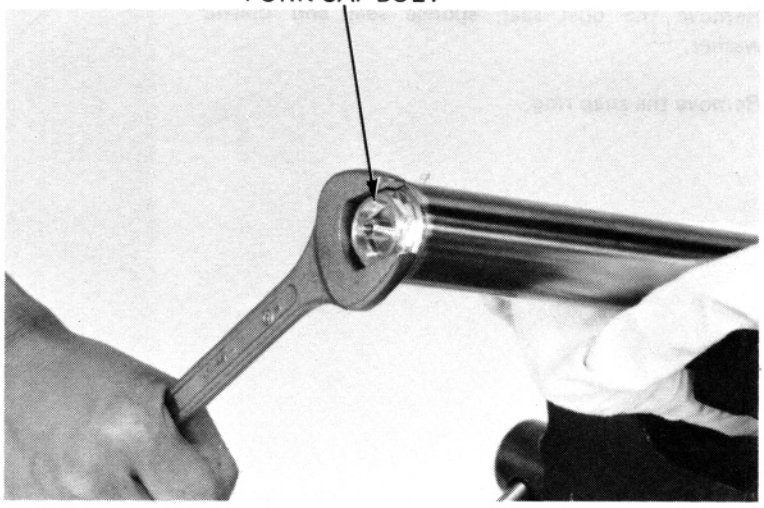
CAUTION:

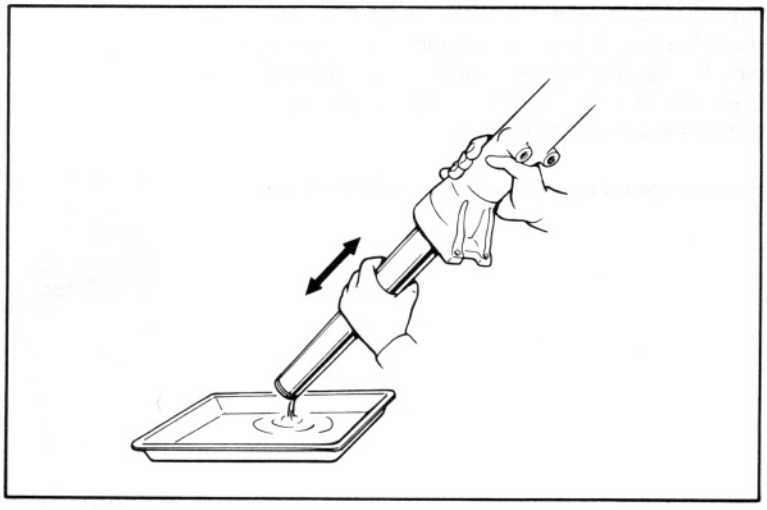
Be careful not to damage the fork tube's sliding surface.

Remove the fork spring, spacer and washer.

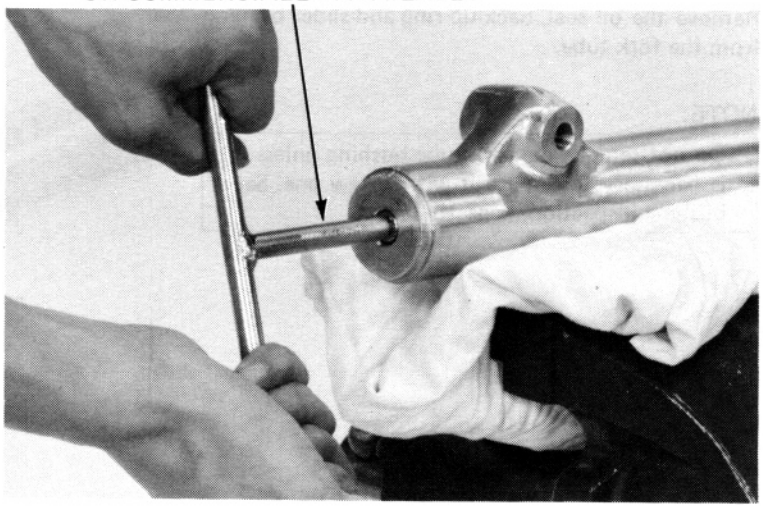
Pour out the fork fluid by pumping the fork up and down several times.

FORK CAP BOLT





HEX WRENCH, 6 mm 07917–3230000
OR COMMERCIALLY AVAILABLE



Hold the fork slider in a vise with soft jaws or a shop towel.

Remove the socket bolt with a hex wrench.

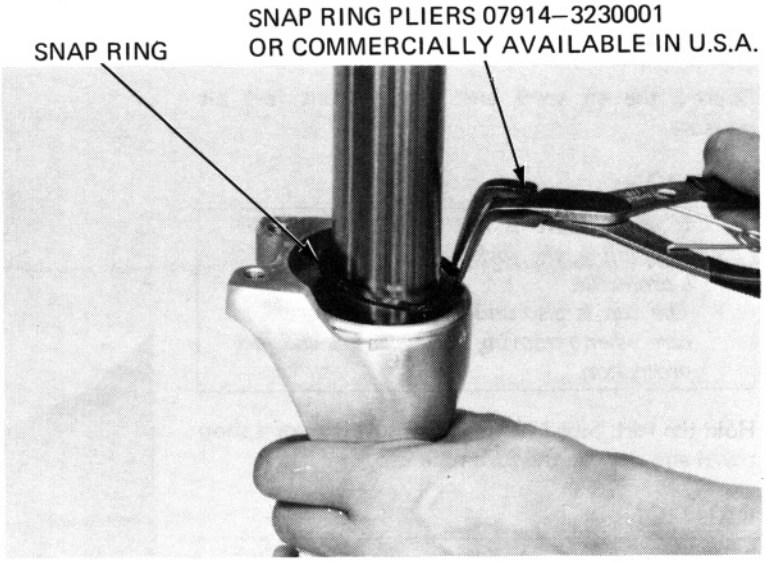
NOTE:

Temporarily install the spring and fork bolt if difficulty is encountered in removing the bolt.

The piston and rebound spring can be removed from the right fork.

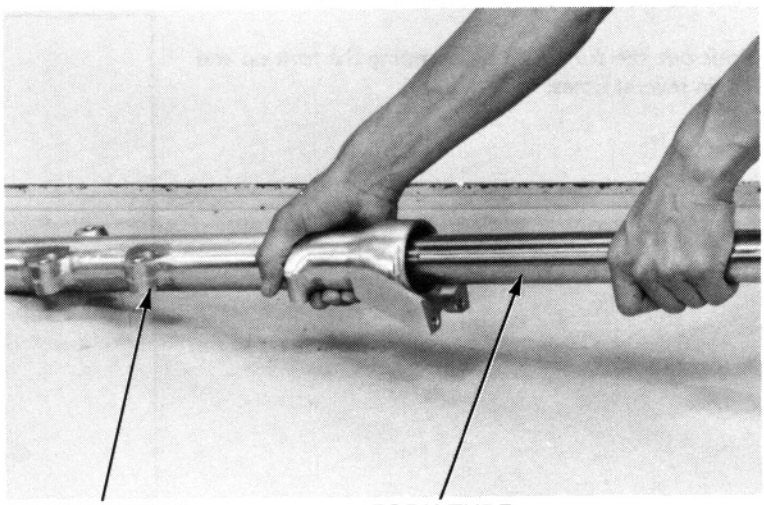
Remove the dust seal, sponge seal and plastic washer.

Remove the snap ring.



Pull the fork tube out until resistance from the slider bushing is felt. Then move it in and out, tapping the bushing lightly until the fork tube separates from the slider. The slider bushing will be forced out by the fork tube bushing.

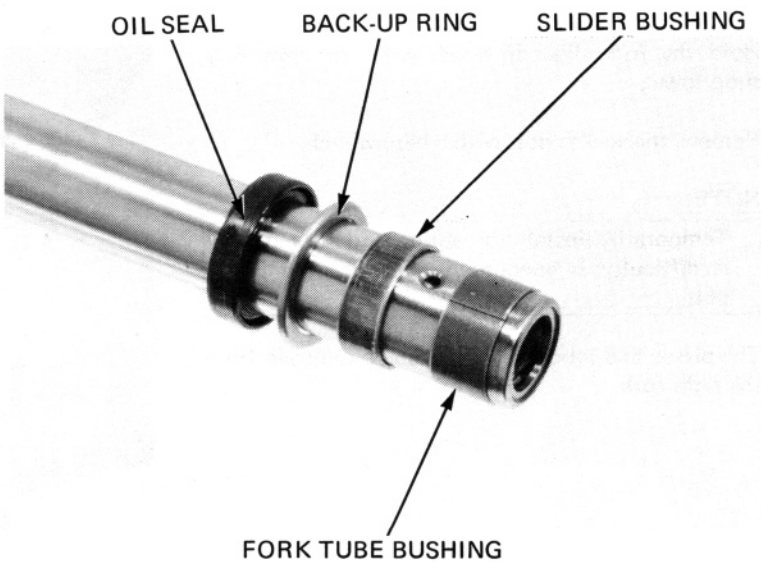
Remove the oil lock piece from inside the slider.



Remove the oil seal, back-up ring and slider bushing from the fork tube.

NOTE:

> Do not remove the fork tube bushing unless it is necessary to replace it with a new one. See bushing inspection, page 15-24.



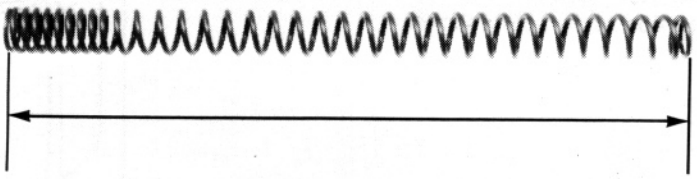
INSPECTION

FORK SPRING FREE LENGTH

Measure the fork spring free length.

SERVICE LIMIT: 465.6 mm (18.3 in)

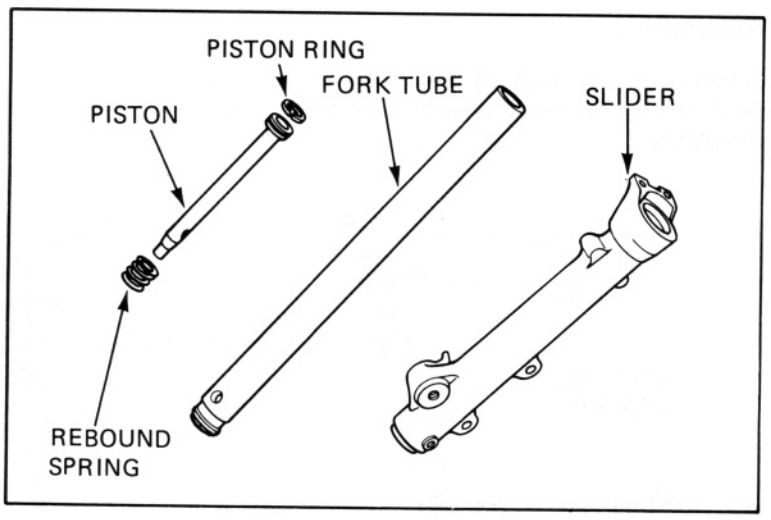
Replace the spring if it is shorter than the service limit.



FORK TUBE/FORK SLIDER/PISTON

Check the fork tube, fork slider and piston for score marks, scratches, or excessive or abnormal wear. Replace any components which are worn or damaged.

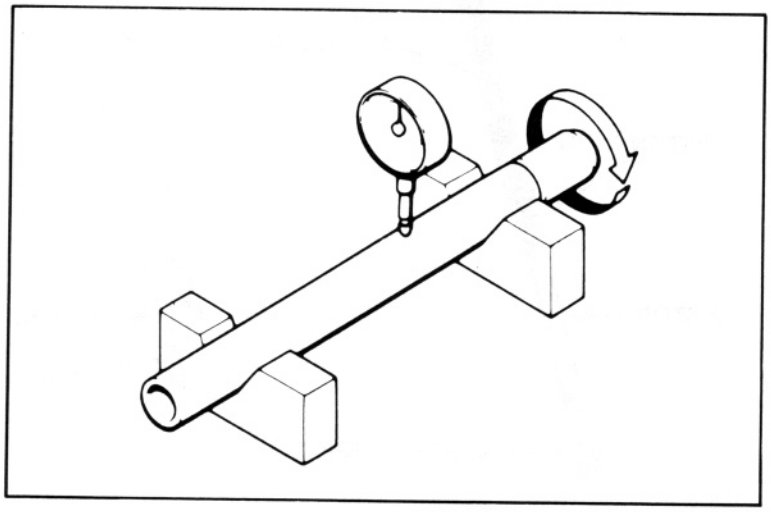
Check the fork piston ring for wear or damage.
Check the rebound spring for fatigue or damage.



FORK TUBE

Set the fork tube in V blocks and read the runout. Use 1/2 the total indicator reading to determine the actual runout.

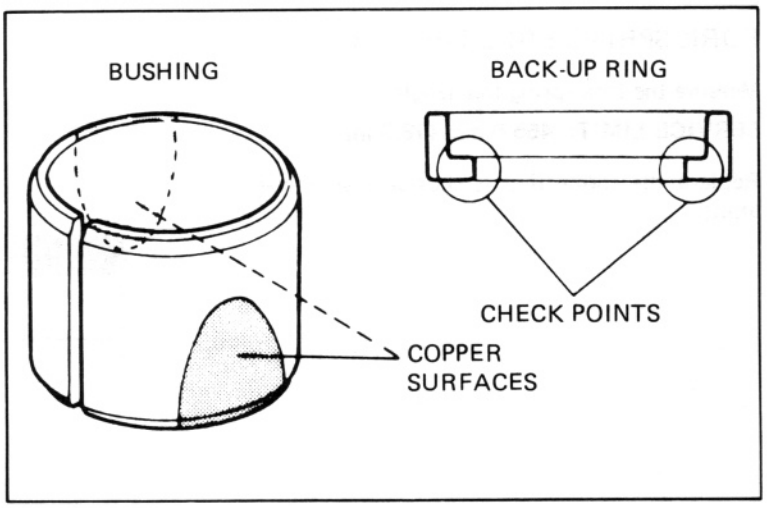
SERVICE LIMIT: 0.20 mm (0.008 in)



BUSHING/BACK-UP RING

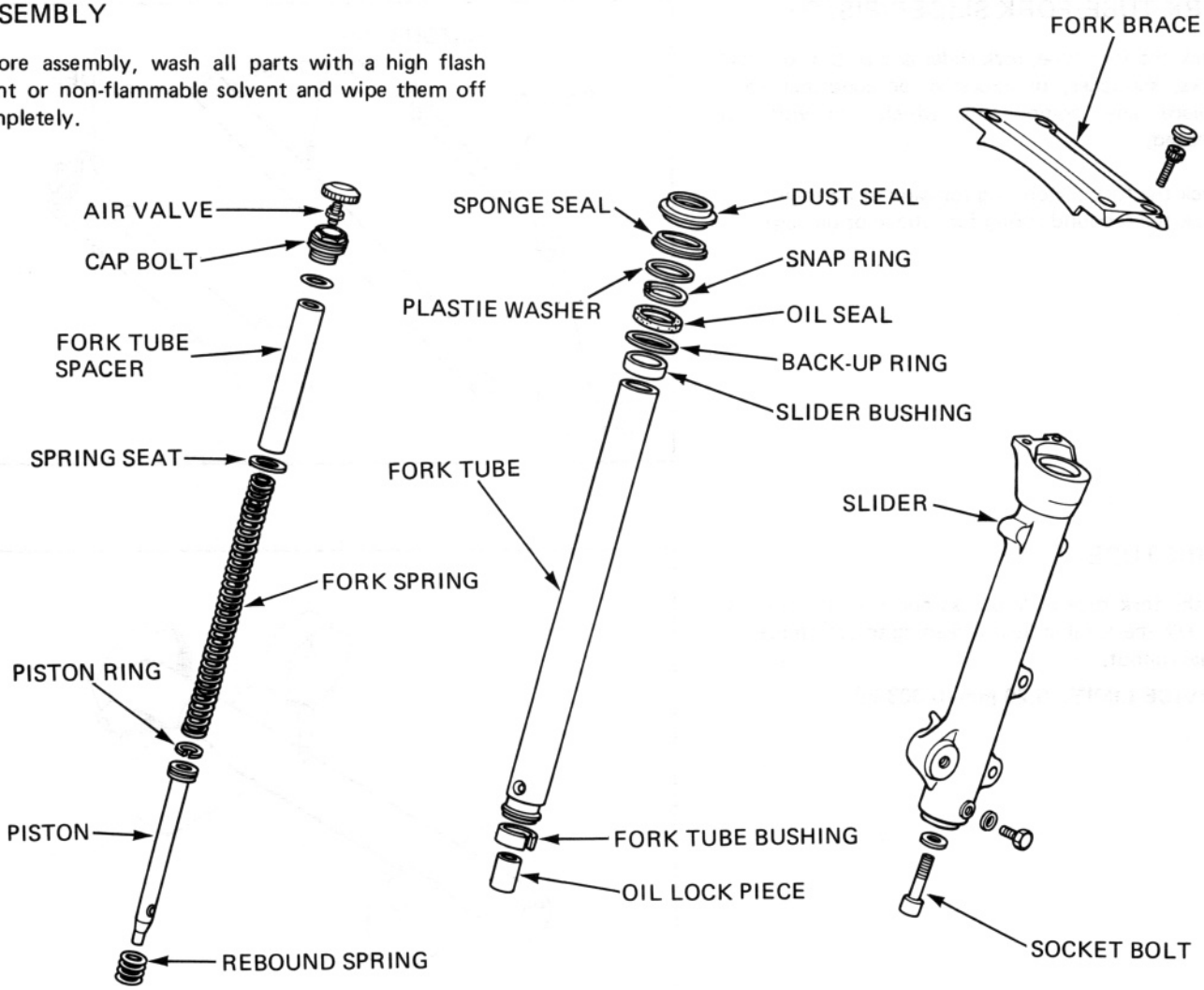
Visually inspect the slider and fork tube bushings. Replace the bushings if there is excessive scoring or scratching, or if the teflon is worn so that the copper surface appears on more than 3/4 of the entire surface.

Check the back-up ring; replace it if there is any distortion at the points shown.



ASSEMBLY

Before assembly, wash all parts with a high flash point or non-flammable solvent and wipe them off completely.



Insert the rebound spring and piston into the fork tube.

Place the oil lock piece on the end of the piston and insert the fork tube into the slider.

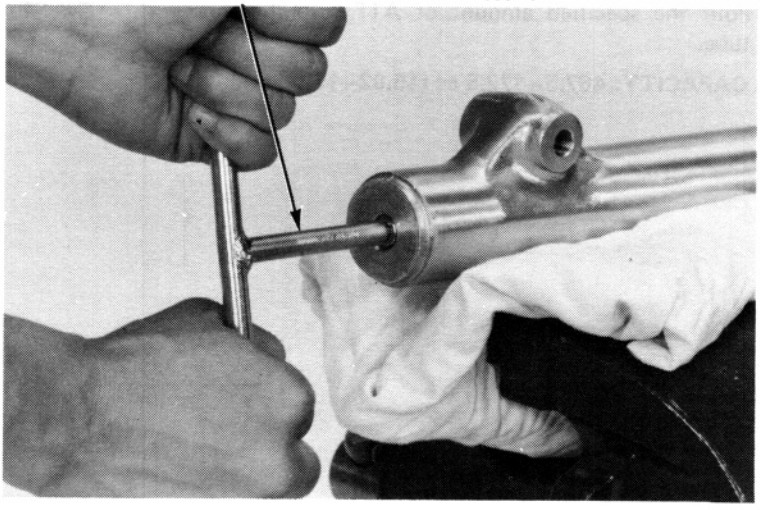
Place the fork slider in a vise with soft jaws or a shop towel. Apply a locking agent to the socket bolt and thread it into the piston. Tighten with a 6 mm hex wrench.

NOTE:

> Temporarily install the fork spring and fork cap bolt to tighten the socket bolt.

TORQUE: 15–25 N·m (1.5–2.5 kg-m, 11–18 ft-lb)

HEX WRENCH, 6 mm 07917–3230000
OR COMMERCIALLY AVAILABLE IN U.S.A.

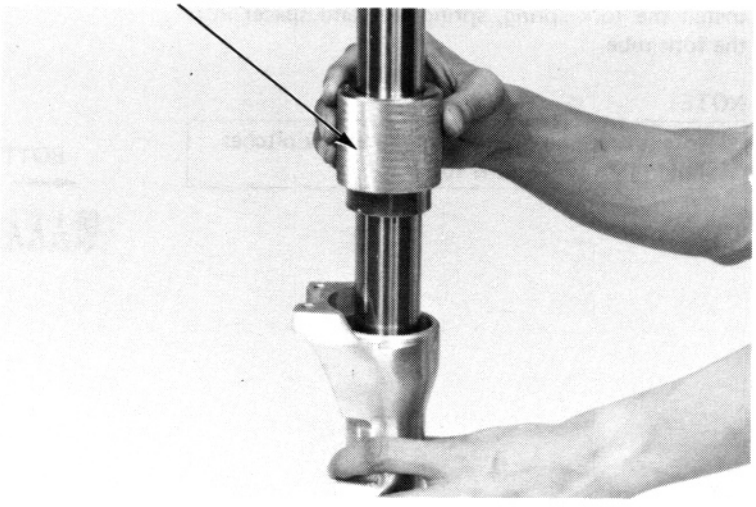


Place the slider bushing over the fork tube and rest it on the slider. Put the back-up ring and an old bushing or equivalent tool on top.

Drive the bushing into place with the seal driver and remove the old bushing or equivalent tool.

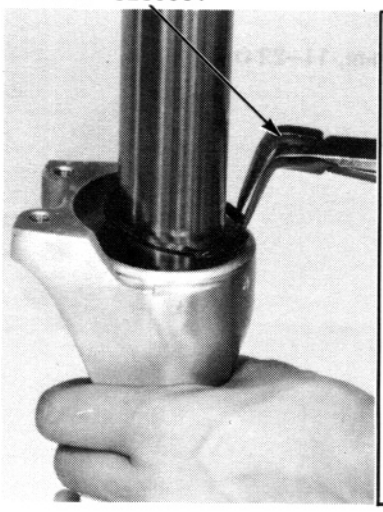
Coat a new oil seal with ATF and install it with the seal markings facing up. Drive the seal in with the seal driver.

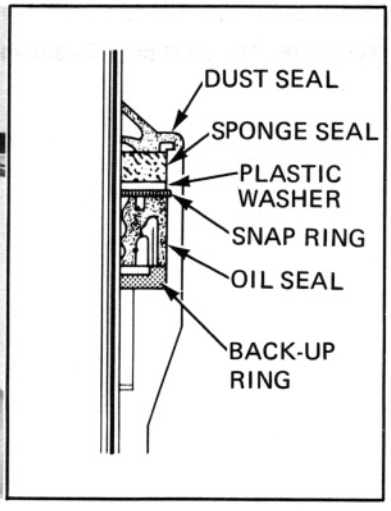
FORK SEAL DRIVER
07947–4630100



Install the snap ring with its radiused edge facing down and install the plastic washer, sponge and dust seals.

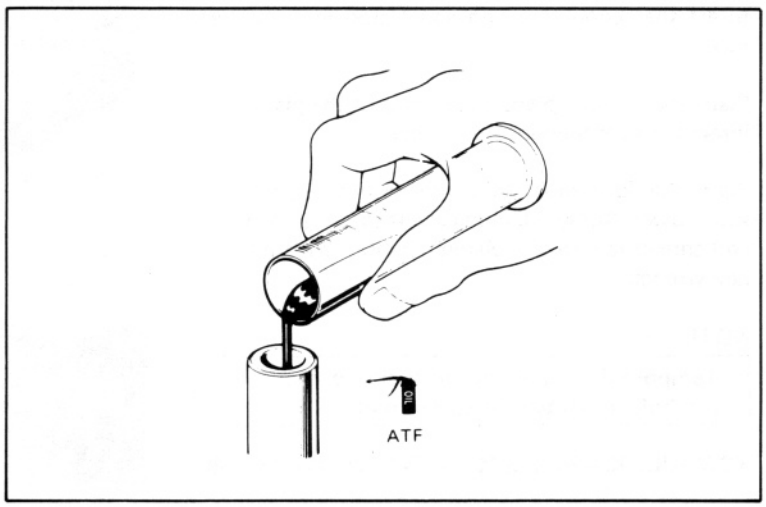
SNAP RING PLIERS
07914–3230001





Pour the specified amount of ATF into the fork tube.

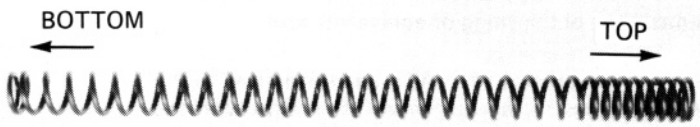
CAPACITY: 467.5–472.5 cc (15.82–15.99 ozs)



Install the fork spring, spring seat and spacer into the fork tube.

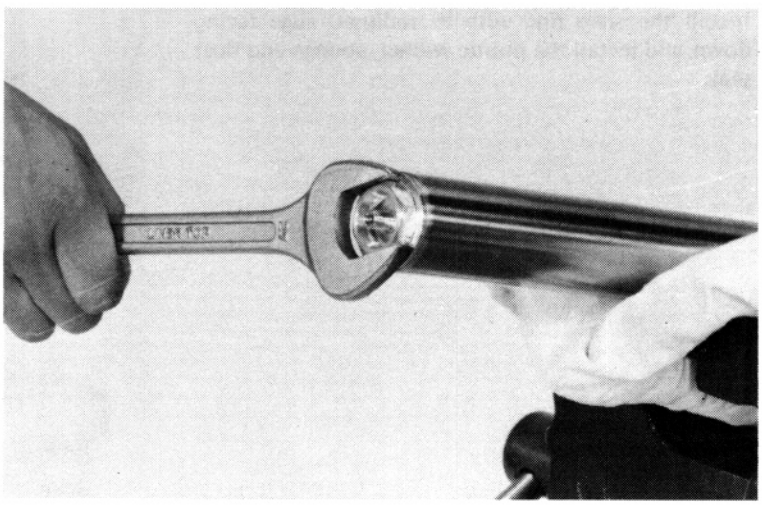
NOTE:

> Note the spring direction, the narrow pitches should face toward the top.



Install and torque the fork tube cap.

TORQUE: 15–30 N·m (1.5–3.0 kg-m, 11–22 ft-lb)



FRONT FORK INSTALLATION

Install the front forks.

Tighten the bottom pinch bolts.

TORQUE: 45–55 N·m (4.5–5.5 kg-m, 33–40 ft-lb)

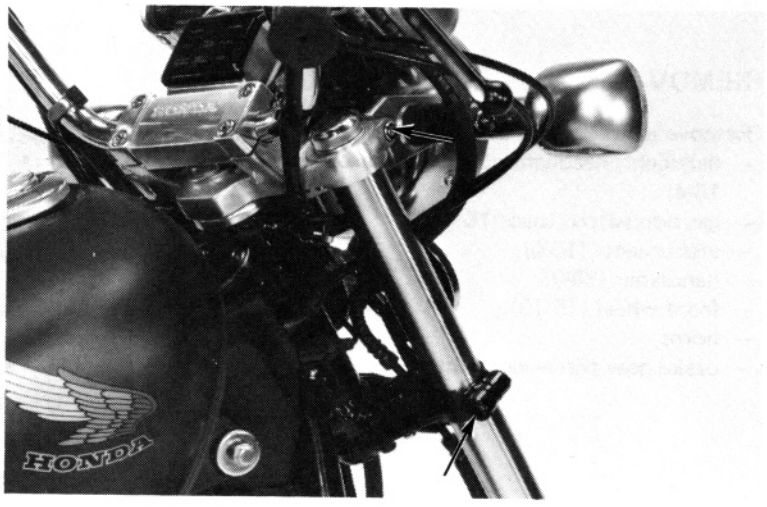
Tighten the top pinch bolts.

TORQUE: 9–13 N·m (0.9–1.3 kg-m, 7–8 ft-lb)

Loosely install the front fork brace.

NOTE:

> Do not install the fork brace before torqueing the front fork pinch bolts.



Install the removed parts in the reverse order of removal.
- front fender.
- brake calipers.
- front wheel.

Tighten the front fork brace to the specified torque.

TORQUE: 18–28 N·m (1.8–2.8 kg-m, 13–20 ft-lb)

Install the bolt caps.

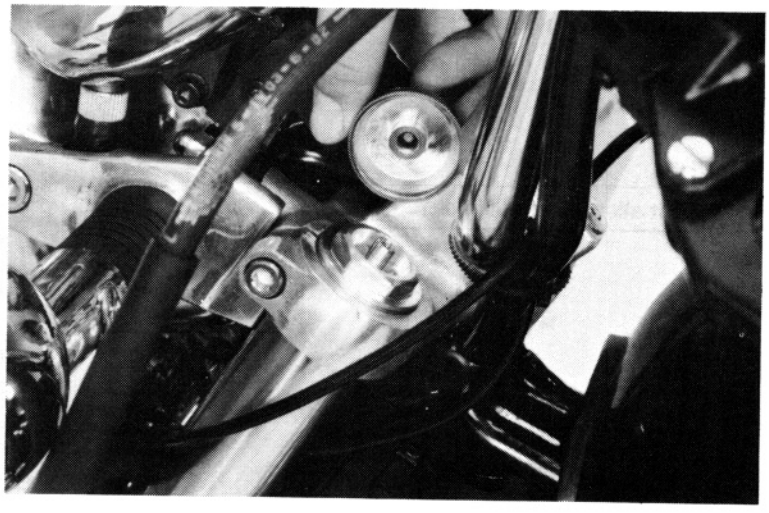
FRONT FORK BRACE

Fill the fork tubes with air to 0–40 kPa (0–4.0 kg/cm², 0–6 psi).

CAUTION:

> - *Use only a hand operated air pump to fill the fork tubes. Do not use compressed air.*
> - *Maximum pressure is 300 kPa (3 kg/cm², 43 psi). Do not exceed this or fork tube component damage may occur.*

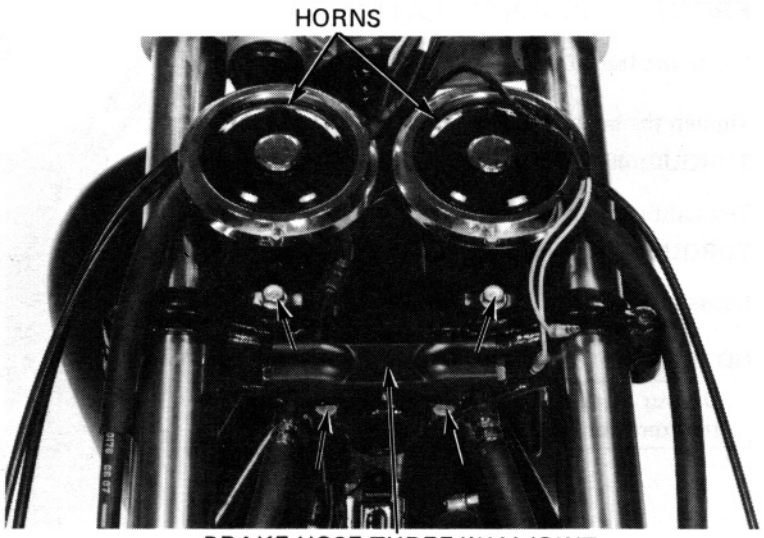
With the front brake applied, pump the front forks up and down several times. Place the motorcycle on its center stand. Check the air pressure and adjust if necessary.



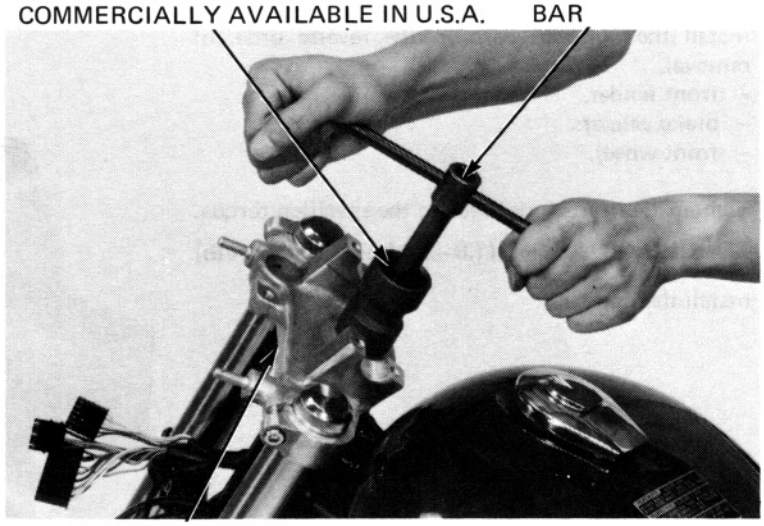
STEERING STEM

REMOVAL

Remove the following components.
- headlight, headlight case and brackets (page 15-3, 15-4).
- ignition switch (page 15-4).
- instruments (15-6).
- handlebar (15-9).
- front wheel (15-13).
- horns.
- brake hose three-way joint.



- steering stem nut.
- front forks (page 15-20).
- fork top bridge.

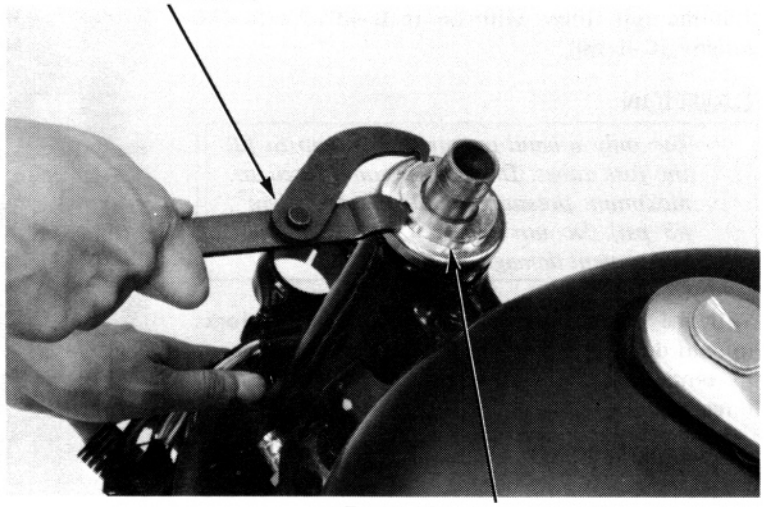


Remove the bearing adjustment nut.

Remove the steering stem, top cone race and steel balls.

NOTE:

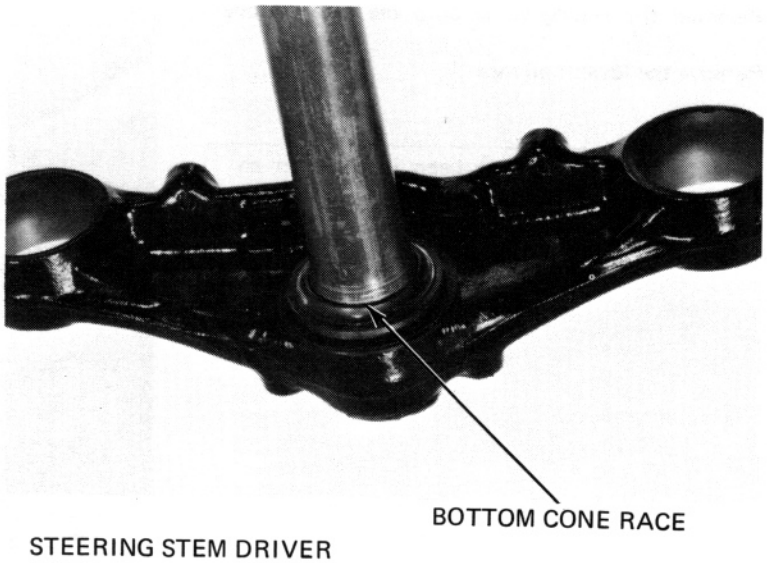
Do not allow the steel balls to fall.



BOTTOM CONE RACE REPLACEMENT

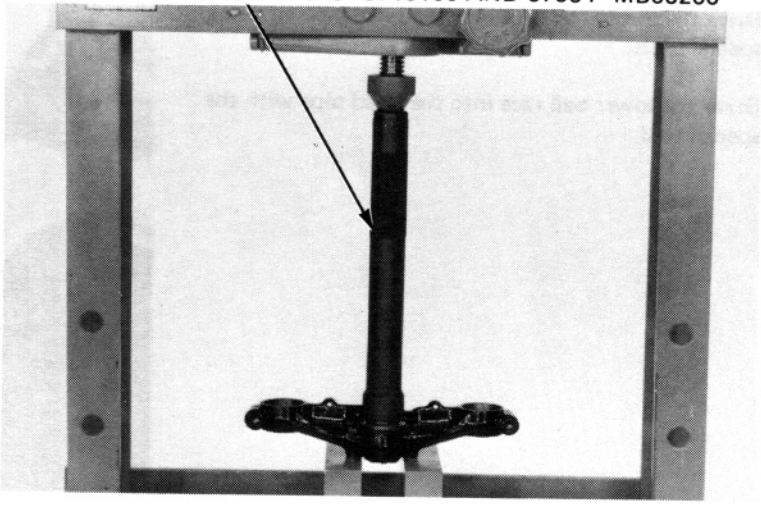
Inspect the bottom cone race for wear or damage and replace if necessary.

Remove the bottom cone race with a hammer and a drift.



Install a new washer and dust seal and drive a new bottom cone race into place.

STEERING STEM DRIVER
07946–MB00000 OR 07946–3710100 AND 07964–MB00200



BALL RACE REPLACEMENT

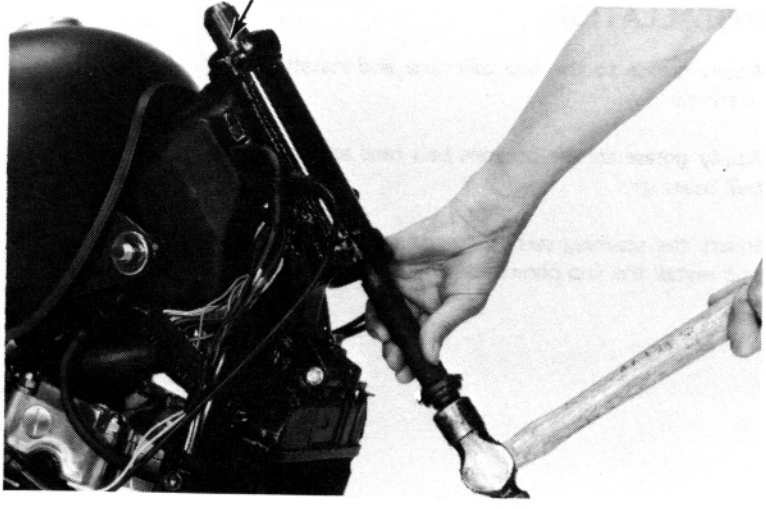
Inspect the top and bottom ball races and replace if worn or damaged.

Remove the upper ball race with the special tool.

NOTE:

> Remove the sliding guide from the bearing race remover.

BEARING RACE REMOVER/
INSTALLER 07946–3710400



Reinstall the sliding guide onto the race remover.

Remove the lower ball race.

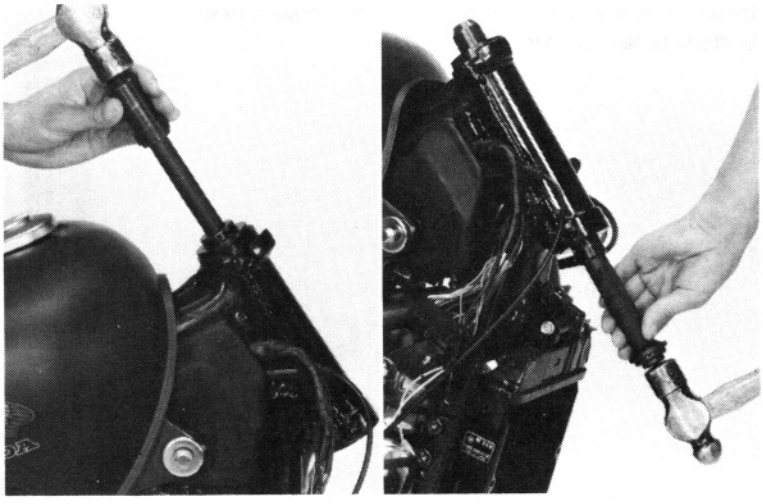
NOTE:

> If the motorcycle has been involved in an accident, examine the area around the steering head for cracks.

BEARING RACE REMOVER/INSTALLER
07946–3710400

Drive the upper ball race into the head pipe with the special tools.

Drive the lower ball race into the head pipe with the special tool.

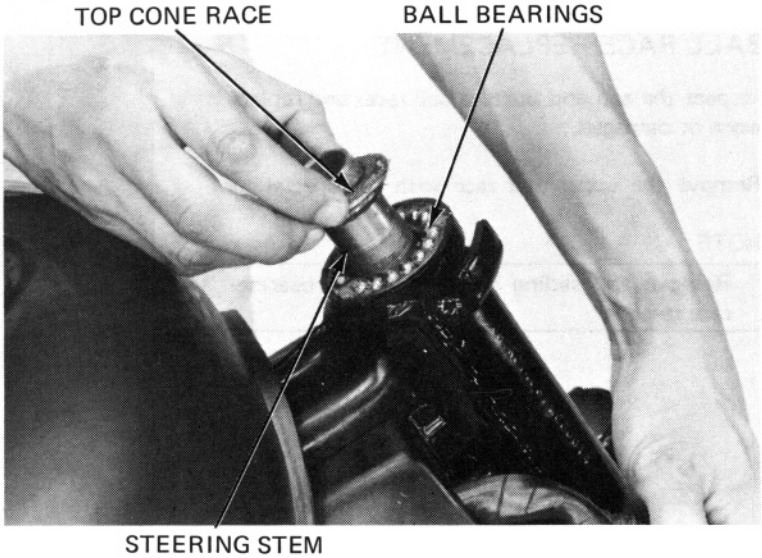


INSTALLATION

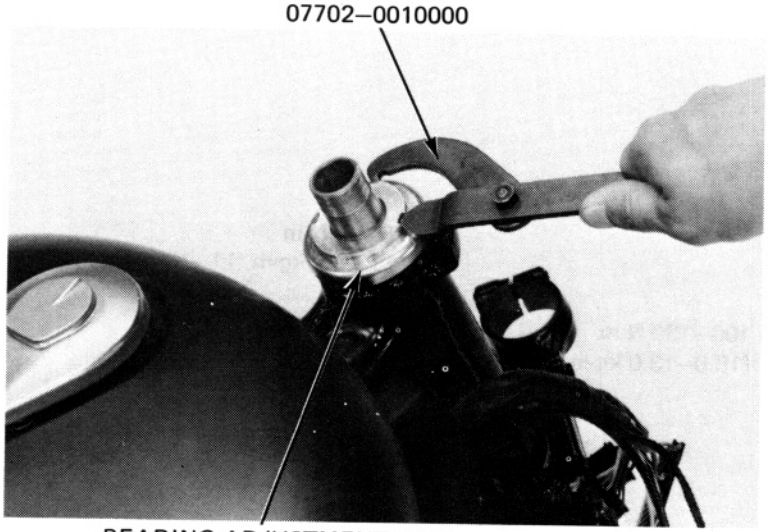
Apply grease to the top ball race and install 18 ball bearings.

Apply grease to the bottom ball race and install 19 ball bearings.

Insert the steering stem into the steering head pipe and install the top cone race.



Install the bearing adjustment nut and tighten it snug against the top cone race. Then, back it off 1/8 turn.
Make sure that there is no vertical movement and that the stem rotates freely.



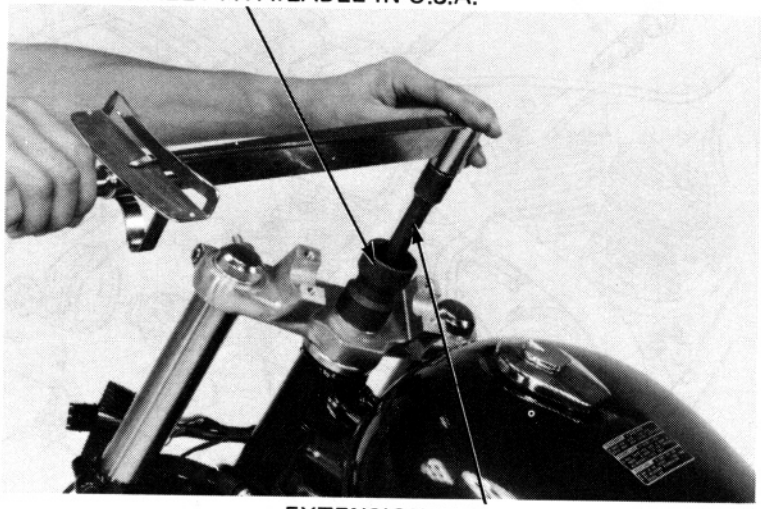
LOCK NUT WRENCH, 30 x 32 mm
COMMERCIALLY AVAILABLE IN U.S.A.

Install the fork top bridge and stem nut.

Temporarhly install the front forks and tighten the stem nut.

TORQUE:
80–120 N·m (8.0–12.0 kg-m, 58–87 ft-lb)

Install the removed parts in the reverse order of removal.



EXTENSION BAR
COMMERCIALLY AVAILABLE IN U.S.A.