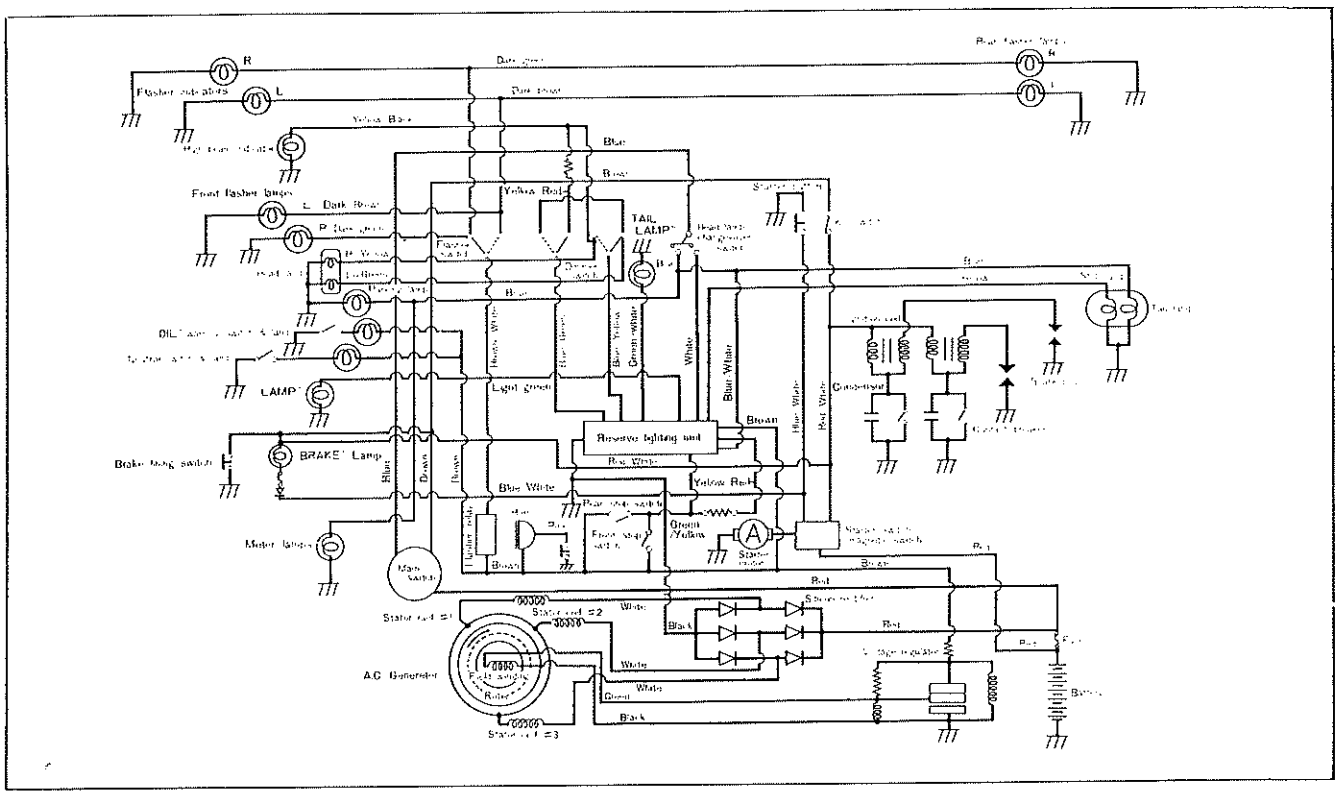
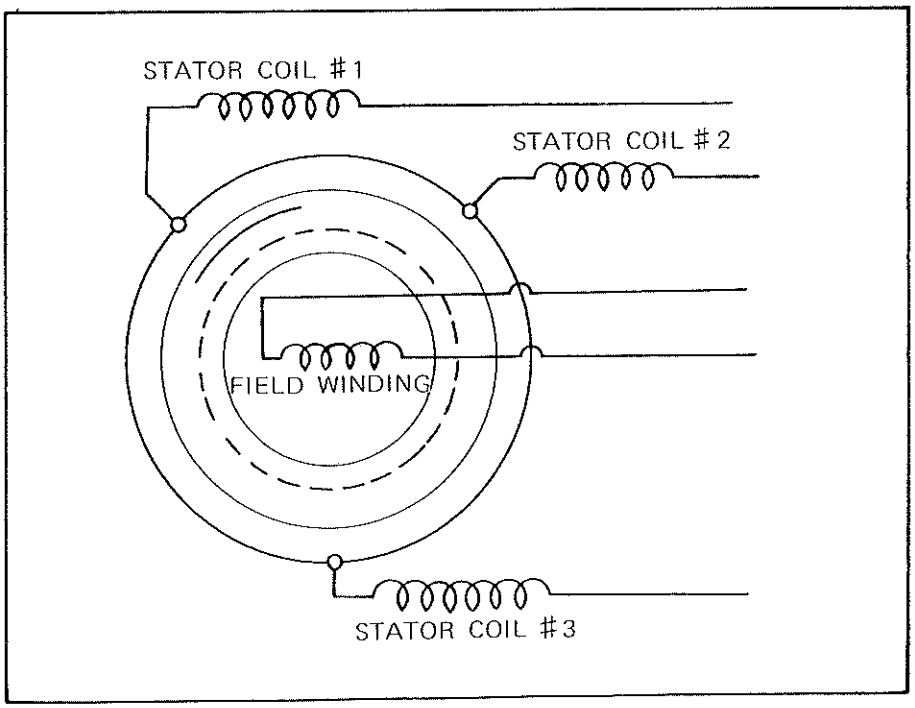
5. ELECTRICAL EQUIPMENT

Unlike a conventional type alternator, the A.C. generator used in the TX750 has no brushes and slip rings, because the fixed coil does not rotate and is separated from the rotor. That is, it has no parts subject to wear.
This A.C. generator is of three-phase A.C. design and uses six silicon diodes for full-wave rectification.

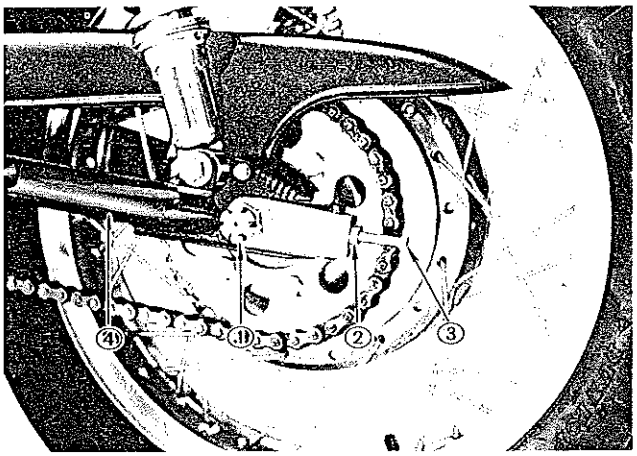


A.C. GENERATOR

The rotor is designed to interrupt the magnetic field created by the sationary field winding. Openings in the rotor are sinusoidal in shape and alternately make and break the magnetic field to the three stationary armature winding. See figure below.



4) Rotate both adjusting bolt 3 to obtain the correct free play, and at the same time make sure that both ends of the axle are positioned evenly. This can be done by matching the marks on the sides of the swing arm 4 just above and to the rear of the rear wheel nuts.

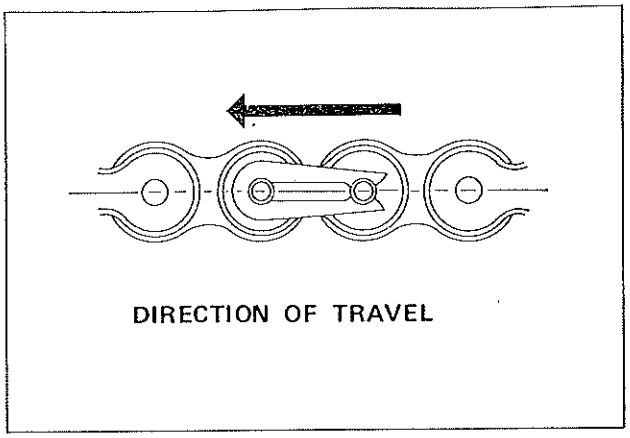


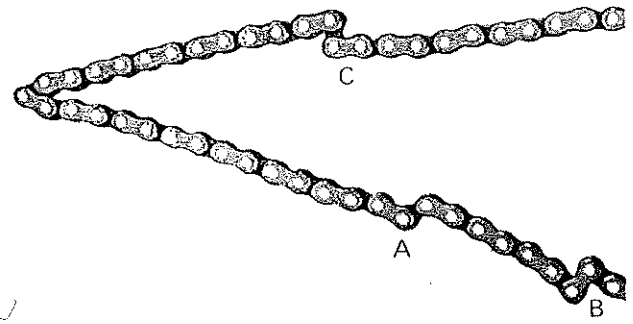
5) After completing the adjustment, retighten all lock nuts.

Tightening torque:
① 12.0 ~ 18.0 kg-m (90~135 ft-lbs)
② 1.0 kg-m (90 in-lbs)

6) Finally, check for correct brake pedal and stoplight operation as they could have changed due to the chain adjustment.

A worn chain causes wear to both sprockets. If either sprocket is excessively worn, it can cause a new chain to wear out prematurely. Strict attention should be paid to the condition of all three components if any one is replaced. Possiblly two or all three components might require replacement if wear is excessive.

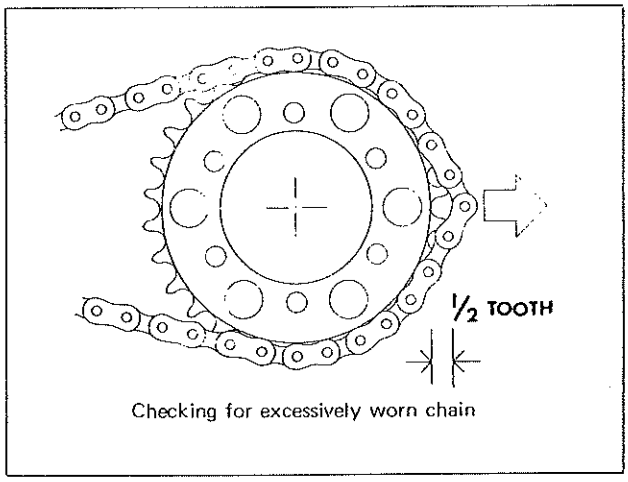




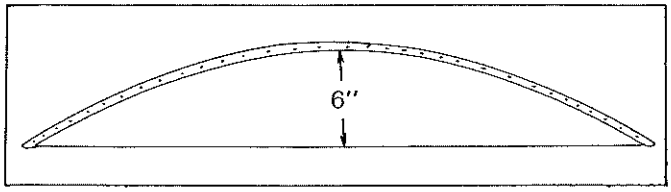
Inspection

Wear

a) With the chain still on the motorcycle, lift the chain away from the rear wheel sprocket. A chain is defective if it can be pulled away from the sprocket more than half the length of a link.



Checking for excessively worn chain



b) Check the chain for binding caused by dirt or rust. Hang the chain straight down and check all links for indications of binding (A, B & C in the picture). If soaking in a strong solvent does not remove the binding situation then replace the chain.

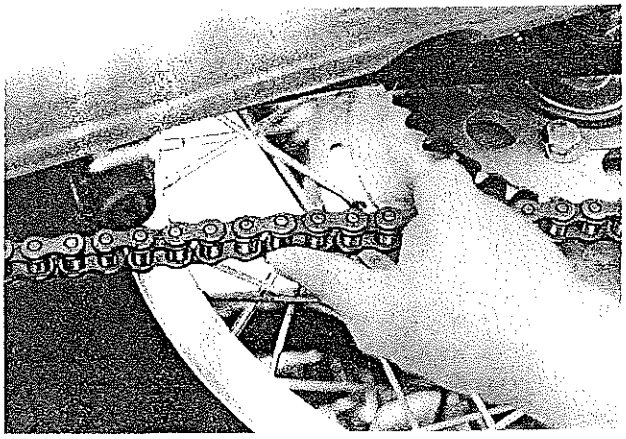
Maintenance

a) Lubrication. There are several pressure can lubricants available. Use a rag to wipe off any accumulation of dirt, then spray a liberal amount of lubricant on the chain at least every 200 miles.

b) Cleaning. The chain has to be periodically removed from the machine soaked in cleaning solvent.
Drain and dry the chain. Immediately after the chain has dried completely, lubricate to prevent any rust from forming.

Adjustment

1) Proper drive chain up and down free play with the rider in position and both wheels on the ground should equal 20mm (3/4") when measured at the center of the lower section of chain. Follow these steps to obtain the correct free play.



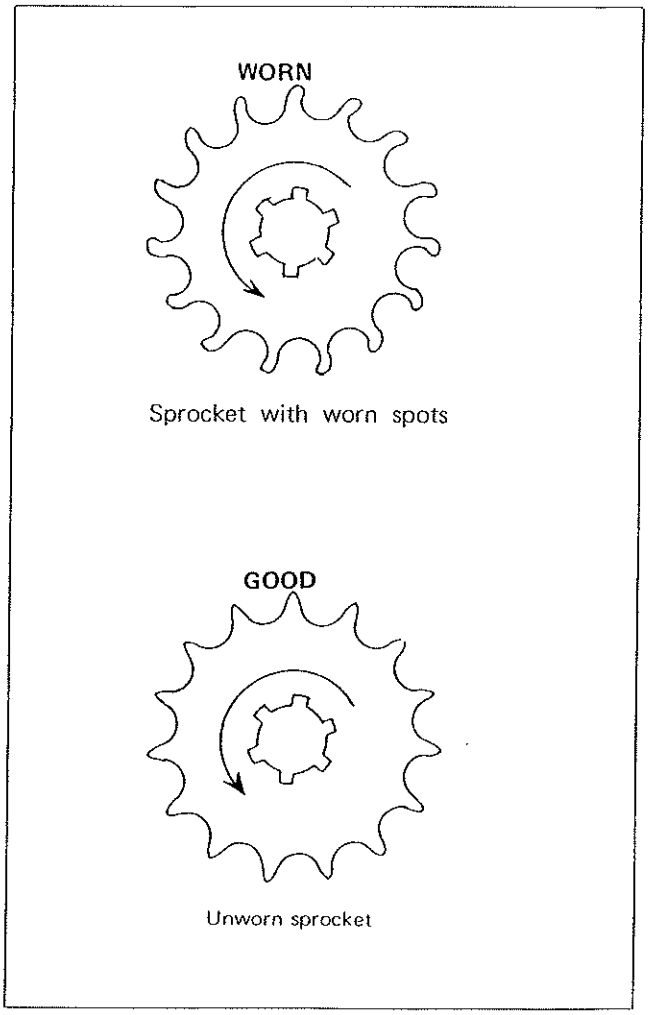
2) Remove the cotter pin and loosen the rear wheel nut

3) Loosen the chain adjusting bolt lock nut 2 on each side.



NOTE ON INSTALLATION: Be sure that all lock tabs are not cracked or broken and that they are all bent against the bolts.

3) Constant friction and force from the chain creates wear on the sprocket teeth. If wear has progressed to the extent shown in the illustration, replace the sprocket.

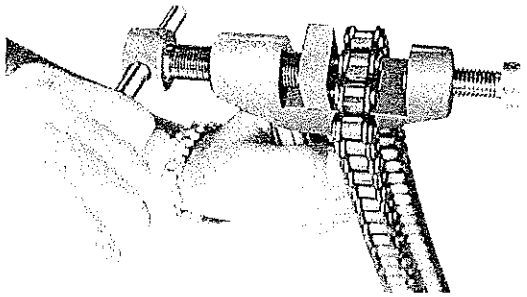


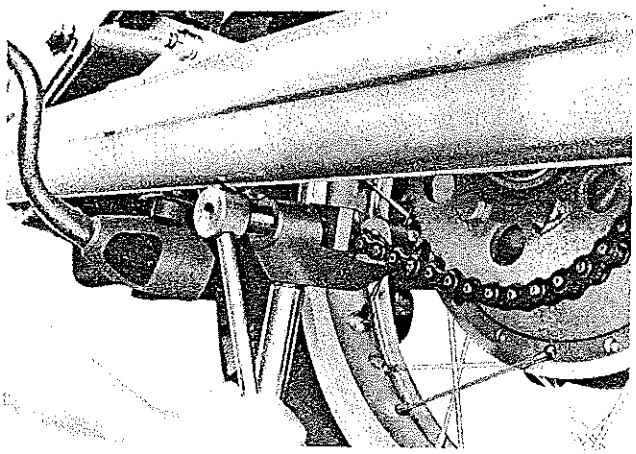
DRIVE CHAIN

Disassembly

a) Removing Chain
Fit the special tool with an adapter for removing the chain. Then place the chain joint on the special tool and pull the chain apart by screwing in the pulling bolt.

b) Installing Chain
Joint the chain ends on the rear wheel sprocket using a master joint. Place the chain joint on the sprocket where it is easier to use the special tool. Use the special tool with a chain installing adapter to caulk the new joint plate by screwing in the pulling bolt.





c) Whenever installing the chain, always install the master link retaining clip so that the rounded closed end faces the direction of travel.

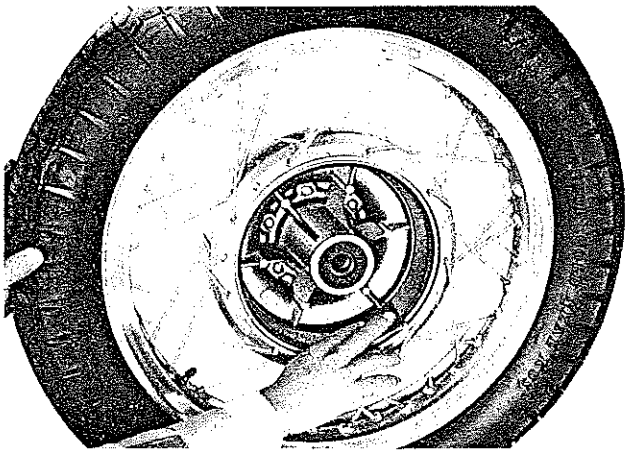
c) Check for brake shoe high spots that cause uneven contact with the brake drum. Remove these high spots with a file or emery cloth.

d) Friction heat can glaze the brake shoe surface. This causes less than maximum stopping efficiency. Use a file or rough emery cloth to evenly rough up the surface.

5) Brake Drum

a) Grease on the brake drum causes improper braking performance. Thoroughly clean the surface with a rag soaked in solvent if any grease is found on the drum.

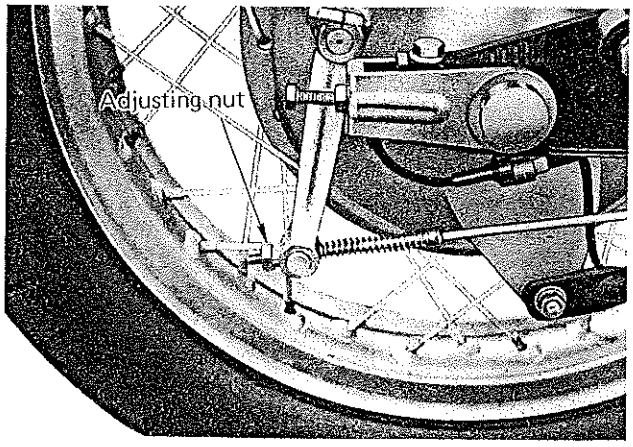
b) Any ridges or glozing that might exist on the brake drum surface can impair the operation. Use emery cloth to lightly sand out any ridges.



c) The single leading shoe rear brake is actuated by the right-side foot pedal. A rod connects the pedal to the brake. The adjustor is at the end of this rod. Spin the adjustor in or out, whichever direction is required to obtain approximately 1" (25mm) of pedal free play.

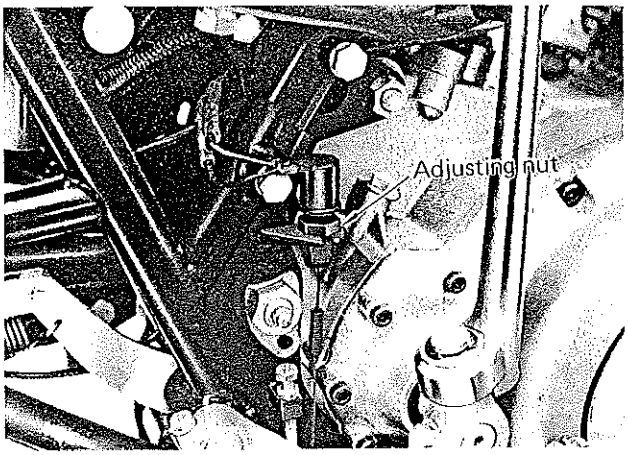
Note:

Rear brake adjustment should be checked any time the rear wheel is removed or the drive chain is adjusted.



Rear Stoplight Switch Adjustment

1) The rear brake stoplight switch mounts to the frame just behind the right-hand case cover. A rod connects the switch to the brake pedal.



2) To make an adjustment, loosen one lock nut and spin the other nut. To raise the switch, loosen the bottom nut. To lower the switch, loosen the top nut.

Note:

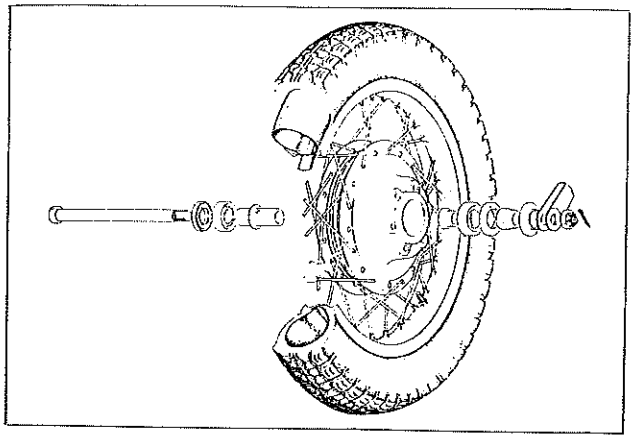
Check rear stoplight switch adjustment whenever the rear brake is adjusted or the rear wheel is moved.

Rear Wheel Sprocket

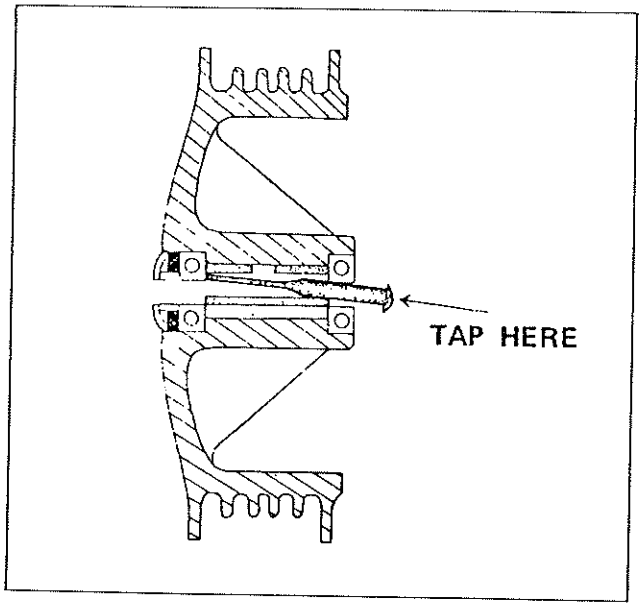
1) Bend the lock washer ears flat.



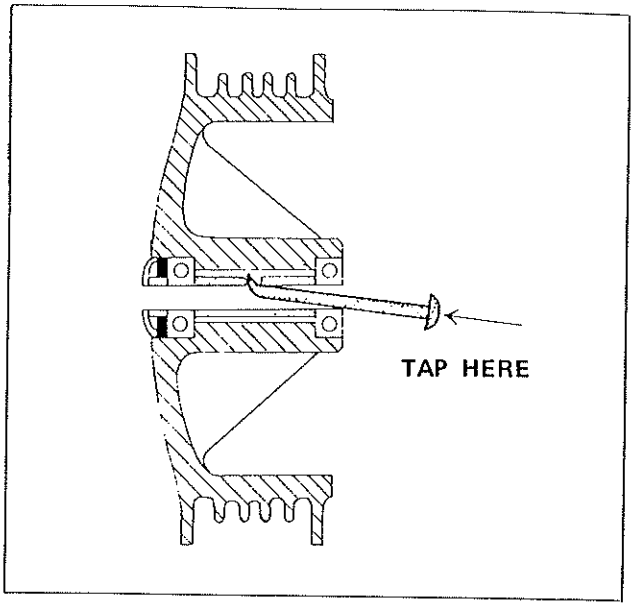
2) Remove the sprocket mounting bolts. Check the lock washer and bolt for damage. If the lock washer is not bent over the hexagon bolt head, or is broken, or the bolt is loose, the sprocket can come loose.



d) Drive the bearing out by pushing the spacer to one side (the spacer "floats" between the bearings) and tapping around the perimeter of the bearing inner race with a soft metal drift pin and hammer. Either or both bearings can be removed in this manner.



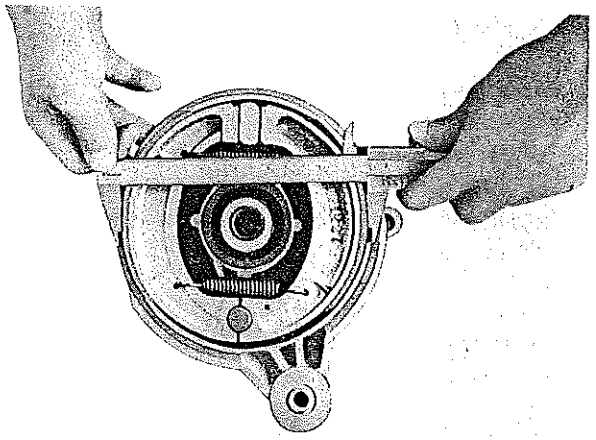
e) An alternative method of removing the bearings is to use a rod with a bent end. Insert the bent end into the hole drilled in the middle of the spacer and tap the other rod end with a hammer, driving the spacer (and bearing in front of it) out of the hub.



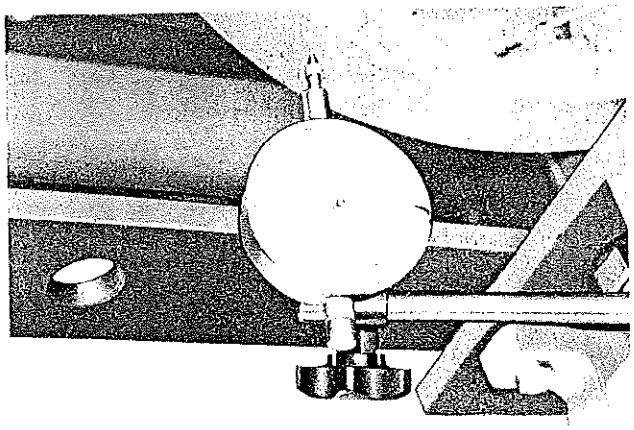
NOTE ON BEARING AND SEAL INSTALLATION: Be sure to use the special bearing installing tool which helps to prevent the bearing from going into the hub crocked and the seal from being bent during installation.

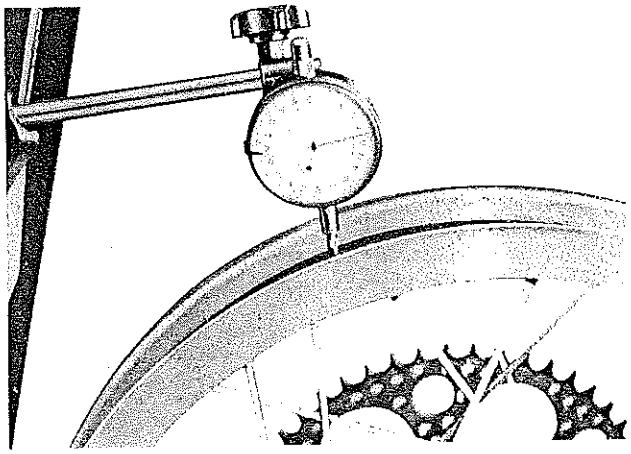
4) Brake Shoes

a) Use a vernier caliper to measure the outside diameter of the installed brake shoes and individual shoe linings. If either measurement proves any part of the brake unit to be excessively worn, replace both shoes with a new set.



	STD	Wear Limit
Shoe Outside Diameter	200mm (6.772")	196mm (6.612"))
Lining Thickness	4mm (0.160")	2mm (0.080")



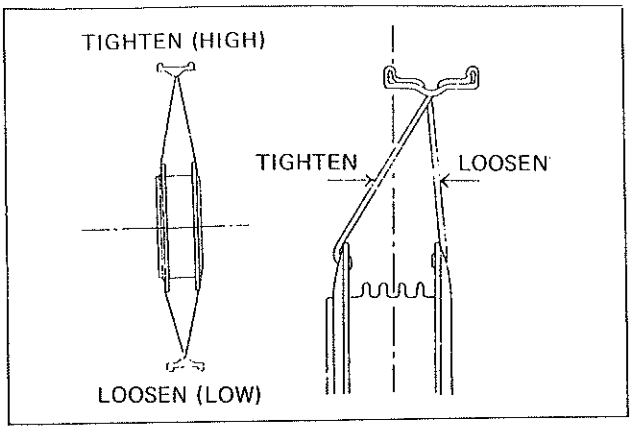


b) Check for warpage by mounting the wheel on a stand (or, if the wheel is attached to a motorcycle, it can be blocked up and held in place). Use some device to measure or detect movement then slowly spin the wheel and note the amount of rim "run-out". It should not exceed 1/16".

c) If all the spokes are tight, and the rim shows no obvious signs of damage, and yet run out is still excessive, do the following:

1) If the run out is up and down, loosen the spokes opposite the high spot and tighten the spokes at the high spot.

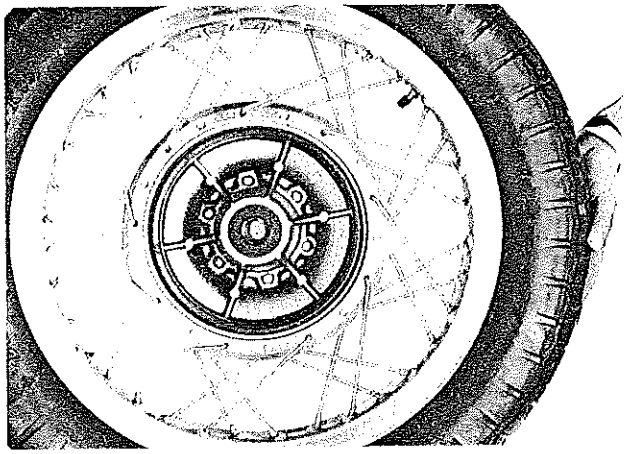
2) If the run out is sideways, loosen the spokes at the high spot, and tighten the spokes opposite the high spot.



3) Seals and Bearings

a) Wheel hub seals should be replaced every time they are pried out during repair, or if broken, cracked, or damaged in any way.

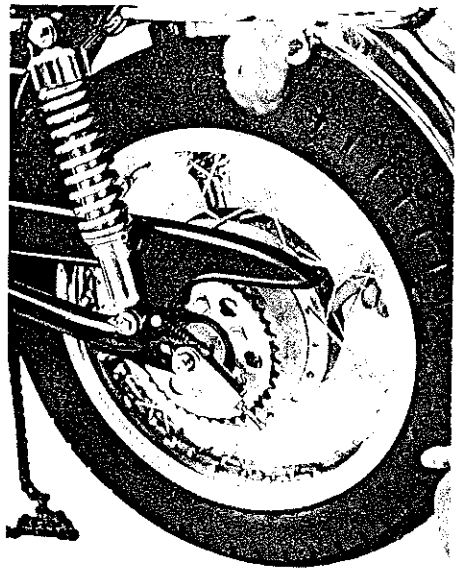
b) Check for smooth wheel bearing rotation. Dirt, rust spots, or any irregular surfaces will cause the bearing to hang up (will not spin smoothly). Remove the bearing, clean it, and check again. If the bearing still does not spin freely, replace it.



NOTE ON BEARING INSTALLATION: Be sure to grease the bearing before installation, using a quality bearing grease. In addition, during installation, protect the bearing to prevent dirt or contamination of any sort from entering the bearing.

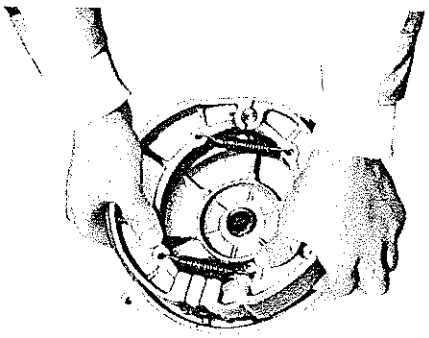
c) The wheel hub houses both bearings, a spacer between the bearings, an outer seal, and a metal cap outside the seal. Removal of the outer bearings requires that the seal be pried out.

6) Lean the machine to the left and pull the rear wheel assembly back.



Disassembly and Assembly

a) Both sides of the single leading shoe unit are mounted on the brake plate. To remove the shoes, pull them out and away from the anchor pin and brake actuating cam.



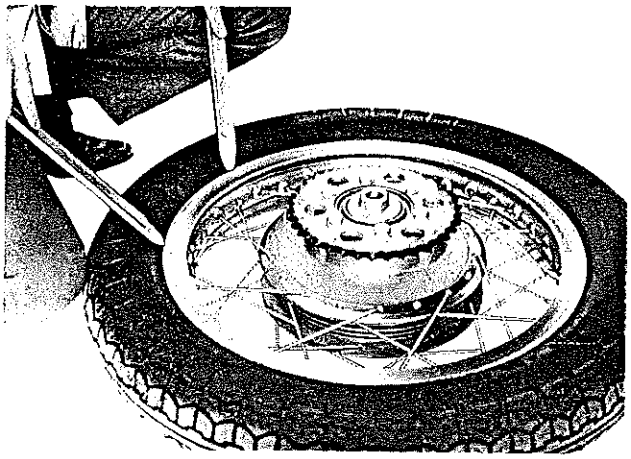
b) Both wheel bearings are mounted in the hub. Their removal can be completed by following the removal procedures explained in the "Seals and Bearings" section, except that the rear wheel has two seals, located one outside each bearing.

Wheels

1) Tire and Tube Removal and Installation

a) Whether it is the front or rear tire to be changed, the procedure of tire and tube removal is identical. The explanation that follows is the proper method for both wheels.

b) Remove the valve cap, valve stem, and valve stem lock nut. Use two tire irons (with rounded edges) and begin to work the tire bead over the edge of the rim, starting opposite the tube stem. Take care to avoid pinching the tube. After one bead of the tire has been completely worked off the rim, slip the tube out. Be very careful not to damage the stem as it is pushed back out of the rim hole.



c) If the tire is to be completely removed, then work the tire off the same rim edge.

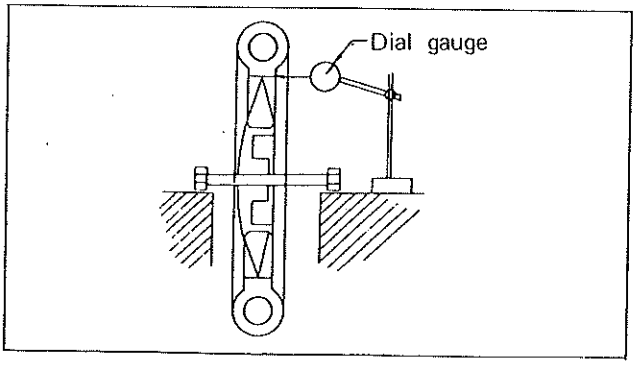
d) Installing the tire can be accomplished by reversing the disassembly procedure. The only difference in procedure would be to inflate the tube momentarily before both tire edges have been completely slipped onto the rim. This removes any creases that might exist. After the tire has been completely slipped onto the rim, check to make sure that the stem is squarely in the center of the hole in the rim. Then inflate the tube to 40(+) psi several times. Check for leaks, and set at prescribed pressure.

Standard pressure:

F	R
1.6 kg/cm^2 (23 lbs/in^2)	2.0 kg/cm^2 (29 lbs/in^2)

2) Rim and Spokes

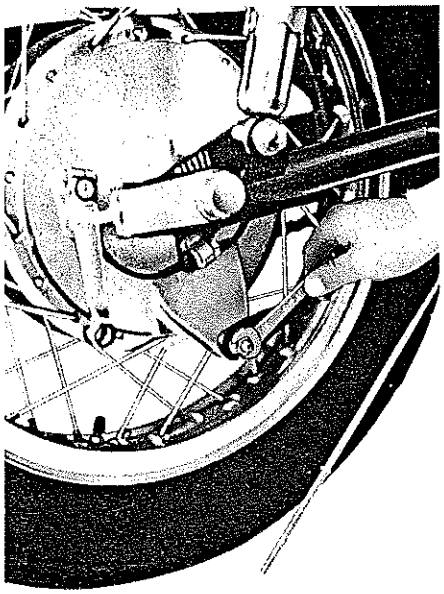
a) A rim can develop warpage. It is due to (1) running the wheel into an object and bending the outer rim, or (2) one or more spokes loosening.



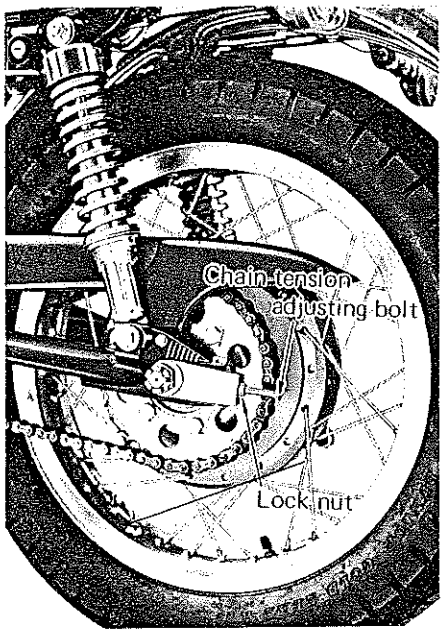
Disassembly

Remove the muffler ass'y.
Remove the drive chain by use of a special tool.

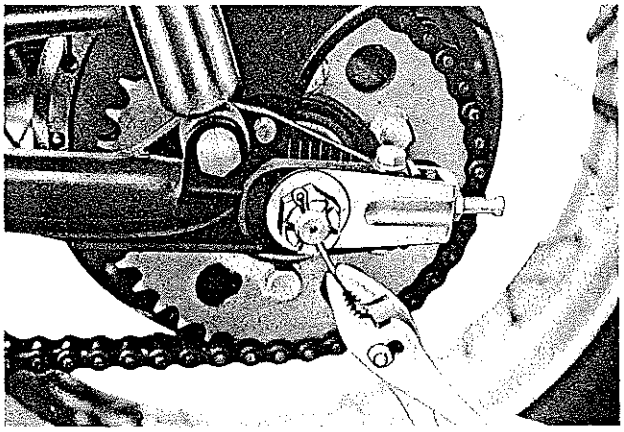
1) Disconnect the tension bar and the brake rod from the rear shoe plate. Pay strict attention to the presence and location of the tension bar lock washer and cotter key. These are safety parts and must be included during assembly.



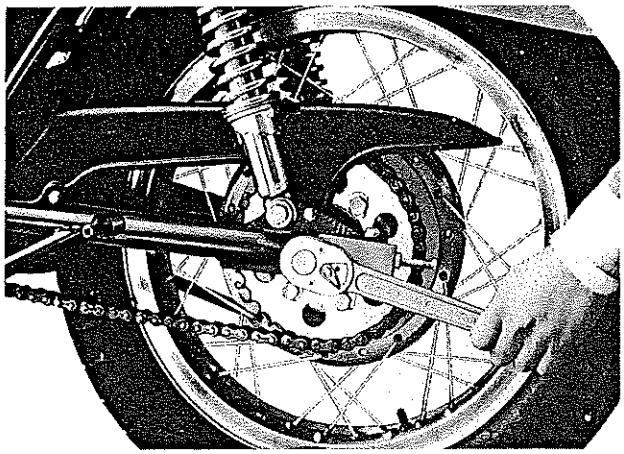
2) Loosen the lock nut and chain tension adjusting bolts on both right and left sides.



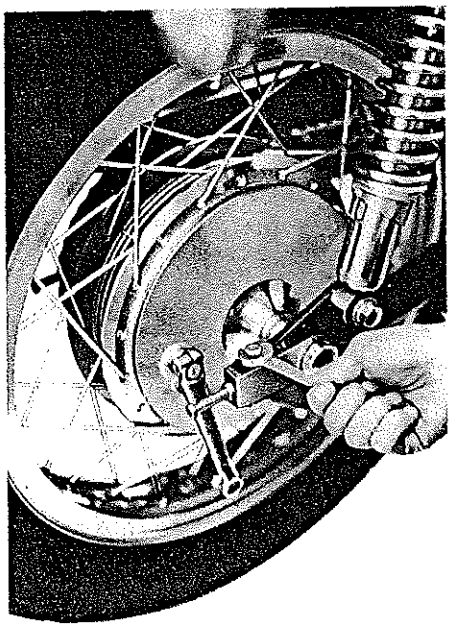
3) Remove the rear axle cotter pin.



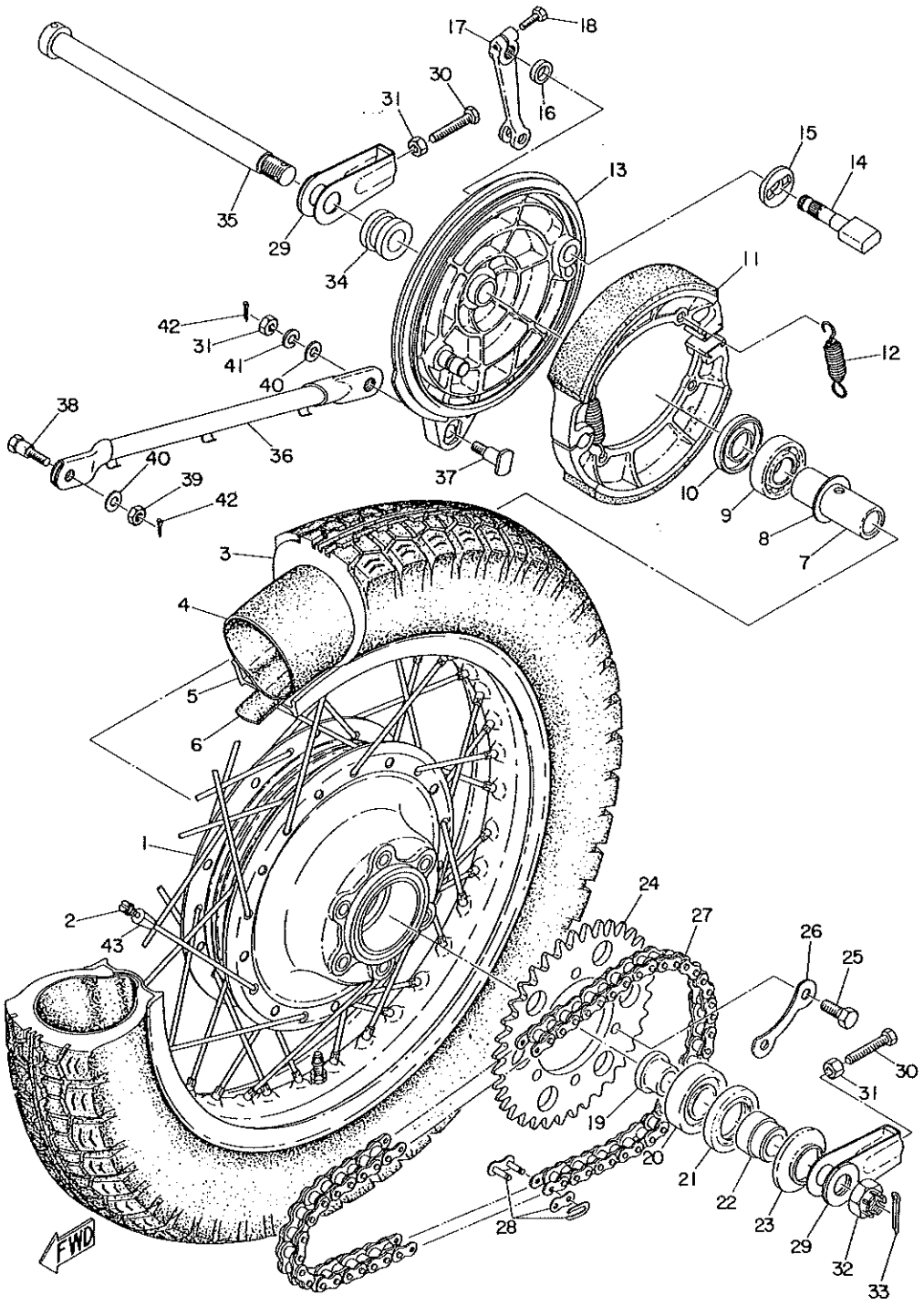
4) Remove the rear axle securing nut.
Tightening torque: 20.0 kg-m (150 ft-lbs)



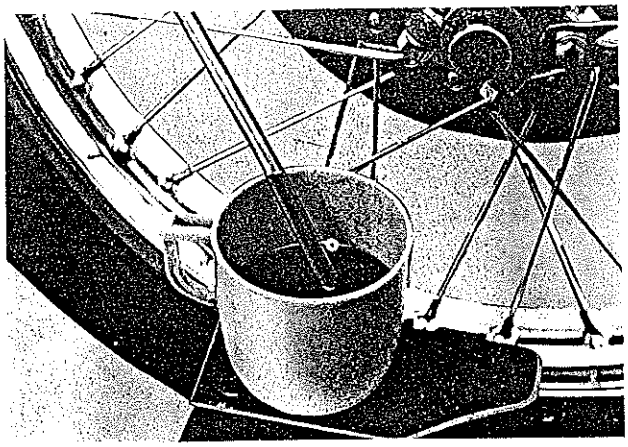
5) Remove the wheel shaft holding bolt (one per side).
Tightening torque: 2.0 kg-m. (180 in-lbs)



REAR WHEEL



1 Rear hub
2 Spoke set
3 Rear tire
4 Tube (4.00-18)
5 Rim
6 Rim band (4.00-18)
7 Bearing spacer
8 Spacer flange
9 Bearing (B6304Z)
10 Oil seal (SO27-52-5)
11 Brake shoe comp.
12 Return spring
13 Brake shoe plate
14 Camshaft
15 Cam shaft shim
16 Cam shaft steal
17 Cam shaft lever
18 Bolt
19 Collar
20 Bearing (B6305Z)
21 Oil seal (SD35-62-9)
22 Shaft collar
23 Dust cover
24 Sprocket wheel gear (38T)
25 Fitting bolt
26 Lock washer
27 Chain (DK530HDS 106L)
28 Chain joint
29 Chain puller
30 Chain puller bolt
31 Nut
32 Shaft nut
33 Cotter pin
34 Wheel shaft collar
35 Wheel shaft
36 Tension bar
37 Tension bar bolt 2
38 Tension bar bolt 1
39 Nut
40 Plain washer
41 Spring washer
42 Cotter pin
43 Wheel balancer



Note:

Bleed screw tightening torque: 60 ~ 90 kg-cm (54 ~ 81 in-lbs)

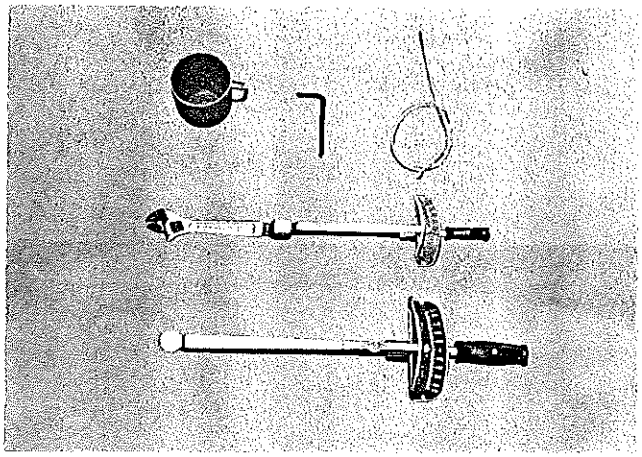
8) Refill with brake fluid so that the level will again reach the specified line.

Air Bleeding

When any parts relating to the brake fluid are reinstalled, be sure that each metal fastner is fully tightened and then bleed.

Tools and Parts

Wrench
Torque wrench
Vinyl tube inside dia 4mm
Brake fluid (DOT#3 or #4)
Brake fluid receiving vessel
Rags

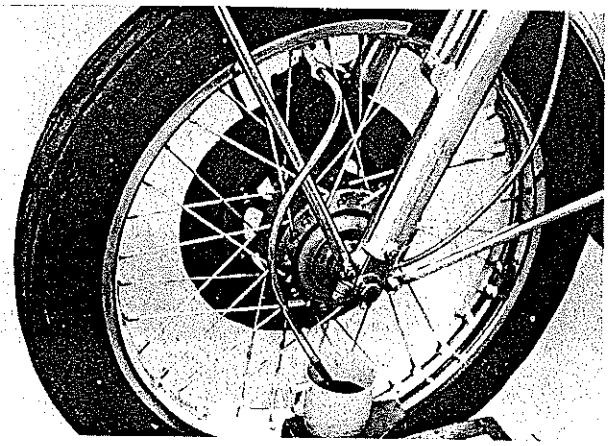


1) Fill with fresh clean brake fluid so that the reservoir level reaches the specified line.

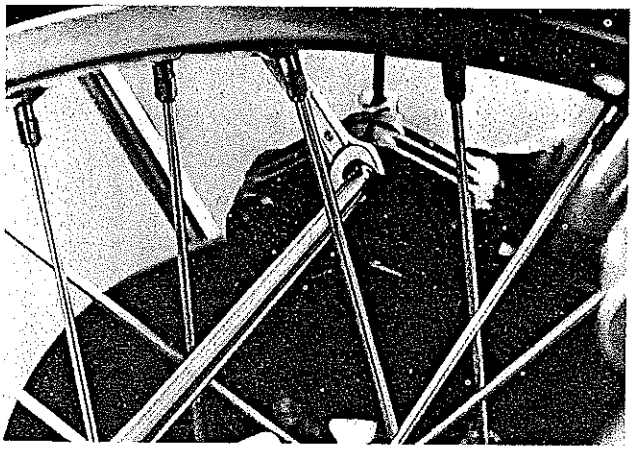
2) Install the diaphragm to prevent the brake fluid from escaping.



3) Connect the vinyl tube to the caliper bleed screw tightly so that no brake fluid will spill.



4) Place the brake fluid receiving vessel at the end of the vinyl tube.



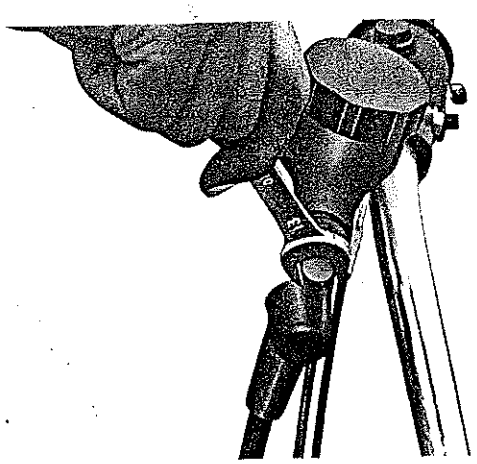
5) Apply the brake lever slowly a few times. With the brake lever squeezed, loosen the bleed screw.

6) As fluid and air escapes, the lever will close. Tighten the bleed screw before the lever bottoms on the handle bar grip.

Note:

When bleeding the air, do not operate the brake lever quickly. Otherwise, the air will turn into fine bubbles, thereby making the air bleeding difficult.

7) Repeat the procedures in 5. - 6. above until air bubbles will completely disappear in the vinyl tube.



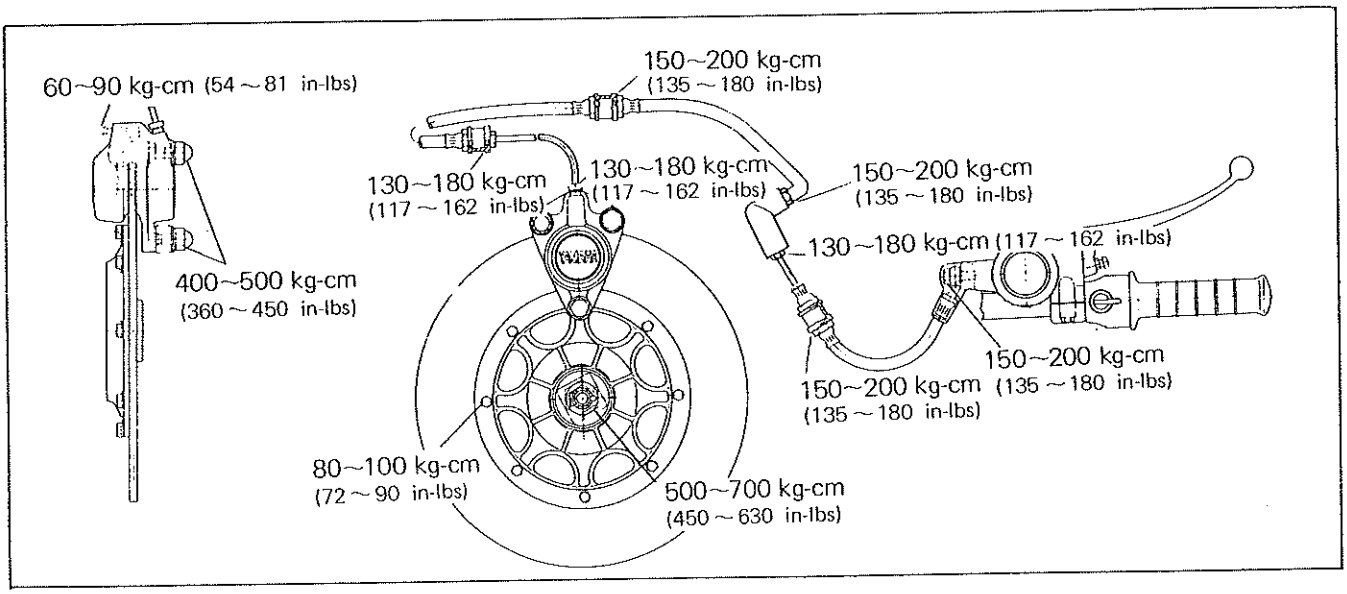
10) Fasten the brake hose to the master cylinder with the union bolt.

Note:
If the gasket is found scratched, it should be replaced.

11) Feed approximately 30cc of brake fluid into the reservoir tank prior to bleeding.

Brake Hose and Brake Pipe

The brake hose and brake pipe fittings should be fastened with the following torque.



Disc

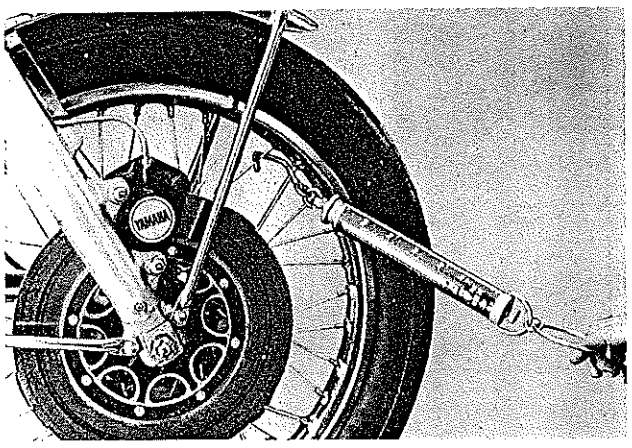
1) The disc mounting bolts should be tightened gently and in pattern with correct torque. The lock tabs should be properly positioned and bent tightly over the bolt heads.
Tightening torque: 80 ~ 100 kg-cm
(70~90 in-lbs)

2) The deflection of the disc ass'y should be within the specified value (0.15mm)

3) The disc trailing torque drag should be within the specified amount after it is assembled.
Torque: 200 ~ 400 kg-cm (180 ~ 350 in-lbs) when assembled as shown in the figure.

If the value exceeds this limit, check the disc for run-out.

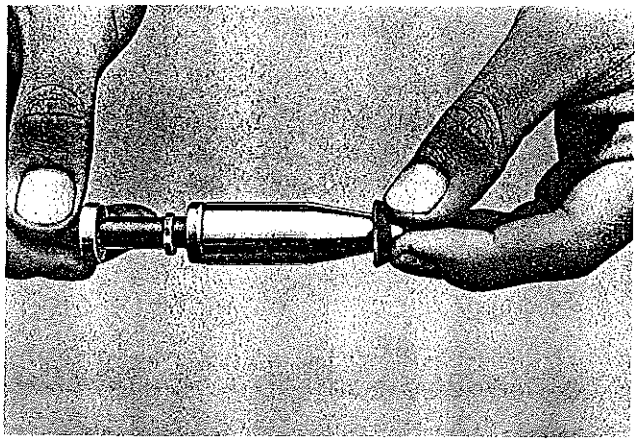
* On the disc brake, a slight drag can be neglected. A slight drag will not result in serious trouble, and will not develop into a worse condition.

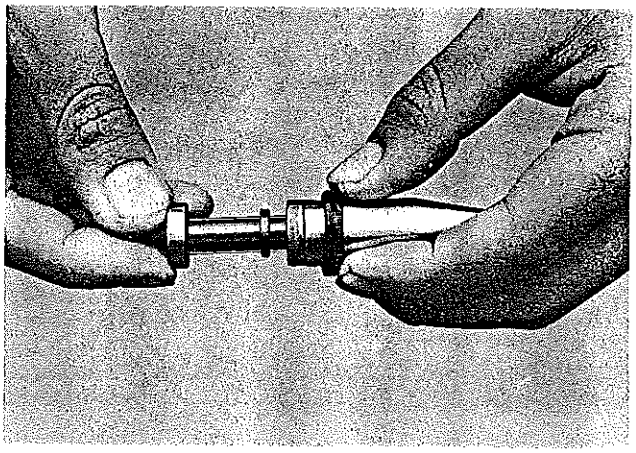


Master Cylinder

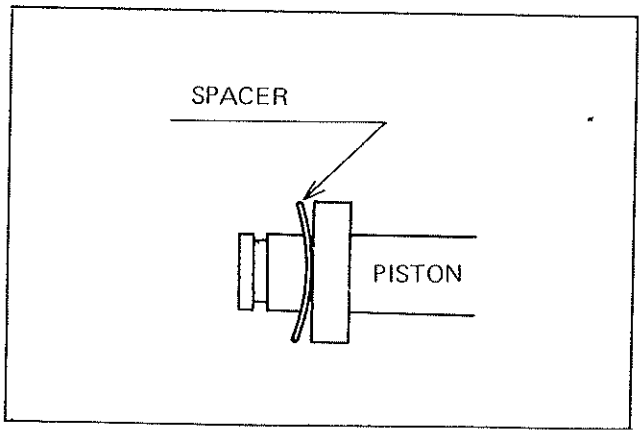
Installing the Cylinder Cup

1) Dip the cup in new brake fluid, and install it. Take care not to scratch the cup and the piston. (Use the jigs.)

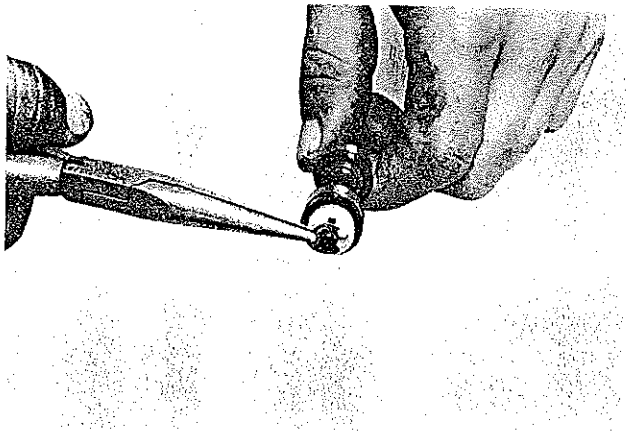




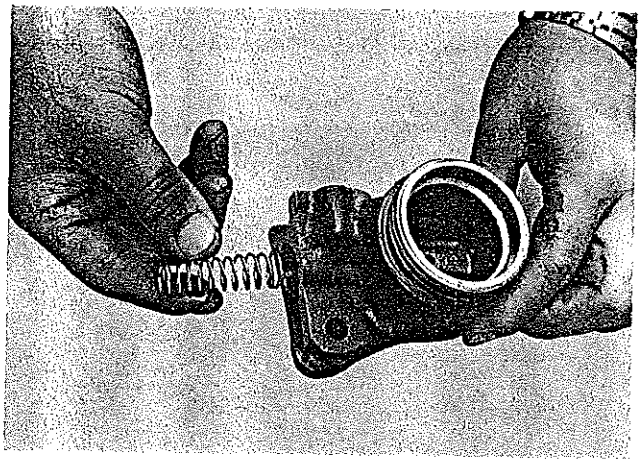
2) Install the spacer. Be sure that the spacer is positioned correctly.



3) Install the cup, retainer and E clip.



4) Insert the spring into the master cylinder body.



Installing the Piston

5) Check the piston surfaces and cup surfaces for scratches, and then, insert the piston into the cylinder. Avoid forcing the piston into the cylinder; otherwise, the cylinder wall will be scratched, thus allowing the brake fluid to leak past.

6) Install the snap ring.

7) Install the boot in the master cylinder groove and the piston groove, respectively.

Installing the master cylinder on the handlebar

8) Install the master cylinder on the handlebar.

9) Adjust the clearance between the piston and the push rod.

Note:
Fully tighten the adjusting screw lock nut so that it will not become loose.

Cleaning

All the removed parts should be washed in the following manner before they are installed.

1) New brake fluid should be used as a cleaning detergent. (The use of any mineral oil should be avoided, because it causes rubber parts to swell. The same can be said of alcohol. Any rubber dipped in alcohol will swell.)

2) If an oil of any other kind (such as mineral oil) is mixed in the system by mistake, the piston cups and seals should be replaced with new ones. All other parts should be washed with fresh, clean, new brake fluid. In addition, the lines, ports, passage, etc., should be thoroughly flushed with clean, new brake fluid.

Calipers

Piston Installation

1) Install the piston seal and dust seal in their seats in the caliper cylinder.

2) Coat the caliper cylinder walls and piston with new brake fluid.

3) Insert the piston into the caliper cylinder by hand. In inserting the piston, special care should be taken so that the piston goes into the cylinder smoothly.

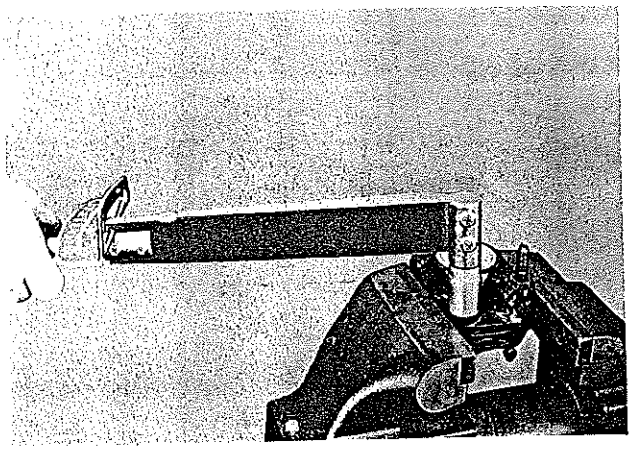


Assembling the outer and inner calipers

4) Install the caliper seals in their seats.

5) Put together the outer and inner calipers. (Make sure that no dust or dirt is attached to the mating surfaces.)

6) The two bridge bolts must be replaced with new ones. Tighten the two hexagon bolts. (The bridge bolts should be tightened later.)
Tightening torque: 60~100 kg-cm. (54~ 90 in-lbs)



7) They are very important parts viewed from operational safety, and therefore, the removed bridge bolts should always be replaced. Be sure they are tightened with correct torque;
Tightening torque: 750 ~ 950 kg-cm (675 ~ 855 in-lbs)

Pad Installation

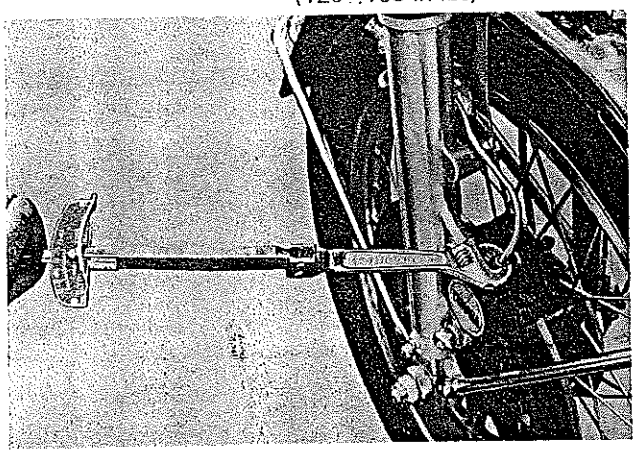
8) Install the pads in their seats.

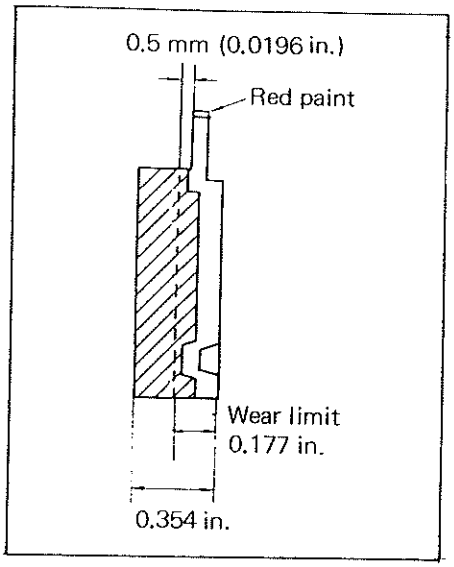
9) When replacing the pads alone, it is necessary to push back the piston so that new pads can easily be installed. (When the piston is pushed back, and the compensating port is open, the brake fluid level in the reservoir tank will rise steeply. Loosen the bleed screw if necessary, and bleed off the excess brake fluid.

Installing the Calipers

10) To install the calipers on the front fork, reverse the procedures for removal.
Tightening torque: 400 ~ 500 kg-cm (360 ~ 450 in-lbs)

11) Install the brake pipe.
Tightening torque: 130 ~ 180 kg-cm (120~160 in-lbs)





Pistons

If any piston is found scratched or worn, replace it.

Piston Seal and Dust Seal

If any seal is found damaged, replace it.
It is advisable to replace the seat every two years of use. Whether they appear damaged or not.

Bridge Bolt

Replace the bridge bolts each time they are removed for disassemble, whether damaged or not.

Master Cylinder Body

1) If the master cylinder has any streak or grooved wear on its wall, replace it.
2) If the outlet end has any scratch or dent, replace it.
3) Check the compensating port for clogging.
4) Check for any foreign matter inside the cylinder and the reservoir tank.

Piston

1) If the piston has any streak or grooved wear, replace it.
2) If the piston has any rust, replace it.

Cylinder Cups

1) If any cylinder cup has a streak or grooved wear on its contacting surface, replace it.
2) If any cylinder cup is found swollen, replace it together with the other seal and rubber parts.
   Thoroughly wash all areas which are exposed to the brake fluid and clean it, in new, brake fluid.
3) Whether worn or not, replace the cylinder cups every two years of use.

Reservoir Diaphragm and Master Cylinder Boot

1) Check the flange and accordion pleats for damage, cracks and aging.
2) Check for smelling. (If swollen, take the same steps as in the case of the cylinder cup.)
3) Replace both every two years of use, whether they are in good condition or not.

Conical Spring

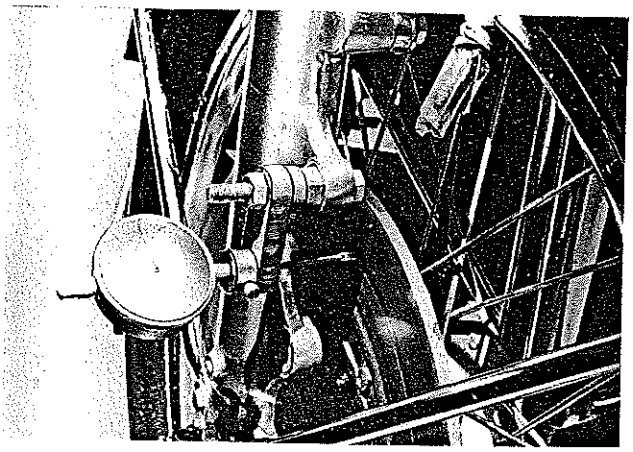
1) Check the spring for breakage and wear.
   Min. free length 60.4mm

Brake Hose and Brake Pipe

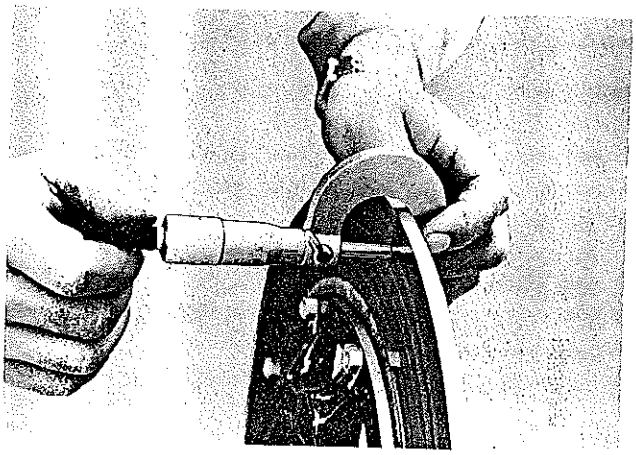
1) Check them for leakage and damage.
2) Replace the brake hose every four years of use, whether it appears to be in good condition or not.

Disc

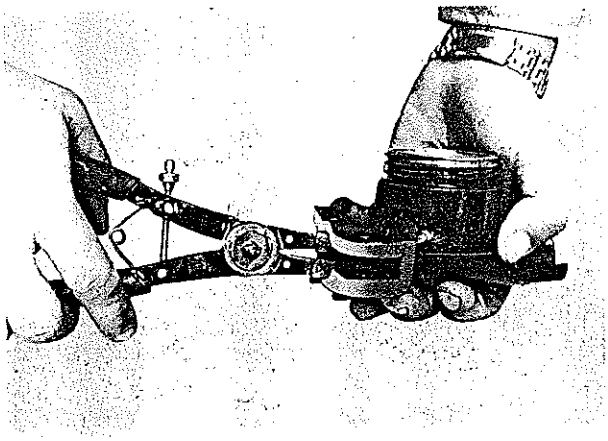
1) Check the disc ass'y for run-out.
   If the disc shows a deflection of 0.15mm or more, check the disc itself and the wheel shaft bearings.



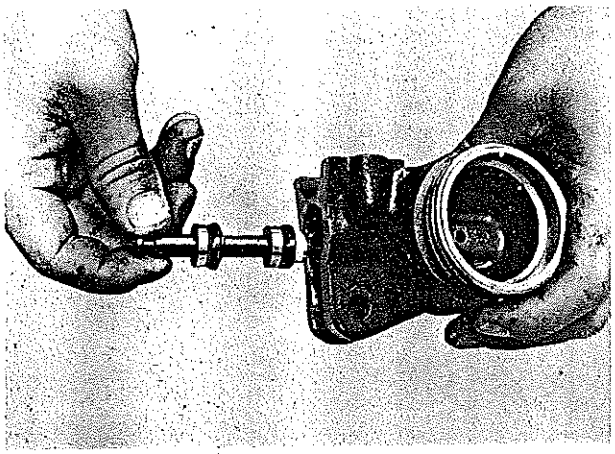
2) If the disc has excessive wear or damage, replace it.
   Min. allow. disc thickness: 6.5mm



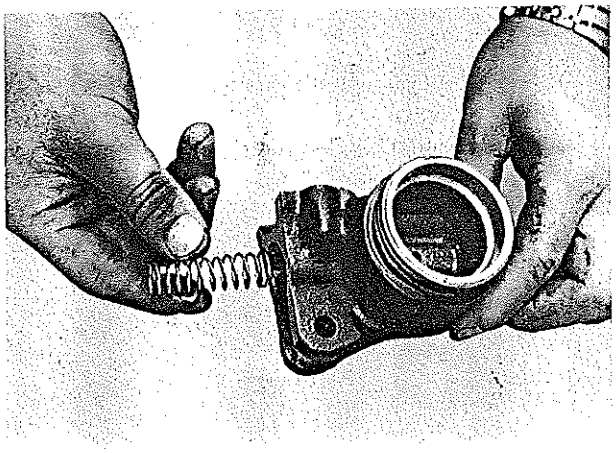
7) Remove the snap ring with clip pliers.



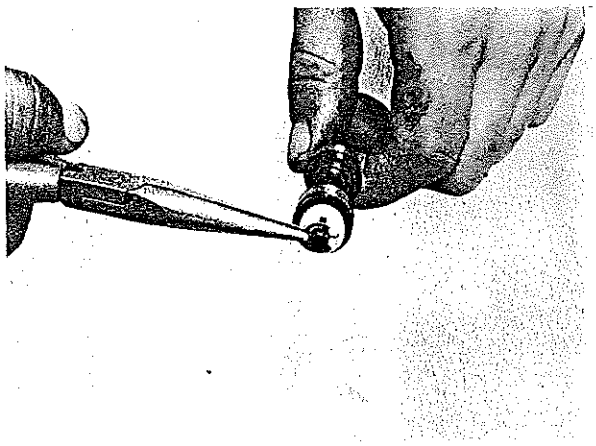
8) Remove the piston. (Note that a spring remains in the master cylinder.)



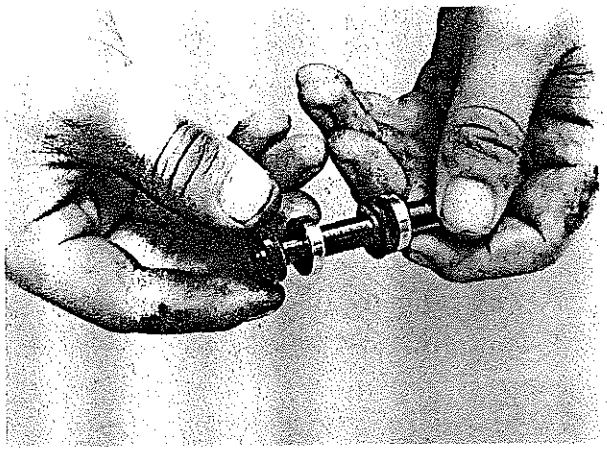
a) Remove the spring.



9) Remove the E clip, and remove the cylinder cup retainer.



10) Remove the cylinder cup.



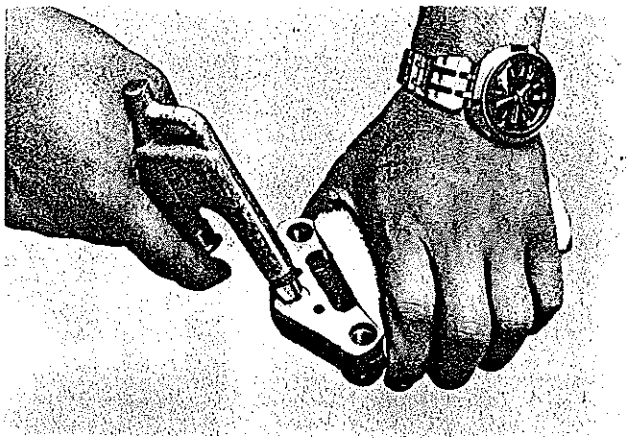
Inspection

Measuring Instruments required for Inspection

Dial gauge
Dial gauge adapter
Micrometer 9-25mm
Vernier calipers 150mm

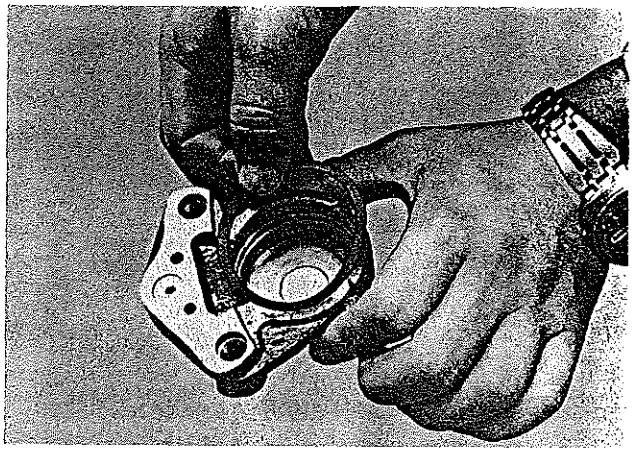
Pads

If any pad is found excessively worn, replace it.
Min allow pad thickness: 0.5mm (0.0196 in.)



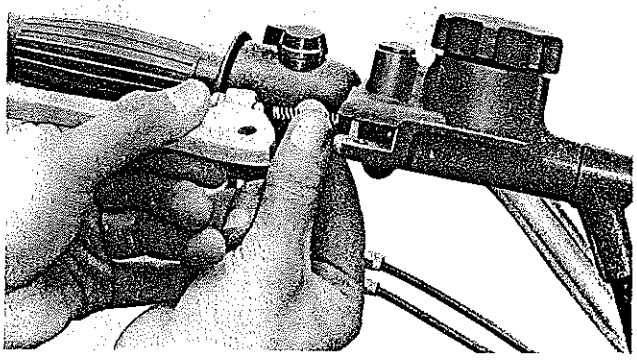
8) Remove the piston seal and dust seal from the caliper body.
The foregoing applies to both pistons.

Note:
The removed parts should be kept free from gasoline, kerosene, engine oil, etc. If any oil attaches to a seal, it will swell up or deteriorate.

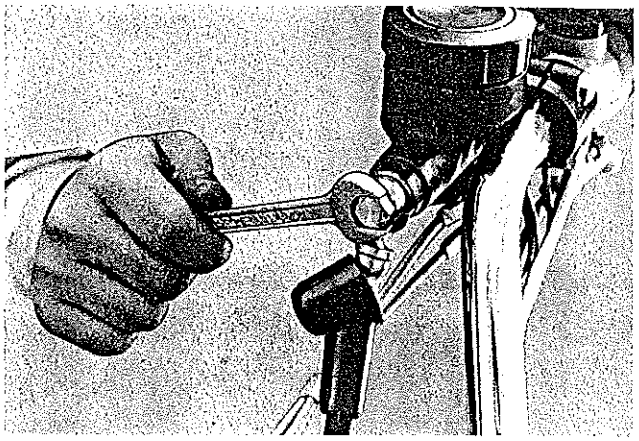


Master Cylinder

1) Remove the stop switch and brake lever.
(Take care not to misplace the brake lever return spring.)



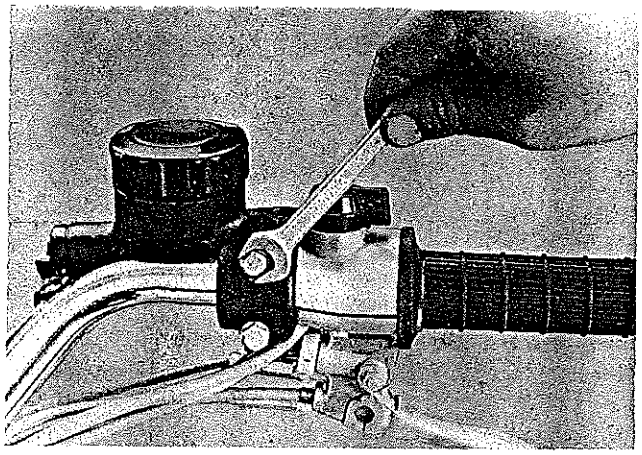
2) Remove the brake hose.



3) Remove the two master cylinder mounting bolts, and remove the master cylinder from the handlebar.

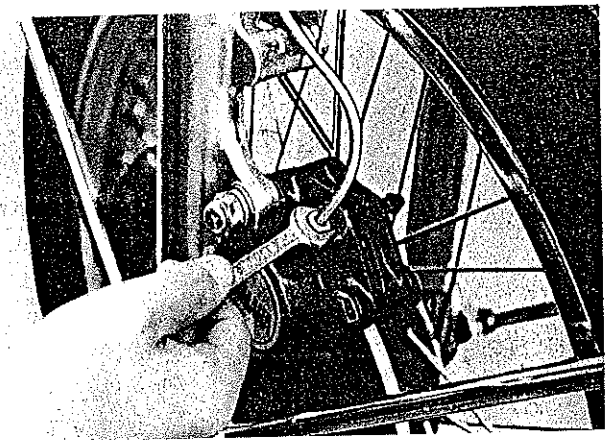
4) Remove the reservoir tank cap, and remove the diaphragm.

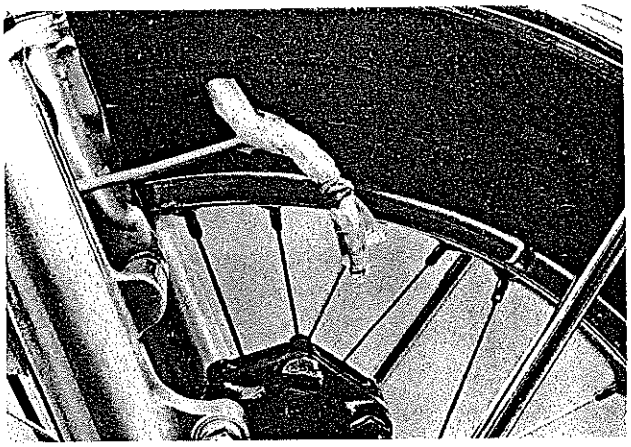
5) Drain the brake fluid from the reservoir tank.



6) Remove the master cylinder boot.

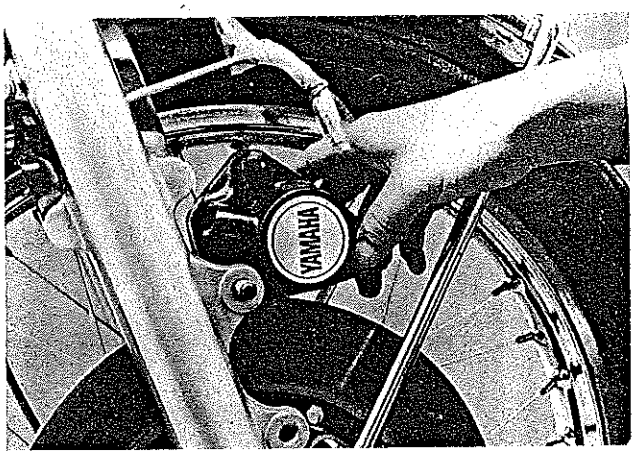






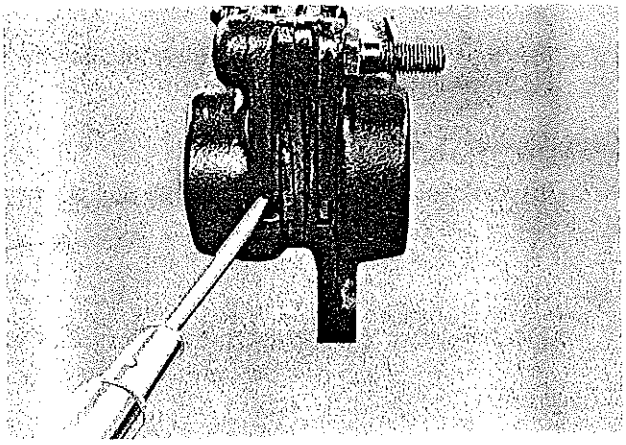
2) Remove the caliper mounting bolts and nuts.

3) Rotate the caliper ass'y upward, and remove it.



Removing the Pads

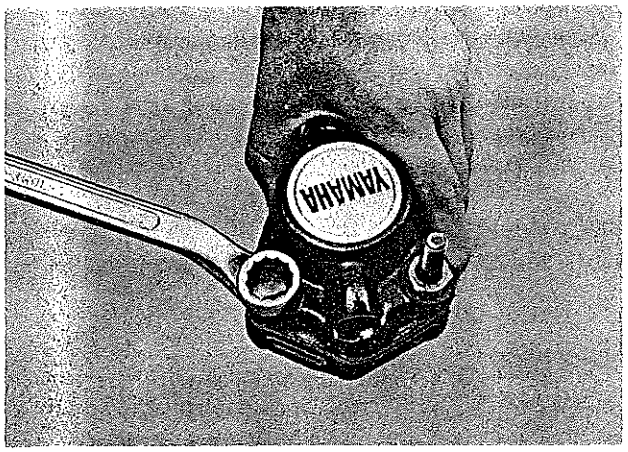
4) Remove the pads from their seats.

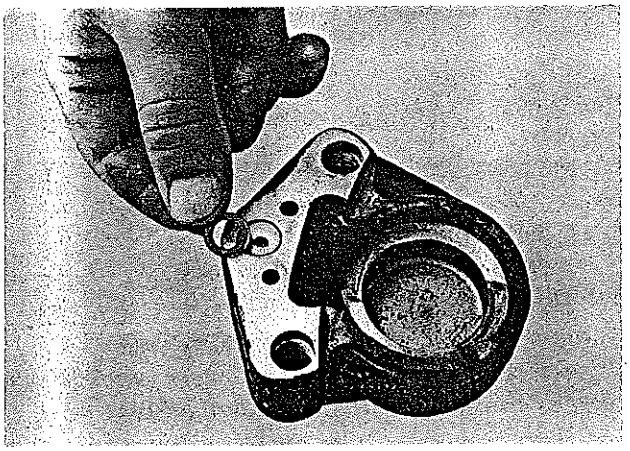


Removing the caliper Pistons and Seals:

5) Remove the two bridge bolts and two hexagon bolts.

6) Remove the caliper seal.





7) Force the piston out from the caliper cylinder by feeding compressed air into the cylinder through the fluid inlet. Never attempt to push the pistons with a screw driver.

Pads

The pads are forced against the revolving disc by the caliper cylinder pistons to grip the disc. They are composed of resin molded asbentos.

Bleed Screw

Air in the hydraulic line impairs hydraulic action. To expel air out of the caliper cylinder, a bleed screw is provided on the caliper ass'y.

Disc

The stainless steel disk is attached to the front wheel hub, and it is gripped by the pads located on each side of the disc.

Brake Fluid

The brake fluid is compressed in the master cylinder, and the hydraulic pressure thus produced is carried to the caliper cylinder pistons. In this sense, the brake fluid plays a very important role.
The brake fluid must meet the following requirements:
1. Proper viscosity and liquidity must be maintained at working temperatures.
2. Good stability must be maintained. (That is, the fluid will not separate, change in viscosity, and/or precipitate.)
3. Boiling point is high. (No vapor lock will result.)
4. It will not deteriorate rubber.
5. Water resisting properties must be excellent.

Note that the disk brake fluid must be of genuine quality, because the fluid temperature tends to rise higher as compared with the drum brake.
Suggested brake fluid specifications: DOT #3 or #4.

Note:
Do not mix brake fluids with different brand names. Some brake fluids are not compatible with other.

Disassembly

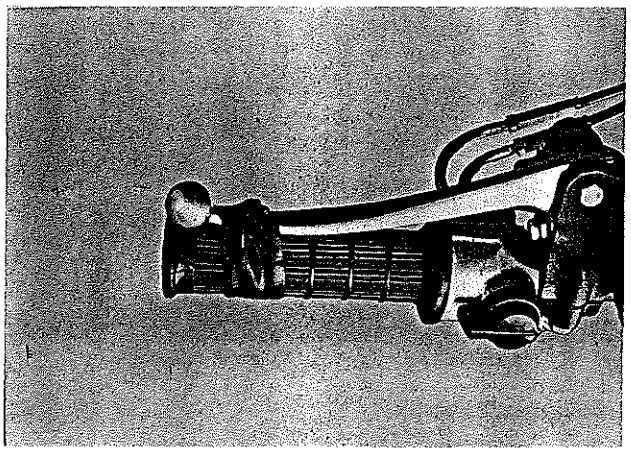
The tire and bearings can be disassembled without removing the brake disc. Do not attempt to remove the brake disc unnecessarily.
Tools and Parts required for Disassembly:

General service tools
Hexagon wrench, 5mm
Clip pliers
Air compressor
Rags
Torque wrench

Removing the Caliper

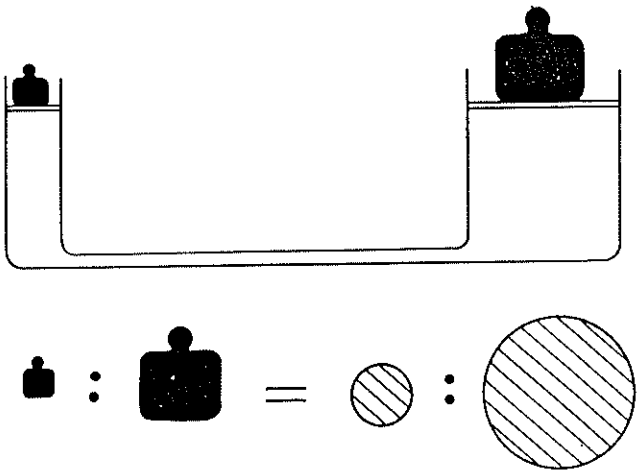
1) Remove the brake pipe from the caliper ass'y.
Put the removed brake pipe in a clean vinyl bag so that it can be kept free from dust and dirt.

Note:
It is advisable to keep the brake lever squeezed, because this brake lever position prevents the fluid from leaking out of the reservoir. Tie the brake lever to the handle grip with a rubber band.



Piston

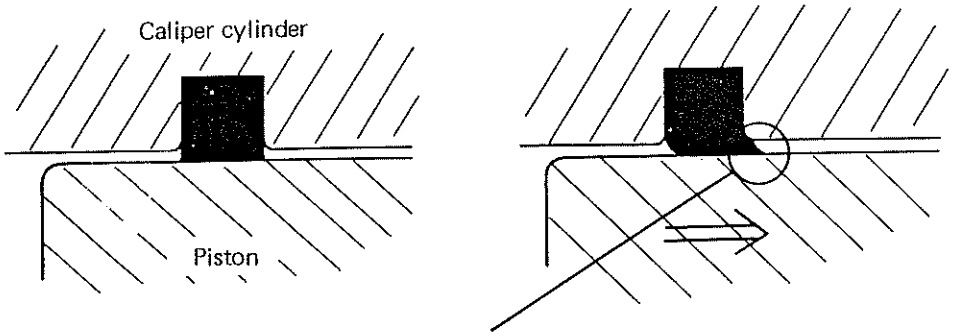
The caliper pistons are forced against the brake pads by hydraulic pressure. The force created is about nine times the force applied to the master hydraulic cylinder piston. Combined with the mechanical advantage of the brake hand lever, the total force applied to the brake disc is approximately 36 times the force applied to the brake hand lever.



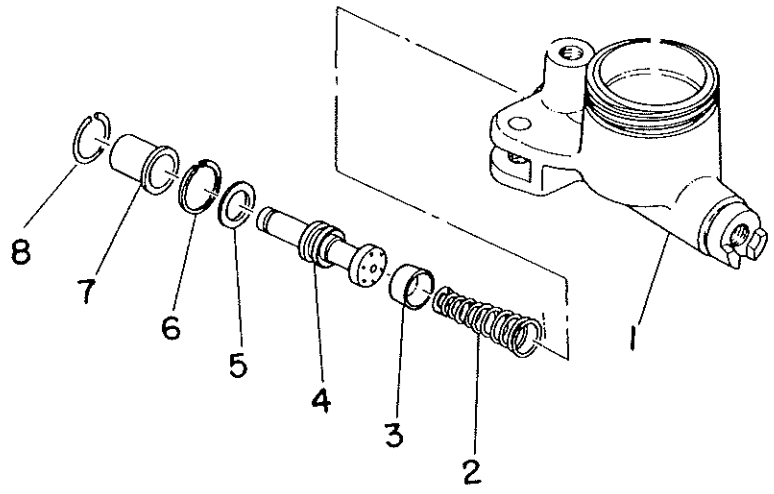
The applied force is proportional to the area ratio.

Seals

Each caliper cylinder has a piston seal (to maintain good sealing between the piston and the caliper cylinder wall) and a dust seal (to prevent dirt and water from entering the cylinder).
The piston seal is designed to move the piston back to its home position by making use of its tortional moment after the brake lever is released. The tortional moment is produced by the frictional force and elasticity of the piston seal. The piston seal also serves as an automatic adjuster of the clearance between the disc and the pad. (The clearance between the disc and the pad is normally 0.1 to 0.3mm.)

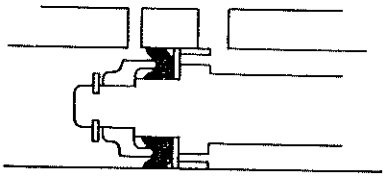


The friction between piston seal and piston and elasticity of the seal cause the piston to return to its home position.

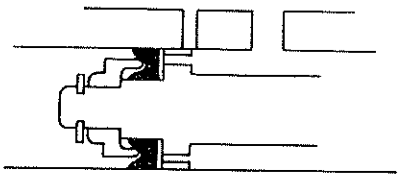


1 Master cylinder body
2 Conical spring
3 Cylinder cup
4 Piston ass'y
5 Spacer
6 Circlip
7 Master cylinder boot
8 Boot stopper

Reservoir Tank



When the brake lever is squeezed



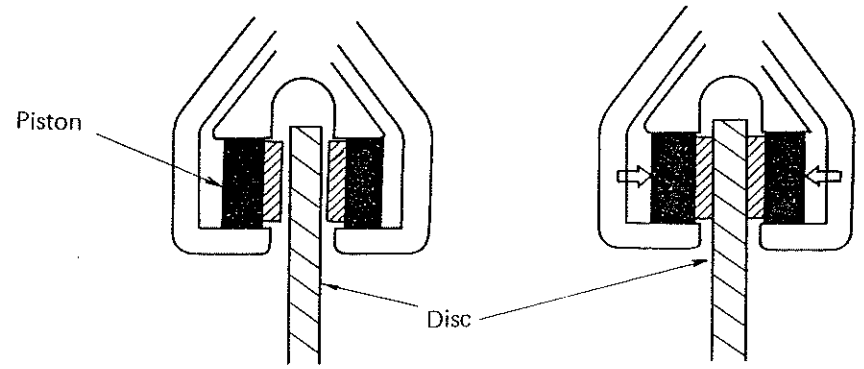
Brake hose and pipe

The brake hose and pipe carry hydraulic pressure to the calipers.
The brake hose is flexible and capable of withstanding a hydraulic pressure of 350 kg/cm² in conforming to SAEJ-1401.

Calipers

The hydraulic pressure carried to the calipers forces the caliper pistons out; by which the pads are pushed out to grip the revolving disc.

When the brake is applied

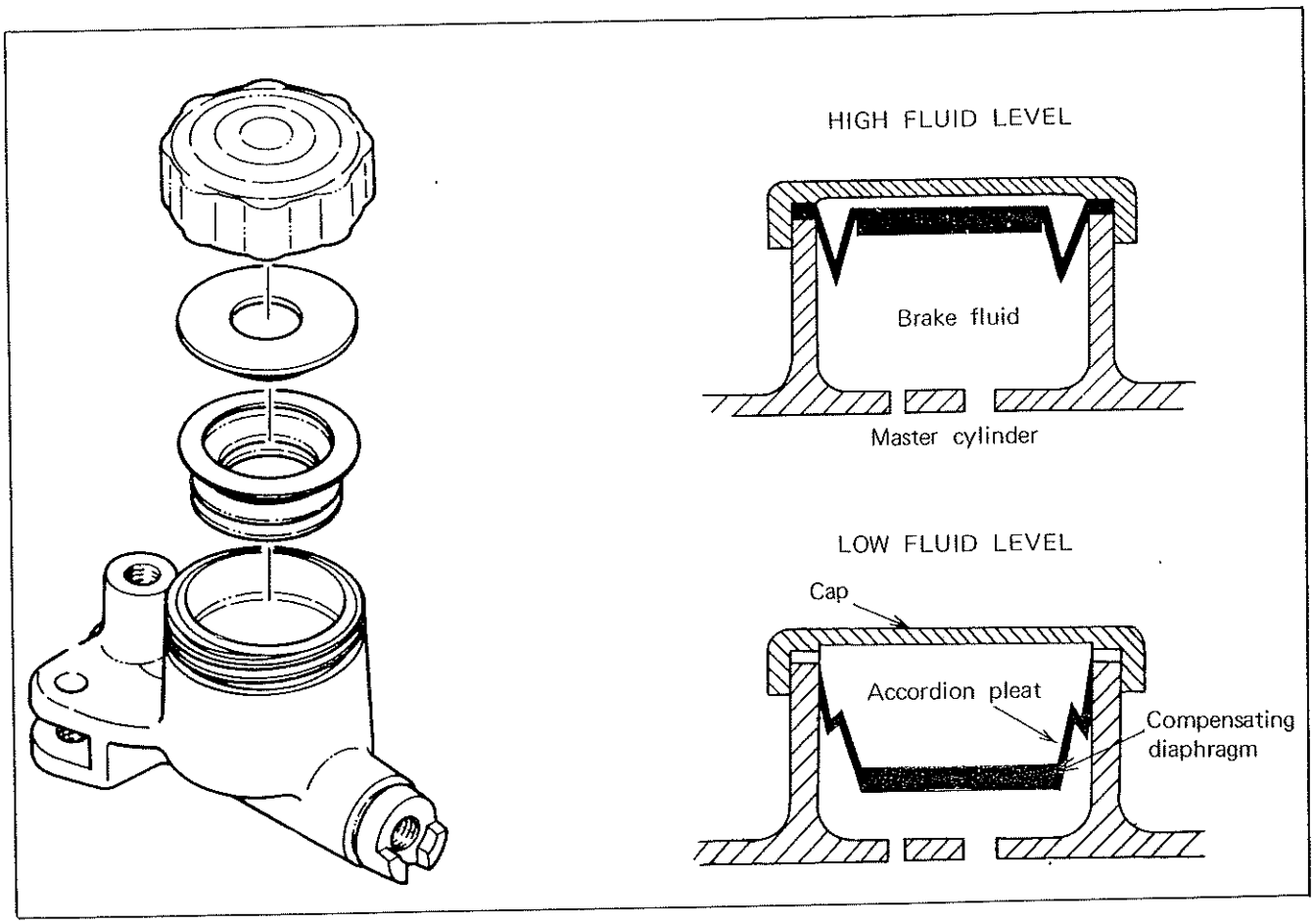


Master cylinder

The master cylinder piston is linked to the brake lever. When the brake lever is squeezed, the piston forces the brake fluid through the hose and pipe to the calipers.

Reservoir tank

As wear on the brake pads increases, the amount of brake fluid must be increased to maintain proper hydraulic pressure. The reservoir tank supplies this brake fluid. (tank capacity is approximately 30cc). To prevent air from entering the brake line when the brake fluid level lowers, especially on a rough road or in an inclined position, a compensating diaphragm is provided for the reservoir tank.

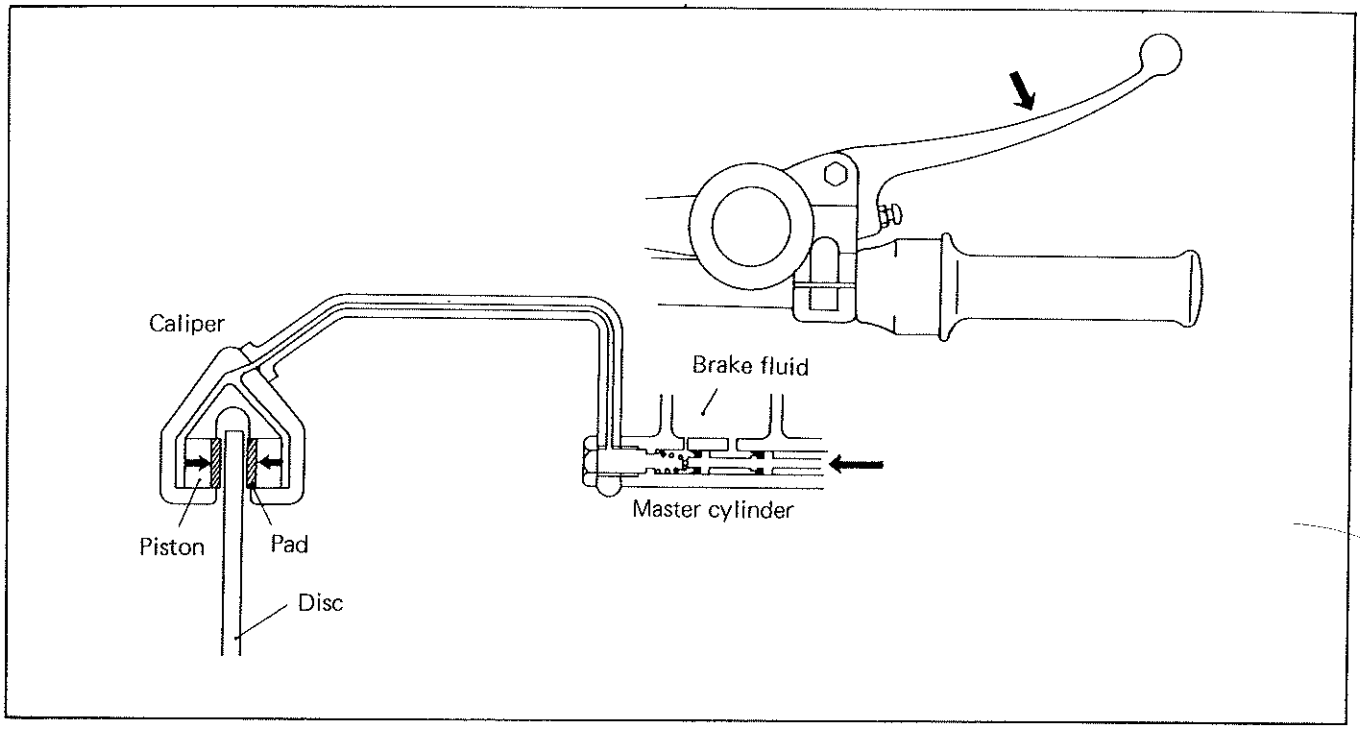


Piston

The master cylinder piston has two cups; one maintains good sealing between the cup and the cylinder wall of the master cylinder, and the other prevents the brake fluid from leaking out from the cylinder to the brake lever side. The return spring forces the brake lever to its home position, when the lever is released.

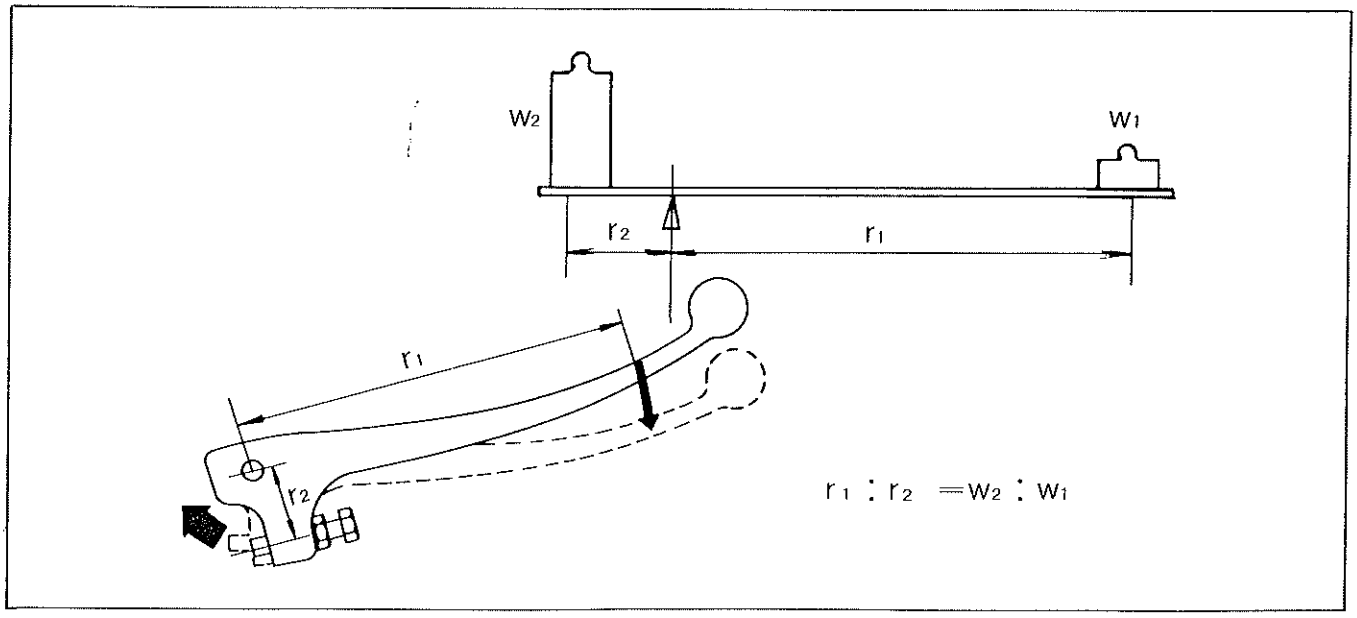
Operation

When the front brake lever is squeezed, it forces the master cylinder piston to move. As the piston cup moves past the compensating port, it traps the brake fluid in the cylinder. Pressure rises rapidly, and the fluid is forced through the brake hose to the caliper cylinders. The brake fluid forced the caliper cylinders pushes against the pistons in the cylinders, and the pads located on each side of the disc are forced against the disc. The friction between the pads and revolving disc then provides the braking action. As the brake lever is released, both brake lever and pistons are forced back to their respective original positions by the force of return springs, and seal elasticity.



Brake lever

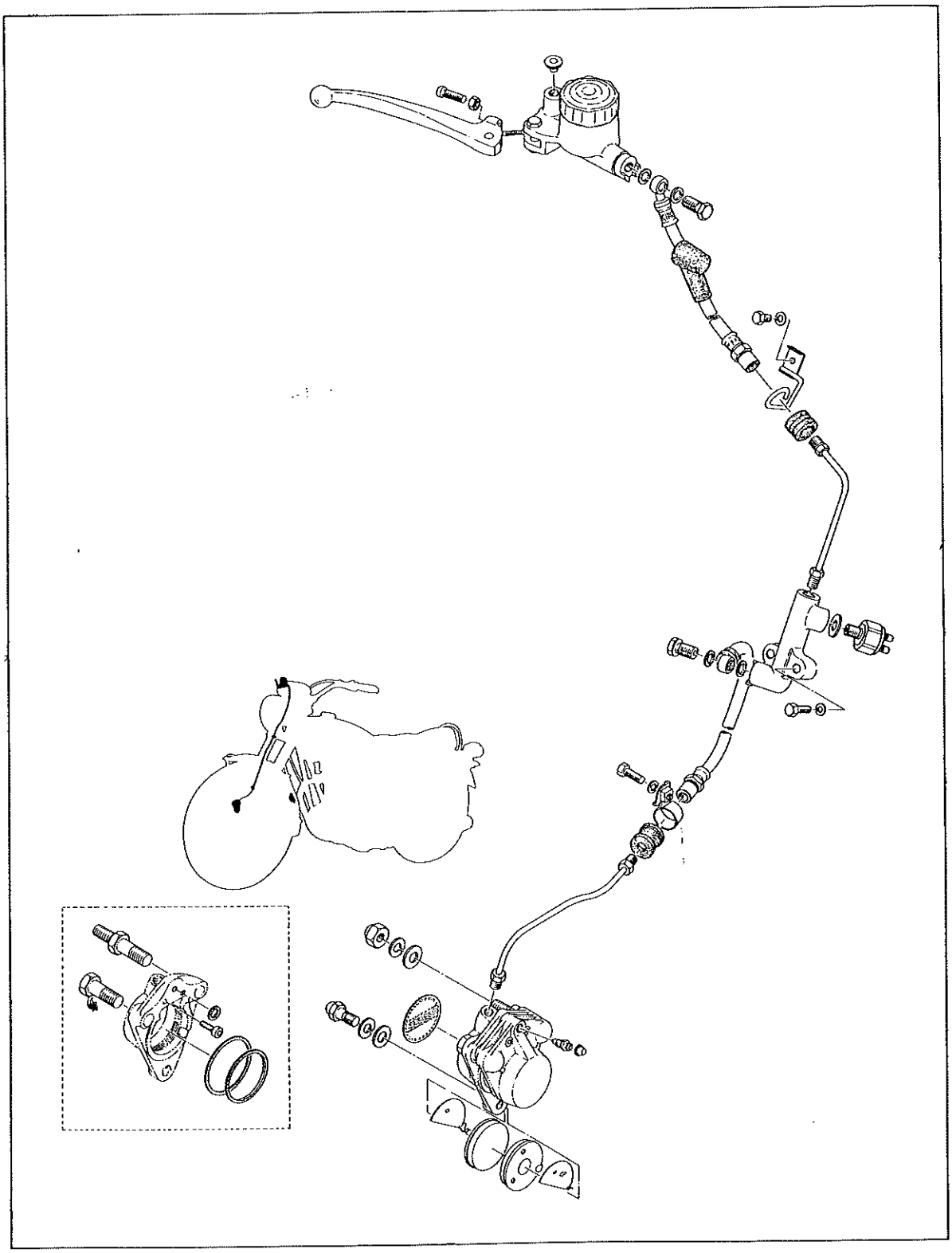
When the brake lever is squeezed, it produces a push at the master cylinder piston about four times greater than the force applied to the brake lever.



DISC BRAKE

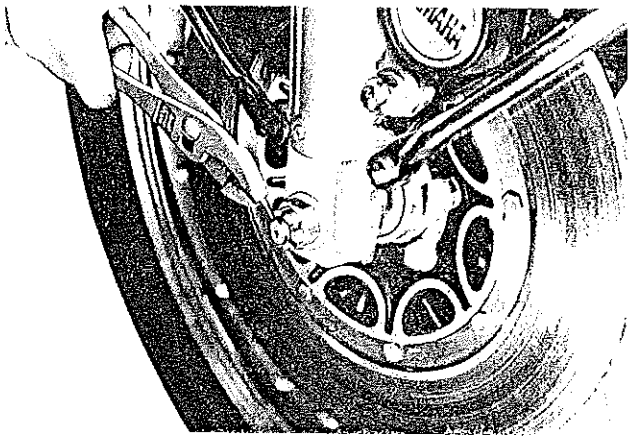
Construction

A fixed-caliper type disc brake, in which the two flat shoes grip the rotating disc, is in use. The right part of the handlebar has a brake lever and a master cylinder. The caliper are installed on the front fork, while the brake disc is mounted on the front hub. The master cylinder is connected to the calipers by a brake hose and pipe.

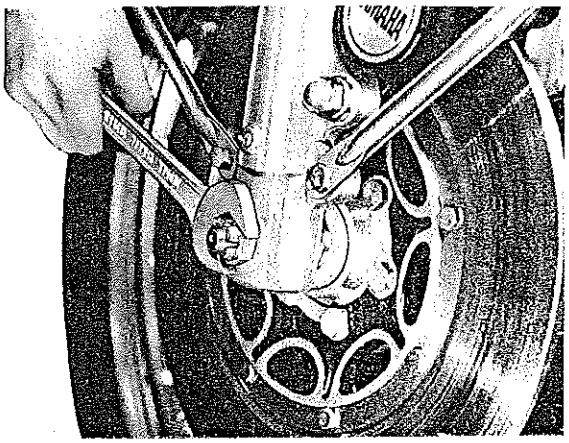


Disassembly

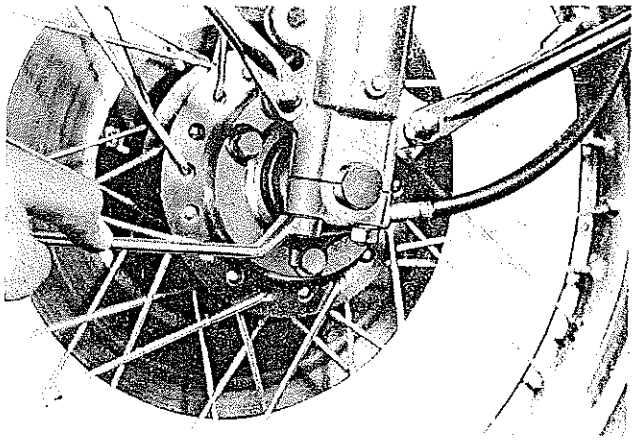
1) Remove the front wheel shaft nut lock pin.
   The pin must be replaced with a new one each time it is removed.



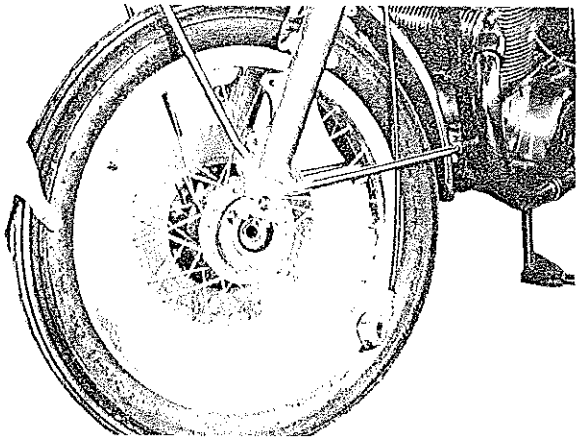
2) Remove the front wheel shaft nut.



3) Loosen the two front wheel shaft lock bolts.

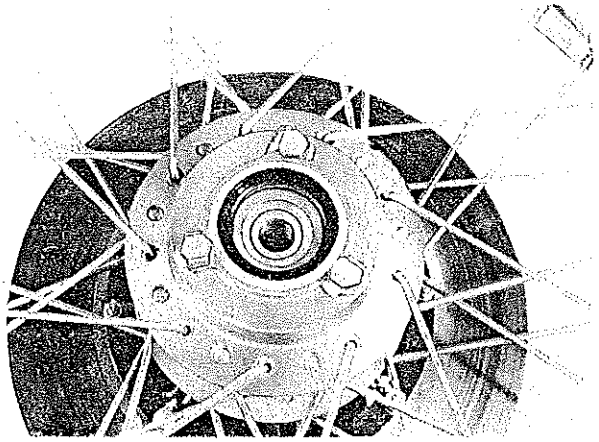


4) Pull out the front wheel shaft, and remove the front wheel ass'y. In this case, the speedometer houisng must be removed.

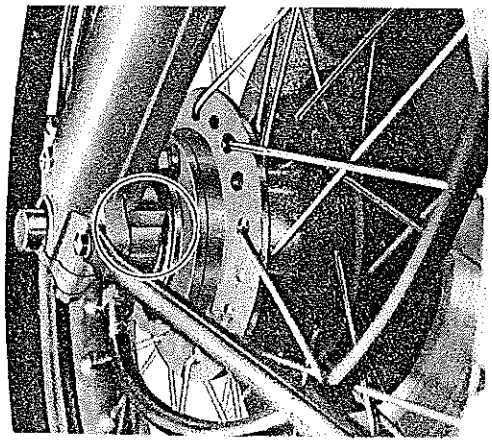


Installation

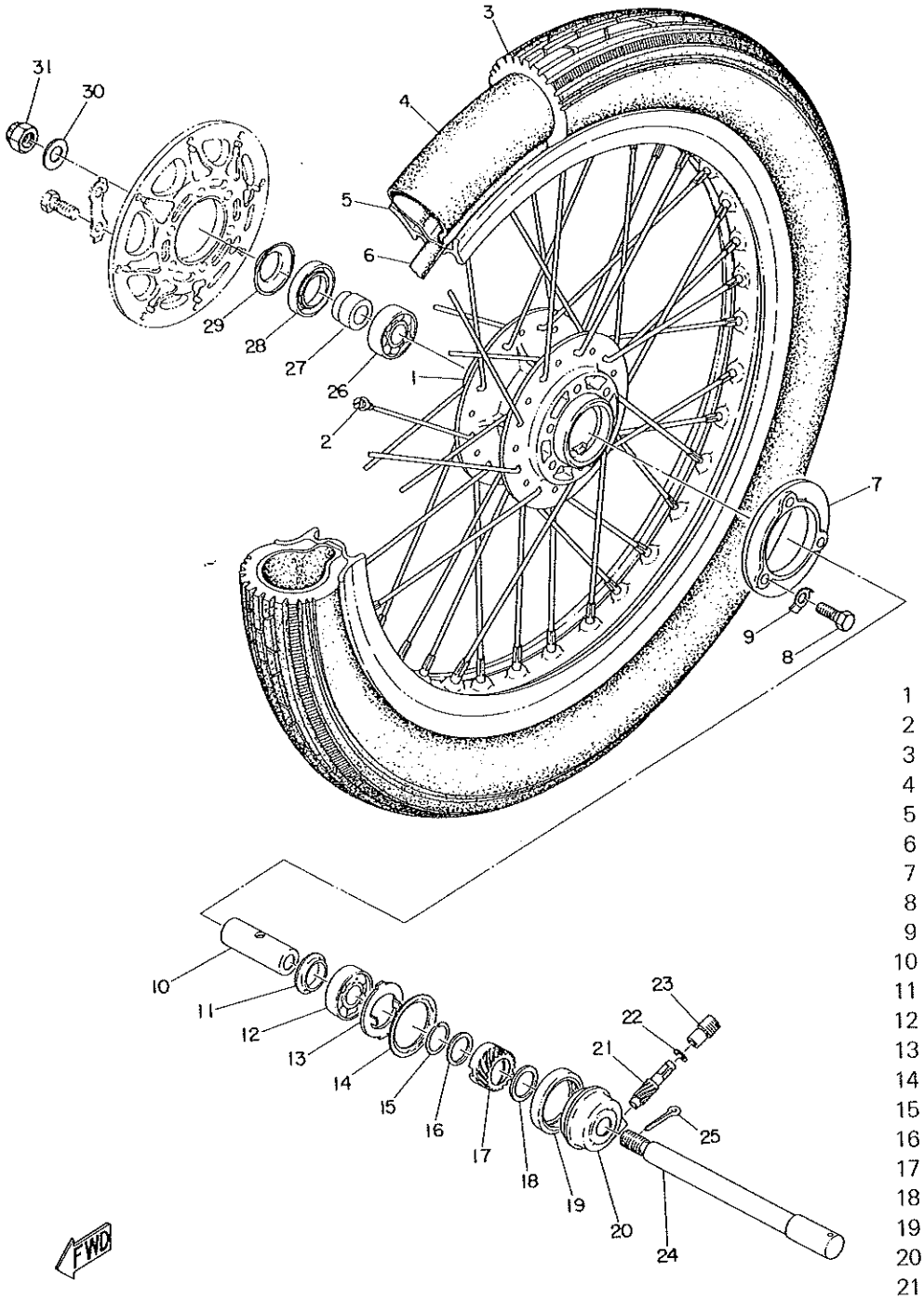
1) Grease the meter clutch and oil seal inside the meter housing.



2) Sub-assemble the front wheel ass'y and meter housing and install this sub-assemble on the frame.
   Be sure the produced portion (torque stopper) of the meter housing is positioned as below.



FRONT WHEEL



1 Front hub
2 Spoke set
3 Front tire (H3.50-19-4PR)
4 Tube (3.50-19)
5 Rim (1.85B-19)
6 Rim band (3.50-19)
7 Housing cover
8 Fitting bolt
9 Lock washer
10 Bearing spacer
11 Spacer flange
12 Bearing (B6303Z)
13 Meter clutch
14 Clutch meter betainer
15 Stop ring
16 Thrust washer 2 (25-29-1.0)
17 Drive gear
18 Thrust washer 1 (25-32-0.1)
19 Oil seal (SD28-47-7)
20 Gear unit housing
21 Meter gear
22 Washer (6.2-9.5-0.8)
23 Bushing
24 Wheel shaft
25 Cotter pin
26 Bearing (B6303)
27 Shaft collar
28 Oil seal (SDD-45-56-6)
29 Dust cover
30 Plain washer
31 Shaft nut

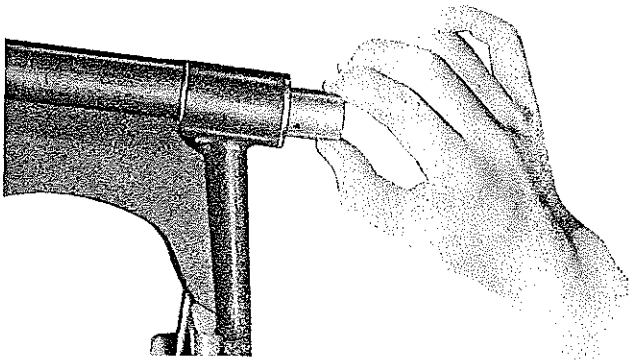
Inspection

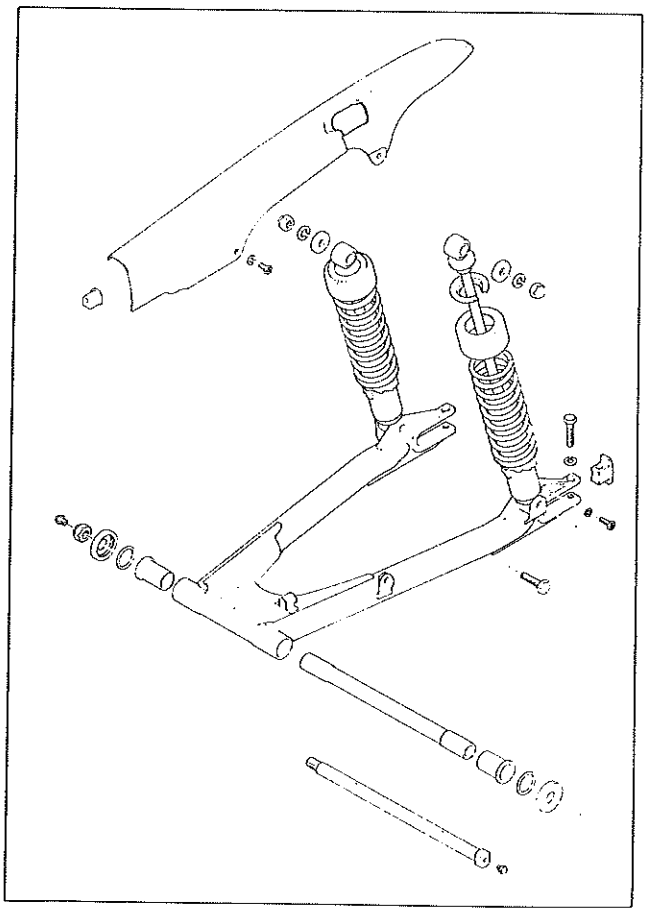
Wear

Wear of the swing arm pivot shaft bushings can cause wheel hop and wobble. With the swing arm installed (rear shocks and wheel removed) grasp the swing arm, twist slightly to feel for excessive shaft play in the bushings. There should be virtually no play at all for the bushings to be useable. If play exists, the bushings are worn. Press them out of the swing arm and install new ones.

Lubrication

The swing arm pivot shaft end is fitted with a zirc grease fitting. Pressure feed a small amount of grease into this fitting every 2,000 miles.





11) Thread the ring nut down over the stem to hold the underbracket in place.

Important

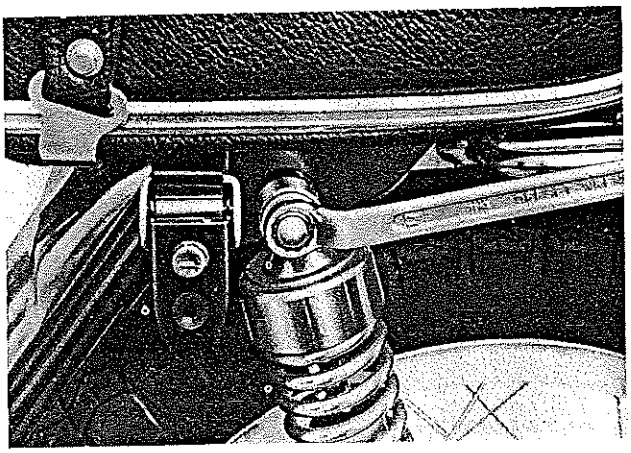
Tighten the lower ring nut so that all free play is taken up, but so the bracket can still pivot freely from lock to lock. Recheck for free play after the entire fork unit has been destall and tighten the upper ring nut reassembled.

12) Set the handle crown into position over the ring nut. Locate both crown arms over the upper covers and lock in place by threading on and tightening the stem lock nut.

REAR SUSPENSION UNIT

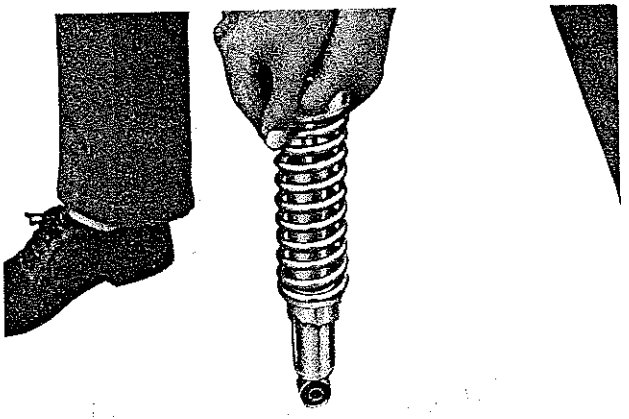
Disassembly

Remove both mounting botts and pull the suspension unit out of the frame and swing arm mounts.



Inspection

A unit that has lost its suspension qualities will compress quite easily and rebound quickly. To test the effectiveness of the unit, compress it as far as possible and then immediately take all weight off the shock. A suspension unit that is working properly will rebound quickly halfway and then slowly expand the second half. A defective shock will rebound to its fullest length without hesitation.

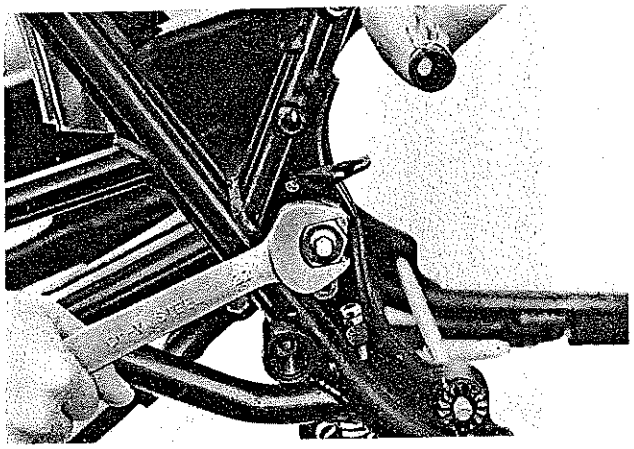


SWING ARM Removal

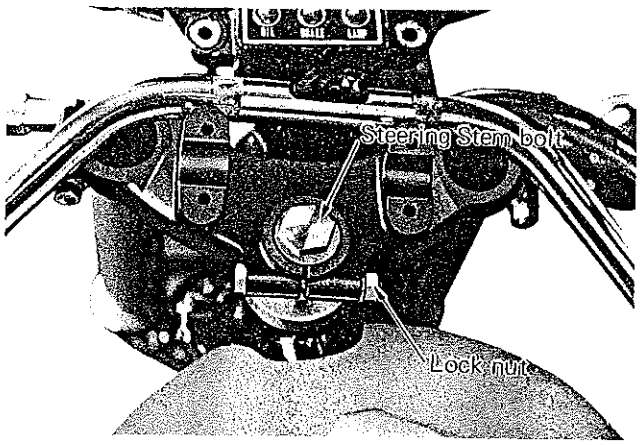
Note:

The rear wheel assembly and rear shock lower mounting bolts must be removed before the swing arm can be removed.

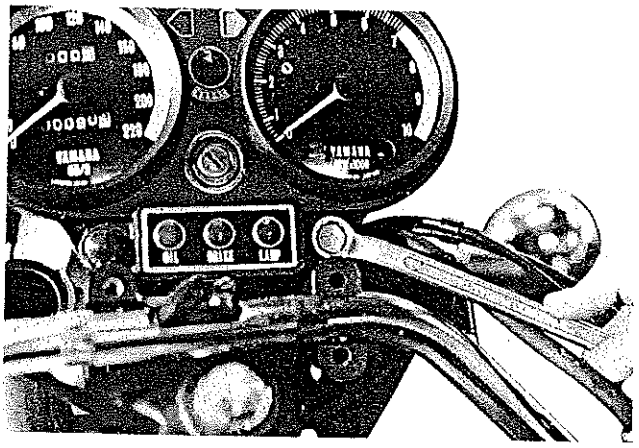
The swing arm is held to the frame by a pivot shaft. Bend the shaft lock tab down, remove the lock nut, and pull out the pivot shaft. The swing arm can now be removed from the frame.



2) Loosen the handle crown lock nut, unscrew the steering stem bolt, and remove the front fork bolts. The handle crown can now be removed.

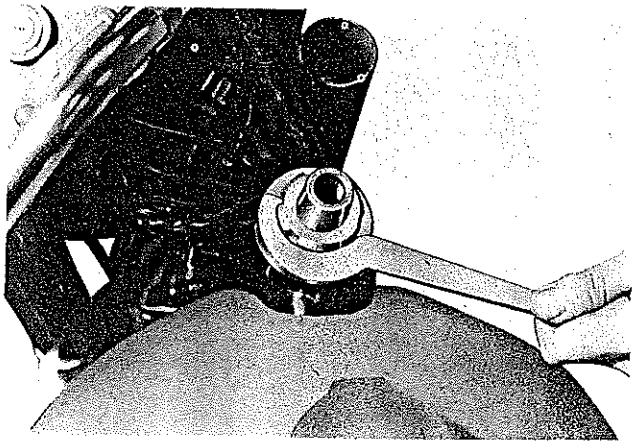


3) Remove the meter panel mounting bolts.



4) When removing the under bracket, it is necessary to remove the wiring inside the head lamp body, disc brake oil hose joint nut, and head lamp clamp bolt.

5) Beneath the handle crown are two stem ring nuts that holds the underbracket in place. Remove it.



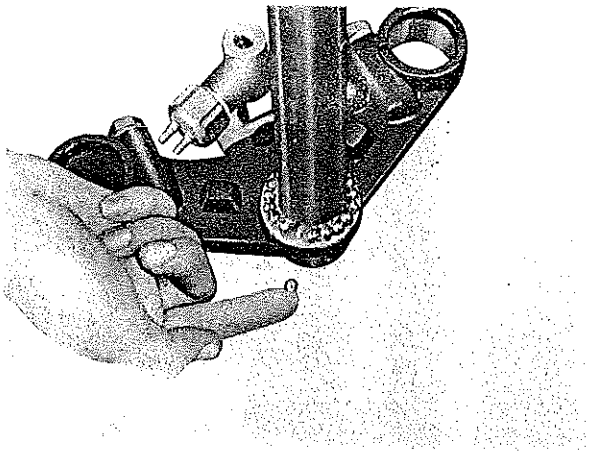
6) Take care when removing the bottom ring nut, as the underbracket will begin to drop down, away from the steering head.

Caution

The top and bottom steering head balls (including top and bottom races for each set of balls) are held in place by the underbracket and ring nut. Take care when removing the underbracket that none of the balls drop out and become lost.

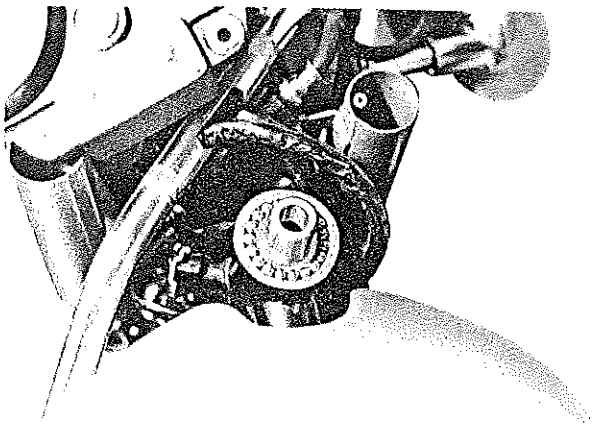
7) Examine all the balls for pits or partial flatness. If any one is found defective, the entire set (including both races) should be replaced. If either race is pitted, shows rust spots, or is damaged in any way, replace both races and all balls.

8) Mount both bottom races and the balls onto the underbracket (balls completely greased).



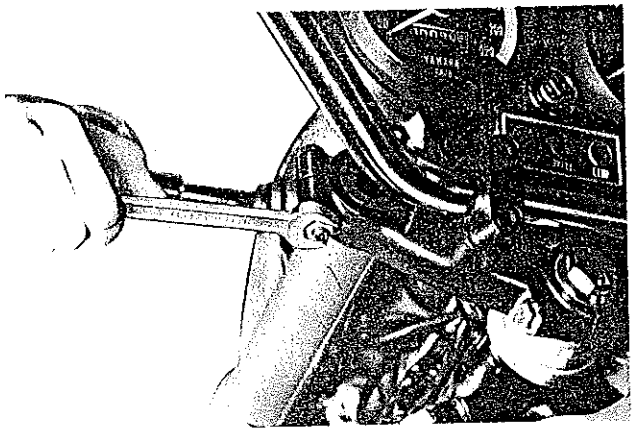
9) Carefully slip the underbracket stem up into the steering head. Hold the top bearing assembly in place so the stem does not knock any balls out of position.

10) Install both top races and balls into the top of the steering head. Be sure the balls are completely greased during installation.



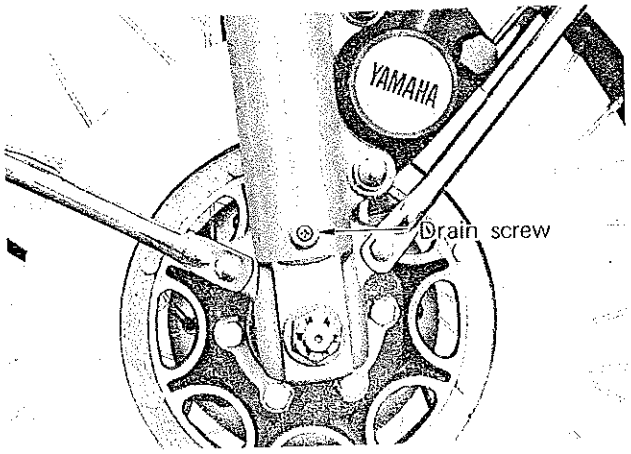
Fork Installation

a) Slide the inner fork leg up through the underbracket and handle crown and tighten the underbracket bolts and front fork installation bolts.
This firmly locks the inner tube in place.

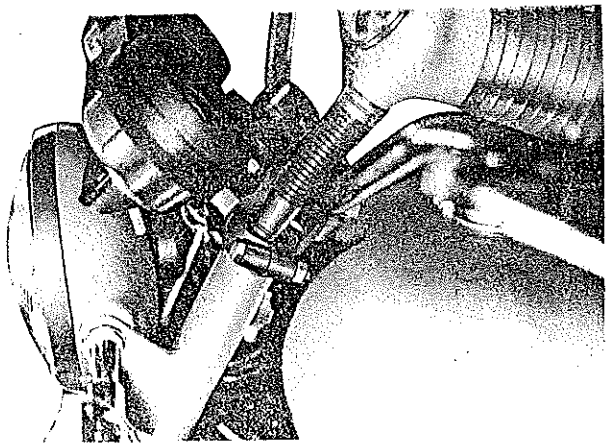


Changing fork oil

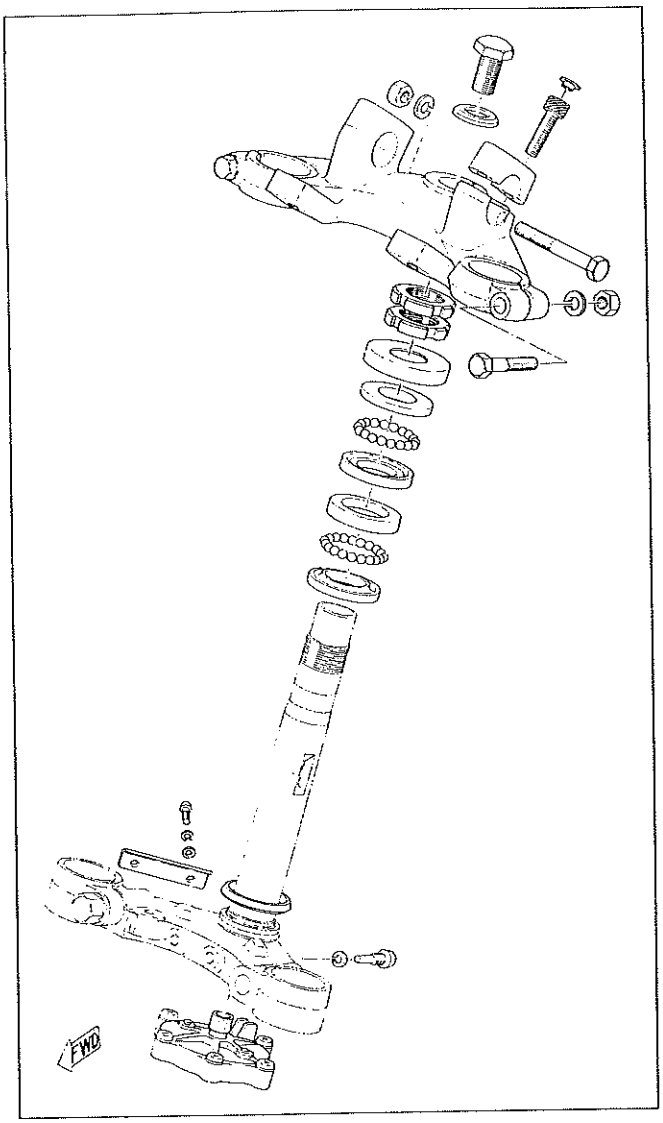
a) Remove the drain screw from the outside of both forks and allow the oil to drain out. Push down on the handlebar a few times to compress the forks and pump out any remaining oil.



b) Install both drain screws, then unscrew both fork cap screws. Pour 173cc (5.8 fl.oz) of 10W/30 into each leg. Install both cap screws.

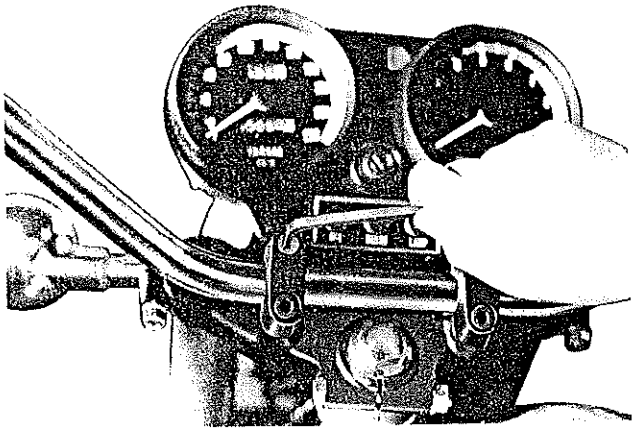


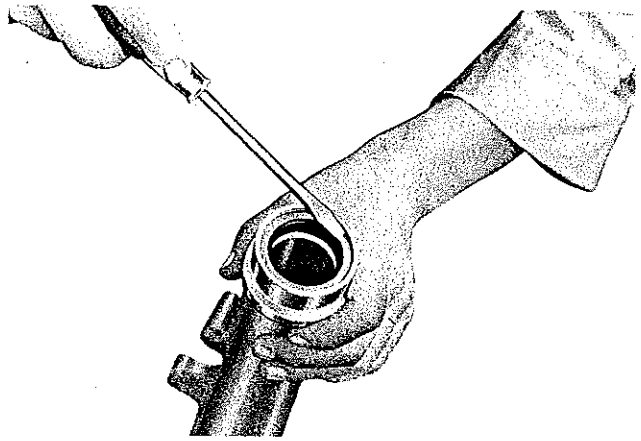
HANDLE CROWN/UNDERBRACKET

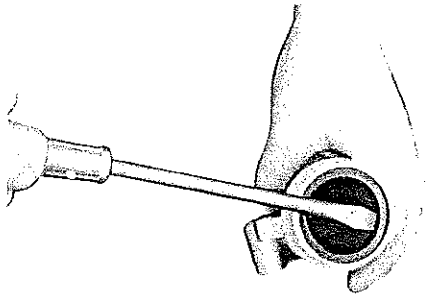


Note:
The following procedures can be performed with the entire fork unit still attached.

1) Remove the handlebar holder retaining bolts, then remove the holder.

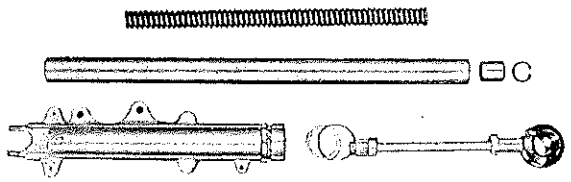






Note:

Whenever the inner tube is removed, be sure to replace the oil seal.



Inspection

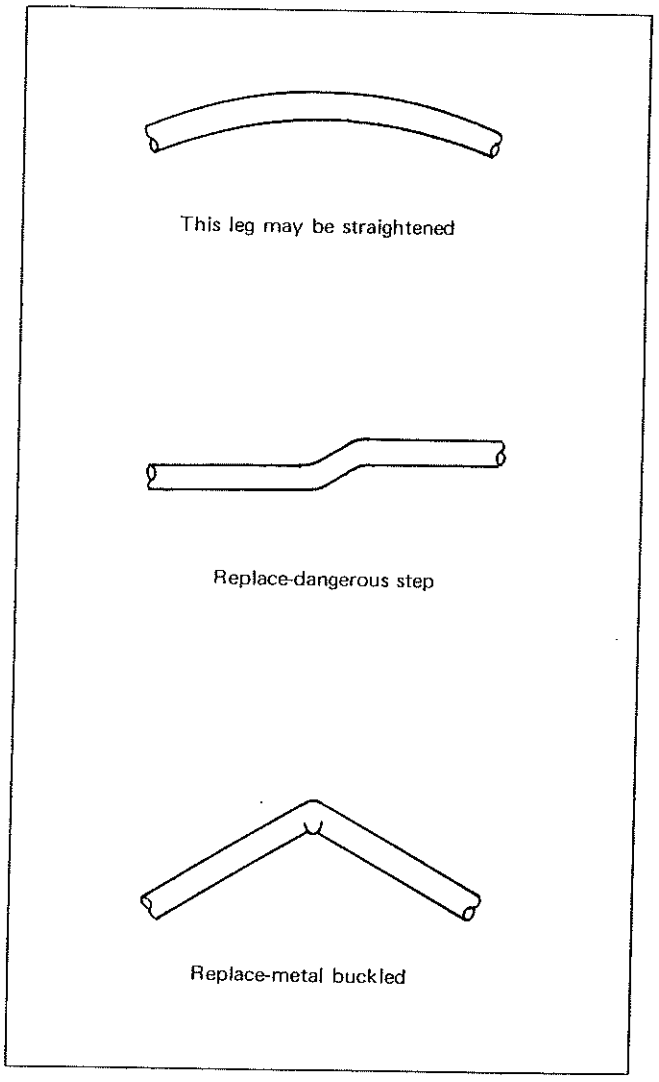
Fork Wear

1) Inner fork tube:

a) The inner fork tube must be checked for surface wear and bends. The tube gets scratched from dirt working past the seal and continually rubbing against the tube. In addition, the tube can become deeply grooved if it is bent.

b) Deep grooves, or nicks, can quickly wear out the seal lips and permit oil to blow past the seal. Replace the tube if these deep grooves are evident.

c) Also check for a bent tube. If the tube is found to be bent for any reason, the safest procedure is to replace it.

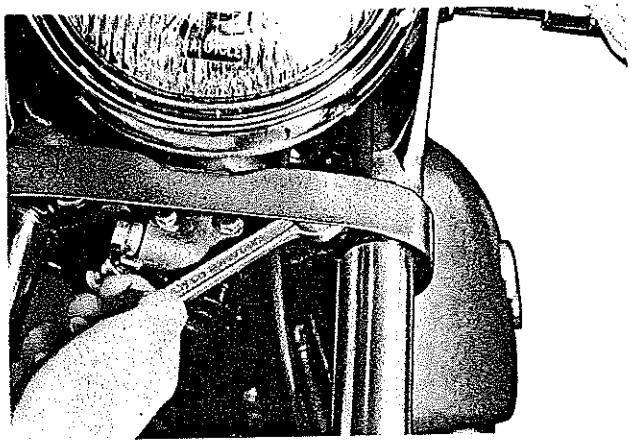


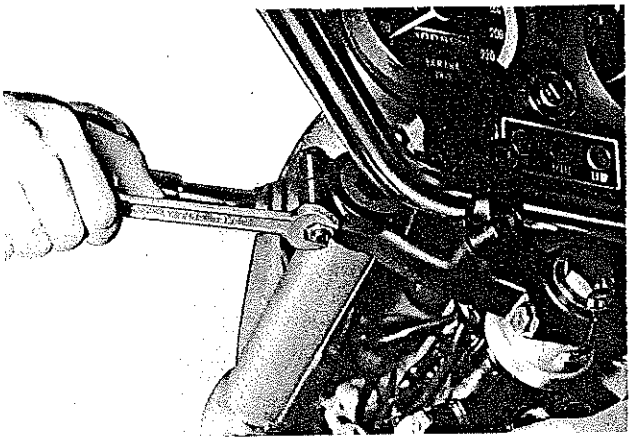
Disassembly

Note:

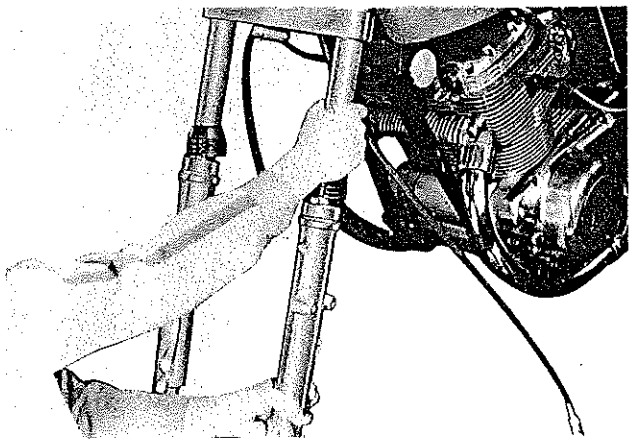
Remove the front wheel and front fender before starting this procedure.
To remove the front fork leg (right), the disc brake caliper must be removed.

1) Loosen the underbracket bolt inside the outer cover and front fork holding bolt.

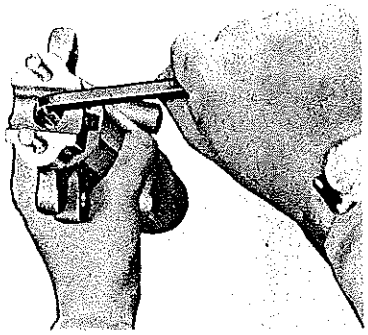




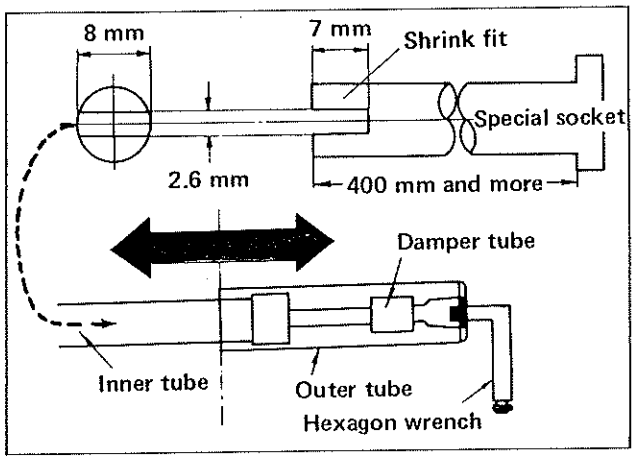
2) Pull the inner fork tube out of the mounting brackets.



3) Remove the cylinder mounting bolt at the bottom end of the outer tube.
If it is difficult to remove the bolt because of the cylinder revolving, take the following steps.



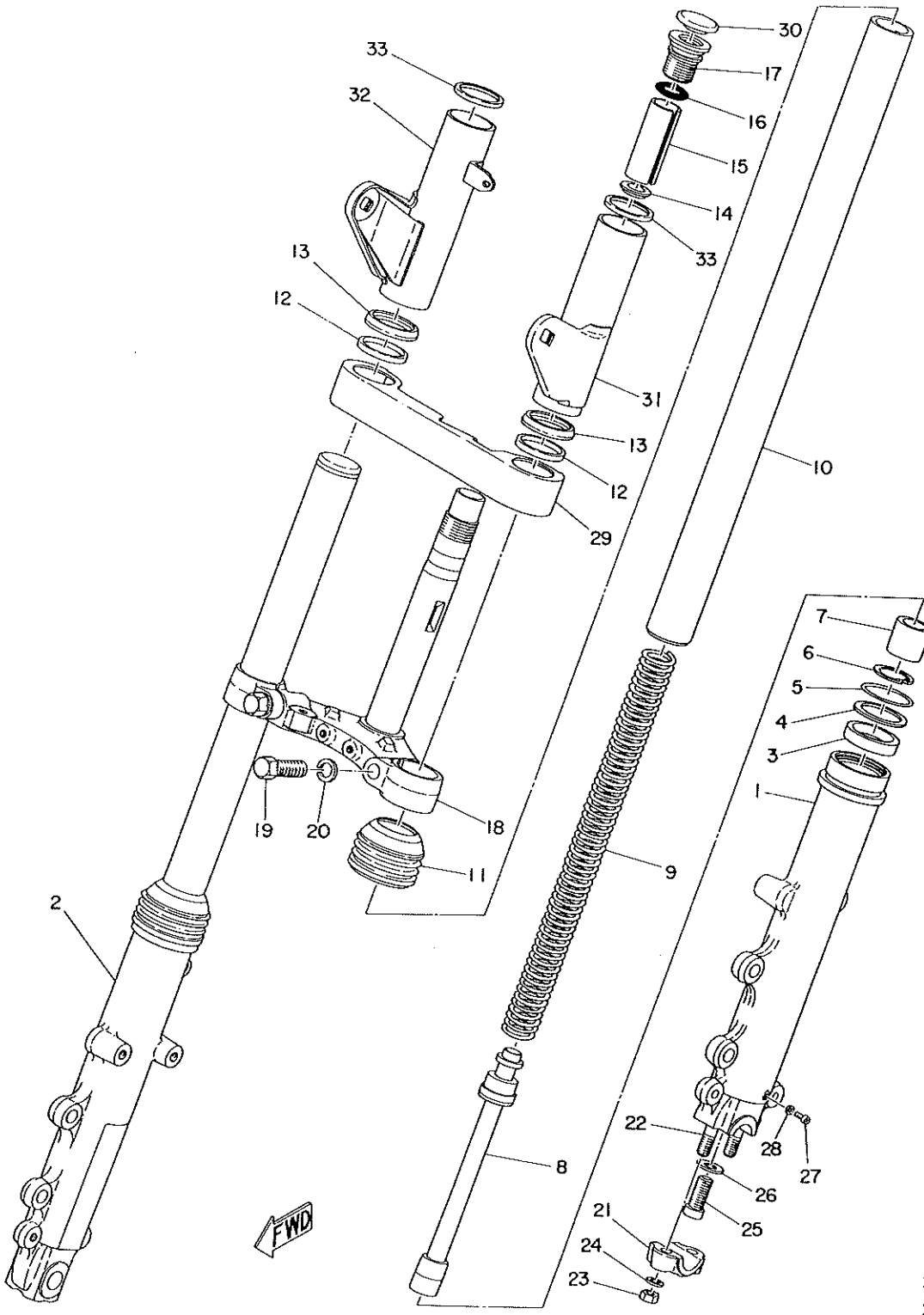
4) Remove the bolt by pulling the inner tube to the full limit of its travel. This will cause friction to be applied to the damper. If this is unsuccessfull, a special socket must be made to attach to the top of the damper tube inside the inner fork leg.



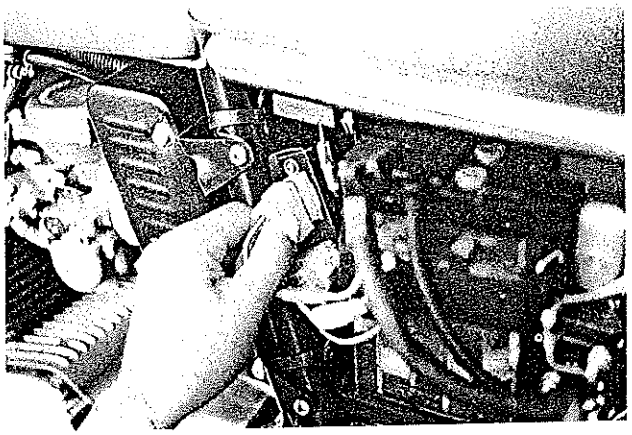
5) Oil Seal
The oil seal that is pressed into the top of the outer nut should be replaced whenever the forks are disassembled.

FRONT FORKS

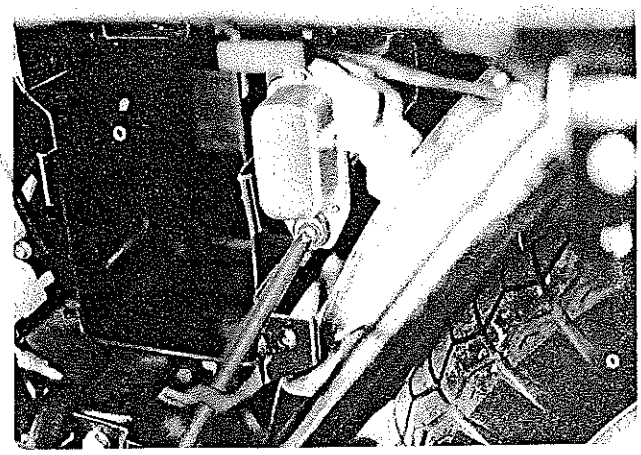
The front forks consist of two individual fork legs, each one having a two-way hydraulic dampening action and an internal spring to extend the fork leg during operation. In addition, the forks are held solidly in place by an underbracket and top bracket commonly called the triple clamp.



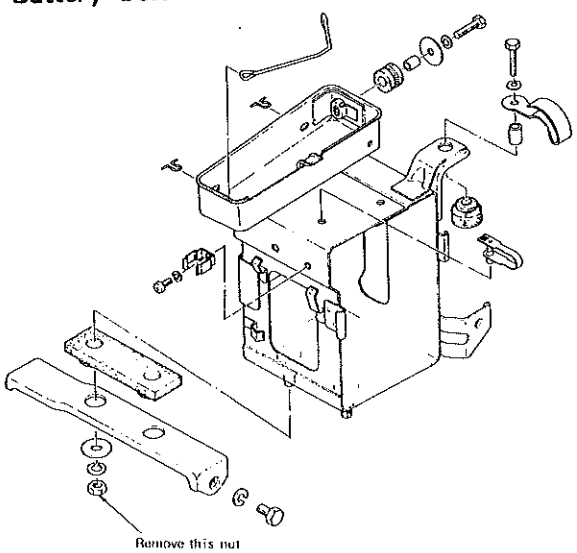
1 Outer left tube
2 Outer right tube
3 Oil seal
4 Oil seal washer
5 Oil seal clip
6 Circlip (R-28)
7 Piston
8 Cylinder comp.
9 Spring
10 Inner tube
11 Dust seal
12 Packing
13 Under cover guide
14 Spring upper seat
15 Spacer
16 Packing
17 Cap bolt
18 Under bracket comp.
19 Bolt
20 Spring washer
21 Axle holder
22 Stud bolt
23 Nut
24 Spring washer
25 Bolt
26 Packing
27 Drain plug
28 Packing
29 Outer cover
30 Cap
31 Upper left cover
32 Upper right cover
33 Cover upper guide



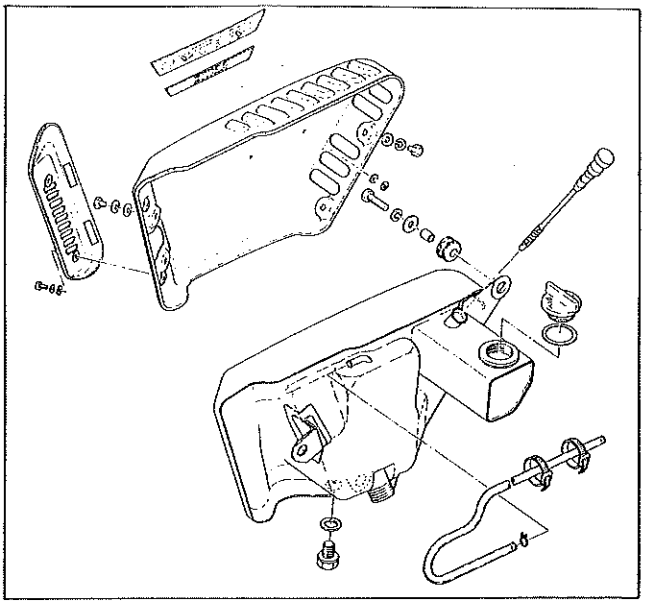
Remove the two battery box bracket installing bolts and battery box installing bolts (which also serve to fix the helmet holders. Then pull up the battery box. Next remove the two nuts which fasten the battery box and battery bracket. Together thus the battery box can be pulled out.



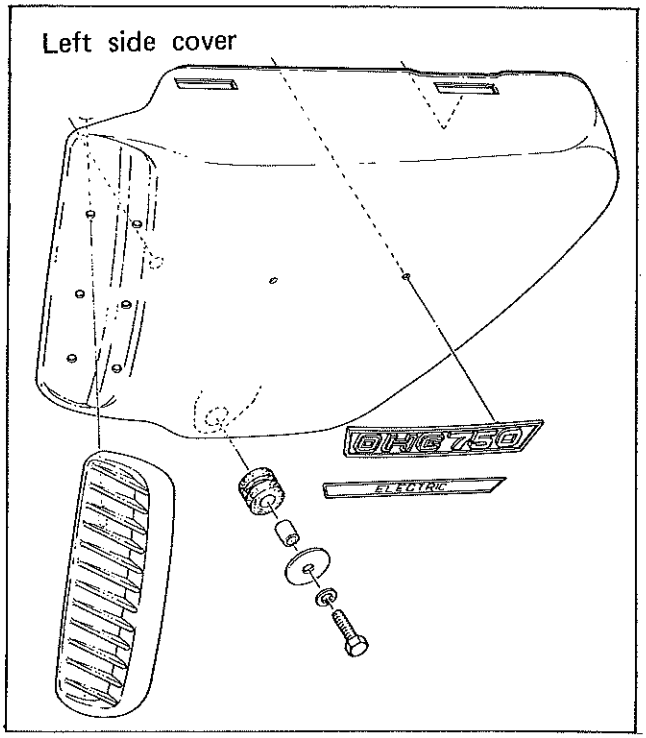
Battery box



Oil Tank · Side cover right



Left side cover



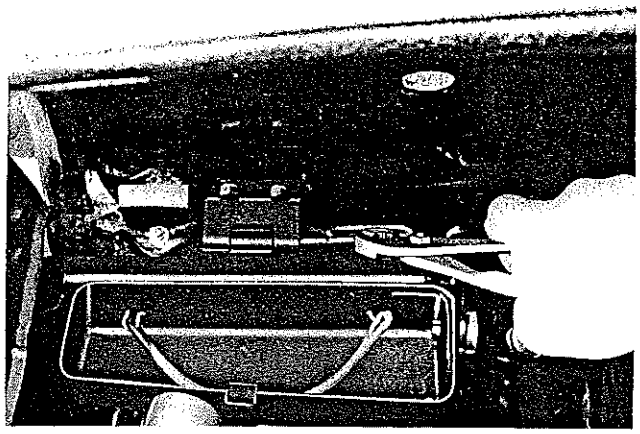
4. FRAME

The basic frame design consists of two down tubes, a large tank rail, and two main tubes. The engine is fully enclosed in the frame.

SEAT Removal

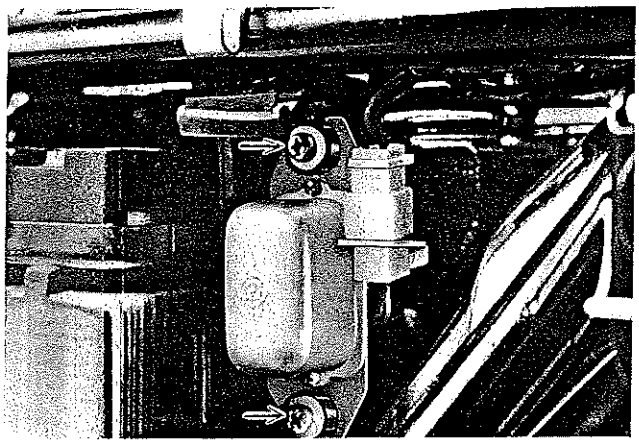
Raise the seat and remove the dowel pins. Lift seat off.

Note:
It is unnecessary to remove seat stopper.



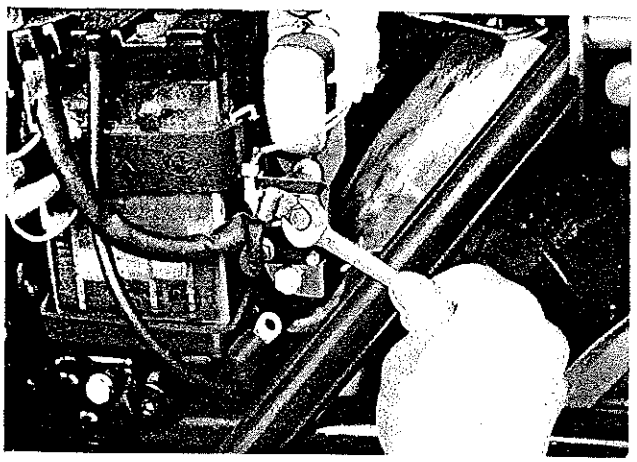
VOLTAGE REGULATOR

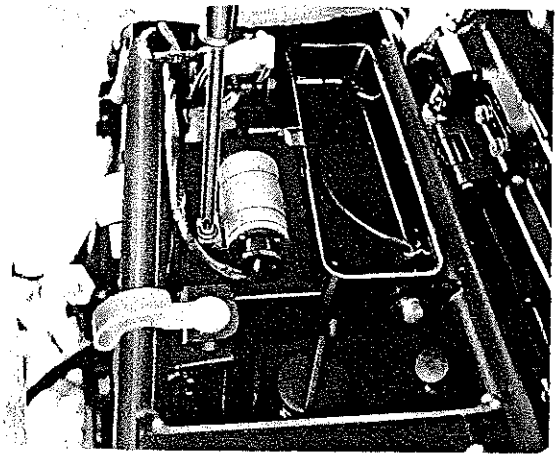
This unit is mounted to the left side of the battery box. Disconnect the multiple wirng connector, remove both mounting screws and set the unit off to one side.



BATTERY BRACKET

Remove the side cover (L) by loosening the installing bolts on it. Then take off the battery lead wire, rectifier, couple for the generator, and coupler holding plate.





Remove the flasher relay installing screws, starter switch installing bolts, two regulator installing screws, and coupler for the regulator lead wire.

