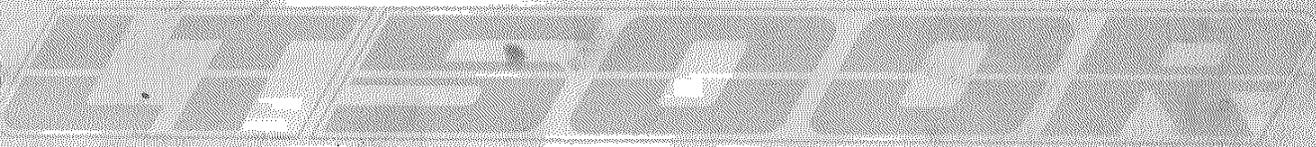


SUZUKI



SERVICE MANUAL



99500-24014-01E

# VIEW OF SUZUKI LT500R ('87-MODEL)



LEFT SIDE



RIGHT SIDE

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# GENERAL INFORMATION

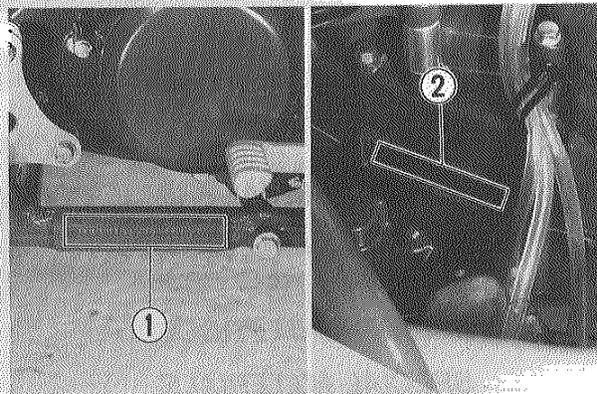
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## VIN AND SERIAL NUMBER LOCATIONS

The VIN number ① is stamped on the left frame member. The engine serial number ② is located on the crankcase.

These numbers are required especially for registering the machine and ordering spare parts.



## FUEL, OIL AND COOLING SOLUTION RECOMMENDATIONS

### FUEL

#### For U.S. model

Use unleaded or low-lead type gasoline of at least 85 – 95 pump octane ( $\frac{R+M}{2}$  method) or 89 octane or higher rated by the research method.

#### For other models

Use gasoline with an octane number of 85 or higher (Research Method), preferable unleaded or low-lead.

### ENGINE OIL

#### For U.S. model

SUZUKI strongly recommends the use of SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT. If this oil is not available use an equivalent high quality 2 Cycle Racing Lubricant.

#### For other models

For the oil to be mixed with gasoline, any of the following brands or its equivalent will do.

- \* SHELL SUPER M
- \* CASTROL A747
- \* CASTROL R30
- \* BELL-RAY MC-100
- \* CASTROL TTS
- \* MOTUL CENTURY 300.2T (A545)
- \* B.P. RACING

#### CAUTION:

**Do not allow two different brands to get mixed in the fuel-oil mixture.**

### MIXTURE RATIO

For proper engine performance 20 parts gasoline to 1 part oil is the correct gasoline to oil mixture ratio. For proper engine performance, it is essential that the above fuel oil mixture should be maintained.

#### FUEL OIL MIXTURE RATIO OF 20 : 1

GASOLINE	OIL	GASOLINE	OIL
L	ml	(qt)	(oz)
0.5	25	0.5	0.8
1.0	50	1.0	1.6
1.5	75	1.5	2.4
2.0	100	2.0	3.2
2.5	125	2.5	4.0
3.0	150	3.0	4.8
3.5	175	3.5	5.6
4.0	200	4.0	6.4
4.5	225	4.5	7.2
5.0	250	5.0	8.0
5.5	275	5.5	8.8
6.0	300	6.0	9.6
6.5	325	6.5	10.4
7.0	350	7.0	11.2
7.5	375	7.5	12.0
8.0	400	8.0	12.8
8.5	425	8.5	13.6
9.0	450	9.0	14.4
9.5	475	9.5	15.2
10.0	500	10.0	16.6

### TRANSMISSION OIL

Use a good quality SAE 20W/40 multi-grade motor oil.

## BRAKE FLUID

Specification and classification:	Front	DOT 3 or DOT4
	Rear	DOT4
99000-23110	SUZUKI BRAKE FLUID	

## COOLING SOLUTION

Use an anti-freeze & Summer coolant compatible with aluminum radiator, mixed with distilled water only.

### WATER FOR MIXING

Use distilled water only. Water other than distilled water can corrode and clog the aluminum radiator.

### ANTI-FREEZE & SUMMER COOLANT

The coolant performs as corrosion and rust inhibitor as well as anti-freeze. Therefore, the coolant should be used at all times even though the atmospheric temperature in your area does not go down to freezing point.

SUZUKI recommends the use of SUZUKI GOLDEN CRUISER 1 200 anti-freeze & summer coolant. If this is not available, use an equivalent which is compatible with aluminum radiator.

99000-24120 Not available in U.S.A.	SUZUKI GOLDEN CRUISER 1200
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## BREAKING-IN PROCEDURE

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to "BREAK-IN" before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. The general rules are as follows:

### WARNING:

- \* *Since the brake system of this motorcycle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result.*
- \* *Do not use any brake fluid taken from old, used, or unsealed containers.*
- \* *Never re-use brake fluid left over from the previous servicing and stored for a long period.*

### REQUIRED AMOUNT OF WATER/COOLANT

Solution capacity (total): 1 500 ml  
(1.59/1.32 US/Imp qt)  
(reserve): 200 ml  
(0.21/0.18 US/Imp qt)

For coolant mixture information, refer to cooling system section, page 4-1.

### CAUTION:

*Mixing of anti-freeze & summer coolant should be limited to 60%. Mixing beyond it would reduce its efficiency. If the anti-freeze & summer coolant mixing ratio is below 30%, rust inhibiting performance is greatly reduced. Every new unit is serviced with anti-leakage material, Bar's leaks.*

99000-24240 Not available in U.S.A.	BAR'S LEAKS
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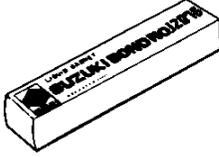
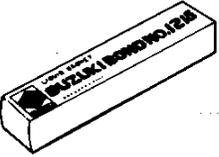
- Keep the these break-in engine speed limits:

Up to 10 hours	Less than 1/2 throttle
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- Do not maintain constant engine speed for an extended time period during any portion of the break-in. Try to vary the throttle position.

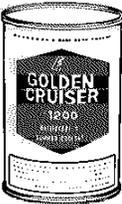
## SPECIAL MATERIALS

The materials listed below are needed for maintenance work on the LT500R and should be kept on hand for ready use. These items supplement such standard materials as cleaning fluids, lubricants, emery cloth and the like. How to use them and where to use them are described in the text of this manual.

Material		Part	Page
For U.S.A.	For other models		
 <p>SUZUKI SUPER GREASE "A" 99000-25030</p>	 <p>SUZUKI SUPER GREASE "A" 99000-25010</p>	<ul style="list-style-type: none"> <li>Steering shaft lower portion</li> <li>Steering shaft dust seal</li> <li>Steering shaft holder</li> <li>Throttle lever</li> <li>Brake pedal pivot shaft</li> <li>Crankcase oil seal and bearing</li> <li>Front wheel bearing and dust seal</li> <li>Front suspension pivot bearing and dust seal</li> <li>Clutch/parking brake lever sliding parts</li> <li>Shock absorber bearing and dust seal</li> <li>Rear wheel bearing and dust seal</li> <li>Rear suspension pivot bearing and dust seal</li> </ul>	<p>2-18 7-40 2-18 7-40 2-18 7-40 2-18 2-18 3-33 7- 4 2-18 7-33 7-27 7-32 7-51 2-18 7-58 2-18 7-52</p>
 <p>SUZUKI SILICONE GREASE 99000-25100</p>	 <p>SUZUKI SILICONE GREASE 99000-25100</p>	<ul style="list-style-type: none"> <li>Front brake caliper axle</li> <li>Rear brake caliper axle</li> <li>Rear caliper mounting bracket</li> </ul>	<p>7-14 7-22 7-52</p>
 <p>SUZUKI BOND No. 1207B 99104-31140</p>	 <p>SUZUKI BOND No. 1215 99000-31110</p>	<ul style="list-style-type: none"> <li>Mating surfaces of the crankcase</li> <li>Water pump mechanical seal</li> <li>Rear sprocket flange</li> <li>Rear brake disc flange</li> </ul>	<p>3-39 4-11 7-60 7-60</p>
 <p>SUZUKI BRAKE FLUID 99000-23110 (0.5L)</p>	 <p>SUZUKI BRAKE FLUID 99000-23110 (0.5L)</p>	<ul style="list-style-type: none"> <li>Brake fluid</li> </ul>	<p>1- 2 2-11</p>

Material		Part	Page
For U.S.A.	For other models		
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1303" 99000-32030	<ul style="list-style-type: none"> <li>● Gearshift shaft arm stopper</li> <li>● Exhaust valve bolt</li> <li>● Rear sprocket mounting bolt</li> </ul>	3-42 3-49 7- 8
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1305" 99000-32100	<ul style="list-style-type: none"> <li>● Magneto rotor nut</li> <li>● Kick starter spring stopper bolt</li> <li>● Balancer driven gear nut</li> <li>● Primary drive gear nut</li> </ul>	3-41 3-42 3-45 3-46
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1322" 99000-32110	<ul style="list-style-type: none"> <li>● Gearshift cam bolt</li> <li>● Kick starter lever fitting bolt</li> <li>● Kick starter pawl/guide stopper bolt</li> <li>● Water pump impeller bolt</li> <li>● Wishbone arm end bolt (Upper &amp; Lower)</li> <li>● Lower wishbone arm end pinch bolt</li> <li>● Steering knuckle arm bolt</li> <li>● Axle lock nut</li> <li>● Chain touch defense bolt</li> </ul>	3-39 3-42 3-42 4-12 7-33 7-34 7-34 7-60
 THREAD LOCK SUPER "1333B" 99000-32020	 THREAD LOCK SUPER "1333B" 99000-32020	<ul style="list-style-type: none"> <li>● Exhaust valve actuator screw</li> </ul>	3-44
 THREAD LOCK "1342" 99000-32050	 THREAD LOCK "1342" 99000-32050	<ul style="list-style-type: none"> <li>● Crankshaft oil seal</li> <li>● Stator screw</li> <li>● Gearshift cam guide screw</li> <li>● Pawl lifter</li> <li>● Parking brake housing bolt</li> </ul>	3-35 3-40 3-41 3-41 7-22

GENERAL INFORMATION

Material		Part	Page
For U.S.A.	For other models		
 <p>THREAD LOCK SUPER "1360" 99000-32130</p>	 <p>THREAD LOCK SUPER "1360" 99000-32130</p>	<ul style="list-style-type: none"> <li>• Brake disc mounting bolt</li> </ul>	<p>7- 5 7-23</p>
<p>Not available</p>	 <p>SUZUKI GOLDEN CRUISER 1200 99000-24120</p>	<ul style="list-style-type: none"> <li>• Cooling solution</li> </ul>	<p>1- 2</p>
<p>Not available</p>	<p>BAR'S LEAKS 99000-24240</p>	<ul style="list-style-type: none"> <li>• To prevent leakage or cooling solution from small hole.</li> </ul>	<p>4- 2</p>

## PRECAUTIONS AND GENERAL INSTRUCTIONS

Observe the following items without fail when servicing, disassembling and reassembling motorcycles.

- Do not run engine indoors with little or no ventilation.
- Be sure to replace packings, gaskets, circlips, O-rings and cotter pins with new ones.

### CAUTION:

**Never reuse a circlip. After a circlip has been removed from a shaft, it should be discarded and a new circlip must be installed.**

**When installing a new circlip, care must be taken not to expand the end gap larger than required to slip the circlip over the shaft.**

**After installing a circlip, always be sure that it is completely seated in its groove and securely fitted.**

- Tighten the cylinder head and case bolts and nuts beginning with larger diameter and ending with smaller diameter, and from inside to out-side diagonally, to the specified tightening torque.
- Use the special tools where specified.
- Use the genuine parts and recommended oils.
- When 2 or more persons work together, pay attention to the safety of each other.
- After a reassembly, check parts for tightness and operation.
- Treat gasoline, which is extremely flammable and highly explosive, with greatest care. Never use gasoline as cleaning solvent.

Warning, Caution and Note are included in this manual occasionally, describing the following contents.

**WARNING** ..... The personal safety of the rider or bystanders may be involved. Disregarding this information could result in personal injury.

**CAUTION** ..... These instructions point out special service procedures or precautions that must be followed to avoid damaging the machine.

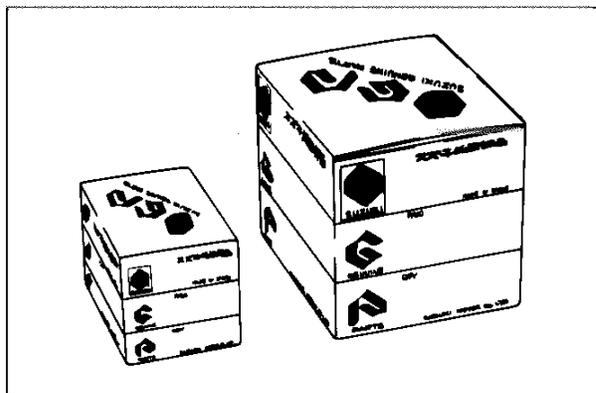
**NOTE** ..... This provides special information to make maintenance easier or important instructions clearer.

## REPLACEMENT PARTS

When you replace any parts, use only genuine SUZUKI replacement parts, or their equivalent. Genuine SUZUKI parts are high quality parts which are designed and built specifically for SUZUKI vehicles.

### CAUTION:

**Use of replacement parts which are not equivalent in quality to genuine SUZUKI parts can lead to performance problems and damage.**



## SPECIFICATIONS

### DIMENSIONS AND DRY MASS

Overall length .....	1 920 mm (75.6 in)
Overall width .....	1 205 mm (47.4 in)
Overall height .....	1 110 mm (43.7 in)
Wheelbase .....	1 350 mm (53.1 in)
Front track .....	1 030 mm (40.6 in)
Rear track .....	900 mm (35.4 in)
Ground clearance .....	110 mm (4.3 in)
Seat height .....	790 mm (31.1 in)
Dry mass .....	178 kg (392 lbs)

### ENGINE

Type .....	Two-stroke, water-cooled, SAEC
Number of cylinders .....	1
Bore .....	86 mm (3.4 in)
Stroke .....	86 mm (3.4 in)
Piston displacement .....	499 cm <sup>3</sup> (30.4 cu. in)
Compression ratio .....	6.3 : 1
Carburetor .....	MIKUNI TM38SS
Air cleaner .....	Polyurethane foam element
Starter system .....	Primary kick
Lubrication system .....	Fuel and oil premixture of 20 : 1

### TRANSMISSION

Clutch .....	Wet multi-plate type
Transmission .....	5-speed constant mesh
Gearshift pattern .....	1-down, 4-up
Primary reduction .....	2.142 (60/28)
Final reduction .....	3.230 (42/13)
Gear ratio, Low .....	2.416 (29/12)
2nd .....	1.733 (26/15)
3rd .....	1.333 (24/18)
4th .....	1.050 (21/20)
Top .....	0.863 (19/22)
Drive chain .....	TAKASAGO RK520SMO-Z10, 98 links

## CHASSIS

Steering angle .....	Inside $32^{\circ} \pm 3^{\circ}$ Outside $25^{\circ} \pm 3^{\circ}$
Caster .....	$10^{\circ}00'$
Trail .....	42 mm (1.65 in)
Turning radius .....	2.8 m (9.2 ft)
Toe-in .....	$36 \pm 4$ mm ( $1.4 \pm 0.2$ in)
Front brake .....	Disc brake, twin, hydraulically operated
Rear brake .....	Disc brake, hydraulically operated
Front tire size .....	AT 21 x 7 - 10 ☆☆
Rear tire size .....	AT 20 x 11 - 10 ☆☆
Front suspension .....	Double wishbone, spring pre-load fully adjustable, damping force 4-way adjustable
Rear suspension .....	Full-floating suspension system, spring pre-load fully adjustable, compression damping force 21-way adjustable, rebound damping force 26-way adjustable

## ELECTRICAL

Ignition type .....	SUZUKI "PEI" (CDI)
Ignition timing .....	$4^{\circ} \pm 1.5^{\circ}$ B.T.D.C. at 1 000 r/min and $15^{\circ} \pm 0.5^{\circ}$ B.T.D.C. at 5 500 r/min
Spark plug .....	NGK B8EGV NGK BR8EV ... For CANADA model
Headlight .....	12V 60/55W
Taillight .....	12V 5W

## CAPACITIES

Fuel tank including reserve .....	13.0 L (3.4/2.9 US/Imp gal)
reserve .....	1.3 L (1.4/1.1 US/Imp qt)
Transmission oil .....	1 000 ml (1.06/0.88 US/Imp qt)
Coolant .....	1 500 ml (1.59/1.32 US/Imp qt)
reserve .....	200 ml (0.21/0.18 US/Imp qt)

\* Specifications are subject to change without notice.

# PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

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## PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the vehicle operating at peak performance and economy. Mileages are expressed in terms of months (kilometers and miles) for your convenience.

**NOTE:**

*More frequent servicing may be performed on vehicles that are used under severe conditions.*

This interval should be judged by distance or months whichever comes first	miles	100	600	1 200
	km	200	1 000	2 000
	months	1	3	6
Cylinder head nuts, cylinder nuts and exhaust pipe nuts		T	T	—
Clutch		I	—	I
Transmission oil		R	—	R
Drive chain	Inspect every time before riding			
Sprockets (wear and mounting)		I	I	—
Spark plug		—	I	R
Engine idle speed		I	—	I
Fuel line		I	I	—
	Replace every 4 years			
Air cleaner element		I	I	—
Cylinder head and muffler		—	—	C
Coolant	Change every 2 years			
Radiator hose		I	I	—
	Replace every 4 years			
Tire	Inspect every time before riding			
Brakes		I	I	—
Brake fluid		I	I	—
	Change every 2 years			
Brake hose		—	I	—
	Replace every 4 years			
Steering		I	I	—
Chassis bolts and nuts		T	T	—
General lubrication		—	L	—

**NOTE:** T = Tighten, R = Replace, I = Inspect, C = Clean, L = Lubricate

## MAINTENANCE PROCEDURES

This section describes the service procedures for each section of Periodic Maintenance.

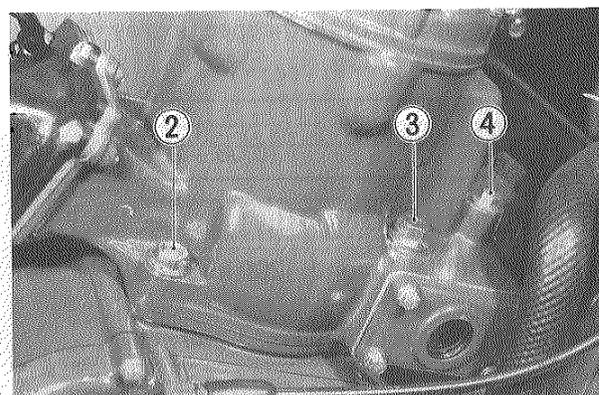
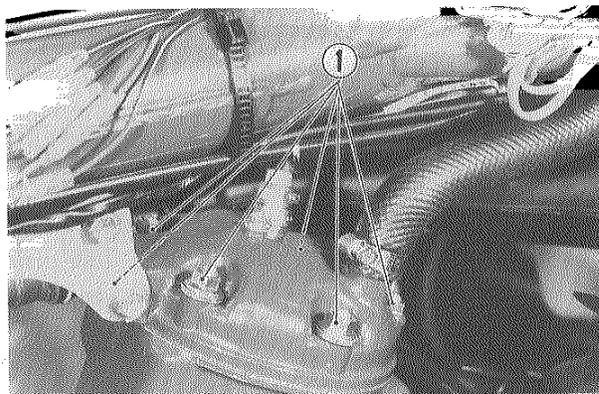
### ENGINE NUTS AND BOLTS

**Tighten Initial 1 month (200 km 100 miles) and Every 3 months (1 000 km, 600 miles).**

#### Cylinder head and cylinder nuts

- Remove the seat, center fender and front fender. (Page 4-3, 7-63)
- Loosen and retighten the six cylinder head nuts ① to the specified torque.
- Loosen and retighten the cylinder nut ② and bolts ③, ④ to the specified torque, right and left.

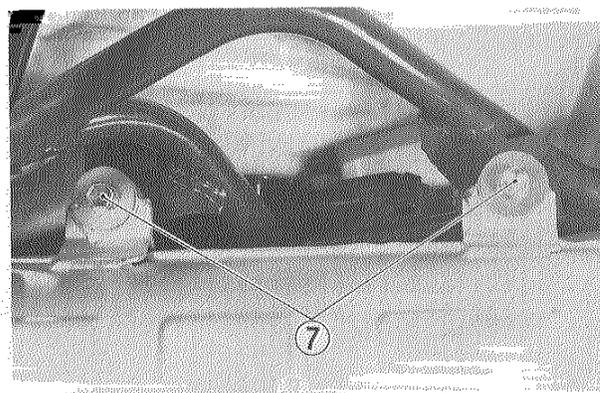
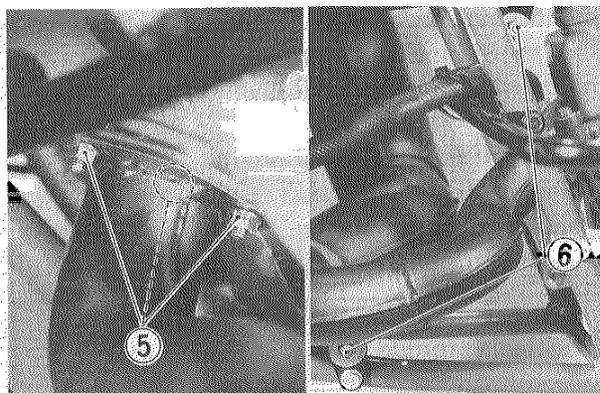
Tightening torque	①	26 – 30 N·m ( 2.6 – 3.0 kg·m ) ( 18.8 – 21.7 lb-ft )
	②	36 – 40 N·m ( 3.6 – 4.0 kg·m ) ( 26.0 – 28.9 lb-ft )
	③	36 – 40 N·m ( 3.6 – 4.0 kg·m ) ( 26.0 – 28.9 lb-ft )
	④	8 – 12 N·m ( 0.8 – 1.2 kg·m ) ( 5.8 – 8.7 lb-ft )



#### Exhaust pipe nuts and muffler bolts

- Tighten the three exhaust pipe nuts ⑤, muffler mounting bolts ⑥, ⑦ to the specified torque.

Tightening torque	⑤	4 – 7 N·m ( 0.4 – 0.7 kg·m ) ( 3.0 – 5.0 lb-ft )
	⑥	20 – 25 N·m ( 2.0 – 2.5 kg·m ) ( 14.5 – 18.0 lb-ft )
	⑦	20 – 25 N·m ( 2.0 – 2.5 kg·m ) ( 14.5 – 18.0 lb-ft )



## CLUTCH

**Inspect Initial 1 month (200 km, 100 miles) and Every 6 months (2 000 km, 1 200 miles).**

The play of the clutch should be 2 – 3 mm (0.08 – 0.12 in) as measured at the clutch lever holder before the clutch begins to disengage. If the play in the clutch is incorrect, adjust it in the following manner:

- Loosen the lock nut ① and screw the adjuster ② on the clutch lever holder all the way in.
- Loosen the lock nut ③ and turn the adjuster ④ in or out to provide the specific play A.
- Tighten the lock nuts ①, ③.

Clutch cable play	2 – 3 mm (0.08 – 0.12 in)
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## TRANSMISSION OIL

**Replace Initial 1 month (200 km, 100 miles) and Every 6 months (2 000 km, 1 200 miles).**

After a long period of use, the transmission oil will deteriorate and quicken the wear of sliding and interlocking surfaces. To facilitate the work, start the engine and warm up oil. Replace the transmission oil periodically in the following manner:

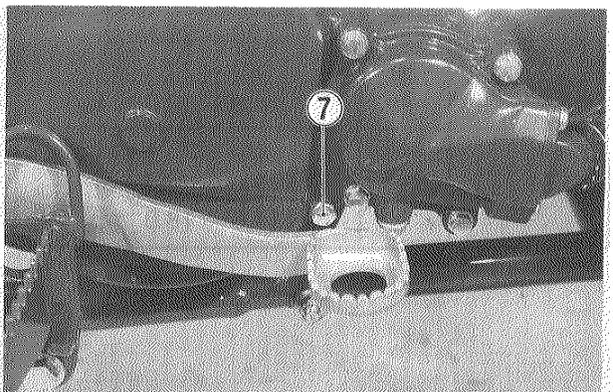
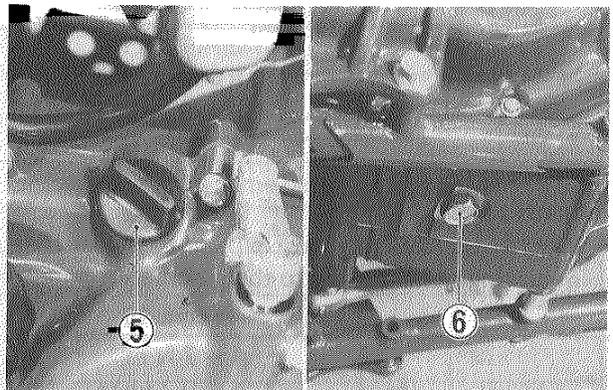
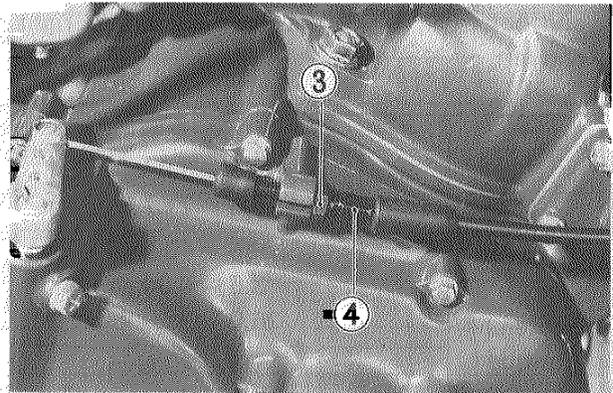
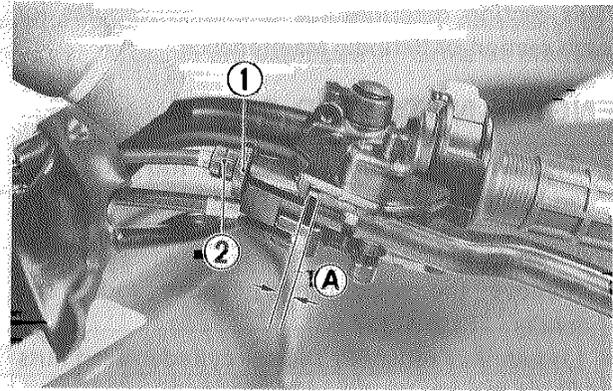
- Place the vehicle on level ground.
- Remove the oil filler cap ⑤ and drain plug ⑥, and drain oil completely.
- Tighten the drain plug to the specified torque.

Tightening torque	20 – 25 N·m ( 2.0 – 2.5 kg·m ) (14.5 – 18.0 lb·ft)
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- Supply a good quality SAE 20W/40 multi-grade motor oil. (Page 1-1)

Capacity	1 000 ml (1.06/0.88 US/Imp qt)
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- Check the oil level with the oil level screw ⑦. If the oil level is below the oil level hole add oil until it reaches the hole.



## DRIVE CHAIN

Inspect every time before riding.

Visually inspect the drive chain for the listed below possible defects. (Lift the rear wheels and place a jack or block under the swingarm, and turn the rear wheels slowly by hand, with the transmission in NEUTRAL).

### Inspect for:

- \* Loose pins
- \* Damaged rollers
- \* Dry or rusted links
- \* Twisted or seized links
- \* Excessive wear

If any defects are found, the drive chain must be replaced.

Check the drive chain for wear and adjust the chain tension as follows:

### CHECKING

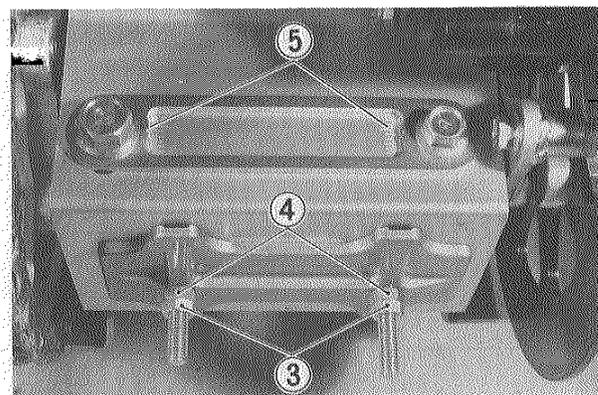
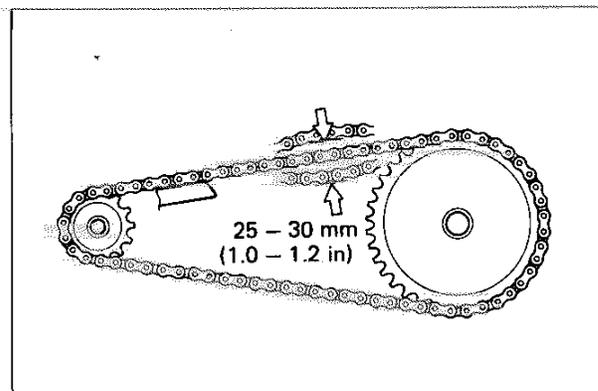
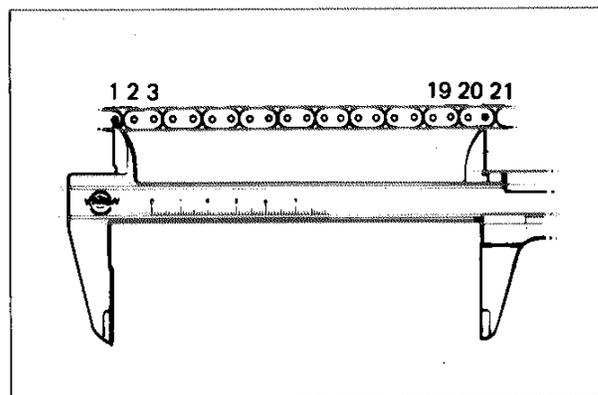
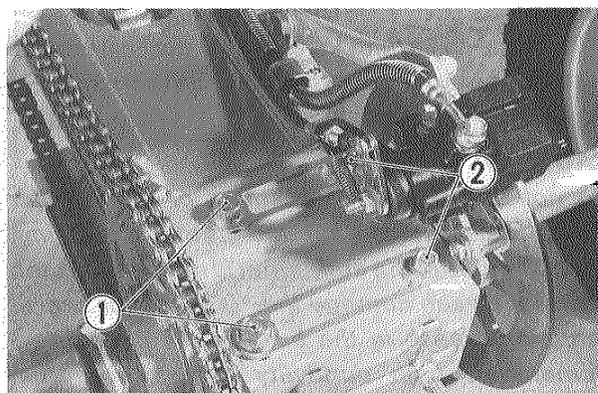
Place the vehicle on a level ground.

- Loosen the four bolts ①, ②.
- Loosen the chain adjusting lock nuts ③ and tension the drive chain fully by tightening the chain adjusting nuts ④.
- Count out 21 pins on the chain and measure the distance between 1st and 21 pins. If the distance exceeds 319.4 mm (12.57 in) the chain must be replaced.

### ADJUSTING

- Loosen the adjusting nuts ④ until the chain has 25 – 30 mm (1.0 – 1.2 in) of slack at the middle between the engine and rear sprockets as shown in the illustration.
- The mark ⑤ on the both chain adjusters must be at the same position on the scale to align the right and left wheels correctly.
- After adjusting the drive chain, tighten the four bolts ①, ② to the specified torque.
- Tighten the chain adjusting nuts ④ and lock nuts ③ securely.

Tightening torque	①	100 – 120 N·m (10.0 – 12.0 kg·m) (72.5 – 87.0 lb·ft)
	②	70 – 85 N·m (7.0 – 8.5 kg·m) (50.5 – 61.5 lb·ft)



## CLEANING AND LUBRICATING

- Wash the chain with kerosene. If the chain tends to rust faster, the intervals must be shortened.

### CAUTION:

*Do not use trichlene, gasoline or any similar fluids: These fluids have too great a dissolving power for this chain and, what is more important is that they can damage the "O" rings (or seals) confining grease in the bush to pin clearance. Remember, high durability comes from the presence of grease in that clearance.*

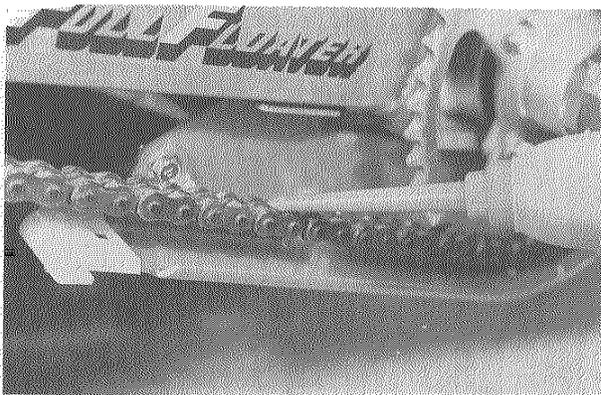
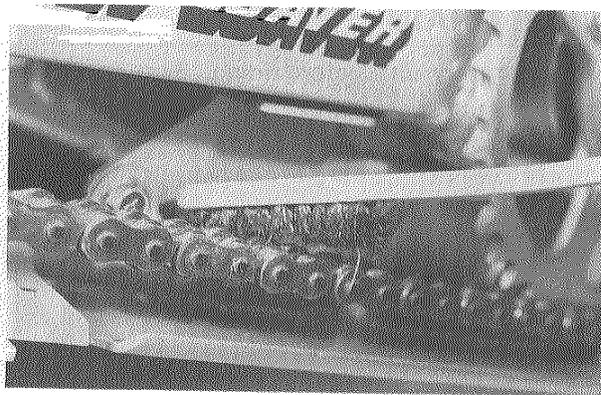
- After washing and drying the chain, oil it with a heavy-weight motor oil (hypoid gear oil).

### WARNING:

*Do not use any oil sold commercially as "drive chain oil". Such oil can damage the "O" rings (or seals).*

### CAUTION:

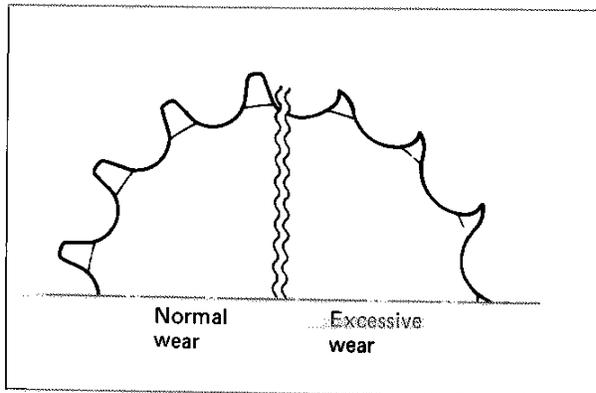
*The standard drive chain is TAKASAGO RK520-SMO-Z10. For the replacement of the chain SUZUKI recommends above-mentioned standard drive chain.*



## SPROCKETS(ENGINE SIDE/REAR SIDE)

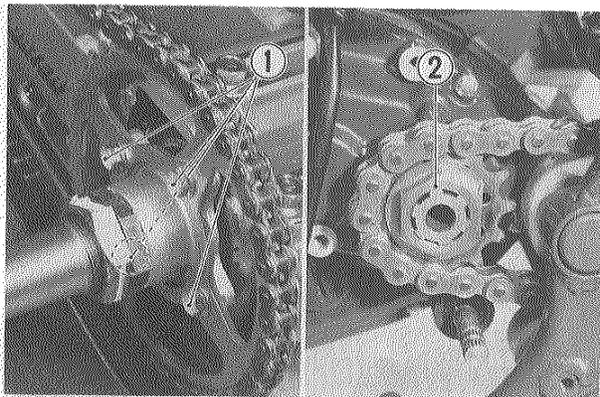
Inspect Initial 1 month (200 km, 100 miles) and  
Every 3 months (1 000 km, 600 miles).

Inspect each sprocket teeth for wear and damage. If they are worn as illustration, replace the sprockets and drive chain with new ones. (Page 3-6, 7-8)



- After replacing the rear and engine sprockets, tighten the rear sprocket mounting bolts ① and engine sprocket mounting nut ② to the specified torque.

Tightening torque	①	40 – 60 N·m ( 4.0 – 6.0 kg·m ) (29.0 – 43.5 lb-ft)
	②	80 – 100 N·m ( 8.0 – 10.0 kg·m ) (58.0 – 72.0 lb-ft)



## SPARK PLUG

**Inspect Every 3 months (1 000 km, 600 miles) and Replace Every 6 months (2 000 km, 1 200 miles).**

Remove the carbon deposits with a wire or pin and adjust the spark plug gap to the following specification, measuring with a thickness gauge.

### SPARK PLUG GAP

BR8EV For Canada model	0.5 – 0.6 mm (0.020 – 0.024 in)
B8EGV For other models	0.55 – 0.65 mm (0.022 – 0.026 in)

When removing carbon deposits, be sure to inspect the insulator of the plug. Proper heat range is indicated if the insulator is light brown in color. If the standard plug is apt to get wet (blackened by carbon), replace it with hot type. If apt to overheat (porcelain is whitish), replace it with cold type.

## ENGINE IDLE SPEED

**Inspect Initial 1 month (200 km, 100 miles) and Every 6 month (2 000 km, 1 000 miles).**

Adjust the engine idle speed in the following manner:

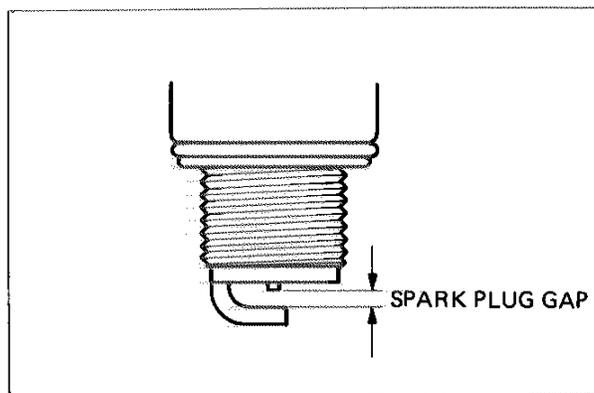
- Adjust the throttle cable play. (Page 2-7)
- Turn in the pilot air screw ① until it bottoms.

### NOTE:

*Be careful not to overtighten the screw.*

- Turn out the pilot air screw 1 1/2 turns.
- Start the engine and allow it to warm up.
- Connect a tachometer.
- Start up the engine and set its speed between 1 350 and 1 450 r/min by turning the throttle valve stop screw ②.
- Turn in or out the pilot air screw within 1/2 turn from the standard setting, and set it when the engine speed is at the highest possible level.
- After this adjustment, readjust the engine idle speed.
- Finally readjust the throttle cable play.

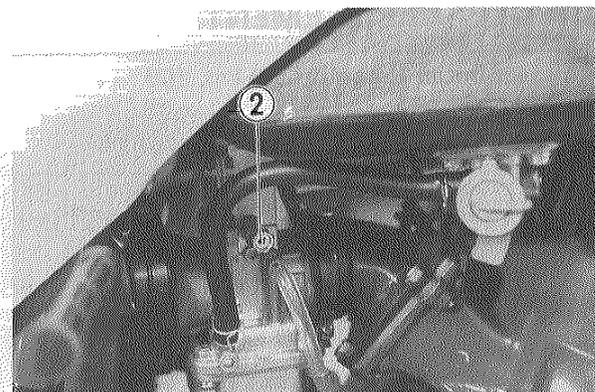
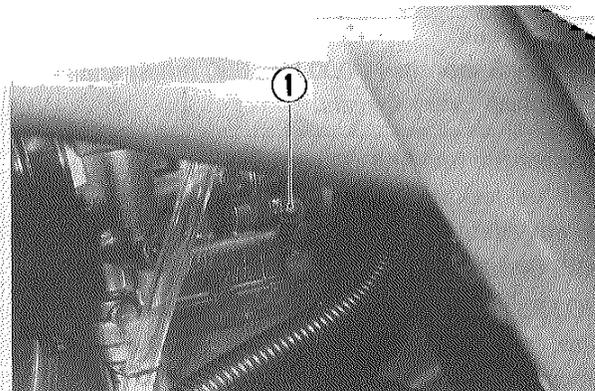
Engine idle speed	1 400 ± 50 r/min
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	For Canada model	For other models
	NGK	NGK
Hot type	BR7EV	B7EGV
Standard	BR8EV	B8EGV
Cold type	BR9EV	B9EGU

### NOTE:

*"R" type spark plug is installed for some specifications. An "R" type spark plug has a resistor located at the center electrode to prevent radio noise.*

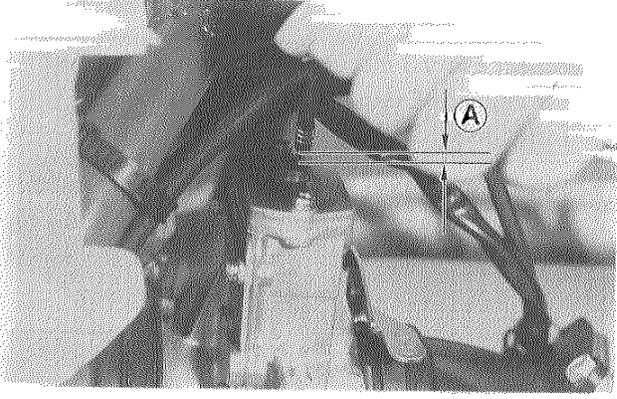


### THROTTLE CABLE

Adjust the throttle cable play (A) in the following manner.

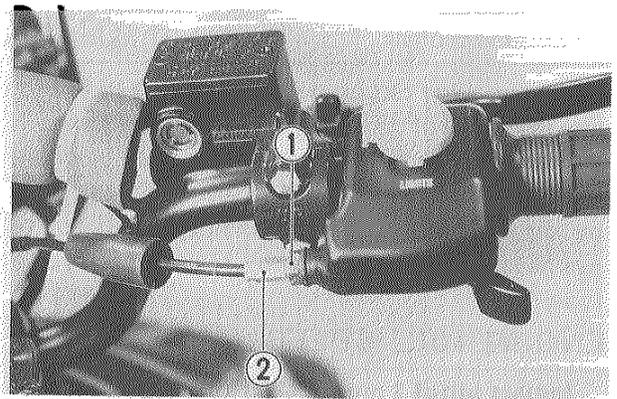
- Loosen the lock nut (1).
- Turn the adjuster (2) and adjust the cable play (A) to 0.5 – 1.0 mm.
- Tighten the lock nut (1).

Cable play (A)	0.5 – 1.0 mm (0.02 – 0.04 in)
----------------	----------------------------------



### OVERHAUL AND CLEANING

- Wash the carburetor and component parts in cleaning solvent after disassembly.
- Before reassembly, inspect the float height and needle valve. Adjust and replace parts when necessary. (Page 5-3)
- Then blow compressed air through all jets and passages to make sure they are not clogged. Do not use wire, etc. to clean them, as this can damage the parts.

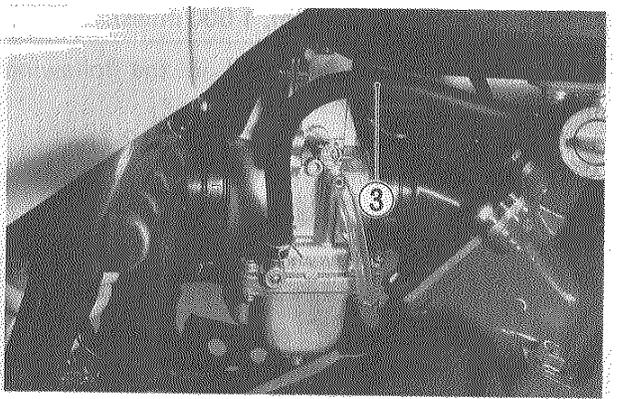


### FUEL LINE

Inspect Initial 1 month (200 km, 100 miles) and
Every 3 months (1 000 km, 600 miles) and
Replace Every 4 years.

Inspect the fuel line (3) and connections for damage and fuel leakage.  
If any defects are found, replace the fuel line with new one.

**NOTE:**  
Turn the fuel cock to "OFF" position when replacing.

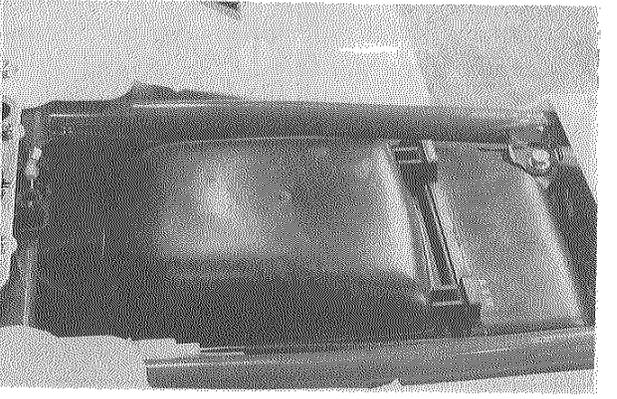


### AIR CLEANER ELEMENT

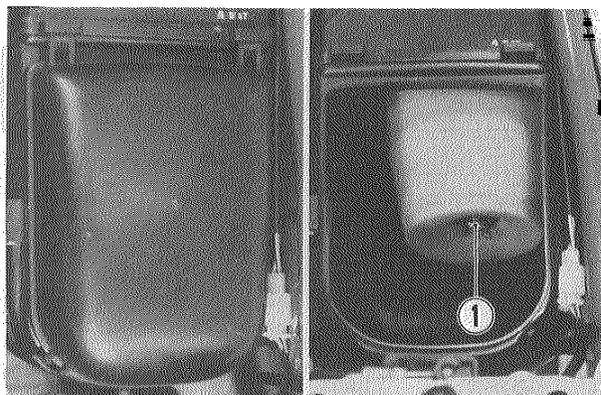
Inspect Initial 1 month (200 km, 100 miles) and
Every 3 months (1 000 km, 600 miles).

If the air cleaner is clogged with dust, intake resistance will be increased with a resultant decrease in power output and an increase in fuel consumption.

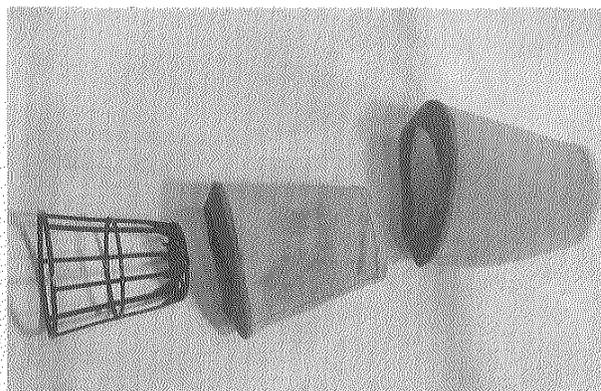
Check and clean the element in the following manner:



- Remove the seat.
- Remove the air cleaner case lid.
- Remove the retaining nut ① and take off the air cleaner element.



- Remove the outer and inner polyurethane foam elements from the element frame.
- Fill a washing pan of a proper size with non-flammable cleaning solvent. Immerse the elements in the cleaning solvent and wash them clean.
- Squeeze the cleaning solvent out of the washed elements by pressing them between the palms of both hands.
- Immerse the elements in motor oil, and squeeze the oil out of the elements leaving them slightly wet with oil.

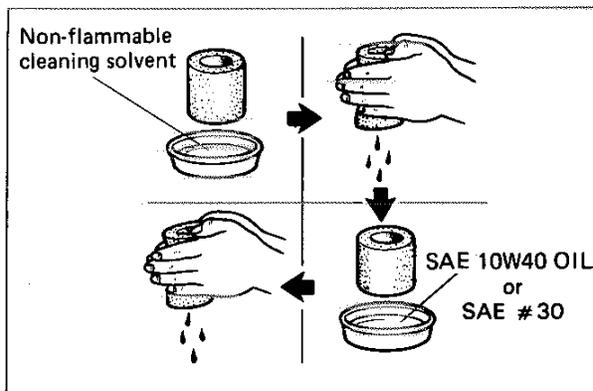


**NOTE:**

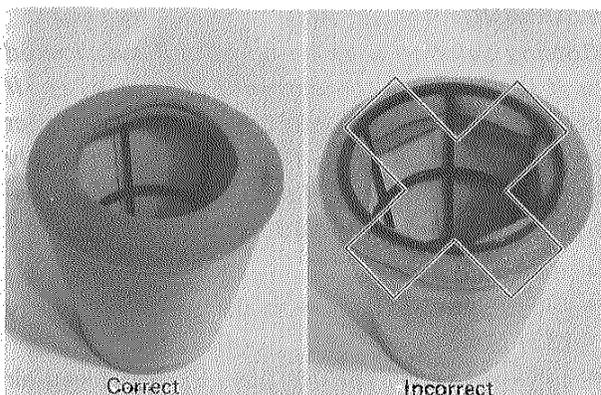
*Do not twist or wring the element because it will be torn or the individual cells of the element will be damaged.*

**CAUTION:**

*Inspect the element carefully for rips, torn seams and etc. If any damage is noted, replace the element.*



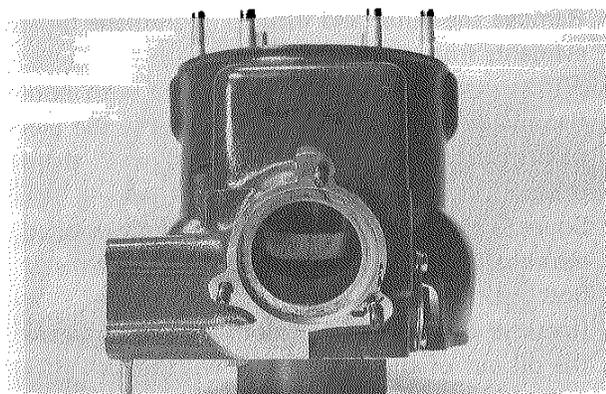
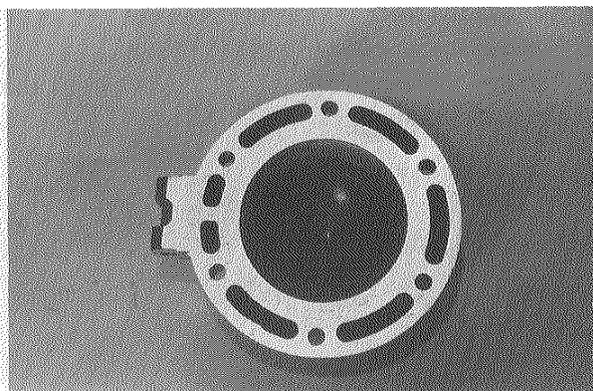
- Reinstall the cleaned elements in reverse order of the removal. Be sure that the elements are securely in position and are sealing properly.



## CYLINDER HEAD AND MUFFLER

Clean Every 6 months (2 000 km,  
1 200 miles).

- Carbon deposits in the combustion chamber of the cylinder head and at the piston crown will raise the compression ratio and may cause pre-ignition or overheating.
- Carbon deposited at the exhaust port of the cylinder will prevent the flow of exhaust gas, reducing the output. Remove carbon deposits periodically.
- For the removal refer to pages 3-3 and 3-10.



## COOLANT

Change Every 2 years.

- Place a clean container under the water pump and remove the drain plug ①.
- Remove the radiator cap and drain coolant completely.

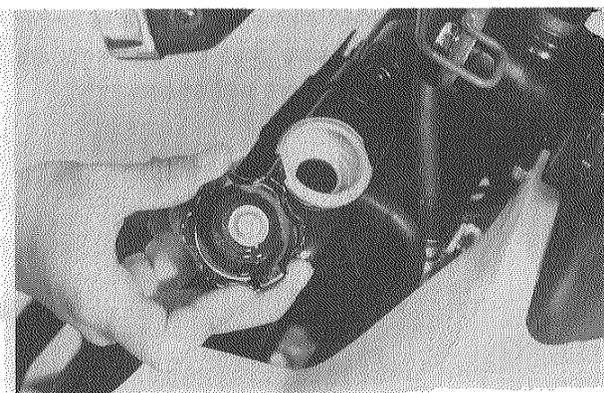
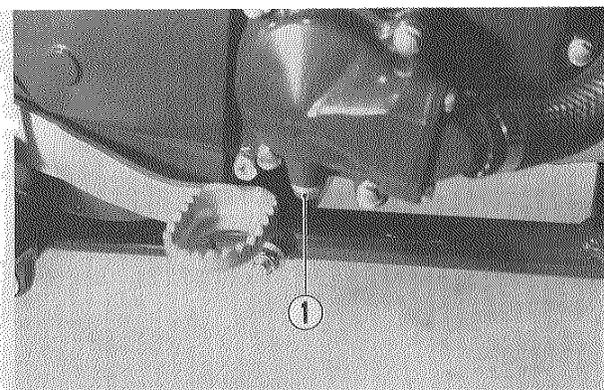
### WARNING:

*Do not open the radiator cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.*

### WARNING:

*Cooling solution may be harmful if swallowed or if it comes in contact with skin or eyes. If cooling solution gets into the eyes or in contact with the skin, it should be flushed thoroughly with plenty of water. If swallowed, induce vomiting and call physician immediately.*

- Replace the plug.
- Fill up the radiator with the specified density of coolant.
- Loosen the air bleeder bolt ② and bleed air completely.



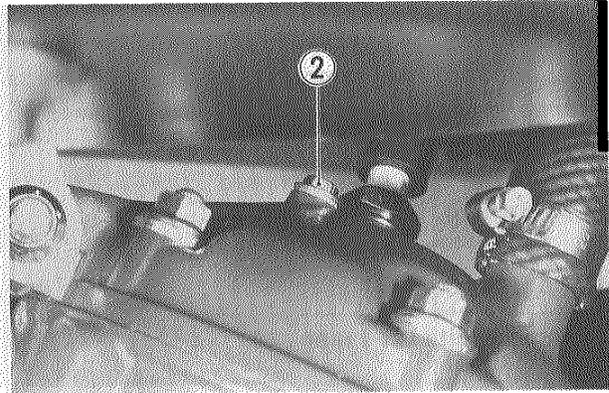
- Close the radiator cap securely and warm up the engine.
- After cooling down remove the cap again and fill up the radiator.

**NOTE:**

About 1 700 ml (1.80/1.50 US/Imp qt) of cooling solution may be needed when the radiator and reservoir tank are filled.

**CAUTION:**

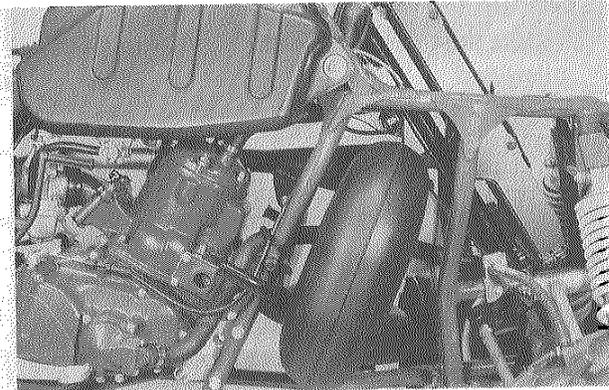
Repeat the above procedure several times and make sure that the radiator is filled with coolant up to the inlet hole.



**RADIATOR HOSE**

Inspect Initial 1 month (200 km, 100 miles) and  
 Every 3 months (1 000 km, 600 miles) and  
 Replace Every 2 years.

- For the removal refer to pages 4-3 and 8-11.



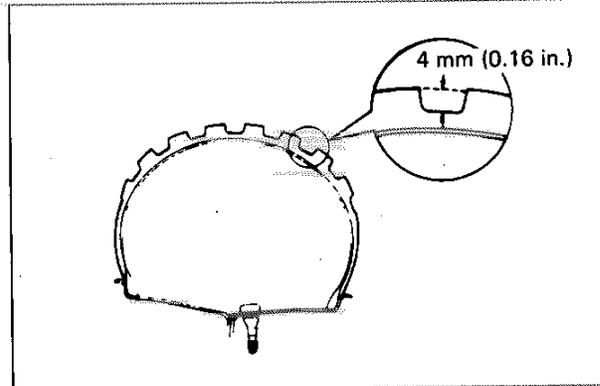
**TIRES**

Inspect every time before riding.

Inspect the tires for wear and damage. Check the tire tread depth as shown. Replace a badly worn or damaged tire. A tire with its tread worn down to the limit (in terms of tread depth) must be replaced.

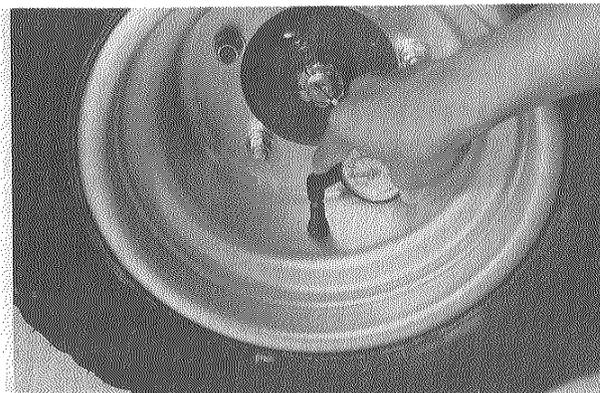
**Tread depth service limit**

Front	4.0 mm (0.16 in)
Rear	



Check the tire pressure, and examine the valve for evidence of air leakage.

LOAD CAPACITY	TIRE PRESSURE	
	FRONT	REAR
Up to 80 kg (Up to 175 lbs)	0.30 kg/cm <sup>2</sup> (30 kPa) (4.4 psi)	0.25 kg/cm <sup>2</sup> (25 kPa) (3.6 psi)
From 80 – 120 kg (From 175 – 265 lbs)	0.35 kg/cm <sup>2</sup> 35 kPa (5.1 psi)	0.35 kg/cm <sup>2</sup> 35 kPa (5.1 psi)



**CAUTION:**

To minimize the possibility of tire damage from overinflation, we strongly recommend that a manual type air pump be used rather than a high pressure tire filler as found in gas stations. When pumping air in, never exceed 70 kPa (0.7kg/cm<sup>2</sup>, 10 psi).

**BRAKES**

Inspect initial at 1 month (200 km, 100 miles) and  
Every 3 months (1 000 km, 600 miles)  
Change fluid Every 2 years.  
Inspect hose Every 3 month (1 000 km, 600 miles) and  
Replace Every 4 years.

**BRAKE FLUID LEVEL**

- Place the vehicle on level ground.
- Check the brake fluid level in the reservoir.
- If the level is lower than the "LOWER" limit line, replenish with brake fluid that meets the following specification.

Specification and classification	Front	DOT3 or DOT4
	Rear	DOT4

99000-23110	SUZUKI Brake fluid
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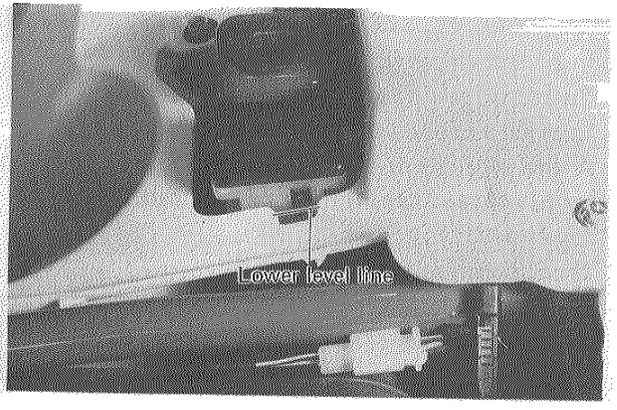
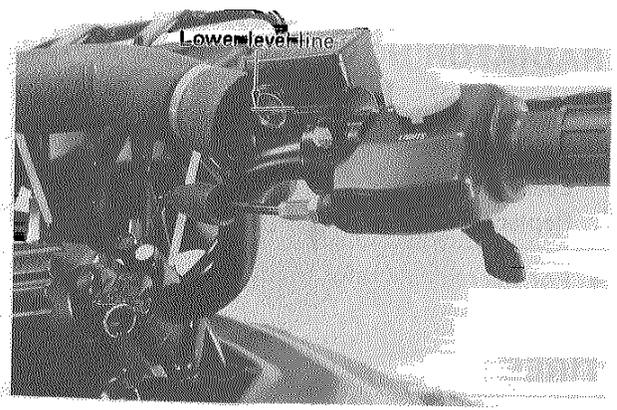
**WARNING:**

Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces.

Check the brake hoses and hose joints for cracks leakage before riding.

**WARNING:**

The brake system of this motorcycle is filled with a glycol-based brake fluid. Do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will be caused. Do not use any brake fluid taken from old, used or unsealed containers. Never re-use brake fluid left over from the last servicing or stored for long period.



## BRAKE PADS

### Front

- Remove the front wheel. (Page 7-1)
- Check the extent of front brake pad wear by a vernier calipers.
- If the wear exceeds the limit, replace the pads with new ones. (Page 7-12)

Service limit	1.0 mm (0.04 in)
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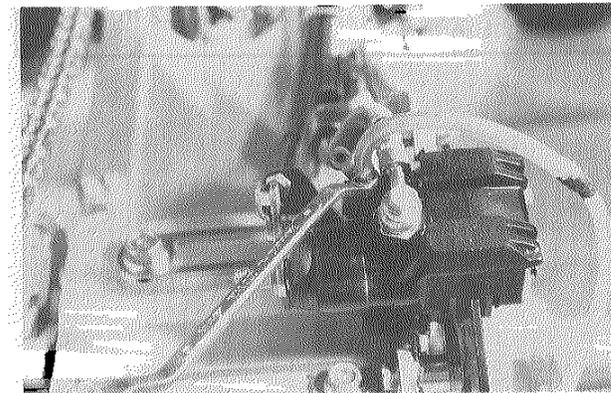
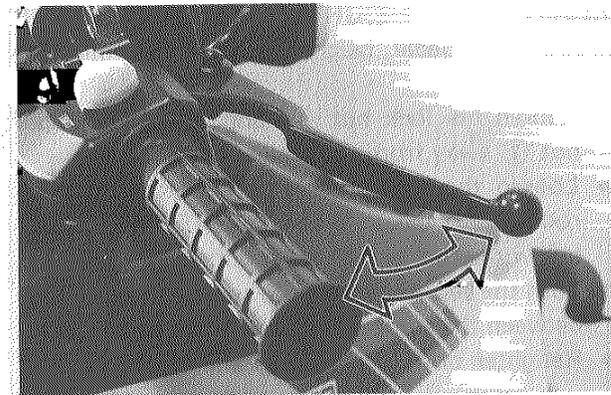
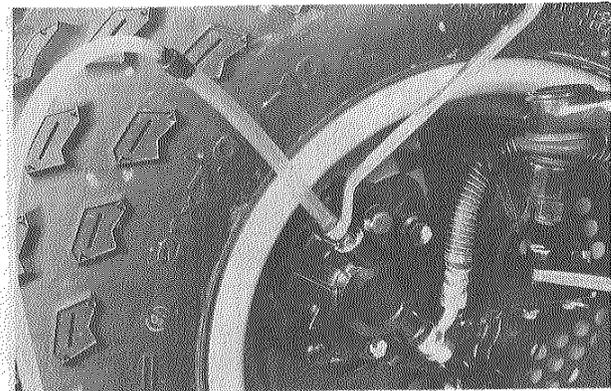
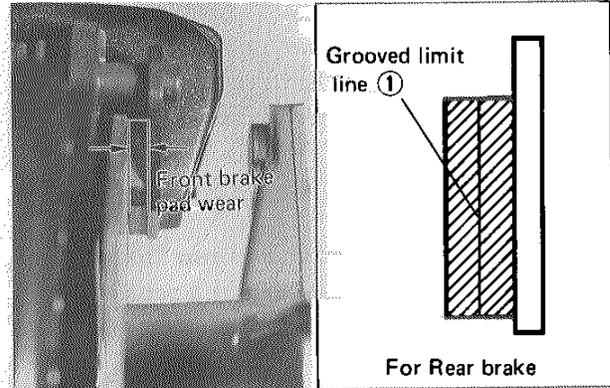
### Rear

- Check the extent of rear brake pad wear by observing the limit line ① marked on the pad.
- If the wear exceeds the limit, replace the pads with new ones. (Page 7-19)

## BLEEDING AIR FROM BRAKE FLUID CIRCUIT

Air trapped in the fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder and thus interferes with the full braking performance of the brake. The presence of air is indicated by "sponginess" of the brake lever and also by lack of braking force. Considering the danger to which such trapped air exposes the machine and rider, it is essential that, after remounting the brake and restoring the brake system to the normal condition, the brake fluid circuit be purged of air in the following manner:

- Fill up the master cylinder reservoir to the upper end of the inspection window. Replace the reservoir cap to prevent entry of dirt.
- Front brake: Bleed the air as following order.
  - ① Left caliper → ② Right caliper
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle containing a small amount of brake fluid. Make sure that the end of the pipe is kept submerged in the brake fluid. This will keep air from being drawn back in the brake system during the bleeding operation.
- Squeeze and release the brake lever/pedal several times in rapid succession, and squeeze the lever/pedal fully without releasing it. Loosen the bleeder valve by turning it a quarter of a turn so that the brake fluid runs into the receptacle; this will remove the tension of the brake lever causing it to touch the handlebar grip. Then, close the valve, pump and squeeze the lever, and open the valve. Repeat this process until the fluid flowing into the receptacle no longer contains air bubbles.



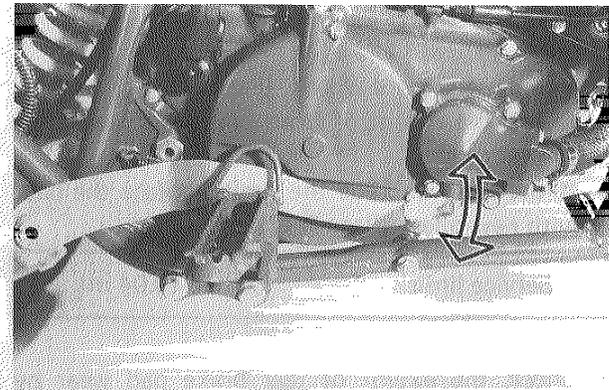
**NOTE:**

Replenish the brake fluid reservoir as necessary while bleeding the brake system.

Make sure that there is always some fluid visible in the reservoir.

**NOTE:**

Differences between front and rear are that the rear master cylinder is actuated by a pedal.



- Close the bleeder valve to the specified torque and disconnect the pipe. Fill the reservoir with brake fluid to the upper end of the inspection window.

**CAUTION:**

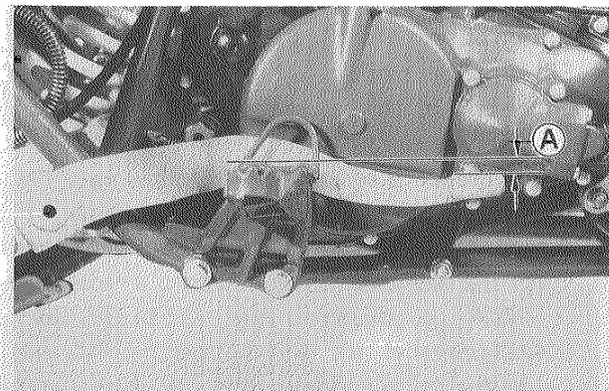
Handle the brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials, etc.

Bleeder valve tightening torque	7 – 9 N·m (0.7 – 0.9 kg·m) (5.1 – 6.5 lb·ft)
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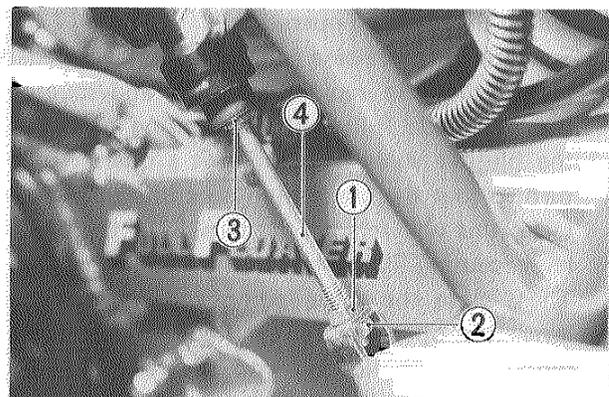
**BRAKE PEDAL HEIGHT**

Adjust the pedal height (A) in the following manner:

- Loosen the lock nut (1), and turn the stopper nut (2) away from the brake pedal.
- Loosen the lock nut (3), and rotate the push rod (4) to locate brake pedal 5 mm (0.2 in) below the top face of the footrest.
- Turn the stopper bolt (2) in so that the clearance between the stopper bolt and brake pedal is zero.
- Retighten both lock nuts (1) and (3).



Brake pedal height (A)	5 mm (0.2 in)
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### PARKING BRAKE

Place the vehicle on level ground. Lift the rear end of the vehicle and place a block under the swingarm.

Loosen the lock nuts ①.

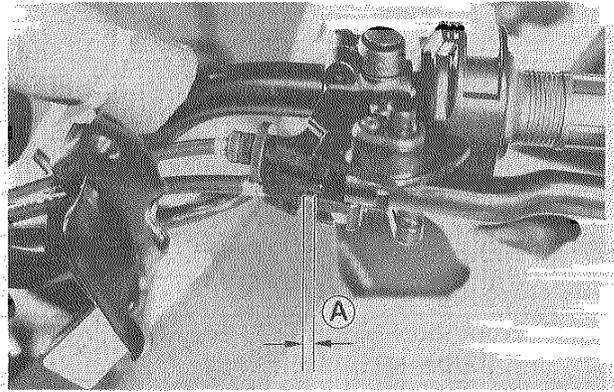
Relocate the adjuster ② to provide the play ③ of the cable is very little or none.

Tighten the lock nuts ①.

Loosen the lock nuts ③.

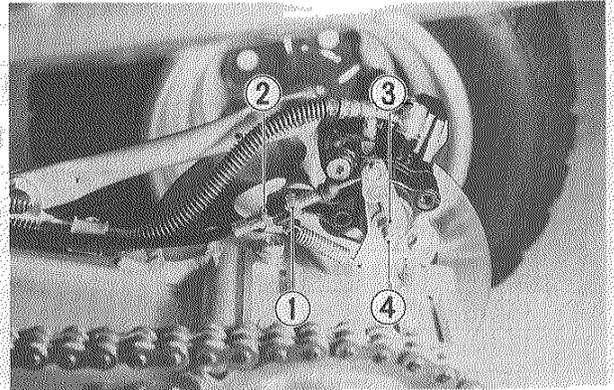
Tighten the adjuster ④ until the resistance is felt. Loosen the adjuster ¼ turn.

Secure the lock nuts ③ while holding the adjuster in position.



#### WARNING:

*After adjusting the parking brake, check that there is no dragging when turning the rear wheel with the wheel off the ground and that the wheel is locked securely when the parking brake is engaged.*



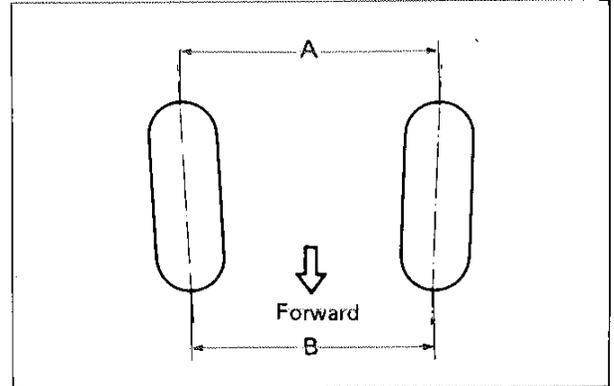
### STEERING

Inspect Initial 1 month (200 km, 100 miles) and  
Every 3 months (1 000 km, 600 miles).

Steering system should be adjusted properly for smooth manipulation of handlebar and safe running.

#### TOE-IN

- Place the vehicle on level ground.
- Make sure the tire pressure for both tires is the same and set to the proper specification.
- The front wheels are set in straightahead position.
- Mount 75 kg (165 lbs) load on the seat.
- Measure the distance (A and B in illustration) of front wheels with a toe-in gauge as shown in illustration and calculate the difference between A and B.



Toe-in ( with 75 kg (165 lbs) load )	36 ± 4 mm (1.4 ± 0.2 in)
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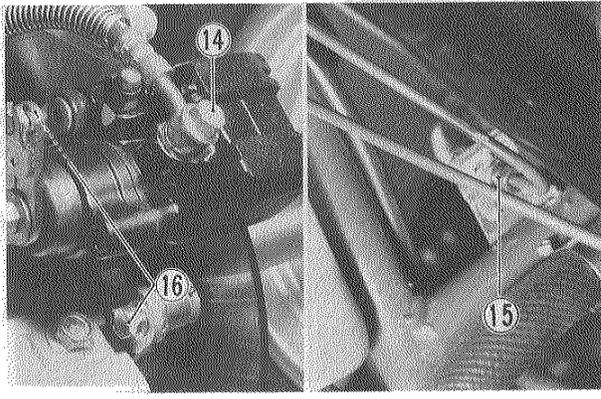
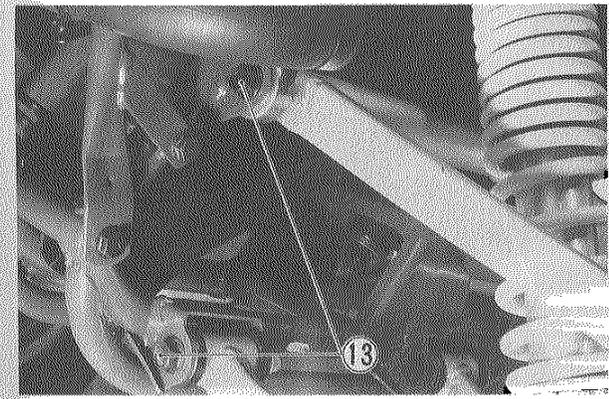
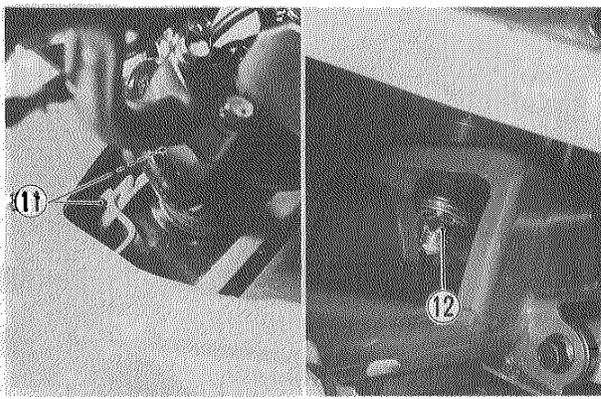
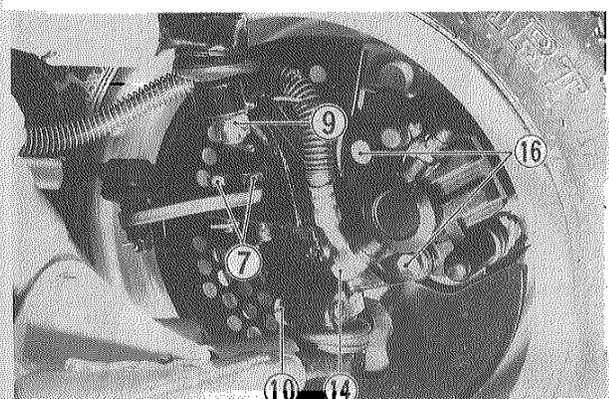
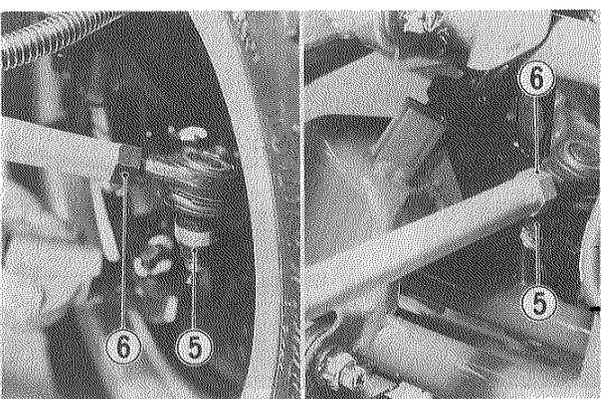
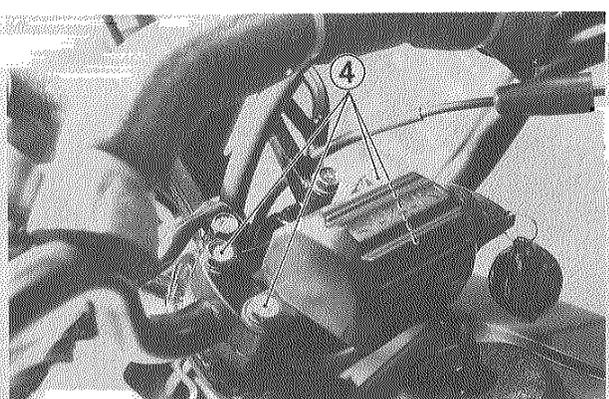
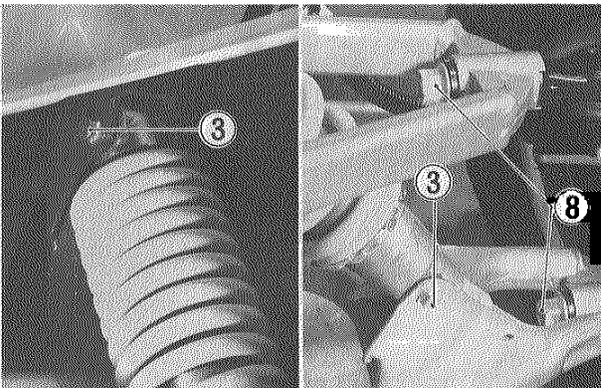
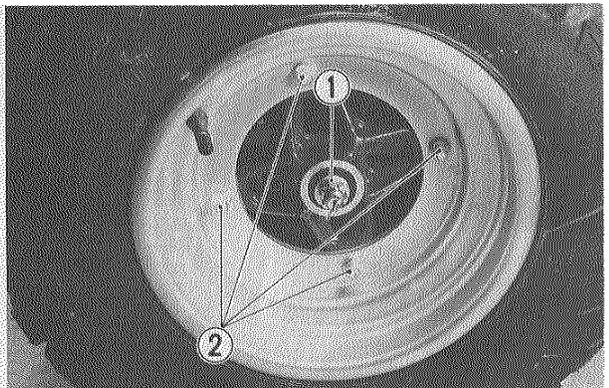
- If the toe-in is off the specification, bring it into the specified range. (Page 7-42).

## CHASSIS BOLTS AND NUTS

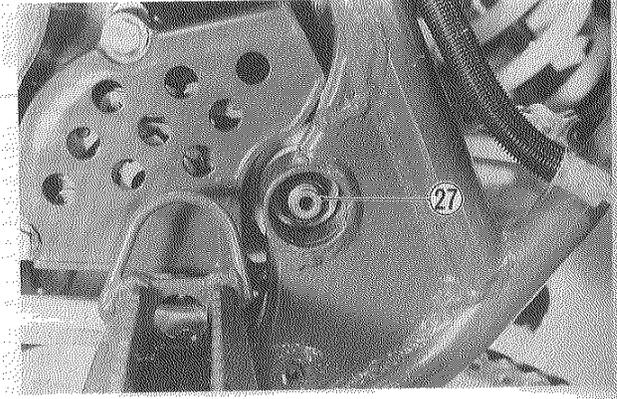
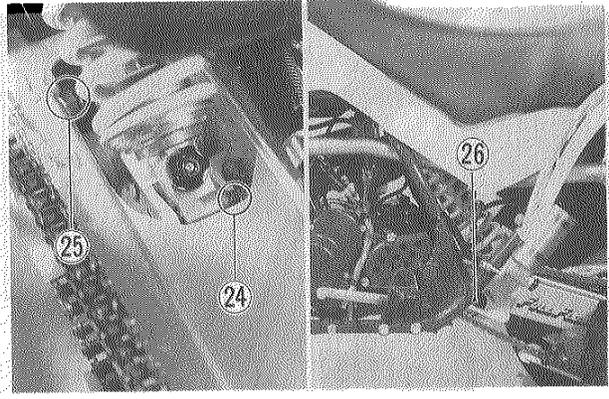
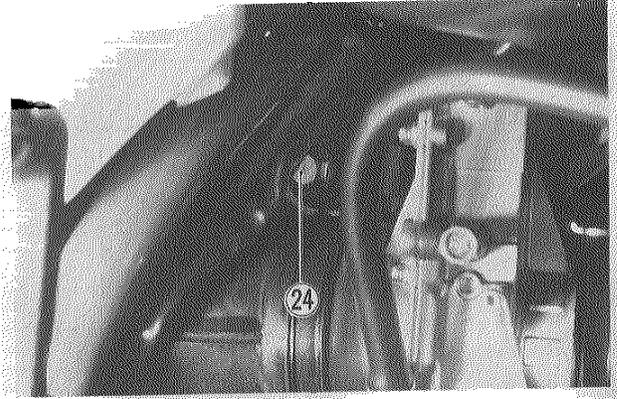
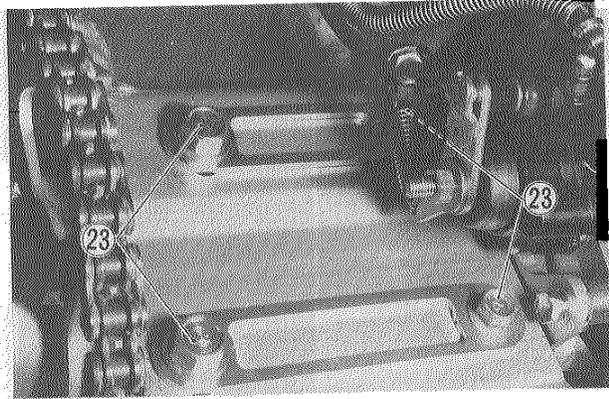
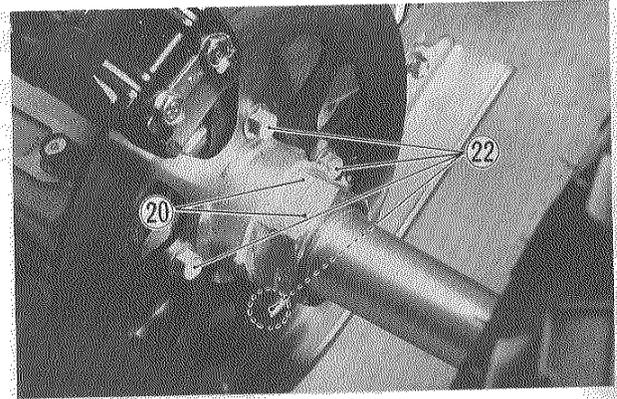
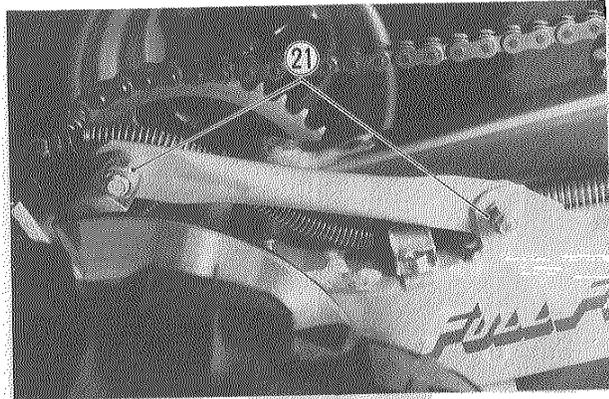
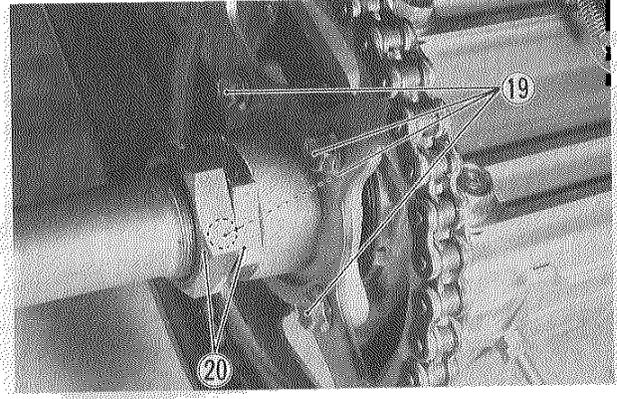
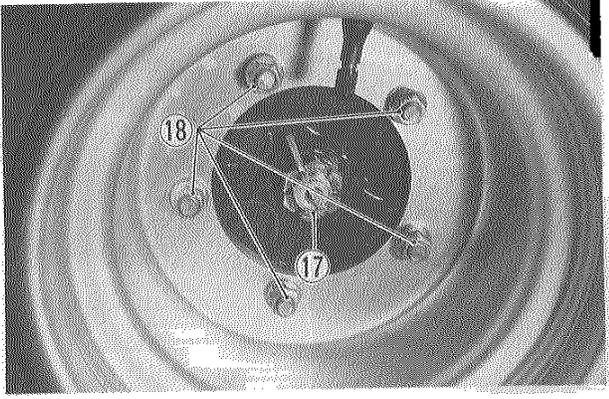
**Tighten Initially at 1 month (200 km, 100 miles) and Every 3 months (1000 km, 600 miles).**

The bolts and nuts listed below are important parts, and they must be in good condition for safety. They must be retightened, as necessary, to the specified torque with a torque wrench.

	ITEM	N·m	kg·m	lb·ft	
①	Front hub nut	50 – 80	5.0 – 8.0	36.0 – 58.0	
②	Front wheel set nut	20 – 31	2.0 – 3.1	14.5 – 22.5	
③	Front shock absorber bolt (Upper and Lower)	40 – 60	4.0 – 6.0	29.0 – 43.5	
④	Handlebar clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0	
⑤	Tie-rod end nut	22 – 35	2.2 – 3.5	16.0 – 25.5	
⑥	Tie-rod lock nut	35 – 55	3.5 – 5.5	25.5 – 40.0	
⑦	Steering knuckle arm bolt	42.5 – 47.5	4.25 – 4.75	30.5 – 34.5	
⑧	Wishbone arm end bolt (Upper and Lower)	120 – 170	12.0 – 17.0	87.0 – 123.0	
⑨	Upper wishbone arm end nut	35 – 50	3.5 – 5.0	25.5 – 36.0	
⑩	Lower wishbone arm end pinch bolt	40 – 60	4.0 – 6.0	29.0 – 43.5	
⑪	Steering shaft holder bolt	18 – 28	1.8 – 2.8	13.0 – 20.0	
⑫	Steering shaft lower nut	38 – 60	3.8 – 6.0	27.5 – 43.5	
⑬	Wishbone arm pivot bolt	50 – 70	5.0 – 7.0	36.0 – 50.5	
⑭	Brake hose union bolt (Front and Rear)	20 – 25	2.0 – 2.5	14.5 – 18.0	
⑮	Brake pipe flare nut	13 – 18	1.3 – 1.8	9.5 – 13.0	
⑯	Brake caliper mounting bolt (Front and Rear)	15 – 25	1.5 – 2.5	11.0 – 18.0	
⑰	Rear hub nut	85 – 115	8.5 – 11.5	61.5 – 83.0	
⑱	Rear wheel set nut	45 – 65	4.5 – 6.5	32.5 – 47.0	
⑲	Rear sprocket mounting bolt	40 – 60	4.0 – 6.0	29.0 – 43.5	
⑳	Rear axle lock nut	Sprocket side	160 – 200	16.0 – 20.0	115.5 – 144.5
		Disc side	15 – 25	1.5 – 2.5	11.0 – 18.0
㉑	Torque link bolt	Front	20 – 31	2.0 – 3.1	14.5 – 22.5
		Rear	44 – 66	4.4 – 6.6	32.0 – 47.5
㉒	Disc plate mounting bolt (Front and Rear)	15 – 25	1.5 – 2.5	11.0 – 18.0	
㉓	Rear axle housing set bolt	Right	70 – 85	7.0 – 8.5	50.5 – 61.5
		Left	100 – 120	10.0 – 12.0	72.5 – 87.0
㉔	Rear shock absorber bolt (Upper and Lower)	40 – 60	4.0 – 6.0	29.0 – 43.5	
㉕	Cushion lever pivot shaft nut	80 – 120	8.0 – 12.0	58.0 – 87.0	
㉖	Cushion lever center shaft	80 – 120	8.0 – 12.0	58.0 – 87.0	
㉗	Swingarm pivot nut	50 – 80	5.0 – 8.0	36.0 – 58.0	



2-17 PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES



## GENERAL LUBRICATIONS

Lubricate Every 3 months (1 000 km, 600 miles).

Proper lubrication is important for smooth operation and long life of each working part of your vehicle and also for safe riding. It is a good practice to lubricate the machine after along rough ride and after getting it wet in the rain or after washing it. Major lubrication points are indicated below.

- \* Lubricate exposed parts which are subject to rust with motor or grease.
- \* Before lubricating each part, clean off any rusty spots and wipe off any grease, oil, dirt or grime.

**WARNING:**

**Be careful not to apply too much grease to the brake disc. If grease gets on the discs, brake slip-page will result.**

- ☒ : Grease
- ☑ : Oil

