

PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

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PERIODIC MAINTENANCE SCHEDULE

IMPORTANT: The periodic maintenance intervals and service requirements have been established in accordance with EPA regulations. Following these instructions will ensure that the motorcycle will not exceed emission standards and it will also ensure the reliability and performance of the motorcycle.

NOTE:

More frequent servicing may be performed on motorcycles that are used under severe conditions however, it is not necessary for ensuring emission level compliance.

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy. Mileages are expressed in terms of kilometer, miles and time for your convenience.

PERIODIC MAINTENANCE CHART

INTERVALS: THIS INTERVAL SHOULD BE JUDGED BY ODOMETER READING OR MONTHS WHICHEVER COMES FIRST.	km	1000	6000	12000	18000	24000
	miles	600	4000	7500	11000	15000
	months	2	12	24	36	48
Battery (Specific gravity of electrolyte)	—	I	I	I	I	I
Air cleaner elements	Clean every 6000 km (4000 miles) and replace every 12000 km (7500 miles)					
Valve clearance	—	I	I	I	I	I
Spark plugs	—	I	R	I	I	R
Engine oil and oil filter	R	—	R	—	—	R
Fuel line (Vapor hose . . . California model only)	I	I	I	I	I	I
	Replace every four years					
Carburetors (Engine idling speed)	I	I	I	I	I	I
Radiator hoses	I	—	I	—	I	I
	Replace every four years					
Coolant	Replace every two years					
Clutch	I	I	I	I	I	I
Final gear oil	R	—	I	—	—	I
Brake hoses	I	I	I	I	I	I
	Replace every four years					
Brake fluid	I	I	I	I	I	I
	Replace every two years					
Brakes	I	I	I	I	I	I
Tires	I	I	I	I	I	I
Steering	I	I	I	I	I	I
Front forks	I	—	I	—	—	I
Rear shock absorbers	I	—	I	—	—	I
Chassis bolts and nuts	T	T	T	T	T	T

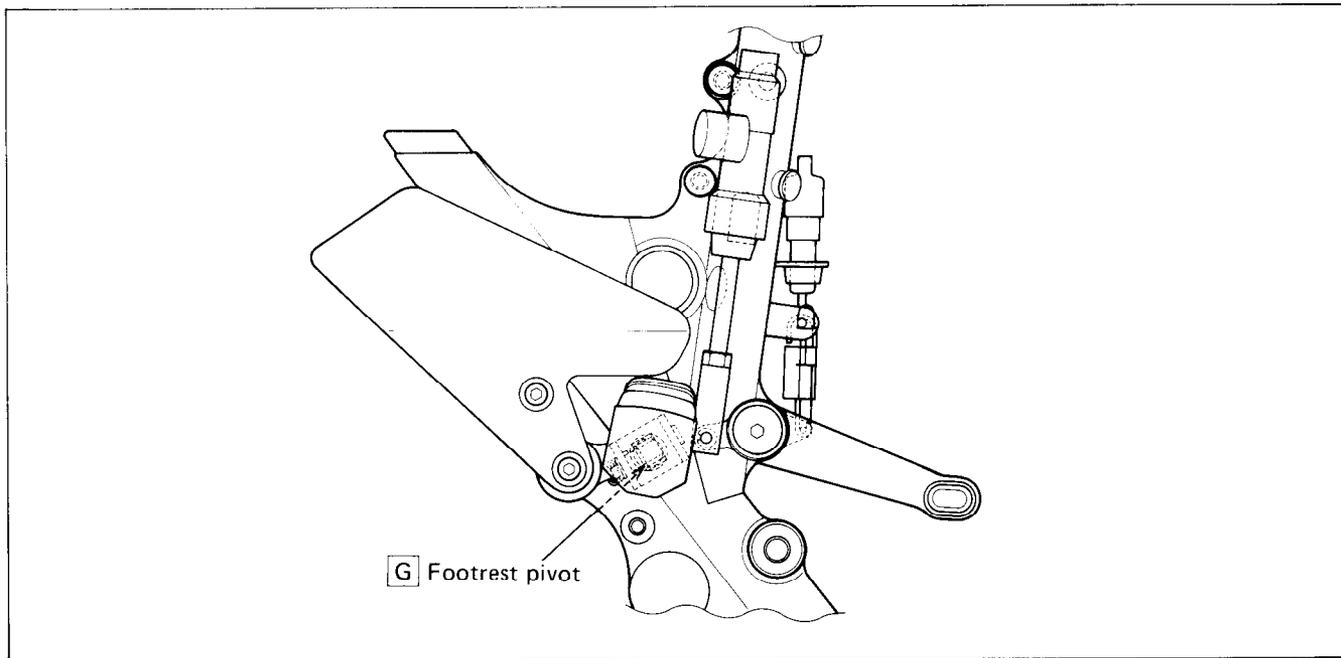
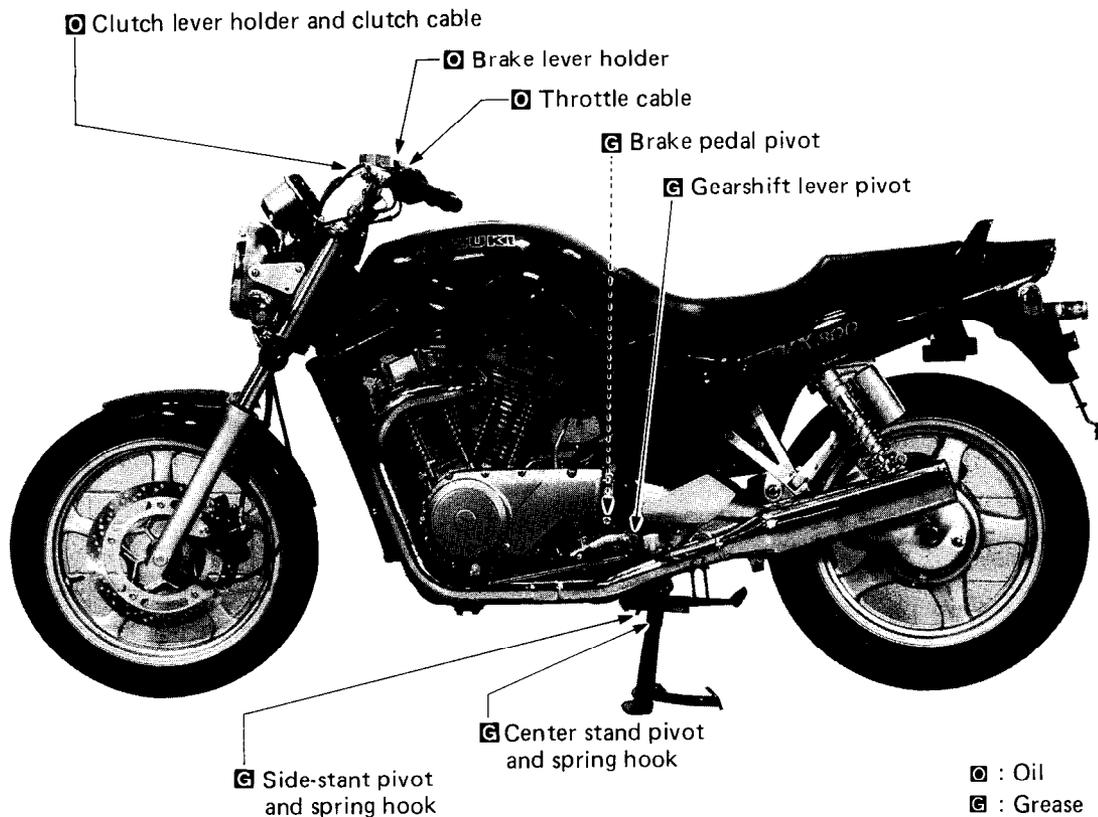
NOTE:

R = Replace, T = Tighten,

I = Inspect and adjust, clean, lubricate or replace as necessary

LUBRICATION POINTS

Proper lubrication is important for smooth operation and long life of each working part of the motorcycle. Major lubrication points are indicated below.



NOTE:

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

MAINTENANCE AND TUNE-UP PROCEDURES

This section describes the servicing procedures for each item of the Periodic Maintenance requirements.

BATTERY

Inspect every 6000 km (4000 miles or 12 months).

- Remove the seat.
- Remove the battery \ominus and then \oplus lead wires from the battery terminals.
- Remove the battery from the battery holder.
- Check the electrolyte level and specific gravity. Add distilled water, as necessary, to keep the surface of the electrolyte above the MIN. level line but not above the MAX. level line.
- For checking specific gravity, use a hydrometer to determine the charged condition.

09900-28403 : Hydrometer

Standard specific gravity : 1.28 at 20°C (68°F)

An S.G. reading of 1.22 (at 20°C) or under means that the battery needs recharging. Remove the battery from the machine and charge it with a battery charger.

CAUTION:

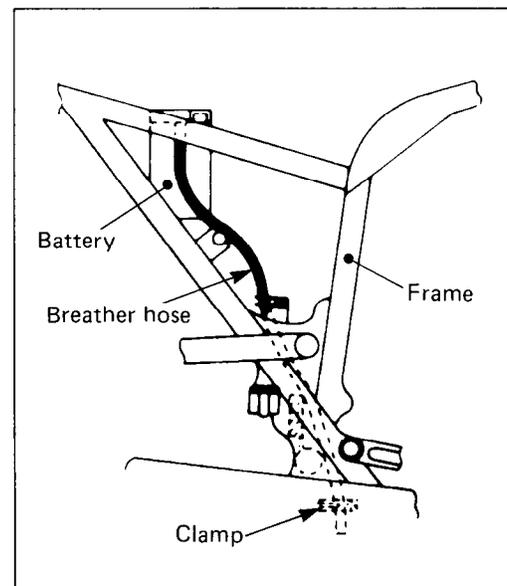
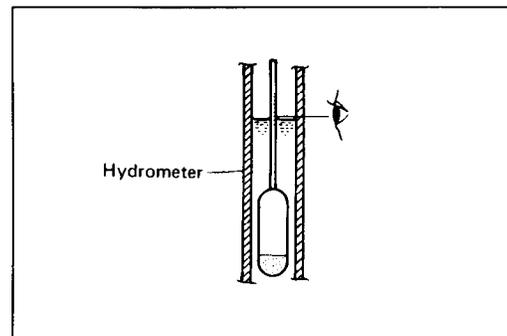
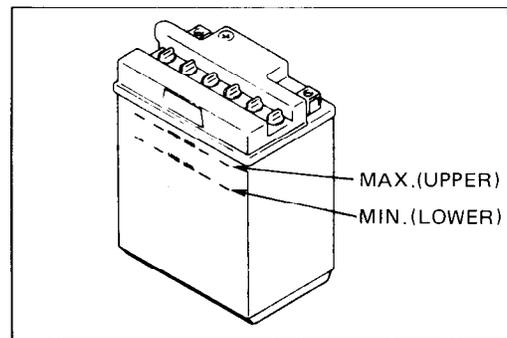
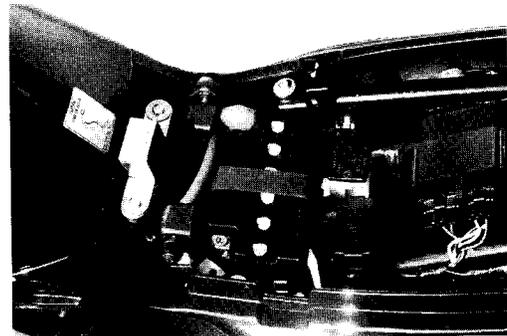
Never charge a battery while still in the machine as damage may result to the battery or regulator/rectifier.

- Charge at a maximum of 1.6 amps.
- To install the battery, reverse the procedure described above.

CAUTION:

When installing the battery lead wires, fix the \oplus lead first and \ominus lead last.

- Make sure that the breather hose is tightly secured and undamaged, and is routed as shown in the figure.



AIR CLEANERS

Clean every 6000 km (4000 miles) and replace every 12000 km (7500 miles).

- Remove the seat, frame covers and fuel tank.
- Remove the right and left side frame head covers (Photo A), then remove the right and left air cleaner mounting screws (Photo B).
- Disconnect the air cleaner drain hose from the front side air cleaner case (Photo C).
- Loosen the two clamp screws and disconnect the joint hose from the carburetor, then rise up the front side air cleaner assembly (Photo D).
- Remove the four screws and pull out the front side air cleaner element (Photo E).
- Loosen the four screws and pull out the rear side air cleaner element (Photo F).
- Carefully use an air hose to blow the dust from the air cleaner elements (Photo G).

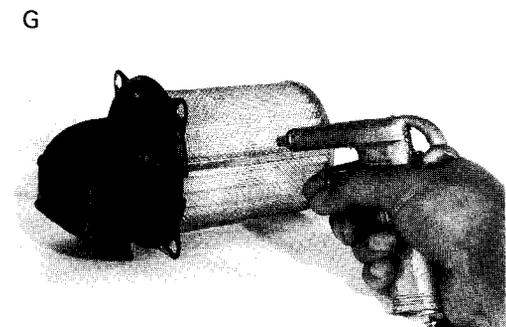
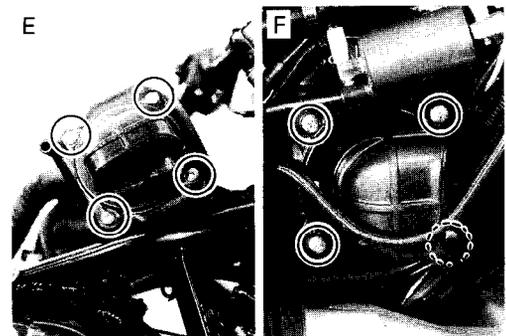
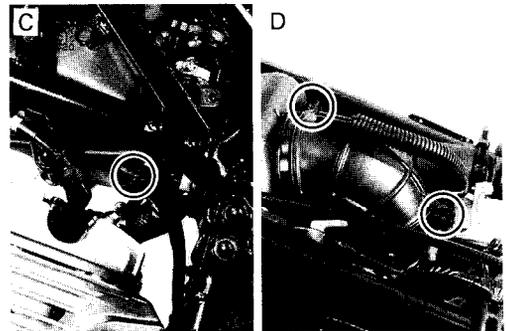
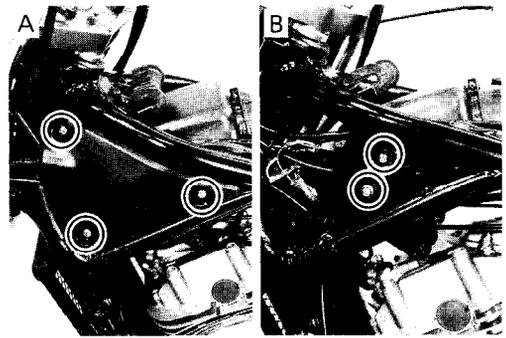
CAUTION:

Always apply an air pressure on the outside of the air cleaner elements. If air pressure is applied on the inside, dirt will be forced into the pores of the cleaner element thus restricting air flow through the cleaner element.

- Reinstall the cleaned elements or new ones in reverse order of removal.

CAUTION:

If driving under dusty conditions, clean the air cleaner elements more frequently. The surest way to accelerate engine wear is to use the engine without the elements or to use ruptured elements. Make sure that the air cleaners are in good condition at all times. Life of the engine depends largely on these components!



VALVE CLEARANCE

Inspect every 6000 km (4000 miles or 12 months).

Valve clearance also must be checked and adjusted when:

- (1) the valve mechanism is serviced, and
- (2) the camshaft are disturbed by removing them for servicing.

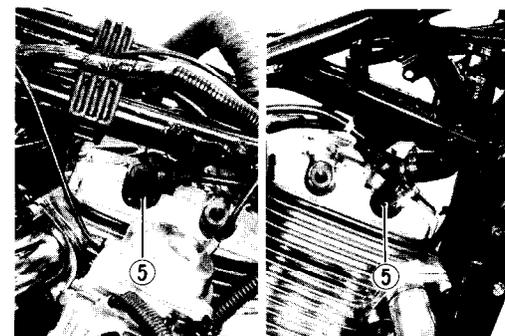
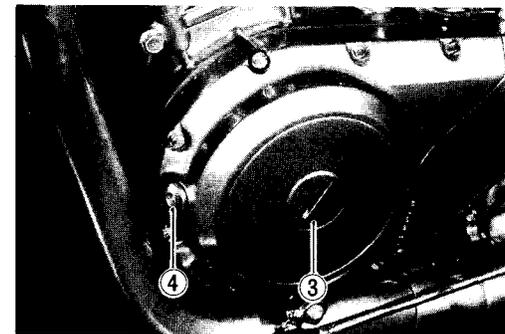
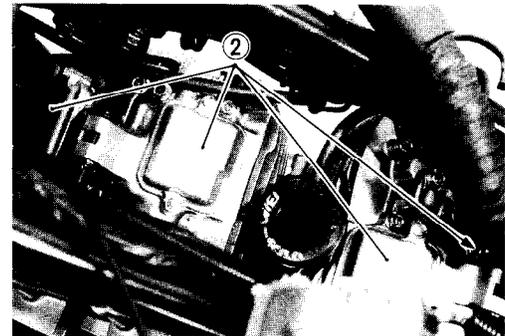
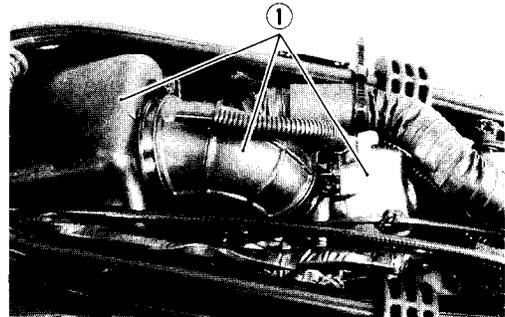
Excessive valve clearance results in valve noise and insufficient valve clearance results in valve damage and reduced power. Check and adjust the clearance to the specification.

Valve clearance (when cold) : IN. & EX. 0.08 – 0.13 mm
(0.003 – 0.005 in)

NOTE:

- * The clearance specification is for COLD state.
- * Both intake and exhaust valves must be checked and adjusted when the piston is at Top Dead Center (TDC) of the compression stroke.

- Remove the seat and the fuel tank.
- Remove the following parts.
 - ① Front side air cleaner, carburetor and outlet tube
 - ② Valve inspection caps
 - ③ Generator cover plug
 - ④ Timing inspection plug
 - ⑤ Spark plugs



SPARK PLUGS

Inspect every 6000 km (4000 miles or 12 months) and replace every 12000 km (7500 miles or 24 months).

- Remove the spark plugs with spark plug wrench.

The plug gap should be 0.8 – 0.9 mm (0.031 – 0.035 in).

The gap is correctly adjusted by using the thickness gauge.

When carbon is deposited on the spark plug, remove the carbon with a spark plug cleaning machine or by carefully using a tool with a pointed end. If the electrodes are extremely worn or burnt, replace the plug. Also replace the plug if it has a broken insulator, damaged thread, etc.

09900-20804 : Thickness gauge

09930-13210 : Socket wrench

09930-14530 : Universal joint

09914-24510 : T-handle

NGK DPR8EA-9 or NIPPON DENSO X24EPR-U9 as listed in the table below should be used as the standard plug. However the heat range of the plug should be selected to meet the requirements of speed, actual road, fuel, etc. If the plugs need to be replaced, it is recommended that ones having a heat range closest to the standard plug in the table be selected. When remove the plugs, inspect the insulators. Proper heat range would be indicated if all insulators were light brown in color. If they are blackened by carbon, they should be replaced with hotter type ones. If they are baked white, they should be replaced with colder type ones. Colder type plugs are designed for high heat range and sufficiently cooled to prevent over-heating.

Recommended spark plug

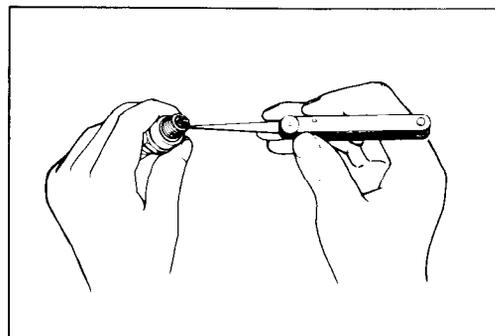
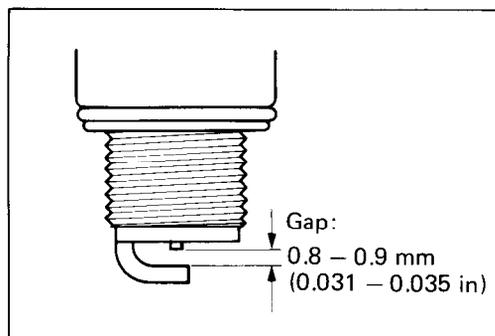
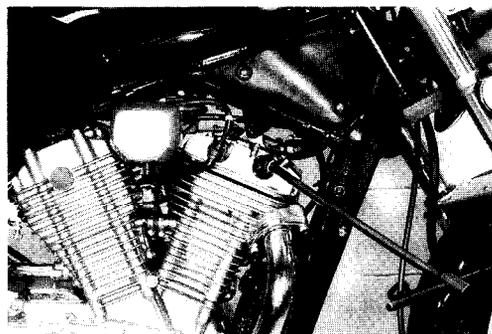
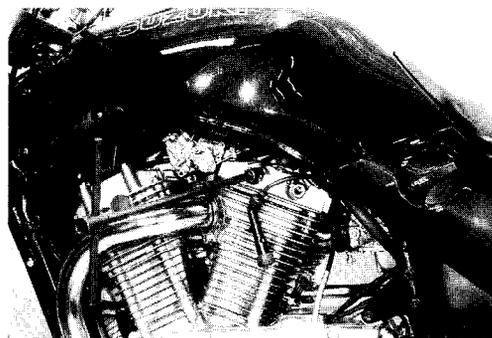
	NGK	NIPPON DENSO
Hotter type	DPR7EA-9	X22EPR-U9
Standard	DPR8EA-9	X24EPR-U9
Colder plug	DPR9EA-9	X27EPR-U9

CAUTION:

Confirm the thread size and reach when replacing the plug. If the reach is too short, carbon will be deposited on the screw portion of the plug hole and engine damage may result.

NOTE:

"R" type spark plug has a resistor located at the center electrode to prevent radio noise.



ENGINE OIL AND OIL FILTER

Replace at initial 1000 km (600 miles or 2 months) and every 12000 km (7500 miles or 24 months).

Oil should be changed while the engine is hot. Oil filter replacement at the above intervals should be done together with engine oil change.

- Place the motorcycle on the center stand.
- Place an oil pan below the engine and drain oil by removing the drain plug ① and filler cap ②.
- Remove the oil filter ③ by using the oil filter wrench (Special tool A).

09915-40611 : Oil filter wrench

- Apply engine oil lightly to the gasket of the new filter before installation.
- Install the new filter turning it by hand until you feel that the filter gasket contacts the mounting surface. Then tighten it 2 turns using the oil filter wrench.

NOTE:

To properly tighten the filter, use the special tool. Never tighten the filter by hand.

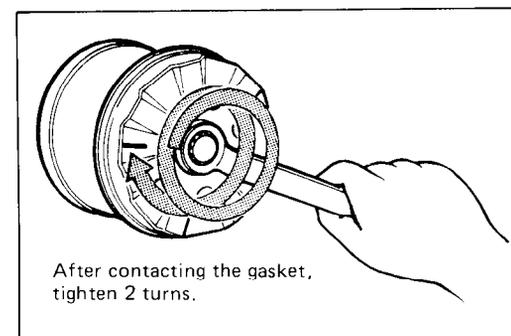
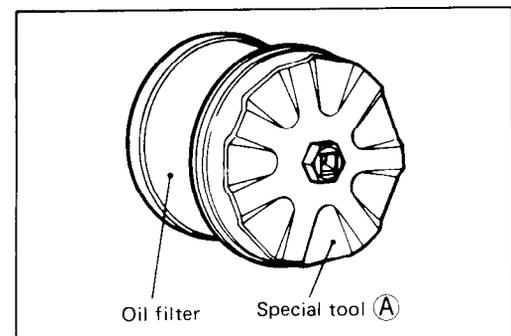
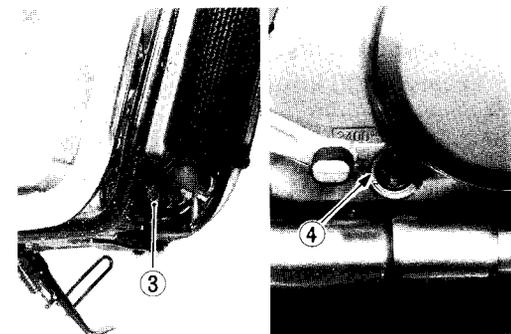
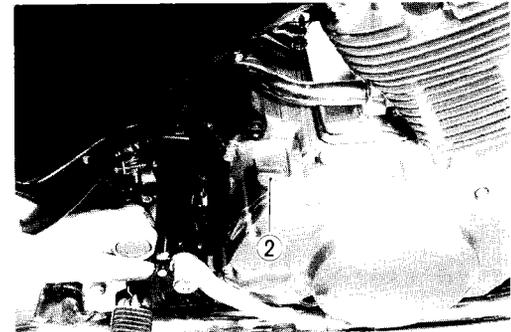
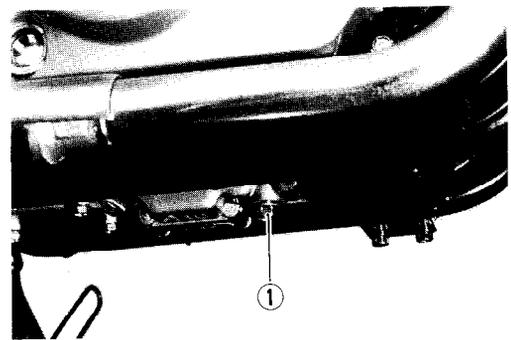
- Fit the drain plug ① securely, and add fresh oil through the oil filler. The engine will hold about 2.8 L (3.0/2.5 US/Imp. qt) of oil. Use an API classification of SE or SF oil with SAE 10W/40 viscosity.
- Refit the filler cap ②.
- Start up the engine and allow it to run for several minutes at idling speed.
- Turn off the engine and wait about one minute, then check the oil level through the inspection window ④. If the level is below the lower line, add oil to the upper line.

NECESSARY AMOUNT OF ENGINE OIL

Oil change: 2.4 L (2.5/2.1 US/Imp. qt)
 Filter change: 2.8 L (3.0/2.5 US/Imp. qt)
 Engine overhaul: 3.3 L (3.5/2.9 US/Imp. qt)

CAUTION:

Use **SUZUKI MOTORCYCLE GENUINE OIL FILTER** only, since the other maker's genuine filters and after-market parts may differ in thread specifications (thread diameter and pitch), filtering performance and durability, which could cause engine damage or oil leaks. Suzuki automobile genuine oil filter is also not usable for the motorcycles.



FUEL LINES

Inspect at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months), then replace every 4 years.

Inspect the fuel lines for damage and fuel leakage. If any defects are found, the fuel line must be replaced. Refer to page 9-12.

VAPOR HOSE California model only

Inspect at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months), then replace every 4 years.



CARBURETORS

ENGINE IDLING SPEED

Inspect at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months).

NOTE:

The engine idling speed should be adjusted when the engine is hot.

- Connect a tachometer.
- Start up the engine and set its speed at idle speed 1000 and 1200 r/min by turning throttle stop screw ①.

Engine idle speed : 1100 ± 100 r/min for E-01 and others
1200 ± 50 r/min for E-03, 33
1200 \pm $\frac{100}{50}$ r/min for E-18

THROTTLE CABLE PLAY

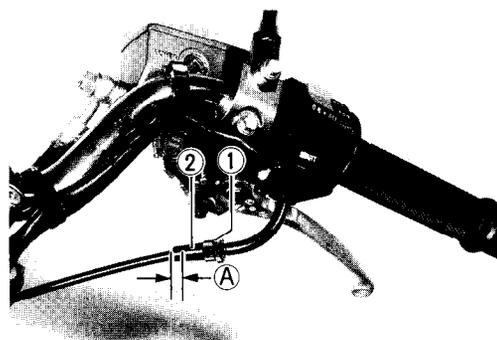
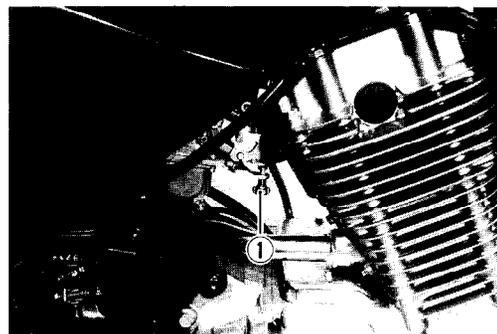
There should be 0.5 – 1.0 mm (0.02 – 0.04 in) play ① on the throttle cable. Adjust the throttle cable play with the following procedures.

- Loosen the lock nut ① and turn the adjuster ② in or out until the specified play is obtained.
- Tighten the lock nut ① while holding the adjuster.

Throttle cable play ① : 0.5 – 1.0 mm (0.02 – 0.04 in)

WARNING:

After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.



COOLING SYSTEM

Inspect at initial 1000 km (600 miles or 2 months) and every 12000 km (7500 miles or 24 months).

Change coolant every 2 years.

Replace radiator hoses every 4 years.

- Remove the right frame head cover.
- Remove the radiator cap ① and drain plug ②.

WARNING:

- * Do not open the radiator cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.
- * Coolant may be harmful if swallowed or if it comes in contact with skin or eyes. If coolant gets into the eyes or in contact with the skin, flush thoroughly with plenty of water. If swallowed, induce vomiting and call physician immediately!

- Flush the radiator with fresh water if necessary.
- Tighten the drain plug ② securely and remove the air bleeder plug ③.
- Pour the specified coolant up to the radiator inlet and tighten the air bleeder plug ③.

Tightening torque

Coolant drain plug : 10 – 12 N·m
(1.0 – 1.2 kg-m, 7.0 – 8.5 lb-ft)

Air bleeder plug : 10 – 12 N·m
(1.0 – 1.2 kg-m, 7.0 – 8.5 lb-ft)

NOTE:

For coolant information, refer to page 5-2.

- Close the radiator cap ① securely.
- After warming up and cooling down the engine, add the specified coolant up to the radiator inlet.

CAUTION:

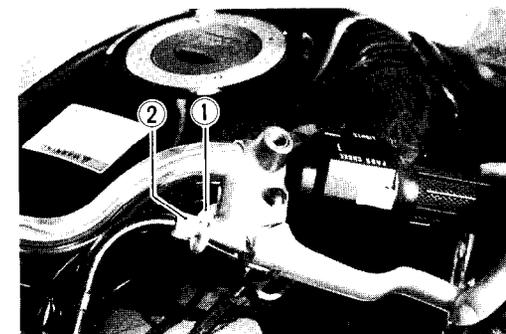
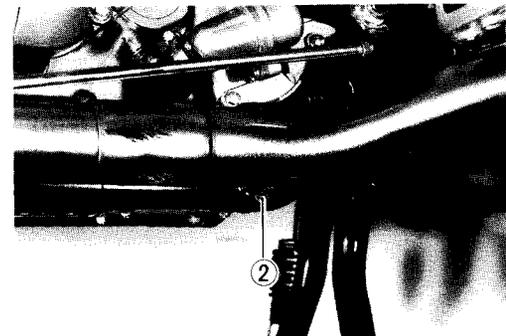
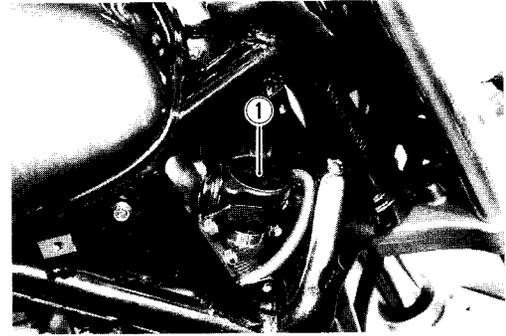
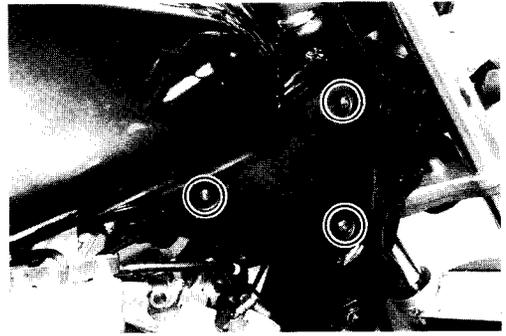
Repeat above procedure several times and make sure that the radiator is filled with coolant up to the inlet hole.

Coolant capacity : 1700 ml (1.8/1.5 US/Imp. qt)

CLUTCH

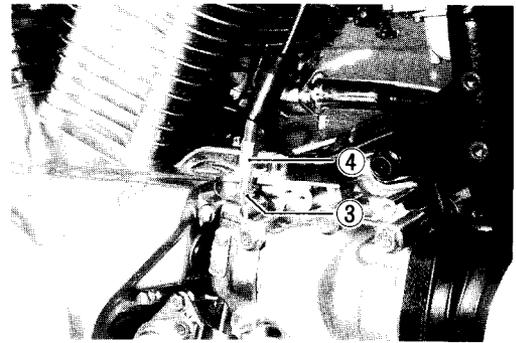
Inspect at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months).

- Loosen the lock nut ① and turn in the adjuster ② all the way into the clutch lever holder.

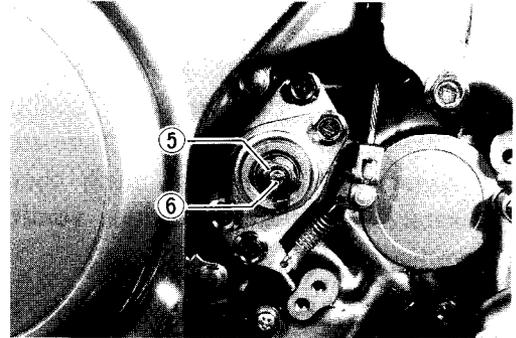


2-11 PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

- Remove the secondary bevel gear case cover.
- Loosen the lock nut ③ and, if required, turn the adjuster ④ in place to introduces some play in the clutch lever.



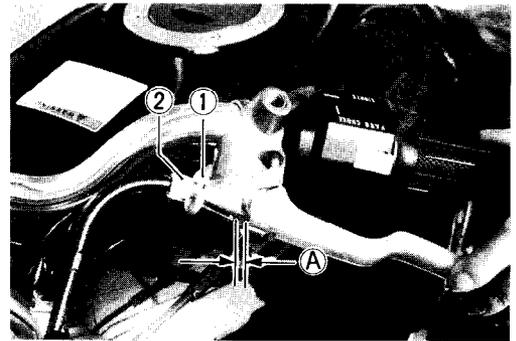
- Loosen the lock nut ⑤ and back the adjusting screw ⑥ out two or three rotations.
- Slowly turn the adjusting screw in until it begins to meet high resistance to turning. From this position, back it out 1/4 – 1/2 rotation and secure the lock nut ⑤.



- Reset the adjuster ④ to provide a clutch lever play ① of 4 mm (0.16 in), and tighten the lock nut ③.

Clutch cable play ① : 4 mm (0.16 in)

- Tighten the lock nut ① to secure the adjuster ②.



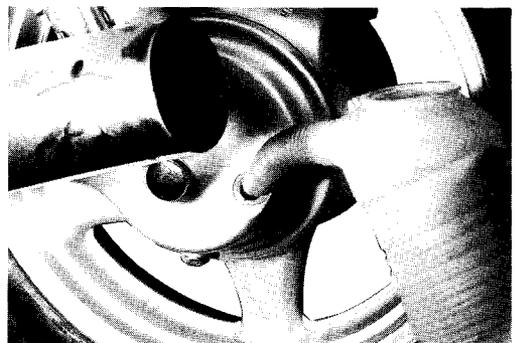
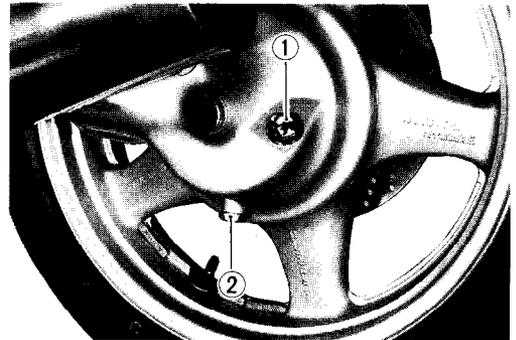
FINAL GEAR OIL

Replace at initial 1000 km (600 miles or 2 months) and inspect every 12000 km (7500 miles or 24 months).

- Place the motorcycle on the center stand.
- Place an oil pan below the final gear case and drain oil by removing filler cap ① and drain plug ②.
- Refit the drain plug ② and pour the specified oil (SAE #90 hypoid gear oil) through the filler hole until the oil level reaches the filler hole.
- Refit the filler cap ①.

NECESSARY AMOUNT OF FINAL GEAR OIL :

200 – 220 ml (6.8/7.0 – 7.4/7.7 US/Imp. oz)



BRAKES

Inspect system at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months).
 Replace hoses every 4 years.
 Change fluid every 2 years.

BRAKE FLUID LEVEL

- Keep the motorcycle upright and place the handlebars straight.
- Remove the seat.
- Check the brake fluid level by observing the upper (Only for rear brake) and lower (Both front and rear brakes) limit lines on the brake fluid reservoirs.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.

Specification and Classification : DOT4

99000-23110 : SUZUKI BRAKE FLUID DOT3 & DOT4

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. Do not use any brake fluid taken from old, used or unsealed containers. Never reuse brake fluid left over from the last servicing or stored for long periods.

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 and oil leakage before riding.

BRAKE PADS

The extent of brake pad wear can be checked by observing the grooved limit line ① marked on the pad. When the wear exceeds the grooved limit line, replace the pads with new ones. (Refer to pages 8-5 and 8-20.)

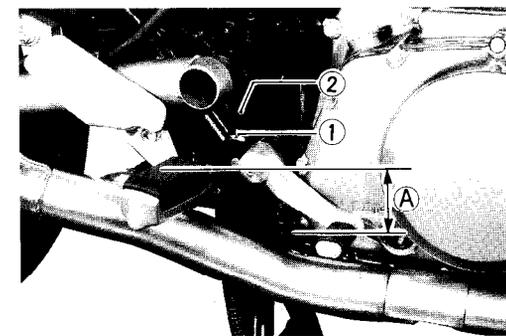
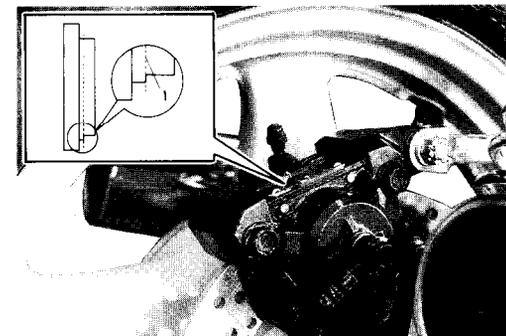
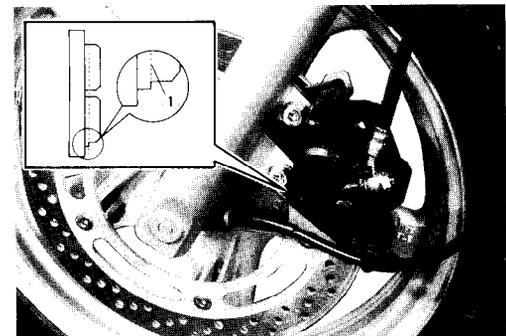
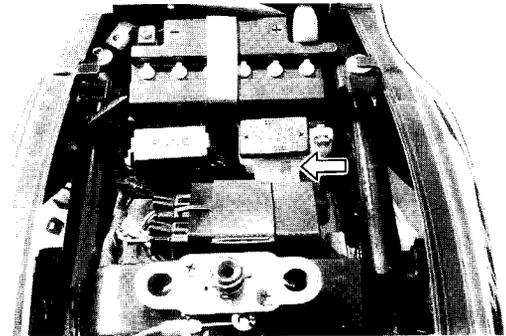
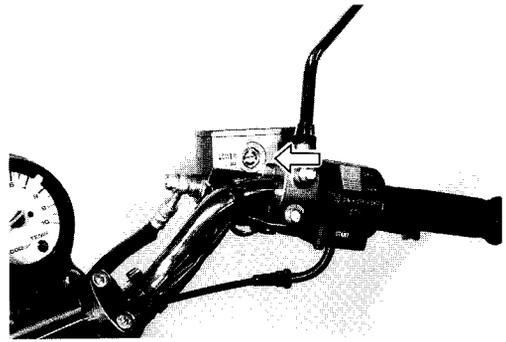
CAUTION:

Replace the brake pad as a set, otherwise braking performance will be adversely affected.

BRAKE PEDAL HEIGHT

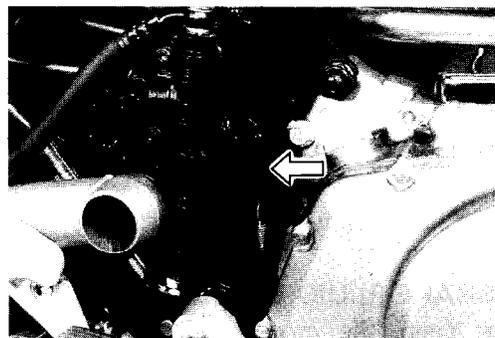
- Loosen the lock nut ① and rotate the push rod ② to locate brake pedal 30 – 40 mm (1.2 – 1.6 in) below the top face of the footrest.
- Retighten the lock nut ① to secure the push rod ② in the proper position.

Brake pedal height A : 30 – 40 mm (1.2 – 1.6 in)



REAR BRAKE LIGHT SWITCH

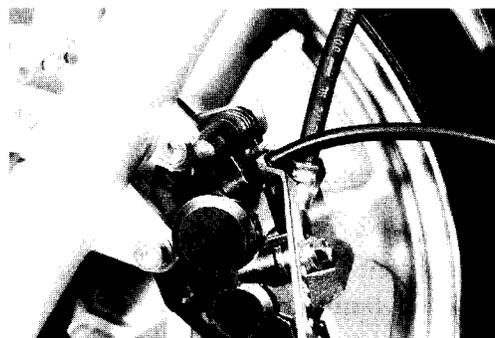
Adjust the rear brake light switch, so that the brake light will come on just before a pressure is felt when the brake pedal is depressed.



AIR BLEEDING THE 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 caliper. The presence of air is indicated by "sponginess" of the brake level/pedal 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, (for front brake) and "UPPER" line (for rear brake). Replace the reservoir cap.
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle.
- Squeeze and release the brake lever several times in rapid succession and squeeze the level 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. The only difference between bleeding the front and rear brakes is that the rear master cylinder is actuated by a pedal.



NOTE:

Replenish the brake fluid in the reservoir as necessary while bleeding the brake system. Make sure that there is always some fluid visible in the reservoir.



- Close the bleeder valve, and disconnect the pipe. Fill the reservoir to the upper end of the inspection window (for front brake) and "UPPER" line. (for rear brake)

Tightening torque

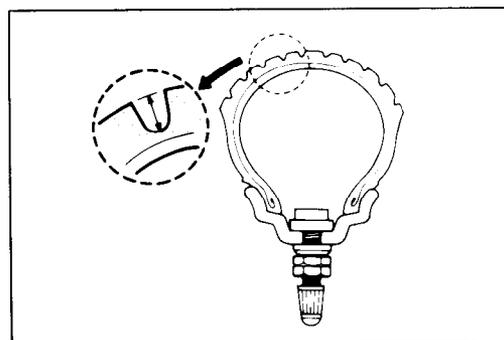
Air bleeder valve : 6 – 9 N·m
(0.6 – 0.9 kg-m, 4.5 – 6.5 lb-ft)

CAUTION:

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

TIRES

Inspect at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months).



TIRE TREAD CONDITION

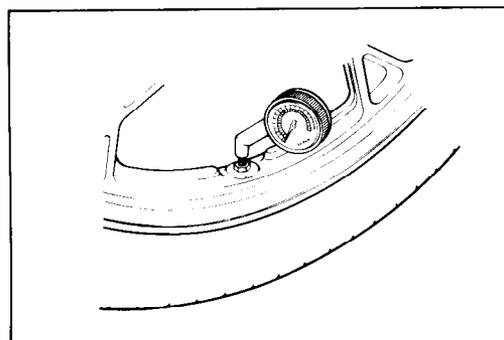
Operating the motorcycle with excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace a tire when the remaining depth of tire tread reaches the following specification.

Tire tread depth limit : FRONT 1.6 mm (0.06 in)
REAR 2.0 mm (0.08 in)

TIRE PRESSURE

If the tire pressure is too high or too low, steering will be adversely affected and tire wear increased. Therefore, maintain the correct tire pressure for good roadability or shorter tire life will result. Cold inflation tire pressure is as follows.

COLD INFLATION TIRE PRESSURE	SOLD RIDING			DUAL RIDING		
	kg/cm ²	kPa	psi	kg/cm ²	kPa	psi
FRONT	2.25	225	33	2.25	225	33
REAR	2.50	250	36	2.80	280	41



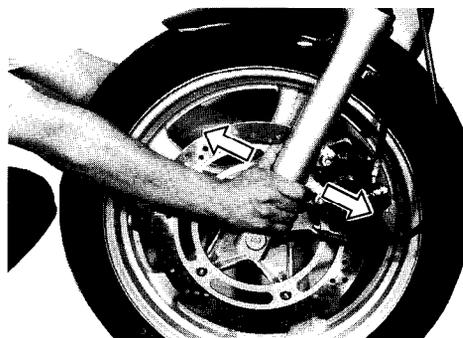
CAUTION:

The standard tire fitted on this motorcycle is 110/80-18 58H for front (METZELER ME33) and 150/70 B17 69H for rear (METZELER ME55A). The use of tires other than those specified may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.

STEERING

Inspect at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months).

Taper roller type bearings are used on the steering system for better handling. Steering should be adjusted properly for smooth turning of handlebars and safe running. Overtight steering prevents smooth turning of the handlebars and too loose steering will cause poor stability. Check that there is no play in the front fork assembly by supporting the motorcycle so that the front wheel is off the ground, with the wheel straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, perform steering bearing adjustment as described in page 8-18 of this manual.



FRONT FORKS

Inspect at initial 1000 km (600 miles or 2 months) and every 12000 km (7500 miles or 24 months).

Inspect the front forks for oil leakage, scoring or scratches on the outer surface of the inner tubes. Replace any defective parts, if necessary. (Refer to page 8-10.)

REAR SHOCK ABSORBERS

Inspect at initial 1000 km (600 miles or 2 months) and every 12000 km (7500 miles or 24 months).

Inspect the rear shock absorber for oil leakage and check that there is no play in the swingarm assembly.

CHASSIS BOLTS AND NUTS

Tighten at initial 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months).

The nuts and bolts listed below are important safety parts. They must be retightened when necessary to the specified torque with a torque wrench. (Refer to page 2-17 for the locations of the following nuts and bolts on the motorcycle.)

Item	N·m	kg·m	lb·ft
① Steering stem head nut	50 – 80	5.0 – 8.0	36.0 – 58.0
② Front fork upper clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
③ Front fork lower clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
④ Front axle shaft	36 – 52	3.6 – 5.2	26.0 – 37.5
⑤ Front axle pinch bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
⑥ Handlebar clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
⑦ Handlebar holder mounting nut	20 – 30	2.0 – 3.0	14.5 – 21.5
⑧ Front brake master cylinder mounting bolt	5 – 8	0.5 – 0.8	3.5 – 6.0
⑨ Front brake caliper mounting bolt	30 – 48	3.0 – 4.8	21.5 – 34.5
⑩ Brake hose union bolt	15 – 20	1.5 – 2.0	11.0 – 14.5
⑪ Air bleeder valve	6 – 9	0.6 – 0.9	4.5 – 6.5
⑫ Front and rear disc bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
⑬ Front footrest bracket mounting bolt	27 – 43	2.7 – 4.3	19.5 – 31.0
⑭ Swingarm pivot nut	100 – 130	10 – 13	72.5 – 94.0
⑮ Rear shock absorber upper/lower mounting nut	22 – 35	2.2 – 3.5	16.0 – 25.5
⑯ Rear brake pedal boss bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
⑰ Rear brake caliper mounting bolt	20 – 31	2.0 – 3.1	14.5 – 22.5
⑱ Rear brake caliper housing bolt	30 – 36	3.0 – 3.6	21.5 – 26.0
⑲ Torque link nut (Front & Rear)	22 – 35	2.2 – 3.5	16.0 – 25.5
⑳ Rear brake master cylinder mounting bolt	8 – 12	0.8 – 1.2	6.0 – 8.5
㉑ Rear brake rod lock nut	15 – 20	1.5 – 2.0	11.0 – 14.5
㉒ Rear axle nut	60 – 96	6.0 – 9.6	43.5 – 69.5
㉓ Final bevel gear case joint nut	35 – 45	3.5 – 4.5	25.5 – 32.5

2-17 PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

