PERIODIC MAINTENANCE

CONTENTS

PERIODIC MAINTENANCE SCHEDULE

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 kilometers, miles and time for your convenience.

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.

PERIODIC MAINTENANCE CHART

Item \ Interval						
	km	1 000	6 000	12 000	18 000	24 000
	miles	600	4 000	7 500	11 000	14 500
	months	1	6	12	18	24
Air cleaner		—	I	I	R	I
Spark plugs		—	I	R	I	R
Tappet clearance		—	—	—	—	I
Engine oil		R	R	R	R	R
Engine oil filter		R	—	—	R	—
Fuel line		—	I	I	I	I
		Replace every 4 years.				
Engine idle speed		I	I	I	I	I
Throttle valve synchronization		I E-33 only	—	I	—	I
Evaporative emission control system		—	—	I	—	I
E-33 (California) model only		Replace vapor hose every 4 years.				
PAIR (air supply) system		—	—	I	—	I
Throttle cable play		I	I	I	I	I
Clutch		—	I	I	I	I
Radiator hoses		—	I	I	I	I
		Replace every 4 years.				
Engine coolant		Replace every 2 years.				
Drive chain		I	I	I	I	I
		Clean and lubricate every 1 000 km (600 miles).				
Brakes		I	I	I	I	I
Brake hose		—	I	I	I	I
		Replace every 4 years.				
Brake fluid		—	I	I	I	I
		Replace every 2 years.				

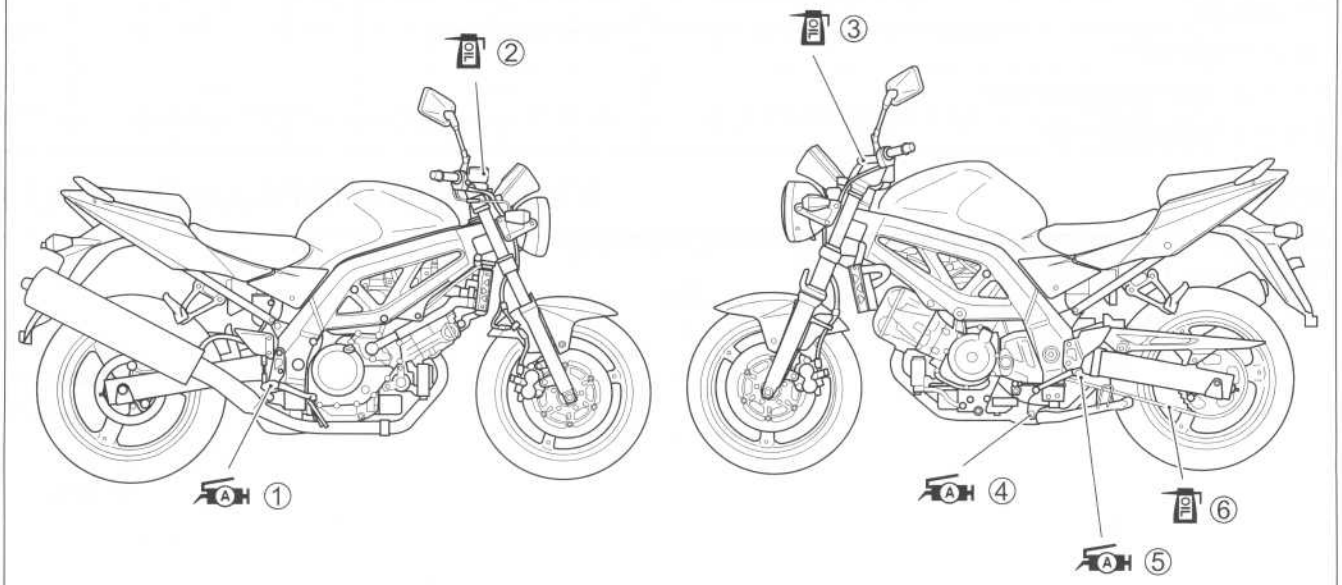
Item \ Interval	km	1 000	6 000	12 000	18 000	24 000
	miles	600	4 000	7 500	11 000	14 500
	months	1	6	12	18	24
Tires		—	I	I	I	I
Steering		I	—	I	—	I
Front forks		—	—	I	—	I
Rear suspension		—	—	I	—	I
Exhaust pipe bolts and nuts		T	—	T	—	T
Chassis bolts and nuts		T	T	T	T	T

NOTE:
I=Inspect and clean, adjust, replace or lubricate as necessary;
R=Replace; T=Tighten

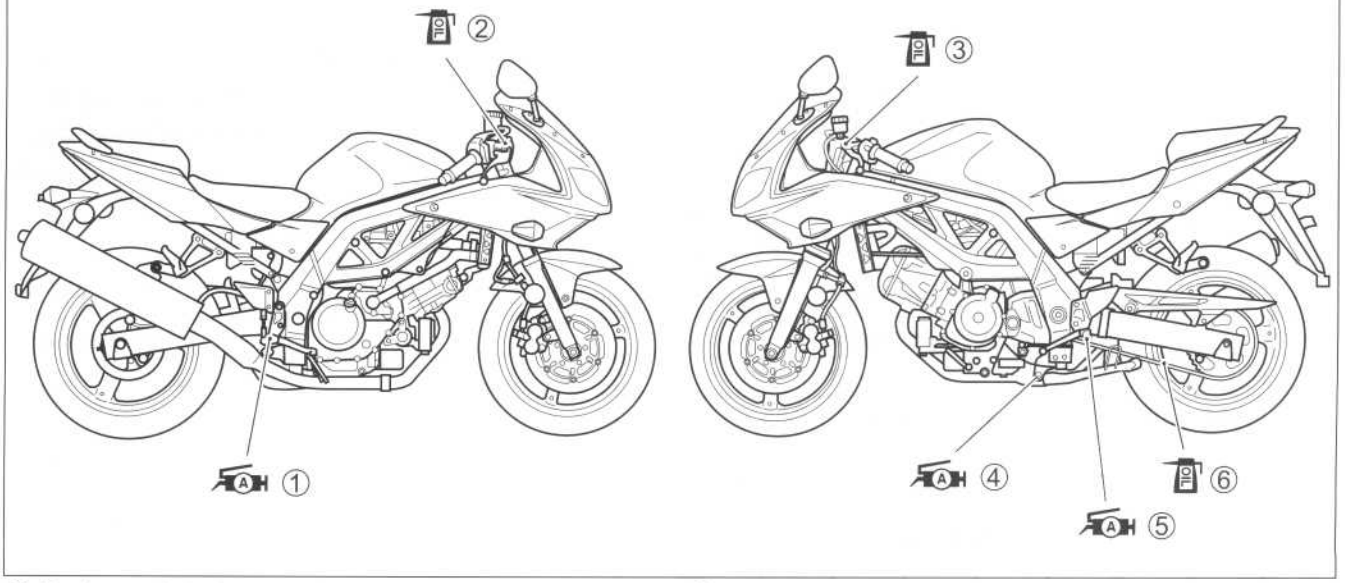
LUBRICATION POINTS

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

SV650



SV650S



① Brake pedal pivot and footrest pivot
② Brake lever holder and throttle cables
③ Clutch lever holder and clutch cable
④ Side-stand pivot and spring hook
⑤ Footrest pivot
⑥ Drive chain

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 a rust preventative spray whenever the motorcycle has been operated under wet or rainy conditions.*

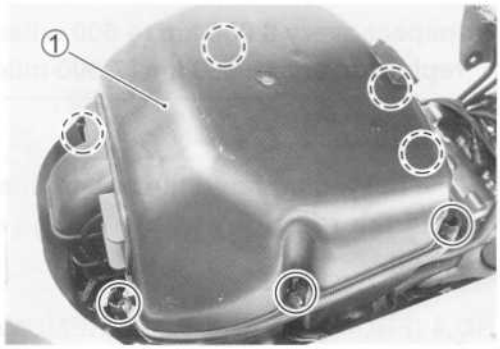
MAINTENANCE AND TUNE-UP PROCEDURES

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

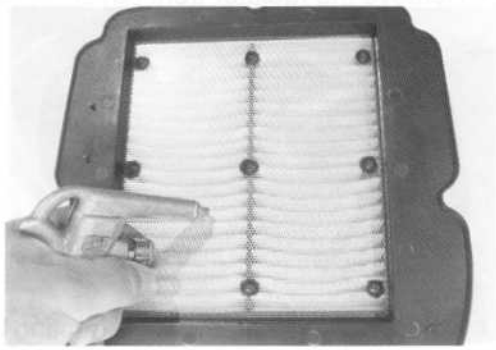
AIR CLEANER

Inspect every 6 000 km (4 000 miles, 6 months) and replace every 18 000 km (11 000 miles, 18 months).

- Lift and support the fuel tank. (☞5-6)
- Remove the air cleaner box cap ①.



- Carefully use air hose to blow the dust from the cleaner element.



CAUTION

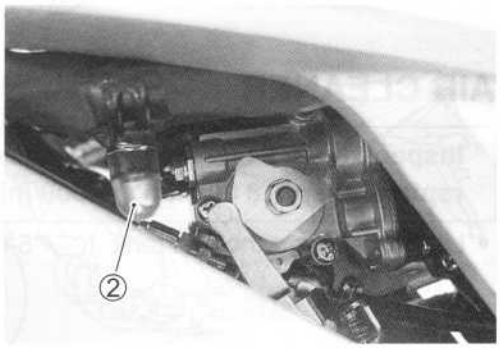
Always use air pressure on the throttle body side of the air cleaner element. If air pressure is used on the other side, dirt will be forced into the pores of the air cleaner element thus restricting air flow through the air cleaner element.

- Reinstall the cleaned or new air cleaner element in the reverse order of removal.

CAUTION

If driving under dusty conditions, clean the air cleaner element more frequently. The surest way to accelerate engine wear is to operate the engine without the element or to use a torn element. Make sure that the air cleaner is in good condition at all times. The life of the engine depends largely on this component!

- Remove the drain plugs ② from the air cleaner drain hose and air cleaner box to allow any water to drain out.



SPARK PLUG

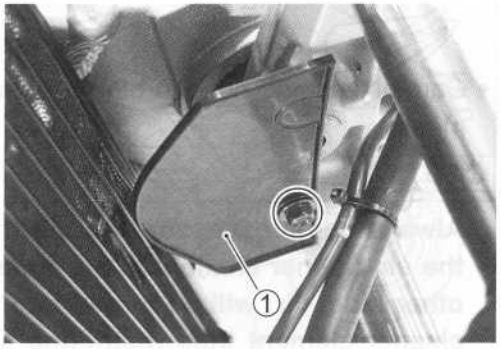
Inspect every 6 000 km (4 000 miles, 6 months) and replace every 12 000 km (7 500 miles, 12 months).

⚠ WARNING

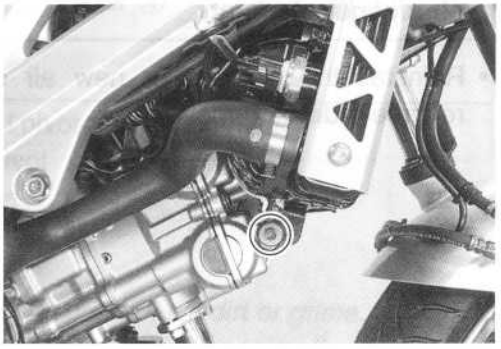
The hot radiator and the hot engine can burn you. Wait until the radiator and the engine are cool enough to touch.

NO.1 (FRONT) SPARK PLUG REMOVAL

- Remove the radiator front cover ①. (SV650)

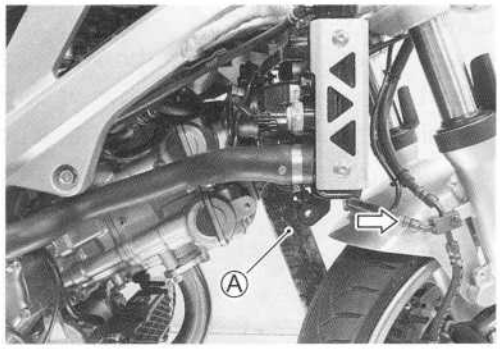


- Remove the radiator lower mounting bolt.



• Move the radiator lower side to forward.

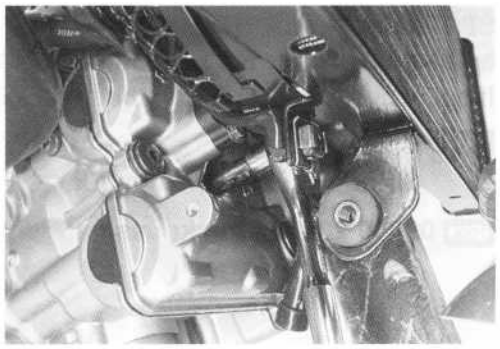
NOTE:
** Do not extract the radiator hoses.*
** Place a wooden block Ⓐ between the radiator and the front cylinder to facilitate spark plug removal.*



• Disconnect the spark plug cap and remove the spark plug.

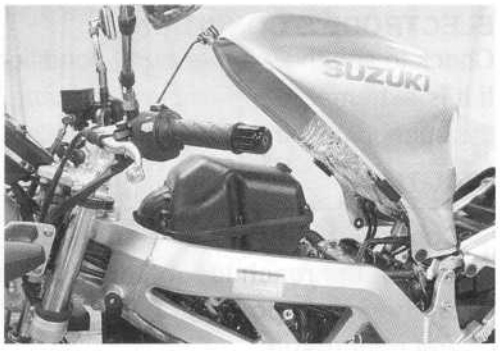
09930-10121: Spark plug socket wrench set

NOTE:
Be careful not to damage the radiator fins.



NO.2 (REAR) SPARK PLUG REMOVAL

• Lift and support the fuel tank. (☞5-6)



• Disconnect the spark plug cap.
• Remove the spark plug with a spark plug wrench.

09930-10121: Spark plug socket wrench set

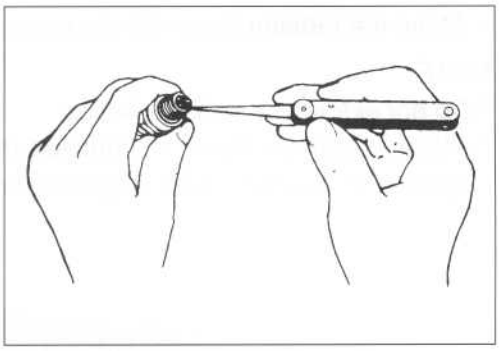
HEAT RANGE

Check to see the heat range of the plug.

	Standard	Cold type	Hot type
NGK	CR8E	CR9E	CR7E
ND	U24ESR-N	U27ESR-N	U22ESR-N

CARBON DEPOSITS

Check to see if there are carbon deposits on the spark plug.
If carbon is deposited, remove it with a spark plug cleaner machine or carefully use a tool with a pointed end.

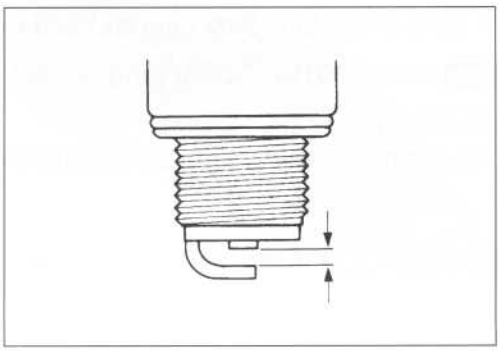


SPARK PLUG GAP

Measure the spark plug gap with a thickness gauge.
If out of specification, regap the spark plug.

DATA **Spark plug gap**
Standard: 0.7 – 0.8 mm (0.028 – 0.031 in)

TOOL **09900-20803: Thickness gauge**



ELECTRODE'S CONDITION

Check to see the worn or burnt condition of the electrodes.
If it is extremely worn or burnt, replace the spark plug. Replace the spark plug if it has a broken insulator, damaged thread, etc.

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.

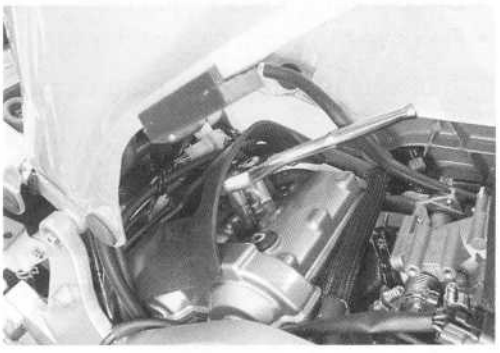
SPARK PLUG INSTALLATION

CAUTION

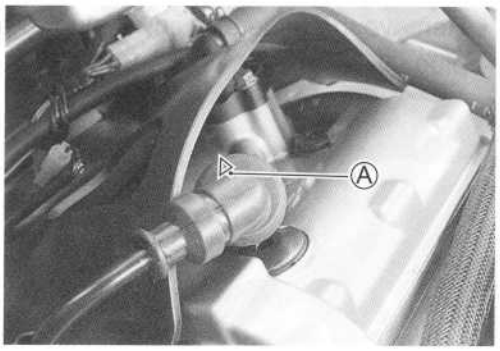
Before tightening the spark plug to the specified torque, carefully turn the spark plug by finger into the threads of the cylinder head to prevent damage the aluminum threads.

- First, finger tighten the spark plugs, and then tighten them to the specified torque.

Spark plug: 11 N·m (1.1 kgf-m, 8.0 lb-ft)



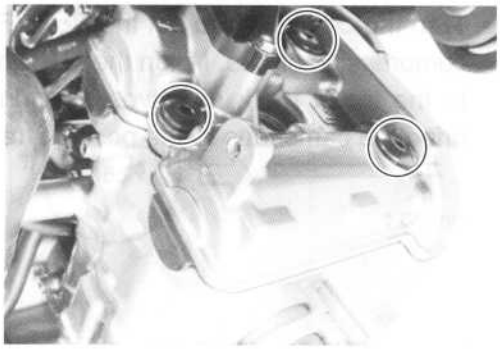
NOTE:
When fitting the spark plug caps, front and rear, face the triangle marks Ⓐ on the water-proof covers to each cylinder exhaust side.



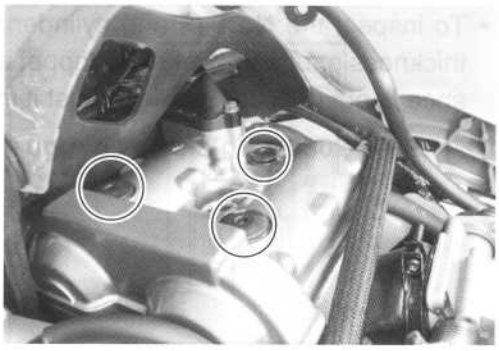
TAPPET CLEARANCE

Inspect every 24 000 km (14 500 miles, 24 months).

- Lift and support the fuel tank. (☞5-6)
- Remove the spark plugs, front and rear. (☞2-6)
- Remove the cylinder head covers, front and rear.

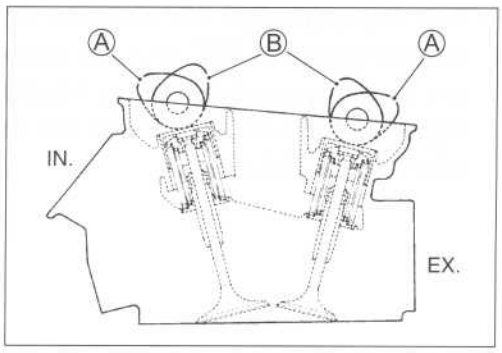


The tappet clearance specification is different for intake and exhaust valves.
Tappet clearance must be checked and adjusted, 1) at the time of periodic inspection, 2) when the valve mechanism is serviced, and 3) when the camshafts are disturbed by removing them for servicing.

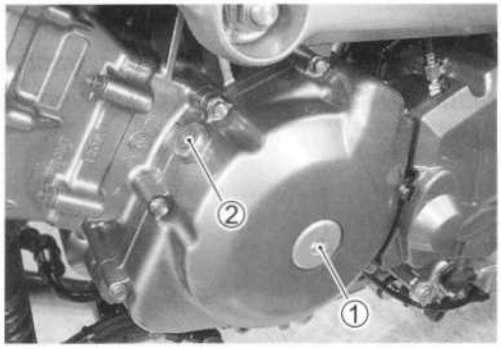


DATA Tappet clearance (when cold):
IN. : 0.10 – 0.20 mm (0.004 – 0.008 in)
EX.: 0.20 – 0.30 mm (0.008 – 0.012 in)

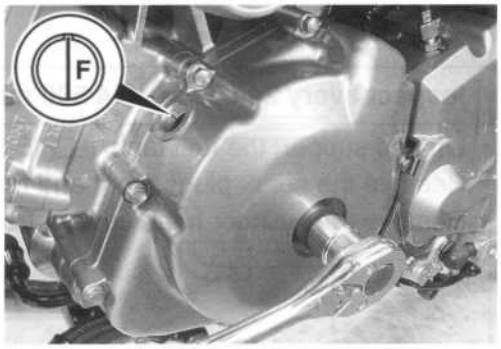
NOTE:
* *The tappet clearance should be taken when each cylinder is at Top Dead Center (TDC) of compression stroke.*
* *The cams (IN & EX) on the front cylinder at position Ⓐ show the front cylinder at TDC of compression stroke.*
* *The cams (IN & EX) on the rear cylinder at position Ⓑ show the rear cylinder at TDC of compression stroke.*
* *The clearance specification is for COLD state.*
* *To turn the crankshaft for clearance checking, be sure to use a wrench, and rotate in the normal running direction. All spark plugs should be removed.*



- Remove the generator cover plug ① and the timing inspection plug ②.

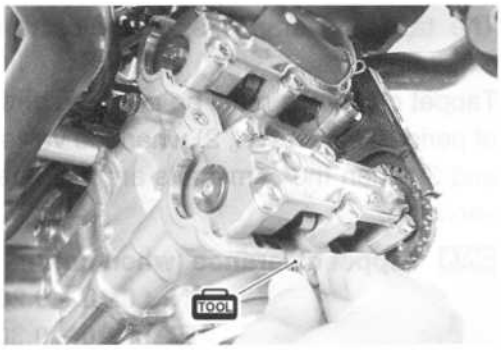


- Turn the crankshaft to set the No.1 (Front) cylinder at TDC of compression stroke. (Align the "|F" line on the generator rotor to the index mark of valve timing inspection hole and also bring the camshafts to the position, refer to page 2-9.)

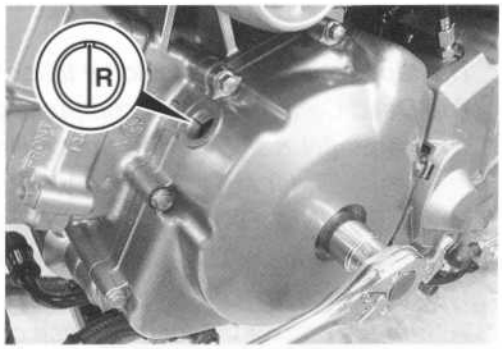


- To inspect the No.1 (Front) cylinder tappet clearance, use a thickness gauge between the tappet and the cam. If the clearance is out of specification, adjust it into the specified range.

TOOL 09900-20803: Thickness gauge

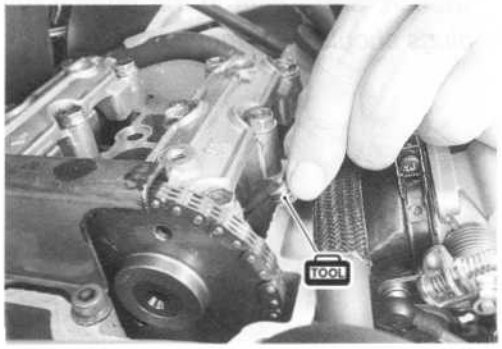


- Turn the crankshaft 270 degrees (3/4 turns) to set the No.2 (Rear) cylinder at TDC of compression stroke. (Align the "|R" line on the generator rotor to the index mark of valve timing inspection hole and also bring the camshafts to the position, refer to page 2-9.)



- Inspect the No.2 (Rear) cylinder tappet clearance as the same manner of No.1 (Front) cylinder and adjust the clearance if necessary.

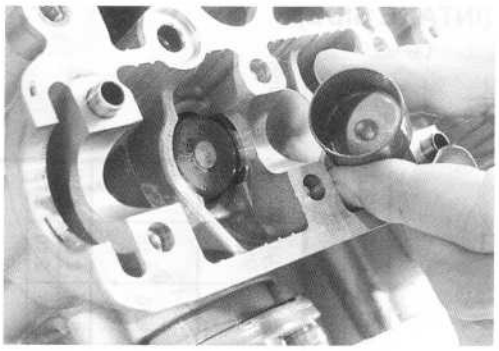
TOOL 09900-20803: Thickness gauge



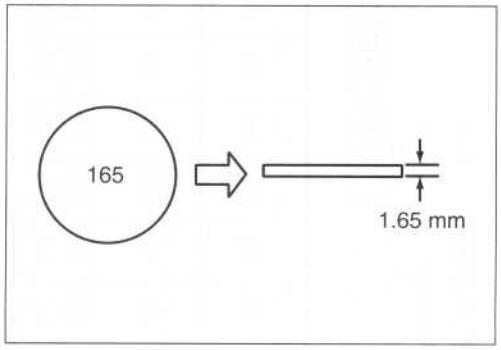
TAPPET CLEARANCE ADJUSTMENT

The clearance is adjusted by replacing the existing tappet shim by a thicker or thinner shim.

- Remove the intake or exhaust camshafts. (☞3-26, 28)
- Remove the tappet and shim by fingers or magnetic hand.

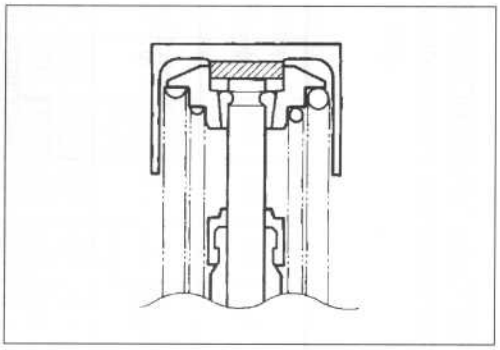


- Check the figures printed on the shim. These figures indicate the thickness of the shim, as illustrated.
- Select a replacement shim that will provide a clearance within the specified range. For the purpose of this adjustment, a total of 21 sizes of tappet shim are available ranging from 1.20 to 2.20 mm in steps of 0.05 mm. Fit the selected shim to the valve stem end, with numbers toward tappet. Be sure to check shim size with micrometer to ensure its size. Refer to the tappet shim selection table (☞2-12, 13) for details.



NOTE:

* *Be sure to apply engine oil to tappet shim top and bottom faces.*
* *When seating the tappet shim, be sure to face figure printed surface to the tappet.*



CAUTION

Reinstall the camshafts as the specified manner. (☞3-102)

- After replacing the tappet shim and camshafts, rotate the engine so that the tappet is depressed fully. This will squeeze out oil trapped between the shim and the tappet that could cause an incorrect measurement, then check the clearance again to confirm that it is within the specified range.

- After finishing the tappet clearance adjustment, reinstall the following items.

* Cylinder head cover (☞3-109)
* Spark plug and plug cap (☞2-8)
* Valve timing inspection plug (☞3-111)
* Generator cover plug (☞3-111)
* Air cleaner box (☞5-16)

TAPPET SHIM SELECTION TABLE [INTAKE]
TAPPET SHIM NO. (12892-05C00-XXX)

TAPPET SHIM SET (12800-05820)

MEASURED TAPPET CLEARANCE (mm) / SUFFIX NO.	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220
PRESENT SHIM SIZE (mm)	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20
0.00-0.04			1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10
0.05-0.09		1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15
0.10-0.20	SPECIFIED CLEARANCE/NO ADJUSTMENT REQUIRED																				
0.21-0.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20	2.20	
0.26-0.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20			
0.31-0.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20				
0.36-0.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20					
0.41-0.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20						
0.46-0.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20							
0.51-0.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20								
0.56-0.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20									
0.61-0.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20										
0.66-0.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20											
0.71-0.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20												
0.76-0.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20													
0.81-0.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20														
0.86-0.90	1.95	2.00	2.05	2.10	2.15	2.20															
0.91-0.95	2.00	2.05	2.10	2.15	2.20																
0.96-1.00	2.05	2.10	2.15	2.20																	
1.01-1.05	2.10	2.15	2.20																		
1.06-1.10	2.15	2.20																			
1.11-1.15	2.20																				

HOW TO USE THIS CHART:

I. Measure tappet clearance. "ENGINE IS COLD"

II. Measure present shim size.

III. Match clearance in vertical column with present shim size in horizontal column.

EXAMPLE

Tappet clearance is	0.23 mm
Present shim size	1.65 mm
Shim size to be used	1.75 mm

TAPPET SHIM SELECTION TABLE [EXHAUST]
TAPPET SHIM NO. (12892-05C00-XXX)

TAPPET SHIM SET (12800-05820)

MEASURED TAPPET CLEARANCE (mm) \ SUFFIX NO.	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220
PRESENT SHIM SIZE (mm)	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20
0.05-0.09				1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05
0.10-0.14			1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10
0.15-0.19		1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15
0.20-0.30	SPECIFIED CLEARANCE/NO ADJUSTMENT REQUIRED																				
0.31-0.35	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20	2.20	
0.36-0.40	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20			
0.41-0.45	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20				
0.46-0.50	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20					
0.51-0.55	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20						
0.56-0.60	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20							
0.61-0.65	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20								
0.66-0.70	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20									
0.71-0.75	1.70	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20										
0.76-0.80	1.75	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20											
0.81-0.85	1.80	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20												
0.86-0.90	1.85	1.90	1.95	2.00	2.05	2.10	2.15	2.20													
0.91-0.95	1.90	1.95	2.00	2.05	2.10	2.15	2.20														
0.96-1.00	1.95	2.00	2.05	2.10	2.15	2.20															
1.01-1.05	2.00	2.05	2.10	2.15	2.20																
1.06-1.10	2.05	2.10	2.15	2.20																	
1.11-1.15	2.10	2.15	2.20																		
1.16-1.20	2.15	2.20																			
1.21-1.25	2.20																				

HOW TO USE THIS CHART:

I. Measure tappet clearance. "ENGINE IS COLD"

II. Measure present shim size.

III. Match clearance in vertical column with present shim size in horizontal column.

EXAMPLE

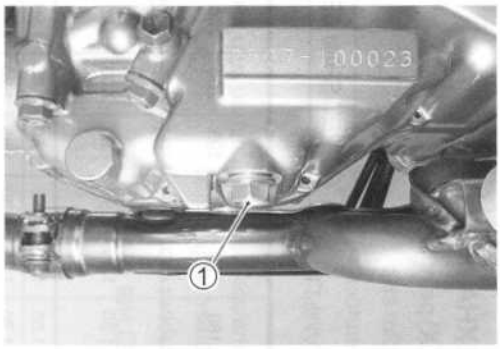
Tappet clearance is	0.33 mm
Present shim size	1.65 mm
Shim size to be used	1.75 mm

ENGINE OIL AND OIL FILTER

(ENGINE OIL)
Replace initially at 1 000 km (600 miles, 1 month) and every 6 000 km (4 000 miles, 6 months) thereafter.

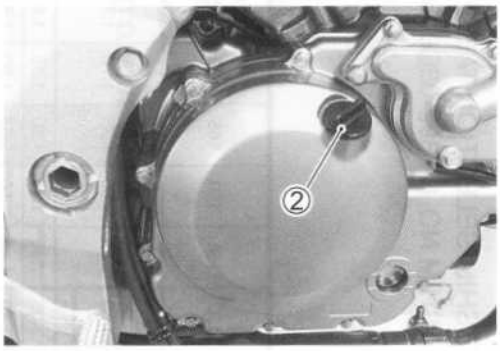
(OIL FILTER)
Replace initially at 1 000 km (600 miles, 1 month) and every 18 000 km (11 000 miles, 18 months) thereafter.

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



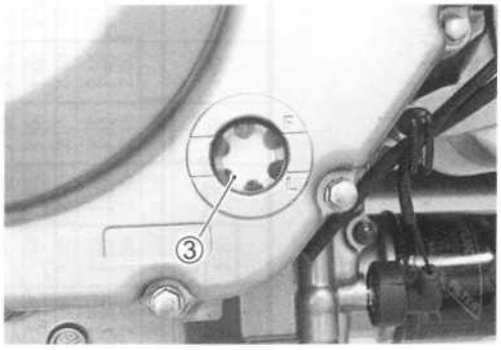
ENGINE OIL REPLACEMENT

- Keep the motorcycle upright.
- Place an oil pan below the engine, and drain oil by removing the oil drain plug ① and filler cap ②.



- Tighten the drain plug ① to the specified torque, and pour fresh oil through the oil filler. The engine will hold about 2.3 L (2.4/2.0 US/Imp qt) of oil. Use an API classification of SF or SG oil with SAE 10 W – 40 viscosity.

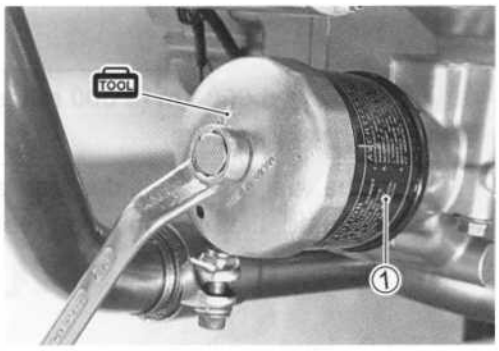
Oil drain plug (M12): 21 N·m (2.1 kgf-m, 15.0 lb-ft)



- Start up the engine and allow it to run for few minutes at idling speed.
- Turn off the engine and wait about three minute, then check the oil level through the inspection window ③. If the level is below mark "L" add oil to "F" level. If the level is above mark "F" drain oil to "F" level.

OIL FILTER REPLACEMENT

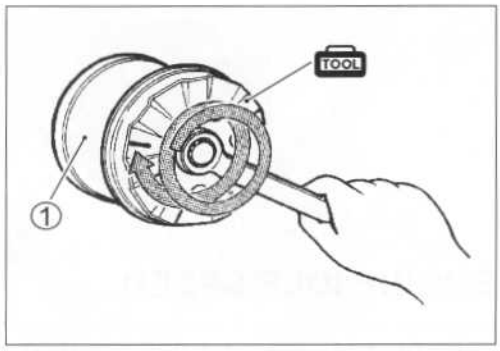
- Drain the engine oil as described in the engine oil replacement procedure.
- Remove the oil filter ① with the special tool.
- Apply engine oil lightly to the gasket of the new oil filter before installation.



- Install the new oil filter. Turn it by hand until you feel that the oil filter gasket has contacted the oil filter mounting surface. Then, tighten the oil filter two turns using the special tool.

TOOL 09915-40610: Oil filter wrench

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



- Add new engine oil and check the oil level as described in the engine oil replacement procedure.

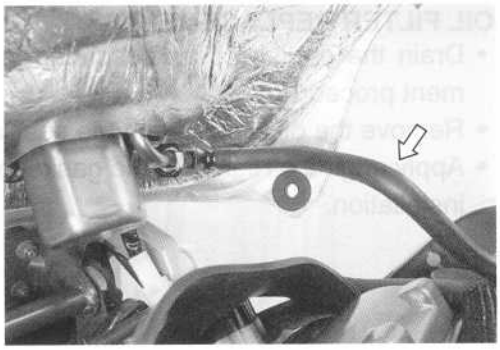
NECESSARY AMOUNT OF ENGINE OIL
Oil change: Approx. 2 300 ml (2.4/2.0 US/Imp qt)
Oil and filter change: Approx. 2 700 ml (2.9/2.4 US/Imp qt)
Engine overhaul: Approx. 3 100 ml (3.3/2.7 US/Imp qt)

CAUTION

ONLY USE A GENUINE SUZUKI MOTORCYCLE OIL FILTER.
Other manufacturer's oil filters may differ in thread specifications (thread diameter and pitch), filtering performance and durability which may lead to engine damage or oil leaks. Also, do not use a genuine Suzuki automobile oil filter on this motorcycle.

FUEL HOSE

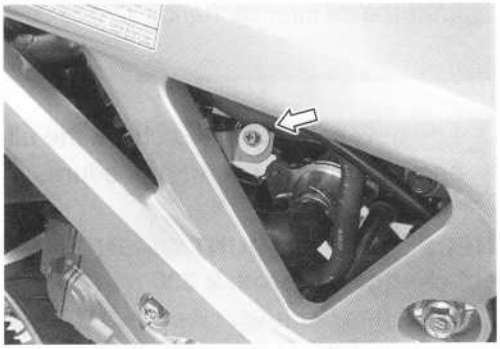
Inspect every 6 000 km (4 000 miles, 6 months).
Replace every 4 years.



- Inspect the fuel hoses for damage and fuel leakage. If any defect is found, the hose must be replaced.

ENGINE IDLE SPEED

Inspect initially at 1 000 km (600 miles, 1 month) and every 6 000 km (4 000 miles, 6 months) thereafter.



NOTE:
Make this adjustment when the engine is warmed up.

- Start the engine, turn the throttle stop screw and set the engine idle speed as follows.

DATA **Engine idle speed: 1 300 ± 100 r/min**

THROTTLE VALVE SYNCHRONIZATION

Inspect initially at 1 000 km (600 miles, 1 month) (E-33 only) and every 12 000 km (7 500 miles, 12 months). (☞5-33)

EVAPORATIVE EMISSION CONTROL SYSTEM (E-33 ONLY)

Inspect every 12 000 km (7 500 miles, 12 months).
Replace vapor hose every 4 years. (☞10-8)

PAIR (AIR SUPPLY) SYSTEM

Inspect every 12 000 km (7 500 miles, 12 months). (☞10-5)

THROTTLE CABLE PLAY

Inspect every at 1 000 km (600 miles, 1 month).

Adjust the throttle cable play Ⓐ as follows.

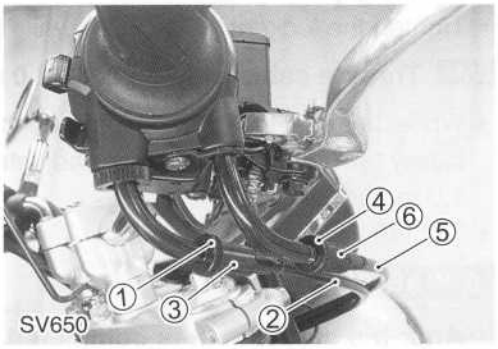
MINOR ADJUSTMENT

First step:

- Loosen the locknut ① of the throttle returning cable ② and fully turn in the adjuster ③.

Second step:

- Loosen the locknut ④ of the throttle pulling cable ⑤.
- Turn the adjuster ⑥ in or out until the throttle cable play (at the throttle grip) Ⓐ is between 2.0 – 4.0 mm (0.08 – 0.16 in).
- Tighten the locknut ④ while holding the adjuster ⑥.



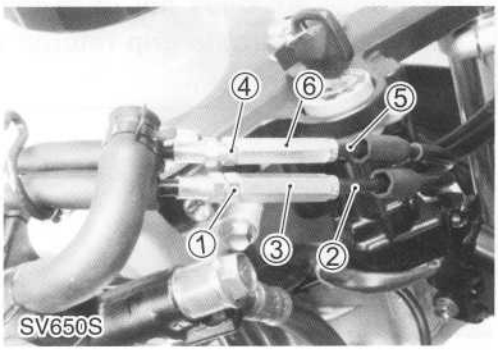
Third step:

- While holding the throttle grip at the fully closed position, slowly turn out the adjuster ③ of the throttle returning cable ② until resistance is felt.
- Tighten the locknut ① while holding the adjuster ③.

DATA Throttle cable play Ⓐ: 2.0 – 4.0 mm (0.08 – 0.16 in)

⚠ WARNING

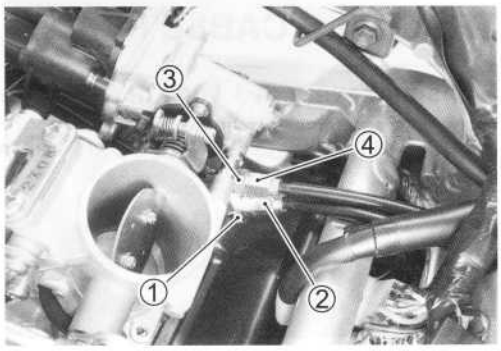
After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.



NOTE:

Major adjustment can be made at the throttle body side adjuster.

MAJOR ADJUSTMENT



- Lift and support the fuel tank. (☞5-6)
- Remove the air cleaner box. (☞5-16)
- Loosen the locknut ① of the throttle returning cable.
- Turn the returning cable adjuster ② to obtain proper cable play.
- Loosen the locknut ③ of the throttle pulling cable.
- Turn the pulling cable adjuster ④ in or out until the throttle cable play Ⓐ should be 2.0 – 4.0 mm (0.08 – 0.16 in) at the throttle grip.
- Tighten the locknut ③ securely while holding the adjuster ④.

DATA Throttle cable play Ⓐ: 2.0 – 4.0 mm (0.08 – 0.16 in)

- While holding the throttle grip at the fully closed position, slowly turn the returning cable adjuster ② to obtain a slack of 1.0 mm (0.04 in).
- Tighten the locknut ① securely.

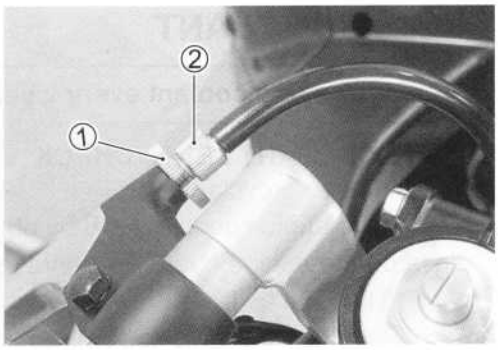
⚠ WARNING

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.

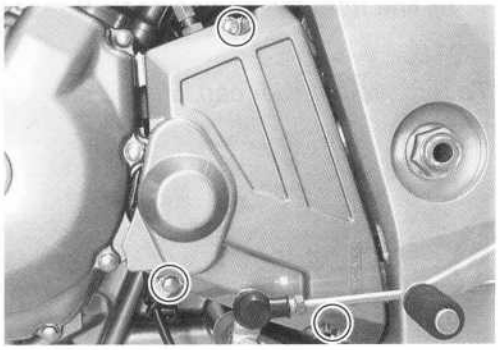
CLUTCH

Inspect every 6 000 km (4 000 miles, 6 months).

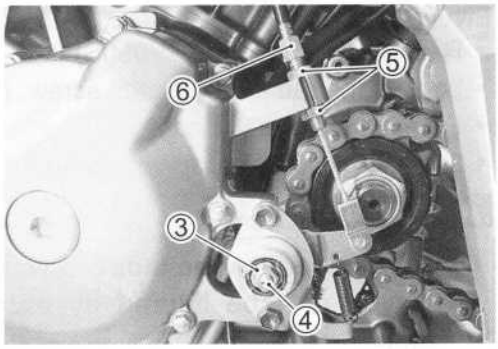
- Loosen the locknut ① and turn the adjuster ② all the way into the clutch lever assembly.



- Remove the engine sprocket cover.

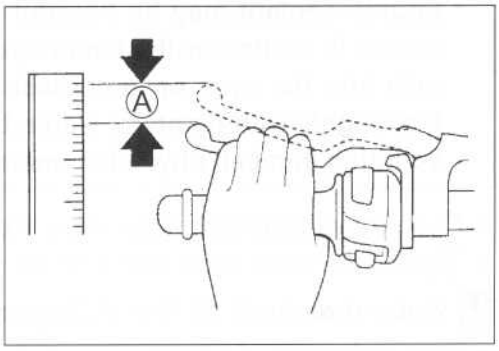


- Loosen the locknut ③ and turn out the adjusting screw ④ two or three rotations.
- From that position, slowly turn the adjuster screw ③ in until it stops.
- Turn the adjuster screw ③ out 1/4 rotation, and tighten the locknut ④.



- Loosen the locknuts ⑤, turn the cable adjuster ⑥ to obtain 10 – 15 mm (0.4 – 0.6 in) of free play Ⓐ at the clutch lever end.
- Tighten the locknuts ⑤.

DATA **Clutch cable play Ⓐ: 10 – 15 mm (0.4 – 0.6 in)**
Clutch release screw: 1/4 turn out.



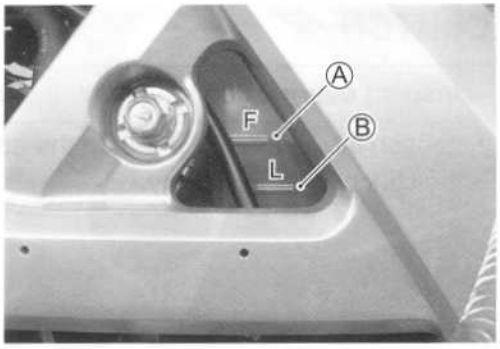
ENGINE COOLANT

Replace engine coolant every 2 years.

ENGINE COOLANT LEVEL CHECK

- Keep the motorcycle upright.
- Check the engine coolant level by observing the full and lower lines on the engine coolant reserve tank.
  Ⓐ Full line Ⓑ Lower line
- If the level is below the lower line, add engine coolant to the full line from the engine coolant reserve tank filler.

NOTE:
To remove the filler cap, lift and support the fuel tank. (☞5-6)

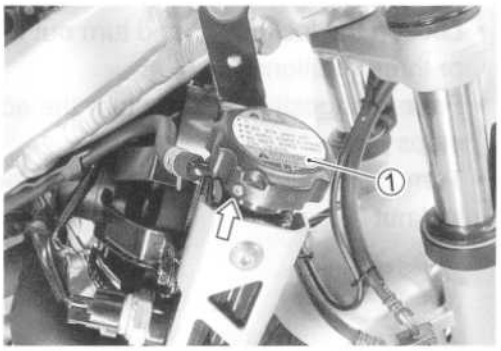


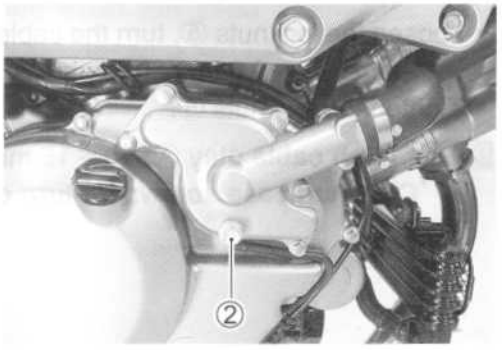
ENGINE COOLANT CHANGE

- Remove the cowling. (SV650S) (☞7-6)
- Loosen the radiator cap stop screw. (SV650)
- Remove the radiator cap ①.
- Drain engine coolant by removing the drain bolt ②.

⚠ WARNING

*** Do not open the radiator cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.**
*** Engine coolant may be harmful if swallowed or if it comes in contact with skin or eyes. If engine 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 water drain bolt ② to the specified torque.

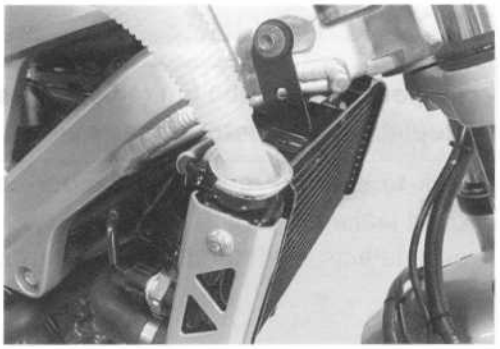
Water drain bolt: 13 N·m (1.3 kgf-m, 9.5 lb-ft)

- Pour the specified engine coolant up to the radiator inlet.
- Bleed the air from the engine coolant circuit as following procedure.

NOTE:
For engine coolant information, refer to page 6-2.

AIR BLEEDING THE COOLING CIRCUIT

- Add engine coolant up to the radiator inlet.
- Support the motorcycle upright.
- Slowly swing the motorcycle, right and left, to bleed the air trapped in the cooling circuit.
- Add engine coolant up to the radiator inlet.



- Start up the engine and bleed air from the radiator inlet completely.
- Add engine coolant up to the radiator inlet.
- Repeat the above procedure until bleed no air from the radiator inlet.

- Close the radiator cap ① securely.
- Tighten the radiator cap stop screw. (SV650)
- After warming up and cooling down the engine several times, add the engine coolant up to the full level of the reserve tank.
- Install the cowling. (SV650S ☞7-7)

CAUTION

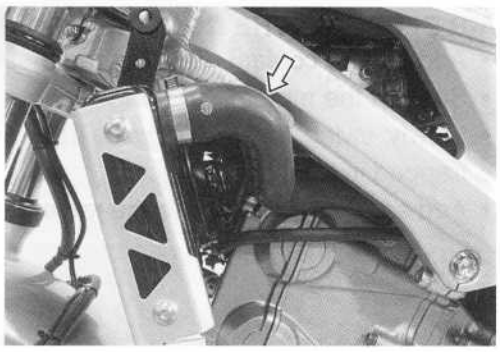
Repeat the above procedure several times and make sure that the radiator is filled with engine coolant up to the reserve tank full level.

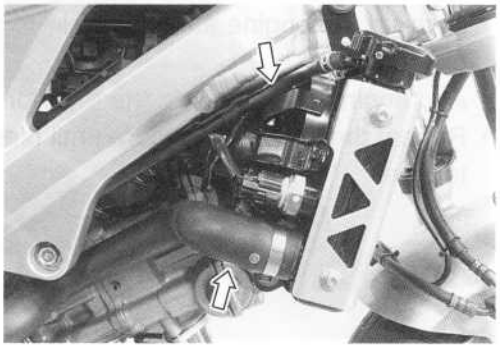
LLC Engine coolant capacity: 1 730 ml (1.8/1.5 US/Imp qt)

RADIATOR HOSES

Inspect every 6 000 km (4 000 miles, 6 months).
Replace the radiator hoses every 4 years.

Check to see the radiator hoses for crack, damage or engine coolant leakage.
If any defects are found, replace the radiator hoses with new ones.





DRIVE CHAIN

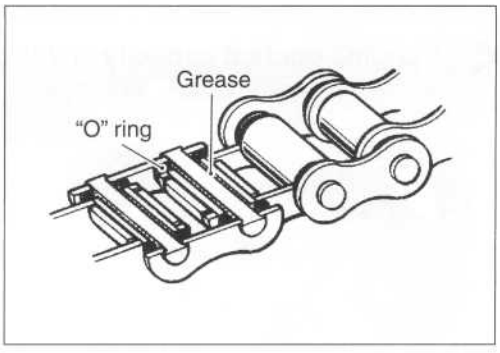
Inspect initially at 1 000 km (600 miles, 1 month) and every 6 000 km (4 000 miles, 6 months) thereafter.
Clean and lubricate every 1 000 km (600 miles).

Visually check the drive chain for the possible defects listed below. (Support the motorcycle by a jack and a wooden block, turn the rear wheel slowly by hand with the transmission shifted to Neutral.)

* Loose pins
* Damaged rollers
* Dry or rusted links
* Kinked or binding links
* Excessive wear
* Improper chain adjustment
* Missing O-ring seals

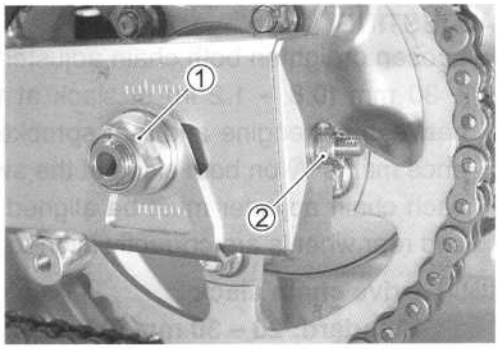
- If any defect is found, the drive chain must be replaced.

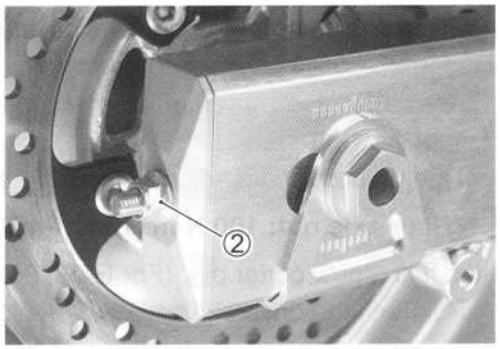
NOTE:
When replacing the drive chain, replace the drive chain and sprockets as a set.



CHECKING

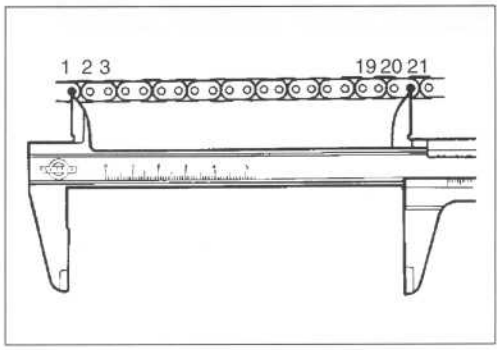
- Remove the axle cotter pin. (For E-03, 28, 33)
- Loosen the axle nut ①.
- Tense the drive chain fully by turning both chain adjuster nuts ②.





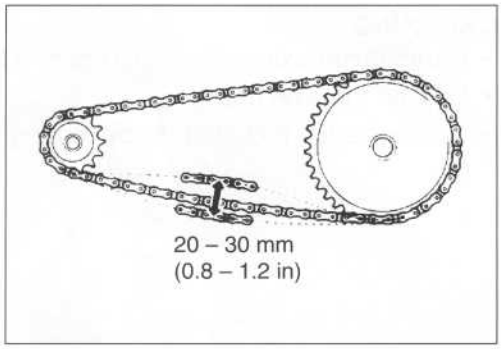
- Count out 21 pins (20 pitches) on the chain and measure the distance between the two points. If the distance exceeds the service limit, the chain must be replaced.

DATA Drive chain 20-pitch length
Service limit: 319.4 mm (12.6 in)



ADJUSTING

- Loosen or tighten both chain adjuster nuts ① until there is 20 – 30 mm (0.8 – 1.2 in) of slack at the middle of the chain between the engine and rear sprockets as shown. The reference marks Ⓐ on both sides of the swingarm and the edge of each chain adjuster must be aligned to ensure that the front and rear wheels are correctly aligned.

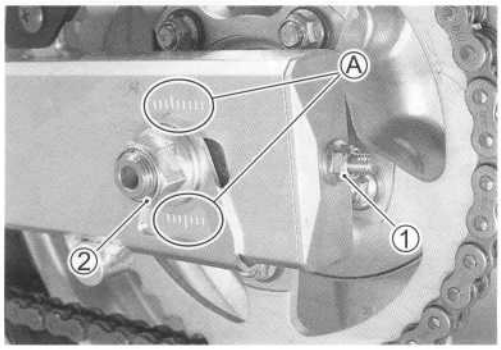


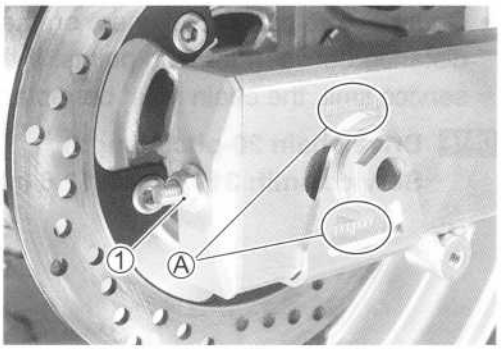
DATA Drive chain slack
Standard: 20 – 30 mm (0.8 – 1.2 in)

- Place the motorcycle on its side stand for accurate adjustment.
- After adjusting the drive chain, tighten the axle nut ② to the specified torque.
- Tighten both chain adjuster nuts ① securely.

Rear axle nut: 100 N·m (10 kgf-m, 725 lb-ft)

- Install a new cotter pin. (For E-03, 28, 33)
- Recheck the drive chain slack after tightening the axle nut.





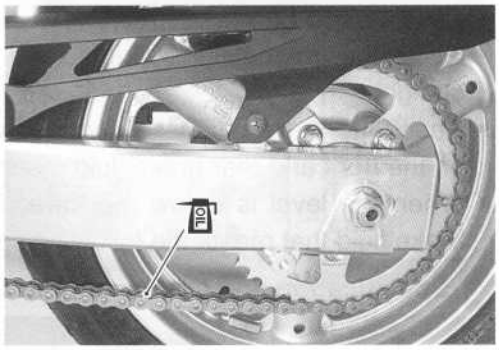
CLEANING AND LUBRICATING

Wash the chain with kerosene. If the chain tends to rust quickly, 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, they can damage the "O"-rings (or seals) confining the 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 heavyweight motor oil.



CAUTION

*** Do not use any oil sold commercially as "drive chain oil". Such oil can damage the O-rings (or seals).**
*** The standard drive chain is DID525V8 Suzuki recommends to use this standard drive chain as a replacement.**

BRAKE

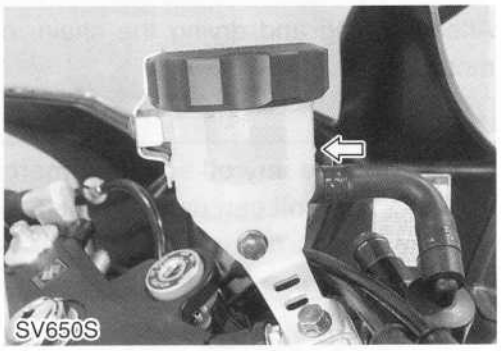
BRAKE
Inspect initially at 1 000 km (600 miles, 1 month) and every 6 000 km (4 000 miles, 6 months) thereafter.

BRAKE HOSE AND BRAKE FLUID
Inspect every 6 000 km (4 000 miles, 6 months). Replace hoses every 4 years. Replace fluid every 2 years.

BRAKE FLUID LEVEL CHECK

- Keep the motorcycle upright and place the handlebars straight.
- Check the brake fluid level by observing the lower limit lines on the front and rear brake fluid reservoirs.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.

Specification and Classification: DOT 4


SV650S

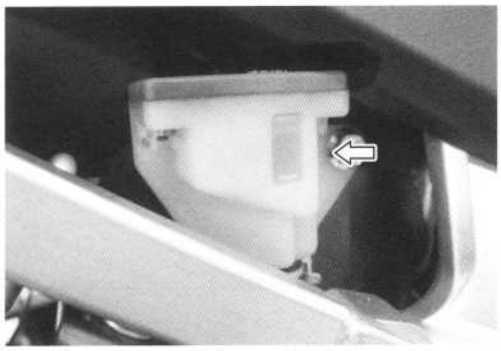
⚠ WARNING

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 or petroleum-based. 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 a long period.


SV650

⚠ WARNING

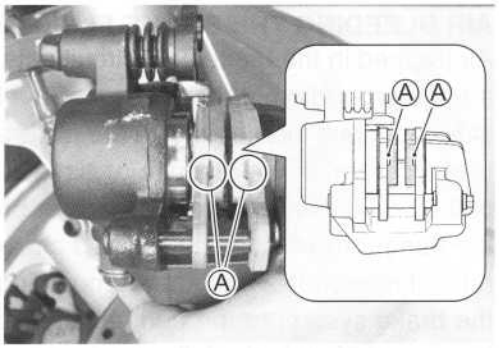
Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses and hose joints for cracks and oil leakage before riding.



BRAKE PADS

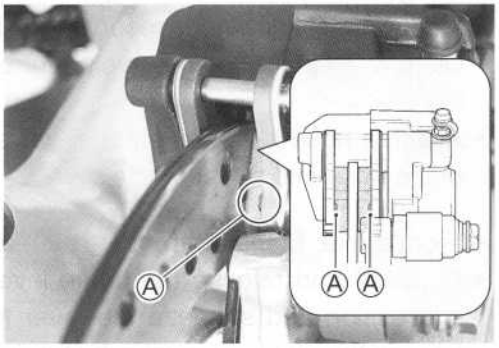
• Remove the brake caliper. (Front ☞7-64)

The extent of brake pad wear can be checked by observing the grooved limit Ⓐ on the pad. When the wear exceeds the grooved limit, replace the pads with new ones. (☞7-64, 79)



CAUTION

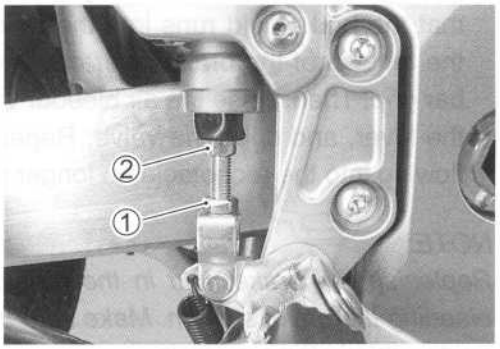
Replace the brake pad as a set, otherwise braking performance will be adversely affected.



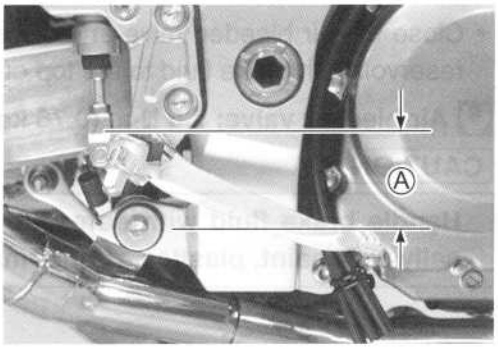
BRAKE PEDAL HEIGHT

• Loosen the locknut ①.
• Turn the push rod ② until the brake pedal is specified height Ⓐ below the top of the footrest.
• Tighten the locknut ① securely.

Rear brake master cylinder rod locknut:
18 N·m (1.8 kgf-m, 13.0 lb-ft)

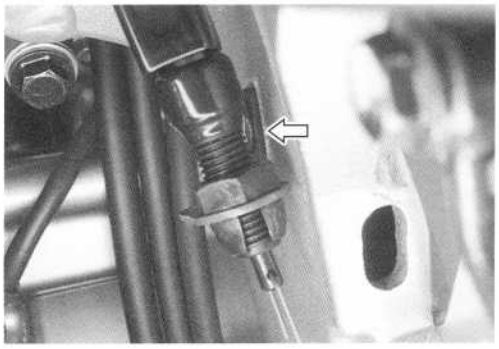


DATA Brake pedal height Ⓐ
Standard: 50 – 60 mm (2.0 – 2.4 in) for SV650
60 – 70 mm (2.4 – 2.8 in) for SV650S



BRAKE LIGHT SWITCH

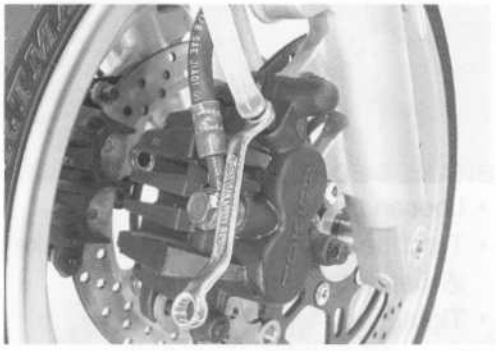
• Adjust the rear brake light switch so that the brake light will come on just before pressure is felt when the brake pedal is depressed.



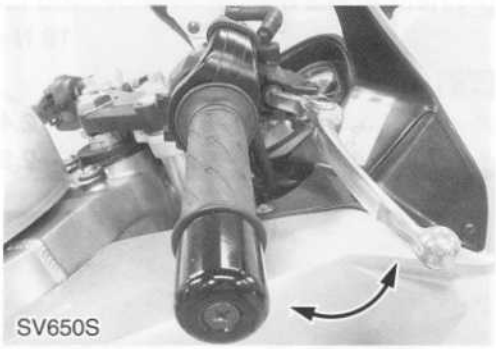
AIR BLEEDING THE BRAKE FLUID CIRCUIT

Air trapped in the brake 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 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 the master cylinder reservoir to the top of the inspection window. Replace the reservoir cap to prevent dirt from entering.
- Attach a hose to the air bleeder valve and insert the free end of the hose into a receptacle.



- Front brake: Bleed air from the air bleeder valve.
- Squeeze and release the brake lever several times in rapid succession and squeeze the lever fully without releasing it. Loosen the air 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 air bleeder valve, pump and squeeze the lever, and open the valve. Repeat this process until fluid flowing into the receptacle no longer contains air bubbles.



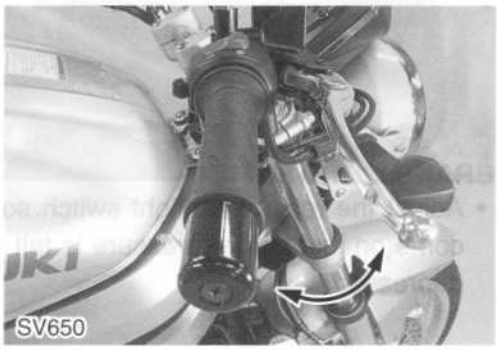
NOTE:
Replenish the brake fluid in the reservoir as necessary while bleeding the brake system. Make sure that there is always some fluid visible in the reservoir.

- Close the air bleeder valve and disconnect the hose. Fill the reservoir with brake fluid to the top of the inspection window.

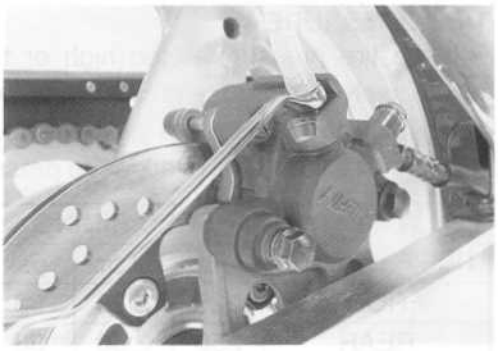
Air bleeder valve: 7.5 N·m (0.75 kgf-m, 5.5 lb-ft)

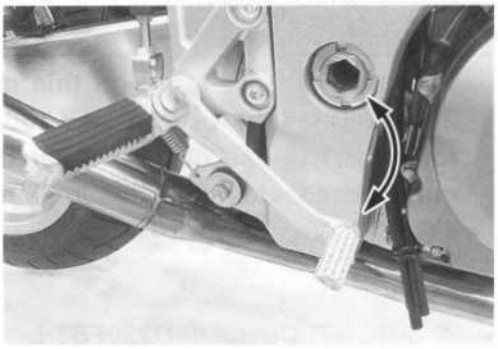
CAUTION

Handle brake fluid with care: the fluid reacts chemically with paint, plastics, rubber materials and so on.



Rear brake: The only difference between bleeding the front and rear brakes is that the rear master cylinder is actuated by a pedal.



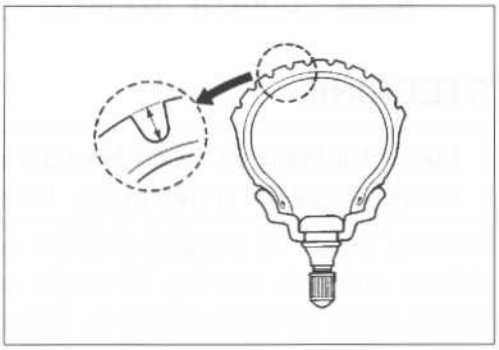


TIRE

Inspect every 6 000 km (4 000 miles, 6 months).

TIRE TREAD CONDITION

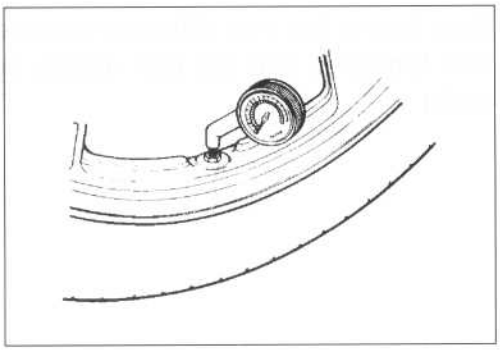
Operating the motorcycle with excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace a tire when the remaining depth of tire tread reaches the following specification.



TOOL 09900-20805: Tire depth gauge

DATA Tire tread depth (Recommend depth):
Service 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 will increase. Therefore, maintain the correct tire pressure for good roadability and a longer tire life. Cold inflation tire pressure is as follows.

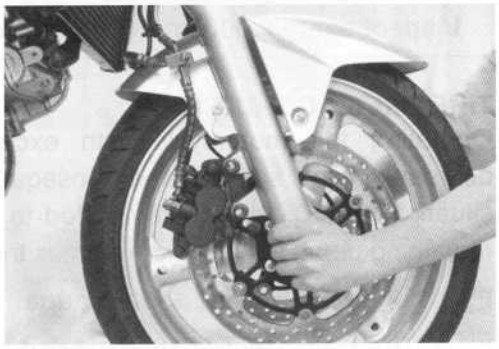
COLD INFLATION	SOLD RIDING			DUAL RIDING		
TIRE PRESSURE	kPa	kgf/cm²	psi	kPa	kgf/cm²	psi
FRONT	225	2.25	33	225	2.25	33
REAR	250	2.50	36	250	2.50	36

CAUTION

The standard tire fitted on this motorcycle is 120/60 ZR17 M/C (55 W) for front and 160/60 ZR17 M/C (69 W) for rear. The use of tires other than those specified may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.

DATA **TIRE TYPE**
FRONT: DUNLOP D220FST L
REAR : DUNLOP D220ST L

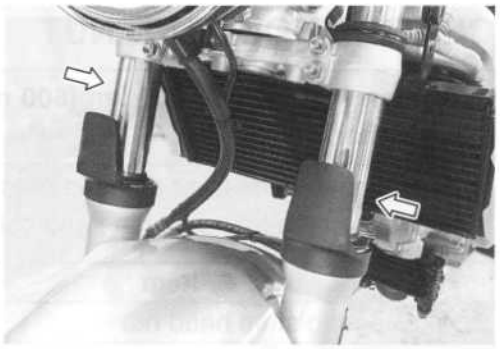
STEERING



Inspect initially at 1 000 km (600 miles, 1 month) and every 12 000 km (7 500 miles, 12 months) thereafter.

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 steering stem while grasping the lower fork tubes by supporting the machine so that the front wheel is off the ground, with the wheel straight ahead, and pull forward. If play is found, perform steering bearing adjustment as described. (☞7-40)

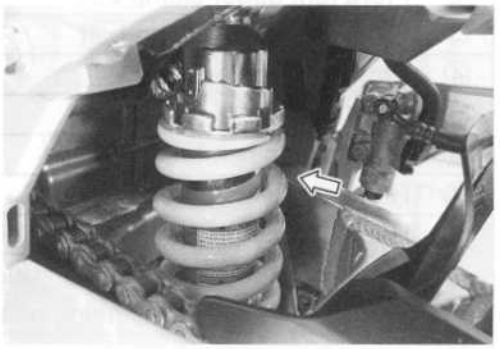
FRONT FORK



Inspect every 12 000 km (7 500 miles, 12 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. (☞ 7-17)

REAR SUSPENSION



Inspect every 12 000 km (7 500 miles, 12 months).

Inspect the rear shock absorber for oil leakage and check that there is no play in the swingarm. Replace any defective parts, if necessary. (☞ 7-51)

EXHAUST PIPE BOLT AND NUT

Tighten initially at 1 000 km (600 miles, 1 month) and every 12 000 km (7 500 miles, 12 months) thereafter.

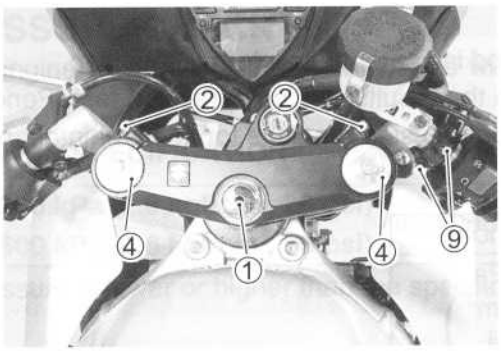
- Tighten the exhaust pipe bolts, nuts and muffler mounting bolts to the specified torque. (☞3-20)

CHASSIS BOLT AND NUT

Tighten initially at 1 000 km (600 miles, 1 month) and every 6 000 km (4 000 miles, 6 months) thereafter.

- Check that all chassis bolts and nuts are tightened to their specified torque. (Refer to page 2-33 for the locations of the following nuts and bolts on the motorcycle.)

	Item	N·m	kgf-m	lb-ft
①	Steering stem head nut	90	9.0	65.0
②	Front fork upper clamp bolt	23	2.3	16.5
③	Front fork lower clamp bolt	23	2.3	16.5
④	Front fork cap bolt	23	2.3	16.5
⑤	Front axle	65	6.5	47.0
⑥	Front axle pinch bolt	23	2.3	16.5
⑦	Handlebar clamp bolt	23	2.3	16.5
⑧	Handlebar holder nut (SV650)	45	4.5	32.5
⑨	Front brake master cylinder mounting bolt	10	1.0	7.0
⑩	Front brake caliper mounting bolt	39	3.9	28.0
⑪	Brake hose union bolt	23	2.3	16.5
⑫	Front caliper air bleeder valve	7.5	0.75	5.5
⑬	Brake disc bolt (Front and Rear)	23	2.3	16.5
⑭	Rear brake caliper mounting bolt	23	2.3	16.5
⑮	Rear brake caliper sliding pin	27	2.7	19.5
⑯	Rear brake master cylinder mounting bolt	10	1.0	7.0
⑰	Rear brake master cylinder rod lock nut	18	1.8	13.0
⑱	Front footrest bracket mounting bolt	23	2.3	16.5
⑲	Front footrest bolt	39	3.9	28.0
⑳	Swingarm pivot shaft nut	100	10.0	72.5
㉑	Swingarm pivot shaft lock nut	90	9.0	65.0
㉒	Rear shock absorber mounting upper nut	50	5.0	36.0
㉓	Rear shock absorber mounting bolt	50	5.0	36.0
㉔	Cushion lever mounting nut	78	7.8	56.5
㉕	Cushion rod mounting nut	78	7.8	56.5
㉖	Rear axle nut	100	10.0	72.5
㉗	Rear sprocket nut	60	6.0	43.5
㉘	Seat rail mounting bolt	50	5.0	36.0
㉙	Rear caliper air bleeder valve	6.0	0.6	4.3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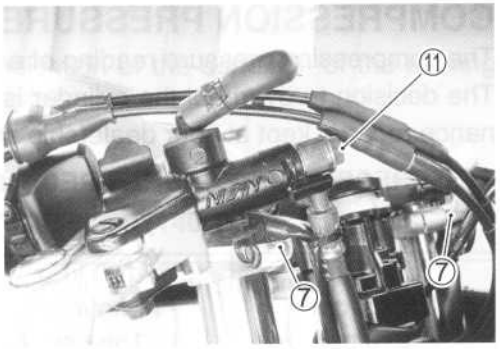
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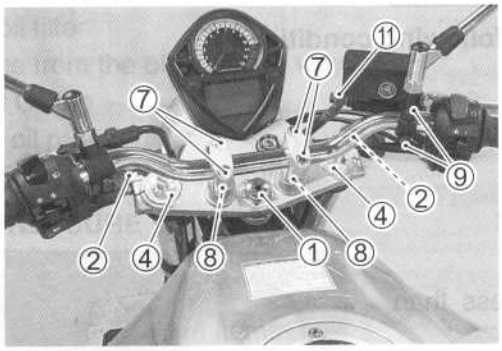
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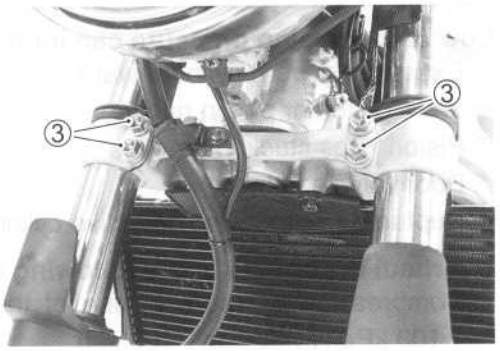
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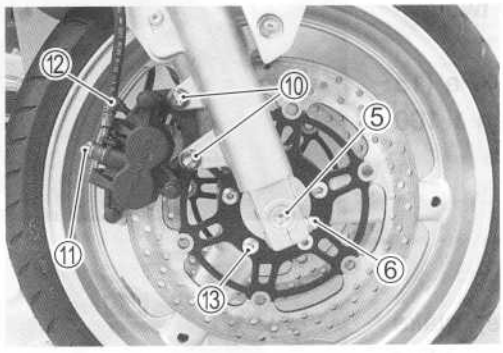
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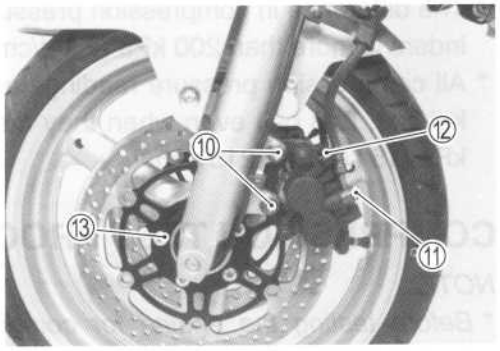
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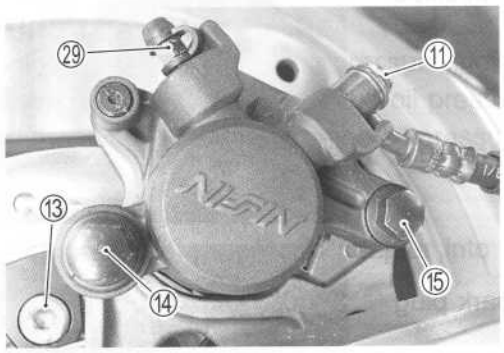
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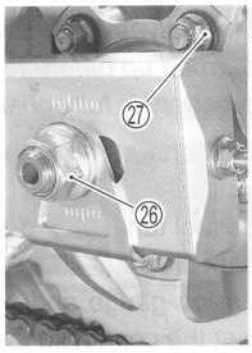
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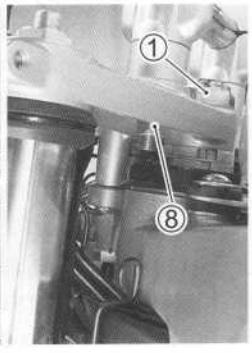
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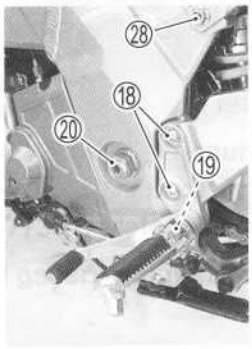
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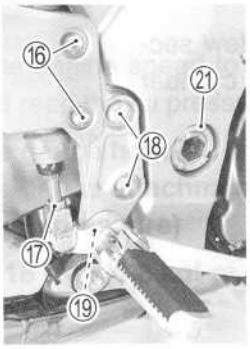
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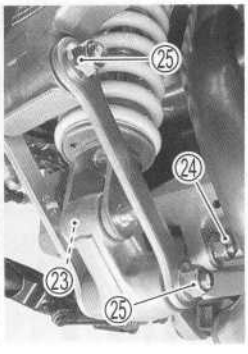
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COMPRESSION PRESSURE CHECK

The compression pressure reading of a cylinder is a good indicator of its internal condition.
The decision to overhaul the cylinder is often based on the results of a compression test. Periodic maintenance records kept at your dealership should include compression readings for each maintenance service.

COMPRESSION PRESSURE SPECIFICATION

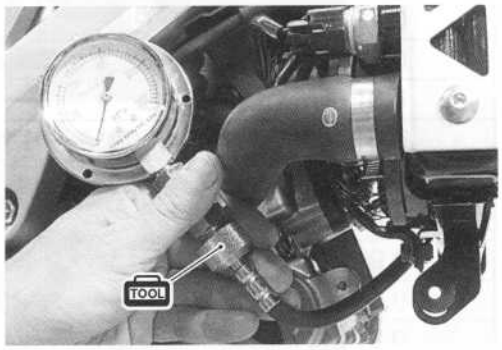
Standard	Limit	Difference
1 500 kPa (15 kgf/cm^2, 213 psi)	1 100 kPa (11 kgf/cm^2, 156 psi)	200 kPa (2 kgf/cm^2, 28 psi)

Low compression pressure can indicate any of the following conditions:

* Excessively worn cylinder walls
* Worn piston or piston rings
* Piston rings stuck in grooves
* Poor valve seating
* Ruptured or otherwise defective cylinder head gasket

Overhaul the engine in the following cases:

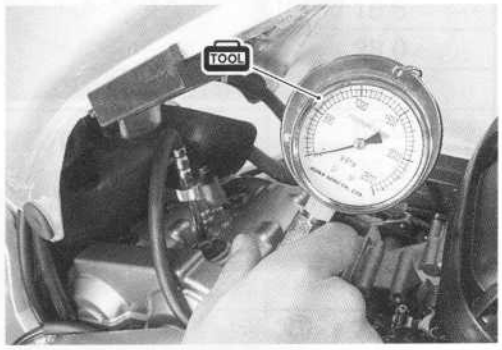
* Compression pressure in one of the cylinders is less than 1 100 kPa (11 kgf/cm^2, 156 psi).
* The difference in compression pressure between any two cylinders is more than 200 kPa (2 kgf/cm^2, 28 psi).
* All compression pressure readings are nearly 1 100 kPa (15 kgf/cm^2, 213 psi) even when they measure more than 1 100 kPa (15 kgf/cm^2, 213 psi).



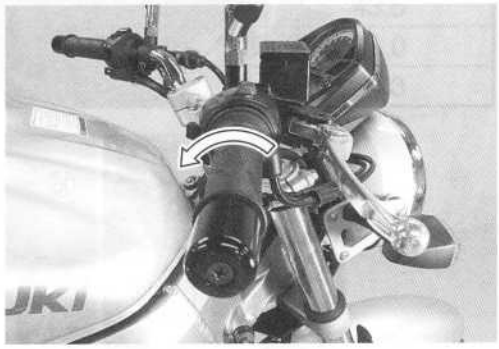
COMPRESSION TEST PROCEDURE

NOTE:

* *Before testing the engine for compression pressure, make sure that the cylinder head nuts are tightened to the specified torque values and the valves are properly adjusted.*
* *Have the engine warmed up before testing.*
* *Make sure that the battery is fully-charged.*



- Remove the related parts and test the compression pressure in the following manner.
- Lift and support the fuel tank. (☞5-6)
- Remove all the spark plugs. (☞2-6)
- Install the compression gauge and adaptor in the spark plug hole. Make sure that the connection is tight.
- Keep the throttle grip in the fully opened position.
- Press the starter button and crank the engine for a few seconds. Record the maximum gauge reading as the cylinder compression.
- Repeat this procedure with the other cylinder.



TOOL 09915-64512: Compression gauge set
09913-10750: Adaptor

OIL PRESSURE CHECK

Check the engine oil pressure periodically. This will give a good indication of the condition of the moving parts.

OIL PRESSURE SPECIFICATION

Above 200 kPa (2.0 kgf/cm², 28 psi) **Below 600 kPa (6.0 kgf/cm², 85 psi)**	**at 3 000 r/min., Oil temp. at 60 °C (140 °F)**

If the oil pressure is lower or higher than the specification, the following causes may be considered.

LOW OIL PRESSURE

- Clogged oil filter
- Oil leakage from the oil passage way
- Damaged O-ring
- Defective oil pump
- Combination of the above items

HIGH OIL PRESSURE

- Engine oil viscosity is too high
- Clogged oil passage way
- Combination of the above items

OIL PRESSURE TEST PROCEDURE

Start the engine and check if the oil pressure indicator light is turned on. If the light stays on, check the oil pressure indicator light circuit. If the circuit is OK, check the oil pressure in the following manner.

- Remove the main oil gallery plug ①.
- Install the oil pressure gauge and adaptor into the main oil gallery.
- Warm up the engine as follows:
- Summer: 10 min. at 2 000 r/min.
- Winter: 20 min. at 2 000 r/min.
- After warming up, increase the engine speed to 3 000 r/min. (observe the tachometer), and read the oil pressure gauge.

TOOL 09915-74521: Oil pressure gauge hose
09915-74532: Oil pressure gauge attachment
09915-77331: Meter (for high pressure)

Main oil gallery plug (M8): 18 N·m (1.8 kgf-m, 13.0 lb-ft)