PERIODIC MAINTENANCE

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CONTENTS

PERIODIC MAINTENANCE SCHEDULE

IMPOTANT: 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.
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. Maintenance intervals are expressed in terms of kilometer, miles and months, and are dependant on whichever comes first.

NOTES:
More frequent servicing may be performed on motorcycles that are used under severe conditions.

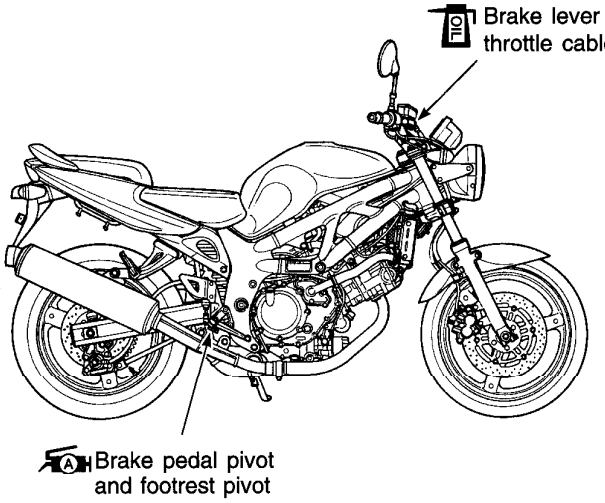
PERIODIC MAINTENANCE CHART

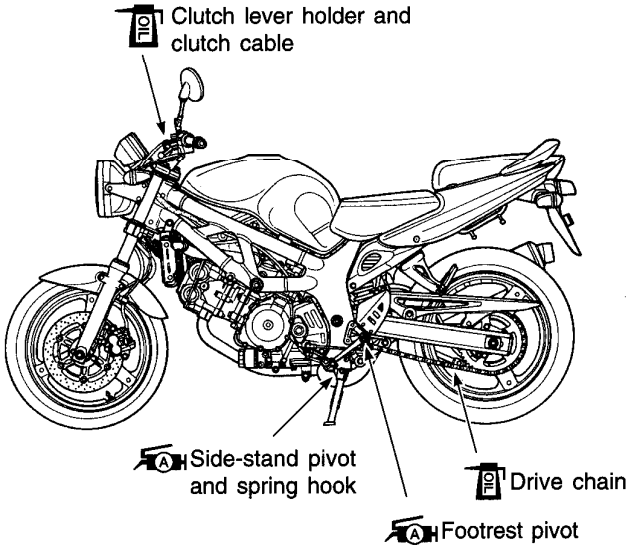
Interval / Item	km	1 000	6 000	12 000	18 000	24 000
	miles	600	4 000	7 500	11 000	15 000
	months	1	6	12	18	24
Air cleaner		-	I	I	R	I
Spark plugs		-	I	R	I	R
Tappet clearance		-	-	-	-	I
Engine oil		R	R	R	R	R
Engine oil filter		R	-	-	R	-
Fuel hose		-	I	I	I	I
		Replace every 4 years.				
Engine idle speed		I	I	I	I	I
Carburetor synchronization		I (E-33 only)	-	I	-	I
Evaporative emission control system (E-33 only)		-	-	I	-	I
		Replace vapor hose every 4 years.				
PAIR (air supply) system (E-33 only)		-	-	I	-	I
Throttle cable play		I	I	I	I	I
Clutch cable play		-	I	I	I	I
Radiator hoses		-	I	I	I	I
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 hoses		-	I	I	I	I
		Replace every 4 years.				
Brake fluid		-	I	I	I	I
		Replace every 2 years.				
Tire		-	I	I	I	I
Steering		I	-	I	-	I
Front forks		-	-	I	-	I
Rear suspension		-	-	I	-	I
Exhaust pipe bolt and nut		T	-	T	-	T
Chassis bolt and nuts		T	T	T	T	T

I = Inspect and adjust, clean, lubricate or replace 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.





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, especially whenever the motorcycle has been operated under wet or rainy conditions.*

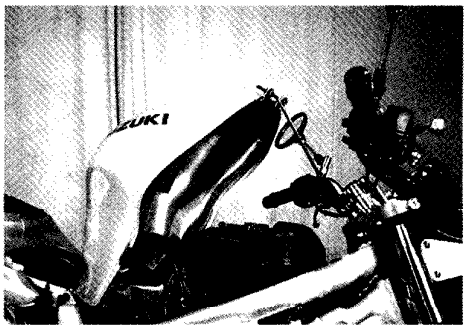
MAINTENANCE AND TUNE-UP PROCEDURES

This section describes the servicing procedures for each item mentioned in the Periodic Maintenance chart.

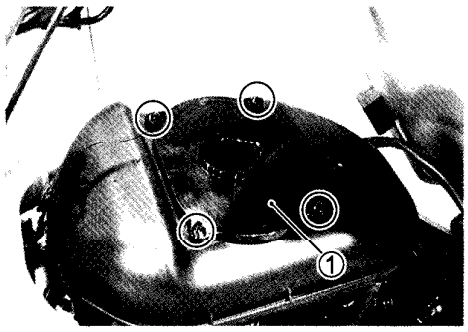
AIR CLEANER

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

- Remove the front and rear seats. (☞ 6-3)
- Lift and support the fuel tank. (☞ 4-4)



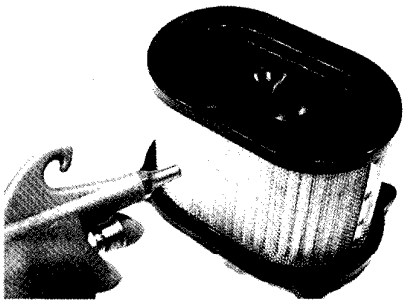
- Remove the air cleaner element ① by removing the screws.



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

⚠ CAUTION

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

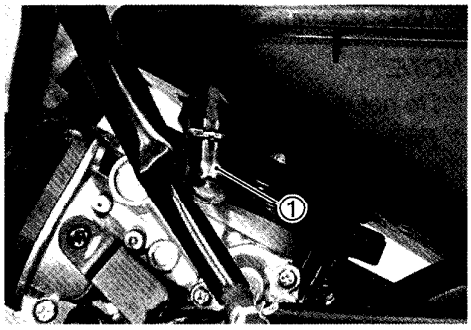


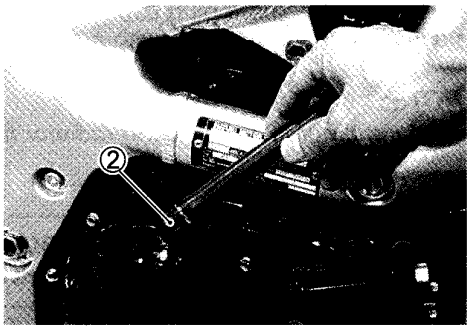
- Reinstall the cleaned or new air cleaner element in the reverse order of removal.

⚠ 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!

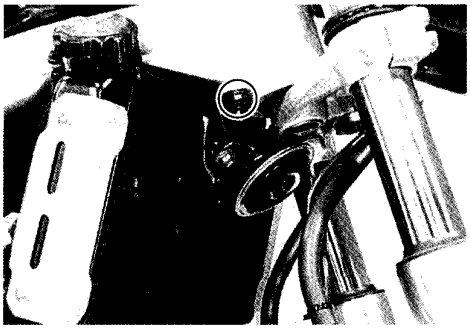
- Remove the drain plugs (① and ②) from the air cleaner drain hose and air cleaner box to allow any water to drain out.





SPARK PLUG

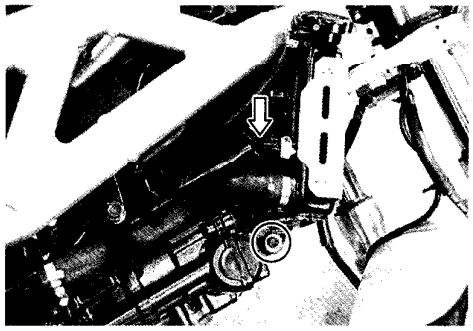
Inspect every 6 000 km (4 000 miles, 6 months) and replace every 12 000 km (7 500 miles, 12 months).



NO.1 (FRONT) SPARK PLUG REMOVAL

- Disconnect the horn lead wires.
- Remove the horn with its bracket.

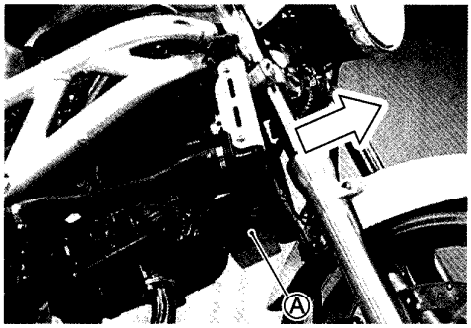
- Remove the radiator mounting bolt.
- Disconnect the cooling fan thermo-switch lead wire.



- 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.*



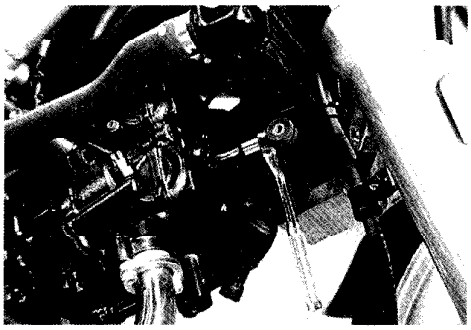
- Remove the spark plug cap.
- Remove the spark plug with a spark plug wrench.

NOTE:

Be careful not to damage the radiator fins.

⚠ WARNING

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



NO.2 (REAR) SPARK PLUG REMOVAL

- Remove the front and rear seats. (☞ 6-3)
- Lift and support the fuel tank. (☞ 4-4)

- Remove the spark plug cap.
- Remove the spark plug with a spark plug wrench.

HEAT RANGE

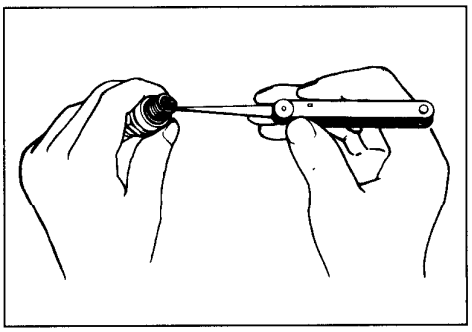
- Check to see the heat range of the plug.

	NGK	DENSO
Standard	CR8E	U24ESR-N
Colder type	CR9E	U27ESR-N
	CR10E	U31ESR-N

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

CARBON DEPOSITS

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



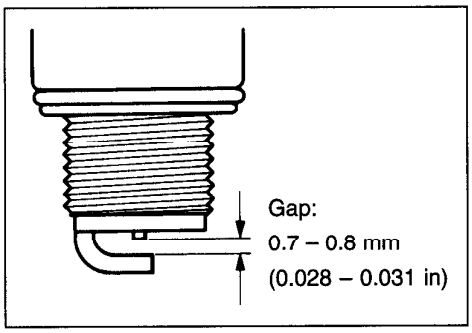
SPARK PLUG GAP

- Measure the spark plug gap using 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 the condition of the electrode.
- 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

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

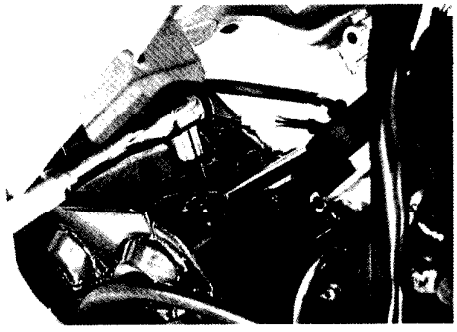
SPARK PLUG INSTALLATION

⚠ CAUTION

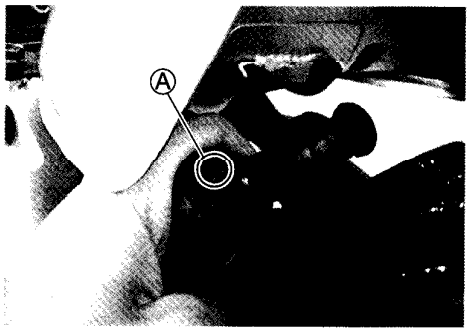
To avoid damaging the cylinder head threads, first finger tighten the spark plug and then tighten it to the proper torque using the spark plug wrench.

- 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)



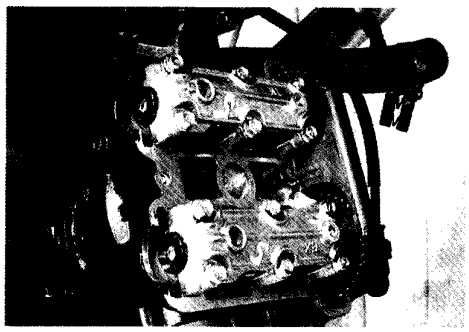
NOTE:
When fitting the spark plug caps, front and rear, face the triangle marks on the water-proof covers Ⓐ to each cylinder exhaust side.

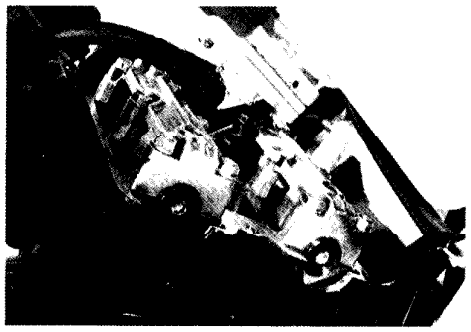


TAPPET CLEARANCE

Inspect every 24 000 km (15 000 miles, 24 months).

- Remove the front and rear seats. (☞ 6-3)
- Lift and support the fuel tank. (☞ 4-4)
- Remove the radiator. (☞ 5-4)
- Remove the spark plugs, front and rear. (☞ 2-5)
- Remove the cylinder head covers, front and rear.

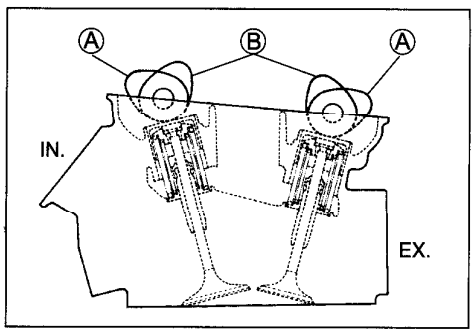




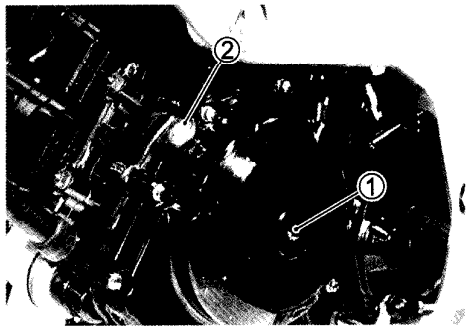
The tappet clearance specification is different for intake and exhaust valves.
Tappet clearance must be checked and adjusted, 1) at the time of periodic inspection, 2) when the valve mechanism is serviced, and 3) when the camshafts are disturbed by removing them for servicing.

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)

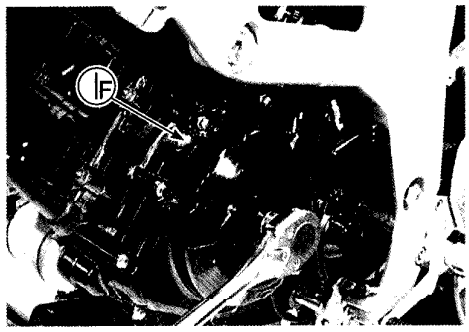
NOTE:
* *The tappet clearance should be taken when each cylinder is at Top Dead Center (TDC) of compression stroke.*
* *The cams (IN & EX) on the front cylinder at position Ⓐ show the front cylinder at TDC of compression stroke.*
* *The cams (IN & EX) on the rear cylinder at position Ⓑ show the rear 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.

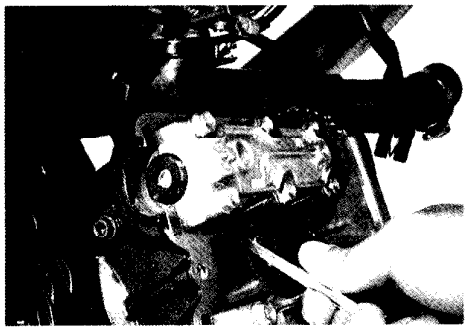


- Turn the crankshaft to set the No.1 (Front) cylinder at TDC of compression stroke. (Align the "| F" line on the generator rotor to the index mark of valve timing inspection hole and also bring the camshafts to the position as shown in page 2-8.)

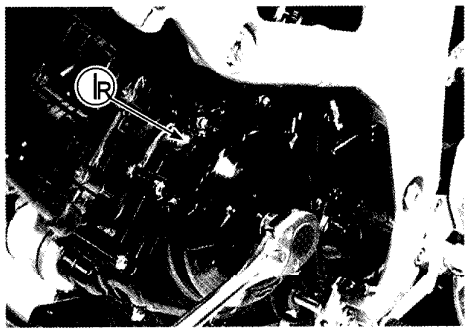


- To inspect the No.1 (Front) cylinder tappet clearance, use a thickness gauge between the tappet and the cam. If the clearance is out of specification, adjust it into the specified range.

09900-20803: Thickness gauge

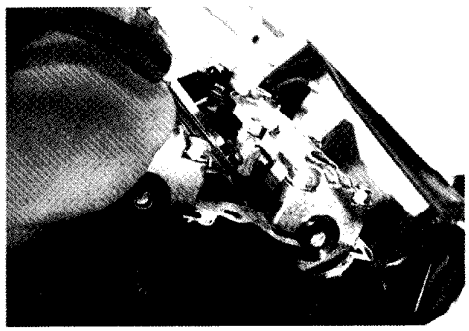


- Turn the crankshaft 270 degrees (3/4 turns) to set the No.2 (Rear) cylinder at TDC of compression stroke. (Align the "| R" line on the generator rotor to the index mark of valve timing inspection hole and also bring the camshafts to the position as shown in page 2-8.)



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

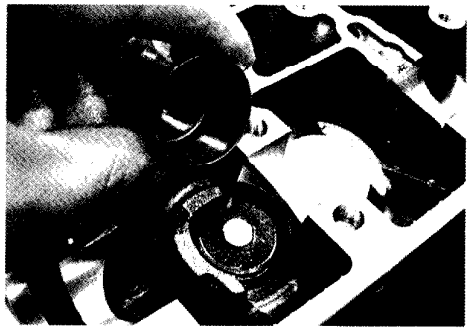
09900-20803: Thickness gauge

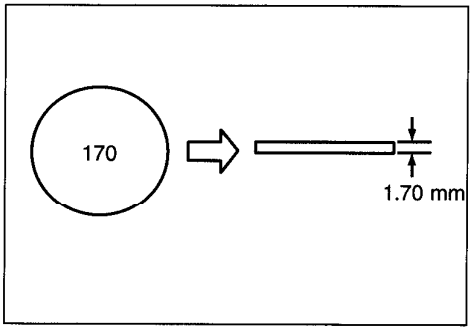


TAPPET CLEARANCE ADJUSTMENT

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

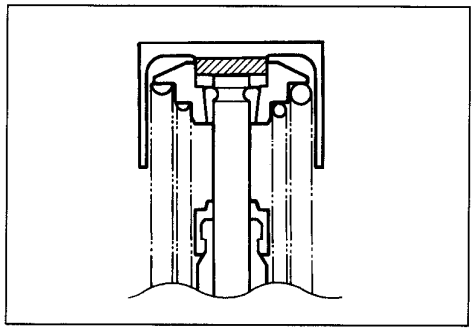
- Remove the intake or exhaust camshafts. (☞ 3-21, 3-23)
- Remove the tappet and shim by fingers or magnetic hand.
- Check the figures printed on the shim. These figures indicate the thickness of the shim, as illustrated.
- Select a replacement shim that will provide a clearance within the specified 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 (☞ 2-11, 2-12) 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. (☞ 3-109, 3-113)

- 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.

	Page
* Cylinder head cover	3-118
* Spark plug and plug cap	2-7 and -8
* Valve timing inspection plug	3-119
* Generator cover plug	3-119

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

TAPPET SHIM SET (12800-05820)

MEASURED TAPPET CLEAFANCE (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	1.70 mm
Shim size to be used	1.80 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

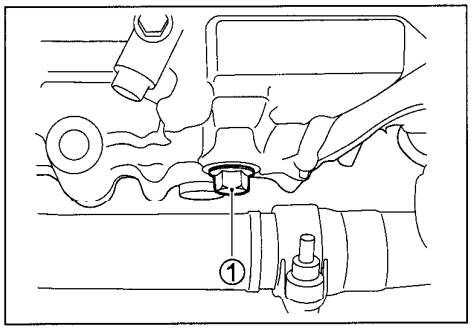
Tappet clearance is	0.33 mm
Present shim size	1.70 mm
Shim size to be used	1.80 mm

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.

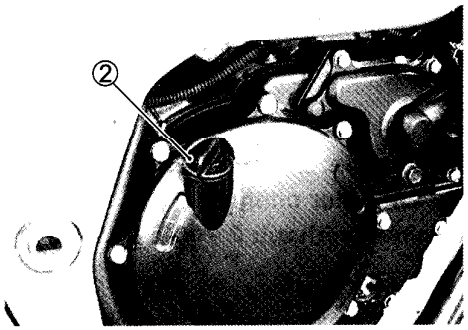


ENGINE OIL REPLACEMENT

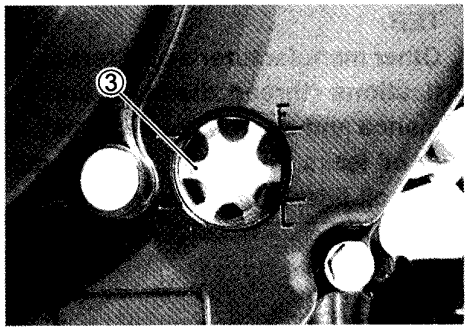
- Keep the motorcycle upright.
- Place an oil pan below the engine, and drain oil by removing the oil drain plug ① and filler cap ②.

- 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 10W/40 viscosity.

Oil drain plug (M12): 21 N·m (2.1 kgf·m, 15 lb-ft)

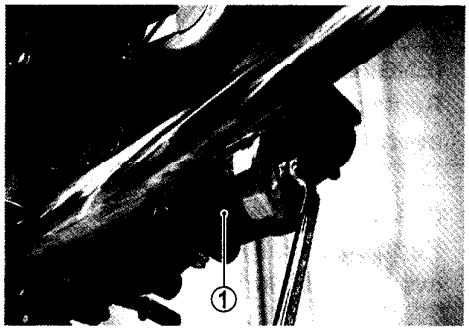


- Start up the engine and allow it to run for several minutes at idling speed.
- Turn off the engine and wait about one minute, then check the oil level through the inspection window ③. If the level is below mark "L", add oil to "F" level. If the level is above mark "F", drain oil to "F" level.



OIL FILTER REPLACEMENT

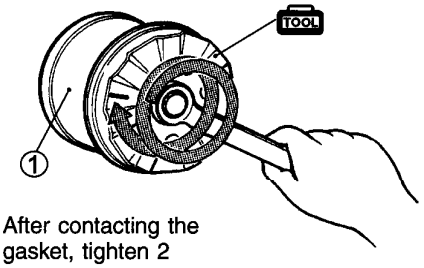
- Drain the engine oil as described in the engine oil replacement procedure.
- Remove the oil filter ① using the special tool.
- Apply engine oil lightly to the gasket of the new oil filter before installation.



- 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 full 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.



After contacting the gasket, tighten 2 turns.

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

NECESSARY AMOUNT OF ENGINE OIL
Oil change: 2 300 ml (2.4/2.0 US/Imp qt)
Oil and filter change: 2 400 ml (2.5/2.1 US/Imp qt)
Engine overhaul: 2 700 ml (2.9/2.4 US/Imp qt)

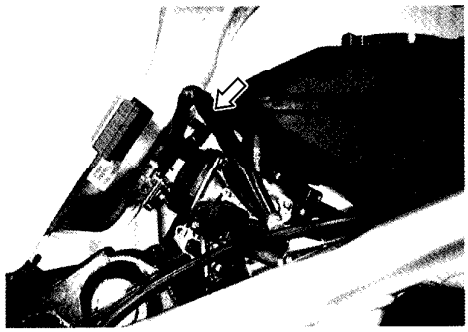
⚠ CAUTION

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 defects are found, the hoses must be replaced.



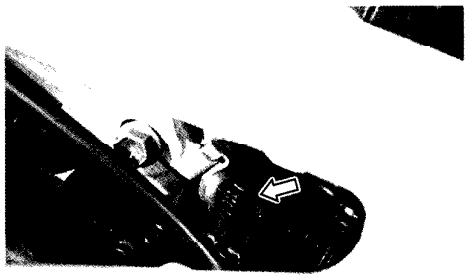
ENGINE IDLE SPEED

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 hot.

- 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



CARBURETOR SYNCHRONIZATION

Inspect initially at 1 000 km (600 miles, 1 month) (E-33 only) and every 12 000 km (7 500 miles, 12 months). (☞ 4-35)

EVAPORATIVE EMISSION CONTROL SYSTEM

(California model only)

Inspect every 12 000 km (7 500 miles, 12 months), Replace vapor hose every 4 years. (☞ 9-3)

PAIR (AIR SUPPLY) SYSTEM

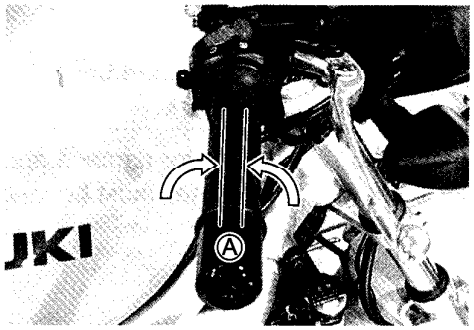
(California model only)

Inspect every 12 000 km (7 500 miles, 12 months), (☞ 9-6)

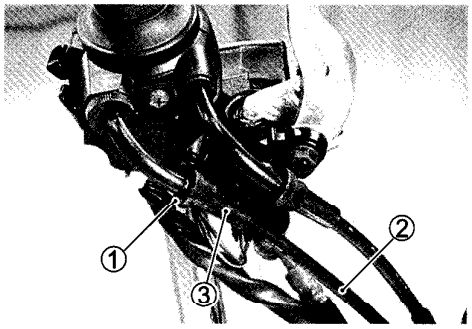
THROTTLE CABLE PLAY

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

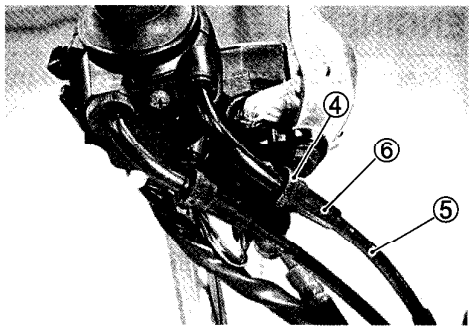
Adjust the throttle cable play Ⓐ as follows.



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



2nd 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.



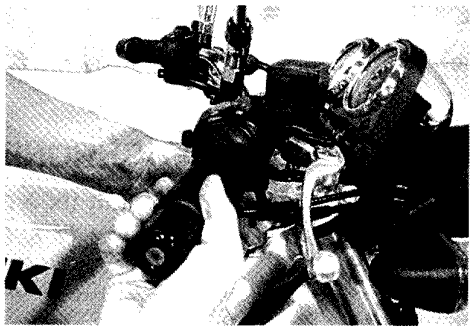
3rd step:
- While holding the throttle grip at the fully closed position, slowly turn out the adjuster ③ of the throttle returning cable ② until resistance is felt.
- Tighten the locknut ① while holding the adjuster ③.

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

⚠ WARNING

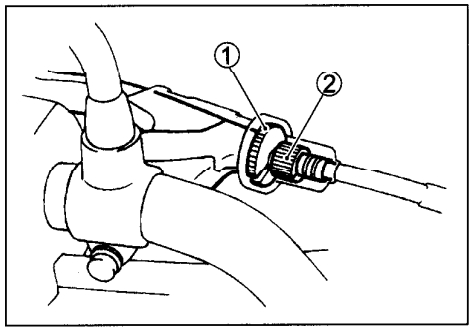
After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.

NOTE:
Major adjustment can be made at the carburetor side adjuster.

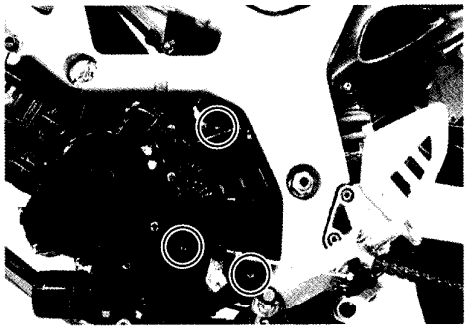


CLUTCH CABLE PLAY

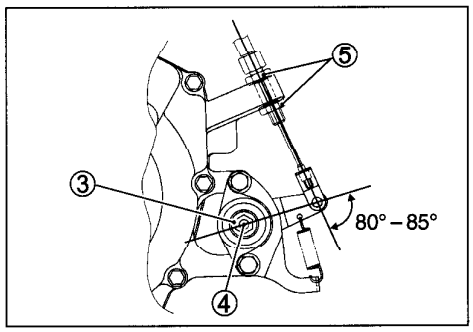
Inspect every 6 000 km (4 000 miles, 6 months).



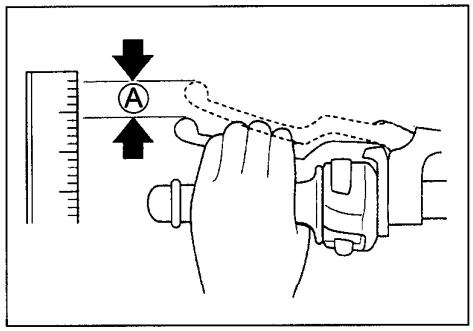
- Loosen the locknut ① and turn the adjuster ② into the clutch lever assembly.



- Remove the engine sprocket cover.



- Loosen the locknut ③ and turn out the adjusting screw ④ two or three rotations.
- Position the clutch release lever as shown by turning the locknuts ⑤.
- Tighten the locknuts ⑤.
- Slowly turn in the adjusting screw ④ until resistance is felt.
- Turn out the adjusting screw ④ 1/4 of a turn, and tighten the locknut ③.
- Turn in or out the cable adjuster ② to obtain 10 – 15 mm (0.4 – 0.6 in) of free play Ⓐ at the clutch lever end.
- Tighten the locknut ①.



DATA **Clutch cable play Ⓐ: 10 – 15 mm (0.4 – 0.6 in)**

COOLING SYSTEM

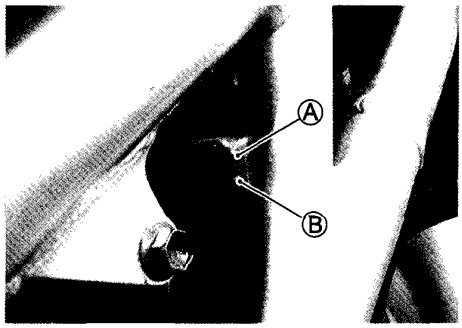
Inspect every 6 000 km (4 000 miles, 6 months).
Replace engine coolant every 2 years.

ENGINE COOLANT LEVEL CHECK

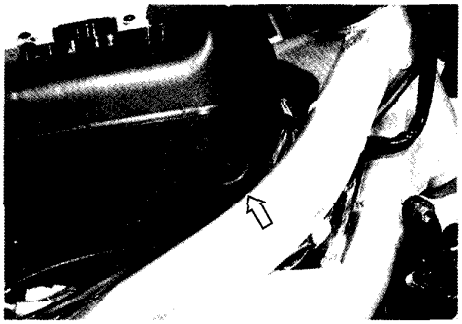
- Keep the motorcycle upright.
- Check the engine coolant level by observing the full and lower lines on the engine coolant reserve tank.

  Ⓐ 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.

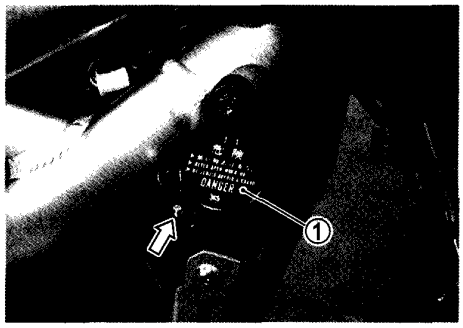


NOTE:
To remove the filler cap, lift and support the fuel tank. (☞ 4-4)



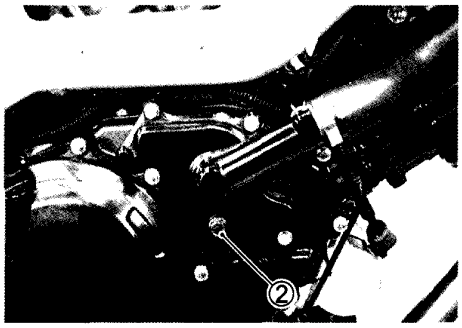
ENGINE COOLANT CHANGE

- Loosen the radiator cap stop screw.
- 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.

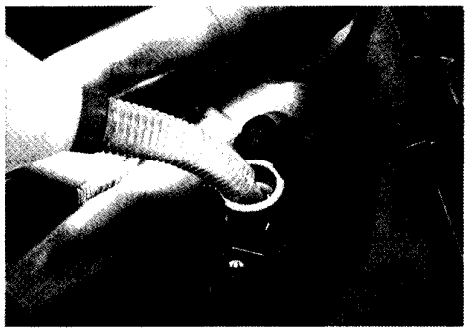
Water drain bolt ②: 13 N·m (1.3 kgf·m, 9.5 lb-ft)

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

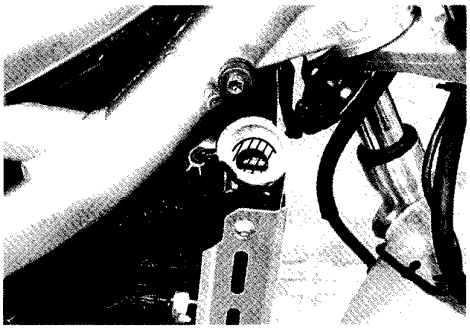
NOTE:
For engine coolant information, refer to page 5-2.

AIR BLEEDING THE COOLING CIRCUIT

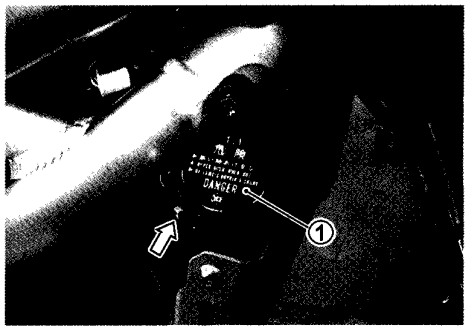
- Add engine coolant up to the radiator inlet.
- Support the motorcycle upright.
- Slowly swing the motorcycle, right and left, to bleed the air trapped in the cooling circuit.
- Add engine coolant up to the radiator inlet.



- 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.
- After warming up and cooling down the engine several times, add the engine coolant up to the full level of the reserve tank.



⚠ CAUTION

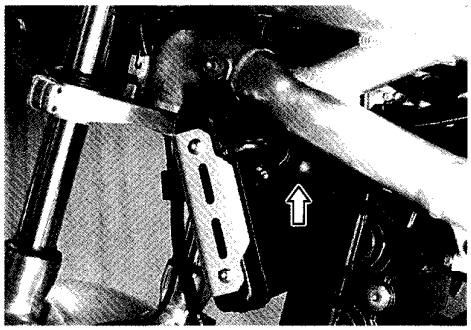
Repeat the above procedure several times and make sure that the radiator is filled with engine coolant up to the reserve tank full level.

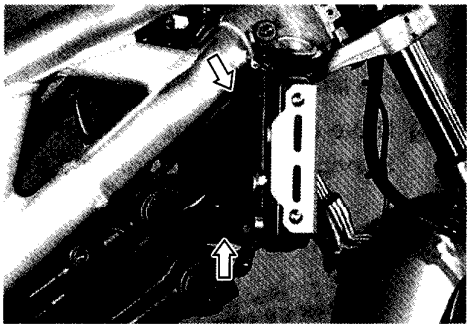
LLC Engine coolant capacity: 1 600 ml (1.7/1.4 US/Imp qt)

RADIATOR HOSES

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

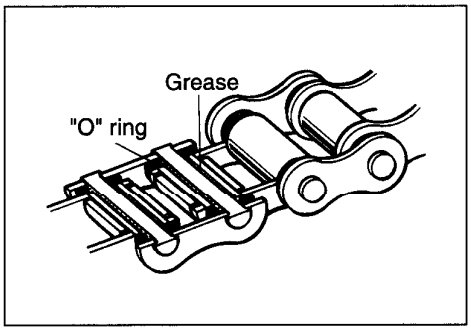
Inspect initially at 1 000 km (600 miles, 1 month) and every 6 000 km (4 000 miles, 6 months) thereafter. Clean and lubricate every 1 000 km (600 miles).

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

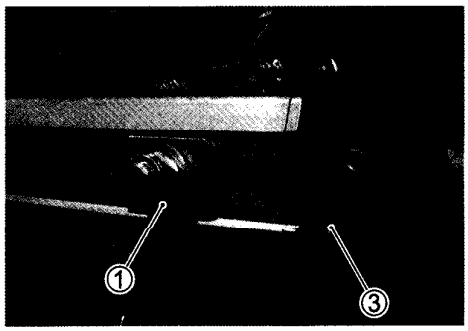
If any defects are found, the drive chain must be replaced.

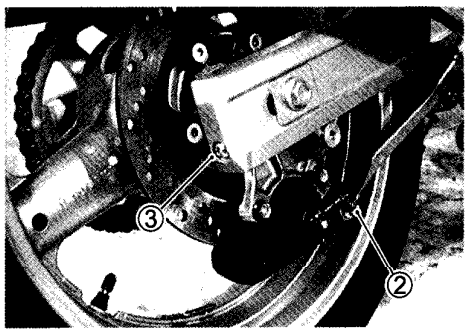
NOTE:
When replacing the drive chain, replace the drive chain and sprockets as a set.



CHECKING

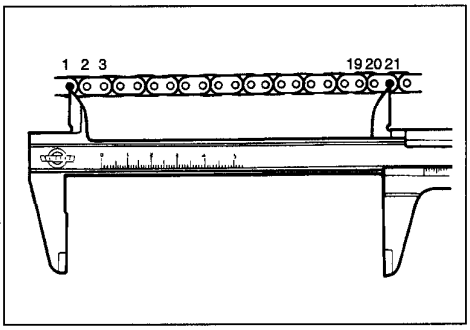
- Remove the axle cotter pin. (For E-03, 28 and 33 models)
- Loosen the axle nut ①.
- Loosen the torque link nut (Rear) ②.
- Tense the drive chain fully by turning both chain adjusters ③.





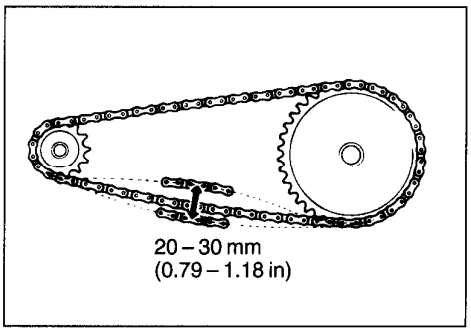
- Count out 21 pins (20 pitches) on the chain and measure the distance between the two points. If the distance exceeds the service limit, the chain must be replaced.

DATA **Drive chain 20-pitch length**
Service limit: 319.4 mm (12.57 in)



ADJUSTING

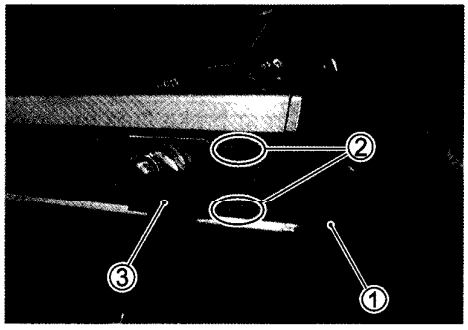
- Loosen or tighten both chain adjuster nuts ① until there is 20 – 30 mm (0.79 – 1.18 in) of slack at the middle of the chain between the engine and rear sprockets as shown. The reference marks ② on both sides of the swingarm and the edge of each chain adjuster must be aligned to ensure that the front and rear wheels are correctly aligned.



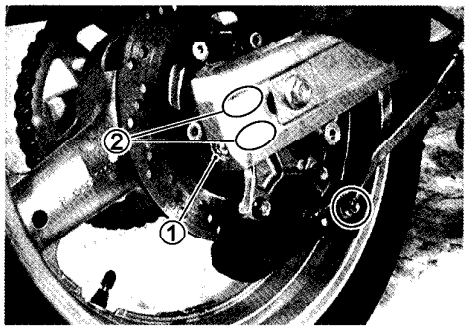
DATA **Drive chain slack**
Standard: 20 – 30 mm (0.79 – 1.18 in)

- Place the motorcycle on its side-stand for accurate adjustment.
- After adjusting the drive chain, tighten the axle nut ③ and the torque link nut (Rear) to the specified torque.
- Tighten both chain adjuster nuts ① securely.

Rear axle nut: 65 N·m (6.5 kgf·m, 47.0 lb-ft)
Torque link nut (Rear): 35 N·m (3.5 kgf·m, 25.5 lb-ft)



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



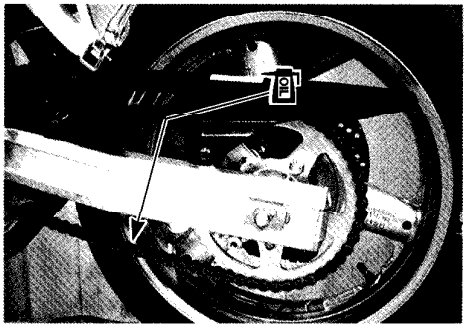
CLEANING AND LUBRICATING

- Clean the drive chain with kerosine. If the drive chain tends to rust quickly, the intervals must be shortened.

⚠ CAUTION

Do not use trichloroethylene, gasoline or any similar solvent. These fluids have too great a dissolving power for this chain and they can damage the O-rings. Use only kerosine to clean the drive chain.

- 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.**
*** The standard drive chain is a D.I.D. 525V8 Suzuki recommends to use this standard drive chain as a replacement.**

BRAKE

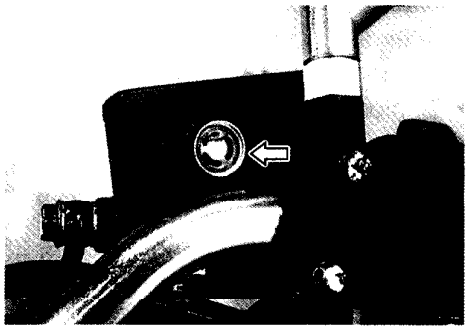
(BRAKE)
Inspect initially at 1 000 km (600 miles, 1 month) and every 6 000 km (4 000 miles, 6 months) thereafter.

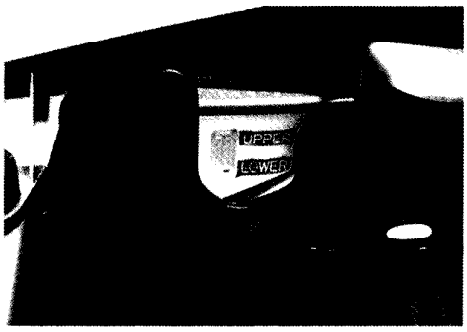
(BRAKE HOSE AND BRAKE FLUID)
Inspect every 6 000 km (4 000 miles, 6 months). Replace hoses every 4 years. Replace fluid every 2 years.

BRAKE FLUID LEVEL CHECK

- Keep the motorcycle upright and place the handlebars straight.
- Remove the rear seat. (☞ 6-3)
- 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





⚠ 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 fluids. 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 of time.**

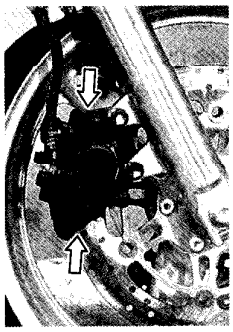
*** Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses and hose joints for cracks and oil leakage before riding.**

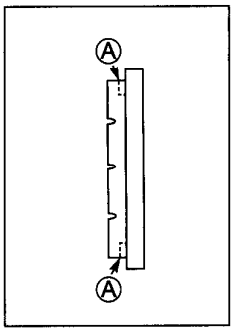
BRAKE PADS

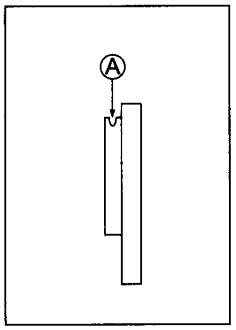
The extent of brake pad wear can be checked by observing the grooved limit line Ⓐ on the pad. When the wear exceeds the grooved limit line, replace the pads with new ones. (☞ 6-48, 6-56)

⚠ CAUTION

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





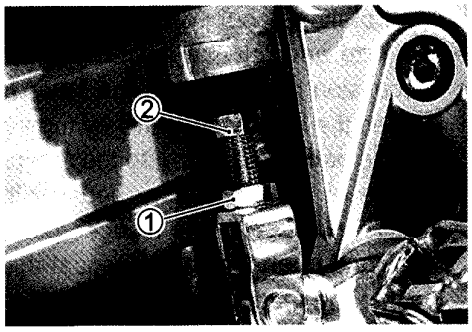


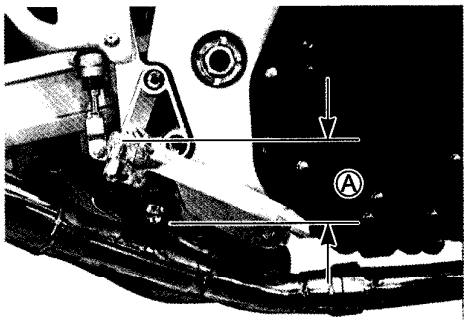
BRAKE PEDAL HEIGHT

- Loosen the locknut ①.
- Turn the push rod ② until the brake pedal is 55 – 65 mm (2.17 – 2.56 in) Ⓐ 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)

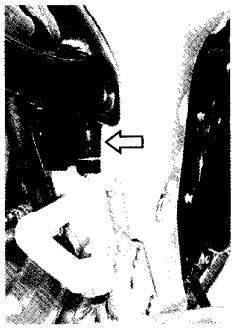
DATA Brake pedal height Ⓐ
Standard: 55 – 65 mm (2.17 – 2.56 in)

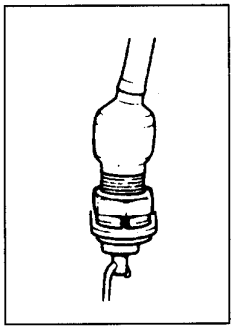




BRAKE LIGHT SWITCH

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.



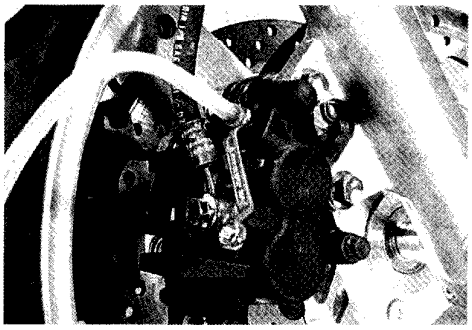


AIR BLEEDING THE BRAKE FLUID CIRCUIT

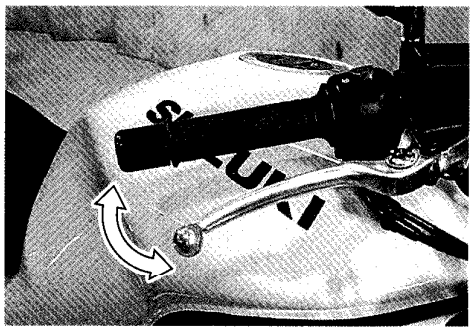
Air trapped in the brake fluid circuit acts like a cushion to absorb a large proportion of the pressure developed by the master cylinder and thus interferes with the full braking performance of the brake caliper. The presence of air is indicated by "sponginess" of the brake lever and also by lack of 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 brake system.
- 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:
While bleeding the brake system, replenish the brake fluid in the reservoir as necessary. Make sure that there is always some fluid visible in the reservoir.



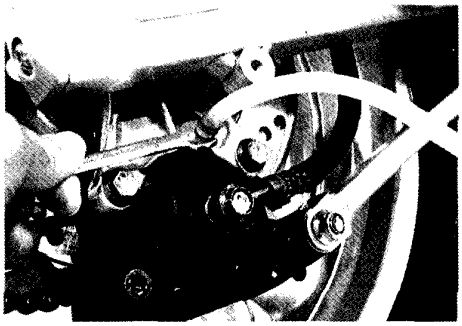
- Close the air bleeder valve and disconnect the hose. Fill the reservoir with brake fluid to the top of the inspection window.

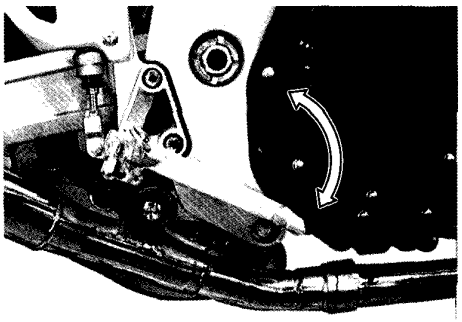
Air bleeder valve: 7.5 N·m (0.75 kgf·m, 5.5 lb-ft)

⚠ CAUTION

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

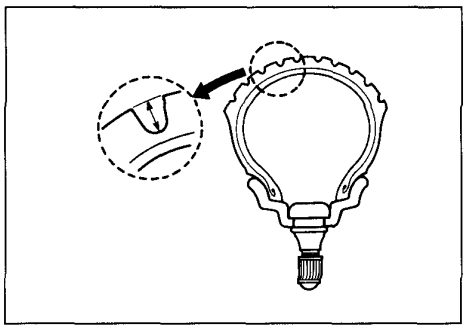
- Rear brake: The only difference between bleeding the front and rear brakes is that the rear master cylinder is actuated by a pedal.





TIRES

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



TIRE TREAD CONDITION

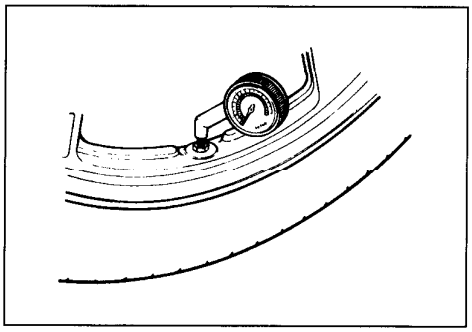
Operating the motorcycle with excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace a tire when the remaining depth of tire tread reaches the following specification.

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.



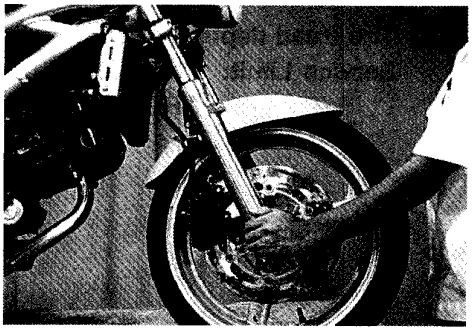
COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kgf/cm²	psi	kPa	kgf/cm²	psi
FRONT	225	2.25	33	225	2.25	33
REAR	250	2.50	36	250	2.50	36

⚠ CAUTION

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

DATA TIRE TYPE
METZELER (MEZ4 FRONT.....Front, MEZ4.....Rear)

STEERING



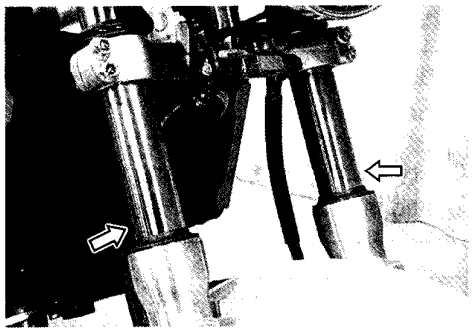
Inspect initially at 1 000 km (600 miles, 1 month) and every 12 000 km (7 500 miles, 12 months) thereafter.

The steering should be adjusted properly for smooth turning of the handlebars and safe operation. 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. Support the motorcycle so that the front wheel is off the ground. With the wheel facing straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, readjust the steering. (☞ 6-28)

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. (☞ 6-11)



REAR SUSPENSION

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

Inspect the rear shock absorbers for oil leakage and check that there is no play in the swingarm. Replace any defective parts if necessary. (☞ 6-37)

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.

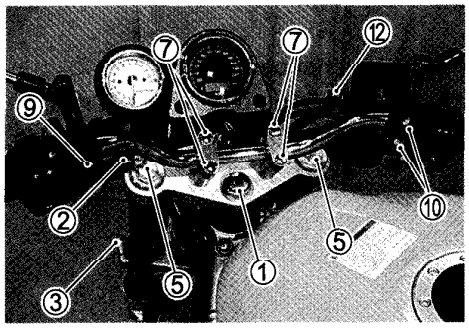
- Tighten the exhaust pipe bolts, nuts and muffler mounting bolts to the specified torque. (☞ 3-16)

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 2-29 for the locations of the following nuts and bolts on the motorcycle.)

Item	N·m	kgf·m	lb-ft
① Steering stem head nut	65	6.5	47.0
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	45	4.5	32.5
⑨ Clutch lever holder mounting bolt	10	1.0	7.0
⑩ Front brake master cylinder mounting bolt	10	1.0	7.0
⑪ Front brake caliper mounting bolt	39	3.9	28.0
⑫ Brake hose union bolt	23	2.3	16.5
⑬ Air bleeder valve	7.5	0.75	5.5
⑭ Brake disc bolt (Front and Rear)	23	2.3	16.5
⑮ Rear brake caliper mounting bolt	26	2.6	19.0
⑯ Rear brake caliper housing bolt	30	3.0	21.5
⑰ Rear brake master cylinder mounting bolt	10	1.0	7.0
⑱ Rear brake master cylinder rod lock nut	18	1.8	13.0
⑲ Front footrest bracket mounting bolt	23	2.3	16.5
⑳ Front footrest bolt	39	3.9	28.0
㉑ Swingarm pivot shaft nut	100	10.0	72.5
㉒ Swingarm pivot shaft lock nut	90	9.0	65.0
㉓ Swingarm pivot shaft	15	1.5	11.0
㉔ Torque link nut (Front & Rear)	35	3.5	25.5
㉕ Rear shock absorber mounting nut	50	5.0	36.0
㉖ Rear shock absorber mounting bolt	50	5.0	36.0
㉗ Cushion lever mounting nut	78	7.8	56.5
㉘ Cushion rod mounting nut	78	7.8	56.5
㉙ Rear axle nut	65	6.5	47.0
㉚ Rear sprocket nut	60	6.0	43.5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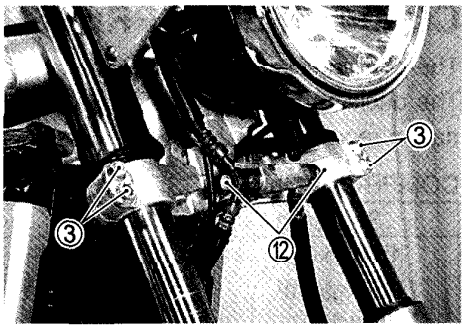
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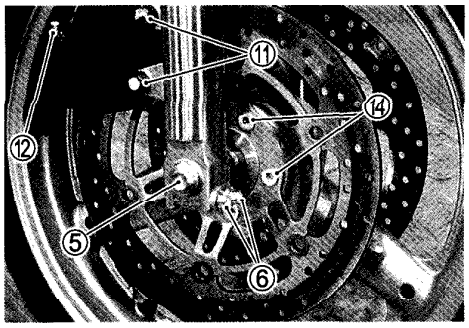
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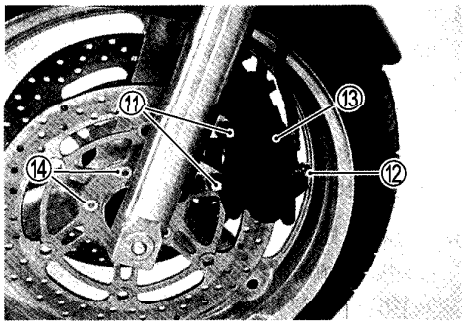
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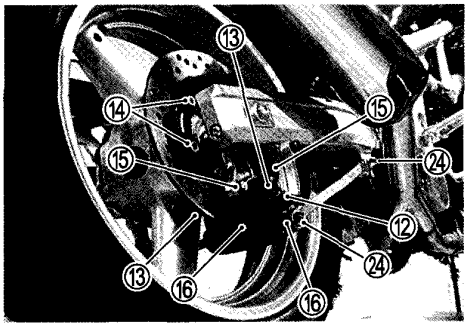
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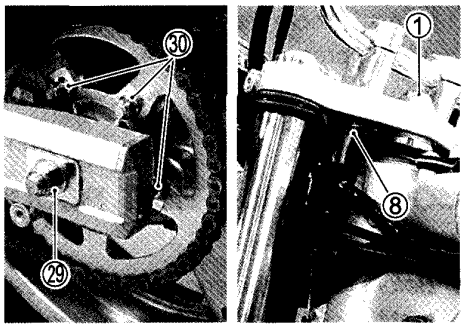
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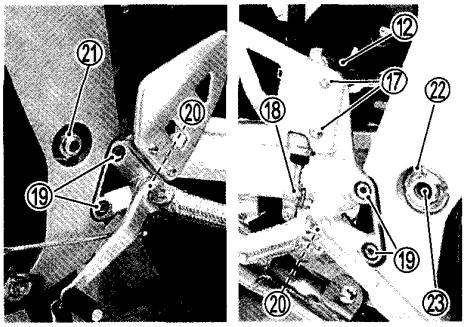
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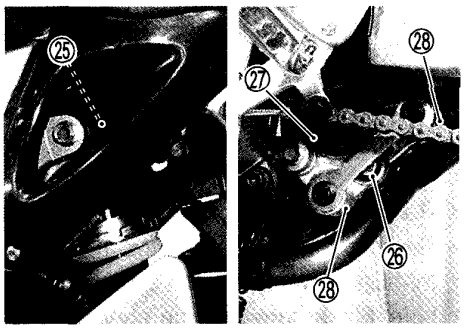
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COMPRESSION PRESSURE CHECK

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

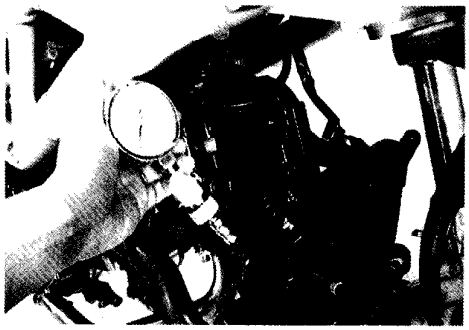
Standard	Limit	Difference
1 500 kPa (15 kgf/cm² 213 psi)	1 100 kPa (11 kgf/cm² 156 psi)	200kPa (2 kgf/cm² 28 psi)

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/cm², 156 psl).
* The difference in compression pressure between any two cylinders is more than 200 kPa (2 kgf/cm², 28 psi).
* All compression pressure readings are nearly 1 100 kPa (11 kgf/cm², 156 psi) even when they measure more than 1 100 kPa (11 kgf/cm², 156 psi).



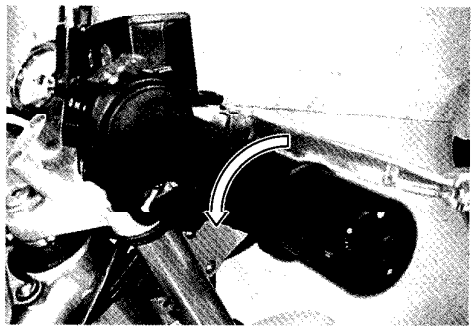
COMPRESSION TEST PROCEDURE

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. (☞ 4-4)
- Remove the all radiator mounting bolts.
- Remove all the spark plugs. (☞ 2-5)
- 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 cylinders.



09915-64510: Compression gauge set
09915-63310: 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
* Damaged O-ring
* Defective oil pump
* Combination of the above items

HIGH OIL PRESSURE

* Engine oil viscosity is too high
* Clogged oil passage
* 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.

09915-74520: Oil pressure gauge hose
09915-74532: Oil pressure gauge attachment
09915-77330: Meter (for high pressure)

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