SUZUKI

GSF400 Bandit

SERVICE MANUAL

99500-33023-01E

FOREWORD

The SUZUKI GSF400/BANDIT has been developed as a new generation motorcycle. It is packed with highly advanced design concepts including a liquid cooling system, a new highly efficient combustion system (TSCC) and a fully transistorized ignition system. Combined with precise control and easy handling the GSF400/BANDIT provides excellent performance and outstanding riding comfort.

This service manual has been produced primarily for experienced mechanics whose job is to inspect, adjust, repair and service SUZUKI motorcycles. Apprentice mechanics and do-it-yourself mechanics, will also find this manual an extremely useful repair guide. This manual contains the most up-to-date information at the time of publication. The rights are reserved to update or make corrections to this manual at any time.

SUZUKI MOTOR CORPORATION

Motorcycle Service Department

GROUP INDEX

VIEW OF SUZUKI GSF400/BANDIT

LEFT SIDE

RIGHT SIDE

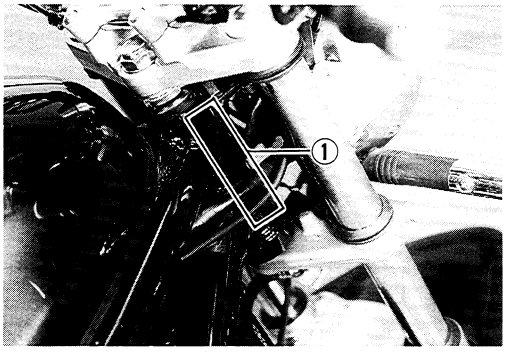
GENERAL INFORMATION

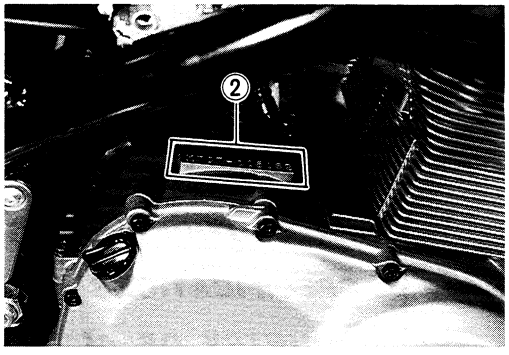
1

CONTENTS

SERIAL NUMBER LOCATION

The frame serial number or V.I.N. (Vehicle Identification Number) ① is stamped on the steering head pipe. The engine serial number ② is located on the right side of the crankcase. These numbers are required especially for registering the machine and ordering spare parts.





FUEL, OIL AND COOLANT RECOMMENDATION

FUEL (For U.S.A model)

1. Use only unleaded gasoline of at least 87 pump octane by the $\frac{R+M}{2}$ method or 91 octane or higher rated by the Research method.
2. Suzuki recommends that customers use alcohol-free, unleaded gasoline whenever possible.
3. Use of blended gasoline containing MTBE (Methyl Tertiary Butyl Ether) is permitted.
4. Use of blended gasoline/alcohol fuel is permitted, provided that the fuel contains not more than 10% ethanol. Gasoline/alcohol fuel may contain up to 5% methanol if appropriate cosolvents and corrosion inhibitors are present in it.
5. If the performance of the vehicle is unsatisfactory while using blended gasoline/alcohol fuel, you should switch to alcohol-free unleaded gasoline.
6. Failure to follow these guideline could possibly void applicable warranty coverage. Check with your fuel supplier to make sure that the fuel you intend to use meets the requirements listed above.

FUEL (For Canadian model)

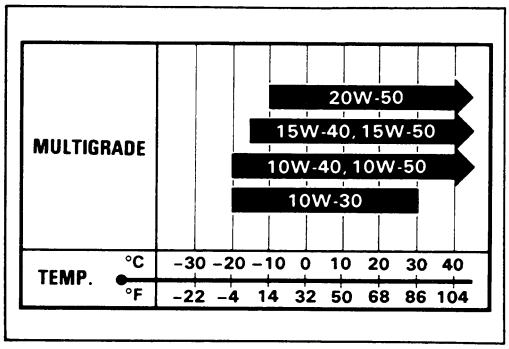
Use only unleaded gasoline of at least 87 pump octane by the $\frac{R+M}{2}$ method or 91 octane or higher rated by the Research method.

FUEL (For the other models)

Gasoline used should be graded 85 – 95 octane by the Research method or higher. An unleaded gasoline is recommended.

ENGINE OIL (For U.S.A. model)

Suzuki recommends the use of SUZUKI PERFORMANCE 4 MOTOR OIL or an oil which is rated SE or SF under the API (American Petroleum Institute) classification system. The viscosity rating is SAE 10W/40. If an SAE 10W/40 motor oil is not available, select an alternate according to the following chart.



ENGINE OIL (For the other models)

Make sure that the engine oil you use comes under API classification of SE or SF and that its viscosity rating is SAE 10W/40. If an SAE 10W/40 motor oil is not available, select an alternate according to the following chart.

BRAKE FLUID

Specification and classification: DOT4

WARNING:

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

FRONT FORK OIL

Use fork oil #10.

COOLANT

Use an anti-freeze/coolant compatible with an aluminum radiator, mixed with distrilled water only.

WATER FOR MIXING

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

ANTI-FREEZE/COOLANT

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

Suzuki recommends the use of SUZUKI GOLDEN CRUISER 1200NA anti-freeze/coolant. If this is not available, use an equivalent which is compatible with an aluminum radiator.

LIQUID AMOUNT OF WATER/COOLANT

Solution capacity (total): 1900 ml (2.0/1.7 US/Imp qt)

For coolant mixture information, refer to cooling system section, page 5-4.

CAUTION:
Mixing of anti-freeze/coolant should be limited to 60%. Mixing beyond it would reduce its efficiency. If the anti-freeze/coolant mixing ratio is below 50%, rust inhabiting performance is greatly reduced. Be sure to mix it above 50% even though the atmospheric temperature does not go down to the freezing point.

BREAK-IN PROCEDURES

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

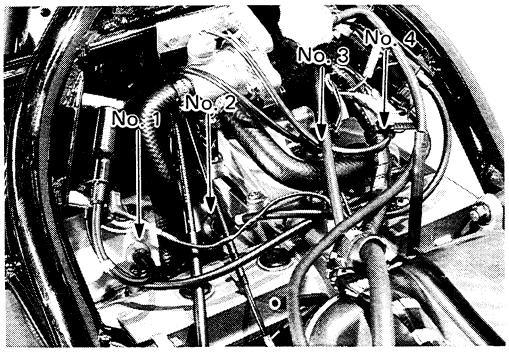
- Keep to these break-in engine speed limits:

Initial 800 km (500 miles) : Below 5000 r/min
Up to 1600 km (1000 miles) : Below 8000 r/min
Over 1600 km (1000 miles) : Below 14000 r/min

- Upon reaching an odometer reading of 1600 km (1000 miles) you can subject the motorcycle to full throttle operation. However, do not exceed 14000 r/min at any time.

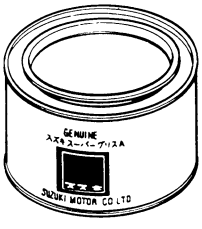
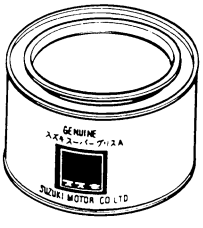
CYLINDER IDENTIFICATION

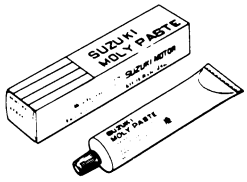
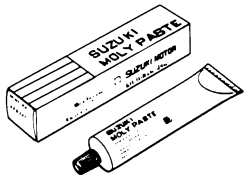
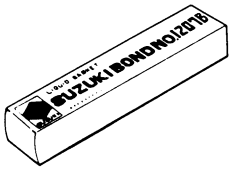
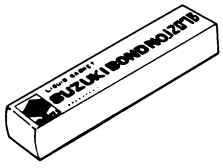
The four cylinders of this engine are identified as No. 1, No. 2, No. 3 and No. 4 cylinder, as counted from left to right (as viewed by the rider on the seat).



SPECIAL MATERIALS

The materials listed below are needed for maintenance work on the GSF400/BANDIT, and should be kept on hand for ready use. They supplement such standard materials as cleaning fluids, lubricants, emery cloth and the like. How to use them and where to use them are described in the text of this manual.

MATERIAL		PART	PAGE
For U.S.A. model	For other models		
 SUZUKI BRAKE FLUID DOT3 & DOT4 99000-23110	 SUZUKI BRAKE FLUID DOT3 & DOT4 99000-23110	• Brakes	2-13 7- 8 7-10 7-23 7-26
 SUZUKI GOLDEN CRUISER 1200NA 99000-99032-10X	 SUZUKI GOLDEN CRUISER 1200NA 99000-99032-10X	• Coolant	2-9 5-4
 SUZUKI SUPER GREASE "A" 99000-25030	 SUZUKI SUPER GREASE "A" 99000-25010	• Brake pedal pivot • Footrest pivot • Gearshift lever pivot • Side-stand pivot and spring hook • Center stand pivot and spring hook • Driveshaft oil seal and countershaft oil seal • Starter motor O-ring • Water pump O-ring • Starter motor oil seal • Wheel bearing • Speedometer gear box dust seal • Steering stem bearing and dust seal • Swingarm spacer, bearing and dust seal • Cushion lever/rod bearing • Water pump oil seal • Sprocket mounting drum bearing and oil seal	2-2 2-2 2-2 2-2, 8-21 2-2, 8-21 3-42 3-54 3-55 6-12 7-3, 30 7-4 7-18 7-45 7-45 5-13 7-31

MATERIAL		PART	PAGE
For U.S.A. model	For other models		
 SUZUKI SILICONE GREASE 99000-25100	 SUZUKI SILICONE GREASE 99000-25100	• Brake caliper axle	7-6
 SUZUKI MOLY PASTE 99000-25140	 SUZUKI MOLY PASTE 99000-25140	• Valve stem • Conrod big end bearing • Countershaft and driveshaft • Piston pin • Crankshaft journal bearing • Camshaft journal and cam face • Rocker arm and shaft • Starter motor armature end	3-26 3-35 3-42 3-56 3-46 3-58 3-20 6-12
 SUZUKI BOND NO. 1207B 99104-31140	 SUZUKI BOND NO. 1207B 99000-31140	• Oil pressure switch • Mating surface of upper and lower crankcases • Mating surface of clutch cover • Mating surface of starter clutch cover • Camshaft end cap • Breather cover • Water pump mechanical seal	3-49 3-47 3-53 3-61 3-61 3-62 5-13
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1303" 99000-32030	• Cam sprocket bolt • Cam chain guide screw • 2nd drive gear • Breather cover	3-29 3-30 3-42 3-62
 THREAD LOCK "1342" 99000-32050	 THREAD LOCK "1342" 99000-32050	• Starter motor housing bolt • Front fork damper rod bolt • Countershaft bearing retainer screw • Oil gallery plug retainer screw • Gearshift cam guide screw and pawl lifter screw • Carburetor set plate screw	6-12 7-14 3-47 3-47 3-48 4-11

MATERIAL		PART	PAGE
For U.S.A. model	For other models		
 THREAD LOCK SUPER "1333B" 99000-32020	 THREAD LOCK SUPER "1322" 99000-32110	• Generator stator mounting screw and lead wire clamp screw • Signal generator coil mounting screw and lead wire guide screw	3-52 6-7
 THREAD LOCK SUPER "1360" 99000-32130	 THREAD LOCK SUPER "1360" 99000-32130	• Brake disc mounting bolt	7-4 7-32
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1305" 99000-32100	• Generator rotor bolt • Starter clutch bolt	3-52 3-53
 SUZUKI FORK OIL # 10 99000-99044-10G	 SUZUKI FORK OIL # 10 99000-99044-10G	• Front fork	7-15

PRECAUTIONS AND GENERAL INSTRUCTIONS

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

☐ Do not run engine indoors with little or no ventilation.

☐ Be sure to replace packings, gaskets, circlips, O-rings and cotter pins with new ones.

CAUTION:
* **Never reuse a circlip. After a circlip has been removed from a shaft, it should be discarded and a new circlip must be installed.**
* **When installing a new circlip, care must be taken not to expand the end gap larger than required to slip the circlip over the shaft.**
* **After installing a circlip, always insure that it is completely seated in its groove and securely fitted.**

☐ Tighten cylinder head and case bolts and nuts, beginning with larger diameter and ending with smaller diameter, from inside to out-side diagonally, to the specified tightening torque.

☐ Use special tools where specified.

☐ Use genuine parts and recommended oils.

☐ When 2 or more persons work together, pay attention to the safety of each other.

☐ After the reassembly, check parts for tightness and operation.

☐ Treat gasoline, which is extremely flammable and highly explosive, with greatest care. Never use gasoline as cleaning solvent.

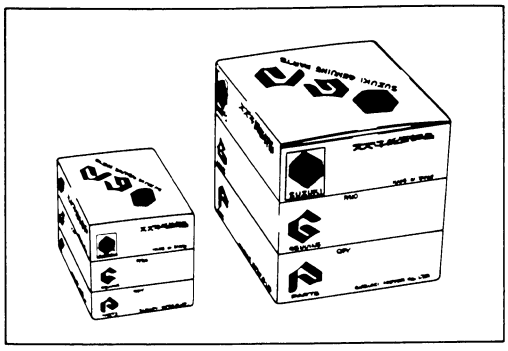
Warning, Caution and Note are included in this manual occasionally, describing the following contents.

WARNING . . . . . The personal safety of the rider or bystanders may be involved. Disregarding this information could result in personal injury.
CAUTION . . . . . These instructions point out special service procedures or precautions that must be followed to avoid damaging the machine.
NOTE . . . . . This provides special information to make maintenance easier or important instructions clearer.

REPLACEMENT PARTS

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

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



ASBESTOS INFORMATION

Note the following when handling a supply part with this WARNING LABEL, or any part in the parts list which contains asbestos.

- Operate if possible out of doors in a well ventilated place.
- Preferably use hand tools or low speed tools equipped, if necessary, with an appropriate dust extractor facility. If high speed tools are used, they should always be so equipped.
- If possible, dampen before cutting or drilling.
- Dampen dust and place it in a properly closed receptacle and dispose of it safely.

Any domestic asbestos product to which the above does not apply, but which is likely to release fibres during use should be replaced by new one when worn.

1.	Breather cover gasket
2.	Clutch cover gasket
3.	Starter gear cover gasket
4.	Oil pan gasket
5.	Cam chain tension adjuster gasket
6.	Exhaust pipe gasket

NOTE:
Refer to the parts catalogue for details.

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2130 mm (83.9 in) . . . E22
	2090 mm (82.3 in) . . . Others
Overall width	760 mm (29.9 in) . . . E03, 28, 33
	730 mm (28.7 in) . . . Others
Overall height	1070 mm (42.1 in) . . . E03, 28, 33
	1060 mm (41.7 in) . . . Others
Wheelbase	1430 mm (56.3 in)
Ground clearance	155 mm (6.1 in)
Seat height	790 mm (31.1 in)
Dry mass	168 kg (370 lbs) . . . E22
	165 kg (364 lbs) . . . Others

ENGINE

Type	Four-stroke, water-cooled, DOHC, TSCC
Valve clearance	IN : 0.10 – 0.15 mm (0.004 – 0.006 in)
	EX: 0.15 – 0.20 mm (0.006 – 0.008 in)
Number of cylinders	4
Bore	56.0 mm (2.20 in)
Stroke	40.4 mm (1.59 in)
Piston displacement	398 cm^3 (24.28 cu. in)
Compression ratio	11.8 : 1
Carburetor	MIKUNI BST33SS, four
	MIKUNI BST32SS, four . . . U.S.A. model only
Air cleaner	Polyurethane foam element
Starter system	Electric starter motor
Lubrication system	Wet sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	1.954 (86/44)
Gear ratios, Low	3.363 (37/11)
2nd	2.307 (30/13)
3rd	1.750 (28/16)
4th	1.437 (23/16)
5th	1.250 (30/24)
Top	1.150 (23/20)
Final reduction ratio	3.357 (47/14)
Drive chain	DID 525V_9 or RK 525SMOZ_2, 114 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped
Rear suspension	New-link suspension, coil spring, gas/oil damped, spring preload 7-way adjustable
Front suspension stroke	120 mm (4.7 in)
Rear wheel travel	120 mm (4.7 in)
Caster	64° 30′
Trail	100 mm (3.9 in)
Steering angle	30° (right & left)
Turning radius	3.2 m (10.5 ft)
Front brake	Disc brake
Rear brake	Disc brake
Front tire size	110/70-17 54H, tubeless
Rear tire size	150/70-17 69H, tubeless

ELECTRICAL

Ignition type	Fully transistorized
Ignition timing	15° B.T.D.C. below 1500 r/min
Spark plug	NGK CR8EK or NIPPON DENSO U24ETR
Battery	12V 28.8 kC (8Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	25/15/10/10A
Headlight	12V 60/55W
Position light	12V 4W . . . except E03, 28, 33
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W x 2 pcs
Tachometer light	12V 1.7W x 2 pcs
Neutral indicator light	12V 3W
High beam indicator light	12V 1.7W
Turn signal light indicator light	12V 3.4W
Oil pressure indicator light	12V 3.4W
Coolant temperature check light	12V 3.4W

CAPACITIES

Fuel tank, including reserve	14.5 L (3.8/3.2 US/Imp gal) . . . E33 only
	16.0 L (4.2/3.5 US/Imp gal) . . . Others
Reserve	3.5 L (0.9/0.8 US/Imp gal)
Engine oil, oil change	2300 ml (2.4/2.0 US/Imp qt)
with filter change	2800 ml (3.0/2.5 US/Imp qt)
overhaul	3200 ml (3.4/2.8 US/Imp qt)
Coolant (including reserve)	1900 ml (2.0/1.7 US/Imp qt)
Front fork oil (each leg)	494 ml (16.7/17.4 US/Imp oz) . . . E03, 28, 33
	495 ml (16.7/17.4 US/Imp oz) . . . Others

These specifications are subject to change without notice.

COUNTRY OR AREA

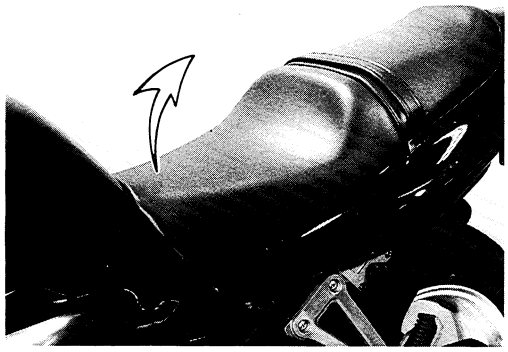
The series of symbols on the left stand for the countries and areas on the right.

SYMBOL	COUNTRY or AREA
E-02	England
E-03	U.S.A. (except California)
E-04	France
E-16	Norway
E-21	Belgium
E-22	West Germany
E-24	Australia
E-25	Netherlands
E-28	Canada
E-33	California (U.S.A.)
E-34	Italy

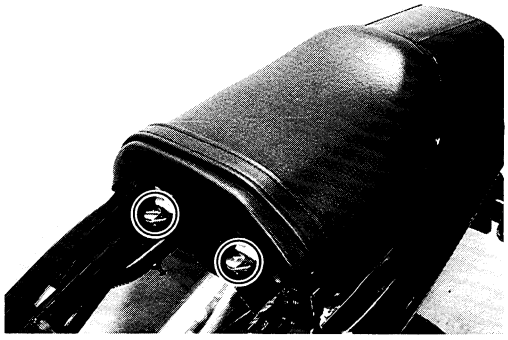
EXTERIOR PARTS REMOVAL

SEATS

- Remove the front seat with the ignition key.

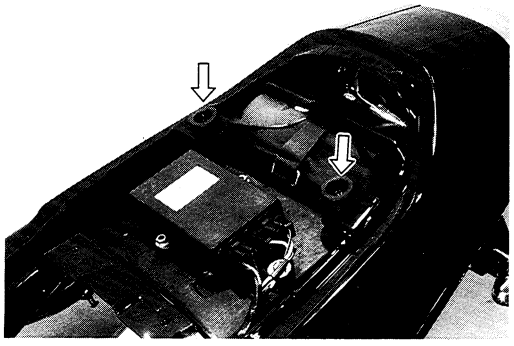


- Remove the rear seat by removing the bolts.

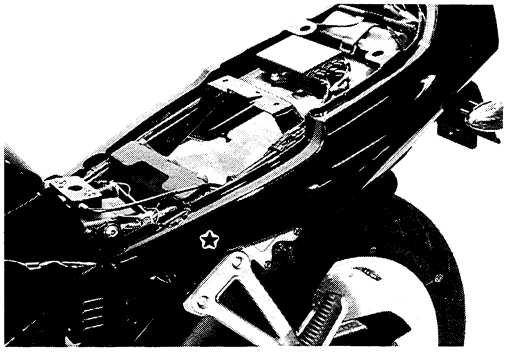


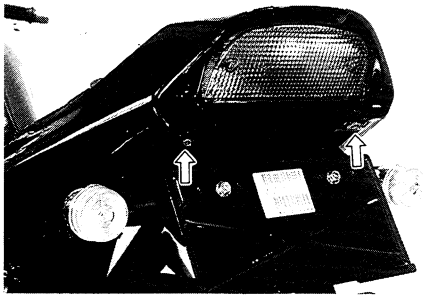
FRAME COVERS

- Remove the frame cover assembly by removing the bolts and extracting the hooked parts.



★: Hooked part

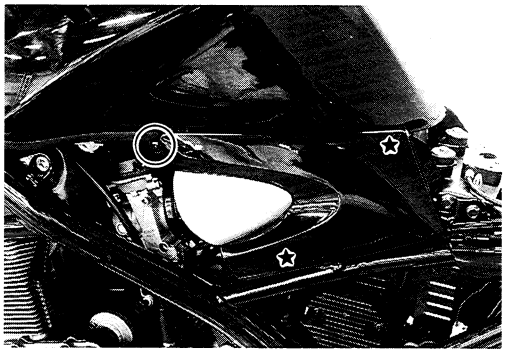




AIR CLEANER SIDE COVERS

- Remove the left and right air cleaner side covers by removing the bolts and extracting the hooked parts.

★: Hooked part



PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

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 kilometer, miles and time for your convenience.

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

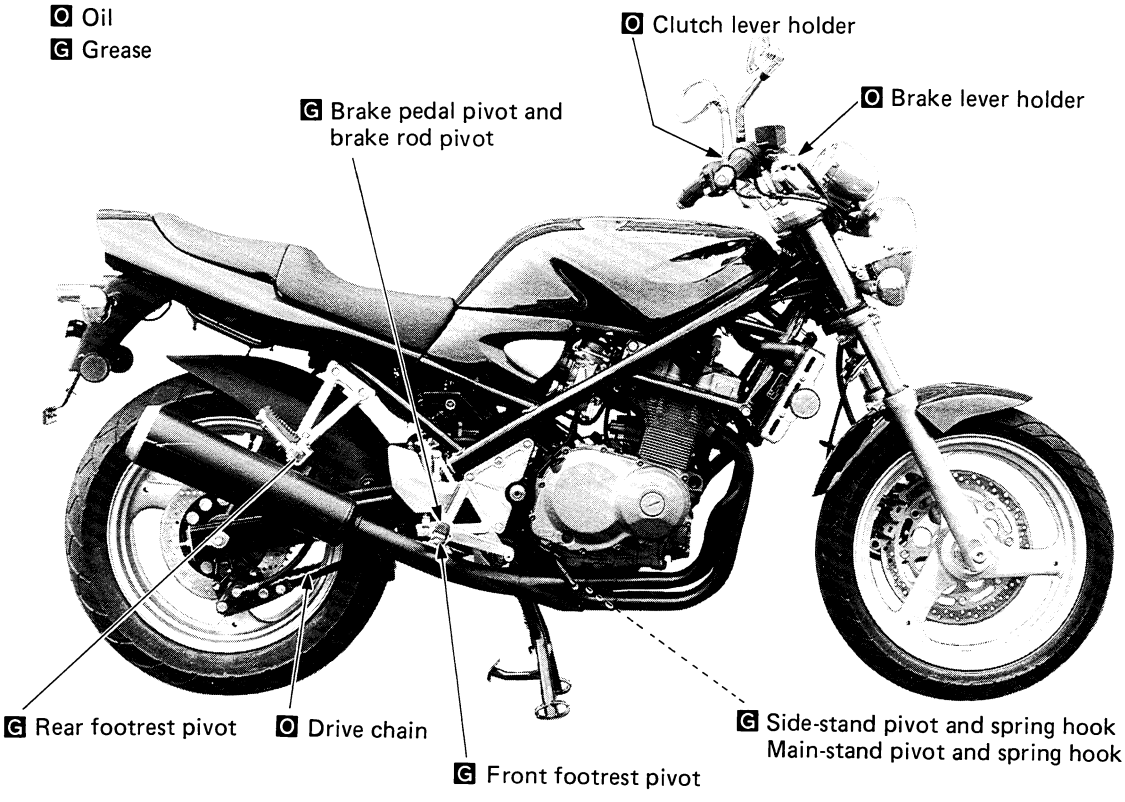
PERIODIC MAINTENANCE CHART

INTERVALS: THIS INTERVAL SHOULD BE JUDGED BY ODOMETER READING OR MONTHS WHICHEVER COMES FIRST.	km	1000	6000	12000	18000	24000
	miles	600	4000	7500	11000	15000
	months	2	12	24	36	48
Battery		–	I	I	I	I
Cylinder head nuts & exhaust pipe bolts		T	T	T	T	T
Air cleaner element		Clean every 3000 km (2000 miles)				
Valve clearance		I	I	I	I	I
Spark plugs		–	I	R	I	R
Engine oil and oil filter		R	R	R	R	R
Fuel line		I	I	I	I	I
(Vapor hose . . . California model only)		Replace every four years				
Carburetors (Engine idling speed)		I	I	I	I	I
Radiator hoses		I	–	I	–	I
		Replace every four years				
Coolant		Replace every two years				
Clutch		I	I	I	I	I
Drive chain		I	I	I	I	I
		Clean and lubricate every 1000 km (600 miles)				
Brake hoses		I	I	I	I	I
		Replace every four years				
Brake fluid		I	I	I	I	I
		Replace every two years				
Brakes		I	I	I	I	I
Tires		I	I	I	I	I
Steering		I	I	I	I	I
Front forks		I	–	I	–	I
Rear suspension		I	–	I	–	I
Chassis bolts and nuts		T	T	T	T	T

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

LUBRICATION POINTS

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

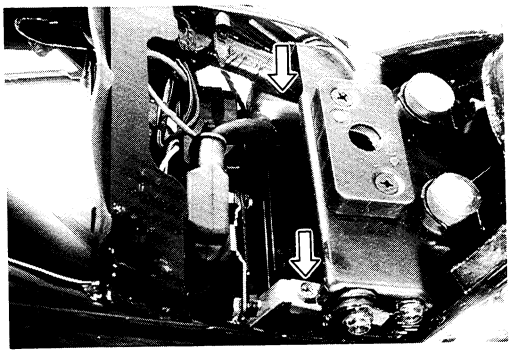


NOTE:

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

MAINTENANCE AND TUNE-UP PROCEDURES

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



BATTERY

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

- Remove the seat.
- Check the battery voltage with the pocket tester.
- If the tester reads under 12V, remove the battery from the machine and charge it with a battery charger.

09900-25002: Pocket tester

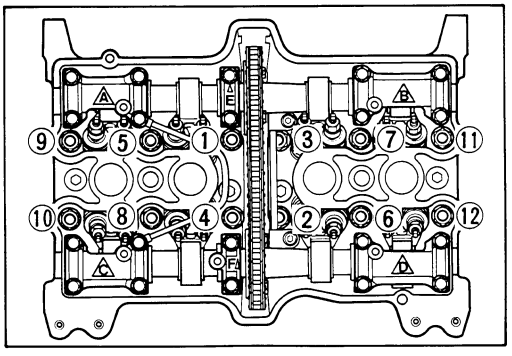
CAUTION:

*** When removing the battery, remove the ⊖ lead first and ⊕ lead last. To install the battery leads, reverse the procedure.**

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

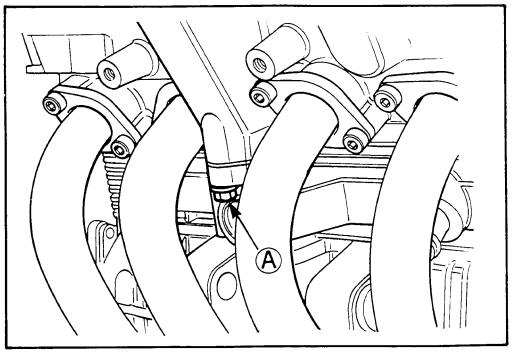
CYLINDER HEAD NUTS AND EXHAUST PIPE BOLTS

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



CYLINDER HEAD

- Remove the seat, air cleaner side covers and fuel tank. (Refer to pages 1-12 and 4-2.)
- Drain coolant. (Refer to page 2-10.)
- Remove the radiator. (Refer to page 5-5.)
- Disconnect the left and right water hoses from the cylinder head. (Refer to page 5-6.)
- Remove the thermostat case. (Refer to page 5-6.)
- Remove the left and right ignition coils. (Refer to page 2-5.)
- Remove the cylinder head cover. (Refer to page 3-10.)
- First loosen and retighten the nuts to the specified torque with a torque wrench sequentially in ascending numerical order with the engine cold.



Tightening torque

Cylinder head nut: 25 – 29 N·m
(2.5 – 2.9 kg-m, 18.0 – 21.0 lb-ft)

- After firmly tightening the 12 nuts, tighten the bolt (indicated as Ⓐ) to the torque value below:

Tightening torque

Cylinder head bolt Ⓐ: 8 – 12 N·m (0.8 – 1.2 kg-m, 6.0 – 8.5 lb-ft)

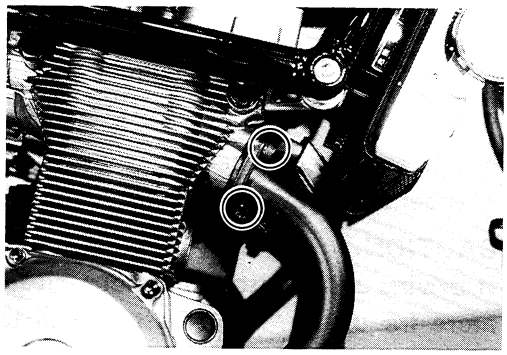
- When installing the cylinder head cover, apply SUZUKI BOND No. 1207B to the cam end caps. (Refer to page 3-61.)
- Tighten the head cover bolts to the specified torque.

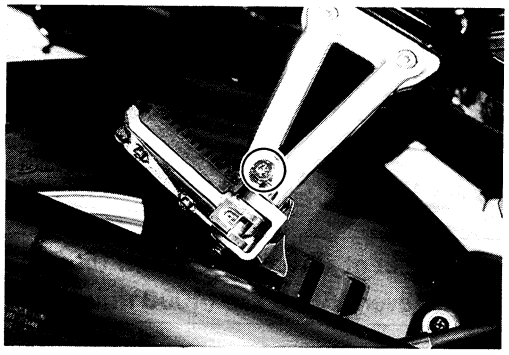
Tightening torque: 8 – 12 N·m (0.8 – 1.2 kg-m, 6.0 – 8.5 lb-ft)

EXHAUST PIPE AND MUFFLER

- Tighten the exhaust pipe clamp bolts and muffler mounting bolt to the specified torque with a torque wrench.

Tightening torque
Exhaust pipe bolt and
Muffler mounting bolt : 18 – 28 N·m
(1.8 – 2.8 kg-m, 13.0 – 20.0 lb-ft)

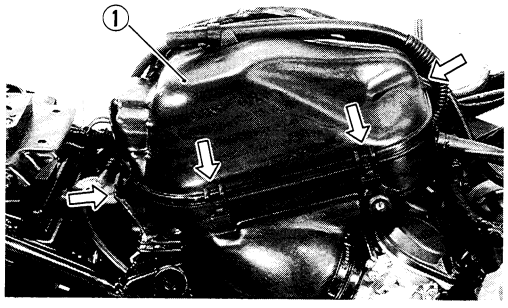




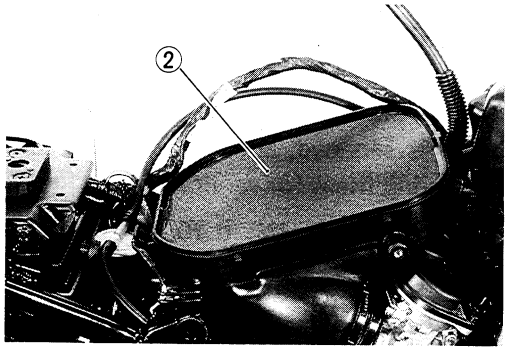
AIR CLEANER

Clean every 3000 km (2000 miles)

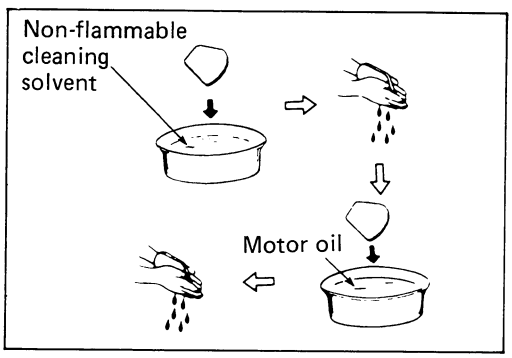
- Remove the seat, air cleaner side covers and fuel tank. (Refer to pages 1-12 and 4-2.)
- Remove the air cleaner cap ① by unhooking the 7 hooked parts.



- Remove the polyurethane foam element ②.



- Fill a washing pan of a proper size with non-flammable cleaning solvent. Immerse the element in the cleaning solvent and wash it clean.
- Squeeze the cleaning solvent out of the washed element by pressing it between the palms of both hands.
- Immerse the element in motor oil, and squeeze the oil out of the element leaving it slightly wet with oil.



NOTE:
Do not twist or wring the element because it will tear or the individual cells of the element will be damaged.

CAUTION:
Inspect the element carefully for rips, etc. If any damage is noted, replace the element.

- Reinstall the cleaned or new 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 use the engine without the element or to use a ruptured element. Make sure that the air cleaner is in good condition at all times. Life of the engine depends largely on this component!

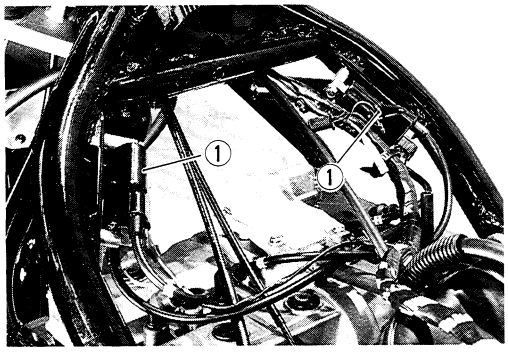
For U.S.A. and Canada models

NOTE:
When you clean the air element, drain water from the air cleaner drain hose end by removing the drain plug.

VALVE CLEARANCE

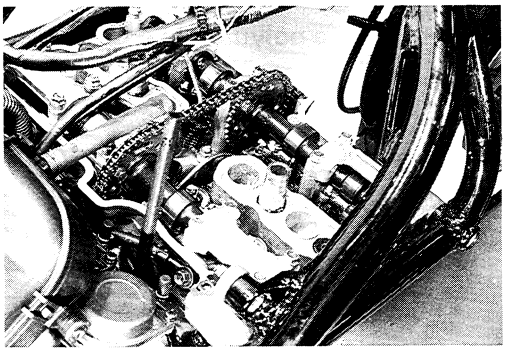
Inspect at initially 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months).

- Remove the seat, air cleaner side covers and fuel tank. (Refer to pages 1-12 and 4-2.)
- Drain coolant. (Refer to page 2-10.)
- Remove the radiator. (Refer to page 5-5.)
- Disconnect the left and right water hoses from the cylinder head. (Refer to page 5-6.)
- Remove the thermostat case. (Refer to page 5-6.)
- Remove the left and right ignition coils ①.
- Remove the cylinder head cover.
- Remove the valve timing inspection plug on the clutch cover.

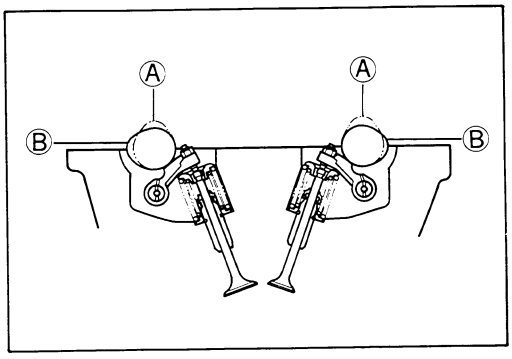


The valve clearance specification is different for both intake and exhaust valves.
Valve clearance adjustment must be checked and adjusted, 1) at the time of periodic inspection, 2) when the valve mechanism is serviced, and 3) when the camshafts are disturbed by removing them for servicing.

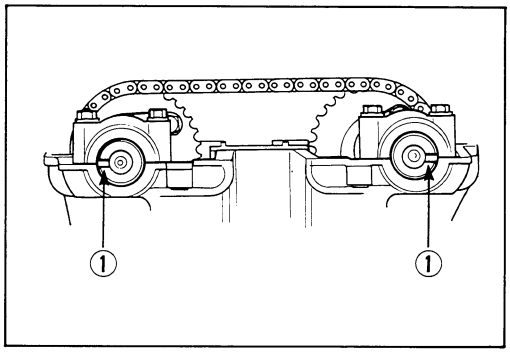
Valve clearance: IN. 0.10 – 0.15 mm (0.004 – 0.006 in)
(when cold) EX. 0.15 – 0.20 mm (0.006 – 0.008 in)

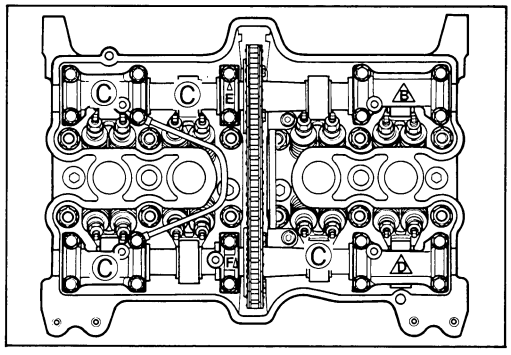


NOTE:
* *The cam must be at positions, Ⓐ or Ⓑ, in order to check the valve clearance, or to adjust valve clearance. Clearance readings should not be taken with the cam in any other position than these two positions.*
* *The clearance specification is for COLD state.*
* *To turn the crankshaft for clearance checking, be sure to use a 17-mm wrench, and rotate in the normal running direction. All spark plugs should be removed.*



- Turn crankshaft to bring the notches ① in the right ends of both camshafts (Ex and In) to the positions shown. In this condition, read the valve clearance at the valves Ⓒ (In and Ex of No. 1 cylinder, Ex of No. 2 and In of No. 3).



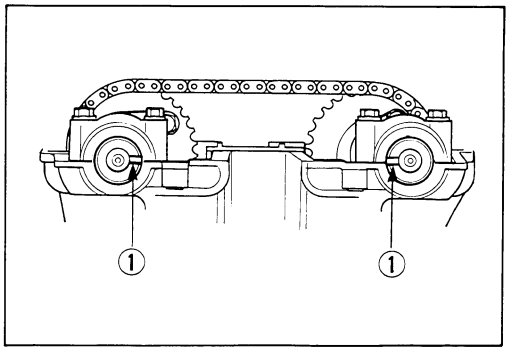


- Use a thickness gauge between the adjusting screw and the valve stem end. If the clearance is out of specification, bring it into the specified range by using the special tool.

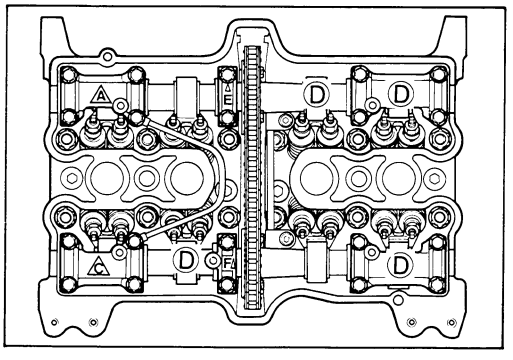
09900-20803: Thickness gauge
09917-14920: Valve adjust driver

CAUTION:
Both right and left valve clearances should be as closely set as possible.

- Turn the crankshaft 360° (one rotation) to bring the notches ① to the positions shown.
- Read the clearance at the remaining valves Ⓓ and adjust the clearance if necessary.



	Notch ① position	
Cam Position	Intake Camshaft	Exhaust Camshaft
Ⓒ	◓	◒
Ⓓ	◒	◓

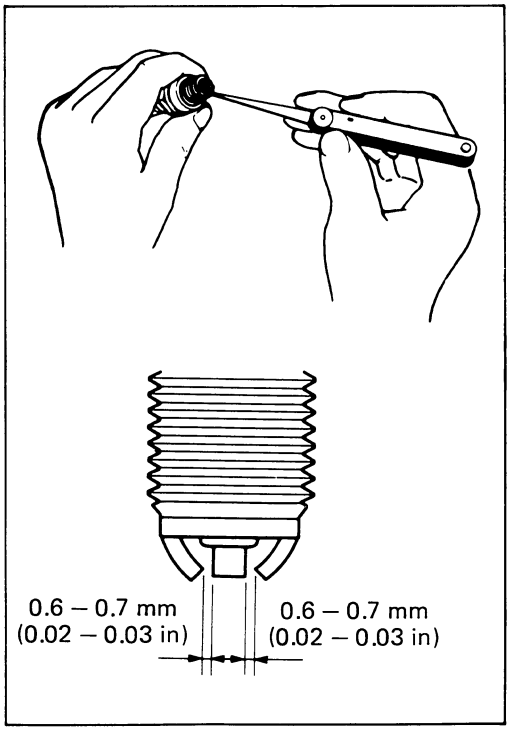


- When installing the cylinder head cover, apply SUZUKI BOND NO. 1207B to the cam end caps. (Refer to page 3-61.)
- Tighten the head cover bolts to the specified torque. (Refer to page 3-62.)
- Tighten the coolant drain plug securely.
- Pour the specified coolant up to the radiator inlet.

SPARK PLUGS

Inspect at 6000 km (4000 miles or 12 months), 18000 km (11000 miles or 36 months) and replace every 12000 km (7500 miles or 24 months).

- Remove the spark plugs with the spark plug wrench.



The plug gap is adjusted to 0.6 – 0.7 mm (0.02 – 0.03 in). The gap is correctly adjusted by using a thickness gauge. When carbon is deposited on the spark plug, remove the carbon by using a spark plug cleaning machine or by carefully using a tool with a pointed end. If the electrode is extremely worn or burnt, replace the plug. Also replace the plug if it has a broken insulator, damaged thread, etc.
NGK CR8EK as listed in the table should be used as the standard plug. However, the heat range of the plug should be selected to meet the requirements of speed, actual load, fuel etc. If the plugs need to be replaced, it is recommended that plugs having a heat range closest to the standard plug in the table be selected. Remove the plugs and inspect the insulators. Proper heat range would be indicated if all insulators are light brown in color. If they are baked white, they should be replaced by a cold type and if blackened by carbon, by a hot type.

Recommended spark plug

	Standard	Cold type	Hot type
NGK	CR8EK	CR9EK	CR7EK
ND	U24ETR	U27ETR	U22ETR

09930-10120: Spark plug socket wrench set
09930-14530: Universal joint
09914-24510: T-handle
09900-20803: Thickness gauge

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

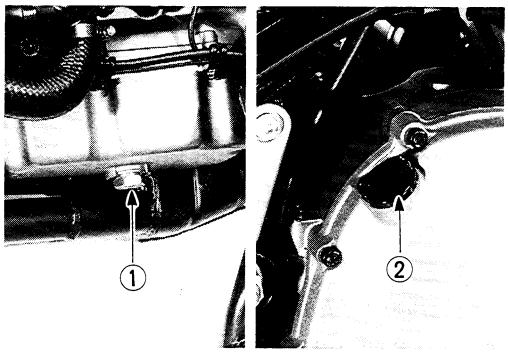
NOTE:
"R" type spark plug is installed for some specifications. "R" type spark plug has a resister located at the center electrode to prevent radio noise.

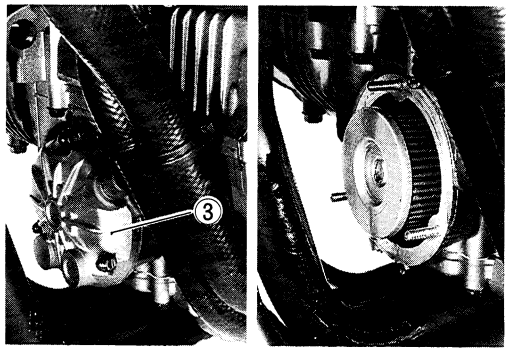
ENGINE OIL AND OIL FILTER

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

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

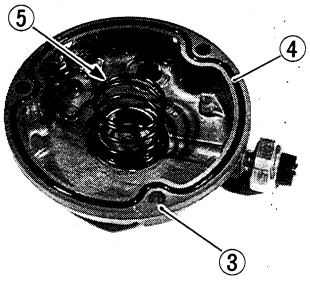
- Keep the motorcycle upright.
- Place an oil pan below the engine and drain oil by removing the drain plug ① and filler cap ②.
- Disconnect the oil pressure switch lead.
- Remove the oil filter cap ③ by removing the three nuts.
- Replace the oil filter with new one.





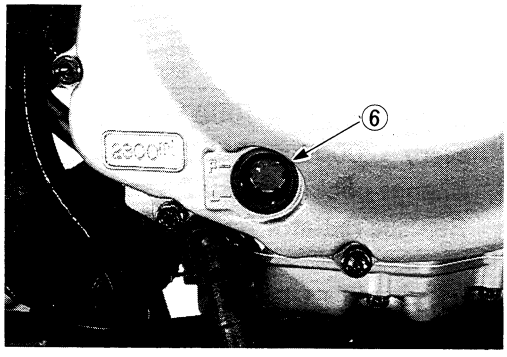
NOTE:
Be sure to take care of O-ring ④ to prevent any damage and be sure that filter spring ⑤ is properly in place.

- Apply grease lightly to the O-ring ④ of the oil filter cap ③ before installation.
- Fit the drain plug ① securely, and add fresh oil through the oil filler. The engine will hold about 2.8 L (3.0 US qt) of oil. Use an API classification of SE or SF oil with SAE 10W/40 viscosity.
- Install the filler cap ②.
- Start up the engine and allow it to run for several minutes at idling speed.
- Turn off the engine and wait about one minute, then check the oil level through the inspection window ⑥. If the level is below the lower line, add oil to the upper line.



NECESSARY AMOUNT OF ENGINE OIL

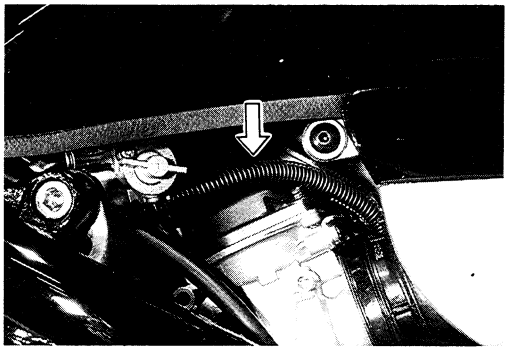
Oil change	2.3 L (2.4/2.0 US/Imp qt)
Filter change	2.8 L (3.0/2.5 US/Imp qt)
Overhaul engine	3.2 L (3.4/2.8 US/Imp qt)



FUEL LINE

Inspect at initially 1000 km (600 miles or 2 months) and every 6000 km (4000 miles or 12 months). Replace every 4 years.

Inspect the fuel line for damage and fuel leakage. If any defects are found, the fuel line must be replaced. (Refer to page 8-19.)

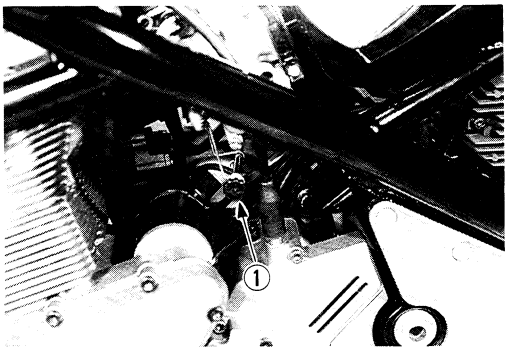


VAPOR HOSE ..... CALIFORNIA MODEL ONLY

CARBURETORS

ENGINE IDLING SPEED

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



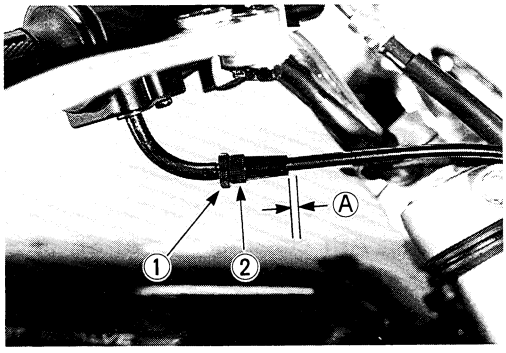
NOTE:
The engine idling speed should be adjusted when the engine is hot. The idling speed is different among the countries.

- Connect a tachometer.
- Start up the engine and set its speed at idle speed by turning throttle stop screw ① as follows.

Engine idle speed: 1400 ± 50 r/min . . . E-03, 22 and 33
1300 ± 100 r/min . . . The others

THROTTLE CABLE PLAY

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



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

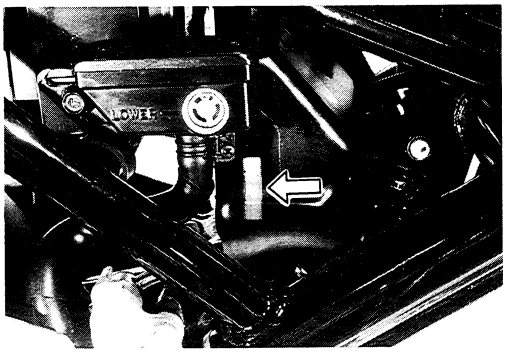
Throttle cable play Ⓐ : 0.5 – 1.0 mm (0.02 – 0.04 in)

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

COOLING SYSTEM

Inspect at initial 1000 km (600 miles or 2 months) and every 12000 km (7500 miles or 24 months).
Change coolant every 2 years.
Replace radiator hoses every 4 years.

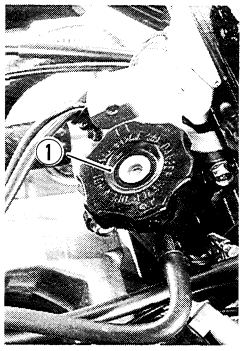
COOLANT LEVEL

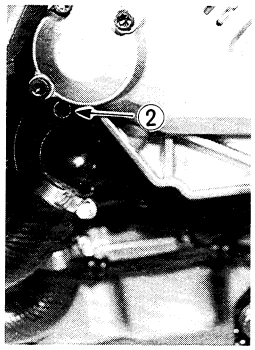


- Keep the motorcycle upright.
- Check the coolant level by observing the upper and lower limit line on the coolant reservoir.
- If the level is below mark "F", add coolant to the upper line from the coolant reservoir filler.

COOLANT CHANGE

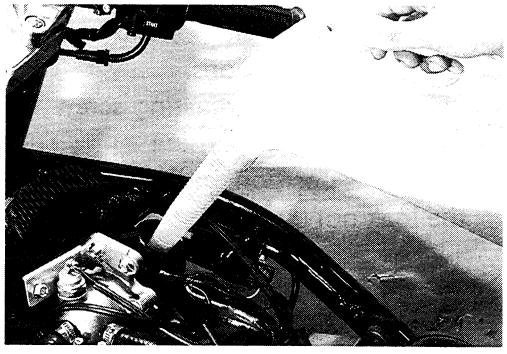
- Remove the seat, air cleaner covers and fuel tank. (Refer to pages 1-12 and 4-2.)
- Remove the radiator cap ① and drain plug ②, and drain coolant.





WARNING:

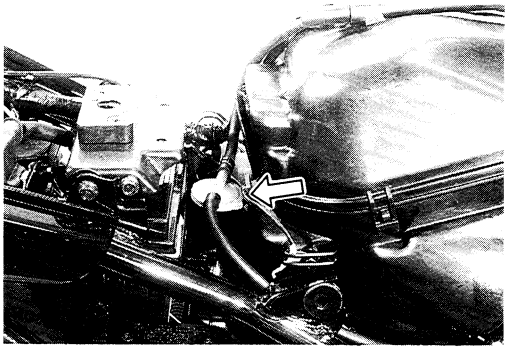
* **Do not open the radiator cap when the engine is hot, as you may be injured by escaping hot liquid or vapor.**
* **Coolant may be harmful if swallowed or if it comes in contact with skin or eyes. If coolant gets into the eyes or in contact with the skin, flush thoroughly with plenty of water. If swallowed,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



- Flush the radiator with fresh water if necessary.
- Tighten the drain plug ② securely.
- Pour the specified coolant up to the radiator inlet.

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

NOTE:
For coolant information, refer to page 5-4.



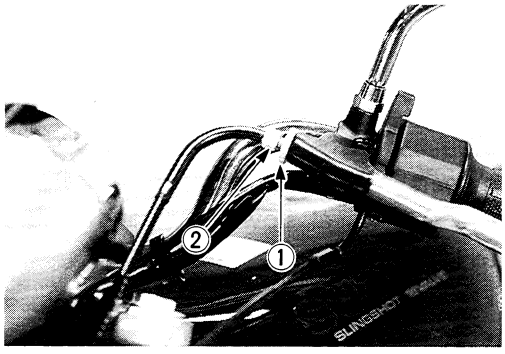
- Close the radiator cap ① securely.
- After warming up and cooling down the engine, add the specified coolant up to the coolant reservoir.

CAUTION:
Repeat above procedure several times and make sure that the radiator is filled with coolant up to the coolant reservoir.

Coolant capacity: 1900 ml (2.0/1.7 US/Imp qt)

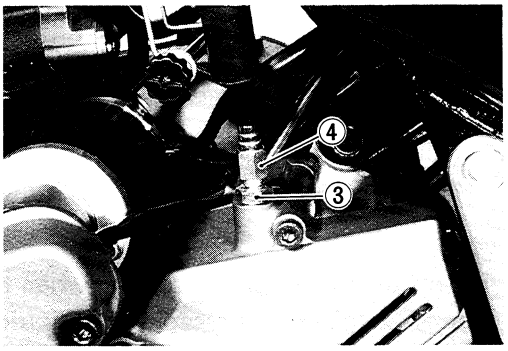
CLUTCH

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

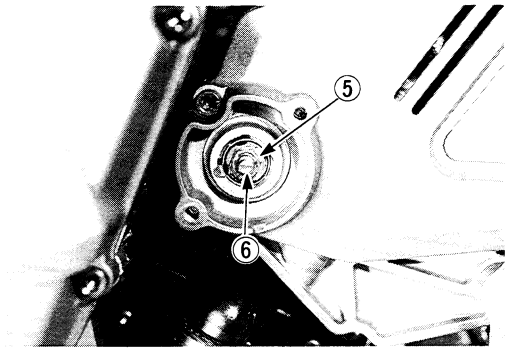


- Loosen the lock nut ① and turn in the adjuster ② all the way into the clutch lever holder.

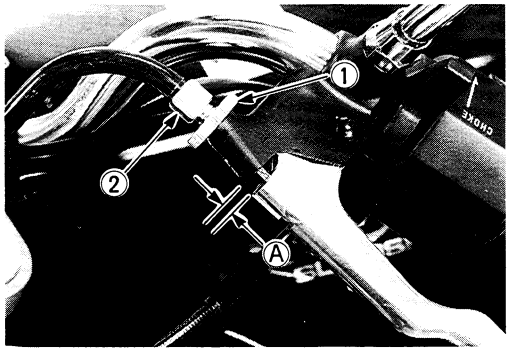
- Loosen the lock nut ③ and, if required, turn the adjuster ④ in place to introduces some play in the clutch lever.
- Remove the clutch release cover.



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

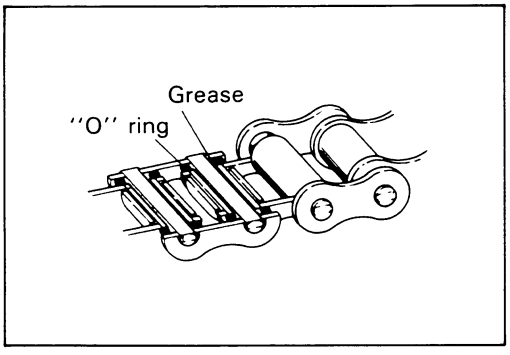


- Reset the adjuster ④ to provide a clutch lever play Ⓐ of 4 mm (0.16 in), and tighten the lock nut ③.
- Lock the adjuster ② using lock nut ①.



DRIVE CHAIN

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



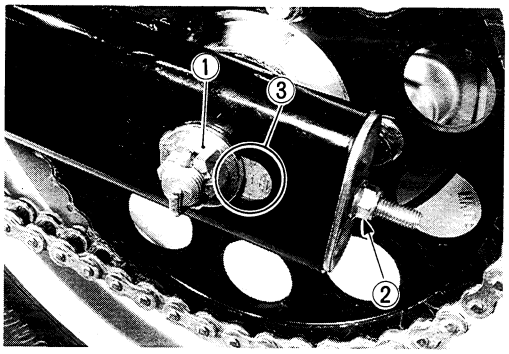
Visually check the drive chain for the listed below possible defects. (Support the motorcycle by center stand, and turn the rear wheel slowly by hand with the transmission shifted to Neutral.)

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

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

CHECKING

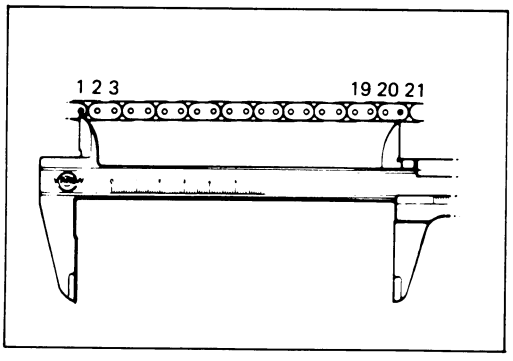
- Remove the cotter pin. (For E-03, 28 and 33 models.)
- Loosen the axle nut ①.
- Tense the drive chain fully by tightening the chain adjusting nuts ②, left and right.



E-03 : U.S.A.
E-28 : Canada
E-33 : California (U.S.A.)

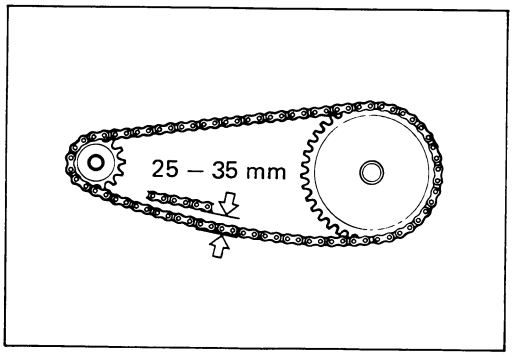
- Count out 21 pins (20 pitches) on the chain and measure the distance between the two points. If the distance exceeds following limit, the chain must be replaced.

Service Limit: 319.4 mm (12.57 in)



ADJUSTING

- Loosen or tighten the chain adjusting nuts ② until the chain has 25 – 35 mm (1.0 – 1.4 in) of slack at the middle between engine and rear sprockets. The mark ③ on both chain adjusters must be at the same position on the scale to ensure that the front and rear wheels are correctly aligned.
  Place on side stand for accurate adjustment.
- After adjusting the drive chain slack, tighten the axle nut ① securely.
- Tighten the chain adjusting nuts securely.

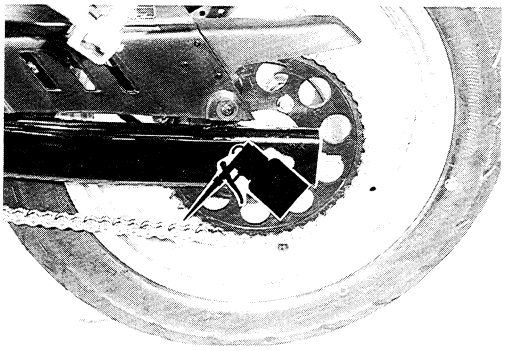


CLEANING AND LUBRICATING

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

CAUTION:
Do not use trichlene, gasoline or any similar fluids. These fluids have too great a dissolving power for this chain and, what is more important, 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 D.I.D. 525V$_9$ – 114 links or RK525SMOZ$_2$ – 114 links. SUZUKI recommends that the above-mentioned standard drive chain be used for the replacement.**

BRAKES

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

BRAKE FLUID LEVEL

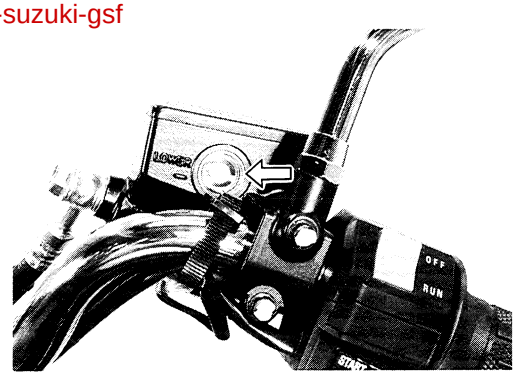
- Keep the motorcycle upright and place the handlebars straight.
- Check the brake fluid level by observing the lower limit lines on the brake fluid reservoirs.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.

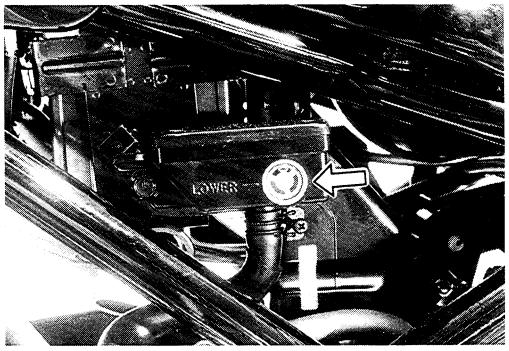
Specification and Classification : DOT4

99000-23110 : SUZUKI BRAKE FLUID DOT3 & DOT4

WARNING:
The brake system of this motorcycle is filled with a glycol-based brake fluid. Do not use or mix different types of fluid such as silicone-based and petroleum-based. Do not use any brake fluid taken from old, used or unsealed containers. Never reuse brake fluid left over from the last servicing or stored for long periods.

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





BRAKE PADS

The extent of brake pad wear can be checked by observing the grooved limit line ① marked on the pad. When the wear exceeds the grooved limit line, replace the pads with new ones. (Refer to pages 7-6 and 7-21.)

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