SUZUKI

SERVICE MANUAL

99500-39092-03E
(英)

SUZUKI MOTOR CORPORATION PRINTED IN JAPAN OCTOBER,'00 ①

FOREWORD

The SUZUKI GSX-R1100 has been developed as a new generation motorcycle to the GS-models. It is packed with highly advanced design concepts including a Suzuki Advanced Cooling System, a new highly efficient combustion system (TSCC), a fully transistorized ignition system and a improved full-floater rear suspension. Combined with precise control and easy handling the GSX-R1100 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.

IMPORTANT

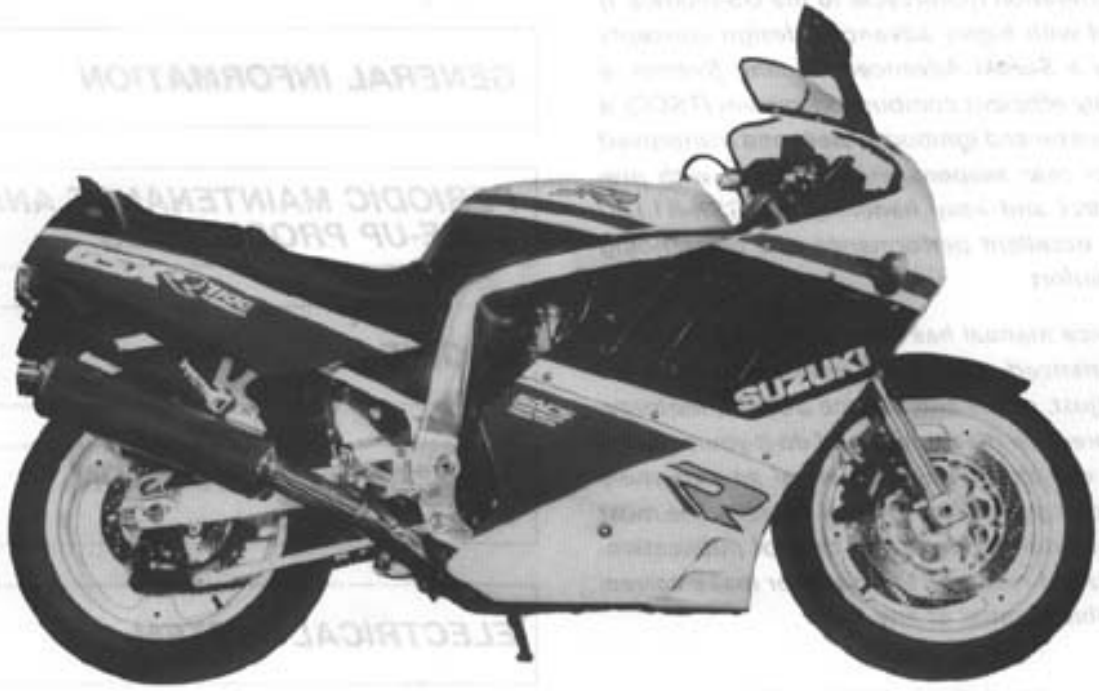
All street-legal Suzuki motorcycles with engine displacement of 50cc or greater are subject to Environmental Protection agency emission regulations. These regulations set specific standards for exhaust emission output levels as well as particular servicing requirements. This manual includes specific information required to properly inspect and service GSX-R1100 in accordance with all EPA regulations. It is strongly recommended that the chapter on Emission Control, Periodic Servicing and Carburetion be thoroughly reviewed before any type of service work is performed.

Further information concerning the EPA emission regulations and U.S. Suzuki's emission control program can be found in the U.S. SUZUKI EMISSION CONTROL PROGRAM MANUAL/SERVICE BULLETIN.

SUZUKI MOTOR CORPORATION
Motorcycle Technical Service Department

GROUP INDEX

VIEW OF GSX-R1100K



RIGHT SIDE

LEFT SIDE

GENERAL INFORMATION

1

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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 AND OIL RECOMMENDATION

FUEL (For U.S.A. model)

1. Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$) 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 it contains not more than 10% ethanol. Gasoline/alcohol fuel may contain up to 5% methanol if appropriate cosolvents and corrosion inhibitors are present.
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 be sure that the fuel you intend to use meets the requirements listed above.

FUEL (For Canadian model)

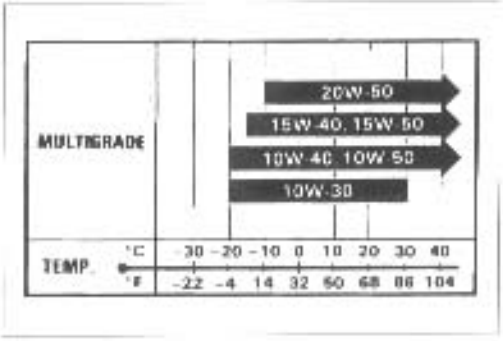
Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$) method or 91 octane or higher rated by the research method.

FUEL (For the other models)

Gasoline used should be graded 85 – 95 octane (Research Method) or higher. An unleaded gasoline type 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 right chart.



ENGINE OIL (For the other models)

Be 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 right chart.

BRAKE AND CLUTCH 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 re-use brake fluid left over from a previous servicing, which has been stored for a long period.

FRONT FORK OIL

Use fork oil #5.

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 exercised 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 7000 r/min
Over 1600 km (1000miles): Below 11000 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 11000 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 GSX-R1100, 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 SUPER GREASE "A" 99000-25030	 SUZUKI SUPER GREASE "A" 99000-25010	• Driveshaft oil seal • Engine oil pipe O-ring • Oil filter • Generator oil seal • Starter motor oil seal • Wheel bearing • Steering stem bearing • Sprocket mounting drum bearing • Swingarm spacer and dust seal cover • Cushion lever bearing and dust seal	3-49 3-63 4-18 5-7 5-17 6-4 6-32 6-20 6-33 6-46 6-46
 SUZUKI MOLY PASTE 99000-25140	 SUZUKI MOLY PASTE 99000-25140	• Valve stem • Conrod big end bearing • Countershaft and driveshaft • Crankshaft journal bearing • Camshaft journal • Starter motor armature end • Generator driven gear damper • Clutch lever push rod	3-30 3-39 3-48 3-54 3-64 5-17 5-6 6-48
 SUZUKI BOND NO. 1207B 99104-31140	 SUZUKI BOND NO. 1207B 99000-31140	• Crankcase mating surface • Clutch cover mating surface • Starter clutch cover mating surface • Oil pressure switch • Signal generator lead wire grommet • Cylinder head cover • Cam end cap • Cylinder stud bolt	3-54 3-58 3-60 3-58 3-58 3-68 3-68 3-61
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1303" 99000-32030	• Cam sprocket bolt • Cam chain guide bolt	3-33 3-34
 THREAD LOCK SUPER "1360" 99000-32130	 THREAD LOCK SUPER "1360" 99000-32130	• Disc plate mounting bolt	6-5 6-34

MATERIAL		PART	PAGE
For U.S.A model	For other models		
 THREAD LOCK "1342" 99000-32050	 THREAD LOCK "1342" 99000-32050	• Gearshift cam stopper bolt • Oil pump mounting bolt • Countershaft bearing retainer screw • Gearshift cam guide/pawl lifter screw • Starter motor mounting bolt • Generator bearing retainer screw • Starter motor housing screw • Front fork damper rod bolt • Steering damper bolt	3-23 3-52 3-55 3-55 3-60 5-8 5-17 6-14 6-20
 THREAD LOCK SUPER "1303" 99000-32030	 THREAD LOCK SUPER "1305" 99000-32100	• Starter clutch mounting bolt	3-59
 SUZUKI BRAKE FLUID DOT3 & DOT4 99000-23110	 SUZUKI BRAKE FLUID DOT3 & DOT4 99000-23110	• Clutch • Brakes	2-9 2-12
 SUZUKI FORK OIL #5 99000-99044-05G	 SUZUKI FORK OIL #5 99000-99044-05G		6-16
 THREAD LOCK CEMENT 99000-32040	 THREAD LOCK CEMENT 99000-32040	• Carburetor set plate screw	4-12

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.

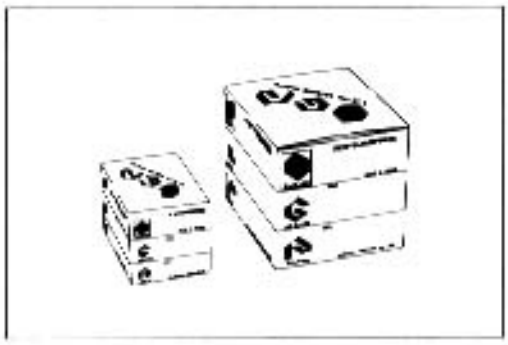
- Tighten cylinder head and case bolts and nuts, beginning with larger diameter and ending with smaller diameter, from inside to out-side diagonally, to the specified tightening torque.
- Use special tools where specified.
- Use genuine parts and recommended oils.
- When 2 or more persons work together, 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.	Signal generator cover gasket
4.	Starter gear cover gasket
5.	Oil pan gasket
6.	Cam chain tension adjuster gasket
7.	Exhaust pipe gasket
8.	Oil strainer protector gasket
9.	Starter motor
10.	Fuel cock gasket
11.	Fuel tank heat shield

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2050 mm (80.7 in)
Overall width	755 mm (29.7 in)
Overall height	1150 mm (45.3 in)
Wheelbase	1440 mm (56.7 in)
Ground clearance	110 mm (4.3 in)
Dry mass	211 kg (465 lbs) ···· For Switzerland model
	212 kg (467 lbs) ···· For California model
	210 kg (463 lbs) ···· For the other models

ENGINE

Type	Four-stroke, Air-cooled with SACS, DOHC, TSCC
Number of cylinders	4
Bore	78.0 mm (3.07 in)
Stroke	59.0 mm (2.32 in)
Piston displacement	1127cm³ (68.8 cu.in)
Carburetor	MIKUNI BST36SS, four
Air cleaner	Polyester fiber element
Starter system	Electric starter
Lubrication system	Wet sump

TRANSMISSION

Clutch	Wet multi-plate type, hydraulically operated
Transmission	5-speed constant mesh
Gearshift pattern	1-down, 4-up
Primary reduction	1.565 (72/46)
Final reduction	3.200 (48/15)
Gear ratios, Low	2.384 (31/13)
2nd	1.631 (31/19)
3rd	1.250 (25/20)
4th	1.045 (23/22)
Top	0.913 (21/23)
Drive chain	TAKASAGO RK532GSV, 114 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, inner rod type, spring pre-load fully adjustable, damping force compression 10-way and rebound 8-way adjustable.
Rear suspension	Full-floating suspension system, gas/oil damped, coil spring, spring pre-load fully adjustable, damping force 4-way adjustable
Steering angle	30° (right & left)
Caster	65° 10'
Trail	99 mm (3.9in)
Turning radius	3.2 m (10.5ft)
Front brake	Disc brake, twin
Rear brake	Disc brake
Front tire size	120/70ZR17
Rear tire size	160/60ZR17
Front fork stroke	120mm (4.7in)
Rear wheel travel	140mm (5.5in)

ELECTRICAL

Ignition type	Fully Transistorized
Ignition timing	7° B.T.D.C. at 1500 r/min···· For California model
	13° B.T.D.C. at 1500 r/min···· For the other models
Spark plug	N.G.K.: JR9B
Battery	12V 50.4 kC (14Ah)/10HR
Generator	Three-phase A.C. Generator
Fuse	10/10/10/10/10A
Circuit breaker	30A

CAPACITIES

Fuel tank, Including reserve	18.5 L (4.8/4.1 US/Imp gal)···· For California model
	20.5 L (5.4/4.5 US/Imp gal)···· For Switzerland model
	21.0 L (5.5/4.6 US/Imp gal)···· For the other models
Engine oil, Oil change with oil filter change	4.2 L (4.4/3.7 US/Imp qt)
Front fork oil	453 ml (15.3/16.0 US/Imp oz)···· For U.S.A. model
	418 ml (14.1/14.7 US/Imp oz)···· For the other models

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-01	General
E-02	England
E-03	U.S.A.
E-04	France
E-15	Finland
E-16	Norway
E-17	Sweden
E-18	Switzerland
E-21	Belgium
E-22	W.Germany
E-24	Australia
E-25	Netherlands
E-28	Canada
E-33	California (U.S.A.)
E-34	Italy
E-39	Austria
E-53	Spain

PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

CONTENTS

PERIODIC MAINTENANCE SCHEDULE

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

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

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

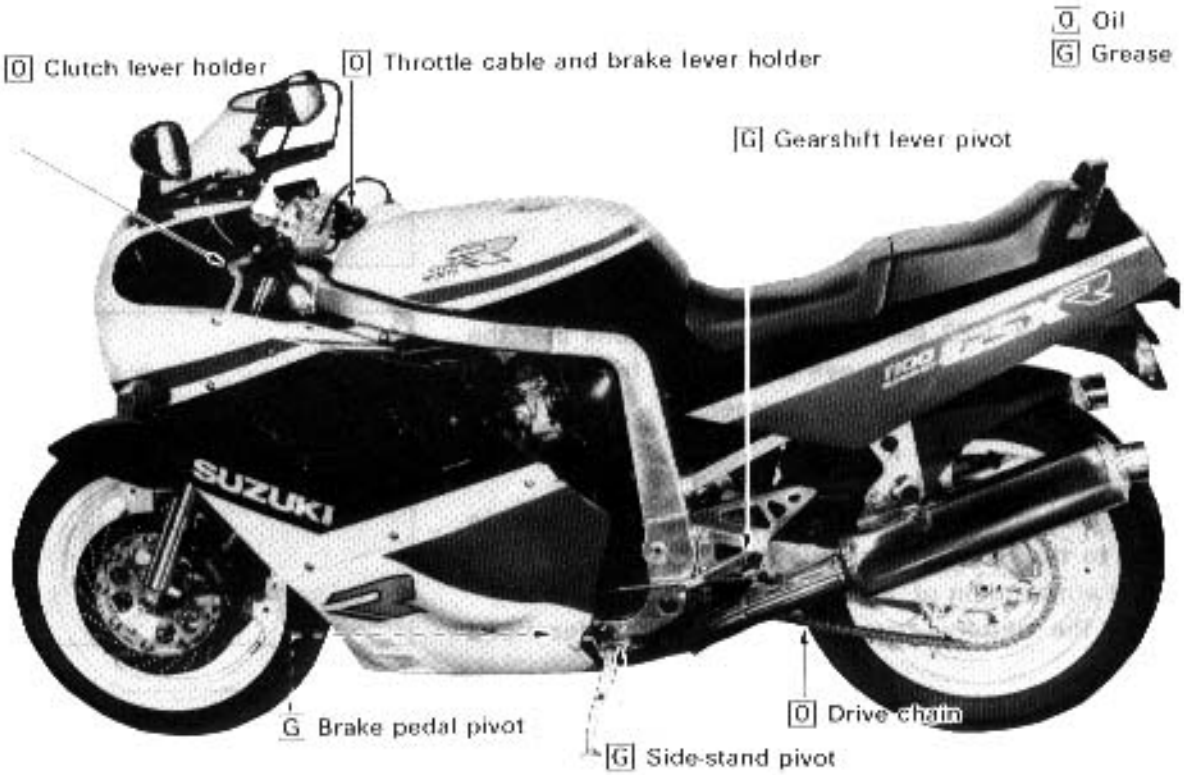
PERIODIC MAINTENANCE CHART

Interval / Item	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		Clean every 3000 km (2000 miles) and replace every 12000 km (7500 miles)				
Valve clearance		I	I	I	I	I
Spark plugs		-	I	R	I	R
Fuel lines		I	I	I	I	I
(Vapor hose ..... California model only)		Replace every four years				
Engine oil and filter		R	R	R	R	R
Carburetors (Idle rpm)		I	I	I	I	I
Clutch hose		I	I	I	I	I
		Replace every four years				
Clutch fluid		I	I	I	I	I
		Replace every two years				
Drive chain		I	I	I	I	I
		Clean and lubricate every 1000km (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 fork		I	-	I	-	I
Rear suspension		I	-	I	-	I
Chassis bolts and nuts		T	T	T	T	T

NOTE: T = Tighten, I = Inspect, R = Replace

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.*

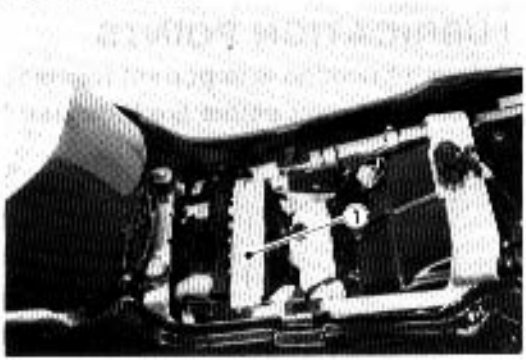
** Lubricate exposed parts which are subject to rust, with oil or grease.*

MAINTENANCE AND TUNE-UP PROCEDURES

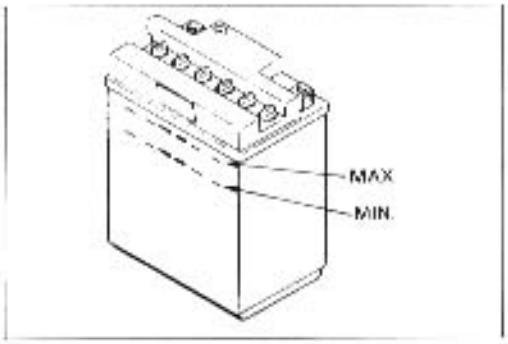
This section describes the servicing procedures for each item of the Periodic Maintenance requirements.

BATTERY

Inspect Every 6000 km (4000 miles, 12 months).

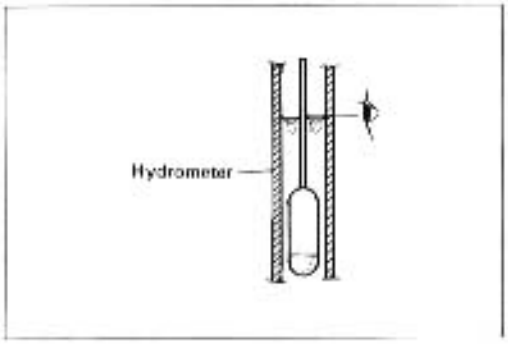


- Remove the seat and battery holder plate ①.
- Remove the battery ⊖ and ⊕ lead wires from the battery terminals.
- Remove the battery from its case.
- Check the electrolyte level and specific gravity. Add distilled water, as necessary, to keep the surface of the electrolyte above the MIN. level line but not above the MAX. level line.
- For checking specific gravity, use a hydrometer to determine the charged condition.



09900-28403: Hydrometer

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

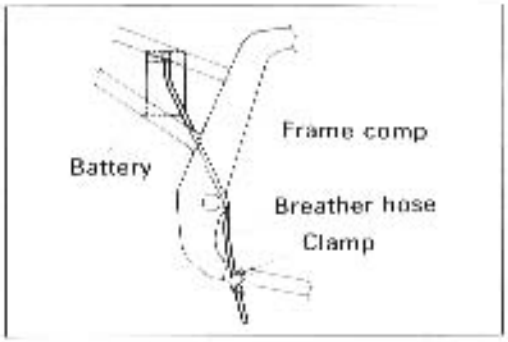


An S.G. reading of 1.22 (at 20°C) or under means that the battery needs recharging. Remove the battery from the machine and charge it with a battery charger.

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

- Charge at a maximum of 1.4 amps.
- To install the battery, reverse the procedure described above.

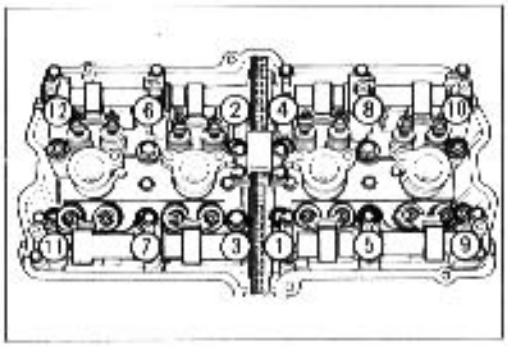
WARNING:
When installing the battery lead wires, fix the ⊕ lead first and ⊖ lead last.



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

CYLINDER HEAD NUTS AND EXHAUST PIPE BOLTS

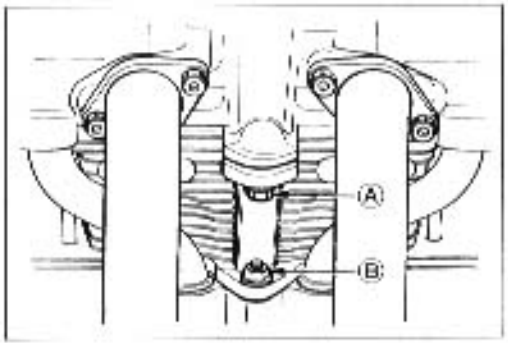
Tighten Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter.



CYLINDER HEAD

- Remove the seat, fairings and fuel tank. (Refer to page 3-4.)
- Remove the cylinder head cover.
- First, loosen and retighten the nuts to the specified torque with a torque wrench sequentially in ascending numerical order with the engine cold.

Cylinder head nut: 35 – 40N·m (3.5 – 4.0 kg-m, 25.5 – 29.0 lb-ft)



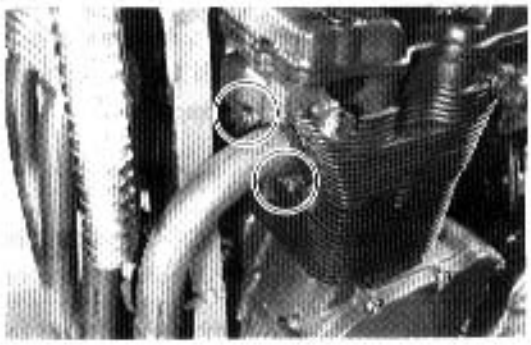
- After firmly tightening the 12 nuts, tighten the bolt and nut (indicated as Ⓐ and Ⓑ) to the torque value below:

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

Cylinder nut Ⓑ: 7 – 11 N·m (0.7 – 1.1 kg-m, 5.0 – 8.0 lb-ft)

- When installing the cylinder head cover, apply SUZUKI BOND NO. 1207B to the head cover groove and cam end caps. (Refer to page 3-68.)
- Tighten the head cover bolts to the specified torque.

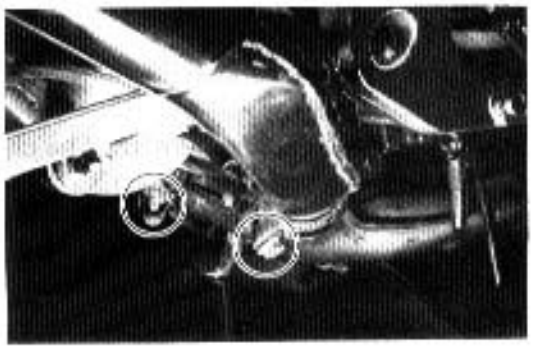
Tightening torque: 13 – 15 N·m (1.3 – 1.5kg-m, 9.5 – 11.0 lb-ft)



EXHAUST PIPE

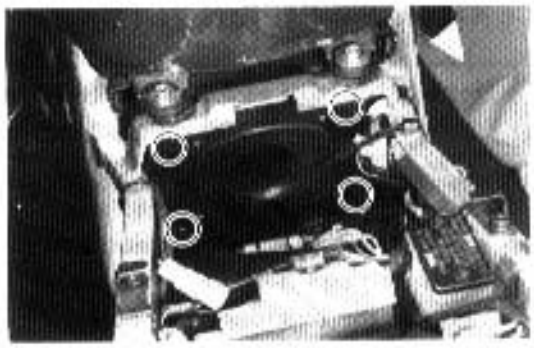
- Tighten the exhaust pipe clamp bolts to the specified torque with a torque wrench.

Exhaust pipe clamp bolt: 18 – 28 N·m (1.8 – 2.8kg-m, 13.0 – 20.0 lb-ft)



AIR CLEANER

Clean Every 3000 km (2000 miles) and Replace Every 12000 km (7500 miles).



- Remove both seats.
- Remove both frame covers.
- Remove the battery.
- Remove the battery holder by removing the ignitor unit.
- Remove the air cleaner element by removing the screws.

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

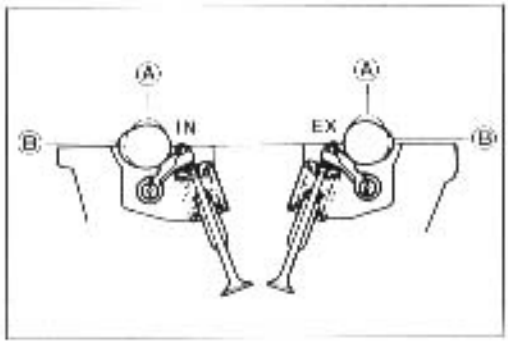
CAUTION:
Always use air pressure on the outside of the cleaner element. If air pressure is used on the inside, dirt will be forced into the pores of the cleaner element thus restricting air flow through the cleaner element.

- Reinstall the cleaned or new cleaner element in the reverse order of removal.
- When installing the air cleaner element in the cleaner case, make sure that the part number Ⓐ comes upward.

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!

VALVE CLEARANCE

Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter.



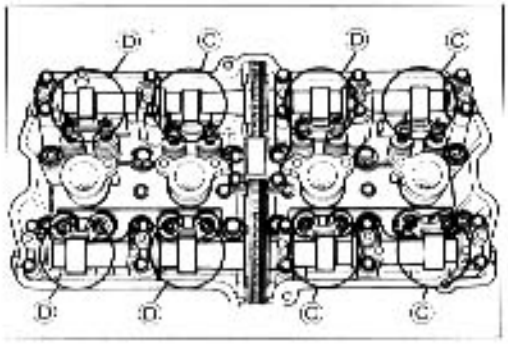
- Remove the seat, fairings and fuel tank.
- Remove the cylinder head cover.

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.

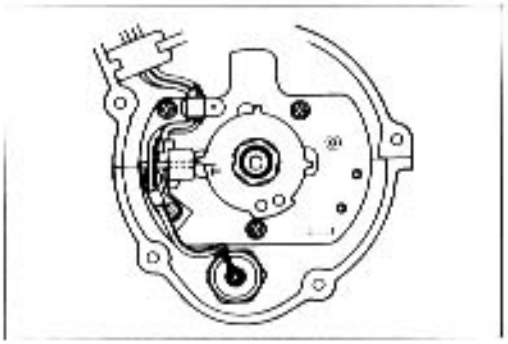
Valve clearance (when cold): IN. 0.10 – 0.15 mm (0.004 – 0.006 in)
EX. 0.18 – 0.23 mm (0.007 – 0.009 in)

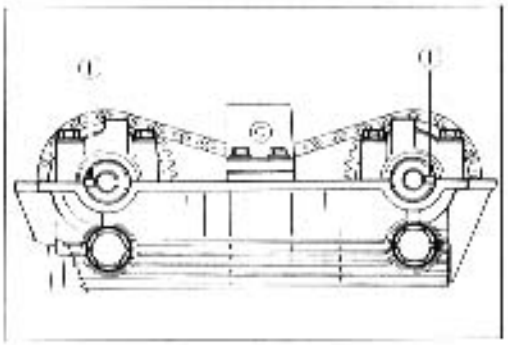
NOTE:

- *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 19-mm wrench, and rotate in the normal running direction. All spark plugs should be removed.*



- Turn crankshaft to bring the "T" mark on the rotor to the center of pick-up coil and also to bring the notches Ⓒ 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).

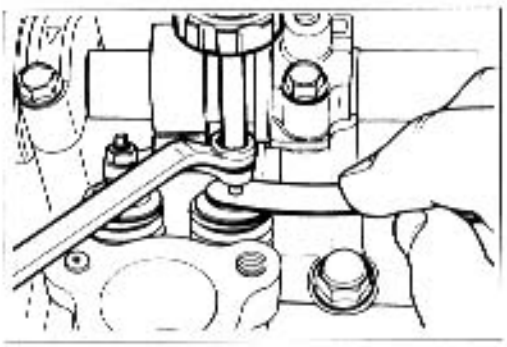




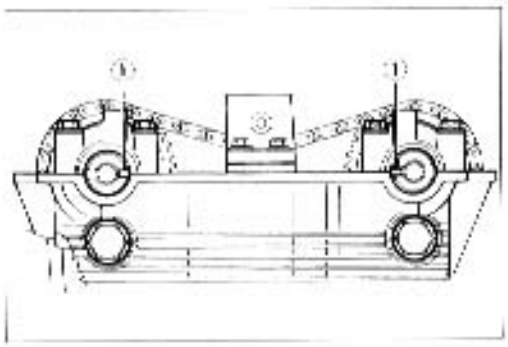
- Use a thickness gauge between the adjusting screw and the valve stem end. If the clearance is out of specification, bring it into the specified range by using the special tool.

  09900-20803: Thickness guage
  09917-14910: 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 "T" mark on the rotor to the center of pick-up coil and also to bring the notches Ⓒ to the positions shown.
- Read the clearance at the remaining valves Ⓓ and adjust the clearance if necessary.



Cam Position	Notch ⓘ position	
	Intake Camshaft	Exhaust Camshaft
ⓒ	⊖	⊖
ⓓ	⊖	⊖

- When installing the cylinder head cover, apply SUZUKI BOND NO. 1207B to the head cover groove and cam end caps. (Refer to page 3-68.)
- Tighten the head cover bolts and union bolts to the specified torque.
  (Refer to page 3-68.)

SPARK PLUGS

Inspect at 6000 km (4000 miles, 12 months), 18000 km (11000 miles, 36 months) and Replace Every 12000 km (7500 miles, 24 months).

- Remove the seat, fairings and fuel tank.
- Remove the spark plugs with the spark plug wrench.

CAUTION:
Take care not to damage the fuel hoses when raising the fuel tank.

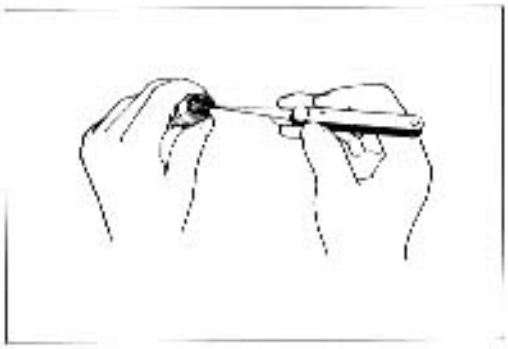
The plug gap is adjusted to 0.6 – 0.7 mm (0.02 – 0.03 in). The gap is correctly adjusted by using a thickness gauge. When carbon is deposited on the spark plug, remove the carbon with a spark plug cleaning machine or by carefully using a tool with a pointed end. If the electrode is extremely worn or burnt, replace the plug. Also replace the plug if it has a broken insulator, damaged thread, etc.

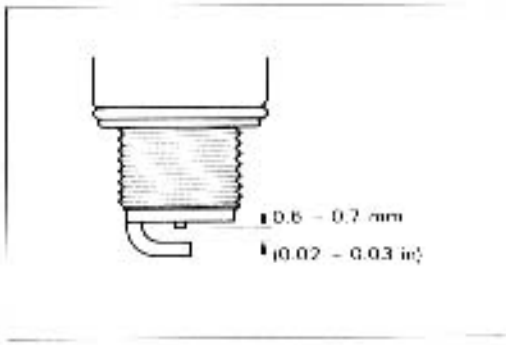
NGK JR9B as listed in the table should be used as the standard plug. However, the heat range of the plug should be selected to meet the requirements of speed, actual load, fuel, etc. If the plugs need to be replaced, it is recommended that plugs having a heat range closest to the standard plug in the 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 NGK JR10B.

Recommended spark plug

	Standard	Cold type
NGK	JR9B	JR10B

09930-13210: Spark plug socket wrench
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 Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter.

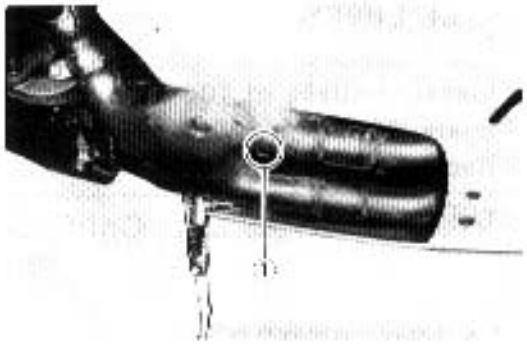
Oil should be changed while the engine is hot. Oil filter replacement at the above intervals, should be done together with the engine oil change.

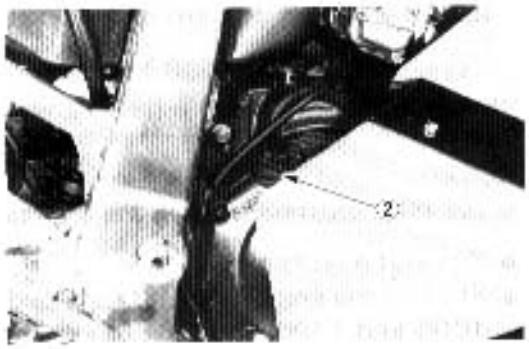
- Keep the motorcycle upright.
- Place an oil pan below the engine, and drain oil by removing the drain plug ① and filler cap ②.
- Remove the oil filter ③ by using the oil filter wrench. (Special tool Ⓐ)
- Apply engine oil lightly to the gasket of the new filter before installation.
- Install the new filter turning it by hand until you feel that the filter gasket contacts the mounting surface. Then tighten it 2 turns using the oil filter wrench. (Special tool Ⓐ)

09915-40610: Oil filter wrench

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

- Fit the drain plug ① securely, and add fresh oil through the oil filler. The engine will hold about 4.5 L (4.8 US qt) of oil. Use an API classification of SE or SF oil with SAE 10W/40 viscosity.
- Start up the engine and allow it to run for several seconds at idling speed.
- Turn off the engine and wait about one minute, then check the oil level through the inspection window ④. If the level is below mark"F", add oil to that level.

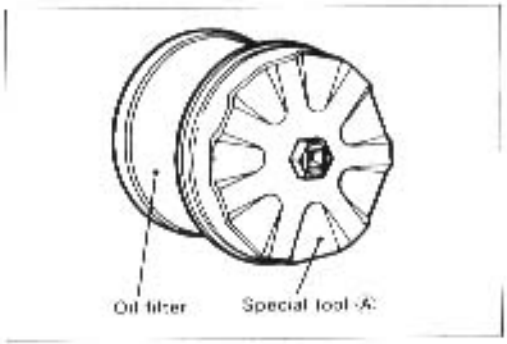


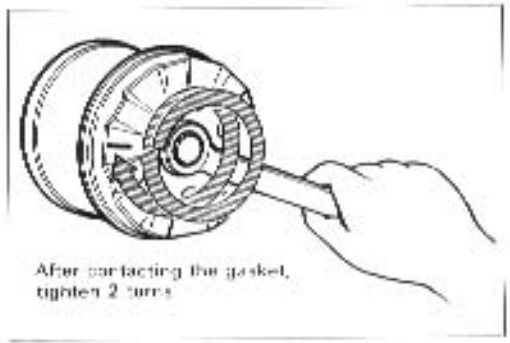


NECESSARY AMOUNT OF ENGINE OIL

Oil change: 4.0 L (4.2/3.5 US/Imp qt)
Filter change: 4.2 L (4.4/3.7 US/Imp qt)
Overhaul engine: 5.1 L (5.4/4.5 US/Imp qt)

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





FUEL LINES

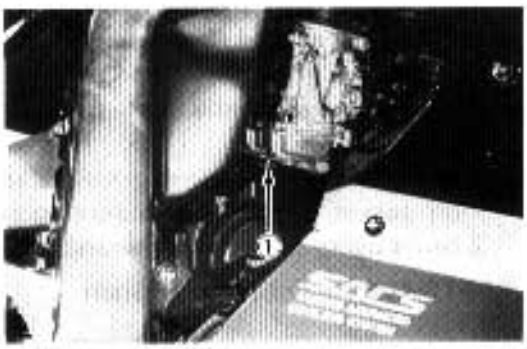
Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter. Replace Every four years.

VAPOR HOSE ..... California model only

CARBURETORS

IDLE RPM (Idling adjustment)

Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter.



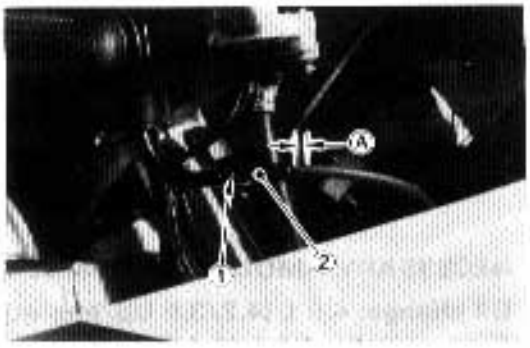
NOTE:
Make this adjustment when the engine is hot.

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

Engine idle speed : 1100 ± 100 r/min ..... for E-01 and others
1200 ± 100 r/min ..... for E-03 (Except California)
1100 $^{100}_{-50}$ r/min ..... for E-18

THROTTLE CABLE PLAY

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



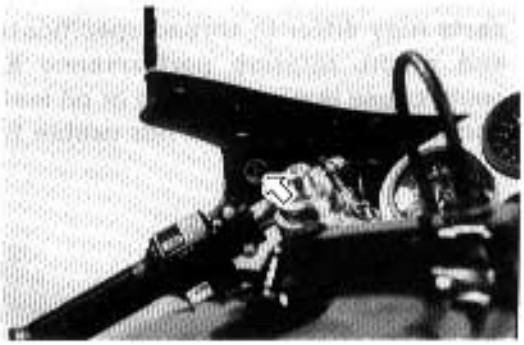
- Loosen the lock nut ① and turn the adjuster ② in or out until the specified play is obtained.
- Tighten the lock nut ① while holding the adjuster.

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

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

CLUTCH

Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter. Replace hose every four years. Replace fluid every two years.



CLUTCH FLUID LEVEL

- Keep the motorcycle upright and place the handlebars straight.
- Check the clutch fluid level in the reservoir.
- If the level is found to be lower than the lower mark, replenish with BRAKE FLUID that meets the following specification.

Specification and classification : DOT4

WARNING:
The clutch 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 re-use brake fluid left over from the last servicing or stored for long periods.

BLEEDING AIR FROM THE CLUTCH FLUID CIRCUIT

The clutch fluid circuit may be purged of air in the following manner.

- Remove the lower fairing.
- Keep the motorcycle upright and place the handlebars straight.
- Fill up the master cylinder reservoir to the upper end of the inspection window. Replace the reservoir cap to prevent entry of dirt.
- Attach a pipe to the bleeder valve and insert the free end of the pipe into a receptacle.
- Squeeze and release the clutch lever several times in rapid succession, and squeeze the lever fully without releasing it. Loosen the bleeder valve by turning it a quarter of a turn so that the fluid runs into the receptacle; this will remove the tension of the clutch lever causing it to touch the handlebar grip. Then, close the valve, pump and sqeeze the lever, and open the valve. Repeat this process until the fluid flowing into the receptacle no longer contains air bubbles.

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

- Close the bleeder valve, and disconnect the pipe. Fill the reservoir to the upper end of the inspection window.

Bleeder valve
tightening torque: 6 – 9 N·m
(0.6 – 0.9kg-m, 4.5 – 6.5 lb-ft)

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

DRIVE CHAIN

Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter. Clean and Lubricate Every 1000 km (600 miles).

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

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

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

CHECKING

- Place the motorcycle on the side-stand.
- Loosen the axle nut ①.
- Tense the drive chain fully by turning both chain adjusters ②.
- Count out 21 pins (20 pitches) on the chain and measure the distance between the two points. If the distance exceeds the following limit, the chain must be replaced.

Service Limit: 319.4mm(12.6in)

ADJUSTING

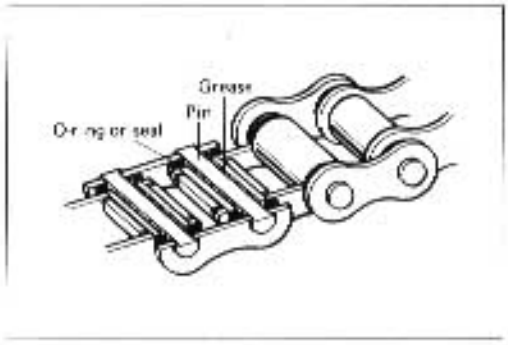
- Loosen or tighten both chain adjusters ② until the chain has 25 – 30 mm (1.0 – 1.2 in) of slack in the middle between engine and rear sprockets. The mark ③ on both chain adjusters must be at the same position on the scale to ensure that the front and rear wheels are correctly aligned. Place the motorcycle on its side-stand for accurate adjustment.
- After adjusting the drive chain slack, tighten the axle nut securely.
- Tighten both chain adjusters ② securely.

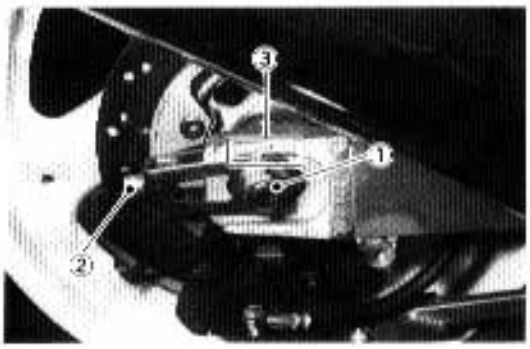
Rear axle nut
Tightening torque: 85 – 115 N-m
(8.5 – 11.5 kg-m, 61.5 – 83.0 lb-ft)

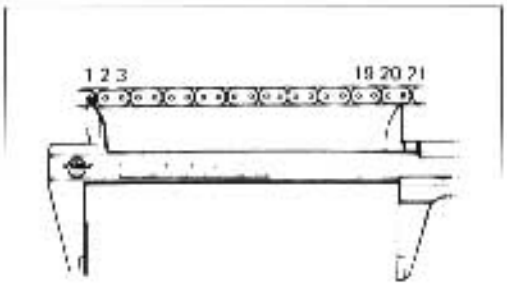
CLEANING AND LUBRICATIING

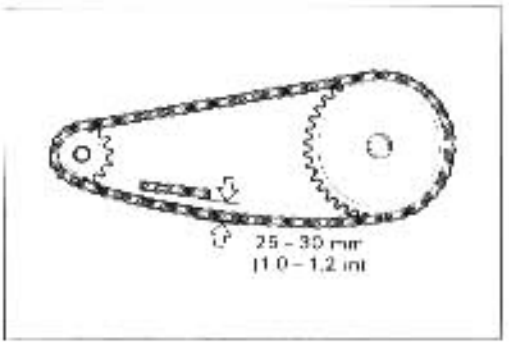
- Wash the chain with kerosene. If the chain tends to rust quickly, the intervals must be shortened.

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









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

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

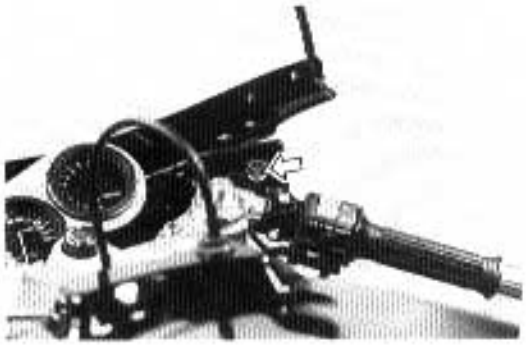
The standard drive chain TAKASAGO RK532GSV. SUZUKI recommends that the above-mentioned standard drive chain be used for the replacement.

BRAKES

Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km. (4000 miles, 12 months) thereafter. Replace hoses Every four years. Change fluid Every two years.

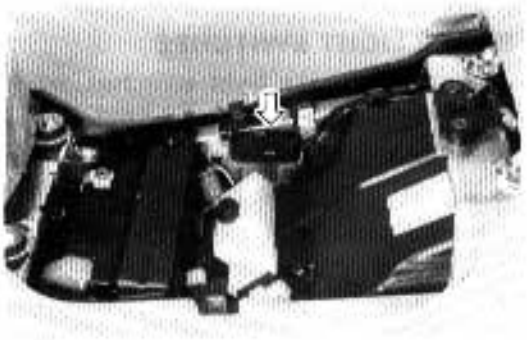
BRAKE FLUID LEVEL

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



Specification and Classification: DOT4

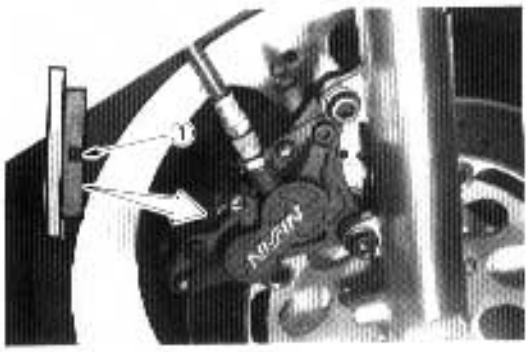
WARNING:
The brake system of this motorcycle is filled with a glycol-based brake fluid. Do not use or mix different types of fluid such as silicone-based or petroleum-based. Do not use any brake fluid taken from old, used or unsealed containers. Never re-use brake fluid left over from the last servicing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



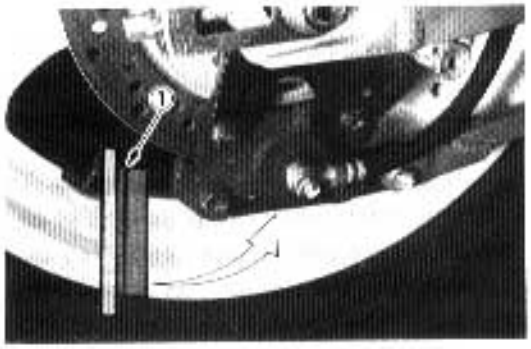
WARNING:
Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces. Check the brake hoses and hose joints for cracks and oil leakage before riding.

BRAKE PADS

The extent of brake pad wear can be checked by observing the grooved limit line (1) on the pad. When the wear exceeds the grooved limit line, replace the pads with new ones. (Refer to pages 6-7 and 6-24.)



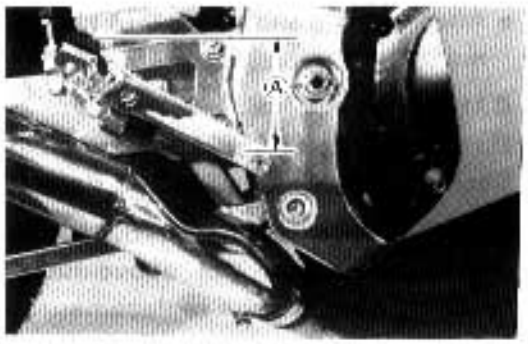
CAUTION:
Replace the brake pad as a set, otherwise braking performance will be adversely affected.

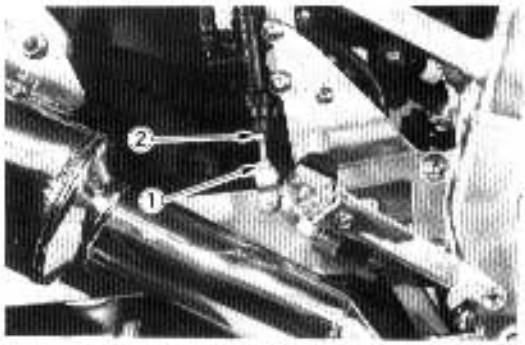


BRAKE PEDAL HEIGHT

- Loosen the lock nut ① and rotate the push rod ② to locate brake pedal 65 mm (2.6 in) Ⓐ below the top face of the footrest.
- Retighten the lock nut ① to secure the push rod ② in the proper position.

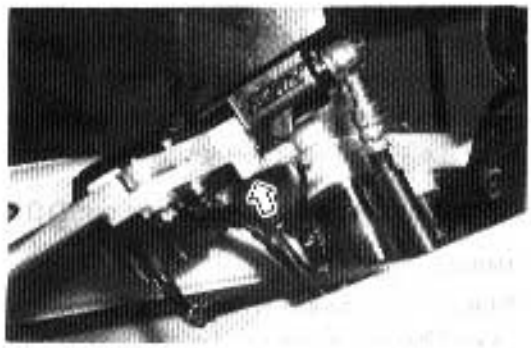
Brake pedal height Ⓐ: 65 mm (2.6 in)





BRAKE LIGHT SWITCHES

Adjust both brake light switches, front and rear, so that the brake light will come on just before pressure is felt when the brake lever is squeezed, or the brake pedal is depressed.



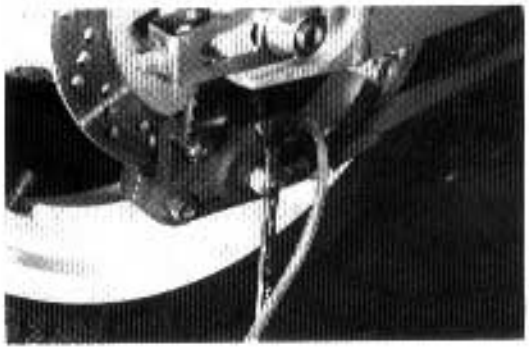
AIR BLEEDING THE BRAKE FLUID CIRCUIT

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

- Fill up the master cylinder reservoir to the upper end of the inspection window, (for front brake) and "UPPER" line. (for rear brake) Replace the reservoir cap to prevent entry of dirt.
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle.

Bleeder valve tightening torque: 6 – 9 N·m
(0.6 – 0.9 kg-m, 4.5 – 6.5 lb-ft)

- Front brake: Bleed the air from the inboard valve first, and then outboard valve.
- Squeeze and release the brake lever several times in rapid succession and squeeze the lever fully without releasing it. Loosen the bleeder valve by turning it a quarter of a turn so that the brake fluid runs into the receptacle; this will remove the tension of the brake lever causing it to touch the handlebar grip. Then, close the valve, pump and squeeze the lever, and open the valve. Repeat this process until the fluid flowing into the receptacle no longer contains air bubbles.



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

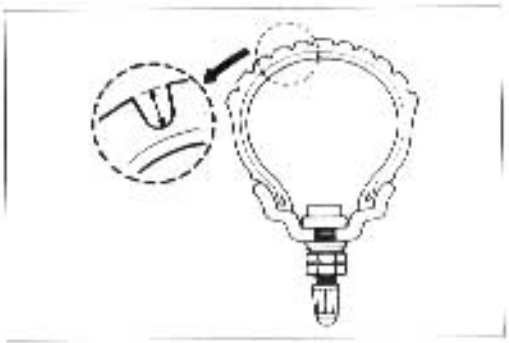
- Close the bleeder valve, and disconnect the pipe. Fill the reservoir to the upper end of the inspection window (for front brake) and "UPPER" line. (for rear brake)

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

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

TIRES

Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter.



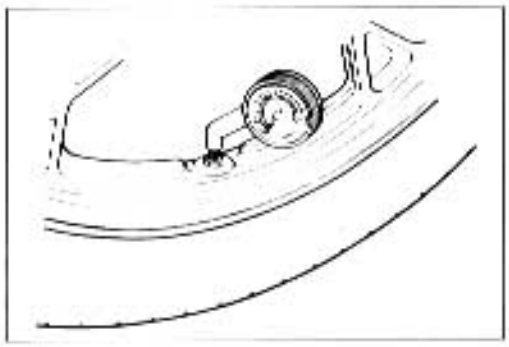
TIRE TREAD CONDITION

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

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

TIRE PRESSURE

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

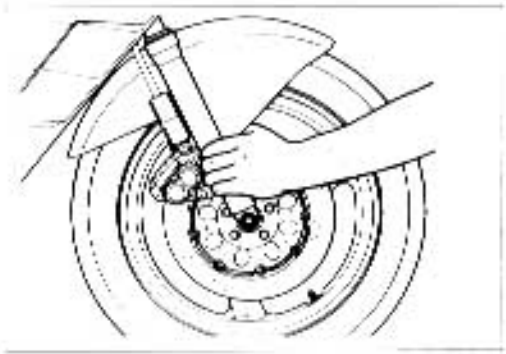


COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	230	2.30	33	250	2.50	36
REAR	250	2.50	36	290	2.90	42

CAUTION:
The standard tire fitted on this motorcycle is 120/70 ZR17 for front (MICHELIN A59) and 160/60 ZR17 for rear (MICHELIN M59). The use of tires other than those specified may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.

STEERING

Inspect Initially at 1000 km (600 miles, 2 months) and Every 6000 km (4000 miles, 12 months) thereafter.



Taper roller type bearings are used in the steering system for better handling. Steering should be adjusted properly for smooth turning of handlebars. Overtight steering prevents smooth turning of the handlebars and too loose steering will cause poor stability. Check that there is no play in the front fork assembly by supporting the machine so that the front wheel is off the ground, with the wheel straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, perform steering bearing adjustment as described on page 6-19 of this manual.

FRONT FORKS

Inspect Initially at 1000 km (600 miles, 2 months) and Every 12000 km (7500 miles, 24 months) thereafter.

Inspect the front forks for oil leakage, scoring or scratches on the outer surface of the inner tubes. Replace any defective parts, if necessary. (Refer to page 6-12.)

REAR SUSPENSION

Inspect Initially at 1000 km (600 miles, 2 months) and Every 12000 km (7500 miles, 24 months) thereafter.

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