

Product: 1997-2000 Suzuki GSX-R600 Motorcycle Service Repair Workshop Manual
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SUZUKI

GSX-R600

SERVICE MANUAL
1997-2000

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This manual contains an introductory description on the SUZUKI GSX-R600 and procedures for its inspection/service and overhaul of its main components. Other information considered as generally known is not included.

Read the GENERAL INFORMATION section to familiarize yourself with the motorcycle and its maintenance. Use this section as well as other sections to use as a guide for proper inspection and service.

This manual will help you know the motorcycle better so that you can assure your customers of fast and reliable service.

- * *This manual has been prepared on the basis of the latest specifications at the time of publication. If modifications have been made since then, differences may exist between the content of this manual and the actual motorcycle.*
- * *Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual motorcycle exactly in detail.*
- * *This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI motorcycles. If you do not have the proper knowledge and tools, ask your authorized SUZUKI motorcycle dealer to help you.*

▲ WARNING

Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual. Improper repair may result in injury to the mechanic and may render the motorcycle unsafe for the rider and passenger.

IMPORTANT

All street-legal Suzuki motorcycles with engine displacement of 50 cc 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-R600 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

control program is contained in the U.S. SUZUKI EMISSION

CONTROL PROGRAM MANUAL/SERVICE BULLETIN.

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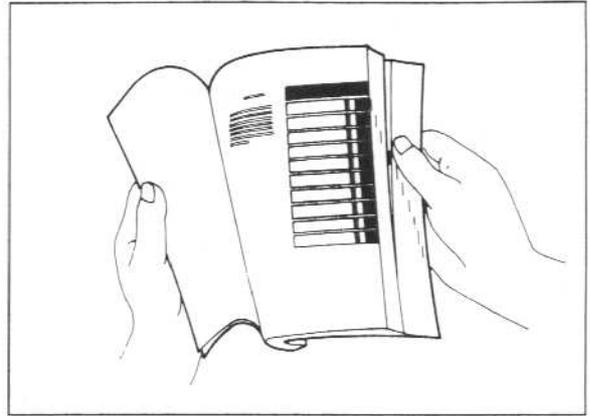
SUZUKI MOTOR CORPORATION

Motorcycle Service Department

HOW TO USE THIS MANUAL

TO LOCATE WHAT YOU ARE LOOKING FOR:

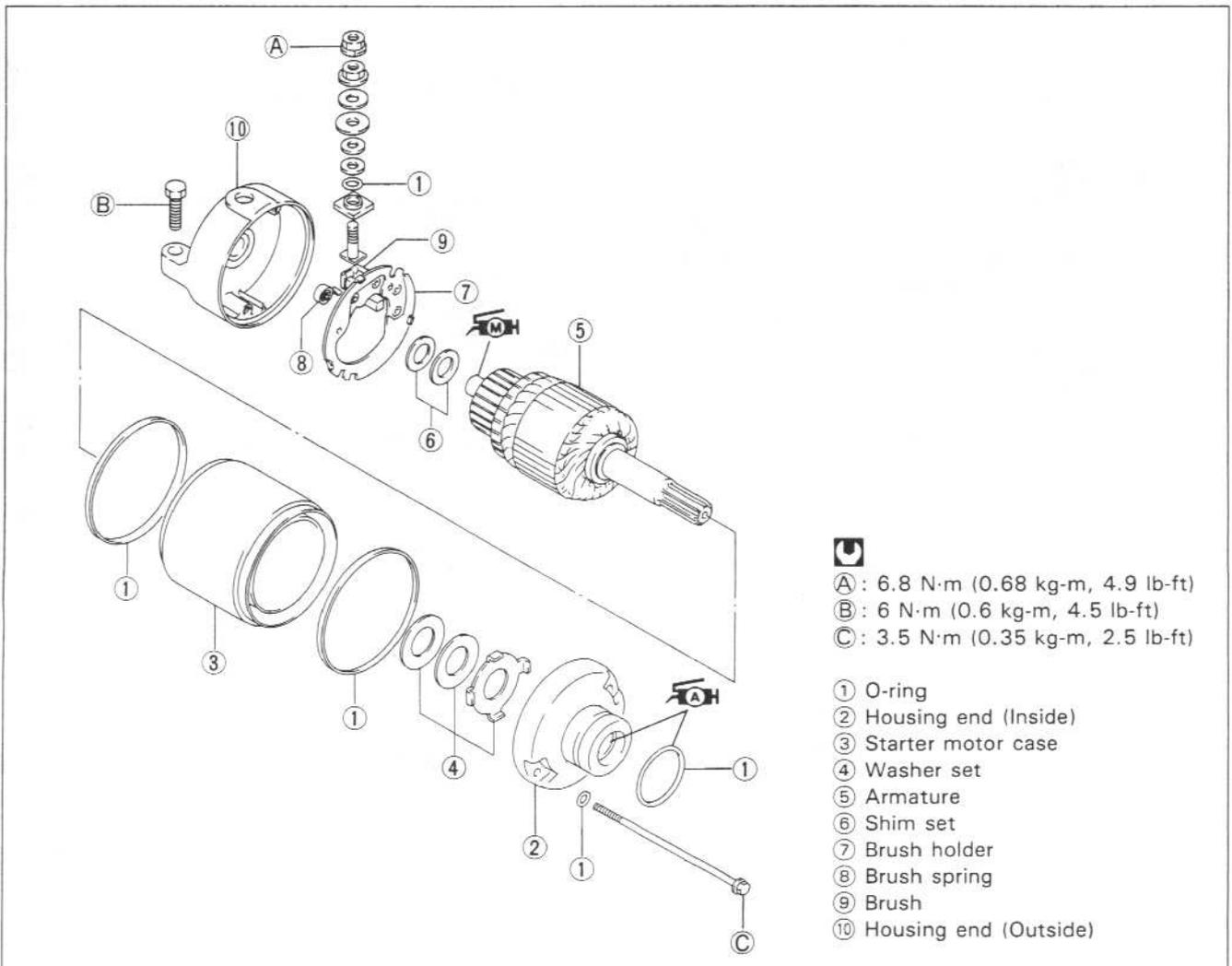
1. The text of this manual is divided into sections.
2. The section titles are listed in the GROUP INDEX.
3. Holding the manual as shown at the right will allow you to find the first page of the section easily.
4. The contents are listed on the first page of each section to help find the item and page you need.



COMPONENT PARTS AND WORK TO BE DONE

Under the name of each system or unit, is its exploded view. Work instructions and other service information such as the tightening torque, lubricating points and locking agent points, are provided.

Example: Starter motor



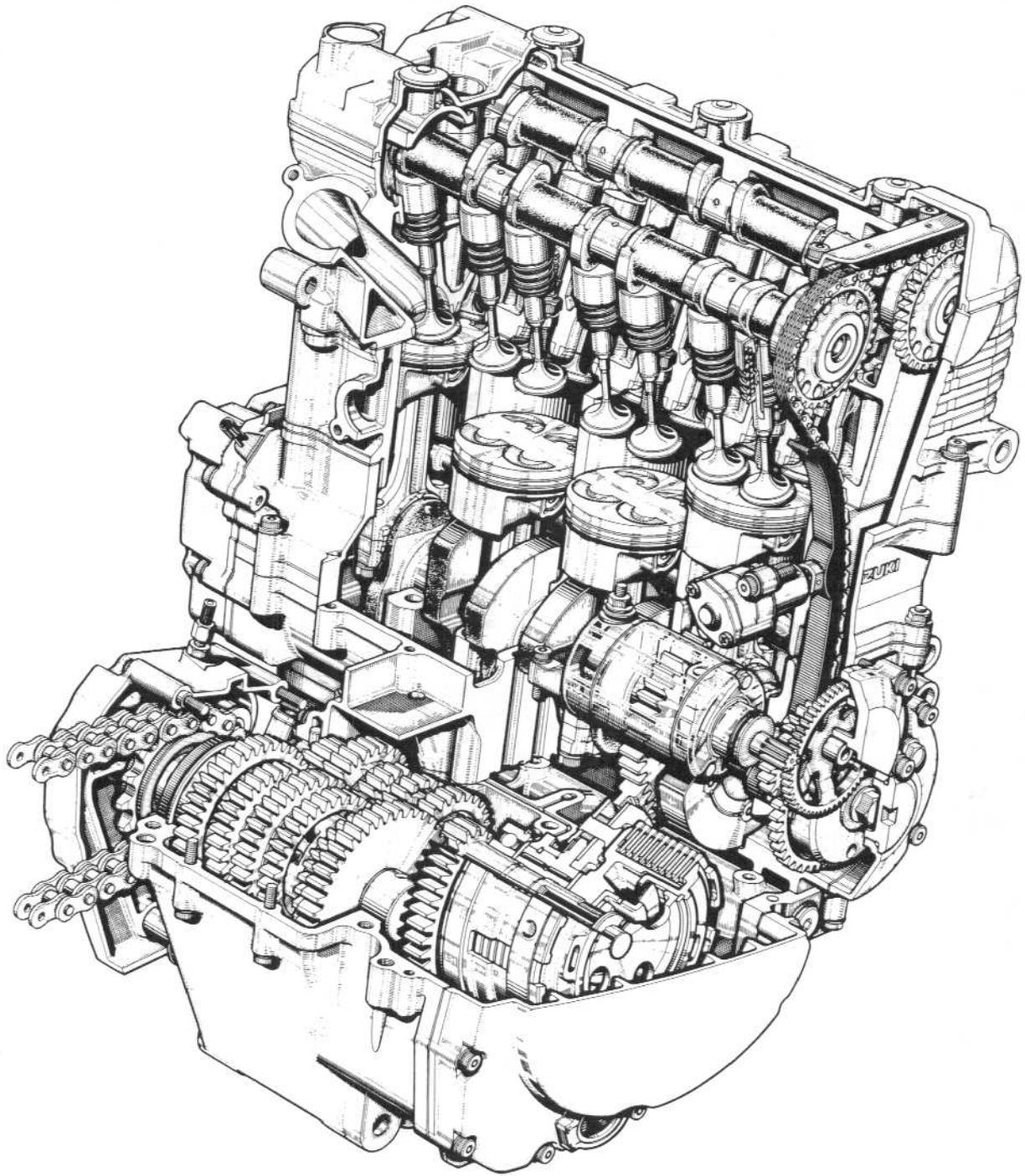
- A: 6.8 N·m (0.68 kg-m, 4.9 lb-ft)
B: 6 N·m (0.6 kg-m, 4.5 lb-ft)
C: 3.5 N·m (0.35 kg-m, 2.5 lb-ft)

- ① O-ring
- ② Housing end (Inside)
- ③ Starter motor case
- ④ Washer set
- ⑤ Armature
- ⑥ Shim set
- ⑦ Brush holder
- ⑧ Brush spring
- ⑨ Brush
- ⑩ Housing end (Outside)

SYMBOL

Listed in the table below are the symbols indicating instructions and other information necessary for servicing and meaning associated with them respectively.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Torque control required. Data beside it indicates specified torque.		Measure in voltage range.
	Apply oil. Use engine oil unless otherwise specified.		Measure in resistance range.
	Apply SUZUKI SUPER GREASE "A". 99000-25030		Measure in current range.
	Apply SUZUKI MOLY PASTE. 99000-25140		Measure in diode test range
	Apply SUZUKI BOND "1207B" 99104-31140		Measure in continuity test range.
	Apply THREAD LOCK SUPER "1303". 99000-32030		Use special tool.
	Apply THREAD LOCK "1342" 99000-32050		Use engine coolant.
	Apply THREAD LOCK SUPER "1360". 99000-32130		Use fork oil. 99000-99044-10G
	Apply or use brake fluid.		



GENERAL INFORMATION

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WARNING/CAUTION/NOTE

Please read this manual and follow its instructions carefully. To emphasize special information, the symbol and the words WARNING, CAUTION and NOTE have special meanings. Pay special attention to the messages highlighted by these signal words.

⚠ WARNING

Indicates a potential hazard that could result in death or injury.

⚠ CAUTION

Indicates a potential hazard that could result in motorcycle damage.

NOTE:

Indicates special information to make maintenance easier or instructions clearer.

Please note, however, that the warnings and cautions contained in this manual cannot possibly cover all potential hazards relating to the servicing, or lack of servicing, of the motorcycle. In addition to the WARNINGS and CAUTIONS stated, you must use good judgement and basic mechanical safety principles. If you are unsure about how to perform a particular service operation, ask a more experienced mechanic for advice.

GENERAL PRECAUTIONS

⚠ WARNING

- Proper service and repair procedures are important for the safety of the service mechanic and the safety and reliability of the motorcycle.
- When 2 or more persons work together, pay attention to the safety of each other.
- When it is necessary to run the engine indoors, make sure that exhaust gas is forced outdoors.
- When working with toxic or flammable materials, make sure that the area you work in is well-ventilated and that you follow all of the material manufacturer's instructions.
- Never use gasoline as a cleaning solvent.
- To avoid getting burned, do not touch the engine, engine oil, radiator and exhaust system until they have cooled.
- After servicing the fuel, oil, water, exhaust or brake systems, check all lines and fittings related to the system for leaks.

▲ CAUTION

- If parts replacement is necessary, replace the parts with Suzuki Genuine Parts or their equivalent.
- When removing parts that are to be reused, keep them arranged in an orderly manner so that they may be reinstalled in the proper order and orientation.
- Be sure to use special tools when instructed.
- Make sure that all parts used in reassembly are clean. Lubricate them when specified.
- Use the specified lubricant, bond, or sealant.
- When removing the battery, disconnect the negative cable first and then the positive cable. When reconnecting the battery, connect the positive cable first and then the negative cable, and replace the terminal cover on the positive terminal.
- When performing service to electrical parts, if the service procedures not require use of battery power, disconnect the negative cable the battery.
- When tightening the cylinder head and case bolts and nuts, tighten the larger sizes first. Always tighten the bolts and nuts from the inside working out, in a crisscross manner.
- Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, self-locking nuts, cotter pins, circlips and certain other parts as specified, be sure to replace them with new ones. Also, before installing these new parts, be sure to remove any left over material from the mating surfaces.
- Never reuse a circlip. When installing a new circlip, take care not to expand the end gap larger than required to slip the circlip over the shaft. After installing a circlip, always ensure that it is completely seated in its groove and securely fitted.
- Use a torque wrench to tighten fasteners to the specified torque. Wipe off grease and oil if a thread is smeared with them.
- After reassembling, check parts for tightness and proper operation.

- To protect the environment, do not unlawfully dispose of used motor oil, engine coolant and other fluids: batteries, and tires.
- To protect Earth's natural resources, properly dispose of used motorcycle and parts.

SUZUKI GSX-R600V ('97-MODEL)



RIGHT SIDE

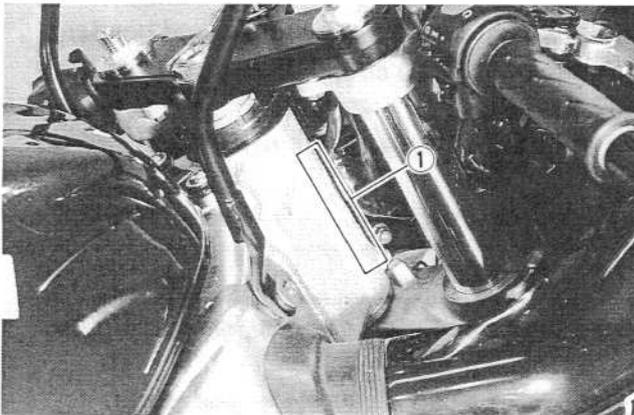


LEFT SIDE

*Difference between photographs and actual motorcycles depends on the markets.

SERIAL NUMBER LOCATION

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



FUEL, OIL AND ENGINE COOLANT 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 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 ($\frac{R+M}{2}$) method or 91 octane or higher rated by the research method.

FUEL (For the other models)

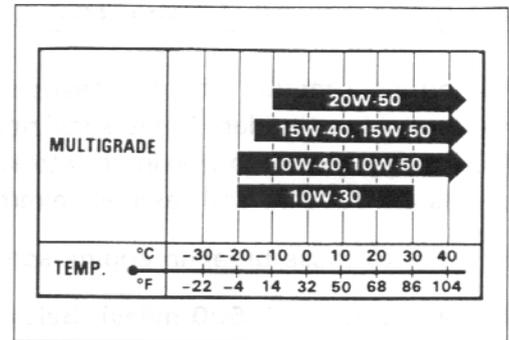
Gasoline used should be graded 85–95 octane (Research Method) or higher. An unleaded gasoline type is recommended.

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

SUZUKI recommends the use of SUZUKI PERFORMANCE 4 MOTOR OIL or an oil which is rated SF or SG under the API (American Petroleum Institute) service classification. The recommended viscosity is SAE 10W/40. If an SAE 10W/40 oil is not available, select an alternative according to the right chart.

ENGINE OIL (For the other models)

Use a premium quality 4-stroke motor oil to ensure longer service life of your motorcycle. Use only oils which are rated SF or SG under the API service classification. The recommended viscosity is SAE 10W-40. If an SAE 10W-40 motor oil is not available, select an alternative according to the right chart.



BRAKE FLUID

Specification and classification: DOT 4

⚠ 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 # 10.

ENGINE COOLANT

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

WATER FOR MIXING

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

ANTI-FREEZE/ENGINE COOLANT

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

LIQUID AMOUNT OF WATER/ENGINE COOLANT

Solution capacity (total): 2 550 ml (2.7/2.2 US/Imp qt)

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

⚠ CAUTION

Mixing of anti-freeze/engine coolant should be limited to 60%. Mixing beyond it would reduce its efficiency. If the anti-freeze/engine 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 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 6 500 r/min

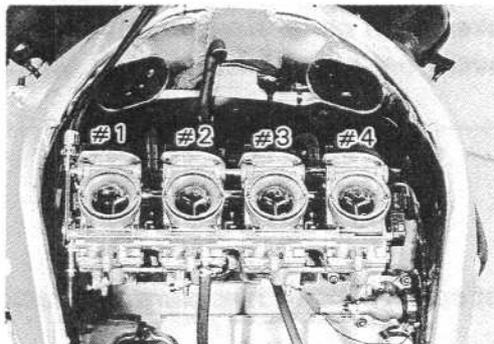
Up to 1 600 km (1000 miles): Below 10 000 r/min

Over 1 600 km (1000 miles): Below 13 400 r/min

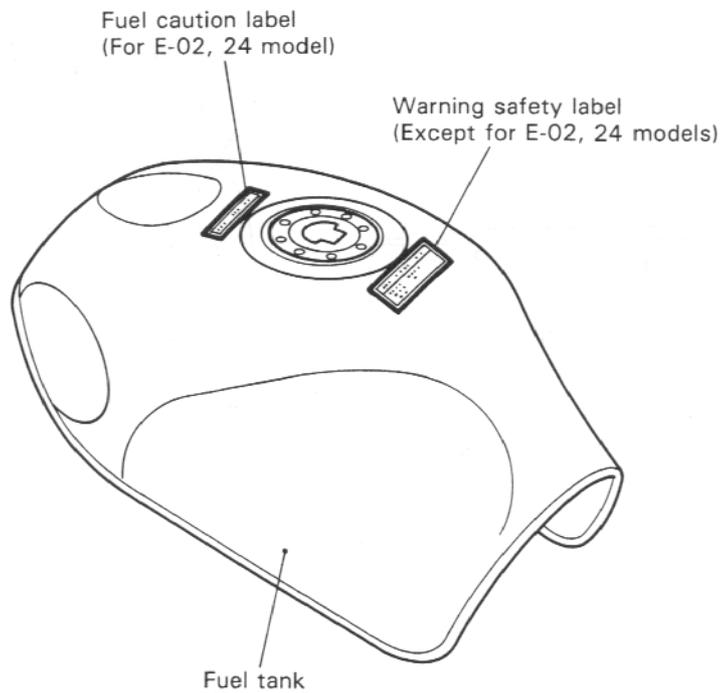
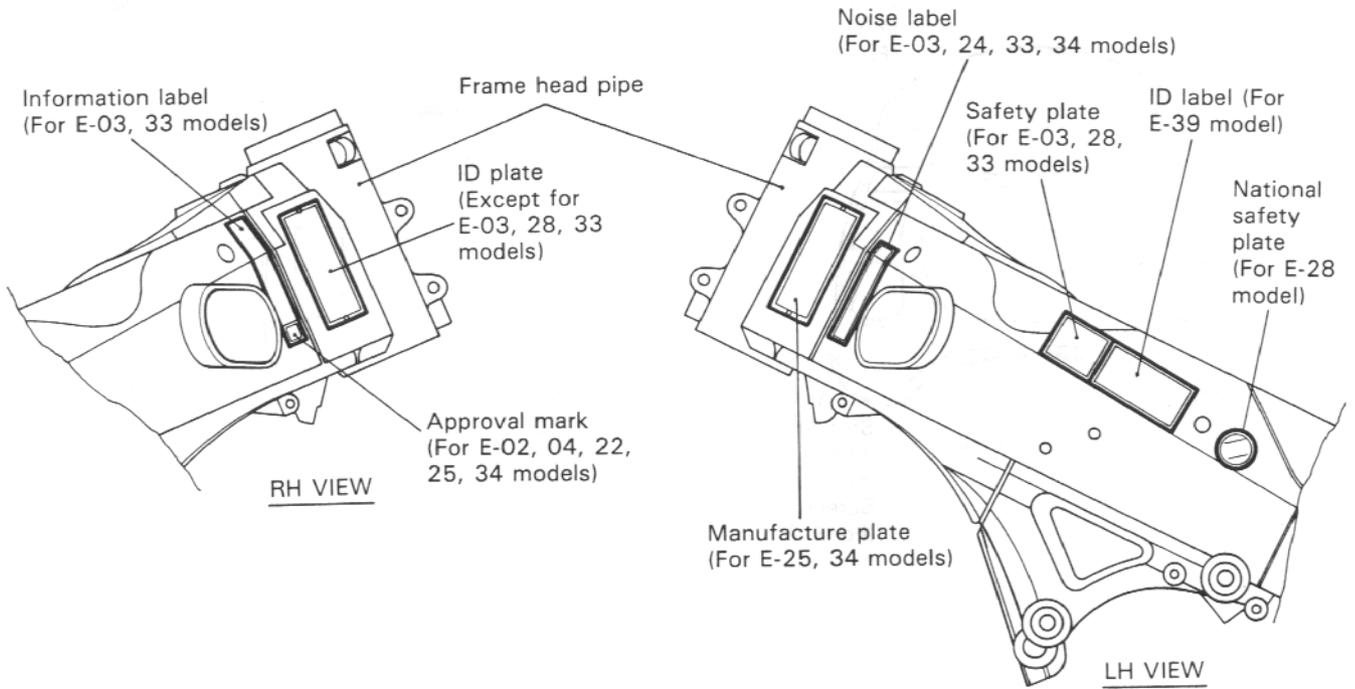
- Upon reaching an odometer reading of 1 600 km (1 000 miles) you can subject the motorcycle to full throttle operation. However, do not exceed 13 400 r/min at any time.

CYLINDER IDENTIFICATION

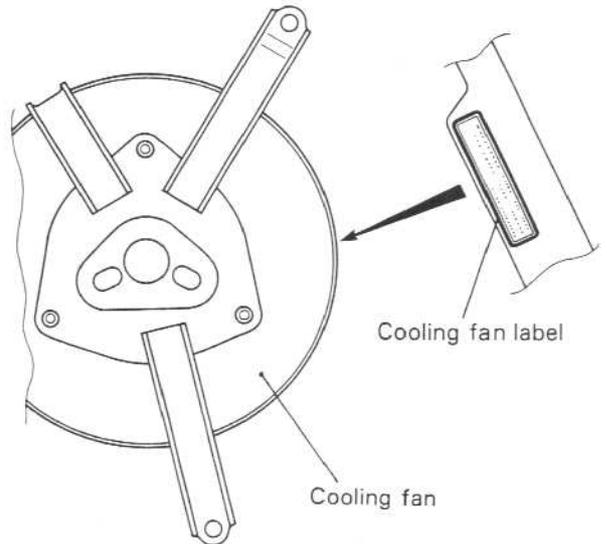
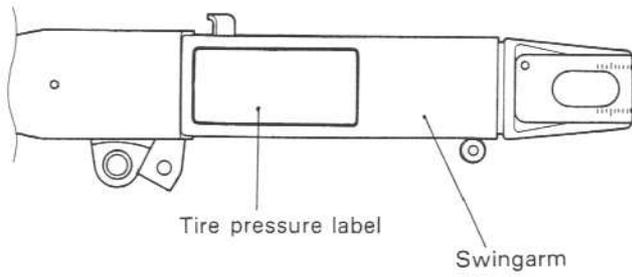
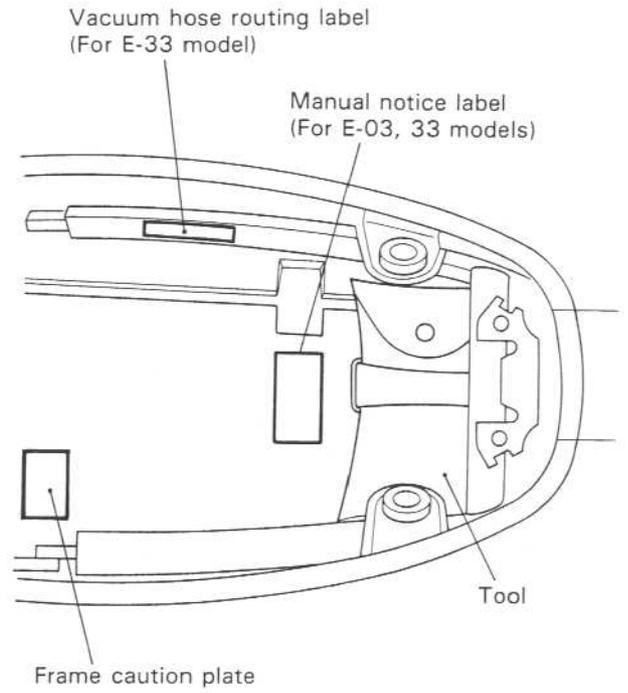
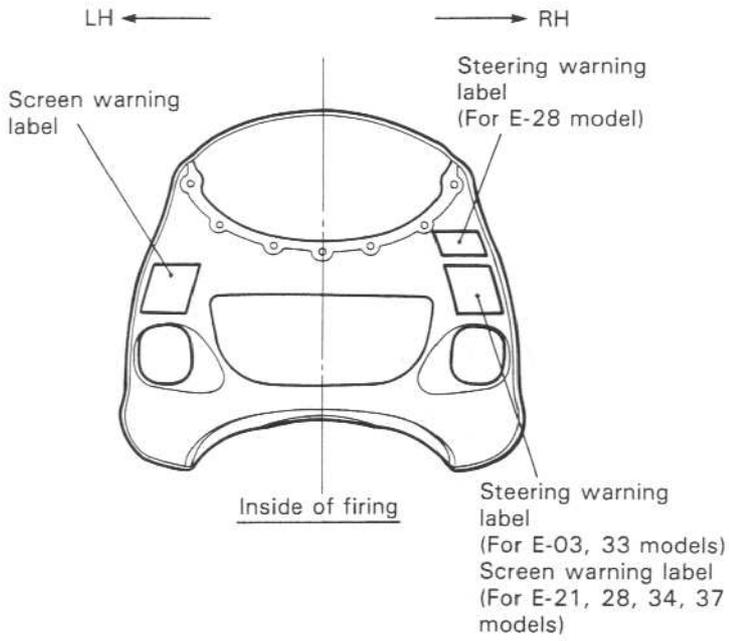
The four cylinders of this engine are identified as No.1, No.2, No.3 and No.4 cylinder, as counted from left to right (as viewed by the rider on the seat).



INFORMATION LABELS



1-7 GENERAL INFORMATION



SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2 100 mm (82.7 in)	For E-18,22,24,39 models
	2 065 mm (81.3 in)	For other models
Overall width	720 mm (28.3 in)	
Overall height	1 135 mm (44.7 in)	
Wheelbase	1 390 mm (54.7 in)	
Ground clearance	130 mm (5.1 in)	
Seat height	830 mm (32.7 in)	
Dry mass	175 kg (386 lbs)	For E-18,33,39 models
	174 kg (384 lbs)	For other models

ENGINE

Type	Four-stroke, Liquid-cooled, DOHC, TSCC
Number of cylinders	4
Tappet clearance, IN	0.10—0.20 mm (0.004—0.008 in)
EX	0.20—0.30 mm (0.008—0.012 in)
Bore	65.5 mm (2.579 in)
Stroke	44.5 mm (1.752 in)
Piston displacement	600 cm ³ (36.6 cu. in)
Compression ratio	12.0 : 1
Carburetor	MIKUNI BDSR36
Air cleaner	Non-woven fabric element
Starter system	Electric starter
Lubrication system	Wet sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	1.756 (72/41)
Gear ratios, Low	2.866 (43/15)
2nd	2.058 (35/17)
3rd	1.650 (33/20)
4th	1.428 (30/21)
5th	1.285 (27/21)
Top	1.181 (26/22)
Final reduction ratio	2.812 (45/16)
Drive chain	RK525SMOZ ₂ , 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring pre-load fully adjustable, rebound damping force fully adjustable.
Rear suspension	Link type system, gas/oil damped, coil spring, spring pre-road fully adjustable, rebound damping force and compression damping force fully adjustable.
Front fork stroke	120 mm (4.7 in)
Rear wheel travel	133 mm (5.2 in)
Steering angle	30° (right & left)
Caster	24°
Trail	96 mm (3.8 in)
Turning radius	3.1 m (10.2 ft)
Front brake	Disc brake, twin, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	120/70 ZR17 (58W), tubeless
Rear tire size	180/55 ZR17 (73W), tubeless

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	5° B.T.D.C. at 1 500 r/min
Spark plug	N.G.K. CR9E, NIPPONDENSO U27ESR-N
Battery	12V 28.8 kC (8 Ah)/10HR
Generator	Three-phase A.C. Generator
Main fuse	30A
Fuse	15/15/10/15/10A
Headlight	12V 55/50W × 2 E-02,03,24,28,33 models 12V 55W + 12V 55W For other models
Turn signal light	12V 21W
Front position light	12V 5W Except for E-03,24,28,33 models
Tail/Brake light	12V 5/21W × 2
Speedometer light	12V 1.7W
Tachometer light	12V 1.7W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W
Fuel indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	18.0 L (4.8/4.0 US/Imp gal)
Engine oil, oil change	2 600 ml (2.7/2.3 US/Imp qt)
with filter change	2 800 ml (3.0/2.5 US/Imp qt)
overhaul	3 500 ml (3.7/3.1 US/Imp qt)
Coolant	2 550 ml (2.7/2.2 US/Imp qt)

These specifications are subject to change without notice.

COUNTRY OR AREA

The series of symbols on the left stand for the countries or area on the right.

SYMBOL	COUNTRY or AREA
E-02	England
E-03	U.S.A. (except California)
E-04	France
E-15	Finland
E-16	Norway
E-17	Sweden
E-18	Switzerland
E-21	Belgium
E-22	Germany
E-24	Australia
E-25	Netherlands
E-28	Canada
E-33	California (U.S.A.)
E-34	Italy
E-37	Brazil
E-39	Austria
E-53	Spain

E-21 and 53 countries are included in E-34.

E-15 and 16 countries are included in E-17.



PERIODIC MAINTENANCE

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PERIODIC MAINTENANCE SCHEDULE

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

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

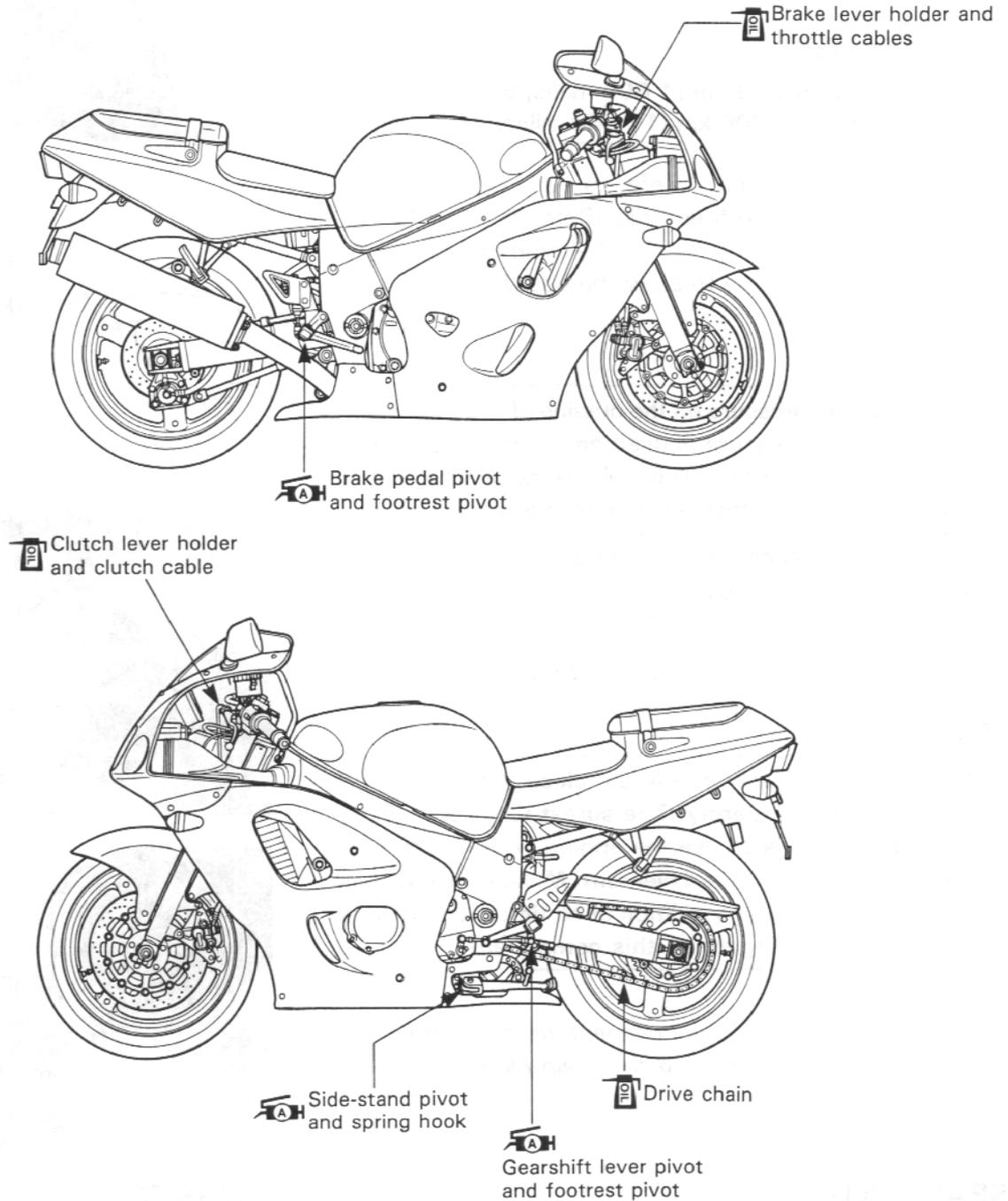
Item	Interval	km	1 000	6 000	12 000	18 000	24 000
		miles	600	4 000	7 500	11 000	15 000
		months	1	6	12	18	24
Air cleaner element		—	I	I	R	I	
Spark plugs		—	I	R	I	R	
Tappet clearance		—	—	—	—	I	
Fuel hose (Evap hose California model only)		—	I	I	I	I	
		Replace every four years.					
Engine oil		R	R	R	R	R	
Engine oil filter		R	—	—	R	—	
Engine idle speed		I	I	I	I	I	
Throttle cable play		I	I	I	I	I	
Carburetor synchronization		—	—	I	—	I	
Clutch		—	I	I	I	I	
Radiator hose		—	I	I	I	I	
Engine coolant		Replace every two years.					
Drive chain		I	I	I	I	I	
		Clean and lubricate every 1 000 km (600 miles).					
Brakes		I	I	I	I	I	
Brake hose		—	I	I	I	I	
		Replace every four years.					
Brake fluid		—	I	I	I	I	
		Replace every two years.					
Tires		—	I	I	I	I	
Steering		I	—	I	—	I	
Front forks		—	—	I	—	I	
Rear suspension		—	—	I	—	I	
Exhaust pipe bolts and muffler bolts		T	—	T	—	T	
Chassis bolts and nuts		T	T	T	T	T	

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

LUBRICATION POINTS

Proper lubrication is important for smooth operation and long life of each working part of the motorcycle.

Major lubrication points are indicated below.



NOTE:

- * Before lubricating each part, clean off any rusty spots and wipe off any grease, oil, dirt or grime.
- * Lubricate exposed parts which are subject to rust, with a rust preventative spray whenever the motorcycle has been operated under wet or rainy conditions.

MAINTENANCE AND TUNE-UP PROCEDURES

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

AIR CLEANER

Inspect Every 6 000 km (4 000 miles, 6 months) and Replace Every 18 000 km (11 000 miles, 18 months).

- Remove the front seat. (Refer to page 6-3.)
- Lift and support the fuel tank. (Refer to page 4-2.)
- 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 air cleaner element. If air pressure is used on the inside, dirt will be forced into the pores of the air cleaner element thus restricting air flow through the air cleaner element.

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

NOTE:

Be careful not to drop the O-ring ① to the air cleaner box.

⚠ CAUTION

If driving under dusty condition, 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!

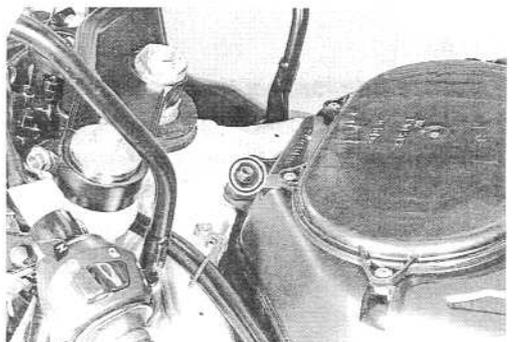
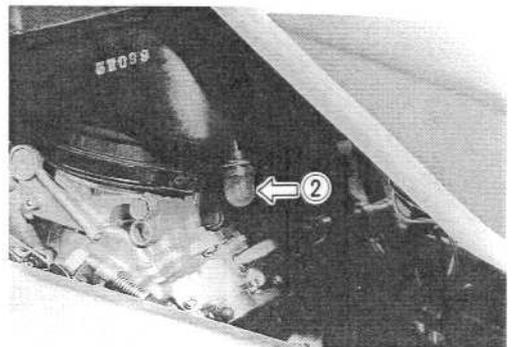
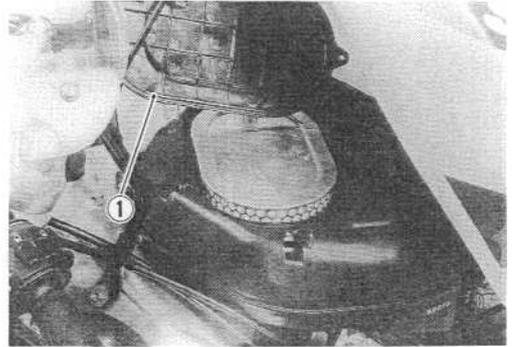
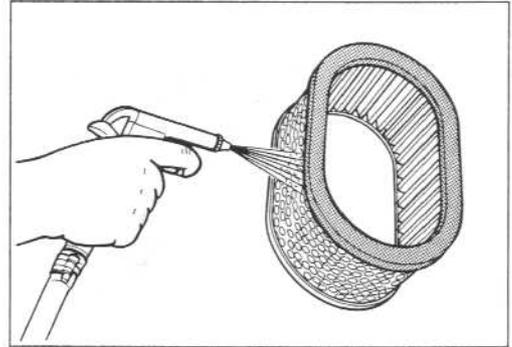
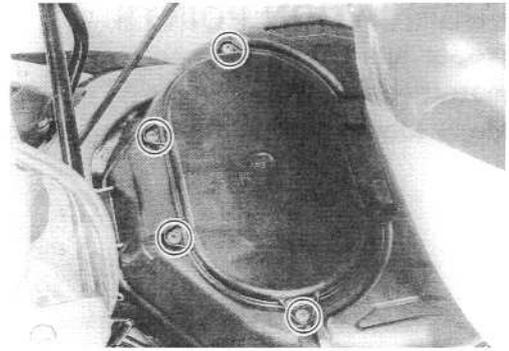
NOTE:

When cleaning the air cleaner element, drain water from the air cleaner drain by removing the drain plug ②.

SPARK PLUG

Inspect Every 6 000 km (4 000 miles, 6 months) and Replace Every 12 000 km (7 500 miles, 12 months).

- Remove the front seat. (Refer to page 6-3.)
- Lift and support the fuel tank. (Refer to page 4-2.)
- Remove the air cleaner box. (Refer to page 4-14.)



- Disconnect all the lead wire couplers from each ignition coil/spark plug cap.
- Remove all the ignition coil/spark plug caps.
- Remove the spark plugs with the spark plug wrench.

TOOL 09930-10121: Socket wrench set

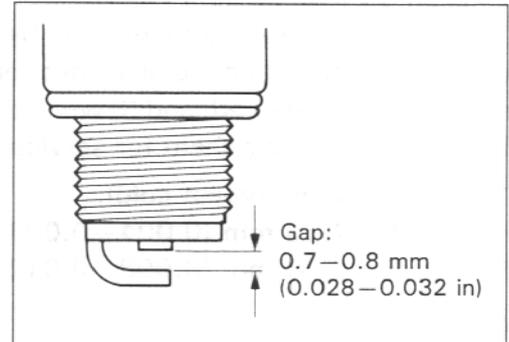
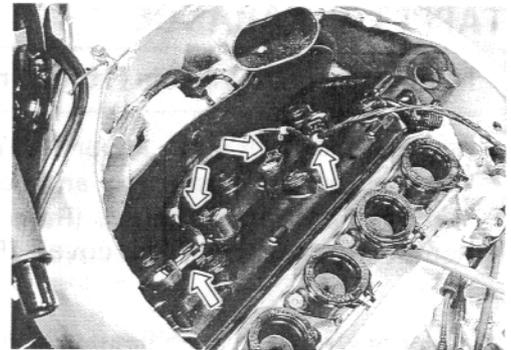
HEAT RANGE

- Check to see the heat range of the plug.
If the electrode of the plug is wet appearing or dark color, replace the plug with hotter type one. If it is white or glazed appearing, replace the plug with colder type one.

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

NOTE:

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



CARBON DEPOSIT

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

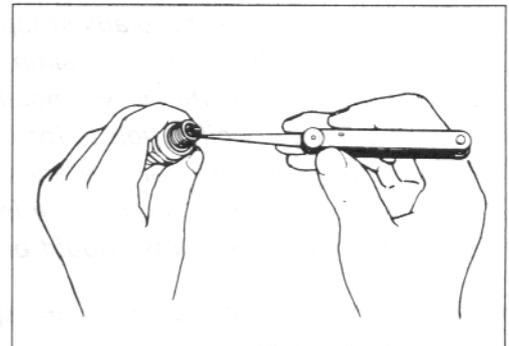
SPARK PLUG GAP

- Measure the plug gap with a thickness gauge if it is correct. If not, adjust it to the following gap.

TOOL 09900-20803: Thickness gauge

Standard

Spark plug gap: 0.7–0.8 mm (0.028–0.032 in)



ELECTRODES CONDITION

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

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.

CAUTION

To prevent damaging the cylinder head, hand-tighten the spark plug before using a wrench to tighten to the specified torque.

- Install the spark plugs to the cylinder head with a hand-tighten, and tighten them to the specified torque.

U Spark plug: 12 N·m (1.2 kg·m, 8.5 lb·ft)

TAPPET CLEARANCE

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

- Remove the front seat, lower fairing assembly and fuel tank. (Refer to pages 6-2, -3 and 4-2.)
- Remove the air cleaner box and carburetors. (Refer to pages 4-14 and -15.)
- Remove all the spark plugs. (Refer to page 2-4.)
- Remove the cylinder head cover. (Refer to page 3A-1.)

The tappet clearance specification is different for intake and exhaust valves.

Tappet 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.

Tappet clearance (when cold):

IN. : 0.10–0.20 mm (0.004–0.008 in)

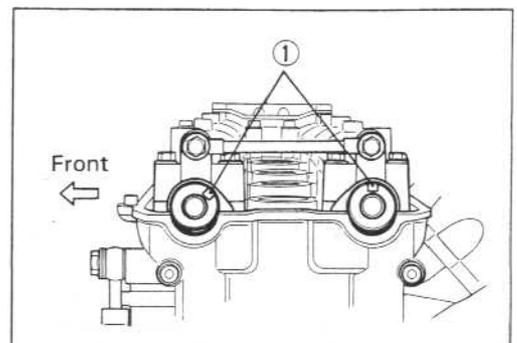
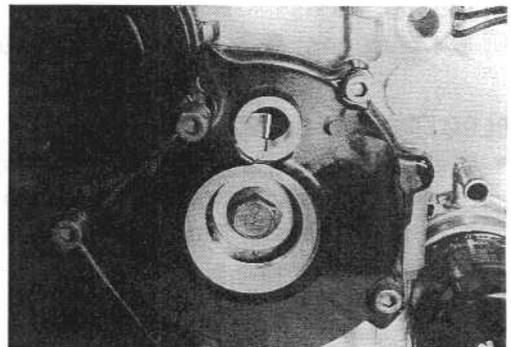
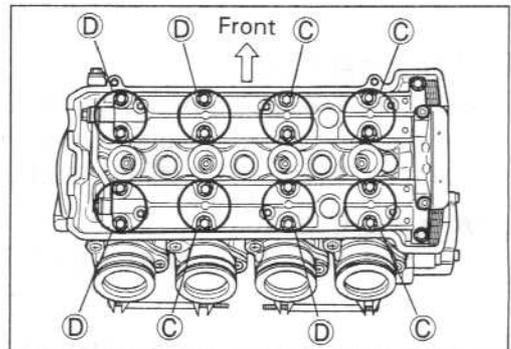
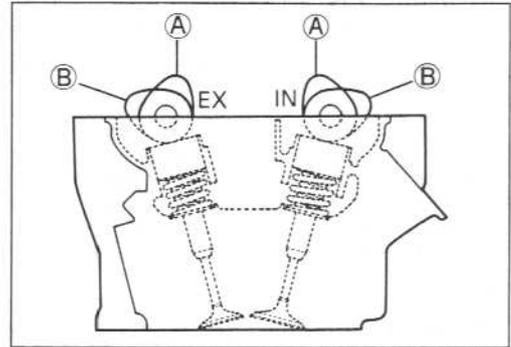
EX.: 0.20–0.30 mm (0.008–0.012 in)

NOTE:

- * The cam must be at positions, **A** or **B**, in order to check the tappet clearance, or to adjust tappet 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 14-mm wrench, and rotate in the normal running direction. All spark plugs should be removed.

- Remove the starter clutch cover cap and the valve timing inspection cap.
- Turn the crankshaft to bring the "TOP" line on the starter clutch to the index mark of valve timing inspection hole and also to bring the notches **①** in the left ends of both camshafts (Ex and In) to the positions shown. In this condition, read the tappet clearance at the valves **C** (In and Ex of No.4 cylinder, Ex of No.3 and In of No.2).
- Use a thickness gauge between the tappet and the cam. If the clearance is out of specification, bring it into the specified range.

TOOL 09900-20803: Thickness gauge



- Turn the crankshaft 360° (one rotation) to bring the "TOP" line on the starter clutch to the index mark of valve timing inspection hole and also to bring the notches ① to the positions shown.
- Read the clearance at the remaining valves ④ and adjust the clearance if necessary.

Cam Position	Notch ① position	
	Exhaust Camshaft	Intake Camshaft
③	←Front ③	←Front ③
④	←Front ④	←Front ④

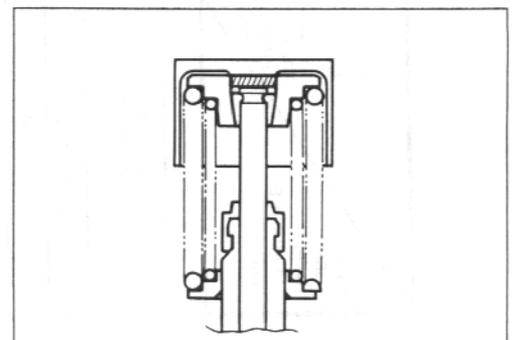
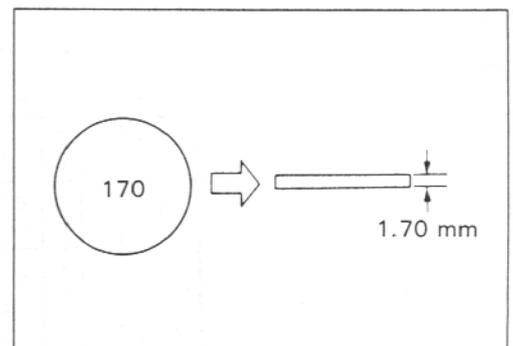
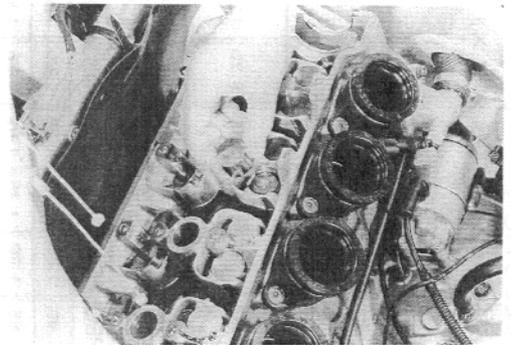
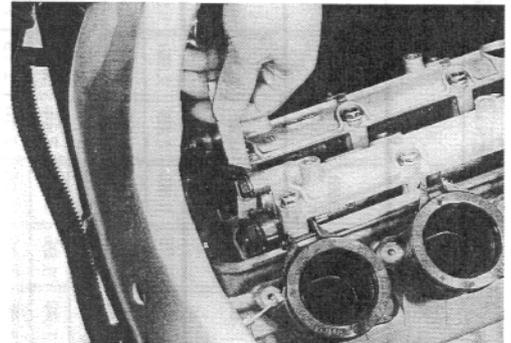
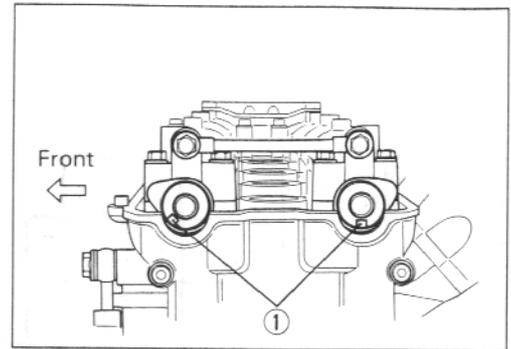
TAPPET CLEARANCE ADJUSTMENT

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

- Remove the intake or exhaust camshafts. (Refer to page 3A-1.)
- Remove the tappet and shim by fingers or magnetic hand. (Refer to page 3A-7.)
- Check the figures printed on the shim. These figures indicate the thickness of the shim, as illustrated.
- Select a replacement shim that will provide a clearance within the specified range. For the purpose of this adjustment, a total of 21 sizes of tappet shim are available ranging from 1.20 to 2.20 mm in steps of 0.05 mm. Fit the selected shim to the valve stem end, with numbers toward tappet. Be sure to check shim size with micrometer to ensure its size.
Refer to the tappet shim selection table (Pages 2-7 and -8) for details.

NOTE:

- * Be sure to apply engine oil to tappet shim top and bottom faces.
- * When seating the tappet shim, be sure to face figure printed surface to the tappet.
- After replacing the tappet shim and camshafts, rotate the engine so that the tappet is depressed fully. This will squeeze out oil trapped between the shim and the tappet that could cause an incorrect measurement, then check the clearance again to confirm that it is within the specified range.
- Tighten the head cover bolts to the specified torque. (Refer to page 3A-19.)



(INTAKE SIDE)

TAPPET SHIM SET NO. (12800-05820)

TAPPET SHIM SELECTION TABLE (INTAKE)
TAPPET SHIM NO.(12892-05C00-x x x)

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

HOW TO USE THIS CHART:

- I. Measure tappet clearance. "ENGINE IS COLD"
- II. Measure present shim size.
- III. Match clearance in vertical column with present shim size in horizontal column.

EXAMPLE

Tappet clearance is 0.23 mm
Present shim size 1.70 mm
Shim size to be used 1.80 mm

(EXHAUST SIDE)

TAPPET SHIM SET NO. (12800-05820)

TAPPET SHIM SELECTION TABLE (EXHAUST)
TAPPET SHIM NO.(12892-05C00-x x x)

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

HOW TO USE THIS CHART:

- I. Measure tappet clearance. "ENGINE IS COLD"
- II. Measure present shim size.
- III. Match clearance in vertical column with present shim size in horizontal column.

EXAMPLE

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

FUEL HOSE (EVAP HOSE ... California model only)

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

Inspect the fuel hose for damage and fuel leakage. If any defects are found, the fuel hose must be replaced. (Refer to chapter 9 for EMISSION CONTROL INFORMATION.)

ENGINE OIL AND OIL FILTER

(ENGINE OIL)

Replace Initially at 1 000 km (600 miles, 1 month) and
Every 6 000 km (4 000 miles, 6 months) thereafter.

(OIL FILTER)

Replace Initially at 1 000 km (600 miles, 1 month) and
Every 18 000 km (11 000 miles, 18 months) thereafter.

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

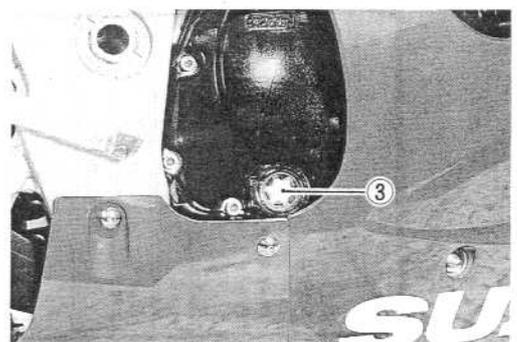
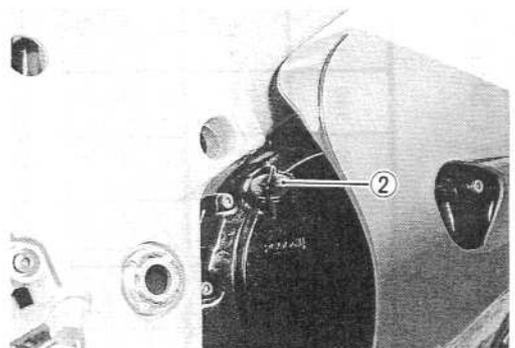
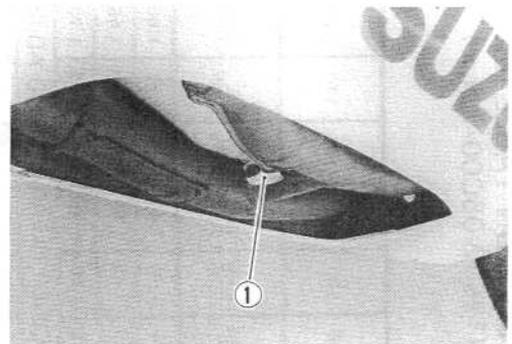
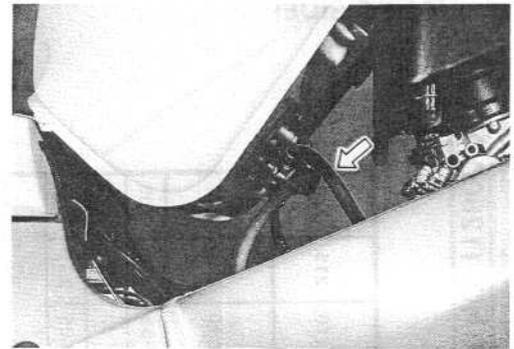
ENGINE OIL REPLACEMENT

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

- Fit the drain plug ① securely, and pour fresh oil through the oil filler. The engine will hold about 2.6 L (2.7 US qt) of oil. Use an API classification of SF or SG oil with SAE 10W/40 viscosity.

 Oil drain plug: 28 N·m (2.8 kg-m, 20.0 lb-ft)

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



OIL FILTER REPLACEMENT

- Drain engine oil in the same manner of engine oil replacement procedure.
- Remove the right side lower fairing. (Refer to page 6-2.)
- Remove the oil filter 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 special tool. Never tighten the filter by hand.

- Pour fresh engine oil and check the oil level in the same manner of engine oil replacement procedure.

NECESSARY AMOUNT OF ENGINE OIL

Oil change: 2.6 L (2.7/2.3 US/Imp qt)

Filter change: 2.8 L (3.0/2.5 US/Imp qt)

Overhaul engine: 3.5 L (3.7/3.1 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.

ENGINE IDLE SPEED

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

NOTE:

Make this adjustment when the engine is hot.

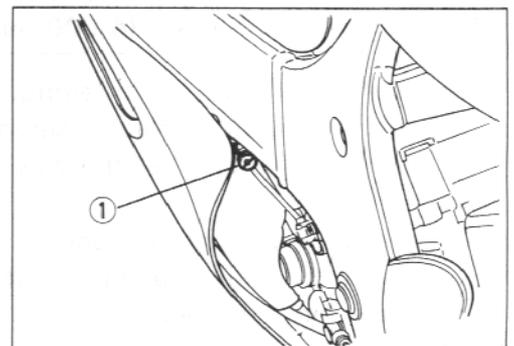
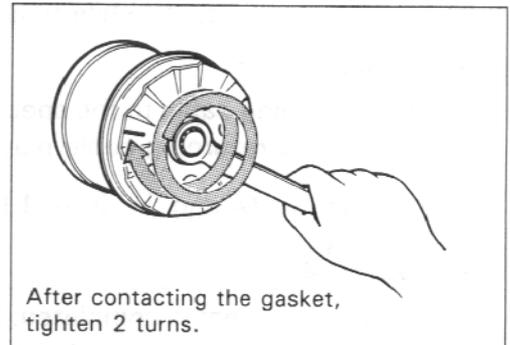
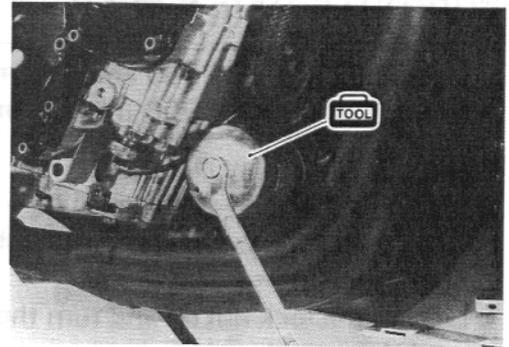
- Connect a tachometer.
- Start up the engine and set its speed to the specified range by turning the throttle stop screw ① .

Engine idle speed:

1 300 ± 100 r/min ... for E-03,28,33,39 models

1 300 \pm $\begin{matrix} 100 \\ 50 \end{matrix}$ r/min ... for E-18 model

1 200 ± 100 r/min ... for the other models



THROTTLE CABLE PLAY

Inspect Initially at 1 000 km (600 miles, 1 month) and Every 6 000 km (4 000 miles, 6 months) therefore.

Returning cable play **(A)**

There should be 0.5–1.0 mm (0.02–0.04 in) play **(A)** 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.

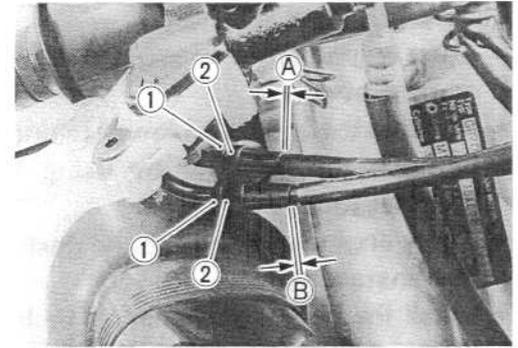
Pulling cable play **(B)**

- Adjust the pulling cable to the specified play in the same manner as the returning cable play adjustment.

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

▲ WARNING

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



CARBURETOR SYNCHRONIZATION

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

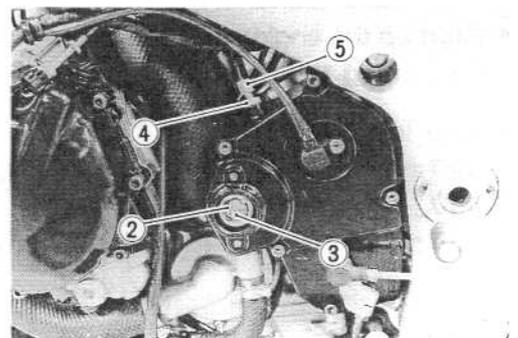
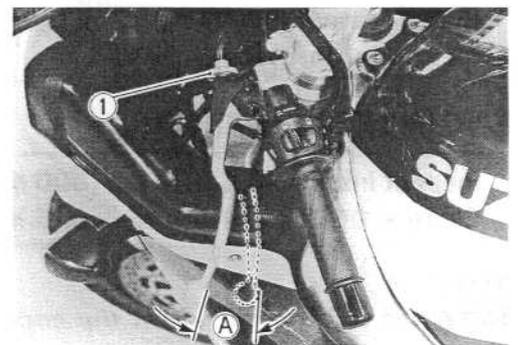
(Refer to page 4-28.)

CLUTCH

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

- Remove the left side lower fairing. (Refer to page 6-2.)
- Remove the engine coolant reservoir tank.
- Turn in the adjuster **(1)** all the way into the clutch lever assembly.
- Remove the clutch release cover.
- Loosen the lock nut **(2)** and turn out the adjusting screw **(3)** two or three rotations.
- From that position, slowly turn in the adjusting screw **(3)** to feel resistance.
- From this position, turn out the adjusting screw **(3)** ¼ rotations, and tighten the lock nut **(2)**.
- Loosen the lock nut **(4)**, and turn the cable adjuster **(5)** to obtain 10–15 mm (0.4–0.6 in) of free play **(A)** at the clutch lever end.
- Tighten the lock nuts **(4)**.

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

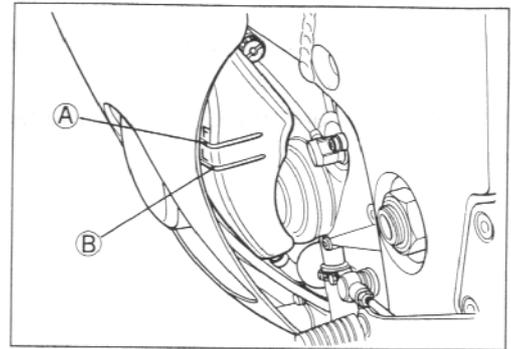


**Inspect Every 6 000 km (4 000 miles, 6 months).
Replace engine coolant Every 2 years.**

ENGINE COOLANT LEVEL CHECK

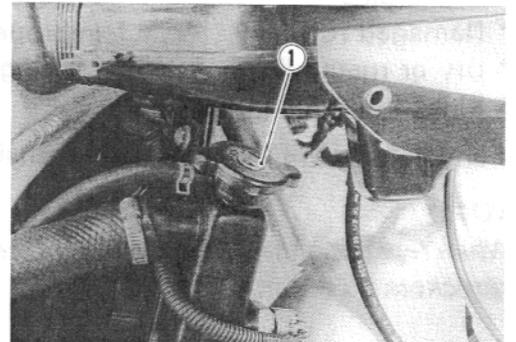
- Keep the motorcycle upright.
- Check the engine coolant level by observing the full and lower lines on the engine coolant reservoir.
- If the level is below the lower line, remove the left side lower fairing (Refer to page 6-2.) and add engine coolant to the full line from the engine coolant reservoir filler.

Ⓐ Full line Ⓑ Lower line



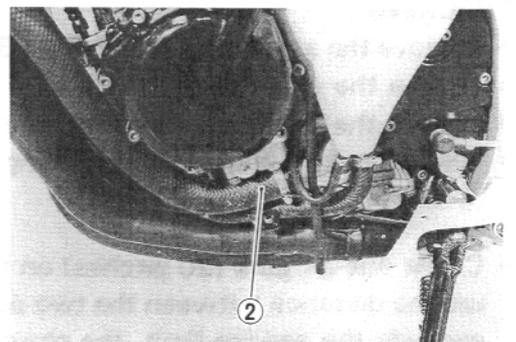
ENGINE COOLANT CHANGE

- Remove the lower fairing assembly. (Refer to page 6-2.)
- Remove the radiator cap ① and disconnect the water hose ② from the water pump, then drain engine coolant.



⚠ WARNING

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



- Flush the radiator with fresh water if necessary.
- Connect the water hose ② securely.
- Pour the specified engine coolant up to the radiator inlet.

NOTE:

For engine coolant information, refer to page 5-4.

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

⚠ CAUTION

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



Ⓜ Engine coolant capacity:
2 550 ml (2.7/2.2 US/Imp qt)