

SUZUKI

GSXR 750

SERVICE MANUAL

99500-37055-01E

(英)

FOREWORD

The SUZUKI GSX-R750 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 link type rear suspension. Combined with precise control and easy handling the GSX-R750 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 as an extremely useful repair guide. This manual contains the most up-to-date information at the time of publication. The rights are reserved to update or make corrections to this manual at any time.

SUZUKI MOTOR CORPORATION

Motorcycle Technical Service Department

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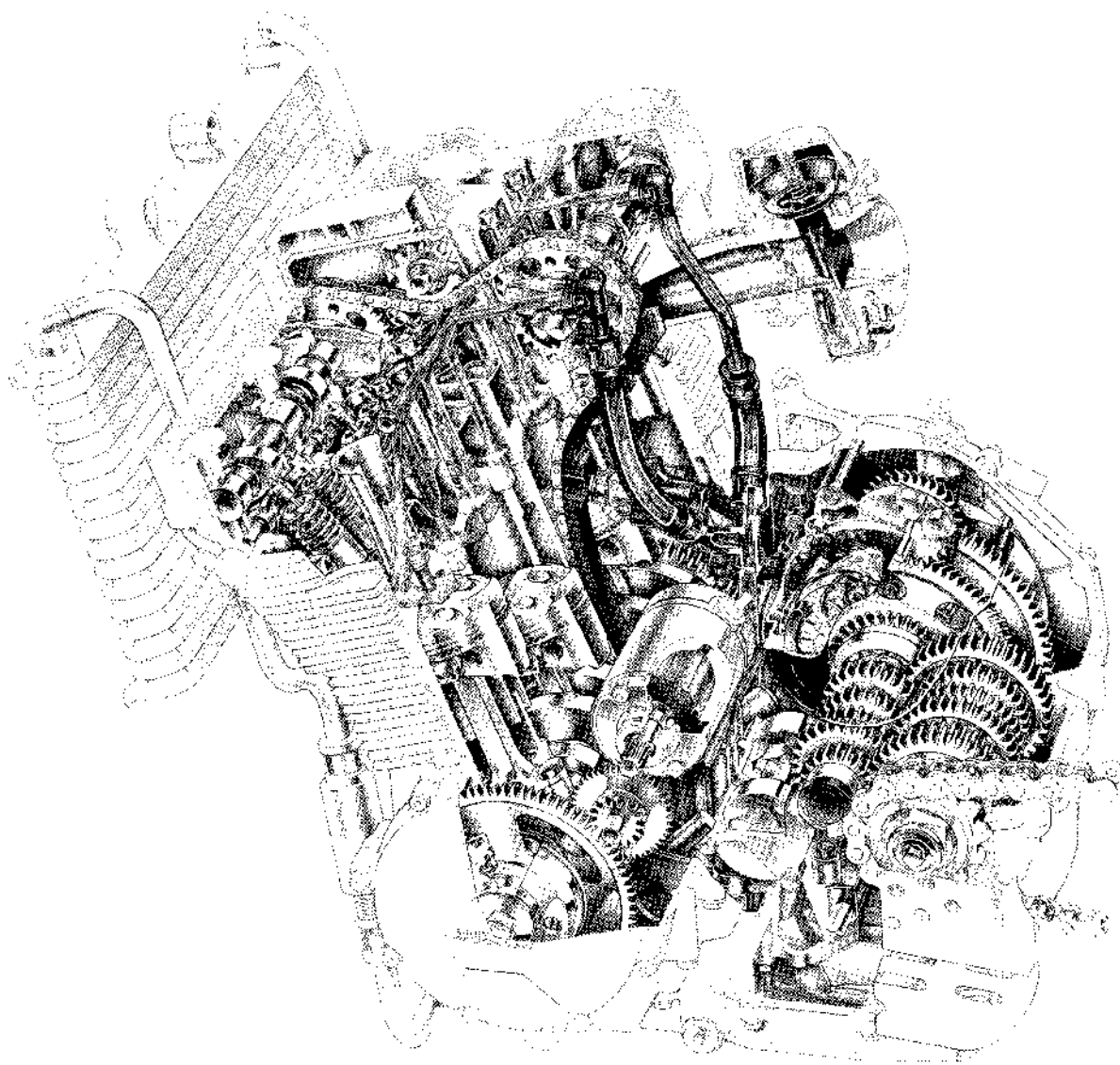
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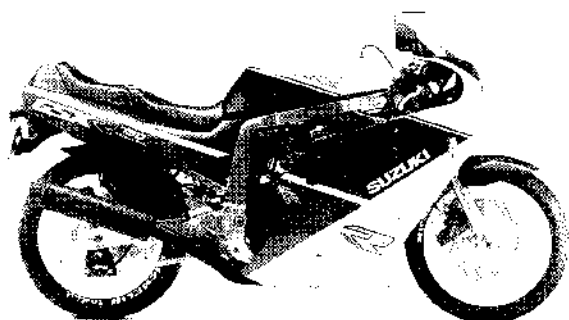
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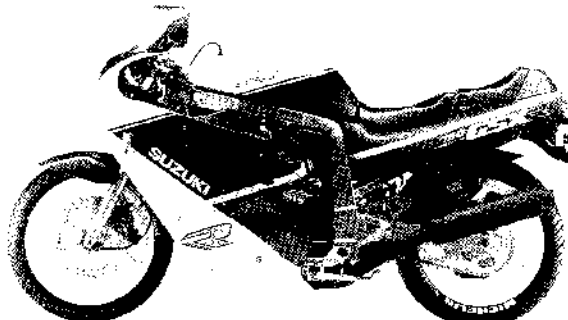
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SUZUKI GSX-R750J ('88-MODEL)



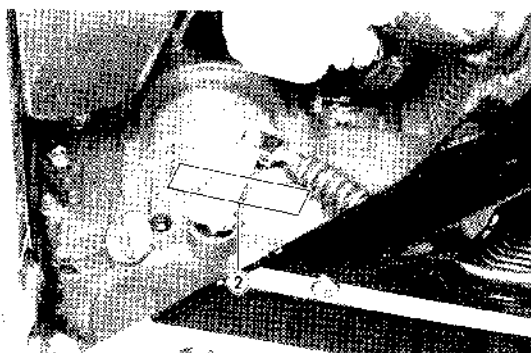
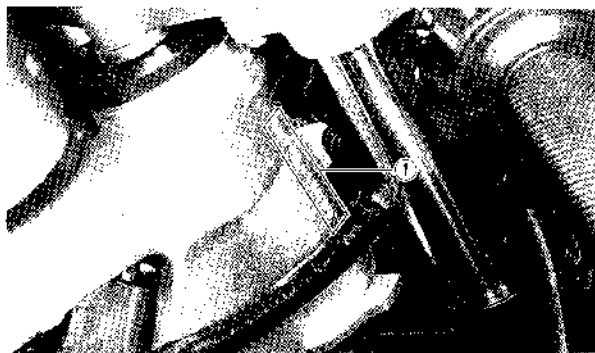
RIGHT SIDE



LEFT SIDE

SERIAL NUMBER LOCATION

The frame 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 right side of the crankcase. These numbers are required especially for registering the machine and ordering spare parts.



FUEL AND OIL RECOMMENDATION

FUEL

For Canada

Use only unleaded or low-lead type gasoline of at least 85-95 pump octane (P_{90}^{95}) method or 89 octane or higher rated by the research method.

For the others

Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.

ENGINE OIL

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

TEMP.	°C		°F					
	-30	-20	-10	0	10	20	30	40
MULTIGRADE	20W-50		15W-40, 15W-50		10W-40, 10W-50		10W-30	
	-30		-20		-10		0	
	-22		-4		14		32	
	50		68		86		104	

BRAKE FLUID

Specification and classification: SAE J1703, DOT3 or DOT4

Use SUZUKI BRAKE FLUID DOT3 & DOT4 (99000-23110).

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 the previous servicing and stored for a long period.

FRONT FORK OIL

Use SUZUKI FORK OIL # 10 (99000-99044-10G).

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 4 000 r/min

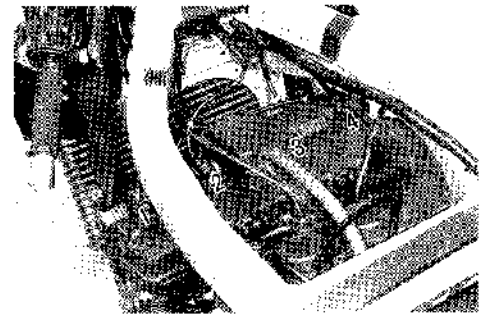
Up to 1 600 km (1 000 miles) : Below 6 000 r/min

Over 1 600 km (1 000 miles) : Below 12 500 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 12 500 r/min at any time.

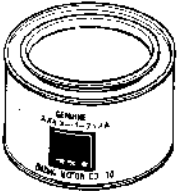
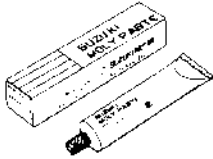
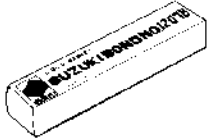


CYLINDER IDENTIFICATION




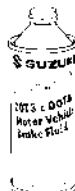

The four cylinders of this engine are identified as NO. 1, No. 2, No. 3 and No. 4 cylinder, as counted from the left hand. (as viewed by rider on the seat)



SPECIAL MATERIALS

The materials listed below are needed for maintenance work on the GSX-R750, 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	PART	PAGE
 <p>SUZUKI SUPER GREASE "A" 99000-25010</p>	<ul style="list-style-type: none"> • Driveshaft oil seal and O-ring • Engine oil pipe O-ring • Generator oil seal • Starter motor oil seal and O-ring • Wheel bearing • Steering stem bearing • Sprocket mounting drum bearing • Swingarm bearing, spacer and dust seal cover 	<p>3-52 3-66 5-7 3-64 5-17 6-5 6-39 6-28 6-39 6-48</p>	<ul style="list-style-type: none"> • Cushion lever bearing, spacer and dust seal • Shock absorber lower bearing and dust seal • Oil filter O-ring • Speedometer gear teeth 	<p>6-49 6-49 4-19 6-6</p>
 <p>SUZUKI MOLY PASTE 99000-25140</p>	<ul style="list-style-type: none"> • Valve stem • Conrod big end bearing • Countershaft and driveshaft • Crankshaft journal bearing • Camshaft journal • Starter motor armature end • Generator driven gear damper 	<p>3-32 3-43 3-51 3-57 3-68 5-18 5-7</p>		
 <p>SUZUKI BOND NO. 1207B 99000-31140</p>	<ul style="list-style-type: none"> • Crankcase mating surface • Mating surface between crankcases and starter clutch cover, clutch cover • Oil pressure switch • Signal generator lead wire grommet • Cylinder head cover • Cam end cap • One of cylinder stud bolts 	<p>3-57 3-63 3-61 3-62 3-62 3-71 3-72 3-65</p>		
 <p>THREAD LOCK SUPER "1303" 99000-32030</p>	<ul style="list-style-type: none"> • Cam sprocket bolt • Cam chain guide bolt 	<p>3-36 3-37</p>		
 <p>THREAD LOCK CEMENT 99000-32040</p>	<ul style="list-style-type: none"> • Carburetor set screw 	<p>4-14</p>		

MATERIAL	PART	PAGE	PART	PAGE
 <p>THREAD LOCK "1342" 99000-32050</p>	<ul style="list-style-type: none"> • 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 	<p>3-24 3-56 3-59 3-59 3-64 5 8</p>	<ul style="list-style-type: none"> • Starter motor housing screw • Front fork damper rod bolt 	<p>3 73 5-18 6-22</p>
 <p>THREAD LOCK SUPER "1305" 99000 32100</p>	<ul style="list-style-type: none"> • Starter clutch mounting bolt 	<p>3-63</p>		
 <p>THREAD LOCK "1360" 99000-32130</p>	<ul style="list-style-type: none"> • Disc plate mounting bolt 	<p>6 6 6-40</p>		
 <p>SUZUKI BRAKE FLUID DOT3 & DOT4 99000-23110</p>	<ul style="list-style-type: none"> ▪ Brakes 			
 <p>SUZUKI FORK OIL # 10 99000-99044-10G</p>				

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, and from inside to outside 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.

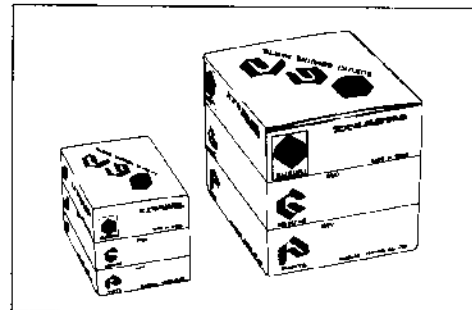
WARNING When personal safety of the rider is involved, disregard of the information could result in injury.

CAUTION For the protection of the motorcycle, the instruction or rule must be strictly adhered to.

NOTE..... Advice calculated to facilitate the use of the motorcycle is given under this heading.

USE OF GENUINE SUZUKI PARTS

To replace any part of the motorcycle, use a genuine SUZUKI replacement part. Imitation parts or parts supplied from any other source than SUZUKI, if used to replace SUZUKI parts can reduce the machine's performance and, even worse, could induce costly mechanical troubles.

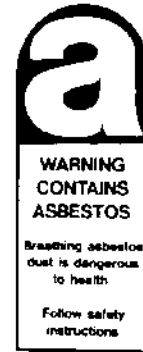


ASBESTOS INFORMATION

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

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

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



1.	Breather cover gasket
2.	Clutch cover gasket
3.	Starter gear cover gasket
4.	Oil pan gasket
5.	Cam chain tension adjuster gasket
6.	Signal generator cover gasket
7.	Oil strainer protector gasket
8.	Fuel cock gasket
9.	Starter motor

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length.....	2 060 mm (81.1 in)
Overall width.....	730 mm (28.7 in)
Overall height.....	1 130 mm (44.5 in)
Wheelbase.....	1 410 mm (55.5 in)
Seat height.....	785 mm (30.9 in)
Ground clearance.....	120 mm (4.7 in)
Dry mass.....	195 kg (429 lbs)
	196 kg (432 lbs)...
	...California model

ENGINE

Type.....	Four-stroke, Air-cooled with SACS, DOHC, TSCC
Number of cylinders...	4
Bore.....	73.0 mm (2.874 in)
Stroke.....	44.7 mm (1.760 in)
Piston displacement...	748 cm ³ (45.6 cu.in)
Compression ratio.....	10.9:1
Carburetor.....	MIKUNI BST36SS, four
Air cleaner.....	Polyester fiber element
Starter system.....	Electric starter motor
Lubrication system.....	Wet sump

TRANSMISSION

Clutch.....	Wet multi-plate type
Transmission.....	6-speed constant mesh
Gearshift pattern.....	1-down, 5-up
Primary reduction.....	1.681 (74/44)
Final reduction.....	3.000 (45/15)
	...E-16, 17, 18, 28
	2.933 (44/15)
	...The others
Gear ratios, Low.....	2.769 (36/13)
2nd.....	2.062 (33/16)
3rd.....	1.647 (28/17)
4th.....	1.400 (28/20)
5th.....	1.227 (27/22)
Top.....	1.095 (23/21)
Drive chain.....	TAKASAGO: RK50GSV-Z1, 108 links, ENDLESS

CHASSIS

Front suspension.....	Telescopic, coil spring, oil damped, spring preload fully adjustable
Rear suspension.....	Link type suspension system, spring preload fully adjustable, damp- ing force 4-way adjustable
Steering angle.....	30° (right & left)
Caster.....	65°10'
Trail.....	99 mm (3.9 in)
Turning radius.....	3.2 m (10.5 ft)
Front brake.....	Disc, twin
Rear brake.....	Disc
Front tire size.....	120/70VR17-V250
Rear tire size.....	160/60VR17-V250
Front fork stroke.....	120 mm (4.72 in)
Rear wheel travel.....	136 mm (5.35 in)

ELECTRICAL

Ignition type.....	Transistorized
Ignition timing.....	13° B.T.D.C. at 1500 r/min
Spark plug.....	N.G.K.: JR9C
Battery.....	12 V 50.4 kC (14 Ah)/10HR
Generator.....	Three-phase A. C. Generator
Fuse.....	10/10/10/10/10A
Circuit breaker.....	30 A

CAPACITIES

Fuel tank including	21.0 L
reserve.....	(5.5/4.6 US/Imp gal)
reserve.....	4.0L
	(4.2/3.5 US/Imp qt)
Engine oil with filter	
change.....	4.8 L
	(5.0/4.2 US/Imp qt)
Front fork oil.....	407 ml
	(13.7/14.3 US/Imp oz)

* These specifications are subject to change without notice.

SYMBOL AND DESTINATION

The series of symbols on the left of below chart stand for the destination on right.

SYMBOL	DESTINATION	SYMBOL	DESTINATION	SYMBOL	DESTINATION
E-03	U.S.A.	E-33	CALIFORNIA	E-76	(E-17) SWEDEN
E-04	FRANCE		(U.S.A)		(E-22) W. GERMANY
E-15	FINLAND	E-34	ITALY	(E-39) AUSTRIA	
E-18	SWITZERLAND	(E-02)	ENGLAND	(E-16) NORWAY	
E-25	NETHERLAND	E-75 (E-06)	S. AFRICA	E-79 (E-21) BELGIUM	
E-28	CANADA	(E-24)	AUSTRALIA	(E-53) SPAIN	

PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

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PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and to maintain proper emission levels. 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

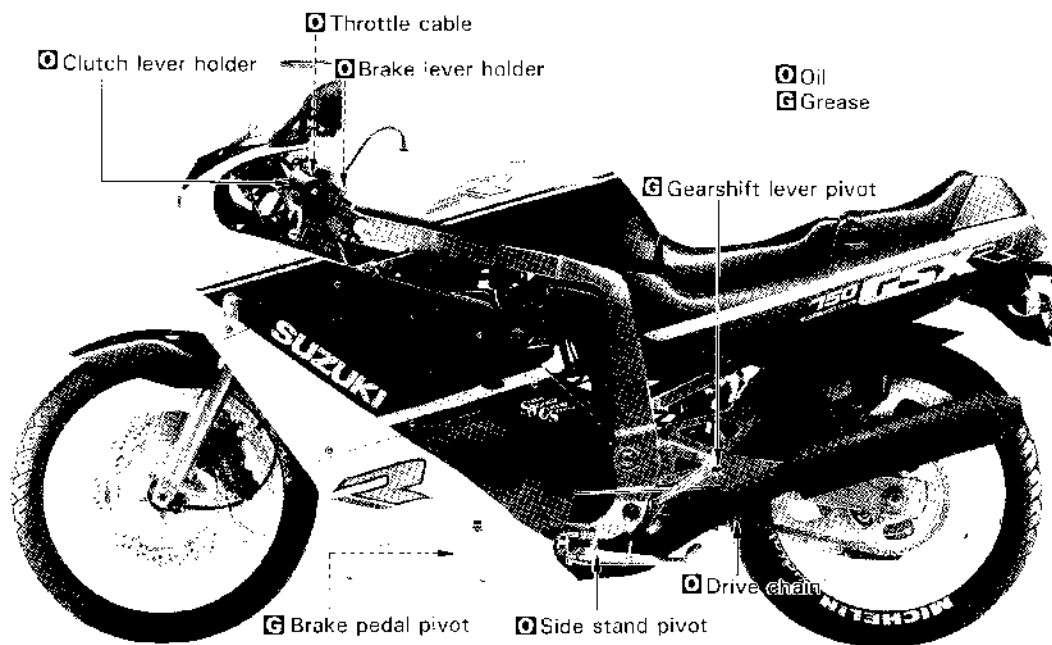
Item	Interval	1 000	6 000	12 000	18 000	24 000
	km					
	miles	600	4 000	7 500	11 000	15 000
	months	2	12	24	36	48
Battery		—	I	I	I	I
Cylinder head nuts and exhaust pipe bolts		T	T	T	T	T
Air cleaner	Clean at every 3 000 km (2 000 miles) and replace at every 12 000 km (7 500 miles)					
Valve clearance		I	I	I	I	I
Spark plugs		—	I	R	I	R
Engine oil and oil filter		R	R	R	R	R
Fuel lines		I	I	I	I	I
	Replace at every four years					
Carburetors		I	I	I	I	I
Clutch		I	I	I	I	I
Drive chain		I	I	I	I	I
	Clean and lubricate at every 1 000 km (600 miles)					
Brakes		I	I	I	I	I
Brake hoses		I	I	I	I	I
	Replace at every four years					
Brake fluid		I	I	I	I	I
	Replace at every two years					
Tires		I	I	I	I	I
Steering		I	I	I	I	I
Front forks		I	—	I	—	I
Rear suspension		I	—	I	—	I
Chassis bolts and nuts		T	T	T	T	T

NOTE:

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, other than the points mentioned on above, which are subject to rust.

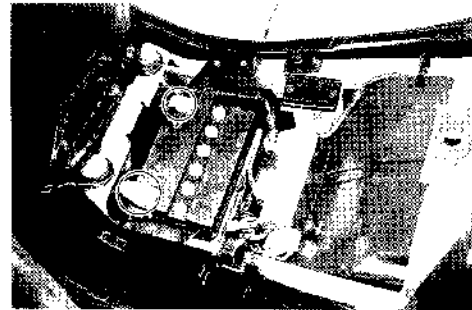
MAINTENANCE AND TUNE-UP PROCEDURES

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

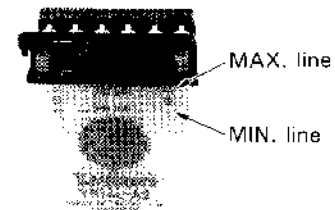
BATTERY

Inspect at Every 6 000 km (4 000 miles, 12 months).

- Remove the seat.
- Remove the battery \ominus and \oplus lead wires from the battery terminals.
- Remove the battery.



- Check the electrolyte level and specific gravity. Add distilled water, if needed, to keep the electrolyte surface above the MIN. level line but not above the MAX. level line.



- For checking the specific gravity, use a hydrometer.

09900-28403 : Hydrometer

Standard specific gravity	1.28 at 20°C (68°F)
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As a S.G. reading of 1.22 (at 20°C) or under means that the battery needs recharging, remove the battery from the motorcycle and charge it with a battery charger.

CAUTION:

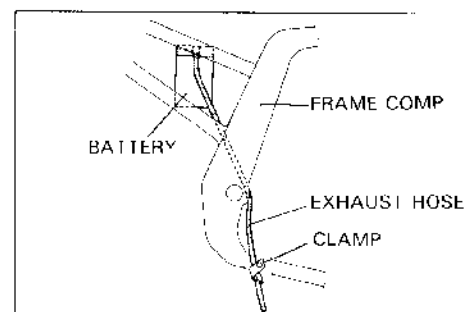
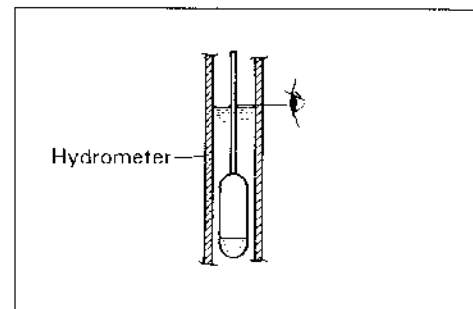
Never charge a battery while it is still on the motorcycle as damage may result to the battery or generator.

- Charge at a maximum of 1.2 amps.
- To install the battery, reverse the procedure described on above.

WARNING:

When installing the battery lead wires, fix the \oplus lead first and \ominus lead last.

- Make sure that the breather pipe is tightly secured without bending, and is routed as shown in the figure.



CYLINDER HEAD NUTS AND EXHAUST PIPE BOLTS

Tighten at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

CYLINDER HEAD

- Remove the seat, fairing and fuel tank. (Refer to page 3-4 and 3-5)
- Remove the cylinder head cover.
- First loosen and retighten the nuts to the specified torque with a torque wrench sequentially in ascending numerical order when the engine is cold.

Cylinder head nut : 35 – 40 N·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 **A** and **B**) to the following torque value:

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

Cylinder base nut **B** : 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 3-71)
- Tighten the head cover bolts to the following specified torques.

Cylinder head cover union bolt : 4 pcs. : 13 – 15 N·m
(1.3 – 1.5 kg·m)
(9.5 – 11.0 lb-ft)

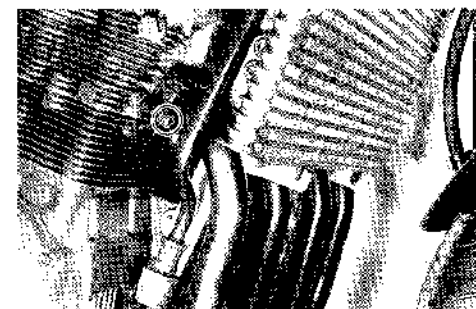
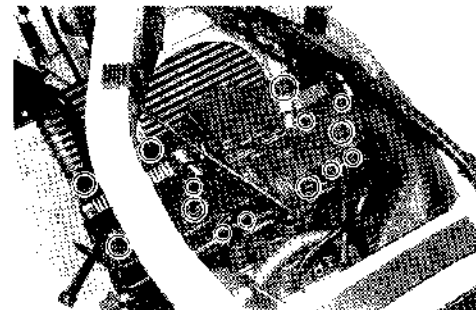
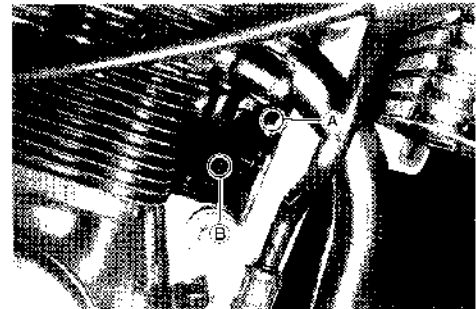
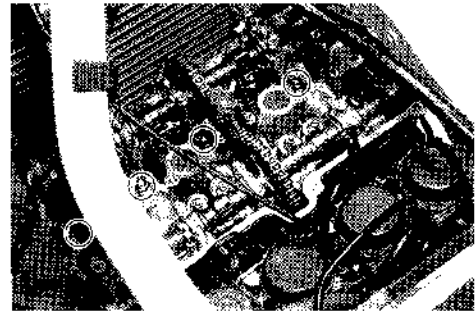
Cylinder head cover bolt : 10 pcs : 13 – 15 N·m
(1.3 – 1.5 kg·m, 9.5 – 11.0 lb-ft)

Oil hose mounting bolt : 4 pcs. : 8 – 12 N·m
(0.8 – 1.2 kg·m, 6.0 – 8.5 lb-ft)

EXHAUST PIPE

- Tighten the exhaust pipe clamp bolts to the specified

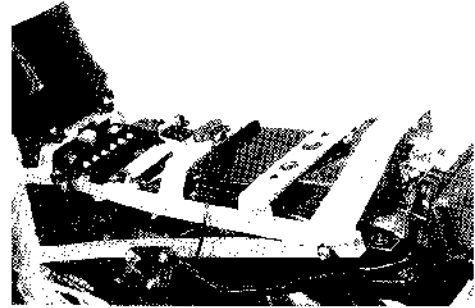
Exhaust pipe clamp bolt : 18 – 28 N·m
(1.8 – 2.8 kg·m, 13.0 – 20.0 lb-ft)



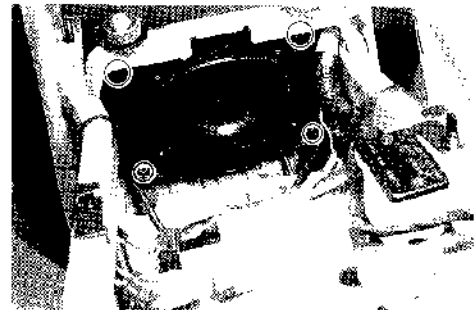
AIR CLEANER

Clean at Every 3 000 km (2 000 miles) and Replace at Every 12 000 km (7 500 miles).

- Remove both seats.
- Remove both frame covers.



- Remove the battery and battery holder.
- Take out the air cleaner element to screw out four bolts.



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

CAUTION:

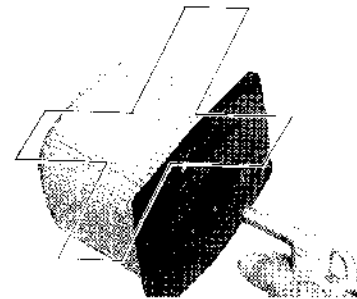
Always use air pressure on the outside of the cleaner element. If air pressure is used on the inside, dirt will be forced into the pores of the cleaner element thus restricting air flow through the cleaner element.

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



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 at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

- Remove the seat, fairing and fuel tank. (Refer to pages 3-4 and 3-5.)
- Remove the cylinder head cover.

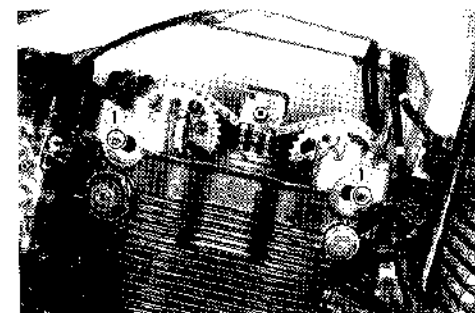
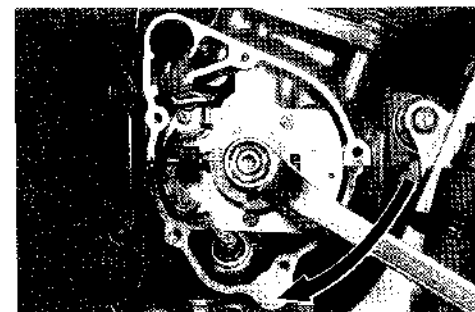
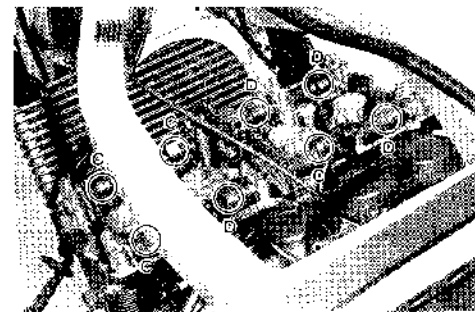
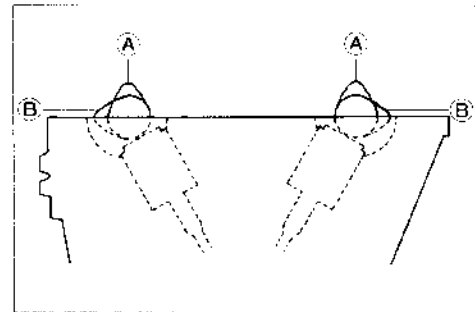
The valve clearance specification is the same for both intake and exhaust valves.

Valve clearance adjustment must be checked and adjust 1) at the time of periodic inspection, 2) when the valve mechanism is serviced, and 3) when the camshafts are disturbed by removing them.

Valve clearance (when cold)	Standard
IN. & EX.	0.10–0.15 mm (0.004–0.006 in)

NOTE:

- * The cam must be at positions, (A) or (B), 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 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 to rotate in the normal running direction.
 - * All the 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 ① in the right ends of both camshafts (Ex and In) to the positions shown. In this condition, read the valve clearance at the valves ② (In and Ex of No. 1 cylinder, Ex of No. 2 and In of No. 3).



2-7 PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

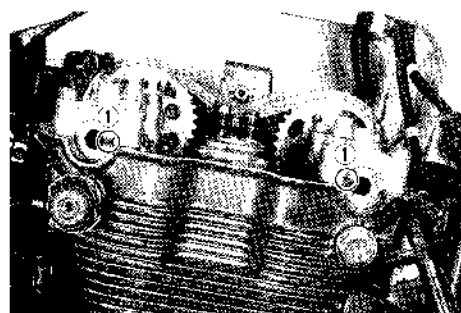
- Use thickness gauge between adjusting screw and valve stem end. If clearance is out of specification, bring it into the specified range with the special tool.

09900-20803 : Thickness gauge

09917-14910 : Valve adjust driver



- 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 ① to the positions as shown.
- Read the clearance at the remaining valves ② and adjust the clearance if necessary.



Cam Position	Notch ① position	
	Intake Camshaft	Exhaust Camshaft
Ⓒ		
Ⓓ		

CAUTION:

Both the right and left valve clearances should be as closely as possible.

- When installing the cylinder head cover, apply SUZUKI Bond No. 1207B to the head cover groove and cam end caps. (Refer to page 3-71).
- Tighten the head cover bolts to the specified torque.

Cylinder head cover union bolt : 4 pcs. :

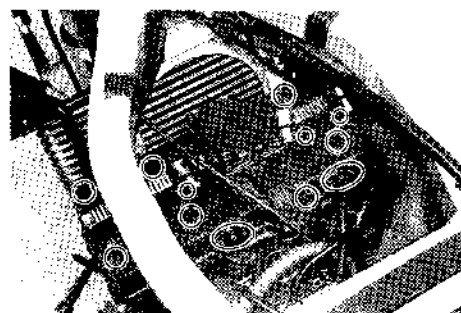
13 – 15 N·m (1.3 – 1.5 kg-m, 9.5 – 11.0 lb-ft)

Cylinder head cover bolt : 10 pcs. :

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

Oil hose mounting bolt : 4 pcs. :

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



SPARK PLUGS

Inspect at 6 000 km (4 000 miles, 12 months),
18 000 km (11 000 miles, 36 months) and Replace at
Every 12 000 km (7 500 miles, 24 months).

- Remove both side fairings.
- Remove the seat and fuel tank.
- Remove two air vent tubes.
- Remove all the spark plugs.

Standard spark plug	NGK JR 9C
---------------------	-----------

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.

	Standard
Spark plug gap	0.6–0.7 mm (0.024–0.028 in)

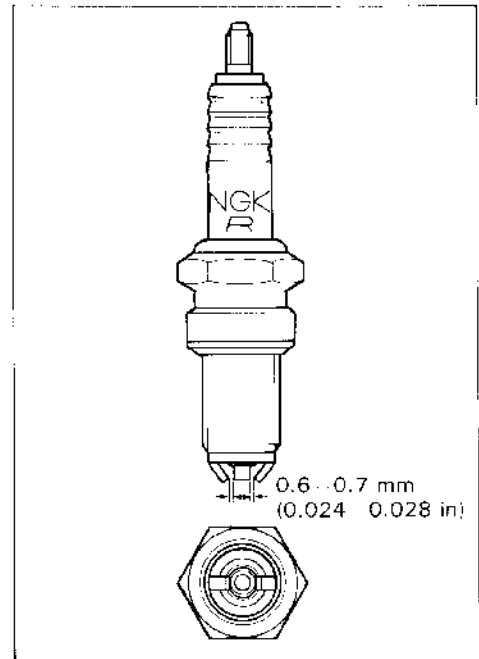
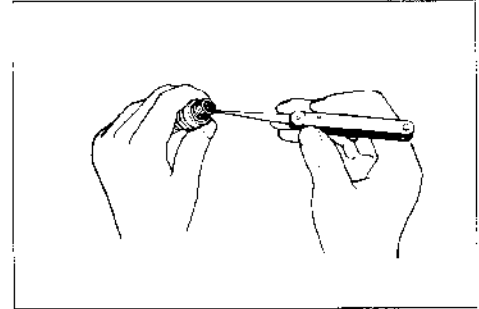
09900-20803 : Thickness gauge

ELECTRODE'S CONDITION

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

CAUTION:

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



ENGINE OIL AND OIL FILTER

Replace at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

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

- Remove both bottom fairing.
- Keep the motorcycle upright.
- Place an oil pan below the engine and drain oil to remove the drain plug ① and filter cap ②.
- Remove the oil filter ③ with the oil filter wrench ④.
- 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 2 turns with the oil filter wrench ④.

09915-40611 : Oil filter wrench

NOTE:

To properly tighten the filter, use the special tool. Never tighten the filter only by hand.

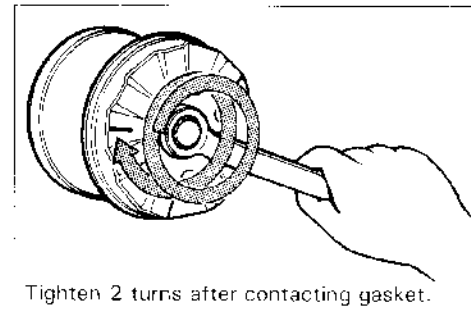
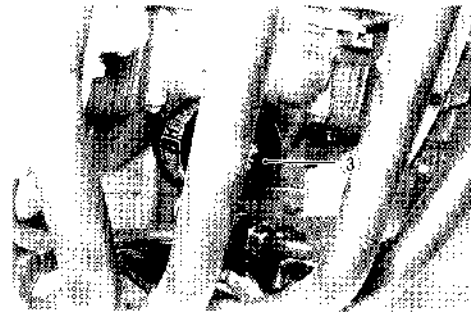
- Fit the drain plug ① securely, and add fresh oil through the oil filter. The engine will hold about 4.8 L (5.0/4.2 US/Imp qt) of oil.
Use an API classification of SE or SF oil with SAE 10 W/40 viscosity.
- Start up the engine and allow it to run for several seconds at idling speed.
- Turn off the engine 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	4.5 L (4.7/4.0 US/Imp qt)
Filter change	4.8 L (5.0/4.2 US/Imp qt)
Overhaul engine	5.8 L (6.1/5.1 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 motorcycles.



FUEL LINES

Inspect at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).
Replace at Every four years.

CARBURETORS

Inspect at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

IDLE R/MIN (Idling adjustment)

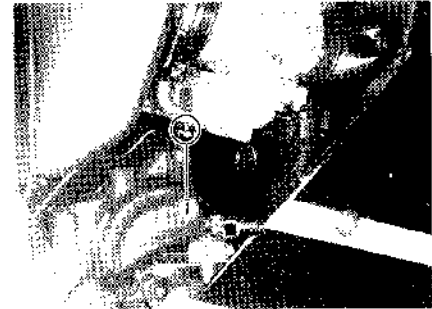
NOTE:

Make this adjustment when the engine is hot.

- Connect a tachometer.

09900-26005 : Engine tachometer

- Start up the engine and set its speed at anywhere between 1 000 and 1 200 r/min to turn throttle stop screw ①.



Engine idle speed	1 100 ± 100 r/min
-------------------	-------------------

THROTTLE CABLE PLAY

There should be 0.5 – 1.0 mm (0.02 – 0.04 in) play ④ on the throttle cable.

Adjust the throttle cable play by the following procedures.

- Remove the fuel tank.
- Loosen the lock nut ① and turn the adjuster ② until the specified play can be obtained.
- Tighten the lock nut ① while holding the adjuster.



Throttle cable play ④	0.5 – 1.0 mm (0.02 – 0.04 in)
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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.

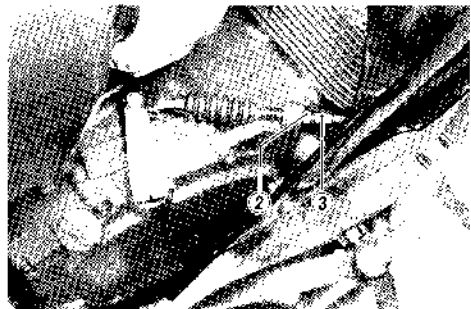
CLUTCH

Inspect at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

- Screw fully in the adjust nut ① on the clutch lever side.
- Loosen the cable lock nut ② and screw in the adjust nut ③ to provide a play in the cable.
- Adjust play of the cable with adjust nut ③ until play A of the clutch lever is within the following value.

Clutch cable play A	2–3 mm (0.08–0.12 in)
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- If the specified play can not be obtained with adjust nut ③, carry out the adjustment with the adjust nut ① on the clutch lever side.



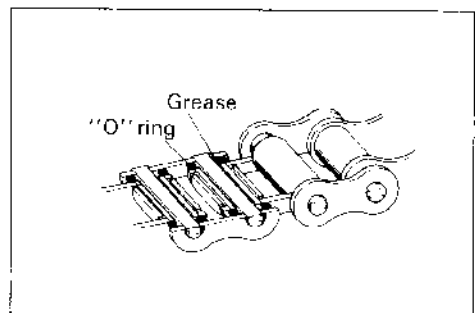
DRIVE CHAIN

Inspect at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).
Clean and Lubricate at Every 1 000 km (600 miles).

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

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

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



CHECKING

- Loosen axle nut ①.
- Tense the drive chain fully to screw in the chain adjuster lock nuts ②.
- Count out 21 pins (20 pitches) on the chain and measure the distance between the two points. If the distance exceeds the service limit, the chain must be replaced.

Drive chain 20-pitch length	Service Limit
	319.4 mm (12.6 in)

ADJUSTING

- Loosen both chain adjuster lock nuts ② until the chain has 25 – 30 mm (1.0 – 1.2 in) of slack at the middle between engine and rear sprockets. The mark ③ on both chain adjusters must be at the same position on the scale to ensure that the front and rear wheels are correctly aligned.
- Place on side stand for accurate adjustment.
- After adjusting the drive chain, slack tighten the axle nut ① securely.
- Tighten both chain adjuster lock nuts ② securely.

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

CLEANING AND LUBRICATING

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

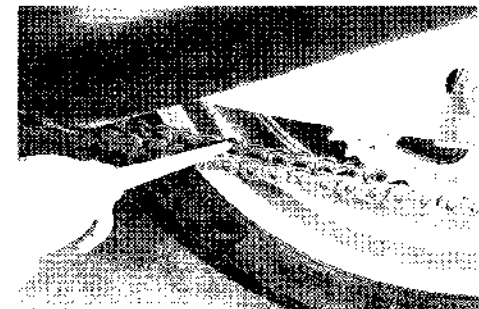
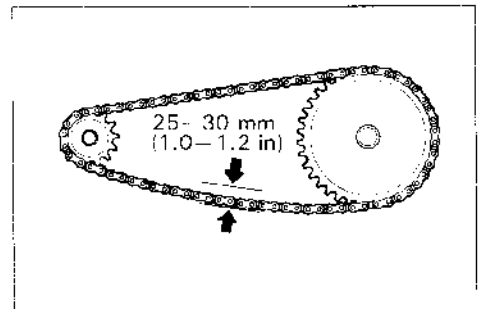
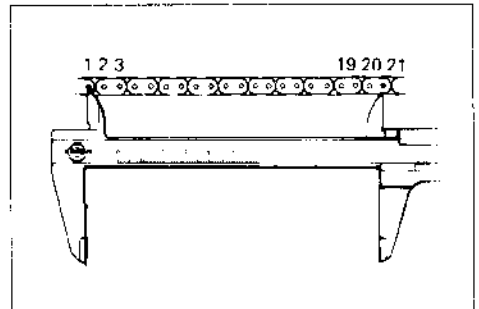
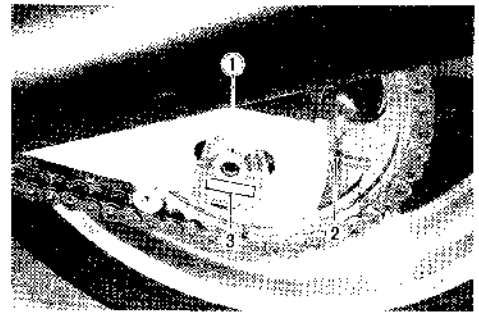
CAUTION:

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

- After washing and drying the chain, oil it with a 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 is TAKASAGO RK50GSV-Z1. SUZUKI recommends that this standard drive chain should be used for the replacement.



BRAKES

Inspect at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).
Replace at hoses Every four years.
Change at fluid Every two years.

BRAKE FLUID LEVEL

- Keep the motorcycle upright and place the handlebars straight.
- Remove the seat for the rear brake fluid.
- Check the brake fluid level to observe the upper and lower limit lines on the brake fluid reservoirs.
- When the level is below the lower limit line, replenish with brake fluid that meets the following specification.

Specification and Classification	DOT3, DOT4 or SAE J1703
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WARNING:

- * The brake system of this motorcycle is filled with a GLYCOL-BASED brake fluid. Do not use or mix the different types of fluid such as SILICONE-BASED and/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 long periods.

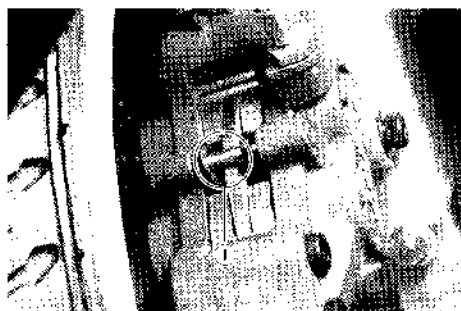
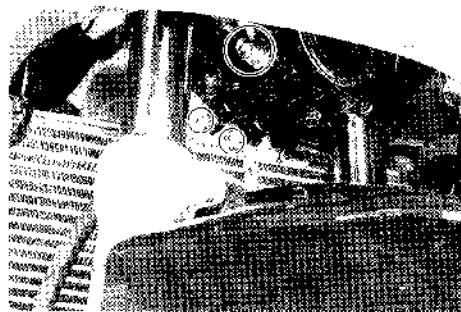
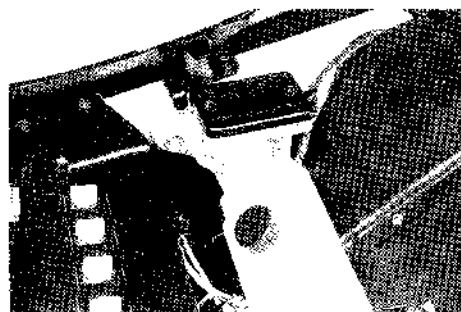
WARNING:

Brake fluid, if it leaks, will interfere with safe running and immediately discolor painted surfaces.

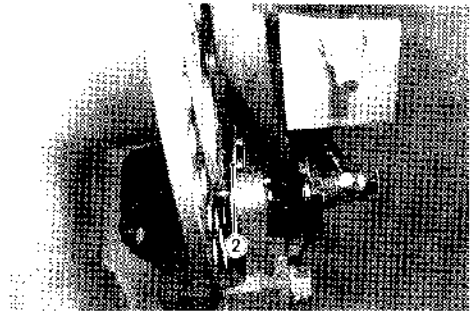
Check the brake hoses and hose joints for cracks and oil leakage before riding.

BRAKE PADS

The extent of front brake pad wear can be checked by observing the groove ① marked on the pad. When the wear exceeds the limit line, replace the pads with new ones. (Refer to page 6-8 and 6-28)



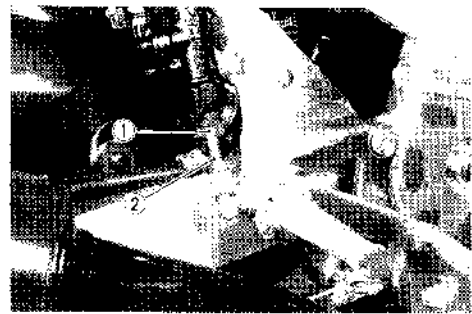
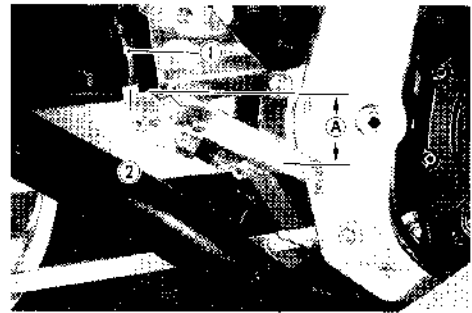
And also the extent of rear brake pad wear can be checked by observing the limit line ② marked on the pad.



BRAKE PEDAL HEIGHT

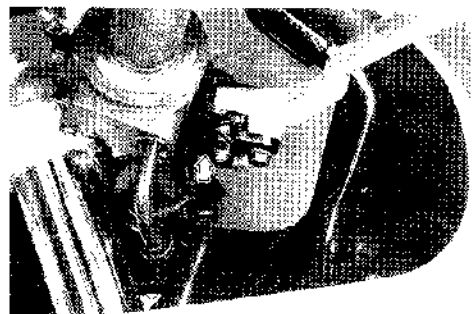
- Loosen the lock nut ① and keep the brake pedal height ④ between the top face of footrest and the brake pedal to rotate the push rod ②.
- Retighten the lock nut ① to secure the push rod ② in the proper position.

Brake pedal height ④	Standard
	58–68 mm (2.3–2.6 in)



BRAKE LIGHT SWITCHES

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



AIR-BLEEDING FROM 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 both master cylinder reservoirs to the "UPPER" line.
- Attach a pipe to the caliper bleeder valve, and insert the free end of the pipe into a receptacle.

Air bleeder valve : 6 — 9 N·m

(0.6 — 0.9 kg·m, 4.5 — 6.5 lb-ft)

- Front brake: Bleed the air from the air bleeder valve.
- Squeeze and release the brake lever several times in rapid succession, and squeeze the lever fully without releasing it. Loosen the 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.

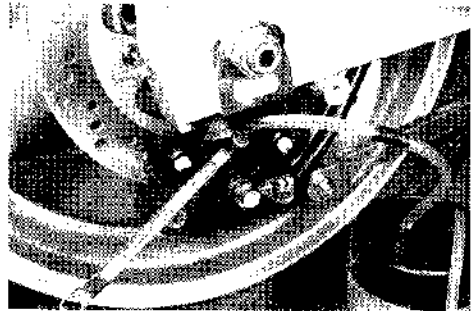
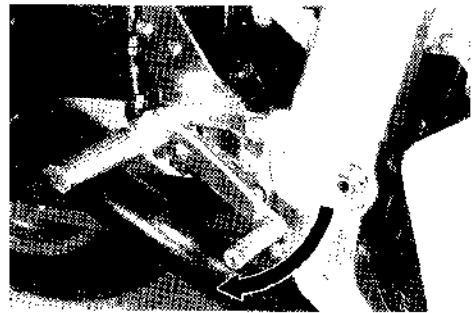
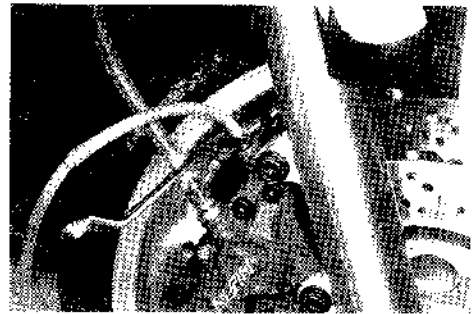
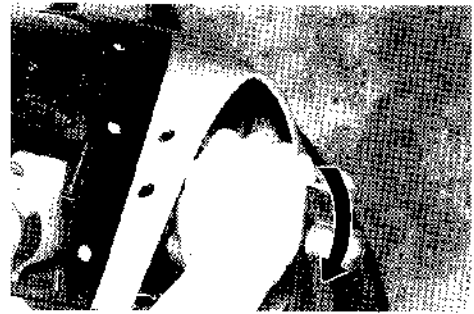
NOTE:

- * Replenish the brake fluid 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" line.

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 at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

TIRE TREAD CONDITION

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

Tire tread depth limit

	FRONT	REAR
	1.6 mm (0.06 in)	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. Cold inflation tire pressure is as follows.

	FRONT			REAR		
	kg/cm ²	kPa	psi	kg/cm ²	kPa	psi
Solo riding	2.50	250	36	2.50	250	36
Dual riding	2.50	250	36	2.90	290	42

CAUTION:

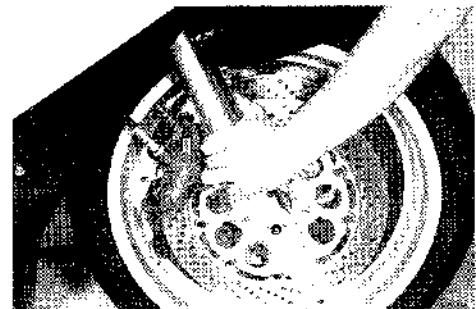
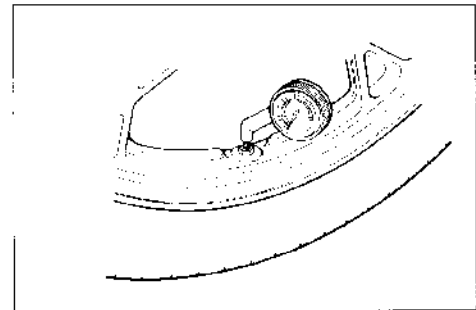
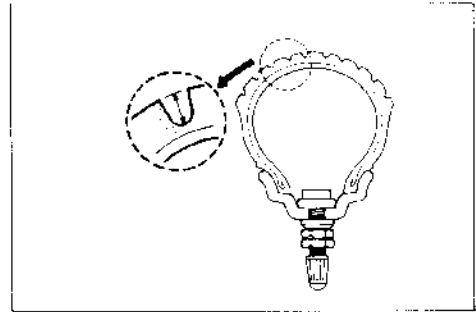
The standard tire fitted on this motorcycle is 120/70 VR17-V250 for front and 160/60 VR17-V250 for rear. The use of tires other than the those specified may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.

STEERING

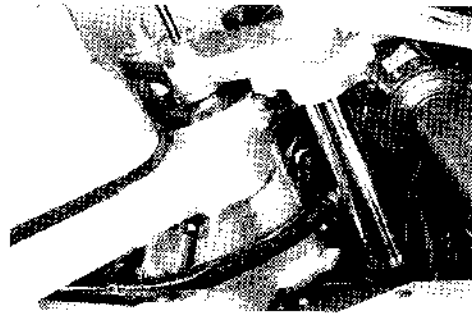
Inspect at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

Taper roller type bearings are used on the steering system for better handling.

Steering should be adjusted properly for smooth turning of handlebars and safe running. Over tight steering prevents smooth turning of the handlebars and too loose steering will cause poor stability.



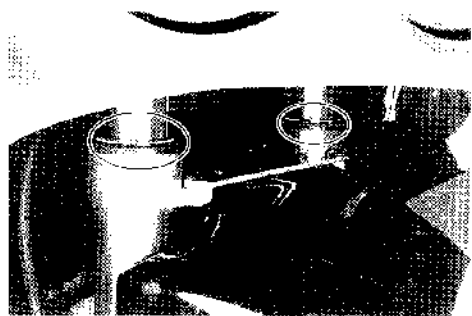
Check that there is no play in the front fork assembly by supporting the motorcycle so that the front wheel is off the ground, with the wheel straight ahead, grasp the lower fork tubes near the axle and pull forward. If play is found, perform steering bearing adjustment as described in page 6-27 of this manual.



FRONT FORKS

Inspect at Initially 1 000 km (600 miles, 2 months) and Every 12 000 km (7 500 miles, 24 months).

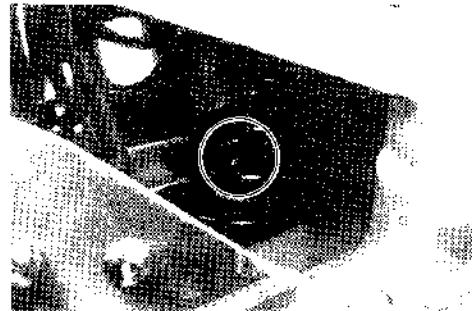
Inspect the front forks for oil leakage, scoring or scratches on the outer surface of the inner tubes. Replace any defective parts, if necessary.
(Refer to page 6-16).



REAR SUSPENSION

Inspect at Initially 1 000 km (600 miles, 2 months) and Every 12 000 km (7 500 miles, 24 months).

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

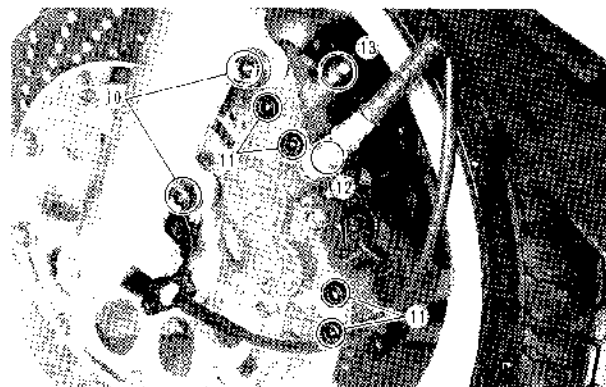
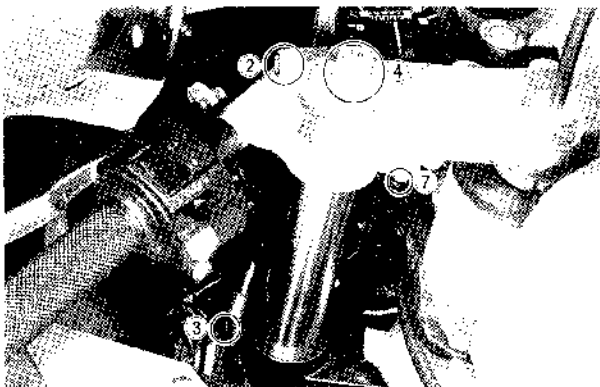
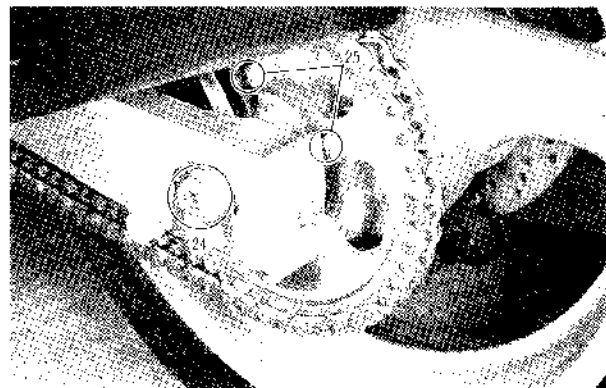
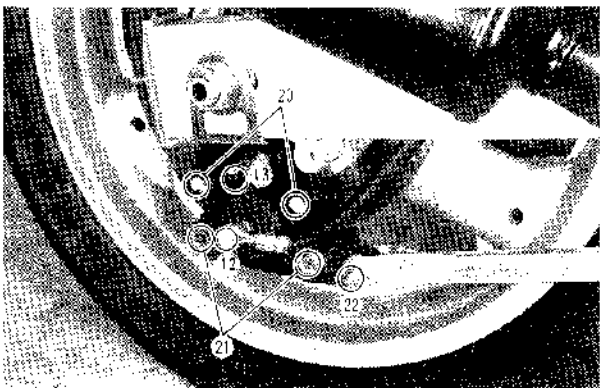
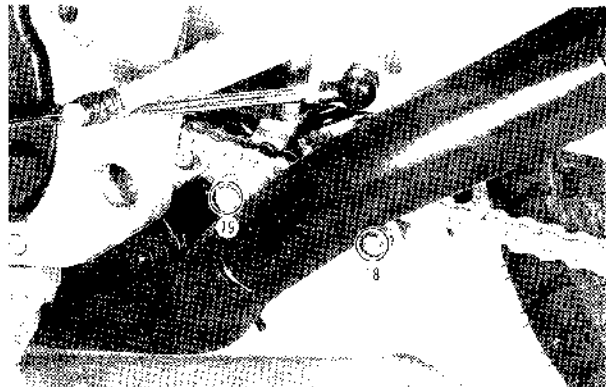
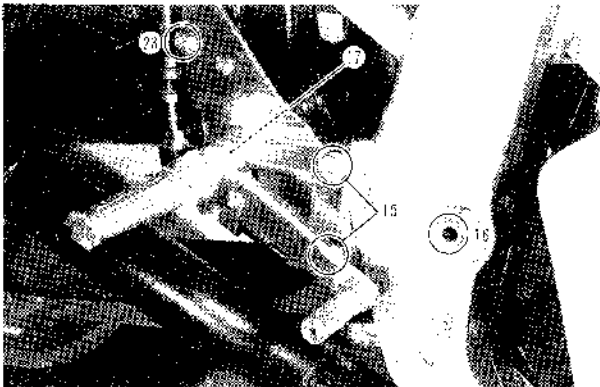
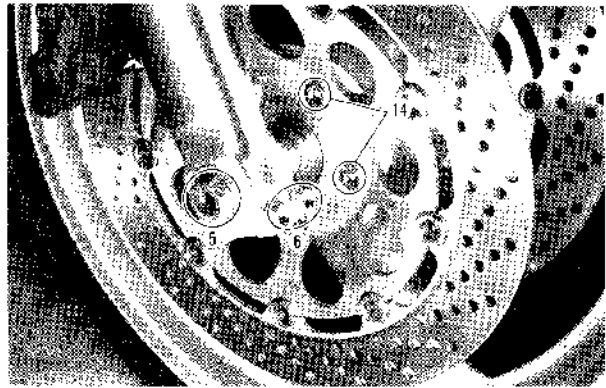
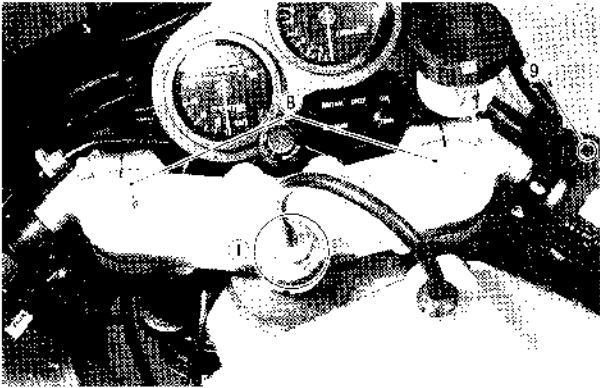


CHASSIS BOLTS AND NUTS

Tighten at Initially 1 000 km (600 miles, 2 months) and Every 6 000 km (4 000 miles, 12 months).

The nuts and bolts listed below are important safety parts. They must be retightened to the specified torque with a torque wrench. (Refer to page 2-19 for the locations of the following nuts and bolts on the motorcycle.)

Item	N-m	kg-m	lb-ft
① Steering stem head nut	30 – 40	3.0 – 4.0	21.5 – 29.0
② Front fork upper clamp bolt	35 – 55	3.5 – 5.5	25.5 – 40.0
③ Front fork lower clamp bolt	25 – 40	2.5 – 4.0	18.0 – 29.0
④ Front fork cap bolt	15 – 30	1.5 – 3.0	11.0 – 21.5
⑤ Front axle	85 – 115	8.5 – 11.5	61.5 – 83.0
⑥ Front axle pinch bolt	15 – 25	1.5 – 2.5	11.0 – 18.0
⑦ Handlebar holder set bolt	7 – 11	0.7 – 1.1	5.0 – 8.0
⑧ Handlebar holder mounting bolt	15 – 25	1.5 – 2.5	11.0 – 18.0
⑨ Front brake lever nut	8 – 12	0.8 – 1.2	6.0 – 8.5
⑩ Front brake caliper mounting bolt	28 – 44	2.8 – 4.4	20.0 – 32.0
⑪ Front brake caliper housing bolt	20 – 25	2.0 – 2.5	14.5 – 18.0
⑫ Brake hose union bolt (Cylinder & Caliper)	20 – 25	2.0 – 2.5	14.5 – 18.0
⑬ Air bleeder valve (Front & Rear)	6 – 9	0.6 – 0.9	4.5 – 6.5
⑭ Front and rear disc bolt	15 – 25	1.5 – 2.5	11.0 – 18.0
⑮ Front footrest bracket mounting bolt	27 – 43	2.7 – 4.3	19.5 – 31.0
⑯ Swingarm pivot nut	85 – 115	8.5 – 11.5	61.5 – 83.0
⑰ Front footrest nut	35 – 55	3.5 – 5.5	25.5 – 40.0
⑱ Rear shock absorber mounting nut (Upper & Lower)	40 – 60	4.0 – 6.0	29.0 – 43.5
⑲ Rear cushion lever nut	110 – 160	11.0 – 16.0	79.5 – 115.5
⑳ Rear brake caliper mounting bolt	17 – 28	1.7 – 2.8	12.5 – 20.0
㉑ Rear brake caliper housing bolt	30 – 36	3.0 – 3.6	21.5 – 26.0
㉒ Rear torque link nut (Front & Rear)	18 – 28	1.8 – 2.8	13.0 – 20.0
㉓ Rear brake master cylinder mounting bolt	15 – 25	1.5 – 2.5	11.0 – 18.0
㉔ Rear axle nut	85 – 115	8.5 – 11.5	61.5 – 83.0
㉕ Rear sprocket nut	48 – 72	4.8 – 7.2	35.0 – 52.0



ENGINE

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COMPRESSION PRESSURE CHECK

The compression of a cylinder is a good indicator of its internal condition.

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

COMPRESSION PRESSURE SPECIFICATION

Standard	Limit	Difference
1 000-1 400 kPa (10-14 kg/cm ²) (142-199 psi)	800 kPa (8 kg/cm ²) (114 psi)	200 kPa (2 kg/cm ²) (28 psi)

Low compression pressure can indicate any of the following conditions:

- * Excessively worn cylinder wall
- * Worn-down piston or piston rings
- * Piston rings stuck in the grooves
- * Poor seating of valves
- * Ruptured or otherwise defective cylinder head gasket

Overhaul the engine in the following cases:

- * Compression pressure in one of the cylinders is less than 800 kPa (8 kg/cm², 114 psi).
- * Difference in compression pressure between any two cylinders is more than 200 kPa (2 kg/cm², 28 psi).
- * All compression pressure are below 1 000 kPa (10 kg/cm², 142 psi) even when they measure more than 800 kPa (8 kg/cm², 114 psi).

COMPRESSION TEST PROCEDURE

NOTE:

- * *Before testing the engine for compression pressure, make sure that the cylinder head nuts and bolts are tightened to the specified torque values and valves are properly adjusted.*
- * *Have the engine warmed up by idling before testing.*

WARNING:

Gasoline is very explosive. Take extreme care not to spill the gasoline when removing the fuel tank.

Remove the parts concerned and test the compression pressure in the following manner.

- Remove the seat.
- Turn the fuel cock knob to "ON" position and disconnect the all hoses from fuel cock body.
- Remove the fuel tank.
- Remove two air ducts.
- Remove all the spark plugs.
- Fit the compression gauge ① one of the plug holes, taking care to make the connection tight.
- Keep the throttle grip in full-open position.
- While cranking the engine a few seconds with the starter, record the maximum gauge reading as the compression of that cylinder.
- Repeat this procedure with the other cylinders.



09915-64510 : Compression gauge

09915-63210 : Adaptor

OIL PRESSURE CHECK

To check periodically oil pressure of the oil passage way in the engine needs to judge roughly the conditions of the moving parts.

OIL PRESSURE SPECIFICATION

<p>Above 300 kPa (3.0 kg/cm², 43 psi) Below 600 kPa (6.0 kg/cm², 85 psi)</p>	<p>at 3 000 r/min., Oil temp. at 60°C (140°F)</p>
---	--

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

LOW OIL PRESSURE

- * Clogged oil filter
- * Oil leakage from oil passage way
- * Damaged oil seal
- * Defective oil pump
- * Combination of above items

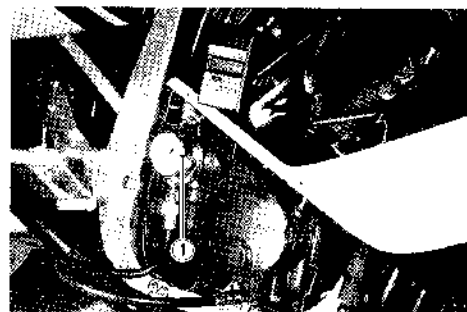
HIGH OIL PRESSURE

- * Used a engine oil which is too heavy a weight
- * Clogged oil passage way
- * Combination of above items

OIL PRESSURE TEST PROCEDURE

Start the engine and check if the oil pressure indicator light is turned on. If it keeps on lighting, check the oil pressure indicator light circuit. If it is in good condition, check the oil pressure in the following manner.

- Remove the RH lower cowling.
- Install the oil pressure gauge ① with the adaptor in the position shown in the figure.
- Warm up the engine as follows:
 Summer 10 min. or so at 2 000 r/min.
 Winter 20 min. or so at 2 000 r/min.
- After warming up, increase the engine speed to 3 000 r/min. with the engine tachometer reading, and read the oil pressure gauge.



- 09900-26005 : Engine tachometer
- 09915-74510 : Oil pressure gauge
- 09915-74540 : Adaptor
- 09915-77330 : Meter (for high pressure)

ENGINE COMPONENTS REMOVABLE WITH ENGINE IN PLACE

The parts listed below can be removed and reinstalled without removing the engine from the frame. Refer to the page listed in each section for removal and reinstallation instructions.

ENGINE CENTER

	See page
Exhaust pipe/muffler.....	3-8
Oil cooler.....	3-7
Oil hose.....	3-14
Oil filter.....	3-14
Oil pan (along with engine oil regulator).....	3-22
Sump filter.....	3-22
Cylinder head breather cover.....	3-10
Carburetors.....	3-6
Throttle cable.....	3-6
Cam chain tensioner.....	3-14
Cylinder head cover.....	3-14
Camshafts.....	3-15
Cylinder head.....	3-15
Cylinder.....	3-16
Pistons.....	3-16
Starter motor.....	3-17
Generator.....	3-17

ENGINE LEFT SIDE

	See page
Gearshift lever.....	3-8
Engine sprocket cover.....	3-8
Engine sprocket and drive chain....	3-9
Neutral indicator switch body.....	3-21
Starter clutch cover.....	3-20
Starter clutch.....	3-20
Starter idle gear.....	3-20

ENGINE RIGHT SIDE

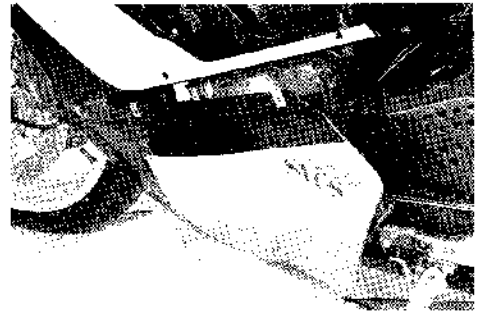
	See page
Signal generator cover.....	3-14
Signal generator.....	3-17
Oil pressure switch.....	3-65
Clutch cover.....	3-17
Clutch pressure, drive and driven plates.....	3-18
Oil pump driven gear.....	3-19
Generator/oil pump drive gears.....	3-19
Primary driven gear.....	3-19
Gearshift shaft.....	3-19
Gear shifting pawl and cam driven gear.....	3-19

ENGINE REMOVAL AND REINSTALLATION

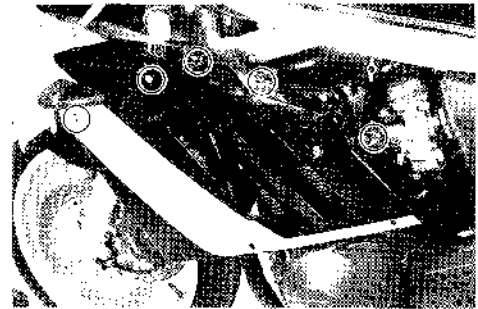
ENGINE REMOVAL

Before taking the engine out of the frame, wash the engine with a steam cleaner and drain engine oil, etc. The procedure of engine removal is sequentially explained in the following steps, and engine installation is effected by reversing the removal procedure.

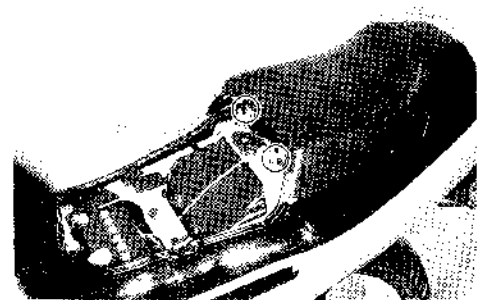
- Remove the bottom fairing.



- Remove the left and right middle fairings.



- Remove both seats.

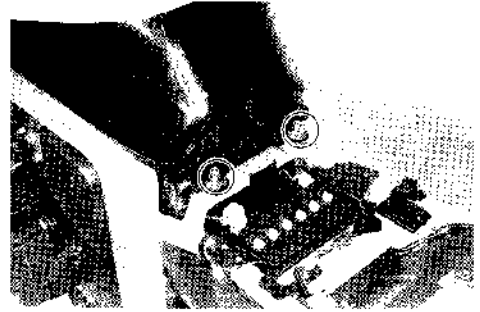


- Remove the left and right frame covers.

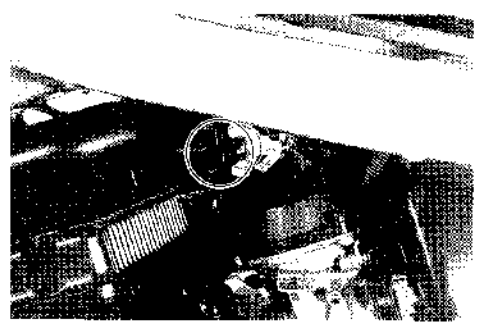


3.5 ENGINE

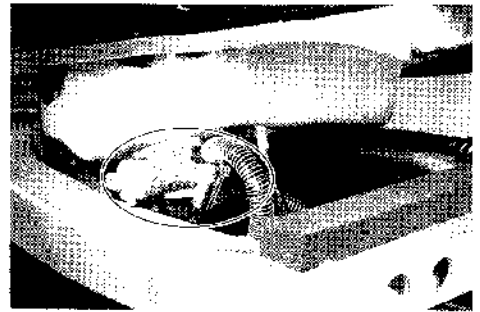
- Remove two fuel tank mounting bolts.



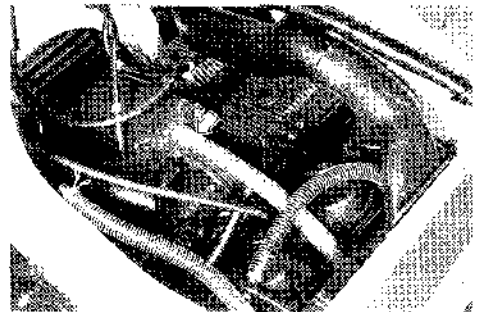
- Remove the fuel cock lever after positioning at "ON".



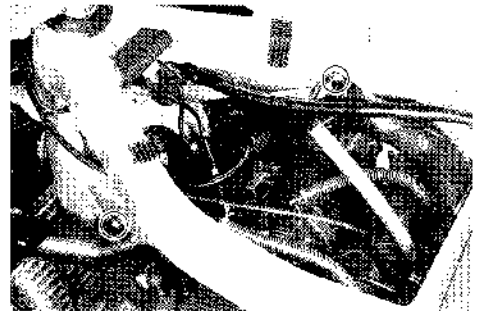
- Remove the fuel tank after disconnecting all hoses from fuel cock body.



- Disconnect the breather hose from cylinder head breather cover.



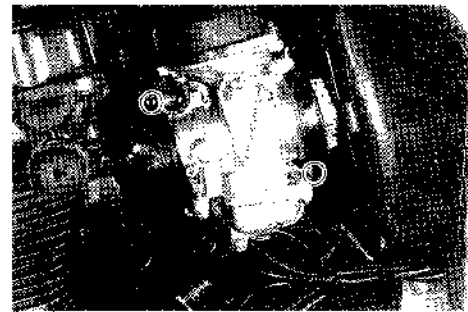
- Remove two air duct hoses.



- Disconnect the throttle cable from throttle grip.



- Loosen the respective carburetor clamp screws.



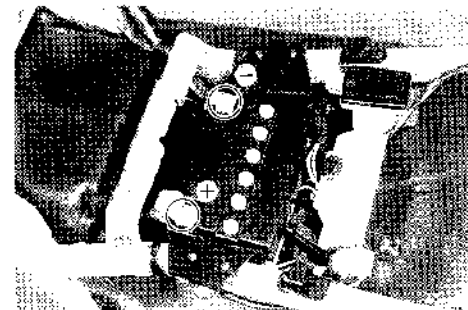
- Pulling out the clips from air cleaner case, separate the carburetor assembly from all the outlet tubes and intake pipes.
- Remove the carburetor assembly from left side.



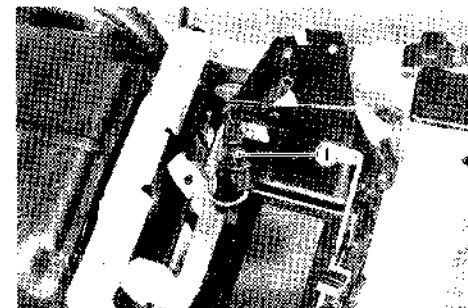
- Disconnecting the battery \ominus and \oplus lead wires from battery terminals, remove the battery.

CAUTION:

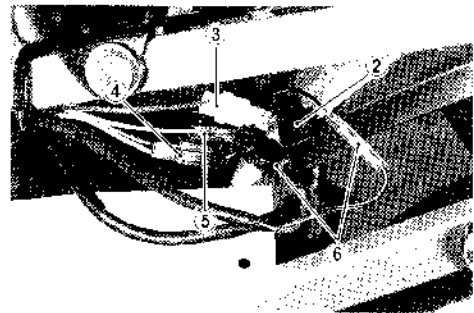
Be sure to disconnect the \ominus lead wire first.



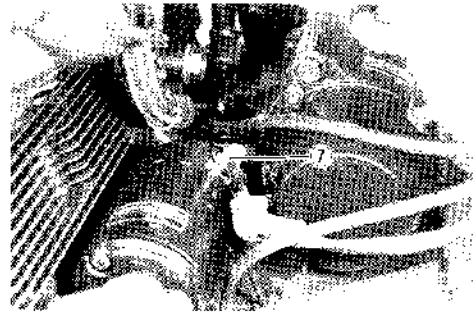
- Disconnect the following various lead wires.
 - * Battery \ominus lead wire (coupler ①)



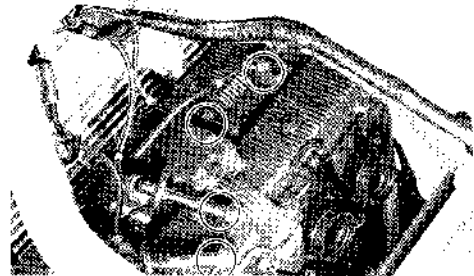
- * Generator lead wires (coupler ②)
- * Neutral indicator switch lead wire ③
- * Signal generator lead wires (coupler ④)
- * Oil pressure indicator switch lead wire ⑤
- * Side stand indicator lead wires (coupler ⑥)



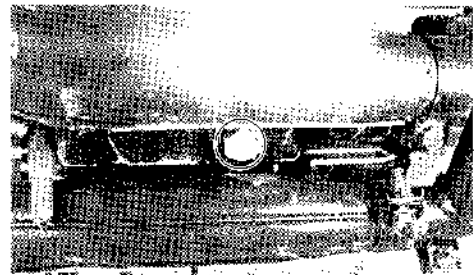
- * Starter motor lead wire ⑦.



- Disconnect all the spark plug caps.



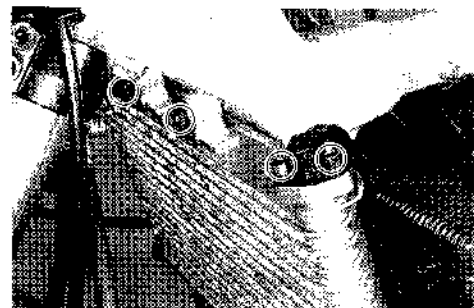
- Remove the oil drain plug to drain out engine oil.



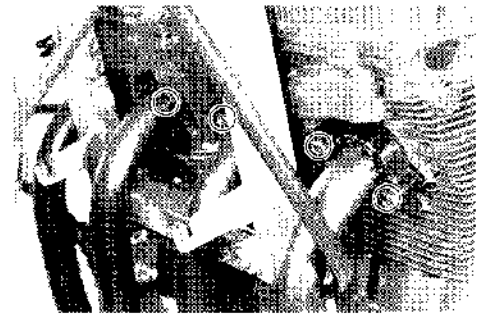
- Remove the oil cooler.

CAUTION:

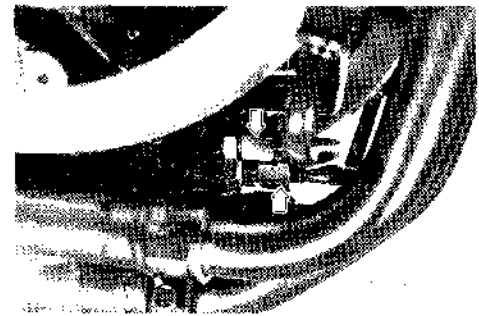
Be sure to remove the oil hoses from the oil cooler, and remove the oil cooler mounting bolts.



- Remove the eight exhaust pipe clamp bolts with a 6-mm hexagon wrench.



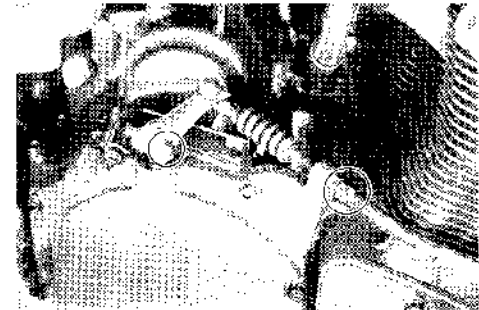
- Remove two oil cooler hoses.



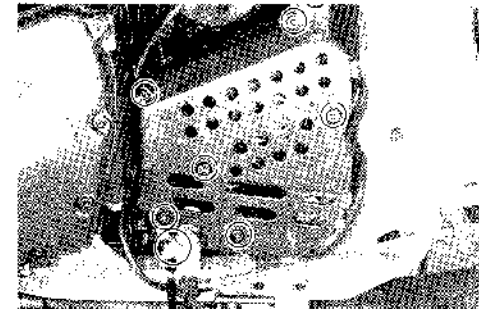
- Removing the muffler mounting bolts, take off the exhaust pipe/muffler.



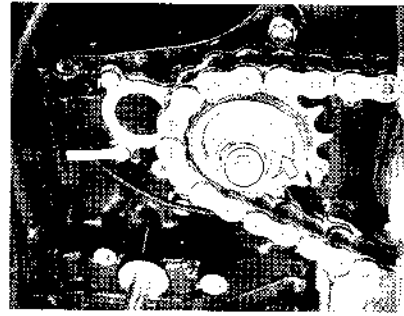
- Remove the clutch release lever.



- Removing the gearshift lever securing bolt, take off the gearshift lever.
- Remove the engine sprocket cover.



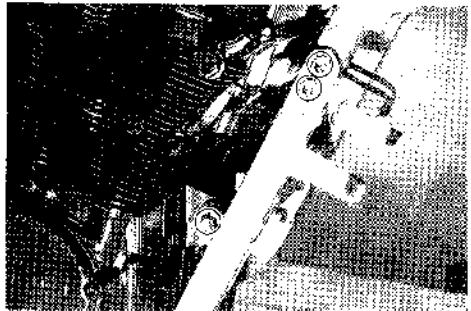
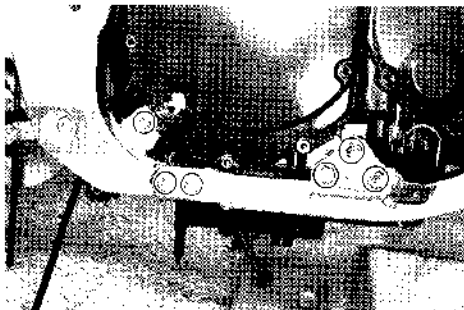
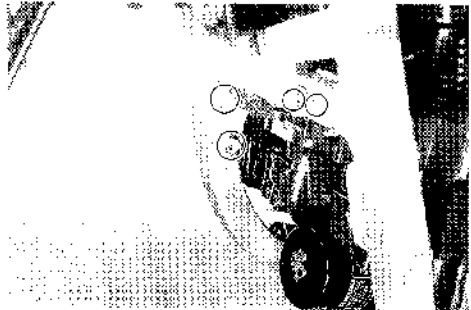
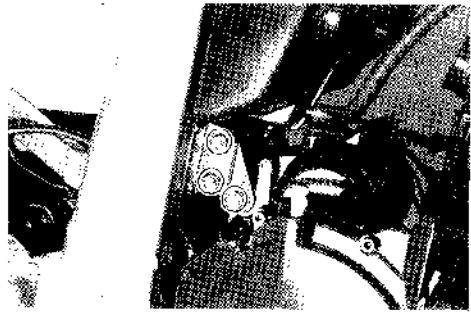
- Remove the engine sprocket bolt and nut while depressing the rear brake pedal.



- Pull out the cotter pin and loosen the axle nut and chain adjuster nuts.
- Push the rear wheel forward and disengage the drive chain and engine sprocket from the driveshaft.



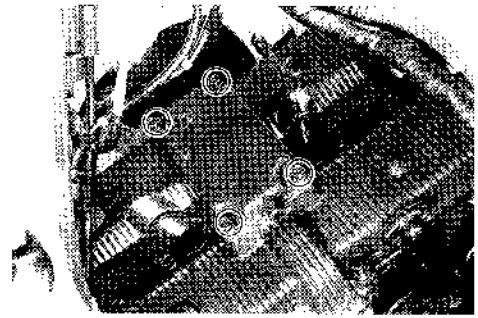
- Remove the engine mounting bolts, nuts, spacers and brackets.



- Gradually lift up the engine and lower the engine assembly on the right side making sure that it does not make contact with the frame.
- Remove the engine through the right side of the frame.

NOTE:

If it is difficult to remove the engine, remove the cylinder head breather cover to provide additional clearance.

**ENGINE REINSTALLATION**

Reinstall the engine in the reverse order of engine removal.

- Insert the two long bolts from left side. Install the brackets, spacers, bushes, bolts and nuts properly, as shown in the illustration on next page.

NOTE:

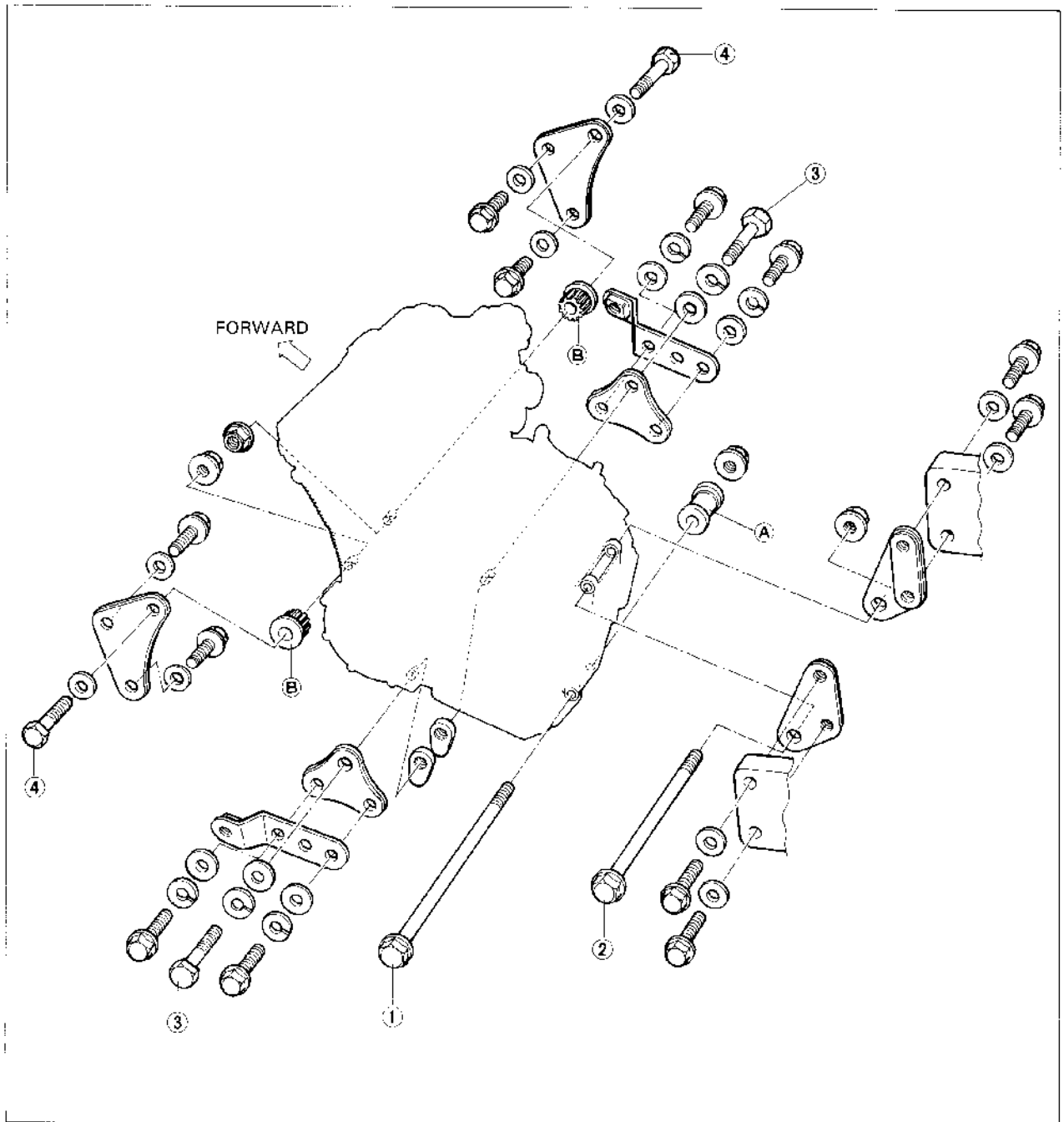
The engine mounting nuts are self-locking. Once the nut has been removed, it is no longer of any use. Be sure to use new nuts and tighten them to the specified torque.

**TIGHTENING TORQUE**

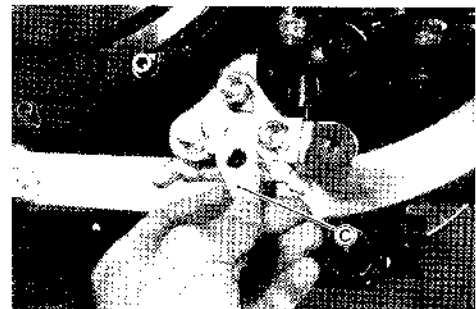
ITEM	N·m	kg-m	lb-ft
①, ②	70 – 88	7.0 – 8.8	50.5 – 63.5
③, ④	50 – 60	5.0 – 6.0	36.0 – 43.5
Other bolts	25 – 38	2.5 – 3.8	18.0 – 27.5

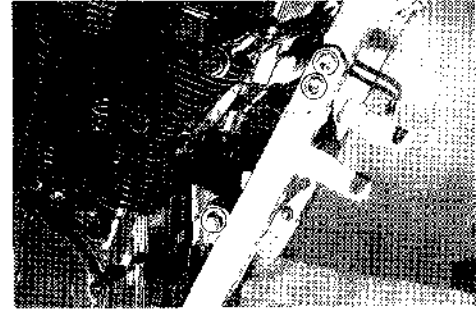
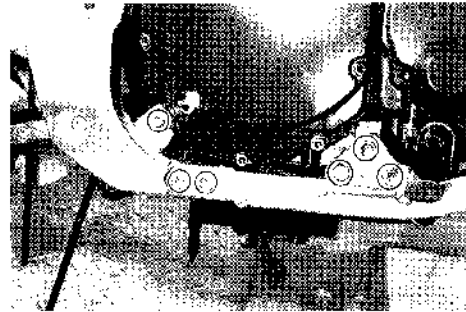
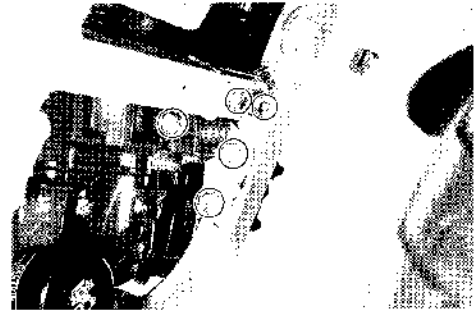
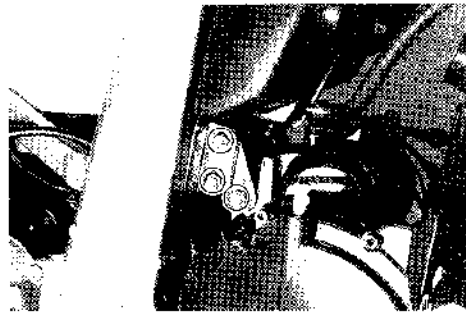
LENGTH

Bolt ①	175 mm (6.9 in)
Bolt ②	150 mm (5.9 in)
Bolt ③	55 mm (2.2 in)
Bolt ④	55 mm (2.2 in)
Spacer RH ⑤	27 mm (1.1 in)
Bush (R & L) ⑥	39 mm (1.5 in)



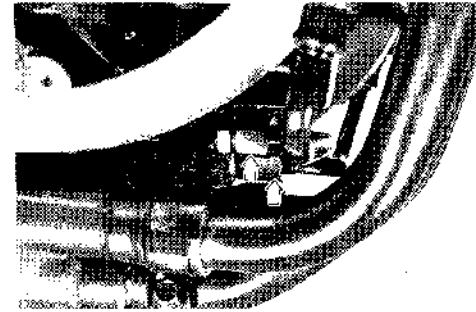
- The nut © takes its position in the place as shown.





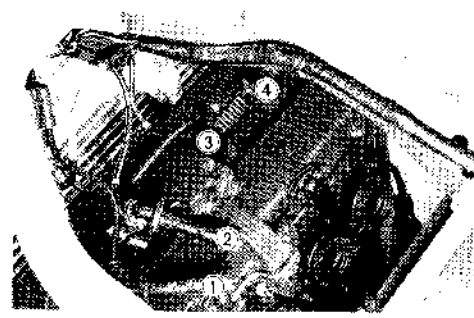
- For the installation of oil cooler hose, locate the gaskets on the both sides of union and tighten the union bolt to the specified torque.

Oil cooler hose : 25 – 30 N·m
union bolt (2.5 – 3.0 kg-m, 18.0 – 21.5 lb-ft)



ITEM	N·m	kg-m	lb-ft
Engine sprocket nut	100 – 130	10.0 – 13.0	72.5 – 94.0
Engine sprocket bolt	9 – 12	0.9 – 1.2	6.5 – 8.5
Rear axle nut	85 – 115	8.5 – 11.5	61.5 – 83.0
Exhaust pipe bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Muffler mounting bolt (Front side)	18 – 28	1.8 – 2.8	13.0 – 20.0
Muffler mounting bolt (Rear side)	22 – 35	2.2 – 3.5	16.0 – 25.5

- Replace the plug caps on the spark plugs so that their code markings correspond to the cylinder numbers arranged in the order of ①, ②, ③ and ④ from the left hand.



- Pour 5.8L (6.1/5.1 US/Imp qt) of engine oil SAE10W/40 under API classification SE or SF into the engine. Several minutes after starting and stopping engine, check that the oil level remains between the marks of oil inspection window.

Change : 4.5 L (4.7/4.0 US/Imp qt)
Filter change : 4.8 L (5.0/4.2 US/Imp qt)
Overhaul : 5.8 L (6.1/5.1 US/Imp qt)

- After remounting the engine, route wiring harness, cables and hoses properly by referring to the sections, for wire routing, cable routing and hose routing. (see page 7-9 through 18)

Adjust the following items to the specification.

	page
* Throttle cable.....	2-10
* Drive chain.....	2-12
* Idling adjustment.....	2-10
* Balancing carburetors.....	4-15

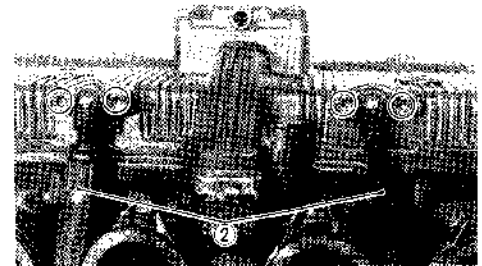
ENGINE DISASSEMBLY

- Remove the oil filter ①.

09915-40611 : Oil filter wrench

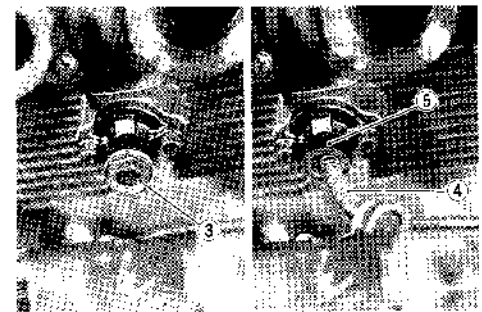


- Remove the right and left oil hoses ②.



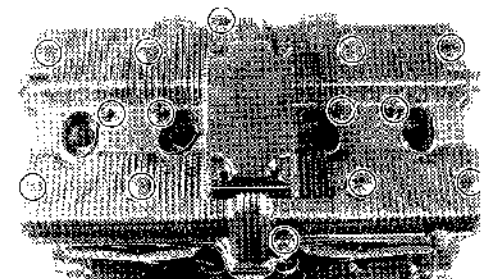
- Remove the spring holder bolt ③ and spring ④, and then remove the cam chain tensioner ⑤.

09911-73730 : 5 mm "T" type hexagon wrench



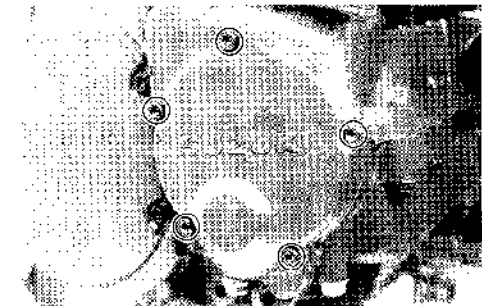
- Remove the cylinder head cover.

09914-25811 : 6 mm "T" type hexagon wrench

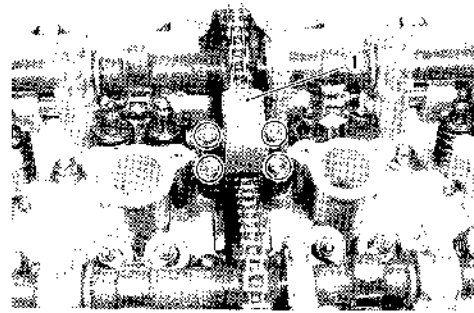


- Remove the signal generator cover.

09911-73730 : 5 mm "T" type hexagon wrench



- Remove the cam chain idler ①.

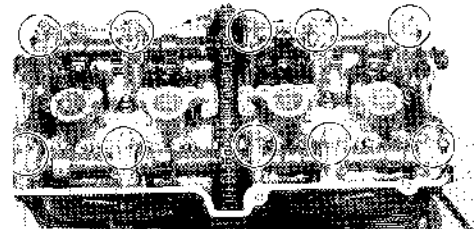


- Remove the ten camshaft journal holders.

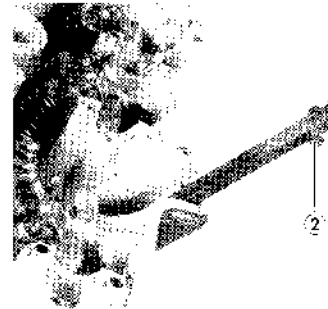
NOTE:

Be sure to loosen camshaft journal holder bolts evenly by shifting the wrench diagonally.

- Remove two camshafts; intake and exhaust.



- Pull out the cam chain guide ②.



- The cylinder head becomes free for removal when its one 6-mm bolt ③ and twelve 10-mm nuts are removed.

09911-74510 : Long socket 14 mm

09914-24510 : T handle



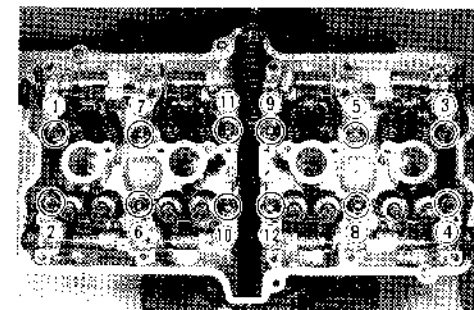
NOTE:

When loosening the cylinder head nuts, loosen each nut little by little in a descending order according to the numbers cast on a cylinder head.

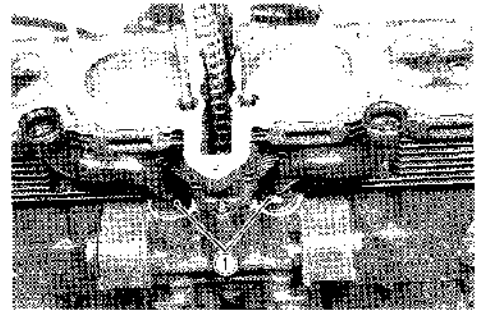
- Lift the cylinder head up to grip its both ends. If it does not come off, lightly tap on the finless portions of it with a plastic mallet.

CAUTION:

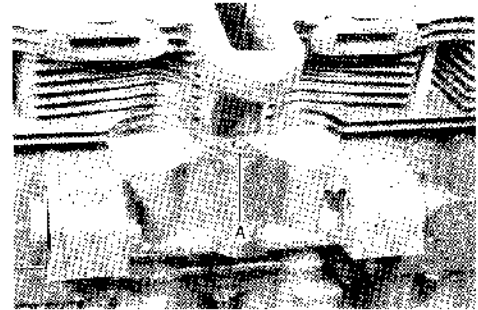
Be careful not to damage the fins when removing or handling the cylinder head.



- Remove the right and left oil pipes ①.



- Remove the cylinder nut ③.



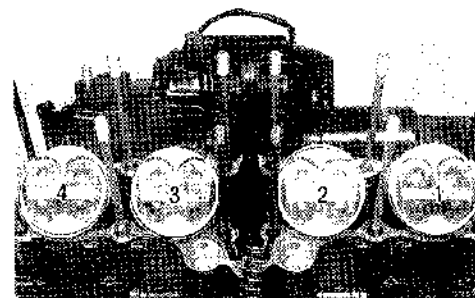
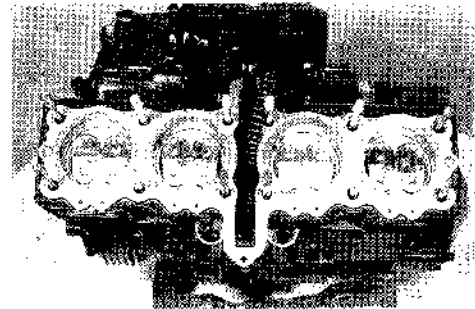
- Firmly grip both ends of the cylinder block and lift it straight up. If the block does not come off, lightly tap on the fin-less portions of the block with a plastic mallet to shake the gasketed joint loose.

09912-34510 : Cylinder disassembler

CAUTION:

Be careful not to damage the fins when removing or handling the cylinder block.

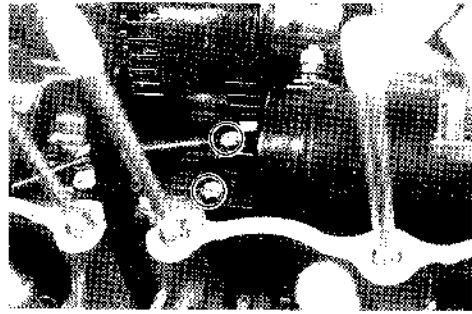
- Scribe the cylinder number on the head of the respective pistons.



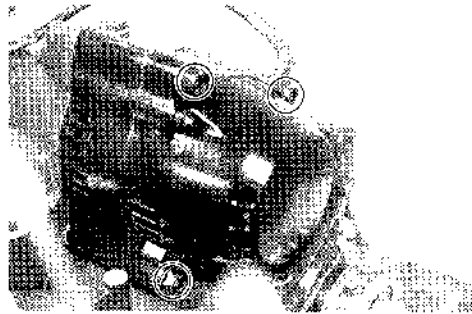
- Place a cloth beneath the piston so as not to drop any parts in the crankcase, and remove the circlip ④ with long-nose pliers.
- Draw out the piston pin. Place each piston pin in the same piston as that it was removed from.



- Remove the starter motor.

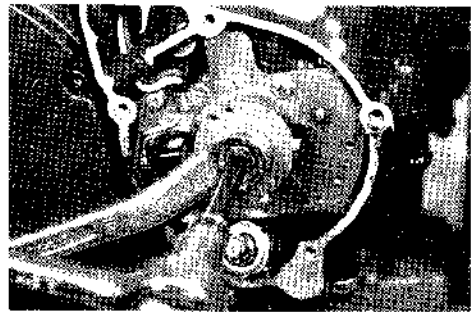


- Remove the generator.

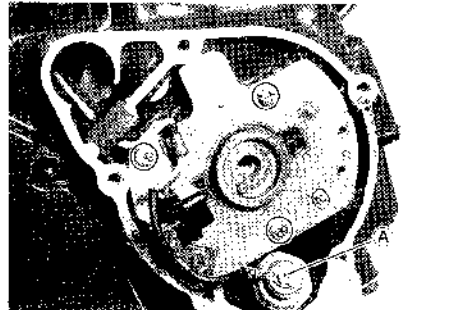


- Remove the signal generator rotor.

09900-00410 : Hexagon wrench set

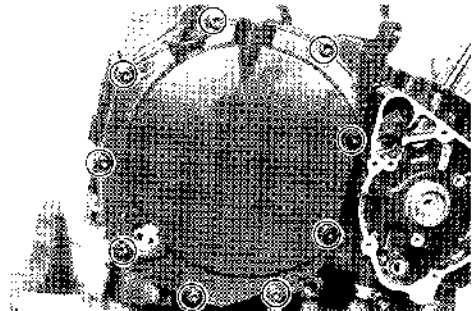


- Disconnect the oil pressure switch lead wire (A).
- Remove the signal generator stator.



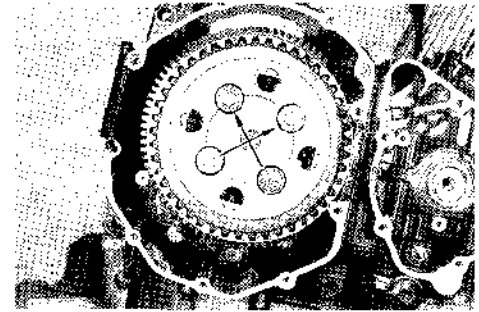
- Remove the clutch cover.

09911-73730 : 5 mm "T" type hexagon wrench

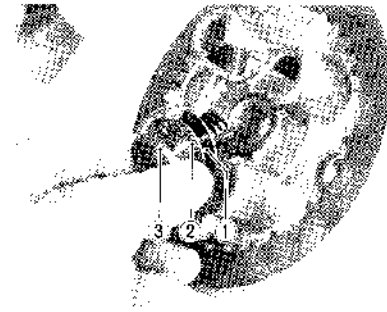


- Holding the conrod with a conrod stopper, remove the clutch spring set bolts in a criss-cross manner.

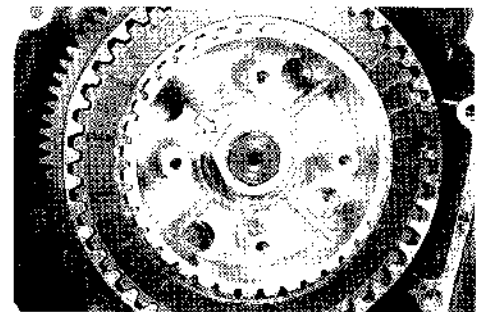
09910-20116 : Conrod stopper



- Remove the pressure plate with the thrust washer ①, bearing ② and clutch push piece ③.

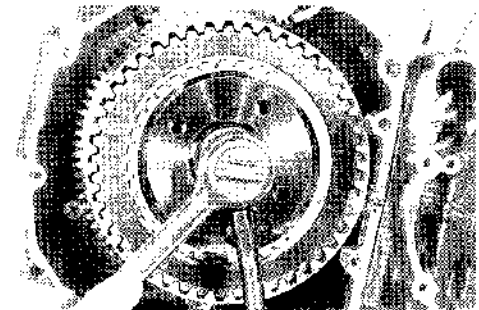


- Flatten the clutch sleeve hub nut lock washer with chisel.

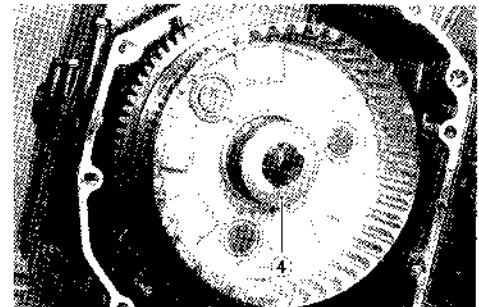


- Firmly secure the clutch sleeve hub to remove mounting nut with a clutch sleeve hub holder, and then remove the clutch sleeve hub along with the clutch driven and drive plates.

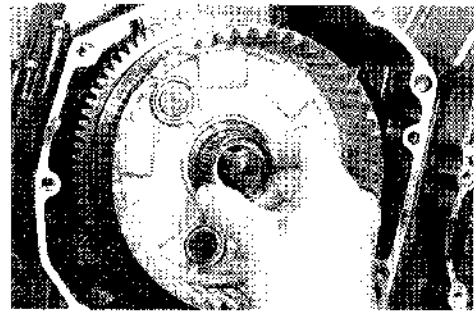
09920-53722 : Clutch sleeve hub holder



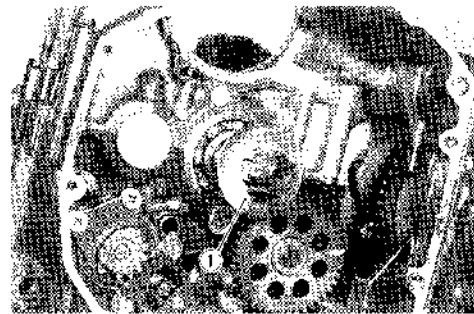
- Remove the thrust washer ④.



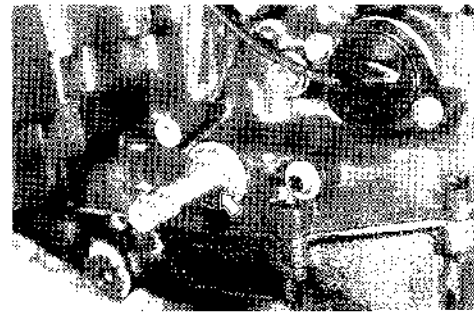
- With the spacer removed, the primary driven gear (integral with the clutch housing) is free to disengage from the primary drive gear.
- Remove the primary driven gear assembly along with the generator/oil pump drive gears.



- Remove the thrust washer ①.



- Remove the clip and washer from the gearshift shaft.

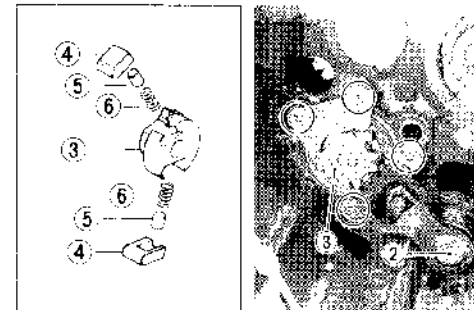


- Draw out the gearshift shaft ②, and then remove the cam driven gear ③.

09900-09003 : Impact driver set

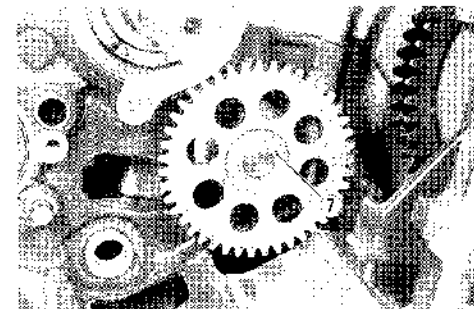
NOTE:

When removing the cam driven gear, do not lose the gearshifting pawl ④, pin ⑤ and spring ⑥.



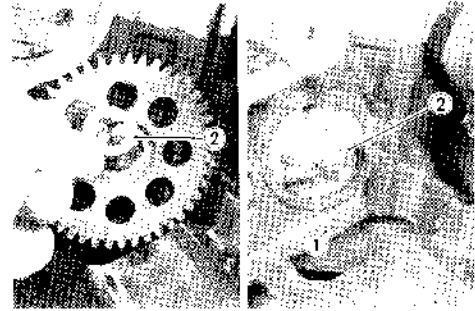
- Remove the oil pump driven gear to remove circlip ⑦.

09900-06107 : Snap ring pliers



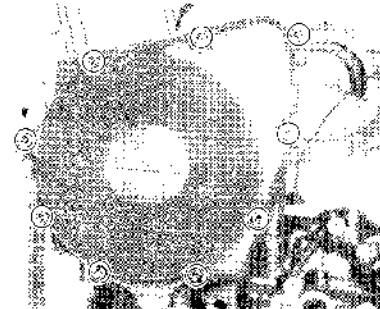
NOTE:

Do not lose the circlip, pin ① and two washers ②.

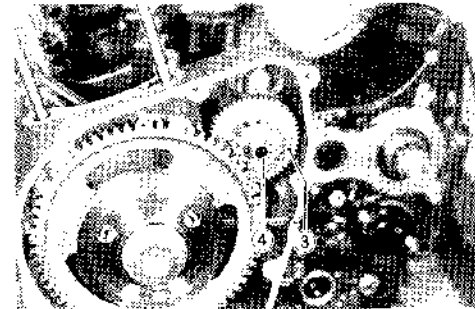


- Remove the starter clutch cover.

09911-73730 : 5 mm "T" type hexagon wrench



- Remove the starter idle gear ③ and its shaft ④.

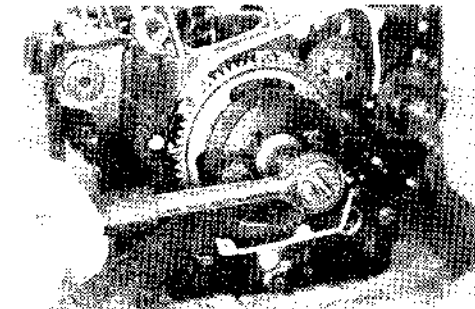


- Loosen the starter clutch mounting bolt with the special tool.

09920-34810 : Rotor holder

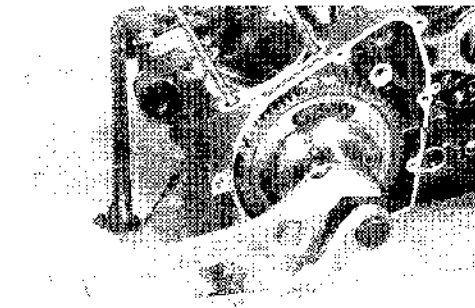
NOTE:

When removing the starter clutch assembly from the crankshaft, do not take off the starter clutch mounting bolt after loosening because it is used in conjunction with the special tool.

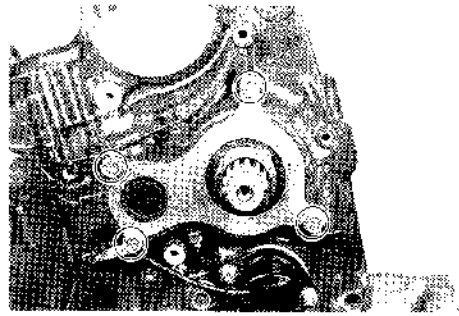


- Remove the starter clutch assembly from the crankshaft with the special tool.

09930-33720 : Rotor remover



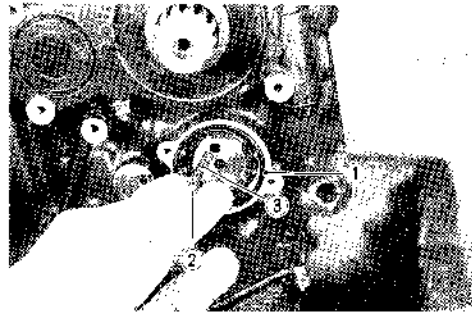
- Flatten the lock portion of the oil seal retainer and remove it.



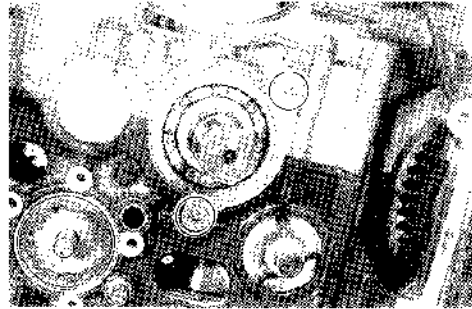
- Remove the neutral position indicator switch.

NOTE:

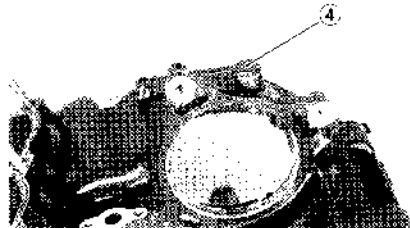
Do not lose the O-ring ①, switch contact ② and its spring ③.



- Remove the countershaft bearing retainer.

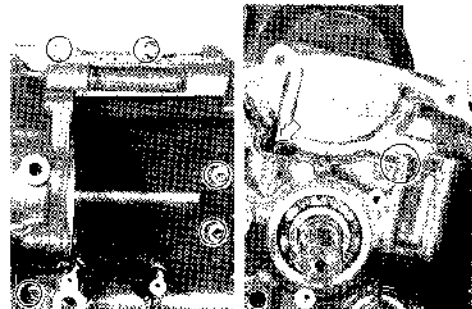


- Remove the plug ④ on the upper crankcase.



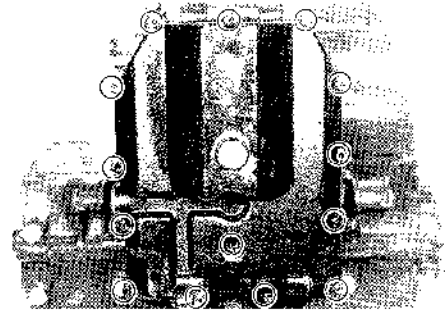
- Remove the upper crankcase securing bolts and nut.

09911-73730 : 5 mm "T" type hexagon wrench

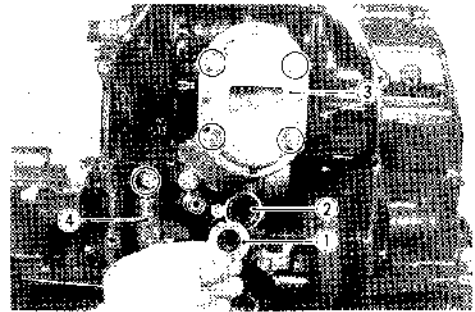


- Remove the oil pan.

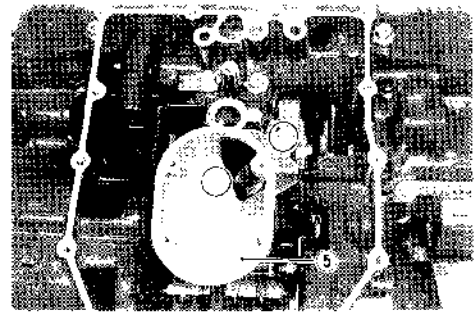
09911-73730 : 5 mm "T" type hexagon wrench



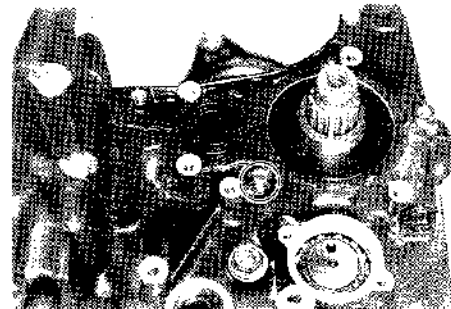
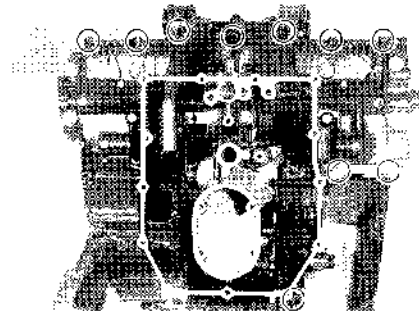
- Remove the shim ① and O-ring ②.
- Remove the oil sump filter ③.
- Remove the left oil pipe ④.



- Remove the oil sump filter protector ⑤.



- Remove the lower crankcase securing bolts and nut.



- When removing the crankshaft tightening bolts, loosen them in the descending order of numbers assigned to these bolts.

NOTE:

- * Two allen bolts are used for tightening crankshaft at the portion (A).
- * Before removing the crankshaft tightening bolts, remove the main oil gallery plug (B).
- * When installing the main oil gallery plug (B), replace the O-ring with new one and tighten it to the specified torque.

09914-25811 : 6 mm "T" type hexagon wrench

09900-00410 : Hexagon wrench set

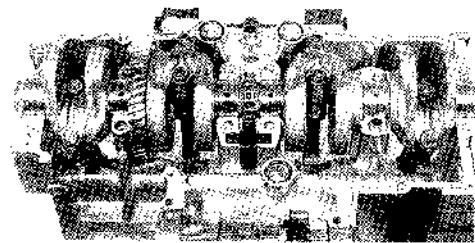
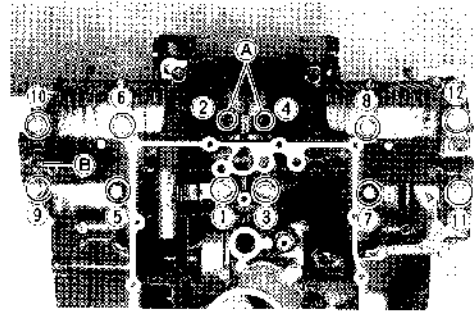
Main oil gallery plug (B) : 35 – 45 N·m
 (3.5 – 4.5 kg·m,
 25.5 – 32.5 lb-ft)

- Make sure that all bolts are removed without fail. Hammer lightly the lower crankcase side with a plastic hammer to separate the upper and lower crankcase halves and then lift the latter.

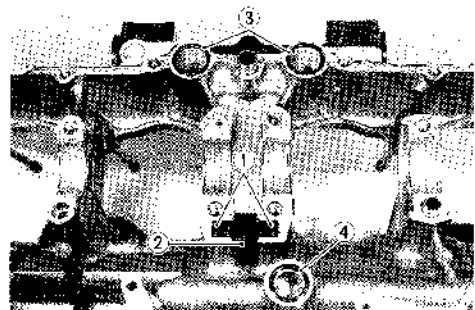
CAUTION:

Do not drop the crankshaft journal bearings from the lower crankcase.

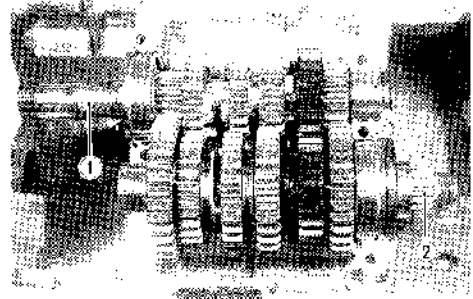
- Remove the crankshaft assembly from the upper crankcase.



- Pull out the two dampers (1) and cam chain guide (2).
- Remove the O-rings, (3) and (4).

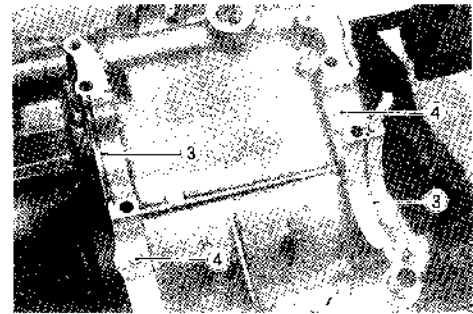


- Remove the countershaft assembly ① and driveshaft assembly ②.



NOTE:

Do not lose the C-rings ③ and bearing pins ④.



- Holding the gearshift forks by hand, draw out the gearshift fork shaft from the lower crankcase.



- Unhook the gearshift cam stopper spring from the lower crankcase.



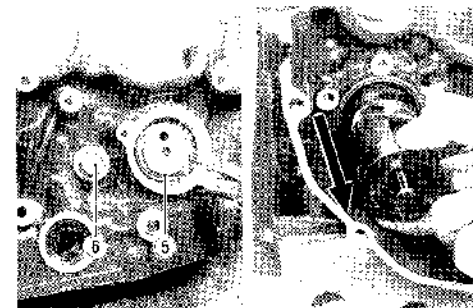
- Removing the circlip ⑤ from the gearshift cam, draw out the gearshift cam from other side.

09900-06107 : Snap ring pliers

NOTE:

When replacing the gearshift cam stopper bolt ⑥, apply a small quantity of **THREAD LOCK "1342"** to the bolt.

99000-32050 : THREAD LOCK "1342"

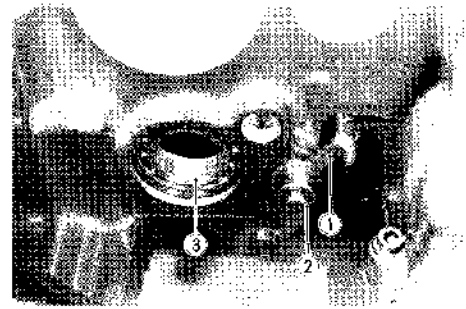


- Remove the gearshift cam stopper ① by removing the circlip ②.

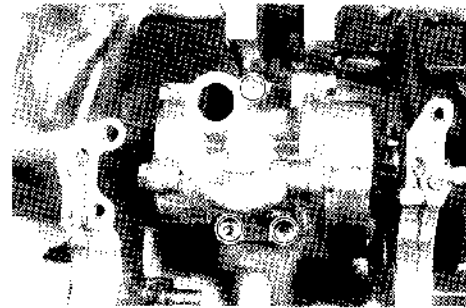
09900-06107 : Snap ring pliers

NOTE:

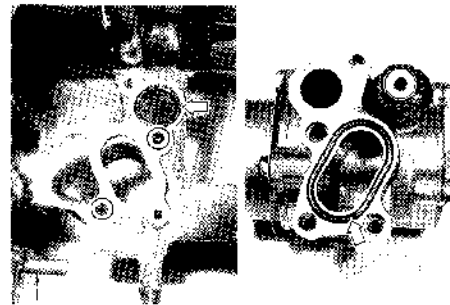
For abnormal noise and smooth rotation, inspect the bearing ③ to rotate by hand. If there is anything unusual, replace it.



- Remove the oil pump assembly.



- Remove the O-rings and dowel pins.



ENGINE COMPONENTS INSPECTION AND SERVICE

CYLINDER HEAD

CYLINDER HEAD SERVICE

CAUTION:

Be sure to identify each removed part as to its location, and lay the parts out in groups designated as "No.1", "No.2", "Exhaust", "Inlet", so that each will be restored to the original location during assembly.

NOTE:

- * When removing rocker arm shaft, remove the rocker arm shaft set bolt ① and plug ②, and then screw 8 mm bolt into the rocker arm shaft end and pull it out.
- * Tighten the set bolt ① and plug ② to the specified torque.
- * Removal of valves completes ordinary disassembling work. If valve guides have to be removed for replacement after inspecting related parts, carry out the steps shown in valve guide servicing.

09900-00410 : Hexagon wrench set

Rocker arm shaft set bolt ① : 8 – 10 N·m
(0.8 – 1.0 kg·m,
6.0 – 7.0 lb·ft)

Cylinder head plug ② : 25 – 30 N·m
(2.5 – 3.0 kg·m,
18.0 – 21.5 lb·ft)

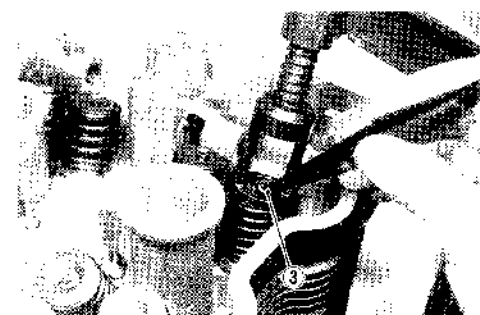
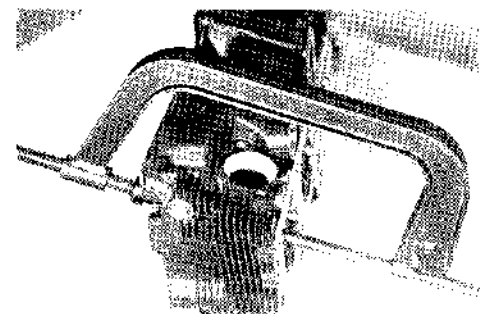
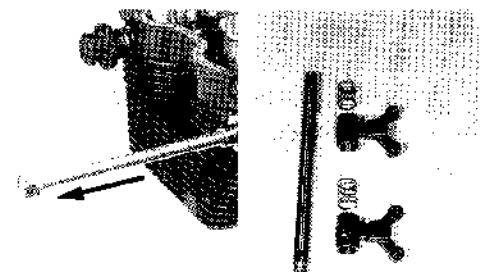
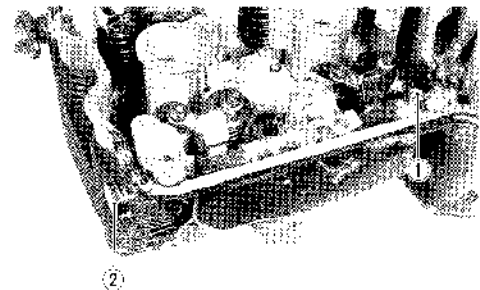
- Using special tools, compress the valve springs and take off the two cotter halves ③ from valve stem.

09916-14510 : Valve lifter

09916-14910 : Valve lifter attachment

09916-84510 : Tweezers

- Take out the spring retainer, inner and outer springs.



- Pull out the valves from the other side.

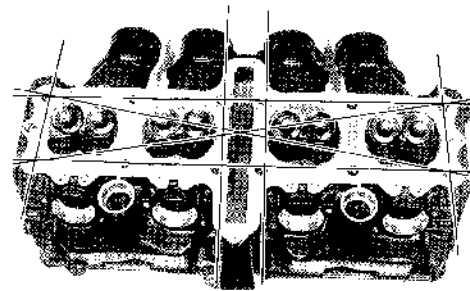


CYLINDER HEAD DISTORTION

Decarbonize the combustion chambers.
 Check the gasketed surface of the cylinder head for distortion with a straight edge and thickness gauge, taking a clearance reading at several places indicated. If the largest reading at any position of the straight edge exceeds the limit, replace the cylinder head.

09900-20803 : Thickness gauge

Cylinder head distortion	Service Limit
	0.20 mm (0.008 in)



VALVES

VALVE STEM RUNOUT

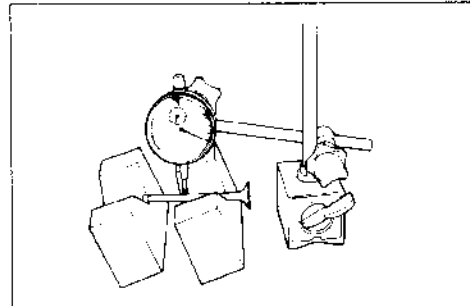
Support the valve with "V" blocks, as shown, and check its runout with a dial gauge.
 The valve must be replaced if the runout exceeds the limit.

09900-20606 : Dial gauge (1/100 mm, 10 mm)

09900-20701 : Magnetic stand

09900-21304 : V-block (100 mm)

Valve stem runout	Service Limit
IN & EX	0.05 mm (0.002 in)



VALVE HEAD RADIAL RUNOUT

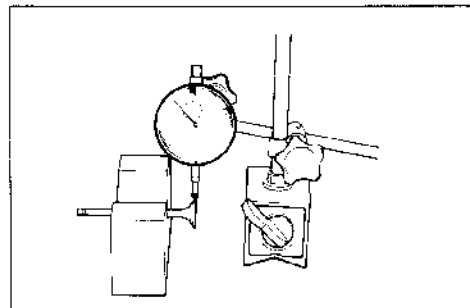
Place the dial gauge at right angles to the valve head face, and measure the valve head radial runout.
 If it measures more than the limit, replace the valve.

09900-20606 : Dial gauge (1/100 mm, 10 mm)

09900-20701 : Magnetic stand

09900-21304 : V-block (100 mm)

Valve head radial runout	Service Limit
	0.03 mm (0.001 in)



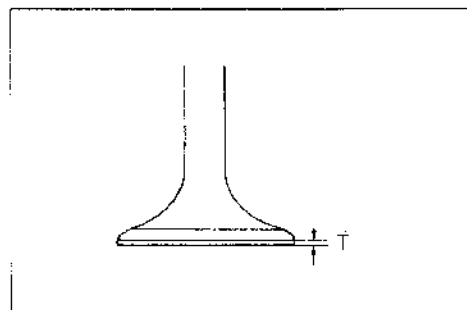
VALVE FACE WEAR

Visually inspect each valve for wear of its seating face. Replace any valve with an abnormally worn face.

The thickness ① decreases as the wear of the face advances. Measure the thickness and, if the thickness is found to have been reduced to the limit, replace it.

09900-20102 : Vernier calipers

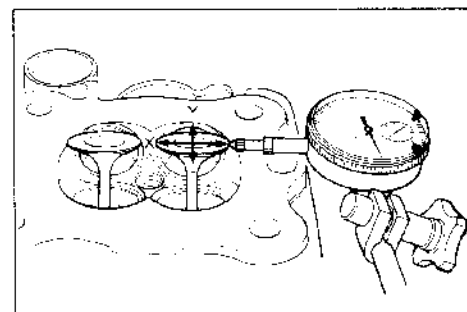
Valve head thickness	Service Limit
	0.5 mm (0.02 in)

**VALVE GUIDE-VALVE STEM CLEARANCE**

Measure the clearance in two directions, "X" and "Y", perpendicular to each other, by positioning the dial gauge as shown. If the clearance measured exceeds the limit, determine whether the valve or the guide should be replaced to reduce the clearance to the standard range:

09900-20606 : Dial gauge (1/100 mm, 10 mm)**09900-20701 : Magnetic stand****09900-21304 : V-block (100 mm)**

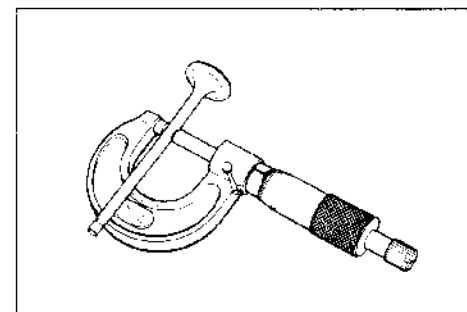
Valve guide to valve stem clearance	Service Limit
IN & EX	0.35 mm (0.014 in)

**VALVE STEM WEAR**

If the valve stem is worn down to the limit to measure with a micrometer, where the clearance is found to be in excess of the limit indicated, replace the valve. If the stem is within the limit, replace the guide. After replacing valve or guide, be sure to recheck the clearance.

09900-20205 : Micrometer (1/1000 mm, 0-25 mm)

Valve stem outer diameter	Standard
IN	4.965 – 4.980 mm (0.1955 – 0.1961 in)
EX	4.945 – 4.960 mm (0.1947 – 0.1953 in)

**VALVE GUIDE SERVICE**

- Using the valve guide remover ① , drive the valve guide out toward intake or exhaust camshaft side.

09914-44310 : Valve guide remover/installer**NOTE:**

- * Discard the removed valve guide subassemblies.
- * Only oversized valve guides are available as the replacement parts.



- Re-finish the valve guide holes in cylinder head with the reamer and handle.

09916-34580 : Valve guide reamer

09916-34541 : Reamer handle

- Fit a ring to each valve guide.

NOTE:

Be sure to use new rings and valve guides.

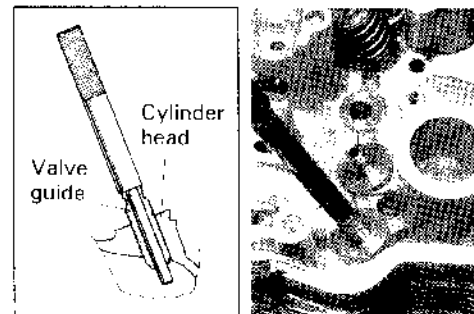
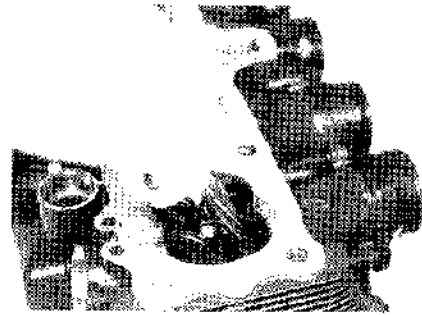
Valve guide oversize : 0.3 mm (11116-06B70)

- Oil the stem hole, too, of each valve guide and drive the guide into the guide hole with the valve guide installer.

09916-44310 : Valve guide remover/installer

CAUTION:

Failure to oil the valve guide hole before driving the new guide into place may result in a damaged guide or head.



- After fitting the valve guides, re-finish their guiding bores with the reamer.

09916-34570 : Valve guide reamer

09916-34541 : Reamer handle

NOTE:

Be sure to clean and oil the guides after reaming.



VALVE SEAT WIDTH

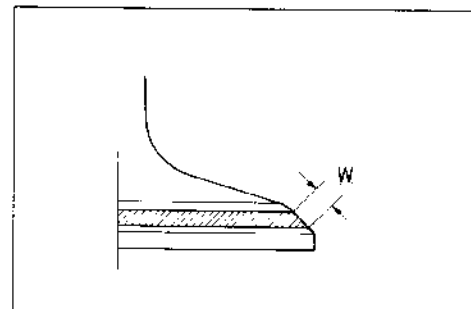
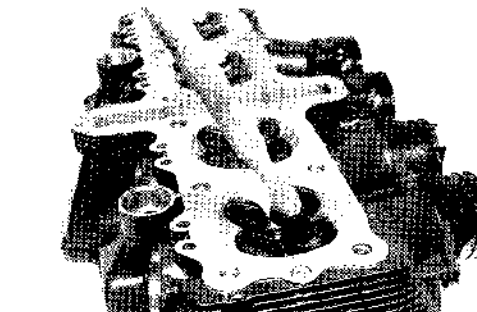
- Coat the valve seat with Prussian blue uniformly. Fit the valve and tap the coated seat with the valve face in a rotating manner, in order to obtain a clear impression of the seating contact. In this operation, use the valve lapper to hold the valve head.

09916-10910 : Valve lapper set

- The ring-like dye impression left on the valve face must be continuous-without any break. In addition, the width of the dye ring, which is the visualized seat "width $\text{\textcircled{W}}$ ", must be within the following specification:

Valve seat width	Standard
IN & EX	0.9 – 1.1 mm (0.035 – 0.043 in)

If either requirement is not met, correct the seat by servicing it as follows:



VALVE SEAT SERVICE

The valve seats for both intake and exhaust valves are machined to two different angles. The seat contact surface is cut 45° and the area above the contact surface (closest to the combustion chamber) is cut to 15° .

09916-20610 : Valve seat cutter head (N-121)

09916-20620 : Valve seat cutter head (N-122)

09916-21110 : Valve seat cutter set

09916-24310 : Solid pilot (N-100-5.0)

	Intake side	Exhaust side
45°	N-122	N-122
15°	N-121	N-121

NOTE:

The valve seat contact area must be inspected after each cut.

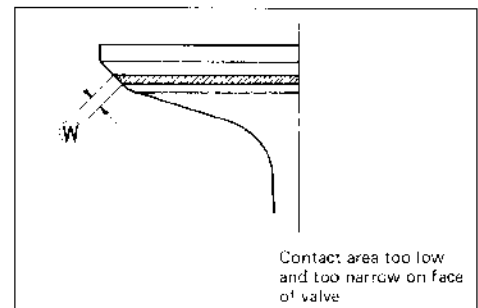
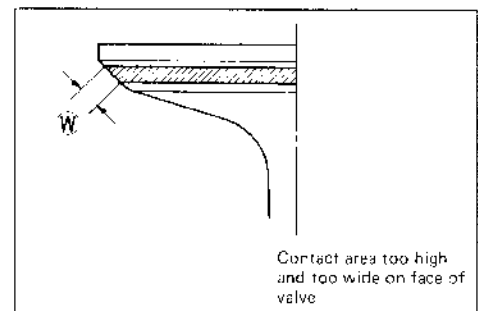
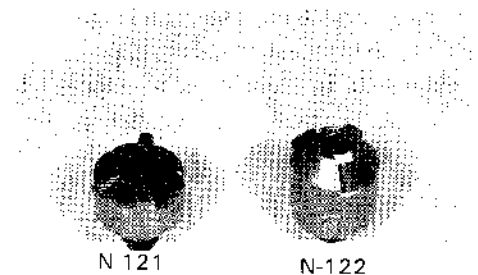
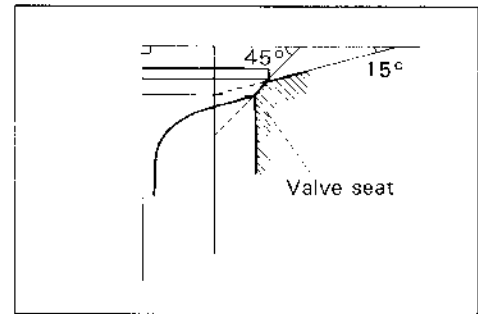
- Insert the solid pilot ① with a slight rotation. Seat the pilot snugly. Install the 45° cutter, attachment and T handle.
- Using the 45° cutter, descale and clean up the seat with one or two turns.
- Inspect the seat by the previously described seat width measurement procedure. If the seat is pitted or burned, additional seat conditioning with the 45° cutter is required.

NOTE:

Cut only the minimum amount necessary from the seat to prevent the possibility of the valve stem becoming too close to the rocker arm for correct valve contact angle.

If the contact area is too high and too wide on the face of valve, use the 15° cutter to lower and narrow the contact area.

If the contact area is too low and too narrow on the face of valve, use the 45° cutter to raise and widen the contact area.



- After the desired seat position and width is achieved, use the 45° cutter very lightly to clean up any burrs caused by the previous cutting operations.

CAUTION:

DO NOT use lapping compound after the final cut is made. The finished valve seat should have a velvety smooth finish and not a highly polished or shiny finish. This will provide a soft surface for the final seating of the valve which will occur during the first few seconds of engine operation.

- Clean and assemble the head and valve components.
- Fill the intake and exhaust ports with gasoline to check for leaks. If any leaks occur, inspect the valve seat and face for burrs or other things that could prevent the valve from sealing.

WARNING:

Always use extreme caution when handling gasoline.

NOTE:

After servicing the valve seats, be sure to adjust the valve clearance after the cylinder head has been reinstalled. (see page 2-6)

VALVE STEM END CONDITION

CAUTION:

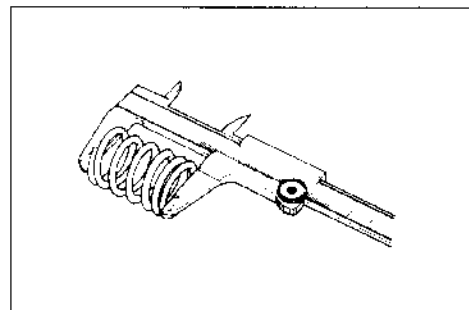
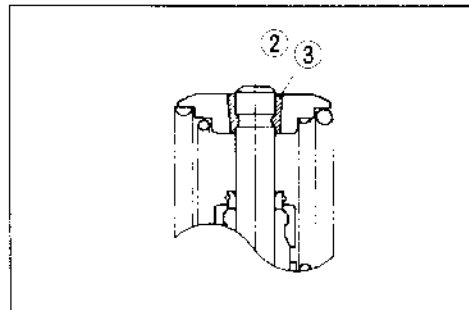
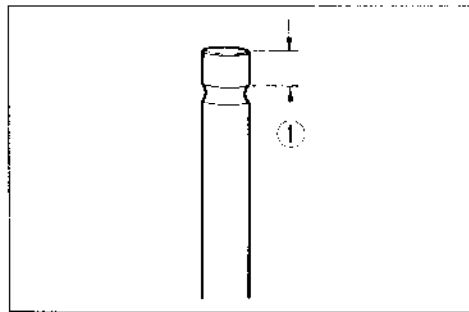
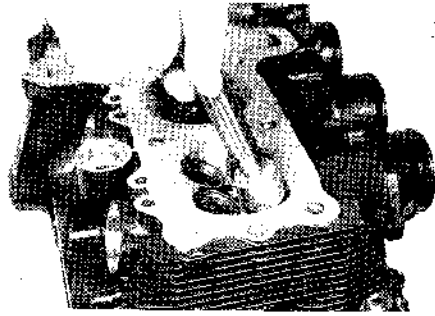
Refacing valve stem end face is permissible where the length ① will not be reduced to less than 2.5 mm. If this length becomes shorter than 2.5 mm, then the valve must be replaced.

CAUTION:

After installing the valve whose stem end has been ground off as above, check that the face ② of valve stem end is above the valve cotter ③.

VALVE SPRINGS

The force of the two coil springs keeps the valve seat tight. Weakened springs result in reduced engine power output, and often account for the chattering noise coming from the valve mechanism. Check the valve springs for proper strength by measuring their free lengths and also by the force required to compress them. If the spring length is less than the service limit, or if the force required to compress the spring dose not fall within the range specified, replace both the inner and outer springs as a set.



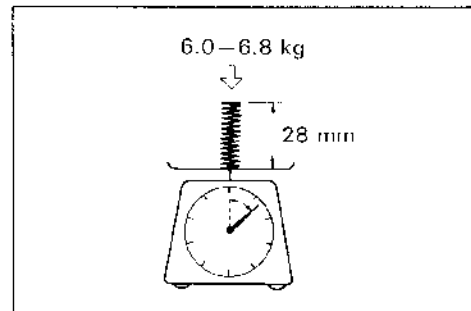
09900-20102 : Vernier calipers (200 mm)

CAUTION:

Replace both the valve springs, inner and outer, at a time, if any one of these is found to be beyond the limit.

Valve spring free length	Service Limit
INNER	33.9 mm (1.33 in)
OUTER	37.3 mm (1.47 in)

Valve spring tension	Standard
INNER	6.0 – 6.8 kg/28.0 mm (13.2 – 15.0 lbs/1.10 in)
OUTER	15.4 – 17.8 kg/31.5 mm (34.0 – 39.2 lbs/1.24 in)

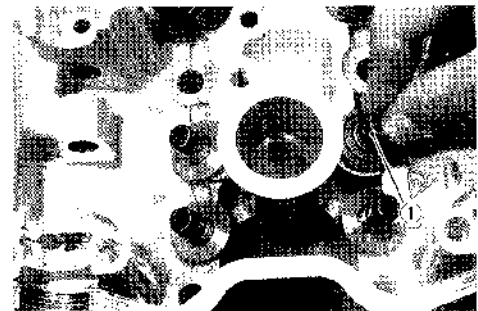


REASSEMBLY

- Oil each oil seal ①, and press-fit them into position with the finger tip.

CAUTION:

Do not reuse the oil seals.



- Install the valve spring lower seat ②.

CAUTION:

Be careful not to confuse the lower seat with the spring retainer ③.

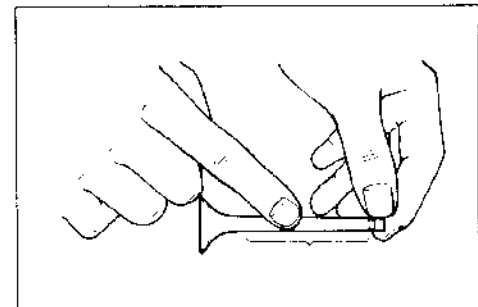


- Insert the valves, with their stems coated with high quality molybdenum disulfide lubricant (SUZUKI MOLY PASTE) all around and along the full stem length without any break.

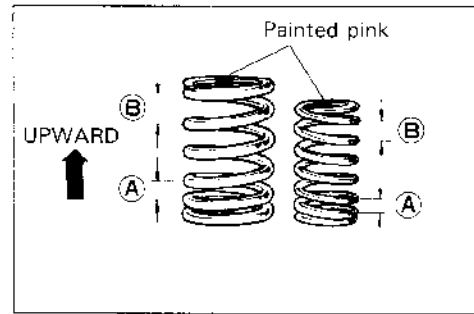
CAUTION:

When inserting each valve, take care not to damage the lip of the stem seal.

99000-25140 : SUZUKI MOLY PASTE



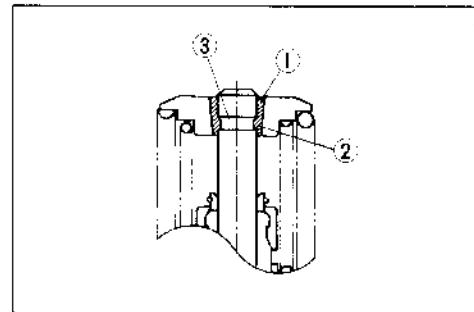
- Install the valve springs with the small-pitch portion (A) facing cylinder head.
 (B) Large-pitch portion



- Put on the valve spring retainer and, using the valve lifter, press down the springs, fit the cotter halves to the stem end, and release the lifter to allow the cotter (1) to wedge in between retainer and stem.

NOTE:

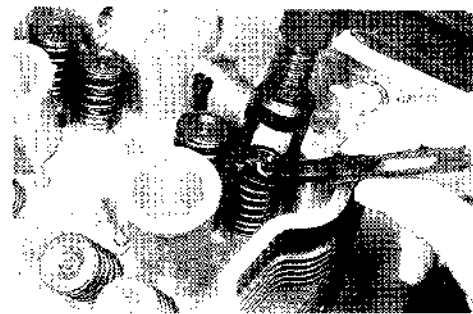
Be sure that the rounded lip (2) of the cotter fits snugly into the groove (3) in the stem end.



- 09916-14510 : Valve lifter
- 09916-14910 : Valve lifter attachment
- 09916-84510 : Tweezers

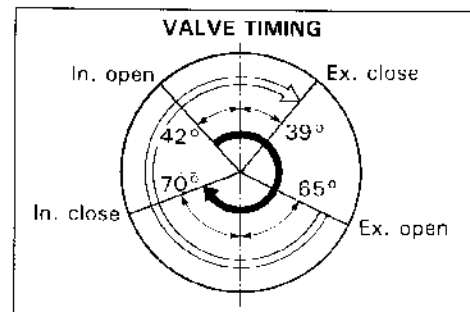
CAUTION:

Be sure to restore each spring and valve to their original positions.

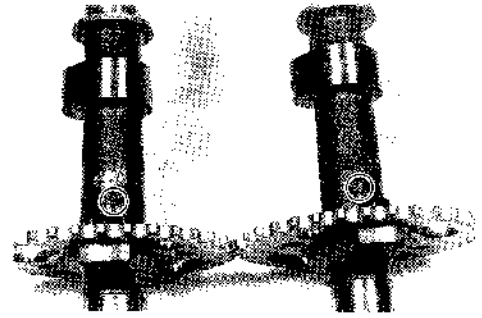


CAMSHAFTS

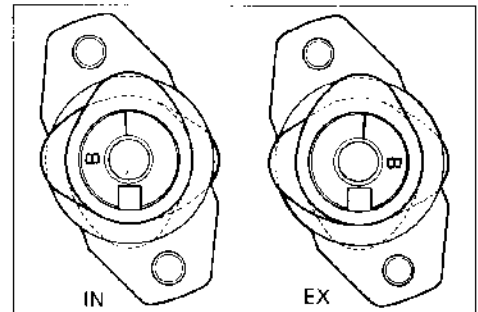
Both camshafts should be checked for runout and also for wear of cams and journals if the engine has been noted as giving abnormal noise or vibration or lack power output. Any of these conditions may be caused by camshafts worn down or distorted to the service limit.



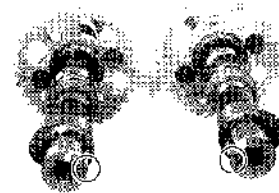
The exhaust camshaft can be distinguished from that of the intake by the embossed letters "EX" (for exhaust) as against letters "IN" (for intake).



The punch letter "B" on the right end of both camshaft of this model means to distinguish these camshafts from those of other models.



Similarly, the right end can be distinguished by the notch from the left end.

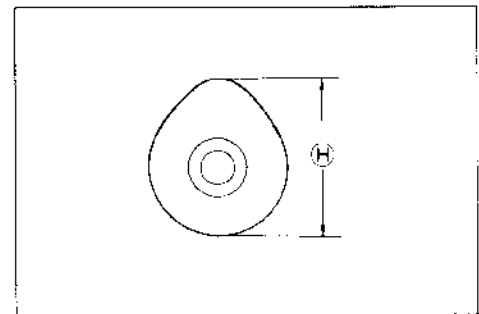


CAM WEAR

Worn-down cams are often the cause of mistimed valve operation resulting in reduced power output. The limit of cam wear is specified for both intake and exhaust cams in terms of cam height \textcircled{H} , which is to be measured with a micrometer. Replace camshafts if found worn down to the limit.

09900-20202 : Micrometer (25 – 50 mm)

Cam height \textcircled{H}	Service Limit
IN	33.580 mm (1.3220 in)
EX	33.240 mm (1.3087 in)



CAMSHAFT JOURNAL WEAR

Determine whether or not each journal is worn down to the limit by measuring the oil clearance with the camshaft installed in place.

- Use plastigauge ① to read the clearance at the widest portion, which is specified as follows:

09900-22301 : Plastigauge

Camshaft journal oil clearance	Service Limit
IN & EX	0.150 mm (0.0059 in)

NOTE:

Install each holder to their original positions.

- Tighten the camshaft holder bolts evenly and diagonally to the specified torque.

**Camshaft journal holder bolt : 8 – 12 N·m
(0.8 – 1.2 kg·m,
6.0 – 8.5 lb·ft)**

NOTE:

Do not rotate the camshaft with plastigauge is in place.

- Remove the camshaft holders, and read the width of compressed plastigauge with envelope scale. This measurement should be taken at the widest part.

If the camshaft journal oil clearance measured exceeds the limit, measure the following two portions:

- Inner diameter of camshaft journal holder

09900-20602 : Dial gauge (1/1000 mm, 1 mm)

09900-22403 : Small bore gauge (18-35 mm)

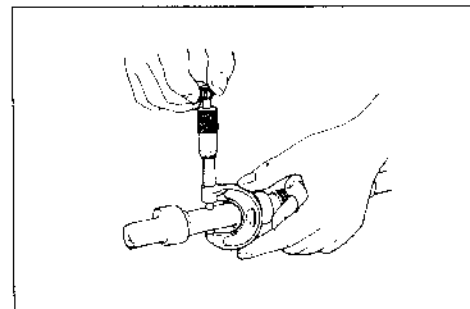
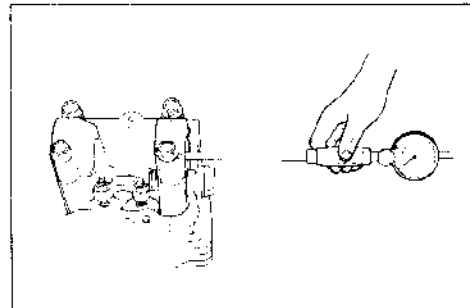
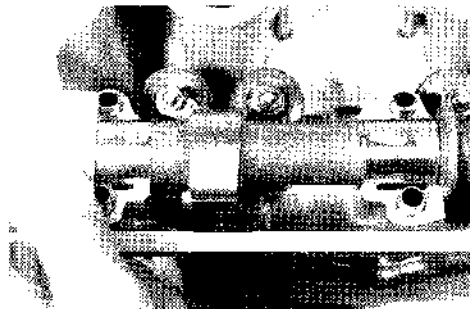
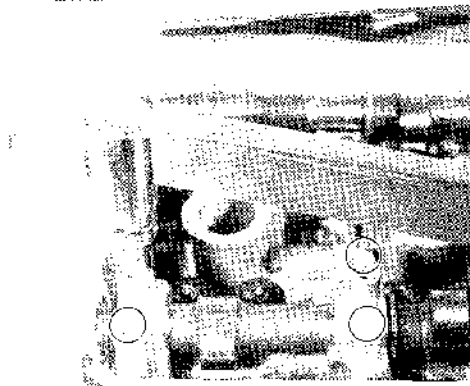
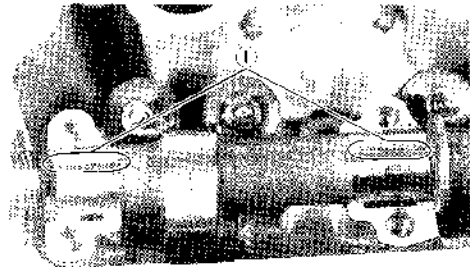
Camshaft journal holder I.D.	Standard
IN & EX	22.012 – 22.025 mm (0.8666 – 0.8671 in)

- Outer diameter of camshaft journal

09900-20205 : Micrometer (0-25 mm)

Camshaft journal O.D.	Standard
IN & EX	21.959 – 21.980 mm (0.8645 – 0.8654 in)

Replace the camshaft or cylinder head depending upon which one exceeds the specification.



CAMSHAFT RUNOUT

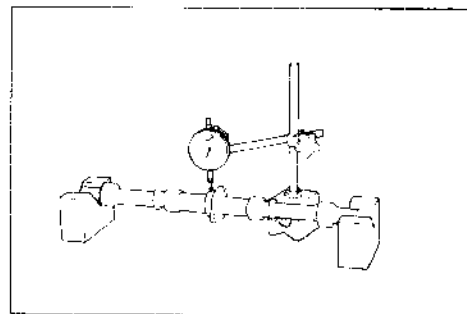
Measure the runout with a dial gauge. Replace the camshaft if the runout exceeds the limit.

09900-20606 : Dial gauge (1/100 mm, 10 mm)

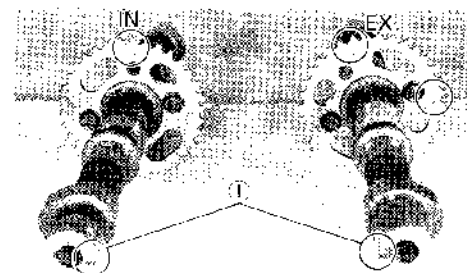
09900-20701 : Magnetic stand

09900-21304 : V-block (100 mm)

Camshaft runout	Service Limit
IN & EX	0.1 mm (0.004 in)

**CAM SPROCKET**

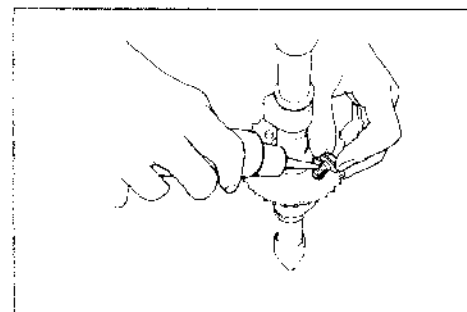
The fixed position of each cam sprocket on each camshaft is determined by arrow mark "3", on INTAKE sprocket, or arrow marks "1" and "2", on EXHAUST sprocket, located in reference to the notch ① in the right end of each camshaft.

**REASSEMBLY**

- Apply THREAD LOCK SUPER "1303" to the threads of cam sprocket bolts, and tighten them to the specified torque.

99000-32030 : THREAD LOCK SUPER "1303"

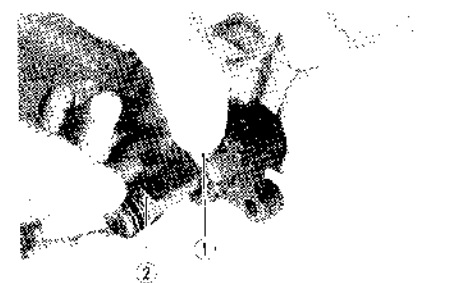
Cam sprocket bolt : 24 – 26 N·m
(2.4 – 2.6 kg·m, 17.5 – 19.0 lb-ft)

**CAM CHAIN TENSIONER**

The cam chain is maintained at the proper tension by an automatically adjusted tensioner.

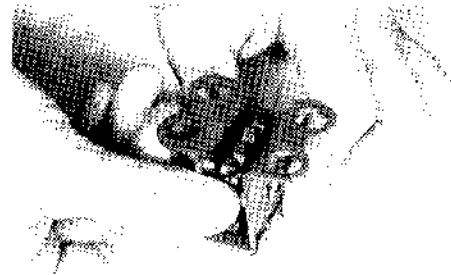
Unlocking the ratchet mechanism ① to push it with a finger tip, move the push rod ② if it slides smoothly.

If any stickiness is noted or ratchet mechanism is faulty, replace the cam chain tensioner assembly with a new one.



CAM CHAIN IDLER

Rotate the sprocket with a finger tip to inspect for an abnormal noise and a smooth rotation. If defect is found, replace the cam chain idler assembly with a new one.

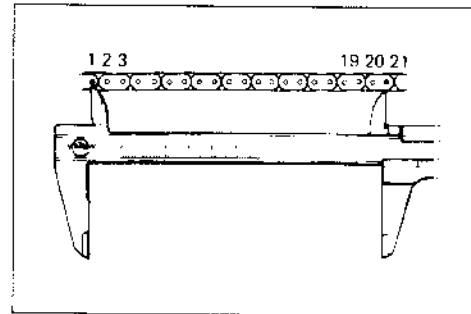


CAM CHAIN LENGTH

Pull the chain tight to remove any slack, then using vernier calipers, measure the 20-pitch length of cam chain. If it measures more than the limit, replace the cam chain.

09900-20102 : Vernier calipers (200 mm)

Cam chain 20-pitch length	Service Limit
	158.0 mm (6.22 in)



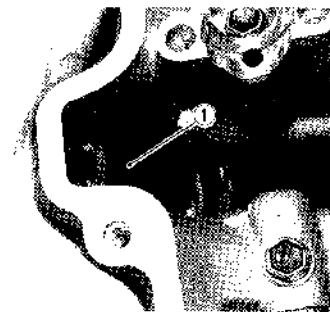
CAM CHAIN GUIDE

NOTE:

When replacing the cam chain guide ①, apply SUZUKI Thread lock "1303" to threads of bolt.

99000-32030 : THREAD LOCK SUPER "1303"

Cam chain guide : 4 – 7 N·m
 mounting bolt (0.4 – 0.7 kg-m, 3.0 – 5.0 lb-ft)

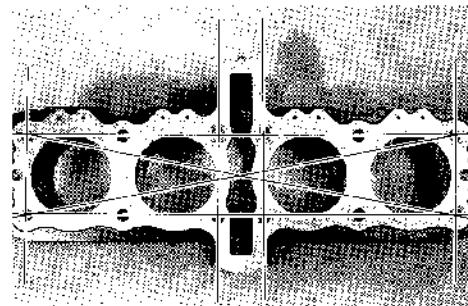


CYLINDER

CYLINDER DISTORTION

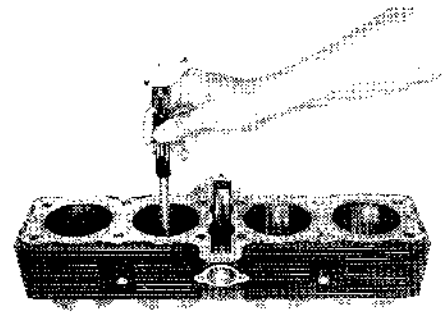
Check the gasketed surface of the cylinder for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder.

Cylinder distortion	Service Limit
	0.20 mm (0.008 in)



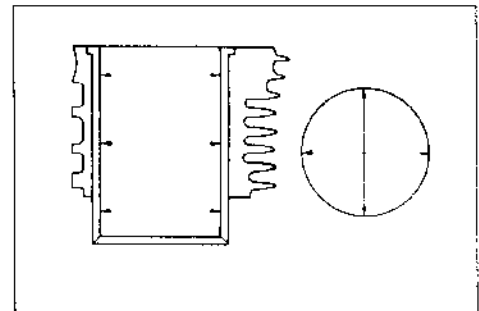
CYLINDER BORE

Measure the cylinder bore diameter at six places. If any one of the measurements exceeds the limit, overhaul the cylinder and replace the piston with an oversize, or replace the cylinder. Once the remaining cylinders must be also rebored accordingly. Otherwise, the imbalance might cause excess vibration.



09900-20508 : Cylinder gauge set (40 – 80 mm)

	Service Limit
Cylinder bore (STD size)	73.090 mm (2.8775 in)

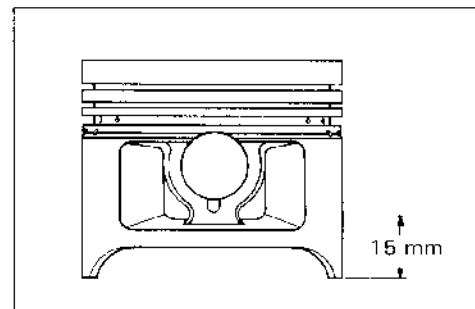
**PISTONS****PISTON DIAMETER**

Using a micrometer, measure the piston outside diameter at the place as shown in Fig. If the measurement is less than the limit, replace the piston with a new one.

Piston oversize : 0.5, 1.0 mm

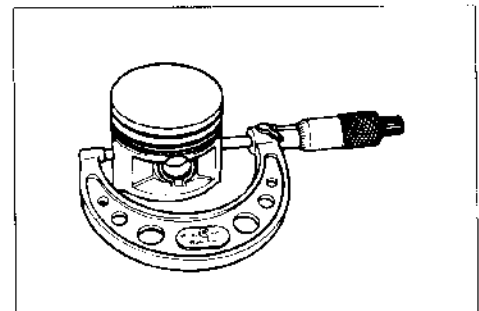
09900-20203 : Micrometer (50 – 75 mm)

	Service Limit
Piston diameter (STD size)	72.880 mm (2.8693 in)

**PISTON-CYLINDER CLEARANCE**

As a result of the above measurement, if the clearance between the piston and cylinder exceeds the following service limit, treat either to replace with an oversize piston overhauling the cylinder or replacing both cylinder and piston.

	Service Limit
Piston to cylinder clearance	0.120 mm (0.0047 in)



PISTON RING-GROOVE CLEARANCE

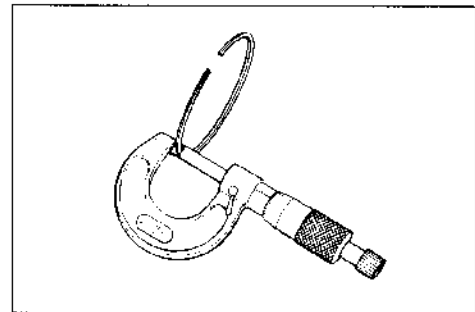
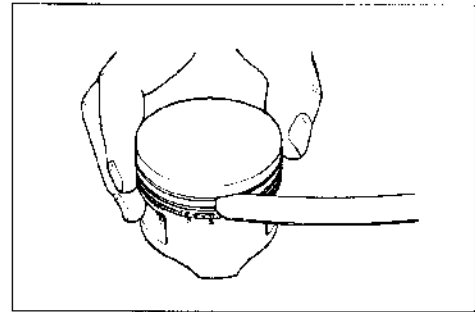
Using a thickness gauge, measure the side clearances of the 1st and 2nd rings. If any of the clearances exceeds the limit, replace both piston and piston rings.

09900-20803 : Thickness gauge

Piston ring to groove clearance	Service Limit
1st & 2nd	0.18 mm (0.007 in)

Piston ring groove width	Standard
1st & 2nd	0.81 – 0.83 mm (0.032 – 0.033 in)
Oil	1.51 – 1.53 mm (0.059 – 0.060 in)

Piston ring thickness	Standard
1st & 2nd	0.77 – 0.79 mm (0.030 – 0.031 in)



PISTON RINGS

PISTON RING END GAP

Before installing piston rings, measure the free end gap of each ring using a vernier calipers. Next, fit the ring in the cylinder, and measure each ring end gap using a thickness gauge.

If the free end gap is smaller than service limit, replace it with new one.

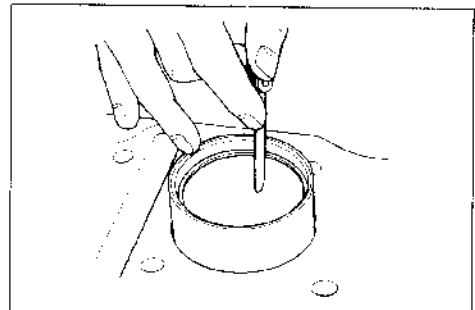
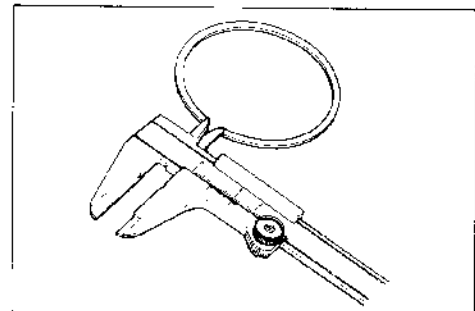
09900-20102 : Vernier calipers (200 mm)

Piston ring free end gap	Service Limit
1st R	7.7 mm (0.30 in)
2nd RN	5.5 mm (0.21 in)

If the end gap is larger than service limit, replace it with new one.

09900-20803 : Thickness gauge

Piston ring end gap	Service Limit
1st & 2nd	0.7 mm (0.03 in)



OVERSIZE PISTON RING

The following two types of oversize piston rings are available. They bear the following identification numbers.

	1st	2nd
0.5 mm	50	50
1.0 mm	100	100

OVERSIZE OIL RING

The following two types of oversize oil ring are available. They bear the following identification marks.

SIZE	COLOR
STD	Painted blue
0.5 mm O.S.	Painted red
1.0 mm O.S.	Painted yellow

OVERSIZE SIDE RAIL

Just measure out side diameter to identify the size.

PISTON PINS

PISTON PIN BORE

Using a small bore gauge, measure the piston pin bore inside diameter, and using a micrometer, measure the piston pin outside diameter. If the difference between these two measurement is more than the limits, replace both piston and piston pin.

09900-20602 : Dial gauge (1/1000 mm, 1 mm)

09900-22403 : Small bore gauge (18 – 35 mm)

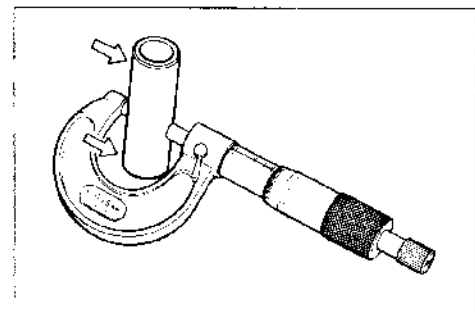
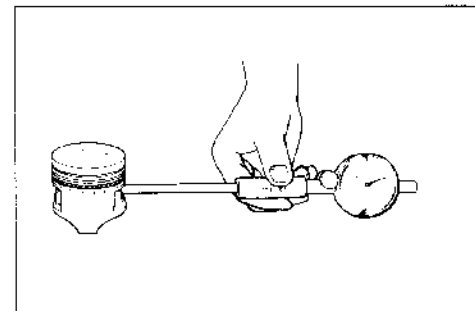
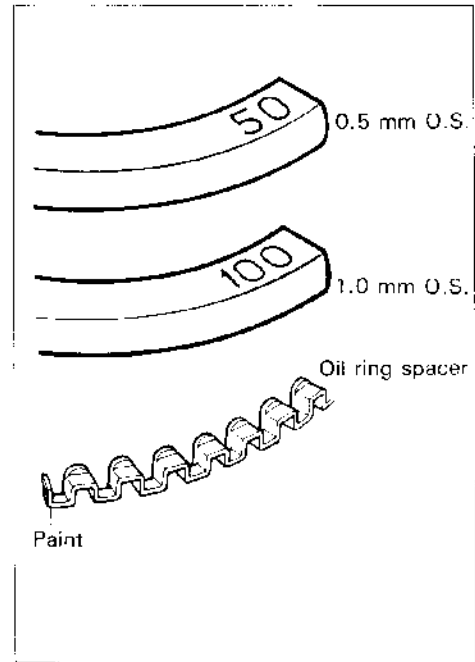
Piston pin bore	Service Limit
	19.030 mm (0.7492 in)

PISTON PIN DIAMETER

Using a micrometer, measure the piston pin outside diameter at three positions.

09900-20205 : Micrometer (0 – 25 mm)

Piston pin O.D.	Service Limit
	18.980 mm (0.7472 in)



CONRODS

CONROD SMALL END I.D.

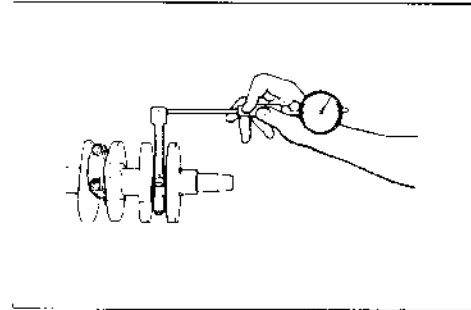
Using a small bore gauge, measure the conrod small end inside diameter.

09900-20602 : Dial gauge (1/1000 mm, 1 mm)

09900-22403 : Small bore gauge (18 – 35 mm)

Conrod small end I.D.	Service Limit
	19.040 mm (0.7496 in)

If the conrod small end inside diameter exceeds the above mentioned limit, replace the conrod.

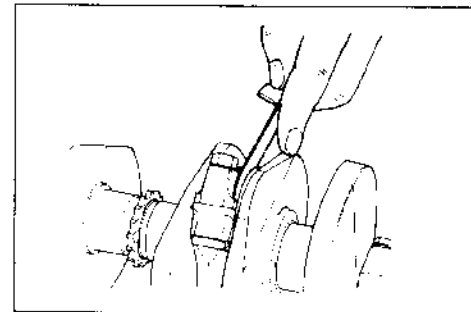


CONROD BIG END SIDE CLEARANCE

Check the conrod side clearance using a thickness gauge.

09900-20803 : Thickness gauge

Conrod big end side clearance	Service Limit
	0.3 mm (0.01 in)

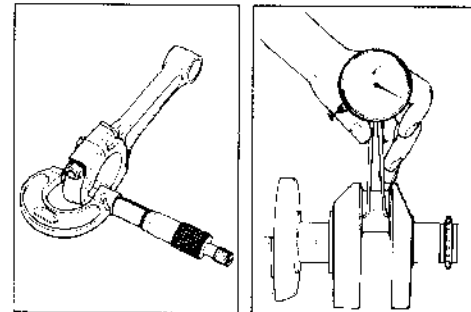


If the side clearance exceeds the limit, replace either conrod or crankshaft to measure both widths.

09900-20205 : Micrometer (0 – 25 mm)

09900-20605 : Dial calipers (10 – 34 mm)

	Standard
Conrod big end width	20.95 – 21.00 mm (0.825 - 0.827 in)
Crank pin width	21.10 – 21.15 mm (0.831 – 0.833 in)

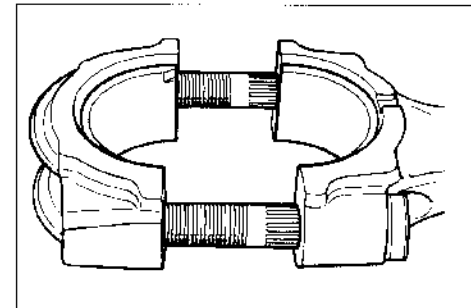


CONROD-CRANK PIN BEARING SELECTION

- Loosen the bearing cap nuts, and tap the bolt end lightly with plastic hammer to remove bearing cap.
- Remove the rods, and mark them to identify the cylinder position.
- Inspect the bearing surfaces for any sign of fusion, pitting, burn, or flaws. If any, replace them with a specified set of bearings.

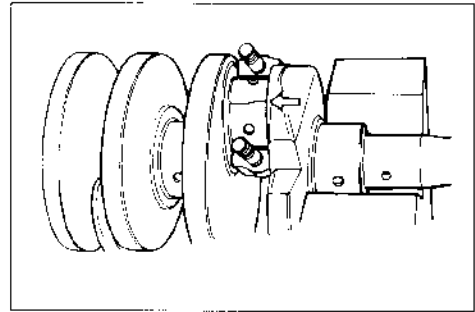
NOTE:

Never try to remove or loosen the conrod cap bolts due to their possible loosening in the rod. Once displaced, the bearing cap will not be fitted properly.



- Place plastigauge axially on the crank pin avoiding oil hole and at the TDC or BDC side as shown.

09900-22301 : Plastigauge



- Tighten the bearing cap with two-step torque values.

NOTE:

When fitting bearing cap to crank pin, be sure to discriminate one end from the other, namely front and rear.

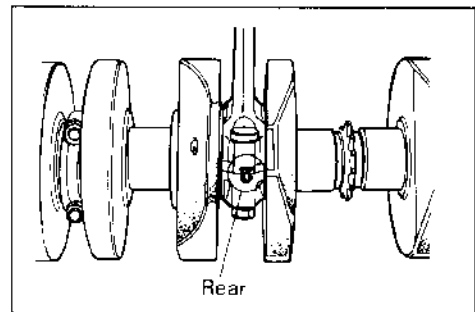
Conrod bearing cap nut

Initial : 22 – 28 N·m (2.2 – 2.8 kg-m, 16.0 – 20.0 lb-ft)

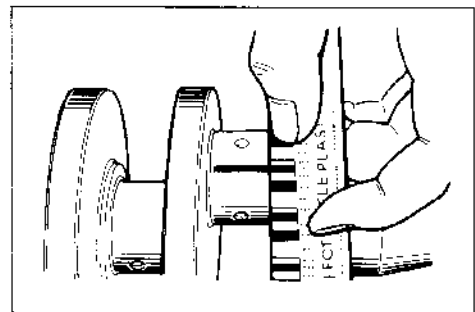
Final : 49 – 53 N·m (4.9 – 5.3 kg-m, 35.5 – 38.0 lb-ft)

NOTE:

Never rotate the crankshaft or conrod when a piece of the plastigauge is in the clearance.



- Remove the caps, and measure the width of compressed plastigauge with its envelope scale. This measurement should be taken at the widest part.

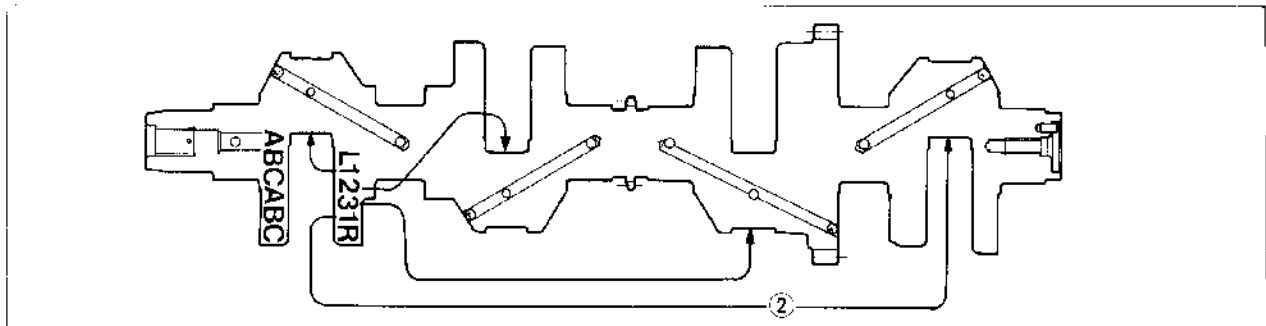
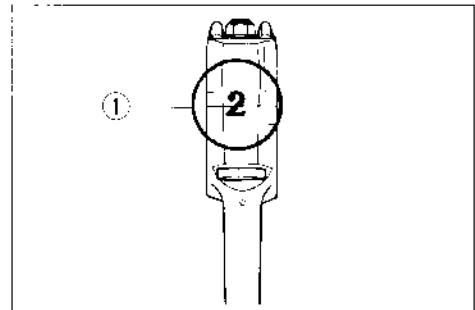


Conrod big end oil clearance	Standard	Service Limit
	0.032 – 0.056 mm (0.0013 – 0.0022 in)	0.080 mm (0.0031 in)

If oil clearance exceeds the service limit, select the specific bearing to refer below table.

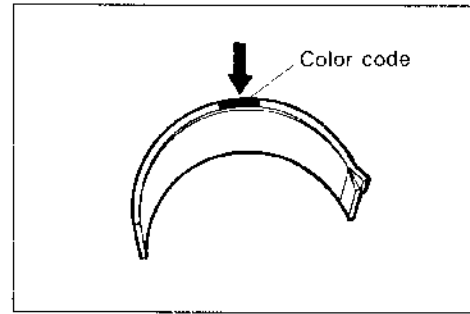
The bearing distinguished by color painted is selected easily by the following two steps.

- Check the corresponding conrod I.D. code number ①, "1" or "2".
- Check the corresponding crank pin O.D. code number ②, "1", "2" or "3".



Bearing selection table

		Crank pin O.D. ②		
		Code	1	2
Conrod I.D. ①	1	Green	Black	Brown
	2	Black	Brown	Yellow



CAUTION:

Bearing should be replaced as a set.

(REFERENCE DATA)

Conrod I.D. specification

Code	I.D. specification
1	39.000 – 39.008 mm (1.5354 – 1.5357 in)
2	39.008 – 39.016 mm (1.5357 – 1.5360 in)

Bearing thickness

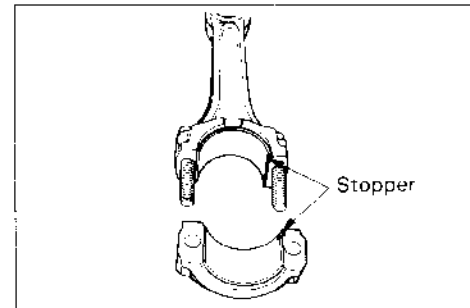
Color (Part No.)	Thickness
Green (12164-17C00-0A0)	1.480 – 1.484 mm (0.0583 – 0.0584 in)
Black (12164-17C00-0B0)	1.484 – 1.488 mm (0.0584 – 0.0586 in)
Brown (12164-17C00-0C0)	1.488 – 1.492 mm (0.0586 – 0.0587 in)
Yellow (12164-17C00-0D0)	1.492 – 1.496 mm (0.0587 – 0.0589 in)

Crank pin O.D. specification

Code	O.D. specification
1	35.992 – 36.000 mm (1.4170 – 1.4173 in)
2	35.984 – 35.992 mm (1.4167 – 1.4170 in)
3	35.976 – 35.984 mm (1.4164 – 1.4167 in)

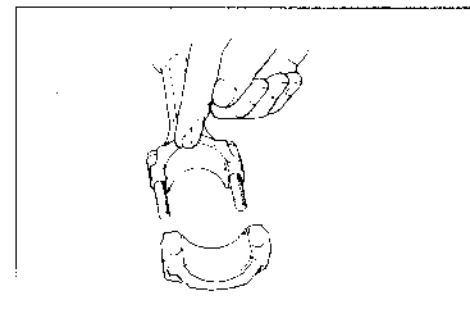
BEARING ASSEMBLY

- When fitting the bearings to the bearing cap and conrod, be sure to fix the stopper part first, and press the other end.



- Apply engine oil or SUZUKI MOLY PASTE to the crank pin and bearing surface.

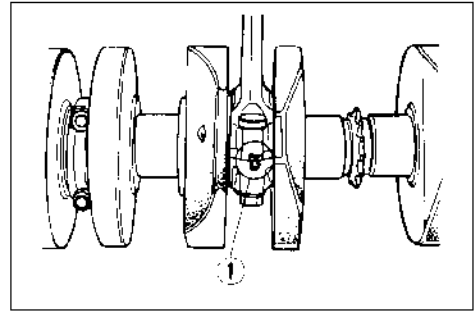
99000-25140 : SUZUKI MOLY PASTE



- When mounting the conrod on the crankshaft, make sure that numeral figure ① of the conrod faces rearward.
- Tighten the conrod fitting nuts with specified torque.

Conrod bearing cap nut : 49 — 53 N·m
 (4.9 — 5.3 kg·m,
 35.5 — 38.0 lb·ft)

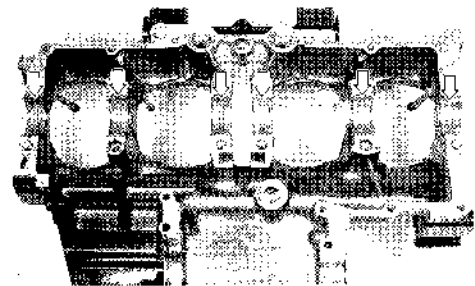
- Check the conrod movement for smooth turning.



CRANKSHAFT

CRANKCASE-CRANKSHAFT BEARING SELECTION

- Inspect each bearing of upper and lower crank cases for any damage.

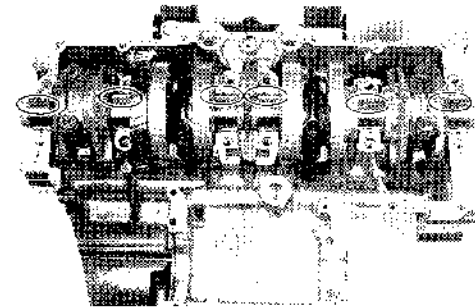


- Place the plastigauge on each crankshaft journal in the usual manner.

NOTE:

Do not place the plastigauge on the oil hole, and do not rotate the shaft when plastigauge is in place.

09900-22301 : Plastigauge

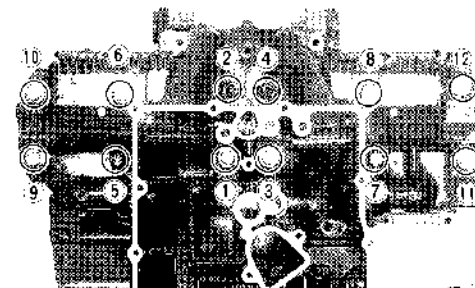


- Mate the lower crankcase with the upper crankcase, and tighten the crankshaft tightening bolts with specified torque value as the indicated order.

8 mm crankshaft tightening bolt

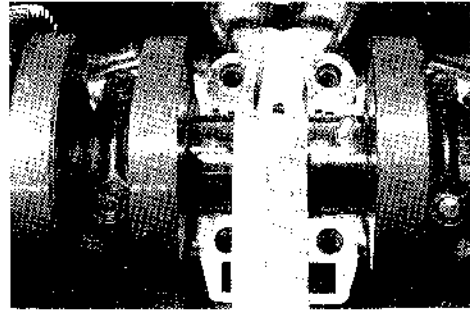
Initial : 13 N·m (1.3 kg·m, 7.5 lb·ft)

Final : 20 — 24 N·m (2.0 — 2.4 kg·m, 14.5 — 17.5 lb·ft)



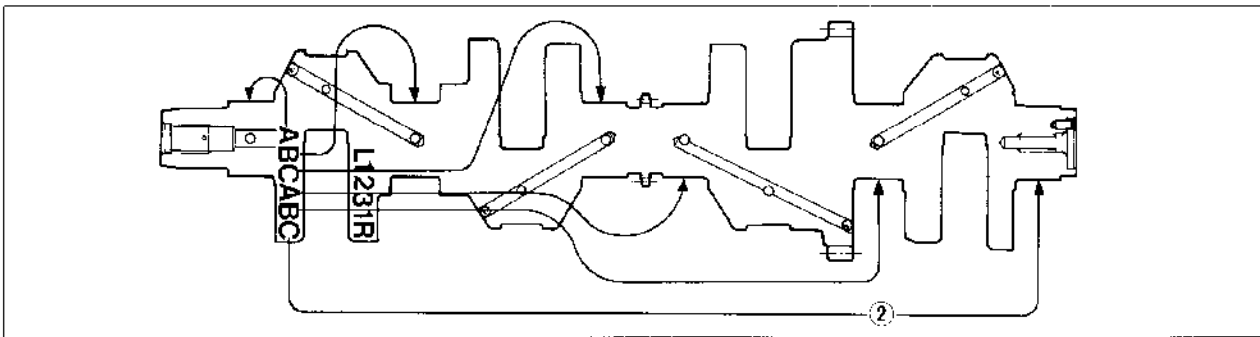
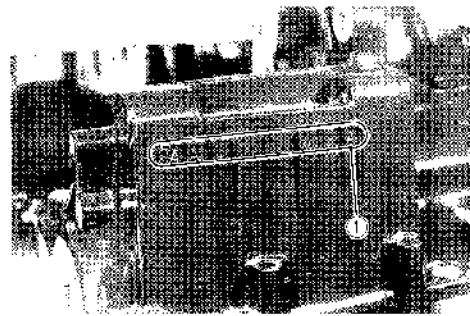
- Remove the lower crankcase, and measure the width of compressed plastigauge in the usual manner.

Crankshaft journal oil clearance	Standard	Service Limit
	0.020 — 0.044 mm (0.0008 — 0.0017 in)	0.080 mm (0.0031 in)



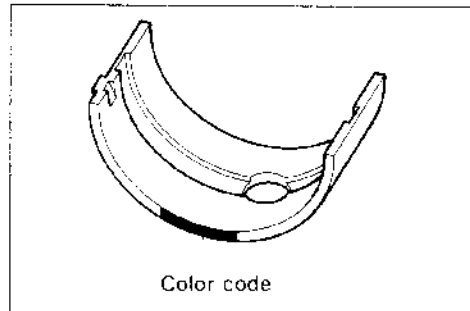
If the width at the widest part exceeds the limit, replace the set of bearings with new ones to refer the selection table.

- Check the corresponding crankcase journal I.D. code number ① "A" or "B" which are stamped on the rear surface of upper crankcase.
- Check the corresponding crankshaft journal O.D. code number ② "A", "B" or "C".



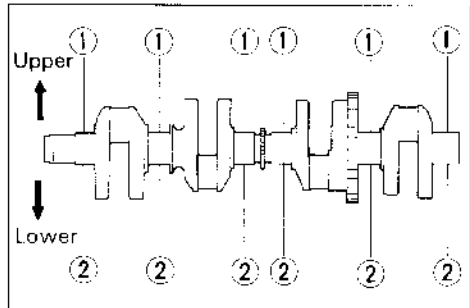
Bearing selection table

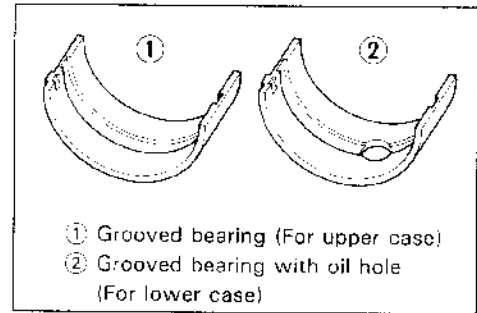
	Code	Crankshaft journal O.D. ②		
		A	B	C
Crankcase I.D. ①	A	Green	Black	Brown
	B	Black	Brown	Yellow



NOTE:

- Grooved bearings have the same specification as the Grooved bearing with oil hole.
- These parts numbers are shown as follows. 12229-06B10-XXX. (Grooved bearing)





(REFERENCE DATA)

Crankcase I.D. specification

Code	I.D. specification
A	39.000 – 39.008 mm (1.5354 – 1.5357 in)
B	39.008 – 39.016 mm (1.5357 – 1.5360 in)

Bearing thickness specification

(Grooved bearing with oil hole ... For lower case)

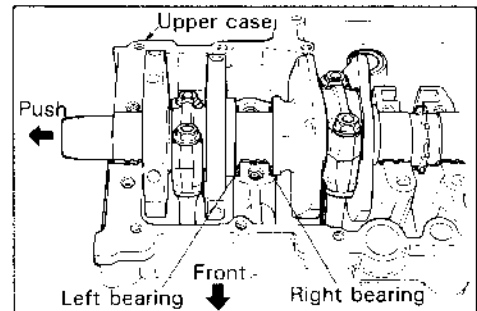
Color (Part No.)	Specification
Green (12229-06B00-0A0)	1.486 – 1.490 mm (0.0585 – 0.0587 in)
Black (12229-06B00-0B0)	1.490 – 1.494 mm (0.0587 – 0.0588 in)
Brown (12229-06B00-0C0)	1.494 – 1.498 mm (0.0588 – 0.0590 in)
Yellow (12229-06B00-0D0)	1.498 – 1.502 mm (0.0590 – 0.0591 in)

Crankshaft journal O.D. specification

Code	O.D. specification
A	35.992 – 36.000 mm (1.4170 – 1.4173 in)
B	35.984 – 35.992 mm (1.4167 – 1.4170 in)
C	35.976 – 35.984 mm (1.4164 – 1.4167 in)

CRANKSHAFT THRUST CLEARANCE

- Place the crankshaft in the upper crankcase and insert the left-side and right-side thrust bearings on regular position.
- Push the crankshaft to the starter clutch side, so that there is no clearance on the right-side thrust bearing.

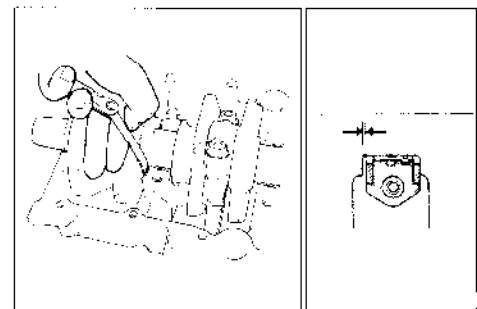


- Measure the thrust clearance on the left-side with a thickness gauge.

09900-20803 : Thickness gauge

Crankshaft thrust clearance	Standard
	0.05 – 0.13 mm (0.002 – 0.005 in)

If the thrust clearance exceeds the standard range, adjust the thrust clearance to replace the thrust bearing as the following manner:

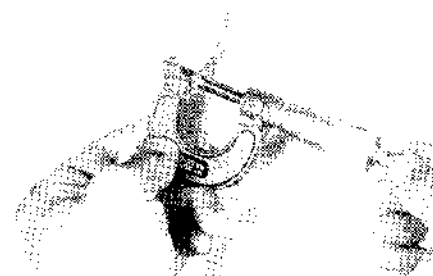


- Remove the right-side thrust bearing and measure its thickness with a micrometer.

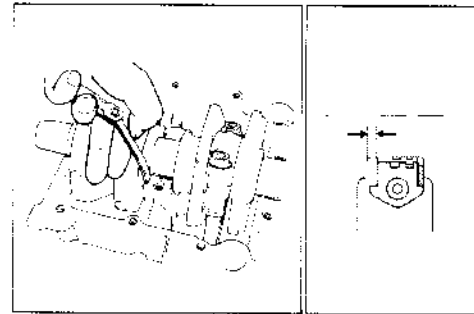
09900-20205 : Micrometer (1/1000 mm, 0 – 25 mm)

- If the thickness of the right-side thrust bearing is below standard, replace with a new bearing painted GREEN.
- Once again perform the thrust clearance measurement mentioned on above.

Right-side thrust bearing thickness	Standard
	2.42 – 2.44 mm (0.095 – 0.096 in)



- If the right-side thrust bearing is within the standard range, reinsert the right-side thrust bearing and remove the left-side thrust bearing.
- As shown in the illustration, measure the clearance with a thickness gauge before inserting the left-side thrust bearing.



09900-20803 : Thickness gauge

- Select the left-side thrust bearing to refer the following thrust bearing selection table.

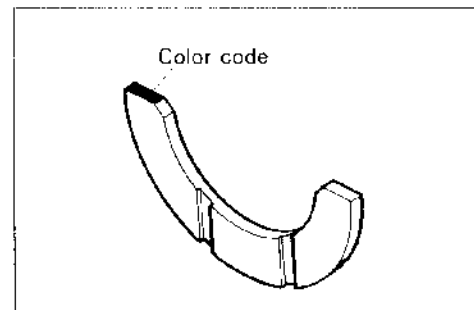
Thrust bearing selection table

Clearance before inserting thrust bearing	Color (Part No.)	Thrust bearing thickness	Thrust clearance
2.44 – 2.49 mm (0.096 – 0.098 in)	Black (12228-48B00-0H0)	2.36 – 2.38 mm (0.093 – 0.094 in)	0.05 – 0.13 mm (0.002 – 0.005 in)
2.49 – 2.54 mm (0.098 – 0.100 in)	Green (12228-48B00-0E0)	2.42 – 2.44 mm (0.095 – 0.096 in)	
2.54 – 2.59 mm (0.100 – 0.102 in)	Red (12228-48B00-0C0)	2.46 – 2.48 mm (0.097 – 0.098 in)	

- After selecting a left-side thrust bearing, insert it and again perform the thrust clearance measurement to make sure it falls within the standard range.

NOTE:

Right-side thrust bearing has the same specification as the Green of left-side thrust bearing.



CRANKSHAFT RUNOUT

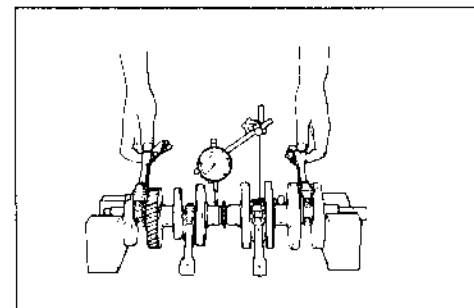
Support the crankshaft with "V" blocks as shown, with the two end journals resting on the blocks. Set up the dial gauge, as shown, and rotate the crankshaft slowly to read the runout. Replace the crankshaft if the runout exceeds the service limit.

09900-20606 : Dial gauge (1/100 mm, 10 mm)

09900-20701 : Magnetic stand

09900-21304 : V-block (100 mm)

Crankshaft runout	Service Limit
	0.05 mm (0.002 in)



CLUTCH

CLUTCH DRIVE AND DRIVEN PLATES

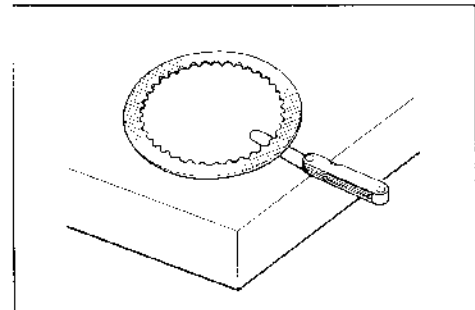
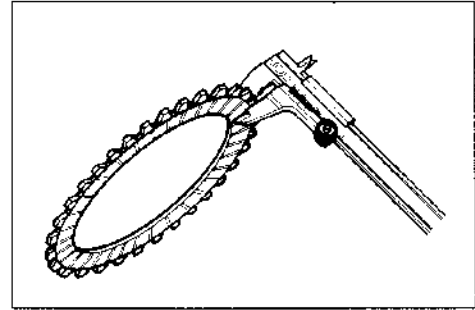
Clutch plates in service remain in oily condition as they are lubricated with oil. Because of this condition, both drive and driven plates are subject to little wearing action and therefore last much longer. Their life depends largely on the quality of oil used in the clutch and also on the way the clutch is operated.

These plates are expendable: they are meant to be replaced when found worn down or distorted to the respective limit: use a vernier calipers to check thickness and a thickness gauge and surface plate to check distortion.

09900-20102 : Vernier calipers (200 mm)

09900-20803 : Thickness gauge

	Standard	Service Limit
Drive plate No.1 thickness	2.12 – 2.28 mm (0.083 – 0.090 in)	1.82 mm (0.072 in)
Drive plate No.2 thickness ("E" letter)	2.12 – 2.28 mm (0.083 – 0.090 in)	1.82 mm (0.072 in)
Drive plate distortion	–	0.10 mm (0.004 in)

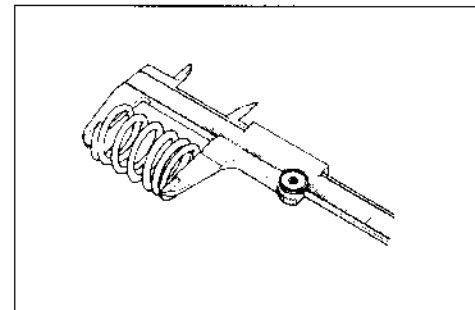


CLUTCH SPRING FREE LENGTH

Measure the free length of each coil spring with vernier calipers, and compare the elastic strength of each with the specified limit. Replace all the springs if any one of springs is not within the limit.

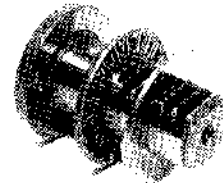
09900-20102 : Vernier calipers (200 mm)

Clutch spring free length	Service Limit
	38.1 mm (1.50 in)



CLUTCH RELEASE BEARING

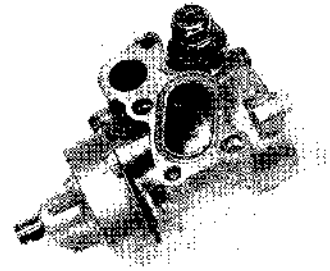
Inspect the clutch release bearing for any abnormality to decide whether it can be reused or should be replaced. Smooth engagement and disengagement of the clutch depends much on the condition of this bearing.



OIL PUMP

CAUTION:

Do not attempt to disassemble the oil pump assembly.
The oil pump is available only as an assembly.



TRANSMISSION GEARS

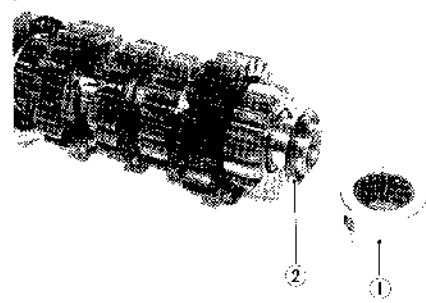
Tightening torque			
Item	N·m	kg·m	lb·ft
(A)	100 130	10.0 13.0	72.5-94.0
(B)	9-12	0.9-1.2	6.5-8.5

Apply thread lock "1342".

- ① Low driven gear
- ② 5th driven gear
- ③ 4th driven gear
- ④ 3rd driven gear
- ⑤ Top driven gear
- ⑥ 2nd driven gear
- ⑦ Driveshaft
- ⑧ Countershaft/Low drive gear
- ⑨ 5th drive gear
- ⑩ 3rd/4th drive gear
- ⑪ Top drive gear
- ⑫ 2nd drive gear

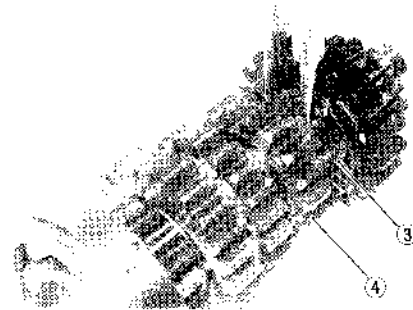
COUNTERSHAFT DISASSEMBLY

- Remove the left end bearing ① and oil seal ②.

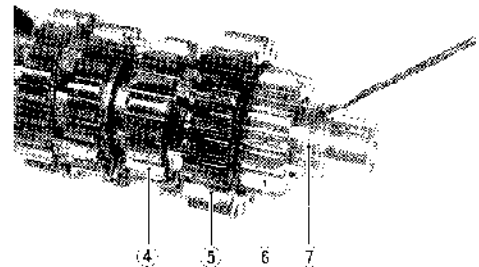


- Remove the Top drive gear circlip ③ from the groove and slide toward the 3rd/4th drive gear ④.

09900-06104 : Snap ring pliers

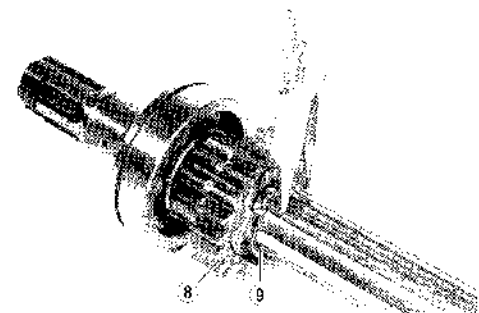


- Slide the Top ⑤ and 2nd ⑥ drive gears toward the 3rd/4th drive gears and remove the 2nd drive gear circlip ⑦. Then, remove the 2nd, Top and 3rd/4th drive gears ④.



- Remove the 5th drive gear ⑧ by removing the circlip ⑨.

09900-06107 : Snap ring pliers

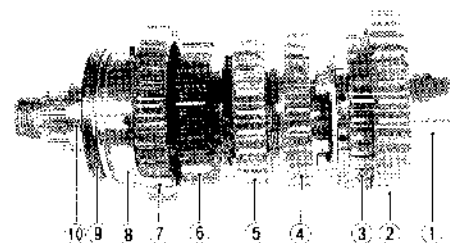
**DRIVESHAFT DISASSEMBLY**

- Each driven gear on the driveshaft is easily removed by using snap ring pliers.

09900-06107 : Snap ring pliers

The order of disassembling is as follows:

- | | |
|---------------------|--------------------|
| ① Right end bearing | ⑥ Top driven gear |
| ② Low driven gear | ⑦ 2nd driven gear |
| ③ 5th driven gear | ⑧ Left end bearing |
| ④ 4th driven gear | ⑨ Oil seal |
| ⑤ 3rd driven gear | ⑩ Spacer |



REASSEMBLY

Assemble the countershaft and driveshaft in the reverse order of disassembly. Pay attention to following points:

NOTE:

- * Before installing the gears, rotate the bearing by hand to inspect for abnormal noise and smooth rotation. If there is any abnormal, replace the bearing with new ones.
- * Before installing the gears, coat lightly moly paste or engine oil on the driveshaft and countershaft.

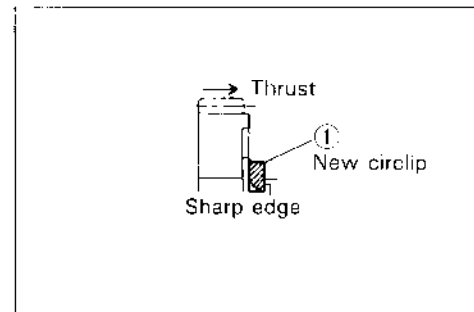
99000-25140 : SUZUKI MOLY PASTE**CAUTION:**

- * 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.

NOTE:

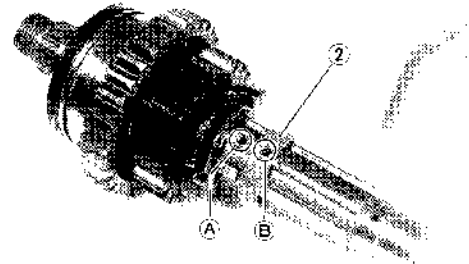
In reassembling the transmission gears, attention must be given to the locations and positions of washers and circlips. The cross sectional view given here will serve as a reference for correctly mounting the gears, washers and circlips. (Refer to page 3-53.)

- When installing a new circlip ①, pay attention to the direction of the circlip. Fit it to the side where the thrust is as shown in the illustration.

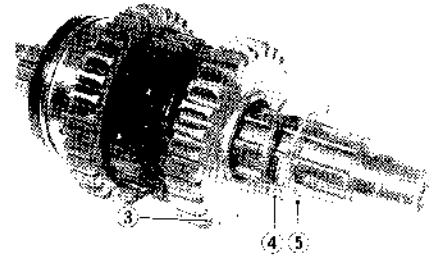


The followings explain major consideration points for assembling the driveshaft gears.

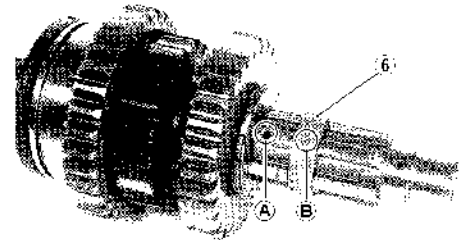
- Install the 3rd driven gear bushing ② to align the oil hole ① on the driveshaft with oil hole ② on it.



- After installing the 3rd driven gear ③, install the lock washers ④ and ⑤ in order as shown in figure.
- Fix to align the three grooves of lock washer ④ and three tabs of lock washer ⑤, turning the lock washer ④.

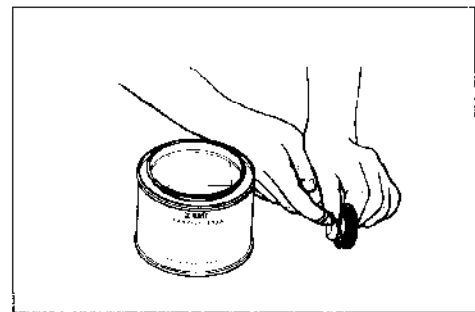


- Install the 4th driven gear bushing ⑥ to align the oil hole ① on the driveshaft with oil hole ② on it.

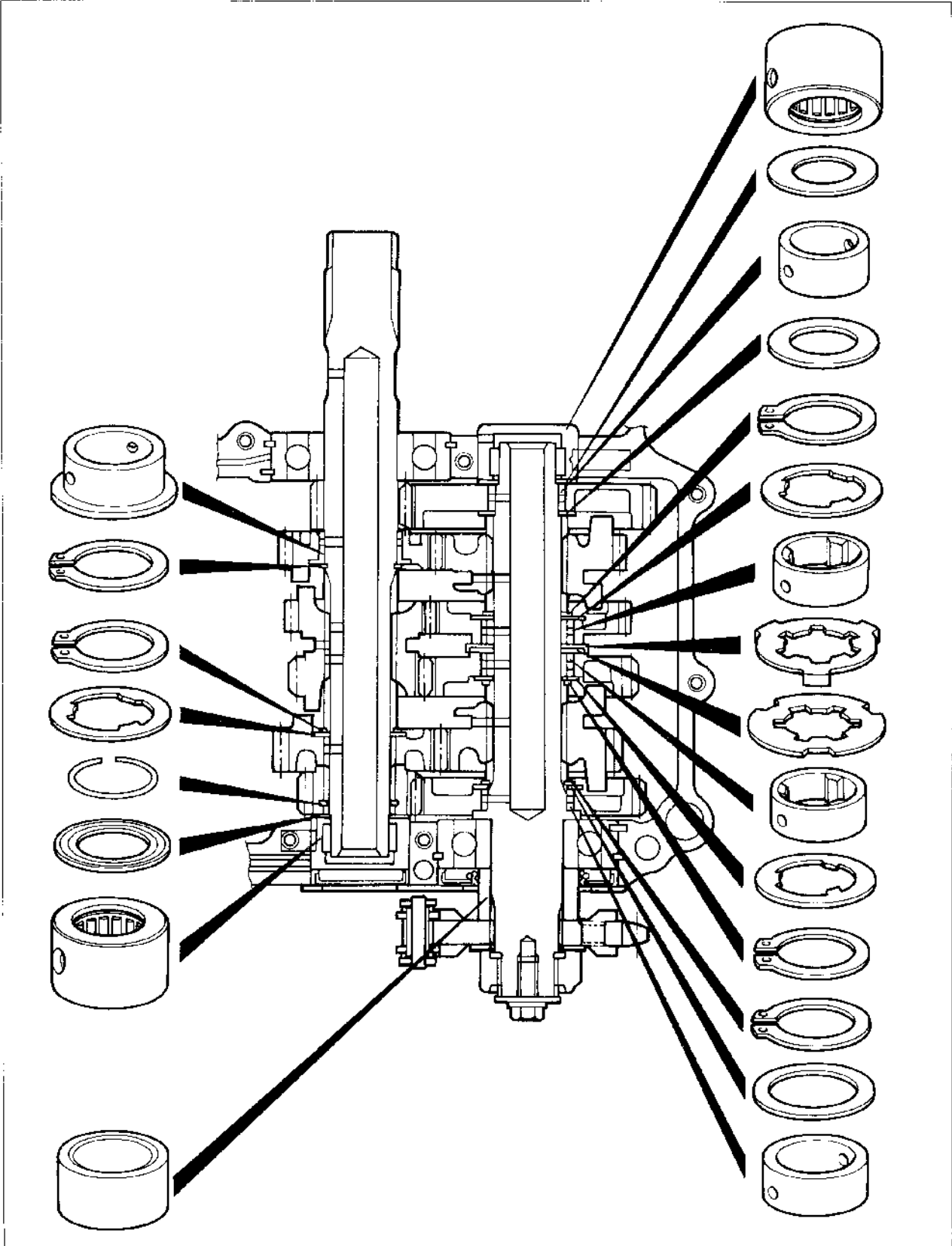


- Apply grease to the oil seal lip and install it onto the driveshaft.

99000-25010 : SUZUKI SUPER GREASE "A"



LOCATION OF SMALL PARTS

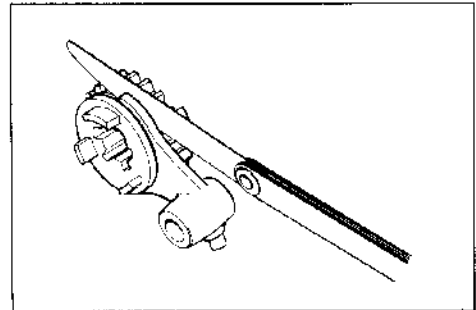


GEARSHIFT FORK-GROOVE CLEARANCE

Using a thickness gauge, check the gearshift fork clearance in the groove of its gear.

The clearance for each of the three gearshift forks plays an important role in the smoothness and positiveness of shifting action.

Gearshift fork to groove clearance	Standard	Service Limit
	0.10 – 0.30 mm (0.004 – 0.012 in)	0.50 mm (0.020 in)



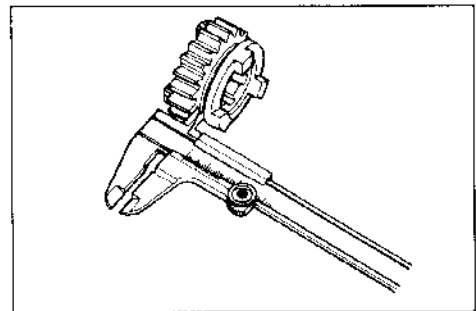
If the clearance checked is noted to exceed the standard range mentioned on above, check the following points:

09900-20803 : Thickness gauge

09900-20102 : Vernier calipers (200 mm)

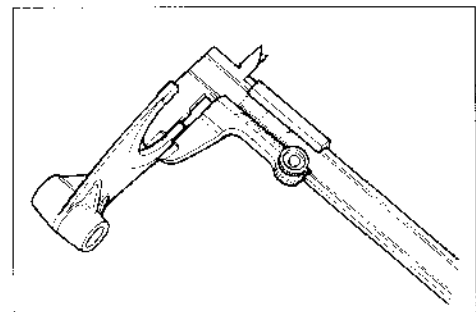
- Check to measure the shift fork groove width with a vernier calipers. If it exceeds the standard, replace its gear with a new one.

Gearshift fork groove width	Standard	
	No.1 & 3	4.80 – 4.90 mm (0.189 – 0.193 in)
	No.2	5.00 – 5.10 mm (0.197 – 0.201 in)



- Check to measure the shift fork thickness with a vernier calipers. If it exceeds the standard, replace the fork with a new one.

Gearshift fork thickness	Standard	
	No.1 & 3	4.60 – 4.70 mm (0.181 – 0.185 in)
	No.2	4.80 – 4.90 mm (0.189 – 0.193 in)



ENGINE REASSEMBLY

The engine is reassembled by carrying out the steps of disassembly in the reversed order, but there are a number of steps which demand special descriptions or precautionary measures.

NOTE:

Apply engine oil to each running and sliding part before reassembling.

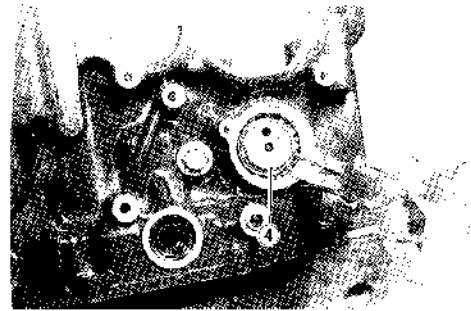
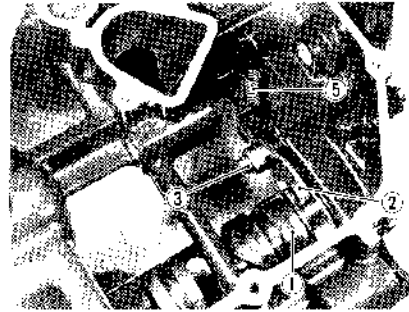
- Install the gearshift cam related parts.

- ① Gearshift cam
- ② Gearshift cam stopper
- ③ Circlip
- ④ Circlip
- ⑤ Spring

CAUTION:

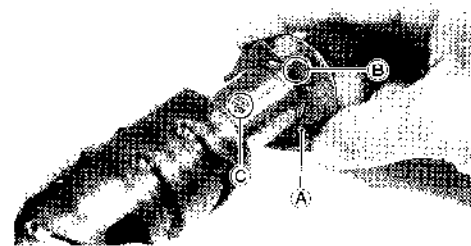
Always use new circlips, ③ and ④.

- Position the gearshift cam in Neutral position as shown in the figure, so that the gearshift forks and transmission gears can be installed easily.



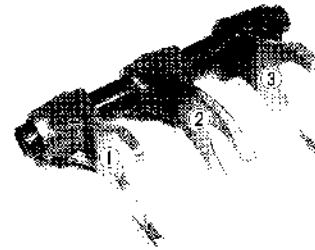
NOTE:

When installing the cam stopper plate (A), align the pin groove (B) with the pin (C) as shown in the figure.



- Install the gearshift forks to the crankcase in the correct position and direction.

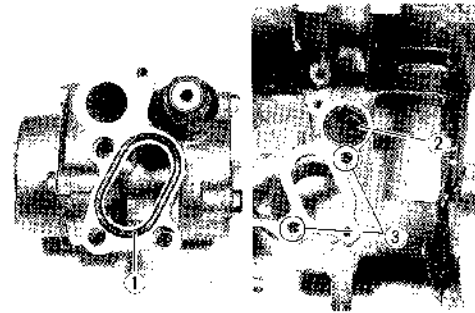
- ① For Top driven gear
- ② For 3rd/4th drive gear
- ③ For 5th driven gear



- Fit the O-rings, ① and ②, and dowel pins ③ to the correct position, as shown in the figures.

CAUTION:

Replace the O-rings with new ones to prevent oil leakage.



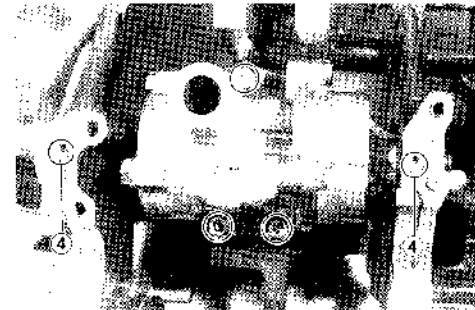
- Install the oil pump to the lower crankcase with three bolts and tighten them to the specified torque.

NOTE:

Apply a small quantity of **THREAD LOCK "1342"** to the bolts.

99000-32050 : THREAD LOCK "1342"

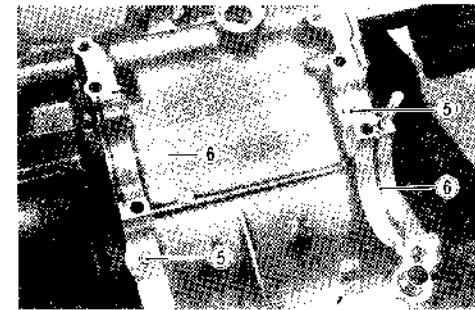
Oil pump : 8 – 12 N·m
mounting bolt (0.8 – 1.2 kg-m, 6.0 – 8.5 lb-ft)



NOTE:

Check for clogging the oil jets ④ fitted on the lower crankcase.

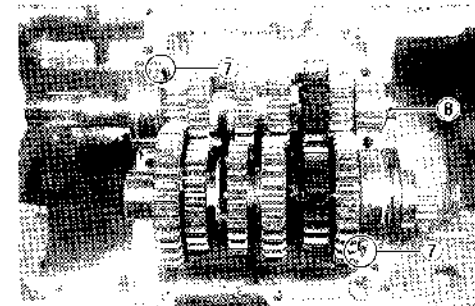
- Fit the bearing pins ⑤ and C-rings ⑥ on the upper crankcase.



- Install both of the countershaft assembly and driveshaft assembly on the upper crankcase.

NOTE:

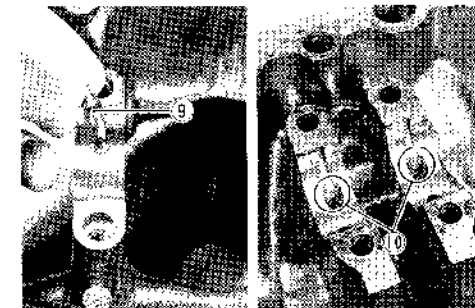
- * Be sure to install the bearing dowel pins ⑦ in their respective positions.
- * Install the countershaft end cap to the position ⑧.
- * Make sure that the countershaft turns freely while holding the driveshaft. If not, shift the gear which is engaged to the neutral position.



NOTE:

Before fitting the crankshaft journal bearings, check for clogging the nozzles ⑨ and oil plungers ⑩ fitted on the upper and lower crankcases.

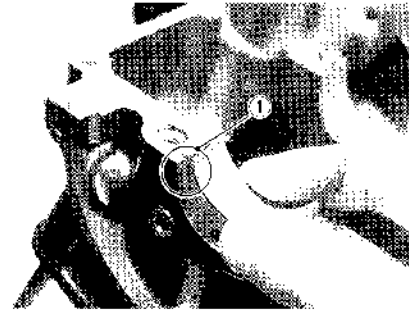
- ⑨ Nozzle (4 pcs) For upper case
- ⑩ Oil plunger (4 pcs) For lower case



- When fitting the crankshaft journal bearings to the upper and lower crankcases, be sure to fix the stopper part ① first and press the other end.
(Refer to page 3-45)

CAUTION:

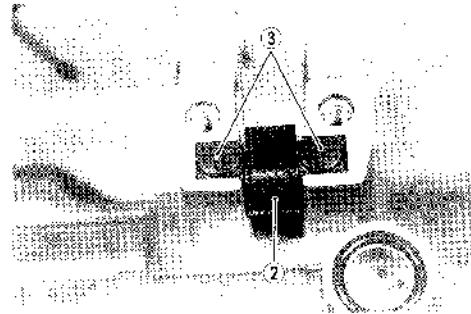
Do not touch the bearing surface with your hands. Grasp by the edge of the bearing shell.



- Install the cam chain guide ② and two dampers ③ properly.

NOTE:

Be sure to face the arrow mark on the damper to the front and rear, not to the right and left.

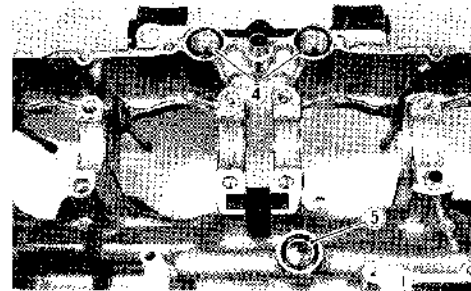


- Fit the O-rings, ④ and ⑤.

CAUTION:

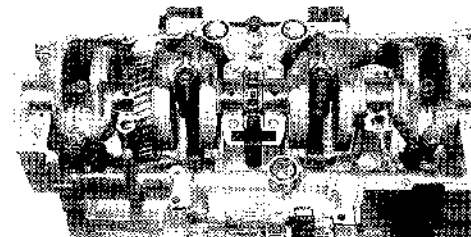
Replace the O-rings with new ones to prevent oil leakage.

- Before installing the crankshaft, apply SUZUKI Moly Paste to each journal bearing.



99000-25140 : SUZUKI MOLY PASTE

- Install the crankshaft with the cam chain to the upper crankcase.
- Insert the right and left-thrust bearings with oil grooved facing the crank web.
- Clean the mating surfaces of the crankcases before matching the upper and lower ones.
- Install the dowel pins to the upper crankcase.
- Apply SUZUKI Bond No.1207B to the mating surface of the lower crankcase in the following procedure.



99000-31140 : SUZUKI BOND NO. 1207B

NOTE:

Use of SUZUKI Bond No.1207B is as follows:

- * Make surfaces free from moisture, oil, dust and other foreign materials.
- * Spread on surfaces thinly to form an even layer, and assemble the cases within few minutes.
- * Take extreme care not to apply any bond No. 1207B to the bearing surfaces.
- * Apply to distored surface as it forms a comparatively thick film.



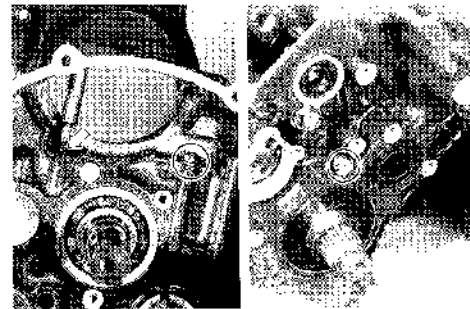
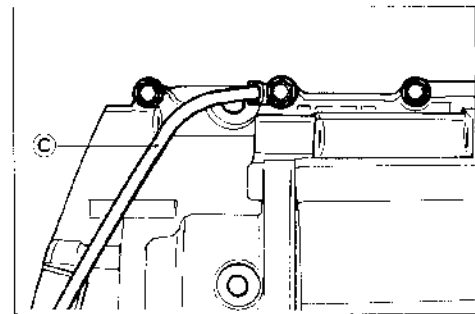
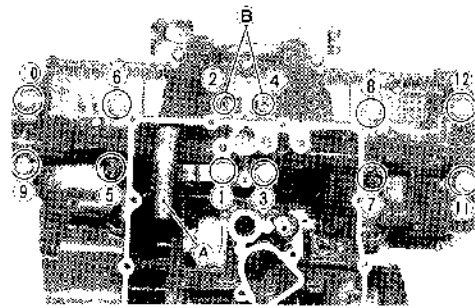
- Fit up the right oil pipe (A) with No. (1) bolt.
- Fit up the copper washers to the No. (9) and No. (11) bolts.
- Locate two allen bolts at position (B) and ten 8-mm bolts.
- Tighten the crankshaft tightening 8-mm bolts in the ascending order of numbers assigned to these bolts, tightening each bolt a little at a time to equalize the pressure. Tighten the lower and upper crankcase securing bolts and nuts to the specified torque values.

Crankcase bolt	Initial tightening			Final tightening		
	kg-m	N·m	lb-ft	kg-m	N·m	lb-ft
6 mm bolt	0.6	6	4.5	1.3	13	9.5
8 mm bolt	1.3	13	9.5	2.4	24	17.5

NOTE:

- * Install the main oil gallery plug. (Refer to page 3-23)
- * Fit up the engine ground wire (C) to the correct position as shown in the figure.

09914-25811 : 6-mm T-type hexagon wrench



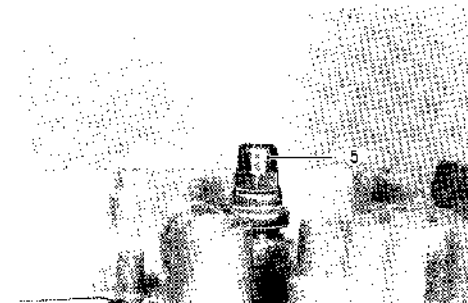
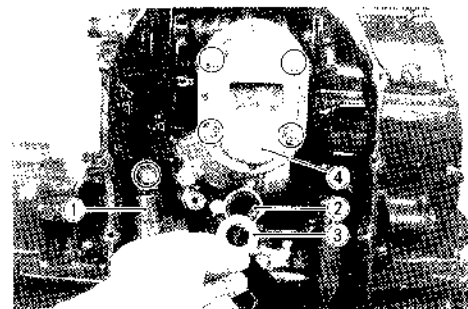
- Install the left oil pipe (1) with bolt.
- Fit a new O-ring (2) and shim (3).
- Fit a new gasket and install the oil sump filter protector with two bolts.
- Install the oil sump filter (4).

CAUTION:

Replace the gasket and O-ring with new ones to prevent oil leakage.

- Seat the washer and install the oil pressure regulator (5) to the oil pan. Tighten the regulator to the specified torque.

**Oil pressure regulator: 25 – 30 N·m
(2.5 – 3.0 kg-m, 18.0 – 21.5 lb-ft)**



- Fit a new gasket and install the oil pan with bolts. Tighten the oil pan bolts to the specified torque.

Oil pan bolt : 12 – 16 N·m
(1.2 – 1.6 kg-m, 8.5 – 11.5 lb-ft)

NOTE:

Fit a new gasket (A) to the correct position as shown.

CAUTION:

Use a new gasket to prevent oil leakage.

- Tighten the engine oil drain plug to the specified torque.

Oil drain plug : 20 – 25 N·m
(2.0 – 2.5 kg-m, 14.5 – 18.0 lb-ft)

- Install the countershaft bearing retainer with two screws.

NOTE:

Apply a small quantity of **THREAD LOCK "1342"** to the two screws.

99000-32050 : THREAD LOCK "1342"

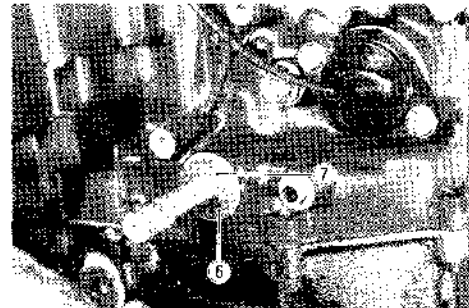
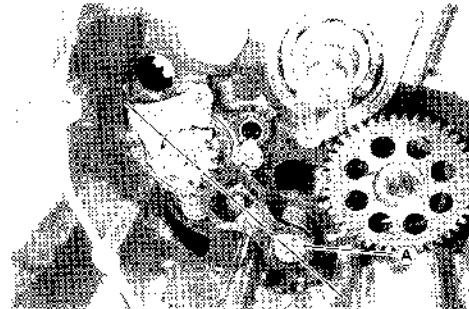
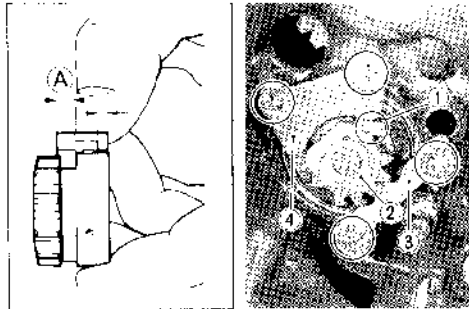
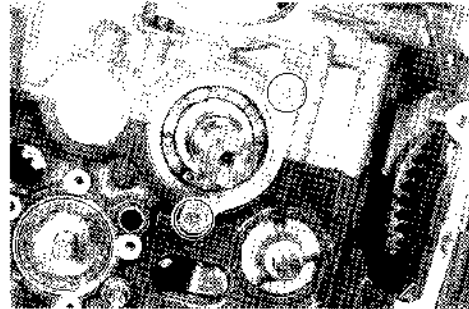
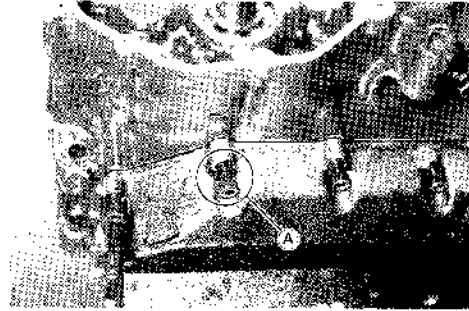
- Install each gearshift pawl (1) into the cam driven gear (2). The large shoulder (A) must face to the outside as shown.
- When installing the cam guide (3) and pawl lifter (4), apply a small quantity of **THREAD LOCK "1342"** to the screws.

99000-32050 : THREAD LOCK "1342"

09900-09003 : Impact driver set

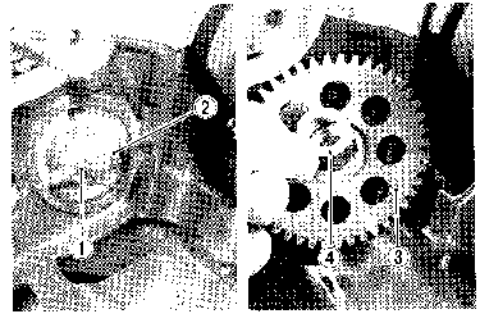
- Install the gearshift shaft (A) with the center of the shift gear on shaft aligned the center of gearshift cam driven gear.

- Install the washer (6) and fix the gearshift shaft with the clip (7).



- Install the pin ①, washer ②, oil pump driven gear ③ and washer ④.
- Fix the oil pump driven gear with the circlip.

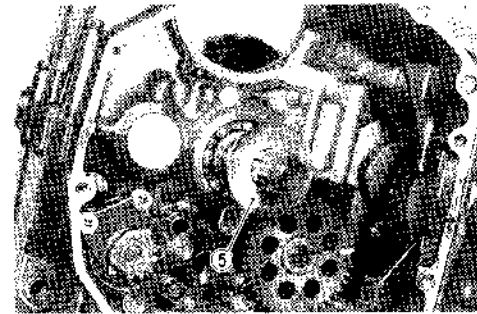
09900-06107 : Snap ring pliers



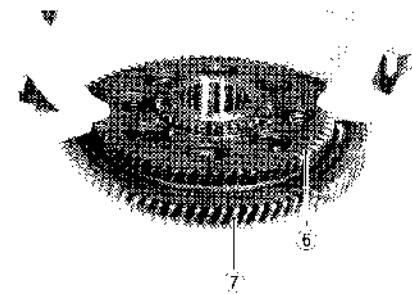
- Install the thrust washer ⑤ onto the countershaft.

NOTE:

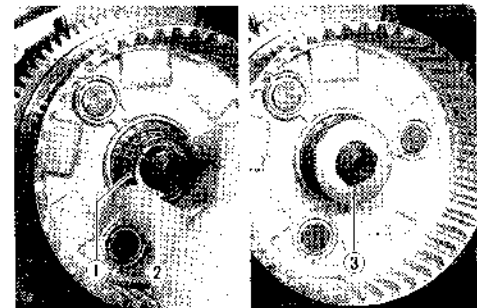
Flat surface of washer is positioned outside.



- Install the generator/oil pump drive gears ⑥ onto the primary driven gear ⑦.



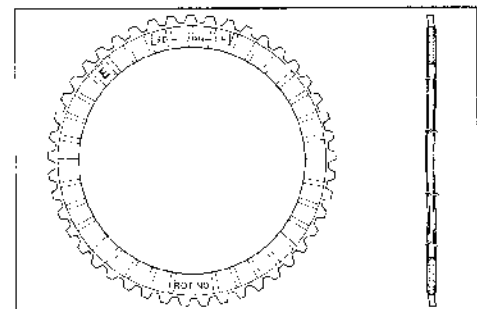
- Install the primary driven gear assembly onto the countershaft and apply engine oil to the needle bearing ① and spacer ②.
- Install the thrust washer ③ onto the countershaft.



- Install the clutch sleeve hub onto the countershaft and insert the drive and driven plates one by one into the sleeve hub.

NOTE:

When assembling the clutch plates, be sure to insert the driven plate first and drive plate No. 2 second.



Clutch drive plate No. 2

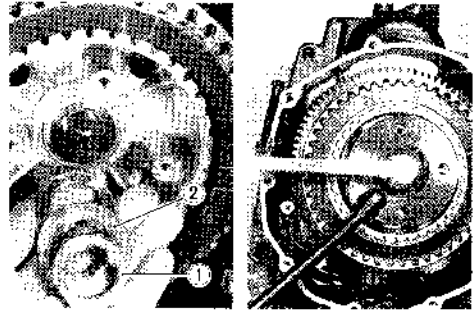
- Tighten the clutch sleeve hub nut to the specified torque.

Clutch sleeve : 80 – 100 N·m

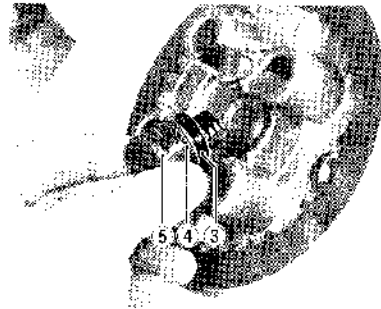
hub nut (8.0 – 10.0 kg-m, 58.0 – 72.5 lb-ft)

09920-53722 : Clutch sleeve hub holder

- After tightening the clutch sleeve hub nut ①, be sure to lock the nut by firmly bending the tongue of the washer ②.



- Set the thrust washer ③, bearing ④ and clutch push piece ⑤ on the clutch pressure disc.



- Tighten the clutch spring set bolts in the order.

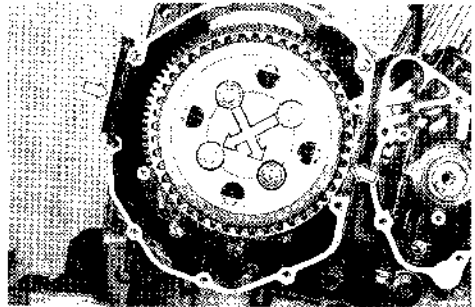
NOTE:

Tighten the clutch spring set bolts in the manner indicated, tightening them by degrees until they attain a uniform tightness.

Clutch spring set bolt : 11 – 13 N·m

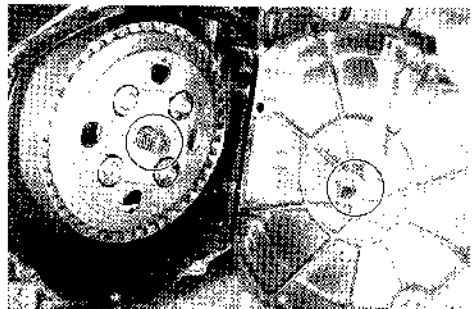
(1.1 – 1.3 kg-m, 8.0 – 9.5 lb-ft)

- Coat SUZUKI Bond No. 1207B lightly to the portion around mating surface between crankcases.



99000-31140 : SUZUKI BOND NO.1207B

- Install the dowel pins and a new gasket.
- Engage the teeth of clutch release rack with those of pinion gear at the clutch cover side and reinstall the clutch cover.



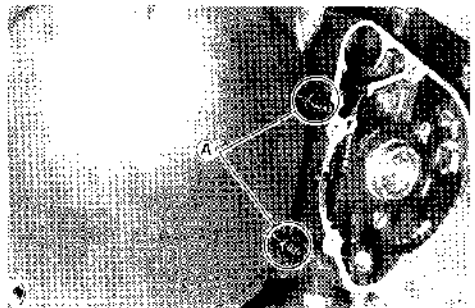
- Tighten the clutch cover bolts securely.

NOTE:

Fit up the two gaskets to the clutch cover bolts (A) correctly as shown in the figure.

CAUTION:

Use only new gasket to prevent oil leakage.



NOTE:

When installing the oil pressure switch, apply SUZUKI Bond No. 1207B to its thread lightly.

99000-31140 : SUZUKI BOND NO.1207B

- Install the signal generator stator with three screws.
- Make sure to fit the slot ① on the back surface of the signal generator rotor over the locating pin ② at the end of crankshaft.

NOTE:

Bond No. 1207B should be applied to the groove of the signal generator lead wire grommet ③.

99000-31140 : SUZUKI BOND NO.1207B

- Hold the crankshaft turning nut and tighten the rotor bolt with specified torque.

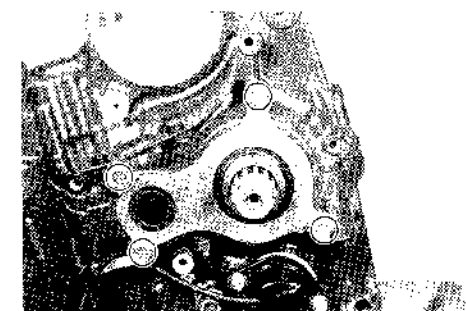
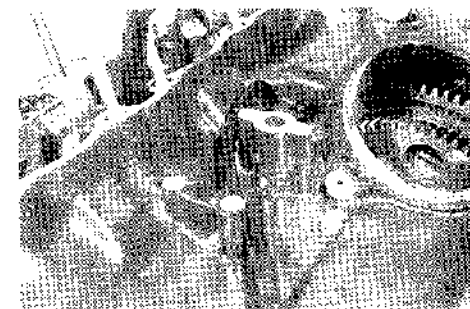
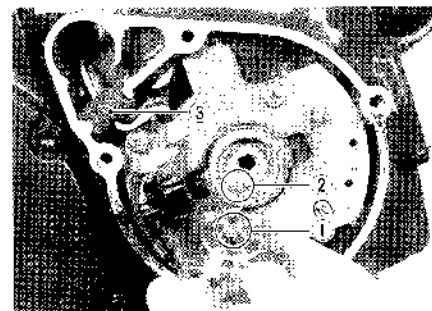
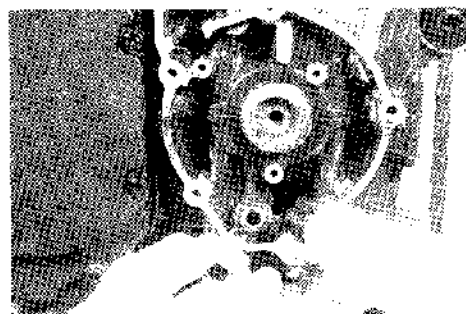
09914-25811 : 6 mm "T" type hexagon wrench

Signal generator: 17 — 23 N·m

rotor bolt (1.7 — 2.3 kg-m, 12.5 — 16.5 lb-ft)

- Pass the signal generator lead wire through upper crankcase as shown in the figure.

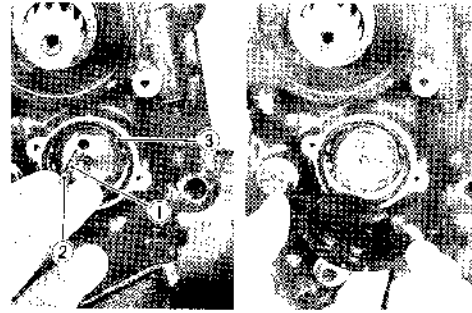
- Install the oil seal retainer with four bolts, and positively bend the lock portion of the retainer.



- Install the neutral position indicator switch with two screws.

NOTE:

When installing the neutral position indicator switch, be sure to locate the spring ①, switch contact ② and O-ring ③.



- Degrease the tapered portion of the starter clutch and also the crankshaft. Use nonflammable cleaning solvent to wipe off the oily or greasy matter to make these surfaces completely dry.

NOTE:

Apply a small quantity of **THREAD LOCK SUPER "1305"** to the thread of starter clutch mounting bolt.

99000-32100 : THREAD LOCK SUPER "1305"

- Tighten the starter clutch mounting bolt to the specified torque.

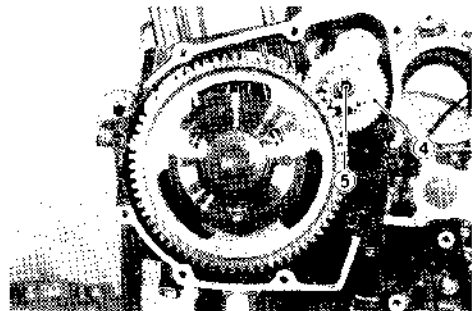
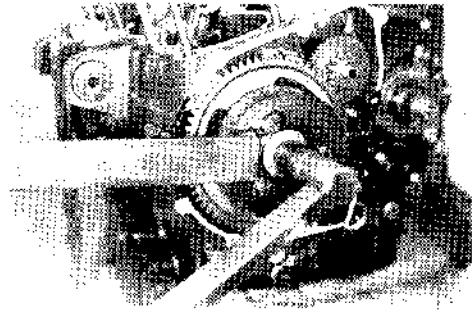
Starter clutch : 143 – 157 N·m
mounting bolt (14.3 – 15.7 kg-m, 103.5 – 113.5 lb-ft)

09920-34810 : Rotor holder



- Install the starter idle gear ④ and its shaft ⑤.
- Coat **SUZUKI Bond No. 1207B** lightly to the portion around mating surface between upper and lower crankcases.

99000-31140 : SUZUKI BOND NO. 1207B



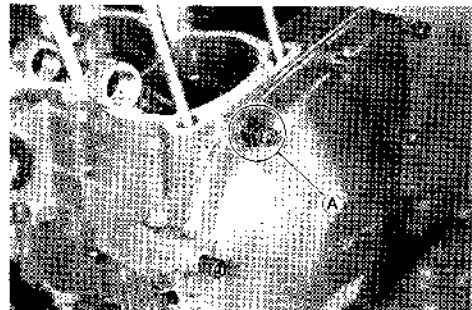
- Install the dowel pin, a new gasket and starter clutch cover, and tighten the cover bolts securely.

NOTE:

Fit up the gasket to the starter clutch cover bolt ① correctly as shown in the figure.

CAUTION:

Use a new gasket to prevent oil leakage.



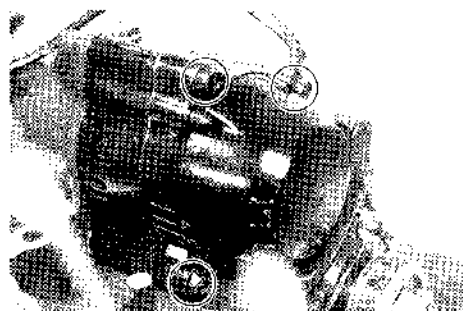
- Install the generator with three bolts.

Generator : 21 – 29 N·m
mounting bolt (2.1 – 2.9 kg-m, 15.0 – 21.0 lb-ft)

NOTE:

Apply SUZUKI super grease "A" to the generator O-ring.

99000-25010 : SUZUKI SUPER GREASE "A"



- Install the starter motor with two bolts.

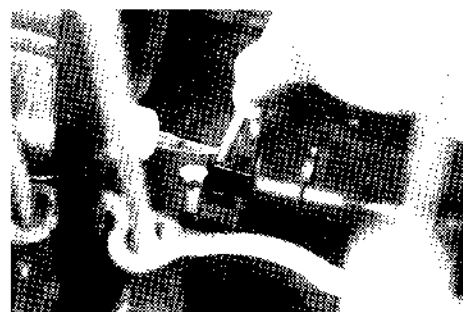
NOTE:

* *Apply SUZUKI super grease "A" to the starter motor O-ring.*

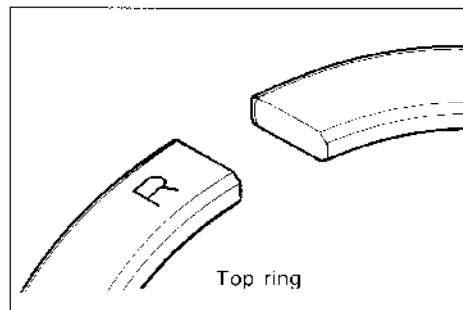
* *Apply a small quantity of THREAD LOCK "1342" to the bolts.*

99000-25010 : SUZUKI SUPER GREASE "A"

99000-32050 : THREAD LOCK "1342"



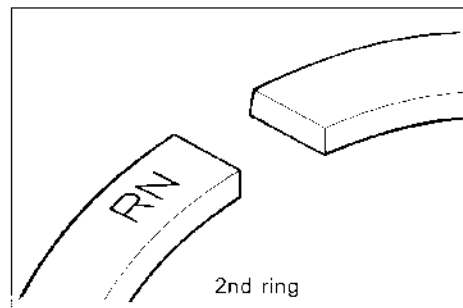
- Install the piston rings in the order of oil ring, 2nd ring and top ring.
- Top ring and 2nd (middle) ring differ in the shape of ring face, and the face of top ring is chrome-plated whereas that of ring is not.



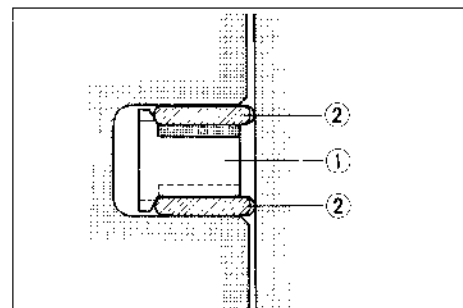
- Top and 2nd (middle) rings have letter "RN" marked on the side.

NOTE:

Be sure to bring the marked side to top when fitting to the piston.

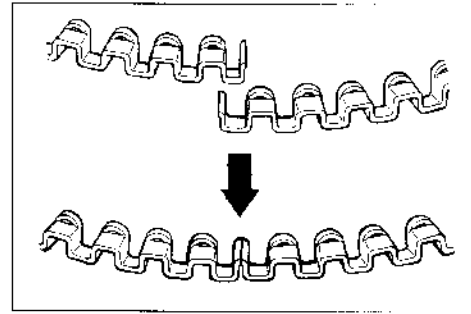


- The first member to go into the oil ring groove is spacer ①. After placing spacer, fit the two side rails ②.

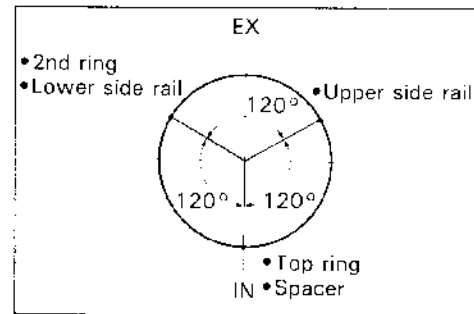


CAUTION:

When installing the spacer, be careful not to allow its two ends to overlap in the groove.



- Position the gaps of the three rings as shown. Before inserting each piston into the cylinder, check that the gaps are so located.

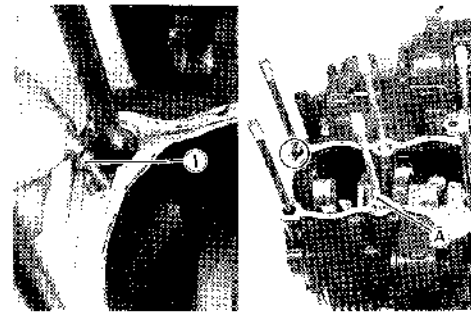


NOTE:

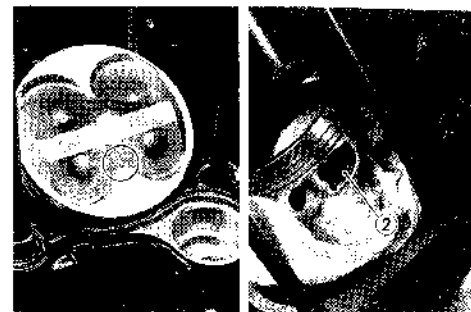
- * Check for clogging the oil jets ① fitted on crankcase.
- * When reinstalling the cylinder stud bolt ④, apply SUZUKI Bond No. 1207B lightly to the stud bolt thread.

99000-31140 : SUZUKI BOND NO. 1207B

**Cylinder stud bolt : 13 — 16 N·m
(1.3 — 1.6 kg-m, 9.5 — 11.5 lb-ft)**



- The piston is in correct position when its arrow (on the top) points forward.
- Be sure to install the pistons in the cylinder from which they were taken out in disassembly, referring to the letter mark, "1" through "4", scribed on the piston.
- Have each piston pin oiled lightly before installing it.
- Place a cloth beneath the piston, and install the circlip ②.



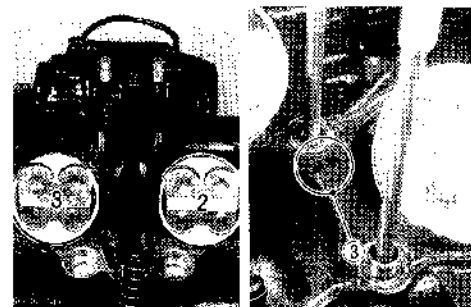
NOTE:

Be sure to use new circlips.

- Before assembling on the cylinder block, oil the big and small ends of each conrod and also the sliding surface of each piston.
- Place the dowel pins and new cylinder gasket on the crankcase.

NOTE:

Be sure to identify the top surface by "UP" mark ③ on the cylinder gasket as shown in the figure.



- Install piston ring holders in the indicated manner. Some light resistance must be overcome to lower the cylinder block.
- With No. 2 and No. 3 pistons in place, install No. 1 and No. 4 pistons, and insert them into the cylinder.

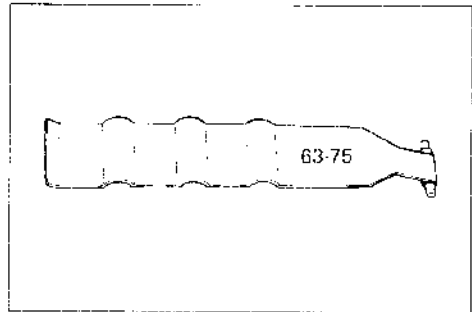
09916-74521 : Holder body

09916-74540 : Band (bore 63 – 75 mm)



NOTE:

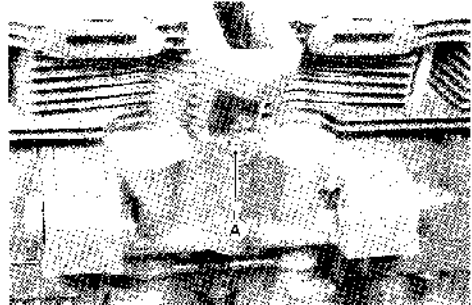
- * Do not overtighten the special tool bands or the cylinders will resist to admit the pistons.
- * Each band has a number punchmarked on it. The number refers to a particular range of piston sizes.



- Tighten the cylinder nut (A) to the specified torque.

Cylinder base nut : 7 – 11 N·m

(0.7 – 1.1 kg-m, 5.0 – 8.0 lb-ft)

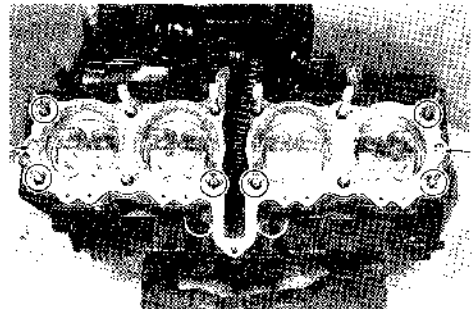


- Place the six O-rings and two dowel pins on the cylinder.

CAUTION:

Replace the O-rings with new ones to prevent oil leakage.

- Be sure to replace the cylinder head gasket with new one to prevent gas leakage.

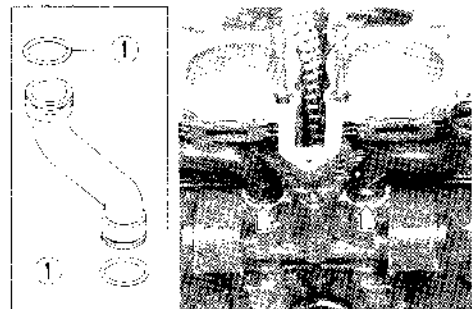


- Applying SUZUKI super grease "A" to the new O-rings, fit up them on the oil pipes.
- Install the right and left oil pipes.

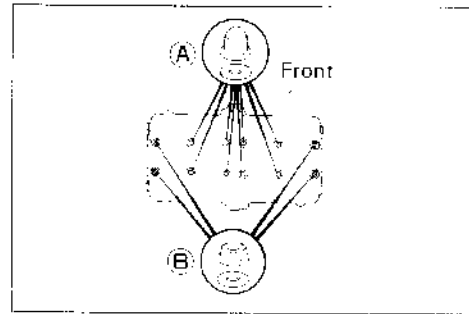
99000-25010 : SUZUKI SUPER GREASE "A"

CAUTION:

Replace the O-rings (1) with new ones to prevent oil leakage.

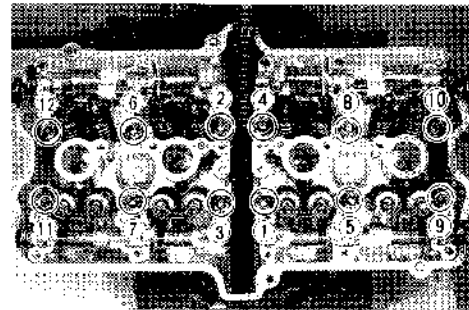


- Place the cylinder head on the cylinder.
- Cylinder head nuts and washers must be fitted in the correct positions, as shown in the illustration.
 - Ⓐ Copper washer with cap nut (8 pcs)
 - Ⓑ Steel washer with normal nut (4 pcs)



- Tighten the twelve 10-mm nuts to the specified torque with a torque wrench sequentially in the ascending order of numbers.

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

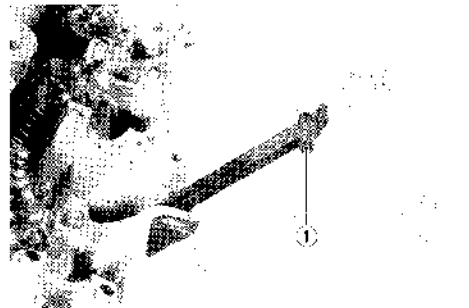


- After firmly tightening the twelve 10-mm nuts, install one 6-mm bolt Ⓐ and tighten it to the specified torque.

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



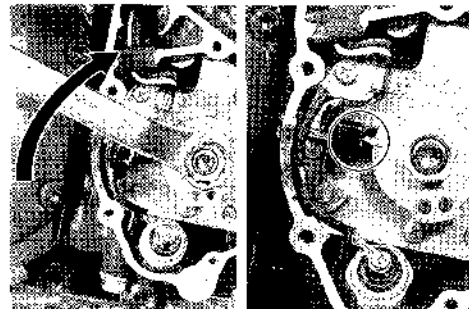
- Place the cam chain guide ① properly.



- While holding down the cam chain, rotate the crankshaft in normal direction to bring the "T" mark on the rotor to the center of pick up coil.

CAUTION:

To turn over crankshaft, torque the nut with a 19 mm wrench. Never try to rotate the crankshaft by putting a 6 mm T-type wrench.



NOTE:

- * Just before placing the camshaft on the cylinder head, apply SUZUKI Moly paste to its journals, fully coating each journal (A) with the paste taking care not to leave any dry spot.
- * Apply engine oil to the camshaft journal holders.

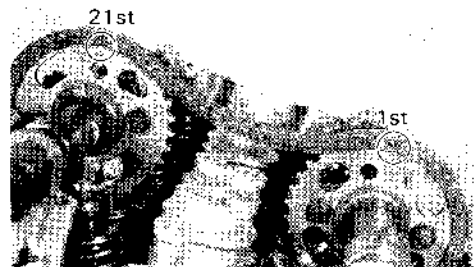
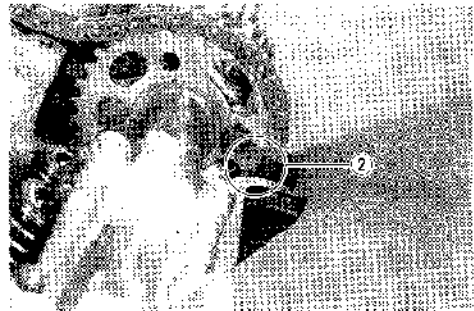
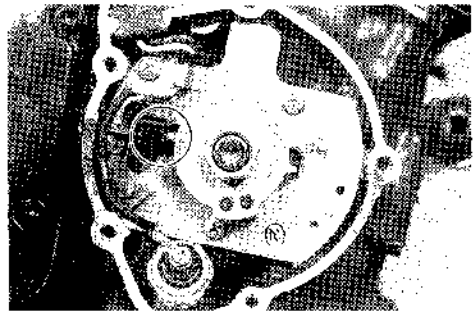
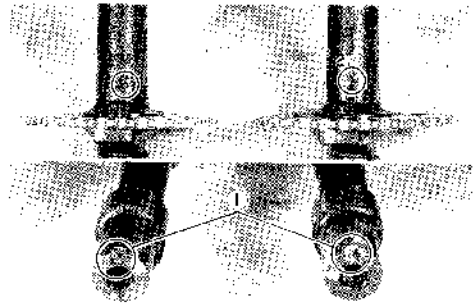
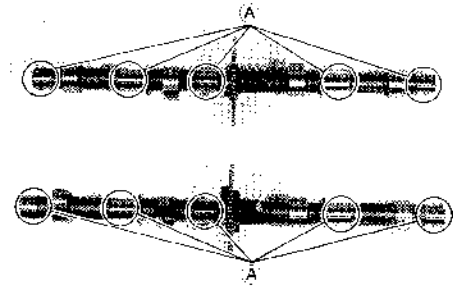
99000-25140 : SUZUKI MOLY PASTE

- The exhaust camshaft can be distinguished from that of the intake by the embossed letters "EX" (for exhaust) as against letters "IN" (for intake). Similarly, the right end can be distinguished by the notch (1) at the right end.

- With "T" mark accurately lined up with the timing mark, hold the crankshaft steady and lightly pull up the chain to remove the slack between the crank sprocket and exhaust sprocket.

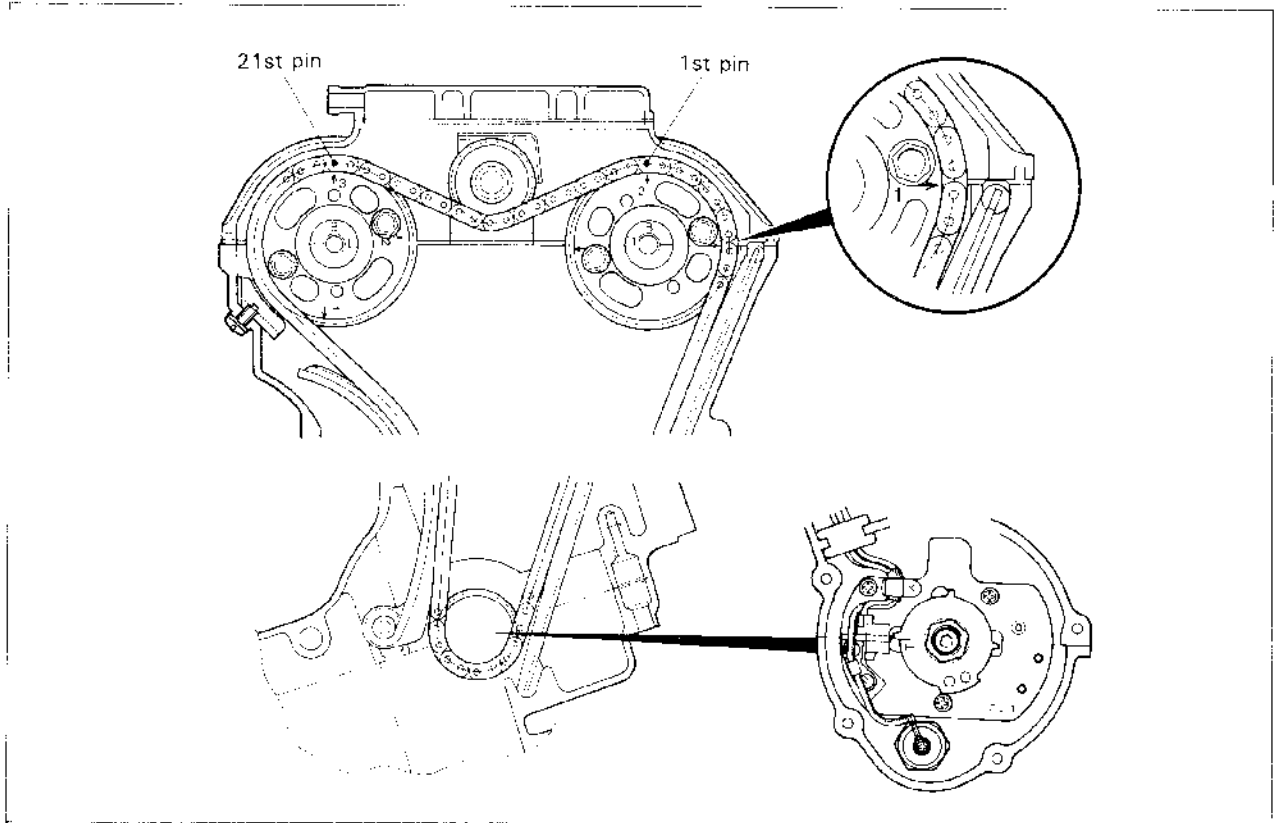
- Exhaust sprocket bears an arrow marked "1" indicated as (2). Turn over the exhaust camshaft so that the arrow points flush with the gasketed surface of the cylinder head. Engage the cam chain with this sprocket.

- The other arrow marked "2" is now pointing straight upward. Count the chain roller pins toward the intake camshaft, starting from the roller pin directly above this arrow marked "2" and ending with the 21st roller pin. Engage the cam chain with intake sprocket, locating the 21st pin at the above the arrow marked "3" on the intake sprocket.



NOTE:

The cam chain is now riding on all three sprockets. Be careful not to disturb the crankshaft until the ten camshaft journal holders, cam chain idler and cam chain tensioner are secured.



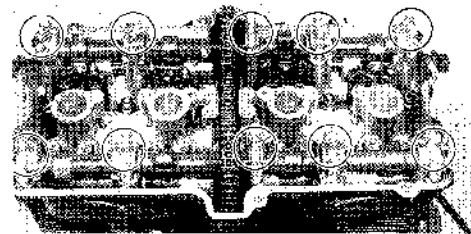
- Each camshaft journal holder is identified with a cast-on letter. Install the dowel pins to each camshaft journal holder.
- Secure the ten camshaft journal holders evenly by tightening the camshaft journal holder bolts sequentially. Try to equalize the pressure by moving the wrench diagonally from one bolt to another and from one camshaft journal holder to another, to push shafts down evenly.

NOTE:

Damage of head or camshaft journal holder thrust surfaces may result if the camshaft journal holders are not drawn down evenly.

- Tighten the camshaft journal holder bolts to the specified torque.

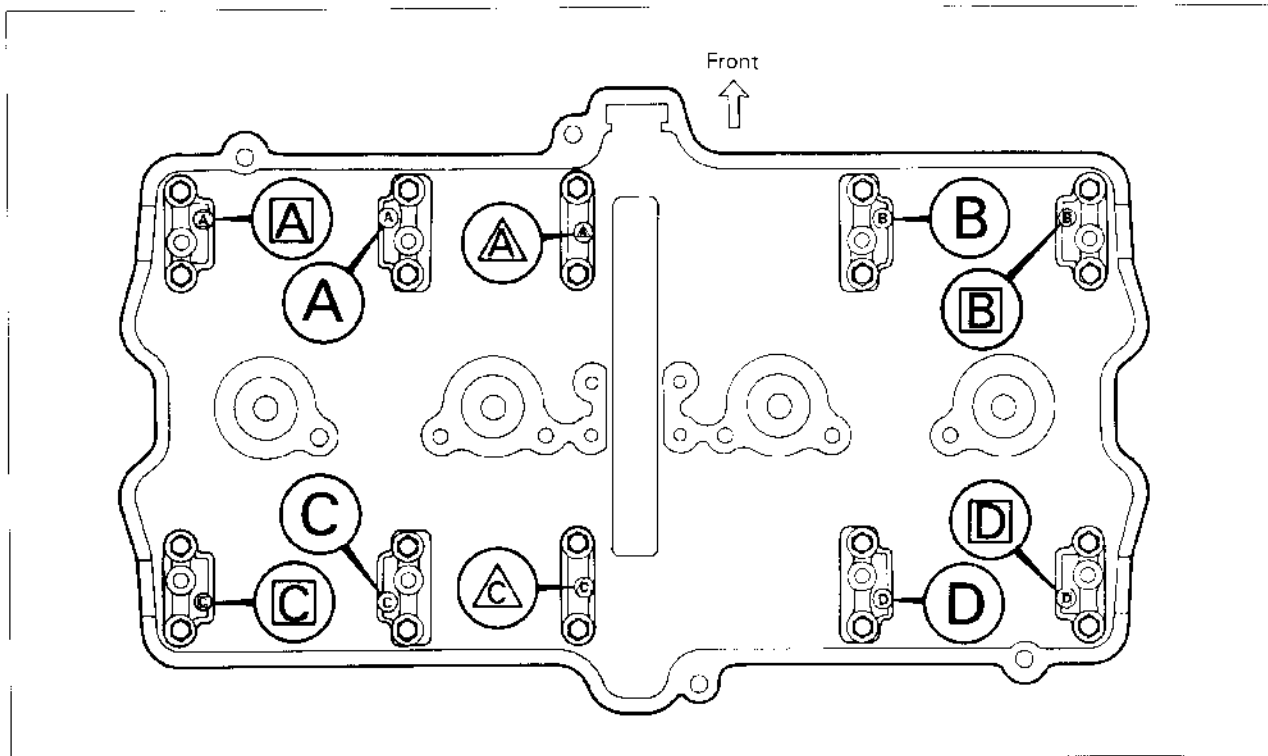
Camshaft journal : 8 – 12 N·m
holder bolt (0.8 – 1.2 kg·m, 6.0 – 8.5 lb·ft)



CAUTION:

The camshaft journal holder bolts are made of a special material and much superior in strength compared with other type of high strength bolts.

Take special care not to use other types of bolts instead of these special bolts. To identify these bolts, each of them has a figure "9" on its head.

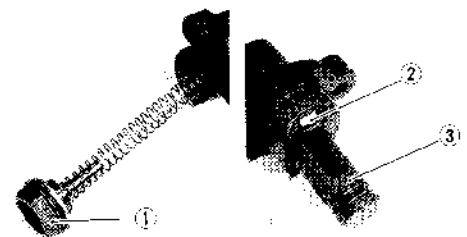
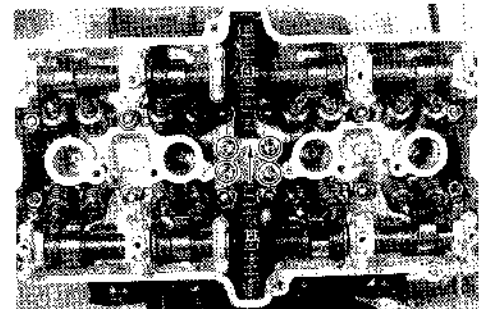
**NOTE:**

Be sure to face the arrow mark on the cam chain idler to the front.

- Tighten the four bolts to the specified torque.

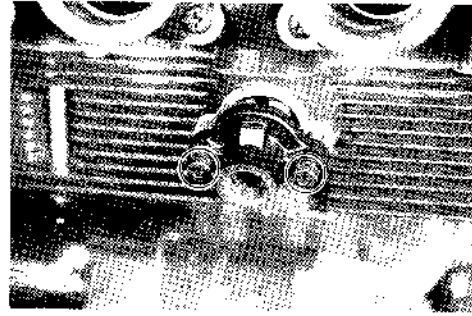
Cam chain idler : 8 – 12 N·m
mounting bolt (0.8 – 1.2 kg-m, 6.0 – 8.5 lb-ft)

- Pour about 50 ml (1.69/1.76 US/Imp oz) of engine oil in each oil pocket in the head.
- After removing the spring holder bolt ① and spring, unlock the ratchet mechanism ② and push in the push rod ③ all the way.



- Install a new gasket and cam chain tensioner to the cylinder block with two bolts and tighten them to the specified torque.

Cam chain tensioner : 6 – 8 N·m
mounting bolt (0.6 – 0.8 kg-m, 4.5 – 6.0 lb-ft)



- Insert the spring into the cam chain tensioner and tighten the spring holder bolt ① to the specified torque.

Cam chain tensioner : 30 – 45 N·m
spring holder bolt (3.0 – 4.5 kg-m, 21.5 – 32.5 lb-ft)

CAUTION:

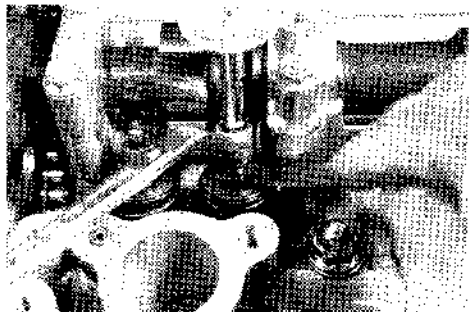
After installing the cam chain tensioner, check to be sure that the tensioner work properly by checking the slack of cam chain.

NOTE:

Turn the crankshaft and check that all the moving parts such as cam follower, camshaft, work properly.

CAUTION:

Be sure to check and adjust the valve clearance.
(Refer to page 2-6)



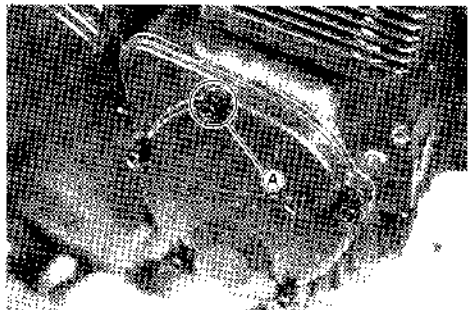
- Install a new gasket and the signal generator cover with five bolts.

NOTE:

Fit up the gasket to the signal generator cover bolt ① correctly as shown in the figure.

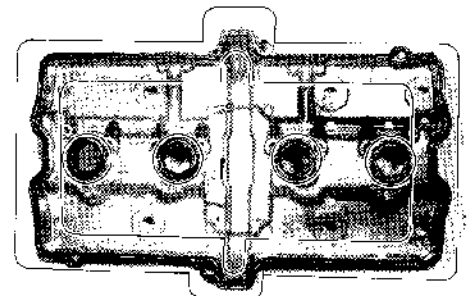
CAUTION:

Use a new gasket to prevent oil leakage.



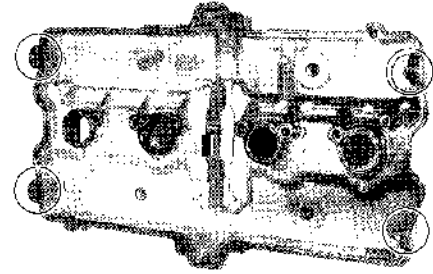
- Before installing the cylinder head cover gaskets on the cylinder head cover, apply SUZUKI Bond No.1207B to the groove of the head cover as shown in the figure.

99000-31140 : SUZUKI BOND NO.1207B



- Apply SUZUKI Bond No.1207B to the four cam end caps of the cylinder head cover gasket as shown in the figure.

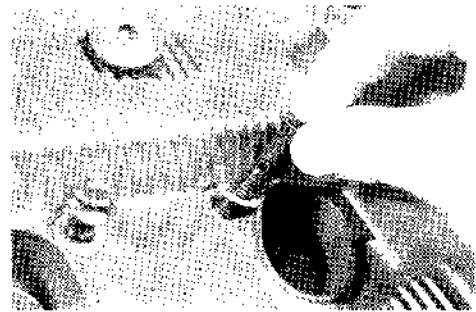
99000-31140 : SUZUKI BOND NO.1207B



- Place the cylinder head cover on the cylinder head.
- Fit up the four gaskets to each head cover union bolt.

CAUTION:

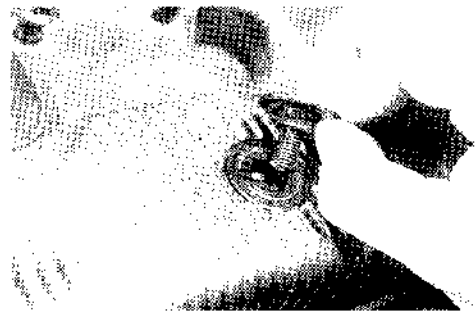
Replace the gaskets with new ones to prevent oil leakage.



- Seat the eight gaskets to each exact position.

CAUTION:

Replace the gaskets with new ones to prevent oil leakage.



- After tightening the head cover union bolts ① to the specified torque, tighten the head cover bolts ② to the specified torque.

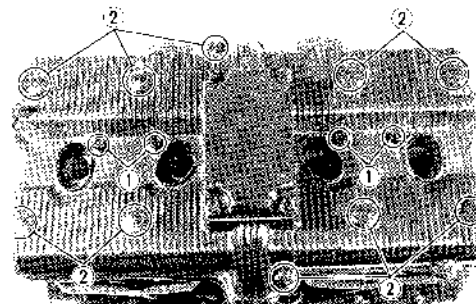
Head cover union bolt ①: 4 pcs.:

Head cover bolt ② : 10 pcs.:

13 — 15 N·m

(1.3 — 1.5 kg-m, 9.5 — 11.0 lb-ft)

09900-00410 : Hexagon wrench set



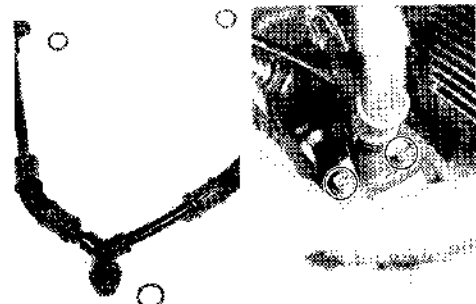
- Place the right and left oil hoses and tighten the bolts to the specified torque.

Oil hose mounting bolt : 8 — 12 N·m

(0.8 — 1.2 kg-m, 6.0 — 8.5 lb-ft)

CAUTION:

Replace the O-rings with new ones to prevent oil leakage.



NOTE:

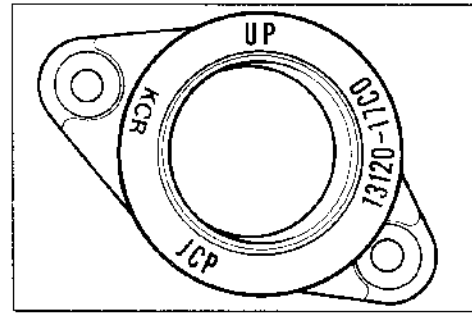
When replacing the intake pipes, identify the four different intake pipes according to each I.D. code.

(13110-17C0 for No.1)

(13120-17C0 for No.2)

(13130-17C0 for No.3)

(13140-17C0 for No.4)



CAUTION:

Use a new O-ring to prevent sucking air from the joint.

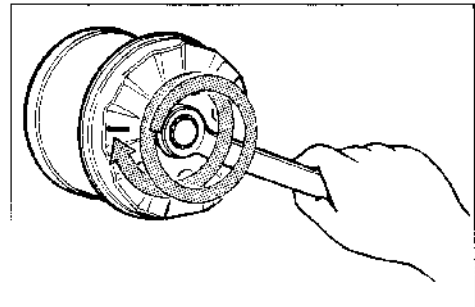


NOTE:

When installing the new oil filter, apply engine oil lightly.

- Install the oil filter turning it by hand until you feel the filter gasket contacts the mounting surface. Then tighten 2 turns by using the special tool.

09915-40611 : Oil filter wrench



FUEL AND LUBRICATION SYSTEM

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FUEL COCK

FUNDAMENTAL

It explains of the construction of diaphragm type fuel cock.

ON: Normally used. Functions as auto cock

RES: Reserve fuel is used. Functions as auto cock

PRI: Fuel is directly supplied. Does not function as auto cock

ENGINE STOP CONDITION

When the engine is not running with the lever in the ON or RES position, the fuel valve ① is kept in the closed position by applying the pressure utilizing the tension of spring ② so that no fuel will flow to the carburetors.

ENGINE RUNNING CONDITION

When the engine is started, a negative pressure (A) is generated in the diaphragm chamber ③ through the vacuum (negative pressure) pipe ④ which is connected to the carburetor, and builds up a negative pressure (A) which is higher than the tension of spring ② so that the diaphragm ⑤ is forced to open the fuel valve ① and thus allow the fuel to flow to the carburetors (B).

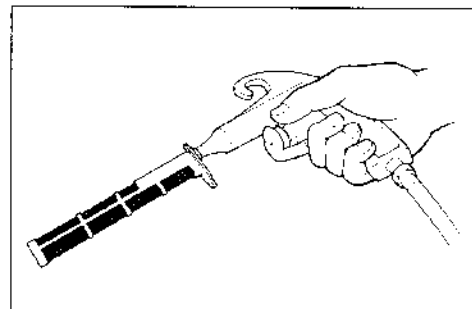
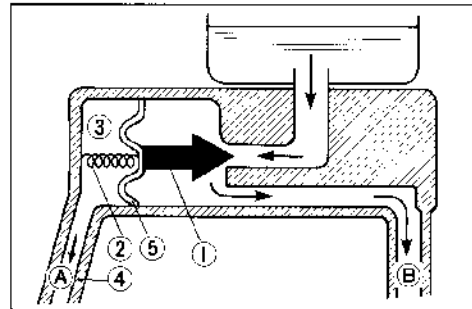
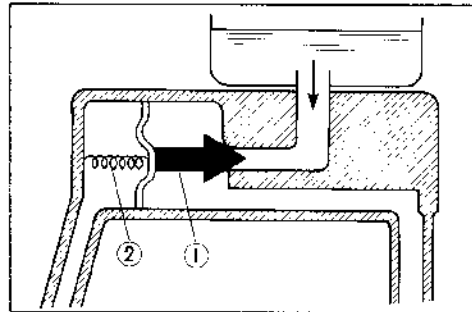
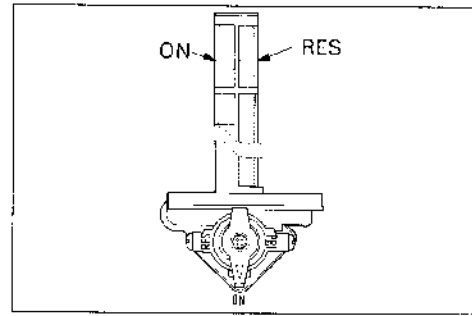
"PRI" POSITION

When the fuel valve ② is set at the PRI position, fuel flows to the carburetors directly the because that the protrusion located on the lever end pushes back the fuel valve ① mechanically against the spring tension, whether the engine is running or not, through the RES side fuel filter and fuel valve clearance.

The PRI position is used when the carburetor have little or no fuel, for example, when filling the fuel tank for the first time, or when the motorcycle has been left unused for a long time, or when the carburetors have been disassembled and repaired. Shift the lever to the ON position when the engine begins to run smoothly.

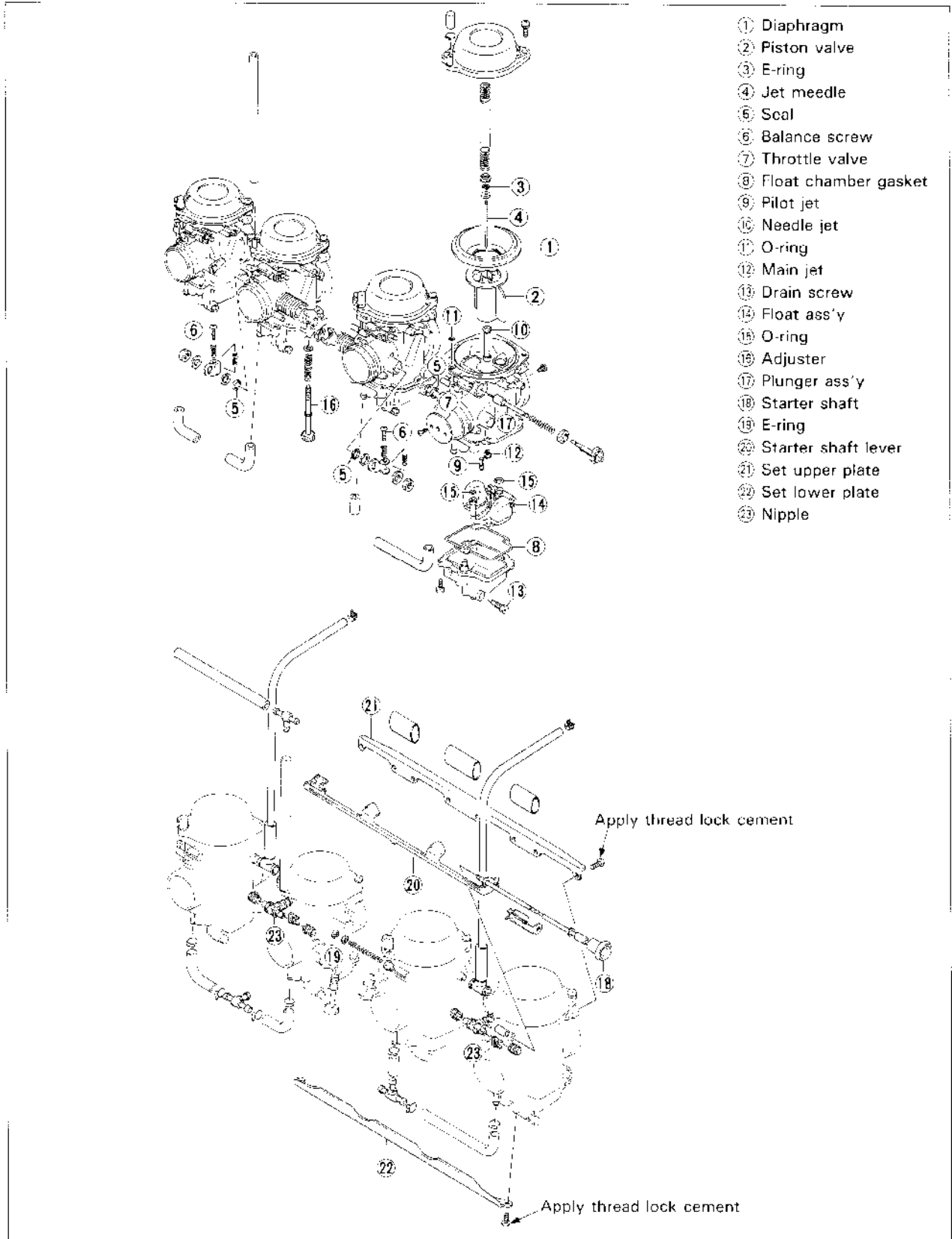
INSPECTION AND CLEAN

If the fuel strainer is dirty with sediment or rust, fuel will not flow smoothly and loss in engine power may result. Clean the fuel strainer with compressed air.



CARBURETOR

CONSTRUCTION

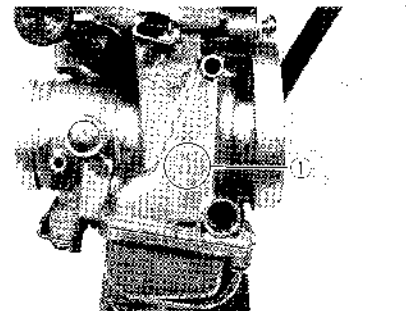


SPECIFICATIONS

ITEM		SPECIFICATIONS		
		E-04, 17,22	E-18	E-24, 39
Carburetor type	MIKUNI BST36SS	←	←	←
Bore size	36 mm (1.4 in)	←	←	←
I.D. No.	17C00	17C20	17C50	17C60
Idle r/min.	1 100±100 r/min.	←	←	←
Fuel level	1.5±0.5 mm (0.06±0.02 in)	←	←	←
Float height	14.6±1.0 mm (0.57±0.04 in)	←	←	←
Main jet (M.J.)	#112.5	←	←	←
Main air jet (M.A.J.)	0.5 mm	←	←	←
Jet needle (J.N.)	5FZ89-3rd	←	5FZ90-3rd	5FZ89-3rd
Needle jet (N.J.)	Y-5	←	←	←
Throttle valve (Th.V.)	#125	←	←	←
Pilot jet (P.J.)	#37.5	←	#32.5	#37.5
By-pass (B.P.)	#10.8, #20.8, #30.8, #40.8 mm	←	←	←
Pilot outlet (P.O.)	0.8 mm	←	←	←
Valve seat (V.S.)	2.3 mm	←	←	←
Starter jet (G.S.)	#45	←	←	←
Pilot screw (P.S.)	PRE-SET (1 1/2 turns back)	←	←	PRE-SET (1 1/4 turns back)
Pilot air jet (P.A.J.)	1.4 mm	←	←	←
Throttle cable play	0.5—1.0 mm (0.02—0.04 in)	←	←	←

I.D. NO. LOCATION

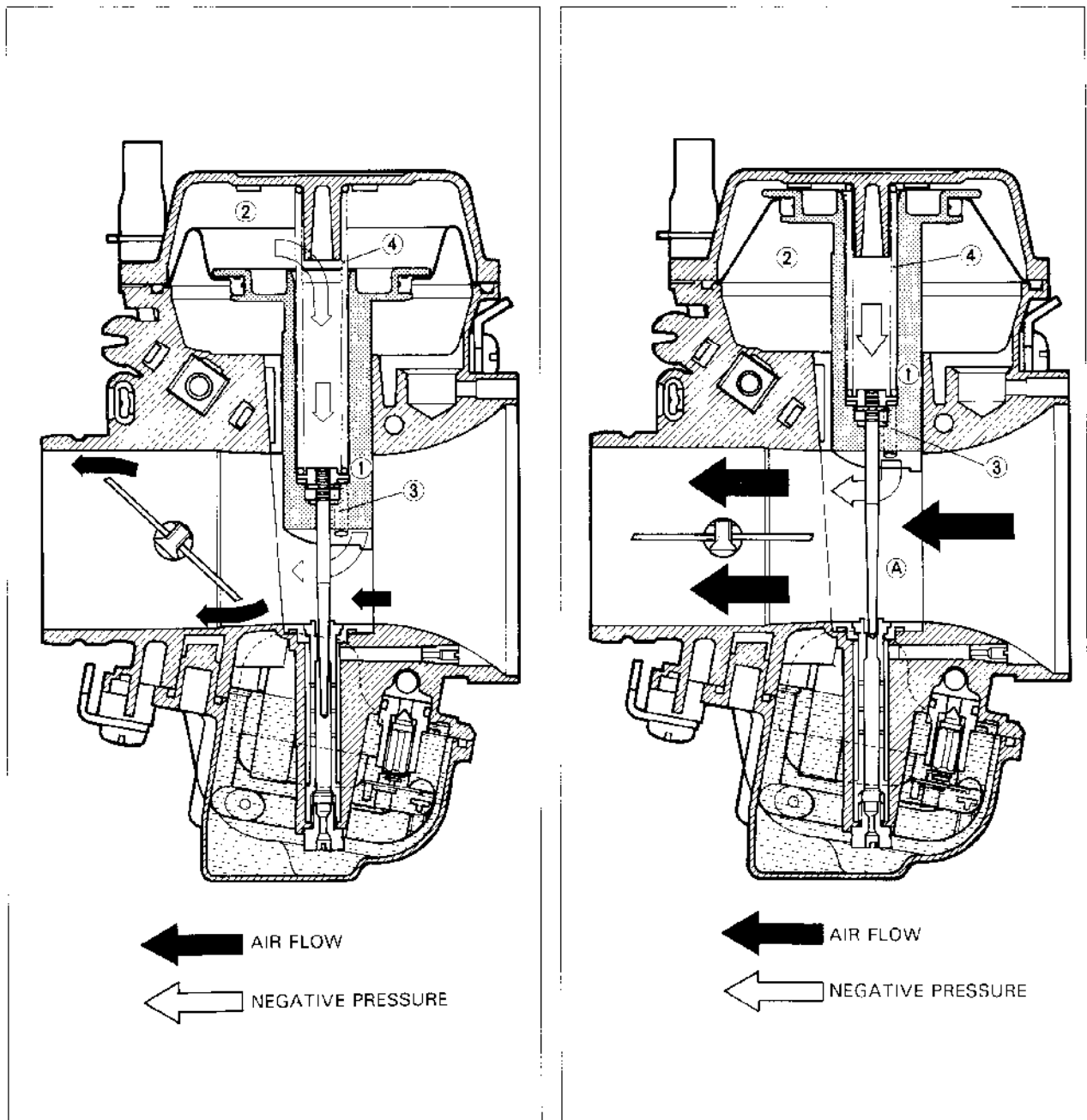
Each carburetor has I.D. Number ① printed on the carburetor body according to its specifications.



DIAPHRAGM AND PISTON OPERATION

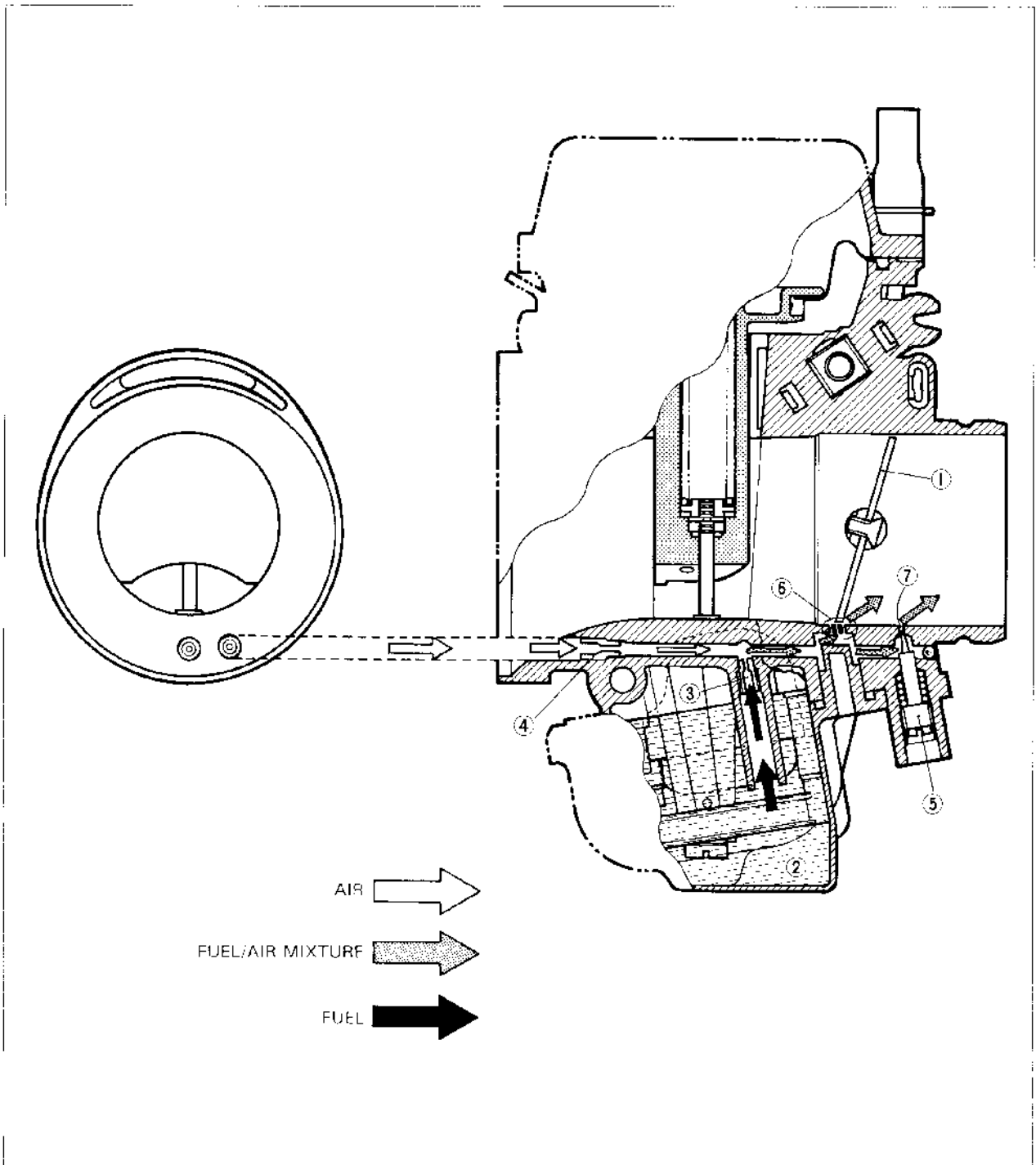
The carburetor is a variable-venturi type, whose venturi cross section area is increased or decreased automatically by the piston valve ① which moves according to the negative pressure present on the downstream side of the venturi (A). Negative pressure is admitted into the diaphragm chamber ② through two orifices ③ provided in the piston valve ①.

Rising negative pressure overcomes the spring ④ force, causing the piston valve ① to rise to increase the said area and thus prevent the air velocity from increasing. Thus, air velocity in the venturi passage is kept relatively constant for improved fuel atomization and for securing optimum ratio of fuel/air mixture.



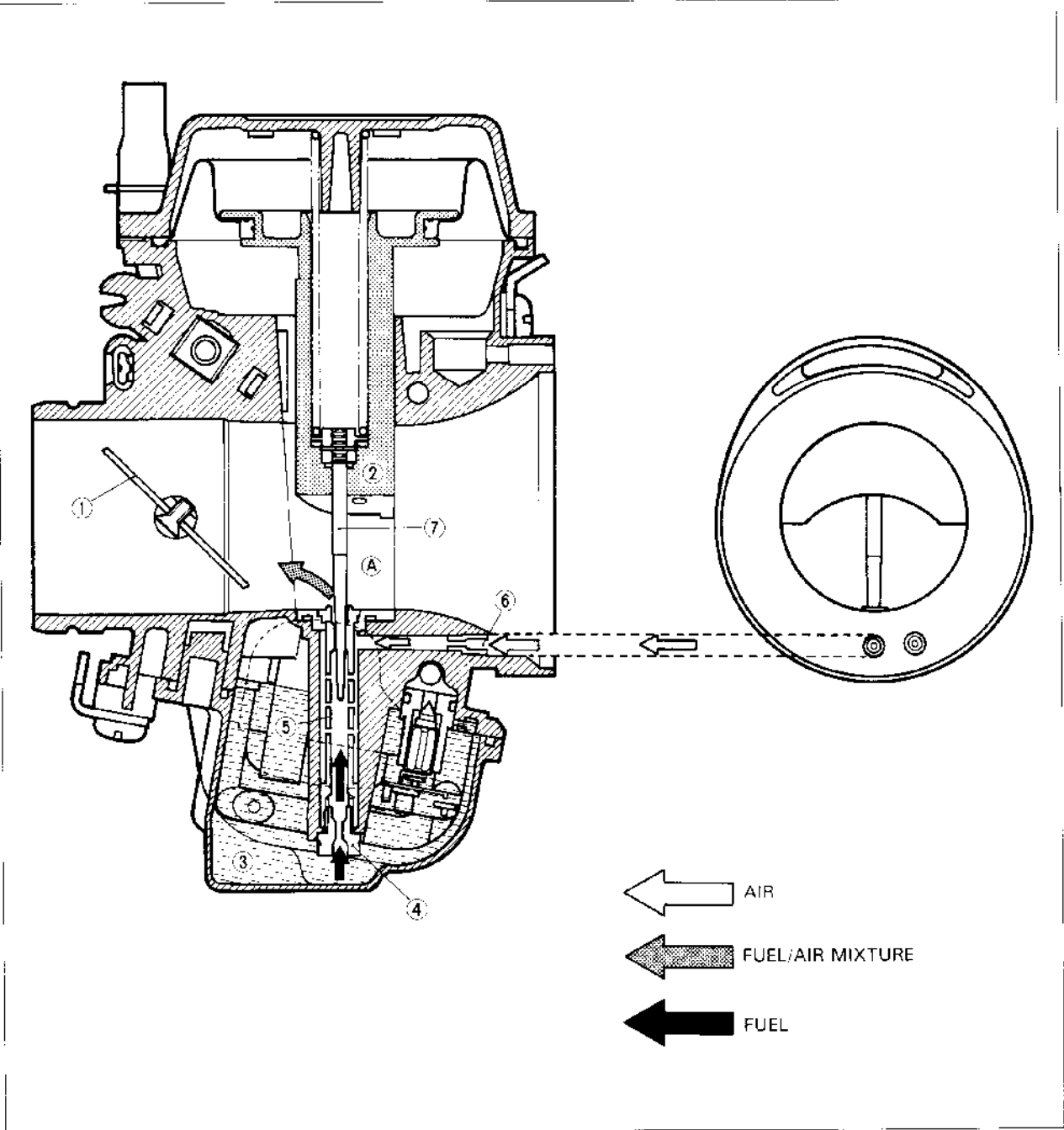
SLOW SYSTEM

This system supplies fuel during engine operation with throttle valve ① closed or slight opened. The fuel from float chamber ② is metered by pilot jet ③ where it mixes with air coming in through pilot air jet ④. This mixture, rich with fuel, then goes up through pilot passage to pilot screw ⑤. A part of the mixture is discharged into the main bore out of bypass ports ⑥. The remainder is then metered by pilot screw ⑤ and sprayed out into the main bore through pilot outlet ⑦.



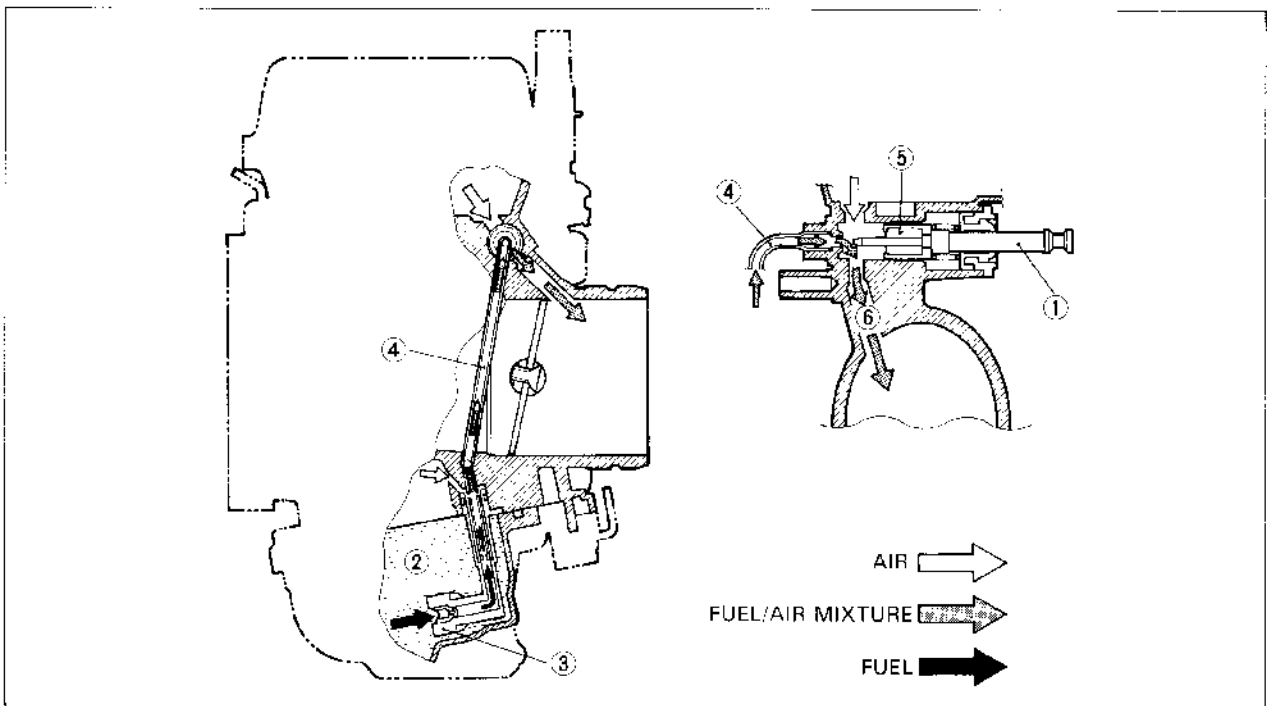
MAIN SYSTEM

As throttle valve ① is opened, engine speed rises, and this increases negative pressure in the venturi ①. Consequently the piston valve ② moves upward. Meanwhile, the fuel in float chamber ③ is metered by main jet ④, and the metered fuel enters needle jet ⑤, in which it mixes with the air admitted through main air jet ⑥ to form an emulsion. The emulsified fuel then passes through the clearance between needle jet ⑤ and jet needle ⑦, and is discharged into the venturi ①, in which it meets main air stream being drawn by the engine. Mixture proportioning is accomplished in needle jet ⑤; the clearance through which the emulsified fuel must flow in large or small, depending ultimately on throttle position.



STARTER SYSTEM

Pulling up the starter knob ①, fuel is drawn into the starter circuit from the float chamber ②. Starter jet ③ meters this fuel, which then flows into starter pipe ④ and mixes with the air coming from the float chamber ②. The mixture, rich in fuel content, reaches starter plunger ⑤ and mixes again with the air coming through a passage extending from behind the diaphragm. The two successive mixings of fuel with air are such that proper fuel/air mixture for starting is produced when the mixture is sprayed out through starter outlet ⑥ into the main bore.

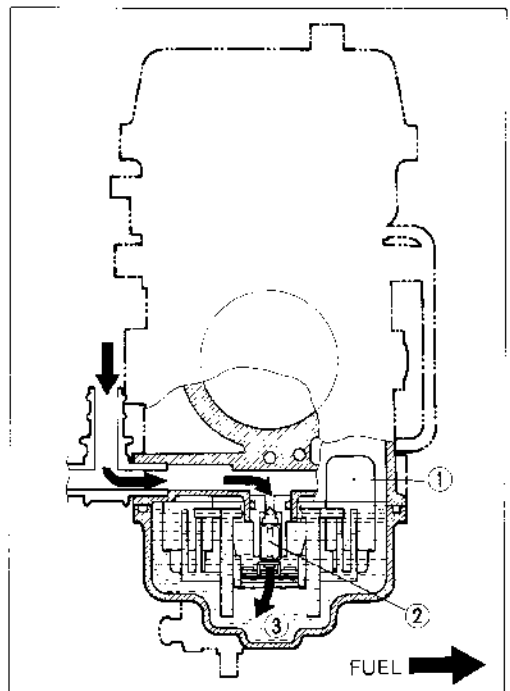


FLOAT SYSTEM

Floats ① and needle valve ② are associated with the same mechanism, so that, as the floats ① move up and down, the needle valve ② too moves likewise.

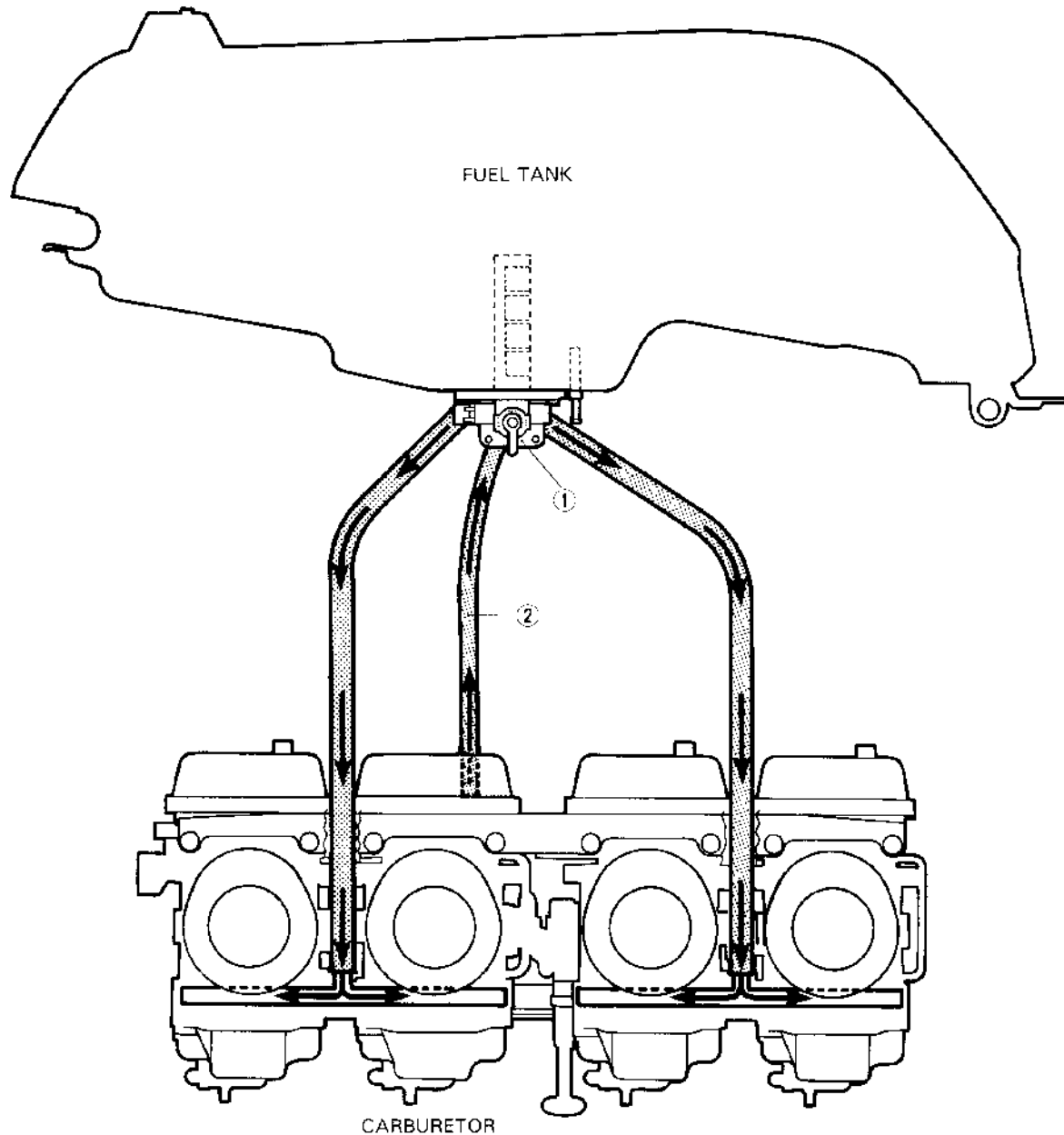
When fuel level is up in float chamber ③, floats ① are up and needle valve ② remains pushed up against valve seat. Under this condition, no fuel enters the float chamber ③. As the fuel level falls, floats ① go down and needle valve ② unseats itself to admit fuel into the chamber ③.

In this manner, needle valve ② admits and shuts off fuel alternately to maintain a practically constant fuel level inside the float chamber ③.



FUEL SYSTEM

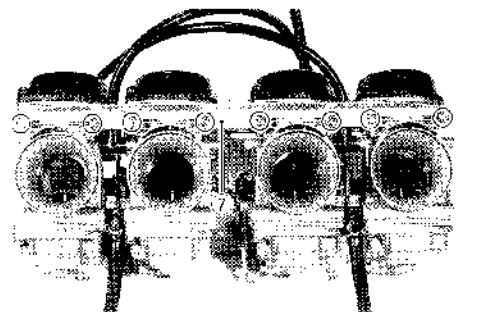
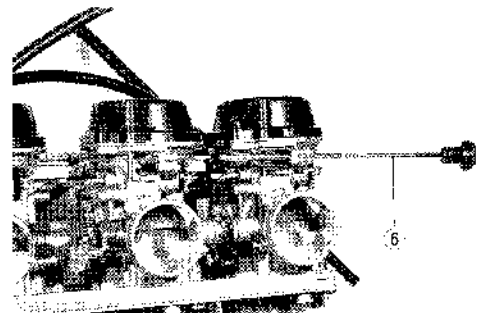
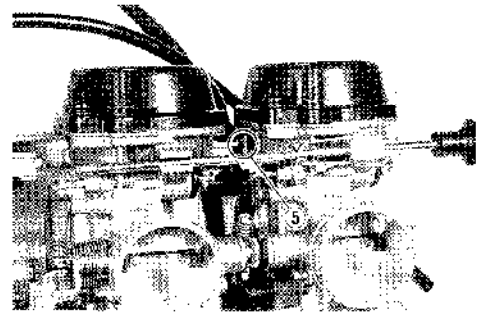
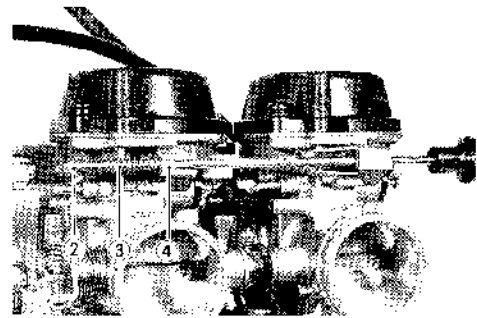
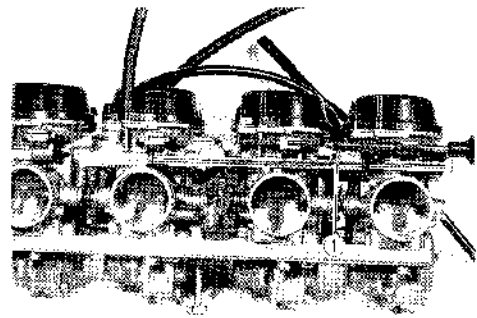
When turning starter motor, negative pressure is generated in the combustion chamber. This negative pressure works on the diaphragm of fuel cock ① through passage way provided in the carburetor main bore and vacuum hose ②, and diaphragm builds up a negative pressure which is higher than the spring pressure. Fuel valve in the fuel cock ① is forced to open due to diaphragm operation, and thus allows fuel to flow into carburetor float chamber.



DISASSEMBLY

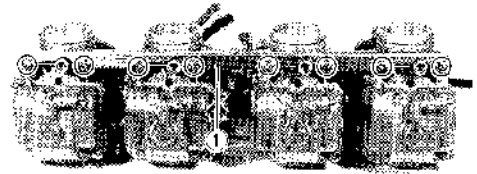
For carburetor removal, refer to page 3-6.

- Remove the starter shaft lever ①.
 - Remove the E-ring ② and pull out the spring ③ and plastic ring ④.
 - Remove the pin ⑤.
 - Pull out the starter shaft ⑥.
 - Remove the carburetor set upper plate ⑦.
- 09900-09003 : Impact driver set

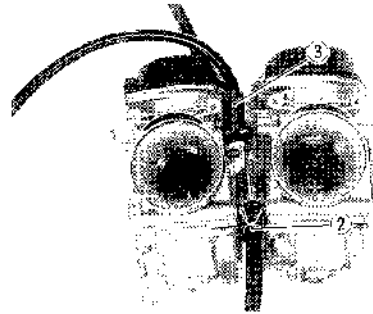


- Remove the carburetor set lower plate ①.

09900-09003 : Impact driver set

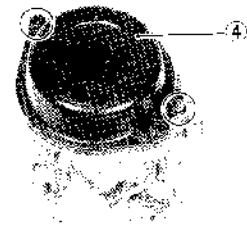


- Separate the carburetor assembly to disconnect the fuel hose ② and air vent pipe ③.

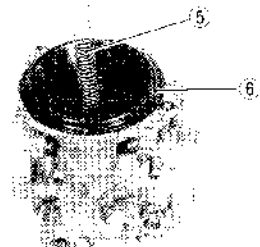


- Remove the carburetor top cap ④.

09900-09003 : Impact driver set

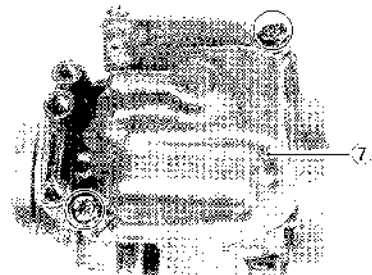


- Remove the piston valve return spring ⑤ and piston valve with diaphragm ⑥.



- Remove the float chamber body ⑦.

09900-09003 : Impact driver set



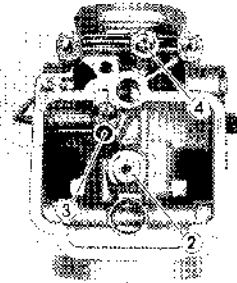
- Remove the float assembly ①.

CAUTION:

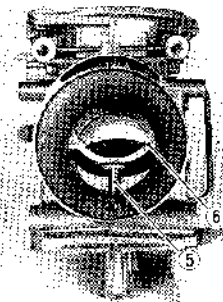
When removing the float assembly with fingers, be careful not to break it which is made of plastics.



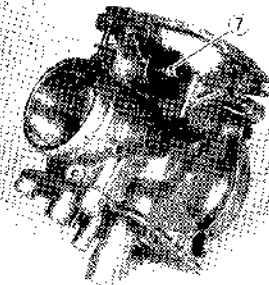
- Remove the main jet ②, pilot jet ③ and pilot screw ④.



- Remove the needle jet ⑤ and jet block ⑥.



- Pull out the starter plunger assembly ⑦.

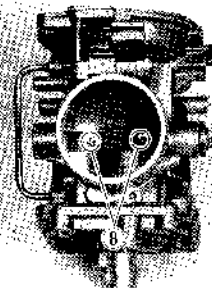


- Remove two throttle valve screws ⑧ and pull out throttle valve plate.

09900-09003 : Impact driver set

CAUTION:

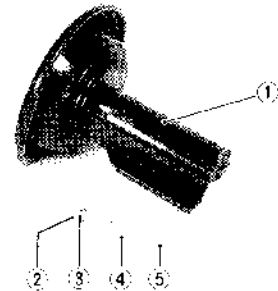
These two screws are locked by punching these ends. Once removing the screws, they will be damaged.



- After removing the nut ① and throttle lever ②, pull out the throttle valve shaft.



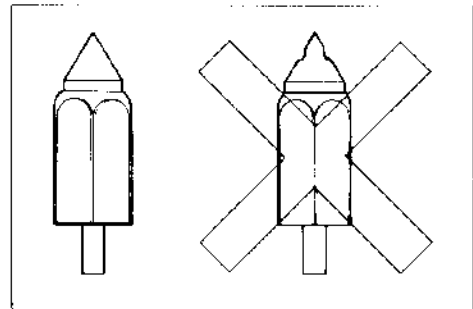
- Remove the jet needle from piston valve.
- Check the small parts related with jet needle.
 - ① Piston valve
 - ② Spring seat
 - ③ E-ring
 - ④ Washer
 - ⑤ Jet needle



**INSPECTION AND ADJUSTMENT
NEEDLE VALVE**

If foreign matter is caught the mating surface between the valve seat and needle valve or if they are worn beyond the permissible limits, the gasoline will continue flowing and cause it to overflow. Therefore they should be replaced as a set.

Conversely, if the needle sticks, the gasoline will not flow into the float chamber. If so, clean the float chamber, float parts and fuel passage with gasoline.

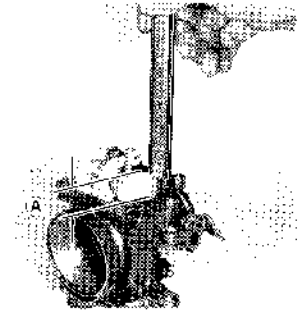


FLOAT HEIGHT

To check and adjust the float height, carry out the following manner:

- Invert the carburetor body.
- With the float arm kept free, measure the height ① while float arm is just in contact with needle valve using vernier calipers.

09900-20102 : Vernier calipers (200 mm)

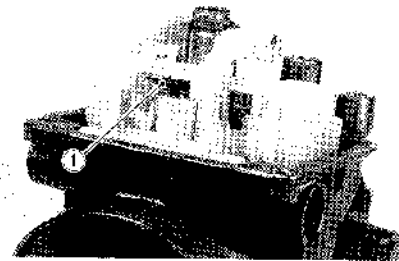


Float height ①	Standard
	14.6 ± 1.0 mm (0.57 ± 0.04 in)

- Bend the tongue ① as necessary to bring the height ② within standard range.

NOTE:

When measuring the height, be sure not to compress the needle valve spring.

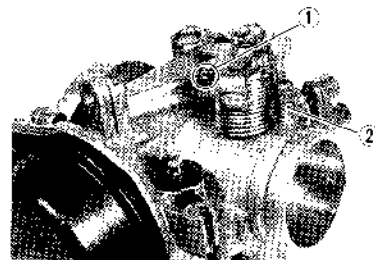


For any damage or clogging, check to see the following items :

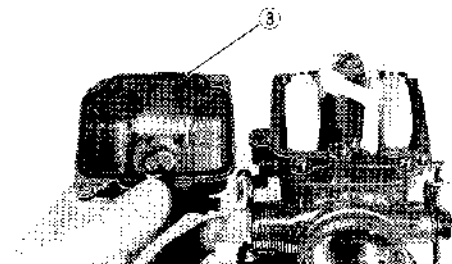
- * Pilot jet
- * Main jet
- * Pilot air jet
- * Main air jet
- * Needle air jet bleeding holes
- * Float
- * Diaphragm
- * Gasket and O-ring
- * Throttle valve shaft oil seals
- * Pilot screw bleeding hole
- * Pilot outlet and bypass holes

REASSEMBLY

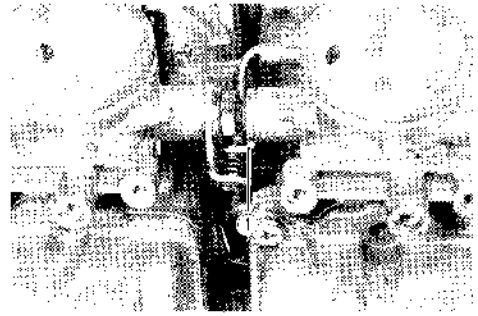
- Turn one end ① of the return spring clockwise by one turn to hitch the other end to the boss ② and hitch it to the throttle valve shaft lever properly.



- When installing the float chamber body, correctly position the O-ring ③.

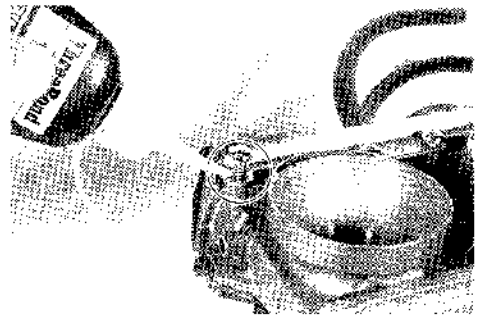


- When engaging two carburetors or two pairs of carburetors, position the throttle valve control lever ① correctly.

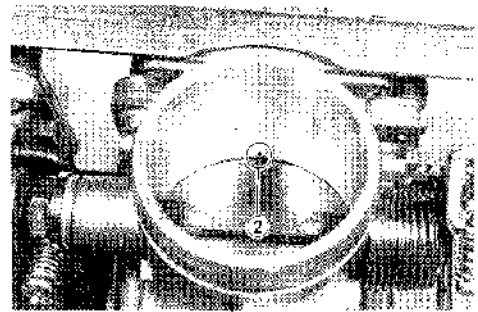


- Apply thread lock cement to the upper and lower plates screws.

99000-32040 : THREAD LOCK CEMENT



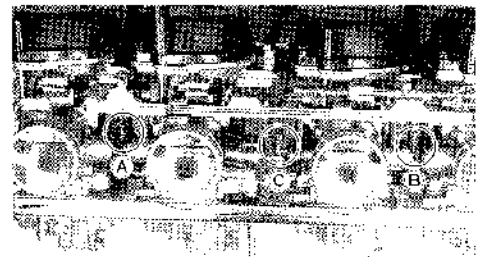
- Set each throttle valve in such a way that its top end meets the foremost bypass ②. This is accomplished by turning the throttle stop screw ③ and balance screws ④.



NOTE:

The order of throttle balance screw adjustment is as follows:

- Ⓐ (balance No. 4 Carb. with No. 3)
- ↓
- Ⓑ (balance No. 1 Carb. with No. 2)
- ↓
- Ⓒ (balance No. 1 and No. 2 Carbs. with No. 3)



After all the work is completed, mount the engine and the following adjustments are necessary.

- * Engine idle r/min Page 2-10
- * Throttle cable play Page 2-10
- * Balancing carburetors Page 4-15

BALANCE OF CARBURETORS

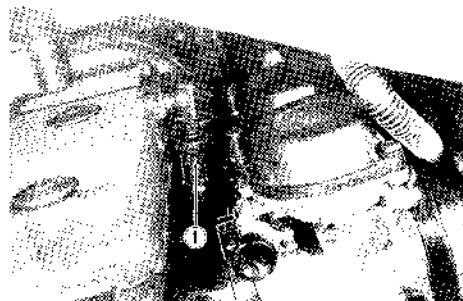
Check the four carburetors for balancing movement according to the following procedures.

NOTE:

If an adjustment is required, it is suggested that the fuel tank is removed, and fuel should be supplied by a separate fuel tank.

CALIBRATING EACH GAUGE

- Start up the engine and run it in idling condition for warming up.
- Stop the warmed-up engine.
- Remove the vacuum inlet cap ① for No. 1 or No. 4 cylinder.



- Connect one of the four rubber hoses of balancer gauge to this inlet.

09913-13121 : Carburetor balancer

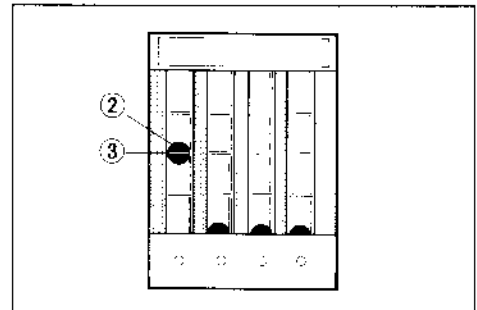
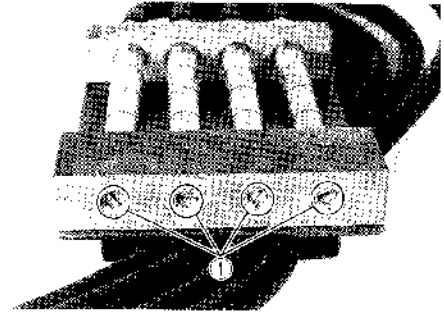


- Start up the engine and keep it running at 1 750 r/min. by turning throttle stop screw ②.

09900-26005 : Engine tachometer

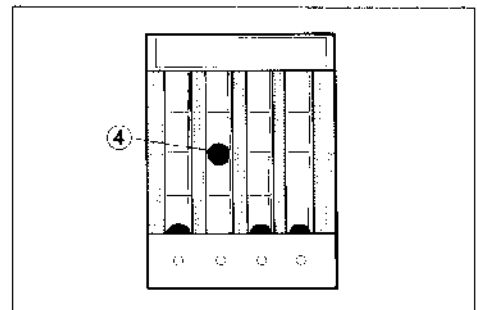


- Turn the air screw ① of the gauge so that the vacuum acting on the tube of that hose will bring the steel ball ② in the tube to the center line ③.



- After making sure that the steel ball stays steady at the center line, disconnect the hose from inlet and connect the next hose to the inlet.
- Turn air screw to bring the other steel ball ④ to the center line.
- Repeat the above process on the third and fourth hoses.

The balancer gauge is now ready for use in balancing the carburetors.

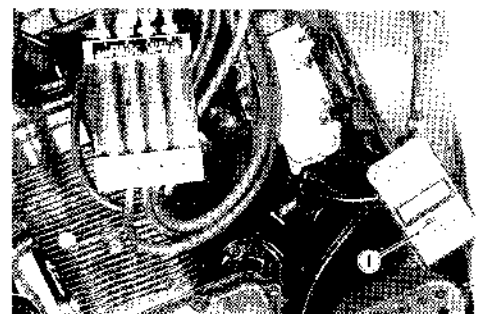


BALANCING CARBURETORS

For balancing all the carburetor movement, remove all the vacuum inlet caps from each carburetor. Connect the balancer gauge hoses to these vacuum inlets and adjust the balance of four carburetors as follows.

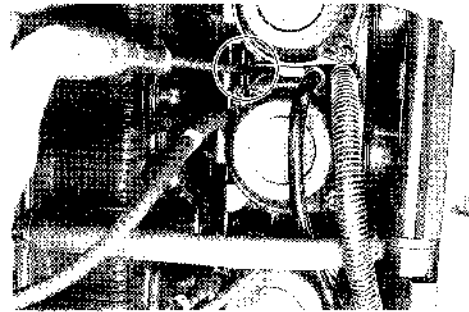
- Start up the engine, and keep it running at 1 750 r/min. to see engine tachometer reading ①.
A correctly adjusted carburetor has the steel balls in the Nos. 1 through 4 tubes at the same level.

09900-26005 : Engine tachometer



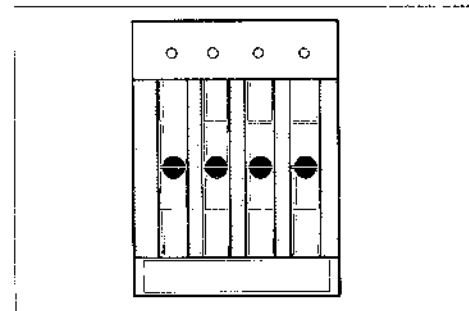
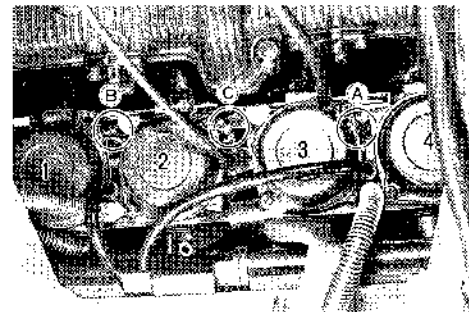
4-17 FUEL AND LUBRICATION SYSTEM

- If the steel balls are not in correct positions, adjust the throttle valve adjusting screw correctly.



Adjusting order is as follows.

- Ⓐ (balance No. 4 Carb. with No. 3)
- ↓
- Ⓑ (balance No. 1 Carb. with No. 2)
- ↓
- Ⓒ (balance No. 1 and No. 2 Carbs. with No. 3)



- After balancing the carburetors, set its speed between 1 000 and 1 200 r/min. to turn the throttle stop screw ① referring engine tachometer reading.

Idle r/min.	1 100 ± 100 r/min.
-------------	--------------------

09900-26005 : Engine tachometer



CAUTION:

Do not disturb the pilot screw. This component is PRE-SET at the factory by the very specialized equipment.



LUBRICATION SYSTEM

OIL PRESSURE

Start the engine and check if the oil pressure indicator light is turned on. If it keeps on lighting, check the oil pressure indicator light circuit. If it is in good condition, check the oil pressure in the following manner:

- Install the oil pressure gauge with adaptor ① in the position shown in the figure.

09915-74510 : Oil pressure gauge

09915-77330 : Meter (for high pressure)

09915-74540 : Adaptor

- Warm up the engine as follows:
 Summer 10 min. or so at 2 000 r/min.
 Winter 20 min. or so at 2 000 r/min.

NOTE:

Engine oil must be warmed up to 60°C (140°F) when checking the oil pressure.

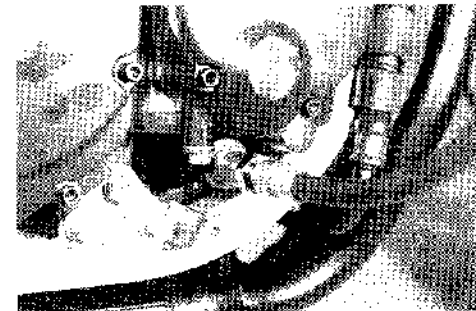
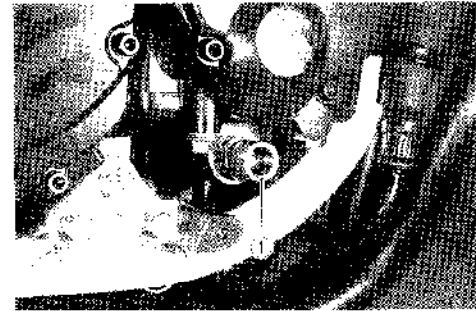
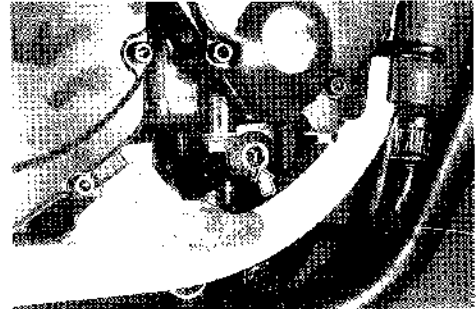
09900-26005 : Engine tachometer

- After warming up, increase the engine speed to 3 000 r/min. with engine tachometer ② reading and read the oil pressure gauge ③.

Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ²) Below 600 kPa (6.0 kg/cm ²) at 3 000 r/min.
----------------------------------	---

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

- * Low oil pressure is usually the result of a clogged oil filter, oil leakage from the oil passage way, damaged oil seal, a defective oil pump or a combination of these items.
- * High oil pressure is usually caused by a engine oil which is too heavy a weight, a clogged oil passage, improper installation of the oil filter or a combination of these items.

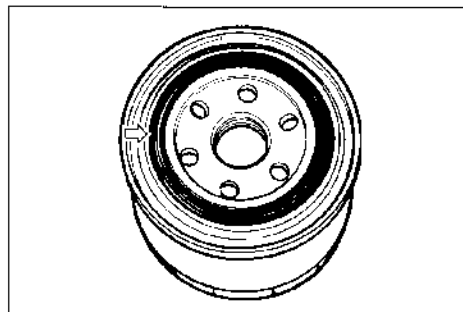


OIL FILTER

NOTE:

Grease the O ring of oil filter.

99000-25010 : SUZUKI SUPER GREASE "A"

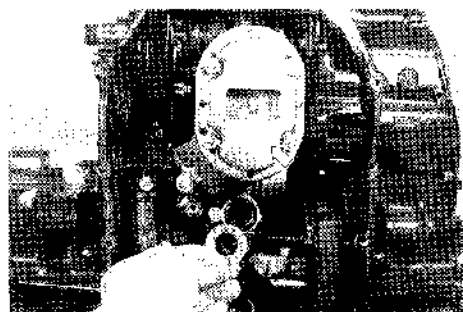


OIL SUMP FILTER

At the same time wash the oil pan. Check to be sure that the strainer is free from any sign of rupture and wash the strainer clean periodically. When installing oil sump filter, be sure to face the oil inlet to the front.

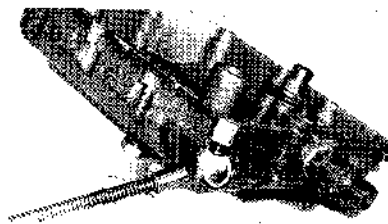
CAUTION:

Replace the oil pan gasket with new one to prevent oil leakage.

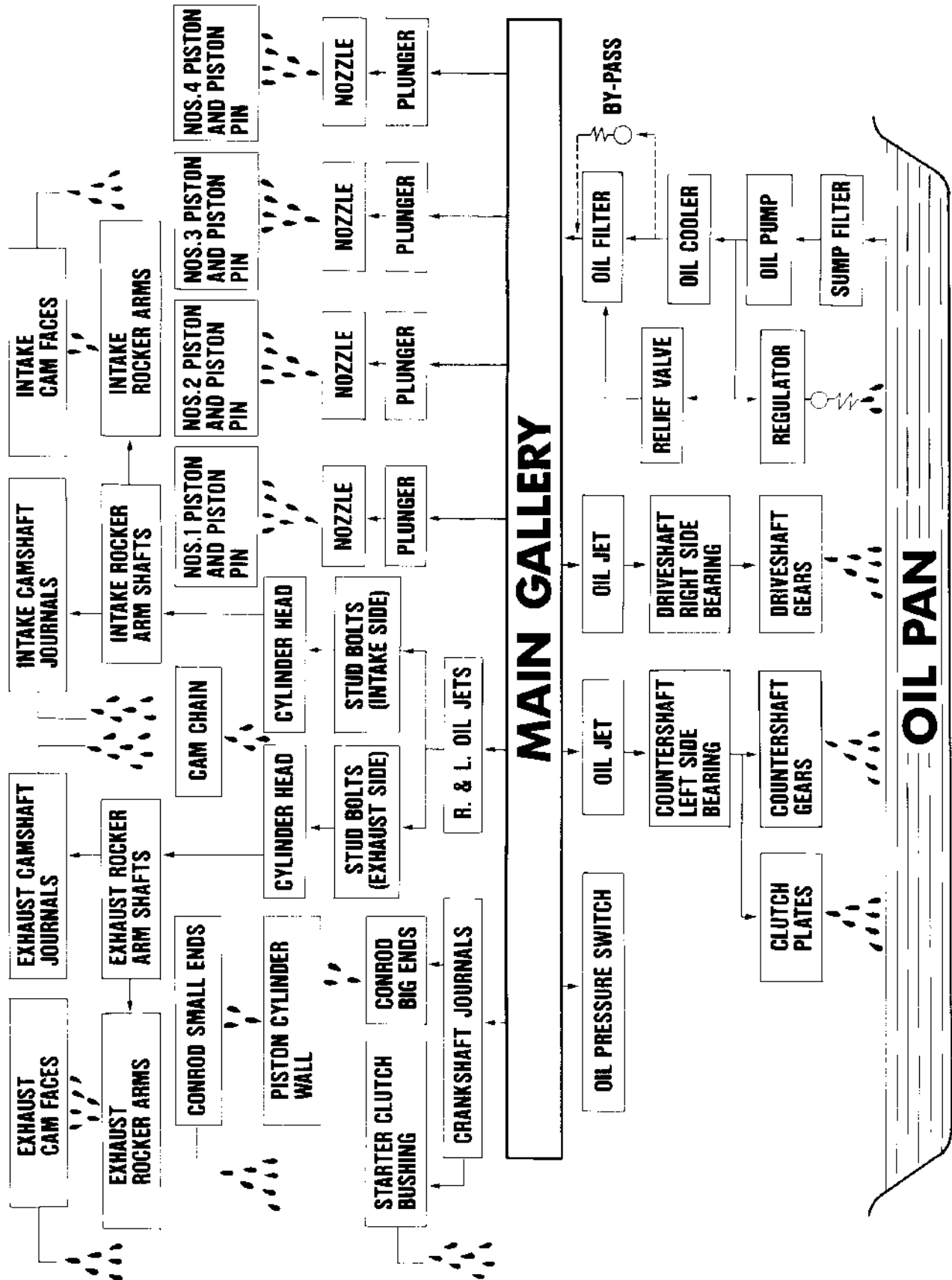


RELIEF VALVE

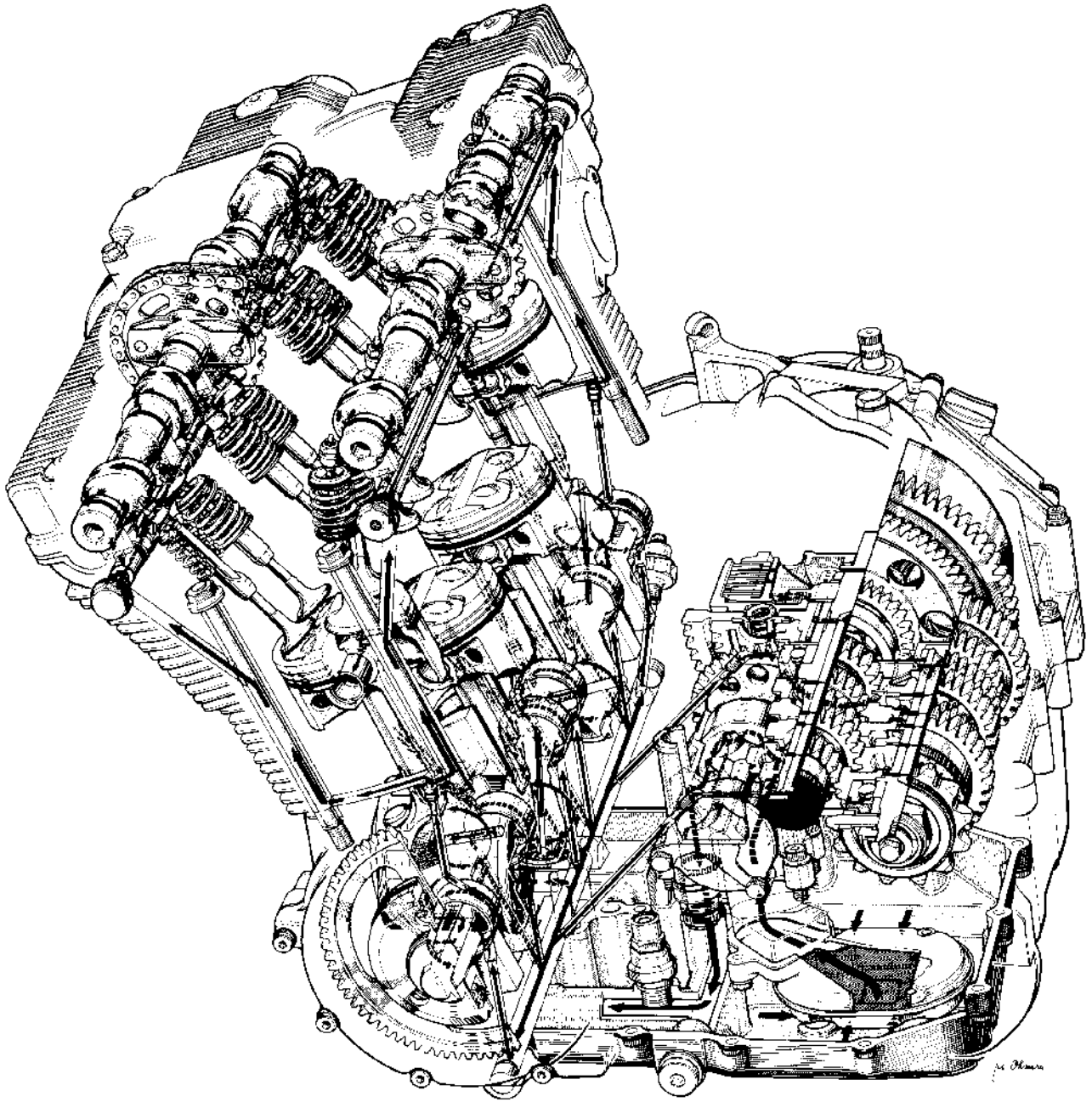
Check the hole of the relief valve for clogging.



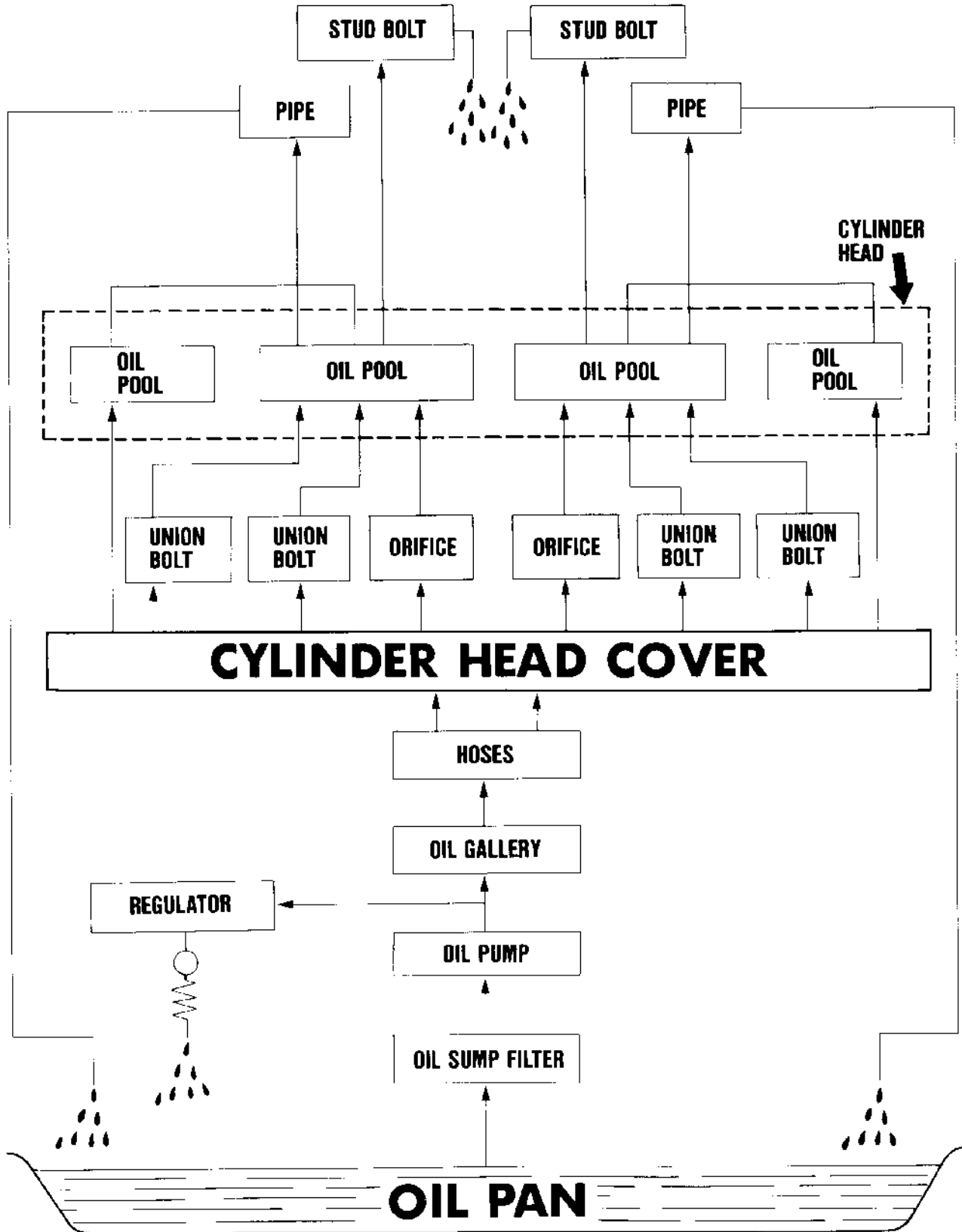
ENGINE LUBRICATION SYSTEM CHART



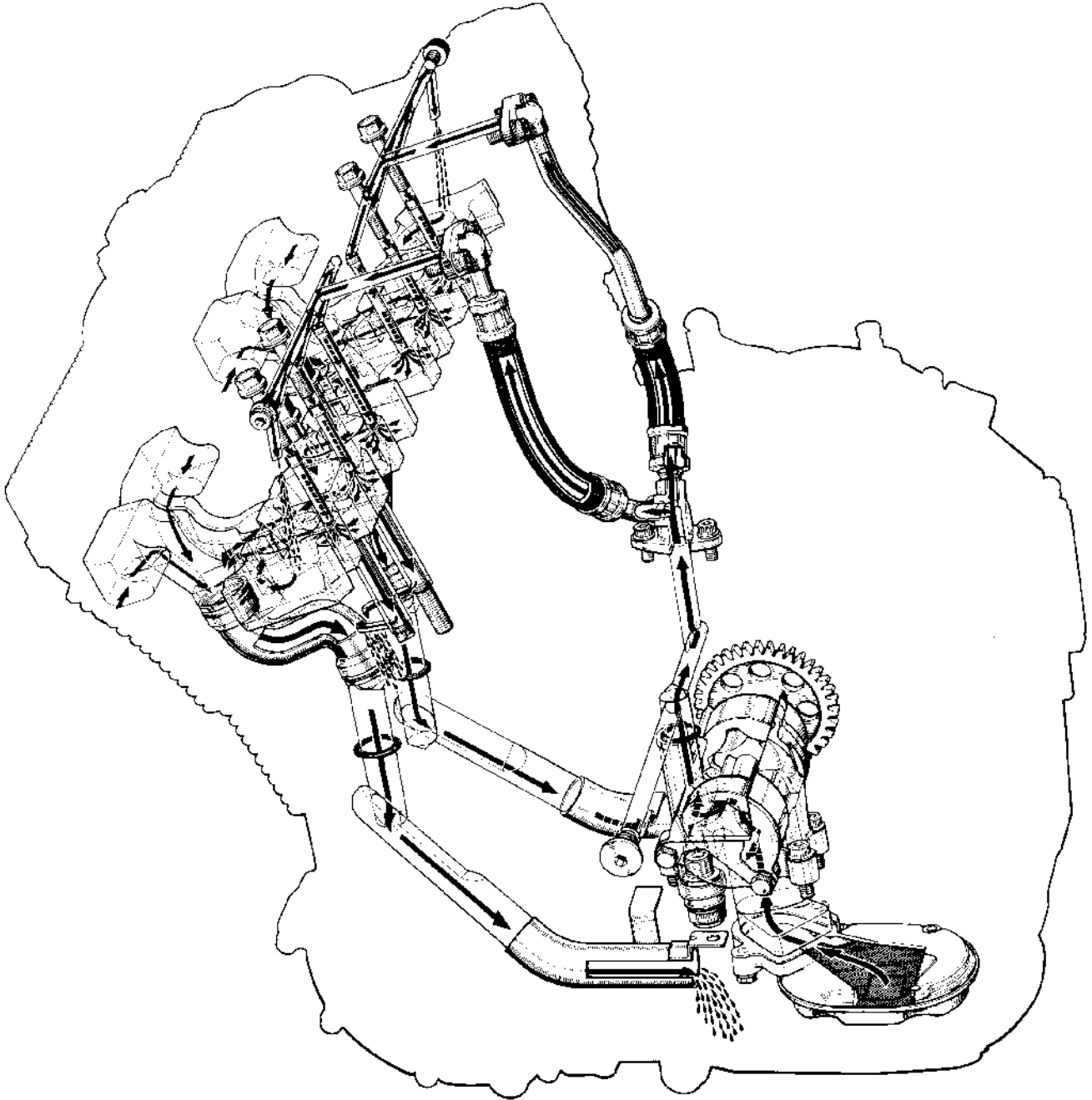
ENGINE LUBRICATION SYSTEM



CYLINDER HEAD COOLING SYSTEM CHART



CYLINDER HEAD COOLING SYSTEM



OIL COOLER

Oil Pressure Regulator: The oil pressure regulator is threaded into the oil passage in the oil pan.

Relief Valve: A relief valve is mounted in the oil pan, in a parallel circuit with the oil cooler; when the relative oil pressure between the entrance and exit to the oil cooler exceeds 6.0 kg/cm² (600 kPa), the relief valve operates.

- **Low Engine Oil Temperature**

When engine oil temperature is low, oil viscosity is high, and there is a great loss of pressure inside the oil cooler.

When the relative pressure of the entrance and exit is greater than 6.0 kg/cm² (600 kPa), the relief valve operates, bringing oil directly from the oil pump to the oil filter.

- **High Engine Oil Temperature**

When engine oil temperature is high, oil viscosity is low, and relative pressure drops below 6.0 kg/cm² (600 kPa). In this case, the relief valve does not operate, this allows the oil to be cooled by flowing through the oil cooler before passing onto the oil filter.

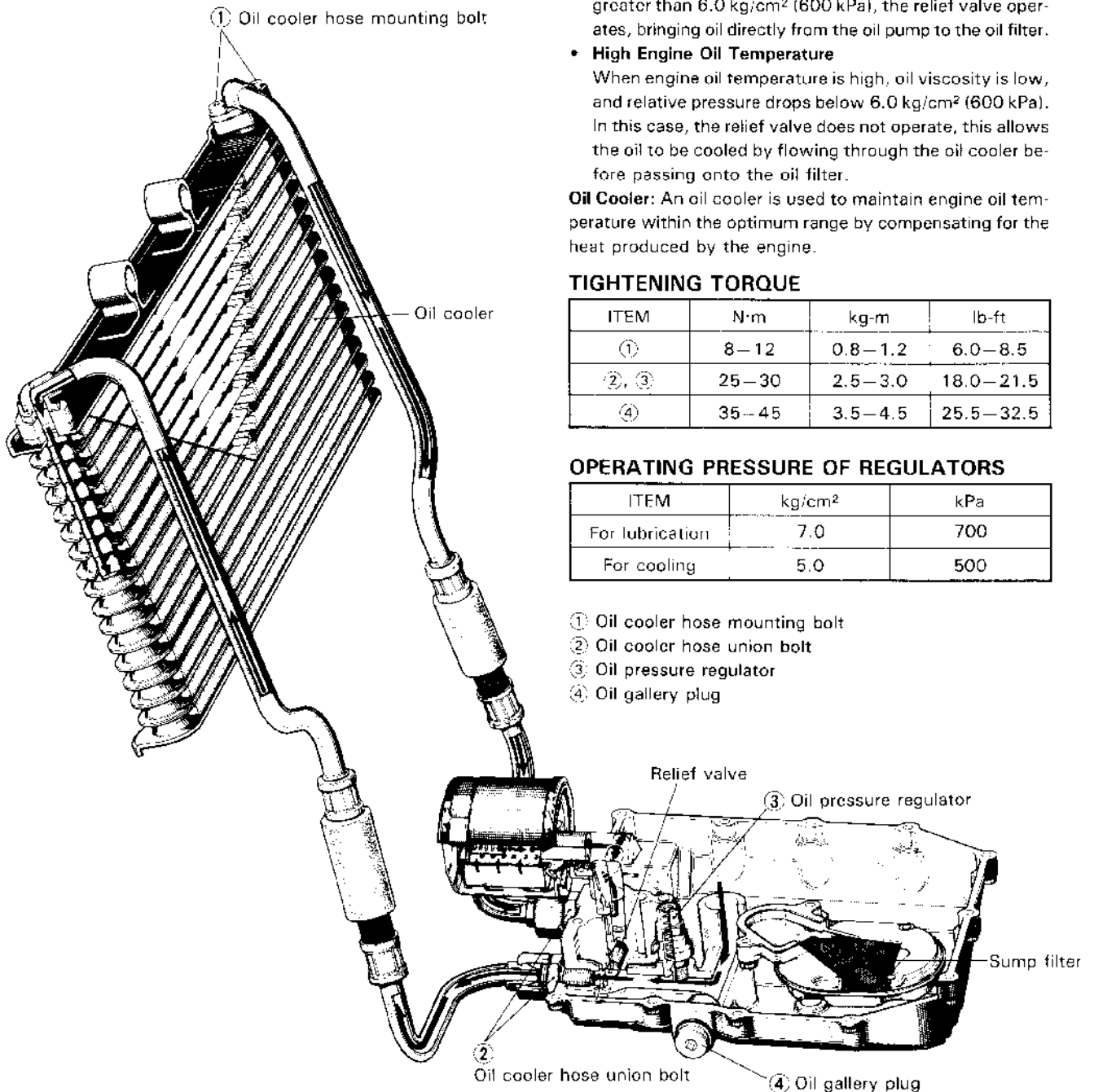
Oil Cooler: An oil cooler is used to maintain engine oil temperature within the optimum range by compensating for the heat produced by the engine.

TIGHTENING TORQUE

ITEM	N·m	kg·m	lb·ft
①	8-12	0.8-1.2	6.0-8.5
②, ③	25-30	2.5-3.0	18.0-21.5
④	35-45	3.5-4.5	25.5-32.5

OPERATING PRESSURE OF REGULATORS

ITEM	kg/cm ²	kPa
For lubrication	7.0	700
For cooling	5.0	500



- ① Oil cooler hose mounting bolt
- ② Oil cooler hose union bolt
- ③ Oil pressure regulator
- ④ Oil gallery plug

ELECTRICAL SYSTEM

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CHARGING SYSTEM

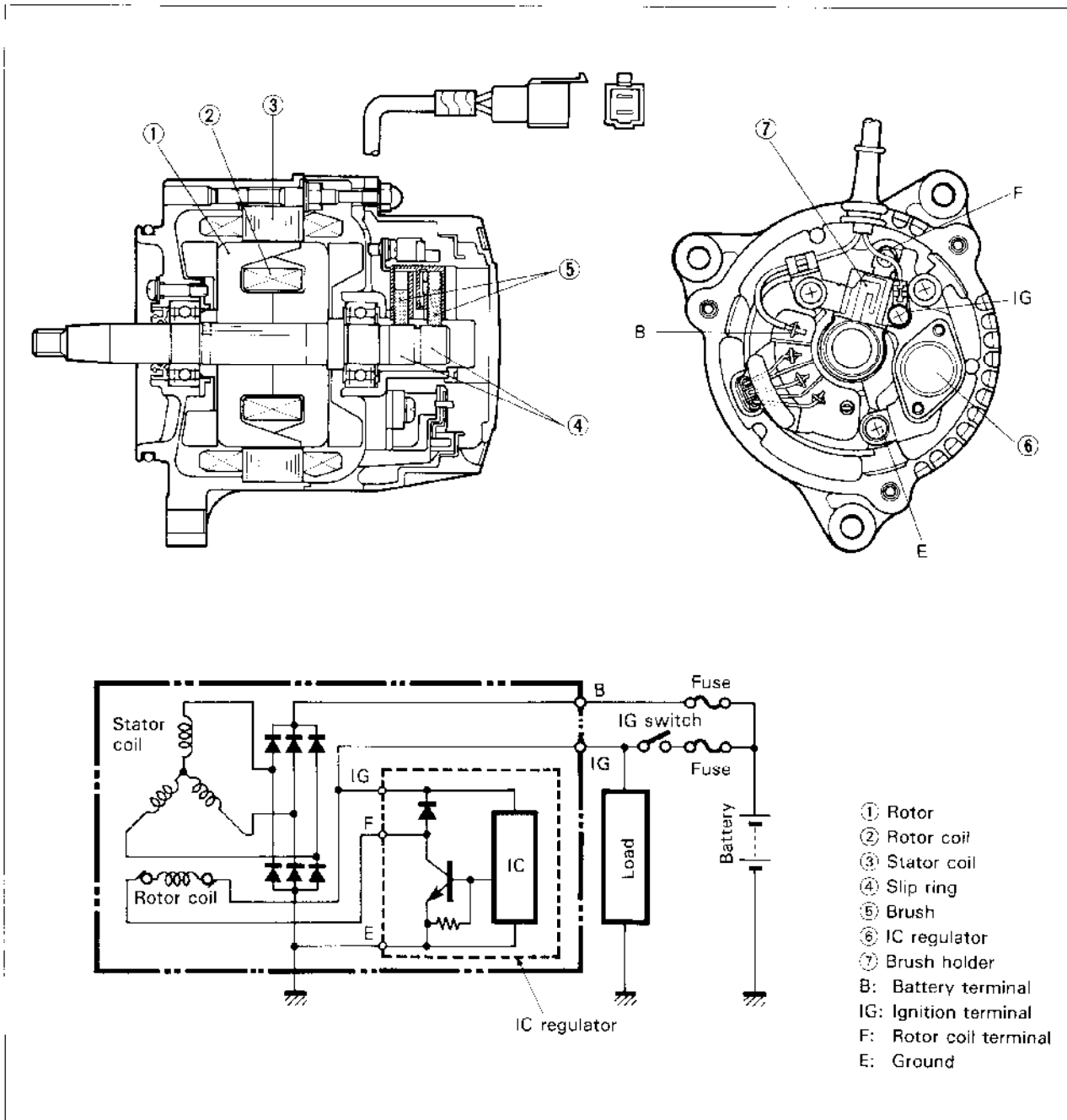
DESCRIPTION (GENERATOR WITH IC REGULATOR)

The generator features a solid state regulator that is mounted inside the generator. All regulator components are enclosed into a solid mold, and this unit is attached to the brush holder frame. The regulator voltage setting cannot be adjusted.

Two brushes carry current through the two slip rings to the rotor coil mounted on the rotor.

The stator windings are assembled on the inside of a laminated core that forms part of the generator housing.

A rectifier bridge connected to the stator windings contains six diodes, and electrically changes the stator A.C. voltages to a D.C. voltage which appears at the generator output terminal.



CHARGING OUTPUT CHECK

- Remove the seat.
- Start the engine and keep it running at 5 000 r/min.
- Measure the DC voltage between the battery terminals, \oplus and \ominus with a pocket tester. If the tester reads under 13.5V, check the stator coil, rectifier and IC regulator mounted in the generator.

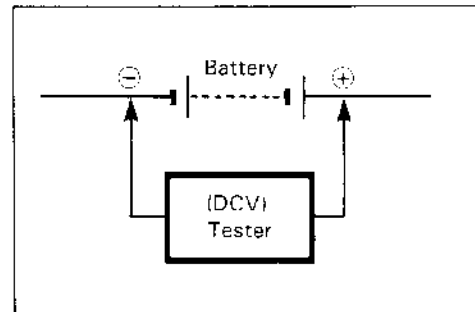
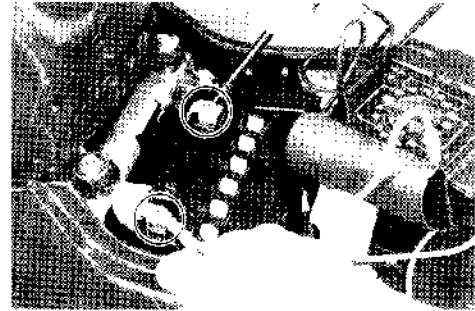
NOTE:

When making this test, be sure that the battery is fully-charged condition.

09900-25002 : Pocket tester

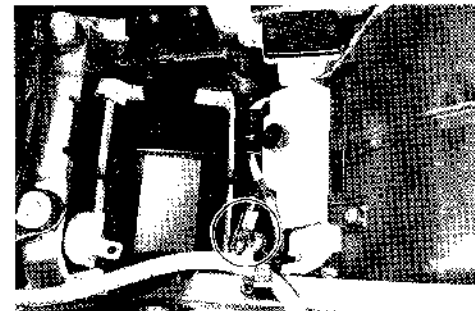
Tester knob indication : DC25V

STD charging output	Above DC13.5V at 5 000 r/min.
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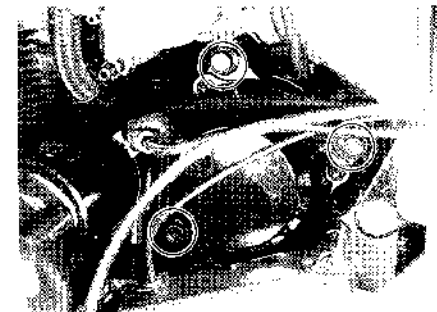


REMOVAL AND DISASSEMBLY

- Disconnect the generator lead wires to locate near the battery.



- Remove the generator.

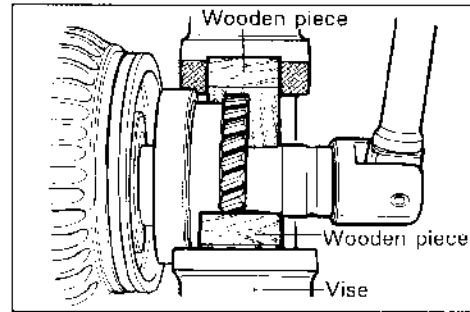


5-3 ELECTRICAL SYSTEM

- Hold the generator driven gear to use a vise and appropriate pieces of woods, and remove the generator driven gear nut as shown.

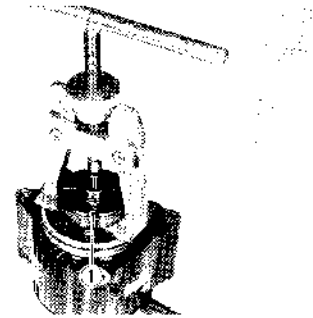
CAUTION:

Do not hold the damper housing with a vise, because the damage or breakage of damper housing will result.

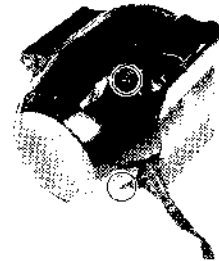


- After removing the generator driven gear, remove the damper housing ① with a bearing puller.

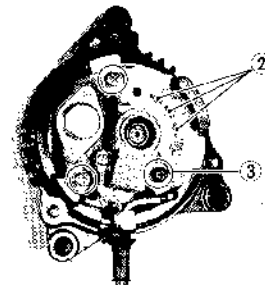
09913-61510 : Bearing puller (80 mm)



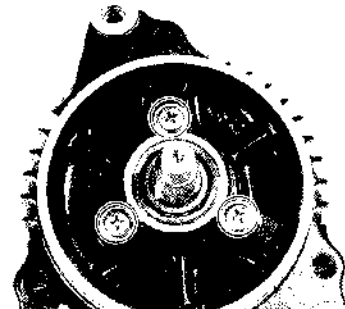
- Remove the generator end cover.



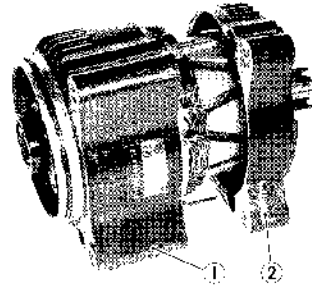
- Disconnect the stator coil lead wires ② and battery lead wire ③ to use a soldering iron.
- Remove the brush holder, IC regulator and rectifier to remove three screws.



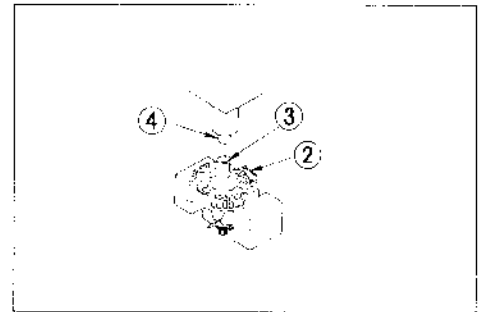
- Remove the three bearing retainer screws.



- Separate the generator housing ① from generator end housing ②.



- Remove the rotor ③ from generator end housing ② to use a hand press ④ as shown.



INSPECTION

ROTOR BEARING

Inspect the rotor bearings for abnormal noise and smooth rotation to rotate it by hand.

If there is anything unusual, remove the bearing with a bearing puller.

09913-60910 : Bearing puller (40–60 mm)

CAUTION:

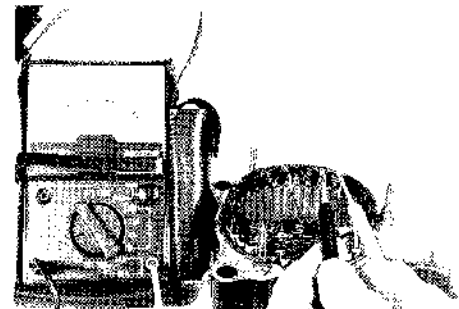
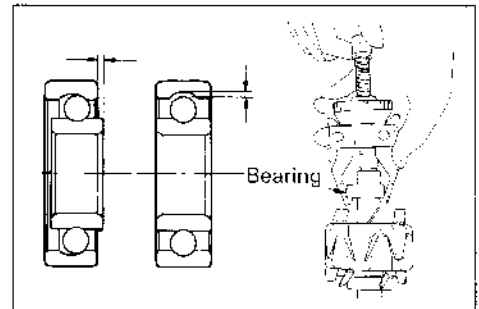
The removed bearing should be replaced with new one.

STATOR COIL CONTINUITY CHECK

Check the continuity between the lead wires of stator with a pocket tester.

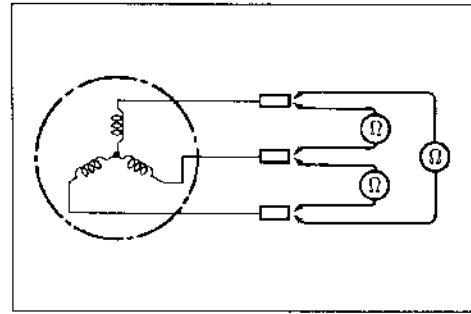
If there is no continuity, replace the stator.

Also check that the stator core is insulated.



09900-25002 : Pocket tester

Tester knob indication : x1Ω range



ROTOR COIL CONTINUITY CHECK

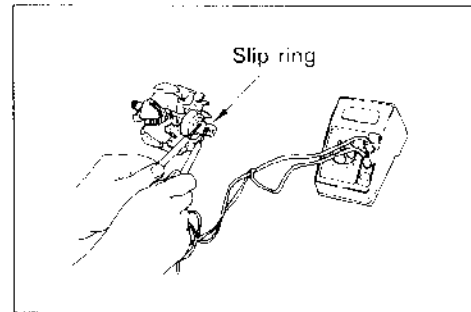
Check the continuity between the two slip rings of rotor with a pocket tester.

If there is no continuity, replace the rotor.

Also check that the rotor is insulated.

09900-25002 : Pocket tester

Tester knob indication : x1Ω range

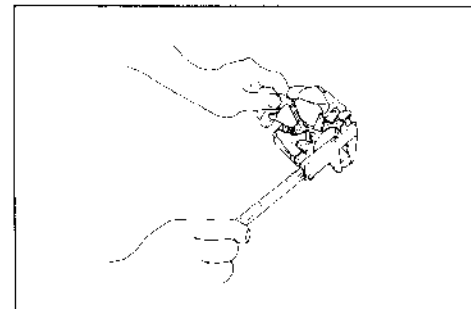


SLIP RING

If the slip ring surface is dirty, polish it with # 400 fine emery paper to protect the charging performance decrease. After polishing, wipe the slip ring with a clean dry cloth.

09900-20102 : Vernier calipers (200 mm)

Slip ring O.D.	Service Limit
	14.0 mm (0.55 in)

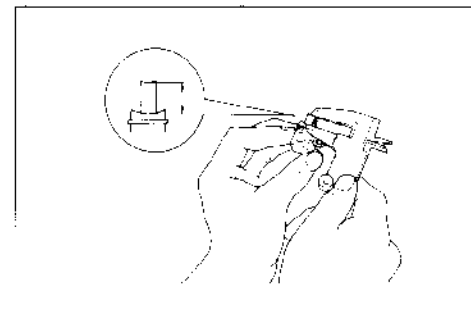


CARBON BRUSH

Measure the length of brushes as shown. If it exceeds the service limit, replace them with new ones.

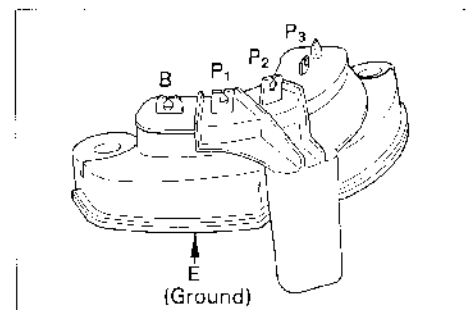
09900-20102 : Vernier calipers (200 mm)

Brush length	Service Limit
	4.5 mm (0.18 in)



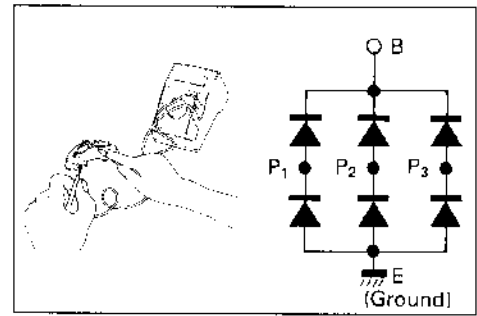
RECTIFIER

Check the continuity between terminals and ground. Put one tester lead to terminal "B" and the other lead to ground or other terminals; then swap the two leads. Of the two tester indications, one should be continuity, and the other should be infinity (non continuity). If not, replace the rectifier assembly.



09900-25002 : Pocket tester

Tester knob indication : $\times 1\Omega$ range



IC REGULATOR

Using a variable DC power source, switch, bulb and pocket tester, check the IC regulator, which requires two steps described below:

First check:

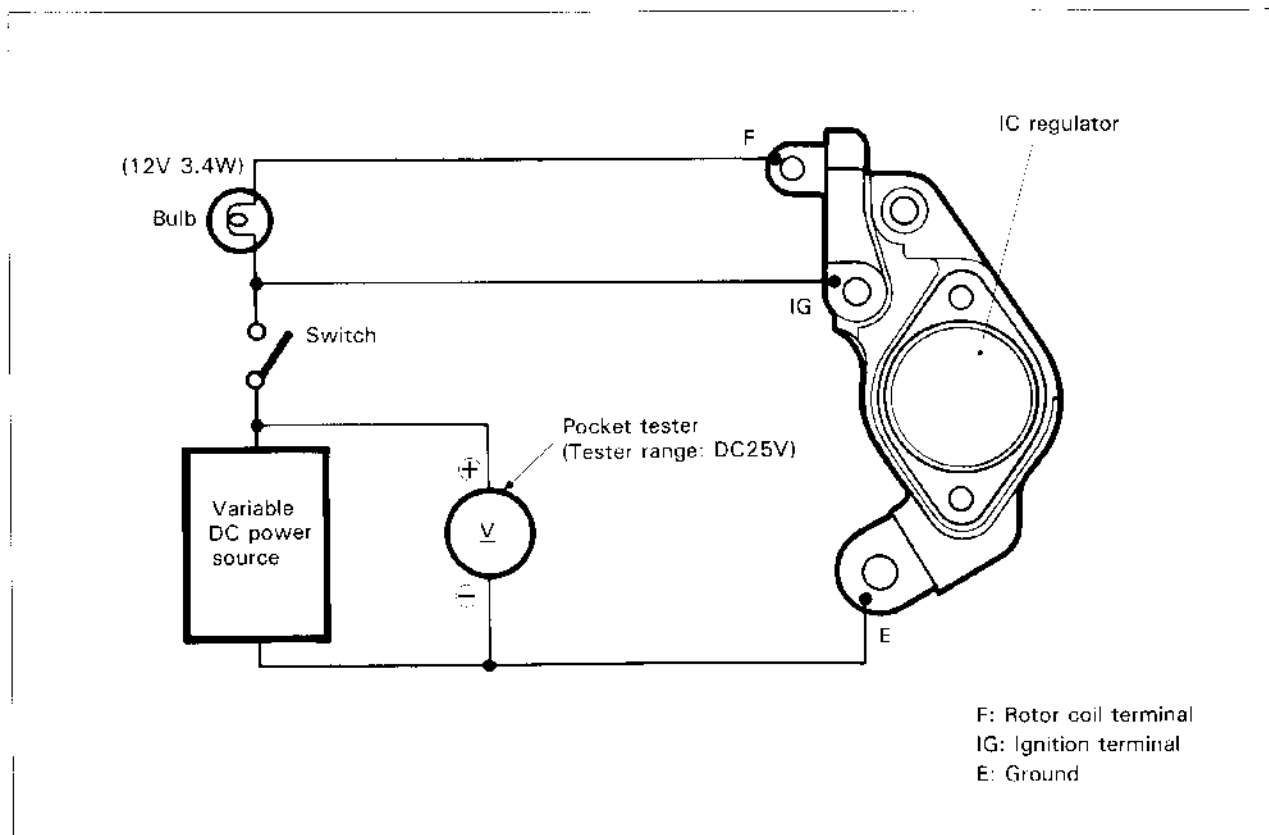
Set the variable DC power source to the 12V and turn the switch ON position. If the bulb does not light, replace the IC regulator. If the bulb is lighting ON, this IC regulator has passed the first check.

Second check:

Under the above condition, set the variable DC power source to the 14.5V, if the bulb goes out, IC regulator is in good condition. If the bulb remains it, replace the IC regulator.

09900-25002 : Pocket tester

Tester knob indication : DC25V



GENERATOR DRIVEN GEAR DAMPER

Inspect the dampers for wear and damage. If any defects are found, replace the dampers as a set.

NOTE:

When installing the dampers, apply Moly Paste to the damper surface.

99000-25140 : SUZUKI MOLY PASTE



REASSEMBLY AND REMOUNTING

Reassemble and remount the generator in the reverse order of disassembly and removal. Pay attention on the way its to the following points:

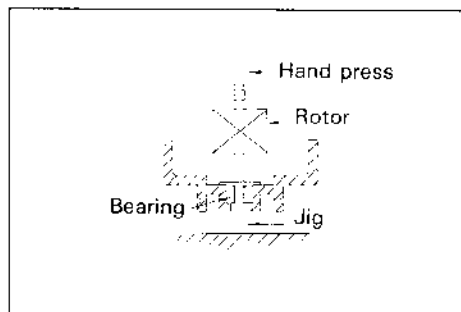
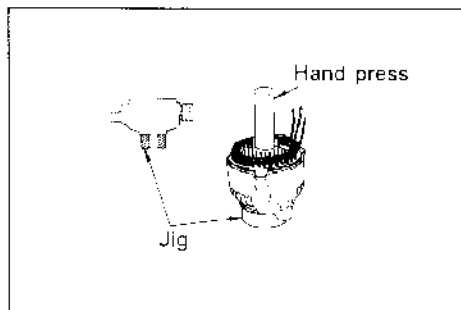
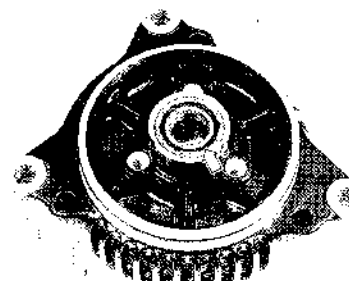
- Apply grease to the lip of the oil seal.

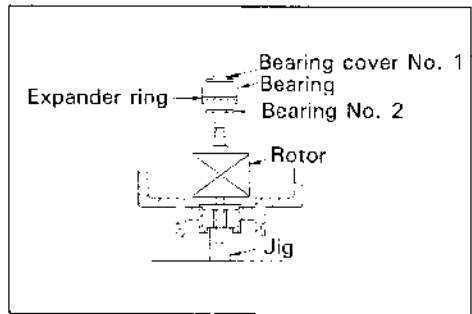
99000-25010 : SUZUKI SUPER GREASE "A"

CAUTION:

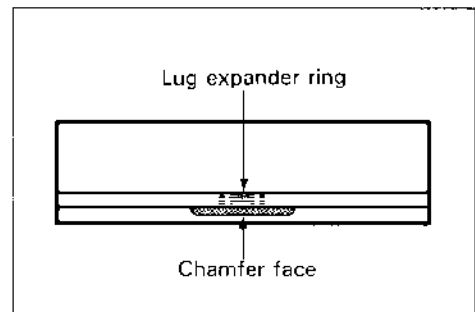
The removed oil seal and O-rings should be replaced with new ones.

- Install the bearings and rotor to use a hand press as shown.



**NOTE:**

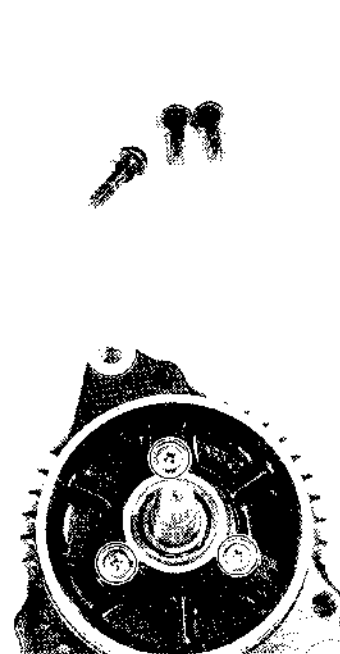
Before reinstalling the slip ring side bearing to generator end housing, turn the expander ring and align the expander ring lug with the center of chamfer face of bearing outer race.



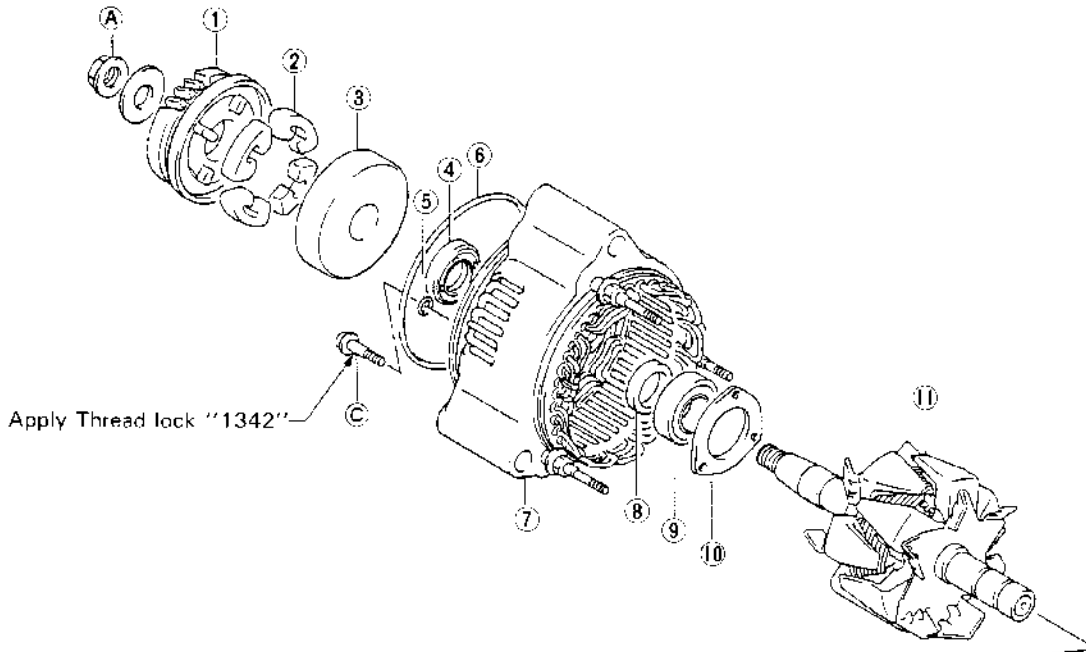
- Fit the three O-rings to the bearing retainer screws.

- Apply a small quantity of cement to the bearing retainer screws.

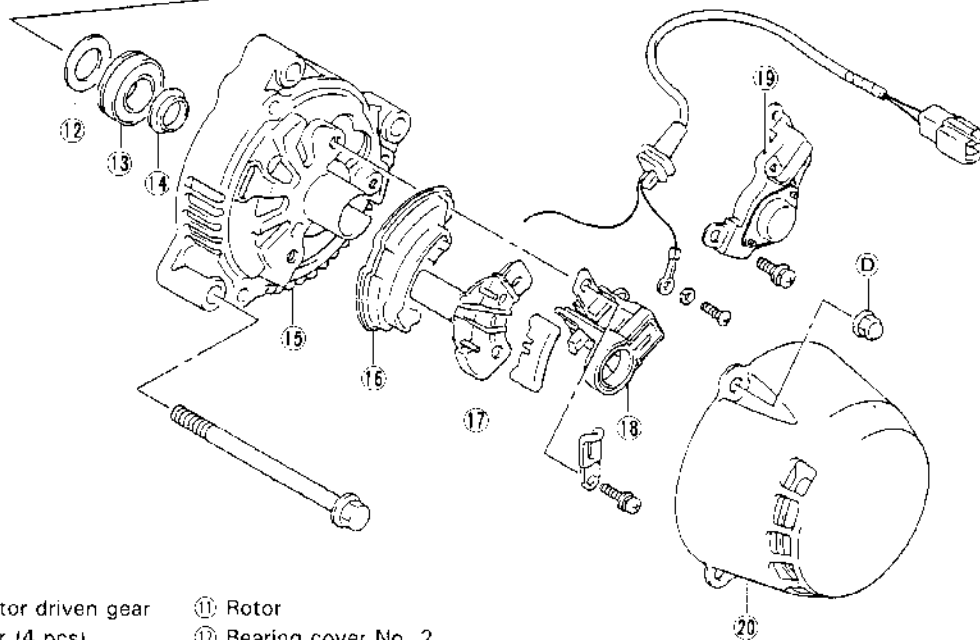
99000-32050 : THREAD LOCK "1342"



REASSEMBLY INFORMATION



Apply Thread lock "1342" C



- ① Generator driven gear
- ② Damper (4 pcs)
- ③ Damper housing
- ④ Oil seal
- ⑤ O ring (3 pcs)
- ⑥ O-ring
- ⑦ Generator housing
- ⑧ Spacer
- ⑨ Bearing (Gear side)
- ⑩ Bearing retainer
- ⑪ Rotor
- ⑫ Bearing cover No. 2
- ⑬ Bearing (Slip ring side)
- ⑭ Bearing cover No. 1
- ⑮ Generator end housing
- ⑯ Rectifier
- ⑰ Rectifier cover
- ⑱ Brush holder
- ⑲ IC regulator
- ⑳ Generator end cover

ITEM	Tightening torque		
	N·m	kg·m	lb·ft
Ⓐ	55-65	5.5-6.5	40.0-47.0
Ⓑ	21-29	2.1-2.9	15.0-21.0
Ⓒ	2.2-3.3	0.22-0.33	1.5-2.5
Ⓓ	3.7-5.5	0.37-0.55	2.5-4.0

IGNITION SYSTEM

DESCRIPTION

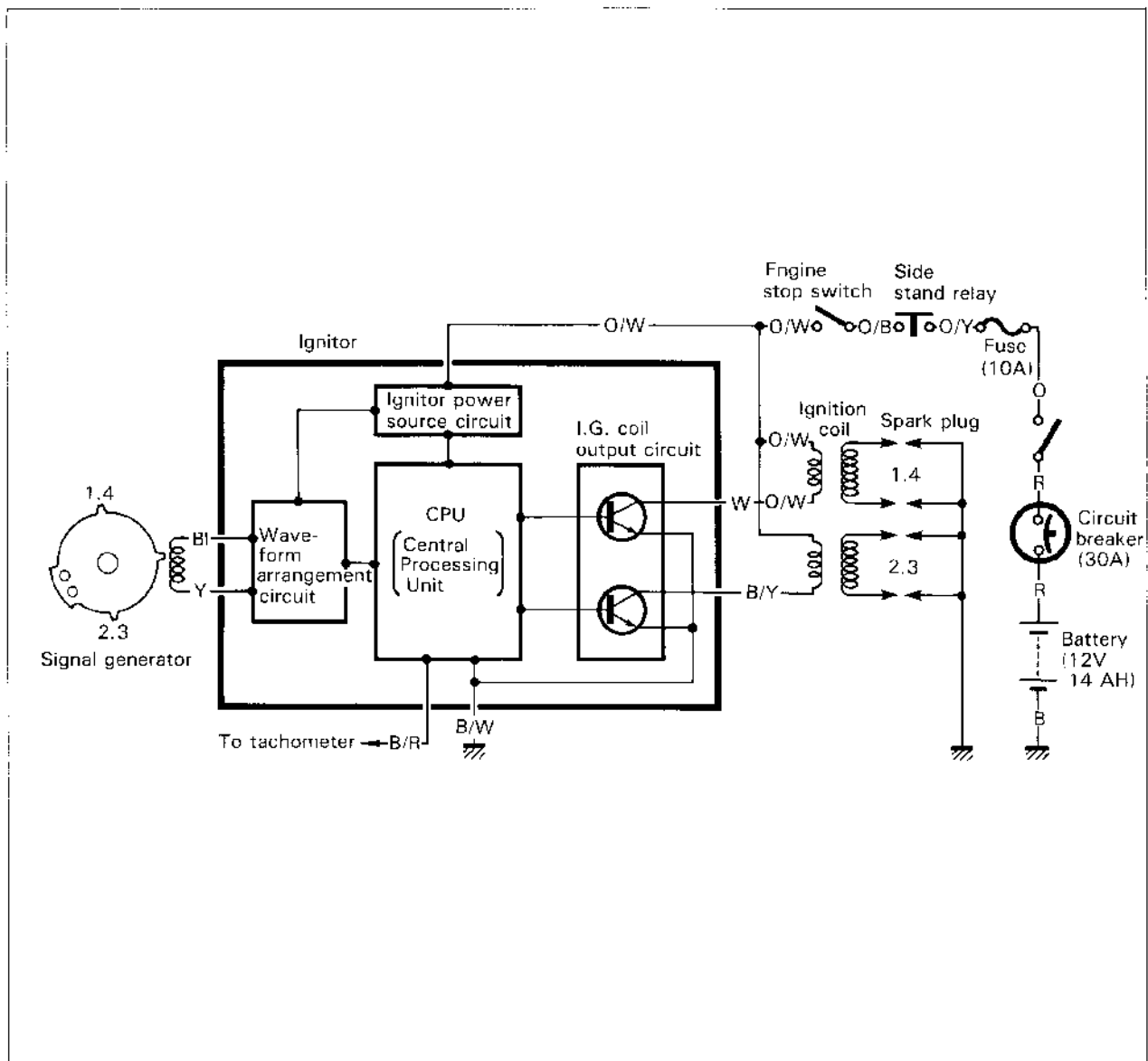
The fully transistorized ignition system consists of a signal generator, ignitor, ignition coils, and spark plugs. The signal generator comprises the rotor tip and pickup coil.

The signal generator is mounted at the right end of the crankshaft. The output of the signal generator goes to the ignitor unit, where it turns ON and OFF the transistor alternately. As the transistor is turned ON and OFF, the current passing through the primary windings of the ignition coil is also turned OFF and ON accordingly, thus it induces the secondary current on the ignition coil secondary windings and produce the spark between spark plug gaps.

Ignition cut-off circuit is incorporated in the ignitor unit to prevent over-running engine. If engine r/min. reaches 12 500 r/min., this circuit cuts off the ignition primary current for all spark plugs.

CAUTION:

Engine can run over 12 500 r/min. without load, even if the ignition cut-off circuit is effective, and it may cause engine damage. Do not run the engine without load over 12 500 r/min. at anytime.



INSPECTION

IGNITION COIL (Checking with Electro Tester)

NOTE:

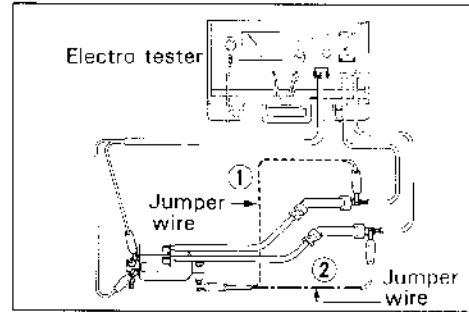
Make sure that the three-needle sparking distance of electro tester is set at 8 mm (0.3 in).

- With the tester and jumper wire, test the ignition coil for sparking performance in accordance with the following two steps.

STEP ① : Connect the jumper wire to the spark plug cap and ignition coil ground.

STEP ② : Switch over the jumper wire to the other plug cap and ground.

If no sparking or orange color sparking occurs in the above conditions, it may be caused by defective coil.



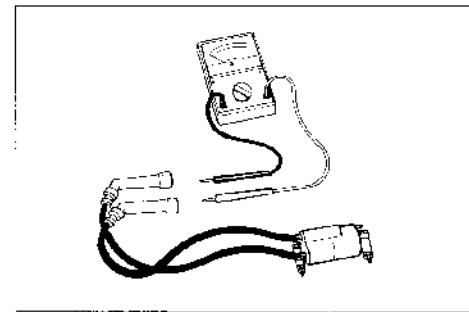
09900-28106 : Electro tester

Spark performance	Over 8 mm (0.3 in)
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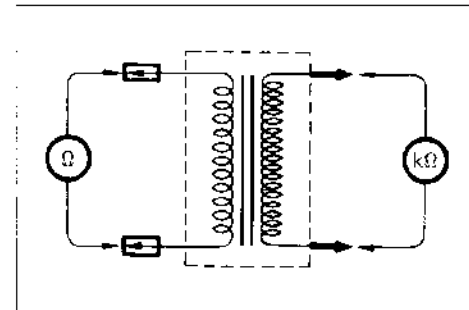
IGNITION COIL (Checking with Pocket Tester)

- A SUZUKI pocket tester or an ohm meter may be used, instead of the electro tester. In either case, the ignition coil is to be checked for continuity in both primary and secondary windings. Exact ohmic readings are not necessary, but, if the windings are in sound condition, their continuity will be noted with these approximate ohmic values.

09900-25002 : Pocket tester



Ignition coil resistance	
Primary	⊕ tap — ⊖ tap 2.4 — 3.2Ω Tester range: (× 1Ω)
Secondary	Plug cap — Plug cap 30 — 40 kΩ Tester range: (× 1 kΩ)

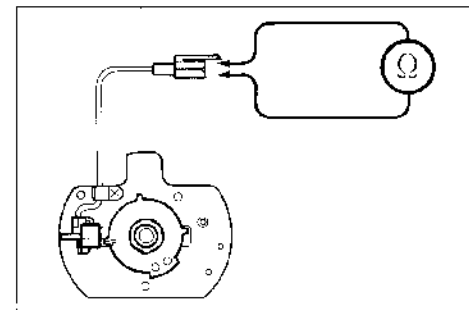


SIGNAL GENERATOR (Checking with Pocket Tester)

- Remove the seat and left frame cover.
- Measure the resistance between lead wires. If the resistance is infinity or less than the specifications, the signal generator must be replaced.

09900-25002 : Pocket tester

Signal coil resistance	Approx. 130 — 180Ω (Y — Bl)
------------------------	--------------------------------



Tester knob indication : × 100Ω range

SPARK PLUGS

- Remove both side fairings.
- Remove the seat and fuel tank.
- Remove two air vent tubes.
- Remove all the spark plugs.

Standard spark plug	NGK JR9C
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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.

09900-20803 : Thickness gauge

Spark plug gap	Standard
	0.6 – 0.7 mm (0.024 – 0.028 in)

Electrode's Condition

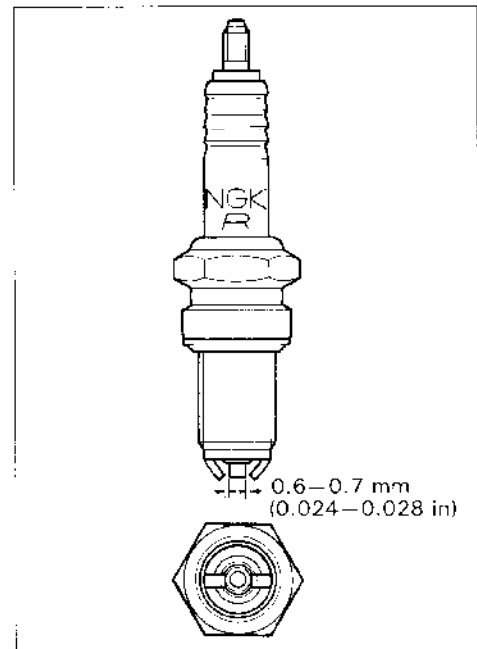
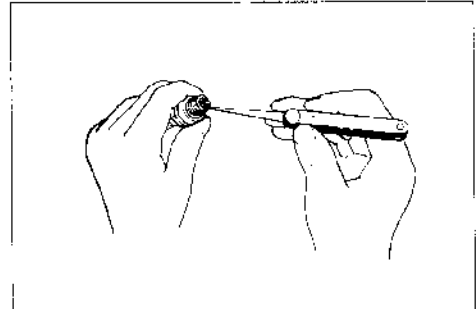
Check to see the worn or burnt condition of the electrodes.
If it is extremely worn or burnt, replace the plug. And also replace the plug if it has a broken insulator, damaged thread, etc.

NOTE:

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

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.



IGNITOR UNIT (Checking with Digital Ignitor Checker)

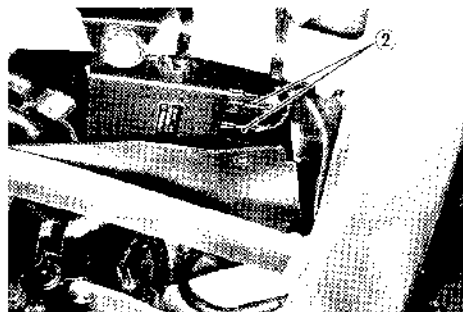
This section explains the checking procedure for the ignitor unit using Digital Ignitor Checker (special tool). With this checker, the ignitor unit can be checked either on the machine or off the machine. The following explains the checking procedure on the machine.

09931-64410 : Digital Ignitor Checker

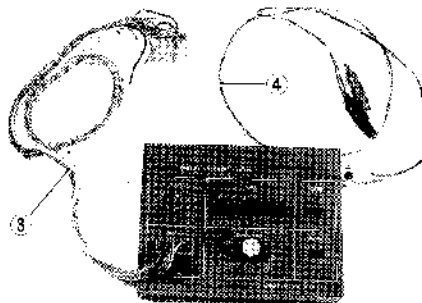
- Remove both seats.
- Remove both frame covers.
- After removing the two screws as shown, move the battery holder under cover ① downward.

**WIRING PROCEDURE:**

- Disconnect two ignitor lead wire couples ② at the ignitor unit.



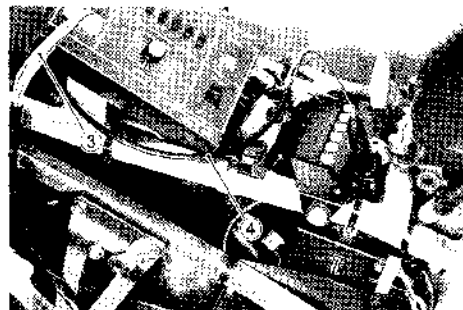
- Prepare the ignitor checker lead wire "MODE 1" ③ which comes supplied with the ignitor checker and connect its end to the ignitor unit and another end to the checker.
- Connect the power source leads ④ to the battery.

**CAUTION:**

- * Be sure the BLACK lead is connected to the battery \ominus terminal and RED lead to the \oplus terminal.
- * Before connecting the power source leads, make sure both "POWER" button and "START" switch are in "off" position (POWER button not depressed)

NOTE:

Be sure the battery used is in fully-charged condition.



CHECK PROCEDURE:

With all the lead wires properly connected, check the ignitor unit in the following three steps.

First Step:

Depress "MODE 1" button then "POWER" button. This time, "POWER" lamp should come on, if not, battery is under-charged. Also, "TACHO" MONITOR lamps should come on. If this lamp does not light, the ignitor unit should be replaced.

Second Step:

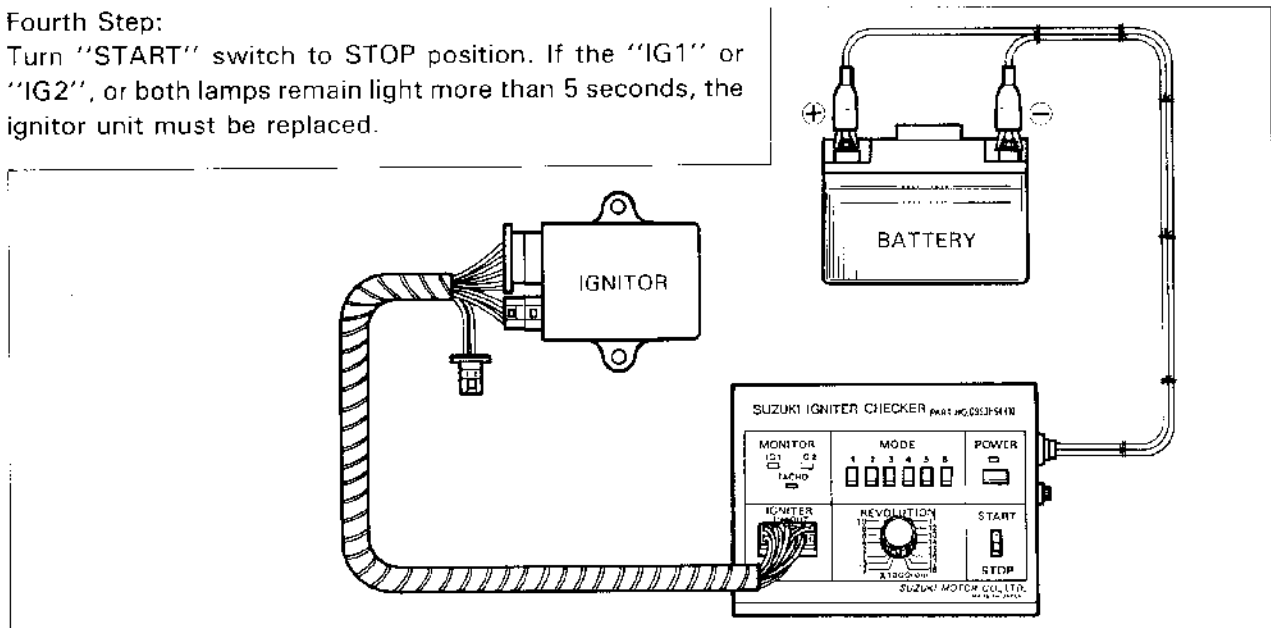
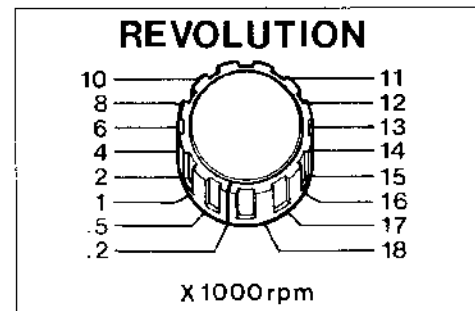
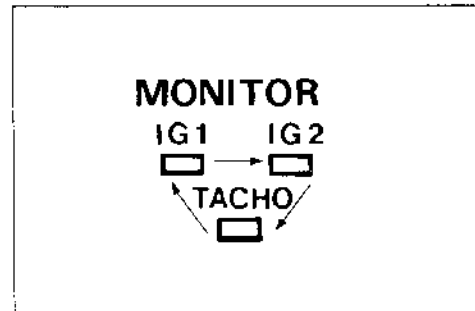
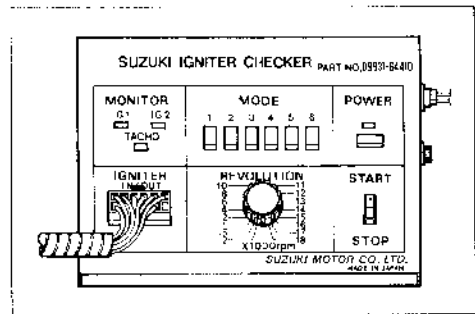
Set "REVOLUTION" dial pointer to ".2" position in which the checker produces the ignition primary current pulses simulating 200 r/min of engine revolution when "START" switch is turned on. With "START" switch is turned to ON position, check that three "MONITOR" lamps turn on and off in slow frequency.

Third Step:

Turn "REVOLUTION" Dial up gradually (assuming the engine is gradually revved up) and check that the MONITOR lamp flash frequency as explained in the second step above increases. As the dial pointer passes beyond the graduation "1" (1 000 r/min), all the three lamps should show continuously lighted. When REVOLUTION dial pointer reaches between "12" and "13" (12 000–13 000 r/min), MONITOR "IG1" and IG2" lamps should go off while "TACHO" lamp stays on. This is because the ignition "cut-off" provided in the GSX-R750 ignition system functions at $12\,500 \pm 100$ r/min. If the lamps go off at the graduation below "12", the engine can not perform properly and therefore the ignitor unit must be replaced.

Fourth Step:

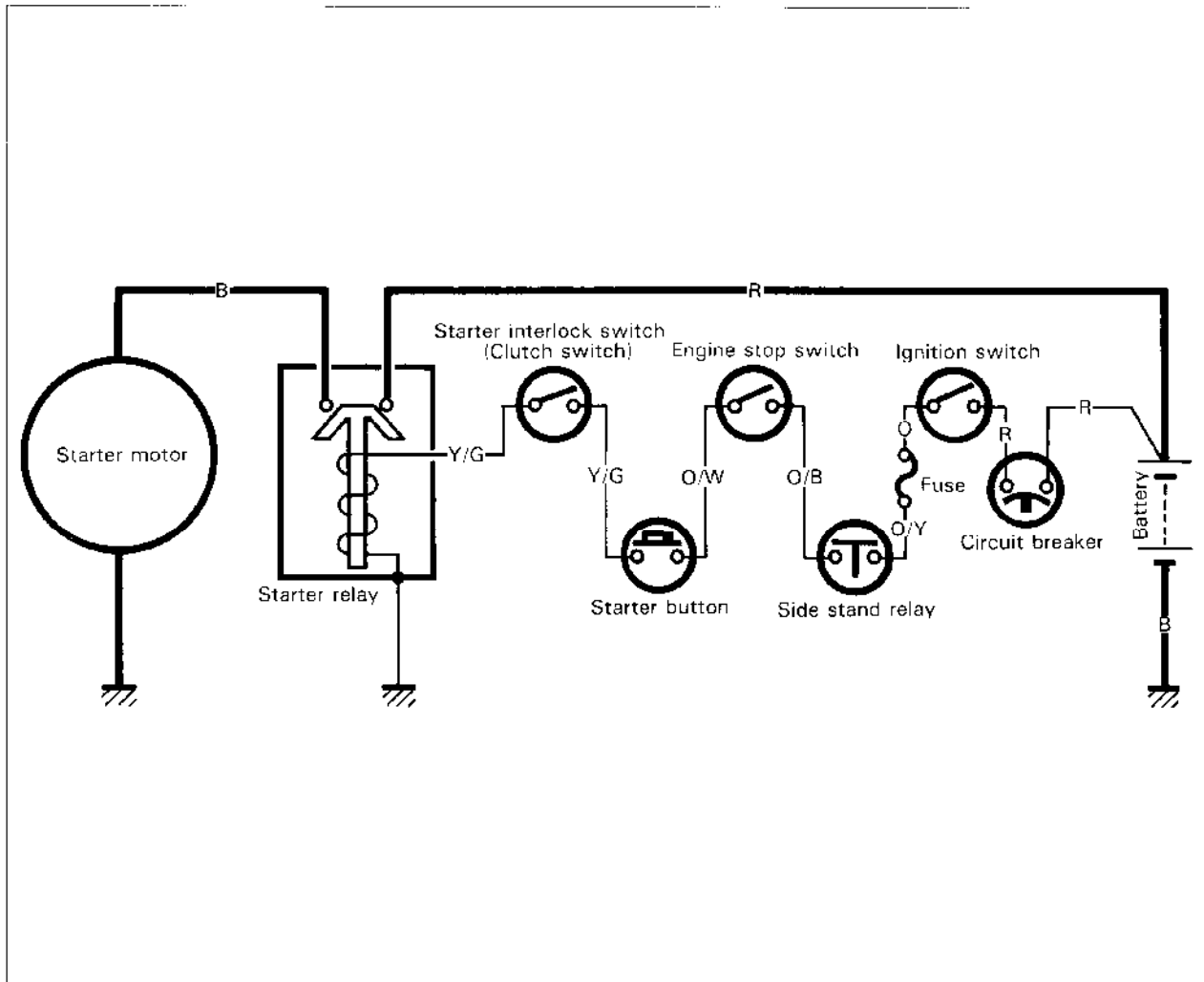
Turn "START" switch to STOP position. If the "IG1" or "IG2", or both lamps remain light more than 5 seconds, the ignitor unit must be replaced.



STARTER SYSTEM

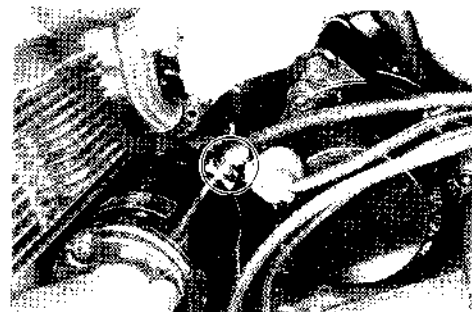
DESCRIPTION

The starter system is shown in the diagram below: namely, the starter motor, relay, side stand switch, interlock switch, starter button, engine stop switch, IG switch and battery. Depressing the starter button (on the right handlebar switch box) energizes the relay, causing the contact points to close which connects the starter motor to the battery. The motor draws about 80 amperes to start the engine.

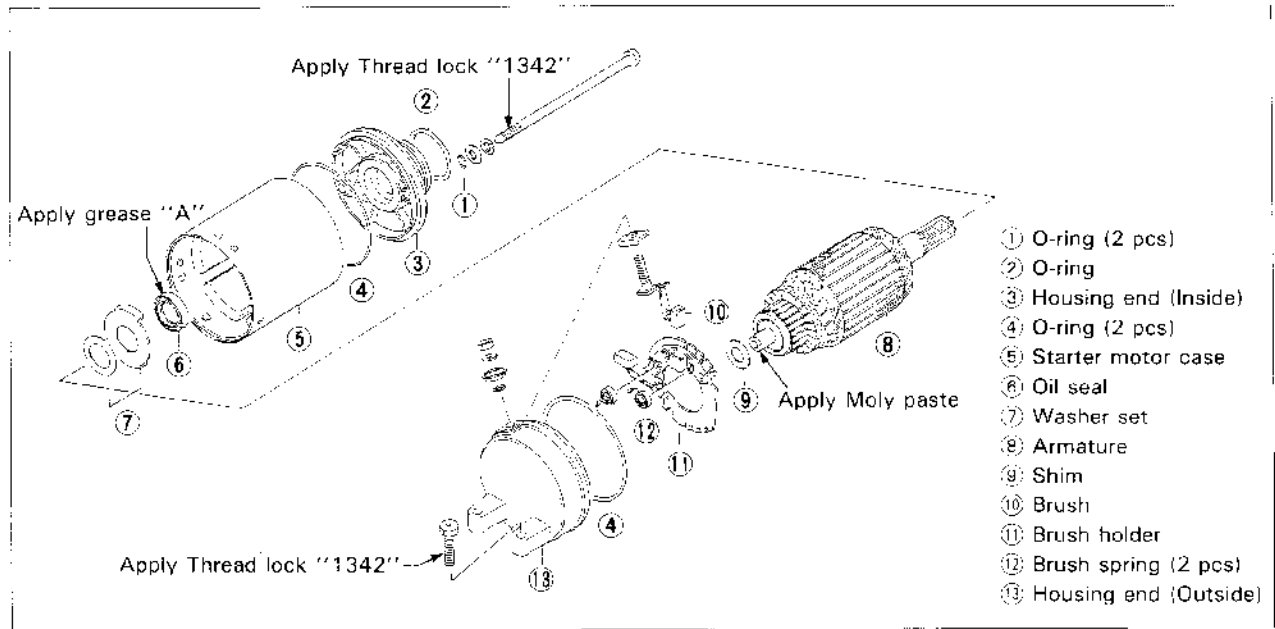


REMOVAL AND DISASSEMBLY

- Disconnect the starter motor lead wire and remove the starter motor.



- Disassemble the starter motor as shown in the illustration.

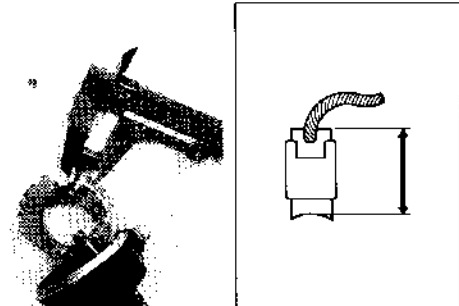


**INSPECTION
CARBON BRUSH**

When the brushes are worn, the motor will be unable to produce sufficient torque, and the engine will be difficult to turn over. To prevent this, periodically, measure the length of the brushes with a vernier calipers, replacing them when they are too short or chipping.

09900-20102 : Vernier calipers (200 mm)

Brush length	Service Limit
	9 mm (0.35 in)



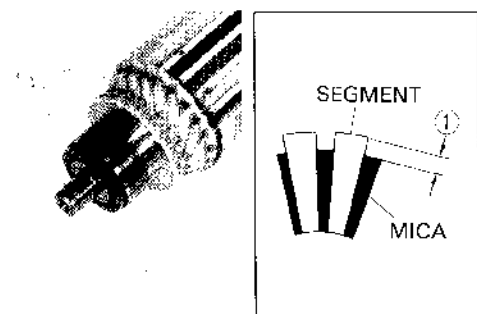
COMMUTATOR

If the commutator surface is dirty, starting performance decreases. Polish the commutator with # 400 or similar fine emery paper when it is dirty. After polishing it, wipe the commutator with a clean dry cloth.

Measure the commutator under cut ① with a vernier calipers.

09900-20102 : Vernier calipers (200 mm)

Commutator under-cut	Service Limit
	0.2 mm (0.008 in)



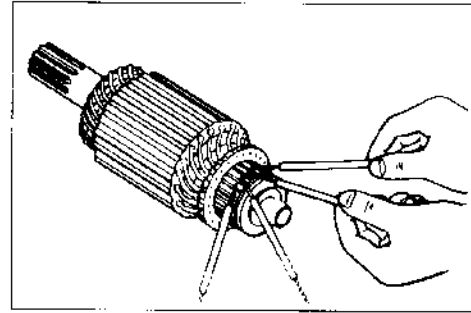
ARMATURE COIL

Using a pocket tester, check the coil for open and ground by placing probe pins on each commutator segment and rotor core (to test for ground) and on any two segments at various places (to test for open), with the brushes lifted off the commutator surface.

If the coil is found to be open-circuited or grounded replace the armature. Continuous use of a defective armature will cause the starter motor to suddenly fail.

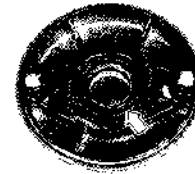
09900-25002 : Pocket tester

Tester knob indication : $\times 1\Omega$ range



OIL SEAL

Check the seal lip for damage or oil leakage. If any damage is found, replace it.

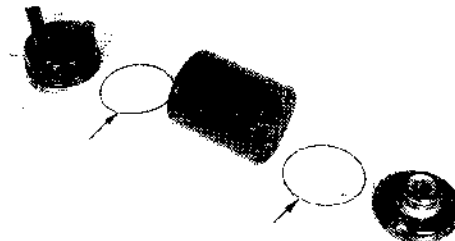


REASSEMBLY

O-RING

CAUTION:

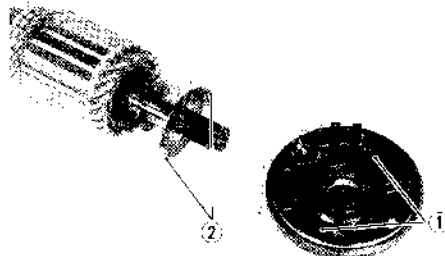
Replace the O-rings with new ones to prevent oil leakage and moisture.



HOUSING END (Inside)

- Apply grease to the lip of oil seal.
- Align the grooves ① on the housing end with tabs ② of washer.

99000-25010 : SUZUKI SUPER GREASE "A"



HOUSING END (Outside)

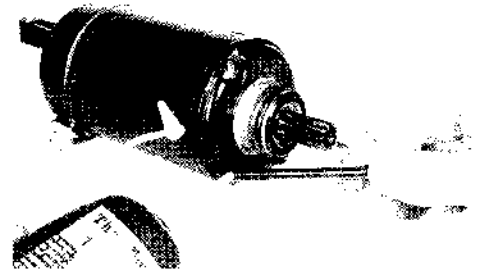
- Apply a small quantity of Moly Paste to the armature end.

99000-25140 : SUZUKI MOLY PASTE



- Apply a small quantity of Thread Lock "1342" to the starter motor housing screws.

99000-32050 : THREAD LOCK "1342"

**STARTER RELAY INSPECTION**

- Disconnect the lead wire of starter motor at starter relay which is located under the battery holder.
- Turn on the ignition switch, inspect the continuity between the terminals, positive and negative, when squeezing the clutch lever and pushing the starter button.
If the starter relay is in sound condition, continuity is found.

09900-25002 : Pocket tester

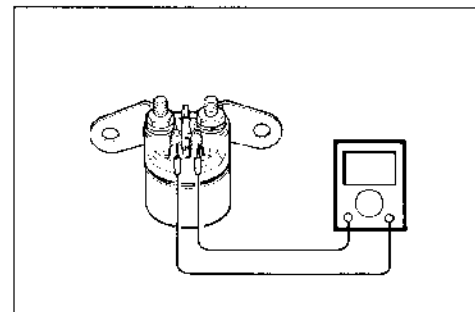
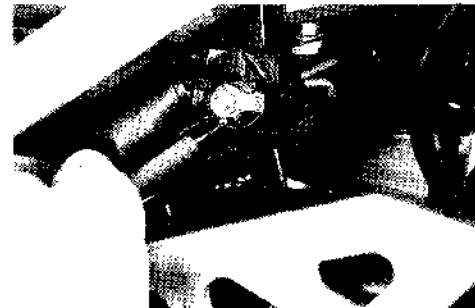
Tester knob indication : $\times 1\Omega$ range

- Disconnect the lead wires from the starter relay.
- Check the coil for "open", "ground" and ohmic resistance.
The coil is in good condition if the resistance is as follows.

09900-25002 : Pocket tester

Tester knob indication : $\times 1\Omega$ range

Starter relay resistance	Standard
	3 - 5 Ω

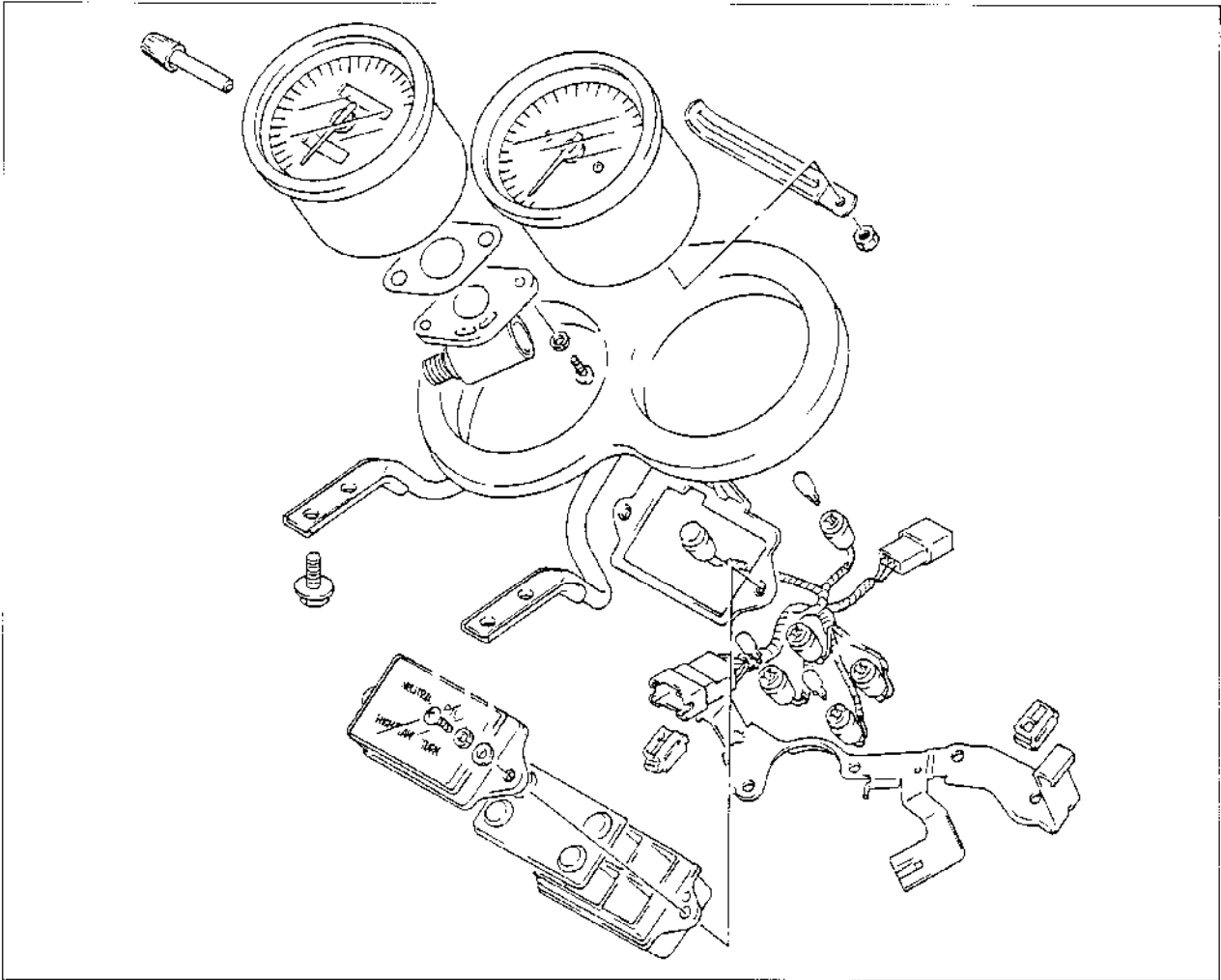
**SIDE-STAND/IGNITION INTERLOCK SYSTEM**

Refer to page Appendix A-3.

COMBINATION METER

REMOVAL AND DISASSEMBLY

- Remove the upper fairing with the wind screen.
- Disassemble the combination meter as follows.



INSPECTION

Using the pocket tester, check the continuity between lead wires in the diagram on next page. If the continuity measured is incorrect, replace the respective parts.

09900-25002 : Pocket tester

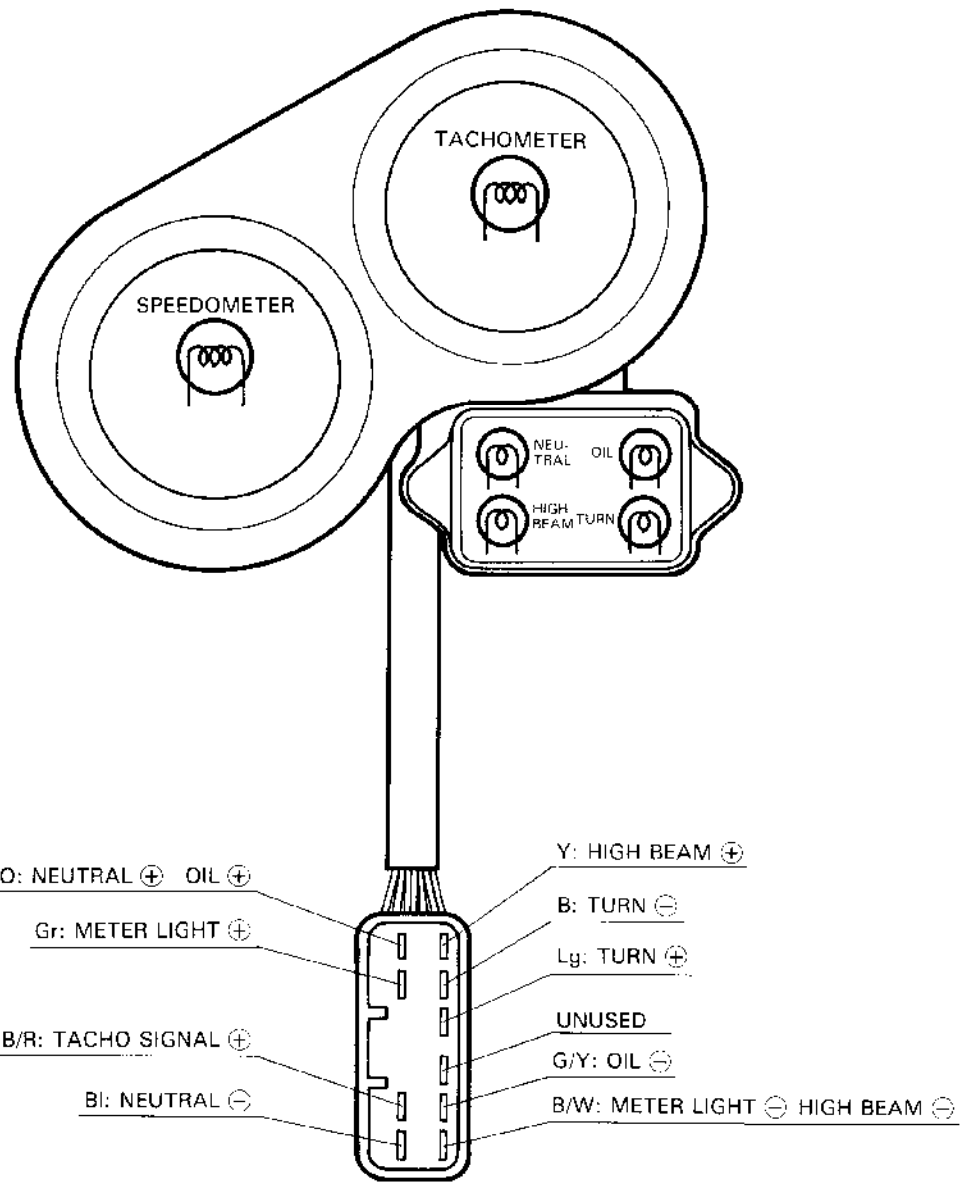
Tester knob indication : $\times 1\Omega$ range

NOTE:

When making this test, it is not necessary to remove the combination meter.

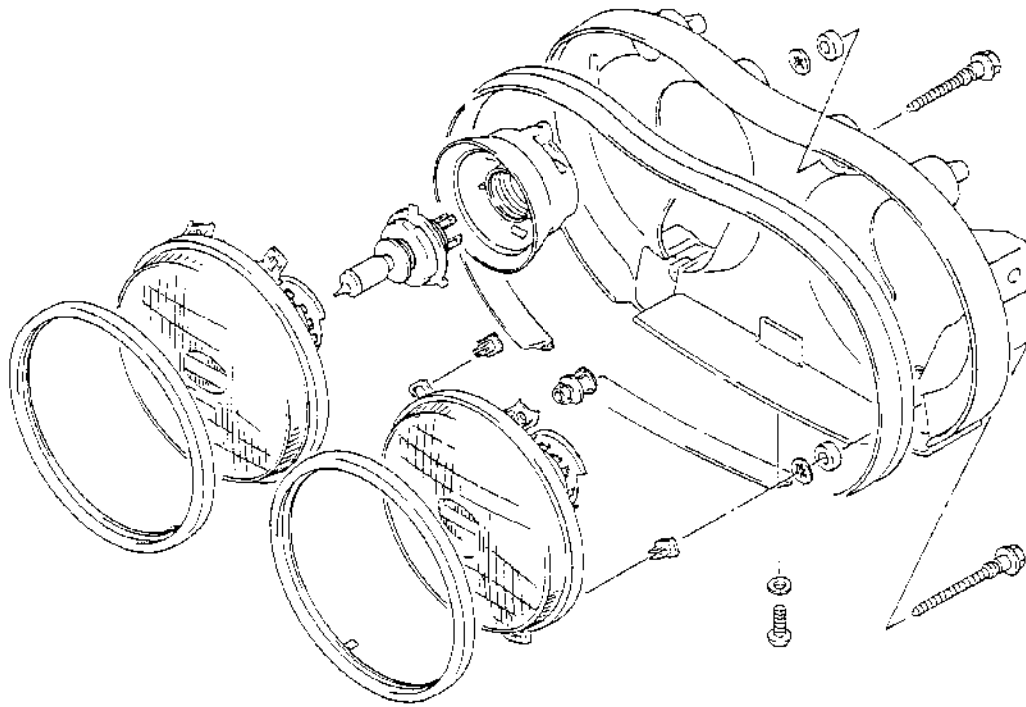


ITEM	⊕ Probe of tester to:	⊖ Probe of tester to:
TURN	Lg	B
HIGH BEAM	Y	B/W
NEUTRAL	O	BI
OIL	O	G/Y
METER LIGHT	Gr	B/W



LAMPS

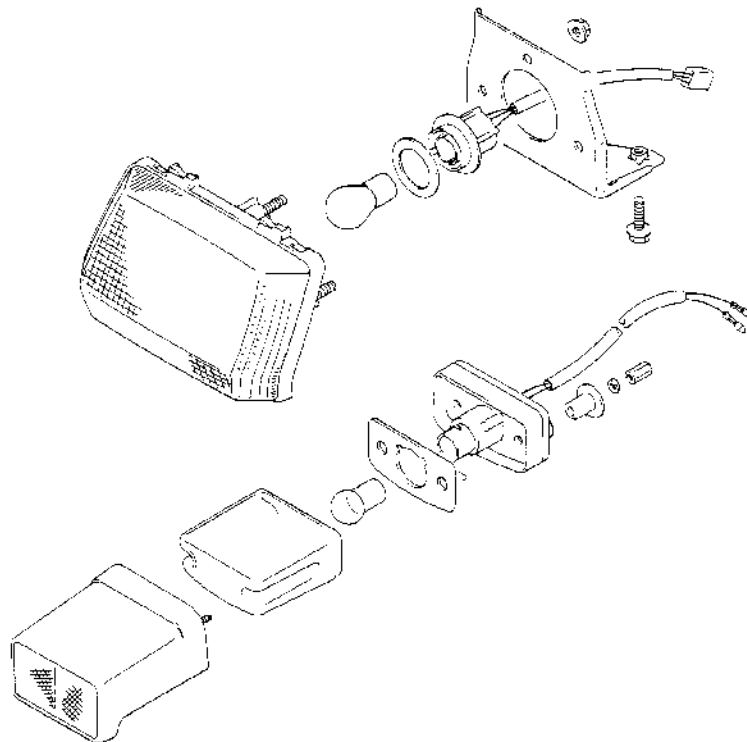
HEADLIGHT



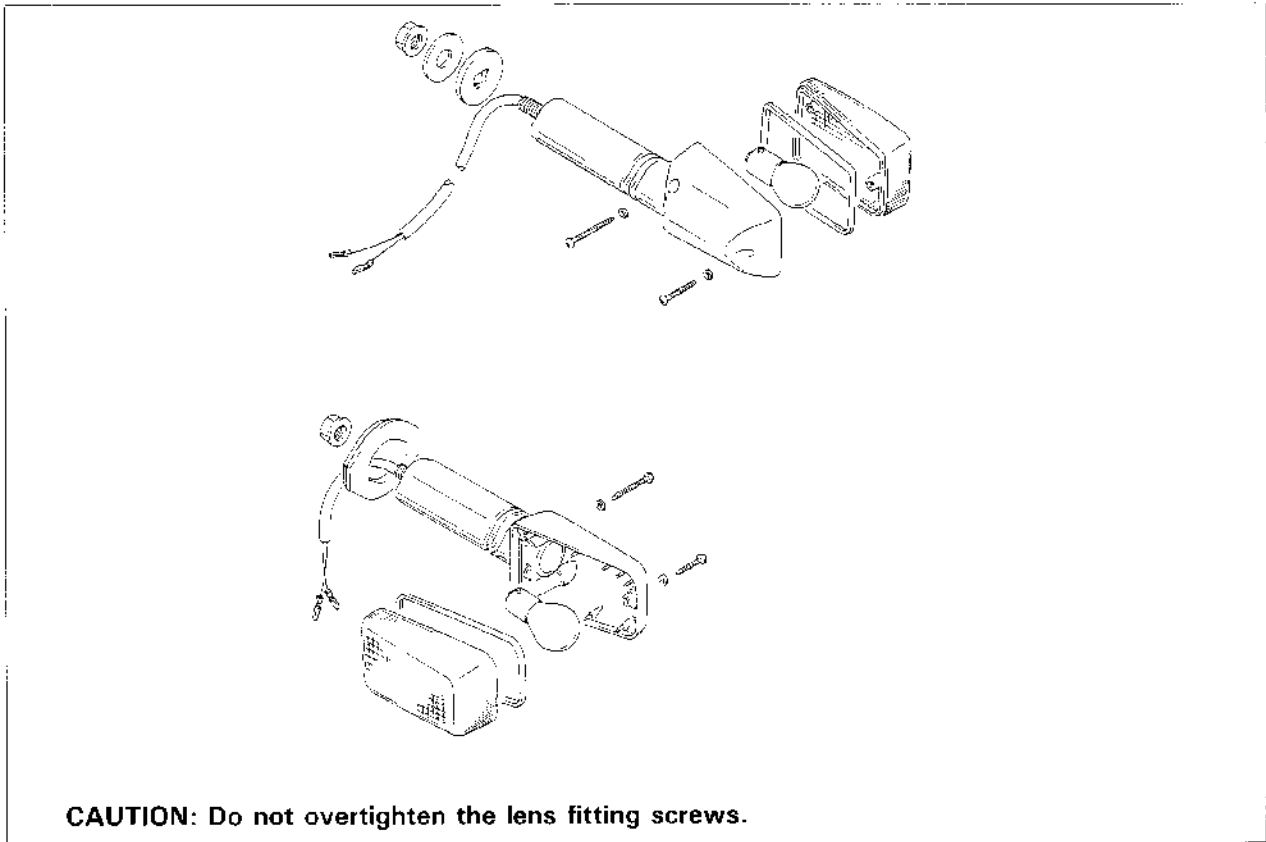
NOTE:

Adjust the headlight, both vertical and horizontal, after reassembling.

TAIL/BRAKE LIGHT



TURN SIGNAL LIGHT



SWITCHES

Inspect each switch for continuity with the pocket tester referring to the chart. If any abnormality is found, replace the respective switch assemblies with new ones.

09900-25002 : Pocket tester

Tester knob indication : $\times 1\Omega$ range

IGNITION SWITCH

Coupler location: under the front part of fuel tank

	R	O	Gr	Br
OFF				
ON	○	○	○	○
P	○			○

TURN SIGNAL SWITCH

Coupler location: under the combination meter panel

	B	Lbl	Lg
R		○	○
•			
L	○	○	

DIMMER SWITCH

Coupler location: under the combination meter panel

	W	Y	Y/W
HI		○	○
LO	○		○

HORN SWITCH

Coupler location: under the combination meter panel

	B/Bl	B/W
ON (Push)	○	○
OFF		

ENGINE STOP AND START SWITCH

Coupler location: under the combination meter panel

	O/BI	O/W	Y/G
OFF			
RUN	○	○	
START (Push)		○	○

FRONT BRAKE SWITCH

Coupler location: under the front brake master cylinder

	B	B
ON (Squeeze lever)	○	○
OFF		

NEUTRAL INDICATOR SWITCH

Coupler location: beside the battery

	BI	Ground
ON (Neutral position)	○	○
OFF		

OIL PRESSURE SWITCH

Coupler location: under the combination meter panel

- Continuity, when engine is stopped.
- No continuity, when engine is running.

	G/Y	Ground
ON	○	○
OFF		

WIRE COLOR

- | | | |
|----------------------|------------------------------------|-------------------------------------|
| B..... Black | Y..... Yellow | O/G Orange with Green tracer |
| BI..... Blue | B/BI Black with Blue tracer | O/R Orange with Red tracer |
| Br..... Brown | B/R..... Black with Red tracer | O/W Orange with White tracer |
| G Green | B/Y..... Black with Yellow tracer | O/Y Orange with Yellow tracer |
| Gr Gray | B/W..... Black with White tracer | W/B..... White with Black tracer |
| Lbl..... Light blue | Bl/B..... Blue with Black tracer | Y/B..... Yellow with Black tracer |
| Lg Light green | G/W Green with White tracer | Y/G Yellow with Green tracer |
| O Orange | G/Y Green with Yellow tracer | Y/R..... Yellow with Red tracer |
| R..... Red | O/B Orange with Black tracer | Y/W..... Yellow with White tracer |
| W..... White | O/BI..... Orange with Blue tracer | |

CLUTCH SWITCH

Coupler location: under the combination meter panel

	Y/G	Y/G
ON (Squeeze lever)	○	○
OFF		

REAR BRAKE SWITCH

Coupler location: beside the rear brake master cylinder

	O/G	W/B
ON (Depress pedal)	○	○
OFF		

SIDE STAND SWITCH

Coupler location: beside the battery

	G	B/W
ON (Upright position)	○	○
OFF (Down position)		

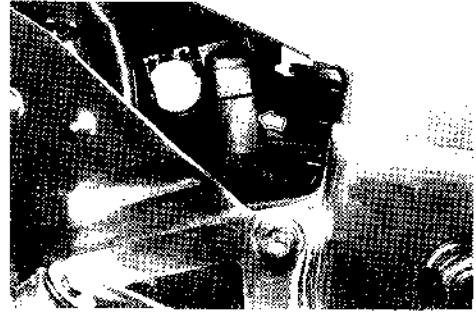
NOTE:

Before inspecting the oil pressure switch, check if the engine oil level is enough.

RELAY

SIDE-STAND RELAY

The side-stand relay is located under the battery holder.



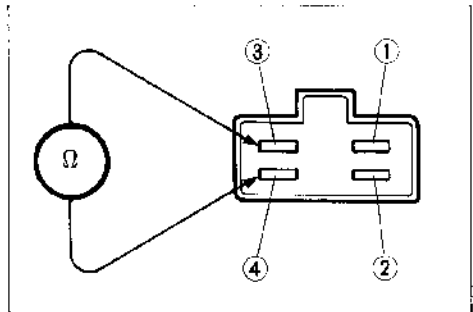
INSPECTION

First:

Check the inspection between ③ and ④ terminals with pocket tester.

Second:

Apply DC 12 volts to ① and ② terminals, \oplus to ① and \ominus to ②, and check the continuity between ③ and ④ with a pocket tester. If there is no continuity, replace it with a new one.



09900-25002 : Pocket tester

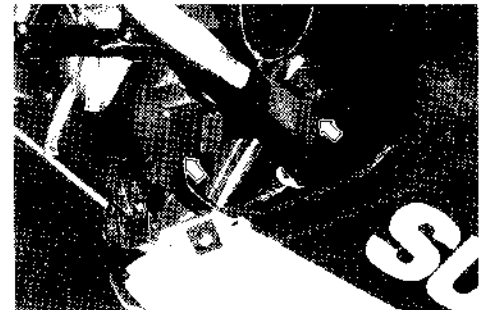
Tester knob indication : $\times 1\Omega$ range

STARTER RELAY

Refer to page 5-18.

HEADLIGHT RELAY

The headlight relays are located under the prop of left side of front turn signal light.



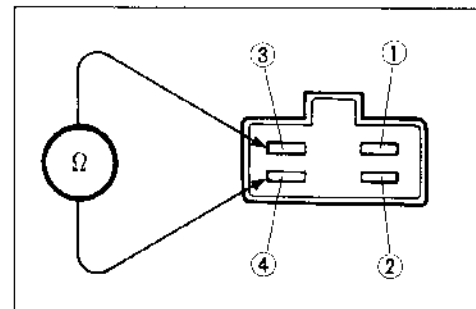
INSPECTION

First:

Check the inspection between ③ and ④ terminals with pocket tester.

Second:

Apply DC 12 volts to ① and ② terminals, \oplus to ① and \ominus to ②, and check the continuity between ③ and ④ with a pocket tester. If there is no continuity, replace it with a new one.



09900-25002 : Pocket tester

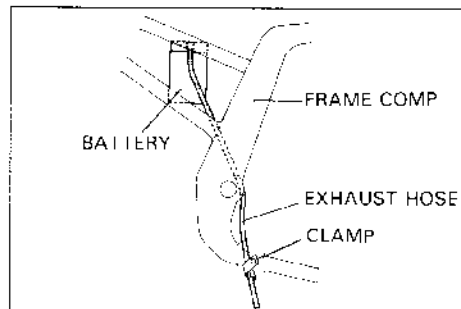
Tester knob indication : $\times 1\Omega$ range

BATTERY

SPECIFICATIONS

Type designation	YB14L-A2
Capacity	12V, 50.4 kC (14 Ah)/10HR
Standard electrolyte S.G.	1.28 at 20°C (68°F)

In fitting the battery to the motorcycle, connect the breather hose to the battery vent.



INITIAL CHARGING

FILLING ELECTROLYTE

Remove the short sealed tube (A) before filling electrolyte. Fill the battery with electrolyte (dilute sulfuric acid solution with acid concentration of 35.0% by weight, having a specific gravity of 1.28 at 20°C (68°F)) up to indicated MAX. LEVEL. Electrolyte should be always cooled below 30°C (86°F) before filling into battery. Leave battery standing for half an hour after filling. Add additional electrolyte if necessary. Charge battery with current as described in the table shown below.

Maximum charging current	1.4A
--------------------------	------

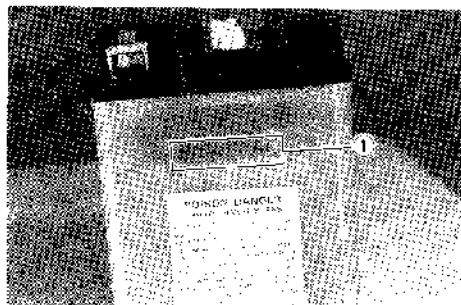
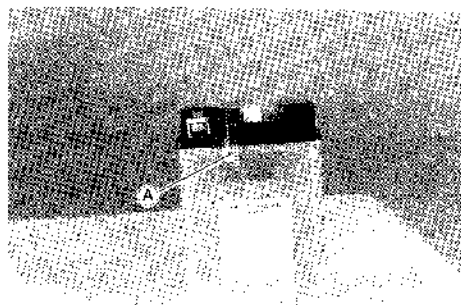
CHARGING TIME

The charging time for a new battery is determined by the number of months that have elapsed since the date of manufacture.

CONFIRMATION FOR DATE OF MANUFACTURE

Date of manufacture is indicated by a three-part number (1), as shown in the photograph, each indicating month, date and year.

Near the end of charging period, adjust the specific gravity of electrolyte to value specified. After charging, adjust the electrolyte level to the MAX. LEVEL with DISTILLED WATER.



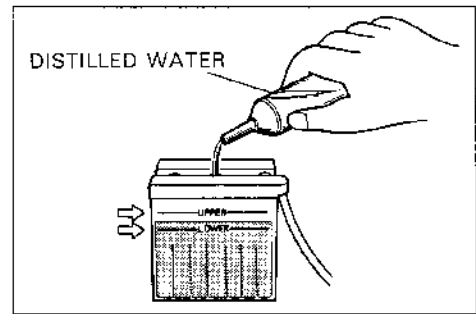
SERVICING

Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one. If the battery terminals are found to be coated with rust or an acidic white powdery substance, then this can be cleaned away with sandpaper.

Check the electrolyte level and add distilled water, as necessary to raise the electrolyte to each cell's MAX. level. Check the battery for proper charge by taking an electrolyte S.G. reading. If the reading is 1.22 or less, as corrected to 20°C (68°F), it means that the battery is still in a run-down condition and needs recharging.

NOTE:

First, remove the ⊖ lead wire.

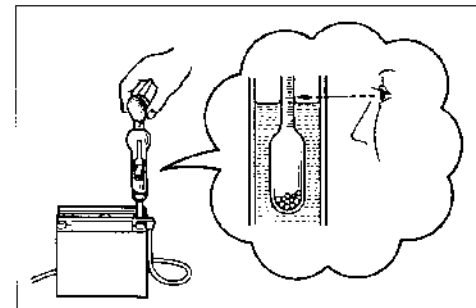


Months after manufacturing	Within 6	Within 9	Within 12	Over 12
Necessary charging hours	20	30	40	60

RECHARGING OPERATION BASED ON S.G. READING

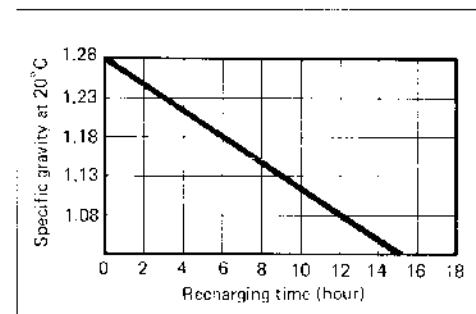
To read the S.G. on the hydrometer, bring the electrolyte in the hydrometer to eye level and read the graduation on the float scale bordering on the meniscus (curved-up portion of electrolyte surface), as shown in figure.

09900-28403 : Hydrometer



Check the reading (as corrected to 20°C) with chart to determine the recharging time in hour by constant-current charging at a charging rate of 1.4 amperes (which is tenth of the capacity of the present battery).

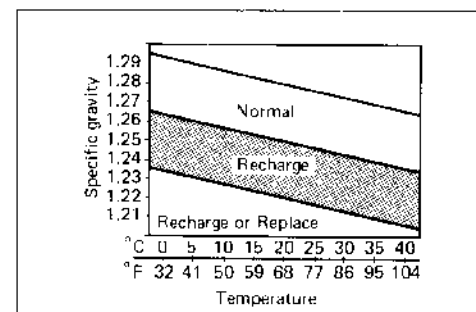
Electrolyte specific gravity	1.28 at 20°C (68°F)
------------------------------	---------------------



Be careful not to permit the electrolyte temperature to exceed 45°C (113°F), at any time, during the recharging operation. Interrupt the operation, as necessary, to let the electrolyte cool down. Recharge the battery to the specification.

CAUTION:

Constant-voltage charging, otherwise called "quick" charging, is not recommendable for it could shorten the life of the battery.



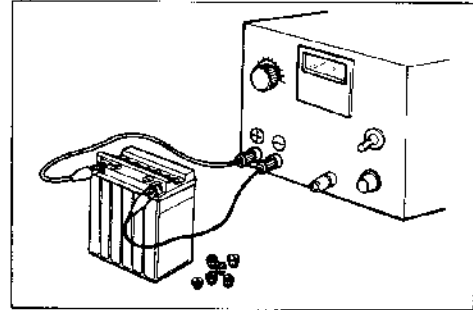
SERVICE LIFE

Lead oxide is applied to the pole plates of the battery which will come off gradually during the service. When the bottom of the battery case becomes full of the sediment, the battery cannot be used any more. If the battery is not charged for a long time, lead sulfate is generated on the surface of the pole plates and will deteriorate the performance (sulfation). Replace the battery with new one in such a case.

When a battery is left for a long term without using, it is apt to subject to sulfation. When the motorcycle is not used for more than 1 month (especially during the winter season), recharge the battery once a month at least.

WARNING:

- * Before charging a battery, remove the seal cap from each cell.
- * Keep fire and sparks away from a battery being charged.
- * When removing a battery from the motorcycle, be sure to remove the \ominus terminal first.

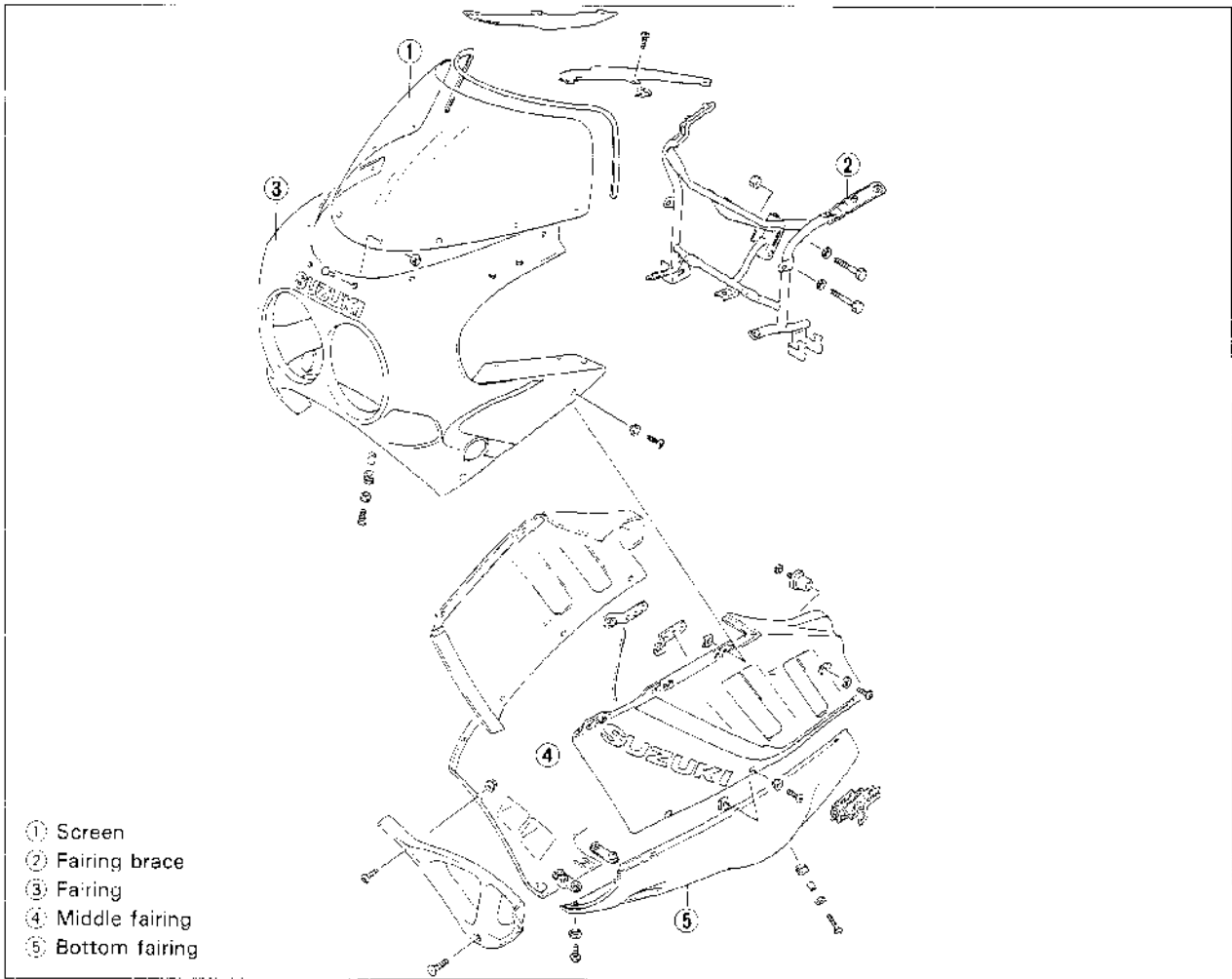


CHASSIS

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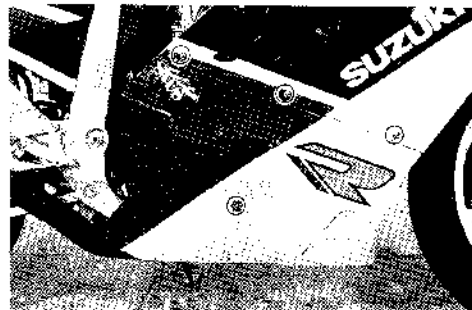
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FAIRING

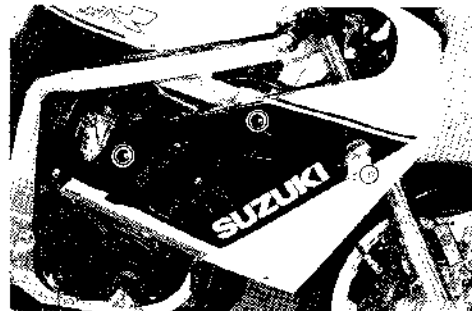


REMOVAL

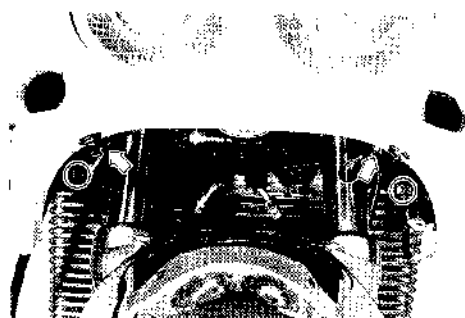
- Remove the bottom fairing.



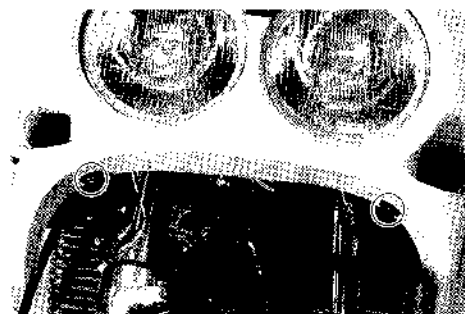
- Remove the middle fairing.



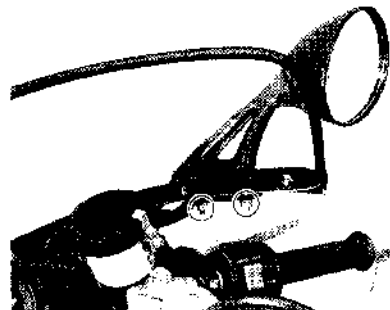
- Disconnecting the front turn signal light lead wires, remove both front turn signal lights.



- Remove the screws ①.



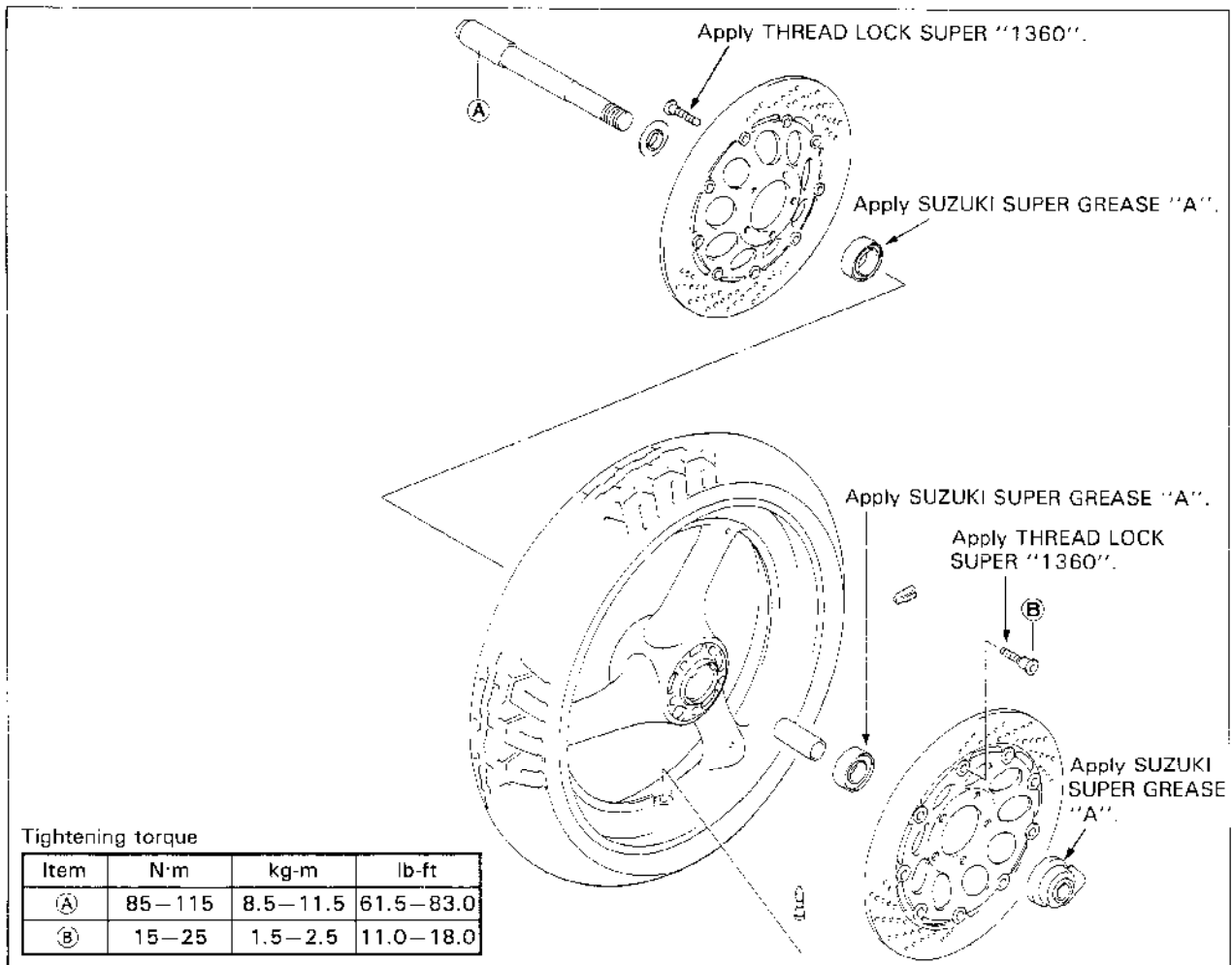
- Remove both rear view mirrors and fairing.



REMOUNTING

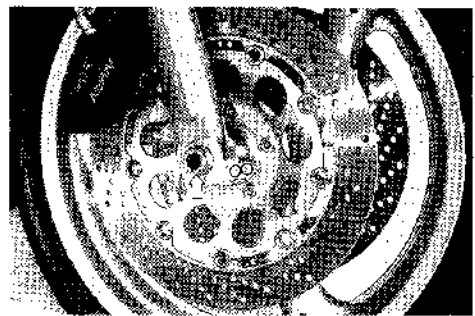
Remount the fairing in the reverse order of its removal.

FRONT WHEEL



REMOVAL

- Remove the bottom fairing. (Refer to page 6-1.)
- Support the machine with a jack or wooden block.
- Loosen the axle pinch bolts.
- Loosen the axle shaft.



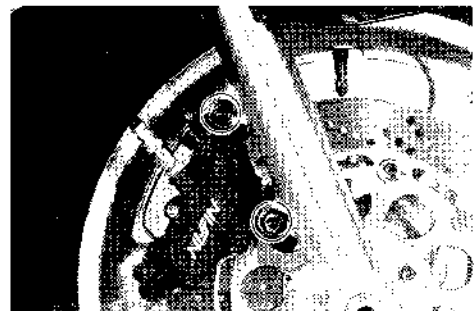
- Remove both brake calipers.
- Remove the axle shaft and front wheel.

NOTE:

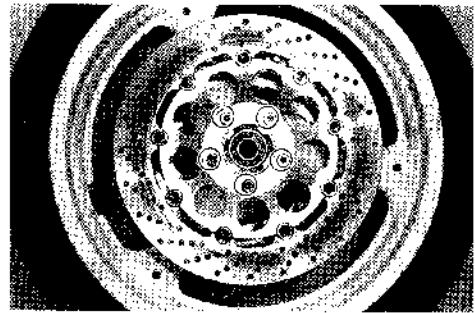
Do not operate the brake lever while dismounting the brake calipers.

CAUTION:

Hang the brake caliper on the motorcycle frame with a string etc., taking care not to bend the brake hose.



- Remove both brake discs.



INSPECTION AND DISASSEMBLY

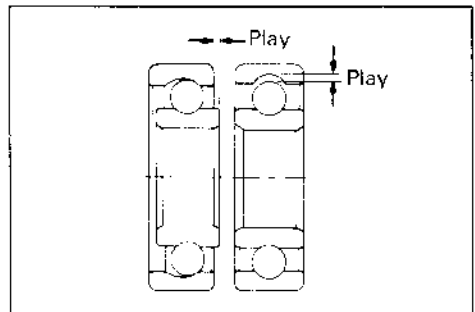
TIRE Refer to page 6-7.

WHEEL BEARINGS

Inspect the play of wheel bearing inner race by hand while it is in the wheel.

Rotating the inner race, inspect its abnormal noise and smooth rotation.

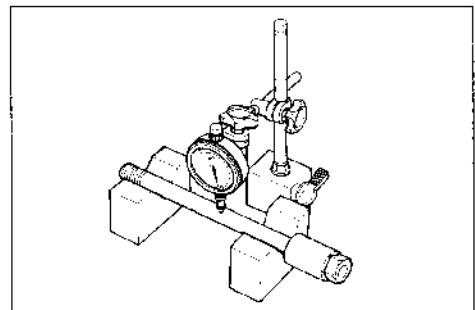
If there is some unusual, replace it with a new one.



AXLE SHAFT

Check the axle shaft runout to use a dial gauge. If the runout exceeds limit, replace it with a new one.

- 09900-20606 : Dial gauge (1/100)
- 09900-20701 : Magnetic stand
- 09900-21304 : V-block set (100 mm)

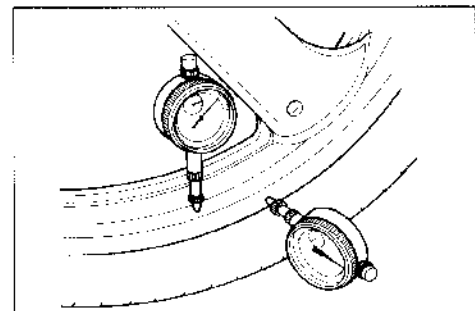


Wheel axle shaft runout	Service Limit
	0.25 mm (0.010 in)

WHEEL

Inspect the wheel rim runout if it exceeds the limit. An excessive runout is usually due to worn or loosen wheel bearings and can be reduced by replacing them. If the runout does not reduce even replacing bearings, replace the wheel.

- 09900-20606 : Dial gauge (1/100 mm, 10 mm)
- 09900-20701 : Magnetic stand

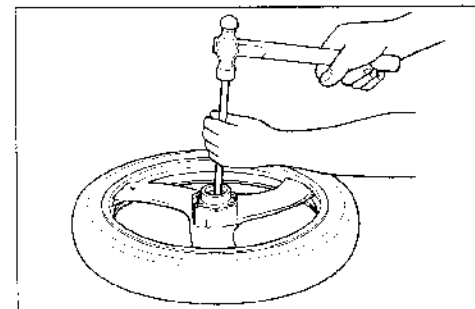


Wheel rim runout (Axial and Radial)	Service Limit
	2.0 mm (0.08 in)

- Drive out both wheel bearings with a appropriate steel bar.

CAUTION:

The bearings removed should be replaced with new ones.



REASSEMBLY AND REMOUNTING

Reassemble and remount the front wheel in the reverse order of removal and disassembly. And also observe the following instructions:

WHEEL BEARING

- Apply grease to the bearings before installing.

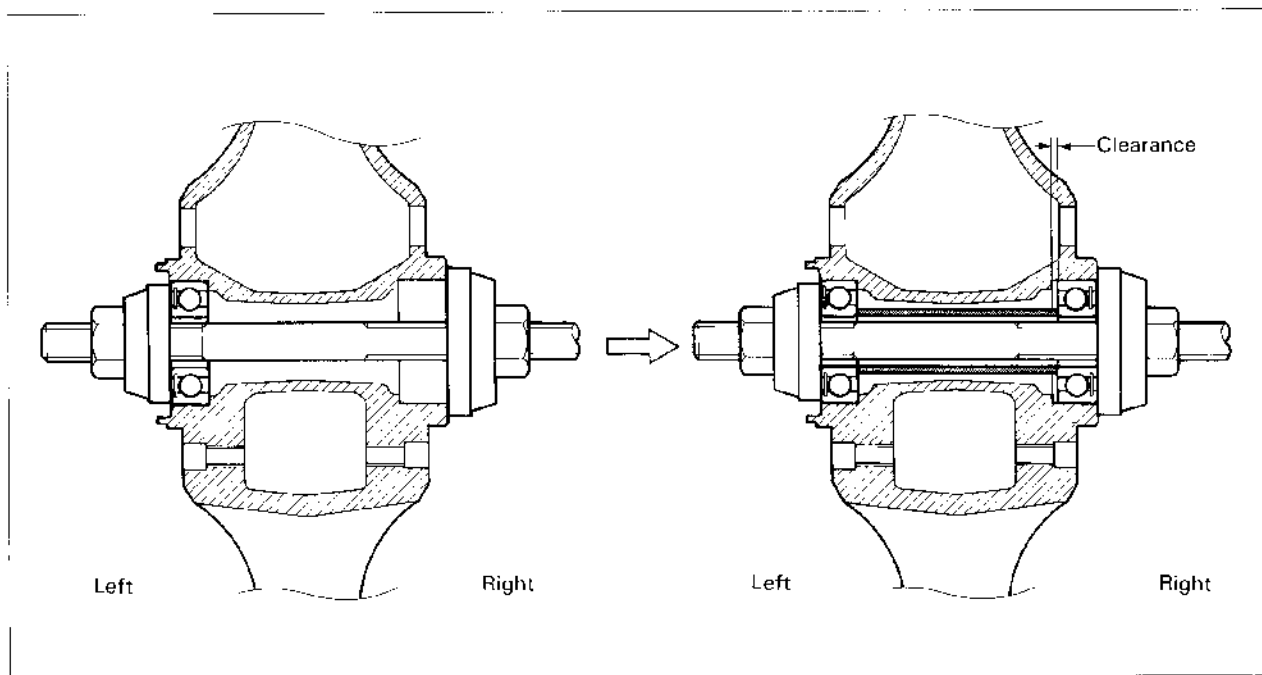
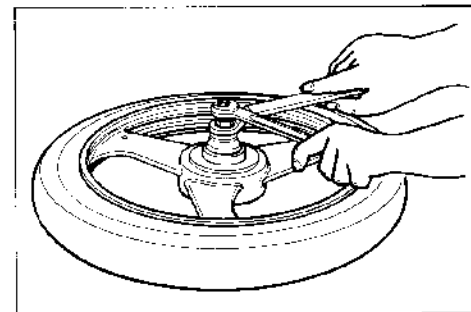
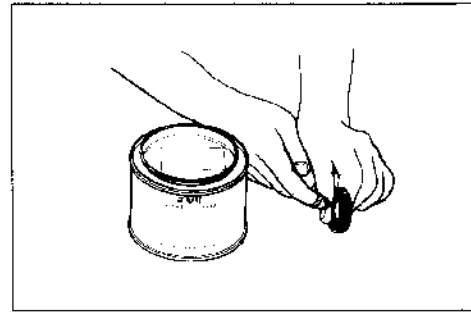
99000-25010 : SUZUKI SUPER GREASE "A"

- Install the wheel bearings with the special tool.

09924-84511 : Bearing installer set

NOTE:

First install the left wheel bearing, then install the right wheel bearing as shown below. The sealed cover on the bearing is positioned outside.



BRAKE DISC

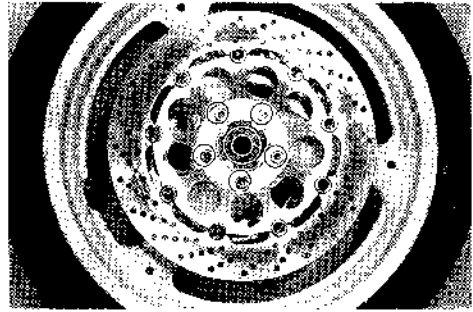
- Apply THREAD LOCK SUPER "1360" to the thread of brake disc bolts and tighten them to the specified torque.

Brake disc bolt : 15 – 25 N·m
(1.5 – 2.5 kg-m, 11.0 – 18.0 lb-ft)

99000-32130 : THREAD LOCK SUPER "1360"

NOTE:

Make sure that the brake disc is clean and free of any greasy matter.

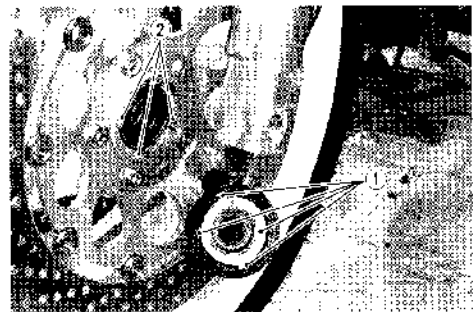
**SPEEDOMETER GEARBOX**

- Grease the teeth of speedometer gear before installing speedometer gearbox.
- Aligning the drive lugs ① to recesses ② on the wheel hub, fit the speedometer gearbox on the wheel hub.

99000-25010 : SUZUKI SUPER GREASE "A"

NOTE:

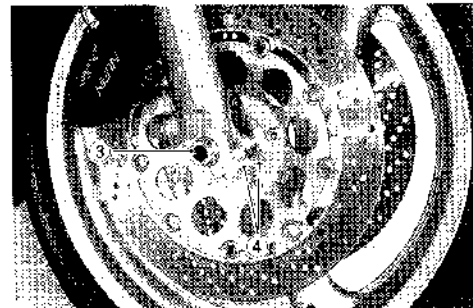
Check to be sure that the speedometer gearbox is in suitable position without cable bending when tightening the axle shaft.

**AXLE SHAFT**

- Tighten the axle shaft ③ and axle shaft pinch bolts ④ to the specified torque.

Axle shaft : 85 – 115 N·m
(8.5 – 11.5 kg-m, 61.5 – 83.0 lb-ft)

Axle pinch bolt : 15 – 25 N·m
(1.5 – 2.5 kg-m, 11.0 – 18.0 lb-ft)

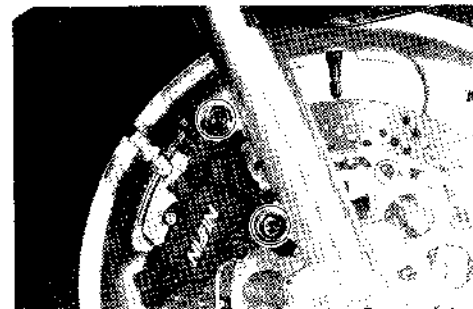
**BRAKE CALIPER**

- Tighten the brake caliper mounting bolts to the specified torque.

Front brake caliper: 28 – 44 N·m
mounting bolt (2.8 – 4.4 kg-m, 20.0 – 32.0 lb-ft)

NOTE:

Push the pistons all the way into the caliper and remount the calipers.

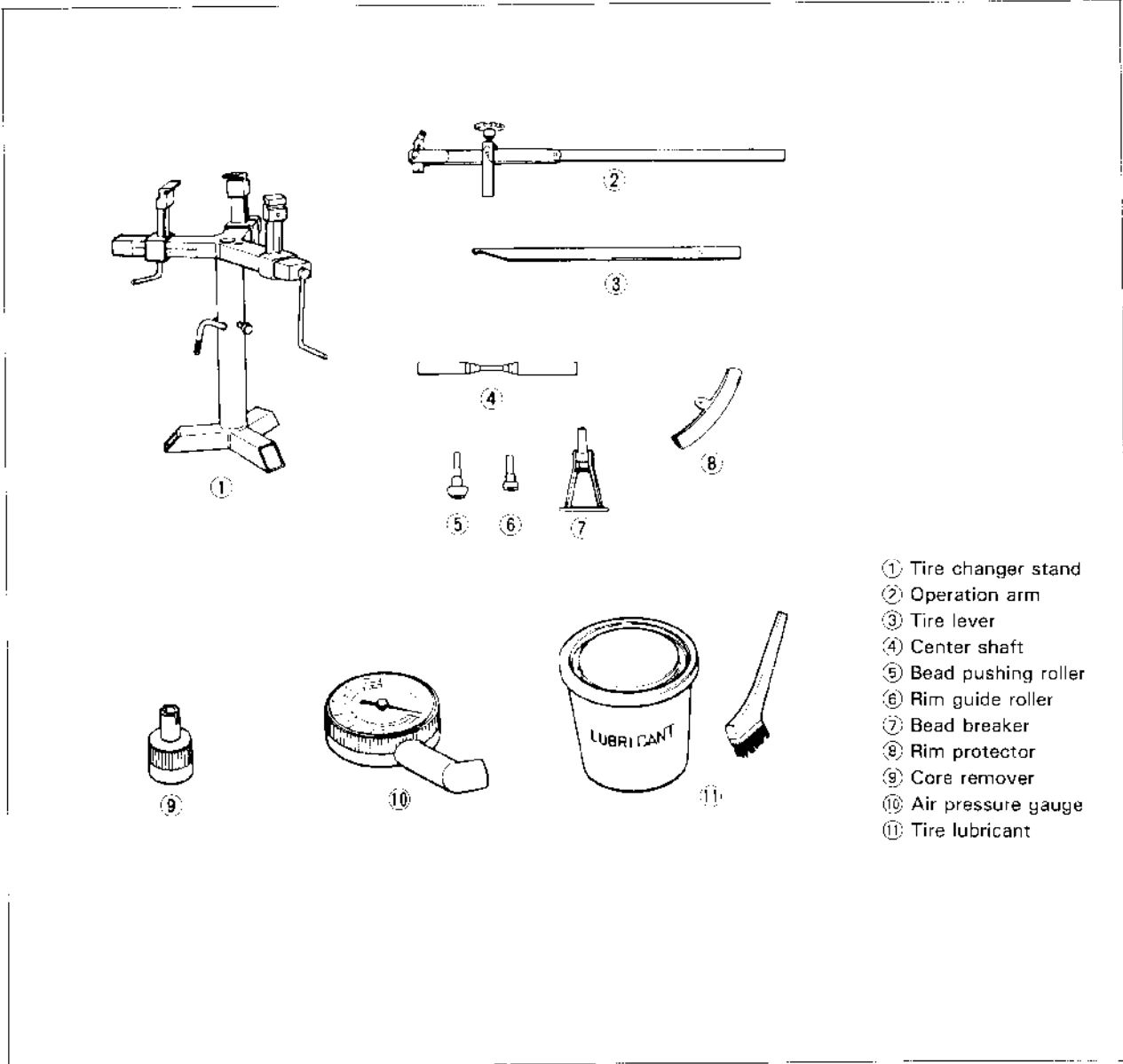


TIRE AND WHEEL

TIRE REMOVAL

The most critical factor of a tubeless tire is the seal between the wheel rim and the tire bead. Because of this, we recommend using a tire changer which is also more efficient than tire levers.

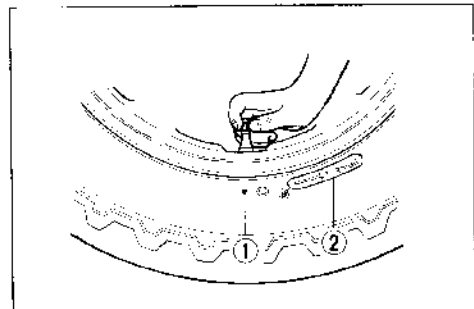
For tire removal the following tools are required.



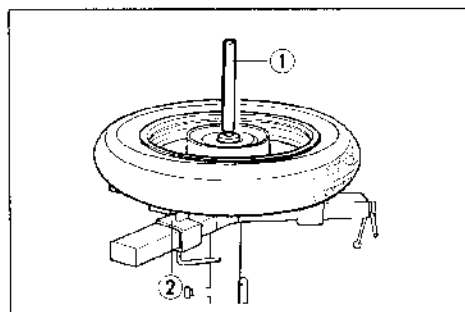
- Remove the valve core from the valve stem, and deflate the tire completely.

NOTE:

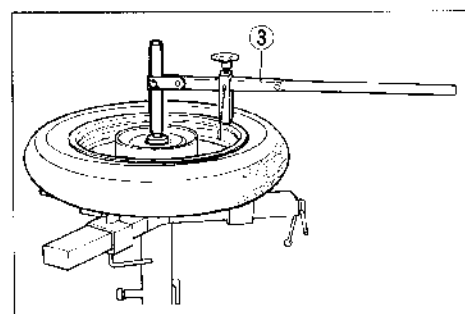
Mark the tire with chalk to note the position ① of the tire on the rim and rotational direction ② of the tire.



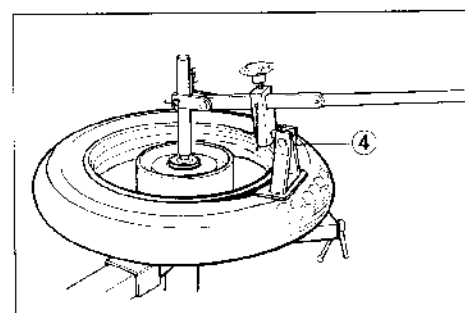
- Place the center shaft ① to the wheel, and fix the wheel with the rim holder ②.



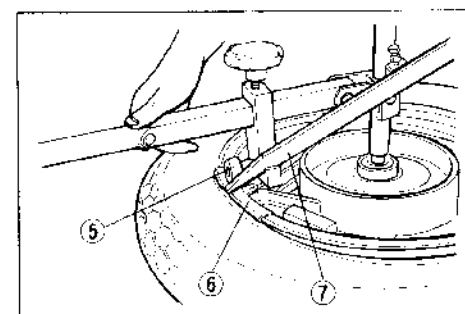
- Attach the operation arm ③ to the center shaft.



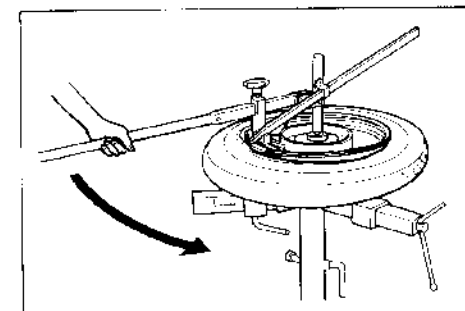
- Attach the bead breaker ④ to the operation arm, and dismount the bead from the rim. Turn the wheel over and dismount the other bead from the rim.



- Install the rim guide roller ⑤.
- Install the rim protector ⑥, and raise the tire bead with the tire lever ⑦.



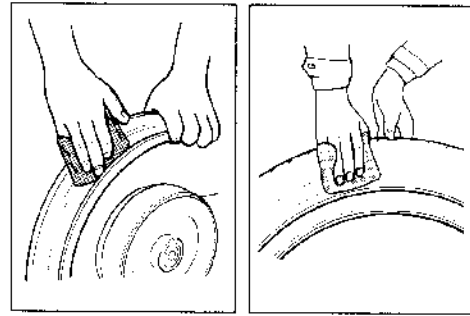
- Set the tire lever against the operation arm, and rotate the lever around the rim. Repeat this procedure to remove the other bead from the rim.



INSPECTION**WHEEL**

Wipe off any rubber substance or rust from the wheel, and inspect the wheel rim. If any one of the following items is observed, replace it with a new wheel.

- * A distortion or crack.
- * Any scratches or flaws in the bead seating area.
- * Wheel runout (Axial & Radial) of more than 2.0 mm (0.08 in).

**TIRE**

Thoroughly inspect the removed tire, and if any one of the following items is observed, do not repair the tire. Replace with a new one.

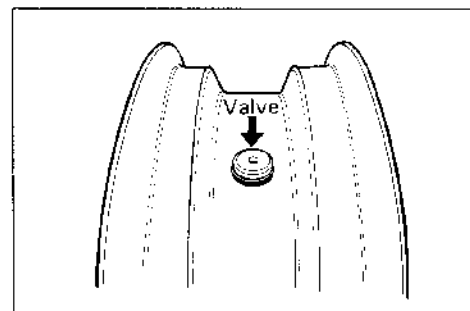
- * A puncture or a split whose total length or diameter exceeds 6.0 mm (0.24 in).
- * A scratch or split at the side wall.
- * Tread depth less than 1.6 mm (0.06 in) in the front tire and less than 2.0 mm (0.08 in) in the rear tire.
- * Ply separation.
- * Tread separation.
- * Tread wear is extraordinarily deformed or distributed around the tire.
- * Scratches at the bead.
- * Cord is cut.
- * Damage from skidding (flat spots).
- * Abnormality in the inner liner.

NOTE:

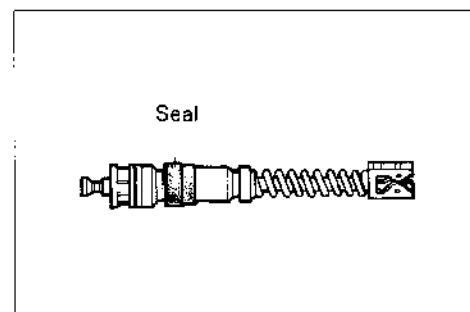
When repairing a flat tire, follow the repair instructions and use only recommended repairing materials.

VALVE INSPECTION

Inspect the valve after the tire is removed from the rim, and replace with a new valve if the seal rubber has any splits or scratches.

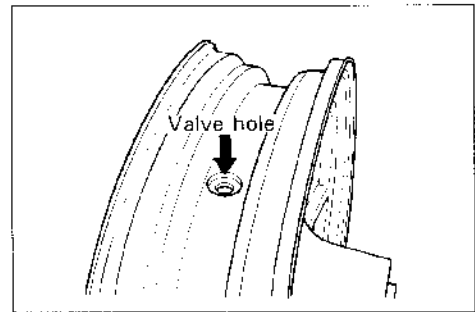


Inspect the removed valve core and replace with the new one if the seal rubber is abnormally deformed or worn.



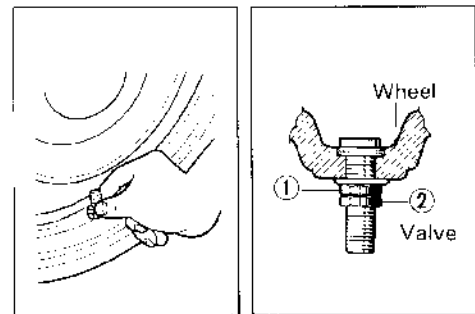
VALVE INSTALLATION

Any dust or rust around the valve hole must be cleaned off. Then install the valve in the rim.



CAUTION:

When installing the valve, tighten the nut ① by hand as much as possible. Holding the nut ① under this condition, tighten the lock nut ②. Do not overtighten the nut ① as this may distort the rubber packing and cause an air leak.

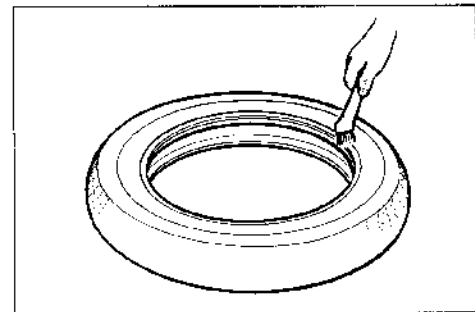


TIRE MOUNTING

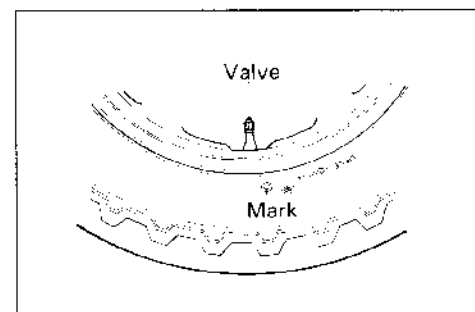
- Apply a special tire lubricant or neutral soapy liquid to the tire bead.

CAUTION:

Never apply grease, oil or gasoline to the tire bead.



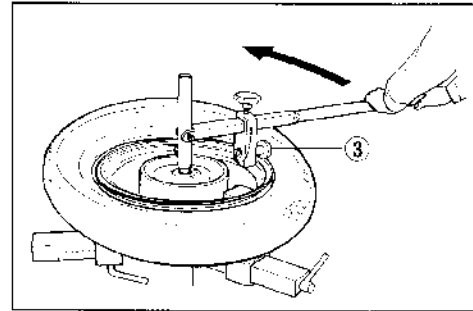
- When installing the tire, make certain that the directional arrow faces the direction of wheel rotation and align the balancing mark of the tire with the valve as shown.



- Set the bead pushing roller ③.
- Rotate the operation arm around the rim to mount the bead completely. Do the bottom bead first, then the upper bead.
- Remove the wheel from the tire changer, and install the valve core in the valve stem.

NOTE:

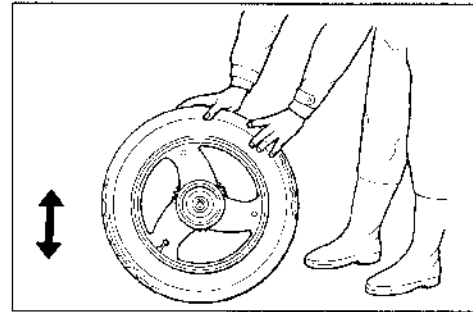
Before installing the valve core, inspect the core.



- Bounce the tire several times while rotating. This makes the tire bead expand outwards, and thus makes inflation easier.

NOTE:

Before inflating, confirm that the balance mark lines up with the valve.



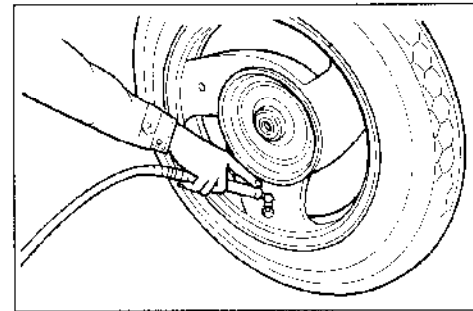
- Pump up the tire with air.

WARNING:

Do not inflate the tire to more than 40 kPa (4.0 kg/cm², 56 psi). The tire could burst with sufficient force to cause severe injury. Never stand directly over the tire while inflating it.

NOTE:

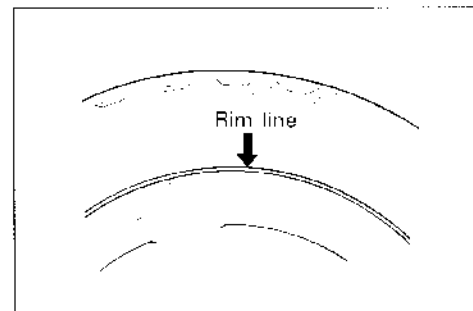
Check the "rim line" cast on the tire side walls. It must be equidistant from the wheel rim all the way around. If the distance between the rim line and wheel rim varies, this indicates that the bead is not properly seated. If this is so, deflate the tire completely, and unseat the bead for both sides. Coat the bead with lubricant, and try again.



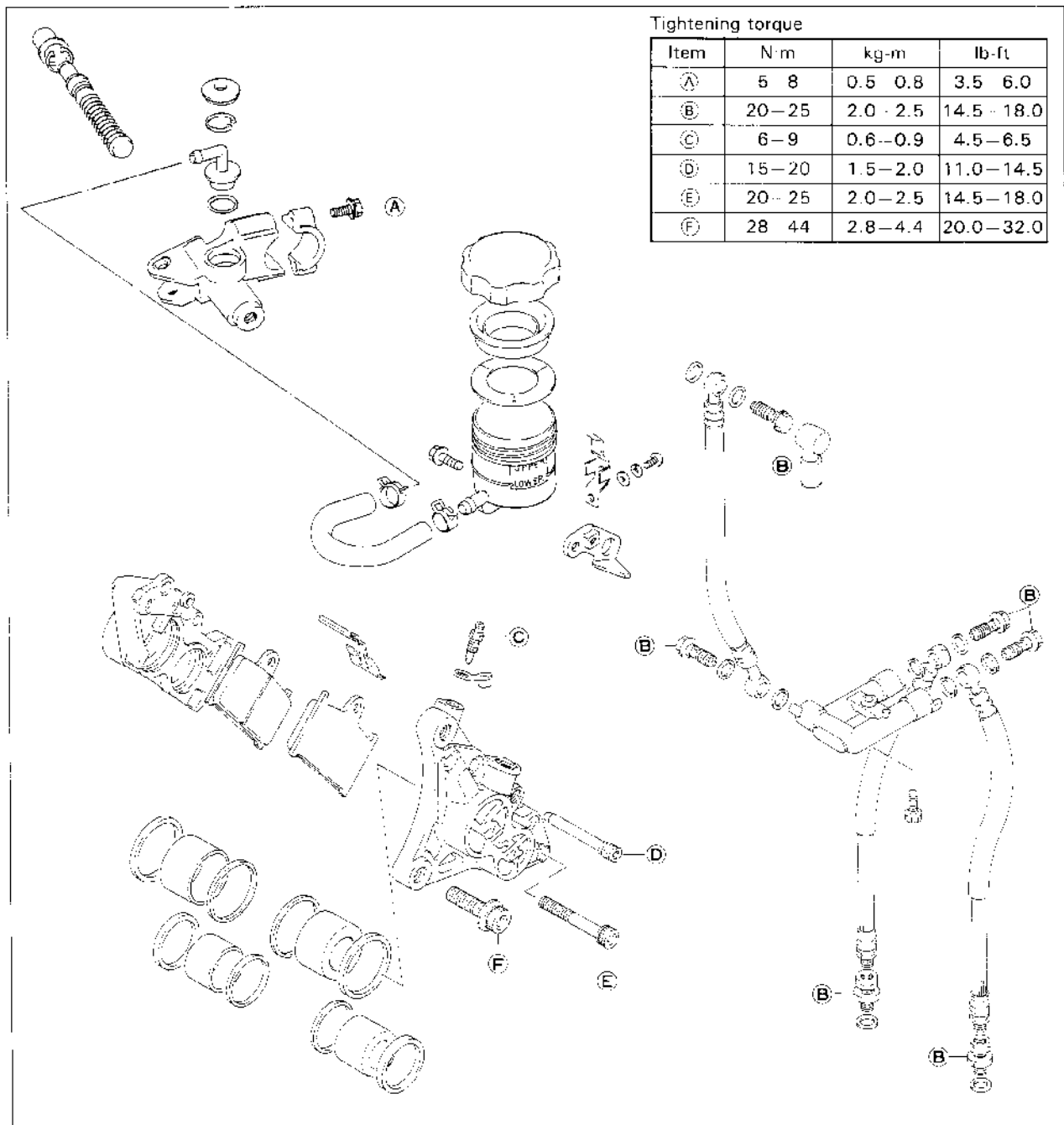
- After tire is properly seated to the wheel rim, adjust the air-pressure to the recommended pressure. Correct the wheel balance if necessary.

WARNING:

- * Do not run a repaired tire more than 50 km/h (30 mph) within 24 hours after tire repairing, since the patch may not be completely cured.
- * Do not exceed 130 km/h (80 mph) with a repaired tire.



FRONT BRAKE

**BRAKE PAD REPLACEMENT**

- Remove the pads mounting bolt and remove the pads.

09900-00410 : Hexagon wrench set

CAUTION:

- * Do not operate the brake lever while dismantling the pads.
- * Replace the brake pad as a set, otherwise braking performance will be adversely affected.

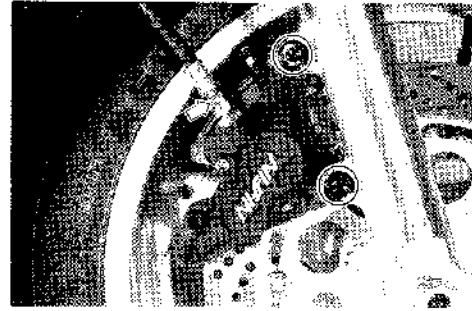


CALIPER REMOVAL AND DISASSEMBLY

Disconnect the brake hose and catch brake fluid in a suitable receptacle.

CAUTION:

Never re-use the brake fluid left over from servicing and stored for long periods.



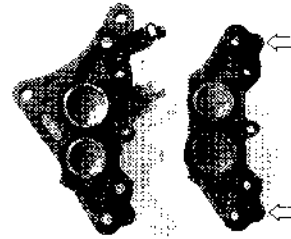
- Remove the caliper.

09900-00410 : Hexagon wrench set

NOTE:

Slightly loosen the caliper housing bolts to facilitate later disassembly before removing the caliper mounting bolts.

- Remove the pads. (Refer to page 6-12.)
- Separate the caliper halves to remove the caliper housing bolts.



09900-00410: Hexagon wrench set

- Remove the seals.

NOTE:

When once separate the caliper halves, replace the seals with new ones.

- Place a rag over the piston to prevent its popping out and push out the piston with a air gun.

CAUTION:

Do not use high pressure air to prevent piston damage.



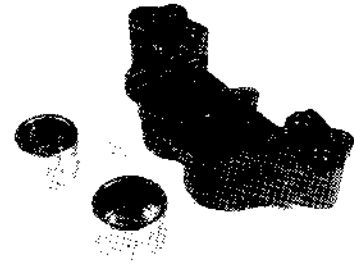
- Remove the dust seals and piston seals.



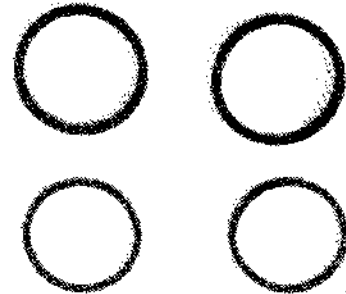
CALIPER INSPECTION

Inspect the caliper bore wall for nicks, scratches or other damage.

Inspect the piston surface for any scratches or other damage.



Inspect each rubber part for damage and wear.



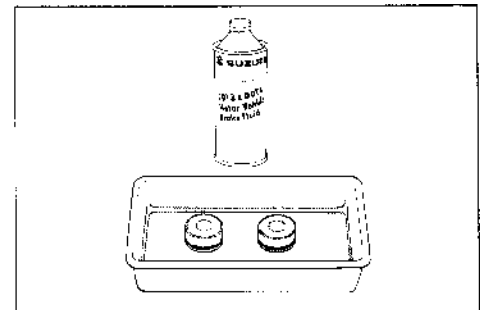
CALIPER REASSEMBLY AND REMOUNTING

Reassemble and remount the caliper in the reverse order of removal and disassembly. Also observe the following instructions:

99000-23110 : SUZUKI BRAKE FLUID DOT3 & 4

CAUTION:

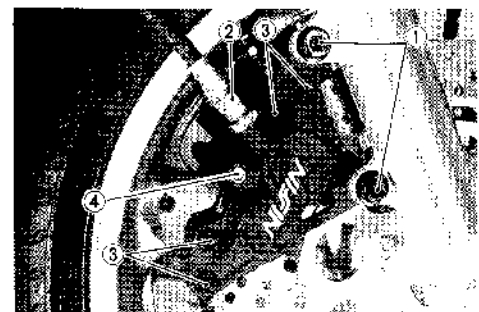
- * Wash the caliper components with fresh brake fluid before reassembly.
- * Never use cleaning solvent or gasoline to wash them.
- * Apply brake fluid to the caliper bore and piston to be inserted into the bore.



CALIPER BOLTS

Tighten the bolts to the specified torques.

Item	N·m	kg-m	lb-ft
①	28 – 44	2.8 – 4.4	20.0 – 32.0
②	20 – 25	2.0 – 2.5	14.5 – 18.0
③	20 – 25	2.0 – 2.5	14.5 – 18.0
④	15 – 20	1.5 – 2.0	11.0 – 14.5



CAUTION:

Bleed air after reassembling the caliper. (Refer to page 2-15.)

DISC SERVICING

- Remove the front and rear wheel. (Refer to pages 6-3 and 6-36.)
- Remove the disc. (Refer to pages 6-4 and 6-37.)
- Install the disc. (Refer to pages 6-6 and 6-40.)

DISC INSPECTION

Using a micrometer, check the disc for wear. Its thickness can be checked with disc and wheel in place.

Brake disc thickness	Front	Service Limit 4.0 mm (0.15 in)
	Rear	5.5 mm (0.22 in)

09900-20205 : Micrometer (0 – 25 mm)

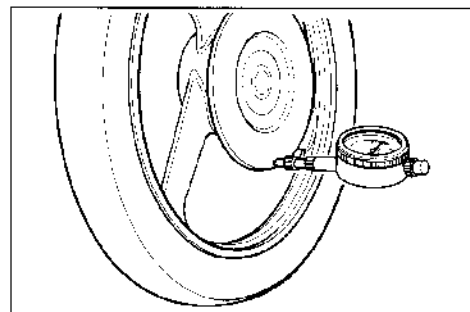
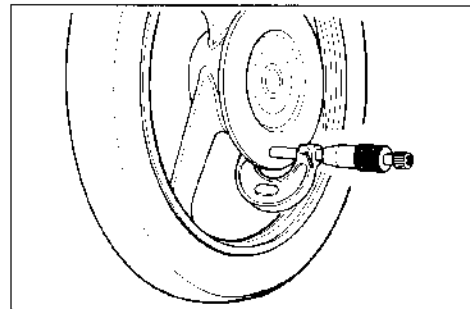
With the disc mounted on the wheel, check the disc for face runout with a dial gauge.

Brake disc runout (Front & Rear)	Service Limit 0.30 mm (0.012 in)
----------------------------------	-------------------------------------

09900-20606 : Dial gauge (1/100 mm)

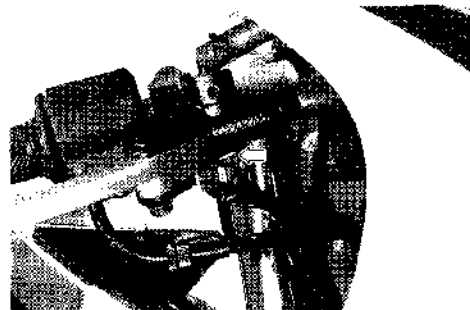
09900-20701 : Magnetic Stand

09900-21304 : V-block (100 mm)



MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Disconnect the front brake light switch lead wires.



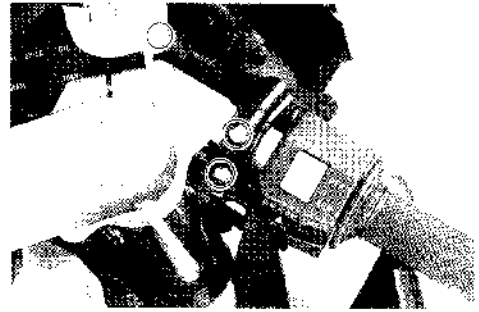
- Place a rag underneath the union bolt on the master cylinder to catch the spilled drops of brake fluid.
- Remove the union bolt and disconnect the brake hose.

CAUTION:

Completely wipe off any brake fluid adhering to any parts of motorcycle. The fluid reacts chemically with paint, plastics, rubber materials, etc. and will damage them severely.



- Remove the master cylinder with reservoir tank.



- Separate the master cylinder and reservoir tank.
- Remove the brake lever.



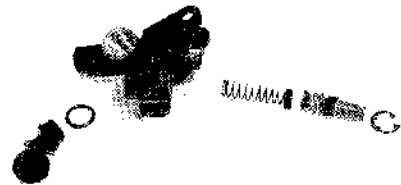
- Remove the dust seal boot.



- Remove the circlip with the special tool.

09900-06108 : Snap ring pliers

- Remove the piston/primary cup and spring.
- Remove the connector and O-ring.



MASTER CYLINDER INSPECTION

Inspect the master cylinder bore for any scratches or other damage.

Inspect the piston surface for any scratches or other damage.



MASTER CYLINDER REASSEMBLY AND REMOUNTING

Reassemble and remount the master cylinder in the reverse order of removal and disassembly. Also observe the following instructions:

99000-23110 : SUZUKI BRAKE FLUID DOT3 & 4

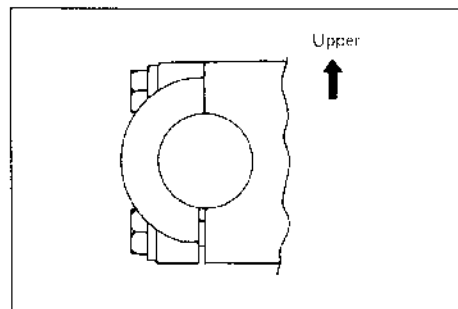
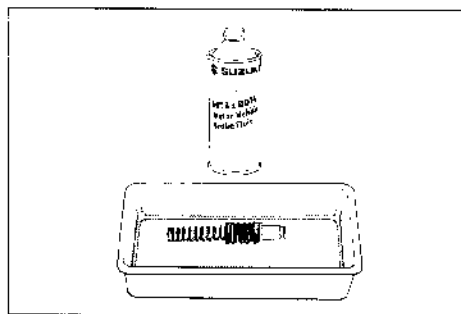
CAUTION:

- * Wash the master cylinder components with fresh brake fluid before reassembly.
- * Never use cleaning solvent or gasoline to wash them.
- * Apply brake fluid to the cylinder bore and all the internal parts to be inserted into the bore.
- When mounting the master cylinder on the handlebar, align the master cylinder holder mating surface ① with punched mark ② on the handlebar, and tighten the upper clamp bolt first as shown.

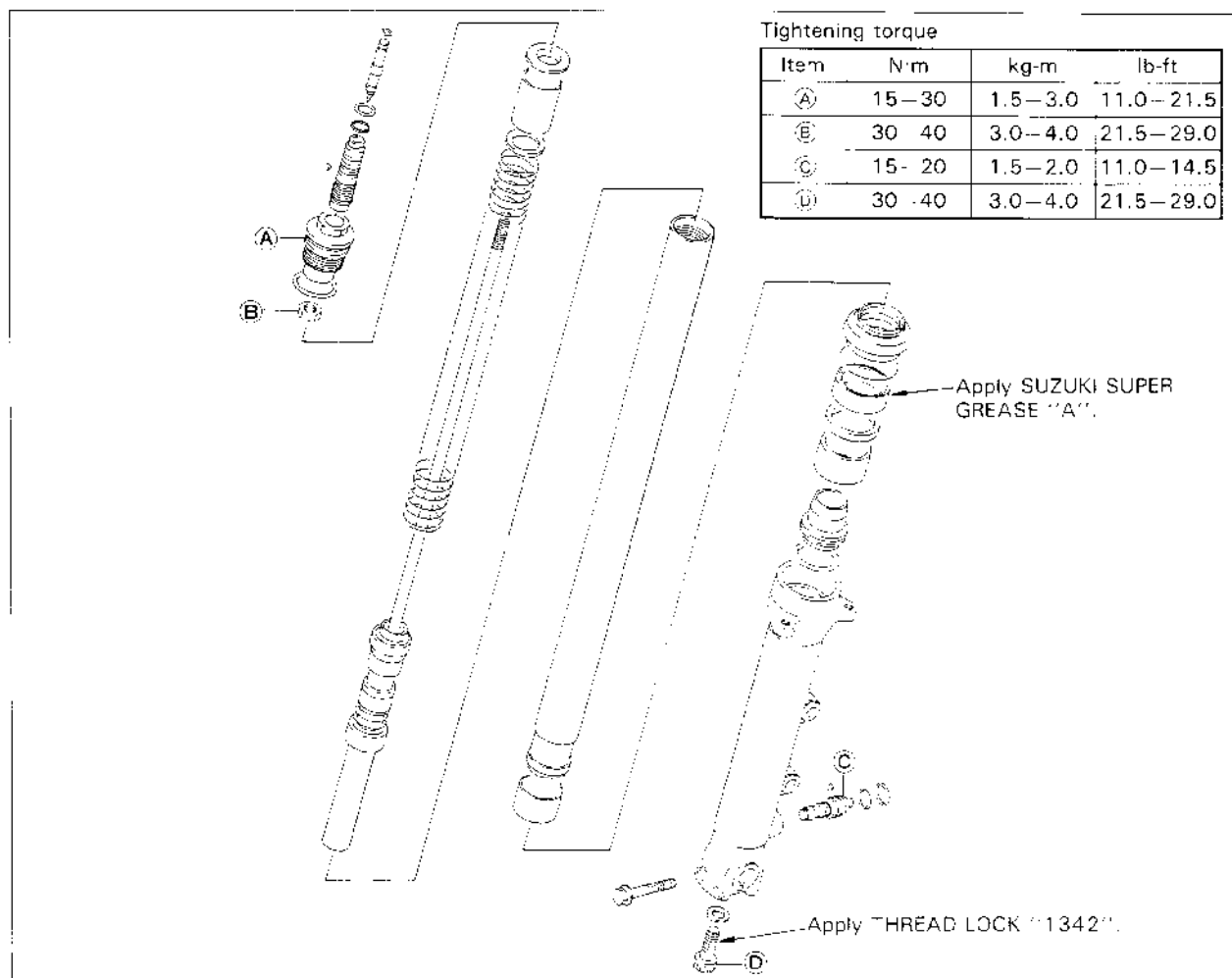
Front brake master : 5 – 8 N·m
 cylinder bolt (0.5 – 0.8 kg-m, 3.5 – 6.0 lb-ft)

CAUTION:

Bleed air after reassembling the master cylinder. (Refer to page 2-15.)



FRONT FORK



REMOVAL AND DISASSEMBLY

- Remove the fairing. (Refer to page 6-1.)
- Remove the front wheel. (Refer to page 6-3.)
- Remove the front fender ①.

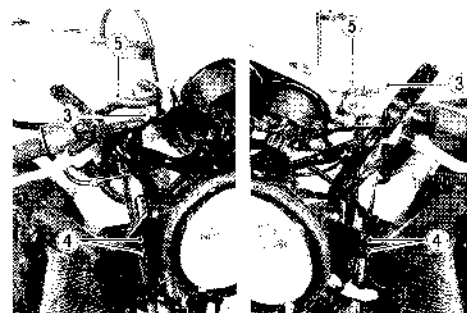
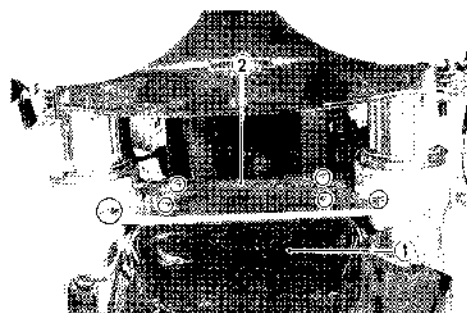
09900-00410 : Hexagon wrench set

- Remove the fender brace ②.

- Loosen the front fork upper ③ and lower ④ clamp bolts and handlebar clamp bolt ⑤.

09900-00410 : Hexagon wrench set

- Remove the front fork.

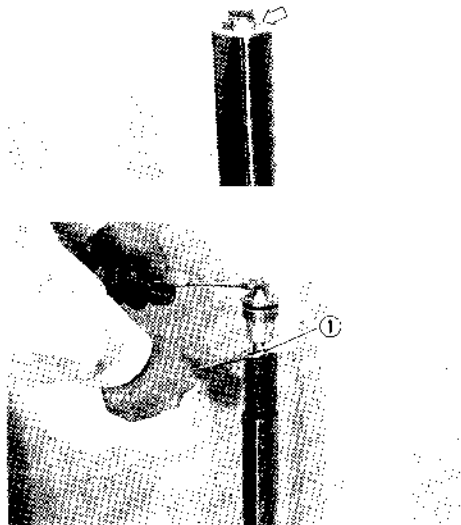


- Loosen the front fork cap bolt.

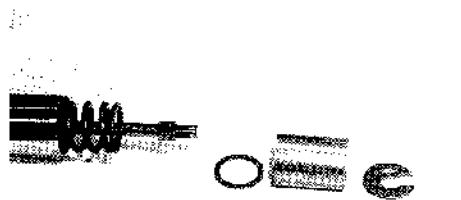
NOTE:

Slightly loosen the cap bolt to facilitate later disassembly before loosening the front fork clamp bolts.

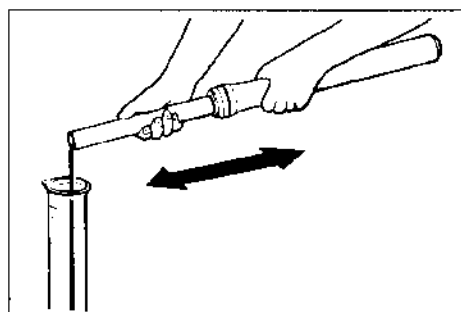
- Push the inner tube down and loosen the spring adjuster lock nut ①, and remove the cap bolt.



- Remove the spring retainer, spacer, spring seat and spring.

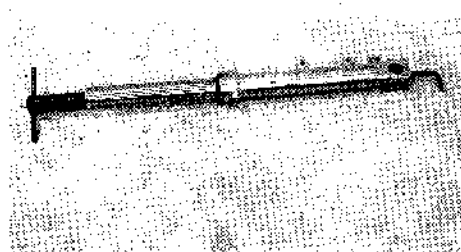


- Invert the fork and stroke it several times to let out fork oil.
- Under the inverted condition of front fork, drain oil to hold it for a few minutes.



- Remove the damper rod bolt with the special tool and 8 mm hexagon wrench.

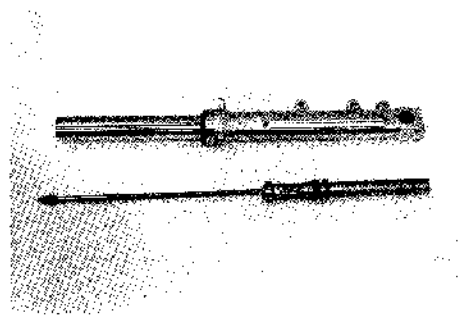
09940-31710 : Front fork assembler



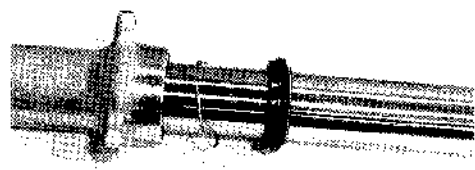
- Remove the damper rod.

CAUTION:

Do not attempt to disassemble the damper rod.



- Remove the dust seal and oil seal stopper ring.

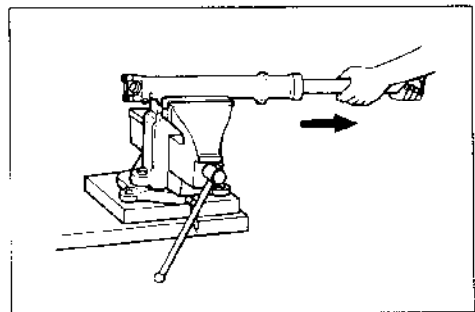


- Remove the oil seal by slowly pulling out the inner tube.

NOTE:

Be careful not to damage the inside of the tube.

- Remove the oil lock piece.

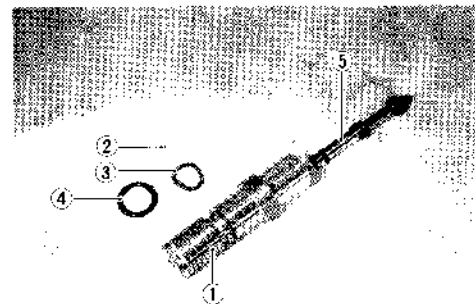


CAUTION:

The outer tube and inner tube "ANTI-FRICTION" metals must be replaced along with the oil seal and dust seal, when assembling front fork.

- Turn in the spring adjuster and remove it from the cap bolt.
- Turn in the rebound damping force adjuster and remove it from the spring adjuster.

- ① Spring adjuster ④ O-ring
- ② Steel ball ⑤ Rebound damping force adjuster
- ③ Expander

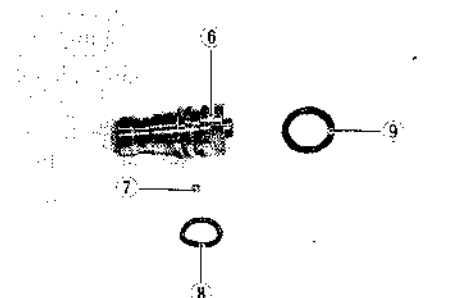


CAUTION:

The O-rings removed should be replaced with new ones.

- Remove the compression damping force adjuster from the outer tube.

- ⑥ Compression damping force adjuster ⑧ Expander
- ⑦ Steel ball ⑨ O-ring



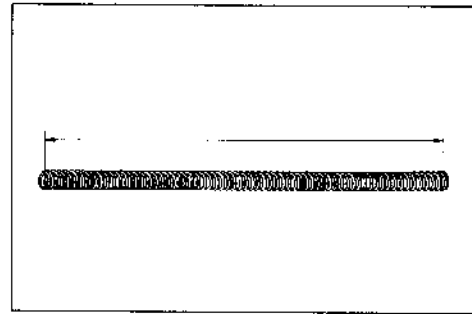
CAUTION:

- * The O-ring removed should be replaced with a new one.
- * Do not attempt to disassemble the compression damping force adjuster.

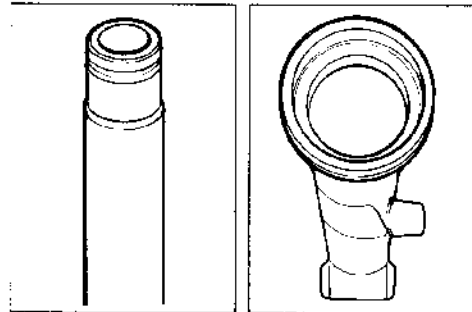
INSPECTION**FORK SPRING**

Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

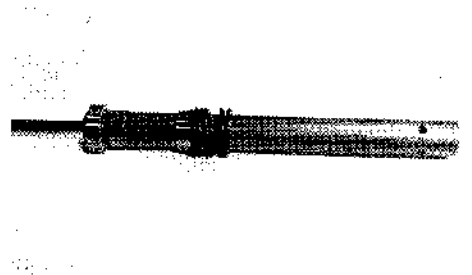
Front fork spring free length	Service Limit
	299.5 mm (11.79 in)

**INNER AND OUTER TUBE**

Inspect the inner tube sliding surface and outer tube sliding surface for any scuffing.

**DAMPER ROD**

Inspect the damper rod for wear and damage.

**REASSEMBLY AND REMOUNTING**

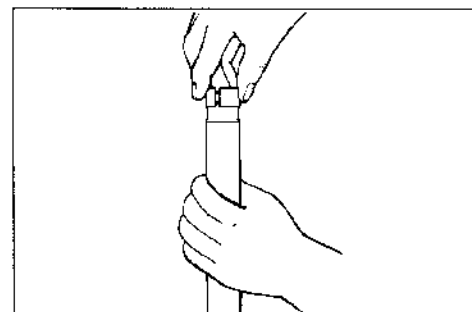
Reassemble and remount the front fork in the reverse order of removal and disassembly. Also observe the following instructions:

INNER TUBE METAL

- Hold the inner tube vertically and clean the metal groove.
- Clean inner and outer surfaces of the metal and install it by hand to the metal groove of the inner tube as shown.

CAUTION:

Use special care to prevent damage to the "Teflon" coated surface of the Anti-friction inner tube metal when mounting it.



DAMPER ROD BOLT

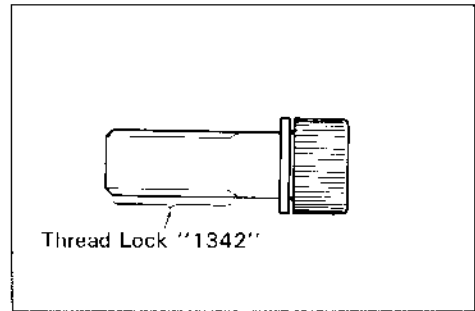
- Apply THREAD LOCK "1342" to the damper rod bolt and tighten it to the specified torque with the special tool.

99000-32050 : THREAD LOCK "1342"

Front fork damper : 30 – 40 N·m
rod bolt (3.0 – 4.0 kg·m, 21.5 – 29.0 lb-ft)

09900-00410 : Hexagon wrench set

09940-31710 : Front fork assembler



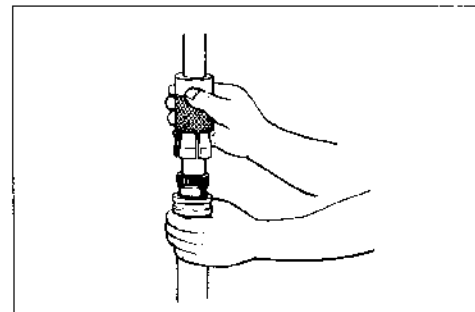
OUTER TUBE METAL, OIL SEAL AND DUST SEAL

- Clean the metal groove of outer tube and metal outer surface.
- Install the outer tube metal, oil seal retainer and oil seal.

09940-50112 : Front fork oil seal installer

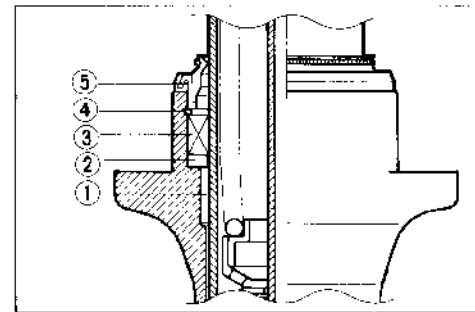
CAUTION:

Use special care to prevent damage to the "Teflon" coated surface of the Anti-Friction outer tube metal when installing it.



- After installing the oil seal, install the oil seal stopper ring and dust seal.

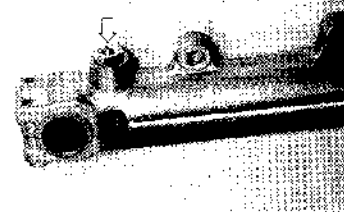
- ① Anti-friction metal
- ② Oil seal retainer
- ③ Oil seal
- ④ Oil seal stopper ring
- ⑤ Dust seal



COMPRESSION DAMPING FORCE ADJUSTER

- Clean the adjuster and tighten it to the specified torque.

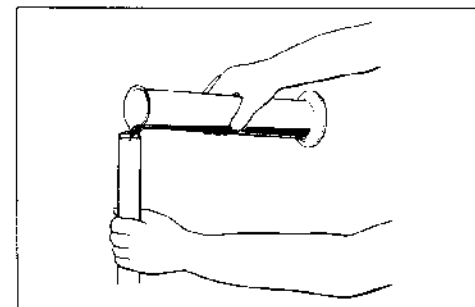
Front fork compression : 15 – 20 N·m
damping force adjuster (1.5 – 2.0 kg·m)
(11.0 – 14.5 lb-ft)



FORK OIL

- Use front fork oil whose viscosity rating meets specifications below.

Fork oil type	Fork oil # 10
Fork oil capacity	407 ml (13.7/13.4 US/Imp oz)



- Hold the front fork vertical and adjust fork oil level with the special tool.

NOTE:

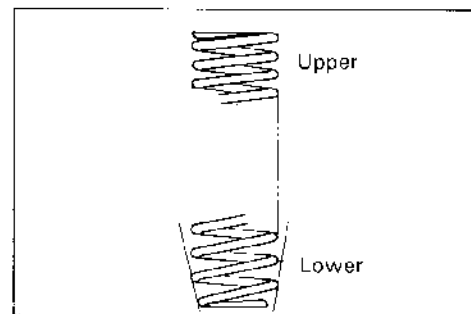
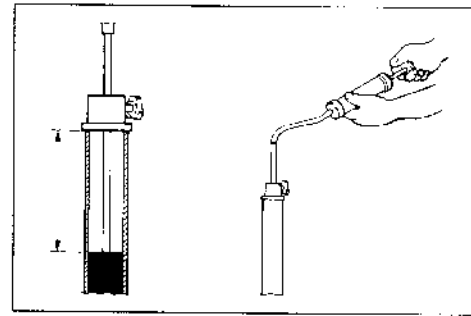
When adjusting fork oil level, remove the fork spring and compress the inner tube fully.

09943-74111 : Fork oil level gauge

Front fork oil level	Standard
	141 mm (5.55 in)

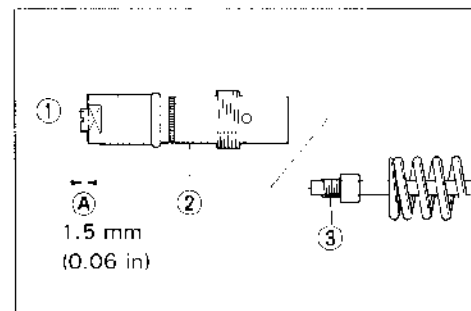
FORK SPRING

- Install the fork spring as shown in the illustration.



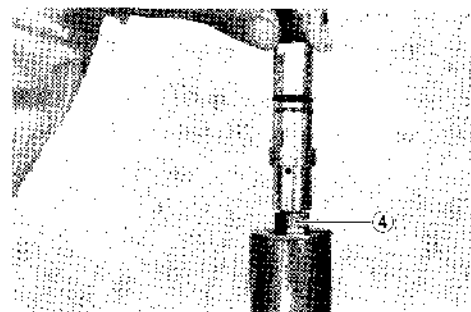
REBOUND DAMPING FORCE ADJUSTER AND SPRING ADJUSTER

- Adjust the height (A) of the rebound damping force adjuster (1) and then install the spring adjuster (2) to the damper rod (3) as shown in the illustration.



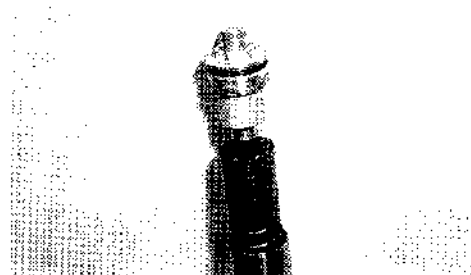
- Slowly turn in the spring adjuster by hand until the rebound damping force adjuster seats on the damper rod.
- Holding the spring adjuster in a position, tighten the lock nut (4) to the specified torque.

**Front fork spring : 25 – 30 N·m
adjuster lock nut (2.5 – 3.0 kg·m, 18.0 – 21.5 lb-ft)**

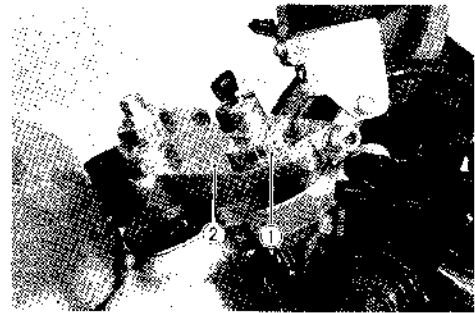


CAP BOLT

- Install the cap bolt to the inner tube.



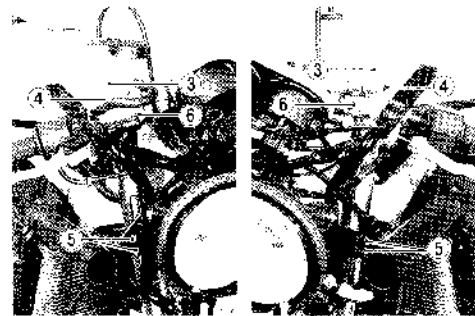
- When installing the front fork to the motorcycle, align the line ① on the inner tube with the upper surface ② of the steering stem upper bracket.



- Tighten the cap bolts and fork clamp bolts to the specified torque.

Tightening torque

Item	N·m		kg-m	lb-ft
③	15	30	1.5 – 3.0	11.0 – 21.5
④	35 – 55		3.5 – 5.5	25.5 – 40.0
⑤	25 – 40		2.5 – 4.0	18.0 – 29.0
⑥	15 – 25		1.5 – 2.5	11.0 – 18.0

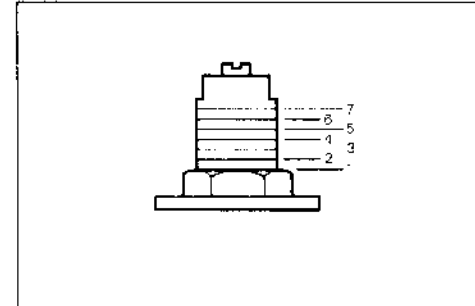


ADJUSTMENT

After installing the front fork, adjust the spring pre-load and damping force as follows.

SPRING PRE-LOAD ADJUSTMENT

There are seven grooved lines on the side of the adjuster. Position 7 provides the maximum spring pre-load and position 1 provides the minimum spring pre-load.

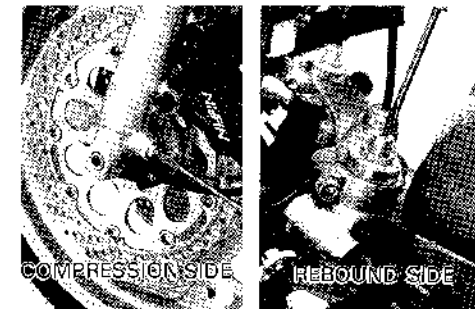


DAMPING FORCE ADJUSTMENT

Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click — that is 1-position then turn back and count the specified position as shown below.

WARNING:

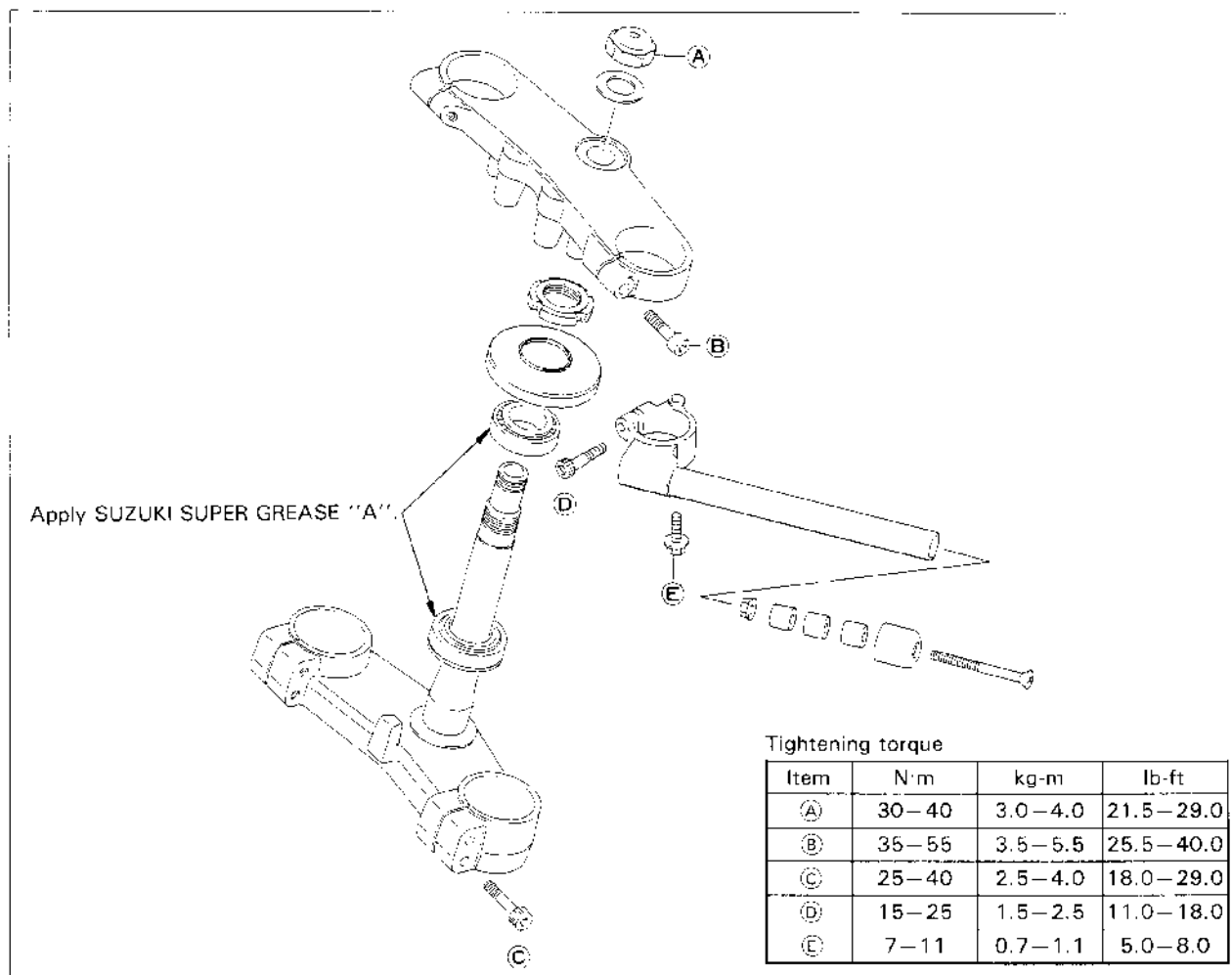
Be sure to adjust the spring pre-load and damping force on both front fork legs equally.



STANDARD SUSPENSION SETTING

	FRONT			REAR	
	Spring-preload adjuster	Damping force adjuster		Spring set length	Damping force adjuster
Rebound		Compression			
Solo riding	4	5	6	187 mm (7.4 in)	2
Dual riding	5	2	3	182 mm (7.2 in)	4

STEERING

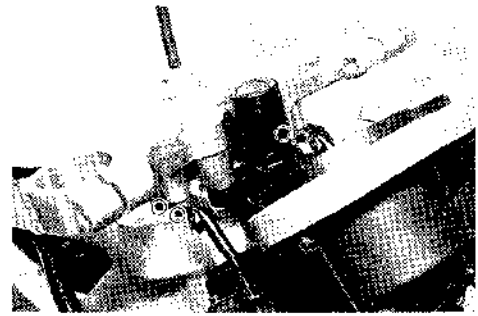


REMOVAL AND DISASSEMBLY

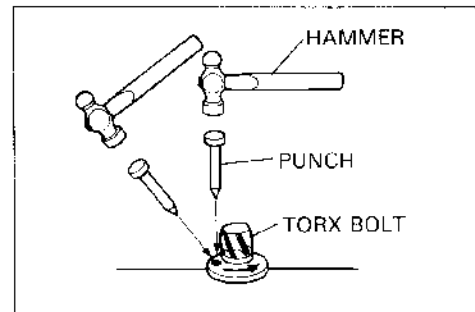
- Remove the fairing. (Refer to page 6-1.)
- Remove the front wheel. (Refer to page 6-3.)
- Remove the front fork. (Refer to page 6-18.)
- Remove the handlebar mounting bolts, right and left.



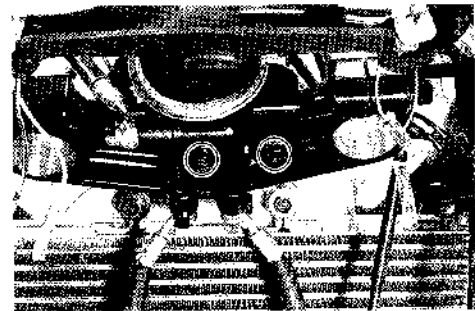
- Remove the speedometer/tachometer bracket mounting bolts.
- Disconnecting the meter coupler, remove the meter.



- Using a center punch and hammer, remove the bolt to detach the ignition switch from the steering stem upper bracket.



- Remove the brake hose joint mounting bolt and horn mounting bolt.



- Take off the upper bracket to remove the steering stem head nut.



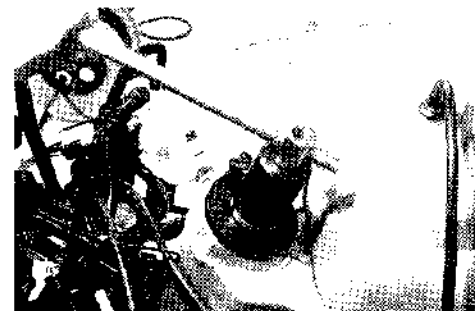
- Removing the steering stem nut with the special tool, draw out the steering stem lower bracket.

09940-14911 : Steering stem nut wrench

NOTE:

Hold the steering stem lower bracket by hand to prevent it from falling.

- Remove the steering stem upper bearing.

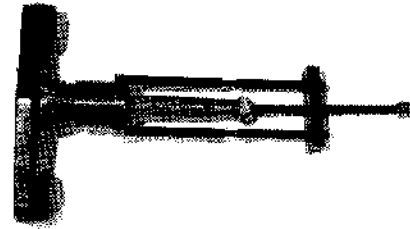


- Install a proper nut onto the steering stem head.
- Remove the steering stem lower bearing with the special tool.

09941-84510 : Bearing remover

CAUTION:

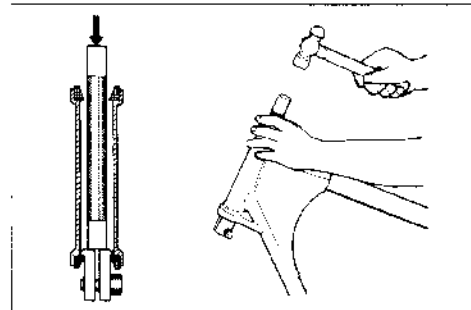
The bearing removed should be replaced with a new one.



- Remove the steering stem bearing races, upper and lower with the special tools.

09941-54911 : Bearing outer race remover

09941-74910 : Steering bearing installer



INSPECTION

Inspect the removed parts for the following abnormalities.

- * Handlebar distortion
- * Race wear and brinelling
- * Bearing wear or damage
- * Abnormal noise of bearing
- * Distortion of steering stem

REASSEMBLY AND REMOUNTING

Reassemble and remount the steering stem in the reverse order of removal and disassembly. Also observe the following instructions:

OUTER RACES

- Press in the upper and lower outer races with the special tool.

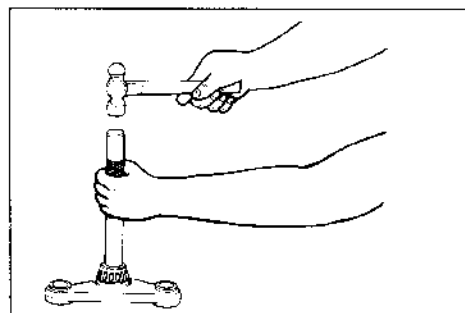
09941-34513 : Steering outer race installer



BEARING

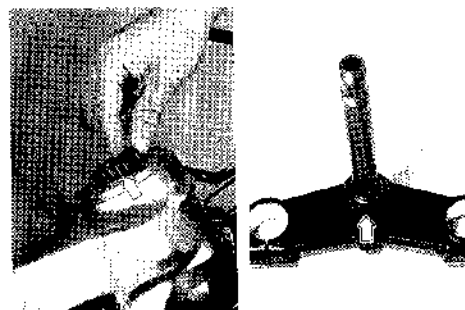
- Press in the lower bearing with the special tool.

09941-74910 : Steering bearing installer.



- Apply grease to the upper and lower bearings.

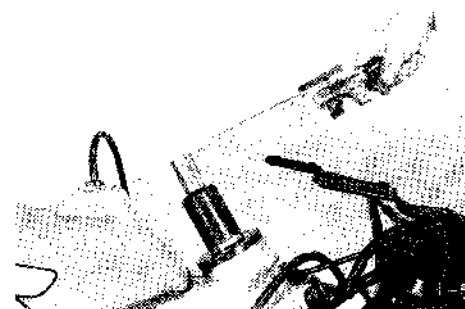
99000-25010 : SUZUKI SUPER GREASE "A"

**STEM NUT**

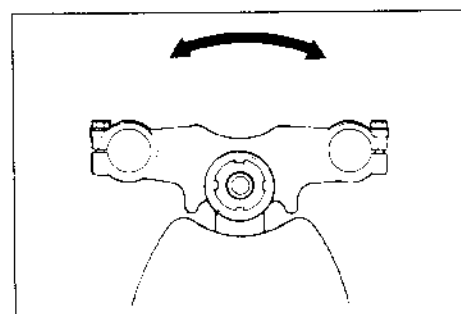
- Tighten the steering stem nut to the specified torque.

**Steering stem nut : 40 – 60 N·m
(4.0 – 6.0 kg-m, 29.0 – 43.5 lb-ft)**

09940-14911 : Steering stem nut wrench



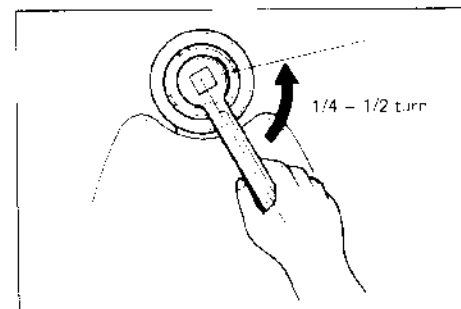
- Turn the steering stem lower bracket about five or six times to the left and right so that the taper roller bearing will be seated properly.



- Turn back the stem nut by 1/4 – 1/2 turn.

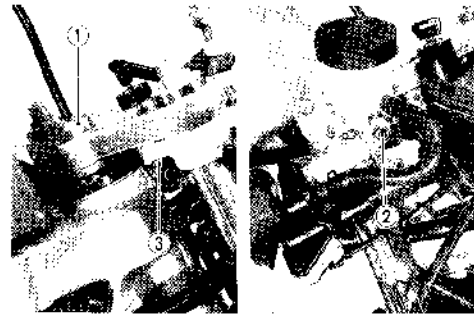
NOTE:

This adjustment will vary from motorcycle to motorcycle.



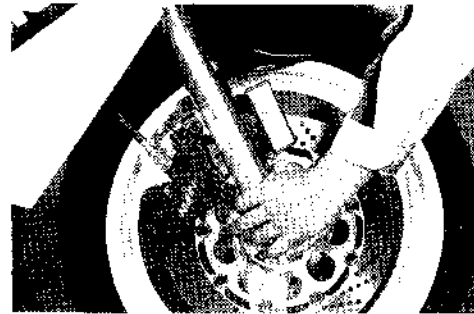
Tighten the steering stem head nut, handlebar clamp bolt and handlebar set bolt.

Item	N·m	kg·m	lb·ft
①	30 – 40	3.0 – 4.0	21.5 – 29.0
②	15 – 25	1.5 – 2.5	11.0 – 18.0
③	7 – 11	0.7 – 1.1	5.0 – 8.0



NOTE:

Holding the front fork legs, check to move them back and forth if the steering is not loose.



IGNITION SWITCH

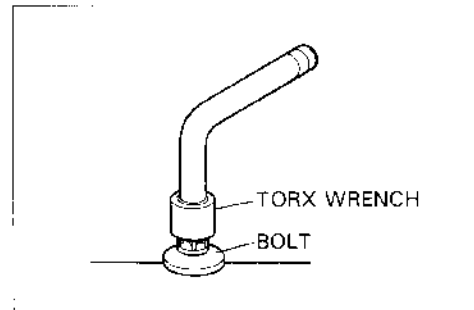
To install the ignition switch, always use the new special bolt and follow the procedures below.

NOTE:

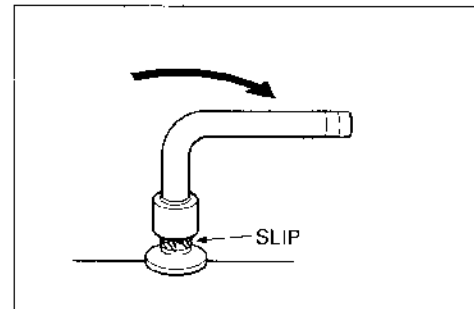
The spare ignition switch comes equipped with the special bolts, however, the bolt is also individually available as spare parts.

- Using the special bolts, attach the ignition switch on the steering stem upper bracket in place and run in the bolts with the special tool.

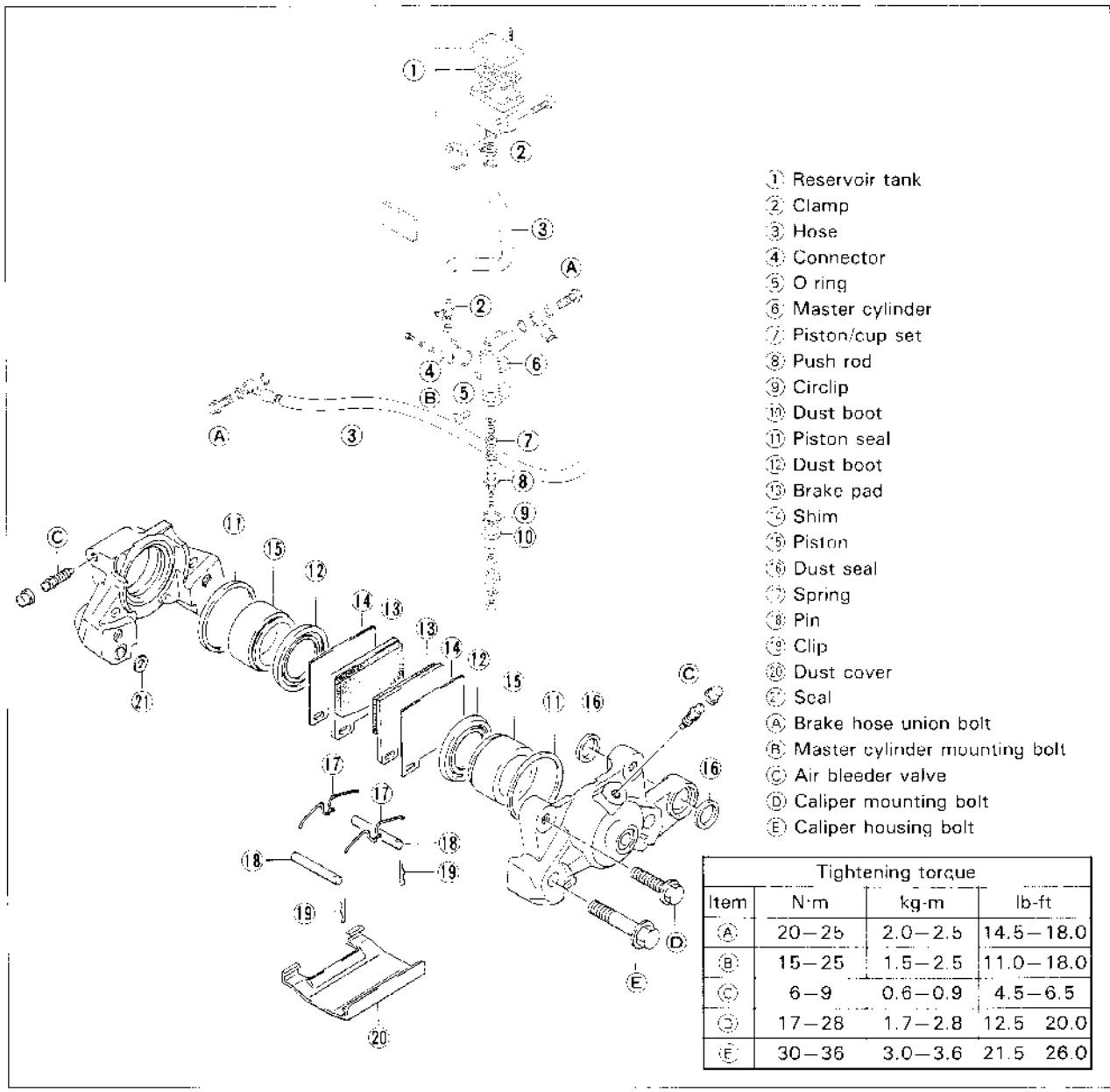
09930-11910 : Torx wrench



- Continue turning the tool until the tool slips from the bolt head or the bolt head breaks off, then the bolt has become tightened to the proper specification.



REAR BRAKE

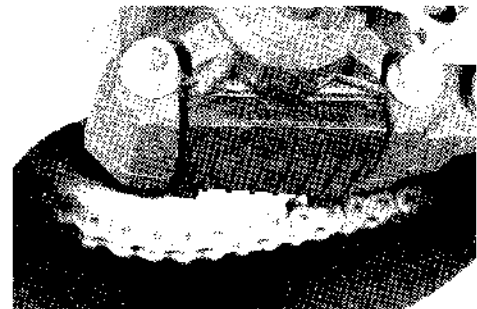


BRAKE PAD REPLACEMENT

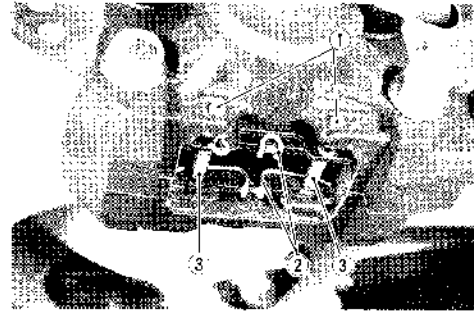
- Remove the dust cover.

CAUTION:

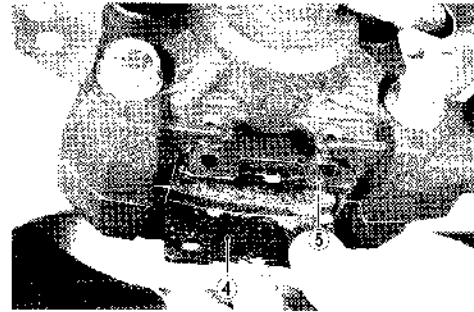
- * Do not operate the brake pedal while dismantling the pads.
- * Replace the brake pad as a set, otherwise braking performance will be adversely affected.



- Removing the clips ① and springs ②, drew out the pins ③.

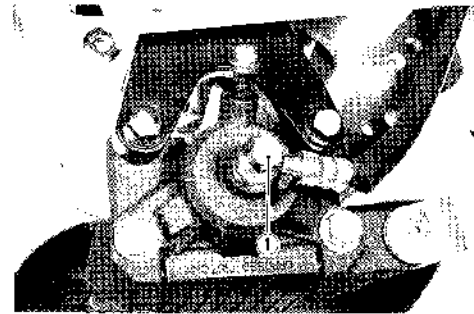


- Take out the pads ④ and shims ⑤.



CALIPER REMOVAL AND DISASSEMBLY

- Catch the brake fluid in a suitable receptacle while removing the union bolt ①.



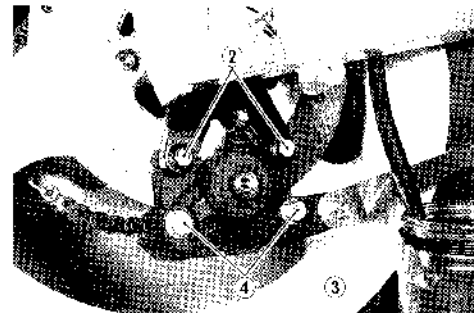
- Take off the caliper to remove the caliper mounting bolts ② and torque link bolt and nut ③.

NOTE:

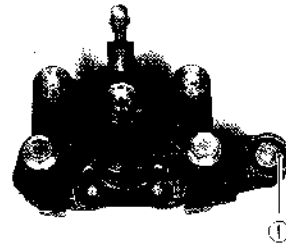
Slightly loosen the caliper housing bolts ④ to facilitate later disassembly before removing the caliper mounting bolts ②.

CAUTION:

Do not operate the brake pedal while dismantling the brake caliper.



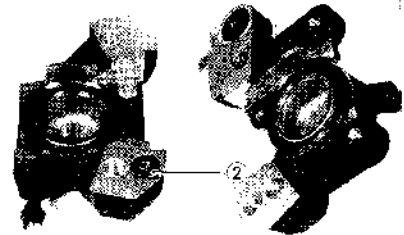
- Remove the pads and shims. (Refer to page 6-30.)
- Remove the torque link spacer ①.
- Remove the caliper housing bolts and separate the caliper halves.



- Remove the seal ②.

NOTE:

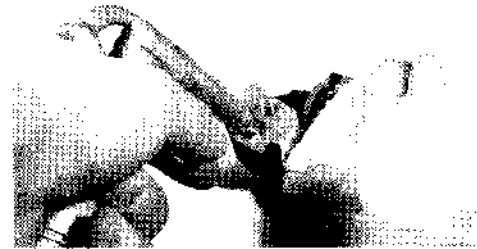
Once separate the caliper halves, replace the seal with a new one.



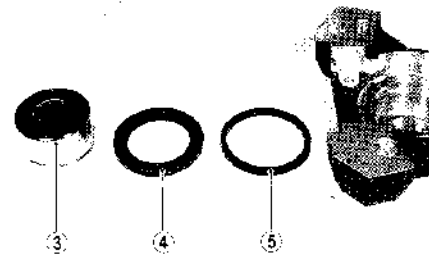
- Placing a rag over the piston to prevent the popping out, push out the piston using air gun.

CAUTION:

To prevent the piston damage, do not use high pressure air.



- Remove the piston ③, dust boot ④ and piston seal ⑤.



CALIPER INSPECTION

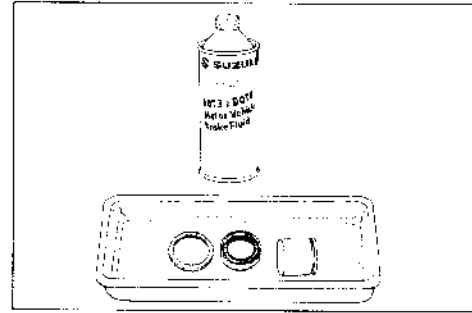
CYLINDER	Refer to page 6-14.
PISTON	Refer to page 6-14.
RUBBER PARTS	Refer to page 6-14.
DISC	Refer to page 6-15.

CALIPER REASSEMBLY AND REMOUNTING

Reassemble and remount the caliper in the reverse order of removal and disassembly and also carry out the following steps:

CAUTION:

- * Wash the caliper components with fresh brake fluid before reassembly.
- * Never use cleaning solvent or gasoline to wash them.
- * Apply brake fluid to caliper bore and also piston to be inserted into the bore.
- * Bleed air after reassembling caliper.
(See page 2-15).



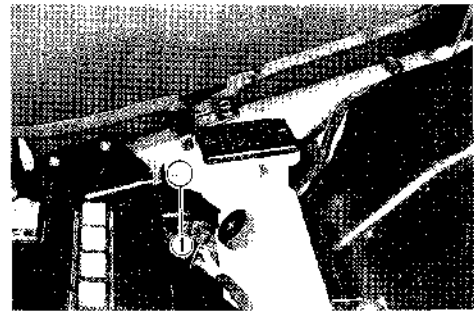
TIGHTENING TORQUE

Item	N·m	kg-m	lb-ft
Union bolt	20-25	2.0-2.5	14.5-18.0
Torque link nut	18-28	1.8-2.8	13.0-20.0

Item	N·m	kg-m	lb-ft
Caliper housing bolt	30-36	3.0-3.6	21.5-26.0
Caliper mounting bolt	17-28	1.7-2.8	12.5-20.0

MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Remove both seats.
- Free the reservoir tank to remove its mounting bolt ①.

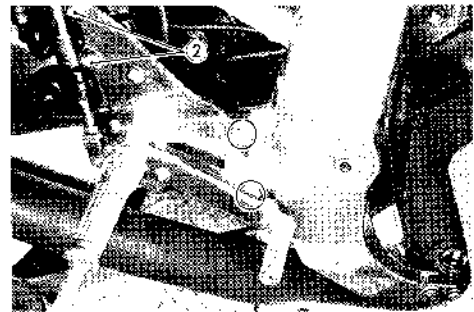


- Remove the right footrest bracket.

09900-00401 : L-type hexagon wrench set

NOTE:

Slightly loosen the master cylinder mounting bolts ② to facilitate later disassembly before removing the right footrest bracket bolts.



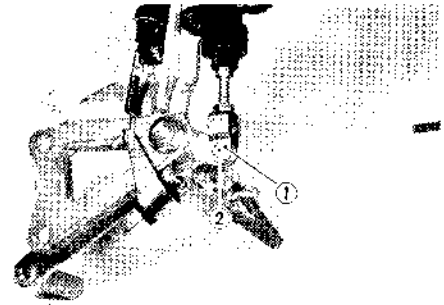
- Disconnect the rear brake light switch lead wires ③.
- Place a cloth underneath the union bolt ④ on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose from the master cylinder joint.



CAUTION:

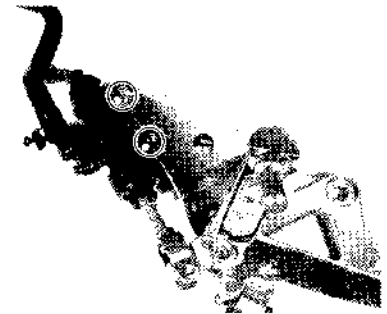
Immediately and completely wipe off any brake fluid contacting with any part of motorcycle. The fluid reacts chemically with paint, plastics and rubber materials, etc. and will damage them severely.

- Pull out the brake pedal cotter pin ① and take off the pin ② to connect master cylinder rod and brake pedal.

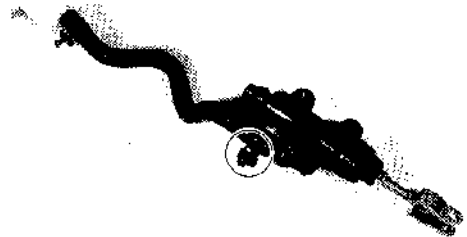


- Remove the master cylinder from the footrest bracket.

09900-00401 : L-type hexagon wrench set



- Remove the master cylinder assembly from reservoir tank and its hose.

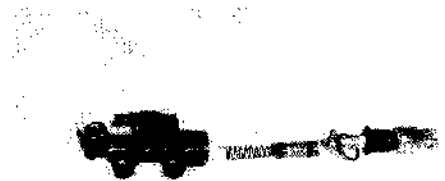


- Pull out the dust boot and remove the circlip using the snap ring pliers.

09900-06105 : Snap ring pliers



- Draw out the piston/cup set and push rod.



- Remove the connector and O-ring.



MASTER CYLINDER INSPECTION CYLINDER AND PISTON/CUP SET

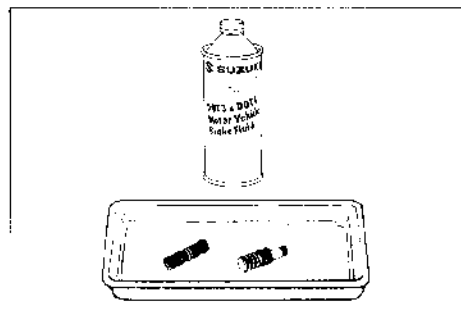
Inspect the cylinder bore wall for any scratches or other damage.
Inspect the piston surface for any scratches or other damage.
Inspect the cup set and each rubber part for damage.

MASTER CYLINDER REASSEMBLY AND REMOUNTING

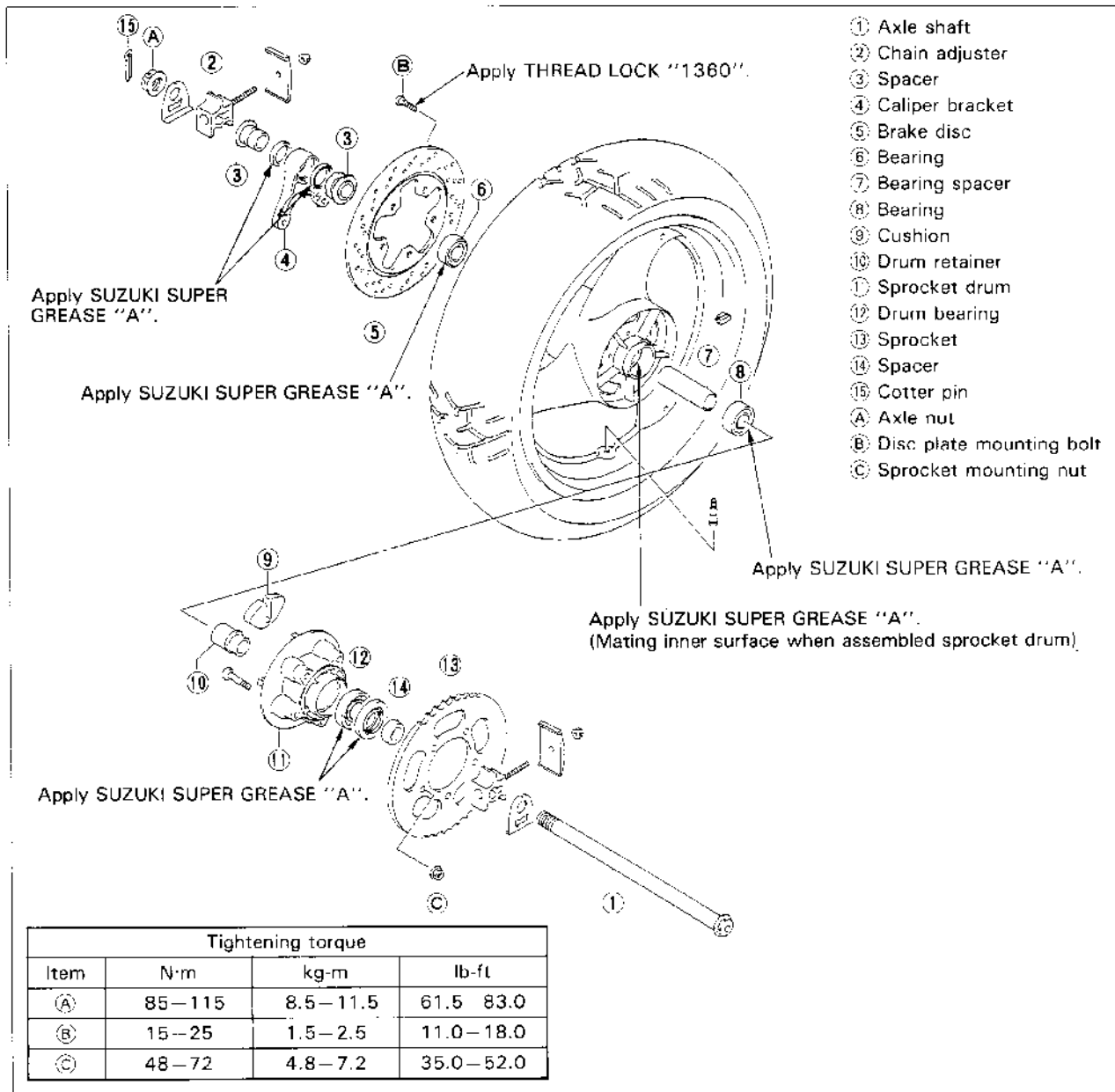
Reassemble and remount the master cylinder in the reverse order of removal and disassembly and also carry out to take the following precautions:

CAUTION

- * Wash the master cylinder components with fresh brake fluid before reassembly.
- * Never use cleaning solvent or gasoline to wash them.
- * Apply brake fluid to the cylinder bore and all the internals to be inserted into the bore.
- * Bleed air after reassembling master cylinder.
(Refer to page 2-15.)
- * Adjust the rear brake light switch and brake pedal height after installation.
(Refer to page 2-14.)



REAR WHEEL

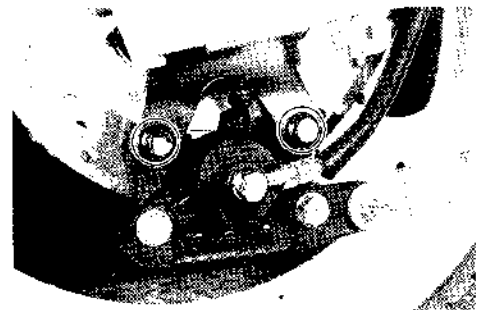


REMOVAL AND DISASSEMBLY

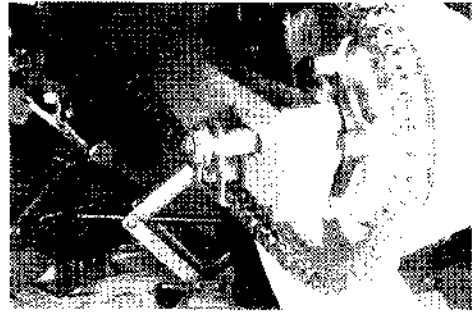
- Removing both lower fairings, support the motorcycle using jack.
- Removing the rear brake caliper mounting bolts, take off the caliper along with torque link at the portion mounting it.

CAUTION:

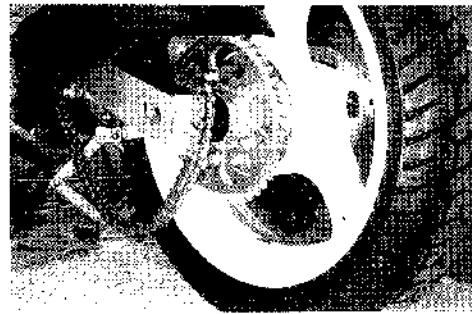
Do not operate the brake pedal while dismantling the brake caliper.



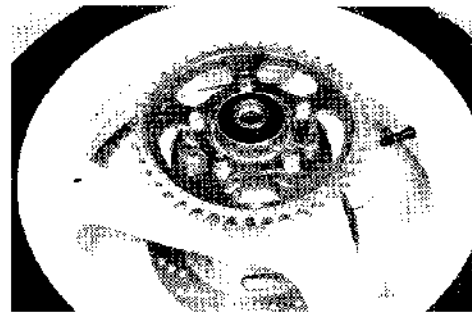
- Pull out the cotter pin. (Only for E-28 model)
- Remove the rear axle nut.
- Draw out the axle shaft.



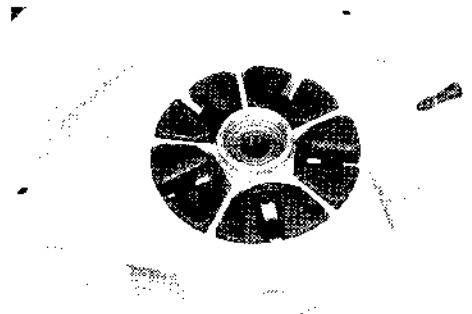
- Taking off the drive chain from rear sprocket, remove the rear wheel.



- Draw out the rear sprocket mounting drum from wheel.

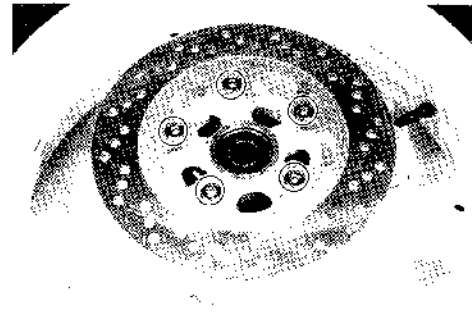


- Remove the five cushions.



- Separate the brake disc from wheel.

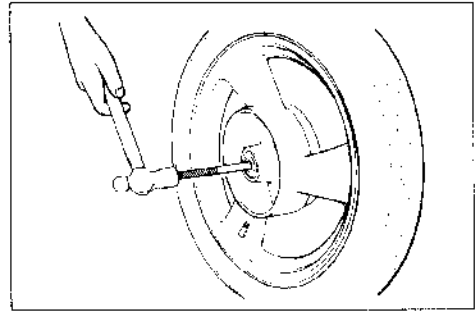
09900-00410 : Hexagon wrench set



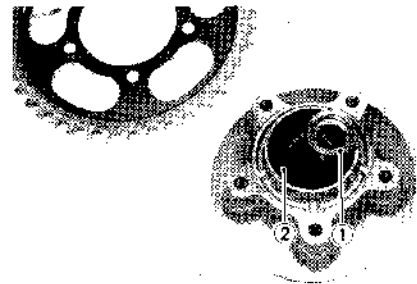
- Drive out the wheel bearings; right and left with an appropriate steel bar.

CAUTION:

The bearings removed should be replaced with new ones.



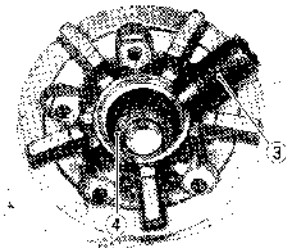
- Separate the rear sprocket from sprocket mounting drum.
- Remove the spacer ① and oil seal ②.



- Removing the drum retainer ③, drive out the sprocket mounting drum bearing ④ using the appropriate tool.

CAUTION:

The bearing removed should be replaced with a new one.

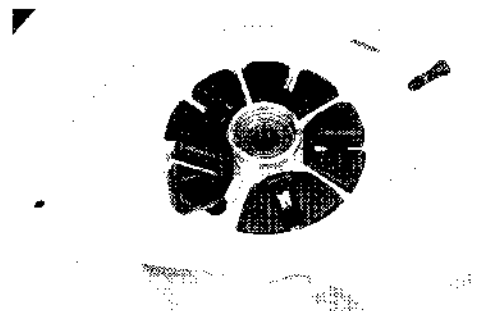


INSPECTION

- DRUM BEARINGS Refer to page 6-40.
- AXLE SHAFT Refer to page 6-4.
- WHEEL Refer to page 6-7.
- TIRE Refer to page 6-7.

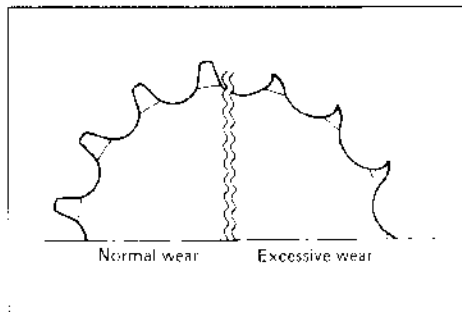
CUSHION

Inspect the cushions for wear and damage.



SPROCKET

Inspect the sprocket teeth for wear. If they are worn as shown, replace the sprocket and drive chain.



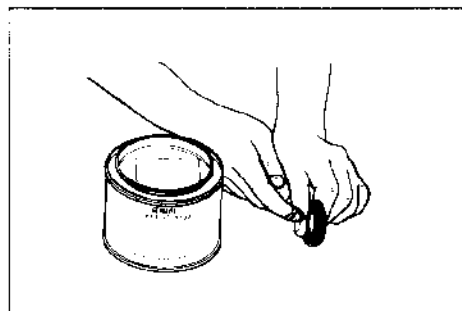
REASSEMBLY AND REMOUNTING

Reassemble and remount the rear wheel in the reverse order of removal and disassembly, and also carry out the following steps :

WHEEL AND SPROCKET MOUNTING DRUM BEARINGS

Apply grease before installing the bearings.

99000-25010 : SUZUKI SUPER GREASE "A"



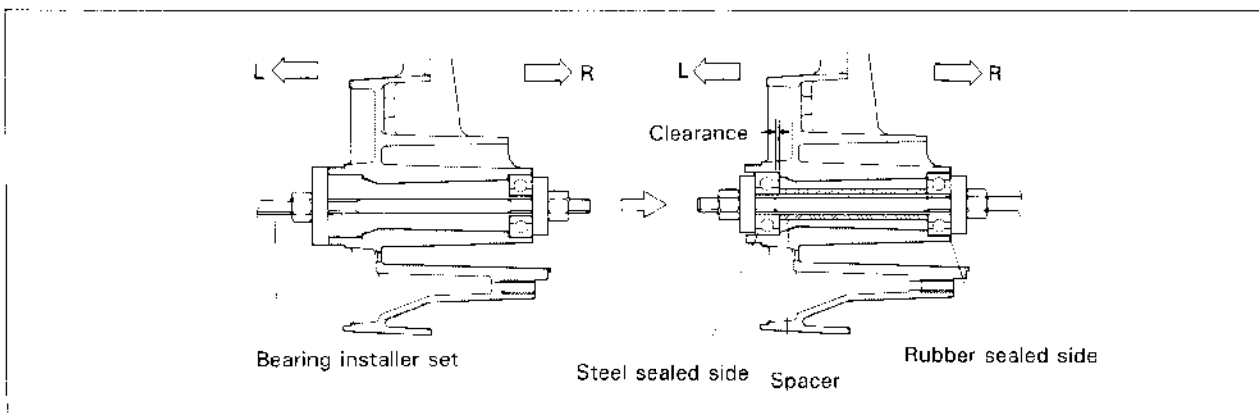
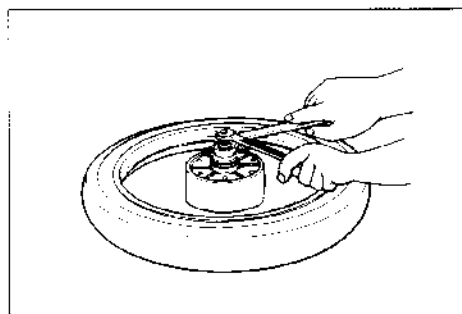
WHEEL BEARINGS

Install the wheel bearing using the bearing installer.

09924-84510 : Bearing installer set

NOTE:

First install the steel sealed bearing for right side, then install the rubber sealed bearing for left. Sealed face of bearing goes toward outside.



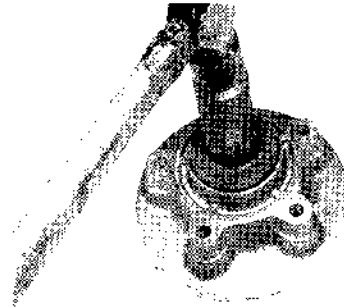
MOUNTING DRUM BEARING

Install the bearing using the bearing installer.

09913-75520 : Bearing installer

NOTE:

Apply grease to the bearing and oil seal lip before assembling rear wheel.

**BRAKE DISC**

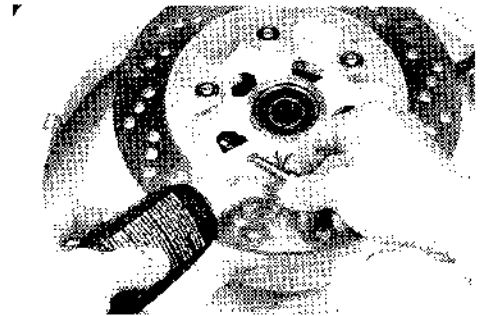
Apply Thread Lock "1360" to the disc bolts and tighten them to the specified torque.

NOTE:

Make sure that the brake disc is clean and free of any greasy matter.

99000-32130 : THREAD LOCK "1360"

Brake disc bolt : 15 – 25 N·m
(1.5 – 2.5 kg-m, 11.0 – 18.0 lb-ft)

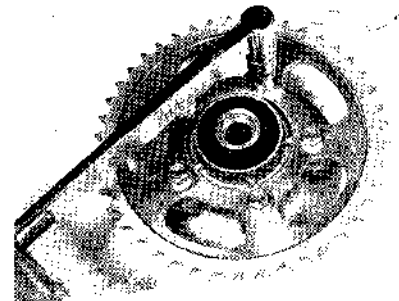
**REAR SPROCKET**

Tighten the sprocket mounting nuts to the specified torque.

Rear sprocket nut : 48 – 72 N·m
(4.8 – 7.2 kg-m, 35.0 – 52.0 lb-ft)

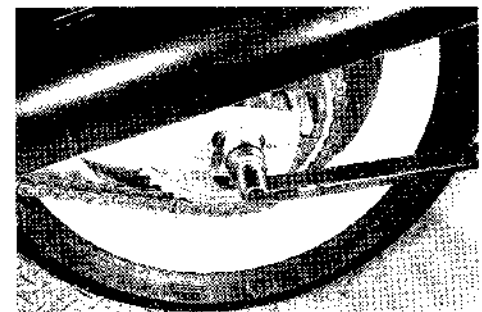
NOTE:

Place the sprocket to turn outward its surface embossed with figures "530".

**REAR AXLE SHAFT**

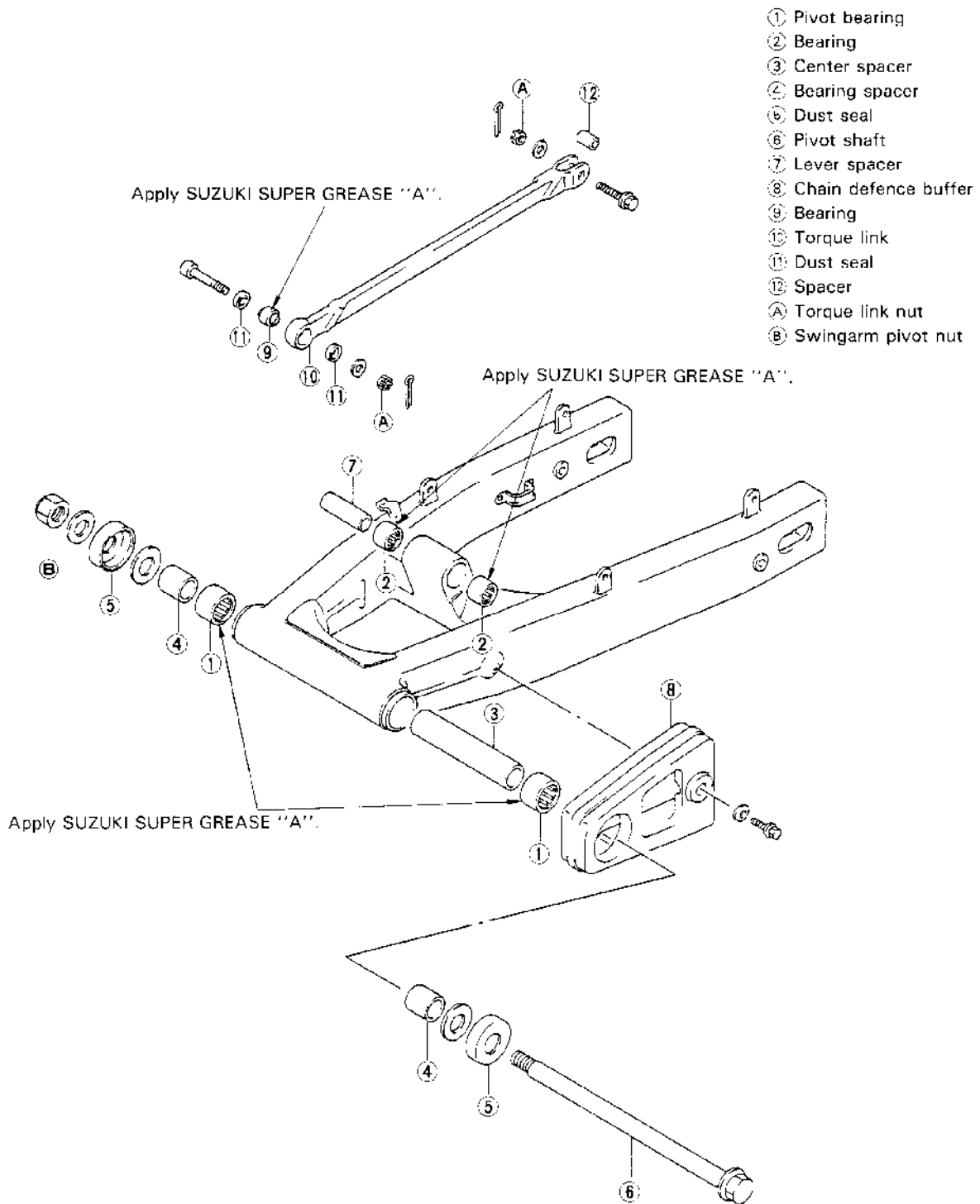
- Adjust the chain slack after rear wheel installation. (Refer to page 2-12.)
- Tighten the rear axle nut to the specified torque.

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



REAR SUSPENSION

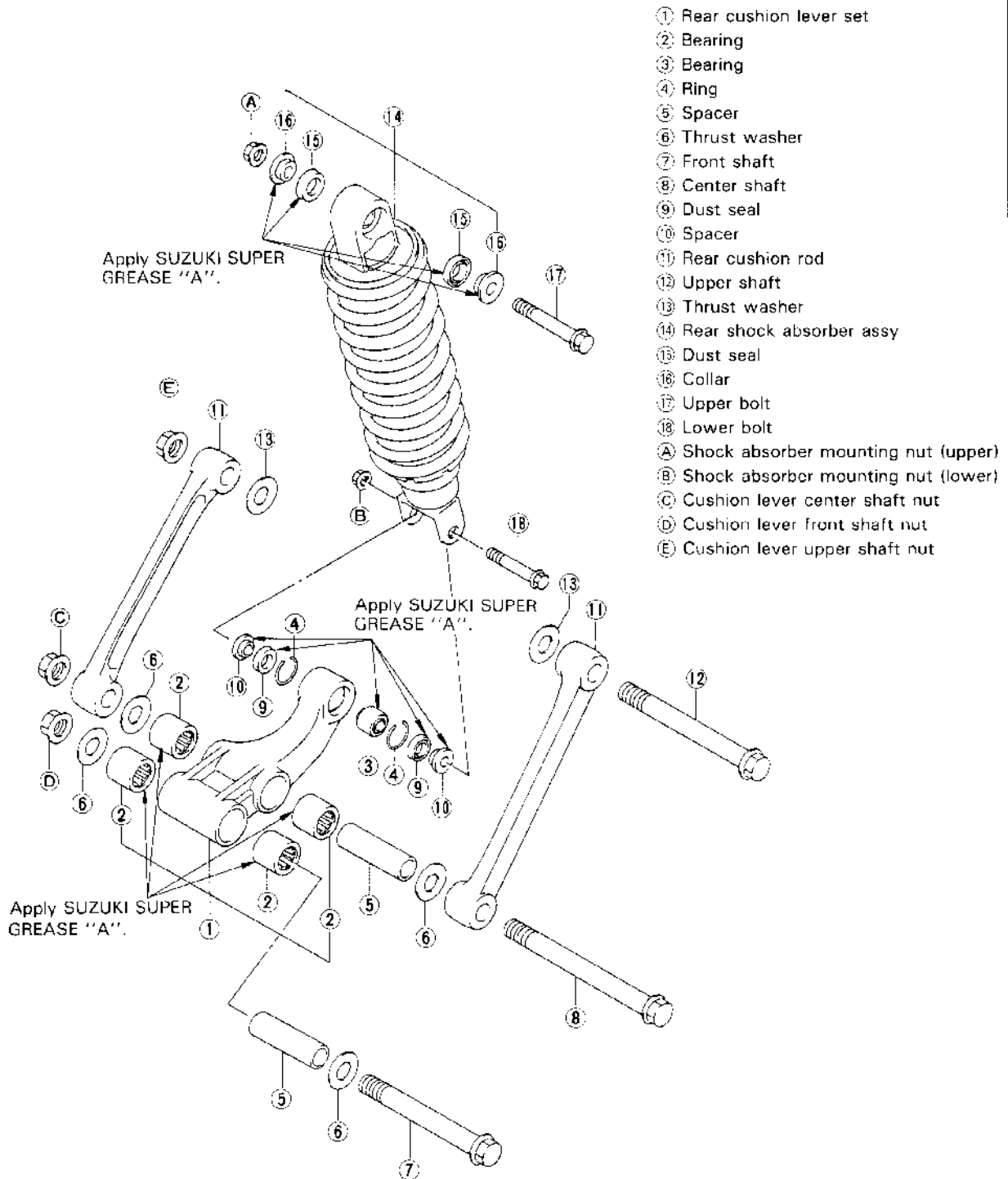
SWINGARM



- ① Pivot bearing
- ② Bearing
- ③ Center spacer
- ④ Bearing spacer
- Ⓟ Dust seal
- Ⓠ Pivot shaft
- ⑦ Lever spacer
- Ⓢ Chain defence buffer
- ⑨ Bearing
- Ⓣ Torque link
- Ⓤ Dust seal
- Ⓥ Spacer
- Ⓐ Torque link nut
- Ⓑ Swingarm pivot nut

Tightening torque			
Item	N·m	kg-m	lb-ft
Ⓐ	18-28	1.8-2.8	13.0-20.0
Ⓑ	85 115	8.5 11.5	61.5 83.0

REAR CUSHION LEVER



- ① Rear cushion lever set
- ② Bearing
- ③ Bearing
- ④ Ring
- ⑤ Spacer
- ⑥ Thrust washer
- ⑦ Front shaft
- ⑧ Center shaft
- ⑨ Dust seal
- ⑩ Spacer
- ⑪ Rear cushion rod
- ⑫ Upper shaft
- ⑬ Thrust washer
- ⑭ Rear shock absorber assy
- ⑮ Dust seal
- ⑯ Collar
- ⑰ Upper bolt
- ⑱ Lower bolt
- A Shock absorber mounting nut (upper)
- B Shock absorber mounting nut (lower)
- C Cushion lever center shaft nut
- D Cushion lever front shaft nut
- E Cushion lever upper shaft nut

Item	Tightening torque		
	N·m	kg-m	lb-ft
A B	40-60	4.0-6.0	29.0-43.5
C D E	110-160	11.0-16.0	79.5-115.5

REMOVAL AND DISASSEMBLY

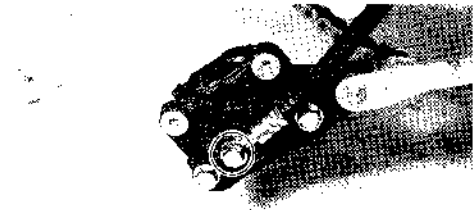
- Remove both seats and right and left frame covers.
- Remove the rear wheel. (Refer to page 6-36.)
- Remove the rear lower fender.



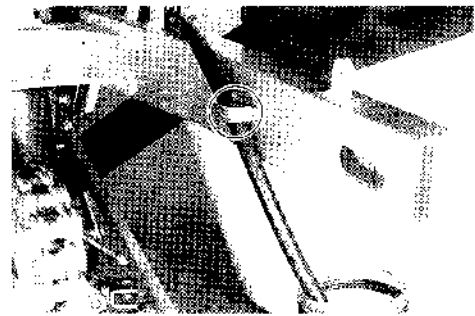
- Remove the rear brake caliper hose union bolt.

CAUTION:

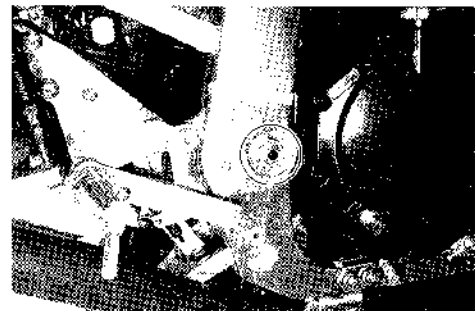
Completely wipe off any brake fluid adhering to any part of motorcycle. The fluid reacts chemically with paint, plastics, rubber materials, etc.



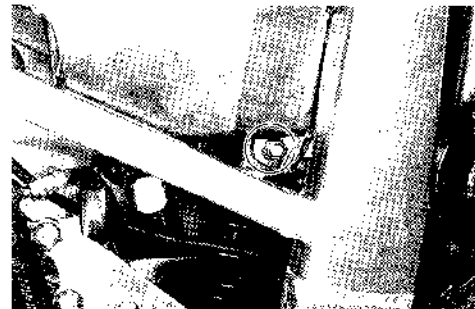
- Separate the brake hose to take out from clamp of swingarm as shown.



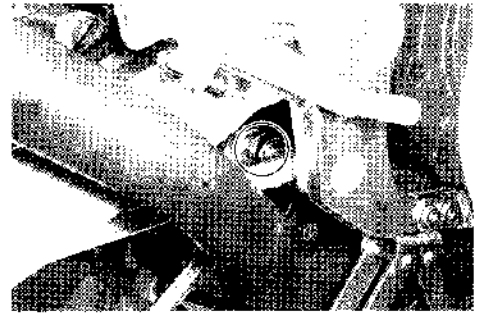
- Remove the swingarm pivot shaft.



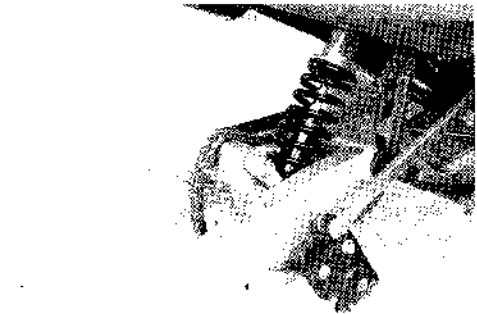
- Remove the shock absorber upper mounting bolt.



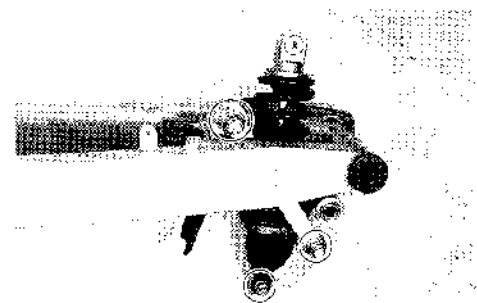
- Remove the cushion lever mounting bolt.



- Take off the rear suspension assembly.

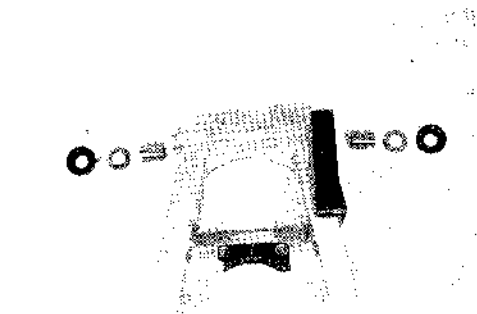


- Remove the shock absorber, cushion lever and cushion rod from swingarm.



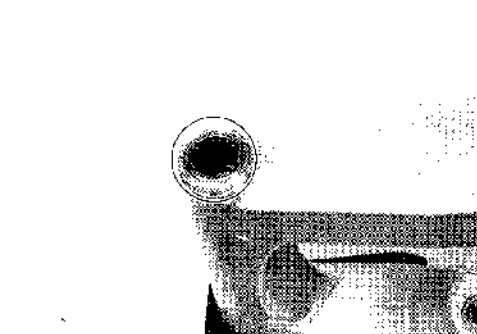
SWINGARM

- Remove the dust seals, washers and spacers from swingarm pivot.



- Draw out the swingarm bearings using swingarm bearing remover.

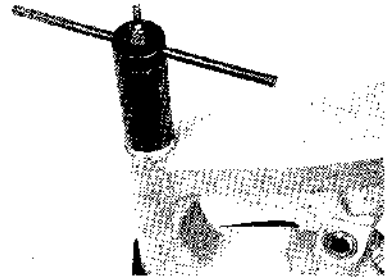
09941-44910 : Swingarm bearing remover



CAUTION :

The bearings removed should be replaced with new ones.

- Remove the lever spacer.



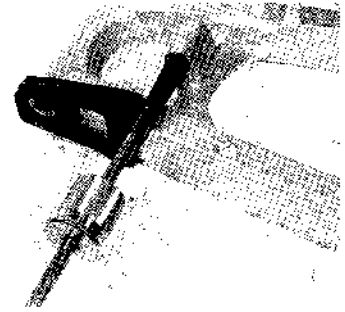
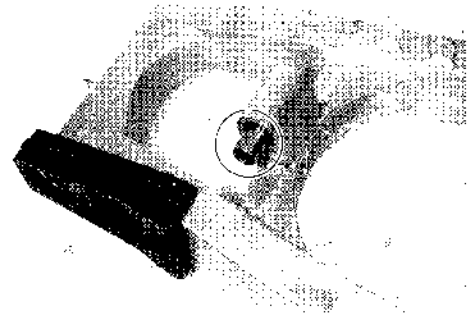
- Draw out the bearings using bearing puller.

09923-74510 : Bearing puller (20 – 38 mm)

09930-30102 : Sliding shaft

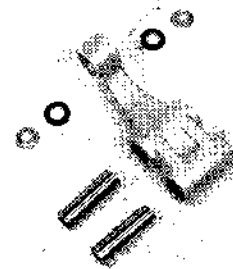
CAUTION:

The bearings removed should be replaced with new ones.



CUSHION LEVER

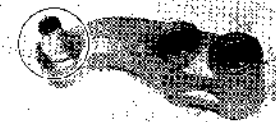
- Remove the front spacers, dust seals and spacers.



- Remove the bearing stopper rings and draw out the bearing using a appropriate socket.

CAUTION :

The bearing and stopper rings removed once should be replaced with new ones.



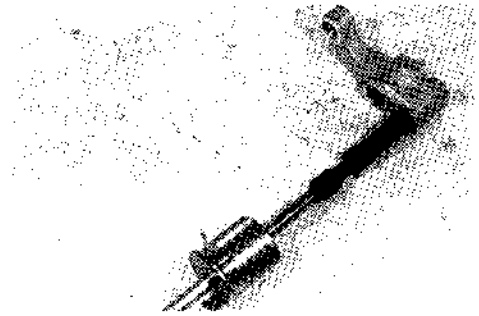
- Remove the cushion lever bearings using bearing/puller.

09923-74510 : Bearing puller (20 – 38 mm)

09930-30102 : Sliding shaft

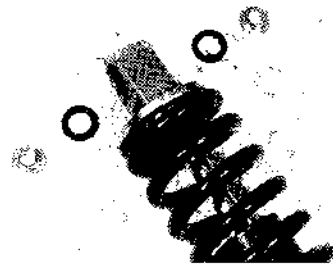
CAUTION:

The bearing removed once should be replaced with new one.



SHOCK ABSORBER

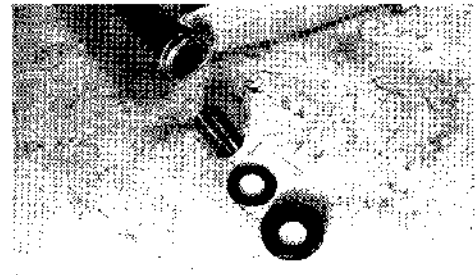
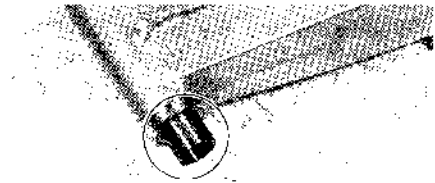
- Remove the collars and dust seals from its upper portion.



INSPECTION

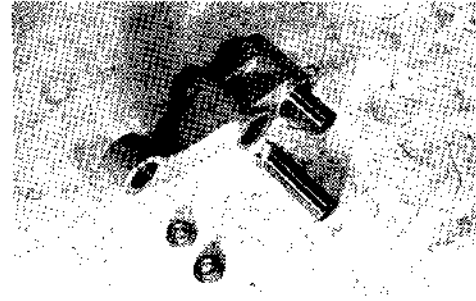
SWINGARM

- * Insert the spacer into bearing and check the play to move the spacer up and down. If excessive play is noted, replace the bearing with a new one.
- * Inspect the spacer for any flaws or other damage.



CUSHION LEVER

- * Inspect the spacer for any flaws or other damage.
- * Insert the spacer into bearing and check the play to move the spacer up and down. If an excessive play is noted, replace the bearing with a new one.

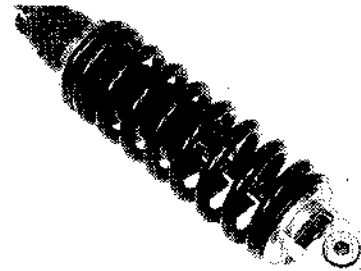


SHOCK ABSORBER

- * Inspect the shock absorber for any oil leakage by turning the adjuster knob. When turning the adjuster knob, check also for its smooth operation.

CAUTION:

Do not attempt to disassemble the rear shock absorber unit. It is unserviceable.



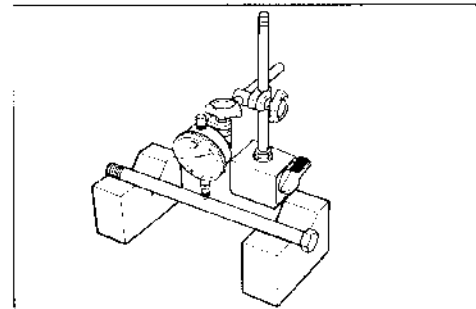
SWINGARM PIVOT SHAFT

- * Check the pivot shaft runout using a dial gauge. If it exceeds the limit, replace with new one.

09900-20606 : Dial gauge (1/100 mm, 10mm)

09900-20701 : Magnetic stand

09900-21304 : V-block (100 mm)



Swingarm pivot shaft runout	Service Limit
	0.3 mm (0.01 in)

REASSEMBLY AND REMOUNTING

Reassemble and remount the rear suspension in the reverse order of disassembly and removal. Pay attention to the following points:

SWINGARM

- Force-fit the bearings into the swingarm pivot using a steering outer race installer.

09941-34513 : Steering outer race installer

NOTE:

When installing the bearings, punch-marked side of bearing comes outside.

- Apply grease to the spacers and dust seals when installing them.

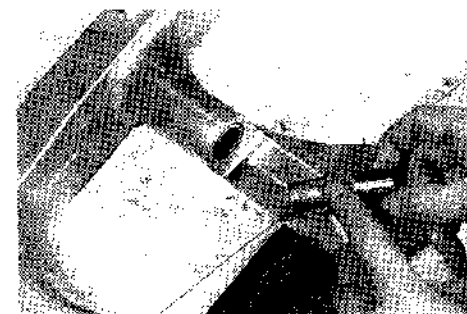
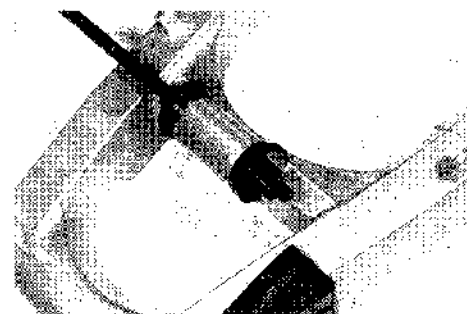
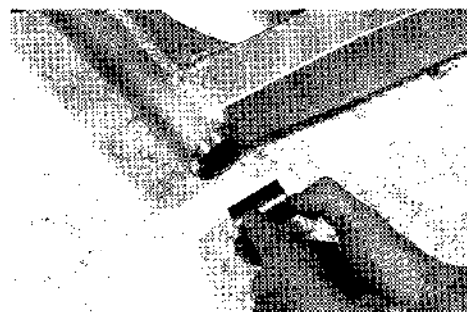
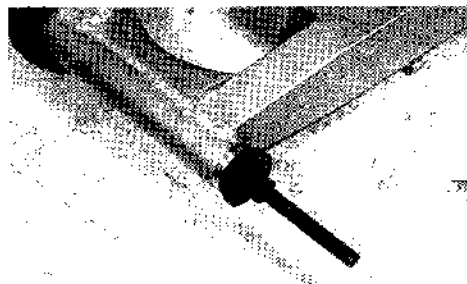
99000-25010 : SUZUKI SUPER GREASE "A"

- Force-fit the bearings into the cushion rod upper mounting portion of swingarm using a steering outer race installer.

09941-34513 : Steering outer race installer

- Apply grease to the spacer when installing it.

99000-25010 : SUZUKI SUPER GREASE "A"



CUSHION LEVER

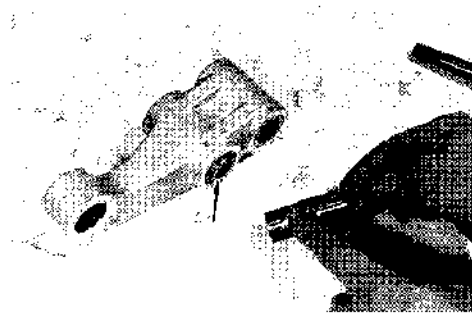
- Force-fit the bearings into the cushion lever using a steering outer race installer.

09941-34513 : Steering outer race installer

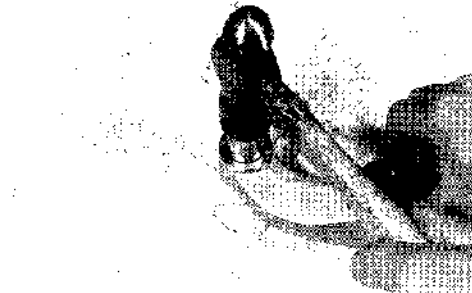


- Apply grease to the spacers when installing them.

99000-25010 : SUZUKI SUPER GREASE "A"

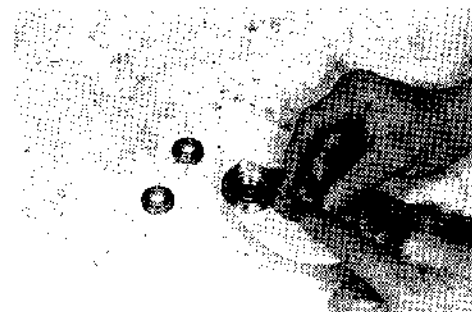


- Force-fit the bearing which is supported shock absorber lower mounting portion, using a appropriate socket.



- Apply grease to the spacers and dust seals.

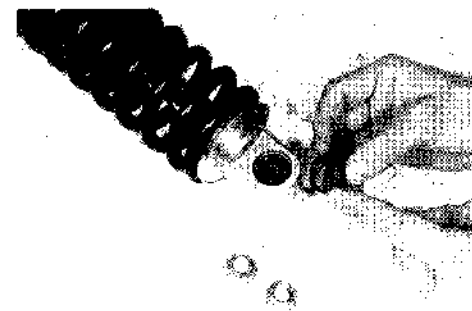
99000-25010 : SUZUKI SUPER GREASE "A"



SHOCK ABSORBER

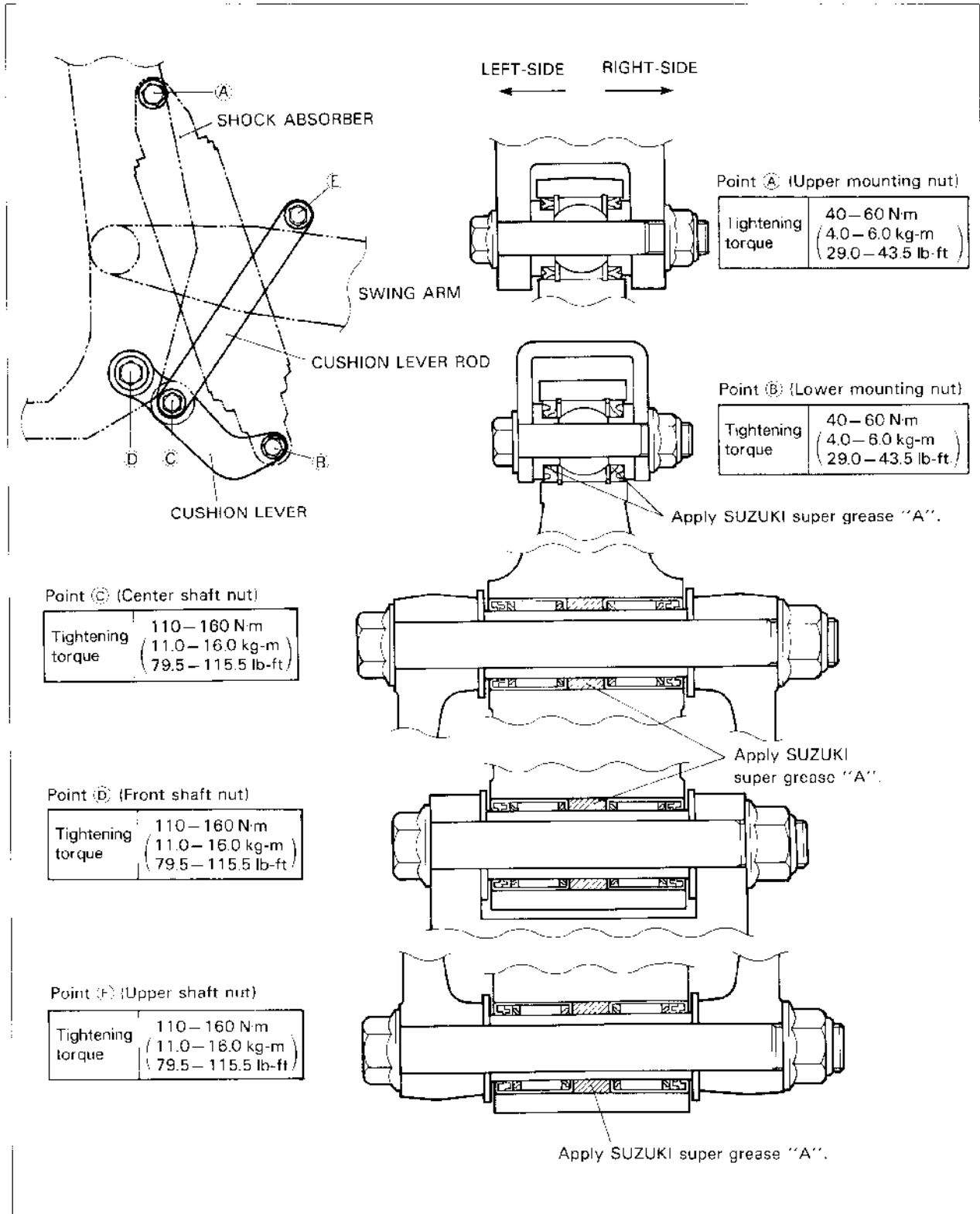
- Apply grease to the bearing, dust seals and collars.

99000-25010 : SUZUKI SUPER GREASE "A"



REASSEMBLY INFORMATION

When reassembling the rear shock absorber and cushion lever set on original portion, tighten bolts and nuts by each specified torque to refer the following illustration:



REASSEMBLY ONTO FRAME

- First of all assemble the rear shock absorber, cushion lever and cushion rods on the swingarm.

Rear shock absorber : 40 — 60 N·m
 mounting nut (4.0 — 6.0 kg·m)
 (29.0 — 43.5 lb·ft)

Cushion lever nut : 110 — 160 N·m
 (11.0 — 16.0 kg·m)
 (79.5 — 115.5 lb·ft)

- Install the upper part of rear shock absorber onto frame.

NOTE:

Install the shock absorber to direct the damping force adjuster leftward.

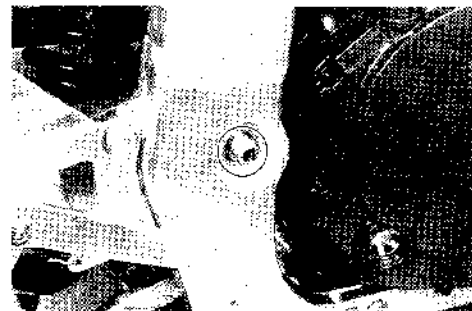
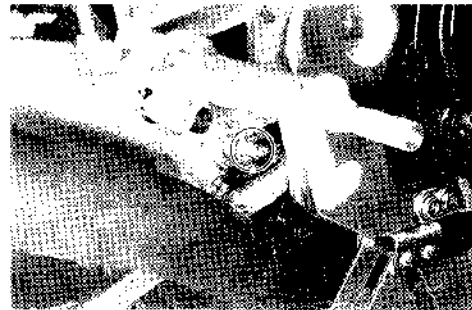
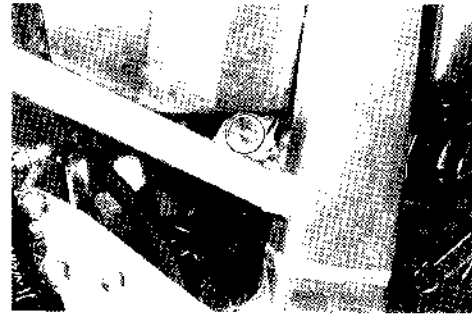
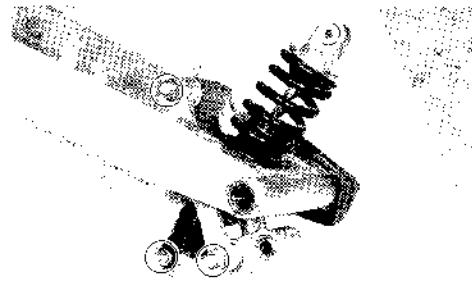
Rear shock absorber : 40 — 60 N·m
 mounting nut (4.0 — 6.0 kg·m)
 (29.0 — 43.5 lb·ft)

- Install the front of cushion lever on to the frame.

Cushion lever nut : 110 — 160 N·m
 (11.0 — 16.0 kg·m)
 (79.5 — 115.5 lb·ft)

- Install the swingarm onto the frame.

Swingarm pivot nut : 85 — 115 N·m
 (8.5 — 11.5 kg·m)
 (61.5 — 83.0 lb·ft)



FINAL INSPECTION AND ADJUSTMENT

After installing the rear suspension and wheel, the following adjustments are required before driving.

- * Drive chain
- * Rear brake
- * Tire pressure
- * Chassis bolts and nuts
- * Shock absorber

REAR SUSPENSION SETTING

Rear suspension is adjustable according to the rider's requirements. The high speed capability of this motorcycle makes proper suspension setting and very important balance.

Adjust the rear suspension referring to page 6-24.

SERVICE INFORMATION

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COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
Engine is noisy.	Noise appears to come from crankshaft 1. Rattling bearing 2. Worn and burnt big end bearing 3. Worn and burnt journal bearing	Replace Replace Replace thrust bearing.
	Noise appears to come from transmission 1. Worn or rubbed gear 2. Badly worn splines 3. Worn or rubbed primary gear 4. Badly worn bearing	Replace Replace Replace Replace
Clutch slips.	1. Out of adjustment or loss of play 2. Weakened clutch springs 3. Worn or distorted pressure plate 4. Distorted clutch plate	Adjust Replace Replace Replace
Clutch drags.	1. Out of adjustment or too much play 2. Weakened some clutch springs 3. Distorted pressure plate or clutch plate	Adjust Replace Replace
Transmission does not shift.	1. Broken gearshift cam 2. Distorted gearshift fork 3. Worn gearshift pawl	Replace Replace Replace
Transmission does not shift back.	1. Broken return spring on shift shaft 2. Rubbed or sticky shift shaft 3. Distorted or worn gearshift fork	Replace Repair Replace
Transmission jumps out of gear.	1. Worn shifting gear on driveshaft or countershaft 2. Distorted or worn gearshift fork 3. Weakened stopper spring on gearshift stopper 4. Worn gearshift pawl	Replace Replace Replace Replace
Engine idles poorly.	1. Out of adjustment valve clearance 2. Poor seated valve 3. Defective valve guide 4. Worn rocker arm or rocker arm shaft 5. Too wide spark plug gap 6. Defective ignition coil 7. Defective signal generator or ignitor unit 8. Out of adjustment carburetor fuel level 9. Clogged carburetor jet 10. Unbalance carburetor	Adjust Replace Replace Replace Adjust or replace Replace Replace Adjust Clean Adjust
Engine runs poorly in high speed range.	1. Weakened valve spring 2. Worn cam or rocker arm 3. Incorrect valve timing 4. Too narrow spark plug gap 5. Ignition unadvanced sufficiently due to poorly working timing advance circuit 6. Defective ignition coil 7. Defective signal generator or ignitor unit 8. Too low fuel level 9. Clogged air cleaner element 10. Clogged fuel hose	Replace Replace Adjust Adjust Replace Replace Replace Adjust Clean Clean

7-3 SERVICE INFORMATION

COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
Exhaust smoke is dirty or heavy.	<ol style="list-style-type: none"> 1. Too much engine oil 2. Worn piston ring or cylinder 3. Worn valve guide 4. Scored or scuffed cylinder wall 5. Worn valve stem 6. Defective stem seal 7. Worn oil ring side rail 	Drain out excess oil Replace Replace Rebore or replace Replace Replace Replace
Engine lacks power.	<ol style="list-style-type: none"> 1. Too small valve clearance 2. Weakened valve spring 3. Incorrect valve timing 4. Worn piston ring or cylinder 5. Poor seated valve 6. Fouled spark plug 7. Incorrect spark plug gap 8. Clogged carburetor jet 9. Incorrect fuel level 10. Clogged air cleaner element 11. Loosened carburetor balancing screw 12. Unreasonable sucked air 13. Too much engine oil 	Adjust Replace Adjust Replace Repair Clean or replace Adjust or replace Clean Adjust Clean Fix Retighten or replace Drain out excess oil
Engine overheats.	<ol style="list-style-type: none"> 1. Heavy carbon deposit on piston crown 2. Unenough engine oil 3. Defective oil pump 4. Clogged oil circuit 5. Too low fuel level 6. Unreasonable sucked air 7. Using incorrect engine oil 	Clean Add oil Replace Clean Adjust Retighten or replace Change

CARBURETOR

COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
Starting troubles.	<ol style="list-style-type: none"> 1. Clogged starter jet 2. Clogged starter pipe 3. Leaked air from joint between starter body and carburetor 4. Leaked air from carburetor joint or vacuum gauge joint 5. Properly unoperated starter plunger 	Clean Clean Retighten, adjust or replace Check and adjust Check and adjust
Idling or low speed troubles.	<ol style="list-style-type: none"> 1. Clogged or loosened pilot jet and pilot air jet 2. Leaked air from carburetor joint, vacuum gauge joint or starter 3. Clogged pilot outlet or bypass 4. Unfully closed starter plunger 	Check and clean Check and clean Check and clean Check and adjust
Medium or high speed troubles.	<ol style="list-style-type: none"> 1. Clogged main jet or main air jet 2. Clogged needle jet 3. Properly unoperated throttle valve 4. Clogged fuel filter 	Check and clean Check and clean Check Check and clean

COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
Overflow and/or fuel level fluctuates.	<ol style="list-style-type: none"> 1. Worn or damaged needle valve 2. Broken needle valve spring 3. Properly unworked float 4. Adhered foreign matter on needle valve 5. Too high or low fuel level 	Replace Replace Check and adjust Clean Adjust

ELECTRICAL

COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
No-sparking or poor sparking.	<ol style="list-style-type: none"> 1. Defective ignition coil 2. Defective spark plug 3. Defective signal generator or ignitor unit 	Replace Replace Replace
Spark plug fouls soon with carbon.	<ol style="list-style-type: none"> 1. Too rich fuel/air mixture 2. High idling speed 3. Incorrect used gasoline 4. Dirty air cleaner element 	Adjust carburetion Adjust Change Clean
Spark plug fouls soon.	<ol style="list-style-type: none"> 1. Worn piston ring 2. Worn piston or cylinder 3. Excessive valve stem/guide clearance 4. Worn valve stem oil seal 	Replace Replace Replace Replace
Spark plug electrode overheats or burns.	<ol style="list-style-type: none"> 1. Overheated engine 2. Loosened spark plug 3. Too lean fuel/air mixture 	Tune up Retighten Adjust carburetion
Generator does not charge.	<ol style="list-style-type: none"> 1. Opened or shorted lead wire 2. Loosened lead connection 3. Shorted, grounded or opened generator coil 4. Shorted or punctured regulator and rectifier 5. Properly unseated brush on generator rotor slip ring 	Repair or replace Fix Replace Replace Repair or replace
Generator charges below than specification.	<ol style="list-style-type: none"> 1. Tended lead wire to get shorted or open-circuited or loosely connected at terminals 2. Grounded or open-circuited generator stator coil 3. Defective regulator and rectifier 4. Unenough battery electrolyte 5. Defective battery cell plates 	Repair or fix Replace Replace Add distilled water Replace battery
Generator overcharges.	<ol style="list-style-type: none"> 1. Short-circuited battery interior 2. Damaged or defective regulator resistor element 3. Poorly grounded regulator 	Replace battery Replace Clean and tighten
Charging is unstable.	<ol style="list-style-type: none"> 1. Frayed lead wire insulation due to vibration, resulting in intermittent shorting 2. Shorted generator interior 3. Defective regulator and rectifier 	Repair or replace Replace Replace
Starter button is un-effective.	<ol style="list-style-type: none"> 1. Run down battery 2. Defective switch contact 3. Properly unseated brush on starter motor commutator 4. Defective starter relay 	Repair or replace Replace Repair or replace Replace

BATTERY

SYMPTON	PROBABLE CAUSE	REMEDY
"SULFATION": acidic white powdery substance or spots on cell plates surface.	<ol style="list-style-type: none"> 1. Unenough electrolyte 2. Cracked battery case 3. Left battery for a long time in a run-down condition 4. Contaminated electrolyte (Foreign matter has entered in the battery and become mixed with the electrolyte.) 	<p>Add distilled water and recharge it. —If the battery seems not to damage, "sulfation" has not advanced too far. Replace battery.</p> <p>Replace battery. If "sulfation" seems not to advance too far, try to restore the battery to replace with new electrolyte, and recharge it fully.</p>
Battery runs down quickly.	<ol style="list-style-type: none"> 1. Incorrect charging method 2. Lost active material in cell plate as a result of overcharging 3. Battery existing short circuit condition due to excessive accumulation of sediments caused by high electrolyte specific gravity 4. Too low electrolyte specific gravity 5. Contaminated electrolyte 6. Too old battery 	<p>Check the generator, regulator/rectifier and circuit connections, and make necessary adjustments to obtain specified charging operation. Replace battery and correct charging method.</p> <p>Replace battery.</p> <p>Recharge battery fully under specified charging current. Replacing electrolyte, recharge the battery. Replace battery.</p>
Battery polarity reverses.	<p>The battery has been connected the wrong way round in the system, so that it is being charged in the reverse direction.</p>	<p>Replace battery and be sure to connect the battery properly.</p>
Battery causes "sulfation".	<ol style="list-style-type: none"> 1. Too low or too high charging rate. (Unused battery should be recharged at least once a month to avoid sulfation.) 2. Unreasonable battery electrolyte level 3. Too high or too low specific gravity 4. Left battery unused for too long in cold climate 	<p>Replace battery.</p> <p>Keep the electrolyte to "MAX" level. Adjust the specific gravity by consulting battery maker's directions. Replace battery, if badly sulfated.</p>
Battery discharges too rapidly.	<ol style="list-style-type: none"> 1. Dirty container top and sides 2. Impurities in the electrolyte 3. Too high electrolyte specific gravity 	<p>Clean Change electrolyte. Change electrolyte by consulting battery maker's directions.</p>

CHASSIS

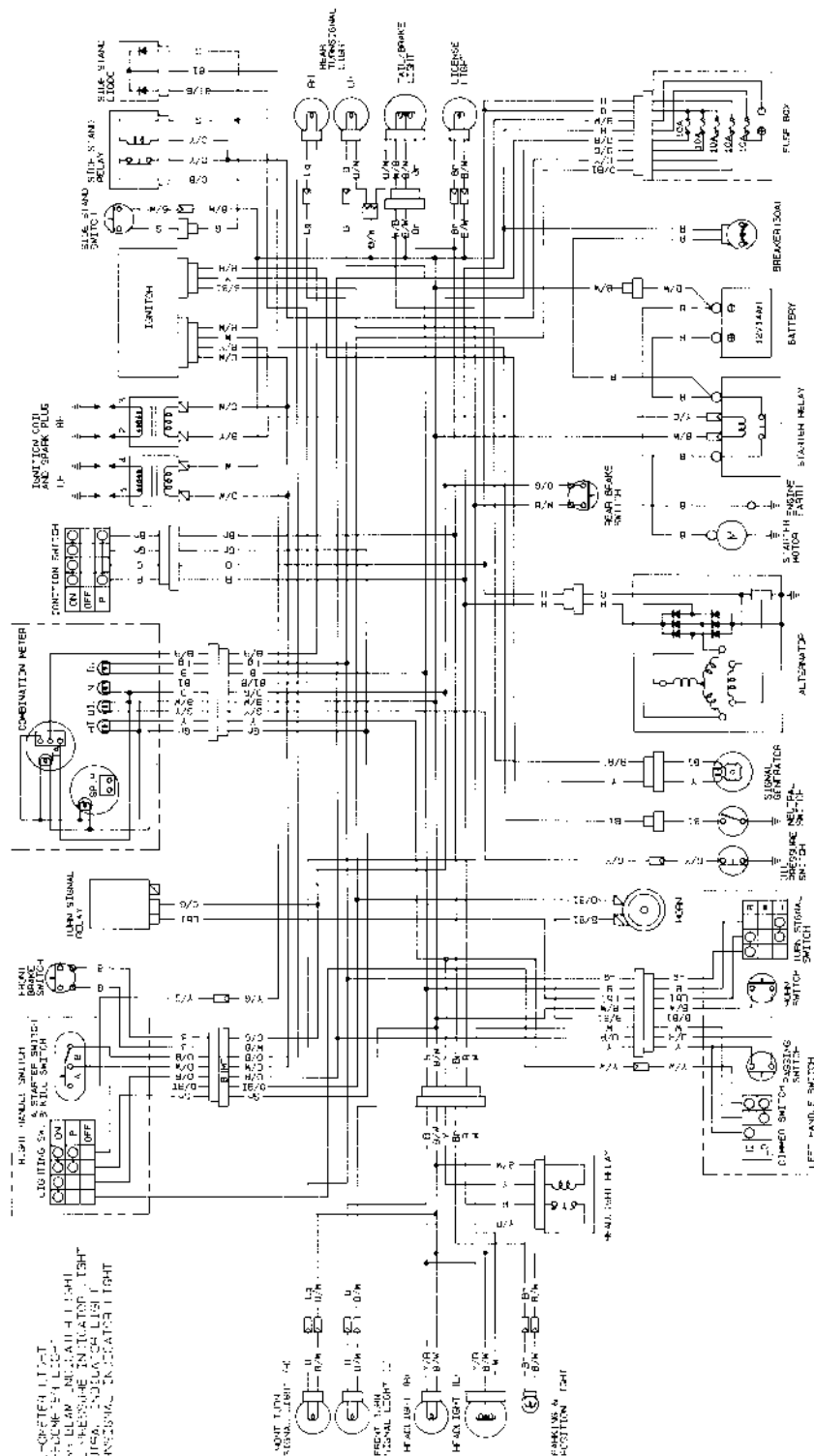
COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
Steering is heavy.	<ol style="list-style-type: none"> 1. Overtightened steering stem nut 2. Broken steering stem bearing 3. Distorted steering stem 4. Unenough tire pressure 	Adjust Replace Replace Adjust
Handle is wobbly.	<ol style="list-style-type: none"> 1. Unbalance of right and left front forks 2. Distorted front fork 3. Distorted front axle 4. Crooked tire 	Replace Repair or replace Replace Replace
Front wheel is wobbly.	<ol style="list-style-type: none"> 1. Distorted wheel rim 2. Worn down front wheel bearing 3. Defective or incorrect tire 4. Loosened front axle 5. Incorrect front fork oil level 	Replace Replace Replace Retighten Adjust
Front suspension is too soft.	<ol style="list-style-type: none"> 1. Weakened spring 2. Unenough fork oil level 	Replace Refill
Front suspension is too stiff.	<ol style="list-style-type: none"> 1. Too viscous fork oil 2. Too much fork oil 	Replace Drain excess oil
Front suspension is noisy.	<ol style="list-style-type: none"> 1. Unenough fork oil level 2. Loosened suspension mountings 	Refill Retighten
Rear wheel is wobbly.	<ol style="list-style-type: none"> 1. Distorted wheel rim 2. Worn down rear wheel or swingarm bearing 3. Defective or incorrect tire 4. Worn swingarm and rear cushion bearing 5. Loosened suspension mountings 	Replace Replace Replace Replace Retighten
Rear suspension is too soft.	<ol style="list-style-type: none"> 1. Weakened shock absorber spring 2. Improper rear suspension adjuster setting 3. Leaked shock absorber oil 	Replace Adjust Replace
Rear suspension is too stiff.	<ol style="list-style-type: none"> 1. Improper rear suspension adjuster setting 2. Bent shock absorber shaft 3. Bent swingarm 4. Worn swingarm and rear cushion bearing 	Adjust Replace Replace Replace
Rear suspension is noisy.	<ol style="list-style-type: none"> 1. Loosened suspension mountings 2. Worn swingarm and rear cushion bearing 	Retighten Replace

BRAKES

COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
Brake power is insufficient.	<ol style="list-style-type: none"> 1. Leaked brake fluid 2. Worn pad 3. Adhered oil to pad surface 4. Worn disc 5. Entered air in hydraulic system 	Repair or replace Replace Clean disc and pad. Replace Bleed air.
Brake squeaks.	<ol style="list-style-type: none"> 1. Adhered carbon to surface 2. Tilted pad 3. Damaged wheel bearing 4. Loosened front and rear wheel axles 5. Worn pad 6. Contaminated brake fluid 7. Clogged master cylinder return port 	Repair with sandpaper. Modify pad fitting. Replace Tighten to specified torque Replace Replace brake fluid Clean
Brake lever stroke is excessive.	<ol style="list-style-type: none"> 1. Entered air in hydraulic system 2. Insufficient brake fluid 3. Improper brake fluid quality 	Bleed air. Replenish Replace
Brake fluid leaks.	<ol style="list-style-type: none"> 1. Insufficient connection joint tightening 2. Cracked brake hose 3. Worn piston and/or cup 	Retighten Replace Replace

WIRING DIAGRAM

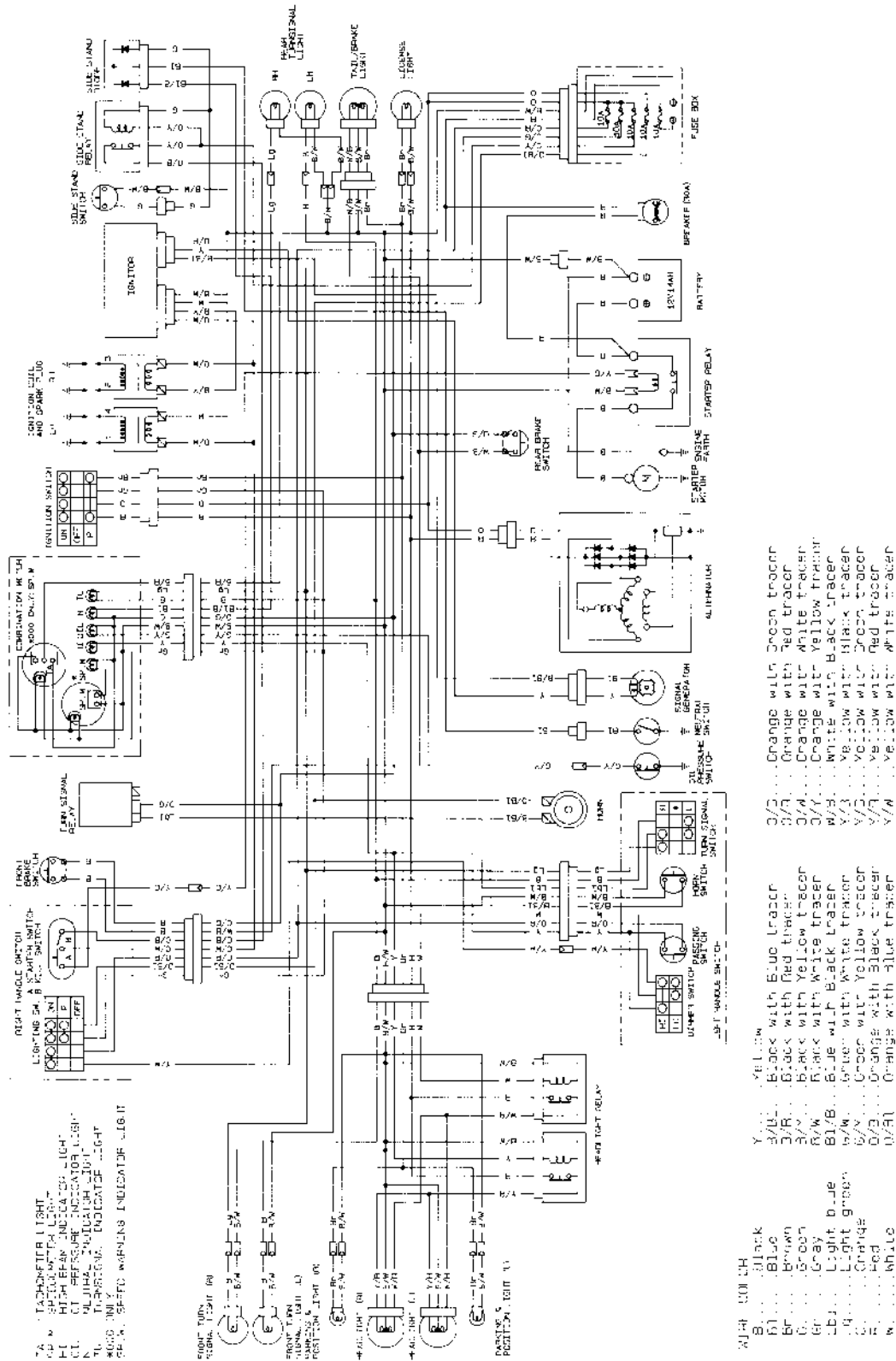
E-04, 15, 25, 76



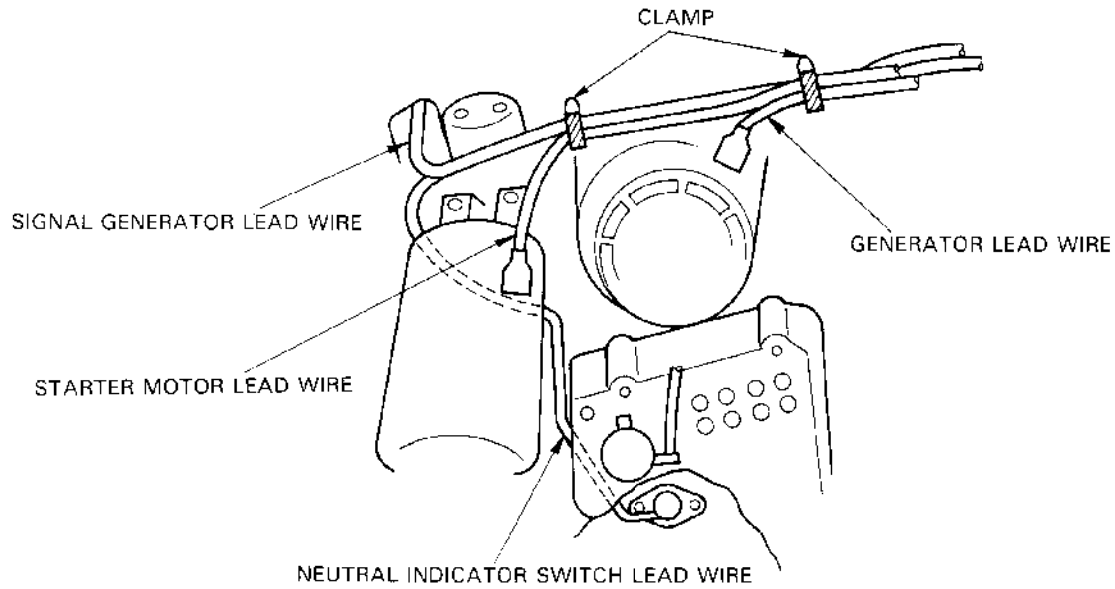
1. TA - MASTER LIGHT
 2. BL - BLUE
 3. BR - BROWN
 4. G - GREEN
 5. Y - YELLOW
 6. W - WHITE
 7. B - BLACK
 8. R - RED
 9. GR - GRAY
 10. BU - BLUE
 11. LG - LIGHT GREEN
 12. DG - DARK GREEN
 13. YG - YELLOW GREEN
 14. BW - BLACK WHITE
 15. BY - BLACK YELLOW
 16. BR - BLACK BROWN
 17. BG - BLACK GREEN
 18. BY - BLACK YELLOW
 19. BR - BLACK BROWN
 20. BG - BLACK GREEN
 21. BY - BLACK YELLOW
 22. BR - BLACK BROWN
 23. BG - BLACK GREEN
 24. BY - BLACK YELLOW
 25. BR - BLACK BROWN
 26. BG - BLACK GREEN
 27. BY - BLACK YELLOW
 28. BR - BLACK BROWN
 29. BG - BLACK GREEN
 30. BY - BLACK YELLOW

WIRE COLOR
 B... Black
 BU... Blue
 BR... Brown
 G... Green
 GR... Gray
 LG... Light Green
 DG... Dark Green
 YG... Yellow Green
 BW... Black White
 BY... Black Yellow
 BR... Black Brown
 BG... Black Green
 Y... Yellow
 B/B1... Black with Blue tracer
 B/Y... Black with Yellow tracer
 B/R... Black with Red tracer
 B/W... Black with White tracer
 B/G... Black with Green tracer
 B/B... Black with Black tracer
 W/B... White with Black tracer
 Y/B... Yellow with Black tracer
 Y/G... Yellow with Green tracer
 Y/R... Yellow with Red tracer
 Y/W... Yellow with White tracer
 C/B... Orange with Black tracer
 C/R... Orange with Red tracer
 C/W... Orange with White tracer
 C/Y... Orange with Yellow tracer
 W/H... White with Black tracer
 Y/B... Yellow with Black tracer
 Y/G... Yellow with Green tracer
 Y/R... Yellow with Red tracer
 Y/W... Yellow with White tracer

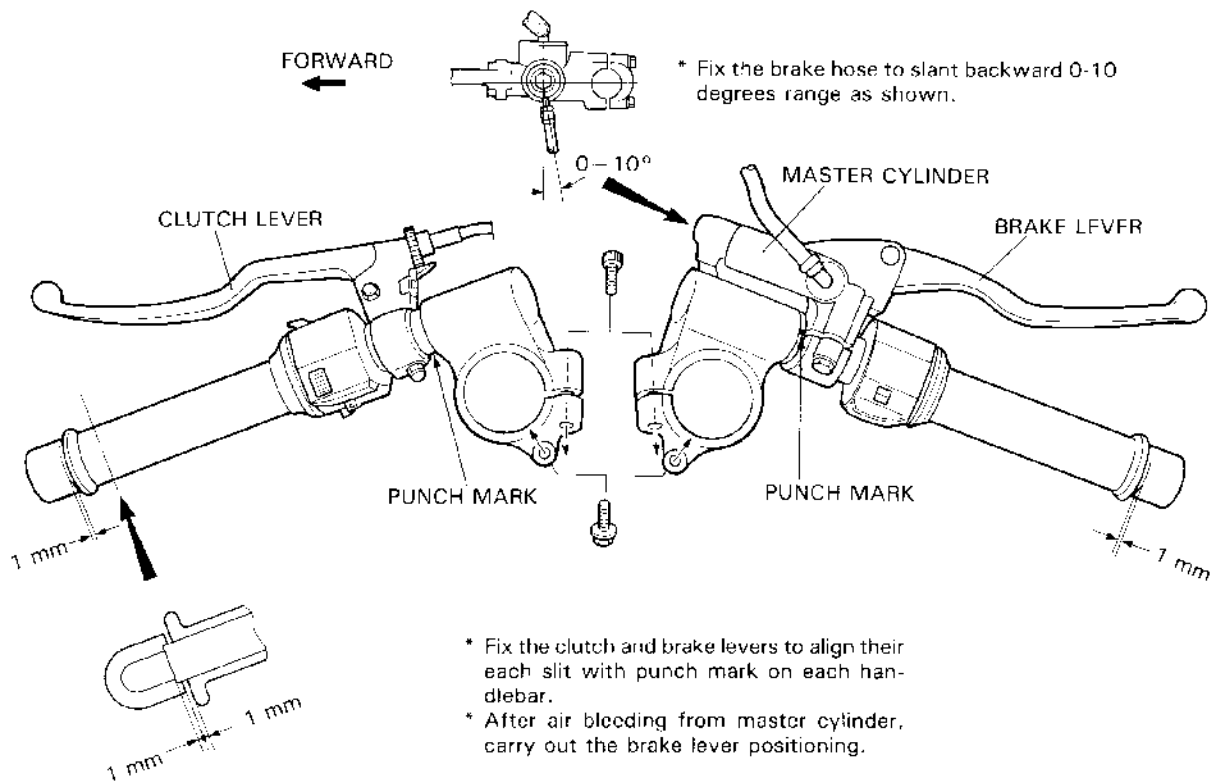
E-75, 79



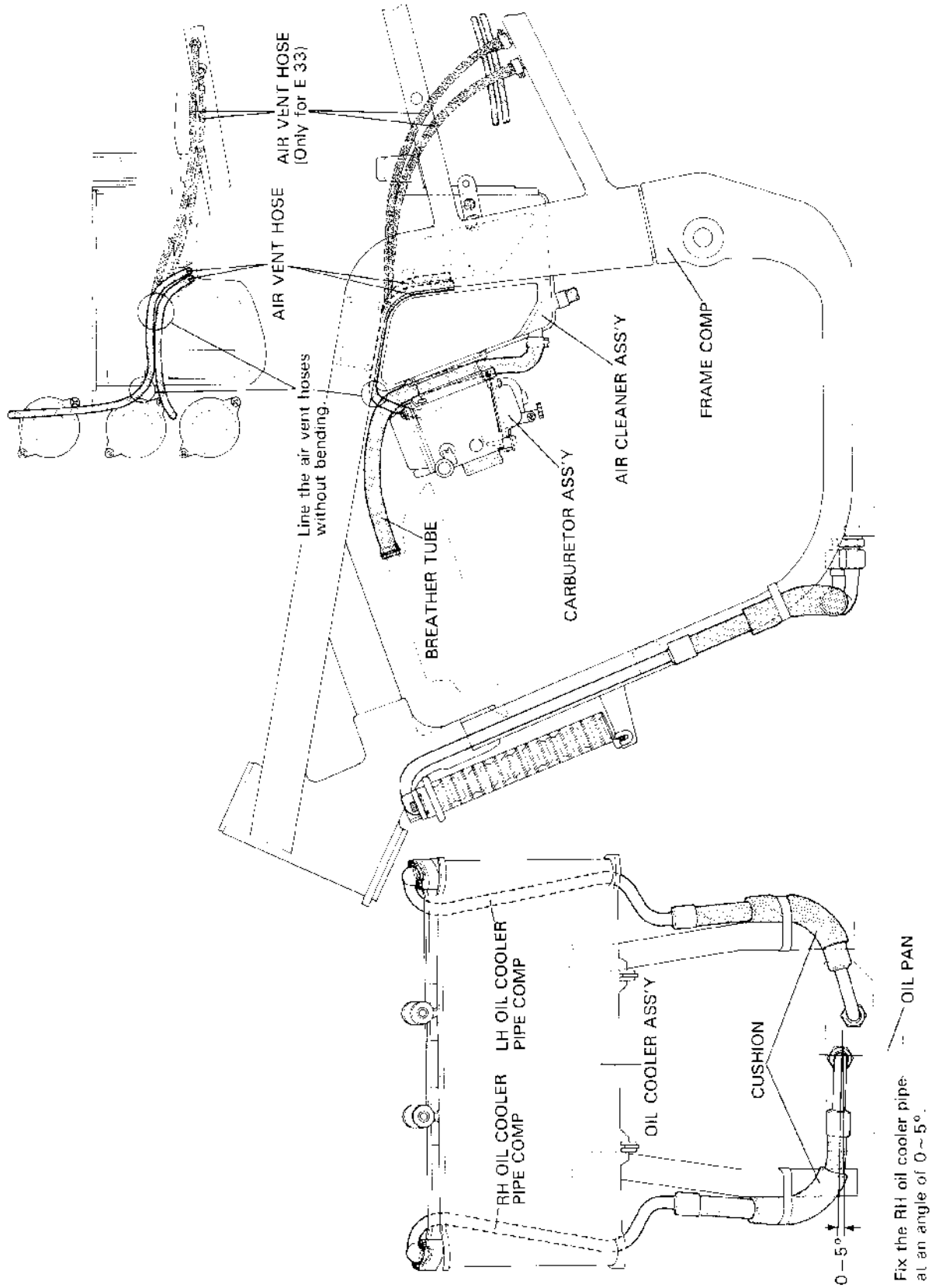
SEVERAL LEAD WIRES



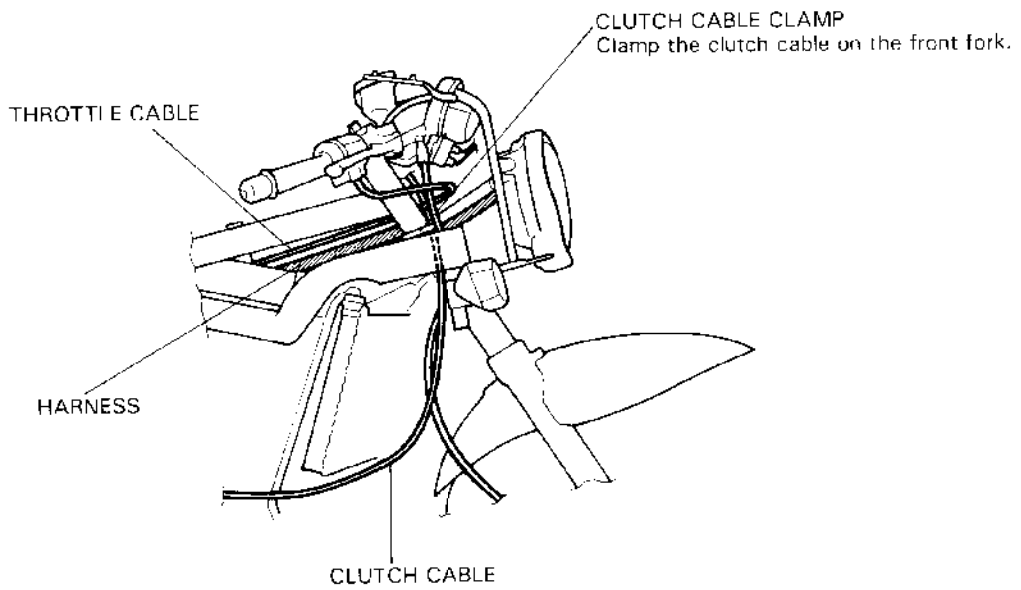
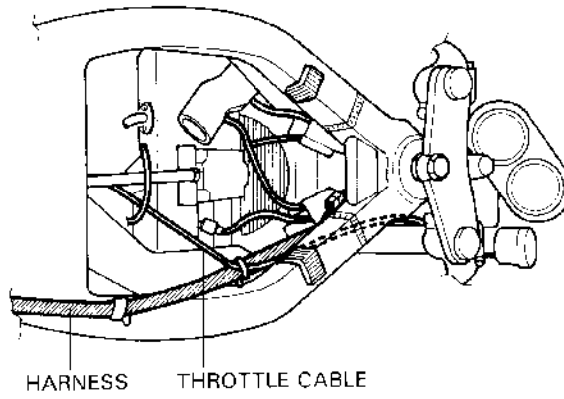
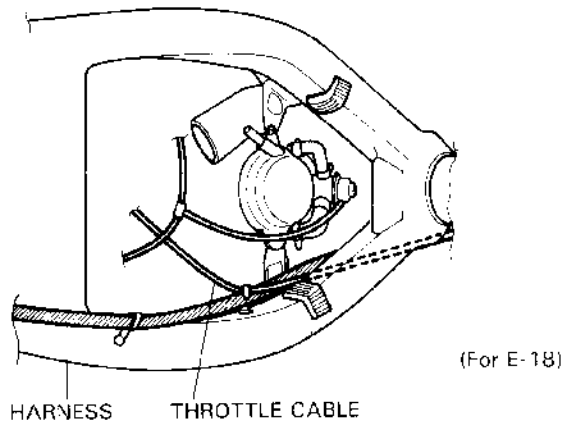
HANDLEBARS



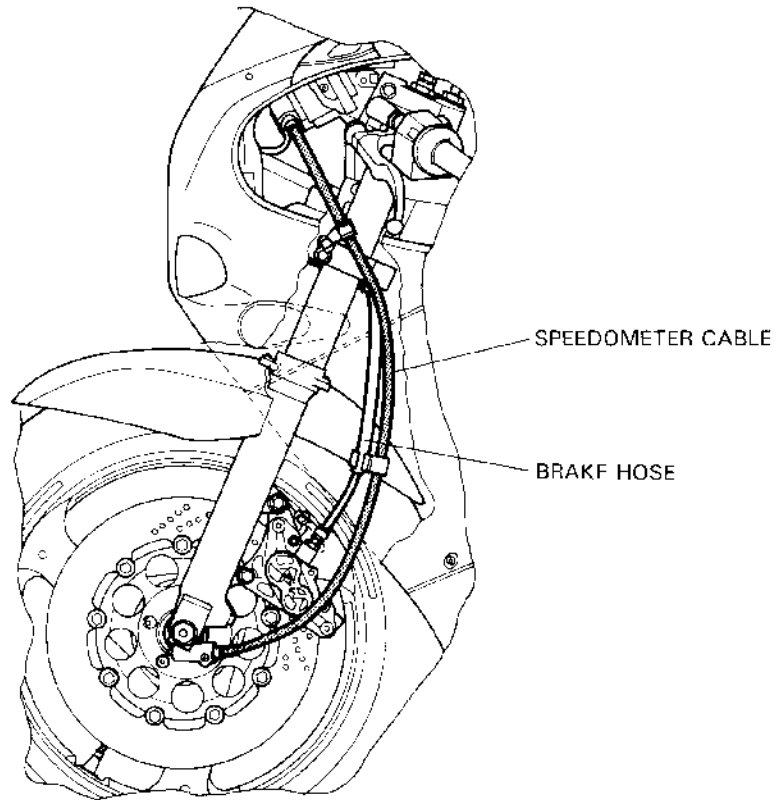
OIL COOLER PIPE AND AIR CLEANER HOSE



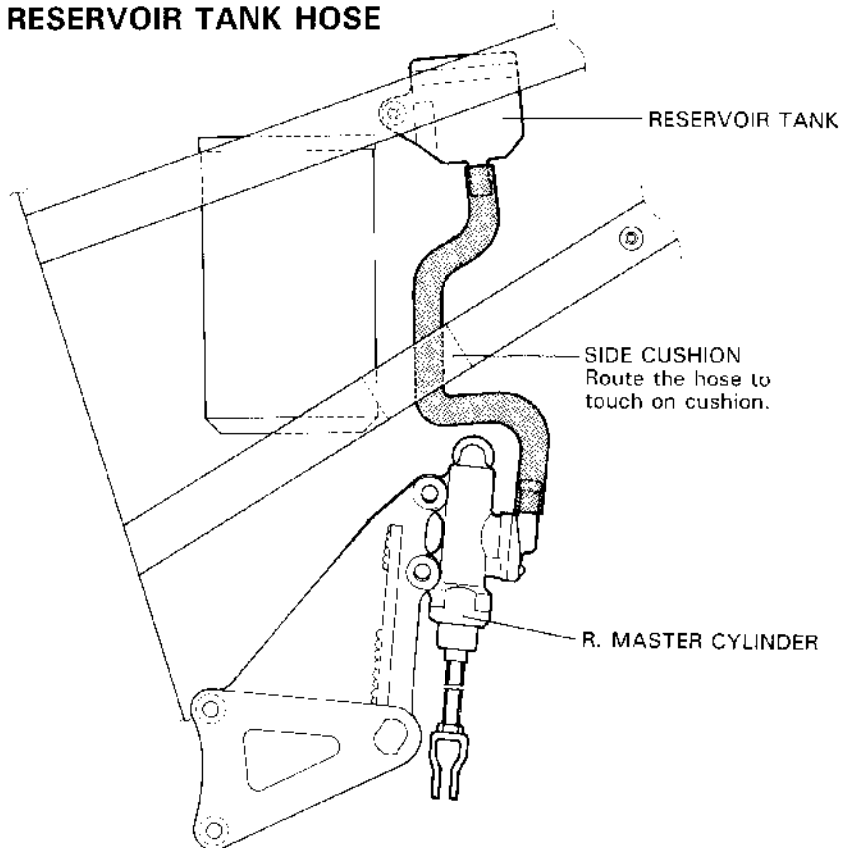
THROTTLE AND CLUTCH CABLES



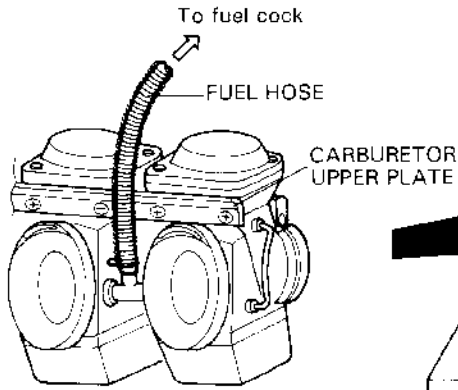
SPEEDOMETER CABLE



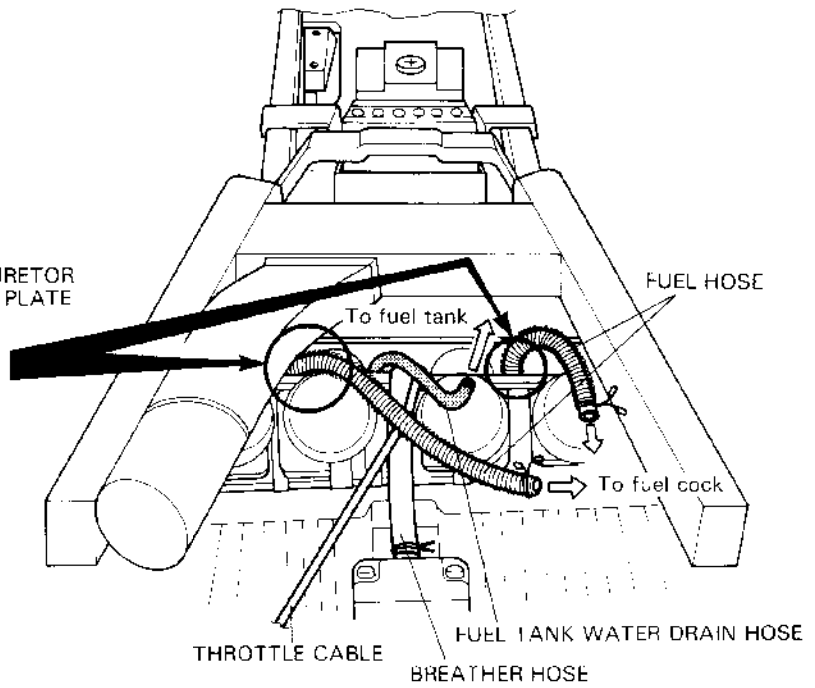
REAR BRAKE RESERVOIR TANK HOSE



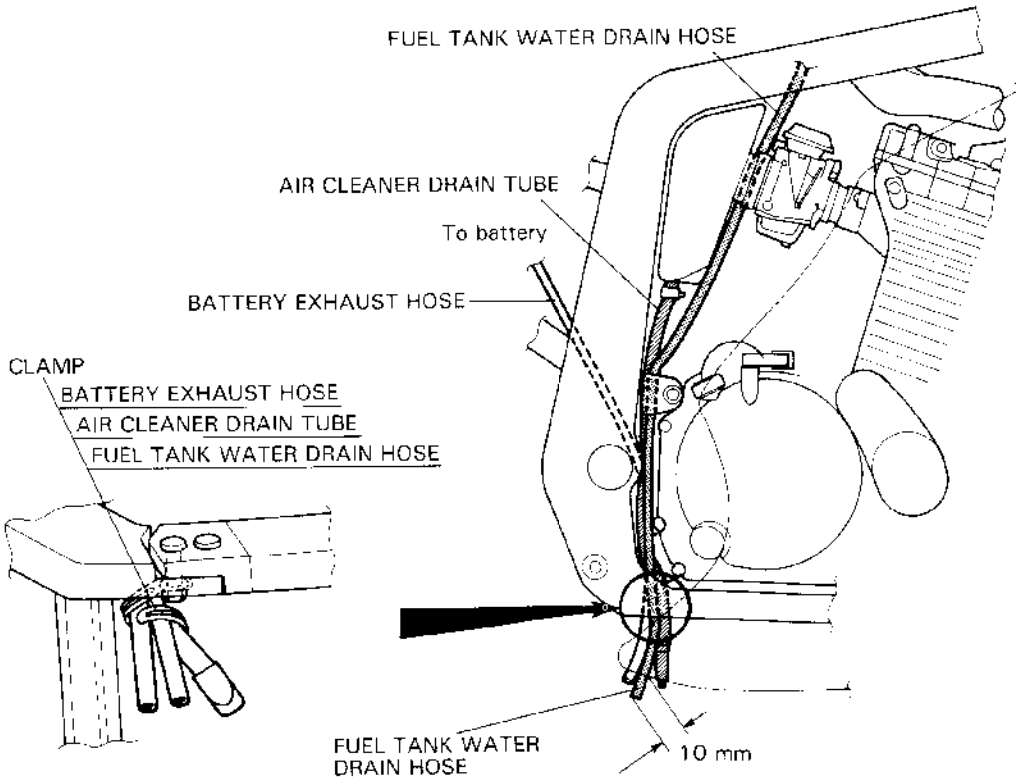
TUBE AND HOSE



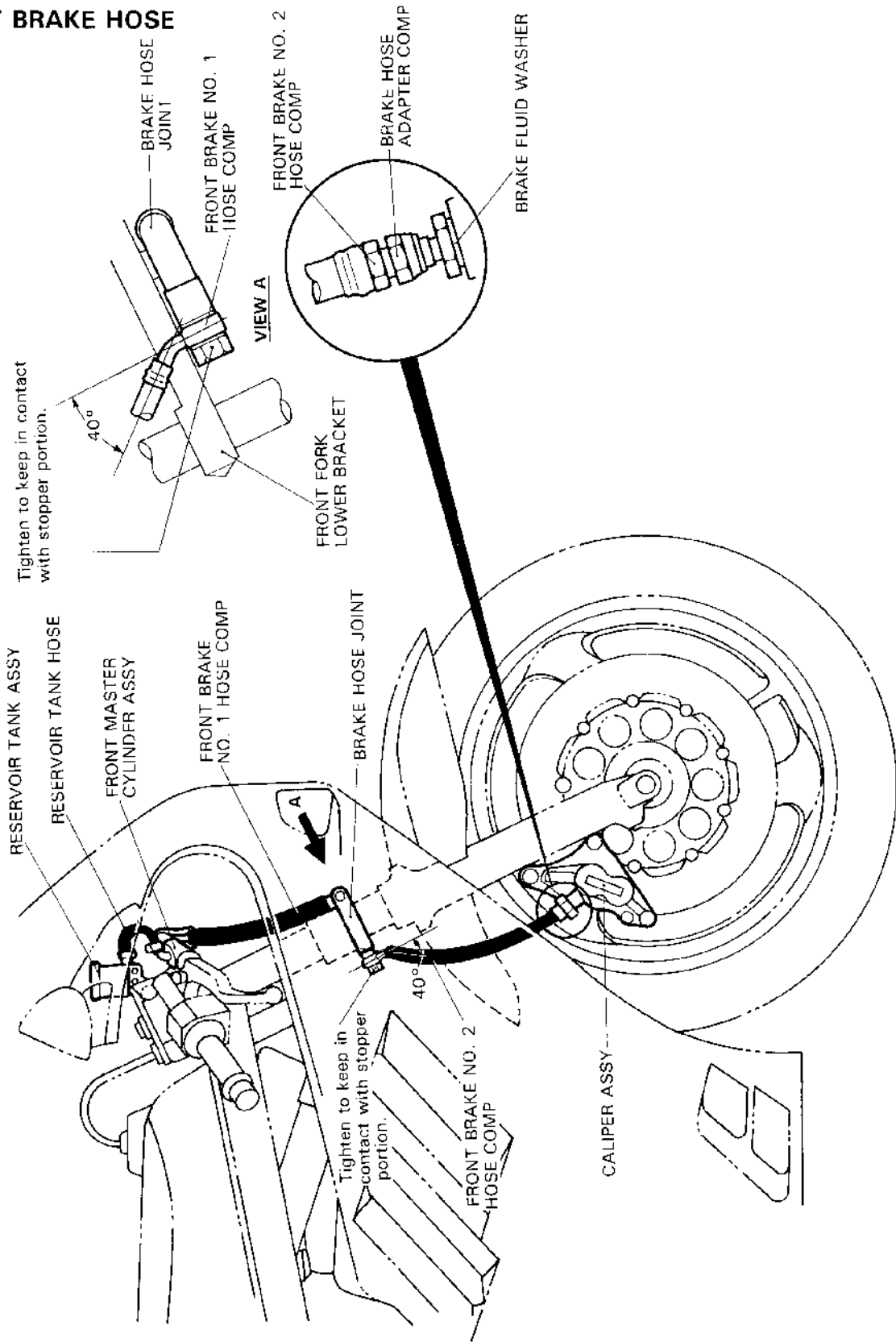
Pass through both fuel hoses behind the carburetor upper plate.



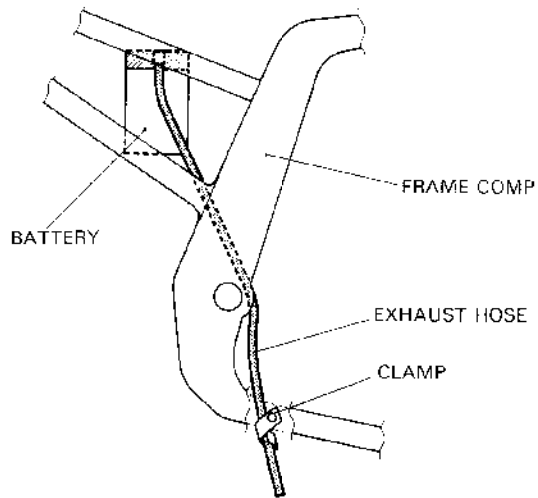
Pass through the LH fuel hose and fuel tank water drain hose above the breather hose and throttle cable.



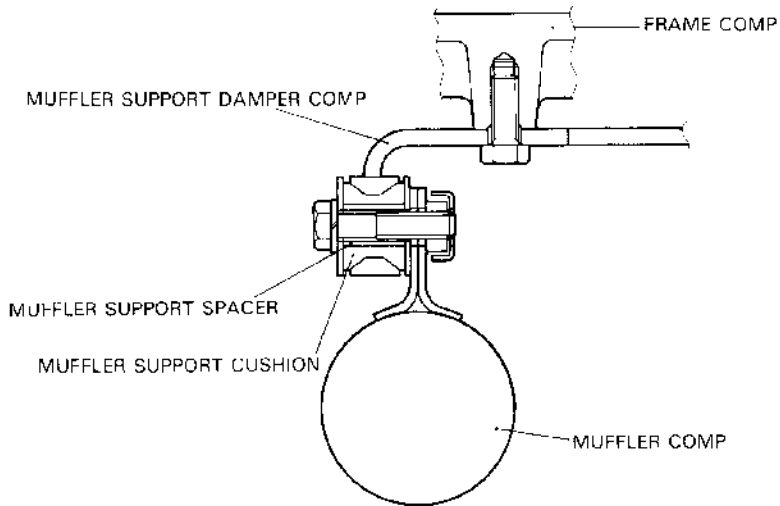
FRONT BRAKE HOSE



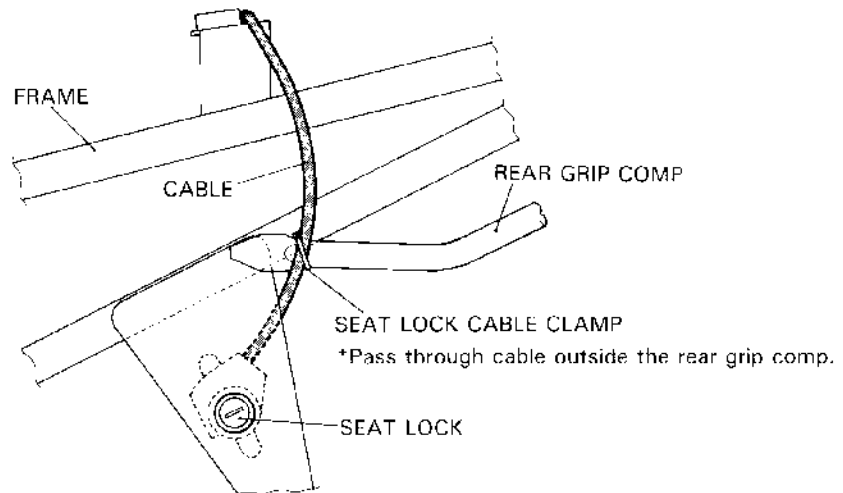
BATTERY EXHAUST HOSE



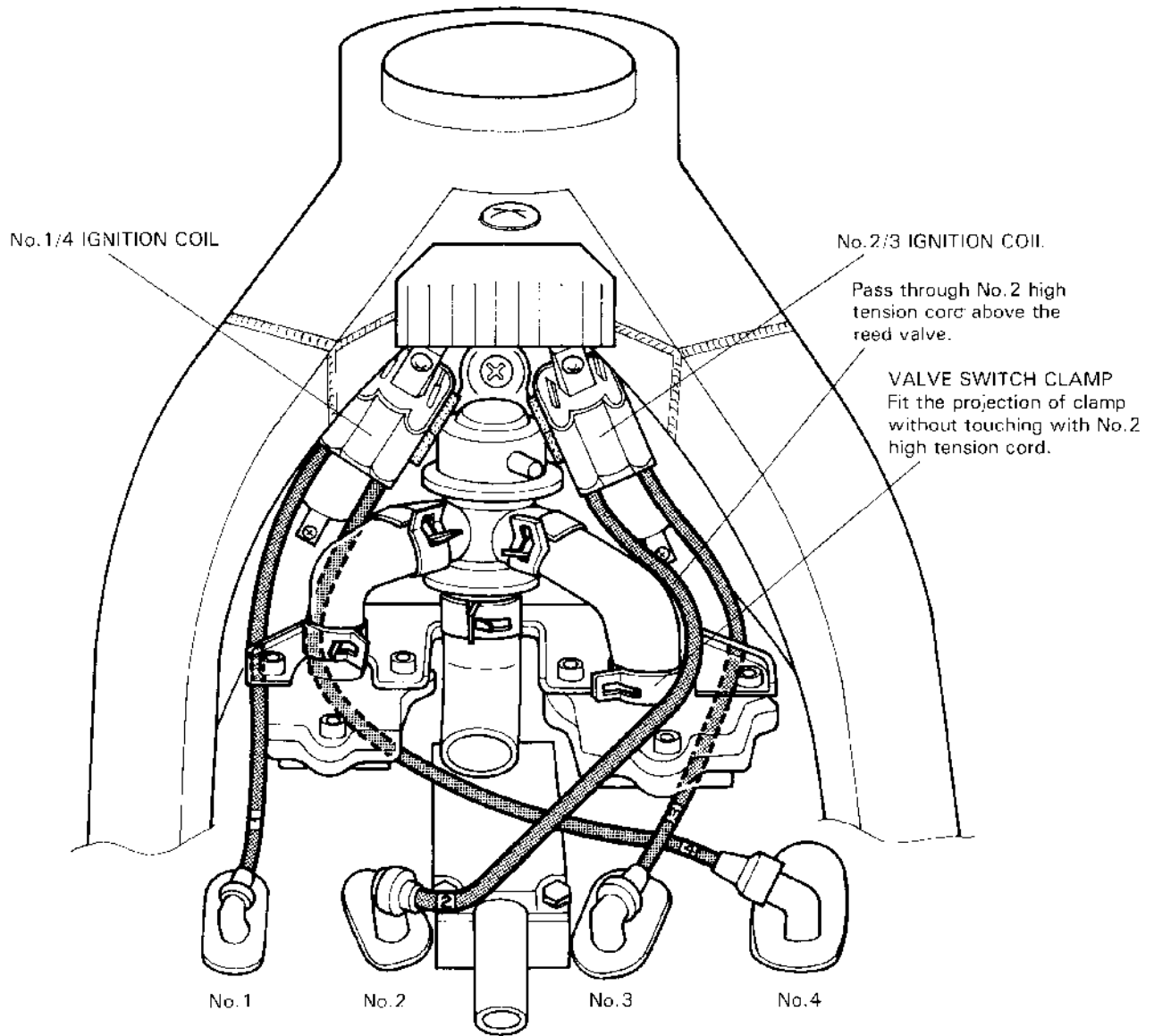
MUFFLER SUPPORT



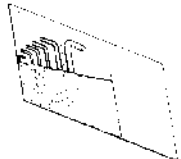
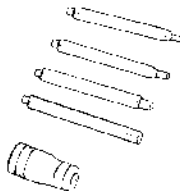
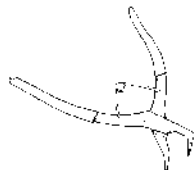
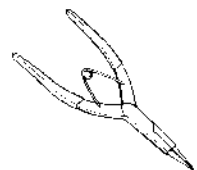
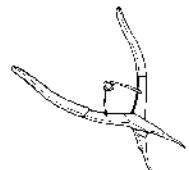
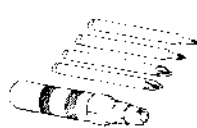

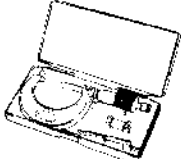
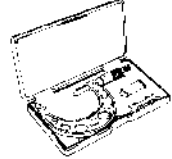

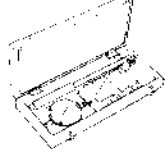

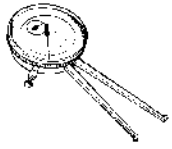

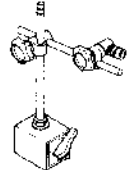

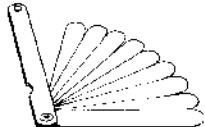
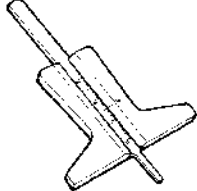
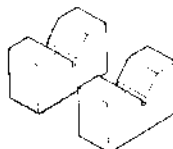

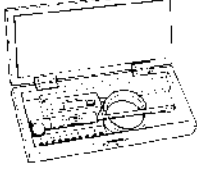
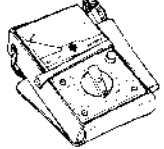



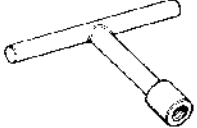
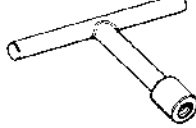
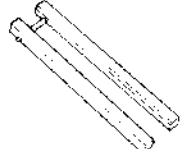
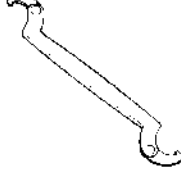
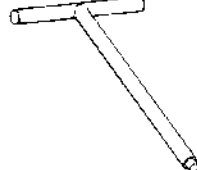
SEAT LOCK CABLE

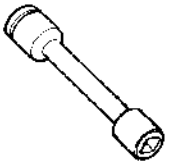
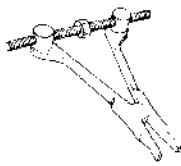

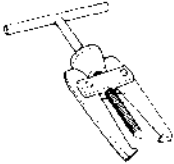
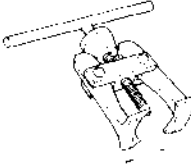
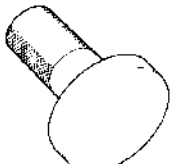

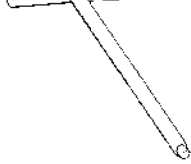
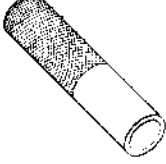
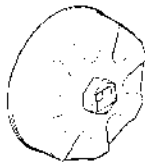
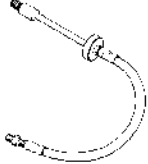
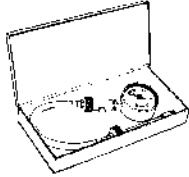


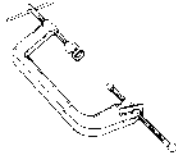
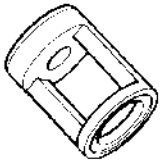
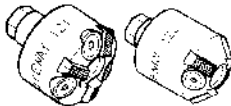
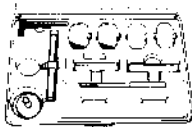





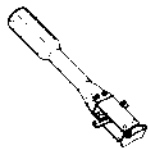


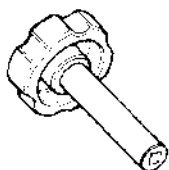
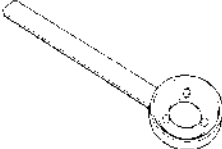
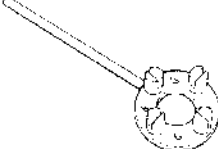
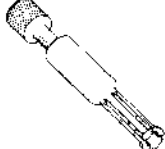


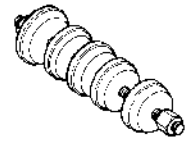



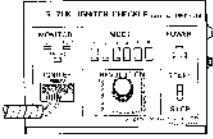
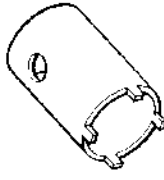
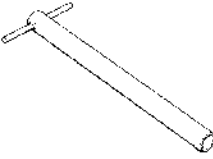
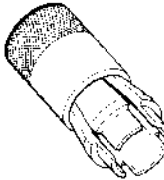
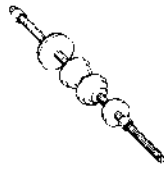
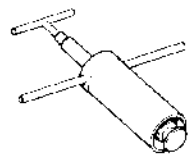
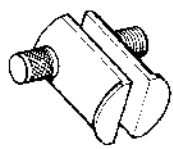

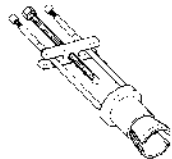
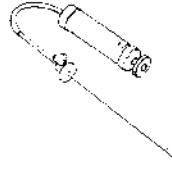
HIGH TENSION CORD (For E-18)



SPECIAL TOOLS

 <p>09900-00401 "L" type hexagon wrench set</p>	 <p>09900-00410 Hexagon wrench set</p>	 <p>09900-06105 Snap ring pliers</p>	 <p>09900-06107 Snap ring pliers</p>	 <p>09900-06108 Snap ring pliers</p>
 <p>09900-09003 Impact driver set</p>	 <p>09900-20102 Vernier calipers (1/20 mm, 200 mm)</p>	 <p>09900-20202 Micrometer (1/100 mm, 25-50 mm)</p>	 <p>09900-20203 Micrometer (1/100 mm, 50-75 mm)</p>	 <p>09900-20205 Micrometer (1/1000 mm, 0-25 mm)</p>
 <p>09900-20508 Cylinder gauge set (1/100 mm, 40-80 mm)</p>	 <p>09900-20602 Dial gauge (1/1000 mm, 1mm)</p>	 <p>09900-20605 Dial calipers (1/100 mm, 10-34 mm)</p>	 <p>09900-20606 Dial gauge (1/100 mm, 10 mm)</p>	 <p>09900-20701 Magnetic stand</p>
 <p>09900-20702 Micrometer stand</p>	 <p>09900-20803 Thickness gauge</p>	 <p>09900-20805 Tire depth gauge</p>	 <p>09900-21304 V-block set (100 mm)</p>	 <p>09900-22301 Plastigauge</p>
 <p>09900-22403 Small bore gauge (18-35 mm)</p>	 <p>09900-25002 Pocket tester</p>	 <p>09900-26005 Engine tachometer</p>	 <p>09900-28106 Electro tester</p>	 <p>09900-28403 Hydrometer</p>
 <p>09910-10110 Stud bolt installer (6 mm)</p>	 <p>09910-11510 Stud bolt installer (10 mm)</p>	 <p>09910-20116 Conrod stopper</p>	 <p>09910-60611 Universal clamp wrench</p>	 <p>09911-73730 "T" type hexagon wrench (5 mm)</p>

 <p>09911-74510 Long socket (14 mm)</p>	 <p>09912-34510 Cylinder disassembler</p>	 <p>09913-13121 Carburetor balancer</p>	 <p>09913-60910 Bearing puller (40-60 mm)</p>	 <p>09913-61510 Bearing puller (80 mm)</p>
 <p>09913-75520 Bearing installer</p>	 <p>09914-24510 T-handle</p>	 <p>09914-25811 "T" type hexagon wrench (6 mm)</p>	 <p>09914-79610 Bearing and oil seal installer</p>	 <p>09915-40611 Oil filter wrench</p>
 <p>09915-63210 Compression gauge adaptor</p>	 <p>09915-64510 Compression gauge</p>	 <p>09915-77330 Meter (0-10 kg/cm²) 09915-74510 Oil pressure gauge</p>	 <p>09915-74540 Oil pressure gauge attachment</p>	 <p>09916-14510 Valve lifter</p>
 <p>09916-14910 Valve lifter attachment</p>	 <p>09916-20610/ 20620 Valve seat cutter head (N-121/N-122)</p>	 <p>09916-21110 Valve seat cutter set</p>	 <p>09916-24310 Valve seat cutter solid pilot (N 100-5.0)</p>	 <p>09916-34541 Valve guide reamer handle</p>
 <p>09916-34570 Valve guide reamer (5 mm)</p>	 <p>09916-34580 Valve guide reamer (10.8 mm)</p>	 <p>09916-44310 Valve guide remover and installer</p>	 <p>09916-74521 Piston ring compressor body</p>	 <p>09916-74540 Piston ring compressor band (63-75 mm)</p>
 <p>09916-84510 Tweezers</p>	 <p>09917-14910 Valve adjust driver</p>	 <p>09920-34810 Starter clutch holder</p>	 <p>09920-53722 Clutch sleeve hub holder</p>	 <p>09923-73210 Bearing puller (17-20 mm)</p>

 <p>09924-84511 Bearing installer set</p>	 <p>09930-11910 Torx wrench</p>	 <p>09930-14530 Universal joint</p>	 <p>09930-33720 Rotor remover</p>	 <p>09931-64411 Ignitor checker (Digital type)</p>
 <p>09940-14911 Steering stem nut wrench</p>	 <p>09940-31710 Front fork assembler</p>	 <p>09940-50112 Front fork oil seal installer</p>	 <p>09941-34513 Steering outer race installer</p>	 <p>09941-44510 Swingarm bearing remover</p>
 <p>09941-54911 Bearing outer race remover</p>	 <p>09941-74910 Steering bearing installer</p>	 <p>09941-84510 Bearing remover</p>	 <p>09943-74111 Front fork oil level gauge</p>	

TIGHTENING TORQUE

ENGINE

ITEM	N·m	kg-m	lb-ft
Cylinder head cover bolt and union bolt	13-15	1.3-1.5	9.5-11.0
Cylinder head nut	35-40	3.5-4.0	25.5-29.0
Cylinder head bolt	8-12	0.8-1.2	6.0-8.5
Cylinder base nut	7-11	0.7-1.1	5.0-8.0
Cylinder stud bolt	13-16	1.3-1.6	9.5-11.5
Valve clearance adjuster lock nut	9-11	0.9-1.1	6.5-8.0
Camshaft journal holder bolt	8-12	0.8-1.2	6.0-8.5
Cam sprocket bolt	24-26	2.4-2.6	17.5-19.0
Rocker arm shaft set bolt	8-10	0.8-1.0	6.0-7.0
Oil hose mounting bolt (Cylinder head side)	8-12	0.8-1.2	6.0-8.5
Oil hose mounting bolt (Crankcase side)	8-12	0.8-1.2	6.0-8.5
Cam chain tensioner mounting bolt	6-8	0.6-0.8	4.5-6.0
Cam chain tensioner spring holder bolt	30-45	3.0-4.5	21.5-32.5
Cam chain idler mounting bolt	8-12	0.8-1.2	6.0-8.5
Conrod bearing cap nut	49-53	4.9-5.3	35.5-38.0
Starter clutch mounting bolt	143-157	14.3-15.7	103.5-113.5
Signal generator bolt	17-23	1.7-2.3	12.5-16.5
Crankcase bolt (6 mm)	12-16	1.2-1.6	8.5-11.5
(8 mm)	20-28	2.0-2.8	14.5-20.0
Oil pump mounting bolt	8-12	0.8-1.2	6.0-8.5
Oil drain plug	20-25	2.0-2.5	14.5-18.0
Oil pan bolt	12-16	1.2-1.6	8.5-11.5
Gearshift cam stopper bolt	15-23	1.5-2.3	11.0-16.5
Clutch sleeve hub nut	80-100	8.0-10.0	58.0-72.5
Clutch spring bolt	11-13	1.1-1.3	8.0-9.5
Exhaust pipe bolt	18-28	1.8-2.8	13.0-20.0
Muffler mounting bolt (Front side)	18-28	1.8-2.8	13.0-20.0
Muffler mounting bolt (Rear side)	22-35	2.2-3.5	16.0-25.5
Engine sprocket nut	100-130	10.0-13.0	72.5-94.0
Engine sprocket nut stopper bolt	9-12	0.9-1.2	6.5-8.5
Engine mounting (L: 55 mm)	50-60	5.0-6.0	36.0-43.5
bolt (L: 150 mm and 175 mm)	70-80	7.0-8.0	50.5-63.5
Generator driven gear nut	54-57	5.4-5.7	39.0-41.0
Generator mounting bolt	21-29	2.1-2.9	15.0-21.0
Oil cooler hose union bolt	25-30	2.5-3.0	18.0-21.5
Oil cooler hose mounting bolt	8-12	0.8-1.2	6.0-8.5
Oil pressure regulator	25-30	2.5-3.0	18.0-21.5
Oil pressure switch	12-15	1.2-1.5	8.5-11.0
Oil gallery plug	35-45	3.5-4.5	25.5-32.5

CHASSIS

ITEM	N-m	kg-m	lb-ft
Steering stem head nut	30-40	3.0-4.0	21.5-29.0
Front fork upper clamp bolt	35-55	3.5-5.5	25.5-40.0
Front fork lower clamp bolt	25-40	2.5-4.0	18.0-29.0
Front fork cap bolt	15-30	1.5-3.0	11.0-21.5
Front axle	85-115	8.5-11.5	61.5-83.0
Front axle pinch bolt	15-25	1.5-2.5	11.0-18.0
Handlebar holder set bolt	7-11	0.7-1.1	5.0-8.0
Handlebar holder mounting bolt	15-25	1.5-2.5	11.0-18.0
Front brake lever nut	8-12	0.8-1.2	6.0-8.5
Front brake caliper mounting bolt	28-44	2.8-4.4	20.0-32.0
Front brake caliper housing bolt	20-25	2.0-2.5	14.5-18.0
Brake hose union bolt (Cylinder & Caliper)	20-25	2.0-2.5	14.5-18.0
Air bleeder valve (Front & Rear)	6-9	0.6-0.9	4.5-6.5
Front and rear disc bolt	15-25	1.5-2.5	11.0-18.0
Front footrest bracket mounting bolt	27-43	2.7-4.3	19.5-31.0
Swingarm pivot nut	85-115	8.5-11.5	61.5-83.0
Front footrest nut	35-55	3.5-5.5	25.5-40.0
Rear shock absorber mounting nut (Upper & Lower)	40-60	4.0-6.0	29.0-43.5
Rear cushion lever nut	110-160	11.0-16.0	79.5-115.5
Rear brake caliper mounting bolt	17-28	1.7-2.8	12.5-20.5
Rear brake caliper housing bolt	30-36	3.0-3.6	21.5-26.0
Rear torque link nut (Front & Rear)	18-28	1.8-2.8	13.0-20.0
Rear brake master cylinder mounting bolt	15-25	1.5-2.5	11.0-18.0
Rear axle nut	85-115	8.5-11.5	61.5-83.0
Rear sprocket nut	48-72	4.8-7.2	35.0-52.0
Front brake pad mounting bolt	15-20	1.5-2.0	11.0-14.5
Front brake master cylinder bolt	5-8	0.5-0.8	3.5-6.0
Rear brake rod lock nut	15-25	1.5-2.5	11.0-18.0
Front fork compression damping force adjuster	15-20	1.5-2.0	11.0-14.5
Front fork spring adjuster lock nut	25-30	2.5-3.0	18.0-21.5
Front fork damper rod bolt	30-40	3.0-4.0	21.5-29.0

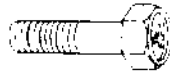
TIGHTENING TORQUE CHART

For other bolts and nuts not listed above, refer to each tightening torque value in the following chart:

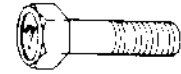
Bolt Diameter (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N·m	kg·m	lb-ft	N·m	kg·m	lb-ft
4	1-2	0.1-0.2	0.7-1.5	1.5-3	0.15-0.3	1.0-2.0
5	2-4	0.2-0.4	1.5-3.0	3-6	0.3-0.6	2.0-4.5
6	4-7	0.4-0.7	3.0-5.0	8-12	0.8-1.2	6.0-8.5
8	10-16	1.0-1.6	7.0-11.5	18-28	1.8-2.8	13.0-20.0
10	22-35	2.2-3.5	16.0-25.5	40-60	4.0-6.0	29.0-43.5
12	35-55	3.5-5.5	25.5-40.0	70-100	7.0-10.0	50.5-72.5
14	50-80	5.0-8.0	36.0-58.0	110-160	11.0-16.0	79.5-115.5
16	80-130	8.0-13.0	58.0-94.0	170-250	17.0-25.0	123.0-181.0
18	130-190	13.0-19.0	94.0-137.5	200-280	20.0-28.0	144.5-202.5



Conventional Bolt



"4" Marked Bolt



"7" Marked bolt

SERVICE DATA**VALVE + GUIDE**

Unit: mm (in)

ITEM		STANDARD	LIMIT
Valve diam.	IN.	28.3 (1.11)	—
	EX.	25.0 (0.98)	—
Valve lift	IN.	8.8 (0.35)	—
	EX.	8.2 (0.32)	—
Valve clearance (when cold)	IN. & EX.	0.10–0.15 (0.004–0.006)	—
Valve guide to valve stem clearance	IN.	0.020–0.047 (0.0008–0.0019)	0.35 (0.014)
	EX.	0.040–0.067 (0.0016–0.0026)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000–5.012 (0.1969–0.1973)	—
Valve stem O.D.	IN.	4.965–4.980 (0.1955–0.1961)	—
	EX.	4.945–4.960 (0.1947–0.1953)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9–1.1 (0.035–0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	33.9 (1.33)
	OUTER	—	37.3 (1.47)
Valve spring tension (IN. & EX.)	INNER	6.0–6.8 kg (13.2–15.0 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	15.4–17.8 kg (34.0–39.2 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM		STANDARD	LIMIT
Cam height	IN.	33.878–33.918 (1.3328–1.3353)	33.580 (1.3220)
	EX.	33.533–33.573 (1.3202–1.3218)	33.240 (1.3087)
Camshaft journal oil clearance	IN. & EX.	0.032–0.066 (0.0013–0.0026)	0.150 (0.0059)

ITEM	STANDARD		LIMIT
Camshaft journal holder I.D.	IN. & EX.	22.012–22.025 (0.8666–0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cam chain 20-pitch length	—		158.0 (6.22)
Cam chain pin (at arrow "3")	21st pin		—
Rocker arm I.D.	IN. & EX.	12.000–12.018 (0.4724–0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.973–11.984 (0.4714 0.4718)	—
Cylinder head distortion	—		0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Compression pressure	1 000–1 400 kPa (10–14 kg/cm ²) 142–199 psi		800 kPa (8 kg/cm ²) 114 psi
Compression pressure difference	—		200 kPa (2 kg/cm ²) 28 psi
Piston to cylinder clearance	0.040–0.050 (0.0016–0.0019)		0.120 (0.0047)
Cylinder bore	73.000–73.015 (2.8740–2.8746)		73.090 (2.8775)
Piston diam.	72.955–72.970 (2.8722–2.8728) Measure at 15 mm (0.6 in) from the skirt end.		72.880 (2.8693)
Cylinder distortion	—		0.20 (0.008)
Piston ring free end gap	1st R	Approx. 9.6 (0.38)	7.7 (0.30)
	2nd RN	Approx. 6.9 (0.27)	5.5 (0.21)
Piston ring end gap	1st	0.1–0.3 (0.004–0.012)	0.7 (0.03)
	2nd	0.1–0.3 (0.004–0.012)	0.7 (0.03)
Piston ring to groove clearance	1st	—	0.18 (0.007)
	2nd	—	0.18 (0.007)
Piston ring groove width	1st	0.81–0.83 (0.032–0.033)	—
	2nd	0.81–0.83 (0.032–0.033)	—
	Oil	1.51–1.53 (0.059–0.060)	—

ITEM	STANDARD		LIMIT
Piston ring thickness	1st	0.77–0.79 (0.030–0.031)	—
	2nd	0.77–0.79 (0.030–0.031)	—
Piston pin bore	19.002–19.008 (0.7481–0.7483)		19.030 (0.7492)
Piston pin O.D.	18.996–19.000 (0.7478–0.7480)		18.980 (0.7472)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD		LIMIT
Conrod small end I.D.	19.010–19.018 (0.7484–0.7487)		19.040 (0.7496)
Conrod big end side clearance	0.10–0.20 (0.004–0.008)		0.30 (0.010)
Conrod big end width	20.95–21.00 (0.825–0.827)		—
Crank pin width	21.10–21.15 (0.831–0.833)		—
Conrod big end oil clearance	0.032–0.056 (0.0013–0.0022)		0.080 (0.0031)
Crank pin O.D.	35.976–36.000 (1.4164–1.4173)		—
Crankshaft journal oil clearance	0.020–0.044 (0.0008–0.0017)		0.080 (0.0031)
Crankshaft journal O.D.	35.976–36.000 (1.4164–1.4173)		—
Crankshaft thrust clearance	0.05–0.13 (0.002–0.005)		—
Crankshaft thrust bearing thickness	Right side	2.42–2.44 (0.095–0.096)	—
	Left side	2.36–2.48 (0.093–0.098)	—
Crankshaft runout	—		0.05 (0.002)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.954 (74/44 × 43/37)	—
Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ² , 43 psi) Below 600 kPa (6.0 kg/cm ² , 85 psi) at 3 000 r/min.	—

CLUTCH

ITEM	STANDARD	LIMIT
Clutch cable play	2–3 (0.08–0.12)	—
Drive plate No.1 thickness	2.12–2.28 (0.083–0.090)	1.82 (0.072)

ITEM		STANDARD	LIMIT
Drive plate No.2 (One pc., "E" letter)	Thickness	2.12–2.28 (0.083–0.090)	1.82 (0.072)
	Height of waves	0.15–0.40 (0.006–0.016)	—
Driven plate distortion		—	0.10 (0.004)
Clutch spring free length		—	38.1 (1.50)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		1.681 (74/44)	—
Final reduction ratio	E-16,17,18,28	3.000 (45/15)	—
	The others	2.933 (44/15)	—
Gear ratios	Low	2.769 (36/13)	—
	2nd	2.062 (33/16)	—
	3rd	1.647 (28/17)	—
	4th	1.400 (28/20)	—
	5th	1.227 (27/22)	—
	Top	1.095 (23/21)	—
Shift fork to groove clearance	No.1, No.2 & No.3	0.10–0.30 (0.004–0.012)	0.50 (0.020)
Shift fork groove width	No.1 & No.3	4.80–4.90 (0.189–0.193)	—
	No.2	5.00–5.10 (0.197–0.201)	—
Shift fork thickness	No.1 & No.3	4.60–4.70 (0.181–0.185)	—
	No.2	4.80–4.90 (0.189–0.193)	—
Drive chain	Type	TAKASAGO: RK50GSVZ1	
	Links	108 links, ENDLESS	
	20-pitch length	—	319.4 (12.6)
Drive chain slack		25–30 (1.0–1.2)	—
Gearshift lever height		60–70 (2.4–2.7)	—

CARBURETOR

ITEM		SPECIFICATION		
		E-04,17,22	E-18	E-24, 39
Carburetor type	MIKUNI BST36SS	←	←	←
Bore size	36 mm (1.4 in)	←	←	←
I.D. No.	17C00	17C20	17C50	17C60

ITEM		SPECIFICATION			
Idle r/min.		1 100 ± 100 r/min.	←	←	←
Fuel level		1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←	←
Main jet	(M.J.)	#112.5	←	←	←
Main air jet	(M.A.J.)	0.5 mm	←	←	←
Jet needle	(J.N.)	5FZ89-3rd	←	5FZ90-3rd	5FZ89-3rd
Needle jet	(N.J.)	Y-5	←	←	←
Throttle valve	(Th.V.)	#125	←	←	←
Pilot jet	(P.J.)	#37.5	←	#32.5	#37.5
By-pass	(B.P.)	#1 0.8, #2 0.8, #3 0.8, #4 0.8 mm	←	←	←
Pilot outlet	(P.O.)	0.8 mm	←	←	←
Valve seat	(V.S.)	2.3 mm	←	←	←
Starter jet	(G.S.)	#45	←	←	←
Pilot screw	(P.S.)	PRE-SET (1 1/2 turns back)	←	←	PRE-SET (1 1/4 turns back)
Pilot air jet	(P.A.J.)	1.4 mm	←	←	←
Throttle cable play		0.5–1.0 mm (0.02–0.04 in)	←	←	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	13° B.T.D.C. at 1 500 r/min.		
Firing order	1-2-4-3		
Spark plug	Type	NGK: JR9C	
	Gap	0.6–0.7 (0.024–0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	Approx. 135–200 Ω		Tester range: (× 100 Ω)
Ignition coil resistance	Primary	⊕ tap– ⊖ tap Approx. 2.4–3.2 Ω	Tester range: (× 1 Ω)
	Secondary	Plug cap–Plug cap Approx. 30–40 kΩ	Tester range: (× 1 kΩ)
Generator	Slip ring O.D.	Limit: 14.0 (0.55)	N.D.
	Brush length	Limit: 4.5 (0.18)	
Regulated voltage	Above 13.5 V at 5 000 r/min.		
Starter motor	Brush length	Limit: 9 (0.35)	N.D.
	Commutator under-cut	Limit: 0.2 (0.008)	
Starter relay resistance	3–5 Ω		

ITEM		SPECIFICATION	NOTE
Battery	Type designation	YB14L-A2	
	Capacity	12 V 50.4 kC (14 Ah)/10 HR	
	Standard electrolyte S.G.	1.28 at 20°C (68°F)	
Fuse size	Headlight	10 A	
	Turn signal	10 A	
	Ignition	10 A	
	Taillight	10 A	
	Power source	10 A	
Circuit breaker		30 A	

WATTAGE

Unit: W

ITEM		SPECIFICATION					
		E-04,25,76	E-15	E-18	E-28	E-34	E-75,79
Headlight	HI	60 + 55	60 × 2	60	60 × 2	35 × 2	60 × 2
	LO	55	←	←	55 × 2	35 × 2	55 × 2
Parking or position light		4	←	←		4 × 2	←
Tail/Brake light		5/21	←	←	←	←	←
Turn signal light		21	←	←	←	←	←
Tachometer light		3	←	←	←	←	←
Speedometer light		3	←	←	←	←	←
Turn signal indicator light		1.7	←	←	←	←	←
High beam indicator light		1.7	←	←	←	←	←
Neutral indicator light		3	←	←	←	←	←
Oil pressure indicator light		1.7	←	←	←	←	←
License light		5	←	←	←	←	←

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	58-68 (2.3-2.6)		—
Brake disc thickness	Front	4.5 ± 0.2 (0.177 ± 0.008)	4.0 (0.15)
	Rear	6.0 ± 0.2 (0.236 ± 0.008)	5.5 (0.22)
Brake disc runout (Front & Rear)	—		0.30 (0.012)
Master cylinder bore	Front	14.000-14.043 (0.5512-0.5528)	—
	Rear	12.700-12.743 (0.5000-0.5017)	—
Master cylinder piston diam.	Front	13.957-13.984 (0.5495-0.5505)	—
	Rear	12.657-12.684 (0.4983-0.4993)	—

ITEM		STANDARD		LIMIT
Brake caliper cylinder bore	Trailing	Front	33.960–34.010 (1.3370–1.3390)	—
	Leading		30.230–30.280 (1.1902–1.1921)	—
		Rear	38.180–38.256 (1.5031–1.5061)	—
Brake caliper piston diam.	Trailing	Front	33.878–33.928 (1.3338–1.3357)	—
	Leading		30.130–30.180 (1.1862–1.1882)	—
		Rear	38.098–38.148 (1.5000–2.5019)	—
Wheel rim runout (Front & Rear)		Axial	—	2.0 (0.08)
		Radial	—	2.0 (0.08)
Wheel axle runout		Front	—	0.25 (0.010)
		Rear	—	0.25 (0.010)
Tire size		Front	120/70 VR17-V250	—
		Rear	160/60 VR17-V250	—
Tire tread depth		Front	—	1.6 (0.06)
		Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	120 (4.72)	—	
Front fork spring free length	—	299.5 (11.79)	
Front fork oil level	141 (5.55)	—	Compress inner tube and inner rod comp. without spring.
Rear wheel travel	136 (5.35)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	250	2.50	36	250	2.50	36
REAR	250	2.50	36	290	2.90	42

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		The others
Fuel tank including reserve	21.0 L (5.5/4.6 US/Imp gal)		
reserve	4.0 L (4.2/3.5 US/Imp qt)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	4 500 ml (4.7/4.0 US/Imp qt)	
	Filter change	4 800 ml (5.0/4.2 US/Imp qt)	
	Overhaul	5 800 ml (6.1/5.1 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	407 ml (13.7/13.4 US/Imp oz)		
Brake fluid type	DOT3, DOT4 or SAE J1703		

APPENDIX (ADDITIONAL INFORMATION OF '88-MODEL)

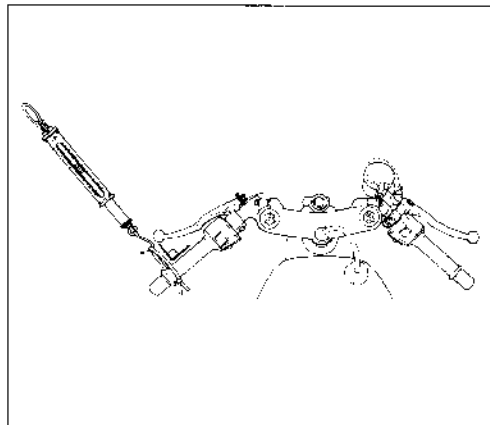
STEERING TENSION ADJUSTMENT

Check the steering movement in the following procedure:

- Remove the bottom fairing.
- Using jacks at two; right and left, positions on the frame down tubes, lift the front wheel until it is off the floor by 20 to 30 mm.
- Check to make sure that the cables and wire harness are properly routed.
- With the front wheel in the straight forward state, hitch the spring scale on one handlebar grip end as shown and then read the graduation when the handlebar starts to move. Do the same on the other grip end.

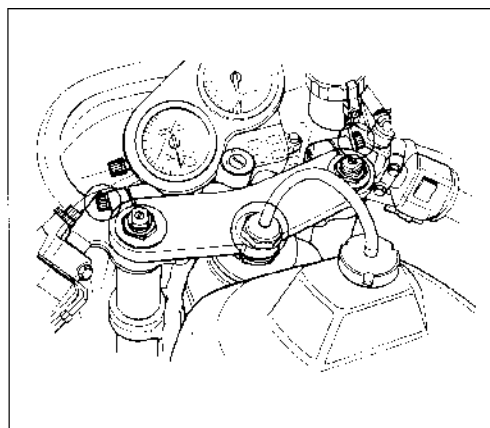
Initial force	200–500 grams
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09940-92710 : Spring scale



If the initial force read on the scale when the handlebar starts turning is either too heavy or too light, adjust it till it satisfies the specification.

- First, loosen the front fork upper clamp bolts and steering stem head nut, and then adjust the steering stem nut by loosening or tightening it.
- Tighten the head nut and clamp bolts to the specified torque and recheck the initial force with the spring scale according to the procedure described on above.



Steering stem head nut : 30–40 N·m

(3.0–4.0 kg·m)
(21.5–29.0 lb·ft)

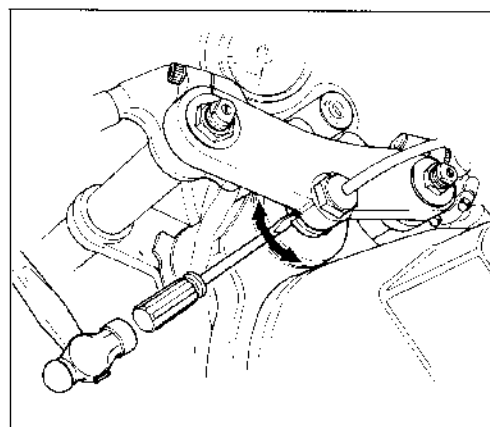
Front fork upper clamp bolt : 35–55 N·m

(3.5–5.5 kg·m)
(25.5–40.0 lb·ft)

- If the initial force is found within the specification range, adjustment has been completed.

NOTE:

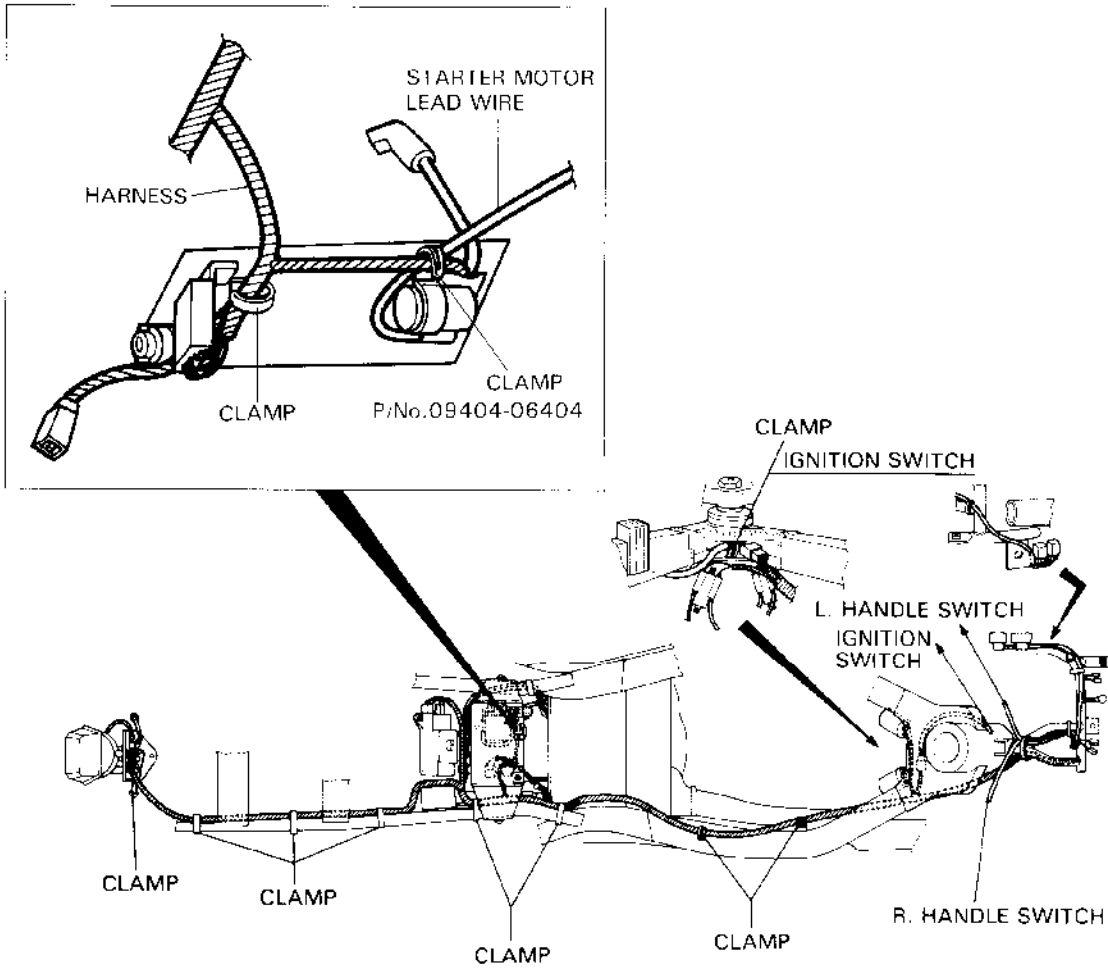
Holding the front fork leg by hand, move it back and forth to make sure that the steering is not loose.



APP

STARTER MOTOR LEAD WIRE

This starter motor lead wire should be fastened with the clamp, P/No. 09404-06404, as shown below.

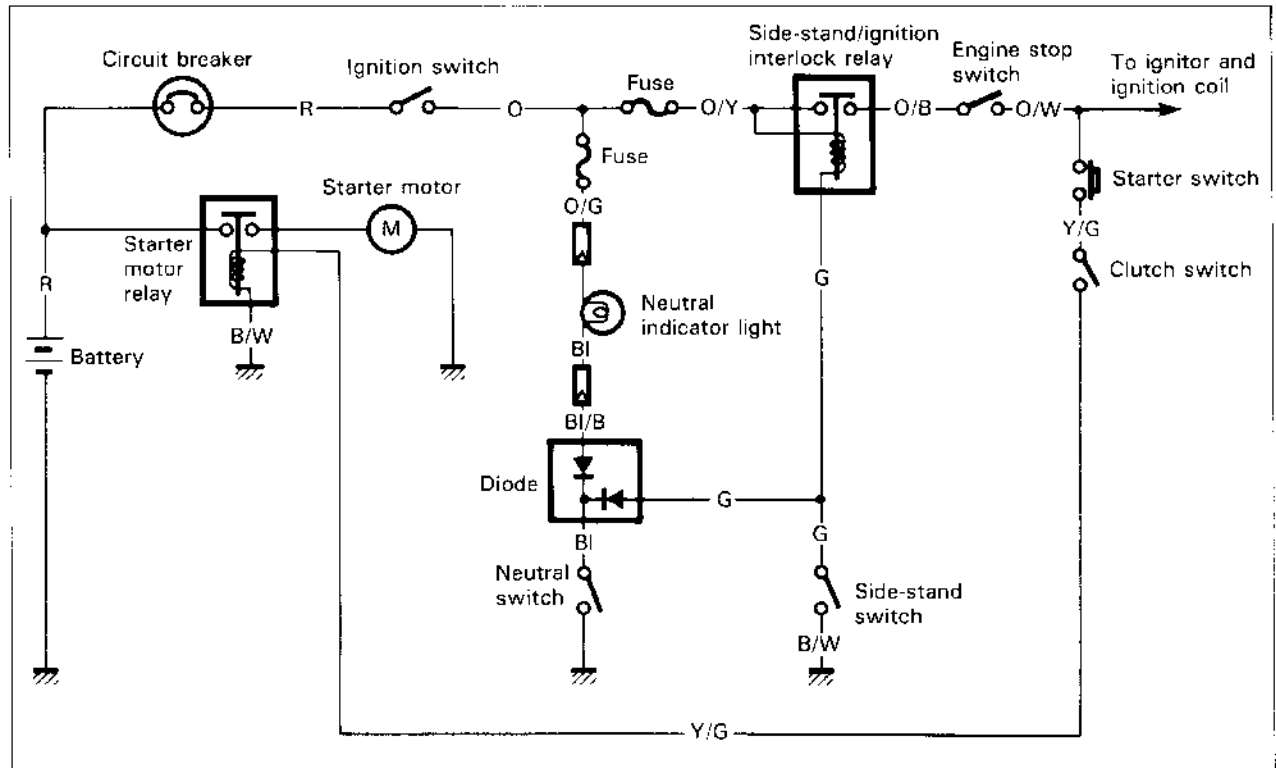


The effective F/Nos are on and after;
JSIGR77A2J2103352
GR77A-102250
GR77B-103855

SIDE-STAND/IGNITION INTERLOCK SYSTEM

DESCRIPTION

This side-stand/ignition interlock system is to prevent starting the motorcycle with the side-stand left down. The system is operated by an electric circuit provided between the battery and ignition coil.

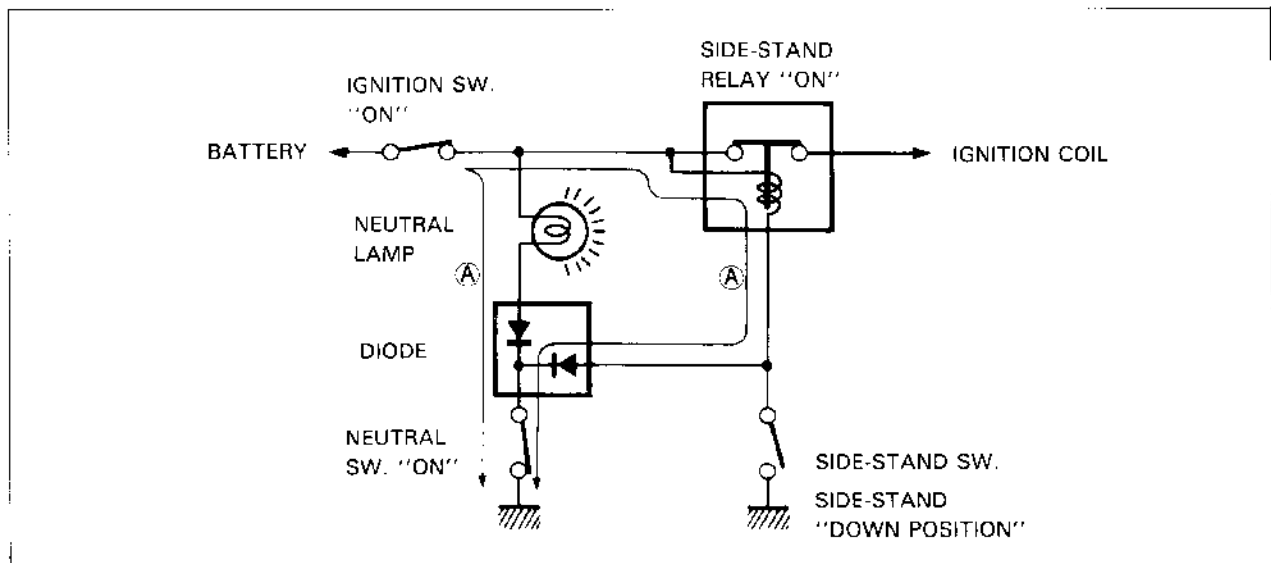


The circuit consists of relay, lamp, diode and switches and decides to live the ignition coil depending on the position of the TRANSMISSION and SIDE-STAND with the neutral and side-stand switches working mutually.

The ignition coil lives only in two situations as follows:

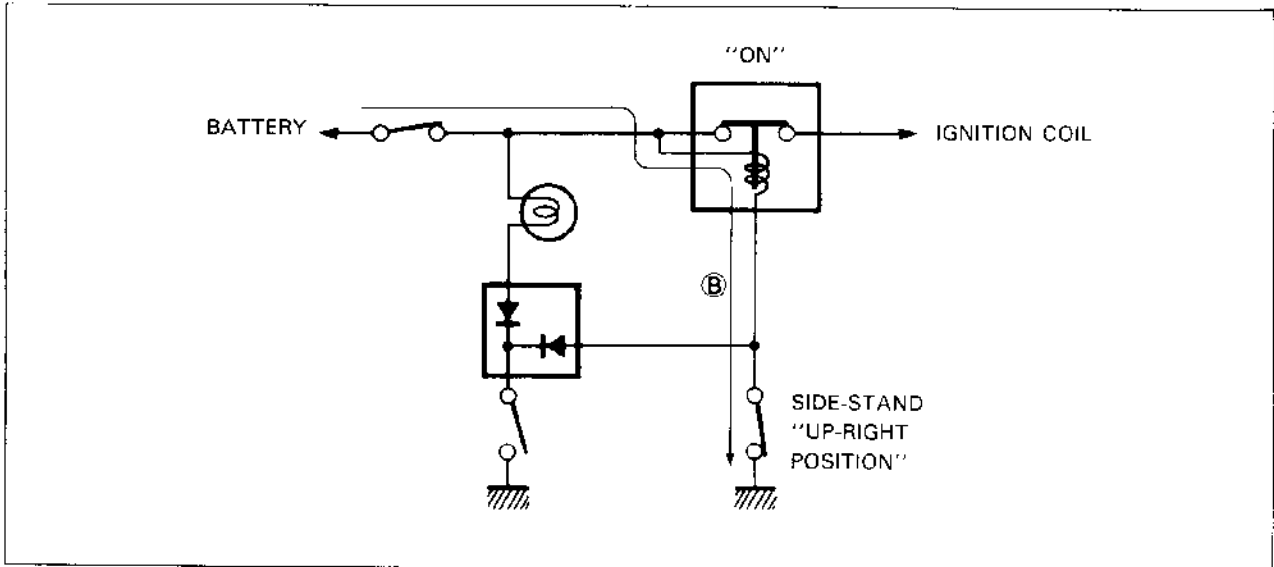
1. Transmission: "NEUTRAL (ON)" Side-stand: "DOWN (OFF)"

The current flow (A) turns "ON" the relay and the ignition coil lives even the side-stand is kept down. This is for warming up the engine.



2. Side-stand: "UP-RIGHT (ON)"

The current flow (B) turns "ON" the relay and the ignition coil lives. The engine can be easily started at any transmission position.



INSPECTION

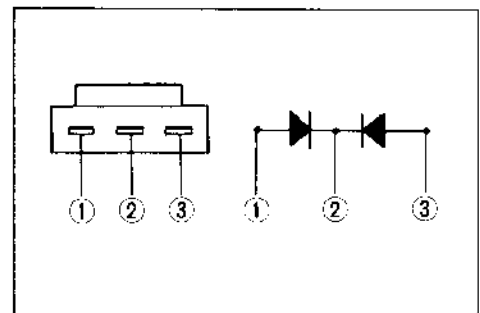
If the interlock system does not operate properly, check each component. If any abnormality is found, replace the component with a new one.

09900-25002 : Pocket tester

Diode

The diode can pass current only in one direction.

- Check the continuity between ① and ②. If one way continuity the diode is in good condition.
- Also check the continuity between ② and ③ as required.



PISTON RINGS

Both piston ring free end gap and piston ring end gap have been changed as follows.

NOTE:

The oil ring remains unchanged.

SERVICE DATA

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT		
		EARLY	LATE	EARLY	LATE	
Piston ring free end gap	1st	R	Approx. 9.6 (0.38)	Approx. 8.2 (0.32)	7.7 (0.30)	6.5 (0.26)
	2nd	RN	Approx. 6.9 (0.27)	←	5.5 (0.22)	←
Piston ring end gap	1st		0.1—0.3 (0.004—0.012)	0.1—0.25 (0.004—0.010)	0.7 (0.03)	←
	2nd		0.1—0.3 (0.004—0.012)	0.2—0.35 (0.008—0.014)	0.7 (0.03)	←

PART SUPPLY DATA

PART NAME	PART NO.	
	EARLY	LATE
Piston ring set	12140-17C11	12140-17C12
Piston ring set O.S. 0.5	12140-17C11-050	12140-17C12-050
Piston ring set O.S. 1.0	12140-17C11-100	12140-17C12-100

INTERCHANGEABILITY: EARLY $\begin{matrix} \leftarrow \\ \rightarrow \end{matrix}$ NO $\begin{matrix} \leftarrow \\ \rightarrow \end{matrix}$ LATE
 YES $\begin{matrix} \leftarrow \\ \rightarrow \end{matrix}$

PARTS AVAILABILITY : Only the late type is available.

The effective F/NOS are on and after.

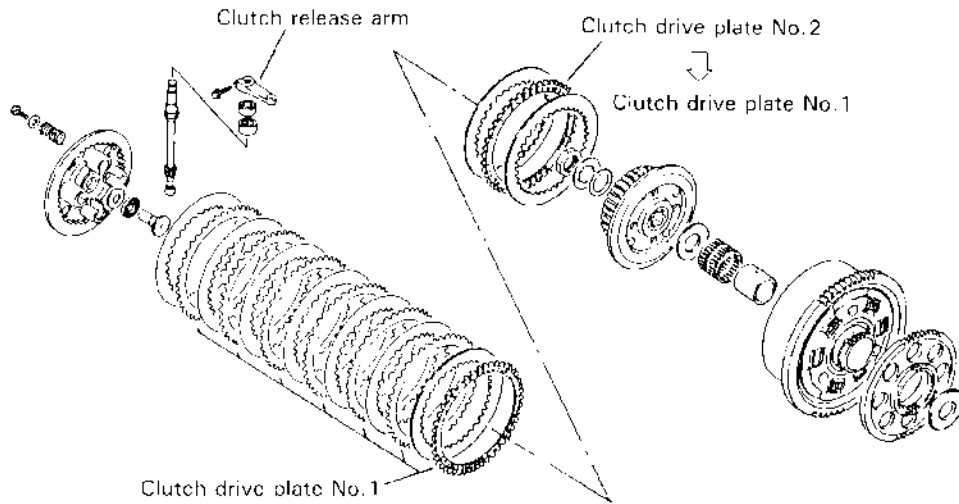
GR77A-104013

GR77B-105040

GR77D-100593

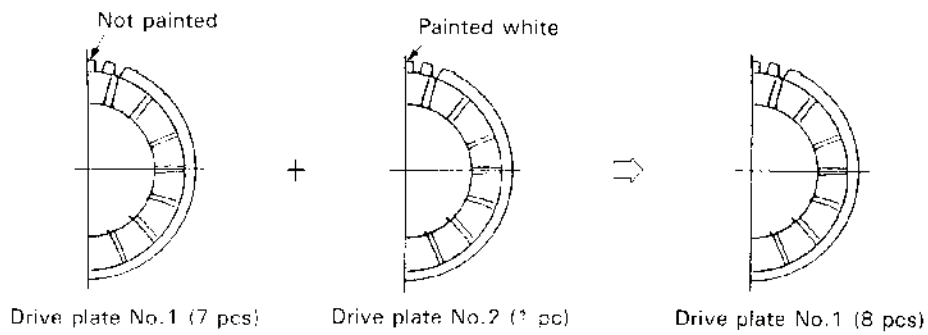
CHANGE OF THE CLUTCH DRIVE PLATE AND OTHERS

The change of the clutch drive plate, clutch release arm and clutch cable on GSX-R750J.



1. CLUTCH DRIVE PLATE

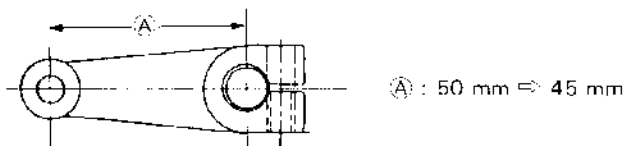
Installation of the clutch drive plates has been changed as shown below.



PART NAME	EARLY		LATE		INTERCHANGEABILITY
	PART No.	Q'ty	PART No.	Q'ty	
Clutch drive plate No. 1	21441-17C02	7	21441-17C02	8	EARLY — NO → LATE ← YES —
Clutch drive plate No. 2	21442-17C00	1			

2. CLUTCH RELEASE ARM

Measurement of the clutch release arm has been changed as shown below.



PART NAME	PART No.		INTERCHANGEABILITY
	EARLY	LATE	
Clutch release arm	23271-40000	23271-17C00	EARLY — NO → LATE ← YES —

PARTS AVAILABILITY: Both EARLY and LATE type parts are available. The LATE type part is supplied for GSX-R750J model and the EARLY type part is continuously supplied for RM250A and others.

3. CLUTCH CABLE

Material of the clutch inner cable has been changed from steel to stainless steel.

PART NAME	PART No.		INTERCHANGEABILITY
	EARLY	LATE	
Clutch cable	58200-17C00	58200-17C01	EARLY — NO → LATE ← YES —

PARTS AVAILABILITY: Only the LATE type part will be supplied after the existing EARLY type part stock is exhausted.

The effective F/NOS are on and after.

GR77A-104013

GR77B-105040

GR77D-100593

GSX-R750K ('89-MODEL)

CONTENTS

SPECIFICATION	8- 1
SERVICE DATA	8- 2
FRONT FORK SPRING SETTING METHOD	8-11

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length.....	2 060 mm (81.1 in)
	...General model
Overall width	730 mm (28.7 in)
Overall height	1 130 mm (44.5 in)
Wheelbase	1 410 mm (55.5 in)
Seat height	*795 mm (31.3 in)
Ground clearance.....	120 mm (4.7 in)
Dry mass.....	195 kg (429 lbs)
	196 kg (432 lbs)
	...California model

ENGINE

Type	Four-stroke, Air-cooled with SACS, DOHC TSCC
Number of cylinders..	4
Bore	73.0 mm (2.874 in)
Stroke	44.7 mm (1.760 in)
Piston displacement ..	748 cm ³ (45.6 cu.in)
Compression ratio.....	10.9 : 1
Carburetor	MIKUNI BST36SS, four
Air cleaner	Polyester fiber element
Starter system.....	Electric starter motor
Lubrication system....	Wet sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission.....	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction.....	1.681 (74/44)
Final reduction.....	3.000 (45/15) ... E-03, 16, 17, 18, 28 2.933 (44/15) ... The others
Gear ratios, Low	2.769 (36/13)
2nd	2.062 (33/16)
3rd.....	1.647 (28/17)
4th.....	1.400 (28/20)
5th.....	1.227 (27/22)
Top	1.095 (23/21)
Drive chain	TAKASAGO: RK50GSV-Z1, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjusta- ble, rebound & com- pression damping force adjustable
Rear suspension	Link type suspension system, spring preload fully adjustable, damp- ing force 4-way adjustable
Steering angle	30° (right & left)
Caster	65° 10'
Trail	99 mm (3.9 in)
Turning radius	3.2 m (10.5 ft)
Front brake	Disc, twin
Rear brake	Disc
Front tire size.....	*120/70 ZR17
Rear tire size.....	*160/60 ZR17
Front fork stroke.....	120 mm (4.72 in)
Rear wheel travel.....	136 mm (5.35 in)

ELECTRICAL

Ignition type.....	Transistorized
Ignition timing	13° B.T.D.C. at 1 500 r/min
Spark plug	N.G.K.: JR9C
Battery	12V 50.4 kC (14 Ah)/10HR
Generator	Three-phase A.C. Generator
Fuse.....	10/10/10/10/10A
Circuit breaker.....	30A

CAPACITIES

Fuel tank, including reserve	21.0 L ... The others 19.5 L ... E-33 reserve.... 4.0 L
Engine oil, oil change..	4.5 L
with filter change	4.8 L
Front fork oil	407 ml

* Asterisk mark indicates the new "K" model specifications.

These specifications are subject to change without notice.

NOTE:

E-03: U.S.A., E-16: Norway, E-17: Sweden, E-18: Switzerland E-28:, Canada E-33: U.S.A:
(Only for California)

SERVICE DATA**VALVE + GUIDE**

Unit: mm (in)

ITEM		STANDARD	LIMIT
Valve diam.	IN.	28.3 (1.11)	—
	EX.	25.0 (0.98)	—
Valve lift	IN.	8.8 (0.35)	—
	EX.	8.2 (0.32)	—
Valve clearance (when cold)	IN.	0.10–0.15 (0.004–0.006)	—
	EX.	*0.18–0.23 (0.007–0.009)	—
Valve guide to valve stem clearance	IN.	0.020–0.047 (0.0008–0.0019)	0.35 (0.014)
	EX.	0.040–0.067 (0.0016–0.0026)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000–5.012 (0.1969–0.1973)	—
Valve stem O.D.	IN.	4.965–4.980 (0.1955–0.1961)	—
	EX.	4.945–4.960 (0.1947–0.1953)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9–1.1 (0.035–0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	33.9 (1.33)
	OUTER	—	37.3 (1.47)
Valve spring tension (IN. & EX.)	INNER	6.0–6.8 kg (13.2–15.0 lbs) at length 28.0 mm (1.10 in)	—
	OUTER	15.4–17.8 kg (34.0–39.2 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM		STANDARD	LIMIT
Cam height	IN.	33.878–33.918 (1.3328–1.3353)	33.580 (1.3220)
	EX.	*33.604–33.664 (1.3230–1.3254)	*33.310 (1.3114)

(*)Asterisk mark indicates the new "K" model specifications.

ITEM	SPECIFICATION		NOTE
Camshaft journal oil clearance	IN. & EX.	0.032–0.066 (0.0013–0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012–22.025 (0.8666–0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cam chain 20-pitch length		—	158.0 (6.22)
Cam chain pin (at arrow "3")		21st pin	—
Rocker arm I.D.	IN. & EX.	12.000–12.018 (0.4724–0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.973–11.984 (0.4714–0.4718)	—
Cylinder head distortion		—	0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Compression pressure	1 000–1 400 kPa (10–14 kg/cm ²) (142–199 psi)		800 kPa (8 kg/cm ²) (114 psi)
Compression pressure difference	—		200 kPa (2 kg/cm ²) (28 psi)
Piston to cylinder clearance	0.040–0.050 (0.0016–0.0019)		0.120 (0.0047)
Cylinder bore	73.000–73.015 (2.8740–2.8746)		73.090 (2.8775)
Piston diam.	72.955–72.970 (2.8722–2.8728) Measure at 15 mm (0.6 in) from the skirt end.		72.880 (2.8693)
Cylinder distortion	—		0.20 (0.008)
Piston ring free end gap	1st R	Approx. *8.2 (0.32)	*6.6 (0.26)
	2nd RN	Approx. 6.9 (0.27)	5.5 (0.21)
Piston ring end gap	1st	*0.10–0.25 (0.004–0.010)	0.7 (0.03)
	2nd	*0.20–0.35 (0.008–0.014)	0.7 (0.03)
Piston ring to groove clearance	1st	—	0.18 (0.007)
	2nd	—	0.18 (0.007)

{*}Asterisk mark indicates the new "K" model specifications.

ITEM	SPECIFICATION		NOTE
Piston ring groove width	1st	0.81–0.83 (0.032–0.033)	—
	2nd	0.81–0.83 (0.032–0.033)	—
	Oil	1.51–1.53 (0.059–0.060)	—
Piston ring thickness	1st	0.77–0.79 (0.030–0.031)	—
	2nd	0.77–0.79 (0.030–0.031)	—
Piston pin bore	19.002–19.008 (0.7481–0.7483)	19.030 (0.7492)	
Piston pin O.D.	18.996–19.000 (0.7478–0.7480)	18.980 (0.7472)	

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD		LIMIT
Conrod small end I.D.	19.010–19.018 (0.7484–0.7487)	19.040 (0.7496)	
Conrod big end side clearance	0.10–0.20 (0.004–0.008)	0.30 (0.010)	
Conrod big end width	20.95–21.00 (0.825–0.827)	—	
Crank pin width	21.10–21.15 (0.831–0.833)	—	
Conrod big end oil clearance	0.032 0.056 (0.0013–0.0022)	0.080 (0.0031)	
Crank pin O.D.	35.976 36.000 (1.4164–1.4173)	—	
Crankshaft journal oil clearance	0.020–0.044 (0.0008–0.0017)	0.080 (0.0031)	
Crankshaft journal O.D.	35.976–36.000 (1.4164–1.4173)	—	
Crankshaft thrust clearance	0.05–0.13 (0.002 0.005)	—	
Crankshaft thrust bearing thickness	Right side	2.42–2.44 (0.095–0.096)	—
	Left side	2.36–2.48 (0.093–0.098)	—
Crankshaft runout	—	0.05 (0.002)	

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.954 (74/44 × 43/37)	—
Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ² , 43 psi) Below 600 kPa (6.0 kg/cm ² , 85 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2-3 (0.08-0.12)	—
Drive plate thickness	2.12-2.28 (0.083-0.090)	1.82 (0.072)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	38.1 (1.50)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	1.681 (74/44)	—
Final reduction ratio	^{E-03,16,17, 18,28,33} 3.000 (45/15)	—
	The others	2.933 (44/15)
Gear ratios	Low	2.769 (36/13)
	2nd	2.062 (33/16)
	3rd	1.647 (28/17)
	4th	1.400 (28/20)
	5th	1.227 (27/22)
	Top	1.095 (23/21)
Shift fork to groove clearance	No.1, No.2 & No.3 0.10-0.30 (0.004-0.012)	0.50 (0.020)
Shift fork groove width	No.1 & No.3 4.80-4.90 (0.189-0.193)	—
	No.2 5.00-5.10 (0.197-0.201)	—
Shift fork thickness	No.1 & No.3 4.60-4.70 (0.181-0.185)	—
	No.2 4.80-4.90 (0.189-0.193)	—
Drive chain	Type	TAKASAGO: RK50GSVZ1
	Links	108 links, ENDLESS
	20-pitch length	— 319.4 (12.6)
Drive chain slack	25-30 (1.0-1.2)	—
Gearshift lever height	60-70 (2.4-2.7)	—

CARBURETOR

ITEM	SPECIFICATION		
	E-03	E-33	E-01,02,15,16, 21,25,28,34,53
Carburetor type	MIKUNI BST36SS	←	←
Bore size	36 mm (1.4 in)	←	←
I.D. No.	17C30	17C40	17C00

ITEM	SPECIFICATION		
	E-03	E-33	E 01,02,15,16, 21,25,28,34,53
Idle r/min.	1 100 ± 100 r/min.	←	←
Fuel level	1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet (M.J.)	#112.5	←	#112.5
Main air jet (M.A.J.)	0.5 mm	←	←
Jet needle (J.N.)	5FZ91	←	5FZ89-3rd
Needle jet (N.J.)	Y-5	←	Y-5
Pilot jet (P.J.)	#32.5	←	#37.5
By-pass (B.P.)	*1 0.8, *2 0.8, *3 0.8 mm	←	*1 0.8, *2 0.8, *3 0.8, *4 0.8 mm
Pilot outlet (P.O.)	0.8 mm	0.9 mm	0.8 mm
Valve seat (V.S.)	2.3 mm	←	←
Starter jet (G.S.)	#45	←	←
Pilot screw (P.S.)	PRE-SET	←	PRE-SET (1 1/2 turns back)
Throttle valve (Th.V.)	#125	#115	#125
Pilot air jet (P.A.J.)	1.55 mm	1.45 mm	1.4 mm
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←	←

ITEM	SPECIFICATION			
	E-04, 17	E-18	E-24, 39	E-22
Carburetor type	MIKUNI BST36SS	←	←	←
Bore size	36 mm (1.4 in)	←	←	←
I.D. No.	17C20	17C50	17C60	17C70
Idle r/min.	1 100 ± 100 r/min.	1 200 ± 50 r/min.	1 100 ± 100 r/min.	←
Fuel level	1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←	←
Float height	14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←	←
Main jet (M.J.)	#112.5	←	←	←
Main air jet (M.A.J.)	0.5 mm	←	←	←
Jet needle (J.N.)	5FZ89-3rd	5FZ90-3rd	5FZ89-3rd	←
Needle jet (N.J.)	Y-5	←	←	←
Pilot jet (P.J.)	#37.5	#32.5	#37.5	←

ITEM	SPECIFICATION			
	E-04, 17	E-18	E-24, 39	E-22
By-pass (B.P.)	#1 0.8, #2 0.8, #3 0.8, #4 0.8 mm	#1 0.8, #2 0.8, #3 0.8 mm	#1 0.8, #2 0.8, #3 0.8, #4 0.8 mm	←
Pilot outlet (P.O.)	0.8 mm	←	←	←
Valve seat (V.S.)	2.3 mm	←	←	←
Starter jet (G.S.)	#45	←	←	←
Pilot screw (P.S.)	PRE-SET (1 1/2 turns back)	PRE-SET (1 1/2 turns back)	PRE-SET (1 1/4 turns back)	PRE-SET (1 1/2 turns back)
Throttle valve (Th.V.)	#125	←	←	←
Pilot air jet (P.A.J.)	1.4 mm	←	←	←
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←	←	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	13° B.T.D.C. at 1 500 r/min.		
Firing order	1-2-4-3		
Spark plug	Type	NGK: JR9C	
	Gap	0.6–0.7 (0.024–0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	Approx. 135–200 Ω		Tester range: (× 100 Ω)
Ignition coil resistance	Primary	⊕ tap— ⊖ tap Approx. 2.4–3.2 Ω	Tester range: (× 1 Ω)
	Secondary	Plug cap—Plug cap Approx. 30–40 kΩ	Tester range: (× 1 kΩ)
Generator	Slip ring O.D.	Limit: 14.0 (0.55)	N.D.
	Brush length	Limit: 4.5 (0.18)	
Regulated voltage	Above 13.5 V at 5 000 r/min.		
Starter motor	Brush length	Limit: 9 (0.35)	N.D.
	Commutator under-cut	Limit: 0.2 (0.008)	
Starter relay resistance	3–5 Ω		
Battery	Type designation	YB14L-A2	
	Capacity	12 V 50.4 kC (14 Ah)/10 HR	
	Standard electrolyte S.G.	1.28 at 20°C (68°F)	
Fuse size	Headlight	10 A	
	Turn signal	10 A	
	Ignition	10 A	
	Taillight	10 A	
	Power source	10 A	
Circuit breaker	30 A		

ITEM	SPECIFICATION		NOTE
Wheel rim runout (Front & Rear)	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	*120/70 ZR17	—
	Rear	*160/60 ZR17	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	120 (4.7)	—	
Front fork spring free length	—	*306.5 (12.1)	
Front fork oil level	141 (5.6)	—	
Rear wheel travel	136 (5.4)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	250	2.50	36	250	2.50	36
REAR	250	2.50	36	290	2.90	42

(*)Asterisk mark indicates the new "K" model specifications.

WATTAGE

Unit: W

ITEM		SPECIFICATION					
		E-03,28, 33	E 01,02, 16,21, 24	E-15	E-04,17, 22,25, 39,53	E-18	E-34
Headlight	HI	60 × 2	*	←	60 + 55	60	35 × 2
	LO	55 × 2	←	←	55	←	35 × 2
Parking or position light			4 × 2	4	←	←	3 × 2
Tail/Brake light		5/21	←	←	←	←	←
Turn signal light		21	←	←	←	←	←
Tachometer light		3	←	←	←	←	←
Speedometer light		3	←	←	←	←	←
Turn signal indicator light		3	←	←	←	←	←
High beam indicator light		1.7	←	←	←	←	←
Neutral indicator light		3	←	←	←	←	←
Oil pressure indicator light		3	←	←	←	←	←
License light		5	←	←	←	←	←

BRAKE + WHEEL

Unit: mm (in)

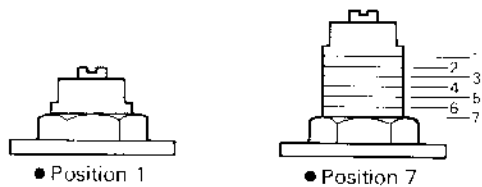
ITEM		STANDARD		LIMIT	
Rear brake pedal height		58–68 (2.3–2.6)		—	
Brake disc thickness	Front	4.5 ± 0.2 (0.177 ± 0.008)		4.0 (0.15)	
	Rear	6.0 ± 0.2 (0.236 ± 0.008)		5.5 (0.22)	
Brake disc runout (Front & Rear)		—		0.30 (0.012)	
Master cylinder bore	Front	14.000–14.043 (0.5512–0.5528)		—	
	Rear	12.700–12.743 (0.5000–0.5017)		—	
Master cylinder piston diam.	Front	13.957–13.984 (0.5495–0.5505)		—	
	Rear	12.657–12.684 (0.4983–0.4993)		—	
Brake caliper cylinder bore	Leading	Front	30.230–30.280 (1.1902–1.1921)		—
			33.960–34.010 (1.3370–1.3390)		—
	Trailing	Rear	38.180–38.256 (1.5031–1.5061)		—
Brake caliper piston diam.	Leading	Front	30.130 30.180 (1.1826–1.1882)		—
			33.878–33.928 (1.3338–1.3357)		—
	Trailing	Rear	38.098–38.148 (1.5000–1.5019)		—

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$) or 89 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03, 33
	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		The others
Fuel tank including reserve	21.0 L (5.5/4.6 US/Imp gal)		
reserve	4.0 L (4.2/3.5 US/Imp qt)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	4 500 ml (4.7/4.0 US/Imp qt)	
	Filter change	4 800 ml (5.0/4.2 US/Imp qt)	
	Overhaul	5 800 ml (6.1/5.1 US/Imp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	*416 ml (14.1/14.6 US/Imp oz)		
Brake fluid type	DOT 3, DOT 4 or SAE J1703		

(*)Asterisk mark indicates the new "K" model specifications.

FRONT FORK SPRING SETTING METHOD



Front suspension spring preload adjuster

		Front			Rear	
		Spring preload adjuster	Damping force adjuster		Spring set length	Damping force adjuster
			Extension	Compression		
Solo riding	Standard	4	5	6	187 mm	2
	Softer	5	8	9	190 mm	1
	Stiffer	3	2	3	182 mm	4
Dual riding		3	2	3	182 mm	4

GSX-R750RK ('89-MODEL)

FOREWORD

This chapter describes up-to-date service procedures which differ from those of the GSX-R750K.

Please refer to the chapters 1 through 8 except for the items described in this chapter.

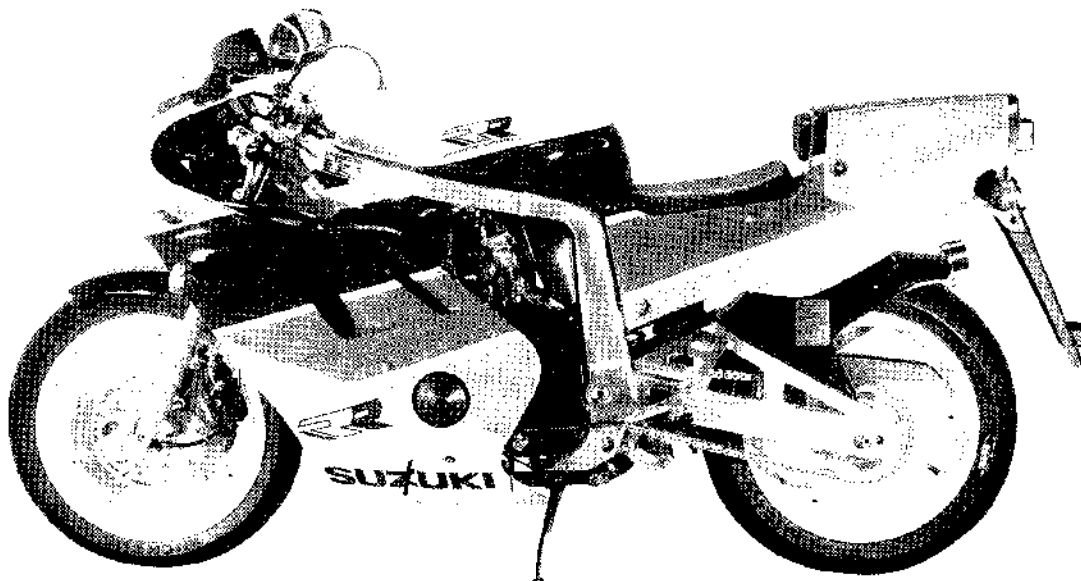
NOTE:

Any differences between GSX-R750K and GSX-R750RK in specifications and service data are clearly indicated with the asterisk marks().*

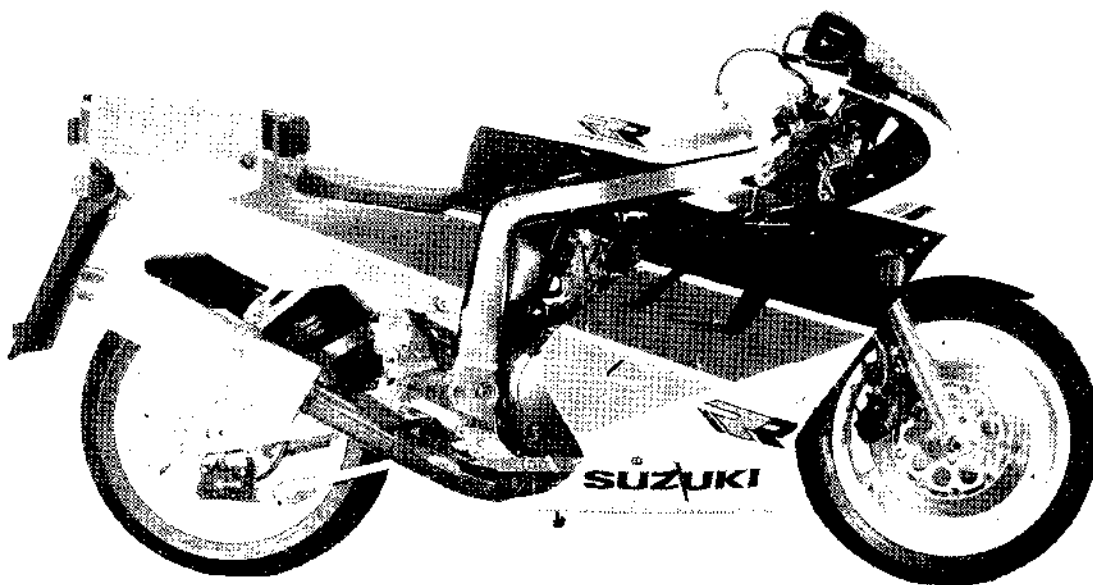
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VIEW OF GSX-R750R



LEFT SIDE



RIGHT SIDE

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length.....	*2 070 mm (81.5 in)
Overall width.....	730 mm (28.7 in)
Overall height.....	*1 110 mm (43.7 in)
Wheelbase.....	*1 405 mm (55.3 in)
Seat height.....	785 mm (30.9 in)
Ground clearance.....	120 mm (4.7 in)
Dry mass.....	*187 kg (412 lbs)

ENGINE

Type.....	Four-stroke, Air-cooled with SACS, DOHC, TSCC
Number of cylinders...	4
Bore.....	*70.0 mm (2.756 in)
Stroke.....	*48.7 mm (1.917 in)
Piston displacement....	*749 cm ³ (45.7 cu.in)
Compression ratio.....	10.9:1
Carburetor.....	*MIKUNI BST40SS, four
Air cleaner.....	Polyester fiber element
Starter system.....	Electric starter motor
Lubrication system....	Wet sump

TRANSMISSION

Clutch.....	Wet multi-plate type
Transmission.....	6-speed constant mesh
Gearshift pattern.....	1-down, 5-up
Primary reduction.....	*1.744 (75/43)
Final reduction.....	*2.600 (39/15)
Gear ratios, Low.....	*2.384 (31/13)
2nd.....	*1.882 (32/17)
3rd.....	*1.631 (31/19)
4th.....	*1.450 (29/20)
5th.....	*1.291 (31/24)
Top.....	*1.200 (24/20)
Drive chain.....	TAKASAGO: *RK50GSV *104 links

CHASSIS

Front suspension.....	Telescopic, oil damped, spring preload fully adjustable, extension damping force and compression damping force adjustable
-----------------------	---

Rear suspension.....	*Link type suspension system, gas/coil spring, extension, damping force 4-way adjustable and compression damping force adjustable
Steering angle.....	30° (right & left)
Caster.....	65°10'
Trail.....	*102 mm (4.0 in)
Turning radius.....	3.2 m (10.5 ft)
Front brake.....	Disc, twin
Rear brake.....	Disc
Front tire size.....	*130/60 ZR17
Rear tire size.....	*170/60 ZR17
Front fork stroke.....	120 mm (4.7 in)
Rear wheel travel.....	136 mm (5.4 in)

ELECTRICAL

Ignition type.....	Fully transistorized
Ignition timing.....	13° B.T.D.C. at 1 500 r/min
Spark plug.....	N.G.K.: *CR10EK N.D.: *U31ETR
Battery.....	*12 V 36 kC (10Ah)/10HR
Generator.....	Three-phase A. C. Generator
Fuse.....	*10/10/10/10/30A

CAPACITIES

Fuel tank including reserve.....	*19.0 L (5.0/4.2 US/Imp gal)
reserve.....	4.0 L (1.1/0.9 US/Imp gal)
Engine oil, oil change..	*3 200 ml (3.4/2.8 US/Imp qt)
Front fork oil.....	*411 ml (13.9/14.5 US/Imp oz)

These specifications are subject to change without notice.

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	* 27 (1.1)	—
	EX.	* 24 (0.9)	—
Valve lift.	IN.	8.8 (0.35)	—
	EX.	8.2 (0.32)	—
Valve clearance (when cold)	IN.	0.10–0.15 (0.004–0.006)	—
	EX.	0.18–0.23 (0.007–0.009)	—
Valve guide to valve stem clearance	IN.	0.020–0.047 (0.0008–0.0019)	0.35 (0.014)
	EX.	0.040–0.067 (0.0016–0.0026)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000–5.012 (0.1969–0.1973)	—
Valve stem O.D.	IN.	4.965–4.980 (0.1955–0.1961)	—
	EX.	4.945–4.960 (0.1947–0.1953)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9–1.1 (0.035–0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length	IN. & EX.	—	* 36.2 (1.43)
Valve spring tension	IN. & EX.	* 16.5–19.3 (36.4–42.5 lbs) at length 32.0 mm (1.26 in)	—

CAMSHFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	* 33.876–33.936 (1.3337–1.3361)	* 33.580 (1.3220)
	EX.	* 33.589–33.649 (1.3224–1.3248)	* 33.290 (1.3106)

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

ITEM		STANDARD	LIMIT
Camshaft journal oil clearance	IN. & EX.	0.032–0.066 (0.0013–0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012–22.025 (0.8666–0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cam chain 20-pitch length		—	158.0 (6.22)
Cam chain pin (at arrow "3")		21st pin	—
Rocker arm I.D.	IN. & EX.	12.000–12.018 (0.4724–0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.973–11.984 (0.4714–0.4718)	—
Cylinder head distortion		—	0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM		STANDARD	LIMIT
Compression pressure		1 000–1 400 kPa (10–14 kg/cm ²) (142–199 psi)	800 kPa (8 kg/cm ²) (114 psi)
Compression pressure difference		—	200 kPa (2 kg/cm ²) (28 psi)
Piston to cylinder clearance		* 0.055–0.065 (0.0022–0.0026)	0.120 (0.0047)
Cylinder bore		* 70.000–70.015 (2.7559–2.7565)	* 70.075 (2.7589)
Piston diam.		* 69.940–69.955 (2.7535–2.7541) Measure at 15 mm (0.6 in) from the skirt end.	* 69.880 (2.7512)
Cylinder distortion		—	0.20 (0.008)
Piston ring free end gap	1st R	Approx. * 9.8 (0.39)	* 7.8 (0.31)
	2nd RN	Approx. * 7.7 (0.30)	* 6.2 (0.24)
Piston ring end gap	1st	* 0.20–0.35 (0.008–0.014)	0.7 (0.03)
	2nd	0.20–0.35 (0.008–0.014)	0.7 (0.03)
Piston ring to groove clearance	1st	—	0.18 (0.007)
	2nd	—	0.18 (0.007)

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

ITEM	STANDARD		LIMIT
Piston ring groove width	1st	0.81 – 0.83 (0.032 – 0.033)	—
	2nd	0.81 – 0.83 (0.032 – 0.033)	—
	Oil	1.51 – 1.53 (0.059 – 0.060)	—
Piston ring thickness	1st	0.77 – 0.79 (0.030 – 0.031)	—
	2nd	0.77 – 0.79 (0.030 – 0.031)	—
Piston pin bore	* 18.002 – 18.008 (0.7087 – 0.7090)		* 18.030 (0.7098)
Piston pin O.D.	* 17.996 – 18.000 (0.7085 – 0.7087)		* 17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD		LIMIT
Conrod small end I.D.	* 18.010 – 18.018 (0.7091 – 0.7094)		* 18.040 (0.7102)
Conrod big end side clearance	0.10 – 0.20 (0.004 – 0.008)		0.30 (0.010)
Conrod big end width	20.95 – 21.00 (0.825 – 0.827)		—
Crank pin width	21.10 – 21.15 (0.831 – 0.833)		—
Conrod big end oil clearance	0.032 – 0.056 (0.0013 – 0.0022)		0.080 (0.0031)
Crank pin O.D.	* 33.976 – 34.000 (1.3376 – 1.3386)		—
Crankshaft journal oil clearance	0.020 – 0.044 (0.0008 – 0.0017)		0.080 (0.0031)
Crankshaft journal O.D.	* 31.976 – 32.000 (1.2589 – 1.2598)		—
Crankshaft thrust clearance	* 0.055 – 0.110 (0.0022 – 0.0043)		—
Crankshaft thrust bearing thickness	Right side	* 2.425 – 2.450 (0.0955 – 0.0965)	—
	Left side	* 2.350 – 2.500 (0.0925 – 0.0984)	—
Crankshaft runout	—		0.05 (0.002)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	* 2.027 (75/43 x 43/37)	—
Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ² , 43 psi) Below 600 kPa (6.0 kg/cm ² , 85 psi) at 3 000 r/min.	—

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2-3 (0.08-0.12)	—
Drive plate thickness	2.12-2.28 (0.083-0.090)	1.82 (0.072)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free leight	—	38.1 (1.50)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT	
Primary reduction ratio	* 1.744 (75/43)	—	
Final reduction ratio	* 2.600 (39/15)	—	
Gear ratios	Low	* 2.384 (31/13)	
	2nd	* 1.882 (32/17)	
	3rd	* 1.631 (31/19)	
	4th	* 1.450 (29/20)	
	5th	* 1.291 (31/24)	
	Top	* 1.200 (24/20)	
Shift fork to groove clearance	No.1, No.2 & No.3	0.10-0.30 (0.004-0.012)	0.50 (0.020)
Shift fork groove width	No.1, & No.3	4.80-4.90 (0.189-0.193)	—
	No.2	5.00-5.10 (0.197-0.201)	—
Shift fork thickness	No.1, & No.3	4.60-4.70 (0.181-0.185)	—
	No.2	4.80-4.90 (0.189-0.193)	—
Drive chain	Type	* TAKASAGO:RK50GSV	—
	Links	* 104 links	—
	20-pitch length	—	319.4 (12.6)
Drive chain slack	* 15-25 (0.6-1.0)	—	
Gearshift lever height	* 62-72 (2.4-2.8)	—	

CARBURETOR

ITEM	SPECIFICATION		
	The others	France	W. Germany
Carburetor type	*MIKUNI BST40SS	—	—
Bore size	* 40 mm	—	—
I.D. No.	* 07D00	* 07D10	* 07D30

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

ITEM	SPECIFICATION		
	The others	France	W. Germany
Idle r./min.	1100±100 r/min	—	—
Float height	* 14.7±1.0mm (0.58±0.04 in)	—	—
Main jet (M.J.)	* #115	* #110	—
Main air jet (M.A.J.)	* 0 mm	—	—
Jet needle (J.N.)	* 6ZEZ3-3rd	—	—
Needle jet (N.J.)	* P-0	—	—
Pilot jet (P.J.)	* #37.5	—	—
By-pass (B.P.)	* 0.8 mm, * ² 0.8 mm * ³ 0.8 mm	—	—
Pilot outlet (P.O.)	* 0.7 mm	—	—
Valve seat (V.S.)	* 2.5 mm	—	—
Starter jet (S.J.)	* #40	—	—
Pilot screw (P.S.)	* PRE-SET (1½ turns back)	—	* PRE-SET (1 turn back)
Throttle valve (Th.V.)	* #120	—	—
Pilot air jet (P.A.J.)	* 1.0 mm	—	—
Power jet (P.W.J.)	* NIL	* #62.5	* No. 1 & 4: #65 No. 2 & 3: #55
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	—	—

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	13° B.T.D.C. at 1 500 r/min		
Firing order	1-2-4-3		
Spark plug	Type	NGK: *CR10EK N.D: *U31ETR	
	Gap	0.6–0.7 (0.024–0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	Approx. 135–200 Ω		
Ignition coil resistance	Primary	⊕ tap – ⊖ tap Approx. 2.4–3.2 Ω	
	Secondary	Plug cap – Plug cap Approx. 30–40 kΩ	
Generator	Slip ring O.D.	Limit: 14.0 (0.55)	N.D.
	Brush length	Limit: 4.5 (0.18)	
Regulated voltage	Above 13.5V at 5 000 r/min.		
Starter motor	Brush length	Limit: 9 (0.35)	N.D.
	Commutator under-cut	Limit: 0.2 (0.008)	
Starter relay resistance	3–5 Ω		

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

ITEM		SPECIFICATION	NOTE
Battery	Type designation	* YTX12-BS	
	Capacity	* 12V 36kC (10 Ah)/10 HR	
	Standard electrolyte S.G.	* 1.320 at 20°C (68°F)	
Fuse size	Headlight	10 A	
	Turn signal	10 A	
	Ignition	10 A	
	Taillight	10 A	
	Main	*30 A	

WATTAGE

Unit: W

ITEM		SPECIFICATION		
		The others	France and W.Germany	Canada
Headlight	HI	60 x 2	60 + 55	60 X 2
	LO	55 x 2	55	55 x 2
Parking or position light		4 x 2	4	
Tail/Brake light		5/21	—	—
Turn signal light		21	—	—
Tachometer light		3	—	—
Speedometer light		3	—	—
Turn signal indicator light		3	—	—
High beam indicator light		1.7	—	—
Neutral indicator light		3	—	—
Oil pressure indicator light		3	—	—

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	* 70 (2.8)		—
Brake disc thickness	Front	* 5.5 ± 0.2 (0.217 ± 0.008)	* 5.0 (0.20)
	Rear	6.0 ± 0.2 (0.236 ± 0.008)	5.5 (0.22)
Brake disc runout (Front & Rear)	—		0.30 (0.012)
Master cylinder bore	Front	* 15.870–15.913 (0.6248–0.6265)	—
	Rear	12.700–12.743 (0.5000–0.5017)	—
Master cylinder piston diam.	Front	* 15.827–15.854 (0.6231–0.6242)	—
	Rear	12.657–12.684 (0.4983–0.4993)	—

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

ITEM		STANDARD		LIMIT
Brake caliper cylinder bore	Leading	Front	30.230 – 30.280 (1.1902 – 1.1921)	—
	Trailing		33.960 – 34.010 (1.3370 – 1.3390)	—
		Rear	38.180 – 38.256 (1.5031 – 1.5061)	—
Brake caliper piston diam.	Leading	Front	30.130 – 30.180 (1.1862 – 1.1882)	—
	Trailing		33.878 – 33.928 (1.3338 – 1.3357)	—
		Rear	38.098 – 38.148 (1.5000 – 1.5019)	—
Wheel rim runout (Front & Rear)		Axial	—	2.0 (0.08)
		Radial	—	2.0 (0.08)
Wheel axle runout		Front	—	0.25 (0.010)
		Rear	—	0.25 (0.010)
Tire size		Front	*130/60 ZR17	—
		Rear	*170/60 ZR17	—
Tire tread depth		Front	—	1.6 (0.06)
		Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in.)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	120 (4.7)	—	
Front fork spring free length	—	*308 (12.1)	
Front fork oil level	*148 (5.8)	—	
Rear wheel travel	136 (5.4)	—	
Rear shock absorber reservoir tank gas pressure	*1 000 kPa (10 kg/cm ² , 142 psi)	—	
Rear shock absorber spring pre-set length	*200.5 (7.89)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING		
	kPa	kg/cm ²	psi
FRONT	250	2.50	36
REAR	250	2.50	36

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		Canada
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		The others
Fuel tank including reserve	* 19.0 L (5.0/4.2 US/Imp gal)		
reserve	4.0 L (1.1/0.9 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	* 3 200 ml (3.4/2.8 US/Imp qt)	
	Filter change	* 3 400 ml (3.6/3.0 US/Imp qt)	
	Overhaul	* 5 200 ml (5.6/4.6 US/Imp qt)	
Front fork oil type	* SUZUKI fork oil SS7 or an equivalent fork oil		
Front fork oil capacity (each leg)	* 411 ml (13.9/14.5 US/Imp oz)		
Brake fluid type	* DOT 4		

Asterisk mark (*) indicates the New GSX-R750RK model specifications.

TIGHTENING TORQUE**ENGINE**

ITEM	N·m	kg-m	lb-ft
Cylinder head cover bolt and union bolt	13-15	1.3-1.5	9.5-11.0
Cylinder head nut	35-40	3.5-4.0	25.5-29.0
Cylinder head bolt	8-12	0.8-1.2	6.0-8.5
Cylinder base nut	7-11	0.7-1.1	5.0-8.0
Cylinder stud bolt	13-16	1.3-1.6	9.5-11.5
Valve clearance adjuster lock nut	9-11	0.9-1.1	6.5-8.0
Camshaft journal holder bolt	8-12	0.8-1.2	6.0-8.5
Cam sprocket bolt	24-26	2.4-2.6	17.5-19.0
Rocker arm shaft set bolt	8-10	0.8-1.0	6.0-7.0
Oil hose mounting bolt (Cylinder head, crankcase and oil cooler)	8-12	0.8-1.2	6.0-8.5
Cam chain tensioner mounting bolt	6-8	0.6-0.8	4.5-6.0
Cam chain tensioner spring holder bolt	30-45	3.0-4.5	21.5-32.5
Cam chain idler mounting bolt	8-12	0.8-1.2	6.0-8.5
Conrod bearing cap bolt	*65-69	*6.5-6.9	*47.0-50.0
Starter clutch mounting bolt	143-157	14.3-15.7	103.5-113.5
Signal generator bolt	17-23	1.7-2.3	12.5-16.5
Crankcase bolt (6 mm)	12-16	1.2-1.6	8.5-11.5
(8 mm)	20-28	2.0-2.8	14.5-20.0
Oil pump mounting bolt	8-12	0.8-1.2	6.0-8.5
Oil drain plug	20-25	2.0-2.5	14.5-18.0
Oil pan bolt	12-16	1.2-1.6	8.5-11.5
Gearshift cam stopper bolt	15-23	1.5-2.3	11.0-16.5
Clutch sleeve hub nut	80-100	8.0-10.0	58.0-72.5
Clutch spring bolt	11-13	1.1-1.3	8.0-9.5
Exhaust pipe bolt	18-28	1.8-2.8	13.0-20.0
Muffler mounting bolt (Front side)	18-28	1.8-2.8	13.0-20.0
Muffler mounting bolt (Rear side)	*40-60	*4.0-6.0	*29.0-43.5
Engine sprocket nut	100-130	10.0-13.0	72.5-94.0
Engine sprocket nut stopper bolt	9-12	0.9-1.2	6.5-8.5
Engine mounting bolt and nut	Refer to page 9-17.		
Generator driven gear nut	54-57	5.4-5.7	39.0-41.0
Generator mounting bolt	21-29	2.1-2.9	15.0-21.0
Oil cooler hose union bolt	25-30	2.5-3.0	18.0-21.5
Sub oil cooler hose union bolt	*18-23	*1.8-2.3	*13.0-16.5
Oil cooler mounting bolt	13-17	1.3-1.7	9.5-12.5
Oil pressure regulator	25-30	2.5-3.0	18.0-21.5
Oil pressure switch	12-15	1.2-1.5	8.5-11.0
Oil gallery plug	35-45	3.5-4.5	25.5-32.5

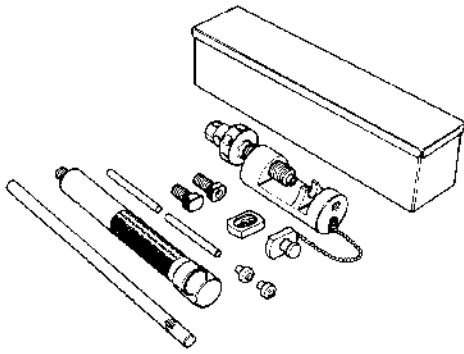
Asterisk mark (*) indicates the New GSX-R750RK model specifications.

CHASSIS

ITEM	N·m	kg-m	lb-ft
Steering stem head nut	50–80	5.0–8.0	36.0–58.0
Front fork upper clamp bolt	22–35	2.2–3.5	16.0–25.5
Front fork lower clamp bolt	22–35	2.2–3.5	16.0–25.5
Front fork cap bolt	15–30	1.5–3.0	11.0–21.5
Front axle	85–115	8.5–11.5	61.5–83.0
Front axle pinch bolt	15–25	1.5–2.5	11.0–18.0
Handlebar holder set bolt	7–11	0.7–1.1	5.0–8.0
Handlebar holder mounting bolt	15–25	1.5–2.5	11.0–18.0
Front fork compression damping force adjuster	15–20	1.5–2.0	11.0–14.5
Front fork spring adjuster lock nut	25–30	2.5–3.0	18.0–21.5
Front fork damper rod bolt	30–40	3.0–4.0	21.5–29.0
Front brake lever nut	8–12	0.8–1.2	6.0–8.5
Front brake caliper mounting bolt	28–44	2.8–4.4	20.0–32.0
Front brake caliper housing bolt	20–25	2.0–2.5	14.5–18.0
Brake hose union bolt (Cylinder & Caliper)	*15–20	*1.5–2.0	*11.0–14.5
Air bleeder valve (Front & Rear)	6–9	0.6–0.9	4.5–6.5
Front and rear disc bolt	15–25	1.5–2.5	11.0–18.0
Front footrest bracket mounting bolt	27–43	2.7–4.3	19.5–31.0
Swingarm pivot nut	85–115	8.5–11.5	61.5–83.0
Front footrest nut	35–55	3.5–5.5	25.5–40.0
Rear shock absorber mounting nut (Upper & Lower)	40–60	4.0–6.0	29.0–43.5
Rear cushion lever nut	110–160	11.0–16.0	79.5–115.5
Rear brake caliper mounting bolt	17–28	1.7–2.8	12.5–20.5
Rear brake caliper housing bolt	30–36	3.0–3.6	21.5–26.0
Rear torque link nut (Front & Rear)	22–34	2.2–3.4	16.0–24.5
Rear brake master cylinder mounting bolt	15–25	1.5–2.5	11.0–18.0
Rear axle nut	85–115	8.5–11.5	61.5–83.0
Rear sprocket nut	48–72	4.8–7.2	35.0–52.0
Front brake pad mounting bolt	15–20	1.5–2.0	11.0–14.5
Front brake master cylinder bolt	5–8	0.5–0.8	3.5–6.0
Rear brake rod lock nut	15–20	1.5–2.0	11.0–14.5

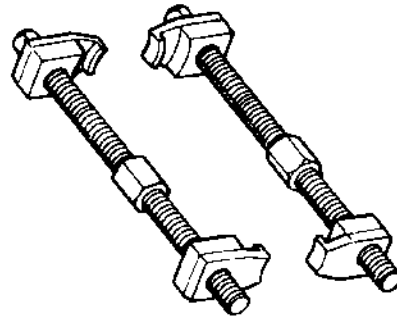
Asterisk mark (*) indicates the New GSX-R750RK model specifications.

SPECIAL TOOLS



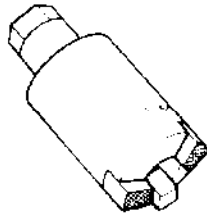
This tool is used for cutting or installing the drive chain.

09922-22710 : Drive chain cutting and joining tool set



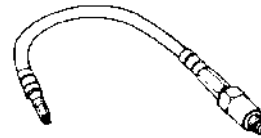
This tool is used for removing or installing the rear shock absorber spring.

09940-71430 : Rear suspension spring compressor



This tool is used for servicing the valve seat.

09916-20630 : Valve seat cutter head (N-126)



This tool is used for checking the compression pressure.

09915-63310 : Compression gauge adapter



This material is used for front fork.

99000-99001-SS7 : SUZUKI fork oil SS7 (500ml)

PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and to maintain proper emission levels. 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	2	12	24	36	48	
Battery			—	I	I	I	I	
Cylinder head nuts and exhaust pipe bolts			T	T	T	T	T	
Air cleaner		Clean at every 3 000 km (2 000 miles) and replace at every 12 000 km (7 500 miles)						
Valve clearance			I	I	I	I	I	
Spark plugs			—	I	R	I	R	
Engine oil and oil filter			R	R	R	R	R	
Fuel lines			I	I	I	I	I	
		Replace at every four years						
Carburetors			I	I	I	I	I	
Clutch			I	I	I	I	I	
Drive chain			I	I	I	I	I	
		Clean and lubricate at every 1 000 km (600 miles)						
Brakes			I	I	I	I	I	
Brake hoses			I	I	I	I	I	
		Replace at every four years						
Brake fluid			I	I	I	I	I	
		Replace at every two years						
Tires			I	I	I	I	I	
Steering			I	I	I	I	I	
Front forks			I	—	I	—	I	
Rear suspension			I	—	I	—	I	
Chassis bolts and nuts			T	T	T	T	T	

NOTE:

T = Tighten, R = Replace

I = Inspect and clean, adjust, replace or lubricate as necessary

BATTERY

Inspect at Every 6 000 km (4 000 miles, 12 months).

- Remove the seat cover with seat.
- Check the battery voltage with the pocket tester.

09900-25002 : Pocket tester.

If the voltage reading is below 12.0 V, this battery needs recharging.

Battery voltage : Above 12.0 V

- Remove the starter relay and starter relay bracket.

- Disconnect the battery \ominus and \oplus lead wires and remove the battery.

WARNING:

When disconnecting the battery lead wires, \ominus lead wire first.

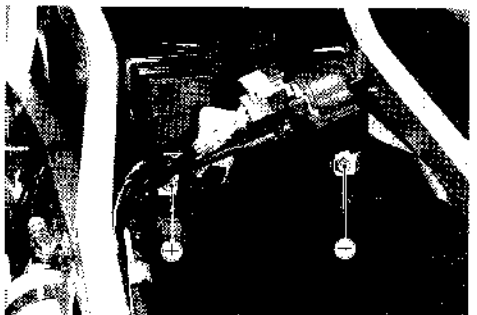
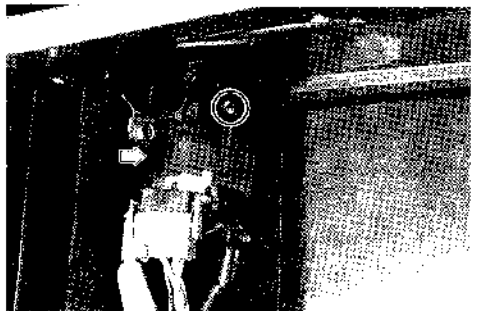
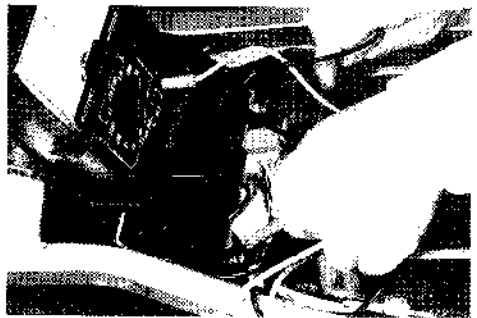
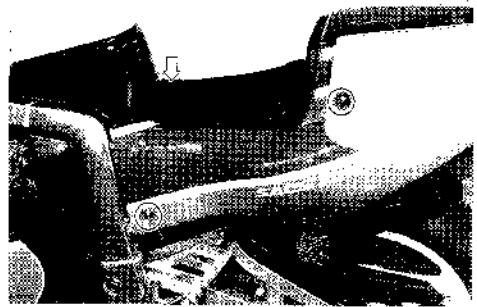
CAUTION:

Read the servicing battery section. (Refer to page 9-32.)

- When installing the battery, terminal side facing the upper fender as shown in photo.

WARNING:

When connecting the battery lead wires, \oplus lead wire first.



AIR CLEANER

Clean at Every 3 000 km (2 000 miles) and Replace at Every 12 000 km (7 500 miles).

- Remove the battery. (Refer to page 9-15.)
- Remove the lower fender.
- Remove the upper fender with the battery holder.
- Remove the air cleaner element.
- Carefully use air hose to blow the dust from the outside of cleaner element.

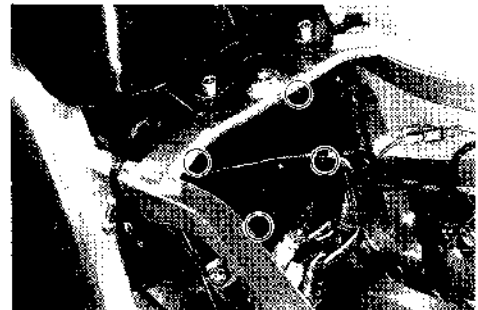
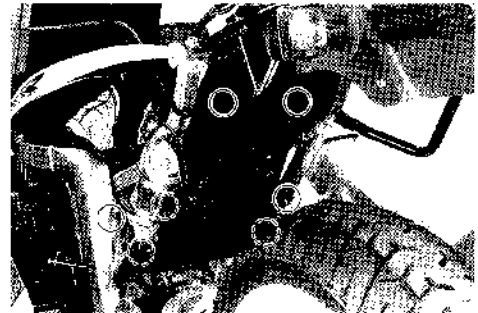
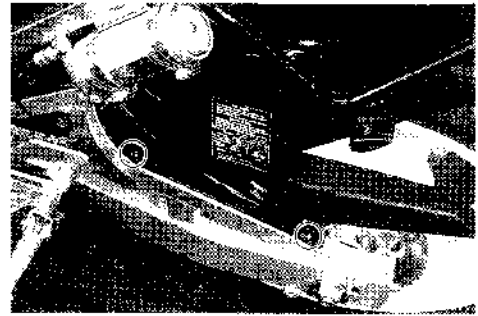
CAUTION:

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.

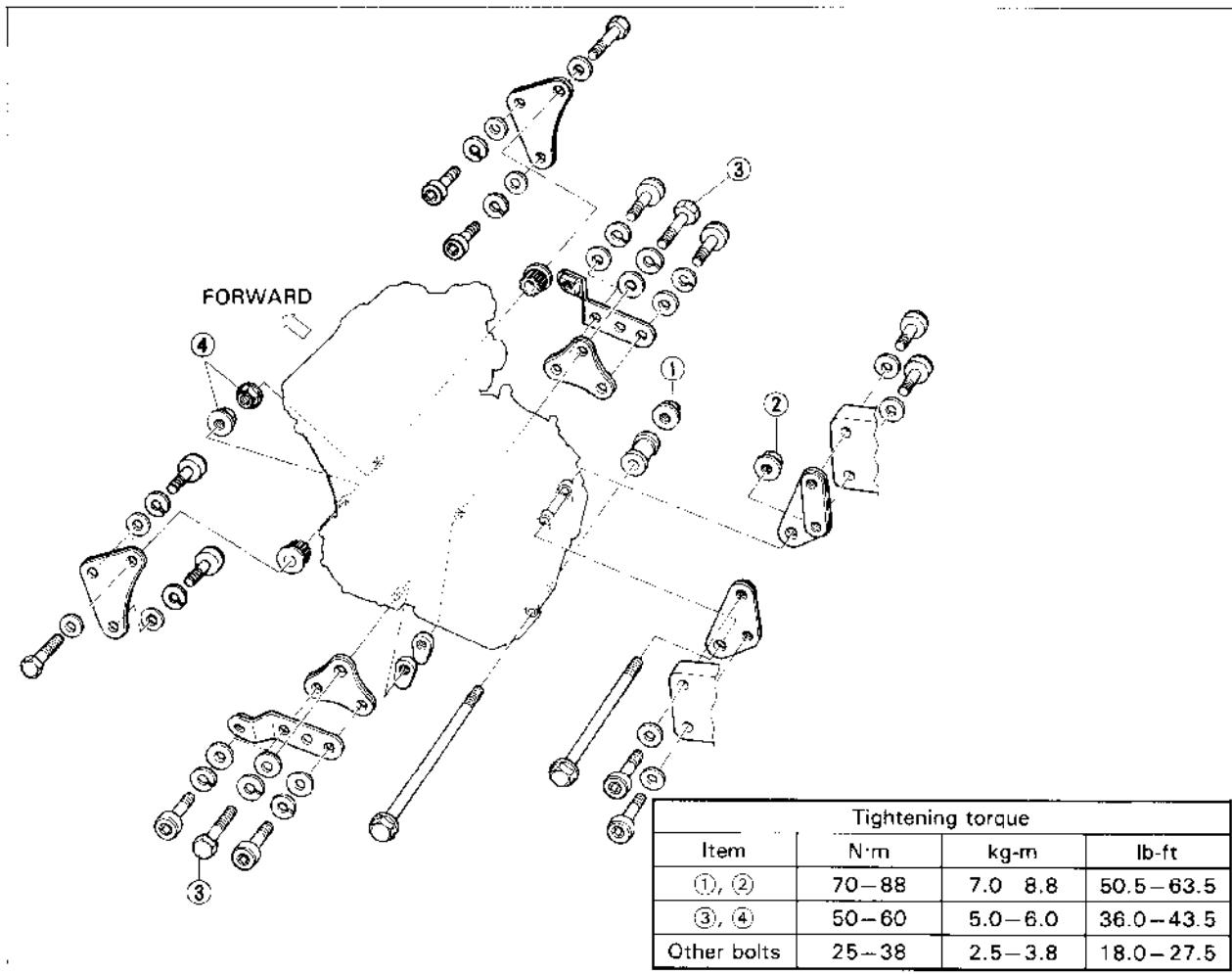
- Reinstall the cleaned or new cleaner element in the reverse order of removal.

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!



ENGINE MOUNTING



CYLINDER HEAD

VALVE SEAT SERVICING

The valve seats for both intake and exhaust valves are angled to present two bevels, 30° and 45° for intake and 15° and 45° for exhaust.

	Intake side	Exhaust side
45°	N-122	N-122
15°		N-121
30°	N-126	

09916-20610 : Valve seat cutter head (N-121)

09916-20620 : Valve seat cutter head (N-122)

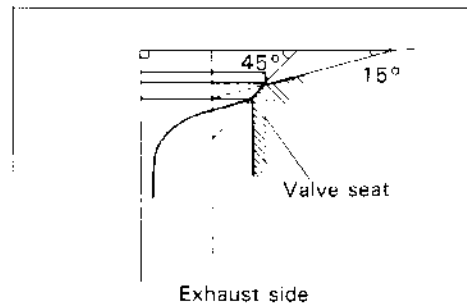
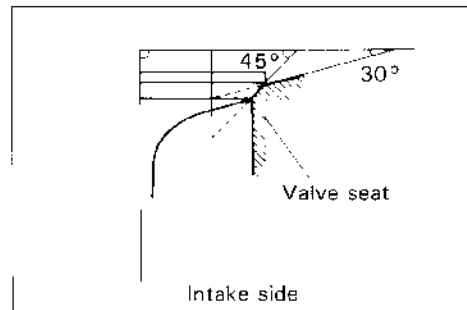
09916-20630 : Valve seat cutter head (N-126)

09916-21110 : Valve seat cutter set

09916-24310 : Solid pilot (N-100-5.0)

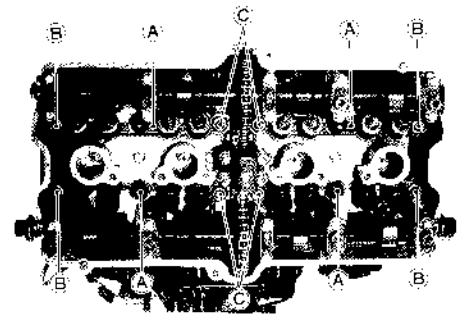
NOTE:

The valve seat contact area must be inspected after each cut.



CYLINDER HEAD NUTS AND WASHERS

- Cylinder head nuts and washers must be fitted in the correct positions, as shown in the illustration.
 - Ⓐ Copper washer with cap nut (4 pcs)
 - Ⓑ Steel washer with normal nut (4 pcs)
 - Ⓒ Normal nut (4 pcs)



VALVE SPRINGS

Check the valve springs for proper strength by measuring their free lengths and also by the force required to compress them. If the spring length is less than the service limit, or if the force required to compress the spring does not fall within the range specified, replace both the inner and outer springs as a set.

CAUTION:

- * Do not separate the inner and outer springs.
- * Replace both the valve springs, inner and outer, at any time.

Valve spring free length (IN. & EX.)

Service Limit : 36.2 mm (1.43 in)

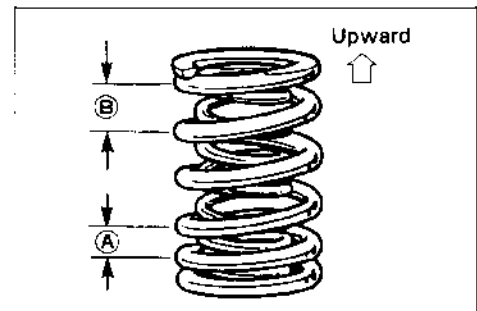
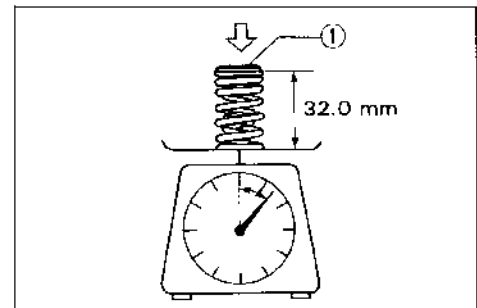
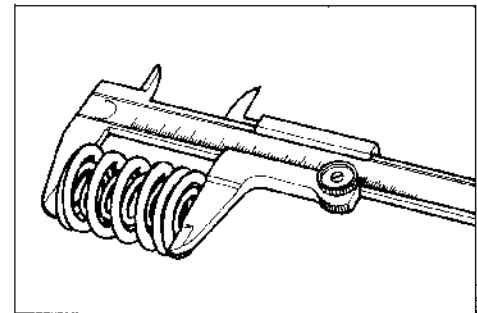
Valve spring tension (IN. & EX.)

Standard : 16.5–19.3 kg (36.4–42.5 lbs)
at length 32.0 mm (1.26 in)

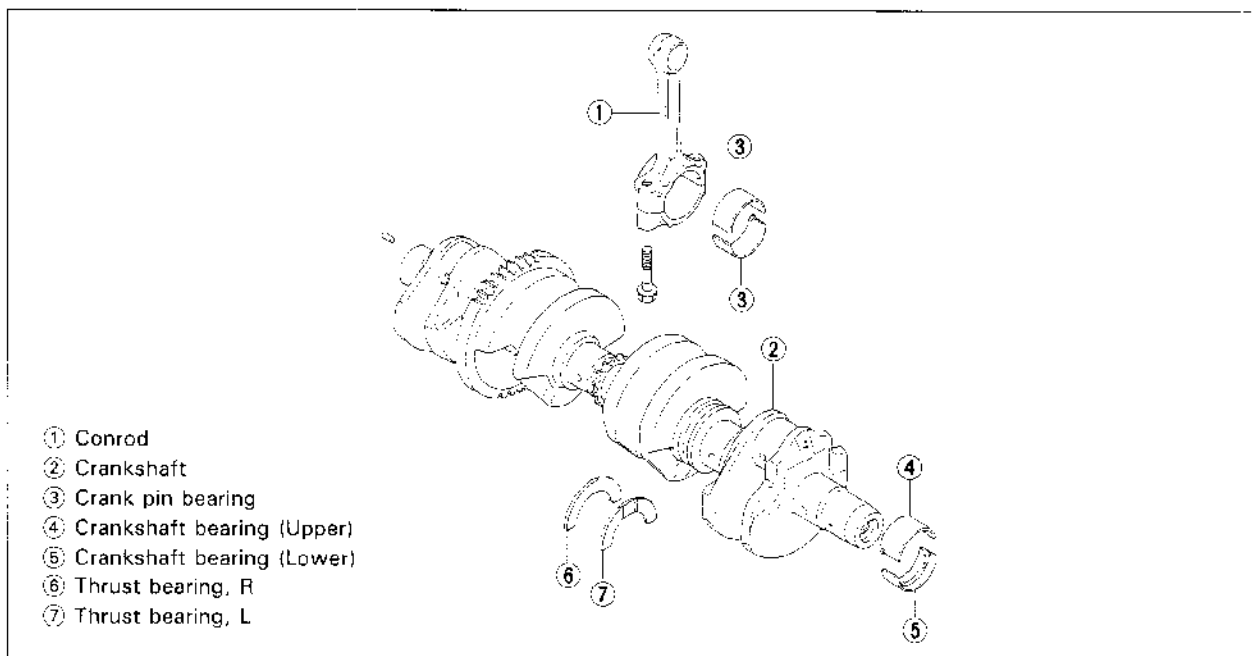
NOTE:

When checking the valve spring tension, use the spring retainer ① as shown in the illustration.

- Install the valve springs with the small-pitch portion Ⓐ facing cylinder head.
 - Ⓑ : Large-pitch portion



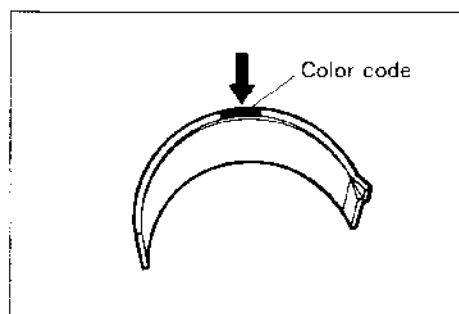
CONROD AND CRANKSHAFT



CONROD-CRANK PIN BEARING SELECTION

Bearing selection table

	Code	Crank pin O.D.		
		1	2	3
Conrod I.D.	1	Green	Black	Brown
	2	Black	Brown	Yellow



CAUTION:

Bearing should be replaced as a set.

Conrod I.D. specification

Code	I.D. specification
1	37.000 – 37.008 mm (1.4567 – 1.4570 in)
2	37.008 – 37.016 mm (1.4570 – 1.4573 in)

Crank pin O.D. specification

Code	O.D. specification
1	33.992 – 34.000 mm (1.3383 – 1.3386 in)
2	33.984 – 33.992 mm (1.3380 – 1.3383 in)
3	33.976 – 33.984 mm (1.3376 – 1.3380 in)

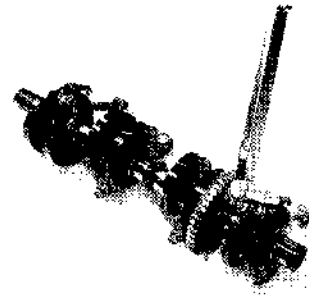
Bearing thickness

Color (Part No.)	Thickness
Green (12164-27A00-0A0)	1.480 – 1.484 mm (0.0583 – 0.0584 in)
Black (12164-27A00-0B0)	1.484 – 1.488 mm (0.0584 – 0.0586 in)
Brown (12164-27A00-0C0)	1.488 – 1.492 mm (0.0586 – 0.0587 in)
Yellow (12164-27A00-0D0)	1.492 – 1.496 mm (0.0587 – 0.0589 in)

- When mounting the conrod on the crankshaft, make sure that numeral figure of the conrod faces rearward.
- Tighten the conrod bolts to specified torque.

Tightening torque : 65–69 N·m
(6.5–6.9 kg·m, 47.0–50.0 lb-ft)

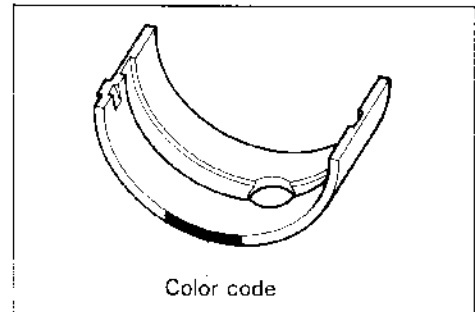
- Check the conrod movement for smooth turning.



CRANKCASE-CRANKSHAFT BEARING SELECTION

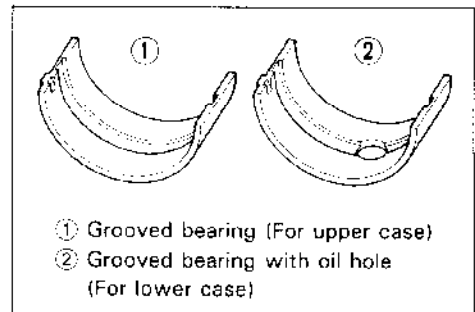
Bearing selection table

	Code	Crankshaft journal O.D.		
		A	B	C
Crankcase I.D.	A	Green	Black	Brown
	B	Black	Brown	Yellow



NOTE:

- * Grooved bearings have the same specification as the Grooved bearing with oil hole.
- * These parts numbers are shown as follows.
12229-27A00-XXX. (Grooved bearing)



Crankcase I.D. specification

Code	I.D. specification
A	35.000 – 35.008 mm (1.3780 – 1.3783 in)
B	35.008 – 35.016 mm (1.3783 – 1.3786 in)

Crankshaft journal O.D. specification

Code	O.D. specification
A	31.992 – 32.000 mm (1.2595 – 1.2598 in)
B	31.984 – 31.992 mm (1.2592 – 1.2595 in)
C	31.976 – 31.984 mm (1.2589 – 1.2592 in)

Bearing thickness specification

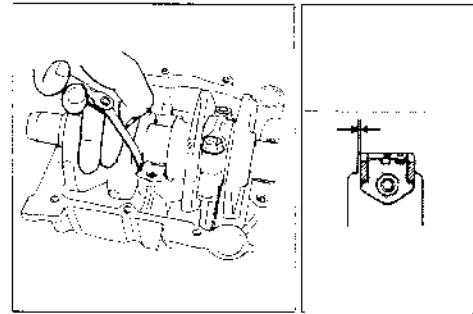
(Grooved bearing with oil hole...For lower case)

Color (Part No.)	Specification
Green (12229-27A00-0A0)	1.486 – 1.490 mm (0.0585 – 0.0587 in)
Black (12229-27A00-0B0)	1.490 – 1.494 mm (0.0587 – 0.0588 in)
Brown (12229-27A00-0C0)	1.494 – 1.498 mm (0.0588 – 0.0590 in)
Yellow (12229-27A00-0D0)	1.498 – 1.502 mm (0.0590 – 0.0591 in)

CRANKSHAFT THRUST CLEARANCE

Crankshaft thrust clearance

Standard : 0.055–0.110 mm (0.0022–0.0043 in)

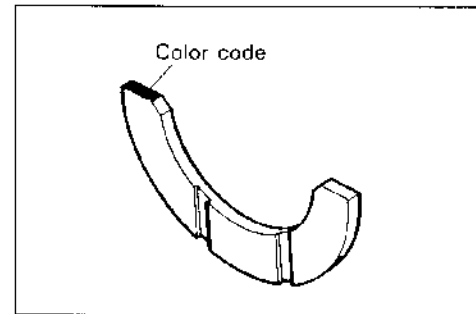


Right-side thrust bearing thickness

2.425–2.450 mm (0.0955–0.0965 in)

NOTE:

Right-side thrust bearing has the same specification as the Green of left-side thrust bearing.

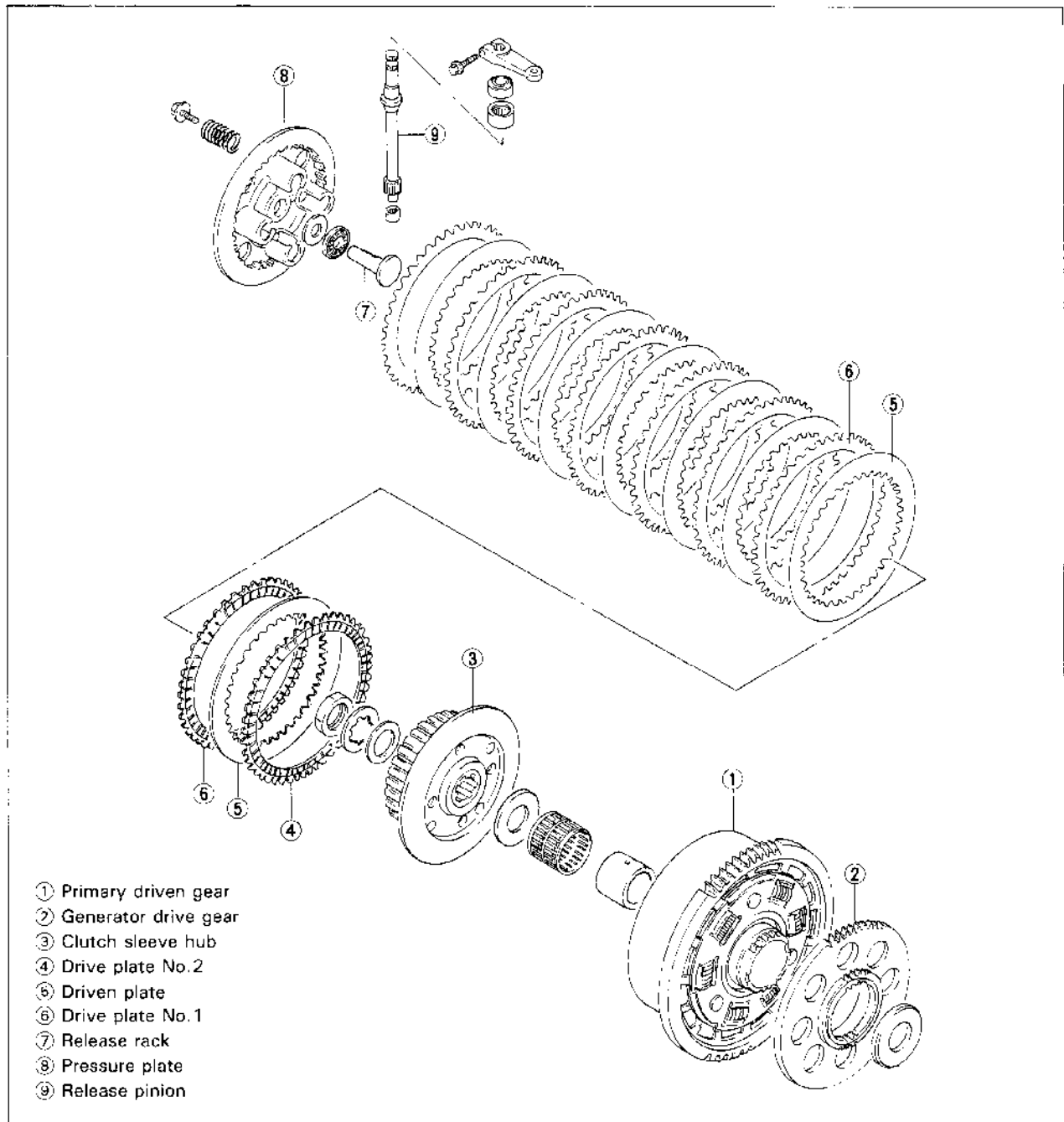


Thrust bearing selection table

Clearance before inserting thrust bearing	Color (Part No.)	Thrust bearing thickness	Thrust clearance
2.430–2.460 mm (0.0957–0.0969 in)	Red (12228-43411)	2.350–2.375 mm (0.0925–0.0935 in)	0.055–0.110 mm (0.0022–0.0043 in)
2.460–2.485 mm (0.0969–0.0978 in)	Black (12228-43412)	2.375–2.400 mm (0.0935–0.0945 in)	0.060–0.110 mm (0.0024–0.0043 in)
2.485–2.510 mm (0.0978–0.0988 in)	Blue (12228-43413)	2.400–2.425 mm (0.0945–0.0955 in)	
2.510–2.515 mm (0.0988–0.0990 in)	Green (12228-43414)	2.425–2.450 mm (0.0955–0.0965 in)	
2.515–2.560 mm (0.0990–0.1008 in)	Yellow (12228-43415)	2.450–2.475 mm (0.0965–0.0974 in)	
2.560–2.585 mm (0.1008–0.1018 in)	White (12228-43416)	2.475–2.500 mm (0.0974–0.0984 in)	

- After selecting a left-side thrust bearing, insert it and again perform the thrust clearance measurement to make sure it falls within the standard range.

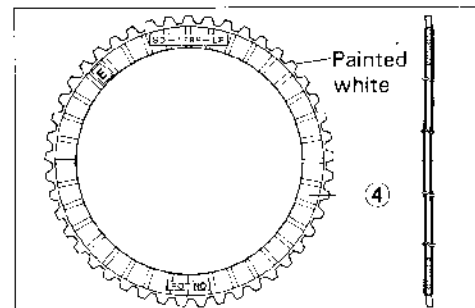
CLUTCH




- Install the clutch sleeve hub onto the countershaft and insert the drive and driven plates one by one into the sleeve hub.

NOTE:

When assembling the clutch plates, be sure to insert a waved clutch drive plate No.2 (④) first and driven plate second.

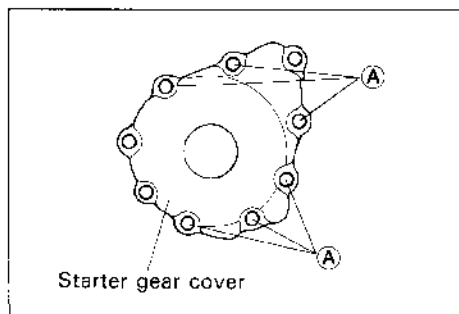
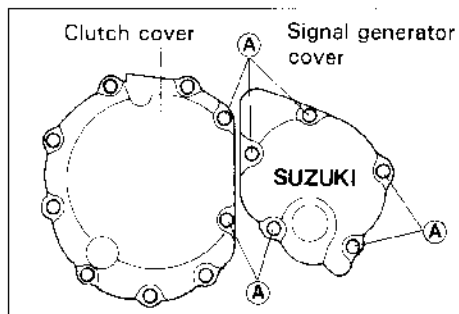


CLUTCH COVER, SIGNAL GENERATOR COVER AND STARTER GEAR COVER

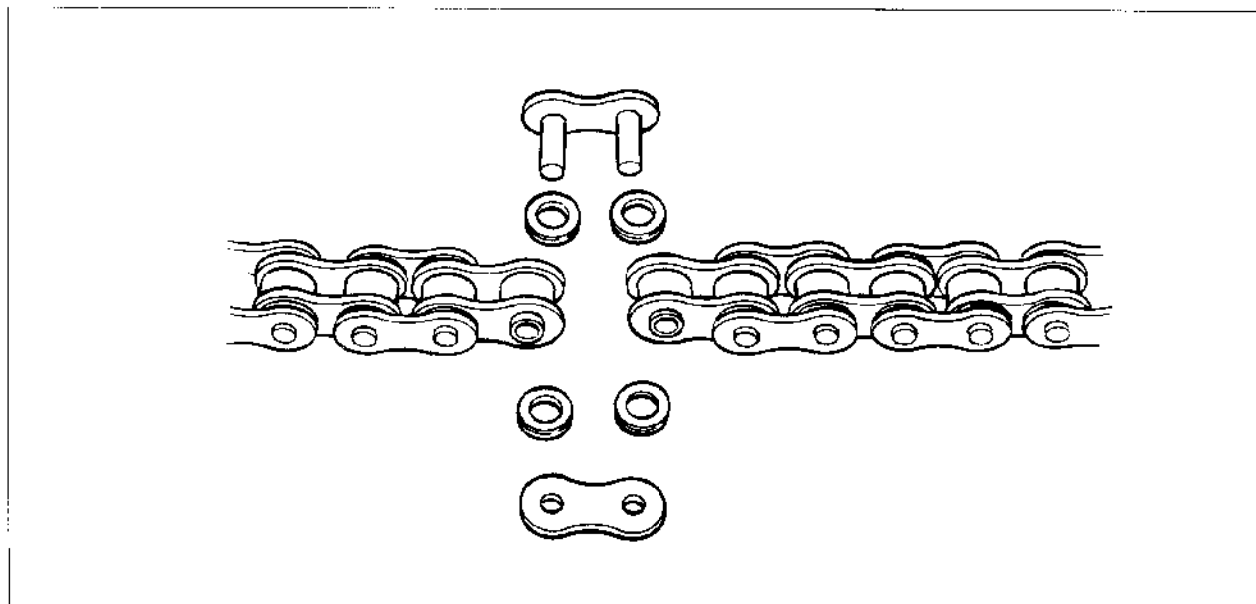
- When tighten the covers, fit up the gaskets to the bolts  correctly as shown in the illustration.

CAUTION:

Use new gaskets to prevent oil leakage.



DRIVE CHAIN



To cut and rejoin the drive chain, use the special tool in the following procedures.

09922-22710: Drive chain cutting and joining tool set

REMOVING JOINT PIN

- Set up the special tool as shown in the illustration.

- ① Tool body
- ② Grip handle
- ③ Pressure bolt A
- ④ Pressure bolt B
- ⑤ Bar
- ⑥ Adjuster bolt (with through hole)
- ⑦ Pin remover

NOTE:

The tip of pin remover ⑦ should be positioned inside approximately 5 mm (0.2 in) from the end face of pressure bolt A ③ as shown in the illustration.

- Place the drive chain link being disjoined on the holder part ⑧ of the tool.
- Turn in both the adjuster bolt ⑥ and pressure bolt A ③ so that each of their end hole fits over the chain joint pin properly.
- Tighten the pressure bolt A ③ with the bar.

- Turn in the pressure bolt B ④ with the bar ⑤ and force out the drive chain joint pin ⑨.

CAUTION:

Continue turning in the pressure bolt B ④ until the joint pin has been completely pushed out of the chain.

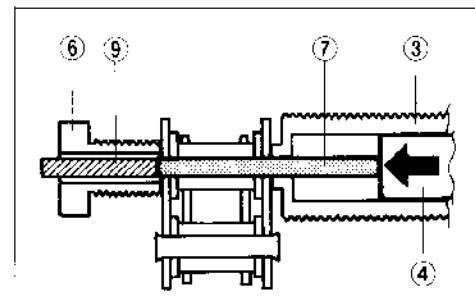
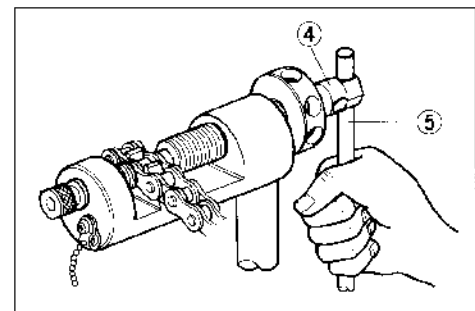
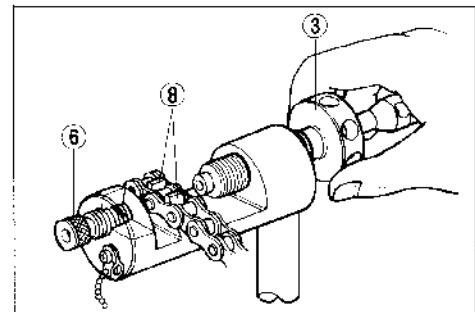
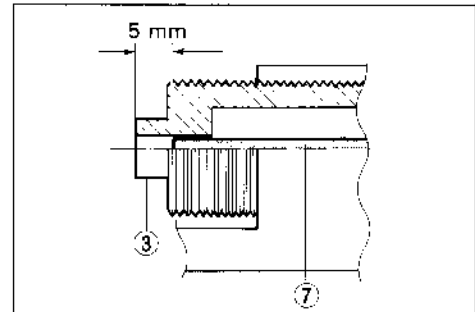
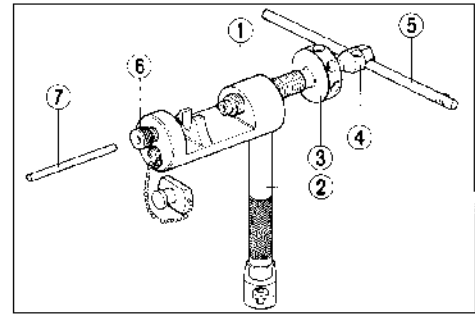
NOTE:

After the joint pin ⑨ is removed, loosen the pressure bolt B ④ and then pressure bolt A ③.

- Remove the joint pin of the other side of joint plate.

CAUTION:

Never reuse joint pins, O-rings and plates. After joint pins, O-rings and plates have been removed from the drive chain, the removed joint pins, O-rings and plates should be discarded and new joint plate, O-rings and plate must be installed.



INSTALLING JOINT PLATE AND STAKING JOINT PIN

INSTALLING JOINT PLATE

- Set up the special tool as shown in the illustration.

- | | |
|--|--------------------------------|
| ① Tool body | ⑤ Adjuster bolt (without hole) |
| ② Grip handle | ⑥ Pressure bolt A |
| ③ Joint plate holder (engraved mark "F50") | ⑦ Bar |
| ④ Wedge holder & wedge pin | |

- Connect both ends of the drive chain with the joint pin ⑧ inserted from the wheel side as installed on the motorcycle.

- ⑨ O-ring...4 pcs
- ⑩ Joint plate

- Apply grease on the recessed portion of the joint plate holder ③ and set the joint plate ⑩.

NOTE:

When positioning the joint plate ⑩ on the tool, bring its stamp mark on the joint plate holder ③ side.

- Set the drive chain on the tool as illustrated and turn in the adjuster bolt ⑤ to secure the wedge holder & wedge pin ④.
- Turn in the pressure bolt A ⑥ and align two joint pins ⑪ properly with the respective holes in joint plate ⑩.
- Turn in the pressure bolt A ⑥ further using the bar ⑦ to press the joint plate over the joint pins.

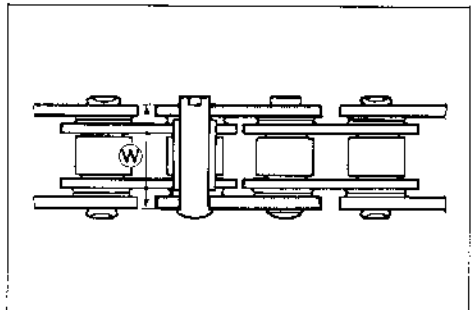
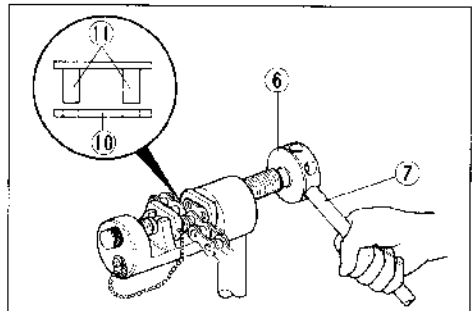
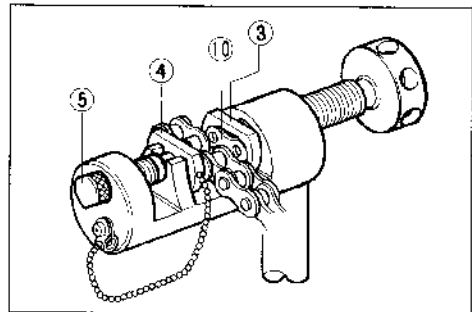
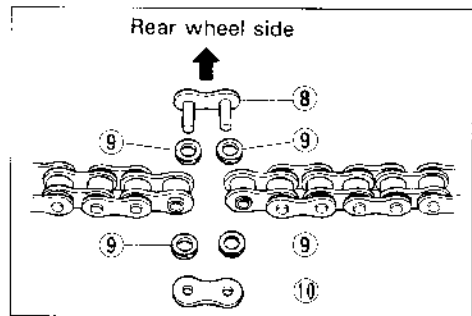
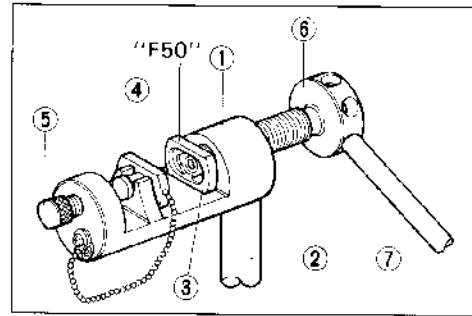
- Continue pressing the joint plate until the distance between the two joint plates comes to the specification.

Joint plates distance specification W

21.85–22.15 mm (0.860–0.872 in)

CAUTION:

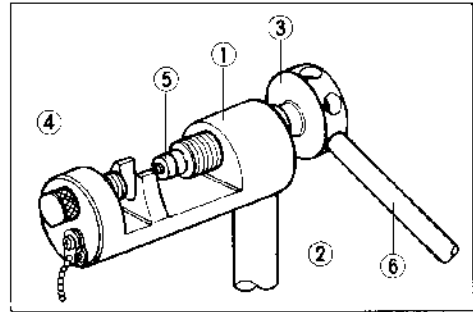
Should pressing of the joint plate be made excessively beyond the specified dimension, the work should be redone using the new joint parts.



STAKING JOINT PIN

- Set up the special tool as shown in the illustration.

- ① Tool body
- ② Grip handle
- ③ Pressure bolt A
- ④ Adjuster bolt (without hole)
- ⑤ Staking pin (stowed inside grip handle behind rubber cap)
- ⑥ Bar

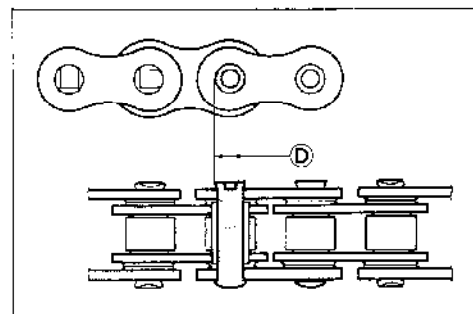
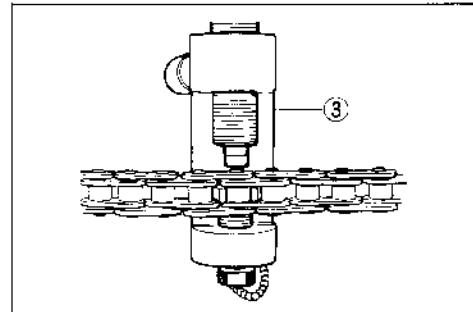


- Stake the joint pin by turning (approximately 7/8 turn) the pressure bolt A (3) with the bar until the pin end diameter becomes the specified dimension.

Pin end diameter specification ⓓ
5.45—5.85 mm (0.215—0.230 in)

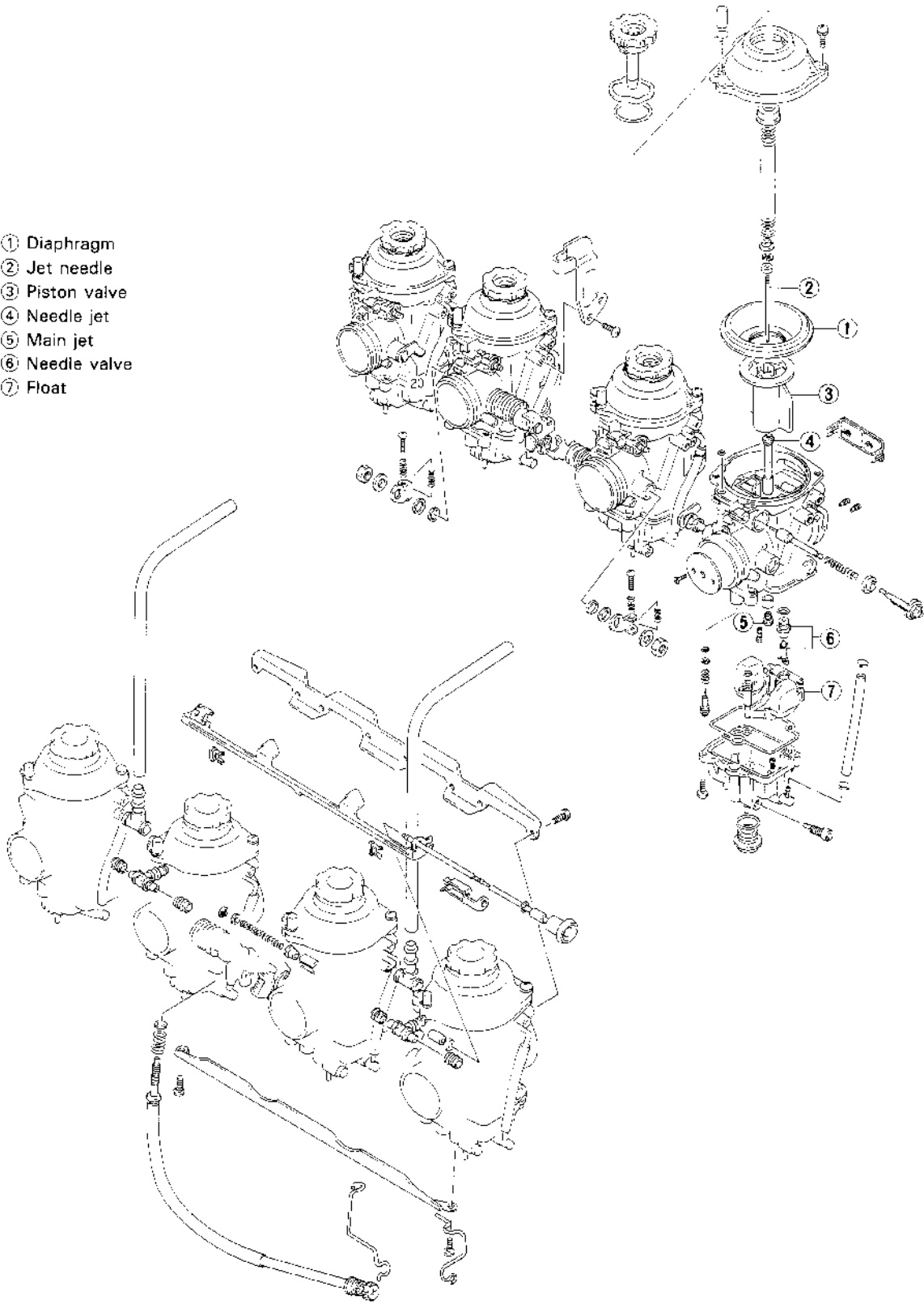
CAUTION:

- * After joining of the chain has been completed, check to make sure that the link is smooth and no abnormal condition is found.
- * Should any abnormal condition be found, reassemble the chain link using the new joint parts.



CARBURETOR

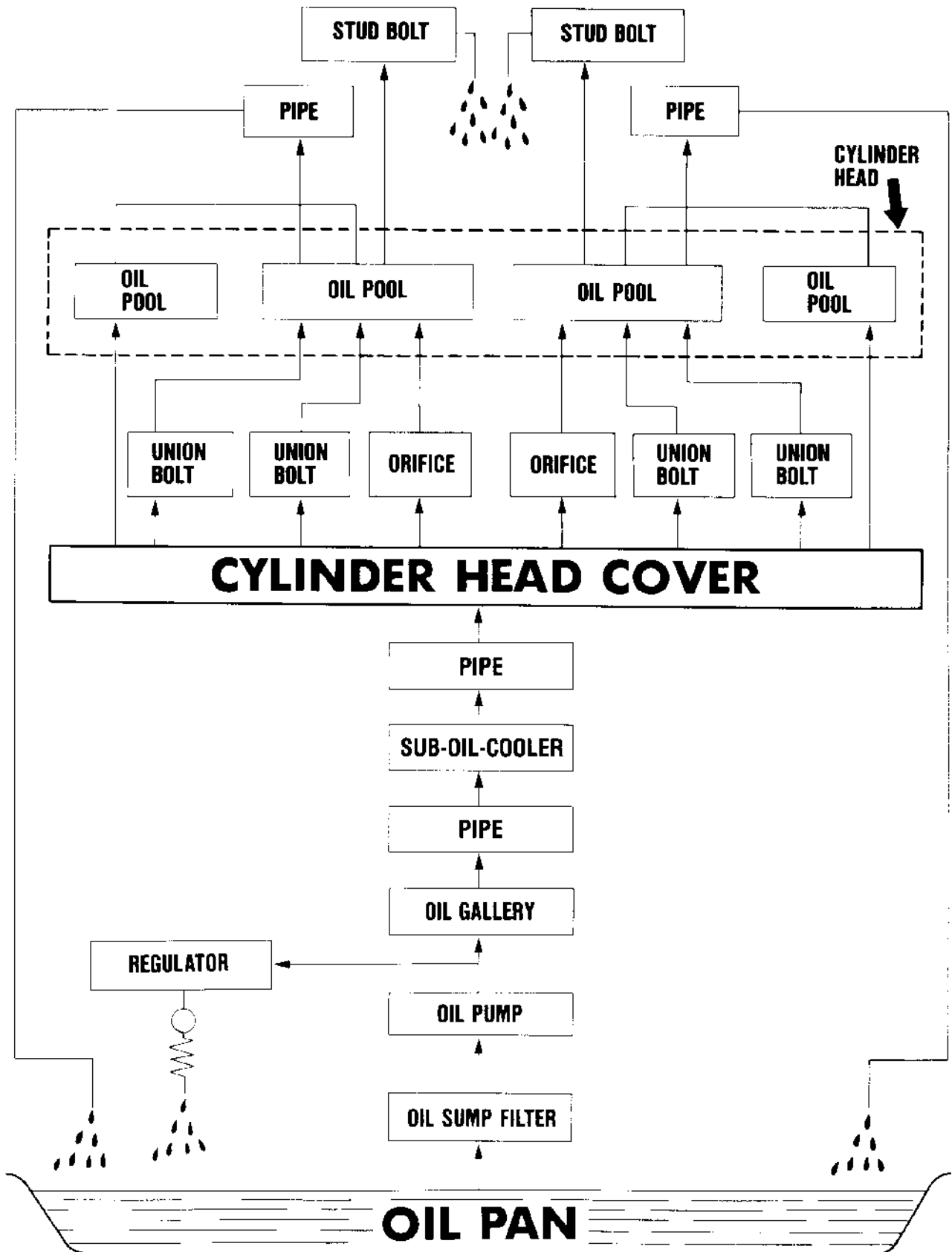
- ① Diaphragm
- ② Jet needle
- ③ Piston valve
- ④ Needle jet
- ⑤ Main jet
- ⑥ Needle valve
- ⑦ Float



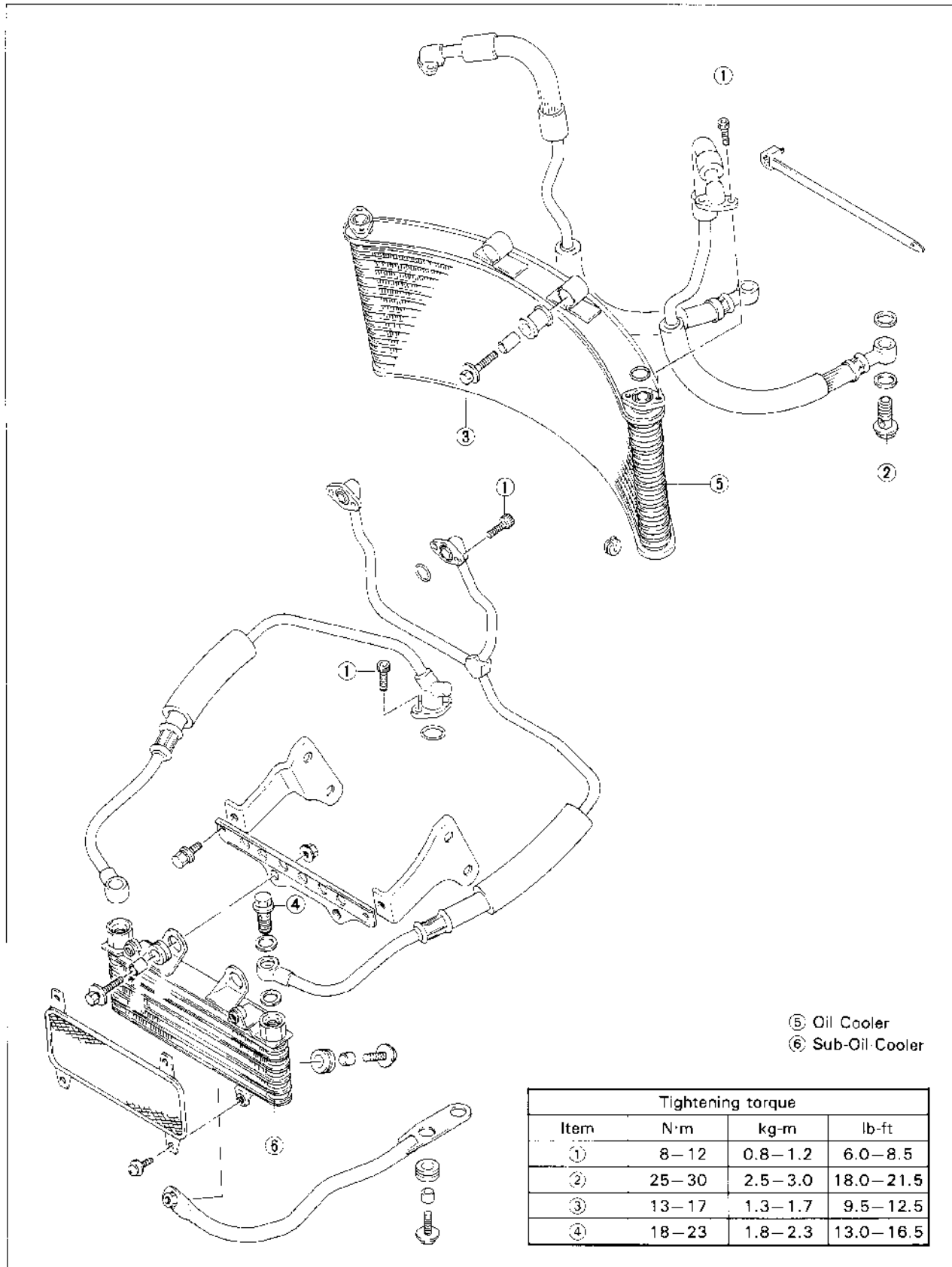
SPECIFICATIONS

ITEM	SPECIFICATIONS		
	The others	France	W.Germany
Carburetor type	MIKUNI BST40SS	←	←
Bore size	40 mm	←	←
I.D. No.	07D00	07D10	07D30
Idle r/min.	1 100 ± 100 r/min.	←	←
Float height	14.7 ± 1.0 mm (0.58 ± 0.04 in)	←	←
Main jet (M.J.)	# 115	# 110	←
Main air jet (M.A.J.)	0 mm	←	←
Jet needle (J.N.)	6ZEZ3-3rd	←	←
Needle jet (N.J.)	P-0	←	←
Throttle valve (Th.V.)	# 125	←	←
Pilot jet (P.J.)	# 37.5	←	# 32.5
By-pass (B.P.)	#10.8, #20.8, #30.8 mm	←	←
Pilot outlet (P.O.)	0.7 mm	←	←
Valve seat (V.S.)	2.5 mm	←	←
Starter jet (G.S.)	# 40	←	←
Pilot screw (P.S.)	PRE-SET (1 1/2 turns back)	←	PRE-SET (1 turn back)
Pilot air jet (P.A.J.)	1.0 mm	←	←
Power jet (P.W.J.)	NIL	# 62.5	No.1 & 4: # 65 No.2 & 3: # 55
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←	←

CYLINDER HEAD COOLING SYSTEM CHART



OIL COOLER AND SUB-OIL-COOLER



STARTER RELAY

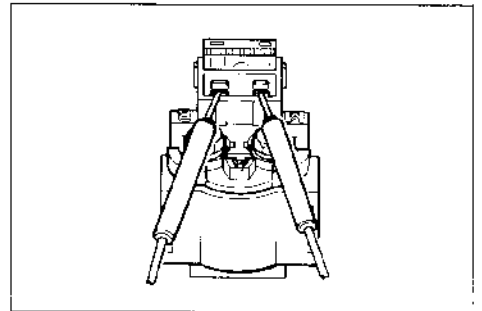
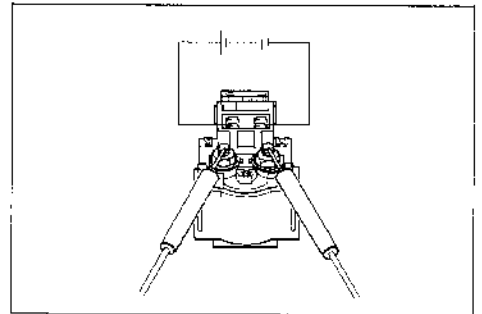
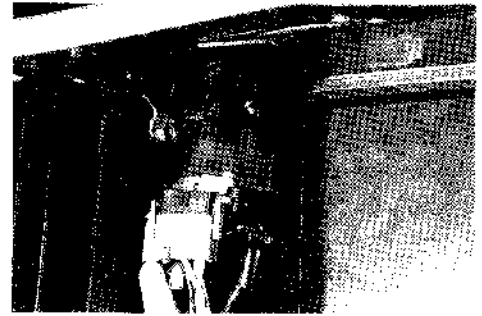
- Disconnect the starter relay lead wires.
 - Disconnect the lead wire of starter motor at starter relay.
 - Turn on the ignition switch, inspect the continuity between the terminals, positive and negative, when squeezing the clutch lever (only for Canada) and pushing the starter button.
- If the starter relay is in sound condition, continuity is found.

09900-25002 : Pocket tester

- Check the coil for "open", "ground" and ohmic resistance.
- The coil is in good condition if the resistance is as follows.

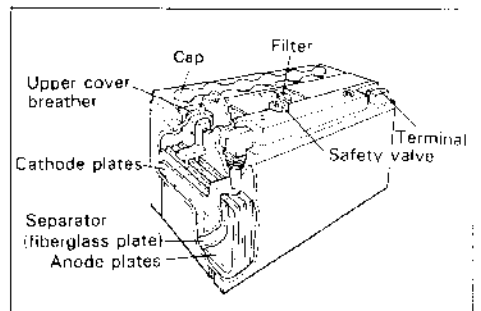
STD resistance : 3—5 Ω

09900-25002 : Pocket tester



BATTERY SPECIFICATIONS

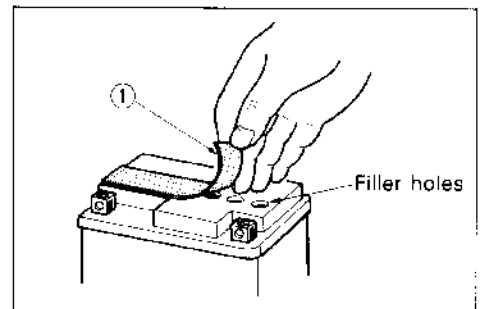
Type designation	YTX12-BS
Capacity	12V, 36 kC (10 Ah)/ 10 HR
Standard electrolyte S.G.	1.320 at 20°C (68°F)



INITIAL CHARGING

Filling electrolyte

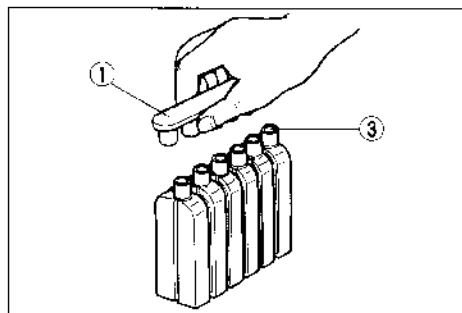
- Remove the aluminum tape ① sealing the battery electrolyte filler holes.



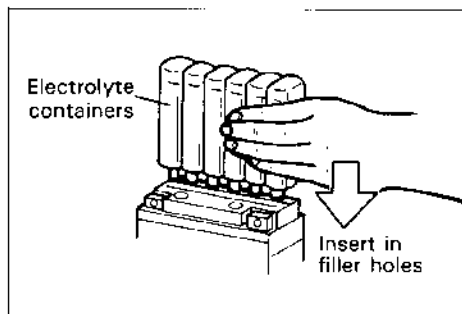
- Remove the caps ①.

NOTE:

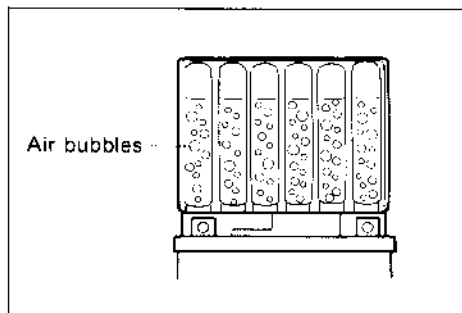
- * After filling the electrolyte completely, use the removed caps ① as the sealed caps of battery filler holes.
- * Do not remove or pierce the sealed areas ② of the electrolyte container.



- Insert the nozzles of the electrolyte container into the battery's electrolyte filler holes, holding the container firmly so that it does not fall. Take precaution not to allow any of the fluid to spill.



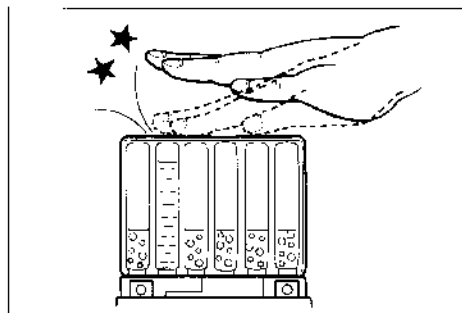
- Make sure air bubbles are coming up each electrolyte container, and leave in this position for about more than 20 minutes.



NOTE:

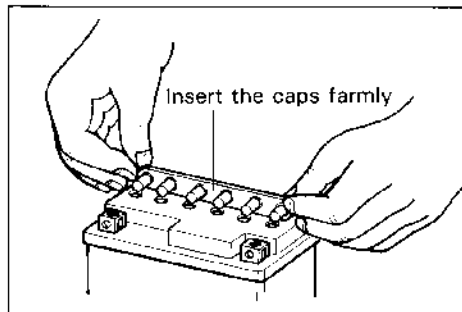
If no air bubbles are coming up from a filler port, tap the bottom of the container two or three times. Never remove the container from the battery.

- After confirming that the electrolyte has entered the battery completely, remove the electrolyte containers from the battery. Wait for around 20 minutes.
- Insert the caps into the filler holes, pressing in firmly so that the top of the caps do not protrude above the upper surface of the battery's top cover.



CAUTION:

- * Never use anything except the specified battery.
- * Once install the caps to the battery, do not remove the caps.



- Using SUZUKI pocket tester, measure the battery voltage. The tester should indicate more than 12.5V (DC) as shown in the Fig. If the battery voltage is lower than the specification, charge the battery with a battery charger. (Refer to the recharging operation.)

NOTE:

Initial charging for a new battery is recommended if two years have elapsed since the date of manufacture.

SERVICING

Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one. If the battery terminals are found to be coated with rust or an acidic white powdery substance, then this can be cleaned away with sandpaper.

RECHARGING OPERATION

- Using the pocket tester, check the battery voltage. If the voltage reading is less than the 12.0V (DC), recharge the battery with a battery charger.

CAUTION:

When recharging the battery, remove the battery from the motorcycle.

NOTE:

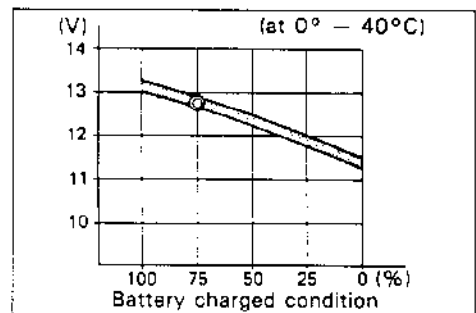
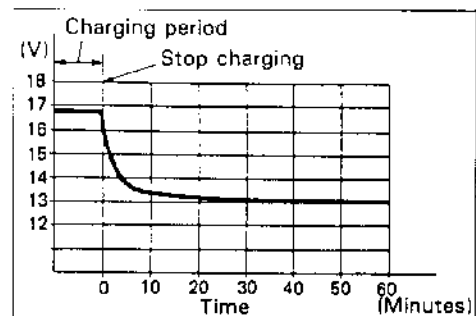
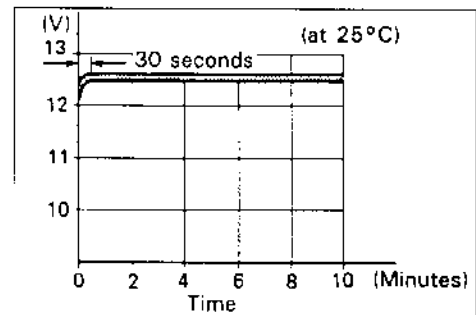
Do not remove the caps on the battery top while recharging.

Recharging time : 5A for 1 hour or 1.2A for 5 hours

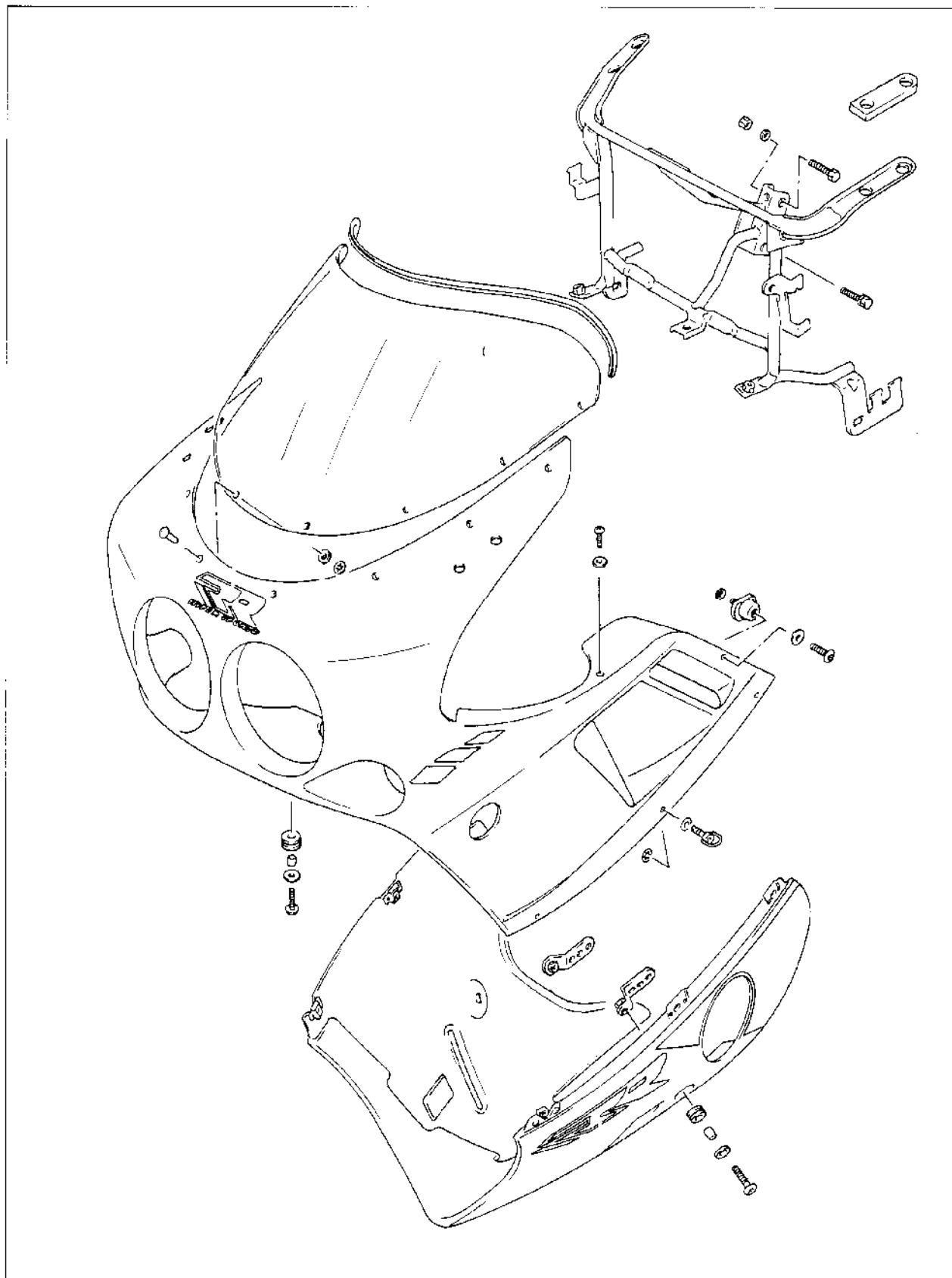
CAUTION:

Be careful not to permit the charging current to exceed 5A at any time.

- After recharging, wait for more than 30 minutes and check the battery voltage with a pocket tester.
- If the battery voltage is less than the 12.5V, recharge the battery again.
- If battery voltage is still less than 12.5V after recharging, replace the battery with a new one.
- When a battery is left for a long term without using, it is subject to discharge. When the motorcycle is not used for more than 1 month (especially during the winter season), recharge the battery once a month at least.



FAIRING



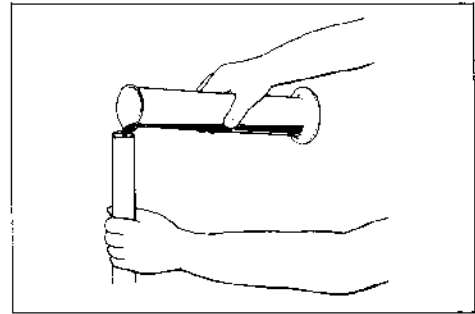
FRONT AND REAR SUSPENSION

FRONT FORK

- Use front fork oil whose viscosity rating meets specifications below.

Fork oil type : SUZUKI fork oil SS7 or an equivalent fork oil
99000-99001-SS7 : SUZUKI fork oil SS7

Fork oil capacity (each leg) : 411 ml (13.9/14.5 US/Imp oz)



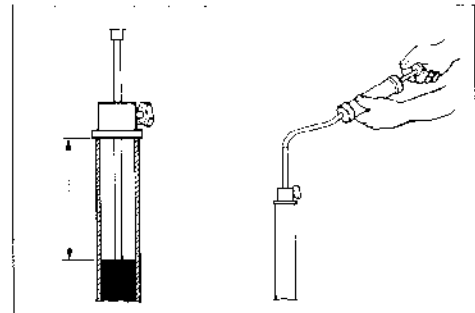
- Hold the front fork vertical and adjust fork oil level with the special tool.

Fork oil level : 148 mm (5.8 in)

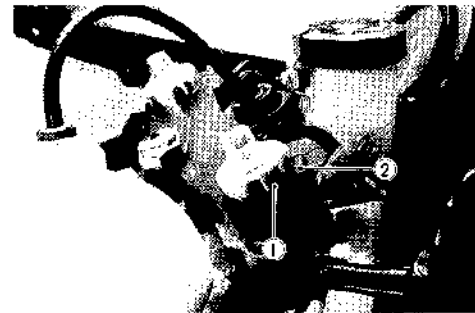
09943-74111 : Fork oil level gauge

NOTE:

When adjusting fork oil level, remove the fork spring and compress the inner tube fully.



- When installing the front fork to the motorcycle, align the upper line ① of the two lines on the inner tube with the upper surface ② of the steering stem upper bracket.

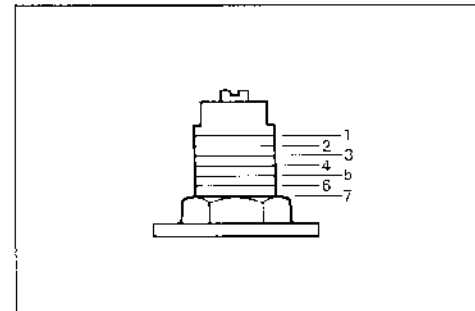


ADJUSTMENT

After installing the front fork, adjust the spring pre-load and damping force as follows.

SPRING PRE-LOAD ADJUSTMENT

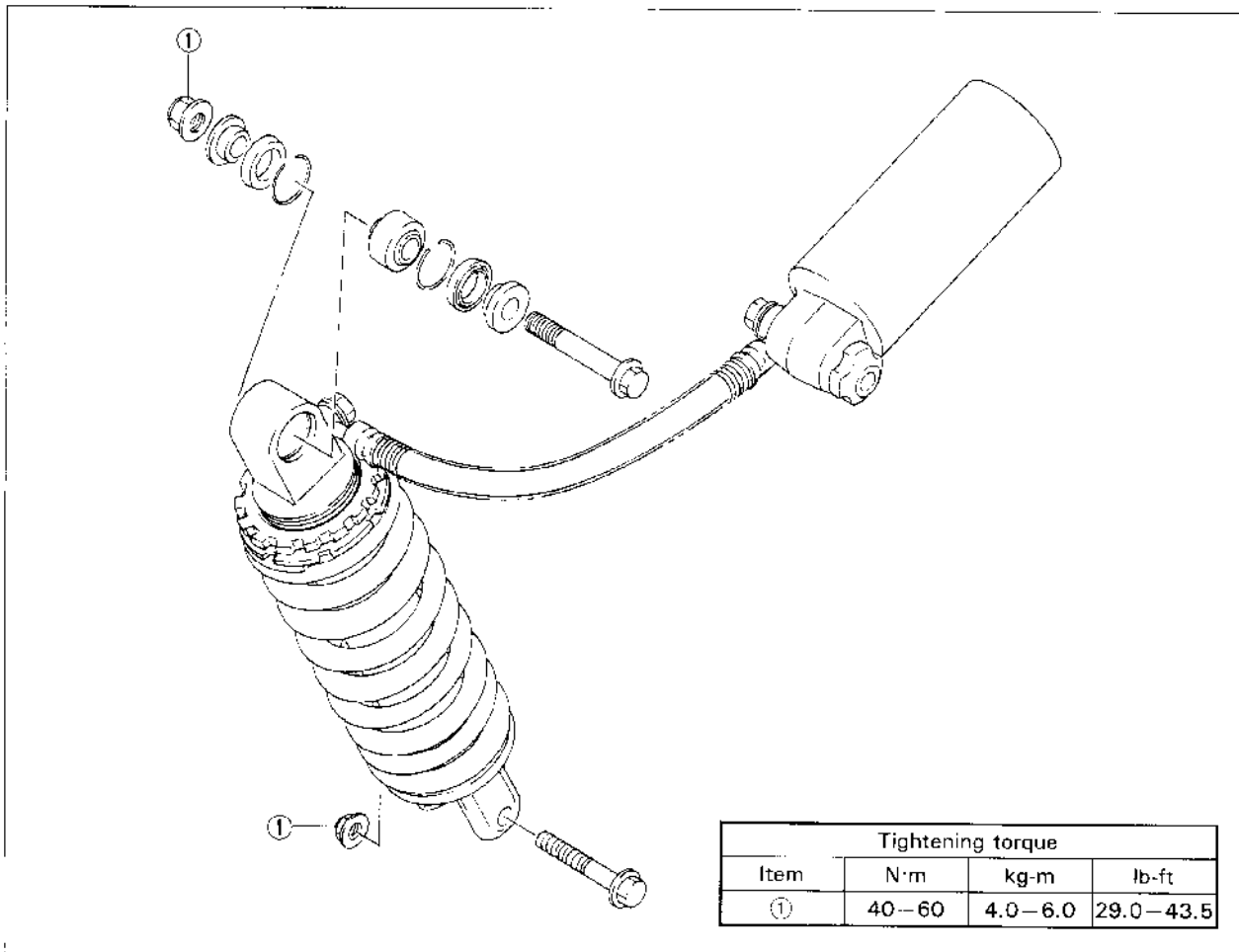
There are seven grooved lines on the side of the adjuster. Position 1 provides the maximum spring pre-load and position 7 provides the minimum spring pre-load.



STANDARD SUSPENSION SETTING

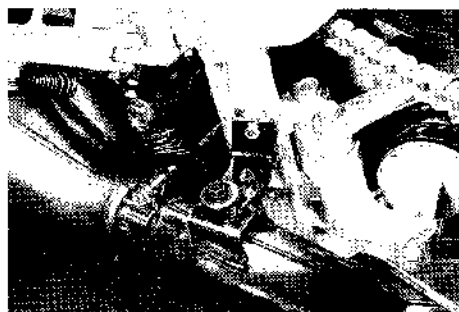
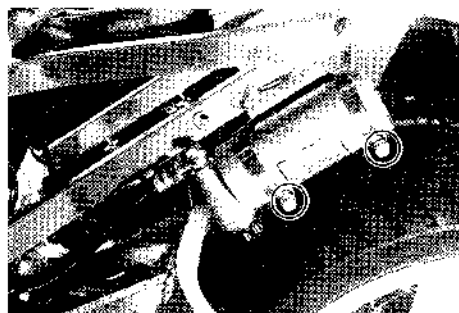
Spring-preload adjuster	FRONT		Spring set length 200.5 mm (7.89 in)	REAR	
	Damping force adjuster			Damping force adjuster	
	Rebound	Compression		Rebound	Compression
3 1/2	4	5		2	6 ± 2

REAR SHOCK ABSORBER



REMOVAL

- Remove the battery. (Refer to page 9-15.)
- Remove the rear fender upper with the battery holder. (Refer to page 9-16.)
- Remove the rear shock absorber mounting bolts and reservoir tank mounting bands.



INSPECTION AND DISASSEMBLY

Inspect the shock absorber for oil leakage or other damage.

- Loosen the adjuster lock and adjuster rings with the special tool.

09910-60611 : Universal clamp wrench

- Compress the spring with the special tool, and remove the spring stoppers, spring guide and spring.

09940-71430 : Rear suspension spring compressor

CAUTION:

Do not attempt to disassemble the reservoir tank. It is not serviceable.

NOTE:

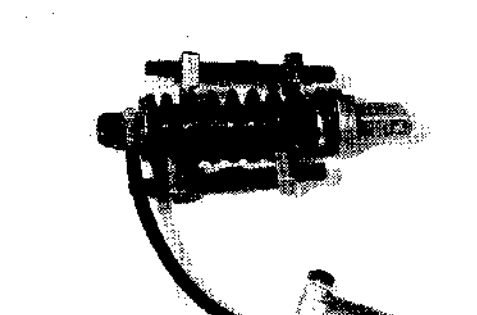
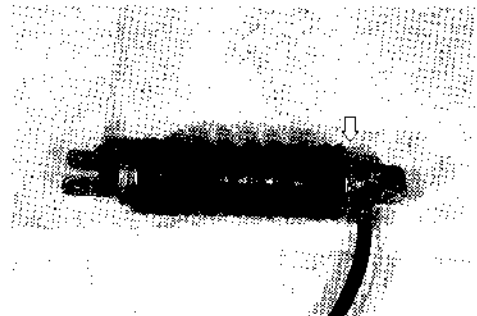
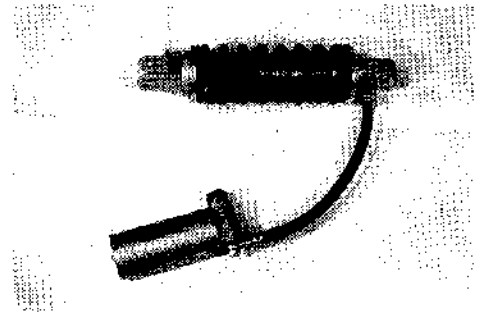
Standard spring is not available.

REASSEMBLY AND REMOUNTING

Reassemble and remount the rear shock absorber in the reverse order of removal and disassembly.

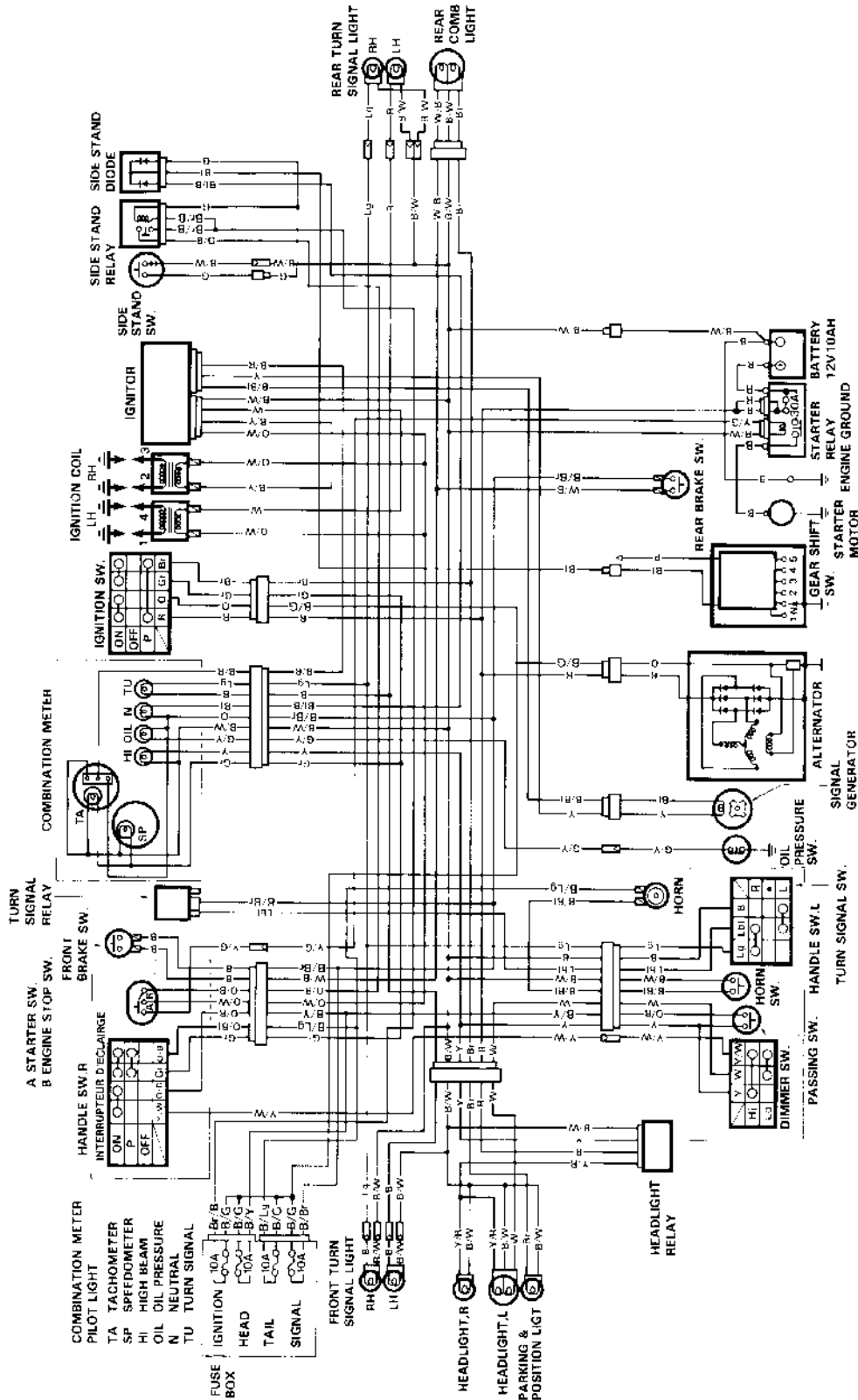
REAR SWINGARM

- When removing the rear swingarm, disconnect the drive chain. (Refer to page 9-23.)



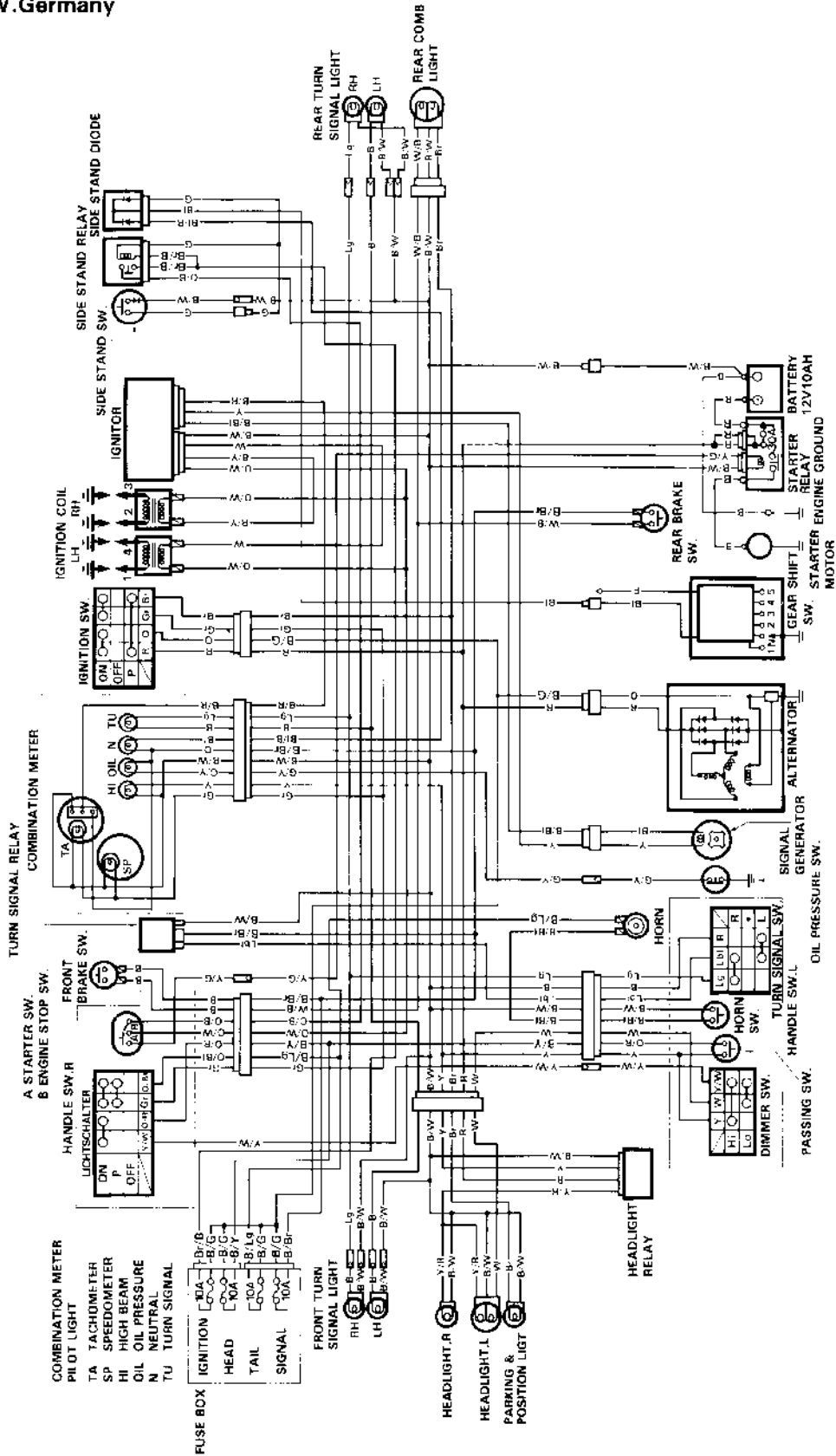
WIRING DIAGRAM

For France



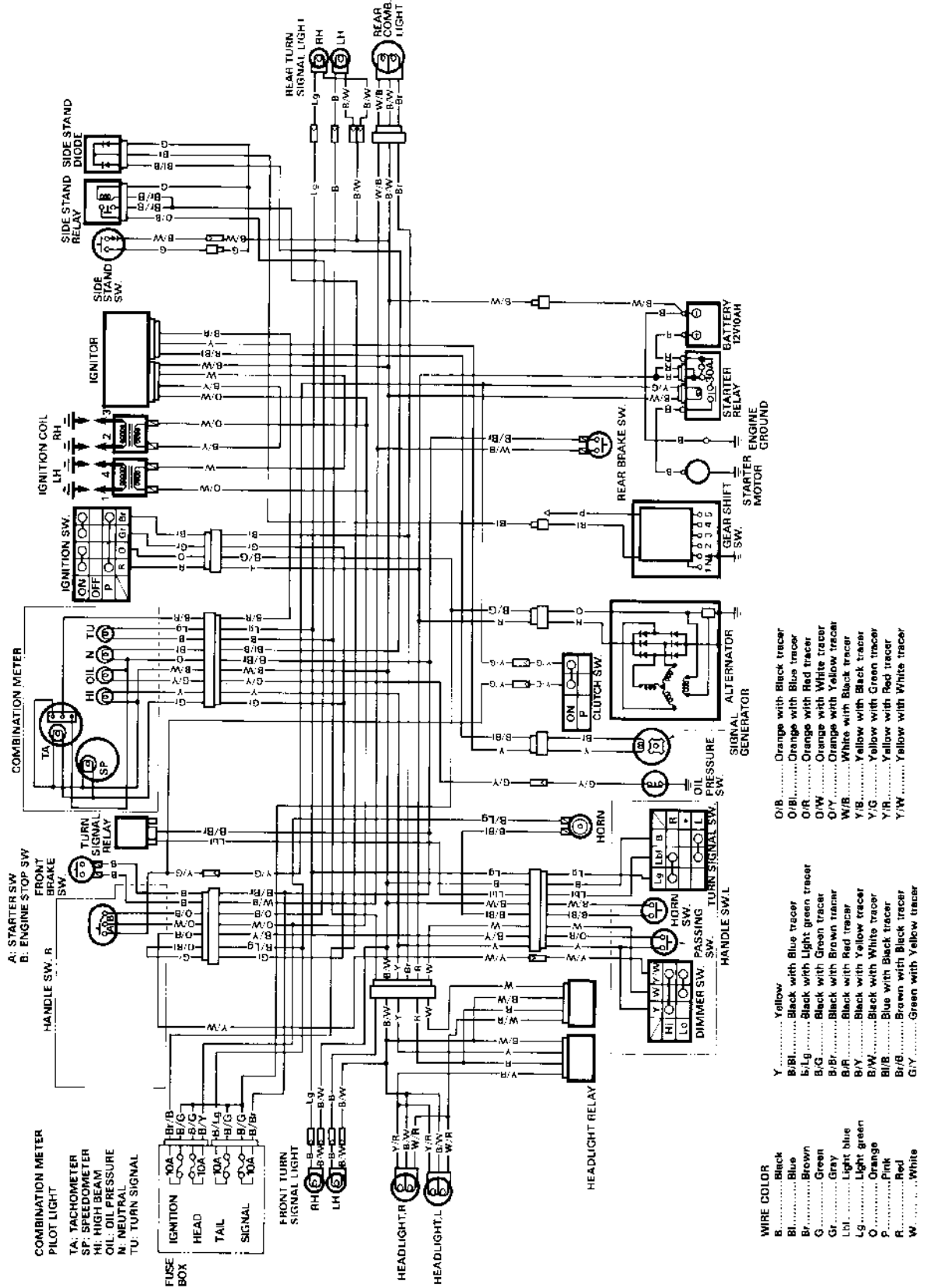
- WIRE COLOR**
- B Black
 - Bl Blue
 - Br Brown
 - G Green
 - Gr Gray
 - Lbl Light blue
 - Lg Light green
 - O Orange
 - P Pink
 - R Red
 - W White
- Tracer Codes:**
- O/B Orange with Black tracer
 - O/Bl Orange with Blue tracer
 - O/Br Orange with Brown tracer
 - O/G Orange with Green tracer
 - O/W Orange with White tracer
 - W/B White with Black tracer
 - Y/B Yellow with Black tracer
 - Y/G Yellow with Green tracer
 - Y/R Yellow with Red tracer
 - Y/W Yellow with White tracer
- Tracer Codes (continued):**
- Y Yellow
 - B/Bl Black with Blue tracer
 - B/Br Black with Brown tracer
 - B/G Black with Green tracer
 - B/Gr Black with Gray tracer
 - B/Lbl Black with Light blue tracer
 - B/Lg Black with Light green tracer
 - B/O Black with Orange tracer
 - B/P Black with Pink tracer
 - B/R Black with Red tracer
 - B/W Black with White tracer
 - G/Y Green with Yellow tracer

For W.Germany

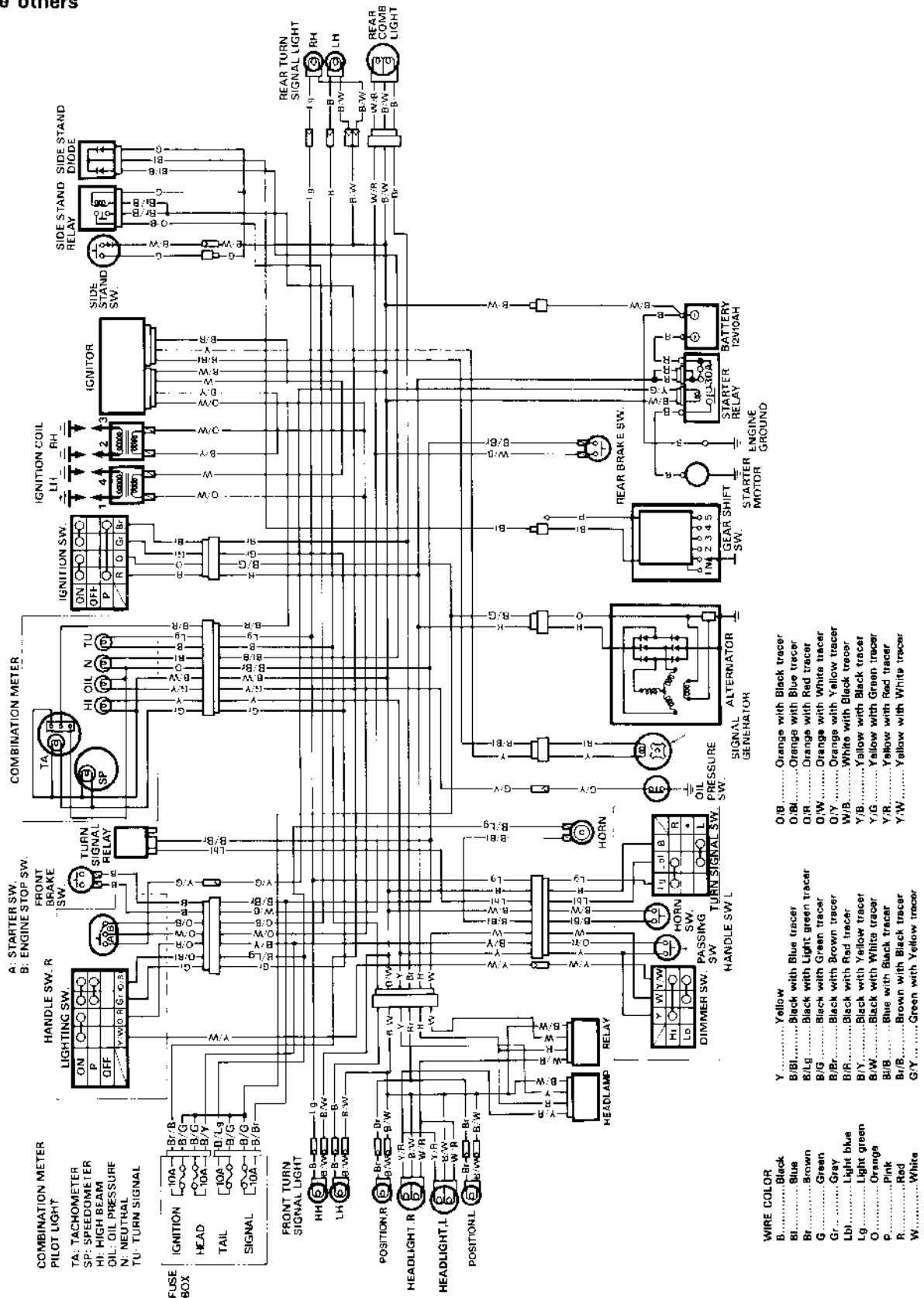


- WIRE COLOR**
- B.....Black
 - Bl.....Blue
 - Br.....Brown
 - G.....Green
 - Gr.....Gray
 - Ll.....Light blue
 - Lg.....Light green
 - O.....Orange
 - P.....Pink
 - R.....Red
 - W.....White
 - Y.....Yellow
 - B/Bl.....Black with Blue tracer
 - B/Br.....Black with Brown tracer
 - B/G.....Black with Green tracer
 - B/Ll.....Black with Light blue tracer
 - B/Lg.....Black with Light green tracer
 - B/R.....Black with Red tracer
 - B/W.....Black with White tracer
 - B/Y.....Black with Yellow tracer
 - Bl/W.....Blue with White tracer
 - Br/B.....Brown with Black tracer
 - Br/Y.....Brown with Yellow tracer
 - Bl/Y.....Blue with Yellow tracer
 - Y.....Orange with Black tracer
 - O/Bl.....Orange with Blue tracer
 - O/R.....Orange with Red tracer
 - O/W.....Orange with White tracer
 - O/Y.....Orange with Yellow tracer
 - W/B.....White with Black tracer
 - Y/B.....Yellow with Black tracer
 - Y/G.....Yellow with Green tracer
 - Y/R.....Yellow with Red tracer
 - Y/W.....Yellow with White tracer

For Canada

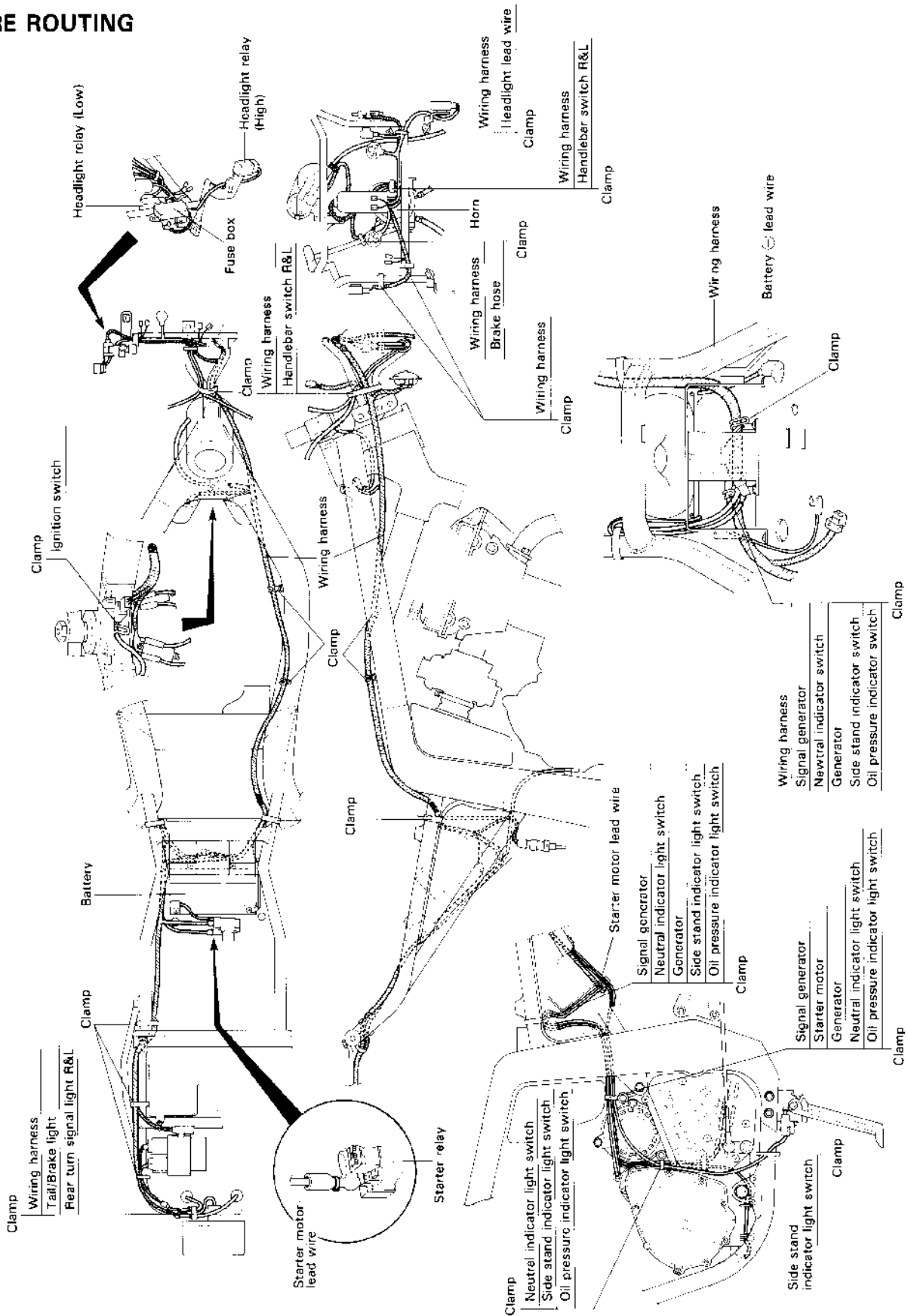


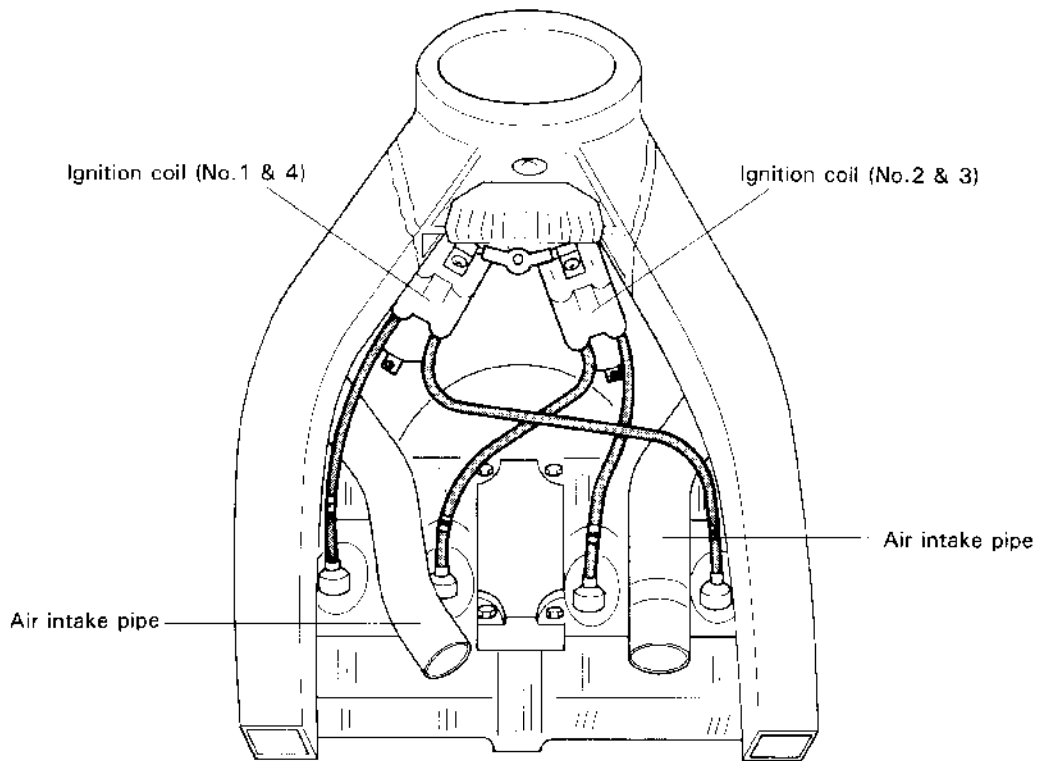
For the others



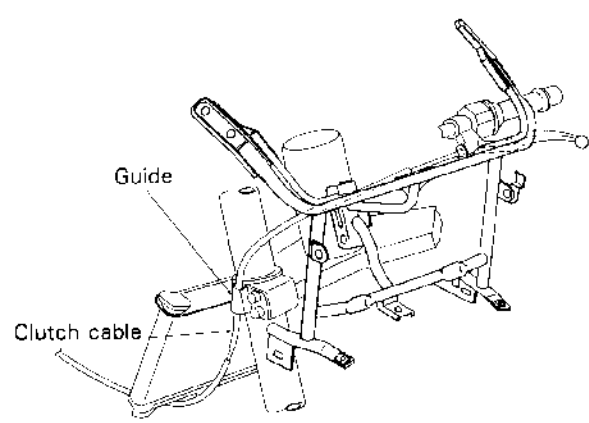
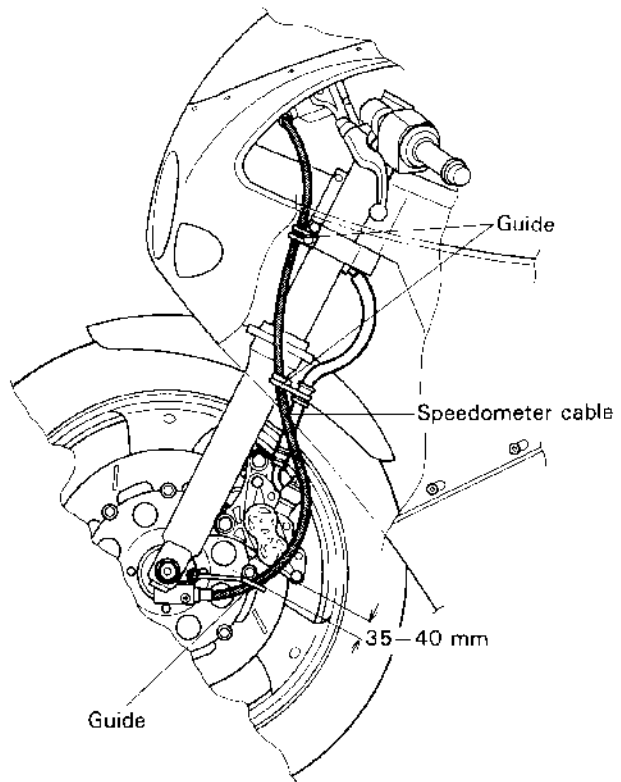
WIRE, CABLE AND HOSE ROUTING

WIRE ROUTING

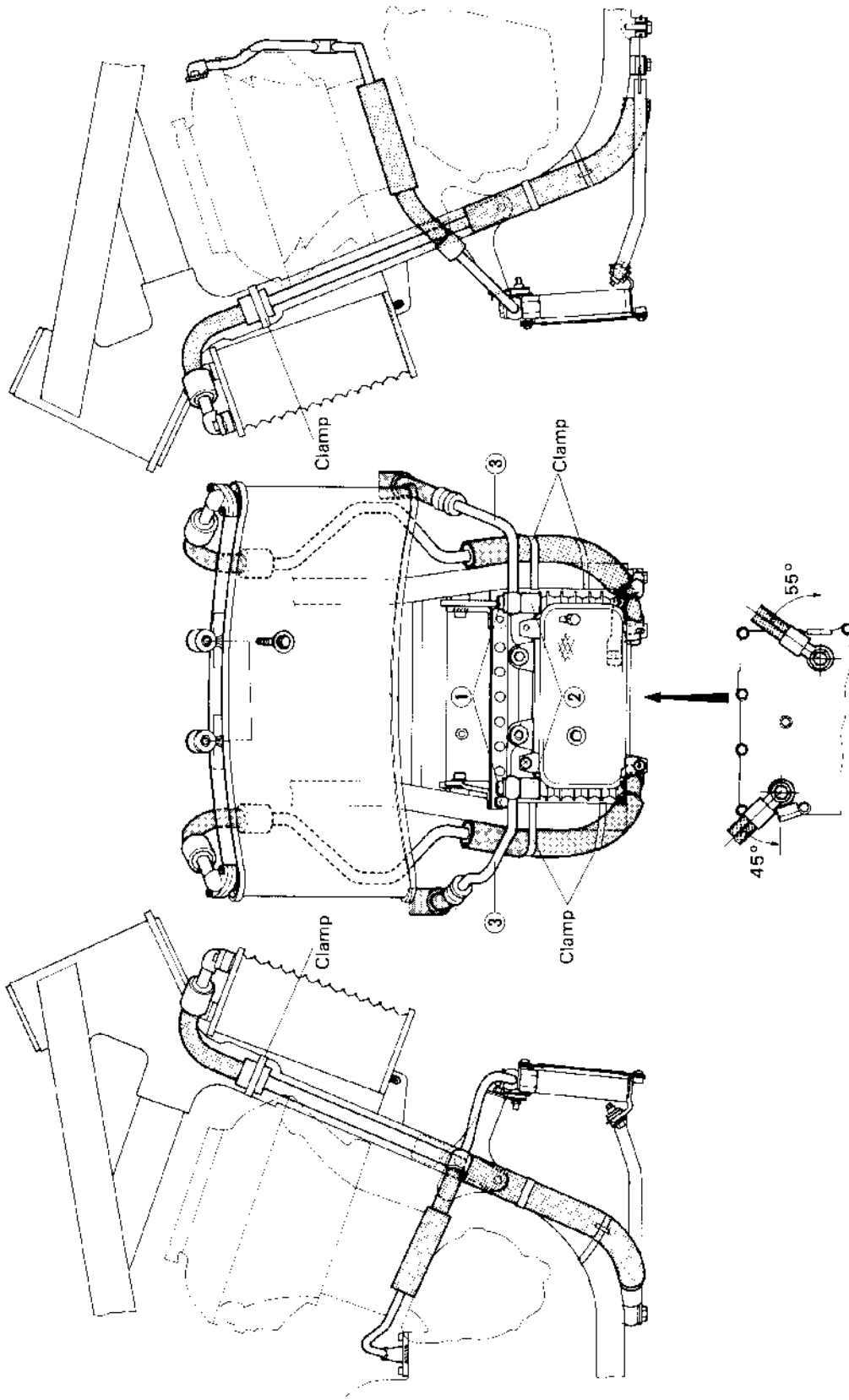




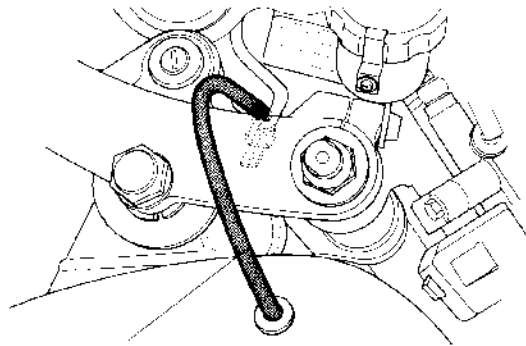
CABLE ROUTING



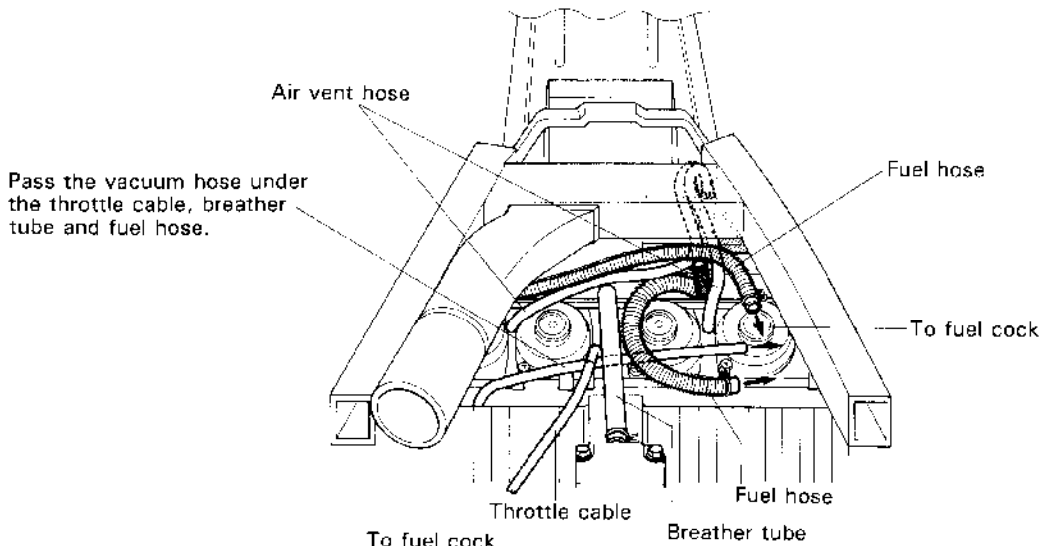
HOSE ROUTING



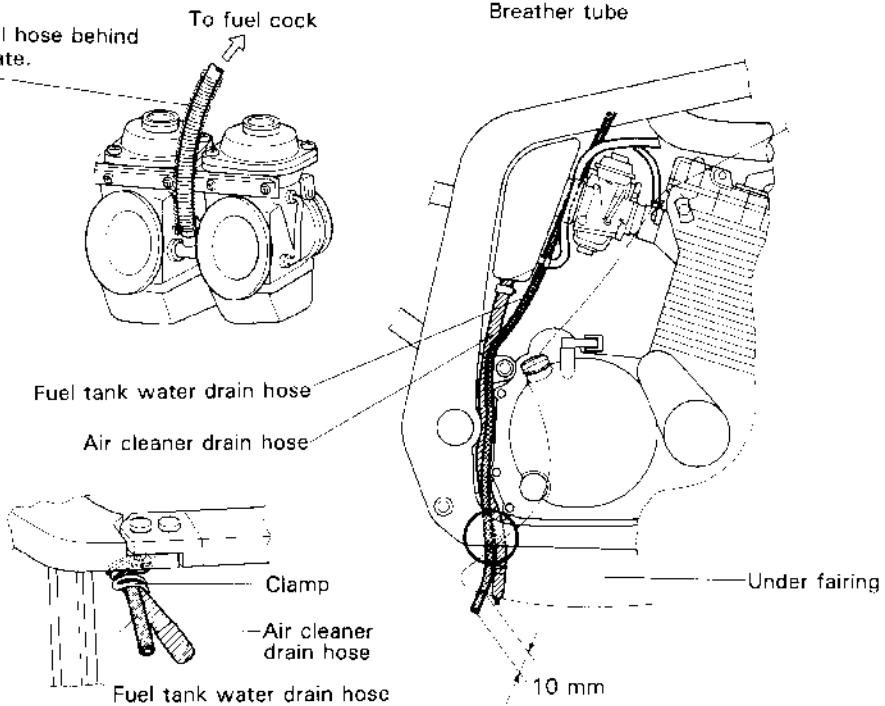
CAUTION:
When tightening the sub-oil-cooler union bolt ①, hold the hexagon part ② of the sub-oil-cooler with the open-end wrench and oil hoses ③.

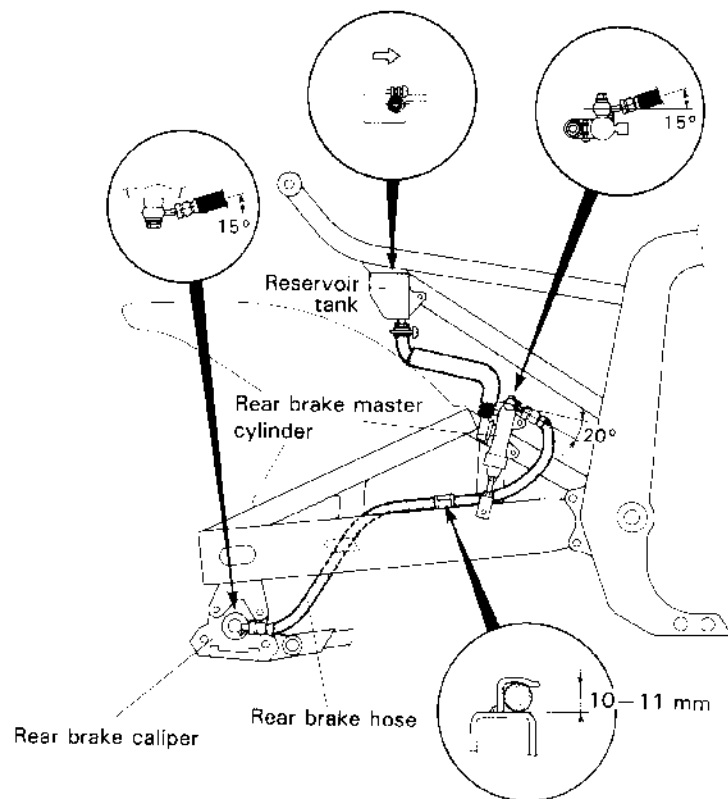
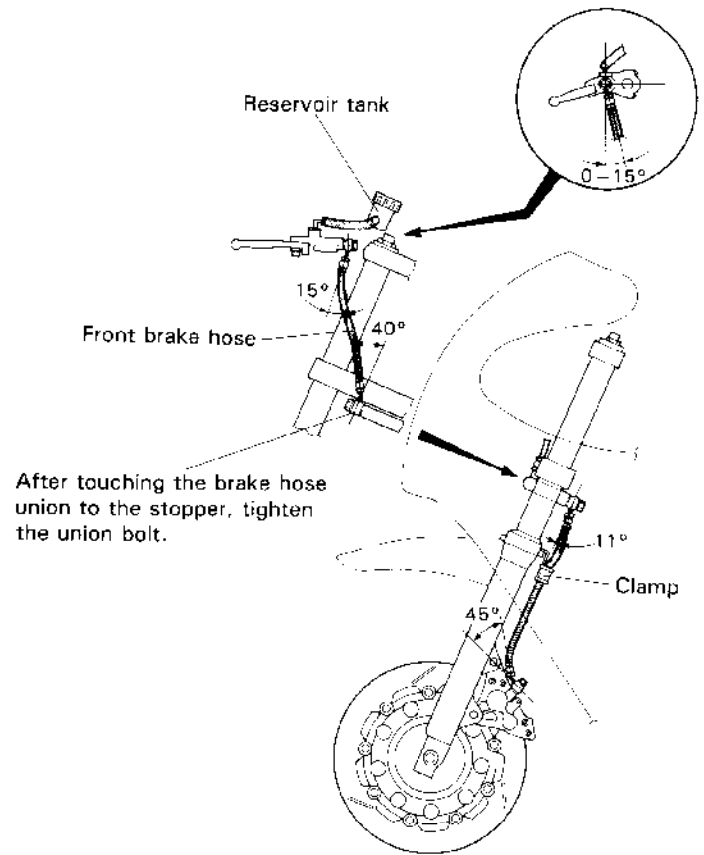


Fuel tank breather hose



Pass the both fuel hose behind the carburetor plate.





GSX-R750L ('90-MODEL)

FOREWORD

This chapter describes up-to-date service procedures which differ from those of the GSX-R750K.

NOTE:

- Any differences between GSX-R750K and GSX-R750L in specifications and service data are clearly indicated with the asterisk marks(*).
- Please refer to the sections 1 through 9 for details which are not given in this section.

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SYMBOL AND DESTINATION

E-01: For General market	E-17: For Sweden	E-25: For Netherlands
E-02: For U.K.	E-18: For Switzerland	E-28: For Canada
E-04: For France	E-21: For Belgium	E-34: For Italy
E-15: For Finland	E-22: For W. Germany	E-39: For Austria
E-16: For Norway	E-24: For Australia	E-53: For Spain

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length.....	2 060 mm (81.1 in)
Overall width.....	730 mm (28.7 in)
Overall height.....	*1 140 mm (44.8 in)
Wheelbase.....	*1 415 mm (55.7 in)
Seat height.....	795 mm (31.2 in)
Ground clearance.....	*125 mm (4.9 in)
Dry mass.....	*193 kg (425 lbs)

ENGINE

Type.....	Four-stroke, Air-cooled with SACS, DOHC, TSCC
Number of cylinders...	4
Bore.....	*70.0 mm (2.756 in)
Stroke.....	*48.7 mm (1.917 in)
Piston displacement....	*749 cm ³ (45.7 cu.in)
Compression ratio.....	10.9:1
Carburetor.....	*MIKUNI BST38SS, four
Air cleaner.....	Polyester fiber element
Starter system.....	Electric starter motor
Lubrication system.....	Wet sump

TRANSMISSION

Clutch.....	Wet multi-plate type
Transmission.....	6-speed constant mesh
Gearshift pattern.....	1-down, 5-up
Primary reduction.....	*1.744 (75/43)
Final reduction.....	*2.866 (43/15)
Gear ratios, Low.....	2.769 (36/13)
2nd.....	2.062 (33/16)
3rd.....	1.647 (28/17)
4th.....	1.400 (28/20)
5th.....	1.227 (27/22)
Top.....	1.095 (23/21)
Drive chain.....	TAKASAGO: RK50GSV-ZI 108 links, ENDLESS

CHASSIS

Front suspension.....	Telescopic, oil damped, spring preload fully adjustable, rebound damping force and compression damping force adjustable
-----------------------	---

Rear suspension.....	*Link type suspension system, gas/oil damped, rebound and compression damping force adjustable
Steering angle.....	30° (right & left)
Caster.....	*64°10'
Trail.....	*100 mm (3.9 in)
Turning radius.....	3.2 m (10.5 ft)
Front brake.....	Disc, twin
Rear brake.....	Disc
Front tire size.....	120/70 ZR17
Rear tire size.....	*170/60 ZR17
Front fork stroke.....	120 mm (4.7 in)
Rear wheel travel.....	136 mm (5.4 in)

ELECTRICAL

Ignition type.....	Fully transistorized
Ignition timing.....	13° B.T.D.C. at 1 500 r/min
Spark plug.....	N.G.K.: *CR10EK N.D.: *U31ETR
Battery.....	12 V 50.4 kC (14Ah)/10HR
Generator.....	Three-phase A. C. Generator
Fuse.....	*20/10/10/10/10 A
Circuit breaker.....	30 A

CAPACITIES

Fuel tank	
including reserve.....	21.0 L (5.5/4.6 US/Imp gal)
reserve.....	4.0 L (1.1/0.9 US/Imp gal)
Engine oil, oil change..	*3 200 ml (3.4/2.8 US/Imp qt)
Front fork oil.....	*462 ml (15.6/16.3 US/Imp oz)

These specifications are subject to change without notice.

Asterisk mark (*) indicates the New GSX-R750L model specifications.

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	*27 (1.1)	-----
	EX.	*24 (0.9)	-----
Valve lift	IN.	The others 8.8(0.35)	-----
		E-17 *8.2(0.32)	-----
Valve clearance (when cold)	IN.	0.10-0.15 (0.004-0.006)	-----
	EX.	0.18-0.23 (0.007-0.009)	-----
Valve guide to valve stem clearance	IN.	0.020-0.047 (0.0008-0.0019)	0.35 (0.014)
	EX.	0.040-0.067 (0.0016-0.0026)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000-5.012 (0.1969-0.1973)	-----
Valve stem O.D.	IN.	4.965-4.980 (0.1955-0.1961)	-----
	EX.	4.945-4.960 (0.1947-0.1953)	-----
Valve stem runout	IN. & EX.	-----	0.05 (0.002)
Valve head thickness	IN. & EX.	-----	0.5 (0.02)
Valve stem end length	IN. & EX.	-----	2.5 (0.10)
Valve seat width	IN. & EX.	0.9-1.1 (0.035-0.043)	-----
Valve head radial runout	IN. & EX.	-----	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	-----	33.9 (1.33)
	OUTER	-----	37.3 (1.47)
Valve spring tension (IN. & EX.)	INNER	6.0-6.8 kg (13.2-15.0 lbs) at length 28.0 mm (1.10 in)	-----
	OUTER	15.4-17.8 kg (34.0-39.2 lbs) at length 31.5 mm (1.24 in)	-----

CAMSHAFT + CYLINDER HEAD

ITEM	STANDARD		LIMIT
Cam height	IN.	The others *33.876-33.936 (1.3337-1.3361)	33.580 (1.3220)
		E-17 *33.584-33.644 (1.3222-1.3246)	*33.290 (1.3106)
	EX.	32.872-32.932 (1.2942-1.2965)	*32.580 (1.2827)

Asterisk mark (*) indicates the New GSX-R750L model specifications.

ITEM	STANDARD		LIMIT
Camshaft journal oil clearance	IN. & EX.	0.032–0.066 (0.0013–0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012–22.025 (0.8666–0.8671)	
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cam chain 20-pitch length		—	158.0 (6.22)
Cam chain pin (at arrow "3")		21st pin	—
Rocker arm I.D.	IN. & EX.	12.000–12.018 (0.4724–0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.973–11.984 (0.4714–0.4718)	—
Cylinder head distortion			0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT	
Compression pressure	1 000–1 400 kPa (10–14 kg/cm ²) (142–199 psi)		800 kPa (8 kg/cm ²) (114psi)	
Compression pressure difference	—		200 kPa (2 kg/cm ²) (28 psi)	
Piston to cylinder clearance	*0.055–0.065 (0.0022–0.0026)		0.120 (0.0047)	
Cylinder bore	*70.000–70.015 (2.7559–2.7565)		*70.075 (2.7589)	
Piston diam.	*69.940–69.955 (2.7535–2.7541) Measure at 15 mm (0.6 in) from the skirt end.		*69.880 (2.7512)	
Cylinder distortion	—		0.20 (0.008)	
Piston ring free end gap	1st	R	Approx. *9.8 (0.39)	*7.8 (0.31)
	2nd	R	Approx. *7.7 (0.30)	*6.2 (0.24)
Piston ring end gap	1st		*0.20–0.35 (0.008–0.014)	0.7 (0.03)
	2nd		0.20–0.35 (0.008–0.014)	0.7 (0.03)
Piston ring to groove clearance	1st		—	0.18 (0.007)
	2nd		—	0.18 (0.007)

Asterisk mark (*) indicates the New GSX-R750L model specifications.

ITEM	STANDARD		LIMIT
Piston ring groove width	1st	0.81–0.83 (0.032–0.033)	—
	2nd	0.81–0.83 (0.032–0.033)	—
	Oil	1.51–1.53 (0.059–0.060)	—
Piston ring thickness	1st	0.77–0.79 (0.030–0.031)	—
	2nd	0.77–0.79 (0.030–0.031)	—
Piston pin bore	*18.002–18.008 (0.7087–0.7090)		*18.030 (0.7098)
Piston pin O.D.	*17.996–18.000 (0.7085–0.7087)		*17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD		LIMIT
Conrod small end I.D.	*18.010–18.018 (0.7091–0.7094)		*18.040 (0.7102)
Conrod big end side clearance	0.10–0.20 (0.004–0.008)		0.30 (0.010)
Conrod big end width	20.95–21.00 (0.825–0.827)		—
Crank pin width	21.10–21.15 (0.831–0.833)		—
Conrod big end oil clearance	0.032–0.056 (0.0013–0.0022)		0.080 (0.0031)
Crank pin O.D.	*33.976–34.000 (1.3376–1.3386)		—
Crankshaft journal oil clearance	0.020–0.044 (0.0008–0.0017)		0.080 (0.0031)
Crankshaft journal O.D.	*31.976–32.000 (1.2589–1.2598)		—
Crankshaft thrust clearance	*0.055–0.110 (0.0022–0.0043)		—
Crankshaft thrust bearing thickness	Right side	*2.425–2.450 (0.0955–0.0965)	—
	Left side	*2.350–2.500 (0.0925–0.0984)	—
Crankshaft runout	—		0.05 (0.002)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	*1.898 (75/43 x 37/34)	—
Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ² , 43 psi) Below 600 kPa (6.0 kg/cm ² , 85 psi) at 3 000 r/min.	—

Asterisk mark (*) indicates the New GSX-R750L model specifications.

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2-3 (0.08-0.12)	---
Drive plate thickness (No.1 & No.2)	2.12-2.28 (0.083-0.090)	1.82 (0.072)
Driven plate distortion	---	0.10 (0.004)
Clutch spring free length	---	*47.5 (1.87)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT	
Primary reduction ratio	*1.744 (75/43)	---	
Final reduction ratio	*2.866 (43/15)	---	
Gear ratios	Low	2.769 (36/13)	
	2nd	2.062 (33/16)	
	3rd	1.647 (28/17)	
	4th	1.400 (28/20)	
	5th	1.227 (27/22)	
	Top	1.095 (23/21)	
Shift fork to groove clearance	No.1, No.2 & No.3	0.10-0.30 (0.004-0.012)	0.50 (0.020)
Shift fork groove width	No.1 & No.3	4.80-4.90 (0.189-0.193)	---
	No.2	5.00-5.10 (0.197-0.201)	---
Shift fork thickness	No.1 & No.3	4.60-4.70 (0.181-0.185)	---
	No.2	4.80-4.90 (0.189-0.193)	---
Drive chain	Type	TAKASAGO: RK50GSVZ1	
	Links	108 links, ENDLESS	
	20-pitch length	---	319.4 (12.6)
Drive chain slack	*25-35 (1.0-1.4)	---	---
Gearshift lever height	60-70 (2.4-2.7)	---	---

CARBURETOR

ITEM	SPECIFICATION	
	E-01,16,28	E-04
Carburetor type	*MIKUNI BST38SS	←
Bore size	*38 mm	←
I.D. No.	*17D00	*17D20

Asterisk mark (*) indicates the New GSX-R750L model specifications.

ITEM	SPECIFICATION	
	E-01,16,28	E-04
Idle r/min.	1100±100 r/min	←
Fuel level	1.5±0.5 mm (0.06±0.02 in)	←
Float height	*14.7±1.0 mm (0.58±0.04 in)	←
Main jet (M.J.)	* #117.5	←
Main air jet (M.A.J.)	*0 mm	←
Jet needle (J.N.)	*6ZD7-3rd	*
Needle jet (N.J.)	*O-8	←
Pilot jet (P.J.)	#37.5	*
By-pass (B.P.)	0.8 mm	←
Pilot outlet (P.O.)	*0.7 mm	←
Valve seat (V.S.)	*2.5 mm	←
Starter jet (G.S.)	* #40	←
Pilot screw (P.S.)	PRE-SET (*1 ¹ / ₈ turns back)	←
Throttle valve (Th.V.)	* #130	←
Pilot air jet (P.A.J.)	*1.2 mm	←
Power jet (P.W.J.)	NIL	←
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←

ITEM	SPECIFICATION				
	E-24	E-22,39	E-02,15,21, 25,34,53	E-18	E-17
Carburetor type	*MIKUNI BST38SS	←	←	←	←
Bore size	*38 mm	←	←	←	←
I.D. No.	*17D60	*17D70	*17D80	*17D50	*17D10
Idle r/min.	1100±100 r/min	←	←	*1200 ^{±20} r/min	1100±100r/min
Fuel level	1.5±0.5 mm (0.06±0.02 in)	←	←	←	←
Float height	14.7±1.0 mm (0.58±0.04 in)	←	←	←	←
Main jet (M.J.)	* #117.5	←	←	* #127.5	* #100
Main air jet (M.A.J.)	*0 mm	←	←	* #4:0.9 mm #2&3:1.2 mm	*0 mm
Jet needle (J.N.)	*6ZD7-3rd	←	←	*5ZDZ5-3rd	*6ZE11-3rd
Needle jet (N.J.)	*O-8	←	←	←	*P-0
Pilot jet (P.J.)	#37.5	←	←	#32.5	* #35
By-pass (B.P.)	0.8 mm	←	←	←	←

ITEM	SPECIFICATION				
	E-24	E-22,39	E-02,15,21, 25,34,53	E-18	E-17
Pilot outlet (P.O.)	*0.7 mm	←	←	←	←
Valve seat (V.S.)	*2.5 mm	←	←	←	←
Starter jet (G.S.)	*#40	←	←	←	←
Pilot screw (P.S.)	PRE-SET (*1 ¹ / ₈ turn back)	←	←	PRE-SET (*2.0 turns back)	PRE-SET (*1 ¹ / ₈ turns back)
Throttle valve(Th.V.)	*#130	←	←	*#135	←
Pilot air jet (P.A.J.)	*1.2 mm	←	←	*1.25 mm	*1.2 mm
Power jet (P.W.J.)	NIL	←	←	←	←
Throttle cable play	0.5—1.0 mm (0.02—0.04 in)	←	←	←	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	13° B.T.D.C. at 1 500 r/min.		
Firing order	1-2-4-3		
Spark plug	Type	NGK: *CR10EK N.D.: *U31ETR	
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	Approx. 135—200 Ω		Tester range: (x 100 Ω)
Ignition coil resistance	Primary	⊕ tap—⊖ tap Approx. 2.4—3.2 Ω	Tester range: (x 1 Ω)
	Secondary	Plug cap—Plug cap Approx. 30—40 kΩ	Tester range: (x 1 kΩ)
Generator	Slip ring O.D.	Limit: 14.0 (0.55)	N.D.
	Brush length	Limit: 4.5 (0.18)	
Regulated voltage	Above 13.5 V at 5 000 r/min.		
Starter motor	Brush length	Limit: 9 (0.35)	N.D.
	Commutator under-cut	Limit: 0.2 (0.008)	
Starter relay resistance	3—5 Ω		
Battery	Type designation	YB14L-A2	
	Capacity	12 V 50.4 kC (14 Ah)/10 HR	
	Standard electrolyte S.G.	1.28 at 20°C (68°F)	
Fuse size	Headlight	*20 A	
	Turn signal	10 A	
	Ignition	10 A	
	Taillight	10 A	
	Power source	10 A	
Circuit breaker	30 A		

Asterisk mark (*) indicates the New GSX-R750L model specifications.

WATTAGE

Unit: W

ITEM		SPECIFICATION				
		E-28	E-01,02, 16,18, 21,24	E-15	E-04,17, 22,25, 39,53	E-34
Headlight	HI	60 x 2	←	←	60 + 55	35 x 2
	LO	55 x 2	←	*55	←	35 x 2
Parking or position light		←	4 x 2	←	*4	3 x 2
Tail/Brake light		5/21	←	←	←	←
Turn signal light		21	←	←	←	←
Tachometer light		3	←	←	←	←
Speedometer light		3	←	←	←	←
Turn signal indicator light		3	←	←	←	←
High beam indicator light		1.7	←	←	←	←
Neutral indicator light		3	←	←	←	←
Oil pressure indicator light		3	←	←	←	←
License light		5	←	←	←	←

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD		LIMIT
Rear brake pedal height		58–68 (2.3–2.6)		—
Brake disc thickness	Front	*5.0 ± 0.2 (0.197 ± 0.008)		*4.5 (0.18)
	Rear	6.0 ± 0.2 (0.236 ± 0.008)		5.5 (0.22)
Brake disc runout (Front & Rear)		—		0.30 (0.012)
Master cylinder bore	Front	*15.870–15.913 (0.6248–0.6265)		—
	Rear	12.700–12.743 (0.5000–0.5017)		—
Master cylinder piston diam.	Front	*15.827–15.854 (0.6231–0.6242)		—
	Rear	12.657–12.684 (0.4983–0.4993)		—
Brake caliper cylinder bore	Leading	Front	30.230–30.280 (1.1902–1.1921)	—
			Trailing	33.960–34.010 (1.3370–1.3390)
	Rear	38.180–38.256 (1.5031–1.5061)	—	
Brake caliper piston diam.	Leading	Front	30.130–30.180 (1.1826–1.1882)	—
			Trailing	33.878–33.928 (1.3338–1.3357)
	Rear	38.098–38.148 (1.5000–1.5019)	—	

Asterisk mark (*) indicates the New GSX-R750L model specifications.

ITEM	SPECIFICATION		LIMIT
Wheel rim runout (Front & Rear)	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	120/70 ZR17	—
	Rear	*170/60 ZR17	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	120 (4.7)	—	
Front fork spring free length	—	*267 (10.5)	
Front fork oil level	*107 (4.2)	—	
Rear wheel travel	136 (5.4)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	*230	*2.30	*33	*230	*2.30	*33
REAR	250	2.50	36	*250	*2.50	*36

Asterisk mark (*) indicates the New GSX-R750L model specifications.

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (^R ₂ ^M method) or 91 octane or higher rated by the Research Method.		For Canada
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		The others
Fuel tank including reserve	21.0L (5.5/4.6 US/Imp gal)		
reserve	4.0L (1.1/0.9 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	*3 200 ml (3.4/2.8 US/Imp qt)	
	Filter change	*3 400 ml (3.6/3.0 US/Imp qt)	
	Overhaul	*5 100 ml (5.4/4.5 US/Imp qt)	
Front fork oil type	Frok oil # 10		
Front fork oil capacity (each leg)	*462 ml (15.6/16.3 US/Imp oz)		
Brake fluid type	*DOT 4		

Asterisk mark (*) indicates the New GSX-R750L model specifications.

TIGHTENING TORQUE

ENGINE

ITEM	N·m	kg-m	lb-ft
Cylinder head cover bolt and union bolt	13–15	1.3–1.5	9.5–11.0
Cylinder head nut	35–40	3.5–4.0	25.5–29.0
Cylinder head bolt	8–12	0.8–1.2	6.0–8.5
Cylinder base nut	7–11	0.7–1.1	5.0–8.0
Cylinder stud bolt	13–16	1.3–1.6	9.5–11.5
Valve clearance adjuster lock nut	9–11	0.9–1.1	6.5–8.0
Camshaft journal holder bolt	8–12	0.8–1.2	6.0–8.5
Cam sprocket bolt	24–26	2.4–2.6	17.5–19.0
Rocker arm shaft set bolt	8–10	0.8–1.0	6.0–7.0
Oil hose mounting bolt (Cylinder head side)	8–12	0.8–1.2	6.0–8.5
Oil hose mounting bolt (Crankcase side)	8–12	0.8–1.2	6.0–8.5
Cam chain tensioner mounting bolt	6–8	0.6–0.8	4.5–6.0
Cam chain tensioner spring holder bolt	30–45	3.0–4.5	21.5–32.5
Cam chain idler mounting bolt	8–12	0.8–1.2	6.0–8.5
Conrod bearing cap bolt	*65–69	*6.5–6.9	*47.0–50.0
Starter clutch mounting bolt	143–157	14.3–15.7	103.5–113.5
Signal generator bolt	17–23	1.7–2.3	12.5–16.5
Crankcase bolt (6 mm)	12–16	1.2–1.6	8.5–11.5
(8 mm)	20–28	2.0–2.8	14.5–20.0
Oil pump mounting bolt	8–12	0.8–1.2	6.0–8.5
Oil drain plug	20–25	2.0–2.5	14.5–18.0
Oil pan bolt	12–16	1.2–1.6	8.5–11.5
Gearshift cam stopper bolt	15–23	1.5–2.3	11.0–16.5
Clutch sleeve hub nut	80–100	8.0–10.0	58.0–72.5
Clutch spring bolt	11–13	1.1–1.3	8.0–9.5
Exhaust pipe bolt	18–28	1.8–2.8	13.0–20.0
Muffler mounting bolt (Front side)	18–28	1.8–2.8	13.0–20.0
Muffler mounting bolt (Rear side)	*40–60	*4.0–6.0	*29.0–43.5
Engine sprocket nut	100–130	10.0–13.0	72.5–94.0
Engine sprocket nut stopper bolt	9–12	0.9–1.2	6.5–8.5
Engine mounting bolt (L: 55 mm)	50–60	5.0–6.0	36.0–43.5
(L: 150 mm and 175 mm)	70–88	7.0–8.8	50.5–63.5
Generator driven gear nut	54–57	5.4–5.7	39.0–41.0
Generator mounting bolt	21–29	2.1–2.9	15.0–21.0
Oil cooler hose union bolt	25–30	2.5–3.0	18.0–21.5
Oil cooler hose mounting bolt	8–12	0.8–1.2	6.0–8.5
Oil cooler mounting bolt	13–17	1.3–1.7	9.5–12.5
Oil pressure regulator	25–30	2.5–3.0	18.0–21.5
Oil pressure switch	12–15	1.2–1.5	8.5–11.0
Oil gallery plug	35–45	3.5–4.5	25.5–32.5

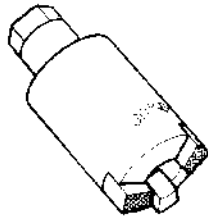
Asterisk mark (*) indicates the New GSX-R750L model specifications.

CHASSIS

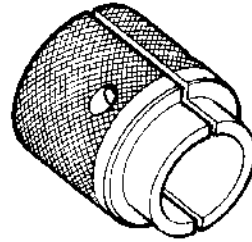
ITEM	N·m	kg-m	lb-ft
Steering stem head nut	50–80	5.0–8.0	36.0–58.0
Front fork upper clamp bolt	22–35	2.2–3.5	16.0–25.5
Front fork lower clamp bolt	22–35	2.2–3.5	16.0–25.5
Front fork cap bolt	*30–40	*3.0–4.0	*21.5–29.0
Front fork compression damping force adjuster	15–20	1.5–2.0	11.0–14.5
Front fork damping adjuster lock nut	*18–22	*1.8–2.2	*13.0–16.0
Front fork damper rod bolt	30–40	3.0–4.0	21.5–29.0
Front fork cap bolt stopper screw	1	0.1	0.7
Front axle	85–115	8.5–11.5	61.5–83.0
Front axle pinch bolt	15–25	1.5–2.5	11.0–18.0
Handlebar holder set bolt	7–11	0.7–1.1	5.0–8.0
Handlebar holder mounting bolt	15–25	1.5–2.5	11.0–18.0
Front brake lever nut	8–12	0.8–1.2	6.0–8.5
Front brake caliper mounting bolt	28–44	2.8–4.4	20.0–32.0
Front brake caliper housing bolt	20–25	2.0–2.5	14.5–18.0
Front brake pad mounting bolt	15–20	1.5–2.0	11.0–14.5
Front brake master cylinder bolt	5–8	0.5–0.8	3.5–6.0
Brake hose union bolt (Cylinder & Caliper)	15–20	1.5–2.0	11.0–14.5
Air bleeder valve (Front & Rear)	6–9	0.6–0.9	4.5–6.5
Front and rear disc bolt	15–25	1.5–2.5	11.0–18.0
Front footrest bracket mounting bolt	27–43	2.7–4.3	19.5–31.0
Swingarm pivot nut	85–115	8.5–11.5	61.5–83.0
Front footrest nut	35–55	3.5–5.5	25.5–40.0
Rear shock absorber mounting nut (Upper & Lower)	40–60	4.0–6.0	29.0–43.5
Rear cushion lever nut	110–160	11.0–16.0	79.5–115.5
Rear brake caliper mounting bolt	17–28	1.7–2.8	12.5–20.5
Rear brake caliper housing bolt	30–36	3.0–3.6	21.5–26.0
Rear torque link nut (Front & Rear)	22–34	2.2–3.4	16.0–24.5
Rear brake master cylinder mounting bolt	15–25	1.5–2.5	11.0–18.0
Rear axle nut	85–115	8.5–11.5	61.5–83.0
Rear sprocket nut	48–72	4.8–7.2	35.0–52.0
Rear brake rod lock nut	15–20	1.5–2.0	11.0–14.5
Swingarm pivot adjuster lock nut	*60–70	*6.0–7.0	*43.5–50.5

Asterisk mark (*) indicates the New GSX-R750L model specifications.

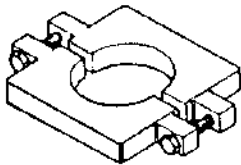
SPECIAL TOOLS



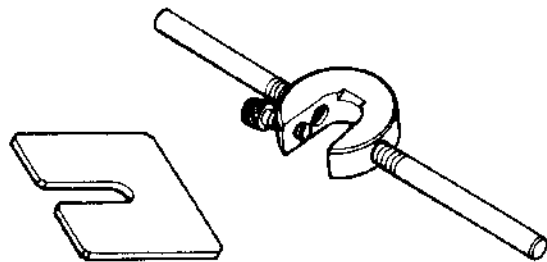
This tool is used for servicing the valve seat.
09916-20630 : Valve seat cutter head
(N-126)



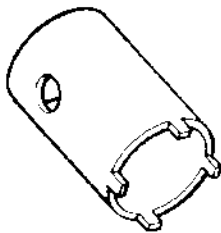
This tool is used for installing the front fork oil seal.
09940-52820 : Front fork oil seal installer



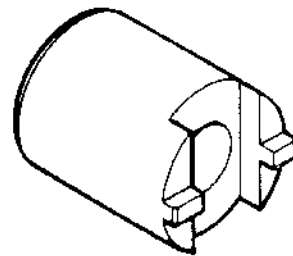
This tool is used for installing the front fork oil seal.
09940-52830 : Front fork oil seal case stopper



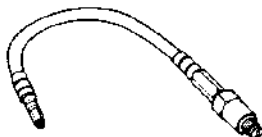
This tool is used for disassembling and reassembling the front fork cap bolt.
09940-94910 : Front fork spacer holder set



This tool is used for removing and installing the swingarm pivot adjuster lock nut.
09940-14940 : Adjuster lock nut wrench

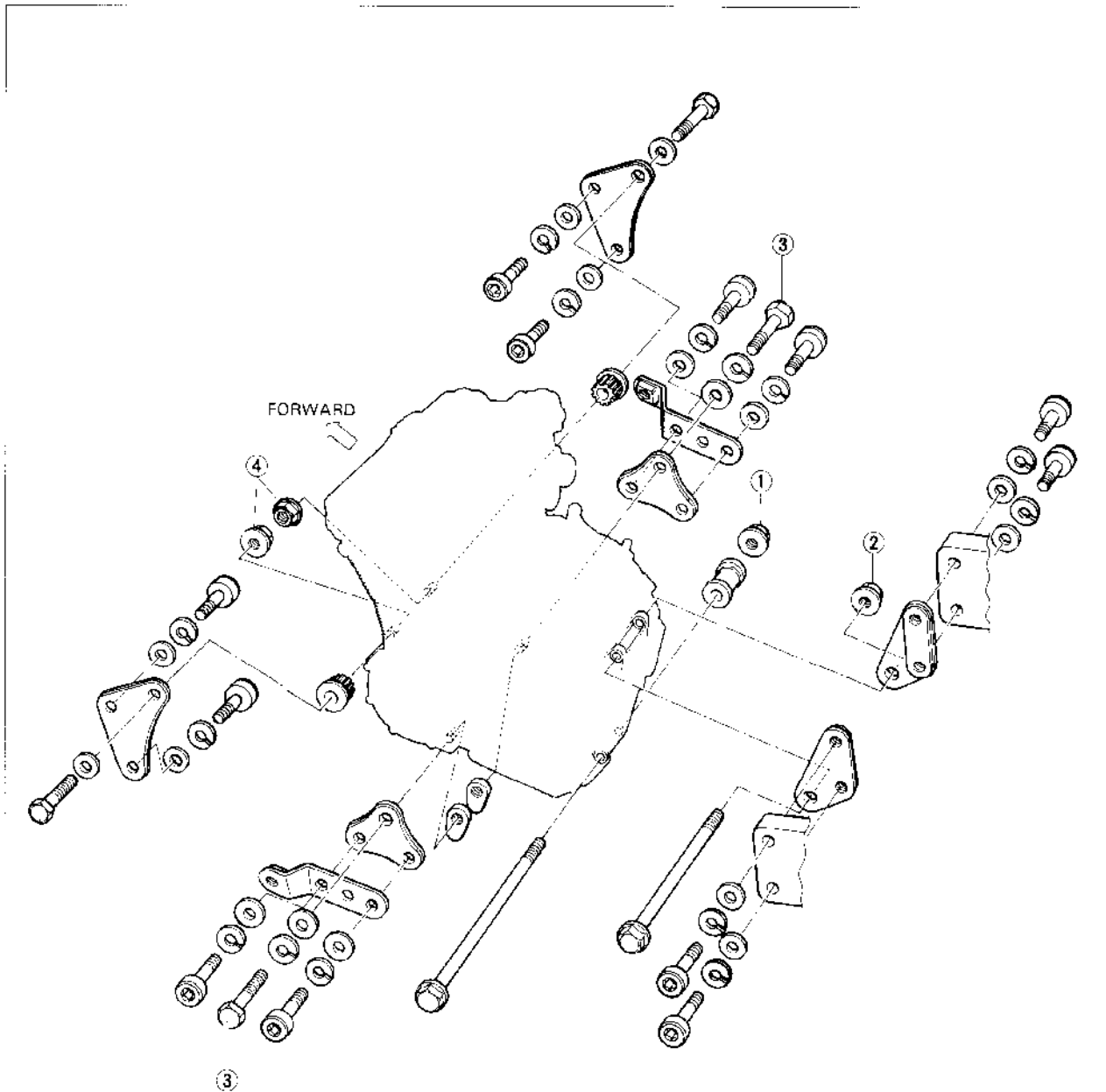


This tool is used for removing and installing the swingarm pivot adjuster.
09940-14950 : Adjuster turning wrench



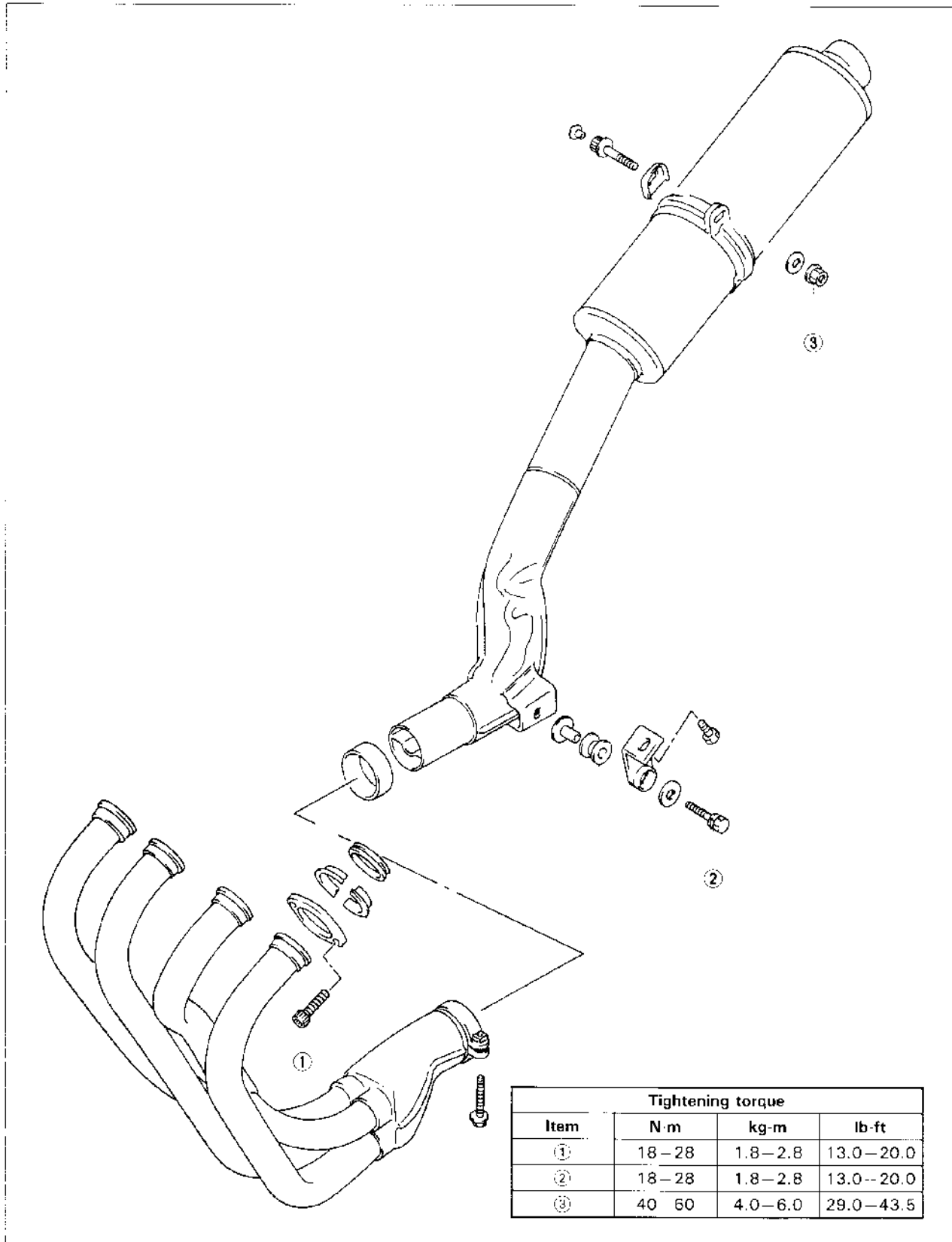
This tool is used for checking the compression pressure.
09915-63310 : Compression gauge adapter

ENGINE MOUNTING



Item	Tightening torque		
	N·m	kg·m	lb·ft
①,②	70-88	7.0-8.8	50.5-63.5
③,④	50-60	5.0-6.0	36.0-43.5
Other bolts	25-38	2.5-3.8	18.0-27.5

EXHAUST PIPE AND MUFFLER



CYLINDER HEAD

VALVE SEAT SERVICING

The valve seats for both intake and exhaust valves are angled to present two bevels, 30° and 45° for intake and 15° and 45° for exhaust.

	Intake side	Exhaust side
45°	N-122	N-122
15°		N-121
30°	N-126	

09916-20610 : Valve seat cutter head (N-121)

09916-20620 : Valve seat cutter head (N-122)

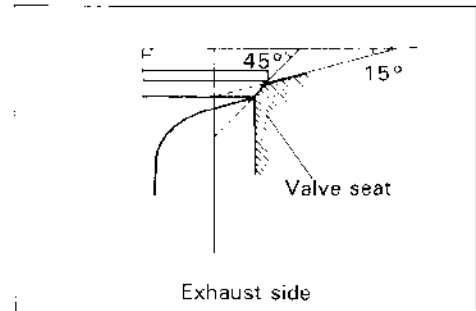
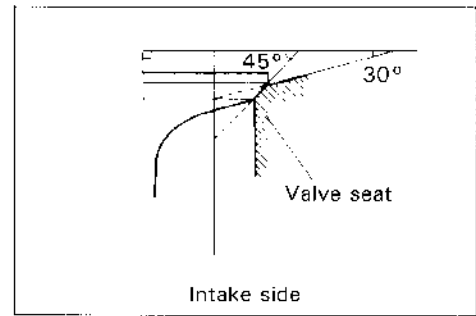
09916-20630 : Valve seat cutter head (N-126)

09916-21110 : Valve seat cutter set

09916-24310 : Solid pilot (N-100-5.0)

NOTE:

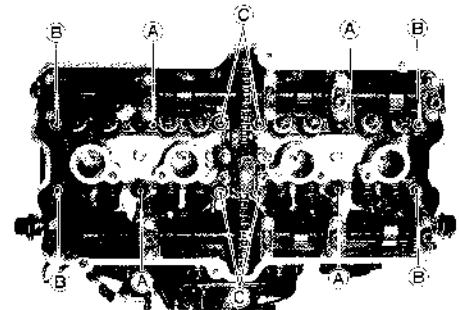
The valve seat contact area must be inspected after each cut.



CYLINDER HEAD NUTS AND WASHERS

- Cylinder head nuts and washers must be fitted in the correct positions, as shown in the illustration.

- Ⓐ Copper washer with cap nut (4 pcs)
- Ⓑ Steel washer with normal nut (4 pcs)
- Ⓒ Normal nut (4 pcs).



CYLINDER STUD BOLT

CYLINDER STUD BOLT LOCATION

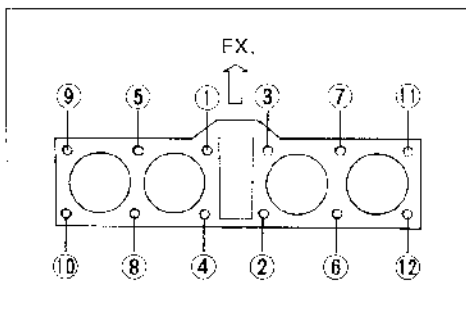
Item No.	Color	Length
①,③	Black	157 mm (6.2 in)
②,④,⑤,⑦	Silver	150 mm (5.9 in)
⑥,⑧	Silver	143 mm (5.6 in)
⑨,⑩,⑪,⑫	Black	150 mm (5.9 in)

- When installing the cylinder stud bolt ⑦, apply SUZUKI Bond No. 1207B lightly to the stud bolt thread.

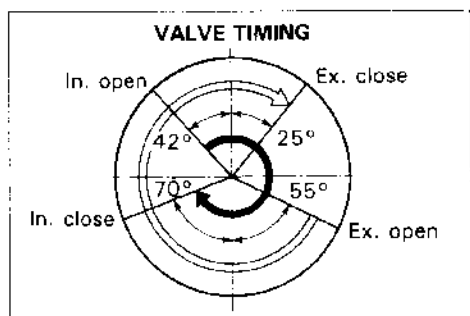
99000-31140 : SUZUKI Bond No. 1207B

Cylinder stud bolt tightening torque

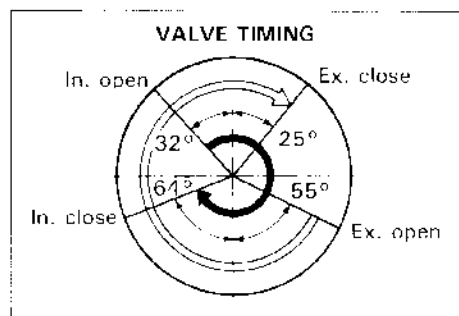
13–16 N·m (1.3–1.6 kg·m, 9.5–11.5 lb-ft)



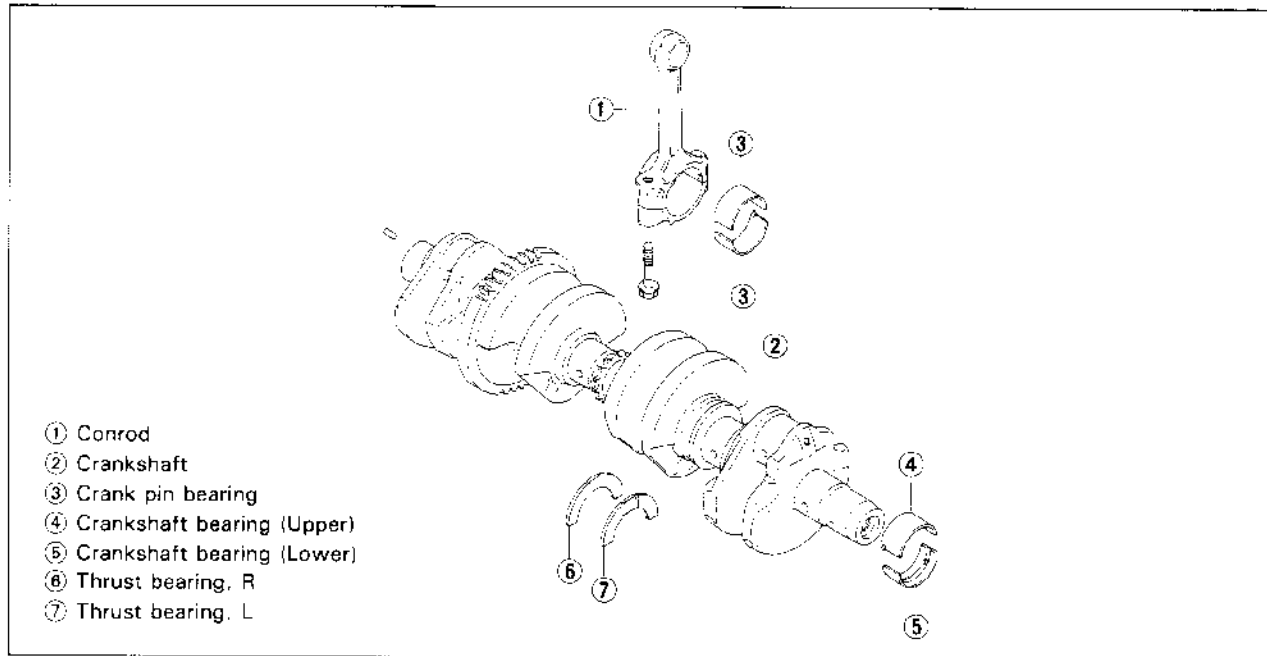
VALVE TIMING



Only for Sweden



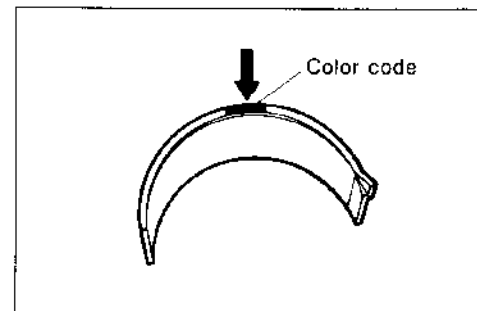
CONROD AND CRANKSHAFT



CONROD-CRANK PIN BEARING SELECTION

Bearing selection table

	Code	Crank pin O.D.		
		1	2	3
Conrod	1	Green	Black	Brown
I.D.	2	Black	Brown	Yellow



CAUTION:

Bearing should be replaced as a set.

Conrod I.D. specification

Code	I.D. specification
1	37.000 – 37.008 mm (1.4567 – 1.4570 in)
2	37.008 – 37.016 mm (1.4570 – 1.4573 in)

Crank pin O.D. specification

Code	O.D. specification
1	33.992 – 34.000 mm (1.3383 – 1.3386 in)
2	33.984 – 33.992 mm (1.3380 – 1.3383 in)
3	33.976 – 33.984 mm (1.3376 – 1.3380 in)

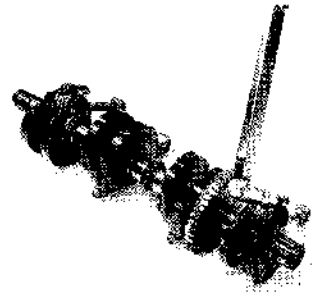
Bearing thickness

Color (Part No.)	Thickness
Green (12164-27A00-0A0)	1.480 – 1.484 mm (0.0583 – 0.0584 in)
Black (12164-27A00-0B0)	1.484 – 1.488 mm (0.0584 – 0.0586 in)
Brown (12164-27A00-0C0)	1.488 – 1.492 mm (0.0586 – 0.0587 in)
Yellow (12164-27A00-0D0)	1.492 – 1.496 mm (0.0587 – 0.0589 in)

- When mounting the conrod on the crankshaft, make sure that numeral figure of the conrod faces rearward.
- Tighten the conrod bolts to specified torque.

Tightening torque : 65–69 N·m
 (6.5–6.9 kg·m, 47.0–50.0 lb·ft)

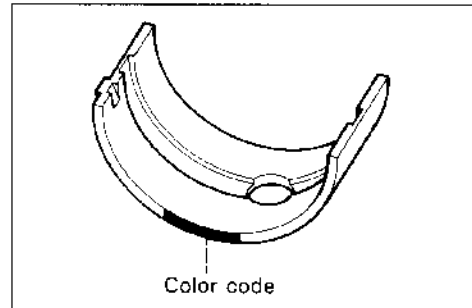
- Check the conrod movement for smooth turning.



CRANKCASE-CRANKSHAFT BEARING SELECTION

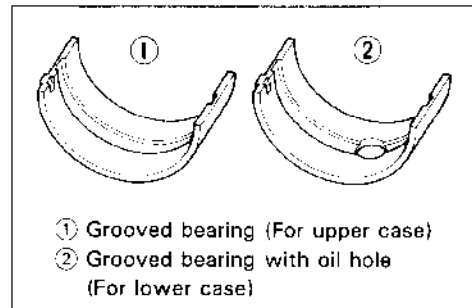
Bearing selection table

		Crankshaft journal O.D.		
		Code	A	B
Crankcase I.D.	A	Green	Black	Brown
	B	Black	Brown	Yellow



NOTE:

- * Grooved bearings have the same specification as the Grooved bearing with oil hole.
- * These parts numbers are shown as follows.
 12229-27A10-XXX. (Grooved bearing)



Crankcase I.D. specification

Code	I.D. specification
A	35.000 – 35.008 mm (1.3780 – 1.3783 in)
B	35.008 – 35.016 mm (1.3783 – 1.3786 in)

Crankshaft journal O.D. specification

Code	O.D. specification
A	31.992 – 32.000 mm (1.2595 – 1.2598 in)
B	31.984 – 31.992 mm (1.2592 – 1.2595 in)
C	31.976 – 31.984 mm (1.2589 – 1.2592 in)

Bearing thickness specification

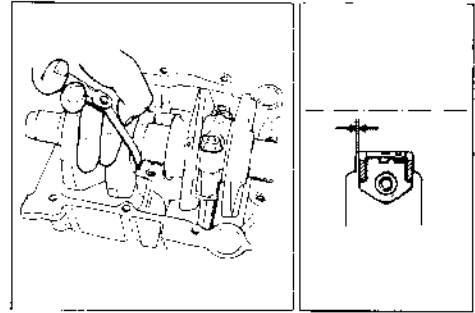
(Grooved bearing with oil hole...For lower case)

Color (Part No.)	Specification
Green (12229-27A00-0A0)	1.486 – 1.490 mm (0.0585 – 0.0587 in)
Black (12229-27A00-0B0)	1.490 – 1.494 mm (0.0587 – 0.0588 in)
Brown (12229-27A00-0C0)	1.494 – 1.498 mm (0.0588 – 0.0590 in)
Yellow (12229-27A00-0D0)	1.498 – 1.502 mm (0.0590 – 0.0591 in)

CRANKSHAFT THRUST CLEARANCE

Crankshaft thrust clearance

Standard : 0.055–0.110 mm (0.0022–0.0043 in)

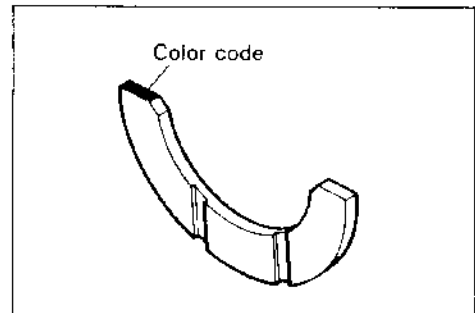


Right-side thrust bearing thickness

2.425–2.450 mm (0.0955–0.0965 in)

NOTE:

Right-side thrust bearing has the same specification as the Green of left-side thrust bearing.

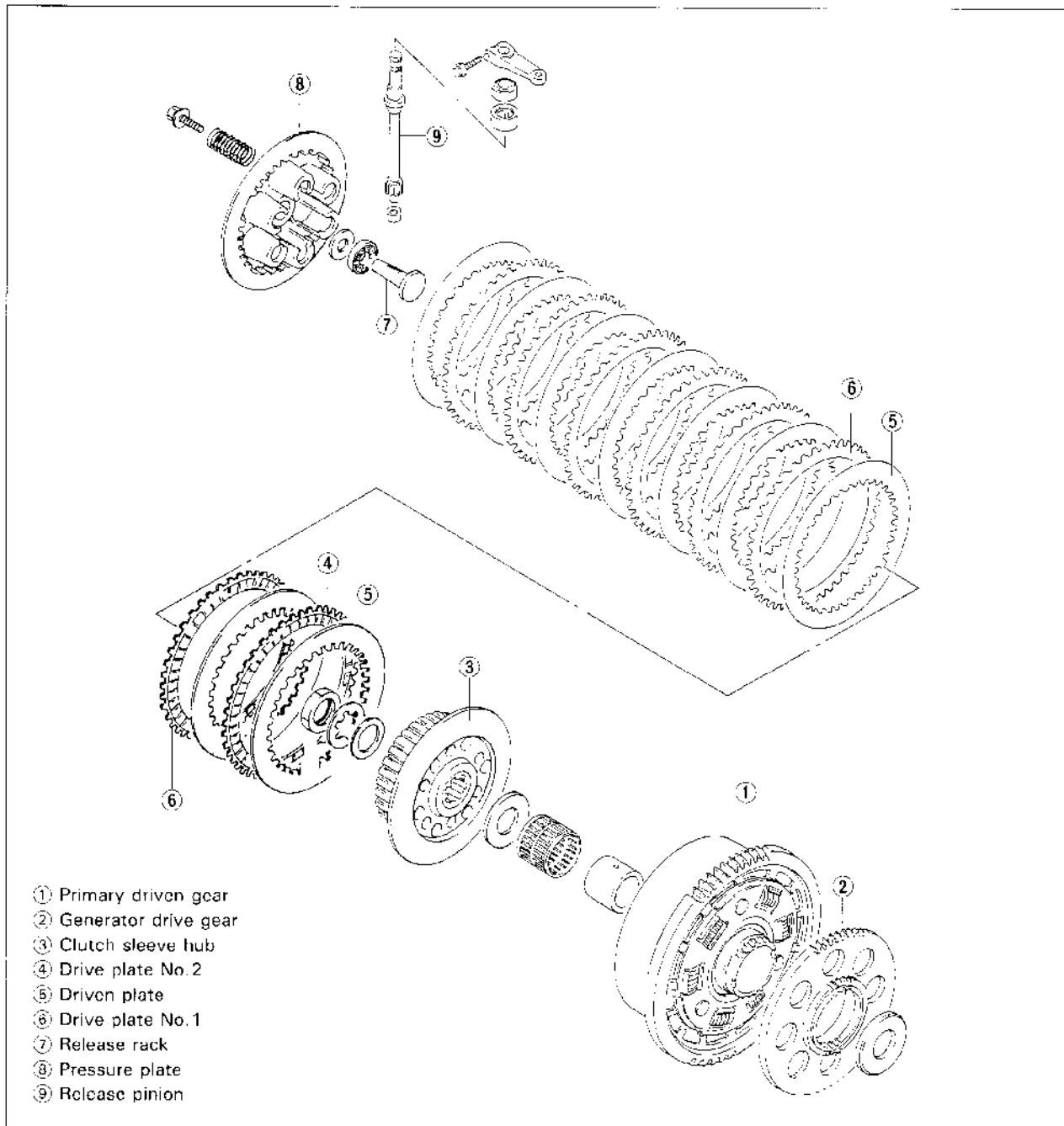


Thrust bearing selection table

Clearance before inserting thrust bearing	Color (Part No.)	Thrust bearing thickness	Thrust clearance
2.430–2.460 mm (0.0957–0.0969 in)	Red (12228-43411)	2.350–2.375 mm (0.0925–0.0935 in)	0.055–0.110 mm (0.0022–0.0043 in)
2.460–2.485 mm (0.0969–0.0978 in)	Black (12228-43412)	2.375–2.400 mm (0.0935–0.0945 in)	0.060–0.110 mm (0.0024–0.0043 in)
2.485–2.510 mm (0.0978–0.0988 in)	Blue (12228-43413)	2.400–2.425 mm (0.0945–0.0955 in)	
2.510–2.515 mm (0.0988–0.0990 in)	Green (12228-43414)	2.425–2.450 mm (0.0955–0.0965 in)	
2.515–2.560 mm (0.0990–0.1008 in)	Yellow (12228-43415)	2.450–2.475 mm (0.0965–0.0974 in)	
2.560–2.585 mm (0.1008–0.1018 in)	White (12228-43416)	2.475–2.500 mm (0.0974–0.0984 in)	

- After selecting a left-side thrust bearing, insert it and again perform the thrust clearance measurement to make sure it falls within the standard range.

CLUTCH

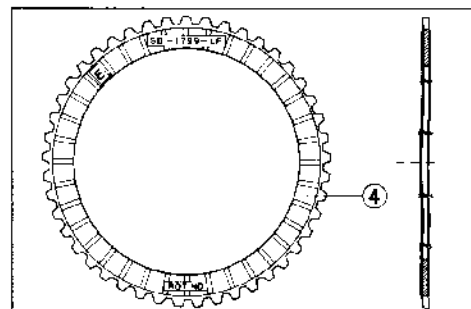


- ① Primary driven gear
- ② Generator drive gear
- ③ Clutch sleeve hub
- ④ Drive plate No. 2
- ⑤ Driven plate
- ⑥ Drive plate No. 1
- ⑦ Release rack
- ⑧ Pressure plate
- ⑨ Release pinion

- Install the clutch sleeve hub onto the countershaft and insert the drive and driven plates one by one into the sleeve hub.

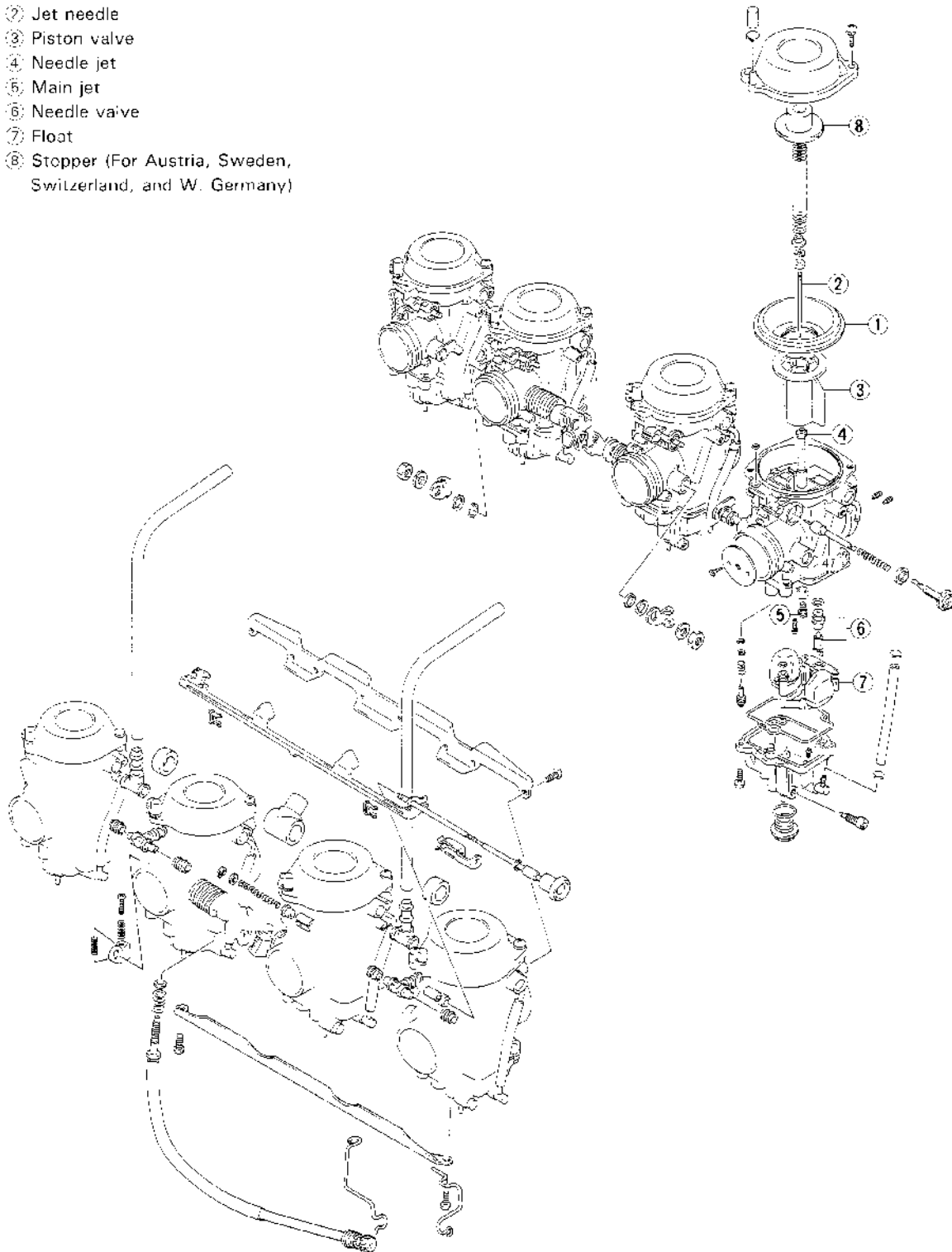
NOTE:

When assembling the clutch plates, be sure to insert the driven plate first and drive plate No.2 ④ second.



CARBURETOR

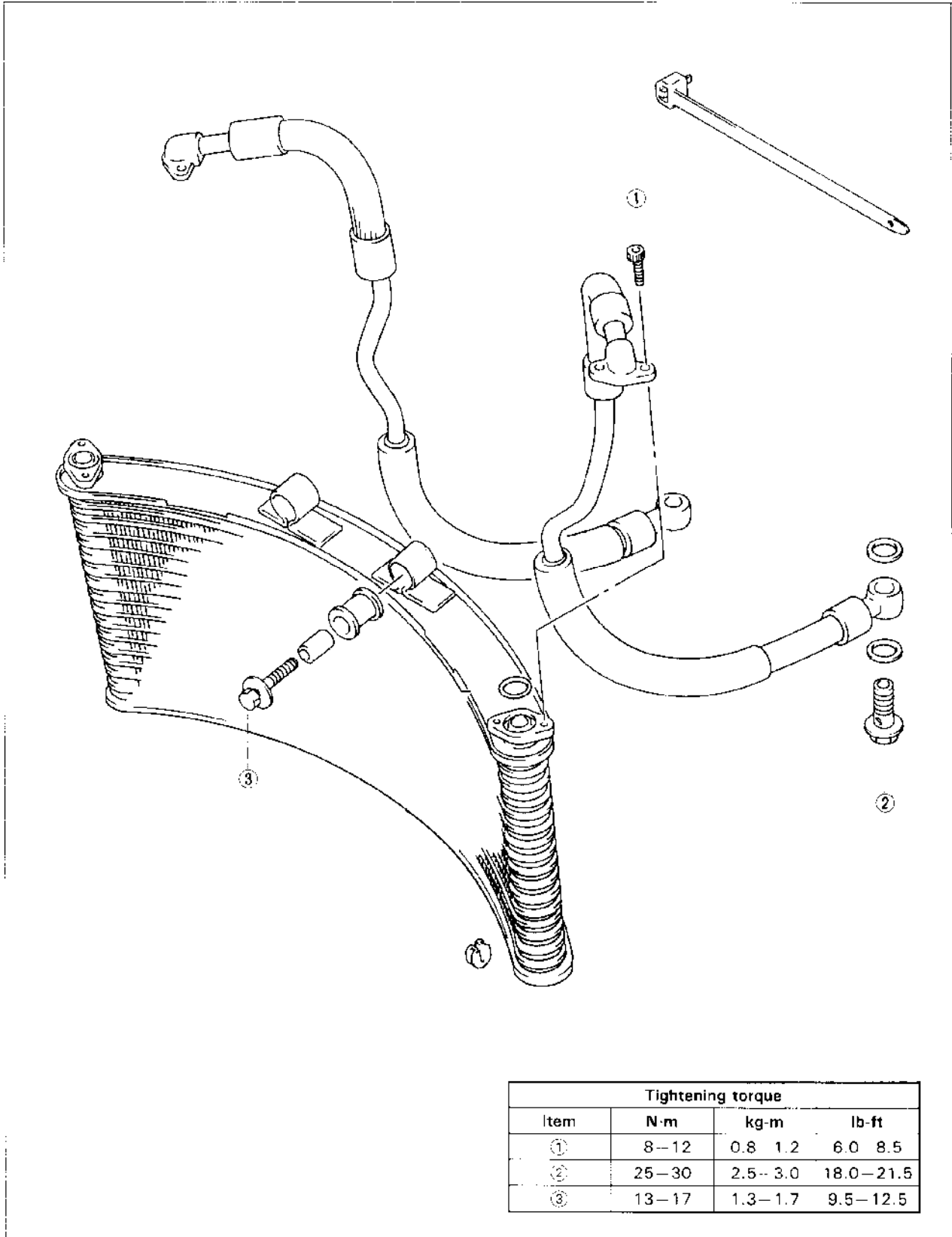
- ① Diaphragm
- ② Jet needle
- ③ Piston valve
- ④ Needle jet
- ⑤ Main jet
- ⑥ Needle valve
- ⑦ Float
- ⑧ Stopper (For Austria, Sweden, Switzerland, and W. Germany)



SPECIFICATIONS

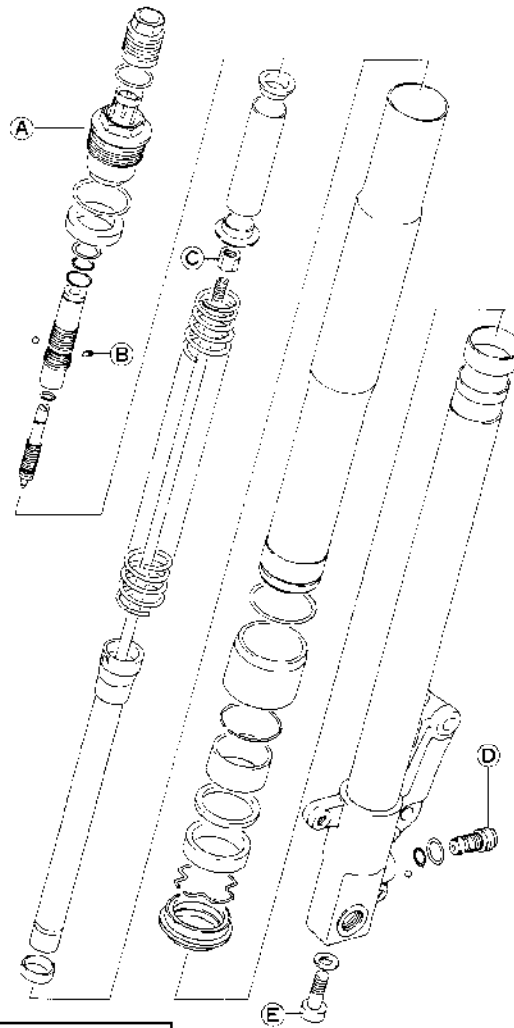
ITEM	SPECIFICATIONS						
	E-01, 16, 28	E-04	F-24	E-22, 39	E-02, 15, 21 25, 34, 53	E-18	E-17
Carburetor type	MIKUNI BST38SS	←	←	←	←	←	←
Bore size	38 mm	←	←	←	←	←	←
I.D. No.	17D00	17D20	17D60	17D70	17D80	17D50	17D10
Idle r/min	1100±100 r/min	←	←	←	←	1200 ± 50 r/min	1100 ± 100 r/min
Fuel level	1.5±0.5 mm (0.06±0.02 in)	←	←	←	←	←	←
Float height	14.7±1.0 mm (0.58±0.04 in)	←	←	←	←	←	←
Main jet (M.J.)	# 117.5	←	←	←	←	# 127.5	# 100
Main air jet (M.A.J.)	0 mm	←	←	←	←	# 1&4:0.9 mm # 2&3:1.2 mm	0 mm
Jet needle (J.N.)	6ZD7-3rd	←	←	←	←	5ZD25-3rd	6ZE11-3rd
Needle jet (N.J.)	O-8	←	←	←	←	←	P-0
Pilot jet (P.J.)	# 37.5	←	←	←	←	# 32.5	# 35
By-pass (B.P.)	0.8 mm	←	←	←	←	←	←
Pilot outlet (P.O.)	0.7 mm	←	←	←	←	←	←
Valve seat (V.S.)	2.5 mm	←	←	←	←	←	←
Start jet (G.S.)	# 40	←	←	←	←	←	←
Pilot screw (P.S.)	PRE-SET (1-1/8 turns back)	←	←	←	←	PRE-SET (2.0 turns back)	PRE-SET (1-1/4 turns back)
Throttle valve (Th.V.)	# 130	←	←	←	←	# 135	←
Pilot air jet (P.A.J.)	1.2 mm	←	←	←	←	1.25 mm	1.2 mm
Power jet (P.W.J.)	NIL	←	←	←	←	←	←
Throttle cable play	0.5 - 1.0 mm (0.02 - 0.04 in)	←	←	←	←	←	←

OIL COOLER



Item	Tightening torque		
	N·m	kg·m	lb·ft
①	8-12	0.8 1.2	6.0 8.5
②	25-30	2.5- 3.0	18.0-21.5
③	13-17	1.3-1.7	9.5-12.5

FRONT FORK



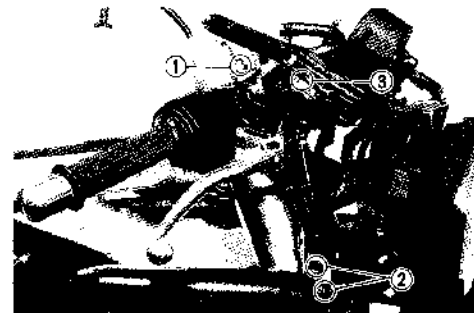
Item	Tightening torque		
	N·m	kg·m	lb·ft
(A)	30-40	3.0-4.0	21.5-29.0
(B)	1	0.1	0.7
(C)	18-22	1.8-2.2	13.0-16.0
(D)	15-20	1.5-2.0	11.0-14.5
(E)	30-40	3.0-4.0	21.5-29.0

REMOVAL AND DISASSEMBLY

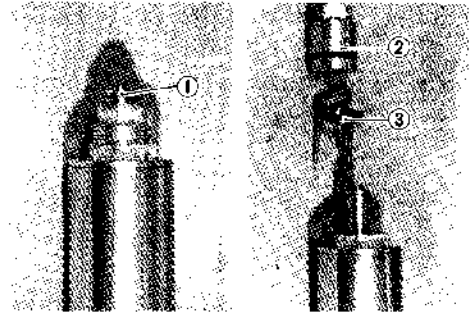
- Remove the fairing.
- Remove the front wheel.
- Remove the front fender.
- Remove the front fork by loosening the upper and lower clamp bolts (①,②) and handlebar clamp bolt ③.

NOTE:

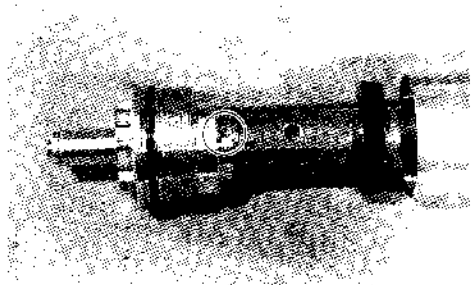
Slightly loosen the cap bolt to facilitate later disassembly before loosening the front fork lower clamp bolts.



- Remove the spring adjuster stopper ring ①.
- Remove the spring adjuster bolt ② and adjuster ③.



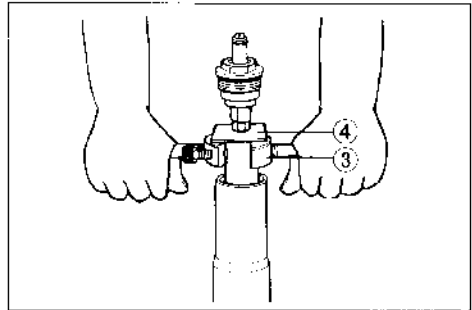
- Remove the fork cap bolt stopper screw with a 2 mm hexagon wrench.



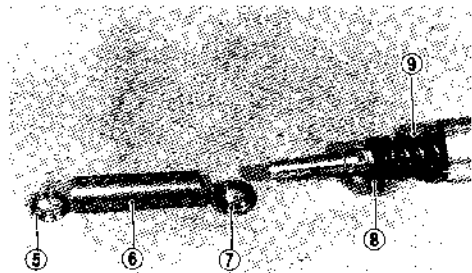
- Compress the fork spring with the special tool ③, and insert the special tool ④ between the lock nut and spacer seat.

09940-94910 : Front fork spacer holder set

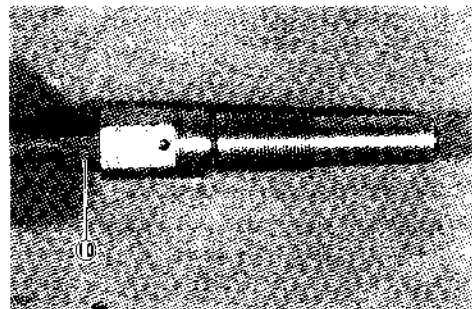
- Remove the fork cap bolt.



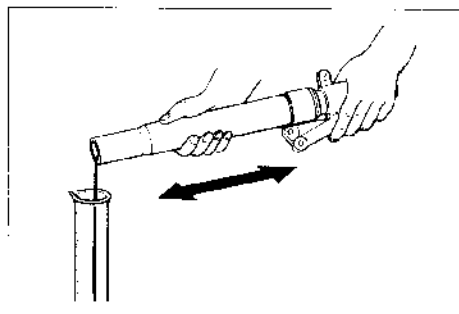
- Remove the spacer seat ⑤, spacer ⑥, spring seat ⑦, rubber seat ⑧ and spring ⑨.



- Remove the rebound damping adjuster by loosening the lock nut ⑩.



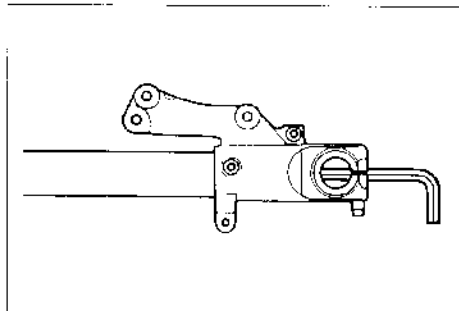
- Invert the fork and stroke it several times to let out fork oil.
- Under the inverted condition of front fork, drain oil to hold it for few minutes.



- Remove the damper rod bolt with a 8 mm hexagon wrench.

NOTE:

If it is difficult to loosen the damper rod bolt, reassemble the fork spring, spacer and cap bolt.



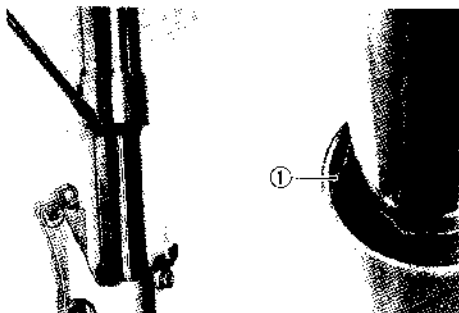
- Remove the damper rod and plate.

CAUTION:

Do not attempt to disassemble the damper rod.



- Remove the dust seal.
- Remove the oil seal stopper ring ①.



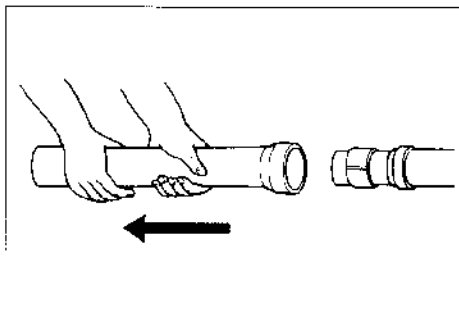
- Remove the oil seal by slowly pulling out the inner tube.

NOTE:

Be careful not to damage the inside of the tube.

CAUTION:

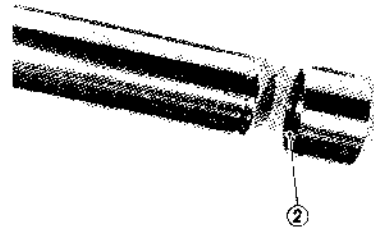
The outer tube and inner tube "ANTI-FRICTION" metals must be replaced along with oil seal and dust seal, when assembling the front fork.



- Remove the oil seal case by removing the stopper ring ①.

NOTE:

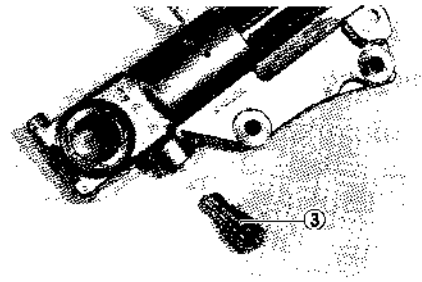
The removed O-ring ② should be replaced with a new one.



- Remove the compression damping force adjuster ③.

NOTE:

Do not attempt to disassemble the compression damping force adjuster.

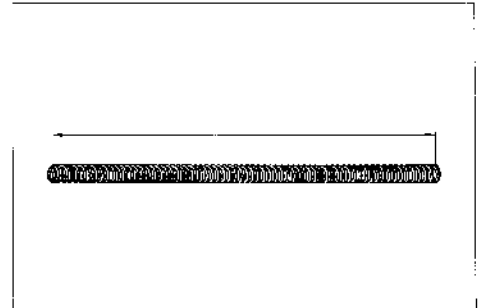


INSPECTION

FORK SPRING

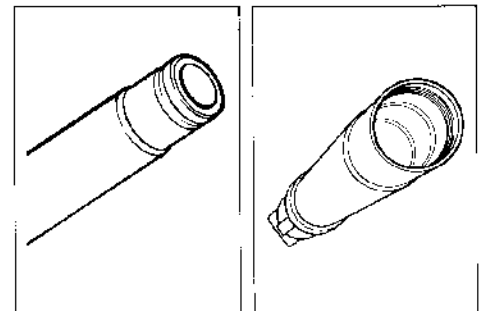
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Service Limit : 267 mm (10.5 in)



INNER AND OUTER TUBE

Inspect the inner tube sliding surface and outer tube sliding surface for any scuffing.

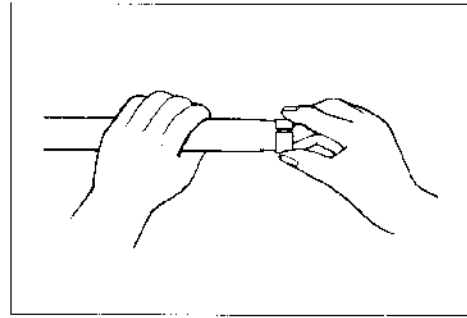


REASSEMBLY AND REMOUNTING

Reassemble and remount the front fork in the reverse order of removal and disassembly. Also observe the following instructions:

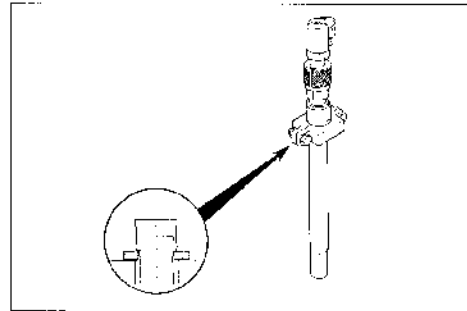
INNER TUBE METAL

- Hold the inner tube vertically and clean the metal groove.
- Clean inner and outer surfaces of the metal and install it by hand to the metal groove of the inner tube as shown.



CAUTION

Be sure to install the dust seal, stopper ring and oil seal to the inner tube, before installing the inner tube metal. Use special care to prevent damage to the "Teflon" coated surface of the Anti-friction inner tube metal when mounting it.



OUTER TUBE METAL, OIL SEAL AND DUST SEAL

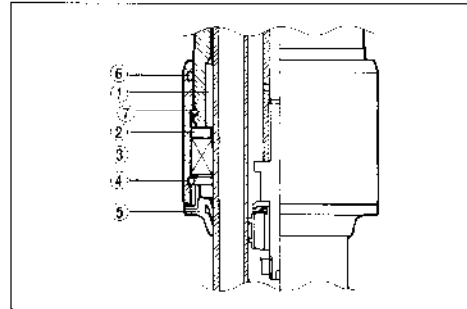
- Clean the metal groove of outer tube and metal outer surface, and install the outer tube metal.
- Install the oil seal retainer and oil seal with the special tools.

09940-52820 : Front fork oil seal installer

09940-52830 : Front fork seal case stopper

CAUTION:

Use special care to prevent damage to the "Teflon" coated surface of the Anti-Friction outer tube metal when installing it.



- After installing the oil seal, install the oil seal stopper ring and dust seal.
 - ① Anti-friction metal
 - ② Oil seal retainer
 - ③ Oil seal
 - ④ Oil seal stopper ring
 - ⑤ Dust seal
 - ⑥ O-ring
 - ⑦ Oil seal case stopper ring

DAMPER ROD BOLT

- Tighten the damper rod bolt to the specified torque with a 8 mm hexagon wrench.

Tightening torque : 30—40 N·m
(3.0—4.0 kg-m, 21.5—29.0 lb-ft)

CAUTION:

Use a new gasket to prevent oil leakage.

NOTE:

If it is difficult to tighten the damper rod bolt, assemble the fork spring, spacer and cap bolt.

FORK OIL

Fork oil air bleeding

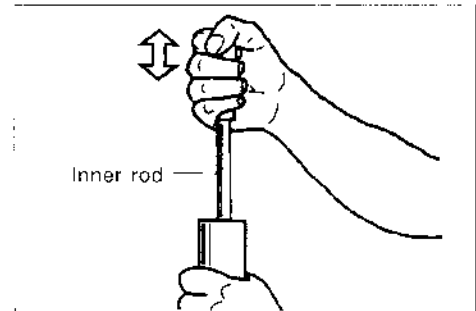
- Place the front fork vertically with fully compressed position and without spring.
- Pour specified front fork oil up to the top level of the outer tube.

Fork oil type : Fork oil # 10

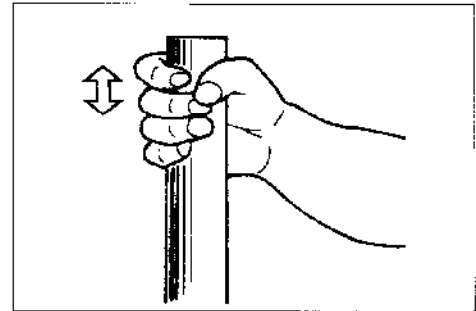
- Move the rod slowly more than ten times until bubbles do not come out from the oil.

NOTE:

Pour front fork oil up to the top of the outer tube to find bubbles while bleeding air.



- Pour specified front fork oil up to the top level of the outer tube again. Move the outer tube up and down fully stroke until bubbles do not come out from the oil.
- Keep the front fork vertically and wait 5–6 minutes.



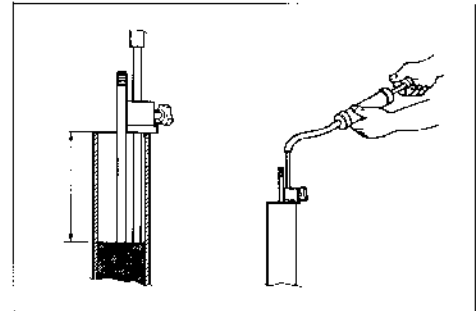
Fork oil level adjusting

- Set the oil level gauge with the front fork fully compressed and adjust the oil level to the specification.

09943-74111 : Fork oil level gauge

Fork oil level : 107 mm (4.2 in)

Fork oil capacity : 462 ml (15.6/16.3 US/Imp oz)
(each leg)

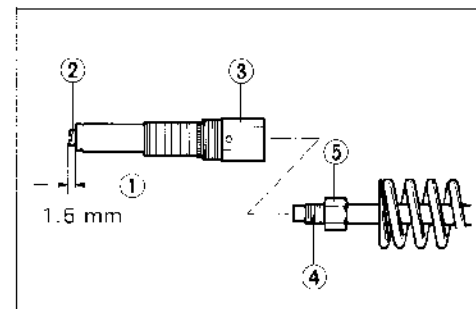


REBOUND DAMPING FORCE ADJUSTER

- Adjust the height ① of the rebound damping force adjuster ② and then install the damping adjuster housing ③ to the damper rod ④ as shown in the illustration.

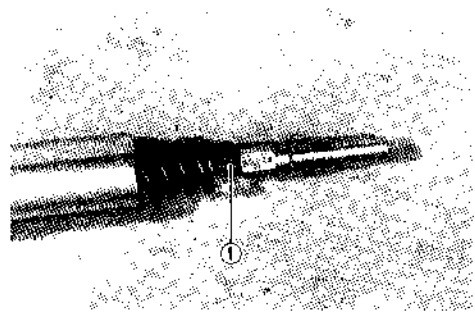
NOTE:

Loosen the lock nut ⑤ fully before installing the damping adjuster housing ③.



- Slowly turn in damping adjuster housing by hand until the rebound damping force adjuster seats on the damper rod.
- Holding the damping adjuster in a position, tighten the lock nut ① to the specified torque.

Tightening torque : 18 – 22 N·m
(1.8 – 2.2 kg·m, 13.0 – 16.0 lb-ft)



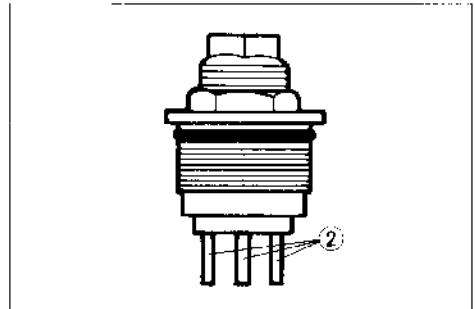
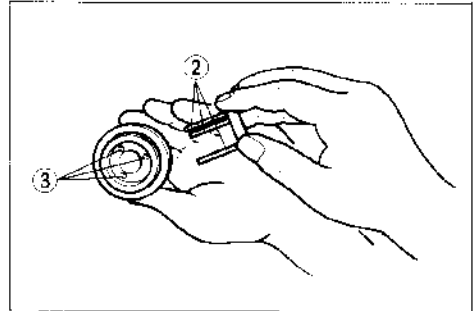
SPRING ADJUSTER

- When installing the spring adjuster to the cap bolt, align the three legs ② of the spring adjuster with the holes ③ of the cap bolt.

NOTE:

Make sure that the legs of the spring adjuster correctly.

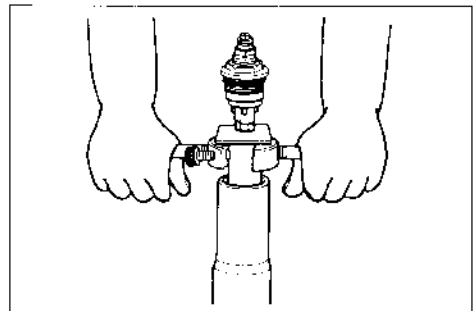
- Install the spring adjuster bolt.



CAP BOLT

- Install the spring seat, spacer and spacer seat.
- Install the cap bolt by compress the spring with the special tools.

09940-94910 : Front fork spacer holder set



- When remounting the front fork assembly, set the upper surface of the outer tube at 10 mm (0.4 in) height from the upper surface of the steering stem upper bracket.

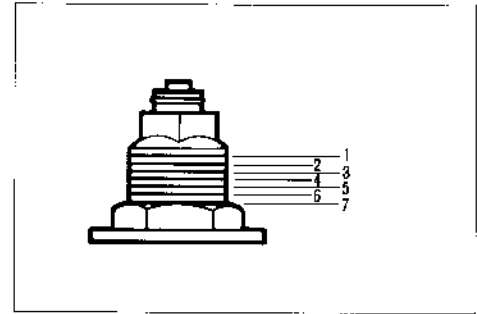


ADJUSTMENT

After installing the front fork, adjust the spring pre-load and damping force as follows.

SPRING PRE-LOAD ADJUSTMENT

There are seven grooved lines on the side of the spring adjuster. Position 1 provides the maximum spring pre-load and position 7 provides the minimum spring pre-load.



DAMPING FORCE ADJUSTMENT

Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click that is I-position then turn back and count the specified position as shown below.

WARNING:

Be sure to adjust the spring pre-load and damping force on both front fork legs equally.



REBOUND SIDE

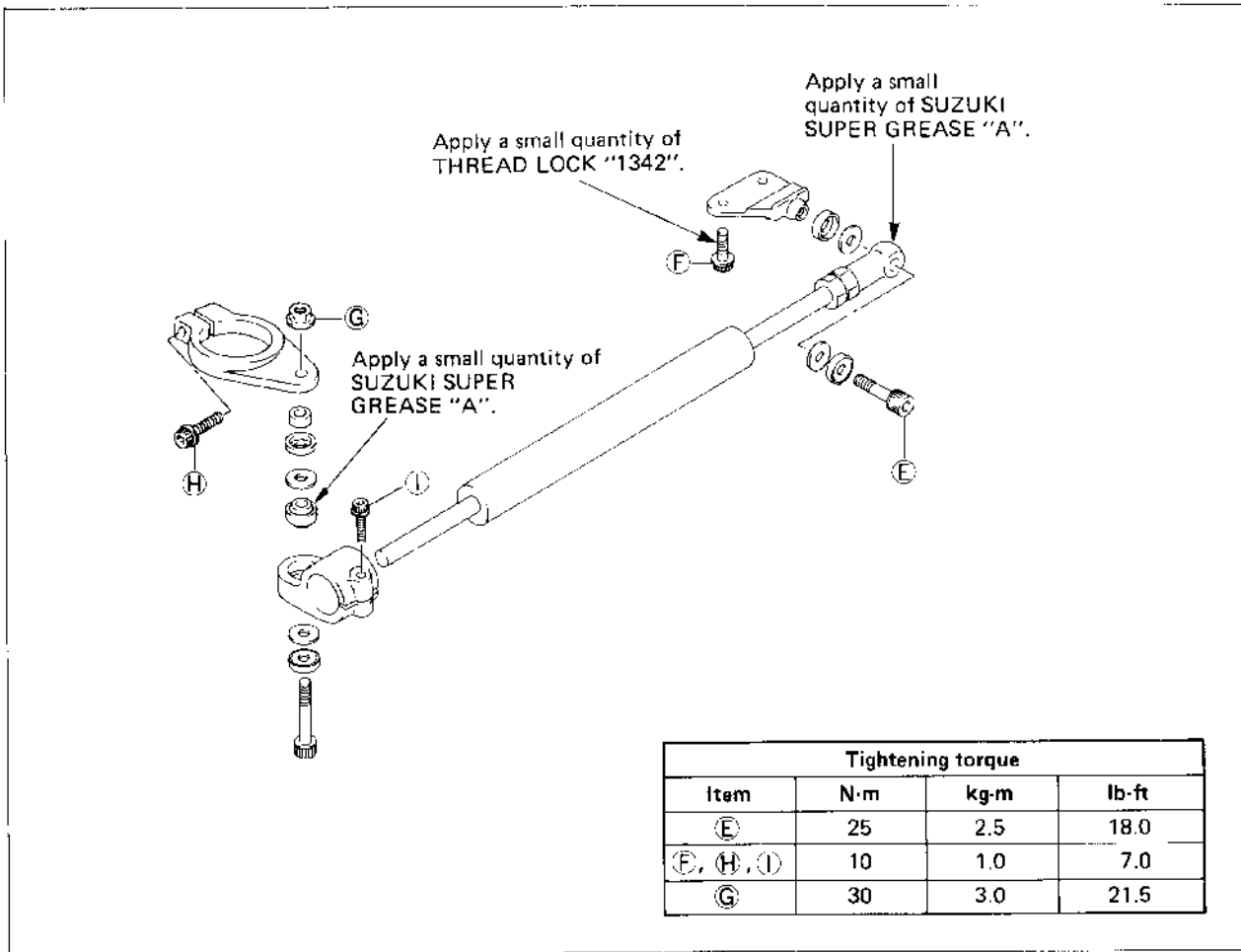


COMPRESSION SIDE

STANDARD SUSPENSION SETTING

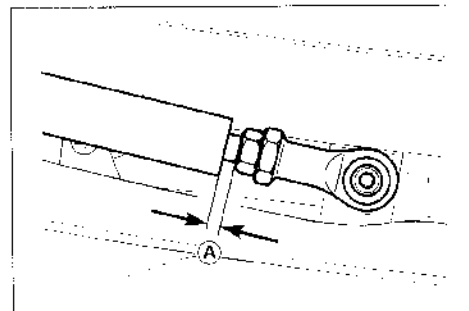
	FRONT			REAR		
	Spring preload adjuster	Damping force adjuster		Spring set length	Damping force adjuster	
		Rebound	Compression		Rebound	Compression
Solo riding	4	5	5	196 mm (7.7 in)	2:4	6
Dual riding	4	5	5	196 mm (7.7 in)	2:4	6

STEERING DAMPER



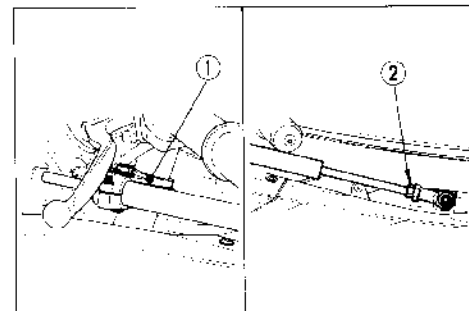
NOTE:

Turn the steering to full left lock position, and then adjust the length Ⓐ to 4 mm (0.16 in) as shown in the illustration by turning the steering damper bracket Ⓘ.



CAUTION:

Do not turn the nut ②.

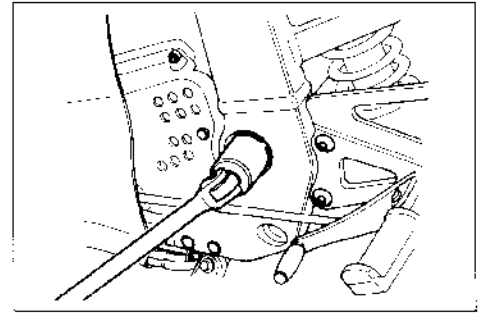


SWINGARM PIVOT

SWINGARM PIVOT THRUST CLEARANCE ADJUSTMENT

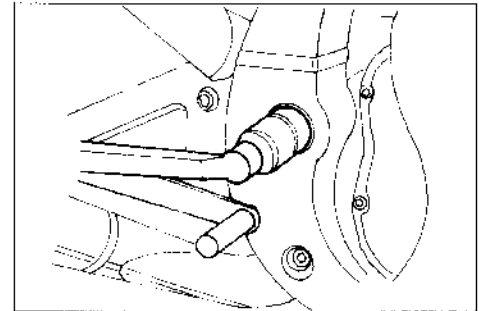
- Turn in swingarm thrust clearance adjuster along with the swingarm pivot shaft with the special tool.

09940-14950 : Adjuster turning wrench



- Hold the swingarm pivot shaft with a 14 mm hexagon wrench and tighten the swingarm pivot nut to the specified torque.

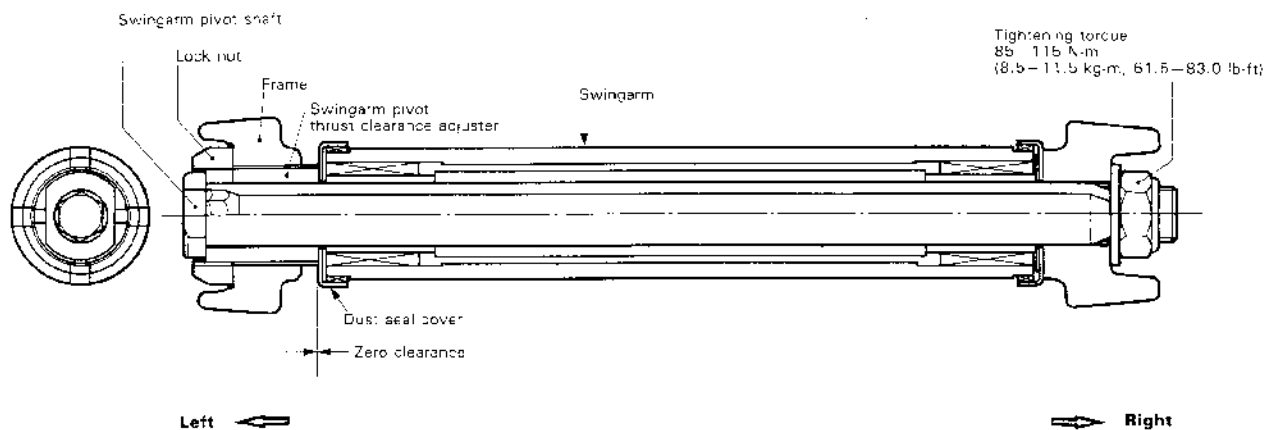
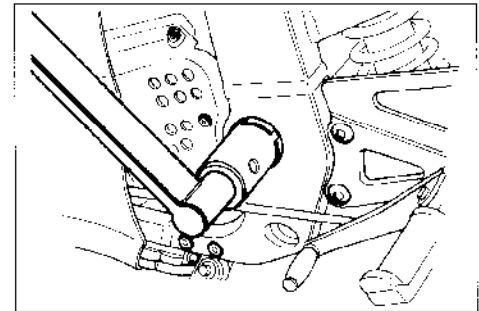
Tightening torque : 85 — 115 N·m
(8.5 — 11.5 kg·m, 61.5 — 83.0 lb-ft)



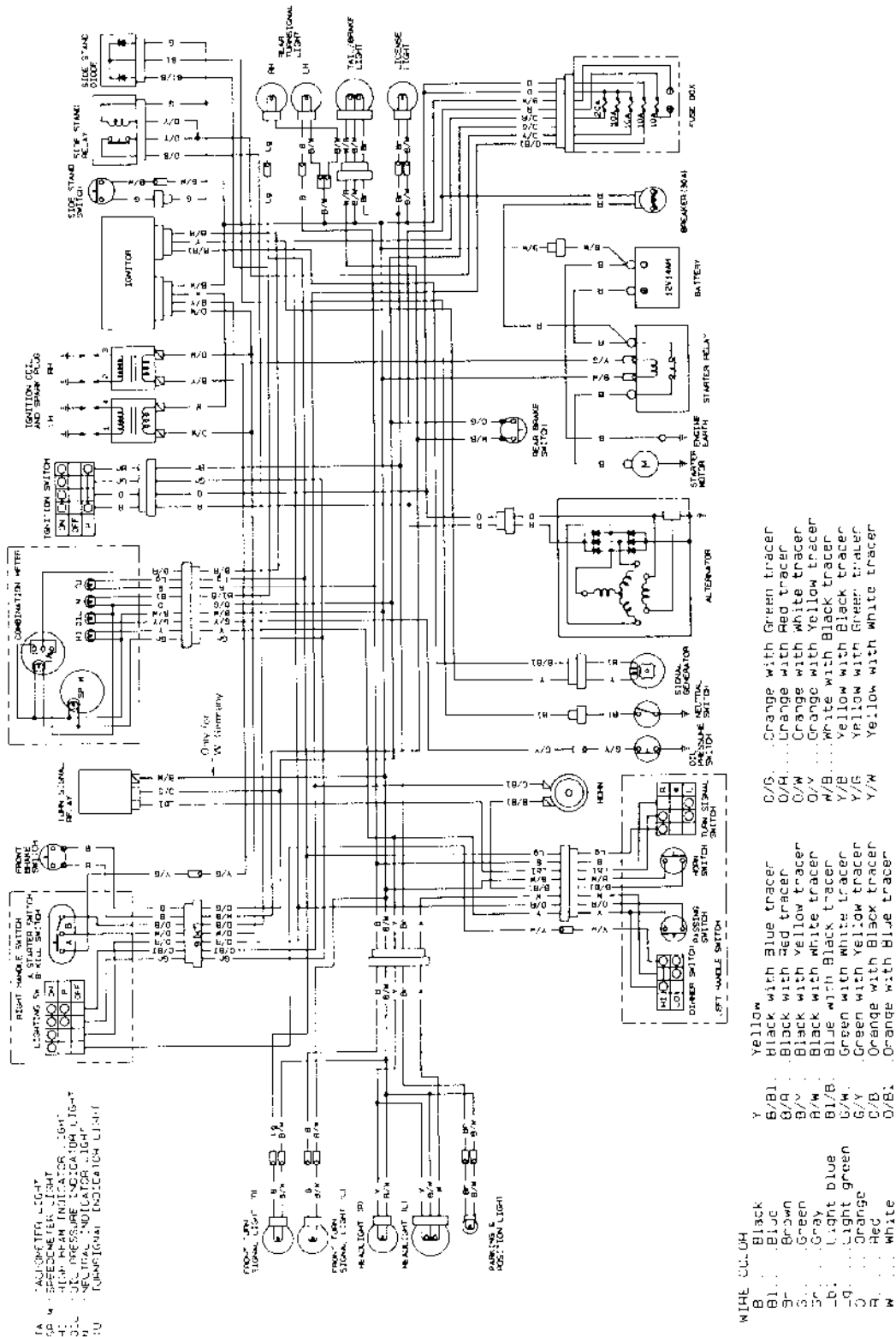
- Tighten the lock nut to the specified torque with the special tool.

09940-14940 : Adjuster lock nut wrench

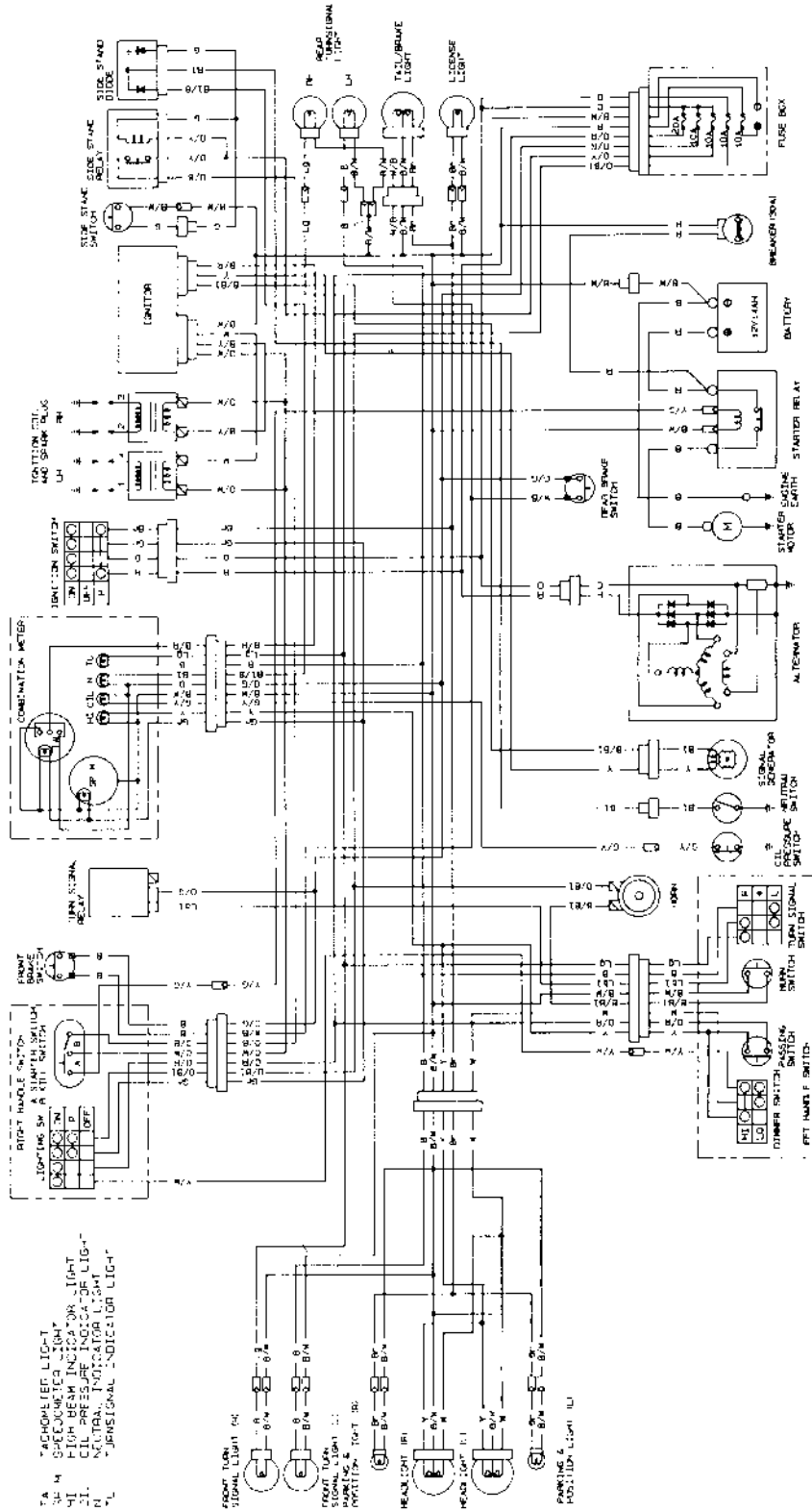
Tightening torque : 60 — 70 N·m
(6.0 — 7.0 kg·m, 43.5 — 50.5 lb-ft)



For Austria, France, The Netherlands, Spain, Sweden and W. Germany



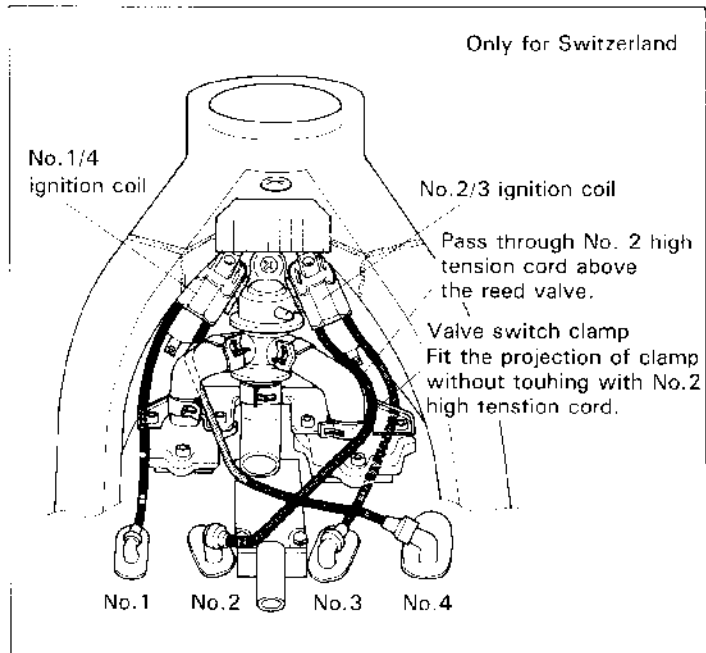
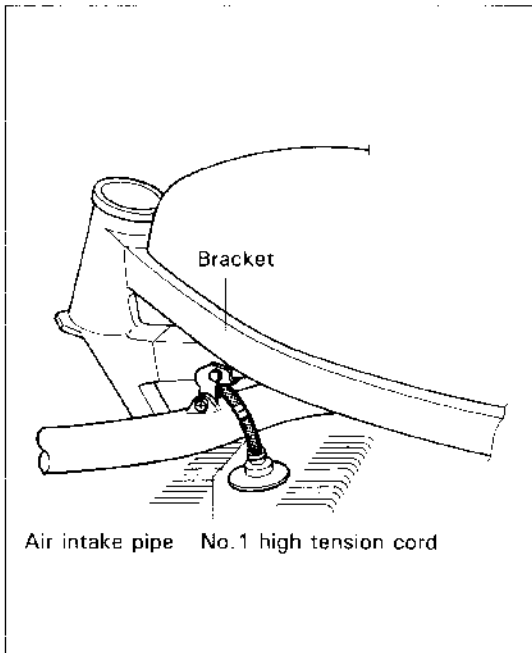
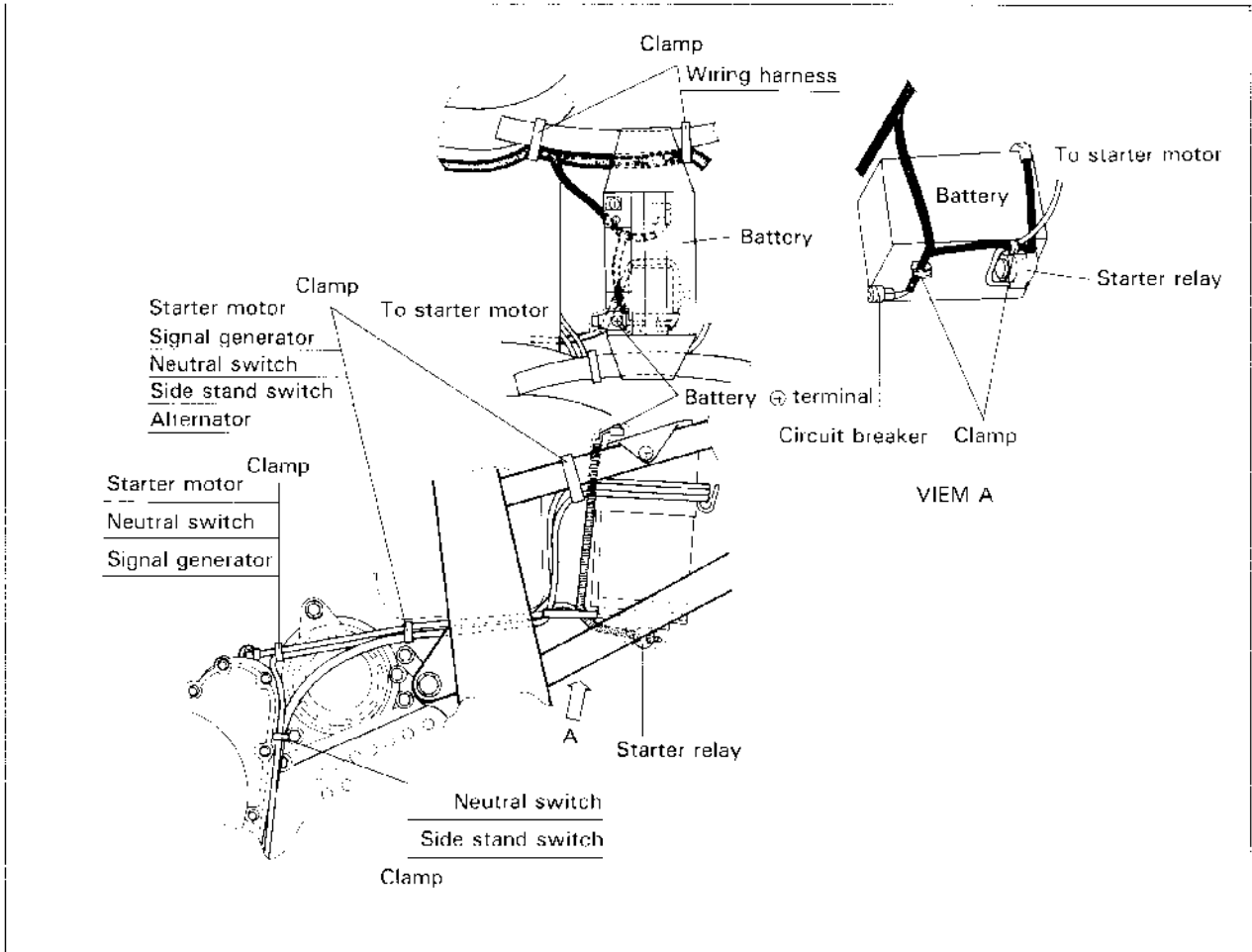
For Australia, Belgium, Italy, Norway, Switzerland, U. K. and The others



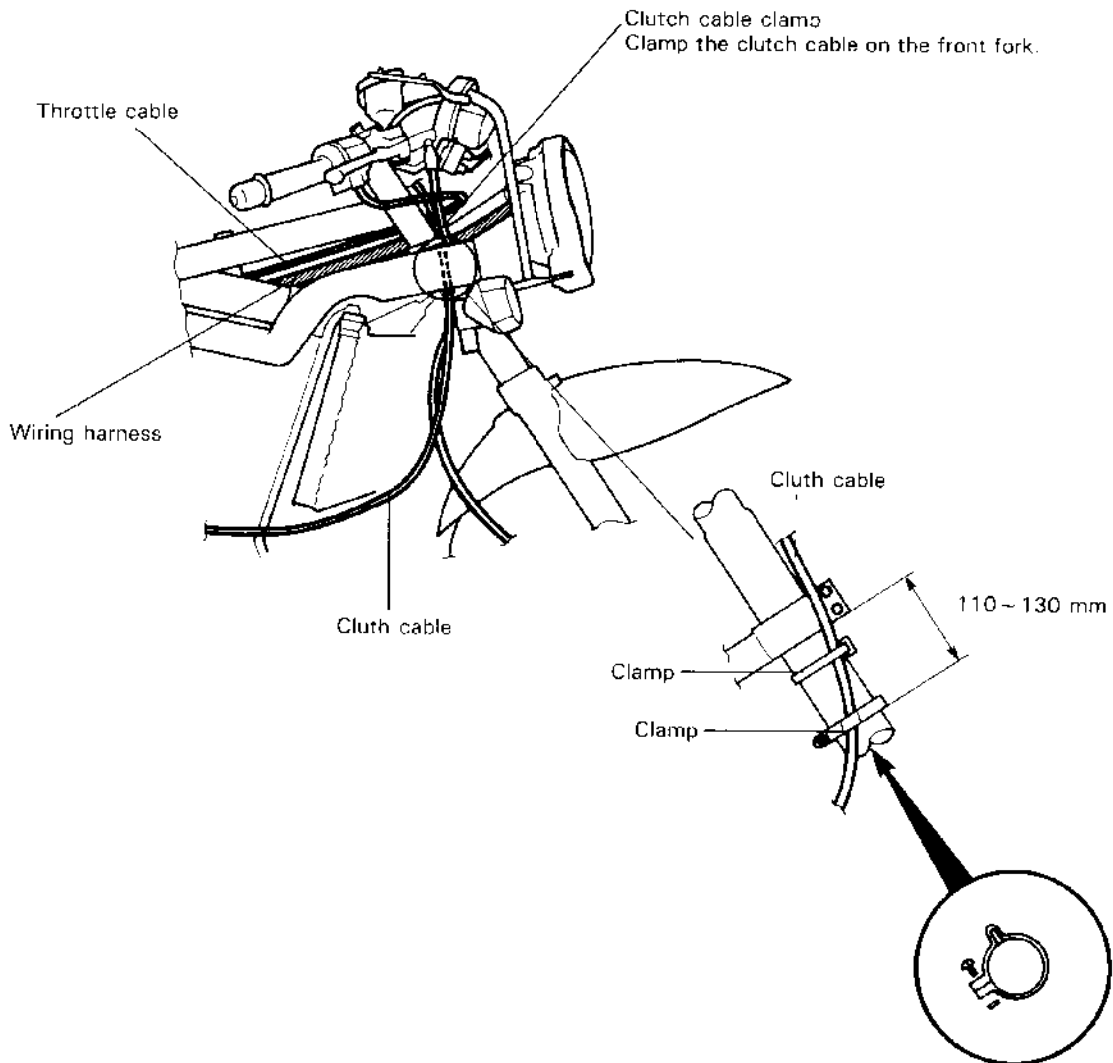
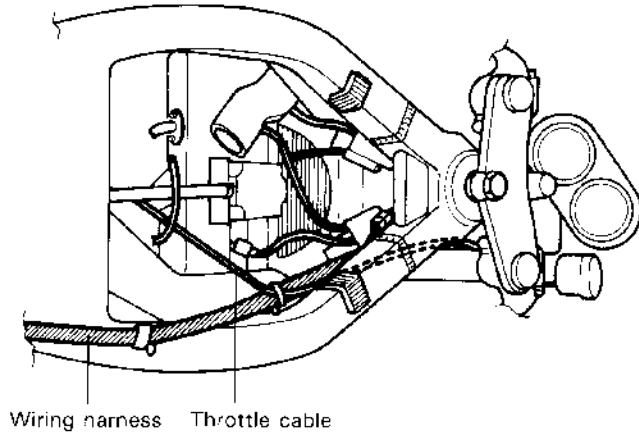
- O/S Orange with Green tracer
- O/R Orange with Red tracer
- O/W Orange with White tracer
- O/Y Orange with Yellow tracer
- W/B White with Black tracer
- Y/B Yellow with Black tracer
- Y/G Yellow with Green tracer
- Y/W Yellow with white tracer
- Y/B Yellow with Blue tracer
- B/W Black with White tracer
- B/Y Black with Yellow tracer
- B/W Black with White tracer
- B/L Blue with Light blue
- G/W Green with White tracer
- G/Y Green with Yellow tracer
- O/W Orange with White tracer
- O/Y Orange with Yellow tracer
- O/B Orange with Blue tracer

WIRE, CABLE AND HOSE ROUTING

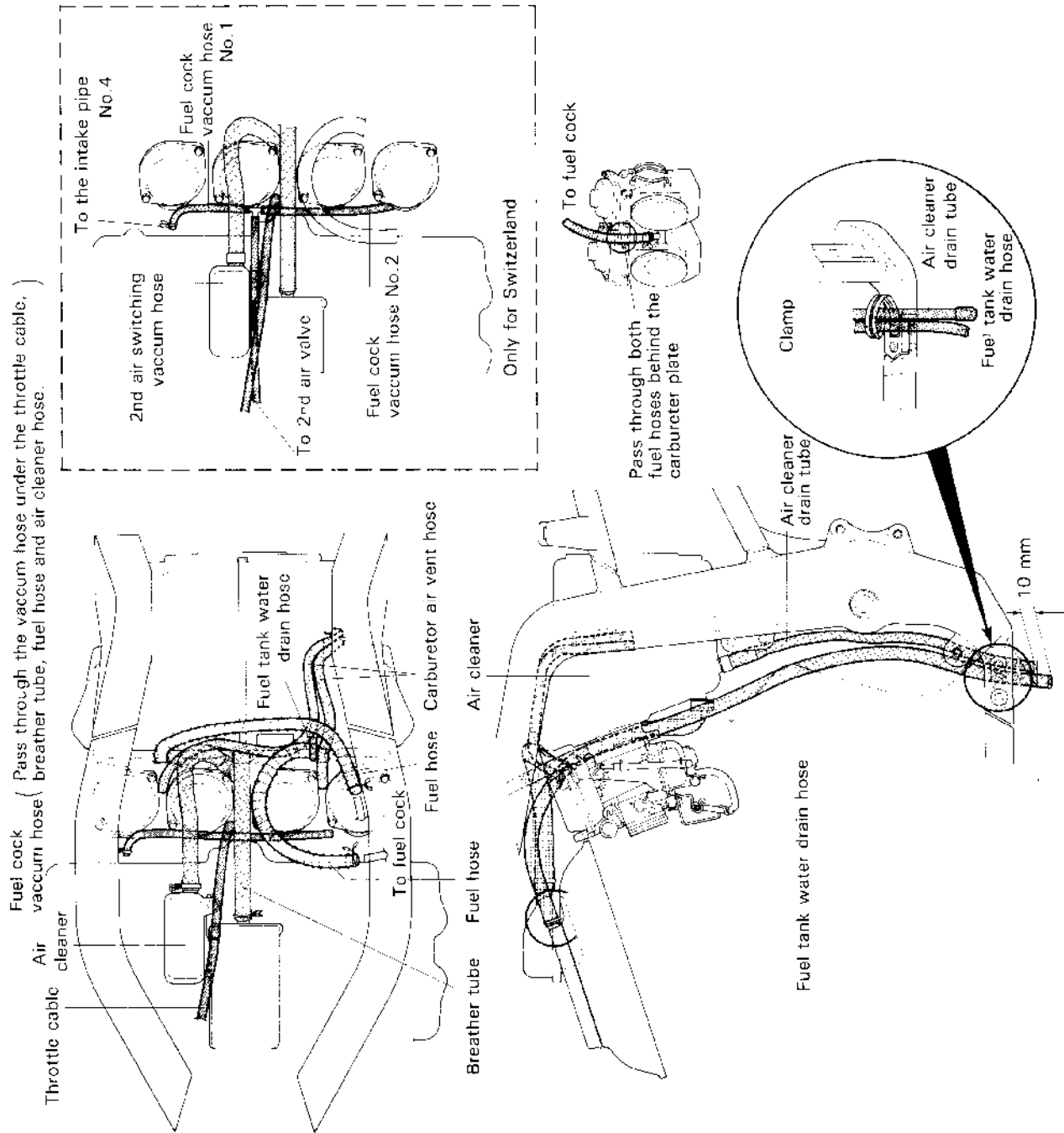
WIRE ROUTING



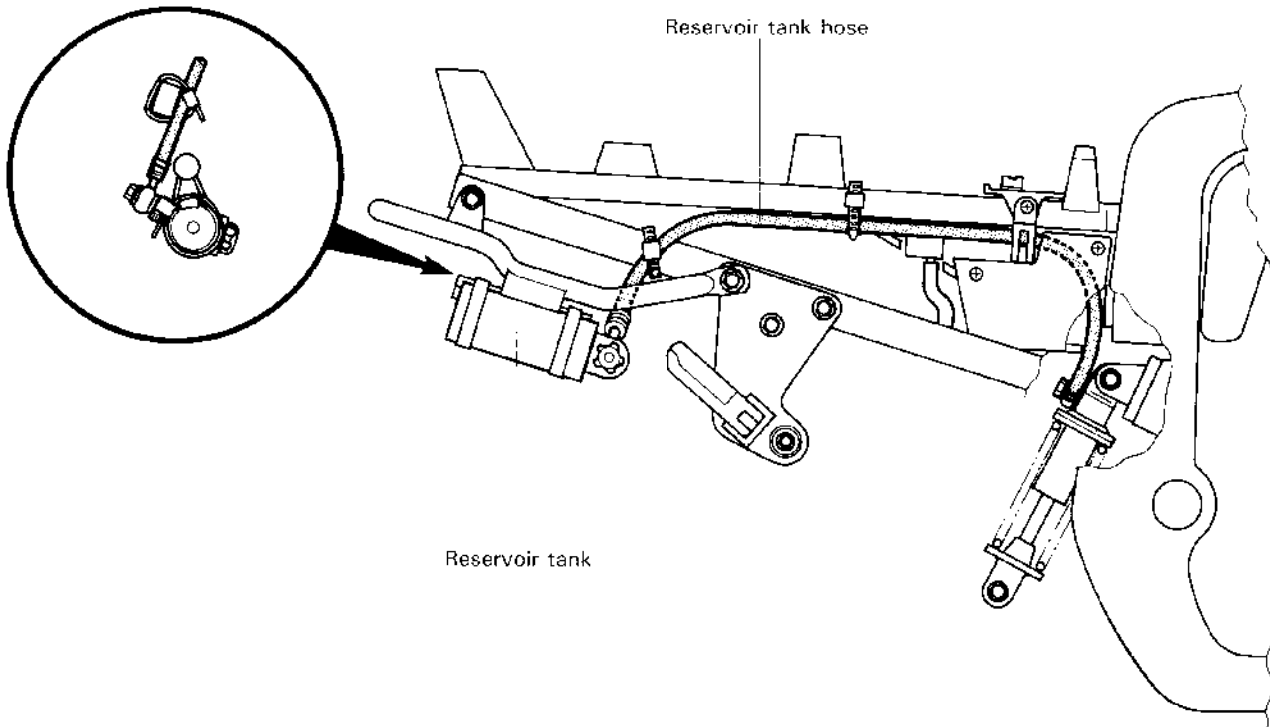
CABLE ROUTING



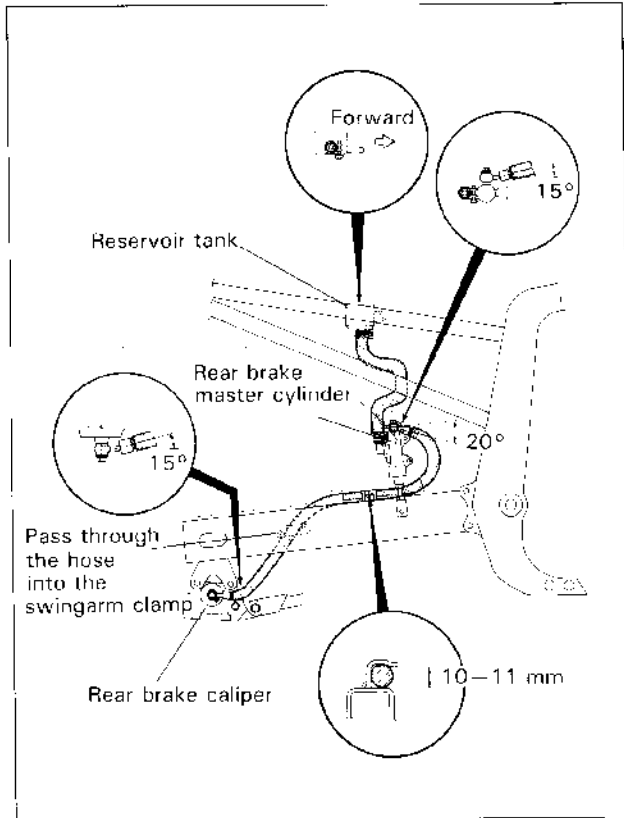
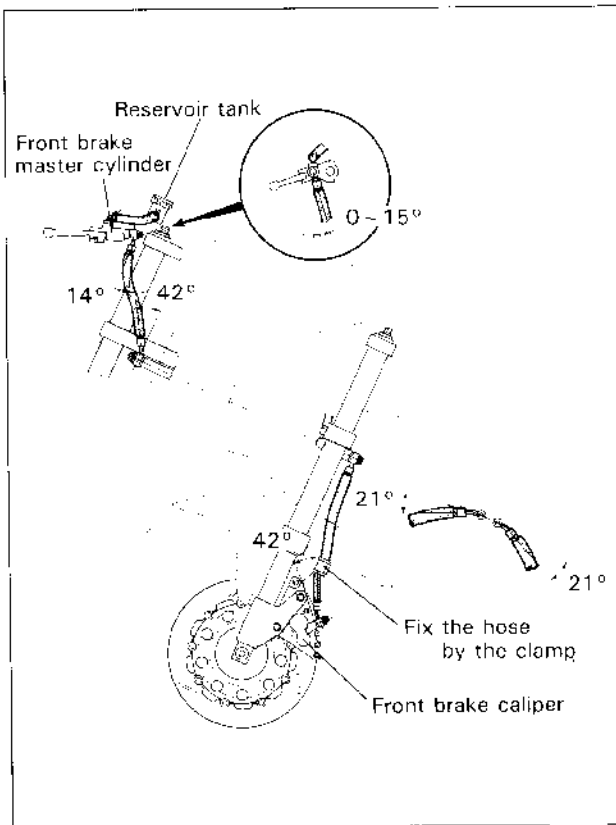
HOSE ROUTING



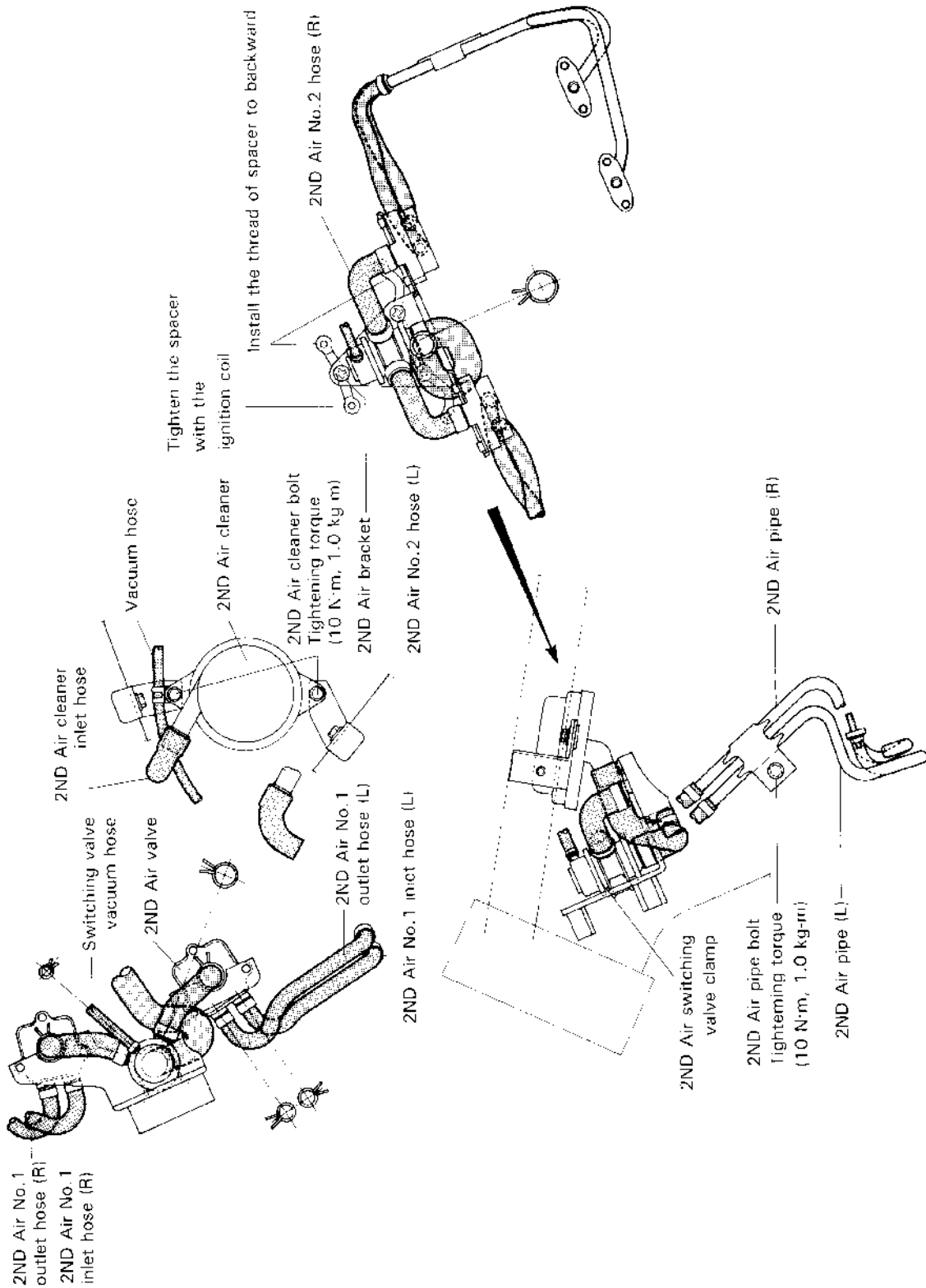
REAR UNIT RESERVOIR TANK HOSE ROUTING



FRONT AND REAR BRAKE HOSE ROUTING



Only for Switzerland



GSX-R750M ('91-MODEL)

FOREWORD

This section describes up-to-date service procedures which differ from those of the GSX-R750L.

NOTE:

- Any differences between GSX-R750L and GSX-R750M in specifications and service data are clearly indicated with the asterisk marks(*).
- Please refer to the sections 1 through 10 for details which are not given in this section.

CONTENTS

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FRONT FORK (Only for Canada)	11-19
WIRING DIAGRAM	11-27
WIRE, CABLE AND HOSE ROUTING	11-32

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length.....	*2 065 mm (81.3 in)
Overall width.....	*725 mm (28.5 in)
Overall height.....	1 140 mm (44.8 in)
Wheelbase.....	1 415 mm (55.7 in)
Seat height.....	*805 mm (31.7 in)
Ground clearance.....	125 mm (4.9 in)
Dry mass.....	*208 kg (459 lbs)..... E-01, 02, 03, 04, 24, 28, 34
	*209 kg (460 lbs)..... E-15, 16, 17, 21, 22, 25, 53
	*210 kg (463 lbs)..... E-18, 39,

ENGINE

Type.....	Four-stroke, Air-cooled with SACS, DOHC, TSSC
Number of cylinders... 4	
Bore.....	70.0 mm (2.756 in)
Stroke.....	48.7 mm (1.917 in)
Piston displacement....	749 cm ³ (45.7 cu.in)
Compression ratio.....	10.9:1
Carburetor.....	MIKUNI BST38SS, four
Air cleaner.....	Polyester fiber element
Starter system.....	Electric starter motor
Lubrication system.....	Wet sump

TRANSMISSION

Clutch.....	Wet multi-plate type
Transmission.....	6-speed constant mesh
Gearshift pattern.....	1-down, 5-up
Primary reduction.....	1.744 (75/43)
Final reduction.....	2.866 (43/15)
Gear ratios, Low.....	2.769 (36/13)
2nd.....	2.062 (33/16)
3rd.....	1.647 (28/17)
4th.....	1.400 (28/20)
5th.....	1.227 (27/22)
Top.....	1.095 (23/21)
Drive chain.....	TAKASAGO: RK50GSV-ZI 108 links, ENDLESS

CHASSIS

Front suspension.....	Inverted telescopic, oil damped, spring preload fully adjustable, rebound damping force and com-
-----------------------	---

	pression damping force adjustable
Rear suspension.....	Link type suspension system, gas/oil damped, rebound and compression damping force adjustable
Steering angle.....	30° (right & left)
Caster.....	65°10'
Trail.....	100 mm (3.9 in)
Turning radius.....	3.2 m (10.5 ft)
Front brake.....	Disc, twin
Rear brake.....	Disc
Front tire size.....	120/70 ZR17
Rear tire size.....	170/60 ZR17
Front fork stroke.....	120 mm (4.7 in)
Rear wheel travel.....	138 mm (5.4 in)

ELECTRICAL

Ignition type.....	Fully transistorized
Ignition timing.....	13° B.T.D.C. at 1 500 r/min
Spark plug.....	NGK: CR10EK ND: U31ETR
Battery.....	12 V 50.4 kC (14Ah)/10HR
Generator.....	Three-phase A. C. Generator
Fuse.....	*10/10/10/10/10 A E-34 20/10/10/10/10 A The others
Circuit breaker.....	30 A

CAPACITIES

Fuel tank	
including reserve.....	21.0 L (5.5/4.6 US/Imp gal)
reserve.....	4.0 L (1.1/0.9 US/Imp gal)
Engine oil, oil change..	3 200 ml (3.4/2.8 US/Imp qt)
Front fork oil.....	*452 ml..... E-28 (15.1/15.9 US/Imp oz) 462 ml..... The others (15.6/16.3 US/Imp oz)

These specifications are subject to change without notice.

Asterisk mark (*) indicates the New GSX-R750M model specifications.

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	27 (1.1)	—
	EX.	24 (0.9)	—
Valve lift	IN.	The others	8.8 (0.35)
		E-17	8.2 (0.32)
	EX.	7.0 (0.28)	—
Tappet clearance (when cold)	IN.	*0.10–0.20 (0.004–0.008)	—
	EX.	*0.15–0.25 (0.006–0.010)	—
Valve guide to valve stem clearance	IN.	0.020–0.047 (0.0008–0.0019)	0.35 (0.014)
	EX.	0.040–0.067 (0.0016–0.0026)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000–5.012 (0.1969–0.1973)	—
Valve stem O.D.	IN.	4.965–4.980 (0.1955–0.1961)	—
	EX.	4.945–4.960 (0.1947–0.1953)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve seat width	IN. & EX.	0.9–1.1 (0.035–0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	*35.0 (1.38)
	OUTER	—	*37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	*5.3–6.5 kg (11.7–14.3 lbs) at length 31 mm (1.22 in)	—
	OUTER	*13.1–15.1 kg (28.9–33.3 lbs) at length 34.5 mm (1.36 in)	—

Asterisk mark (*) indicates the New GSX-R750M model specifications.

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	The others	* 33.896–33.944 (1.3345–1.3364)
		E-17	* 33.612–33.668 (1.3233–1.3255)
	EX.	* 32.906–32.954 (1.2955–1.2974)	
Camshaft journal oil clearance	IN. & EX.	0.032–0.066 (0.0013–0.0026)	
Camshaft journal holder I.D.	IN. & EX.	22.012–22.025 (0.8666–0.8671)	
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	
Camshaft runout	IN. & EX.	—	
Cam chain 20-pitch length	—		158.0 (6.22)
Cam chain pin (at arrow "3")	21st pin		—
Rocker arm I.D.	IN. & EX.	12.000–12.018 (0.4724–0.4731)	
Rocker arm shaft O.D.	IN. & EX.	11.973–11.984 (0.4714–0.4718)	
Cylinder head distortion	—		0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Compression pressure	1 000–1 400 kPa (10–14 kg/cm ²) (142–199 psi)		800 kPa (8 kg/cm ²) (114 psi)
Compression pressure difference	—		200 kPa (2 kg/cm ²) (28 psi)
Piston to cylinder clearance	0.055–0.065 (0.0022–0.0026)		0.120 (0.0047)
Cylinder bore	70.000–70.015 (2.7559–2.7565)		70.075 (2.7589)
Piston diam.	69.940–69.955 (2.7535–2.7541)		69.880 (2.7512)
Cylinder distortion	—		0.20 (0.008)
Piston ring free end gap	1st	R	Approx. 9.8 (0.39)
	2nd	R	Approx. 7.7 (0.30)
Piston ring end gap	1st	0.20–0.35 (0.008–0.014)	
	2nd	0.20–0.35 (0.008–0.014)	

Asterisk mark (*) indicates the New GSX-R750M model specifications.

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.18 (0.007)
	2nd	—	0.18 (0.007)
Piston ring groove width	1st	0.81–0.83 (0.032–0.033)	—
	2nd	0.81–0.83 (0.032–0.033)	—
	Oil	1.51–1.53 (0.059–0.060)	—
Piston ring thickness	1st	0.77–0.79 (0.030–0.031)	—
	2nd	0.77–0.79 (0.030–0.031)	—
Piston pin bore	18.002–18.008 (0.7087–0.7090)		18.030 (0.7098)
Piston pin O.D.	17.996–18.000 (0.7085–0.7087)		17.980 (0.7079)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD		LIMIT
Conrod small end I.D.	18.010–18.018 (0.7091–0.7094)		18.040 (0.7102)
Conrod big end side clearance	0.10–0.20 (0.004–0.008)		0.30 (0.010)
Conrod big end width	20.95–21.00 (0.825–0.827)		—
Crank pin width	21.10–21.15 (0.831–0.833)		—
Conrod big end oil clearance	0.032–0.056 (0.0013–0.0022)		0.080 (0.0031)
Crank pin O.D.	33.976–34.000 (1.3376–1.3386)		—
Crankshaft journal oil clearance	0.020–0.044 (0.0008–0.0017)		0.080 (0.0031)
Crankshaft journal O.D.	31.976–32.000 (1.2589–1.2598)		—
Crankshaft thrust clearance	0.055–0.110 (0.0022–0.0043)		—
Crankshaft thrust bearing thickness	Right side	2.425–2.450 (0.0955–0.0965)	—
	Left side	2.350–2.500 (0.0925–0.0984)	—
Crankshaft runout	—		0.05 (0.002)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.898 (75/43 x 37/34)	—

ITEM	STANDARD	LIMIT
Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ² , 43 psi) Below 600 kPa (6.0 kg/cm ² , 85 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2–3 (0.08–0.12)	—
Drive plate thickness (No.1 & No.2)	2.12–2.28 (0.083–0.090)	1.82 (0.072)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	47.5 (1.87)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT	
Primary reduction ratio	1.744 (75/43)	—	
Final reduction ratio	2.866 (43/15)	—	
Gear ratios	Low	2.769 (36/13)	
	2nd	2.062 (33/16)	
	3rd	1.647 (28/17)	
	4th	1.400 (28/20)	
	5th	1.227 (27/22)	
	Top	1.095 (23/21)	
Shift fork to groove clearance	No.1, No.2 & No.3	0.10–0.30 (0.004–0.012)	0.50 (0.020)
Shift fork groove width	No.1 & No.3	4.80–4.90 (0.189–0.193)	—
	No.2	5.00–5.10 (0.197–0.201)	—
Shift fork thickness	No.1 & No.3	4.60–4.70 (0.181–0.185)	—
	No.2	4.80–4.90 (0.189–0.193)	—
Drive chain	Type	TAKASAGO: RK50GSVZ1	
	Links	108 links, ENDLESS	
	20-pitch length	—	319.4 (12.6)
Drive chain slack	25–35 (1.0–1.4)	—	—
Gearshift lever height	60–70 (2.4–2.7)	—	—

CARBURETOR

ITEM	SPECIFICATION				
	E-03	E-33	E-01,34	E-02,04,16, 21,25,28,53	E-15
Carburetor type	MIKUNI BST38SS	MIKUNI BST36SS	MIKUNI BST38SS	←	←

ITEM	SPECIFICATION				
	E-03	E-33	E-01,34	E-02,04,16,21, 25,28,53	E-15
Bore size	38 mm	36 mm	38 mm	←	←
I.D. No.	*18D3	*18D4	*18D8	*18D0	*18D9
Idle r/min.	*1 200 ± 100 r/min	←	1 100 ± 100 r/min	←	←
Fuel level	1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←	←	←
Float height	14.7 ± 1.0 mm (0.58 ± 0.04 in)	14.6 ± 1.0 mm (0.57 ± 0.04 in)	14.7 ± 1.0 mm (0.58 ± 0.04 in)	←	←
Main jet (M.J.)	#127.5	#112.5	#117.5	←	←
Main air jet (M.A.J.)	#1&4:0.9 mm #2&3:1.2 mm	0.5 mm	0 mm	←	←
Jet needle (J.N.)	5ZDZ3	5FZ91	6ZD7-3rd	←	←
Needle jet (N.J.)	Q-B	Y-5	O-8	←	←
Pilot jet (P.J.)	#32.5	←	#37.5	←	←
By-pass (B.P.)	#1,2,3 & 4: 0.8 mm	#1,2 & 3: 0.8 mm	←	←	←
Pilot outlet (P.O.)	0.7 mm	0.9 mm	0.7 mm	←	←
Valve seat (V.S.)	2.5 mm	2.3 mm	2.5 mm	←	←
Starter jet (G.S.)	#40	#45	#40	←	←
Pilot screw (P.S.)	PRE-SET	PRE-SET	PRE-SET (1 1/8 turns back)	←	←
Throttle valve (Th.V.)	#135	#115	#130	←	←
Throttle cable play	0.5—1.0 mm (0.02—0.04 in)	←	←	←	←

ITEM	SPECIFICATION				
	E-17	E-18	E-22	E-24	E-39
Carburetor type	MIKUNI BST38SS	←	←	←	←
Bore size	38 mm	←	←	←	←
I.D. No.	*18D1	*18D5	*18D7	*18D6	*18D2
Idle r/min.	1100 ± 100 r/min	1200 ± 100 50 r/min	1100 ± 100 r/min	←	←
Fuel level	1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←	←	←
Float height	14.7 ± 1.0 mm (0.58 ± 0.04 in)	←	←	←	←
Main jet (M.J.)	#100	#127.5	#117.5	←	←
Main air jet (M.A.J.)	0 mm	#1&4:0.9 mm #2&3:1.2 mm	0 mm	←	←
Jet needle (J.N.)	6ZE11-3rd	5ZDZ5-3rd	6ZD7-3rd	←	*6ZD14-3rd
Needle jet (N.J.)	P-0	O-8	←	←	←
Pilot jet (P.J.)	#35	#32.5	#37.5	←	←
By-pass (B.P.)	#1,2,3 & 4: 0.8 mm	←	#1,2 & 3: 0.8 mm	←	←

Asterisk mark (*) indicates the New GSX-R750M model specifications.

ITEM	SPECIFICATION				
	E-17	E-18	E-22	E-24	E-39
Pilot outlet (P.O.)	0.7 mm	←	←	←	←
Valve seat (V.S.)	2.5 mm	←	←	←	←
Stater jet (G.S.)	# 40	←	←	←	←
Pilot screw (P.S.)	PRE-SET (1¼ turns back)	* PRE-SET (1¾ turns back)	PRE-SET (1⅞ turns back)	←	←
Throttle valve (Th.V.)	# 135	←	# 130	←	←
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)	←	←	←	←

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	7° B.T.D.C. below 1 500 r/min.		E-33
	13° B.T.D.C. below 1 500 r/min.		The others
Firing order	1-2-4-3		
Spark plug	Type	NGK: CR10EK ND: U31ETR	
	Gap	0.6–0.7 (0.024–0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	Approx. 135–200 Ω		Tester range: (x 100 Ω)
Ignition coil resistance	Primary	⊕ tap–⊖ tap Approx. 2.4–3.2 Ω	Tester range: (x 1 Ω)
	Secondary	Plug cap–Plug cap Approx. 30–40 kΩ	Tester range: (x 1 kΩ)
Generator	Slip ring O.D.	Limit: 14.0 (0.55)	ND
	Brush length	Limit: 4.5 (0.18)	
Generator Max. output	Approx. 337.5 W at 5 000 r/min		The rotation of the generator
Regulated voltage	Above 13.5 V at 5 000 r/min.		
Starter motor	Brush length	Limit: 9 (0.35)	ND
	Commutator under-cut	Limit: 0.2 (0.008)	
Starter relay resistance	3–5 Ω		
Battery	Type designation	YB14L-A2	
	Capacity	12 V 50.4 kC (14 Ah)/10 HR	
	Standard electrolyte S.G.	1.28 at 20°C (68°F)	
Fuse size	Headlight	*10 A	E-34
		20 A	The others
	Turn signal	10 A	
	Ignition	10 A	
	Taillight	10 A	
Power source	10 A		
Circuit breaker	30 A		

Asterisk mark (*) indicates the New GSX-R750M model specifications.

WATTAGE

Unit: W

ITEM		SPECIFICATION		
		E-01,02,03,15, 24,28,33	E-04,15,16,17,18, 21,25,39,53	E-34
Headlight	HI	60 x 2	60 + 55	35 x 2
	LO	55 x 2	55	35 x 2
Position light		* 5	←	←
Tail/Brake light		5/21 x 2	←	←
Turn signal light		21	←	←
Tachometer light		3	←	←
Speedometer light		3	←	←
Turn signal indicator light		3	←	←
High beam indicator light		1.7	←	←
Neutral indicator light		3	←	←
Oil pressure indicator light		3	←	←

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD		LIMIT
Rear brake pedal height		58 – 68 (2.3 – 2.6)		—
Brake disc thickness	Front	5.0 ± 0.2 (0.197 ± 0.008)		4.5 (0.18)
	Rear	6.0 ± 0.2 (0.236 ± 0.008)		5.5 (0.22)
Brake disc runout (Front & Rear)		—		0.30 (0.012)
Master cylinder bore	Front	15.870 – 15.913 (0.6248 – 0.6265)		—
	Rear	12.700 – 12.743 (0.5000 – 0.5017)		—
Master cylinder piston diam.	Front	15.827 – 15.854 (0.6231 – 0.6242)		—
	Rear	12.657 – 12.684 (0.4983 – 0.4993)		—
Brake caliper cylinder bore	Leading	Front	30.230 – 30.280 (1.1902 – 1.1921)	—
			Trailing	33.960 – 34.010 (1.3370 – 1.3390)
		Rear	38.180 – 38.256 (1.5031 – 1.5061)	—
Brake caliper piston diam.	Leading	Front	30.130 – 30.180 (1.1826 – 1.1882)	—
			Trailing	33.878 – 33.928 (1.3338 – 1.3357)
		Rear	38.098 – 38.148 (1.5000 – 1.5019)	—

Asterisk mark (*) indicates the New GSX-R750M model specifications.

ITEM	SPECIFICATION		LIMIT
Wheel rim runout (Front & Rear)	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	120/70 ZR17	—
	Rear	170/60 ZR17	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	120 (4.7)	—	
Front fork spring free length	—	* 341 (13.4)	E-03,28,33
	—	267 (10.5)	The others
Front fork oil level	* 123 (4.8)	—	E-03,28,33
	107 (4.2)	—	The others
Rear wheel travel	136 (5.4)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	230	2.30	33	230	2.30	33
REAR	250	2.50	36	250	2.50	36

Asterisk mark (*) indicates the New GSX-R750M model specifications.

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane (R_2^M) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.	E-03,33
	Use only unleaded gasoline of at least 87 pump octane (R_2^M method) or 91 octane or higher rated by the Research Method.	E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.	The others
Fuel tank including reserve	18.5 L (4.9/4.1 US/Imp gal)	E-33
	21.0 L (5.5/4.6 US/Imp gal)	The others
	reserve 4.0 L (1.1/0.9 US/Imp gal)	
Engine oil type	SAE 10W/40, API SE or SF	
Engine oil capacity	Change 3 200 ml (3.4/2.8 US/Imp qt)	
	Filter change 3 400 ml (3.6/3.0 US/Imp qt)	
	Overhaul 5 100 ml (5.4/4.5 US/Imp qt)	
Front fork oil type	Fork oil # 10	
Front fork oil capacity (each leg)	* 452 ml (15.1/15.9 US/Imp oz)	E-03,28,33
	462 ml (15.6/16.3 US/Imp oz)	The others
Brake fluid type	DOT 4	

Asterisk mark (*) indicates the New GSX-R750M model specifications.

COUNTRY OR AREA

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

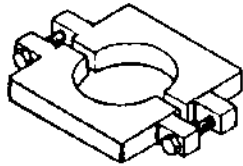
CHASSIS

ITEM	N·m	kg·m	lb·ft
Steering stem head nut	50–80	5.0–8.0	36.0–58.0
Front fork upper clamp bolt	22–35	2.2–3.5	16.0–25.5
Front fork lower clamp bolt	22–35	2.2–3.5	16.0–25.5
Front fork cap	30–40	3.0–4.0	21.5–29.0
Front fork compression damping force adjuster	15–20	1.5–2.0	11.0–14.5
Front fork rebound damping force adjuster lock nut	18–22	1.8–2.2	13.0–16.0
Front fork damper rod bolt	30–40	3.0–4.0	21.5–29.0
Front axle shaft	85–115	8.5–11.5	61.5–83.0
Front axle pinch bolt	15–25	1.5–2.5	11.0–18.0
Handlebar holder set bolt	7–11	0.7–1.1	5.0–8.0
Handlebar holder mounting bolt	15–25	1.5–2.5	11.0–18.0
Front brake lever nut	8–12	0.8–1.2	6.0–8.5
Front brake caliper mounting bolt	28–44	2.8–4.4	20.0–32.0
Front brake caliper housing bolt	20–25	2.0–2.5	14.5–18.0
Front brake pad mounting bolt	15–20	1.5–2.0	11.0–14.5
Front brake master cylinder bolt	5–8	0.5–0.8	3.5–6.0
Brake hose union bolt (Cylinder & Caliper)	15–20	1.5–2.0	11.0–14.5
Air bleeder valve (Front & Rear)	6–9	0.6–0.9	4.5–6.5
Front and rear disc bolt	15–25	1.5–2.5	11.0–18.0
Front footrest bracket mounting bolt	27–43	2.7–4.3	19.5–31.0
Swingarm pivot nut	85–115	8.5–11.5	61.5–83.0
Front footrest nut	35–55	3.5–5.5	25.5–40.0
Rear shock absorber mounting nut (Upper & Lower)	40–60	4.0–6.0	29.0–43.5
Rear cushion lever nut	110–160	11.0–16.0	79.5–115.5
Rear brake caliper mounting bolt	17–28	1.7–2.8	12.5–20.5
Rear brake caliper housing bolt	30–36	3.0–3.6	21.5–26.0
Rear torque link nut For Canada & U.S.A. (Front & Rear)	18–28	1.8–2.8	13.0–20.0
For the others	22–34	2.2–3.4	16.0–24.5
Rear brake master cylinder mounting bolt	15–25	1.5–2.5	11.0–18.0
Rear axle nut	85–115	8.5–11.5	61.5–83.0
Rear sprocket nut	48–72	4.8–7.2	35.0–52.0
Rear brake rod lock nut	15–20	1.5–2.0	11.0–14.5
Swingarm pivot adjuster lock nut	60–70	6.0–7.0	43.5–50.5

For Austria and Switzerland

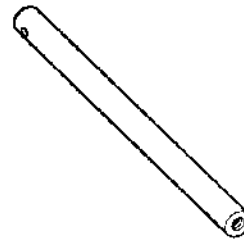
ITEM	N·m	kg·m	lb·ft
2nd air reed valve mounting bolt	4–5	0.4–0.5	3.0–3.5
2nd air cleaner mounting bolt	7	0.7	5.0
2nd air cleaner bracket bolt	10	1.0	7.0
2nd air pipe bolt	10	1.0	7.0
2nd air pipe nut	10	1.0	7.0

SPECIAL TOOLS (Only for Canada)



This tool is used for installing the front fork oil seal.

09940-52830 : Front fork oil seal case stopper



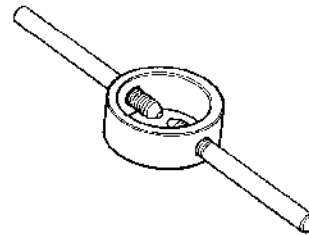
This tool is used for installing the front fork cap.

09940-52840 : Front fork inner rod holder



This tool is used for disassembling and reassembling the front fork cap.

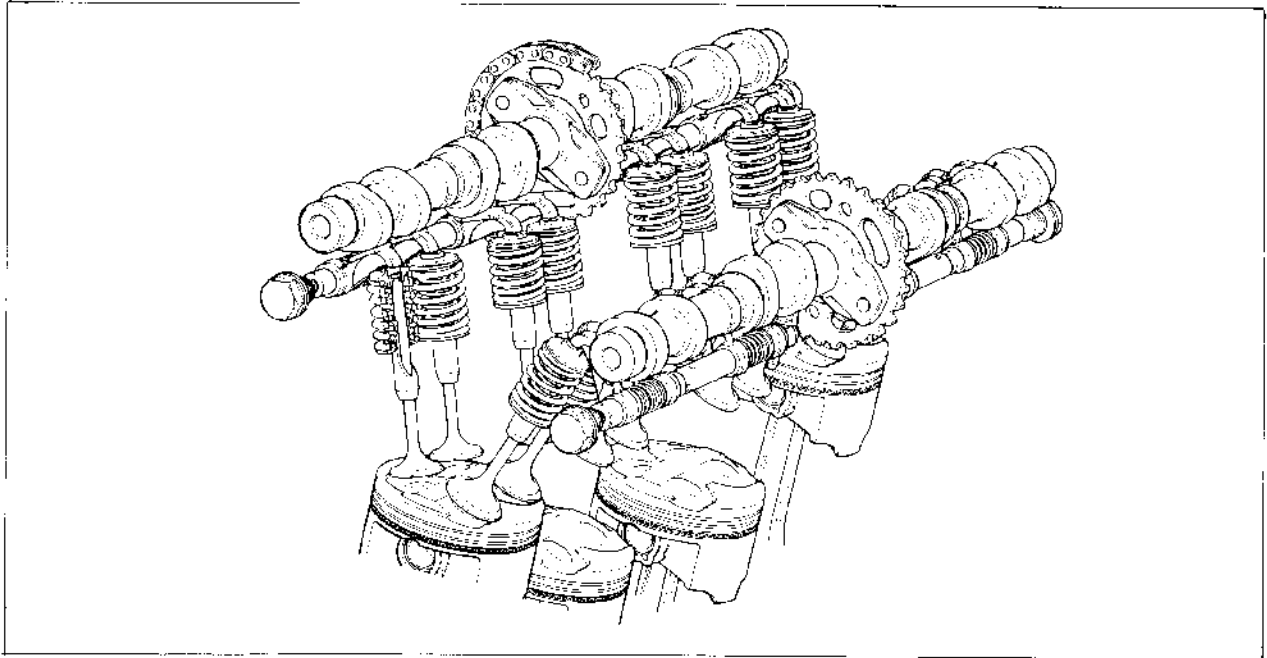
09940-94920 : Stopper plate



This tool is used for disassembling and reassembling the front fork cap.

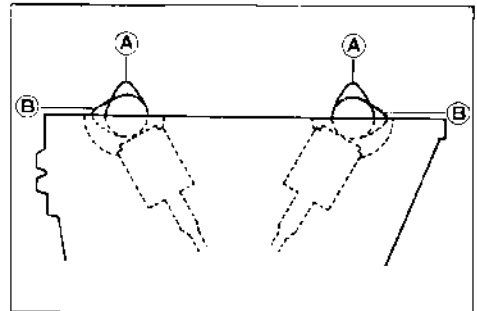
09940-94930 : Front fork spacer holder

TAPPET CLEARANCE



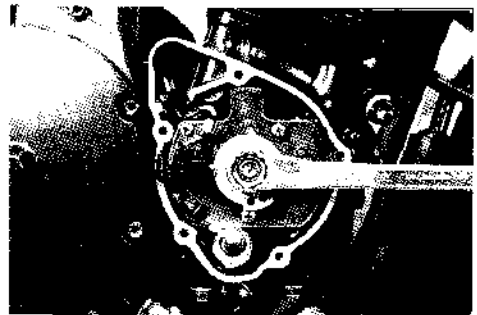
- Remove the fairing.
- Remove the seat and fuel tank.
- Remove the cylinder head breather cover.
- Remove the steering damper bracket.
- Remove the cylinder head cover.

Tappet clearance IN. : 0.10–0.20 mm
(when cold) (0.0039–0.0079 in)
EX. : 0.15–0.25 mm
(0.0059–0.0098 in)



NOTE:

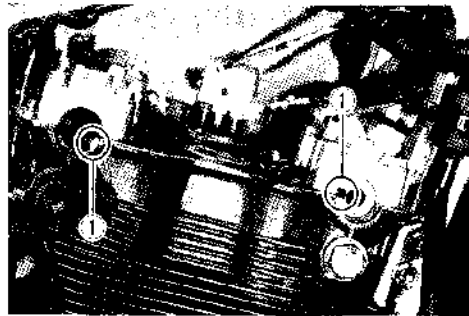
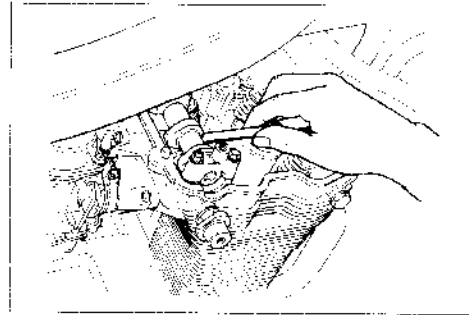
- * The cam must be located in the indicated positions, **(A)** or **(B)**, in order to check the tappet clearance or to adjust tappet clearance. Clearance reading should not be taken with the cam in any other position than two positions.
 - * The clearance specification is for **COLD** state.
 - * To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



- Turn crankshaft to bring the "T" mark on the rotor to the center of pick up coil and also to bring the notches ① in the right ends of both camshafts (EX. and IN.) to the positions shown.
- In this condition, read the tappet clearance at the valves. (IN. and EX. of No. 1 cylinder, EX. of No. 2 and IN. of No. 3).



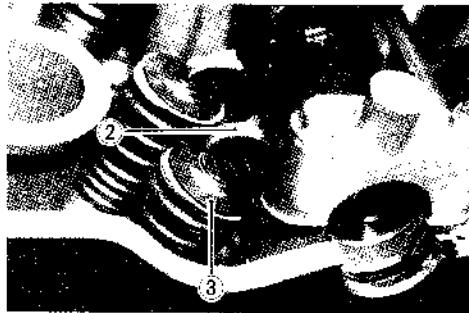
- Use thickness gauge between tappet shim and rocker arm. If clearance is off the specification, bring it into the specified range by replacing a thicker or thinner shim.
- Turn the crankshaft 360° (one rotation) to bring the "T" mark to the center of pick up coil and also to bring the notches ① to the positions as shown.
- Read the clearance at the remaining valves and adjust the clearance if necessary.
Refer to Service Manual (2-6 page).



Cam Position	Notch position	
	Intake Camshaft	Exhaust Camshaft
Ⓒ		
Ⓓ		

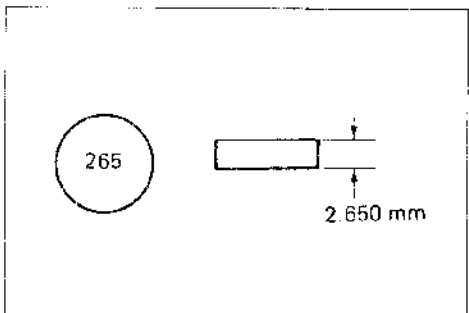
TAPPET CLEARANCE ADJUSTMENT

- The clearance is adjusted by replacing the existing tappet shim by a thicker or thinner shim.
- Moving the rocker arm sideways by the suitable tool, set the rocker arm ② on the spring retainer ③ as shown.
- Replace the shim with a magnetic bar.
- 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 (IN: 0.10–0.20 mm, EX: 0.15–0.25 mm). For the purpose of this adjustment, a total of 21 sizes of tappet shim are available ranging from 2.50 to 3.50 mm in steps of 0.05 mm. Fit the selected shim to the tappet, with numbers toward tappet. Be sure to check shim size with micrometer to insure its size.



NOTE:

- * Before fitting the tappet shim to the tappet, be sure to apply engine oil to its top and bottom faces.
- * When seating tappet shim, be sure to face figure printed surface to the tappet.
- After replacing the tappet shim, rotate 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.



TAPPET SHIM SELECTION TABLE [INTAKE]
TAPPET SHIM NO. (12892-41C00-x x x)

MEA- SURED TAPPET CLEARANCE (mm)	SUFFIX NO.	SPECIFIED CLEARANCE/NO ADJUSTMENT REQUIRED																				
		750	755	760	765	770	775	780	785	290	295	300	305	310	315	320	325	330	335	340	345	350
0.00	0.04	2.50	2.550	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5
0.05	0.09	2.50	2.550	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5
0.10	0.20	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5		
0.21	0.25	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5			
0.26	0.30	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5				
0.31	0.35	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5					
0.36	0.40	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5						
0.41	0.45	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5							
0.46	0.50	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5								
0.51	0.55	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5									
0.56	0.60	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5										
0.61	0.65	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5											
0.66	0.70	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5												
0.71	0.75	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5													
0.76	0.80	3.2	3.25	3.3	3.35	3.4	3.45	3.5														
0.81	0.85	3.25	3.3	3.35	3.4	3.45	3.5															
0.86	0.90	3.3	3.35	3.4	3.45	3.5																
0.91	0.95	3.35	3.4	3.45	3.5																	
0.96	1.00	3.4	3.45	3.5																		
1.01	1.05	3.45	3.5																			
1.06	1.10	3.5																				
1.11	1.15																					

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 2.70 mm
Shim size to be used 2.80 mm

TAPPET SHIM SELECTION TABLE (EXHAUST)
TAPPET SHIM NO. (12892-41C00-x x x)

MEASURED TAPPET CLEARANCE (mm)	SUFFIX NO.	SPECIFIED CLEARANCE/NO ADJUSTMENT REQUIRED																				
		250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350
0.00 - 0.04		2.50	2.550	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5
0.05 - 0.09		2.50	2.550	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5
0.10 - 0.14		2.50	2.550	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5
0.15 - 0.25		2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5		
0.26 - 0.30		2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5			
0.31 - 0.35		2.70	2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5				
0.36 - 0.40		2.75	2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5					
0.41 - 0.45		2.80	2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5						
0.46 - 0.50		2.85	2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5							
0.51 - 0.55		2.90	2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5								
0.56 - 0.60		2.95	3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5									
0.61 - 0.65		3.00	3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5										
0.66 - 0.70		3.05	3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5											
0.71 - 0.75		3.10	3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5												
0.76 - 0.80		3.15	3.2	3.25	3.3	3.35	3.4	3.45	3.5													
0.81 - 0.85		3.2	3.25	3.3	3.35	3.4	3.45	3.5														
0.86 - 0.90		3.25	3.3	3.35	3.4	3.45	3.5															
0.91 - 0.95		3.3	3.35	3.4	3.45	3.5																
0.96 - 1.00		3.35	3.4	3.45	3.5																	
1.01 - 1.05		3.4	3.45	3.5																		
1.06 - 1.10		3.45	3.5																			
1.11 - 1.15		3.5																				
1.16 - 1.20																						

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.

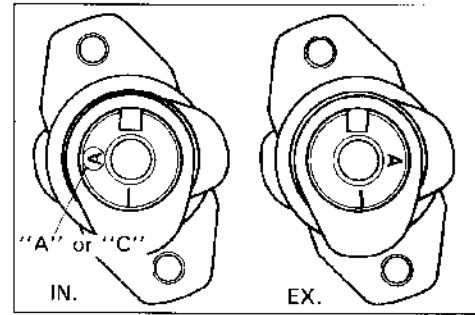
EXAMPLE

Tappet clearance is 0.27 mm
Present shim size 2.90 mm
Shim size to be used 3.00 mm

CAMSHAFT

The punch letter (as shown below) on the right end of both camshaft of this model means to distinguish these camshafts from those of other models.

	Letter	Note
IN.	A	
	C	Only for Sweden
EX.	A	



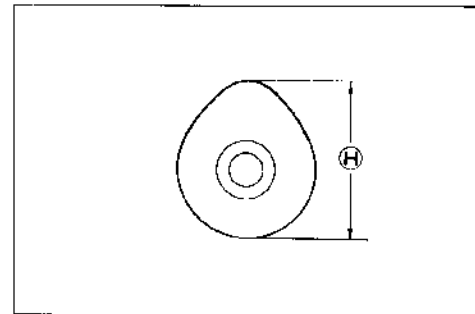
CAM HEIGHT: H

Service Limit

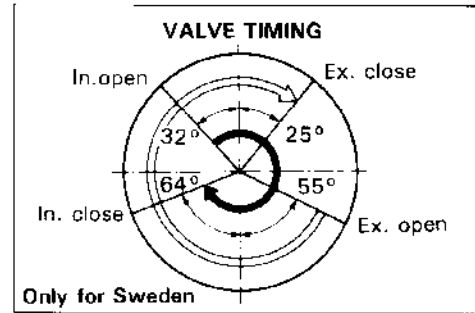
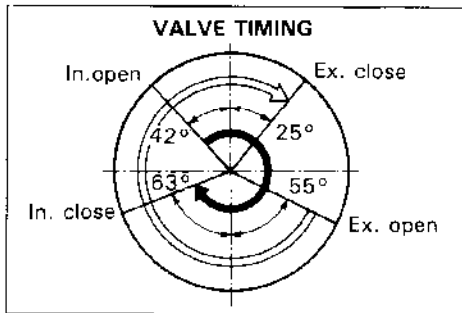
IN.: 33.600 mm (1.3228 in)

33.320 mm (1.3118 in).....Only for sweden

EX.: 32.610 mm (1.2839 in)

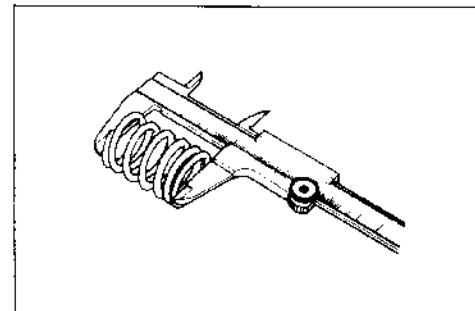


VALVE TIMING

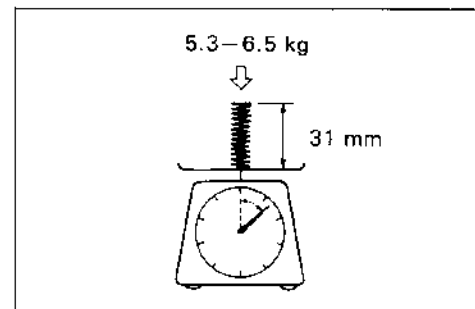


VALVE SPRING

Valve spring free length	Service Limit
INNER	35.0 mm (1.38 in)
OUTER	37.8 mm (1.49 in)



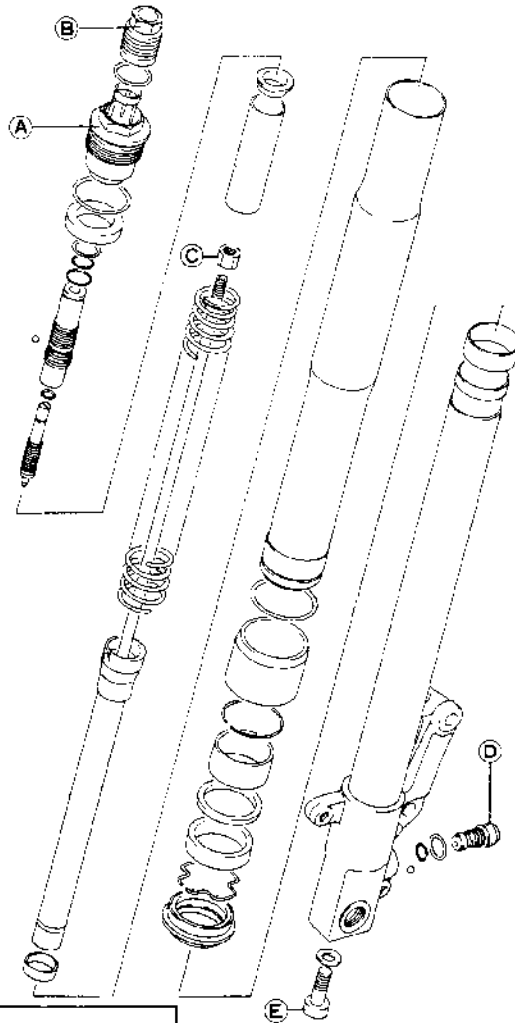
Valve spring tension	Standard
INNER	5.3 – 6.5 kg/31.0 mm (11.7 – 14.3 lbs/1.22 in)
OUTER	13.1 – 15.1 kg/34.5 mm (28.9 – 33.3 lbs/1.36 in)



CAUTION:

Replace both the valve springs, inner and outer, at a time, if any one of these is found to be beyond the limit.

FRONT FORK (Only for Canada)



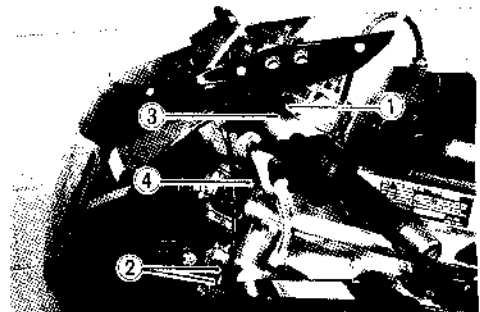
Item	Tightening torque		
	N·m	kg-m	lb-ft
A	30-40	3.0-4.0	21.5-29.0
B	30-40	3.0-4.0	21.5-29.0
C	18-22	1.8-2.2	13.0-16.0
D	15-20	1.5-2.0	11.0-14.5
E	30-40	3.0-4.0	21.5-29.0

REMOVAL AND DISASSEMBLY

- Remove the lower fairing assembly.
- Remove the front wheel.
- Remove the front fender.
- Remove the front fork by loosening the upper and lower clamp bolts (①, ②), handlebar clamp bolt ③ and steering damper clamp bolt ④ (for left front fork).

NOTE:

Slightly loosen the fork cap to facilitate later disassembly before loosening the front fork lower clamp bolts.

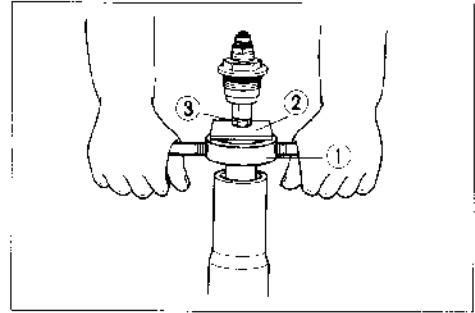


- Compress the fork spring with the special tool ①, and insert the special tool ② between the lock nut and spacer.

09940-94930 : Front fork spacer holder ①

09940-94920 : Stopper plate ②

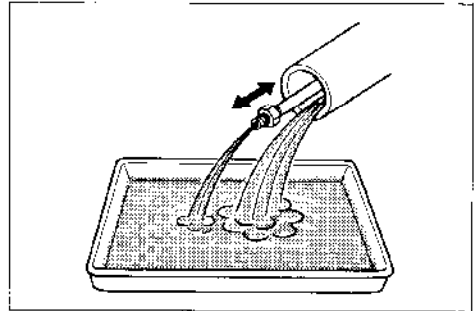
- Remove the fork cap by loosening the lock nut ③.



- Remove the spacer and spring.



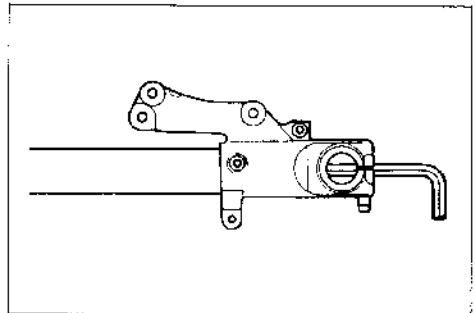
- Invert the fork and stroke it several times to let out fork oil.
- Under the inverted condition of front fork, drain oil to hold it few minutes.



- Remove the damper rod bolt with a 8 mm hexagon wrench.

NOTE:

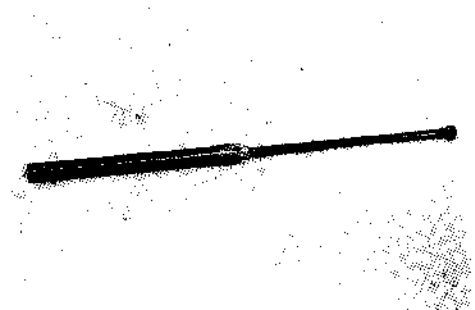
If it is difficult to loosen the damper rod blot, use the air impact wrench.



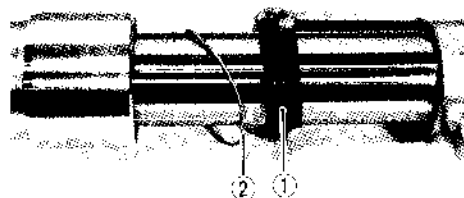
- Remove the damper rod and plate.

CAUTION:

Do not attempt to disassemble the damper rod.



- Remove the dust seal ① and stopper ring ② .



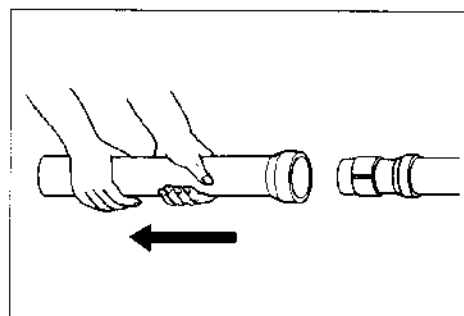
- Remove the oil seal by slowly pulling out the inner tube.

NOTE:

Be careful not to damage the inside of the tube.

CAUTION;

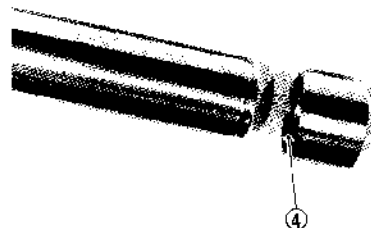
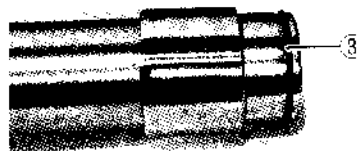
The outer tube and inner tube "ANTI-FRICTION" metals must be replaced along with oil seal and dust seal, when assembling the front fork.



- Remove the oil seal case by removing the stopper ring ③.

NOTE:

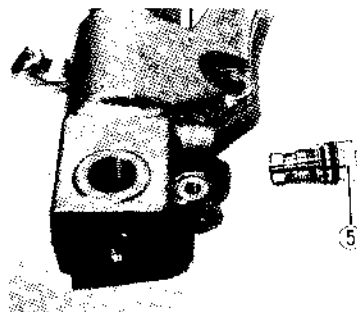
The removed O-ring ④ should be replaced with a new one.



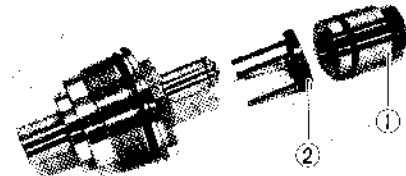
- Remove the compression damping force adjuster ⑤.

NOTE:

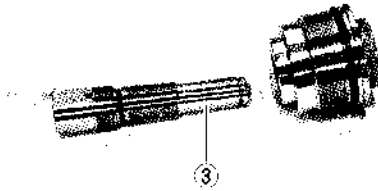
Do not attempt to disassemble the compression damping force adjuster.



- Remove the spring adjuster ① and spring adjuster plate ② .



- Remove the rebound damping adjuster ③ .

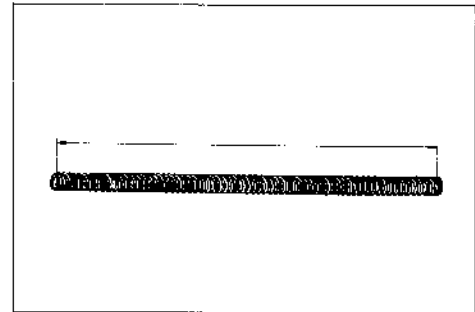


INSPECTION

FORK SPRING

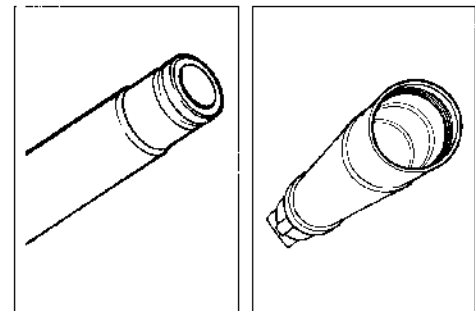
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Service Limit : 341 mm (13.4 in)



INNER AND OUTER TUBE

Inspect the inner tube sliding surface and outer tube sliding surface for any scuffing.

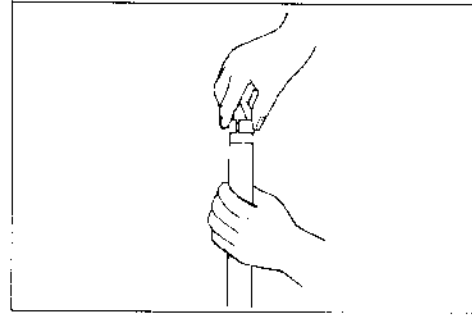


REASSEMBLY AND REMOUNTING

Reassemble and remount the front fork in the reverse order of removal and disassembly. Also observe the following instructions:

TUBE METALS AND SEALS

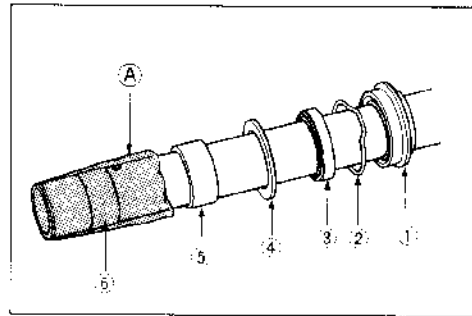
- Hold the inner tube vertically and clean the metal groove and install the ANTI-FRICTION metal by hand as shown.



CAUTION

Use special care to prevent damage to the "Teflon" coated surface of the Anti-friction inner tube metal when mounting it.

- Install the dust seal, oil seal stopper ring, oil seal, oil seal retainer and anti-friction metal onto the inner tube.



CAUTION:

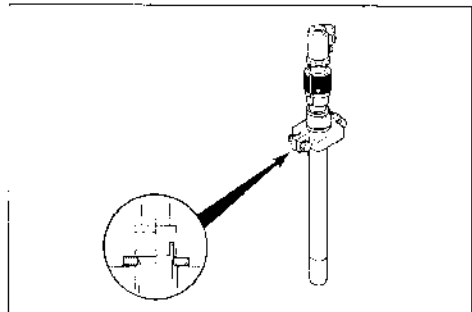
- * When installing the dust seal ① and oil seal ③ onto the inner tube, protect their seal lips with a vinyl film ④ to prevent oil seal damage.
- * Do not use solvents for washing to prevent oil seal damage.

- ① Dust seal
- ② Oil seal stopper ring
- ③ Oil seal
- ④ Oil seal retainer
- ⑤ Anti-friction metal (outer tube)
- ⑥ Anti-friction metal (inner tube)

- Insert the inner tube into the outer tube and install the oil seal and dust seal with the special tools.

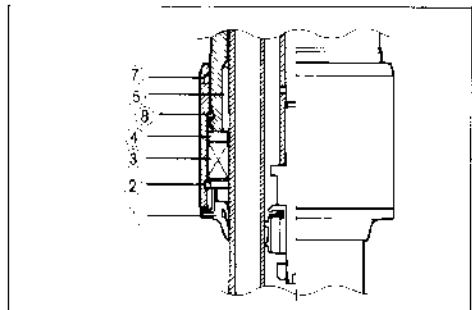
09940-52820 : Front fork oil seal installer

09940-52830 : Front fork seal case stopper



- After installing the oil seal, install the oil seal stopper ring and dust seal.

- ⑦ O-ring
- ⑧ Oil seal case stopper ring



DAMPER ROD BOLT

- Tighten the damper rod bolt to the specified torque with a 8 mm hexagon wrench.

Tightening torque : 30—40 N·m
(3.0—4.0 kg-m, 21.5—29.0 lb-ft)

CAUTION:

Use a new gasket to prevent oil leakage.

FORK OIL

Fork oil air bleeding

- Place the front fork vertically with fully compressed position and without spring.
- Pour specified front fork oil up to the top level of the outer tube.

Fork oil type : Fork oil # 10

- Install the special tool to the inner rod.

09940-52840 : Front fork inner rod holder

- Move the inner rod holder slowly more than ten times until bubbles do not come out from the oil.

NOTE:

Pour front fork oil up to the top of the outer tube to find bubbles while bleeding air.

- Pour specified front fork oil up to the top level of the outer tube again. Move the outer tube up and down fully stroke until bubbles do not come out from the oil.
- Keep the front fork vertically and wait 5—6 minutes.

NOTE:

Take extreme attention to pump out air completely.

Fork oil level adjusting

- Hold the front fork vertical and adjust fork oil level with the special tool.

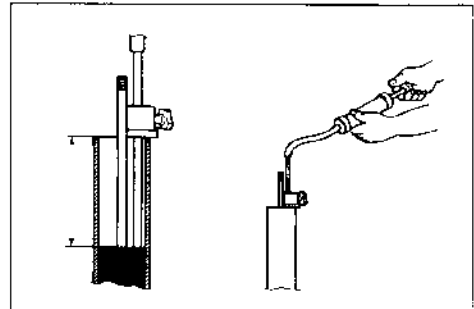
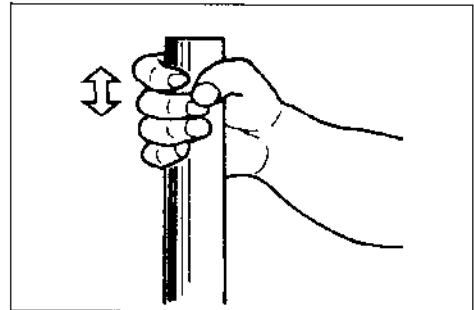
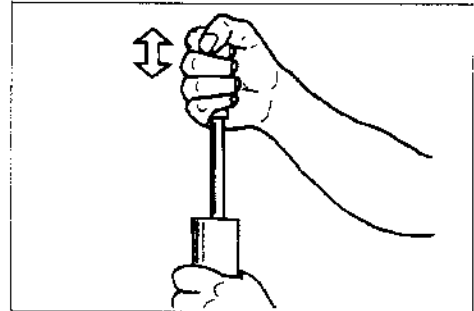
09943-74111 : Fork oil level gauge

Fork oil level : 123 mm (4.8 in)

Fork oil capacity : 452 ml (15.1/15.9 US/Imp oz)
(each leg)

NOTE:

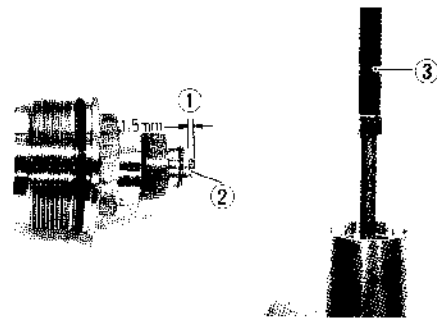
When adjusting fork oil level, remove the fork spring and compress the outer tube fully.



FRONT FORK CAP

- Adjust the height ① of the rebound damping force adjuster ②, before installing the fork cap assembly.
- Install the special tool ③ to the inner rod.

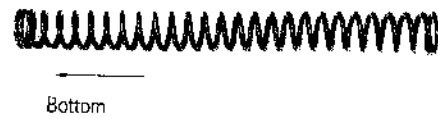
09940-52840 : Front fork inner rod holder



- Install the spring and spacer.

NOTE:

When installing the spring, close pitch of the spring to bottom.



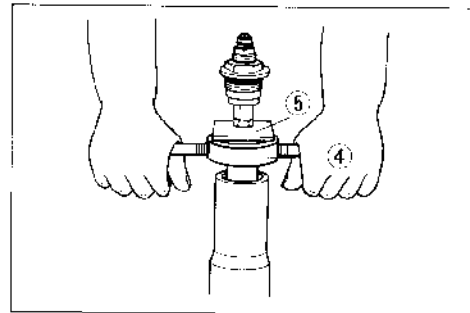
- Compress the spring with the special tool ④, and insert the special tool ⑤ between the spacer and lock nut.

09940-94930 : Front fork spacer holder ④

09940-94920 : Stopper plate ⑤

NOTE:

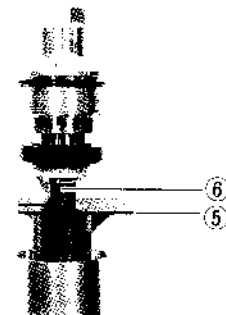
Loosen the lock nut ⑥ fully before installing the special tool ⑤.



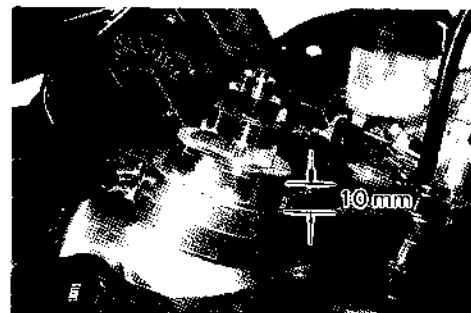
- Slowly turn in the fork cap by hand until the rebound damping force adjuster seats on the inner rod, after installing the rubber seat, spring adjuster seat and spacer seat.
- Holding the rebound damping adjuster housing in a position, tighten the lock nut to the specified torque.

Tightening torque : 18–22 N·m

(1.8–2.2 kg·m, 13.0–16.0 lb-ft)



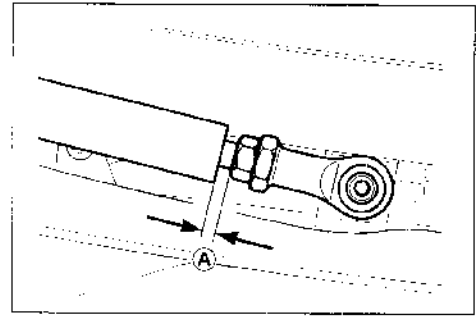
- When remounting the front fork assembly, set the upper surface of the outer tube at 10 mm (0.4 in) height from the upper surface of the steering stem upper bracket.



- After installing the left front fork, adjust the steering damper.

NOTE:

Turn the steering to full left lock position, and then adjust the length **A** to 4 mm (0.16 in) as shown in the illustration by turning the steering damper bracket **1**.

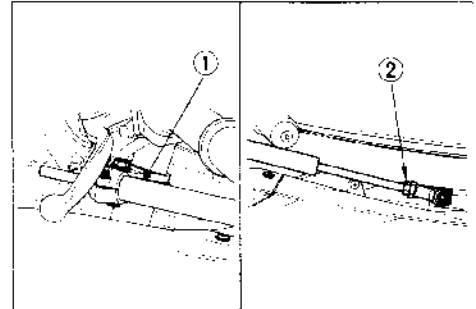


- Tighten the steering damper bracket bolt to the specified torque.

Tightening torque : 10 N·m (1.0 kg-m, 7.0 lb-ft)

CAUTION:

Do not turn the nut **2**.

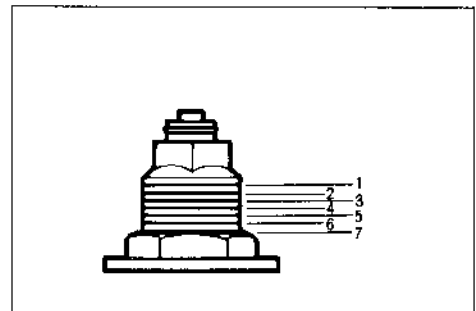


ADJUSTMENT

After installing the front fork, adjust the spring pre-load and damping force as follows.

SPRING PRE-LOAD ADJUSTMENT

There are seven grooved lines on the side of the spring adjuster. Position 1 provides the maximum spring pre-load and position 7 provides the minimum spring pre-load.

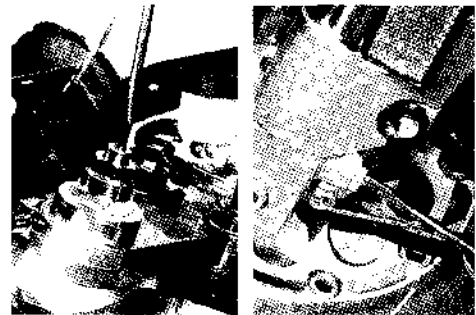


DAMPING FORCE ADJUSTMENT

Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click — that is 1-position then turn back and count the specified position as shown below.

WARNING:

Be sure to adjust the spring pre-load and damping force on both front fork legs equally.



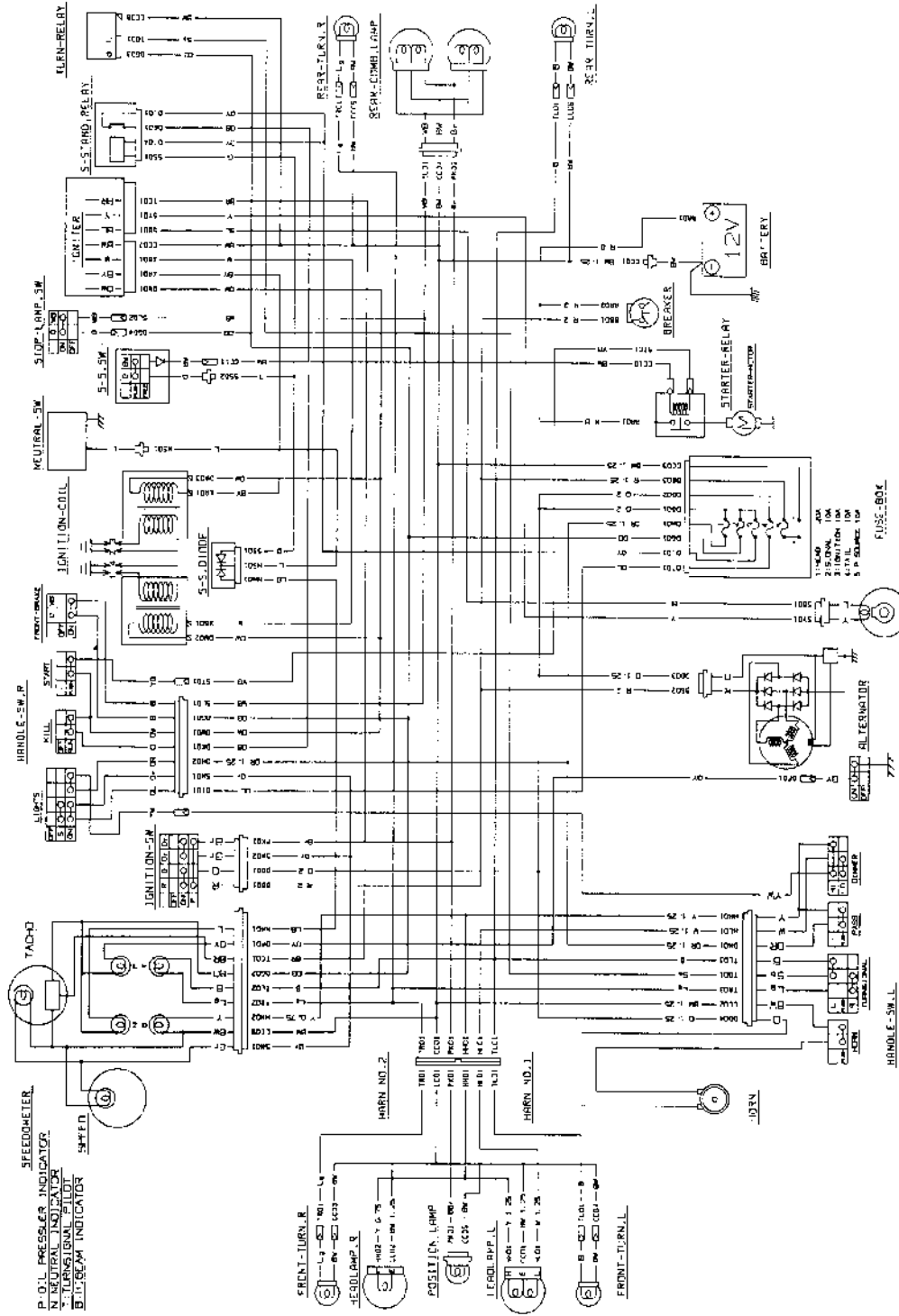
REBOUND SIDE

COMPRESSION SIDE

STANDARD SUSPENSION SETTING

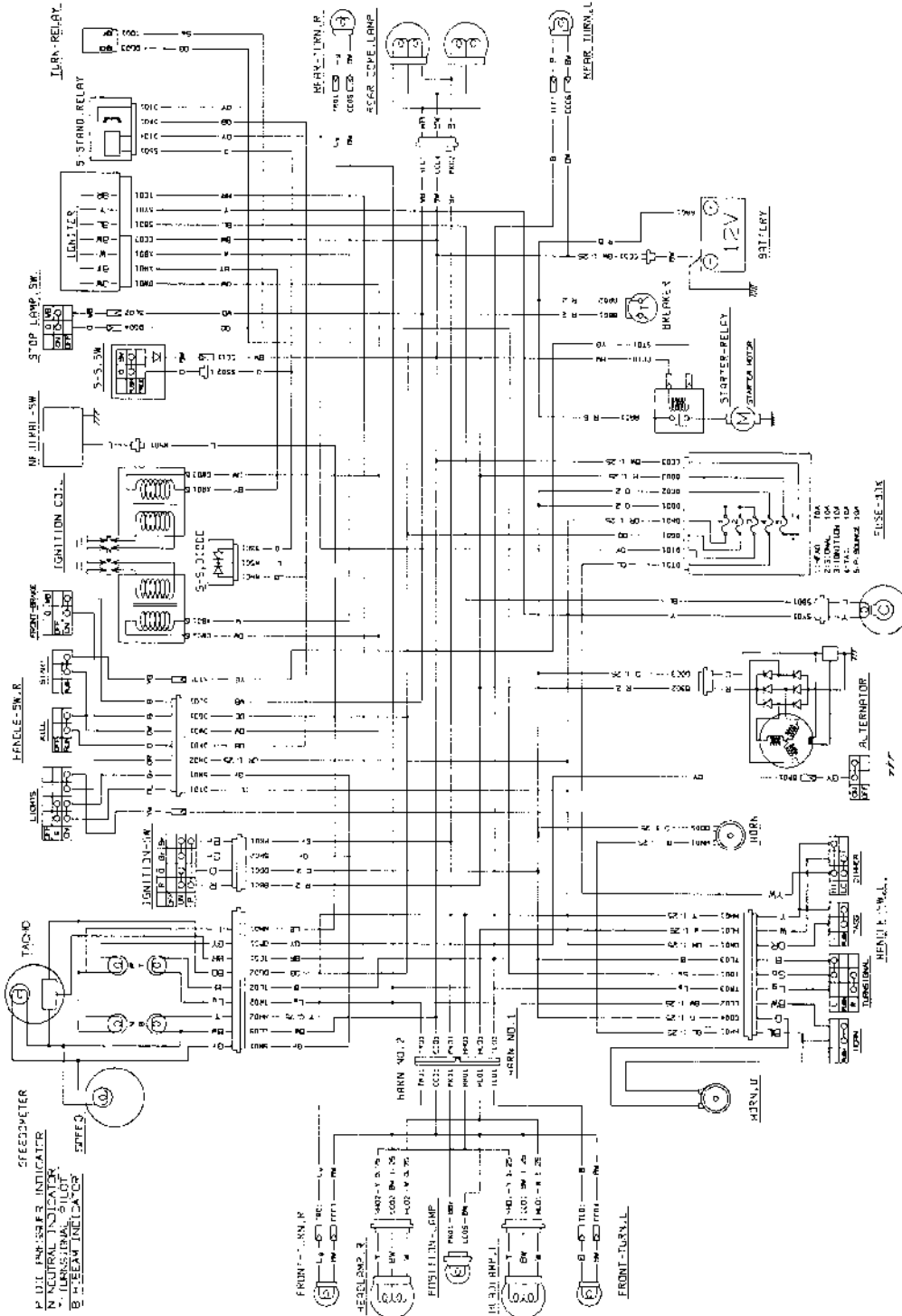
	FRONT			REAR		
	Spring-preload adjuster	Damping force adjuster		Spring set length	Damping force adjuster	
		Rebound	Compression		Rebound	Compression
Solo riding	4	3	5	196 mm (7.7 in)	2/4	6
Dual riding	4	3	5	196 mm (7.7 in)	2/4	6

For Germany



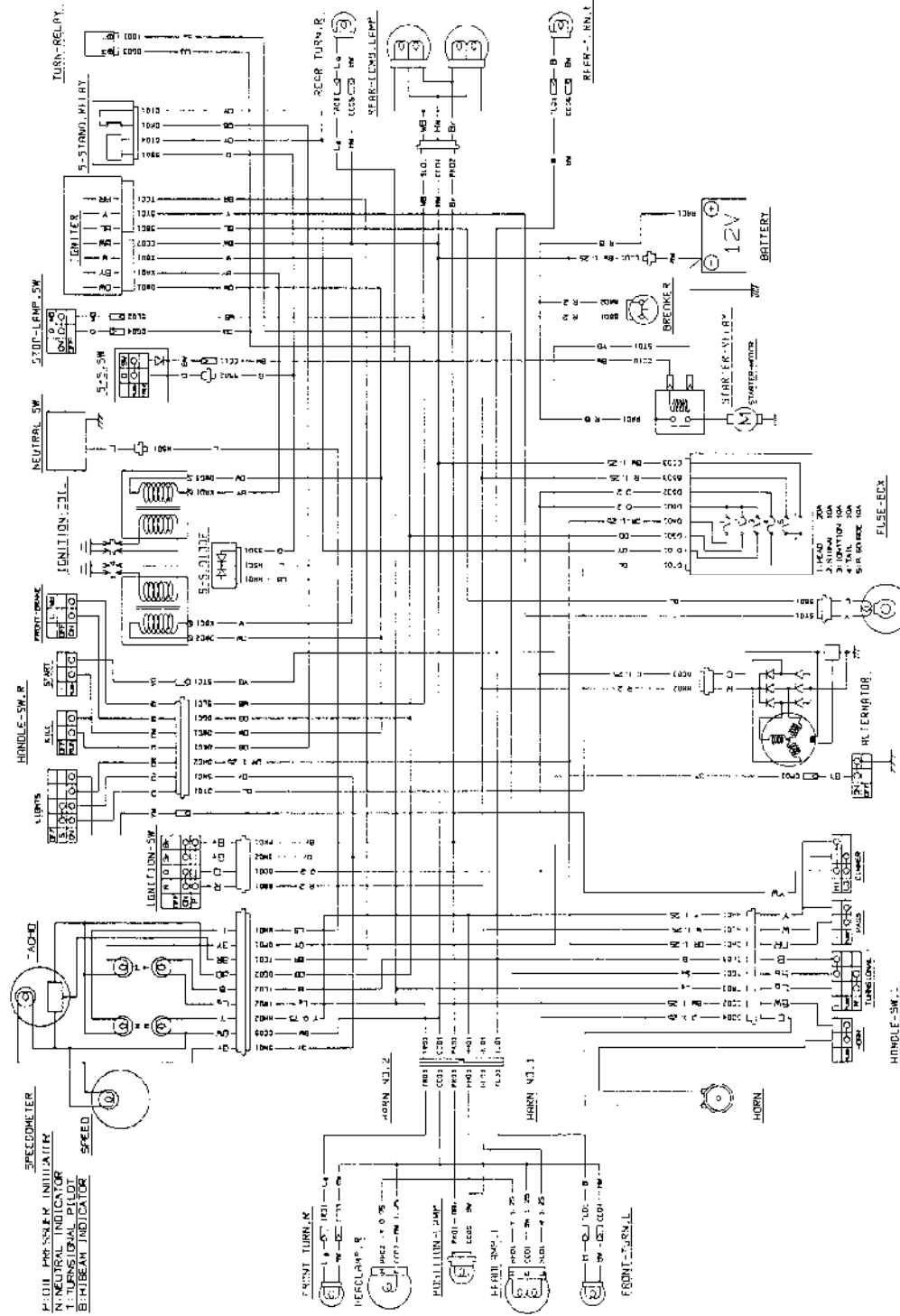
- WIRE COLOR
- B ... Black
 - Bl ... Blue
 - Br ... Brown
 - G ... Green
 - Gr ... Gray
 - Lb ... Light blue
 - Lg ... Light green
 - O ... Orange
 - R ... Red
 - W ... White
- Y ... Yellow
- 6/B1 ... Black with Blue tracer
- B/R ... Black with Red tracer
- B/Y ... Black with Yellow tracer
- B/W ... Black with White tracer
- B/B ... Blue with Black tracer
- G/W ... Green with White tracer
- O/Y ... Orange with Yellow tracer
- O/B ... Orange with Black tracer
- O/B1 ... Orange with Blue tracer
- C/G ... Orange with Green tracer
- C/R ... Orange with Red tracer
- C/W ... Orange with White tracer
- C/Y ... Orange with Yellow tracer
- W/B ... White with Black tracer
- Y/G ... Yellow with Green tracer
- Y/B ... Yellow with Black tracer
- Y/W ... Yellow with White tracer

For Italy



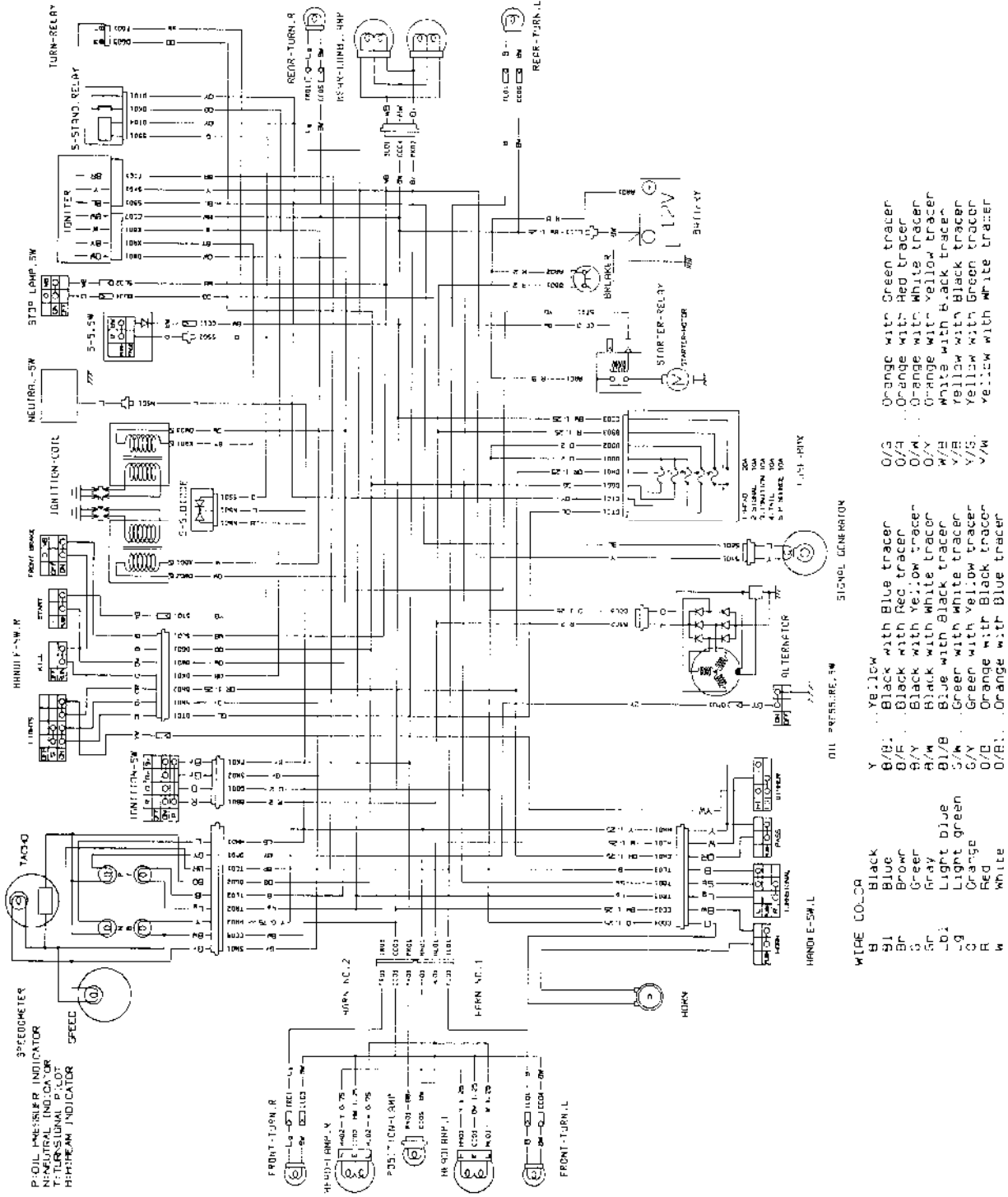
- WIRE COLOR**
- B Black
 - B1 Blue
 - B2 Brown
 - B3 Green
 - G Gray
 - L1 Light blue
 - L2 Light green
 - O Orange
 - R Red
 - W White
 - Y Yellow
 - B/B1 Black with Blue tracer
 - B/R Black with Red tracer
 - B/Y Black with Yellow tracer
 - B/W Black with White tracer
 - B/B Black with Black tracer
 - G/W Green with White tracer
 - O/B Orange with Black tracer
 - O/B1 Orange with Blue tracer
 - O/G Orange with Green tracer
 - O/R Orange with Red tracer
 - O/Y Orange with Yellow tracer
 - W/B White with Black tracer
 - Y/B Yellow with Black tracer
 - Y/G Yellow with Green tracer
 - Y/W Yellow with White tracer

For Austria, Belgium, Finland, Norway, The Netherlands, Spain, Sweden and Switzerland



- WIRE COLOR**
- B: Black
 - B1: Blue
 - B2: Brown
 - G: Green
 - Gr: Gray
 - Lb1: Light blue
 - Lg: Light green
 - O: Orange
 - Rec: Red
 - W: White
- WIF COLOR**
- Y: Yellow
 - B/B1: Black with Blue tracer
 - B/B2: Black with Red tracer
 - B/Y: Black with Yellow tracer
 - B/W: Black with White tracer
 - B1/B: Blue with Black tracer
 - G/W: Green with White tracer
 - O/W: Orange with White tracer
 - O/B1: Orange with Blue tracer
- OIL-PRESSURE SW**
- D/G: Orange with Green tracer
 - O/W: Orange with White tracer
 - O/Y: Orange with Yellow tracer
 - W/B: White with Black tracer
 - Y/B: Yellow with Black tracer
 - Y/G: Yellow with Green tracer
 - Y/W: Yellow with White tracer
- SIGNAL-CENTER SW**
- D/G: Orange with Green tracer
 - O/W: Orange with White tracer
 - O/Y: Orange with Yellow tracer
 - W/B: White with Black tracer
 - Y/B: Yellow with Black tracer
 - Y/G: Yellow with Green tracer
 - Y/W: Yellow with White tracer

For Australia, U.K. and The others.



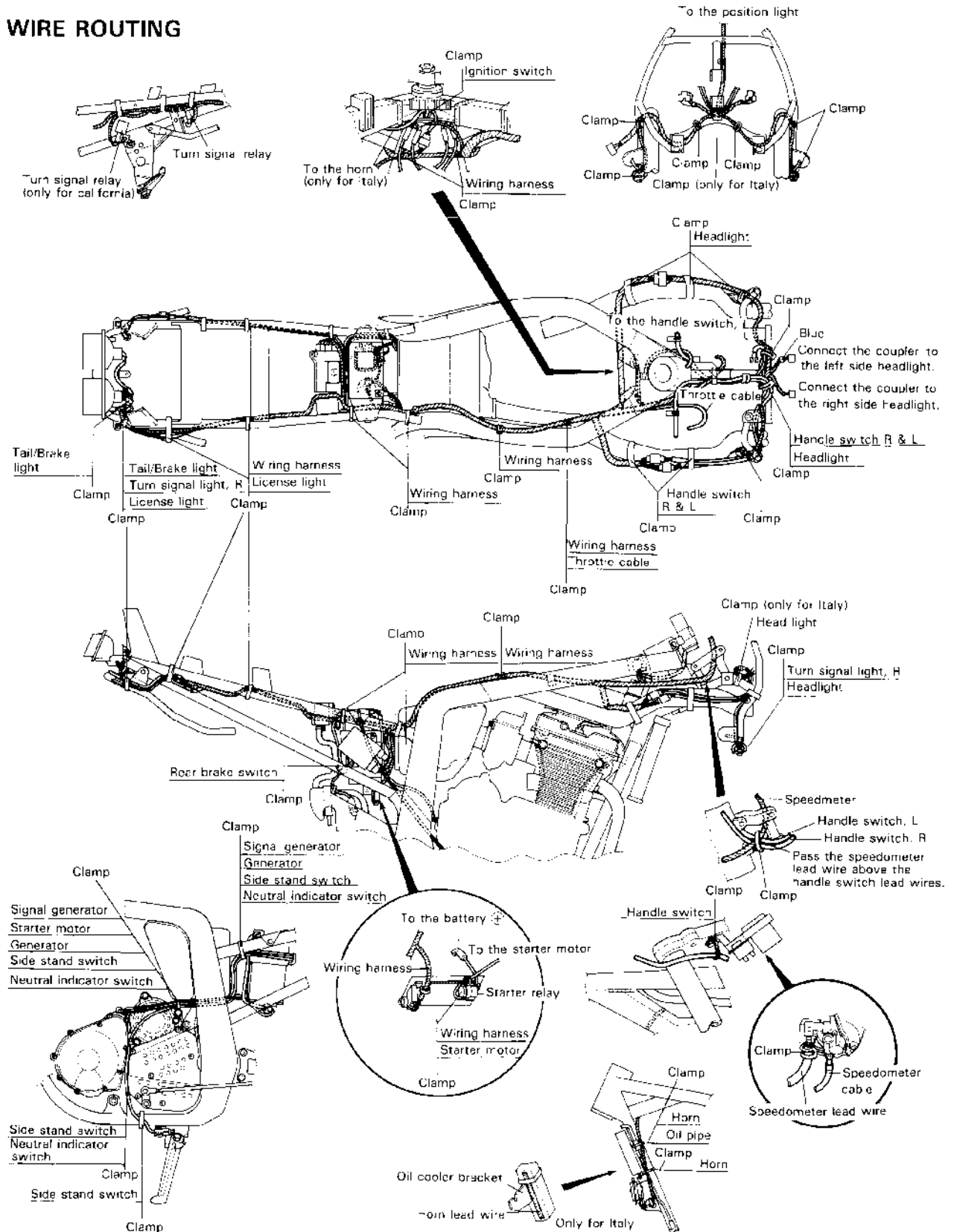
- Orange with Green tracer O/G
- Orange with Red tracer O/R
- Orange with White tracer O/W
- Orange with Yellow tracer O/Y
- White with Black tracer W/B
- Yellow with Black tracer Y/B
- Yellow with Green tracer Y/G
- Yellow with White tracer Y/W

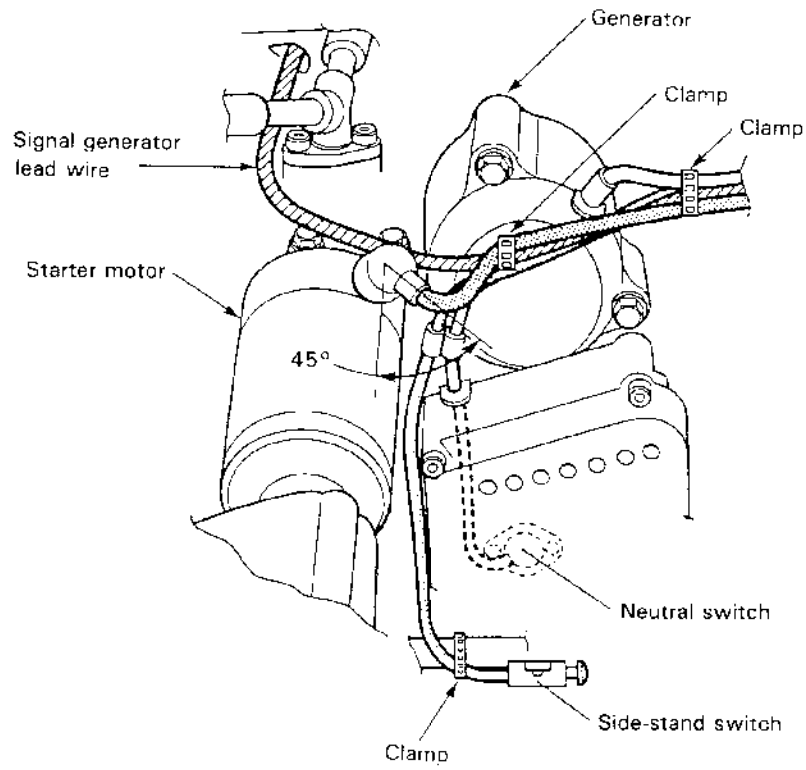
- Black with Blue tracer B/B
- Black with Red tracer B/R
- Black with Yellow tracer B/Y
- Black with White tracer B/W
- Blue with Black tracer B/B
- Blue with White tracer B/W
- Green with Yellow tracer G/Y
- Green with White tracer G/W
- Orange with Black tracer O/B
- Orange with Blue tracer O/B

- Black
- Blue
- Blue with Red tracer
- Black with Red tracer
- Black with Yellow tracer
- Black with White tracer
- Blue with Black tracer
- Blue with White tracer
- Green with Yellow tracer
- Green with White tracer
- Orange with Black tracer
- Orange with Blue tracer
- White

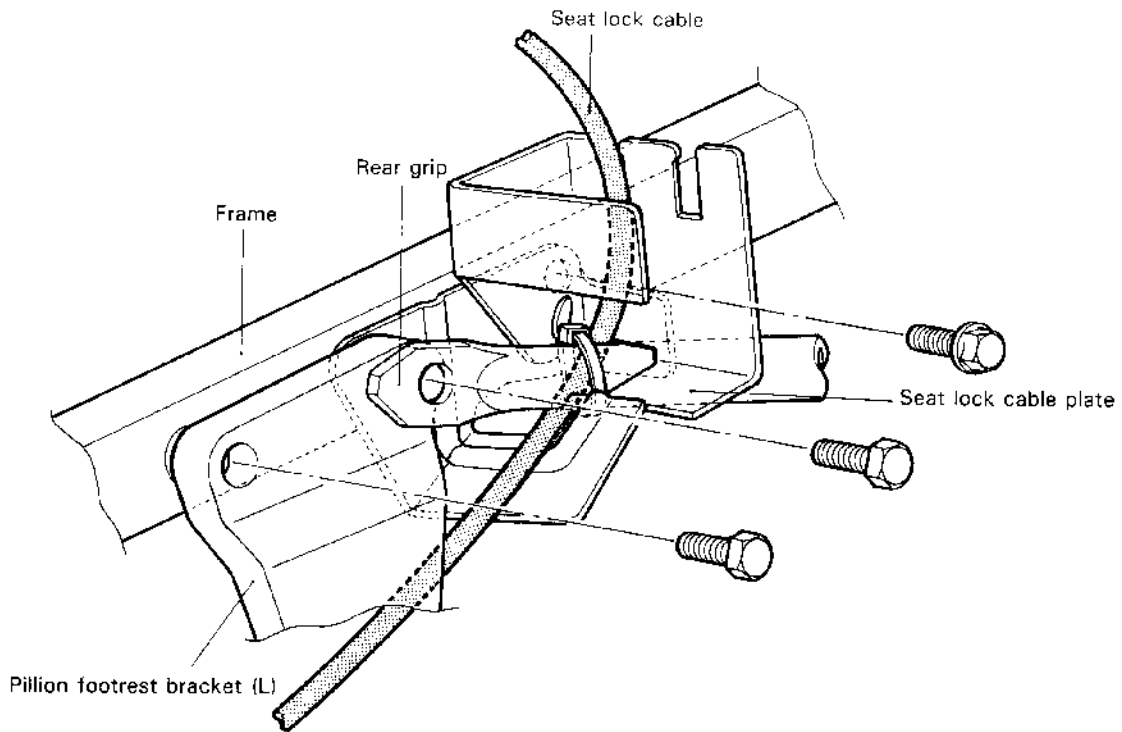
WIRE, CABLE AND HOSE ROUTING

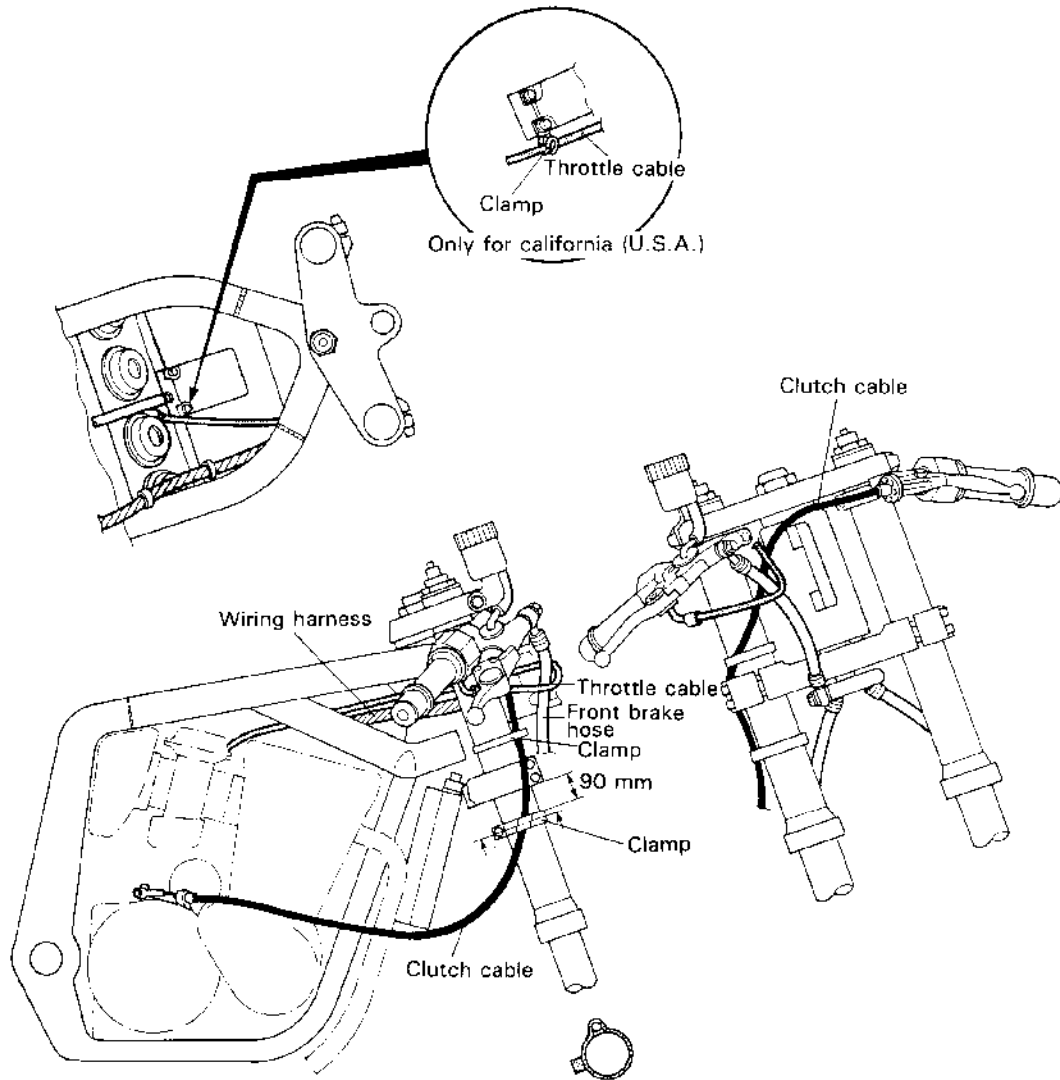
WIRE ROUTING



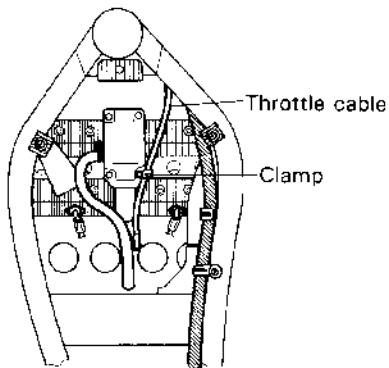


CABLE ROUTING

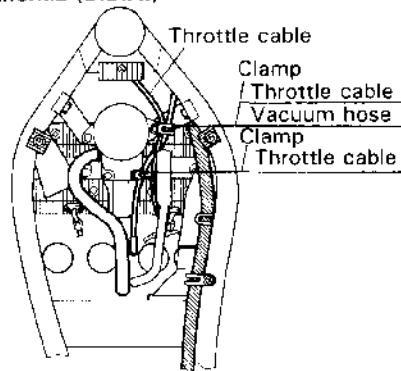




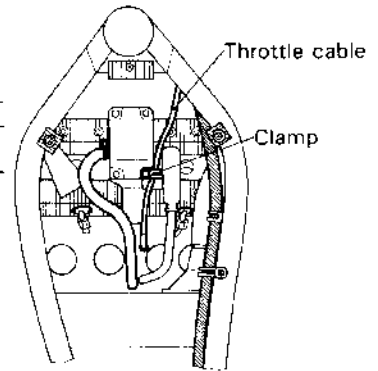
For U.S.A.



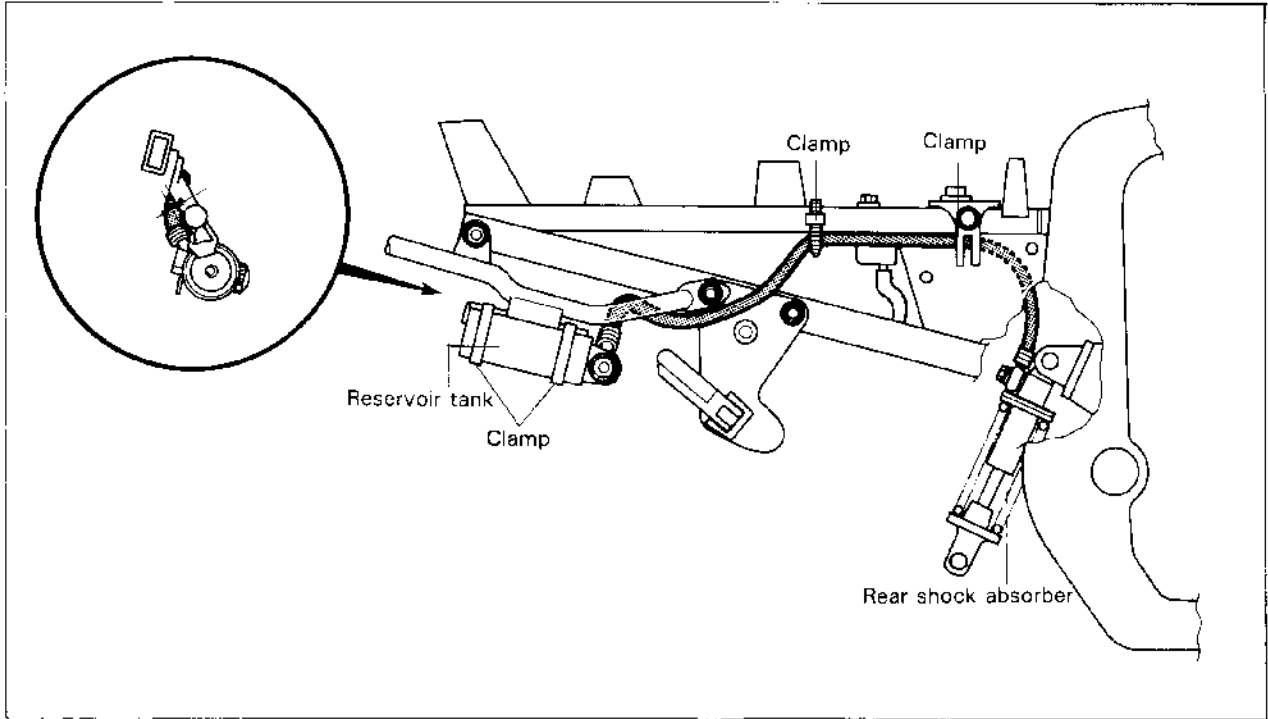
For Austria, Switzerland and California (U.S.A.)



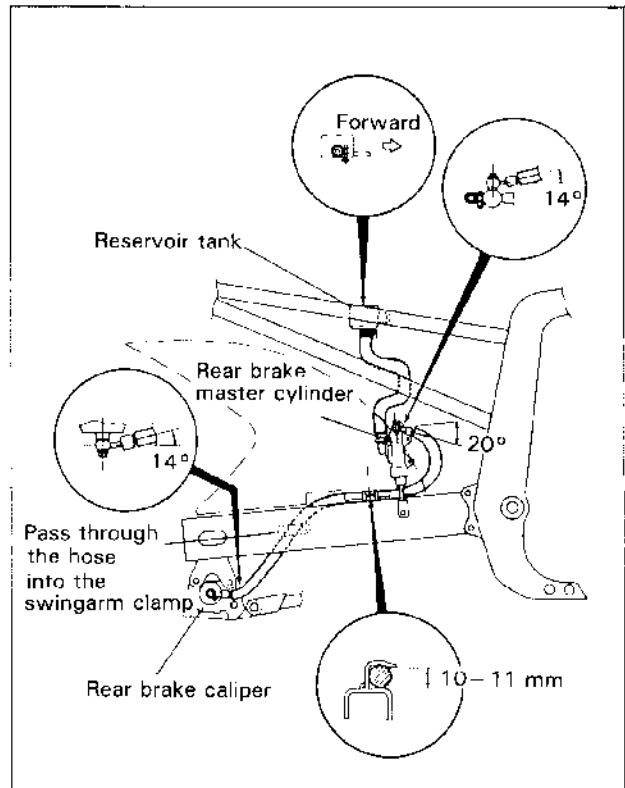
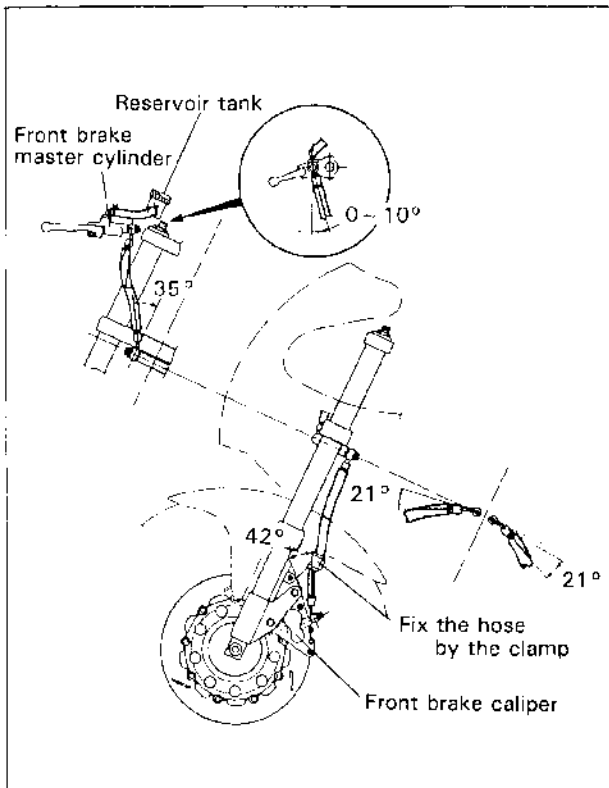
For the others



REAR UNIT RESERVOIR TANK HOSE ROUTING

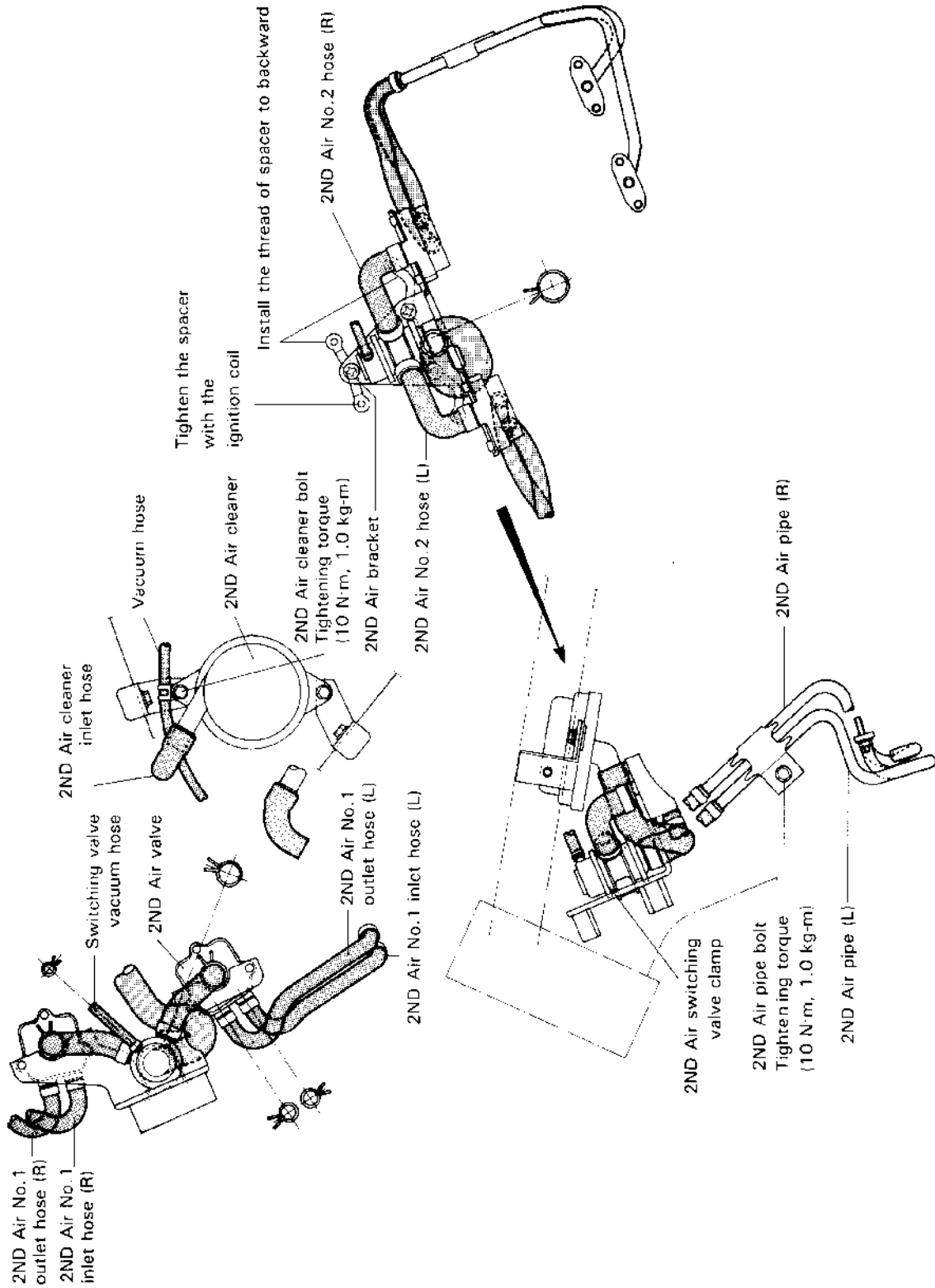


FRONT AND REAR BRAKE HOSE ROUTING



SECONDARY AIR SUPPLY HOSE ROUTING

For Austria and Switzerland



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