SUZUKI

RF600R

SERVICE MANUAL

All Out Racing
Performance
Motorcycle Parts
440-985-3853
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440-985-3853

SUZUKI MOTOR CORPORATION PRINTED IN JAPAN JULY, '93 (TK)

99500-35034-03E
(英)

MATERIAL	PART	PAGE
 THREAD LOCK SUPER "1360" 99000-32130	• Brake disc mounting bolt	7-9, 47
 SUZUKI FORK OIL #10	• Front fork	7-28

MAINTENANCE AND TUNE-UP PROCEDURES

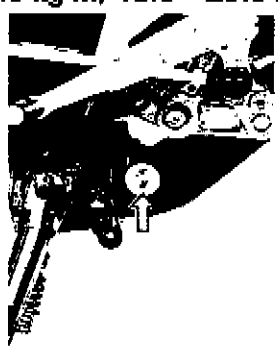
This section describes the servicing procedures for each item of the Periodic Maintenance requirements.

EXHAUST PIPE BOLTS

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

- Remove the lower cowling assembly. (Refer to page 7-2.)
- Remove the radiator mounting bolts. (Refer to page 3-4.)
- Tighten the exhaust pipe clamp bolts and muffler mounting bolts to the specified torque with a torque wrench.

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



AIR CLEANER

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

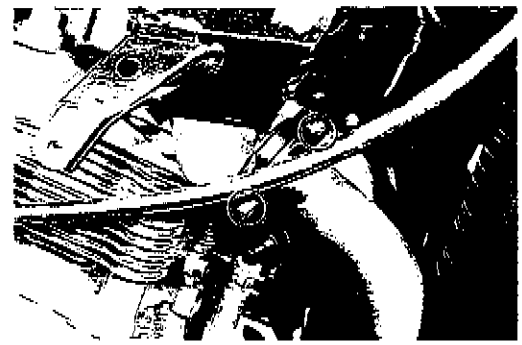
- Remove the seats, frame cover assembly and fuel tank. (Refer to pages 7-5 and 4-5.)
- Remove the air cleaner element by removing the screws.
- Carefully use air hose to blow the dust from the cleaner element.

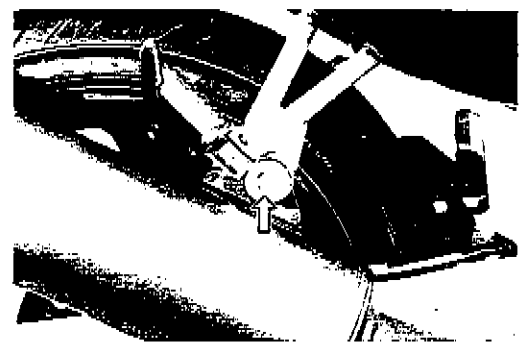
CAUTION:
Always use air pressure on the inside of the air cleaner element. If air pressure is used on the outside, dirt will be forced into the pores of the air cleaner element thus restricting air flow through the air cleaner element.

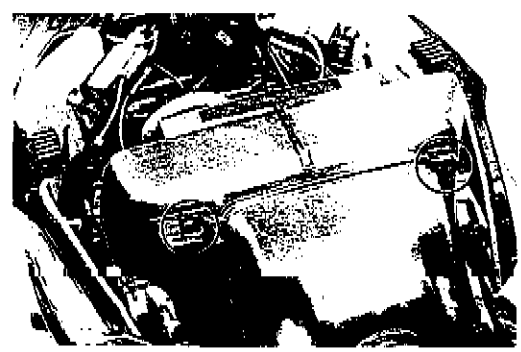
- Reinstall the cleaned or new air cleaner element in the reverse order of removal.
- When installing the air cleaner element in the cleaner case, make sure that the ⇕ mark Ⓐ comes upward.

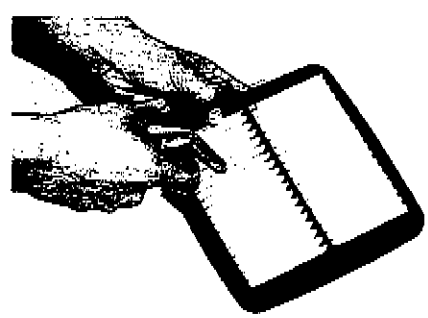
CAUTION:
If driving under dusty condition, clean the air cleaner element more frequently. The surest way to accelerate engine wear is to use the engine without the element or to use a ruptured element. Make sure that the air cleaner is in good condition at all times. Life of the engine depends largely on this component!

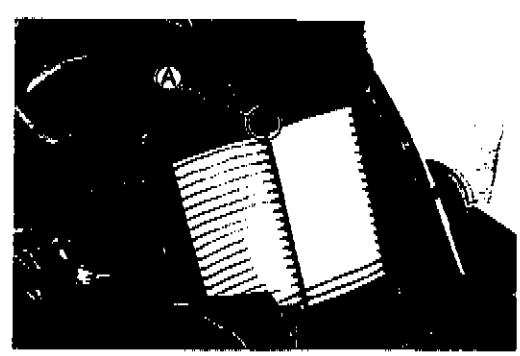
NOTE:
When you clean the air cleaner element, drain water from the air cleaner drain hose by removing the drain plug.









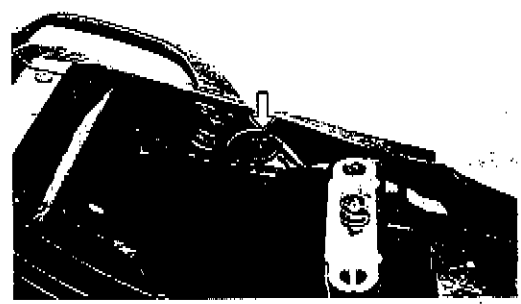


COOLING SYSTEM

Inspect Every 6000 km (4000 miles, 12 months).
Replace engine coolant Every 2 years.
Replace radiator hoses Every 4 years.

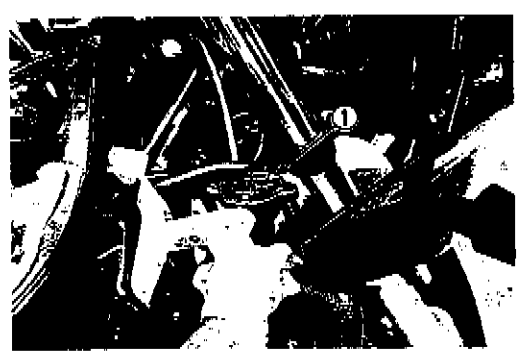
ENGINE COOLANT LEVEL

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



ENGINE COOLANT CHANGE

- Remove the seats, frame cover assembly, lower cowling assembly and right side of cowling upper panel. (Refer to pages 7-2 and 5.)
- Remove the radiator cap ① and disconnect the water hose ② , and drain engine coolant.



WARNING:

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

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

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

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

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

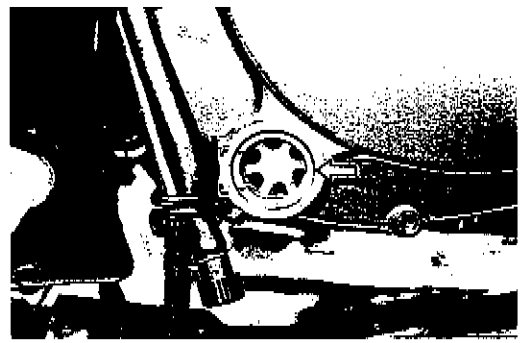
Engine coolant capacity: 2450 ml (2.6/2.2 US/Imp qt)

- After remounting the engine, route wiring harnesses, cables and hoses properly by referring to the sections, for wire routing, cable routing and hose routing. (See pages 8-12 through 22.)
- Adjust the following items to the specification.

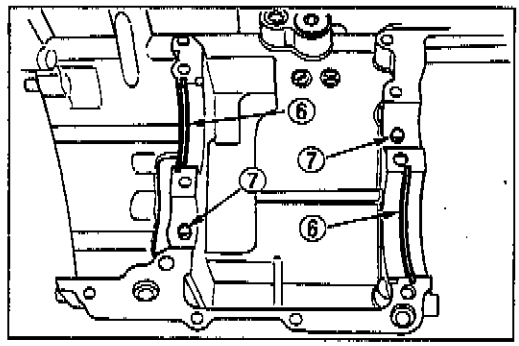
	Page
* Filling engine coolant	2-13
* Clutch cable play	2-11
* Throttle cable play	2-10
* Idling adjustment	4-18
* Balancing carburetors	4-17
* Drive chain	2-11

- Pour 3.9 L (4.1/3.4 US/Imp qt) of engine oil SAE 10W/40 graded SE or SF into the engine after overhauling engine.
- Start up the engine and allow it run for several minutes at idle speed. About several minutes after stopping engine, check that the oil level remains between the marks of oil level inspection window.

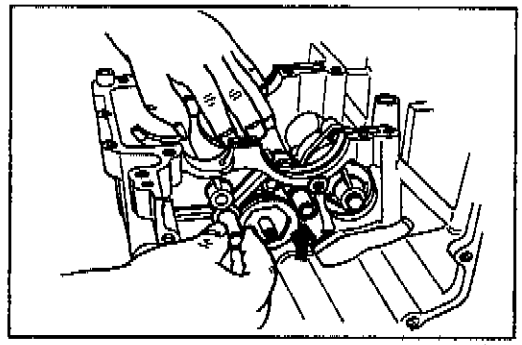
Change	3000 ml (3.2/2.6 US/Imp qt)
Filter change	3300 ml (3.5/2.9 US/Imp qt)
Overhaul	3900 ml (4.1/3.4 US/Imp qt)



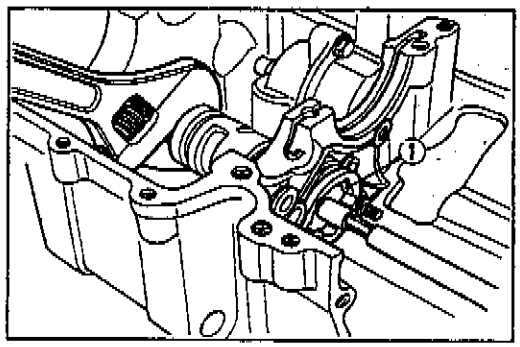
NOTE:
Do not lose the C-rings ⑥ and bearing pins ⑦ .



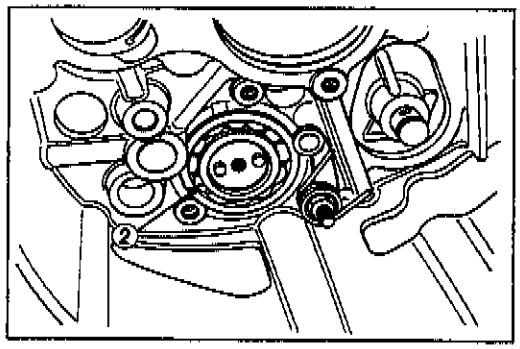
- Hold the gearshift forks by hand while drawing out the gearshift fork shafts from the lower crankcase.



- Remove the gearshift cam stopper plate ① by removing the bolt while holding the gearshift cam with an adjuster wrench.

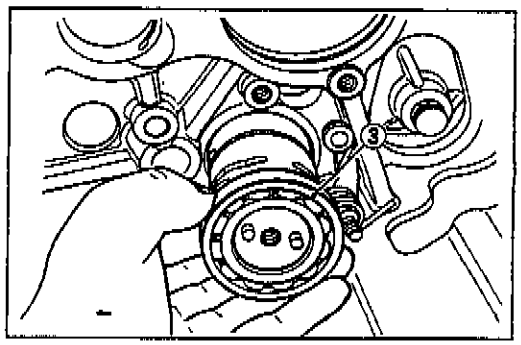


- Remove the washer ② .

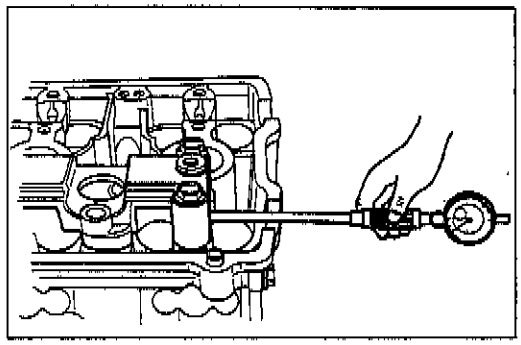


- Draw out the gearshift cam with bearing from the lower crankcase.

NOTE:
Rotate the bearing ③ on the gearshift cam by hand to inspect for abnormal noise and smooth rotation. Replace the bearing if there is anything unusual.

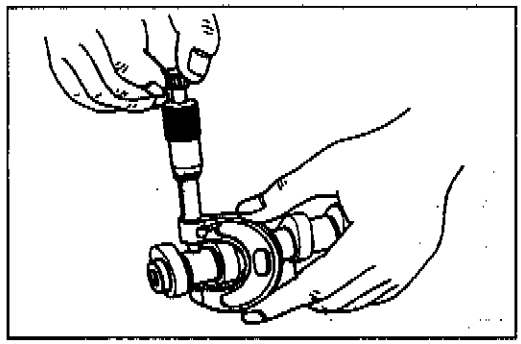


If the camshaft journal oil clearance measured exceeds the limit, measure the inside diameter of the camshaft journal holder and outside diameter of the camshaft journal. Replace the camshaft or the cylinder head depending upon which one exceeds the specification.



Standard
Journal holder I.D. (IN & EX): 22.012—22.025 mm (0.8666—0.8671 in)

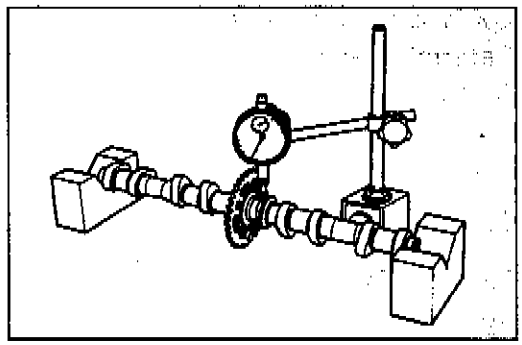
09900-20205: Micrometer (0—25 mm)



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

CAMSHAFT RUNOUT

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

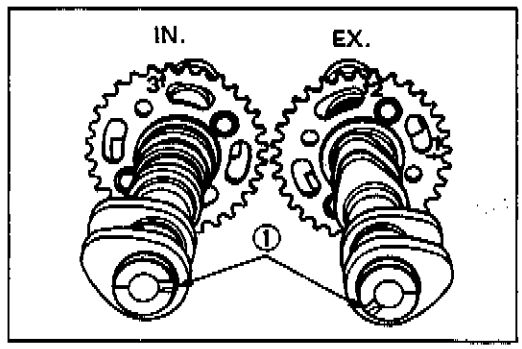


Camshaft runout (IN & EX)
Service Limit: 0.1 mm (0.004 in)

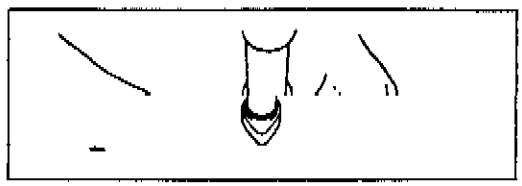
09900-20606: Dial gauge (1/100 mm, 10 mm)
09900-20701: Magnetic stand
09900-21304: V-block (100 mm)

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 (as shown) in reference to the notch ① in the right end of each camshaft.



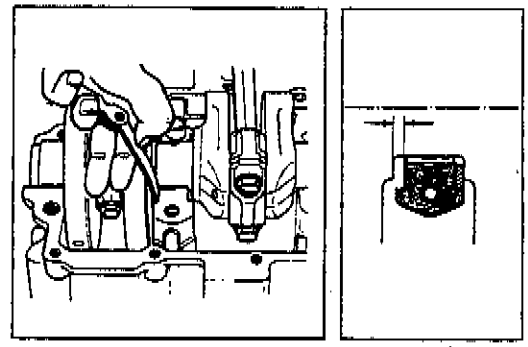
REASSEMBLY



- Apply THREAD LOCK SUPER "1303" to the threads of [illegible]

(2.4—2.6 kg-m, 17.5—19.0 lb-ft)

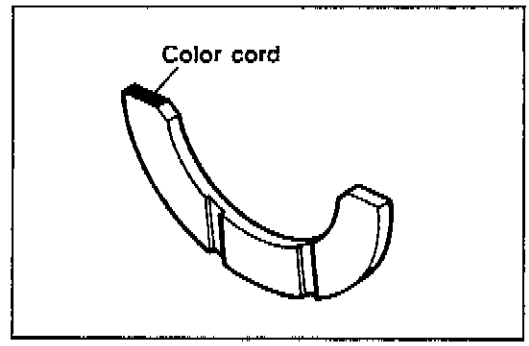
- If the right-side thrust bearing is within the standard range, reinsert the right-side thrust bearing and remove the left-side thrust bearing.
- As shown in the illustration, use a thickness gauge to measure the clearance before inserting of the left-side thrust bearing, and select a left-side thrust bearing from the selection table.



Thrust bearing selection table

Clearance before inserting left-side thrust bearing	Color (Part No.)	Thrust bearing thickness	Thrust clearance
2.560—2.585 mm (0.1008—0.1018 in)	White (12228-17E00-0F0)	2.475—2.500 mm (0.0974—0.0984 in)	0.060—0.110 mm (0.0024—0.0043 in)
2.535—2.560 mm (0.0998—0.1008 in)	Yellow (12228-17E00-0E0)	2.450—2.475 mm (0.0965—0.0974 in)	0.060—0.110 mm (0.0024—0.0043 in)
2.510—2.535 mm (0.0988—0.0998 in)	Green (12228-17E00-0D0)	2.425—2.450 mm (0.0955—0.0965 in)	0.060—0.110 mm (0.0024—0.0043 in)
2.485—2.510 mm (0.0978—0.0988 in)	Blue (12228-17E00-0C0)	2.400—2.425 mm (0.0945—0.0955 in)	0.060—0.110 mm (0.0024—0.0043 in)
2.460—2.485 mm (0.0969—0.0978 in)	Black (12228-17E00-0B0)	2.375—2.400 mm (0.0935—0.0945 in)	0.060—0.110 mm (0.0024—0.0043 in)
2.430—2.460 mm (0.0957—0.0969 in)	Red (12228-17E00-0A0)	2.350—2.375 mm (0.0925—0.0935 in)	0.055—0.110 mm (0.0022—0.0043 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.



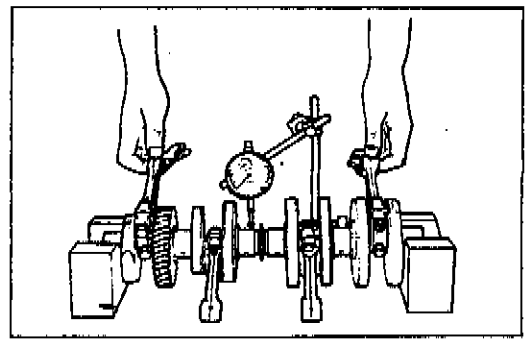
NOTE:
Right-side thrust bearing has the same specification as the GREEN (12228-17E00-0D0) of left-side thrust bearing.

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 is greater than the limit.

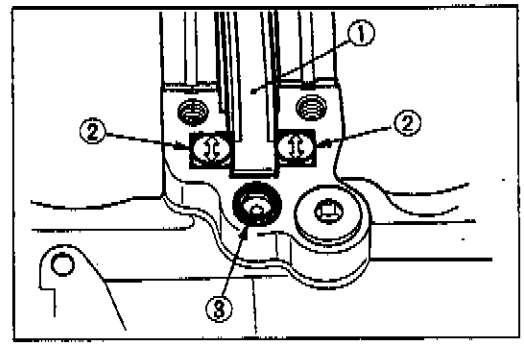
09900-20606: Dial gauge (1/100 mm, 10 mm)
09900-20701: Magnetic stand
09900-21304: V-block (100 mm)

Crankshaft runout
Service Limit: 0.05 mm (0.002 in)



- Install the cam chain guide ① and two dampers ② properly.

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

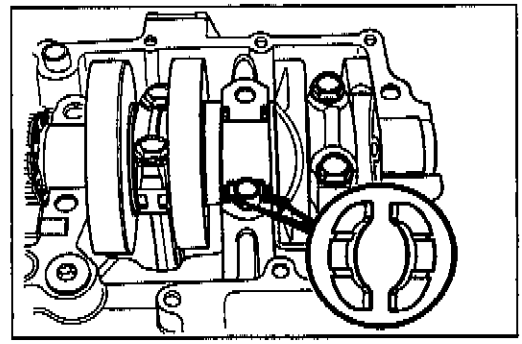


- Fit the O-ring ③ .

CAUTION:
Replace the O-ring with a new one to prevent oil leakage.

- Before installing the crankshaft, apply SUZUKI MOLY PASTE to each journal bearing lightly.

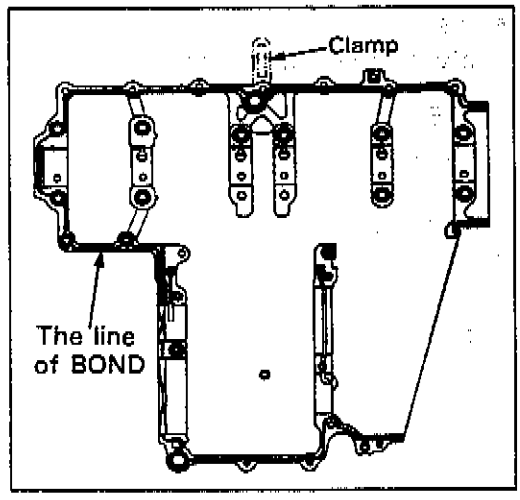
99000-25140: SUZUKI MOLY PASTE



- 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. (Refer to page 3-38.)

- 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 and crankshaft left end cap in the following procedure.

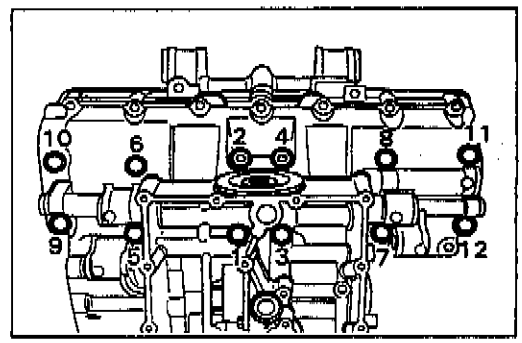
99104-31140: SUZUKI BOND NO. 1207B



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 cornered surface as it forms a comparatively thick film.*

- Tighten the crankshaft tightening 9-mm bolts in 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 tightening bolts to the specified torque values.

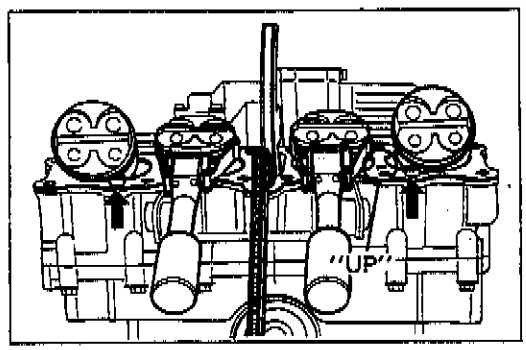
Tightening torque	Initial tightening			Final tightening		
	N·m	kg-m	lb-ft	N·m	kg-m	lb-ft
6 mm bolt	6	0.6	4.5	13	1.3	9.5
8 mm bolt	13	1.3	9.5	26	2.6	19.0
9 mm bolt	13	1.3	9.5	26	2.6	19.0



- Place the dowel pins and new cylinder gasket on the crankcase.

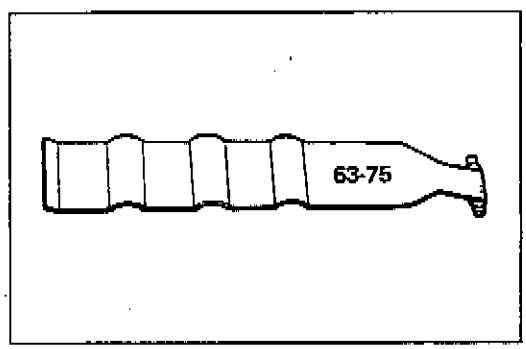
CAUTION:
Use a new gasket to prevent oil leakage.

NOTE:
Be sure to identify the top surface by "UP" mark on the cylinder gasket as shown in the Fig.



- 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.

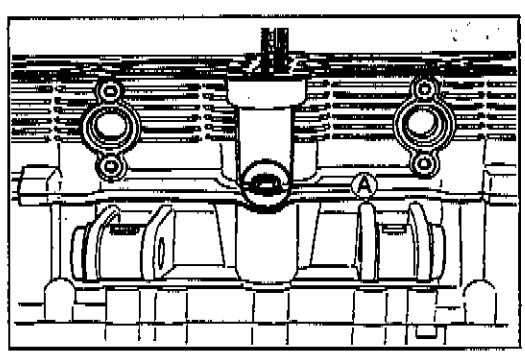
09916-74521: Holder body
09916-74540: Band



NOTE:
Do not overtighten the special tool bands or the pistons entry into the cylinders will be difficult.

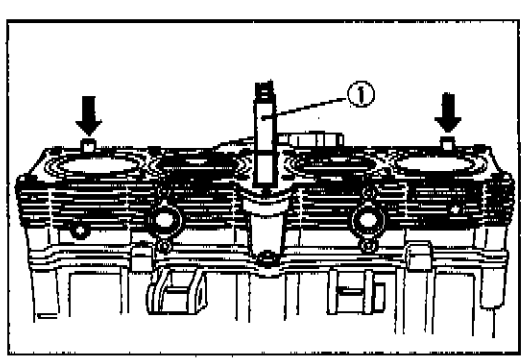
- Tighten the cylinder nut Ⓐ to the specified torque.

Tightening torque: 7—11 N·m
(0.7—1.1 kg-m, 5.0—8.0 lb-ft)



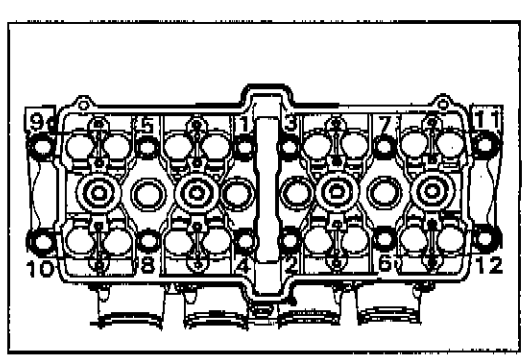
- Install the cam chain guide ① properly.
- Place the dowel pins and new cylinder head gasket on the cylinder.

CAUTION:
Use a new gasket to prevent gas leakage.



- Place the cylinder head on the cylinder block.
- Tighten the twelve 10-mm bolts to the specified torque with a torque wrench sequentially in the ascending order of numbers.

Tightening torque: 40—45 N·m
(4.0—4.5 kg-m, 29.0—32.5 lb-ft)



FUEL PUMP

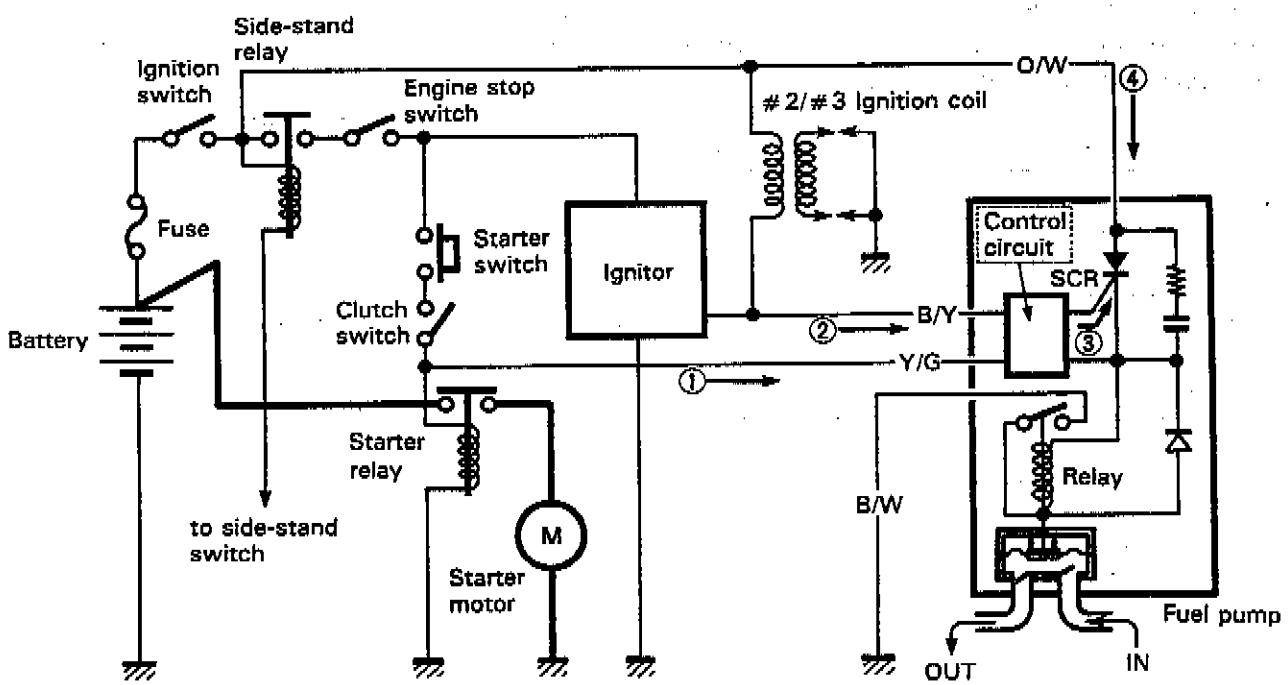
DESCRIPTION

Starting Engine:

In order to supplement fuel supply when starting the engine by turning the starter switch ON, current ① is sent directly from the battery and passes through the fuel pump relay, thus operating the fuel pump.

After start:

The current ② generated at coils No.2/No.3 flows to the fuel pump relay's control circuit. The control circuit receives this current ② and sends signal ③ to the SCR, turning it ON. When the SCR turns ON, current ④ is sent from the battery through the fuel pump relay, thus operating the fuel pump.

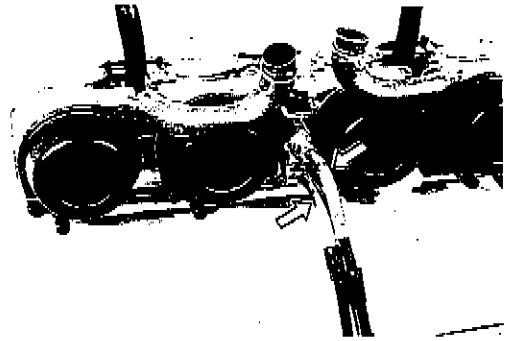


WIRE COLOR

B/W : Black with White tracer
Y/G : Yellow with Green tracer
B/Y : Black with Yellow tracer
O/W : Orange with White tracer

REMOVAL

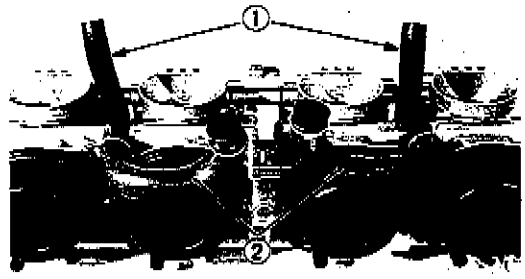
Refer to page 3-3.



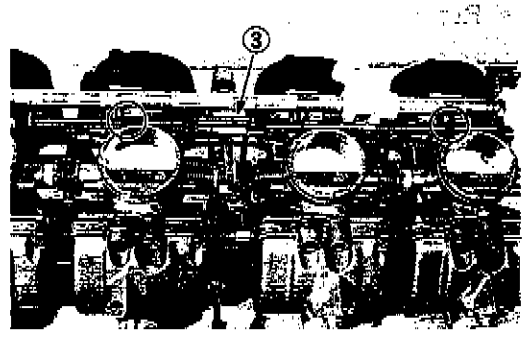
DISASSEMBLY

- Remove the throttle cables from the throttle lever.

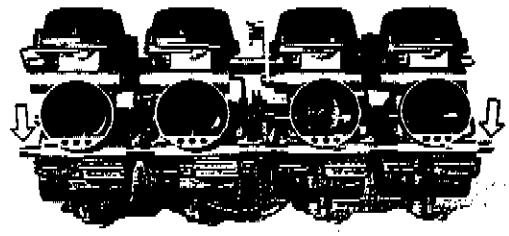
- Disconnect the air vent hoses ① and diaphragm chamber air cleaner hoses ② .

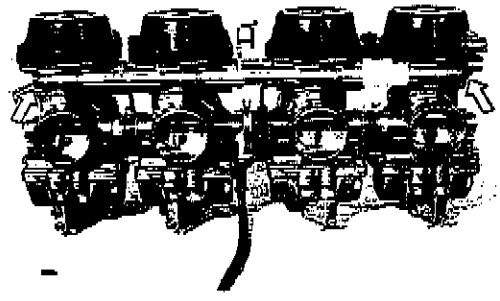


- Remove the starter shaft lever ③ .



- Remove the upper and lower carburetor set shafts.
- Separate the carburetor assembly.





COOLING SYSTEM

CONTENTS

COOLING SYSTEM 5- 1
DESCRIPTION 5- 1
CONSTRUCTION 5- 2
COOLING SOLUTION 5- 4
COOLING SYSTEM REMOVAL AND DISASSEMBLY 5- 5
WATER HOSES AND THERMOSTAT CASE 5- 5
RADIATOR 5- 5
COOLING FAN 5- 6
ENGINE COOLANT TEMPERATURE GAUGE AND COOLING FAN THERMO-SWITCH 5- 6
THERMOSTAT 5- 6
WATER PUMP 5- 6
RADIATOR 5- 8
INSPECTION 5- 8
REMOVAL 5- 8
INSTALLATION 5- 8
ENGINE COOLANT TEMPERATURE GAUGE 5- 9
REMOVAL 5- 9
INSPECTION 5- 9
REASSEMBLY 5-10
COOLING FAN 5-10
REMOVAL 5-10
INSPECTION 5-10
COOLING FAN THERMO-SWITCH 5-10
REMOVAL 5-11
INSPECTION 5-11
REASSEMBLY 5-11
THERMOSTAT 5-12
REMOVAL 5-12
INSPECTION 5-12
REASSEMBLY 5-12
WATER PUMP 5-13
REMOVAL AND DISASSEMBLY 5-13
INSPECTION 5-13
REASSEMBLY 5-13

5

REASSEMBLY

Apply SUZUKI BOND NO.1207B to the thread portion of the temperature gauge and tighten it to the specified torque.

99104-31140: SUZUKI BOND NO.1207B

Tightening torque
Engine coolant temperature gauge: 6.0—9.0 N·m (0.6—0.9 kg-m, 4.5—6.5 lb-ft)

CAUTION:
Take special care when handling the temperature gauge. If may cause damage if it gets a sharp impact.

- Fill the specified engine coolant. (Refer to page 2-13.)

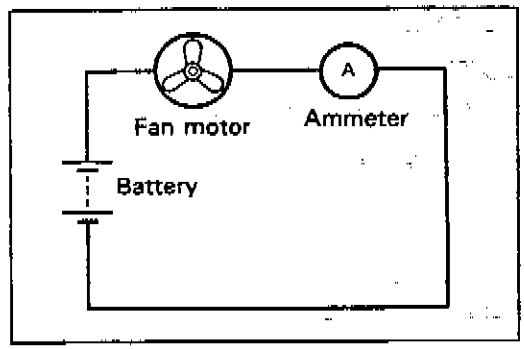
COOLING FAN

REMOVAL

- Refer to page 5-6.

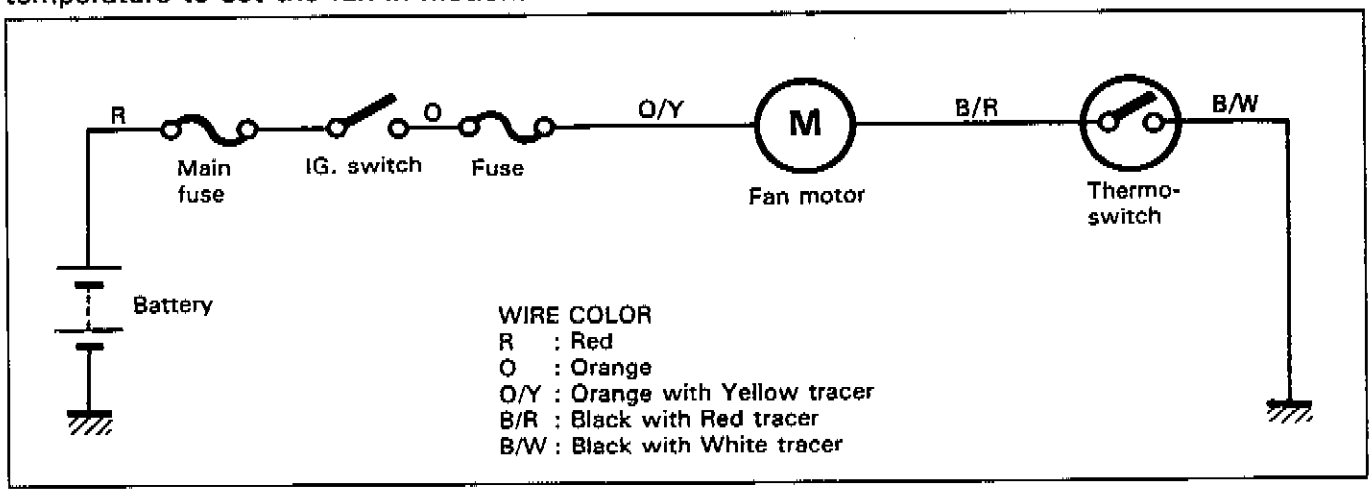
INSPECTION

Test the cooling fan drive motor for load current with an ammeter connected as shown in the illustration.
The voltmeter is for making sure that the battery applies 12 volts to the motor. With the motor with electric motor fan running at full speed, the ammeter should be indicating not more than 5 amperes.
If the fan motor does not turn, replace the motor assembly with a new one.



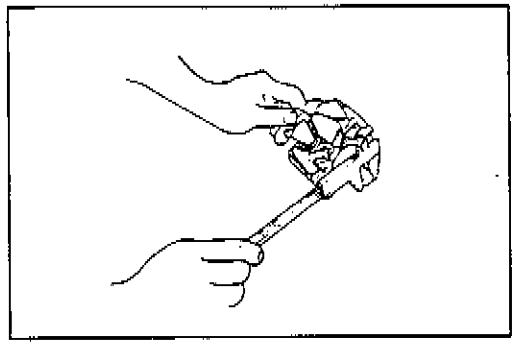
COOLING FAN THERMO-SWITCH

The cooling fan, being located behind the radiator, is secured to the radiator by three bolts. The fan drive motor is automatically controlled by the thermo-switch. This switch remains open when the temperature of engine coolant is low, but it closes at about 105°C (221°F) of rising engine coolant temperature to set the fan in motion.



SLIP RING

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

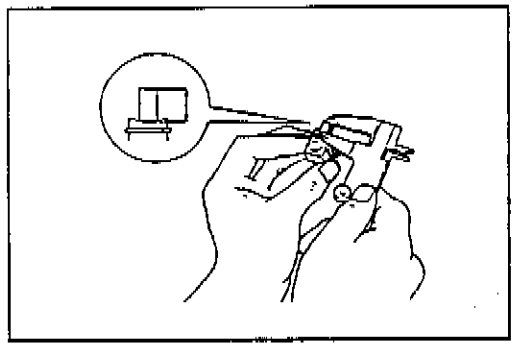


09900-20102: Vernier calipers (200 mm)

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

CARBON BRUSH

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

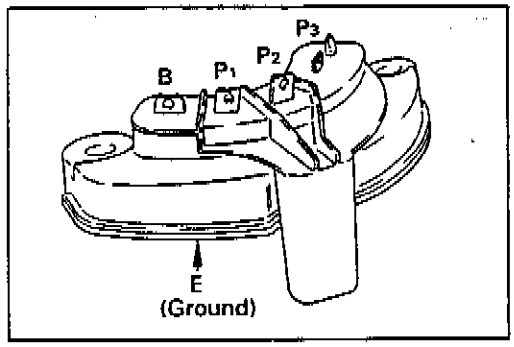


09900-20102: Vernier calipers (200 mm)

Brush length	Service Limit
	4.5 mm (0.18 in)

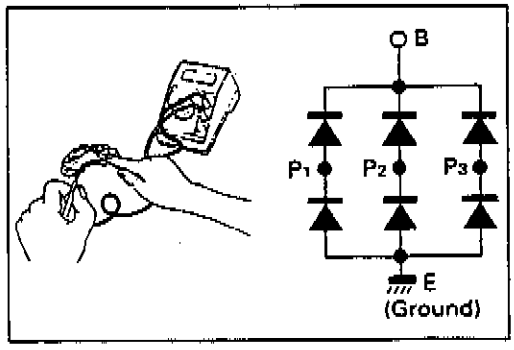
RECTIFIER

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: X 1Ω range

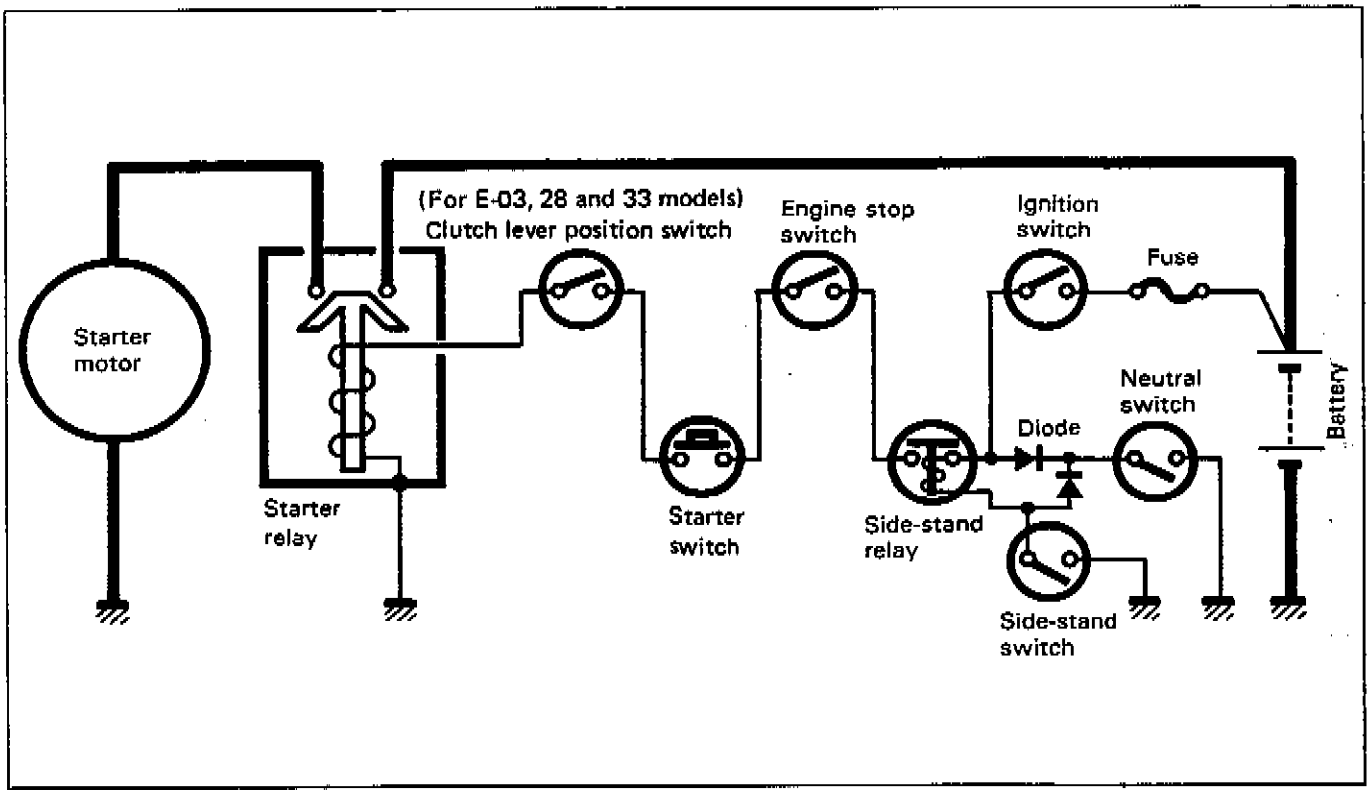


STARTER SYSTEM

DESCRIPTION

The starter system is shown in the diagram below: namely, the starter motor, starter relay, side-stand relay, side-stand switch, neutral switch, clutch lever position switch, starter switch, engine stop switch, IG switch and battery.

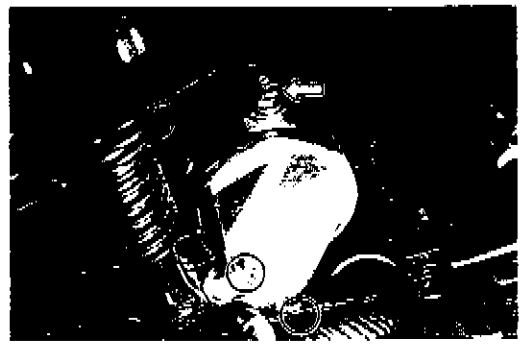
Depressing the starter switch (on the right handlebar switch box) energizes the relay, causing the contact points to close which connects the starter motor to the battery. The motor draws about 80 amperes to start the engine.



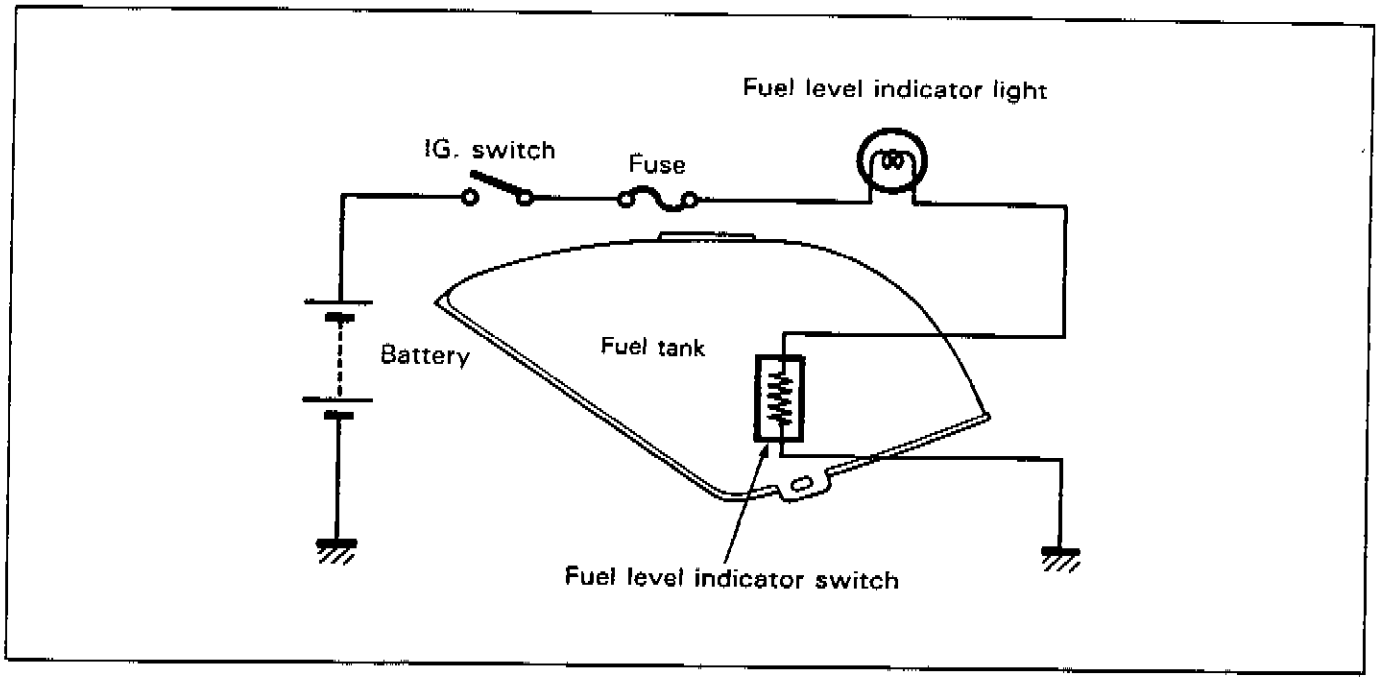
REMOVAL AND DISASSEMBLY

- Remove the lower cowling assembly. (Refer to page 7-2.)
- Disconnect the starter motor lead wire and remove the starter motor by removing the mounting bolts.

NOTE:
If it is difficult to remove the starter motor, remove the water hose mounting bolts to provide additional space.

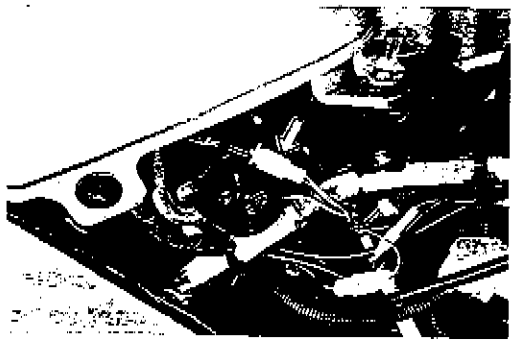


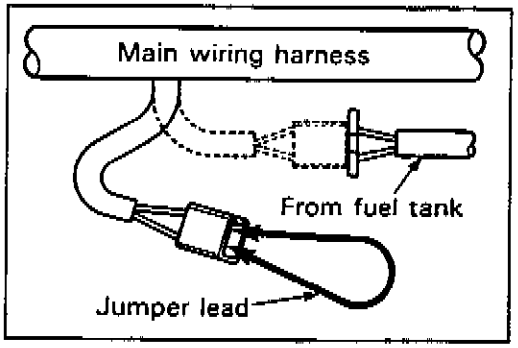
FUEL LEVEL INDICATOR



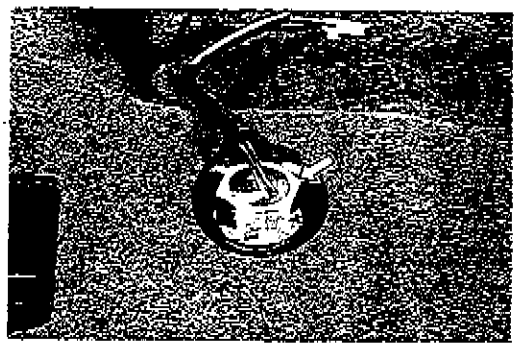
INSPECTION

- Remove the seats and frame cover assembly. (Refer to page 7-5.)
- With the engine has started, disconnect the two lead wires going into the fuel level indicator switch, connect the lead wires from the main wiring harness with a jumper lead and check whether the fuel level indicator light is ON. If a "LIGHT" is indicated, the circuit of fuel level indicator light is in good condition. If the fuel level indicator light does not light, replace the indicator bulb or repair the circuit connection. If the bulb is in good condition, the level indicator switch may be faulty, replace the indicator switch with a new one or inspect the fuel level indicator switch.





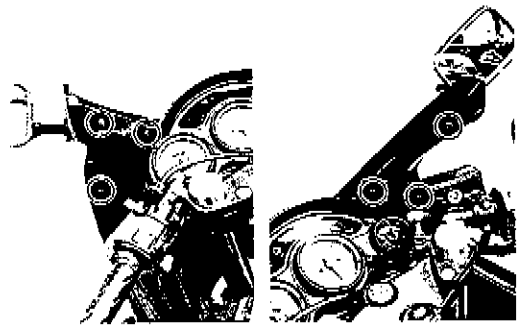
- Remove the fuel tank. (Refer to page 4-5.)
- Remove the fuel level indicator switch from the fuel tank.



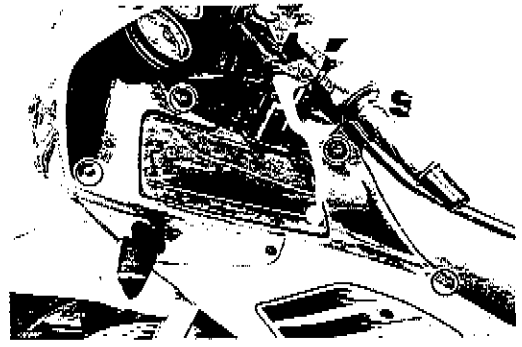
REMOVAL

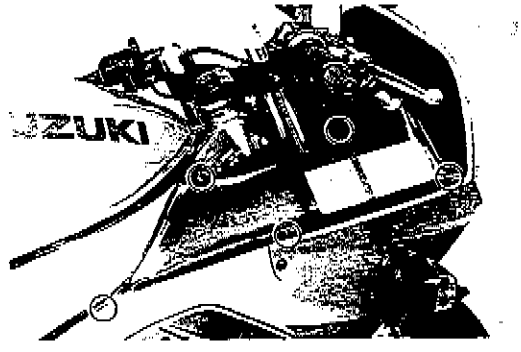
COWLING ASSEMBLY AND COWLING BRACE

1. Remove the cowling upper panels of front by removing the screws, left and right.

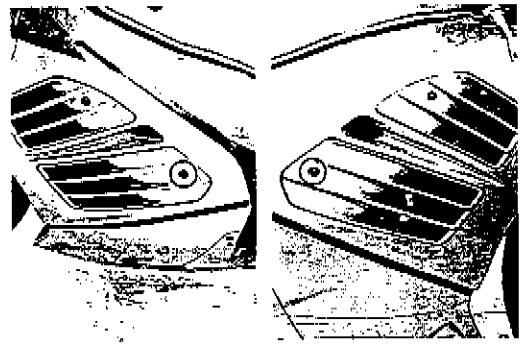


2. Remove the cowling upper panels of rear by removing the screws, left and right.

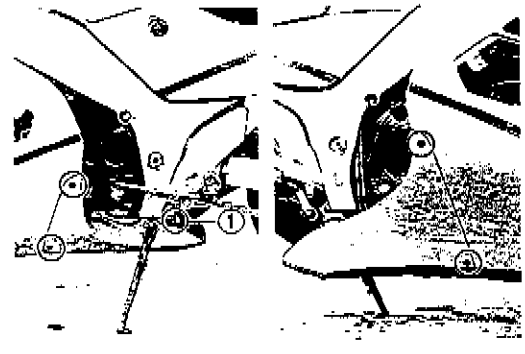




3. Remove the service lids on the lower cowling by removing the screws, left and right.



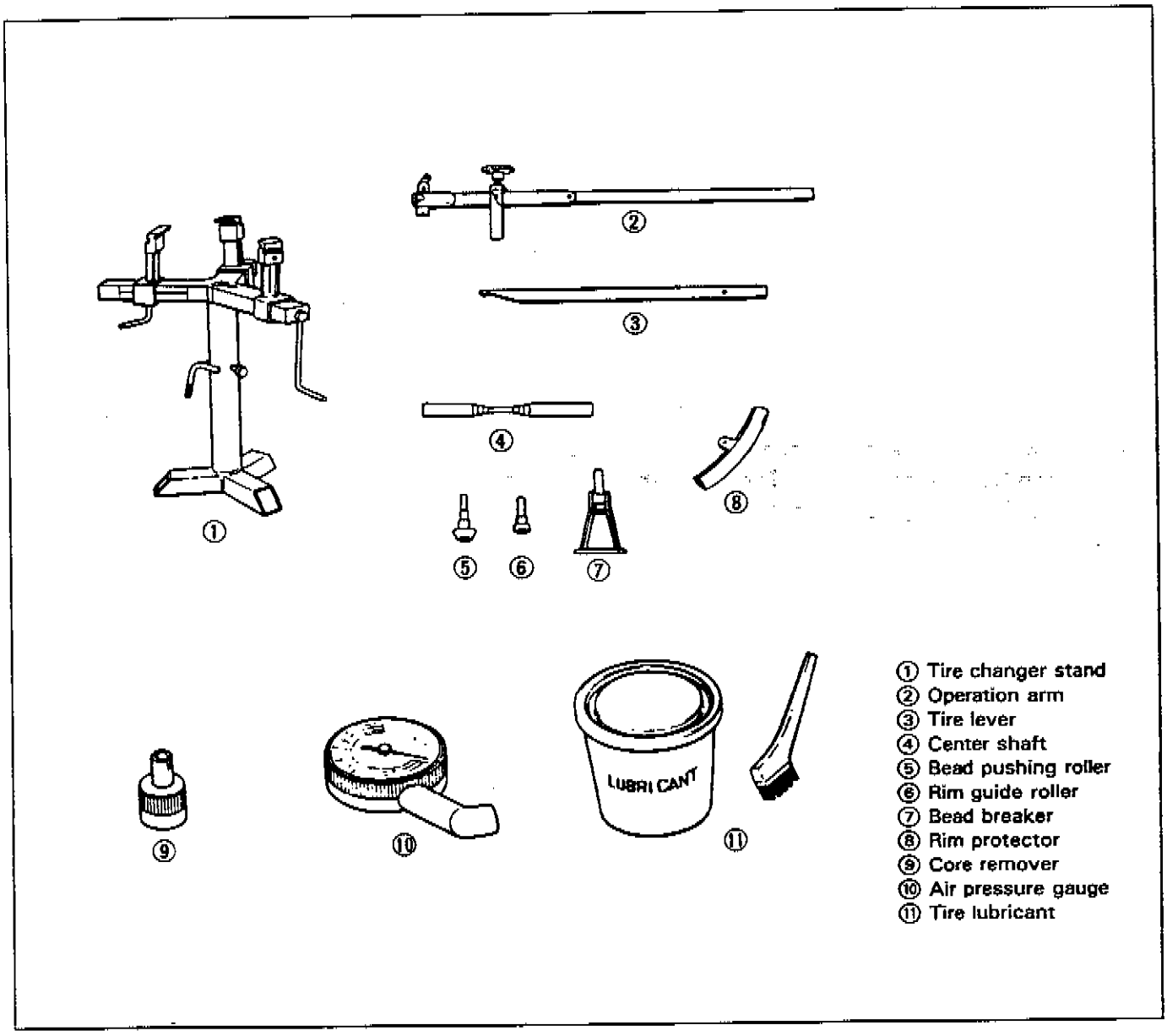
4. Remove the lower cowling of rear by removing the screws and nut ① .



TIRE AND WHEEL

TIRE REMOVAL

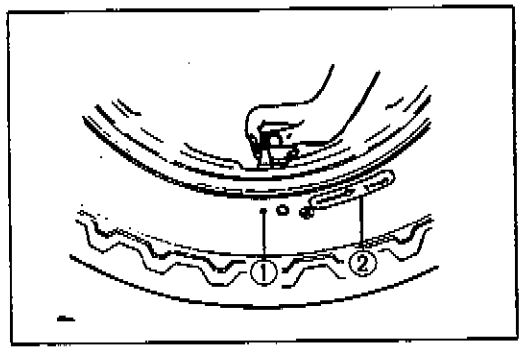
The most critical factor of a tubeless tire is the seal between the wheel rim and the tire bead. Because of this, we recommend using a tire changer which is also more efficient than tire levers. For tire removal, the following tools are required.



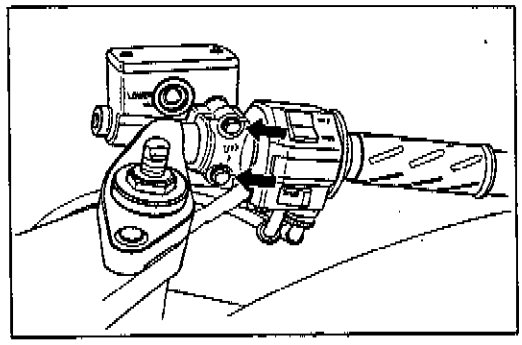
① Tire changer stand
② Operation arm
③ Tire lever
④ Center shaft
⑤ Bead pushing roller
⑥ Rim guide roller
⑦ Bead breaker
⑧ Rim protector
⑨ Core remover
⑩ Air pressure gauge
⑪ Tire lubricant

- 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.

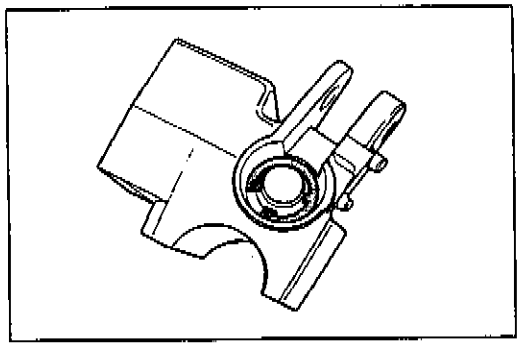


3. Remove the master cylinder assembly.



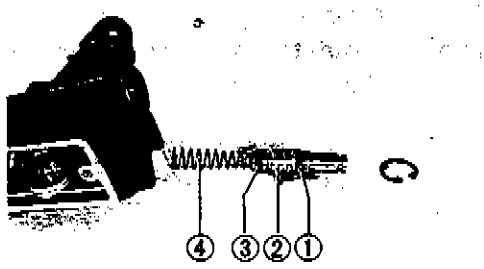
4. Remove the front brake lever, reservoir cap and diaphragm.
5. Drain brake fluid.
6. Remove the dust seal, then remove the circlip by using the special tool.

09900-06108: Snap ring pliers



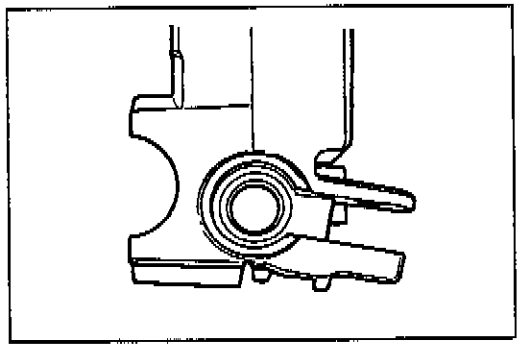
7. Remove the piston/secondary cup, primary cup and spring.

① Secondary cup
② Piston
③ Primary cup
④ Return spring



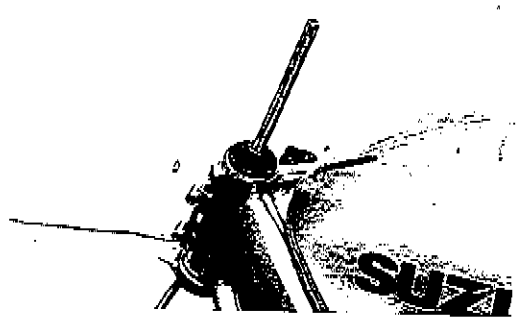
MASTER CYLINDER INSPECTION

Inspect the master cylinder bore for any scratches or other damage.
Inspect the piston surface for any scratches or other damage.
Inspect the primary cup, secondary cup and dust seal for wear or damage.



REASSEMBLY AND REMOUNTING

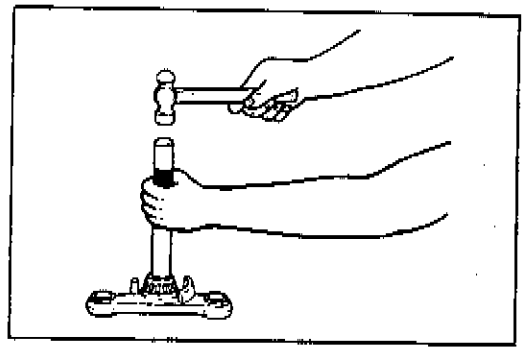
Reassemble and remount the steering stem in the reverse order of removal and disassembly. Pay attention to the following points:



OUTER RACES

- Press in the upper and lower outer races by using the special tool.

09941-34513: Steering outer race installer



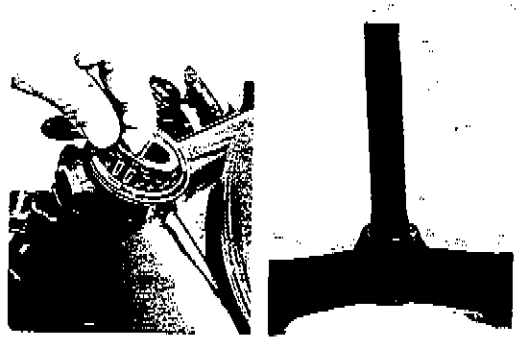
BEARING

- Place a suitable washer onto the lower bearing and press in the lower bearing by using the special tool.

09941-74910: Steering bearing installer

- Apply grease to the upper and lower bearings before remounting the steering stem.

99000-25030: SUZUKI SUPER GREASE "A"



STEM NUT

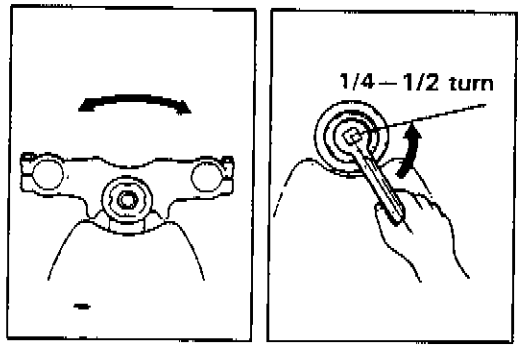
- Tighten the steering stem nut to the specified torque.

09940-14911: Steering stem nut wrench

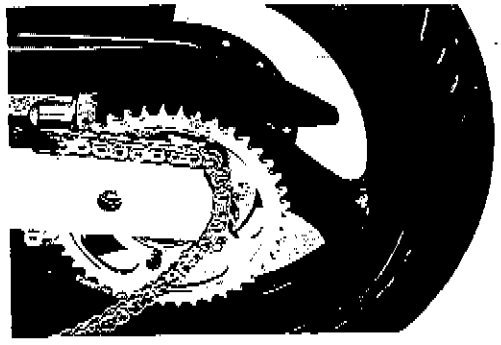
Tightening torque: 40—50 N·m
(4.0—5.0 kg-m, 29.0—36.0 lb-ft)

- 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.

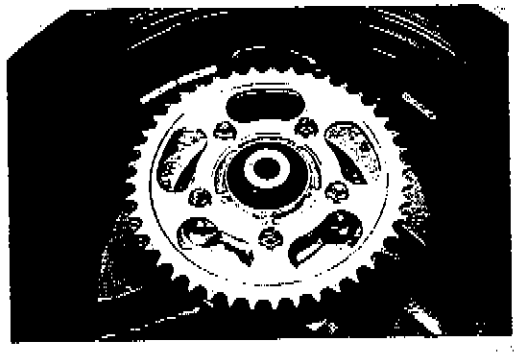


5. Draw out the rear axle shaft.
6. Remove the rear wheel by disengaging the drive chain.



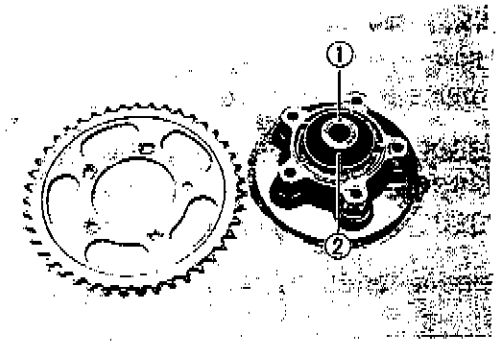
CAUTION:
Do not operate the brake pedal while dismounting the brake caliper.

7. Draw out the rear sprocket mounting drum from the wheel.



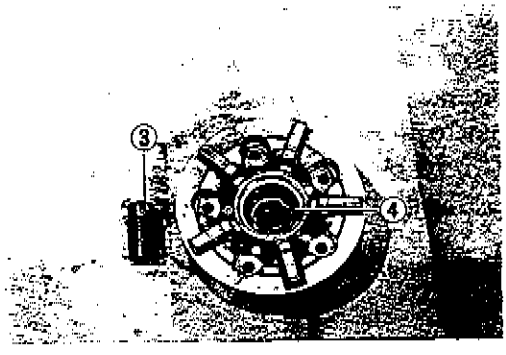
NOTE:
Slightly loosen the rear sprocket mounting nuts to facilitate later disassembly before separate the mounting drum.

8. Separate the rear sprocket from the mounting drum.
9. Remove the spacer ① and dust seal ② .



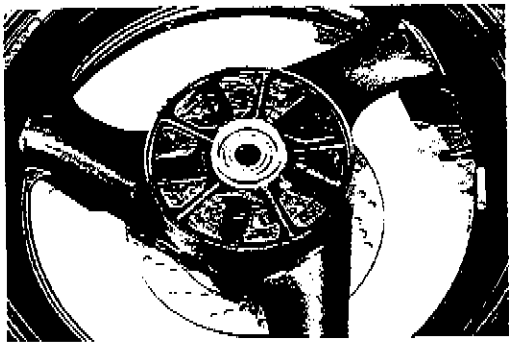
CAUTION:
The removed dust seal should be replaced with a new one.

10. Remove the drum retainer ③ , draw out the sprocket mounting drum bearing ④ using an appropriate tool.



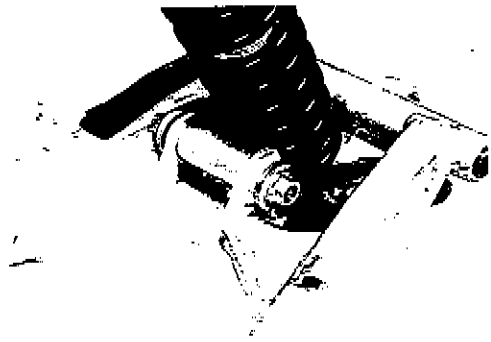
CAUTION:
The removed bearing should be replaced with a new one.

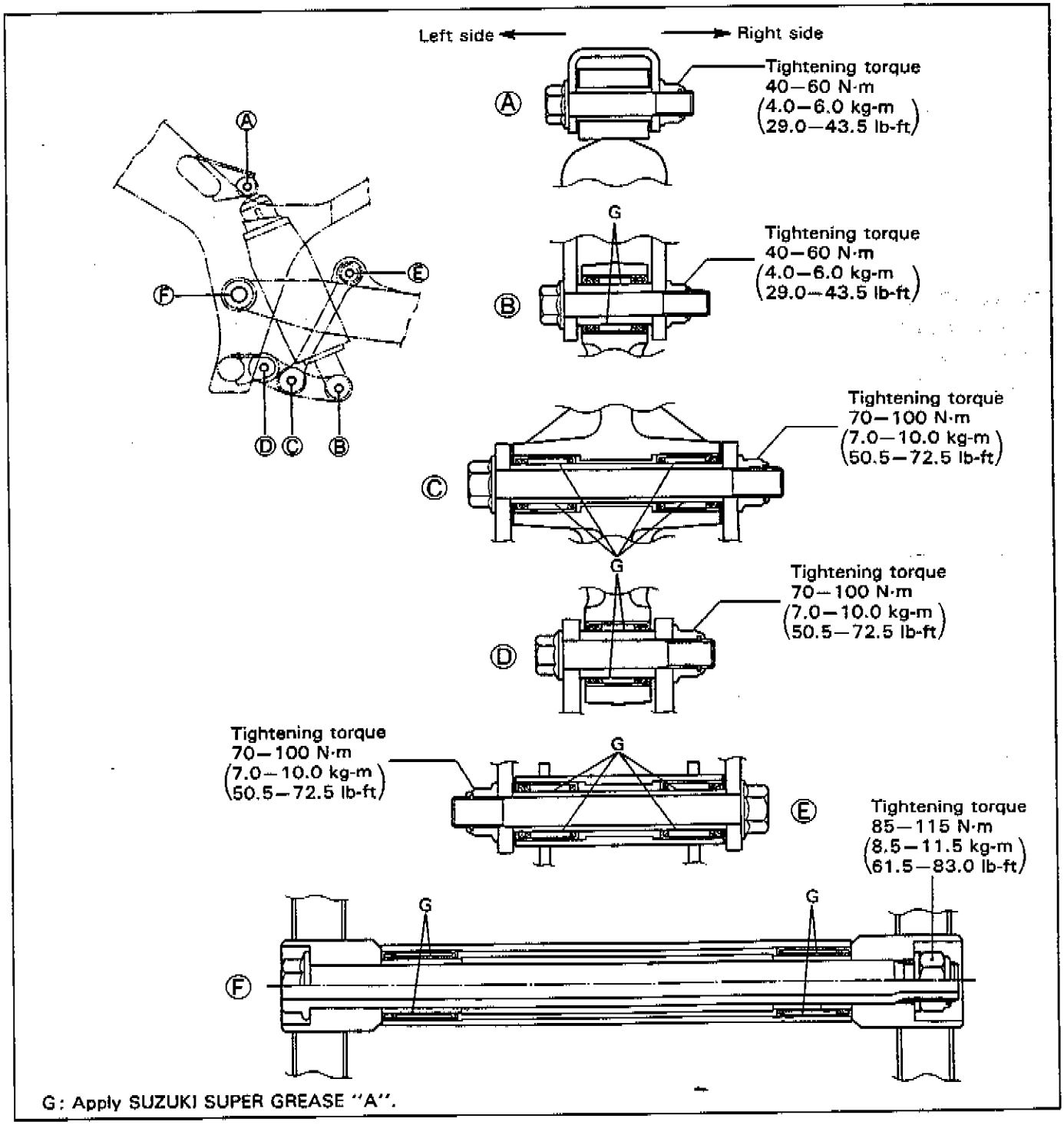
11. Remove the cushions.



REASSEMBLY ONTO FRAME

- First of all assemble the shock absorber, cushion lever and cushion rods onto the swingarm.

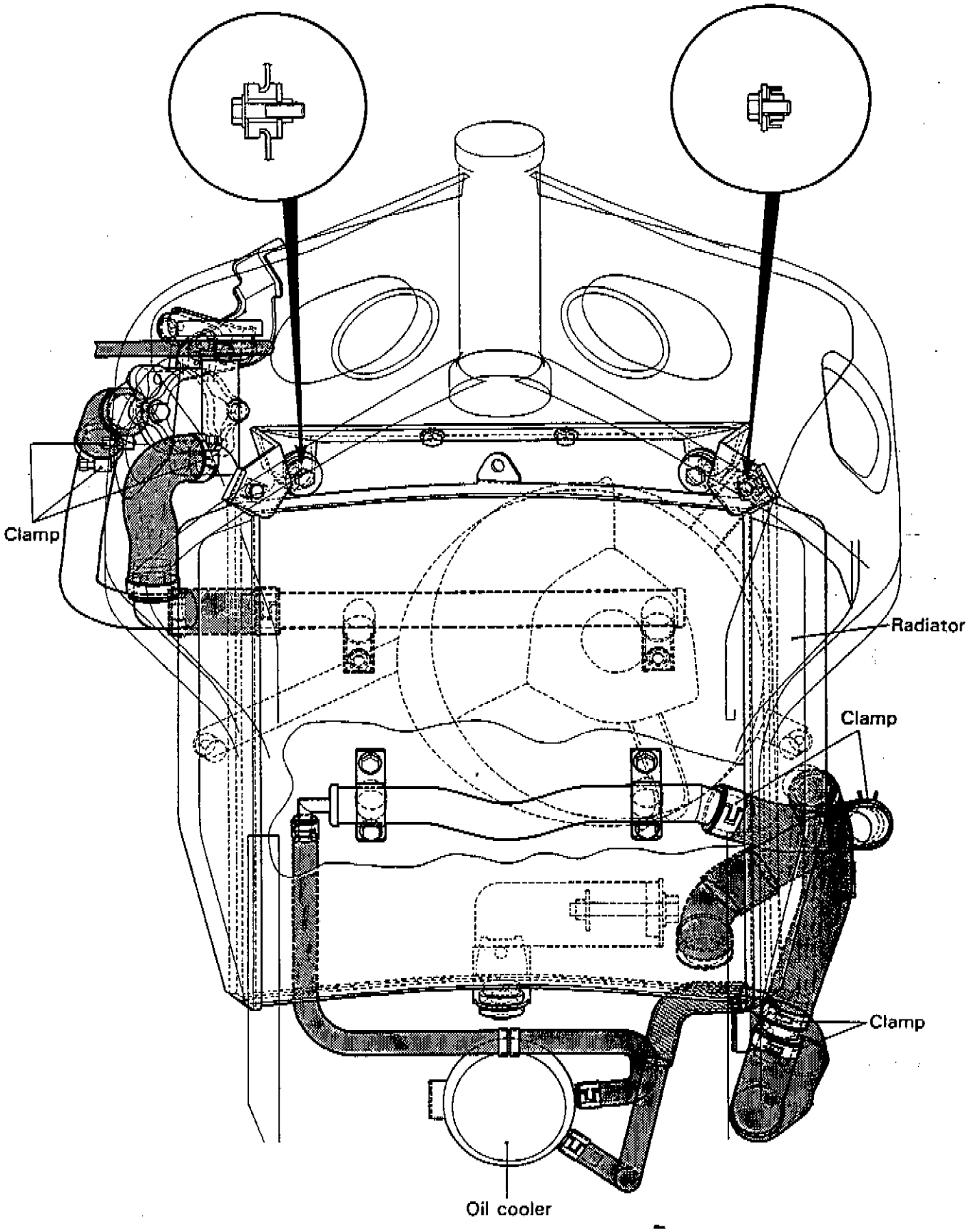


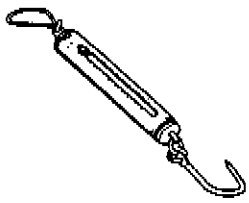
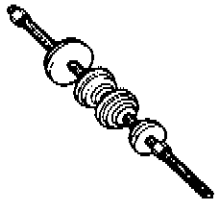
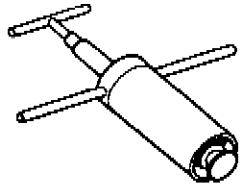
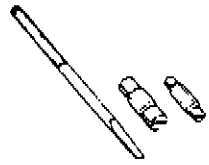
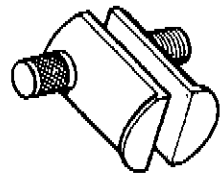
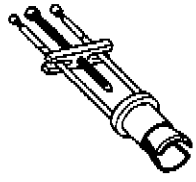
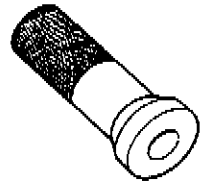


BRAKES

Complaint	Symptom and possible causes	Remedy
Insufficient brake power.	1. Leakage of brake fluid from hydraulic system. 2. Worn pads. 3. Oil adhesion of engaging surface of pads. 4. Worn disc. 5. Air in hydraulic system.	Repair or replace. Replace. Clean disc and pads. Replace. Bleed air.
Brake squeaking.	1. Carbon adhesion on pad surface. 2. Tilted pad. 3. Damaged wheel bearing. 4. Loosen front-wheel axle or rear-wheel axle. 5. Worn pads. 6. Foreign material in brake fluid. 7. Clogged return port of master cylinder.	Repair surface with sandpaper. Modify pad fitting or replace. Replace. Tighten to specified torque. Replace. Replace brake fluid. Disassemble and clean master cylinder.
Excessive brake lever stroke.	1. Air in hydraulic system. 2. Insufficient brake fluid. 3. Improper quality of brake fluid.	Bleed air. Replenish fluid to specified level; bleed air. Replace with correct fluid.
Leakage of brake fluid.	1. Insufficient tightening of connection joints. 2. Cracked hose. 3. Worn piston and/or cup.	Tighten to specified torque. Replace. Replace piston and/or cup.

COOLING SYSTEM HOSE ROUTING



 09940-92710 Spring scale	 09941-34513 Steering outer race installer	 09941-44510 Swingarm bearing remover	 09941-50111 Bearing remover	 09941-54911 Bearing outer race remover
 09941-74910 Steering bearing installer	 09941-84510 Bearing remover	 09943-74111 Front fork oil level gauge	 09951-16080 Bearing installer	

NOTE:
When ordering the special tool, please confirm whether it is available or not.

ITEM		STANDARD		LIMIT
Master cylinder bore		Front	12.700—12.743 (0.5000—0.5017)	—
		Rear	12.700—12.743 (0.5000—0.5017)	—
Master cylinder piston diam.		Front	12.657—12.684 (0.4983—0.4993)	—
		Rear	12.657—12.684 (0.4983—0.4993)	—
Brake caliper cylinder bore	Leading	Front	25.400—25.450 (1.0000—1.0020)	—
	Trailing		25.400—25.450 (1.0000—1.0020)	—
		Rear	38.180—38.256 (1.5031—1.5061)	—
Brake caliper piston diam.	Leading	Front	25.335—25.368 (0.9974—0.9987)	—
	Trailing		25.335—25.368 (0.9974—0.9987)	—
		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	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	—	390 (15.4)	
Front fork oil level	92 (3.6)	—	
Rear wheel travel	130 (5.1)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring pre-load adjustable.
Rear suspension	Link type system, oil damped, coil spring, spring pre-load adjustable and rebound damping force adjustable.
Steering angle	30° (right & left)
Caster	65°
Trail	103 mm (4.1 in)
Turning radius	3.2 m (10.5 ft)
Front brake	Disc brake, twin
Rear brake	Disc brake
Front tire size	120/70 ZR17, tubeless
Rear tire size	160/60 ZR17, tubeless
Front fork stroke	120 mm (4.7 in)
Rear wheel travel	130 mm (5.1 in)

ELECTRICAL

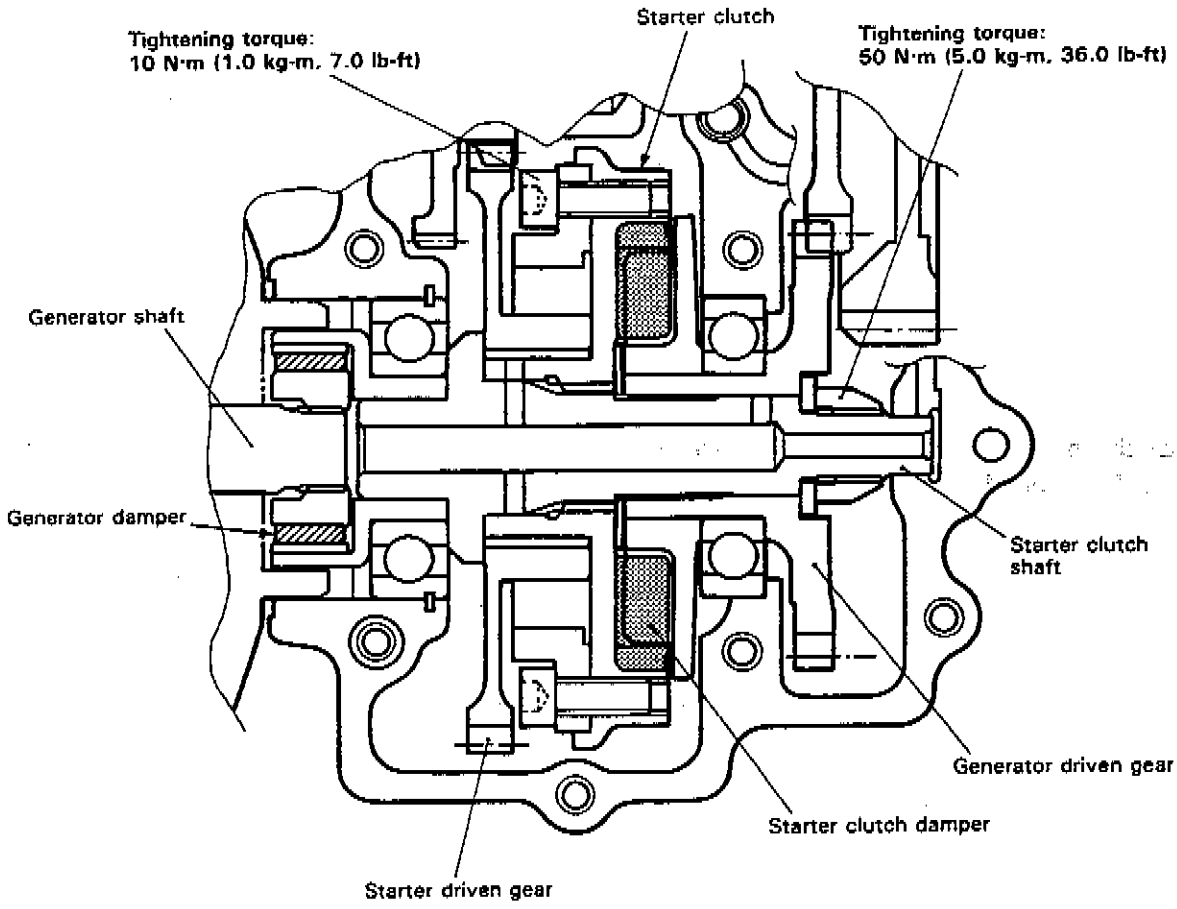
Ignition type	Electronic Ignition (Fully Transistorized)
Ignition timing	4° B.T.D.C. at 1500 r/min ..... For E-33 *7° B.T.D.C. at 1500 r/min ..... For the others
Spark plug	N.G.K.: CR9E, NIPPONDENSO U27ESR-N
Battery	12V 28.8 kC (8 Ah)/10 HR
Generator	Three-phase A.C. Generator
Main fuse	30A
Fuse	15/15/15/10/10A
Headlight	12V 60/55W
Turn signal light	12V 21W x 4
Parking or city light	12V 4W ..... Except for E-03,24,28,33
Taillight	12V 5W
Brake light	12V 21W x 2
License plate light	12V 5W
Speedometer light	12V 1.7W x 2
Tachometer light	12V 1.7W x 2
Engine coolant temp. meter light	12V 1.7W
Neutral indicator light	12V 3.4W
High beam indicator light	12V 3.4W
Turn signal indicator light	12V 3.4W
Oil pressure indicator light	12V 3.4W
Fuel level indicator light	12V 3.4W

CAPACITIES

Fuel tank, including reserve	16.0 L (4.2/3.5 US/Imp gal) ..... For E-33 17.0 L (4.5/3.7 US/Imp gal) ..... For the others
Engine oil, oil change	3 000 ml (3.2/2.6 US/Imp qt)
with filter change	3 300 ml (3.5/2.9 US/Imp qt)
overhaul	3 900 ml (4.1/3.4 US/Imp qt)
Front fork oil	503 ml (17.0/17.7 US/Imp oz)
Coolant	2 450 ml (2.6/2.2 US/Imp qt)

These specifications are subject to change without notice.

SERVICE INFORMATION
STARTER CLUTCH



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/cm², 43 psi) Below 600 kPa (6.0 kg/cm², 85 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	—
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	—	47.5 (1.87)

THERMOSTAT + RADIATOR + FAN

ITEM		STANDARD		LIMIT
Thermostat valve opening temperature		74.5—78.5°C (166.1—173.3°F)		—
Thermostat valve lift		Over 7 mm (0.28 in) at 90°C (194°F)		—
Radiator cap valve opening pressure		110 kPa (1.1 kg/cm², 15.6 psi)		—
Cooling fan thermo-switch operating temperature	ON	Approx. 105°C (221°F)		—
	OFF	Approx. 100°C (212°F)		—
Engine coolant temperature gauge resistance		50°C (122°F)	Approx. 153.9 Ω	—
		80°C (176°F)	Approx. 51.9 Ω	—
		100°C (212°F)	Approx. 27.4 Ω	—
		120°C (248°F)	Approx. 16.1 Ω	—

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		1.744 (75/43)		—
Final reduction ratio		E-03,18,33	3.071 (43/14)	—
		The others	3.000 (42/14)	—
Gear ratios	Low	3.142 (44/14)		—
	2nd	2.058 (35/17)		—
	3rd	1.650 (33/20)		—
	4th	1.428 (30/21)		—
	5th	1.260 (29/23)		—
	Top	1.120 (28/25)		—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD			LIMIT
Cam height	IN.	E-04	36.312—36.368 (1.4296—1.4318)	36.02 (1.418)
		E-18,33	34.542—34.598 (1.3599—1.3621)	34.25 (1.348)
		Others	36.312—36.368 (1.4296—1.4318)	36.02 (1.418)
	EX.	E-04	35.902—35.958 (1.4135—1.4157)	35.61 (1.402)
		E-18,33	34.122—34.178 (1.3433—1.3456)	33.83 (1.332)
		Others	35.902—35.958 (1.4135—1.4157)	35.61 (1.402)
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 pin (at arrow "3")	13th pin			—
Cylinder head distortion	—			0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure	1 000—1 500 kPa (10—15 kg/cm², 142—213 psi)			800 kPa (8 kg/cm², 114psi)
Compression pressure difference	—			200 kPa (2 kg/cm², 28 psi)
Piston to cylinder clearance	0.040—0.060 (0.0016—0.0024)			0.120 (0.0047)
Cylinder bore	65.000—65.015 (2.5591—2.5596)			65.090 (2.5626)
Piston diam.	64.945—64.970 (2.5569—2.5579) Measure at 15 mm (0.6 in) from the skirt end.			64.880 (2.5543)
Cylinder distortion	—			0.20 (0.008)
Piston ring free end gap	1st	R	Approx. 7.5 (0.29)	6.0 (0.24)
	2nd	R	Approx. 8.0 (0.31)	6.4 (0.25)
Piston ring end gap	1st		0.25—0.40 (0.010—0.016)	0.5 (0.02)
	2nd		0.25—0.40 (0.010—0.016)	0.5 (0.02)

FIG.1

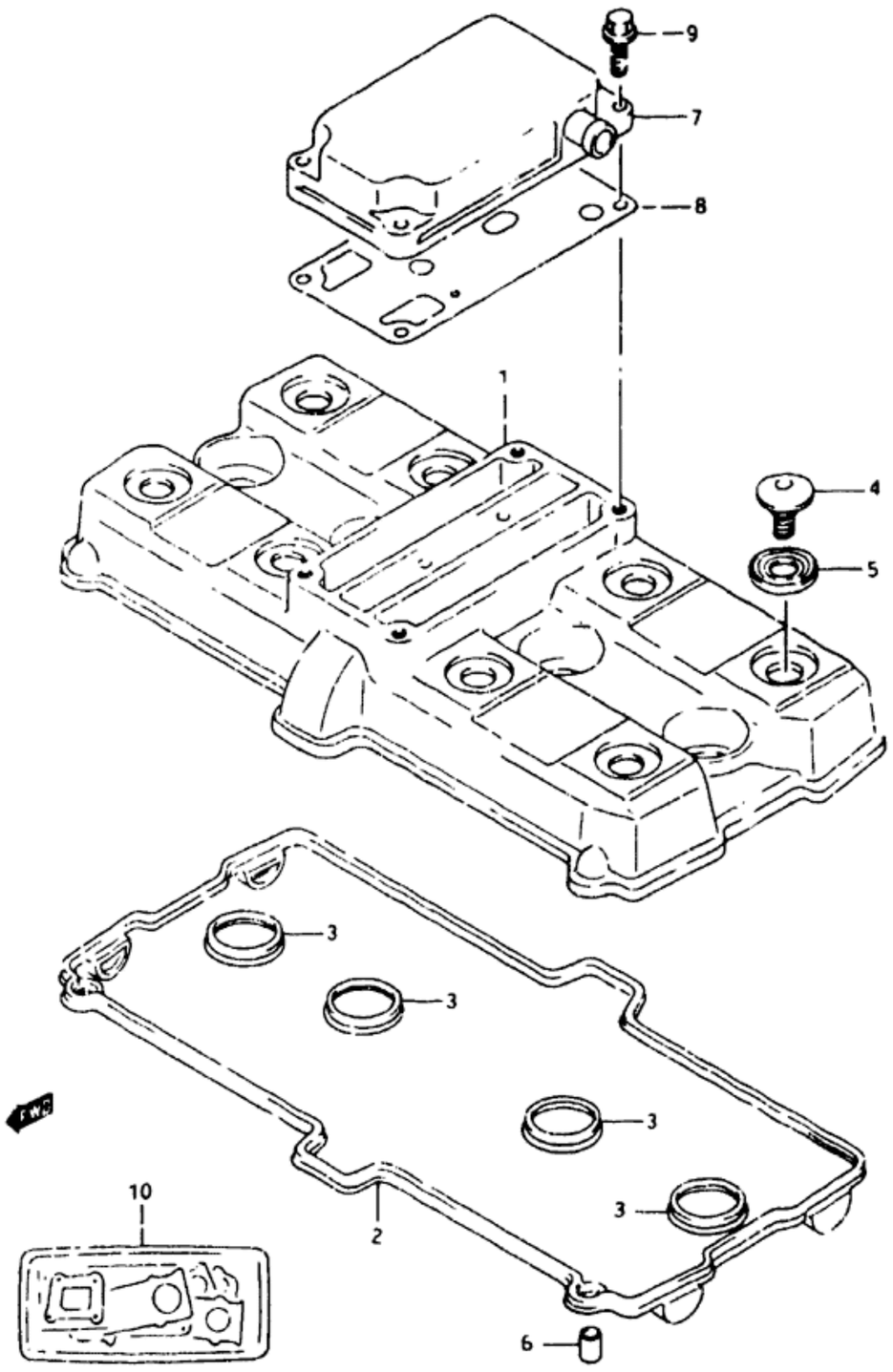


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FIG.1 (B- 2) CYLINDER HEAD COVER

REF.NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	11171-31E00	COVER, cylinder head	1	
2	11173-21E00	GASKET, head cover No.1	1	
3	11178-17E00	GASKET, head cover No.2	4	
4	09106-07009	BOLT (L:5.5)	8	
5	09161-11008	WASHER	8	
6	09206-08001	PIN	2	
7	11175-31E00	COVER, breather	1	
8	11177-17E00	GASKET, breather cover	1	
9	01550-06253	BOLT	4	
10-1	11401-17811	GASKET SET	1	model R
10-2	11401-17812	GASKET SET	1	model S
10-3	11401-17813	GASKET SET	1	model T

FIG.9

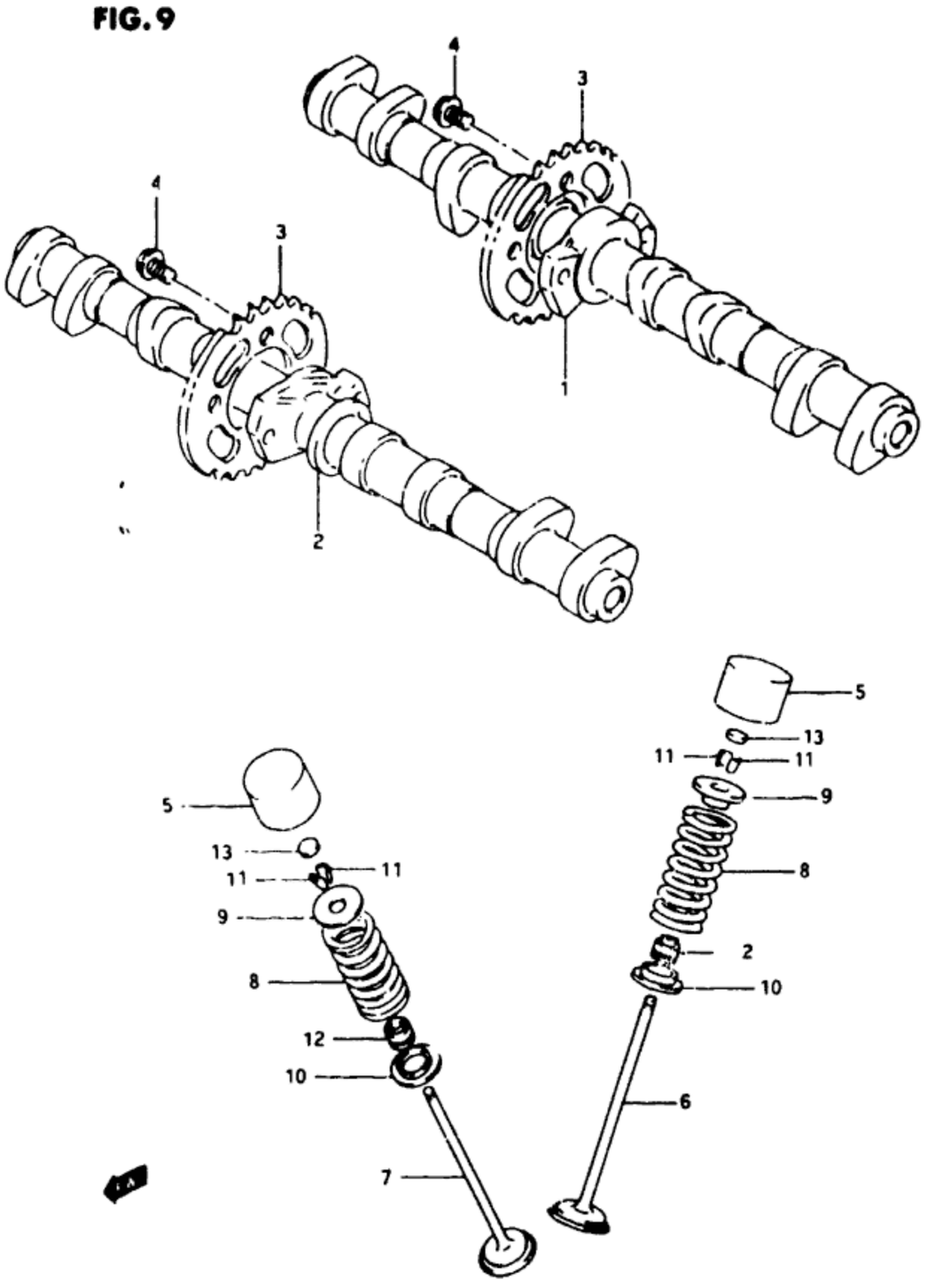

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FIG.9 (B-12) CAM SHAFT - VALVE

REF.NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
13-21	12892-05C00-220	SHIM, tappet (T:2.2C)	16	
14	12800-05820	SHIM SET, tappet Inc. Ref.No.13-1-13-21 (5pcs. each) & No.15	1	OPT,Not shown
15	99000-69491	CASE, tappet shim	1	OPT

FIG.15

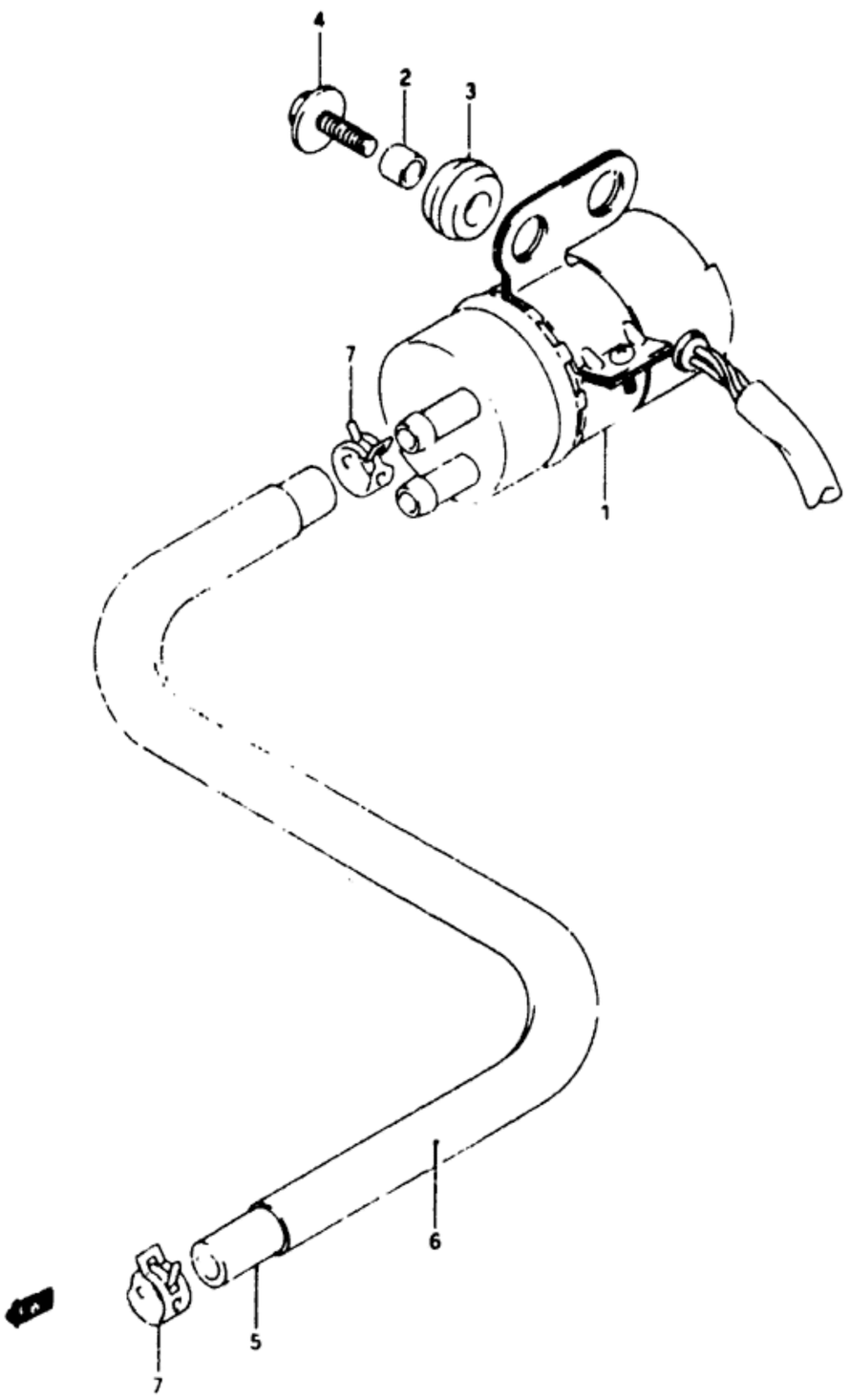

FIG.15 (C-10) FUEL PUMP

REF.NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	15100-21E01	PUMP ASSY, fuel	1	
2	09180-06011	SPACER	2	
3	09320-09009	CUSHION	2	
4	09116-06010	BOLT	2	
5-1	09354-70133-600	HOSE	1	600+370 model R/S
5-2	09354-70123-600	HOSE	1	600+380 model T
6	09351-14152-600	PROTECTOR	1	600+33C
7-1	09401-12404	CLIP	2	model R/S
7-2	09401-11407	CLIP	2	model T

FIG. 23

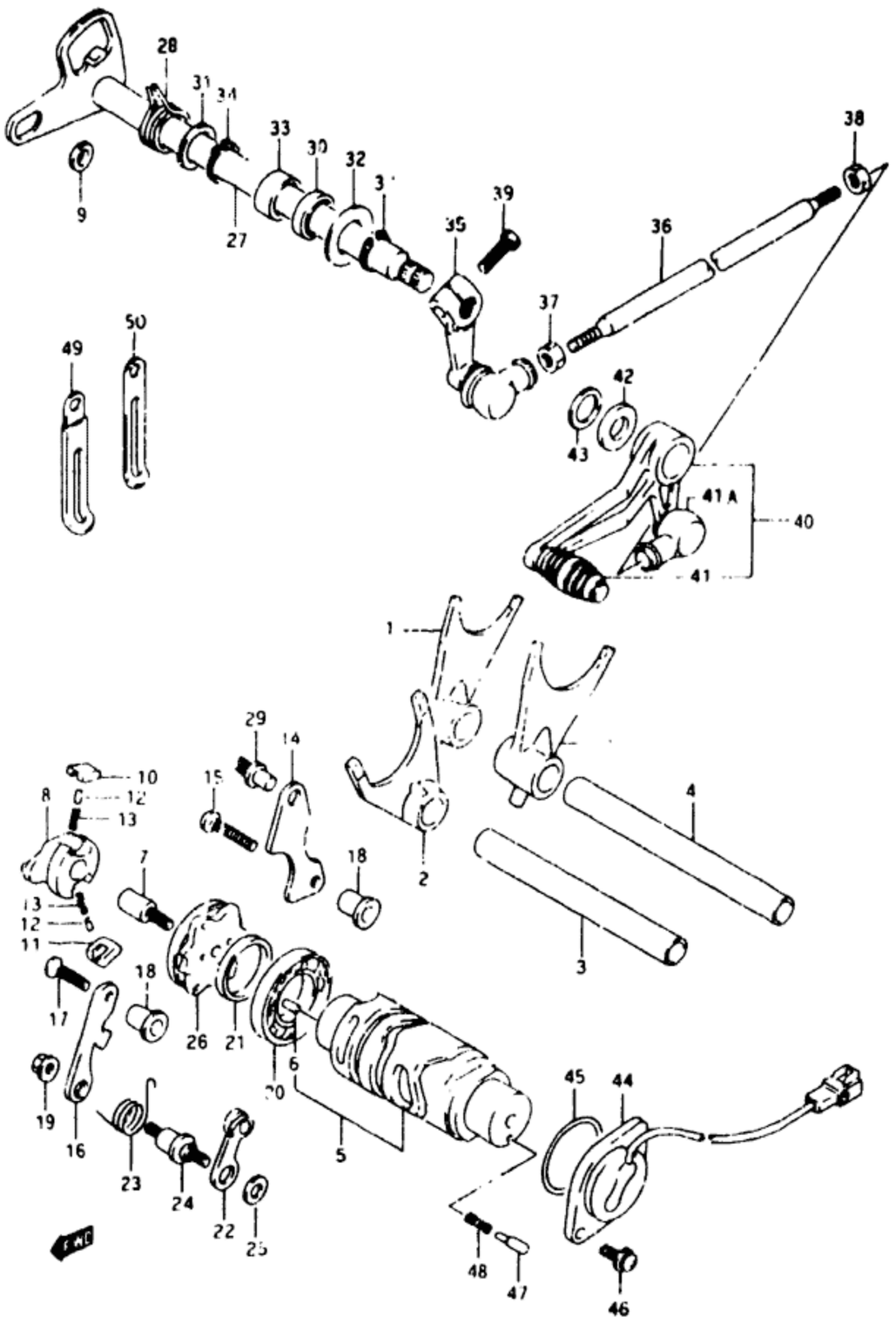

FIG.23 (D- 9) GEAR SHIFTING

REF.NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	25211-17E00	FORK, gear shifting No.1	2	
2	25231-17E00	FORK, gear shifting No.3	1	
3	25411-26001	SHAFT, fork (L:110)	1	
4	25411-27A00	SHAFT, fork (L:128)	1	
5	25310-17E01	CAM, gear shifting	1	
6	04221-04089	.PIN	2	
7	25312-12C00	PIN, shift cam driven gear	1	
8	25322-33C00	SHIFTER, cam	1	
9	09180-07014	ROLLER	1	
10	25323-34201	PAWL, No.1	1	
11	25324-34201	PAWL, No.2	1	
12	09261-05003	PIN	2	
13	09440-04003	SPRING	2	
14	25331-26000	LIFTER, pawl	1	
15	02112-06303	SCREW	1	
16	25341-17F00	GUIDE, cam	1	
17	02122-06303	SCREW	1	
18	09180-06202	SPACER	2	
19	08316-10063	NUT	1	
20	09262-25006	BEARING (25x47x8)	1	
21	09160-25059	WASHER (25x32x3)	1	
22	25350-26001	STOPPER, cam	1	
23-1	25355-26010	SPRING	1	model R/S
23-2	25355-26021	SPRING	1	model T
24	25356-12C00	SUPPORT, stopper	1	
25	08211-06141	WASHER	1	
26	25358-12000	PLATE, stopper	1	
27	25510-17E10	SHAFT, gear shifting	1	
28-1	09444-20002	SPRING	1	model R/S
28-2	09444-20003	SPRING	1	model T
29	25671-01000	STOPPER, arm	1	
30	09283-14006	OIL SEAL	1	
31	08211-14221	WASHER, RH	1	
32	09160-14016	WASHER, LH	1	
33	09263-14027	BEARING (14x20x12)	1	
34	08331-31146	CIRCLIP	2	

FIG. 29

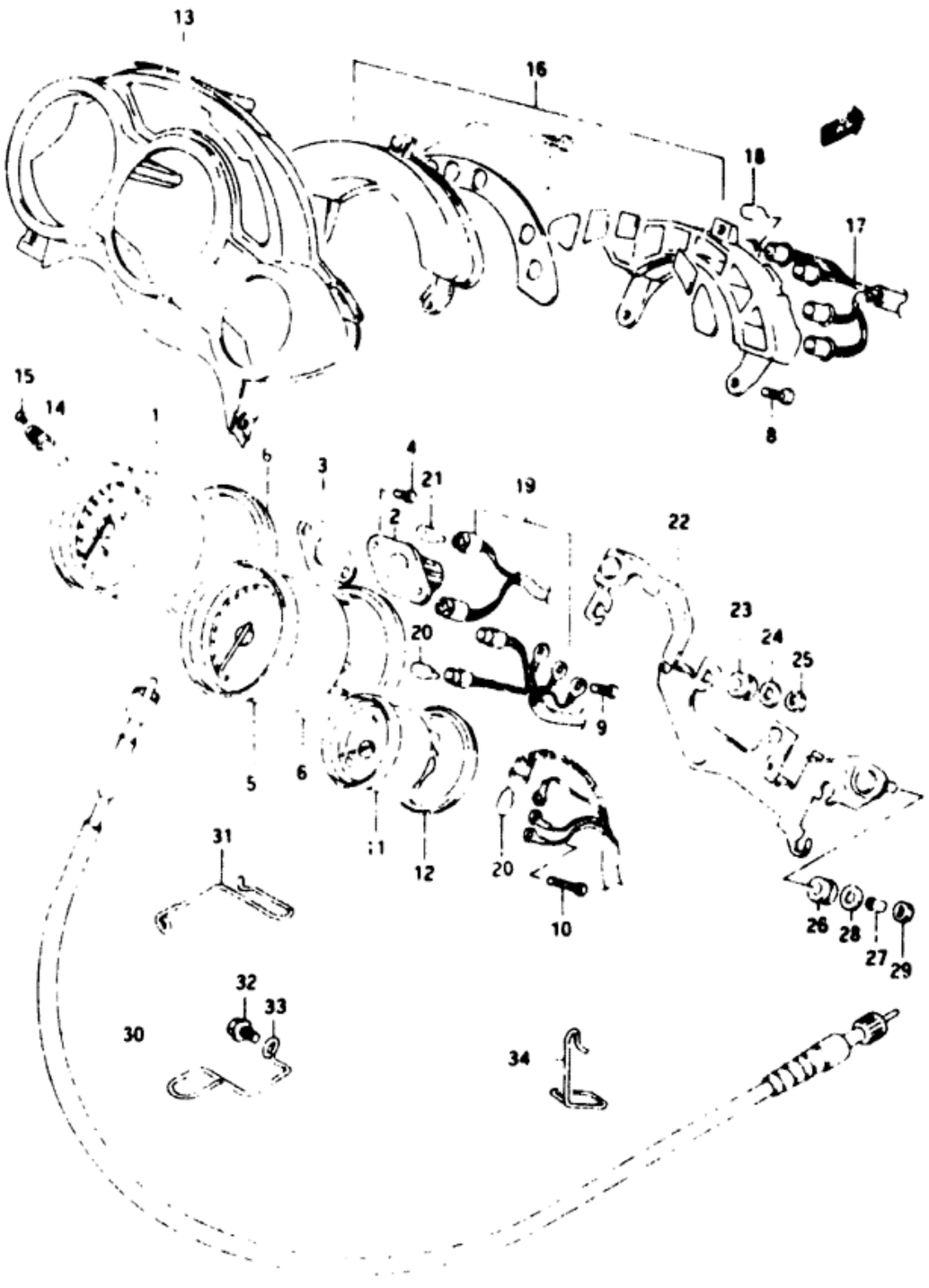

FIG.29 (E-18) SPEEDOMETER

REF.NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	34120-21E20	SPEEDOMETER (Mile/Kilo)	1	
2	34131-46B10	BOX, meter gear	1	
3	34132-17C00	GASKET	1	
4	02112-74103	SCREW	2	
5	34210-21E10	TACHOMETER	1	
6	34191-21E10	DAMPER	2	
7-1	34183-14900	SCREW (4x14)	1	model R
7-2	34184-12B00	SCREW (4x14)	1	model S/T
8-1	34183-21E00	SCREW (4x20)	3	model R
8-2	34183-21E01	SCREW (4x20)	3	model S/T
9-1	34249-17E10	SCREW (3x10)	3	model R
9-2	34149-19000	SCREW (3x10)	3	model S/T
10	34303-09400	SCREW (3x22)	3	
11-1	34420-21E10	METER, temp	1	model R
11-2	34420-21E20	METER, temp	1	model S/T
12	34191-21E20	DAMPER	1	
13	34190-21E10	HOOD, meter	1	
14	34124-21E10	KNOB	1	
15-1	34981-13A00	SCREW	1	model R
15-2	09139-02003	SCREW	1	model S/T
16	3630[illegible]	BOX ASSY, pilot	1	
17-1	36394-21E[illegible]	CORD ASSY, pilot bulb	1	model R
17-2	36394-21E11	CORD ASSY, pilot bulb	1	model S/T
19	09471-12082	BULB (12V,3.4W)	5	
19	34170-21E10	CORD ASSY	1	
20	09471-12100	BULB (12V,1.7W)	2	
21	09471-12108	BULB (12V,1.7W)	3	
22	34950-21E12	BRACKET, meter	1	
23	90189-21E10	CUSHION	6	
24-1	34727-41410	WASHER	6	model R
24-2	09160-04017	WASHER	6	model S/T
25	08310-00047	NUT	6	
26	09320-08048	GROMMET	3	
27	09180-06044	SPACER	3	

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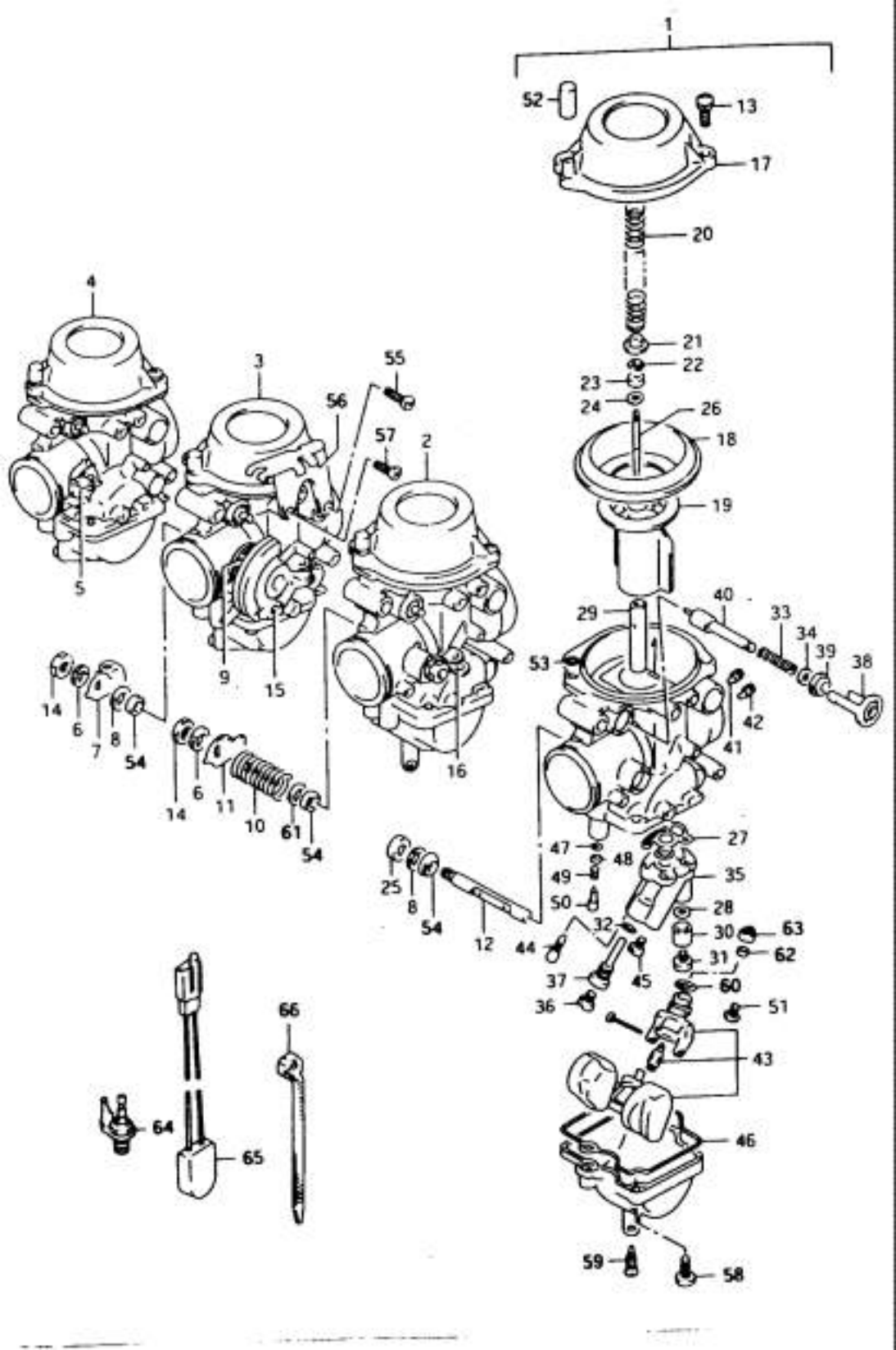
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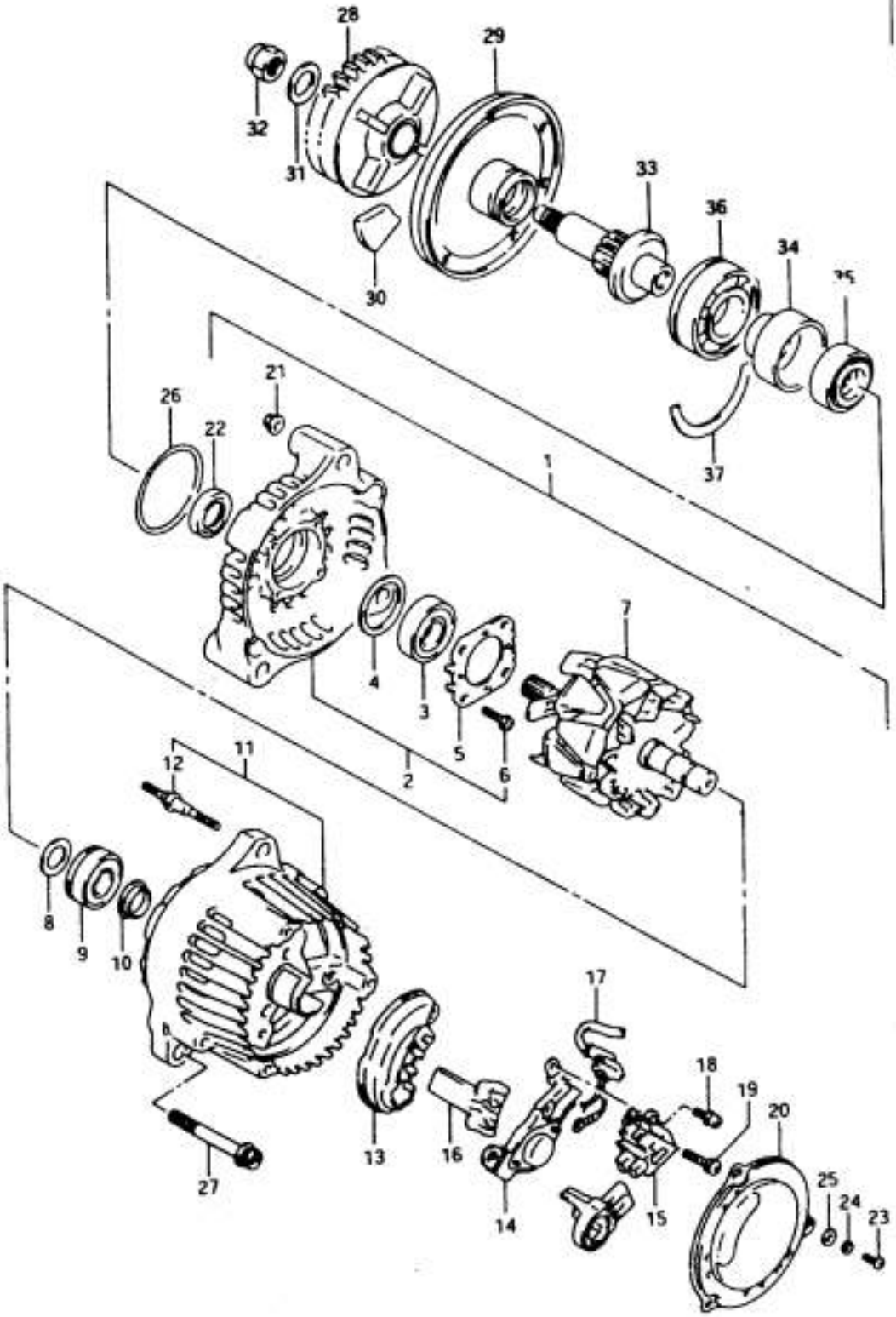
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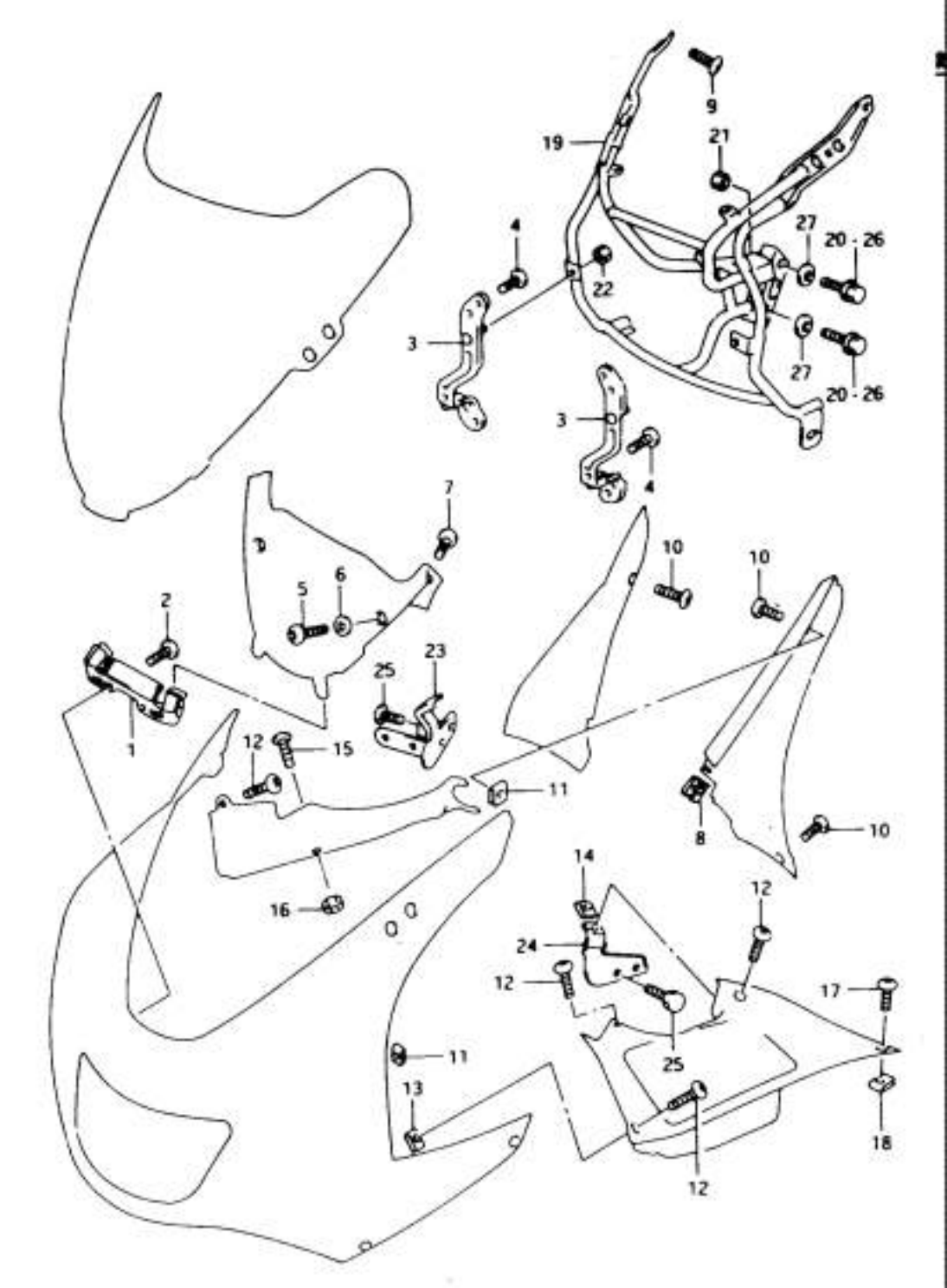
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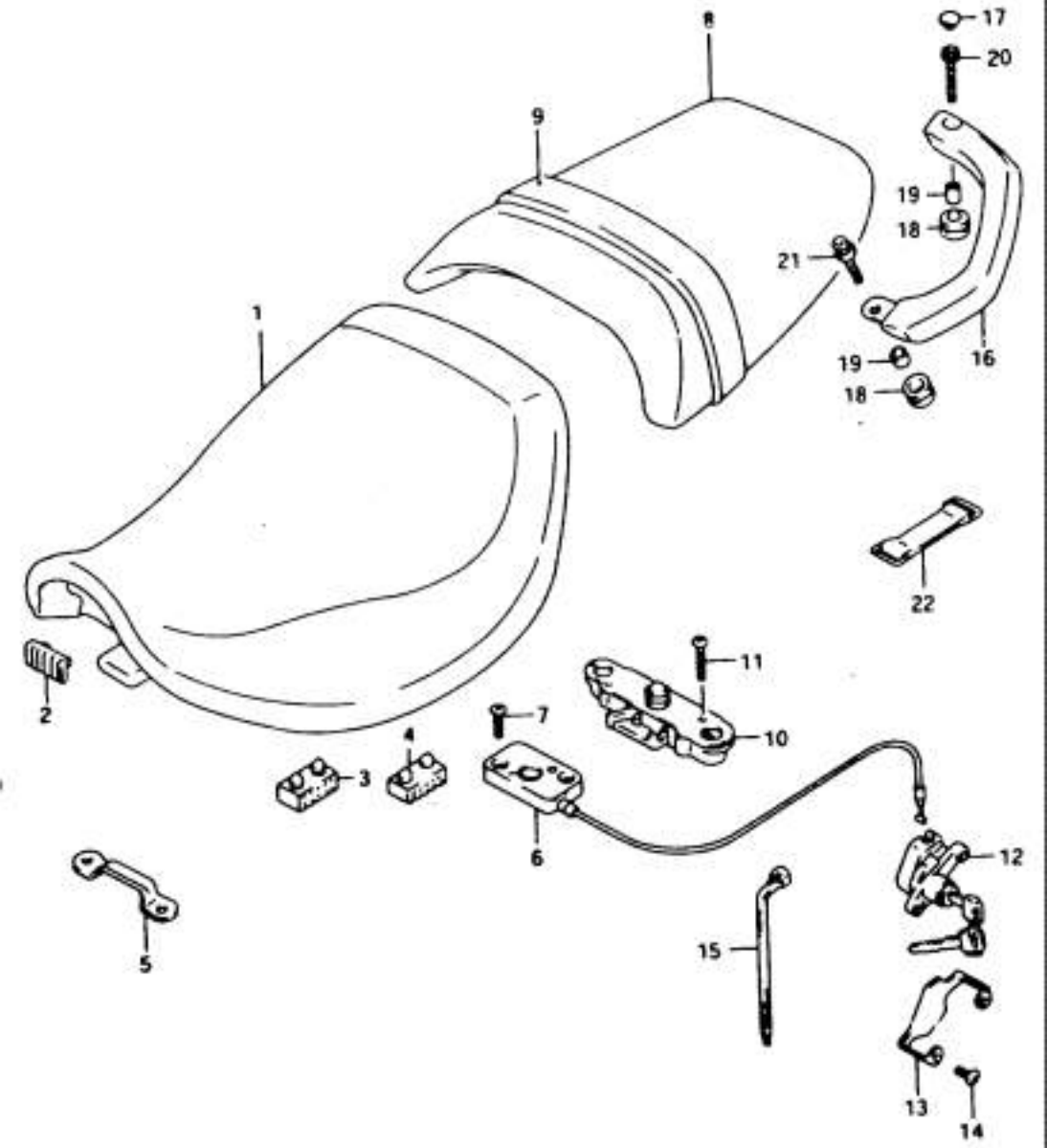
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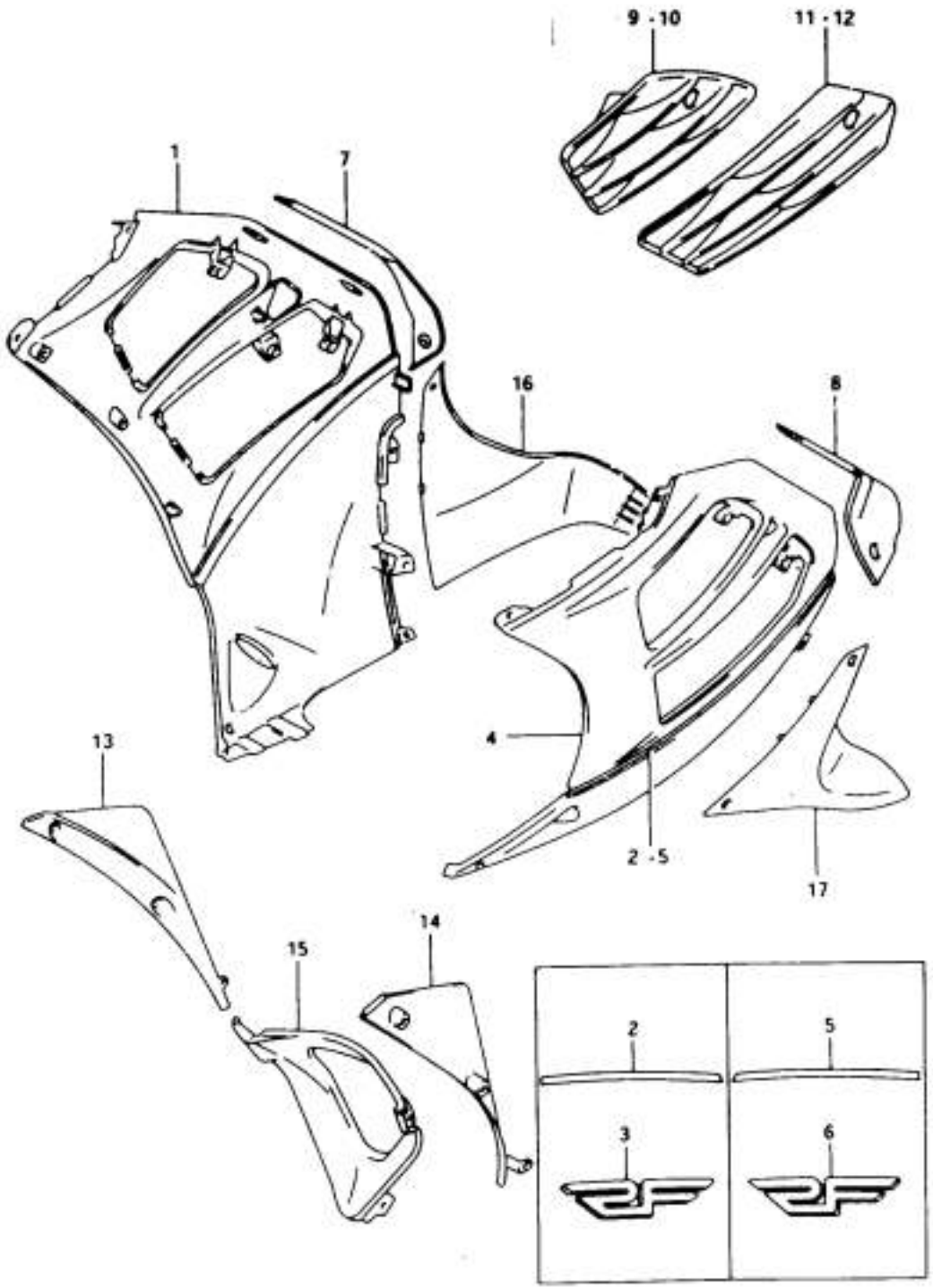
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