



**SUZUKI**

**PV50**

**SERVICE MANUAL**

99500-10291-01E

(英)



## FOREWORD

*This service manual has been specially prepared to provide all the necessary information for the proper maintenance and repair of the PV50.*

*The PV50 fits the needs of a wide variety of motorcycle users. Those who will be servicing this motorcycle should carefully review this manual before performing any repairs or services.*

*This manual contains up-to-date information at the time of its issue. Later made modification and changes will be explained to each SUZUKI distributor in respective markets, to whom you are kindly requested to make query about up dated information, if any.*

*The motorcycles distributed in your country might differ in minor respects from the standard — specification and, if they do, it is because some minor modifications (which are of no consequence in most cases as far as servicing is concerned) had to be made to comply with the statutory requirements of your country.*

**SUZUKI MOTOR CO.,LTD.**

*Service Publications Department  
Overseas Service Division*

## VIEW OF SUZUKI PV50



RIGHT SIDE



LEFT SIDE

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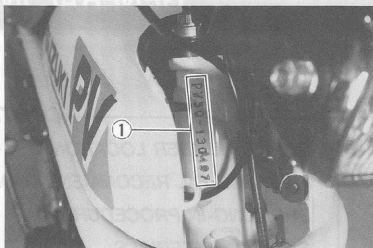


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## SERIAL NUMBER LOCATIONS

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



## FUEL AND OIL RECOMENDATIONS BREAKING-IN PROCEDURES

### FUEL

Unleaded or low-lead type gasoline is recommended. Use gasoline which is at least 85 — 95 octane by the Research Method.

### ENGINE OIL

Use SUZUKI "CCI" oil or SUZUKI CCI super oil.

### MIXING RATIO

25 parts gasoline to 1 part oil is the correct gasoline to oil mixture ratio.

### TRANSMISSION OIL

Use a good quality SAE 20W/40 multi grade motor oil.

### FRONT FORK OIL

Use fork oil #10

During the manufacture only the best possible materials are used and all machine 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 these breaking-in throttle position.

Initial	800 km	Below 1/4 throttle
Up to	1 600 km	Below 1/2 throttle








- Do not maintain constant engine speed for an extended time period during any portion of the break-in. Try to vary the throttle position.
- Upon reaching an odometer reading of 1 600 km, you can subject the motorcycle to full throttle operation.



## SPECIAL MATERIALS

## MATERIALS REQUIRED FOR MAINTENANCE

The materials shown are required for maintenance works on the Model PV50, and should be kept on hand for ready use. These items supplement such standard materials as cleaning fluids, lubricants, emery cloth and the like. Methods of use are discussed on later pages.

Material	Part	Page	Material	Part	Page
 <p>SUZUKI SUPER GREASE "A" 99000-25010</p>	Bearing and oil seals	3-22 3-23	 <p>SUZUKI FORK OIL # 10 99000-99044-15G</p>	Front fork	6-14
	Wheel bearing	6-7			
	Brake cam shaft	6-8 6-9			
	Dust seal	6-9			
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	Sprocket mounting drum bearing	6-27			
 <p>SUZUKI BOND NO. 4 99000-31030</p>	Crankcase mating surface.	3-28	 <p>THREAD LOCK SUPER "1303" 99000-32030</p>	Countershaft spacer	3-26
 <p>THREAD LOCK "1342" 99000-32050</p>	Reed valve screws	3-18	 <p>THREAD LOCK SUPER "1333B" 99000-32020</p>	Gearshift cam pin retainer screw	3-32
	Bearing retainer screws	3-22			
	Stator screws	3-29			
	Gearshift cam guide screw	3-32			
	Damper rod bolt	6-13			
 <p>THREAD LOCK SUPER "1322" 99000-32110</p>	Magneto rotor nut	3-29			

## 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, self-lock nuts 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 out-side diagonally, with 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 a 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** . . . . . Personal safety of the rider is involved, and 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 repair of the motorcycle is given under this heading.

## ENGINE OIL

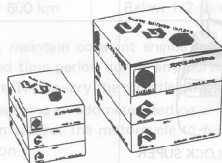
Use SUZUKI "CC" oil.

## MIXING RATIO

26 parts gasoline to 1 part oil

## USE OF GENUINE SUZUKI PARTS

When replacing any part of the machine, the use of genuine SUZUKI replacement parts is highly recommended. The use of parts that are not genuine SUZUKI will lower the inherent capability of the machine and could induce costly mechanical trouble.



## SPECIFICATIONS

### DIMENSIONS AND DRYMASS

Overall length . . . . .	1 415 mm
Overall width . . . . .	690 mm
Overall height . . . . .	915 mm
Wheelbase . . . . .	960 mm
Ground clearance . . . . .	125 mm
Dry mass . . . . .	67 kg

### ENGINE

Type . . . . .	Two-stroke, air-cooled
Intake system . . . . .	Piston and reed valve
Number of cylinder . . . . .	1
Bore . . . . .	41.0 mm
Stroke . . . . .	37.8 mm
Piston displacement . . . . .	49 cm <sup>3</sup>
Compression ratio . . . . .	7.3 : 1
Carburetor . . . . .	MIKUNI VM12SH, single
Air cleaner . . . . .	Polyurethane form element
Starter system . . . . .	Primary kick
Lubrication system . . . . .	SUZUKI "CCI"
Fuel/oil mixing ratio . . . . .	25 : 1 by volume

### TRANSMISSION

Clutch . . . . .	Wet multi-plate type
Transmission . . . . .	4-speed constant mesh
Gearshift pattern . . . . .	1 down, 3-up
Primary reduction . . . . .	3.842 (73/19)
Final reduction . . . . .	2.692 (35/13)
Gear ratios, Low . . . . .	3.166 (38/12)
2nd . . . . .	1.941 (33/17)
3rd . . . . .	1.380 (29/21)
Top . . . . .	1.083 (26/24)
Drive chain . . . . .	DAIDO D.I.D. 420 or TAKASAGO RK420M 88 links

## PRECAUTIONS AND GENERAL INSTRUCTIONS

### CHASSIS

Front suspension	Telescopic, coil spring, oil damped
Rear suspension	Swinging arm, oil damped
Steering angle	42° (right & left)
Caster	26° 00'
Trail	46 mm
Turning radius	1.7 m
Front brake	Internal expanding
Rear brake	Internal expanding
Front tire size	3.50-8-4PR
Rear tire size	3.50-8-4PR
Front tire pressure	125 kPa (1.25 kg/cm <sup>2</sup> )
Rear tire pressure	175 kPa (1.75 kg/cm <sup>2</sup> )

### ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	17° ± 3° B.T.D.C. at 6 000 r/min.
Spark plug	NGK BP6ES or NIPPON DENSO W20EP
Headlight (HI/LO)	6V 15/15W
Tail/Brake light	6V 3/10W
Speedometer light	6V 3W

### CAPACITIES

Fuel tank including reserve	3.5 L
reserve	0.5 L
Transmission oil	Change 650 ml
	Overhaul 700 ml
Front fork oil	55 ml

\*These specifications are subject to change without notice.

### USE OF GENUINE SUZUKI PARTS

When replacing any part of the machine with genuine SUZUKI replacement parts is highly recommended. The use of parts that are not genuine SUZUKI will lower the inherent capability of the machine and could induce costly mechanical trouble.



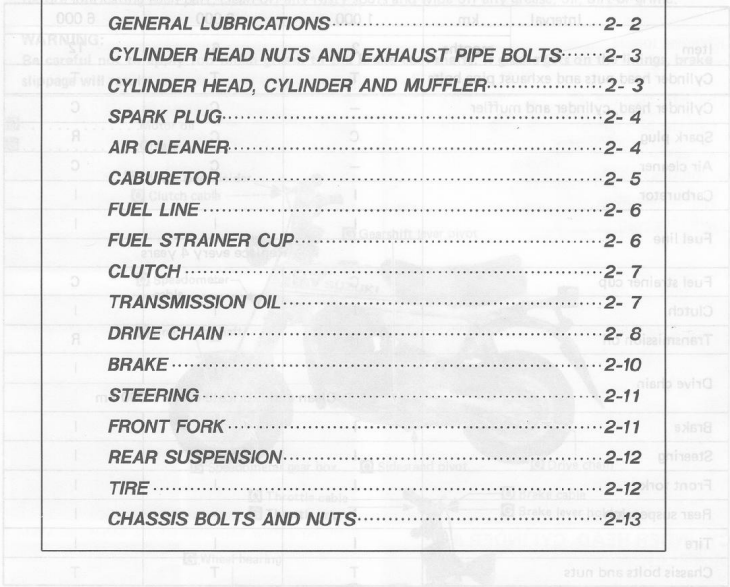
# PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

The chart below lists the recommended maintenance intervals for your motorcycle. To ensure peak performance and economy, keep the motorcycle operating at peak performance and economy. Travelled distance is expressed in terms of kilometers and months for your convenience.

## GENERAL LUBRICATIONS

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NOTE: T - Tighten, I - Inspect, W - Replace, S - Clean

- Kick starter lever pivot
- Brake cable adjuster
- Brake pedal pivot
- Wheel bearing

## PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended interval for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy. Traveled distance is expressed in terms of kilometers and months for your convenience.

**NOTE:**

Vehicles operated under severe conditions may require more frequent servicing.

### PERIODIC MAINTENANCE SCHEDULE CHART

Item	Interval	km	1 000	3 000	6 000
		months	2	6	12
Cylinder head nuts and exhaust pipe bolts			T	T	T
Cylinder head, cylinder and muffler			—	C	C
Spark plug			C	C	R
Air cleaner			—	C	C
Carburetor			I	I	I
Fuel line			I	I	I
			Replace every 4 years		
Fuel strainer cup			C	—	C
Clutch			I	I	I
Transmission oil			R	—	R
Drive chain			I	I	I
			Clean and lubricate every 1 000 km		
Brake			I	I	I
Steering			I	I	I
Front fork			I	I	I
Rear suspension			I	I	I
Tire			I	I	I
Chassis bolts and nuts			T	T	T

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

## MAINTENANCE PROCEDURES

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

### GENERAL LUBRICATIONS

Proper lubrication is important for smooth operation and long life of each working part of the motorcycle and also for safe riding. It is a good practice to lubricate the machine after a long rough ride and after getting it wet in the rain or after washing it. Major lubrication points are indicated below.

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

#### WARNING:

Be careful not to apply too much grease to the brake cam shafts. If grease gets on the linings, brake slippage will result.

- ⊙ ..... Motor oil
- ⊖ ..... Grease



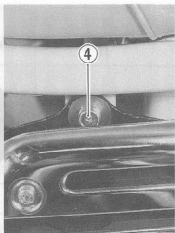
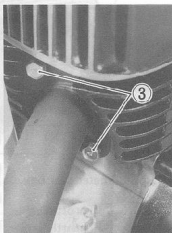
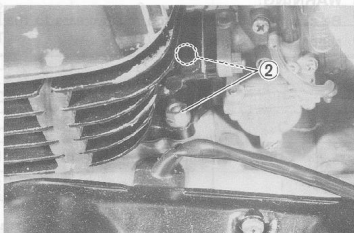
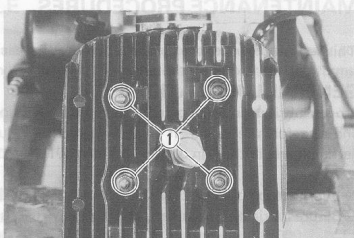
## CYLINDER HEAD NUTS AND EXHAUST PIPE BOLTS

Tighten 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

The nuts and bolts listed are important parts, and they must be kept to the specified torque for safety. Loosen and retighten to the specified torque.

### Tightening torque

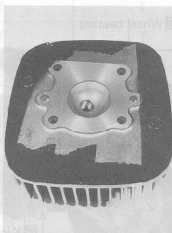
ITEM	N·m	kg·m
Cylinder head nut ①	8 – 12	0.8 – 1.2
Cylinder base nut ②	8 – 12	0.8 – 1.2
Exhaust pipe mounting bolt ③	5.5 – 6.0	0.5 – 0.6
Muffler mounting bolt ④	13 – 16	1.3 – 1.6



## CYLINDER HEAD, CYLINDER AND MUFFLER

Clean 3 000 km (6 months) and 6 000 km (12 months).

Carbon deposits in the combustion chamber of the cylinder head and at the piston crown will raise the compression ratio and may cause preignition or overheating. Carbon deposited at the exhaust port of the cylinder will prevent the flow of the exhaust, reducing the output. Remove the carbon deposits periodically. Be careful not to damage the surface of the combustion chamber and exhaust port when removing carbon.





## SPARK PLUG

Clean 1 000 km (2 months) and 3 000 km (6 months).

Replace 6 000 km (12 months).

Remove the carbon deposits with a wire or pin and adjust the spark plug gap to 0.6 – 0.7 mm, measuring with the thickness gauge.

Spark plug gap	0.6 – 0.7 mm
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09900-20804	Thickness gauge
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When removing the carbon deposits, be sure to inspect the insulator of the plug. Proper heat range is indicated if the insulator is light brown in color. If the standard plug is apt to get wet (blackened by carbon), replace it with hot type.

If apt to overheat (porcelain is whitish), replace it with cold type.

	NGK	NIPPON DENSO
Hot type	BP5ES	W16EP
Standard	BP6ES	W20EP
Cold type	BP7ES	W22EP

## AIR CLEANER

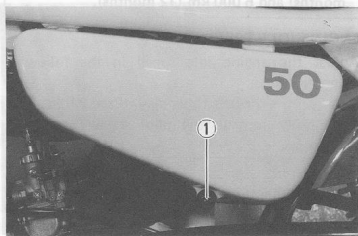
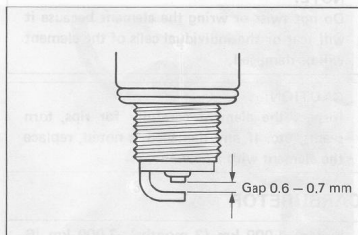
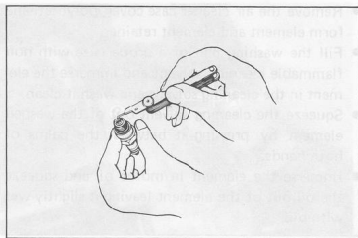
Clean 3 000 km (6 months) and 6 000 km (12 months).

If the air cleaner element is clogged with dust, intake resistance will be increased with a resultant decrease in power output and an increase in fuel consumption.

Check and clean the element in the following manner:

- Remove the screw ① and remove the left frame cover.
- Remove the two fitting slippers.

If the air cleaner cup is dirty with sediment or the element is dirty, clean the cup and the element. If the element is dirty, clean it with a brush and a loss in engine power may result. Clean the strainer and the cup, leaving the cock lever in "OFF" position.



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

### NOTE:

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

### CAUTION:

Inspect the element carefully for rips, torn seams, etc. If any damaged is noted, replace the element with a new one.

## CARBURETOR

Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

### ENGINE IDLE SPEED

Adjust the engine idle speed in the following manner:

- Adjust the throttle cable play. (Page 2-6)
- Carefully turn in the pilot screw ① until it bottoms.

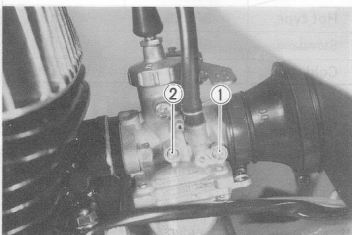
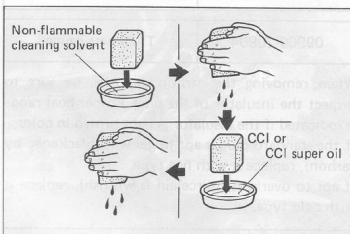
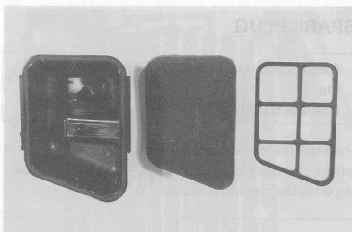
### NOTE:

Be careful not overtighten the screw.

- From the position, turn out the pilot screw 1 1/2 turn.
- Start the engine and allow it to warm up.
- Connect a tachometer.
- Turn the throttle stop screw ② so that engine idles between 1 400 – 1 700 r/min.
- Turn the pilot screw ① in or out within 1/2 turn from the standard setting, so that the engine speed is at the highest possible level.
- After this adjustment, recheck the engine idle speed and adjust at 1 200 – 1 500 r/min with the throttle stop screw ②.
- Finally recheck the throttle cable play.

Idle r/min

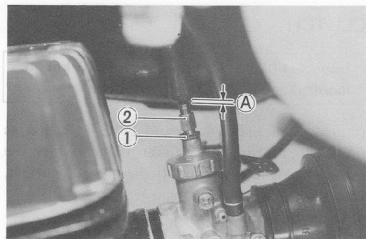
1 200 – 1 500 r/min



## THROTTLE CABLE

Adjust the throttle cable play (A) in the following manner:

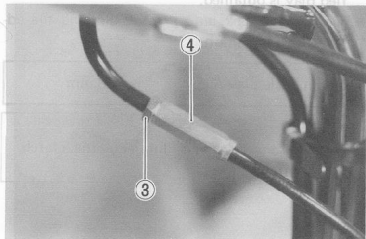
- Loosen the lock nut ①.
- Adjust the cable play (A) to 0.5 – 1.0 mm by turning the adjuster ②.
- After adjusting the play, tighten the lock nut ①.



Throttle cable play (A)	0.5 – 1.0 mm
-------------------------	--------------

### NOTE:

Minor adjustment can be made by the adjuster ④ after loosening the lock nut ③. At the same intervals, lubricate the throttle cable with motor oil.



## FUEL LINE

Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).  
Replace every 4 years.

Inspect the fuel line and connections for damage and fuel leakage.

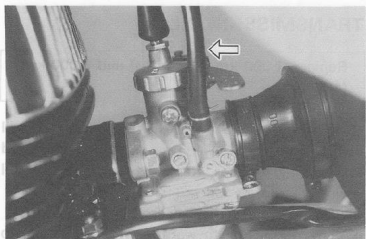
If any defects are found, replace the fuel line with a new one.

### NOTE:

Turn the fuel cock to "OFF" position when replacing.

### WARNING:

Gasoline is very explosive. Extreme care must be taken.

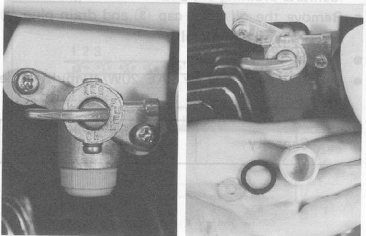


● Count out 21 pins (20 pitch) on the chain and

## FUEL STRAINER CUP

Clean 1 000 km (2 months) and 6 000 km (12 months).

If the fuel strainer cup is dirty with sediment or water, gasoline will not flow smoothly and a loss in engine power may result. Clean the strainer and the cup, leaving the cock lever in "OFF" position.



## CLUTCH

Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

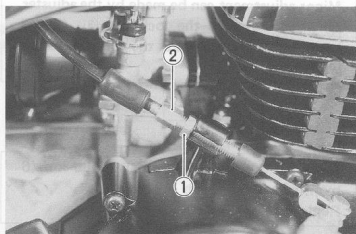
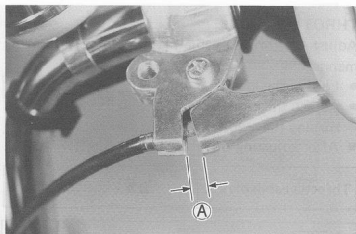
Clutch cable play (A) should be 2 – 3 mm as measured at the clutch lever holder when the clutch begins to disengage. If the play is incorrect, adjust it in the following manner:

- Loosen the lock nut (1).
- Turn the adjuster (2) in or out until the specified play is obtained.
- Tighten the lock nut (1) while holding the adjuster (2) in position.

Clutch cable play (A)	2 – 3 mm
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### NOTE:

At the same intervals, lubricate the clutch cable with motor oil.



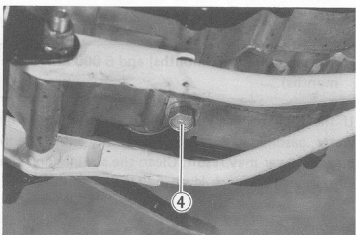
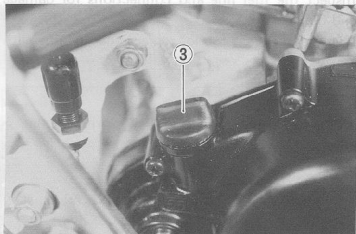
## TRANSMISSION OIL

Replace 1 000 km (2 months) and 6 000 km (12 months).

After a long period of use, the transmission oil will deteriorate and quicken the wear of sliding and interlocking surfaces. Replace the transmission oil periodically in the following manner:

- Place the vehicle on level ground.
- Start the engine to warm up the engine oil to facilitate draining oil. Shut off the engine.
- Remove the oil filler cap (3) and drain plug (4) and drain oil completely.
- Tighten the drain plug.
- Supply a good quality SAE 20W/40 multi-grade motor oil.

Capacity	650 ml
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Idle r/min

1 200 – 1 500 r/min

- Check the oil level with the oil level screw. If the level is below the hole add oil until it reaches the hole.

## DRIVE CHAIN

Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).  
Clean and lubricate every 1 000 km.

Visually inspect the drive chain for the below listed possible malconditions.

(Lift the rear wheel and place a jack or wooden block under the engine, and turn the rear wheel slowly by hand, with the transmission in NEUTRAL.)

### INSPECT FOR:

- \* Loose pins
- \* Damaged rollers
- \* Dry or rusted links
- \* Twisted or seized links
- \* Excessive wear

If any defects are found, the drive chain must be replaced. (Page 3-3)

Check the drive chain for wear and adjust the chain tension in the following manner:

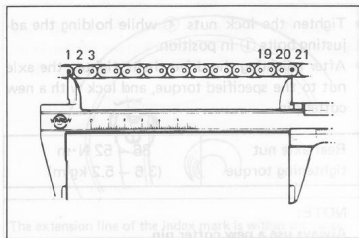
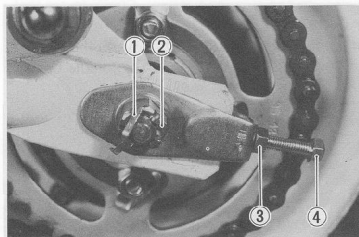
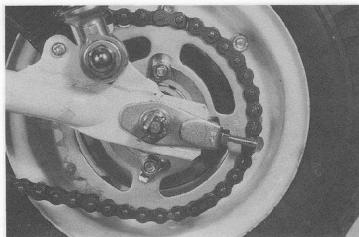
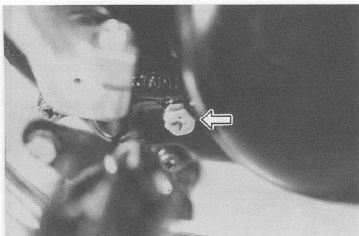
### CHECKING

- Remove the cotter pin ① and loosen the axle nut ②.
- Loosen the chain adjusting lock nuts ③ and stretch the drive chain fully by tightening the both chain adjusting bolts ④.
- Count out 21 pins (20 pitch) on the chain and measure the distance between the two. If the distance exceeds the service limit, replace the chain.

Service Limit	442.6 mm
---------------	----------

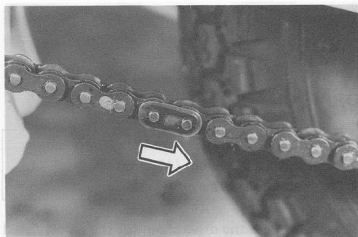
### CAUTION:

The standard drive chain is DAIDO D.I.D. 420 or TAKASAGO RK420M. For the replacement of the chain SUZUKI recommends above-mentioned standard drive chain.

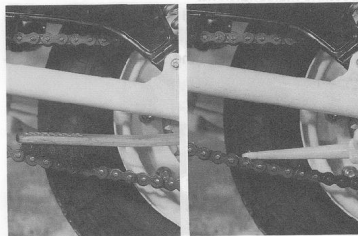


**WARNING:**

The drive chain joint clip should be attached in the way that the slit end will face opposite the direction of rotation.

**CLEANING AND LUBRICATING**

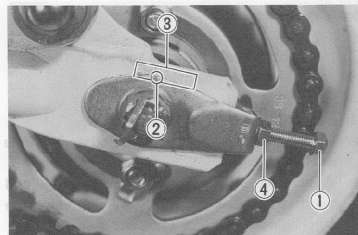
- Wash the chain with kerosene. If the chain tends to rust faster, the interval must be shortened.
- After washing and drying the chain, lubricate it with chain lube or heavy-weight motor oil (hypoid gear oil).

**ADJUSTING**

- Loosen the adjusting bolts ① until the chain has 20 – 30 mm of slack at the middle between the engine and rear sprockets.

**NOTE:**

The marks ② must point at the same scales ③ to ensure that the front and rear wheels are correctly aligned.



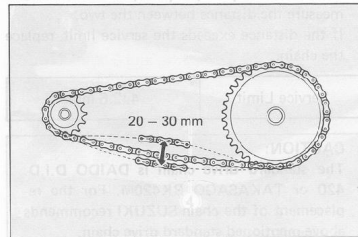
Drive chain slack

20 – 30 mm

- Tighten the lock nuts ④ while holding the adjusting bolts ① in position.
- After adjusting the drive chain, tighten the axle nut to the specified torque, and lock with a new cotter pin.

Rear axle nut  
tightening torque36 – 52 N·m  
(3.6 – 5.2 kg·m)**NOTE:**

Always use a new cotter pin.

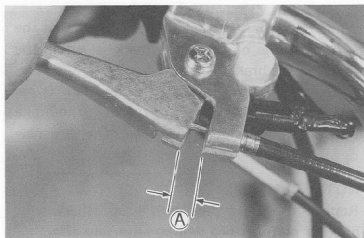


**BRAKE**

Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

**FRONT BRAKE CABLE PLAY**

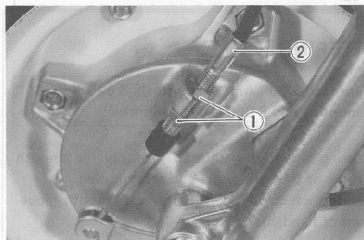
- Loosen the lock nuts ① and turn the adjuster ② to obtain the specified brake cable play A.
- Tighten the lock nuts ①.



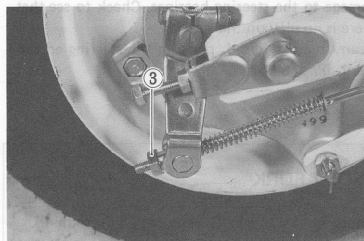
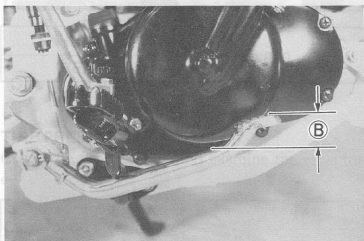
Front brake cable play A	2 – 3 mm
--------------------------	----------

**REAR BRAKE FREE TRAVEL**

- Turn the adjuster ③ and adjust the free travel B.



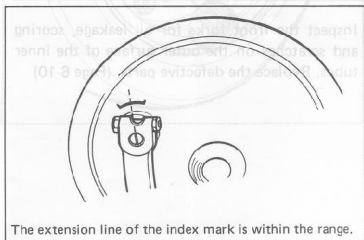
Brake pedal free travel B	20 – 30 mm
---------------------------	------------

**BRAKE SHOE WEAR**

This motorcycle has brake lining wear limit indicator on the front and rear. As shown in Fig., at the condition of normal lining wear, the extension line of index mark on the brake cam shaft should be within the range embossed on the brake panel with brake on.

Check the wear of each brake lining in the following manner:

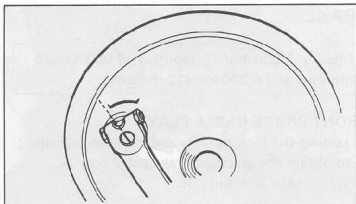
- Adjust the front brake cable play and rear brake pedal free travel.



- While operating the brake, check to see that the extension line of the index mark is within the range on the brake panel.
- If the extension line of the index mark is beyond the range as shown in the Fig., the brake shoe assembly should be replaced with a new one as a set.

**NOTE:**

Replace the brake shoe with a set, otherwise braking performance will be adversely affected.



The extension line of the index mark is beyond the range.

**STEERING**

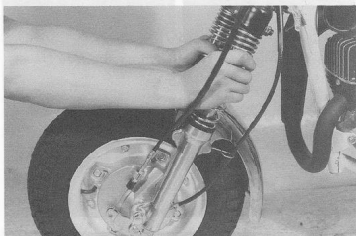
Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

Steering should be adjusted properly for smooth turning of the handlebars and safe running.

Steering which is too stiff prevents smooth movement of handlebars.

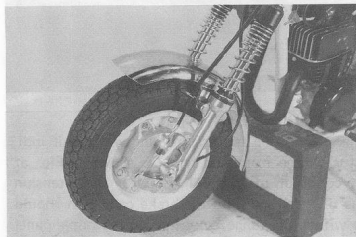
Steering which is too loose will cause vibration and damage to the steering bearings. Check to see that there is no play on the steering.

If any play is found, perform the steering adjustment. (Page 6-18)

**FRONT FORK**

Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

- Inspect the front forks for oil leakage, scoring and scratches on the outer surface of the inner tubes. Replace the defective parts. (Page 6-10)



Rear axle nut  
tightening torque

**NOTE:**

Always use a new cutter pin.



## REAR SUSPENSION

Inspect 1 000 km (2 months) and 6 000 km (12 months).

- Inspect the rear shock absorber for oil leakage and check that there is no play in the swingarm assembly. Replace the defective parts. (Page 6-30)

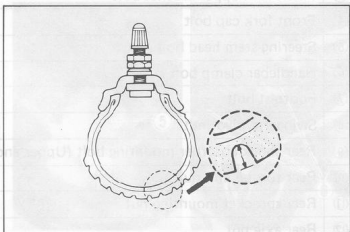


## TIRE

Inspect 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

### TREAD DEPTH

Inspect the tires for wear and damage. Check the tire tread depth as shown. Replace a badly worn or damaged tire. A tire with its tread worn down to the limit (in terms of tread depth) must be replaced.



### Tread depth service limit

FRONT	1.6 mm
REAR	

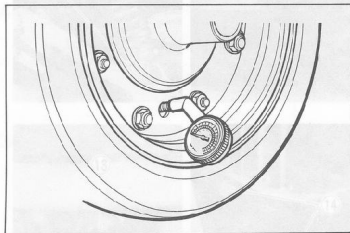
### TIRE PRESSURE

Check the tire pressure, and examine the valve for evidence of air leakage.

COLD INFLATION TIRE PRESSURE	FRONT	REAR
		125 kPa (1.25 kg/cm <sup>2</sup> )

#### WARNING:

The standard tire fitted on this motorcycle is 3-50-8 4PR for front and rear. The use of a tire other than the standard may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.



## CHASSIS BOLTS AND NUTS

Tighten 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

The bolts and nuts listed are important parts, and they must be in good condition for safety. They must be retightened, as necessary, to the specified torque with a torque wrench.

ITEM		N·m	kg·m
①	Front axle nut	27 – 43	2.7 – 4.3
②	Brake cam lever nut (Front and Rear)	4 – 7	0.4 – 0.7
③	Front fork upper bracket bolt	25 – 40	2.5 – 4.0
④	Front fork cap bolt	35 – 55	3.5 – 5.5
⑤	Steering stem head bolt	57 – 73	5.7 – 7.3
⑥	Handlebar clamp bolt	12 – 20	1.2 – 2.0
⑦	Footrest bolt	15 – 25	1.5 – 2.5
⑧	Swingarm pivot nut	25 – 40	2.5 – 4.0
⑨	Rear shock absorber mounting bolt (Upper and Lower)	20 – 30	2.0 – 3.0
⑩	Rear torque link nut	10 – 15	1.0 – 1.5
⑪	Rear sprocket mounting nut	45 – 60	4.5 – 6.0
⑫	Rear axle nut	36 – 52	3.6 – 5.2
⑬	Muffler mounting bolt	13 – 16	1.3 – 1.6
⑭	Exhaust pipe mounting bolt	5.5 – 6.0	0.5 – 0.6
⑮	Damper rod bolt	35 – 55	3.5 – 5.5

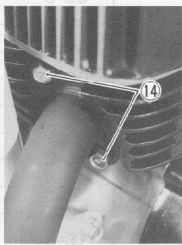
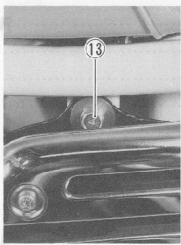
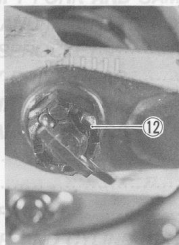
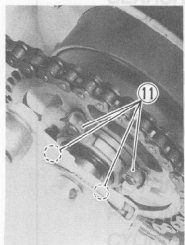
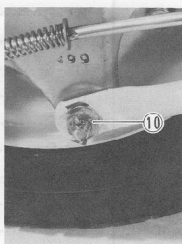
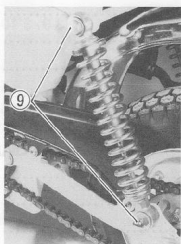
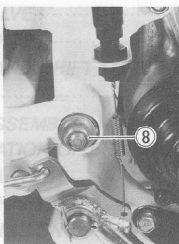
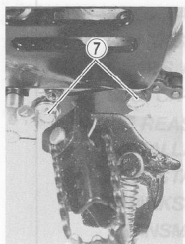
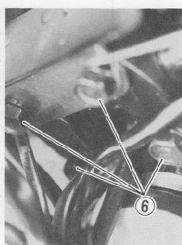
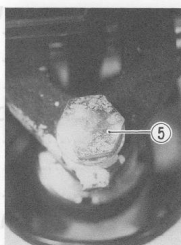
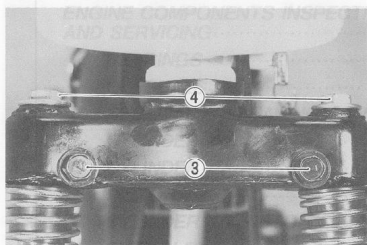
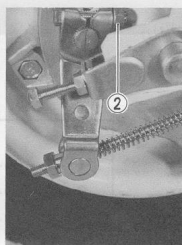
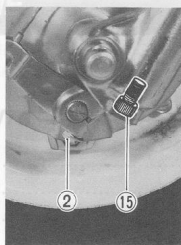
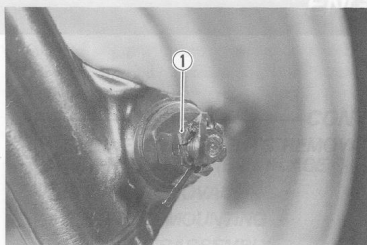


**TIRE PRESSURE**  
Check the tire pressure and examine the valve for evidence of air leakage.

REAR	FRONT
1.75 bar (25.5 psi)	1.75 bar (25.5 psi)
2.5 bar (36.3 psi)	2.5 bar (36.3 psi)

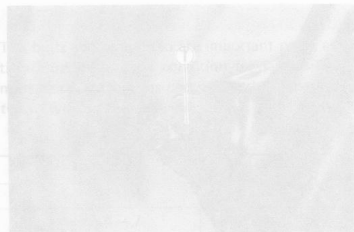
**WARNING**  
To avoid the risk of an accident, do not use a tire that has been repaired. The use of a tire that has been repaired may cause a safety hazard. To use a tire that has been repaired, use a properly qualified technician to use a SUZUKI Genuine Tire.

ENGINE



GEARSHIFT FORK AND CAM

3-28



**a** Front fork upper bracket bolt

25 – 40

2.5 – 4.0

35 – 55

3.5 – 5.5

5 – 10

5 – 10

5 – 10

5 – 10

5 – 10

5 – 10

5 – 10

5 – 10

5 – 10

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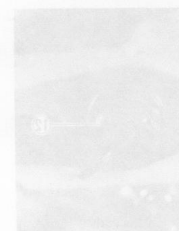
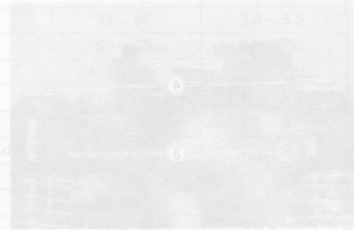
5 – 10

5 – 10

5 – 10

5 – 10

5 – 10



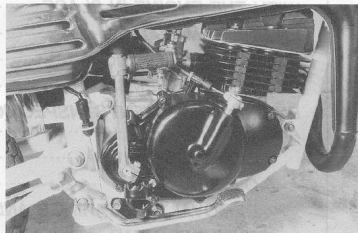
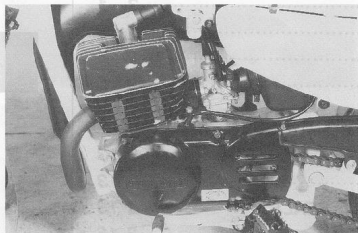
# ENGINE

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## ENGINE COMPONENTS REMOVAL WITH THE ENGINE IN PLACE

The parts listed below can be removed and reinstalled without removing the engine from the frame. Refer to the pages listed in this section for the removal instruction.



### ENGINE LEFT SIDE

	Refer to page
Gearshift lever .....	3-5
Engine sprocket .....	3-9
Magneto cover and rotor .....	3-9, 3-10
Stator coil .....	3-11
Cylinder head .....	3-5
Cylinder .....	3-5
Piston .....	3-6

### ENGINE RIGHT SIDE

	Refer to page
Clutch release mechanism .....	3-6
Clutch cover .....	3-6
Primary drive gear .....	3-9
Primary driven gear .....	3-7
Clutch assembly .....	3-7
Gearshift shaft .....	3-8
Kick starter assembly .....	3-7

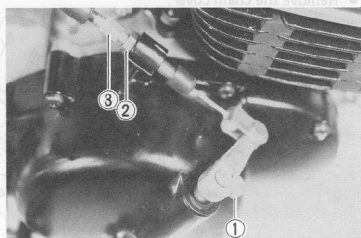
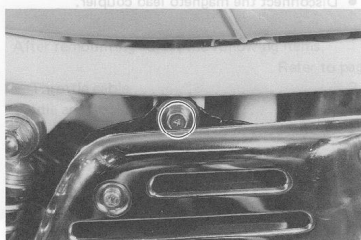
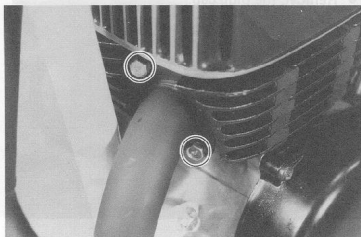
## ENGINE REMOVAL

- Wash the engine with a steam cleaner.
- Drain transmission oil completely. (Page 2-7)
- Remove the exhaust pipe and muffler.

## ENGINE REMOUNTING

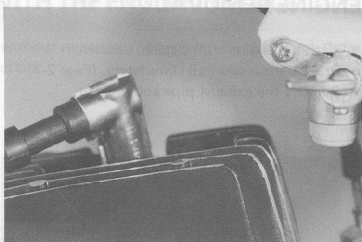
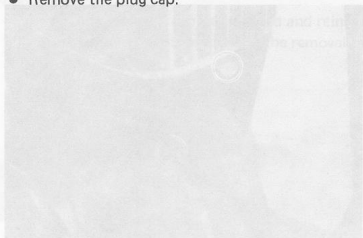
- Remove the bolt ① and disconnect the lever.
- Loosen the lock nut ② and remove the adjuster ③.
- Disconnect the clutch cable.

- Remove the carburetor. (Page 4-6)

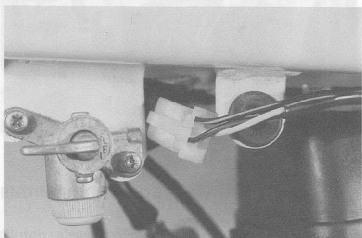
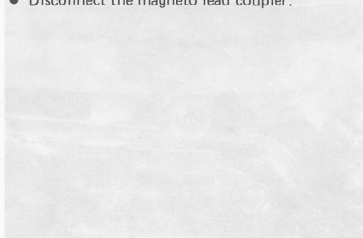


## ENGINE COMPONENTS REMOVAL WITH THE ENGINE IN POSITION

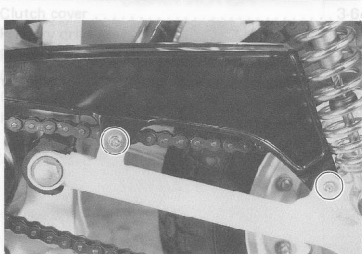
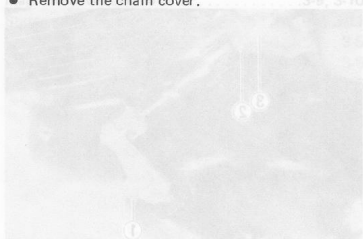
- Remove the plug cap.



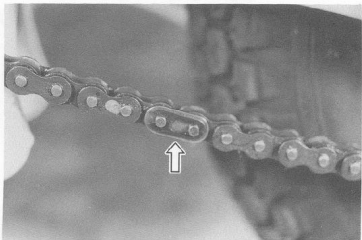
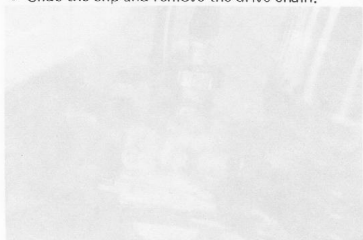
- Disconnect the magneto lead coupler.



- Remove the chain cover.

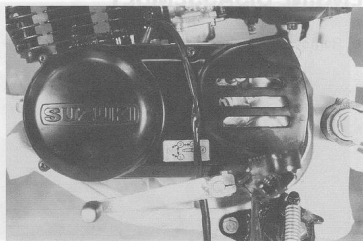


- Slide the clip and remove the drive chain.





- Remove the engine mounting nuts and bolts.
- Remove the engine from the frame.



## ENGINE REMOUNTING

Remount the engine in the reverse order of the removal and tighten the nuts to the specified torque.

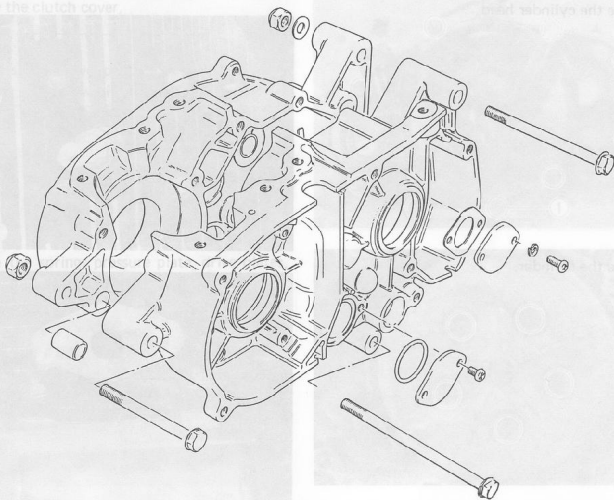
Tightening torque	13 – 23 N·m (1.3 – 2.3 kg·m)
-------------------	---------------------------------

After remounting adjust the following items.

Refer to page

- \* Throttle cable . . . . . 2-6
- \* Idle adjustment . . . . . 2-5
- \* Clutch cable . . . . . 2-7
- \* Drive chain slack . . . . . 2-9

Remove the clutch cover



## ENGINE DISASSEMBLY

- Remove the kick lever.

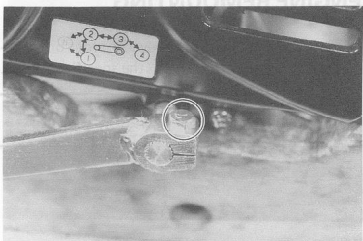
● Disconnect the magneto lead coupler.

- Remove the gearshift lever.

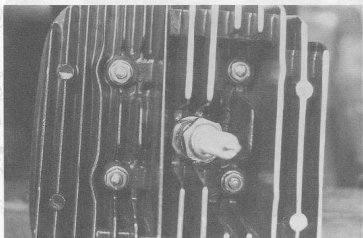
After removing adjust the following items:

Refer to page

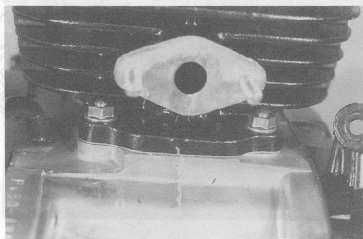
- Throttle cable ..... 3-8
- Idle adjustment ..... 3-5
- Clutch cable ..... 3-7
- Drive chain slack ..... 3-9



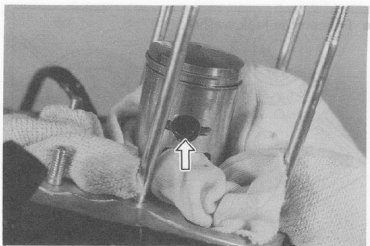
- Remove the cylinder head.



- Remove the cylinder.



- Place a clean rag over the cylinder base to prevent piston pin circlip from dropping into crankcase.
- Remove the piston pin circlip with long-nose pliers.



- Remove the piston pin with the special tool.

09910-34510

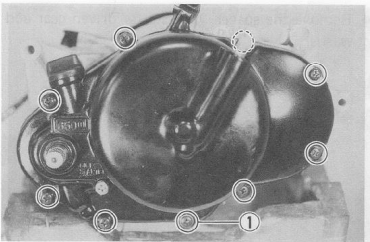
Piston pin puller



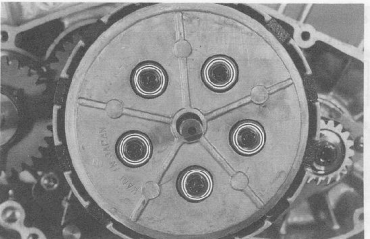
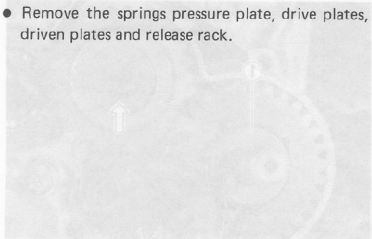
- Remove the clutch cover.

**NOTE:**

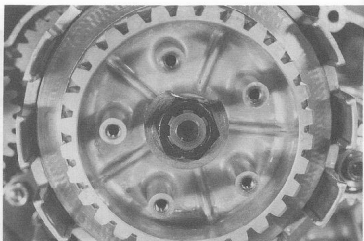
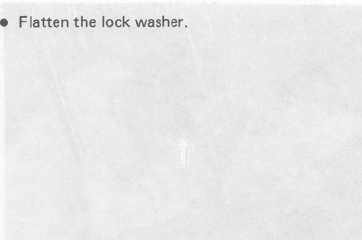
Do not lose the dowel pins.  
The screw ① has a washer.



- Remove the springs pressure plate, drive plates, driven plates and release rack.



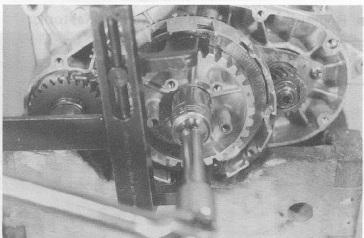
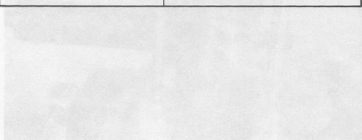
- Flatten the lock washer.



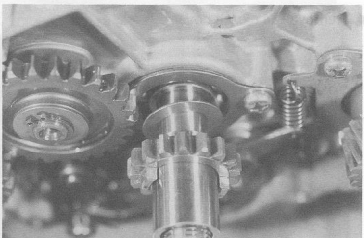
- Remove the clutch sleeve hub nut with the special tool.

09920-53710

Clutch sleeve hub holder



- Remove the spacer, kick starter driven gear and washer.

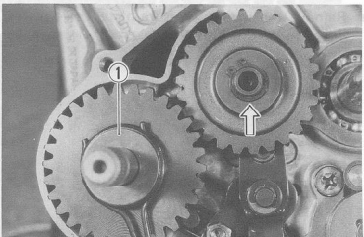
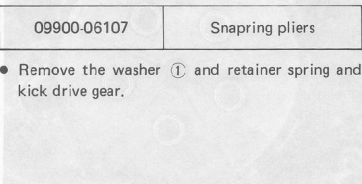


- Remove the circlip with the special tool and remove the washer and starter idle gear.

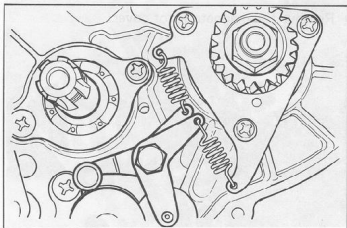
09900-06107

Snapping pliers

- Remove the washer ① and retainer spring and kick drive gear.

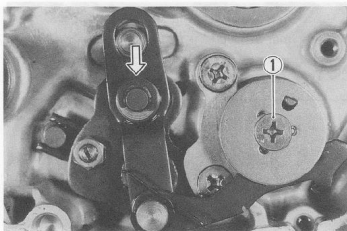


- Remove the gearshift cam stopper and neutral stopper.
- Remove the springs.



- Remove the E-ring and remove the gearshift pawl.
- Remove the screw ① with the special tool.

09900-09003	Impact driver set
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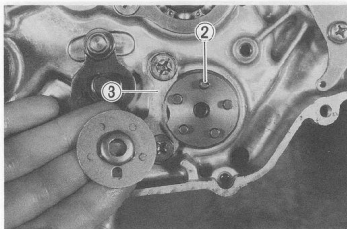
- Remove the pin retainer and five pins.

**NOTE:**

The pin ② is different from others.

- Remove the gearshift cam guide ③ with the special tool.

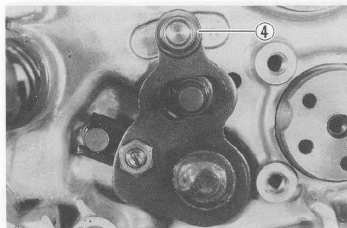
09900-09003	Impact driver set
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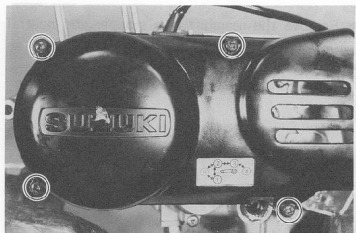
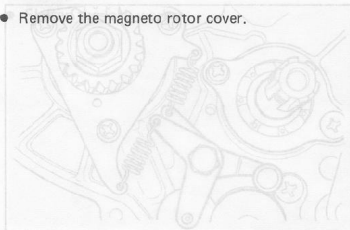
- Remove the gearshift shaft.

**NOTE:**

Do not loose the roller ④.



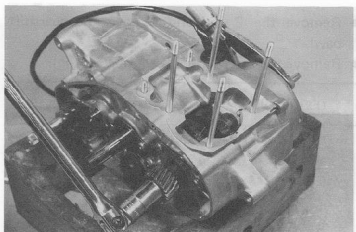
- Remove the magneto rotor cover.



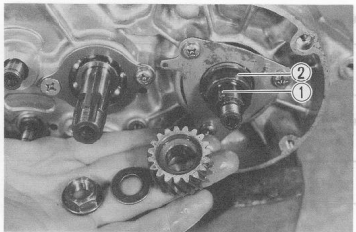
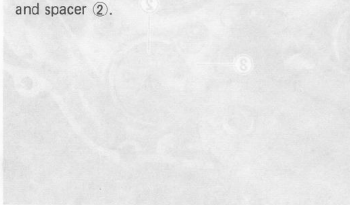
- Hold the rotor with the special tool and remove the primary drive gear nut.

09930-40113

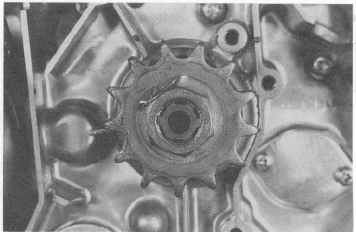
Rotor holder



- Remove the washer, primary drive gear, key ① and spacer ②.



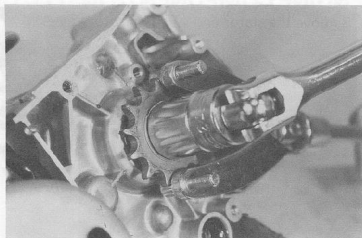
- Flatten the lock washer of the engine sprocket.



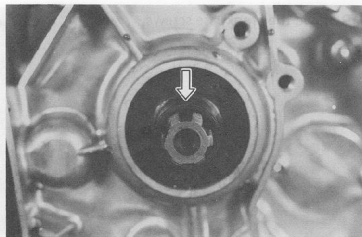
- Remove the engine sprocket nut with the special tool.

09930-40113

Rotor holder



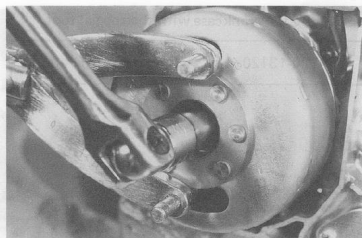
- Remove the spacer and O-ring. (Page 3-25)



- Remove the magneto rotor nut with the special tool.

09930-40113

Rotor holder



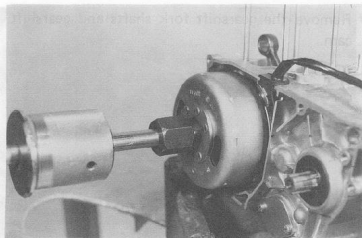
- Remove the rotor with the special tools.

09930-30102

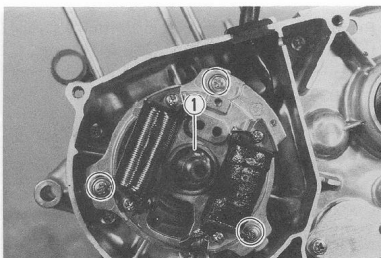
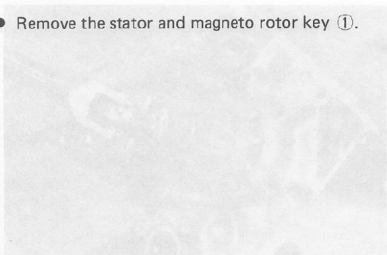
Sliding shaft

09930-30161

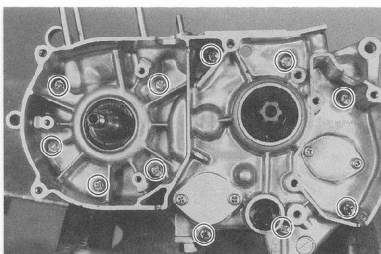
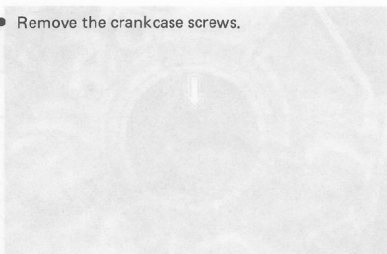
Attachment



- Remove the stator and magneto rotor key ①.



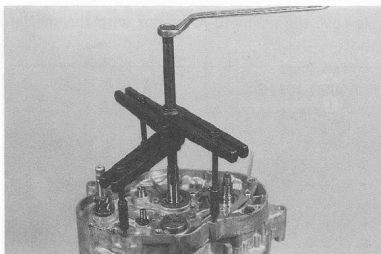
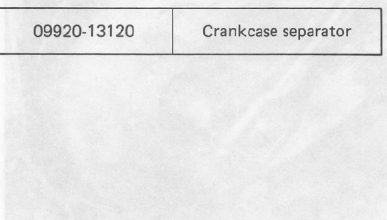
- Remove the crankcase screws.



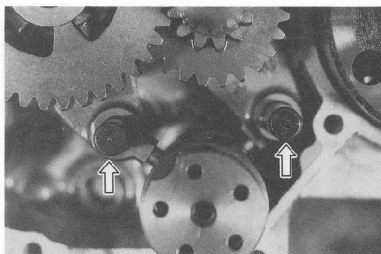
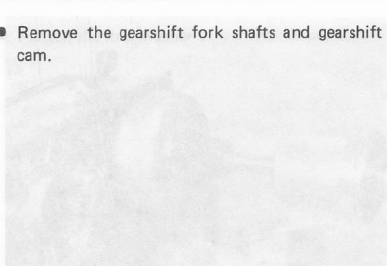
- Separate the crankcase with the special tool.

09920-13120

Crankcase separator

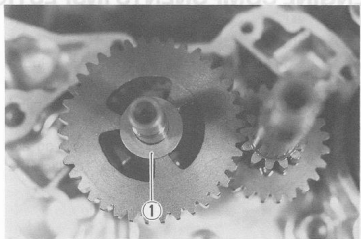


- Remove the gearshift fork shafts and gearshift cam.





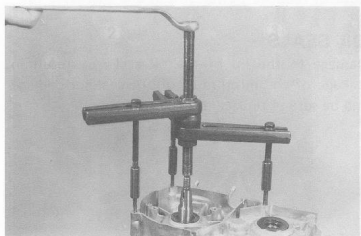
- Remove the washer ①, driveshaft and countershaft with gears.



ITEM	PART NO.	PART NAME
1	0913-50121	Special remover

- Remove the crankshaft with the special tool.

09900-09003 09920-13120	Crankshaft remover (Crankcase separator)
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**NOTE:**

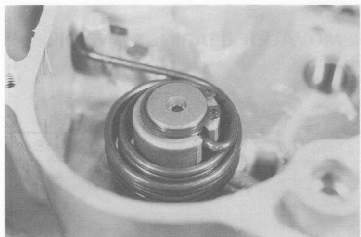
The screw

Remove the bearing with the special tools.

ITEM	PART NO.	PART NAME
2, 3	09913-75820	Bearing remover

- Remove the circlip with the special tool.
- Remove the spring guide.

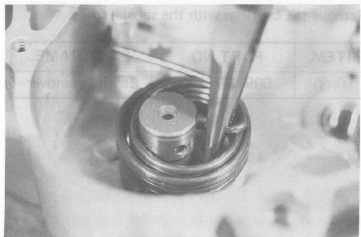
09900-06107	Snapping pliers
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**NOTE:**

Additional information on page 9-1.

- Remove the spring.



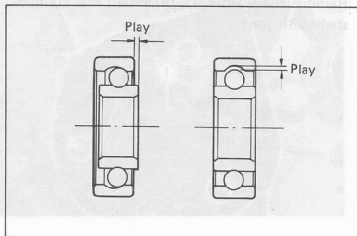
## ENGINE COMPONENTS INSPECTION AND SERVICING

### BEARINGS

Wash the bearing with cleaning solvent and lubricate with motor oil before inspecting.

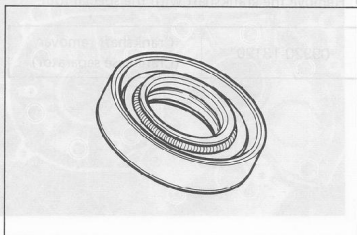
Inspect the play of each bearing inner race by hand while fixing it in the crankcase.

Rotate the inner race by hand to inspect an abnormal noise and a smooth rotation. Replace the bearing if there is anything unusual.



### OIL SEALS

Damage to the lip of the oil seal may result in leakage of the mixture or oil. Inspect for damage and be sure to replace it if there are any.

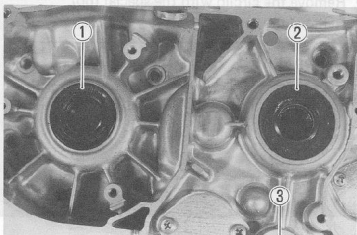


### REMOVAL OF BEARINGS AND OIL SEALS

#### LEFT CASE

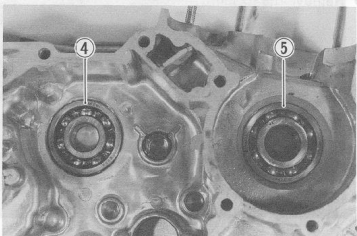
Remove the oil seals with the special tools.

ITEM	PART NO.	PART NAME
①	09913-50121	Oil seal remover
②		
③	Appropriate bar	



Remove the bearings with the special tools.

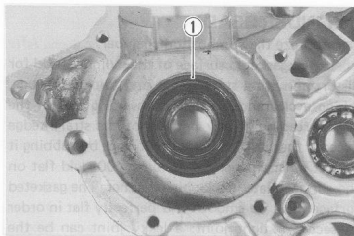
ITEM	PART NO.	PART NAME
④, ⑤	09913-75820	Bearing remover



**RIGHT CASE**

Remove the oil seal with the special tool.

ITEM	PART NO.	PART NAME
①	09913-50121	Oil seal remover



Remove the bearing retainers with the special tool.

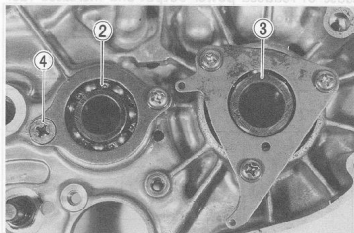
09900-09003	Impact driver set
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**NOTE:**

The screw ④ is flat head screw.

Remove the bearings with the special tools.

ITEM	PART NO.	PART NAME
②, ③	09913-75820	Bearing remover

**CLUTCH COVER**

Remove the oil seal with an appropriate bar.

Service Limit	
09900-09003	Dial calipers

**PISTON PIN O.D.**

Measure the piston pin outside diameter at three positions with the micrometer. If it exceeds the limit, replace the piston pin.

09900-20205	Micrometer (0 - 25 mm)
Service Limit	11.980 mm



Over-size pistons are available in two sizes: 0.2 mm and 1.0 mm over-size.

09900-50808	Cylinder bore gauge set
Service Limit	11.068 mm

After rework, the bore to an over-size piston to chamfer the edge of ports and smooth the chamfered edges with emery paper. To chamfer, use a chamfer, taking care not to nick the wall surface.

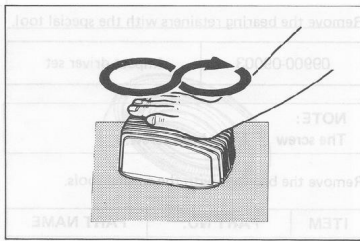
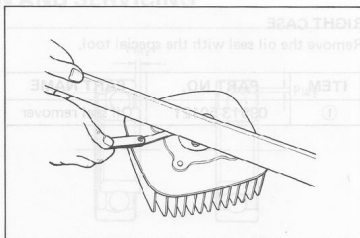
## ENGINE COMPONENTS INSPECTION AND SERVICING

**CYLINDER HEAD**

Decarbonize the combustion chamber.

Check the gasketed surface of the cylinder head for distortion with a straightedge and thickness gauge, taking a clearance reading at several places. If the largest reading at any portion of the straightedge exceeds the limit, rework the surface by rubbing it against emery paper (of about # 400) laid flat on the surface plate in a lapping manner. The gasketed surface must be smooth and perfectly flat in order to secure a tight joint: a leaky joint can be the cause of reduced power output and increased fuel consumption.

09900-20803	Thickness gauge
Service Limit	0.05 mm

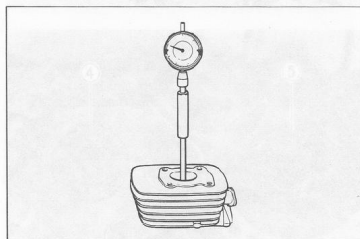
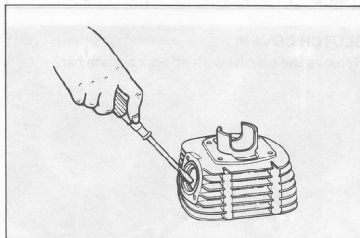
**CYLINDER**

Decarbon the exhaust port and the upper part of the cylinder, taking care not to damage the cylinder wall surface.

The wear of the cylinder wall is determined from diameter reading taken at 15 mm (0.6 in) from the top of the cylinder with a cylinder gauge. If the wear thus determined exceeds the limit indicated below, rework the bore to the next oversize with a boring machine or replace the cylinder with a new one. Oversize pistons are available in two sizes: 0.5 mm and 1.0 mm oversizes.

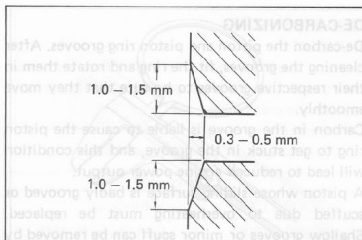
09900-20508	Cylinder bore gauge set
Service Limit	41.065 mm

After reworking the bore to an oversize, be sure to chamfer the edges of ports and smooth the chamfered edges with emery paper. To chamfer, use a scraper, taking care not to nick the wall surface.



**NOTE:**

Minor surface flaws on the cylinder wall due to seizure or similar abnormalities can be corrected by grinding the flaws off with fine-grain emery paper. If the flaws are deep grooves or otherwise persist, the cylinder must be reworked with a boring machine to the next oversize.

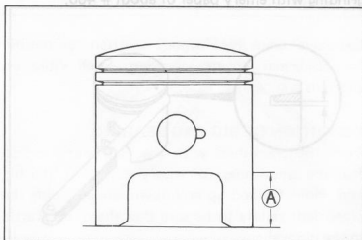
**PISTON****MEASURING TO GROOVE CLEARANCE****PISTON O.D.**

Measure the miked diameter at right angles to the piston pin. The value of elevation **A** is prescribed to be 23 mm from the skirt end.

If it exceeds the limit, replace the piston.

09900-20202	Micrometer (25 – 50 mm)
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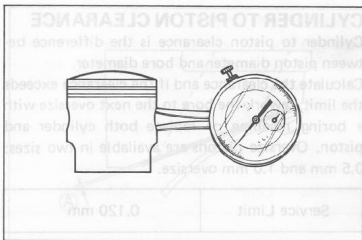
Service Limit	40.855 mm
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**PISTON PIN BORE**

Measure the piston pin bore I.D. with a dial calipers. If it exceeds the limit, replace the piston.

Service Limit	12.030 mm
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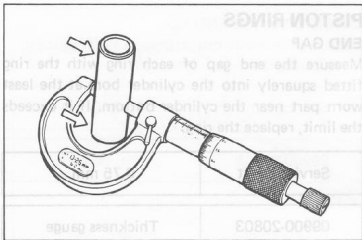
09900-20605	Dial calipers
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**PISTON PIN O.D.**

Measure the piston pin outside diameter at three positions with the micrometer. If it exceeds the limit, replace the piston pin.

09900-20205	Micrometer (0 – 25 mm)
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Service Limit	11.980 mm
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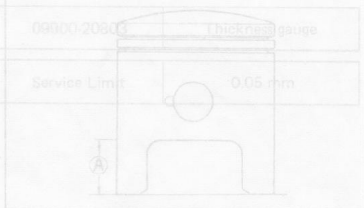


**DE-CARBONIZING**

De-carbon the piston and piston ring grooves. After cleaning the grooves, fit the ring and rotate them in their respective grooves to be sure that they move smoothly.

Carbon in the groove is liable to cause the piston ring to get stuck in the groove, and this condition will lead to reduced engine power output.

A piston whose sliding surface is badly grooved or scuffed due to overheating must be replaced. Shallow grooves or minor scuff can be removed by grinding with emery paper of about # 400.

**CYLINDER TO PISTON CLEARANCE**

Cylinder to piston clearance is the difference between piston diameter and bore diameter.

Calculate the clearance and if the clearance exceeds the limit, rework the bore to the next oversize with a boring machine or replace both cylinder and piston. Oversize pistons are available in two sizes: 0.5 mm and 1.0 mm oversize.

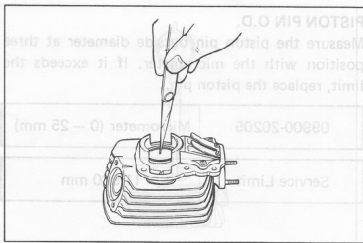
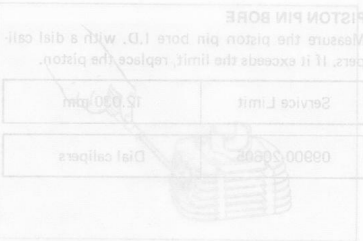
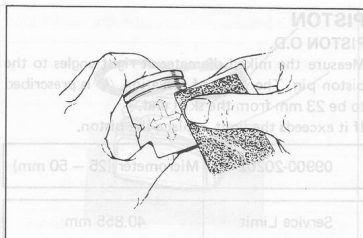
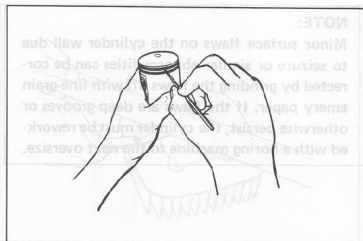
Service Limit	0.120 mm
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**PISTON RINGS****END GAP**

Measure the end gap of each ring with the ring fitted squarely into the cylinder bore at the least worn part near the cylinder bottom. If it exceeds the limit, replace the ring.

Service Limit	0.75 mm
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09900-20803	Thickness gauge
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**FREE END GAP**

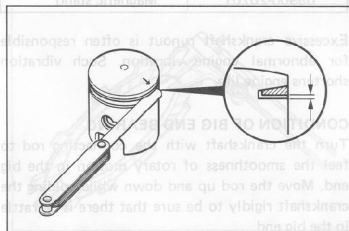
Measure the piston ring free end gap with vernier calipers to check the spring tension. If it exceeds the limit, replace the ring.

Service Limit	3.6 mm
09900-20101	Vernier calipers

**PISTON RING TO GROOVE CLEARANCE**

Fix the piston ring in the piston ring groove and measure the ring side clearance with the thickness gauge while matching the sliding surfaces of piston and ring. If it exceeds the standard, replace the ring and piston.

Standard	0.01 – 0.05 mm
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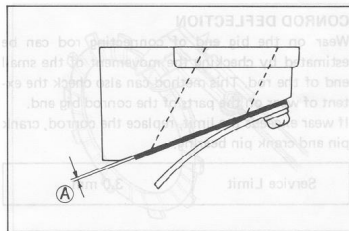
**REED VALVE**

Check the clearance (A) between the reed valve and its seat. If the clearance (A) is noted to exceed 0.2 mm, replace the reed valve flapping piece.

**NOTE:**

When replacing the individual part, apply **THREAD LOCK "1342"** to the screws and tighten it with the torque value 7 – 9 kg-cm.

09900-32050	THREAD LOCK "1342"
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**DRIVEN PLATES**

Measure the distortion of each driven plate with a thickness gauge. If it exceeds the limit, replace the driven plate.

Service Limit	0.1 mm
09900-20803	Thickness gauge



## CRANKSHAFT RUNOUT

Support the crankshaft with "V" blocks and check the runout with a dial gauge. If it exceeds the limit, replace the crankshaft.

Service Limit	0.05 mm
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09900-21304	V-block set
09900-20606	Dial gauge (1/100)
09900-20701	Magnetic stand

Excessive crankshaft runout is often responsible for abnormal engine vibration. Such vibration shortens engine life.

### CONDITION OF BIG END BEARING

Turn the crankshaft with the connecting rod to feel the smoothness of rotary motion in the big end. Move the rod up and down while holding the crankshaft rigidly to be sure that there is no rattle in the big end.

### CONROD DEFLECTION

Wear on the big end of connecting rod can be estimated by checking the movement of the small end of the rod. This method can also check the extent of wear on the parts of the conrod big end.

If wear exceeds the limit, replace the conrod, crank pin and crank pin bearing.

Service Limit	3.0 mm
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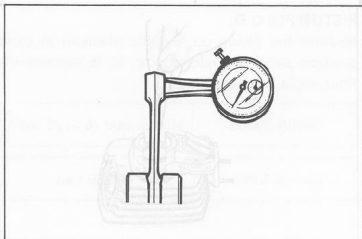
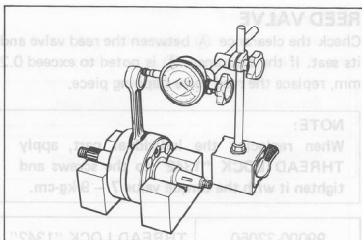
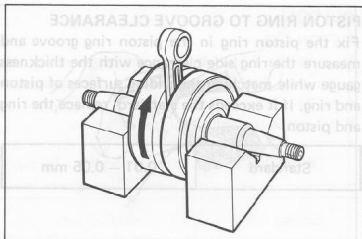
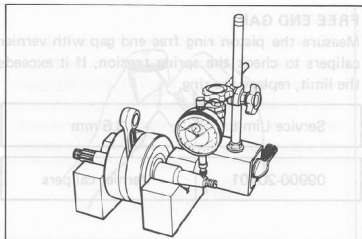
### CONROD SMALL END I.D.

Measure the inside diameter with a dial calipers. If it exceeds the limit, replace the conrod.

Service Limit	16.040 mm
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09900-20605	Dial calipers
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09900-20803	Thickness gauge
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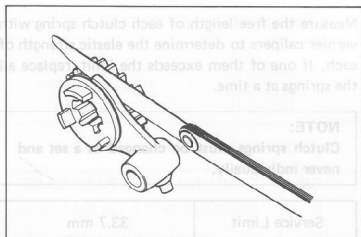
## ENGINE REASSEMBLY

## GEARS AND SHIFT FORKS

Measure each gearshift fork to groove clearance with a thickness gauge. If it exceeds the limit, replace the fork or gear, or both.

Service Limit	0.50 mm
---------------	---------

09900-20804	Thickness gauge
-------------	-----------------



## CLUTCH DRIVE PLATES

Measure the thickness and claw width of each drive plate with vernier calipers. If it exceeds the limit, replace the drive plate.

Item	Standard	Service Limit
Thickness	2.9 – 3.1 mm	2.6 mm
Claw width	11.8 – 12.0 mm	11.0 mm

09900-20101	Vernier calipers
-------------	------------------

09900-25010	GREASE "A"
-------------	------------

- Install the oil seals with the special tools.

ITEM	PART NO.	PART NAME
③, ④	09913-78010	Oil seal installer
⑤	09913-78820	

## RIGHT CASE

- Install the bearings with the special tools.

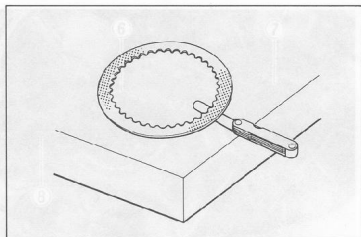
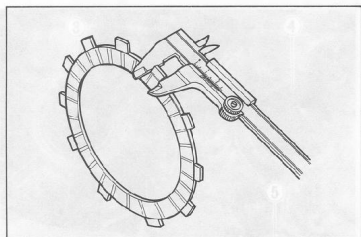
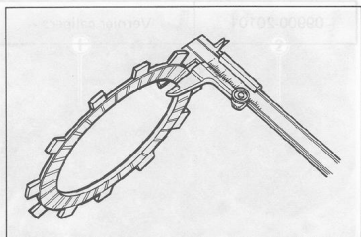
## DRIVEN PLATES

Measure the distortion of each driven plates with a thickness gauge. If it exceeds the limit, replace the driven plate.

Service Limit	0.1 mm
---------------	--------

09900-20803	Thickness gauge
-------------	-----------------

NOTE:  
The screw ⑥ is flat head screw.



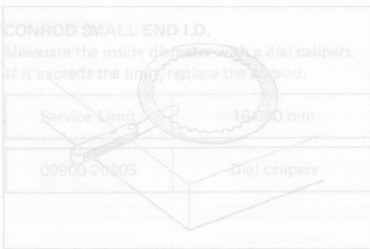
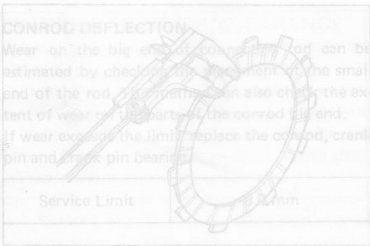
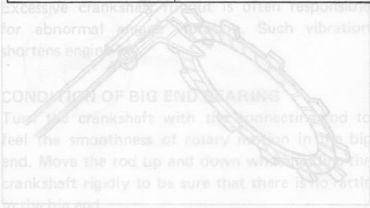
Measure the free length of each clutch spring with vernier calipers to determine the elastic strength of each. If one of them exceeds the limit, replace all the springs at a time.

**NOTE:**

**Clutch springs must be changed as a set and never individually.**

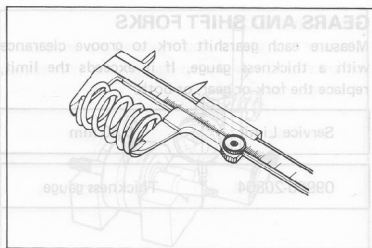
Service Limit	33.7 mm
---------------	---------

09900-20101	Vernier calipers
-------------	------------------



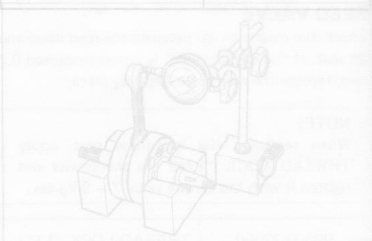
Service Limit	15.40 mm
---------------	----------

09900-20905	Dial calipers
-------------	---------------



Item	Standard	Service Limit
Thickness	2.9 - 3.1 mm	2.8 mm
Claw width	11.8 - 12.0 mm	11.0 mm

09900-20101	Vernier calipers
-------------	------------------



Service Limit	0.1 mm
---------------	--------

09900-20803	Thickness gauge
-------------	-----------------

## ENGINE REASSEMBLY

Reassembly is generally performed in the reverse order of the disassembly but there are a number of reassembling steps that demand or deserve detailed explanation or emphasis. These steps will be taken up for respective parts and components.

### NOTE:

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

## INSTALLATION OF BEARINGS AND OIL SEALS

### LEFT CASE

- Install the bearings with the special tool.

ITEM	PART NO.	PART NAME
①, ②	09913-76010	Bearing installer

- Apply SUZUKI SUPER GREASE "A" to the lip of the oil seals.

99000-25010	SUZUKI SUPER GREASE "A"
-------------	-------------------------

- Install the oil seals with the special tools.

ITEM	PART NO.	PART NAME
③, ④	09913-76010	Oil seal installer
⑤	09913-75820	

### RIGHT CASE

- Install the bearings with the special tools.

ITEM	PART NO.	PART NAME
⑥	09914-79610	Bearing installer
⑦	09913-75810	

- Apply THREAD LOCK "1342" to the bearing retainer screws.

99000-32050	THREAD LOCK "1342"
-------------	--------------------

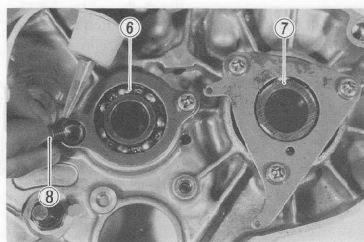
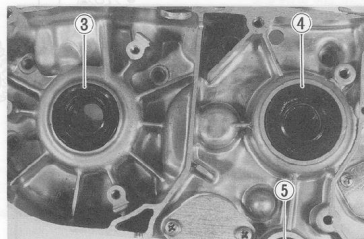
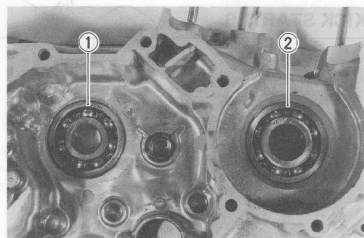
### NOTE:

The screw ⑧ is flat head screw.

99000-25010	SUZUKI SUPER GREASE "A"
-------------	-------------------------

ITEM	PART NO.	PART NAME
①	09940-50112	Oil seal installer
②		Proper socket wrench



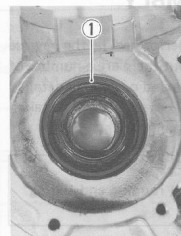
- Apply SUZUKI SUPER GREASE "A" to the lip of the oil seals.

99000-25010	SUZUKI SUPER GREASE "A"
-------------	-------------------------

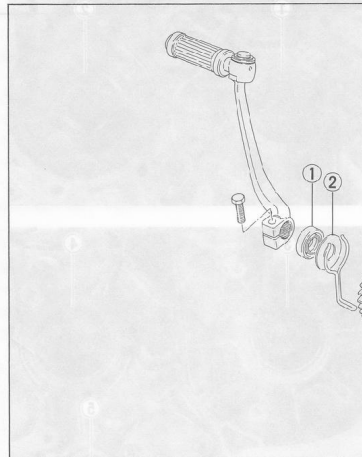
NOTE:

- Install the oil seals with the special tool.

ITEM	PART NO.	PART NAME
①	09940-50112	Oil seal installer
②	Proper socket wrench	



### KICK STARTER

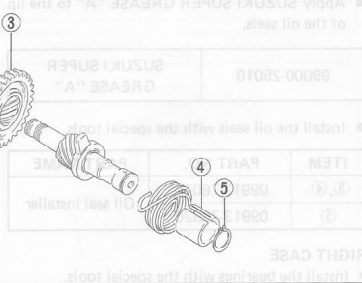


### INSTALLATION OF BEARINGS AND OIL SEALS

- ① Oil seal
- ② Washer
- ③ Kick starter drive gear
- ④ Spring guide
- ⑤ Circlip

ITEM	PART NO.	PART NAME
①	09913-00010	Oil seal installer
②	09913-00010	Oil seal installer
③	09913-00010	Oil seal installer
④	09913-00010	Oil seal installer
⑤	09913-00010	Oil seal installer

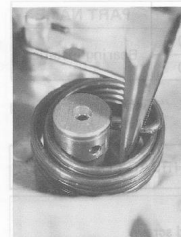
**NOTE:**  
Additional information on page 9-1.



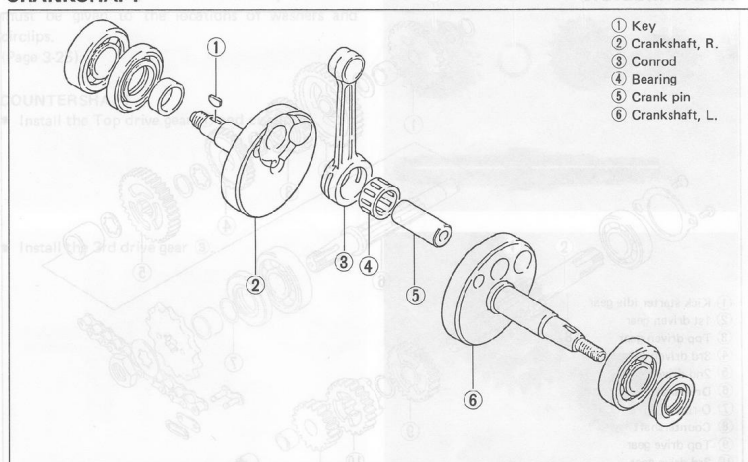
- Install the kick starter shaft and hitch the spring.
- Install the spring guide and circlip with the special tool.

09900-06107	Snapping pliers
-------------	-----------------

**NOTE:**  
Additional information on page 9-1.

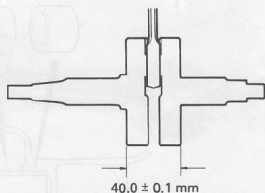


## CRANKSHAFT



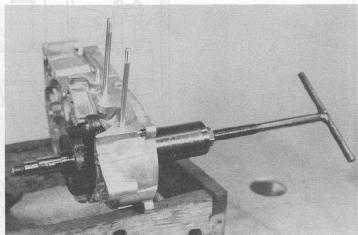
Decide the length between the webs referring to the figure when rebuilding the crankshaft.

Crank web to web length	$40.0 \pm 0.1$ mm
-------------------------	-------------------

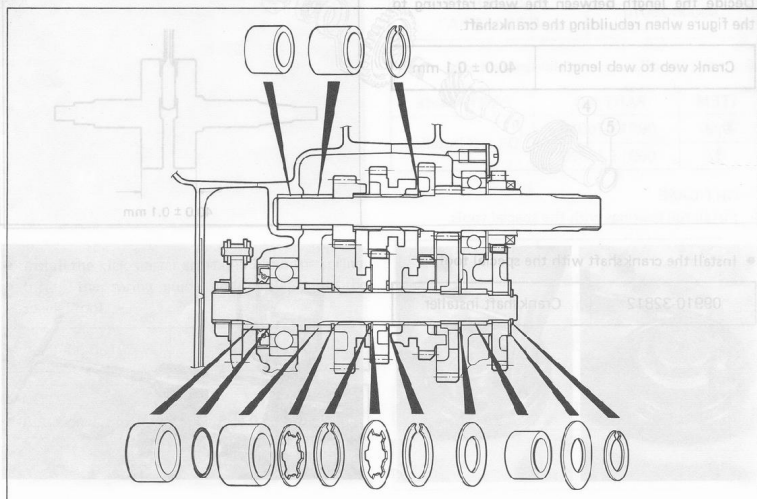
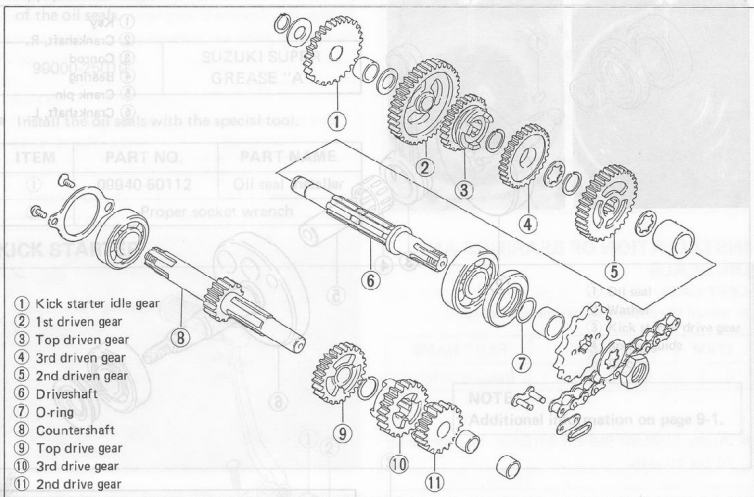


- Install the crankshaft with the special tool.

09910-32812	Crankshaft installer
-------------	----------------------



## TRANSMISSION

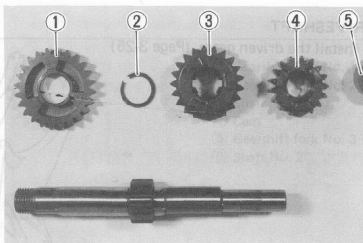


When reassembling the transmission, attention must be given to the locations of washers and circlips.

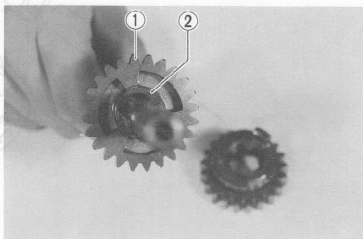
(Page 3-25)

### COUNTERSHAFT

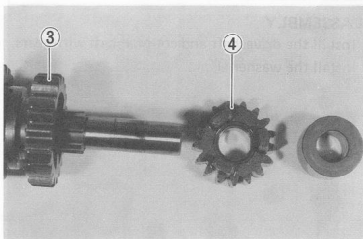
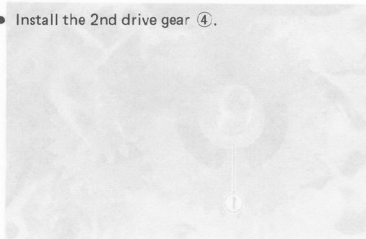
- Install the Top drive gear ① and circlip ②.



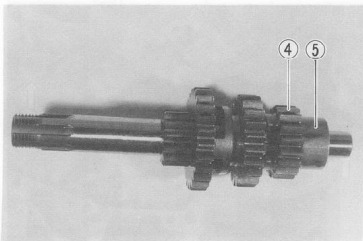
- Install the 3rd drive gear ③.



- Install the 2nd drive gear ④.



- The spacer ⑤ is press-fitted into the countershaft and can be removed by a hydraulic press. When reassembling, coat the internal face of the spacer with THREAD LOCK SUPER "1303" and press-fit to the specified length.

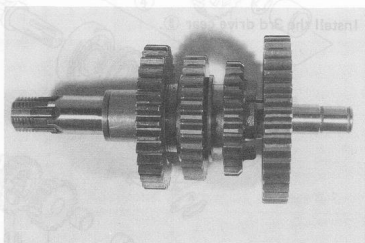
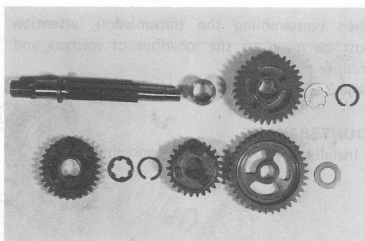


Countershaft length (Low to spacer)	76.0 – 76.1 mm
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99000-32030	THREAD LOCK SUPER "1303"
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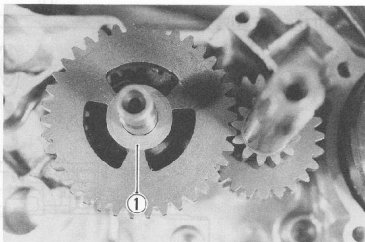
## DRIVESHAFT

- Install the driven gears. (Page 3-25)



## REASSEMBLY

- Install the driveshaft and countershaft with gears.
- Install the washer ①.

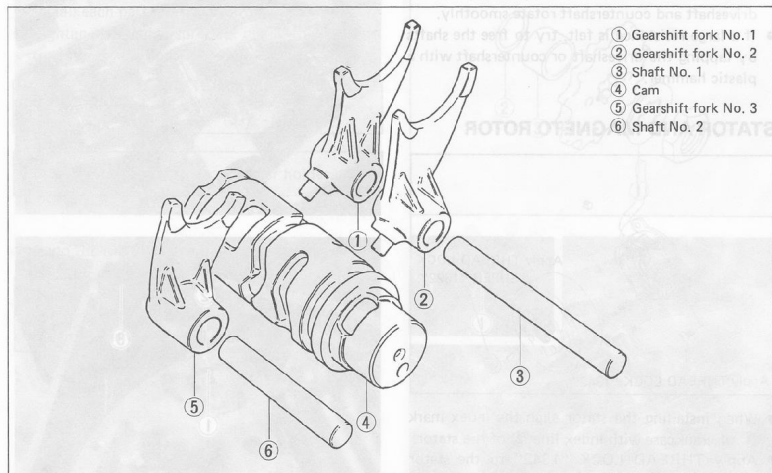


The spacer ① is press-fitted into the countershaft and can be removed by a hydraulic press. When reassembling, coat the inner face of the spacer with THREAD LOCK SUPER 412034 and press-fit to the specified length.

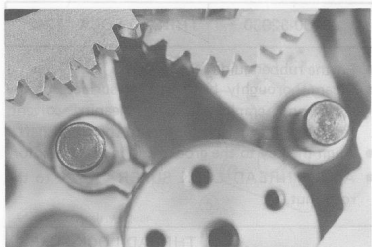
Countershaft length (Low to spacer)	80 - 78.1 mm
THREAD LOCK SUPER	88000-32030



## GEARSHIFT FORK AND CAM



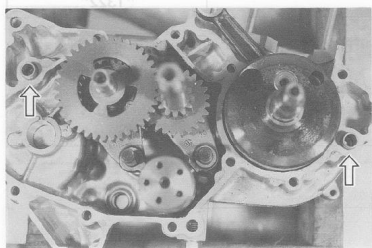
- Install the gearshift cam, forks and shafts.



- Install the dowel pins and apply SUZUKI BOND NO. 4 to the mating surface.
- Tighten the screws around the crankshaft diagonally and then other screws.

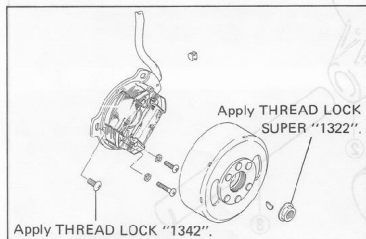
99000-31030

SUZUKI BOND NO. 4

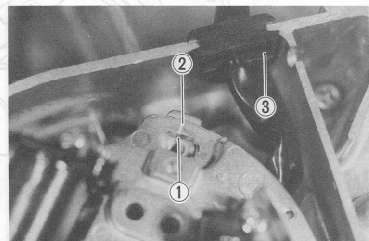
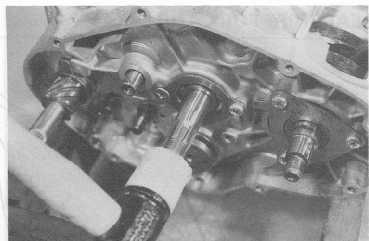


- After the crankcase has been tightened, check if driveshaft and countershaft rotate smoothly.
- If a large resistance is felt, try to free the shafts by tapping the driveshaft or countershaft with a plastic hammer.

## STATOR AND MAGNETO ROTOR



- When installing the stator align the index mark ① of crankcase with index line ② of the stator.
- Apply THREAD LOCK "1342" to the stator screws.



09900-32050	THREAD LOCK "1342"
-------------	--------------------

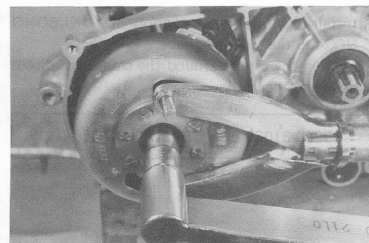
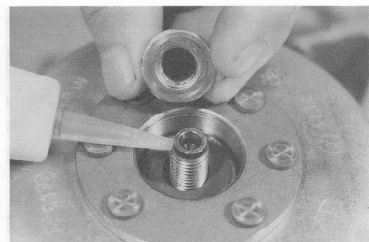
- Fit the rubber guide ③ properly.
- Clean thoroughly both mating surfaces of the rotor and crankshaft with cleaning solvent. Install the magneto rotor key to the crankshaft.
- Align the key to the groove and install the rotor.
- Apply THREAD LOCK SUPER "1322" to the rotor nut.

99000-32110	THREAD LOCK SUPER "1322"
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- Tighten the nut to the specified torque with the special tool.

Tightening torque	30 – 40 N·m (3.0 – 4.0 kg·m)
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09930-40113	Rotor holder
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## ENGINE SPROCKET

- Install each part referring to the illustration.
- Tighten the engine sprocket nut to the specified torque with the special tool.

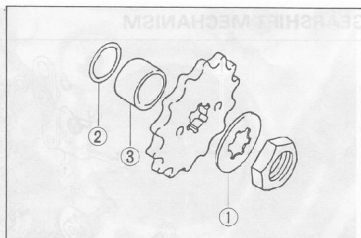
Tightening torque	30 – 50 N·m (3.0 – 5.0 kg·m)
-------------------	---------------------------------

09930-40113	Rotor holder
-------------	--------------

- Bend the lock washer ①.

### NOTE:

The O-ring ② is for sealing the clearance between the driveshaft and spacer ③.

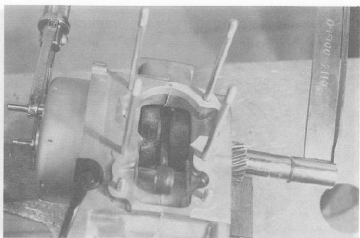
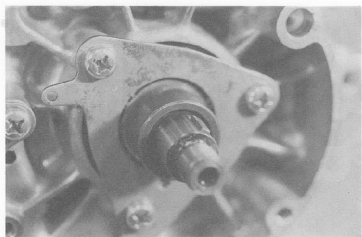
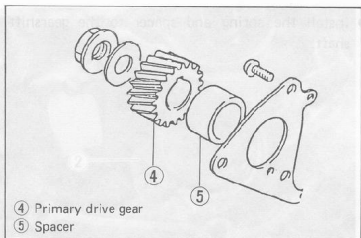


## PRIMARY DRIVE GEAR

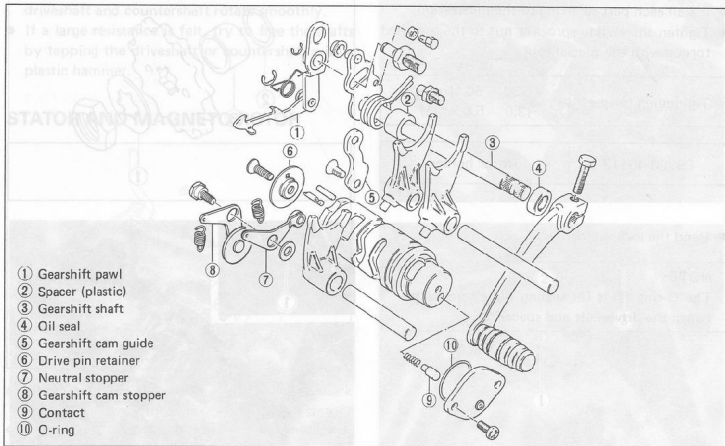
- Install each part referring to the illustration.
- Tighten the nut to the specified torque with the special tool.

Tightening torque	40 – 60 N·m (4.0 – 6.0 kg·m)
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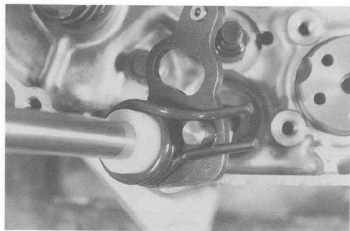
09930-40113	Rotor holder
-------------	--------------



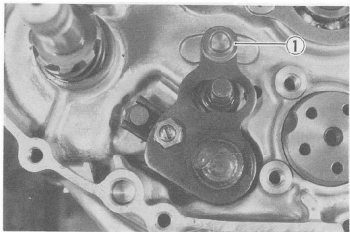
## GEARSHIFT MECHANISM



- Install the spring and spacer to the gearshift shaft.



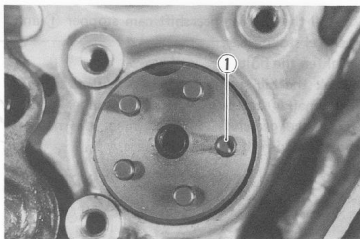
- Install the gearshift shaft to the crankcase.
- Locate the roller ①.



- Install the pins to the cam.

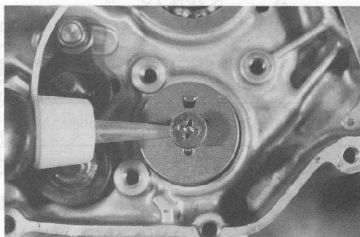
**NOTE:**

The pin ① is different from others.



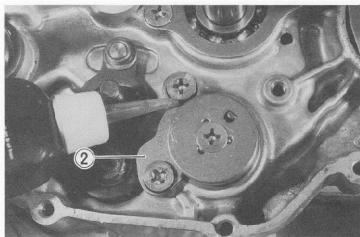
- Install the pin retainer and apply **THREAD LOCK SUPER "1333B"** to the screw.

99000-32020

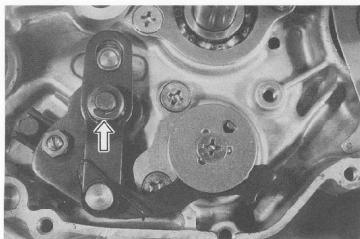
**THREAD LOCK SUPER  
"1333B"**


- Install the gearshift cam guide ② and apply **THREAD LOCK "1342"**.

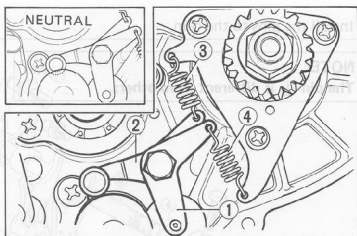
99000-32050

**THREAD LOCK "1342"**


- Install the gearshift pawl and E-ring.



- Install the washer, gearshift cam stopper ① and neutral stopper ②.
- Tighten the bolt.
- Hook the big spring ③ to the neutral stopper and small ④ to the gearshift cam stopper.
- Turn the gearshift cam and meet the neutral position with the neutral stopper.



## KICK STARTER GEARS

### IDLE GEAR

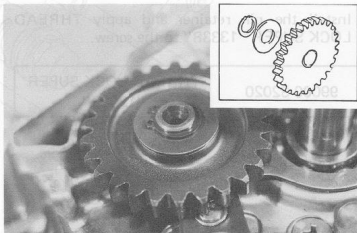
- Install the kick idle gear, washer and circlip with the special tool.

09900-06107

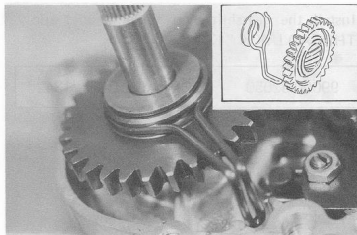
Snapping pliers

#### NOTE:

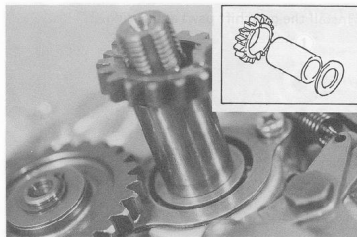
Always use a new circlip.



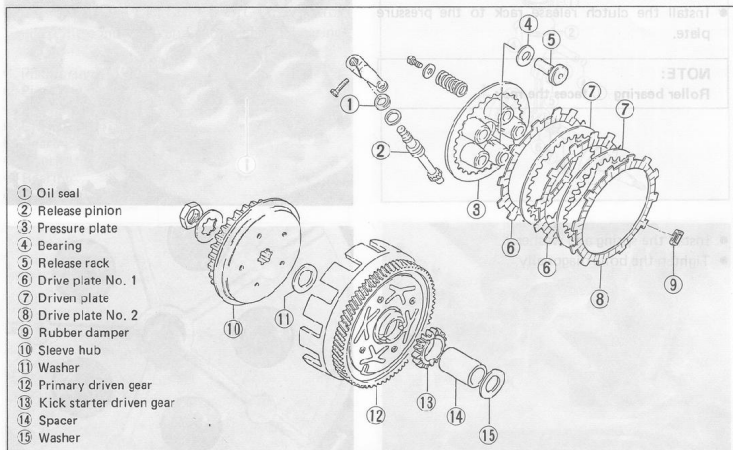
- Install the kick drive gear, retainer spring and washer.



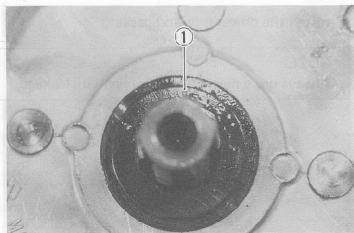
- Install the washer, spacer and kick driven gear.



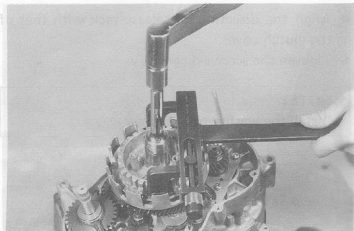
## CLUTCH



- Install the primary driven gear and washer ⑪.



- Install the sleeve hub and lock washer.
- Tighten the sleeve hub nut to the specified torque with the special tool.
- Bend the lock washer.



09920-53710

Clutch sleeve hub holder

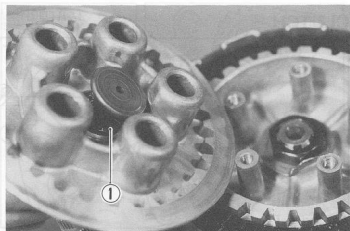
Tightening torque

30 – 50 N·m  
(3.0 – 5.0 kg·m)

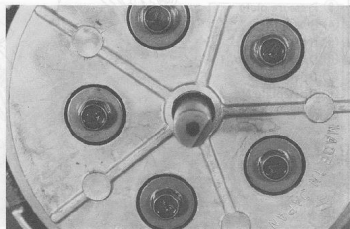
- Install the drive and driven plates.
- Install the clutch release rack to the pressure plate.

**NOTE:**

Roller bearing ① faces the rack.



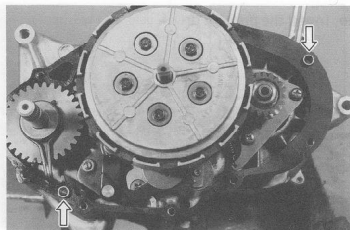
- Install the spring and washer.
- Tighten the bolts diagonally.



- Install the dowel pins and gasket.

**NOTE:**

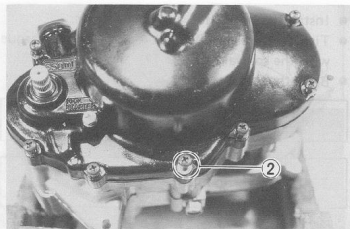
Always use a new gasket to prevent oil leakage.



- Align the direction of release rack with that of the clutch cover.
- Tighten the screws diagonally.

**NOTE:**

Install the washer to the screw ②.





**PISTON**

- Apply SUZUKI CCI SUPER OIL or two stroke oil to the conrod big end and small end bearings.

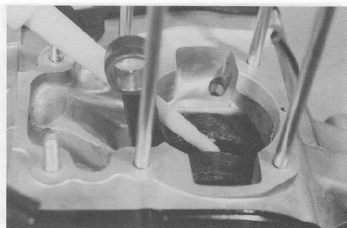
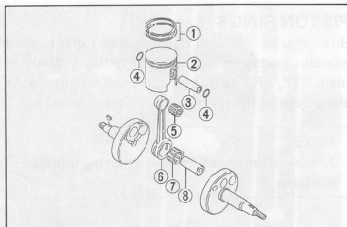
## NOTE:

- ① Piston ring
- ② Piston
- ③ Piston pin
- ④ Circlip
- ⑤ Bearing
- ⑥ Conrod
- ⑦ Bearing
- ⑧ Crank pin

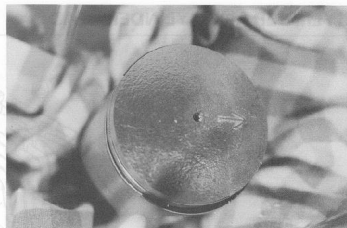
Tightening torque 8 - 12 N·m  
(0.8 - 1.2 kgm)

- Tighten the cylinder base nut to the specified torque.

Tightening torque 8 - 12 N·m  
(0.8 - 1.2 kgm)



- Place a rag under the piston to prevent a circlip from falling.
- Install the piston with the arrow mark toward the exhaust side.



The circlip end should be mounted in such a position ① that the mating ends of the circlip do not coincide with the groove portion of the piston.

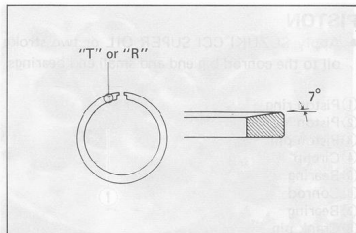


## PISTON RINGS

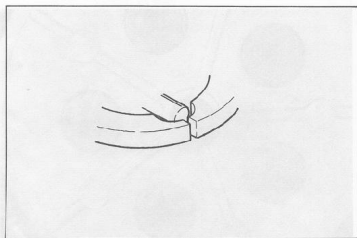
Both the 1st and 2nd rings are key stone type of exactly the same size. This ring has a punched mark "T", "R" at its end and must be installed in the groove of the piston with the mark facing up.

### NOTE:

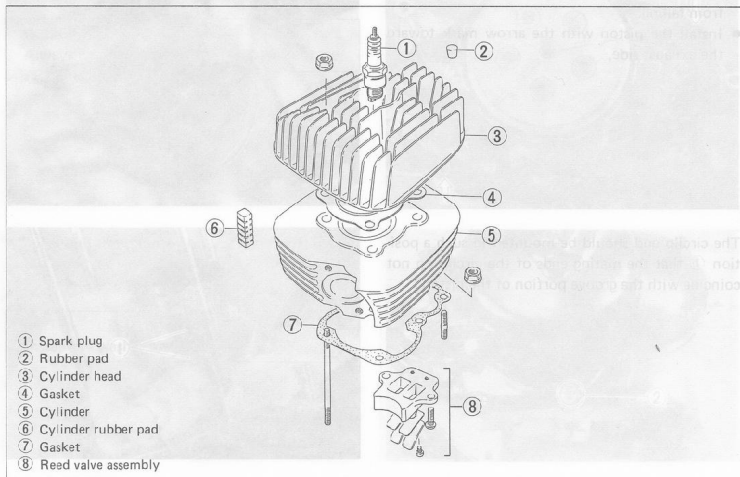
The punch mark of 1st and 2nd ring must be the same.



Fix the rings by aligning the gaps of rings with the pin at the grooves of the piston to prevent flatter- ing.



## CYLINDER AND CYLINDER HEAD



- ① Spark plug
- ② Rubber pad
- ③ Cylinder head
- ④ Gasket
- ⑤ Cylinder
- ⑥ Cylinder rubber pad
- ⑦ Gasket
- ⑧ Reed valve assembly

- Install a cylinder gasket and cylinder.
- Install a cylinder head gasket and cylinder head.

**NOTE:**

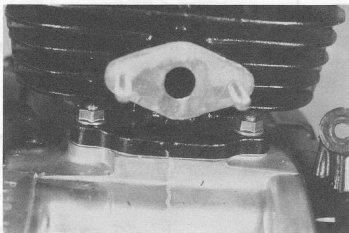
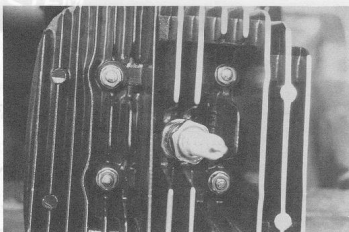
Always use new gaskets to prevent oil and compression leakage.

Tighten the cylinder head nut diagonally to the specified torque.

Tightening torque	8 – 12 N·m (0.8 – 1.2 kg-m)
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- Tighten the cylinder base nut to the specified torque.

Tightening torque	8 – 12 N·m (0.8 – 1.2 kg-m)
-------------------	--------------------------------



REMOVAL AND DISASSEMBLY	
INSPECTION	
FLOAT HEIGHT ADJUSTMENT	
DIAGNOSIS OF CARBURETOR	
MIXTURE ADJUSTMENT	4-10
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REASSEMBLY	4-11
REMOUNTING	4-11



# FUEL SYSTEM

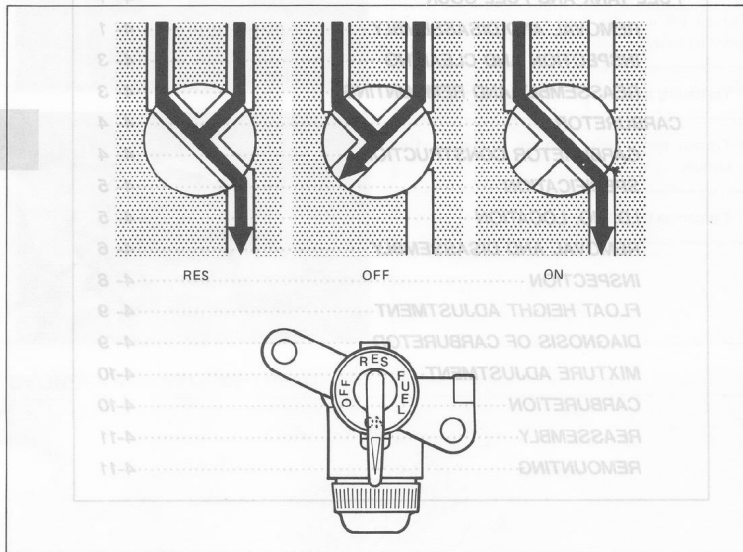
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<b>REMOVAL AND DISASSEMBLY</b> .....	4- 1
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<b>REASSEMBLY</b> .....	4-11
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## FUEL TANK AND FUEL COCK

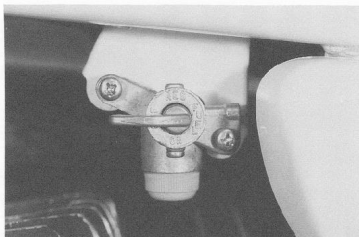
The fuel tank is provided with a tank cap and fuel cock. An air vent is provided in the tank cap to supply gasoline smoothly to the carburetor. The fuel cock can be switched to three passages "ON", "OFF" and "RES" by the valve operates together with the fuel cock lever as shown below.

Generally, water or other impurities are contained in gasoline. A filter is provided to remove them and filter cup to deposit them.

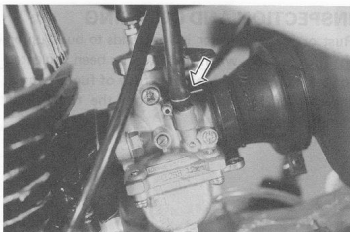


### REMOVAL AND DISASSEMBLY

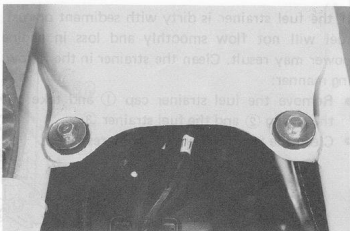
- Turn the fuel cock to "OFF" position.



- Slide the clip and disconnect the fuel hose.
- Turn the fuel cock to "RES" position and drain fuel completely.
- Remove the fuel cock mounting screws.



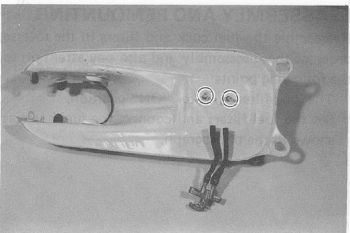
- Remove the two bolts and remove the fuel tank.



- Slide the clips and disconnect the fuel hoses.



- Remove the filters.



## INSPECTION AND CLEANING

Rust or foreign matter in fuel tends to build up on the filter, which, when the filter has been neglected for a long period, inhibits the flow of fuel. Remove the rust or foreign matter from the filter using compressed air.

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

- Remove the fuel strainer cap ① and take out the O-ring ② and the fuel strainer ③.
- Clean the fuel strainer with compressed air.

### WARNING:

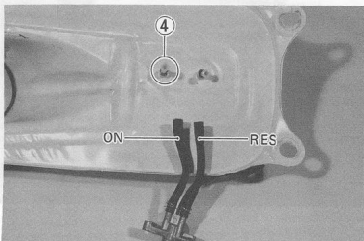
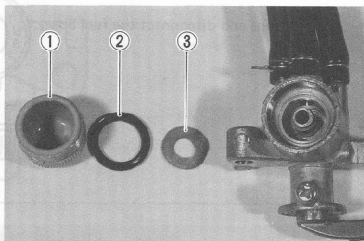
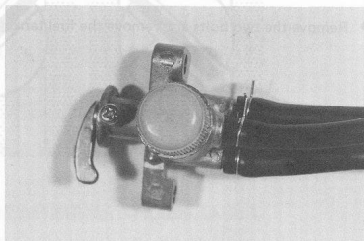
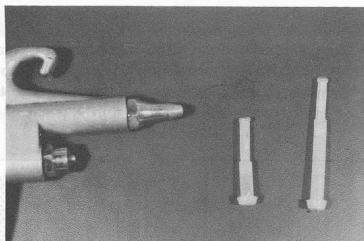
Gasoline is very explosive. Extreme care must be taken.

Always use a new O-ring to prevent fuel leakage.

## REASSEMBLY AND REMOUNTING

Reassemble the fuel cock and filters in the reverse order of the disassembly and also pay attention to the following points:

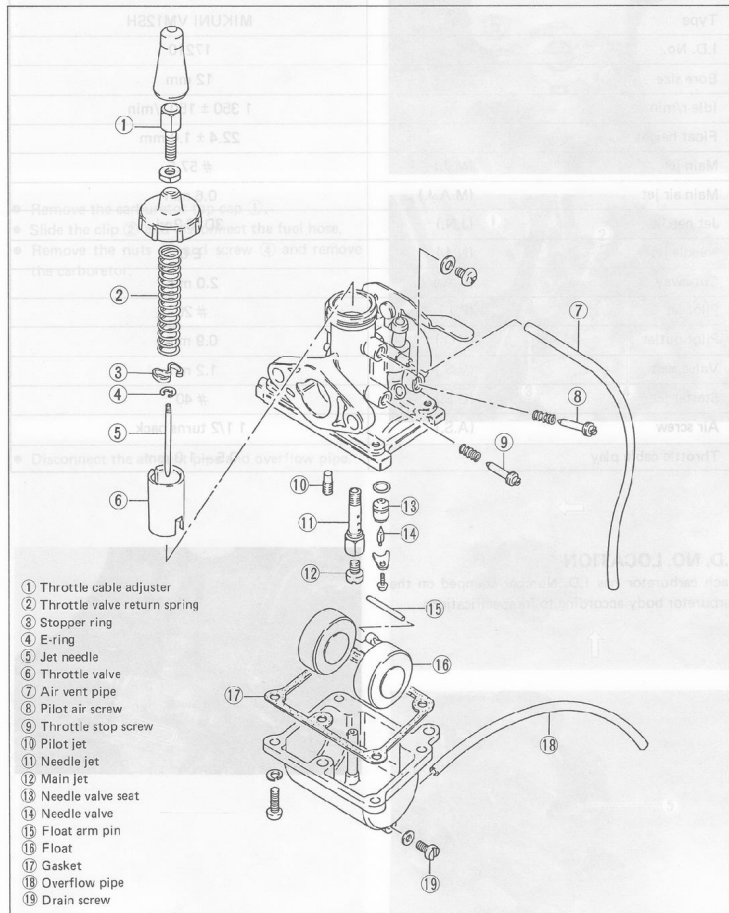
- \* The long filter ④ is for "ON" position.
- \* Set the fuel filters and connect the fuel hoses as shown in the photograph.





## CARBURETOR

## CARBURETOR CONSTRUCTION



## SPECIFICATION &amp; CLEANING

ITEM		SPECIFICATION
Type		MIKUNI VM12SH
I.D. No.		17210
Bore size		12 mm
Idle r/min		1 350 ± 150 r/min
Float height		22.4 ± 1.0 mm
Main jet	(M.J.)	# 57.5
Main air jet	(M.A.J.)	0.6 mm
Jet needle	(J.N.)	3D16-2nd
Needle jet	(N.J.)	E-0
Cut-away	(C.A.)	2.0 mm
Pilot jet	(P.J.)	# 20
Pilot outlet	(P.O.)	0.9 mm
Valve seat	(V.S.)	1.2 mm
Starter jet	(G.S.)	# 40
Air screw	(A.S.)	1 1/2 turns back
Throttle cable play		0.5 – 1.0 mm

## I.D. NO. LOCATION

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



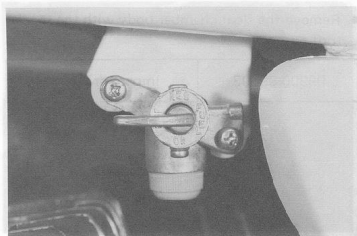
## REASSEMBLY AND REMOUNTING

Reassemble the fuel cock and filters in the reverse order of the disassembly and also pay attention to the following points:

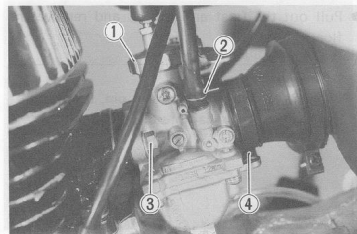
- The long filter ④ is for "ON" position.
- Set the fuel filters and connect the fuel hoses as shown in the photograph.

## REMOVAL AND DISASSEMBLY

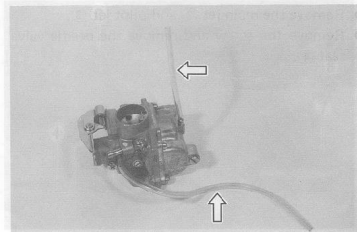
- Turn the fuel cock to "OFF" position.



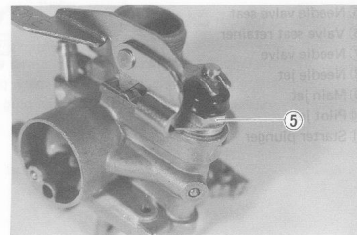
- Remove the carburetor top cap ①.
- Slide the clip ② and disconnect the fuel hose.
- Remove the nuts ③ and screw ④ and remove the carburetor.



- Disconnect the air vent pipe and overflow pipe.



- Remove the nut ⑤ and remove the starter plunger assembly.



## 4-7 FUEL SYSTEM

- Remove the float chamber body with the special tool.

09900-09003

Impact driver set

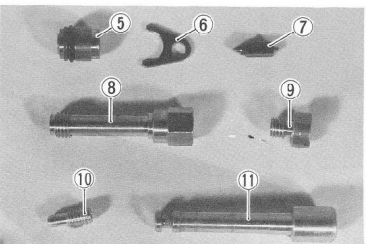
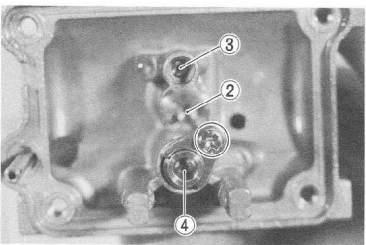
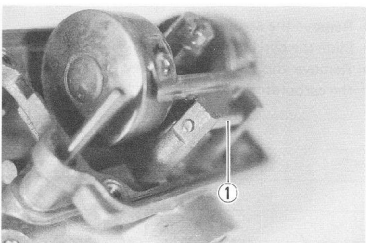
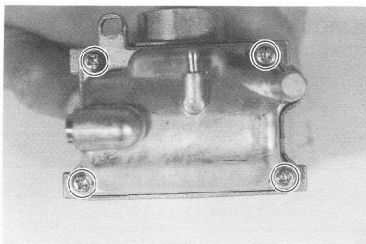
- Pull out the float arm pin ① and remove the float.

### CAUTION:

When removing the float arm pin, be careful not to damage the carburetor body.

- Remove the main jet ② and pilot jet ③.
- Remove the screw and remove the needle valve seat ④.

- ⑤ Needle valve seat
- ⑥ Valve seat retainer
- ⑦ Needle valve
- ⑧ Needle jet
- ⑨ Main jet
- ⑩ Pilot jet
- ⑪ Starter plunger



- Remove the throttle valve assembly.

This adjustment is effected mainly by main jet and jet needle.

Before doing so, check to be sure that the float level is correctly set and that the overflow pipe, air vent pipe, inlet hose and air cleaner are in sound condition.

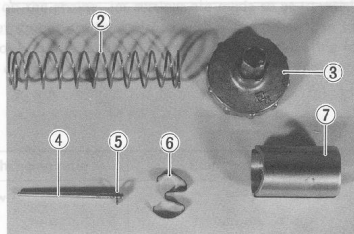
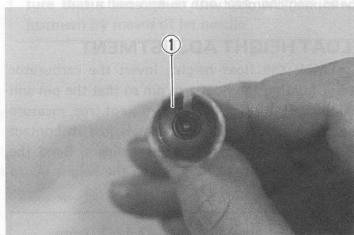
Find a flat which throttle position the engine lacks power or otherwise performs poorly. Drive the machine at the throttle position for a distance of about 10 km, after which the spark plug and piston crown should be inspected for color and

- Remove the stopper ring ①.

The structure of the throttle valve is shown in three ways. The throttle valve is made of brass and aluminum. The throttle valve is made of brass and aluminum. The throttle valve is made of brass and aluminum.



- ② Spring
- ③ Cap
- ④ Jet needle
- ⑤ E-ring
- ⑥ Stopper ring
- ⑦ Throttle valve



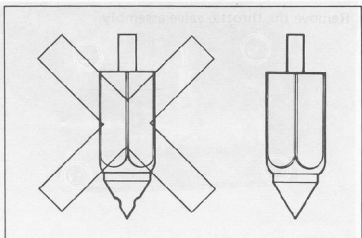
## INSPECTION

Check following items for any damage or clogging.

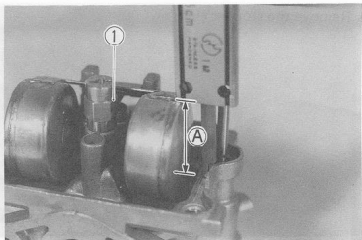
- \* Pilot jet
- \* Main jet
- \* Needle jet air bleeding hole
- \* Float
- \* Needle valve mesh and O-ring
- \* Gasket
- \* Throttle valve
- \* Pilot outlet
- \* Starter plunger

**NEEDLE VALVE**

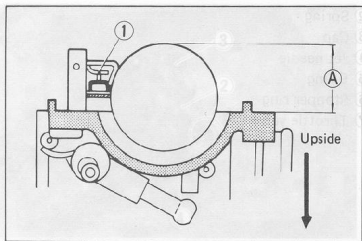
If foreign matter is caught between the valve seat and the needle, the gasoline will continue flowing and cause it to overflow. If the seat and needle are worn out beyond the permissible limits, similar trouble will occur. Conversely, if the needle sticks, the gasoline will not flow into the float chamber. Remove the carburetor, float chamber and floats, and clean the float chamber and float parts with gasoline. If the needle is worn as shown, replace it together with a valve seat. Clean the fuel passage of the mixing chamber with compressed air.

**FLOAT HEIGHT ADJUSTMENT**

To check the float height, invert the carburetor body, holding the float arm pin so that the pin will not slip off. With the float arm kept free, measure the height (A) while float arm is just in contact with needle valve with vernier calipers. Bend the tongue (1) as necessary to bring the height (A) to this value.

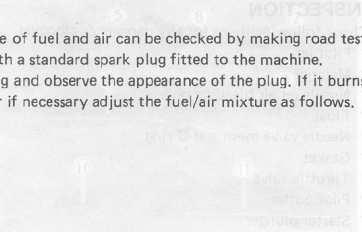


Float height	$22.4 \pm 1.0$ mm
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**DIAGNOSTS OF CARBURETOR**

Whether the carburetor is producing a proper mixture of fuel and air can be checked by making road test (simulating the way the user operates the machine) with a standard spark plug fitted to the machine. After completing the road test, remove the spark plug and observe the appearance of the plug. If it burns abnormally, replace it with a proper heat range plug or if necessary adjust the fuel/air mixture as follows.

Starter plunger



## ELECTRICAL SYSTEM

## MIXTURE ADJUSTMENT

- This adjustment is effected mainly by main jet and jet needle. Before doing so, check to be sure that the float level is correctly set and that the overflow pipe, air vent pipe, inlet hose and air cleaner are in sound condition.
- Find out at which throttle position the engine lacks power or otherwise performs poorly. Drive the machine at the throttle position for a distance of about 10 km, after which the spark plug and piston crown should be inspected for color and appearance.
- The mixture can be made "richer" or "leaner" in three ways, namely, by altering main jet, jet needle and pilot jet. Effectiveness of these ways depends on the throttle position, as shown in the right chart.

Throttle opening	¼	½	¾	Full
Main jet				Richer
Jet needle	Richer			
Pilot air screw	Richer			


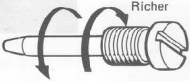
## NOTE:


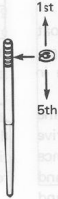


If the machine is tested at 1/2 throttle resulting in a color and appearance indicating a mixture that is too rich or too lean, perform adjustment by means of jet needle.

## CARBURETION

Adequate carburetion is determined according to the results of various tests mainly concerning engine power, fuel consumption, and cooling effect of fuel on the engine. Jet settings are made so as to satisfy and balance all of these conditions. Therefore, the jet should not be replaced with a size other than the original, and the positions of the adjustable parts should not be changed except when compensating for the mixture ratio due to altitude differences or other climatic conditions. When an adjustment is required, refer to the following chart.

Fuel-air mixture ratio can be changed as follows:

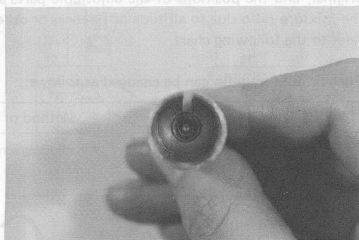
Throttle opening	Method of changing ratio	Standard setting
 <p>Slight</p>	<p>Air adjusting screw</p>  <p>Richer</p> <p>Leaner</p>	<p>1 ½ turns back</p>

Throttle opening	Method of changing ratio	Standard setting
 <p data-bbox="177 438 231 452">Medium</p>	<p data-bbox="384 180 464 195">Jet needle</p>  <p data-bbox="539 180 567 195">1st</p> <p data-bbox="578 209 629 224">Leaner</p> <p data-bbox="578 267 629 282">Richer</p> <p data-bbox="539 311 567 326">5th</p>	<p data-bbox="798 302 878 317">3D16-2nd</p>
 <p data-bbox="192 754 226 768">High</p>	<p data-bbox="389 481 453 496">Main jet</p>  <p data-bbox="467 695 588 768">Larger number: richer mixture Smaller number: leaner mixture</p>	<p data-bbox="814 623 866 637"># 57.5</p>

## REASSEMBLY

Reassemble the carburetor in the reverse order of disassembly and also pay attention to the following points.

- When setting the jet needle to the throttle valve, make sure that the groove of the stopper ring matches that of the throttle valve.



## RECOUNTING

Remount the carburetor in the reverse order of the removal, and following adjustments are necessary after remounting the carburetor.

- \* Throttle cable play (Page 2-6)
- \* Idling adjustment (Page 2-5)



# ELECTRICAL SYSTEM

## CONTENTS

IGNITION SYSTEM.....	5-1
LIGHTING SYSTEM.....	5-3
ELECTRIC LIGHT BULB.....	5-5
SWITCH.....	5-6

### CHECKING WITH SUZUKI POCKET TESTER

Use a SUZUKI pocket tester as an ohm meter, provided that it has a "x 1k" ohm range. In either case, the two testing probes,  $\oplus$  and  $\ominus$ , are to be placed

on terminals of the CDI/ignition coil unit referring to the following chart.

Probe of S.C.H. test	Plug cap	Ground
(1) B	50	200
(2) R	50	200
(3) Y	50	200
(4) S	50	200

The high voltage is fed to the spark plug where it produces a spark across the spark gap and ignites the fuel/air mixture in the combustion chamber.

If the ignition system is faulty, inspect the CDI unit & ignition coil unit.

### STATOR COIL INSPECTION

Using the ohmmeter, test the resistance between the lead wires in the following table. If the resistance is infinite, inspect the unit.

Standard resistance	Ω
B/W - B/W (Ground)	0.0005
B/W - R/W (Ground)	0.0005
B/W - Y/W (Ground)	0.0005
B/W - S/W (Ground)	0.0005



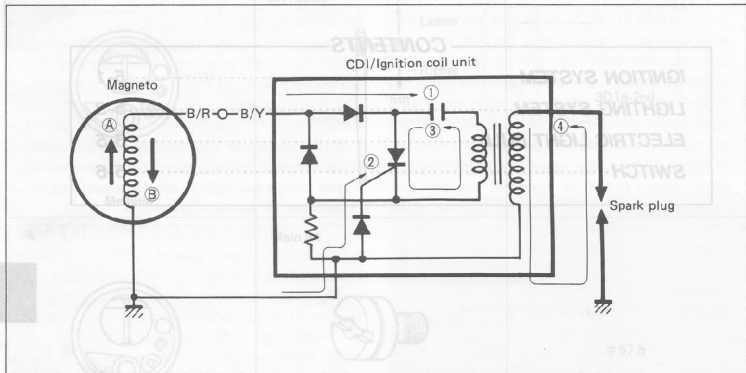
CONDUCT A MID-IGNITION SYSTEM INSPECTION

CHECKING WITH ELECTRIC TESTER

Check for correct lead wire colors: Yellow lead wire to the coil's primary winding and Black lead wire to the coil's secondary winding. Connect the tester's mounting bracket to ground. Connect the tester's positive lead to the plug cap and the tester's negative lead to the spark plug's metal part. The tester's needle should point to the spark plug's metal part.

# IGNITION SYSTEM

The ignition system consists of a flywheel magneto, CDI/ignition coil unit and spark plug.



- (1) As the rotor rotates, AC current is induced in the coil. The current induced in the A direction charges up the capacitor.
- (2) As the rotor rotates further, the current is induced in the reverse direction (B direction). This current causes a voltage applied through the ground to the gate of SCR.
- (3) As the SCR conducts, the energy which has been charged in the capacitor is instantaneously discharged through the primary winding of the ignition coil.
- (4) The current which flows in the primary winding of the ignition coil causes a high voltage induced in the secondary winding of the ignition coil. The induced voltage is much higher than the voltage of the primary winding because it is boosted up by the high ratio of turns between primary and secondary windings.

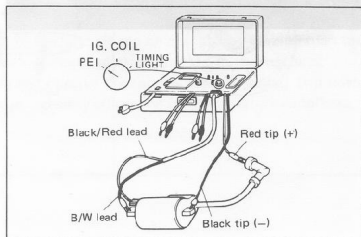
The high voltage is fed to the spark plug, where it produces discharge sparks across the spark plug gap and sparks ignite the fuel/air mixture in the combustion chamber.

If the ignition system is faulty, inspect the CDI unit & ignition coil, stator and spark plug in the following manner:

## CDI UNIT AND IGNITION COIL INSPECTION

### CHECKING WITH ELECTRO TESTER

Connect the CDI test leads with the Black/Yellow lead attached to the coil's primary tap and Black/White to mounting bracket (ground). Connect the high tension leads with the red ⊕ lead attached to the spark plug cord and the black ⊖ lead to the coil's mounting bracket (ground).



- Set the test selector knob to "P.E.I.".

**CAUTION:**

Don't forget to set the test selector knob to "P.E.I.", or C.D.I. unit will be broken.

- Switch the power ON.
- Note the spark in the spark gap window. It should be strong and continuous, not intermittent, across a preset 8 mm gap. Allow the spark to jump the test gap for at least five minutes continuously, to insure proper operation under the temperature conditions of actual riding. If the spark is faulty, replace the unit.

09900-28106

Electro tester

09900-28617

Test lead

**CHECKING WITH SUZUKI POCKET TESTER**

Use a SUZUKI pocket tester as an ohm meter, provided that it has a "x 1k" ohm range. In either case, the two testing probes,  $\oplus$  and  $\ominus$ , are to be placed on terminals of the CDI/ignition coil unit referring to the following chart.

Unit: approx. k $\Omega$ 

Negative $\ominus$ probe of tester to:	Positive $\oplus$ probe of tester to:		
	B/Y	Plug cap	Ground
B/Y		50 - 200	50 - 200
Plug cap	38 - 58		12 - 19
Ground	8 - 13	12 - 19	

09900-25002

Pocket tester

If the resistance checked is incorrect, replace the unit. If the tester does not indicate within the specified range, the lighting coil is faulty. Replace

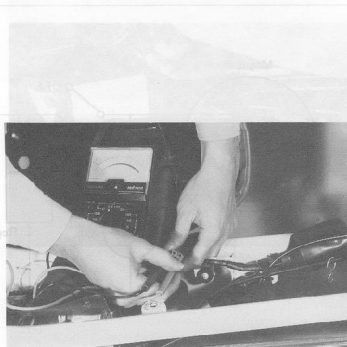
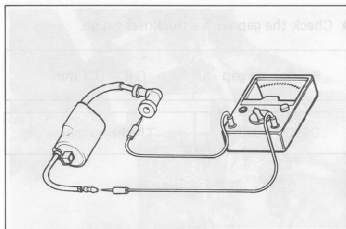
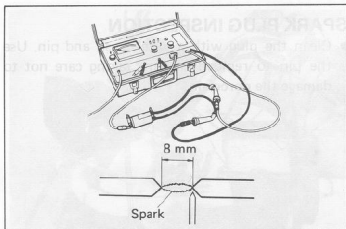
**STATOR COIL INSPECTION**

Using the pocket tester, measure the resistance between the lead wires in the following table. If the resistance checked is incorrect, replace the unit.

Standard resistance B/R - B/W (Ground)	Approx. 90 - 140 $\Omega$
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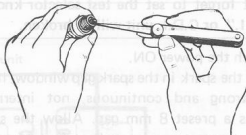
09900-25002

Pocket tester



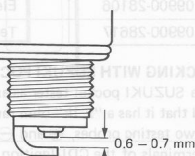
## SPARK PLUG INSPECTION

- Clean the plug with a wire brush and pin. Use the pin to remove carbon, taking care not to damage the porcelain.



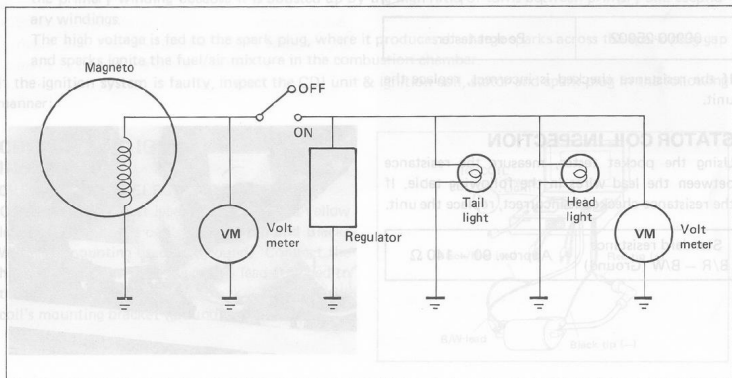
- Check the gap with a thickness gauge.

Spark plug gap	0.6 – 0.7 mm
09900-20803	Thickness gauge



## LIGHTING SYSTEM

The lighting coil is mounted on the stator and generates AC current as the magneto rotor turns. This current then flows to the headlight and taillight after regulated by the voltage regulator.



## SWITCH

**REGULATOR INSPECTION**

- Start the engine and keep it running at 5 000 r/min with the lighting switch turned ON.
- Using the pocket tester, measure the A.C. voltage between the headlight lead wire [Y (H) position) or W (LO position)] and ground.  
If the tester reads under 6.6V or over 7.2V, replace the regulator.

Lighting output	6.6 – 7.2V at 5 000 r/min
-----------------	---------------------------

09900-25002	Pocket tester
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**STATOR INSPECTION****LIGHTING COIL OUTPUT**

- Start the engine.
- Using the pocket tester, measure the AC voltages between lighting coil lead wires (Y/W and B/W).  
If the tester does not indicate within the specification, replace the lighting coil.

**Lighting coil output**

Above 6V at 2 500 r/min (Ground)
Below 9V at 4 000 r/min

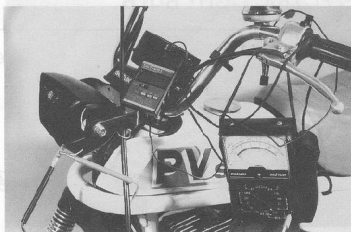
09900-25002	Pocket tester
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**STATOR COIL (LIGHTING COIL)**

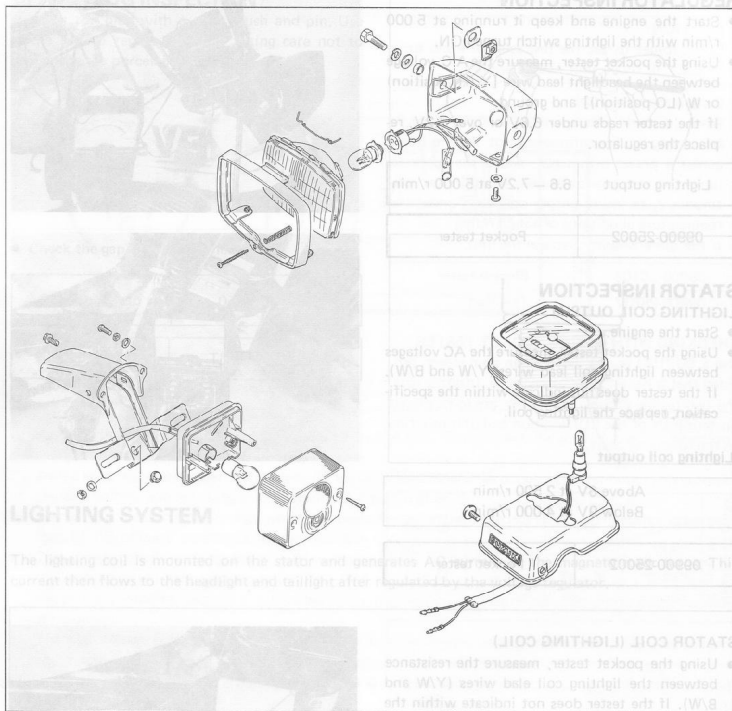
- Using the pocket tester, measure the resistance between the lighting coil elad wires (Y/W and B/W). If the tester does not indicate within the specification, the lighting coil is faulty. Replace the lighting coil.
- Again, inspect the lighting coil output as required. If still out of standard range, replace the magneto rotor.

Lighting coil resistance	Y/W – B/W 0 – 1Ω
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09900-25002	Pocket tester
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## ELECTRIC LIGHT BULB



## INSPECTION

Using the pocket tester, check continuity of each bulb. If there is no continuity, replace the bulb.

09900-25002

Pocket tester

## SWITCH

Inspect each switch for continuity with the pocket tester referring to the chart. If it is found any abnormality, replace the respective switch assembly with a new one.

09900-25002	Pocket tester
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### ENGINE KILL SWITCH

	O/R	W/B (Ground)
ON		
OFF	○	○

### LIGHTING SWITCH

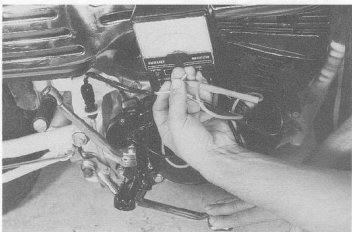
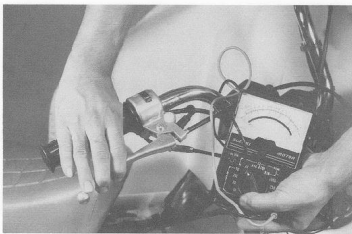
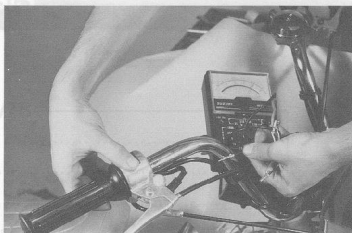
	Y	W	Y/W	Gr
HI	○		○	○
LO		○	○	○
OFF				

### FRONT BRAKE SWITCH

	B/R	B/W (Ground)
ON	○	○
OFF		

### REAR BRAKE SWITCH

	O	W
ON	○	○
OFF		







# CHASSIS

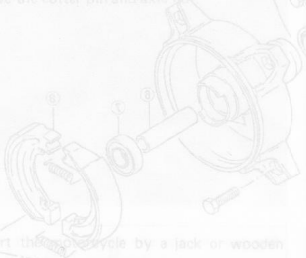
## FRONT WHEEL

- Disconnect the speedometer cable (1) and front brake cable (2).

### CONTENTS

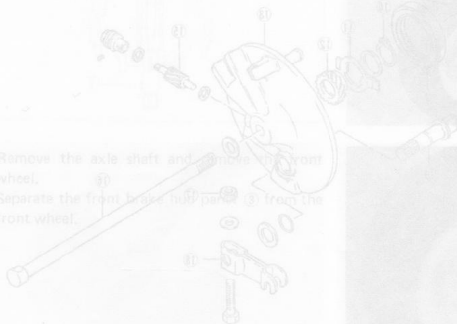
<b>FRONT WHEEL AND FRONT BRAKE</b> .....	<b>6- 1</b>
<b>FRONT FORK AND STEERING</b> .....	<b>6-10</b>
<b>REAR WHEEL AND REAR BRAKE</b> .....	<b>6-21</b>
<b>REAR SUSPENSION AND SWINGARM</b> .....	<b>6-30</b>

- Remove the outer rim and tire.



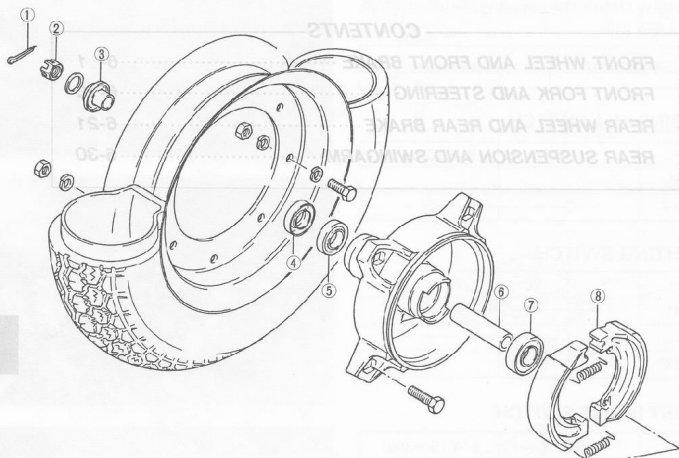
- Support the motorcycle by a jack or wooden block.

Remove the front wheel.



- Remove the axle shaft and tire from the front wheel.
- Separate the front brake hub parts (1) from the front wheel.

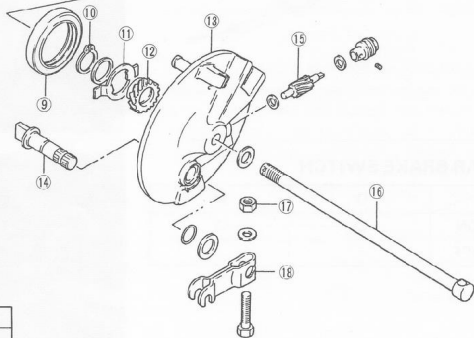
## FRONT WHEEL AND FRONT BRAKE



- ① Cotter pin
- ② Axle nut
- ③ Spacer
- ④ Oil seal
- ⑤ Wheel bearing, R.
- ⑥ Spacer
- ⑦ Wheel bearing, L.
- ⑧ Brake shoe
- ⑨ Oil seal
- ⑩ Circlip
- ⑪ Speedometer drive plate
- ⑫ Speedometer drive gear
- ⑬ Brake panel
- ⑭ Brake cam shaft
- ⑮ Pinion
- ⑯ Axle shaft
- ⑰ Brake cam lever nut
- ⑱ Brake cam lever

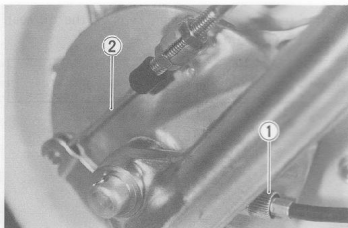
## Tightening torque

	N·m	kg·m
②	27 - 43	2.7 - 4.3
⑰	4 - 7	0.4 - 0.7

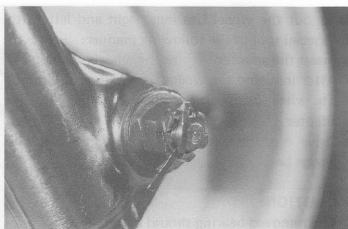
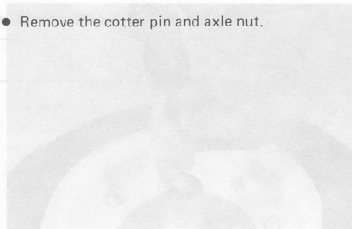


## REMOVAL AND DISASSEMBLY FRONT WHEEL

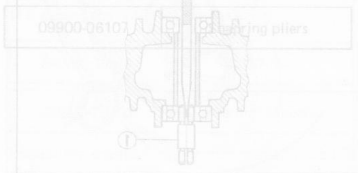
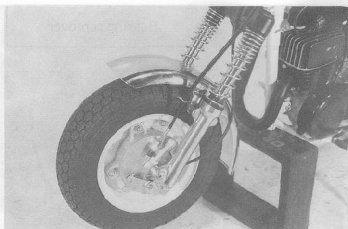
- Disconnect the speedometer cable (1) and front brake cable (2).



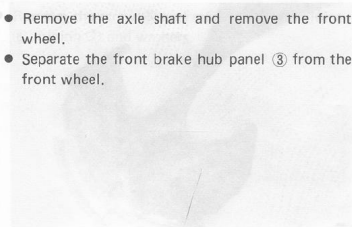
- Remove the cotter pin and axle nut.



- Support the motorcycle by a jack or wooden block.



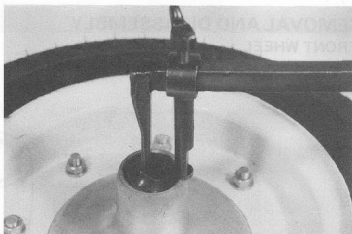
- Remove the axle shaft and remove the front wheel.
- Separate the front brake hub panel (3) from the front wheel.



- After removing the spacer, remove the oil seal with the special tool.

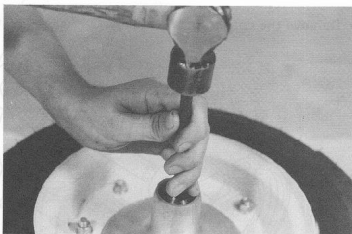
09913-50121

Oil seal remover



Drive out the wheel bearings, right and left, with the special tool in the following manner:

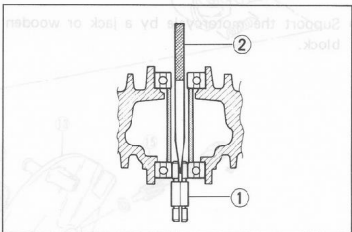
- Insert the adapter ① into the wheel bearing.
- After inserting the wedge bar ② from the opposite wheel bearing, lock the wedge bar into the adapter.
- Drive out the wheel bearing by knocking the wedge bar.

**CAUTION:**

The removed bearing should be replaced.

09941-50110

Bearing remover

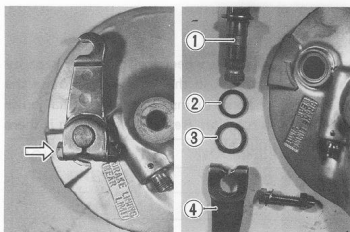
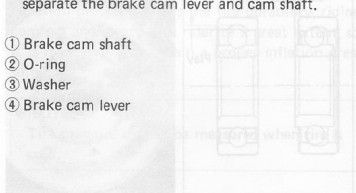
**FRONT BRAKE**

- Remove the brake shoes.



- Remove the brake cam lever bolt and nut, and separate the brake cam lever and cam shaft.

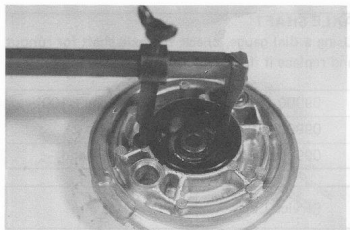
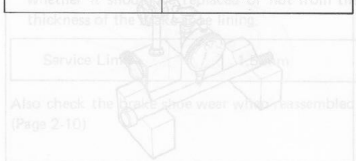
- ① Brake cam shaft
- ② O-ring
- ③ Washer
- ④ Brake cam lever



- Remove the oil seal with the special tool.

09913-50121

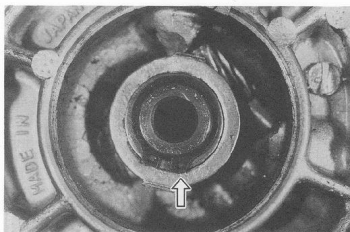
Oil seal remover



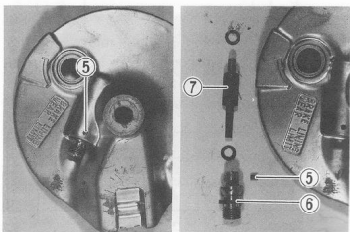
- Remove the circlip with the special tool and remove the washer, drive plate and gear.

09900-06107

Snapping pliers

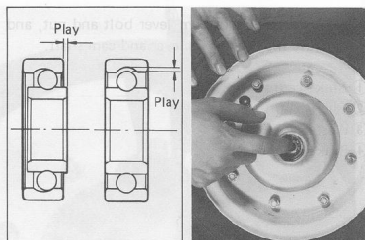


- Remove the screw (5) and remove the cable joint (6), pinion (7) and washers.



**INSPECTION****WHEEL BEARING**

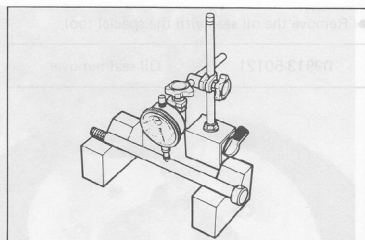
Inspect the play of wheel bearing inner race by hand while fixing it in the wheel hub. Rotate the inner race by hand to inspect an abnormal noise and a smooth rotation. Replace the bearing if there is anything unusual.

**AXLE SHAFT**

Using a dial gauge, check the axle shaft for runout and replace it if the runout exceeds the limit.

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

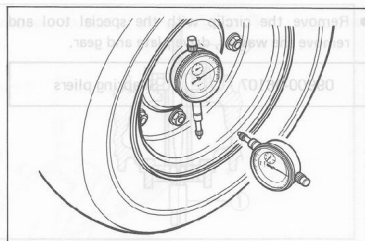
Service Limit	0.25 mm
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**WHEEL RIM**

Make sure that the wheel rim runout checked as shown does not exceed the service limit. An excessive runout is usually due to worn or loose wheel bearings and can be reduced by replacing the bearings.

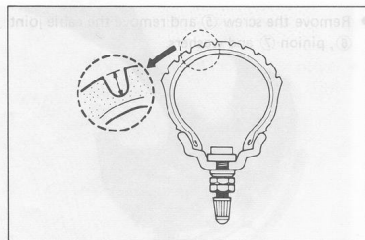
If bearing replacement fails to reduce the runout, replace the wheel rim.

Service Limit (Axial and Radial)	2.0 mm
-------------------------------------	--------

**TIRE**

For proper braking and riding stability, the tire should have sufficient groove depth from the tread surface. If the groove depth, measured as shown in the figure, reaches the wear limit, replaced the tire.

	Service Limit
Front	1.6 mm
Rear	1.6 mm



**TIRE PRESSURE**

Inflation pressure affects the tire durability, riding comfort and safety of a rider to a great extent, so it is necessary to maintain a proper inflation pressure.

**NOTE:**

Tire pressure should be measured when tire is cold.

COLD INFLATION TIRE PRESSURE	NORMAL RIDING	
	kPa	kg/cm <sup>2</sup>
Front	125	1.25
Rear	175	1.75

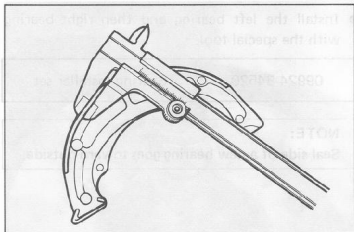
**BRAKE SHOE**

- Check the wear of the brake shoe and decide whether it should be replaced or not from the thickness of the brake shoe lining.

Service Limit

1.5 mm

Also check the brake shoe wear when reassembled. (Page 2-10)

**BRAKE DRUM**

Measure the brake drum I.D. with a vernier calipers. If it exceed the limit, replace the drum.

Service Limit

110.7 mm

09900-20101

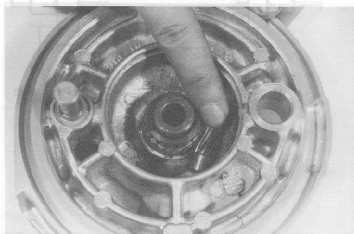
Vernier calipers

Inspect the drum I.D. for scratch marks. If the I.D. surface is scratched or otherwise roughened, smoothen it by grinding with an emery paper.

**SPEEDOMETER GEAR**

Make sure that the gear and the pinion rotate smoothly.

Replace the respective parts if there is anything unusual.



**REASSEMBLY**

Reassemble and remount the front wheel in the reverse order of disassembly and removal, and also carry out the following steps:

**FRONT WHEEL**

- Apply grease to the wheel bearings and spacer.

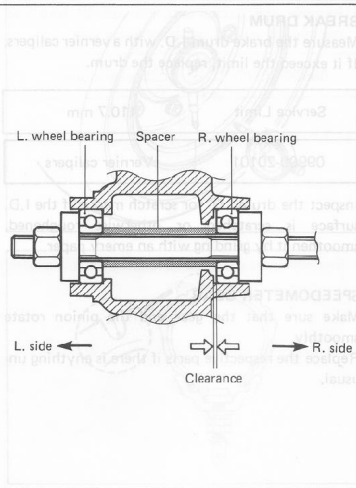
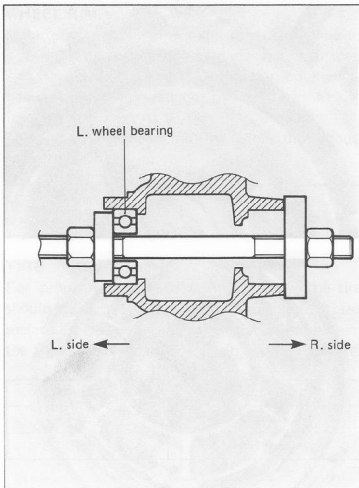
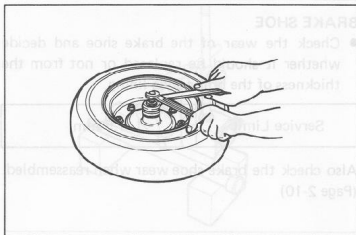
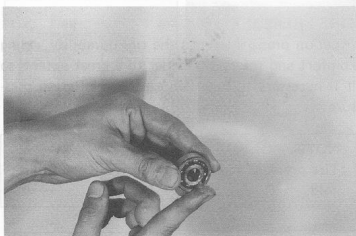
99000-25010	SUZUKI SUPER GREASE "A"
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- Install the left bearing and then right bearing with the special tool.

09924-84520	Bearing installer set
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**NOTE:**

Seal side of a new bearing goes toward outside.



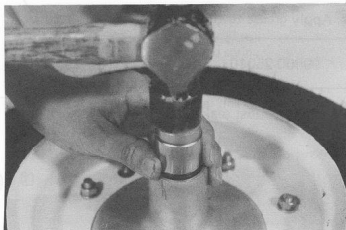


## FRONT FORK AND SWEEPING

- Apply grease to the dust seal.



- Install the dust seal with an appropriate socket.



## FRONT BRAKE

- Apply grease to the brake cam shaft ①.

**WARNING:**

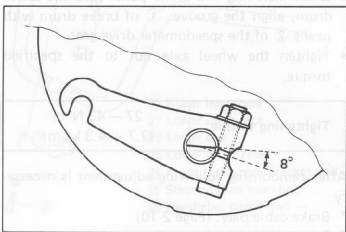
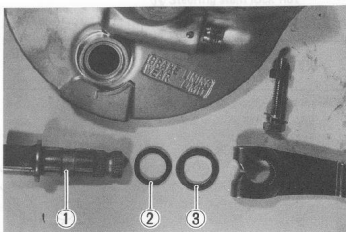
Be careful not to apply too much grease to the brake cam shaft.

99000-25010

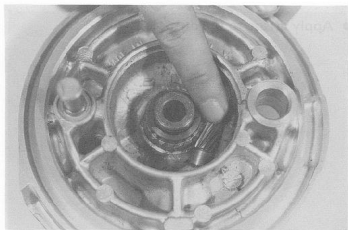
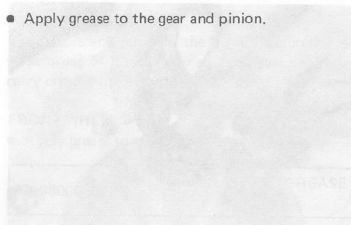
SUZUKI SUPER GREASE  
"A"

- When installing the brake cam lever, be sure to install the O-ring ② and washer ③.
- Install the brake cam lever as shown in the illustration.
- Tighten the nut to the specified torque.

Tightening torque

4 – 7 N·m  
(0.4 – 0.7 kg-m)

- Apply grease to the gear and pinion.

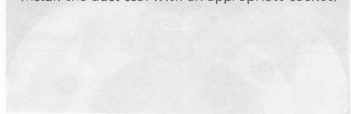


- Apply grease to the dust seal.

99000-25010	SUZUKI SUPER GREASE "A"
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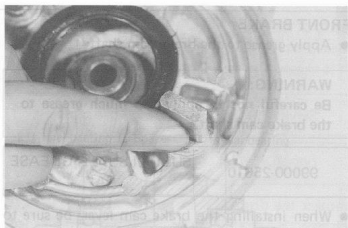


- Install the dust seal with an appropriate socket.



- Apply grease to the brake cam shaft surfaces.

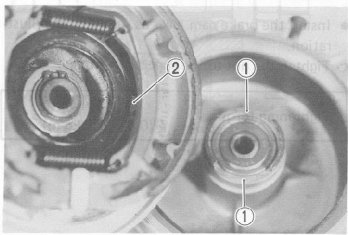
99000-25010	SUZUKI SUPER GREASE "A"
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- When installing the brake panel into the brake drum, align the grooves ① of brake drum with pawls ② of the speedometer drive gear.

- Tighten the wheel axle nut to the specified torque.

Tightening torque	27 – 43 N·m (2.7 – 4.3 kg-m)
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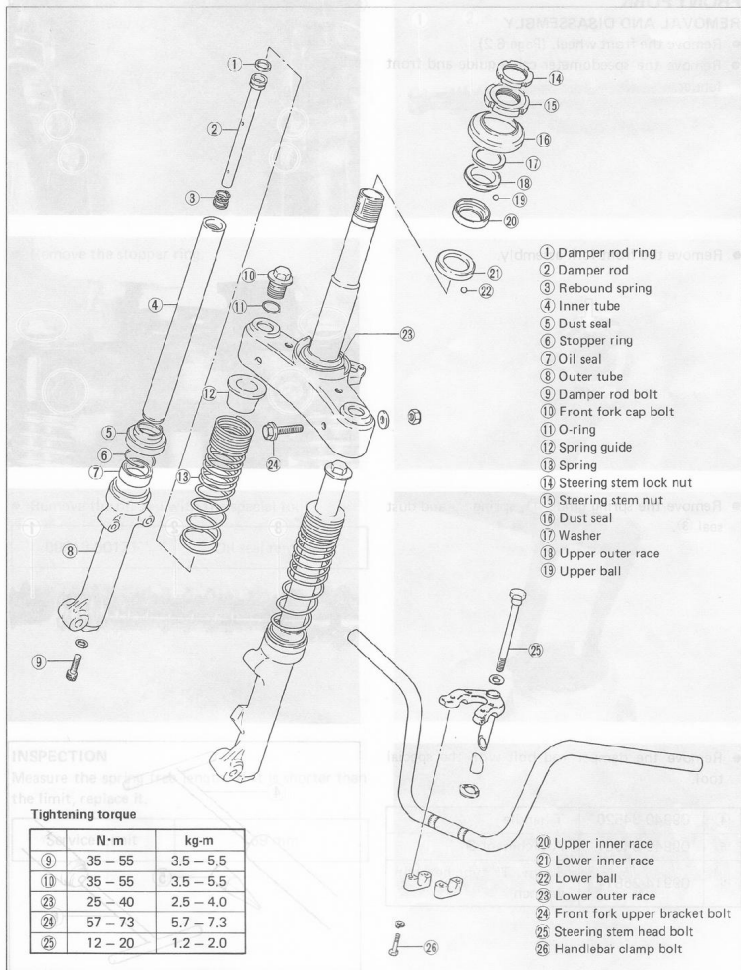


After remounting following adjustment is necessary.

\* Brake cable play. (Page 2-10)

\* Brake shoe wear check. (Page 2-10)

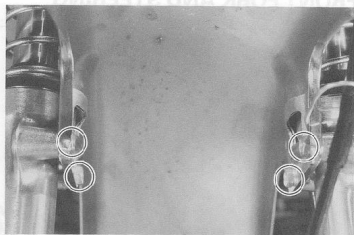
## FRONT FORK AND STEERING



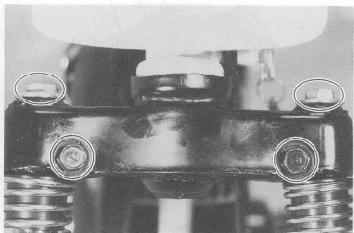
## FRONT FORK

## REMOVAL AND DISASSEMBLY

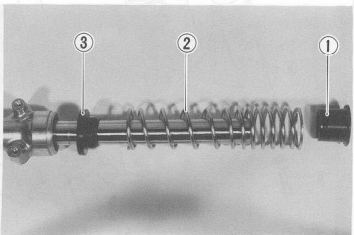
- Remove the front wheel. (Page 6-2)
- Remove the speedometer cable guide and front fender.



- Remove the front fork assembly.

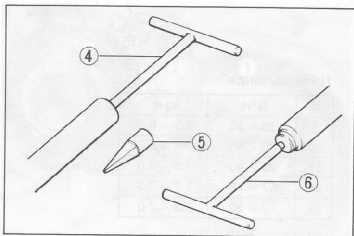


- Remove the spring guide ①, spring ② and dust seal ③.

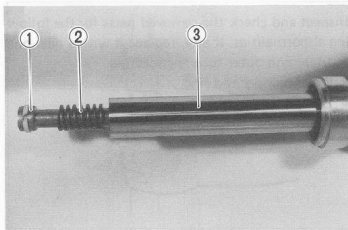


- Remove the damper rod bolt with the special tool.

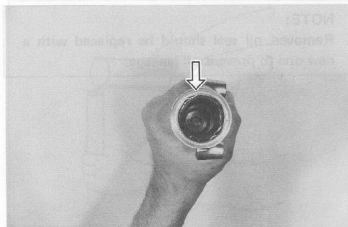
④	09940-34520	T-handle
⑤	09940-34561	Attachment D
⑥	09914-25811	6 mm "T" type hexagon wrench



- Remove the damper rod ①, rebound spring ② and inner tube ③.

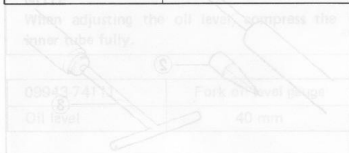


- Remove the stopper ring.



- Remove the oil seal with the special tool.

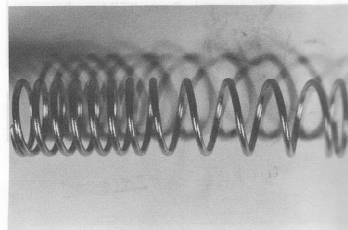
09913-50121	Oil seal remover
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#### INSPECTION

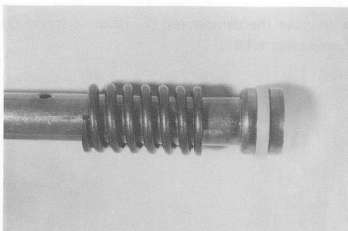
Measure the spring free length. If it is shorter than the limit, replace it.

Service Limit	169 mm
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Inspect and check the removed parts for the following abnormalities. If any, replace it with a new one.

- Inner and outer tube for scuffing.
- Worn damper rod ring.
- Bent damper rod.



**NOTE:**

Removed oil seal should be replaced with a new one to prevent oil leakage.

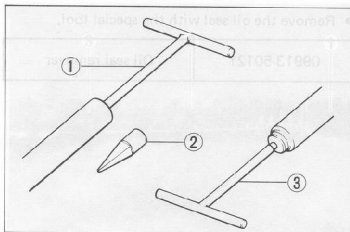


**REASSEMBLY**

Reassemble and remount the front fork in the reverse order of the disassembly and removal, and also carry out the following steps:

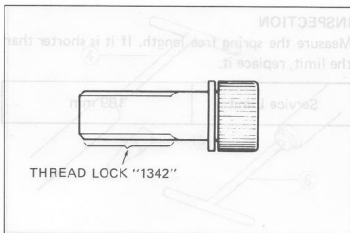
**Damper rod bolt**

Apply THREAD LOCK "1342" to the damper rod bolt and tighten it to the specified torque.



①	09940-34520	T-handle
②	09940-34561	Attachment D
③	09914-25811	6 mm "T" type hexagon wrench
	99000-32050	THREAD LOCK "1342"

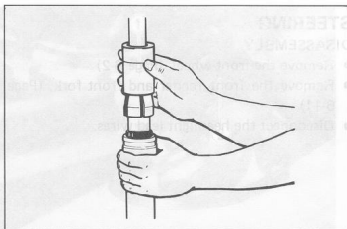
Tightening torque	35 – 55 N·m (3.5 – 5.5 kg·m)
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**Oil seal**

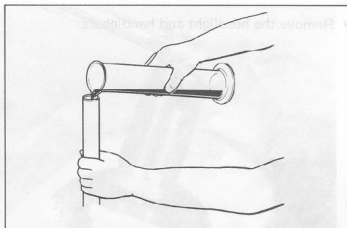
- Install the oil seal with the special tool. Make sure that the lip of the seal faces downward.

09940-50112	Oil seal installer
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**Fork oil**

Use fork oil whose viscosity rating meets specifications below.

09900-99044-10G	SUZUKI FORK OIL #10
Capacity	55 ml

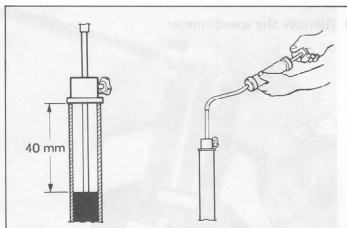


- Hold the front fork vertical and remove the spring and adjust the fork oil level with the special tool.

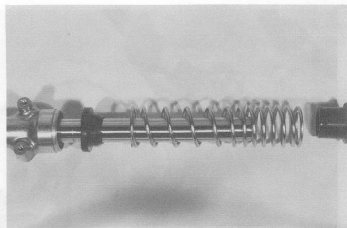
**NOTE:**

When adjusting the oil level, compress the inner tube fully.

09943-74111	Fork oil level gauge
Oil level	40 mm

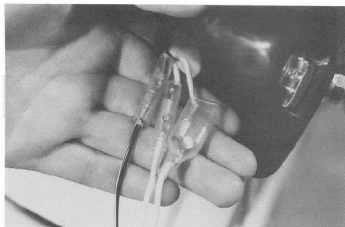
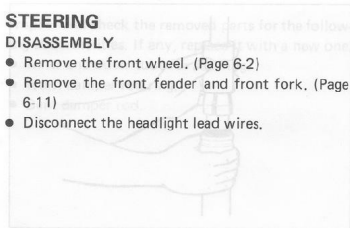
**Fork spring****NOTE:**

When inserting the fork spring, close pitch side should be positioned upwards.

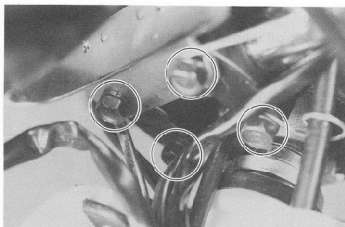
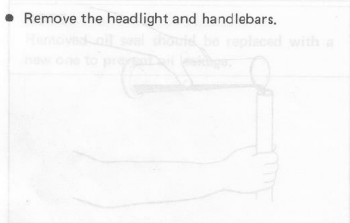


**STEERING****DISASSEMBLY**

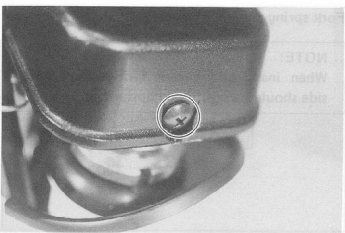
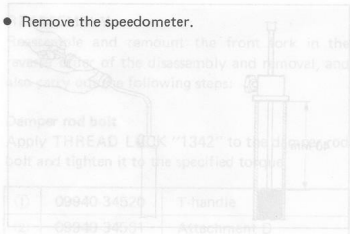
- Remove the front wheel. (Page 6-2)
- Remove the front fender and front fork. (Page 6-11)
- Disconnect the headlight lead wires.



- Remove the headlight and handlebars.

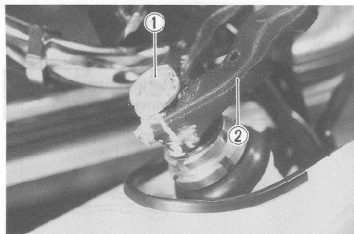
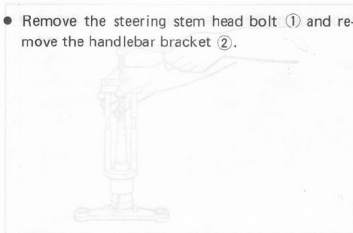


- Remove the speedometer.





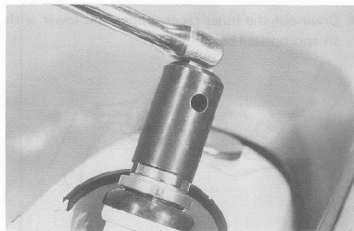
- Remove the steering stem head bolt ① and remove the handlebar bracket ②.



- Remove the steering stem lock nut with the special tool.

09940-14920

Steering stem nut socket wrench

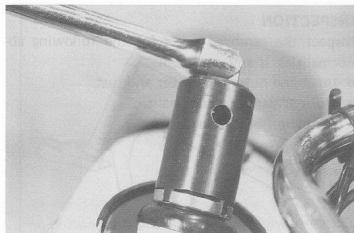


- Remove the steering stem nut with the special tool.

09940-14911

Steering stem nut socket wrench

**NOTE:**  
Hold the steering stem lower bracket by hand to prevent dropping.



- Remove the steering stem upper outer race and steel balls.

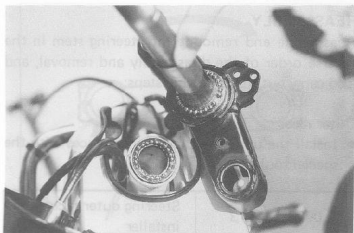
Number of balls

Upper

22 pcs

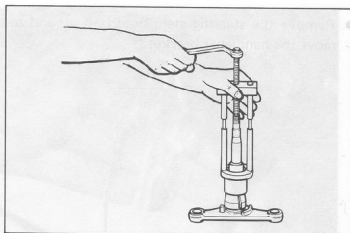
Lower

25 pcs

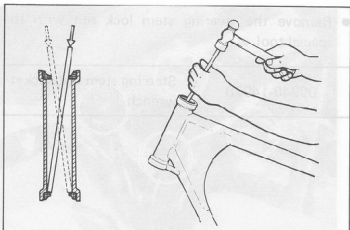


- Remove the lower outer race with the special tool.

09941-84510

Steering outer race  
remover

- Drive out the inner races, upper and lower with an appropriate bar.

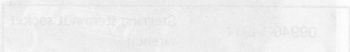


### INSPECTION

Inspect the removed parts for the following abnormalities. If any, replace it.

- Inner and outer races wear and rust.
- Worn or damaged steel balls.
- Distortion of steering stem.

- Remove the steering stem out with the special tool.



NOTE:  
Hold the steering stem lower flange by hand to prevent turning.

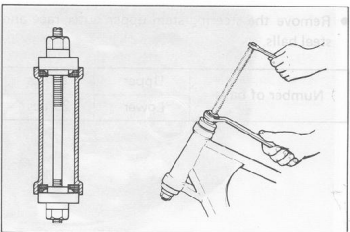
### REASSEMBLY

Reassemble and remount the steering stem in the reverse order of the disassembly and removal, and also carry out the following steps:

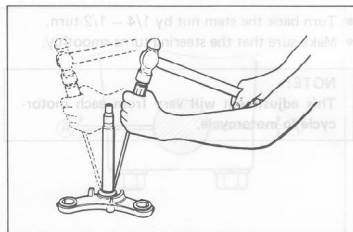
#### Outer races

- Install the upper and lower inner races with the special tool.

09941-34513

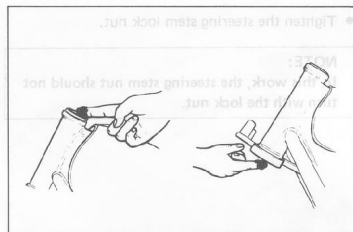
Steering outer race  
installer

- Install the lower outer race with an appropriate bar.

**CAUTION:**

After performing the adjustment and install.

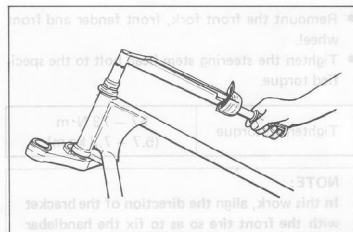
- Apply grease to the upper and lower outer races before reassembling the steering stem.



99000-25010

SUZUKI SUPER GREASE  
"A"**Steering adjustment**

- Tighten the steering stem nut with the special tool to the specified torque.



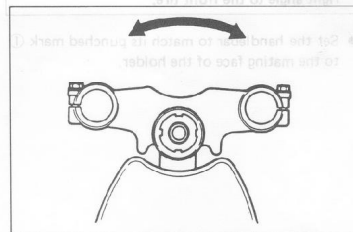
09940-14911

Steering nut socket  
wrench

Tightening torque

40 – 50 N·m  
(4.0 – 5.0 kg-m)

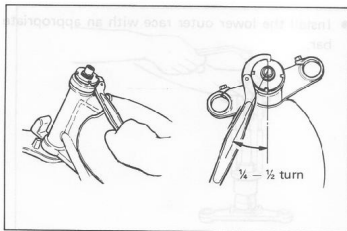
- Turn the steering stem right and left, lock-to-lock, five or six times to seat the steel balls and bearing.



- Turn back the stem nut by 1/4 – 1/2 turn.
- Make sure that the steering turns smoothly.

**NOTE:**

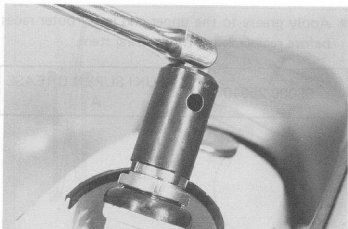
This adjustment will vary from each motorcycle to motorcycle.



- Tighten the steering stem lock nut.

**NOTE:**

In this work, the steering stem nut should not turn with the lock nut.



- Remount the front fork, front fender and front wheel.
- Tighten the steering stem head bolt to the specified torque.

Tightening torque

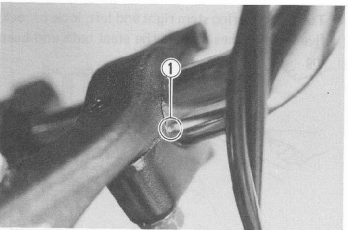
57 – 73 N·m  
(5.7 – 7.3 kg·m)

**NOTE:**

In this work, align the direction of the bracket with the front tire so as to fix the handlebar right angle to the front tire.



- Set the handlebar to match its punched mark ① to the mating face of the holder.



09941-0013

Steering stem race  
includer

- Install the clutch cable and front brake cable guides. (Page 7-6)
- Secure the each handlebars clamp in such a way that the clearance (A) ahead and behind the handlebars should be equalized.

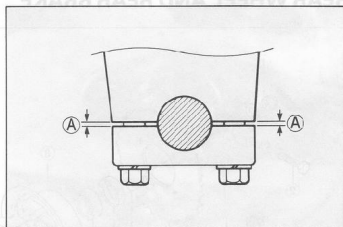
Tightening torque	12 – 20 N·m (1.2 – 2.0 kg·m)
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**CAUTION:**

After performing the adjustment and installing the steering stem upper bracket, rock the front wheel assembly forward to ensure that there is no play and that the procedure was accomplished correctly. Finally check to be sure that the steering stem moves freely from left to right with own weight.

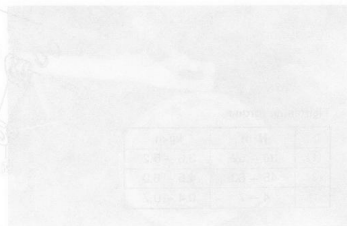
If play or stiffness is noticeable, re-adjust the steering stem nut.

- Install the front wheel. (Page 6-7)



- Support the motorcycle with a wooden block.

- Disengage the drive chain with the front wheel.



## REAR WHEEL AND REAR BRAKE

Make sure the stem nut by 1/4 - 1/2 turn.

## NOTE:

This work should not work from each motor.

## NOTE:

In this work, the steering stem nut should not turn with the lock nut.

Remove the fork, fender and front

wheel.

Tighten the axle nut to the specified torque.

Tightening torque

## NOTE:

In this work, align the direction of the brake with the front tire so as to fix the handlebar right angle to the front tire.

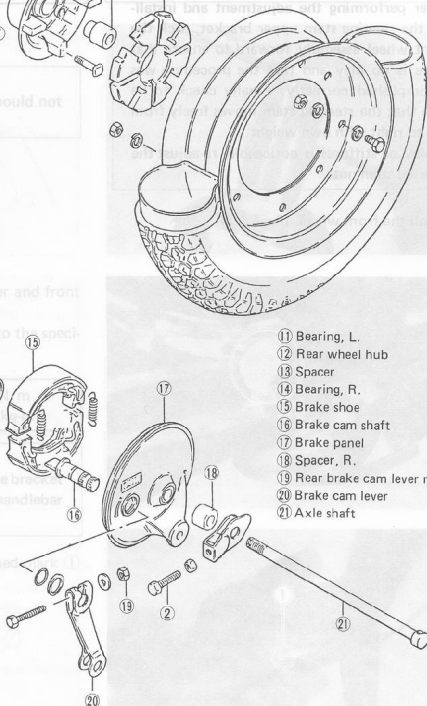
Set the handlebar to match its punch to the mating face of the holder.

- ① Rear axle nut
- ② Chain adjuster bolt
- ③ Rear sprocket mounting nut
- ④ Rear sprocket
- ⑤ Spacer, L.
- ⑥ Oil seal
- ⑦ Bearing
- ⑧ Sprocket mounting drum
- ⑨ Spacer
- ⑩ Damper

- ⑪ Bearing, L.
- ⑫ Rear wheel hub
- ⑬ Spacer
- ⑭ Bearing, R.
- ⑮ Brake shoe
- ⑯ Brake cam shaft
- ⑰ Brake panel
- ⑱ Spacer, R.
- ⑲ Rear brake cam lever nut
- ⑳ Brake cam lever
- ㉑ Axle shaft

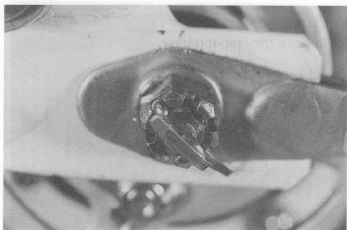
## Tightening torque

	N·m	kg·m
①	36 - 52	3.6 - 5.2
③	45 - 60	4.5 - 6.0
⑲	4 - 7	0.4 - 0.7

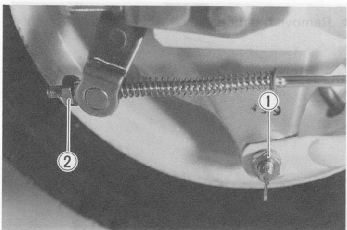


## REMOVAL AND DISASSEMBLY

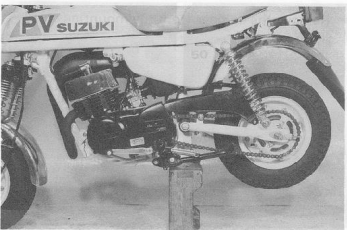
- Remove the cotter pin and axle nut.



- Remove the cotter pin and torque link nut ①.
- Remove the rear brake rod nut ②.



- Support the motorcycle with a jack or wooden block.

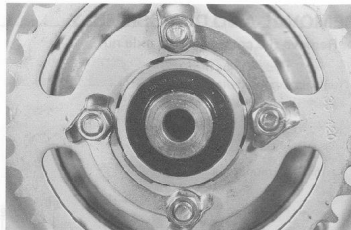
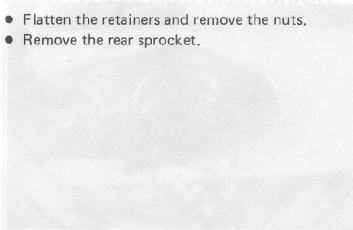


- Disengage the drive chain and remove the rear wheel.

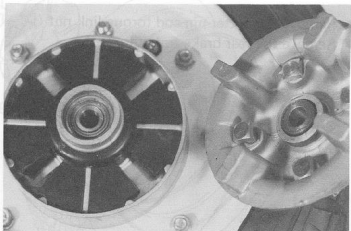


## REAR WHEEL AND REAR BRAKE

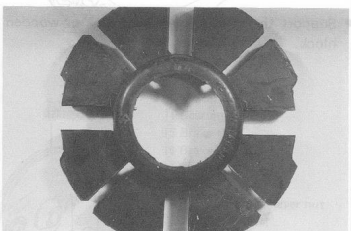
- Flatten the retainers and remove the nuts.
- Remove the rear sprocket.



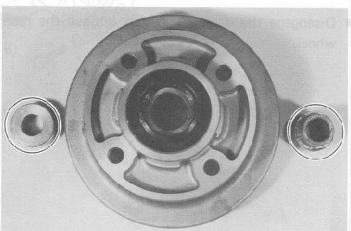
- Remove the mounting drum from the rear wheel.



- Remove the damper from the mounting drum.



- Remove the two spacers from the mounting drum.





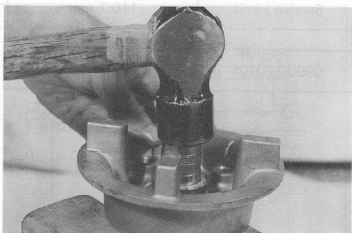
- Remove the oil seal with the special tool.

09913-50121

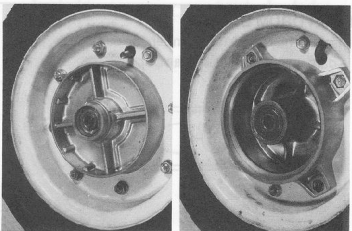
Oil seal remover



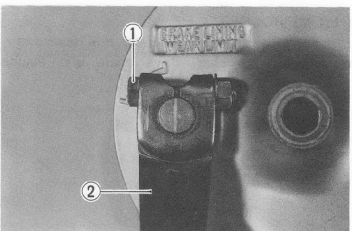
- Remove the rear sprocket mounting drum bearing with an appropriate socket.



- Remove the two wheel bearings. (Page 6-3)



- Remove the brake shoe. (Page 6-3)
- Remove the brake cam lever bolt ① and remove the brake cam lever ②.



**INSPECTION**

- WHEEL BEARING (Page 6-5)
- AXLE SHAFT (Page 6-5)
- WHEEL RIM (Page 6-5)
- TIRE (Page 6-5)
- BRAKE SHOE (Page 6-6)

- BRAKE DRUM (Page 6-7)

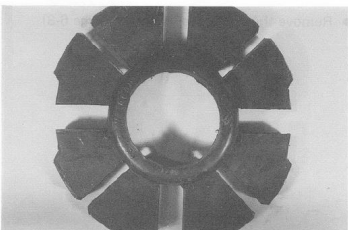
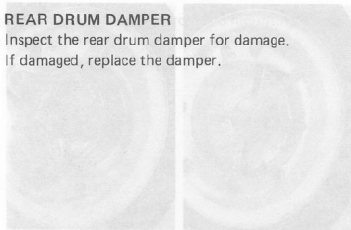
Measure the brake drum I.D. with vernier calipers. If it exceed the limit, replace the drum.

Service Limit	110.7 mm
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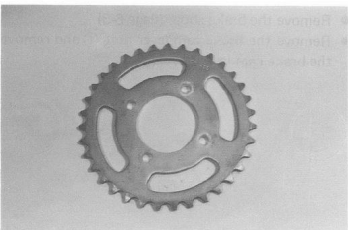
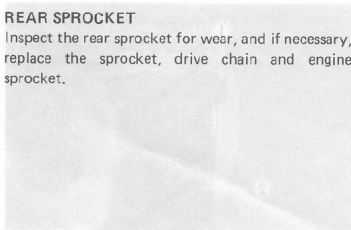
09900-20101	Vernier calipers
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**REAR DRUM DAMPER**

Inspect the rear drum damper for damage. If damaged, replace the damper.

**REAR SPROCKET**

Inspect the rear sprocket for wear, and if necessary, replace the sprocket, drive chain and engine sprocket.



**DRIVE CHAIN**

Remove the clip and connection plate, and disassemble the chain. Inspect the drive chain for wear, and if necessary replace the chain, drive sprocket and engine sprocket.

Measure the drive chain 20 pitch length and if it exceeds the limit, replace the chain (Page 2-8). Also check the wear of the engine sprocket and rear sprocket.

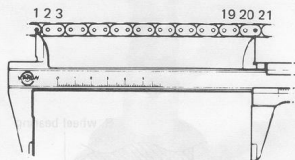
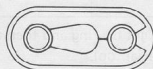
Service Limit	442.6 mm
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**WARNING:**

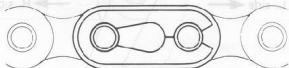
The drive chain joint clip should be installed in the way that the slit end will face opposite the direction of rotation as the illustration.

**REASSEMBLY**

Reassemble and remount the rear wheel in the reverse order of the removal and disassembly, and also carry out the following steps:



Direction of travel



**WHEEL BEARING**

- Apply grease to the wheel bearings.

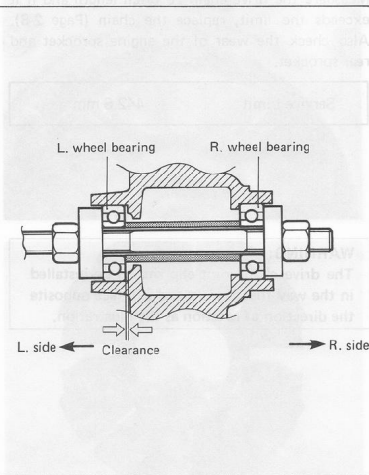
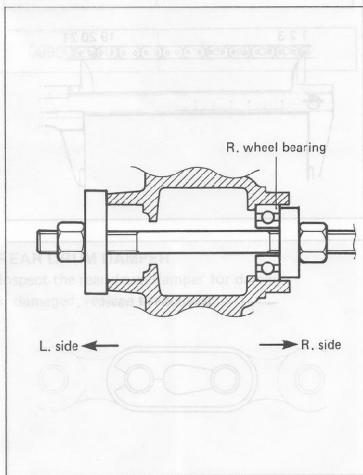
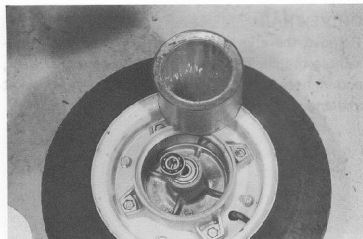
99000-25010	SUZUKI SUPER GREASE "A"
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- Install the right bearing and then the left bearing with the special tool.

09924-84520	Bearing installer set
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**NOTE:**

Seal side of a new bearing goes toward outside.

**SPROCKET MOUNTING DRUM BEARING**

- Install the sprocket mounting drum bearing with the special tool.

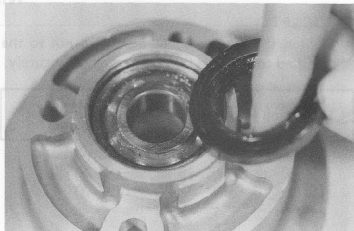
09914-79610	Bearing installer
-------------	-------------------



## REAR SUSPENSION AND SWINGARM

- Apply grease to the bearing before installing the oil seal.

99000-25010

SUZUKI SUPER GREASE  
"A"

## OIL SEAL

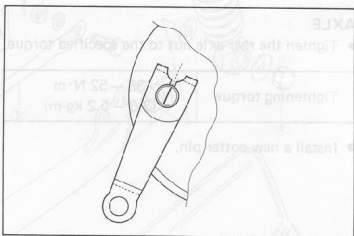
- Install the oil seal with an appropriate socket.



## REAR BRAKE

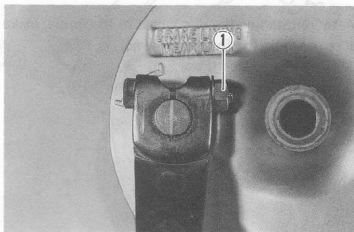
- Apply grease to the brake cam shaft surfaces and install the brake cam lever as shown in the illustration.

99000-25010

SUZUKI SUPER GREASE  
"A"

- Tighten the brake cam lever nut ① to the specified torque.

Tightening torque

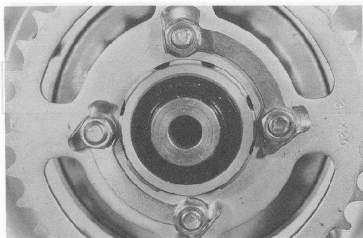
4 – 7 N·m  
(0.4 – 0.7 kg·m)

	N·m	kg·m
①	25 – 30	2.0 – 2.0
②	10 – 16	1.0 – 1.6
③	25 – 30	2.5 – 4.0

## SPROCKET

- Tighten the rear sprocket mounting nut to the specified torque and bend the retainers securely.

Tightening torque	45 – 60 N·m (4.5 – 6.0 kg·m)
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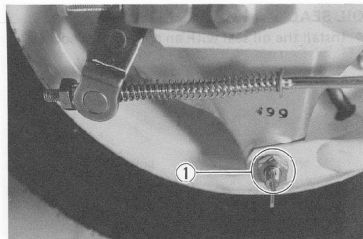
Seal side of a new bearing goes toward outside.

## TORQUE LINK

- Tighten the rear torque link nut ① to the specified torque.

Tightening torque	10 – 15 N·m (1.0 – 1.5 kg·m)
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- Install a new cotter pin.

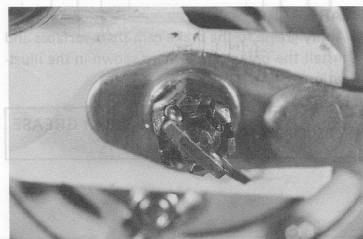


## AXLE

- Tighten the rear axle nut to the specified torque.

Tightening torque	36 – 52 N·m (3.6 – 5.2 kg·m)
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- Install a new cotter pin.



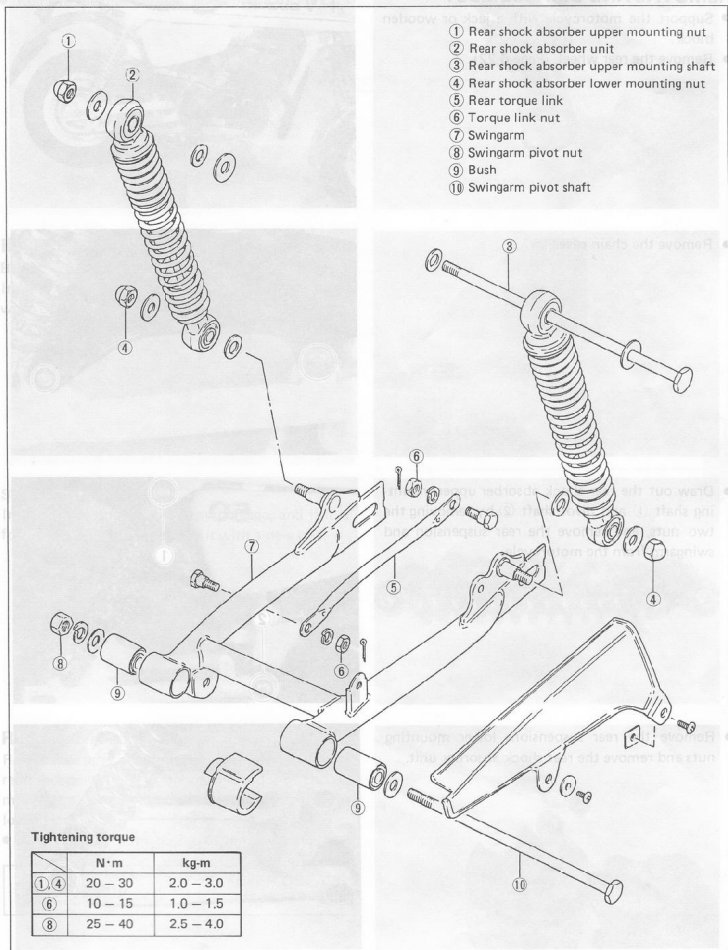
After reinstalling the rear wheel to the frame, make sure to adjust the following items.

- \* Drive chain slack (Page 2-9)
- \* Rear brake pedal free travel (Page 2-10).

Tighten the rear axle nut ① to the specified torque.

Tightening torque	4 – 7 N·m (0.4 – 0.7 kg·m)
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## REAR SUSPENSION AND SWINGARM



## REMOVAL AND DISASSEMBLY

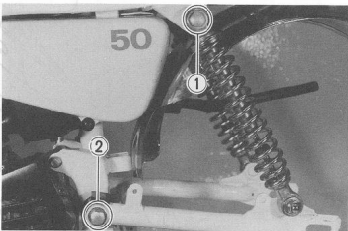
- Support the motorcycle with a jack or wooden block.
- Remove the rear wheel. (Page 6-22)



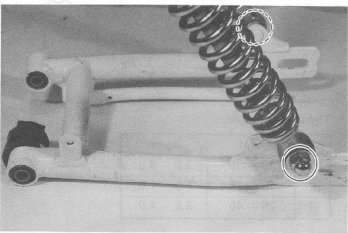
- Remove the chain case.



- Draw out the rear shock absorber upper mounting shaft ① and pivot shaft ② by removing the two nuts, and remove the rear suspension and swingarm from the motorcycle.



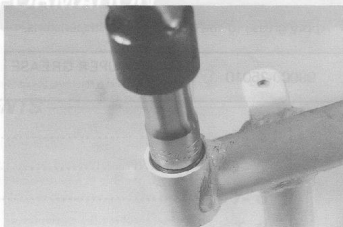
- Remove the rear suspensions lower mounting nuts and remove the rear shock absorber unit.



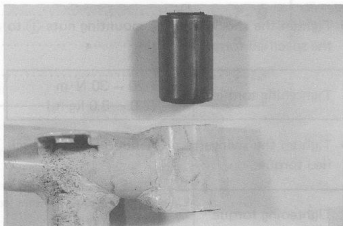


## SERVICING INFORMATION

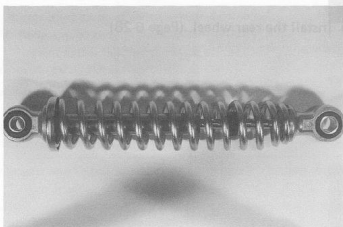
- Remove the bush with an appropriate socket.

**INSPECTION****BUSH**

Inspect the bush for wear and damage, and if it is worn or damaged, replace it.

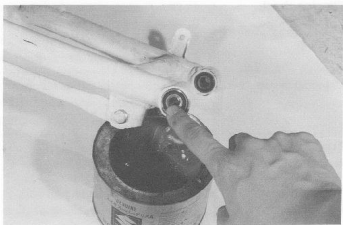
**SUSPENSION**

Inspect the suspension for any damage, and if it is found to be damaged, replace it with a new one.

**REASSEMBLY**

Reassemble and remount the rear swingarm and rear shock absorber in the reverse order of the removal and disassembly, and also carry out the following step.

- Apply grease to the bushes of the swingarm.

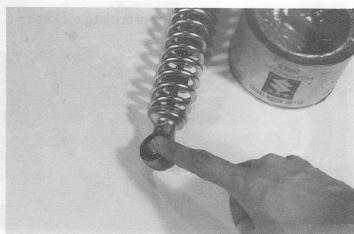
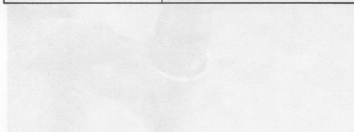


99000-25010

SUZUKI SUPER GREASE  
"A"

- Apply grease to the bushes of the suspensions.

99000-25010	SUZUKI SUPER GREASE "A"
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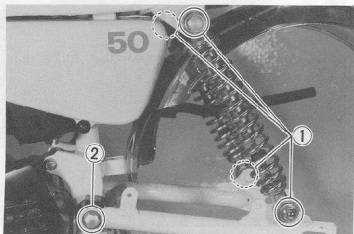


- Tighten the shock absorber mounting nuts ① to the specified torque.

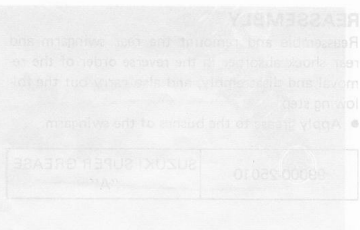
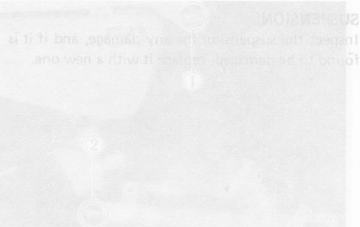
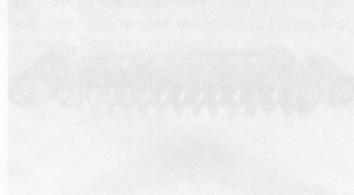
Tightening torque	20 – 30 N·m (2.0 – 3.0 kg·m)
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- Tighten the swingarm pivot nut ② to the specified torque.

Tightening torque	25 – 40 N·m (2.5 – 4.0 kg·m)
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- Install the rear wheel. (Page 6-28)



99000-25010	SUZUKI SUPER GREASE "A"
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# SERVICING INFORMATION

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## TROUBLESHOOTING

## ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start, or is hard to start.	<p><b>Plug not sparking</b></p> <ol style="list-style-type: none"> <li>1. Fouled spark plug.</li> <li>2. Wet spark plug.</li> <li>3. Defective ignition coil.</li> <li>4. Open or short in high-tension cord.</li> <li>5. Defective primary coil or CDI unit.</li> </ol> <p><b>No fuel reaching the carburetors</b></p> <ol style="list-style-type: none"> <li>1. Clogged hole in the fuel tank cap.</li> <li>2. Clogged or defective fuel cock.</li> <li>3. Defective carburetor needle valve.</li> <li>4. Clogged fuel pipe.</li> </ol>	<p>Clean. Clean and dry. Replace. Replace. Replace.</p> <p>Clean. Clean or replace. Replace. Clean.</p>
Engine stalls easily.	<ol style="list-style-type: none"> <li>1. Fouled spark plug.</li> <li>2. Defective primary coil or CDI unit.</li> <li>3. Clogged fuel pipe.</li> <li>4. Clogged jets in carburetor.</li> </ol>	<p>Clean. Replace. Replace. Clean.</p>
Noisy engine.	<p><b>Noise appears to come from piston</b></p> <ol style="list-style-type: none"> <li>1. Piston or cylinder worn down.</li> <li>2. Combustion chamber fouled with carbon.</li> <li>3. Piston pin or piston pin bore worn.</li> <li>4. Piston ring groove worn.</li> <li>5. Piston pin bearing worn.</li> </ol> <p><b>Noise seems to come from clutch</b></p> <ol style="list-style-type: none"> <li>1. Worn splines of countershaft or hub.</li> <li>2. Worn teeth of clutch plates.</li> <li>3. Distorted clutch plates, driven and drive.</li> </ol> <p><b>Noise seems to come from crankshaft</b></p> <ol style="list-style-type: none"> <li>1. Rattling bearings due to wear.</li> <li>2. Big-end bearing worn and burnt.</li> <li>3. Journal bearing worn and burnt.</li> </ol>	<p>Replace. Clean. Replace. Replace. Replace.</p> <p>Replace. Replace. Replace.</p> <p>Replace. Replace. Replace.</p>
Noisy engine.	<p><b>Noise seems to come from transmission</b></p> <ol style="list-style-type: none"> <li>1. Gears worn or rubbing.</li> <li>2. Badly worn splines.</li> <li>3. Primary gears worn or rubbing.</li> </ol>	<p>Replace. Replace. Replace.</p>
Slipping clutch	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment or loss of play.</li> <li>2. Weakened clutch springs.</li> <li>3. Worn or distorted pressure plate.</li> <li>4. Distorted clutch plates, driven and drive.</li> </ol>	<p>Adjust. Replace. Replace. Replace.</p>
Dragging clutch	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment or too much play.</li> <li>2. Some clutch springs weakened while others are not.</li> <li>3. Distorted pressure plate or clutch plates.</li> </ol>	<p>Adjust. Replace. Replace.</p>
Transmission will no shift.	<ol style="list-style-type: none"> <li>1. Broken gearshift cam.</li> <li>2. Distorted gearshift forks.</li> </ol>	<p>Replace. Replace.</p>
Transmission will not shift back.	<ol style="list-style-type: none"> <li>1. Broken return spring on shift shaft.</li> <li>2. Shift shafts are rubbing or sticky.</li> </ol>	<p>Replace. Repair or replace.</p>

Complaint	Symptom and possible causes	Remedy
<b>Transmission jumps out of gear.</b>	<ol style="list-style-type: none"> <li>1. Worn shifting gears on driveshaft or countershaft.</li> <li>2. Distorted or worn gearshift forks.</li> <li>3. Weakened stopper spring on gearshift stopper.</li> </ol>	Replace. Replace. Replace.
<b>Engine idles poorly.</b>	<ol style="list-style-type: none"> <li>1. Spark plug gaps too wide.</li> <li>2. Defective ignition coil.</li> <li>3. Defective primary coil or CDI unit.</li> <li>4. Float-chamber fuel level out of adjustment in carburetor.</li> <li>5. Clogged jets.</li> </ol>	Adjust or replace. Replace. Replace. Adjust. Clean or adjust.
<b>Engine runs poorly in high-speed range.</b>	<ol style="list-style-type: none"> <li>1. Spark plug gaps too narrow.</li> <li>2. Clogged jets.</li> <li>3. Defective ignition coil.</li> <li>4. Defective primary coil or CDI unit.</li> <li>5. Float-chamber fuel level too low.</li> <li>6. Clogged air cleaner element.</li> <li>7. Clogged fuel pipe, resulting in inadequate fuel supply to carburetor.</li> </ol>	Adjust or replace. Clean. Replace. Replace. Adjust. Clean. Clean.
<b>Dirty or heavy exhaust smoke.</b>	<ol style="list-style-type: none"> <li>1. Damage or worn crankshaft oil seal.</li> </ol>	Replace.
<b>Engine lacks power.</b>	<ol style="list-style-type: none"> <li>1. Worn piston rings or cylinder.</li> <li>2. Spark plug gaps incorrect.</li> <li>3. Clogged jets in carburetors.</li> <li>4. Float-chamber fuel level out of adjustment.</li> <li>5. Clogged air cleaner element.</li> <li>6. Sucking air from intake pipe.</li> <li>7. Too much engine oil in the engine.</li> </ol>	Replace. Adjust or replace. Clean. Adjust. Clean. Retighten or replace. Drain out excess oil.
<b>Engine overheats.</b>	<ol style="list-style-type: none"> <li>1. Heavy carbon deposit on piston crown.</li> <li>2. Not enough oil in the engine.</li> <li>3. Fuel level too low in float chambers.</li> <li>4. Suck air from intake pipes.</li> <li>5. Use incorrect engine oil.</li> </ol>	Clean. Add oil. Adjust. Retighten or replace. Change.

## CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	<ol style="list-style-type: none"> <li>1. Starter jet is clogged.</li> <li>2. Starter pipe is clogged.</li> <li>3. Air leaking from carburetor's joint.</li> <li>4. Starter plunger is not operating properly.</li> </ol>	<p>Clean.</p> <p>Clean.</p> <p>Check and retighten.</p> <p>Repair.</p>
Idling or low-speed trouble.	<ol style="list-style-type: none"> <li>1. Pilot jet is clogged or loose.</li> <li>2. Sucking air from carburetor's joint.</li> <li>3. Pilot outlet is clogged.</li> <li>4. Starter plunger is not fully closed.</li> </ol>	<p>Clean.</p> <p>Check and retighten.</p> <p>Clean.</p> <p>Adjust.</p>
Medium- or high-speed trouble.	<ol style="list-style-type: none"> <li>1. Main jet is clogged.</li> <li>2. Needle jet is clogged.</li> <li>3. Throttle valve is not operating properly.</li> <li>4. Filter is clogged.</li> </ol>	<p>Clean.</p> <p>Clean.</p> <p>Clean or replace.</p> <p>Clean.</p>
Overflow and fuel level fluctuations.	<ol style="list-style-type: none"> <li>1. Needle valve is worn or damaged.</li> <li>2. Float is not working properly.</li> <li>3. Foreign matter has adhered to needle valve.</li> <li>4. Fuel level is too high or low.</li> <li>5. Clogged carburetor air vent pipe.</li> </ol>	<p>Replace.</p> <p>Adjust.</p> <p>Clean.</p> <p>Adjust float height.</p> <p>Clean.</p>

## ELECTRICAL

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	<ol style="list-style-type: none"> <li>1. Defective ignition coil.</li> <li>2. Defective spark plug.</li> <li>3. Defective primary coil or CDI unit.</li> </ol>	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Spark plug soon become fouled with carbon.	<ol style="list-style-type: none"> <li>1. Mixture too rich.</li> <li>2. Idling speed set too high.</li> <li>3. Incorrect gasoline.</li> <li>4. Dirty element in air cleaner.</li> <li>5. Spark plug too cold.</li> </ol>	<p>Adjust carburetor.</p> <p>Adjust carburetor.</p> <p>Change.</p> <p>Clean.</p> <p>Replace by hot type plug.</p>
Spark plug become fouled too soon.	<ol style="list-style-type: none"> <li>1. Worn piston rings.</li> <li>2. Piston or cylinder worn.</li> </ol>	<p>Replace.</p> <p>Replace.</p>
Spark plug electrodes overheat or burn.	<ol style="list-style-type: none"> <li>1. Spark plug too hot.</li> <li>2. The engine overheats.</li> <li>3. Spark plug loose.</li> <li>4. Mixture too lean.</li> </ol>	<p>Replace by cold type plug.</p> <p>Tune up.</p> <p>Retighten.</p> <p>Adjust carburetor.</p>
Magneto does not generate.	<ol style="list-style-type: none"> <li>1. Open or short in lead wires, or loose lead connections.</li> <li>2. Shorted, grounded or open magneto coils.</li> <li>3. Shorted or damaged regulator.</li> </ol>	<p>Repair or replace or retighten.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>

no shift.

2. Distorted gearshift forks.

Replace.

Transmission will not shift back.

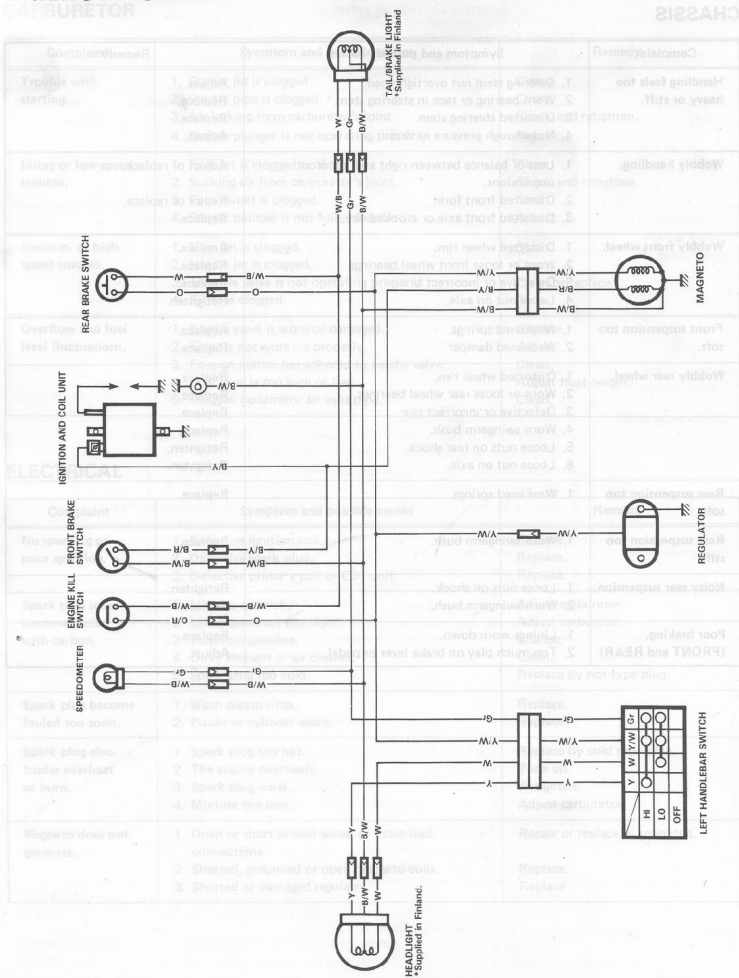
1. Broken return spring on shift shaft.
2. Shift shafts are rubbing or sticky.

Replace.

Repair or replace.



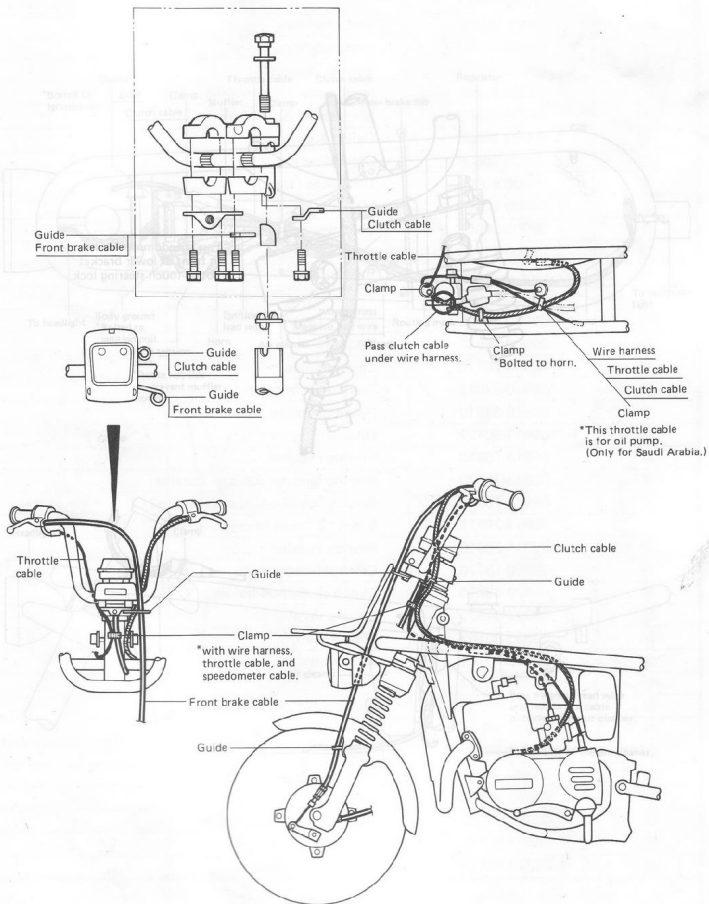
## WIRING DIAGRAM





## CABLE ROUTING

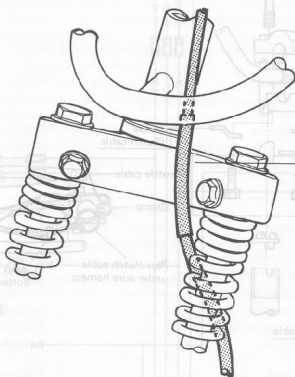
SPEEDOMETER CABLE ROUTING



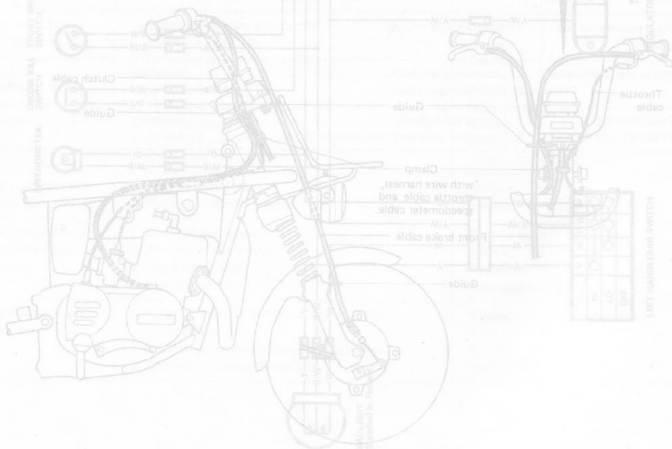
# WIRING DIAGRAM

## SPEEDOMETER CABLE ROUTING

CABLE ROUTING

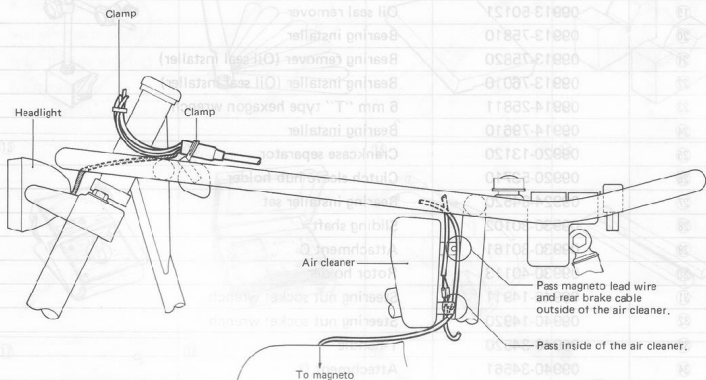
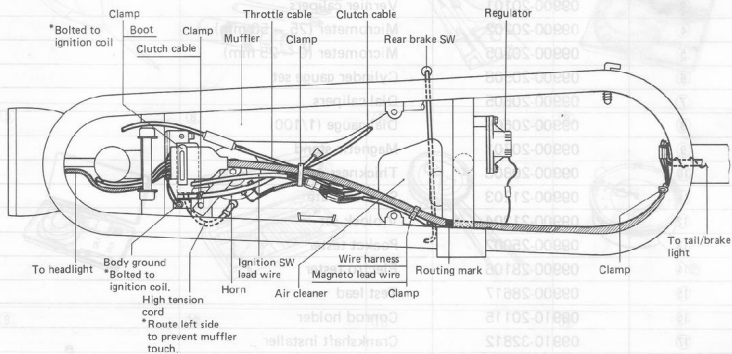


Pass speedometer cable  
in front of lower bracket  
not to touch steering lock.



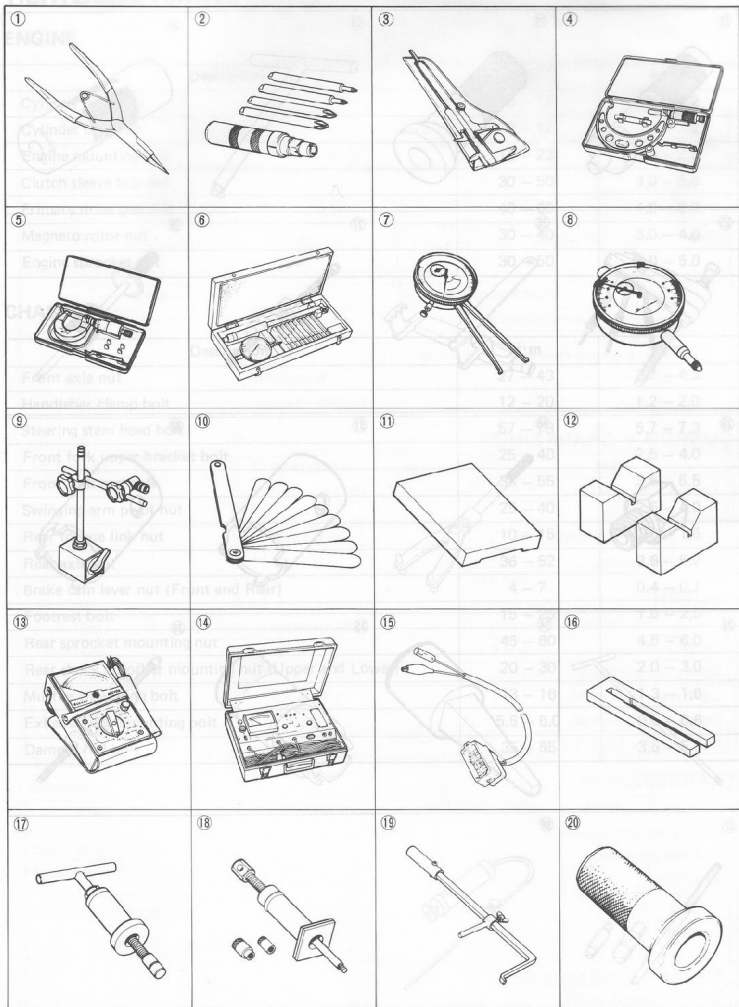
## HARNESS ROUTING

SPECIAL TOOLS



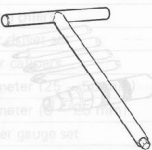


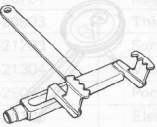
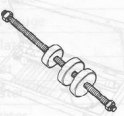




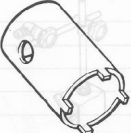
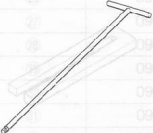









## SPECIAL TOOLS

ITEM	PART NO.	PART NAME
①	09900-06107	Snapping pliers
②	09900-09003	Impact driver set
③	09900-20101	Vernier calipers
④	09900-20202	Micrometer (25 – 50 mm)
⑤	09900-20205	Micrometer (0 – 25 mm)
⑥	09900-20508	Cylinder gauge set
⑦	09900-20605	Dial calipers
⑧	09900-20606	Dial gauge (1/100)
⑨	09900-20701	Magnetic stand
⑩	09900-20803	Thickness gauge
⑪	09900-21203	Surface plate
⑫	09900-21304	V-block set
⑬	09900-25002	Pocket tester
⑭	09900-28106	Electro tester
⑮	09900-28617	Test lead
⑯	09910-20115	Conrod holder
⑰	09910-32812	Crankshaft installer
⑱	09910-34510	Piston pin puller
⑲	09913-50121	Oil seal remover
⑳	09913-75810	Bearing installer
㉑	09913-75820	Bearing remover (Oil seal installer)
㉒	09913-76010	Bearing installer (Oil seal installer)
㉓	09914-25811	6 mm "T" type hexagon wrench
㉔	09914-79610	Bearing installer
㉕	09920-13120	Crankcase separator
㉖	09920-53710	Clutch sleeve hub holder
㉗	09924-84520	Bearing installer set
㉘	09930-30102	Sliding shaft
㉙	09930-30161	Attachment C
㉚	09930-40113	Rotor holder
㉛	09940-14911	Steering nut socket wrench
㉜	09940-14920	Steering nut socket wrench
㉝	09940-34520	T-handle
㉞	09940-34561	Attachment D
㉟	09940-50112	Oil seal installer
㊱	09941-34513	Steering outer race installer
㊲	09941-50110	Bearing remover
㊳	09943-74111	Fork oil level gauge



## SPECIAL TOOLS

<p>21</p> 	<p>22</p> 	<p>23</p> 	<p>24</p> 
<p>25</p> 	<p>26</p> 	<p>27</p> 	<p>28</p> 
<p>29</p> 	<p>30</p> 	<p>31</p> 	<p>32</p> 
<p>33</p> 	<p>34</p> 	<p>35</p> 	<p>36</p> 
<p>37</p> 	<p>38</p> 	<p>39</p> 	<p>40</p> 

## TIGHTENING TORQUE

## ENGINE

Description	N·m	kg-m
Cylinder head nut	8 – 12	0.8 – 1.2
Cylinder base nut	8 – 12	0.8 – 1.2
Engine mounting bolt	13 – 23	1.3 – 2.3
Clutch sleeve hub nut	30 – 50	3.0 – 5.0
Primary drive gear nut	40 – 60	4.0 – 6.0
Magneto rotor nut	30 – 40	3.0 – 4.0
Engine sprocket nut	30 – 50	3.0 – 5.0

## CHASSIS

Description	N·m	kg-m
Front axle nut	27 – 43	2.7 – 4.3
Handlebar clamp bolt	12 – 20	1.2 – 2.0
Steering stem head bolt	57 – 73	5.7 – 7.3
Front fork upper bracket bolt	25 – 40	2.5 – 4.0
Front fork cap bolt	35 – 55	3.5 – 5.5
Swinging arm pivot nut	25 – 40	2.5 – 4.0
Rear torque link nut	10 – 15	1.0 – 1.5
Rear axle nut	36 – 52	3.6 – 5.2
Brake cam lever nut (Front and Rear)	4 – 7	0.4 – 0.7
Footrest bolt	15 – 25	1.5 – 2.5
Rear sprocket mounting nut	45 – 60	4.5 – 6.0
Rear shock absorber mounting nut (Upper and Lower)	20 – 30	2.0 – 3.0
Muffler mounting bolt	13 – 16	1.3 – 1.6
Exhaust pipe mounting bolt	5.5 – 6.0	0.5 – 0.6
Damper rod bolt	35 – 55	3.5 – 5.5

## TRANSMISSION

ITEM	STANDARD	LIMIT
Primary reduction ratio	3.842 ± 0.002	
Final reduction ratio	2.693 ± 0.003	
Gear ratios	3.788 ± 0.002	
W/B - W/Y	1.941 ± 0.017	
W/B - R/B	1.780 ± 0.021	
Lighting output (No load)	1.083 ± 0.024	0.10 - 0.30
Regulated voltage	4.42 ± 0.02	4.42 ± 0.02
Stiffness	4.22 ± 0.02	4.22 ± 0.02

## SERVICE DATA

## CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD		LIMIT	
Piston to cylinder clearance	0.040—0.050		0.120	
Cylinder bore	40.975—40.990 Measure at 15 mm from the top surface		41.065	
Piston diam.	40.930—40.945 Measure at 23 mm from the skirt end		40.855	
Cylinder distortion	—		0.05	
Cylinder head distortion	—		0.05	
Piston ring free end gap	1st	R	Approx. 4.5	3.6
		T	Approx. 4.5	3.6
	2nd	R	Approx. 4.5	3.6
		T	Approx. 4.5	3.6
Piston ring end gap	0.10—0.25		0.75	
Piston ring to groove clearance	1st & 2nd	0.01—0.05	—	
Piston pin bore	11.998—12.006		12.030	
Piston pin O.D.	11.995—12.000		11.980	

## CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.003—16.011	16.040
Conrod deflection	—	3.0
Crank web to web width	40.0 ± 0.1	—
Crankshaft runout	—	0.05

## CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch cable play	2—3	—
Drive plate thickness	2.9—3.1	2.6
Drive plate claw width	11.8—12.0	11.0
Driven plate distortion	—	0.10
Clutch spring free length	—	33.7

## TRANSMISSION

Unit: mm (Except ratio)

ITEM	STANDARD		LIMIT
Primary reduction ratio	3.842 ( 73/19 )		—
Final reduction ratio	2.692 ( 35/13 )		—
Gear ratios	Low	3.166 ( 38/12 )	—
	2nd	1.941 ( 33/17 )	—
	3rd	1.380 ( 29/21 )	—
	Top	1.083 ( 26/24 )	—
Shift fork to groove clearance	No. 1 & No. 3	0.10—0.30	0.50
Shift fork groove width	No. 1 & No. 3	4.45—4.55	—
Shift fork thickness	No. 1 & No. 3	4.25—4.35	—



ITEM	STANDARD	LIMIT
Countershaft length (Low to Spacer)	76.0 76.1	—

**DRIVE CHAIN**

ITEM	STANDARD		LIMIT
Drive chain	Type	DAIDO: DID420 TAKASAGO: RK420M	—
	Links	88	—
	20-pitch length	—	442.6 mm
Drive chain slack	20 – 30 mm		—

**CARBURETOR**

ITEM	SPECIFICATION	
Carburetor type	MIKUNI VM12SH	
Bore size	12 mm	
I.D. No.	17210	
Idle r/min.	1 350 ± 150	
Float height	22.4 ± 1.0 mm	
Main jet (M.J.)	#57.5	
Air jet (A.J.)	0.6 mm	
Jet needle (J.N.)	3D16-2nd	
Needle jet (N.J.)	E-0	
Cut-away (C.A.)	2.0 mm	
Pilot jet (P.J.)	#20	
Pilot outlet (P.O.)	0.9 mm	
Air screw (A.S.)	1 1/2 turns back	
Starter jet (G.S.)	#40	
Valve seat (V.S.)	1.2 mm	
Throttle cable play	0.5–1.0 mm	

**ELECTRICAL**

ITEM	SPECIFICATION		NOTE
Ignition timing	17° ± 3° B.T.D.C. at 6 000 r/min.		
Spark plug	Type	N.D.: W20EP NGK: BP6ES	
	Gap	0.6 – 0.7 mm	
Spark performance	Over 8 mm at 1 atm.		
Ignition coil resistance	Secondary	15–18 kΩ	Plug cap— Ground
Magneto coil resistance	Lighting	0–1 Ω	Y/W—B/W
	Primary	90–140 Ω	B/R—B/W
Lighting coil output (No load)	Above 6 V at 2 500 r/min. Below 9 V at 4 000 r/min.		
Regulated voltage (Lighting circuit)	6.6–7.2 V at 5 000 r/min.		

## WATTAGE

ITEM	SPECIFICATION		Unit: W
Headlight	HI	15	
	LO	15	
Tail/Brake light	3/10		
Speedometer light	3		

## BRAKE + WHEEL

ITEM	STANDARD		LIMIT	Unit: mm
Brake lever play	2-3		—	
Rear brake pedal free travel	20-30		—	
Brake drum I.D.	Front	—	110.7	
	Rear	—	110.7	
Brake lining thickness	—		1.5	
Wheel rim runout	Axial	—	2.0	
	Radial	—	2.0	
Wheel axle runout	Front	—	0.25	
	Rear	—	0.25	
Tire size	Front	3.50-8 4PR	—	
	Rear	3.50-8 4PR	—	
Tire tread depth	Front	—	1.6	
	Rear	—	1.6	

## SUSPENSION

ITEM	STANDARD	LIMIT	NOTE	Unit: mm
Front fork stroke	80	—		
Front fork spring free length	—	169		
Front fork oil level	40	—		
Swingarm pivot shaft runout	—	0.6		

## TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING	
	kPa	kg/cm <sup>2</sup>
FRONT	125	1.25
REAR	175	1.75

## FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Use gasoline with an octane number of 85-90 or higher (Research Method), preferably unleaded or low-lead type. FUEL/OIL Mixing ratio 25 : 1	

## PV50 (FOR SAUDI ARABIA)

ITEM	STANDARD	LIMIT
Fuel tank including reserve	3.5 L	
reserve	0.5 L	
Engine oil type	CCI or CCI super	
Transmission oil type	SAE 20W/40	
Transmission oil capacity	Change	650 ml
	Overhaul	700 ml
Front fork oil type	Fork oil #10	
Front fork oil capacity (each leg)	55 ml	

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# PV50 (FOR SAUDI ARABIA)

## DIMENSIONS AND DRY MASS

This section describes the service data and servicing procedures which differ from those of the PV50 for general markets.

Please refer to the sections 7 through 7 except for the items described in this section.

### NOTE:

Any differences in the service data and specifications with those that apply to the PV50 (FOR SAUDI ARABIA) model are clearly indicated with an asterisk (\*).

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## VIEW OF SUZUKI PV50

The section describes the service data and servicing procedures which differ from those of the PV50 for general markets. Please refer to the sections through except for the parts described in this section.

NOTE:  
Any differences in the service data and specifications of those that apply to the PV50 (FOR SAUDI ARABIA) model are clearly indicated by an asterisk (\*).



LEFT SIDE



RIGHT SIDE

1  
2

3

4  
5

7

8

## SPECIFICATIONS

### DIMENSIONS AND DRY MASS

Overall length	1 415 mm
Overall width	690 mm
Overall height	915 mm
Wheelbase	960 mm
Ground clearance	125 mm
Dry mass (weight)	67 kg

### ENGINE

Type	Two-stroke, air cooled
Intake system	Piston and reed valve
Number of cylinders	1
Bore	41.0 mm
Stroke	37.8 mm
Piston displacement	49 cm <sup>3</sup>
Compression ratio	7.3 : 1
*Carburetor	MIKUNI VM14SH, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
*Lubrication system (Oil supplied by oil pump)	SUZUKI "CCI"

### TRANSMISSION

Clutch	Wet multi-plate type
*Transmission	5-speed constant mesh
*Gearshift pattern	1-down, 4-up
Primary reduction	3.842 (73/19)
*Final reduction	2.500 (35/14)
Gear ratios, Low	3.166 (38/12)
2nd	1.941 (33/17)
3rd	1.380 (29/21)
4th	1.083 (26/24)
*Top	0.923 (24/26)
Drive chain	DAIDO D.I.D. 420 or TAKASAGO RK420M, 88 links

Specifications marked with asterisk (\*) are exclusive to PV50 for general markets.

## CHASSIS

Front suspension	Telescopic, coil spring, oil damped
Rear suspension	Swinging arm, oil damped
Steering angle	42° (right & left)
Caster	26°00'
Trail	46 mm
Turning radius	1.7 m
Front brake	Internal expanding
Rear brake	Internal expanding
Front tire size	3.50-8-4PR
Rear tire size	3.50-8-4PR
Front tire pressure	125 kPa (1.25 kg/cm <sup>2</sup> )
Rear tire pressure	175 kPa (1.75 kg/cm <sup>2</sup> )

## ELECTRICAL

* Ignition type	Magneto (contact point)
* Ignition timing	20° ± 2° B.T.D.C., 1.20 — 1.85 mm
* Spark plug	NGK BP6HS or NIPPON DENSO W20FP
* Battery	6V 14.4 kC (4Ah)/10 HR 6N4B-2A
* Fuse	10A
Headlight (HI/LO)	6V 15/15W
Tail/Brake light	6V 3/10W
* Turn signal light	6V 8W
Speedometer light	6V 3W
* Neutral indicator light	6V 3W
* Oil level warning light	6V 3W

## CAPACITIES

Fuse tank including reserve	3.5 L
reserve	0.5 L
Engine oil	1.2 L
Front fork oil	55 ml
Transmission oil	Charge 650 ml Overhaul 700 ml

Specifications marked with asterisk (\*) are exclusive to PV50 for general markets.



## PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended interval for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy. Traveled distance is expressed in terms of kilometers and months for your convenience.

### NOTE:

More frequent maintenance may be performed on motorcycles that are used in severe condition.

## PERIODIC MAINTENANCE CHART

Item	Interval	1 000	3 000	6 000
	km months			
Battery		—	I	I
Oil pump		I	I	I
Contact points and ignition timing		I	I	—

NOTE: I = Inspect



## MAINTENANCE PROCEDURES

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

### BATTERY

Inspect 3 000 km (6 months) and 6 000 km (12 months).

#### REMOVAL AND INSPECTION

- Open the seat.
- Disconnect the  $\ominus$  lead and then  $\oplus$  lead.
- Check electrolyte for level and specific gravity. Add distilled water, if necessary, to keep the surface of the electrolyte above the LOWER and below the UPPER level line.
- Check specific gravity with a hydrometer to determine the state of charge.

09900-28403	Hydrometer
Standard specific gravity	1.26 at 20°C

#### CHARGING

A specific gravity reading of 1.20 (at 20°C) or under means that the battery needs recharging. Remove the battery from the motorcycle and charge it with a battery charger. (Page 8-23)

#### CAUTION:

Charging the battery without disconnecting the battery  $\oplus$ ,  $\ominus$  lead may damage the electrical components in the circuit.

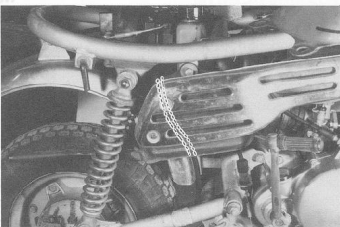
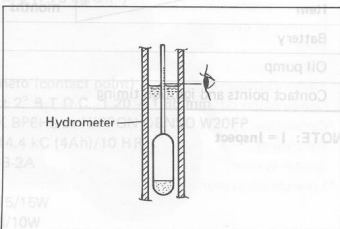
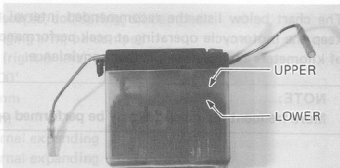
#### REMountING

Remount the battery in the reverse order of the removal, and also pay attention to the following points:

#### WARNING:

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

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



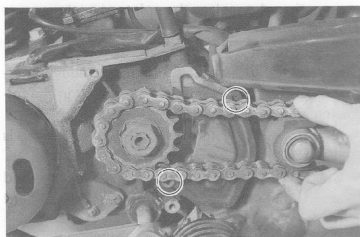
**OIL PUMP**

Inspect Initial 1 000 km (2 months), 3 000 km (6 months) and 6 000 km (12 months).

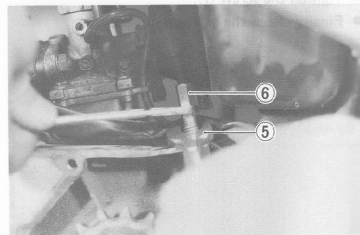
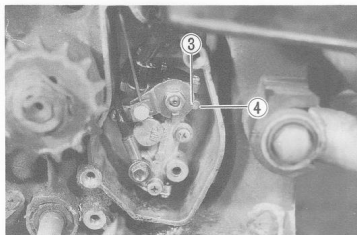
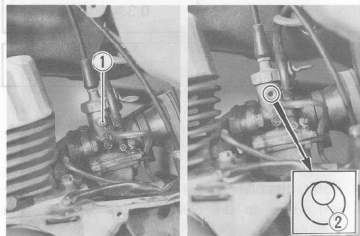
- Remove the magneto rotor cover.



- Remove the oil pump cover.
- Remove the screw ① of the carburetor.
- Turn the throttle grip until the dent mark ② on the throttle valve comes to the upper part of the screw hole.
- Keeping the throttle at this position, check whether the mark ③ on the oil pump control lever is aligned with the index mark ④.
- If not aligned, loosen the oil pump cable lock nut ⑤ and align the marks by turning the adjuster ⑥.
- Tighten the lock nut ⑤ securely.

**CAUTION:**

Adjust the oil pump cable after adjusting the throttle cable. (Page 2-6)



## CONTACT POINTS AND IGNITION TIMING

Inspect initial 1 000 km (2 months) and 3 000 km (6 months).

### CONTACT POINTS

#### Point wear

Remove the magneto rotor cover and check the condition of contact point surfaces. Correct the minor wear of the surface with a point file or flex stone, otherwise replace the points as a set.

#### Point gap check

Check the point gap according to the above intervals or everytime the points are replaced in the following manner:

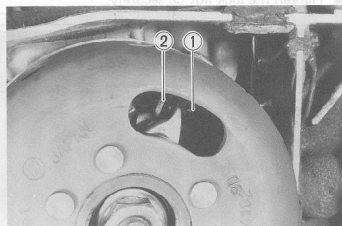
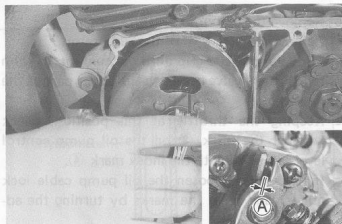
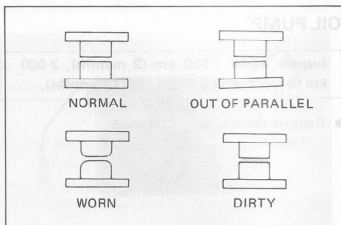
- Rotate the magneto rotor slowly until the gap is "largest."
- Check the gap **A** with the thickness gauge and see if the measurement is within the standard range.

Point gap <b>A</b>	0.3 – 0.4 mm
09900-20804	Thickness gauge

#### Point gap adjustment

If the measurement is out of the standard range, adjust the gap in the following manner:

- Loosen the screw **1**.
- Rotate the plate **2** with a plane head screwdriver and adjust to the correct point gap with the thickness gauge.
- Tighten the screw **1**.
- Finally check the gap as required.



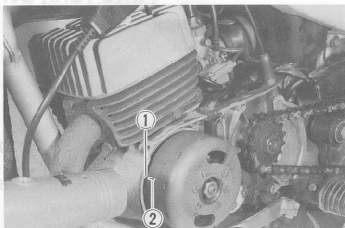
- Make sure that the breather is clean and unobstructed, and is routed away from the photograph.

## ENGINE REMOVAL AND REMOUNTING (OIL PUMP)

**IGNITION TIMING CHECK  
(USING TIMING LIGHT)****Check**

- After adjusting the point gap, connect the timing light cord to the high tension cord.
- Start the engine.
- Aim the timing light at the aligning mark ① on the crankcase.

If the line ② on the magneto rotor is aligned with the mark ①, correct ignition timing is provided.



09900-27311

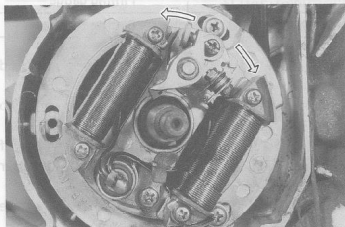
Timing light

If not, adjust the timing in the following manner:

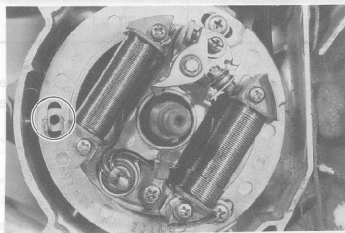
**Adjustment**

With correct contact point gap, the stator is needed to be adjusted by removing the magneto rotor. (Page 3-10)

- In the case of "late" timing, loosen the three screws and turn the stator clockwise to catch up.
- In the case of "early" timing, turn the stator counterclockwise.
- Repeat the adjustment until correct timing is obtained by checking with the timing tester.
- For the installation of the magneto rotor refer to page 3-29.

**NOTE:**

Standard location of the stator is determined by aligning the marks.

**REMOUNTING**

Connect the oil pump cable in the reverse order of the removal, and also following adjustments are necessary.

- \* Oil pump air bleeding . . . . . Page 3-12
- \* Oil pump capacity inspection . . . . . Page 3-12
- \* Throttle cable adjustment . . . . . Page 3-8
- \* Oil pump adjustment . . . . . Page 3-6

For the installation of the magneto rotor refer to page 3-29.

**NOTE:**  
Standard location of the stator is determined by aligning the marks. (page 8-8)

### IGNITION TIMING CHECK (USING TIMING GAUGE AND TESTER)

#### Check

The ignition timing can also be checked by measuring the piston stroke in the following manner:

- Adjust the point gap. (Page 8-7)
- Remove the spark plug and install the timing gauge ①.
- Connect one timing tester lead to B/Y lead under the fuel tank, the other lead to a ground.

09931-00112	Timing gauge
09900-27003	Timing tester

- Turn the crankshaft clockwise slowly and find TDC on the dial gauge.
- Set the dial indicator on the timing gauge to "ZERO."
- Turn the crankshaft clockwise slowly (reverse of normal engine rotation) and stop when the tester sound fades out.
- Read the dial gauge indication. This shows the ignition timing in piston travel from TDC.

Piston distance	1.20 – 1.85 mm
-----------------	----------------

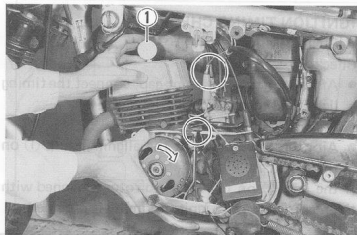
#### Adjustment

If the reading is out of the standard range, the stator is needed to be adjusted by removing the magneto rotor. (Page 3-10)

- In case of the reading is above the range ("late" timing), turn the stator clockwise.
- In case of the reading is below the range ("early" timing), turn the stator counterclockwise.
- Repeat the adjustment until correct timing is obtained reading the timing gauge.
- For the installation of the magneto rotor refer to page 3-29.

#### NOTE:

Standard location of the stator is determined by aligning the marks. (Page 8-8)



## ENGINE REMOVAL AND REMOUNTING (OIL PUMP)

### REMOVAL

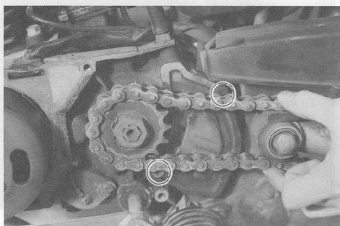
Before removing the engine from the motorcycle, the oil pump cable must be disconnected in the following manner:

- Remove the magneto rotor cover.



- Hold the motorcycle upright and remove the screw (1), and let the air bleed out.
- After the work is completed, tighten the screw again.

- Remove the oil pump cover.



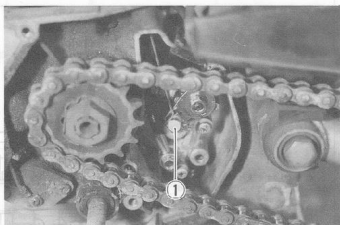
09900 21800 Oil gauge

Check the oil pump in the following manner:

- Have the gauge filled with CCI SUPER OIL and connect it to the suction side of the pump.
- Run the engine at 3 000 r/min.

- Holding engine speed at the same 3 000 r/min,

- Disconnect the oil pump cable (1) position and let the pump draw for 3 minutes. For this operation, the reading taken on the device should be from 0.9 – 1.1 ml.



3 minutes at 3 000 r/min (full open position)

Oil-discharge amount	0.9
----------------------	-----

- Connect the oil pump hose correctly as shown in the illustration.
- Adjust the throttle cable adjustment. Page 2-6

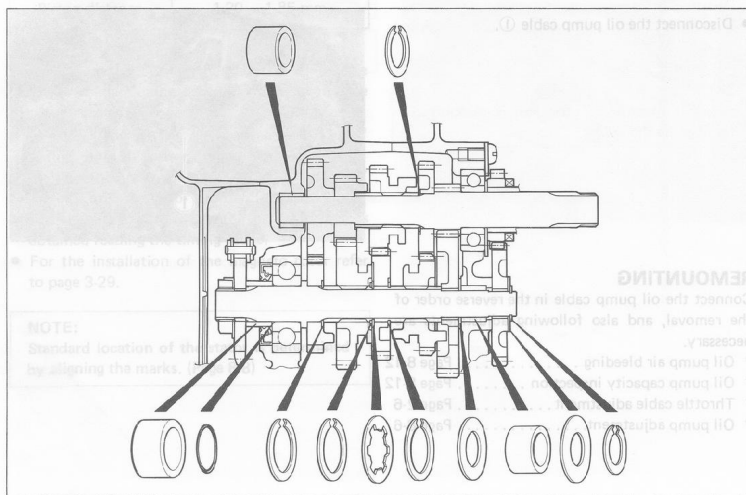
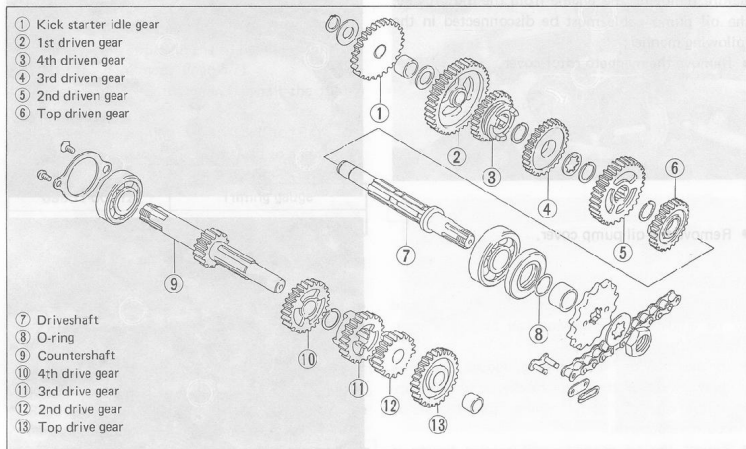
### REMOUNTING

Connect the oil pump cable in the reverse order of the removal, and also following adjustments are necessary.

- \* Oil pump air bleeding . . . . . Page 8-12
- \* Oil pump capacity inspection . . . . . Page 8-12
- \* Throttle cable adjustment . . . . . Page 2-6
- \* Oil pump adjustment. . . . . Page 8-6

## TRANSMISSION (ENGINE REMOVAL AND REMOUNTING)

As this motorcycle is 5 speed, the Top (5th) drive and driven gears are provided instead of the spacers.



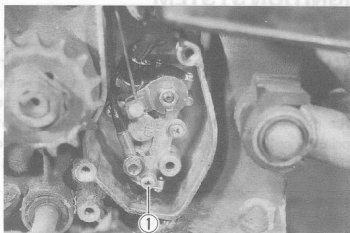


## OIL PUMP

### AIR BLEEDING

Whenever evidence is noted of some air having leaked into the oil pipe from the oil tank in a machine brought in for servicing, or if the oil pump has to be removed for servicing, be sure to carry out an air bleeding operation with the oil pump in place.

- Hold the motorcycle upright and loosen the screw ① and let the air out.
- After the trapped air has all been bled, tighten the screw good and hard.



### CHECKING OIL PUMP

Use the special tool, to check the pump for capacity by measuring the amount of oil the pump draws during the specified interval.

09900-21602

CCI oil gauge

Check the oil pump in the following manner:

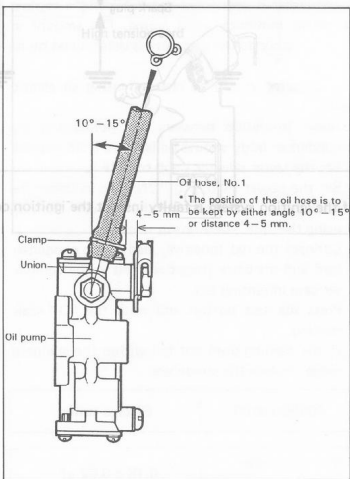
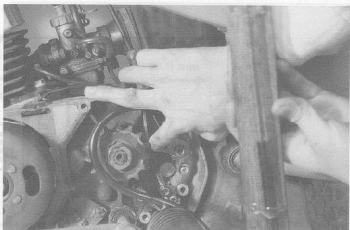
- Have the gauge filled with CCI SUPER OIL and connect it to the suction side of the pump.
- Run the engine at 3 000 r/min.
- Holding engine speed at the same 3 000 r/min, move the lever up to the fully open position and let the pump draw for 3 minutes. For this operation, the reading taken on the device should be from 0.9 – 1.1 ml.

3 minutes at 3 000 r/min (full open position)

Oil discharge amount

0.9 – 1.1 ml

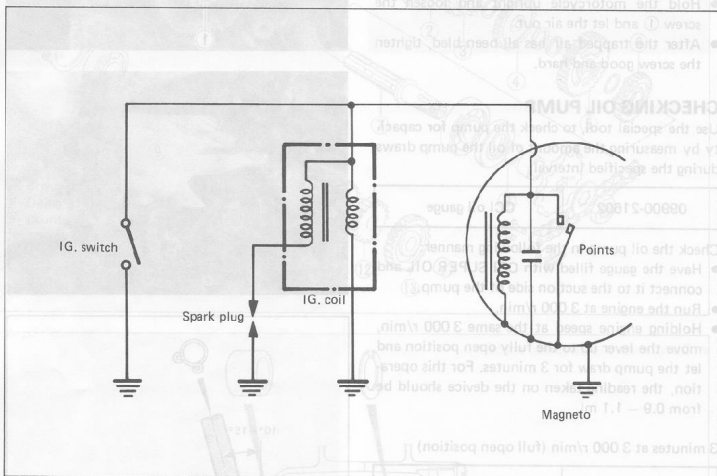
- Connect the oil pump hose correctly as shown in the illustration.
- Adjust the throttle and oil pump cable. (Page 2-6, 8-6)



## IGNITION SYSTEM

### DESCRIPTION

The flywheel magneto type ignition system is wired as shown in the diagram. As the flywheel magneto rotates, current is generated in the primary coil mounted on the stator. When the breaker points close, this current flows to ground through them, because the primary coil is grounded and thus has no influence on the primary ignition coil. When the contact points open, the current induced in the flywheel magneto primary coil flows into the primary ignition coil to provide high voltage induction in the secondary coil, thereby creating a sufficiently strong spark to jump the spark plug electrode gap.



If the ignition system is faulty inspect the ignition coil, stator coil and condenser as follows:

## CHARGING AND LIGHTING SYSTEM

## IGNITION COIL INSPECTION

## CHECKING WITH ELECTRO TESTER

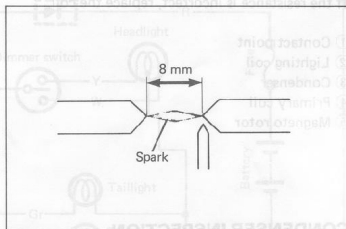
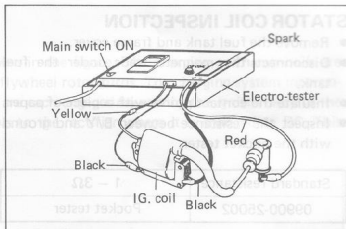
- Set the power switch "OFF".
- Connect the leads as follows:
 

ELECTRO TESTER	IGNITION COIL
Yellow test lead	– B/Y
Black test lead	– Ground
Black ⊖ lead	– Ground
Red ⊕ lead	– Plug cap

- Set the test selector knob to "IG. COIL".
- Set the power switch "ON".
- Note the spark in the spark gap window. It should be strong and continuous, not intermittent, across a preset 8 mm (0.8 in) gap. Allow the spark to jump the test gap for at least five minutes continuously, to insure proper operation under the temperature conditions of actual riding.

09900-28106

Electro tester

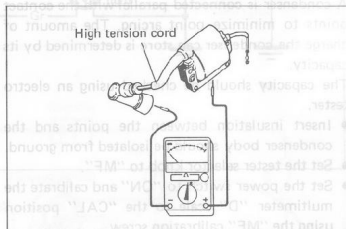


## CHECKING WITH POCKET TESTER

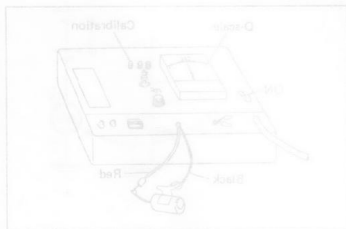
A SUZUKI pocket tester or an ohm meter may be used, instead of the electro tester. In either case, the ignition coil is to be checked for continuity in both primary and secondary windings. Exact ohmic readings are not necessary, but, if the windings are in sound condition, their continuity will be noted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

09900-25002

Pocket tester



Primary	B/Y – Ground	Approx. 0 – 1Ω
Secondary	Plug cap – Ground	Approx. 15 – 18 kΩ



- Connect the red (positive) lead to the condenser lead and the black (negative) lead to the condenser case mounting cap.
- Press the test button and note the "Q" scale reading.
- If the reading does not fall within the standard range, replace the condenser.

Electro tester

09900-28106

0.18 ± 0.02 %

STD condenser  
capacity range

## IGNITION SYSTEM

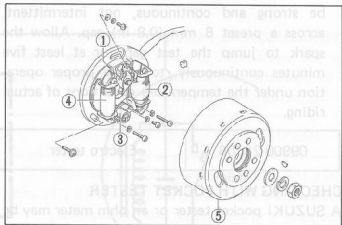
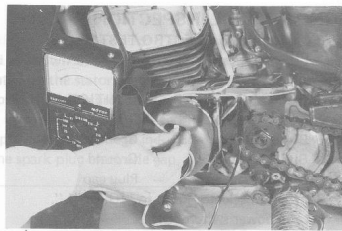
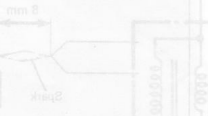
### STATOR COIL INSPECTION

- Remove the fuel tank and frame cover.
- Disconnect the magneto leads under the fuel tank.
- Insulate the contact points with a piece of paper.
- Inspect the resistance between B/Y and ground with the pocket tester.

Standard resistance	1 – 3 $\Omega$
09900-25002	Pocket tester

If the resistance is incorrect, replace the coil.

- ① Contact point
- ② Lighting coil
- ③ Condenser
- ④ Primary coil
- ⑤ Magneto rotor



### CONDENSER INSPECTION

A condenser is connected parallel with the contact points to minimize point arcing. The amount of charge the condenser can store is determined by its capacity.

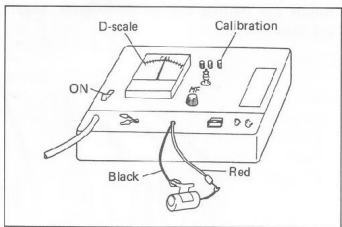
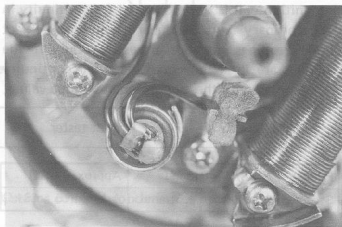
The capacity should be checked using an electro tester.

- Insert insulation between the points and the condenser body should be isolated from ground.
- Set the tester selector knob to "MF".
- Set the power switch to "ON" and calibrate the multimeter "D" scale to the "CAL" position using the "MF" calibration screw.
- Connect the red (positive) lead to the condenser lead and the black (negative) lead to the condenser case mounting tab.
- Press the test button and note the "D" scale reading.

If the reading does not fall within the standard range, replace the condenser.

09900-28106	Electro tester
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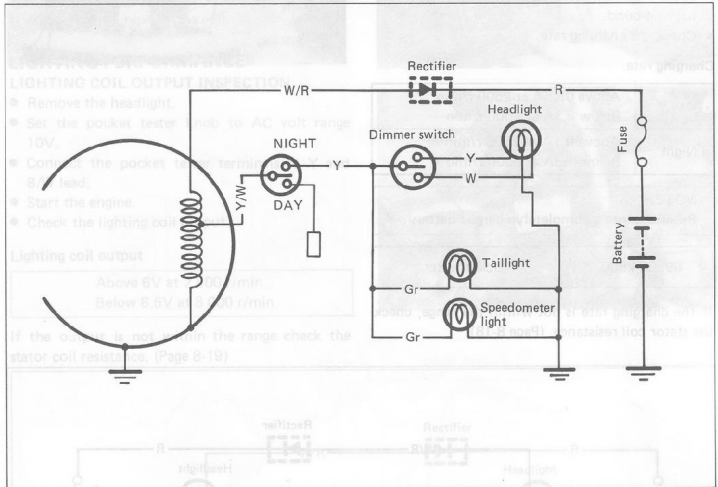
STD condenser capacity range	0.18 $\pm$ 0.02 $\mu$ F
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## CHARGING AND LIGHTING SYSTEM

### DESCRIPTION

The charging system uses the flywheel magneto as shown in the figure. The charging and lamp coils are mounted on the magneto stator and generate AC as the flywheel rotor turns. The charging system incorporates two circuits, for day or night riding. These circuits are each engaged by setting the ignition key to the proper position. AC generated in the charging coil flows to the rectifier where it is changed to DC. This DC then charges the battery.



## CHARGING PERFORMANCE

### CHARGING RATE INSPECTION

- Disconnect the battery B/W lead.
- Start the engine.
- Set the pocket tester knob to DC Ampere range 20A.
- Connect the pocket tester  $\oplus$  terminal to the battery  $\ominus$  terminal and pocket tester  $\ominus$  terminal to ground.
- Check the charging rate.

### Charging rate

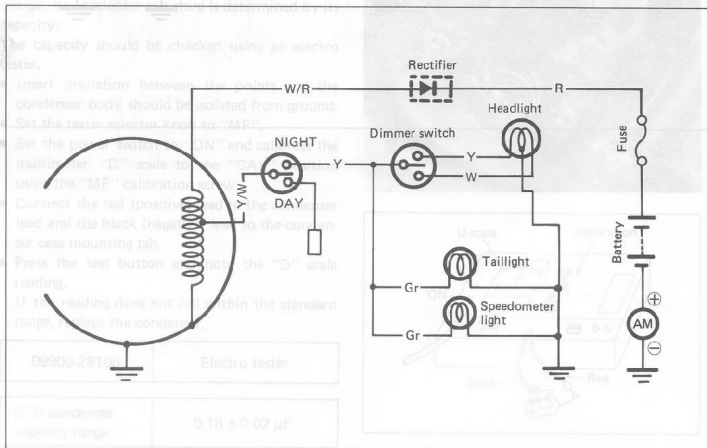
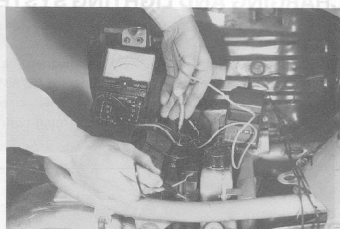
Day	Above 0.15A at 2500 r/min Below 3.3A at 8000 r/min
Night	Above 0.1A at 2500 r/min Below 1.8A at 8000 r/min

#### NOTE:

Be sure to use a completely charged battery.

09900-25002	Pocket tester
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If the charging rate is not within the range, check the stator coil resistance. (Page 8-18)



## ELECTRIC LIGHT BULB

## STATOR COIL INSPECTION

- Disconnect the magneto leads under the fuel tank.
- Inspect the continuity between W/R and ground with the pocket tester for continuity.

09900-25002

Pocket tester

If no continuity, replace the coil.

## LIGHTING PERFORMANCE

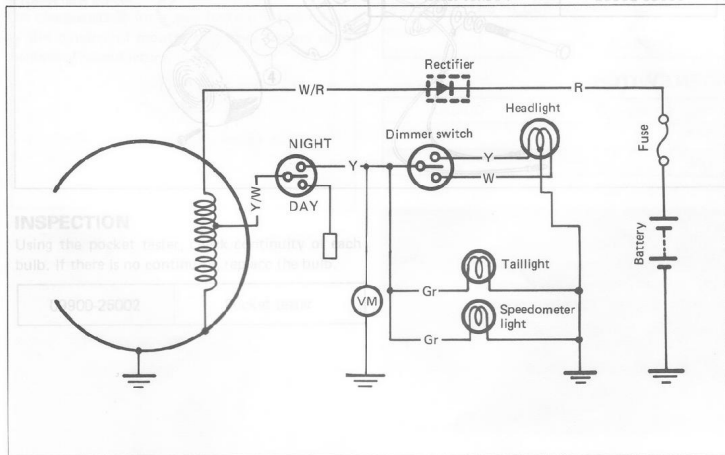
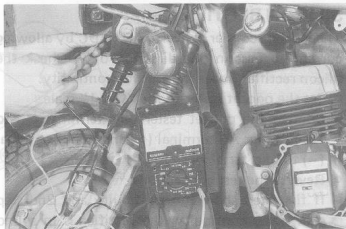
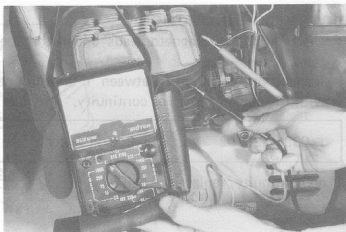
## LIGHTING COIL OUTPUT INSPECTION

- Remove the headlight.
- Set the pocket tester knob to AC volt range 10V.
- Connect the pocket tester terminals to Y and B/W lead.
- Start the engine.
- Check the lighting coil output.

## Lighting coil output

Above 6V at 2 500 r/min  
Below 8.5V at 8 000 r/min

If the output is not within the range check the stator coil resistance. (Page 8-19)



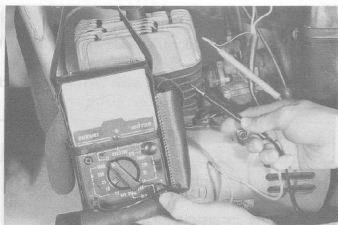
**STATOR COIL INSPECTION**

- Disconnect the magneto leads under the fuel tank.
- Inspect the continuity between Y and ground with the pocket tester for continuity.

09900-25002

Pocket tester

If no continuity, replace the coil.

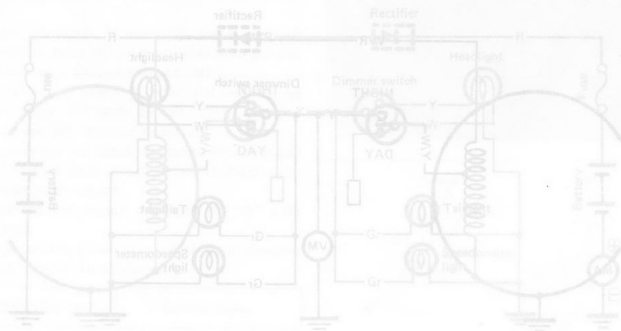
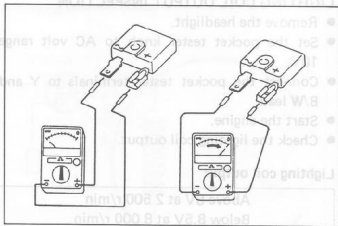
**SILICON RECTIFIER**

The silicon rectifier converts AC to DC by allowing current to pass in one direction only. Check the silicon rectifier under the seat for continuity.

- Set the pocket tester to the " $\Omega \times 1$ " scale.
- Contact the pocket tester plus terminal (+) to the rectifier AC terminal ( $\sim$ ) and minus terminal (-) to plus terminal (+).
- Reverse the test connections.
- If first step shows no continuity and 2nd step shows any continuity, the rectifier is in sound condition.

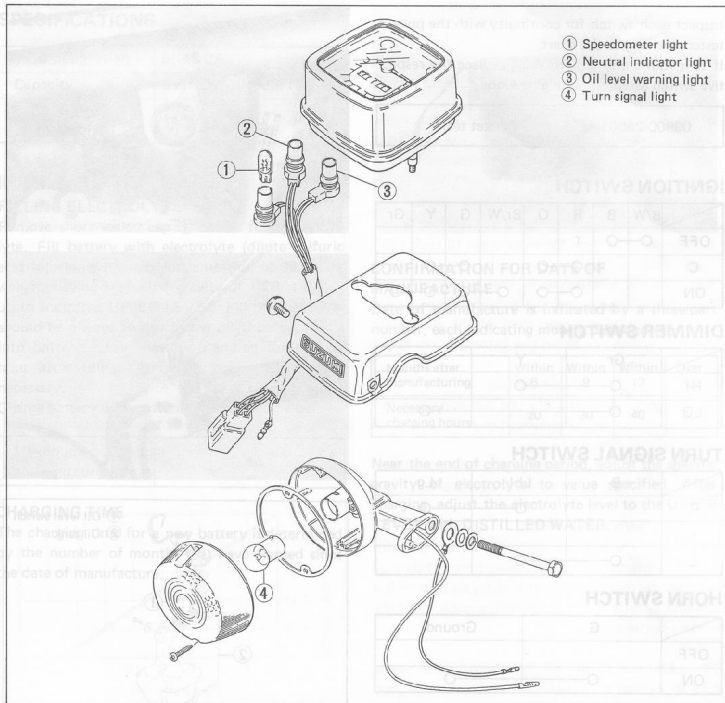
09900-25002

Pocket tester





## ELECTRIC LIGHT BULB



## INSPECTION

Using the pocket tester, check continuity of each bulb. If there is no continuity, replace the bulb.

09900-25002

Pocket tester

## SWITCH

Inspect each switch for continuity with the pocket tester referring to the chart.

If it is found any abnormality, replace the respective switch assembly with a new one.

09900-25002	Pocket tester
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## IGNITION SWITCH

	B/W	B	R	O	Br/W	G	Y	Gr
OFF	○—○							
C			○—○			○—○		
ON			○—○		○—○			○—○

## DIMMER SWITCH

	Gr	Y	W
HI	○—○	○—○	
LO	○—○		○—○

## TURN SIGNAL SWITCH

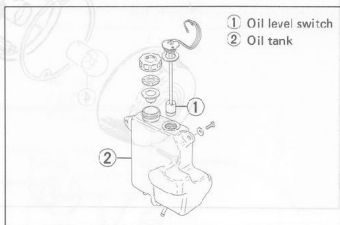
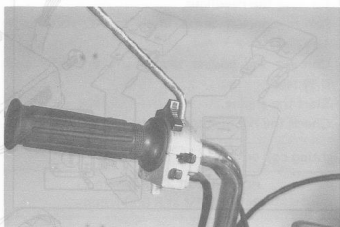
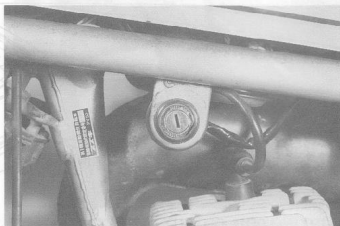
	B	Lbl	Lg
R		○—○	○—○
.			
L	○—○	○—○	

## HORN SWITCH

	G	Ground
OFF		
ON	○—○	○—○

## OIL LEVEL SWITCH INSPECTION

Check the oil level switch for continuity between Bl/W and B/W lead wires. If the tester does not show the value of 0 – 1 ohm when the switch ring is in bottom, file the contact surface or replace the unit.



## BATTERY

### SPECIFICATIONS

Type designation	6N4B 2A
Capacity	6V 14.4kC (4Ah)/10HR
Standard electrolyte S.G.	1.26 at 20°C

### INITIAL CHARGING

#### FILLING ELECTROLYTE

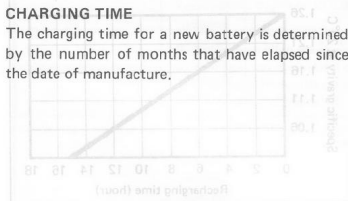
Remove short sealed cap ① before filling electrolyte. Fill battery with electrolyte (dilute sulfuric acid solution with acid concentration of 35.0% by weight, having a specific gravity of 1.26 at 20°C) up to indicated UPPER LEVEL. Filling electrolyte should be always cooled below 30°C before filling into battery. Leave battery standing for half an hour after filling. Add additional electrolyte if necessary.

Charge battery with current as described below.

Maximum charging current	0.4A
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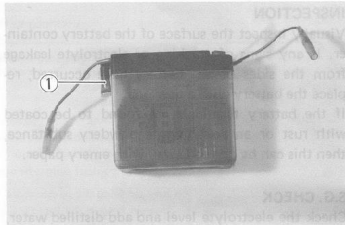
#### CHARGING TIME

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



### REMOUNTING

When installing the battery make sure that the breather pipe is tightly secured and undamaged, and is routed as shown in the photograph.



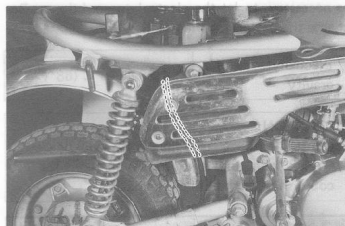
### CONFIRMATION FOR DATE OF MANUFACTURE

Date of manufacture is indicated by a three-part number, each indicating month, data and year.

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

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

Be careful not to permit the electrolyte temperature to exceed 45°C (113°F) at any time during the recharging operation. Interrupt the operation



**SERVICING INSPECTION**

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 emery paper.

**S.G. CHECK**

Check the electrolyte level and add distilled water, as necessary, to raise the electrolyte to each cell's upper level.

Draw up the electrolyte in the hydrometer and read the S.G. by bringing the hydrometer to eye level. Measure the temperature of the electrolyte and find which condition the battery is, using the right diagram.

"Normal" . . . . . Fully charged  
 "Recharge" . . . . . Battery is a run condition but recommend to recharge.

"Recharge or Replace"  
 . . . . . Battery is run-down condition and must be recharged.

**RECHARGING OPERATION**

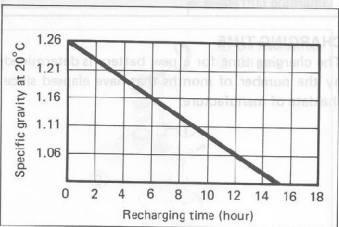
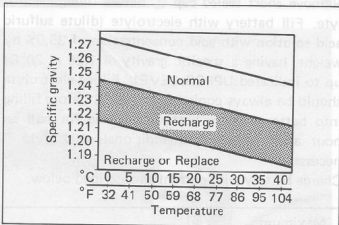
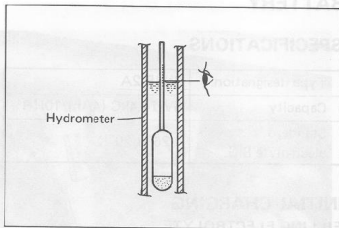
Check the reading (as corrected to 20°C) with chart to determine the recharging time in hours by constant-current charging at a charging rate of 0.4 amperes (which is one tenth of the capacity of the present battery.)

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.

Electrolyte specific gravity	1.26 at 20°C (68°F)
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**CAUTION:**  
 Constant-voltage charging, otherwise called "quick" charging, is not recommendable for it could shorten the life of the battery.

09900-28403	Hydrometer
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## 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.

Engine overheats	<ol style="list-style-type: none"> <li>1. Insufficient cooling water</li> <li>2. Water pump or fan belt loose</li> <li>3. Dirty radiator</li> <li>4. Fan blades bent</li> <li>5. Fan belt worn</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace fan belt</li> <li>2. Replace fan belt</li> <li>3. Clean radiator</li> <li>4. Replace fan blades</li> <li>5. Replace fan belt</li> </ol>
Noisy engine	<ol style="list-style-type: none"> <li>1. Loose bearing cap</li> <li>2. Loose bearing cap</li> <li>3. Loose bearing cap</li> <li>4. Loose bearing cap</li> <li>5. Loose bearing cap</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten bearing cap</li> <li>2. Tighten bearing cap</li> <li>3. Tighten bearing cap</li> <li>4. Tighten bearing cap</li> <li>5. Tighten bearing cap</li> </ol>
Slipping clutch	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment or too much play</li> <li>2. Weakened clutch springs</li> <li>3. Worn or distorted pressure plate</li> <li>4. Distorted clutch plates, driven and drive</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust clutch control</li> <li>2. Replace clutch springs</li> <li>3. Replace pressure plate</li> <li>4. Replace clutch plates</li> </ol>
Dragging clutch	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment or too much play</li> <li>2. Some clutch springs weakened while others are not</li> <li>3. Distorted pressure plate or clutch plates</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust clutch control</li> <li>2. Replace clutch springs</li> <li>3. Replace pressure plate</li> </ol>
Transmission will not shift	<ol style="list-style-type: none"> <li>1. Broken gearshift cam</li> <li>2. Distorted gearshift fork</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace gearshift cam</li> <li>2. Replace gearshift fork</li> </ol>
Transmission will not shift back	<ol style="list-style-type: none"> <li>1. Broken return spring on shift shaft</li> <li>2. Shift shaft not rubbing or sticky</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace return spring</li> <li>2. Clean or replace shift shaft</li> </ol>

## TROUBLESHOOTING

## ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start, or is hard to start.	<p><b>Plug not sparking</b></p> <ol style="list-style-type: none"> <li>1. Fouled spark plug.</li> <li>2. Wet spark plug.</li> <li>3. Defective ignition coil.</li> <li>4. Open or short in high-tension cord.</li> <li>5. Defective contact points or condenser.</li> </ol> <p><b>No fuel reaching the carburetors</b></p> <ol style="list-style-type: none"> <li>1. Clogged hole in the fuel tank cap.</li> <li>2. Clogged or defective fuel cock.</li> <li>3. Defective carburetor needle valve.</li> <li>4. Clogged fuel pipe.</li> </ol>	<p>Clean.</p> <p>Clean and dry.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Engine stalls easily.	<ol style="list-style-type: none"> <li>1. Fouled spark plug.</li> <li>2. Defective contact points or condenser.</li> <li>3. Clogged fuel pipe.</li> <li>4. Clogged jets in carburetor.</li> </ol>	<p>Clean.</p> <p>Replace.</p> <p>Replace.</p> <p>Clean.</p>
Noisy engine.	<p><b>Noise appears to come from piston</b></p> <ol style="list-style-type: none"> <li>1. Piston or cylinder worn down.</li> <li>2. Combustion chamber fouled with carbon.</li> <li>3. Piston pin or piston pin bore worn.</li> <li>4. Piston ring groove worn.</li> <li>5. Piston pin bearing worn.</li> </ol> <p><b>Noise seems to come from clutch</b></p> <ol style="list-style-type: none"> <li>1. Worn splines of countershaft or hub.</li> <li>2. Worn teeth of clutch plates.</li> <li>3. Distorted clutch plates, driven and drive.</li> </ol> <p><b>Noise seems to come from crankshaft</b></p> <ol style="list-style-type: none"> <li>1. Rattling bearings due to wear.</li> <li>2. Big-end bearing worn and burnt.</li> <li>3. Journal bearing worn and burnt.</li> </ol>	<p>Replace.</p> <p>Clean.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Noisy engine.	<p><b>Noise seems to come from transmission</b></p> <ol style="list-style-type: none"> <li>1. Gears worn or rubbing.</li> <li>2. Badly worn splines.</li> <li>3. Primary gears worn or rubbing.</li> </ol>	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Slipping clutch	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment or loss of play.</li> <li>2. Weakened clutch springs.</li> <li>3. Worn or distorted pressure plate.</li> <li>4. Distorted clutch plates, driven and drive.</li> </ol>	<p>Adjust.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Dragging clutch	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment or too much play.</li> <li>2. Some clutch springs weakened while others are not.</li> <li>3. Distorted pressure plate or clutch plates.</li> </ol>	<p>Adjust.</p> <p>Replace.</p> <p>Replace.</p>
Transmission will no shift.	<ol style="list-style-type: none"> <li>1. Broken gearshift cam.</li> <li>2. Distorted gearshift forks.</li> </ol>	<p>Replace.</p> <p>Replace.</p>
Transmission will no shift back.	<ol style="list-style-type: none"> <li>1. Broken return spring on shift shaft.</li> <li>2. Shift shafts are rubbing or sticky.</li> </ol>	<p>Replace.</p> <p>Repair or replace.</p>

Complaint	Symptom and possible causes	Remedy
<b>Transmission jumps out of gear.</b>	<ol style="list-style-type: none"> <li>1. Worn shifting gears on driveshaft or countershaft.</li> <li>2. Distorted or worn gearshift forks.</li> <li>3. Weakened stopper spring on gearshift stopper.</li> </ol>	<p>Replace. Replace. Replace.</p>
<b>Engine idles poorly.</b>	<ol style="list-style-type: none"> <li>1. Spark plug gaps too wide.</li> <li>2. Defective ignition coil.</li> <li>3. Defective contact points or condenser.</li> <li>4. Float-chamber fuel level out of adjustment in carburetor.</li> <li>5. Clogged jets.</li> </ol>	<p>Adjust or replace. Replace. Replace. Adjust. Clean or adjust.</p>
<b>Engine runs poorly in high-speed range.</b>	<ol style="list-style-type: none"> <li>1. Spark plug gaps too narrow.</li> <li>2. Clogged jets.</li> <li>3. Defective ignition coil.</li> <li>4. Defective contact points or condenser.</li> <li>5. Float-chamber fuel level too low.</li> <li>6. Clogged air cleaner element.</li> <li>7. Clogged fuel pipe, resulting in inadequate fuel supply to carburetor.</li> </ol>	<p>Adjust or replace. Clean. Replace. Adjust. Clean. Clean. Clean.</p>
<b>Dirty or heavy exhaust smoke.</b>	<ol style="list-style-type: none"> <li>1. Damage or worn crankshaft oil seal.</li> </ol>	Replace.
<b>Engine lacks power.</b>	<ol style="list-style-type: none"> <li>1. Worn piston rings or cylinder.</li> <li>2. Spark plug gaps incorrect.</li> <li>3. Clogged jets in carburetors.</li> <li>4. Float-chamber fuel level out of adjustment.</li> <li>5. Clogged air cleaner element.</li> <li>6. Sucking air from intake pipe.</li> <li>7. Too much engine oil in the engine.</li> </ol>	<p>Replace. Adjust or replace. Clean. Adjust. Clean. Retighten or replace. Drain out excess oil.</p>
<b>Engine overheats.</b>	<ol style="list-style-type: none"> <li>1. Heavy carbon deposit on piston crown.</li> <li>2. Not enough oil in the engine.</li> <li>3. Fuel level too low in float chambers.</li> <li>4. Sucking air from intake pipes.</li> <li>5. Using incorrect engine oil.</li> </ol>	<p>Clean. Add oil. Adjust. Retighten or replace. Change.</p>

## CARBURETOR

Complaint	Symptom and possible causes	Remedy
<b>Trouble with starting.</b>	<ol style="list-style-type: none"> <li>1. Starter jet is clogged.</li> <li>2. Starter pipe is clogged.</li> <li>3. Air leaking from carburetor's joint or oil pump adjusting hole screw.</li> <li>4. Starter plunger is not operating properly.</li> </ol>	Clean. Clean. Check and retighten. Repair.
<b>Idling or low-speed trouble.</b>	<ol style="list-style-type: none"> <li>1. Pilot jet is clogged or loose.</li> <li>2. Sucking air from carburetor's joint, oil pump adjusting hole screw or starter.</li> <li>3. Pilot outlet is clogged.</li> <li>4. Starter plunger is not fully closed.</li> </ol>	Clean. Check and retighten. Clean. Adjust.
<b>Medium- or high-speed trouble.</b>	<ol style="list-style-type: none"> <li>1. Main jet is clogged.</li> <li>2. Needle jet is clogged.</li> <li>3. Throttle valve is not operating properly.</li> <li>4. Filter is clogged.</li> </ol>	Clean. Clean. Clean or replace. Clean.
<b>Overflow and fuel level fluctuations.</b>	<ol style="list-style-type: none"> <li>1. Needle valve is worn or damaged.</li> <li>2. Float is not working properly.</li> <li>3. Foreign matter has adhered to needle valve.</li> <li>4. Fuel level is too high or low.</li> <li>5. Clogged carburetor air vent pipe.</li> </ol>	Replace. Adjust. Clean. Adjust float height. Clean.

## ELECTRICAL

Complaint	Symptom and possible causes	Remedy
<b>No sparking or poor sparking.</b>	<ol style="list-style-type: none"> <li>1. Defective ignition coil.</li> <li>2. Defective spark plug.</li> <li>3. Defective contact points or condenser.</li> </ol>	Replace. Replace. Replace.
<b>Spark plug soon become fouled with carbon.</b>	<ol style="list-style-type: none"> <li>1. Mixture too rich.</li> <li>2. Idling speed set too high.</li> <li>3. Incorrect gasoline.</li> <li>4. Dirty element in air cleaner.</li> <li>5. Spark plug too cold.</li> </ol>	Adjust carburetor. Adjust carburetor. Change. Clean. Replace by hot type plug.
<b>Spark plug become fouled too soon.</b>	<ol style="list-style-type: none"> <li>1. Worn piston rings.</li> <li>2. Piston or cylinder worn.</li> </ol>	Replace. Replace.
<b>Spark plug electrodes overheat or burn.</b>	<ol style="list-style-type: none"> <li>1. Spark plug too hot.</li> <li>2. The engine overheats.</li> <li>3. Spark plug loose.</li> <li>4. Mixture too lean.</li> </ol>	Replace by cold type plug. Tune up. Retighten. Adjust carburetor.
<b>Magneto does not generate.</b>	<ol style="list-style-type: none"> <li>1. Open or short in lead wires, or loose lead connections.</li> <li>2. Shorted, grounded or open magneto coils.</li> </ol>	Repair or replace or retighten. Replace.
	<ol style="list-style-type: none"> <li>2. Distorted gear shafts, forks.</li> </ol>	Repair.
	<ol style="list-style-type: none"> <li>1. Broken return spring on shift shaft.</li> <li>2. Shift shafts are rubbing or sticky.</li> </ol>	Replace. Repair or replace.



## HARNES ROUTING

## WIRING DIAGRAM

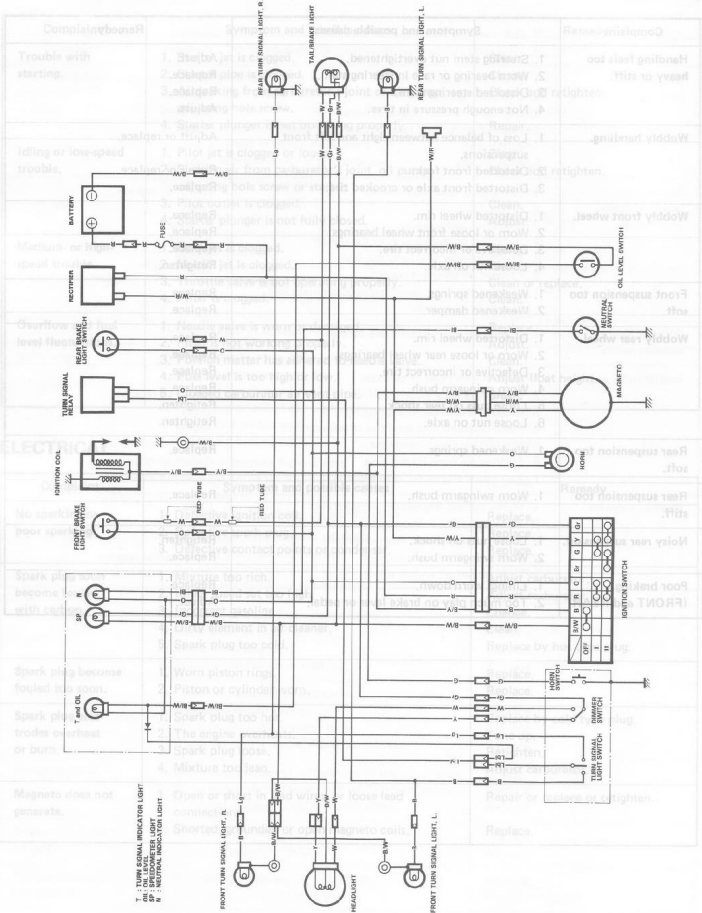
## CHASSIS

Complaint	Symptom and possible causes	Remedy
Handling feels too heavy or stiff.	<ol style="list-style-type: none"> <li>1. Steering stem nut overtightened.</li> <li>2. Worn bearing or race in steering stem.</li> <li>3. Distorted steering stem.</li> <li>4. Not enough pressure in tires.</li> </ol>	Adjust. Replace. Replace. Adjust.
Wobbly handling.	<ol style="list-style-type: none"> <li>1. Loss of balance between right and left front suspensions.</li> <li>2. Distorted front fork.</li> <li>3. Distorted front axle or crooked tire.</li> </ol>	Adjust or replace. Repair or replace. Replace.
Wobbly front wheel.	<ol style="list-style-type: none"> <li>1. Distorted wheel rim.</li> <li>2. Worn or loose front wheel bearings.</li> <li>3. Defective or incorrect tire.</li> <li>4. Loose nut on axle.</li> </ol>	Replace. Replace. Replace. Retighten.
Front suspension too soft.	<ol style="list-style-type: none"> <li>1. Weakened springs.</li> <li>2. Weakened damper.</li> </ol>	Replace. Replace.
Wobbly rear wheel.	<ol style="list-style-type: none"> <li>1. Distorted wheel rim.</li> <li>2. Worn or loose rear wheel bearings.</li> <li>3. Defective or incorrect tire.</li> <li>4. Worn swingarm bush.</li> <li>5. Loose nuts on rear shock.</li> <li>6. Loose nut on axle.</li> </ol>	Replace. Replace. Replace. Replace. Retighten. Retighten.
Rear suspension too soft.	<ol style="list-style-type: none"> <li>1. Weakened springs.</li> </ol>	Replace.
Rear suspension too stiff.	<ol style="list-style-type: none"> <li>1. Worn swingarm bush.</li> </ol>	Replace.
Noisy rear suspension.	<ol style="list-style-type: none"> <li>1. Loose nuts on shock.</li> <li>2. Worn swingarm bush.</li> </ol>	Retighten. Replace.
Poor braking. (FRONT and REAR)	<ol style="list-style-type: none"> <li>1. Linings worn down.</li> <li>2. Too much play on brake lever or pedal.</li> </ol>	Replace. Adjust.

## WIRING DIAGRAM

LAMP/RETOR

CHASSIS

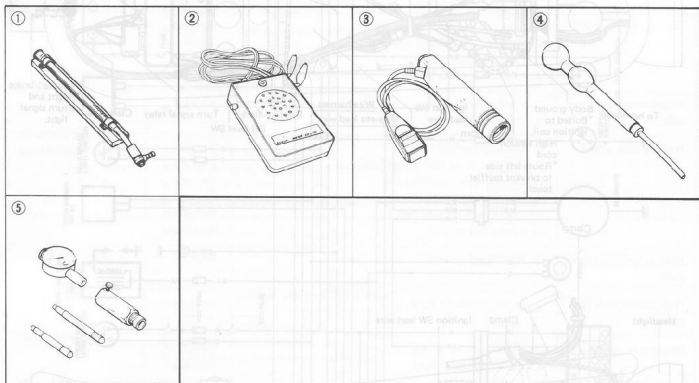




## SPECIAL TOOLS

HARNES ROUTING

ITEM	PART NO.	PART NAME
①	09900-21602	CCI Oil gauge
②	09900-27003	Timing tester
③	09900-27311	Timing light
④	09900-28403	Hydrometer
⑤	09931-00112	Timing gauge



## SERVICE DATA

## CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD		LIMIT	
Piston to cylinder clearance	0.065 – 0.075		0.120	
Cylinder bore	41.000 – 41.015 Measure at 15 mm from the top surface		41.065	
Piston diam.	40.930 – 40.945 Measure at 23 mm from the skirt end		40.880	
Cylinder distortion	—		0.05	
Cylinder head distortion	—		0.05	
Piston ring free end gap	1st	R	Approx. 4.5	3.6
		T	Approx. 4.5	3.6
	2nd	R	Approx. 4.5	3.6
		T	Approx. 4.5	3.6
Piston ring end gap	0.10 – 0.25		0.75	
Piston ring to groove clearance	1st & 2nd	0.01 – 0.05	—	
Piston pin bore	11.998 – 12.006		12.030	
Piston pin O.D.	11.995 – 12.000		11.980	

## CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD		LIMIT
Conrod small end I.D.	16.003 – 16.011		16.040
Conrod deflection	—		3.0
Crank web to web width	40.0 ± 0.1		—
Crankshaft runout	—		0.05

## OIL PUMP

Unit: mm

ITEM	SPECIFICATION
Oil pump reduction ratio	6.769 (73/19 x 29/21 x 37/29)
CCI pump discharge rate (Full open)	0.9 – 1.1 ml for 3 minutes at 3 000 r/min.

## CLUTCH

Unit: mm

ITEM	STANDARD	LIMIT
Clutch cable play	2 – 3	—
Drive plate thickness	2.9 – 3.1	2.6
Drive plate claw width	11.8 – 12.0	11.0
Driven plate distortion	—	0.10
Clutch spring free length	—	33.7

## TRANSMISSION

Unit: mm (Except ratio)

ITEM		STANDARD	LIMIT
Primary reduction ratio		3.842 (73/19)	—
Final reduction ratio		2.500 (35/14)	—
Gear ratios	Low	3.166 (38/12)	—
	2nd	1.941 (33/17)	—
	3rd	1.380 (29/21)	—
	4th	1.083 (26/24)	—
	Top	0.923 (24/26)	—
Shift fork to groove clearance		No. 1, No. 2 & No. 3	0.10 – 0.30 0.50
Shift fork groove width		No. 1, No. 2 & No. 3	4.45 – 4.55
Shift fork thickness		No. 1, No. 2 & No. 3	4.25 – 4.35
Countershaft length (Low to Spacer)		76.0 – 76.1	—

## DRIVE CHAIN

ITEM	STANDARD	LIMIT
Drive chain	Type	DAIDO: DID420 TAKASAGO: RK420M
	Links	88
	20-pitch length	— 442.6 mm
Drive chain slack	20 – 30 mm	—

## CARBURETOR

ITEM	SPECIFICATION
Carburetor type	MIKUNI VM14SH
Bore size	14 mm
I.D. No.	17200
Idle r/min.	1 350 ± 150
Float height	22.4 ± 1.0 mm
Main jet (M.J.)	# 77.5
Air jet (A.J.)	# 25
Jet needle (J.N.)	3E2-3rd
Needle jet (N.J.)	E-7
Cut-away (C.A.)	2.0 mm
Pilot jet (P.J.)	# 15
Pilot outlet (P.O.)	0.9 mm
Air screw (A.S.)	2.0 turns back
Starter jet (G.S.)	# 35
Valve seat (V.S.)	1.2 mm
Throttle cable play	0.5 – 1.0 mm

**ELECTRICAL**

ITEM		SPECIFICATION		NOTE
Ignition timing		20°	(1.20 – 1.85 mm)	
Spark plug	Type	N.D.: W20FP NGK: BP6HS		
	Gap	0.6 – 0.7 mm		
Spark performance		Over 8 mm at 1 atm.		
Ignition coil resistance	Primary	0 – 1 Ω		B/Y – Ground
	Secondary	15 – 18 kΩ		Plug cap – Ground
Magneto coil resistance	Lighting	0 – 1 Ω		Y/W – B/W
	Charging	0 – 1 Ω		W/R – B/W
	Primary	1 – 3 Ω		B/Y – B/W
Charging rate	Day	Above 0.15A at 2 500 r/min. Below 3.3A at 8 000 r/min.		
	Night	Above 0.1A at 2 500 r/min. Below 1.8A at 8 000 r/min.		
Lighting coil output		Above 6V at 2 500 r/min. Below 8.5V at 8 000 r/min.		
Battery	Type designation	6N4B-2A		
	Capacity	6V 14.4 kC (4Ah)/10HR		
	Standard electrolyte S.G.	1.26 at 20°C (68°F)		
Fuse size	MAIN	10A		

**WATTAGE**

Unit: W

ITEM		SPECIFICATION	
Headlight	HI	15	
	LO	15	
Tail/Brake light		3/10	
Turn signal light		8	
Speedometer light		3	
Neutral indicator light		3	
Oil level warning light		3	

**SUSPENSION**

Unit: mm

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	80	—	
Front fork spring free length	—	169	
Front fork oil level	40	—	
Swingarm pivot shaft runout	—	0.6	

## TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING	
	kPa	kg/cm <sup>2</sup>
FRONT	125	1.25
REAR	175	1.75

## FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 85 – 95 octane or higher. An unleaded or low-lead type gasoline is recommended.	
Fuel tank including reserve	3.5 L	
reserve	0.5 L	
Engine oil type	CCI or CCI super	
Engine oil tank capacity	1.2 L	
Transmission oil type	SAE 20W/40	
Transmission oil capacity	Change	650 ml
	Overhaul	700 ml
Front fork oil type	Fork oil # 10	
Front fork oil capacity (each leg)	55 ml	

## CARBURETOR

ITEM	SPECIFICATION	ITEM	SPECIFICATION
Carburetor type	310	Headlight	18
I.D. No.	3	Tail/brake light	18
Flow height	3	Turn signal light	8
Main jet	(J.A.)	Speedometer light	3
Air jet	(J.A.)	Neutral indicator light	3
NOTE	LIMIT	Oil level warning light	3
Choke	188		
Pinion jet	(J.A.)		
Throttle cable play	(S.V.)		

## SUSPENSION

ITEM	SPECIFICATION	ITEM	SPECIFICATION
Front fork stroke	68	Swingarm pivot shaft rotation	25
Front fork spring free length	188		
Front fork spring free length	188		
Front fork oil level	40		
Swingarm pivot shaft rotation	25		
Starts jet	(S.G.)		
Valve stem	(S.V.)		
Throttle cable play	0.1 – 0.5		



# APPENDIX

## CONTENTS

**KICK STARTER SPRING GUIDE ..... 9-1**



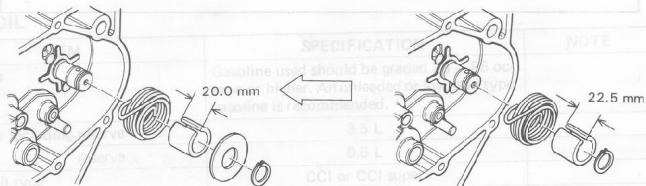
EARLY	by design	LATE
<b>011-03 ROTOR INLET</b>		
EARLY PART NO.	LATE PART NO.	PART NAME
28231-4800	28231-1200	Kick starter spring guide
	0390-1600	

# KICK STARTER SPRING GUIDE

APPLICABLE MODEL: PV50 (FOR FINLAND) RB50 (FOR FINLAND)

EFFECTIVE ENGINE NO.: ON AND AFTER NO. 136266

The construction of the kick starter has been modified as shown in the illustration.



## PARTS SUPPLY DATA

PART NAME	LATE PART NO.	EARLY PART NO.
Kick starter spring guide	26221-17200	26221-46000
Washer	09160-16018	—

NOTE: When ordering replacement parts, order the later type guide and washer.

Prepared by

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