

**SUZUKI**

# **FA50**

**SERVICE MANUAL**

## **FOREWORD**

*This service manual has been specially prepared to provide all the necessary information for the proper maintenance and repair of the FA50. The contents have been simplified so that FA50 owners, as well as experienced mechanics, may fully utilize this manual.*

*The FA50 is a new type of motorcycle that has many special features such as:*

- 1) Easy to ride operation*
- 2) Easy, smooth handling due to light weight and size*
- 3) Simple to maintain and service*
- 4) Technical features such as PEI ignition and automatic clutch*

*The FA50 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.*

**SUZUKI MOTOR CO., LTD.**  
**Service Department**  
**Overseas Operations Division**

*All specifications and construction details contained in this manual were correct at time of issue. Suzuki Motor Co., Ltd. reserves the right to make changes without notice at any time.*

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# GENERAL INFORMATION

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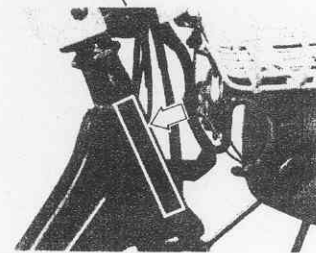
## MODEL IDENTIFICATION

### RIGHT SIDE VIEW

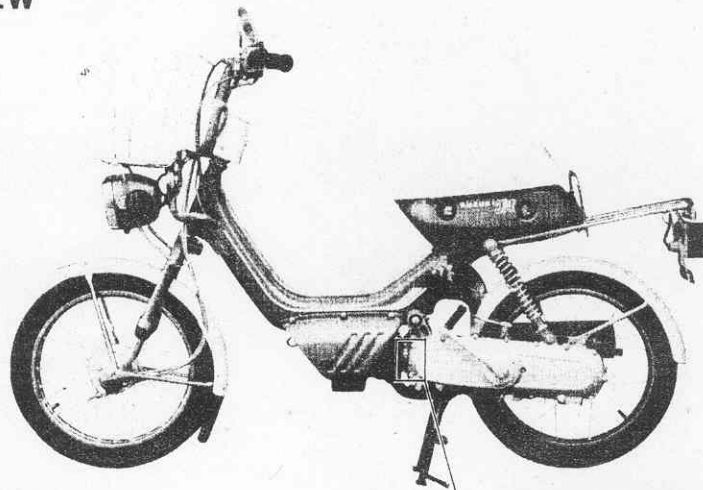


### FRAME NUMBER

The frame serial number is stamped on the right side of the steering head pipe.

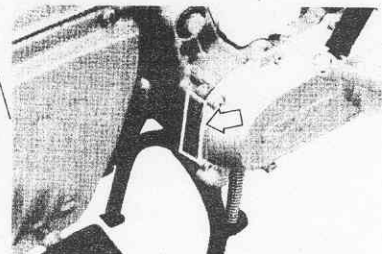


### LEFT SIDE VIEW



### ENGINE NUMBER

The engine serial number is located on the left side of the crankcase.



These numbers are required especially for registering the machine and ordering the spare parts.

## SPECIFICATIONS

### DIMENSIONS AND WEIGHT

Overall length	1 585 mm (62.4 in)
Overall width	670 mm (26.4 in)
Overall height	970 mm (38.2 in)
Wheelbase	1 040 mm (40.2 in)
Ground clearance	120 mm ( 4.7 in)
Dry mass (weight)	45 kg (99 lbs)

### ENGINE

Type	Two-stroke, air cooled
Intake system	Reed valve
Number of cylinder	1
Bore	41.0 mm (1.614 in)
Stroke	37.4 mm (1.472 in)
Piston displacement	49 cm <sup>3</sup> (3.0 cu.in)
Corrected compression ratio	6.5 : 1
Carburetor	MIKUNI VM12SH, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	SUZUKI "CCI"

### TRANSMISSION

Clutch	Wet shoe, automatic, centrifugal type
Transmission	1-speed
Gearshift pattern	Automatic type
Primary reduction	1.000
Final reduction	5.564
	(chain)
	2.384 (31/13)
	(gear)
	2.333 (56/24)
Drive chain	DAIDO D.I.D. 270H, 64 links

## CHASSIS

Front suspension	Telescopic
Rear suspension	Swinging arm, oil dampened
Steering angle	45° (right & left)
Caster	65°00''
Trail	70 mm (2.76 in)
Turning radius	1.4 m (4.6 ft)
Front brake	Internal expanding
Rear brake	Internal expanding
Front tire size	2.25-14 4PR
Rear tire size	2.25-14 4PR
Front tire pressure	150 kPa (1.50 kg/cm <sup>2</sup> , 21 psi) (Normal solo riding)
Rear tire pressure	200 kPa (2.00 kg/cm <sup>2</sup> , 28 psi) (Normal solo riding)

## ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	25° B.T.D.C. at 4 000 rpm
Spark plug	NGK BP4HA or NIPPON DENSO W14FP-UL
Battery	6V 7.2 kC (2 Ah)/10 HR
Generator	Flywheel magneto
Fuse	10A
Headlight	6V 20/20W
Tail/Brake light	6V 5.3/17W (3/21 cp)
High beam indicator light	6V 1.7W
Speedometer light	6V 1.5W

## CAPACITIES

Fuel tank including reserve reserve	2.5 L (0.66 US gal) 0.4 L (0.4 US qt)
Engine oil tank	0.7 L (0.7 US qt)
Transmission oil	500 ml (0.5 US qt)

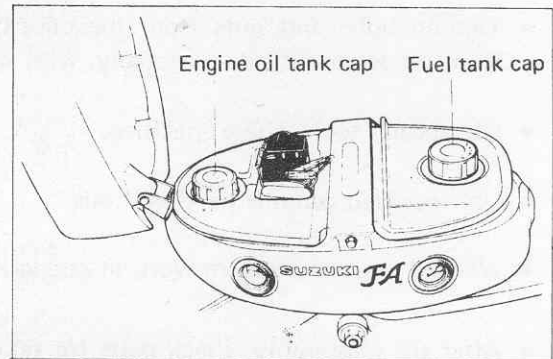
\* These specifications are subject to change without notice.

## FUEL AND OIL RECOMMENDATION

Be sure to use the specified fuel and oils. The following are the specifications:

### FUEL

Use only unleaded or low-lead type gasoline of at least 85 – 95 pump octane ( $\frac{R + M}{2}$  method) or 89 octane or higher rated by the Research method.

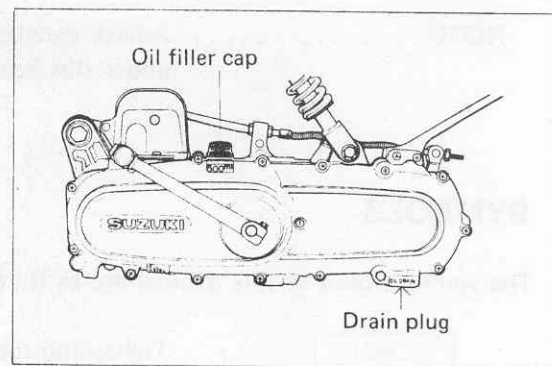


### ENGINE OIL

For the SUZUKI CCI system, use of SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT is highly recommended, but if it is not available, a good quality synthetic based 2-cycle oil should be used.

### TRANSMISSION OIL

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





## GENERAL NOTES AND PRECAUTIONS

Observe the following items without fail when disassembling and reassembling motorcycles.

- Be sure to replace packings, gaskets, O rings, circlips and cotter pins with new ones.
- Tighten bolts and nuts from the ones of larger diameter to those of smaller diameter, and from inside to out-side diagonally, with specified tightening torque.
- Use special tools where specified.
- Use specified genuine parts and oils.
- When 2 persons perform work in cooperation, pay attention to the safety of each other.
- After the reassembly, check parts for tightening condition and operation.
- Treat gasoline, which is extremely flammable and highly explosive, with greatest care. Never use gasoline as cleaning solvent.

Warning, caution and note are included in this manual occasionally, describing the following contents.

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

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

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

## SYMBOLS

The symbols used in this manual are as follows.

 : Tightening torque

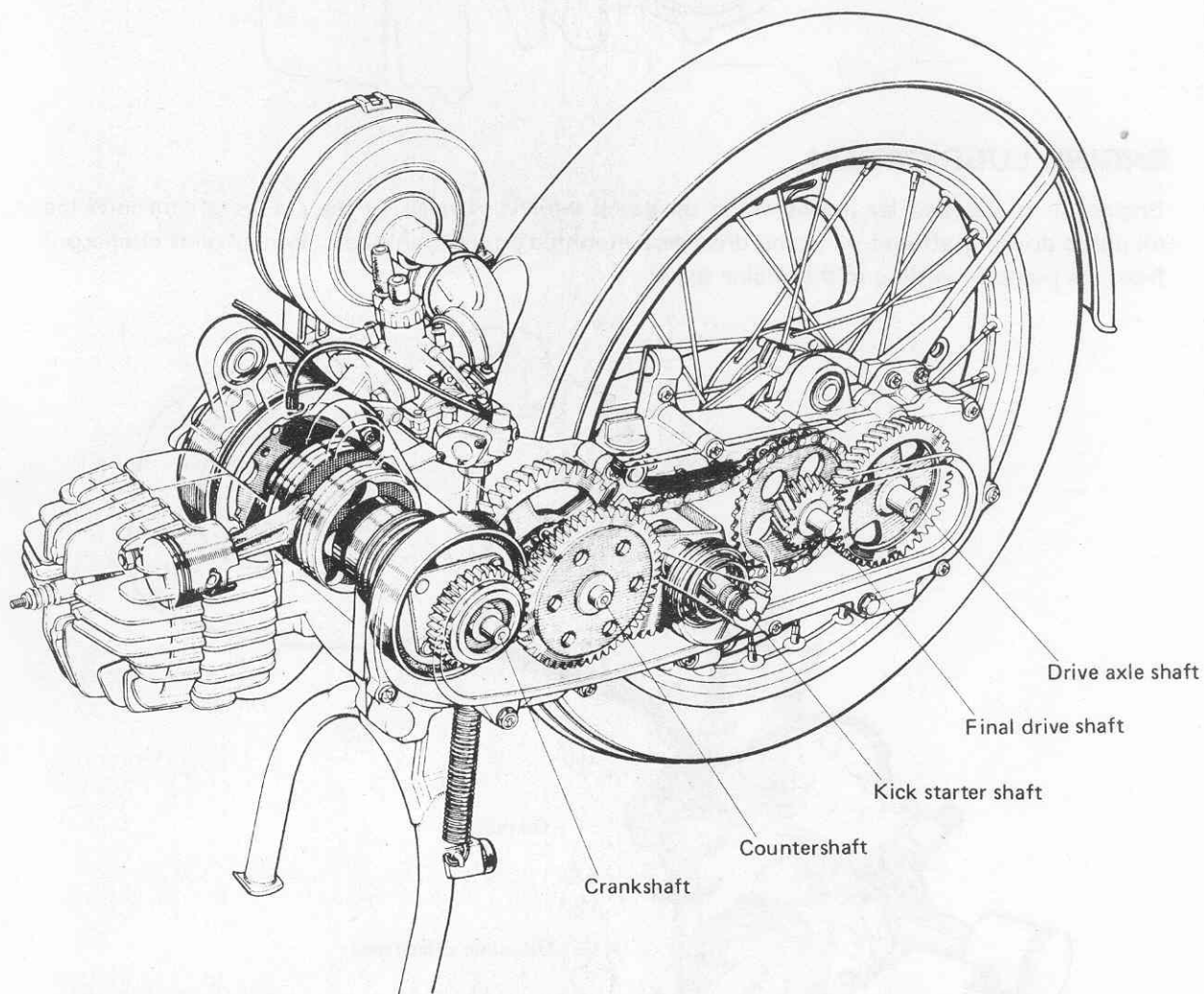
**OIL** : Oil

**GREASE** : Grease

## TECHNICAL FEATURES

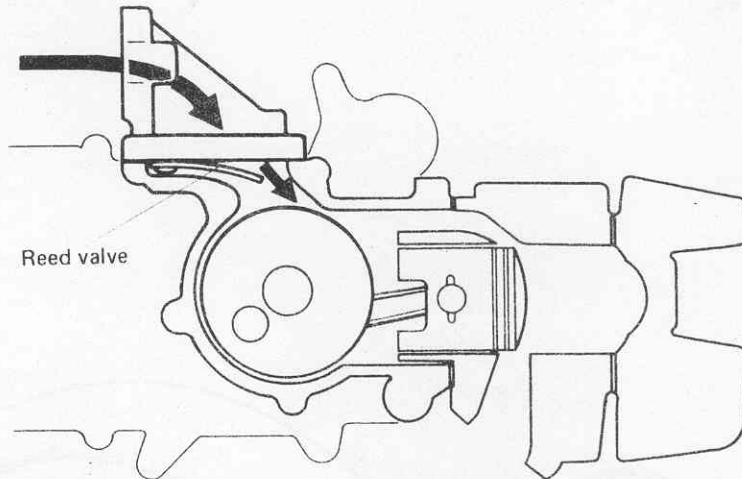
### DESCRIPTION

The FA50 has a 49 cc 2-cycle engine with a reed valve. The simple construction and rational design of the engine has minimized the number of inspection items, thus allowing easy inspection and almost maintenance-free operation. - This provides a unique motorcycle, with a long enjoyable life, free from troubles.



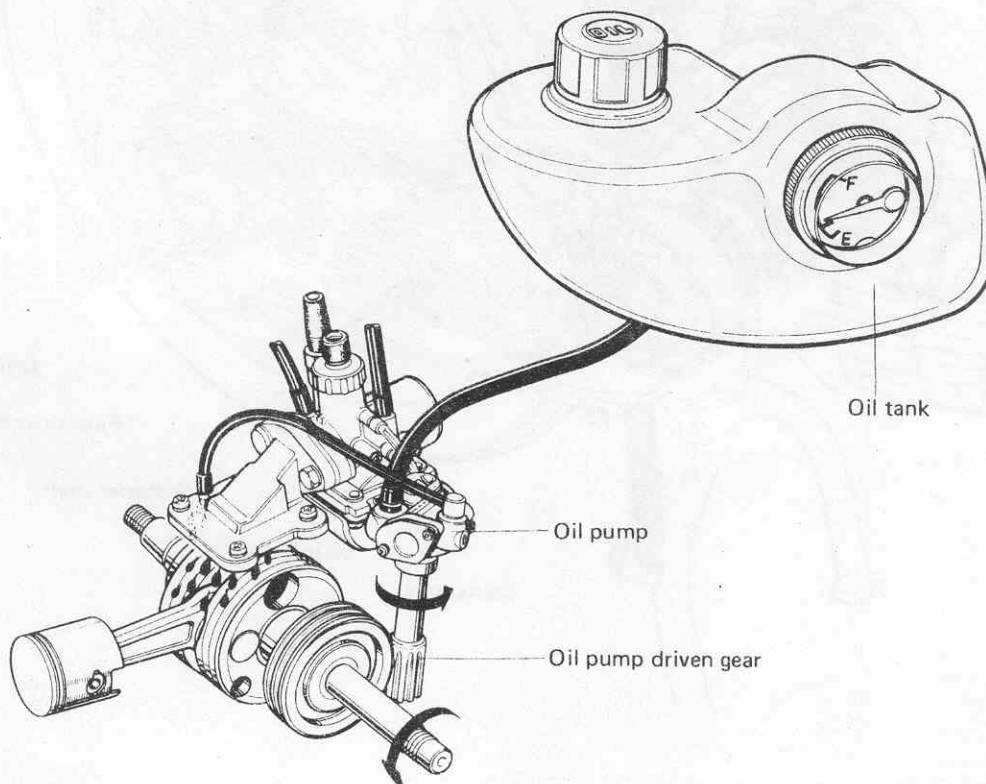
## REED VALVE

A reed valve is used in the intake system. The reed valve has thin, flexible steel pieces and are fitted into the top of the crankcase. As the piston moves up and down, the pressure in the crankcase alternately changes to negative and positive, thus causing the reed valve to open and close. The reed valve timing and opening vary depending on the engine speed and throttle opening. In other words, it can be said that the intake timing is ideally matched to the operating condition of the engine.



## ENGINE LUBRICATION

Engine oil is supplied by means of an oil pump which is driven by the crankshaft through the oil pump driven shaft and oil pump drive gear mounted on the crankshaft. Engine oil is discharged from the pump according to the engine speed.



## PISTON AND PISTON RING

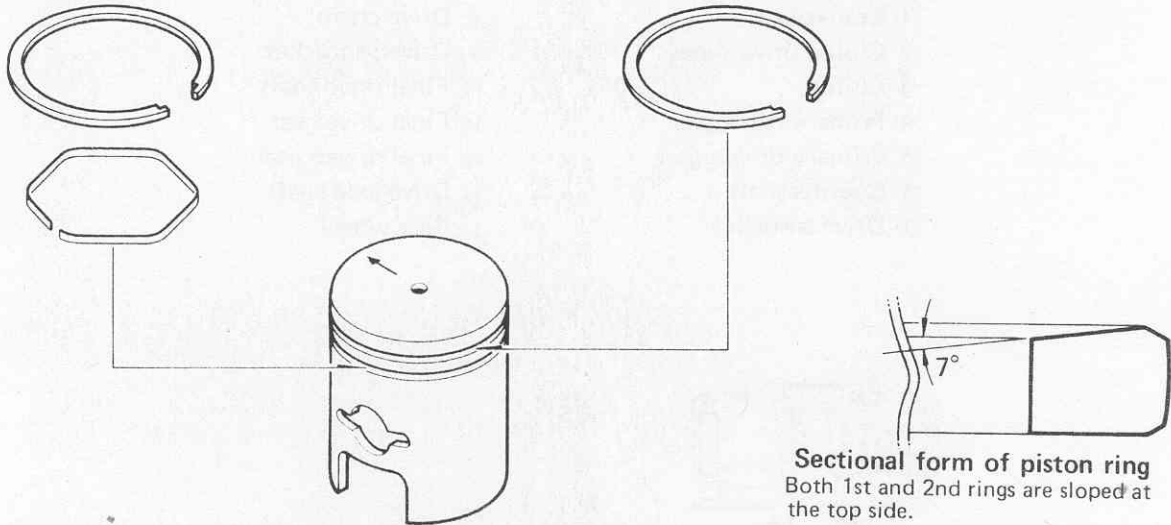
Both 1st and 2nd piston rings are of keystone type, and an expander ring is with the 2nd ring. The keystone ring is less sticking and has excellent durability. The expander ring absorbs the noise generated by the piston sliding against the cylinder wall by means of its spring tension, thus reducing overall noise.

### 2nd ring

Parkerized for better "wear-in"

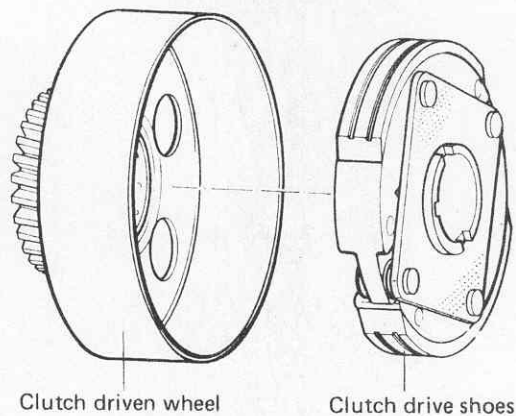
### 1st ring

Chrome-plated for better durability



## CLUTCH

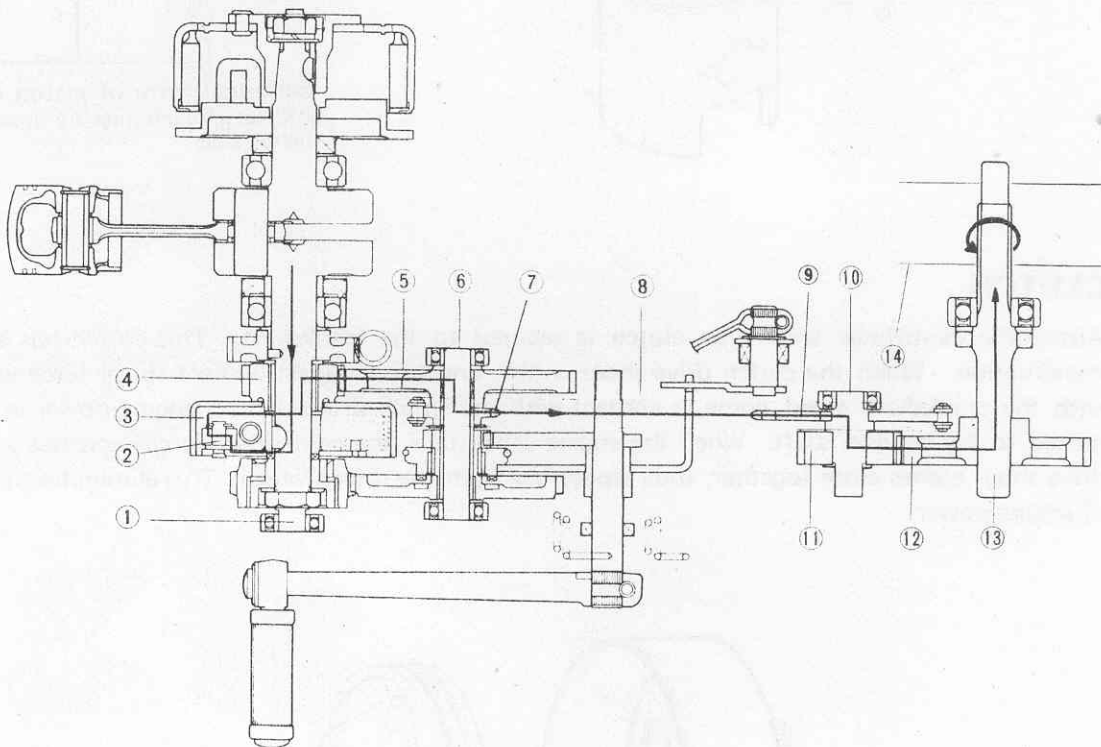
Automatic centrifugal shoe type clutch is secured to the crankshaft. This clutch has simple construction. When the clutch drive shoes, which are thrown apart by centrifugal force varying with the crankshaft speed, come in contact with the clutch driven wheel, engine power is transmitted to the counter shaft. When the engine speed falls, the centrifugal force decreases and the drive shoes come close together, thus separating from the driven wheel. This eliminates the flow of engine power.



## POWER TRANSMISSION

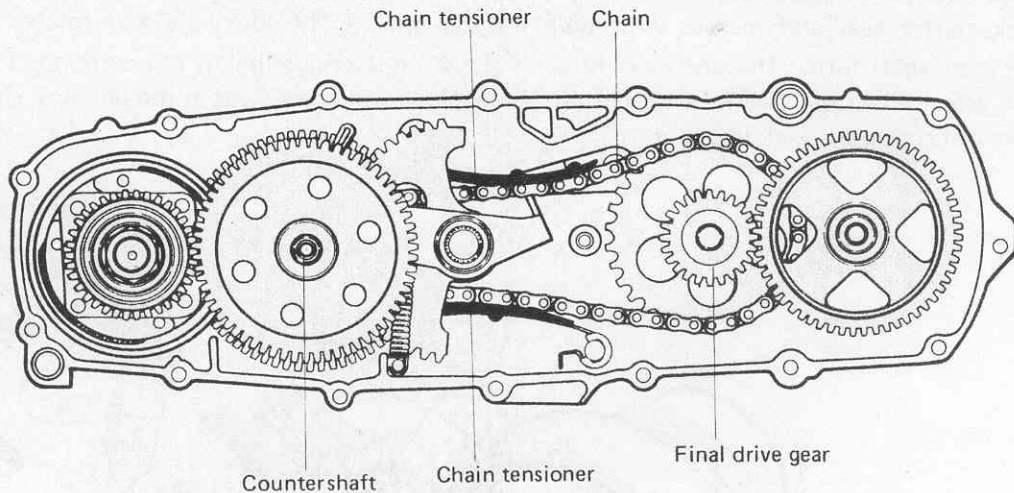
This motorcycle is equipped with an automatic one speed transmission. If the engine revolution is increased, the clutch ③ is connected and the power of the crankshaft ① is transmitted to the counter shaft ⑥. Power of the countershaft is transmitted to the final drive shaft ⑩ by means of the drive chain ⑧. Power of the final drive shaft is transmitted to the drive axle shaft ⑬ and at the same time, the rear wheel ⑭ is rotated.

- |                       |                     |
|-----------------------|---------------------|
| ① Crankshaft          | ⑧ Drive chain       |
| ② Clutch drive shoes  | ⑨ Driven sprocket   |
| ③ Clutch              | ⑩ Final drive shaft |
| ④ Primary drive gear  | ⑪ Final drive gear  |
| ⑤ Primary driven gear | ⑫ Final driven gear |
| ⑥ Countershaft        | ⑬ Drive axle shaft  |
| ⑦ Drive sprocket      | ⑭ Rear wheel        |



## DRIVE CHAIN

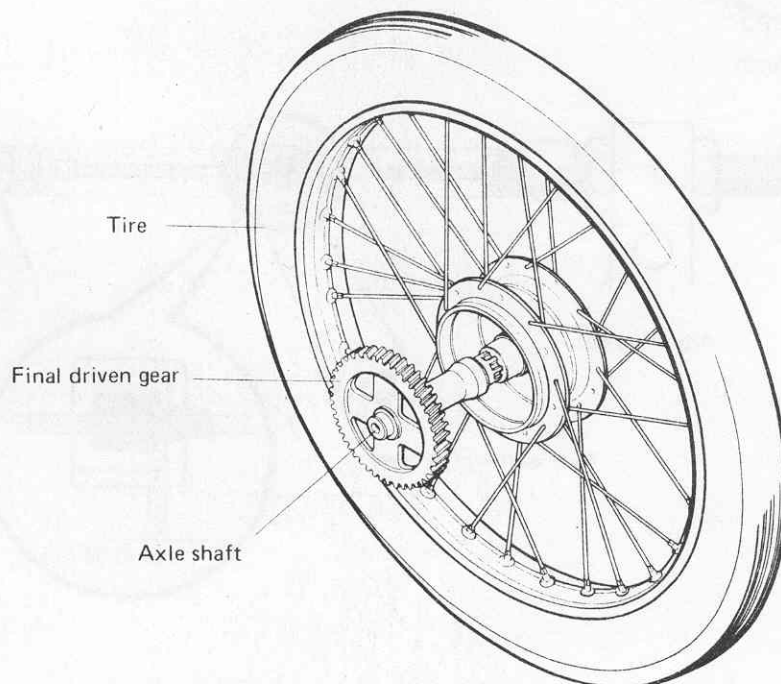
Power is transmitted from the countershaft to the final drive shaft through a drive chain. The drive chain is maintained at the proper tension by the chain tensioners provided for the upper and lower parts of the chain and is immersed in transmission oil – oil bath type – ensuring excellent durability.



## FINAL DRIVE

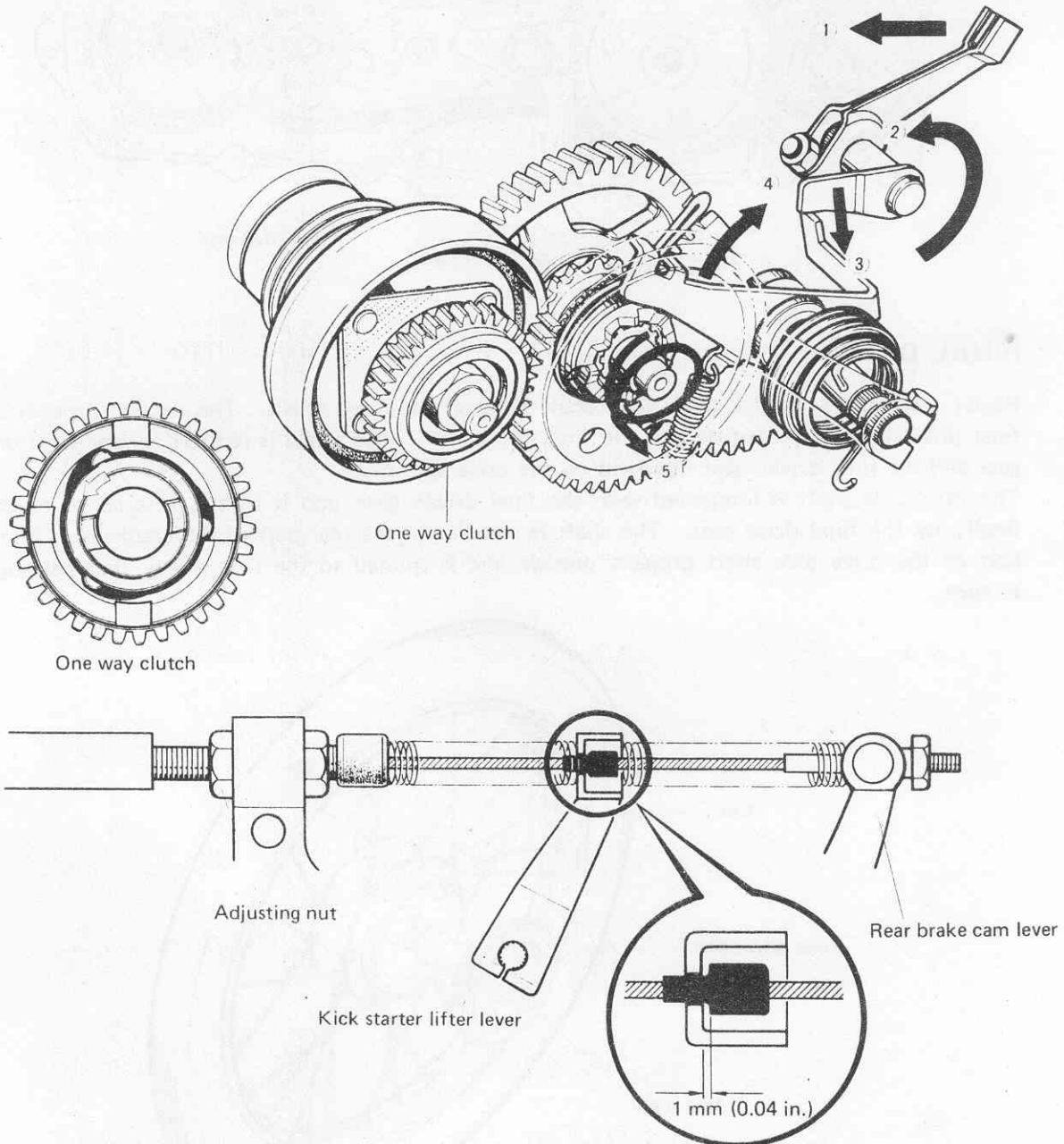
Power transmitted to the final drive shaft through the drive chain. The driven sprocket and final drive gear are press-fitted to the final drive shaft. The speed is reduced by the final drive gear and the final driven gear mounted on the drive axle shaft.

The drive axle shaft is integrated with the final driven gear, and it rotates at a speed reduced finally by the final drive gear. The shaft is installed in the rear part of the crankcase. Almost half of the drive axle shaft projects outside and is splined to the rear wheel, thus causing it to turn.



## KICK STARTER

When the brake lever is squeezed, the kick starter lifter lever is actuated (1), the kick starter lifter shaft rotates (2) and the kick starter lifter moves downward (3). By the movement of the kick starter lifter, the kick starter guide is pushed and the guide end is raised. Keeping this condition, when the kick lever is depressed (3), the kick starter is turned by the kick starter drive gear (4). As a result, the kick starter moves to the left side of the kick idle gear (5) while being turned by the kick starter gear and meshes with the kick idle gear. The kick idle gear rotates and makes the crankshaft turn. The one-way clutch as shown in the figure below is incorporated in the kick idle gear. When the engine is started up, the engine revolution is cut at the one-way clutch and it does not rotate the kick idle gear.



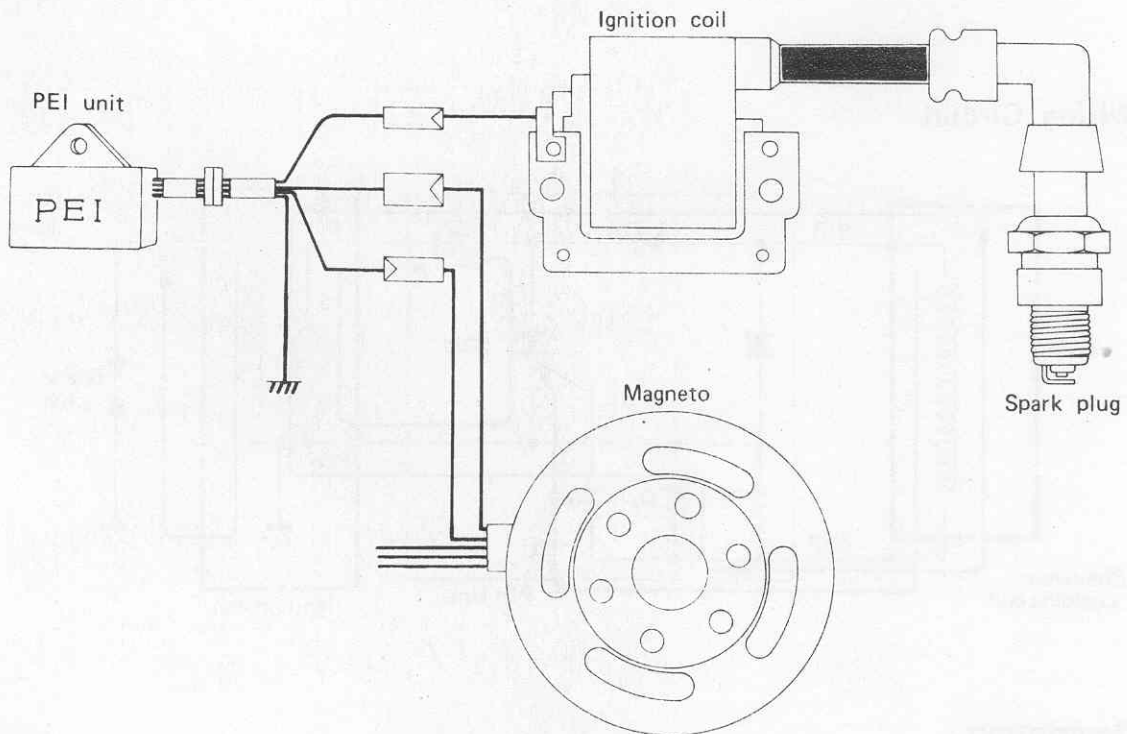
## "PEI" SYSTEM

In the FA50 ignition system, the PEI system is used.

The PEI system uses a magneto as the power source, and the capacitor (condenser) momentarily stores a charge up to hundreds of volts.

The charge is instantly discharged, at the specified ignition timing, to the ignition coil primary winding, thus inducing a high surge of voltage in the secondary winding. As a result, a spark occurs at the spark plug gap.

The PEI magneto has no breaker points and therefore it is free from mechanical trouble. This ensures a stabler secondary high voltage and better spark performance.

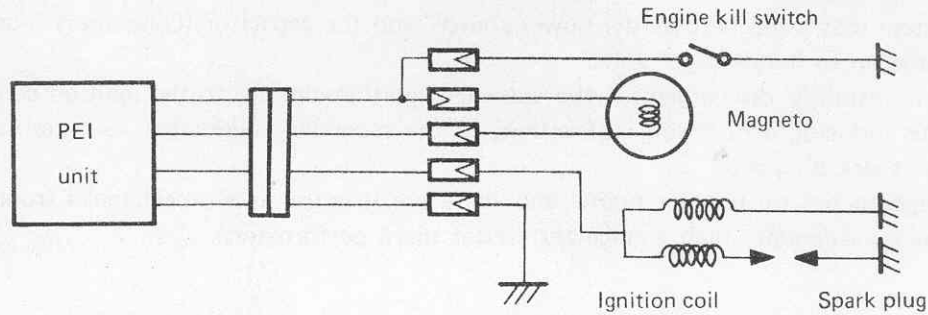


### Features of "PEI" System

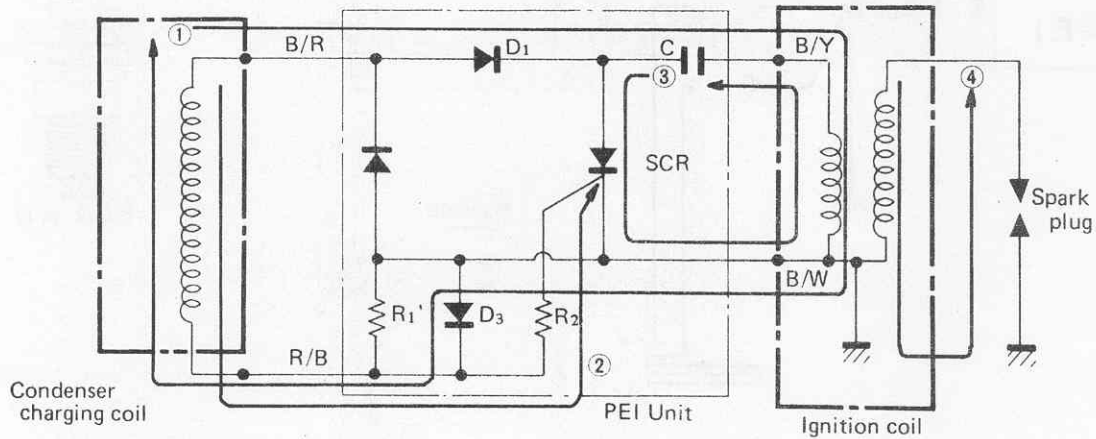
1. Spark plug deposits are minimized as high voltage spark is produced.
2. Disuse of contact points means no dust trouble. Contact points become worn by dust.
3. Original engine performance is kept as ignition timing is always correct.
4. Running cost is reduced as "PEI" system has no mechanical parts and therefore requires no adjustment or replacement.



## Connecting Diagram



## Wiring Circuit



## Description

1. As the magneto turns, the voltage generated by the condenser charging coil is charged to the condenser through the following circuit:  
Condenser charging coil → Diode  $D_1$  → Condenser C → Ignition coil primary winding → Diode  $D_3$  → Condenser charging coil.
2. When the rotor turns  $180^\circ$ , the polarity of the red/black terminal becomes positive (+) and the generated voltage, which is divided by  $R_1$ , is applied through  $R_2$  to the SCR gate. When this voltage arrives at the SCR gate, it makes SCR conduct (turned on).
3. When SCR closes the circuit, the electrical charge stored in the condenser is rapidly discharged through the following circuit:  
Condenser C → SCR → Ignition coil primary winding → Condenser C.
4. In this way, a high surge of voltage quickly builds up in the secondary winding, thus causing a good spark to jump across the spark plug gap.

**NOTE:**

In case of PEI, two sparks occur each crankshaft rotation at approximately TDC and BDC.

# INSPECTION AND ADJUSTMENT

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MAINTENANCE PROCEDURE .....	2-4

Item	Inspection Interval	Inspection Points	Adjustment Points
1. Drive Shafts	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust end play and bearing clearance.
2. Axles	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust bearing clearance and end play.
3. Steering Knuckles	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust steering geometry.
4. Suspension Springs	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust spring tension.
5. Brake Components	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust brake pedal stroke and brake shoe clearance.
6. Drive Belts	Every 10,000 miles	Check for wear, cracks, and proper tension.	Adjust belt tension.
7. Engine Components	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust valve clearance and timing.
8. Transmission Components	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust gear mesh and bearing clearance.
9. Rear Axle Components	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust bearing clearance and end play.
10. Front Axle Components	Every 10,000 miles	Check for wear, cracks, and proper lubrication.	Adjust bearing clearance and end play.

## PERIODIC MAINTENANCE SCHEDULE

Vehicles should be inspected after a certain period of running for wear of parts, carbon deposits, elongated cables, etc. Inspections should be made periodically and defects should be repaired or adjusted beforehand to prevent trouble and prolong the motorcycle's service life.

Inspect and adjust the vehicle as indicated below.

**NOTE:**

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

### PERIODIC MAINTENANCE CHART

Interval		Initial	Every	Every
Item	Km	1 000	3 000	6 000
	Miles	600	2 000	4 000
	Month	2	6	12
Air cleaner element		—	Wash and clean	—
Battery		Check specific gravity and service electrolyte solution	Check S.G. and service electrolyte solution	—
Brakes		Adjust play	Adjust play	—
Brake shoes		—	Check wear	—
Carburetor		Adjust idle rpm	Adjust idle rpm	Overhaul and clean
Cylinder head and cylinder		Retorque head nuts and exhaust pipe bolts	Retorque head nuts and exhaust pipe bolts	Remove carbon
Chassis bolts and nuts		Retorque	Retorque	—
Fuel line		Replace every 2 years		
Oil pump		Check operation	Check operation	—
Spark plug		Clean	Clean and adjust gap	Replace
Steering		Check play	Check play	—
Throttle cable		Adjust play	Adjust play	—
Tire		Check tire pressure	Check tire pressure and tread wear	—
Transmission oil		Change	Change	—

## LUBRICATION CHART

Rotating and rubbing parts must be lubricated periodically. Insufficient lubrication will cause rapid wear and severe damage may result.

Lubricate the following parts periodically.

Item	Interval		Every	Every
	Km		3 000	6 000
	Mile		2 000	4 000
	Month		6	12
Brake cables			Motor oil	—
Brake cam shaft			—	Grease
Choke cable			Motor oil	—
Speedometer gear			—	Grease
Speedometer cable			—	Grease
Throttle cable			Motor oil	—

### WARNING:

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

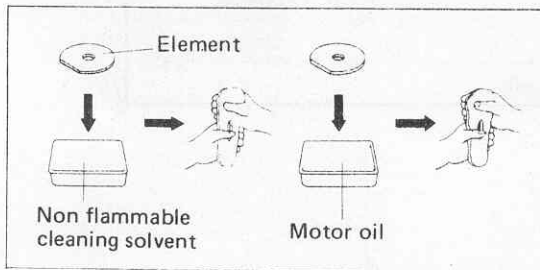
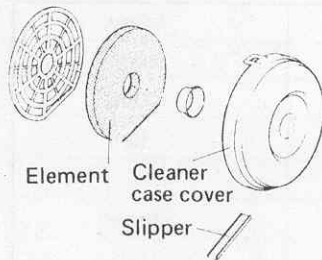
Lubricate exposed parts which are subject to rust, with either motor oil or grease whenever the motorcycle has been operated under wet or rainy conditions.

Before lubricating each part, clean off any rusty spots and wipe off any grease, oil, dirt or grime.

## MAINTENANCE PROCEDURE

### AIR CLEANER

Clean at initial 1 000 km (600 miles)  
and every 3 000 km (2 000 miles)



#### CAUTION:

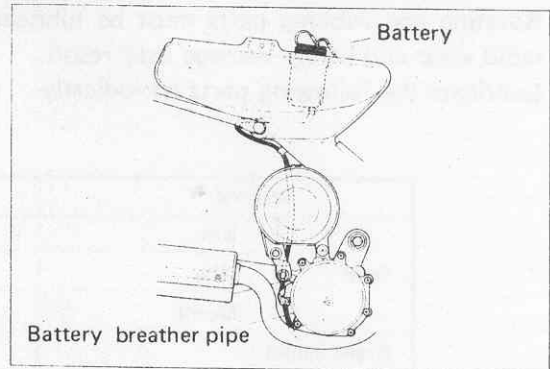
- \* Before and during the cleaning operation, examine the element to see if it is torn. A torn element must be replaced.
- \* Be sure to position the element snugly and correctly, so that no incoming air will bypass it. Remember, rapid wear of piston rings and cylinder bore is often caused by a defective or poorly fitted element.

### BATTERY

Check at initial 1 000 km (600 miles)  
and every 3 000 km (2 000 miles)

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

- Check to be sure that the vent pipe is secure and routed properly.
- Add distilled water, as necessary, to keep the surface of the electrolyte above the LOWER level line but not above the UPPER level line.



- If the electrolyte surface falls rapidly and requires frequent addition of distilled water, check the charging system for proper charging rate.
- An S.G. reading of 1.22 (at 20°C, 68°F) or under means that the battery needs recharging off the machine: take it off and charge it from a recharger. Charging the battery in place from the recharger can damage the rectifier and related wiring.

Charging current	0.2 A/10 hours
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S.G.	Condition	Measure
over 1.250	Normal	—
1.220 – 1.250	Under charged	Better to recharge
below 1.220	Run down	Recharge or replace

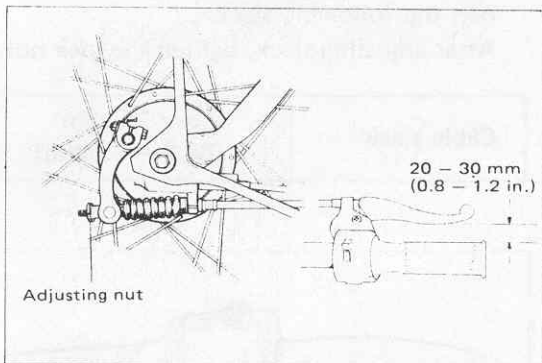
#### CAUTION:

Do not forget to remove three battery caps to prevent possible battery damage when recharging.

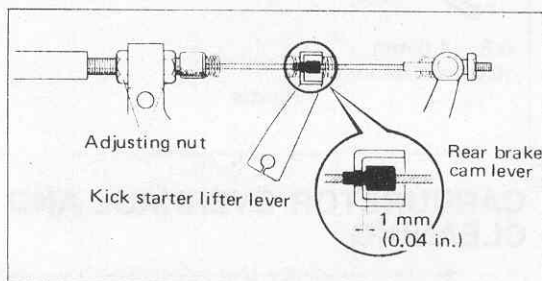
## BRAKES

Adjust at initial 1 000 km (600 miles) and every 3 000 km (2 000 miles)

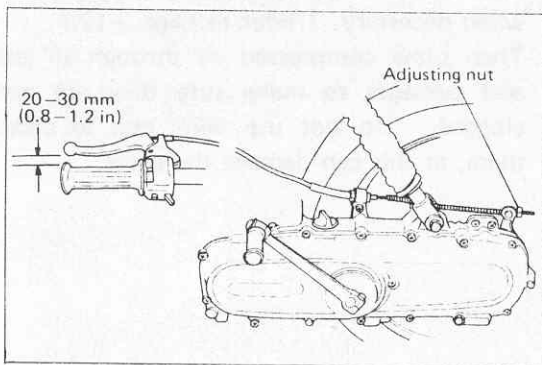
- Adjust by turning the adjusting nut so that the clearance between grip and brake lever is 20 – 30 mm (0.8 – 1.2 in) when applying the front brake.



- As the rear brake wire is linked to the kick starter lifter lever, first adjust with the adjusting nut so that the lifter lever play is 1 mm (0.04 in).



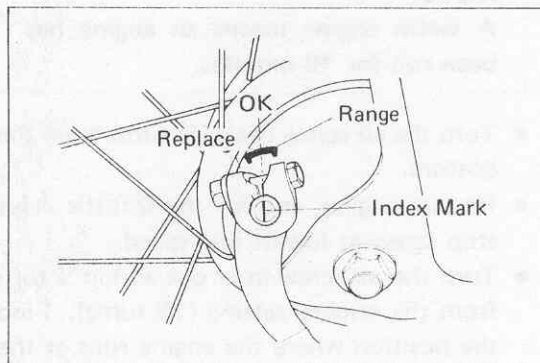
- Adjust by turning the brake cable adjusting nut so that the clearance between lever and grip is 20 – 30 mm (0.8 – 1.2 in).



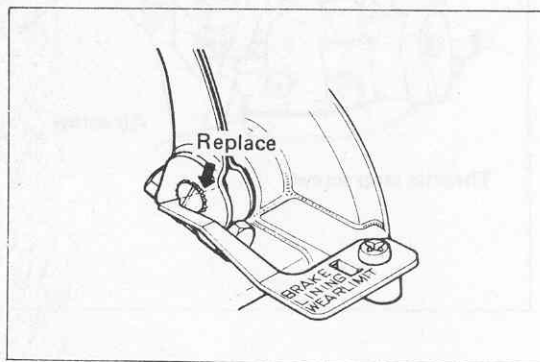
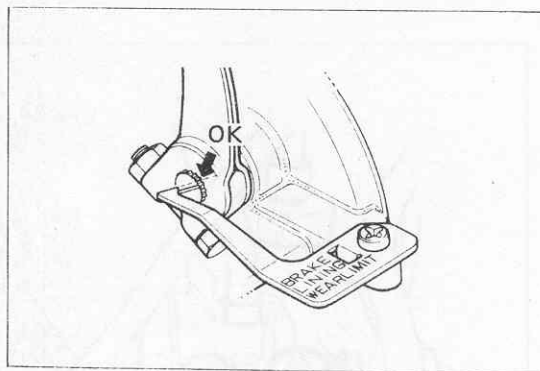
## BRAKE SHOE WEAR

Check every 3 000 km (2 000 miles)

- When applying the front brake, if the extended line of the brake cam lever exceeds the range on the brake panel, replace the brake shoes.



- When applying the rear brake, if the index mark is located forward the indicator, replace the brake shoes.



## ENGINE IDLE RPM

Adjust at initial 1 000 km (600 miles) and every 3 000 km (2 000 miles)

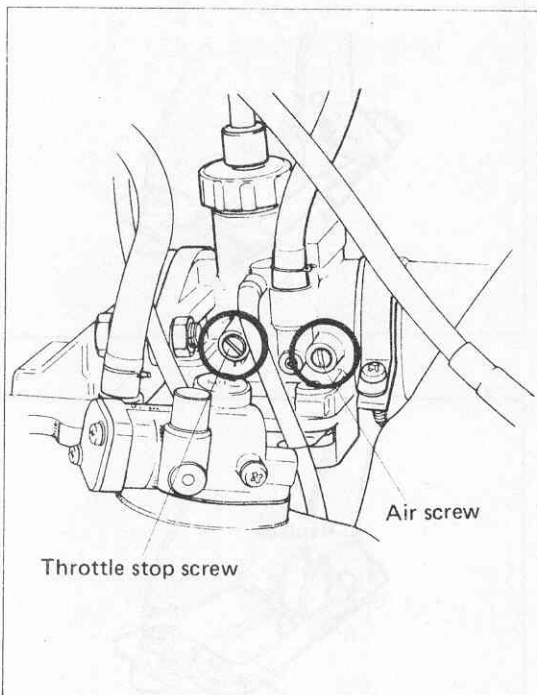
- Adjust the throttle cable play.
- Warm the engine up.

### NOTE:

A warm engine means an engine has been run for 10 minutes.

- Turn the air screw back  $1\frac{3}{4}$  turns from the bottom.
- Restart engine, and set the throttle valve stop screw at lowest idle speed.
- Turn the air screw in or out within  $\frac{1}{4}$  turn from the original setting ( $1\frac{3}{4}$  turns). Find the position where the engine runs at the highest rpm. Turn the air screw in  $1/8$  turn.
- Adjust the throttle stop screw to obtain the idling rpm as follows.

Idle rpm	1 500 ± 150 rpm
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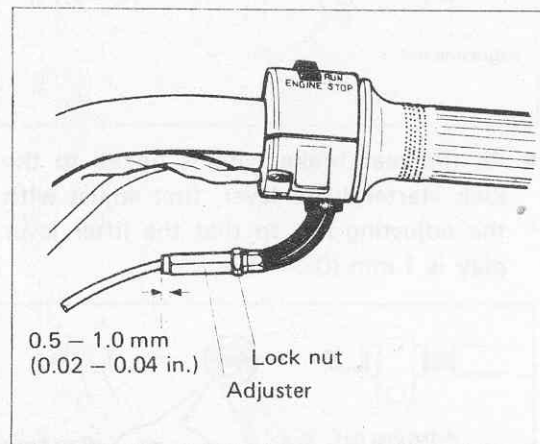
- Finally adjust the throttle cable play.

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

## THROTTLE CABLE

- Loosen the lock nut and adjust the cable slack by turning adjuster in or out to obtain the following slack. After adjusting slack, tighten the lock nut.

Cable slack	0.5 – 1.0 mm (0.02 – 0.04 in)
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## CARBURETOR OVERHAUL AND CLEANING

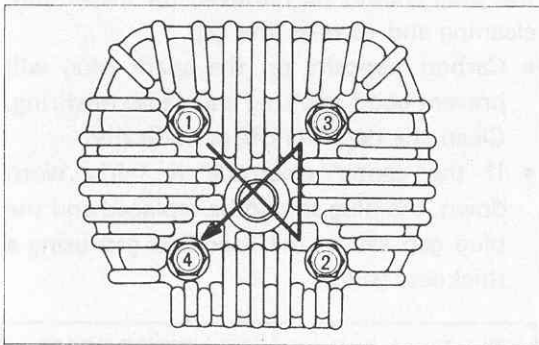
Overhaul and clean every 6 000 km (4 000 miles)

Wash the carburetor and component parts in cleaning solvent after disassembly. Before reassembly, inspect the float level and needle valve. Adjust and replace parts when necessary. (Refer to page 3-12.) Then blow compressed air through all jets and passages to make sure they are not clogged. Do not use wire, etc. to clean them, as this can damage the parts.

## CYLINDER HEAD NUTS

Retighten at initial 1 000 km (600 miles) and every 3 000 km (2 000 miles)

- Cylinder head nuts, when they are not tightened to the specified torque, may result in leakage of the compressed mixture and reduce output. Tighten the 4 nuts evenly one by one in stages until each one is tightened to the specified torque. Tighten the nuts in the order indicated below.

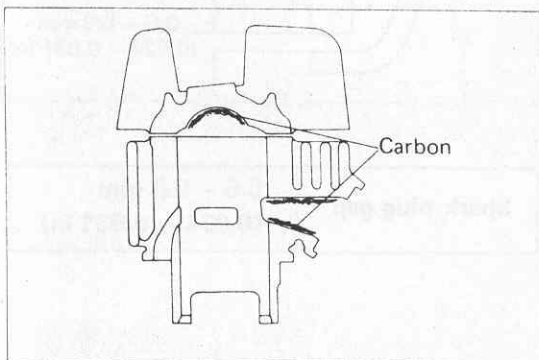


Cylinder head nut tightening torque	0.8 – 1.2 kg-m (6.0 – 8.5 lb-ft)
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## CYLINDER HEAD AND CYLINDER

Remove carbon every 6 000 km (4 000 miles)

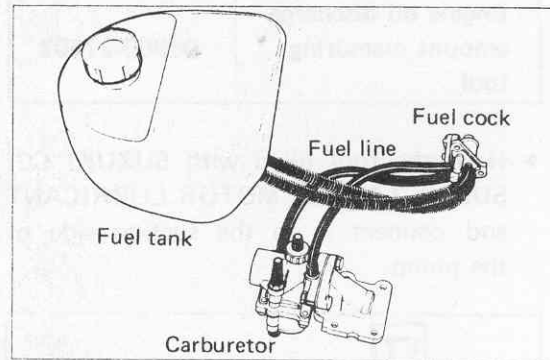
Carbon deposits in the combustion chamber and the cylinder head will raise the compression ratio and may cause pre-ignition or overheating. Carbon deposited at the exhaust port of the cylinder will prevent the flow of exhaust, reducing the output. Remove carbon deposits periodically.



## FUEL LINE

Replace every two years

Replace the fuel line every two years.



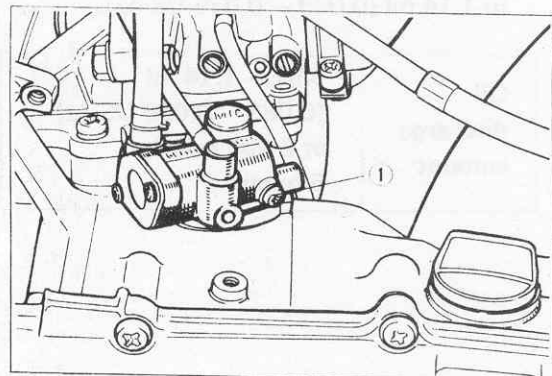
## OIL PUMP

Inspect at initial 1 000 km (600 miles) and every 3 000 km (2 000 miles)

### Air bleeding

Whenever evidence is noted of some air having leaked into the oil line 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 before returning the machine to the user.

How to bleed the air: With the engine not running condition; loosen screw ①, to let out the air; and, after making sure that the trapped air has all been bled, tighten the screw good and hard.



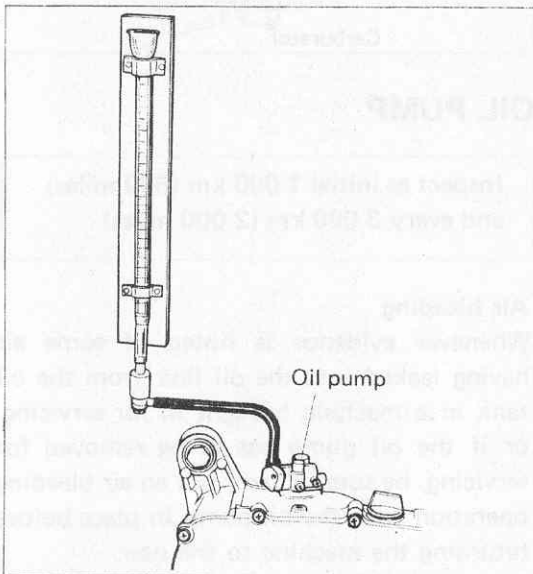


### Checking oil pump capacity

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

Engine oil discharge amount measuring tool	09900-21602
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- Have the tool filled with SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT and connect it to the suction side of the pump.



- Holding engine speed at the 2 000 rpm by turning the throttle stop screw and let the pump draw for 6 minutes. For this operation, the reading taken on the measuring cylinder should be from 0.97 to 1.14 ml (0.033 – 0.039 US oz).

Oil discharge amount	0.97 – 1.14 ml (0.033 – 0.039 US oz) at 2 000 rpm for 6 minutes
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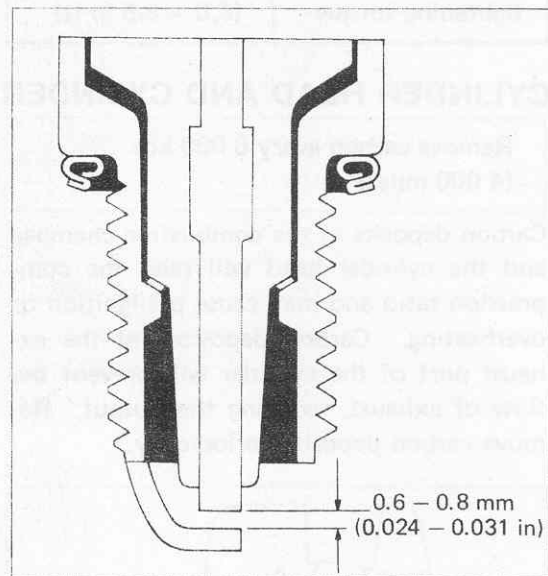
### SPARK PLUG

Check at initial 1 000 km (600 miles) and every 3 000 km (2 000 miles) Replace every 6 000 km (4 000 miles)
---

Neglecting the spark plug eventually leads to difficult starting and poor performance. If the spark plug is used for a long period, the electrode gradually burns away and carbon builds up along the inside part. In accordance with the Periodic Inspection Chart, the plug should be removed for inspection, cleaning and to reset the gap.

- Carbon deposits on the spark plug will prevent good sparking and cause misfiring. Clean the deposits off periodically.
- If the center electrode is fairly worn down, the plug should be replaced and the plug gap set to the specified gap using a thickness gauge.

Thickness gauge	09900-20803
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Spark plug gap	0.6 – 0.8 mm (0.024 – 0.031 in)
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- Check spark plug for burnt condition. If abnormal, replace the plug as indicated below.

NGK	Nippon Denso	Remarks
BP-2HA	W9FP-UL	If the standard plug is apt to get wet, replace with this plug.
BP-4HA	W14FP-UL	Standard
BP-5HA	W16FP-UL	If the standard plug is apt to overheat, replace with this plug.

- Tighten the spark plug in the cylinder head with the specified torque.

Spark plug tightening torque	2.5 – 3.0 kg-m (18.0 – 21.5 lb-ft)
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## STEERING STEM

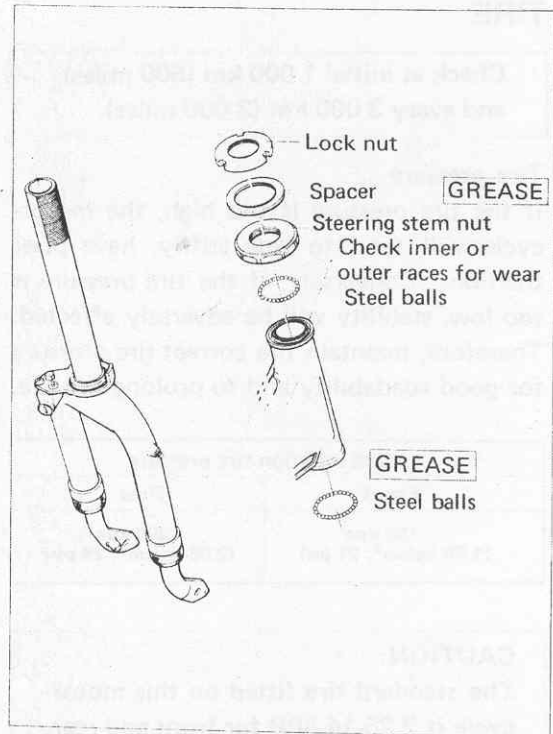
Check at initial 1 000 km (600 miles) and every 3 000 km (2 000 miles)

Steering should be adjusted properly for smooth manipulation of handlebars and safe running. Too stiff steering prevents smooth manipulation of handlebars and too loose steering will cause the handlebars to vibrate. Check to see that there is no play in the front fork fitting.

If any play can be found, adjust the steering as follows:

- Support the motorcycle body and jack up the front wheel.
- Loosen the steering stem nut securing nut ①, tighten the steering stem nut ② using the special tool so that the front fork moves smoothly.

Steering stem nut wrench	09940-10122
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If any play is still found, inspect the following items and replace the affected parts, if necessary.

- Wear of the inner and outer races
- Wear or damage of steel balls
- Number of steel balls (upper 25 pcs lower 25 pcs)
- Distortion of steering stem



## TIRE

Check at initial 1 000 km (600 miles)  
and every 3 000 km (2 000 miles)

### Tire pressure

If the tire pressure is too high, the motorcycle will tend to ride stiffly, have poor traction. Conversely, if the tire pressure is too low, stability will be adversely affected. Therefore, maintain the correct tire pressure for good roadability and to prolong tire life.

Cold inflation tire pressure	
Front	Rear
150 kpa (1.50 kg/cm <sup>2</sup> , 21 psi)	200 kpa (2.00 kg/cm <sup>2</sup> , 28 psi)

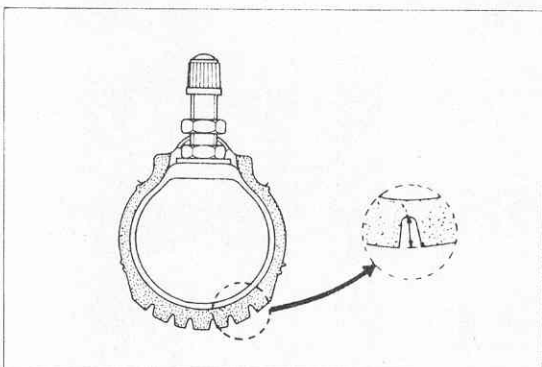
### CAUTION:

The standard tire fitted on this motorcycle is 2.25-14 4PR for front and rear. The use of a tire other than the standard may cause handling instability. It is highly recommended to use a SUZUKI Genuine Tire.

### Tire tread condition

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

FRONT and REAR	1.6 mm (0.06 in)
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## TRANSMISSION OIL

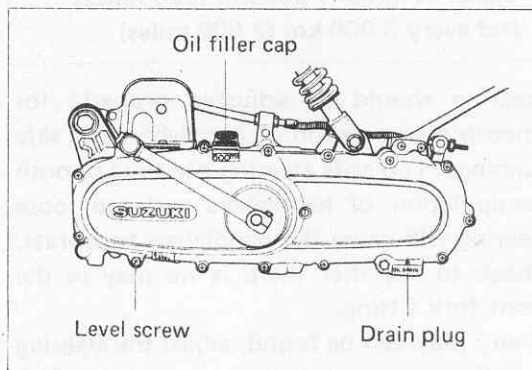
Change at initial 1 000 km (600 miles)  
and every 3 000 km (2 000 miles)

After a long period of use, the transmission oil qualities will deteriorate and quicken the wear of sliding and interlocking surfaces. Replace the transmission oil periodically following the procedure below.

- Start the engine to warm up the oil, this will facilitate draining of oil.
- Unscrew the oil filler cap and drain plug, and drain the oil completely.
- Tighten the drain plug.
- Supply a good quality SAE 20W/40 multi-grade motor oil.

Capacity	500 ml (0.50 US qt)
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- Check the oil level with the oil level screw.

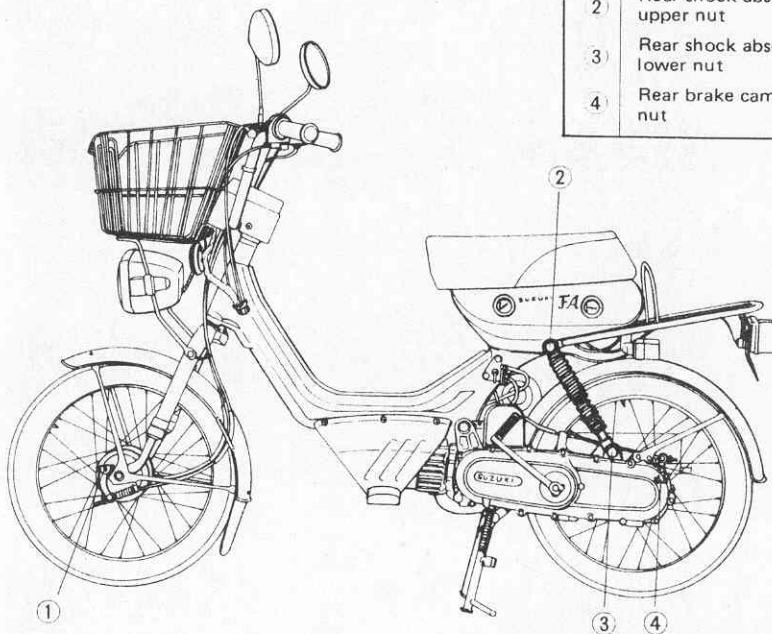


## CHASSIS BOLTS AND NUTS

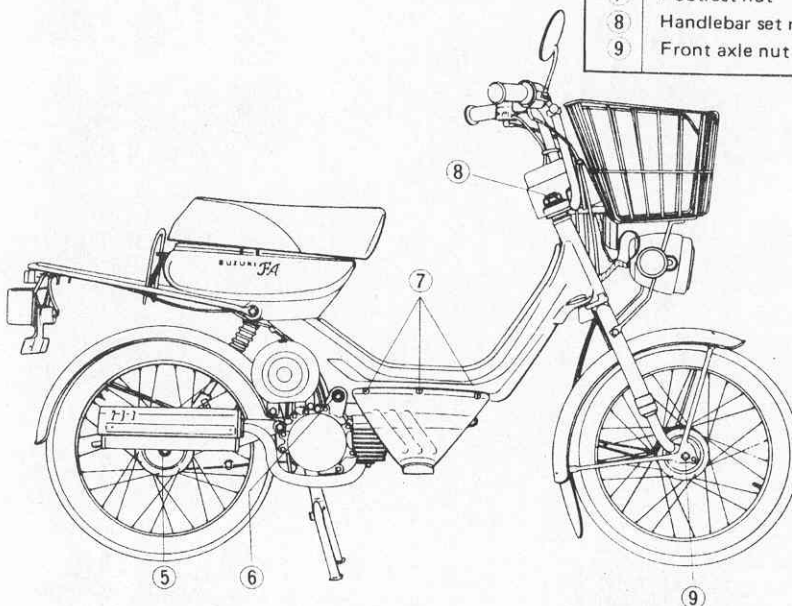
Retighten at initial 1 000 km (600 miles) and every 3 000 km (2 000 miles)

These bolts and nuts listed below are important safety parts. They must be retightened, as necessary, to the specified torque with a torque wrench.

No.	Description	Q'ty	kg-m	lb-ft
1	Front brake cam lever nut	1	0.3 - 0.6	2.0 - 4.5
2	Rear shock absorber upper nut	1	2.0 - 3.0	14.5 - 21.5
3	Rear shock absorber lower nut	1	2.0 - 3.0	14.5 - 21.5
4	Rear brake cam lever nut	1	0.3 - 0.6	2.0 - 4.5



No.	Description	Q'ty	kg-m	lb-ft
5	Rear axle nut	1	3.6 - 5.2	26.5 - 37.5
6	Engine mounting nut	1	2.5 - 4.0	18.5 - 28.5
7	Footrest nut	6	0.4 - 0.7	3.0 - 5.0
8	Handlebar set nut	1	9.5 - 12.0	68.5 - 86.5
9	Front axle nut	1	2.7 - 4.3	20.0 - 31.0



# SERVICING PROCEDURE

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FRONT SUSPENSION .....	3-23
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## ENGINE REMOVAL/INSTALLATION

### Upper side

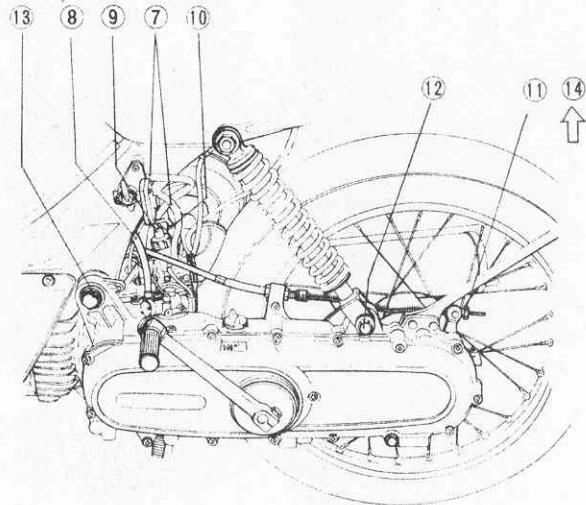
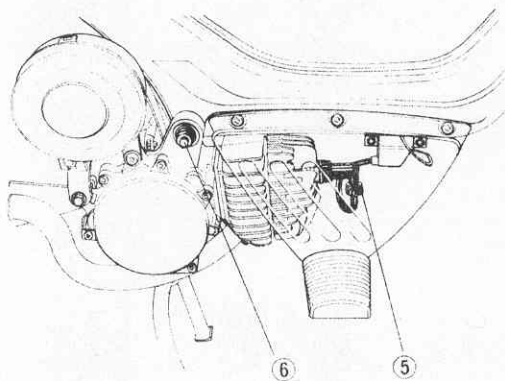
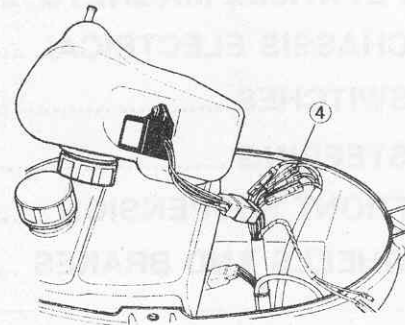
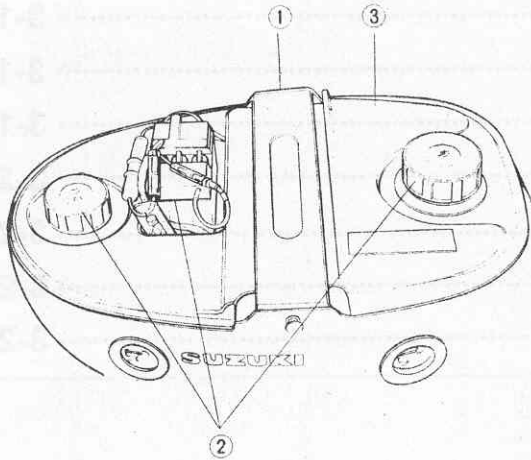
- ① Remove the support bracket.
- ② Remove the engine oil tank cap, fuel tank cap and battery.
- ③ Remove the frame upper cover.
- ④ Remove the magneto lead wire.


### Right side


- ⑤ Remove the spark plug cap.
- ⑥ Loosen the engine mounting nut.

### Left side

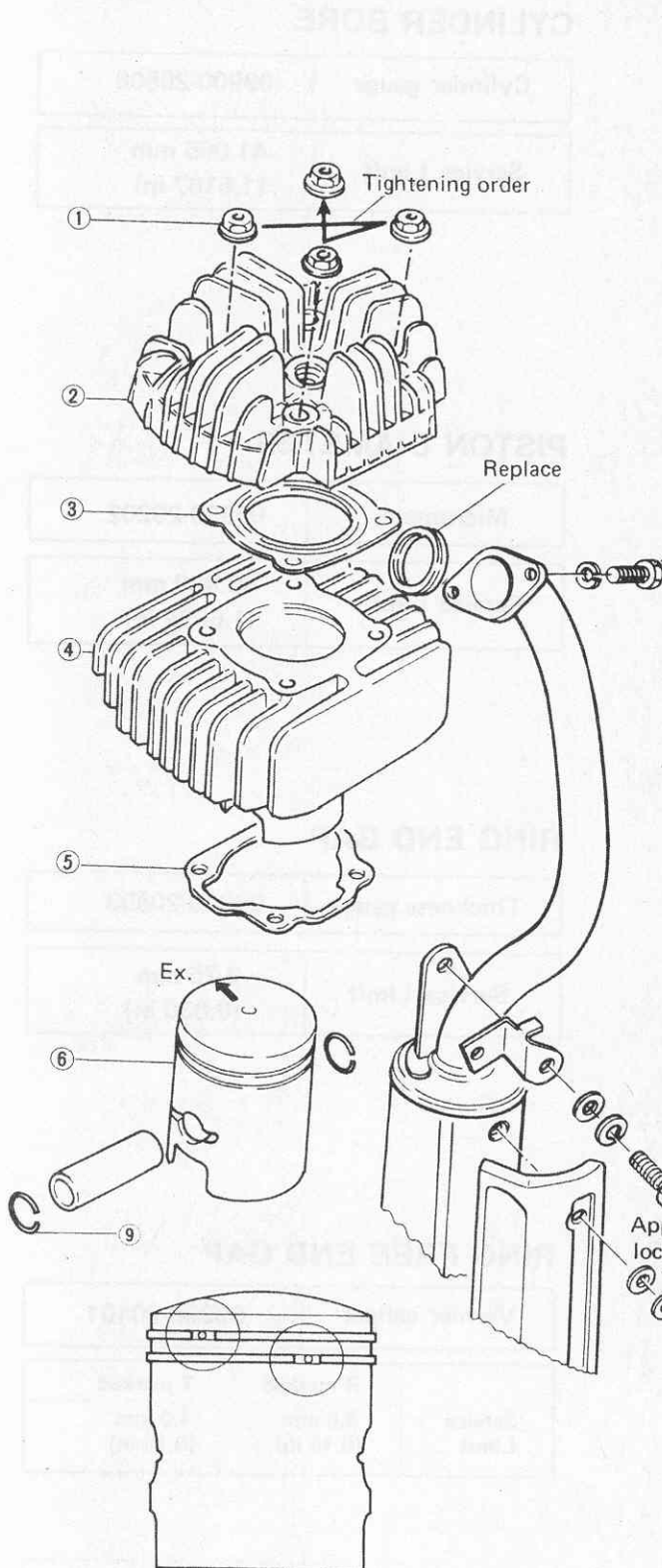
- ⑦ Remove the fuel line and the vacuum line with the fuel cock set to ON.
- ⑧ Remove the oil pump cover and oil hose.
- ⑨ Remove the carburetor top cover.
- ⑩ Remove the carburetor choke cable from the carburetor side.
- ⑪ Remove the rear brake cable.
- ⑫ Loosen and remove the rear shock absorber lower bolt.
- ⑬ Pull out the engine mounting bolt.
- ⑭ Lift the body.



⑥ 	<b>2.5 – 4.0 kg-m</b> <b>(18.5 – 28.5 lb-ft)</b>
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⑫ 	<b>2.0 – 3.0 kg-m</b> <b>(14.5 – 21.5 lb-ft)</b>
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# CYLINDER HEAD, CYLINDER, PISTON, PISTON RING



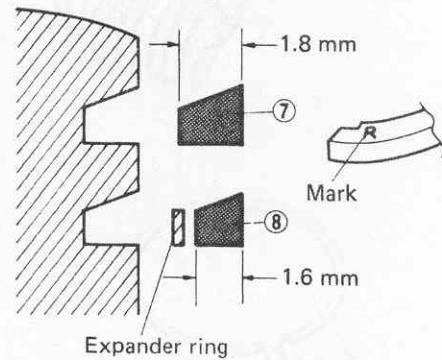
①

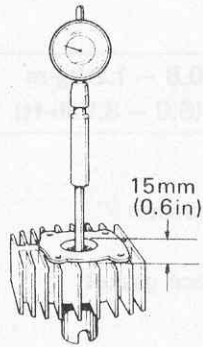
	<b>0.8 – 1.2 kg-m</b> <b>(6.0 – 8.5 lb-ft)</b>
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- ② Remove carbon
- ③, ⑤ Replace gasket

<b>1.5 – 2.0 kg-m</b> <b>(11.0 – 14.0 lb-ft)</b>
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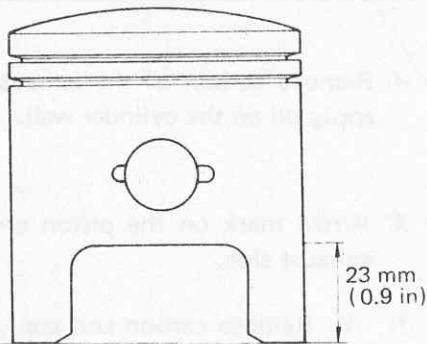
- ④ Remove carbon of the exhaust port and apply oil on the cylinder wall.
- ⑥ Arrow mark on the piston crown faces exhaust side.
- ⑦, ⑧ Remove carbon and apply oil. Top mark "R" or "T" indicates up-side on rings.
- ⑨ Replace with new circlips.





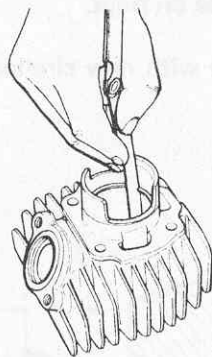
### CYLINDER BORE

Cylinder gauge	09900-20508
Service Limit	41.065 mm (1.6167 in)



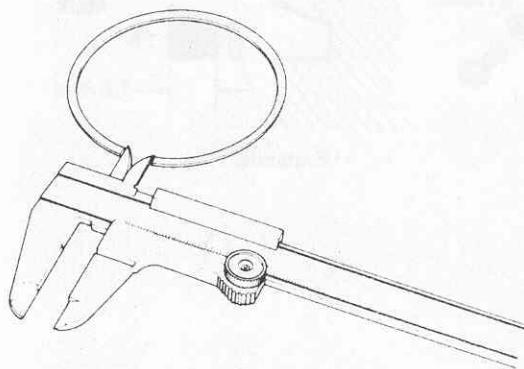
### PISTON DIAMETER

Micrometer	09900-20202
Service Limit	40.880 mm (1.6094 in)



### RING END GAP

Thickness gauge	09900-20803
Service Limit	0.75 mm (0.030 in)



### RING FREE END GAP

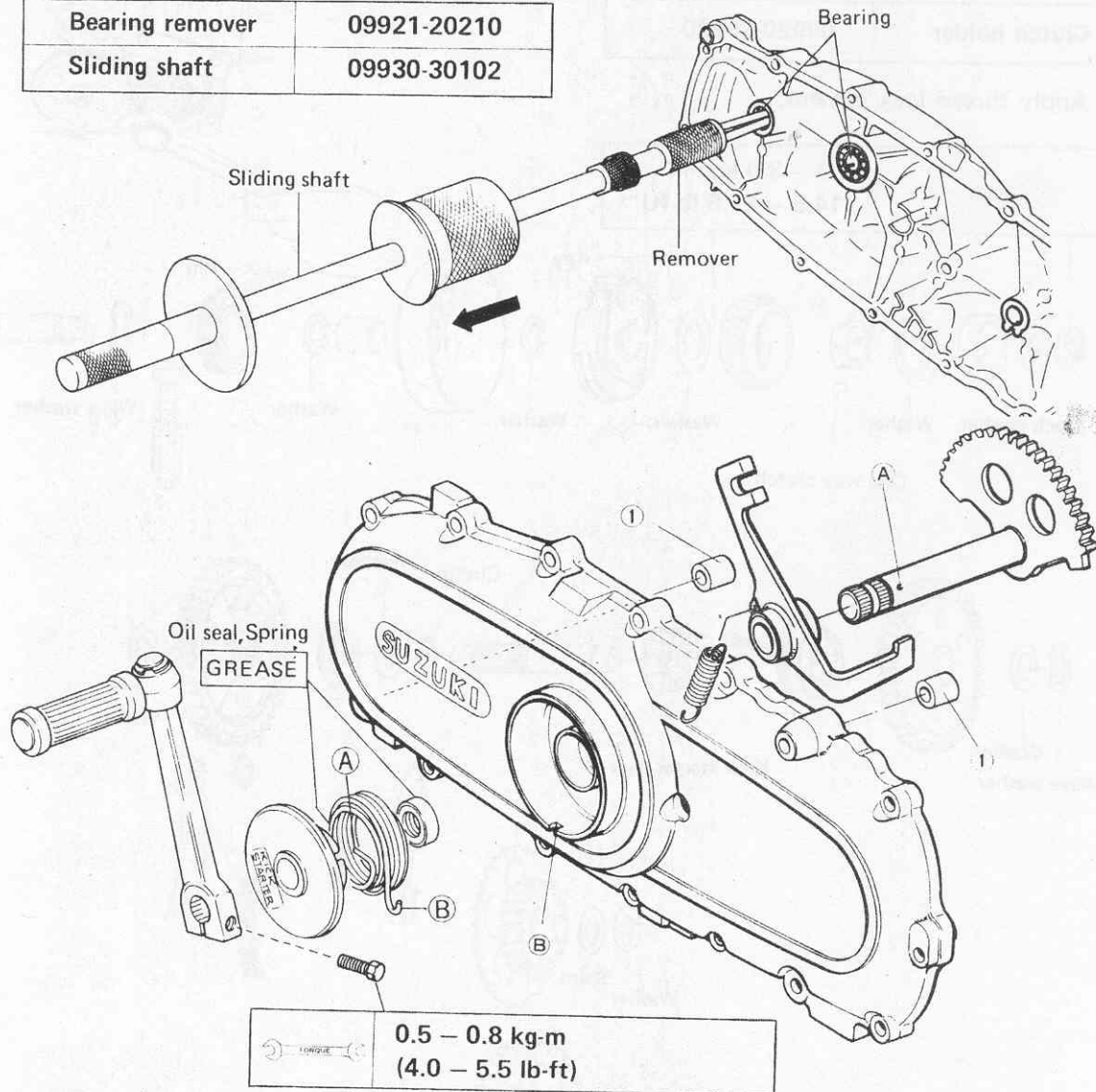
Vernier caliper	09900-20101	
Service Limit	R marked	T marked
	3.6 mm (0.14 in)	4.0 mm (0.16 in)

**NOTE:**  
Replace the piston rings as a set.

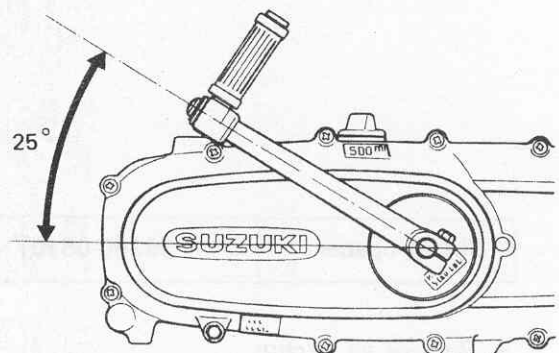


## KICK STARTER, LEFT COVER

Bearing remover	09921-20210
Sliding shaft	09930-30102



- When installing the kick starter return spring, install **A** and then install **B**.
- Apply Suzuki Super Grease A to the oil seal lip and the kick starter spring.
- Replace the gasket.
- Install two dowel pins **1**.




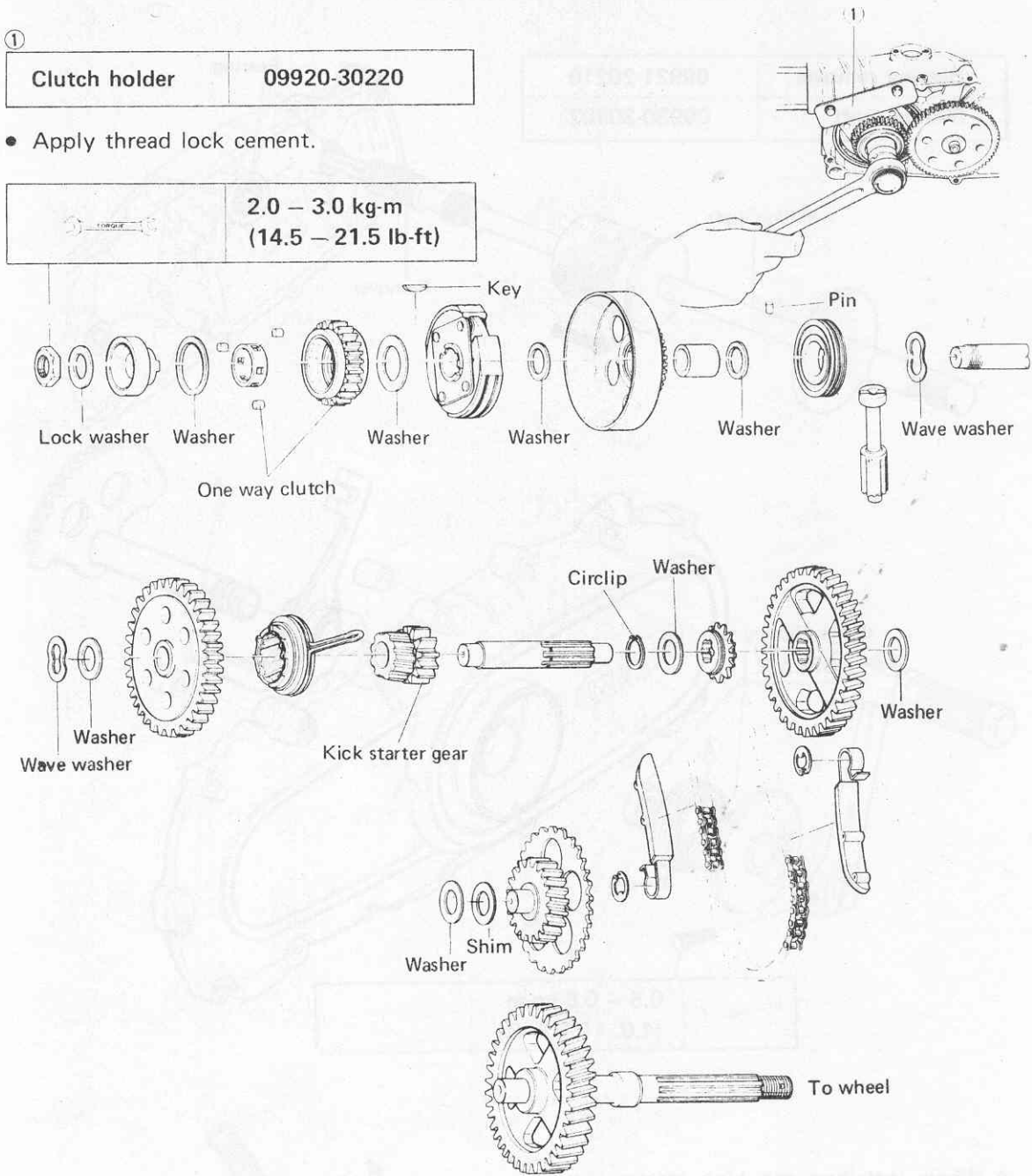
# POWER TRANSMISSION

①

Clutch holder	09920-30220
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- Apply thread lock cement.

	2.0 – 3.0 kg-m (14.5 – 21.5 lb-ft)
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Circlip opener	09900-06107
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- Replace all circlips.
- Adjust shim to reduce the final drive and driven gear noise.

## AUTOMATIC CLUTCH INSPECTION

The FA50 is equipped with an automatic clutch. The engagement of the clutch is governed by engine RPMs and a centrifugal mechanism located in the clutch.

To insure proper performance and longevity of the clutch assemblies it is essential that the clutch engage smoothly and gradually. Two inspection checks must be performed to thoroughly check the operation of the drivetrain. Follow the procedures listed.

### 1. INITIAL ENGAGEMENT INSPECTION

- Warm the motorcycle up to normal operating temperature.
- Connect an electric tachometer to the engine.
- Seated on the motorcycle with the motorcycle on level ground, increase the engine RPMs slowly and note the RPM at which the motorcycle begins to move forward.

#### ENGAGEMENT RPM

STD	2 400 rpm
Tolerance	±200 rpm

### 2. CLUTCH "LOCK-UP" INSPECTION

Perform this inspection to determine if the clutch is engaging fully and not slipping.

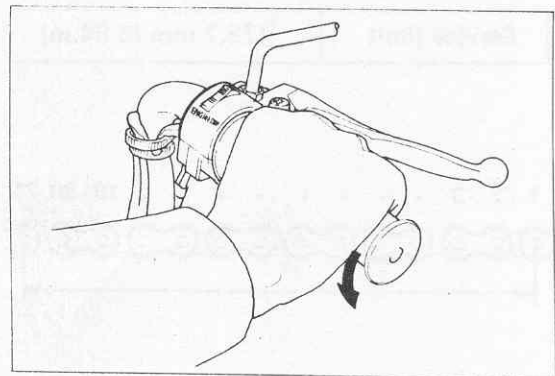
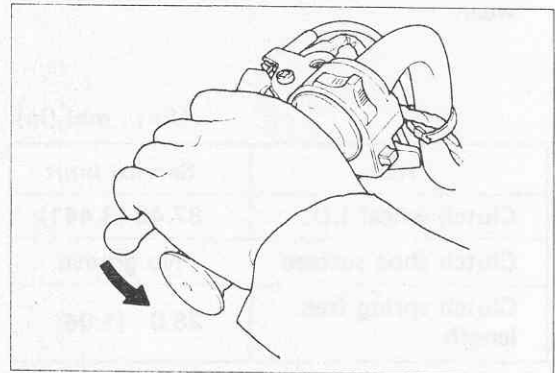
- Warm the engine to normal operating temperatures.
- Connect an electric tachometer to the engine.
- Apply the rear brake as firm as possible.
- Briefly open the throttle fully and note the maximum engine RPMs sustained during the test cycle.

#### CAUTION:

Do not apply full power for more than 10 seconds or damage to the clutch or engine may occur.

#### LOCK-UP RPM

STD	3 500 rpm
Tolerance	±300 rpm



If the engine rpm does not coincide with the specified rpm range then disassemble the clutch.

- Clutch shoe – inspect the shoes visually for chips, cracking, uneven wear, burning and check the depth of the grooves on the shoes. If there is no groove at any part of the shoes, replace them as a set.
- Clutch springs – visually inspect the clutch springs for stretched coils or broken coils. Measure the free length of the springs with vernier calipers.

**NOTE:**  
Clutch shoes or springs must be changed as a set and never individually.

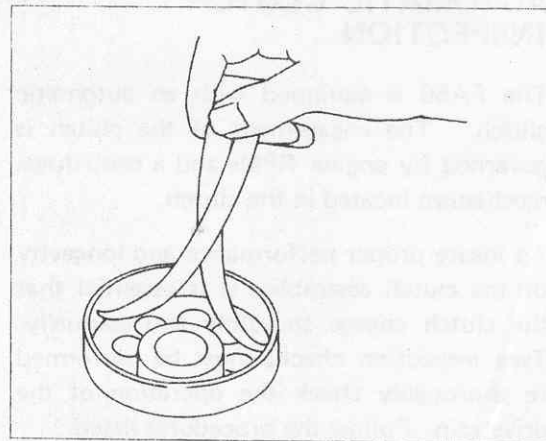
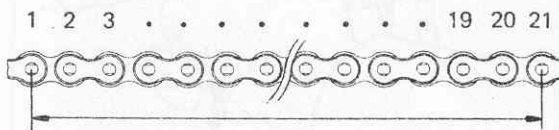
- Clutch wheel – inspect visually the condition of the inner clutch wheel surface for scoring, cracks, or uneven wear. Measure the inside diameter of the clutch wheel with inside calipers. Measure the diameter at several points to check for an out-of-round condition as well as normal wear.

Unit : mm (in)

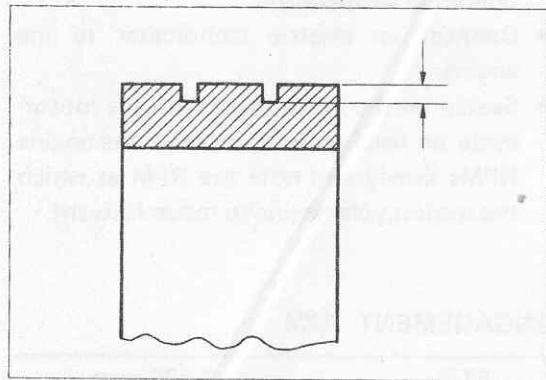
Item	Service limit
Clutch wheel I.D.	87.40 (3.441)
Clutch shoe surface	No groove
Clutch spring free length	28.0 (1.06)

**CHAIN 20 PITCH LENGTH**

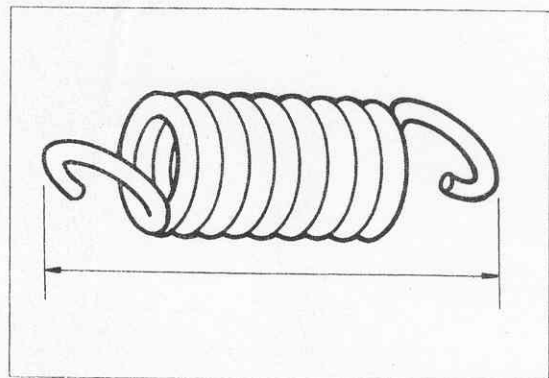
Service limit	173.7 mm (6.84 in)
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Measuring clutch wheel.




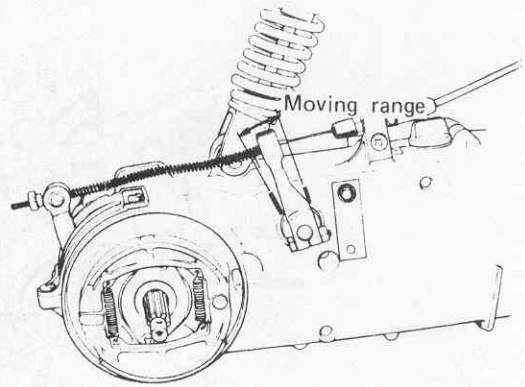
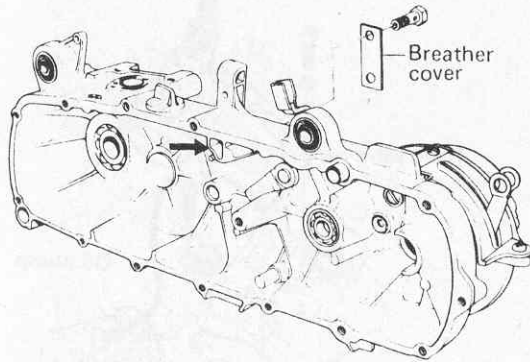
Inspecting clutch shoe groove.



Measuring clutch spring.

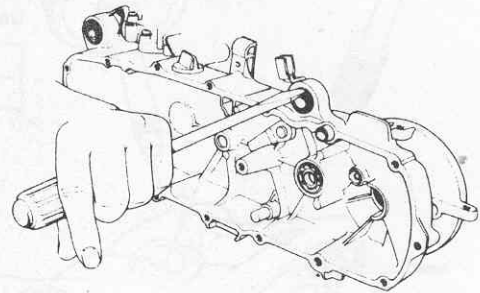
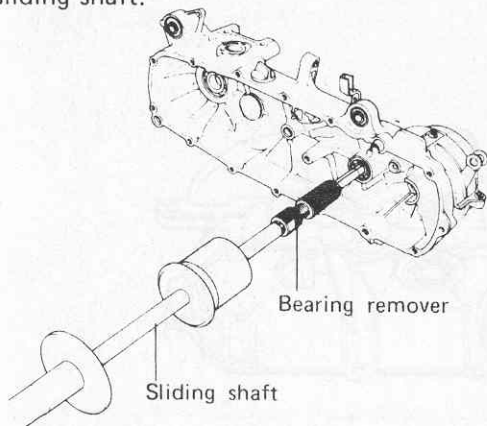
## LEFT CRANK CASE

	0.5 – 0.8 kg-m (4.0 – 5.5 lb-ft)
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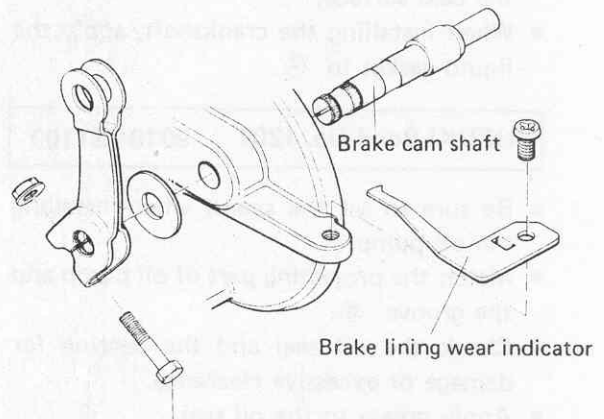
Push out as shown in the figure.


Pull out by using the bearing puller and sliding shaft.



**NOTE:**

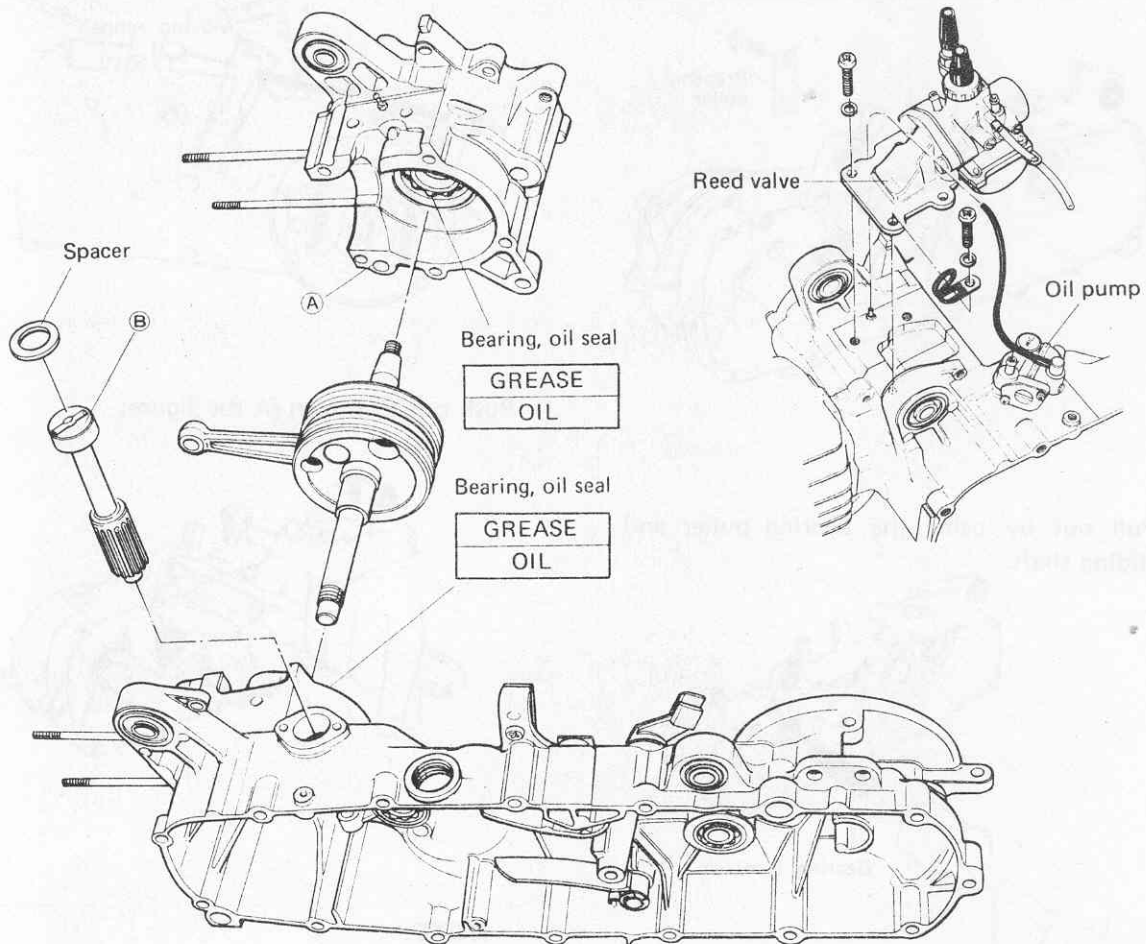
Remove the rear brake shoe and slide out the cam to the right. Be sure to mark the cam lever position before removal.



	0.3 – 0.6 kg-m (2.0 – 4.5 lb-ft)
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## CRANKSHAFT

- Check for damage and bent reeds. Be careful not to bend the reed valve stopper.



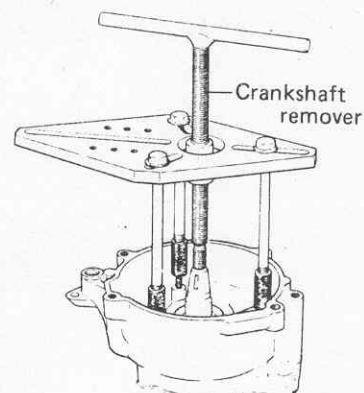
- Clean the inlet port mounting surface and the case surface.
- When installing the crankshaft, apply the liquid gasket to (A).

SUZUKI Bond No. 1201	99104-31100
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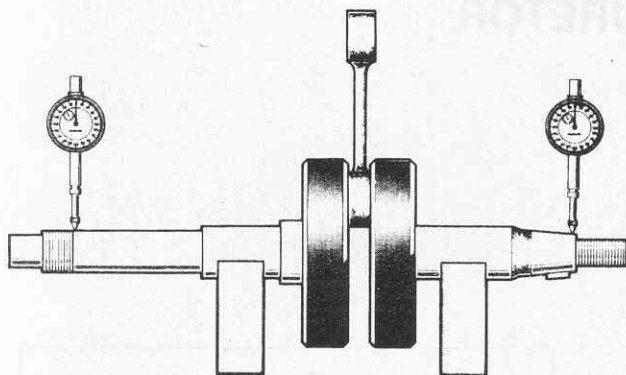
- Be sure to set the spacer when installing the oil pump.
- Match the projecting part of oil pump and the groove (B).
- Check the oil seal and the bearing for damage or excessive clearance.
- Apply grease to the oil seal.
- Apply oil to the bearing.

- Use a crankshaft remover to prevent damage to the crankshaft bearing and crankshaft.

Crankshaft remover	09920-13111
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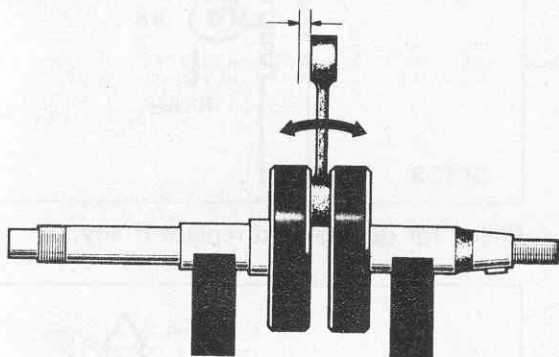


### CRANKSHAFT DEFLECTION



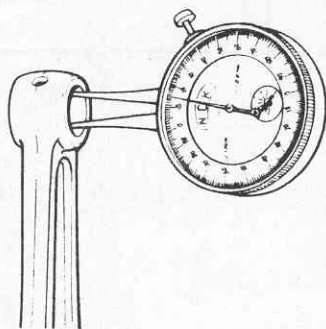
Service limit	0.05 mm (0.002 in)
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### SMALL END DEFLECTION



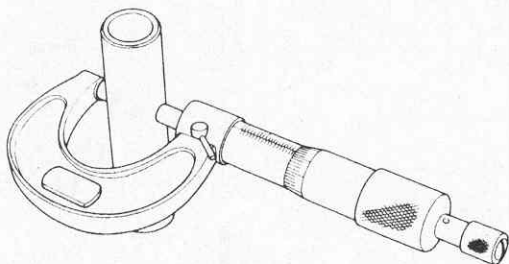
Service limit	3.0 mm (0.12 in)
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### SMALL END BORE DIA.



Service limit	16.040 mm (0.6315 in)
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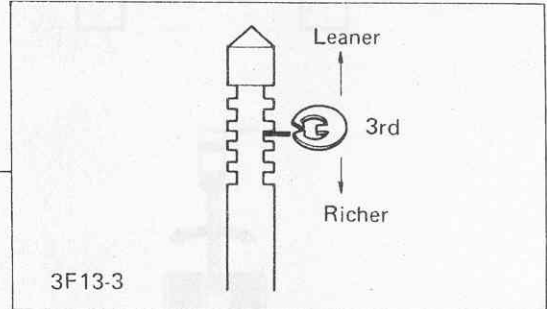
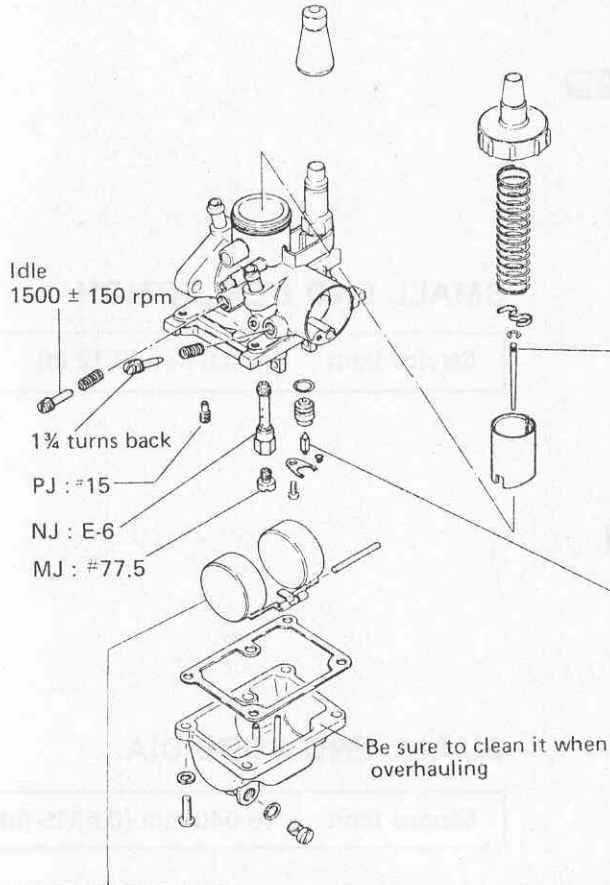
### PISTON PIN O.D.



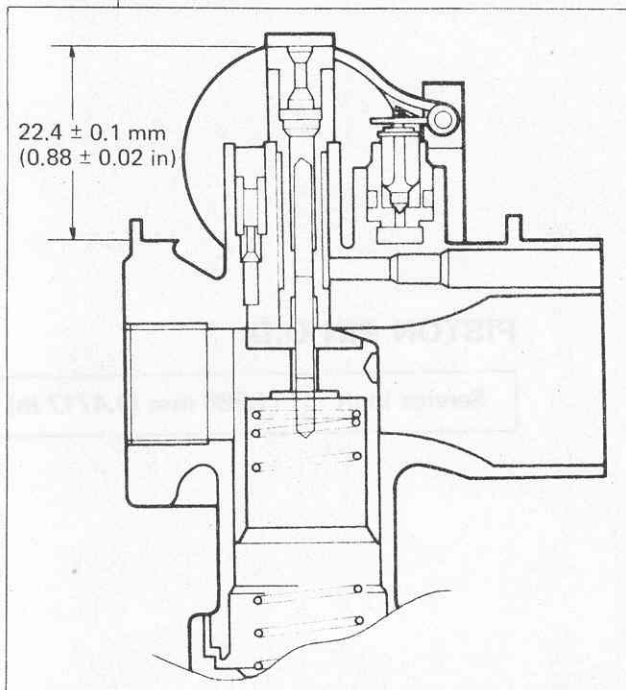
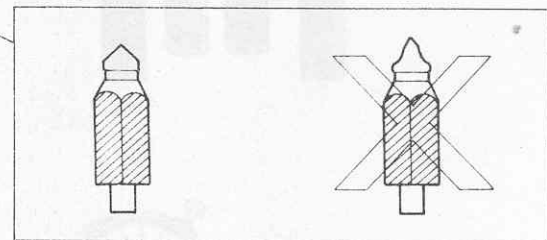
Service limit	11.980 mm (0.4717 in)
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# CARBURETOR

Clean each passage of air and fuel with an air gun.

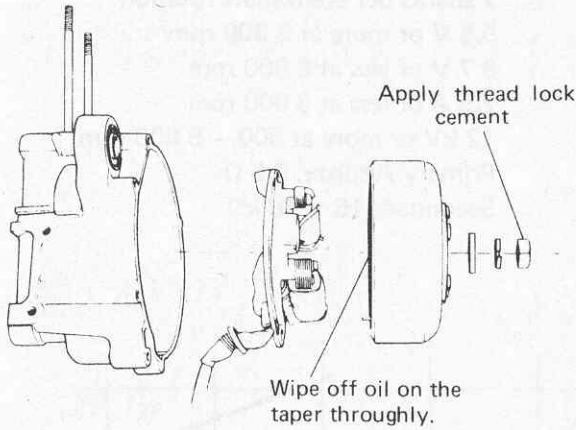


Check for damage and replace if any.



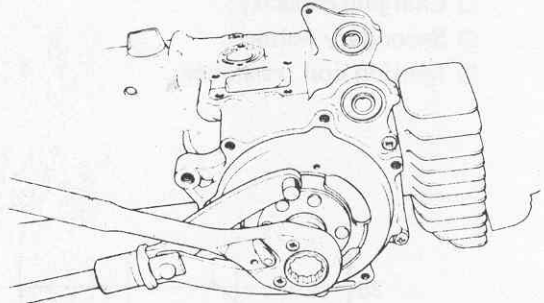


# FLYWHEEL MAGNETO

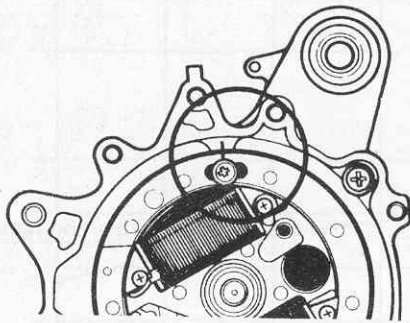


Fix the stator to align the scribed line with the center of the screw hole so that correct ignition timing is assured.

Flywheel holder	09930-40113
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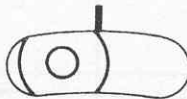
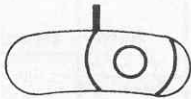


Sliding shaft	09930-30102
Attachment C	09930-30161

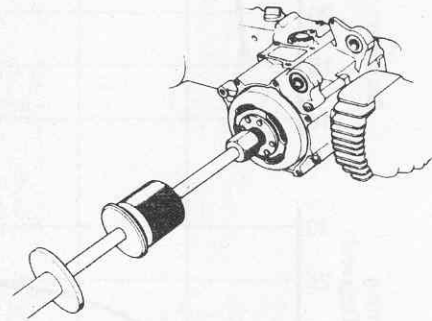
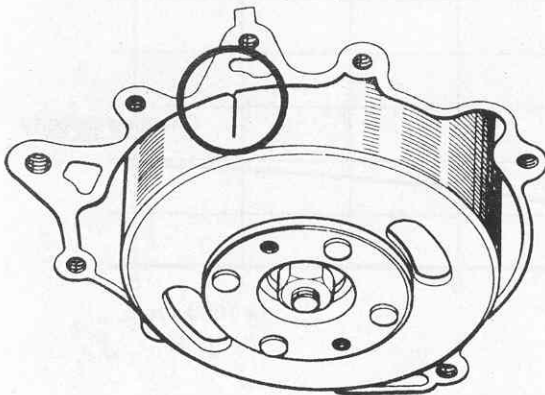


Timing advance

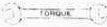
Timing retard

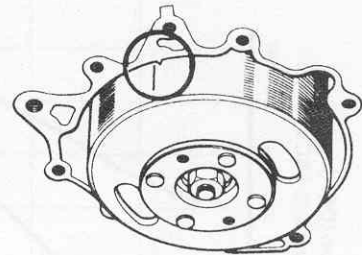


Using a timing light, check whether the ignition timing is correct by running the engine at 4 000 rpm and noting that the marks are aligned properly.

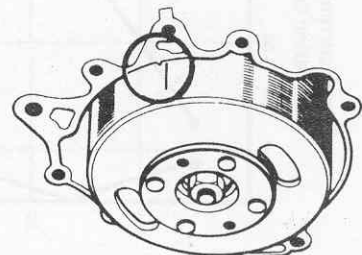


Wipe off oil on the taper thoroughly.

	<b>3.0 – 4.0 kg-m</b> <b>(22.0 – 28.5 lb-ft)</b>
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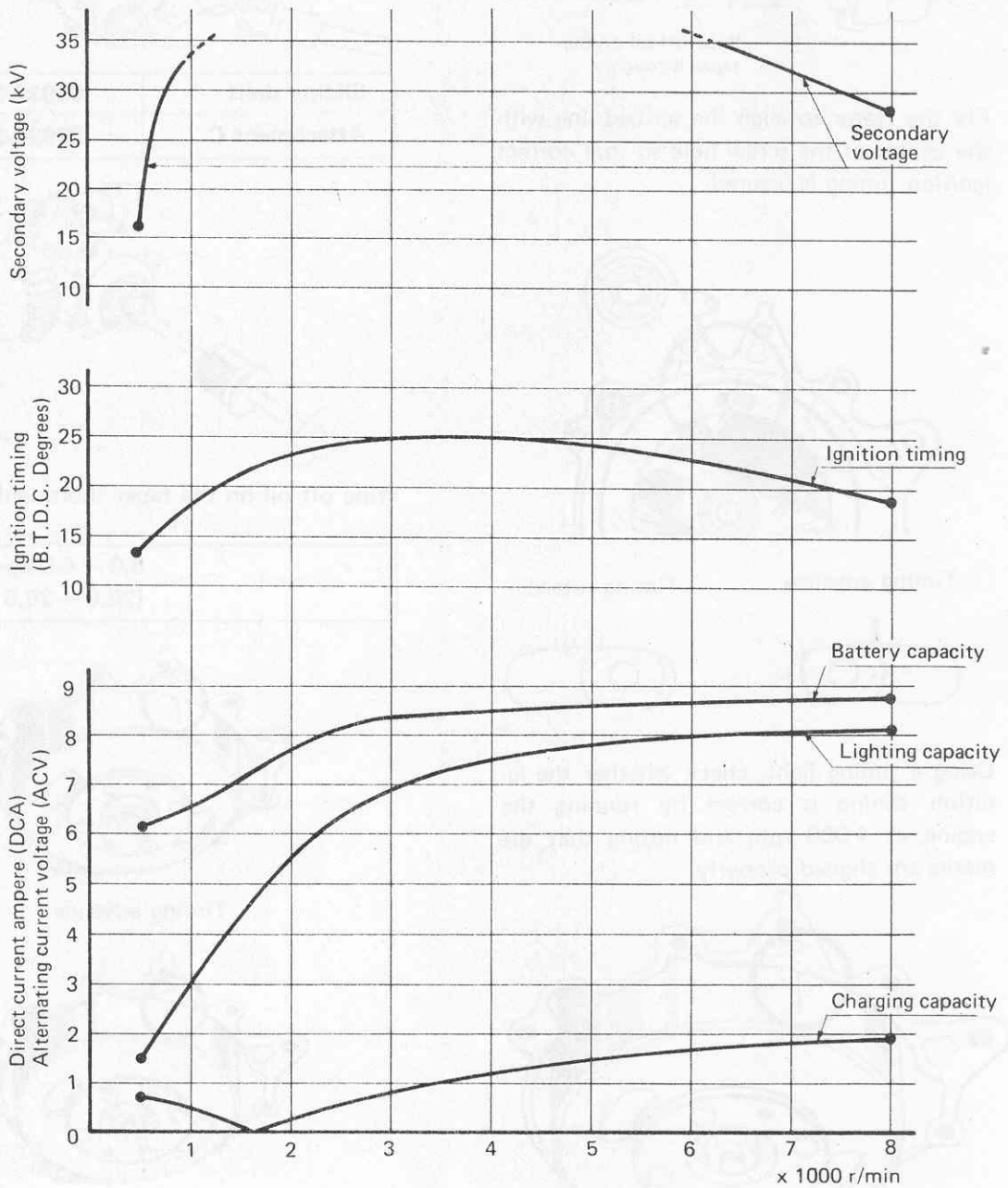
Timing advance



Timing retard

**Specifications**

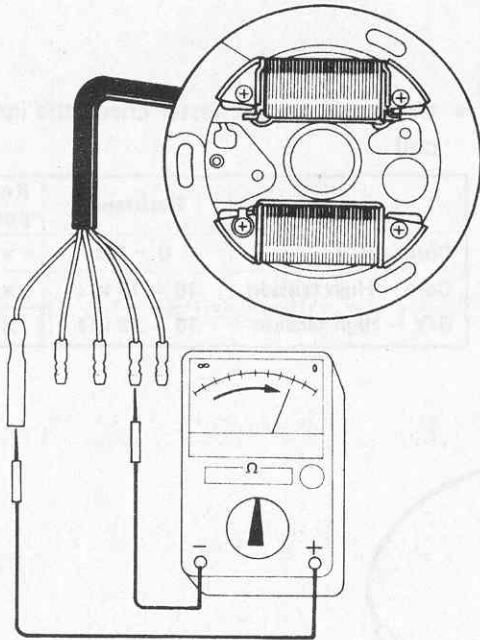
- Ignition method: 2 sparks per crankshaft rotation
- Light capacity: 5.5 V or more at 2 300 rpm  
8.7 V or less at 8 000 rpm
- Charging capacity: 2.5 A or less at 8 000 rpm
- Secondary voltage: 12 kV or more at 500 – 8 000 rpm
- Ignition coil resistance: Primary Approx. 0.5  $\Omega$   
Secondary 16 ~ 18 k $\Omega$



# STATOR

Pocket tester	09900-25002
---------------	-------------

- Select the knob to RX "x 1".
- Make a following continuity test.

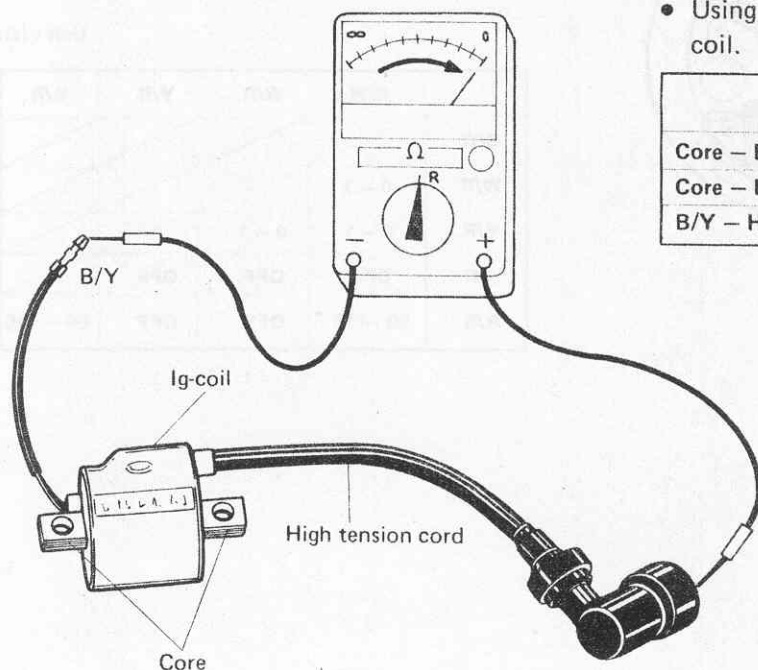


Unit : (Ω)

	B/W	W/R	Y/R	B/R
B/W				
W/R	0 - 1			
Y/R	0 - 1	0 - 1		
B/R	OFF	OFF	OFF	
R/B	90 - 110	OFF	OFF	90 - 110

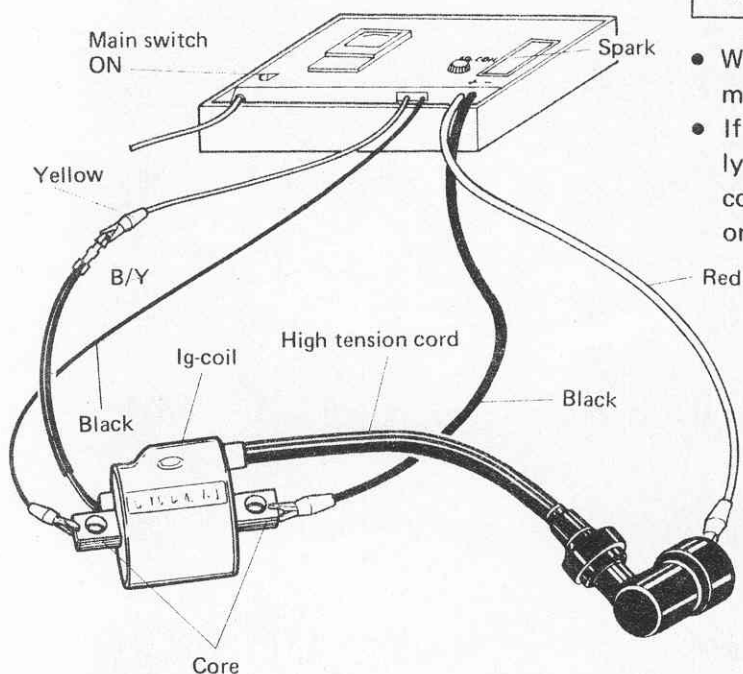
## CHASSIS ELECTRICAL

### IGNITION COIL



- Using the pocket tester check the ignition coil.

	Resistance	Knob position
Core – B/Y	0 – 1Ω	x 1Ω
Core – High tension	16 – 18 kΩ	x kΩ
B/Y – High tension	16 – 18 kΩ	x kΩ



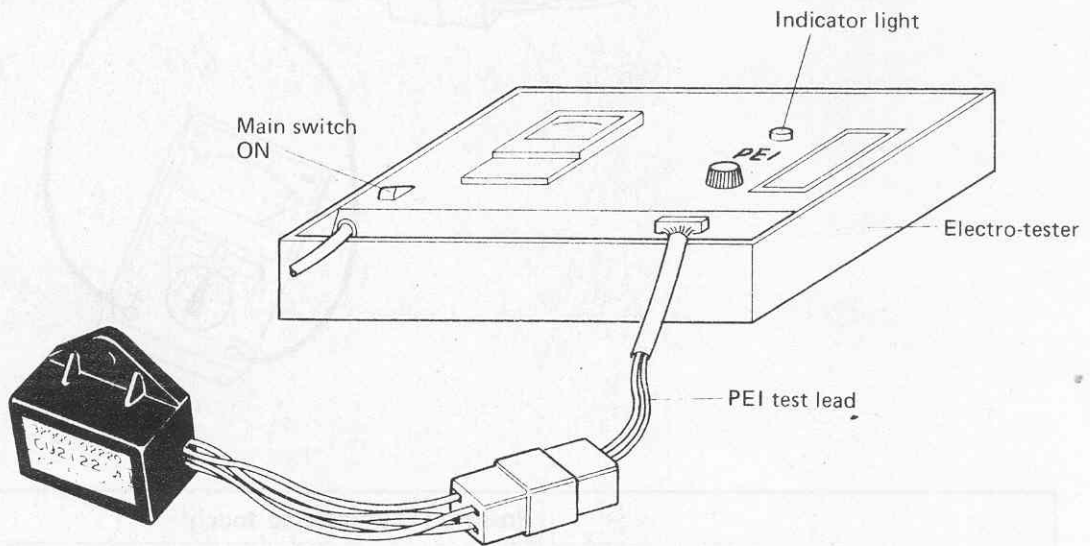
Electro-tester	09900-28106
----------------	-------------

- Wire as shown in the figure and turn the main switch to ON.
- If a bluish white spark occurs continuously for about ten minutes, it is in good condition. When a red spark, a poor spark or no spark is found, replace it.

PEI UNIT

PEI test lead for FA50	09900-28607
------------------------	-------------

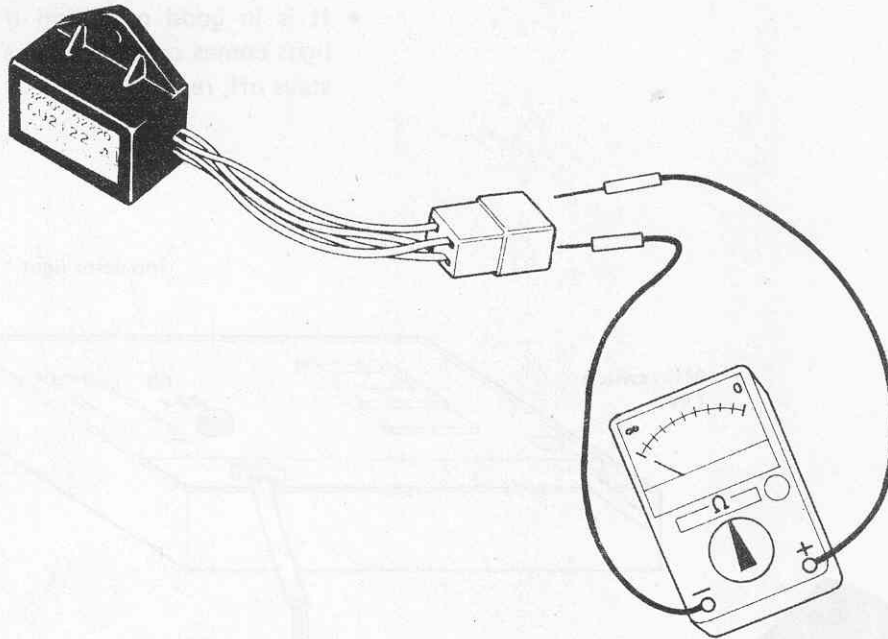
- Wire as shown in the figure and turn the main switch to ON.
- It is in good condition if the indicator light comes on and remains lit. If the light stays off, replace it.



Color	Wire	Color	Wire	Color	Wire	Color	Wire
Black	Black	Black	Black	Black	Black	Black	Black
Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Red	Red	Red	Red	Red	Red	Red	Red
Green	Green	Green	Green	Green	Green	Green	Green
Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
Purple	Purple	Purple	Purple	Purple	Purple	Purple	Purple
Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Pink	Pink	Pink	Pink	Pink	Pink	Pink	Pink
Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
White	White	White	White	White	White	White	White

NOTE: Whether or not the PEI unit is in good condition can be determined only by temporarily replacing it with a new one.

## PEI Inspection by Pocket Tester



		Positive (+) pointer to touch:			
		Black/Red	Red/Black	Black/White	Black/Yellow
Negative (-) pointer touch:	Black/Red		OFF	OFF	OFF
	Red/Black	2 – 4 k $\Omega$		80 – 100 $\Omega$	OFF
	Black/White	2 – 4 k $\Omega$	5 – 7 $\Omega$		OFF
	Black/Yellow	10 – 12 k $\Omega$	2 – 4 k $\Omega$	2 – 4 k $\Omega$	

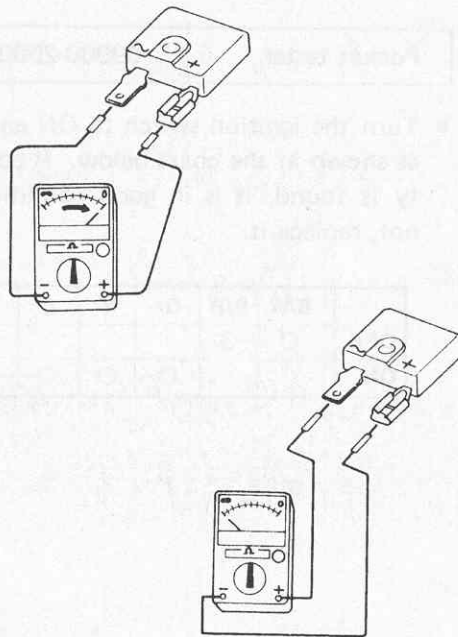
## Test conditions

- The pocket tester's selector knob should be set at "X 1 $\Omega$ " or "X 1 k $\Omega$ " range referring to the chart.
- The two testing probes, (+) and (-), are to be placed on terminals of the PEI unit referring to the chart.
- The (+) probe or pointer is to be placed on one of the terminals listed in the top horizontal row, and the (-) probe or pointer on the corresponding terminal listed in the vertical column.

## NOTE:

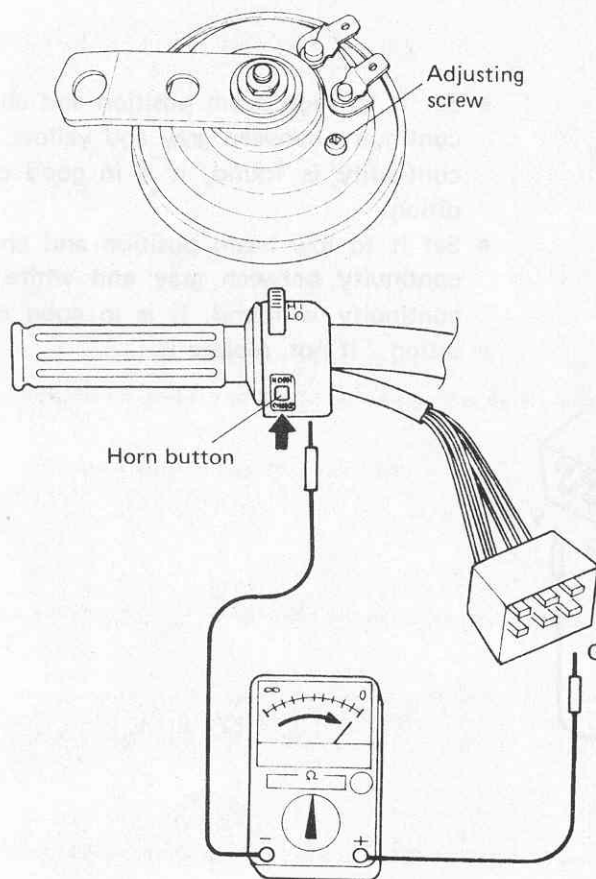
- Whether or not the PEI unit is in good condition can be determined easily by temporarily replacing it with a new one.

## RECTIFIER



- If continuity is found in  $\Omega$  range when connecting as shown in the figure and not found when (+) (-) probes are reversed, it is in good condition. If continuity is found in both cases or no continuity in either case, replace it.

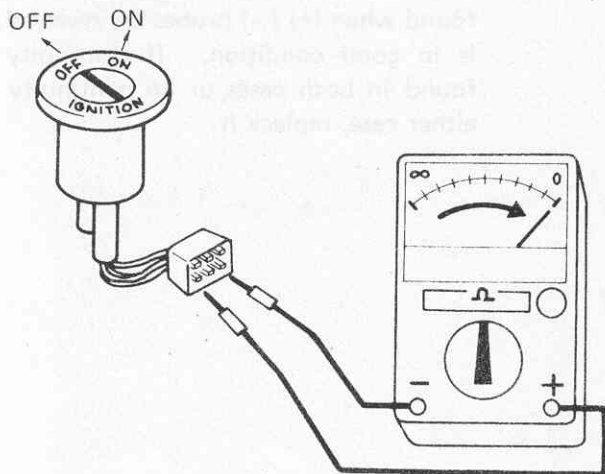
## HORN



- If the sound volume is insufficient, turn the adjusting screw while connecting the horn directly to the battery till the maximum volume is found and set it there.
- After turning the adjusting screw, if no sound is heard or the sound volume is insufficient, replace it.
- Connect the lead wire in the headlight housing and the ground wire to the pocket tester, set knob range to R and press the horn button. If continuity is found, it is in good condition.

## SWITCHES

### IGNITION SWITCH



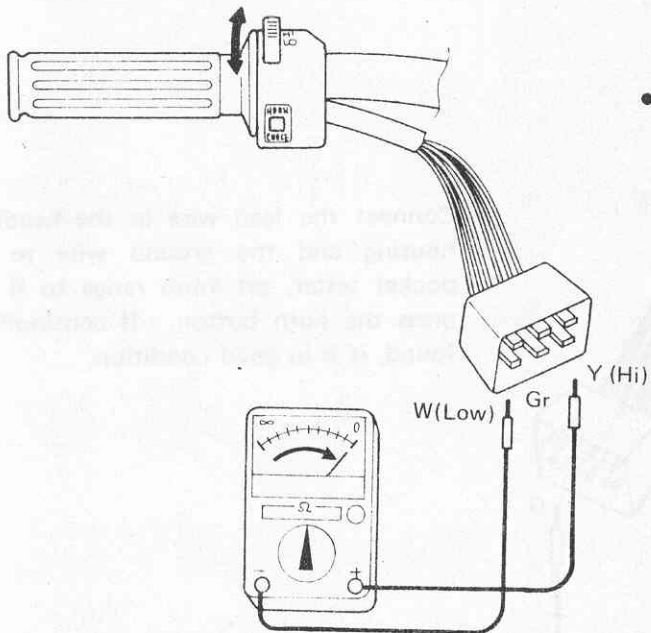
Pocket tester

09900-25002

- Turn the ignition switch to ON and OFF as shown in the chart below. If continuity is found, it is in good condition. If not, replace it.

	B/W	B/R	Gr	Y	O	R
OFF	○—○					
ON			○—○	○—○	○—○	

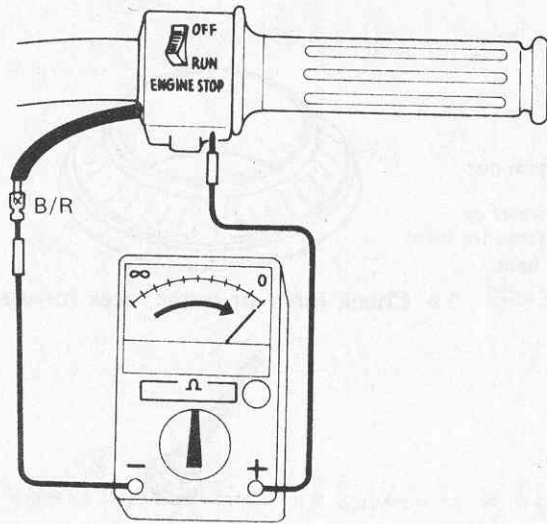
### LEFT HANDLE SWITCH



- Set it to high beam position and check continuity between gray and yellow. If continuity is found, it is in good condition.
- Set it to low beam position and check continuity between gray and white. If continuity is found, it is in good condition. If not, replace it.

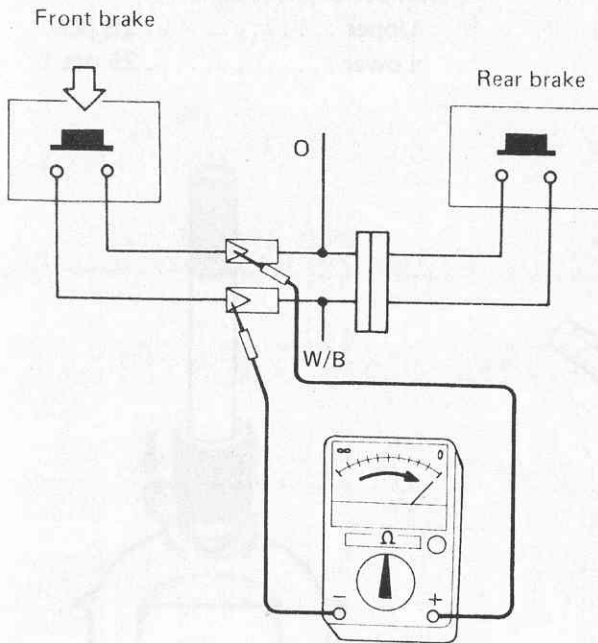


### ENGINE KILL SWITCH



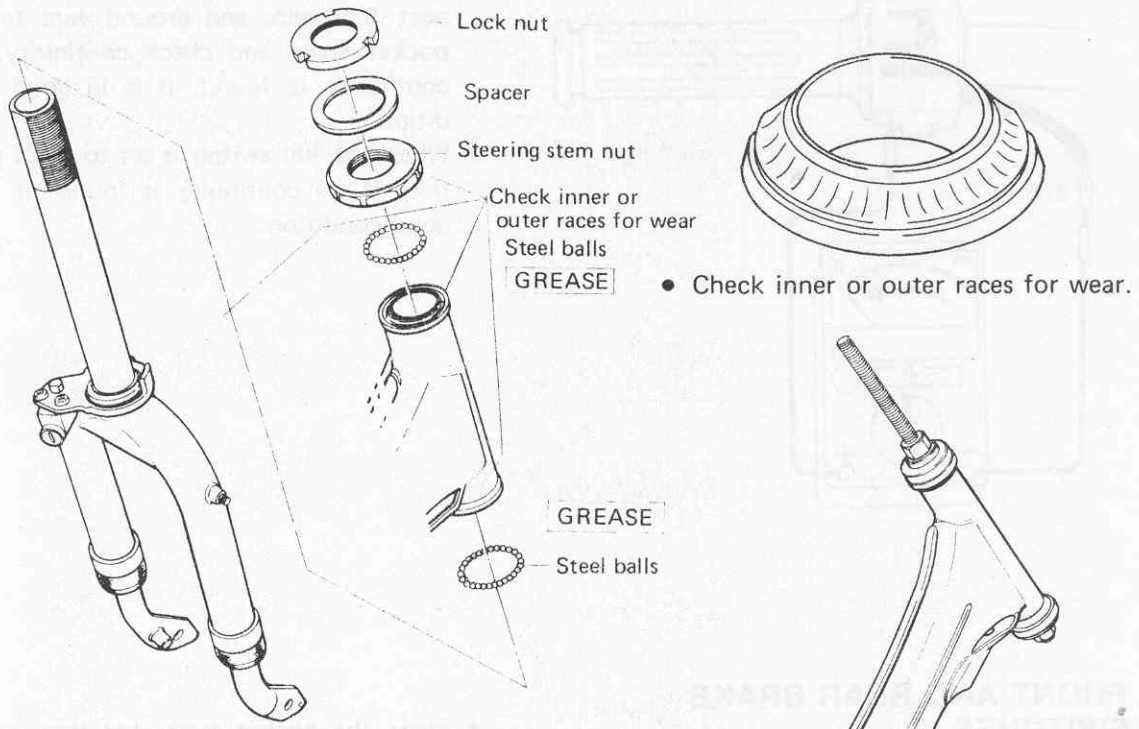
- Set the kill switch to OFF position, connect B/R wire and ground wire to the pocket tester and check continuity. If continuity is found, it is in good condition.
- When the kill switch is set to RUN position, if no continuity is found, it is in good condition.

### FRONT AND REAR BRAKE SWITCHES

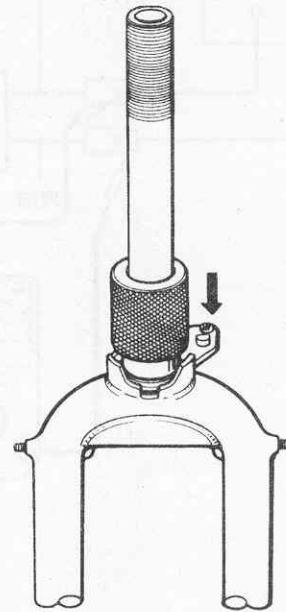
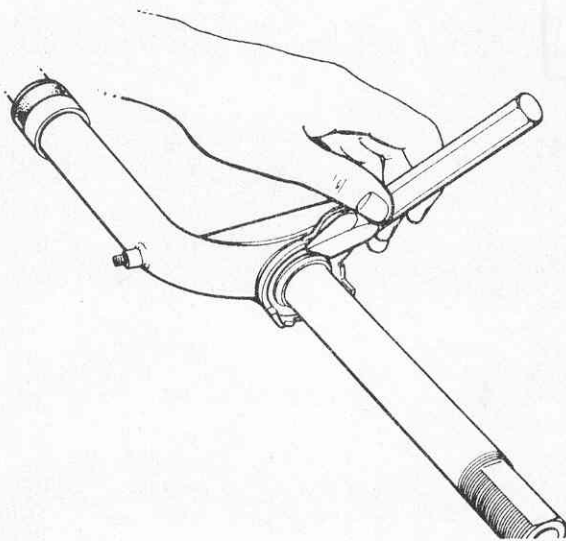


- Place the pocket tester between orange lead wire and W/B lead wire with the red tube and squeeze the brake lever. If continuity is found, it is in good condition. If not, replace it.

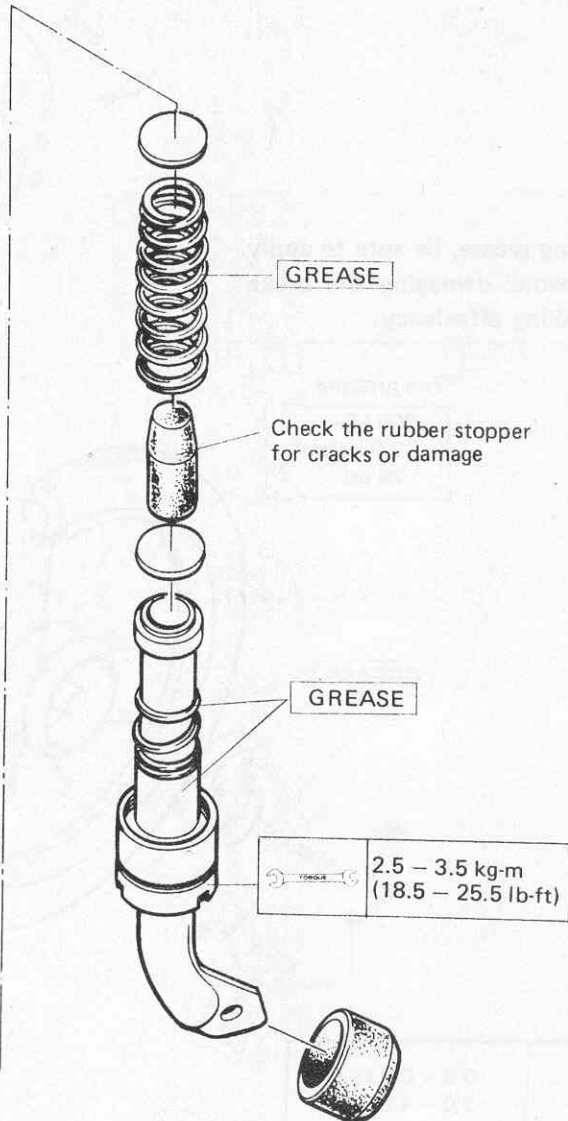
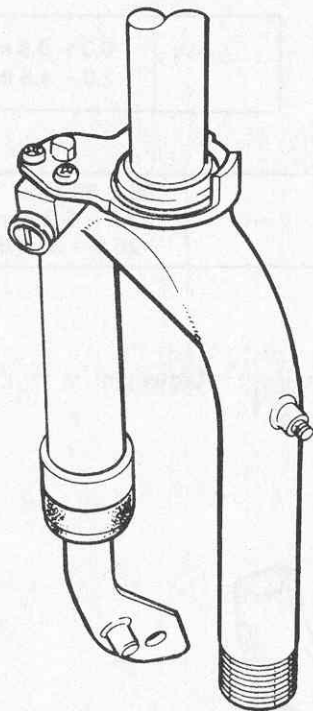
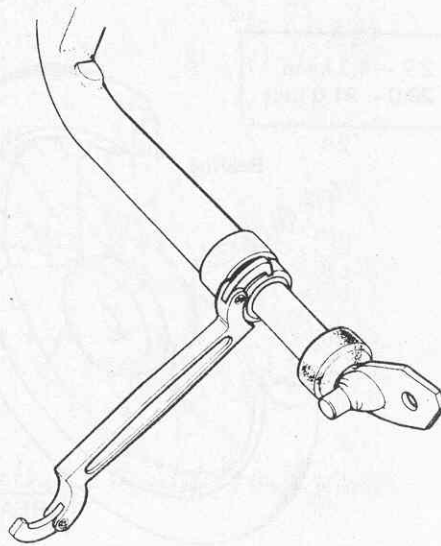
# STEERING



- Number of steel balls
  - Upper ..... 25 pcs
  - Lower ..... 25 pcs




# FRONT SUSPENSION



## WHEELS AND BRAKES

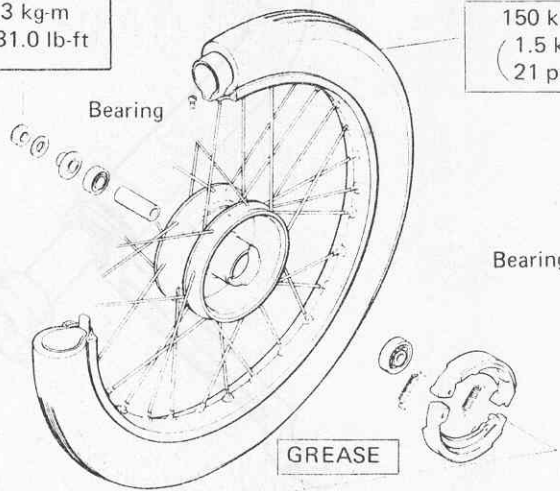
### WHEELS

#### FRONT

	2.7 – 4.3 kg-m 20.0 – 31.0 lb-ft
---	-------------------------------------

Tire pressure

150 kPa (1.5 kg/cm <sup>2</sup> ) 21 psi
--




Bearing

GREASE

**CAUTION:**

When applying grease, be sure to apply it thin to avoid damaging the brake shoe and braking efficiency.




	0.3 – 0.6 kg-m 2.0 – 4.5 lb-ft
---	-----------------------------------

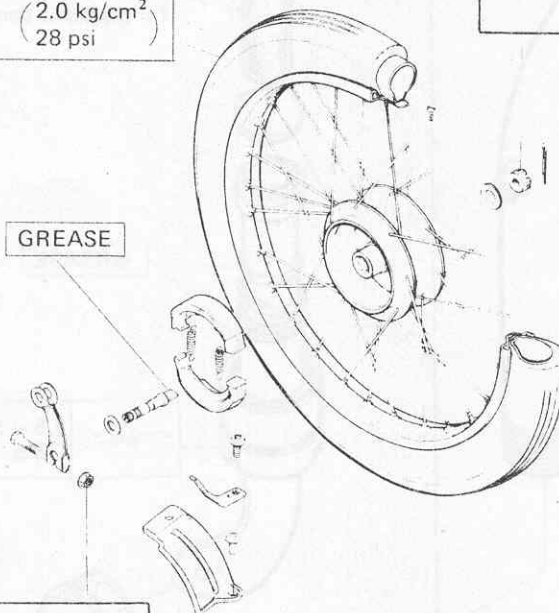
#### REAR

Tire pressure


200 kPa (2.0 kg/cm <sup>2</sup> ) 28 psi
--

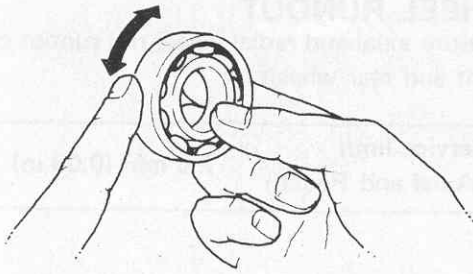
	36 – 52 N-m (3.6 – 5.2 kg-m) 26.5 – 37.5 lb-ft
---	--

GREASE



Cotter pin

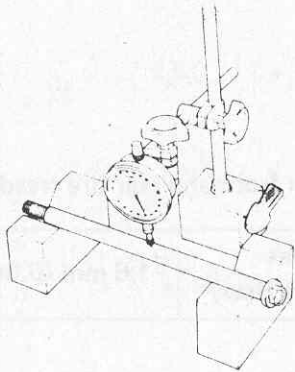
	0.3 – 0.6 kg-m 2.0 – 4.5 lb-ft
---	-----------------------------------



### BEARING

Front wheel bearing is of grease sealed type and one side of it is sealed. If noise or excessive clearance is found when rotating it by hand, replace it.

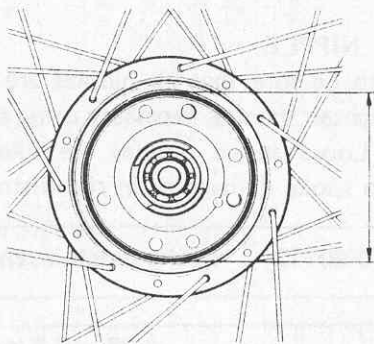
As to the rear wheel bearing, both sides are sealed. If noise or excessive clearance is found between the inner race and the outer race or rotation is not smooth, replace it.



### FRONT AXLE SHAFT

Measure the front axle shaft deflection.

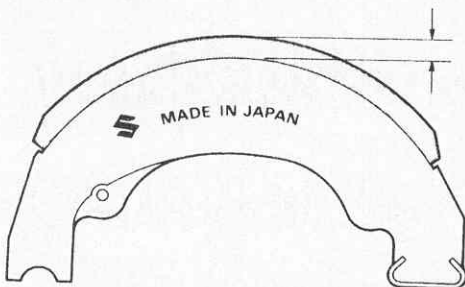
Service limit	0.25 mm (0.01 in)
---------------	-------------------



### BRAKE DRUM

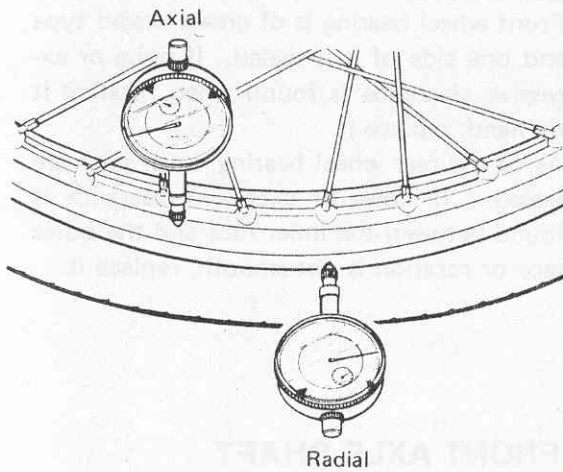
Measure inner diameter of both front and rear drums.

Service limit (Front and Rear)	80.5 mm (3.17 in)
-----------------------------------	-------------------



### BRAKE LINING THICKNESS

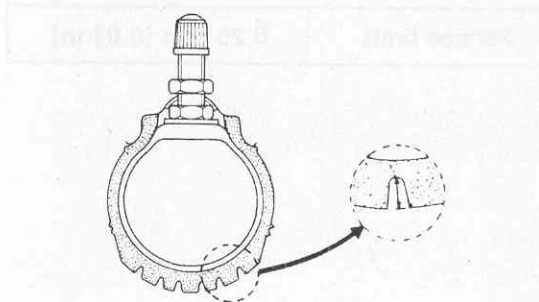
Service limit	1.5 mm (0.06 in)
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### WHEEL RUNOUT

Measure axial and radial wheel rim runout of front and rear wheels.

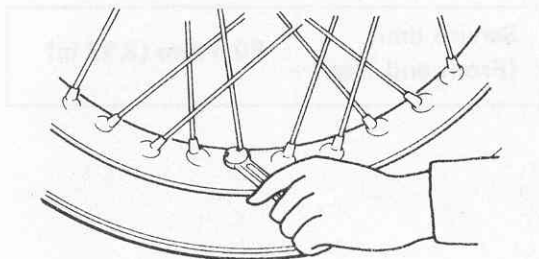
Service limit (Axial and Radial)	2.0 mm (0.08 in)
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### TIRE

Measure both front and rear tire tread depth.

Service limit (Front and Rear)	1.6 mm (0.06 in)
-----------------------------------	------------------



### SPOKE NIPPLE

Check to be sure that all nipples are tight, and retighten them as necessary using special tool. Loose spoke nipples are likely to result in spoke damage or in rim distortion.

09940-60112	Spoke nipple wrench
-------------	---------------------

Tightening torque	0.25 – 0.3 kg-m (1.8 – 2.1 lb-ft)
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# SERVICING INFORMATION

## CONTENTS

TROUBLESHOOTING .....	4- 2
SPECIAL MATERIALS .....	4- 5
SPECIAL TOOLS .....	4- 6
WIRE AND CABLE ROUTING.....	4- 8
WIRING DIAGRAM .....	4-10
TIGHTENING TORQUE.....	4-11
SERVICE DATA .....	4-12

## TROUBLESHOOTING

### HARD ENGINE STARTING OR NO ENGINE STARTING

#### ENGINE

1. Compression leakage from crank chamber
  - Leakage from cylinder base gasket
  - Damaged or improperly tightened reed valve
  - Leakage due to defective crankshaft oil seal
  - Leakage from crankcase mating surface
2. Compression leakage from combustion chamber
  - Loose spark plug mounting
  - Damaged cylinder head gasket
  - Loose cylinder head tightening nut
  - Worn or sticking piston ring
  - Piston seizure, wear or holed piston
  - Defective or warped cylinder head mating surface

#### FUEL CIRCUIT

1. Fuel line
  - Clogged fuel hose
  - Damaged fuel cock diaphragm
2. Air passage
  - Air intake due to defective fuel cock vacuum hose
  - Air intake due to damaged reed valve gasket
  - Air intake due to loose carburetor inlet mounting
  - Clogged tank cap breather hole
3. Carburetor
  - Poor return of choke plunger
  - Clogged air jet or pilot jet
  - Clogged needle valve

#### ELECTRICAL CIRCUIT

1. No sparking at spark plug
  - Bridged, carbon fouled or wet spark plug
  - Poor contact between spark plug cap and high tension cord
  - Broken or improperly connected engine ground wire
  - Defective engine kill switch
  - Poor contact of ignition switch
  - Broken or short circuited ignition coil
  - Defective wiring among stator, PEI unit and ignition coil
  - Defective PEI unit
2. Sparking at spark plug
  - Improperly timed ignition
  - Loose mounting part of stator or rotor
  - Check engine unit or fuel circuit



**ENGINE STALLING**

1. Improper idling rpm.
2. Fouled or worn spark plug
3. Lean fuel/air mixture
  - Air screw out of adjustment
  - Clogged carburetor jet
  - Clogged fuel hose
  - Clogged gasoline tank cap
  - Incorrect carburetor fuel level
4. Compression leakage from crankcase (oil seal, mating surface)

**NOT ENOUGH ENGINE POWER**

1. Defective spark plug gap
2. Clogged air cleaner
3. Clogged exhaust muffler
4. Clogged carburetor jet
5. Incorrect carburetor fuel level
6. Slipping clutch (see clutch slippage)
7. Sticking piston ring
8. Worn cylinder, piston or piston rings

**POOR ENGINE PERFORMANCE AT LOW-SPEED**

1. Carburetor adjustment
  - Air screw adjustment
  - Incorrect fuel level
  - Idling rpm out of adjustment
2. Ignition system
  - Incorrect spark plug gap
  - Improperly timed ignition (improper stator mounting position)
3. Air cleaner element ripped or leaking
4. Air intake through inlet hose
5. Damaged reed valve

**POOR ENGINE PERFORMANCE AT HIGH-SPEED**

1. Incorrect spark plug gap
2. Clogged carburetor jet
3. Clogged air cleaner element
4. Muffler restricted
5. Improperly timed ignition (improper stator mounting position)
6. Defective ignition coil

### ENGINE OVERHEAT

1. Lean fuel/air mixture
  - Clogged carburetor jet
  - Carburetor float level
2. Ignition timing too advance or retarded
3. Carbon deposit
  - Cylinder head, piston crown, exhaust port, spark plug
4. Dragging brake
5. Defective oil pump




### DEFECTIVE CLUTCH


1. Slipping clutch
  - Worn or burnt clutch shoe
2. Disengaged clutch
  - Poor operation of clutch drive shoe
3. Incorrect clutch-engagement rpm
  - Defective clutch spring
  - Worn or burnt clutch drive shoe
4. Not smooth idling
  - Defective clutch spring
  - Too high idling rpm

## SPECIAL MATERIALS

### MATERIAL REQUIRED FOR MAINTENANCE

The materials listed below are required for maintenance works on the Model FA50, and should be kept on hand for ready use. In addition, such standard materials as cleaning fluids, lubricants, etc., should also be available. Methods of use are discussed in the text of this manual.

Material	Use
 Suzuki super grease "A" 99000-25010	<ul style="list-style-type: none"> <li>○ Oil seals</li> <li>○ Cable (speedometer)</li> <li>○ Brake cam shaft</li> <li>○ Speedometer gears</li> </ul>
 Suzuki bond No. 1201 99104-31100	<ul style="list-style-type: none"> <li>○ Crankcase mating surface</li> </ul>
 Suzuki lock super "1363C" 99104-32050	<ul style="list-style-type: none"> <li>○ Muffler fitting bolt</li> </ul>

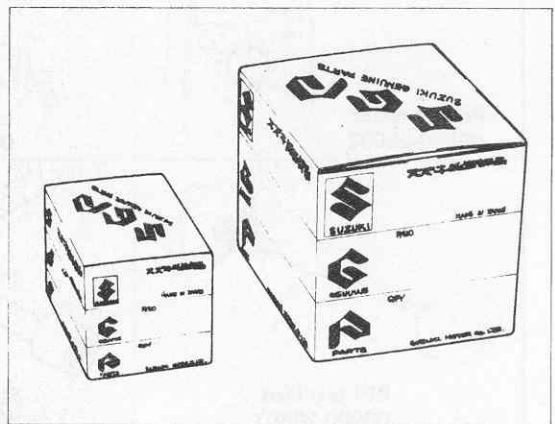


Thread lock cement  
99000-32040

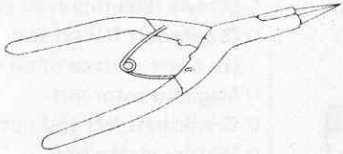
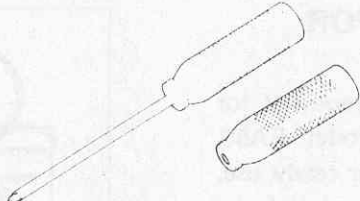
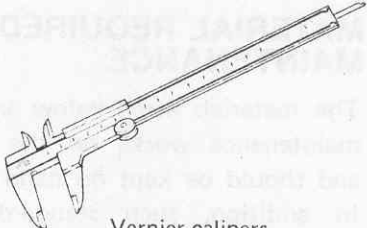
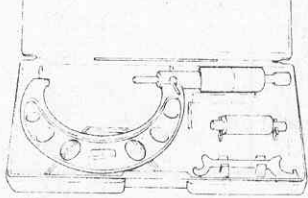
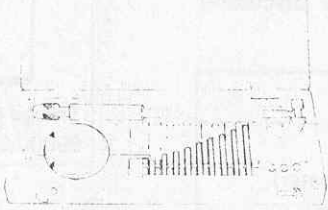
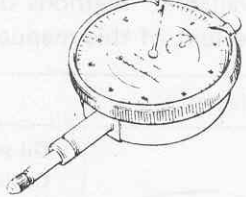
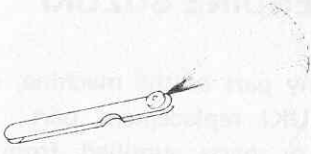
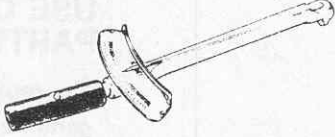
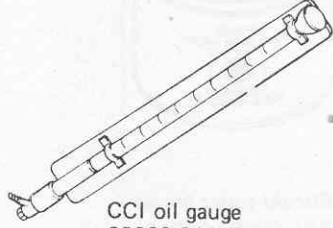
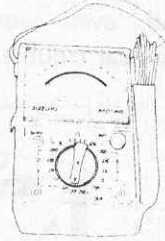
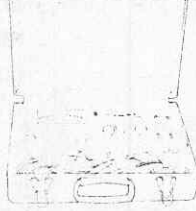
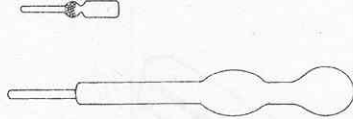
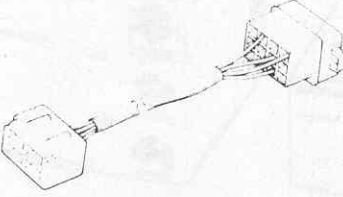
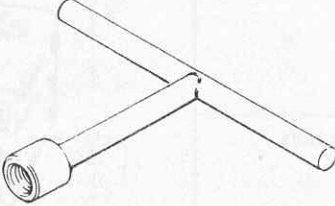

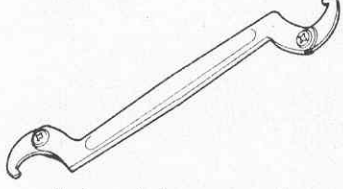
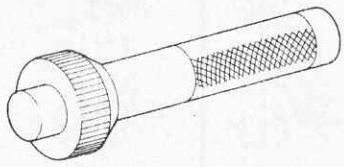
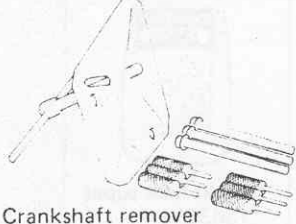
- Screws (securing read valve)
- Crankshaft RH oil seal (to outer surface of oil seal)
- Magneto rotor nut
- Crankshaft left end nut
- Muffler clamp bolt
- Horn adjusting screw
- Cylinder stud bolts

### USE OF GENUINE SUZUKI PARTS

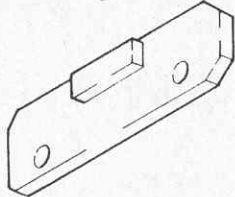
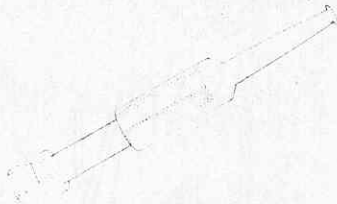
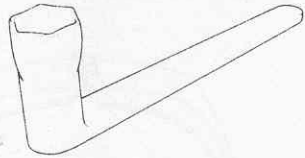
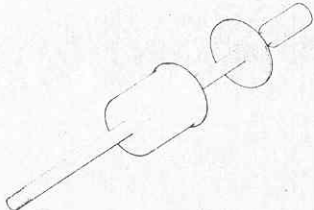
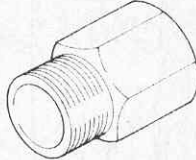
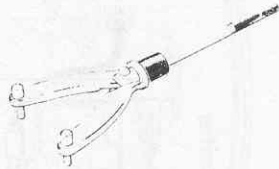
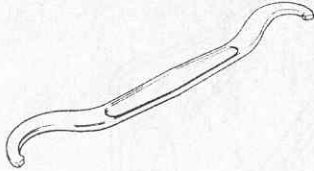
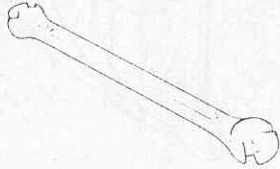
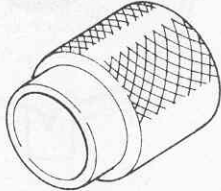
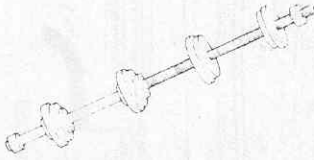
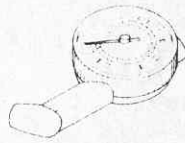
To replace any part of the machine, use a genuine SUZUKI replacement part. Imitation parts or parts supplied from any other source than SUZUKI, if used to replace parts of SUZUKI origin in the machine, will lower the inherent capacity of the machine and, even worse, could induce costly mechanical trouble.



## SPECIAL TOOLS

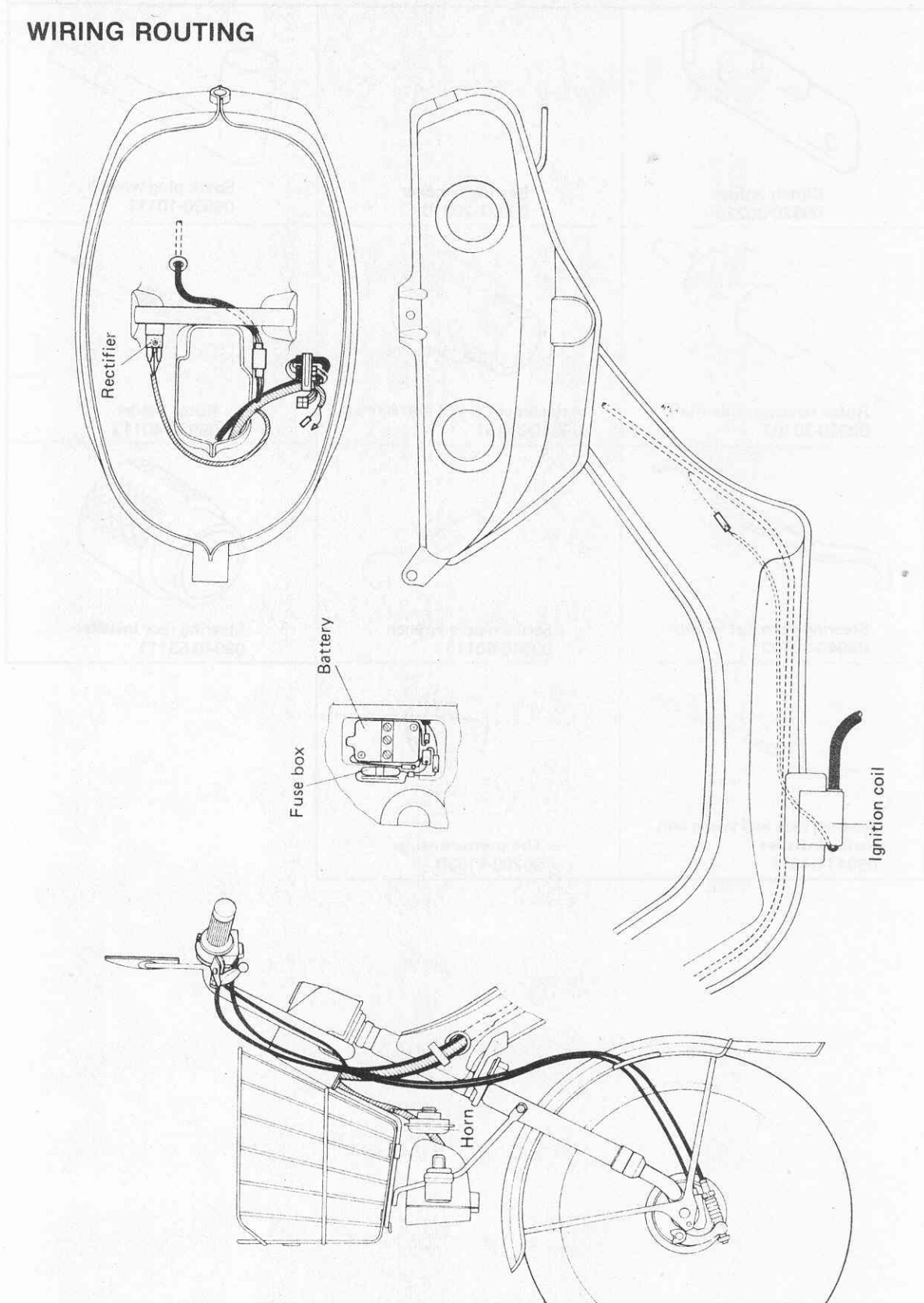
 <p>Snap ring pliers (opening type) 09900-06107</p>	 <p>Shock driver set 09900-09002</p>	 <p>Vernier calipers 09900-20101</p>
 <p>Micrometer 09900-20201 (0 ~ 25 mm) 09900-20202 (25 ~ 50 mm)</p>	 <p>Cylinder gauge set 09900-20508</p>	 <p>Dial gauge 09900-20606 (0 ~ 10 mm, <math>\frac{1}{100}</math> mm)</p>
 <p>Thickness gauge 09900-20803</p>	 <p>Torque wrench 09009-21102 (0 ~ 120 kg-cm) 09900-21103 (100 ~ 900 kg-cm)</p>	 <p>CCI oil gauge 09900-21602</p>
 <p>Pocket tester 09900-25002</p>	 <p>Electro-tester 09900-28106</p>	 <p>Hydrometer 09900-28403</p>
 <p>PEI test lead 09900-28607</p>	 <p>Stud bolt installer 09910-10110</p>	 <p>Piston pin puller 09910-34510</p>
 <p>Universal clamp wrench 09910-60611</p>	 <p>Bearing installer 09913-75820</p>	 <p>Crankshaft remover 09920-13111</p>

WIRE AND CABLE ROUTING

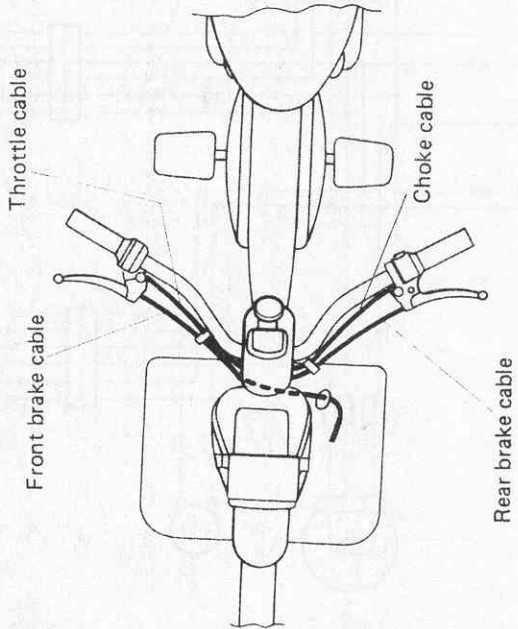
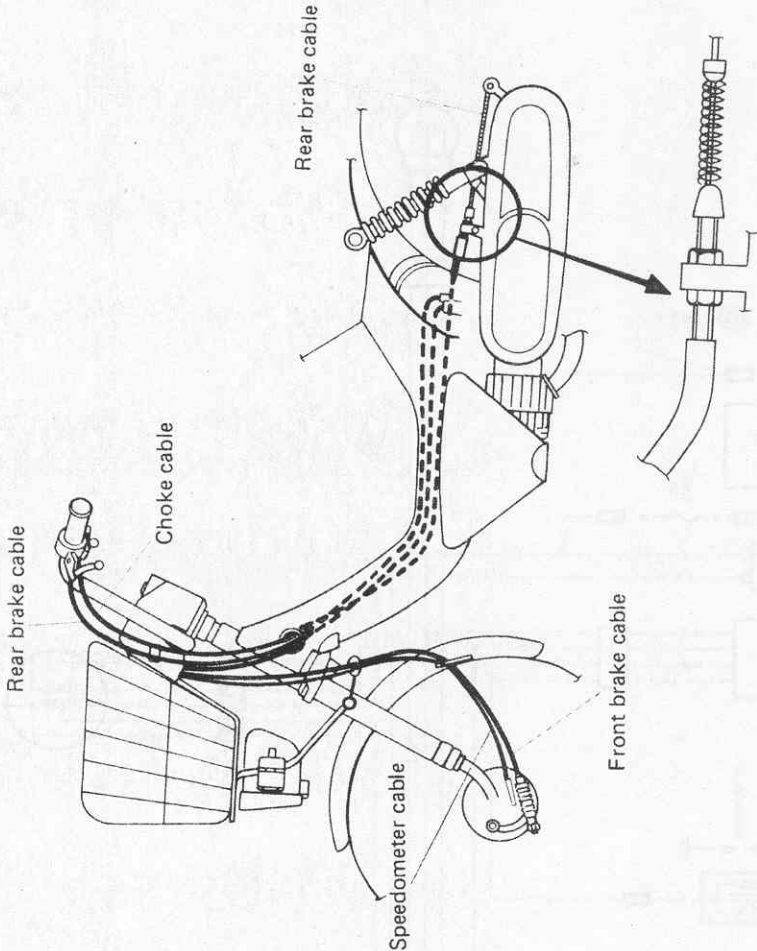
 <p>Clutch holder 09920-30220</p>	 <p>Bearing remover 09921-20210</p>	 <p>Spark plug wrench 09930-10111</p>
 <p>Rotor remover slide shaft 09930-30102</p>	 <p>Attachment C (27 mm screw) 09930-30161</p>	 <p>Rotor holder 09930-40113</p>
 <p>Steering stem nut wrench 09940-10122</p>	 <p>Spoke nipple wrench 09940-60113</p>	 <p>Steering race installer 09940-53111</p>
 <p>Steering race and swing arm bearing installer 09941-34511</p>	 <p>Tire pressure gauge 96200-41330</p>	

# WIRE AND CABLE ROUTING

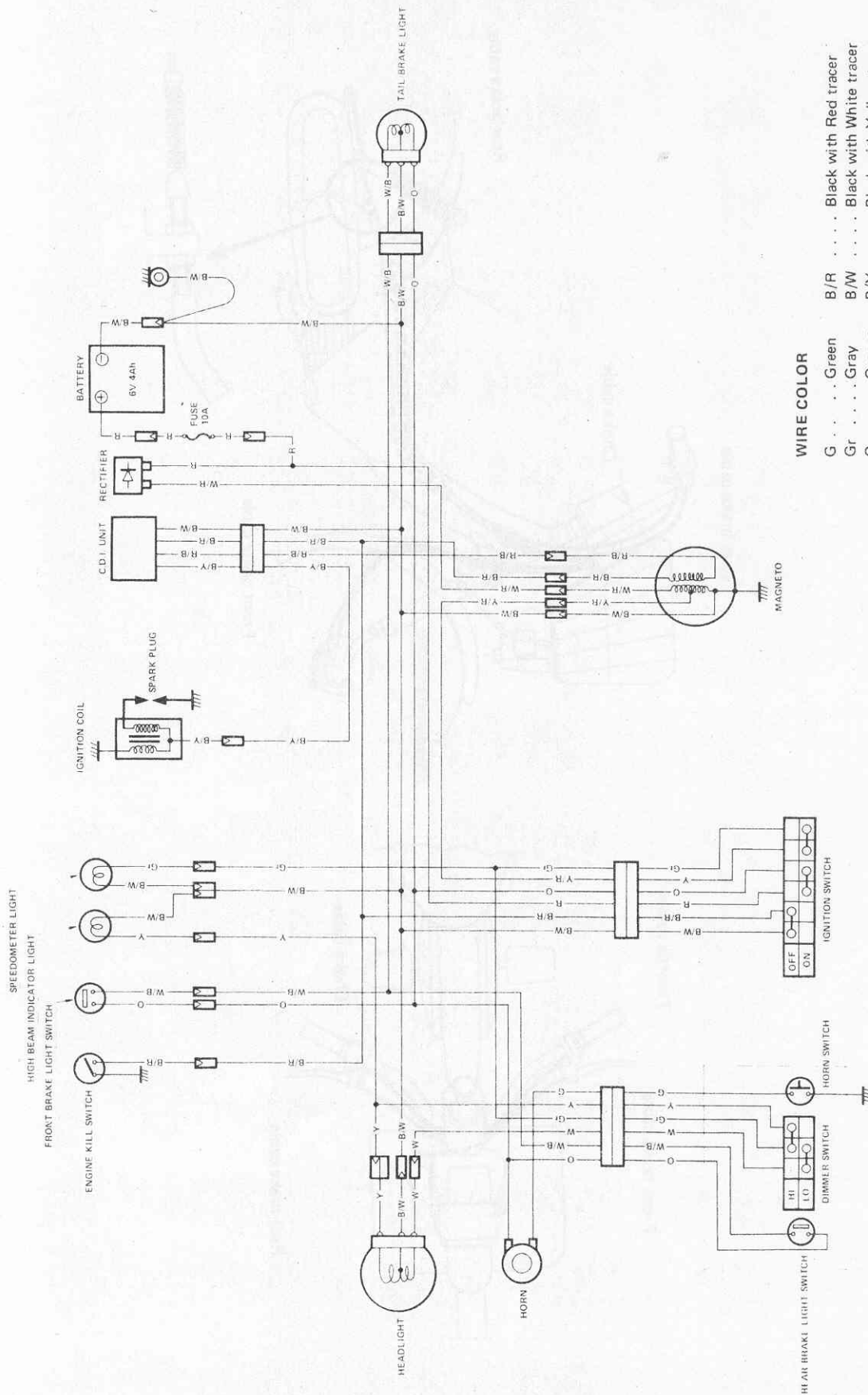
## WIRING ROUTING



# CABLE ROUTING



# WIRING DIAGRAM



**WIRE COLOR**

- G . . . . . Green
- Gr . . . . . Gray
- O . . . . . Orange
- R . . . . . Red
- W . . . . . White
- Y . . . . . Yellow
- B/R . . . . . Black with Red tracer
- B/W . . . . . Black with White tracer
- B/Y . . . . . Black with Yellow tracer
- R/B . . . . . Red with Black tracer
- W/B . . . . . White with Black tracer
- W/R . . . . . White with Red tracer
- Y/R . . . . . Yellow with Red tracer



## TIGHTENING TORQUE

ITEM	Q'TY	kg-m	lb-ft
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### ENGINE

Cylinder head nut	4	0.8 – 1.2	6.0 – 8.5
Exhaust pipe bolt	2	1.5 – 2.0	11.0 – 14.0
Muffler bolt	1	1.5 – 2.0	11.0 – 14.0
Clutch nut	1	4.0 – 6.0	29.0 – 43.5
Kick starter lifter lever nut	1	0.5 – 0.8	4.0 – 5.5
Kick starter lever bolt	1	0.5 – 0.8	4.0 – 5.5
Flywheel magneto nut	1	3.0 – 4.0	22.0 – 28.5

### CHASSIS

Front brake cam lever nut	1	0.3 – 0.6	2.0 – 4.5
Rear shock absorber upper nut	1	2.0 – 3.0	14.5 – 21.5
Rear shock absorber lower bolt	1	2.0 – 3.0	14.5 – 21.5
Rear brake cam lever nut	1	0.3 – 0.6	2.0 – 4.5
Rear axle nut	1	3.6 – 5.2	26.5 – 37.5
Engine mounting nut	1	2.5 – 4.0	18.5 – 28.5
Footrest bolt	6	0.4 – 0.7	3.0 – 5.0
Handlebar set nut	1	9.5 – 12.0	68.5 – 86.5
Front axle nut	1	2.7 – 4.3	20.0 – 31.0
Spoke nipple (Front and rear tires)	56	0.25 – 0.3	1.8 – 2.1

## SERVICE DATA

## CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.055 – 0.085 ( 0.0022 – 0.0033 )		0.120 ( 0.0047 )
Cylinder bore	41.000 – 41.015 ( 1.6142 – 1.6148 ) Measure at the 15 ( 0.6 ) from top surface.		41.065 ( 1.6167 )
Piston dia.	40.930 – 40.945 ( 1.6114 – 1.6120 ) Measure at the 23 ( 0.9 ) from skirt end.		40.880 ( 1.6095 )
Cylinder distortion	—————		0.05 ( 0.002 )
Cylinder head distortion	—————		0.05 ( 0.002 )
Piston ring free end gap	1st	R	Approx. 4.5 ( 0.18 ) 3.6 ( 0.14 )
		T	Approx. 5.0 ( 0.20 ) 4.0 ( 0.16 )
	2nd	R	Approx. 4.5 ( 0.18 ) 3.6 ( 0.14 )
		T	Approx. 5.0 ( 0.20 ) 4.0 ( 0.16 )
Piston ring end gap	0.10 – 0.25 ( 0.004 – 0.010 )		0.75 ( 0.030 )
Piston ring to groove clearance	1st	0.020 – 0.060 ( 0.0008 – 0.0024 )	—————
	2nd	0.020 – 0.060 ( 0.0008 – 0.0024 )	—————
Piston pin bore	11.998 – 12.006 ( 0.4724 – 0.4727 )		12.030 ( 0.4736 )
Piston pin O.D.	11.996 – 12.000 ( 0.4723 – 0.4724 )		11.980 ( 0.4717 )

**CONROD + CRANKSHAFT**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	16.003 – 16.011 ( 0.6300 – 0.6304 )	16.040 ( 0.6315 )
Conrod deflection	—————	3.0 ( 0.12 )
Crank web to web width	40.0 ± 0.1 ( 1.57 ± 0.004 )	—————
Crankshaft runout	—————	0.05 ( 0.002 )

**OIL PUMP**

ITEM	SPECIFICATION
Oil pump reduction ratio	7.00 ( 14 / 2 )
CCI pump discharge rate (Full open)	0.97 – 1.14 ml ( 0.033 / 0.034 – 0.039 / 0.040 US/Imp oz) for 6 minutes at 2000 rpm

**CLUTCH + PRIMARY GEAR**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	87.00 – 87.15 ( 3.425 – 3.431 )	87.40 ( 3.441 )
Clutch shoe O.D.	86.9 – 87.0 ( 3.42 – 3.43 )	No groove at any part
Clutch engagement	2400 ± 200 rpm	—————
Clutch lock-up	3500 ± 300 rpm	—————
Clutch spring free length	Below 28 ( 1.06 )	Over 28 ( 1.06 )
Primary drive to driven gear backlash	0.02 – 0.07 ( 0.001 – 0.003 )	0.10 ( 0.004 )

**TRANSMISSION**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Primary reduction ratio	1.000		—
Final reduction ratio	5.564		—
Gear ratios	Chain	2.384 ( 31 / 13 )	—
	Gear	2.333 ( 56 / 24 )	—

**DRIVE CHAIN**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Drive chain	Type	D.I.D.: 270H	—
	Links	64	—
	20 pitch length	170.0 ( 6.69 )	173.7 ( 6.84 )

CLUTCH + PRIMARY GEAR

ITEM	STANDARD	LIMIT
Clutch wheel I.D.	110.0 ( 4.33 )	110.0 ( 4.33 )
Clutch wheel O.D.	110.0 ( 4.33 )	110.0 ( 4.33 )
Clutch adjustment	1.00 ( 0.04 )	1.00 ( 0.04 )
Clutch lock pin	1.00 ( 0.04 )	1.00 ( 0.04 )
Gear service life length	170.0 ( 6.69 )	173.7 ( 6.84 )
Primary to secondary gear	2.384 ( 31 / 13 )	—

**CARBURETOR**

Unit: mm (in)

ITEM	SPECIFICATION
Carburetor type	MIKUMI VM12SH
Bore size	12
I.D. No.	02340
Idle r/min.	1500 ± 150 rpm
Float height	22.4 ± 1.0 ( 0.88 ± 0.04 )
Main jet (M. J.)	# 77.5
Air jet (A. J.)	25
Jet needle (J. N.)	3F13-3
Needle jet (N. J.)	E-6
Cut-away (C. A.)	2.0
Pilot jet (P. J.)	# 15
Pilot outlet (P. O.)	0.7
Air screw (A. S.)	1¼
Valve seat (V. S.)	1.5
Starter jet (G. S.)	30
Throttle cable play	0.5 – 1.0 ( 0.02 – 0.04 )

**ELECTRICAL**

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	25° ± 2° B.T.D.C. at 4000 rpm		
Spark plug	Type	NGK BP4HA or NIPPON DENSO W14FP-UL	
	Gap	0.6 – 0.8 ( 0.02 – 0.03 )	
Spark performance	Over 8 (0.3) at 1 atm		
Ignition coil resistance	Primary	B/Y – Ground Approx. 0 – 1 Ω	
	Secondary	Plug cap – Ground Approx. 16 – 18 kΩ	
Magneto coil resistance		Y/R – W/R Approx. 0 – 1 Ω	
		W/R – B/W Approx. 0 – 1 Ω	
		Y/R – B/W Approx. 0 – 1 Ω	
		R/B – B/W Approx. 90 – 110 Ω	
		R/B – B/R Approx. 90 – 110 Ω	
Charging rate	Below 2.5A at 8000 rpm		
Lighting coil output	Above	5.5 V at 2300 rpm	
	Below	8.7 V at 8000 rpm	
Battery	Type designation	6N2-2A-4	
	Capacity	6V 7.2kC (2 Ah)/10HR	
	Standard electrolyte S. G.	1.280 at 20°C (68°F)	
Fuse size	10 A		

**BRAKE + WHEEL**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Front brake lever distance	20 - 30 ( 0.8 - 1.2 )		_____
Rear brake lever distance	20 - 30 ( 0.8 - 1.2 )		_____
Brake drum I.D.	Front	_____	80.5 ( 3.17 )
	Rear	_____	80.5 ( 3.17 )
Brake lining thickness	_____		1.5 ( 0.06 )
Wheel rim runout	Axial	_____	2.0 ( 0.08 )
	Radial	_____	2.0 ( 0.08 )
Tire size	Front	2.25-14 4PR	_____
	Rear	2.25-14 4PR	_____
Tire tread depth	Front	_____	1.6 ( 0.06 )
	Rear	_____	1.6 ( 0.06 )

**SUSPENSION**

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	40 ( 1.57 )	_____	
Front fork spring free length	80.2 ( 3.16 )	_____	
Rear wheel travel	60 ( 2.36 )	_____	
Engine mounting pivot shaft runout	_____	0.6 ( 0.02 )	

**FUEL + OIL**

ITEM	SPECIFICATION	NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85 – 95 pump octane ( $\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research method.	
Fuel tank including reserve	2.5 L ( 0.66 / 0.55 US/Imp gal)	
reserve	0.4 L ( 0.42 / 0.35 US/Imp qt)	
Engine oil type	Use SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT or an equivalent good quality synthetic based 2-cycle oil.	
Engine oil tank capacity	0.7 L ( 0.74 / 0.62 US/Imp qt)	
Transmission oil type	SAE 20W/40	
Transmission oil capacity	500 ml ( 0.53 / 0.44 US/Imp qt)	
	550 ml ( 0.58 / 0.48 US/Imp qt)	

**TIRE PRESSURE**

COLD INFLATION TIRE PRESSURE	NORMAL SOLO RIDING		
	kPa	kg/cm <sup>2</sup>	psi
	FRONT	150	1.5
REAR	200	2.0	28



## WATTAGE

(W)

ITEM		SPECIFICATION
Headlight	HI	20
	LO	20
Tail/Brake light		5.3/17
Turn signal light		_____
Tachometer light		_____
Speedometer light		1.5
Turn signal indicator light		_____
High beam indicator light		1.7
Neutral indicator light		_____
Oil level warning light		_____
Charging indicator light		_____
Parking or city light		_____

***SUZUKI MOTOR CO., LTD.***

JULY 80