

SUZUKI

GP125/125U

SERVICE MANUAL

FOREWORD

This manual has been prepared to provide service operators with necessary information for the maintenance and the repairs of the motorcycle. The contents are made plain so that less-experienced mechanics may carry out the proper jobs according to the items of assembly and disassembly instructions.

For fully qualified mechanics, the necessary service data for the inspections and repairs is provided in this manual. Since it is above all important on servicing a motorcycle to know thoroughly its construction and the necessary data, it is highly recommended for those who are engaged in servicing GP125 and GP125U to study beforehand this manual notwithstanding their technical ability.

We trust the publication of this manual would be of assistance in the service activity as well as in the study of models GP125 and GP125U.

Data, photo, etc. contained in this service manual are valid as of the time of issue and subject to alteration without notice due to the improvement of quality and other reasons.

SUZUKI MOTOR CO., LTD.
Service Department

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There may be some differences among models depending on specifications. If the service data differ, it is noted there by using the following symbols.

The series of symbols on the left stand for the countries and areas on the right.

E-01: General	E-18: Switzerland
E-02: U.K.	E-21: Belgium
E-04: France	E-22: W. Germany
E-06: S. Africa	E-24: Australia
E-10: Central & South America	E-31: Philippines
E-12: Indonesia	E-32: Nigeria
E-13. South East Asia	E-41: Greece
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GENERAL INFORMATION

1

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MODEL IDENTIFICATION

GP125



GP125U

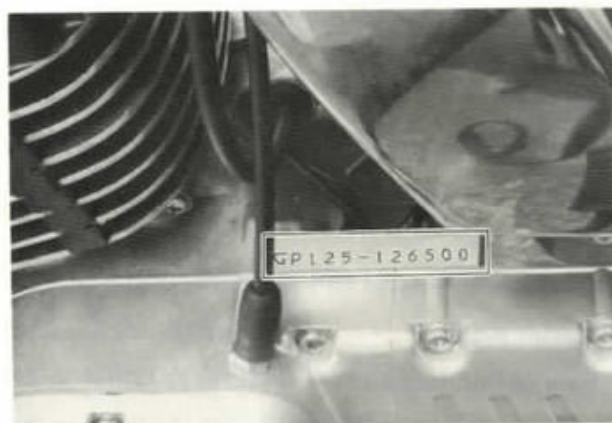


SERIAL NUMBER LOCATION

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



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



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

SPECIFICATIONS

DIMENSIONS AND WEIGHT

Overall length	1 905 mm (75.0 in)
Overall width	750 mm (29.5 in)
Overall height	1 075 mm (42.3 in)
Wheelbase	1 230 mm (48.4 in)
Ground clearance	150 mm (5.9 in)
Seat height	770 mm (30.3 in)
Dry mass (weight)	92 kg (203 lbs) GP125 89 kg (196 lbs) GP125U

ENGINE

Type	Two-stroke cycle, air-cooled
Intake system	Rotary disc valve
Number of cylinder	1
Bore	56 mm (2.205 in)
Stroke	50 mm (1.969 in)
Piston displacement	123 cm ³ (7.5 cu.in)
Corrected compression ratio	6.7 : 1
Carburetor	MIKUNI VM24SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	SUZUKI "CCI"

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	5-speed constant mesh
Gearshift pattern	1-down 4-up
Primary reduction	3.625 (58/16)
Final reduction	3.000 (45/15)
	3.214 (45/14) Only for Philippines
Gear ratios, Low	3.090 (34/11)
2nd	1.812 (29/16)
3rd	1.250 (25/20)
4th	0.956 (22/23)
Top	0.800 (20/25)
Drive chain	D.I.D. 428D, 120 links or 122 links

CHASSIS

Front suspension	Telescopic, oil dampened
Rear suspension	Swinging arm, oil dampened, spring 5-way adjustable
Steering angle	45° (right & left)
Caster	63°
Trail	93 mm (3.7 in)
Turning radius	2.0 m (6.6 ft)
Front brake	Disc brake GP125 Internal expanding GP125U
Rear brake	Internal expanding
Front tire size	2.75-18-4PR 3.00-16-4PR Only for Philippines
Rear tire size	3.00-18-4PR 3.00-16-4PR Only for Philippines

ELECTRICAL

Ignition type	SUZUKI "PEI" (Pointless Electronic Ignition) or Magneto
Ignition timing	21° B.T.D.C. at 6 000 r/min "PEI" type (NIPPON DENSO) 24° B.T.D.C. at 4 000 r/min PEI type (KOKUSAN) 20° B.T.D.C. Point type
Spark plug	NGK B8HS or NIPPON DENSO W24FS NGK B7HS or NIPPON DENSO W22FS Only for Philippines
Battery	6V 14.4 kC (4 Ah)/10 HR
Generator	Flywheel magneto
Fuse	10A

CAPACITIES

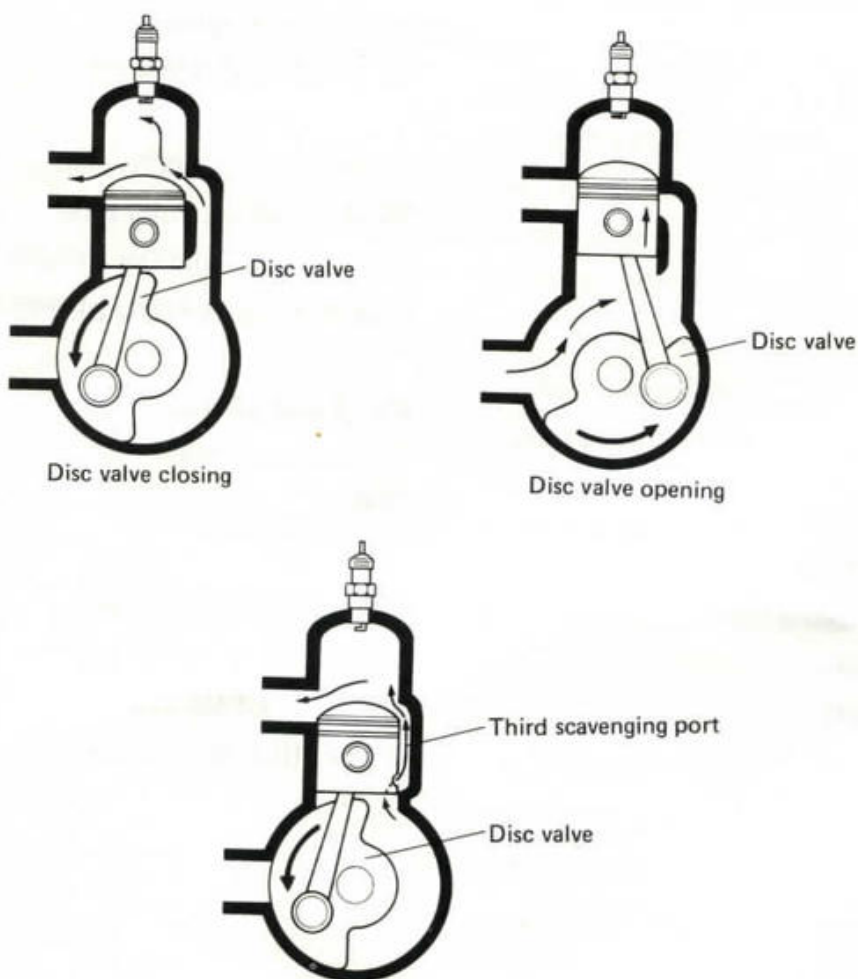
Fuel tank including reserve	9.8L (2.6/2.2 US/Imp gal)
reserve	2.0L (2.1/1.8 US/Imp qt)
Engine oil tank	1.2L (1.3/1.1 US/Imp qt)
Transmission oil	800ml (0.85/0.70 US/Imp qt)

SPECIAL FEATURES

ROTARY DISC VALVE INTAKE SYSTEM

Rotary disc valve is located between the crank chamber and the carburetor. When the fuel-air mixture flows from the carburetor into the crank chamber, the rotary disc valve which rotates in accordance with the crankshaft closes and stops the fuel-air mixture flow at appropriate timing. This valve operation makes it possible that necessary amount of fuel-air mixture is drawn into the engine of GP125 and the fuel-air mixture compressed in the crank chamber is hindered from back flow. Thus enough compression ratio is secured to obtain good engine power.

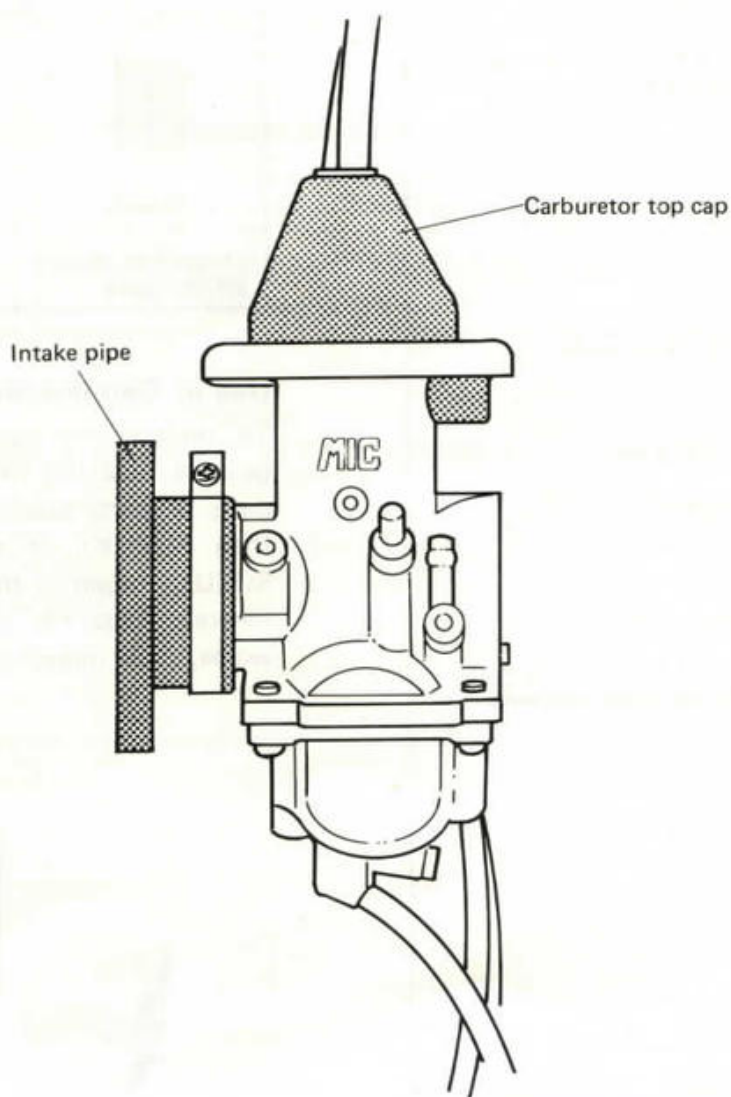
In case of the ordinary 2-cycle engine with a piston valve, an inlet port is necessary on the cylinder wall, while in case of GP125, the rotary disc valve allows to eliminate this inlet port. Instead, GP125 is provided with the third scavenging port on that position. As shown below, the fuel-air mixture compressed in the crank chamber moves from the back of the piston through the hole on its intake side and enters the cylinder groove. When it finally flows into the combustion chamber, it pushes out the burned gas. By employing this scavenging system, scavenging action is carried out more effectively in GP125 than in the ordinary engine, fuel consumption is decreased and yet enough power is obtained.



CARBURETOR

The carburetor of GP125 is of floating mount carburetor system, therefore is mounted with an intake pipe and a carburetor top cap made of rubber as shown below.





In most cases, engine vibration is most likely propagated to the carburetor and gasoline in the float chamber vibrates resulting in instability of its surface. Being free from this, the carburetor of floating mount carburetor system constantly mixes fuel with air at the best mixture ratio which ensures steady engine power either at high speed or low speed. At the same time, it economizes fuel consumption.





GENERAL INSTRUCTIONS

Materials Required for Maintenance

The materials listed below are required for maintenance works on the Models GP125 and GP125U, 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 on later pages.

Material	Use
 <p>Suzuki super grease "A" 99000-25010</p>	<ul style="list-style-type: none"> ○Oil seals ○Throttle grip ○Cables (speedometer and tachometer)
 <p>Suzuki brake pad grease 99000-25100</p>	<ul style="list-style-type: none"> ○Disc brake pads
 <p>Suzuki caliper axle grease 99000-25110</p>	<ul style="list-style-type: none"> ○Brake caliper axle bolts
 <p>Suzuki bond No. 4 99000-31030</p>	<ul style="list-style-type: none"> ○Crankcase mating surface ○Rotary disc valve guide

 <p>Suzuki lock super "103K" 99000-32030</p>	<ul style="list-style-type: none"> ○2nd drive gear
 <p>Thread lock cement 99000-32040</p>	<ul style="list-style-type: none"> ○Inner valve seat screws ○Front fork piston bolt

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.



FUEL AND OIL RECOMMENDATION

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

Fuel

Gasoline used should be graded 85 to 95 octane in Research Method, and should be unleaded or low-lead where they are available.

Engine Oil

For the SUZUKI CCI system, use of SUZUKI CCI Oil or SUZUKI CCI Super Oil is highly recommended, but if they are not available, a good quality two-stroke oil (non diluent type) should be used.

Transmission Oil

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

Brake Oil

For the disc brake, replenish with one of the brake fluid graded below.

Specification and Classification
SAE J1703a/SAE J1703b/SAE J1703c
SAE 70R3 (obsolete spec.)

Front Fork Oil

For the front fork oil, be sure to use a motor oil whose viscosity rating meets the specifications of SAE 10W/20.

PRECAUTIONS AND GENERAL INSTRUCTIONS

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

- Be sure to replace packings, gaskets, circlips, O rings 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 recommended.
- When more than 2 persons perform works 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 this 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.

PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

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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 service condition.

PERIODIC MAINTENANCE CHART

Engine

Item \ Interval	Initial 1 000 km Initial 600 miles	Every 3 000 km Every 2 000 miles	Every 6 000 km Every 4 000 miles	Every 12 000 km Every 8 000 miles
Spark plug	Clean	Clean and adjust gap	Replace	—
Contact breaker	Check contact point gap and ignition timing	Check contact point gap and ignition timing	—	Replace (only for point type)
Air cleaner element	—	Wash	—	—
Carburetor	Adjust throttle valve stop screw, pilot air adjust screw and throttle cable	Adjust throttle valve stop screw, pilot air adjust screw and throttle cable	—	Overhaul and clean
Oil pump	Check operation, adjust control lever aligning mark	Check operation, adjust control lever aligning mark	—	—
Fuel hose	Replace every 2 years.			
Fuel strainer	Clean	—	Clean	—
Cylinder head and cylinder	Retighten cylinder head nuts	Retighten cylinder head nuts	Remove carbon	—
Clutch	Adjust	Adjust	—	—
Transmission oil	Change	Change	—	—
Battery	Check & service electrolyte solution	Check & service electrolyte solution	—	—

Chassis

Item \ Interval	Initial 1 000 km Initial 600 miles	Every 3 000 km Every 2 000 miles	Every 6 000 km Every 4 000 miles	Every 12 000 km Every 8 000 miles
Bolts and nuts	Retighten	—	Retighten	—
Drive chain	Adjust	Adjust	Wash	—
Front brake (GP125)	Check fluid level, leakage and pad	Check fluid level, leakage and pad	—	—
Front brake (GP125U)	Adjust play	Adjust play	—	—
Rear brake	Adjust play	Adjust play	—	—
Steering stem	Adjust play	—	Adjust play	—

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	Initial 1 000 km (600 mi)	Every 3 000 km (2 000 mi)	Every 6 000 km (4 000 mi)
Brake cam shaft	—	—	Grease
Brake cables	—	Motor oil	—
Clutch cable	—	Motor oil	—
Drive chain	Every 1 000 km (600 mi) Motor oil		Wash and Motor oil
Speedometer cable	—	—	Grease
Tachometer cable	—	—	Grease
Throttle and oil pump 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 SUZUKI super grease "A" (part No. 99000-25010) 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

SPARK PLUG

Check at initial 1 000 km (600 mi)
and every 4 000 km (2 000 mi)
Replace every 6 000 km (4 000 mi)

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	09900-20804
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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.

* General and Other

B7HS	W22FS	If the standard plug is apt to wet foul, replace with this plug.
B8HS	W24FS	Standard
B9HS	W27FS	If the standard plug is apt to overheat, replace with this plug.

* Only for Philippines

B6HS	W20FS	If the standard plug is apt to wet foul, replace with this plug.
B7HS	W22FS	Standard
B8HS	W24FS	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	25 – 30 N.m (2.5 – 3.0 kg-m) (18.0 – 21.5 lb-ft)
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IGNITION TIMING

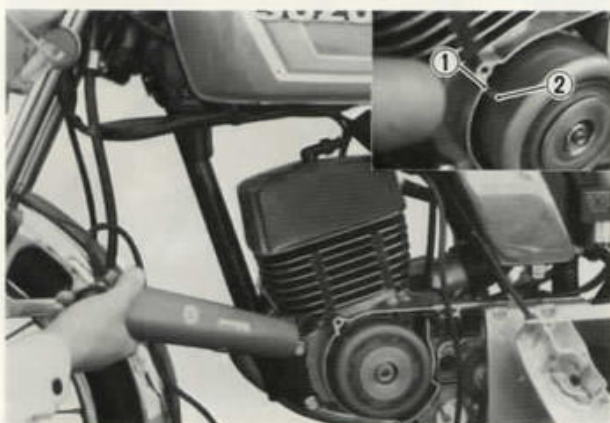
Adjust at initial 1 000 km (600 mi)
and every 3 000 km (2 000 mi)
Replace contact point every 6 000 km
(4 000 mi) (only for point type)

Check ignition timing(For PEI type)

- Connect the timing light cord to the high-tension cord.
- Start the engine.
- Aim the light from the timing light at the aligning mark ① on the crankcase. Raise the engine speed to 6 000 r/min or 4 000 r/min. At this time, the ignition timing is proper if the aligning mark ① is aligned to the middle line ② of the three on the magneto rotor when the timing light flashes.

Timing light

09900-27311



21°±2° B.T.D.C. at
6 000 r/min

NIPPON DENSO

24°±2° B.T.D.C. at
4 000 r/min

KOKUSAN DENKI

If the ignition timing is not correct, readjust following the procedure below.

- Remove the rotor using the special tools.
- Untighten the 3 screws fixing the stator.
- Align the index line ③ on the stator to the center of the screw.

Rotor holder

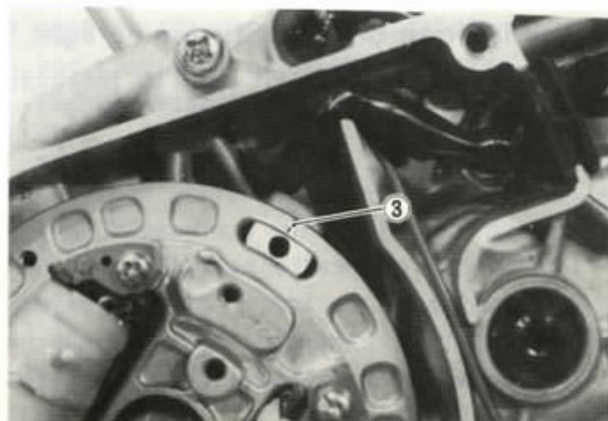
09930-40113

Rotor remover shaft

09930-30102

Attachment C

09930-30161



Check contact points (For point type)

- Check the condition of contact point surfaces. If pitted or damaged, replace with a new set of points. A point file, or flexstone may be used to correct minor damage.



NORMAL



WORN



OUT OF PARALLEL

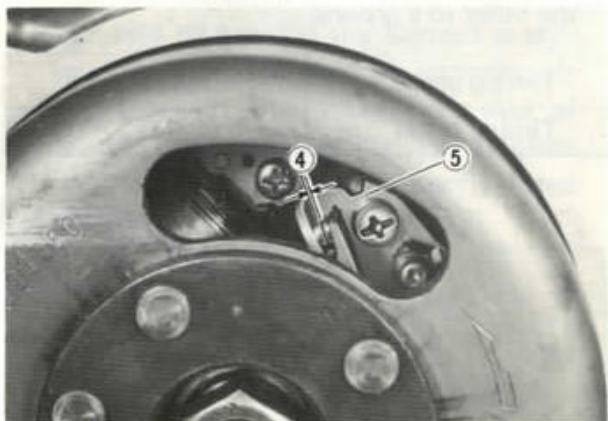


DIRTY

- Adjust the contact point gap ④ with a thickness gauge.
- If the gap is too wide or too narrow, loosen the contact breaker plate locking screw and rotate the plate ⑤ with a plane head screwdriver to achieve the correct gap.

Thickness gauge

09900-20804



Point gap

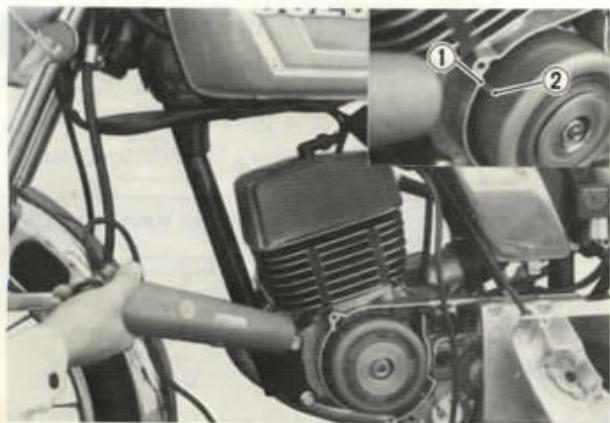
0.3 - 0.4 mm
(0.012 - 0.016 in)

Check ignition timing with timing light

- Connect the timing light cord to the high-tension cord.
- Start the engine.
- Aim the light from the timing light at the aligning mark ① on the crankcase. The ignition timing is correct if the aligning mark ① is aligned with the line ② on the magneto rotor when the timing light flashes. If they are not aligned, readjust the point gap to 0.3 - 0.4 mm (0.012 - 0.016 in).

Timing light

09900-27311



Check ignition timing with timing gauge and tester

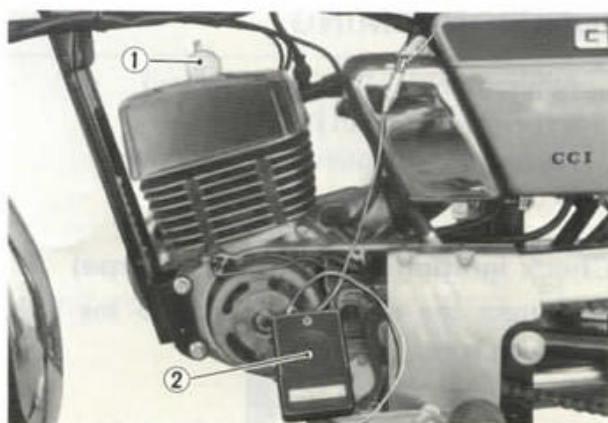
- Remove the spark plug from the cylinder head and install the timing gauge ① in its place.
- Connect one tester ② lead to the contact point positive terminal or B/Y (B) lead wire, the other to a ground.

Timing gauge

09931-00112

Timing tester

09900-27003



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



	Timing Retard		STD	Timing advance	
Crankshaft angle (Deg.)	18°	19°	20°	21°	22°
Piston distance (mm)	1.52	1.69	1.87	2.06	2.26

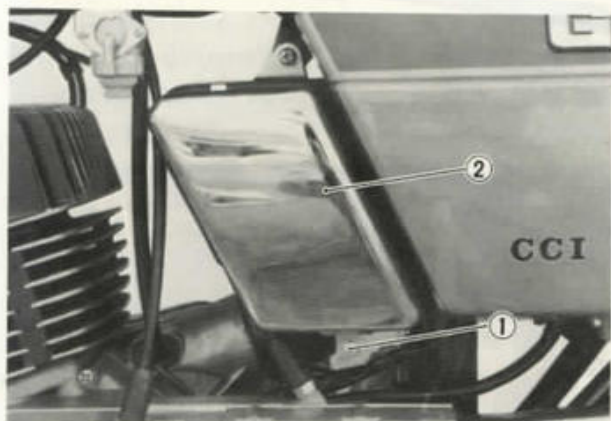
- If timing is incorrect, loosen the screw ③ and adjust by moving the ground side of the contact braker.

AIR CLEANER

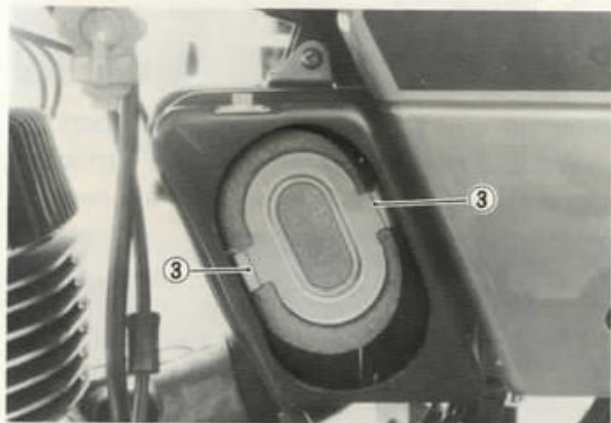
Clean every 3 000 km (2 000 mi)

When the air cleaner element is clogged with dust, air intake resistance is raised, reducing the output and increasing the fuel consumption. Clean the element periodically, following the procedure below.

- Unscrew the screw ① and remove the cleaner case cover ②.

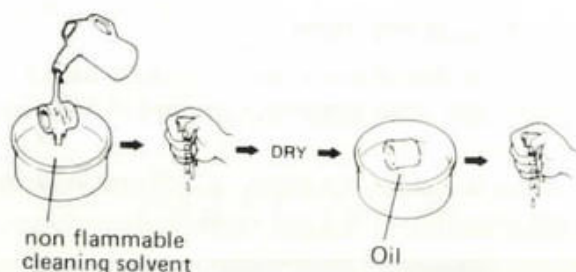


- Unfasten the hook ③ and remove element.

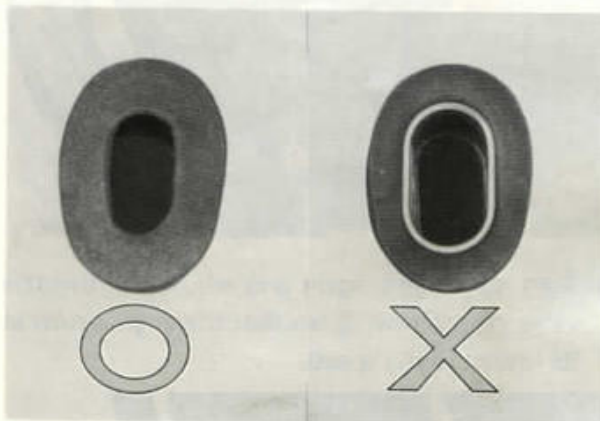


- Fill a washing pan of a proper size with non-flammable cleaning solvent. Immerse the element in the solvent and wash it clean.
- Squeeze the solvent off the washed element by pressing it between the palms of both hands: Do not twist and wring the element or it will develop fissures.

- Immerse the element in a pool of motor oil, and squeeze the oil off the element to make it slightly wet with the oil.



- Fix the element on the frame properly.



CAUTION:

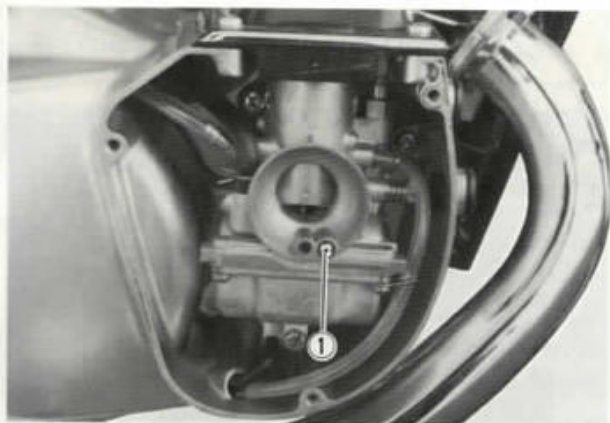
- Before and during the cleaning operation, examine the element to see if it has a rupture or fissure. A ruptured or fissured element must be replaced.
- Be sure to position the element snugly and correctly, so that no incoming air will bypass it. Remember, rapid wear of piston rings and cylinder bore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

CARBURETOR

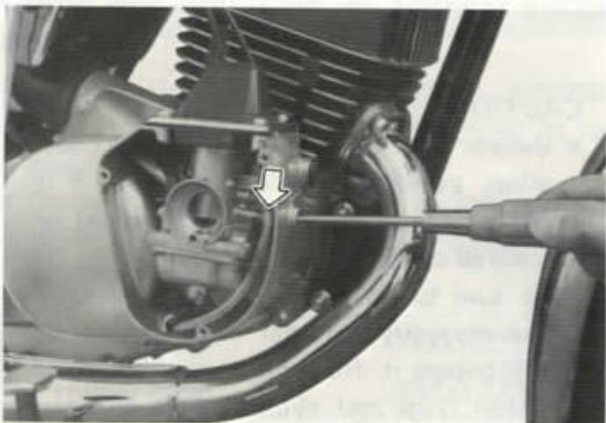
Adjust at initial 1 000 km (600 mi)
and every 3 000 km (2 000 mi)

Adjusting idling speed

- Start the engine and allow it to warm up.
- After the engine warms up, shut it off momentarily.
- Screw the pilot air screw ① all the way in, and then loosen it 1- 1/2 turns.



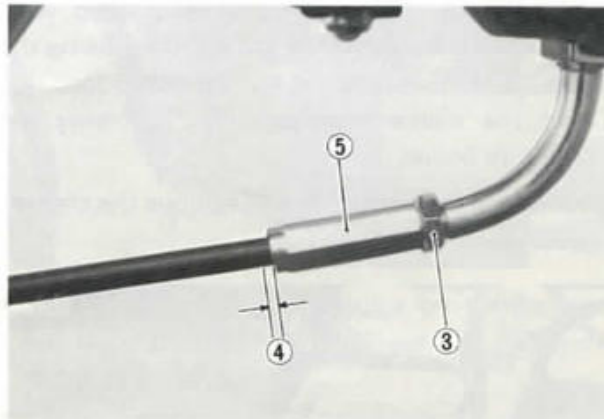
- Start the engine again and adjust the throttle valve stop screw ② so that the engine runs at its lowest idling speed.



- Screw the pilot air screw in or out within ¼ turn from the standard setting (1¾ turns) to find the position where the engine runs most smoothly.

Adjusting throttle cable

- Loosen lock nut ③ .
- Adjust the cable slack ④ to 1.0 – 1.5mm (0.04 – 0.06 in) by turning adjuster ⑤ .



Idle speed

1 300 ± 150 r/min

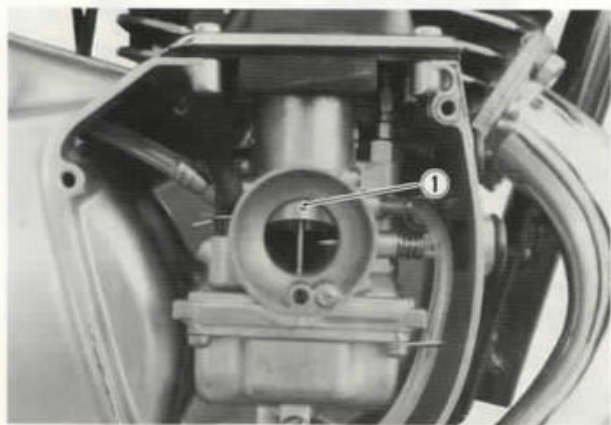
OIL PUMP

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

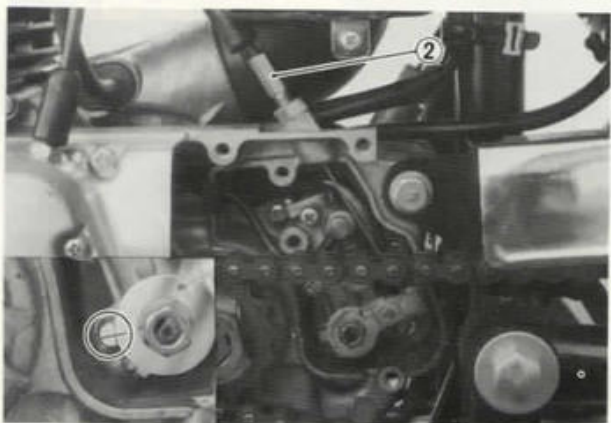
The engine oil is fed by the oil pump to the engine. The amount of oil fed to it is regulated by engine speed and the oil pump control lever which is controlled by the amount of throttle opening.

Check the oil pump in the following manner to confirm correct operation for all throttle valve opening positions.

- Turn the throttle grip until the dent mark ① on the throttle valve comes to the upper part of the hole.



- Check whether the mark on the oil pump control lever is aligned with the index mark when the throttle valve is positioned as above.



- If the marks are not aligned, adjust by means of the cable adjuster ② to align them.

CAUTION:

This adjustment could affect the throttle cable play, so readjust the throttle cable play if necessary.

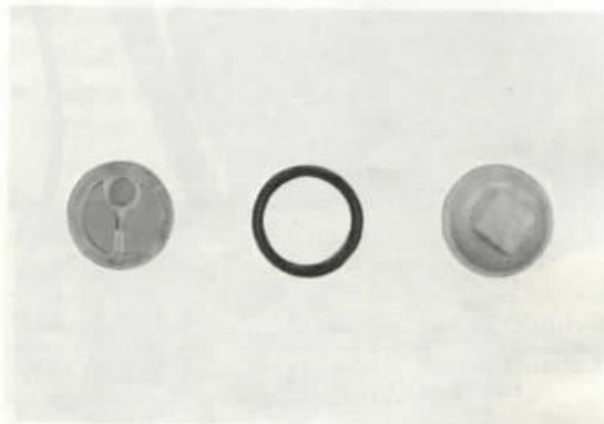
FUEL HOSE

Replace every two years

FUEL STRAINER

Clean at initial 1 000 km (600 mi)
and every 6 000 km (4 000 mi)

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 fuel cock in OFF position.



CYLINDER HEAD NUTS AND EXHAUST PIPE CLAMP BOLTS

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

- Retighten cylinder head nuts and exhaust pipe clamp bolts as specified torque according to the following tightening order.

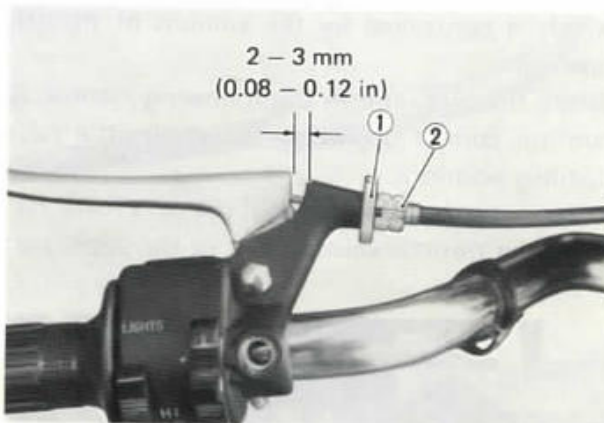


	N.m	kg-m	lb-ft
Cylinder head nut	23-27	2.3-2.7	16.5-19.5
Exhaust pipe clamp bolt	9-12	0.9-1.2	0.5- 8.5

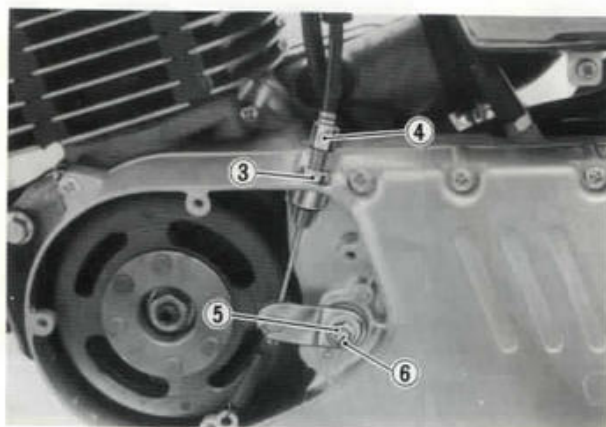
CLUTCH

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

- Loosen lock nut ① on the clutch lever side.
- Screw in adjuster ② fully in the direction of the clutch lever.



- Loosen the lock nut ③ and screw in the clutch cable adjuster ④ to give sufficient play to the clutch cable.
- Temporarily loosen the lock nut ⑤ and tighten the release adjusting screw ⑥ until resistance is felt, then loosen it ¼ -½ turn.
- Secure the lock nut ⑤.
- Adjust the clutch cable adjuster ② again until approximately 2 - 3 mm (0.08 - 0.12 in.) of play remains at the bottom of the clutch lever.

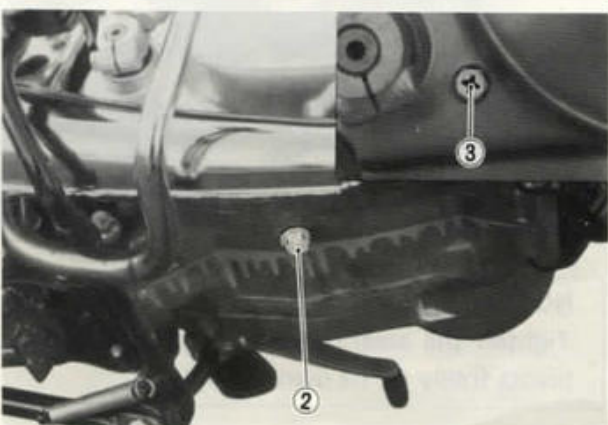


TRANSMISSION OIL

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

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 following the procedure below.

- Start the engine to warm up the oil, this will facilitate draining of oil. Shut off the engine.
- Unscrew the oil filler cap ① and drain plug ②, and drain the oil completely.
- Tighten the drain plug.
- Supply a good quality SAE 20W/40 multi-grade motor oil.
- Check the oil level with the oil level screw ③.



Capacity

800 ml
(0.85/0.70 US/Imp qt)

BATTERY

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

Battery specifications

Type	6N4B-2A 1 lead storage battery
Voltage	6V
Capacity	14.4 kC (4Ah)
Electrolyte for specific gravity	1.26 at 20°C (68°F)

- Check to be sure that the vent pipe is secured properly and routing correctly.
- 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.
- Periodically, check the electrolyte for specific gravity by using a hydrometer to tell the state of charge.

Hydrometer

09900-28403



- A S.G. reading of 1.20 (at 20°C) 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.

CAUTION:

Do not use tap water for battery solution. Reconnect the battery vent hose after re-installing the battery.

STEERING STEM

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

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 poor stability.

Check to see that there is no play in the front fork bearings.

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

- Support the motorcycle body and jack up the front wheel.
- Untighten the steering stem head bolt, the front fork cap bolts and lower clamp bolts.
- Tighten the steering stem head nut using the special tool so that the handlebars move smoothly.

Steering stem nut
wrench

09940-10122

**NOTE:**

Tighten the steering so that the handlebar pivots freely by its own weight.

- Tighten the bolts to the following torque:

Steering stem head bolt	35 — 55 N m (3.5 — 5.5 kg-m) (25.5 — 39.5 lb-ft)
Front fork cap bolt	35 ~ 55 N m (3.5 ~ 5.5 kg-m) (25.5 ~ 39.5 lb-ft)
Lower clamp bolt	20 — 30 N m (2.0 — 3.0 kg-m) (14.5 — 21.5 lb-ft)

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
- Distortion of steering stem

Number of steel balls	
Upper	22 pcs.
Lower	18 pcs.

FRONT BRAKE(GP125)

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

Check brake fluid level

- Check the brake fluid level by observing the upper and lower limit lines on the brake fluid reservoir.
- When the level is below the lower limit line ①, replenish with motor vehicle brake fluid as indicated below.



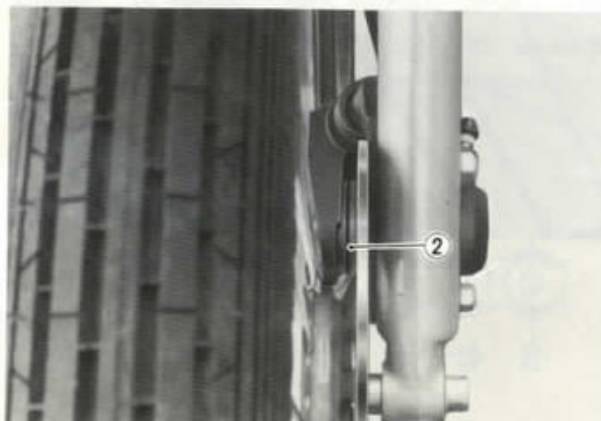
Specification and Classification

SAE J1703a/SAE J1703b/SAE J1703c

SAE 70R3 (obsolete spec.)

Check brake pads

Wear condition of brake pads can be checked by observing the red limit line ② marked around the pad. When the wear exceeds the limit line, replace the pad with a new one.



Check brake fluid leaks

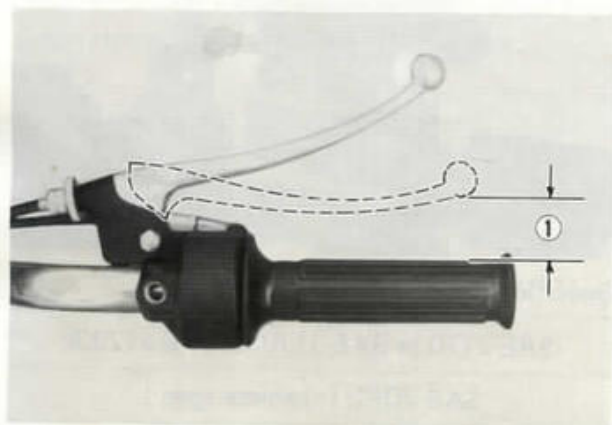
Brake fluid, if it leaks, will interfere with safe running and discolor painted surfaces. Check the brake hose for cracks and hose joint for leakage periodically.

FRONT BRAKE(GP125U)

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

Adjusting

- Measure the clearance between the brake lever end and throttle grip when brake is fully applied. Adjust the clearance ① to 20 – 30 mm (0.8 – 1.2 in) by turning the adjusting nut ②.

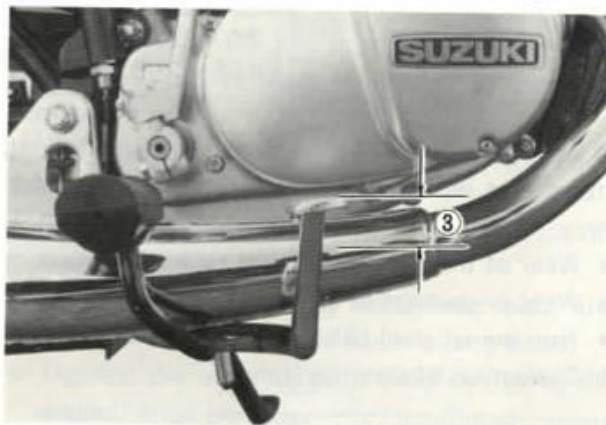


REAR BRAKE

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

Adjusting

- Adjust the free travel ③ to 20 – 30 mm (0.8 – 1.2 in) by turning the adjusting nut ④.



BRAKE SHOE WEAR

Check every 3 000 km (2 000 mi)

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

DRIVE CHAIN

Check and adjust at initial 1 000 km (600 mi) and every 3 000 km (2 000 mi)
Lubricate every 3 000 km (2 000 mi)
Wash every 6 000 km (4 000 mi)

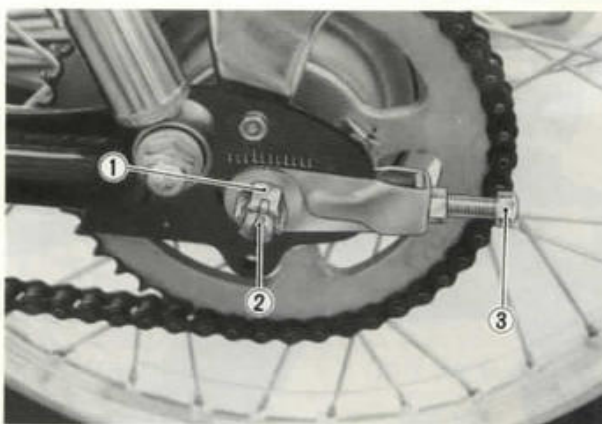
Visually inspect the drive chain for the below-listed possible malconditions.

- Loose pins
- Damaged rollers
- Rusted links
- Twisted or seized links
- Excessive wear

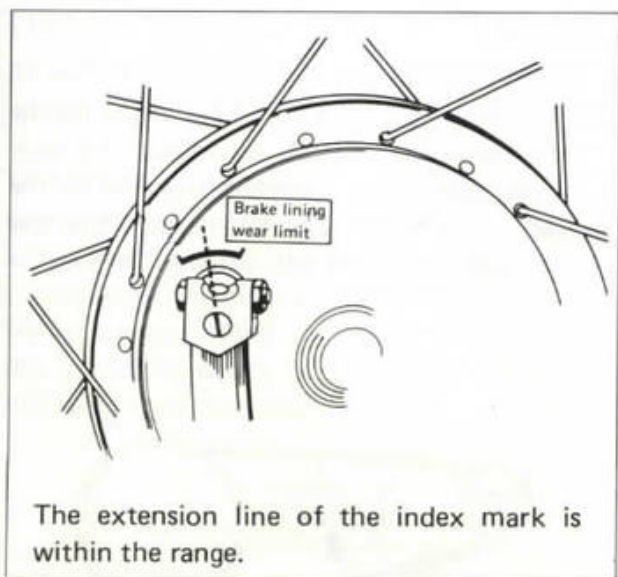
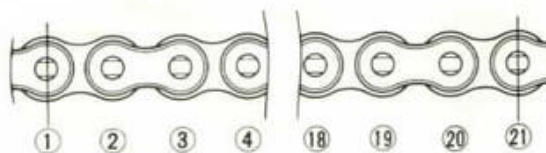
If any defects are found, the drive chain must be replaced.

Checking

- Loosen axle nut ① after pulling out cotter pin ②.
- Tense the drive chain fully by tightening the adjusters ③.



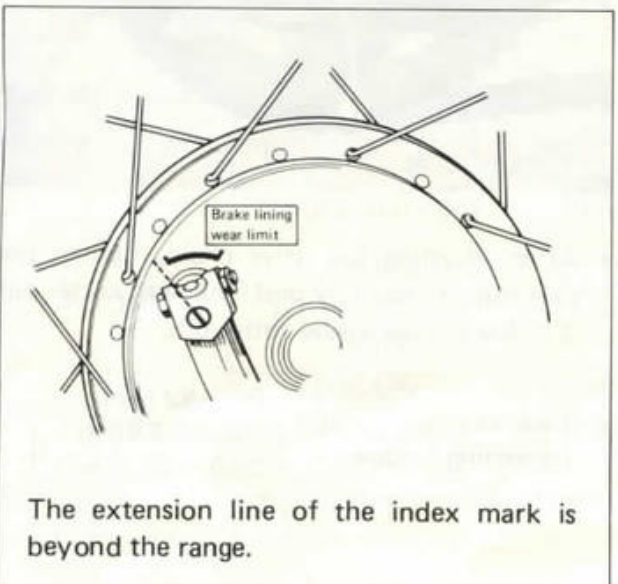
- Remove the chain case. Count out 21 pins (20 pitch) on the chain and measure the distance between the two. If the distance exceeds following limit, the chain must be replaced.



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

To check wear of the brake lining, perform the following steps.

- First check if the brake system is properly adjusted.
- 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 index mark is beyond the range as shown in the Fig., the brake shoe assembly should be replaced with a new one.



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



Service limit

259.5 mm (10.22 in)

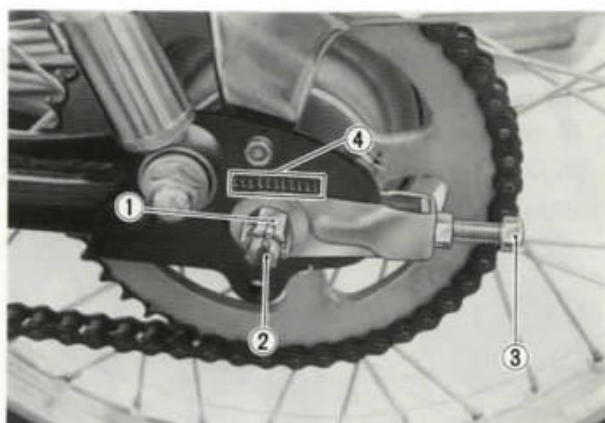
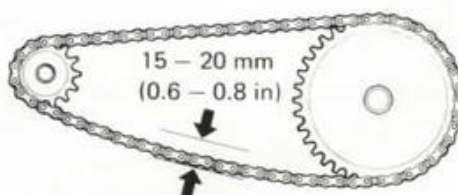
Cleaning and lubricating

Wash the drive chain in cleaning solvent and lubricate it with chain lube or motor oil. If the motorcycle operates under dusty conditions, frequent rapid acceleration or at sustained high speeds, the drive chain should be cleaned and lubricated more often.



Adjusting

- Loosen the adjuster ③ until the chain has 15 – 20 mm (0.6 – 0.8 in) of sag at the middle between engine and rear sprockets. The mark ④ on both chain adjusters must be at the same position on the scale to ensure that the front and rear wheels are correctly aligned.



- After adjusting the drive chain, tighten the axle nut ① securely and lock with cotter pin ②. Always use a new cotter pin.

Rear axle nut
tightening torque

36 – 52 N m
(3.6 – 5.2 kg-m)
(26.0 – 31.5 lb-ft)

TIRE

Check every day

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	REAR
1.6 mm (0.06 in)	1.6 mm (0.06 in)

Tire air pressure

	SOLO RIDING		DUAL RIDING	
	General and other	Only for E-31	General and other	Only for E-31
FRONT	175 kPa (1.75 kg/cm ²) 25 psi	150 kPa (1.50 kg/cm ²) 21 psi	175 kPa (1.75 kg/cm ²) 25 psi	150 kPa (1.50 kg/cm ²) 21 psi
REAR	225 kPa (2.25 kg/cm ²) 32 psi	200 kPa (2.00 kg/cm ²) 28 psi	250 kPa (2.50 kg/cm ²) 36 psi	225 kPa (2.25 kg/cm ²) 32 psi

If the tire pressure is too high or too low, steering will be adversely affected and tire wear increased.

Therefore, maintain the correct tire pressure for good roadability or shorter tire life will result. Cold inflation tire pressure is as follows.

CAUTION:

The standard tire fitted on this motorcycle is 2.75-18-4PR (3.00-16-4PR) for front and 3.00-18-4PR (3.00-16-4PR) for rear.

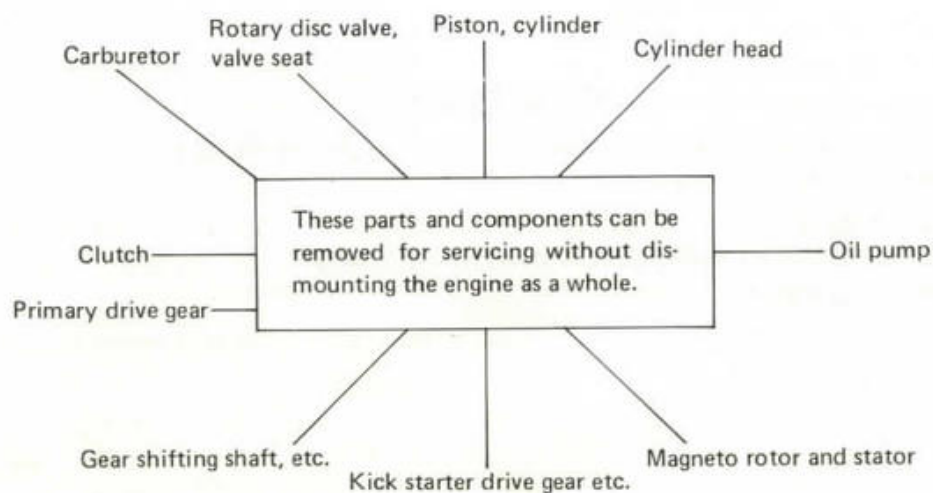
The use of a tire other than the standard may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.

SERVICING ENGINE

CONTENTS

<i>ENGINE COMPONENTS REMOVAL WITH THE ENGINE IN PLACE</i>	3-1
<i>ENGINE REMOVAL</i>	3-1
<i>ENGINE DISASSEMBLY</i>	3-5
<i>ENGINE COMPONENTS INSPECTION AND SERVICING</i>	3-10
<i>ENGINE REASSEMBLY</i>	3-17

ENGINE COMPONENTS REMOVAL WITH THE ENGINE IN PLACE



ENGINE REMOVAL

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

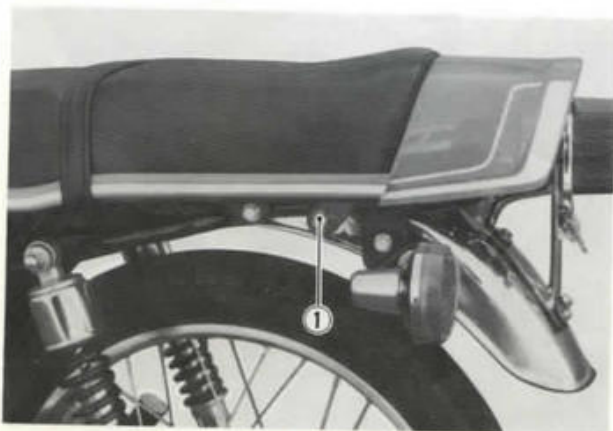
1. Disconnect battery \ominus lead wire ①.



2. Turn fuel cock to "OFF" position and disconnect fuel hose from the fuel cock.



3. Remove the two bolts ①, right and left, and take off seat.



4. Loosen fuel tank retaining bolt ② and take off fuel tank.



5. Disconnect lead wires of the magneto and spark plug cord.



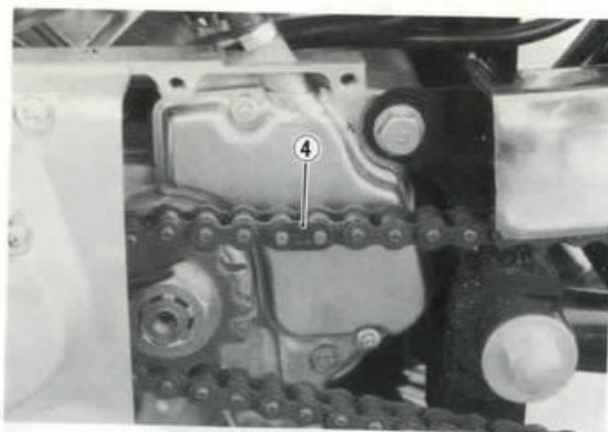
6. Disconnect oil hose ③.



7. Remove gearshift lever and sprocket cover.



8. Disconnect drive chain by removing clip ④.



9. Remove oil pump cover and disconnect oil pump control cable ① .



10. Remove magneto cover.



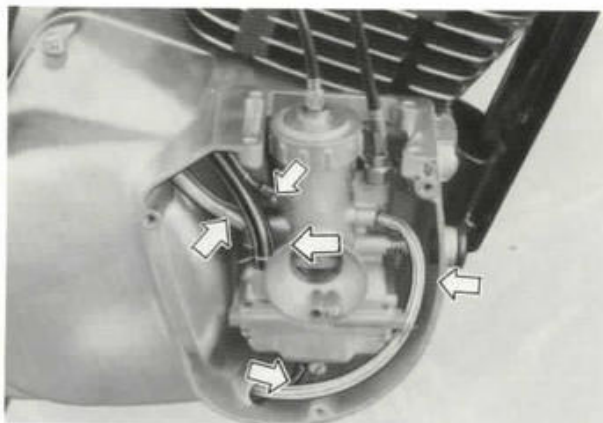
11. Take off muffler by removing exhaust pipe clamp bolts and swinging arm pivot shaft nut.



12. Loosen the four screws and slide up carburetor top cap ② .



13. Remove carburetor inspection cap and disconnect each hose.



14. Loosen carburetor clamp screw and take off carburetor.



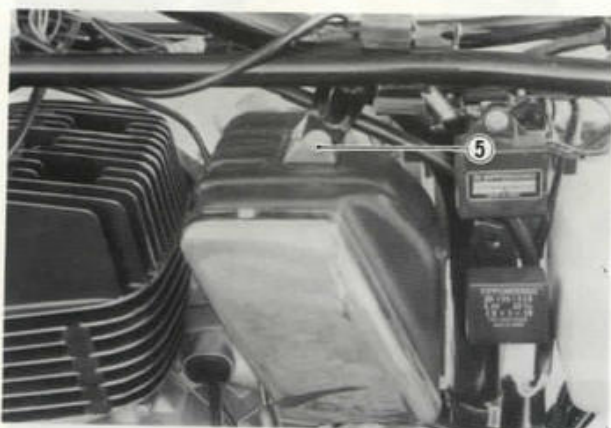
15. Disconnect tachometer cable ③ . (Only for GP125)



16. Loosen air inlet hose clamp screw ④ .



17. Remove bolts ⑤ and take off air cleaner case.



18. Remove cylinder head.



19. Loosen engine mounting bolts and remove engine.



Tightening torque

Dia. 8mm	13 – 23 N m (1.3 – 2.3 kg-m) (9.5 – 16.5 lb-ft)
Dia. 10mm	25 – 40 N m (2.5 – 4.0 kg-m) (18.0 – 29.0 lb-ft)

CAUTION:

Self-lock nut are used for engine mounting.
Do not reuse them.

NOTE:

After engine installation, following adjustments are required.

- Throttle cable play.
- Oil pump control cable.
- Clutch cable play.
- Drive chain sag.

ENGINE DISASSEMBLY

The procedure for engine disassembly is sequentially explained in the following steps.

1. Remove cylinder.



2. Remove the piston pin circlip. Use a rug, as shown, in order to avoid dropping the circlip into the crankcase.



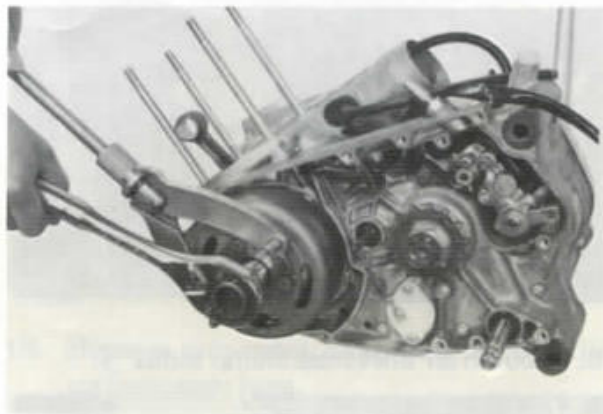
3. Draw out piston pin by using special tool and take off piston.

Piston pin puller	09910-34510
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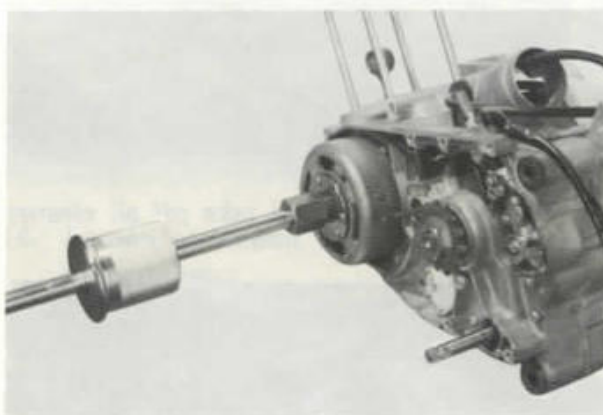
4. Loosen the rotor nut by using special tool.

Rotor holder	09930-40113
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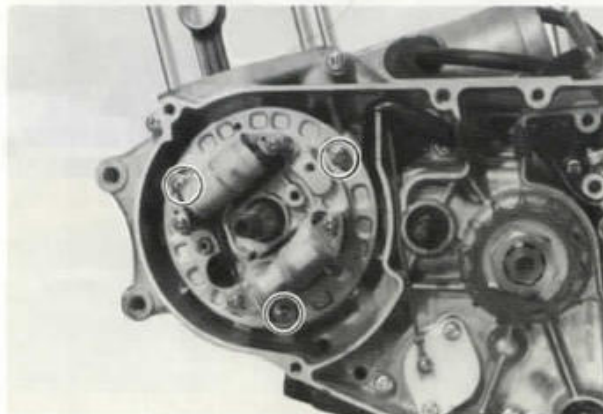


5. Remove the rotor by using special tool.

Rotor remover shaft	09930-30102
Attachment C	09930-30161

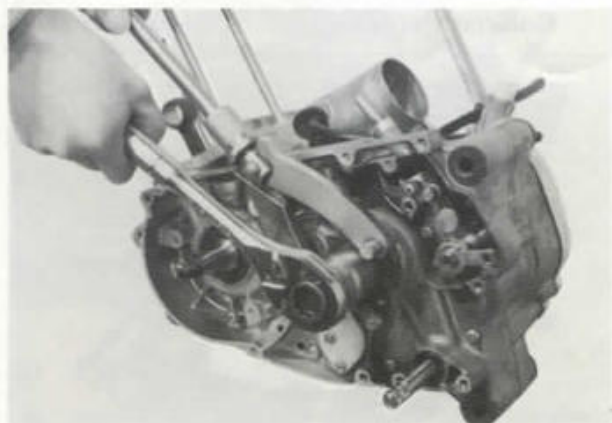


6. Remove the stator by loosening stator securing screws and neutral lead wire.

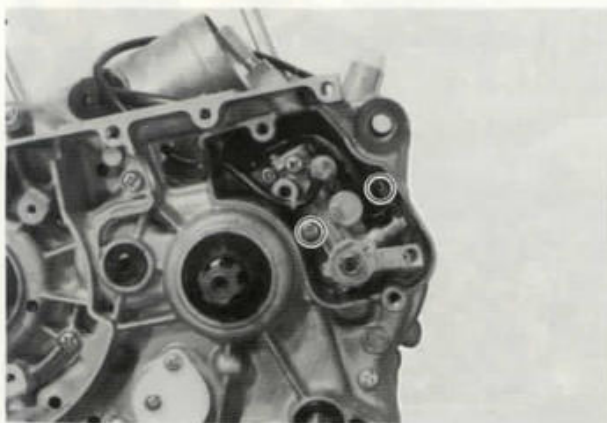


7. Flatten the lock washer and loosen the engine sprocket nut by using special tool.

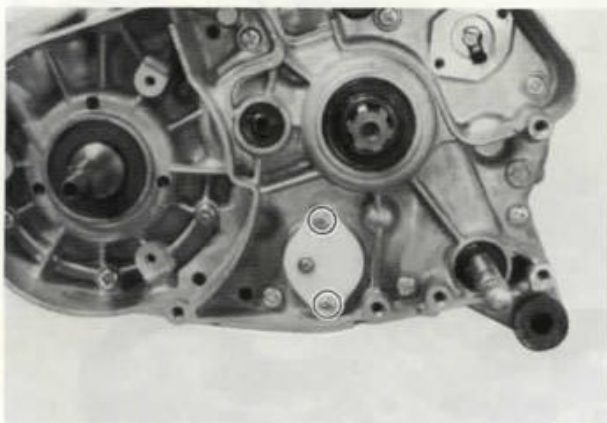
Rotor holder	09930-40113
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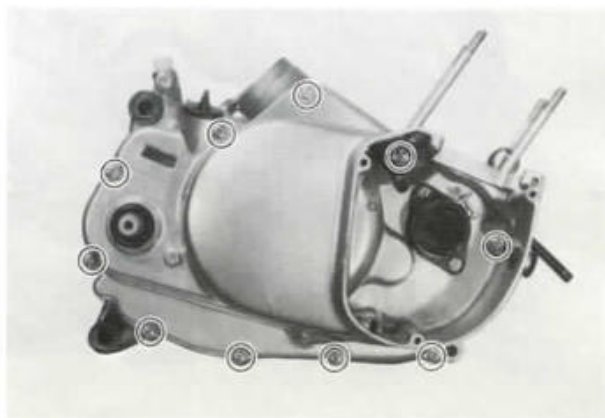
8. Remove the oil pump.



9. Remove neutral switch

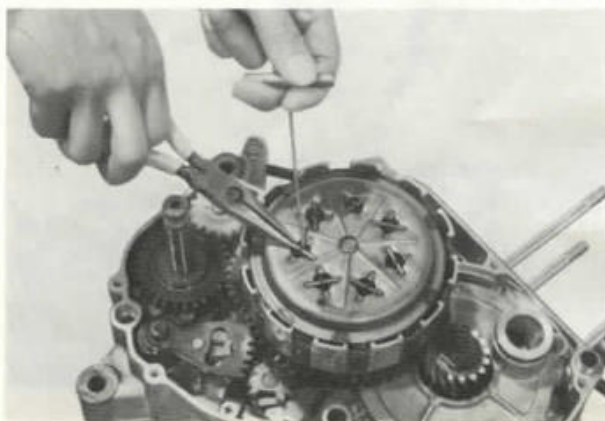


10. Remove kick starter lever and clutch cover.



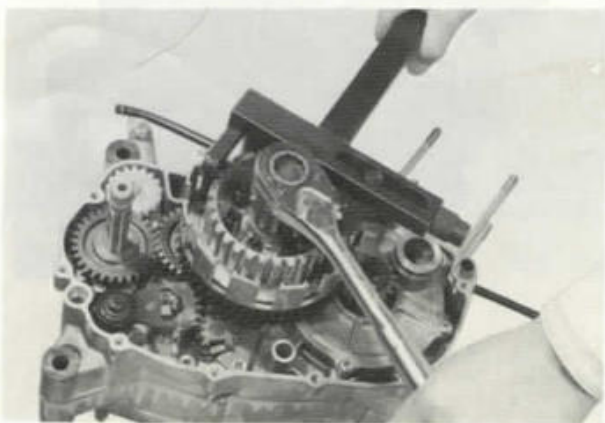
11. Using special tool, pull out clutch spring pins and take off clutch pressure plate. Take off push piece and clutch plates.

Spring hook	09920-20310
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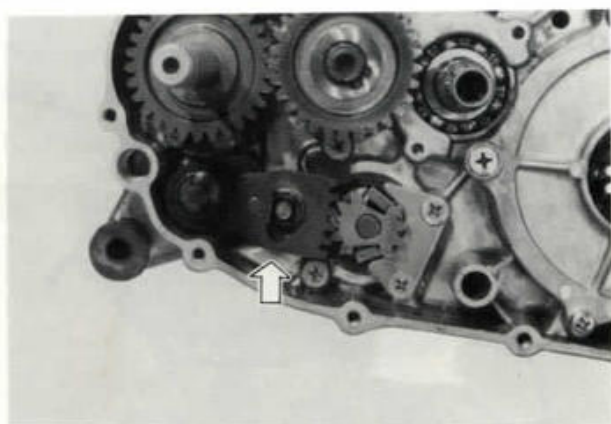


12. Flatten the clutch sleeve hub washer, and remove hub nut by using special tool. Take off clutch sleeve hub and primary driven gear.

Clutch sleeve hub holder	09920-53710
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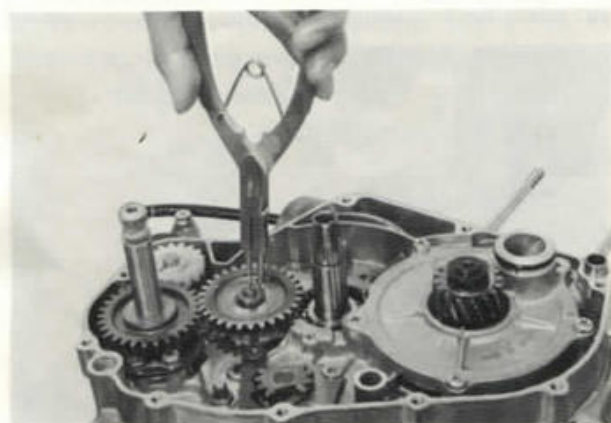
13. Draw out gearshift shaft.



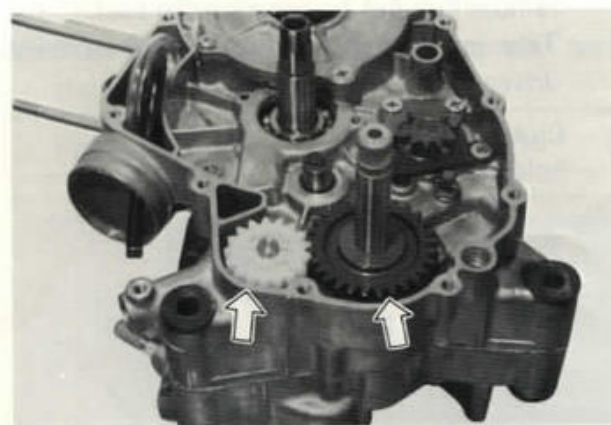
14. Remove circlip by using special tool and draw out kick starter idle gear.

Snap ring plier

09900-06107



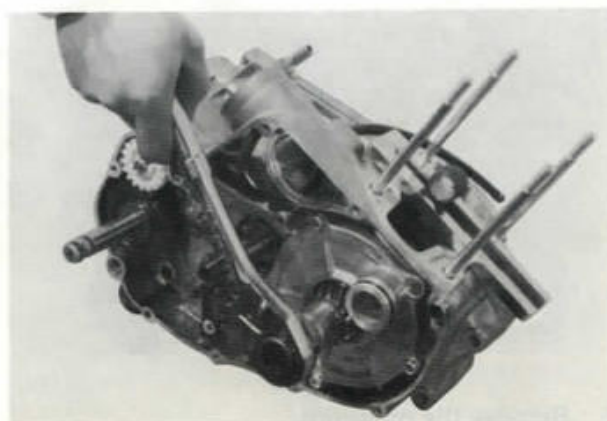
15. Draw out oil pump drive gear and kick starter drive gear.



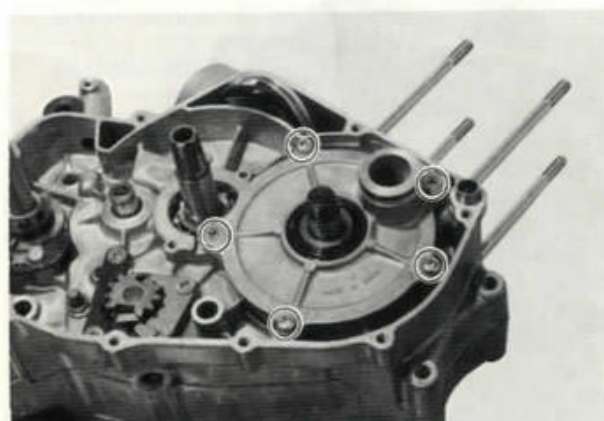
16. Flatten primary drive gear washer and loosen primary drive gear nut by using special tool.
Take off gear.

Con-rod stopper

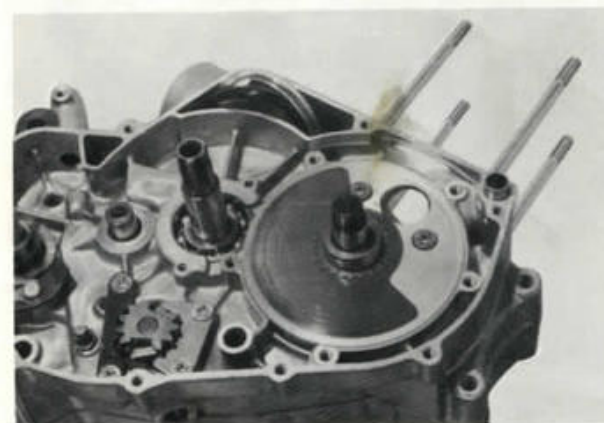
09910-20115



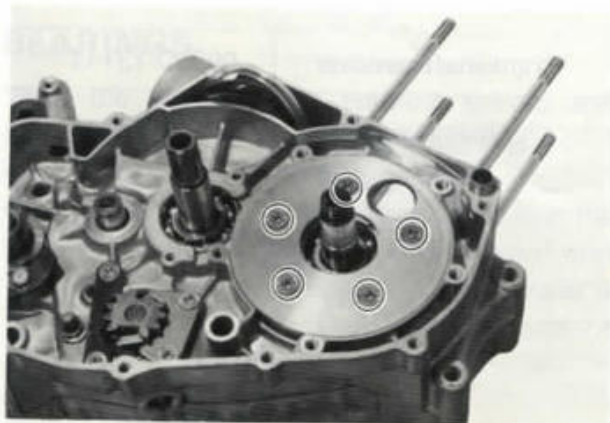
17. Remove outer valve seat.



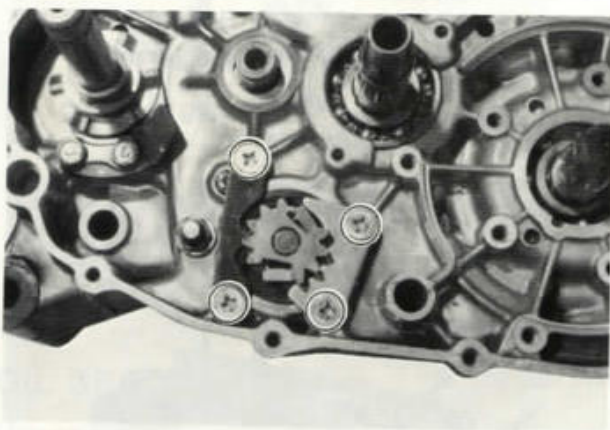
18. Pull out valve plate and valve guide.



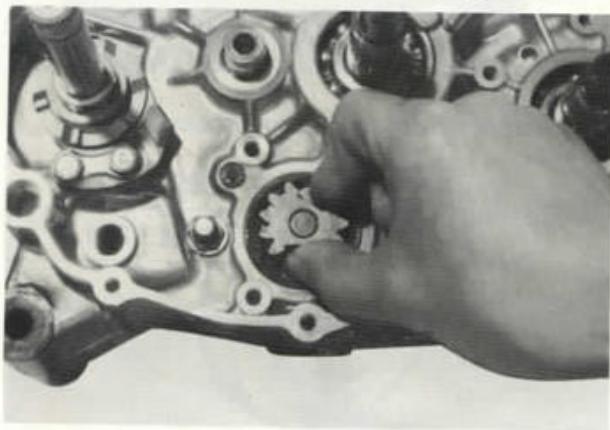
19. Remove inner valve seat.



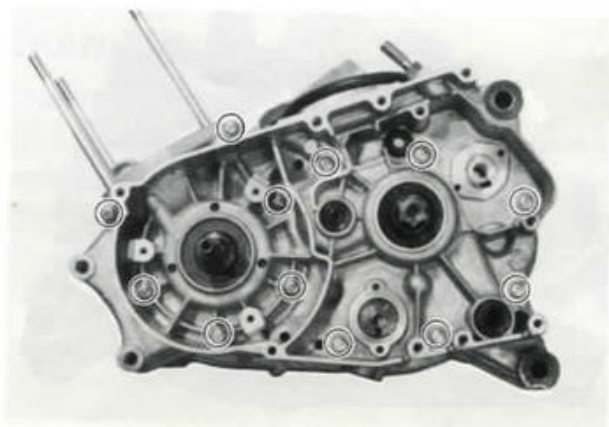
20. Remove pawl lifter and cam guide.



21. Pull out gearshifting cam driven gear.



22. Loosen crankcase securing screws.

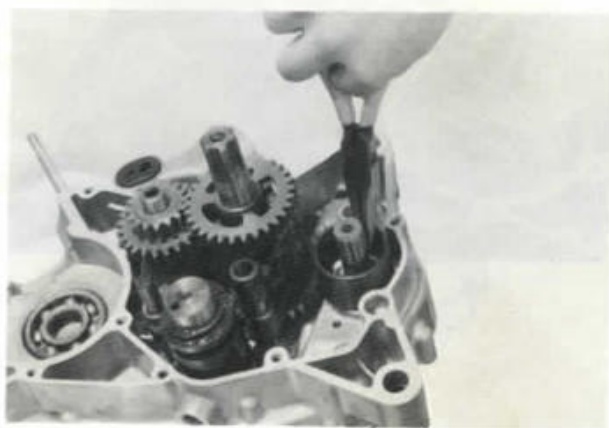


23. Separate the crank case by using special tool.

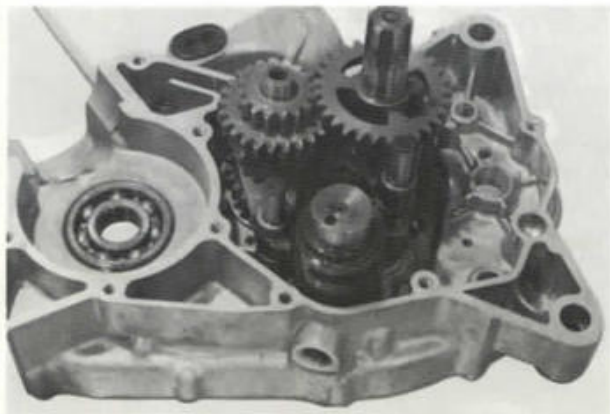
Crankcase separating tool	09910-80113
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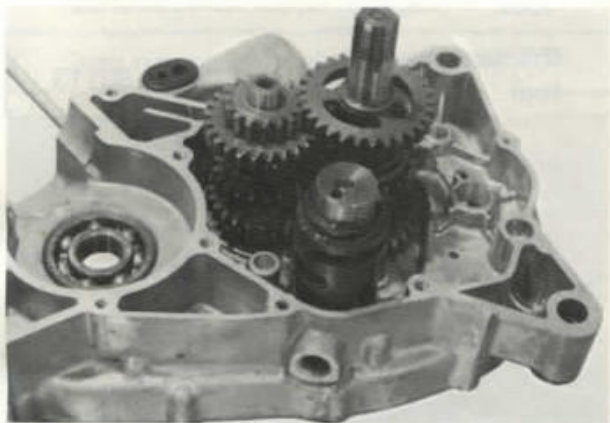
24. Take out spring guide and remove kick starter return spring.
Draw out starter shaft.



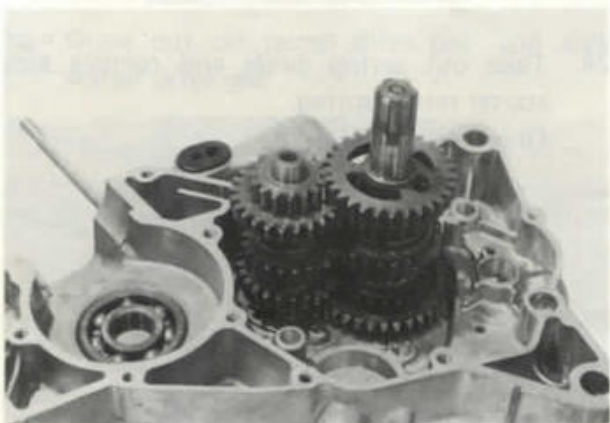
25. Draw out gearshift fork shaft and shift fork.



26. Take off gearshift cam.



27. Draw out the counter and drive shafts at the same time.



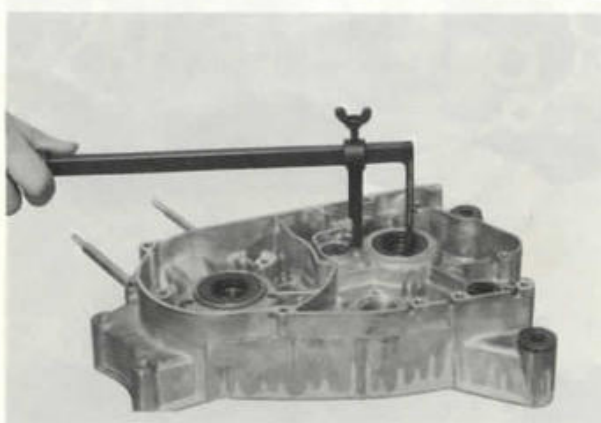
28. Remove the crankshaft by using special tool.

Crankshaft remover	09920-13111
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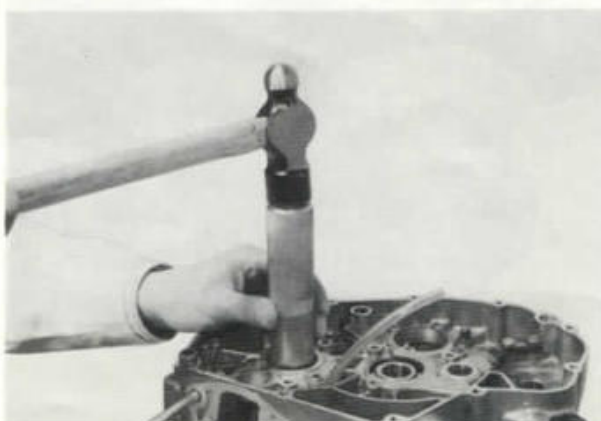
29. Remove oil seal by using special tool.

Oil seal remover	09913-70122
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30. Remove bearing by using special tool.

Bearing remover	09913-50120
	09913-80111



ENGINE COMPONENTS INSPECTION AND SERVICING

BEARINGS

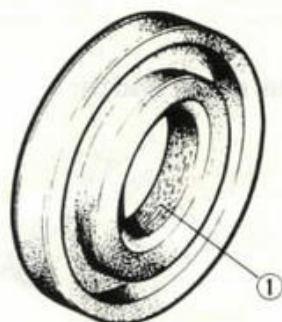
Wash the bearing with cleaning solvent and lubricate with motor oil before inspecting.

- Hold the bearing by the inner race.
- Turn the outer race and check to see that the outer race turns smoothly. If it does not turn lightly, quietly and smoothly, or if noise is heard, the bearing is defective and must be replaced with a new one.



OIL SEALS

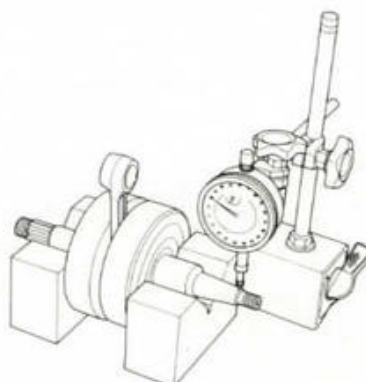
Damage to the lip ① of the oil seal may result in leakage of the mixture or oil. Inspect for damage and be sure to replace damaged parts if there are any.



CRANKSHAFT

Crankshaft deflection

Support crankshaft by "V" blocks, with the dial gauge rigged to read the runout. Deflection is total dial reading, and is specified to be within the following limit:

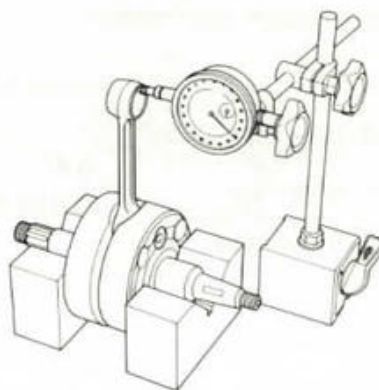


Service Limit	0.05 mm (0.002 in)
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Excessive crankshaft deflection is often responsible for abnormal engine vibration. Such vibration shortens engine life.

Condition of big end bearing

Wear on the big end of the 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 connecting rod's big end. If wear exceeds the limit, connecting rod, crank pin and crank pin bearing should all be replaced.

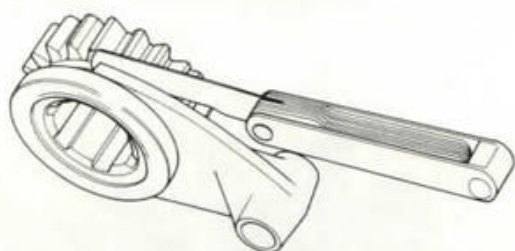


Service Limit	3.0 mm (0.12 in)
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GEARS AND SHIFTING FORKS

Upon disassembling the engine, immediately inspect the transmission internals, visually examining the gears for damage and checking the meshed condition of gear teeth. Using a thickness gauge, check the shifting fork clearance in the groove of its gear.

Thickness gauge	09900-20804
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This clearance for each of the three shifting forks plays an important role in the smoothness and positiveness of shifting action. Each fork has its prongs fitted into the annular groove provided in its gear. In operation, there is sliding contact between fork and gear and, when a shifting action is initiated, the fork pushes the gear axially. Too much a clearance is, therefore, liable to cause the meshed gears to slip apart. If the clearance checked is noted to exceed the limit specified, replace the fork or its gear, or both.

Shift fork-groove clearance

	Service limit
For 3rd drive gear	0.45 mm (0.018 in)
For 4th driven gear	
For 5th driven gear	

CLUTCH

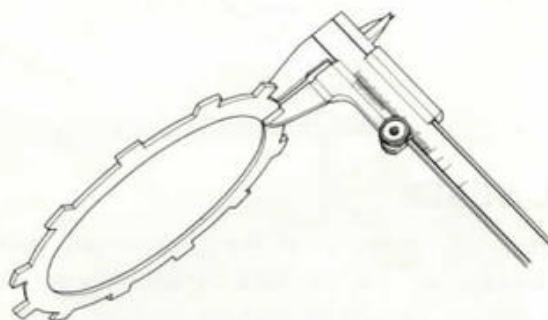
Drive plates and driven plates

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

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

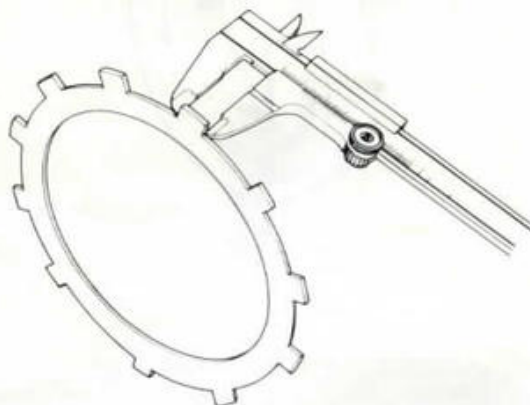
Vernier caliper	09900-20101
Thickness gauge	09900-20803

Drive plate thickness:

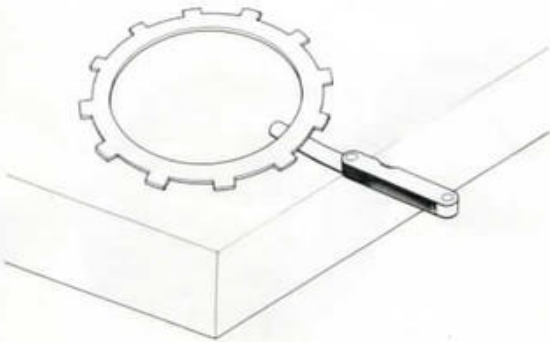


Service limit	2.6 mm (0.10 in)
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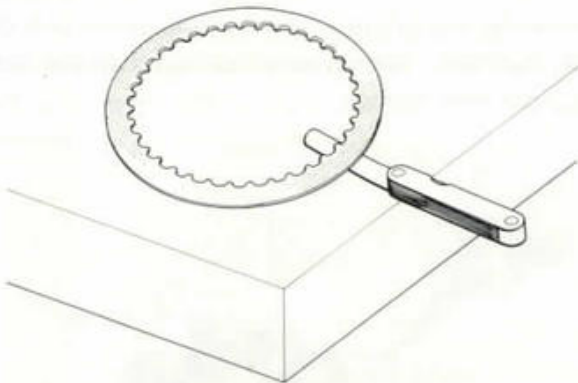
Drive plate claw width:



Service limit	11.3 mm (0.44 in)
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Drive plate distortion:

Service limit	0.4 mm (0.016 in)
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Driven plate distortion:

Service limit	0.1 mm (0.004 in)
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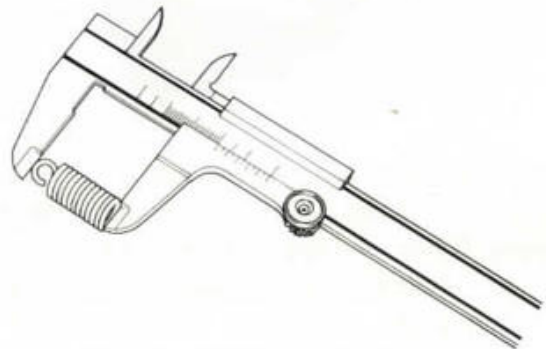
Clutch springs

Clutch springs which have lost their tension also cause clutch slipping, resulting in loss of power and rapid wear of the clutch plates.

Remove the clutch springs and measure their free length with calipers.

NOTE:

If one of them is longer than service limit, renew all of them at a time.



Service limit	33.6 mm (1.32 in)
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Clutch release bearing

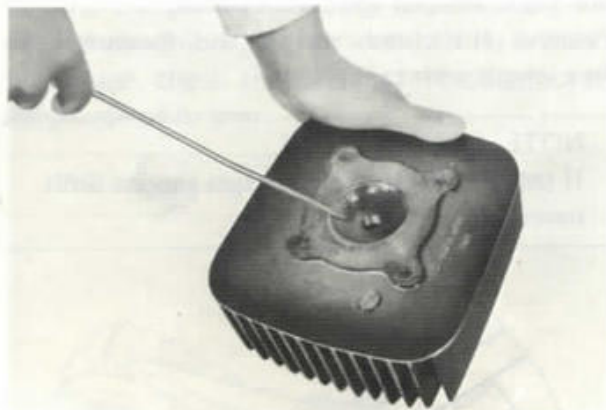
Inspect this thrust-type bearing for any abnormality, particularly cracks, upon removal from the clutch, to decide whether it can be reused or should be replaced.

Smooth engagement and disengagement of the clutch depends much on the condition of this bearing.



CYLINDER HEAD

Remove the carbon and clean the cylinder head. Check the scratch on the mating surface.



Using a surface plate and red lead paste, check the gasketed surface of the cylinder head for flatness. If high and low spots are noted, remove them by rubbing the surface 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.



Cylinder head wapage:



Service limit

0.05 mm (0.002 in)

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 (0.59 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 by using a boring machine or replace the cylinder with a new one. Oversize pistons are available in two sizes: 0.5 mm (0.0196 in) and 1.0 mm (0.0394 in) oversizes.

Cylinder gauge set

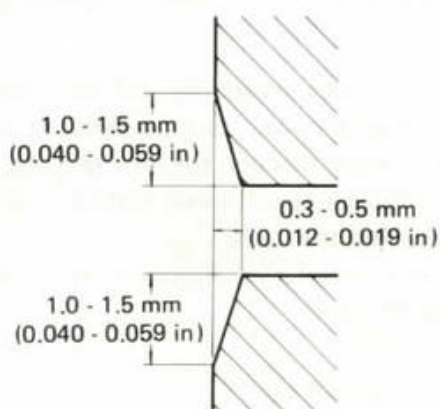
09900-20508



Service limit

56.095 mm (2.2085 in)

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

**NOTE:**

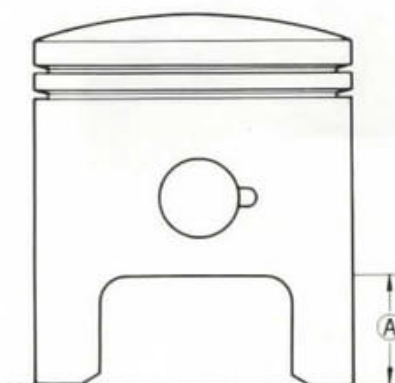
Minor surface flaws on the cylinder wall due to seizure or similar abnormalities can be corrected by grinding the flaws off with fine-grain sandpaper. If the flaws are deep grooves or otherwise persist, the cylinder must be reworked with a boring machine to the next oversize.

PISTON**Cylinder to piston clearance**

Cylinder-to-piston clearance is the difference between piston diameter and bore diameter. Be sure to take the miked diameter at right angles to the piston pin. The value of elevation **A** is prescribed to be 20 mm (0.79 in).

Micrometer

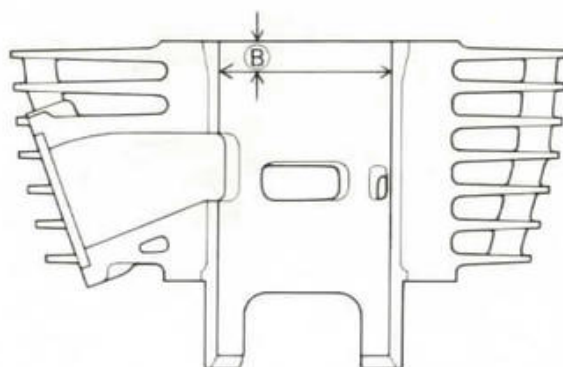
09900-20202



Piston diameter for cylinder-to-piston clearance determination.

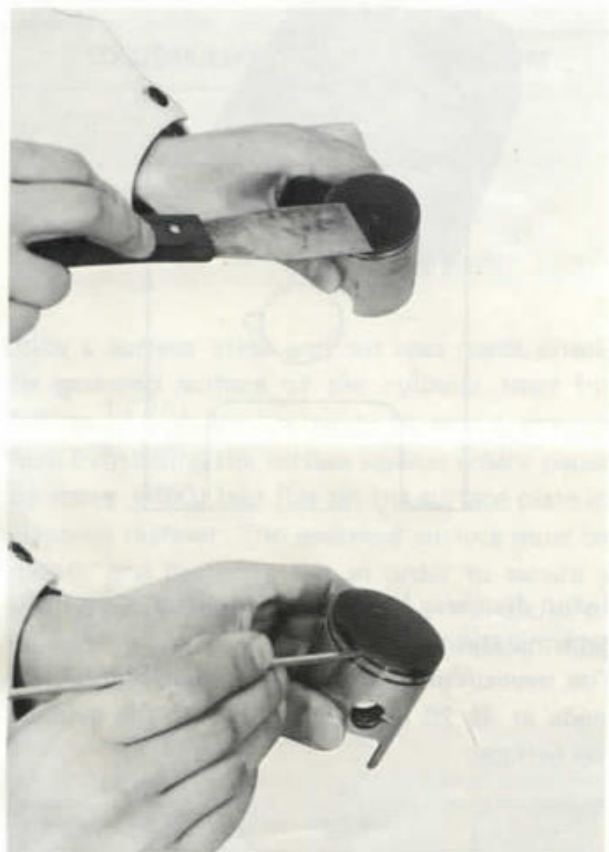
The measurement for the bore diameter will be made at **B** 20 mm (0.79 in) from the cylinder top surface.

	STD	Service limit
Cylinder	56.000 – 56.015 mm (2.2047 – 2.2053 in)	56.095 mm (2.2085 in)
Piston	55.960 – 55.975 mm (2.2031 – 2.2037 in)	55.880 mm (2.2000 in)
Cylinder to piston	0.035 – 0.045 mm (0.0014 – 0.0018 in)	0.120 mm (0.0047 in)

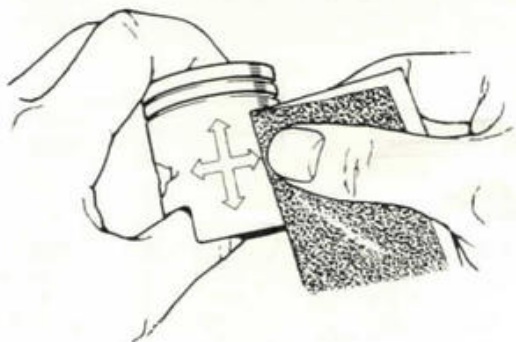


Decarbon the piston and piston ring grooves, as shown in Fig. After cleaning the grooves, fit the rings and rotate them in their respective grooves to be sure that they move smoothly.

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.



PISTON RINGS

Check each ring for end gap, reading the gap with a thickness gauge, as shown in Fig. If the end gap is found to exceed the limit, indicated below, replace it with a new one.

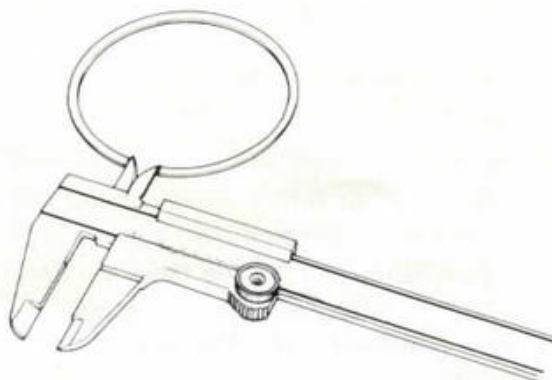
The end gap of each ring is to be measured with the ring fitted squarely into the cylinder bore and held at the least worn part near the cylinder bottom, as shown in Fig.



Service limit	0.80 mm (0.031 in)
---------------	--------------------

As the piston ring wears, its end gap increases reducing engine power output because of the resultant blowby through the enlarged gap. Here lies the importance of using piston rings with end gaps within the limit.

Measure the piston ring free end gap to check the spring tension.



Service limit	6.0 mm (0.24 in)
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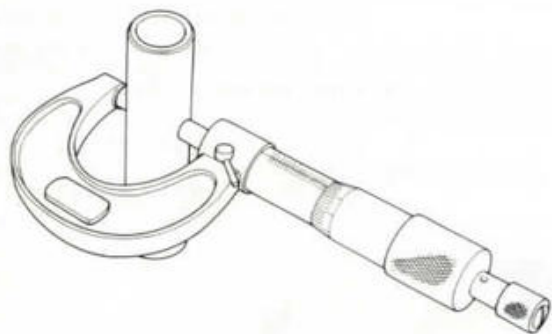
Fix the piston ring in the piston ring groove, measure the ring side clearance with the thickness gauge while matching the sliding surfaces of piston and ring.



STD clearance	0.03-0.07 mm (0.001-0.003 in)
---------------	-------------------------------

PISTON PIN

Measure the piston pin outside diameter with the micrometer.



Service limit	13.980 mm (0.5504 in.)
---------------	------------------------

CONNECTING ROD

Measure the con-rod small end bore with the caliper gauge.



Service limit	14.040 mm (0.5528 in)
---------------	-----------------------

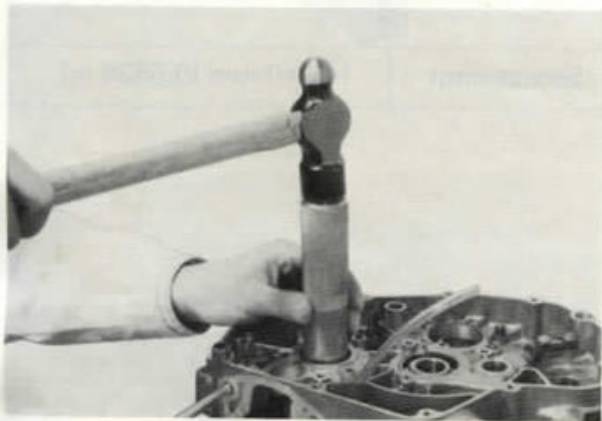
ENGINE REASSEMBLY

Reassembly is generally performed in the reverse order to 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.

BEARINGS

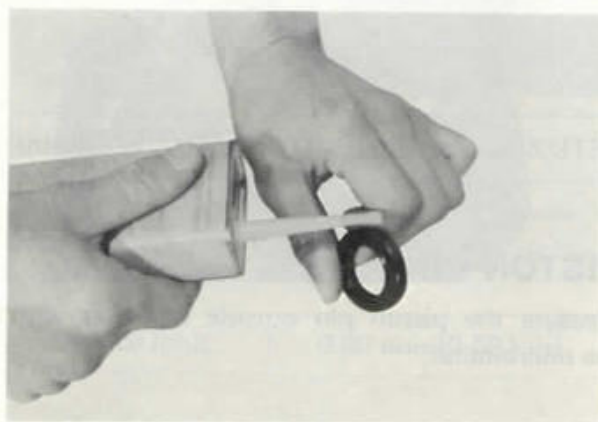
Insert the bearing into the crankcase using the special tool. After the bearing is installed, be sure to lubricate to prevent initial wear.

Bearing installer	09913-70122
	09913-80111



- Be sure to apply "Thread Lock Cement" to outer surfaces of right and left crankshaft oil seals, to prevent them moving.

Thread Lock Cement	99000-32040
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- When fitting the oil seal in the crankcase, insert it slowly using the special tool.

Oil seal installer	09913-70122
	09913-80111



OIL SEALS

Fit the oil seals to the crankcase following the procedure below.

Replace removed oil seals with new ones.

- Apply SUZUKI Super Grease "A" to the lip of the oil seal.

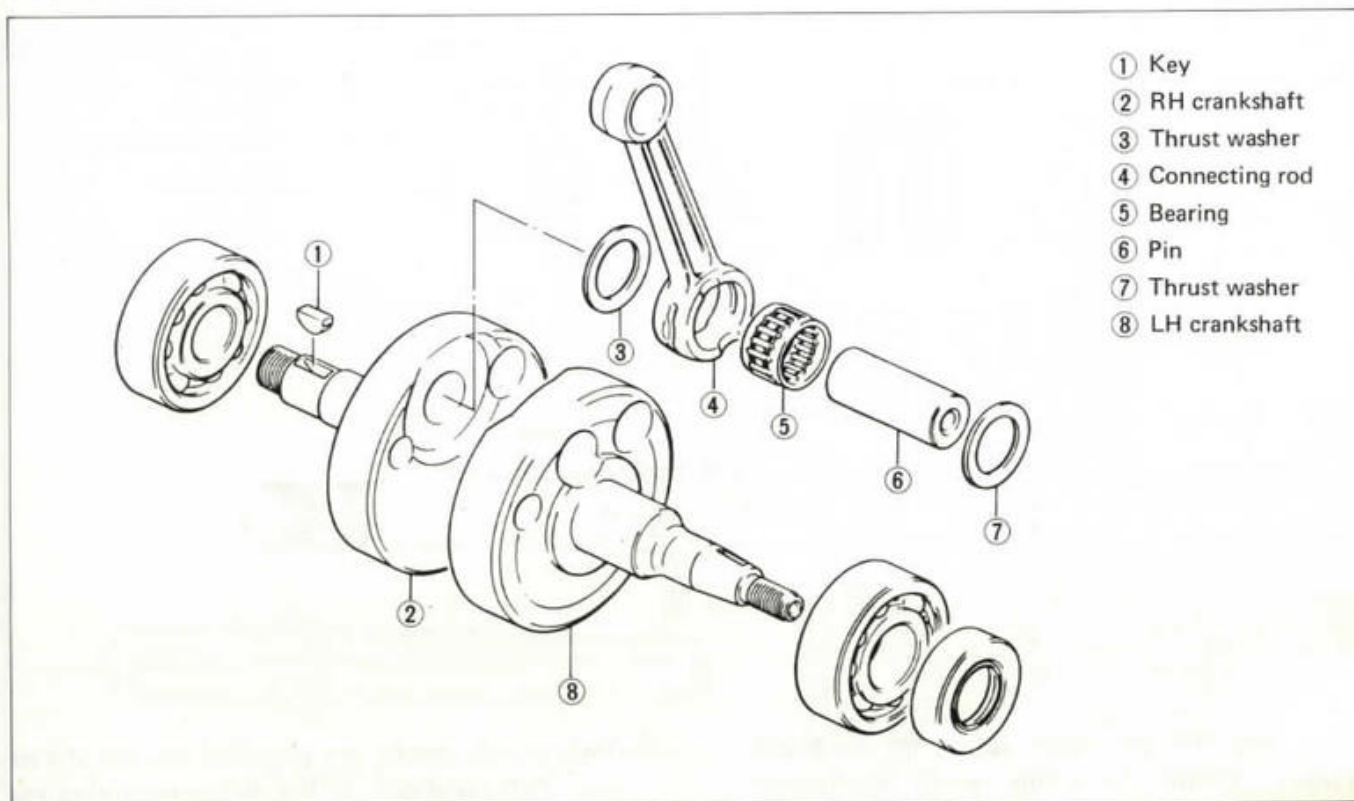
SUZUKI Super Grease "A"	99000-25010
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NOTE:

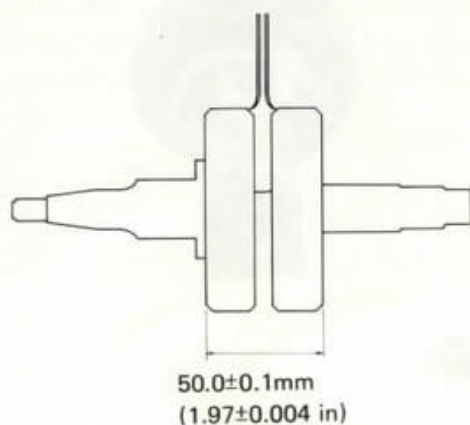
Apply engine oil to each running and sliding part before installing it in reassembling.

CRANKSHAFT



Crankshaft rebuilding

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



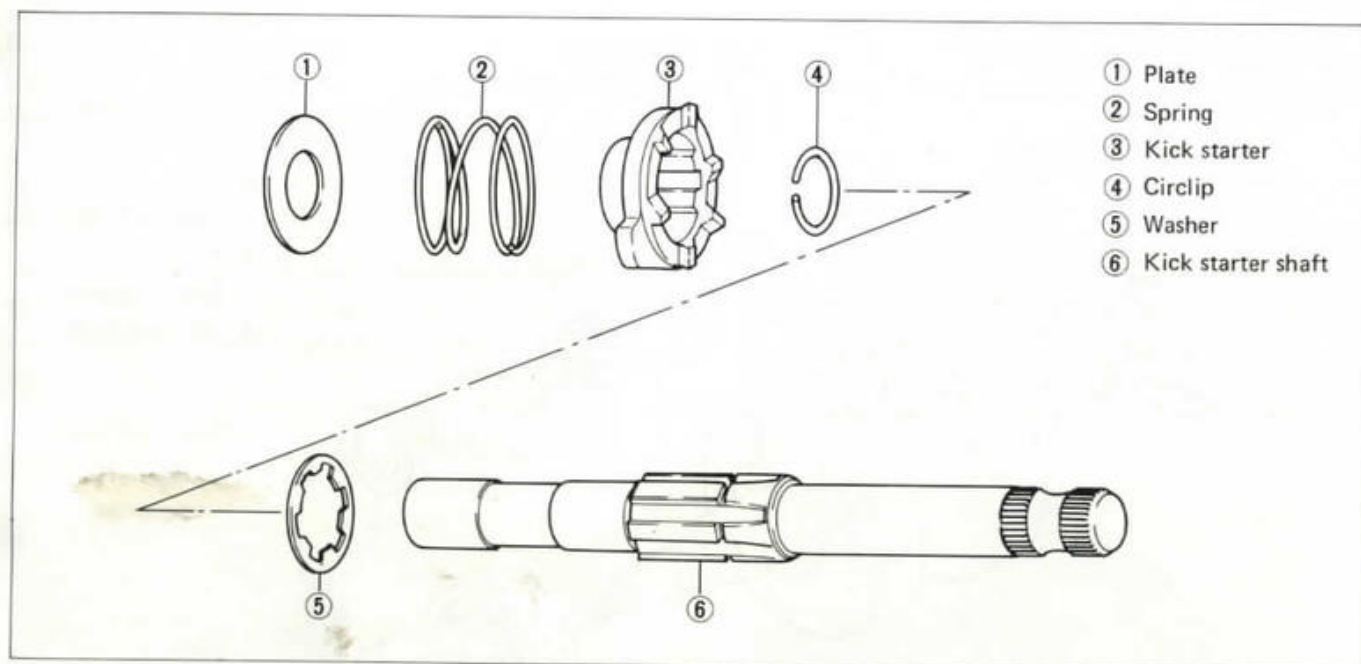
STD width between webs

$50.0 \pm 0.1 \text{ mm}$ ($1.97 \pm 0.004 \text{ in}$)

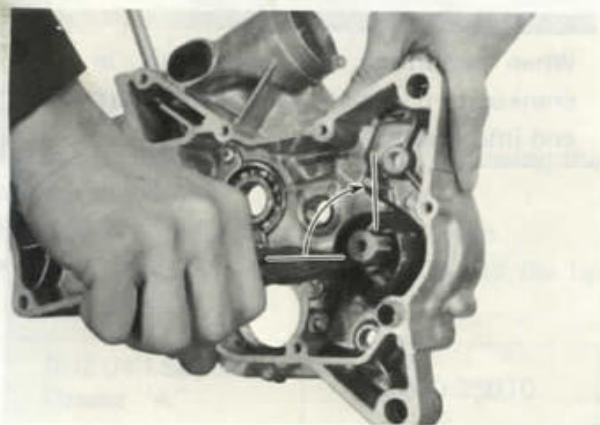
CAUTION:

When mounting the crankshaft in the crankcase, it is necessary to drive its right end into the crankcase.

KICK STARTER



Hitch one end of return spring to crankcase stopper: rotate the spring about 90 degree clockwise; and hitch the other end to the hole provided in kick starter shaft.

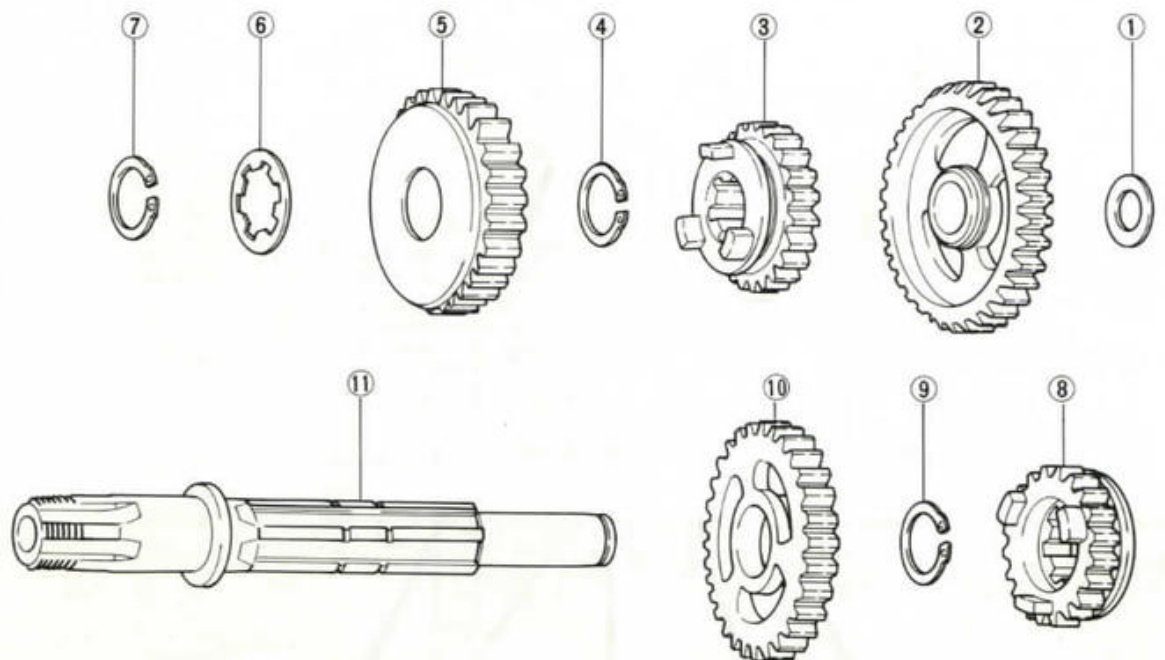


Two punch marks are provided on the starter and shaft, as shown in Fig. When mounting the kick starter on the shaft, be sure that these two punch marks meet each other.



TRANSMISSION

Drive shaft



- ① Thrust washer
- ② 1st driven gear
- ③ 4th driven gear

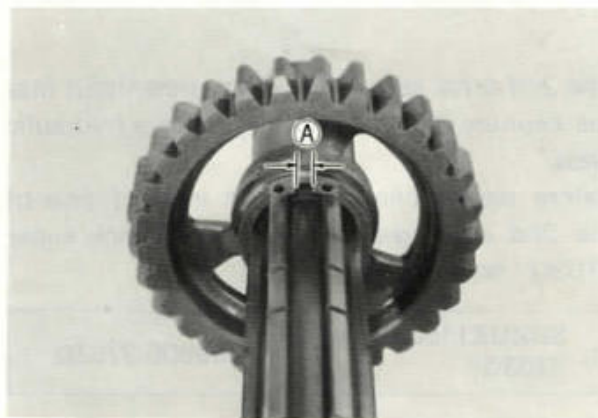
- ④ Circlip
- ⑤ 3rd driven gear
- ⑥ Thrust washer

- ⑦ Circlip
- ⑧ 5th driven gear
- ⑨ Circlip

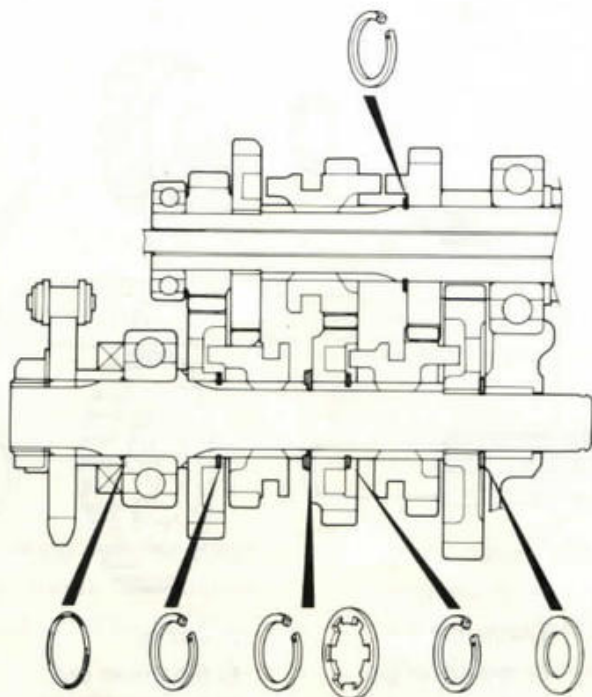
- ⑩ 2nd driven gear
- ⑪ Drive shaft

CAUTION:

Seat the circlip in the groove and its ends **A** should be located as shown in the photo.



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

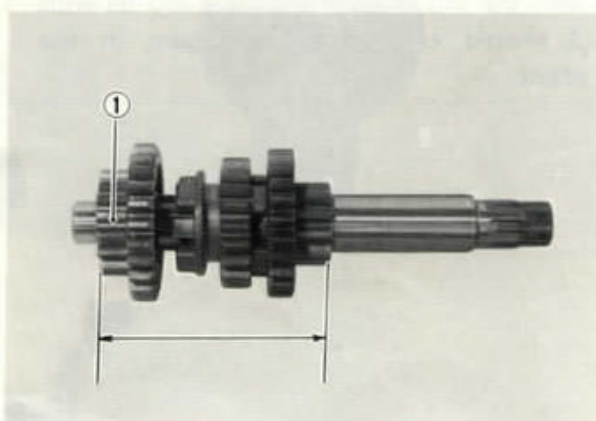


The 2nd drive gear ① has been press-fitted into the counter shaft. Remove it using a hydraulic press.

Before reassembling, coat the internal face of the 2nd drive gear with SUZUKI lock super "103Q" and install so

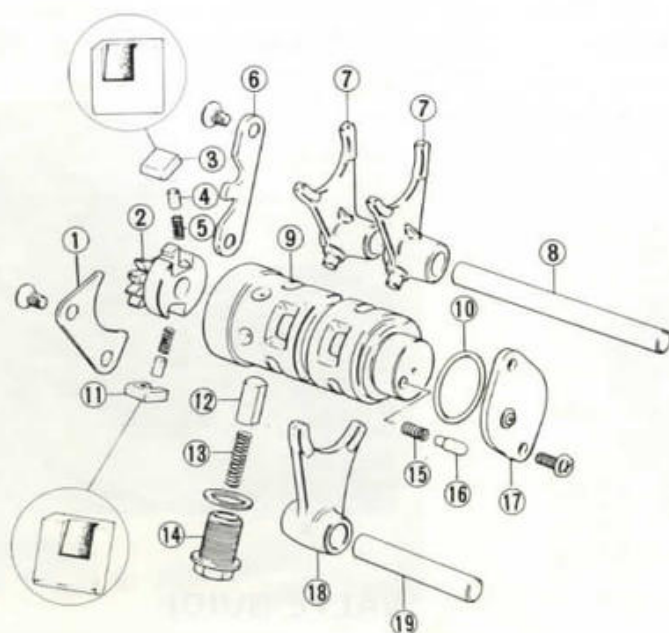
SUZUKI lock super "103Q"	99000-32030
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Counter shaft Standard length	80.3 - 80.4 mm (3.16 - 3.17 in)
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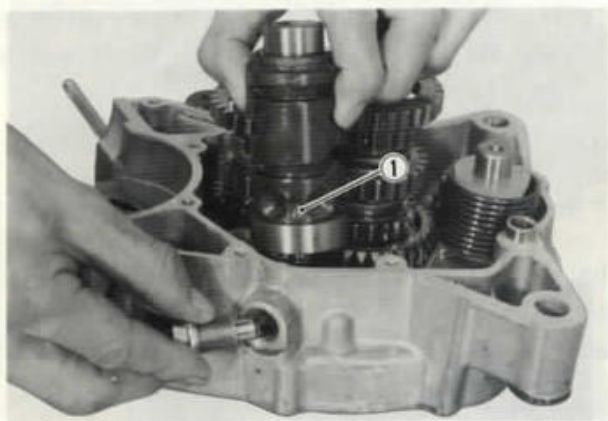
GEARSHIFT MECHANISM

The exploded view of the mechanism give in Fig. serves as a reference for reassembly work.



- ① Pawl lifter
- ② Cam driven gear
- ③ Pawl No. 2
- ④ Pin
- ⑤ Spring
- ⑥ Cam guide
- ⑦ Gear shifting fork No. 1
- ⑧ Fork shaft No. 1
- ⑨ Gear shifting cam
- ⑩ O ring
- ⑪ Pawl No. 1
- ⑫ Cam stopper
- ⑬ Spring
- ⑭ Stopper housing
- ⑮ Spring
- ⑯ Contact
- ⑰ Gear shifting switch body
- ⑱ Gear shifting fork No. 2
- ⑲ Fork shaft No. 2

Turn the gearshifting cam, and meet the neutral position ① with the neutral stopper.



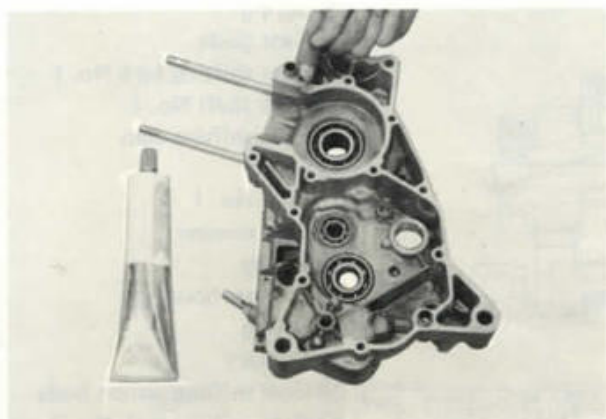
NOTE:

Set the cam guide before installing the fork shaft.

CRANKCASE

Wipe the crankcase mating surfaces (both surfaces) with cleaning solvent and coat one of a pair with SUZUKI Bond No. 4 in the usual manner, just before assembling the crankcase.

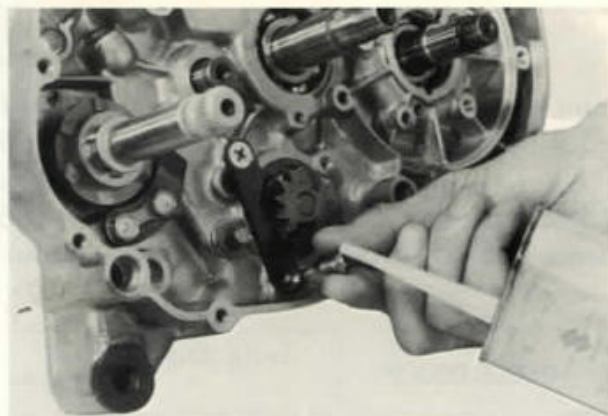
SUZUKI Bond No. 4	99000-31030
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PAWL LIFTER AND CAM GUIDE

Apply "Thread Lock Cement" to the 4 screws when installing the pawl lifter and cam guide.

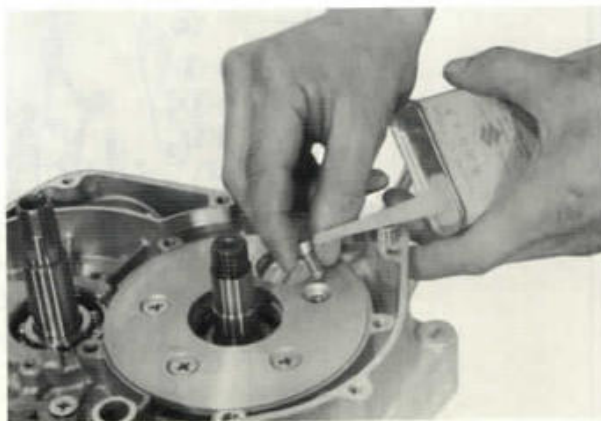
Thread Lock Cement	99000-32040
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INNER VALVE SEAT

Apply "Thread Lock Cement" to the 5 screws when installing the inner valve seat.

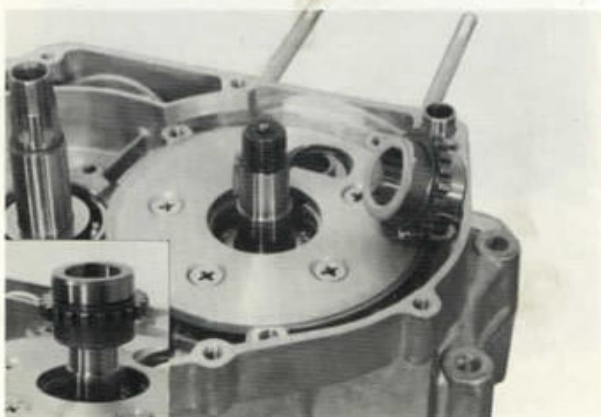
Thread Lock Cement	99000-32040
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VALVE GUIDE

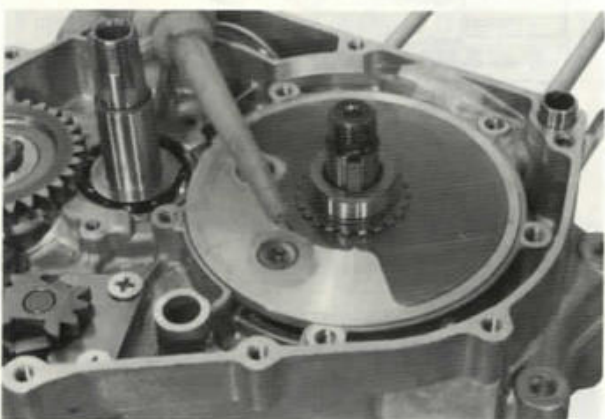
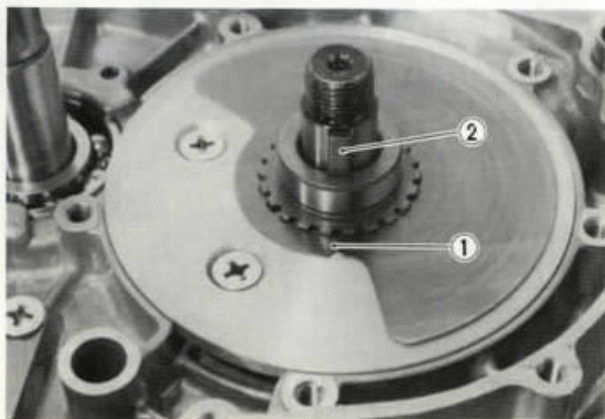
- Before installing the valve guide in the crankshaft, be sure to apply "SUZUKI Bond No. 4" to the side in contact with the crankshaft bearing, the outer surface of which has not been treated, as shown in Fig.
- Put the valve guide on the crankshaft facing the fine grinded portion upward not to damage the oil seal lip.

SUZUKI Bond No. 4	99000-31030
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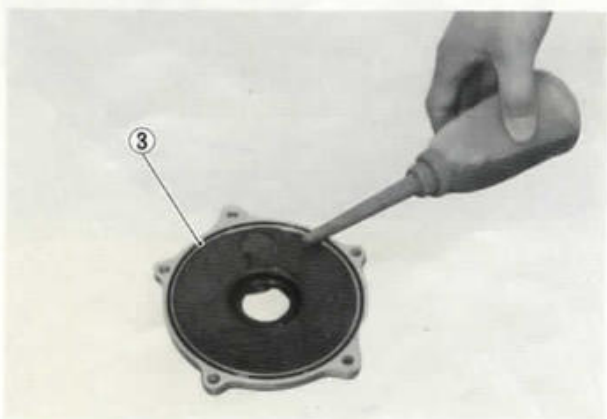


VALVE PLATE

- Insert the valve plate into the valve guide so that the side with the mark ① faces outward and aligning mark ② (notch) and key way on the crankshaft are aligned. If installed in the wrong way, it will prevent the engine from starting.
- Apply motor oil to the valve plate surfaces.



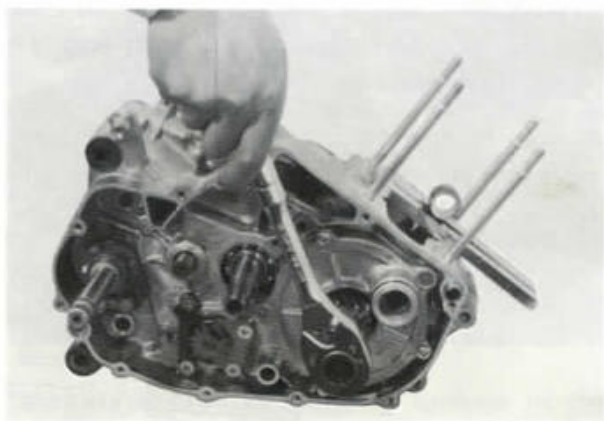
- Take care so that the O-ring ③ does not fall out when installing the outer valve seat. Applying grease between the O-ring and the ring groove will facilitate insertion.
- Apply motor oil to outer valve seat.



PRIMARY DRIVE GEAR NUT

Using special tool, tighten the primary drive gear nut with specified torque.

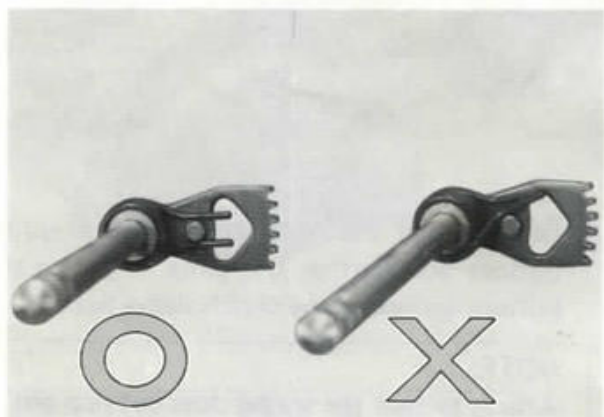
Con-rod stopper	09910-20115
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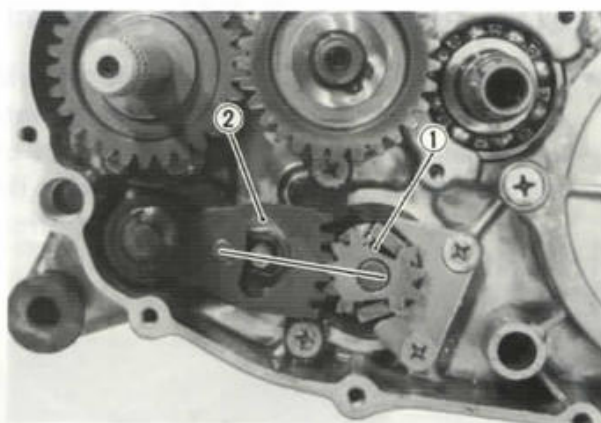
Tightening torque	36 – 50 N.m (3.6 – 5.0 kg-m) (26.0 – 36.0 lb-ft)
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GEARSHIFT RETURN SPRING

Attach the spring to the gearshift shaft correctly as indicated in Fig.

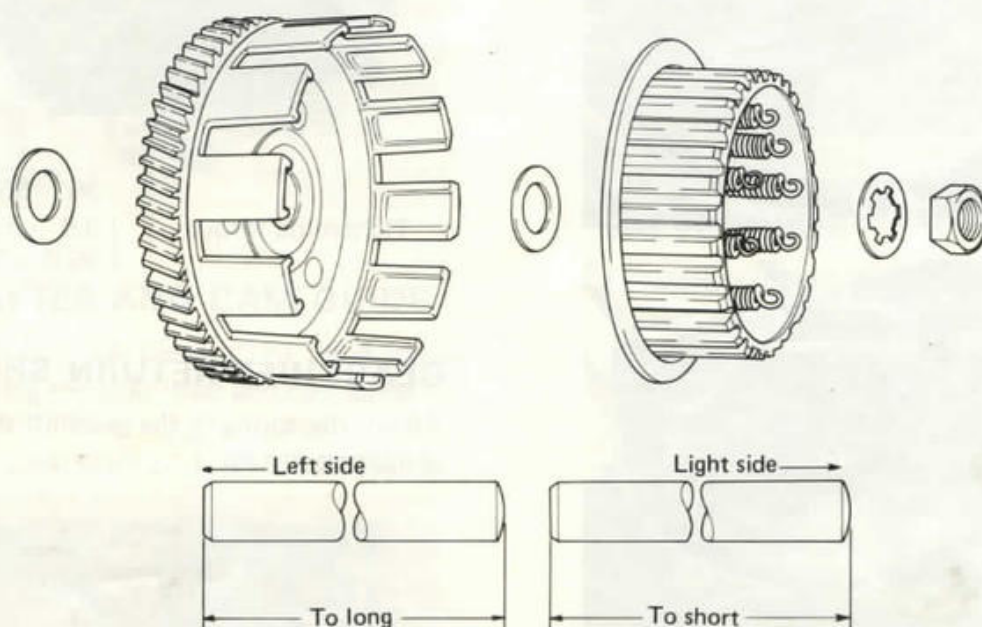


- Installing the gearshift shaft in the crankcase. Referring to Fig. gearsifting cam gear ① has two groups of teeth. This gear takes its position with the large group coming into mesh with the shifting gear ② mounted on the shifting shaft. Be sure to mesh gears ① and ② with their center lines coinciding with each other or the mechanism will shift poorly or will not shift at all.



CLUTCH

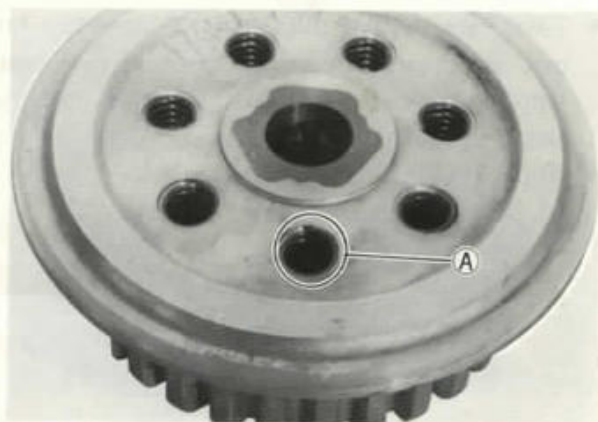
Housing and sleeve hub



- Be sure that the ends of the clutch spring bottom are kept at the same height as the bottom surface of the clutch sleeve hub.

NOTE:

Attach so that the spring does not pop out of hub bottom surface, as shown by (A) in the Fig.



Clutch sleeve hub nut

Using special tool, tighten the clutch sleeve hub nut with specified torque.

Clutch sleeve hub holder

09920-53710

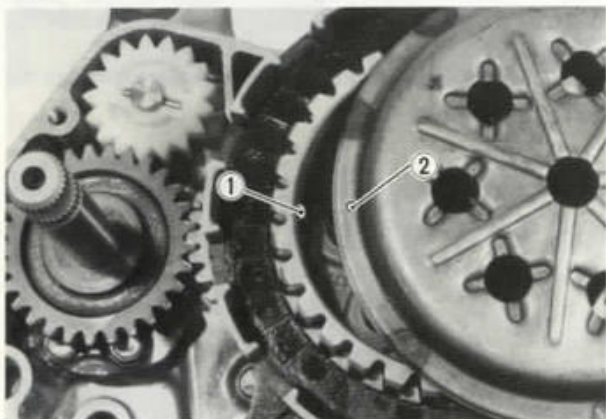


Tightening torque

20 – 30 N.m
(2.0 – 3.0 kg-m)
(14.5 – 21.5 lb-ft)

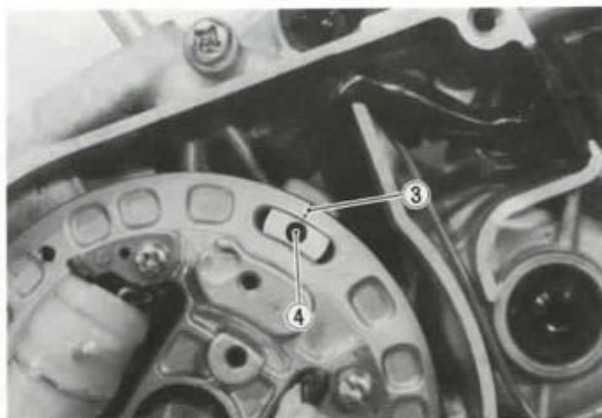
Pressure plate

Install the clutch pressure plate so that boss ① in the clutch sleeve hub is aligned with mark ② on the pressure plate.



STATOR AND ROTOR

When fitting the stator, align the index line ③ with the center of screw ④.



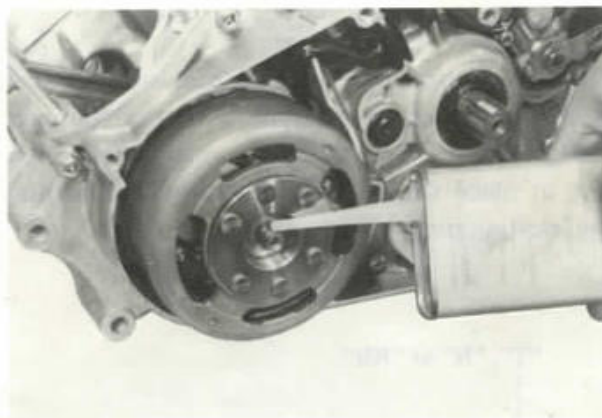
Clean thoroughly both mating surfaces of the rotor and crankshaft with cleaning solvent. Then fix the rotor with the key, apply thread lock cement to the rotor nut and tighten the nut by using special tool.

Rotor holder

09930-40113

Thread Lock Cement

99000-32040



Tightening torque

30 – 40 N.m
(3.0 – 4.0 kg-m)
(21.5 – 29.0 lb-ft)

ENGINE SPROCKET

The "O" ring ① located on the drive shaft is for sealing the clearance between the drive shaft and the spacer. Tighten the engine sprocket with specified torque by using special tool.

Rotor holder

09930-40113

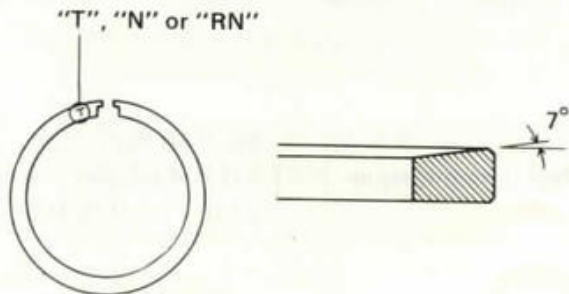


Tightening torque

40 – 60 N.m
(4.0 – 6.0 kg-m)
(29.0 – 43.5 lb-ft)

PISTON RINGS

The two piston rings, 1st and 2nd, are identical in shape and key-stone type with the stamped mark, "N" or "T", on their upper sides. Each ring in place should be so positioned as to hug the locating pin.



PISTON

Before connecting the piston to the connecting rod, be sure to apply SUZUKI CCI Oil or two-stroke oil to the connecting rod big end and small end bearings.



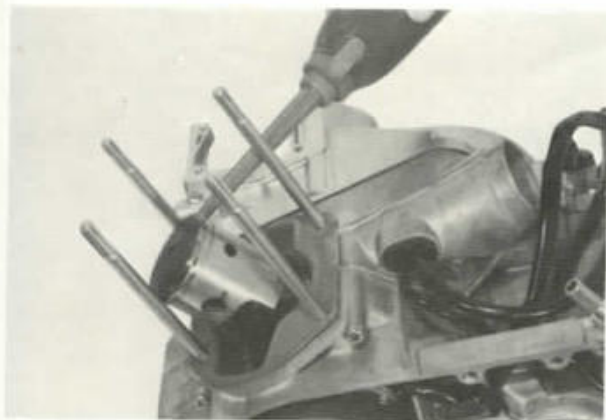
The arrow mark on the piston crown points to the exhaust port side.



The circlip 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.



Before inserting the piston in the cylinder, be sure to apply SUZUKI CCI Oil or two-stroke oil to the outer surfaces of the piston and piston ring grooves.



CYLINDER HEAD

Tighten the cylinder head nut with the following order and specified torque.



Tightening torque

23 – 27 N.m
(2.3 – 2.7 kg-m)
(16.5 – 19.5 lb-ft)

FUEL AND OIL SYSTEM

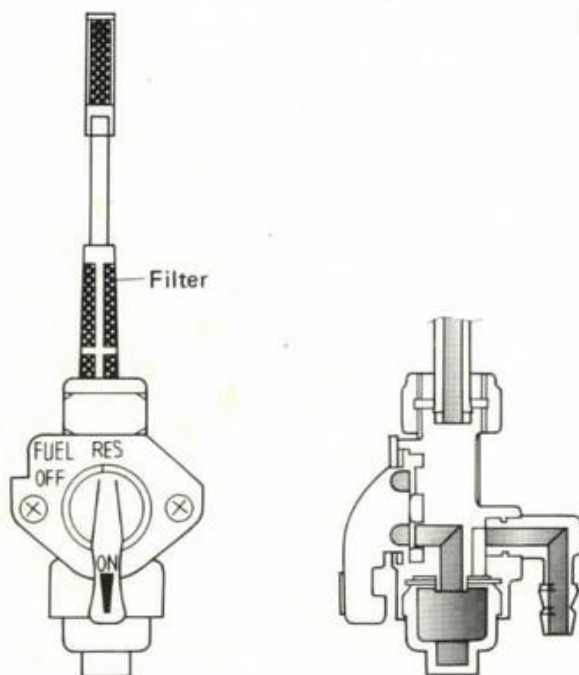
CONTENTS

FUEL TANK AND FUEL COCK	4-1
CARBURETOR	4-2
OIL PUMP	4-5

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 has the structure as shown in Fig. A valve is provided at the top of the fuel cock lever and can switch over to "OFF", "ON" and "RES". With the valve ON (normal), the main passage opens. With the valve OFF, both holes close.

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



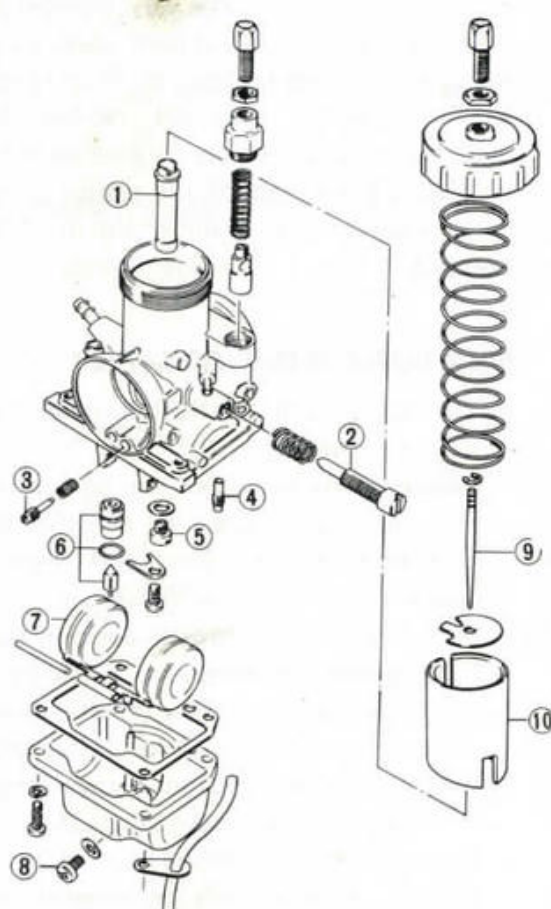
CLEAN

The fuel cock filter will collect impurities, and therefore must be periodically checked cleaned. The fuel tank should be cleaned at the same time the fuel cock filter is being cleaned.

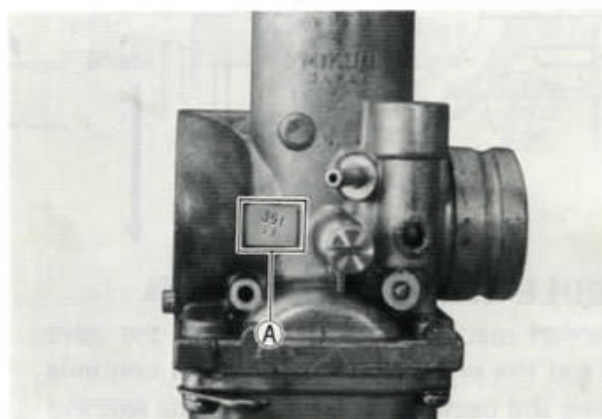
INSPECTION

If the fuel leaks from the cap or from around the fuel cock, the cup gasket or cock gasket may be damaged. Visually inspect these parts, and replace them if necessary. Examine the air vent in the cap to see if it is obstructed. Use compressed air to clean an obstructed vent.

CARBURETOR CONSTRUCTION



- ① Needle jet
- ② Throttle valve adjusting screw
- ③ Air screw
- ④ Pilot jet
- ⑤ Main jet
- ⑥ Needle valve Ass'y
- ⑦ Float
- ⑧ Drain plug
- ⑨ Jet needle
- ⑩ Throttle valve



Ⓐ I.D. number location

CARBURETOR SETTING TABLE

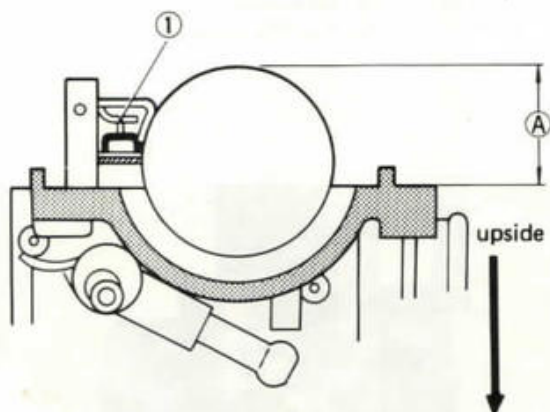
ITEM	SPECIFICATION			
Carburetor type	MIKUNI VM24SS			
Idle r/min	1 300 ± 150 r/min			
Bore size	24.0 (0.94)			
I. D. No.	39111	39122	39130	39150
Float height	23.5±1.0 mm (0.93±0.04 in)	←	←	←
Air screw (A.S.)	1½	1¼	1½	←
Cut-away (C.A.)	2.5	←	←	←
Jet needle (J.N.)	4EJ14-3	4J25-3	4EJ14-3	4P6-3
Pilot jet (P.J.)	#25	#17.5	#25	#20
Pilot outlet (P.O.)	0.8	1.0	0.8	0.6
Needle jet (N.J.)	0 - 2	P - 2	0 - 2	0 - 8
By-pass (B.P.)	1.2	0.8	1.2	1.0
Main jet (M.J.)	#90	#105	#92.5	#97.5

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 by using the caliper. Bend the tongue **1** as necessary to bring the height **A** to this value.

Float height

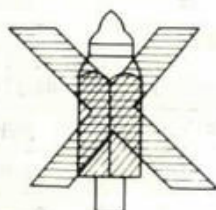
$23.5 \pm 1.0 \text{ mm}$
($0.93 \pm 0.04 \text{ in}$)



NEEDLE VALVE INSPECTION

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 below, replace it together with a valve seat. Clean the fuel passage of the mixing chamber with compressed air.



DIAGNOSIS OF CARBURETOR

Whether the carburetor is producing a proper mixture of fuel and air can be told by making a road test (simulating the way the user operates the machine) with a standard spark plug (NGK B8HS or NIPPON DENSO W24FS) fitted to the engine. After the road test, remove the spark plug, and observe the appearance of the plug as well as the surfaces of the piston crown. The color observed tells whether the mixture is too rich or too lean.

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 hose, air vent hose, 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 that 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 air adjusting screw. Effectiveness of these ways depends on the throttle position, as shown in this chart.

Throttle	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	Full
Main jet				
Jet needle				
Pilot air screw				

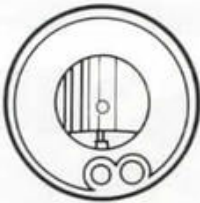
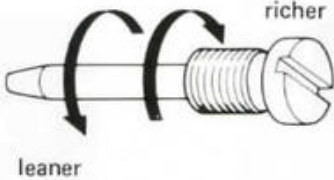

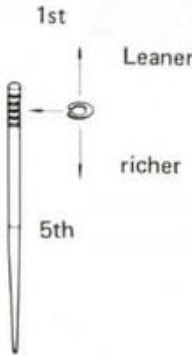

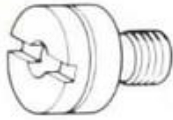
NOTE:

If the machine is tested at $\frac{1}{2}$ throttle resulting in a color and appearance indicating a mixture that is too rich or too lean, perform adjustment by means of jet needle and air adjusting screw.

CARBURETION

Adequate carburetion is determined according to the results of various tests, mainly concerning engine power, fuel consumption and cooling effect of fuel on engine, and 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 adjustable parts should not be changed except when compensating for the mixture ratio due to altitude differences or other climatic conditions. When adjustment is necessary, refer to the following.

Fuel-air mixture ratio can be changed as follows:

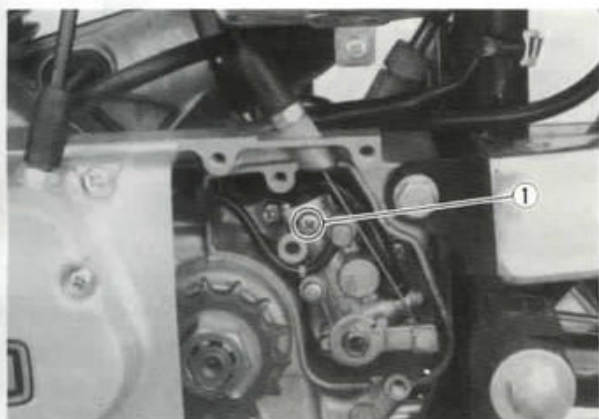
Throttle Opening	Method of Changing Ratio	Standard setting
 <p>Slight</p>	<p>Air adjusting screw</p> 	<ul style="list-style-type: none"> • 1-1/2 turns back • 1-3/4 turns back (Only for I.D. No. 39122)
 <p>Medium</p>	<p>Jet needle</p> 	<ul style="list-style-type: none"> • 4EJ14 – 3rd Groove (I.D. No. 39111 and 39130) • 4J25 – 3rd Groove (I.D. No. 39122) • 4P6 – 3rd Groove (I.D. No. 39150)
 <p>High</p>	<p>Main jet</p>  <p>Larger number: richer mixture Smaller number: leaner mixture</p>	<ul style="list-style-type: none"> • #90 (I.D. No. 39111) • #105 (I.D. No. 39122) • #92.5 (I.D. No. 39130) • #97.5 (I.D. No. 39150)

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 before returning the machine to the user.

To bleed the air, hold the machine in standstill condition. Loosen the 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

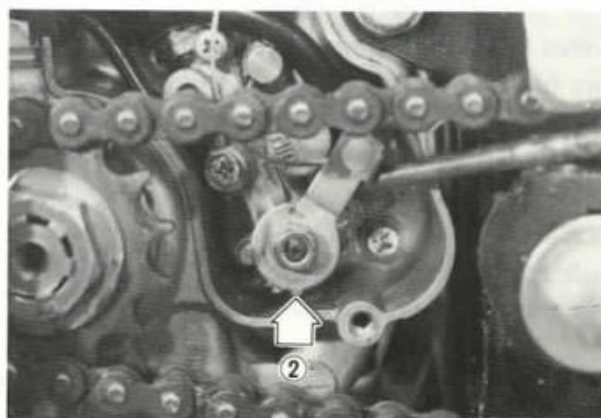
Use the special tool, to check the pump for capacity by measuring the amount of oil the pump draws during the specified interval.

The checking procedure follows:

- Have the tool filled with SUZUKI CCI or CCI SUPER OIL and connect it to the suction side of the pump.
- Run the engine at 2 000 r/min.
- Holding engine speed at the same 2 000 r/min., move the lever up to the fully open position ② and let the pump draw for 2 minutes. For this operation, the reading taken on the device should be from 1.30 – 1.60 ml (0.044/0.046 – 0.054/0.056 US/Imp oz).

CCI oil gauge

09900-21602



Oil discharge amount	1.30 – 1.60 ml (0.044/0.046 – 0.054/0.056 US/Imp oz)
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NOTE:

Adjust both throttle and oil pump control cable play after checking oil pump.

ELECTRICAL SYSTEM

CONTENTS

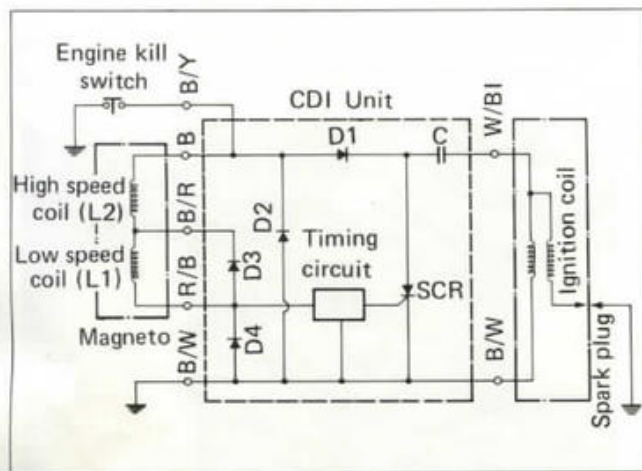
<i>DISCRIPTION</i>	<i>5-1</i>
<i>INSPECTION AND MAINTENANCE</i>	<i>5-2</i>

IGNITION SYSTEM(For PEI type)

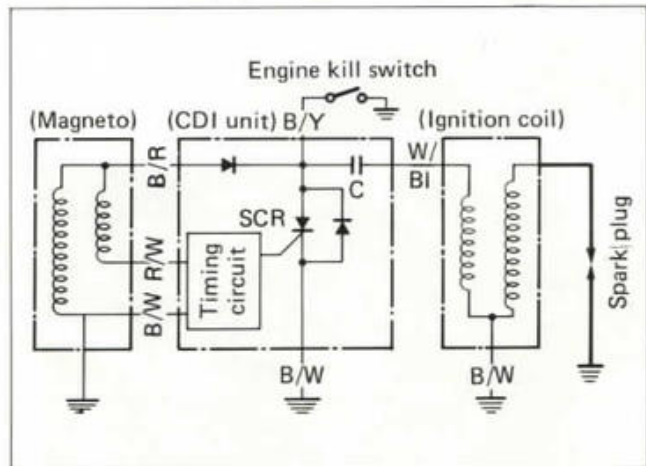
The magneto has three coils to meet all electric power needs - charging, lighting loads and ignition. Unlike conventional magneto units, it is of a contactless type, i.e., no contact breaker is used.

Ignition energy is produced by a SUZUKI "PEI" system, to which the energy for initiating each ignition is supplied from the low-speed and high-speed coils mounted in the magneto. The PEI system is highlighted by these three advantages:

- For the entire speed range from low-speed to high-speed, the sparking voltage induced in the secondary side of the ignition coil is stable.
- No need for frequent checking and servicing of the ignition system since there are no mechanical contact points as in ordinary contact breakers.
- Ignition timing is corrected electronically to suit each level of engine speed.



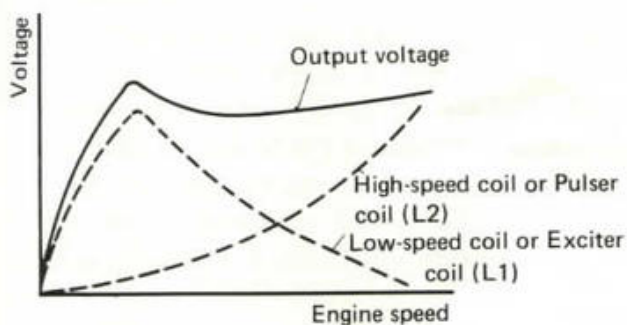
NIPPON DENSO



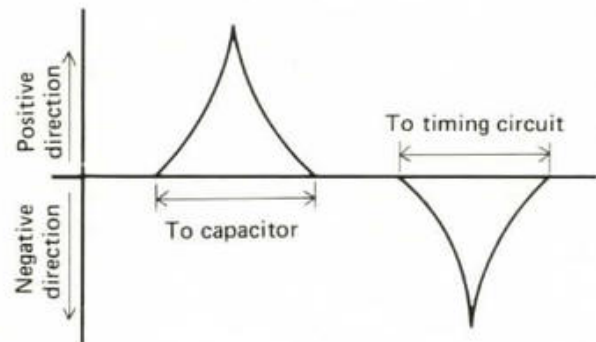
KOKUSAN

PEI Operating principles

When the engine is running in low-speed range, primary coil voltage for charging the condenser is supplied mainly from low-speed coil (L_1); in high-speed range, however, high-speed coil (L_2) supplies most of the voltage. The sum of these two output voltages is relatively constant over the normal engine speed range as will be noted in Fig.



During half a revolution of the magneto rotor, two shots of energy are supplied from the primary coils to the CDI unit. One shot is positive and the other negative as shown in Fig.

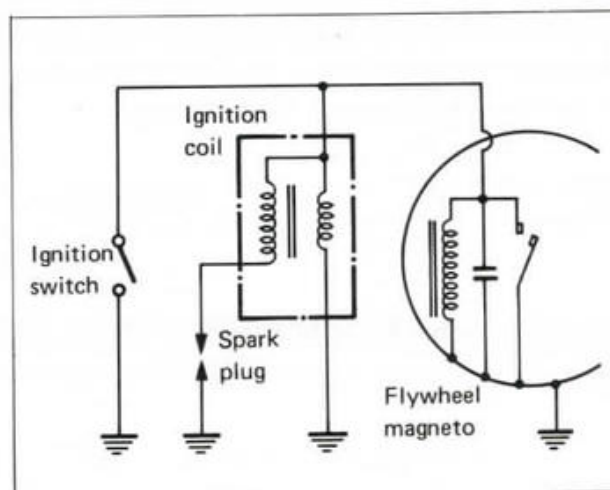


It is the positive shot that charges the condenser C, the negative shot applies to the timing circuit and triggers the SCR into conductive state.

As the SCR becomes conductive, the condenser discharges instantly through the SCR and the primary winding of the ignition coil to induce the high-voltage surge in the secondary winding. The high voltage current causes the plug to spark two times by each rotation of crankshaft.

IGNITION SYSTEM(For point type)

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.



INSPECTION AND MAINTENANCE

Checking CDI unit(For PEI type)

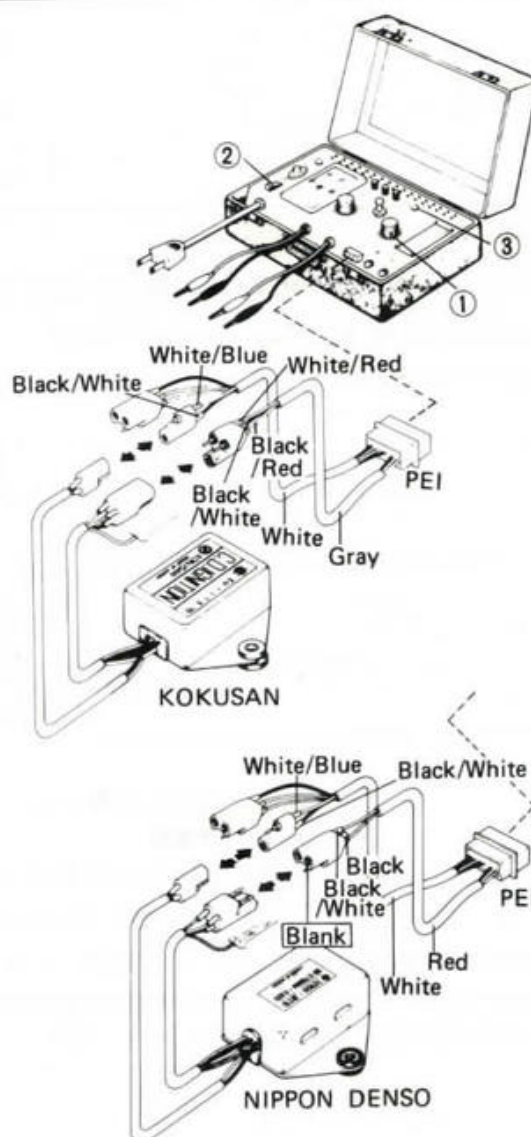
The purpose of inspecting the CDI unit is to determine whether or not the unit is electrically in good condition. There are two ways to inspect. one is simpler and based on the use of a special tool, which is the Type SS-II SUZUKI electro tester; the other involves the use of SUZUKI Pocket Tester.

Checking with electro tester:

Connect the CDI unit to the electro tester, as shown in Fig. Twist the selector knob to "PEI" range, and turn on the power switch. The "PEI" indicator lamp will light up to tell that the CDI unit is in good, sound condition; if the lamp will not light up, it means, that the CDI is defective and needs to be replaced.

Electro tester (SSII)

09900-28106



CHECKING WITH POCKET TESTER

Use a SUZUKI pocket tester in reference to the following chart by adhering to these rules:

- Before starting to check the "CDI" unit, be sure to have all lead-wire couplers unmade.
- Just before putting your pocket tester to two "CDI" terminals, briefly shortcircuit them with a jumper.
- Set the tester knob to "RX1K" range.

Pocket tester	09900-25001
---------------	-------------

Checking chart(for NIPPON DENSO CDI unit):

Put negative (—) pin of tester to.	Put positive (+) pin of tester to.					
	B/Y	B	B/R	R/B	B/W	W/BI
	B/Y	ON	OFF	OFF	OFF	OFF
	B	ON	OFF	OFF	OFF	OFF
	B/R	OFF	OFF	OFF	OFF	OFF
	R/B	3-5kΩ	3-5kΩ	3-5kΩ	ON	OFF
	B/W	3-5kΩ	3-5kΩ	3-5kΩ	ON	OFF
	W/BI	OFF	OFF	OFF	OFF	OFF

Checking chart(for KOKUSAN CDI unit):

- Set the tester knob to "RX100" range.

Put negative (—) pin of tester to.	Put positive (+) pin of tester to:				
	R/W	B/W	B/R	B/Y	W/BI
	R/W	OFF	OFF	OFF	OFF
	B/W	700-750Ω	OFF	400-450Ω	OFF
	B/R	OFF	OFF	400-450Ω	OFF
	B/Y	OFF	OFF	OFF	OFF
	W/BI	OFF	OFF	OFF	OFF

B/Y : Black with Yellow tracer

B : Black

B/R : Black with Red tracer

R/W : Red with White tracer

R/B : Red with Black tracer

B/W : Black with White tracer

W/BI : White with Blue tracer

This chart presupposes that the "CDI" unit is in sound condition; "on", "off" and each resistance in the boxes of the chart refer to what your pocket tester will indicate when its positive and negative pins are put to the indicated terminals of a good "CDI" unit.

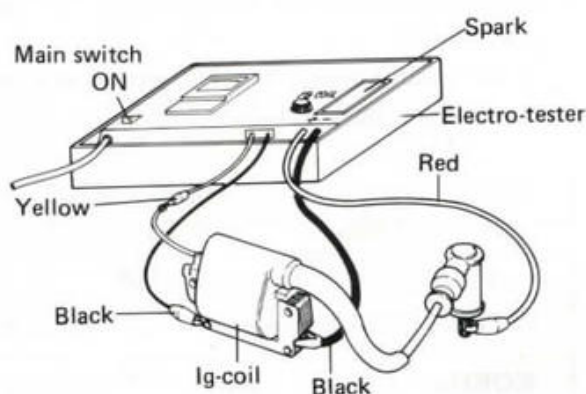
CHECKING IGNITION COIL

The ignition coil is essentially a transformer which changes low voltage into high. For this reason there are two windings; the first (low voltage — input side) is the primary coil and the second (high voltage — output) the secondary coil.

Use a electro tester type SS-II to verify ignition coil performance.

- Set the power switch to "OFF".
- Connect the coil test leads with the yellow tip attached to the coils B/Y (or B, BI/W) wire and the black tip to the coils mounting bracket (ground). Connect the high tension leads with the red \oplus lead attached to the spark plug cable and the black \ominus lead to the coils mounting bracket (ground).
- Set the test selector knob to "IG. COIL".
- 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 (0.3 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.

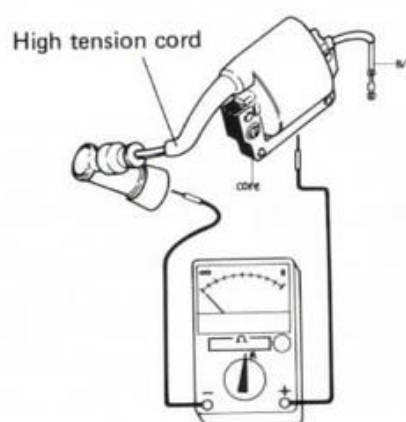
Electro tester	09900-28106
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CHECKING WITH POCKET TESTER:

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.

Pocket tester	09900-25002
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* CDI type (NIPPON DENSO)

Primary (B/W — W/BI)	Approx. 0.5Ω
Secondary (Plug cap — Ground)	Approx. $13k\Omega$

* CDI type (KOKUSAN)

Primary (B/Y — Ground)	Approx. 0.05Ω
Secondary (Plug cap — Ground)	Approx. $12k\Omega$

* Point type

Primary (B/Y — Ground)	Approx. 1.5Ω
Secondary (Plug cap — Ground)	Approx. $15k\Omega$

CHECKING MAGNETO COILS

Use a SUZUKI pocket tester or an ohm meter and check each coils for continuity.

Pocket tester	09900-25002
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* CDI type (NIPPON DENSO)

Coil	Resistance
High speed (B - B/R)	Approx. 27Ω
Low speed (B/R - R/B)	Approx. 200Ω
Charging (G/W - Ground)	Approx. 0.2Ω
Lighting (Y - Ground)	Approx. 0.3Ω

* CDI type (KOKUSAN)

Coil	Resistance
Exciter (B/R - B/W)	Approx. 210Ω
Pulser (B/R - R/W)	Approx. 24Ω
Charging (G/W - Y)	Approx. 0.2Ω
Lighting (Y - Ground)	Approx. 0.3Ω

* Point type (E-24 and E-35)

Coil	Resistance
Primary (B/Y - Ground)	Approx. 0.1Ω
Charging (W/R - Ground)	Approx. 0.2Ω
Lighting (Y/W - Ground)	Approx. 0.3Ω

* Point type (for other)

Coil	Resistance
Primary (B/Y - Ground)	Approx. 0.05Ω
Charging (W/R - Ground)	Approx. 0.2Ω
Lighting (Y/W - Ground)	Approx. 0.2Ω



CONDENSER(For point type)

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

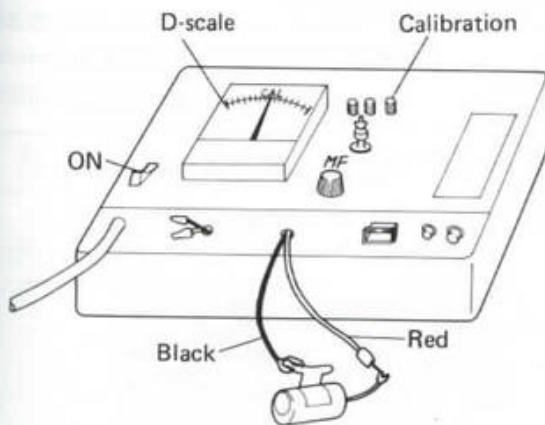
The capacity should be checked using an electro tester.

- 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.

Electro tester	09900-28106
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STD condensor capacity range	
NIPPON DENSO make	$0.18 \pm 0.02\mu F$
KOKUSAN DENKI make	$0.25 \pm 0.03\mu F$



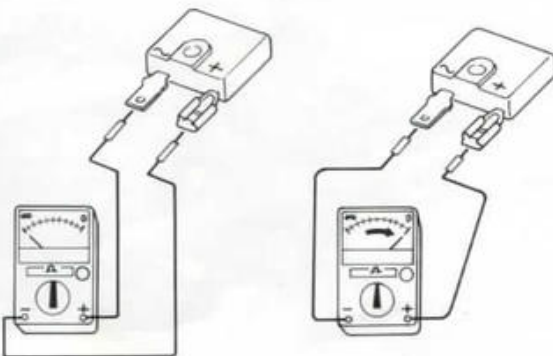
SILICON RECTIFIER

The silicon rectifier converts AC to DC by allowing current to pass in one direction only.

Check the silicon rectifier for continuity.

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

Pocket tester	09900-25002
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CHARGING AND LIGHTING COIL PERFORMANCE

Below are the steps for checking lighting/charging coil performance.

NOTE:

Be sure to use a 6V 4A-h (14.4 KC) battery which is completely charged. When connecting the pocket tester terminals, be sure to differentiate the two terminals, plus (+) and minus (-).

Pocket tester	09900-25002
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Charging performance check

- Set the pocket tester knob to DC Ampere range 20A.
- Start the engine.
- Check that the proper charging occurs at the various engine speeds shown in the following chart. (Values in the list below indicate minimum limit. Therefore, they should be more than indicated under normal condition.)

* CDI type (NIPPON DENSO)

Day	Above 0.5A at 4 000 r/min. Below 4.0A at 8 000 r/min.
Night	Above 0.1A at 4 000 r/min. Below 0.8A at 8 000 r/min.

* CDI type (KOKUSAN)

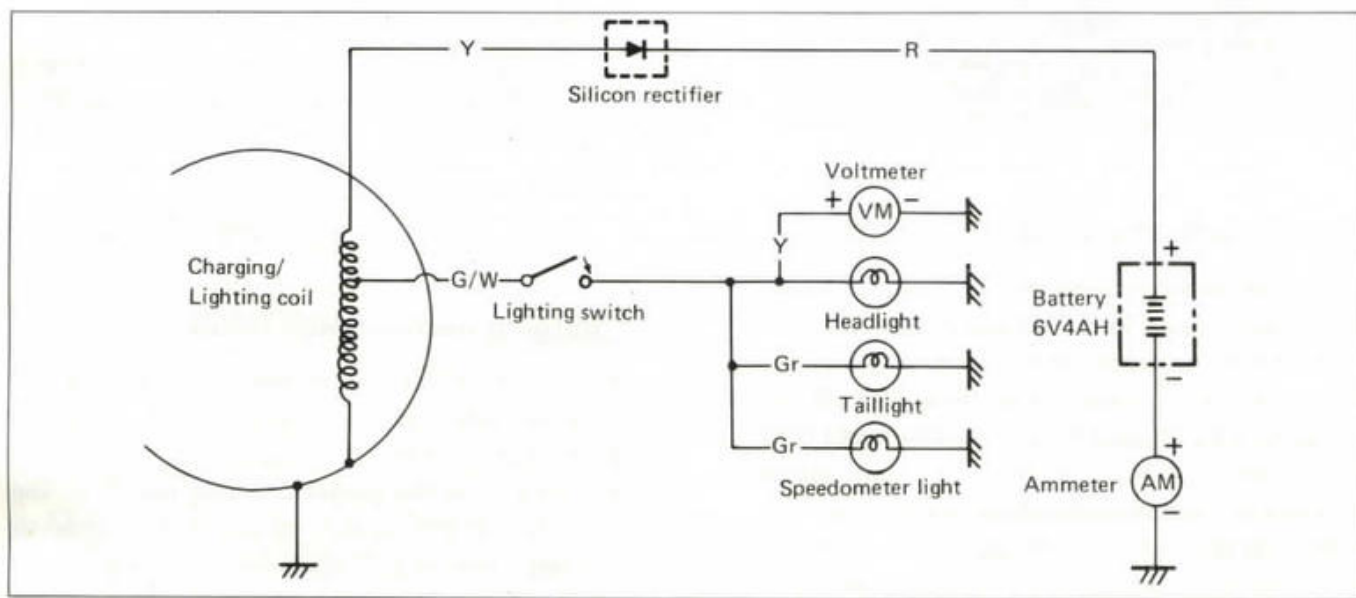
Day	Above 0.8A at 4 000 r/min. Below 4.0A at 8 000 r/min.
Night	Above 0.2A at 4 000 r/min. Below 0.5A at 8 000 r/min.

* Point type (E-24 and E-35)

Day	Above 0.8A at 4 000 r/min. Below 4.0A at 8 000 r/min.
Night	Above 0.1A at 4 000 r/min. Below 1.0A at 8 000 r/min.

* Point type (for other)

Day	Above 0.8A at 4 000 r/min. Below 2.5A at 8 000 r/min.
Night	Above 0.7A at 4 000 r/min. Below 1.5A at 8 000 r/min.

**Lighting performance check**

- Set the pocket tester knob to AC Volt range 10.
- Connect the terminal as shown in Figure.
- Start engine.
- Check that the voltmeter reads as follows.

Above 6.0V at 2 500 r/min.
Below 8.5V at 8 000 r/min.



LEFT HANDLEBAR SWITCH

Check the conductivity between the respective lead terminals on the left handle switch box (headlight housing). Refer to the following chart for this check.

Dimmer switch

		W	Y
HI			
LO			

Turn signal switch

	B	Lbl	Lg
R			
L			



HORN BUTTON

Check the conductivity between the green lead terminal on the left handle switch box inside the headlight housing and the handlebar ground, while the horn button is pressed. If conductivity is present, the horn button is normal.



ENGINE KILL SWITCH (Only for GP125)

Check the conductivity between the B/Y lead terminal on the right handle switch box inside the headlight housing and the handlebar ground, while the engine kill switch is turned to RUN. If no conductivity is present, the engine kill switch is normal.



BATTERY

Initial charge

This battery is a dry-charge type, unlike larger capacity batteries. It must be initially charged at the specified rate before it is used, because the plates may have been slightly oxidized during storage.

Initial charge rate	0.4A, 10 ~ 12 hours
Electrolyte specific gravity	1.26 at 20°C (68°F)

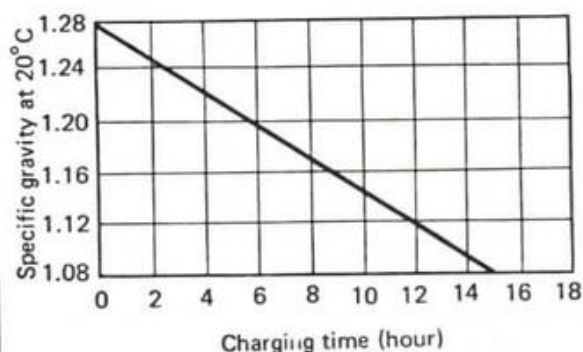
Recharge

To check the battery capacity, and hence its condition, measure the specific gravity of the electrolyte using a hydrometer. Refer to the following chart.

Hydrometer	09900-28403
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Specific gravity at 20°C (68°F)	Condition	Measure
1.250 - 1.270	Normal	
1.220 - 1.250	Under-charged	Recharge
Below 1.220	Run down	Recharge or replace



NOTE:

If starting engine without battery, it may cause damage of the rectifier.

NOTE:

When recharging, be sure to remove the battery from the motorcycle to protect the rectifier against excessive voltage.

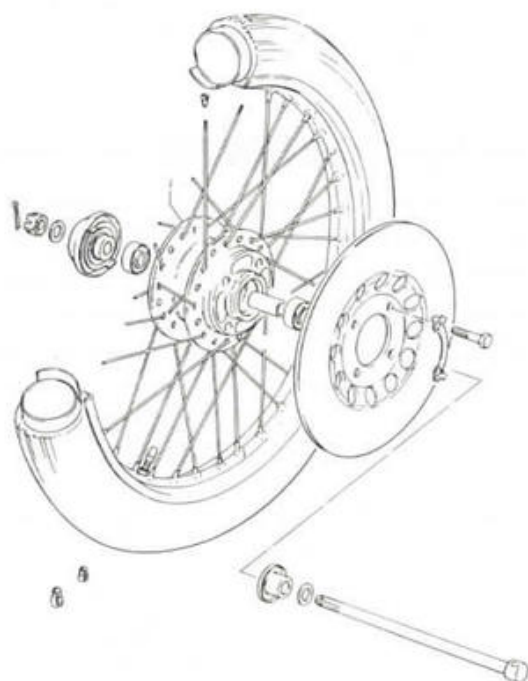
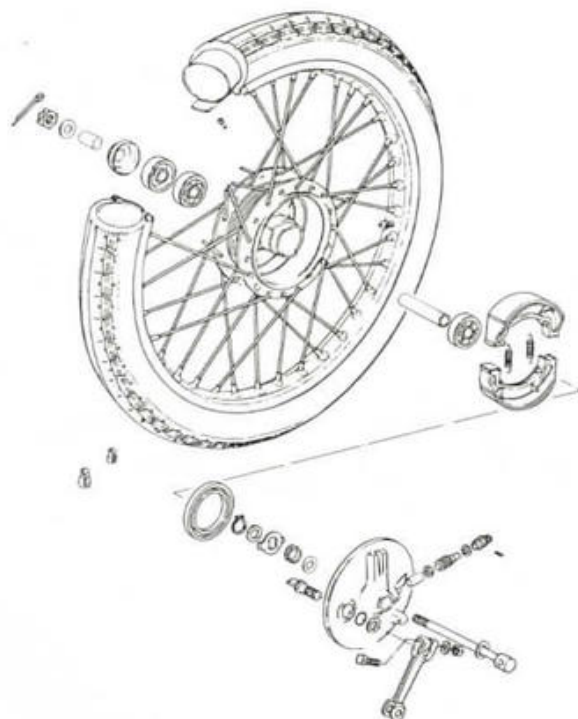
WARNING:

When checking, servicing, or charging a battery, always be certain that the battery vent is open and that the vent hose is properly routed. An obstructed vent or vent hose could result in the battery case exploding with resultant acid damage.

CHASSIS

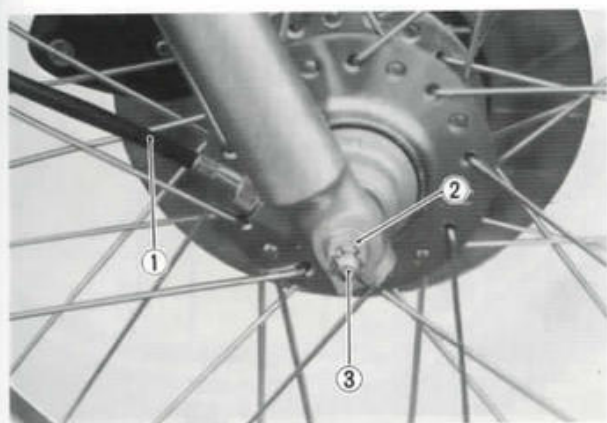
CONTENTS

WHEELS	6-1
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REAR SUSPENSION	6-15
BRAKE	6-17

WHEELS**FRONT WHEEL EXPLODED VIEW(For GP125)****FRONT WHEEL EXPLODED VIEW(For GP125U)**

FRONT WHEEL REMOVAL (For GP125)

1. Support the machine by center stand.
Disconnect speedometer cable ① and loosen axle nut ② after removing cotter pin ③.



2. Draw out axle and remove front wheel ass'y.

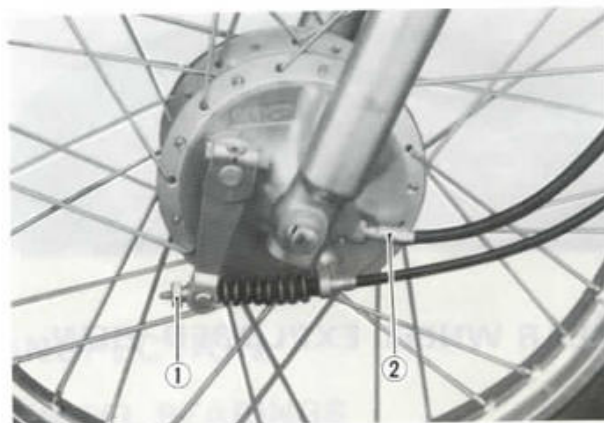


3. Draw out wheel bearings.



FRONT WHEEL REMOVAL (For GP125U)

1. Support the machine by center stand.
Disconnect front brake adjuster ① and speedometer cable ②.



2. Loosen axle nut ③ after removing cotter pin ④.



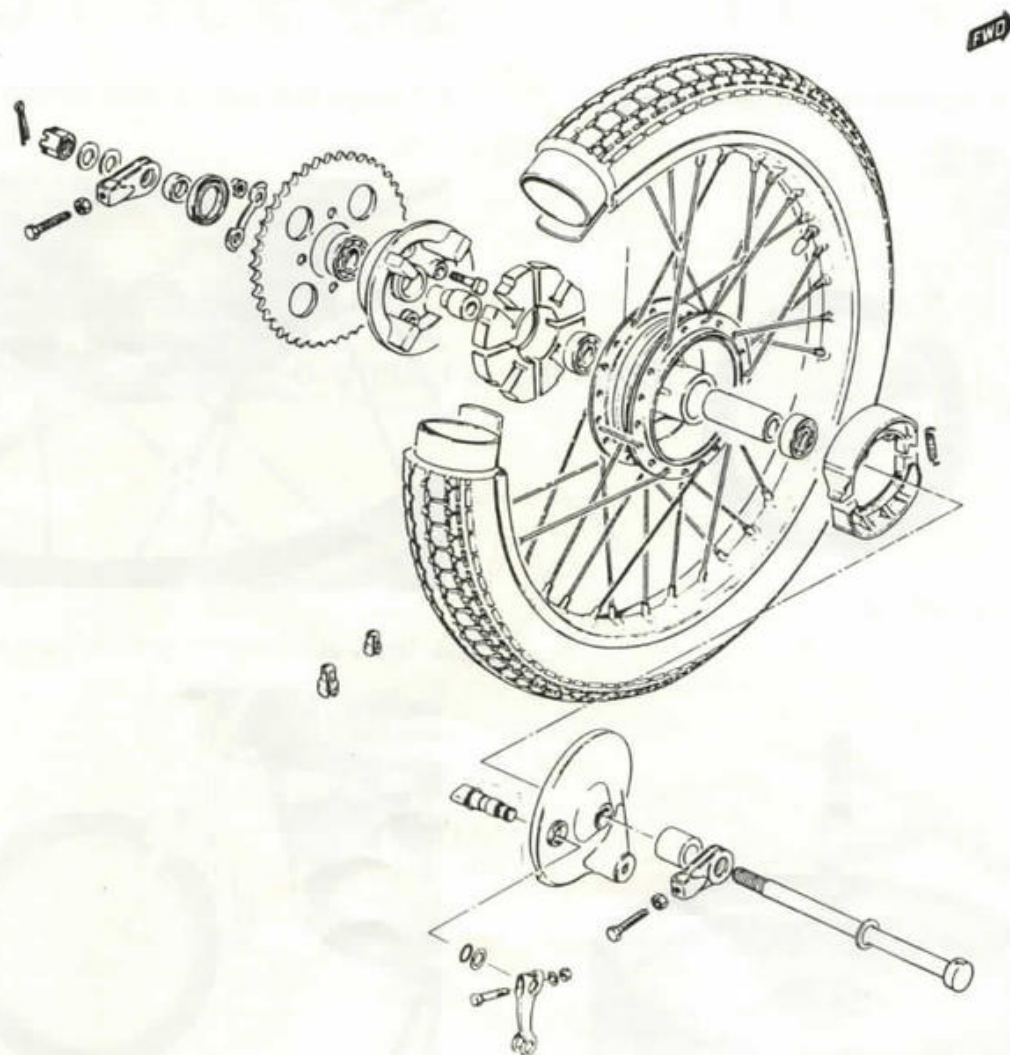
3. Draw out axle and remove front wheel ass'y.



4. Draw out wheel bearings.



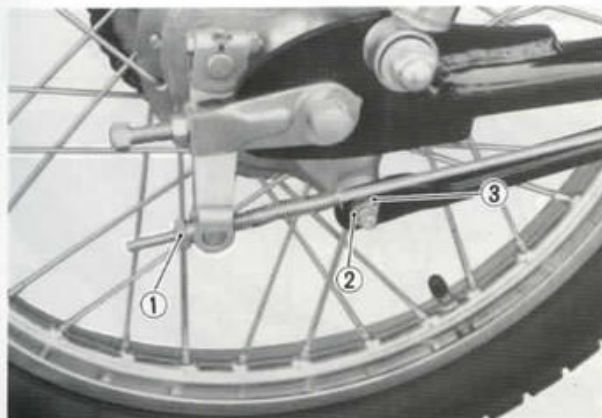
REAR WHEEL EXPLODED VIEW



REAR WHEEL REMOVAL

1. Remove muffler.

Disconnect brake adjuster ① and remove torque link nut ② after removing pin ③.



2. Loosen axle nut ④ after removing cotter pin ⑤.



3. Draw out axle and remove rear wheel ass'y.



4. Draw out wheel bearings.



INSPECTION

WHEEL BEARINGS

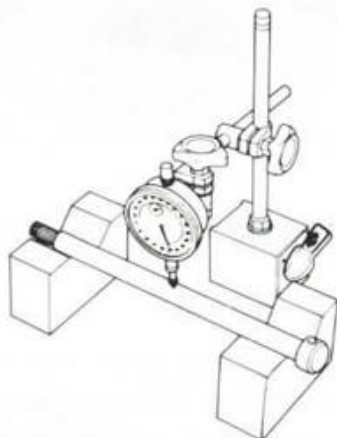
- Visually inspect the wheel hub bore, from which the bearings have been extracted, for evidence of abnormal wear caused possibly by spinning, if any, of bearing outer races.
- Check the wheel bearings in the usual manner after washing them. Make sure that the bearings spin smoothly without any noise or resistance: spin them with your fingers. Never use an air gun for this purpose.



AXLE SHAFT

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

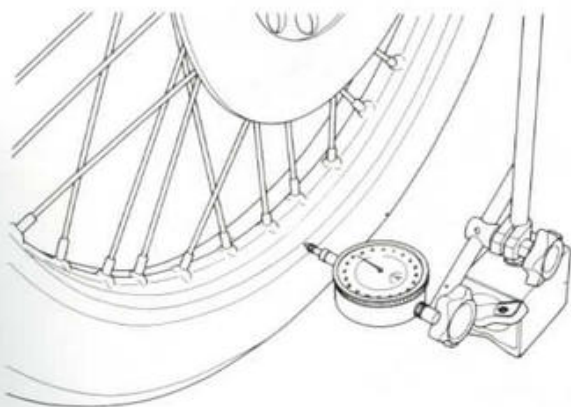
Dial gauge (1/100)	09900-20603
Magnetic stand	09900-20701



Axle runout (Front & Rear)	0.25 mm (0.01 in)
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RIM

Make sure that the rim runout checked as shown, does not exceed the service limit. Adjust the tension of the spokes and, if this proves to be of no effect, replace the rim.



Rim runout (Radial & Axial)	2.0 mm (0.08 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.

Spoke nipple wrench	09940-60112
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Tightening torque	2.5 – 3.0 N.m (0.25 – 0.3 kg-m) (1.8 – 2.1 lb-ft)
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SPEEDOMETER GEAR BOX (GP125U)

Apply grease to the pinion and gear.



OIL SEAL

Apply grease to the sprocket drum oil seal.



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, replace the tire.



Wear limit of tire	1.6 mm (0.06 in.)
--------------------	-------------------

TIRE PRESSURE

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

NOTE:

Tire pressure should be measured when tire is cold.

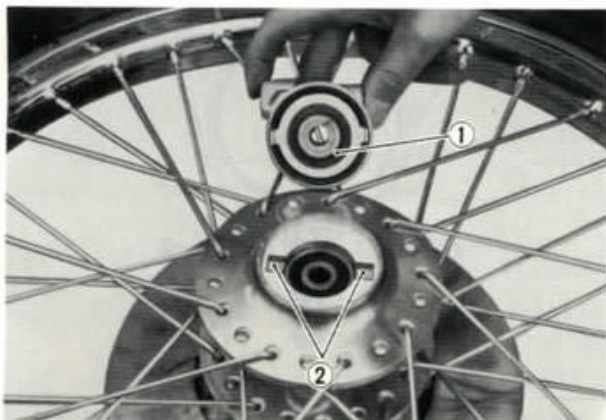
Tire air pressure

	SOLO RIDING		DUAL RIDING	
	General and other	Only for E-31	General and other	Only for E-31
FRONT	175 kPa (1.75 kg/cm ²) 25 psi	150kPa (1.50 kg/cm ²) 21 psi	175 kPa (1.75 kg/cm ²) 25 psi	150 kPa (1.50 kg/cm ²) 21 psi
REAR	225 kPa (2.25 kg/cm ²) 32 psi	200 kPa (2.00 kg/cm ²) 28 psi	250 kPa (2.50 kg/cm ²) 36 psi	225 kPa (2.25 kg/cm ²) 32 psi

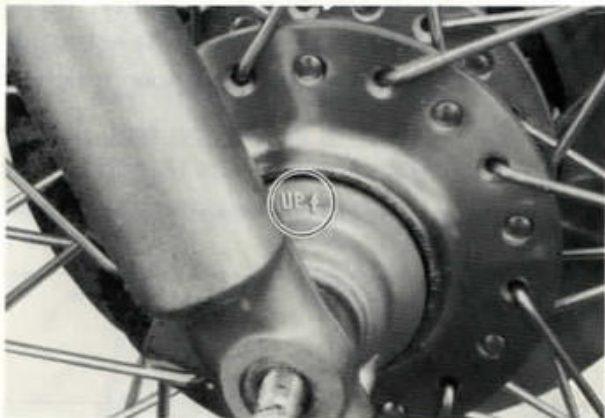
REASSEMBLY

SPEEDOMETER GEAR BOX

Before installing the speedometer gear box ①, grease it and align groove ② (for fitting the two drive pawls to the hub) with the hub to insert the gear box in the wheel.



Fasten the speedometer gear box at the position shown in the drawing below and take care not to bend the speedometer cable excessively.



REAR WHEEL

CAUTION:

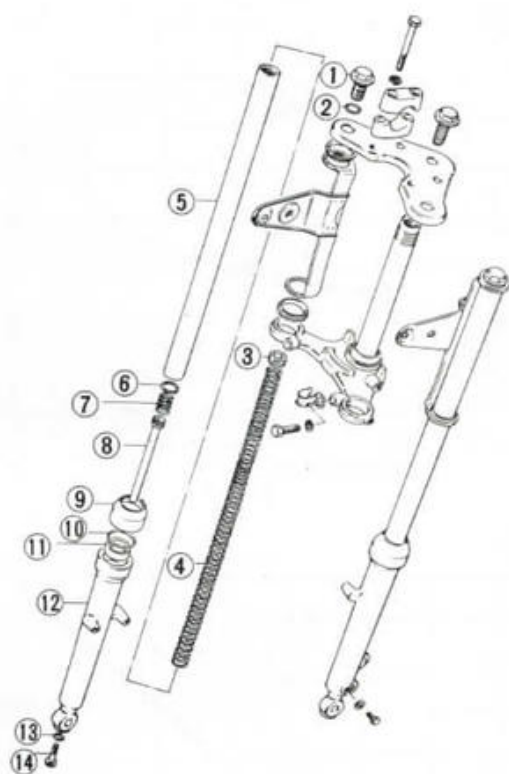
When reinstalling the rear wheel, be sure to adjust for drive chain slack.

BOLTS AND NUTS

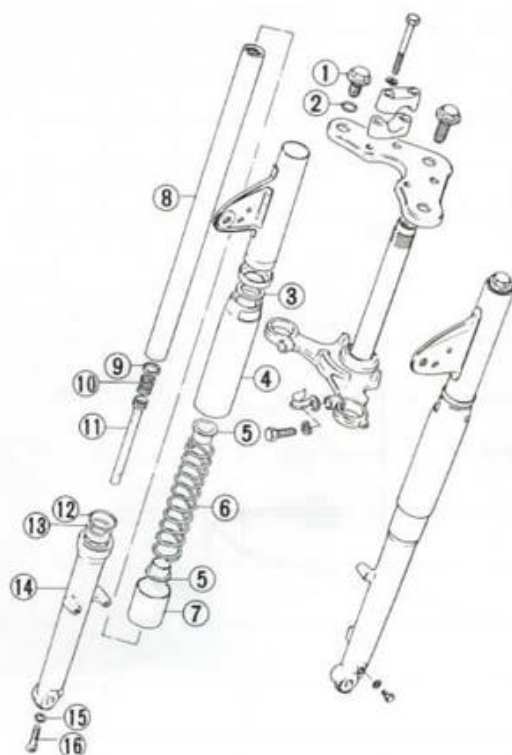
Tighten the following bolts and nuts with specified torque.

	N.m	kg-m	lb-ft
Front axle nut	27 - 43	2.7 - 4.3	19.5 - 31.0
Rear axle nut	36 - 52	3.6 - 5.2	26.0 - 37.5
Torque link nut	10 - 15	1.0 - 1.5	7.0 - 11.0
Sprocket nut	15 - 20	1.5 - 2.0	11.0 - 14.5

FRONT FORK



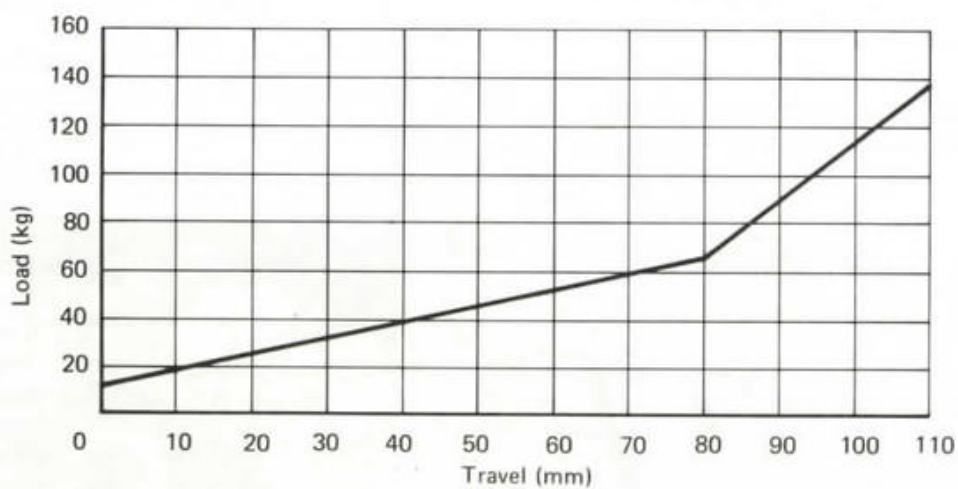
- ① Cap bolt
- ② O ring
- ③ Bolt
- ④ Spring
- ⑤ Inner tube
- ⑥ Ring
- ⑦ Spring
- ⑧ Cylinder
- ⑨ Dust seal
- ⑩ Snap ring
- ⑪ Oil seal
- ⑫ Outer tube
- ⑬ Gasket
- ⑭ Bolt



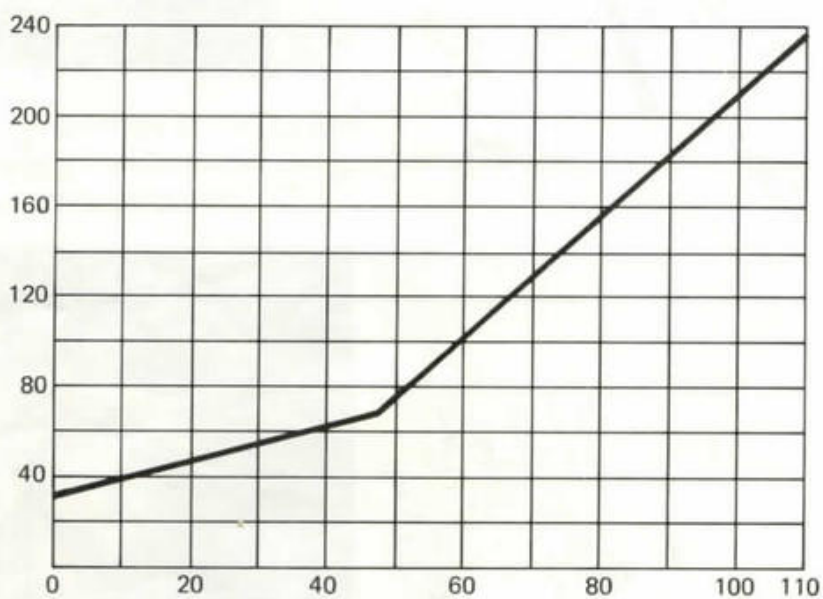
- ① Cap bolt
- ② O ring
- ③ Gasket
- ④ Outer cover
- ⑤ Spring guide
- ⑥ Spring
- ⑦ Outer tube cover
- ⑧ Inner tube
- ⑨ Ring
- ⑩ Spring
- ⑪ Cylinder
- ⑫ Snap ring
- ⑬ Oil seal
- ⑭ Outer tube
- ⑮ Gasket
- ⑯ Bolt

SPPING CHARACTERISTICS

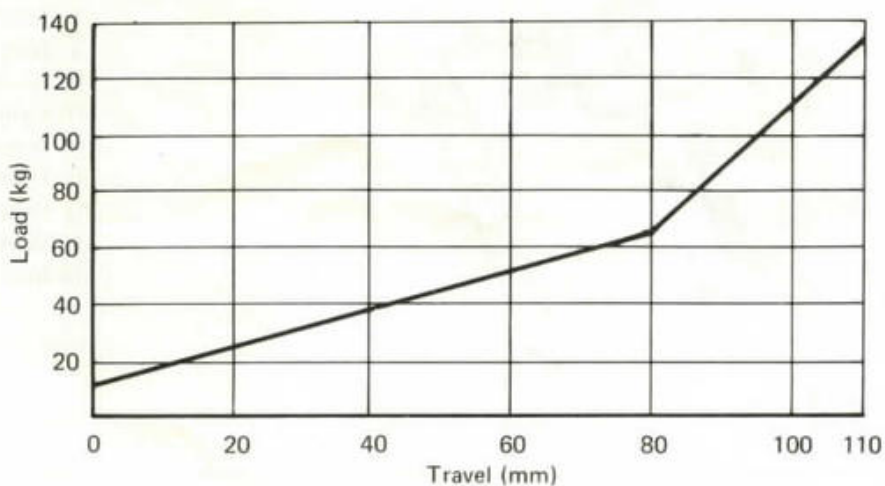
* General and other



* Only for Philippines



* Only for Nigeria

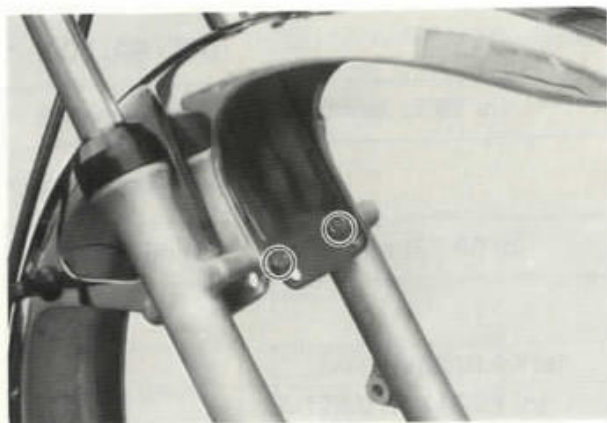


DISASSEMBLY

1. Remove front wheel (See page 6-2).
Disconnect brake caliper by loosening bolts.
(Only for GP125)



2. Remove fender by loosening securing bolts.



3. Remove handlebar clamp bolts and disconnect handlebar.



4. Remove front fork cap bolt and loosen lower clamp bolt.



5. Remove front fork.
Remove the fork inner bolt using special tool.

Hexagon wrench (8 x 10 mm)	09941-03610
-------------------------------	-------------

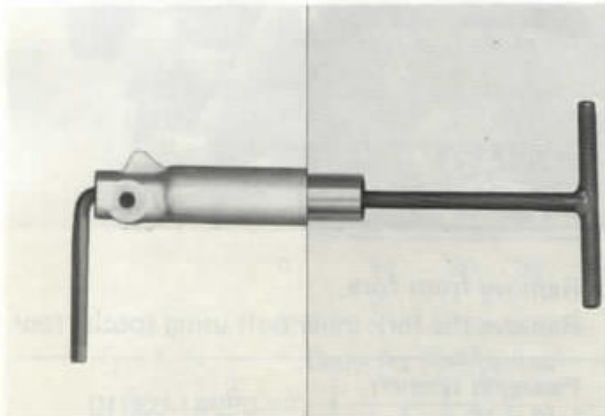


6. Draw out fork spring.
Invert the fork and stroke it several times to let out the oil inside. Under the condition (inverted condition), hold the fork for a few minutes.

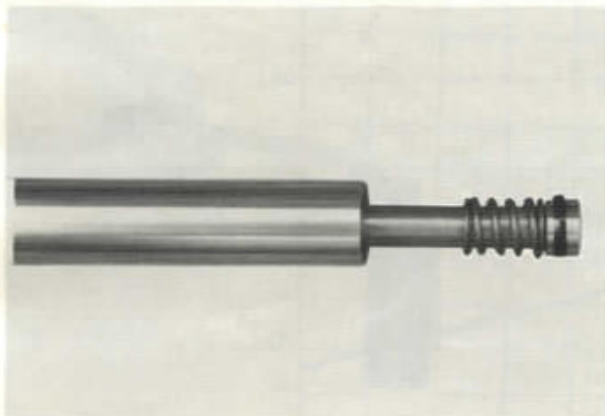


7. Remove cylinder securing bolt by using special tool.

"L" type wrench (8 mm)	09911-71510
T handle	09940-34520
Attachment D	09940-34561



8. Draw out cylinder and rebound spring.

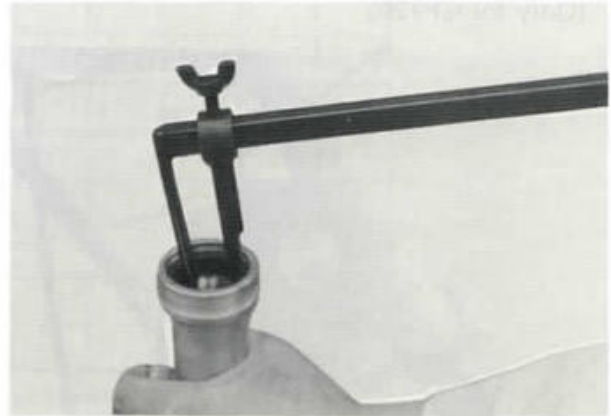


9. Remove the snap ring.



10. Remove the oil seal by using special tool.

Oil seal remover	09913-50120
------------------	-------------



INSPECTION

Measure the fork spring free length if it is shorter than service limit, replace it.



* General and other

Service limit	481.0 mm (18.94 in)
---------------	---------------------

* E-06 (GP125U)

Service limit	200.0 mm (7.87 in)
---------------	--------------------

* E-12, 13 and E-30

Service limit	447.0 mm (17.60 in)
---------------	---------------------

* E-31

Service limit	L: 266.0 mm (10.47 in)
	S: 123.0 mm (4.84 in)

* E-32

Service limit	185.0 mm (7.28 in)
---------------	--------------------

Inspect and check the removed parts for the following abnormalities.

- Oil seal damage
- Cylinder ring damage
- Inner tube scuffing
- Outer tube scuffing

REASSEMBLY

Reassemble the front fork by reversing the sequence of disassembling steps and by referring to the exploded view.

CYLINDER BOLT

Apply thread lock cement to the cylinder bolt and tighten with specified torque.

'L' type wrench (8 mm)	09911-71510
Thread Lock Cement	99000-32040

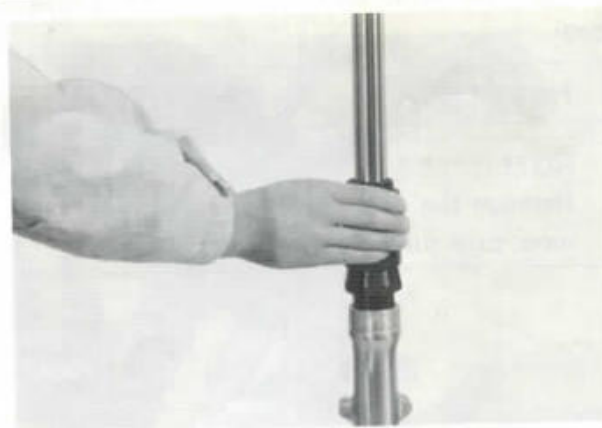


Tightening torque	6 – 9 N.m*
	(0.6 – 0.9 kg-m) (4.5 – 6.5 lb-ft)

OIL SEAL

Mounting oil seal on the outer tube using special tool.

Oil seal installer	09940-50110
--------------------	-------------



FORK OIL

For the fork oil, be sure to use a motor oil whose viscosity rating meets the specifications of SAE 10 W/20.



* General and other

90 ml (3.04/3.17 US/Imp oz)

* E-06 (GP125U)

132 ml (4.46/4.65 US/Imp oz)

* E-12, 13 and E-30

146 ml (4.93/5.14 US/Imp oz)

* E-31

168 ml (5.68/5.92 US/Imp oz)

* E-32

200 ml (6.76/7.04 US/Imp oz)

Adjust the front fork oil level with a special tool.

Fork oil gauge	09943-74111
----------------	-------------

NOTE:

Remove the fork spring and compress the inner tube fully to measure the oil level.

* General and other

Oil level	188 mm (7.4 in)
-----------	-----------------

* E-12, 13 and E-30

Oil level	165 mm (6.5 in)
-----------	-----------------

* E-06 (GP125U)

Oil level	36 mm (1.4 in)
-----------	----------------

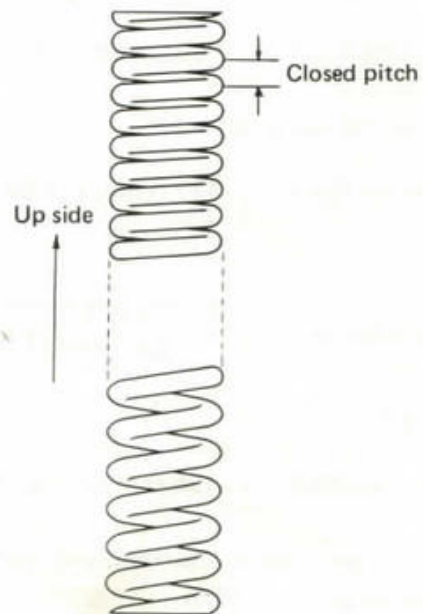
* E-31

Oil level	176 mm (6.93 in)
-----------	------------------

* E-32

Oil level	49 mm (1.9 in)
-----------	----------------

When install the front fork spring, closed pitch end should position upside.



Tighten the following bolts and nut with specified torque.

	N-m	kg-m	lb-ft
Cylinder bolt	6 - 9	0.6 - 0.9	4.5 - 6.5
Cap bolt	35 - 55	3.5 - 5.5	25.4 - 40.0
Lower clamp bolt	25 - 35	3.5 - 3.5	18.0 - 25.5
Front axle nut	27 - 43	2.7 - 4.3	19.5 - 31.0

STEERING

DISASSEMBLY

1. Remove the handlebar and the steering stem head by loosening the fork cap bolts and the steering stem head bolt.



2. Remove the steering stem nut with special tool.

Steering stem nut wrench

09940-10122



3. Slide off the stem and be careful not to loose any of the steel balls.



INSPECTION

Inspect and check the removed parts for the following abnormalities.

- Handlebar distortion
- Handlebar clamp wear
- Race wear and brinelling
- Worn or damaged steel balls
- Distortion of steering stem

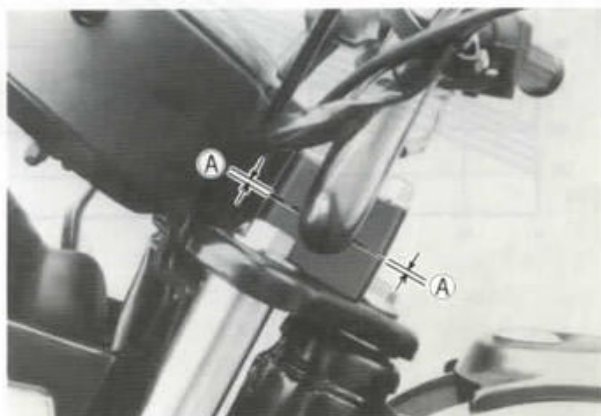
Number of balls	Upper	22 pcs.
	Lower	18 pcs.

REASSEMBLY

- Install the front fork assembly, upper bracket and handlebars, in that order. Set the handlebars to match its punched mark ① to the mating face of the holder.



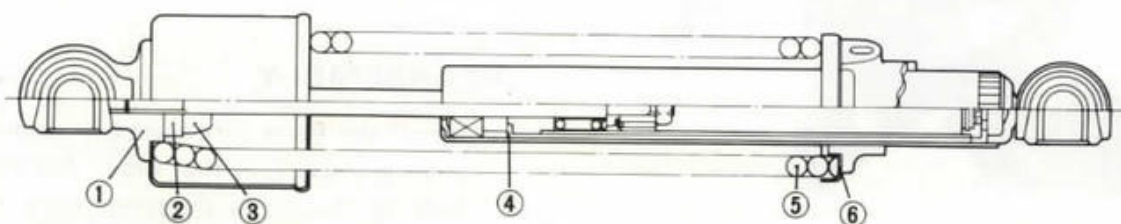
- As in case of axle clamps, secure each handlebars clamp in such a way that the clearances (A) ahead of and behind the handlebars are equalized.



REAR SUSPENSION

REAR SHOCK ABSORBER

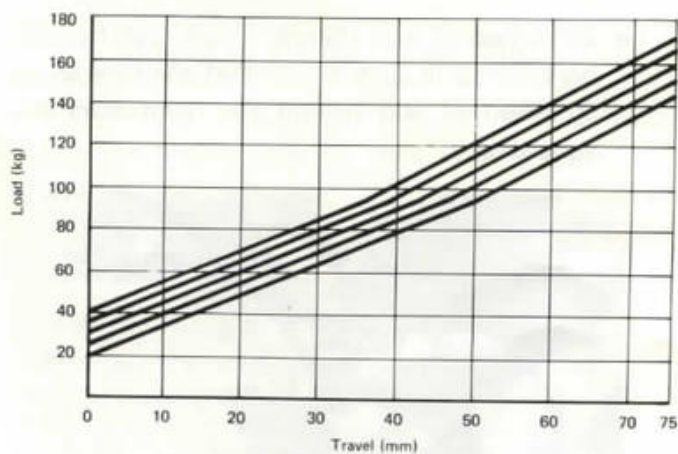
The rear suspension incorporates a hydraulically damped swinging arm. Shocks received by the rear wheel are damped by rear shock absorbers mounted between the frame and this swinging arm. These shock absorbers are telescopic oil damper types.



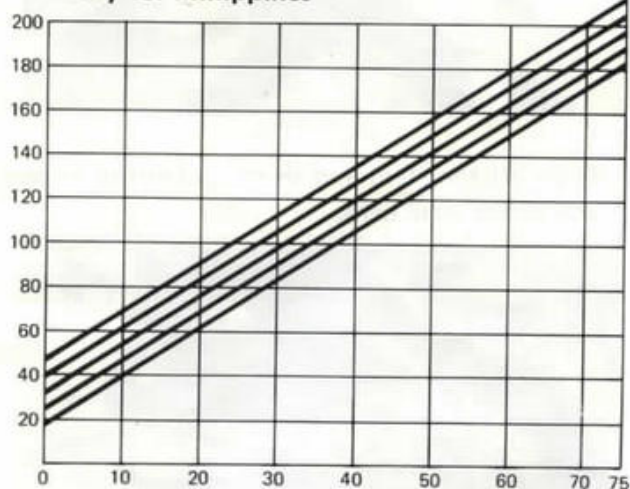
- | | |
|------------------|---------------------|
| ① Upper metal | ④ Rear damper comp. |
| ② Lock nut | ⑤ Spring |
| ③ Stopper rubber | ⑥ Spring set |

SPRING CHARACTERISTIC

* General and Other

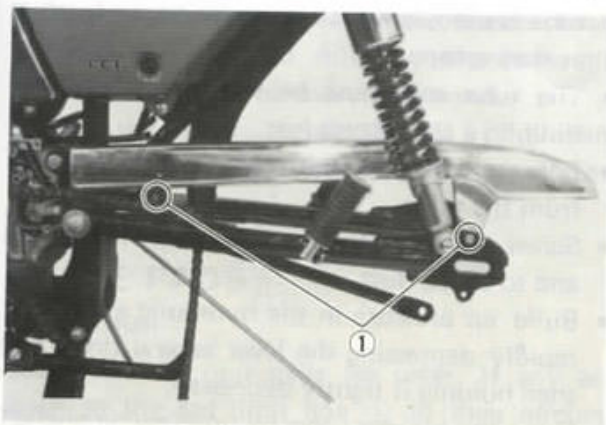


* Only for Philippines



SWINGING ARM

1. Remove rear wheel (See page 6-4).
Remove chain case by loosening two bolts ①.



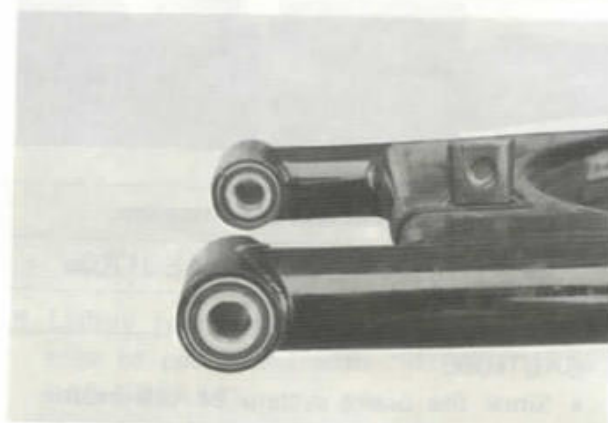
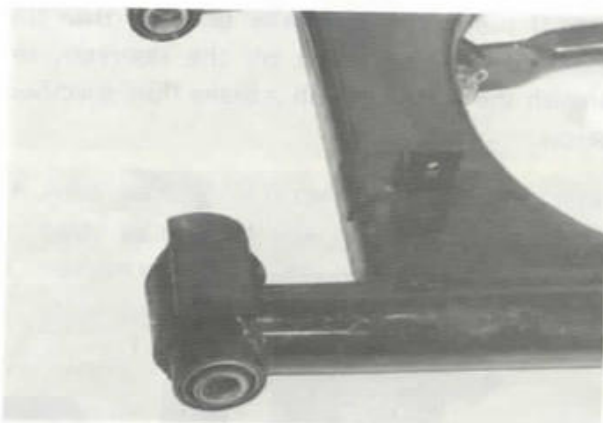
2. Take off swinging arm.



INSPECTION

Inspect and check the removed parts for the following abnormalities.

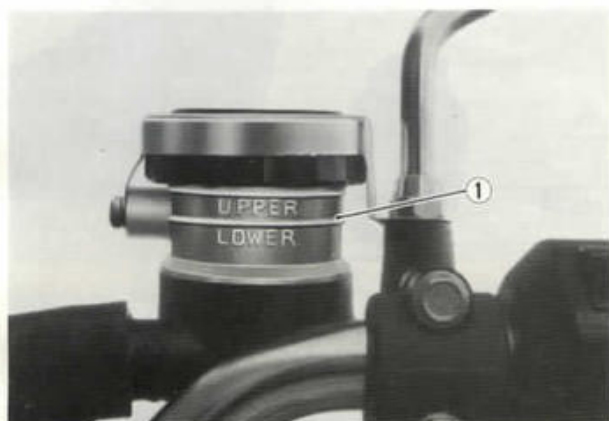
- Damaged chain buffer
- Damaged busing
- Distortion of swinging arm



BRAKE

FRONT BRAKE(GP125) BRAKE FLUID

Check the brake fluid level. The level of the fluid is visible without removing the reservoir cap. If the level is found to be lower than the level mark ① embossed on the reservoir, replenish the reservoir with a brake fluid specified below.



Specification and Classification

SAE J1703a/SAE J1703b/SAE J1703c

CAUTION:

- Since the brake system of this motorcycle is filled with a glycol base brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based or petroleum-based fluid for refilling the system, otherwise serious damage will result.
- Do not use any brake fluid taken from old or used or unsealed containers.
- Brake fluid will damage the paint finish and instrument gauge lenses.

BLEEDING AIR

If brake lever travel becomes excessive, or if the lever action becomes soft and spongy, there is probably air in the system which must be purged. This can be done more easily by two persons. Follow these steps:

- Remove the bleeder valve dust cap and attach a bleeder tube ② to the valve. If a transparent tube is used, it will be easier to see air bubbles as they escape.
- The tube end must be submerged in brake fluid, in a clean container.
- Fill the reservoir with brake fluid selected from the table.
- Screw on the reservoir cap to prevent spurting and to block dust.
- Build up pressure in the hydraulic system by rapidly depressing the lever several times and then holding it tightly depressed.
- Open the bleeder valve by unscrewing onehalf turn, then depress the lever all the way.
- Hold it in this position and close the bleeder valve; do not release the lever until the valve is completely closed.
- Repeat the above steps until no more air bubbles escape into the bleeder tube or container, then close the bleeder valve securely.
- Remove the tube and install the valve dust cap.
- Check the fluid level in the reservoir and refill if necessary.
- Reinstall the diaphragm and the diaphragm plate, then retighten the reservoir cap.



CHANGING BRAKE FLUID

The boiling point of brake fluid falls considerably with the absorption of moisture. No matter how carefully maintenance is carried out, some absorption is inevitable with long use. Therefore, periodic draining and refilling are required.

Fluid change interval: Every one year

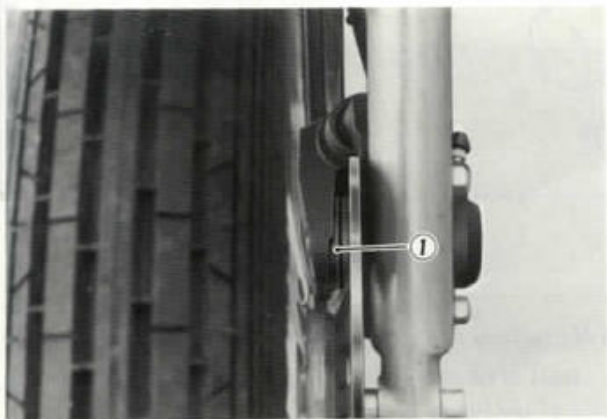
When changing the brake fluid, take care to prevent entry of any foreign materials. They will block the master cylinder return port and cause brake drag or squeaking.

- Attach a bleeder tube to the bleeder valve. Drain out the old fluid by depressing the brake lever until no more comes out.
- Now the system can be refilled by following the same procedure used for purging air from the system (above).

BRAKE PADS

Inspection

Check the friction pads for wear. If any are worn to the red limit line ① on their circumferences, replace them.



Replacement

NOTE:

Wash the front wheel and caliper to remove mud and dust before beginning the replacement procedure.

- Loosen the caliper mounting bolts and take off caliper.
- Remove the pad No. 2 (stationary side) by loosening securing screw ②.



- After pad No. 2 is removed, slide the caliper body to the left side of the motorcycle and remove pad No. 1 ③.



- Lightly coat the back and sliding peripheral edge of pad No. 1 with "SUZUKI BRAKE PAD GREASE".

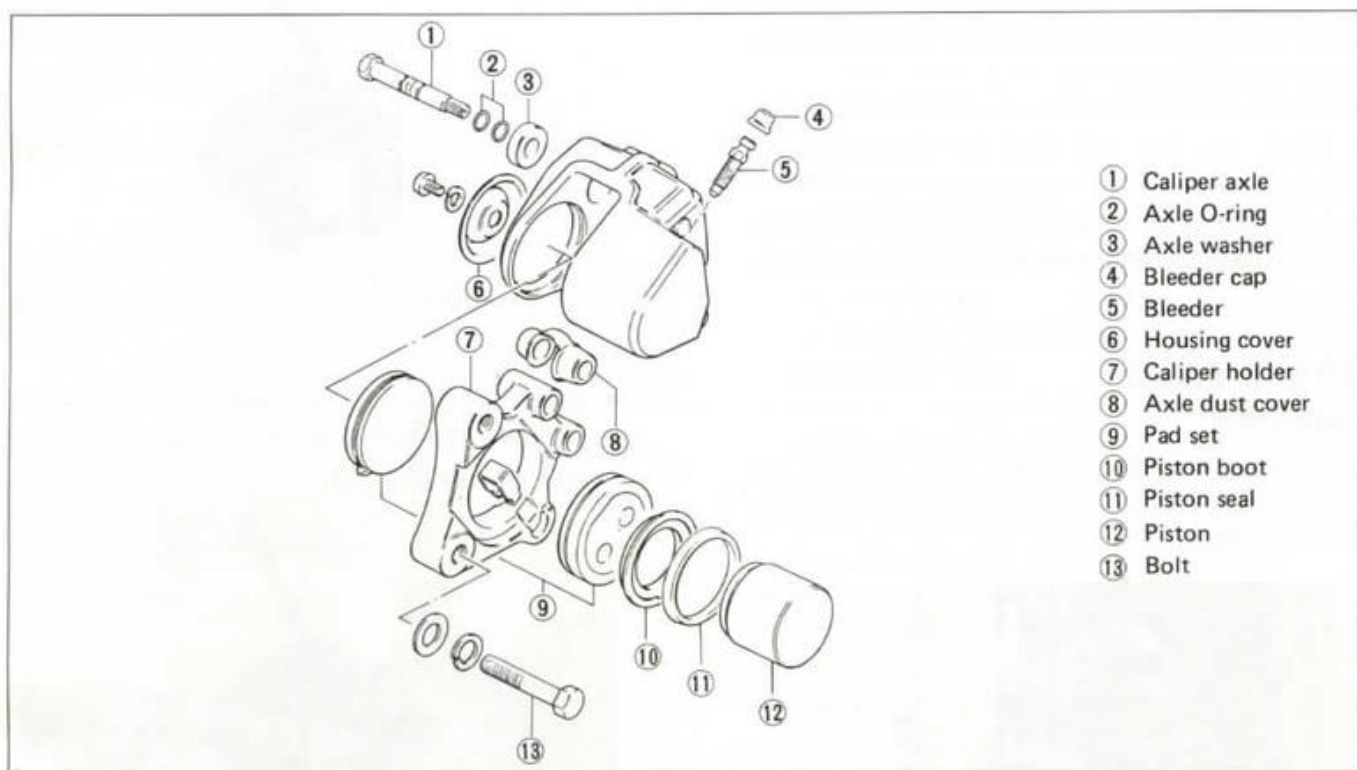
Brake pad grease	99000-25100
------------------	-------------



NOTE:

- Do not apply SUZUKI pad grease or any other grease to No. 2 pad.
- Be careful not to smear the friction faces of brake pads with grease.

CALIPER



DISASSEMBLY

- Unscrew the brake hose union bolt and caliper fitting bolts.
- Pull the caliper body out from the disc plate.



- Unscrew the caliper axle bolts with the special tool and separate the caliper holder from the caliper body.

"L" type wrench

09911-71510



- Remove pads and the piston boot.
- Blow out the piston with compressed air (hold it with your finger to keep it from flying off).



- Remove the piston seal



- Wash the piston, boot, seal and axle O-rings in fresh brake fluid.

INSPECTION

Inspect and check the removed parts for the following abnormalities.

- Damaged piston seal
- Damaged O-ring for caliper axle
- Damaged dust seal
- Scuffing piston and cylinder surface.



NOTE:

Do not use gasoline or other petroleum products, as parts may be damaged.

Do not wash the pads, and be sure no brake fluid is spilled or splashed onto them.

REASSEMBLY

Piston seal

Be careful that the piston seal ① is not tilted or twisted during installation.



Piston

Apply a generous amount of brake fluid to the inner surface of the cylinder and the piston surface.

Caliper axle

Apply SUZUKI Caliper Axle Grease to the caliper axles. This grease has ideal heat resistance.

Caliper axle grease	99000-25110
---------------------	-------------

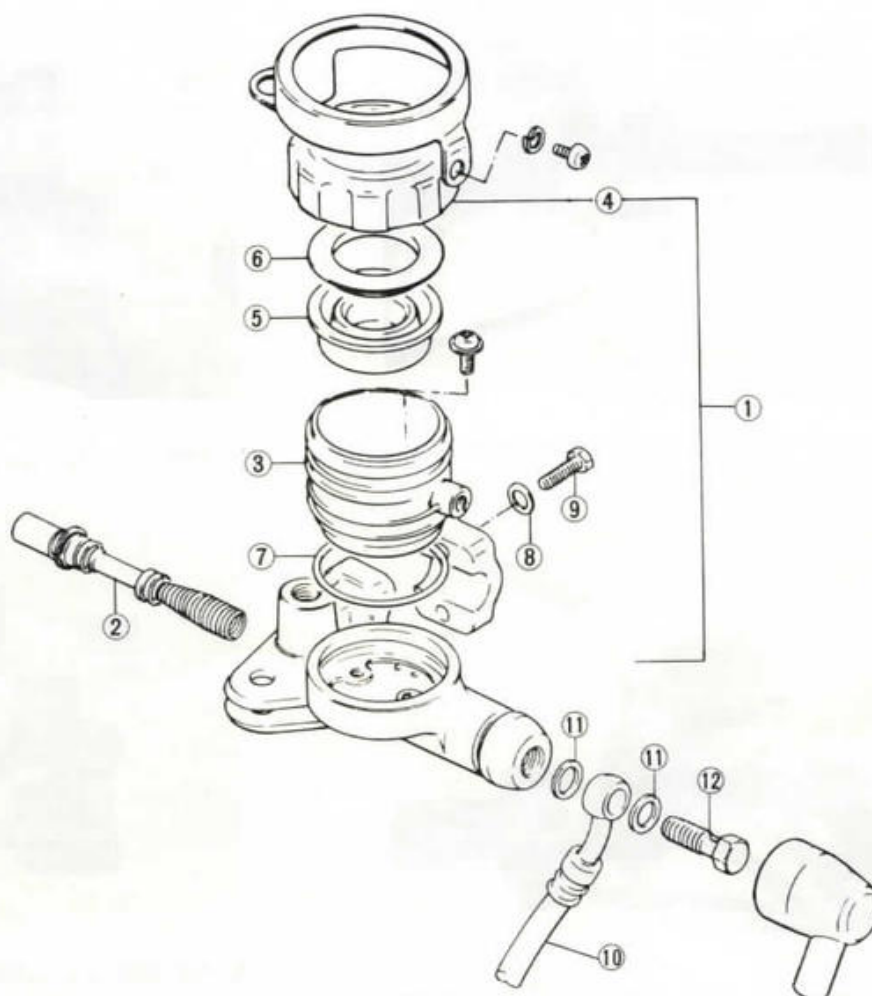


CAUTION:

Bleeding air after reassembly (See page 6-17).

After a test run, check that the pads do not press against the disc when the brake is not applied. Do this by raising the motorcycle and turning the wheel by hand.

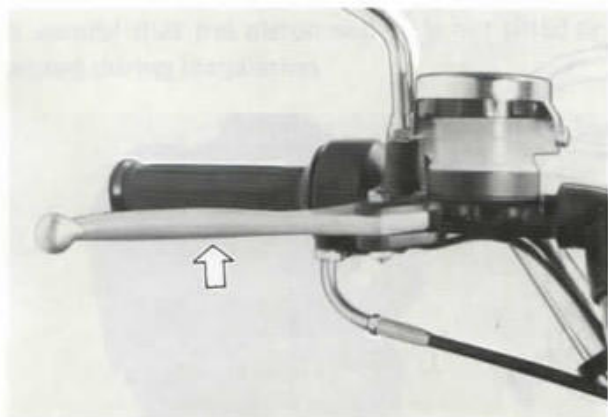
MASTER CYLINDER



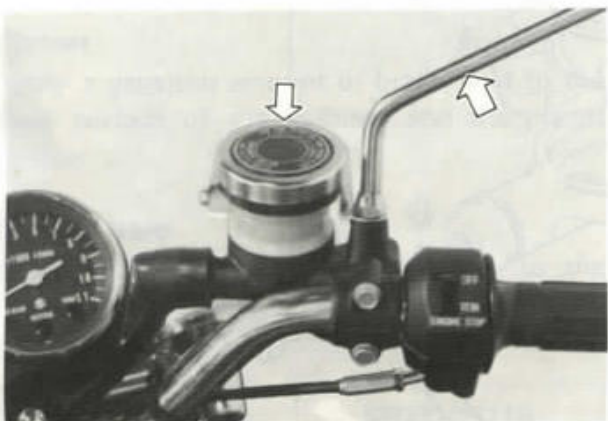
- ① Master cylinder ass'y
- ② Piston and cup set
- ③ Reservoir
- ④ Cap
- ⑤ Diaphragm
- ⑥ Diaphragm plate
- ⑦ O-ring
- ⑧ Washer
- ⑨ Bolt
- ⑩ Brake hose
- ⑪ Washer
- ⑫ Bolt

DISASSEMBLY

- Remove brake lever.



- Remove the right hand rear view mirror and the cap lock plate.



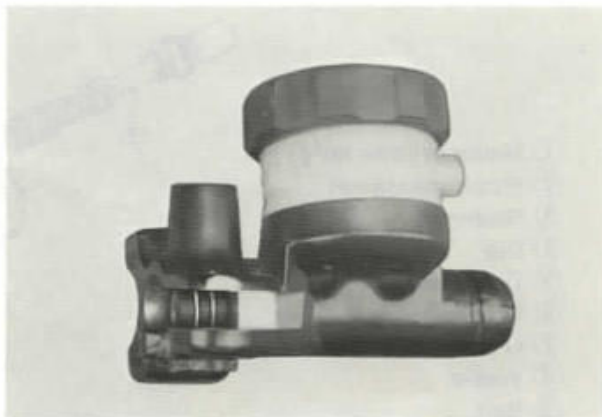
- Place a rag underneath the union bolt on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose.



- Unscrew the two master cylinder fitting bolts and remove the master cylinder body from the handlebars.

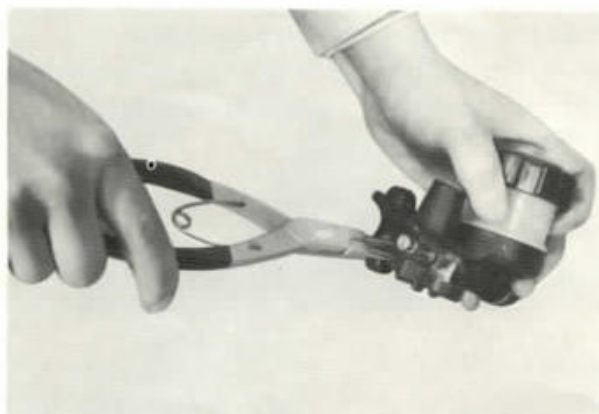


- Remove the circlip and washer.



- Remove the boot and circlip by using special tool.

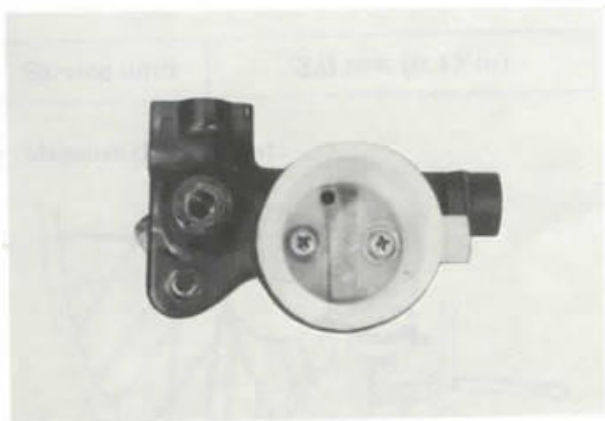
Circlip plier	09900-06106
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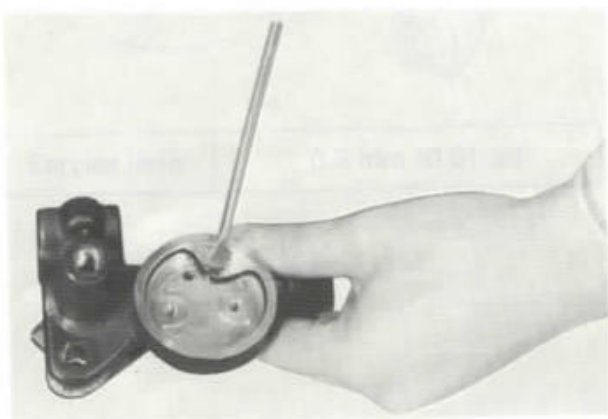
- Remove the piston, primary cup and spring.



- Remove the reservoir cap and reservoir by loosening bolts



- Remove the reservoir O-ring.



- Put all removed parts in a clean container and wash them in fresh brake fluid.

NOTE:

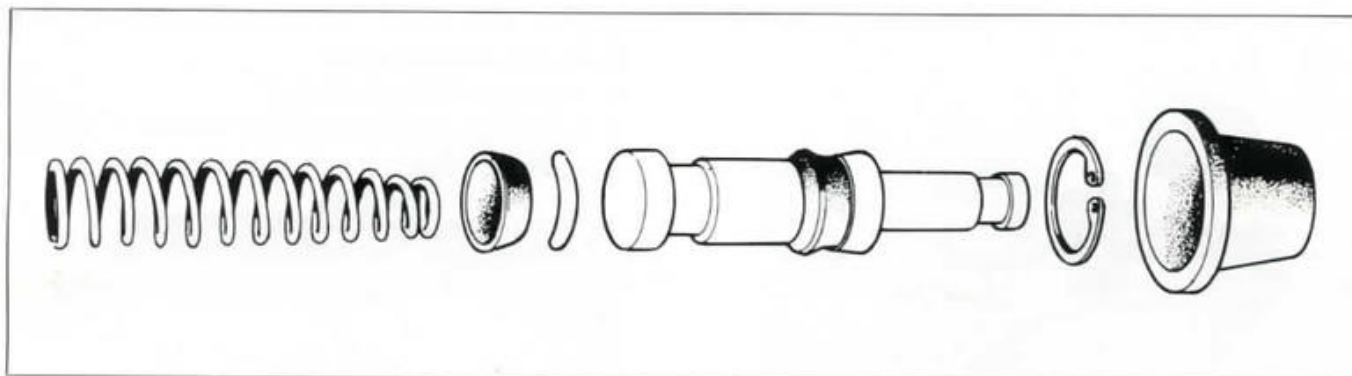
Do not wash the parts in gasoline or other petroleum products. This will damage the rubber parts.

INSPECTION

Inspect and check the removed parts for the following abnormalities.

- Damaged O-ring and boot
- Scuffing piston and cylinder surface
- Damaged primary and secondary cup.

REASSEMBLY



Tighten the following bolts and nut with specified torque.

	N-m	kg-m	lb-ft
Union bolt	25 - 40	2.5 - 4.0	18.0 - 29.0
Caliper axle bolt	15 - 20	1.5 - 2.0	11.0 - 14.5
Caliper bolt	15 - 25	1.5 - 2.5	11.0 - 18.0
Master cylinder clamp bolt	6 - 9	0.6 - 0.9	4.5 - 6.5

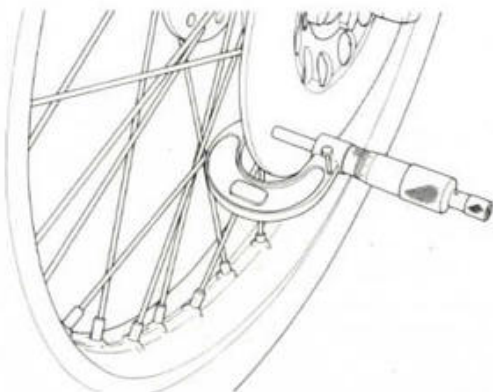
CAUTION:

Bleeding air after reassembly (See page 6-17).

BRAKE DISC(Only for GP125)

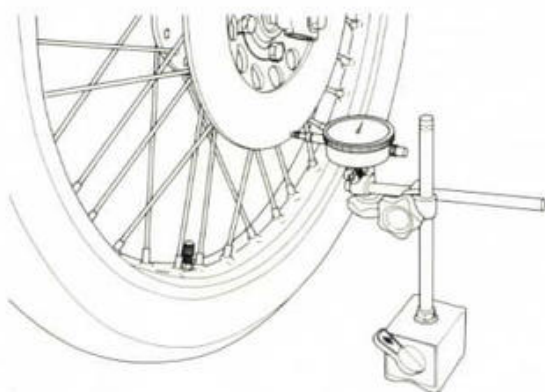
INSPECTION

- Measure disc thickness.



Service limit	3.0 mm (0.12 in)
---------------	------------------

- Measure disc runout.



Service limit	0.3 mm (0.01 in)
---------------	------------------

BRAKE SHOE AND DRUM

Disassembly

- Remove the wheel Front and Rear (See page 6-1).

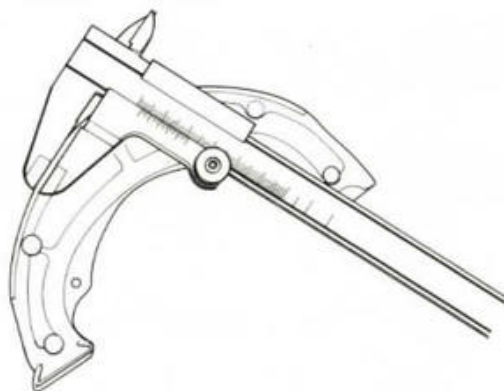
Inspection

- Measure the brake drum I.D.



Service limit	130.7 mm (5.15 in)
---------------	--------------------

- Measure the brake lining thickness.



Service limit	1.5 mm (0.06 in)
---------------	------------------

REASSEMBLY

Brake cam

- Apply grease to brake cam.



- Reassembly the wheel Front and Rear (See page 6-1).

SERVICING INFORMATION

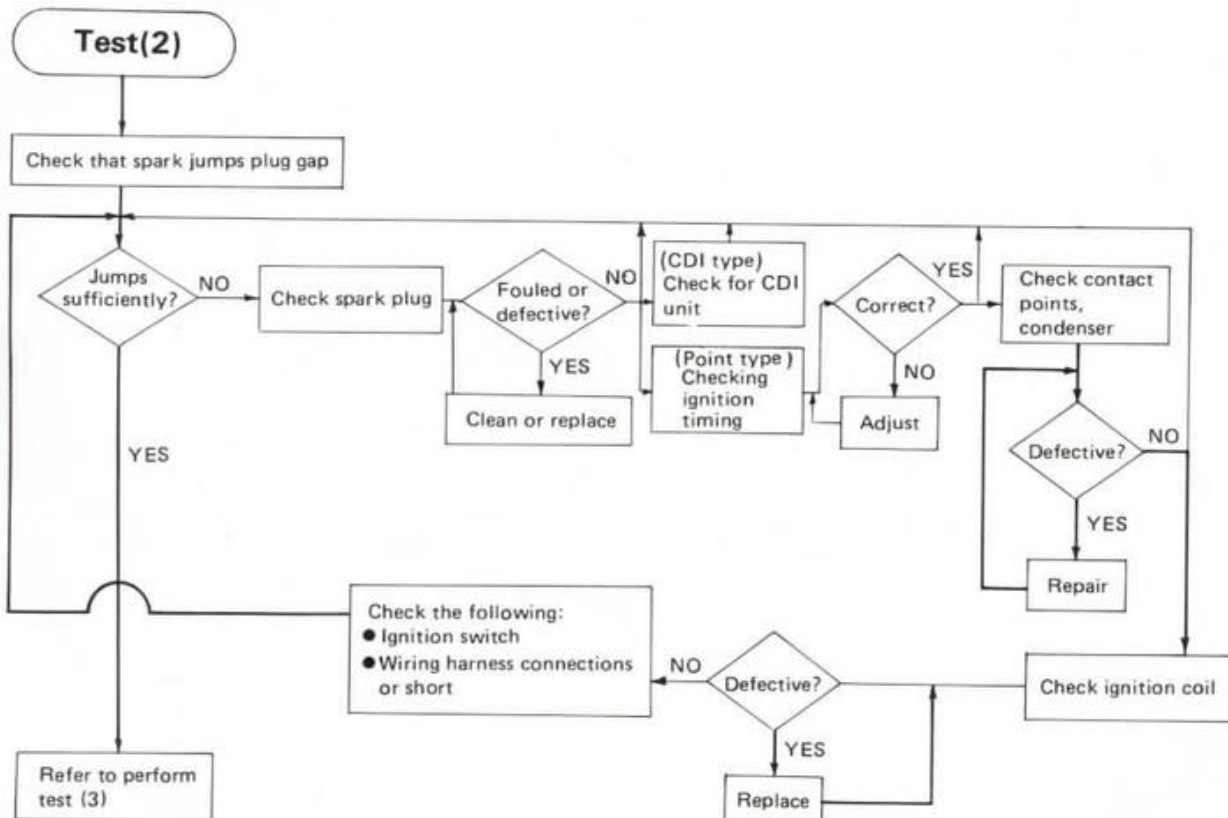
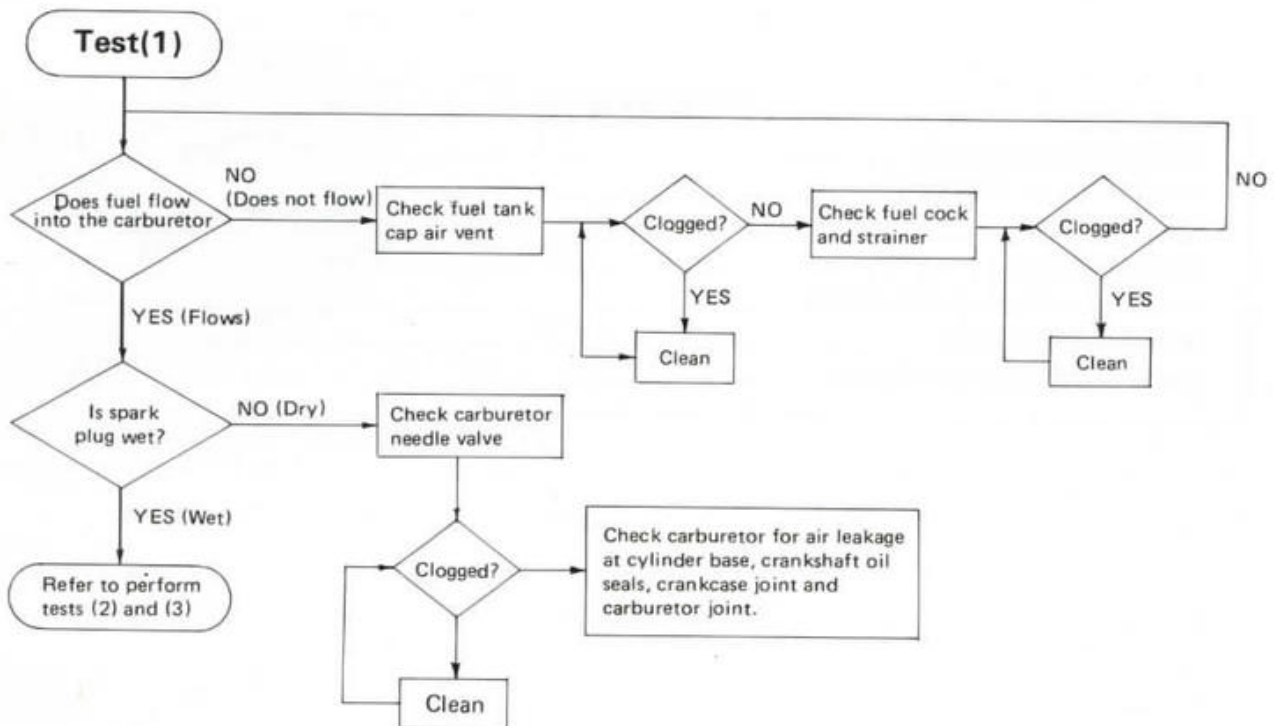
CONTENTS

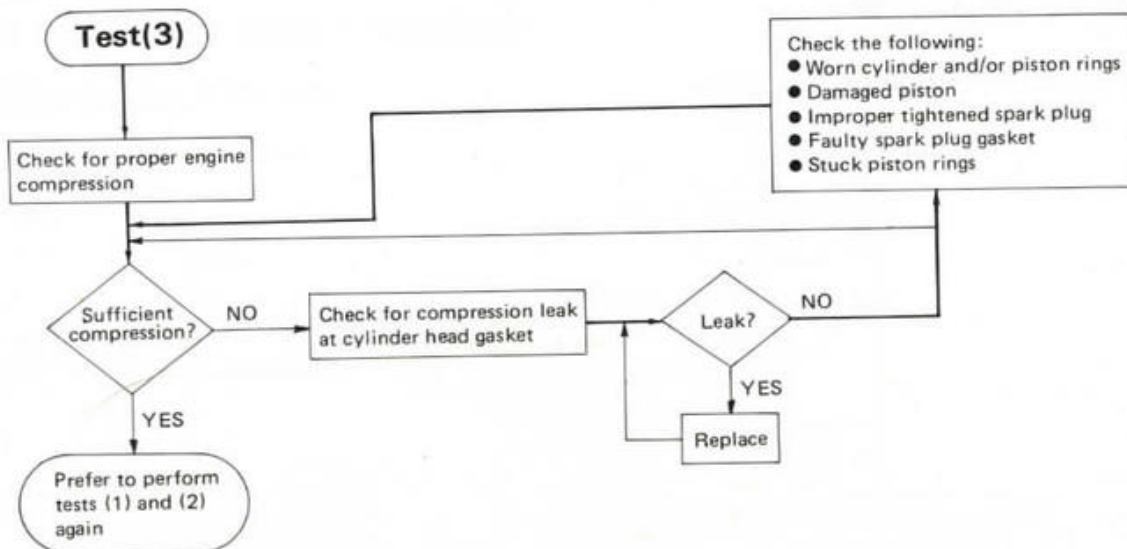
<i>TROUBLE SHOOTING</i>	7-1
<i>TIGHTENING TORQUE</i>	7-5
<i>SPECIAL TOOLS</i>	7-7
<i>SERVICE DATA</i>	7-11
<i>WIRE AND CABLE ROUTING</i>	7-17
<i>WIRING DIAGRAM</i>	7-19
<i>UNIT CONVERSION TABLE</i>	7-24

TROUBLE SHOOTING

ENGINE DIFFICULT TO START

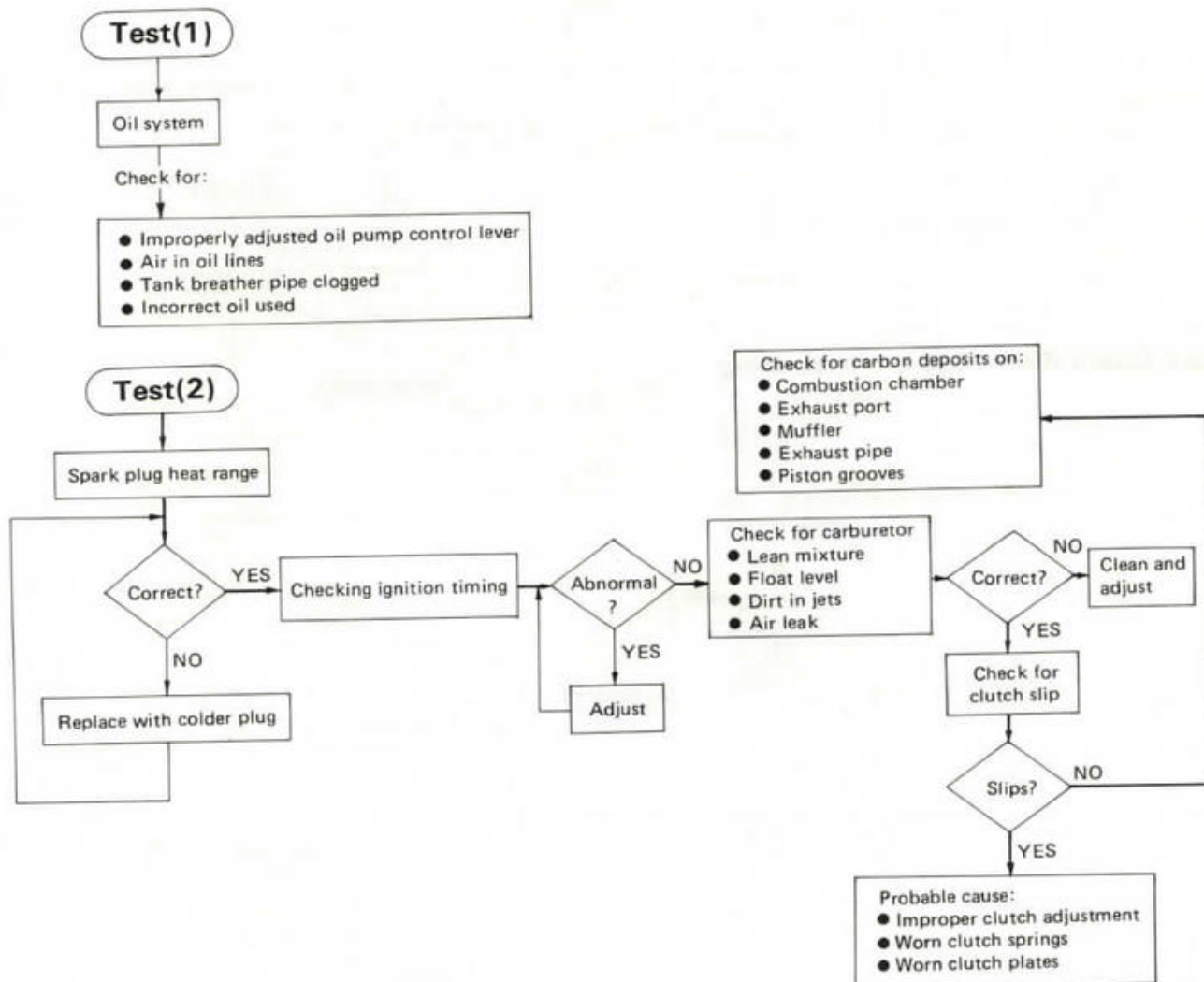
First check that there is fuel in the tank. If there is a sufficient amount of fuel, check the following.





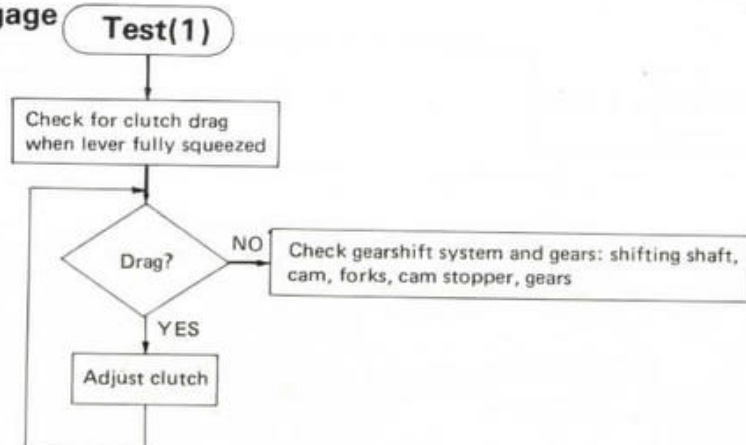
ENGINE OVERHEATS

If the engine tends to overheat during low-speed running, check the condition of the lubrication system, the brakes (for dragging) and cylinder fin cleanliness. If no abnormality is found, make the following checks:

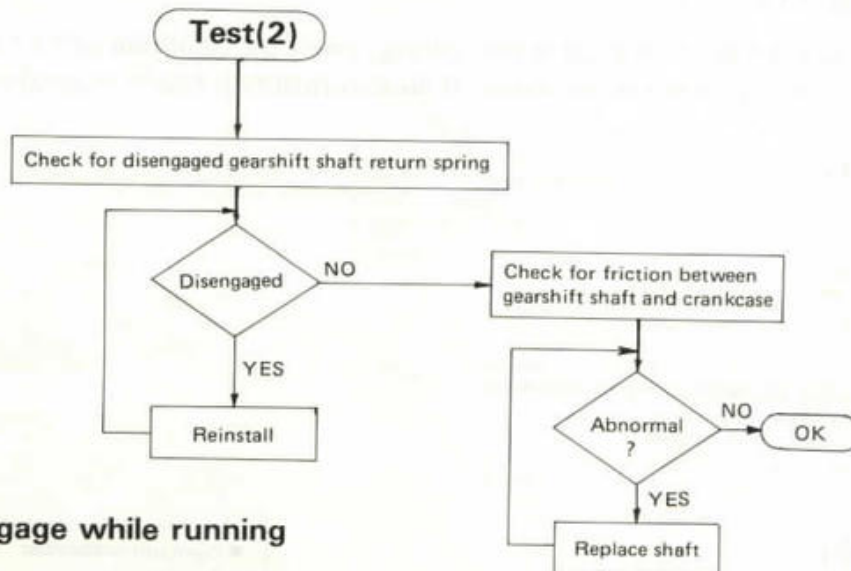


GEAR SHIFT PROBLEMS

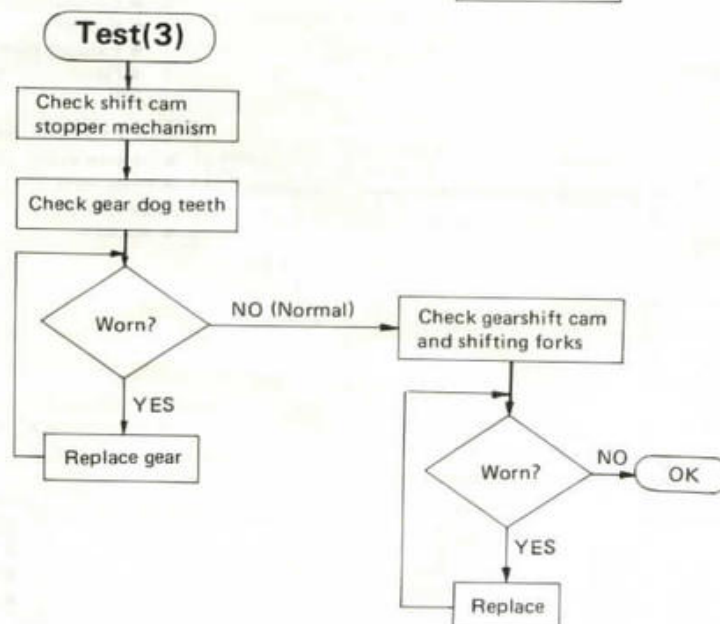
Case1 Gears do not engage



Case2 Gear shift lever does not return to normal position

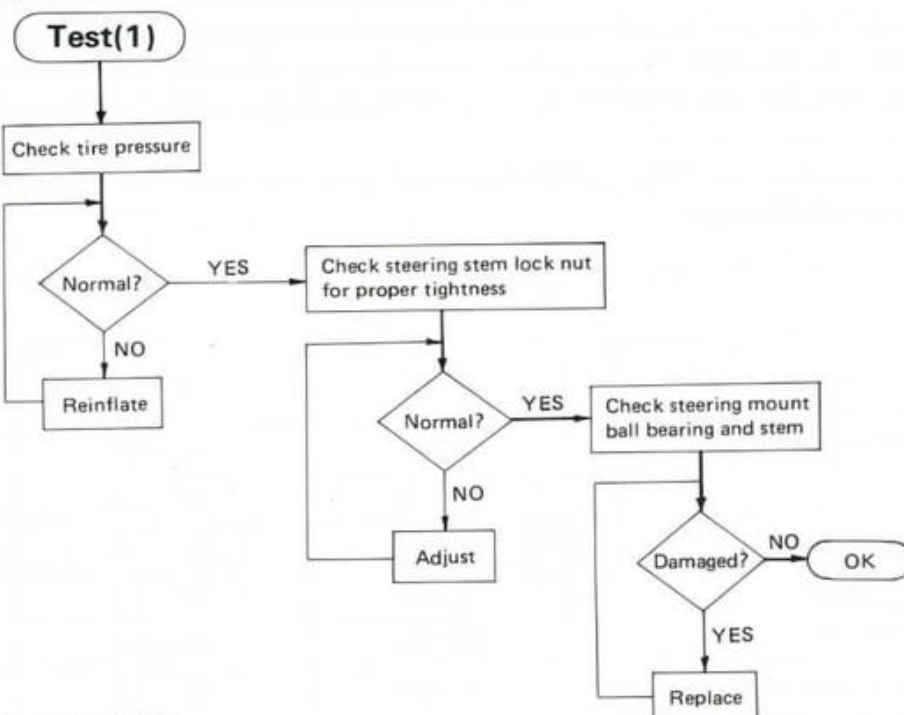


Case3 Gears disengage while running

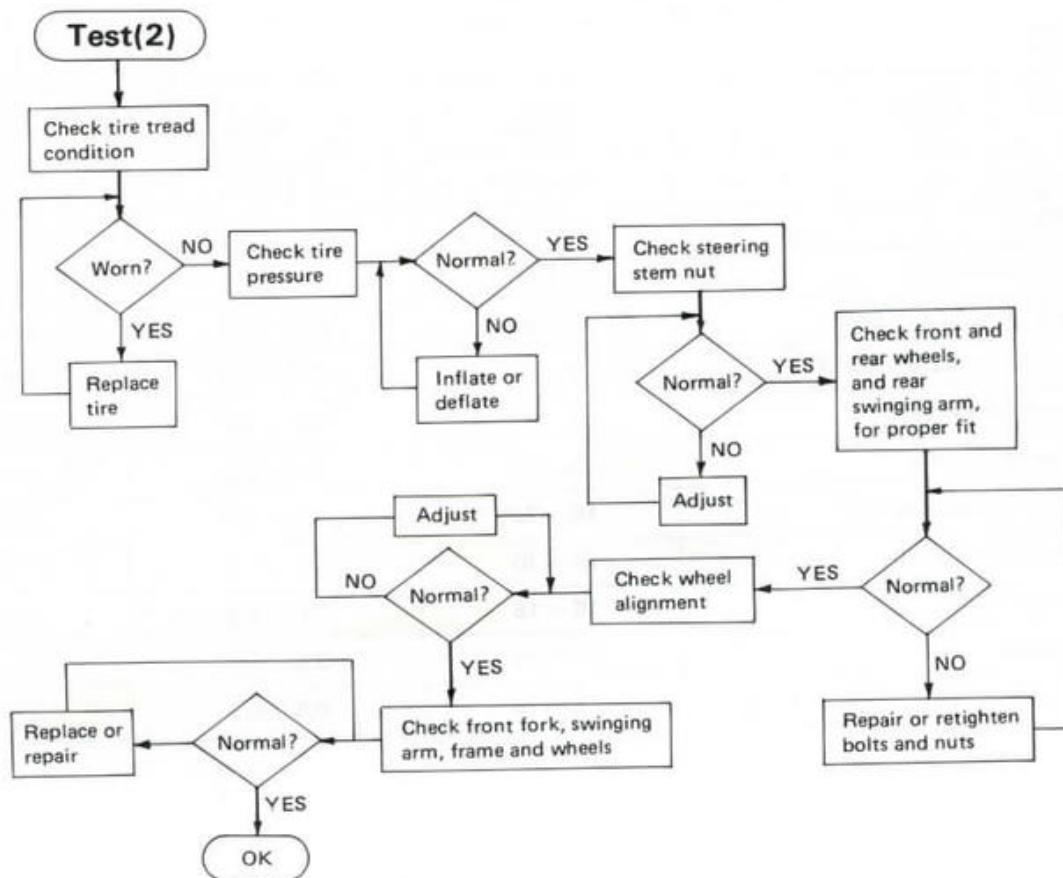


POOR STABILITY AND STEERING

Handlebar feels stiff to turn



Handlebar operation unstable



TIGHTENING TORQUE

Tighten all bolts and nuts described below to the proper torque using an accurate torque wrench. If insufficiently tightened, a bolt or nut may become damaged or fall off, possibly resulting in damage to the motorcycle and injury to the rider. A bolt or nut which is over-tightening may become damaged, strip and internal thread, or break and then fall out. The following tables list the tightening torque for the major bolts and nuts of engine and chassis.

When checking the tightening torque of the bolts and nuts, first loosen the bolt or nut by half a turn and then tighten to specified torque.

ENGINE

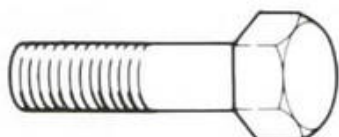
ITEM	N.m	kg-m	lb-ft
Cylinder head nut	23 - 27	2.3 - 2.7	16.5 - 19.5
Magneto rotor nut	30 - 40	3.0 - 4.0	21.5 - 29.0
Primary drive gear nut	36 - 50	3.6 - 5.0	26.0 - 36.0
Clutch sleeve hub nut	20 - 30	2.0 - 3.0	14.5 - 21.5
Engine sprocket nut	40 - 60	4.0 - 6.0	29.0 - 43.5
Engine mounting nut dia. 8 mm	13 - 23	1.3 - 2.3	9.5 - 16.5
dia. 10 mm	25 - 40	2.5 - 4.0	18.0 - 29.0

CHASSIS

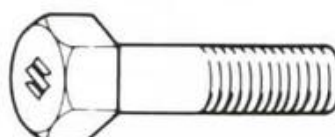
ITEM	N.m	kg-m	lb-ft
Front axle nut	27 - 43	2.7 - 4.3	19.5 - 31.0
Caliper bolt	15 - 25	1.5 - 2.5	11.0 - 18.0
Brake hose union bolt	25 - 40	2.5 - 4.0	18.0 - 29.0
Front fork lower clamp bolt	25 - 35	2.5 - 3.5	18.0 - 25.5
Front fork cap bolt	35 - 55	3.5 - 5.5	25.5 - 40.0
Steering stem head bolt	35 - 55	3.5 - 5.5	25.5 - 40.0
Handlebar clamp bolt	12 - 20	1.2 - 2.0	8.5 - 14.5
Rear swinging arm pivot nut	45 - 70	4.5 - 7.0	32.5 - 50.5
Rear shock absorber nut	20 - 30	2.0 - 3.0	14.5 - 21.5
Rear torque link nut	10 - 15	1.0 - 1.5	7.0 - 11.0
Rear axle nut	36 - 52	3.6 - 5.2	26.0 - 37.5
Brake cam lever nut (Front and Rear)	5 - 8	0.5 - 0.8	3.5 - 6.0

TORQUE SPECIFICATIONS

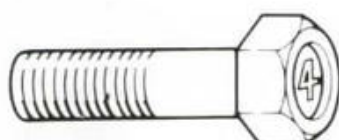
The table below, relating tightening torque to thread diameter, lists the basic torque for the generality bolts and nuts used on Suzuki Motorcycles. However, the actual torque that is necessary may vary among bolts and nuts with the same thread diameter. Refer to this table for only the bolts and nuts and included in the above tables "Engine" and "Chassis". All of the values are for use with dry, solvent-cleaned threads.



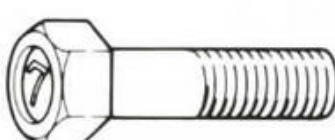
Conventional bolt



"S" marked bolt



"4" marked bolt



"7" marked bolt

Thread dia. (mm) (A)	Conventional or "4" marked bolt			"S" or "7" marked bolt		
	N.m	kg-m	lb-ft	N.m	kg-m	lb-ft
4	1 - 1.5	0.1 - 0.15	0.8 - 1.0	1.5 - 2.5	0.15 - 0.25	1.1 - 1.8
5	2 - 3	0.2 - 0.3	1.5 - 2.0	3 - 5	0.3 - 0.5	2.0 - 3.5
6	4 - 6	0.4 - 0.6	3.0 - 4.5	6 - 9	0.6 - 0.9	4.5 - 6.5
8	9 - 12	0.9 - 1.2	6.5 - 8.5	15 - 20	1.5 - 2.0	11.0 - 14.5
10	20 - 25	2.0 - 2.5	14.5 - 18.0	30 - 37	3.0 - 3.7	21.5 - 27.0
12	35 - 40	3.5 - 4.0	25.0 - 28.5	50 - 65	5.0 - 6.5	36.5 - 47.0
14	60 - 70	6.0 - 7.0	43.5 - 50.5	90 - 110	9.0 - 11.0	65.5 - 79.5
16	90 - 110	9.0 - 11.0	65.5 - 79.5	140 - 170	14.0 - 17.0	101.5 - 122.5
18	140 - 160	14.0 - 16.0	101.5 - 115.5	210 - 250	21.0 - 25.0	152.0 - 180.5

SPECIAL TOOLS

No.	Part Name	Part No.
1	Snap ring pliers (opening type)	09900-06104
2	Snap ring pliers (closing type)	09900-06108
3	Shock driver set	09900-09002
4	Vernier caliper	09900-20101
5	Micrometer	09900-20202
6	Cylinder gauge set	09900-20508
7	Dial gauge (1/100)	09900-20602
8	Magnetic stand	09900-20701
9	Thickness gauge	09900-20804
10	CCI oil gauge	09900-21602
11	Pocket tester	09900-25002
12	Timing tester	09900-27003
13	Timing light	09900-27311
14	Hydrometer	09900-28403
15	Electro tester	09900-28106
16	Stud bolt installer	09910-10710
17	Con-rod stopper	09910-20115
18	Piston pin puller	09910-34510
19	Crank case separating tool	09910-80115
20	L type hexagon wrench	09911-70120
21	Oil seal remover	09913-50120
22	Bearing and oil seal installing tool	09913-70122
23	Bearing and oil seal installing tool	09913-80111
24	Crankshaft remover	09920-13111
25	Clutch spring hook	09920-20310
26	Clutch sleeve hub holder	09920-53710
27	Spark plug wrench	09930-10111
28	Rotor remover shaft	09930-30102
29	Rotor remover attachment "C"	09930-30161
30	Rotor holder	09930-40113
31	Timing gauge	09931-00112
32	Steering stem nut wrench	09940-10122
33	"T" handle	09940-34520
34	Attachment "D"	09940-34561
35	Front fork oil seal installer	09940-50110
36	Spoke nipple wrench	09940-60112
37	Hexagon combination wrench (8 x 10)	09941-03610
38	Steering race installer	09941-34511
39	Front fork oil level gauge	09943-74111

No. 1



No. 2



No. 3



No. 4



No. 5



No. 6



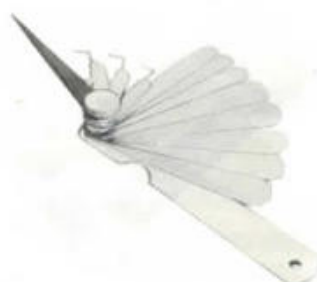
No. 7



No. 8



No. 9



No. 10



No. 11



No. 12



No. 13



No. 14



No. 15



<p>No. 16</p> 	<p>No. 17</p> 	<p>No. 18</p> 
<p>No. 19</p> 	<p>No. 20</p> 	<p>No. 21</p> 
<p>No. 22</p> 	<p>No. 23</p> 	<p>No. 24</p> 
<p>No. 25</p> 	<p>No. 26</p> 	<p>No. 27</p> 
<p>No. 28</p> 	<p>No. 29</p> 	<p>No. 30</p> 

No. 31



No. 32



No. 33



No. 34



No. 35



No. 36



No. 37



No. 38



No. 39



SERVICE DATA

Piston + Ring + Cylinder

Unit:mm(in)

ITEM	STANDARD		LIMIT
Piston – Cylinder clearance	0.035 – 0.045 (0.0014 – 0.0018)		0.120 (0.0047)
Cylinder bore	56.000 – 56.015 (2.2047 – 2.2053)		56.095 (2.2085)
Piston dia. / Measurement point	55.960 – 55.975 (2.2013 – 2.2037)/20.0(0.79)		55.880 (2.2000)
Cylinder warpage	_____		0.05 (0.002)
Cylinder head warpage	_____		0.05 (0.002)
Piston ring free end gap	1 st	Approx. 7.5 (0.30)	6.0 (0.24)
	2 nd		
Piston ring end gap	1 st	0.15 – 0.35 (0.006 – 0.014)	0.80 (0.031)
	2 nd		
Piston ring – Groove clearance	1 st	0.03 – 0.07 (0.001 – 0.003)	_____
	2 nd		
Piston pin – Pin bore clearance	0.002 (tight) – 0.011 (0.0001 – 0.0004)		0.080 (0.0031)
Piston pin bore I. D.	13.998 – 14.006 (0.5511 – 0.5514)		_____
Piston pin O. D.	13.995 – 14.000 (0.5510 – 0.5512)		_____

Crankshaft

Unit:mm(in)

ITEM	STANDARD	LIMIT
Con-rod small end bore	18.003 – 18.011 (0.7088 – 0.7091)	18.040 (0.7102)
Piston pin O. D.	13.995 – 14.000 (0.5510 – 0.5512)	13.980 (0.5504)
Con-rod deflection (small end)	—————	3.0 (0.12)
Con-rod big end wear	—————	0.08 (0.003)
Crankshaft runout	—————	0.05 (0.002)

Oil pump

ITEM	SPECIFICATION
Oil pump reduction ratio	3.625 (58/16 x 29/17 x 17/29)
CCI pump discharge rate (Full open)	1.30–1.60 ml (0.044/0.046–0.054/0.056 US/Imp oz) 2 minutes at 2000r/min

Clutch

Unit:mm(in)

ITEM	STANDARD	LIMIT
Drive plate thickness	2.9 – 3.0 (0.11 – 0.12)	2.6 (0.10)
Drive plate distortion		0.4 (0.016)
Driven plate thickness	1.6 (0.063)	_____
Driven plate distortion		0.1 (0.004)
Drive plate claw width	11.8 – 12.0 (0.46 – 0.47)	11.3 (0.45)
Clutch spring free length	32.0 (1.26)	33.6 (1.32)
Pri. drive – Driven gear backlash	0.02 – 0.07 (0.001 – 0.003)	0.10 (0.004)

Transmission

Unit:mm(in)

ITEM	STANDARD	LIMIT
Primary reduction	3.625 (58/16)	
Final reduction	3.000 (45/15) 3.214 (45/14) Only for Philippines	
Gear ratios, Low	3.090 (34/11)	
2 nd	1.812 (29/16)	
3 rd	1.250 (25/20)	
4 th	0.956 (22/23)	
Top	0.800 (20/25)	
Gear backlash 1st, 2nd, 3rd, 4th and Top	0.10 (0.004)	0.15 (0.006)
Shift fork – Groove clearance	No.1	0.45 (0.018)
	No.2	
Shift fork groove width	No.1	_____
	No.2	
Shift fork thickness	No.1	_____
	No.2	
Drive chain size	D. I. D # 428D, 120 links or 122 links	
20 pitch length	254.0 (10.00)	259.5 (10.22)

Carburetor

ITEM	SPECIFICATION			
Carburetor type	MIKUNI VM24SS			
Idle r/min	1 300 ± 150 r/min			
Bore size	24.0 (0.94)			
I. D. No.	39111	39122	39130	39150
Float height	23.5±1.0 mm (0.93±0.04 in)	←	←	←
Air screw (A.S.)	1½	1¼	1½	←
Cut-away (C.A.)	2.5	←	←	←
Jet needle (J.N.)	4EJ14-3	4J25-3	4EJ14-3	4P6-3
Pilot jet (P.J.)	#25	#17.5	#25	#20
Pilot outlet (P.O.)	0.8	1.0	0.8	0.6
Needle jet (N.J.)	0 - 2	P - 2	0 - 2	0 - 8
By-pass (B.P.)	1.2	0.8	1.2	1.0
Main jet (M.J.)	#90	#105	#92.5	#97.5

Electrical

ITEM	SPECIFICATION			
Ignition timing	Point type	20° ± 2° B.T.D.C.		
	CDI type (KOKUSAN)	24° ± 2° B.T.D.C. at 4 000 r/min		
	CDI type (NIPPON DENSO)	21° ± 2° B.T.D.C. at 6 000 r/min		
Piston stroke (point type)	1.52 – 1.87 – 2.26 (0.060 – 0.074 – 0.089)			
Spark plug	NGK B8HS or NIPPON DENSO W24FS			
	NGK B7HS or NIPPON DENSO W22FS Only for Philippines			
Spark plug gap	0.6 – 0.8 (0.024 – 0.031)			
Contact point gap	0.35±0.05 (0.014±0.002)			
Dwell angle	170°			
Spark performance	Over 8 (0.3) at 1 atm			
Condensor capacity	0.25±0.03μF KOKUSAN		0.18±0.02μF NIPPON DENSO	
Ignition coil resistance		CDI type (KOKUSAN)	CDI type (NIPPON DENSO)	Point type
	Primary	Approx. 0.05Ω	Approx. 0.5Ω	Approx. 1.5Ω
	Secondary	Approx. 12kΩ	Approx. 13kΩ	Approx. 15kΩ
Magneto coil resistance	CDI type (KOKUSAN)		CDI type (NIPPON DENSO)	
	Exciter coil	B/R–B/W:Approx. 210Ω	High speed coil	B–B/R:Approx. 27Ω
	Pulser coil	B/R–R/W:Approx. 24Ω	Low speed coil	B/R–R/B:Approx. 200Ω
	Charging coil	G/W–Y:Approx. 0.2Ω	Charging coil	G/W–Ground:Approx. 0.2Ω
	Lighting coil	Y–Ground:Approx. 0.3Ω	Lighting coil	Y–Ground:Approx. 0.3Ω
	Point type (E-24 and E-35)		Point type (for other)	
	Primary coil	B/Y–Ground:Approx. 0.05Ω	Primary coil	B/Y–Ground:Approx. 0.05Ω
	Charging coil	G/W–Ground:Approx. 0.1Ω	Charging coil	W/R–Ground:Approx. 0.2Ω
	Lighting coil	Y–Ground:Approx. 0.2Ω	Lighting coil	Y/W–Ground:Approx. 0.2Ω

Unit:mm(in)

ITEM	SPECIFICATION	
Battery capacity	6V 14.4kC (4 Ah) 10 HR	
Specific gravity	1.26 at 20°C	
Charging rate	CDI type (NIPPON DENSO)	Day : Above 0.5A at 4 000 r/min, Below 4.0A at 8 000 r/min Night : Above 0.1A at 4 000 r/min, Below 0.8A at 8 000 r/min
	CDI type (KOKUSAN)	Day : Above 0.8A at 4 000 r/min, Below 4.0A at 8 000 r/min Night : Above 0.2A at 4 000 r/min, Below 0.5A at 8 000 r/min
	Point type (E-24 and E-35)	Day : Above 0.8A at 4 000 r/min, Below 4.0A at 8 000 r/min Night : Above 0.1A at 4 000 r/min, Below 1.0A at 8 000 r/min
	Point type (Other)	Day : Above 0.8A at 4 000 r/min, Below 2.5A at 8 000 r/min Night : Above 0.7A at 4 000 r/min, Below 1.5A at 8 000 r/min
Lighting coil performance	Above 6V at 2 500 r/min, Below 8.5V at 8 000 r/min	
Resistor resistance	Approx. 4Ω (Only for E-02, 04, 17, 18, 21 and E-22)	
Fuse size	10A	

Brake + Wheel

Unit:mm(in)

ITEM	STANDARD	LIMIT
Axle runout (Front & Rear)	—	0.25 (0.010)
Brake drum I. D.	130.0 (5.12)	130.7 (5.15)
Brake lining thickness (Front & Rear)	—	1.5 (0.06)
Brake disc thickness	3.8 – 4.2 (0.150 – 0.165)	3.0 (0.12)
Brake disc runout	—	0.3 (0.01)
Master cylinder cylinder dia.	12.700 – 12.743 (0.5000 – 0.5017)	—
Master cylinder piston dia.	12.650 – 12.670 (0.4980 – 0.4988)	—
Brake caliper cylinder bore	33.960 – 34.000 (1.3370 – 1.3386)	—
Brake caliper piston Dia.	33.890 – 33.910 (1.3342 – 1.3350)	—
Wheel rim runout (Radial & Axial)	—	2.0 (0.08)

ITEM	STANDARD	LIMIT
Tire size	Front: 2.75 – 18 – 4PR 3.00 – 16 – 4PR Only for Philippines	
	Rear: 3.00 – 18 – 4PR 3.00 – 16 – 4PR Only for Philippines	
Tire Tread depth	Front: —	1.6 (0.06)
	Rear: —	1.6 (0.06)

Tire air pressure

	SOLO RIDING		DUAL RIDING	
	General and other	Only for E-31	General and other	Only for E-31
FRONT	175 kPa (1.75 kg/cm ²) 25 psi	150 kPa (1.50 kg/cm ²) 21 psi	175 kPa (1.75 kg/cm ²) 25 psi	150 kPa (1.50 kg/cm ²) 21 psi
REAR	225 kPa (2.25 kg/cm ²) 32 psi	200 kPa (2.00 kg/cm ²) 28 psi	250 kPa (2.50 kg/cm ²) 36 psi	225 kPa (2.25 kg/cm ²) 32 psi

Suspension

Unit:mm(in)

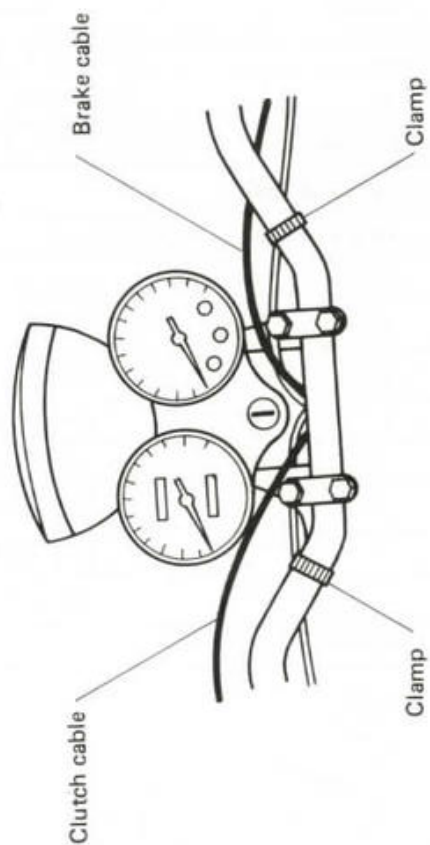
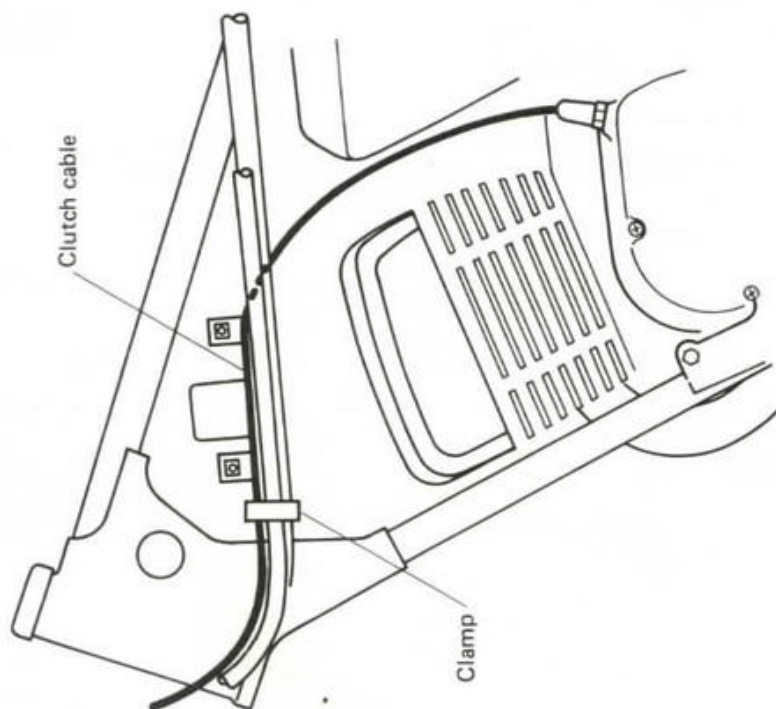
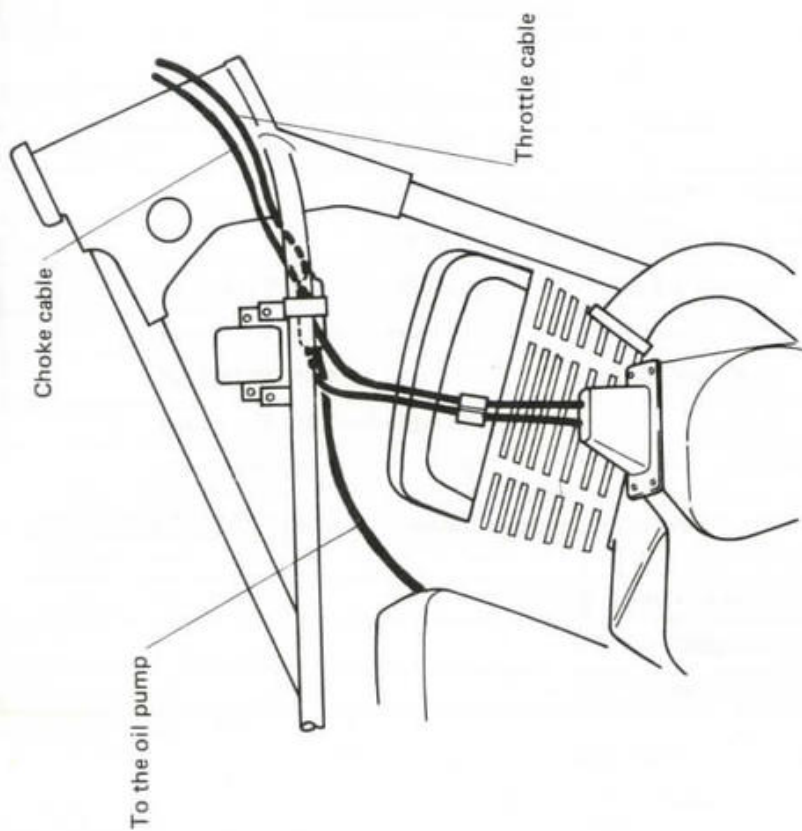
ITEM	STANDARD		LIMIT
Front fork stroke	110.0 (4.32)		
Rear wheel travel	85.0 (3.35)		
Fork spring free length	General and other	496.0 (19.53)	481.0 (18.94)
	E-06 (GP125U)	220.0 (8.66)	200.0 (7.87)
	E-12, 13 and E-30	462.0 (18.19)	447.0 (17.60)
	E-31	L: 277.5 (10.93)	266.0 (10.47)
		S: 156.5 (6.16)	123.0 (4.84)
	E-32	200.0 (7.87)	185.0 (7.28)
Fork oil level	General and other	188 (7.4)	
	E-06 (GP125U)	36 (1.4)	
	E-12, 13 and E-30	165 (6.5)	
	E-31	176 (6.9)	
	E-32	49 (1.9)	
Swinging arm pivot shaft runout			0.6 (0.02)

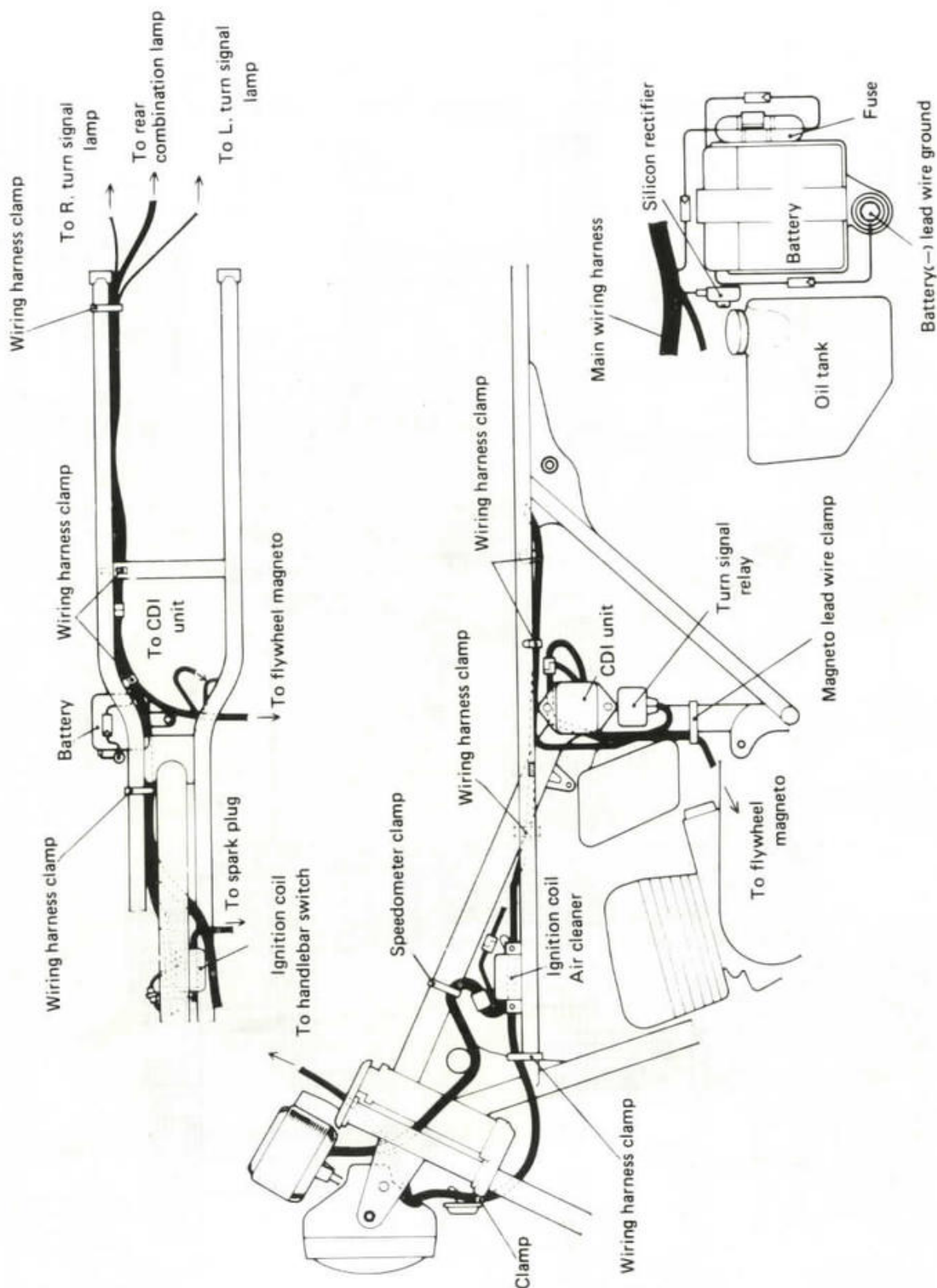
Capacity

Unit:mm(in)

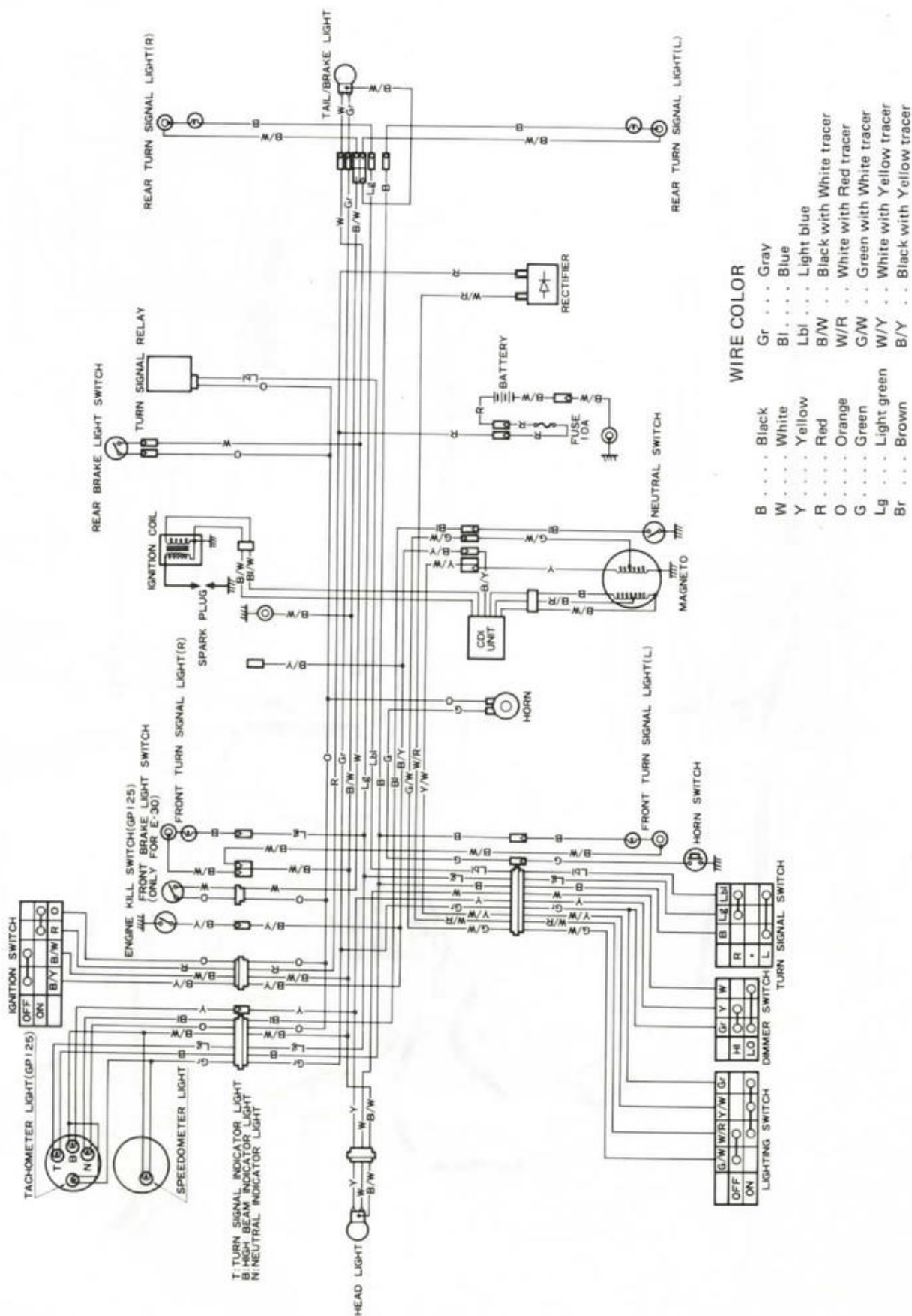
ITEM	SPECIFICATION	
Fuel tank including reserve	9.8 L (2.6/2.2 US/Imp gal)	
reserve	2.0 L (2.1/1.8 US/Imp qt)	
Engine oil tank	1.2 L (1.3/1.1 US/Imp qt)	
Transmission oil	Change:	800 ml (0.85/0.70 US/Imp qt)
	Overhaul:	850 ml (0.90/0.75 US/Imp qt)
Front fork oil (each leg)	General and other	90 ml (3.04/3.17 US/Imp oz)
	E-12, 13 and E-30	146 ml (4.93/5.14 US/Imp oz)
	E-06 (GP125U)	132 ml (4.46/4.65 US/Imp oz)
	E-31	168 ml (5.68/5.92 US/Imp oz)
	E-32	200 ml (6.76/7.04 US/Imp oz)
Fuel type	Octane number of 90 or higher (Research Method), preferably unleaded or/ow-lead.	
Engine oil type	SUZUKI CCI or CCI SUPER	
Transmission oil type	SAE 20 W/40	
Front fork oil type	SAE 10 W/20	

WIRE AND CABLE ROUTING

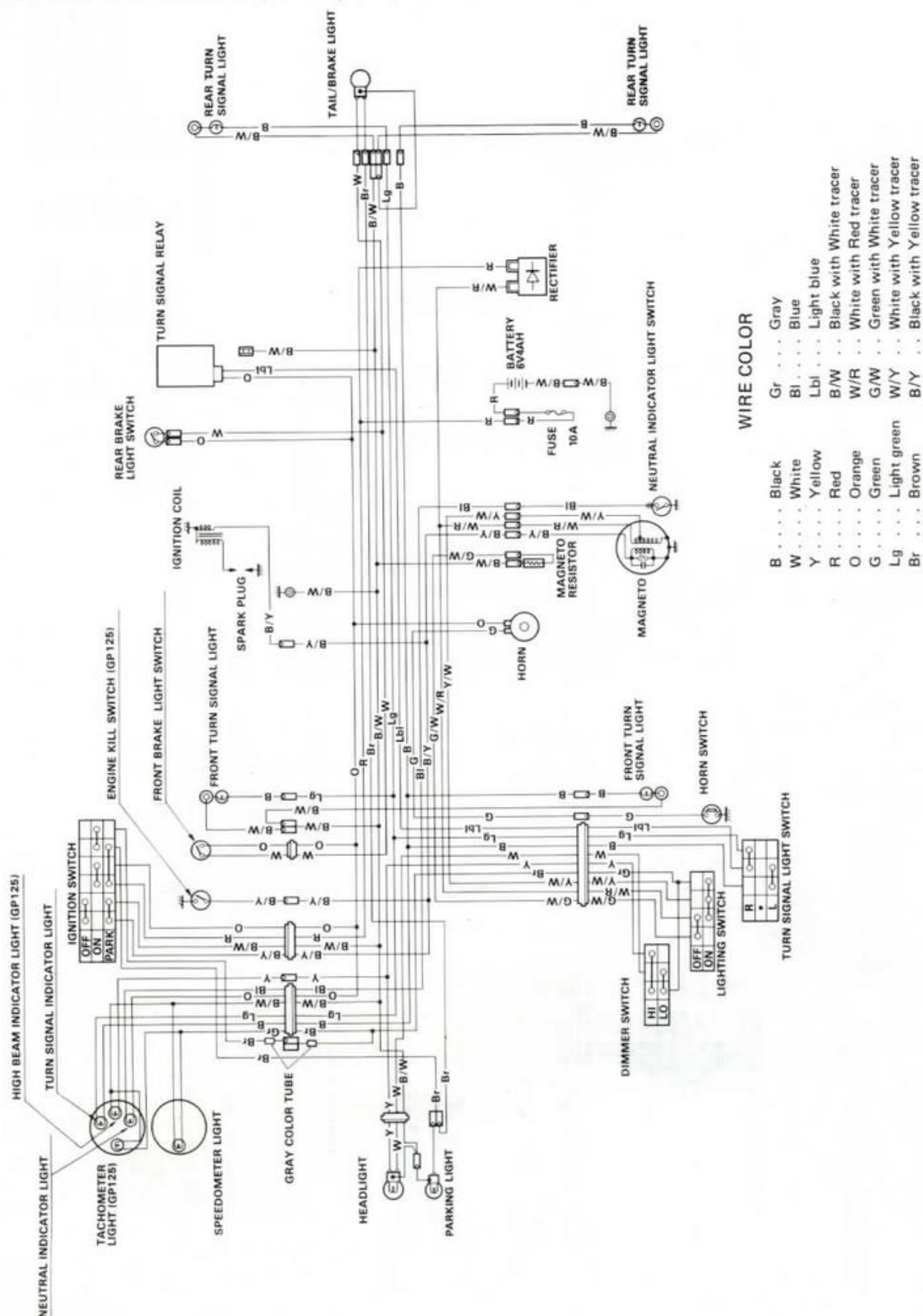




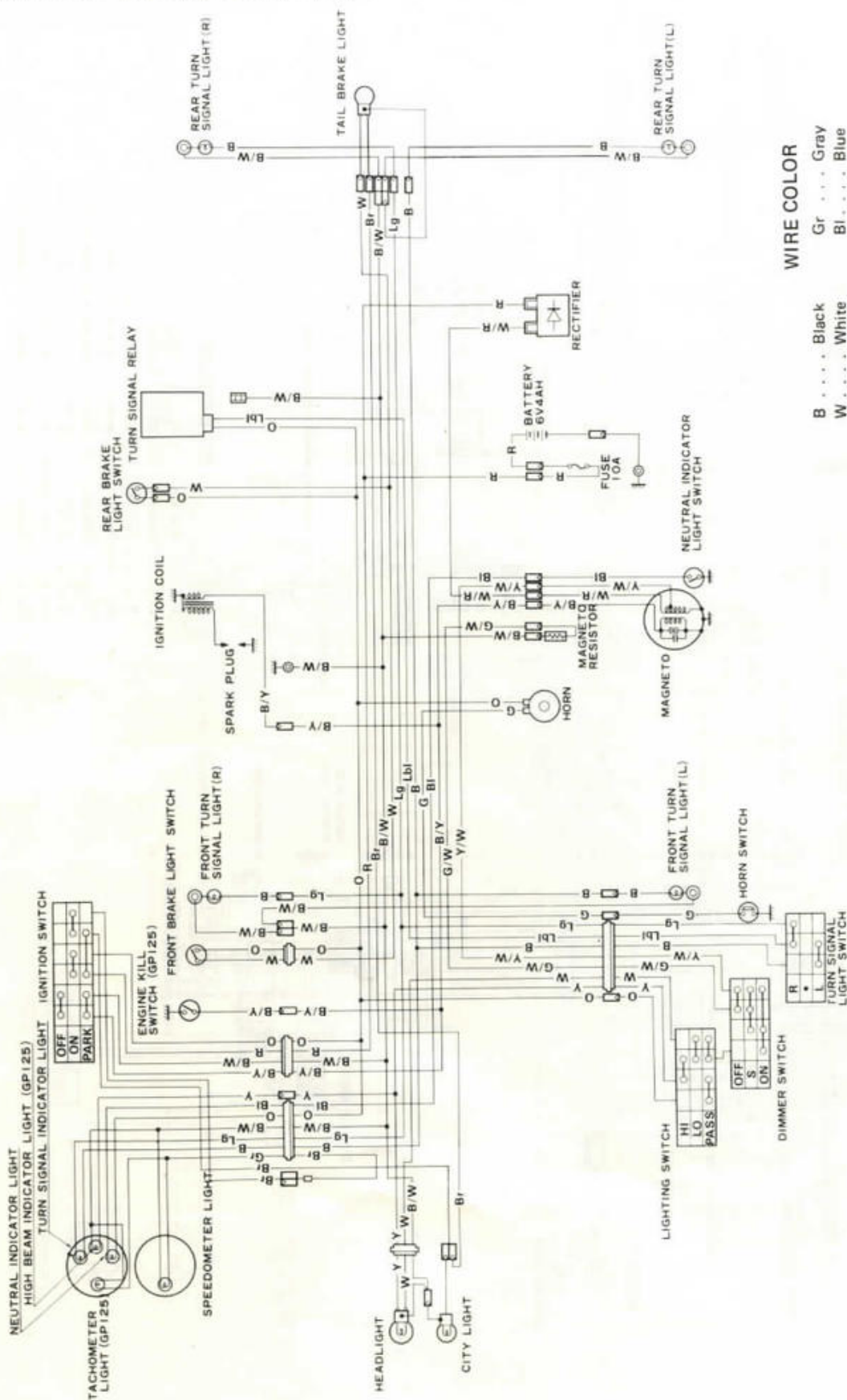
WIRING DIAGRAM (General and other)



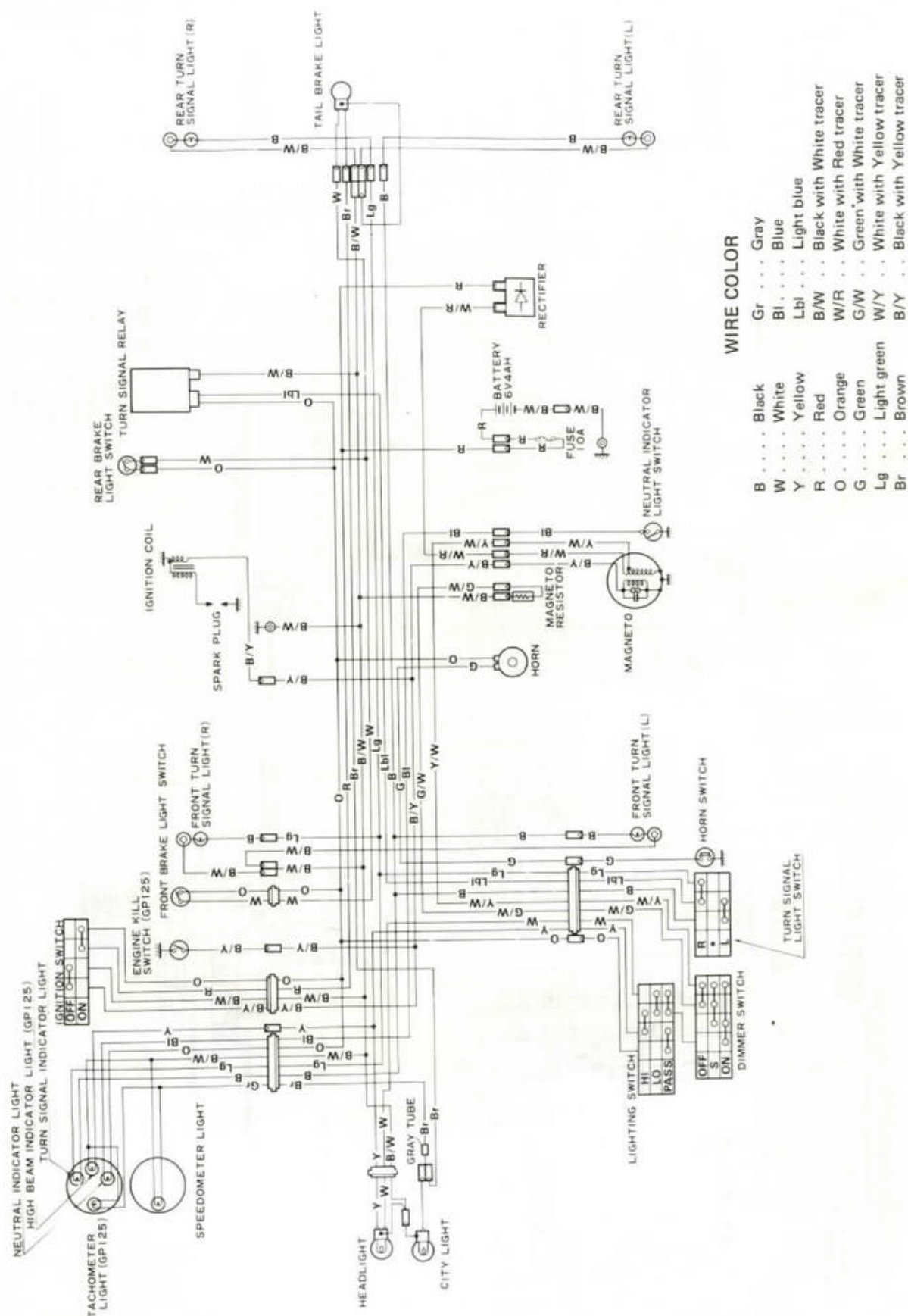
WIRING DIAGRAM (E-02, 04, 17 and E-21)

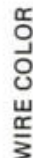


WIRING DIAGRAM(E-18)



WIRING DIAGRAM(E-22)





UNIT CONVERSION TABLE

Volumes

cc, cm ³ , ml	x	.061023	=	cu. in, in ³
	x	.03380	=	US oz.
	x	.03521	=	Imp. oz.
	x	.002113	=	US pt.
	x	.001760	=	Imp. pt.
ℓ	x	1 000	=	cc, cm ³ , ml
	x	.26420	=	US gal.
	x	.21997	=	Imp. gal.
	x	1.0567	=	US qt.
	x	.8799	=	Imp. qt.
	x	33.80	=	US oz.
	x	35.21	=	Imp. oz.
US gal.	x	3.78533	=	ℓ
Imp. gal.	x	4.54596	=	ℓ
US gal.	x	.8326	=	Imp. gal.
Imp. gal.	x	1.2010	=	US gal.
US qt.	x	.9463	=	ℓ
	x	.25	=	US gal.
Imp. qt.	x	1.1365	=	ℓ
	x	.25	=	Imp. gal.
US pt.	x	473.26	=	cc, cm ³ , ml
	x	.125	=	US gal.
Imp. pt.	x	568.18	=	cc, cm ³ , ml
		.125	=	Imp. gal.
US oz.	x	29.57	=	cc, cm ³ , ml
	x	.0625	=	US pt.
Imp. oz.	x	28.41	=	cc, cm ³ , ml
	x	.05	=	Imp. pt.
cu. in.	x	16.39	=	cc, cm ³ , ml

Weights

grams	x	.001	=	kg
	x	.0022	=	lbs.
	x	.03527	=	oz.
kg	x	1 000	=	grams
	x	35.274	=	oz.
	x	2.2046	=	lbs.
lbs.	x	453.6	=	grams
	x	16	=	oz.
	x	.45359	=	kg
oz.	x	28.3495	=	grams
	x	.0625	=	lbs.
kgf	x	10	=	Newton (N)

Distance

mm	x	.03937	=	in.
cm	x	.3937	=	in.
m	x	3.281	=	ft.
	x	39.37	=	in.

km	x	.6214	=	miles
miles	x	1.6093	=	km
in.	x	25.4	=	mm
ft.	x	12	=	in.
	x	30.48	=	cm
Torque				
kg-cm	x	.07233	=	lb-ft
kg-m	x	7.233	=	lb-ft
	x	100	=	kg-cm
lb-ft	x	.1383	=	kg-m
	x	13.83	=	kg-cm
kgf. m	x	10	=	Newton meter (N.m) or Joule (J)
Pressure				
kg/cm ²	x	14.22	=	lbs/in ² or psi
	x	.0001	=	kg/m ²
	x	100	=	kPa
kPa	x	.01	=	kg/cm ²
lbs/in ² or psi	x	.07031	=	kg/cm ²
Velocity				
m/sec.	x	3.6	=	km/h
	x	3.281	=	ft/sec.
	x	2.237	=	miles/h
miles/h	x	1.6093	=	km/h
	x	1.467	=	ft/sec.
	x	.4470	=	m/sec.
km/h	x	.2778	=	m/sec.
	x	.9113	=	ft/sec.
	x	.6214	=	miles/h
Power				
hp	x	.7457	=	kw
	x	76.12	=	kg-m/sec.
kw	x	1.3405	=	hp
	x	101.97	=	kg-m/sec.
Square Measure				
m ²	x	1 550	=	in ²
	x	10.764	=	ft ²
cm ²	x	.155	=	in ²
	x	.0001	=	m ²
ft ²	x	.092903	=	m ²
in ²	x	6.4516	=	cm ²
Temperature				
F = 9/5 x C + 32		F : Fahrenheit		
C = 5/9 x (F - 32)		C : Centigrade		
Capacity				
Ah	x	3.6	=	kC

LIST OF ABBREVIATIONS

A	ampere, amperes	kg-m/sec. . . .	kilogram meters per second
AC	alternating current	k Ω	kilo-ohm
ACV	alternating current voltage	kPa	kilo Pascal
AH	amperes-hour	kw	kilowatts
AM	ammeter, amperemeter	lb-ft	pounds-foot
Amp.	ampere	lbs	pounds
B.T.D.C.	before top dead center	lbs/in ²	pounds per square inch
cc	cubic centimeters	l	liter, litre
cm	centimeters	m	meter, meters
cm ²	square centimeters	m ²	square meters
cm ³	cubic centimeters	m ³	cubic meters
cu.in	cubic inches	mi.	mile, miles
DC	direct current	miles/h	miles per hour
DCA	direct current ampere	ml	milliliters
DCV	direct current voltage	mm	millimeters
ft.	foot, feet	MPa	Mega Pascal
ft ²	square feet	m/sec.	meters per second
ft/sec.	feet per second	μ F	microfarad
hp	horsepower	N	Newton
Imp. gal.	Imperial gallons	N.m	Newton meters
Imp. pt.	Imperial pints	Ω	ohm
Imp. qt.	Imperial quarts	oz.	ounce, ounces
Imp. oz.	Imperial ounces	%	percent, per cent
in.	inch, inches	psi	pounds per square inch
in ²	square inches	r/min.	revolutions per minute
in ³	cubic inches	rpm	revolutions per minute
J	Joule	SAE	Society of Automotive Engineers
kC	kilo coulomb	US gal.	US gallons
kg	kilogram, kilograms	US oz.	US ounces
kgf.	kilogram-force	US pt.	US pints
kgf.m	kilogram-force meter	US qt.	US quarts
kg-cm	kilogram centimeters	V	volt, volts
kg/cm ²	kilograms per square centimeter	VM	voltmeter
kg-m	kilogram meters	W	watt, watts
km	kilometers		
km/h	kilometers per hour		

INCH					MM	INCH					MM	
$\frac{1}{64}$.015625	1mm= .03937 inch	$\frac{33}{64}$.515625	14mm= .55118 inch	
	$\frac{1}{32}$			.03125			$\frac{17}{32}$			.53125
$\frac{3}{64}$				.046875			$\frac{35}{64}$			.546875
		$\frac{1}{16}$		.0625				$\frac{9}{16}$		.5625
$\frac{5}{64}$.078125	2mm= .07874 inch	$\frac{37}{64}$.578125	15mm= .59055 inch	
	$\frac{3}{32}$			.09375				$\frac{19}{32}$		.59375
$\frac{7}{64}$.109375	3mm= .11811 inch	$\frac{39}{64}$.609375	16mm= .62992 inch	
			$\frac{1}{8}$	.125					$\frac{5}{8}$	.625
$\frac{9}{64}$.140625	4mm= .15748 inch	$\frac{41}{64}$.640625	17mm= .66929 inch	
	$\frac{5}{32}$			.15625				$\frac{21}{32}$		.65625
$\frac{11}{64}$				.171875			$\frac{43}{64}$			.671875
		$\frac{3}{16}$		.1875					$\frac{11}{16}$	.6875
$\frac{13}{64}$.203125	5mm= .19685 inch	$\frac{45}{64}$.703125	18mm= .70866 inch	
	$\frac{7}{32}$			.21875				$\frac{23}{32}$		.71875
$\frac{15}{64}$.234375	6mm= .23622 inch	$\frac{47}{64}$.734375		19mm= .74803 inch
			$\frac{1}{4}$	.25					$\frac{3}{4}$	.75
$\frac{17}{64}$.265625	7mm= .27559 inch	$\frac{49}{64}$.765625	20mm= .78740 inch	
	$\frac{9}{32}$			.28125				$\frac{25}{32}$		.78125
$\frac{19}{64}$.296875	8mm= .31496 inch	$\frac{51}{64}$.796875		21mm .82677 inch
		$\frac{5}{16}$		.3125					$\frac{13}{16}$	.8125
$\frac{21}{64}$				.328125			$\frac{53}{64}$			.828125
	$\frac{11}{32}$			.34375				$\frac{27}{32}$		.84375
$\frac{23}{64}$.359375	9mm= .35433 inch	$\frac{55}{64}$.859375	22mm= .86614 inch	
			$\frac{3}{8}$	.375					$\frac{7}{8}$	.875
$\frac{25}{64}$.390625	10mm= .39370 inch	$\frac{57}{64}$.890625		23mm= .90551 inch
	$\frac{13}{32}$			.40625				$\frac{29}{32}$		.90625
$\frac{27}{64}$.421875	11mm= .43307 inch	$\frac{59}{64}$.921875	24mm= .94488 inch	
		$\frac{7}{16}$		.4375					$\frac{15}{16}$	.9375
$\frac{29}{64}$.453125	12mm= .47244 inch	$\frac{61}{64}$.953125		24mm= .98425 inch
	$\frac{15}{32}$			.46875				$\frac{31}{32}$		.96875
$\frac{31}{64}$.484375		13mm= .51181 inch	$\frac{63}{64}$.984375	
			$\frac{1}{2}$.5						1	1.	

MILLIMETERS-INCHES CONVERSION TABLE

MILLIMETERS TO INCHES

Millimeters (mm)	0	.1	.2	.3	.4	.5	.6	.7	.8	.9
	inches (in.)									
0	—	0.0039	0.0079	0.0118	0.0157	0.0197	0.0236	0.0276	0.0315	0.0354
1	0.0394	0.0433	0.0472	0.0512	0.0551	0.0591	0.0630	0.0669	0.0709	0.0748
2	0.0787	0.0827	0.0866	0.0906	0.0945	0.0984	0.1024	0.1063	0.1102	0.1142
3	0.1181	0.1220	0.1260	0.1299	0.1339	0.1378	0.1417	0.1457	0.1496	0.1535
4	0.1575	0.1614	0.1654	0.1693	0.1732	0.1772	0.1881	0.1850	0.1890	0.1929
5	0.1969	0.2008	0.2047	0.2087	0.2126	0.2165	0.2205	0.2244	0.2283	0.2323
6	0.2362	0.2402	0.2441	0.2480	0.2520	0.2559	0.2598	0.2638	0.2677	0.2717
7	0.2756	0.2795	0.2835	0.2874	0.2913	0.2953	0.2992	0.3031	0.3071	0.3110
8	0.3150	0.3189	0.3228	0.3268	0.3307	0.3346	0.3386	0.3425	0.3465	0.3504
9	0.3543	0.3583	0.3622	0.3661	0.3701	0.3740	0.3780	0.3819	0.3858	0.3898
10	0.3937	0.3976	0.4016	0.4055	0.4094	0.4134	0.4173	0.4213	0.4252	0.4291

INCHES TO MILLIMETERS

inches (in.)	0	.01	.02	.03	.04	.05	.06	.07	.08	.09
	millimeters (mm)									
0	—	0.254	0.508	0.762	1.016	1.270	1.524	1.778	2.032	2.286
.1	2.540	2.794	3.048	3.302	3.556	3.810	4.064	4.318	4.572	4.826
.2	5.080	5.334	5.588	5.842	6.096	6.350	6.604	6.858	7.112	7.366
.3	7.620	7.874	8.128	8.382	8.636	8.890	9.144	9.398	9.652	9.906
.4	10.160	10.414	10.668	10.922	11.176	11.430	11.684	11.938	12.192	12.446
.5	12.700	12.954	13.208	13.462	13.716	13.970	14.224	14.478	14.732	14.986
.6	15.240	15.494	15.748	16.002	16.256	16.510	16.764	17.018	17.272	17.526
.7	17.780	18.034	18.288	18.542	18.796	19.050	19.304	19.558	19.812	20.066
.8	20.320	20.574	20.828	21.082	21.336	21.590	21.844	22.098	22.352	22.606
.9	22.860	23.114	23.368	23.622	23.876	24.130	24.384	24.638	24.892	25.146
1.0	25.400	25.654	25.908	26.162	26.416	26.670	26.924	27.178	27.432	27.686

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