1980

SUZUKI

OWNER'S MAINTENANCE MANUAL

PE250

FOREWORD

Welcome to the world of Suzuki motorcycles.

The confidence you have shown by the purchase of our products is very much appreciated. Each Suzuki motorcycle backs this confidence by a long record of manufacturing and engineering excellence. The same excellence that has produced a long history of world-championship racing successes at the famous Isle of Man as well as the motocross tracks of Europe.

Suzuki now presents the new PE250, a competition proved racing machine, capable of competing on any race course in the world.

This handbook is presented as a means whereby you can maintain your PE250 in top working condition at all times. Your riding skill and the maintenance steps outlined in this manual will assure you of top performance from your machine under any type of competition conditions.

We sincerely wish you and your Suzuki motorcycle a successful partnership for many years of happy riding.

WARNING

THIS VEHICLE IS DESIGNED AND MANUFACTURED FOR COMPETITION USE ONLY AND IS NOT SUBJECT TO FEDERAL MOTOR VEHICLE SAFETY STANDARDS AS IT IS NOT EQUIPPED OR APPROVED FOR OPERATION ON PUBLIC STREETS, ROADS, OR HIGHWAYS.
SOME STATE LAWS FURTHER PROHIBIT OPERATION OF THIS VEHICLE EXCEPT IN AN ORGANIZED COMPETITIVE EVENT UPON A CLOSED COURSE CONDUCTED UNDER THE AUSPICES OF A RECOGNIZED SANCTIONING BODY OR BY PERMIT OF THE LOCAL GOVERNMENTAL AUTHORITY HAVING JURISDICTION.
BEFORE OPERATION, FIRST DETERMINE THAT OPERATION IS LEGAL IN YOUR STATE.

CONTENTS

GENERAL INSTRUCTION

FUEL

The PE250 is of the two-stroke design, which requires a premixture of gasoline and oil. Premium gasoline should be used.

ENGINE OIL

Suzuki strongly recommends the use of SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT.
It this oil is not available use an equivalent high quality Two Cycle Racing Lubricant, at a 20 to one ratio only.

CAUTION: Do not allow two different brands to get mixed in the fuel-oil mixture.

MIXING RATIO

20 parts gasoline to 1 part oil is the correct gasoline to oil mixture ratio for your engine. For proper engine performance, it is essential that the above fuel/oil mixture should be maintained.

FUEL OIL MIXTURE RATIO OF 20 : 1

GASOLINE (qt)	OIL (oz)	GASOLINE (qt)	OIL (oz)	GASOLINE L	OIL ml	GASOLINE L	OIL ml
0.5	0.8	5.5	8.8	0.5	25	5.5	275
1.0	1.6	6.0	9.6	1.0	50	6.0	300
1.5	2.4	6.5	10.4	1.5	75	6.5	325
2.0	3.2	7.0	11.2	2.0	100	7.0	350
2.5	4.0	7.5	12.0	2.5	125	7.5	375
3.0	4.8	8.0	12.8	3.0	150	8.0	400
3.5	5.6	8.5	13.6	3.5	175	8.5	425
4.0	6.4	9.0	14.4	4.0	200	9.0	450
4.5	7.2	9.5	15.2	4.5	225	9.5	475
5.0	8.0	10.0	16.0	5.0	250	10.0	500

CAUTION:
A mixture containing too little oil with cause overheating of the engine. Too much oil will cause excessive carbon formation resulting in preignition, fouled spark plug and loss of engine power.

MIXING PROCEDURE

To mix gasoline and oil, always use a separate, clean container. Pour the full amount of oil required for the total mixture into the container, add approximately half the amount of gasoline to be mixed and shake thoroughly. Add the remainder of the gasoline and again thoroughly agitate the container.

TRANSMISSION OIL

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

FRONT FORK OIL

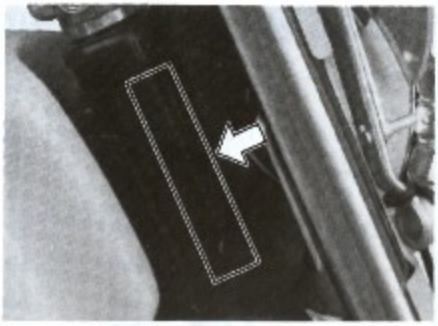
For the oil in the two legs, use a motor oil of SAE 5W/20.

USE OF GENUINE SUZUKI PARTS

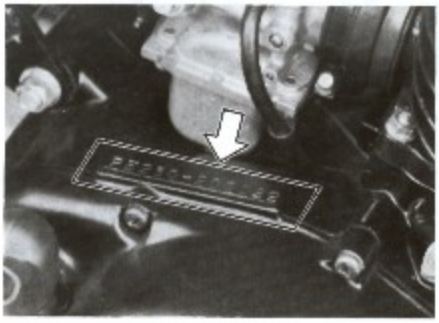
To replace any part of the machine, use a genuine Suzuki replacement part. Immitation parts or parts supplied from any other source than Suzuki, if used to replace parts of Suzuki origin in the machine, will lower the inherent capability of the machine and, for worse, could induce costly mechanical trouble.

SERIAL NUMBER LOCATION

Frame serial number is stamped on steering head pipe. Engine serial number is located on the right crankcase.
When registering your machine and marking orders for spare parts, cite these two numbers.



Frame number



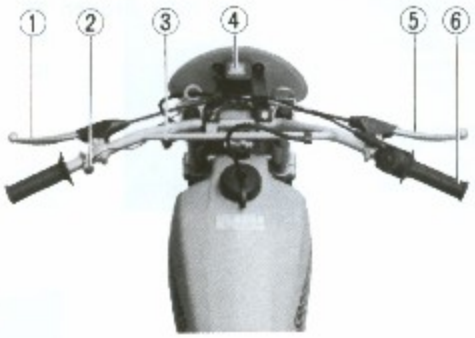
Engine number

OPERATING INSTRUCTION

Take the time to familiarize yourself with the operating principles of the following motorcycle components.

LOCATION OF PARTS

① Clutch lever
② Engine stop switch
③ Dimmer switch
④ Trip meter
⑤ Front brake lever
⑥ Throttle grip
⑦ Fuelcock
⑧ Gearshift lever
⑨ Side stand
⑩ Kick starter lever
⑪ Rear brake pedal
⑫ Tool

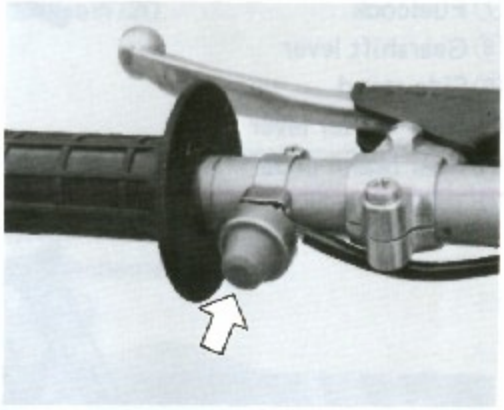


BREAKING-IN

The PE250 is manufactured using the latest technology relating to the two-stroke engine and thus requires a relatively short break-in. No programed breaking-in operation is necessary: the only thing is that the machine should not be continuously operated in full-load condition for the first one hour or 30 km (20 miles). This practice will help all moving parts to break in and will assist in acquainting you with machine. Once the machine is fully broken in, you can be assured of high performance in competition.

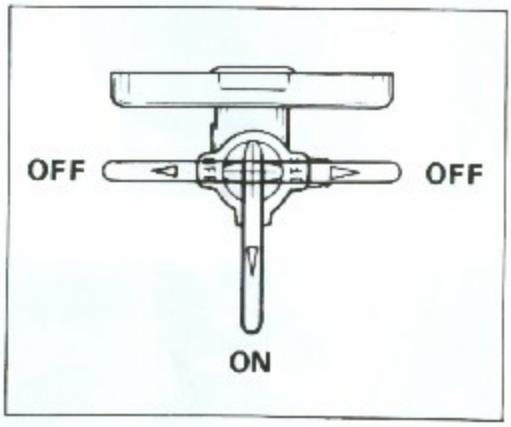
ENGINE STOP SWITCH

To stop the engine, push the engine stop switch as shown in photo.



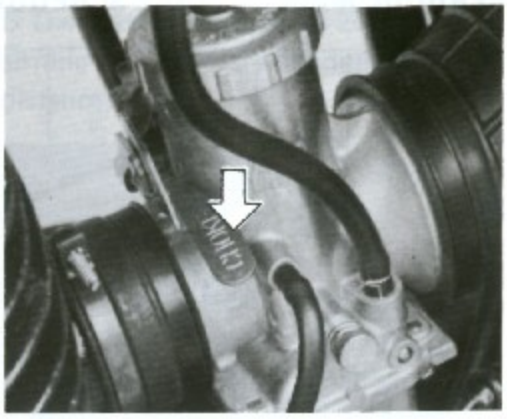
FUEL COCK LEVER

The fuel cock lever has two positions, ON and OFF.



CARBURETOR CHOKE LEVER

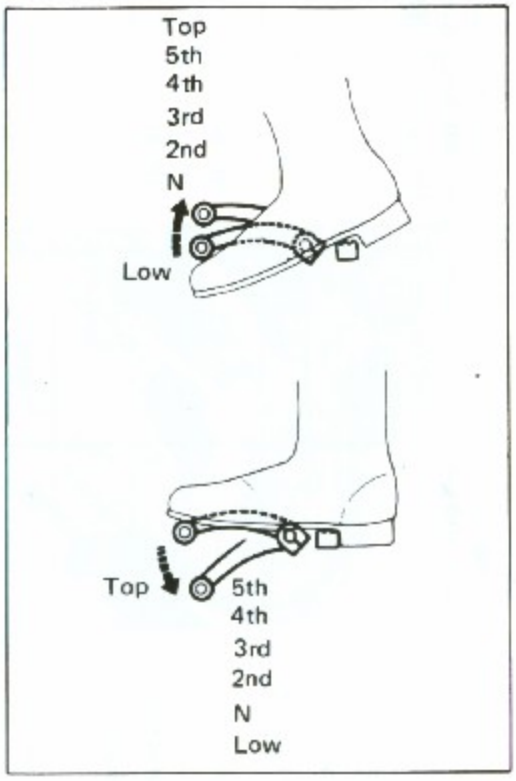
When the engine is cold:
Push down the choke lever. Depress the kick starter lever without opening the throttle.
Even opening the throttle slightly may make the engine hard to start. Always return the choke lever to the original position when the engine warms up.



When the engine is warm:
Using the choke lever is not necessary. To start a warm engine, open the throttle 1/8 to 1/4 and kick-start the engine.

GEARSHIFT LEVER

The PE250 is equipped with a 6-speed transmission which operates as shown in figure.
Neutral is located between low and 2nd. Low gear is located by fully depressing the lever from the neutral position. Shifting into succeedingly higher gears is accomplished by pulling up on the shift lever once for each gear. When shifting from low to 2nd, neutral is wanted for stopping, depress or raise the lever a half of a stroke between low and 2nd.



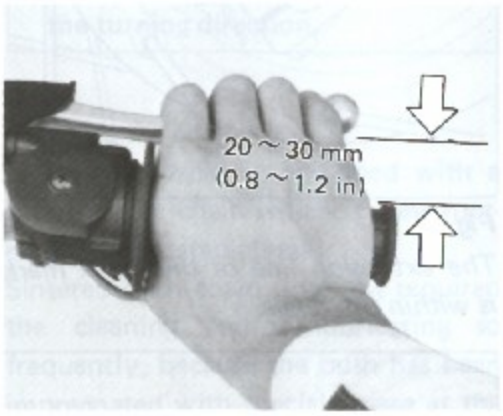
INSPECTION AND MAINTENANCE

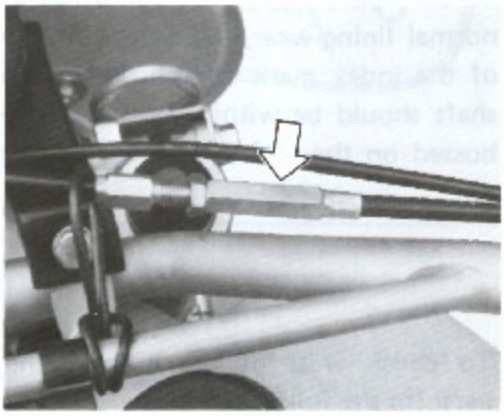
PERIODIC MAINTENANCE SCHEDULE

Interval / Service Item	Each race Every 100 km (60 miles)	Every 2 races Every 200 km (120 miles)	Every 3 races Every 300 km (180 miles)	Every 5 races Every 500 km (300 miles)	Remarks
Piston ring	–	Replace	–	–	
Transmission oil	–	–	Change	–	Change at initial 100 km
Engine sprocket	–	–	–	Replace	
Drive chain	–	–	Replace	–	Adjust slack every 40 km Clean and/or Lubricate if necessary
Rear sprocket	–	–	Replace	–	
Drive chain buffer	–	–	–	Replace	
Drive chain guide roller	–	–	Replace	–	
Spoke nipple	Retighten	–	–	–	Within 0 – 50 km retighten every 10 km. After 50 km retighten every 50 km.
Air cleaner	Clean	–	–	–	
Kick starter lever	Apply grease	–	–	–	
Throttle, brake & clutch cable	Lubricate & Adjust	–	–	Replace	
Bolts and nuts	Retighten	–	–	–	Retighten initial 20 km
Spark plug	Check & clean	–	–	–	
Piston	–	–	–	Replace	
Front fork oil	–	–	Change	–	Change at initial 100 km
Engine mounting bolt	Retighten	–	–	–	Retighten initial 5 km

FRONT BRAKE

Measure the amount of the front brake lever distance between the brake lever end and throttle grip when the brake is operated. The distance should be 20 ~ 30 mm (0.8 ~ 1.2 in). If adjustment is necessary, turning the front brake adjuster in the counter clockwise direction will increase the distance.



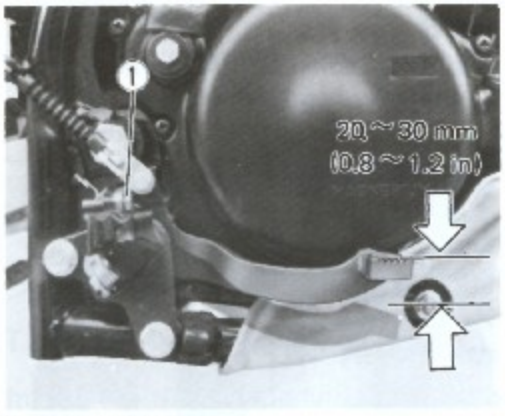


Adjuster

REAR BRAKE

Before adjusting the brake pedal travel, adjust the brake pedal position with the brake pedal adjuster until the most suitable position is obtained for quick operation.

After adjustment of the brake pedal position completed, adjust the brake pedal travel ② with the brake adjuster to 20 ~ 30 mm (0.8 ~ 1.2 in).



① Pedal adjuster

② Adjuster

BRAKE LINING WEAR LIMIT INDICATOR

This motorcycle is equipped with brake lining wear limit indicators on both front and rear brakes. As shown in the *figure A,* 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.

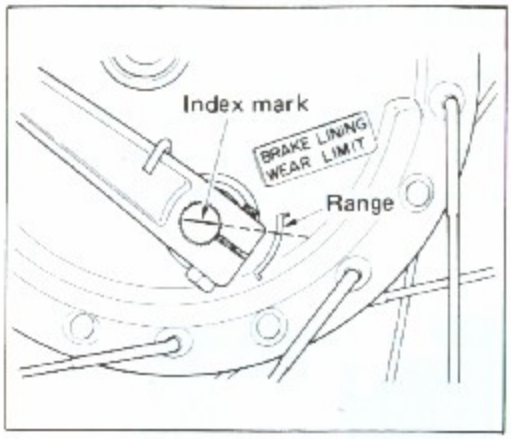


Fig. A
The extension line of the index mark is within the range.

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

1. First check if the brake system is properly adjusted.
2. While operating the brake, check to see that the extension line of the index mark is within the range on the brake panel.
3. If the index mark is beyond the range as shown in the *figure B,* have the brake shoe assembly replaced by your Suzuki dealer to insure safe operation.

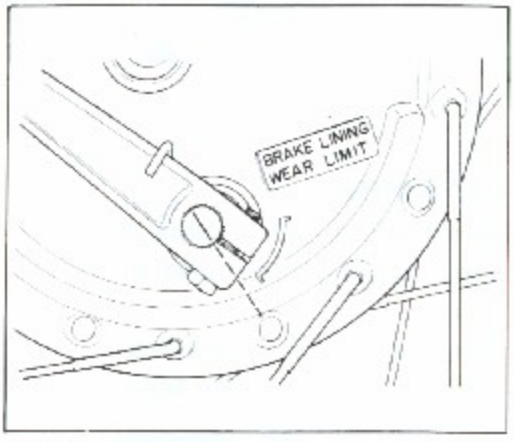
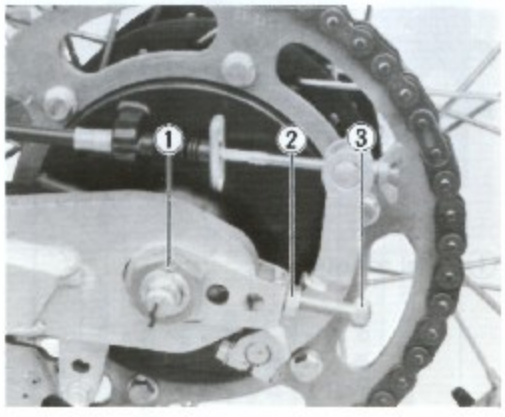


Fig. B
The extension line of the index mark is out of the range.

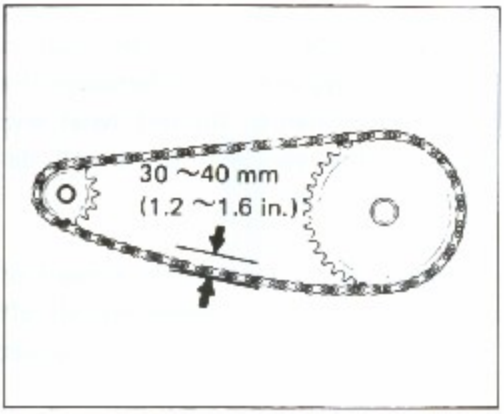
DRIVE CHAIN

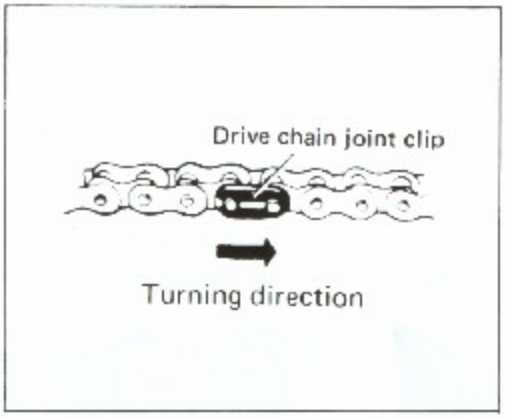
Adjustment

Adjust the drive chain at the rear axle by loosening right and left nuts ① . Then loosen lock nuts ② and adjust the chain tension by turning bolts ③ in or out. Be sure the marks stamped on the adjuster yoke aligns with the same mark on the swinging arm on both sides of the motorcycle. Proper chain tension is obtained when there is **30 ~ 40 mm (1.2 ~ 1.6 in.)** up and down slack in the chain with using the side stand, at a point midway between the sprockets.



CAUTION:
When refitting the drive chain, be sure the drive chain joint clip is attached in the way that the slit end will face opposite to the turning direction.





Cleaning the chain

This motorcycle is equipped with a special drive chain which is constructed of the sintered metal.

Sintered bush chain does not required the cleaning and/or lubricating so frequently, because the bush has been impregnated with special grease at the factory.

To keep the well lubrication, wipe and brush the chain if necessary. If the chain tends to rust or becomes severely dirty, clean it with kerocene. After thoroughly washing the chain and allowing it to dry, oil the links with a heavy weight gear oil SAE 90.

CAUTION:
Do not use gasoline, trichlene or other commercial sold cleaning solvents.

TIRE PRESSURE

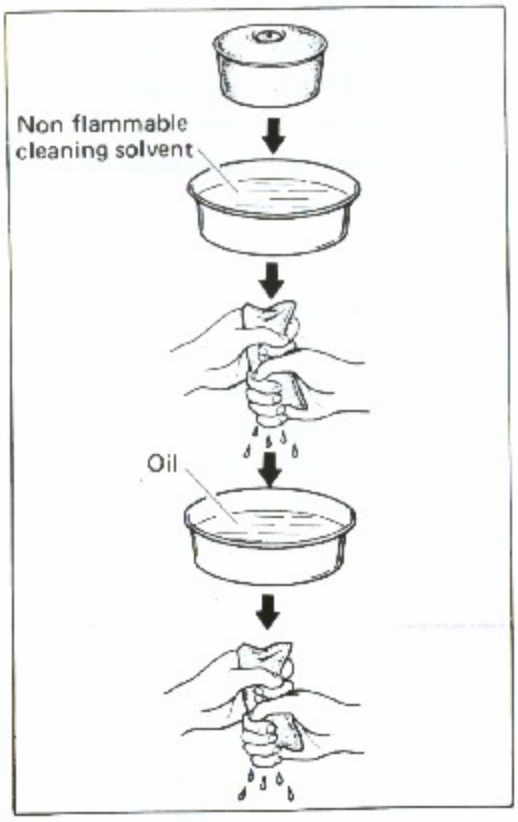
Inflate the tires properly, depending on the weight of the rider. Too high an inflating pressure makes the machine bounce up and down; too low a pressure makes steering hard. In either case, tire life will be shortened.

Cold inflation tire pressure		Standard tire size
Front	1.0 kg/cm^2 (14 psi)	3.00-21-4PR, Full Knobby
Rear	1.0 kg/cm^2 (14 psi)	5.10-18-4PR, Full Knobby

AIR CLEANER

1. Squeeze the solvent off the washed element by pressing it between the palms of hands: do not twist and wring the element, or it will develop fissures.

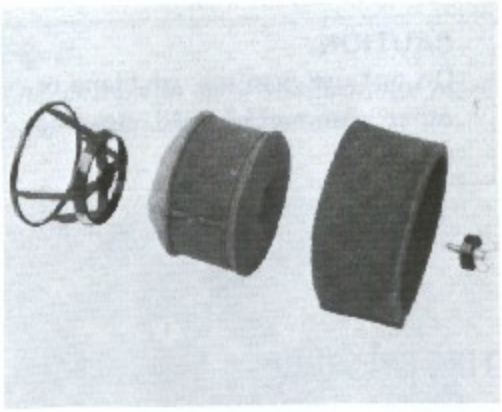
2. Immerse the element in a pool of motor oil, and squeeze the oil off the element to make it slightly wet with motor oil.



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.

Installation

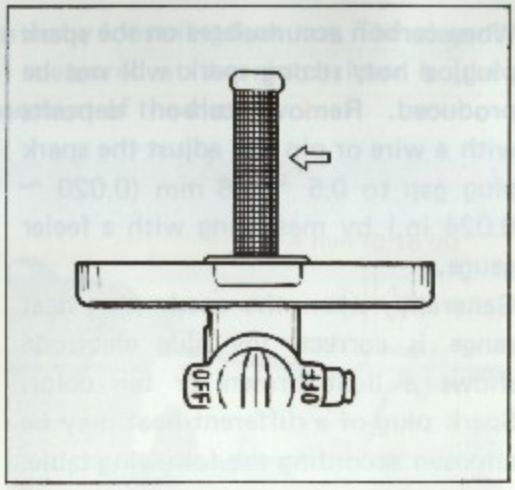
Refer to the figure shown right.
After putting on the frame secure it by bolt.



FUEL FILTER

The fuel filter is incorporated in the fuel cock which is mounted on the bottom of the fuel tank at the left side. Accumulation of dirt in the filter will restrict the flow of the fuel and cause the carburetor to malfunction, therefore, the fuel filter should be serviced periodically.

1. Drain the fuel from the fuel tank.
2. Remove the fuel cock by unscrewing the fitting screws.
3. Wash the screen filter in cleaning solvent.

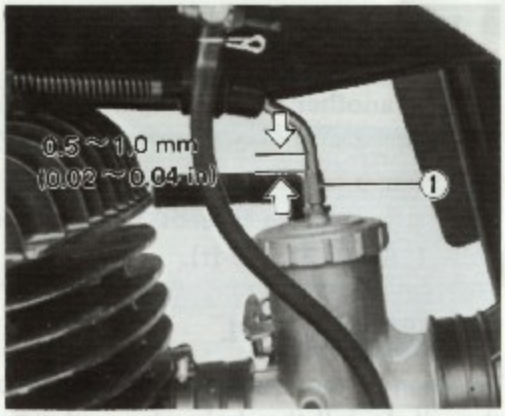


Filter

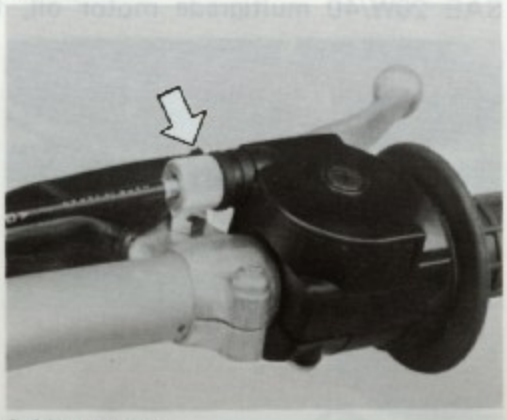
CARBURETOR

For correct safe throttle operation the throttle cable should be adjusted to have 0.5 – 1.0 mm (0.02 – 0.04 in.) play at the carburetor. This adjustment can be made at the cable adjuster on the carburetor cap.

CAUTION:
Throttle cable stopper is not for adjusting the throttle cable play. Always tighten the stopper certainly not to release the cable from the throttle grip or prevent the cable from smooth throttle grip movement.



① Adjuster

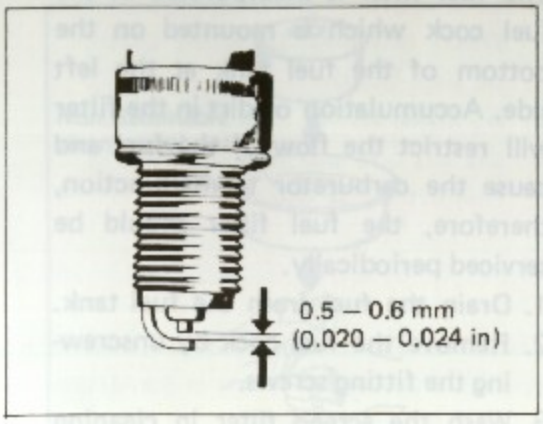


Cable stopper

SPARK PLUG

When carbon accumulates on the spark plug, a hot, strong spark will not be produced. Remove carbon deposits with a wire or pin and adjust the spark plug gap to 0.5 ~ 0.6 mm (0.020 ~ 0.024 in.) by measuring with a feeler gauge.

Generally, when the spark plug heat range is correct, the plug electrode shows a light brown or tan color. Spark plug of a different heat may be choosen according the following table.



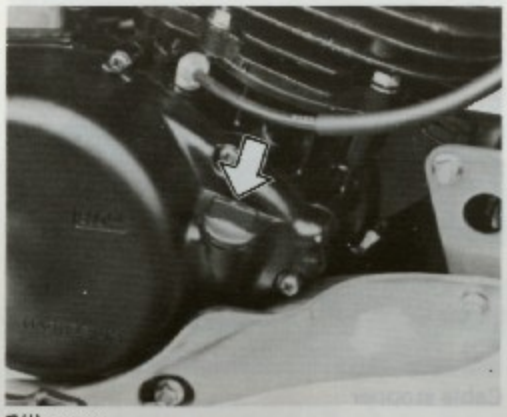
	HOT TYPE	STANDARD TYPE
NGK	B9EGV	B10EGV
CHAMPION	N-2G	N-59G

CAUTION:

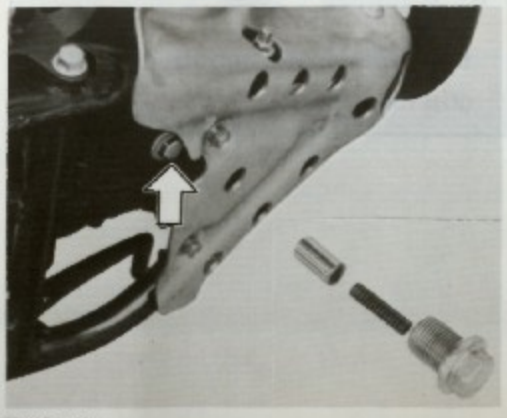
1. **The heat range selection may be made only under the condition that the carburetion is set properly.**
2. **If another brand of spark plug is to be used other than NGK or CHAMPION, consult your authorized SUZUKI dealer.**
3. **When installing the spark plug, screw in with your fingers to prevent stripping the threads, then tighten with a torque wrench to 2.5 ~ 3.0 kg-m (18.0 ~ 22.0 lb-ft).**

TRANSMISSION OIL

To change the transmission oil, remove the filler cap and drain plug and drain the oil. Install the drain plug and measure 800 ml (1.69 US pt) of a good quality SAE 20W/40 multigrade motor oil, then pour it into the transmission slowly.



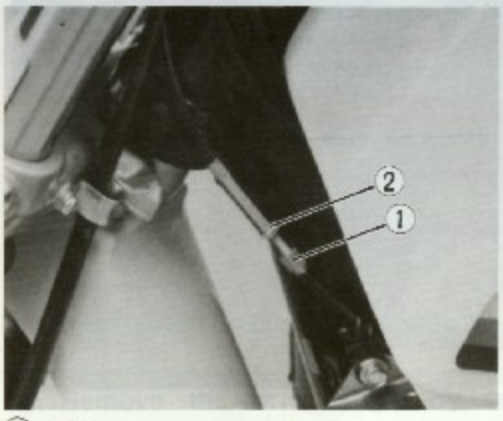
Filler cap



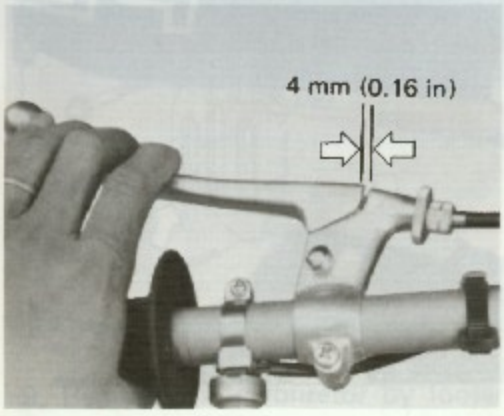
Drain plug

CLUTCH

Adjust the clutch with the clutch cable adjuster by loosening lock nut. The play of the clutch cable should be 4 mm (0.16 in) measured at the clutch lever holder before pressure can be felt indicating disengagement of the clutch.

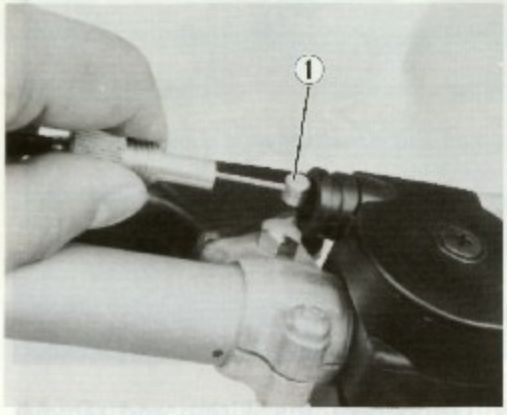


① Adjuster
② Lock nut



ATTACHING THE THROTTLE CABLE

When attaching the throttle cable, turn the throttle grip forward, and put the cable end ① into the throttle cable holder as photo. Turn the throttle grip a little bit to hook the cable end and make sure to check the throttle cable move smoothly with the throttle grip movement. Turn fully the throttle grip and tighten the stopper.

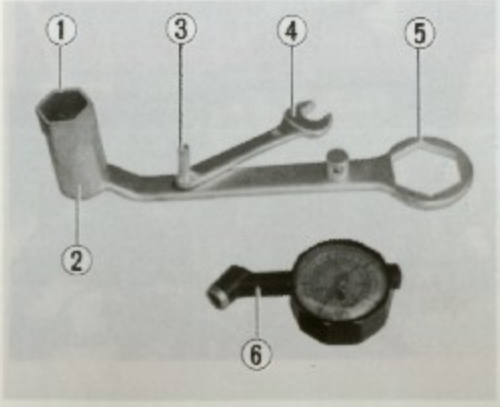


TOOL

A unique multi-purpose wrench is provided for PE250 to be able to service the following items.

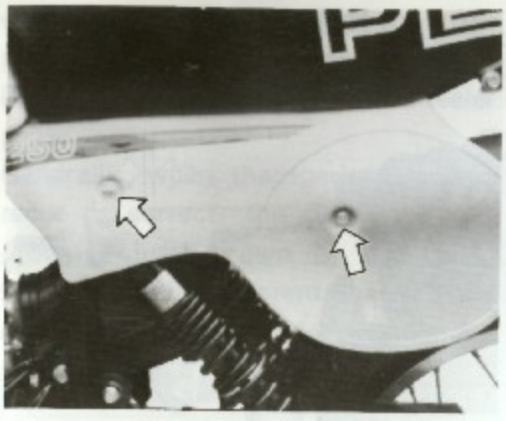
① Loosen and tighten spark plug
② Loosen and tighten front axle nut
③ Draw out the rear axle
④ Loosen and tighten 10 mm bolt
⑤ Loosen and tighten rear axle nut
⑥ Check the front fork air pressure

This wrench is equipped on the right upper bracket.

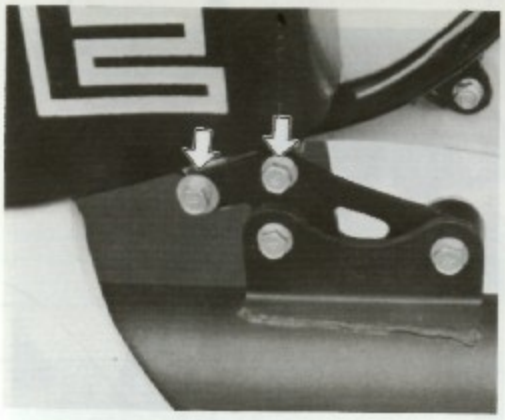


ENGINE REMOVAL

1. Remove the left frame cover.

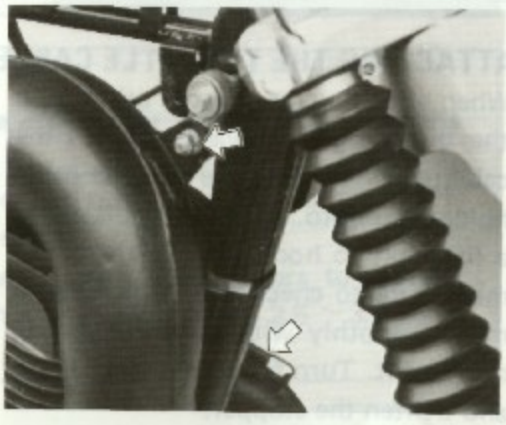


2. Remove the 2nd muffler and the seat.

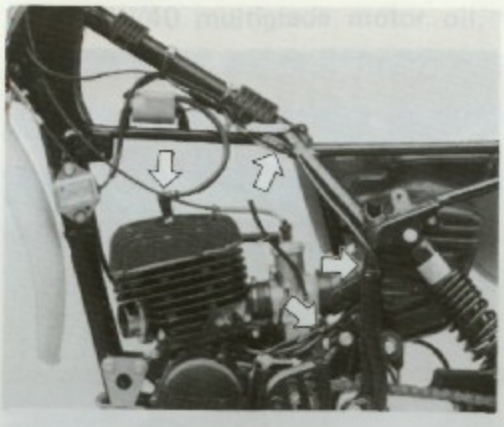


3. Remove the fuel tank.

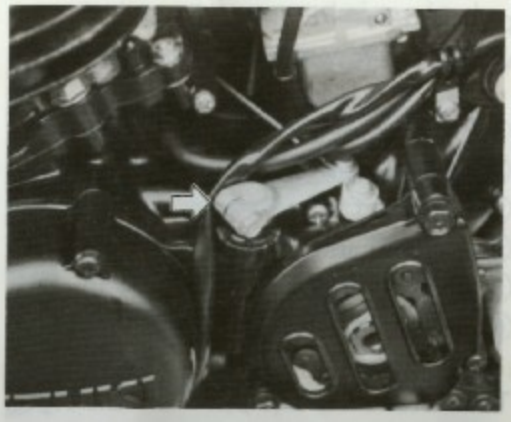
4. Remove the muffler.



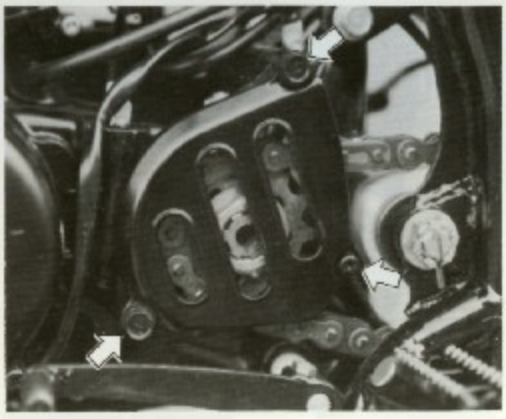
5. Disconnect the wiring and remove the clamps.



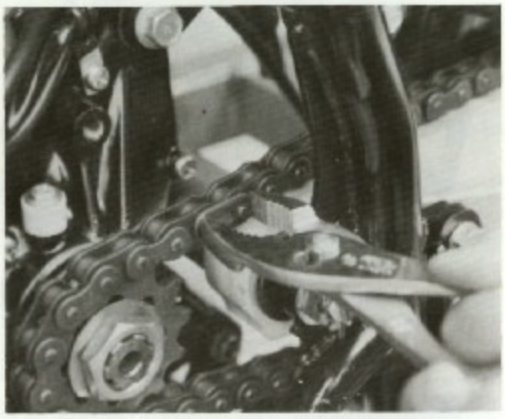
6. Disconnect the clutch cable.



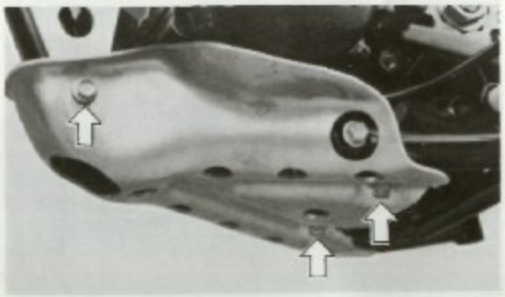
7. Remove the engine sprocket cover and the chain guide plate.



8. Remove the drive chain by removing the chain joint clip.

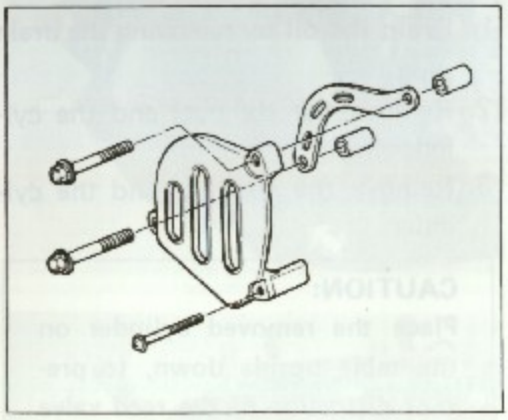


10. Remove the engine protector.

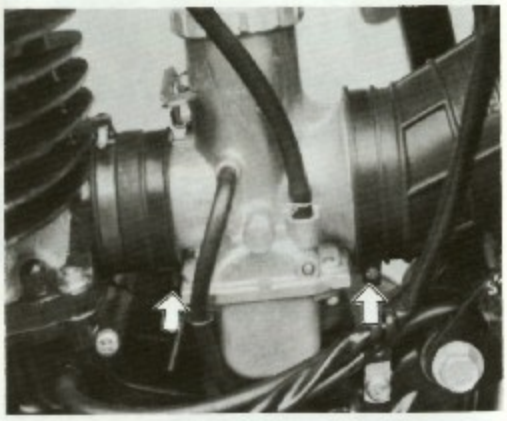


CAUTION:
Self-locknuts are used for the engine mounting. Do not reuse these nuts.

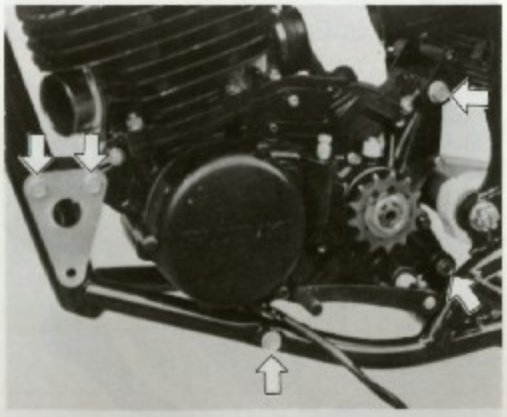
NOTE: Location of the engine sprocket related parts.



9. Remove the carburetor by loosening two clamps.



11. Remove the five engine mounting bolts.

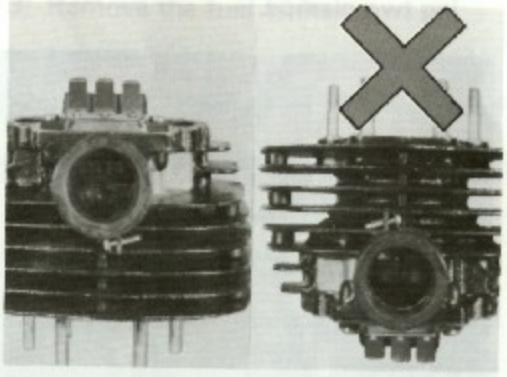


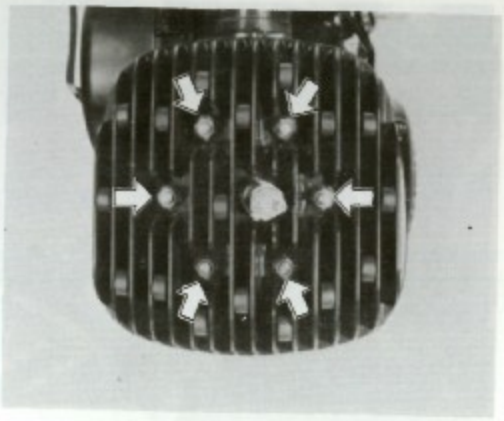
DISASSEMBLY

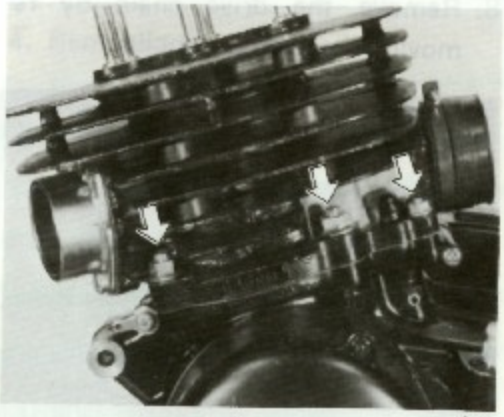
DISASSEMBLY

1. Drain the oil by removing the drain plug.
2. Remove the six nuts and the cylinder head.
3. Remove the six nuts and the cylinder.

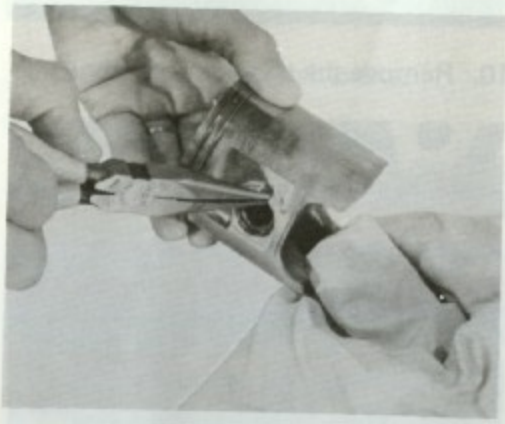
CAUTION:
Place the removed cylinder on the table upside down, to prevent distortion of the reed valve stopper.







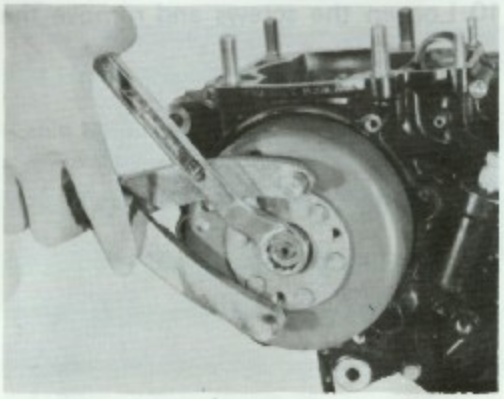
4. Put a clean cloth over the bore of crankcase. Then remove the piston pin circlip, piston pin, bearing and piston.



5. Remove the three screws and the magneto cover.

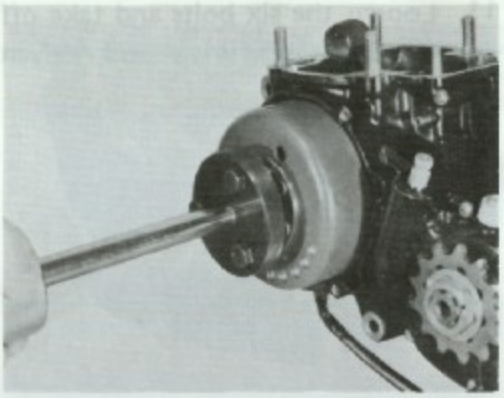
6. Remove the nut by using special tool.

09930-40113	Flywheel holder

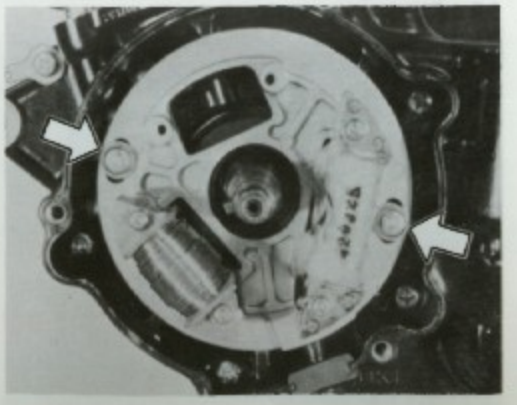


7. Draw out the rotor by using special tool.

09930-30102	Rotor remover (shaft)
09930-30190	Attachment F.

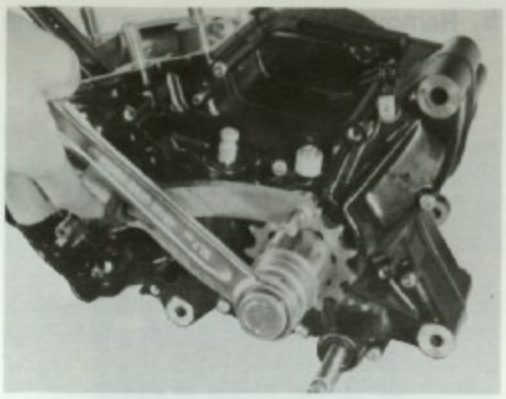


8. Loosen two screws and take off the stator.



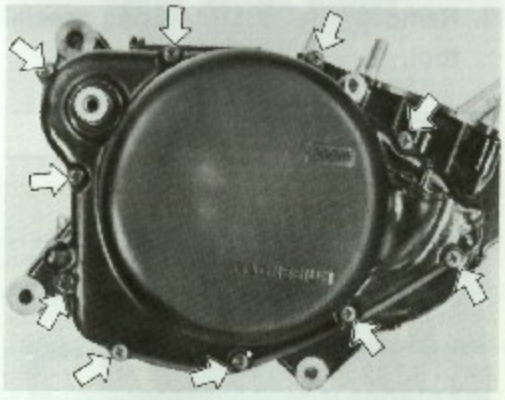
9. Flatten the engine sprocket washer and loosen the nut by using special tool and draw out the engine sprocket.

09930-40113	Flywheel holder

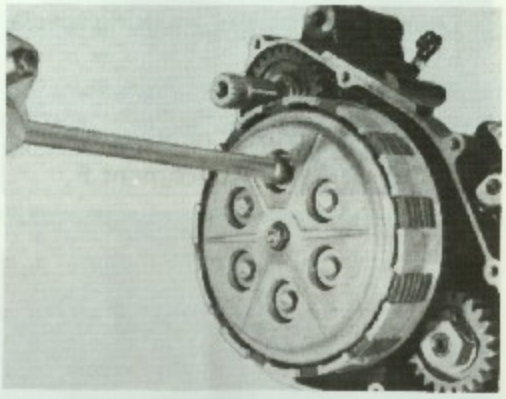


10. Loosen the screws and remove the clutch cover.

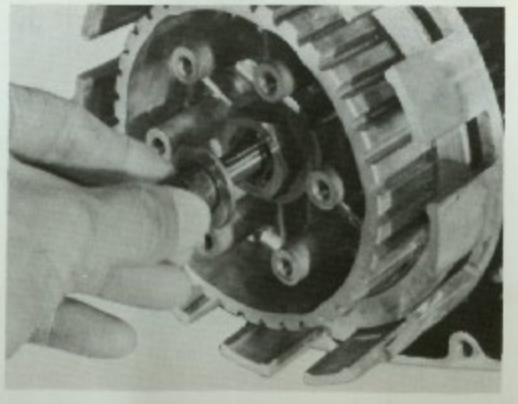
NOTE: Do not miss the two dowel pins.



11. Loosen the six bolts and take off the pressure, drive and driven plates.

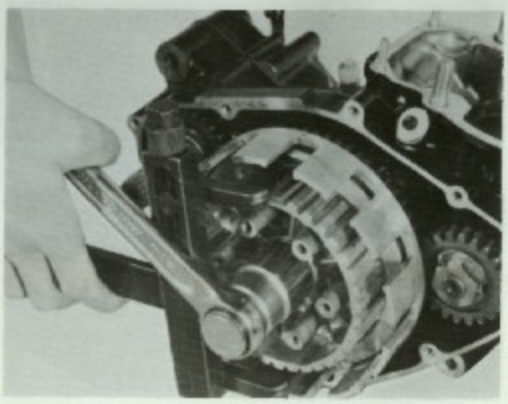


12. Draw out push piece.

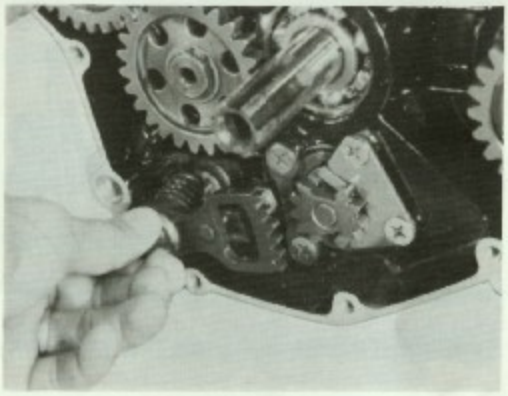


13. Flatten the clutch sleeve hub washer and loosen the hub nut by using the clutch sleeve hub holder. Then draw out the clutch sleeve hub.

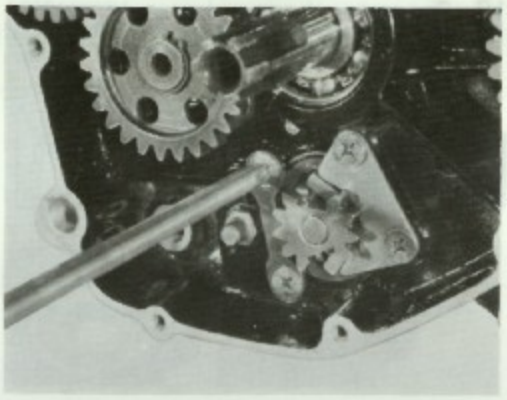
09920-53710	Clutch sleeve hub holder



14. Draw out the gear shifting shaft.

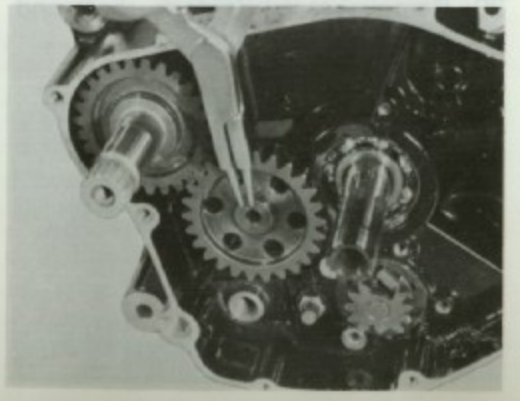


15. Remove the gearshift cam guide.



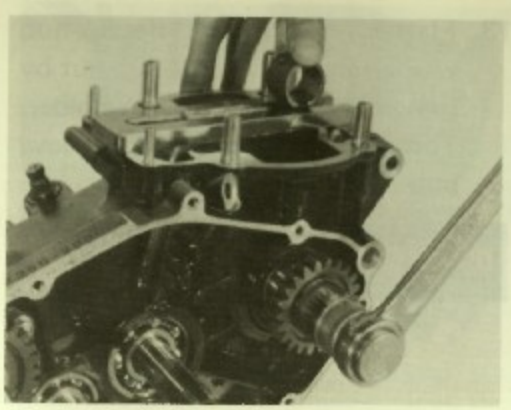
16. Remove the circlip by using special tool and draw out the kick idle gear.

09900-06104	Snap ring pliers

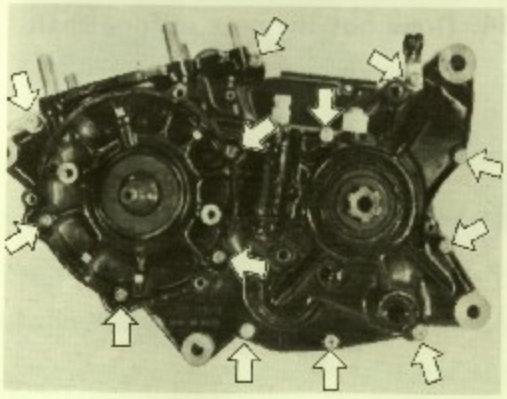


17. Flatten the primary drive gear washer and loosen the nut by turning clockwise. Take off the primary drive gear and its key.

09910-20115	Con-rod stopper

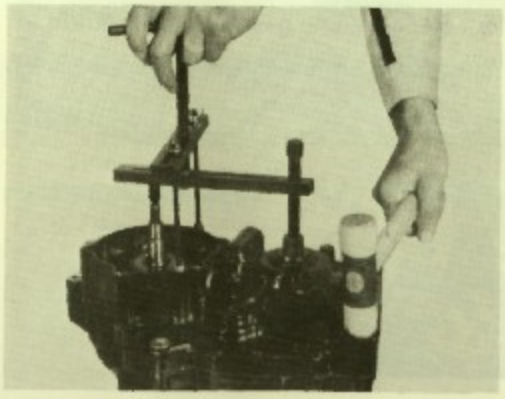


18. Loosen the crankcase fitting screws.

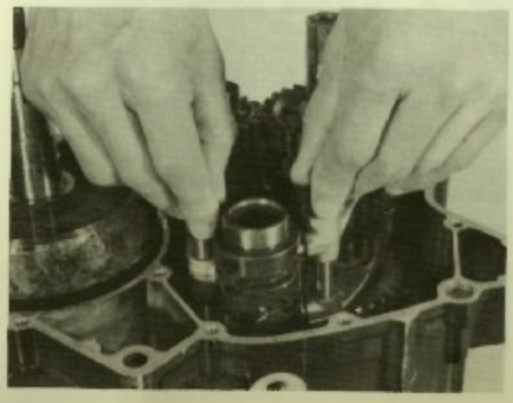


19. Separate the crankcase by using special tool and the plastic hammer.

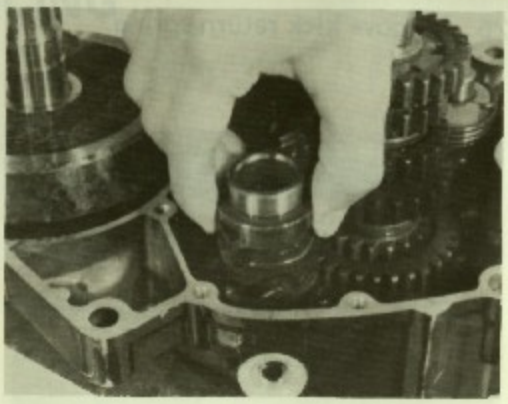
09910-80115	Crankcase separating tool



20. Remove gearshift fork shaft and fork.

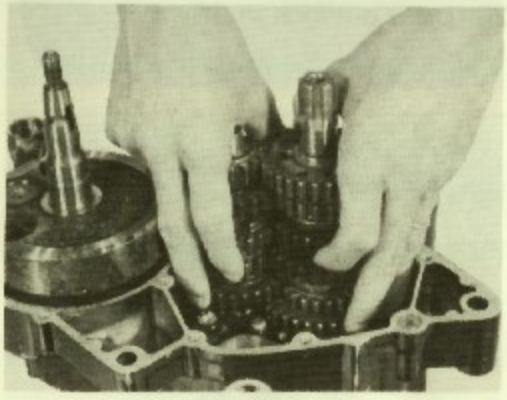


21. Draw out gearshift cam.



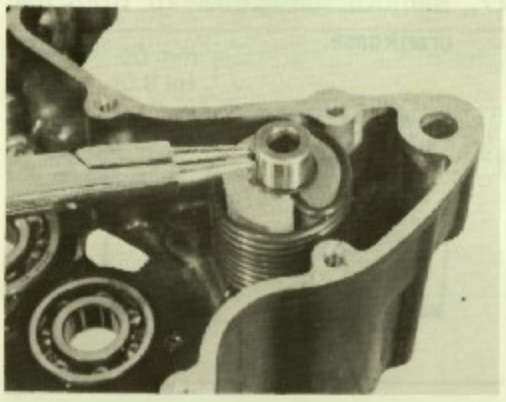
22. Remove gears.

NOTE: Take out the gears altogether.

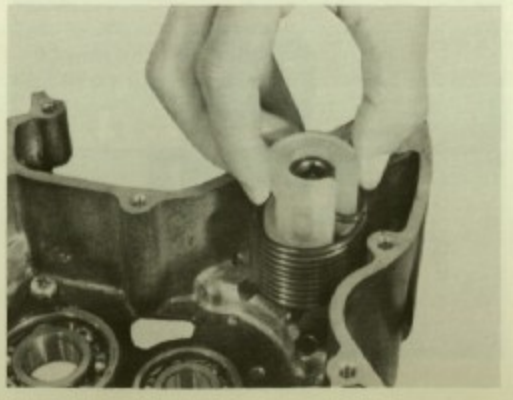


23. Remove the circlip on kick starter shaft.

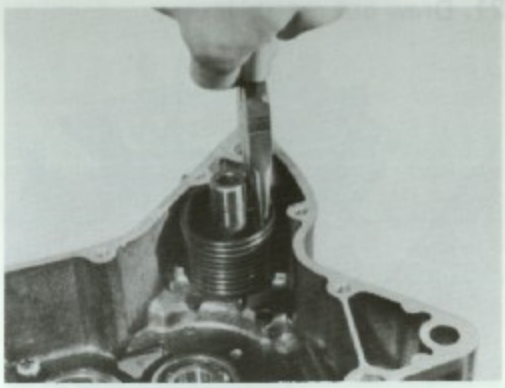
09900-06104	Snap ring pliers



24. Remove kick shaft spring guide.



25. Remove kick return spring.



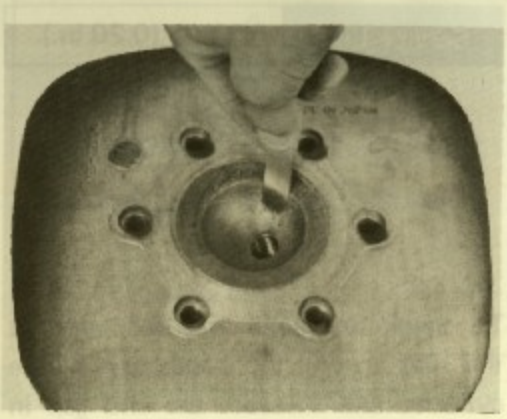
26. Draw out kick shaft.

27. Remove the crankshaft from the crankcase.

INSPECTION AND SERVICING

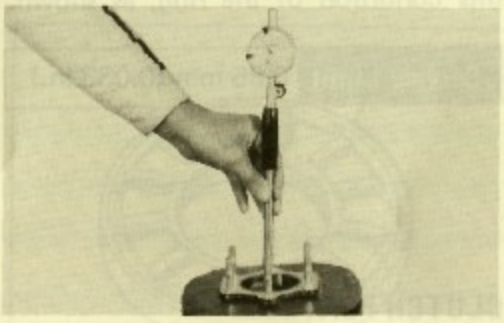
CYLINDER HEAD

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

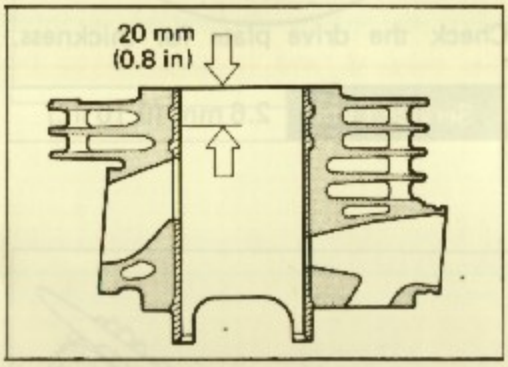


CYLINDER

Decarbon the exhaust ports and the upper part of the cylinder. Check the cylinder bore for wear by using a cylinder gauge at 20 mm (0.8 in) from the top.



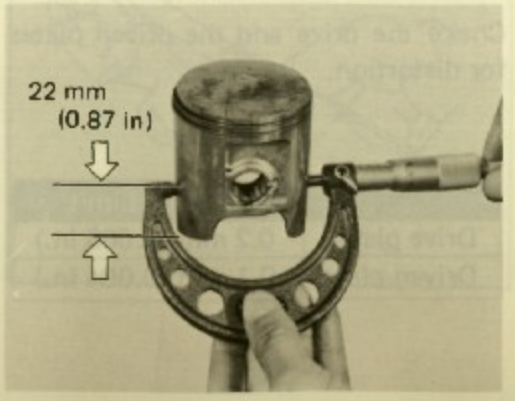
Service Limit	67.070 mm (2.6406 in.)



CAUTION:
After reboring, be sure to lightly chamfer the ports edges with a scraper and smoothen the chamfers with sand paper.

PISTON

Decarbon the piston crawn and the ring grooves. Minor scuff on the sliding surface can be removed by grinding with sand paper #400. Measure the piston diameter.

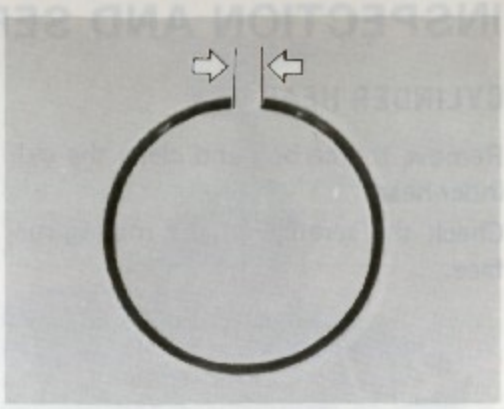


Service Limit	66.880 mm (2.6331 in.)

PISTON RING

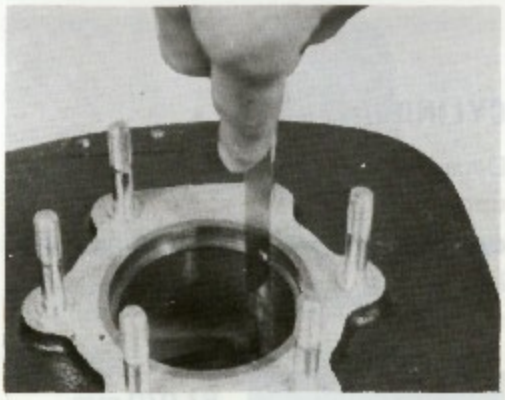
Check each ring for free end gap.

Service Limit	5.2 mm (0.20 in.)



To check the piston ring for wear, fit the ring around the upper part of the cylinder and measure the end gap in this condition of the ring, as shown.

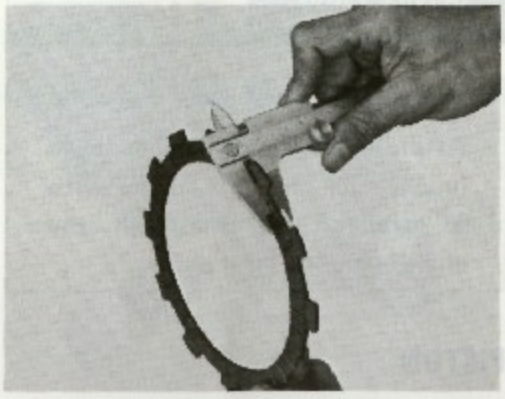
Service Limit	0.85 mm (0.033 in.)



CLUTCH PLATE

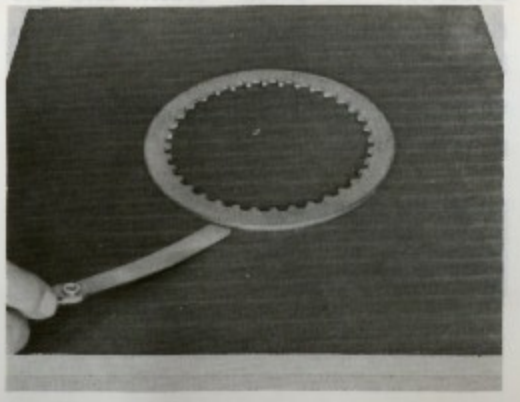
Check the drive plate for thickness.

Service Limit	2.6 mm (0.10 in.)



Cheke the drive and the driven plates for distortion.

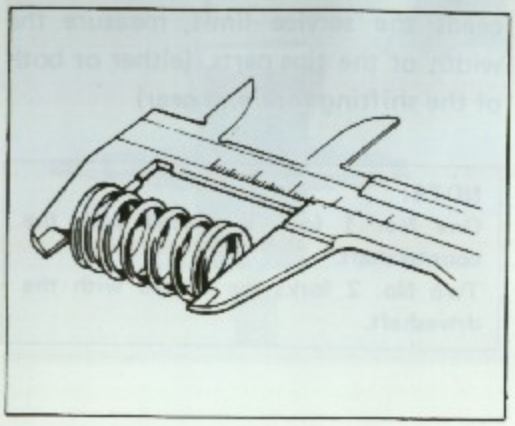
	Service Limit
Drive plate	0.2 mm (0.008 in.)
Driven plate	0.1 mm (0.004 in.)



CLUTCH SPRING

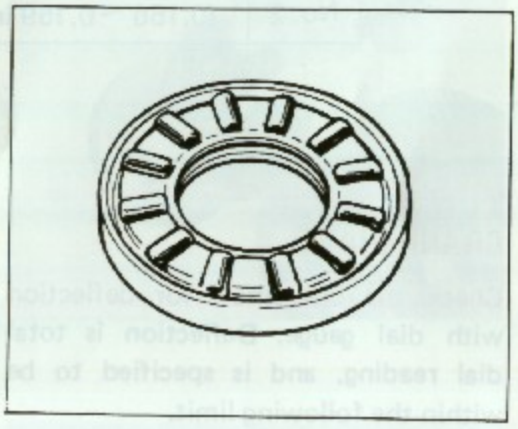
Measure the clutch spring free length. If one of them is shorter than service limit, replace all the springs at a time.

Service Limit	38.5 mm (1.52 in.)



CLUTCH RELEASE BEARING

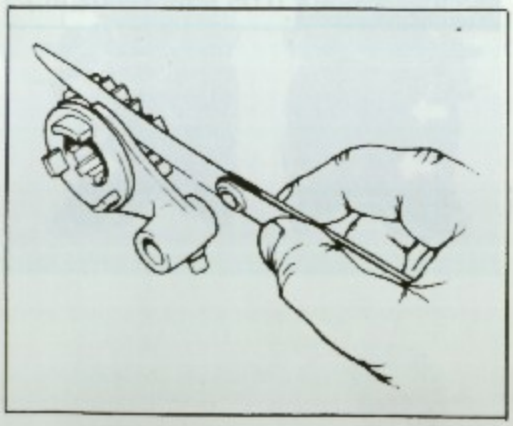
Inspect the thrust-type bearing for any abnormality especially cracks.



SHIFTING FORK-GROOVE CLEARANCE

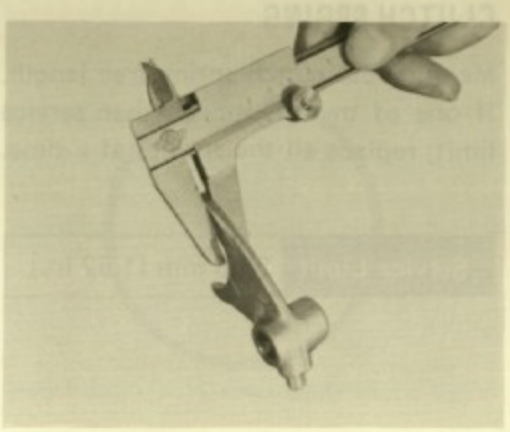
Check the shifting fork clearance in the groove of its gear.

	No. 1, No. 2
Service Limit	0.6 mm (0.024 in.)



When the shifting fork clearance exceeds the service limit, measure the width of the tips parts. (either or both of the shifting fork and gear)

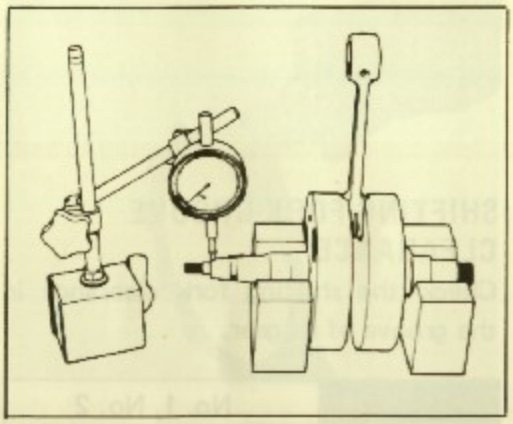
NOTE:
One No. 1 fork is related with the countershaft.
Two No. 2 forks are related with the driveshaft.



	Shifting fork	Gear groove
No. 1 No. 2	3.95 ~ 4.05 mm (0.156 ~ 0.159 in.)	4.25 ~ 4.35 mm (0.167 ~ 0.171 in.)

CRANKSHAFT

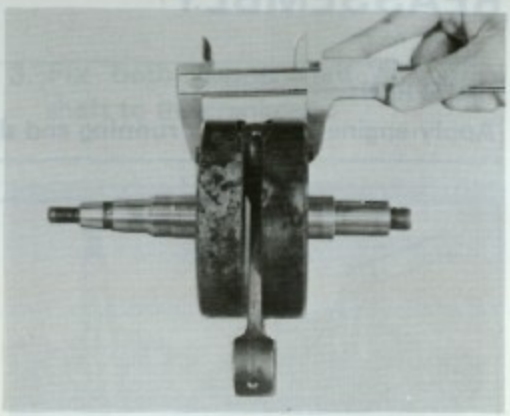
Check the crankshaft for deflection with dial gauge. Deflection is total dial reading, and is specified to be within the following limit.



Service Limit	0.05 mm (0.002 in.)

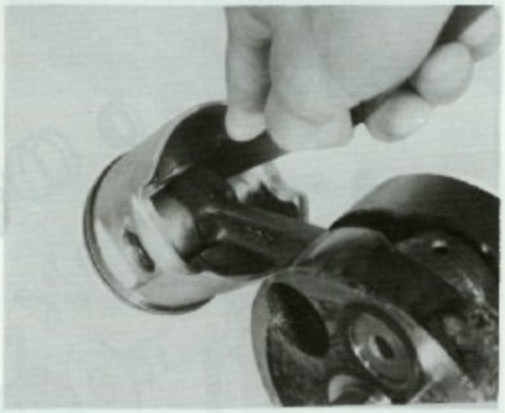
When rebuilding the crankshaft, measure the flywheel width with caliper and check its deflection.

STD width	62.0 ± 0.1 mm (2.441 ± 0.004 in.)

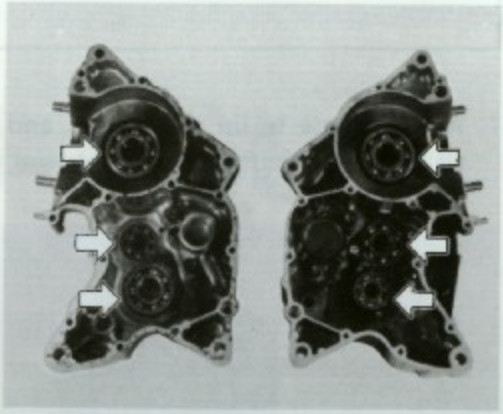


Check the thrust clearance between the piston boss and the connecting rod.

Service Limit	1.0 mm (0.04 in.)

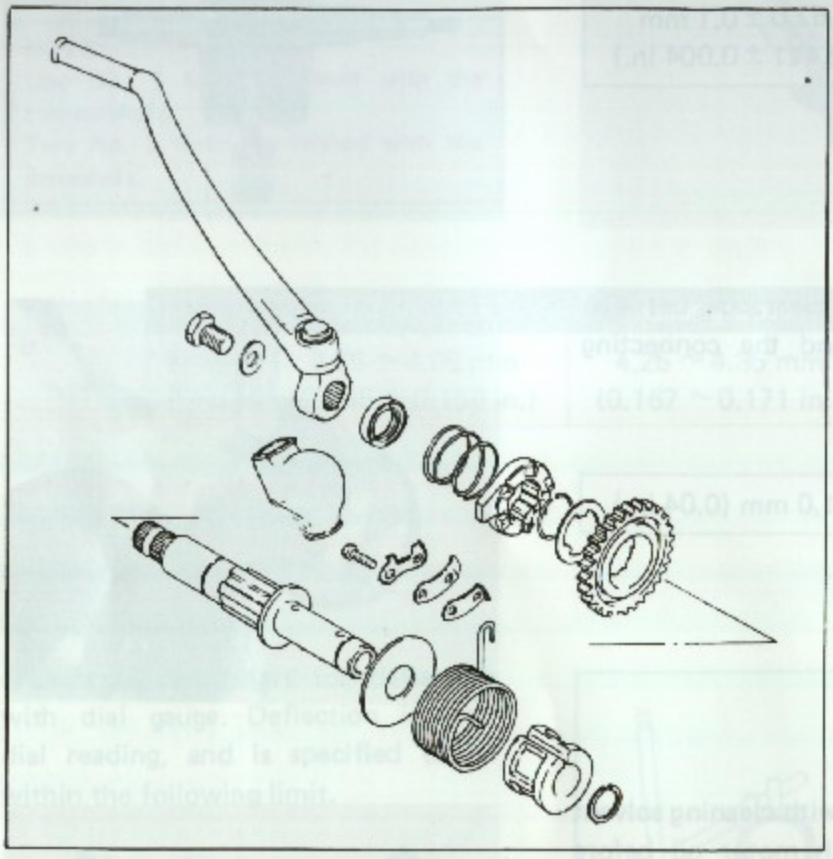


Wash the bearing with cleaning solvent and lubricate with motor oil before inspecting. Turn the inner race and check to see that it turns smoothly. If noise is heard, replace it.



REASSEMBLY

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

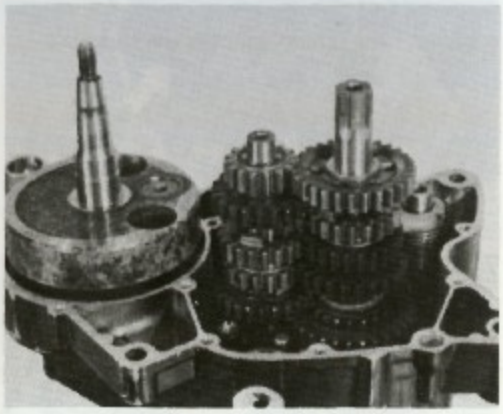


1. Apply grease to lip of oil seals, and fit the crankshaft on the crankcase.

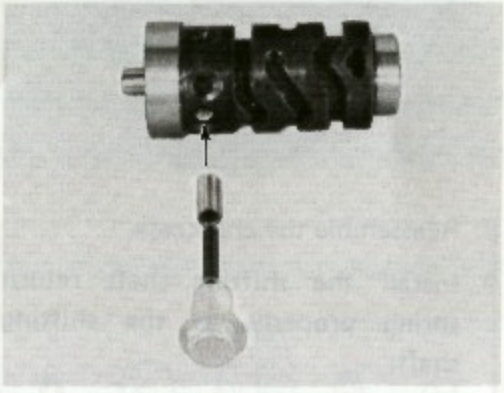
2. Fix the kick starter so that the marking on the kick starter matches the marking on the kick starter shaft.

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

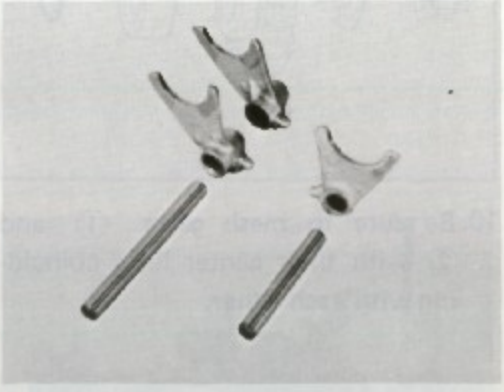
3. Fix both countershaft and drive shaft to the crankcase.



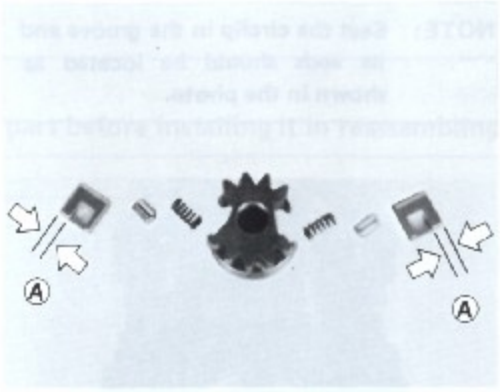
4. Install the gear shifting cam to the crankcase and align the neutral position on the cam with the cam stopper.



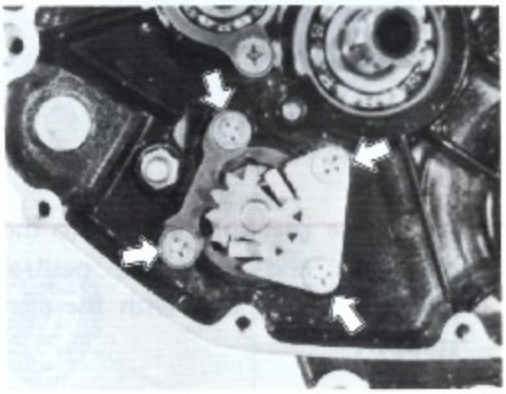
5. Three gearshifting forks of different shape are used. Install them to the proper position.



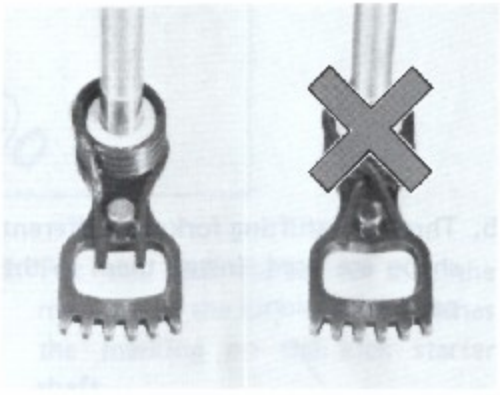
6. Install the 2-cam driven gear pawls properly. Ⓐ should be position outside.



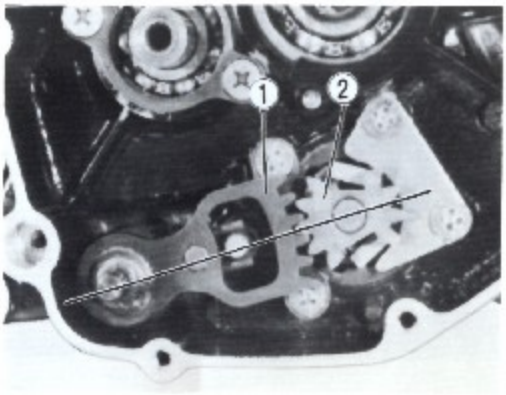
7. Apply Thread Lock Cement to screws when tightening the cam guide and pawl lifter.



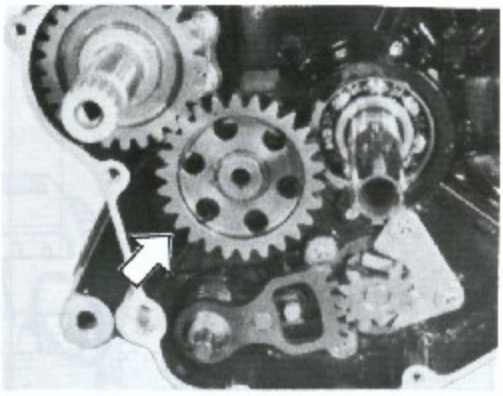
8. Reassemble the crankcase.
9. Install the shifting shaft return spring properly to the shifting shaft.



10. Be sure to mesh gears ① and ② with their center lines coinciding with each other.

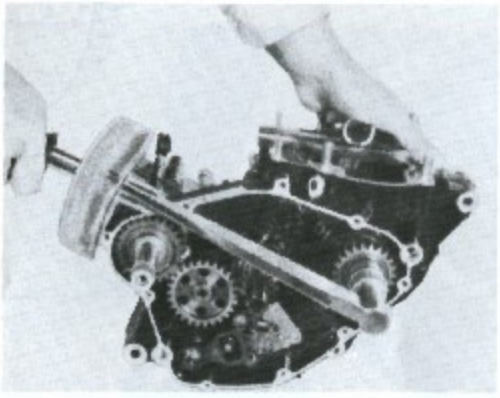


11. Install the kick idle gear.

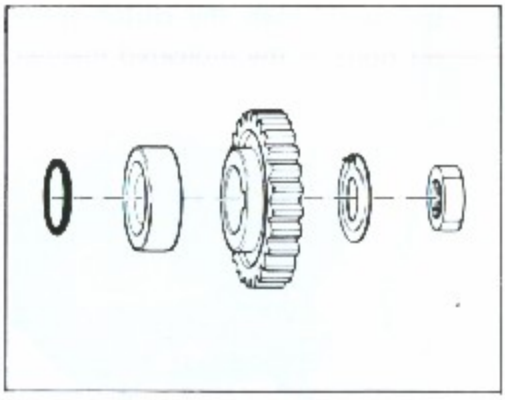


12. Tighten the primary drive gear and bend the washer.

Tightening Torque	4.0 ~ 6.0 kg-m (29.0 ~ 43.0 lb-ft)

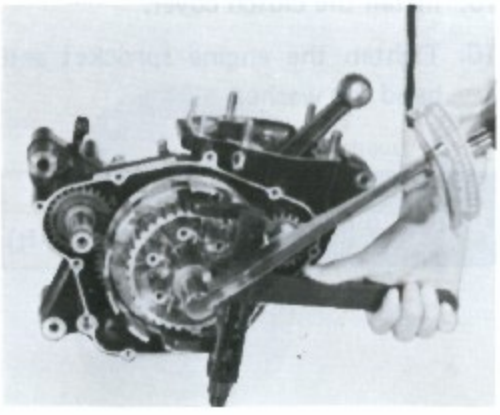


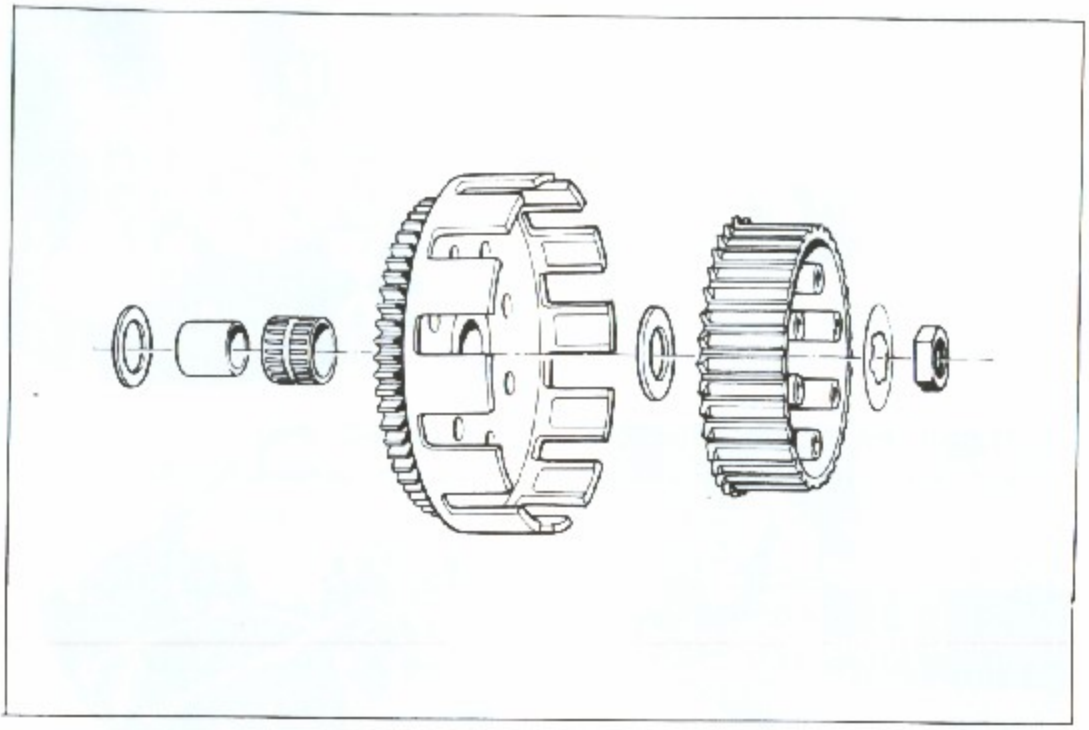
The relative position of parts associated with the primary drive gear are as shown in this illustration.



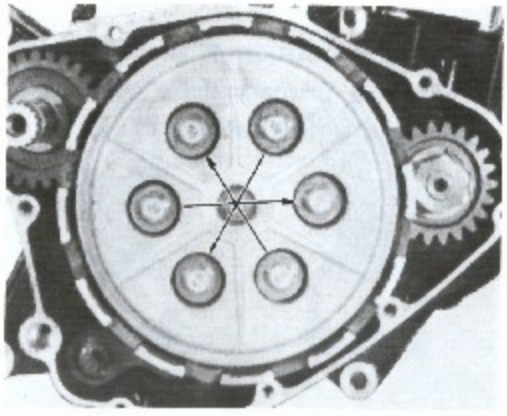
13. Tighten the clutch sleeve hub nut and bend the washer.

Tightening Torque	4.0 ~ 6.0 kg-m (29.0 ~ 43.0 lb-ft)



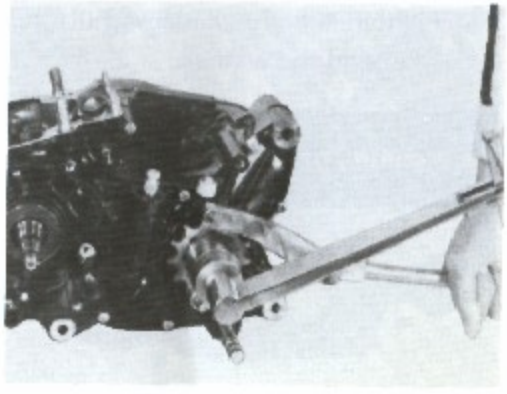


14. Fix the pressure plate and the spring. Tighten the clutch spring set bolts in the indicated manner.

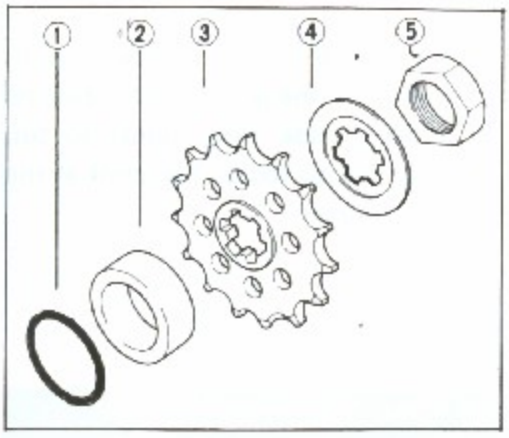


15. Install the clutch cover.
16. Tighten the engine sprocket and bend the washer.

Tightening Torque	4.0 ~ 6.0 kg-m (29.0 ~ 43.0 lb-ft)



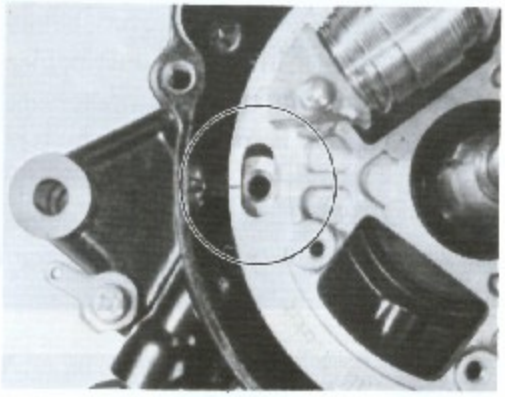
Be sure to install "O" ring between bearing and collar. Oil leakage from the sprocket is often due to absence of this "O" ring. The order of mounting the parts on the drive shaft is as shown in this illustration:



CAUTION: Note the position of "O" ring in this cross section. The collar has its one end chamfered: the chamfered end comes on transmission side.

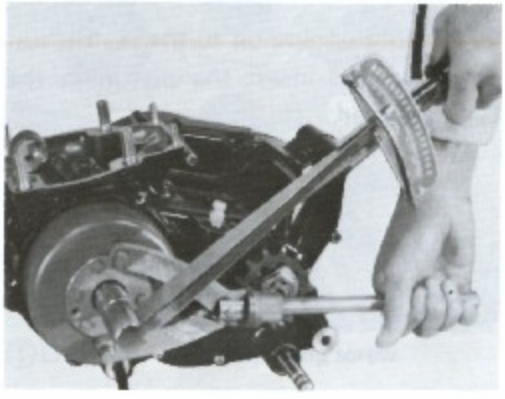
①"O" ring
②Collar
③Engine sprocket
④Washer
⑤Nut

17. The engraved line (on stator) is aligned to the center of screw and the stator is secured in that position.



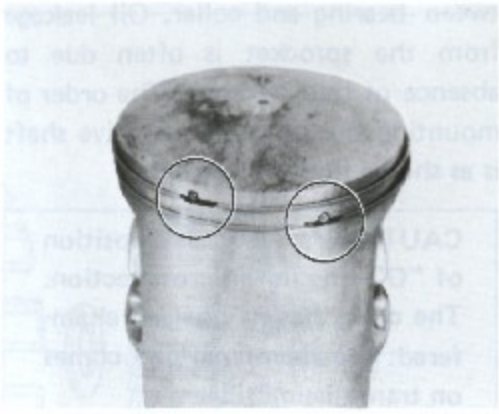
18. Apply Thread Lock Cement to the flywheel rotor nut and tighten the nut.

Tightening Torque	3.0 ~ 4.0 kg-m (21.5 ~ 29.0 lb-ft)

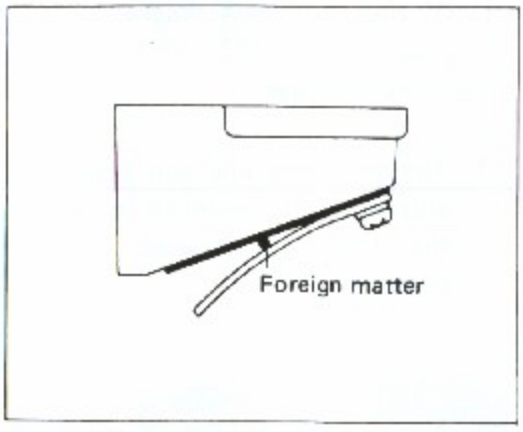


19. The arrow mark on the piston crown points to exhaust port side.

20. Each piston ring must be so positioned in the groove as to bring its marked side (near joint) to top side and to locate the joint at the locating pin.



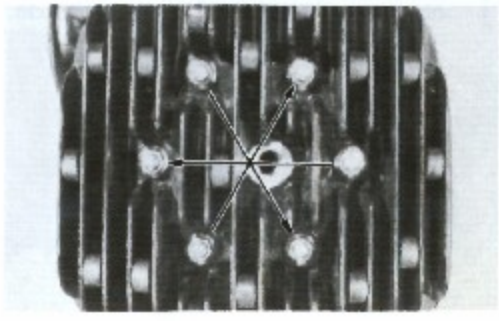
21. The reed valve is located below the cylinder inlet port. Just before installing the cylinder, make sure that there is no foreign matter stuck between the reed and its seat. Such foreign matter could reduce engine output performance.



22. Apply engine oil to the piston surface and insert the piston in the cylinder.

23. After installing the cylinder head, gradually tighten the nuts as shown in photo.

Tightening Torque	2.0 ~ 2.5 kg-m (14.5 ~ 18.0 lb-ft)



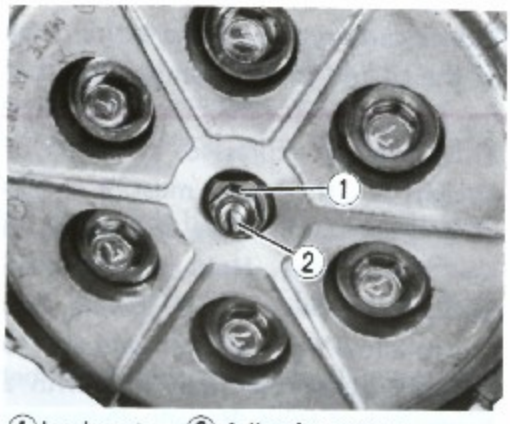
24. Pour the transmission oil as follows.

Overhaul engine	900 ml (0.95 US qt)
Change oil	800 ml (0.85 US qt)

Clutch release adjustment

Fix the clutch release arm so that the slit of release arm matches the marking on the clutch release camshaft.

Loosen lock nut, and back adjusting screw away two to three rotations. From that position of adjusting screw, slowly run it in until it begins to offer high resistance to turning. From this position, back it away one-quarter rotation, and secure it by tightening lock nut.



① Lock nut ② Adjusting screw

CARBURETOR

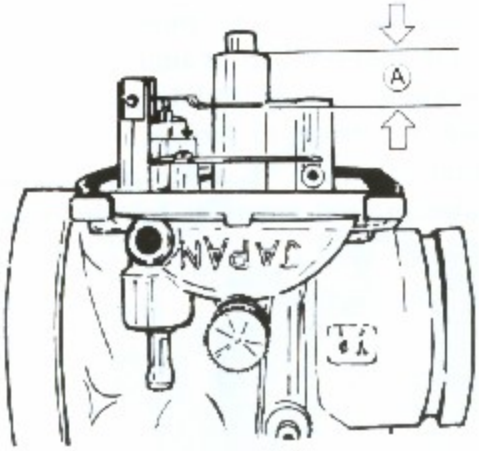
If carburetion is not perfect, the performance of the engine will be adversely affected. Therefore, the carburetor should be set correctly to meet such conditions as weather, race field, etc. First, check the carburetor thoroughly, and adjust the following parts as necessary:

CARBURETOR SPECIFICATIONS

Bore	36 mm
Main jet	#280
Jet needle	6DH20-2
Needle jet	Q-0
Cut-away	2.5
Pilot jet	#37.5
Pilot air adjusting screw	1½ turn back
Float height	10.7 ± 0.5 mm (0.42 ± 0.02 in.)

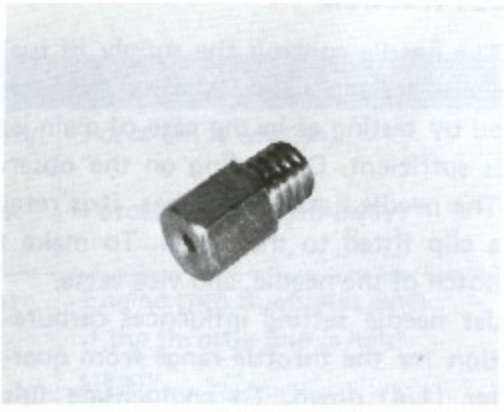
FLOAT LEVEL

Proper carburetion for the entire range of the engine speeds assumes first that the float is set for the prescribed level. This level is expressed in terms of "height A", the height must be checked and set right before attempting to alter the jetting. Hold the removed carburetor upside down, taking care not to allow float arm pin and arm to slip off. Raise the float arm with a fingertip and lower it gradually until it touches the needle valve. Measure the distance A with calipers. If the caliper reading is off the specification (stated below), bend the tongue.



Float height Ⓐ	10.7 ± 0.5 mm (0.42 ± 0.02 in.)

MAIN JET

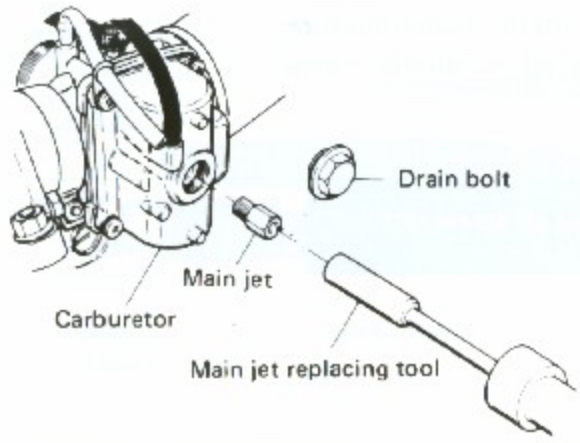


During operation, this jet controls the supply of fuel for a range from 3/4 throttle to full throttle. To test the main jet, drive the machine on a racing caurse for a distance of about 10 km (6 miles), with the throttle kept open in that range; after this test run, open the engine to observe the carboned color of the spark plug, cylinder head and piston. If the color is black or if the surface is wet, it means that the mixture is too rich: in this case, the main jet must be replaced by the one with a smaller number.
If a grey-brownish or whitish color is noted, it means that the mixture is too lean: in this case, a main jet with a larger number is needed.

Standard main jet	**#280**
Optional main jets	**#260, #270, #290, #300 and #310**

MAIN JET REPLACING

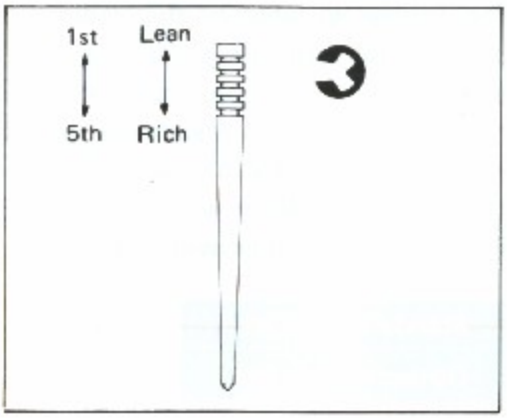
1. Move fuel cock lever to OFF position.
2. Remove the drain bolt on float chamber to empty the chamber of fuel.
3. Loosen clamp screws on both sides of carburetor, and turn the carburetor around to bring its float chamber toward you.
4. Insert the main jet replacing tool into the drain bolt hole and, with this tool, remove the main jet.
5. Install the main jet of another number it in the carburetor. Plug up the float chamber by refitting the drain bolt.
6. Restore the carburetor (which is now tilted condition) to the original position by turning it around, and tighten the clamp screws on both sides to secure the carburetor in place.



JET NEEDLE

The needle controls the supply of fuel for a throttle range of one quarter (1/4) to three quarters (3/4). Whether the existing jet needle is proper or not is to be checked by testing as in the case of main jet testing. A test run of about 10 km (6 miles) is sufficient. Depending on the observed color, reposition the jet needle in place. The needle has five notches. It is retained standardly at 2nd notch in PE400 with a clip fitted to the notch. To make the mixture leaner, set the clip at an upper notch of the needle, and vice versa.

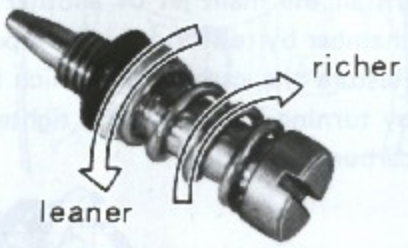
Jet needle setting influences carburetion for the throttle range from quarter (1/4) down. To compensate this range for the effect of the change made in jet needle setting, the pilot air screw must be repositioned in place. In other words, if the jet needle has been repositioned to enrich the mixture (for 1/4-to3/4 throttle range), then the screw must be loosened, slightly to make the mixture leaner (for up-to-1/4 range).



Standard jet needle setting	2nd notch

NOTE:

The pilot air screw should be left in the standard position, that is, in a position at which the screw will not support the engine in self-idling condition. This is because, when the throttle is opened quickly, engine speed will pick up but with some delay due to a momentarily richer mixture, if the screw in set to sustain engine idling.



Standard pilot air screw setting:	Backed away $1\frac{1}{2}$ rotation from fully run-in position.

HOW TO JUDGE CARBURETION

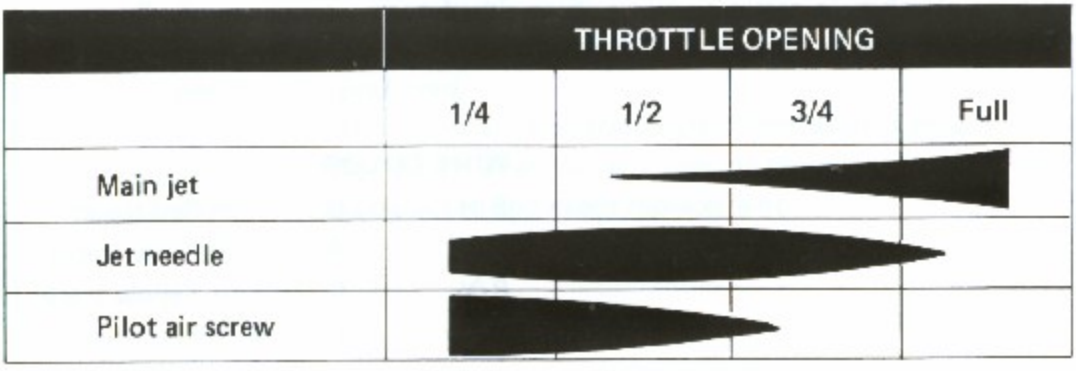
Item	Proper	Mixture is rich	Mixture is lean
Spark plug	Porcelain is light brown. Porcelain is tan color.	Porcelain is sooty. Porcelain is oily.	Porcelain is whitish. Porcelain is burned away.
Engine revolution	Engine runs smoothly.	Engine does not run smoothly	Engine rpm fluctuates even if the throttle grip is held steady.

OVERALL CARBURETOR ADJUSTMENT

Item	When mixture is rich	When mixture is lean
Half-throttle	Raise needle clip position.	Lower needle clip position.
Full-throttle	Replace with main jet having a smaller calibration number.	Replace with main jet having a larger calibration number.

MATCHING THE JETTING TO THE RACE

Drive the machine on the racing course, making several laps and noting the pattern of throttle variation required to cover the lap for best clocking. Then, open the engine to observe the spark plug, cylinder head and piston crown. On the basis of this observation and also the throttle range in which the machine had to be driven in the test run, set the main jet, jet needle and pilot air screw by referring to the diagram below.



NOTE: **The length of each shaded pattern represents the effective range, and the width represents the intensity of carburetion.**

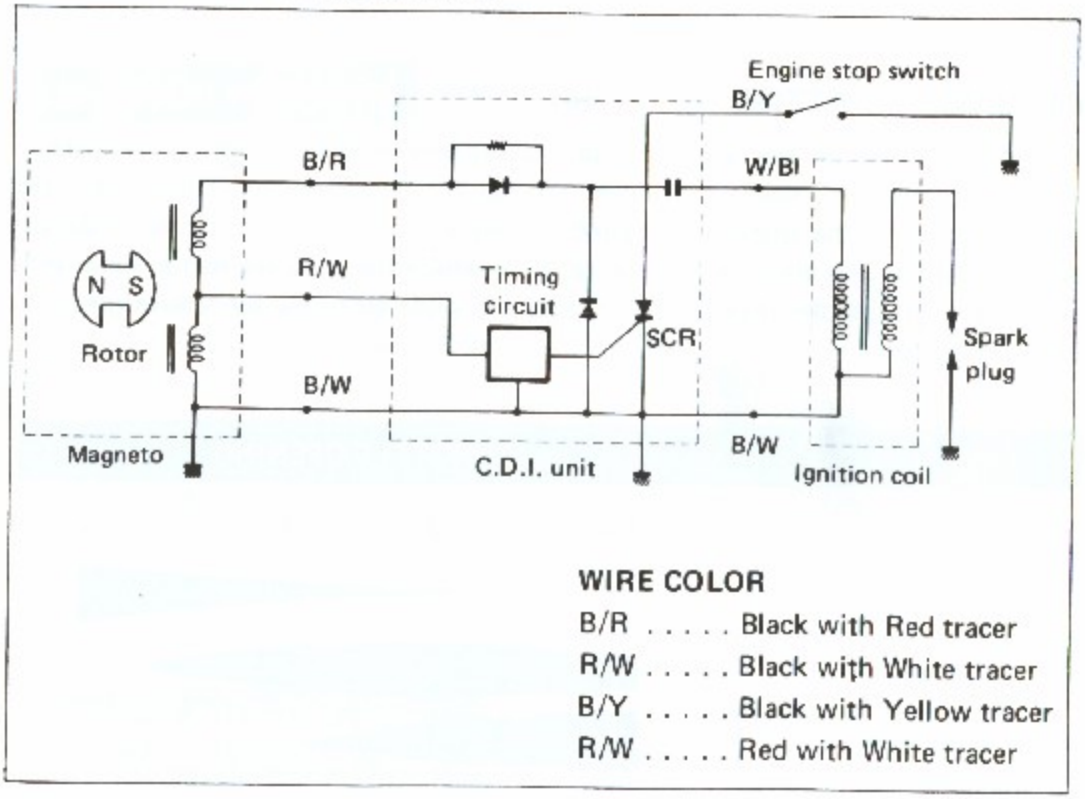
IGNITION SYSTEM

SUZUKI "PEI" SYSTEM

In the PE250, ignition energy is supplied to the spark plug though electronically triggered capacitor discharge in a system comprising the magneto,CDI unit, ignition coil and spark plug. Three outstanding advantages of this proprietary system are:

1. High voltage induced in the secondary winding of the ignition coil is stable over the entire range of engine speeds, so that the ignition performance of the plug is dependable, regardless of whether the engine is running fast or slow.
2. There is no need of so frequently checking and adjusting the ignition system components as in the conventional system based on a breaker mechanism for make-break contacting action. Make-break action is electronic in the SUZUKI "PEI" system.
3. Ignition timing is automatically advanced in a manner best suited to the operating characteristic of the engine.

SUZUKI "PEI" CIRCUIT DIAGRAM



WIRE COLOR

B/R . . . . . Black with Red tracer
R/W . . . . . Black with White tracer
B/Y . . . . . Black with Yellow tracer
R/W . . . . . Red with White tracer

CHECKING CDI UNIT

Use a circuit tester as an ohmmeter. In either case, the two testing prods, (+) and (–), are to be put to terminals of the CDI unit in reference to the chart shown.

09900-25002	Pocket tester
09900-28106	Electro tester

The CDI unit has five terminals. The (+) prod or pointer is to be put to one of the terminals listed in the top horizontal row, and the (–) prod or pointer to the corresponding terminals listed in the vertical column. What the circuit tester or ohmmeter should indicate for the two terminals is given in the intersecting box (ON or Approx. 3 kΩ, 9 kΩ, CON, OFF or ∞Ω.
The meanings of these terms are as follows:

Term	Significance
ON	The tester shows circuit continuity.
OFF	The tester shows infinitely large resistance or, for short, infinity.
CON	The indicating hand deflects a little but promptly returns to the infinity end of the scale.

CAUTION:
Never use an insulation-resistance meter (so-called megger) for this purpose or circuit elements inside the CDI unit will suffer rupture.

NOTE:
1. *Before putting the probe pointers of the tester to two terminals, touch the two with a jumper lead to form a momentary short-circuit in order to neutralize the charges, if any.*
2. *For the instrument to be used, a circuit tester of the type used by radio repairmen will do. However, a high-grade circuit tester or an ohmmeter is preferred.*
3. *If the instrument gives an indication other than what is shown in the intersecting box in the chart for any pair of terminals, it means that the CDI unit is defective and needs replacement.*

(× k Ω range)

Negative (–) prod \ Positive (+) prod	Black/White	Black/Yellow	Black/Red	Red/White	White/Blue
Black/White		3 kΩ	∞Ω	3 kΩ	CON
Black/Yellow	CON		∞Ω	CON	CON
Black/Red	CON	3 kΩ		CON	CON
Red/White	OFF	OFF	OFF		OFF
White/Blue	3 kΩ	9 kΩ	∞Ω	9 kΩ	

CHECKING IGNITION COIL

The ignition coil is to 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:

BLACK/WHITE – WHITE/BLUE	0~1Ω
Plug cap – BLACK/WHITE or WHITE/BLUE	10~11 kΩ

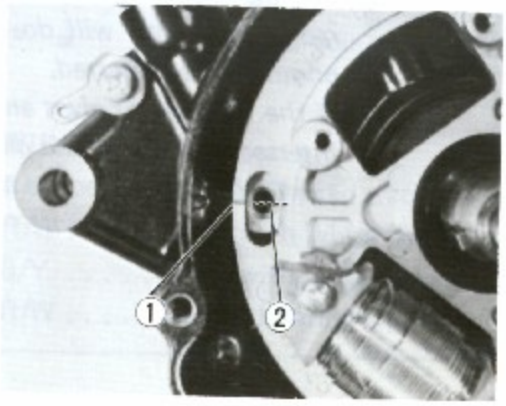
MAGNETO

Using the circuit tester, check the high-speed and low-speed coils for ohmic resistance. Coils in good condition will exhibit these values:

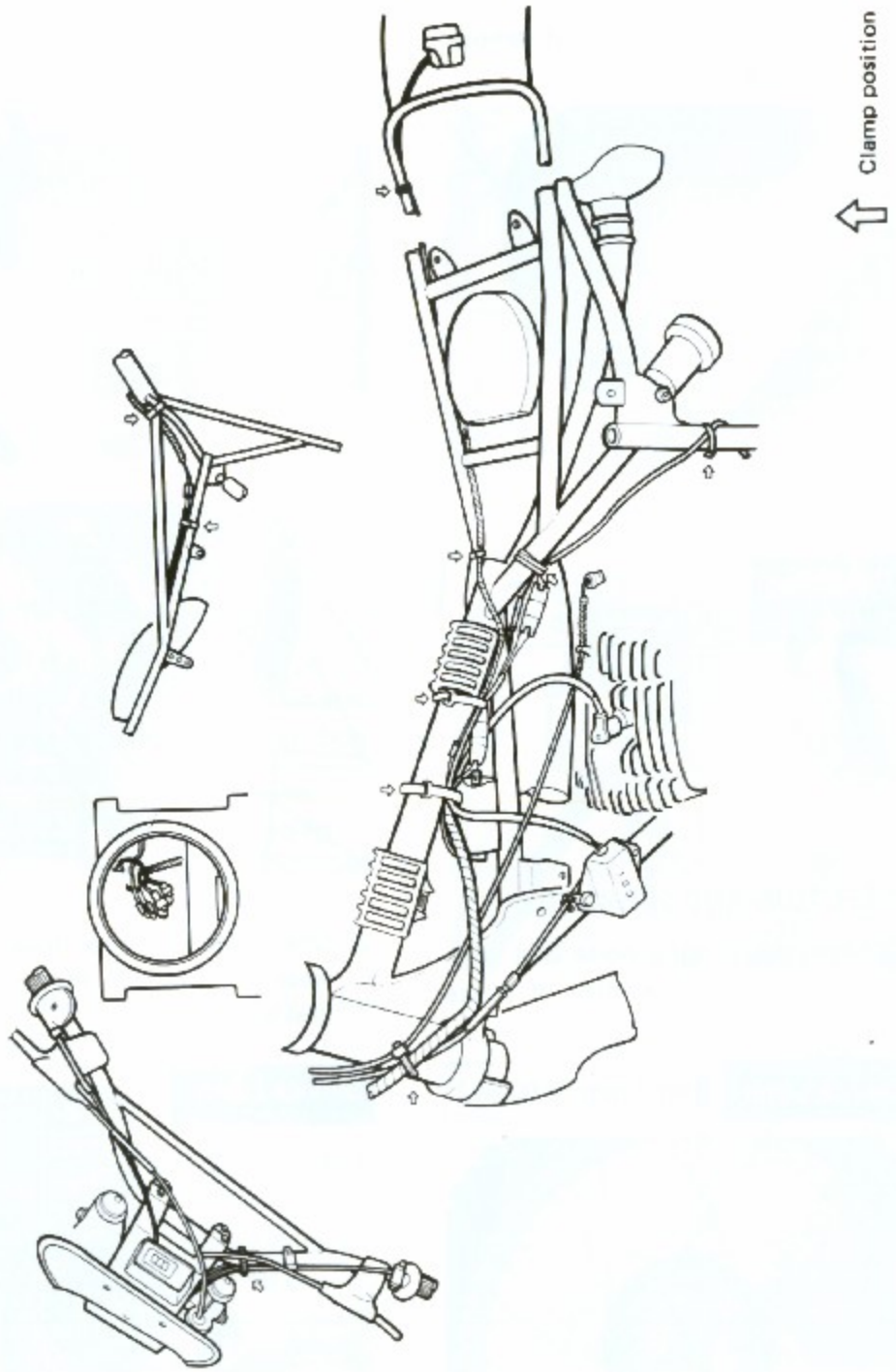
BLACK/RED – BLACK/WHITE	195~245Ω
RED/WHITE – BLACK/ RED	35~45Ω
YELLOW/RED – BLACK/WHITE	0~2Ω

IGNITION TIMING ADJUSTMENT

The engraved line ① (on stator) is aligned to the center of screw ② and the stator is secured in that position.



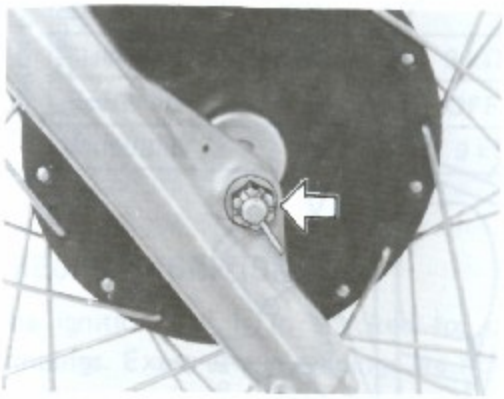
WIRE ROUTING



FRONT WHEEL

REMOVAL

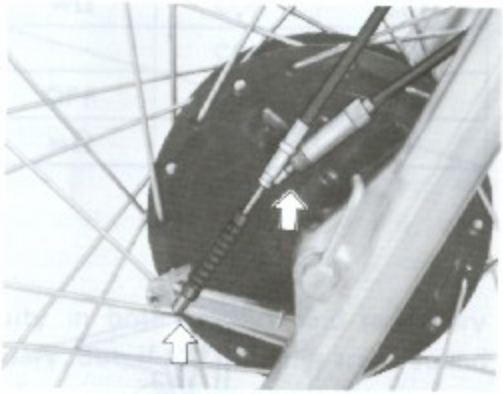
1. Pull out the cotter pin and remove the front axle nut.

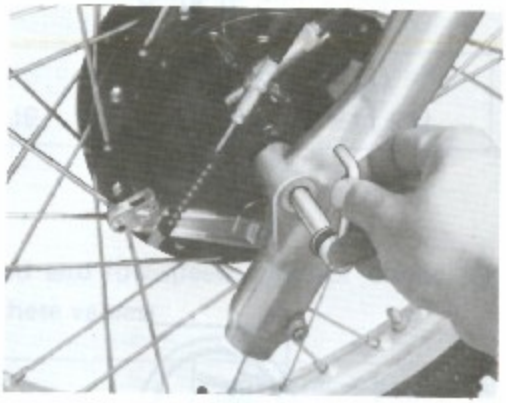


3. Pull out the front axle.

Tightening torque	3.60 ~ 5.20 kg-m (26.0 ~ 37.5 lb-ft)

2. Disconnect the front brake and the tripmeter cables.

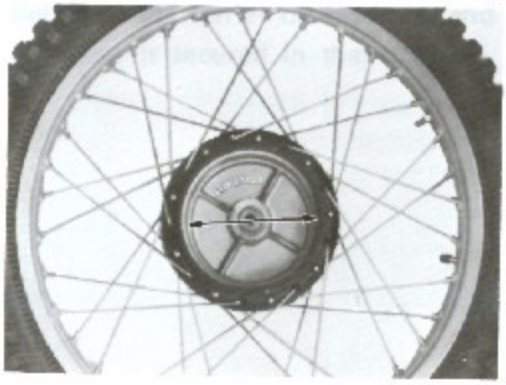




INSPECTION AND SERVICING

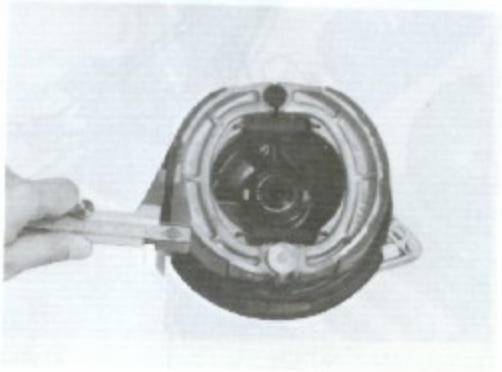
1. Check the bearing noise and measure the inner diameter of brake drum.

Service Limit	150.7 mm (5.93 in.)

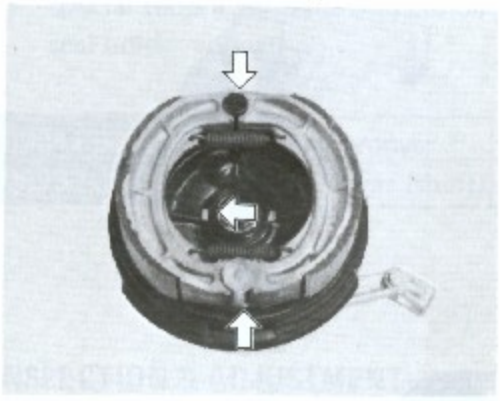


2. Check the tripmeter drive gears for wear and measure the thickness of brake shoe.

Service Limit	1.5 mm (0.06 in.)



3. Apply grease on the gears and cam.

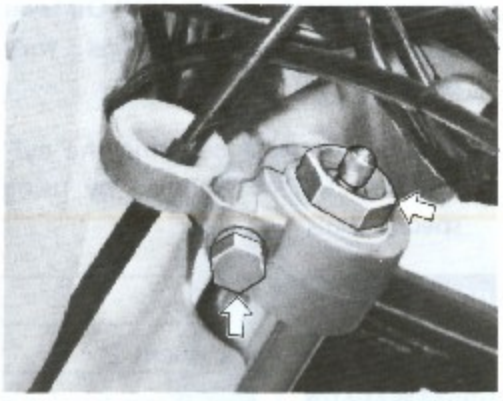


FRONT FORK

DISASSEMBLY

1. Remove the front wheel.
2. Loosen the front fork cap bolt after loosening the upper clamp bolt.

Tightening torque	1.5 ~ 3.0 kg-m (11.0 ~ 21.5 lb-ft)



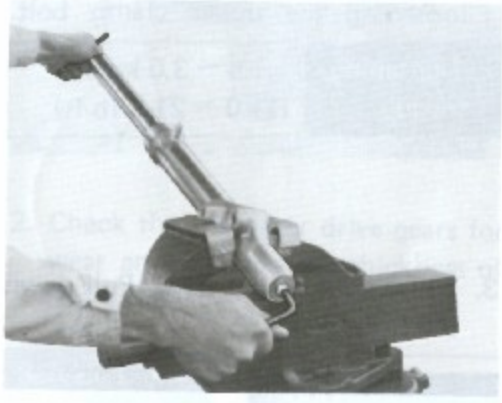
3. Loosen the clamp bolts. Pull down the front fork.

Tightening torque	Upper clamp bolt	2.0 ~ 3.0 kg-m (14.5 ~ 21.5 lb-ft)
	Lower clamp bolt	1.5 ~ 2.5 kg-m (11.0 ~ 18.0 lb-ft)

4. Remove the front fork cap bolt.
5. Draw out spacer, spring stopper and fork spring.

6. 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. Pour in the fork oil and gently stroke the fork several times. As to quantity of oil, consult" **Oil level adjustment**" and **"Typical fork setting"**.

8. Remove the bolt securing the cylinder to the outer tube by using special tools.

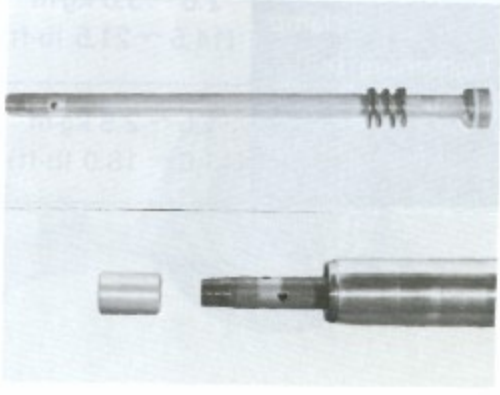


09940-34520	T handle
09940-34561	Attachment D
09911-71510	L type 8 mm hexagon wrench

When reassembling, apply the Thread Lock "1342" to the damper rod bolt and SUZUKI BOND No. 4 to the damper rod bolt and oil drain screw.

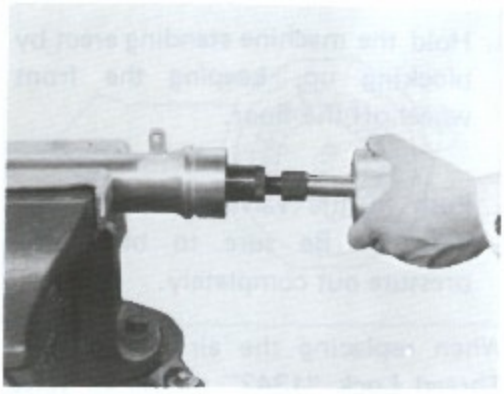
99000-32050	Thread Lock "1342"
99000-31030	SUZUKI BOND No.4

9. Remove the cylinder, spring and the oil lock piece.



10. Remove the oil seal by using special tools after removing the oil seal holder and spring.

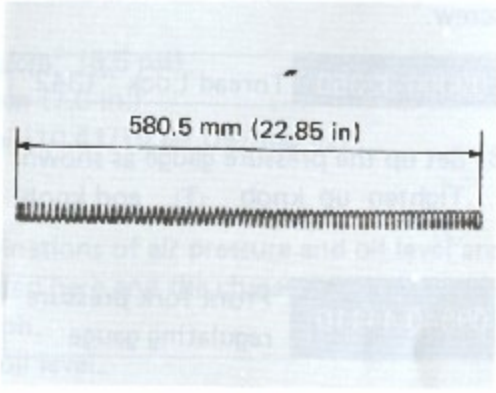
09941-64910	Fork seal remover
09930-30102	Rotor remover (shaft)



INSPECTION & ADJUSTMENT

Measure the free length of the fork spring.

Standard	580.5 mm (22.85 in.)
Service Limit	571 mm (22.5 in.)



Install the oil seal by using special tool.

09940-50111	Front fork oil seal installer

Set the oil level gauge as shown, and refer to top end face of the inner tube (in the fully compressed state of the fork) to the scale. Adjust the oil level to the prescribed specification as measured from that end face.

09943-74111	Front fork oil level gauge
Oil level	180 mm (7.1 in.)
Oil capacity	308 ml each leg (10.41/10.84 US/ Imp oz)

AIR PRESSURE ADJUSTMENT

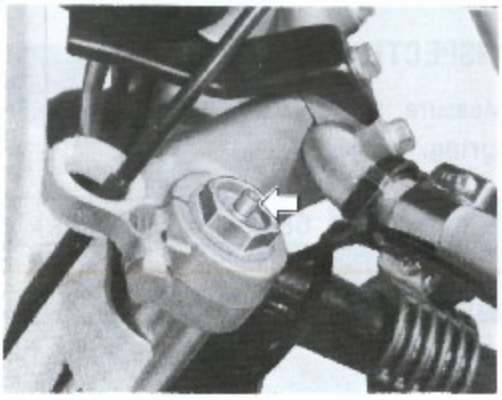
1. Hold the machine standing erect by blocking up, keeping the front wheel off the floor.

2. Push in the valve to let out the pressure. Be sure to bleed the pressure out completely.

When replacing the air valve, apply Thread Lock "1342" to the air valve screw.

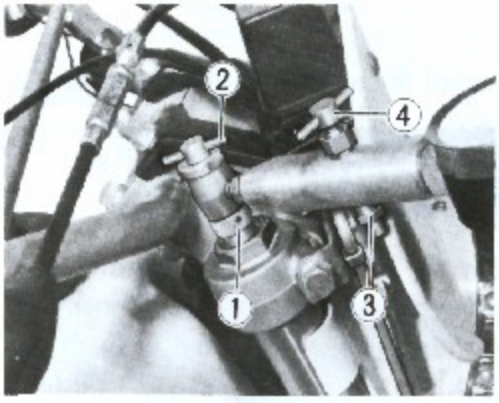
99000-32050	Thread Lock "1342"

3. Set up the pressure gauge as shown. Tighten up knob ① and knob ②



09940-44110	Front fork pressure regulating gauge

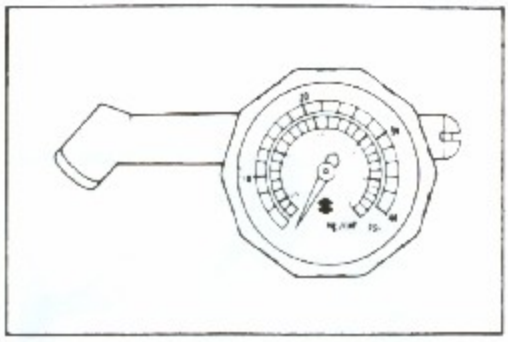
4. Inject water-free compressed air through valve ③ until the pressure gauge reads the desired level (see page 51) not higher than 2.5 kg/cm^2 (35 psi).
5. Back away (loosen) knob ④ to bleed out the excess pressure, if any, to secure the desired air pressure inside the fork.



REQUIREMENTS ON AIR

* Be sure that the compressed air supply comes through a de-watering filter. Instead of air, nitrogen gas may be used.
* Just before charging air in, see if the valve is loose by using the valve tightener.
* Be sure to inject water-free compressed air not higher than 2.5 kg/cm^2 (35 psi).
* The fork is designed not for higher pressures than this limit.
* Try to equalize the air pressure of the two forks, right and left, as closely as possible. The maximum permissible difference is 0.1 kg/cm^2 (1.4 psi).
* Before riding out, be sure to check that the air pressure is at the prescribed level.

NOTE:
The above method is based on the use of the special-tool pressure gauge available from SUZUKI but, instead of this gauge, the one furnished with each PE250 machine may be used. The furnished gauge (included in the kit) must be used in this manner: 1) fit it to the valve squarely, and 2) upon reading the pressure, let it off the valve snappily.



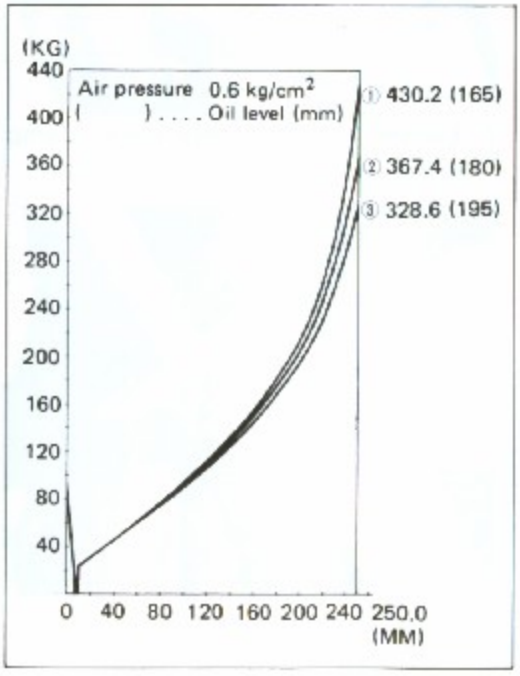
* Ⓐ **Standard setting Pressure:** **0.6 kg/cm² (8.5 psi)**
Oil level: **180 mm (7.0 in.)**
308 ml (10.41/10.84 US/Imp oz)

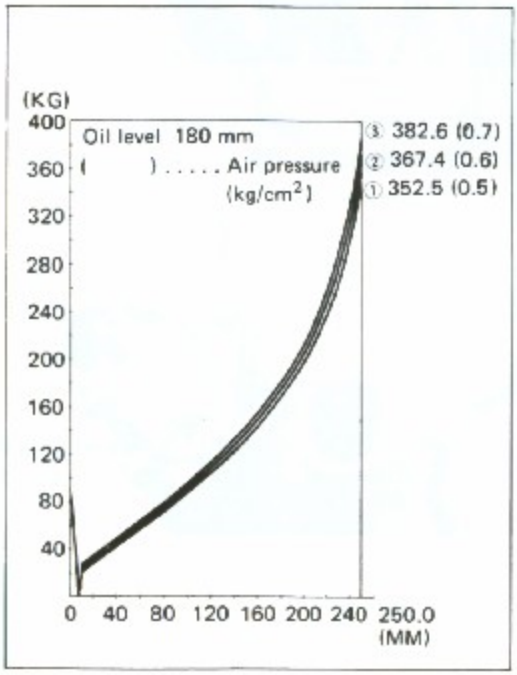
TYPICAL FORK SETTING

Theoretically a counterless number of combinations of air pressure and oil level are possible. The typical combinations are indicated here and the characteristic for each combination is indicated as a curve in the graph.
Do not exceed the limits on air pressure and oil level.

Air pressure	Oil level		
0.6 kg/cm² (8.5 psi)	165 mm (6.5 in)	180 mm (7.1 in)	195 mm (7.7 in)
	①	②	③

Oil level	Air pressure		
180 mm (7.1 in)	0.5 kg/cm² (7.1 psi)	0.6 kg/cm² (8.5 psi)	0.7 kg/cm² (10.0 psi)
	①	②	③

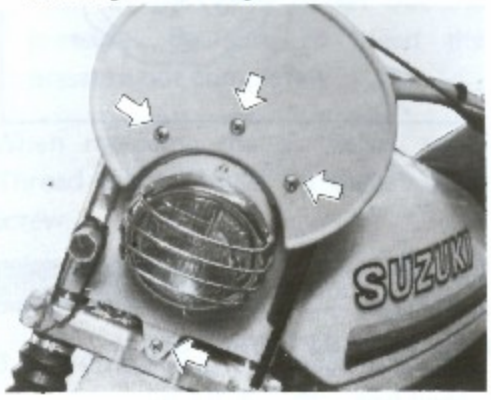




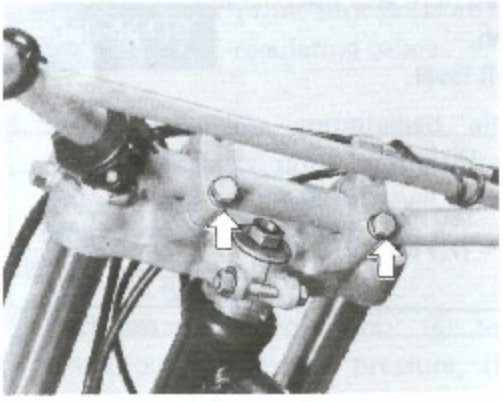
STEERING

DISASSEMBLY

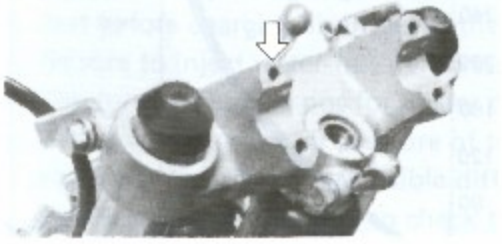
1. Remove the front wheel.
2. Take off front number plate and headlight housing.



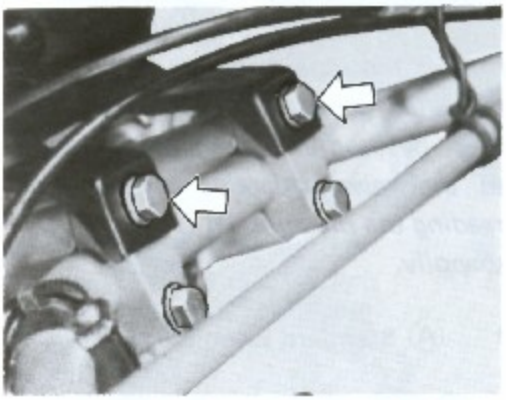
4. Remove the handlebar clamp bolts and slide off the handlebar.



6. Remove the upper bracket.

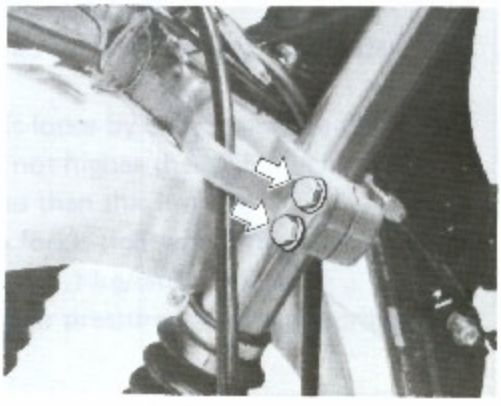


3. Remove the tripmeter.



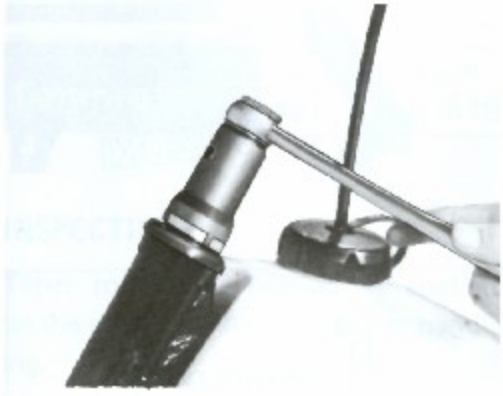
5. Remove the steering stem head bolt and loosen the front fork upper clamp bolts and steering stem upper clamp bolt.

7. Loosen the front fork lower clamp bolts and remove the front forks.



8. Remove the steering stem nut with the special tool.

09940-14910	Steering nut socket wrench



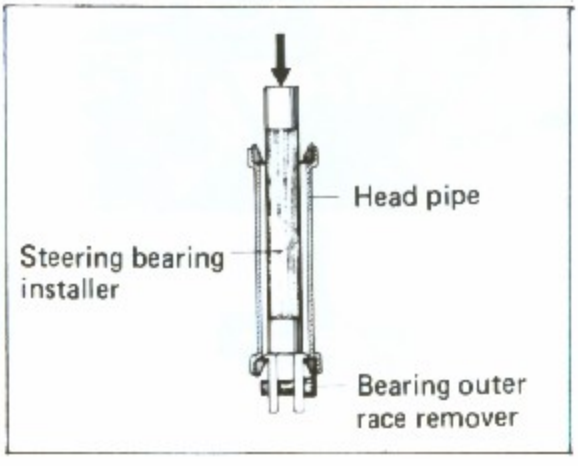
10. Draw out bearing by using special tool.

09941-84510	Bearing inner race remover

9. Draw out bearing and steering stem lower bracket.

11. Draw out upper and lower bearing outer races by using special tool.

09941-54910	Steering race remover
09941-74910	Steering bearing installer



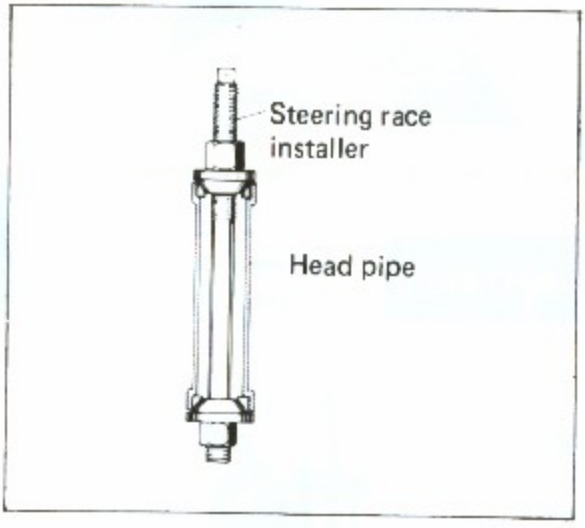
REASSEMBLY

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

OUTER RACES

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

09941-34511	Steering outer race installer



BEARINGS

Press in the lower bearing by using special tool.

09941-74910	Steering bearing installer

Apply grease upper and lower bearing before remount the steering stem.

99000-25010	Suzuki super grease "A"

STEM NUT

Tighten the steering stem nut by using special tool with specified torque.

09940-14910	Steering nut socket wrench

Tightening torque	4.0 ~ 5.0 kg-m (29.0 ~ 36.0 lb ft)

INSPECTION

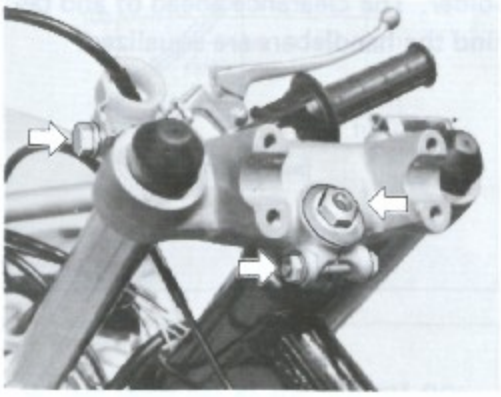
Taper roller type bearing are applied on the steering system for better handling.

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.

Follow the steps below for adjusting and checking the steering stem.

- Using the steering nut socket wrench and a torque wrench, tighten the stem nut.
- Move the steering stem back and forth five or six times to seat the bearings.
- Loosen the steering stem nut to 0 kg-m. Then retighten very lightly so that no play can be detected in the stem.
- Install the steering stem upper bracket and temporarily tighten the steering stem head center bolt.
- Tighten the steering stem upper clamp bolt.



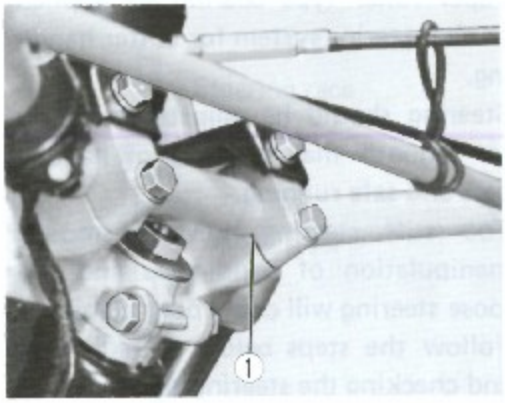
- Loosen the stem nut slightly and tighten the steering stem head center bolt.
  When the fork is moved back and forth, it must move freely. If there is any play in the forks, loosen the center bolt, tighten the stem nut slightly and retorque the center bolt.
- Install the handlebars.

Tightening torque

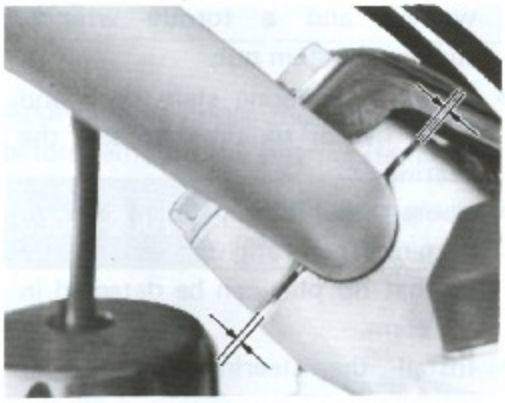
	kg-m	lb-ft
Steering stem nut	4.0 - 5.0	29.0 - 36.0
Steering stem head center bolt	3.5 - 5.0	25.5 - 36.0
Steering stem upper clamp bolt	1.5 - 2.5	11.0 - 18.0
Handlebars clamp bolt	1.2 - 2.0	8.5 - 14.5

Inspect and check the removed parts for the following abnormalities.

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



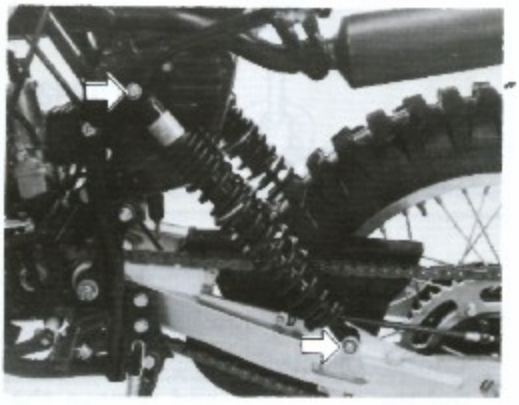
Set the handlebar to match its punched mark ① to the mating face of the holder. The clearance ahead of and behind the handlebars are equalized.



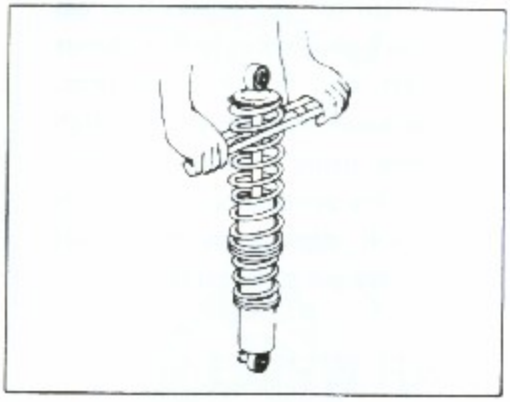
REAR SHOCK ABSORBER

DISASSEMBLY

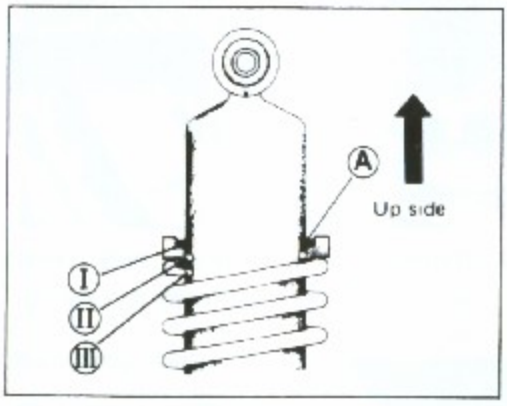
1. Remove the frame cover. Remove the upper and lower rear shock absorber bolts and dismount the shock absorber. Self-lock nuts are used for lower rear shock absorber nuts. Do not reuse these nuts.

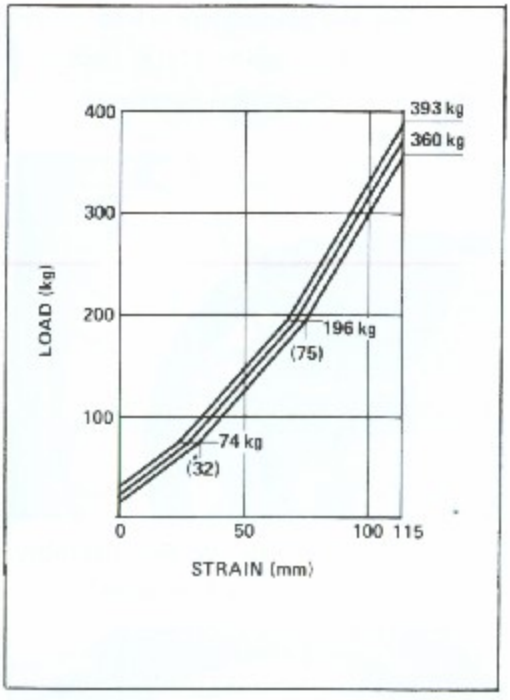


2. While compressing the spring, remove the upper spring seat as shown below.



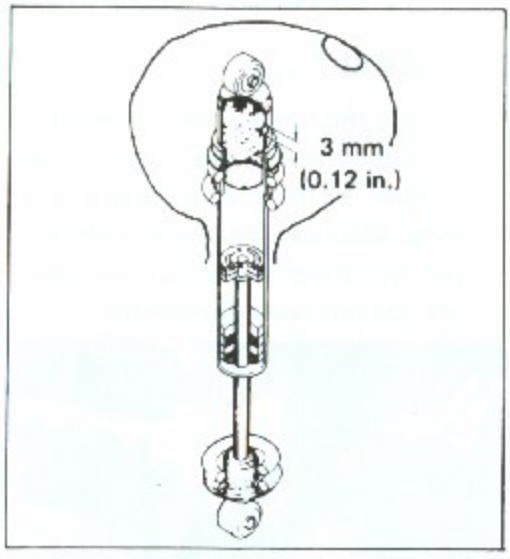
3. Each unit has three grooves for changing spring tension. The higher the clip position, the less tension as shown in illustration.





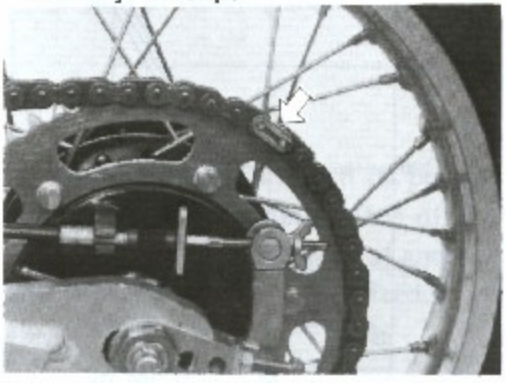
CAUTION:
In the new shock absorber unit the clip (A) has been set at the highest position for optimum shock absorption for an average rider's weight. However, after the machine has covered the running-in mileage of about 500 km (300 miles), the component parts could be adjusted and the optimum clip position will be changed to the groove one step down – the middle groove.

CAUTION:
Never throw away this absorber without depressurizing it when it becomes so used-up that it no longer serves its purpose. To depressurize it, place the gas tank in a plastic bag with a corner cut off, and drill into the tank, at the location indicated, through the bag, using a 3-mm drill. The bag is for protection; it prevents the drill clips from flying off when the gas rushes out.

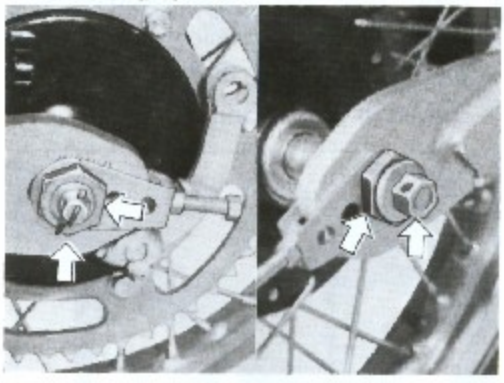


REAR WHEEL

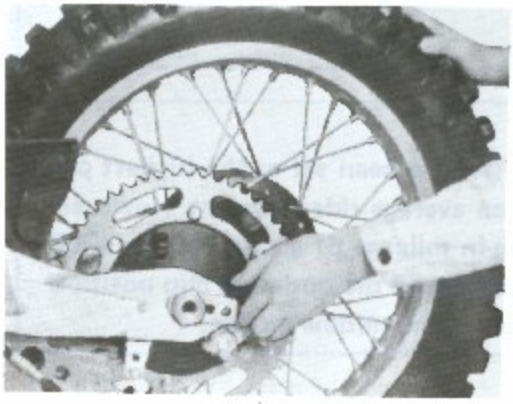
1. Remove the engine sprocket cover and the chain guide plate. Remove the drive chain by removing the chain joint clip.



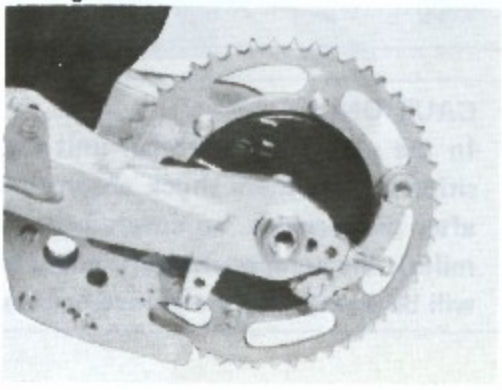
2. Remove the rear brake cable.
Loosen the sleeve nuts after removing the cotter pin and remove the axle shaft.



3. Separate the rear wheel assembly from the rear brake hub panel.



4. Remove the rear brake hub panel with rear sprocket from the swinging arm.

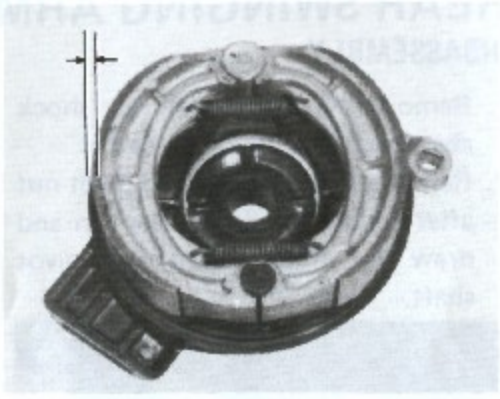


5. Remove the rear sprocket from the brake drum. Self-lock nuts are used for the rear sprocket mounting. Do not reuse these nuts.

INSPECTION

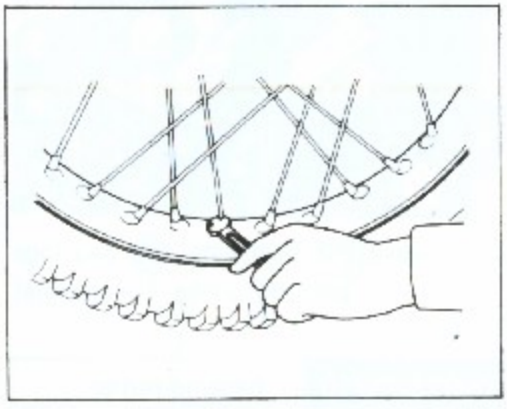
Measure the inner diameter of the brake drum and thickness of the brake shoe.

	Service Limit
Drum I.D.	150.7 mm (5.93 in.)
Brake shoe	1.5mm (0.06 in.)



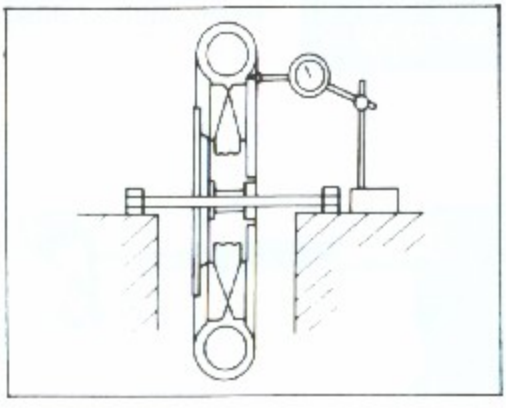
After each race, retighten the spoke nipples to prevent damage of nipples and rim.

09940-60113	Spoke nipple wrench



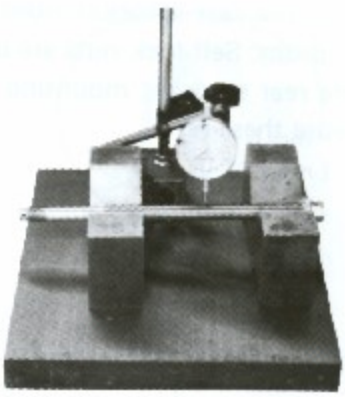
Adjust the rim runout by tightening or loosening the spoke nipples.

Service Limit Axial and Radial	2.0mm (0.08 in.)



Check the axle shaft for deflection by using a dial gauge.

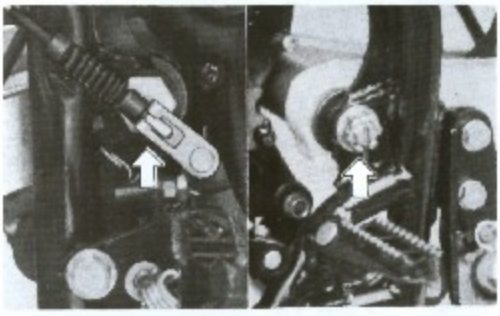
Service Limit	0.25 mm (0.010 in.)



REAR SWINGING ARM

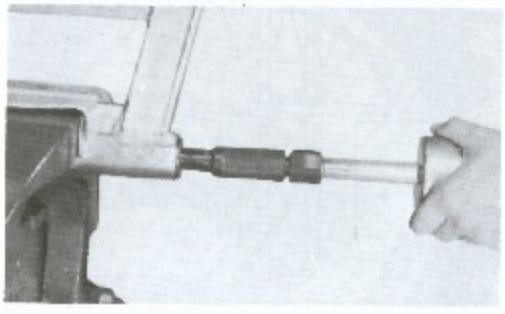
DISASSEMBLY

1. Remove the rear wheel, rear shock absorbers and rear brake cable.
2. Remove the swinging arm pivot nut after pulling off the cotter pin and draw out the swinging arm pivot shaft.

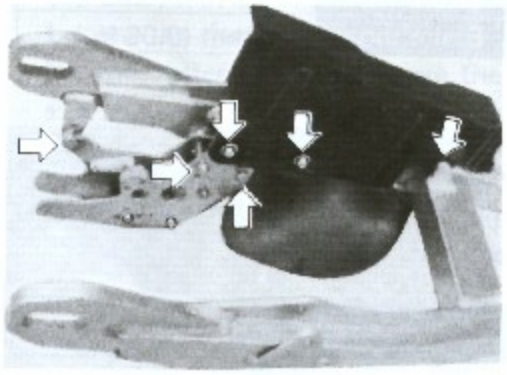


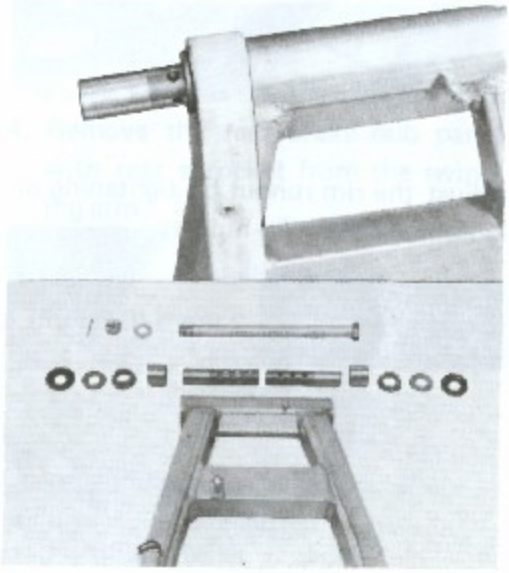
5. Remove the bushings and bearings at both side by using the special tool.

09923-73210	Bearing puller
09930-30102	Rotor remover slide shaft



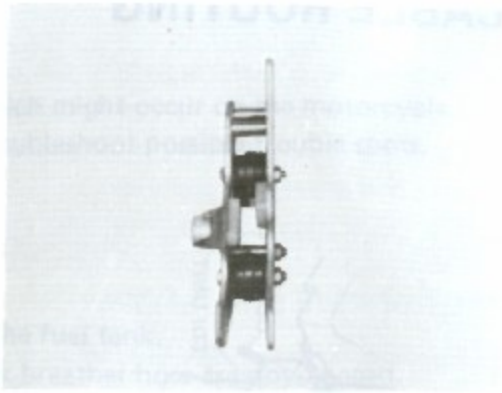
3. Remove the chain guide rollers and the chain guard.
4. Remove the dust seal and pull out the side spacer.





INSPECTION

- Swinging arm for distortion and damage.
- Bearings for rattle.
- Pivot shaft distortion
- Chain guide for damage.
- Chain guide roller for wear.

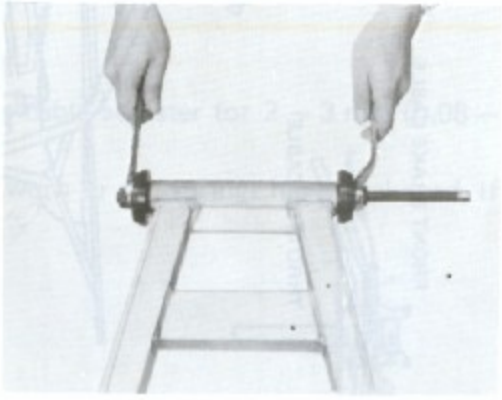


REASSEMBLY

Be sure to have the bore cleaned and apply oil to the periphery of each bearing before installing.
Punch-marked side of bearing comes on outer side when the bearing is in place.

Install the right and left bearings by using special tool.

09941-34511	Swinging arm bearing installer

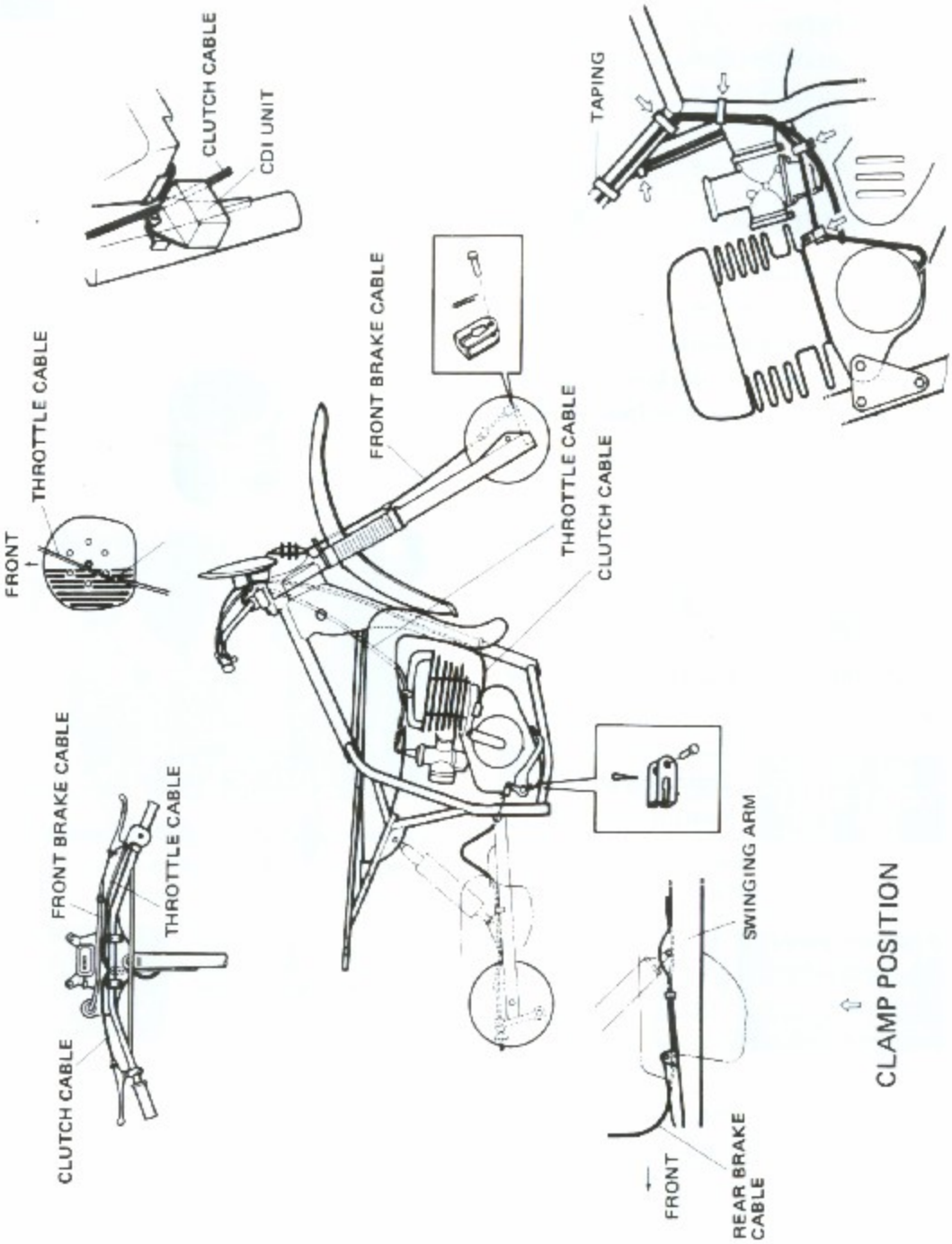


Tighten the swinging arm pivot shaft.

Tightening torque of swinging arm pivot nuts	4.5 – 7.0 kg-m (32.5 – 50.5 lb-ft)

Apply grease in the grease nipple to lubricate the bearings.

CABLE ROUTING



TROUBLESHOOTING

There can be various causes for problems which might occur on the motorcycle. The following procedures may be used to troubleshoot possible trouble spots.

ENGINE WILL NOT START

Fuel system

1. Check that there is sufficient gasoline in the fuel tank.
2. Make sure the fuelcock lever and fuel tank breather hose are not clogged.

Spark plug

1. Check that the spark plug gap has not been bridged and short circuited by carbon.
2. Check that the plug is not fouled with wet gasoline or oil.
3. Clean the spark plug gap and lay the connected spark plug against the cylinder head. Kick over the engine and see if a spark is produced. If not, replace the spark plug or check your ignition system.
4. To check the ignition system, remove the spark plug cap from the high tension wire and hold it about 7 mm (0.28 in.) from the cylinder head (ground). Kick the engine over and see if a spark jumps this gap. If so, the system is functioning and the problem is probably in the spark plug cap. If this does not produce a spark, have your Suzuki dealer check your ignition system.

CLUTCH SLIPPAGE

1. If there is no clutch lever play, adjust the cable adjuster for 2 – 3 mm (0.08 – 0.12 in.) play.
2. The clutch will also slip if the plates are worn or the springs have weakened. If so, these items must be replaced.

EXCESSIVE ENGINE VIBRATION

1. Loose engine mounting bolt.
2. Crack in the frame.

ENGINE OVERHEATS

1. Carburetion is lean caused by the carburetor setting (main jet selection) not being suitable for running conditions and weather.
2. Carbon has collected on the combusion chamber, piston crown, cylinder exhaust port and expansion chamber.
3. The spark plug has too hot a heat range.

BAD RUNNING STABILITY

1. Improper front or rear tire pressure.
2. Improper front or rear wheel alignment.
3. Improperly tightened front axle nut or steering stem lock nut.

ENGINE WILL NOT REV UP OR WILL NOT RUN SMOOTHLY

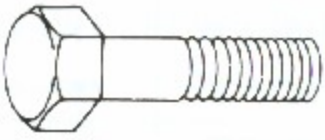
1. The carburetor choke knob is not fully returned.
2. Too rich carburetion.
3. Clogged air cleaner element.

TIGHTENING TORQUE

PART	Kg-m	lb-ft
Handlebar clamp bolts	1.20~2.00	8.5~14.5
Front fork upper clamp bolts (right and left)	2.00~3.00	14.5~21.5
Front fork lower clamp bolts (right and left)	1.50~2.50	11.0~18.0
Steering stem upper clamp bolt	1.50~2.50	11.0~18.0
Steering stem head bolt	3.50~5.00	25.5~36.0
Front fork cap bolt	1.50~3.00	11.0~21.5
Front fork damper rod bolt	2.00~2.60	14.5~18.5
Front fork oil drain screw	0.10~0.20	0.7~ 1.5
Front fork air valve	1.00~1.30	7.5~ 9.5
Front brake cam lever bolt	0.50~0.80	3.5~ 6.0
Front axle nut	3.60~5.20	26.0~37.5
Rear swinging arm pivot nut	4.50~7.00	32.5~50.5
Right side rear shock absorber fitting bolts (Upper and Lower)	1.50~2.50	11.0~18.0
Left side rear shock absorber fitting bolts (Upper and Lower)	2.00~3.00	14.5~21.5
Rear brake cam lever bolt	0.50~0.80	3.5~ 6.0
Rear axle shaft	5.00~8.00	36.0~58.0
Rear axle sleeve nuts	7.00~9.00	50.5~65.0
Cylinder head nuts	2.00~2.50	14.5~18.0
Magneto rotor nut	3.00~4.00	21.5~29.0
Engine sprocket nut	4.00~6.00	29.0~43.5
Clutch sleeve hub nut	4.00~6.00	29.0~43.5
Primary drive gear nut	4.00~6.00	29.0~43.5
Rear sprocket screw	2.50~4.00	18.0~29.0
Spoke nipple	0.40~0.50	3.0~ 3.5
Kick starter bolt	0.60~1.00	4.5~ 7.5
Gear shifting lever bolt	1.30~2.30	9.5~16.5

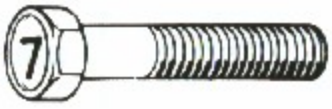
For other bolts and nuts not listed left, refer to this chart:

Bolt Diameter (mm)	Conventional or "4" marked bolt		"7" marked bolt	
	kg-m	lb-ft	kg-m	lb-ft
5	0.20 – 0.40	1.5 – 3.0	0.30 – 0.60	2.0 – 4.0
6	0.40 – 0.70	3.0 – 5.0	0.70 – 1.00	5.5 – 7.5
8	0.90 – 1.40	6.5 – 10.0	2.00 – 2.50	14.5 – 18.0
10	1.80 – 2.80	13.0 – 20.0	3.50 – 4.00	25.5 – 29.0



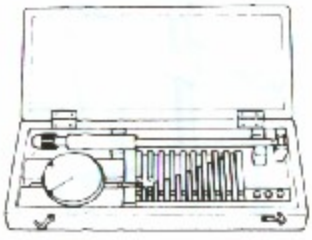
Conventional bolt

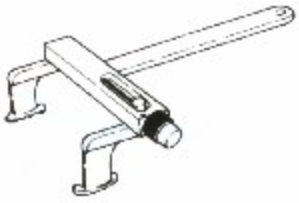
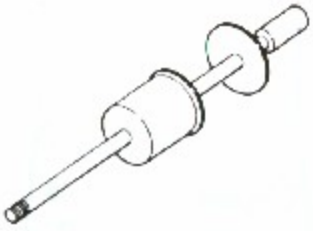
"4" marked bolt

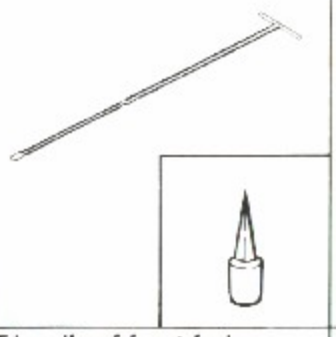
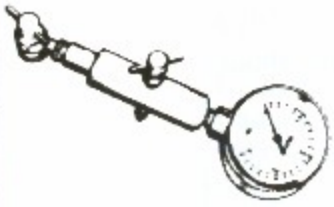
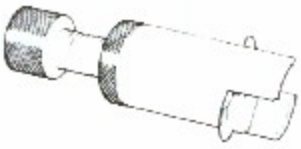
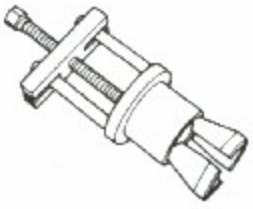


"7" marked bolt

SPECIAL TOOLS

		
Snap ring pliers 09900-06104	Shock driver set 09900-09002	Vernier caliper 09900-20101
		
Micrometer 50 - 75 mm 09900-20203	Cylinder gauge set 09900-20508	Thickness gauge 09900-20803
		
Pocket tester 09900-25002	Electro-tester 09900-28106	Conrod holder 09910-20115

		
L-type hexagon wrench 8 mm 09911-71510	Oil seal remover 09913-50110	Clutch spring hook 09920-20310
		
Clutch sleeve hub holder 09920-53710	Crankcase separating tool 09910-80115	Rotor remover slide shaft 09930-30102
		
Attachment F 09930-30190	Rotor holder 09930-40113	Steering stem nut socket wrench 09940-14910

		
T-handle of front fork 09940-34520 Attachment D 09940-34561	Front fork pressure regulating gauge 09940-44110	Steering race and swinging arm bearing installer 09941-34511
		
Bearing puller 09923-73210	Front fork oil seal remover 09941-64910	Front fork oil level gauge 09943-74111
		
Bearing inner race remover 09941-84510	Steering race remover 09941-54910	Front fork oil seal installer 09940-50111

MATERIALS

The materials listed below are required for maintenance operations, and should be kept on hand for ready use. In addition, such standard materials as cleaning fluids, lubricants, etc., should also be available.

Material	Part
 SUZUKI SUPER GREASE "A" 99000-25010	· Oil seals · Brake cam · Throttle grip · Speedometer cable · Gearshift lever shaft · Steering stem bearings · Swinging arm bearing and dust seal
 SUZUKI BOND No.4 99000-31030	· Front fork damper rod bolt · Front fork oil drain screw
 THREAD LOCK "1342" 99000-32050	· Gearshift cam guide screw · Gearshift pawl screw · Bearing retainer screw · Front fork air valve · Front fork damper rod bolt

Material	Part
 THREAD LOCK SUPER "1332B" 99000-32090	· Magneto rotor bolt
 THREAD LOCK SUPER "1361A" 99104-32020	· Kick starter return spring stopper screw · Kick starter stopper bolt

USE OF GENUINE SUZUKI PARTS

Whenever replacing parts on your motorcycle, it is recommended that you use Genuine Suzuki replacement parts or their equivalent.

SPECIFICATIONS

DIMENSIONS AND WEIGHT

Overall length	2 165 mm (85.2 in.)
Overall width	870 mm (34.3 in.)
Overall height	1 220 mm (48.0 in.)
Wheelbase	1 445 mm (56.9 in.)
Ground clearance	320 mm (12.6 in.)
Dry mass	109 kg (241 lbs)

ENGINE

Type	Two-stroke, air cooled
Intake system	Piston and reed valve
Number of cylinder	1
Bore	67.0 mm (2.638 in.)
Stroke	70.0 mm (2.756 in.)
Piston displacement	246 cm^3 (15.0 cu.in.)
Corrected compression ratio	7.7 : 1
Carburetor	MIKUNI VM36SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Fuel/oil premixture of 20 : 1

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction	2.727 (60/22)
Final reduction	4.000 (52/13)
Gear ratios, Low	2.384 (31/13)
2nd	1.750 (28/16)
3rd	1.352 (23/17)
4th	1.095 (23/21)
5th	0.904 (19/21)
Top	0.760 (19/25)
Drive chain	TAKASAGO RK520SU, 110 links

CHASSIS

Front suspension	Telescopic pneumatic/coil spring, oil dampened
Rear suspension	Swinging arm, gas/oil dampened, spring 3-way adjustable
Steering angle	45° (right & left)
Caster	60° 30′
Trail	125 mm (4.92 in.)
Turning radius	2.3 m (7.5 ft)
Front brake	Internal expanding
Rear brake	Internal expanding
Front tire size	3.00-21-4PR
Rear tire size	5.10-18-4PR

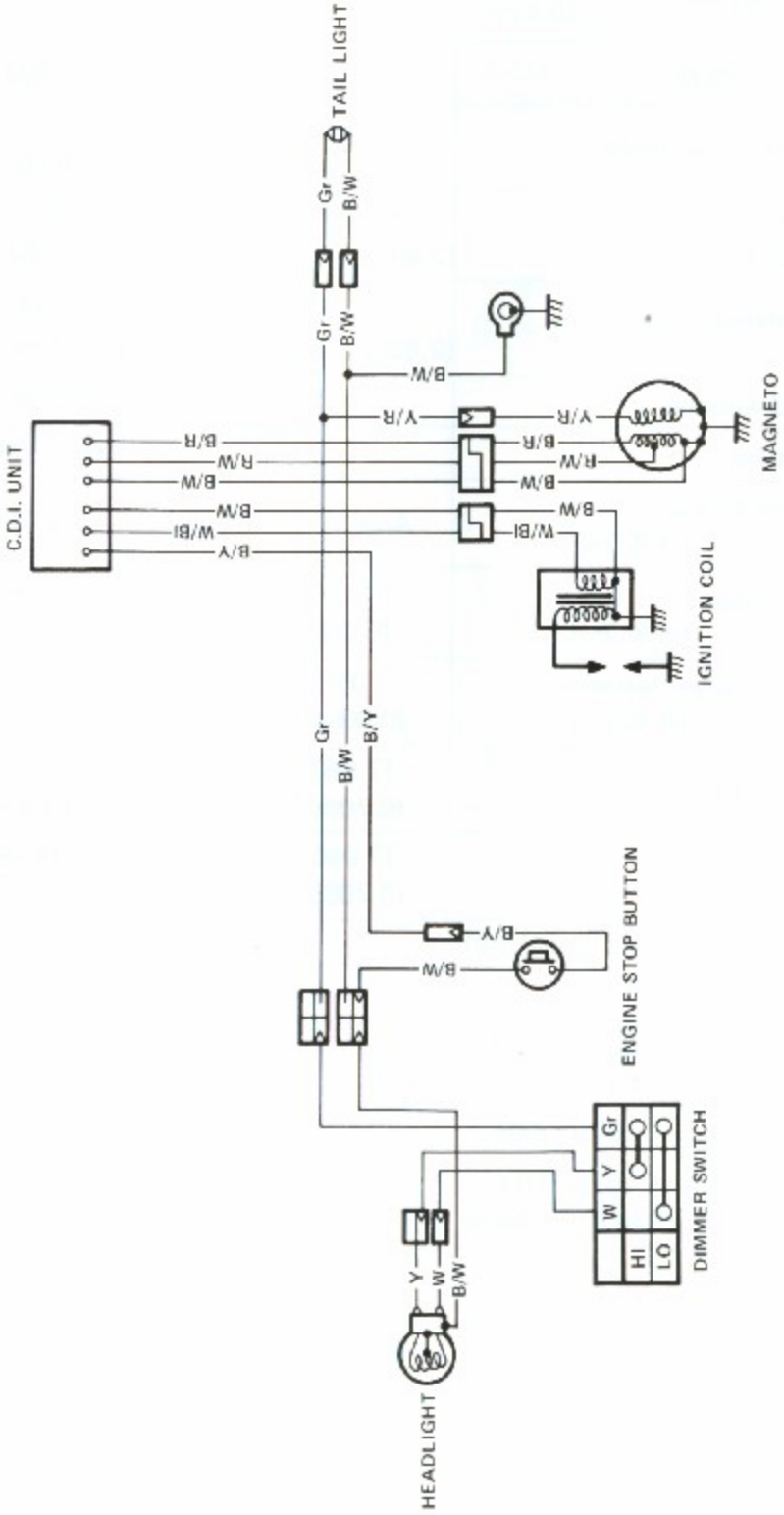
ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	13.5° ± 2° B.T.D.C. at 6 000 r/min
Spark plug	NGK B10EGV or CHAMPION N59G
Headlight	6V 15/15W
Taillight	6V 5W

CAPACITIES

Fuel tank	10.6 L (2.8/2.3 US/Imp gal)
Front fork oil	308 ml (10.41/10.84 US/Imp oz)
Transmission oil	800 ml (1.69/1.41 OS/Imp pt)

WIRING DIAGRAM



SERVICE DATA

Piston + Ring + Cylinder

Unit : mm (in)

ITEM	STANDARD	LIMIT
Piston – Cylinder clearance	0.060 ~ 0.070 (0.0024 ~ 0.0028)	0.120 (0.0047)
Cylinder bore / Measurement Point	67.000 ~ 67.015 (2.6378~2.6384)/20(0.79)	67.070 (2.6406)
Piston dia. / Measurement point	66.935 ~ 66.950 (2.6352~2.6358)/22(0.87)	66.880 (2.6331)
Cylinder head warpage	–	0.05 (0.002)
Cylinder warpage	–	0.05 (0.002)
Piston ring free end gap 1st & 2nd:	Approx. 6.5 (0.26)	5.2 (0.20)
Piston ring end gap 1st & 2nd:	0.20 ~ 0.40 (0.008 ~ 0.016)	0.85 (0.033)
Piston ring – Groove clearance 1st & 2nd:	0.01 ~ 0.05 (0.0004 ~ 0.0020)	–
Piston pin bore I.D.	17.998 ~ 18.006 (0.7086 ~ 0.7089)	18.030 (0.7098)
Piston pin O.D.	17.995 ~ 18.000 (0.7085 ~ 0.7087)	17.980 (0.7079)

Crankshaft + Connecting rod

Unit : mm (in)

ITEM	STANDARD	LIMIT
Con-rod small end bore	23.003 ~ 23.011 (0.9056 ~ 0.9059)	23.040 (0.9071)
Con rod deflection (small end)	–	3.0 (0.12)
Crankshaft runout	–	0.05 (0.002)
Crank web to web width	62 ± 0.1 (2.441± 0.004)	–

Clutch

Unit : mm (in)

ITEM	STANDARD	LIMIT
Drive plate thickness	2.9 – 3.1 (0.11 – 0.12)	2.6 (0.10)
Drive plate distortion	–	0.2 (0.008)
Driven plate thickness	2.0 ± 0.06 (0.079± 0.002)	–
Driven plate distortion	–	0.1 (0.004)
Drive plate claw width	15.8 ~ 16.0 (0.62 ~ 0.63)	15.0 (0.59)
Clutch spring free length	40.5 (1.59)	38.5 (1.52)
Pri. drive – Driven gear backlash	0.02 ~ 0.07 (0.001 ~ 0.003)	0.10 (0.004)

Transmission

Unit : mm (in)

ITEM	STANDARD	LIMIT
Shift fork – Groove clearance	0.2 ~ 0.4 (0.008 ~ 0.016)	0.6 (0.024)
Shift fork groove width	4.25 ~ 4.35 (0.167 ~ 0.171)	–
Shift fork thickness	3.95 ~ 4.05 (0.156 ~ 0.159)	–
Drive chain size · 20 pitch length	TAKASAGO RK520SU 110 links 317.5 (12.50)	324 (12.76)

Carburetor

ITEM	SPECIFICATION
Carburetor type	MIKUNI VM36SS, Single
I.D. No.	40600
Bore size mm (in.)	36 (1.4)
Float height mm (in.)	10.7 ± 0.5 (0.42 ± 0.02)
Air screw	1½
Throttle valve cut-away	2.5
Jet needle	6DH20-2
Air jet	2.5
Pilot jet	# 37.5
Pilot outlet	0.6
Needle jet	O–0
By-pass	1.4
Main jet	# 280
Valve seat	3.0
Starter jet	80

Electrical

ITEM	SPECIFICATION	
Ignition timing	13.5° ± 2° B.T.D.C. at 6 000 r/min	
Spark plug	NGK B10EGV or CHAMPION N-59G	
Spark plug gap mm (in.)	0.5 ~ 0.6 (0.020 ~ 0.024)	
Spark performance mm (in.)	Over 8 (0.3) at 1 atm	
Ignition coil resistance (primary)	B/W–W/Bl	Approx. 0 – 1 Ω
Ignition coil resistance (secondary)	Plug cap – B/W or W/Bl	Approx. 10 – 11 Ω
Magneto coil resistance	B/R–B/W	Approx. 195 – 245 Ω
	R/W–B/R	Approx. 35 – 45 Ω
	Y/R–B/W	Approx. 0 – 2 Ω
Lighting coil output	Above 5.5V at 2 500 r/min Below 8.0V at 8 000 r/min	

Brake + Wheel

Unit : mm (in)

ITEM		STANDARD	LIMIT
Axle runout (Front or Rear)		–	0.25 (0.010)
Brake drum I.D.	Front	–	150.7 (5.93)
	Rear	–	150.7 (5.93)
Brake lining thickness (Front & Rear)		–	1.5 (0.06)
Wheel rim runout (Radial & Axial)		–	2.0 (0.08)
Tire size	Front	3.00 – 21 – 4PR	–
	Rear	5.10 – 18 – 4PR	–
Tire Tread depth	Front	–	4.0 (0.16)
	Rear	–	4.0 (0.16)

Tire Air Pressure

ITEM		STANDARD	LIMIT
Cold inflation pressure	Front & Rear	1.0 kg/cm^2 (14 psi)	–

Suspension

Unit : mm (in)

ITEM	STANDARD	LIMIT
Front fork stroke	250 (9.84)	–
Rear wheel travel	257 (10.1)	–
Fork spring free length	580.5 (22.85)	571 (22.5)
Fork oil level	180 (7.1)	–
Swinging arm pivot shaft runout	–	0.3 (0.01)

Capacity

ITEM		SPECIFICATION
Fuel tank		10.6 L (2.80/2.33 US/Imp gal)
Transmission oil	Change	800 ml (0.85/0.70 US/Imp)
	Overhaul	900 ml (0.95/0.79 US/Imp)
Front fork oil (each leg)		308 ml (10.41/10.84 US/Imp oz)
Fuel type		Premium gasoline
Engine oil type		SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT
Transmission oil type		SAE 20W/40
Front fork oil type		SAE 5W/20

Prepared by

SUZUKI MOTOR CO., LTD.

Service Department
Overseas Operations Division

January, 1980

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