

**SUZUKI**

**MI20X**

**SERVICE MANUAL**

99500-90600-01E

(英)

# FOREWORD

The SUZUKI M120X is forced air-cooled, 2-cycle engine. On the ignition system, SUZUKI's unique transistorized ignition warrants a strong spark for sure ignition. In addition, the engine speed is maintained constant by means of the governor mounted on the crankshaft. Read this manual carefully so you can make best use of it as ready reference for your service work.

To emphasize special information the words WARNING, CAUTION and NOTE carry special meanings and should be carefully reviewed.

WARNING . . . . . The personal safety of the user may be involved. Disregarding this information could result in injury to the owner.

CAUTION . . . . . These instructions point out special service procedure or precautions that must be followed to avoid damage the engine.

NOTE . . . . . Special information to make maintenance easier or important instructions clearer.

**NOTE:**

This manual is compiled based on M120X '85 production.

**SUZUKI MOTOR CORPORATION**

Service Department  
Marine & Power Products Division

# GROUP INDEX

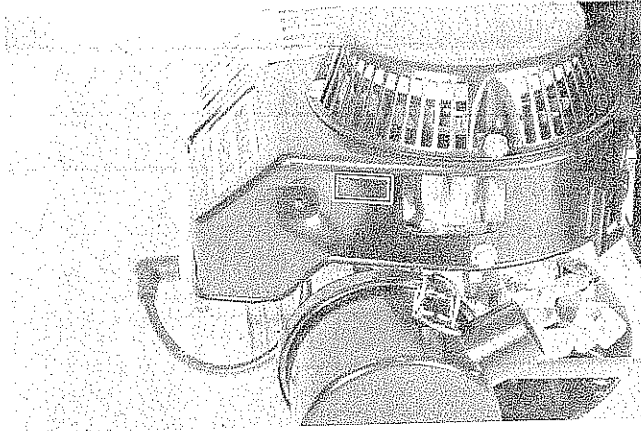
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## SERIAL NUMBER LOCATION

The engine serial number is located on the cooling fan cover.



## FUEL RECOMMENDATION

Suzuki recommends that you use unleaded gasoline, containing no alcohol, with at least 85 pump octane ( $\frac{R+M}{2}$  method). Regular leaded gasoline, containing no alcohol, may also be used.

Blends of unleaded gasoline and ethanol (grain alcohol), also known as gasohol, are commercially available in some areas. These blends may be used, provided they contain no more than 5% ethanol. Be sure the gasoline-ethanol blend you use has at least 85 pump octane, as recommended for unleaded gasoline without any alcohol.

**DO NOT USE GASOLINES CONTAINING METHANOL** (methyl or wood alcohol), even if they contain cosolvents and corrosion inhibitors for methanol. Fuel system damage and performance problems resulting from the use of such fuels are not the responsibility of Suzuki and may not be covered under the limited warranty.

### CAUTION:

Take care not to spill gasoline during refueling. Some types of gasoline can cause paint damage. Such damage may not be covered under the limited warranty.

## OIL RECOMMENDATION

Use SUZUKI CCI oil. It is a proprietary lubricant designed to ensure the best engine performance and to minimize combustion chamber deposits, avoid preignition and prolong the spark plug life. If SUZUKI CCI oil is not available, a high-grade two cycle oil should be used instead. It is with the oil present in the fuel that the running parts of the engine are lubricated.

## MIXING PROCEDURE

To mix gasoline and oil, always use a separate, clean container and oil measuring cup. 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.

### FUEL OIL MIXTURE RATIO 50 parts gasoline to 1 part oil

Gasoline	Oil	
	ml	Imp (oz)
L		
0.5	10	0.35
1.0	20	0.70
1.5	30	1.06

## PERIODIC INSPECTION

Item	Interval	Initial and Every 50 hrs.	Every 100 hrs	Every 300 hrs or one year
Clean the spark plug			○	
Clean the air cleaner element		*○		
Clean the fuel strainer		○		
Check tightness of bolts and nuts		○		
Combustion chamber cleaning				○
Clean the carburetor		○		
Clean the fuel tank				○
Fuel hose change		Every 2 years		

**CAUTION:**

\* When used in dusty areas, the air cleaner should be service more frequently.

## SPECIFICATIONS

\*These specifications are subject to change without notice.

ITEM	DATA
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## DIMENSION &amp; DRY WEIGHT

Length (A)	365 mm (14.4 in)
Width (B)	357 mm (14.1 in)
Height (C)	257 mm (10.1 in)
Output shaft height (D)	61.9 mm (2.44 in)
Output shaft diameter (E)	22.2 mm (0.87 in)
Dry weight	9.3 kg (20.5 lb)

## PERFORMANCE

Maximum output	2.8 kW (3.8 HP)/3,600 rpm
Maximum torque	0.79 kg-m (5.7 lb-ft)/3,000 rpm

## ENGINE

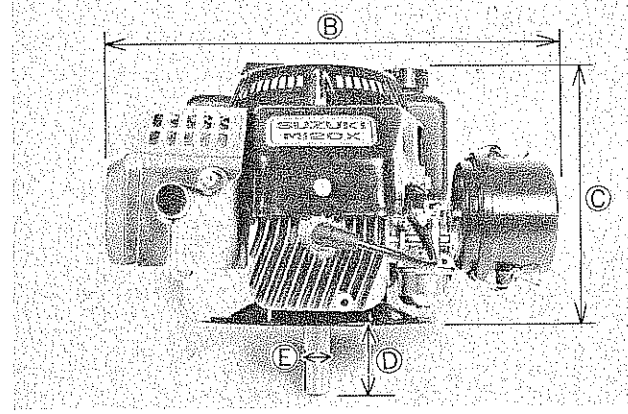
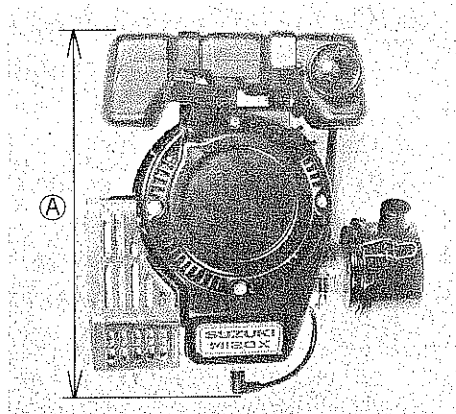
Engine type	Forced air cooled 2 cycle, gasoline
Bore	58 mm (2.3 in)
Stroke	46 mm (1.8 in)
Displacement	121 cm <sup>3</sup> (7.4 cu.in)
Carburetor	Butterfly valve
Air cleaner	Polyurethane foam and paper
Starting system	Recoil starter
Governor	Centrifugal mechanical

## ELECTRICAL

Ignition system	Transistorized ignition	
Ignition timing	B.T.D.C. 23° ± 2°/3,000 rpm	
Spark plug	For South Africa	NGK BPMR6A
	For England	NGK BPMR4A
Spark plug gap	0.6 – 0.7 mm (0.024 – 0.028 in)	

## FUEL &amp; OIL

Fuel	Suzuki recommends that you use unleaded gasoline containing no alcohol, with at least 85 pump octane (R <sub>2</sub> <sup>M</sup> method). Regular leaded gasoline containing no alcohol may also be used.
Fuel tank capacity	1.5 L (1.3 Imp qt)
Engine oil	Suzuki CCI oil



## SERVICE DATA

ITEM	DATA	
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## ENGINE

Crankshaft diameter	Upper	19.993 – 20.000 mm (0.7871 – 0.7874 in)
	Lower	24.972 – 24.993 mm (0.9831 – 0.9840 in)
Crankshaft deflection	Limit	0.05 mm (0.002 in)
Conrod deflection	Limit	3.0 mm (0.12 in)
Piston to cylinder clearance	STD	0.042 – 0.058 mm (0.0017 – 0.0023 in)
Piston diameter measuring point	25 mm (1.0 in) from piston skirt end	
Cylinder bore measuring point	110 mm (4.3 in) from cylinder bottom surface	
Wear on cylinder bore	Limit	0.10 mm (0.004 in)
Piston pin diameter	STD	12.002 – 12.010 mm (0.4725 – 0.4728 in)
	Limit	12.030 mm (0.4736 in)
Piston pin hole diameter	STD	11.995 – 12.000 mm (0.4722 – 0.4724 in)
	Limit	11.980 mm (0.4716 in)
Piston ring end gap	STD	0.15 – 0.35 mm (0.006 – 0.014 in)
	Limit	0.70 mm (0.028 in)

## CARBURETOR

ITEM	For South Africa	For England
Type	MIKUNI BV18-15	←
Main jet	# 90	# 85
Main air jet	φ 1.5 mm	←
Pilot jet	# 45	# 40
Pilot air jet	φ 0.9 mm	←
Throttle valve	# 130	# 150
Pilot outlet	φ 0.7 mm	←
Valve seat	φ 1.5 mm	←

\*These service data are subject to change without notice.

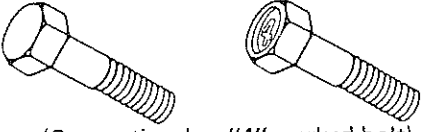
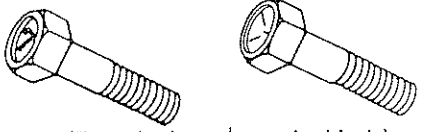


## 8 GENERAL INFORMATION

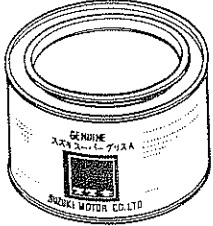
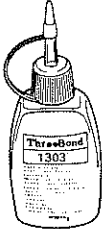
### TIGHTENING TORQUE

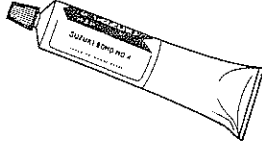
ITEM	TIGHTENING TORQUE
Crankcase bolt	9 – 11 N·m, 0.9 – 1.1 kg-m, 6.5 – 8.0 lb-ft
Flywheel nut	40 – 50 N·m, 4.0 – 5.0 kg-m, 29.0 – 36.0 lb-ft

### TIGHTENING TORQUE FOR GENERAL BOLTS

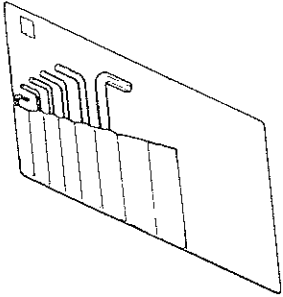
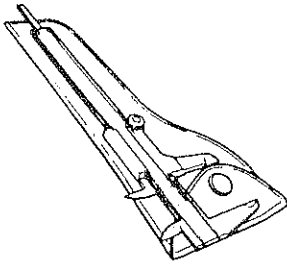
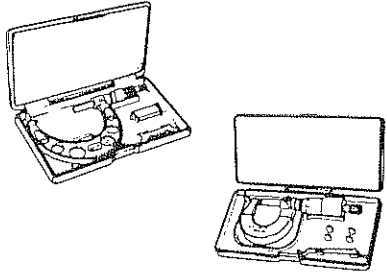
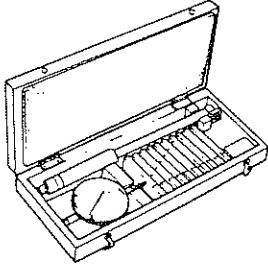
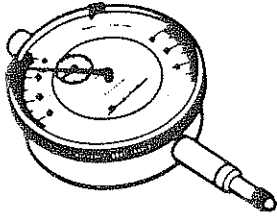
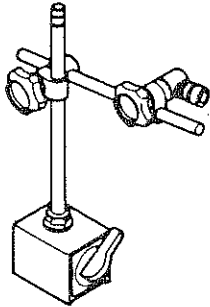
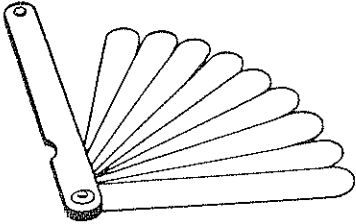
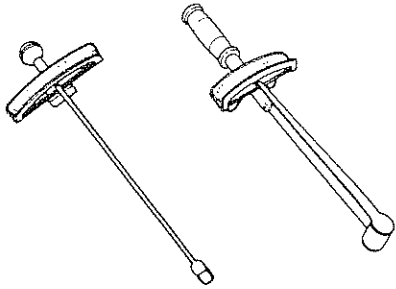
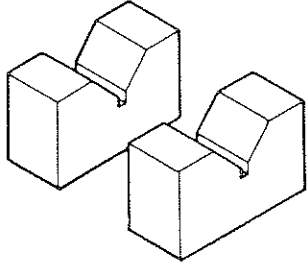
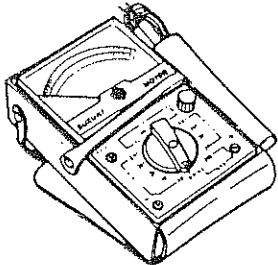
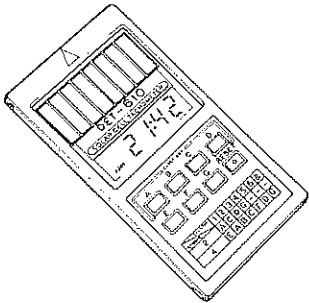
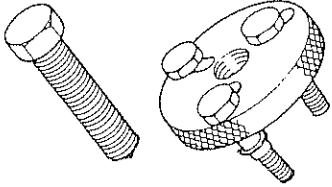
Types of bolt	Thread diameter (mm)	Tightening torque		
		N·m	kg-m	lb-ft
 (Conventional or "4" marked bolt)	5	2 – 4	0.2 – 0.4	1.5 – 3.0
	6	4 – 7	0.4 – 0.7	3.0 – 5.0
	8	10 – 16	1.0 – 1.6	7.0 – 11.5
	10	22 – 35	2.2 – 3.5	16.0 – 25.5
 (7 marked or $\Delta$ marked bolt)	5	3 – 6	0.3 – 0.6	2.0 – 4.5
	6	8 – 12	0.8 – 1.2	6.0 – 8.5
	8	18 – 28	1.8 – 2.8	13.0 – 20.0
	10	40 – 60	4.0 – 6.0	29.0 – 43.5

### SPECIAL MATERIALS

PART NAME	PART NO.	NET
Suzuki Super Grease "A" 	99000-25010	450 g
Thread Lock Super "1303" 	99000-32030	50 g

PART NAME	PART NO.	NET
Suzuki Bond No. 4 	99000-31030	200 g

## SPECIAL TOOLS

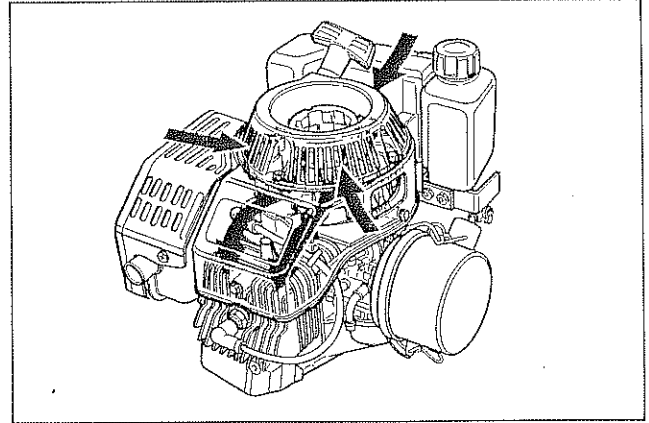
<p>L type hexagon wrench set</p>  <p>09900-00401</p>	<p>Vernier calipers</p>  <p>09900-20101</p>	<p>Micrometer</p>  <p>09900-20203 (50 – 75 mm) 09900-20205 (0 – 25 mm)</p>
<p>Cylinder gauge set</p>  <p>09900-20508</p>	<p>Dial gauge</p>  <p>09900-20606</p>	<p>Dial gauge chuck</p>  <p>09900-20701</p>
<p>Thickness gauge</p>  <p>09900-20803</p>	<p>Torque wrench</p>  <p>09900-21102 (0 – 120 kg-cm) 09900-21103 (100 – 900 kg-cm)</p>	<p>Steel "V" block set</p>  <p>09900-21303</p>
<p>Pocket tester</p>  <p>09900-25002</p>	<p>Engine tachometer</p>  <p>09900-26006</p>	<p>Rotor remover</p>  <p>09930-30713</p>

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## FORCED AIR-COOLED ENGINE

The Suzuki M120X has an engine with a forced air cooling system. In this system the fan mounted on the flywheel magneto charges external, fresh air through the air charging port on the recoil starter. This charged air constantly cools the cylinder and its head in this order and is finally discharged out.



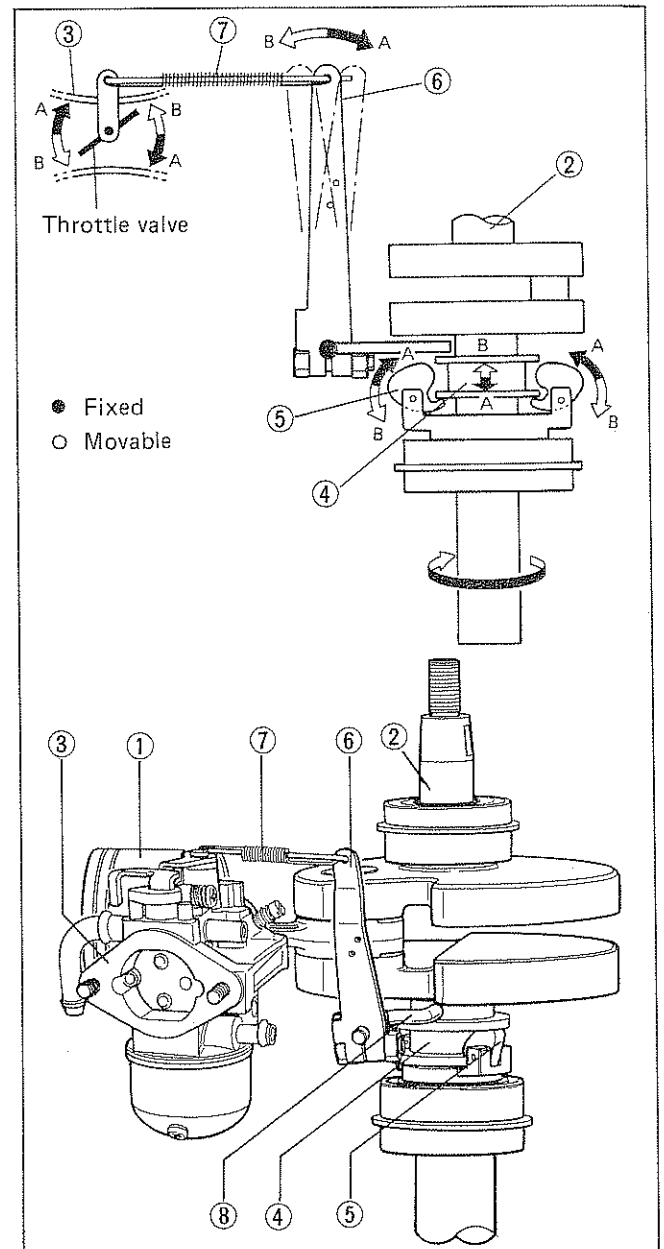
## GOVERNOR SYSTEM

The Suzuki M120X is equipped with a centrifugal type governor which is designed to maintain a constant engine speed. To be more precise, the governor keeps the engine speed at 3,600 rpm, regardless on the engine load.

Without this governor, the engine speed would change depending on the load. When the load is high, the engine speed decrease but the governor automatically functions to increase the throttle opening, thus supplying more fuel to the engine. In this way, the governor stabilizes the engine speed. When the load is light, the governor reduces throttle opening to keep the engine speed stable.

### Operation

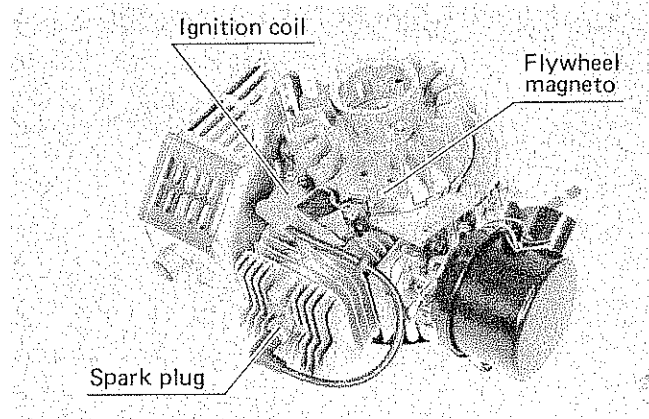
When the M120X is connected to a heavy load, the engine speed starts to decrease and the centrifugal force of the governor also begins to decrease. This allows the governor weights to move in direction A, and the governor spacer, interlocked with the weights, also moves in the same direction. As the governor moves, the control lever is moved in direction A by the throttle return shaft. As a result, the carburetor throttle valve moves in direction A to increase its opening and stops in a position at which the control lever is in balance with the spring. So the throttle valve also stops moving and thus the rated engine speed can be maintained. When the load is light, the governor parts move in direction B, and thus the rated speed can be maintained.



- |                   |                         |
|-------------------|-------------------------|
| ① Piston          | ⑤ Governor              |
| ② Crankshaft      | ⑥ Control lever         |
| ③ Carburetor      | ⑦ Spring                |
| ④ Governor spacer | ⑧ Throttle return shaft |

## TRANSISTORIZED IGNITION SYSTEM

The Suzuki M120X employs a transistorized ignition system having no contact point. Therefore, this ignition system does not require the periodic reconditioning of contact point surface or point gap adjustment. As a result, a strong spark is produced, even at low speeds, so that maximum reliability can be ensured.

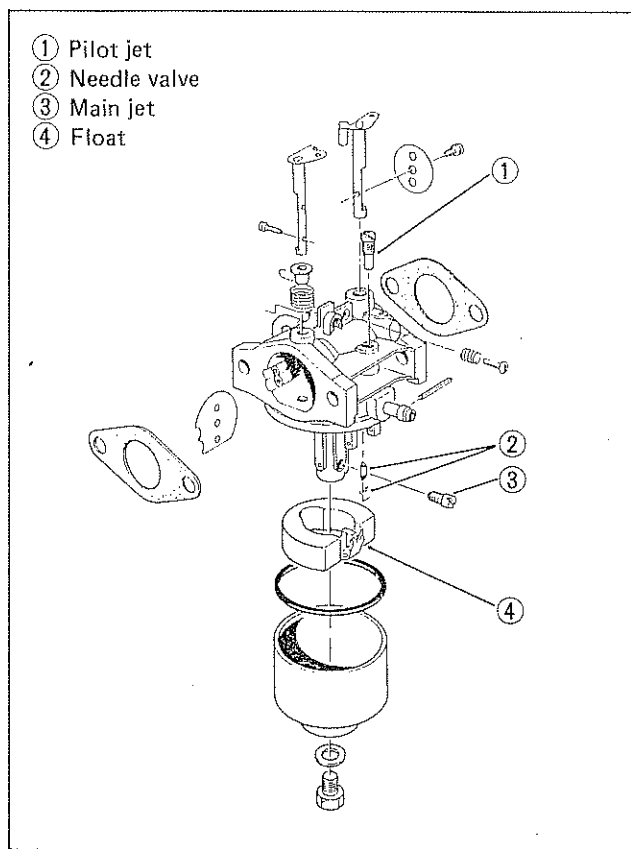


## CARBURETOR

### SPECIFICATIONS

ITEM	DATA	
	For South Africa	For England
Type	MIKUNI BV18-15	
Main jet	# 90	# 85
Main air jet	$\phi$ 1.5 mm	
Pilot jet	# 45	# 40
Pilot air jet	$\phi$ 0.9 mm	
Throttle valve	# 130	# 150
Pilot outlet	$\phi$ 0.7 mm	
Valve seat	$\phi$ 1.5 mm	

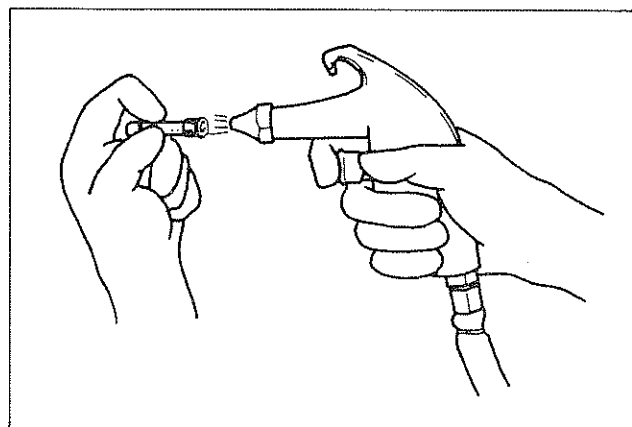
### CONSTRUCTION



### SERVICING

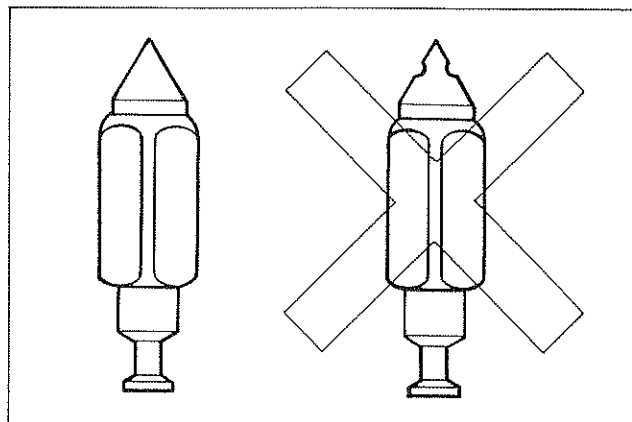
#### Jets

Wash the jets clean. Wash the holes in which jets are located, and clear each hole by directing compressed air to it, thereby removing foreign matter, if any.



#### Needle valve

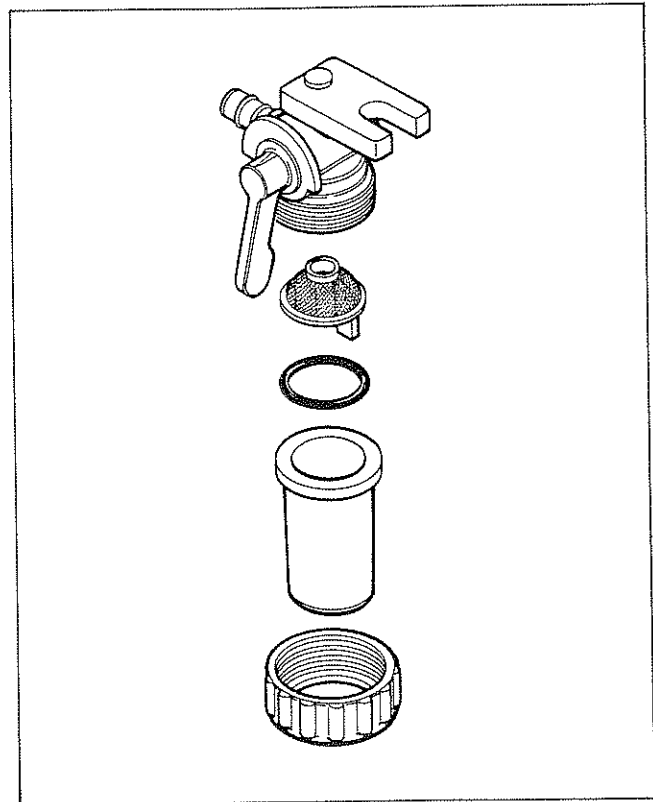
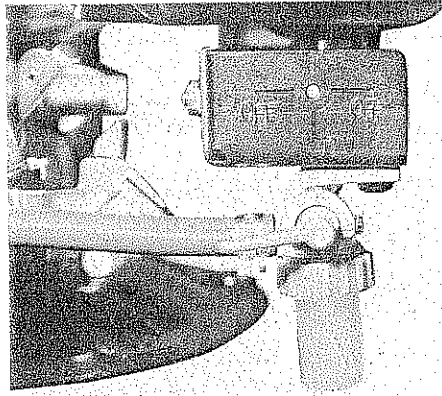
The conical tip of needle valve is subject to wear because the valve is kept pushed up by the float against the seat. Inspect the valve to see if its cone is grooved, as shown in fig. and if so, replace the valve. Continued use of such a valve will cause the fuel to overflow from the chamber. Check to be sure that the seat is clean and permits the valve to seat tight. Fuel overflow is often due to a dirty seat preventing the valve from seating tight. A dirty seat and valve must be cleaned by washing.



## FUEL FILTER

Inspect the strainer for clogging and, as necessary, clean it by washing it with nonflammable cleaning solvent. Clean the cup interior, too. These service should be carried out periodically.

It is advisable to replace the strainer if it is found in excessively dirty condition.



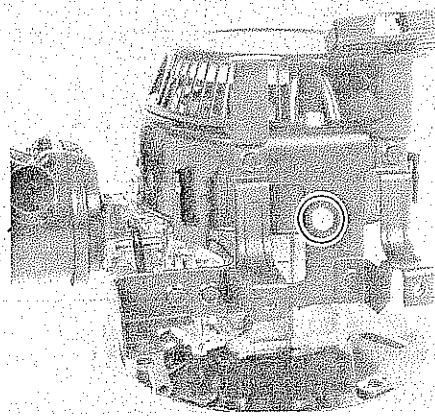
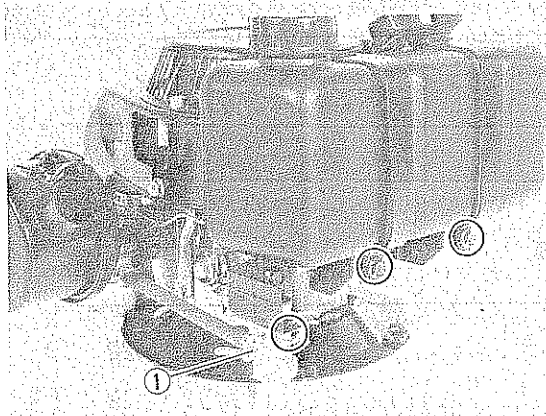
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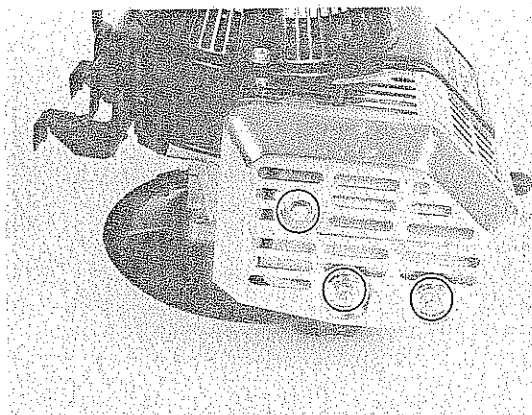


## DISASSEMBLY

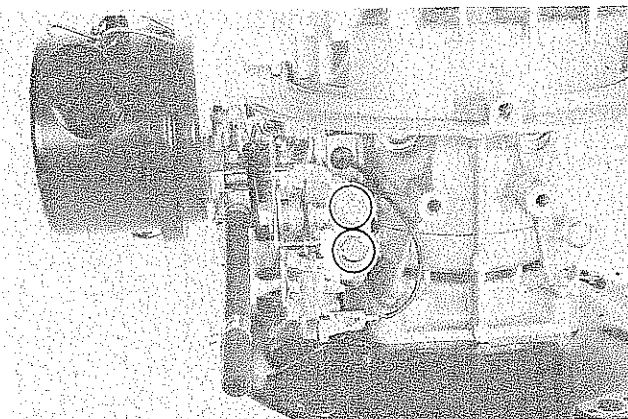
Turn fuel cock ① to the OFF position. Remove the fuel cock and the fuel tank.



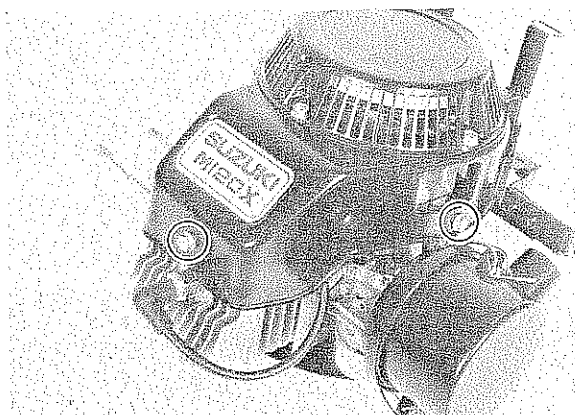
Remove the muffler assembly.



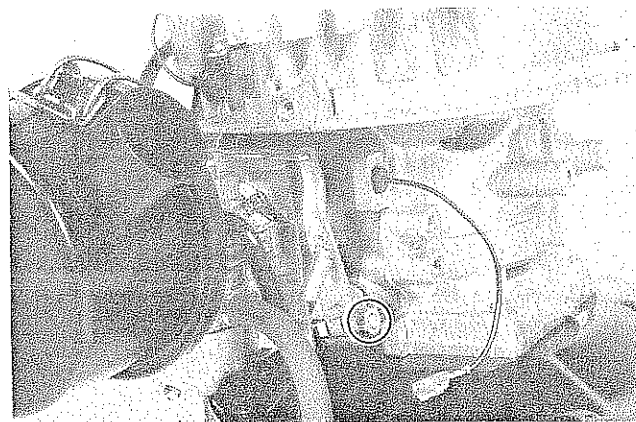
Remove the throttle control bracket.



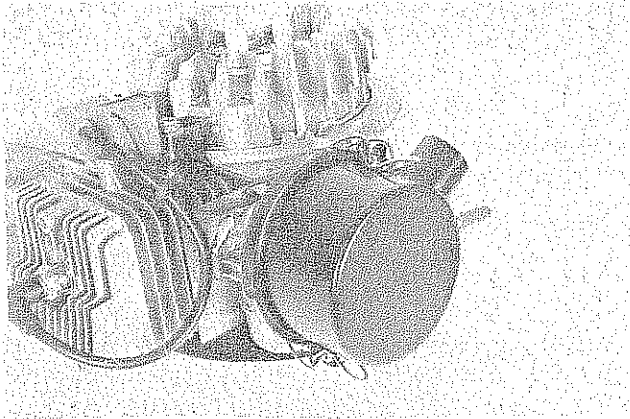
Remove the recoil starter assembly.  
Remove the cooling fan cover.



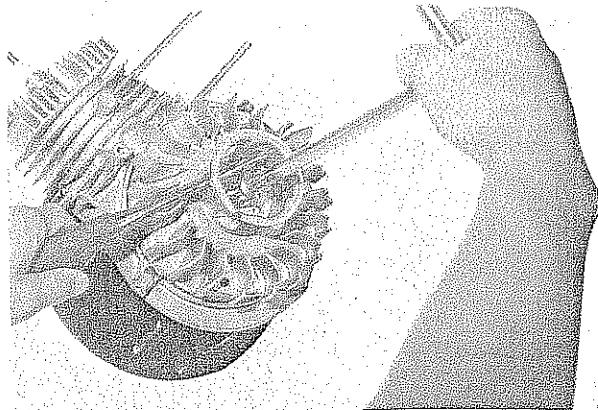
Remove the throttle control lever.



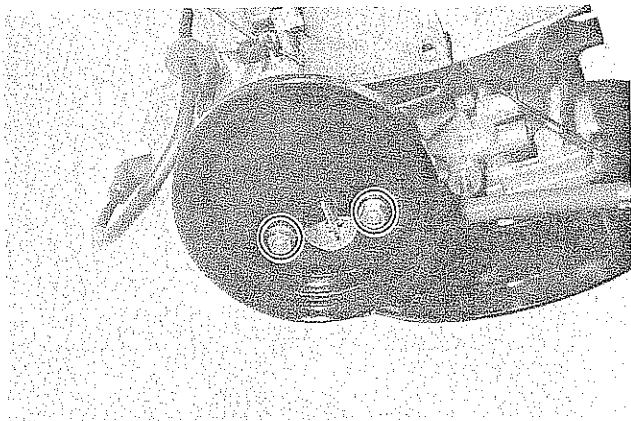
Remove the air cleaner assembly.



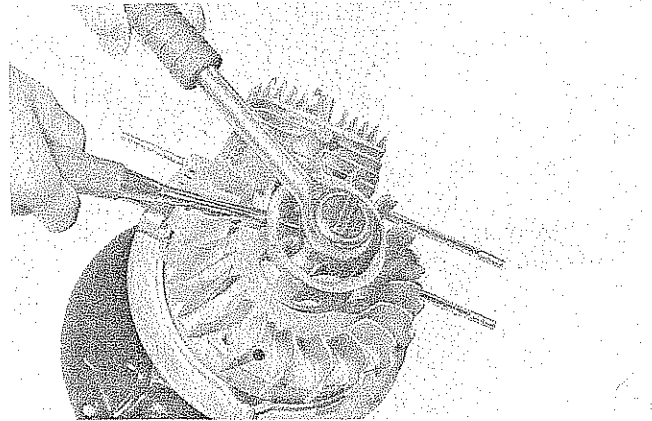
Remove the recoil starter pulley.



Remove the air cleaner rear cover and carburetor assembly.



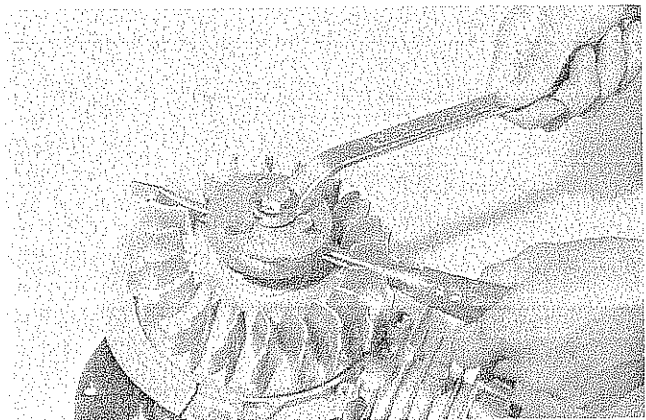
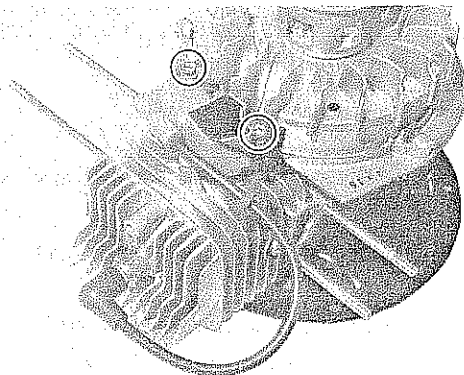
Remove the flywheel nut.



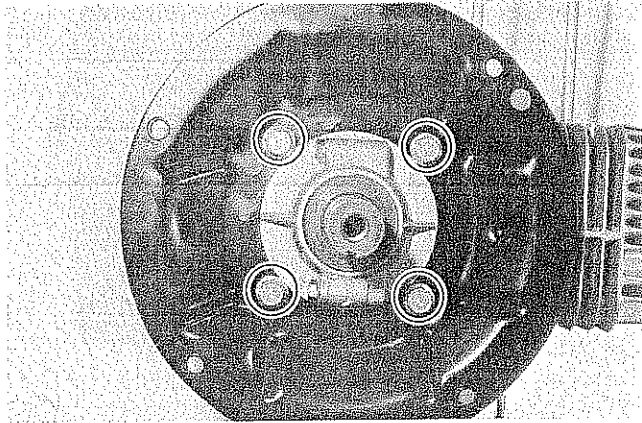
Using the special tool, remove the flywheel.

Rotor remover	09930-30713
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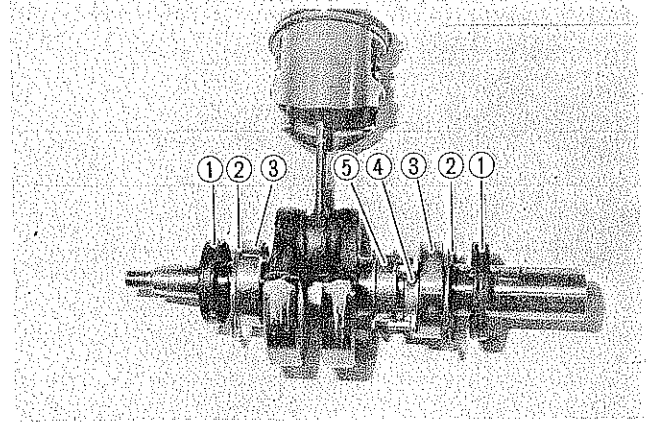
Remove the ignition coil/ignitor unit.



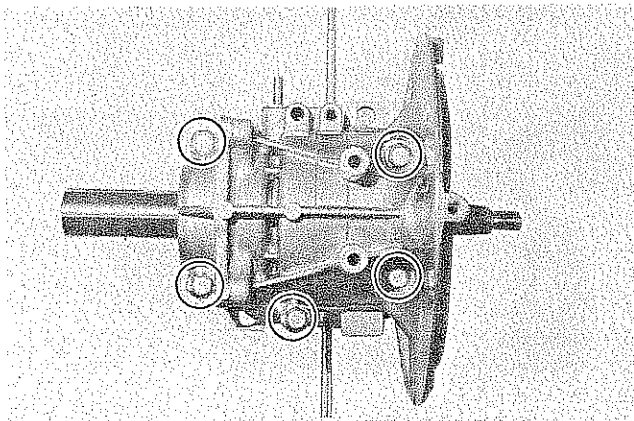
Remove the mounting plate.



Remove the oil seal ①, thrust washer ②, bearing ③, arm bracket ④ and governor spacer ⑤ from the crankshaft assembly.



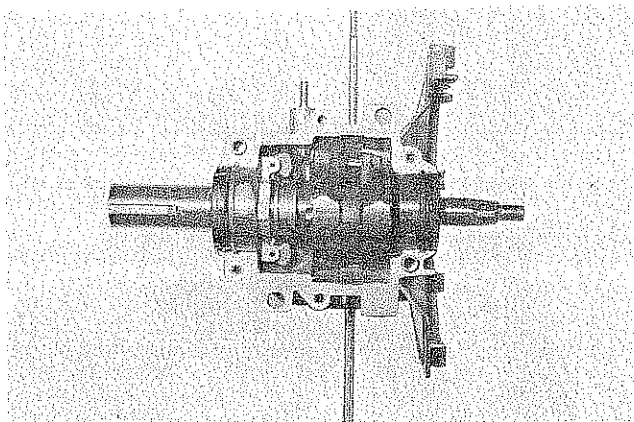
Remove the five bolts and separate the crankcase.



Remove the circlip retaining the piston pin. Push out the piston pin and separate the piston from the crankshaft assembly.



Lift the crankshaft assembly out from the cylinder.



Remove the piston rings.

## INSPECTION AND SERVICING

Components found in sound condition can be re-used in reassembly, with or without repair or servicing, depending on the condition in which each component is found upon inspection.

### CYLINDER

Carbon is likely to accumulate in the exhaust port. Such accumulations should be removed by scraping. The flat tip of a rod or a plain screwdriver may be used for this purpose.

#### CAUTION:

When de-carboning the exhaust port, be careful not to nick the cylinder wall.

Use the special tool ① to determine wear on the cylinder wall while taking readings at a total of 6 places, as shown in fig. Elevations at which the bore is to be checked are indicated as A, B and C at each elevation, take readings in two directions at right angles to each other.

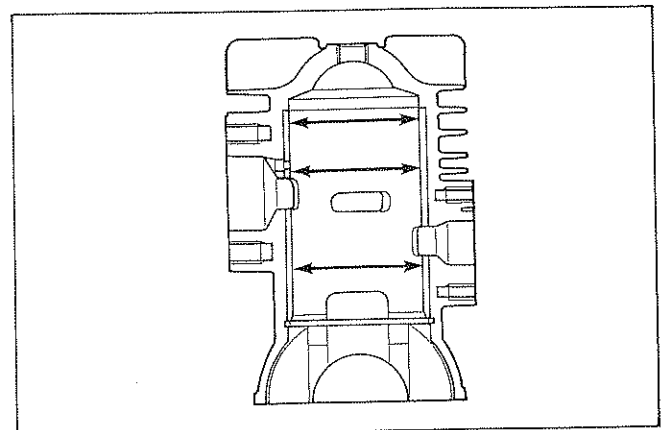
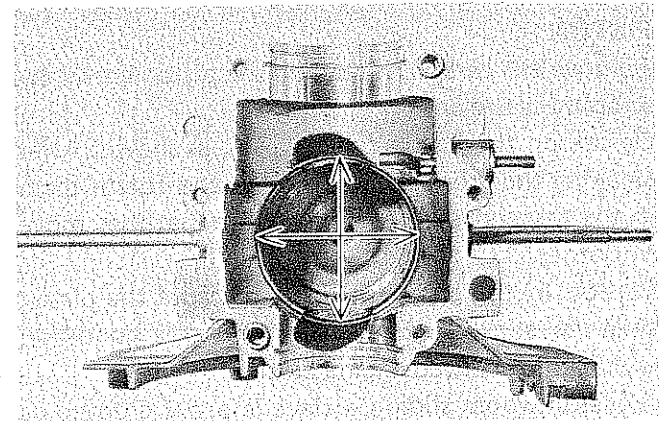
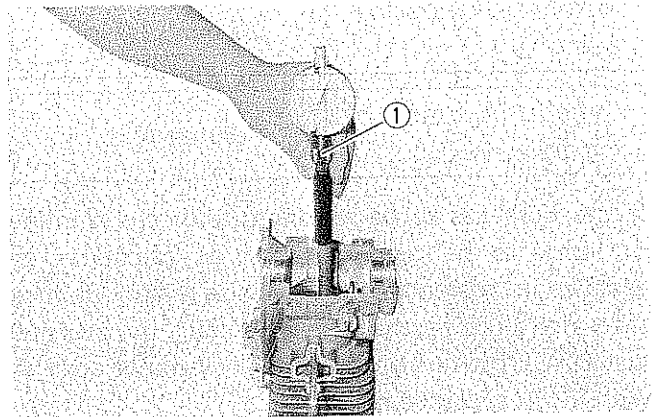
Wear on cylinder bore	Limit	0.10 mm (0.004 in)
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① Cylinder gauge set	09900-20508
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If the wear exceeds the limit indicated, rework the bore to the next oversize by using a boring machine or replace the cylinder with a new one. Oversize piston is available in one size: 0.25 mm (0.010 in.). After reworking the bore to an oversize, be sure to chamfer the edges of the ports and smooth the chamfered edges with emery paper. To chamfer, use a scraper, taking care not to nick the wall surface.

#### NOTE:

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



**PISTON TO CYLINDER CLEARANCE**

Piston to cylinder clearance is the difference between the piston diameter at the elevation indicated and the bore diameter at the elevation indicated.

The piston diameter should be measured at the point **(A)** above the piston skirt.

The cylinder diameter should be measured at the point **(B)** below the cylinder bottom.

Piston to cylinder clearance	0.042 – 0.058 mm (0.0017 – 0.0023 in)
Piston dia. measuring point <b>(A)</b>	25 mm (1.0 in)
Cylinder bore measuring point <b>(B)</b>	110 mm (4.3 in)

If the bore has to be reworked, then the amount of stock to be removed must be calculated in advance in reference to the oversize piston. Be sure that, after finishing the bore by honing, the oversize piston will provide an amount of clearance coming within the specified range.

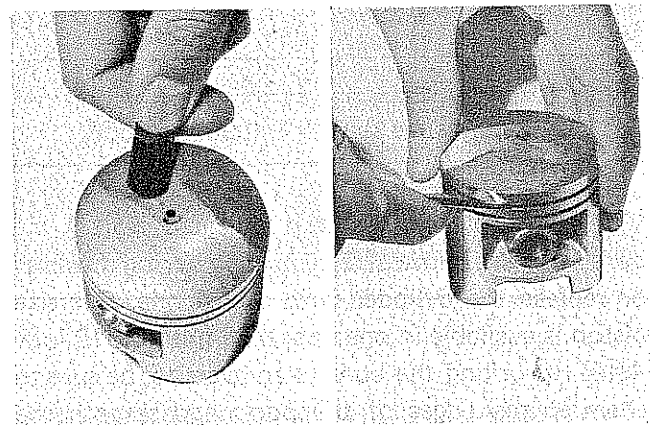
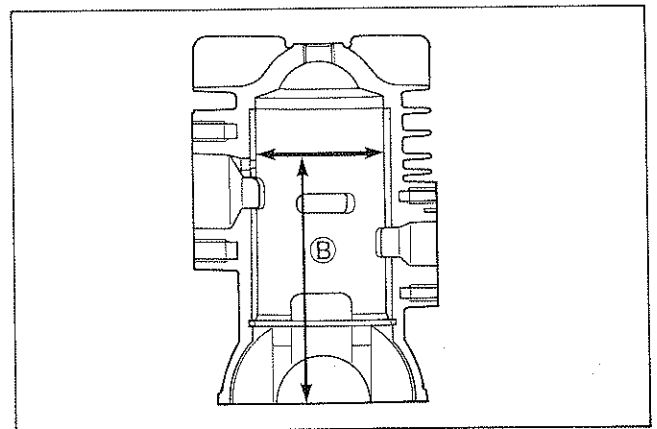
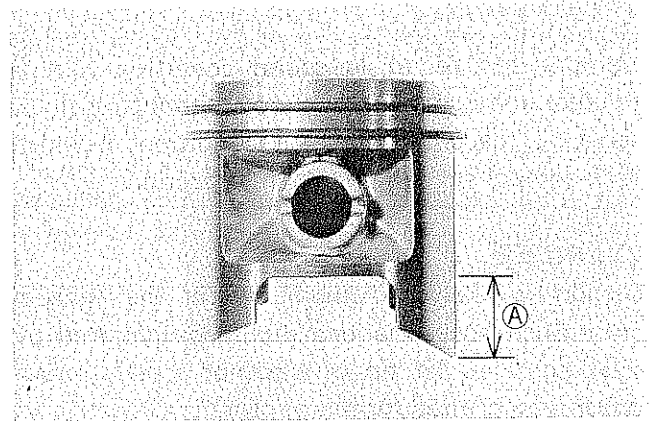
**PISTON**

Remove the carbon, if any, on the piston crown by scraping as shown.

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

Carbon in the groove is liable to cause the piston rings to stick in the groove, and this condition will lead to reduced engine output.

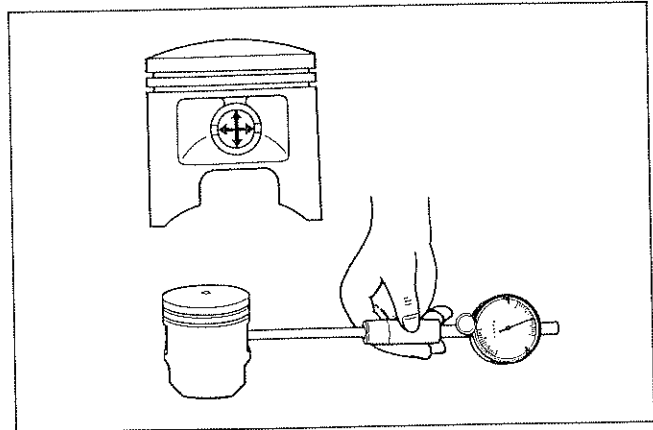
A piston whose sliding surface is badly grooved or scuffed due to overheating must be replaced. Shallow grooves or minor scuff can be removed by grinding with emery paper of about # 400.



### PISTON PIN AND PIN BORE

Using a small bore gauge, measure the piston pin bore inside diameter, and using a micrometer, measure the piston pin outside diameter. If the reading exceeds the following limit, replace both piston and piston pin.

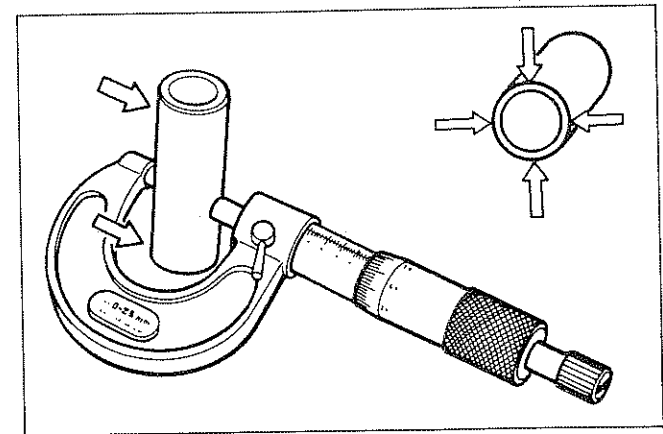
Piston pin hole diameter	STD	12.002 – 12.010 mm (0.4725 – 0.4728 in)
	Limit	12.030 mm (0.4736 in)



Using a micrometer, measure the piston pin outside diameter at six positions.

Piston pin diameter	STD	11.995 – 12.000 mm (0.4722 – 0.4724 in)
	Limit	11.980 mm (0.4716 in)

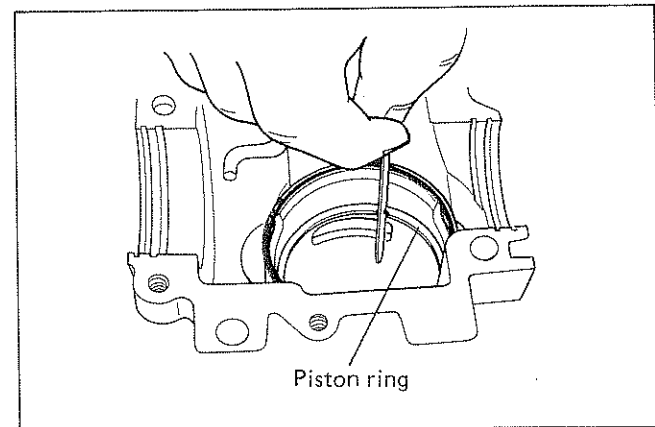
Micrometer (0 – 25 mm)	09900-20205
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### PISTON RINGS

As a piston ring wears, its end gap increases to promote "blowby", thus reducing the output of the engine. Bear this in mind and check the end gap of each piston ring held in the bore at its least worn part (the lowest portion of the bore). Be sure to hold the ring true and square and measure the gap with a thickness gauge. If the limit is exceeded, replace the ring.

Piston ring end gap	STD	0.15 – 0.35 mm (0.006 – 0.014 in)
	Limit	0.70 mm (0.028 in)



**CRANKSHAFT**

After visually inspecting the crankshaft, check it carefully for 1) shaft deflection, 2) condition of crankshaft bearing, and 3) condition of crank pin bearing.

1) Crankshaft deflection

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

Crankshaft deflection	Limit	0.05 mm (0.002 in.)
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2) Condition of crankshaft bearings

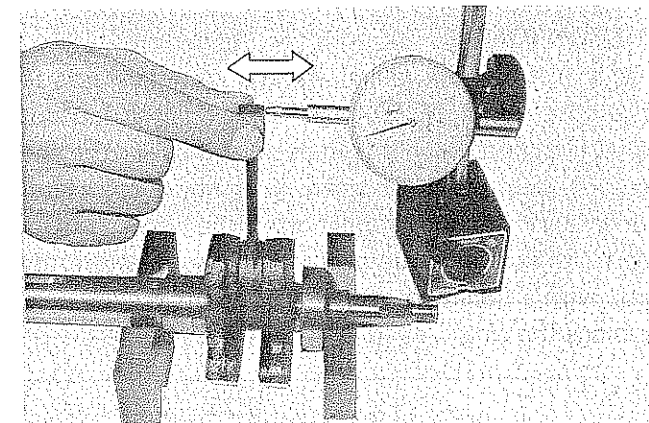
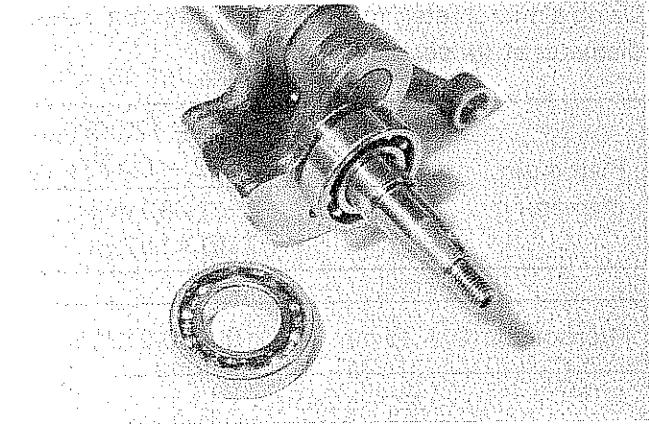
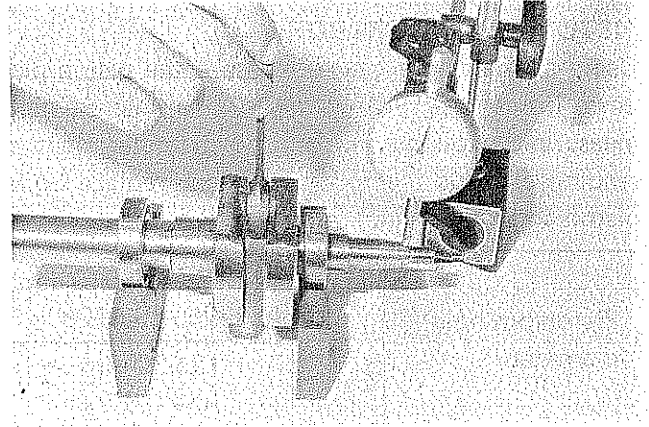
After washing the bearings, clean, spin the outer race of each bearing to see if it rotates smoothly as it should, without any abnormal noise. A bearing giving any abnormal noise or presenting a color signifying burning must be replaced.

To wash the crankshaft, use a nonflammable cleaning solvent. Be sure to oil it with the prescribed lubricant when installing.

3) Connecting rod deflection

Wear on the big end of the connecting rod can be found by checking the movement of the small end of the rod. This method will also check the extent of wear on the parts of the connecting rod's big end. If wear exceeds the limit, connecting rod, crank pin and crank pin bearing should all be replaced.

Connecting rod deflection	Limit	4.0 mm (0.16 in)
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## REASSEMBLY

Reassembly is generally reverse of disassembly, but there are a number of reassembling steps that demand or deserve detailed explanation or emphasis. These steps will be taken up in the following section.

### GASKETS

Do not re-use gaskets removed in engine disassembly. Be sure to use new gaskets. A gasket that has been in service is usually poor in sealing capability.

### OIL SEALS

Before fitting the oil seals to the crankshaft, be sure that the lip portions of the oil seals are in good condition, free of any cut, scratch marks or nicks. It is a good practice to use new oil seals when reassembling an overhauled engine.

When installing the oil seal on the crankshaft, apply Suzuki Super Grease "A" to the seal lip.

Suzuki Super Grease "A"
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99000-25010
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### CRANKSHAFT

If the crankshaft has been disassembled, refer to the exploded view of fig., when building it up to the original state. Crankshaft reassembly must be carried out with ut-most care, and with all parts perfectly clean.

When installing the crank pin, apply the following material (A) to lip portion of each wheel about 2 mm as illustrated. Care should be exercised, however, to keep the bearings free from the material.

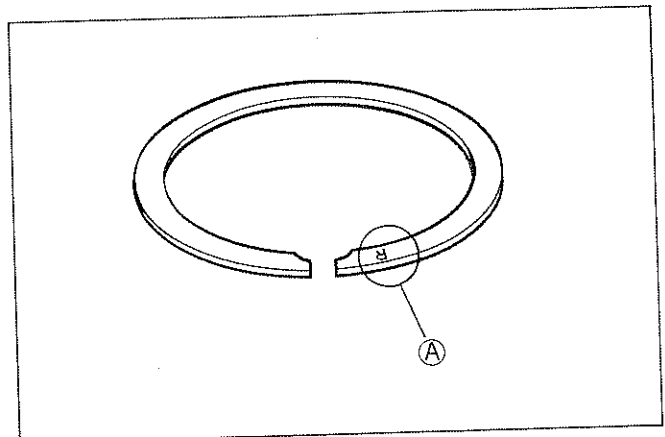
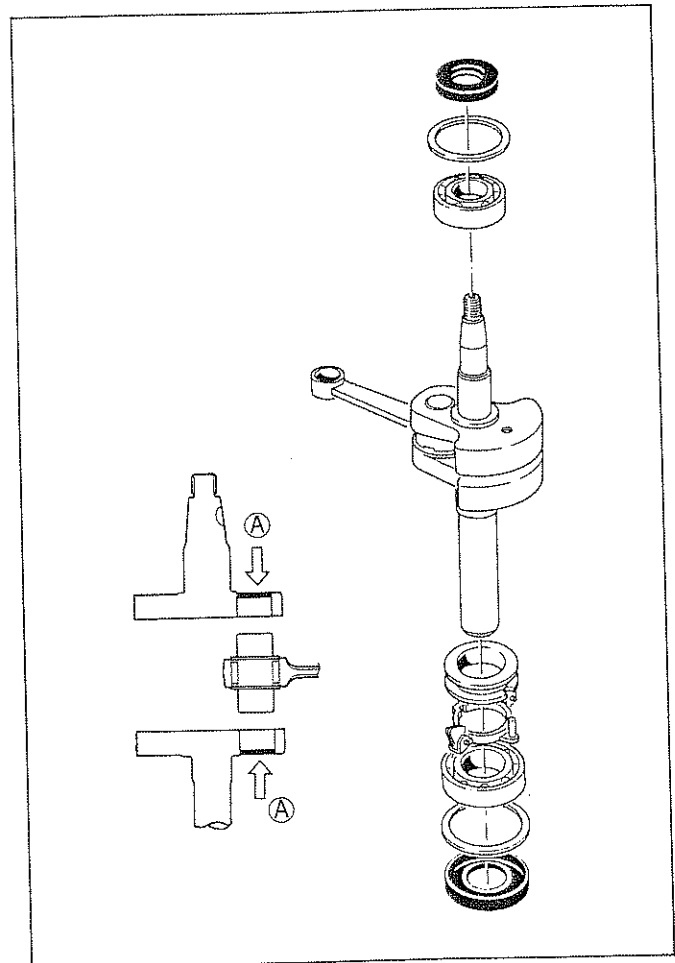
(A)
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Thread Lock Super "1303"
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99000-32030
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### PISTON RING

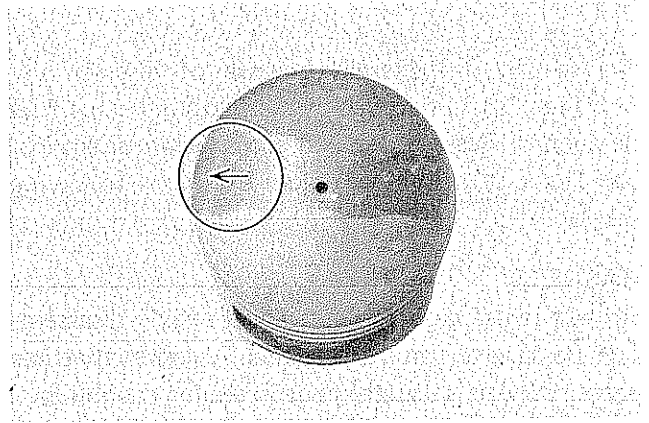
One side of each ring has a marking (A) indicating the ring manufacture. When installing the rings, be sure this marked side faces up.





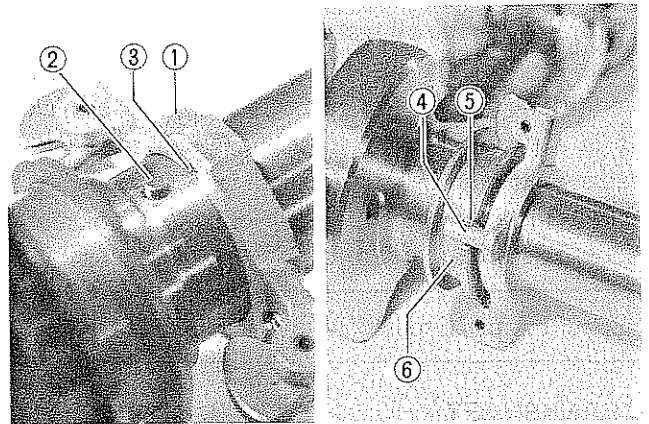
### PISTON

When reassembling the piston, care must be exercised to ensure that the piston is installed into the cylinder bore with its arrow mark ① to the exhaust port side.



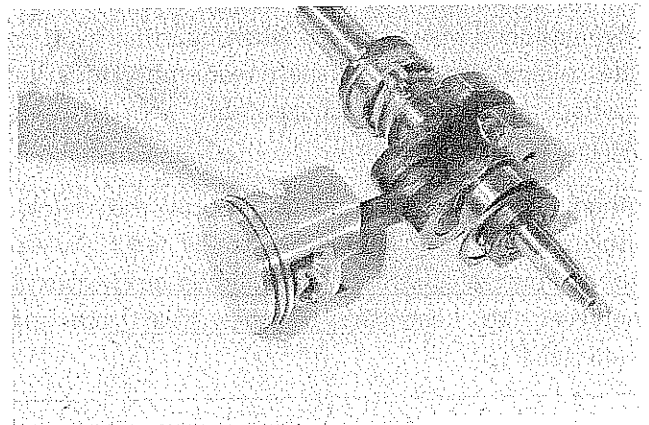
### CENTRIFUGAL ARM BRACKET AND GOVERNOR SPACER

When installing the arm bracket ①, match the pin ② of the crankshaft with the cut groove ③ of the arm bracket, and match the projected arm ④ of the arm bracket with the cut groove ⑤ of the governor spacer ⑥.



### CRANKSHAFT ASSEMBLY INSTALLATION

Before lowering the crankshaft, connecting rod and piston as a whole into the crankcase, apply Suzuki CCI oil to piston, piston rings and piston pin bearing.

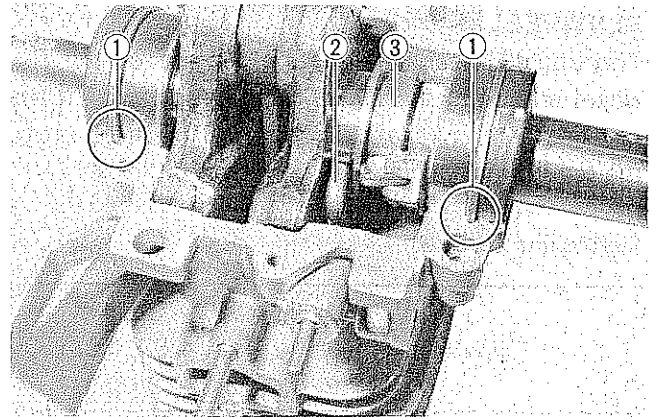


Locate the end gap of the ring over the locating pin ① so that the ring will seat snugly in the groove.

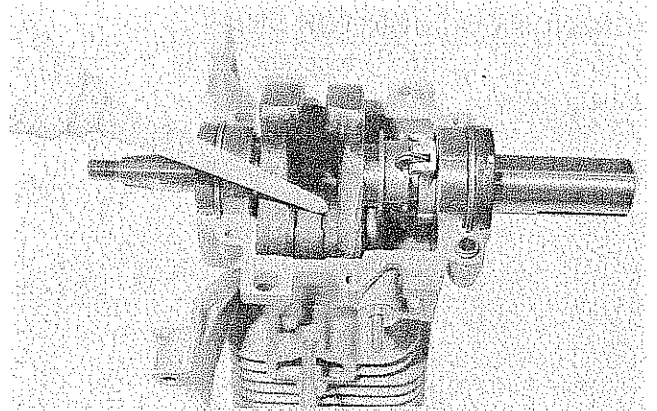


When installing the crankshaft assembly, make sure that the thrust washers fit snugly in to the grooves ① provided in crankcase.

Confirm that the throttle return shaft ② is set on the left side of the governor spacer ③ as shown in the figure.

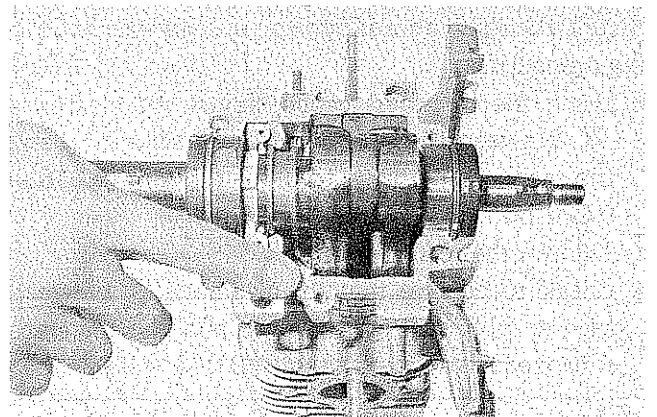


Just before fitting the cylinder, apply SUZUKI CCI oil to crank pin bearing.



Coat the crankcase mating faces (two faces) with Suzuki Bond No. 4 before reassembling the crankcase.

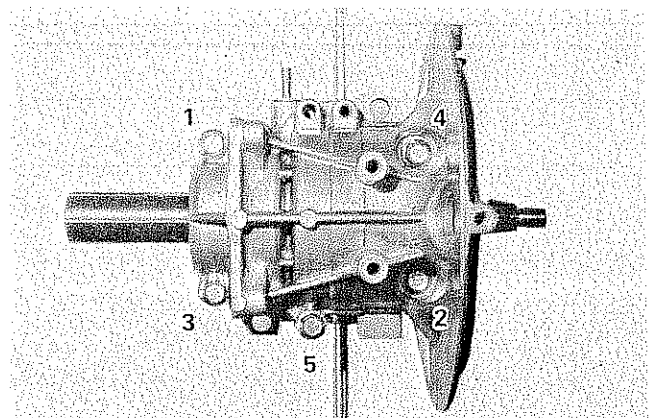
Suzuki Bond No. 4	99000-31030
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Secure the crankcase to the block by tightening the bolts sequentially, as shown, to the torque value.

**Tightening torque**

Crankcase bolt	9 – 11 N·m
	0.9 – 1.1 kg·m
	6.5 – 8.0 lb·ft

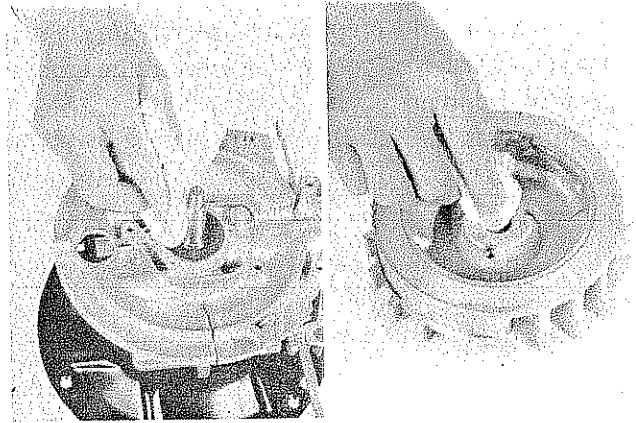


**FLYWHEEL**

Thoroughly clean the mating surface of the flywheel and crankshaft with cleaning solvent. Fit the key on the crankshaft. Tighten the flywheel nut to the tightening torque specified below.

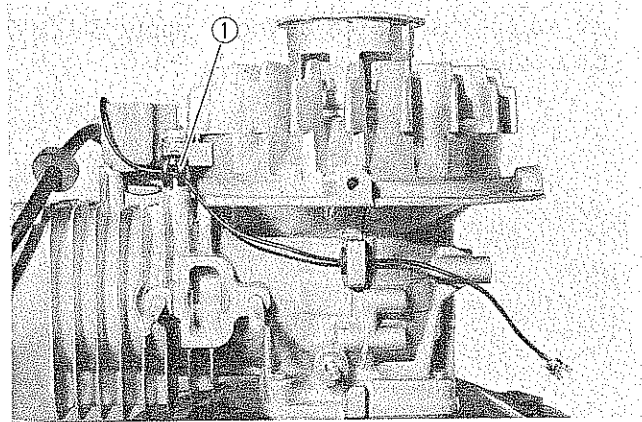
**Tightening torque**

Flywheel	40 – 50 N·m 4.0 – 5.0 kg·m 29.0 – 36.0 lb·ft
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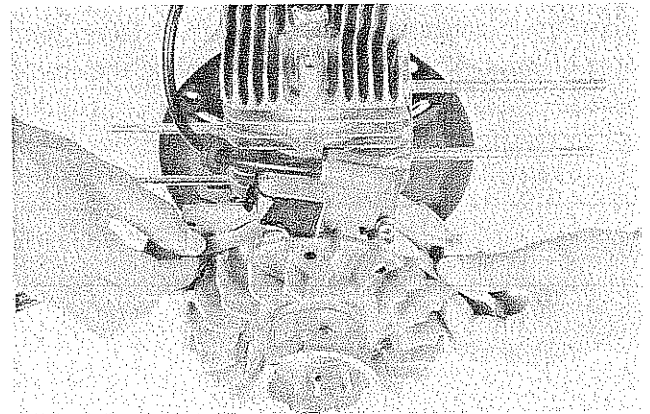
**IGNITION COIL/IGNITOR UNIT**

Mount the clamp ① together with the bolt as shown in fig.

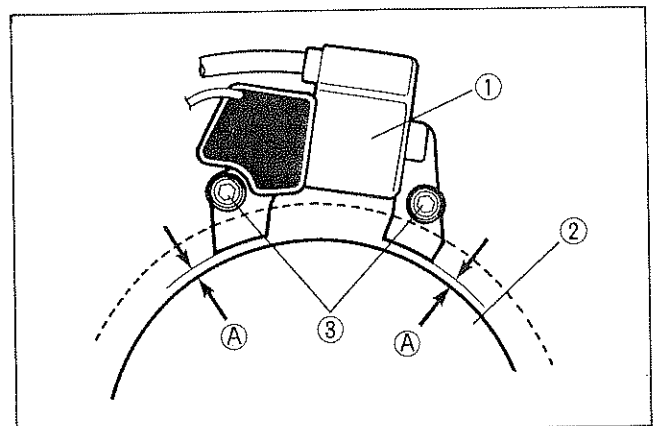


Install the ignition coil/ignitor unit by the following procedures.

- Using the thickness gauge, adjust the clearance ④ between the ignition coil/ignitor unit ① and the magneto rotor ② to 0.4 – 0.6 mm (0.016 – 0.024 in).
- Tighten the securing bolt ③.
- Check to be sure that the clearance ④ between the ignition coil/ignitor unit and the magneto rotor becomes 0.4 – 0.6 mm (0.016 – 0.024 in).



Thickness gauge	09900-20803
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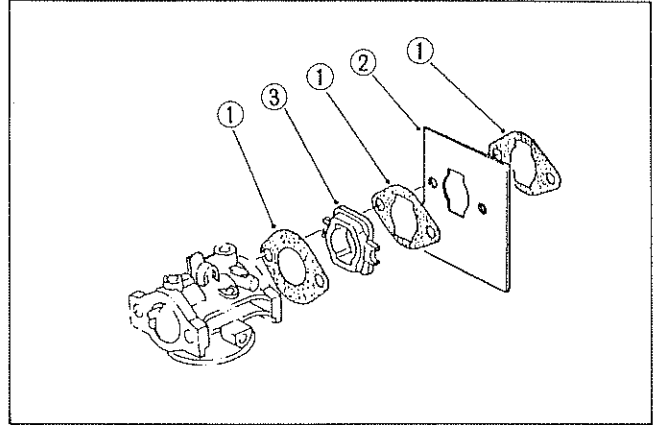


## CARBURETOR

Install the gaskets ①, shield ② and insulator ③, followed by the carburetor, as indicated in the illustration.

### CAUTION:

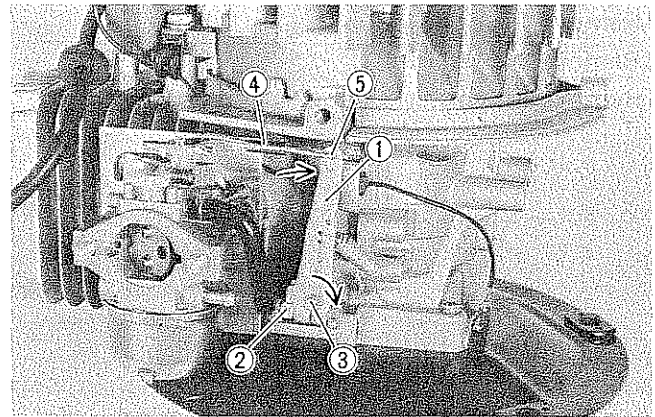
Always use a new gaskets. Check the insulator, and if its mating surface is rough or cracked, replace it.



## THROTTLE CONTROL LEVER

When securing the control lever ① with the control lever nut ②, take the following steps:

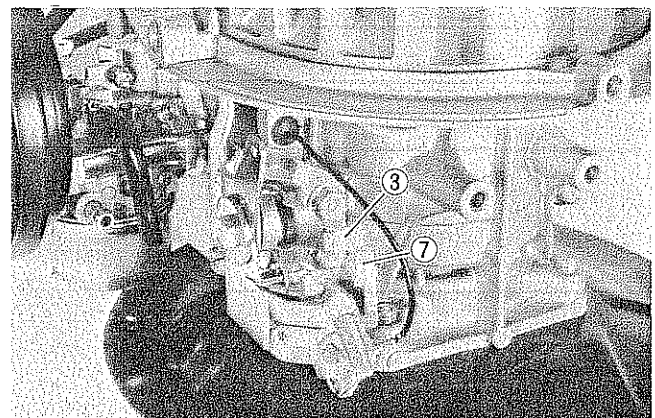
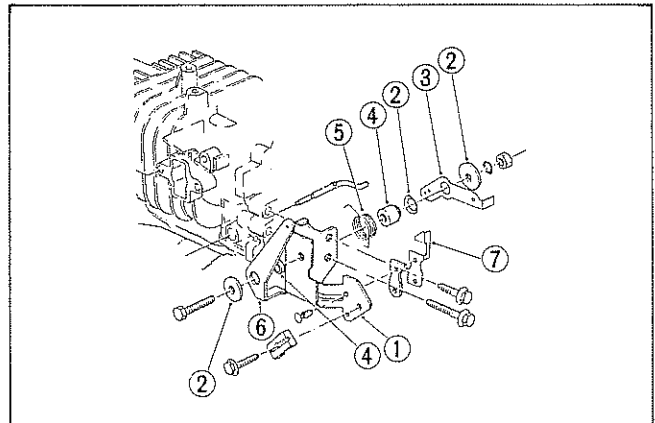
- 1) Turn the throttle return shaft ③ to the clockwise until it stops.
- 2) Turn the top of the control lever to the right until it stops so that the carburetor throttle valve fully opens.
- 3) With the control lever in this position, tighten the control bolt.
- 4) Install the throttle control spring ④ into the upper hole ⑤ of the portion of the governor spring lever.



## THROTTLE CONTROL ASSEMBLY

Install the bracket ①, washers ②, governor spring lever ③, spacers ④, spring ⑤ and chock control lever ⑥, as indicated in the illustration.

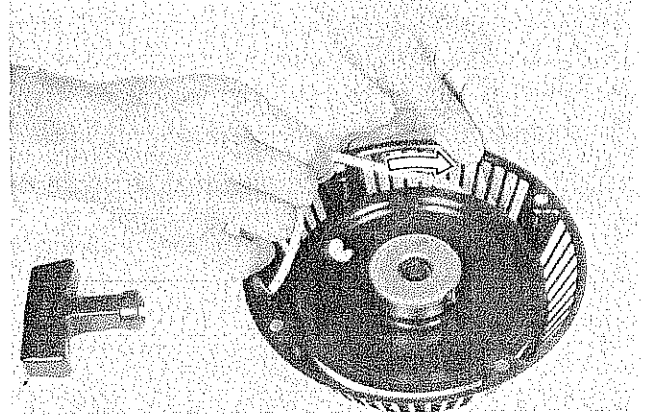
After tightening the bolt, make sure that the governor spring lever ③ and choke control lever ⑥ move smoothly. Also make sure that the governor spring lever comes into contact with the stop switch terminal ⑦ when moved.



## RECOIL STARTER

### DISASSEMBLY

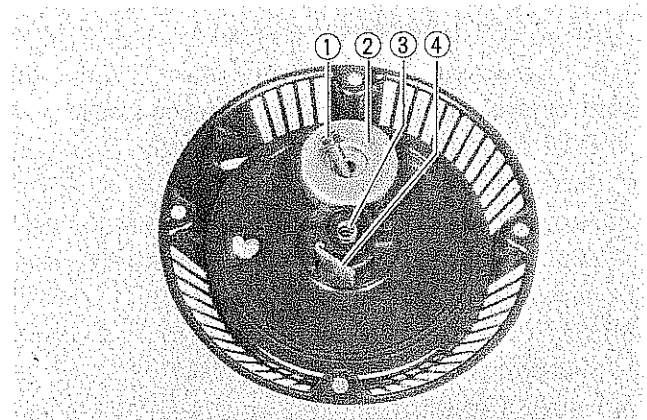
After pulling the starter rope, hold the starter reel steady (preventing it from turning) and then hold the rope, as shown. Under this condition, let starter reel rotate until recoil spring stretches all the way.



Remove the bolt ①.

Remove the retainer ②.

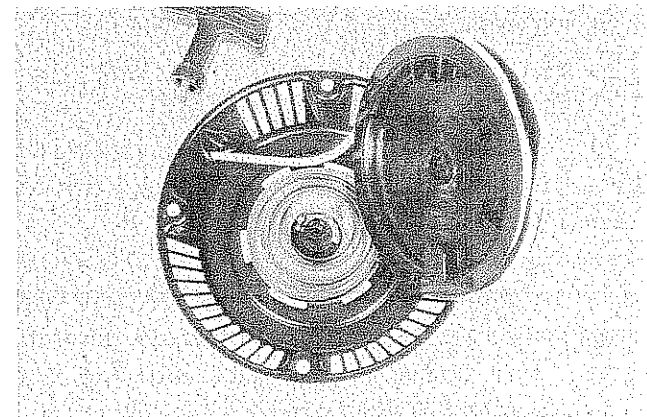
Remove the spring ③, dog ④ and dog spring.



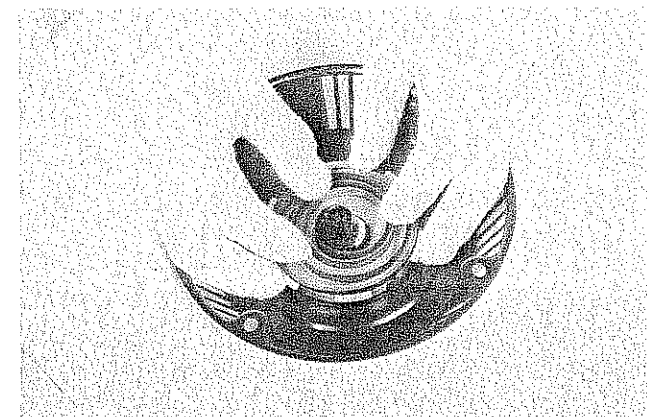
Remove the starter reel complete with the rope recoil spring from the housing.

**WARNING:**

Be careful not to let the recoil spring fly off.



Protect your hand with cotton gloves or a cloth, grasp the recoil spring and allow it to unwind slowly to prevent personal injury.



**REASSEMBLY**

Reassembly is reverse of disassembly, but the following reassembly steps demand attention.

Apply Suzuki Super Grease "A" to the recoil spring and starter reel.

Suzuki Super Grease "A"	99000-25010
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Position the recoil spring in the starter reel, feeding the outer portion of the spring first into the reel and settling the remainder gradually in the reel.

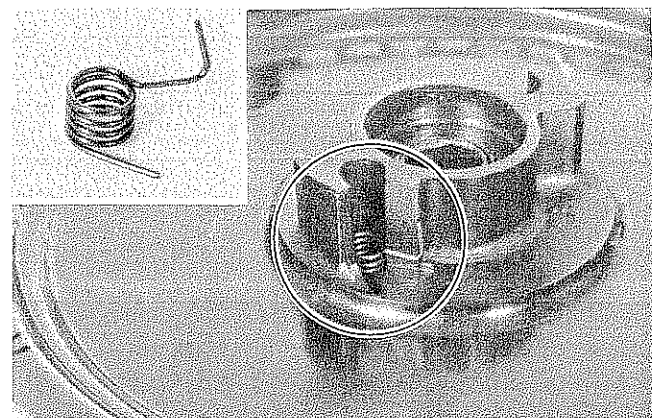
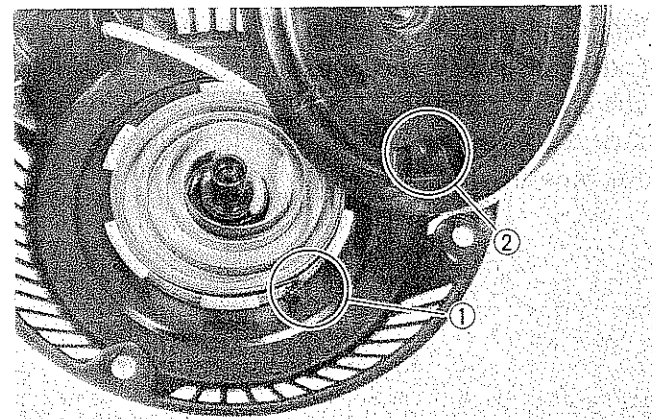
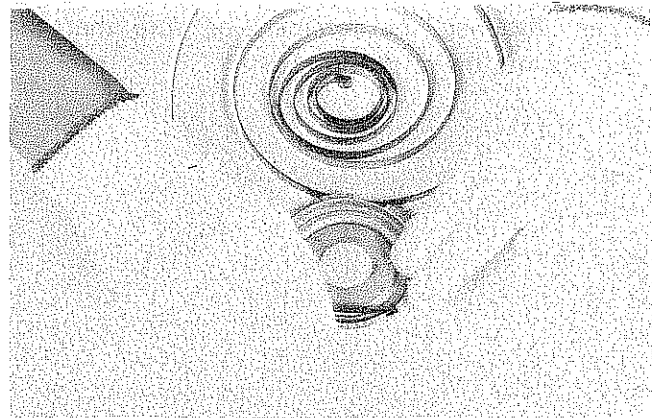
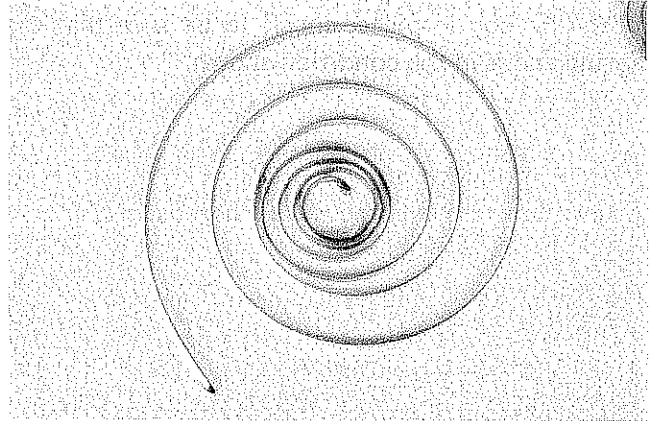
**WARNING:**

Be careful not to let the recoil spring fly off.

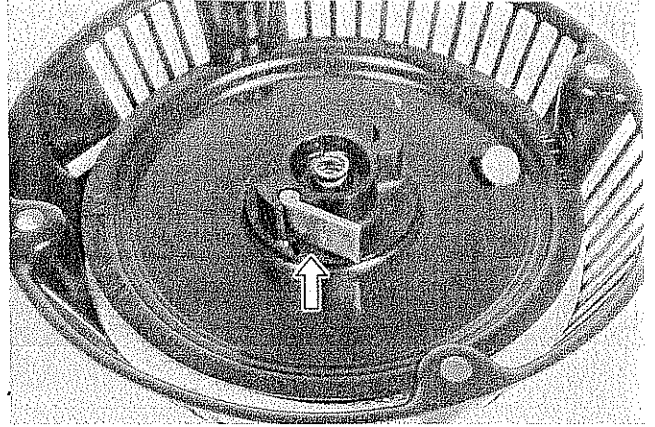
Put on the starter reel, as follows:

- 1) Install the starter reel matching the bent end ① of the spring and the starter reel tongue ②.
- 2) Twist the reel counter-clockwise just a little to make sure the spring is positively engaged with the reel. If no reaction is felt in this twisting, it means the engagement is not complete.

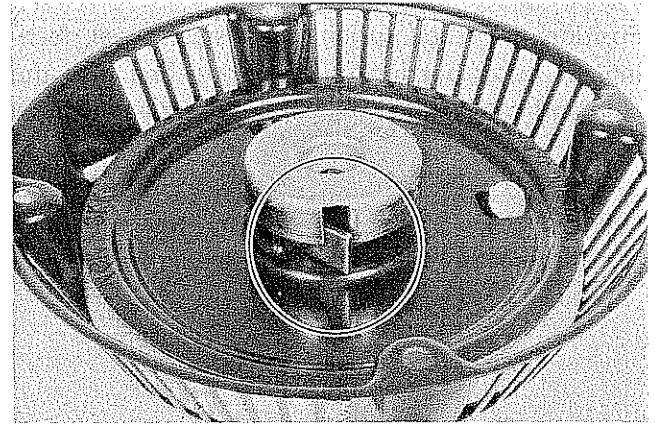
Set the dog spring in place in this manner: bring the hooked end of spring to the top side, and insert it into the hole provided in the starter reel.



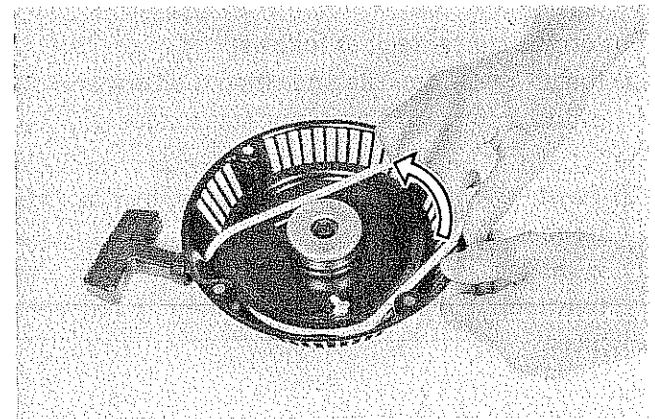
With the dog in place, check to be sure that the spring end is in the condition shown.



When installing the retainer, be sure that the dog fits into the ratchet's notch.



Wind the rope around the sheave drum 2.5 turns counterclockwise and hook the rope end on to the cut out in the drum. Then, from that position, rotate the drum 4 turns counterclockwise and wind the rope around the drum.



Prepared by

**SUZUKI MOTOR CORPORATION**

Service Department  
Marine & Power Products Division

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