

# **YAMAHA**

# **YP250** 4UC-AE1

# **SERVICE MANUAL**



---

EB000000

**YP250**

**SERVICE MANUAL**

**©1996 by Yamaha Motor Co., Ltd.**

**1st Edition, January 1996**

**All rights reserved. Any reprinting or  
unauthorized use without the written  
permission of Yamaha Motor Co., Ltd.  
is expressly prohibited.**

---

## NOTICE

This manual was produced by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual, so it is assumed that anyone who uses this book to perform maintenance and repairs on Yamaha scooter has a basic understanding of the mechanical ideas and the procedures of scooter repair. Repairs attempted by anyone without this knowledge are likely to render the scooter unsafe and unfit for use.

Yamaha Motor Company, Ltd. is continually striving to improve all its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

---

**NOTE:**

Designs and specifications are subject to change without notice.

---

## IMPORTANT INFORMATION

Particularly important information is distinguished in this manual by the following notations.



The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Failure to follow WARNING instructions could result in severe injury or death to the scooter operator, a bystander or a person inspecting or repairing the scooter.

**CAUTION:**

A CAUTION indicates special precautions that must be taken to avoid damage to the scooter.

**NOTE:**

A NOTE provides key information to make procedures easier or clearer.

# HOW TO USE THIS MANUAL

## MANUAL ORGANIZATION

This manual consists of chapters for the main categories of subjects. (See "Illustrated symbols")

- 1st title ①: This is the title of the chapter with its symbol on the upper right corner of each page.
- 2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper left corner of the page.
- 3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

## EXPLODED DIAGRAMS

To help identify parts and clarify procedure steps, there are exploded diagrams at start of each removal and disassembly section.

- 1. An easy-to-see exploded diagram ④ is provided for disassembly and assembly jobs.
- 2. Numbers ⑤ are given in the order of jobs in the exploded diagram. A number that is enclosed by a circle indicates a disassembly step.
- 3. An explanation of jobs and notes is presented in an easy-to-read way by the use of symbol marks ⑥. The meanings of the symbol marks are given on the next page.
- 4. A job instruction chart ⑦ accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
- 5. For jobs requiring more information, the step-by-step format supplements ⑧ are given in addition to the exploded diagram and the job instruction chart.

② CYLINDER AND PISTON

① ENG

④

CYLINDER AND PISTON

Order	Job name/Part name	Qty	Remarks
<b>Cylinder and piston removal</b>			
1	Cylinder head	1	Remove the parts in order. Refer to "CYLINDER HEAD" section.
2	Joint	2	
3	O-ring	2	
4	Timing chain guide (exhaust side)	1	
5	Cylinder	1	Refer to "PISTON RINGS, PISTON AND CYLINDER INSTALLATION" section.
6	Dowel pin	2	
7	Cylinder gasket	1	Refer to "PISTON AND PISTON RINGS REMOVAL" section.
8	Piston pin circlip	1	
9	Piston pin	1	Refer to "PISTON RINGS, PISTON AND CYLINDER INSTALLATION" section.
10	Piston	1	
11	Piston ring (top)	1	Reverse the removal procedure for installation.
12	Piston ring (2nd)	1	
	Side rail/Spacer	2/1	

③

CYLINDER AND PISTON

ENG

PISTON AND PISTON RINGS REMOVAL

1. Remove:

- Piston pin circlip ①
- Piston pin ②
- Piston ③

**NOTE:**

Before removing the piston pin circlip, cover the crankcase opening with a clean towel or rag to prevent the circlip from falling into the crankcase cavity.

2. Remove:

- Top ring
- 2nd ring
- Oil ring

**NOTE:**

When removing the piston ring, open the end gap of the ring by fingers, and push up the other side of the ring.

CYLINDER INSPECTION

1. Measure:

- Cylinder bore
- Out of specification → Rebore or replace

**NOTE:**

- Measure the cylinder bore with a cylinder bore gauge.
- Measure the cylinder bore in parallel to and at right angles to the crankshaft. Then, find the average of the measurements.

**Cylinder bore:**

69.000 – 69.005 mm

<Limit: 69.1 mm>

<Defferance limit between A, B and C: 0.03 mm>

2. Measure:

























- Warpige
- Out of specification → Replace.

**Cylinder warpige limit:**

0.03 mm

4-21

4-22

① <b>GEN INFO</b> 	② <b>SPEC</b> 	
③ <b>INSP ADJ</b> 	④ <b>ENG</b> 	
⑤ <b>COOL</b> 	⑥ <b>CARB</b> 	
⑦ <b>CHAS</b> 	⑧ <b>ELEC</b> 	
⑨ <b>TRBL SHTG</b> 	⑩ 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	⑰ 
⑱ 	⑲ 	⑳ 
㉑ 	㉒ 	㉓ 
㉔ 	㉕ <b>New</b>	

EB003000

## ILLUSTRATED SYMBOLS

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

- ① General information
- ② Specifications
- ③ Periodic inspection and adjustment
- ④ Engine
- ⑤ Cooling system
- ⑥ Carburetion
- ⑦ Chassis
- ⑧ Electrical
- ⑨ Troubleshooting

Illustrated symbols ⑩ to ⑰ are used to identify the specifications appearing in the text.

- ⑩ Possible to maintain with engine mounted
- ⑪ Filling fluid
- ⑫ Lubricant
- ⑬ Special tool
- ⑭ Tightening
- ⑮ Wear limit, clearance
- ⑯ Engine speed
- ⑰  $\Omega$ , V, A









Illustrated symbols ⑱ to ㉓ in the exploded diagrams indicate the types of lubricants and lubrication points.

- ⑱ Apply engine oil
- ⑲ Apply gear oil
- ⑳ Apply molybdenum disulfide oil
- ㉑ Apply wheel bearing grease
- ㉒ Apply lightweight lithium-soap base grease
- ㉓ Apply molybdenum disulfide grease

Illustrated symbols ㉔ to ㉕ in the exploded diagrams indicate the where to apply locking agent ㉔ and when to install new parts ㉕.

- ㉔ Apply locking agent (LOCTITE®)
- ㉕ Use new one

# INDEX

<b>GENERAL INFORMATION</b>	
	<b>GEN INFO 1</b>
<b>SPECIFICATIONS</b>	
	<b>SPEC 2</b>
<b>PERIODIC INSPECTION AND ADJUSTMENT</b>	
	<b>INSP ADJ 3</b>
<b>ENGINE OVERHAUL</b>	
	<b>ENG 4</b>
<b>COOLING SYSTEM</b>	
	<b>COOL 5</b>
<b>CARBURETION</b>	
	<b>CARB 6</b>
<b>CHASSIS</b>	
	<b>CHAS 7</b>
<b>ELECTRICAL</b>	
	<b>ELEC 8</b>
<b>TROUBLESHOOTING</b>	<b>?</b>
	<b>TRBL SHTG 9</b>





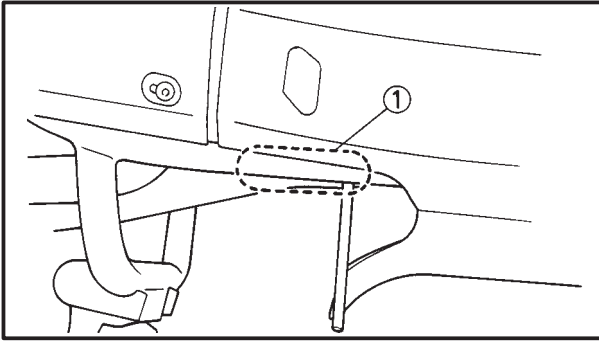
---

## CHAPTER 1

### GENERAL INFORMATION

<b>SCOOTER IDENTIFICATION</b> .....	1-1
VEHICLE IDENTIFICATION NUMBER (for E) .....	1-1
FRAME SERIAL NUMBER .....	1-1
ENGINE SERIAL NUMBER .....	1-1
MODEL LABEL .....	1-1
<b>FEATURES</b> .....	1-2
OIL INDICATOR LIGHT .....	1-2
AUTO CHOKE SYSTEM .....	1-3
IGNITION CIRCUIT CUT-OFF SYSTEM .....	1-3
<b>IMPORTANT INFORMATION</b> .....	1-4
PREPARATION FOR REMOVAL PROCEDURES .....	1-4
REPLACEMENT PARTS .....	1-4
GASKETS, OIL SEALS, AND O-RINGS .....	1-4
LOCK WASHERS/PLATES AND COTTER PINS .....	1-5
BEARINGS AND OIL SEALS .....	1-5
CIRCLIPS .....	1-5
CHECKING OF CONNECTIONS .....	1-6
HOW TO USE THE CONVERSION TABLE .....	1-7
<b>SPECIAL TOOLS</b> .....	1-8

---



YP100000

## GENERAL INFORMATION SCOOTER IDENTIFICATION

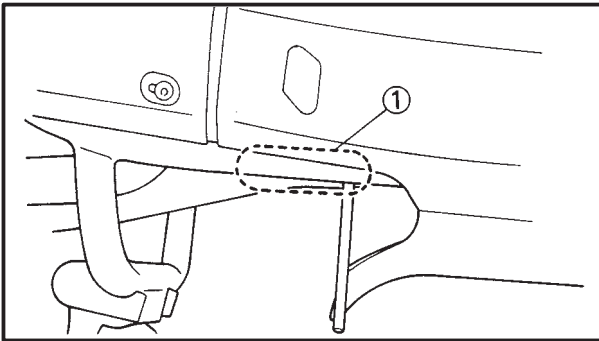
YP100010

### VEHICLE IDENTIFICATION NUMBER (for E)

The vehicle identification number ① is stamped into the right side of the frame.

**NOTE:** \_\_\_\_\_

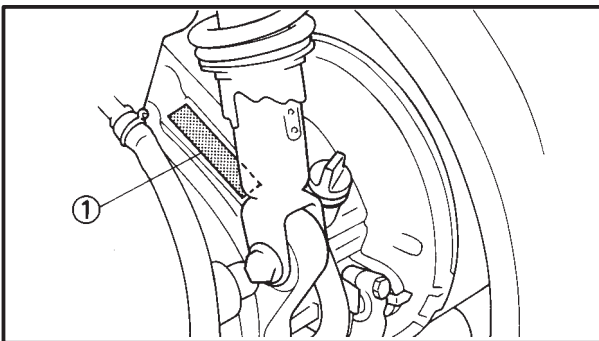
The vehicle identification number is used to identify your scooter and may be used to register your scooter with the licensing authority in your country.



YP100020

### FRAME SERIAL NUMBER (except for E)

The frame serial number ① is stamped into the right side of the frame.



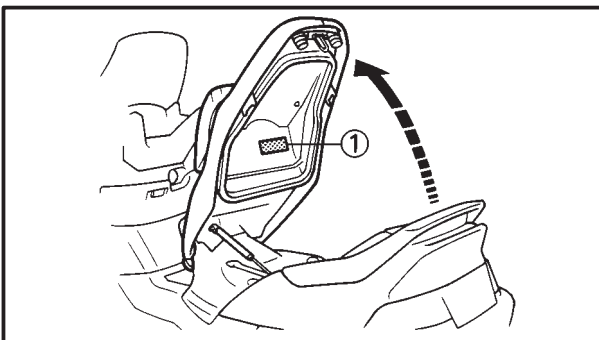
EB100030

### ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the crankcase.

**NOTE:** \_\_\_\_\_

Designs and specifications are subject to change without notice.



### MODEL LABEL

The model label ① is affixed under the seat. This information will be needed to order spare parts.

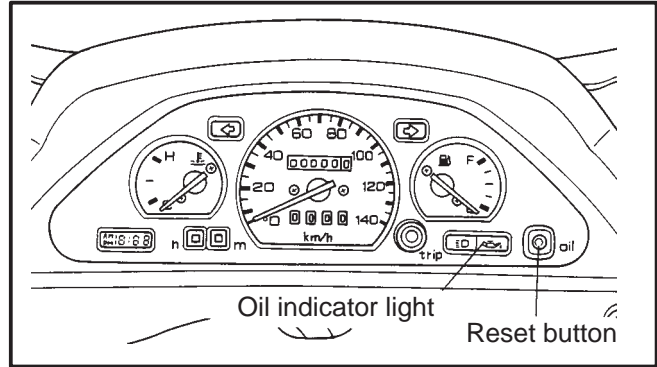
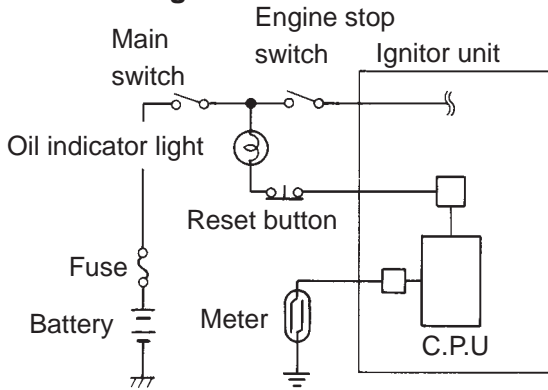
## FEATURES

### OIL INDICATOR LIGHT

• **Function**

Pulses (travel distance signals) from the speedometer are counted and cause the oil indicator light to come on at 1,000 km for the first time and thereafter every 3,000 km. In this way, this light indicates the time for oil change.

• **Circuit diagram**



• **Resetting procedure**

Travel distance can be reset if the reset button is held down for 2 to 5 seconds with the main switch “ON”.

- 1) If the “resetting” is done while the oil light is on, the oil indicator light goes off for resetting confirmation.
- 2) If the “resetting” is done while the oil light is off, the oil indicator light comes on for 1.4 seconds for resetting confirmation.

• **Failure diagnosis**

- 1) Checking oil indicator light for breakage  
This oil indicator light is kept on for 1.4 seconds immediately after the main switch is turned on, thereby checking the bulb for breakage.
- 2) In case of meter pulse failure  
If travel distance signals are not detected during running, the oil indicator light flashes and gives a warning of meter signal failure.

**NOTE:**

This circuit may be activated if the engine is accelerated without load with the mainstand put up.

• **Battery tending to discharge.**

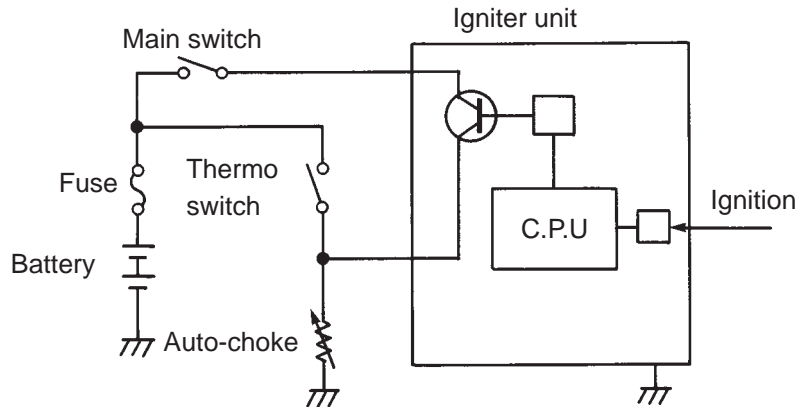
If the starting motor is run with the battery tending to discharge, the oil indicator light may come on (for 1.4 seconds), but this is noting abnormal. In this case recharge or replace battery.

**This light comes on if battery charging becomes poor, thereby causing the engine to run as low as about 200 rpm against 600 rpm or so,**

**AUTO-CHOKE SYSTEM**

This system is the parallel connection of the ignitor unit circuit and the thermo switch as shown, detecting the engine temperature, and facilitates the restarting with the warm engine.

• **Circuit diagram**



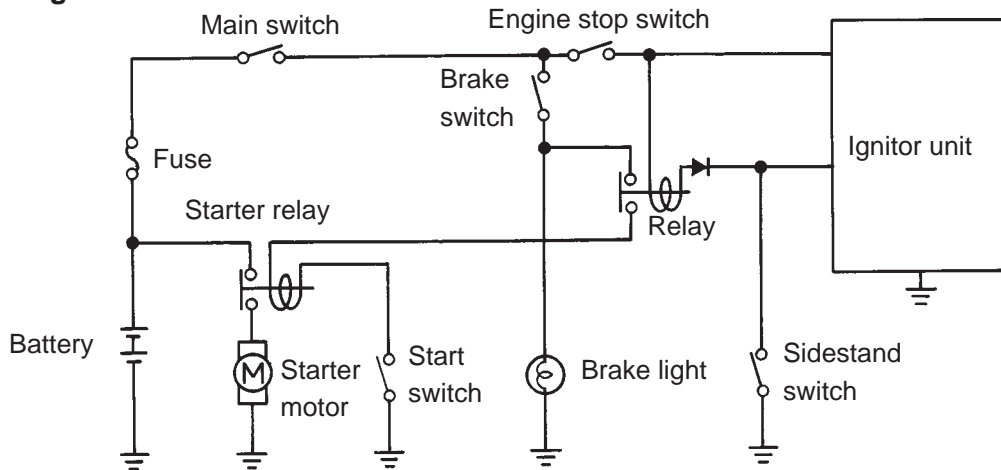
• **Auto-choke operation**

Engine condition	Start with the cold engine	Crank with the cold engine	Crank with the warm engine	Restart with the warm engine
Thermo switch	OFF	OFF	ON	ON
Ignitor unit circuit	OFF	ON	ON	OFF
Auto-choke	Activates	Activates	Not activate	Not activate

**IGNITION CIRCUIT CUT-OFF SYSTEM**

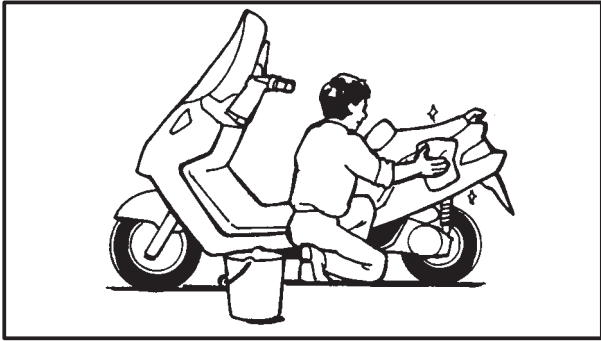
A sidestand circuit is added to the existing electric starting circuit, thereby controlling the starter motor operation and the ignition system of the ignitor unit.

• **Circuit diagram**



• **Operating mode**

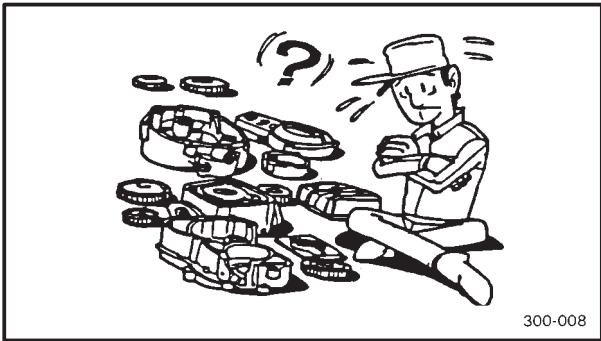
Sidestand switch	Operation of brake light	Operation of starter motor	Operation of ignitor unit control
OFF (Sidestand in use)	ON	Not operated	Misfire
	OFF	Not operated	Misfire
ON (Sidestand folded in)	ON	Operated	Ignited
	OFF	Not operated	Ignited (ridden)



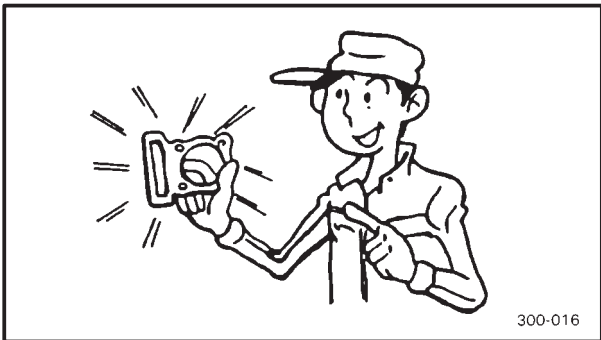
EB101000

**IMPORTANT INFORMATION  
PREPARATION FOR REMOVAL PROCE-  
DURES**

1. Remove all dirt, mud, dust and foreign material before removal and disassembly.
2. Use proper tools and cleaning equipment.
3. Refer to the "SPECIAL TOOLS" section.



4. When disassembling the machine, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been "mated" through normal wear. Mated parts must always be reused or replaced as an assembly.
5. During machine disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation of all parts.
6. Keep all parts away from any source of fire.



EB101010

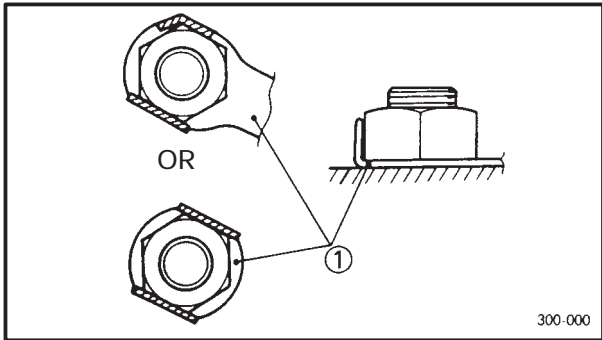
**REPLACEMENT PARTS**

1. Use only genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for all lubrication jobs. Other brands may be similar in function and appearance, but inferior in quality.

EB101020

**GASKETS, OIL SEALS AND O-RINGS**

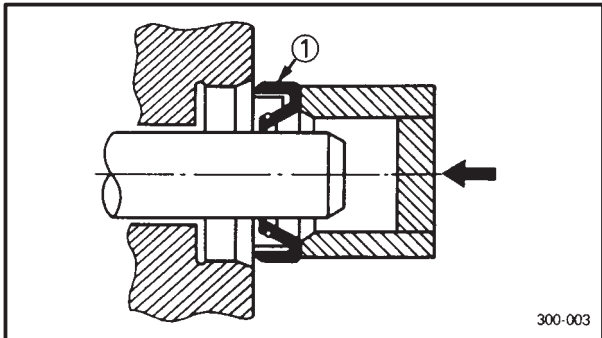
1. Replace all gaskets, seals and O-rings when overhauling the engine. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



EB101030

## LOCK WASHERS/PLATES AND COTTER PINS

1. Replace all lock washers/plates and cotter pins after removal. Bend lock tabs along the bolt or nut flats after the bolt or nut has been tightened to specification.

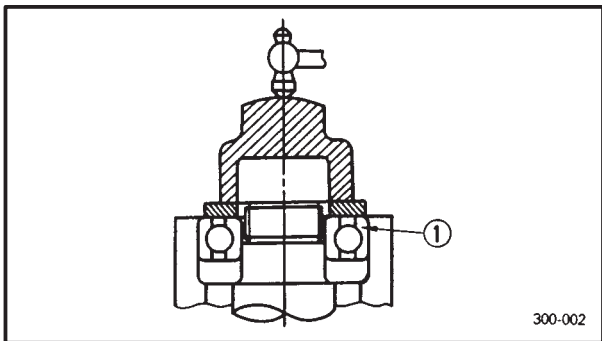


EB101040

## BEARINGS AND OIL SEALS

Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips. Oil bearings liberally when installing, if appropriate.

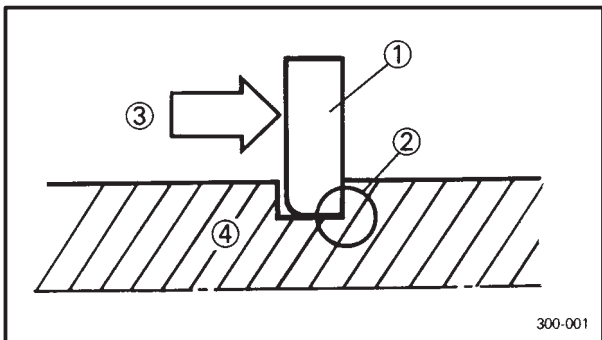
- ① Oil seal



## CAUTION:

Do not use compressed air to spin the bearings dry. This will damage the bearing surfaces.

- ① Bearing



EB101050

## CIRCLIPS

1. Check all circlips carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip ①, make sure that the sharp-edged corner ② is positioned opposite the thrust ③ it receives. See sectional view.

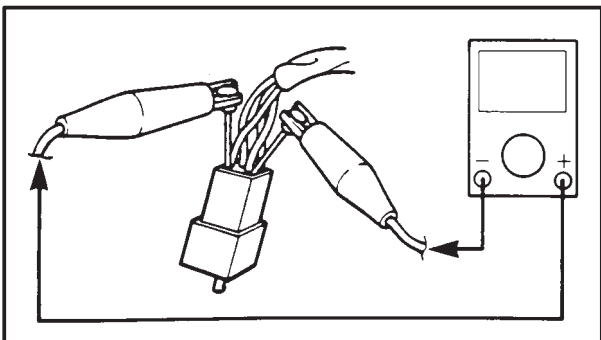
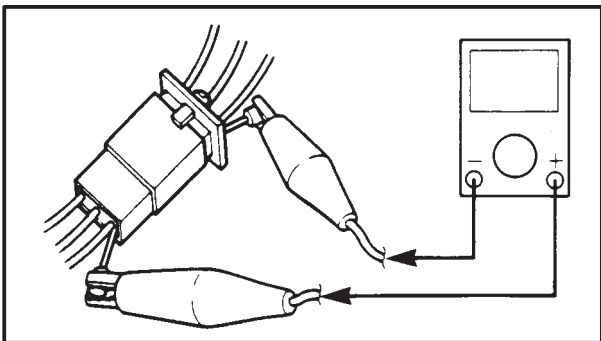
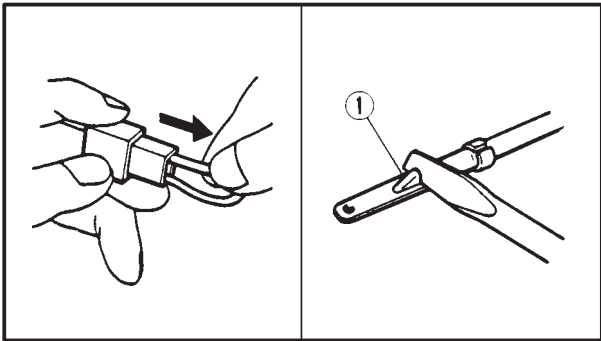
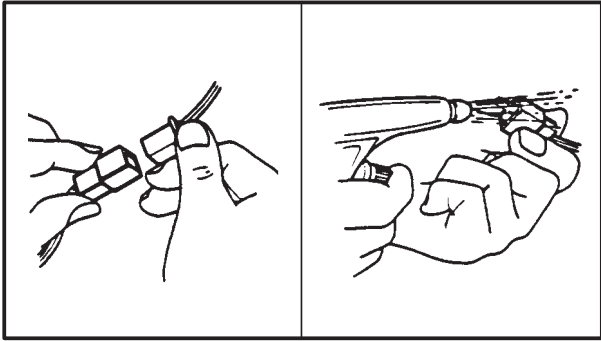
- ④ Shaft

EB801000

### CHECKING OF CONNECTIONS

Dealing with stains, rust, moisture, etc. on the connector.

1. Disconnect:
  - Connector
2. Dry each terminal with an air blower.



3. Connect and disconnect the connector two or three.
4. Pull the lead to check that it will not come off.
5. If the terminal comes off, bend up the pin ① and reinsert the terminal into the connector.

6. Connect:
  - Connector

**NOTE:** \_\_\_\_\_

The two connectors “click” together.

7. Check for continuity with a tester.

**NOTE:** \_\_\_\_\_

- If there is no continuity, clean the terminals.
- Be sure to perform the steps 1 to 7 listed above when checking the wireharness.
- For a field remedy, use a contact revitalizer available on the market.
- Use the tester on the connector as shown.



EB201000

**HOW TO USE THE CONVERSION TABLE**

All specification data in this manual are listed in SI and METRIC UNITS.

Use this table to convert METRIC unit data to IMPERIAL unit data.

Ex.

METRIC		MULTIPLIER		IMP
**mm	×	0.03937	=	** in
2 mm	×	0.03937	=	0.08 in

**CONVERSION TABLE**

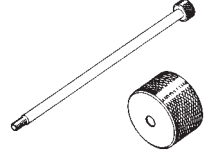
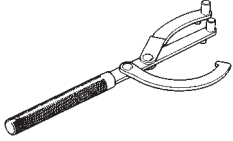
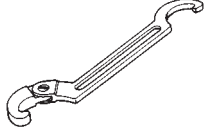
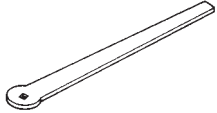

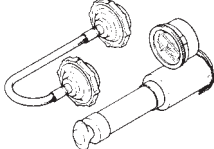
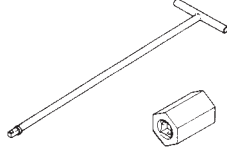
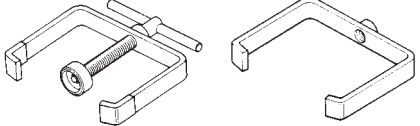
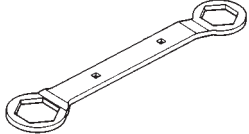
METRIC TO IMP			
	Known	Multiplier	Result
Torque	m•kg	7.233	ft•lb
	m•kg	86.794	in•lb
	cm•kg	0.0723	ft•lb
	cm•kg	0.8679	in•lb
Weight	kg	2.205	lb
	g	0.03527	oz
Distance	km/hr	0.6214	mph
	km	0.6214	mi
	m	3.281	ft
	m	1.094	yd
	cm	0.3937	in
Volume/ Capacity	mm	0.03937	in
	cc (cm <sup>3</sup> )	0.03527	oz (IMP liq.)
	cc (cm <sup>3</sup> )	0.06102	cu•in
	lit (liter)	0.8799	qt (IMP liq.)
Miscella- neous	lit (liter)	0.2199	gal (IMP liq.)
	kg/mm	55.997	lb/in
	kg/cm <sup>2</sup>	14.2234	psi (lb/in <sup>2</sup> )
	Centigrade	9/5(°C) + 32	Fahrenheit (°F)

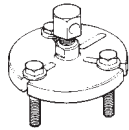
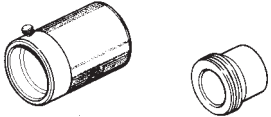


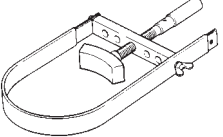
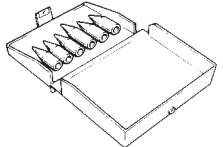
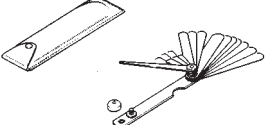
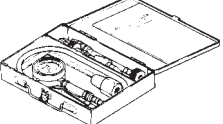
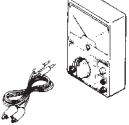
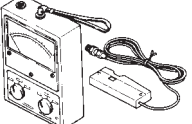
EB102000

## SPECIAL TOOLS

The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools; this will help prevent damage caused by the use of inappropriate tools or improvised techniques.

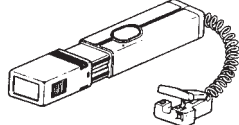
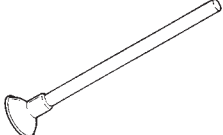
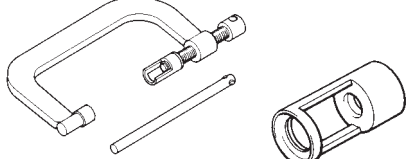
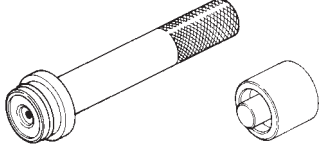
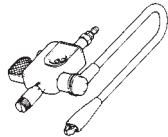
When placing an order, refer to the list provided below to avoid any mistakes.

Tool No.	Tool name/Usage	Illustration
90890-01084 -01085	Weight Rocker arm shaft puller bolt  These tools are used when removing or installing the rocker arm shafts.	
90890-01235	Rotor holding tool  This tool is used to remove the flywheel magneto.	
90890-01268	Ringnut wrench  This tool is used to loosen and tighten the exhaust and steering ringnut.	
90890-01311	Valve adjusting tool  This tool is necessary for adjusting valve clearance.	
90890-01312	Fuel level gauge  This gauge is used to measure the fuel level in the float chamber.	
90890-01325 -01352	Radiator cap tester Adaptor  These tools are used for checking the cooling system.	
90890-01326 -04084	T-handle Damper rod holder  These tool are used for holding the damper rod holder when removing or installing the damper rod holder.	
90890-01337 -01464	Clutch spring compressor Clutch spring holder arm  These tools are used for removing the nut with holding the compression spring.	
90890-01348	Locknut wrench  This tool is used when removing or installing the secondary sheave nut.	

Tool No.	Tool name/Usage	Illustration
90890-01362	<p>Flywheel puller</p> <p>This tool is used for removing the rotor.</p>	
90890-01367 -01368	<p>Fork seal driver weight Fork seal driver attachment (ø33)</p> <p>This tool is used when installing the fork seal.</p>	
90890-01384	<p>Oil seal guide</p> <p>This tool is used for protecting the oil seal lip when installing the secondary sliding sheave.</p>	
90890-01403	<p>Ring nut wrench</p> <p>This tool is used to loosen and tighten the steering ring nut.</p>	
90890-01701	<p>Sheave holder</p> <p>This tool is used for holding the secondary sheave.</p>	
90890-01996	<p>Cylinder cup installer set</p> <p>This tool is used for installing the cylinder cup to the master cylinder piston.</p>	
90890-03079	<p>Thickness gauge</p> <p>This tool is used to measure the valve clearance.</p>	
90890-03081	<p>Compression gauge</p> <p>These tools are used to measure the engine compression.</p>	
90890-03112	<p>Pocket tester</p> <p>These instruments are invaluable for checking the electrical system.</p>	
90890-03113	<p>Engine tachometer</p> <p>This tool is needed for detecting engine rpm.</p>	

SPECIAL TOOLS



Tool No.	Tool name/Usage	Illustration
90890-03141	<p>Timing light</p> <p>This tool is needed for detecting ignition timing.</p>	
90890-04101	<p>Valve lapper</p> <p>This tool is used for removing and installing the lifter and for lapping the valve.</p>	
90890-04019 -04108	<p>Valve spring compressor Attachment</p> <p>These tools are used when removing or installing the valve and the valve spring.</p>	
90890-04058 -04078	<p>Middle shaft bearing driver Mechanical seal installer</p> <p>These tools are used for installing mechanical seal.</p>	
90890-06754	<p>Ignition checker</p> <p>This instrument is necessary for checking the ignition system components.</p>	
90890-85505	<p>Yamaha bond No. 1215</p> <p>This sealant (bond) is used for crankcase mating surface, etc.</p>	