

YAMAHA

FZS600 '98

5DM1-AE1

SERVICE MANUAL

EB000000

FZS600

SERVICE MANUAL

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First edition, December 1997

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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 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.



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

WARNING

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

CAUTION:

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

NOTE:

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

HOW TO USE THIS MANUAL

This manual is intended as a handy, easy-to-read reference book for the mechanic. Comprehensive explanations of all installation, removal, disassembly, assembly, repair and inspection procedures are laid out with the individual steps in sequential order.

① The manual is divided into chapters. An abbreviation and symbol in the upper right corner of each page indicate the current chapter. Refer to "SYMBOLS" on the following page.

② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 ("Periodic Inspections and Adjustments"), where the sub-section title (-s) appear.

(In Chapter 3, "Periodic Inspections and Adjustments", the sub-section title appears at the top of each page, instead of the section title.)

③ Sub-section titles appear in smaller print than the section title.

④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

⑤ Numbers are given in the order of the jobs in the exploded diagram. A circled number indicates a disassembly step.

⑥ Symbols indicate parts to be lubricated or replaced (see "SYMBOLS").

⑦ A job instruction chart accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.

⑧ Jobs requiring more information (such as special tools and technical data) are described sequentially.

CLUTCH ENG

CLUTCH

⑤

Order	Job name/Part name	O/y	Remarks
Removing the clutch			
1	Compression spring	6	Remove the parts in the order listed.
2	Pressure plate	1	
3	Short clutch push rod	1	
4	O-ring	1	
5	Ball	1	
6	Long clutch push rod	1	
7	Friction plate	8	
8	Clutch plate	8	
9	Friction plate (large)	1	
10	Clutch spring plate	1	
11	Nut	1	

⑦

CLUTCH ENG

CLUTCH

⑧

REMOVING THE CLUTCH

1. Straighten the lock washer tab.
2. Loosen:
 - clutch boss nut ①

NOTE:
While holding the clutch boss ② with the universal clutch holder ③, loosen the clutch boss nut.

Universal clutch holder ③
90890-04086

3. Remove:
 - spacer ①
 - bearing ②

NOTE:
Insert two M6-mm bolts ③ into the spacer and then remove the spacer by pulling on the bolts.

CHECKING THE FRICTION PLATES
The following procedure applies to all of the friction plates.

1. Check:
 - friction plate
Damage/wear → Replace the friction plates as a set.
2. Measure:
 - friction plate thickness
Out of specification → Replace the friction plates as a set.

NOTE:
Measure the friction plate at four places.

Friction plate thickness
2.94 - 3.06 mm
◀Limit: 2.8 mm

CHECKING THE CLUTCH PLATES
The following procedure applies to all of the clutch plates.

1. Check:
 - clutch plate
Damage → Replace the clutch plates as a set.
2. Measure:
 - clutch plate warpage (with a surface plate and thickness gauge ①)
Out of specification → Replace the clutch plates as a set.

Clutch plate warpage limit
Less than 0.1 mm

SYMBOLS

The following symbols are not relevant to every vehicle.

Symbols ① to ⑨ indicate the subject of each chapter.

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

Symbols ⑩ to ⑰ indicate the following.

















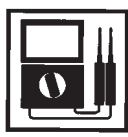







- ⑩ Serviceable with engine mounted
- ⑪ Filling fluid
- ⑫ Lubricant
- ⑬ Special tool
- ⑭ Tightening torque
- ⑮ Wear limit, clearance
- ⑯ Engine speed
- ⑰ Electrical data

Symbols ⑱ to ⑳ 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

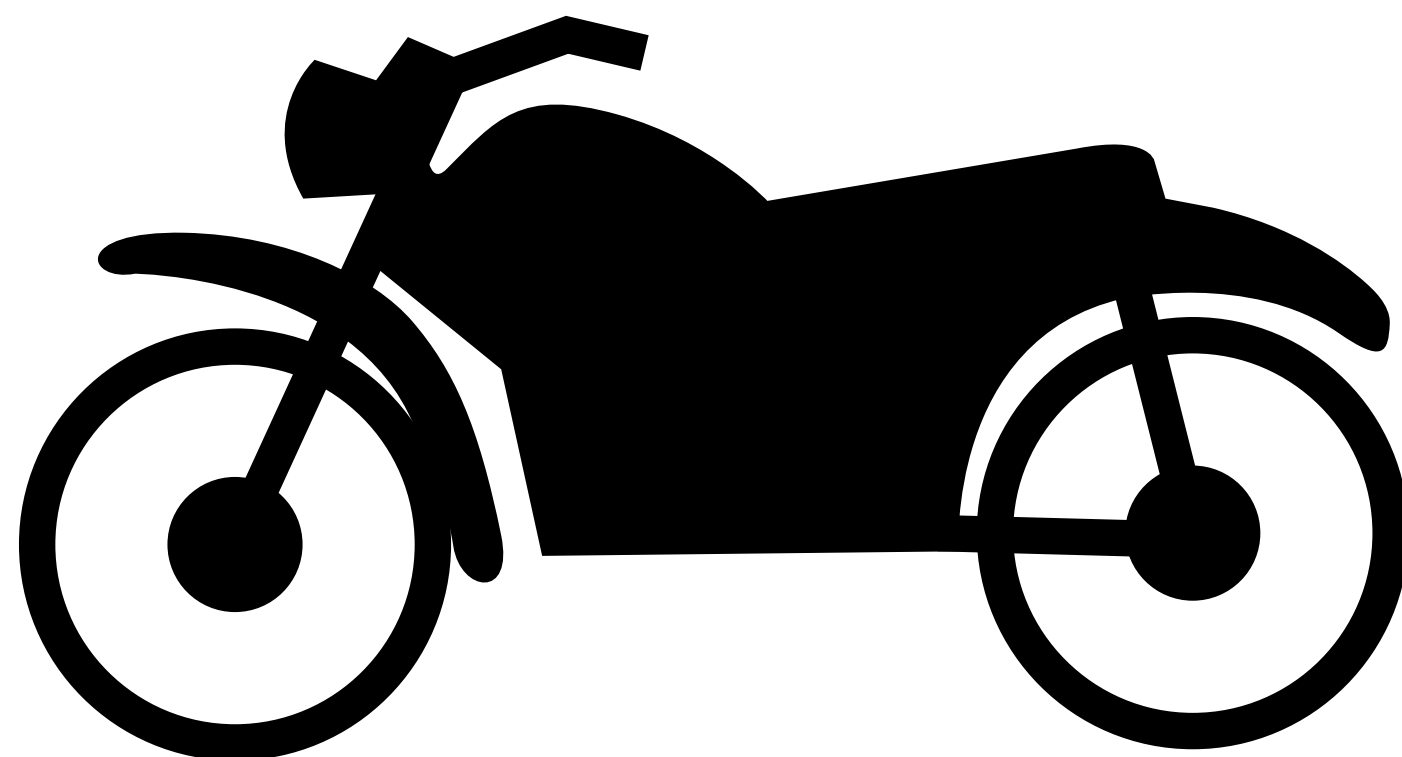
Symbols ㉔ to ㉕ in the exploded diagrams indicate the following:

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

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

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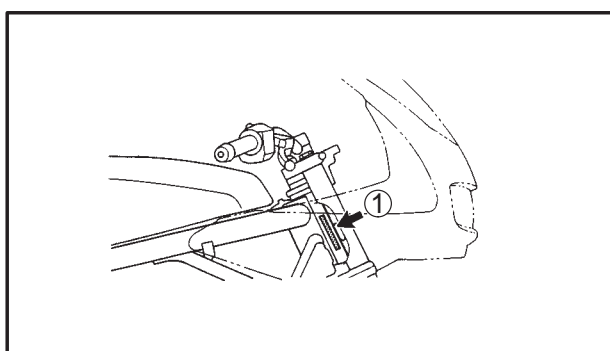


**GEN
INFO**

1

CHAPTER 1 GENERAL INFORMATION

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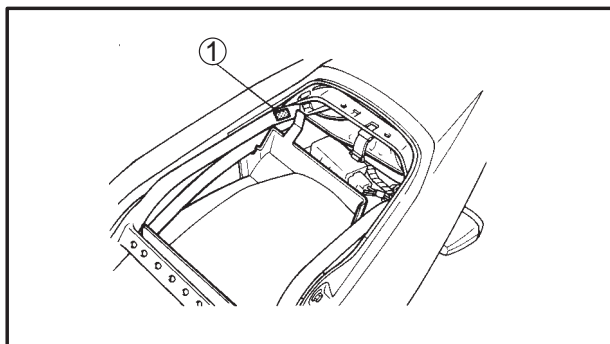
EB100000

GENERAL INFORMATION MOTORCYCLE IDENTIFICATION

EB100010

VEHICLE IDENTIFICATION NUMBER

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



EB100020

MODEL CODE

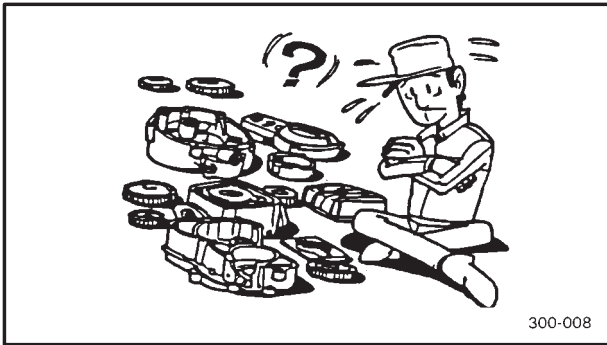
The model code label ① is affixed to the frame. This information will be needed to order spare parts.



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**IMPORTANT INFORMATION
PREPARATION FOR REMOVAL AND
DISASSEMBLY**

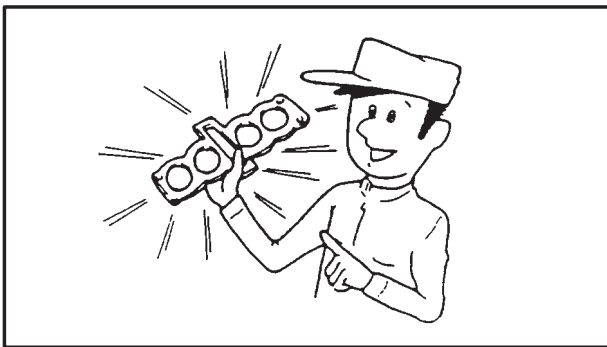
1. Before removal and disassembly, remove all dirt, mud, dust and foreign material.
2. Use only the proper tools and cleaning equipment.
Refer to the "SPECIAL TOOLS" section.
3. When disassembling, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been "mated" through normal wear.
Mated parts must always be reused or replaced as an assembly.
4. During disassembly, clean all of the 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.
5. Keep all parts away from any source of fire.



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REPLACEMENT PARTS

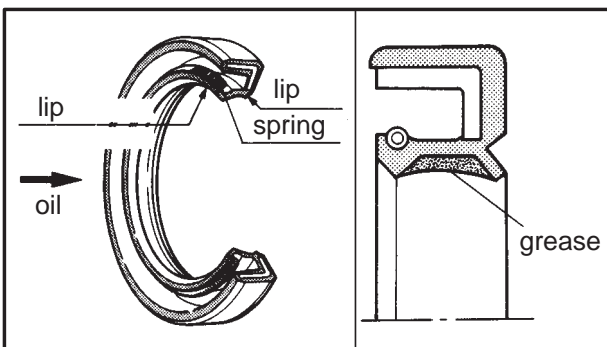
1. Use only genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for all lubrication jobs. Other brands may be similar in-function and appearance, but inferior in quality.

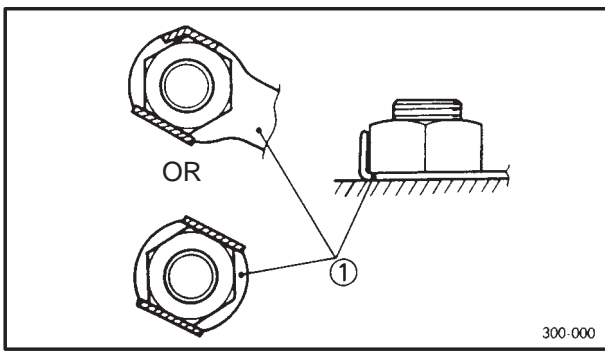


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GASKETS, OIL SEALS AND O-RINGS

1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and apply grease onto the oil seal lips.

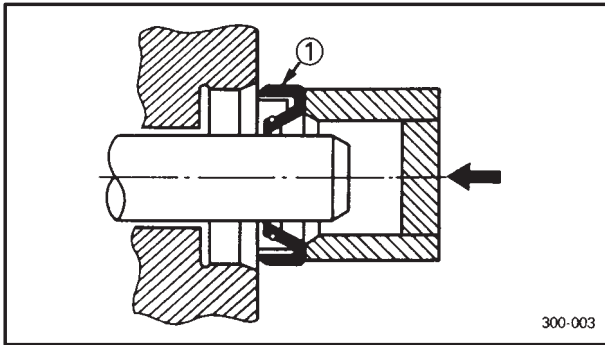




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LOCK WASHERS/PLATES AND COTTER PINS

1. After removal, replace all lock washers/plates ① and cotter pins. After the bolt or nut has been tightened to specification, bend the lock tabs along a flat of the bolt or nut.



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BEARINGS AND OIL SEALS

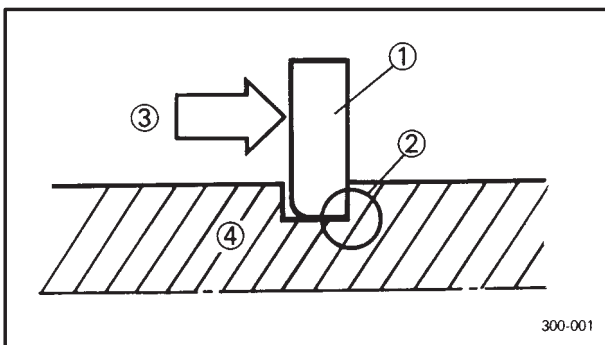
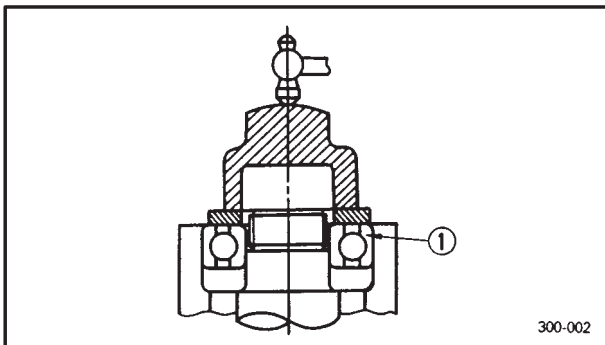
1. Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, apply a light coat of lithium soap base grease onto the oil seal lips. Oil bearings liberally when installing, if appropriate.

① Oil seal

CAUTION:

Do not spin the bearing with compressed air because this will damage the bearing surfaces.

① Bearing

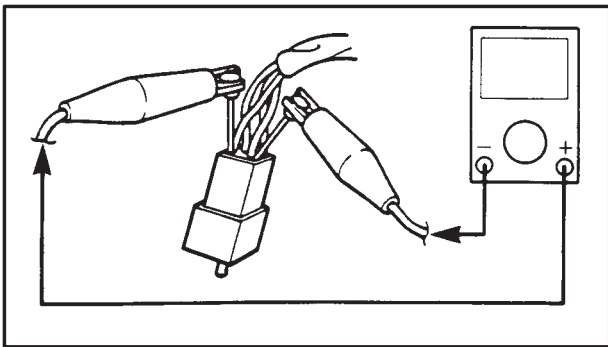
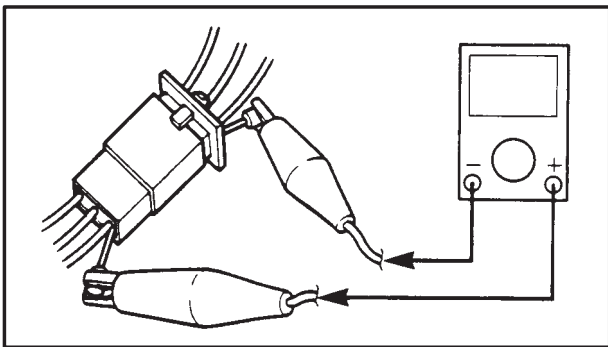
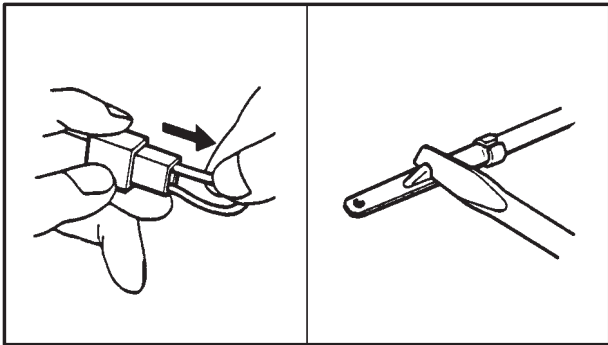
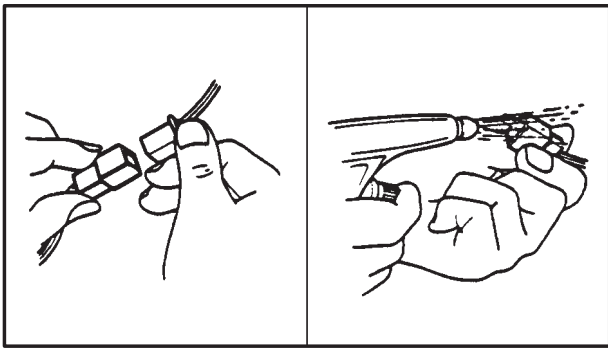


EB102050

CIRCLIPS

1. Before reassembly, check all circlips carefully and replace damaged or distorted circlips. Always replace piston pin clips after one use. When installing a circlip ①, make sure that the sharp-edged corner ②, is positioned opposite the thrust ③ that the circlip receives.

④ Shaft



EB103000

CHECKING THE CONNECTIONS

Check the leads, couplers, and connectors for stains, rust, moisture, etc.

1. Disconnect:

- lead
- coupler
- connector

2. Check:

- lead
- coupler
- connector

Moisture → Dry with an air blower.

Rust/stains → Connect and disconnect several times.

3. Check:

- all connections

Loose connection → Connect properly.

NOTE: _____

If the pin 2 on the terminal is flattened, bend in up.

4. Connect:

- lead
- coupler
- connector

NOTE: _____

Make sure that all connections are tight.

5. Check:

- continuity
(with a pocket tester)



Pocket tester
90590-03112

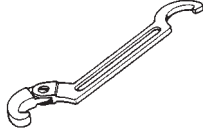
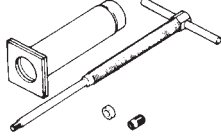
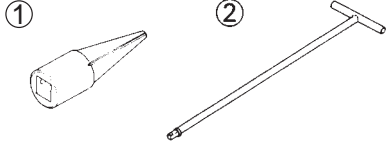
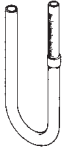
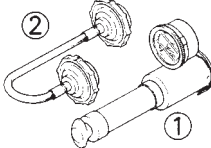
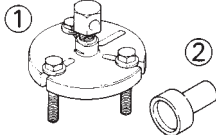

NOTE: _____

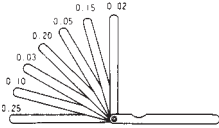
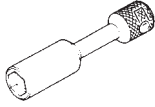

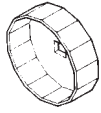
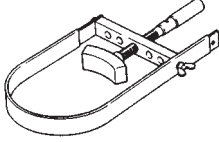
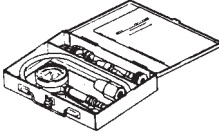
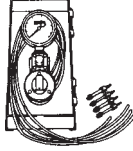
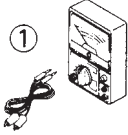
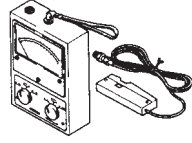
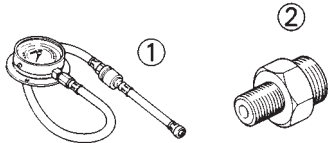
- If there is no continuity, clean the terminals.
- When checking the wire harness, perform steps 1 to 3.
- As a quick remedy, use a contact revitalizer available at most part stores.

EB104000

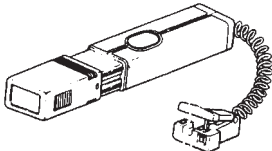
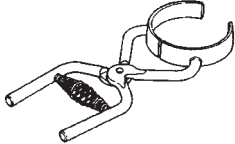
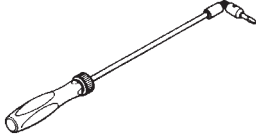
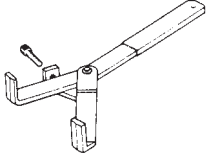
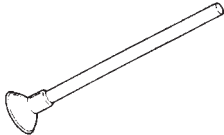
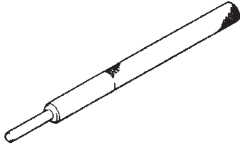
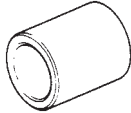
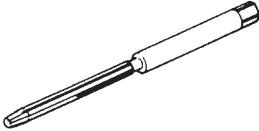
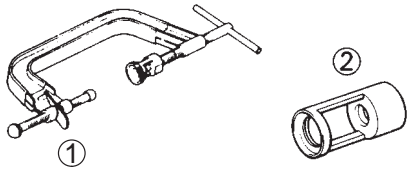
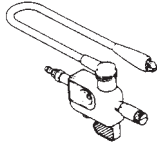
SPECIAL TOOLS

The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as 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
90890-01268	Ring nut wrench This tool is used to loosen and tighten the steering ringnut.	
90890-01304	Piston pin puller This tool is used to remove the piston pin.	
90890-01460 -01326	Damper rod holder ① T-handle ② These tool ar used for holding the damper rod when removing or installing the damper rod.	
90890-01312	Fuel level gauge This gauge is used to measure the fuel level in the float chamber.	
90890-01325 -01352	Radiator cap tester ① Adaptor ② These tools are used for checking the cooling system.	
90890-01362 -01382	Flywheel puller ① Crank shaft protector ② These tools are used for removing the rotor and starter clutch.	
90890-01367 -01381	Fork seal driver weight Fork seal driver attachment (ø41 mm) These tools are used when installing the forkseal.	

Tool No.	Tool name/Usage	Illustration
90890-01399	<p>Special thickness gauge</p> <p>This tool is used to measure the valve clearance.</p>	
90890-01401	<p>Spark plug wrench</p> <p>This tool is used for removing or installing the spark plug.</p>	
90890-01403	<p>Ring nut wrench</p> <p>This tool is used to tighten the steering ring nut.</p>	
90890-01469	<p>Oil filter wrench</p> <p>This tool is used for removing or installing the oil filter.</p>	
90890-01701	<p>Sheave holder</p> <p>This tool is used for holding the magneto rotor.</p>	
90890-03081	<p>Compression gauge</p> <p>This tool is used to measure the engine compression</p>	
90890-03094	<p>Vacuum gauge</p> <p>This tool is used to measure the synchronizing the carburetors.</p>	
90890-03112	<p>Pocket tester ①</p> <p>These instruments are invaluable for checking the electrical system.</p>	
90890-03133	<p>Engine tachometer</p> <p>This tool is needed for detecting engine rpm.</p>	
90890-03153 -03139	<p>Oil pressure gauge Oil pressure adaptor H</p> <p>These tools are used to measure the engine oil pressure.</p>	

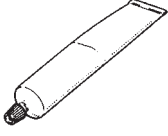


Tool No.	Tool name/Usage	Illustration
90890-03141	Timing light This tool is necessary for checking ignition timing.	
90890-04044	Piston ring compressor This tool is used to compress piston rings when installing the cylinder.	
90890-03158	Carburetor angle driver This tool is used to adjust the pilot screw.	
90890-04086	Clutch holding tool This tool is used for holding the clutch boss.	
90890-04101	Valve lapper This tool is used for removing and installing the valve lifter and for lapping the valve.	
90890-04111	Valve guide remover (4.0 mm) This tool is used to remove the valve guides.	
90890-04112	Valve guide installer (4.0 mm) This tool is needed to install the valve guides properly.	
90890-04113	Valve guide reamer (4.0 mm) This tool is used to rebore the new valve guide.	
90890-04019 -04114	Valve spring compressor ① Valve spring compressor attachment ② These tools are used when removing or installing the valve and the valve spring.	
90890-06754	Ignition checker This instrument is necessary for checking the ignition system components.	

SPECIAL TOOLS

**GEN
INFO**



Tool No.	Tool name/Usage	Illustration
90890-85505	Yamaha bond No.1215 This sealant (bond) is used for crankcase mating surface, etc.	 A line drawing of a tube of sealant, oriented horizontally with a small nozzle at the left end.

SPEC

2

