



YAMAHA

2008

SERVICE MANUAL

YZFR6X(C)

RG

EAS20050

**YZFR6X(C)
SERVICE MANUAL
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NOTICE

This manual was produced by the Yamaha Motor Company, Ltd. 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. Therefore, anyone who uses this book to perform maintenance and repairs on Yamaha vehicles should have a basic understanding of mechanics and the techniques to repair these types of vehicles. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle unsafe and unfit for use.

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the vehicle will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his vehicle and to conform to federal environmental quality objectives.

Yamaha Motor Company, Ltd. is continually striving to improve all of 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:

- This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.
 - Designs and specifications are subject to change without notice.
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IMPORTANT MANUAL 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 vehicle operator, a bystander or a person checking or repairing the vehicle.

CAUTION:

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

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 check procedures are laid out with the individual steps in sequential order.

- The manual is divided into chapters and each chapter is divided into sections. The current section title "1" is shown at the top of each page.
- Sub-section titles "2" appear in smaller print than the section title.
- To help identify parts and clarify procedure steps, there are exploded diagrams "3" at the start of each removal and disassembly section.
- Numbers "4" are given in the order of the jobs in the exploded diagram. A number indicates a disassembly step.
- Symbols "5" indicate parts to be lubricated or replaced.
- Refer to "SYMBOLS".
- A job instruction chart "6" accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
- Jobs "7" requiring more information (such as special tools and technical data) are described sequentially.

1
↓
CLUTCH

EAS20090
CLUTCH

3 Removing the clutch cover

4 12 Nm (1.2 m·kg, 8.9 ft·lb)

5 12 Nm (1.2 m·kg, 8.9 ft·lb)

6 12 Nm (1.2 m·kg, 8.9 ft·lb)

Order	Job/Parts to remove	Q'ty	Remarks
	Side cowl assembly		Refer to "GENERAL CHASSIS" on page 4-1.
	Engine oil		Drain. Refer to "CHANGING THE ENGINE OIL" on page 3-12.
	Coolant		Drain. Refer to "CHANGING THE COOLANT" on page 3-21.
1	Water pump breather hose	1	Disconnect.
2	Clutch cable	1	Disconnect.
3	Pull lever	1	
4	Pull lever spring	1	
5	Clutch cover	1	
6	Clutch cover gasket	1	
7	Dowel pin	2	For installation, reverse the removal procedure.

5-36

CLUTCH

EAS20070
REMOVING THE CLUTCH

1. Remove:

- Oil strainer
Refer to "OIL PUMP" on page 5-48.
- Water pump
Refer to "WATER PUMP" on page 6-8.
- Friction plates
- Clutch plates

NOTE:
Be sure to mark the friction plates and clutch plates or note the position of each part so that they are installed in their original positions.

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
90890-04086
YM-91042

3. Remove:

- Spacer "1"
- Bearing
- Clutch housing "2"
- Oil pump drive chain

NOTE:
Remove the spacer and bearing from the main axle, then remove the oil pump drive chain from the oil pump driven sprocket, and then remove the clutch housing and oil pump drive chain from the main axle.

EAS20100
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
2.92-3.08 mm (0.115-0.121 in)
Wear limit
2.80 mm (0.1102 in)

EAS20110
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.

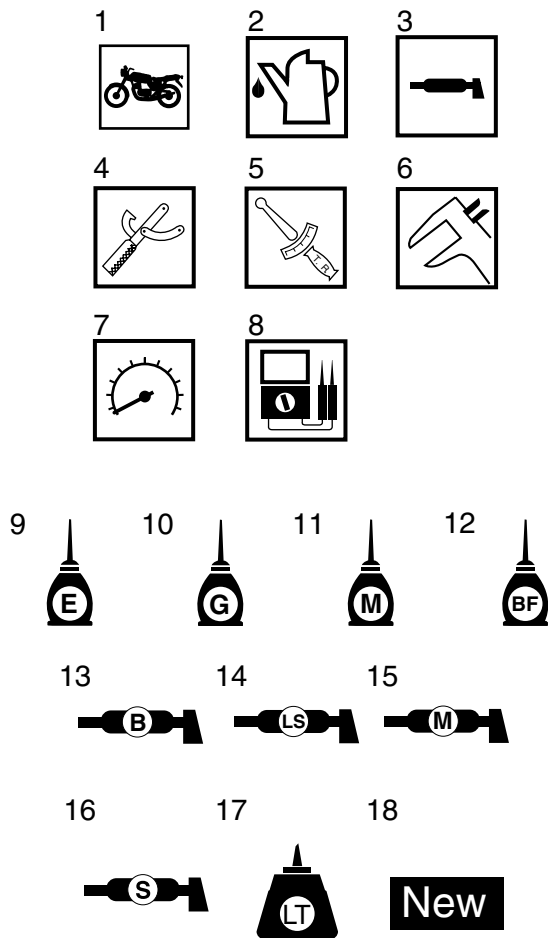
5-40

SYMBOLS

The following symbols are used in this manual for easier understanding.

NOTE:

The following symbols are not relevant to every vehicle.



- 15.Molybdenum-disulfide grease
- 16.Silicone grease
- 17.Apply locking agent (LOCTITE®)
- 18.Replace the part

- 1. Serviceable with engine mounted
- 2. Filling fluid
- 3. Lubricant
- 4. Special tool
- 5. Tightening torque
- 6. Wear limit, clearance
- 7. Engine speed
- 8. Electrical data
- 9. Engine oil
- 10.Gear oil
- 11.Molybdenum-disulfide oil
- 12.Brake fluid
- 13.Wheel-bearing grease
- 14.Lithium-soap-based grease

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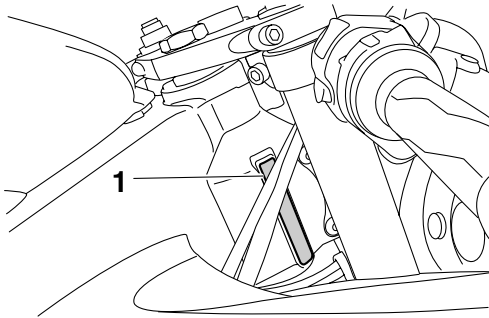
EAS20130

IDENTIFICATION

EAS20140

VEHICLE IDENTIFICATION NUMBER

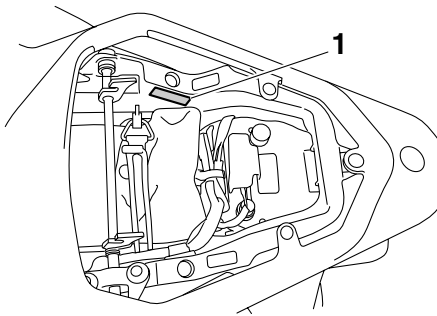
The vehicle identification number “1” is stamped on the right side of the steering head pipe.



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MODEL LABEL

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



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FEATURES

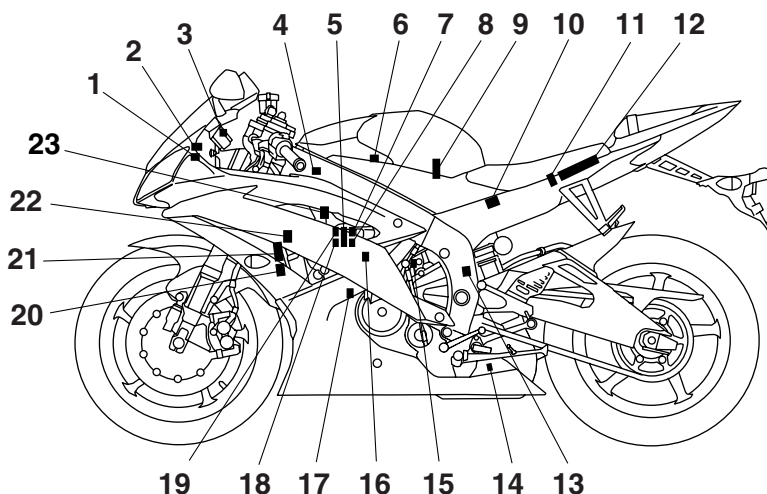
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OUTLINE OF THE FI SYSTEM

The main function of a fuel supply system is to provide fuel to the combustion chamber at the optimum air-fuel ratio in accordance with the engine operating conditions and the atmospheric temperature. In the conventional carburetor system, the air-fuel ratio of the mixture that is supplied to the combustion chamber is created by the volume of the intake air and the fuel that is metered by the jet used in the respective carburetor.

Despite the same volume of intake air, the fuel volume requirement varies by the engine operating conditions, such as acceleration, deceleration, or operating under a heavy load. Carburetors that meter the fuel through the use of jets have been provided with various auxiliary devices, so that an optimum air-fuel ratio can be achieved to accommodate the constant changes in the operating conditions of the engine.

As the requirements for the engine to deliver more performance and cleaner exhaust gases increase, it becomes necessary to control the air-fuel ratio in a more precise and finely tuned manner. To accommodate this need, this model has adopted an electronically controlled fuel injection (FI) system, in place of the conventional carburetor system. This system can achieve an optimum air-fuel ratio required by the engine at all times by using a microprocessor that regulates the fuel injection volume according to the engine operating conditions detected by various sensors. The adoption of the FI system has resulted in a highly precise fuel supply, improved engine response, better fuel economy, and reduced exhaust emissions.



- | | |
|----------------------------------|--|
| 1. Intake air temperature sensor | 14. O ₂ sensor |
| 2. Atmospheric pressure sensor | 15. Speed sensor |
| 3. Engine trouble warning light | 16. Coolant temperature sensor |
| 4. Air induction system solenoid | 17. Crankshaft position sensor |
| 5. Throttle servo motor | 18. Throttle position sensor (for throttle cable pulley) |
| 6. Secondary injectors | 19. Throttle position sensor (for throttle valves) |
| 7. Primary injectors | 20. Spark plug |
| 8. Intake air pressure sensor | 21. Ignition coil |
| 9. Fuel pump | 22. Cylinder identification sensor |
| 10. Relay unit (fuel pump relay) | 23. Intake funnel servo motor |
| 11. Lean angle sensor | |
| 12. ECU (engine control unit) | |
| 13. EXUP servo motor | |