

Product: Yamaha XT660R(S),XT660X(S) Motorcycle Service Repair Workshop Manual
Full Download: <https://www.arepairmanual.com/downloads/yamaha-xt660rsxt660xs-motorcycle-service-repair-workshop-manual/>



YAMAHA

2004

XT660R(S) XT660X(S)

5VK1-AE1

SERVICE MANUAL

EAS00000

**XT660R(S)/XT660X(S) 2004
SERVICE MANUAL
©2003 by MBK Industrie
First edition, December 2003
All rights reserved.
Any reproduction or unauthorized use
without the written permission of
MBK Industrie
is expressly prohibited.**

NOTICE

This manual was produced by MBK Industrie 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.

Yamaha 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 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 motorcycle operator, a bystander or a person checking 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 check 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".
- ② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 ("PERIODIC CHECKS AND ADJUSTMENTS"), where the sub-section title(s) appears.
- 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. Refer to "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.

②

CLUTCH

①

ENG

EAS00074

CLUTCH

④

⑤

⑥

⑦

Order	Job/Part	Qty	Remarks	
Removing the clutch				
1	Clutch spring	5	Remove the parts in the order listed.	
2	Pressure plate	1		
3	Pull rod	1		
4	Friction plate 1	4		Inside diameter (plate with notched tabs) = 119 mm (4.69 in)
5	Clutch plate	6		Refer to "INSTALLING THE CLUTCH".
6	Friction plate 2	2		
7	Friction plate 3	1		Inside diameter (plate with notched tabs) = 128 mm (5.04 in)
8	Clutch damper spring	1		
9	Clutch damper spring seat	1		

5 - 42

CLUTCH **ENG**

EAS00075

REMOVING THE CLUTCH

1. Remove:

- clutch cover ①

NOTE:
Loosen each bolt 1/4 of a turn at a time, in stages and in a crisscross pattern. After all of the bolts are fully loosened, remove them.

2. Straighten the lock washer tab.

3. Loosen:

- clutch boss nut ②

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

Universal clutch holder
90890-04086

4. Remove:

- lock washer
- clutch boss

EAS00076

CHECKING THE FRICTION PLATES

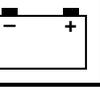
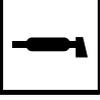
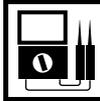
The following procedure applies to all of the friction plates.

1. Check:

- friction plate 1
- friction plate 2
- friction plate 3

Damage/wear → Replace the friction plates as a set.

5 - 44

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

EAS00008

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 checks and adjustments
- ④ Chassis
- ⑤ Engine
- ⑥ Cooling system
- ⑦ Fuel injection system
- 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 ㉓ in the exploded diagrams indicate the types of lubricants and lubrication points.

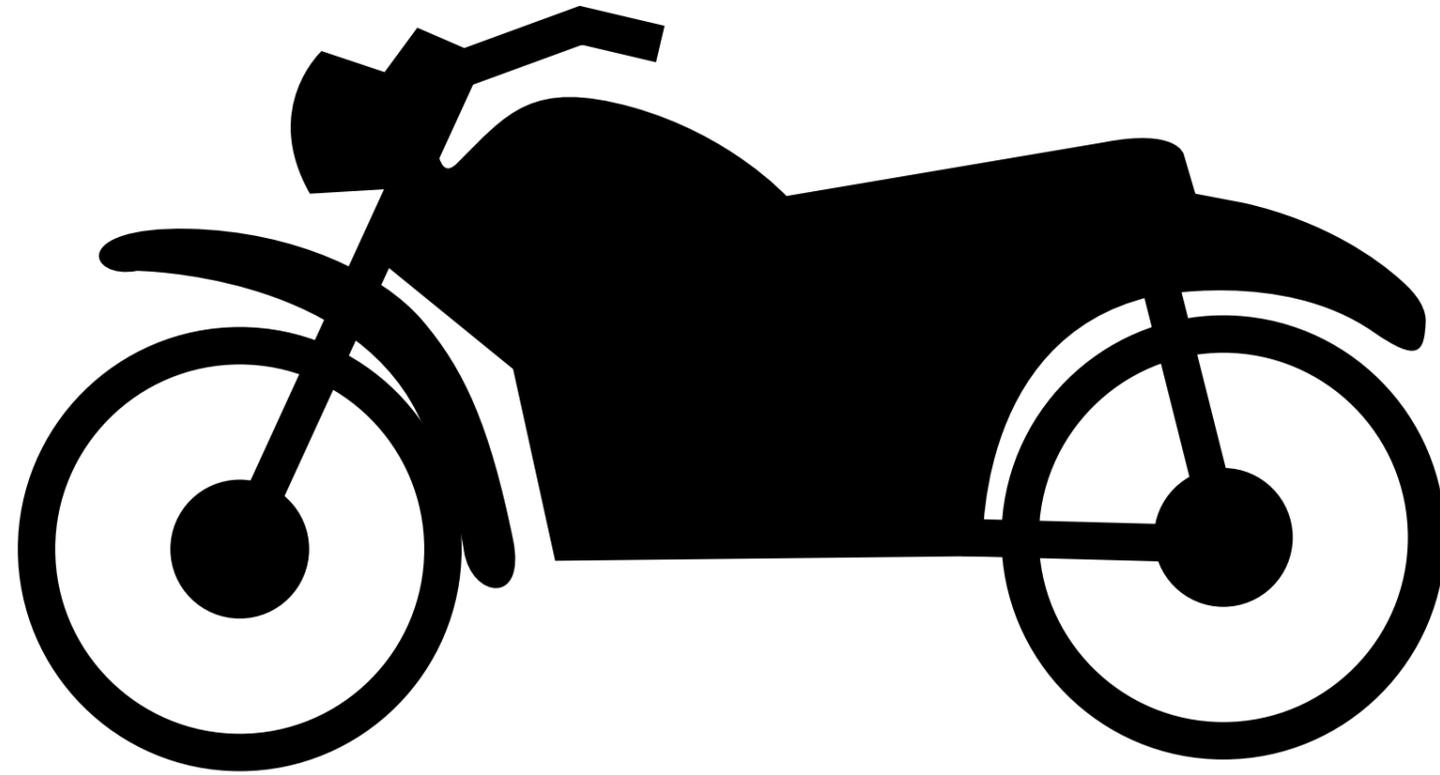
- ⑱ Engine oil
- ⑲ Gear oil
- ⑳ Molybdenum-disulfide oil
- ㉑ Wheel-bearing grease
- ㉒ Lithium-soap-based grease
- ㉓ Molybdenum-disulfide grease

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

- ㉔ Apply locking agent (LOCTITE®)
- ㉕ Replace the part

TABLE OF CONTENTS

GENERAL INFORMATION	
	GEN INFO 1
SPECIFICATIONS	
	SPEC 2
PERIODIC CHECKS AND ADJUSTMENTS	
	CHK ADJ 3
CHASSIS	
	CHAS 4
ENGINE	
	ENG 5
COOLING SYSTEM	
	COOL 6
FUEL INJECTION SYSTEM	
	FI 7
ELECTRICAL SYSTEM	
	ELEC 8
TROUBLESHOOTING	
	TRBL SHTG 9

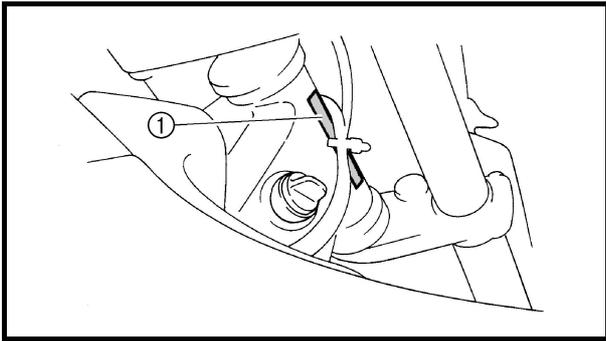


**GEN
INFO**



CHAPTER 1 GENERAL INFORMATION

MOTORCYCLE IDENTIFICATION	1-1
VEHICLE IDENTIFICATION NUMBER.....	1-1
MODEL LABEL.....	1-1
FEATURES	1-2
OUTLINE.....	1-2
FI SYSTEM.....	1-3
IMPORTANT INFORMATION	1-4
PREPARATION FOR REMOVAL AND DISASSEMBLY.....	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 THE CONNECTIONS	1-6
SPECIAL TOOLS	1-7



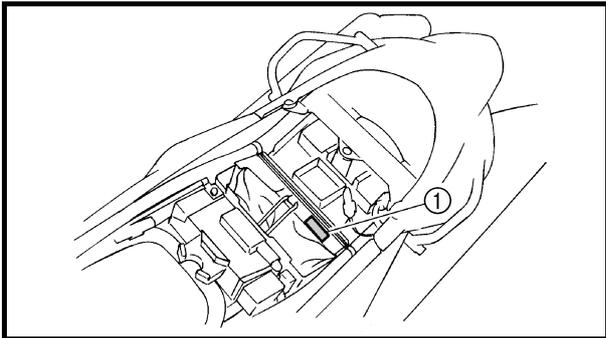
EAS00014

GENERAL INFORMATION MOTORCYCLE IDENTIFICATION

EAS00017

VEHICLE IDENTIFICATION NUMBER

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



EAS00018

MODEL LABEL

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

EAS00019

FEATURES

EAS00896

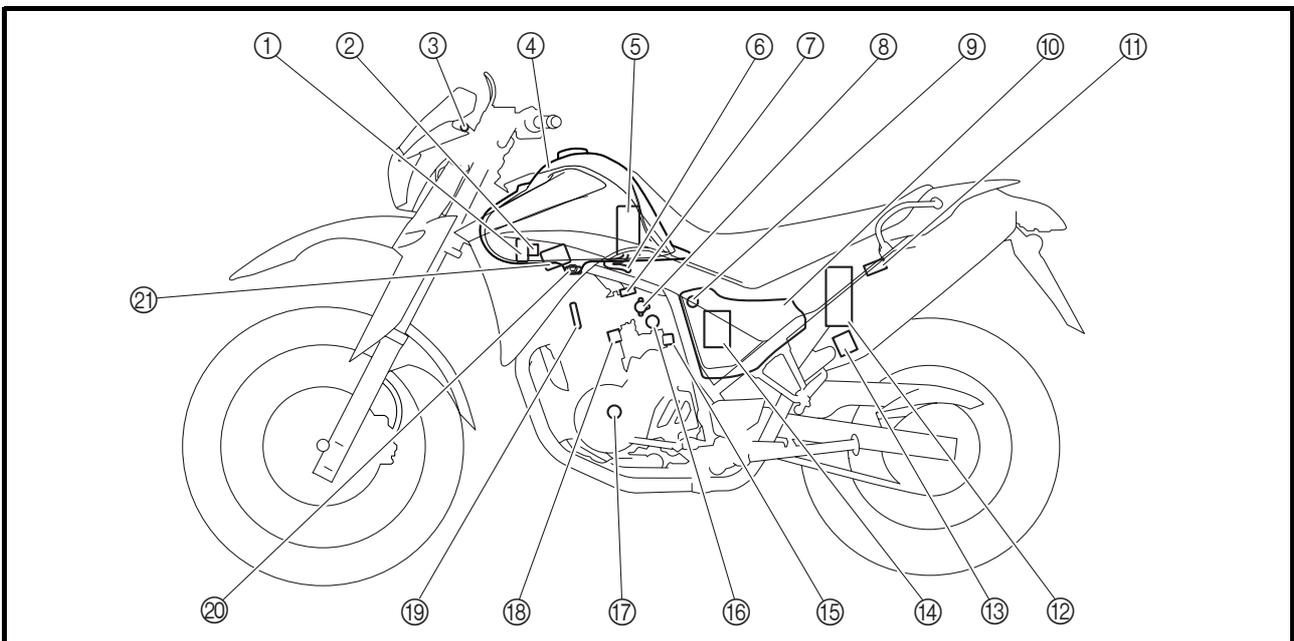
OUTLINE

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 a 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 chamber.

Despite the same volume of intake air, the fuel volume requirement varies with the engine operating conditions, such as acceleration, deceleration, or operation 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 engines 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 a 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.

Adoption of the FI system has resulted in a highly precise fuel supply, improved engine response, better fuel economy, and reduced exhaust emissions. Furthermore, the air induction system (AI system) has been placed under computer control together with the FI system in order to realize cleaner exhaust gases.



- | | | | |
|---------------------------------|---------------------------------|------------------------------|------------------------------|
| ① Air cut-off valve | ⑦ Fuel injector | ⑫ Battery | ⑱ Coolant temperature sensor |
| ② Air induction system solenoid | ⑧ Throttle position sensor | ⑬ Catalytic converter | ⑲ Spark plug |
| ③ Engine trouble warning light | ⑨ Intake air temperature sensor | ⑭ ECU | ⑳ Intake air pressure sensor |
| ④ Fuel tank | ⑩ Air filter case | ⑮ Lean angle cut-off switch | ㉑ Ignition coil |
| ⑤ Fuel pump | ⑪ Fuel injection system relay | ⑯ Fast idle unit | |
| ⑥ Fuel hose | | ⑰ Crankshaft position sensor | |

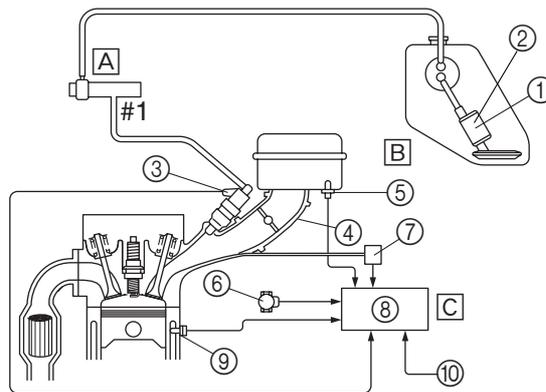
EAS00897

FI SYSTEM

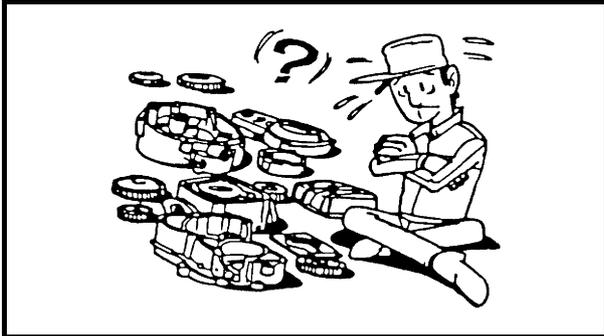
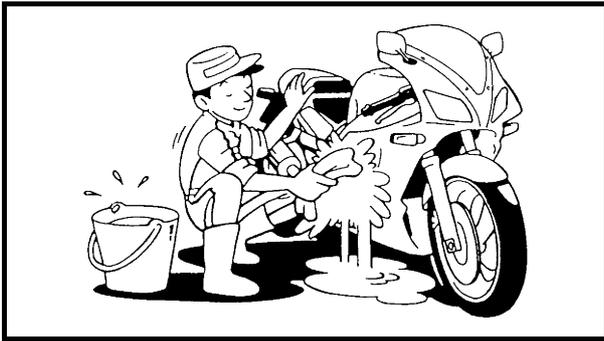
The fuel pump delivers fuel to the injector via the fuel filter. The pressure regulator maintains the fuel pressure that is applied to the injector at 324 kPa (3.24 kg/cm², 46.1 psi) higher than the intake manifold pressure. Accordingly, when the energizing signal from the ECU energizes the injector, the fuel passage opens, causing the fuel to be injected into the intake manifold only during the time the passage remains open. Therefore, the longer the length of time the injector is energized (injection duration), the greater the volume of fuel that is supplied. Conversely, the shorter the length of time the injector is energized (injection duration), the lesser the volume of fuel that is supplied.

The injection duration and the injection timing are controlled by the ECU. Signals that are input from the throttle position sensor, crankshaft position sensor, intake air pressure sensor, intake air temperature sensor, and coolant temperature sensor enable the ECU to determine the injection duration. The injection timing is determined through the signal from the crankshaft position sensor. As a result, the volume of fuel that is required by the engine can be supplied at all times in accordance with the driving conditions.

Illustration is for reference only.



- | | | | |
|----------------------|---------------------------------|------------------------------|------------------|
| ① Fuel pump | ⑤ Intake air temperature sensor | ⑧ ECU | Ⓐ Fuel system |
| ② Pressure regulator | ⑥ Throttle position sensor | ⑨ Coolant temperature sensor | Ⓑ Air system |
| ③ Fuel injector | ⑦ Intake air pressure sensor | ⑩ Crankshaft position sensor | Ⓒ Control system |
| ④ Throttle body | | | |



EAS00020

**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 "SPECIAL TOOLS".
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.



EAS00021

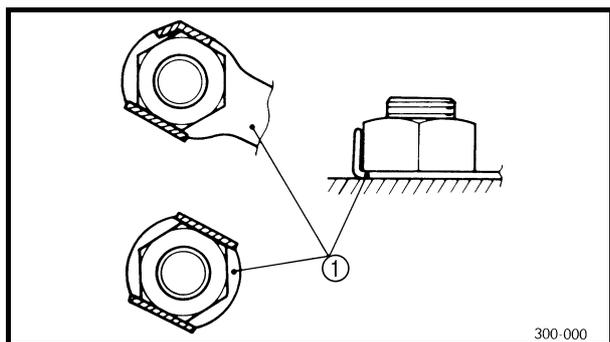
REPLACEMENT PARTS

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.

EAS00022

GASKETS, OIL SEALS AND O-RINGS

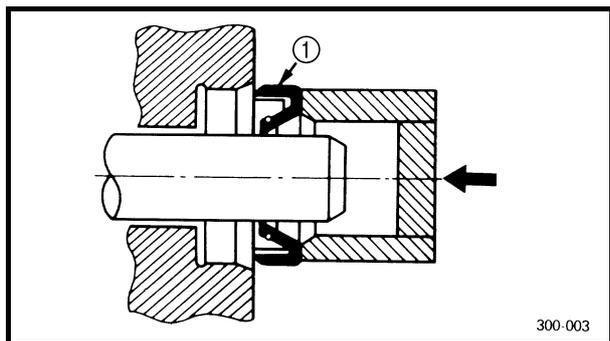
1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and lubricate the oil seal lips with grease.



EAS00023

LOCK WASHERS/PLATES AND COTTER PINS

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.



EAS00024

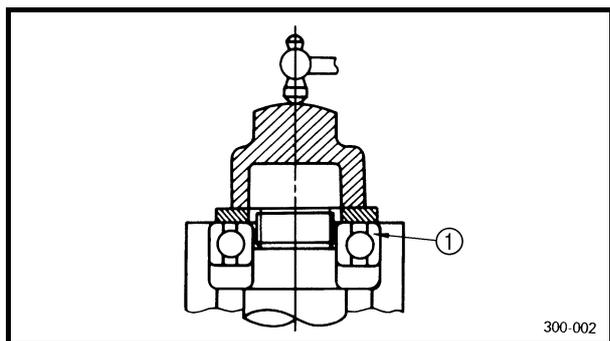
BEARINGS AND OIL SEALS

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

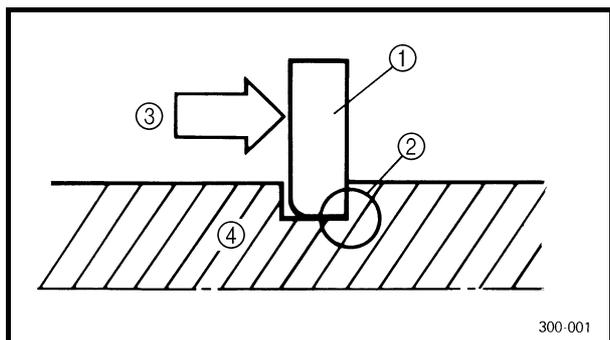
① Oil seal

CAUTION:

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



① Bearing

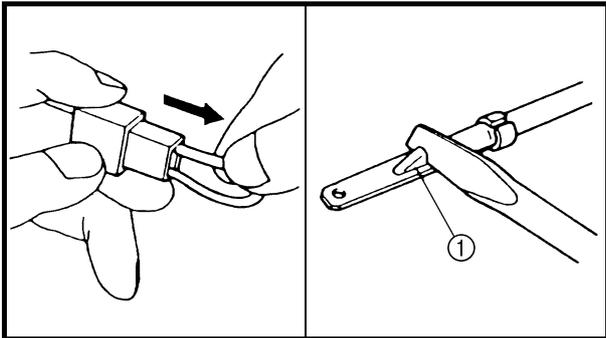
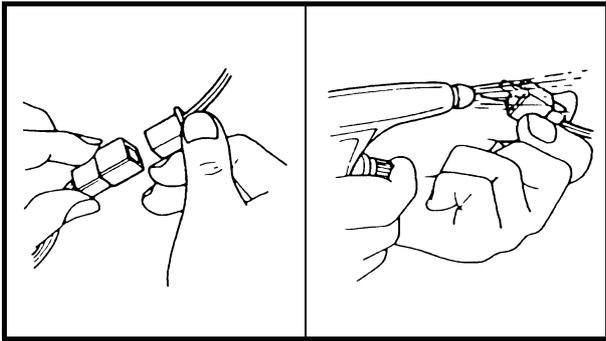


EAS00025

CIRCLIPS

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 the sharp-edged corner ② is positioned opposite the thrust ③ that the circlip receives.

④ Shaft



EAS00026

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: _____

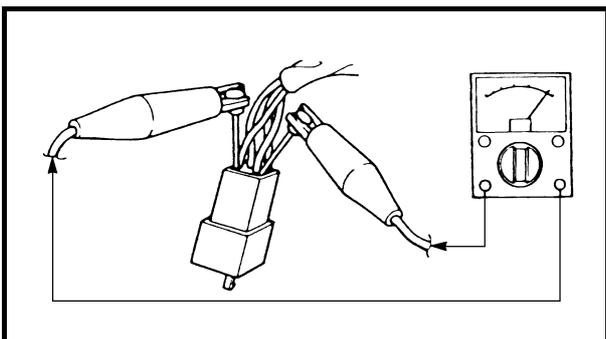
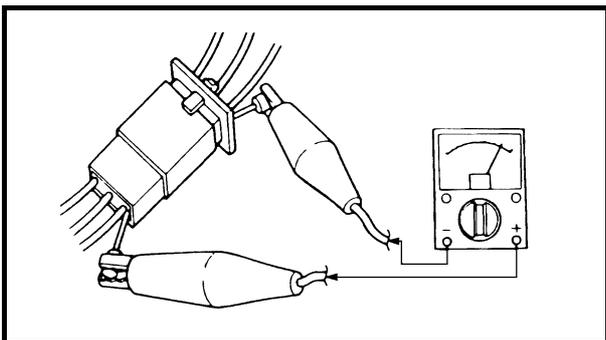
If the pin ① on the terminal is flattened, bend it up.

4. Connect:

- lead
- coupler
- connector

NOTE: _____

Make sure all connections are tight.



5. Check:

- continuity
(with the pocket tester)

	Pocket tester 90890-03112
---	--------------------------------------

NOTE: _____

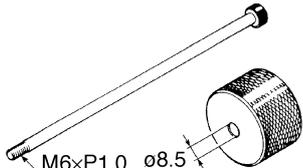
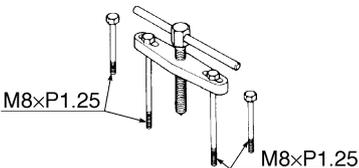
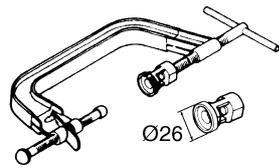
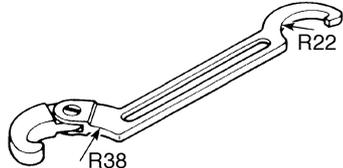
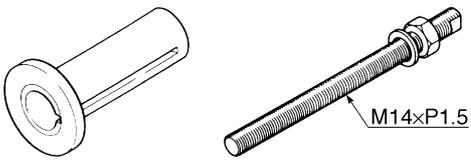
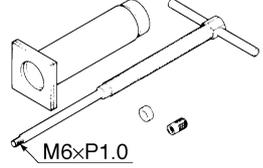
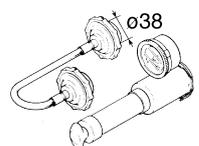
- If there is no continuity, clean the terminals.
- When checking the wire harness, perform steps (1) to (3).
- As a quick remedy, use a contact revitalizer available at most part stores.

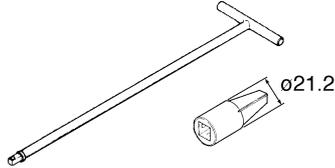
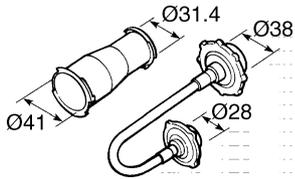
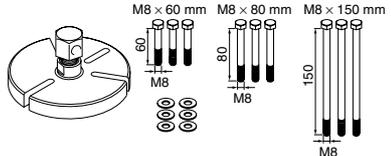
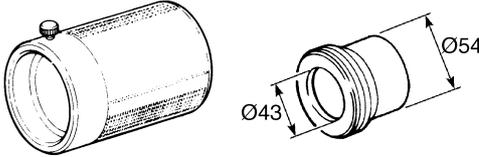
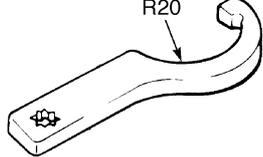
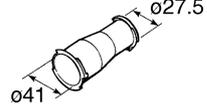
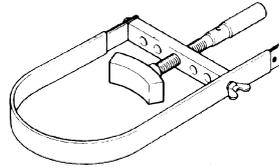
EAS00027

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. Special tools, part numbers or both may differ depending on the country.

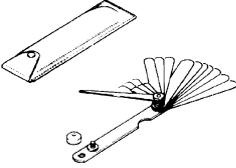
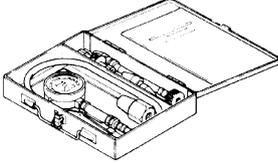
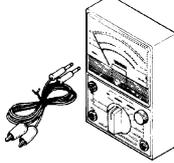
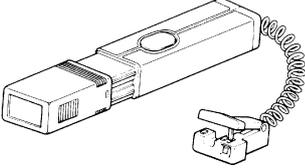
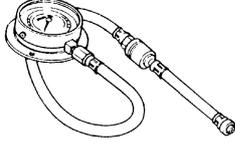
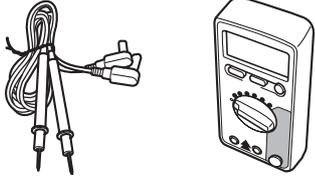
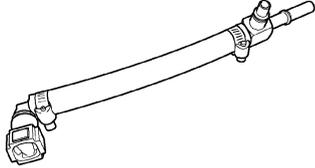
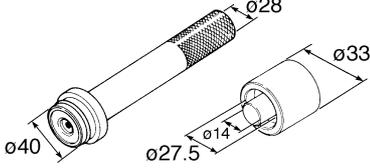
When placing an order, refer to the list provided below to avoid any mistakes.

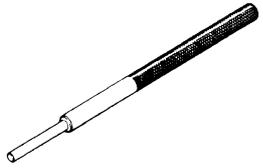
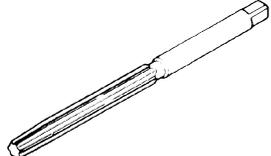
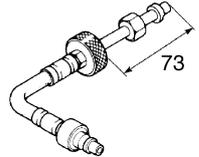
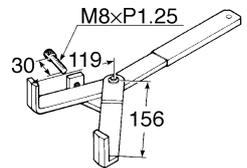
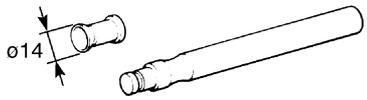
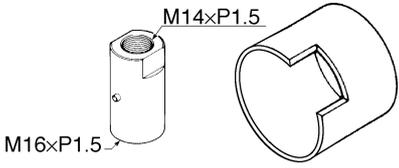
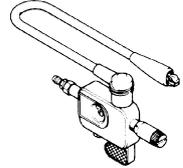
Tool No.	Tool name/Function	Illustration
Slide hammer bolt 90890-01083 Weight 90890-01084	Slide hammer bolt Weight These tools are used to remove or install the rocker arm shafts.	
90890-01135	Crankcase separating tool This tool is used to remove the crankshaft.	
Attachment 90890-01243 Compressor 90890-04019	Valve spring compressor attachment Valve spring compressor These tools are used to remove or install the valve assemblies.	
90890-01268	Ring nut wrench This tool is used to loosen or tighten the steering ring nuts.	
Pot 90890-01274 Bolt 90890-01275	Crankshaft installer pot Crankshaft installer bolt These tools are used to install the crankshaft.	
90890-01304	Piston pin puller set This tool is used to remove the piston pin.	
90890-01325	Radiator cap tester This tool is used to check the cooling system.	

Tool No.	Tool name/Function	Illustration
<p>T-handle 90890-01326 Holder 90890-01460</p>	<p>T-handle Damper rod holder</p> <p>These tools are used to hold the damper rod holder when removing or installing the damper rod.</p>	
<p>90890-01352</p>	<p>Radiator cap tester adaptor</p> <p>This tool is used to check the cooling system.</p>	
<p>90890-01362</p>	<p>Flywheel puller</p> <p>This tool is used to remove the A.C. magneto rotor.</p>	
<p>Weight 90890-01367 Attachment 90890-01374</p>	<p>Fork seal driver weight Fork seal driver attachment (ø43)</p> <p>These tools are used to install the oil seal, dust seal, and the outer tube bushing of the front fork legs.</p>	
<p>90890-01403</p>	<p>Steering nut wrench</p> <p>This tool is used to loosen or tighten the steering ring nuts.</p>	
<p>90890-01496</p>	<p>Radiator tester adapter</p> <p>This tool is used to check the cooling system.</p>	
<p>90890-01497</p>	<p>Radiator cap tester adapter</p> <p>This tool is used to check the cooling system.</p>	
<p>90890-01701</p>	<p>Sheave holder</p> <p>This tool is used to hold the A.C. magneto rotor when loosen or tighten the A.C. magneto rotor nut.</p>	

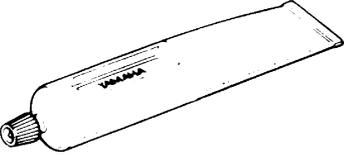
SPECIAL TOOLS



Tool No.	Tool name/Function	Illustration
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>This tool is used to check the electrical system.</p>	
90890-03141	<p>Timing light</p> <p>This tool is used to check the ignition timing.</p>	
90890-03153	<p>Pressure gauge</p> <p>This tool is needed to measure fuel pressure.</p>	
90890-03174	<p>Digital circuit tester</p> <p>This tool is used to check electrical system.</p>	
90890-03176	<p>Fuel pressure adapter</p> <p>This tool is needed to measure fuel pressure.</p>	
<p>Driver 90890-04058 Installer 90890-04132</p>	<p>Middle driven shaft bearing driver Mechanical seal installer</p> <p>These tools are used to install the mechanical seal.</p>	

Tool No.	Tool name/Function	Illustration
90890-04064	Valve guide remover (ø 6) This tool is needed to remove and install the valve guides.	
90890-04065	Valve guide installer (ø 6) This tool is needed to install the valve guides.	
90890-04066	Valve guide reamer (ø 6) This tool is needed to rebore the new valve guides.	
90890-04082	Adaptor (Compression gauge) This tool is needed to measure engine compression.	
90890-04086	Universal clutch holder This tool is needed to hold the clutch boss when removing or installing the boss nut.	
90890-04101	Valve lapper This tool is used for lapping the valve.	
Adapter 90890-04130 Spacer 90890-04144	Adapter Spacer (crankshaft installer) These tools are used to install the crankshaft.	
90890-06754	Ignition checker This tool is used to check the ignition system components.	

SPECIAL TOOLS

Tool No.	Tool name/Function	Illustration
90890-85505	Yamaha bond No. 1215 This bond is used to seal two mating surfaces (e.g., crankcase mating surfaces).	 A line drawing of a tube of Yamaha bond No. 1215. The tube is rectangular with a rounded end and a small cap at the other end. The word "YAMAHA" is visible on the side of the tube.



SPEC

2

CHAPTER 2 SPECIFICATIONS

GENERAL SPECIFICATIONS	2-1
ENGINE SPECIFICATIONS	2-2
CHASSIS SPECIFICATIONS	2-11
ELECTRICAL SPECIFICATIONS	2-16
CONVERSION TABLE	2-19
GENERAL TIGHTENING TORQUE SPECIFICATIONS	2-19
TIGHTENING TORQUE	2-20
ENGINE TIGHTENING TORQUE	2-20
CHASSIS TIGHTENING TORQUES	2-23
LUBRICATION POINTS AND LUBRICANT TYPES	2-25
ENGINE	2-25
CHASSIS	2-27
COOLING SYSTEM DIAGRAMS	2-28
LUBRICATION CHART	2-30
LUBRICATION DIAGRAMS	2-31
CABLE ROUTING	2-35

SPECIFICATIONS

GENERAL SPECIFICATIONS

Item	Standard	Limit
Model code	XT660R: 5VK1 (Europe)	----
	5VK2 (AUS)	----
	5VK3 (GB)	----
	XT660X: 1D21 (Europe)	----
	1D22 (AUS)	----
	1D23 (GB)	----
Dimensions		
Overall length	2,240 mm (88.2 in) (XT660R)	----
	2,150 mm (84.6 in) (XT660X)	----
Overall width	845 mm (33.3 in) (XT660R)	----
	865 mm (34.1 in) (XT660X)	----
Overall height	1,230 mm (48.4 in) (XT660R)	----
	1,210 mm (47.6 in) (XT660X)	----
Seat height	865 mm (34.1 in) (XT660R)	----
	870 mm (34.3 in) (XT660X)	----
Wheelbase	1,505 mm (59.3 in) (XT660R)	----
	1,490 mm (58.7 in) (XT660X)	----
Minimum ground clearance	210 mm (8.27 in) (XT660R)	----
	205 mm (8.07 in) (XT660X)	----
Minimum turning radius	2,400 mm (94.5 in)	----
Weight		
Wet (with oil and a full fuel tank)	181 kg (399 lb) (XT660R)	----
	186 kg (410 lb) (XT660X)	----
Maximum load (total of cargo, rider, passenger, and accessories)	186 kg (410 lb)	----



ENGINE SPECIFICATIONS

Item	Standard	Limit
Engine		
Engine type	Liquid-cooled, 4-stroke, SOHC	----
Displacement	660 cm ³ (40.27 cu · in)	----
Cylinder arrangement	Forward-inclined single cylinder	----
Bore × stroke	100.0 × 84.0 mm (3.94 × 3.31 in)	----
Compression ratio	10.00 : 1	----
Engine idling speed	1,300 ~ 1,500 r/min	----
Water temperature	80 °C (176 °F)	----
Oil temperature	55 ~ 60 °C (131 ~ 140 °F)	----
Standard compression pressure (at sea level)	650 kPa (6.5 kg/cm ² , 92.4 psi) at 800 r/min	----
Fuel		
Recommended fuel	Premium unleaded gasoline only	----
Fuel tank capacity		
Total (including reserve)	15.0 L (3.30 Imp gal, 3.96 US gal)	----
Reserve only	5.0 L (1.10 Imp gal, 1.32 US gal)	----
Engine oil		
Lubrication system	Dry sump	----
Recommended oil	Refer to the chart for engine oil grade. API service SE, SF, SG type or higher	----
<p>The chart shows temperature ranges in °C for various SAE oil grades. The x-axis is labeled from -20 to 50 °C. Vertical dashed lines are at -20, -10, 0, 10, 20, 30, 40, and 50 °C. Horizontal double-headed arrows indicate the operating temperature ranges for each grade: SAE 10W-30 (approx. -20 to 30 °C), SAE 10W-40 (approx. -10 to 40 °C), SAE 15W-40 (approx. 0 to 40 °C), SAE 20W-40 (approx. 10 to 40 °C), and SAE 20W-50 (approx. 20 to 50 °C).</p>		
Quantity		
Total amount	2.90 L (2.55 Imp qt, 3.07 US qt)	----
Periodic oil change	2.50 L (2.20 Imp qt, 2.64 US qt)	----
With oil filter replacement	2.60 L (2.29 Imp qt, 2.75 US qt)	----
Oil filter		
Oil filter type	Paper	----
Bypass valve opening pressure	40.0 ~ 80.0 kPa (0.40 ~ 0.80 kg/cm ² , 5.8 ~ 11.6 psi)	----
Pressure check location	Oil filter chamber	----

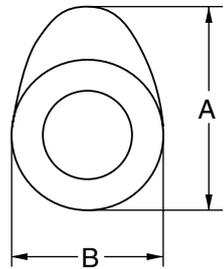
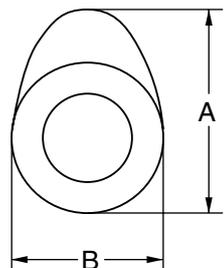
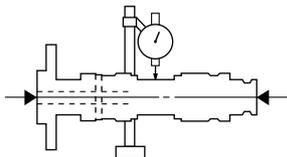
ENGINE SPECIFICATIONS

SPEC



Item	Standard	Limit
Oil pump		
Oil pump type	Trochoid	----
Inner-rotor-to-outer-rotor-tip clearance	0.07 ~ 0.12 mm (0.0028 ~ 0.0047 in)	0.2 mm (0.008 in)
Outer-rotor-to-oil-pump-housing clearance	0.03 ~ 0.08 mm (0.0012 ~ 0.0031 in)	0.15 mm (0.0059 in)
Oil-pump-housing-to-inner-rotor-and-outer-rotor clearance	0.03 ~ 0.08 mm (0.0012 ~ 0.0031 in)	0.15 mm (0.0059 in)
Cooling system		
Radiator capacity	1.00 L (0.88 Imp, 1.06 US qt)	----
Radiator cap opening pressure	110.0 ~ 140.0 kPa (1.10 ~ 1.40 kg/cm ² , 16.0 ~ 20.3 psi)	----
Radiator core		
Width	280.0 mm (11.02 in)	----
Height	158.0 mm (6.22 in)	----
Depth	23.0 mm (0.91 in)	----
Coolant reservoir		
Capacity	0.25 L (0.22 Imp, 0.26 US qt)	----
<From low to full level>	0.15 L (0.13 Imp, 0.16 US qt)	----
Water pump		
Water pump type	Single-suction centrifugal pump	----
Reduction ratio	27/28 (0.964)	----
Maximum impeller shaft tilt	----	0.15 mm (0.006 in)
Starting system type	Electric starter	----
Fuel injector		
Model/manufacture	297500-0390/DENSO	----
Quantity	1	----
Spark plug		
Model/manufacture × quantity	CR7E/NGK × 1	----
Spark plug gap	0.7 ~ 0.8 mm (0.028 ~ 0.031 in)	----
Cylinder head		
Volume	59.10 ~ 60.50 cm ³ (3.61 ~ 3.69 cu · in)	----
Maximum warpage *	----	0.03 mm (0.0012 in)

ENGINE SPECIFICATIONS

Item	Standard	Limit
Camshaft		
Drive system	Chain drive (left)	----
Intake camshaft lobe dimensions		
		
Measurement A	43.488 ~ 43.588 mm (1.7121 ~ 1.7161 in)	43.338 mm (1.7062 in)
Measurement B	36.959 ~ 37.059 mm (1.4551 ~ 1.4590 in)	36.840 mm (1.4504 in)
Exhaust camshaft lobe dimensions		
		
Measurement A	43.129 ~ 43.229 mm (1.6980 ~ 1.7019 in)	42.983 mm (1.6922 in)
Measurement B	37.007 ~ 37.107 mm (1.4570 ~ 1.4609 in)	36.886 mm (1.4522 in)
Valve timing		
Intake - open (B.T.D.C.)	25°	----
Intake - closed (A.B.D.C.)	55°	----
Exhaust - open (B.B.D.C.)	60°	----
Exhaust - closed (A.T.D.C.)	20°	----
Overlap angle "A"	45°	----
Maximum camshaft runout	----	0.040 mm (0.0016 in)
		
Timing chain		
Model/number of links	98 × RH2010/126	----
Tensioning system	Automatic	----