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YAMAHA 2006

MT-03

SERVICE MANUAL

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MT-03 (2006)
SERVICE MANUAL
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EAS00020

NOTICE

This manual was produced by the Yamaha Motor Italia S.p.A. 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 Motor Italia S.p.A. 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:

Designs and specifications are subject to change without notice.

EAS00040

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.

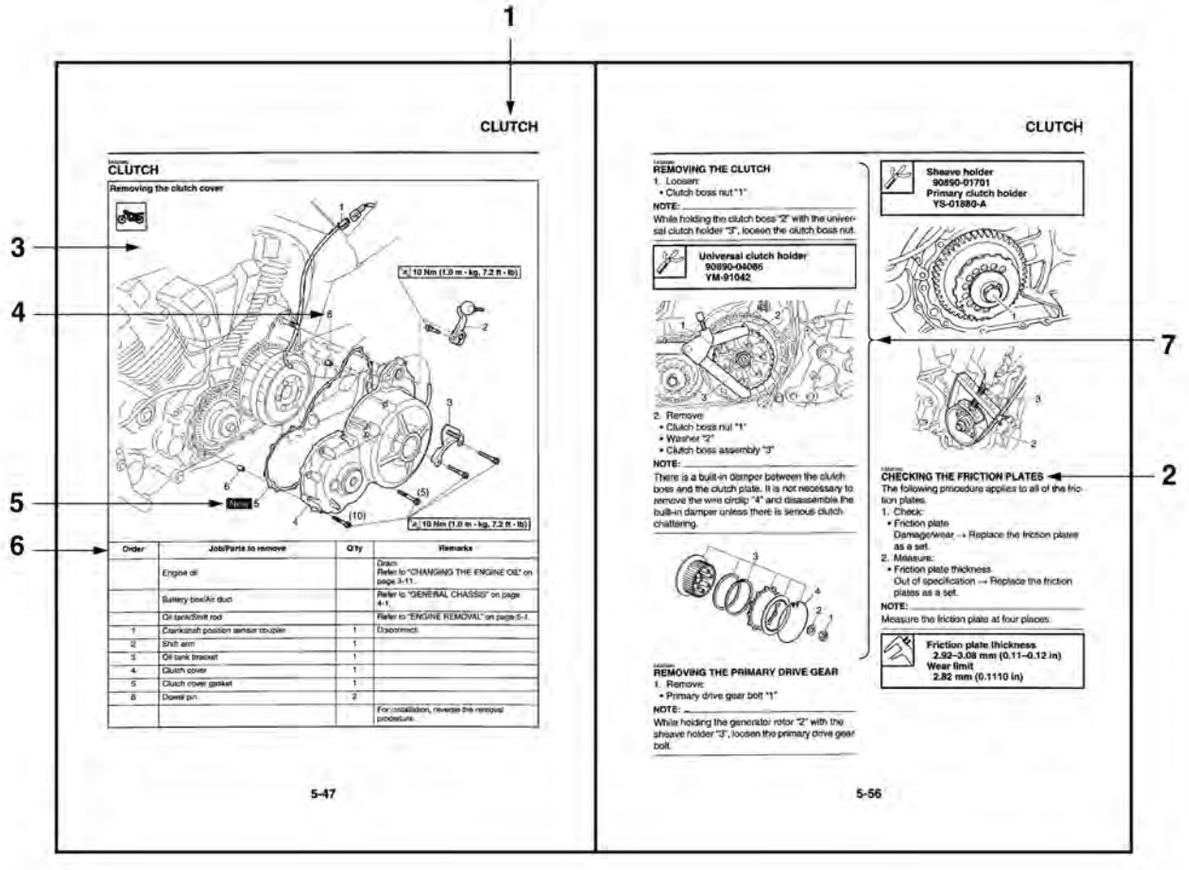
NOTE: A NOTE provides key information to make procedures easier or clearer.

EAS20090

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.



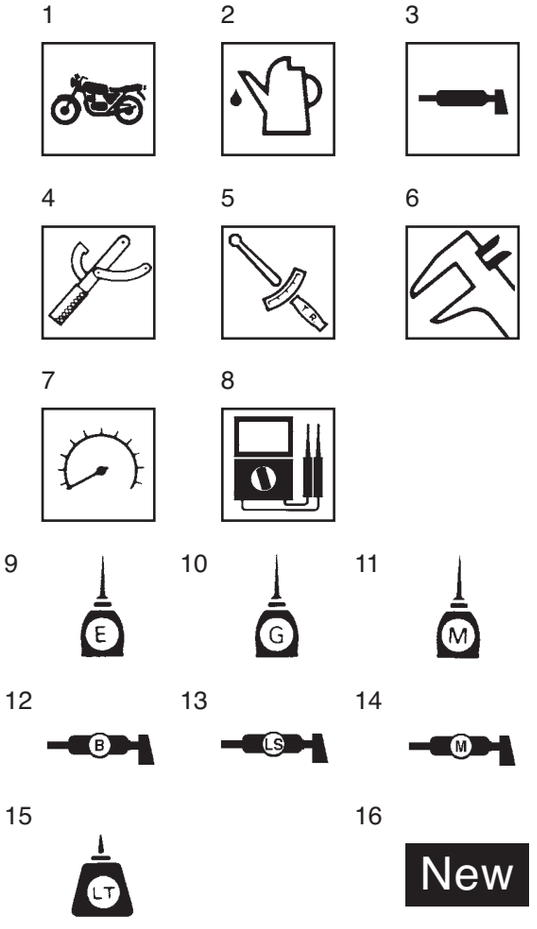
EAS20100

SYMBOLS

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

NOTE:

The following symbols are not relevant to every vehicle.



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. Wheel bearing grease
13. Lithium-soap-based grease
14. Molybdenum disulfide grease
15. Apply locking agent (LOCTITE®)
16. Replace the part with a new one.

TABLE OF CONTENTS

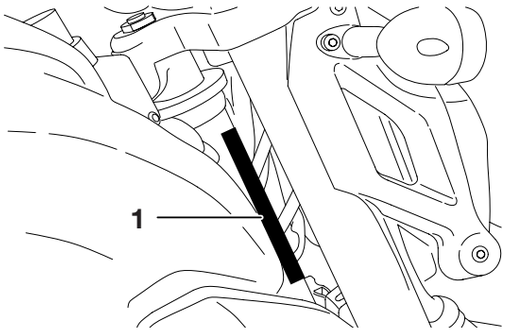
GENERAL INFORMATION

IDENTIFICATION

EAS00170

VEHICLE IDENTIFICATION NUMBER

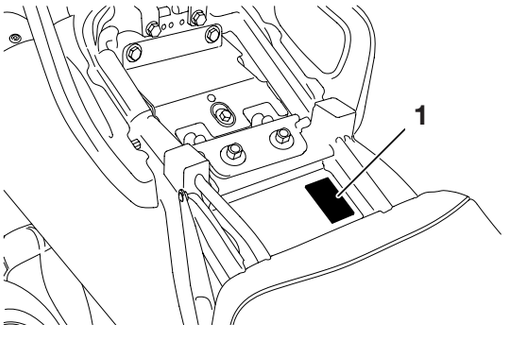
The vehicle identification number “1” is stamped into the right side of the steering head pipe.



EAS00180

MODEL LABEL

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



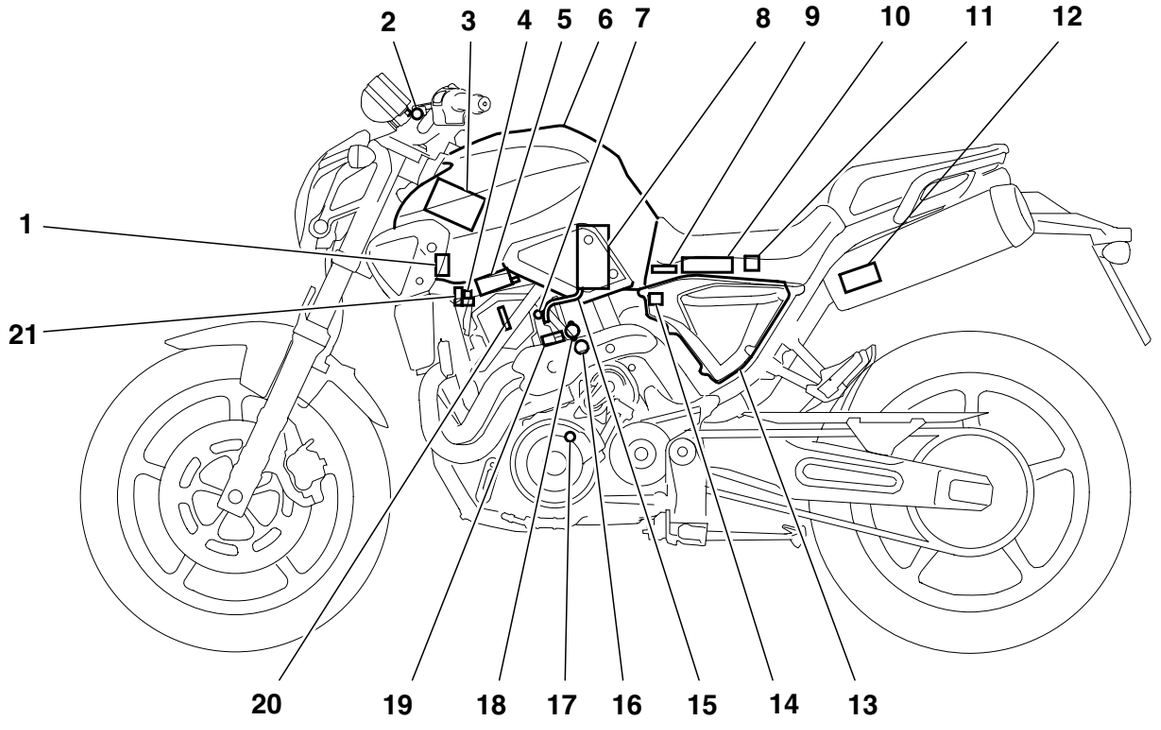
EAS00019

FEATURES

EAS00896

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 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.



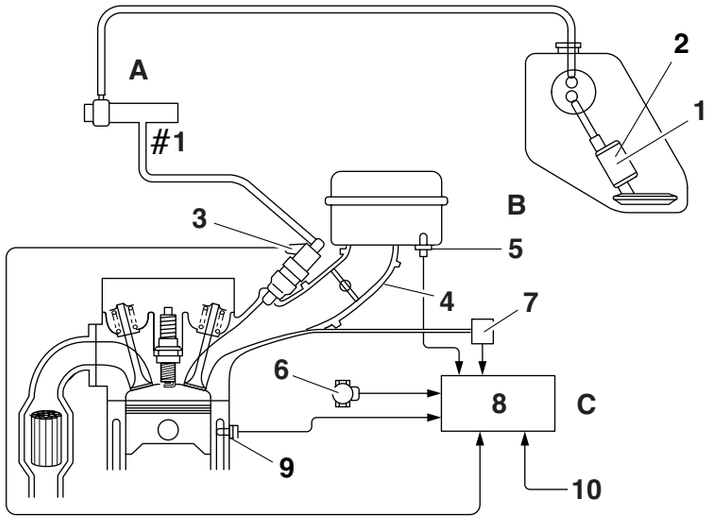
1. Fuel injection system relay
2. Engine trouble warning light
3. Battery
4. Air induction system solenoid
5. Ignition coil/Spark plug
6. Fuel tank
7. Idling adjustment screw
8. Fuel pump
9. Intake air pressure sensor
10. ECU
11. Lean angle cut-off switch
12. Catalytic converter
13. Air filter case
14.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

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
2. Pressure regulator
3. Fuel injector
4. Throttle body
5. Intake air temperature sensor
6. Throttle position sensor
7. Intake air pressure sensor
8. ECU
9. Coolant temperature sensor
10. Crankshaft position sensor

A. Fuel system
B. Air system
C. Control system

INSTRUMENT FUNCTIONS

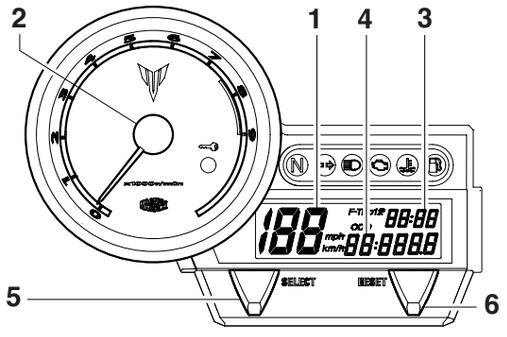
EAUB1392

Multi-function meter unit

EWA12421

⚠ WARNING

Be sure to stop the vehicle before making any setting changes to the multi-function meter unit.



1. Speedometer
2. Tachometer
3. Clock
4. Odometer/Tripmeters/Fuel reserve tripmeter
5. “SELECT” button
6. “RESET” button

The multi-function meter unit is equipped with the following:

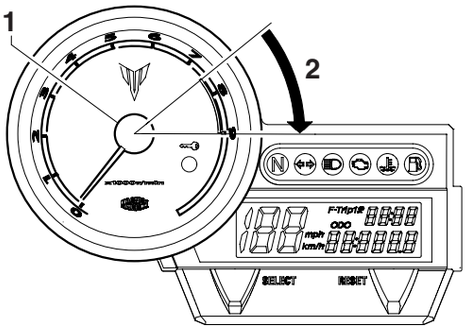
- a speedometer (which shows the riding speed)
- a tachometer (which shows engine speed)
- an odometer (which shows the total distance traveled)
- two tripmeters (which show the distance traveled since they were last set to zero)
- a fuel reserve tripmeter (which shows the distance traveled since the fuel level warning light came on)
- a clock
- a self-diagnosis device
- an indicator lights brightness control mode.

To switch the speedometer and odometer/tripmeter displays between kilometers and miles, push the “SELECT” and “RESET” buttons together and turn the key to “ON”. When the digits start flashing on the display, push the “SELECT” button to choose kilometers or miles.

NOTE:

Be sure to turn the key to “ON” before using the “SELECT” and “RESET” buttons.

Tachometer



1. Tachometer
2. Red zone

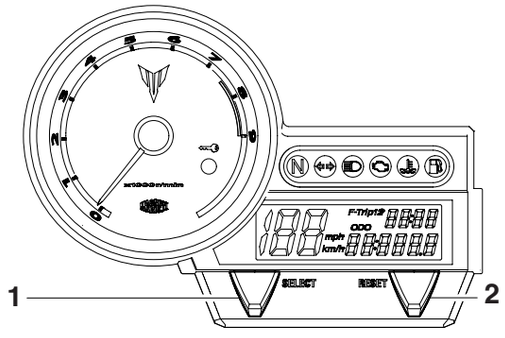
The electric tachometer allows the rider to monitor the engine speed and keep it within the ideal power range.

ECA10031

CAUTION:

Do not operate the engine in the tachometer red zone. Red zone: 7500 r/min and above.

Odometer, tripmeter modes



1. “SELECT” button
2. “RESET” button

Pushing the “SELECT” button switches the display between the odometer mode “ODO” and the tripmeter modes “TRIP 1” and “TRIP 2” in the following order:

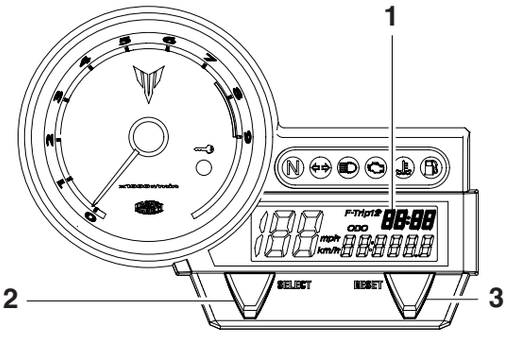
ODO → TRIP 1 → TRIP 2 → ODO

If the fuel level warning light comes on, the odometer display will automatically change to the fuel reserve tripmeter mode “F-TRIP” and start counting the distance traveled from that point. In that case, push the “SELECT” button to switch the display between the various tripmeter, odometer modes in the following order:

F-TRIP → ODO → TRIP 1 → TRIP 2 → F-TRIP

To reset a tripmeter, select it by pushing the “SELECT” button, and then push the “RESET” button for at least four seconds. If you do not reset the fuel reserve tripmeter manually, it will reset itself automatically and the display will return to the prior mode after refueling and traveling 5 km (3 mi).

Clock mode



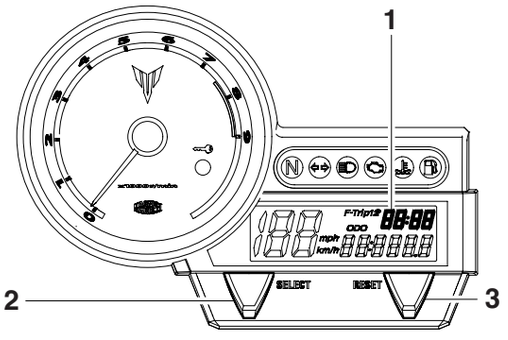
1. Clock
2. “SELECT” button
3. “RESET” button

Turn the key to “ON”.

To set the clock

1. Push the “SELECT” button for at least two seconds.
2. When the hour digits start flashing, push the “RESET” button to set the hours.
3. Push the “SELECT” button, and the minute digits will start flashing.
4. Push the “RESET” button to set the minutes.
5. Push the “SELECT” button, and then release it to start the clock.

Self-diagnosis devices



1. Engine trouble warning light "🔧"
2. Immobilizer system indicator light "🔑"

This model is equipped with a self-diagnosis device for various electrical circuits.
If any of those circuits are defective, the engine trouble warning light will start flashing.
Refer to "FUEL INJECTION SYSTEM" on page 7-16. This model is also equipped with a self-diagnosis device for the immobilizer system.
Turn the key to "ON". If any of the immobilizer system circuits are defective, the immobilizer system indicator light will flash, and it will indicate an error code. Refer to "IMMOBILIZER SYSTEM" on page 8-29. However, if the indicator light slowly flashes five times, and then quickly flashes two times repeatedly, this error could be caused by signal interference. If this occurs, try the following.

1. Use the code re-registering key to start the engine.

NOTE:

Make sure there are no other immobilizer keys close to the main switch, and do not keep more than one immobilizer key on the same key ring! Immobilizer system keys may cause signal interference, which may prevent the engine from starting.

2. If the engine starts, turn it off and try starting the engine with the standard keys.
3. If one or both of the standard keys do not start the engine, re-register the standard keys.

If the multifunction display indicates an error code, note the code number, and then check the vehicle. Refer to "IMMOBILIZER SYSTEM" on page 8-29.

ECA11590

CAUTION:

If the display indicates an error code, the vehicle should be checked as soon as possible in order to avoid engine damage.

Indicator lights brightness control mode

• Indicator lights brightness:
This function allows you to adjust the brightness of the indicator lights to suit the outside lighting conditions.

To adjust the brightness of the indicator lights
1. Turn the key to "ON".
2. Push the "SELECT" button to select ODO meter mode, and then push the "RESET" button for at least five seconds.
3. Release the "RESET" button, and then select the desired lighting brightness level by pushing the "RESET" button.

EAS20180

IMPORTANT INFORMATION

EAS20190

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” on page 1-10.
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.

EAS20200

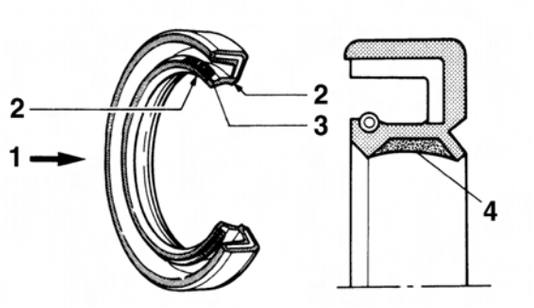
REPLACEMENT PARTS

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.

EAS20210

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.

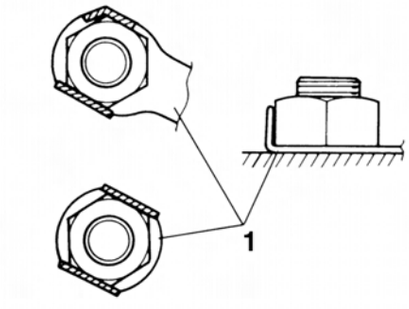


1. Oil
2. Lip
3. Spring
4. Grease

EAS20220

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.



EAS20230

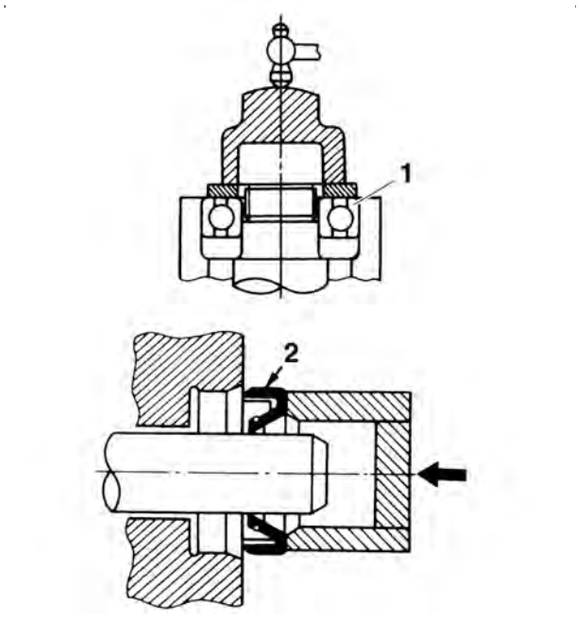
BEARINGS AND OIL SEALS

Install bearings “1” and oil seals “2” 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.

ECA13300

CAUTION:

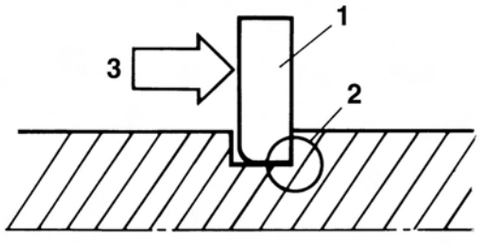
Do not spin the bearing with compressed air because this will damage the bearing surfaces.



EAS20240

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.



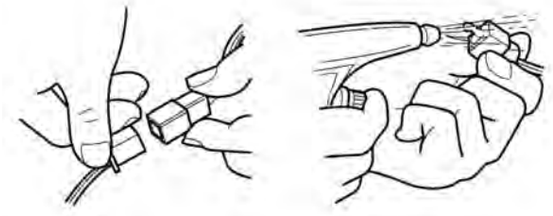
EAS20250

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.

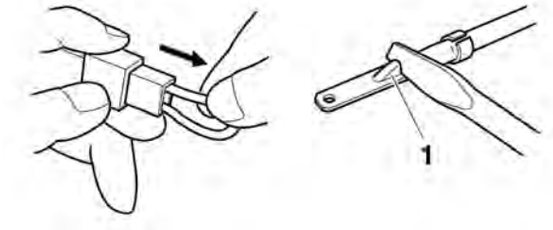


3. Check:
   - All connections

   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.

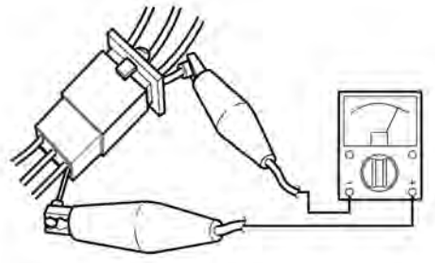
5. Check:
   - Continuity

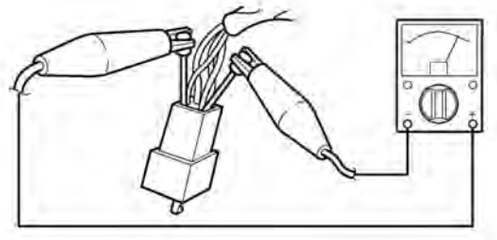
   (with the pocket tester)

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.

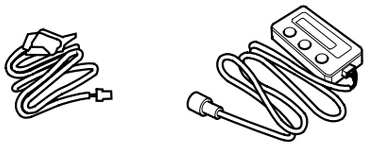
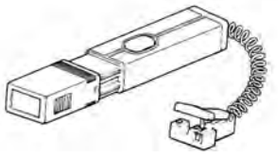
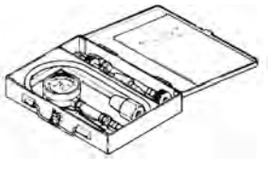
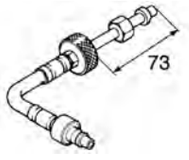


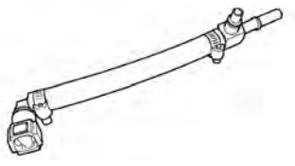
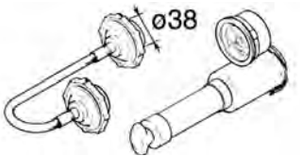
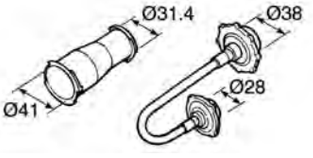
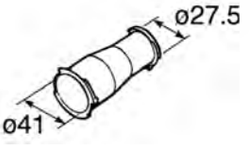
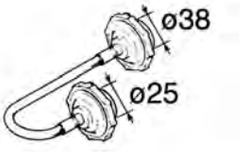
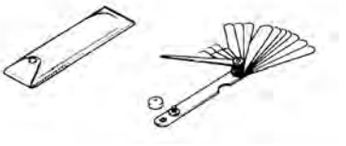
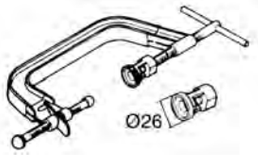


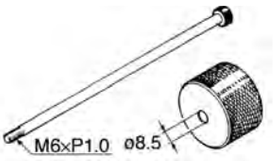
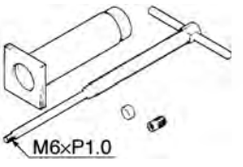
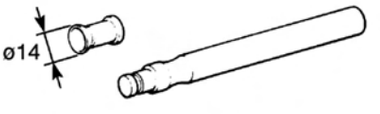
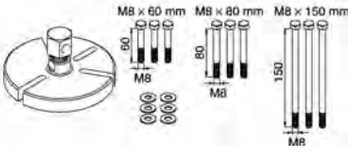
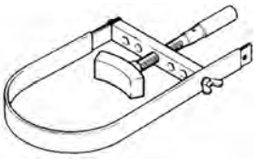
EAS00027

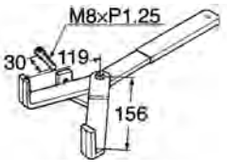
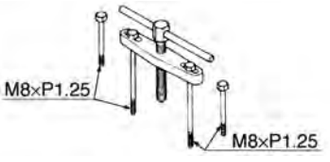
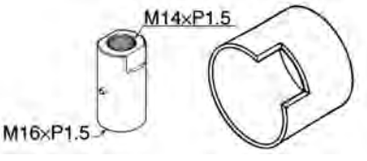
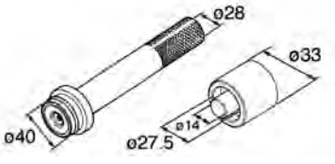
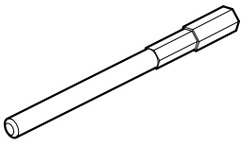
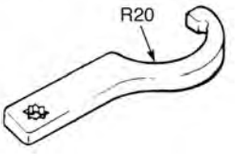
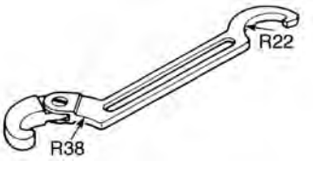
SPECIAL TOOLS

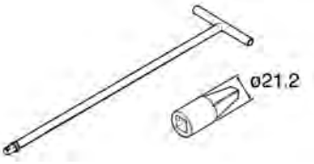
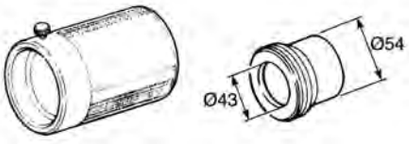
The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country.
When placing an order, refer to the list provided below to avoid any mistakes.

Tool name/Tool No.	Illustration	Reference pages
Pocket tester 90890-03112		5-59, 8-45, 8-46, 8-47, 8-48, 8-52, 8-53, 8-54, 8-55, 8-56, 8-57, 8-58, 8-59, 8-60
Digital circuit tester 90890-03174		7-10
Fuel injection system tester 90890-03182		7-23
Timing light 90890-03141		3-7
Ignition checker 90890-06754		8-55
Compression gauge 90890-03081		3-8
Adaptor (Compression gauge) 90890-04082		3-8

Tool name/Tool No.	Illustration	Reference pages
Pressure gauge 90890-03153		7-8
Fuel pressure adapter 90890-03176		7-8
Radiator cap tester 90890-01325		6-2, 6-3
Radiator cap tester adaptor 90890-01352		6-2
Radiator cap tester adapter 90890-01497		6-2
Radiator tester adapter 90890-01496		6-3
Thickness gauge 90890-03079		3-4
Valve spring compressor attachment 90890-01243 Valve spring compressor 90890-04019		5-21, 5-26

Tool name/Tool No.	Illustration	Reference pages
Slide hammer bolt 90890-01083 Weight 90890-01084		5-16, 5-18
Piston pin puller set 90890-01304		5-28
Valve guide remover (ø 6) 90890-04064		5-22
Valve guide installer (ø 6) 90890-04065		5-22
Valve guide reamer (ø 6) 90890-04066		5-22
Valve lapper 90890-04101		5-22
Flywheel puller 90890-01362		5-54
Sheave holder 90890-01701		5-54, 5-56

Tool name/Tool No.	Illustration	Reference pages
Universal clutch holder 90890-04086		5-36, 5-38
Crankcase separating tool 90890-01135		5-68
Crankshaft installer pot 90890-01274 Crankshaft installer bolt 90890-01275		5-69
Adapter 90890-04130 Spacer (crankshaft installer) 90890-04144		5-69
Middle driven shaft bearing driver 90890-04058 Mechanical seal installer 90890-04132		6-10
Engine alignment tool 90890-11097		5-7
Steering nut wrench 90890-01403		3-24, 4-57, 4-58
Ring nut wrench 90890-01268		4-57

Tool name/Tool No.	Illustration	Reference pages
T-handle 90890-01326 Damper rod holder 90890-01460		4-49, 4-51
Fork seal driver weight 90890-01367 Fork seal driver attachment (ø 43) 90890-01374		4-51, 4-52
Yamaha bond No. 1215 90890-85505		5-56, 5-63, 5-65, 6-10

SPECIFICATIONS

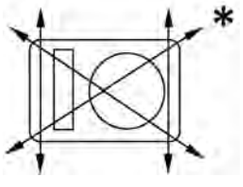
GENERAL SPECIFICATIONS

Model	
Model code	5YK1 (Europe) 5YK3 (MT-03 25KW)
Dimensions	
Overall length	2070 mm (81.49 in)
Overall width	860 mm (33.85 in)
Overall height	1115 mm (43.89 in)
Seat height	805 mm (31.69 in)
Wheelbase	1420 mm (55.90 in)
Minimum ground clearance	200 mm (7.87 in)
Minimum turning radius	2225 mm (87.59 in)
Weight	
With oil and fuel	192 kg (423 lb)
Maximum load	186 kg (410 lb)

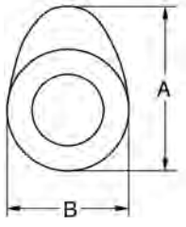
ENGINE SPECIFICATIONS

Engine	
Engine type	Liquid-cooled, 4-stroke, SOHC
Displacement	660 cm^3 (40.27 cu·in)
Cylinder arrangement	Forward-inclined single cylinder
Bore x stroke	100.0 x 84.0 mm (3.94 x 3.31 in)
Compression ratio	10.00 : 1
Standard compression pressure (at sea level)	650 kPa/800 r/min (92.4 psi/800 r/min) (6.5 kg/cm^2/800 r/min)
Water temperature	80 °C (176 °F)
Oil temperature	55-60 °C (131-140 °F)
Engine idling speed	1,300-1,500 r/min
Starting system type	Electric starter
Fuel	
Recommended fuel	Premium unleaded gasoline only
Fuel tank capacity	15.0 L (3.30 Imp gal, 3.96 US gal)
Reserve	4.25 L (0.93 Imp gal, 1.12 US gal)
Engine oil	
Lubrication system	Dry sump
Oil type	SAE10W30 or SAE10W40 or SAE15W40 or SAE20W40 or SAE20W50
Recommended engine oil grade	API service SE, SF, SG type or higher
Engine oil quantity	
Total amount	3.40 L (2.99 Imp qt, 3.60 US qt)
Without oil filter element replacement	3.00 L (2.64 Imp qt, 3.17 US qt)
With oil filter replacement	3.10 L (2.72 Imp qt, 3.28 US qt)
Oil filter	
Oil filter type	Paper
Oil pump	
Oil pump type	Trochoid
Inner-rotor to outer-rotor tip clearance	0.07-0.12 mm (0.0028-0.0047 in)
Limit	0.20 mm (0.0079 in)
Outer-rotor to oil-pump housing clearance	0.03-0.08 mm (0.0012-0.0031 in)
Limit	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)
Limit	0.150 mm (0.0059 in)
Bypass valve opening pressure	40.0-80.0 kPa (5.8-11.6 psi) (0.40-0.80 kg/cm^2)
Pressure check location	Oil filter chamber

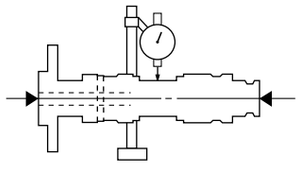
Cooling system	
Radiator capacity	1.00 L (1.06 US qt) (0.88 Imp.qt)
Radiator cap opening pressure	110.0-140.0 kPa (16.0-20.3 psi) (1.10-1.40 kg/cm^2)
Radiator core	
Width	280.0 mm (11.02 in)
Height	158.0 mm (6.22 in)
Depth	23.0 mm (0.91 in)
Coolant reservoir	
Capacity	0.25 L (0.26 US qt) (0.22 Imp.qt)
From low to full level	0.15 L (0.16 US qt) (0.13 Imp.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)
Spark plug	
Manufacturer/Model	NGK/CR7E
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)



Camshaft	
Drive system	Chain drive (left)
Intake camshaft lobe dimensions	
Measurement A	43.488-43.588 mm (1.7121-1.7161 in)
Limit	43.338 mm (1.7062 in)
Measurement B	36.959-37.059 mm (1.4551-1.4590 in)
Limit	36.859 mm (1.4511 in)
Exhaust camshaft lobe dimensions	
Measurement A	43.129-43.229 mm (1.6980-1.7019 in)
Limit	43.029 mm (1.694 in)
Measurement B	37.007-37.107 mm (1.4570-1.4609 in)
Limit	36.907 mm (1.4530 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	0.030 mm (0.0012 in)



Timing chain	
Model/number of links	98 x RH2010/126
Tensioning system	Automatic
Rocker arm/rocker arm shaft	
Rocker arm inside diameter	12.000-12.018 mm (0.4724-0.4731 in)
Limit	12.036 mm (0.4739 in)
Shaft outside diameter	11.981-11.991 mm (0.4717-0.4721 in)
Limit	11.955 mm (0.4707 in)
Arm to shaft clearance	0.009-0.037 mm (0.0004-0.0015 in)
Limit	0.081 mm (0.0032 in)

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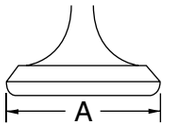
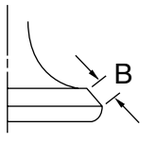
Valves, valve seats, valve guides

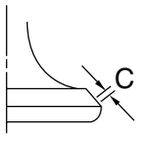
Valve clearance (cold)	
Intake	0.09-0.13 mm (0.0035-0.0051 in)
Exhaust	0.16-0.20 mm (0.0063-0.0079 in)
Valve dimensions	
Valve head diameter A (intake)	37.90-38.10 mm (1.4921-1.5000 in)
Valve head diameter A (exhaust)	31.90-32.10 mm (1.2559-1.2638 in)



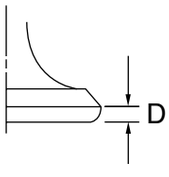
Valve face width B (intake)	1.910-2.620 mm (0.075-0.103 in)
Valve face width B (exhaust)	1.910-2.620 mm (0.075-0.103 in)



Valve seat width C (intake)	1.00-1.20 mm (0.0394-0.0472 in)
Limit	1.6 mm (0.06 in)
Valve seat width C (exhaust)	1.00-1.20 mm (0.0394-0.0472 in)
Limit	1.6 mm (0.06 in)



Valve margin thickness D (intake)	0.80-1.20 mm (0.0315-0.0472 in)
Valve margin thickness D (exhaust)	0.80-1.20 mm (0.0315-0.0472 in)



Valve stem diameter (intake)	5.975-5.990 mm (0.2352-0.2358 in)
Limit	5.945 mm (0.2341 in)
Valve stem diameter (exhaust)	5.960-5.975 mm (0.2346-0.2352 in)
Limit	5.930 mm (0.2335 in)
Valve guide inside diameter (intake)	6.000-6.012 mm (0.2362-0.2367 in)
Limit	6.05 mm (0.2382 in)
Valve guide inside diameter (exhaust)	6.000-6.012 mm (0.2362-0.2367 in)

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