YAMAHA 2005

MT-01(T)

SERVICE MANUAL

5YU1-AE1

EAS20040

MT-01(T) 2005
SERVICE MANUAL

EAS20070
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.

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:

Designs and specifications are subject to change without notice.

EAS20080
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.

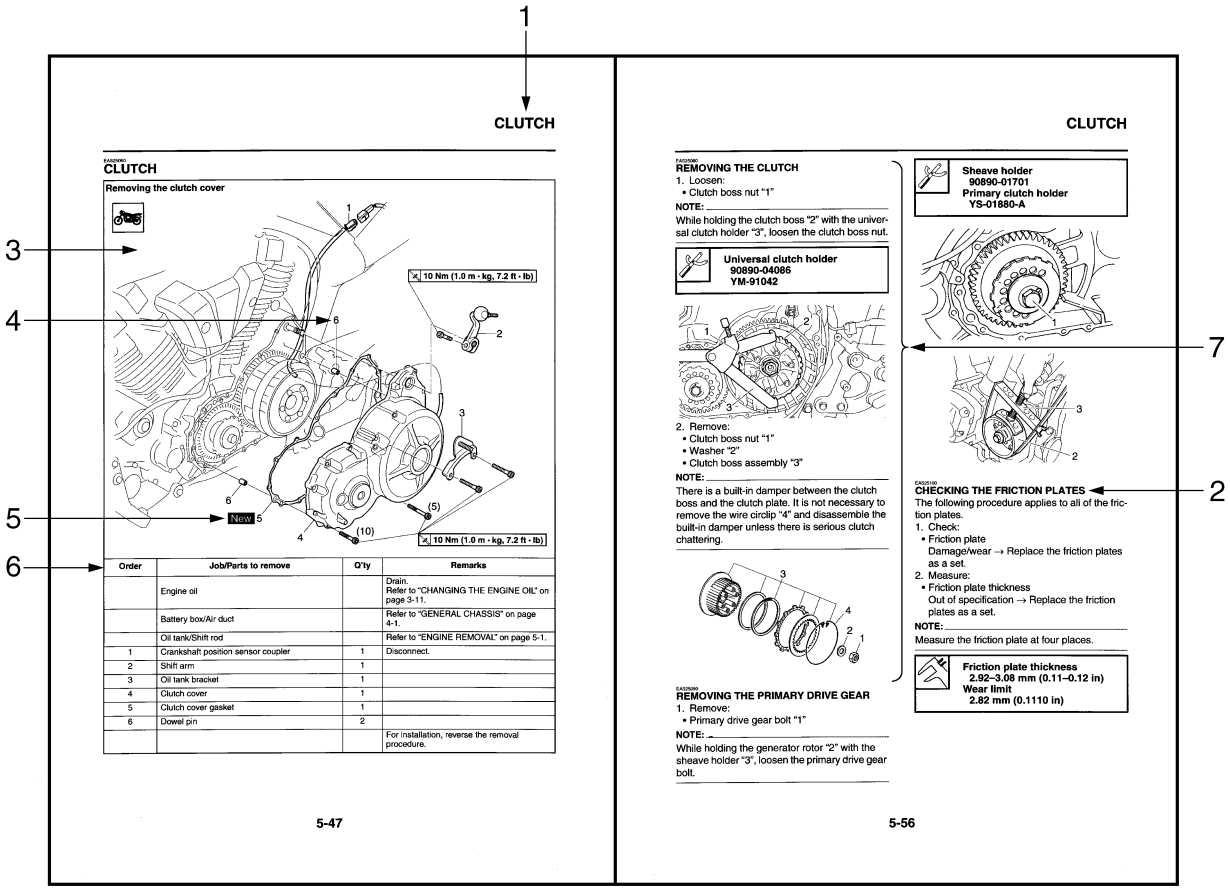
CAUTION: — A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.

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.

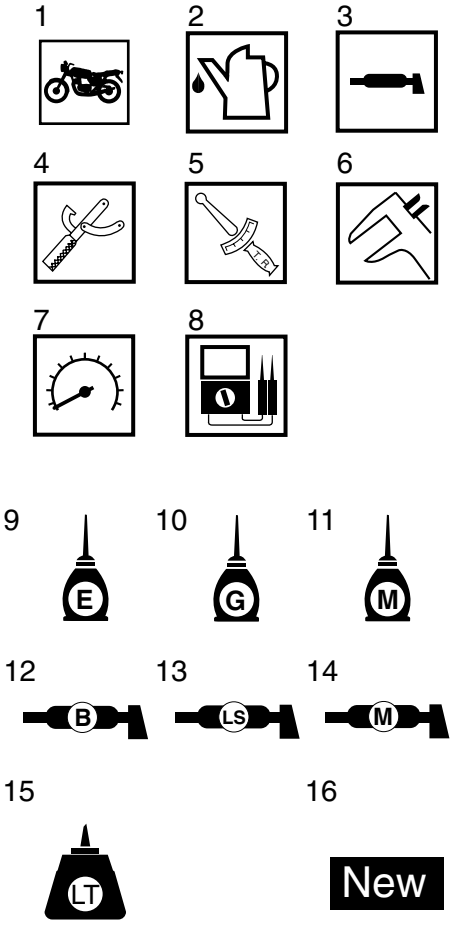


EAS20100
SYMBOLS

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.

EAS20110

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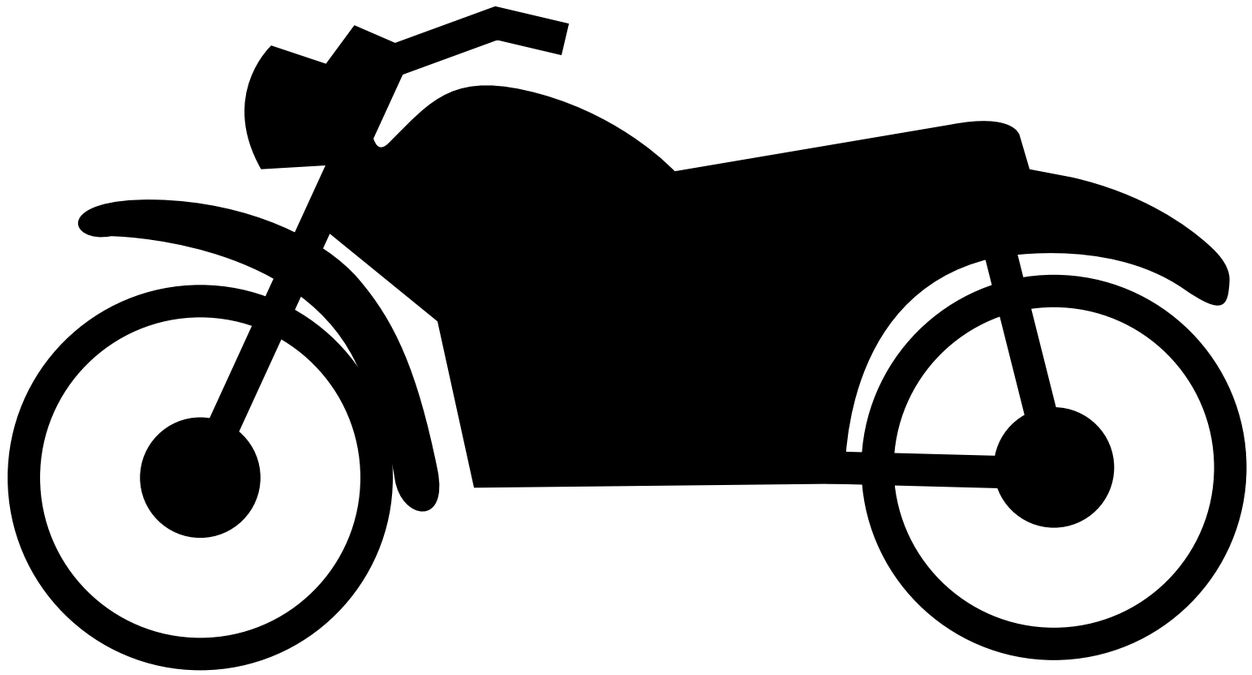


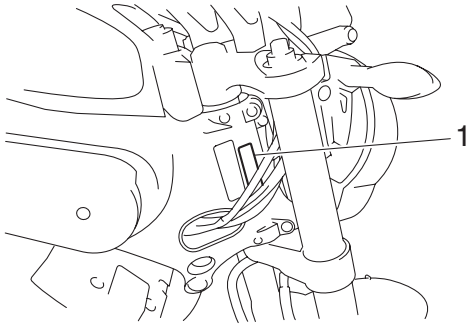
GEN INFO

1

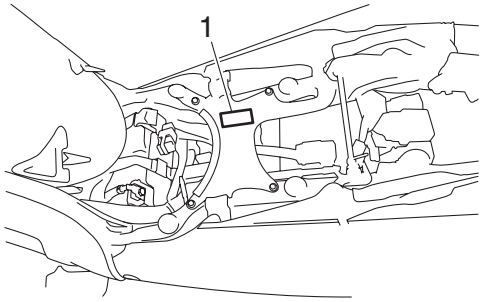
GENERAL INFORMATION

EAS20130
IDENTIFICATION

EAS20140
VEHICLE IDENTIFICATION NUMBER
The vehicle identification number “1” is stamped on the right side of the steering head pipe.



EAS20150
MODEL LABEL
The model label “1” is affixed to the lead holder under the seat. This information will be needed to order spare parts.



EAS20170
FEATURES

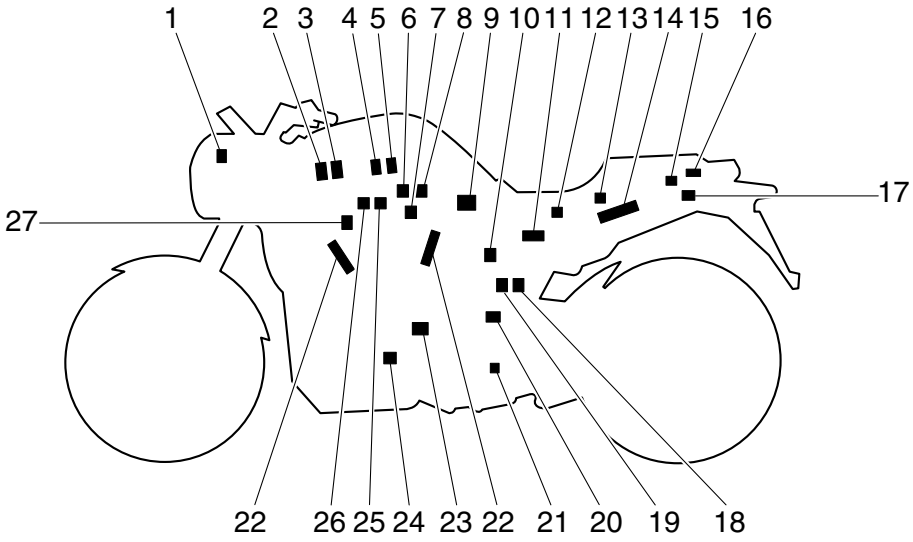
ET5YU1009
OUTLINE OF THE FI SYSTEM

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.

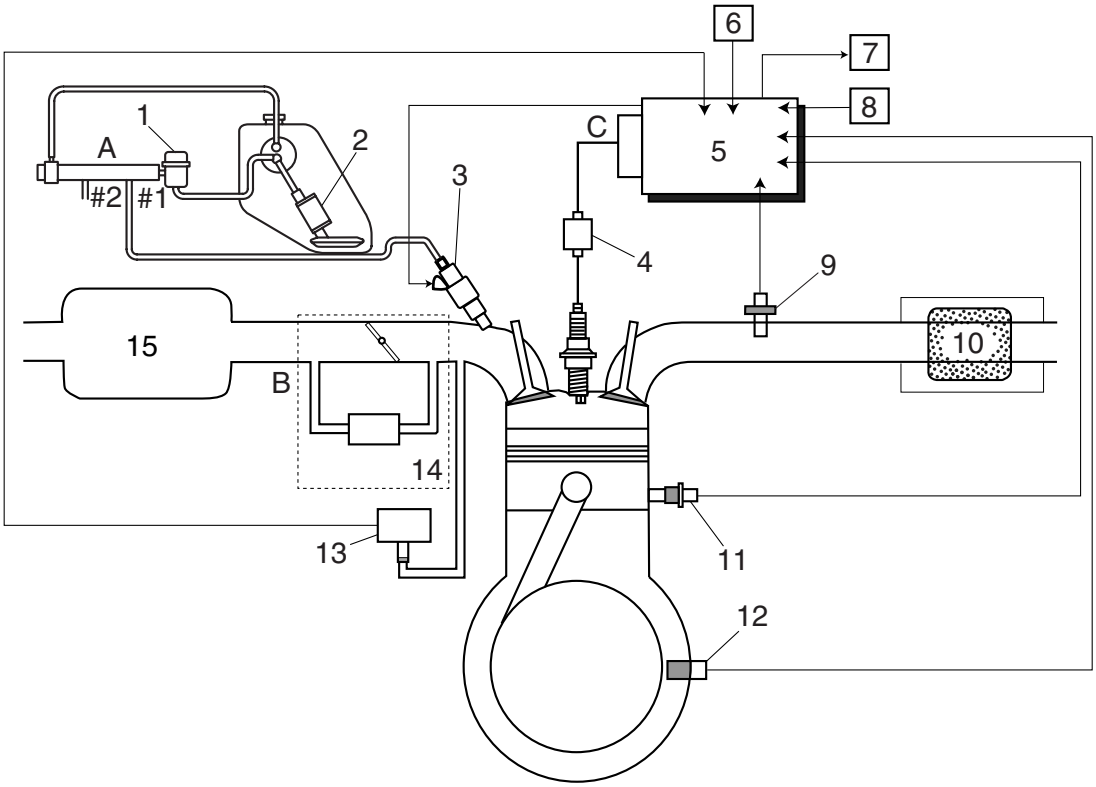


1. Air temperature sensor
2. Cylinder-#1 intake air pressure sensor
3. Cylinder-#2 intake air pressure sensor
4. Cylinder-#2 left ignition coil
5. Cylinder-#2 right ignition coil
6. Throttle position sensor
7. Intake solenoid
8. ISC (idle speed control) unit
9. Fuel pump
10. EXUP servo motor
11. Lean angle cut-off switch
12. Fuel pump relay
13. Muffler cooling fan motor relay
14. ECU (electronic control unit)
15. Relay unit (fuel pump relay)
16. Muffler cooling fan temperature sensor
17. Muffler cooling fan motor
18. Cylinder-#1 right ignition coil
19. Cylinder-#1 left ignition coil
20. Speed sensor
21. O_2 sensor
22. Spark plug
23. Decompression solenoid
24. Crankshaft position sensor
25. Injector #2
26. Injector #1
27. Engine temperature sensor

ET5YU1010
FI SYSTEM

The fuel pump delivers fuel to the fuel injector via the fuel filter. The pressure regulator maintains the fuel pressure that is applied to the fuel injector at only 392 kPa (3.92 kg/cm², 55.7 psi). Accordingly, when the energizing signal from the ECU energizes the fuel 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 fuel injector is energized (injection duration), the greater the volume of fuel that is supplied. Conversely, the shorter the length of time the fuel 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, air temperature sensor, engine temperature sensor, speed sensor and O_2 sensor enable the ECU to determine the injection duration. The injection timing is determined through the signals 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. Pressure regulator
2. Fuel pump
3. Fuel injector
4. Ignition coil
5. ECU (electronic control unit)
6. Air temperature sensor
7. ISC (idle speed control) unit
8. Throttle position sensor
9. O_2 sensor
10. Catalytic converter
11. Engine temperature sensor
12. Crankshaft position sensor
13. Intake air pressure sensor
14. Throttle body
15. Air filter case

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

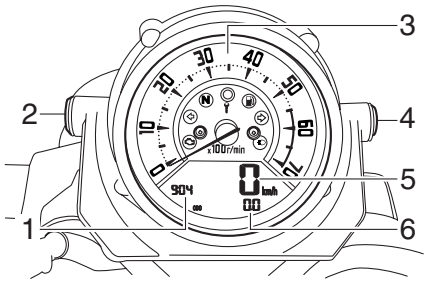
ET5YU1011
INSTRUMENT FUNCTIONS

Multifunction display

EW5YU1005

⚠ WARNING

Be sure to stop the vehicle before making any setting changes to the multifunction display.



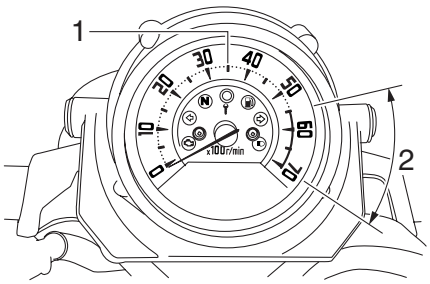
1. Clock
2. “RESET” button
3. Tachometer
4. “SELECT” button
5. Speedometer
6. Odometer/Tripmeter/Fuel reserve tripmeter

The multifunction display 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 come on)
- a clock
- a self-diagnosis device
- a brightness control mode

NOTE:

- Be sure to turn the key to “ON” before using the “SELECT” and “RESET” buttons except for setting the brightness control.
- For the U.K. only: To switch the speedometer and odometer/tripmeter/fuel reserve tripmeter displays between kilometers and miles, press the “SELECT” button for at least two seconds.

Tachometer



1. Tachometer
2. Tachometer red zone

The electric tachometer allows the rider to monitor the engine speed and keep it within the ideal power range.
When the key is turned to “ON”, the tachometer needle will sweep once across the r/min range and then return to zero r/min in order to test the electrical circuit.

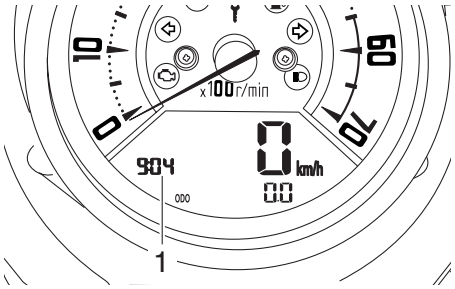
EC5YU1009

CAUTION:

Do not operate the engine in the tachometer red zone.
Red zone: 5500 r/min and above

The tachometer needle flashes when it reaches and exceeds the red zone.

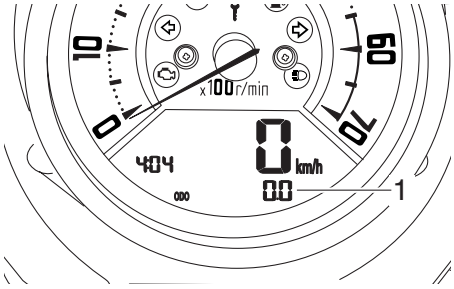
Clock mode



1. Clock

To set the clock:
1. Push the “SELECT” button and “RESET” button together 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.

Odometer and tripmeter modes



1. Odometer/Tripmeter/Fuel reserve tripmeter

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, pushing the “SELECT” button switches the display between the various tripmeter and odometer modes in the following order:
F-TRIP → TRIP 1 → TRIP 2 → ODO → F-TRIP
To reset a tripmeter, select it by pushing the “SELECT” button, and then push the “RESET” button for at least one second. 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).

Self-diagnosis device
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 come on, and then the multifunction display will indicate a two-digit error code (e.g., 12, 13, 14).
If the multifunction display indicates an error code, note the code number, and then check the vehicle. Refer to “FUEL INJECTION SYSTEM” on page 7-25.

EC5YU1010
CAUTION:

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

This model is also equipped with a self-diagnosis device for the immobilizer system.
If any of the immobilizer system circuits are defective, the immobilizer system indicator light will flash, and then the multifunction display will indicate a two-digit error code (e.g., 51, 52, 53) when the key is turned to “ON”.

NOTE:

If the multifunction display indicates error code 52, this could be caused by transponder interference. If this error appears, try the following.

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

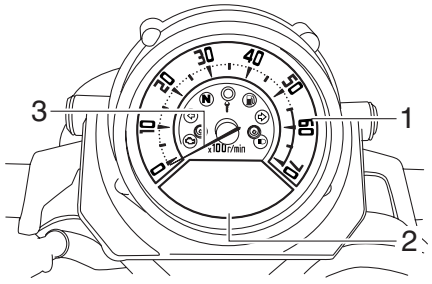
NOTE:

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 7-75.

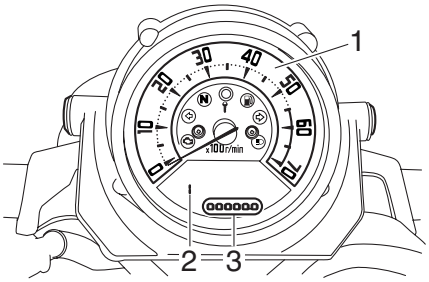
Brightness control mode



1. Tachometer panel
2. LCD

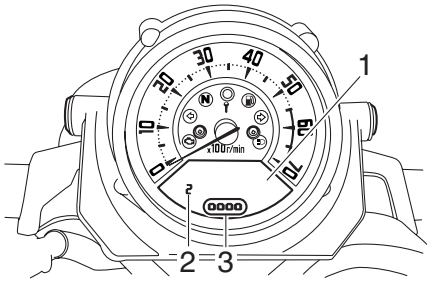
3. Tachometer needle

The brightness can be adjusted for the following:
• the tachometer panel (item number “1”)
• the LCD (item number “2”)
• the tachometer needle (item number “3”)
Select the brightness control mode as follows.
1. Turn the key to “OFF”.
2. Push and hold the “SELECT” button.
3. Turn the key to “ON”, and then release the “SELECT” button after five seconds.
   Item number “1” is displayed.



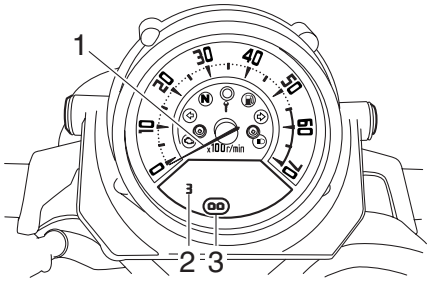
1. Tachometer panel
2. Item number
3. Brightness level

4. Adjust the tachometer panel brightness level by pushing the “RESET” button.
5. Push the “SELECT” button to select the LCD.
   Item number “2” is displayed.
   Adjust the LCD brightness level by pushing the “RESET” button.



1. LCD
2. Item number
3. Brightness level

6. Push the “SELECT” button to select the tachometer needle.
   Item number “3” is displayed.
   Adjust the tachometer needle brightness level by pushing the “RESET” button.



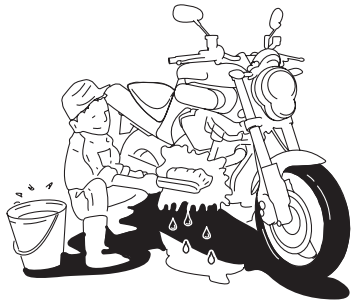
1. Tachometer needle
2. Item number
3. Brightness level

7. Push the “SELECT” button and the multi-function display will return to the odometer or tripmeter mode.

EAS20180
IMPORTANT INFORMATION

EAS20190
PREPARATION FOR REMOVAL AND DISASSEMBLY

1. Before removal and disassembly, remove all dirt, mud, dust and foreign material.

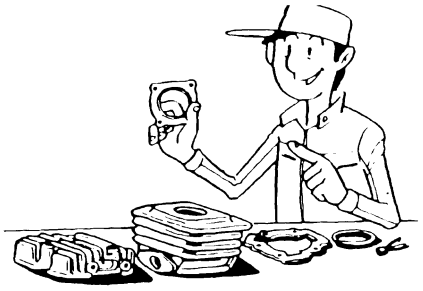


2. Use only the proper tools and cleaning equipment.
   Refer to “SPECIAL TOOLS” on page 1-10.
3. When disassembling, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been “mated” through normal wear. Mated parts must always be reused or replaced as 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.

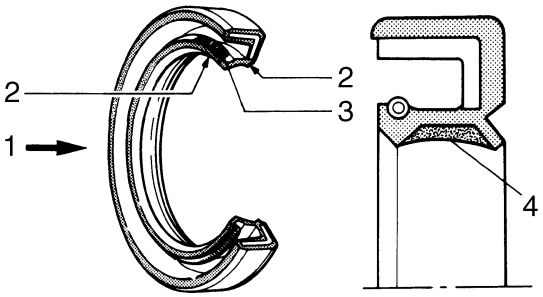
EAS20200
REPLACEMENT PARTS

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

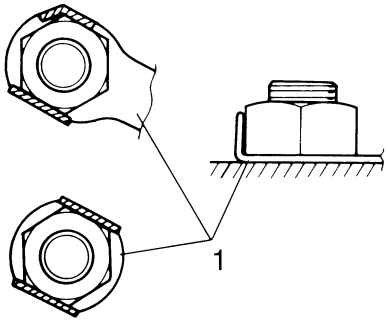
1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and lubricate the oil seal lips with grease.



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

EAS20220
LOCK WASHERS/PLATES AND COTTER PINS

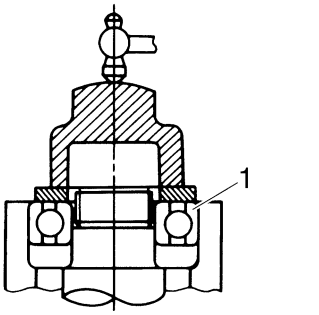
After removal, replace all lock washers/plates “1” and cotter pins. After the bolt or nut has been tightened to specification, bend the lock tabs along a flat of the bolt or nut.

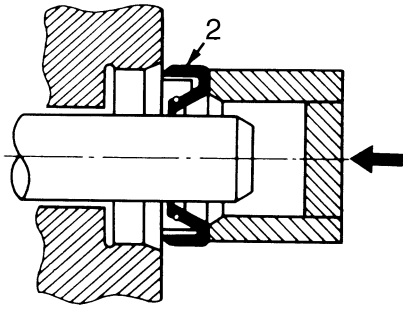


EAS20230
BEARINGS AND OIL SEALS
Install bearings “1” and oil seals “2” so that the manufacturer’s marks or numbers are visible. When installing oil seals, lubricate the oil seal lips with a light coat of lithium-soap-based grease. Oil bearings liberally when installing, if appropriate.

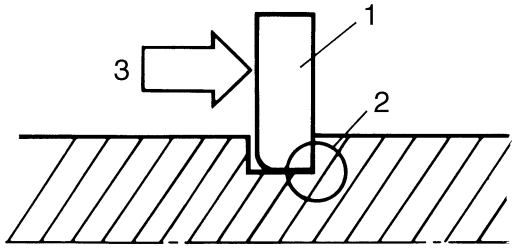
ECA13300
CAUTION:

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





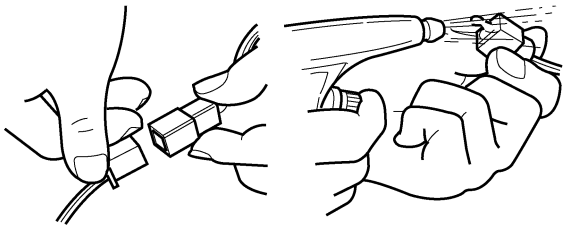
EAS20240
CIRCLIPS
Before reassembly, check all circlips carefully and replace damaged or distorted circlips. Always replace piston pin clips after one use. When installing a circlip “1”, make sure the sharp-edged corner “2” is positioned opposite the thrust “3” that the circlip receives.



EAS20250
CHECKING THE CONNECTIONS

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

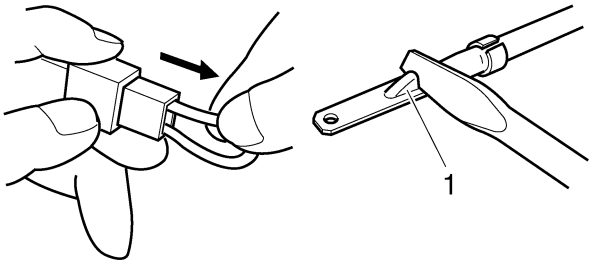
1. Disconnect:
   • Lead
   • Coupler
   • Connector
2. Check:
   • Lead
   • Coupler
   • Connector
   Moisture → Dry with an air blower.
   Rust/stains → Connect and disconnect several times.



3. Check:
   • All connections
   Loose connection → Connect properly.

NOTE:

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

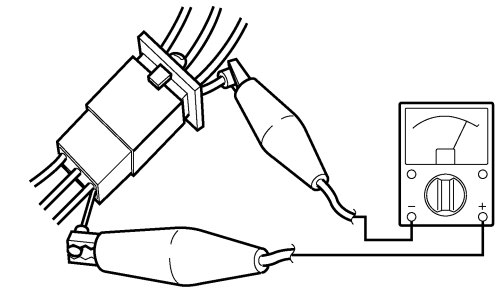


4. Connect:
   • Lead
   • Coupler
   • Connector

NOTE:

Make sure all connections are tight.

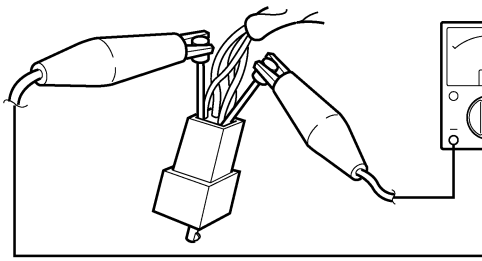
5. Check:
   • Continuity
   (with the pocket tester)



Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

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.

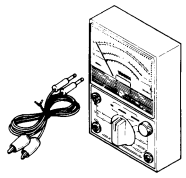
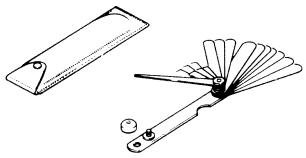
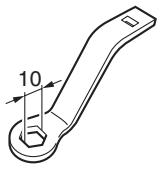
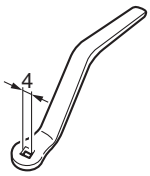
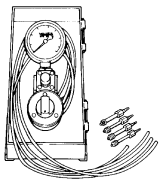
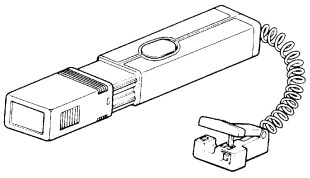


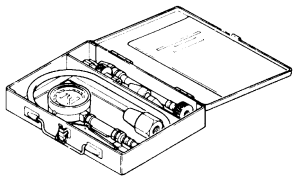
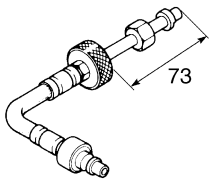
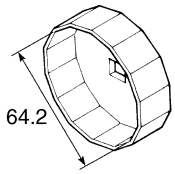
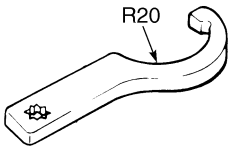
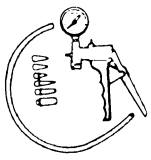
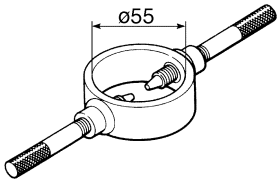
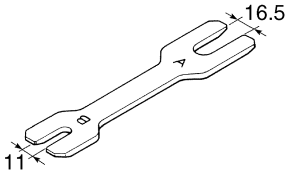
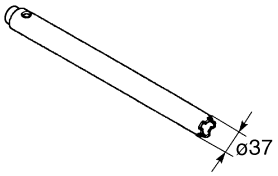
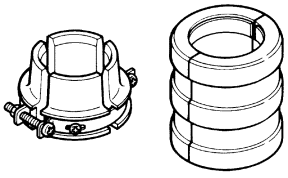
EAS20260
SPECIAL TOOLS

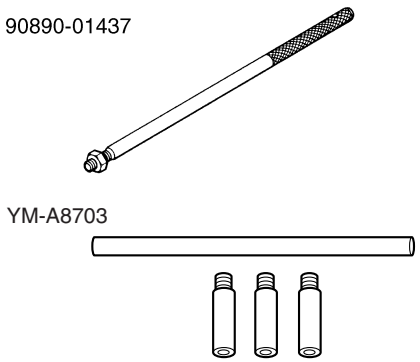
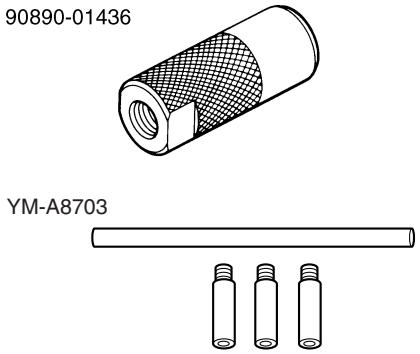
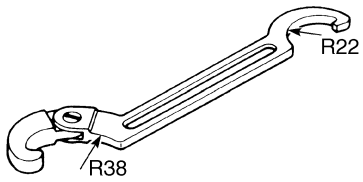
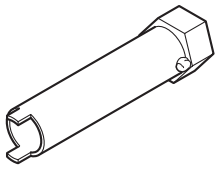
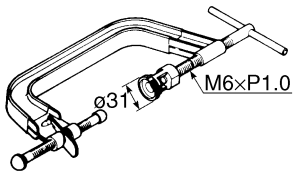
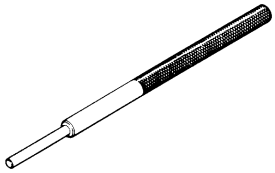
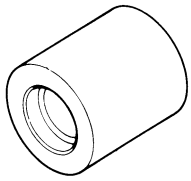
The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country.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

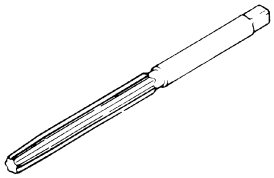
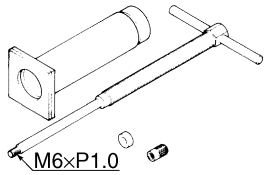
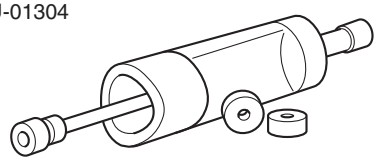
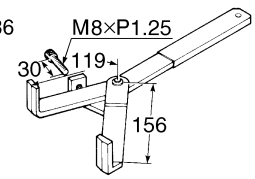
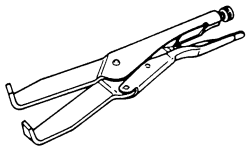
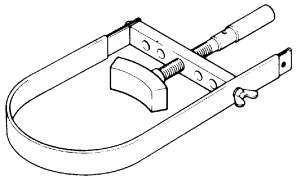
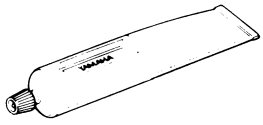
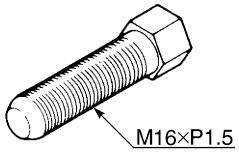
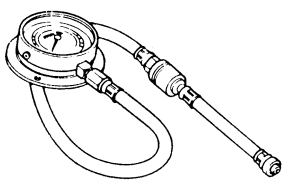
NOTE:

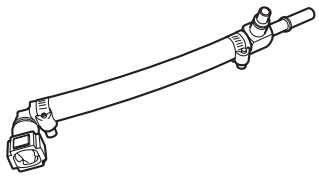
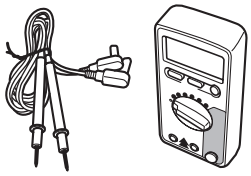
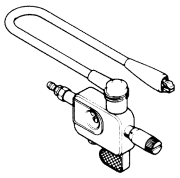
- For U.S.A. and Canada, use part number starting with “YM-”, “YU-”, or “ACC-”.
- For others, use part number starting with “90890-”.

Tool name/Tool No.	Illustration	Reference pages
Pocket tester 90890-03112 Analog pocket tester YU-03112-C		1-9, 5-72, 7-91, 7-92, 7-93, 7-96, 7-97, 7-98, 7-99, 7-100, 7-101, 7-102, 7-103, 7-104, 7-106, 7-107, 7-108
Thickness gauge 90890-03079 Narrow gauge set YM-34483		3-4, 3-5, 5-56
Locknut wrench 90890-04150		3-5
Tappet adjusting tool 90890-04149		3-5
Vacuum gauge 90890-03094 Carburetor synchronizer YU-44456	90890-03094  YU-44456 	3-6
Timing light 90890-03141 Inductive clamp timing light YU-03141		3-9

Tool name/Tool No.	Illustration	Reference pages
Compression gauge 90890-03081 Engine compression tester YU-33223		3-10
Extension 90890-04082		3-10
Oil filter wrench 90890-01426 YU-38411		3-12
Steering nut wrench 90890-01403 Spanner wrench YU-33975		3-26, 4-59
Vacuum/pressure pump gauge set 90890-06756		4-5, 6-9
Fork spring compressor 90890-01441 YM-01441		4-50, 4-55
Rod holder 90890-01434 Damper rod holder double ended YM-01434		4-50, 4-55
Damper rod holder 90890-01504		4-51, 4-52
Fork seal driver 90890-01442 Adjustable fork seal driver (36–46 mm) YM-01442		4-53

Tool name/Tool No.	Illustration	Reference pages
Rod puller 90890-01437 Universal damping rod bleeding tool set YM-A8703		4-53, 4-55
Rod puller attachment (M10) 90890-01436 Universal damping rod bleeding tool set YM-A8703		4-53, 4-55
Ring nut wrench 90890-01268 Spanner wrench YU-01268		4-59
Pivot shaft wrench 90890-01485 Frame mount insert wrench YM-01485		5-13
Valve spring compressor 90890-04019 YM-04019		5-35, 5-40
Valve guide remover (ø6) 90890-04064 Valve guide remover (6.0 mm) YM-04064-A		5-36
Valve guide installer (ø6) 90890-04065 Valve guide installer (6.0 mm) YM-04065-A		5-36

Tool name/Tool No.	Illustration	Reference pages
Valve guide reamer (ø6) 90890-04066 Valve guide reamer (6.0 mm) YM-04066		5-36
Piston pin puller set 90890-01304 Piston pin puller YU-01304	90890-01304  YU-01304 	5-42
Universal clutch holder 90890-04086 YM-91042	90890-04086  YM-91042 	5-55, 5-58
Sheave holder 90890-01701 Primary clutch holder YS-01880-A		5-55, 5-57, 5-68, 5-69, 5-77, 5-79
Yamaha bond No. 1215 90890-85505		5-57, 5-69, 5-78
Rotor puller 90890-01080 Stator rotor puller YM-01080-A		5-68
Pressure gauge 90890-03153		6-9

Tool name/Tool No.	Illustration	Reference pages
Fuel pressure adapter 90890-03176 YM-03176		6-9
Digital circuit tester 90890-03174		6-10
Ignition checker 90890-06754 Opama pet-4000 spark checker YM-34487		7-100

SPEC 2

SPECIFICATIONS

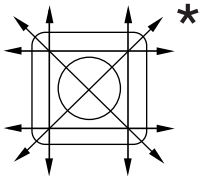
EAS20280
GENERAL SPECIFICATIONS

Model	
Model	5YU1 (Europe) 5YU2 (AUS)
Dimensions	
Overall length	2185 mm (86.0 in)
Overall width	790 mm (31.1 in)
Overall height	1160 mm (45.7 in)
Seat height	825 mm (32.5 in)
Wheelbase	1525 mm (60.0 in)
Ground clearance	143 mm (5.63 in)
Minimum turning radius	3200 mm (126.0 in)
Weight	
With oil and fuel	259.0 kg (571 lb)
Maximum load	202 kg (445 lb)

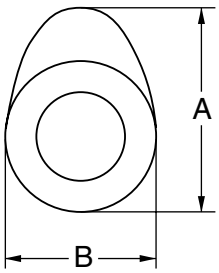
EAS20290
ENGINE SPECIFICATIONS

Engine	
Engine type	Air cooled 4-stroke, OHV
Displacement	1670.0 cm³ (101.90 cu.in)
Cylinder arrangement	V-type 2 cylinders
Bore × stroke	97.0 × 113.0 mm (3.82 × 4.45 in)
Compression ratio	8.40 :1
Standard compression pressure (at sea level)	1200 kPa/200 r/min (170.7 psi/200 r/min) (12.0 kgf/cm²/200 r/min)
Minimum–maximum	1000–1400 kPa (142.2–199.1 psi) (10.0–14.0 kgf/cm²)
Starting system	Electric starter
Fuel	
Recommended fuel	Regular unleaded gasoline only (Europe) Unleaded gasoline only (AUS)
Fuel tank capacity	15.0 L (3.96 US gal) (3.30 Imp.gal)
Fuel reserve amount	3.0 L (0.79 US gal) (0.66 Imp.gal)
Engine oil	
Lubrication system	Dry sump
Type	SAE20W40
Recommended engine oil grade	API standard: SE or higher grade ACEA standard: G4 or G5
Engine oil quantity	
Total amount	5.00 L (5.29 US qt) (4.40 Imp.qt)
Engine	2.2 L (2.33 US qt) (1.94 Imp.qt)
Oil tank	2.8 L (2.96 US qt) (2.46 Imp.qt)
Without oil filter cartridge replacement	3.70 L (3.91 US qt) (3.26 Imp.qt)
With oil filter cartridge replacement	4.10 L (4.33 US qt) (3.61 Imp.qt)
Oil filter	
Oil filter type	Cartridge (paper)
Oil pump	
Oil pump type	Trochoid
Inner-rotor-to-outer-rotor-tip clearance	0.12 mm (0.0047 in) or less
Limit	0.20 mm (0.0079 in)
Outer-rotor-to-oil-pump-housing clearance	0.09–0.15 mm (0.0035–0.0059 in)
Limit	0.220 mm (0.0087 in)
Oil-pump-housing-to-inner-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	80–120 kPa (11.4–17.1 psi) (0.80–1.20 kgf/cm²)
Relief valve operating pressure	60 kPa (8.53 psi) (0.60 kgf/cm²)

Spark plug (s)	
Manufacturer/model	NGK/DPR7EA-9
Manufacturer/model	DENSO/X22EPR-U9
Spark plug gap	0.8–0.9 mm (0.031–0.035 in)
Cylinder head	
Volume	98.60–103.60 cm³ (6.02–6.32 cu.in)
Warpage limit*	0.03 mm (0.0012 in)



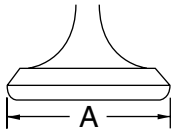
Camshaft	
Drive system	Gear drive
Camshaft to crankcase clearance	0.050–0.084 mm (0.0020–0.0033 in)
Camshaft lobe dimensions	
Intake A	38.241–38.341 mm (1.5055–1.5095 in) (cylinder #1) 38.243–38.343 mm (1.5056–1.5096 in) (cylinder #2)
Limit	38.141 mm (1.5016 in) (cylinder #1) 38.143 mm (1.5017 in) (cylinder #2)
Intake B	31.950–32.050 mm (1.2579–1.2618 in)
Limit	31.850 mm (1.2539 in)
Exhaust A	38.236–38.336 mm (1.5054–1.5093 in)
Limit	38.136 mm (1.5014 in)
Exhaust B	31.950–32.050 mm (1.2579–1.2618 in)
Limit	31.850 mm (1.2539 in)



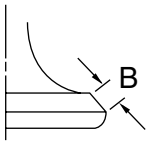
Rocker arm/rocker arm shaft	
Rocker arm inside diameter	18.000–18.018 mm (0.7087–0.7094 in)
Limit	18.036 mm (0.7101 in)
Rocker arm shaft outside diameter	17.976–17.991 mm (0.7077–0.7083 in)
Rocker-arm-to-rocker-arm-shaft clearance	0.009–0.042 mm (0.0004–0.0017 in)
Limit	0.080 mm (0.0032 in)

Valve, valve seat, valve guide

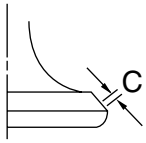
Valve clearance (cold)	
Intake	0.00–0.04 mm (0.0000–0.0016 in)
Exhaust	0.00–0.04 mm (0.0000–0.0016 in)
Valve dimensions	
Valve head diameter A (intake)	33.90–34.10 mm (1.3346–1.3425 in)
Valve head diameter A (exhaust)	27.90–28.10 mm (1.0984–1.1063 in)



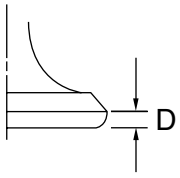
Valve face width B (intake)	1.300–2.300 mm (0.0512–0.0906 in)
Valve face width B (exhaust)	1.200–2.400 mm (0.0472–0.0945 in)



Valve seat width C (intake)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	2.0 mm (0.08 in)
Valve seat width C (exhaust)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	2.0 mm (0.08 in)



Valve margin thickness D (intake)	0.70–1.30 mm (0.0276–0.0512 in)
Limit	0.4 mm (0.02 in)
Valve margin thickness D (exhaust)	0.70–1.30 mm (0.0276–0.0512 in)
Limit	0.4 mm (0.02 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	6.050 mm (0.2382 in)
Valve guide inside diameter (exhaust)	6.000–6.012 mm (0.2362–0.2367 in)
Limit	6.050 mm (0.2382 in)