YAMAHA 2008

SERVICE MANUAL

YZF-R15

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YZF-R15
SERVICE MANUAL

NOTICE

This manual was produced by YMIS. primarily for use by YMIS 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.
India Yamaha Motor Pvt. Ltd. is continually striving to improve all of its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized YMIS 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 vehicle operator, a bystander or a person checking or repairing the vehicle.

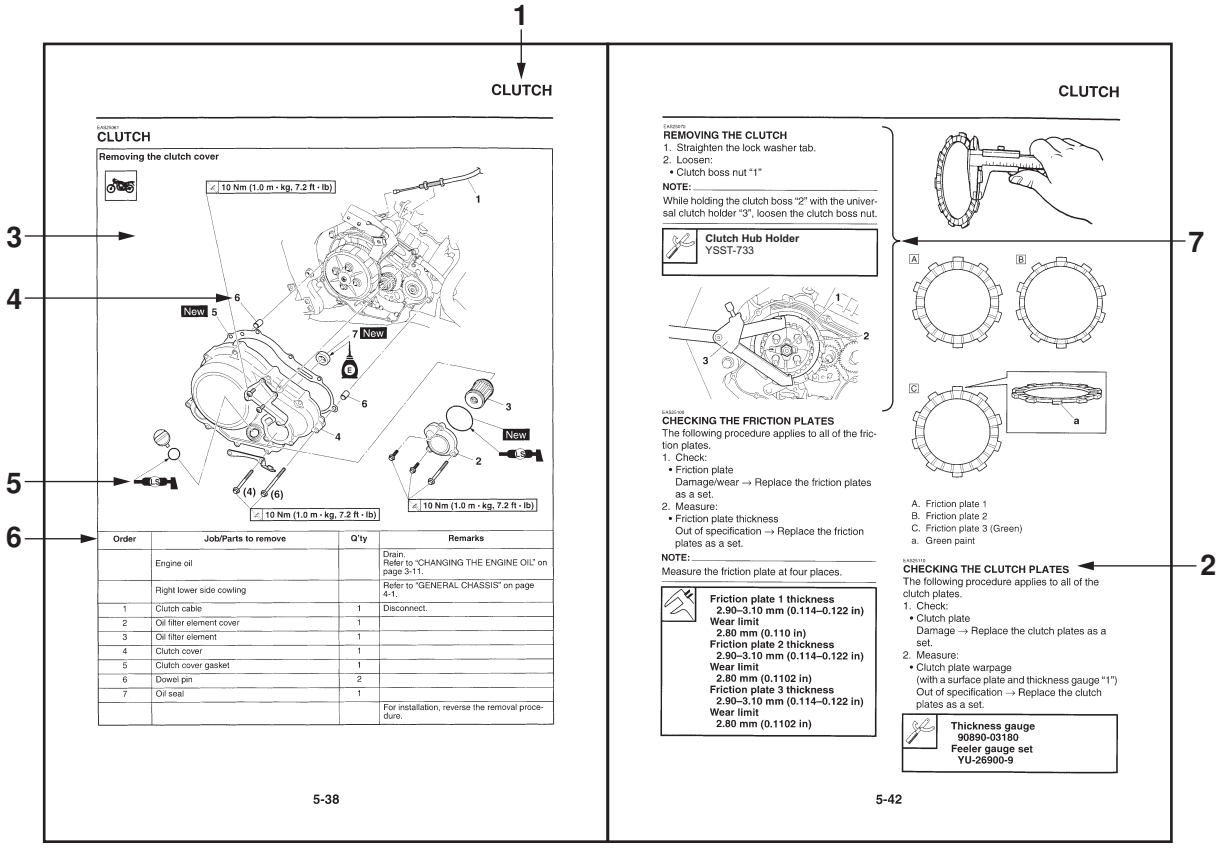
CAUTION : A CAUTION indicates special precautions that must be taken to avoid damage to the vehicle.

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

HOW TO USE THIS MANUAL

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

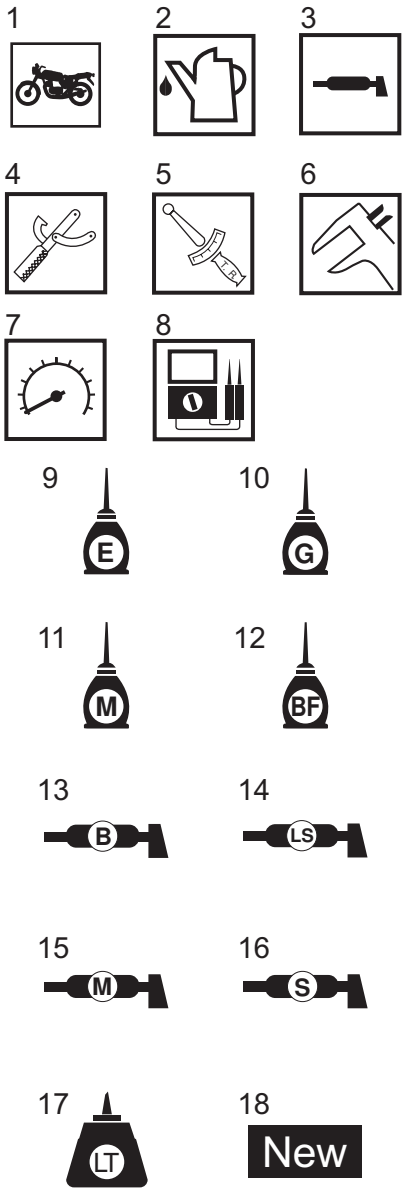
- The manual is divided into chapters and each chapter is divided into sections. The current section title "1" is shown at the top of each page.
- Sub-section titles "2" appear in smaller print than the section title.
- To help identify parts and clarify procedure steps, there are exploded diagrams "3"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



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

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GENERAL INFORMATION

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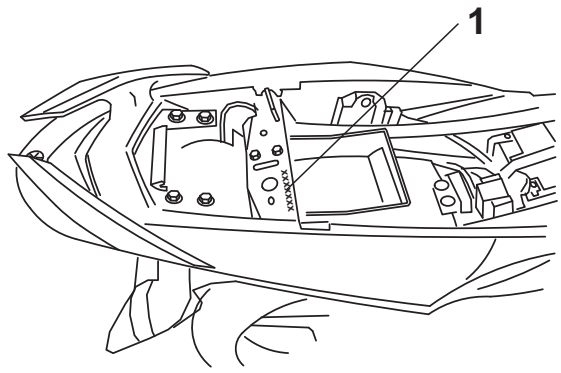
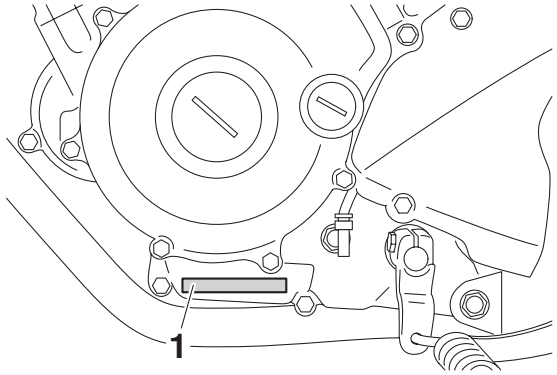
IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER (FRAME NO.)
The vehicle identification number “1” is stamped into the frame.



ENGINE SERIAL NUMBER
The engine serial number “1” is stamped into the crankcase.

NOTE:
Designs and specifications are subject to change without notice.



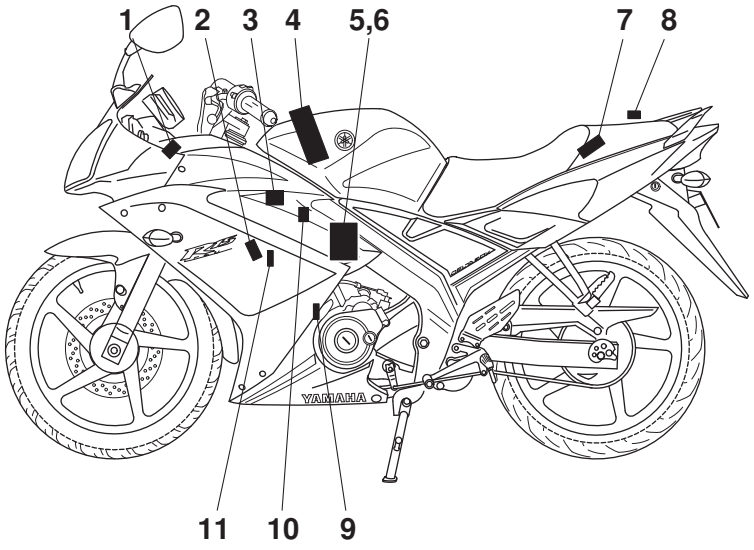
FEATURES

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 airfuel 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.

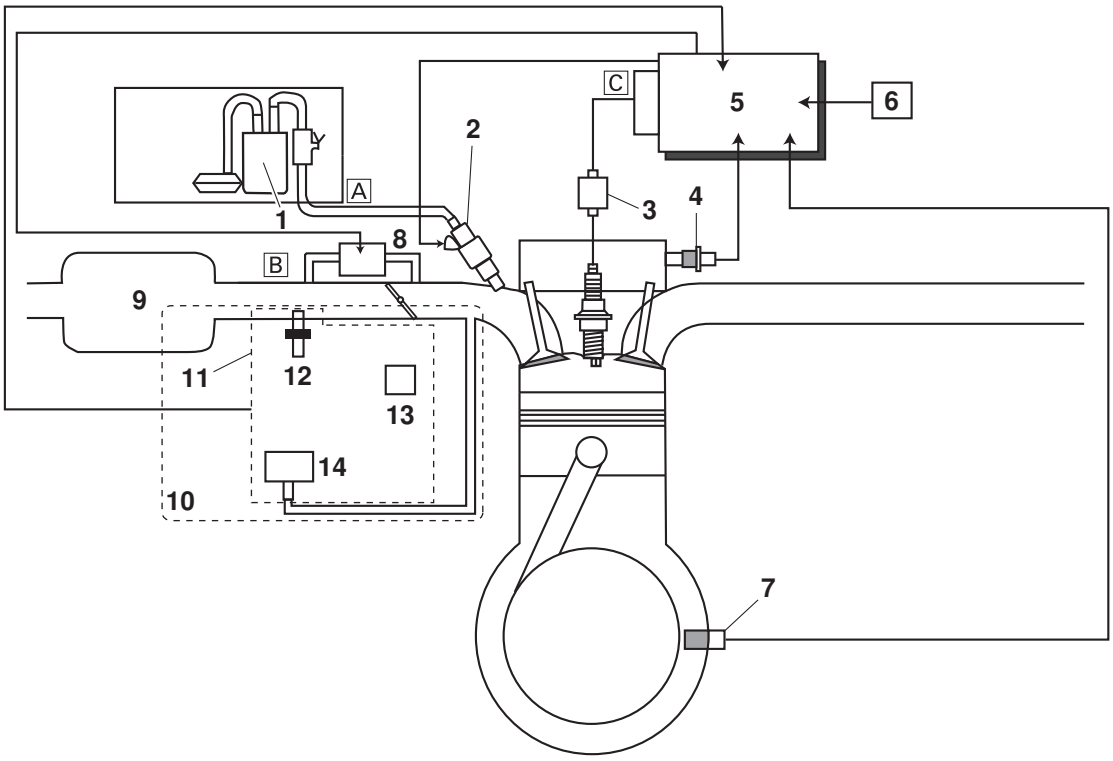


1. Engine trouble warning light
2. Spark plug
3. Ignition coil
4. Fuel pump
5. FID (fast idle solenoid)
6. Throttle body sensor assembly (consisting of throttle position sensor, intake air pressure sensor, intake air temperature sensor)
7. ECU (engine control unit)
8. Lean angle sensor
9. Crankshaft position sensor
10. Fuel injector
11. Coolant temperature sensor

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 250 kPa (2.50 kg/cm², 35.6 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.

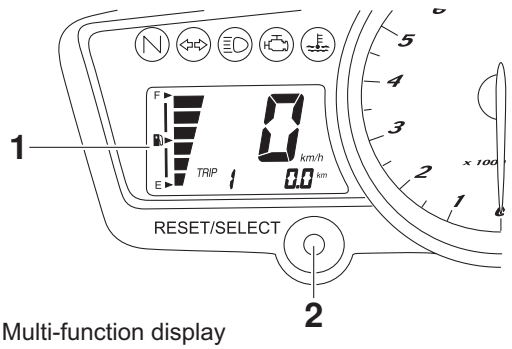
The injection duration and the injection timing are controlled by the ECU. Signals that are input from the throttle position sensor, crankshaft position sensor, intake air pressure sensor, intake air temperature sensor, lean angle sensor and coolant temperature sensor enable the ECU to determine the 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.



1. Fuel pump
2. Fuel injector
3. Ignition coil
4. Coolant temperature sensor
5. ECU (engine control unit)
6. Lean angle sensor
7. Crankshaft position sensor
8. FID (fast idle solenoid)
9. Air filter case
10. Throttle body
11. Throttle body sensor assembly
12. Intake air temperature sensor
13. Throttle position sensor
14. Intake air pressure sensor

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

MULTI-FUNCTION DISPLAY



1. Multi-function display
2. “RESET/SELECT” button

The multi-function display is equipped with the following:

- a speedometer (which shows the riding 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 fuel meter

Odometer and tripmeter modes

A brief push (less than one second) on the “ RESET/ SELECT” button switches the display between the odometer mode “ ODO” and the tripmeter modes “ TRIP 1” and “ TRIP 2” in the following order:

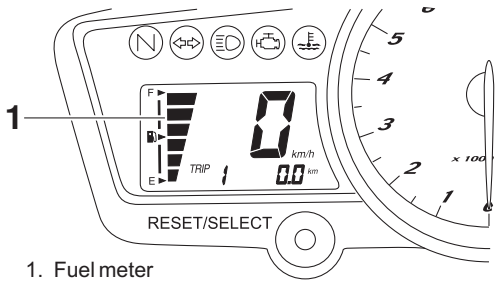
ODO →TRIP 1 →TRIP 2 →ODO

When approximately 1.9 L of fuel remains in the fuel tank, the odometer display will automatically change to the fuel reserve tripmeter mode “ F-TRIP” and start counting the distance traveled from that point, and the last segment of the fuel meter will start flashing. In that case, pushing the “ RESET/ 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

Tripmeter will reset itself automatically and the display will return to the prior mode after refueling and traveling 5 km (3 mi).

Fuel meter



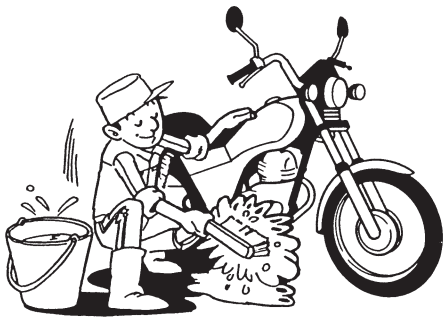
1. Fuel meter

The fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear towards “E” (Empty) as the fuel level decreases. When the last fuel meter segment starts flashing, refuel as soon as possible.

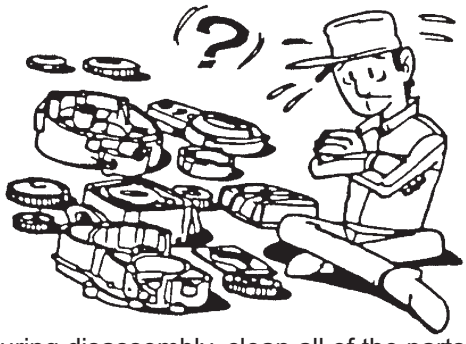
IMPORTANT INFORMATION

PREPARATION FOR REMOVAL AND DISASSEMBLY

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



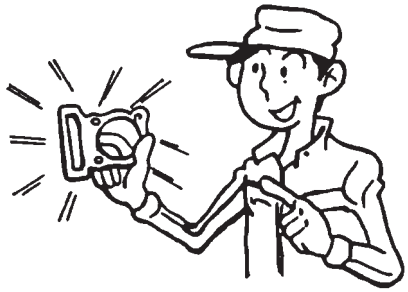
2. Use only the proper tools and cleaning equipment.
   Refer to "SPECIAL TOOLS" on page 1-8.
3. When disassembling, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been "mated" through normal wear. Mated parts must always be reused or replaced as an 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.

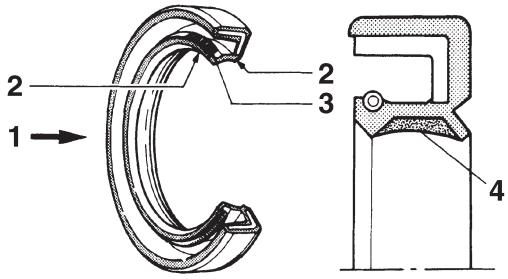
REPLACEMENT PARTS

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.



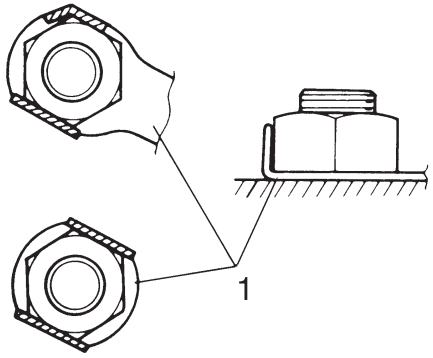
GASKETS, OIL SEALS AND O-RINGS

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 seallips with grease.



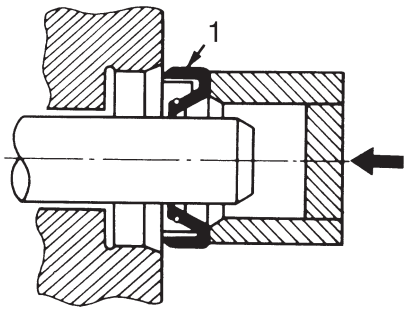
LOCK WASHERS/PLATES AND COTTER PINS

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.



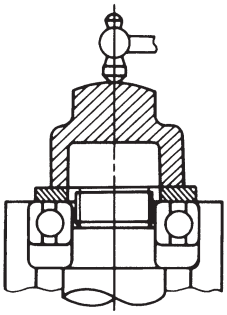
BEARINGS AND OIL SEALS

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



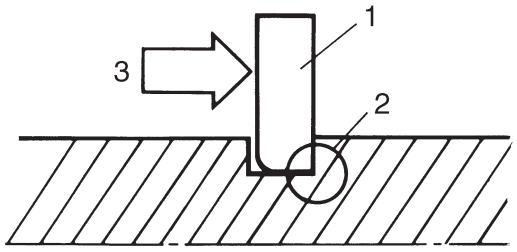
CAUTION :

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



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.



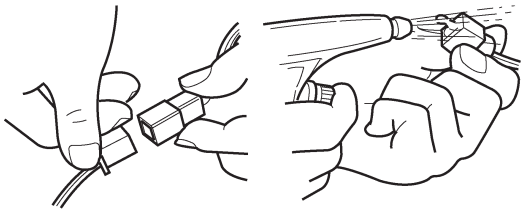
CHECKING THE CONNECTIONS

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.

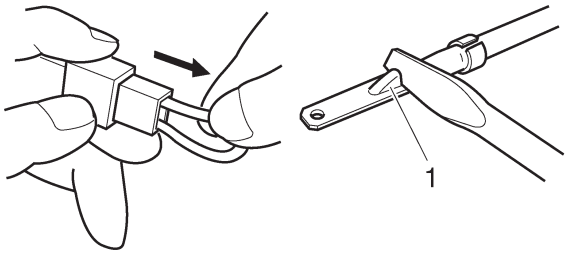


3. Check:
   - All connections

   Loose connection →Connect properly.

NOTE:

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



4. Connect:
   - Lead
   - Coupler
   - Connector

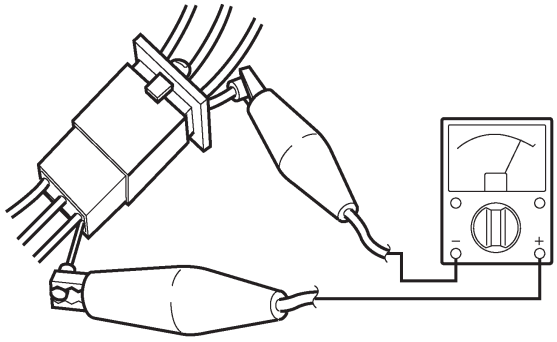
NOTE:

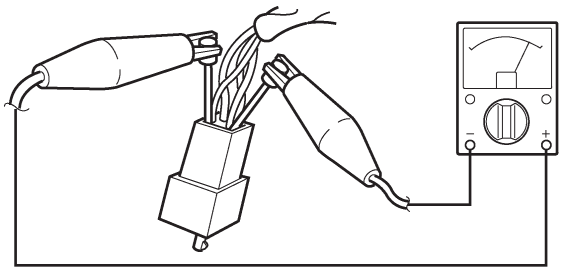
Make sure all connections are tight.

5. Check:
   - Continuity
     (with the multimeter)

NOTE:

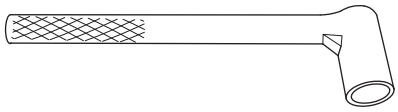
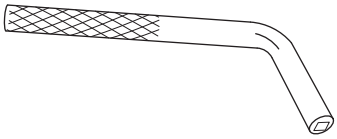
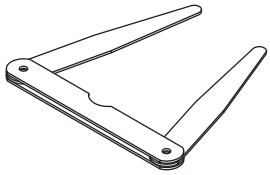
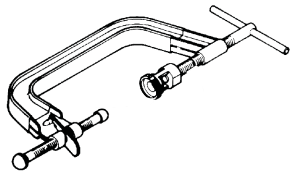
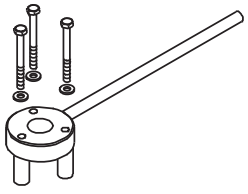
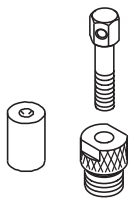
- If there is no continuity, clean the terminals.
- When checking the wire harness, perform steps (1) to (3).
- As a quick remedy, use a contact revitalizer available at most part stores.

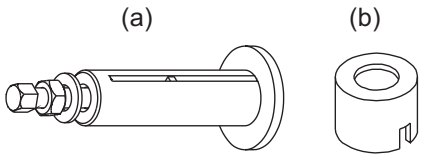
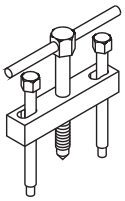
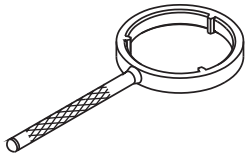
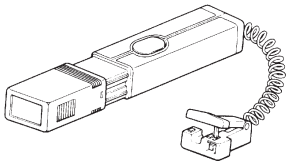
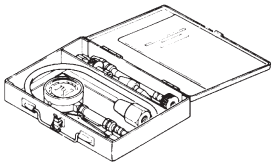
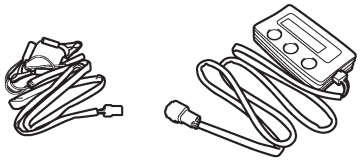
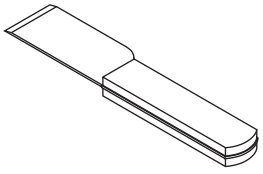


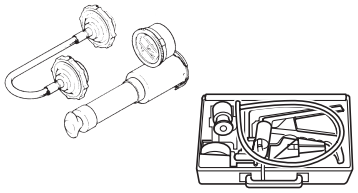
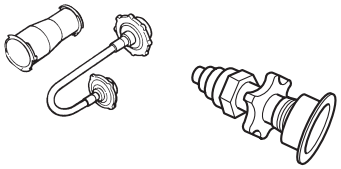
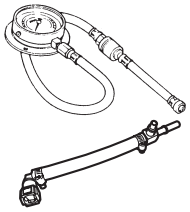
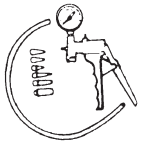
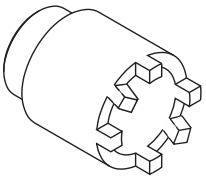
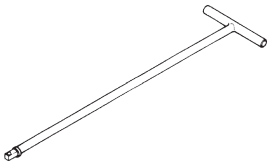
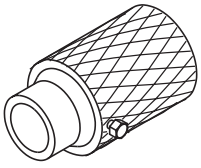


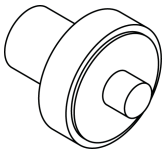
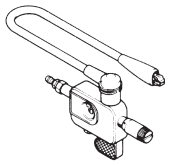
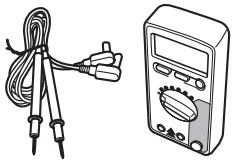
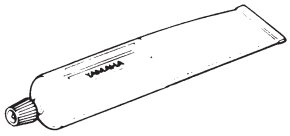
SPECIAL TOOLS

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.

Tool name/Tool No.	Illustration
Tappet screw holder YSST-706 This tool is used to loosen and tighten tappet adjusting nut.	
Tappet adjusting socket YSST-706A This tool is used to adjust the valve clearance by tappet adjusting screw	
Feeler gauge YSST-715 This tool is used to adjust the valve clearance in an engine	
Valve spring compressor YSST-603 This tool is used to remove and install Valve & Spring Assemblies.	
Magneto holder YSST-701 This tool is used to hold the magneto when removing or installing the magneto securing Nut and Primary Drive Gear Nut	
Magneto puller YSST-702 This tool is used to remove the magneto with the help of magneto holder.	

Tool name/Tool No.	Illustration
Crank Shaft Installing Tool with Spacer (a) YSST-266 (b) YSST-267 These tools are used for installation of Crank Shaft.	
Crankshaft removing tool YSST-265 This tool is used to remove the Crank Shaft from the Crank Case.	
Clutch hub holder YSST-733 This tool is used to hold the Clutch Hub while removing or installing Clutch Main Shaft Nut.	
Timing light This instrument is used to reset the ignition timing.	
Compression gauge This instrument is used to measure the engine compression.	
FI diagnostic tool This instrument is used to diagnose the electrical faults in fuel injection system	
Scraper YSST-612 This tool is used for scraping the sealent from Crankcase joining surface.	

Tool name/Tool No.	Illustration
Radiator cap tester This instrument is used to test the radiator cap functionality.	
Radiator cap tester adapter This adapter is used to connect the radiator cap tester with radiator cap for radiator cap testing.	
Fuel Pressure gauge This instrument is used to measure the fuel pressure.	
Vacuum/pressure pump gauge set This instrument is used to offer the vacuum to air induction system for checking.	
Steering nut wrench YSST-721 This tool is used to loosen and tighten the steering nut.	
T-handle YSST-713 This tool is used to hold the TFF plunger for loosening and tightening of Hex Socket Head Bolt	
TFF Oil Seal Installation Tool YSST-775 This tool assists to install the TFF Oil Seal.	

Tool name/Tool No.	Illustration	Reference
Mechanical seal/bearing Installer YSST-722 This tool is used to install the seal and bearing in water pump assy.		
Ignition checker This instrument is used to check the effficiency of ignition at spark plug.		
Multimeter This instrument is used to check the electrical circuits or components.		
Yamaha bond No. 1215 This adhesive is used on mating surfaces while assembling Crankcase#1 and #2.		
LOCTITE Three Bond 1322 This adhesive is used for tightening of Torx Screw.		

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GENERAL SPECIFICATIONS

Model	
Model	20 P1
Dimensions	
Overall length	1995 mm
Overall width	670 mm
Overall height	1070 mm
Seat height	790 mm
Wheelbase	1290 mm
Ground clearance	160 mm
Minimum turning radius	2500 mm
Weight	
With oil and fuel	131 kg
Maximum load	199 kg

ENGINE SPECIFICATIONS

Engine	
Engine type	Liquid cooled 4-stroke, SOHC
Displacement	149.8 cm
Cylinder arrangement	Forward-inclined single cylinder
Bore x stroke	57.0 x 58.7 mm
Compression ratio	10.40 :1
Compression pressure	55Psi (3.866 kgf/cm^2)
Starting system	Electric starter
Fuel	
Recommended fuel	Regular unleaded gasoline only
Fuel tank capacity	12.0 L
Engine oil	
Lubrication system	Wet sump
Type	SAE20W40
Recommended engine oil grade	YAMALUBE (Grade-SG)
Engine oil quantity	
Total amount	1.15 L
Without oil filter element replacement	0.95 L
With oil filter element replacement	1.00 L
Oil filter	
Oil filter type	Paper
Oil pump	
Oil pump type	Gear pump
Inner-rotor-to-outer-rotor-tip clearance	Less than 0.15 mm
Limit	0.23 mm
Outer-rotor-to-oil-pump-housing clearance	0.13–0.18 mm
Limit	0.25 mm
Oil-pump-housing-to-inner-and-outer-rotor clearance	0.06–0.11 mm
Limit	0.18 mm
Rotor thickness	9.95–9.98 mm
Relief valve operating pressure	39.2–78.4 kPa (5.7–11.4 psi) (0.39–0.78 kgf/cm^2)
Cooling system	
Radiator capacity (including all routes)	0.59L
Coolant reservoir capacity (up to the maximum level mark)	0.25 L
Radiator cap opening pressure	107.9-137.3 kPa
Valve relief pressure	4.9 kPa
Thermostat	
Manufacturer	NIPPON THERMOSTAT

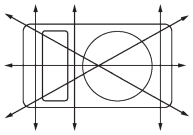
Valve opening temperature	80.5–83.5 °C
Valve full open temperature	95.0 °C
Valve lift (full open)	3.0 mm
Radiator core	
Width	198.0 mm
Height	128.0 mm
Depth	24.0 mm
Water pump	
Water pump type	Single suction centrifugal pump
Reduction ratio	½ (0.500)

Spark plug (s)

Manufacturer/model	NGK/CR8E
Manufacturer/model	DENSO/U24ESR-N
Spark plug gap	0.7–0.8 mm

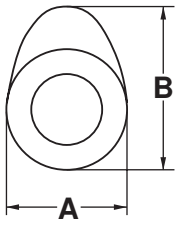
Cylinder head

Volume	9.90–10.50 cm³
Warpage limit	0.03 mm

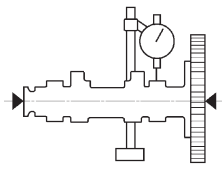


Camshaft

Drive system	Chain drive (left)
Camshaft lobe dimensions	
Intake A	25.177 ± 0.05 mm
Limit	25.027 mm
Intake B	30.275 ± 0.05 mm
Limit	30.125 mm
Exhaust A	25.115 ± 0.05 mm
Limit	24.965 mm
Exhaust B	30.282 ± 0.05 mm
Limit	30.132 mm



Camshaft runout limit 0.03 mm



Timing chain

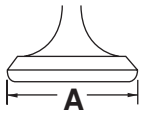
Model/number of links	SILENT CHAIN/96
Tensioning system	Automatic

Rocker arm/rocker arm shaft

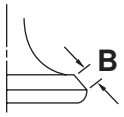
Rocker arm inside diameter	9.985–10.000 mm
Limit	10.030 mm
Rocker arm shaft outside diameter	9.966–9.976 mm
Limit	9.950 mm
Rocker-arm-to-rocker-arm-shaft clearance	0.009–0.034 mm
Limit	0.08 mm

Valve, valve seat, valve guide

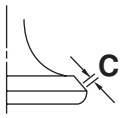
Valve clearance (cold)	
Intake	0.10–0.14 mm
Exhaust	0.20–0.24 mm
Valve dimensions	
Valve head diameter A (intake)	19.40–19.60 mm
Valve head diameter A (exhaust)	16.90–17.10 mm



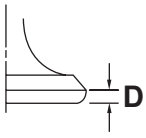
Valve face width B (intake)	1.538–2.138 mm
Valve face width B (exhaust)	1.538–2.138 mm



Valve seat width C (intake)	0.90–1.10 mm
Valve seat width C (exhaust)	0.90–1.10 mm

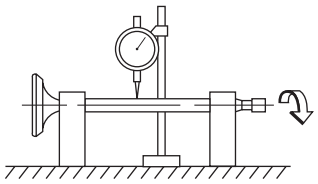


Valve margin thickness D (intake)	0.50–0.90 mm
Valve margin thickness D (exhaust)	0.50–0.90 mm



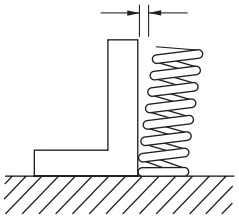
Valve stem diameter (intake)	4.475–4.490 mm
Limit	4.450 mm
Valve stem diameter (exhaust)	4.460–4.475 mm
Limit	4.435 mm
Valve guide inside diameter (intake)	3.950–4.050 mm
Valve guide inside diameter (exhaust)	3.950–4.050 mm
Valve-stem-to-valve-guide clearance (intake)	0.010–0.037 mm

Limit	0.080 mm
Valve-stem-to-valve-guide clearance (exhaust)	0.025–0.052 mm
Limit	0.100 mm
Valve stem runout	0.010 mm



Valve spring

Free length (intake)	41.71 mm
Limit	39.62 mm
Free length (exhaust)	41.71 mm
Limit	39.62 mm
Installed length (intake)	35.30 mm
Installed length (exhaust)	35.30 mm
Spring rate K1 (intake)	23.54 N/mm
Spring rate K2 (intake)	36.58 N/mm
Spring rate K1 (exhaust)	23.54 N/mm
Spring rate K2 (exhaust)	36.58 N/mm
Installed compression spring force (intake)	140–162 N
Installed compression spring force (exhaust)	140–162 N
Spring tilt (intake)	2.5°/1.8 mm
Spring tilt (exhaust)	2.5°/1.8 mm



Winding direction (intake)	Clockwise
Winding direction (exhaust)	Clockwise

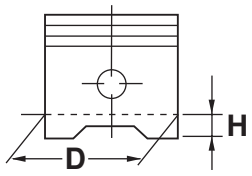
Cylinder

Bore 56.985–57.010 mm
Taper limit 0.05 mm
Out of round limit 0.05 mm

Piston

Piston-to-cylinder clearance	0.020–0.045 mm
Limit	0.15 mm
Diameter D	56.965–56.990 mm

Height H	5.0 mm



Offset	0.25 mm
Offset direction	Intake side
Piston pin bore inside diameter	14.002–14.013 mm
Limit	14.043 mm
Piston pin outside diameter	13.995–14.000 mm
Limit	13.975 mm
Piston-pin-to-piston-pin-bore clearance	0.002–0.018 mm
Limit	0.068 mm

Piston ring

Top ring

Ring type	Barrel
Dimensions(B x T)	0.80 x 2.10 mm

End gap (installed)	0.10–0.25 mm
Limit	0.40 mm
Ring side clearance	0.030–0.065 mm
Limit	0.100 mm

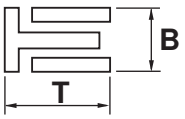
2nd ring

Ring type Taper	
Dimensions (B x T)	0.80 x 2.00 mm

End gap (installed)	0.10–0.25 mm
Limit	0.40 mm
Ring side clearance	0.020–0.055 mm
Limit	0.100 mm

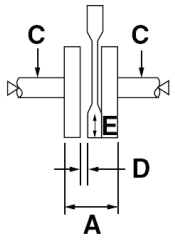
Oil ring

Dimensions (B x T)	1.50 x 1.52 mm



End gap (installed)	0.20–0.70 mm
Ring side clearance	0.040–0.160 mm

Connecting rod	
Small end inside diameter	14.015–14.028 mm
Connected Rod Length	99.90–100.10 mm
Crankshaft	
Width A	47.95–48.00 mm
Runout limit C	0.030 mm
Big end side clearance D	0.110–0.410 mm
Big end radial clearance E	0.004–0.014 mm



Balancer	
Balancer drive method	Gear
Clutch	
Clutch type	Wet, multiple-disc
Clutch release method	Inner push, cam push
Clutch lever free play	10.0–15.0 mm
Friction plate thickness	2.90–3.10 mm
Wear limit	2.80 mm
Plate quantity	1 pc
Friction plate 2 thickness	2.90–3.10 mm
Wear limit	2.80 mm
Plate quantity	4 pc
Clutch plate thickness	1.45–1.75 mm
Plate quantity	4 pcs
Warpage limit	0.20 mm
Clutch spring free length	39.00 mm
Minimum length	36.80 mm
Spring quantity	4 pcs
Push rod bending limit	0.500 mm
Transmission	
Transmission type	Constant mesh 6-speed
Primary reduction system	spur gear
Primary reduction ratio	73/24 (3.042)
Secondary reduction system	Chain drive
Secondary reduction ratio	42/14 (3.000)
Operation	Left foot operation
Gear ratio	
1st	34/12 (2.833)

2nd	30/16 (1.875)
3rd	30/22 (1.364)
4th	24/21 (1.143)
5th	22/23 (0.957)
6th	21/25 (0.840)
Shifting mechanism	
Shift mechanism type	Shift drum and guide bar
Shift fork-L thickness	5.76–5.89 mm
Decompression device	
Device type	Auto Decompression
Air filter	
Air filter element	Dry element
Fuel injector	
Model/quantity	1100–87H10/1
Throttle body	
Type/quantity	AC28/1
Manufacturer	MIKUNI
Throttle valve size	#50
Fuel injection sensor	
Crankshaft position sensor resistance	248–372 Ω at 20°C
Intake air pressure sensor output voltage	0.789–4.000 V at 20.00–101.32 kPa
Intake air temperature sensor resistance	5.7–6.3 kΩ
Coolant temperature sensor resistance	310–326 Ω at 80°C
Idling condition	
Engine idling speed	1300–1500 r/min
Water temperature	85.0–95.0 °C (185.00-203.00°F)
Oil temperature	50.0–70.0 °C–(112.00-158.00 °F
Throttle cable free play	3.0–5.0 mm

CHASSIS SPECIFICATIONS

Chassis	
Frame type	Delta Box
Caster angle	26.00
Trail	100.0 mm
Front wheel	
Wheel type	Cast wheel
Rim size	17 x 1.60.
Rim material	Aluminum
Wheel travel	115.0 mm
Radial wheel runout limit	1.0 mm
Lateral wheel runout limit	0.5 mm
Rear wheel	
Wheel type	Cast wheel
Rim size	17 M/C x MT 2.15
Rim material	Aluminum
Wheel travel	105.0 mm
Radial wheel runout limit	1.0 mm
Lateral wheel runout limit	0.5 mm
Front tyre	
Type	Tubeless
Size	80/90-17M/C 44P
Manufacturer/model	MRF / ZAPPER
Rear tyre	
Type	Tubeless
Size	100/80–17M/C 52P
Manufacturer/model	MRF / ZAPPER
Tyre air pressure (**measured on cold tyres**)	
Front	200 kPa
Rear	225 kPa
Front brake	
Type	Single disc brake
Operation	Right hand operation

Front disc brake	
Disc outside diameter & thickness	267.0 x 4.0 mm
Brake disc thickness limit	3.5 mm
Brake disc deflection limit	0.10 mm
Brake pad lining thickness (inner)	5.3 mm
Limit	0.8 mm
Brake pad lining thickness (outer)	5.3 mm
Limit	0.8 mm
Master cylinder inside diameter	11.00 mm
Caliper cylinder inside diameter	25.40 mm x 2
Recommended fluid	DOT 3 or DOT 4
Rear brake	
Type	Disk brake
Operation	Right foot operation
Brake pedal position	44 mm
Rear disc brake	
Disc outside diameter & thickness	203.0 x 4.5 mm
Brake disc thickness limit	4.0 mm
Brake disc deflection limit	0.1 mm
Brake pad lining thickness (inner)	7.0 mm
Limit	1.5 mm
Brake pad lining thickness (outer)	7.0 mm
Limit	1.5 mm
Master cylinder inside diameter	12.7 mm
Caliper cylinder inside diameter	32.0 mm
Recommended fluid	DOT 3 or DOT 4
Steering	
Steering bearing type	Ball and angular bearing
Center to lock angle (left)	35.0°
Center to lock angle (right)	35.0°
Front suspension	
Type	Telescopic fork
Spring/shock absorber type	Coil spring/oil damper
Front fork travel	130.0 mm
Fork spring free length	384.8 mm
Limit	381.8 mm
Collar length	88.0 mm
Installed length	381.8 mm
Spring rate K1	5 N/mm
Spring rate K2	6.75 N/mm
Spring stroke K1	0–75.0 mm
Spring stroke K2	75.0–130 mm
Inner tube outer diameter	33.0 mm
Optional spring available	No
Recommended oil	Fork oil 10W or equivalent
Quantity	240 cm^3
Level	126.0 mm
Rear suspension	
Type	Swingarm (Link suspension)
Spring/shock absorber type	Coil spring/oil damper
Rear shock absorber assembly travel	50.0 mm

Spring free length	166.8 mm
Installed length	156.5 mm
Spring rate K1	90.00 N/mm
Spring stroke K1	0.0–50.0 mm
Optional spring available	No

Swingarm

Swingarm end free play limit (axial)	2.4 mm

Drive chain

Type/manufacturer	428VI3/DAIDO
Link quantity	120
Drive chain slack	20–40 mm
15-link length limit	190.5 mm