YAMAHA

2008

SERVICE MANUAL

XT250X
XT250XC

XT250

EAS20050

XT250X
XT250XC
SERVICE MANUAL

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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.

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

Yamaha Motor Company, Ltd. is continually striving to improve all of its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

NOTE:

- This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.
- Designs and specifications are subject to change without notice.

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 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.

EAS20090

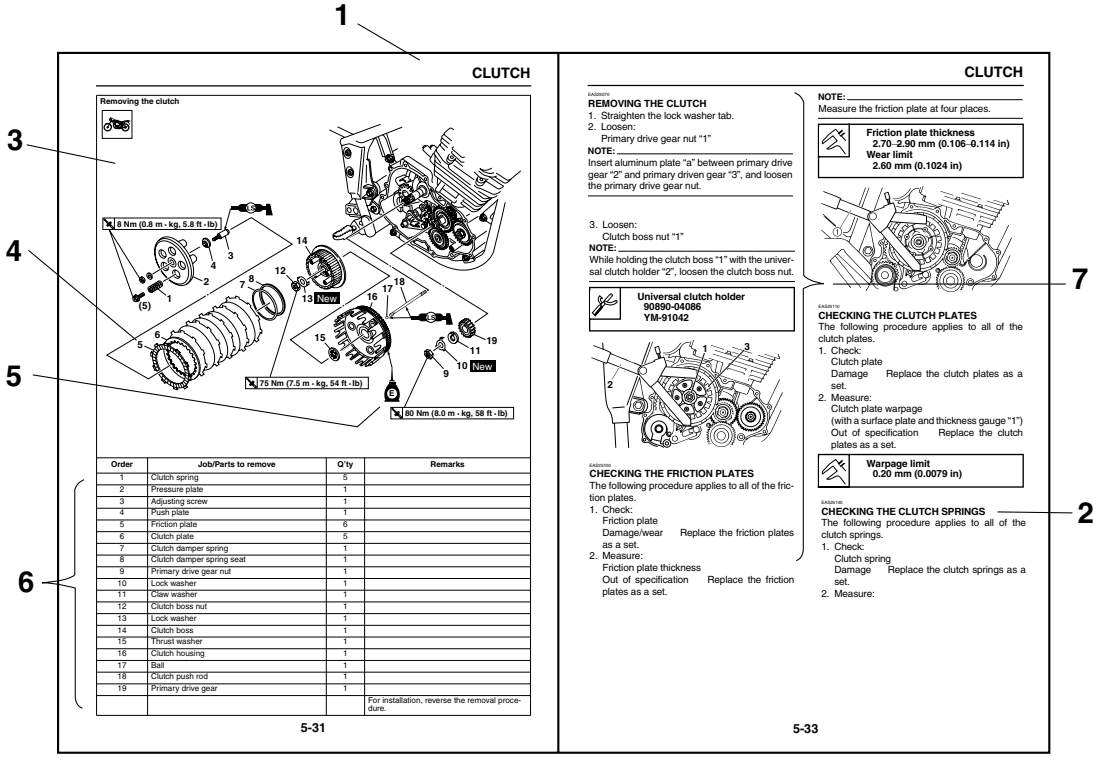
HOW TO USE THIS MANUAL

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 is shown at the top of each page “1”.
- Sub-section titles appear in smaller print than the section title “2”.
- To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section “3”.
- Numbers are given in the order of the jobs in the exploded diagram. A number indicates a disassembly step “4”.
- Symbols indicate parts to be lubricated or replaced “5”.

Refer to “SYMBOLS”.

- A job instruction chart accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc “6”.
- Jobs requiring more information (such as special tools and technical data) are described sequentially “7”.



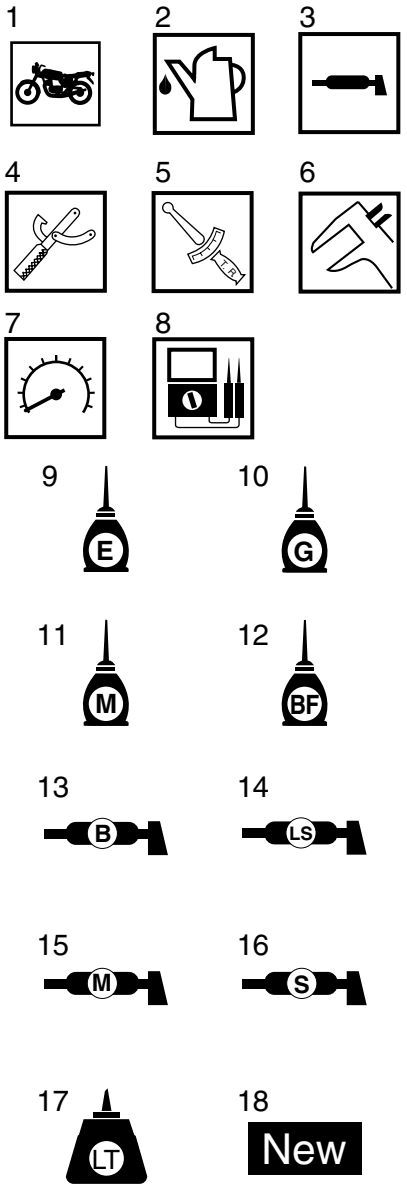
EAS20100

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. 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

EAS20110

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GENERAL INFORMATION

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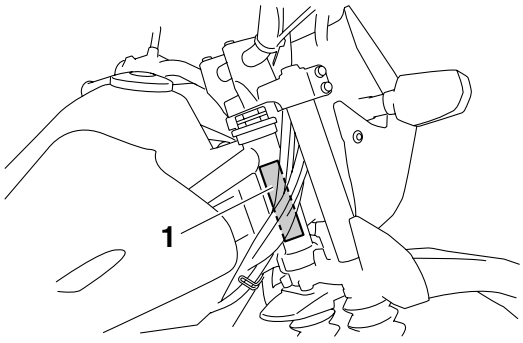
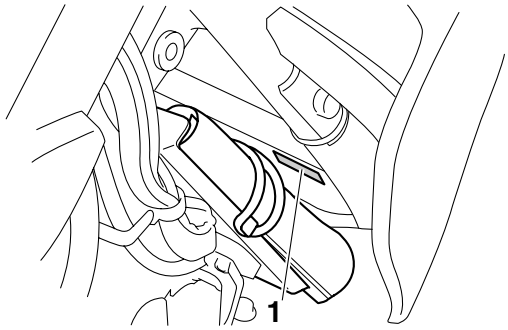
EAS20130
IDENTIFICATION

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

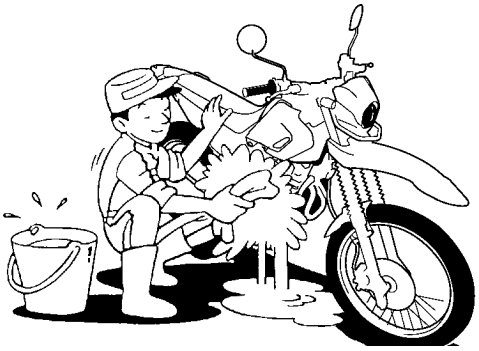


EAS20150
MODEL LABEL
The model label “1” is affixed to the frame. This information will be needed to order spare parts.



EAS20180
IMPORTANT INFORMATION

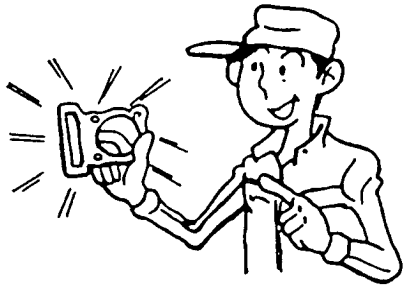
EAS20190
PREPARATION FOR REMOVAL AND DISASSEMBLY
1. Before removal and disassembly, remove all dirt, mud, dust and foreign material.



2. Use only the proper tools and cleaning equipment.
   Refer to “SPECIAL TOOLS” on page 1-5.
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.

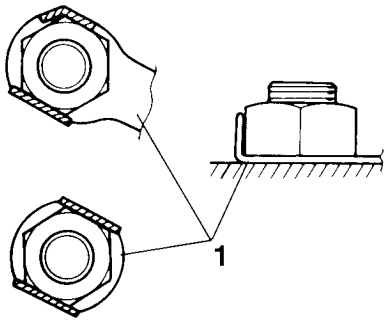
4. During disassembly, clean all of the parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation of all parts.
5. Keep all parts away from any source of fire.

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.

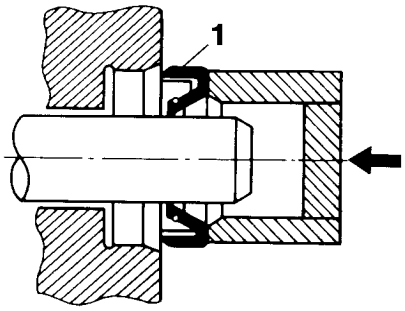


EAS20210
GASKETS, OIL SEALS AND O-RINGS
1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and lubricate the oil seal lips with grease.

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.



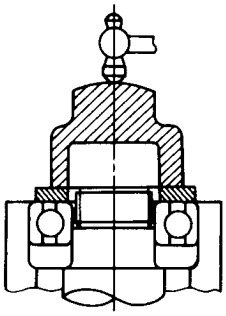
EAS20230
BEARINGS AND OIL SEALS
Install bearings and oil seals so that the manufacturer’s marks or numbers are visible. When installing oil seals “1”, lubricate the oil seal lips with a light coat of lithium-soap-based grease. Oil bearings liberally when installing, if appropriate.



ECA13300

CAUTION:

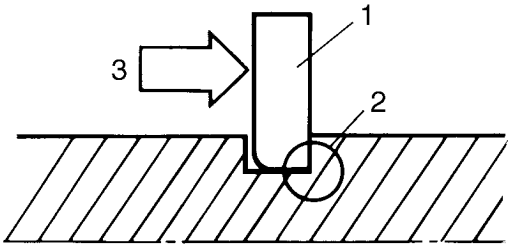
Do not spin the bearing with compressed air because this will damage the bearing surfaces.



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.



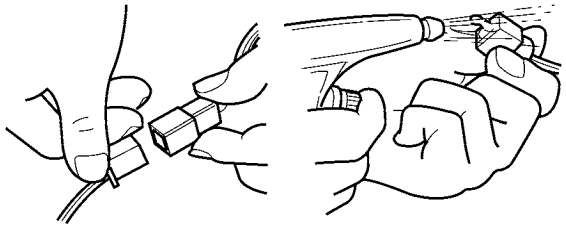
EAS20250

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.

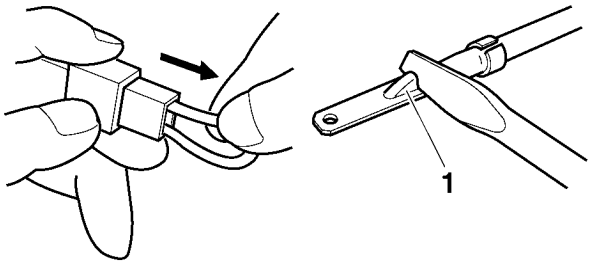


3. Check:
   - All connections

   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.

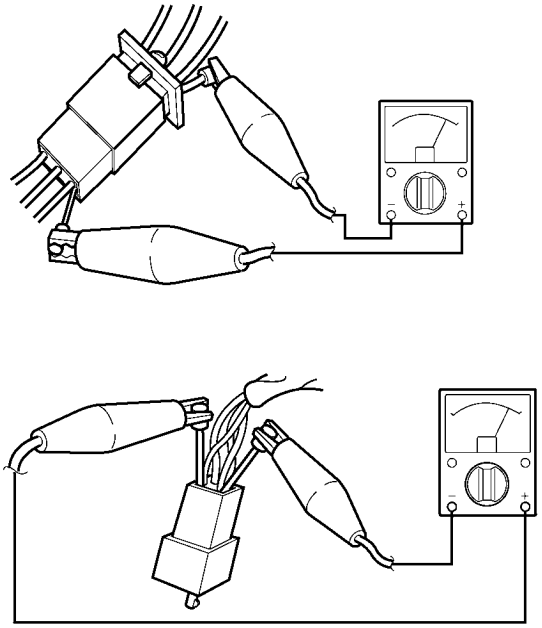
5. Check:
   - Continuity

   (with the pocket tester)

	Pocket tester **90890-03132**

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.



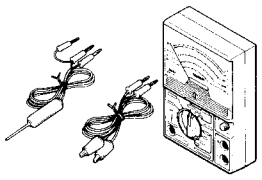
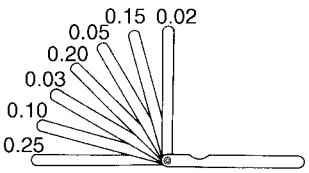
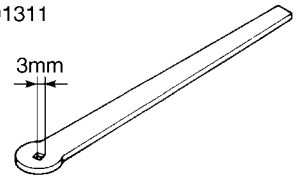
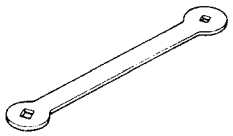
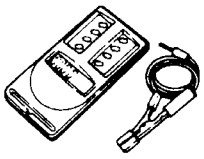
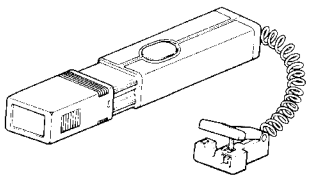
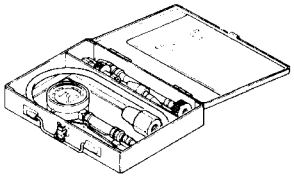
EAS20260

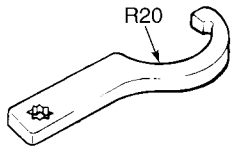
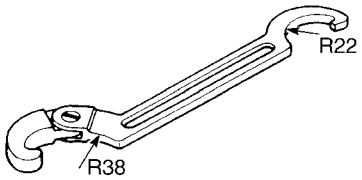
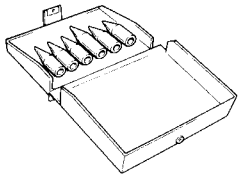
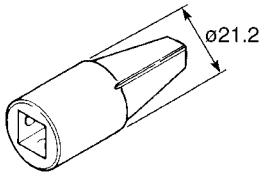
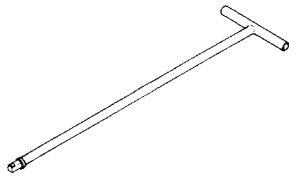
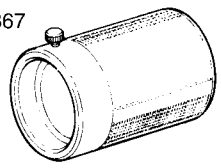
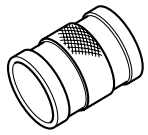
SPECIAL TOOLS

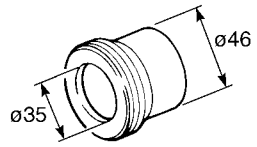
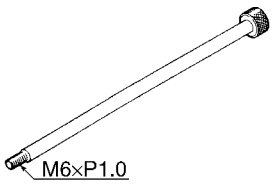
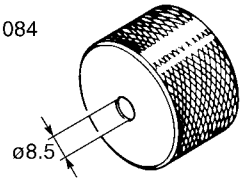
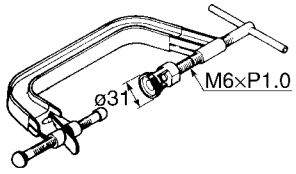
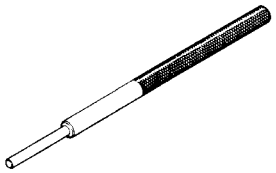
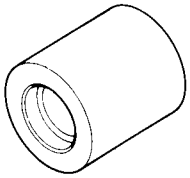
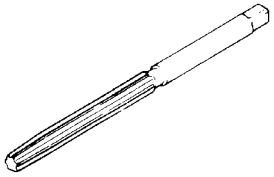
The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country.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

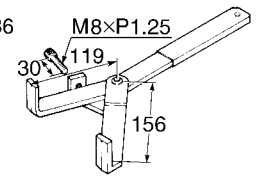
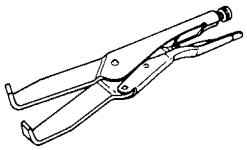
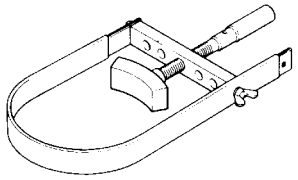
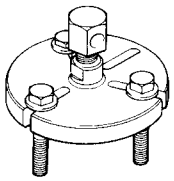
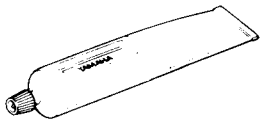
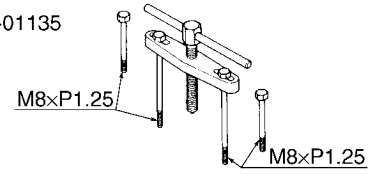
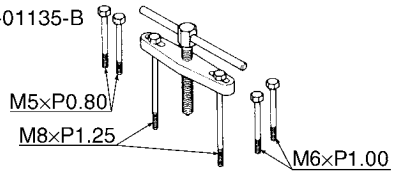
NOTE:

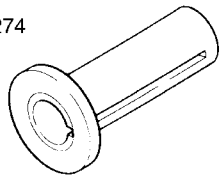
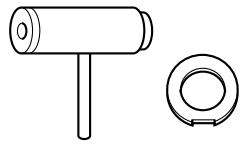
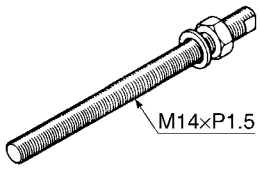
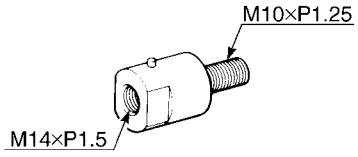
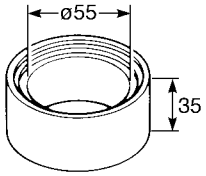
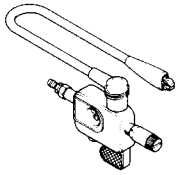
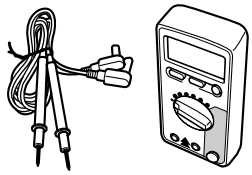
For U.S.A. and Canada, use part number starting with "YM-", "YU-", or "ACC-".
For others, use part number starting with "90890-".

Tool name/Tool No.	Illustration	Reference pages
Pocket tester 90890-03132		1-4, 3-7, 3-8, 5-52, 7-35, 7-36, 7-37, 7-40, 7-41, 7-42, 7-43, 7-44, 7-45, 7-47
Special thickness gauge 90890-01399		3-5
Tappet adjusting tool 90890-01311 Six piece tappet set YM-A5970	90890-01311 	3-6
	YM-08035-A 	
Digital tachometer 90890-06760 YU-39951-B		3-7, 3-8, 3-11
Timing light 90890-03141 Inductive clamp timing light YU-03141		3-11
Compression gauge 90890-03081 Engine compression tester YU-33223		3-12

Tool name/Tool No.	Illustration	Reference pages
Steering nut wrench 90890-01403 Spanner wrench YU-33975		3-23
Ring nut wrench 90890-01268 Spanner wrench YU-01268		3-24, 4-49
Spoke wrench 90890-01522		3-27
Cylinder cup installer 90890-01996		4-22, 4-33
Damper rod holder 90890-01460		4-42, 4-44
T-handle 90890-01326 T-handle 3/8" drive 60 cm long YM-01326		4-44
Fork seal driver weight 90890-01367 Replacement hammer YM-A9409-7	90890-01367  YM-A9409-7/YM-A5142-4 	4-44, 4-45

Tool name/Tool No.	Illustration	Reference pages
Fork seal driver attachment (ø35) 90890-01369 Replacement 35 mm YM-A9409-5		4-44
Slide hammer bolt 90890-01083 Slide hammer bolt 6 mm YU-01083-1		5-14
Weight 90890-01084 YU-01083-3	90890-01084  YU-01083-3 	5-14
Valve spring compressor 90890-04019 YM-04019		5-18, 5-23
Valve guide remover (ø6) 90890-04064 Valve guide remover (6.0 mm) YM-04064-A		5-20
Valve guide installer (ø6) 90890-04065 Valve guide installer (6.0 mm) YM-04065-A		5-20
Valve guide reamer (ø6) 90890-04066 Valve guide reamer (6.0 mm) YM-04066		5-20

Tool name/Tool No.	Illustration	Reference pages
Universal clutch holder 90890-04086 YM-91042	90890-04086  YM-91042 	5-33, 5-35
Sheave holder 90890-01701 Primary clutch holder YS-01880-A		5-47, 5-48
Flywheel puller 90890-01362 Heavy duty puller YU-33270-B		5-47
Yamaha bond No. 1215 (Three Bond No.1215®) 90890-85505		5-56
Crankcase separating tool 90890-01135 Crankcase separator YU-01135-B	90890-01135  YU-01135-B 	5-59

Tool name/Tool No.	Illustration	Reference pages
Crankshaft installer pot 90890-01274 Installing pot YU-90058	90890-01274  YU-90058/YU-90059 	5-60
Crankshaft installer bolt 90890-01275 Bolt YU-90060		5-60
Adapter (M10) 90890-01383 Adapter #2 YU-90062		5-60
Spacer 90890-01288		5-60
Ignition checker 90890-06754 Opama pet-4000 spark checker YM-34487		7-43
Digital circuit tester 90890-03174 Model 88 Multimeter with tachometer YU-A1927		7-46

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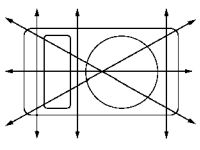
EAS20280
GENERAL SPECIFICATIONS

Model	
Model	3C58 (U49) 3C59 (CAL)
Dimensions	
Overall length	2150 mm (84.6 in)
Overall width	805 mm (31.7 in)
Overall height	1160 mm (45.7 in)
Seat height	810 mm (31.9 in)
Wheelbase	1360 mm (53.5 in)
Ground clearance	285 mm (11.22 in)
Minimum turning radius	1900 mm (74.8 in)
Weight	
With oil and fuel	132.0 kg (291 lb)
Maximum load	160.0 kg (353 lb)

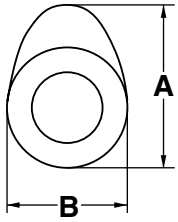
EAS20290
ENGINE SPECIFICATIONS

Engine	
Engine type	Air cooled 4-stroke, SOHC
Displacement	249.0 cm^3
Cylinder arrangement	Forward-inclined single cylinder
Bore × stroke	74.0 × 58.0 mm (2.91 × 2.28 in)
Compression ratio	9.50 :1
Starting system	Electric starter
Fuel	
Recommended fuel	Unleaded gasoline only
Fuel tank capacity	9.1 L (2.40 US gal) (2.00 Imp.gal) (CAL) 9.8 L (2.59 US gal) (2.16 Imp.gal) (U49)
Fuel reserve amount	1.9 L (0.50 US gal) (0.42 Imp.gal)
Engine oil	
Lubrication system	Wet sump
Type	YAMALUBE 4, SAE10W30 or SAE20W40
Recommended engine oil grade	API service SG type or higher, JASO standard MA
Engine oil quantity	
Total amount	1.40 L (1.48 US qt) (1.23 Imp.qt)
Without oil filter element replacement	1.20 L (1.27 US qt) (1.06 Imp.qt)
With oil filter element replacement	1.30 L (1.37 US qt) (1.14 Imp.qt)
Oil filter type	Paper
Oil pump	
Oil pump type	Trochoid
Inner-rotor-to-outer-rotor-tip clearance	0.150 mm (0.0059 in)
Limit	0.200 mm (0.0079 in)
Outer-rotor-to-oil-pump-housing clearance	0.100–0.151 mm (0.0039–0.0059 in)
Limit	0.221 mm (0.0087 in)
Oil-pump-housing-to-inner-and-outer-rotor clearance	0.04–0.09 mm (0.0016–0.0035 in)
Limit	0.16 mm (0.0063 in)
Pressure check location	HEAD CYLINDER
Spark plug (s)	
Manufacturer/model	NGK/DR7EA
Spark plug gap	0.6–0.7 mm (0.024–0.028 in)
Cylinder head	
Volume	20.50–21.50 cm^3 (1.25–1.31 cu.in)
Warpage limit	0.03 mm (0.0012 in)

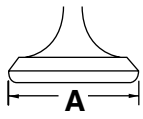


Camshaft	
Drive system	Chain drive (right)
Camshaft journal diameter	25.021–25.039 mm (0.9851–0.9858 in)

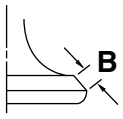
Camshaft lobe dimensions	
Intake A	36.520–36.620 mm (1.4378–1.4417 in)
Limit	36.460 mm (1.4354 in)
Intake B	30.201–30.301 mm (1.1890–1.1930 in)
Limit	30.151 mm (1.1870 in)
Exhaust A	36.564–36.664 mm (1.4395–1.4435 in)
Limit	36.514 mm (1.4376 in)
Exhaust B	30.216–30.316 mm (1.1896–1.1935 in)
Limit	30.166 mm (1.1876 in)



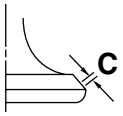
Camshaft runout limit	0.030 mm (0.0012 in)
Timing chain	
Model/number of links	DID SCR-0404 SV/104
Tensioning system	Automatic
Rocker arm/rocker arm shaft	
Rocker arm inside diameter	12.000–12.018 mm (0.4724–0.4731 in)
Limit	12.036 mm (0.4739 in)
Rocker arm shaft outside diameter	11.981–11.991 mm (0.4717–0.4721 in)
Limit	11.950 mm (0.4705 in)
Rocker-arm-to-rocker-arm-shaft clearance	0.009–0.037 mm (0.0004–0.0015 in)
Valve, valve seat, valve guide	
Valve clearance (cold)	
Intake	0.05–0.10 mm (0.0020–0.0039 in)
Exhaust	0.10–0.15 mm (0.0039–0.0059 in)
Valve dimensions	
Valve head diameter A (intake)	33.90–34.10 mm (1.3346–1.3425 in)
Valve head diameter A (exhaust)	28.40–28.60 mm (1.1181–1.1260 in)



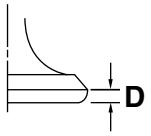
Valve face width B (intake)	2.260 mm (0.0890 in)
Valve face width B (exhaust)	2.260 mm (0.0890 in)



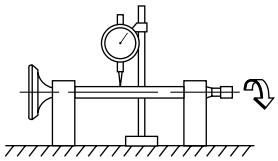
Valve seat width C (intake)	0.90–1.10 mm (0.0354–0.0433 in)
Valve seat width C (exhaust)	0.90–1.10 mm (0.0354–0.0433 in)



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)



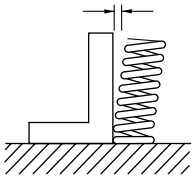
Valve stem diameter (intake)	5.975–5.990 mm (0.2352–0.2358 in)
Limit	5.950 mm (0.2343 in)
Valve stem diameter (exhaust)	5.960–5.975 mm (0.2346–0.2352 in)
Limit	5.935 mm (0.2337 in)
Valve guide inside diameter (intake)	6.000–6.012 mm (0.2362–0.2367 in)
Limit	6.042 mm (0.2379 in)
Valve guide inside diameter (exhaust)	6.000–6.012 mm (0.2362–0.2367 in)
Limit	6.042 mm (0.2379 in)
Valve-stem-to-valve-guide clearance (intake)	0.010–0.037 mm (0.0004–0.0015 in)
Limit	0.080 mm (0.0032 in)
Valve-stem-to-valve-guide clearance (exhaust)	0.025–0.052 mm (0.0010–0.0020 in)
Limit	0.100 mm (0.0039 in)
Valve stem runout	0.030 mm (0.0012 in)



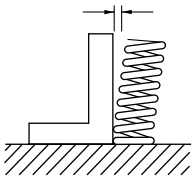
Cylinder head valve seat width (intake)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	1.7 mm (0.07 in)
Cylinder head valve seat width (exhaust)	0.90–1.10 mm (0.0354–0.0433 in)
Limit	1.7 mm (0.07 in)

Valve spring

Inner spring	
Free length (intake)	36.17 mm (1.42 in)
Limit	34.47 mm (1.36 in)
Free length (exhaust)	36.17 mm (1.42 in)
Limit	34.47 mm (1.36 in)
Installed length (intake)	30.50 mm (1.20 in)
Installed length (exhaust)	30.50 mm (1.20 in)
Spring rate K1 (intake)	14.70 N/mm (83.94 lb/in) (1.50 kgf/mm)
Spring rate K2 (intake)	19.00 N/mm (108.49 lb/in) (1.94 kgf/mm)
Spring rate K1 (exhaust)	14.70 N/mm (83.94 lb/in) (1.50 kgf/mm)
Spring rate K2 (exhaust)	19.00 N/mm (108.49 lb/in) (1.94 kgf/mm)
Installed compression spring force (intake)	75.00–91.70 N (16.86–20.61 lbf) (7.65–9.35 kgf)
Installed compression spring force (exhaust)	75.00–91.70 N (16.86–20.61 lbf) (7.65–9.35 kgf)
Spring tilt (intake)	2.5 °/1.6 mm
Spring tilt (exhaust)	2.5 °/1.6 mm



Winding direction (intake)	Counter clockwise
Winding direction (exhaust)	Counter clockwise
Outer spring	
Free length (intake)	36.63 mm (1.44 in)
Limit	34.63 mm (1.36 in)
Free length (exhaust)	36.63 mm (1.44 in)
Limit	34.63 mm (1.36 in)
Installed length (intake)	32.00 mm (1.26 in)
Installed length (exhaust)	32.00 mm (1.26 in)
Spring rate K1 (intake)	30.90 N/mm (176.44 lb/in) (3.15 kgf/mm)
Spring rate K2 (intake)	40.80 N/mm (232.97 lb/in) (4.16 kgf/mm)
Spring rate K1 (exhaust)	30.90 N/mm (176.44 lb/in) (3.15 kgf/mm)
Spring rate K2 (exhaust)	40.80 N/mm (232.97 lb/in) (4.16 kgf/mm)
Installed compression spring force (intake)	128.50–157.90 N (28.89–35.50 lbf) (13.10–16.10 kgf)
Installed compression spring force (exhaust)	128.50–157.90 N (28.89–35.50 lbf) (13.10–16.10 kgf)
Spring tilt (intake)	2.5 °/1.6 mm
Spring tilt (exhaust)	2.5 °/1.6 mm



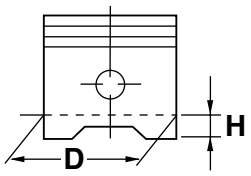
Winding direction (intake)	Clockwise
Winding direction (exhaust)	Clockwise

Cylinder

Bore	74.000–74.016 mm (2.9134–2.9140 in)
Wear limit	74.100 mm (2.9173 in)
Taper limit	0.050 mm (0.0020 in)
Out of round limit	0.010 mm (0.0004 in)
Warp limit	0.10 mm (0.0039 in)

Piston

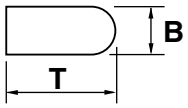
Piston-to-cylinder clearance	0.010–0.025 mm (0.0004–0.0010 in)
Limit	0.15 mm (0.0059 in)
Diameter D	73.983–73.998 mm (2.9127–2.9133 in)
Height H	11.0 mm (0.43 in)



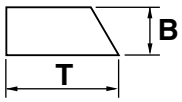
Offset	0.50 mm (0.0197 in)
Offset direction	Intake side
Piston pin bore inside diameter	16.002–16.013 mm (0.6300–0.6304 in)
Limit	16.043 mm (0.6316 in)
Piston pin outside diameter	15.991–16.000 mm (0.6296–0.6299 in)
Limit	15.971 mm (0.6288 in)
Piston-pin-to-piston-pin-bore clearance	0.002–0.022 mm (0.0001–0.0009 in)

Piston ring

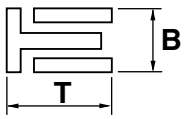
Top ring	
Ring type	Barrel
Dimensions (B × T)	0.90 × 2.75 mm (0.04 × 0.11 in)



End gap (installed)	0.19–0.31 mm (0.0075–0.0122 in)
Limit	0.56 mm (0.0220 in)
Ring side clearance	0.030–0.065 mm (0.0012–0.0026 in)
Limit	0.115 mm (0.0045 in)
2nd ring	
Ring type	Taper
Dimensions (B × T)	0.80 × 2.80 mm (0.03 × 0.11 in)

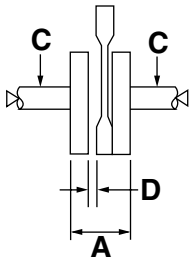


End gap (installed)	0.30–0.45 mm (0.0118–0.0177 in)
Limit	0.80 mm (0.0314 in)
Ring side clearance	0.020–0.055 mm (0.0008–0.0022 in)
Limit	0.115 mm (0.0045 in)
Oil ring	
Dimensions (B × T)	1.50 × 2.60 mm (0.06 × 0.10 in)



End gap (installed)	0.10–0.35 mm (0.0039–0.0138 in)

Crankshaft	
Width A	69.25–69.30 mm (2.726–2.728 in)
Runout limit C	0.030 mm (0.0012 in)
Big end side clearance D	0.350–0.850 mm (0.0138–0.0335 in)



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 (0.39–0.59 in)
Friction plate thickness	2.70–2.90 mm (0.106–0.114 in)
Wear limit	2.60 mm (0.1024 in)
Plate quantity	6 pcs
Clutch plate thickness	1.50–1.70 mm (0.059–0.067 in)
Plate quantity	5 pcs
Warpage limit	0.20 mm (0.0079 in)
Clutch spring free length	40.10 mm (1.58 in)
Limit	38.10 mm (1.50 in)
Spring quantity	5 pcs
Clutch housing thrust clearance	0.100–0.350 mm (0.0039–0.0138 in)
Clutch housing radial clearance	0.010–0.044 mm (0.0004–0.0017 in)
Push rod bending limit	0.500 mm (0.0197 in)
Transmission	
Transmission type	Constant mesh 5-speed
Primary reduction system	Spur gear
Primary reduction ratio	74/24 (3.083)
Secondary reduction system	Chain drive
Secondary reduction ratio	48/15 (3.200)
Operation	Left foot operation
Gear ratio	
1st	37/13 (2.846)
2nd	29/16 (1.812)
3rd	29/22 (1.318)
4th	29/28 (1.035)
5th	23/28 (0.821)
Main axle runout limit	0.08 mm (0.0032 in)
Drive axle runout limit	0.08 mm (0.0032 in)
Main axle assembly width	102.20–102.40 mm (4.02–4.03 in)
Shifting mechanism	
Shift mechanism type	Shift drum and guide bar
Shift fork thickness	4.76–4.89 mm (0.1874–0.1925 in)

Air filter	
Air filter element	Oil-coated paper element
Carburetor	
Type × quantity	MV33 x 1
Manufacturer	TEIKEI
ID mark	3C58 00 (U49) 3C59 00 (CAL)
Main jet	#135
Main air jet	1.20
Jet needle	5A21-1
Needle jet	2.585
Pilot air jet 1	0.90
Pilot outlet	0.8x1.2
Pilot jet	#34
Bypass 1	0.8
Bypass 2	0.8
Bypass 3	0.8
Bypass 4	0.8
Pilot screw turn out	2–1/2
Valve seat size	0.50
Starter jet 1	#90
Starter jet 2	#78
Throttle valve size	33
Float height	11.9 mm (0.47 in)
Idling condition	
Engine idling speed	1300–1500 r/min
CO%	0.5–1.5 %
Intake vacuum	29.0–37.0 kPa (8.6–10.9 inHg) (218–278 mm-Hg)
Oil temperature	95.0–105.0 °C (203.00–221.00 °F)
Throttle cable free play	3.0–5.0 mm (0.12–0.20 in)

EAS20300
CHASSIS SPECIFICATIONS

Chassis	
Frame type	Semi double cradle
Caster angle	26.42 °
Trail	106.0 mm (4.17 in)
Front wheel	
Wheel type	Spoke wheel
Rim size	21x1.60
Rim material	Aluminum
Wheel travel	225.0 mm (8.86 in)
Radial wheel runout limit	2.0 mm (0.08 in)
Lateral wheel runout limit	2.0 mm (0.08 in)
Wheel axle bending limit	0.25 mm (0.01 in)
Rear wheel	
Wheel type	Spoke wheel
Rim size	18M/C x MT2.15
Rim material	Aluminum
Wheel travel	180.0 mm (7.09 in)
Radial wheel runout limit	2.0 mm (0.08 in)
Lateral wheel runout limit	2.0 mm (0.08 in)
Wheel axle bending limit	0.25 mm (0.01 in)
Front tire	
Type	With tube
Size	2.75-21 45P
Manufacturer/model	CHENG SHIN/C-6006
Manufacturer/model	DUNLOP/D605F
Wear limit (front)	0.8 mm (0.03 in)
Rear tire	
Type	With tube
Size	120/80-18M/C 62P
Manufacturer/model	CHENG SHIN/C-6006
Manufacturer/model	DUNLOP/D605
Wear limit (rear)	0.8 mm (0.03 in)
Tire air pressure (measured on cold tires)	
Loading condition	0–90 kg (0–198 lb)
Front	125 kPa (18 psi) (1.25 kgf/cm^2)
Rear	150 kPa (22 psi) (1.50 kgf/cm^2)
Loading condition	90 kg–Maximum load
Front	150 kPa (22 psi) (1.50 kgf/cm^2)
Rear	175 kPa (25 psi) (1.75 kgf/cm^2)
Front brake	
Type	Single disc brake
Operation	Right hand operation
Front brake lever free play	2.0–5.0 mm (0.08–0.20 in)
Front disc brake	
Disc outside diameter × thickness	245.0 × 3.5 mm (9.65 × 0.14 in)
Brake disc thickness limit	3.0 mm (0.12 in)

Brake disc deflection limit	0.15 mm (0.0059 in)
Brake pad lining thickness (inner)	5.3 mm (0.21 in)
Limit	0.8 mm (0.03 in)
Brake pad lining thickness (outer)	5.3 mm (0.21 in)
Limit	0.8 mm (0.03 in)
Master cylinder inside diameter	11.00 mm (0.43 in)
Caliper cylinder inside diameter	26.99 mm (1.06 in)
Caliper cylinder inside diameter	22.22 mm (0.87 in)
Recommended fluid	DOT 4
Rear brake	
Type	Single disc brake
Operation	Right foot operation
Brake pedal position	20.0 mm (0.79 in)
Rear disc brake	
Disc outside diameter × thickness	203.0 × 4.5 mm (7.99 × 0.18 in)
Brake disc thickness limit	4.0 mm (0.16 in)
Brake disc deflection limit	0.15 mm (0.0059 in)
Brake pad lining thickness (inner)	5.2 mm (0.20 in)
Limit	1.0 mm (0.04 in)
Brake pad lining thickness (outer)	5.2 mm (0.20 in)
Limit	1.0 mm (0.04 in)
Master cylinder inside diameter	12.7 mm (0.50 in)
Caliper cylinder inside diameter	30.23 mm (1.19 in)
Recommended fluid	DOT 4
Steering	
Steering bearing type	Taper roller bearing
Center to lock angle (left)	51.0 °
Center to lock angle (right)	51.0 °
Front suspension	
Type	Telescopic fork
Spring/shock absorber type	Coil spring/oil damper
Front fork travel	225.0 mm (8.86 in)
Fork spring free length	482.0 mm (18.98 in)
Limit	472.3 mm (18.59 in)
Installed length	472.2 mm (18.59 in)
Spring rate K1	3.65 N/mm (20.84 lb/in) (0.37 kgf/mm)
Spring stroke K1	0.0–225.0 mm (0.00–8.86 in)
Optional spring available	No
Recommended oil	Yamaha fork oil 15WT
Quantity	385.0 cm^3 (13.02 US oz) (13.58 Imp.oz)
Level	125.0 mm (4.92 in)
Swingarm	
Swingarm end free play limit (radial)	1.0 mm (0.04 in)
Swingarm end free play limit (axial)	1.0 mm (0.04 in)
Drive chain	
Type/manufacturer	428V/DAIDO
Link quantity	128
Drive chain slack	40.0–45.0 mm (1.57–1.77 in)
15-link length limit	191.5 mm (7.54 in)

FAS20310
ELECTRICAL SPECIFICATIONS

Voltage	
System voltage	12 V
Ignition system	
Ignition system	CDI
Advancer type	Digital
Ignition timing (B.T.D.C.)	10.0 °/1400 r/min
CDI	
Magneto model/manufacturer	F5XT/YAMAHA
Pickup coil resistance	248–372 Ω (Red–white)
CDI unit model/manufacturer	3C5/YAMAHA
Ignition coil	
Model/manufacturer	2JN/YAMAHA
Minimum ignition spark gap	6.0 mm (0.24 in)
Primary coil resistance	0.18–0.28 Ω
Secondary coil resistance	6.32–9.48 kΩ
Spark plug cap	
Material	Resin
Resistance	10.0 kΩ
AC magneto	
Model/manufacturer	F5XT/YAMAHA
Standard output	14.0 V, 190 W@5000 r/min
Stator coil resistance	0.688–1.032 Ω (White–white)
Rectifier/regulator	
Regulator type	Semi conductor-short circuit
Model/manufacturer	SH629A-12/SHINDENGEN
No load regulated voltage	14.1–14.9 V
Rectifier capacity	10.0 A
Withstand voltage	200.0 V
Battery	
Model	YTZ7S
Voltage, capacity	12 V, 6.0 Ah
Specific gravity	1.310
Manufacturer	GS YUASA
Ten hour rate amperage	0.60 A
Headlight	
Bulb type	Halogen bulb
Bulb voltage, wattage × quantity	
Headlight	12 V, 60 W/55.0 W × 1
Tail/brake light	12 V, 8.0 W/27.0 W × 1
Front turn signal/position light	12 V, 27 W/5.0 W × 2
Rear turn signal light	12 V, 27.0 W × 2
License plate light	12 V, 8.0 W × 1
Indicator light	
Neutral indicator light	LED
Turn signal indicator light	LED
High beam indicator light	LED