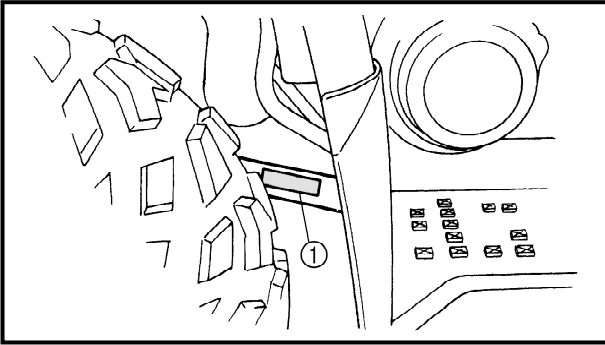

CHAPTER 1. GENERAL INFORMATION

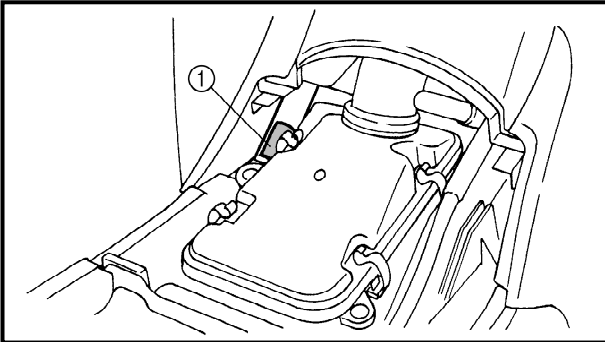
MACHINE IDENTIFICATION	1-1
VEHICLE IDENTIFICATION NUMBER	1-1
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GENERAL INFORMATION
MACHINE IDENTIFICATION

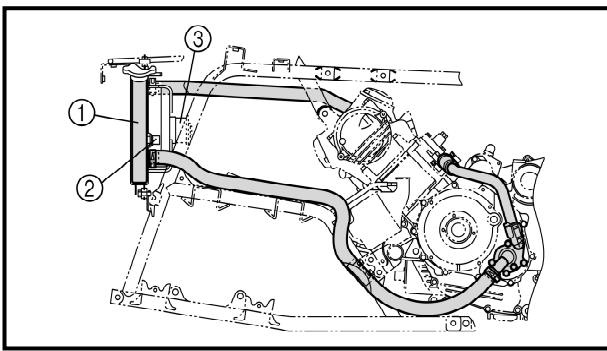
VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the left side of the frame.



MODEL LABEL

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

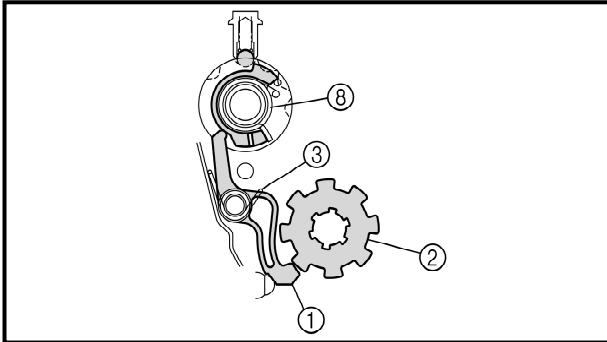


FEATURES

LIQUID COOLING ENGINE

Compact liquid cooled 45° inclined engine. A liquid cooling system has been incorporated for stable power and engine endurance.

- ① Radiator
- ② Thermo switch
- ③ Fan motor

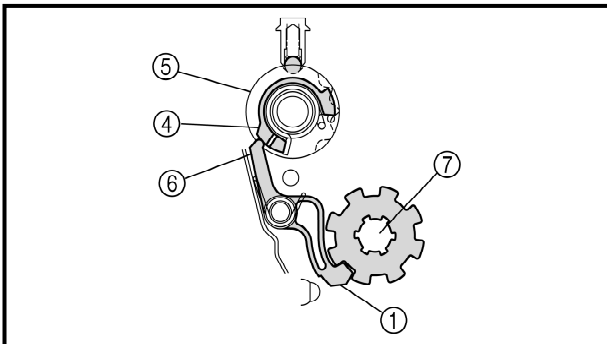


PARK POSITION

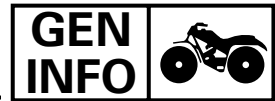
When the drive select lever is shifted into the park position, a stopper lever is engaged into the stopper gear preventing the drive select lever and transmission from moving.

When the drive select lever is at the "L", "H", "N", or "R" positions, the stopper lever end ① is moved away from the stopper gear ② by the return spring ③.

When the drive select lever is in the "P" position, the lever cam ④ at the side of the shift cam ⑤ lifts the stopper lever end ⑥ and the stopper lever end locks the drive axle ⑦.



When the stopper lever end ① is not synchronized, a torsion spring ⑧ retains the rotation force of the shift cam ⑤ until it is synchronized.



EB101000

IMPORTANT INFORMATION

PREPARATION FOR REMOVAL

PROCEDURES

1. Remove all dirt, mud, dust and foreign material before removal and disassembly.
2. Use proper tools and cleaning equipment. Refer to the "SPECIAL TOOLS" section.
3. When disassembling the machine, always keep mated parts together. This includes gears, cylinder, piston and other parts that have been "mated" through normal wear. Mated parts must always be reused or replaced as an assembly.
4. During machine disassembly, clean all 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.

EB101010

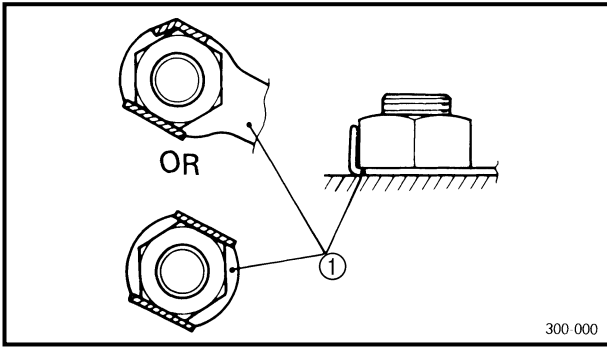
REPLACEMENT PARTS

1. 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.

EB101020

GASKETS, OIL SEALS AND O-RINGS

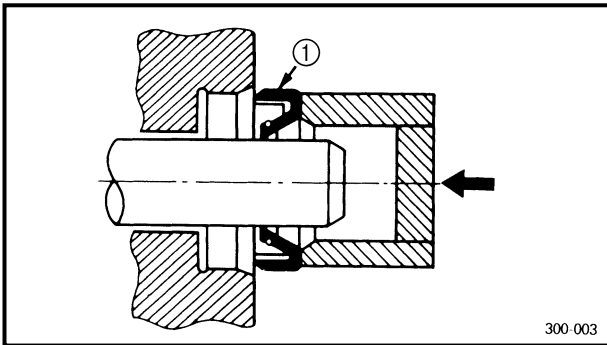
1. Replace all gaskets, seals and O-rings when overhauling the engine. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



EB101030

LOCK WASHERS/PLATES AND COTTER PINS

1. Replace all lock washers/plates ① and cotter pins after removal. Bend lock tabs along the bolt or nut flats after the bolt or nut has been tightened to specification.



EB101040

BEARINGS AND OIL SEALS

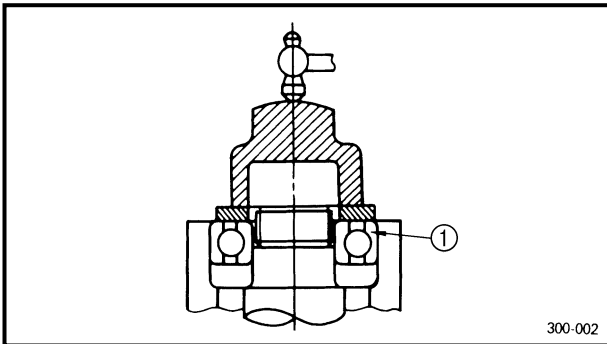
1. Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips. Oil bearings liberally when installing, if appropriate.

① Oil seal

CAUTION:

Do not use compressed air to spin the bearings dry. This will damage the bearing surfaces.

① Bearing

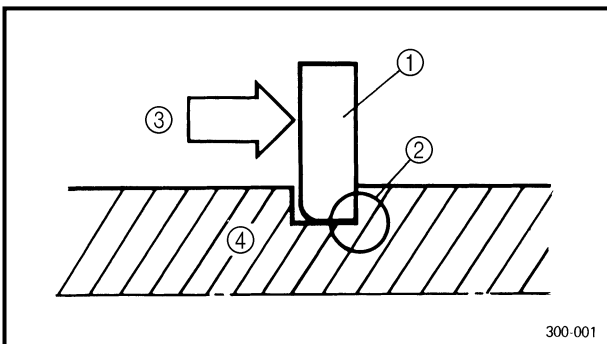


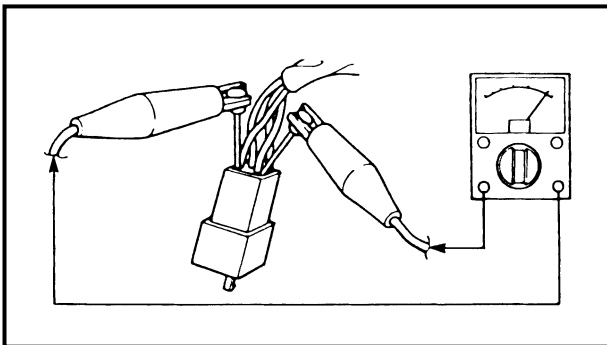
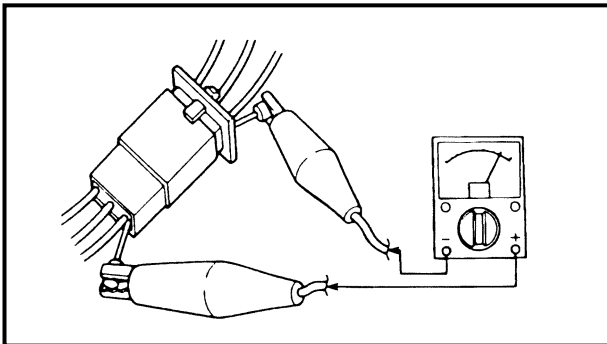
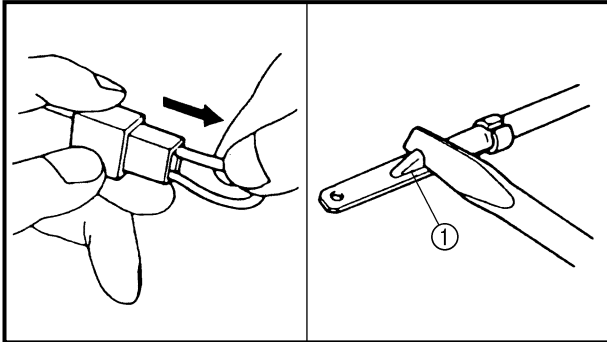
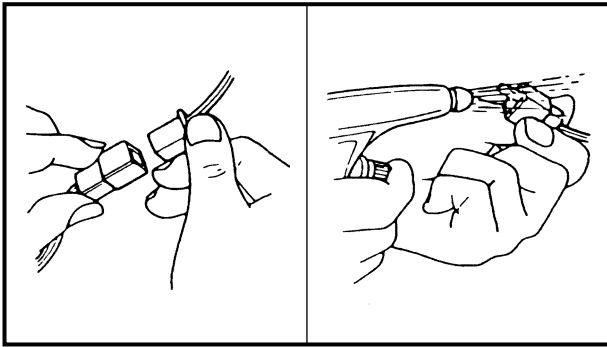
EB101050

CIRCLIPS

1. Check all circlips carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip ①, make sure that the sharp-edged corner ② is positioned opposite the thrust ③ it receives. See sectional view.

④ Shaft





EB801000

CHECKING OF CONNECTIONS

Check the connectors for stains, rust, moisture, etc.

1. Disconnect:

- Connector

2. Check:

- Connector

Moisture → Dry each terminal with an air blower.

Stains/rust → Connect and disconnect the terminals several times.

3. Check:

- Connector leads

Looseness → Bend up the pin ① and connect the terminals.

4. Connect:

- Connector terminals

NOTE:

The two terminals "click" together.

5. Check:

- Continuity (using a pocket tester)

NOTE:

- If there is no continuity, clean the terminals.

- When checking the wire harness be sure to perform steps 1 to 3.

- As a quick remedy, use a contact revitalizer available at most part stores.

- Check the connector with a pocket tester as shown.

EB102001

SPECIAL TOOLS

The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools; this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools may differ by shape and part number from country to country. In such a case, two types are provided.

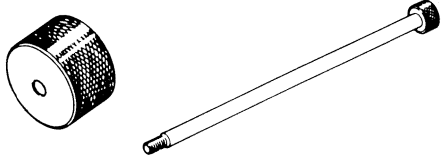
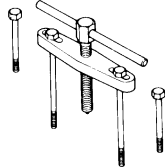
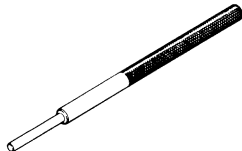
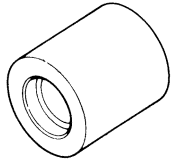
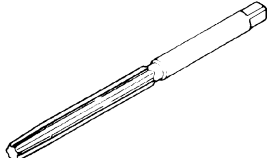
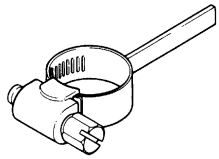
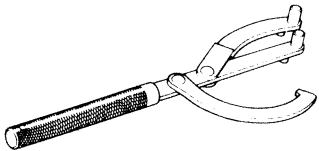
When placing an order, refer to the list provided below to avoid any mistakes.

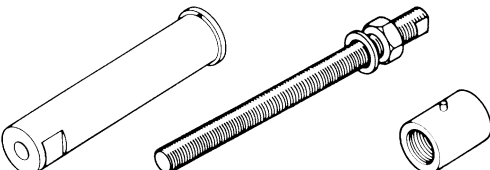
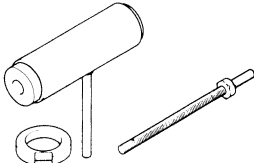

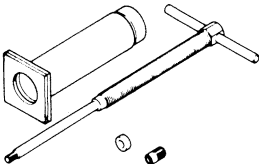
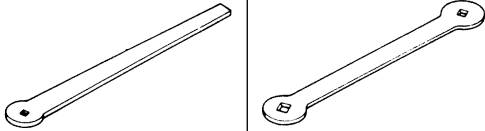

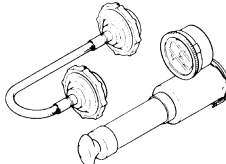

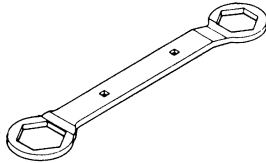
For US and CDN

P/N. YM-, YU-, YS-, YK-, ACC-

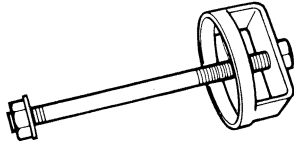
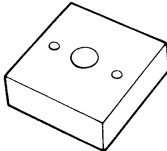
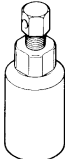

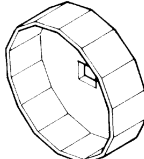

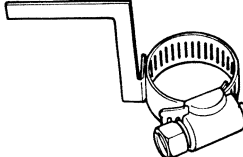
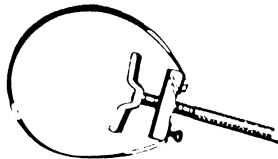
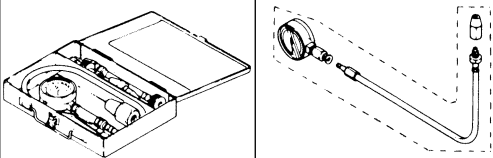
Except for US and CDN

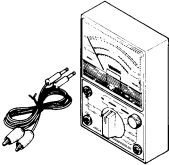
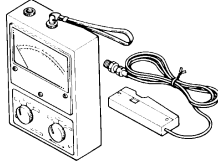

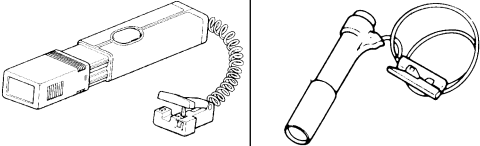
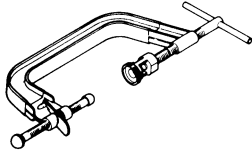
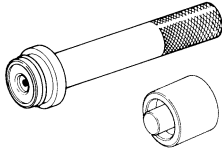

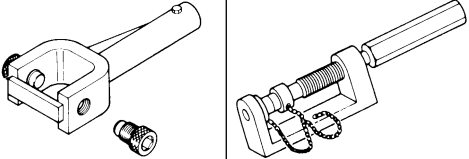
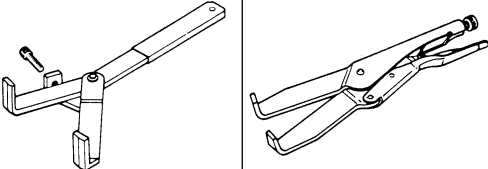
P/N. 90890-

Tool No.	Tool name/How to use	Illustration
Bolt 90890-01083 Weight 90890-01084 Set YU-01083-A	Slide hammer bolt (M6)/weight/set These tools are used to remove the rocker arm shaft.	
90890-01135 YU-01135-A	Crankcase separating tool This tool is used to separate the crankcase.	
90890-01225 YM-01225-A	Valve guide remover (7.0 mm) This tool is needed to remove and install the valve guide.	
90890-04017 YM-04017	Valve guide installer (7.0 mm) This tool is needed to install the valve guide.	
90890-01227 YM-01227	Valve guide reamer (7.0 mm) This tool is needed to rebores the new valve guide.	
90890-01231 YM-01231	Gear lash measurement tool This tool is used to measure the gear lash.	
90890-01235 YU-01235	Rotor holding tool This tool is needed to hold the starter puller when removing/installing the starter puller bolt or camshaft sprocket bolts.	

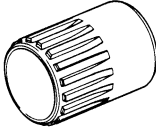
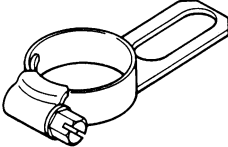
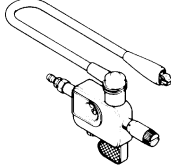
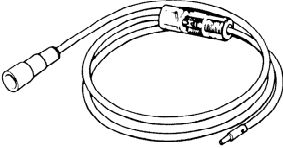
Tool No.	Tool name/How to use	Illustration
Kit 90890-04088 Bolt 90890-01275	Buffer boss installer set Crankshaft installer bolt These tools are used to install the crankshaft.	
YU-90050	Crankshaft installer set These tools are used to install the crankshaft.	
Adapter YM-33279 Spacer 90890-04060 YM-90070-A	Adapter (#11) Spacer (crankshaft installer) These tools are used to install the crankshaft.	
90890-01304 YU-01304	Piston pin puller This tool is used to remove the piston pin.	
90890-01311 YU-08035	Tappet adjusting tool (3 mm) This tool is necessary for adjusting the valve clearance.	
90890-01312 YM-01312-A	Fuel level gauge This gauge is used to measure the fuel level in the float chamber.	
90890-01325 YU-24460-01	Radiator cap tester This tool is used to check the cooling system.	
90890-01352 YU-33984	Adapter This tool is used to check the cooling system.	
90890-01348	Locknut wrench This tool is needed when removing or installing the secondary sheave spring.	



Tool No.	Tool name/How to use	Illustration
90890-04134 YM-04134	Sheave spring compressor This tool is needed when removing or installing the secondary sheave spring.	
90890-04135 YM-04135	Sheave fixed block This tool is needed when removing or installing the secondary sheave spring.	
90890-01404 YM-01404	Flywheel puller These tools are needed to remove the rotor.	
90890-01327 YM-01327	Damper rod holder (30 mm) This tool is needed to loosen and tighten the steering stem bearing retainer.	
90890-01426 YU-38411	Oil filter wrench This tool is needed to loosen or tighten the oil filter cartridge.	
90890-01430 YM-38404	Ring nut wrench This tool is needed to removing and installing the middle driven shaft bearing retainer.	
90890-01467 YM-01467 90890-01475 YM-01475	Gear lash measurement tool This tool is used to measure the gear lash.	
90890-01701 YU-01880	Sheave holder This tool is needed to hold the primary sheave when removing or installing the sheave bolts.	
Set 90890-03081 YU-33223 Adapter 90890-04082 YU-33223-3	Compression gauge set Adapter These tools are needed to measure engine compression.	

Tool No.	Tool name/How to use	Illustration	
90890-03112 YU-03112	<p>Pocket tester</p> <p>This instrument is needed for checking the electrical system.</p>		
90890-03113	<p>Engine tachometer</p> <p>This tool is needed for observing engine rpm.</p>		
YU-8036-A	<p>Inductive tachometer</p> <p>This tool is needed for observing engine rpm.</p>		
90890-03141 YM-33277-A	<p>Timing light</p> <p>This tool is necessary for checking ignition timing.</p>		
90890-04019 YM-04019	<p>Valve spring compressor</p> <p>This tool is needed to remove and install the valve assemblies.</p>		
Middle driven shaft bearing driver 90890-04058 YM-04058-1 Mechanical seal installer 90890-04078 YM-33221	<p>Middle driven shaft bearing driver Mechanical seal installer</p> <p>These tools are used to install the water pump seal.</p>		
90890-04050 YM-04050	<p>Bearing retainer wrench</p> <p>This tool is needed when removing or installing the final drive shaft bearing retainer.</p>		
90890-04062 YM-04062	<p>Universal joint holder</p> <p>This tool is needed when removing or installing the universal joint yoke nut.</p>		
90890-04086 YM-91042	<p>Clutch holding tool</p> <p>This tool is needed to hold the clutch carrier when removing or installing the carrier nut.</p>		



Tool No.	Tool name/How to use	Illustration
90890-04128 YM-04128	<p>Bearing retainer wrench</p> <p>This tool is needed when removing or installing the middle driven pinion gear bearing retainer.</p>	
90890-04129 YM-04129	<p>Pinion gear fix clamp</p> <p>This tool is used to hold the shift cam.</p>	
90890-06754	<p>Ignition checker</p> <p>This instrument is necessary for checking the ignition system components.</p>	
YM-34487	<p>Dynamic spark tester</p> <p>This instrument is necessary for checking the ignition system components.</p>	
Bond 90890-85505 Sealant ACC-11001-05-01	<p>Yamaha bond No. 1215 Sealant (Quick Gasket®)</p> <p>This sealant (bond) is used on crank-case mating surfaces, etc.</p>	