

## PERIODIC MAINTENANCE AND MINOR REPAIR

Periodic inspection, adjustment, and lubrication will keep your motorcycle in the safest and most efficient condition possible. Safety is an obligation of the motorcycle owner. The most important points of motorcycle inspection, adjustment, and lubrication are explained in the following pages.

**"Maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual using any part which is certified (if applicable)."**

**CAUTION:**

**If the owner is not familiar with motorcycle service, this work should be done by a Yamaha dealer or other qualified mechanic.**

### PERIODIC MAINTENANCE

PROPER PERIODIC MAINTENANCE OF YOUR MOTORCYCLE IS IMPORTANT TO ITS GIVING YOU LONG, PLEASURABLE SERVICE: ESPECIALLY IMPORTANT ARE THE MAINTENANCE SERVICES RELATED TO EMISSIONS CONTROL. THESE CONTROLS NOT ONLY FUNCTION TO ENSURE CLEANER AIR BUT ARE ALSO VITAL TO PROPER ENGINE OPERATION AND MAXIMUM PERFORMANCE. IN THE FOLLOWING TABLES OF PERIODIC MAINTENANCE, THE SERVICES RELATED TO EMISSIONS CONTROL ARE GROUPED SEPARATELY, THESE SERVICES REQUIRE SPECIALIZED DATA, KNOWLEDGE, AND EQUIPMENT. YAMAHA DEALERS ARE TRAINED AND EQUIPPED TO PERFORM THESE PARTICULAR SERVICES.

### Tool kit

The service information included in this manual is intended to provide you, the owner, with the necessary information for completing some of your own preventive maintenance and minor repairs. The tools provided in the owner's tool kit are sufficient for most of these purposes, except that a torque wrench is also necessary to properly tighten nuts and bolts.



1. Tool kit

### NOTE:

If you do not have a torque wrench available during a service operation requiring one, take Your motorcycle to a Yamaha dealer or other qualified mechanic to check the torque settings and adjust them as necessary.

### WARNING:

Modifications to this motorcycle not approved by Yamaha may cause loss of performance, excessive emissions, and render it unsafe for use. Consult your dealer before attempting any changes.

## A. Periodic maintenance emission control system

NO.	ITEM	REMARKS	INITIAL BREAK-IN		THEREAFTER EVERY	
			1,000 km or 1 month (600 mi)	5,000 km or 7 months (3,000 mi)	4,000 km or 6 months (2,500 mi)	8,000 km or 12 months (5,000 mi)
1*	Cam chain	Check and adjust chain tension.	○	○		○
2*	Valve Clearance	Check and adjust valve clearance when engine is cold.	○	○		○
3	Spark Plugs	Check condition. Adjust gap. Replace after initial 13,000 km or 18 months.		○	○	Replace every 12,000 km or 18 months
4*	Crankcase Ventilation System	Check ventilation hose for cracks or damage. Replace if necessary.		○		○
5*	Fuel Hose	Check fuel hose for cracks or damage. Replace if necessary.		○		○
6*	Exhaust System	Check for leakage. Retighten if necessary. Replace gasket(s) if necessary		○	○	
7*	Carburetor Synchronization	Adjust synchronization of carburetors.		○	○	
8*	Idle Speed	Check and adjust engine idle speed. Adjust cable free play if necessary.		○	○	

\*It is recommended that these items be inspected and serviced by your Yamaha Dealer or other qualified mechanic.

## Spark plug inspection

The spark plug is an important engine component and is easy to inspect. The condition of the spark plug can indicate something of the condition of the engine.

Normally, all spark plugs from the same engine should have the same coloration on the white porcelain insulator around the center electrode. The ideal coloration at this point is a medium to light tan color for a motorcycle that is being ridden normally. If one spark plug shows a distinctly different color, there could be something wrong with the engine. For example, a very white center electrode porcelain color could indicate an intake tract air leak or carburetion problem for that cylinder. Do not attempt to diagnose such problems yourself. Instead, take the motorcycle to your Yamaha dealer or other qualified mechanic.

You should periodically remove and inspect the spark plug because heat and deposits will cause any spark plug to slowly break down and erode. If electrode erosion becomes excessive, or if carbon and other deposits are excessive, you should replace the spark plug with one of the proper type.

Standard spark plug:

BP7ES (NGK) or N-7Y (CHAMPION)

Before installing any spark plug, measure the electrode gap with a wire thickness gauge and adjust to specifications.

Spark plug gap:

0.7 ~ 0.8 mm (0.028~ 0.032 in)

When installing the plug, always clean the gasket surface and use a new gasket. Wipe

off any grime from the threads and torque the spark plug properly.

Spark plug torque:

2.0 m-kp (14.5 ft-lb)

**NOTE:** \_\_\_\_\_

If a torque wrench is not available when you are installing a spark plug, a good estimate of the correct torque is 1/4 to 1/2 turns past finger tight. Have the spark plug torqued to the correct value as soon as possible with a torque wrench.

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## B. General maintenance/lubrication

NO	ITEM	REMARKS	TYPE	INITIAL BREAK-IN		THEREAFTER EVERY		
				1,000 km or 1 month (600 mi)	5,000 km or 7 months (3,000 mi)	4,000 km or 6 months (2,500 mi)	8,000 km or 12 months (5,000 mi)	16,000 km or 24 months (10,000 mi)
1	Engine Oil	Warm-up engine before draining	Yamalube 4-cycle oil or SAE 20W/40 "SE" motor oil	○	○	○		
2	Oil Filter	Clean element in solvent	—		○		○	
3*	Air Filter	Dry type filter. Clean with compressed air.	—		○		○	
4*	Brake System	Adjust free play. Replace pads (front brake only) or shoes (rear brake only) if necessary.	—	○	○	○		
5*	Clutch	Adjust free play	—	○	○	○		
6	Drive Chain	Check chain condition. Adjust and lubricate chain thoroughly.	Yamaha chain and cable lube or SAE 10W/30 motor oil	CHECK CHAIN TENSION AND LUBE EVERY 500 km (300 mi).				
7	Control and Meter Cable	Apply cable lube thoroughly.	Yamaha chain and cable lube or SAE 10W/30 motor oil	○	○	○		
8	Rear Arm Pivot Shaft	Apply until new grease shows.	—			○		
9	Brake Pedal and Change Pedal Shaft	Lubricate. Apply chain lube lightly.	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○		
10	Brake/Clutch Lever Pivot Shafts	Apply chain lube lightly	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○		

NO.	ITEM	REMARKS	TYPE	INITIAL BREAK-IN		THEREAFTER EVERY		
				1,000 km or 1 month (600 mi)	5,000 km or 7 months (3,000 mi)	4,000 km or 6 months (2,500 mi)	8,000 km or 12 months (5,000 mi)	16,000 km or 24 months (10,000 mi)
11	Center and Side Stand Pivots and Kick Crank Boss	Lubricate. Apply chain lube lightly.	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○		
12	*Front Fork Oil	Drain completely. Refill to specification	Yamaha fork oil 10wt or equivalent					○
13	*Steering Bearings	Check bearings assembly for looseness. Moderately repack every 16,000 km (10,000 mi)	Medium weight wheel bearing grease.		○	○		Repack
14	*Wheel Bearings	Check bearings for smooth rotation.	—		○	○		
15	Battery	Check specific gravity. Check breather pipe for proper operation.	—		○	○		
16	*A.C. Generator	Replace generator brushes. Replace at initial 8,000 km (5,000 mi)	—				○	

\*It is recommended that these items be inspected and serviced by your Yamaha dealer or other qualified mechanic.

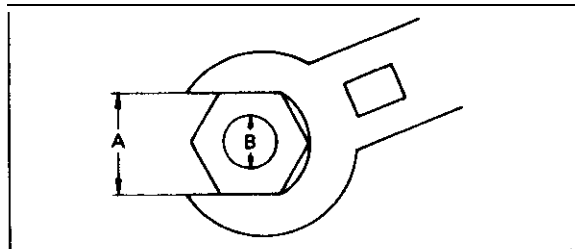
## Torque specifications

(For a more complete list, refer to the Service Manual for this model.)

Use a torque wrench to tighten these items. It is recommended that these items should be checked occasionally, especially before a long trip. Always check the tightness of these items whenever they are loosened for any reason.

A (Nut)	B (Bolt)	General Torque Specifications	
		m-kg	ft-lb
10 mm	6 mm	0.6	4.5
12 mm	8 mm	1.5	11
14 mm	10 mm	3.0	22
17 mm	12 mm	5.5	40
19 mm	14 mm	8.5	61
22 mm	16 mm	13.0	94

Item	Torque
Spark plug	2.0 m-kg (14.5 ft-lb)
Engine drain plug	4.2 m-kg (30.5 ft-lb)
Kick starter	2.0 m-kg (14.5 ft-lb)
Change pedal	1.0 m-kg ( 7.0 ft-lb)
Front engine mount bolts	4.6 m-kg (33.6 ft-lb)
Rear engine mount bolts	9.0 m-kg (65.0 ft-lb)
Steering pinch bolts (8mm)	1.0 m-kg ( 7.0 ft-lb)
Shock absorber (Top)	3.0 m-kg (21.5 ft-lb)
Shock absorber (bottom)	3.9 m-kg (28.0 ft-lb)
Front wheel axle	10.7 m-kg (77.4 ft-lb)
Front axle holder	1.4 m-kg (10.1 ft-lb)
Rear wheel axle	16.0 m-kg (118.6 ft-lb)





## Engine oil

### 1. Oil level measurement

- a. Place the motorcycle on the center stand.  
Warm up the engine for several minutes.

**NOTE:** \_\_\_\_\_

Be sure the motorcycle is positioned straight up when checking the oil level; a slight tilt toward the side can produce false readings.

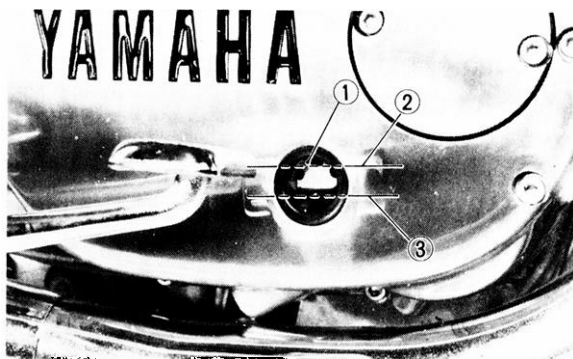
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- b. With the engine stopped, check the oil level through the level window located at the lower part of the right side crankcase cover, or screw the dip stick completely out and then the stick in the hole.

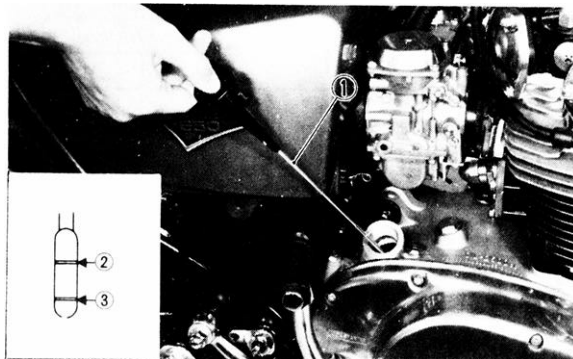
**NOTE:** \_\_\_\_\_

Wait a few minutes until the oil level settles before checking. When checking engine oil level with the dip stick, let the unscrewed dip stick rest on the case threads.

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1. Level window 2. Maximum level 3. Minimum level



1. Dip stick 2. Maximum level 3. Minimum level

- c. **The oil level should be between maximum and minimum levels. If the level is lower, add sufficient oil to raise it to the proper level.**
- 2. **Engine oil replacement**
  - a. Start the engine and stop it after a few minutes of warm up.
  - b. Place an oil pan under the engine.
  - c. Remove the drain plugs and drain the oil.
  - d. Reinstall the drain plugs (make sure it is tight).

Drain plug torque:

4.2 m·kg (30.5 ft·lb)

- e. Add oil through the dip stick hole.

**Periodic oil change: 2.0 lit (2.1 US qt)**

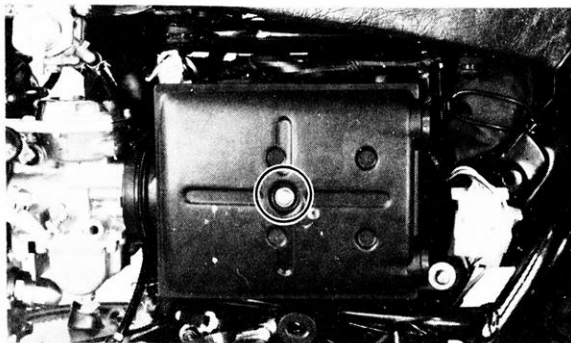
**Recommended oil: See page 21**

- f. **After replacement of engine oil, be sure to check the oil leakage.**

## **Air filter**

### **1. Removal**

- a. **Remove the right and left side covers and remove the bolts holding the right and left air cleaner case.**



- b. **Remove the air filter element.**

### **2. Cleaning method**

**Tap the element lightly to remove most of the dust and dirt; then blow out the remaining dirt from the inner surface of**