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:

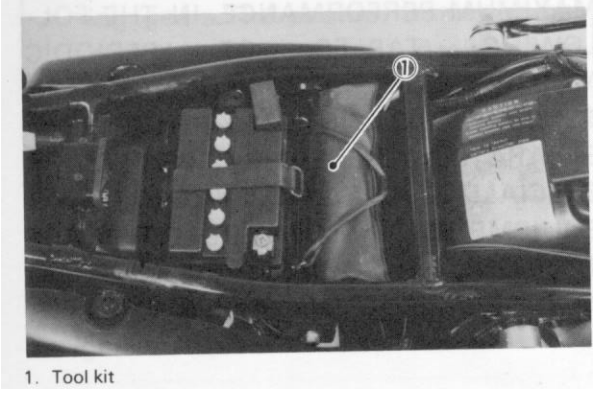
If the owner is not familiar with motorcycle service, this work should be done by a Yamaha dealer or other qualified mechanic.

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 can render it unsafe for use. Consult your Yamaha dealer or other qualified mechanic before attempting any changes.**

PERIODIC MAINTENANCE EMISSION CONTROL SYSTEM

No	Item	Remarks	Initial break-in		Thereafter every	
			1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4.000 km (2.500 mi) or 6 months	8,000 km (5.000 mi) or 12 months
1*	Cam chain	Check and adjust chain tension,	0	0		0
2*	Valve clearance	Check and adjust valve clearance when engine is cold.		0		0
3	Spark plugs	Check condition. Adjust gap. Clean. Replace after initial 1,300 km (8,000 mi).		0	0	Replace. Every 12,000 km or 18 months (7.500 mi).
4*	Crankcase ventilation system	Check ventilation hose for cracks or damage. Replace if necessary.		0		0
5*	Fuel line	Check fuel hose for cracks or damage. Replace if necessary.		0		0
6*	Exhaust system	Check for leakage. Retighten as necessary. Replace gasket(s) if necessary.		0	0	
7*	Carburetor synchronization	Adjust synchronization of carburetors.		○	○	
8*	Idle speed	Check and adjust engine idle speed. Adjust cable free play if necessary.		0	0	

* It is recommended that these items be 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 color on the white porcelain insulator around the center electrode. The ideal color 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-kg (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 tights. Have the spark plug torqued to the correct value as soon as possible with a torque wrench.

No	Item	Remarks	Type	Initial break-In		Thereafter every		
				1,000 km (600 mi) or 1 month	5,000 km (3.000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 ml) or 12 months	16,000 km (10,000 ml) or 24 months
1	Engine oil	Warm-up engine before draining	Refer to page 38	0	0	0		
2	Oil filter	Replace	—	0	0		0	
3	gear oil	Replace	Refer to page 40	0			0	
4	Air filter	Dry type filter Clean with compressed air	—		0		0	
5*	Brake system	Adjust free play Replace pads if necessary	—	0	0	0		
6*	Clutch	Adjust free play	—	0	0	0		
7*	Control and meter cable	Apply chain lube thoroughly	Yamaha chain and cable lube or 10W/30 motor oil	0	0	0		
8*	Rear arm pivot bearings	Check bearings assembly for looseness. Moderately repack every 16,000 km (10,000 ml)	Medium weight wheel bearing grease					Repack
9	Brake pedal and change pedal shaft	Apply lightly	Yamaha chain and cable lube or 10W/30 motor oil		0	0		

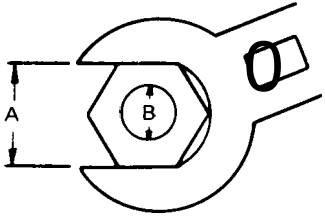
No.	Item	Remarks	Type	Initial break-in		Thereafter every		
				1,000 km (600 mi) or month	5,000 km (3,000 mi) or 7 months	4.000 km (2.500 mi) or 6 months	8,000 km (5.000 mi) or 12 months	16.000 km (10.000 mi) or 24 month'
10	Center and side stand pivots	Apply lightly	Yamaha chain and cable lube or 10W/30 motor oil		0	0		
11*	Front fork oil	Drain completely. Refill to specification	Yamaha fork oil 10Wt or equivalent					0
12*	Steering ball bearing and races	Check bearings assembly for looseness. Moderately repack every 16,000 km (10,000 mi)	Medium weight wheel bearing grease.		0	0		Repack
13*	Wheel bearings	Check bearings for smooth rotation. Replace if necessary	—		0	0		
14	Battery	Check specific gravity. Check breather pipe for proper operation	—		0	0		

• It is recommended that these items be 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	4.3 m-kg (31.0 ft-lb)
Middle drain gear plug	4.3 m-kg (31.0 ft-lb)
Oil filter bolt	3.2 m-kg (23.0 ft-lb)
Change pedal	1.0 m-kg (7.0 ft-lb)
Front engine mount bolts	5.5 m-kg (40.0 ft-lb)
Rear engine mount bolts	2.5 m-kg (18.0 ft-lb)
Steering pinch bolts	1.5 m-kg (11. 0 ft-lb)
Shock absorber (top)	3.0 m-kg (21.5 ft-lb)
(bottom)	3.9 m-kg (28.0 ft-lb)
Front wheel axle	10.5 m-kg (76.0 ft-lb)
Front axle holder	2.0 m-kg (14.5 ft-lb)
Rear wheel axle	15.0 m-kg (108.5 ft-lb)
Rear axle pinch bolt	0.6 m-kg (4.5 ft-lb)
Front brake caliper bolt	2.5 m-kg (18.0 ft-lb)
Final gear drain plug	2.3 m-kg (16.5 ft-lb)

Engine oil

1. Oil level measurement

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

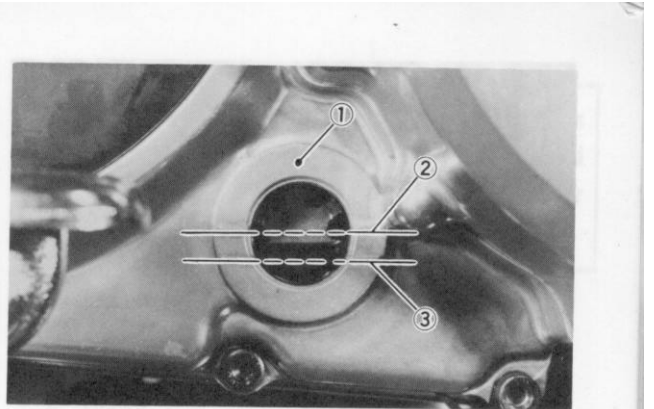
NOTE:

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

b. With the engine stopped, check the oil level through the level window located at the lower part of the right side crankcase cover.

NOTE:

Wait a few minutes until the oil level settles before checking.



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

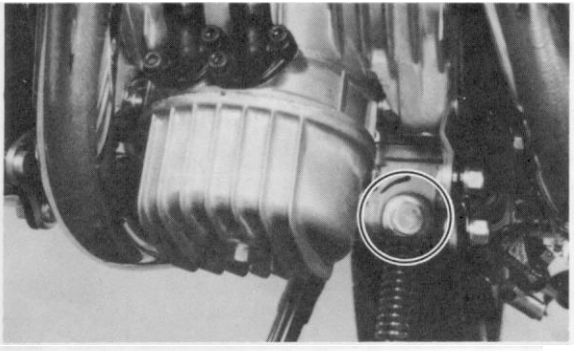
c. The oil level should be between maximum and minimum marks. If the level is lower. add sufficient oil to raise it to the proper level.

2. Engine oil and oil filter replacement

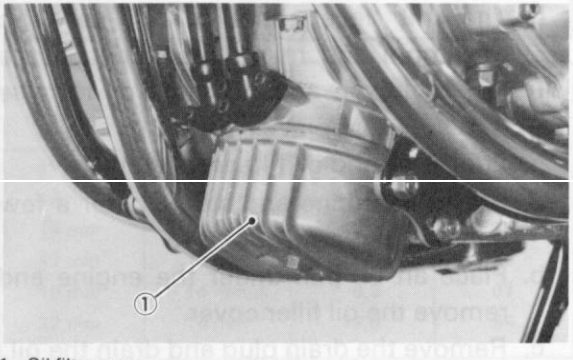
a. Start the engine and stop it after a few minutes of warm-up.

b. Place an oil pan under the engine and remove the oil filler cover.

c. Remove the drain plug and drain the oil.



d. Remove the oil filter bolt and filter element.



1. Oil filter cover

e. Re-install the drain plug (make sure it is tight).

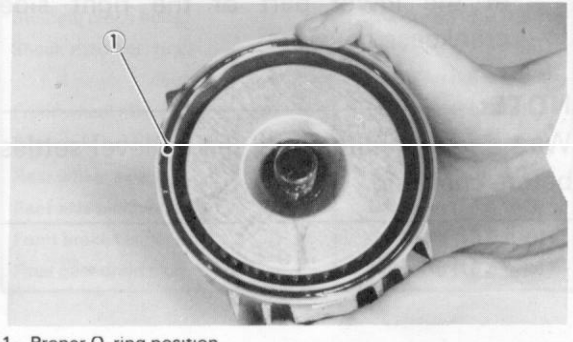
Drain plug torque: 4.3 m-kg (31 .0 ft-lb)

f. Install the new oil filter element. new "O" ring and filter cover, tighten the oil filter bolt.

Oil filter bolt: 3.2 m-kg (23.0 ft-lb)

NOTE:

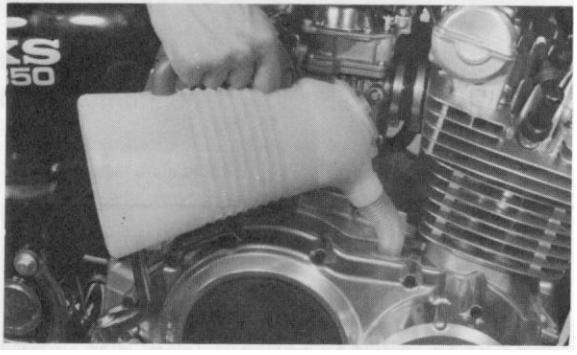
Make sure the "O" ring is positioned properly.



1. Proper O-ring position

g. Add oil through the oil filler hole.

Periodic oil change:
2.8 lit (2.96 US qt)
With oil filter replacement:
3.1 lit (3.28 US qt)
Recommended oil: See page 17.



h After replacement of engine oil, and/or oil filter, be sure to check the oil pressure and for any oil leakage. The oil pressure indicator light should go off after the engine is started.

CAUTION:
If the indicator light flickers or remains on, immediately stop the engine and consult your Yamaha dealer or other qualified mechanic.

Middle gear/Final gear oil

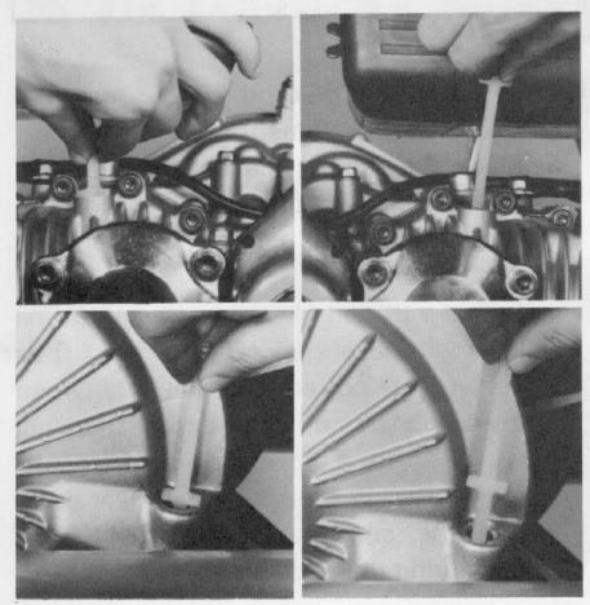
1. Oil level measurement

a. Place the motorcycle on a level place and place it on the center stand. The engine should be cool (at atmospheric temperature).

b Remove the oil filler cap. Check the oil level with level gauge (from tool kit) as shown. The correct oil level is between the two marks on each end of the level gauge. Use the tool end marked “REAR” for measuring the rear (final) gear case. Use the end marked “MIDDLE” for measuring the middle gear case.

NOTE:

Middle gear and final gear oil can be checked with same level gauge, which is in the owners tool kit.



CAUTION:

Take care not to allow foreign material to enter the middle and/or final gear case.

2. Gear oil replacement

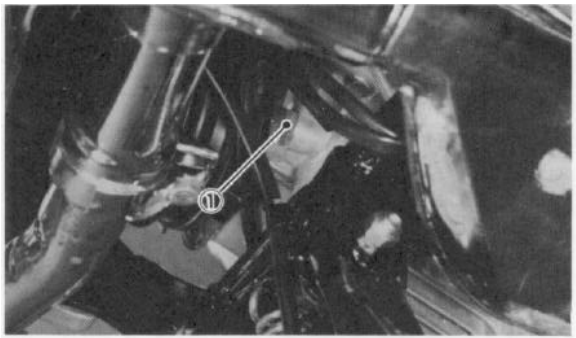
a. Place an oil pan under the transmission for the middle gear and under the final gear case.

b. Remove the middle and/or final gear oil filler cap(s) and the drain plug(s), and drain the oil.

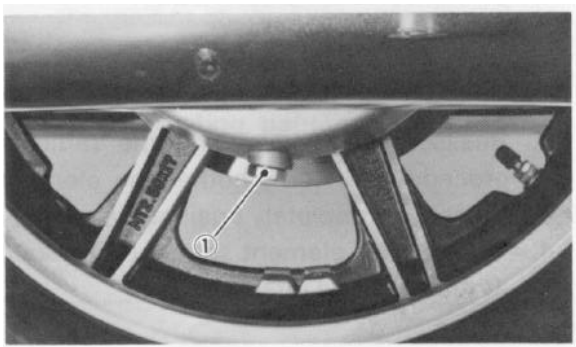
WARNING:

When draining or filling, take care not to allow foreign material to enter the middle and/or final gear case. Do not allow the gear oil to contact the tire and wheel.

c. Reinstall and tighten the middle and/or final gear drain plug(s). (See page 37 for torque specifications.)



1 Middle gear drain plug



1. Final gear drain plug

d. Fill the gear case(s) to the specified level.

Oil capacity:
Middle gear case:
Approx. 0.375 lit (0.40 US qt)
Final gear case:
Approx. 0.30 lit (0.32 US qt)
Recommended oil: See page 18.

e. Reinstall the filler cap(s) securely.

Air filter

1. Removal

a. Remove the air filter case cap by loosening the wing bolt.