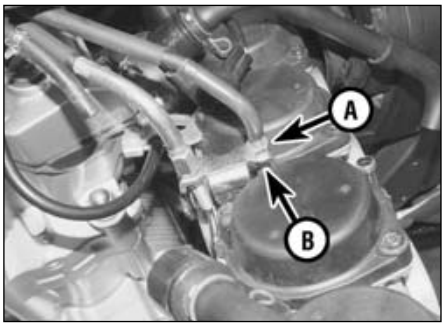
17.3 Measure the amount of freeplay in the throttle as shown

17.4 Slacken the lockring (arrowed) and turn the adjuster as required



17.6 Slacken the top nut (A) and slide the cable in the bracket until the bottom nut (B) is clear of the lug, then thread it up or down as required

with an antifreeze hydrometer. Sometimes coolant looks like it is in good condition, but it might be too weak to offer adequate protection. If the hydrometer indicates a weak mixture, drain, flush and refill the system (see Section 26).

9 Start the engine and let it reach normal operating temperature, then check for leaks again. As the coolant temperature increases beyond normal, the fan should come on automatically and the temperature should begin to drop. If it does not drop, refer to Chapter 3 and check the thermo switch, fan motor and fan circuit.

10 If the coolant level is consistently low, and no evidence of leaks can be found, have the entire system pressure-checked by a Yamaha dealer.

17 Throttle and choke cable check

Every 6000 miles (10,000 km) – Europe models

Every 4000 miles (6400 km) – US models

Throttle cables

1 Make sure the throttle twistgrip rotates easily from fully closed to fully open and returns automatically from fully open to fully closed when released. Do this with the front wheel turned at various angles to make sure the cables aren't binding at any point.

2 If the throttle sticks, this is probably due to a cable fault. Remove the cables (see Chapter 4) and lubricate them (see Section 18). If the inner cables still do not run smoothly in the outer cables, replace them with new ones. With the cables removed, check that the twistgrip runs smoothly and freely around the handlebar – dirt and debris combined with a lack of lubrication can cause the action to be stiff. Install the lubricated or new cables, making sure they are correctly routed (see Chapter 4). If this fails to improve the operation of the throttle, the fault could lie in the carburettors. Remove them and check the action of the throttle linkage and butterflies (see Chapter 4).

3 With the throttle operating smoothly, check for a small amount of freeplay in the cables, measured in terms of the amount of twistgrip rotation before the throttle opens, and compare the amount to that listed in this Chapter's Specifications **(see illustration)**. If it is incorrect, adjust the cables to correct it as follows.

4 Loosen the adjuster lockring **(see illustration)**. Turn the adjuster until the specified amount of freeplay is obtained (see this Chapter's Specifications), then retighten the lockring. Turn the adjuster in to increase freeplay and out to reduce it. Refit the rubber boot on completion.

5 If the adjuster has reached its limit of adjustment, reset it so that the freeplay is at a maximum, then adjust the cable at the carburettor end as follows. Raise the fuel tank (see Chapter 4).

6 Slacken the accelerator (opening) cable top nut and slide the cable down in the bracket until the bottom nut is clear of the lug, then thread the bottom nut up or down as required – thread it down to reduce freeplay, and thread it up to increase it **(see illustration)**. Draw the cable up into the bracket so the bottom nut becomes captive against the lug, then tighten the top nut down onto the bracket. Further adjustments can now be made at the throttle end. If the cable cannot be adjusted as specified, replace the cable with a new one (see Chapter 4).

Warning: Turn the handlebars all the way through their travel with the engine idling. Idle speed should not change. If it does, the cable may be routed incorrectly. Correct this condition before riding the bike.

7 Check that the throttle twistgrip operates smoothly and snaps shut quickly when released. Install the fuel tank (see Chapter 4).

Choke cable

8 If the choke does not operate smoothly this is probably due to a cable fault. Remove the cable (see Chapter 4) and lubricate it (see Section 18). If the inner cable still does not run smoothly in the outer cable, replace it with a new one. Install the cable, routing it so it takes the smoothest route possible.

9 If this fails to improve the operation of the choke, check that the lever is not binding in the switch housing. If the lever action is good, the fault could lie in the carburettors rather than the cable, necessitating their removal and inspection of the choke plungers (see Chapter 4).

10 Make sure there is a small amount of freeplay in the cable before the plungers move. If there isn't, check that the cable is seating correctly at the carburettor end – raise the fuel tank (see Chapter 4) for access. You can create some freeplay in the cable by slackening the outer cable clamp screw on the carburettor and sliding the cable further into the clamp. Otherwise, replace the cable with a new one.

18 Stand, lever pivot and cable lubrication

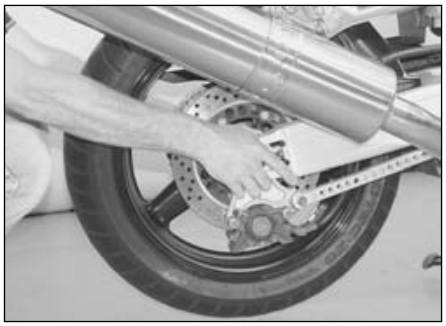
Every 6000 miles (10,000 km) – Europe models

Every 4000 miles (6400 km) – US models

1 Since the controls, cables and various other components of a motorcycle are exposed to the elements, they should be lubricated periodically to ensure safe and trouble-free operation.

2 The footrests, clutch and brake levers, brake pedal, gearchange lever linkage and stand pivots should be lubricated frequently. In order that the lubricant is applied where it will do the most good, the component should be disassembled. The lubricant recommended by Yamaha for each application is listed at the beginning of the Chapter. If chain or cable lubricant is being used, it can be applied to the pivot joint gaps and will usually work its way into the areas where friction occurs, so less disassembly of the component is needed (however it is always better to do so and clean off all corrosion, dirt and old lubricant first). If motor oil or light grease is being used, apply it sparingly as it may attract dirt (which could

18.3 Lubricating a cable with a pressure lubricator. Make sure the tool seals around the inner cable



19.7 Checking for play in the swingarm bearings

19.8 Checking for play in the suspension linkage bearings

cause the controls to bind or wear at an accelerated rate). **Note:** *One of the best lubricants for the control lever pivots is a dry-film lubricant (available from many sources by different names)*.

3 To lubricate the throttle, choke and clutch cables, disconnect the relevant cable at its upper end, then lubricate the cable with a pressure adapter and aerosol lubricant **(see illustration)**. See Chapter 4 for the throttle and choke cable removal procedures, and Chapter 2 for the clutch cable.

19 Suspension check

Every 6000 miles (10,000 km) – Europe models

Every 4000 miles (6400 km) – US models

1 The suspension components must be maintained in top operating condition to ensure rider safety. Loose, worn or damaged suspension parts decrease the motorcycle's stability and control.

Front suspension

2 While standing alongside the motorcycle, apply the front brake and push on the handlebars to compress the forks several times. See if they move up and down smoothly without binding. If binding is felt, the forks should be disassembled and inspected (see Chapter 6).

3 Inspect the area above and around each dust seal for signs of scratches, corrosion and pitting, and oil leakage, then carefully lever up the dust seal using a flat-bladed screwdriver and inspect the area around the fork seal. If leakage is evident, the seals in each fork must be replaced with new ones (see Chapter 6). If there is pitting in the chrome tubes within the extent of fork travel, you should consider replacing them with new ones as it will eventually cause the seals to fail. If there is evidence of corrosion between the seal retaining ring and its groove spray the area with a penetrative lubricant, otherwise the ring will be difficult to remove if needed. Press the dust seal back into place on completion..

4 Check the tightness of all suspension nuts and bolts to be sure none have worked loose, applying the torque settings at the beginning of Chapter 6 if you have a torque wrench.

Rear suspension

5 Inspect the rear shock absorber for damage and fluid leakage and tightness of its mountings. If leakage is found, the shock must be replaced with a new one (see Chapter 6).

6 With the aid of an assistant to support the bike, compress the rear suspension several times. It should move up and down freely without binding. If any binding is felt, the worn or faulty component must be identified and checked (see Chapter 6). The problem could be due to either the shock absorber, the suspension linkage components or the swingarm components.

7 Support the motorcycle on its centrestand. Grab the swingarm and rock it from side to side – there should be no discernible movement at the rear **(see illustration)**. If there's a little movement or a slight clicking can be heard, inspect the tightness of all the swingarm and rear suspension mounting bolts and nuts, referring to the procedures and torque settings specified at the beginning of Chapter 6, and re-check for movement.

8 Next, grasp the top of the rear wheel and pull it upwards – there should be no discernible freeplay before the shock absorber begins to compress **(see illustration)**. Any freeplay felt in either check indicates worn bearings in the suspension linkage or swingarm, or worn suspension mountings. The worn components must be identified and replaced with new ones (see Chapter 6).

9 To make an accurate assessment of the swingarm bearings, remove the rear wheel (see Chapter 7) and the nut and bolt securing the suspension linkage rods to the swingarm (see Chapter 6). Grasp the rear of the swingarm with one hand and place your other hand at the junction of the swingarm and the frame. Try to move the rear of the swingarm from side to side. Any wear (play) in the bearings should be felt as movement between the swingarm and the frame at the front. If there is any play, the swingarm will be felt to move forward and backward at the front (not from side-to-side). Alternatively, measure the amount of freeplay at the swingarm end – Yamaha specify a maximum of 1 mm. Next, move the swingarm up and down through its full travel. It should move freely, without any binding or rough spots. If any play in the swingarm is noted or if the swingarm does not move freely, the bearings must be removed for inspection or renewal (see Chapter 6).

20 Steering head bearing check and adjustment

Every 6000 miles (10,000 km) – Europe models

Every 4000 miles (6400 km) – US models

1 Steering head bearings can become dented, rough or loose during normal use of the machine. In extreme cases, worn or loose steering head bearings can cause steering wobble – a condition that is potentially dangerous.

Check

2 Support the motorcycle on its centrestand on level ground. Place a jack under the engine, with a piece of wood between the jack head and the sump to cushion and spread the load, and raise the front wheel off the ground. Alternatively have an assistant push down on the rear of the bike.

3 Point the front wheel straight-ahead and move the handlebars slowly from side-to-side. Any dents or roughness in the bearing races will be felt and the bars will not move smoothly and freely. Again point the wheel straight-ahead, and tap the front of the wheel to one side. The wheel should 'fall' under its own weight to the limit of its lock, indicating that the bearings are not too tight. Check for similar movement to the other side. If the steering doesn't perform as described, and