

1•10 Routine maintenance and servicing



5.6 Carburettor synchronisation set-up

5 Arrange a temporary fuel supply using an auxiliary tank and some hosing.

6 Start the engine and let it idle. If the gauges are fitted with damping adjustment, set this so that the needle flutter is just eliminated but so that they can still respond to small changes in pressure (see illustration).

7 The vacuum readings for all cylinders should be the same. If the vacuum readings differ, proceed as follows.

8 The carburettors are balanced by turning the synchronising screws situated in between each carburettor, in the throttle linkage (see illustration). **Note:** Do not press on the screws whilst adjusting them, otherwise a false reading will be obtained. First synchronise No. 1 carburettor to No. 2 using the left-hand synchronising screw until the gauge readings are the same. Then synchronise No. 3 carburettor to No. 4 using the right-hand screw. Finally synchronise Nos. 1 and 2 carburettors to Nos. 3 and 4 using the centre screw.

9 When all the carburettors are synchronised, open and close the throttle quickly to settle the linkage, and recheck the gauge readings, readjusting if necessary.

10 When the adjustment is complete, adjust the idle speed (see Section 4), and check the throttle cable freeplay (see Section 7). Remove the gauges and refit the joining plugs and the hose clips (see illustration 5.4a). Detach the temporary fuel supply and install the fuel tank (see Chapter 4).

6 Fuel system and air induction system (AIS) – check



Interval:

1999 and 2000 models –
every 6000 km (3700 miles)

2001-on models –
every 10,000 km (6000 miles)



Warning: Petrol (gasoline) is extremely flammable, so take extra precautions when you work on any part of the fuel

system. Don't smoke or allow open flames or bare light bulbs near the work area, and don't work in a garage where a natural gas-type appliance is present. If you spill any fuel on your skin, rinse it off



5.8 The synchronisation screws are located in the linkage between the carburettors

immediately with soap and water. When you perform any kind of work on the fuel system, wear safety glasses and have a fire extinguisher suitable for a Class B type fire (flammable liquids) on hand.

Fuel system – check

1 Remove the fuel tank (see Chapter 4) and check the tank, fuel tap and fuel hoses, and the filter and fuel pump, for signs of leakage, deterioration or damage; in particular check that there is no leakage from the fuel hoses. Renew any hoses which are cracked or have deteriorated (see Section 34).

2 If the tap has been leaking from the face, tightening the assembly screws on the face may help. Slacken the screws a little first, then tighten them evenly and a little at a time to ensure the cover seats properly on the tap body. If leakage persists, remove the screws on the face of the tap and disassemble it, noting how the components fit. Inspect all components for wear or damage, and renew the O-ring. None of the other components are available individually, so if they are worn fit a new tap. If the tap has been leaking from the base, tightening the mounting screws may help. Otherwise, remove the tap and fit a new O-ring (see Chapter 4). Remove any corrosion or paint bubbles before installing the tap.

3 If the carburettor gaskets are leaking, the carburettors should be disassembled and rebuilt using new gaskets and seals (see Chapter 4).

Air induction system (AIS) – check (California models)

4 If the valves clearances are all correct and the carburettors have been synchronised and have no other faults, but the idle speed cannot be set properly, it is possible that the AIS is faulty. Information on the function of the system is in Chapter 4.

5 Remove the fairing side panels (see Chapter 8). Check the air cut-off valve and the reed valve assembly on the front of the engine for signs of physical damage and replace it with a new one if necessary (see Chapter 4).

6 Check the AIS hoses and pipes for signs of deterioration or damage, and check that they are all securely connected with the hoses clamped at each end. Replace any hoses which are cracked or deteriorated with new ones (see Chapter 4).

7 Remove the reed valve assembly and disassemble it for inspection and cleaning (see Chapter 4).

8 Any further testing of the air induction system requires the use of an exhaust gas analyser and temperature sensors. If the system is thought to be faulty, take the bike to a Yamaha dealer for assessment. Make sure that the idle speed, valve clearances and carburettor synchronisation have all been checked before assuming that the AIS is faulty.

7 Throttle and choke cables – check and adjustment



Interval:

1999 and 2000 models –
every 6000 km (3700 miles)

2001-on models –
every 10,000 km (6000 miles)

Throttle cables

1 Make sure the throttle twistgrip rotates easily from fully closed to fully open with the front wheel turned at various angles. The twistgrip should return automatically from fully open to fully closed when released.

2 If the throttle sticks, this is probably due to a cable fault. Remove the cables (see Chapter 4) and lubricate them (see Section 9). If the inner cables still do not run smoothly in the outer cables, renew the cables.

3 With the cables removed, check that the twistgrip turns smoothly around the handlebar – dirt combined with a lack of lubrication can cause the action to be stiff. Clean and lightly grease the twistgrip pulley and the inside of the twistgrip housing. 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).

4 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.



7.4 Measure the amount of freeplay in the throttle as shown



7.5 Accelerator cable lock ring (arrowed)

5 Adjustment can be made at the twistgrip end of the accelerator cable. Loosen the lock ring and turn the adjuster until the specified amount of freeplay is obtained, then retighten the lock ring (see illustration). Turn the adjuster in to increase freeplay and out to reduce it.

6 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. Remove the fuel tank and air filter housing (see Chapter 4) and the frame left-hand side panel (see Chapter 8).

7 Loosen the lock nut on the accelerator cable adjuster and turn the adjuster nut until the specified amount of freeplay is obtained, then tighten the lock nut (see illustration). Further adjustments can now be made at the twistgrip (see Step 5). If the cable cannot be adjusted as specified, renew the cable (see Chapter 4).

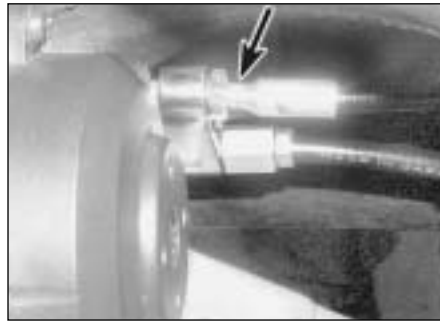
Warning: Turn the handlebars all the way through their travel with the engine idling. Idle speed should not change. If it does, the cables may be routed incorrectly. Correct this condition before riding the motorcycle.

8 Check that the throttle twistgrip operates smoothly and snaps shut quickly when released.

Choke cable

9 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 9). If the inner cable still does not run smoothly in the outer cable, renew the cable.

10 With the cable removed, check that the choke lever turns smoothly around the handlebar – dirt combined with a lack of



7.7 Accelerator cable adjuster (arrowed) at carburettor end

lubrication can cause the action to be stiff. Clean and lightly grease the lever pulley and the inside of the pulley housing. Install the lubricated or new cable, making sure it is correctly routed (see Chapter 4).

11 If this fails to improve the operation of the choke, the fault could lie in the carburettors, necessitating their removal and inspection of the choke plungers (see Chapter 4).

12 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 correctly installed at both ends.

13 Remove the fuel tank and the air filter housing (see Chapter 4) to access the carburettor end of the cable. 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 (see illustration). Otherwise, renew the cable.

8 Clutch cable – and adjustment

Interval:

1999 and 2000 models – every 6000 km (3700 miles)

2001-on models – every 10,000 km (6000 miles)

1 Check that the clutch lever operates smoothly and easily.

2 If the lever action is heavy or stiff, remove the cable (see Chapter 2) and lubricate it (see Section 9). If the inner cable still does not run smoothly in the outer cable, replace the cable



7.13 Choke cable clamp (arrowed) at carburettor end

with a new one. Install the lubricated or new cable (see Chapter 2).

3 If the lever itself is stiff, remove the lever from its bracket (see Chapter 6) and check for damage or distortion, or any other cause, and remedy as necessary. Clean and lubricate the pivot and contact areas (see Section 9).

4 If the lever and cable are good, refer to Chapter 2 and check the release mechanism in the clutch cover and the clutch itself.

5 With the clutch operating smoothly, check that the clutch lever is correctly adjusted. Periodic adjustment is necessary to compensate for wear in the clutch plates and stretch of the cable. Check that the amount of freeplay at the clutch lever end is within the specifications listed at the beginning of this Chapter (see illustration).

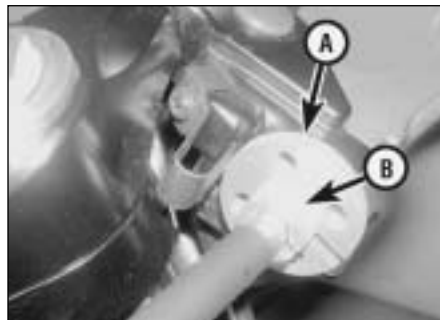
6 If adjustment is required, loosen the locking ring and turn the adjuster in or out until the required amount of freeplay is obtained (see illustration). To increase freeplay, turn the adjuster clockwise (into the lever bracket). To reduce freeplay, turn the adjuster anti-clockwise (out of the lever bracket). Tighten the locking ring securely.

7 If all the adjustment has been taken up at the lever, reset the adjuster to give the maximum amount of freeplay, then set the correct amount of freeplay using the adjuster on the lower end of the cable in the bracket on the right-hand side of the engine.

8 Remove the lower fairing (see Chapter 8). Slacken the rear adjuster nut, then turn the front nut as required to obtain the correct freeplay (see illustration). To increase



8.5 Check the amount of freeplay in the cable as shown



8.6 Loosen locking (A) and turn adjuster (B)



8.8 Adjuster (arrowed) on lower end of clutch cable