

**17.4** The drain hole (arrowed) is on the bottom of the sump

*vice versa*, two seals are fitted on the pump shaft. On the bottom of the sump there is a drain hole fed by a pipe coming from the pump (see illustration). If either seal fails, the drain allows the coolant or oil to escape and prevents them mixing. The seal on the water pump side is of the mechanical type which bears on the rear face of the impeller. The second seal, which is mounted behind the mechanical seal, is of the normal feathered lip type. If on inspection the drain hole shows signs of coolant leakage, remove the pump and renew the mechanical seal. If it is oil that is leaking, or if the leakage is white and with the texture of emulsion, renew both seals (the mechanical seal has to be removed in order to remove the oil seal, and it cannot be re-used). Refer to Chapter 3, Section 8, for seal renewal.

**5** Check the radiator for leaks and other damage. Leaks in the radiator leave tell-tale scale deposits or coolant stains on the outside of the core below the leak. If leaks are noted, remove the radiator (see Chapter 3) and have it repaired professionally.

**Caution: Do not use a liquid leak stopping compound to try to repair leaks.**

**6** Check the radiator fins for mud, dirt and insects, which may impede the flow of air through the radiator. If the fins are dirty, remove the radiator (see Chapter 3) and clean it, using water or low pressure compressed air directed through the fins from the back. If the fins are bent or distorted, straighten them carefully with a screwdriver. If the airflow is



**17.7** Remove the pressure cap as described

restricted by bent or damaged fins over more than 30% of the radiator's surface area, install a new radiator.

**7** Remove the right-hand cockpit trim panel (see Chapter 8, Section 3). Remove the pressure cap from the radiator filler neck by turning it anti-clockwise until it reaches a stop (see illustration). If you hear a hissing sound (indicating that there is still pressure in the system), wait until it stops. Now press down on the cap and continue turning the cap until it can be removed. Check the condition of the coolant in the system. If it is rust-coloured or if accumulations of scale are visible, drain, flush and refill the system with new coolant (See Section 23). Check the cap seal for cracks and other damage. If in doubt about the pressure cap's condition, have it tested by a Yamaha dealer or renew it. Install the cap by turning it clockwise until it reaches the first stop, then push down on the cap and continue turning until it can turn no further.

**8** Check the antifreeze content of the coolant 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 23).

**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 fan switch, fan motor and fan circuit carefully.

**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.

## 18 Throttle and choke cables



**1998 to 1999 models – every 4000 miles (6000 km) or 6 months**

**2000 to 2003 models – every 6000 miles (10,000 km)**

### 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.

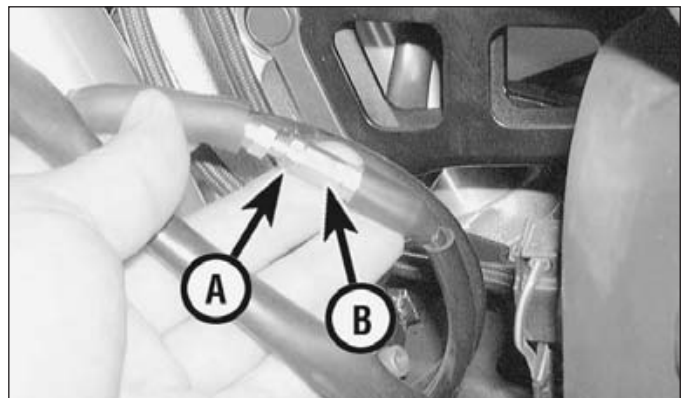
**2** If the throttle sticks, this is probably due to a cable fault. Remove the cables (see Chapter 4A or 4B) and lubricate them (see Section 19). If the inner cables still do not run smoothly in the outer cables, renew the cables. With the cables removed, check that the twistgrip turns smoothly and 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. If this fails to improve the operation of the throttle, the fault could lie in the carburetors or fuel injector throttle bodies, as applicable. Remove them and check the action of the throttle linkage and throttle valves (see Chapter 4A or 4B).

**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 as follows.

**4** Freeplay adjustments can be made at the twistgrip end of the cable. Pull back the rubber boot on the adjuster, then loosen the locknut (see illustration). Turn the adjuster



**18.3** Measure the amount of freeplay in the throttle as shown



**18.4** Throttle cable adjuster locknut (A) and adjuster (B)



18.5a Release the trim clips (arrowed) . . .



18.5b . . . and remove the cover



18.5c Push the centre into the body and remove the clip

until the specified amount of freeplay is obtained (see this Chapter's Specifications), then retighten the locknut. 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 or fuel injector end as follows. Follow the appropriate procedure in Chapter 4A or 4B and remove the fuel tank and the air filter housing. On 1998 to 2001 models, remove the ignition coils (see Chapter 5) then release the trim clips securing the rubber cover and remove the cover, noting how it fits (see illustrations). To release the clips, push the centre into the body, then draw the clip out (see illustration). On 2002 to 2003 models, release the trim clips and lift off the two-piece ignition coil plate (see illustration). The cover can be folded forwards to access the cable adjusters.

**6** Loosen the decelerator (closing) cable locknut, then turn the adjuster just enough to remove any freeplay from the cable (see illustration). Now loosen the accelerator (opening) cable locknut and turn the adjuster nut until the specified amount of freeplay is obtained. Tighten the accelerator and decelerator cable locknuts. Further adjustments can now be made at the twistgrip end. If the cable cannot be adjusted as specified, renew the cable (see Chapter 4A or 4B).



**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 all components in the reverse order of removal. To install the trim clips securing the rubber cover on 1998 to 2001 models, and the coil plate on 2002 to 2003 models, first push the centre back out so that it protrudes from the top of the body. Fit the clip into its socket, then push the centre in so that it is flush with the top of the body (see illustrations).

### Choke cable

#### 1998 to 2001 models

**8** If the choke does not operate smoothly this is probably due to a cable fault. Remove the cable (see Chapter 4A) and lubricate it (see Section 19). If the inner cable still does not run

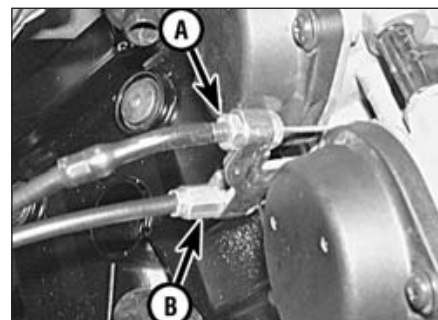
smoothly in the outer cable, renew it. Install the cable, routing it so it takes the smoothest route possible.

**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 4A, Section 8).

**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 – remove the air filter housing (see Chapter 4A), the ignition coils (see Chapter 5), and the rubber cover 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 (see illustration). Otherwise, renew the cable.



18.5d Remove the ignition coil plate in two sections (arrowed)



18.6 Accelerator cable adjuster (A) and decelerator cable adjuster (B)



18.7a Fit the trim clip into its socket . . .



18.7b . . . and push the centre into the body to secure it



18.10 Slacken the clamp screw (arrowed) and slide the cable into the clamp a little