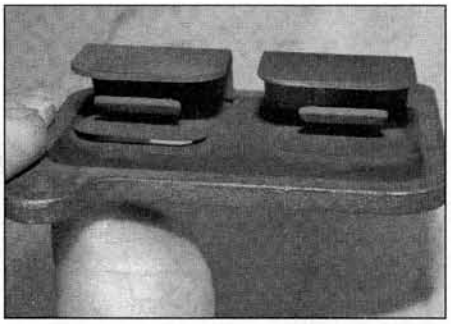


12.5 Check each reed valve as described

5 Check the valve for cracks, warping, burning or other damage, and make sure the reed lifts and seats correctly **(see illustration)**. Check the area where the reeds contact the valve holder for scratches, separation and grooves. If any of these conditions are found, replace the valve.
6 Wash the valve with solvent if carbon has accumulated between the reed and the valve holder.
7 Installation of the valves is the reverse of removal. Be sure to use a new gasket. See Chapter 4A or 4B for the air switching valve.

13 Evaporative emission control system (California models only) – check

1 This system, installed on California models to conform to stringent emission control standards, routes fuel vapors from the fuel system into the engine to be burned, instead of letting them evaporate into the atmosphere. When the engine isn't running, vapors are stored in a carbon canister.

Hoses

2 To begin the inspection of the system, remove the seat, fuel tank and side covers (see Chapters 4A or 4B and 8). Inspect the hoses from the fuel tank, carburetor(s) or throttle body and liquid/vapor separator to the canister for cracking, kinks or other signs of deterioration. Replace them with new ones if necessary.

Component inspection

3 Label and disconnect the hoses, then remove the separator and canister from the machine (see Chapter 4).
4 Check the separator closely for cracks or other signs of damage. If these are found, replace it.
5 Inspect the canister for cracks or other signs of damage. Tip the canister so the nozzles point down. If fuel runs out of the canister, the liquid/vapor separator is probably bad. The fuel inside the canister has probably caused damage, so it would be a good idea to replace it also.

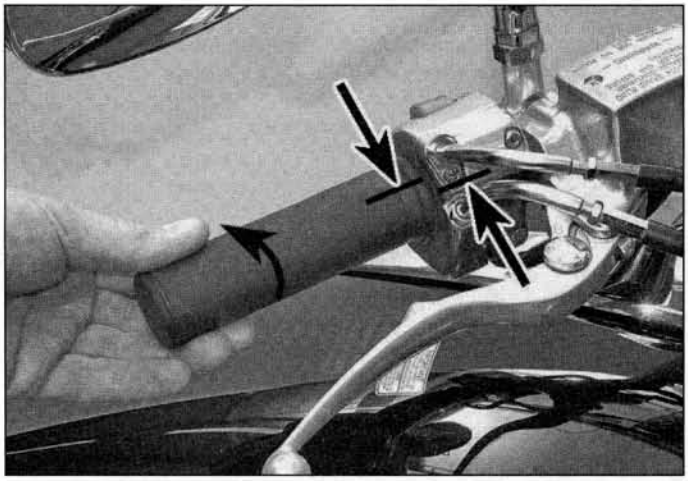
14 Throttle and choke operation/grip freeplay – check and adjustment

Throttle check

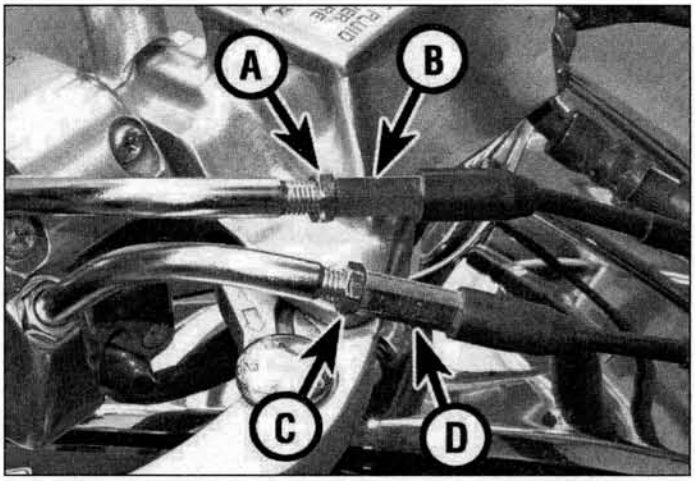
1 With the engine stopped, make sure the throttle grip rotates easily from fully closed to fully open with the front wheel turned at various angles. The grip should return automatically from fully open to fully closed when released. If the throttle sticks, check the throttle cables for cracks or kinks in the housings. Also, make sure the inner cables are clean and well-lubricated.
2 Check for a small amount of freeplay in the cable before the throttle opens by lightly turning the grip and compare the freeplay to the value listed in this Chapter's Specifications **(see illustration)**.

Throttle cable adjustment

Note: *These motorcycles use two throttle cables – a throttle opening or accelerator cable and a throttle closing or decelerator cable.*
3 Freeplay adjustments are initially made at the throttle twistgrip end of the cable.
4 Loosen the locknut on the adjuster on each cable and turn the adjusters fully in **(see illustration)**.
5 Turn the adjuster on the throttle closing cable until it just becomes tight, but not so it starts to pull the throttle open. Tighten the locknut.
6 Turn the adjuster on the throttle opening cable until the specified freeplay is obtained at the throttle grip, then tighten the locknut.
7 Check that the throttle twistgrip operates smoothly and snaps shut quickly when released.
8 On VN1500A and B models, if you cannot adjust the cables as specified, reset the adjusters so freeplay is at a maximum as in Step 4. Loosen the locknuts securing the cables in the bracket on the carburetors, and adjust each cable as described in Steps 5 and 6 by turning the adjusters above the locknuts, then tighten the locknuts. Finally make any minor and subsequent adjustments using the adjusters at the twistgrip.
9 On VN1500 Classic and Nomad/Classic Tourer models, if you cannot adjust the cables as specified, reset the adjusters so freeplay is at a maximum as in Step 4. Remove the fuel



14.2 Throttle cable freeplay is measured in terms of the amount of twistgrip rotation before the throttle opens



14.4 Throttle opening cable locknut (A) and adjuster (B), throttle closing cable locknut (C) and adjuster (D)

tank (see Chapter 4A). Loosen the locknuts on the adjusters roughly half way along the cables, and adjust each cable as described in Steps 5 and 6 by turning the adjusters, then tighten the locknuts. Finally make any minor and subsequent adjustments using the adjusters at the twistgrip.

10 On VN1500 Classic FI, Nomad/Classic Tourer FI and all Drifter models, if you cannot set the correct freeplay in the opening cable as specified, reset the adjuster so freeplay is at a maximum as in Step 4. Remove the fuel tank (see Chapter 4B). Loosen the locknut on the adjusters roughly half way along the opening cable, and adjust the cable as described in Step 6 by turning the adjuster, then tighten the locknut. Finally make any minor and subsequent adjustments using the adjusters at the twistgrip.

11 Mean Streak models and VN1600 Classic and Nomad/Classic Tourer models do not have any adjusters other than those at the twistgrip.

12 If the cable cannot be adjusted as specified, replace the cables with new ones (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 cables may be routed or adjusted incorrectly. Correct this condition before riding the bike.

Choke check

Note: *On fuel injection models the choke knob should only be used if the bike cannot be started normally, for example in extreme cold or high altitude. The fuel injection system has its own automatic fast idle system that uses information from the sensors to adjust for cold starting as required.*

13 Inspect the choke knob, and its cable where fitted. The choke should pull out smoothly and easily and stay out by itself. If it doesn't, lubricate the cable or linkage mechanism as required (see Section 18).

15 Idle speed – check and adjustment

1 The idle speed should be checked and adjusted at the specified maintenance intervals and when it is obviously too high or too low. On VN1500A and B models, the carburetors should be synchronized as described in Section 16 as part of the procedure. Before adjusting the idle speed, make sure the spark plugs are in good condition and the gaps are correct (see Section 5). Also, with the engine running turn the handlebars back-and-forth and see if the idle speed changes as this is done. If it does, the throttle cable may not be adjusted correctly, or it may be incorrectly routed or worn out. Be sure to correct this problem before proceeding.

2 The engine must be at normal operating temperature, which is usually reached after 10 to 15 minutes of stop and go riding. Make sure the choke knob is pushed fully in.

3 With the engine idling turn the adjusting knob as required, until the idle speed listed in this Chapter's Specifications is obtained **(see illustration)**.

4 Snap the throttle open and shut a few times, then recheck the idle speed. If necessary, repeat the adjustment procedure.

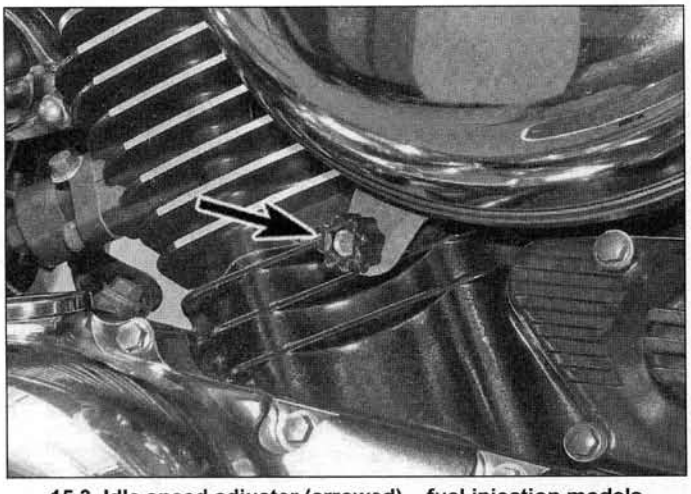
5 If a smooth, steady idle can't be achieved refer to Chapter 4A on carburetor models and Chapter 4B on fuel injection models for additional information.

16 Carburetor synchronization (VN1500A and B models) – check and adjustment

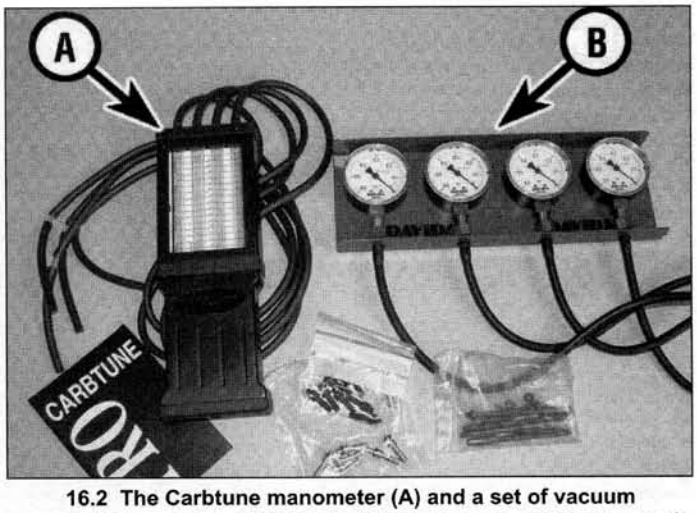
Warning: Gasoline is extremely flammable, so take extra precautions when you work on any part of the fuel system. Don't smoke or allow open flames or bare light bulbs near the work area, and don't work in a garage where a natural gas-type appliance (such as a water heater or clothes dryer) is present. If you spill any fuel on your skin, rinse it off 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.

1 Carburetor synchronization is simply the process of adjusting the carburetors so they pass the same amount of fuel/air mixture to each cylinder. This is done by measuring the vacuum produced in each cylinder. Carburetors that are out of synchronization will result in increased fuel consumption, increased engine temperature, less than ideal throttle response and higher vibration levels.

2 To synchronize the carburetors, you will need a manometer, such as the Morgan Carbtune Pro4, or a set of vacuum gauges, suitable for a twin cylinder engine, with the necessary adapters and hoses to fit the take-off points **(see illustration)**. When using such equipment always read the instructions supplied with it. The hoses usually have some form of restrictor in them for damping the movement of the manometer rod or gauge needle – make sure these are fitted correctly if not already in place otherwise it



15.3 Idle speed adjuster (arrowed) – fuel injection models



16.2 The Carbtune manometer (A) and a set of vacuum gauges (B), and the various adapters that come with them – each set is available in twin format