

2.8 Main and auxiliary fuel tanks - 1982 through 1984 700/750 Magnas shown (1100 Magnas similar)

mounting rubbers and collars are correctly positioned, and that the tank does not trap any cables, wiring or hoses. Check that there are no fuel leaks when the fuel valve is turned ON.

### Auxiliary fuel tank - 1982 through 1984 700/750 Magna models and all 1100 Magna models

- 16 Remove the seat and both side covers (see Chapter 6).
- 17 Disconnect the battery (negative lead first) and remove it.
- 18 Fully drain the main and auxiliary fuel tanks, then remove the main fuel tank as described above.
- 19 Disconnect the fuel level sender wiring from the sender in the tank top surface.
- 20 Remove the regulator/rectifier unit and its wiring tie from the side of the tank on 700/750 models (see Chapter 8).
- 21 Remove the rear wheel (see Chapter 7).
- 22 Remove the rear fender sections.
- 23 Have a rag ready to catch any drops of fuel and disconnect the auxiliary fuel tank hose from the fuel pump.
- 24 Remove the auxiliary fuel tank mounting bolt and withdraw the tank rearwards from the motorcycle.
- 25 The 1100 Magna has a drain bolt fitted in the base of the tank, which provides a useful means of draining any sludge or dirt which has settled in the bottom of the tank. If it is ever removed, always fit a new sealing washer on installation.
- 26 Installation is a reverse of the removal procedure. Ensure that the tank mounting bolt rubber grommet and collar are correctly positioned, and that the tank front edge engages the lower rubber mounting. Check that the tank does not trap any cables, wiring or hoses and that there are no fuel leaks when the fuel valve is turned ON.

### 3 Fuel tank - cleaning and repair

- 1 All repairs to the fuel tank should be carried out by a professional who has experience in this critical and potentially dangerous work. Even after cleaning and flushing of the fuel system, explosive fumes can remain and ignite during repair of the tank.
- 2 If the fuel tank is removed from the motorcycle, it should not be placed in an area where sparks or open flames could ignite the fumes coming out of the tank. Be especially careful inside garages where a

natural gas-type appliance is located, because the pilot light could cause an explosion.

### 4 Fuel valve - removal and installation

Warning: Refer to the precautions given in Section 1 before starting work.

#### 700/750 Sabre models

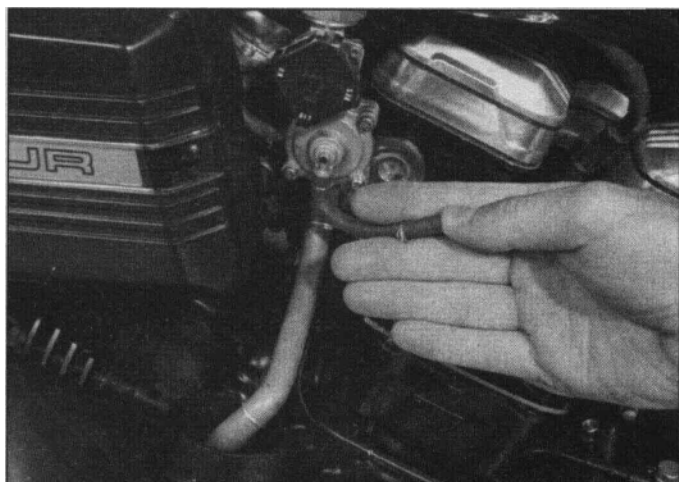
##### Fuel valve

Refer to illustration 4.10

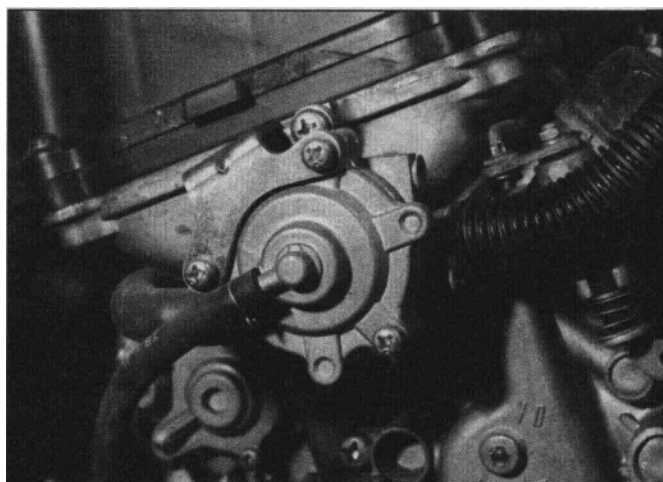
- 1 Before the valve can be removed, all fuel must be drained from the tank.
- 2 Switch the fuel valve to the OFF position. Have a rag ready to catch any spilt fuel and disconnect the fuel, vent and vacuum hoses from the diaphragm valve stubs.
- 3 Attach a length of hose of the proper diameter to the fuel outlet stub (larger diameter of the three) and place the other end of the hose in a clean container, such as a multi-gallon gas (petrol) can. Turn the valve to the RES position and drain all fuel. Turn the valve OFF when draining is complete and disconnect the drain hose.
- 4 Remove the fuel tank (see Section 2).
- 5 Unscrew the fuel valve's gland nut and remove the valve and internal gauze filter from the tank. Recover the O-ring.
- 6 Taking suitable precautions against fire, rinse the filter gauze in fresh fuel to clean it.
- 7 Installation is a reverse of the removal procedure, noting that a new O-ring should be fitted at the valve-to-tank joint.

##### Diaphragm unit

- 8 The diaphragm valve housing forms part of the fuel valve body. The diaphragm can be inspected by removing the four screws and withdrawing the cover. If operating correctly it should only allow fuel to flow when the engine is running.
- 9 To check its operation, disconnect the vacuum hose from the no. 1 cylinder intake manifold and the fuel outlet pipe (to the carburetors) from the lower stub on the valve. Install a substitute length of hose on the outlet stub union and place its other end in a jar.
- 10 With the fuel valve in the ON position there should be no fuel flow



**4.10** Checking the fuel valve diaphragm unit on 700/750 Sabres - suck on the vacuum hose then press your thumb tightly over the hose end



**4.33** Fuel valve diaphragm unit location on air chamber - 1987 and 1988 700/750 Magnas

through the diaphragm valve apart from a very small amount which will be present in the pipe. Suck gently on the other end of the vacuum hose to simulate engine vacuum, then quickly cover the end with your thumb - fuel should flow from the outlet pipe if the valve is operating correctly and stop when the vacuum is released (**see illustration**).

11 If fuel is not flowing from the valve with vacuum applied, first make sure that the vacuum line is not clogged, then remove the assembly from the tank and make sure that the filter is not clogged.

12 If the valve fails to operate as described it must be replaced although check with your dealer if the diaphragm and cover assembly can be purchased separately.

### **1982 through 1984 700/750 Magna models**

13 Before the valve can be removed, all fuel must be drained from the main and auxiliary tanks.

14 Remove the right side cover and switch the fuel valve to the OFF position. Have a rag ready to catch any spilt fuel and disconnect the fuel outlet hose from the valve stub.

15 Attach a length of hose of the proper diameter to the valve and place the other end of the hose in a clean container, such as a multi-gallon gas (petrol) can. Turn the valve to the RES position and drain all fuel. Turn the valve OFF when draining is complete and disconnect the drain hose.

16 Disconnect the inlet hose from the other union on the fuel valve and remove the two screws to detach the valve from its mounting bracket.

17 No replacement parts are available for the fuel valve; if it is faulty it must be replaced as a complete unit.

18 An in-line fuel filter is fitted to these models (see Chapter 1).

### **1985 and 1986 700 Magna models**

19 Before the valve can be removed, all fuel must be drained from the tank.

20 Switch the fuel valve to the OFF position. Have a rag ready to catch any spilt fuel and disconnect the fuel hose from the valve stub.

21 Attach a length of hose of the proper diameter to the valve and place the other end of the hose in a clean container, such as a multi-gallon gas (petrol) can. Turn the valve to the RES position and drain all fuel. Turn the valve OFF when draining is complete and disconnect the drain hose.

22 Remove the fuel tank (see Section 2).

23 Unscrew the fuel valve's gland nut and remove the valve from the tank. Recover the O-ring.

24 Installation is a reverse of removal, noting that a new O-ring should be fitted at the valve-to-tank joint.

25 An in-line fuel filter is fitted to these models (see Chapter 1).

### **1987 and 1988 700/750 Magna models**

#### **Fuel valve**

26 Before the valve can be removed, all fuel must be drained from the tank.

27 Switch the fuel valve to the OFF position. Have a rag ready to catch any spilt fuel and disconnect the fuel hose from the valve stub.

28 Attach a length of hose of the proper diameter to the valve and place the other end of the hose in a clean container, such as a multi-gallon gas (petrol) can. Turn the valve to the RES position and drain all fuel. Turn the valve OFF when draining is complete and disconnect the drain hose.

29 Remove the fuel tank (see Section 2).

30 Unscrew the fuel valve's gland nut and remove the valve and internal gauze filter from the tank. Recover the O-ring.

31 Taking suitable precautions against fire, rinse the filter gauze in fresh fuel to clean it.

32 Installation is a reverse of the removal procedure, noting that a new O-ring should be fitted at the valve-to-tank joint.

#### **Diaphragm unit**

*Refer to illustration 4.33*

33 The fuel valve diaphragm is retained to the air chamber left by two screws; remove the air chamber left side cover for access (**see illustration**). If operating correctly it should only allow fuel to flow when the engine is running.

34 To check its operation, disconnect the vacuum hose from the no. 2 cylinder intake manifold and the fuel outlet pipe (to the carburetor) from the front stub on the valve. Install a substitute length of hose on the outlet stub union and place its other end in a jar.

35 With the fuel valve in the ON position there should be no fuel flow through the diaphragm valve. Suck gently on the other end of the vacuum hose to simulate engine vacuum, then quickly cover the end with your thumb - fuel should flow from the outlet stub if the valve is operating correctly and stop when the vacuum is released.

36 If fuel is not flowing from the valve with vacuum applied, first make sure that the vacuum line is not clogged, then remove the fuel valve from the tank and make sure that the filter is not clogged.

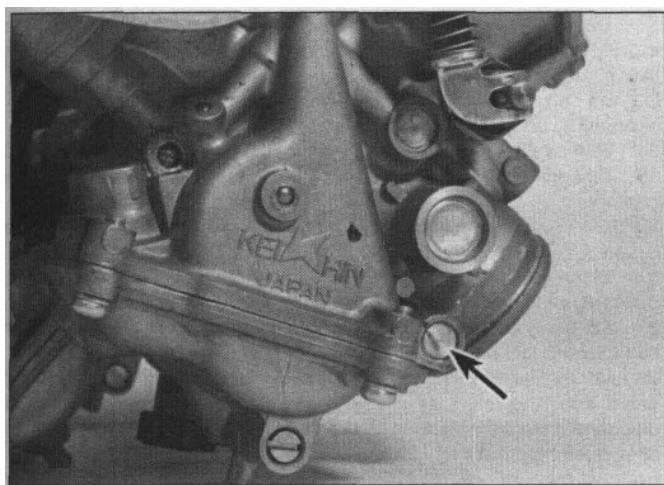
37 If the valve fails to operate as described it must be replaced individual parts are not available.

### **1100 Sabre models**

38 Remove the fuel tank (see Section 2).

39 Turn the fuel valve to the RES position and drain the fuel via the outlet pipe into a container marked as being suitable for the storage of gasoline (petrol).

40 Remove its two retaining screws and remove the fuel valve from



5.1 Metal limiter caps (arrow) seal the pilot screws in certain markets

the rear of the tank. Recover the valve gasket.

41 Installation is a reverse of removal, noting that a new gasket should be fitted at the valve-to-tank joint.

42 An in-line fuel filter is fitted to this model (see Chapter 1).

### 1100 Magna models

43 Before the valve can be removed, all fuel must be drained from the tank.

44 Remove the left side cover and switch the fuel valve to the OFF position.

45 Have a rag ready to catch any spilt fuel and disconnect the fuel outlet hose from its tank stub. Attach a length hose of the proper diameter to the stub and place the other end of the hose in a clean container, such as a multi-gallon gas (petrol) can. Turn the valve to the RES position and drain all fuel from the auxiliary tank. Turn the valve OFF and reconnect the outlet hose when draining is complete. Complete draining can be achieved by removing the drain bolt from the base of the tank.

46 Remove the two screws to free the fuel valve and its gasket from the fuel tank.

47 Installation is a reverse of removal, noting that a new gasket should be fitted at the valve-to-tank joint and a new sealing washer fitted to the tank drain bolt if removed.

48 An in-line fuel filter is fitted to this model (see Chapter 1).

## 5 Idle fuel/air mixture adjustment - general information

Refer to *illustration 5.1*

1 Due to the increased emphasis on controlling motorcycle exhaust emissions, certain governmental regulations have been formulated which directly affect the carburetion of this machine. In order to comply with the regulations, the carburetors on many models have a metal limiter cap stuck onto the end of the pilot screw (which controls the idle fuel/air mixture) on each carburetor, so they can't be tampered with (**see illustration**). These should only be removed in the event of a complete carburetor overhaul, and even then the screws should be returned to their original settings. If a new pilot screw is fitted, set it to the basic setting given in the Specifications section of this chapter and have its setting checked with the use of an exhaust gas analyzer; this is the only accurate way to adjust the idle fuel/air mixture and be sure the machine doesn't exceed the emissions regulations.

2 Refer to Sections 8 and 9 for pilot screw removal and installation.

3 If the engine runs extremely rough at idle or continually stalls, and if a carburetor overhaul does not cure the problem, take the motorcycle to a Honda dealer service department or other repair shop

equipped with an exhaust gas analyzer. They will be able to properly adjust the idle fuel/air mixture to achieve a smooth idle and restore low speed performance.

4 If the motorcycle is operated continuously at high altitudes (above 2000 meters, 6,500 feet) alteration of the pilot screw setting will be required - refer to a Honda dealer for details.

## 6 Carburetor overhaul - general information

1 Poor engine performance, hesitation, hard starting, stalling, flooding and backfiring are all signs that major carburetor maintenance may be required.

2 Keep in mind that many so-called carburetor problems are really not carburetor problems at all, but mechanical problems within the engine or ignition system malfunctions. Try to establish for certain that the carburetors are in need of maintenance before beginning a major overhaul.

3 Check the fuel filter, the fuel lines, the tank cap vent (except California models), the intake manifold hose clamps, the vacuum hoses, the air filter element, the cylinder compression, the spark plugs and carburetor synchronization before assuming that a carburetor overhaul is required.

4 Most carburetor problems are caused by dirt particles, varnish and other deposits which build up in and block the fuel and air passages. Also, in time, gaskets and O-rings shrink or deteriorate and cause fuel and air leaks which lead to poor performance.

5 When the carburetor is overhauled, it is generally disassembled completely and the parts are cleaned thoroughly with a carburetor cleaning solvent and dried with filtered, unlubricated compressed air. The fuel and air passages are also blown through with compressed air to force out any dirt that may have been loosened but not removed by the solvent. Once the cleaning process is complete, the carburetor is reassembled using new gaskets and O-rings.

6 Before disassembling the carburetors, make sure you have a carburetor rebuild kit (which will include all necessary O-rings and other parts), some carburetor cleaner, a supply of rags, some means of blowing out the carburetor passages and a clean place to work. It is recommended that only one carburetor be overhauled at a time to avoid mixing up parts.

## 7 Carburetors - removal and installation

**Warning:** Refer to *the precautions given in Section 1 before starting work. Disconnect the battery negative lead.*

### Removal

#### Sabre models

1 Remove the fuel tank (see Section 2).

2 Remove the air filter housing (see Section 14).

3 Disconnect the crankcase breather hose from its stub on the air chamber.

4 On the 1982 750 model, remove the right ignition coil mounting bolts so that the coil can be maneuvered to one side for access to the air chamber screws. Also remove the bolt which attaches the water pipe to the air chamber.

5 On 1983 through 1985 700/750 models, remove both front side covers and remove the ignition coil mounting bracket, complete with coils from the left side (right side on California models).

6 Remove the bolt that attaches the thermostat to the air chamber (it also secures the ground/earth cable).

7 Remove the air chamber cover screws and slide the chamber out of position.

8 On 1982 750 Sabre models remove the radiator side mounting bolts.

9 Disengage the choke cable outer from its retainer clamp and then disengage the end of the cable from the lever.

10 Loosen the throttle cable locknuts then free each outer cable from

its mounting bracket. Detach the inner cables from the throttle pulley.

11 Unbend the retainers that secure the front two spark plug wires and any wiring to the air chamber heat shield.

12 Label and then disconnect the fuel and emission hoses from the carburetors. On 1984-on California models, it may be necessary to disconnect the purge control valve from the frame to permit carburetor removal. On 1100 models, disconnect the air vent control valve hoses from the valve. If the valve hoses are disconnected, label them carefully as a guide to reinstallation.

13 Loosen all hose clamps that secure the carburetor-to-cylinder head boots.

14 Using a long screwdriver, carefully pry the carburetors out of their connecting boots, then carefully remove the carburetor and air chamber assembly through the left side of the motorcycle. **Note:** *Additional clearance is gained by removing the carburetor boots from the cylinder ports.*

15 With the carburetors removed, place a suitable container below the carburetor float chambers then loosen the drain screws and drain all the fuel from the carburetors. Once all the fuel has been drained, tighten all the drain screws securely.

### 1982 through 1984 700/750 Magna models

16 Remove the main fuel tank (see Section 2). **Note:** *If the tank is only half full it can be triggered up on its support rod after the tank front mounting bolts have been removed - this will save having to drain the tank of fuel.*

17 Remove both the right and left side air chamber covers.

18 Disconnect the crankcase breather hose from its stub on the air chamber.

19 Remove the air filter housing (see Section 14).

20 Remove its retaining screws and withdraw the air chamber top cover.

21 Remove the radiator (see Chapter 3).

22 Remove the bolt that attaches the thermostat housing to the air chamber; this bolt also secures the ground (earth) wire. Disconnect the coolant temperature sender unit wire. Remove the thermostat housing and detach its hose from the crossover pipes.

23 Disengage the choke cable outer from its retainer clamp and then disengage the end of the cable from the lever.

24 Loosen the throttle cable locknuts then free each outer cable from its mounting bracket. Detach the inner cables from the throttle pulley.

25 Unbend the retainers that secure the front two spark plug wires to the air chamber heat shield.

26 On early 1982 models, prior to serial number CM015298 (identified by all-metal air chamber covers), the carburetor assembly is removed from the right side. On models later than this serial number (identified by partly rubber air chamber covers) the carburetors are removed from the left side. On the earlier models, remove the coolant crossover pipes (see Chapter 3).

27 Label and then disconnect the fuel and emission hoses from the carburetors. On 1984-on California models, it may be necessary to disconnect the purge control valve from the frame to permit carburetor removal from the left side of the motorcycle. If the valve hoses are disconnected, label them carefully as a guide to reinstallation.

28 Loosen the carburetor boot clamps and withdraw the carburetors from the boots. A long screwdriver can be used to pry them out. Remove the boots from the cylinder ports. This is made easier by removing the clamps from the boots first.

29 Lift out the carburetor assembly. **Note:** *If additional clearance is necessary, loosen the engine mount bolts and move the engine on its mounts.*

30 With the carburetors removed, place a suitable container below the carburetor float chambers then loosen the drain screws and drain all the fuel from the carburetors. Once all the fuel has been drained, tighten all the drain screws securely.

### 1985 and 1986 700 Magna models

31 Remove the fuel tank (see Section 2).

32 Remove the air filter housing (see Section 14).

33 Remove the air chamber side covers from both sides of the motorcycle. On the right side remove the bolt which retains the thermostat housing to the air chamber, noting the ground (earth) wire. On the left side, remove the cover over the electrical multi-pin connectors and disconnect them.

34 Remove the radiator (see Chapter 3).

35 Disconnect the crankcase breather hose from the rear of the air chamber.

36 Remove its retaining screws and withdraw the air chamber top cover.

37 Disengage the choke cable outer from its retainer clamp and then disengage the end of the cable from the lever.

38 Loosen the throttle cable locknuts then free each outer cable from its mounting bracket. Detach the inner cables from the throttle pulley.

39 On all California models, label and disconnect the purge control valve from the left side of the motorcycle, then on 1986 models disconnect the air injection control valve and air vent control valve. On all models, disconnect the fuel supply hose and all emission hoses from the carburetors.

40 Loosen all hose clamps that secure the carburetor-to-cylinder head boots.

41 Using a long screwdriver, carefully pry the carburetors out of their connecting boots, then carefully remove the carburetor and air chamber assembly from the left side of the motorcycle. **Note:** *Additional clearance is gained by removing the carburetor boots from the cylinder ports.*

42 With the carburetors removed, place a suitable container below the carburetor float chambers then loosen the drain screws and drain all the fuel from the carburetors. Once all the fuel has been drained, tighten all the drain screws securely.

### 1987 and 1988 700/750 Magna models

43 Remove the fuel tank (see Section 2).

44 Remove the air filter housing (see Section 14). On the right side, remove the bolt which retains the thermostat housing to the air chamber, noting the ground (earth) wire and remove the screws which secure the side air chamber to the main chamber. On the left side label and disconnect the hoses from the air injection control valve, then remove the valve and its air chamber and detach the side air chamber from the main chamber.

45 Remove the air chamber top cover screws and withdraw the cover.

46 Disengage the choke cable outer from its retainer clamp and then disengage the end of the cable from the lever.

47 Loosen the throttle cable locknuts then free each outer cable from its mounting bracket. Detach the inner cables from the throttle pulley.

48 Disconnect the vacuum hose and fuel tank hose from the automatic fuel valve on the left side of the air chamber. Label and disconnect all emission system hoses from the carburetors. Label its hoses, then disconnect and remove the air vent control valve.

49 Loosen all hose clamps that secure the carburetor-to-cylinder head boots.

50 Using a long screwdriver, carefully pry the carburetors out of their connecting boots, then carefully remove the carburetor and air chamber assembly from the left side of the motorcycle. **Note:** *Additional clearance is gained by removing the carburetor boots from the cylinder ports.*

51 With the carburetors removed, place a suitable container below the carburetor float chambers then loosen the drain screws and drain all the fuel from the carburetors. Once all the fuel has been drained, tighten all the drain screws securely.

### 1100 Magna model

52 Remove the main fuel tank (see Section 2). **Note:** *If the tank is only half full it can be triggered up on its support rod after the tank front mounting bolts have been removed - this will save having to drain the tank of fuel.*

53 Remove the air filter (see Chapter 1).