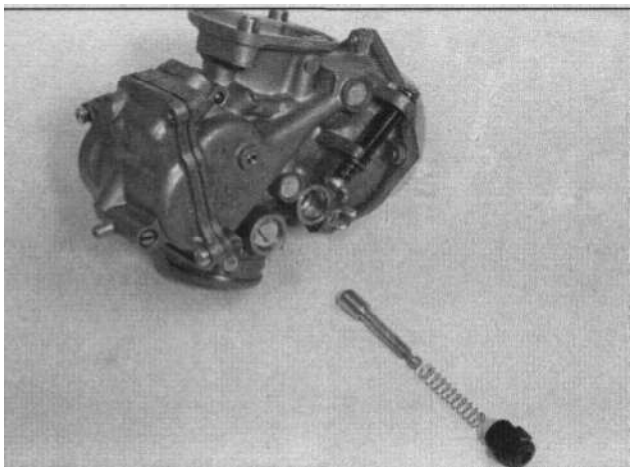
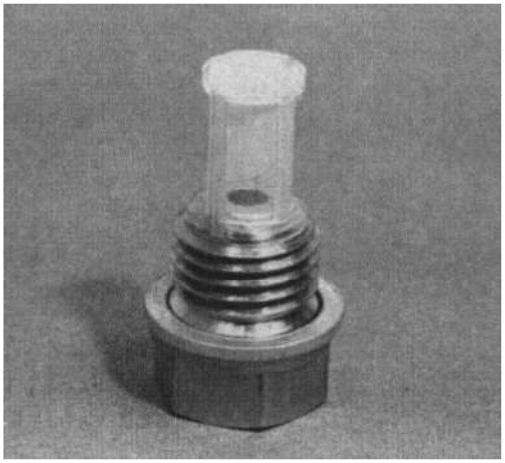


9.1 Install the choke valve and its spring in the carburetor bore and secure with the nut



9.7 Assemble the float valve seat, washer and filter and install them in the carburetor body

cover for cracks, distorted sealing surfaces and other damage. If any defects are found, replace the faulty component, although replacement of the entire carburetor will probably be necessary (check with your parts supplier for the availability of separate components).

18 Check the diaphragm for splits, holes and general deterioration. Holding it up to a light will help to reveal problems of this nature.

19 Insert the throttle piston in the carburetor body and check that it moves up-and-down smoothly. Check the surface of the piston for wear. If it's worn excessively or doesn't move smoothly in the bore, replace the carburetor.

20 Check the jet needle for straightness by rolling it on a flat surface (such as a piece of glass). Replace it if it's bent or if the tip is worn.

21 Check the tip of the fuel inlet valve needle. If it has grooves or scratches in it, it must be replaced. Push in on the rod in the other end of the needle, then release it - if it doesn't spring back, replace the valve needle. If the needle valve seat is damaged the carburettor assembly must be replaced; it is not possible to replace the seat individually.

22 Check the float chamber gasket and replace it if it's damaged.

23 Operate the throttle shaft to make sure the throttle butterfly valve opens and closes smoothly. If it doesn't, replace the carburetor.

24 Check the floats for damage. This will usually be apparent by the presence of fuel inside one of the floats. If the floats are damaged, they must be replaced.

9 Carburetors - reassembly and float height check

Note: *When reassembling the carburetors, be sure to use the new Citings, gaskets and other parts supplied in the rebuild kit. Do not overtighten the carburetor jets and screws as they are easily damaged. Refer to illustrations 9.1, 9.7, 9.8, 9.9 and 9.11*

1 Install the choke valve in its bore, followed by its spring and nut **(see illustration).** Tighten the nut securely and reconnect the operating link hook in the valve groove.

2 Install the pilot screw (if removed) along with its spring, washer and O-ring, turning it in until it seats lightly. Now, turn the screw out the number of turns previously recorded. Where applicable, drive new metal limiter caps into the pilot screw bores. If a new pilot screw has been fitted, Honda advise that the screws in the other three carburetors be replaced also, and that having been set to the standard number of turns out (see Specifications), adjustment of their settings be carried out by a dealer service department before new limiter caps are installed.

3 Screw the needle jet into position in the carburetor.

4 Screw the main jet into the end of the needle jet.

5 Screw the pilot jet into position.

6 If the starter jet was removed, screw or press it into the body (as applicable).

7 Install the float valve seat, washer and filter **(see illustration).** Hook the needle valve over the float, then install the float and secure it with the pivot pin.

8 To check the float height, hold the carburetor so the float hangs down, then tilt it back until the valve needle is just seated, but not so far that the needle's spring-loaded tip is compressed. Measure the distance between the gasket face and the bottom of the float with a gauge or an accurate ruler **(see illustration).** The correct setting should be as given in the Specifications Section. On early models with brass floats, adjustment of the float height can be made by very carefully bending the tang which bears on the needle valve tip. On later models with plastic floats, the float height is not adjustable; if it is incorrect the float must be replaced. Repeat the procedure for all carburetors.

9 With the float height checked, install a new seal in the float chamber groove and install the chamber on the carburetor (see **illustration).**

10 Fit the washer to the jet needle and insert the needle into the throttle valve piston. Insert the spring and the needle holder into the center of the piston and turn it 60° in the opposite direction of removal using an 8 mm box wrench.

11 Insert the throttle piston/diaphragm assembly into the carburetor body and lightly push it down, ensuring the needle is correctly aligned with the needle jet. Press the diaphragm outer edge into its groove, ensuring the diaphragm tongue is correctly seated in the cutout on the carburetor **(see illustration).** Check the diaphragm is not creased, and that the piston moves smoothly up and down the bore. To prevent the diaphragm from being displaced when the cover is fitted, push it up the bore with a finger passed through the venturi.

12 Insert the spring and fit the vacuum chamber cover to the carburetor, noting that the longer springs are fitted to the front cylinder carburetors **(see illustration 8.3b).**

13 On 1987 and 1988 700/750 models, if it was removed, install the air cut-off valve, spring and O-ring. Refit the cover and secure with the two screws.

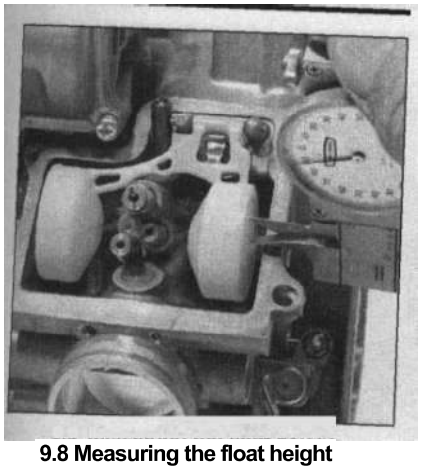
14 If the carburetors were separated, refer to Section 10 and join them, then refit the assembly to the motorcycle (see Section 7).

10 Carburetors - separation and joining

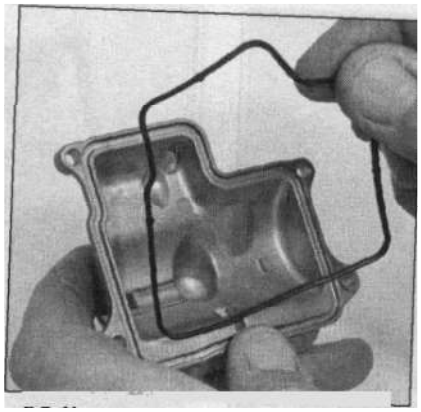
Warning: *Refer to the precautions given in Section 1 before proceeding*

Separation

Refer to illustrations 10.1, 10.6a, 10.6b, 10.7, 10.8, 10.9 and 10.11 1 The carburetors do not need to be separated for normal overhaul. If you need to separate them (to replace a carburetor body, for



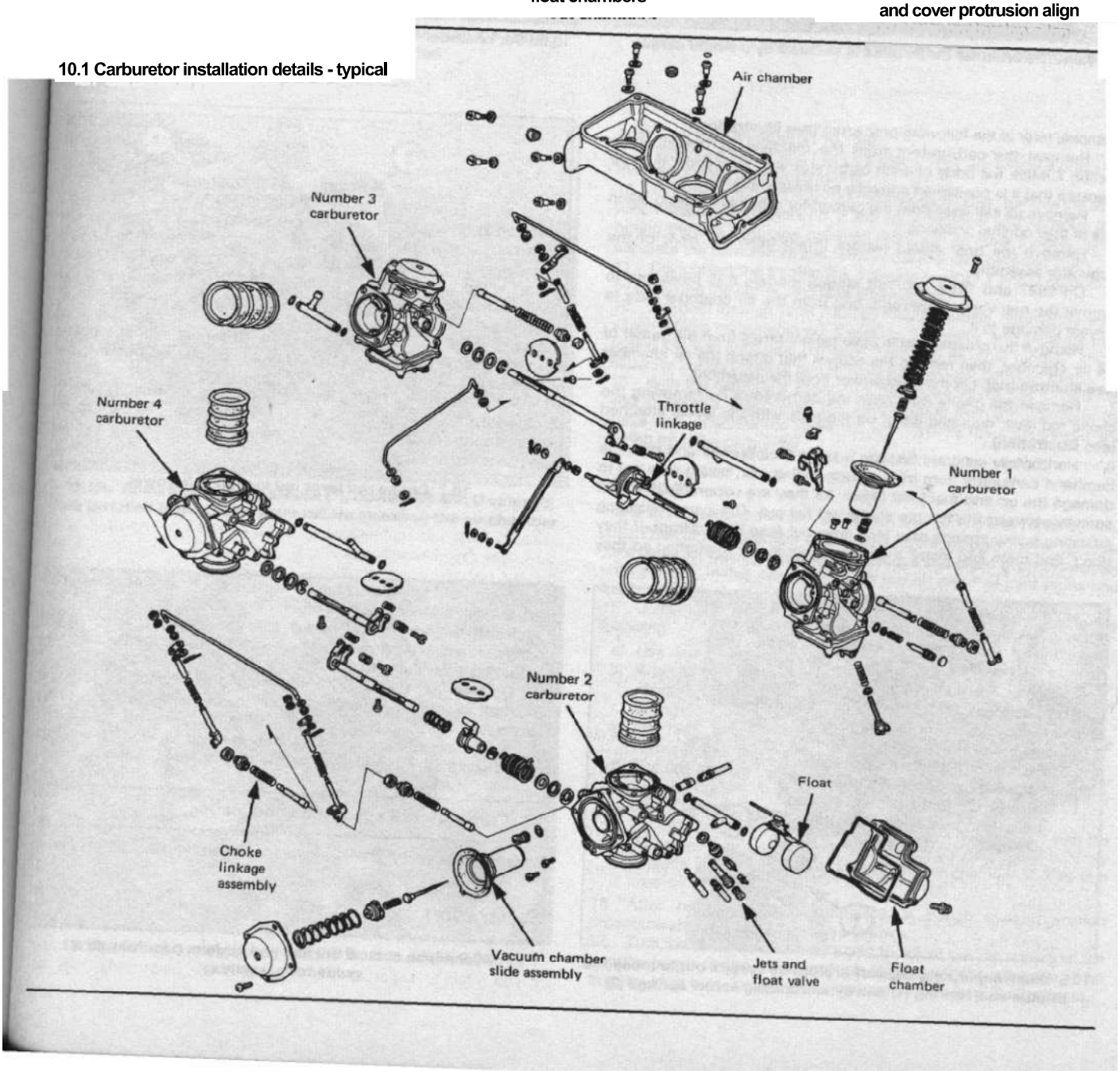
9.8 Measuring the float height

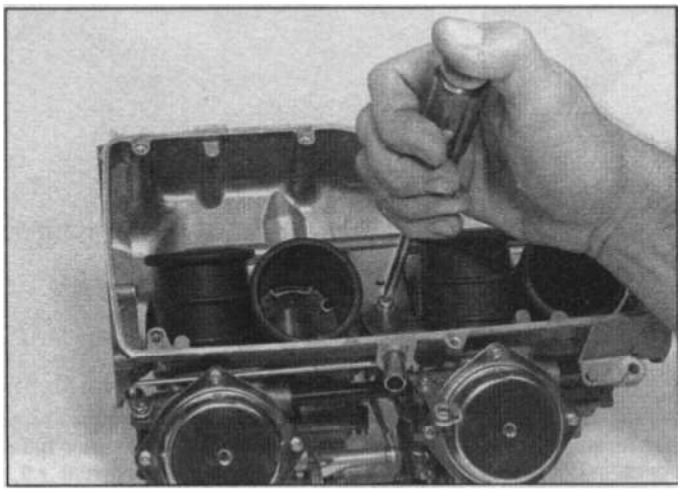


9.9 Use a new seal when installing the float chambers

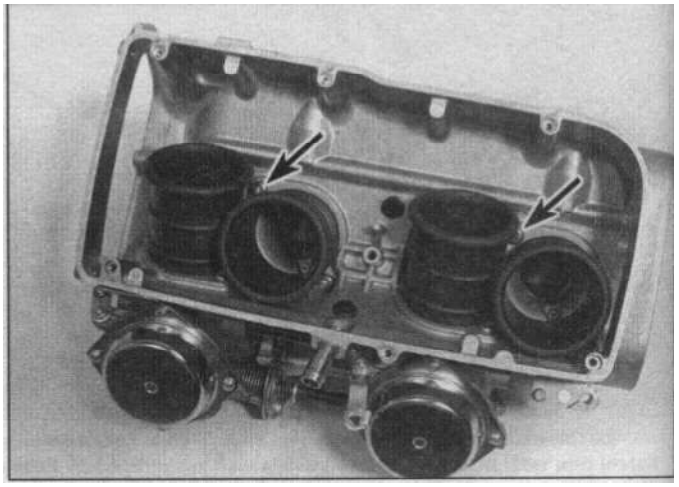
9.11 Ensure diaphragm tab, vacuum tube and cover protrusion align

10.1 Carburetor installation details - typical





10.6a The breather baffle plate is secured by a single screw



10.6b Air chamber-to-carburetor screws - there are eight in total

example), refer to the following procedure **(see illustration).**

2 Remove the carburetors from the machine as described in Section 7. Mark the body of each carburetor with its cylinder number to ensure that it is positioned correctly on reassembly.

3 Remove all fuel lines from the carburetor assembly, having taken note of their original positions.

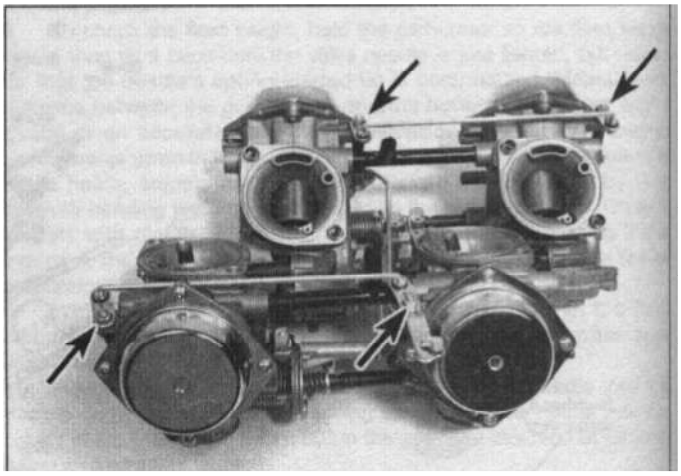
4 Remove the heat shield (where fitted) from the front of the carburetor assembly.

5 On 1987 and 1988 700/750 Magna models it is advisable to remove the fuel valve diaphragm unit from the air chamber side to prevent damage to it.

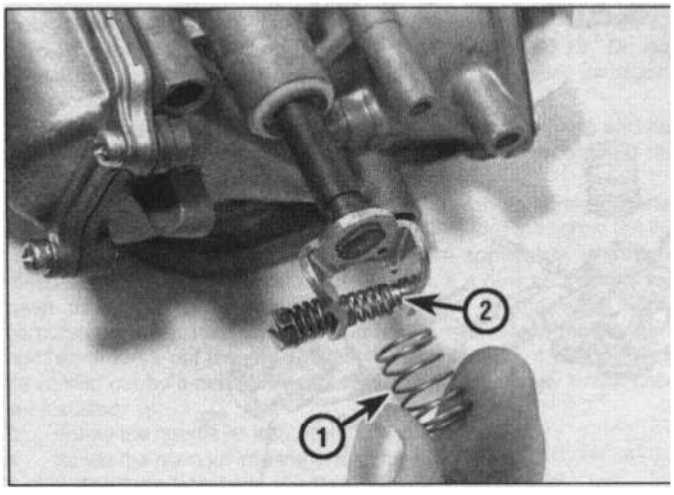
6 Remove the breather baffle plate (where fitted) from the center of the air chamber, then remove the screws that attach the air chamber **(see illustrations).** Lift the air chamber from the assembly.

7 Remove the choke rods from the carburetors by removing the choke rod lever nuts and lifting off the rods with the levers attached **(see illustration).**

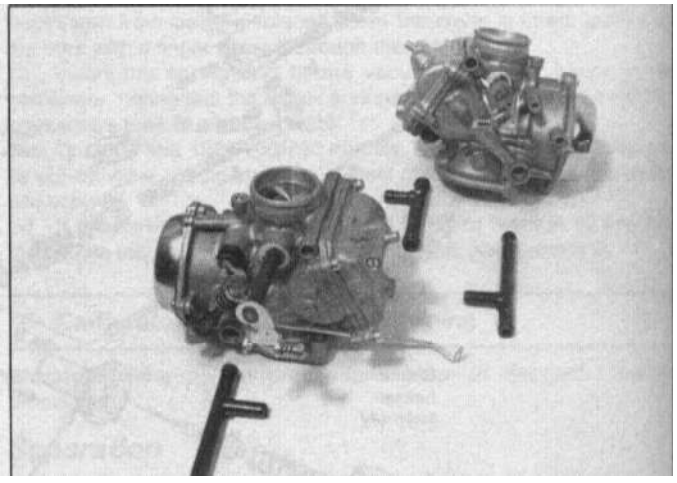
8 Horizontally separate first the number 3 carburetor and then the number 4 carburetor from their corresponding pair, taking care not to damage the air and fuel joint pipes. As they are separated, the coil springs between the throttle shafts will fall out. The synchronization adjusting screw springs may also drop out **(see illustration).** If they don't, find them and install them as shown in the illustration so they



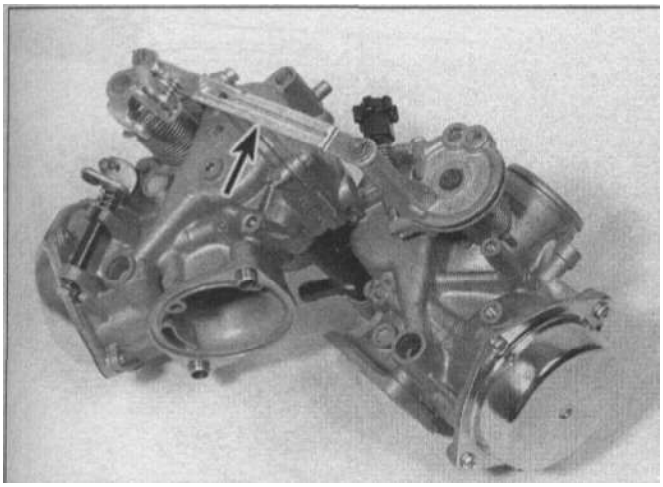
10.7 Choke rod lever nut locations (arrows)



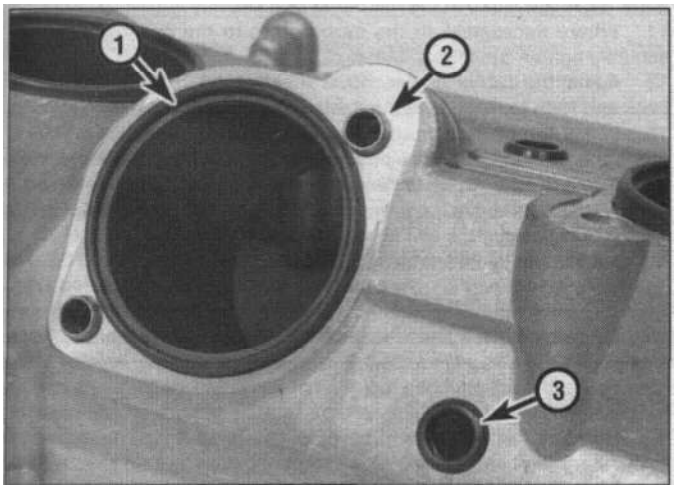
10.8 When separating the carburetors be careful not to loose the throttle shaft spring (1) and synchronizing screw springs (2)



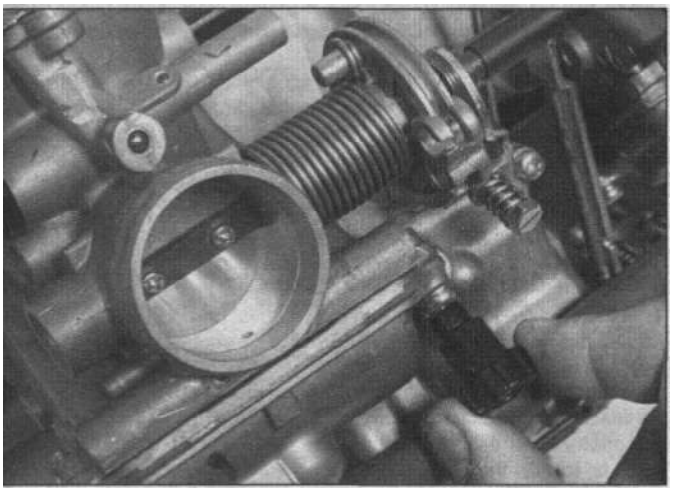
10.9 Make note of the fuel and air joint positions as a guide to reassembly



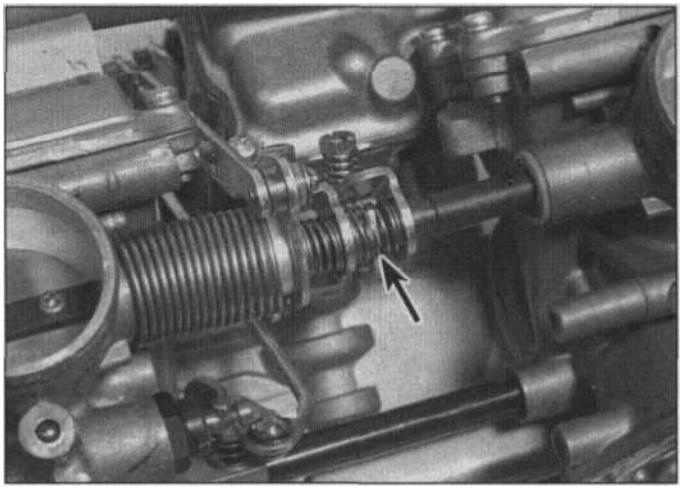
10.11 Throttle link must be detached before nos. 1 and 2 carburetors can be separated



10.15b Ensure all velocity stacks (1), dowels (2) and O-rings (3) are installed in the carburetors before installing the air chamber



10.17a On no. 1 carburetor, use the throttle stop screw ...



10.15a Installed position of the throttle shaft coil springs (arrow)

aren't lost **(see illustration 10.15a).**

9 Withdraw the air and fuel joint pipes. They are simply a press fit in the carburetors **(see illustration).**

10 On 1985 through 1988 700/750 Magna models, remove the screw which retains carburetors no. 3 and no. 4 together and separate them noting the fuel joint pipe between them. On all other models, simply separate the carburetors and retrieve the fuel joint between them.

11 Disconnect the throttle link from the number 1 and 2 carburetors by removing the cotter pins **(see illustration).**

12 On 1985 through 1988 700/750 Magna models, remove the screw which retains carburetors no. 1 and no. 2 together and separate them noting the fuel joint pipe between them. On all other models, simply separate the carburetors and retrieve the fuel joint between them.

13 With the carburetor separated, the choke valves can be removed and inspected. Disconnect the linkage hook from the groove in the valve end, unscrew the valve nut and remove the choke valve and spring from the carburetor.

Joining

Refer to illustrations 10.15a, 10.15b, 10.17a, 10.17b and 10.18

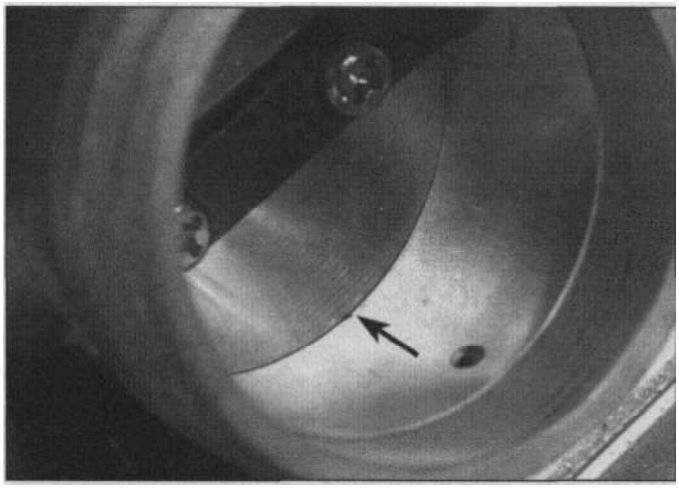
14 Prior to reconnection of the carburetors, inspect the air and fuel joint pipes for cracks, blockage or damage and clean them thoroughly with solvent. Install new O-rings on the air and fuel joint pipes and apply oil to the O-rings prior to installing the pipes in the carburetors.

15 Joining is the reverse of the disassembly procedure, noting the following.

a) *Use new O-rings on the fuel and vent line fittings.*
b) *After all four carburetors are connected, loosen the synchroni ation adjusting screws and re-install the synchroni ation springs.*
c) *On 1985 through 1988 700/750 Magna models, tighten the carburetor joining screws only lightly at this stage.*
d) *The coil springs between the throttle shafts can be installed after the carburetors have been loosely attached to the air chamber* **(see illustration).**
e) *Prior to connecting the carburetors to the air chamber, be sure the rubber velocity stacks, grommets and dowel pins are all securely in place* **(see illustration).** *Tighten the air chamber screws in a criss-cross sequence.*

16 After reconnection is complete, a bench synchronization procedure should be carried out as follows.

17 Turn the throttle stop screw (used to adjust the idle speed) so the throttle valve in the no. 1 carburetor is aligned with the rear edge of the front by-pass hole, located in the carburetor bore **(see illustrations).**



10.17b ... to set the throttle valve level with the rear edge of the front bypass hole (arrow)

18 Align the throttle valves in each of the other carburetors in the same manner by turning the synchronization adjusting screws **(see illustration).**

19 Open the throttle slightly by pressing on the throttle linkage, then release it and make sure it returns smoothly with no drag or binding. Also check the choke valve linkage for smooth operation. If the choke linkage arms were disconnected from each other, new cotter pins should be used on reassembly.

20 Install the carburetors on the motorcycle (see Section 7).

21 On 1987 and 1988 700/750 Magna models, tighten the carburetor joining screws securely.

22 Carry out carburetor synchronization (see Chapter 1).

11 Throttle cables - removal and installation

Warning: Refer to *the precautions given in Section 1 before proceeding*

Removal

1 Remove the air filter housing as described in Section 14.

2 Loosen the throttle cable locknuts then free each outer cable from its mounting bracket. Detach the inner cables from the throttle pulley. If necessary to improve access to throttle cam, loosen the four retaining clips securing the carburetor intake rubbers to the cylinder head and disengage the carburetors from the cylinder head. Keep the carburetors upright to prevent fuel spillage.

3 Unscrew the three (early models) or two (later models) right handlebar switch screws and free the switch from the handlebar.

4 Disconnect the throttle cables from the throttle grip and unscrew each cable from the lower half of the handlebar switch. Mark each cable to ensure it is connected correctly on installation.

5 Remove the cables from the machine noting their exact routing.

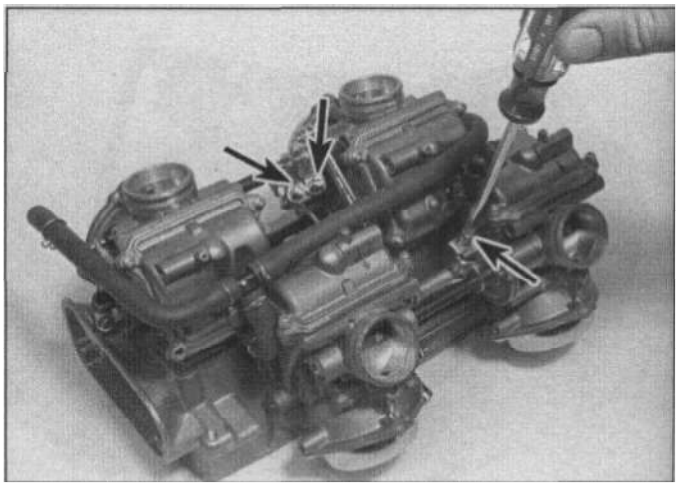
Installation

6 Install the cables making sure they are correctly routed. The cables must not interfere with any other component and should not be kinked or bent sharply.

7 Screw the cables into the lower half of the handlebar switch, making sure they are correctly connected. Lubricate the end of each cable with multi-purpose grease and attach the cables to the throttle grip pulley.

8 Fit the switch lower half to the handlebar, locating its peg in the handlebar hole. Fit the top half of the switch and securely tighten the screws (forward screws must be tightened first).

9 Lubricate the end of each cable with multi-purpose grease and attach them to the carburetor throttle cam.



10.18 Set up the other throttle valves using the synchronizing screws (arrows)

10 Make sure the cables are correctly connected and locate the outer cable adjusters in the mounting bracket.

11 Where necessary, fit the carburetors to the cylinder head and securely tighten the intake rubber clips.

12 Adjust the cables as described in Chapter 1. Turn the handlebars back and forth to make sure the cables don't cause the steering to bind.

13 Install the air filter housing as described in Section 14. Prior to fitting the fuel tank, start the engine and turn the handlebars back and forth to make sure the idle speed doesn't rise as the bars are turned. If it does, the cables are incorrectly routed. Sort out the problem before riding the motorcycle.

14 Install the fuel tank (see Section 2).

12 Choke cable - removal, installation and freeplay check

Removal

1 Remove the fuel tank (Sabre) or trig it up if less than half full (Magna).

2 Loosen the choke cable retainer screw, near the no. 1 carburetor.

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

4 Remove the rear view mirror from the left side.

5 On early models, remove the two bolts that hold the clutch master cylinder to the handlebars and lift the master cylinder off (keep it level to prevent fluid leakage). Disengage the cable trunnion from the choke lever.

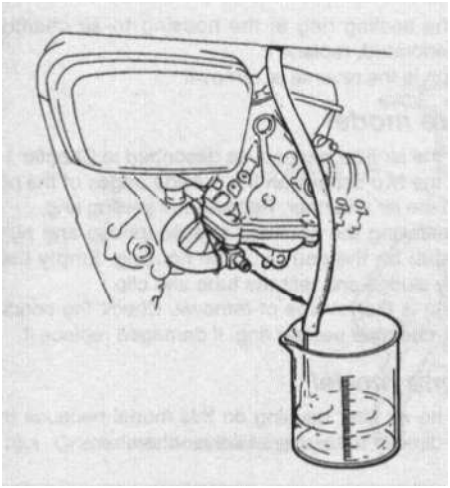
6 On later models (where the cable goes into the base of the handlebar switch), remove the two screws from the switch underside and separate the switch halves. Disengage the cable trunnion from the choke lever.

7 Unscrew the cable casing from the clutch master cylinder clamp (early models) or handlebar switch lower half (later models) and then withdraw it from the motorcycle.

Installation and freeplay check

8 Installation is the reverse of the removal procedure. Lubricate the cable inner and ensure that it is routed in its original path and secured with any relevant ties.

9 Set the cable freeplay by pulling the choke operating lever on the handlebar fully back (choke on) and check for any further movement at the choke lever on the carburetors. There should be no freeplay; if there is, loosen the outer cable clamp screw and reposition the outer cable accordingly. Push the choke operating lever fully forward (choke off) and check for a small amount of slack in the carburetor linkage, indicating that the choke is fully off.



13.3 When checking the fuel pump output, route the carburetor fuel supply hose into a glass jar or measuring vessel

13 Fuel pump - check, removal and installation

Warning: *Refer to the precautions given in Section 1 before proceeding.*

Check

Refer to illustration 13.3

1 Make sure there is adequate fuel in the fuel tank and that the battery is fully charged.
2 With the engine running, examine all fuel lines between the fuel tank and fuel pump for leaks, loose connections, kinks or crimps in the rubber hoses. Air leaks before the fuel pump can seriously affect the pump's output.
3 Disconnect the fuel supply hose from the carburetors. Place a clean container such as a glass jar at the end of the detached fuel hose and turn the ignition switch on for several seconds **(see illustration).** There should be strong, regular spurts of fuel from the line until the ignition switch is turned off again.
4 If little or no fuel emerges from the line during the test, then either the line or fuel filter is clogged or the fuel pump is not working properly. Disconnect all fuel lines and blow them out. Replace the fuel filter (see Chapter 1). If the lines and filter are not clogged, then the pump is faulty and should be replaced.
5 A more accurate method of testing fuel pump flow capacity is to perform the previous test using a measuring container and a watch according to the following sub-Section.

1982 through 1986 700/750 Magna models

6 Turn the ignition ON for 5 seconds, then turn it OFF. Measure the amount of fuel in the glass jar and multiply it by 12 to arrive at the output per minute. On 1982 through 1984 models the pump should produce approximately 614 cc (21 US fl oz, 22 Imp fl oz) of fuel, and on 1985 and 1986 models it should produce approximately 600 cc (20 US fl oz, 21 Imp fl oz) of fuel.

1100 Sabre models

7 Remove the seat and left side cover (see Chapter 6).
8 With the fuel supply hose connected to the carburetors, start the engine and pinch the fuel valve vacuum hose, then turn the fuel valve OFF and ignition switch OFF.
9 Disconnect the fuel pump relay connector, and using a jumper wire, short the black/light green and white wire terminals on the harness side of the connector together.
10 Disconnect the fuel supply hose from the carburetors and place its open end in a glass jar. Turn the fuel valve ON, then turn the ignition ON for 5 seconds, then turn the ignition OFF.
11 Measure the amount of fuel in the jar and multiply it by 12 to arrive at the output per minute. If the pump is operating correctly it should produce approximately 800 cc (27 US fl oz, 28 Imp fl oz).
12 Remove the testing equipment and reconnect the wiring and fuel hose.

1100 Magna models

13 Remove the seat and side covers (see Chapter 6).
14 Make sure the ignition switch is OFF, then disconnect the fuel pump relay connector. Using a jumper wire, short the black and white wire terminals on the harness side of the connector together.
15 Disconnect the fuel supply hose from the carburetors and place its open end in a glass jar. Turn the ignition ON for 5 seconds, then turn it OFF.
16 Measure the amount of fuel in the jar and multiply it by 12 to arrive at the output per minute. If the pump is operating correctly it should produce approximately 614 cc (21 US fl oz, 22 Imp fl oz).
17 Remove the testing equipment and reconnect the wiring and fuel hose.

Removal and installation

1982 through 1984 700/750 Magna models

18 Remove the seat.
19 Remove the main fuel tank as described in Section 2.
20 Remove both side covers (see Chapter 6).
21 Disconnect the battery leads, negative lead first. Remove the battery.
22 Remove the battery tray.
23 Remove the starter relay (see Chapter 8).
24 Turn the fuel valve OFF and clamp the fuel hoses to prevent fuel flow. Have a rag handy to catch fuel spills, then detach the fuel inlet and outlet hoses from the fuel pump.
25 Disconnect the wiring connectors leading to the fuel pump.
26 Remove the fuel pump mounting bolts and lift out the fuel pump.
27 Installation is the reverse of the removal procedure.

1985 and 1986 700 Magna models

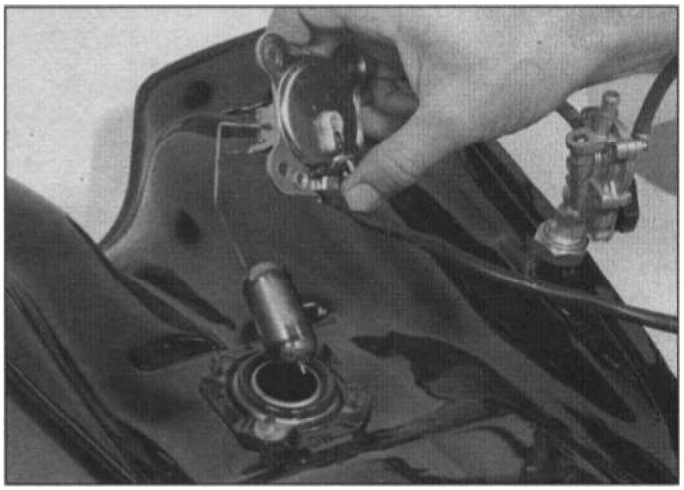
28 Remove both side covers (see Chapter 6).
29 Disconnect the battery leads, negative lead first.
30 Turn the fuel valve OFF and clamp the fuel hoses to prevent fuel flow. Have a rag handy to catch fuel spills, then detach the fuel inlet and outlet hoses from the fuel pump.
31 Disconnect the wiring connectors leading to the fuel pump.
32 Maneuver the fuel pump out of its mounting rubber.
33 Installation is the reverse of the removal procedure.

1100 Sabre models

34 Remove the seat and both side covers (see Chapter 6).
35 Disconnect the battery leads, negative lead first.
36 Disconnect the wiring connectors for the fuel pump, fuel unit **and** both spark units.
37 To gain access to the fuel pump, remove the right side spark **unit** from its holder and the stop/tail light sensor from its holder (use the wiring diagram at the end of this manual for component identification).
38 Turn the fuel valve OFF and clamp the fuel hoses to prevent fuel flow. Have a rag handy to catch fuel spills, then detach the fuel inlet and outlet hoses from the fuel pump.
39 Maneuver the fuel pump out of its rubber mounting.
40 Installation is the reverse of the removal procedure. Refer to the wiring diagram at the end of this manual, and ensure that all electrical connections have been made correctly.

1100 Magna models

41 Remove the seat and both side covers (see Chapter 6).
42 Disconnect the battery leads, negative lead first.
43 Turn the fuel valve OFF and clamp the fuel hoses to prevent fuel flow. Have a rag handy to catch fuel spills, then detach the fuel inlet and outlet hoses from the fuel pump.
44 Disconnect the wiring connector leading to the fuel pump.



15.2 Take care not to bend the float arm when removing the fuel sender from the tank

45 Remove the two mounting bolts and lift the pump upwards and out of the motorcycle. Note the location of the washer, grommet, collar and nut.
46 Installation is the reverse of the removal procedure.

14 Air filter housing - removal and installation

1982 750 Sabre model

1 Remove the air filter elements as described in Chapter 1.
2 Remove the three screws on each side and detach the air filter housings from the side of the air chamber. Recover the sealing rings.
3 Installation is a reverse of removal, noting that the sealing rings must be replaced if damaged.

1983 through 1985 700/750 Sabre and 1982 through 1986 700/750 Magna models

4 Remove the air filter element as described in Chapter 1.
5 On Magna models, remove the single screw and collar from the top rear of the housing and loosen the screw clamp which secures the housing to the carburetor air chamber. On Sabre models, remove the three screws which retain the housing to the air chamber.
6 Pull the crankcase breather hose off the back of the housing and lift the housing up and off the motorcycle.
7 Before installing the housing, release its clip and pull the drain tube off the stub on the base of the housing. Empty the tube and housing of any sludge and refit the tube and clip.
8 On Magna models, inspect the condition of the flexible hose between the air chamber and filter housing; replace it if split or deteriorated.
9 Installation is the reverse of removal. Ensure that the housing front end engages the air duct correctly.

1987 *and 1988 700/750 Magna models*

10 Remove the air filter element as described in Chapter 1.
11 Remove the air chamber side covers (single screw at lower edge) and the screws which secure the air chambers to the air filter housing; you may need to move the thermostat (right side) and air injection control valve assembly (left side) to gain access to the screws.
12 Working from the top of the air filter housing, remove the six screws which retain the housing to the air chamber on the carburetors.
13 Pull the crankcase breather hose off the back of the housing and lift it up and off the motorcycle.
14 Before installing the housing, release its clip and pull the drain tube off the stub on the base of the housing. Empty the tube and housing of any sludge and refit the tube and clip.
15 Check the sealing ring at the housing-to-air chamber joint; if broken to deteriorated, replace it.
16 Installation is the reverse of removal.

1100 Sabre model

17 Remove the air filter element as described in Chapter 1.
18 Remove the two screws on the outside edges of the housing and detach it from the air chamber. Recover the sealing ring.
19 Before installing the housing, release its clip and pull the drain tube off the stub on the corner of the housing. Empty the tube and housing of any sludge and refit the tube and clip.
20 Installation is the reverse of removal. Check the condition of the housing-to-air chamber sealing ring; if damaged replace it.

1100 Magna model

21 There is no air filter housing on this model because the element cover screws directly to the top of the air chamber.

15 Fuel sender - removal and installation

Warning: *Refer to the precautions given in Section 1 before proceeding.*

All Sabre models and 1985/86 700 Magna models

Refer to illustration 15.2

1 Remove the fuel tank (see Section 2) and drain all fuel into a container suitable for the storage of gasoline (petrol).
2 The fuel sender is secured to the tank base by four nuts. Recover the O-ring and be especially careful not to bend the float arm as the sender is withdrawn through the tank base **(see illustration).**
3 Installation is a reverse of the removal procedure, noting that a new O-ring should be used between the tank and sender.

1982 through 1984 700/750 Magna models and all 1100 Magna models

4 Remove the seat and left side cover (see Chapter 6).
5 Drain all fuel from the main fuel tank and half of the auxiliary tank into a container suitable for the storage of gasoline (petrol).
6 The sender is set in the top of the auxiliary fuel tank. Disconnect its wires and unscrew the sender from the tank. Plug the tank opening while the sender is removed.
7 Installation is a reverse of the removal procedure, noting that a new sealing ring should be installed between the tank and sender unit.

16 Crankcase breather - general information and system components check

General information

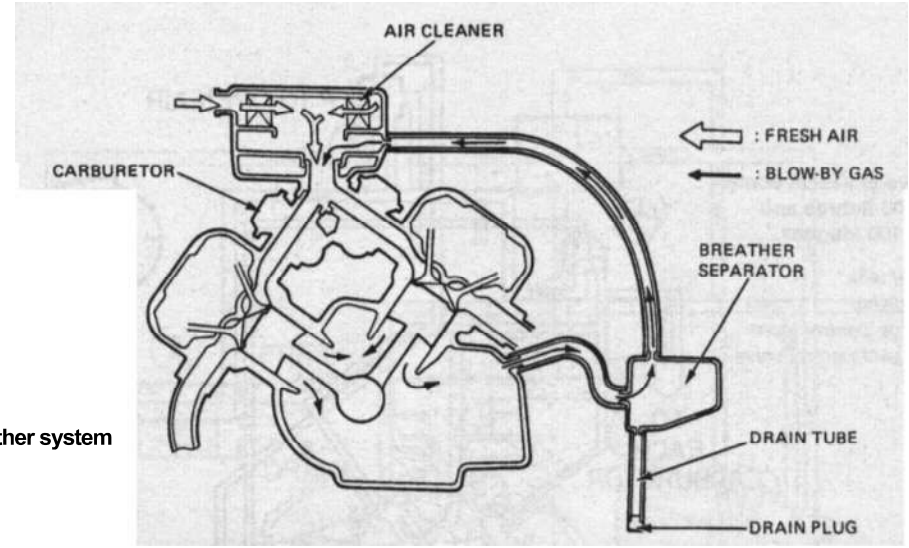
Refer to illustration 16.1

1 The crankcase breather prevents the discharge of hydrocarbons from crankcase vapor into the atmosphere. Gases are sucked out of the crankcase via engine vacuum, through a hose to the separator tank, and from there through another hose up to the air filter housing or chamber. From there, the gases combine with fresh air and are sucked into the carburetors for reburning **(see illustration).**
2 Over a period of time, sludge may build up in the separator tank and hoses to the extent that they become clogged. Rough idling or a reduced engine speed at idle are indications of this condition.
3 Certain models have a drain tube or catch tank linked to the separator tank which has to be emptied in accordance with the maintenance schedule (see Chapter 1), but on others, the system will have to be disassembled and cleaned out if a blockage is suspected.

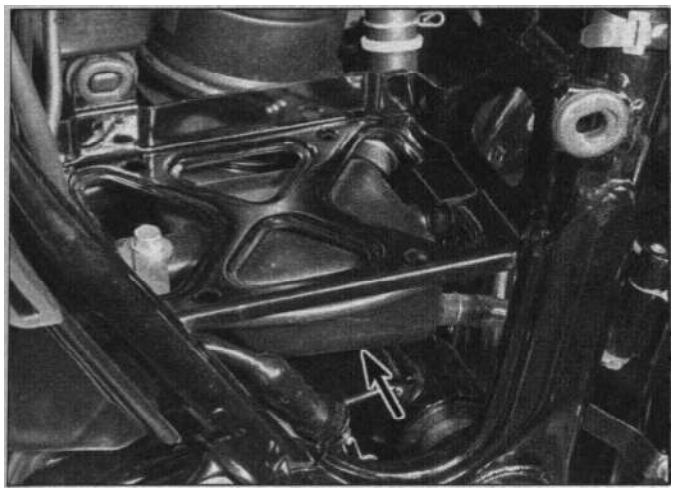
System components check

Refer to illustration 16.6

4 To check for proper vacuum in the system, disconnect the rubber



16.1 Crankcase breather system



16.6 Crankcase breather separator tank (arrow) will be found in the mid-frame area - 700/750 Sabre location shown

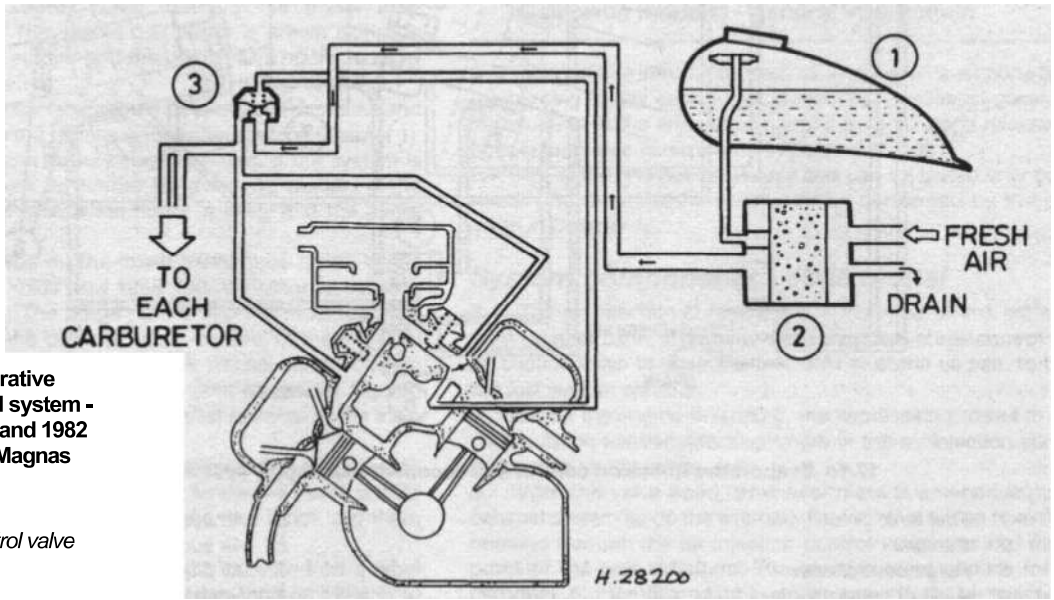
hose where it exits the rear of the crankcase. With the engine idling, place your thumb lightly over the end of the hose. You should feel a slight vacuum. The suction may be heard as your thumb is released. This will indicate that air is being drawn all the way through the system. If a vacuum is felt, the system is functioning properly.

5 If there is no or very little vacuum at the end of the hose, the system is either clogged or an air leak exists. Remove the separator tank and connecting hoses, and blow them through with compressed air.

6 Air leaks might be due to a cracked hose, poor connection or cracked separator tank **(see illustration).**

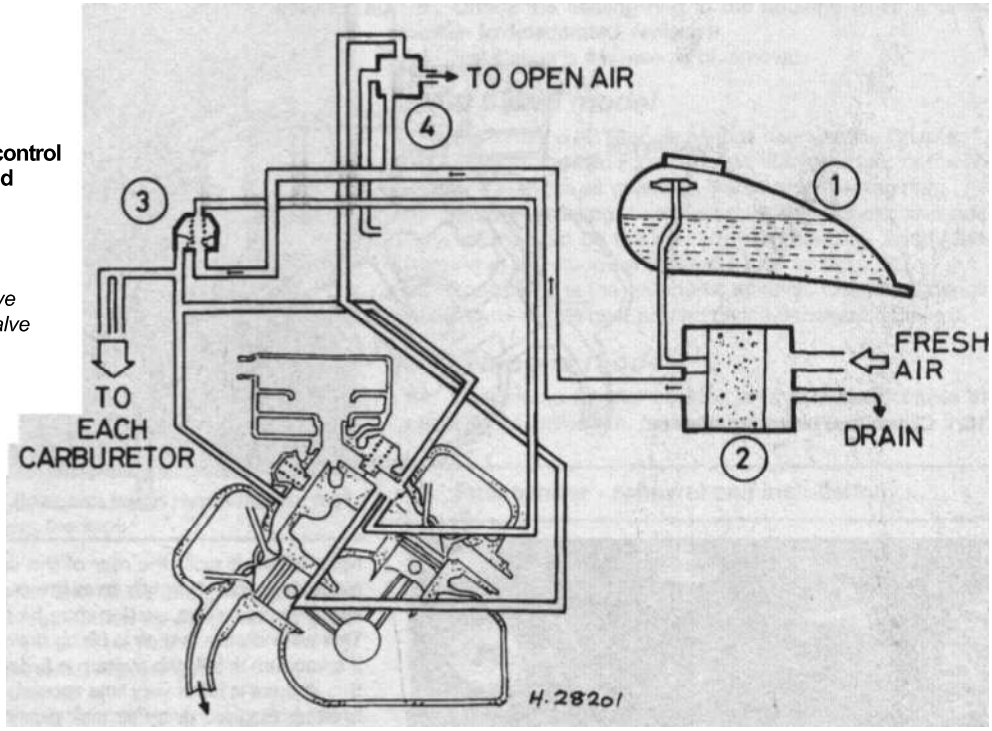
17 Evaporative emission control system (1984-on California models) - general information

Refer *to illustrations 17.1a, 17.1b, 17.1c and 17.1d* 1 This system conforms to the California Air Resources Board (CARB) requirements governing stringent emission control standards. Fuel vapors are routed from the fuel system into the engine to be burned, instead of letting them evaporate into the atmosphere. While the engine is stopped, vapors are absorbed by and stored in a carbon canister **(see illustrations).**



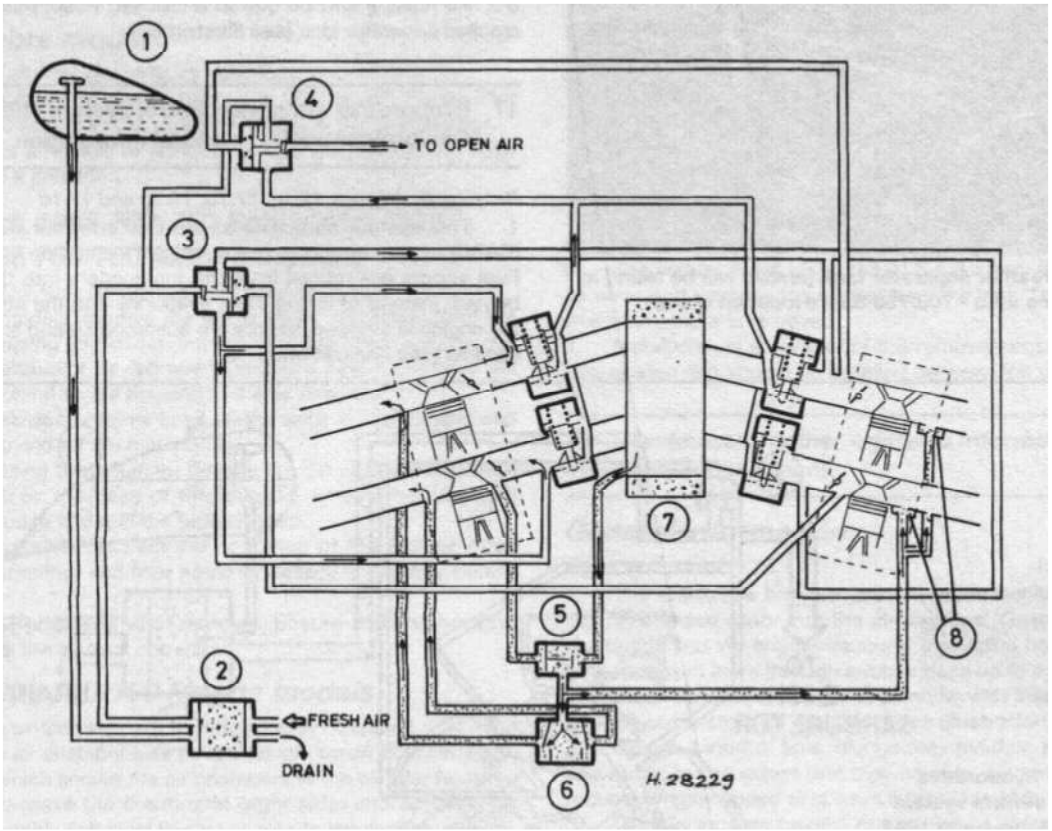
17.1a Evaporative emission control system - 700/750 Sabres and 1982 through 1985 Magnas

1 Fuel tank
2 Canister
3 Purge control valve



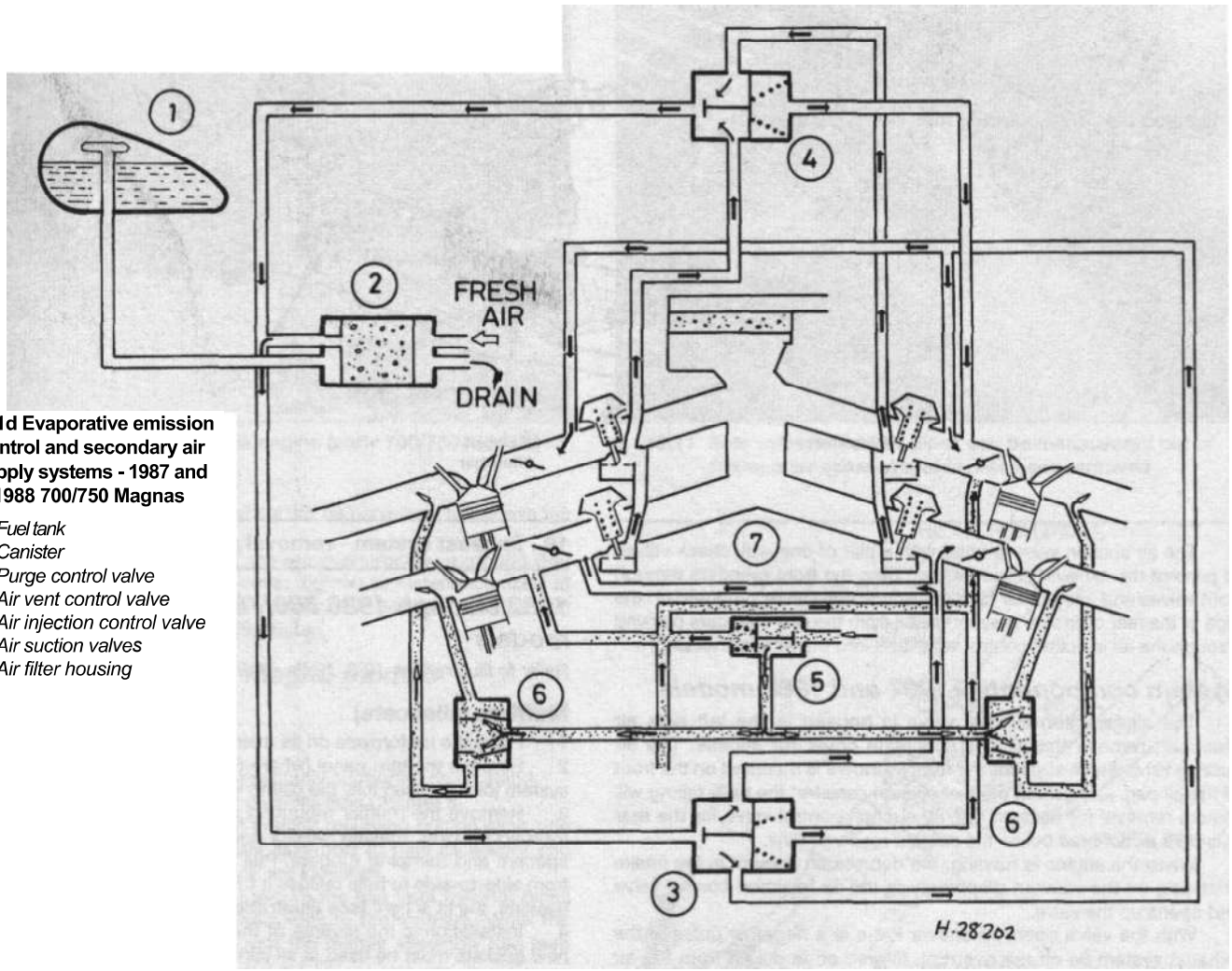
17.1b Evaporative emission control system -1100 Sabres and 1986-on 1100 Magnas

1 Fuel tank
2 Canister
3 Purge control valve
4 Air vent control valve



17.1c Evaporative emission control and secondary air supply systems - 1986 700 Magna

1 Fuel tank
2 Canister
3 Purge control valve
4 Air vent control valve
5 Air injection control valve
6 Air suction valve
7 Air filter housing
8 Reed valves (rear cylinders)



17.1d Evaporative emission control and secondary air supply systems - 1987 and 1988 700/750 Magnas

1 Fuel tank
2 Canister
3 Purge control valve
4 Air vent control valve
5 Air injection control valve
6 Air suction valves
7 Air filter housing

2 The air vent control valve (fitted to all 1100 Sabre models and all 1986-on Magna models) routes vapor from the carburetor float chambers to the canister. The stored fuel vapor is drawn from the canister when the engine is started and the purge valve opens to allow vapor to pass to the carburetors.

3 The system hoses and canister should be checked for cracks and damage in accordance with the maintenance schedule (see Chapter 1). Apart from the inspection and replacement of hoses, if the system is suspected of failure it must be tested by a Honda dealer. If the motorcycle is difficult to re-start when hot, it is likely that the purge control valve is at fault.

4 The canister is mounted on the lower frame tube brace at the front of the motorcycle (on 1987 and 1988 700/750 Magnas, remove the belly fairing for access). The purge control valve is mounted on a bracket on the left side of the cylinder head; removal of the front left side cover or air chamber side cover will be necessary on certain models for access to the valve. The air vent control valve is located above the carburetors and can be accessed after removal of the main fuel tank.

5 Details of the vacuum hose connections are given on a label stuck to the inside of either side cover or on the rear fender. All hoses should carry a label containing their number reference, but if not, tag them carefully when disconnecting.

6 Information relating to emission control is provided on a label stuck to the right side lower frame tube on models through 1986 or to the right side upper frame tube on models from 1987-on.

18 Secondary air supply system (1986-on 700/750 California models) - general information

1 This system introduces fresh air into the exhaust ports to promote the burning of any excess fuel present in the exhaust gases, resulting in reduction in the amount of harmful hydrocarbons released into the atmosphere **(see illustrations 17.1c and 17.1d).**

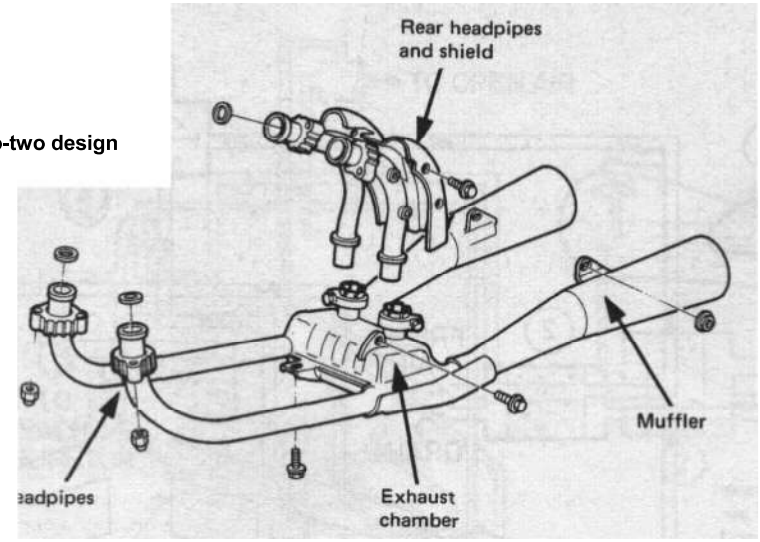
2 The system is not adjustable and can be tested only by a Honda dealer. Routine checks which can be performed by the owner are given in Chapter 1.

System *components -1986 model*

3 The air injection control valve is mounted on the left side of the front cylinder bank, just below the fuel system purge control valve. The air suction valve is mounted on the front of the oil pan, to the rear of the fuel system canister.

4 When the engine is running, the depression present in the intake duct acts on the vacuum diaphragm in the air injection control valve and opens up the valve.

5 With the valve open, whenever there is a negative pulse in the exhaust system (ie on the overrun), filtered air is drawn from the air filter housing through the air injection control valve and into the exhaust ports of the rear cylinders. The same system applies for the front cylinders, but the filtered air is drawn through the air injection control valve and the air suction valve before reaching the exhaust ports.

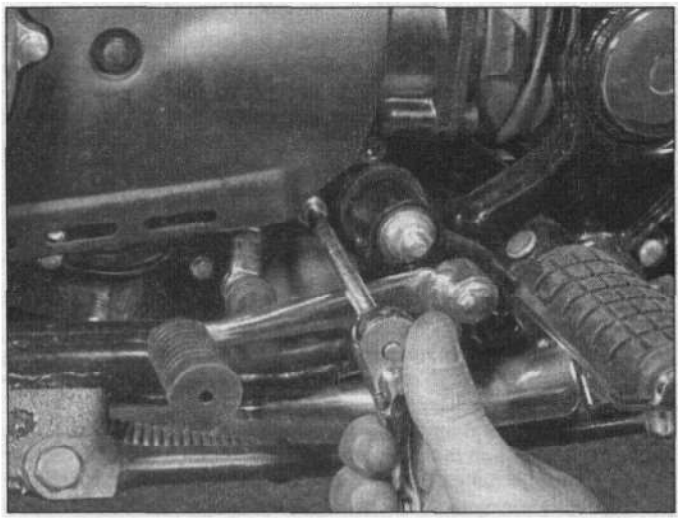


19.3 Exhaust system - early four-into-two design

6 The air suction valve is fitted with a pair of one-way check valves to prevent the exhaust gases passing from the front cylinders through both valves and into the air filter housing. Reed valves mounted on the side of the rear cylinders prevent gases from the rear cylinders passing through the air injection control valve and into the air filter housing.

System components - 1987 and 1988 models

7 The air injection control valve is housed in the left side air chamber; remove the air chamber side cover for access. The air suction valve which supplies the front cylinders is mounted on the front of the oil pan, just behind the fuel system canister; the belly fairing will require removal for access. The air suction control valve for the rear cylinders is mounted below the coolant reservoir tank.
8 When the engine is running, the depression present in the intake duct acts on the vacuum diaphragm in the air injection control valve and opens up the valve.
9 With the valve open, whenever there is a negative pulse in the exhaust system (ie on the overrun), filtered air is drawn from the air filter housing through the air injection control valve and air suction valves and into the exhaust ports.
10 The air suction valves are fitted with a pair of reed valves to prevent the exhaust gases passing from the cylinders through both valves and into the air filter housing.



19.9a Exhaust chamber bolts are located on left side of engine ...

19 Exhaust system - removal and installation

1982 through 1986 700/750 models and all 1100 models

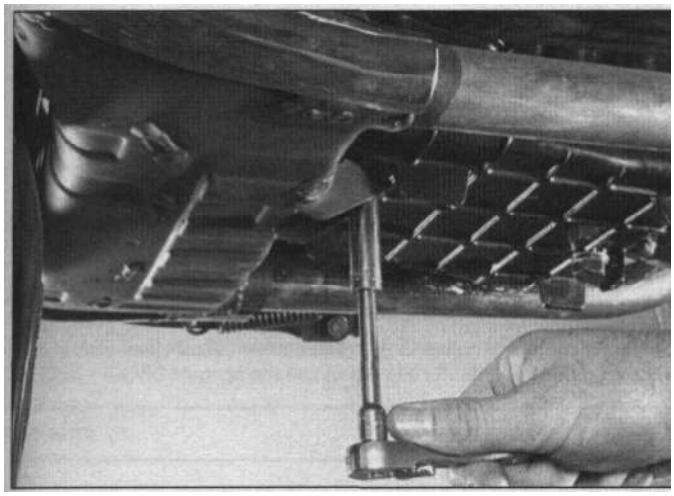
Refer to illustrations 19.3, 19.9a, 19.9b and 19.11

Mufflers (silencers)

1 Place the motorcycle on its main stand.
2 Remove the trim panel (where fitted) from the muffler-to-exhaust system joint. Loosen fully the clamp which retains this joint.
3 Remove the muffler mounting nut and bolt from the passenger footpeg bracket, making careful note of the position of all washers, spacers and damping rubbers. Pull the muffler rearwards, twisting it from side-to-side to help release it from its joint clamp. Due to the joint gaskets, the fit is tight **(see illustration).**
4 Installation is the reverse of the removal procedure, noting that new gaskets must be used at all joints. Tighten all fasteners loosely at first, and then when the system is in its correct position, secure them to the specified torque (see Specifications).

Complete system

5 Place the motorcycle on its main stand.
6 Remove the muffler (silencer) mounting bolt on each side and place a wood block under the assembly to take its weight and prevent strain while the main exhaust fasteners are released.
7 Remove the nuts that retain the exhaust pipes to the front cylinder head.
8 Loosen fully the clamps that secure the exhaust chamber to the two rear exhaust headpipes.
9 On 700/750 models remove the two exhaust chamber mounting bolts (one is located on the left side of the engine and one is located underneath the engine) **(see illustrations).** On 1100 models the chamber is held by a single long bolt on the left side of the engine (remove the rear left engine cover for access).
10 Carefully work the rear cylinder pipes out of the chamber stubs and lower the complete exhaust system clear of the motorcycle. Note that the rear cylinder pipe clamps may need to be rotated to clear the swingarm.
11 On all models except the 1985 and 1986 700 Magnas, the rear cylinder headpipes can be removed after removing the exhaust system. First remove the screws that attach the heat shield to both headpipes, then remove the nuts that attach the pipes to the rear cylinder head bank. Carefully work each pipe up and out the side of the motorcycle **(see illustration).** Due to lack of clearance, the heat shield cannot be removed without first removing other components. On 1985



19.9b ... and underneath the engine (early 700/750 models)

and 1986 700 models, engine removal will be necessary to remove the rear cylinder headpipes.
12 Installation is the reverse of the removal procedure, noting that new gaskets must be used at all joints. Tighten all fasteners loosely at first, and then when the system is in its correct position, secure them to the specified torque (see Specifications).

1987 and 1988 700/750 Magna models

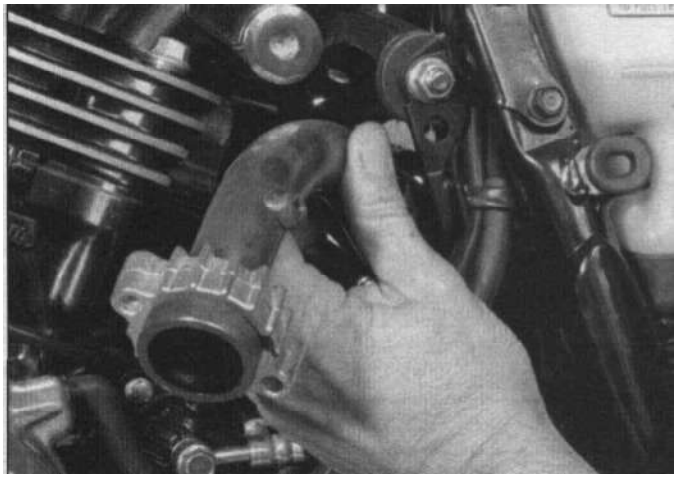
Refer to illustration 19.16

Muffler (silencer)

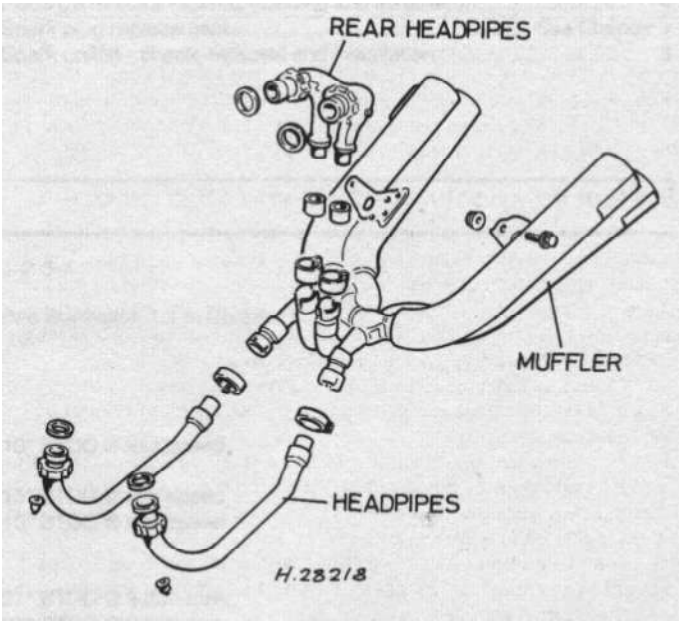
13 Ensure that the motorcycle is securely supported on its stand.
14 Remove the belly fairing rear sections (see Chapter 6).
15 Remove the muffler (silencer) bracket mounting bolt on each side and place a wood block under the assembly to take its weight and prevent strain while the joint clamps are loosened.
16 Loosen fully the clamps that secure the two front cylinder pipes and two rear cylinder exhaust headpipes to the mufflers. Work the muffler stubs off the pipes and lower the muffler assembly free **(see illustration).**
17 If required, the right and left side mufflers can be separated after the connecting pipe clamp bolt has been fully loosened and the joint pulled apart.
18 Installation is the reverse of the removal procedure, noting that new gaskets must be used at all joints. Tighten all fasteners loosely at first, and then when the system is in its correct position, secure them to the specified torque (see Specifications).

Complete system

19 Ensure that the motorcycle is securely supported on its stand.
20 Remove the belly fairing (see Chapter 6).
21 Remove the muffler (silencer) bracket mounting bolt on each side and place a wood block under the assembly to take its weight and prevent strain while the main exhaust fasteners are released.
22 Remove the nuts that retain the exhaust pipes to the front cylinder head.
23 Loosen fully the clamps that secure the two rear exhaust headpipes to the mufflers and carefully work the headpipes out of the stubs and lower the complete exhaust system clear of the motorcycle.



19.11 Rear cylinder header pipes can be maneuvered out of frame after exhaust system has been removed



19.16 Exhaust system - four-into-four design

24 If required, the right and left side mufflers can be separated after the connecting pipe clamp bolt has been fully loosened and the joint pulled apart.
25 Engine removal will be necessary to remove the rear cylinder headpipes from the cylinder head; the pipes are covered by a heat shield and retained to the head by nuts.
26 Installation is the reverse of the removal procedure, noting that new gaskets must be used at all joints. Tighten all fasteners loosely at first, and then when the system is in its correct position, secure them to the specified torque (see Specifications).