



10.6 Fuel filter - 'in-tank' fuel pump type

5 Loosen the clamp screws, and disconnect the fuel hoses from the filter. Be prepared for fuel spillage, and take adequate fire precautions.

6 Loosen the clamp bolt(s), and withdraw the fuel filter from its bracket. Note the orientation of the flow direction arrow on the body of the filter, and the position of the "AUS" (out) marking on the filter end face.

Refitting

7 Refitting is a reversal of removal, ensuring that the flow direction markings are correctly orientated.

8 Run the engine and check for leaks on completion. If leakage is evident, stop the engine immediately, and rectify the problem without delay.

10 Fuel filter ('In-tank' fuel pump models) - removal and refitting



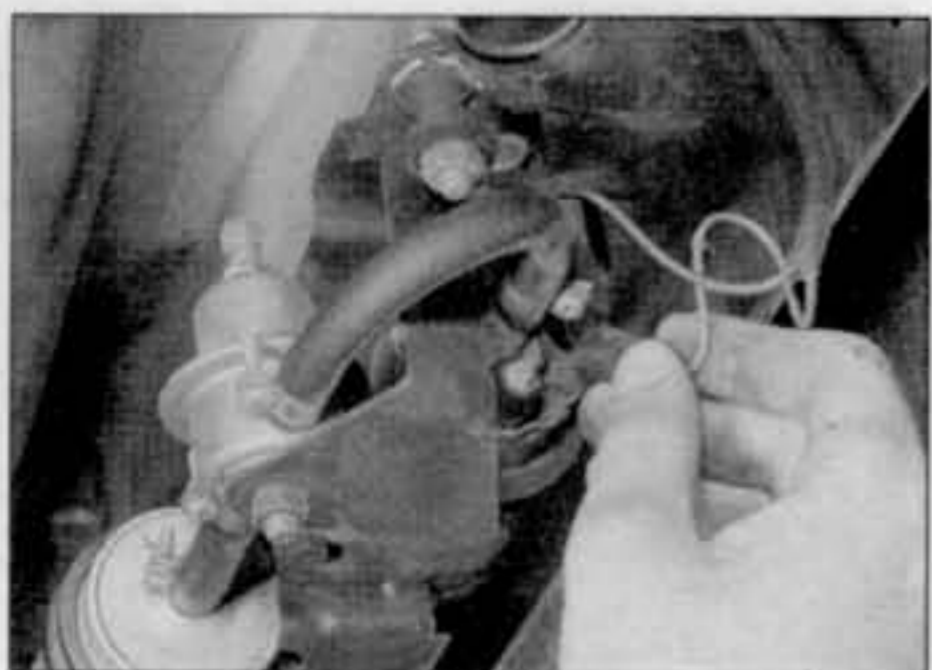
Note: Refer to Section 2 before proceeding.

Removal

1 Depressurise the fuel system (Section 8).
2 Chock the front wheels, jack up the rear of the vehicle and support it on axle stands placed under the body side members (see "Jacking and Vehicle Support"). The fuel filter is located at the rear of the fuel tank, on the right-hand side.

3 Unclip the fuel hose from the filter mounting bracket.

4 Note carefully any markings on the fuel filter



12.4 Disconnecting a fuel pump wiring plug - 'out-of-tank' fuel pump model

casing. There should be at least an arrow (showing the direction of fuel flow) pointing in the direction of the fuel supply hose leading to the engine compartment. There may also be the words "EIN" (in) and "AUS" (out) embossed in the appropriate end of the casing.

5 Clamp the fuel filter hoses, then slacken the clips and disconnect the hoses.

6 Undo the single screw to release the mounting bracket, then open the clamp with a screwdriver to remove the fuel filter (see illustration).

Refitting

7 Fit the new fuel filter using the reverse of the removal procedure, but ensure that the fuel flow direction arrow or markings point in the correct direction. Switch on the ignition and check carefully for leaks; if any signs of leakage are detected, the problem must be rectified before the engine is started.

11 Fuel pump - testing



1 If the fuel pump is functioning, it should be possible to hear it "buzzing" by listening under the rear of the vehicle when the ignition is switched on. Unless the engine is started, the fuel pump should switch off after approximately one second. If the noise produced is excessive, this may be due to a faulty fuel flow damper. The damper can be renewed referring to Section 18, if necessary.

2 If the pump appears to have failed completely, check the appropriate fuse and relay.

3 To test the fuel pump, special equipment is required, and it is recommended that any suspected faults are referred to a Vauxhall dealer.

12 Fuel pump ('Out-of-tank' fuel pump models) - removal and refitting



Note: Refer to Section 2 before proceeding.

Removal

1 The fuel pump is located on a bracket under the rear of the vehicle, either on the right-hand side of the spare wheel well or in front of the fuel tank on other models.

2 Disconnect the battery negative lead.

3 Have a container to hand, to catch the fuel that will be released as the damper is removed.
4 Disconnect the wiring plug(s) from the fuel pump (see illustration).

5 Clamp the fuel hoses on either side of the damper, to minimise fuel loss when the hoses are disconnected.

6 Loosen the clamp screws, and disconnect the fuel hoses from the pump. Be prepared for spillage, and take adequate fire precautions.

7 Loosen the clamp bolt, and slide the pump from its bracket.

Refitting

8 Refitting is a reversal of removal, ensuring that the pump is fitted the correct way round in its bracket. Push the pump into the rubber clamping sleeve as far as the rim on the pump body (see illustration).

9 Run the engine and check for leaks on completion. If leakage is evident, stop the engine immediately, and rectify the problem without delay.

13 Fuel pump ('In-tank' fuel pump models) - removal and refitting



Removal

1 Remove the fuel tank, as described in Section 16.

2 Undo the fuel pipe unions and disconnect the wiring multi-plug.

3 Unscrew the plastic cap, then withdraw the mounting bracket and pump assembly from the tank.

4 Recover the gasket and discard it.

5 Cover the tank opening, as a safety measure and to prevent the entry of dirt.

6 If the pump is to be renewed, first move it to a clean working area and carry out the following.

7 Prise off the filter at the base of the pump assembly, then release the clips and separate the pump bracket from the damper ring.

8 Disconnect the fuel hose from the upper flange.

9 Make your own marks or notes to ensure that they can be reconnected the same way round, and unsolder the wires connecting the pump to the flange.

10 Press the pump out of the rubber sleeve.

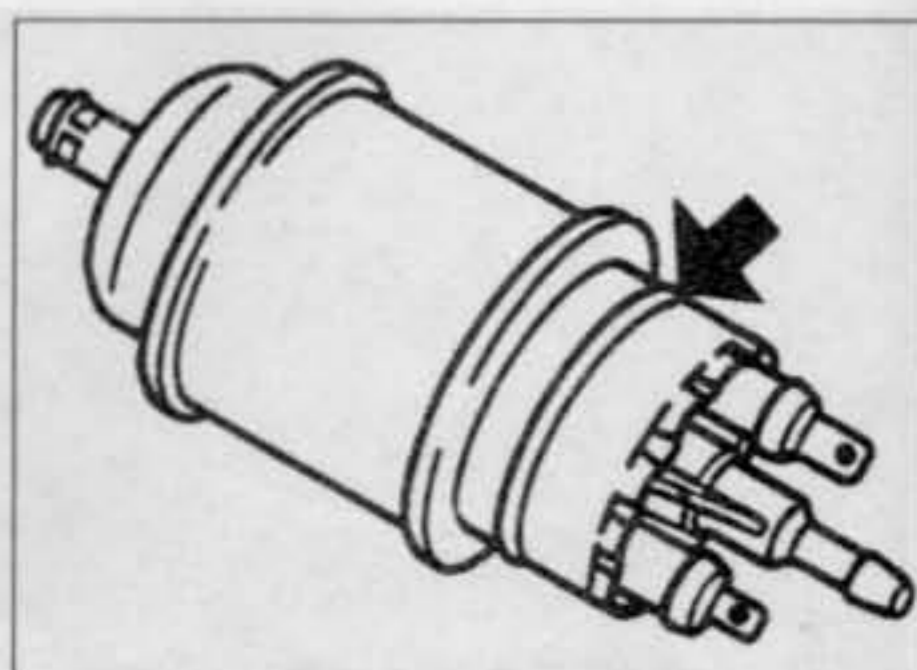
Refitting

11 Reassembly and refitting are the reverse of removal and dismantling, noting the following points.

12 Ensure that the pump is seated correctly in the sleeve and that the hose is securely fastened.

13 Ensure that the wires are correctly reconnected and securely soldered.

14 Fit a new gasket.



12.8 Fuel pump clamping sleeve should rest against rim (arrowed)

14 Fuel pump relay - renewal



The relay is mounted in the engine compartment relay box (Chapter 12). Where more than one relay is fitted, the fuel pump relay is the one with the black base.

15 Fuel tank filler pipe - removal and refitting

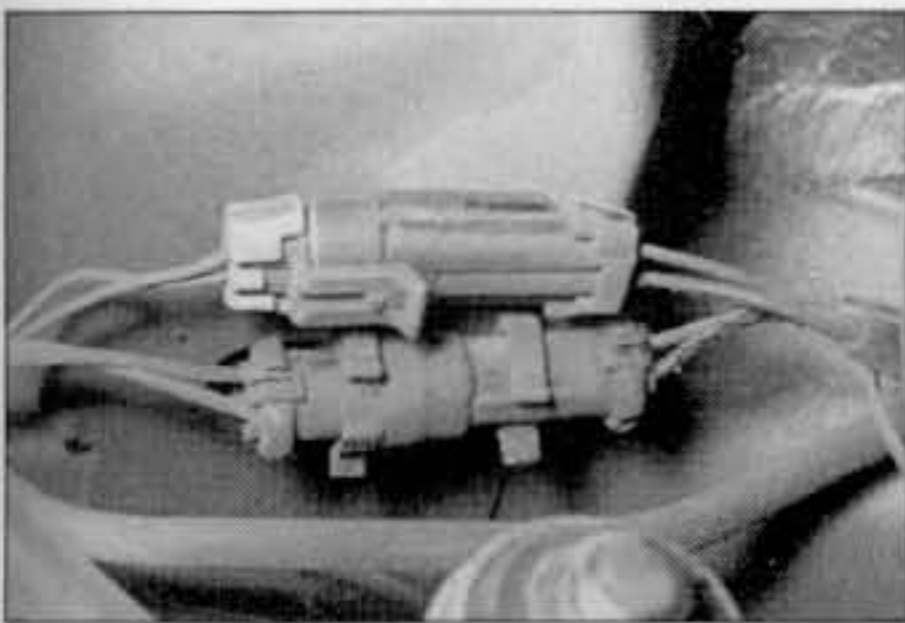


Removal

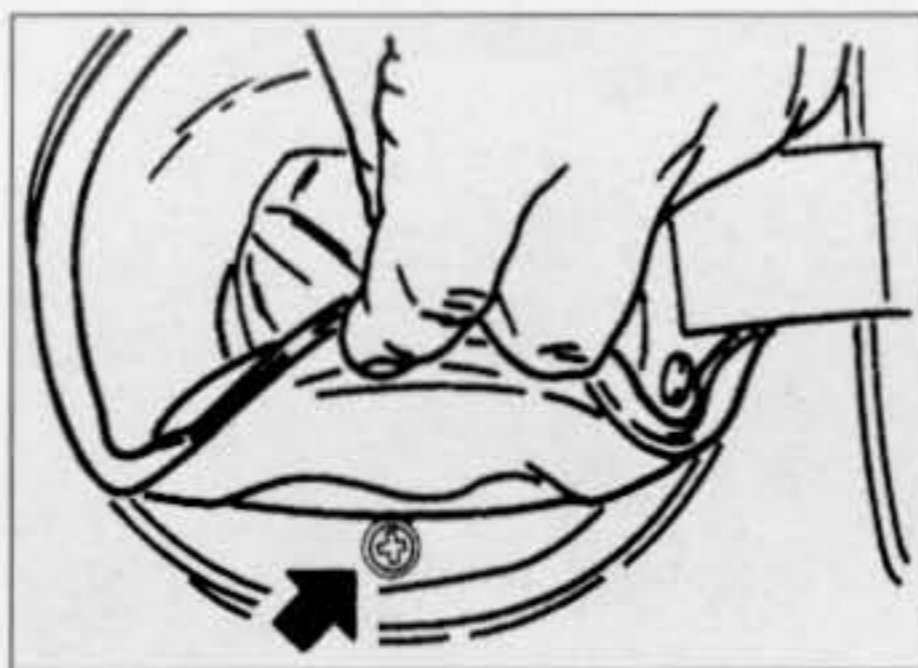
- 1 If the vehicle has an anti-syphon device, run the vehicle until the tank level is low. Otherwise, siphon out the fuel through the filler pipe into a clean metal container that can be sealed.
- 2 Raise the bottom edge of the seal surrounding the filler neck and undo the single securing screw beneath (see illustration).
- 3 Chock the front wheels, jack up the rear of the vehicle and support it securely on axle stands (see "Jacking and Vehicle Support") placed under the body side members.
- 4 Unscrew the single filler pipe mounting bolt from the underbody, then work along the length of the pipe, cutting or releasing any clips or ties securing other pipes or hoses to it. Releasing their clips, disconnect the filler and vent hoses from the pipe's lower end and the small-bore vent hoses from the unions at its upper end.
- 5 Having ensured that all components have been removed or disconnected which might prevent its removal, manoeuvre the pipe away from the vehicle's underside.
- 6 To check the operation of the pipe's anti-leak valve, invert the filler pipe and fill the lower union (now uppermost) with petrol. If the valve is functioning correctly, no petrol will leak from the other union. If petrol leaks from the other union the valve is faulty and the complete filler pipe must be renewed.

Refitting

- 7 Refitting is the reverse of the removal procedure, noting the following.



16.5 Fuel tank wiring multi-plugs on vehicle underbody - models with 'in-tank' fuel pumps



15.2 Fuel filler pipe securing screw (arrowed)

- 8 Check the condition of all hoses and clips, renewing any components that are found to be worn or damaged.
- 9 When reconnecting the small-bore vent hoses to the unions at the pipe's upper end, connect the hose from the charcoal canister to the uppermost union and the vent hose from the tank itself to the lower union (see illustration).
- 10 Replacing any that were cut on removal use the clips or ties provided to secure any other pipes or hoses to the filler pipe.
- 11 Check carefully for signs of leaks on refilling the tank; if any signs of leakage are detected, the problem must be rectified immediately.

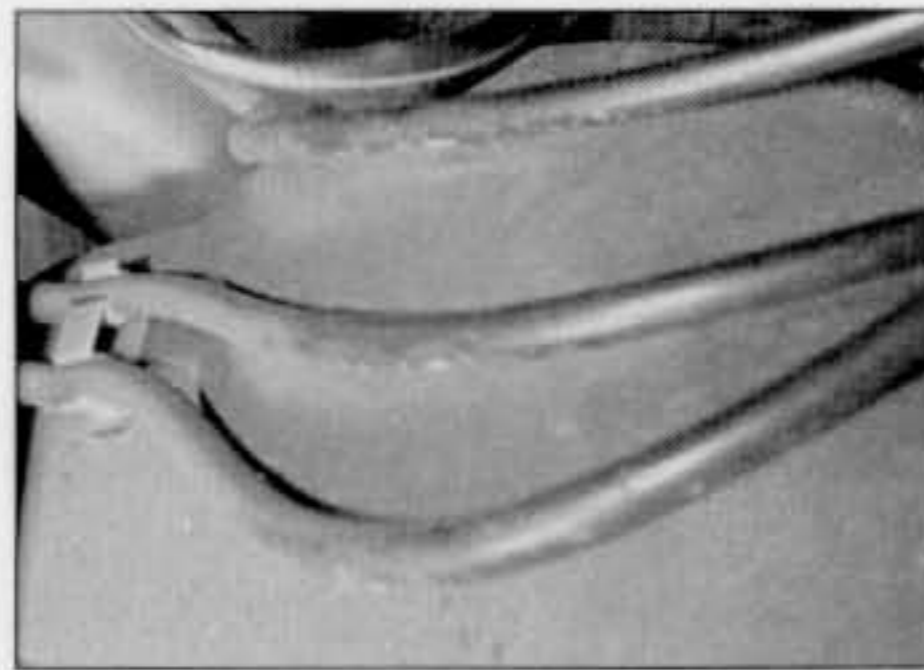
16 Fuel tank - removal, examination and refitting



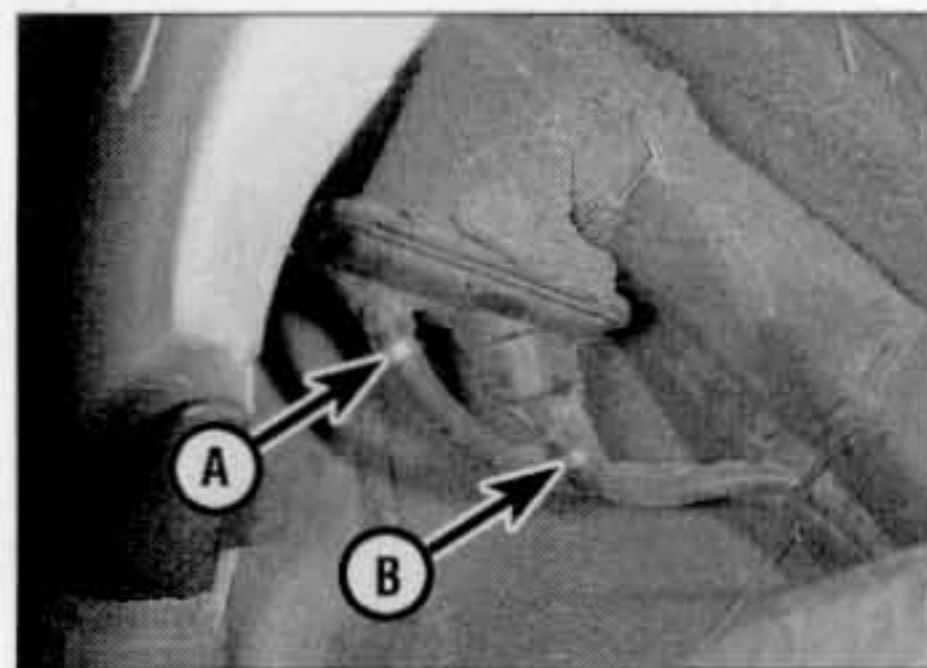
Note: Refer to Section 2 before proceeding.

Removal

- 1 If the vehicle has an anti-syphon device, run the vehicle until the tank level is low. Otherwise, siphon out the fuel through the filler pipe into a clean metal container that can be sealed.
- 2 Disconnect the battery negative lead.
- 3 Chock the front wheels, then jack up the rear of the vehicle, and support on axle stands placed under the body side members (see "Jacking and Vehicle Support").



16.6 Breather hoses clipped to side of tank



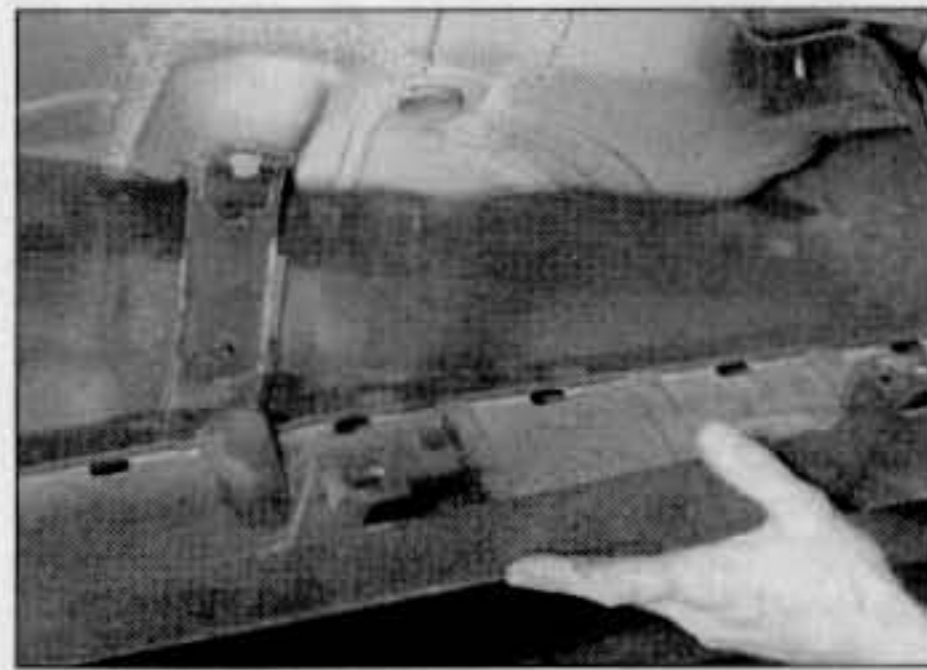
15.9 Vent hose connections at fuel tank filler pipe

- A Charcoal canister hose
- B Tank vent hose

- 4 Disconnect the fuel lines as follows:
 - a) On models with 'in-tank' fuel pumps, disconnect the pipe union from the fuel filter.
 - b) On models with 'out-of-tank' fuel pumps, disconnect the pipe union from the fuel pump.
 - c) Disconnect the fuel return line on the underbody where the flexible hose meets the metal pipe.

Caution: Be prepared for fuel spillage, and take adequate fire precautions. Plug the open ends of the hoses, to prevent dirt ingress and further fuel loss.

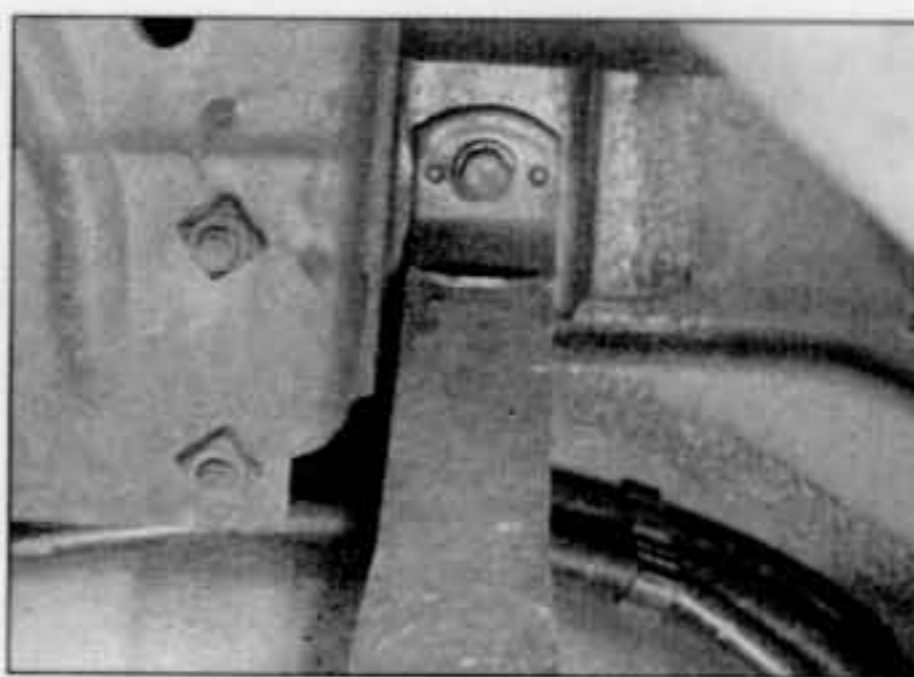
- 5 Disconnect the multi-plugs on all wiring harnesses that lead to the fuel tank. On models with 'in-tank' fuel pumps there are two plugs on the underbody, adjacent to the road spring (see illustration).
- 6 Detach all accessible breather hoses from their clips on the side of the tank (see illustration).
- 7 Undo the four nuts and remove the plastic tray from behind the fuel tank (see illustration).
- 8 Undo the fuel filler neck clip (see illustration).
- 9 Support the weight of the fuel tank on a jack, with an interposed block of wood.
- 10 Unscrew the securing bolts from the tank mounting straps (see illustration). Then remove the straps and lower the tank sufficiently to enable the vent hoses and breather hoses to be disconnected. Note the positions of all hoses for refitting.



16.7 Remove the plastic tray from behind the fuel tank



16.8 Fuel filler neck clip



16.10 Fuel tank mounting strap



18.1 Fuel flow damper

11 Lower the fuel tank and withdraw it from under the vehicle.

Examination

12 If the tank contains sediment or water, it may be cleaned out using two or three rinses with clean fuel. Shake vigorously using several changes of fuel, but before doing so, remove the fuel tank sender unit, as described in Section 17. This procedure should be carried out in a well-ventilated area, and it is vital to take adequate fire precautions - refer to the "Safety first!" Section at the beginning of this manual for further details.

13 Any repairs to the fuel tank should be carried out by a professional, and removal of all residual fuel vapour requires several hours of specialist cleaning.

Refitting

14 Refitting is the reverse of removal, ensuring that all hoses are reconnected to their correct locations as noted during removal.

15 On completion, fill the fuel tank, then run the engine and check for leaks. If leakage is evident, stop the engine immediately, and rectify the problem without delay.

17 Fuel tank sender unit - removal and refitting



Note: Refer to Section 2 before proceeding.

Models with 'in tank' fuel pump

1 The sender unit is integrated into the fuel pump assembly, which is removed as described in Section 13.

Models with 'out of tank' fuel pump

Removal

- 2 Remove the fuel tank, (see Section 16).
- 3 Undo the fuel pipe unions and disconnect the wiring multi-plug.
- 4 Make alignment marks on the sender unit and the fuel tank so that the sender unit can be refitted in its original position.
- 5 Unscrew the plastic cap and withdraw the sender unit, taking care to avoid bending the float arm.

6 Recover the gasket and discard it.

7 Cover the tank opening, as a safety measure and to prevent the entry of dirt.

Refitting

8 Refitting is the reverse of removal, noting the following points:

9 Ensure that the marks that have been made on the sender unit and fuel tank are correctly aligned.

10 Fit a new gasket.

18 Fuel flow damper - removal and refitting



Note: Refer to Section 2 before proceeding.

Removal

1 The fuel flow damper, if fitted, is located in front of the fuel tank, in the feed line between the fuel pump and the fuel filter (see illustration). Its purpose is to reduce pressure fluctuations in the fuel return line, thus reducing noise levels.

2 Disconnect the battery negative lead.

3 Have a container to hand, to catch the fuel that will be released as the damper is removed.

4 Clamp the fuel hoses on either side of the damper, to minimise fuel loss when the hoses are disconnected.

5 Loosen the clamp screws, and disconnect the fuel hoses from the damper. Be prepared for fuel spillage, and take adequate fire precautions.



19.2 Disconnecting the throttle cable end from the throttle valve lever - SOHC model

6 Unscrew the securing nut, and withdraw the damper from the bracket.

Refitting

7 Refitting is the reverse of removal. Tighten the damper securing nut to the specified torque setting.

8 Run the engine and check for leaks on completion. If leakage is evident, stop the engine immediately, and rectify the problem without delay.

19 Throttle cable - removal, refitting and adjustment



Removal

1 Remove the air box, if fitted (see Section 6).

2 Remove the throttle cable end from the throttle valve linkage. If it is connected to the linkage by a balljoint and wire spring clip (see illustration), remove the clip with a pair of needle-nosed pliers and prise the cable end off the linkage.

3 The outer seating grommet is held by a clip to a bracket on the inlet manifold. Withdraw the clip and pull the grommet out of the bracket, then release the cable as far as the bulkhead (see illustration).

4 Working inside the passenger compartment, remove the driver's footwell trim panel. Refer to Chapter 11, if necessary.

5 Release the end of the cable's inner wire from the "keyhole" fitting at the top of the



19.3 Throttle cable end grommet in bracket on inlet manifold

throttle pedal by easing back the spring and prising the cable end out of the slot.

6 Prise the grommet out of the bulkhead and tie a length of string to the cable.

7 Noting carefully its routing, withdraw the cable through the bulkhead into the engine compartment; untie the string, leaving it in place, when the pedal end of the cable appears.

Refitting

8 Refitting is the reverse of the removal procedure, noting the following points:

- a) First ensure that the cable is correctly routed, then draw it through the bulkhead aperture using the string.
- b) Ensure that the bulkhead grommet is correctly seated.
- c) Connect the cable end to the throttle linkage. Seat the cable outer grommet in the bracket and pull it through so that the cable inner wire is just taut when the throttle linkage is held fully closed. Fit the clip to secure the cable outer in that position.
- d) Check the throttle operation and cable adjustment, as described below, then refit the airbox if applicable.

Adjustment

9 First check that the pedal is at a convenient height for the driver. This setting can be adjusted by turning the pedal stop screw (it will be necessary to remove the footwell trim panel to reach the screw). Remember that the pedal must be left with enough travel for the throttle valve to open fully. Also check that the pedal pivot bushes are in good condition.

10 Returning to the engine compartment, check that the linkage pivots and balljoints are unworn and operate smoothly throughout their full travel. When the throttle valve is fully closed and the throttle pedal is released, there should be hardly any free play in the cable inner wire.

11 If adjustment is required, extract the clip securing the cable outer seating grommet in the cable bracket and replace it in the appropriate groove, so that the cable outer is repositioned correctly.

12 With an assistant operating the throttle pedal from the driver's seat. Check that when the pedal is fully depressed, the throttle valve is fully open. If there is insufficient pedal travel to permit this, unscrew the pedal stop screw, then reset the cable at the throttle linkage.

13 When cable adjustment is correct, refit all disturbed components.

20 Throttle pedal - removal and refitting



Removal

1 Working inside the vehicle, remove the lower trim panel from the driver's footwell (see Chapter 11).

2 Slide the cable retainer from the bracket on the top of the pedal, and disconnect the cable end from the pedal.

3 Extract the circlip from the right-hand end of the pedal pivot shaft, then slide out the pivot shaft from the left-hand side of the pivot bracket (see illustration). Recover the pivot bushes and the pedal return spring.

4 Examine the pivot bushes for wear, and renew if necessary.

Refitting

5 Refitting is the reverse of removal, but on completion check the throttle mechanism for satisfactory operation, and check the throttle cable adjustment, as described in Section 19.

21 Idle mixture - checking



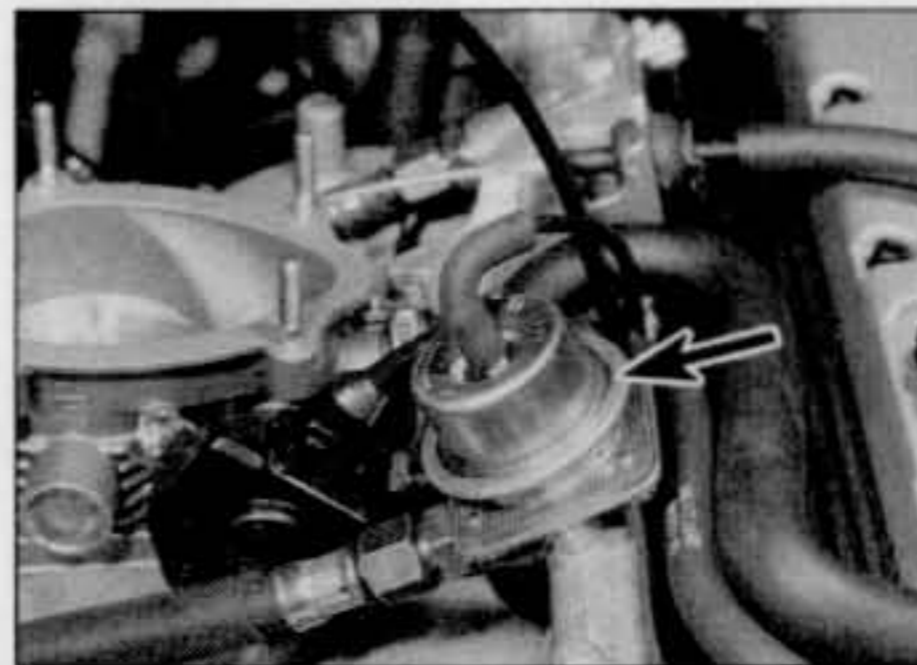
Note: No adjustment of either the idle speed or CO level is possible on any Calibra model. If either of these is outside the specified limits, there is a system fault and the problem should be referred to a dealer. There is a CO adjustment screw on the vane-type airflow meter on C20 NE models, but it is not used and has no effect.

1 In order to check the idle mixture, the following conditions must be met:

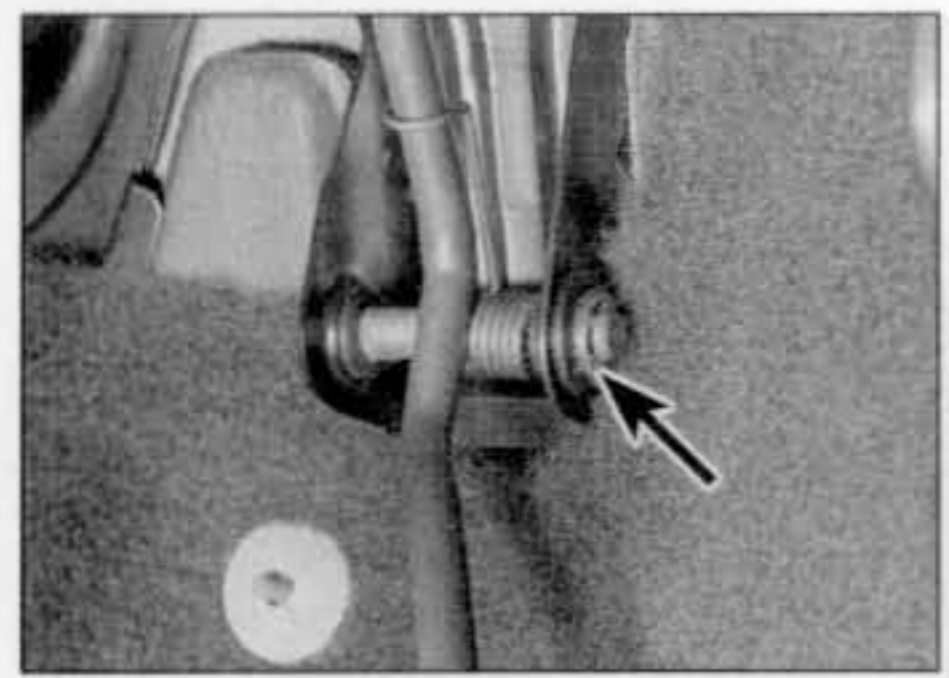
- a) The engine must be at normal operating temperature
- b) All electrical consumers (cooling fan, heater blower, headlamps etc.) must be switched off
- c) The spark plug gaps must be correctly adjusted (see Chapter 1)
- d) The throttle cable free play must be correctly adjusted - see Section 19
- e) The air inlet trunking must be free from leaks, and the air filter must be clean

2 Connect a tachometer and an exhaust gas analyser to the vehicle in accordance with the equipment manufacturer's instructions.

3 Start the engine and turn it at 2000 rpm for approximately 30 seconds, then allow it to idle. Check that the idle speed is within the specified limits, then check the CO level in the exhaust gas.



22.12 Fuel pressure regulator (arrowed) - DOHC model



20.3 Throttle pedal pivot assembly. Circlip arrowed

22 Fuel pressure regulator - removal and refitting



Note: Refer to Section 2 before proceeding.

Removal

SOHC models

- 1 Disconnect the battery negative lead.
- 2 For improved access, remove the idle speed adjuster as described in Section 23. Disconnect the wiring harness housing from the fuel injectors and move it to one side, taking care not to strain the wiring. Pull up on the wiring harness housing, and compress the wiring plug retaining clips to release the harness housing from the injectors.
- 3 Position a wad of rag beneath the pressure regulator, to absorb the fuel that will be released as the regulator is removed.
- 4 Loosen the clamp screws and disconnect the fuel hoses from the regulator. Be prepared for fuel spillage, and take adequate fire precautions.
- 5 Disconnect the vacuum pipe from the top of the pressure regulator and withdraw the regulator.

DOHC models

- 6 Disconnect the battery negative lead.
- 7 Disconnect the wiring plug from the air mass meter. Recover the sealing ring.
- 8 Loosen the clamp screw securing the air trunking to the right-hand end of the air mass meter.
- 9 Using an Allen key or hexagon bit, unscrew the four bolts securing the air box to the throttle body. Lift the air box from the throttle body and disconnect the hose from the base of the air box, then withdraw the air box/air mass meter assembly.
- 10 Disconnect the two breather hoses from the rear of the camshaft cover, and move them to one side.
- 11 Disconnect the wiring plug from the throttle potentiometer.
- 12 Disconnect the vacuum pipe from the top of the pressure regulator (see illustration).
- 13 Position a wad of rag beneath the regulator, to absorb the fuel that will be released as the regulator is removed.