






Chapter 3

Cooling, heating and ventilation systems

Contents

Antifreeze mixture	See Chapter 1	Heater motor/fan - removal and refitting	13
Coolant level check	See "Weekly checks"	Heating and ventilation system - description	8
Cooling system - draining, flushing and refilling	See Chapter 1	Radiator - removal, inspection and refitting	3
General description	1	Radiator fan - removal and refitting	2
Heater - removal and refitting	11	Radiator fan thermal switch - testing, removal and refitting	6
Heater controls - adjustment	9	Temperature gauge sender unit - removal and refitting	7
Heater controls - removal and refitting	10	Thermostat - removal, testing and refitting	4
Heater matrix - removal and refitting	12	Water pump - removal and refitting	5

Degrees of difficulty

Easy, suitable for novice with little experience		Fairly easy, suitable for beginner with some experience		Fairly difficult, suitable for competent DIY mechanic		Difficult, suitable for experienced DIY mechanic		Very difficult, suitable for expert DIY or professional	
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Specifications

System type	Pressurised, pump-assisted thermo-syphon with front mounted radiator and electric cooling fan	
Pressure cap rating		
Up to 1986:		
1.1 litre OHV engine	0.9 bar (13.0 lbf/in ²)	
1.3 and 1.6 litre CVH engine	0.85 to 1.1 bar (12.0 to 15.7 lbf/in ²)	
1986 onwards	0.98 to 1.2 bar (14.2 to 17.0 lbf/in ²)	
Thermostat		
Type	Wax	
Start to open temperature	85° to 89°C (189° to 192°F)	
Fully open temperature	102°C (223°F) (±3°C/5°F for used thermostats)	
Torque wrench settings	Nm	lbf ft
Radiator mounting bolts:		
Pre-1986 models	7 to 10	5 to 7
1986 models onwards	20 to 27	15 to 20
Thermostat housing bolts:		
OHV engines	17 to 21	13 to 16
CVH engines	9 to 12	7 to 9
Water pump bolts:		
OHV engines	7 to 10	5 to 7
CVH engines	7 to 10	5 to 7
Water pump pulley (OHV engines)	9 to 11	6 to 8
Fan shroud to radiator:		
Pre-1986 models	7 to 10	5 to 7
1986 models onwards	3 to 5	2 to 4
Fan motor to shroud	9 to 12	7 to 9

1 General description

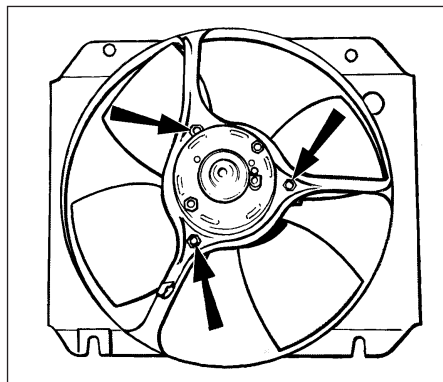
The cooling system is of the pressurised pump-assisted thermo-syphon type. The system consists of the radiator, water pump, thermostat, electric cooling fan, expansion tank and associated hoses.

The system functions as follows. When the coolant is cold the thermostat is shut and coolant flow is restricted to the cylinder block, cylinder head, inlet manifold and the vehicle interior heater matrix. As the temperature of the coolant rises, the thermostat opens allowing the coolant to pass into the radiator. The coolant now circulates through the radiator where it is cooled by the inrush of air when the car is in forward motion, supplemented by the operation of the radiator cooling fan. Coolant is then circulated from the base of the radiator, up through the water pump, and into the cylinder block to complete the circuit.

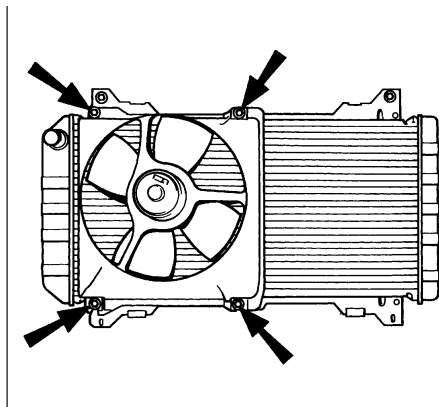
On OHV engines, the water pump is driven by a vee-belt from the crankshaft pulley. On CVH engines, the water pump is driven by the timing belt.

When the engine is at normal operating temperature the coolant expands, and some of it is displaced into the expansion tank. The coolant collects in the tank and is returned to the radiator when the system cools. On 1.1 litre engines the system pressure cap is fitted to the thermostat housing and the expansion tank acts as a simple overflow bottle. On all other engines the pressure cap is fitted to the expansion tank which is pressurised with the rest of the system.

On all engines except 1.1 litre CVH versions the radiator cooling fan is controlled by a thermal switch located in the thermostat housing. When the coolant reaches a predetermined temperature the switch contacts close thus actuating the fan. On 1.1 litre CVH engines with standard equipment the cooling fan operates continuously whenever the ignition is switched on.



2.7 Fan motor retaining nuts - pre-1986 models



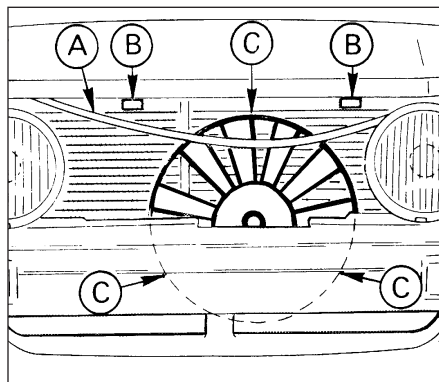
2.3 Radiator fan shroud retaining bolts - pre-1986 models

2 Radiator fan - removal and refitting

All models except RS Turbo

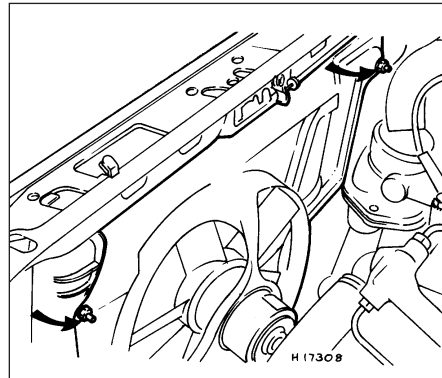
Removal

- 1 Disconnect the battery negative terminal.
- 2 Disconnect the wiring plug at the fan motor and unclip the wiring from the shroud.
- 3 On pre-1986 models the fan shroud is secured to the radiator with four bolts. Unscrew the two upper bolts and slacken the two lower bolts (see illustration).
- 4 For 1986 models onwards the shroud is retained by two bolts at the top and two clips at the bottom. Unscrew the two upper bolts (see illustration).
- 5 On all models carefully lift the fan and shroud assembly upwards and out of the engine compartment, taking care not to damage the radiator.
- 6 Extract the retaining clip and remove the fan from the motor shaft.
- 7 Unscrew the three nuts and separate the motor from the shroud (see illustration).



2.10 Radiator fan removal details - 1985 RS Turbo

- A Transverse cooling hose
B Transverse cooling hose clips
C Fan shroud retaining bolts



2.4 Radiator fan shroud retaining bolts - 1986 models onwards

Refitting

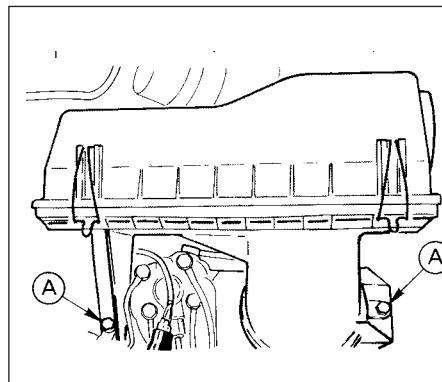
- 8 Reassembly and refitting are reversals of the removal and dismantling operations.

RS Turbo models

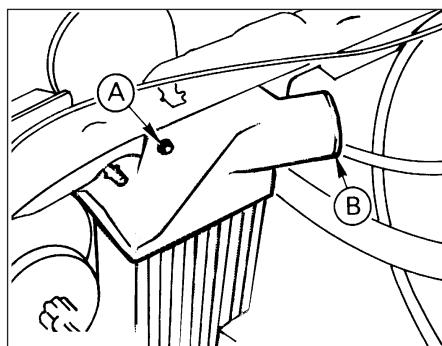
1985 models

Removal

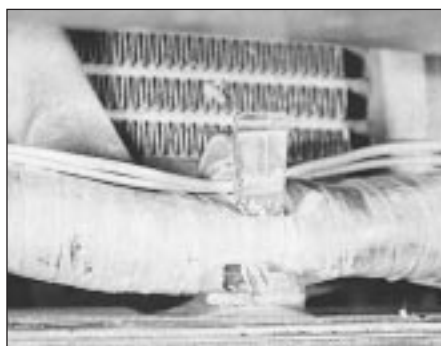
- 9 Disconnect the battery negative terminal.
- 10 Detach the transverse coolant hose from the two clips above the radiator (see illustration).
- 11 Unscrew the three fan shroud retaining bolts.
- 12 Disconnect the upper and lower air hoses at the turbo intercooler mounted alongside the radiator.
- 13 Undo the two air cleaner retaining bolts and remove the air cleaner assembly (see illustration).
- 14 Undo the single upper retaining screw and lift the intercooler to disengage the lower retaining peg (see illustration). Remove the intercooler.
- 15 Undo the two upper radiator retaining bolts, disengage the lower guides and move the radiator towards the engine taking care not to stretch the hoses.
- 16 Disconnect the fan wiring multi-plug, release the cable-tie and separate the fan wiring from the harness.



2.13 Air cleaner retaining bolts (A) - 1985 RS Turbo



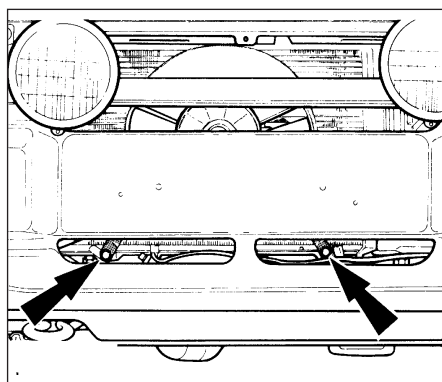
2.14 Intercooler retaining bolt (A) and upper air hose connection (B) - 1985 RS Turbo



2.20a Release the wiring harness clips . . .



2.20b . . . to gain access to the fan shroud bolts on 1986 RS Turbo models



2.20c Fan shroud bracket retaining bolts - RS Turbo from 1986 onwards

17 Carefully lift the fan up and out of its location. The fan, motor and shroud are serviced as an assembly on these models and further dismantling is not recommended.

Refitting

18 Refitting is the reverse sequence to removal.

1986 models onwards

Removal

19 Disconnect the battery negative terminal.
20 Working through the aperture below the front bumper, release the wiring harness clips and unscrew the two shroud bracket retaining bolts (see illustrations).



3.4 Disconnecting radiator fan wiring plug

21 Unhook the shroud from the top of the radiator, disconnect the wiring at the harness connector and remove the fan and shroud assembly from the front of the radiator.

22 Remove the fan guard from the shroud.

23 Extract the retaining circlip and washer, then withdraw the fan from the motor shaft.

24 Unscrew the three nuts, unclip the wiring and remove the motor from the shroud.

Refitting

25 Reassembly and refitting are the reversals of the removal and dismantling operations.

3 Radiator - removal, inspection and refitting

All models except RS Turbo

Pre-1986 models

Removal

1 Drain the cooling system as described in Chapter 1.

2 Disconnect the battery negative terminal.

3 Release the retaining clips and disconnect all the hoses from the radiator, and on vehicles with automatic transmission, disconnect and plug the oil cooler pipelines.

4 Disconnect the wiring plug at the fan motor and unclip the wiring from the shroud (see illustration).

5 Unscrew the two upper mounting bolts and carefully lift the radiator, complete with fan and cowl from the engine compartment. Note



3.5a Undo the radiator upper bolts . . .

that the base of the radiator is held in place by two lugs (see illustrations).

Inspection

6 If the purpose of removal was to thoroughly clean the radiator, first reverse flush it with a cold water hose. The normal coolant flow is from left to right (from the thermostat housing to the radiator) through the matrix and out of the opposite side.

7 If the radiator fins are clogged with flies or dirt, remove them with a soft brush or blow compressed air from the rear face of the radiator. It is recommended that the fan assembly is first removed as described in the preceding Section (if not already done). In the absence of a compressed air line, a strong jet from a water hose may provide an alternative method of cleaning.

8 If the radiator is leaking, it is recommended that a reconditioned or new one is obtained from specialists. In an emergency, minor leaks can be cured by using a radiator sealant. If the radiator, due to neglect, requires the application of chemical cleaners, then these are best used when the engine is hot and the radiator is in the vehicle. Follow the manufacturer's instructions precisely and appreciate that there is an element of risk in the use of most de-scaling products, especially in a system which incorporates alloy and plastic materials.

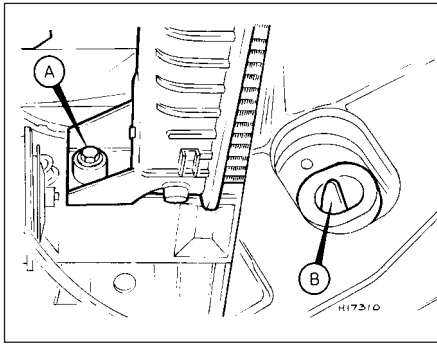
Refitting

9 Refit the radiator by reversing the removal operations, but ensure that the rubber lug



3.5b . . . and lift out the unit complete with fan - pre-1986 models (except RS Turbo)

3•4 Cooling, heating and ventilation systems



3.12 Radiator lower retaining bolts (A) and upper lugs (B) - 1986 models onwards (except RS Turbo)

insulators are in position. Fill the cooling system as described in Chapter 1 and on later models adjust the alternator drivebelt as described in Chapter 1.

1986 models onwards

Removal

10 Refer to Section 2 and remove the radiator fan.

11 To provide greater clearance for radiator removal, slacken the alternator mounting and adjustment arm bolts and push the alternator in towards the engine as far as it will go.

12 Unscrew the two radiator lower retaining bolts (see illustration).

13 Move the bottom of the radiator in towards the engine, then lower it to disengage the two upper retaining lugs. Carefully lift the radiator from the engine compartment.

Inspection and refitting

14 Proceed as described previously in this Section for pre-1986 models.

RS Turbo models

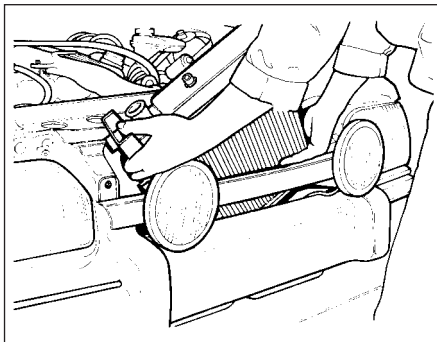
1985 models

Removal

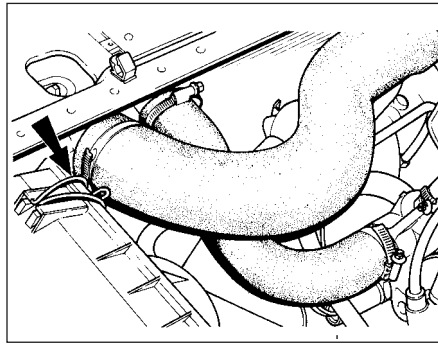
15 Drain the cooling system as described in Chapter 1.

16 Disconnect the battery negative terminal.

17 Release the retaining clips and disconnect all the coolant hoses from the radiator.



3.27 Radiator removal - RS Turbo from 1986 onwards



3.23 Intercooler upper air hose attachment - RS Turbo from 1986 onwards

18 Refer to Section 2 and remove the radiator fan.

19 Lift the radiator up and out of the engine compartment.

Inspection and refitting

20 Proceed as described previously in this Section for all models except RS Turbo.

1986 models onwards

Removal

21 Drain the cooling system as described in Chapter 1.

22 Disconnect the battery negative terminal.

23 Release the retaining clips and disconnect the coolant hoses at the radiator and the air hoses at the turbo intercooler (see illustration).

24 Refer to Section 2 and remove the radiator fan.

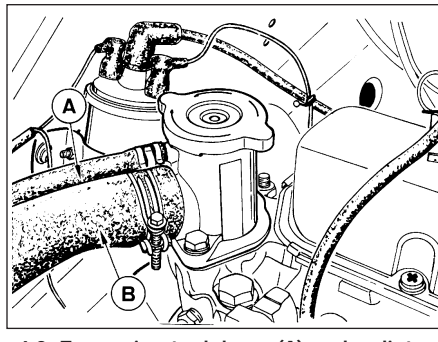
25 Undo the two radiator and intercooler lower retaining bolts (see illustration).

26 Undo the four bolts securing the intercooler to the radiator and remove the intercooler from the front.

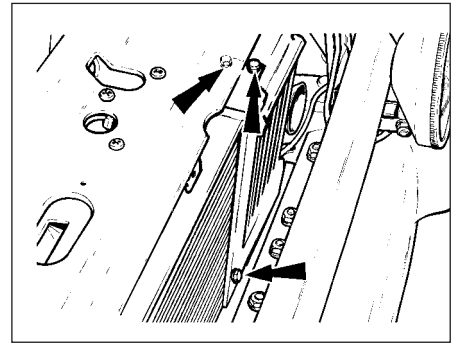
27 Manipulate the radiator up and out of its location from the front (see illustration).

Inspection and refitting

28 Proceed as described previously in this Section for all models except RS Turbo.



4.2 Expansion tank hose (A) and radiator top hose (B) connections at thermostat housing - OHV engine



3.25 Radiator and intercooler retaining bolts - RS Turbo from 1986 onwards (one lower bolt not shown)

4 Thermostat - removal, testing and refitting

OHV engines

Note: A new gasket must be used on refitting.

Removal

1 Drain the cooling system as described in Chapter 1.

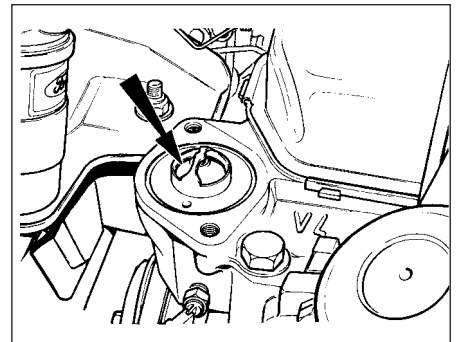
2 Slacken the clips and disconnect the hoses at the thermostat housing (see illustration). Disconnect the radiator fan thermal switch wiring plug.

3 Unscrew the two bolts and remove the thermostat housing cover. If it is tight carefully tap it with a soft-faced mallet.

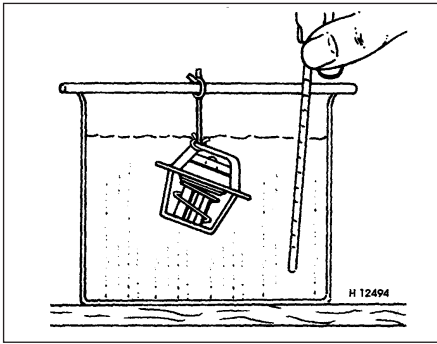
4 Extract the thermostat (see illustration). If it is stuck tight in its seat, do not lever it out by its bridge piece, but cut round it with a very sharp knife.

Testing

5 To test the thermostat, first check that in a cold condition its valve plate is closed. Suspend it on a string in a pan of cold water together with a thermometer (see illustration). Heat the water and check that the thermostat starts to open at the temperature given in the Specifications. It is difficult to check that the thermostat opens fully, as this occurs at a temperature above the boiling point of water.



4.4 Thermostat location in cylinder head - OHV engine



4.5 Testing the thermostat

6 Remove the thermostat from the water and check that the valve closes as the unit cools. If the thermostat does not operate as described, obtain a new thermostat.

Refitting

7 Refitting is the reverse sequence to removal, but ensure that all traces of old gasket are removed from the housing mating faces and use a new gasket lightly smeared with jointing compound. Tighten the retaining bolts to the specified torque.

8 On completion, refill the cooling system as described in Chapter 1.

CVH engines

Note: A new gasket must be used on refitting.

Removal

9 Drain the cooling system as described in Chapter 1.

10 Slacken the clips and disconnect the expansion tank hose, radiator hose and heater hose at the thermostat housing (see illustration).

11 Disconnect the radiator fan thermal switch wiring plug.

12 Unscrew the three bolts and remove the thermostat housing from the cylinder head. If it is stuck, tap it off carefully with a soft-faced mallet.

13 Extract the retaining spring clip and withdraw the thermostat from the housing followed by the sealing ring (see illustrations).



4.13b ... withdraw the thermostat ...



4.10 Disconnect the expansion tank hose at the thermostat housing - CVH engine

Testing and refitting

14 Proceed as described previously in this Section for OHV engines.

5 Water pump - removal and refitting

OHV engines

Note: A new gasket and suitable jointing compound must be used on refitting.

Removal

1 Drain the cooling system as described in Chapter 1.

2 Slacken the three water pump pulley retaining bolts. Any tendency for the pulley to turn as the bolts are undone can be restrained by depressing the top run of the drivebelt.

3 Release the alternator mounting and adjustment arm bolts, push the alternator in towards the engine and slip the drivebelt off the pulleys.

4 Unscrew the previously slackened pulley bolts and remove the pulley.

5 Release the clip and disconnect the hose at the pump outlet.

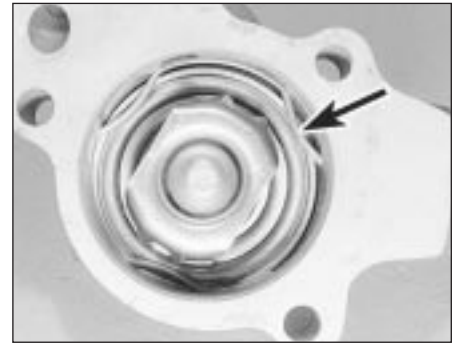
6 Unscrew the three retaining bolts and remove the pump from the cylinder block (see illustration).

7 Peel away the old gasket from the cylinder block and thoroughly clean the mating face.

8 No provision is made for repair of the water



4.13c ... and remove the sealing ring



4.13a Extract the retaining spring clip (arrowed) ...

pump and if the unit is leaking, noisy, or in any way unserviceable, renewal will be necessary.

Refitting

9 Refitting is the reverse sequence to removal. Use a new gasket lightly smeared with jointing compound and tighten the retaining bolts to the specified torque.

10 Refill the cooling system, and adjust the drivebelt tension as described in Chapter 1.

CVH engines

Note: The following procedure entails the use of special tools to tension the timing belt after refitting the water pump. Read through the entire Section to familiarise yourself with the procedure and refer also to Chapter 2. A new gasket and suitable jointing compound must be used on refitting.

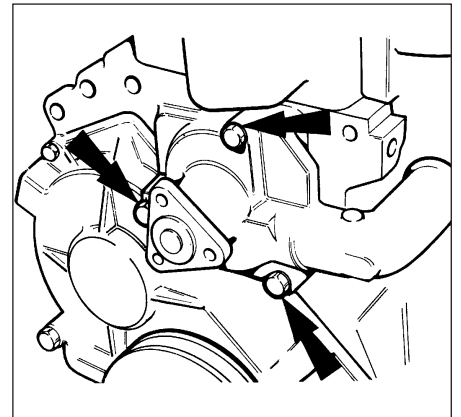
Removal

11 Drain the cooling system as described in Chapter 1.

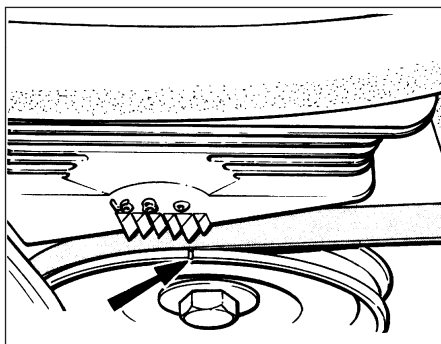
12 On carburettor engines refer to Chapter 4 and remove the air cleaner to improve access.

13 Slacken the alternator mounting and adjustment arm bolts, push the alternator in towards the engine and slip the drivebelt off the pulleys.

14 Using a spanner on the crankshaft pulley bolt, turn the crankshaft until the notch on the



5.6 Water pump retaining bolts - OHV engines



5.14 Crankshaft pulley notch aligned with TDC (O) mark on timing belt cover scale - CVH engines

pulley is aligned with TDC (O) mark on the timing belt cover scale (see illustration). Now remove the distributor cap and check that the rotor arm is pointing towards the No 1 cylinder HT lead segment in the cap. If the rotor arm is pointing towards No 4 cylinder segment, turn the crankshaft through another complete turn and realign the pulley notch with the TDC mark.

15 On early models unscrew the four bolts and remove the one-piece timing belt cover (see illustration). On later models fitted with a two-piece cover, unscrew the two upper bolts and remove the top half, then unscrew the two lower bolts. The lower half cannot be removed at this stage.

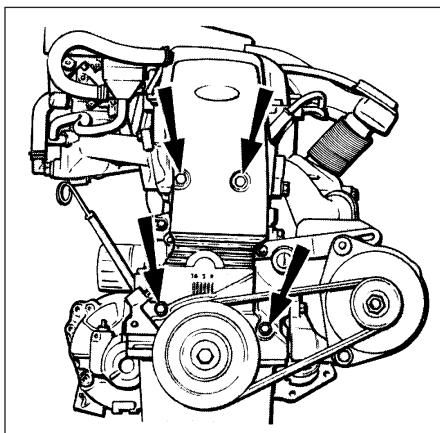
16 Using a dab of quick drying paint, mark the teeth of the timing belt and their notches



5.18 Removing the timing belt from the camshaft sprocket - CVH engine



5.19 Removing the timing belt tensioner - CVH engine



5.15 Timing belt cover retaining bolts - early CVH engine models with one-piece cover

on the sprockets so that the belt can be engaged in its original position on reassembly.

17 Slacken the two timing belt tensioner retaining bolts and slide the tensioner sideways to relieve the tautness of the belt (see illustration). If the tensioner is spring-loaded, tighten one of the bolts to retain it in the slackened position.

18 Slip the timing belt off the camshaft, tensioner and water pump sprockets (see illustration).

19 Remove the bolts and lift off the tensioner and, where fitted, the tensioning spring (see illustration).

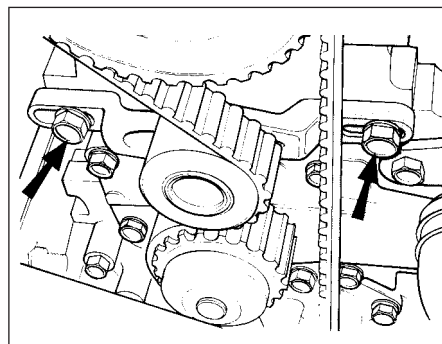
20 Slacken the clips and disconnect the hoses at the water pump.

21 Undo the four bolts and remove the pump from the cylinder block face (see illustrations).

22 Renewal of the pump will be necessary if there are signs of water leakage, roughness of the bearings, or excessive side play or endfloat at the sprocket. From 1983 onwards a revised water pump was introduced in conjunction with a two-piece timing belt cover. If a water pump is being renewed on an early model with one-piece belt cover, then it will also be necessary to obtain a replacement kit. This kit contains a modified belt cover and related parts to suit the later type pump which is now the only type supplied.



5.21a Undo the four bolts . . .



5.17 Timing belt tensioner retaining bolts - CVH engines

Refitting

23 Scrape away all traces of old gasket and ensure that the mating faces are clean and dry.

24 Lightly smear jointing compound on both sides of a new gasket and locate the gasket on the cylinder block face.

25 Place the pump in position, then fit and tighten the bolts to the specified torque.

26 Fit the timing belt tensioners (and spring where applicable), but only tighten the bolts finger tight at this stage.

27 Refer to Chapter 2, and refit and tension the timing belt.

28 Refit the hoses to the water pump.

29 Refit the timing belt cover(s).

30 Refit the alternator drivebelt and adjust its tension as described in Chapter 1.

31 On carburettor engines, refit the air cleaner.

32 Refill the cooling system as described in Chapter 1.

6 Radiator fan thermal switch - testing, removal and refitting

Testing

1 The thermal switch is located on the side of the thermostat housing on early OHV engine models and in the thermostat housing cover on later OHV versions. On all CVH engines, the switch is located in the thermostat housing. If



5.21b . . . and remove the water pump - CVH engine

the operation of the radiator fan is suspect, the thermal switch may be tested as follows.

2 Disconnect the wiring plug and bridge the two plug terminals with a length of wire or suitable metal object. The fan should now operate with the ignition switched on. If it does, the thermal switch is proved faulty and must be renewed. If the fan still does not operate, check the appropriate fuses, wiring and connections. If these are satisfactory it is likely that the fan motor itself is faulty.

Removal

Note: A new sealing washer will be required on refitting.

3 To renew the thermal switch wait until the engine is cold, then remove the pressure cap on the thermostat housing or expansion tank as applicable.

4 Place a container beneath the thermostat housing to collect the small amount of coolant that will be released when the switch is removed.

5 Disconnect the wiring plug and unscrew the switch from its location.

Refitting

6 Using a new sealing washer, refit and tighten the switch securely. Fit the wiring plug and top-up the system as described in Chapter 1.

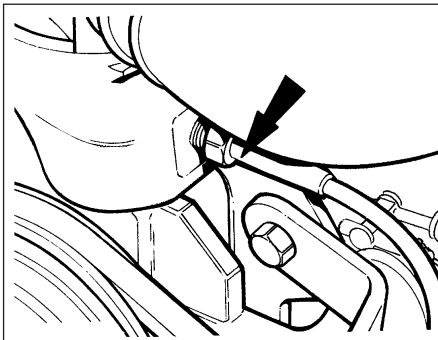
7 Temperature gauge sender unit - removal and refitting

Note: Suitable jointing compound will be required on refitting.

Removal

1 With the engine cold unscrew the pressure cap on the thermostat housing or expansion tank as applicable, then refit it. This will release any residual pressure in the system and minimise coolant loss when the sender unit is removed.

2 Disconnect the wiring and unscrew the sender unit located on the forward facing side of the cylinder head, below the thermostat housing on OHV engines, or adjacent to the thermostat housing on CVH engines (see illustrations).



7.2a Temperature gauge sender unit location in cylinder head - OHV engines

Refitting

3 To refit, smear the threads of the sender unit with jointing compound and screw it into the cylinder head securely.

4 Reconnect the wiring and top-up the cooling system as described in Chapter 1.

8 Heating and ventilation system - description

The heater is of the type which utilises waste heat from the engine coolant. The coolant is pumped through the matrix in the heater casing where air, force-fed by a duplex radial fan, disperses the heat into the vehicle interior.

Fresh air enters the heater or the ventilator ducts through the grille at the rear of the bonnet lid. Air is extracted from the interior of the vehicle through outlets at the rear edges of the doors.

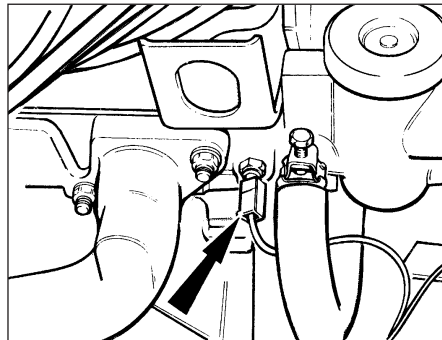
There are differences between the heater used on Base models and other versions in the Escort range. On Base models, a two-speed fan switch is used instead of the three-position switch used on other versions. On all models except the Base version, central and side window vents are incorporated in the facia panel.

The heater/ventilator controls are of lever type or rotary type on later models, operating through cables to flap valves which deflect the air flowing through the heater both to vary the temperature and to distribute the air between the footwell and demister outlets.

9 Heater controls - adjustment

1 On heaters with lever control, set both control levers approximately 2.0 mm up from their lowest setting. On heaters with rotary controls set the controls just off the COLD and CLOSED positions.

2 Release the securing bolts on the cable clamps and pull the temperature control and air direction flap valve arms to the COLD and CLOSED positions respectively (see illustration). Check to see that the setting of the levers or rotary knobs on the control panel has not changed and retighten the cable clamps.



7.2b Temperature gauge sender unit location in cylinder head - CVH engines

10 Heater controls - removal and refitting

Pre-1986 models

Removal

1 Working inside the vehicle, remove the dash lower trim panel from the right-hand side. The panel is secured by two metal tags and two clips.

2 Detach the air ducts from the right-hand side of the heater casing and swivel them to clear the control cables.

3 Disconnect the control cables from the heater casing.

4 Giving a sharp jerk, pull the knobs from the control levers on the facia panel, then press the control indicator plate downwards and remove it.

5 Unscrew and remove the two screws which are now exposed and which hold the control lever assembly in position.

6 Carefully withdraw the control unit with the cables from the facia and disconnect the wire from the illumination lamp.

1986 models onwards

Removal

7 Pull the air ducts off the heater on the right-hand side and move them clear.

8 Detach the right-hand cable from the heater casing and temperature control flap lever.

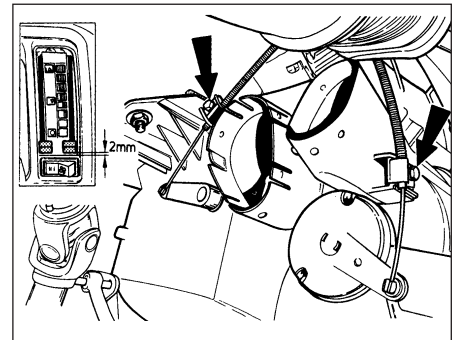
9 Pull the cover off the left-hand actuating lever and detach the cable from the heater casing and air distribution flap lever.

10 Pull off the heater control knobs and undo the two screws, one located under each outer control knob, then remove the control panel bezel. Remove the centre vents.

11 Undo the two control panel screws and withdraw the panel with cables, through the aperture.

Refitting (all models)

12 Refitting is a reversal of removal. On completion adjust as described in the preceding Section.



9.2 Heater control cable connections (arrowed) - pre-1986 models

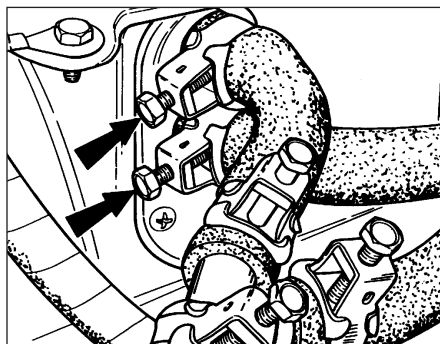
11 Heater - removal and refitting

Removal

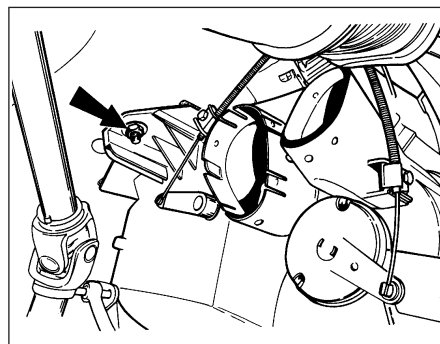
- 1 Disconnect the battery negative lead.
- 2 Refer to Chapter 11 and remove the centre console.
- 3 Working within the engine compartment, disconnect the coolant hoses from the heater pipe stubs at the rear bulkhead (see illustration). Raise the ends of the hoses to minimise loss of coolant.
- 4 The heater matrix will still contain coolant and should be drained by blowing into the upper heater pipe stub and catching the coolant which will be ejected from the lower one.
- 5 Remove the cover plate and gasket from around the heater pipe stubs. This is held to the bulkhead by two self-tapping screws.
- 6 Working inside the vehicle, remove the dash lower trim panels from both sides. The panels are held in position by clips and tags.
- 7 Pull the air distribution ducts from the heater casing and swivel them as necessary to clear the control cables.
- 8 Disconnect the control cables from the heater casing and the flap arms.
- 9 Remove the two heater mounting nuts and lift the heater assembly out of the vehicle, taking care not to spill any remaining coolant on the carpet (see illustration).

Refitting

- 10 Refitting is a reversal of removal. Check that the heater casing seal to the cowl is in good order, otherwise renew it. Adjust the heater controls on completion as described in Section 9.
- 11 Top-up the cooling system (see "Weekly checks") and reconnect the battery.



11.3 Coolant hose connections at heater pipe stubs



11.9 Heater mounting nut location - left-hand side

12 Heater matrix - removal and refitting

Removal

- 1 With the heater removed from the vehicle as previously described, extract the two securing screws and slide the matrix out of the heater casing.
- 2 If further dismantling is necessary, cut the casing seal at the casing joint, prise off any securing clips and separate the two halves of the casing.
- 3 Remove the air flap valves. It should be noted that the lever for the air distribution valve can only be removed when the mark on the lever is in alignment with the one on the gearwheel (see illustration).
- 4 If the heater matrix is leaking, it is best to obtain a new or reconditioned unit. Home repairs are seldom successful. A blocked matrix can sometimes be cleared using a cold water hose and reverse flushing, but avoid the use of searching chemical cleaners.

Refitting

- 5 Reassembly is a reversal of removal. Take care not to damage the fins or tubes of the matrix when inserting it into the casing. Refit the heater with reference to Section 11.

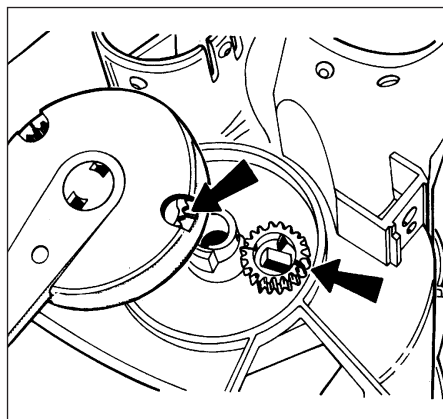
13 Heater motor/fan - removal and refitting

Removal

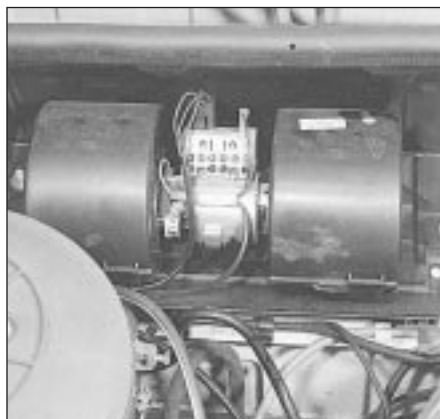
- 1 Open the bonnet, disconnect the battery and pull off the rubber seal which seals the air inlet duct to the bonnet lid when the lid is closed.
- 2 Prise off the five spring clips from the plenum chamber cover and detach the cover at the front.
- 3 Disconnect the wiring harness multi-plug, and the earth lead at its body connection adjacent to the heater pipe stub cover plate on the engine compartment bulkhead.
- 4 Unscrew and remove the fan housing mounting nuts and lift the housing from the engine compartment (see illustration).
- 5 Insert the blade of a screwdriver and prise off the securing clips so that the fan covers can be removed (see illustration).
- 6 Remove the resistor and lift out the motor/fan assembly.

Refitting

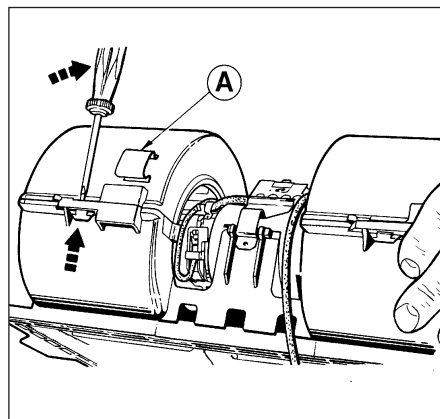
- 7 Reassembly and refitting are reversals of dismantling and removal.



12.3 Air distribution valve lever and gear marks (arrowed)



13.4 Heater motor/fan assembly - viewed with cover removed



13.5 Prising off a heater fan cover clip