

Section N - Cooling System

N.B. Cooling System part numbers begin with (K)

contents

A *Radiator*

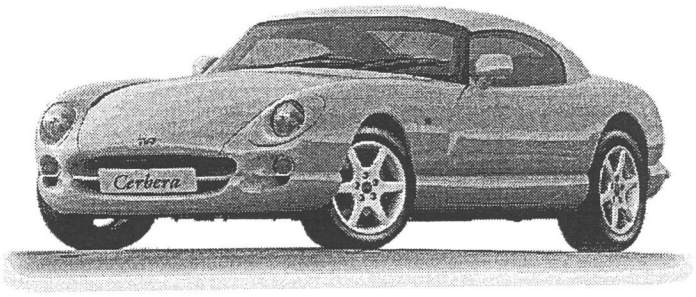
B *Temp.Sensor*

C *Oil Cooler*

D *Water cooling piping*

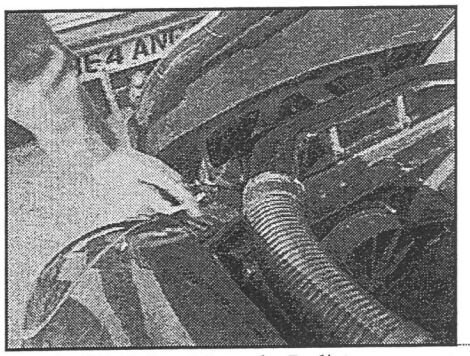
E *Bleeding Coolant System*

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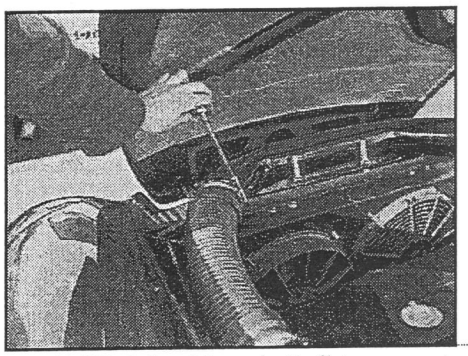
Radiator



Service/Workshop Manual - Radiator

1

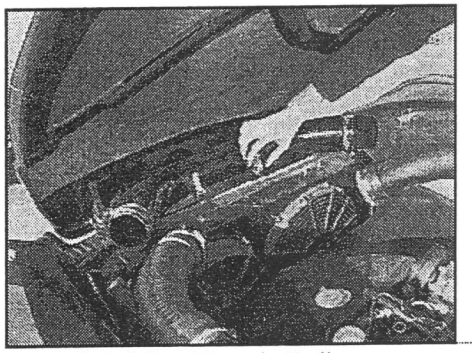
Remove the air flow sensor plug which is situated on the N/S of the car.



Service/Workshop Manual - Radiator

2

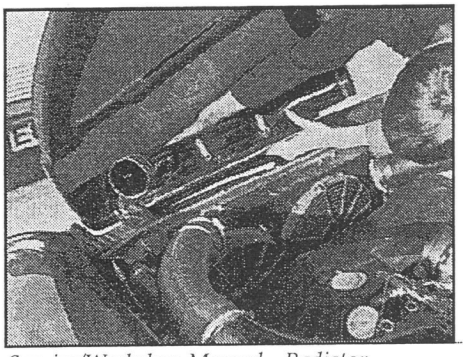
Remove the inlet ducts from the air filter box by loosening the Jubilee clips.



Service/Workshop Manual - Radiator

3

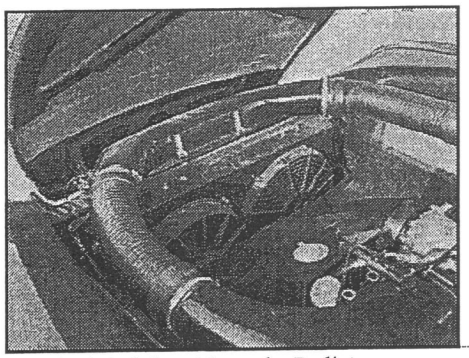
Next remove the split pins on the two securing clips on the front of the box and undo the clips.



Service/Workshop Manual - Radiator

4

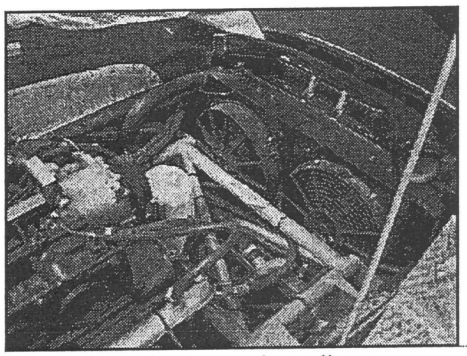
The filter housing should now come free.



5

Service/Workshop Manual - Radiator

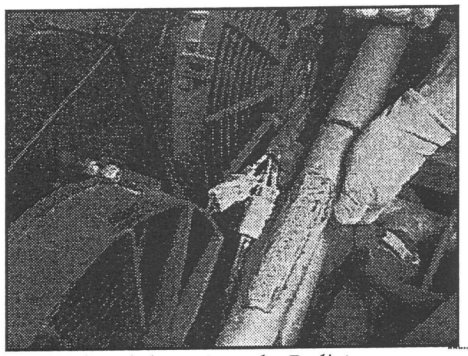
To gain access to the radiator remove the F1 panel.



6

Service/Workshop Manual - Radiator

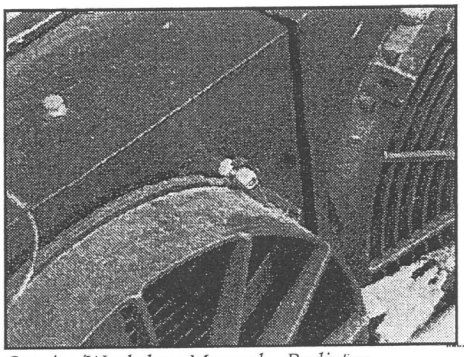
Remove the top and bottom radiator hoses. Starting with the bottom - to allow fluid to drain out.



7

Service/Workshop Manual - Radiator

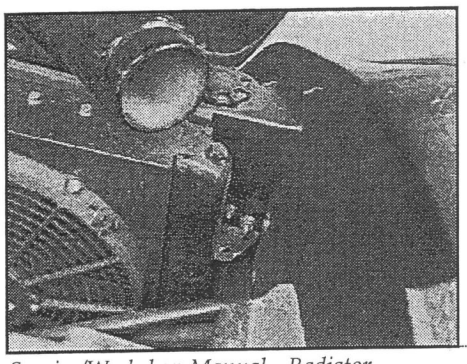
If A/Con disconnect both fan wires.
N.B. Noting which wires went to which connector.
If standard disconnect single fan wiring.



8

Service/Workshop Manual - Radiator

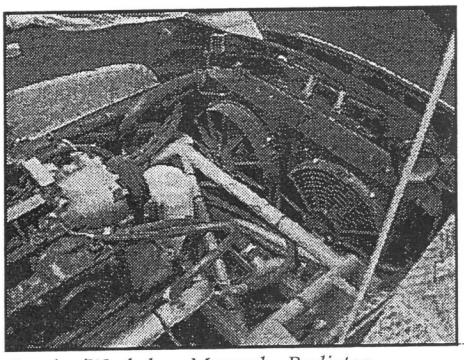
If A/Con remove the largest fan by unbolting the 4 x M6 nyloc nuts.



Service/Workshop Manual - Radiator

9

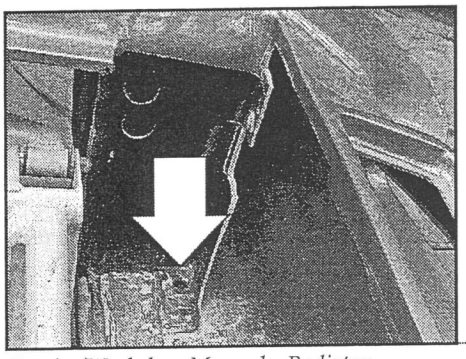
Remove the 2 securing M8 nut on each side of the radiator and then lift out of the car.



Service/Workshop Manual - Radiator

10

When replacing the radiator the cooling system will have to be bled.- as described in its relevant sub-section.

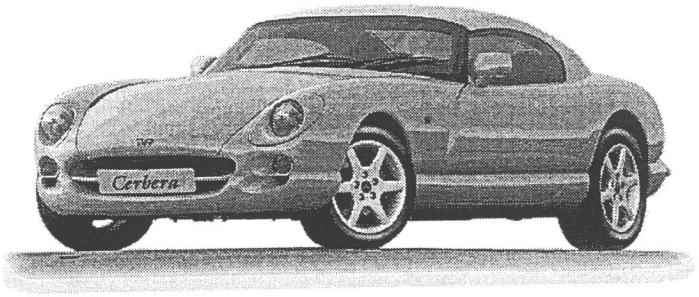


Service/Workshop Manual - Radiator

11

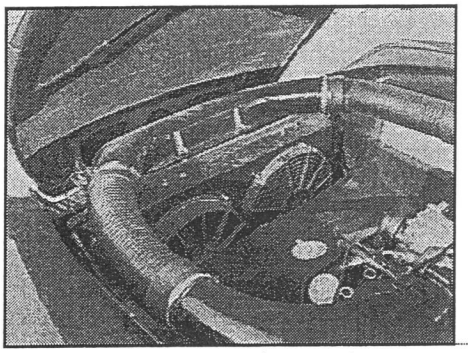
Locate the radiator Mtg. pins in the two locational holes and then replace nuts. Ensure that the mtg. pins have the rubber spacers in place.
Coolant Specification 3 parts water to 1 anti-freeze. Capacity 15 litres.

Notes



Service / Workshop Manual

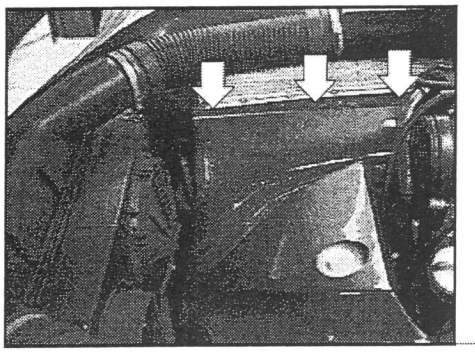
ECU Temperature Sensor



Service/Workshop Manual - Temp Sensor

1

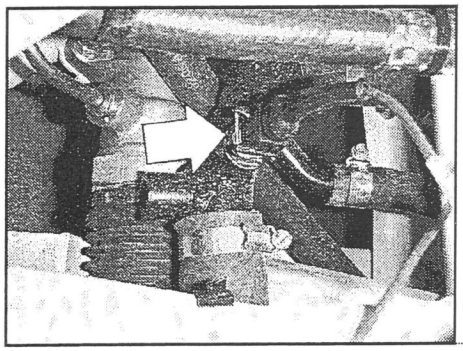
The temperature sensor for the cooling system is located in the engine bay under the F1 panel.



Service/Workshop Manual - Temp Sensor

2

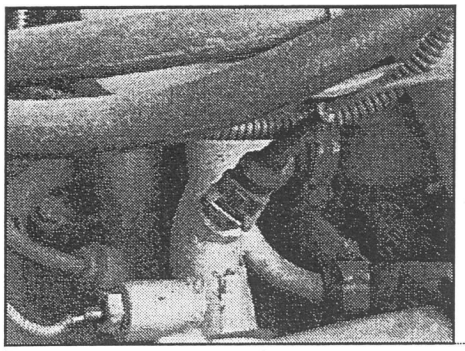
Remove the 6 x M8 allen bolts which secures the F1 panel.



Service/Workshop Manual - Temp Sensor

3

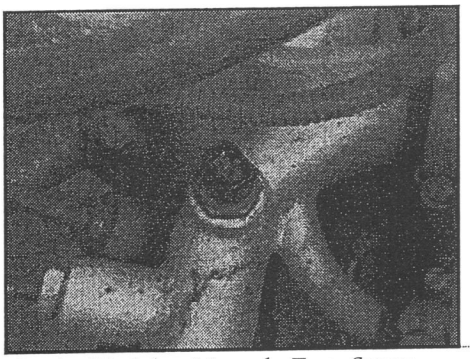
The sensor is located on the top of the outlet cooling pipes - as shown.



Service/Workshop Manual - Temp Sensor

4

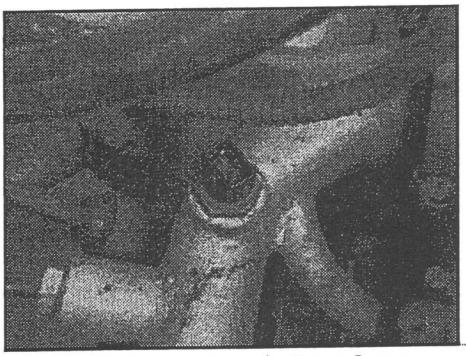
To remove unclip the sensor connector.



Service/Workshop Manual - Temp Sensor

5

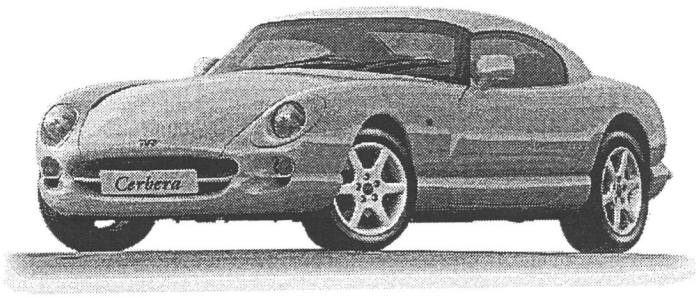
Unscrew the sensor from the coolant piping. The sensor is connected directly to the ECU which determines when the fans come on.



Service/Workshop Manual - Temp Sensor

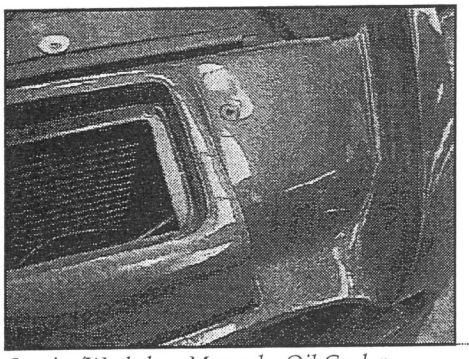
6

To replace reverse the outlined procedure. Ensure to bleed system on reassembly.



Service / Workshop Manual

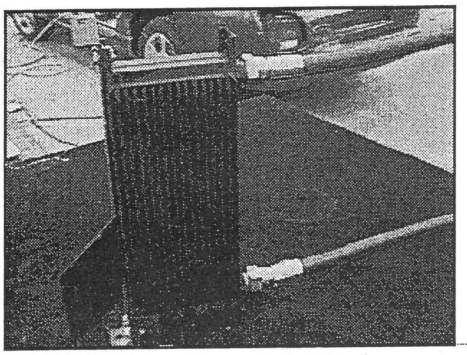
Oil Cooler



Service/Workshop Manual - Oil Cooler

1

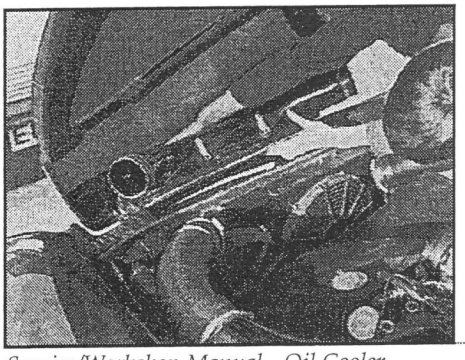
To remove the oil coolant matrix firstly remove the M8 counter sunk allen bolt which secures it to the body of the car. This is located at the N/S nose of the car under the bonnet. (same position as the V.I.N. but on the opposite side of the body).



Service/Workshop Manual - Oil Cooler

2

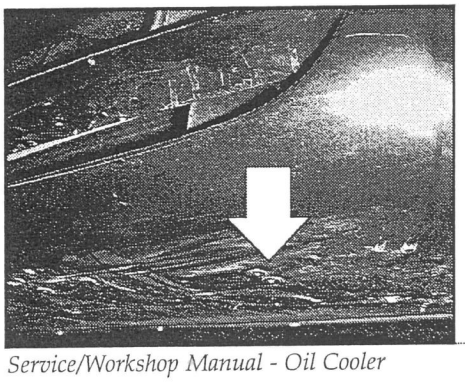
Undo the oil coolant piping from the oil cooler matrix. access can be gained via the access panel in the front of the front N/S wheel arch. The picture is of an oil cooler and piping out of the car.
N.B. - The oil in the system will drain out so be sure to have a container for the fliud to drain into.



Service/Workshop Manual - Oil Cooler

3

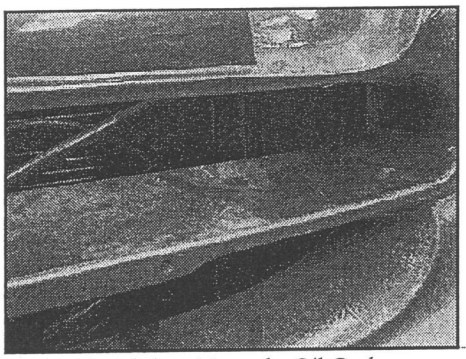
Then remove the air filter box - as described in its relevant section.



Service/Workshop Manual - Oil Cooler

4

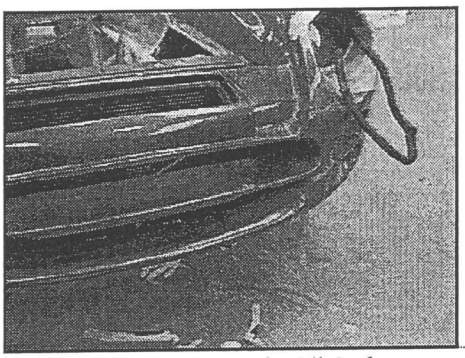
Remove the 2 X M8 allen bolts from underneath the front grill area.



Service/Workshop Manual - Oil Cooler

5

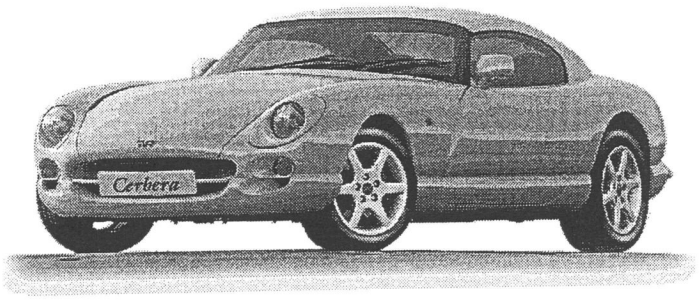
The oil cooler will then be able to slide to the left.



Service/Workshop Manual - Oil Cooler

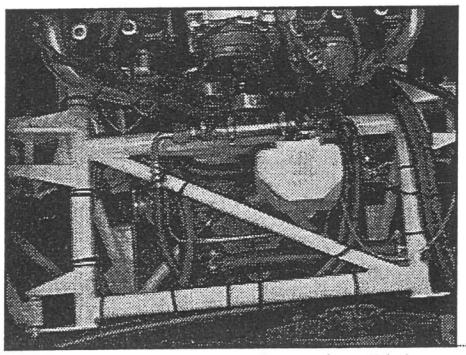
6

Remove the oil coolant matrix from the car through the air filter box hole.
To replace reverse the outlined procedure remembering to refill and bleed the system.
- refering to the relevant sections for instructions on these procedures.



Service / Workshop Manual

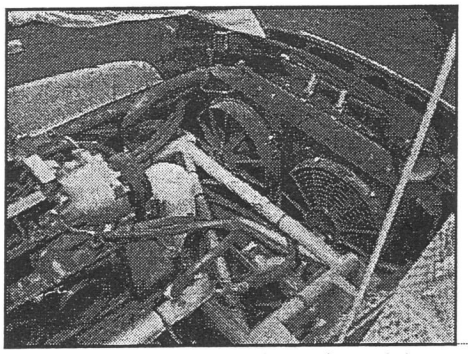
Water Cooling Piping



Service/Workshop Manual - Coolant Piping

1

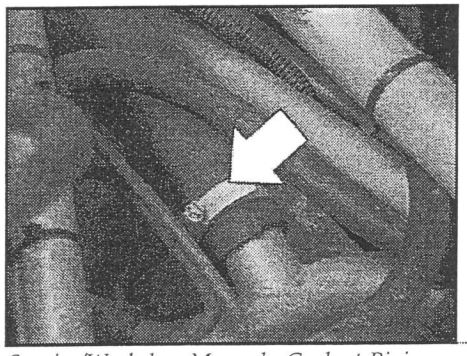
The water cooling piping is made up of rubber hoses sections which are joined by jubliee clips from the radiator to 2 metal pipe sections which inturn are conected to the engines cooling rails and the fluid reservoir.



Service/Workshop Manual - Coolant Piping

2

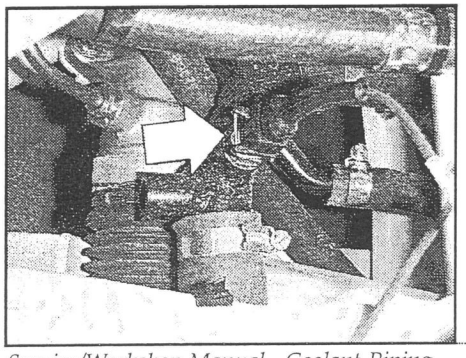
To replace a section of the rubber piping or even a section of the metal piping, drain the system - as described in the:-
"bleeding the coolant system"



Service/Workshop Manual - Coolant Piping

3

Then, simply disconnect the relevant section of hose or metal tubing by undoing the relevant jubliee clips.



Service/Workshop Manual - Coolant Piping

4

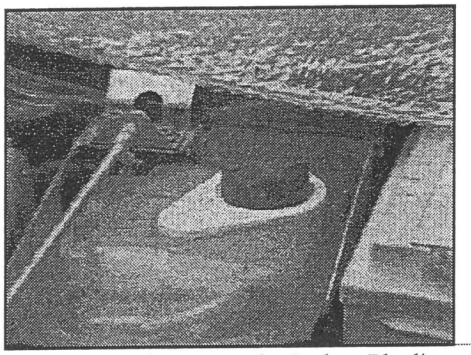
Remembering to disconnect the temperature sensor or the temperature gauge when the section of tubing which houses them has to be removed.

Notes



Service / Workshop Manual

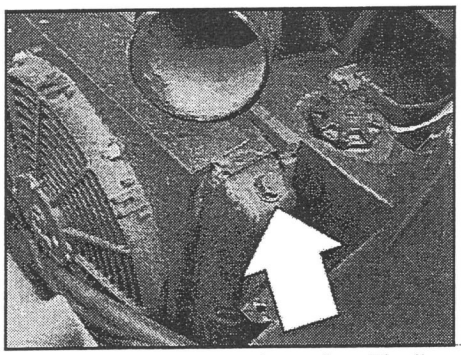
Bleeding the Coolant System



Service/Workshop Manual - Coolant Bleeding

1

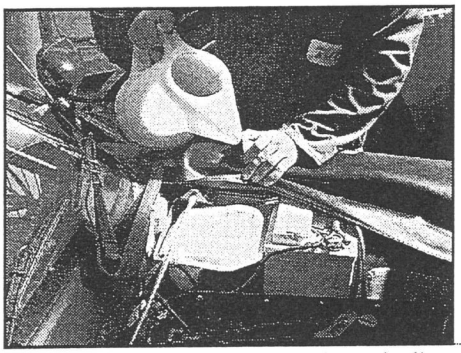
Remove the coolant reservoir cap located under the upper engine bay cover on the N/S of the car.



Service/Workshop Manual - Coolant Bleeding

2

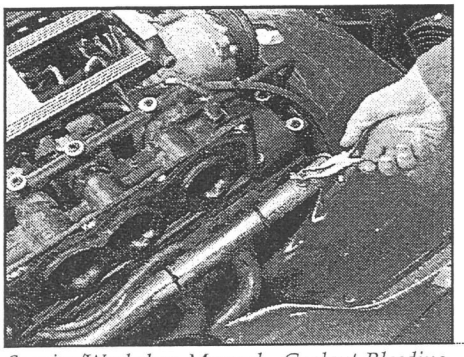
Remove the bleeding plug which is located on the O/S of the radiator.



Service/Workshop Manual - Coolant Bleeding

3

Top up the reservoir with fluid until the excess spills out of the bleed plug on the radiator.



Service/Workshop Manual - Coolant Bleeding

4

Replace the bleed plug and then bleed any air from the system using the bleed valves on the coolant rails. Once no more air is being expelled tighten the valve, check the level of coolant in the reservoir and replace the cap. Run the car and then re-check for air.

Notes



Service / Workshop Manual

Replacing the Coolant



Service/Workshop Manual - Coolant replacement

1

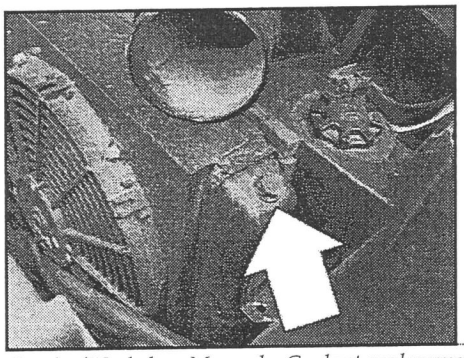
To replace the cooling system fluid, all the existing fluid has to be drained. To do this the lowest part of the system, which is the lower piping connecting to the radiator, has to be dis connected.



Service/Workshop Manual - Coolant replacement

2

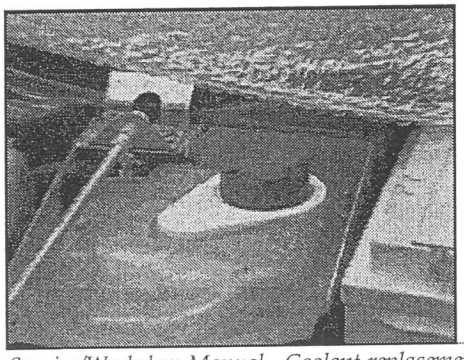
Once all the exsisting fluid has been drained reconnect piping.



Service/Workshop Manual - Coolant replacement

3

Remove the bleeding plug which is located on the O/S of the radiator.



Service/Workshop Manual - Coolant replacement

4

Remove the coolant reservoir cap and refill with coolant. 15 litres - 3 parts water, 1 part anti-freeze.
Then bleed the system as descrided in the relevant section.