

COOLING SYSTEM

GENERAL

Description

The engine is cooled by circulation of water through passages in the cylinder block and head and radiator. Circulation is by thermo-syphon action and is assisted by an impeller type water pump, driven by a 'Vee' belt from the crankshaft pulley.

The water pump is fitted to the front face of the cylinder block. The bearings are pre-packed with a special grease during assembly and do not require attention in service.

A thermostat is fitted into the water outlet connection to control engine running temperature and shorten the warm-up period.

PARTIAL DRAINING

Only partial draining of the cooling system is necessary during some operations and the following method has been found satisfactory:

Obtain a suitable threaded union having the same thread as the cylinder block drain plug tapping to which a length of plastic piping may be attached. The piping should be 1,0m to 1,5m (3 to 5 feet) in length.

If the engine is cold, the cooling system will be under a partial vacuum. Under this condition remove the cylinder block drain plug and immediately fit the adaptor **before** removing the coolant filler cap.

Where an 'Engine Warm' condition exists, relieve the pressure in the system by releasing, but not removing, the coolant filler cap followed by re-tightening after the pressure diminishes. Only then must the cylinder block drain plug be removed and the reducing union fitted, followed by the removal of the coolant filler cap.

Where it proves necessary to completely drain the cooling system, use one of the above methods **followed** by the disconnection of hoses between the engine and radiator. The above routine will minimise the loss of coolant and anti-freeze.

WATER PUMP SEALS

Where ceramic counter face water pump seals are fitted, the engine must **NEVER** be run without coolant, even for a few seconds. This is because the heat build-up between the carbon seal and ceramic face is very rapid, resulting in cracking of the ceramic face. The resultant leakage often creates a misleading impression that the cause is incorrect assembly of the sealing arrangement.

HOSES

Inspection

Periodically inspect all hoses for cracking or perishing. Pay particular attention to those parts of the hose secured by hose clips. Check for any signs of internal collapsing or ballooning. Hoses displaying any of the above symptoms must be renewed.

DRIVE BELT

Adjustment

The 'Vee' drive belt should be adjusted until a deflection of 10mm (3/8in) is obtained mid-way between the alternator and crankshaft pulleys.

Correct tension of the belt should be maintained by periodical checking and adjustment at times recommended in the current servicing schedule.

Belt adjustment is obtained by altering the position of the alternator with an adjustable link.

Note: When a new belt is fitted it is advisable to re-check the adjustment after a short running period. Re-adjust as necessary.

THERMOSTAT**Testing**

If the thermostat is suspected of being faulty, it should be tested as follows:

Immerse thermostat in water and gradually raise the water temperature. Check the water temperature at frequent intervals with an accurate thermometer. The valve should commence to open at the temperature stamped on the top face of the thermostat.

If the thermostat proves to be faulty it must be renewed. A faulty thermostat cannot be repaired.

RADIATOR**To Remove**

Disconnect battery.

Place heater control in HOT position.

Release clips and remove rear engine cover. Where necessary remove front undertray.

Open and secure bonnet.

Pull heater air ducting from its location at bulkhead and inner wing.

Partially drain cooling system (Refer to note at start of section).

Remove lower grille panel.

Release clips securing main grille to headlamp surrounds.

Remove screws and detach main grille.

Remove cooling fan guard.

Disconnect header tank hoses at radiator.

Disconnect radiator hoses. Some coolant spillage will occur.

Remove bolts and lift out radiator upper brackets and mounting rubbers.

Release centre vertical grille stay and remove stay.

Lift radiator until lower mounting spigots disengage from mountings and remove radiator taking care not to damage the matrix.

Recover lower mounting rubbers.

To Refit

Refitting is a reversal of the removal instructions.

Refill with coolant.

HEADER TANK**To Remove**

Open and secure bonnet.

Partially drain the cooling system (Refer to note at beginning of section).

Release hose clips and disconnect hoses from header tank.

Detach sound insulation panel from inside cab to allow access to header tank securing bolts.

Remove bolts and lift out header tank through bonnet aperture.

To Refit

Refitting is a reversal of the removal procedure.

Refill with coolant.