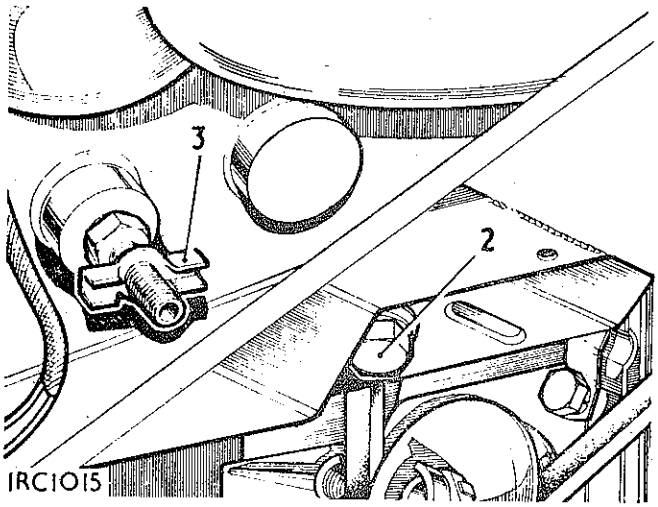
COOLING SYSTEM OPERATIONS

COOLANT

—Drain and refill 26.10.01

Draining

1. Remove the radiator filler cap.
2. Remove the radiator drain plug, right hand side.
3. Open the cylinder block drain tap at right hand side adjacent to engine breather.



Refilling

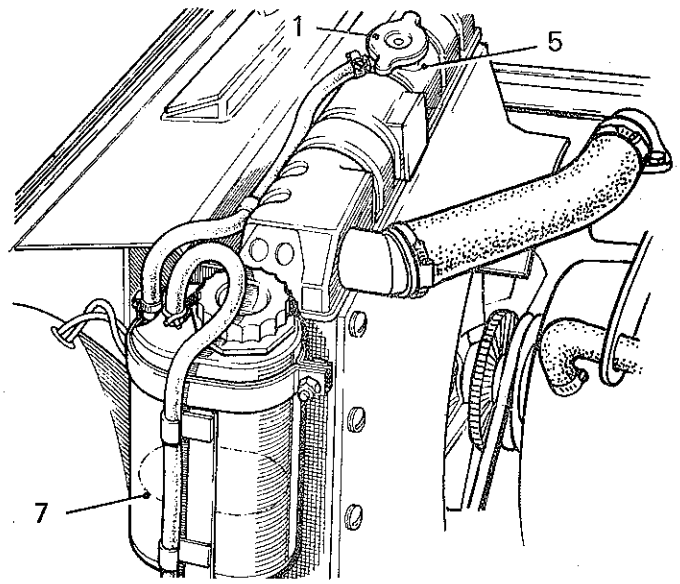
4. Reverse 2 and 3. If antifreeze solution is to be added, first pour 4,5 litres (8 pints) of water into the system, then add the required quantity of the recommended solution (see Division 09.)
5. Top up with water to between 12 mm and 19 mm (0.5 in and 0.75 in) below the bottom of the radiator filler neck.
6. Check and top up after the initial short engine run.
7. Ensure that the expansion tank coolant is maintained at one-quarter full approximately.

EXPANSION TANK

—Remove and refit 26.15.01

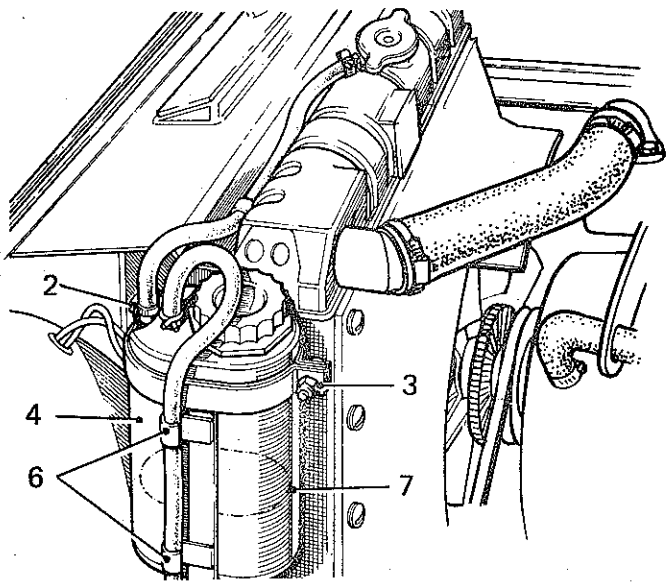
Removing

1. Open and prop the bonnet.
2. Disconnect the radiator overflow hose at the tank.
3. Slacken the tank retainer pinch bolt.
4. Withdraw the expansion tank.



Refitting

5. Reverse 3 and 4.
6. Refit the vent hose into the clips on the tank retainer.
7. Fill the expansion tank one quarter full approximately with coolant.
8. Reverse 1 and 2.



FAN BLADES AND PULLEY

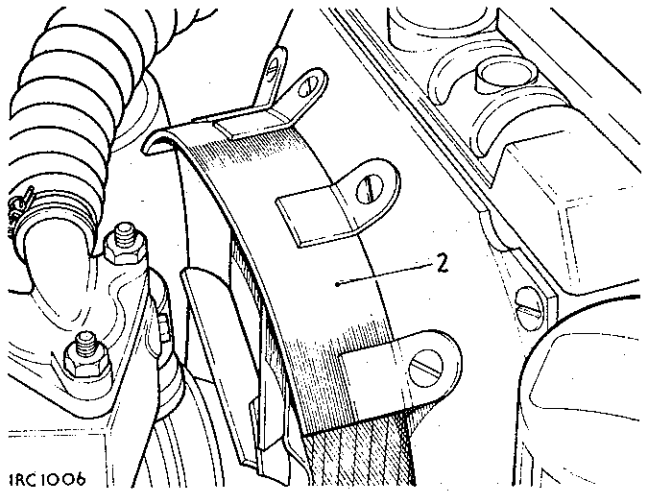
—Remove and refit **26.25.01**

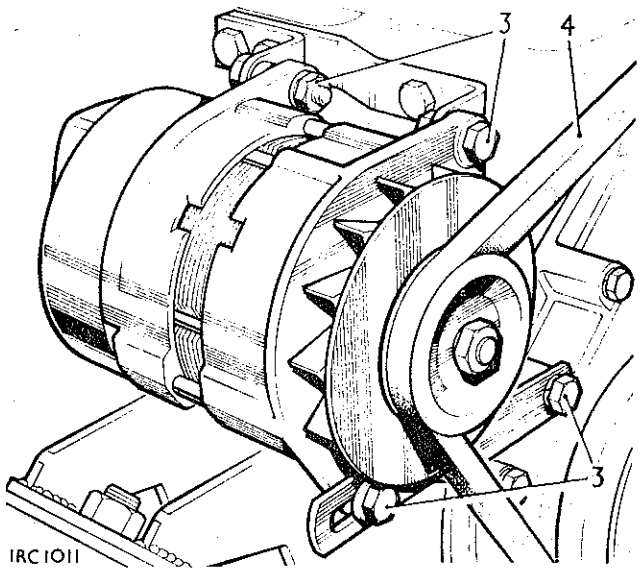
Removing

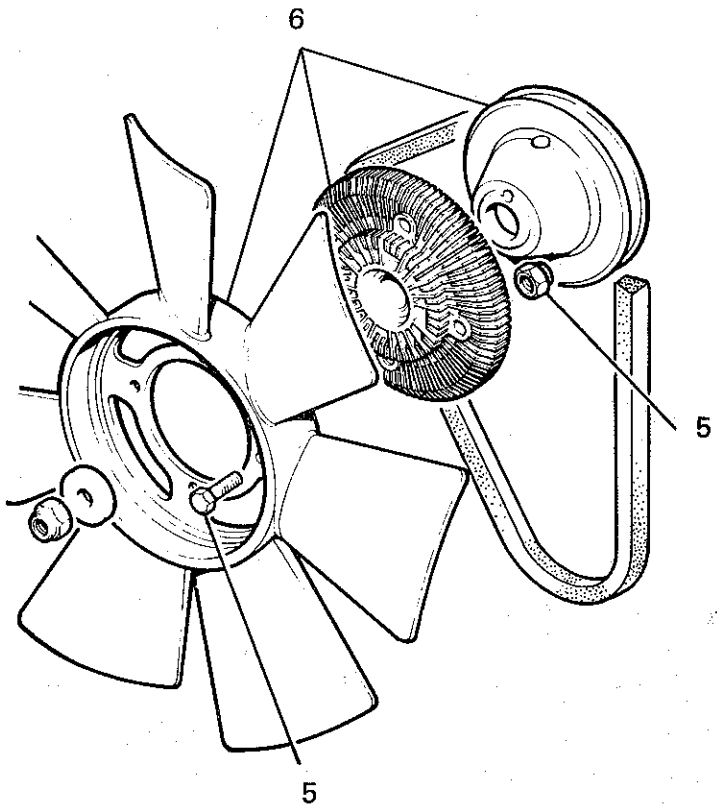
1. Open and prop the bonnet.
2. Remove the shroud from the radiator fan cowl.
3. Slacken the alternator fixings.
4. Remove the fan belt.
5. Remove the fixings.
6. Withdraw the fan blades, viscous hub and pulley.

Refitting

7. Reverse 3 to 6. Adjust the fan belt tension to 8 mm to 11 mm (0.312 in to 0.437 in) checked by thumb pressure between the fan and crankshaft pulleys.
8. Reverse 1 and 2.







RADIATOR BLOCK

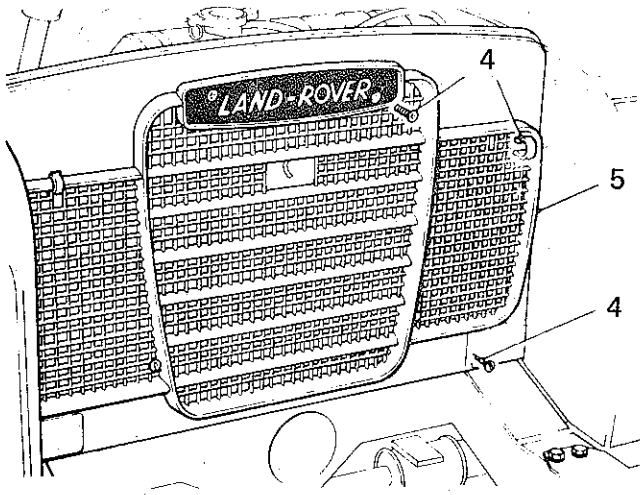
—Remove and refit **26.40.04**

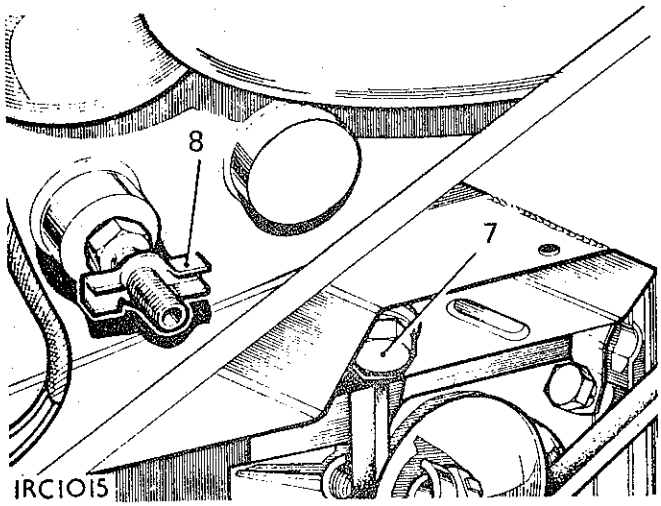
Removing

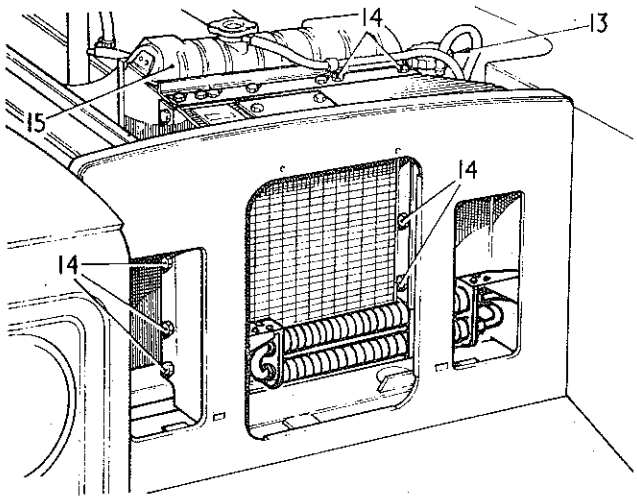
1. Remove bonnet panel. 76.16.01.
2. Disconnect the battery earth lead.
3. Remove the air cleaner. 19.10.01.
4. Remove the grille fixings screws.
5. Remove the radiator grille.
6. Remove the radiator cap.
7. Remove the radiator drain plug.
8. Open the drain tap at the cylinder block right hand side, adjacent to engine breather.
9. Disconnect the radiator top and bottom hoses.
10. Remove the fan cowl shroud.
11. Slacken the alternator fixings and withdraw the fan belt.
12. Remove the fan blades and fan pulley.
13. Remove the expansion tank.
14. Remove the fixings, radiator to grille panel.
    NOTE: If necessary, remove oil cooler fixings and move cooler aside to reach radiator fixings. To remove oil cooler disconnect oil lines.
15. Withdraw the radiator and fan cowl assembly.
16. Remove the fan cowl.

Refitting

17. Reverse 1 to 16, setting the fan belt tension at 8 to 11 mm (0.312 to 0.437 in) checked by thumb pressure between the fan and crankshaft pulleys.
18. Run the engine and check for leakages.





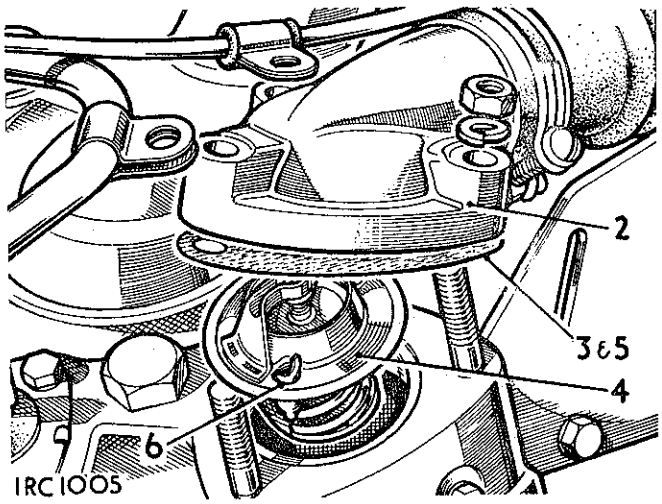


THERMOSTAT

—Remove and refit 26.45.01

Removing

1. Drain off coolant at the engine sufficient to drain the thermostat housing.
2. Remove the fixings and lift aside the outlet pipe.
3. Withdraw the joint washer.
4. Withdraw the thermostat.



Refitting

5. Smear both sides of the new joint washer with a small quantity of general purpose grease.
6. Ensure that the thermostat bleed hole is clear to prevent air locks when refilling.
7. Reverse 1 to 4.

DATA

Thermostat opening temperature 75°C to 80°C

THERMOSTAT

—Test 26.45.09

Testing

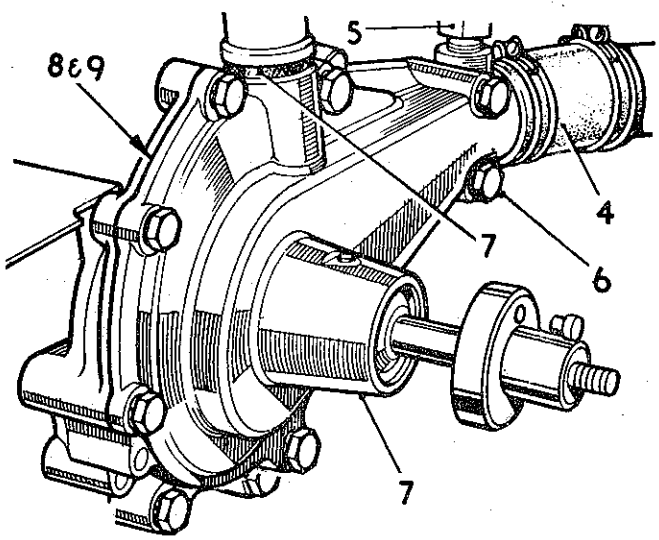
1. Remove the thermostat. 26.45.01.
2. Immerse the thermostat in water in a suitable container.
3. Heat the water and note the temperature at which the thermostat commences to open; this should be within the range as follows:
   – 75°C to 80°C.
4. The thermostat is not adjustable or serviceable; repair is by replacement.
5. Reverse 1.

WATER PUMP

– Remove and refit 26.50.01

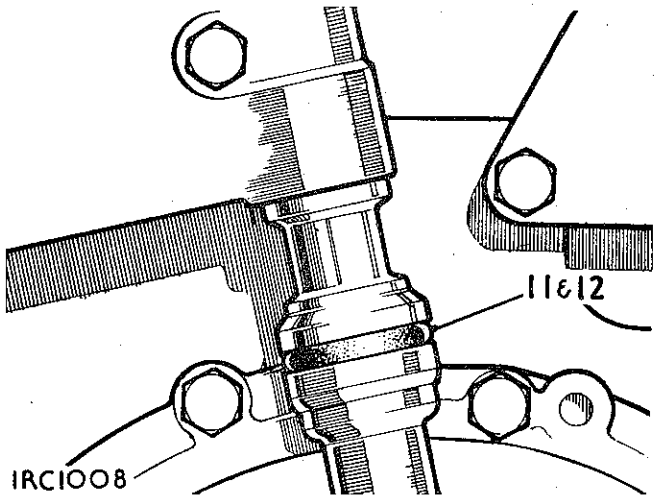
Removing

1. Remove the bonnet. 76.16.01.
2. Drain the cooling system. 26.10.01.
3. Remove the fan belt, fan blades and pulley. 26.25.01.
4. Disconnect the radiator bottom hose at the pump.
5. Disconnect heater hose at pump housing.
6. Remove the water pump fixings; note the fitted positions of the varying length bolts.
7. Withdraw the water pump, tilting upwards to clear the locating dowels and compress the 'O' ring seal on the by-pass outlet.
8. Withdraw the joint washer from the adaptor joint face.



Refitting

9. Smear both sides of the new joint washer with a minimum of general purpose grease.
10. Position the joint washer onto the pump adaptor face.
11. Lubricate a new 'O' ring seal with Silicone Compound MS4 and position the seal on the pump by-pass outlet.
12. Reverse 7. Ensure that the 'O' ring seal does not become dislodged.
13. Reverse 1 to 6.



WATER PUMP

—Overhaul 26.50.06

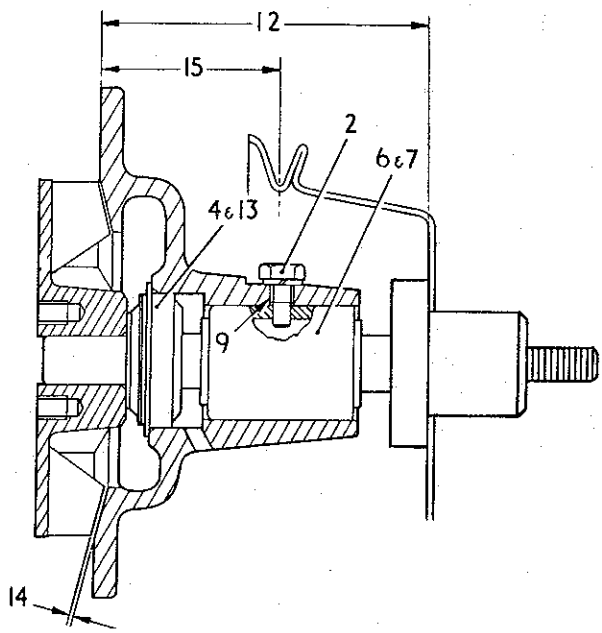
Dismantling

1. Remove the water pump. 26.50.01.
2. Remove the bearing location bolt.
3. Drift out the impeller, bearing and spindle as an assembly from the pump body and hub.
4. Cut through and remove the seal assembly from the spindle.
5. Insert the spindle into the water pump body, so that the impeller is in the position of the fan pulley.
6. Drift the spindle and bearing assembly from the impeller.

Inspecting

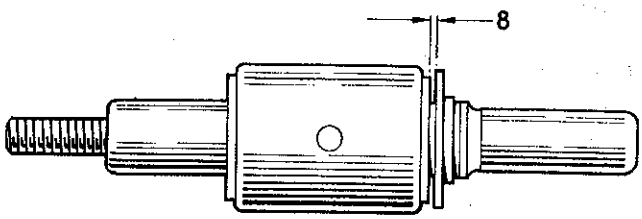
7. Examine the spindle and bearing assembly; it need not be renewed if the bearing is satisfactory and the spindle is free from excessive corrosion.
   Clean any corroded portion of the spindle and paint with a suitable chlorinated rubber primer or, alternatively, with a good quality aluminium paint or other anti-corrosive paint.
   The impeller must be a press fit on the spindle. If the impeller is loose on the spindle, replace either part as necessary.

Continued



Re-assembling

8. Where a steel deflector washer is fitted to the pump spindle, check that there is a minimum clearance of 0,46 mm (0.018 in) between the washer and the bearing housing face.
9. Insert a few drops of thick oil in the location hole in the bearing.
10. Suitably mark the spindle bearing housing and the pump body so that the bearing locating screw holes may be easily aligned during assembly.
11. Fit the spindle and bearing to the pump body and fit the locating screw.
12. Press the fan pulley hub on to the spindle to a set dimension measured between the front face of the pulley hub and the mounting face of the water pump body as follows:
    – 97,00 mm ± 0,25 mm (3.819 in ± 0.010 in).
    When pressing on the hub, support the spindle to avoid load falling on the bearing location bolt.
13. Fit the carbon ring and seal assembly to the pump body with the carbon ring outwards.
14. Press the impeller onto the spindle until there is 0,50 mm to 0,63 mm (0.020 in to 0.025 in) clearance between the impeller vanes and the pump body. Check using feeler gauges.
15. Offer the fan pulley to the assembly and check the fan belt groove position relative to the pump mounting face which must be as follows:–
    — 46,2 mm ± 0,25 mm (1.819 in ± 0.010 in)
16. Reverse 1.



DATA

Dimension from front face of hub to rear (mounting) face of water pump	97,00 mm ± 0,25 mm (3.819 in ± 0.010 in)
Clearance between impeller vanes and pump body	0,50 mm to 0,63 mm (0.020 in to 0.025 in)
Dimension from fan belt groove in pulley to rear (mounting) face of water pump	46,2 mm ± 0,25 mm (1.819 in ± 0.010 in)