

FOR INFORMATION

CHANGING RADIATORS ON REFRIGERATION CARS

APPLICABLE TO:

All 'S' type cars.

INTRODUCTION

The following instructions are intended to assist Service Personnel, who have some elementary knowledge of refrigeration, to change a radiator matrix without completely discharging the system.

Service Personnel who are not familiar with items referred to in the instructions that follow, should refer to Refrigeration Manuals T.S.D.720, T.S.D.744 and T.S.D.723.

PROCEDURE

Radiator matrix - To remove

Forward seat the compressor low pressure service valve.

Start the engine and engage the compressor clutch.

Allow the engine to run for at least two minutes on fast idle then reduce engine speed to normal tick-over. Fully forward seat the high pressure service valve on the compressor then, switch off the engine immediately. The compressor will then be isolated from the refrigeration circuit.

Remove the radiator shell.

Remove the two setscrews retaining the high pressure service valve to the compressor, then fit a rubber bung into the open aperture in the compressor to prevent the ingress of dirt.

To obviate any significant loss of gas, the following operation should be carried out quickly and carefully.

Continued...

Just 'crack' loose the high pressure pipe connection on top of the condenser and swing the pipe upward and forward clear of the radiator matrix. Tighten the connection on the condenser.

Note During the aforementioned operation, it is important that the operator should wear protective goggles as liquid refrigerant could blow off from the connection if the connections are slacked too much or for too long.

Disconnect the radiator matrix then lift it vertically out of the engine compartment (see T.S.D.729 Workshop Manual - Chapter L - Engine Cooling System - Radiator - To remove).

Radiator matrix - To fit

Fit a new matrix by reversing the procedure given for its removal - test the system for leaks then reconnect the refrigeration system in the following manner.

Just 'crack' the high pressure pipe connection on the condenser and swing the pipe back into its normal position then, quickly tighten the connection.

Remove the rubber bung from the compressor then fit the high pressure service valve to the compressor and tighten the setscrews.

Just 'crack' open the low pressure service valve. Remove the cap nut on the high pressure service valve and allow the refrigerant gas to bleed through the compressor and out to atmosphere for about ten seconds; refit the cap nut on the high pressure service valve.

Remove the oil level checking plug in the compressor crankcase then, with the low pressure valve 'cracked' slightly open, allow the refrigerant gas to bleed from the crankcase; bleeding should last approximately 10 seconds. Refit the oil level checking plug.

Before running the engine, finally, fully back seat both the high pressure and low pressure service valves.

If the aforementioned instructions are carried out carefully, not more than $\frac{1}{2}$ lb. of refrigerant will be lost.

FOR INFORMATION

ANTI-FREEZE MIXTURES

APPLICABLE TO:

All 'S' type cars

DESCRIPTION

In addition to the approved anti-freeze mixtures conforming to British Standard Specification 3150:1959 the following anti-freeze is also approved for use in all the above mentioned cars.

'Prestone' Anti-freeze (manufactured by Union Carbide Ltd.).

An approximate indication of the protection against frost ensured by differing amounts of anti-freeze in the system is given below.

Anti-freeze (%)	12.5	21.4	30.4	39.3
Freezing point °C.	- 6	-10	-16.5	-24
°F.	21.2	14	2.3	-11.2
Degrees of frost °C.	6	10	16.5	24
°F.	10.8	18	29.7	43.2

The maximum anti-freeze mixture in the system should not exceed 50% which will give protection down to -34°C. (-29.2°F.).

In addition to providing protection against frost, anti-freeze mixtures contain inhibitors to prevent corrosion in the cooling system, therefore, it is essential to use an anti-freeze mixture all the year round and in all parts of the world.

In hot climates a minimum of 25% anti-freeze mixture should be used in the engine cooling system; this, in addition to providing corrosion protection, raises the boiling point of the coolant.

Different brands of anti-freeze should not be mixed under any circumstances.

CATEGORY C

COOLING SYSTEM - THERMOSTATS

APPLICABLE TO:

All Rolls-Royce Silver Cloud and Bentley S Series cars, fitted with a wax operated thermostat.

DESCRIPTION

This Service Bulletin has been issued to advise Distributors, Retailers and Service Personnel that the wax operated thermostats fitted to the above cars, have a service life of two years.

These thermostats should therefore be changed every two years, the cost being chargeable to the owner.

PROCEDURE

It is recommended that the thermostat should be changed at the 2 Years Service Schedule, as this schedule calls for the removal of the thermostat to enable the cooling system to be reverse flushed.

When a thermostat has been replaced, one of the labels provided with the thermostat should be completed to show the date of the next change and attached to the engine in a conspicuous position. These labels are available from the Spares Department at Crewe, part number RH 8147, and read as follows.

Replace thermostat every
two years

Next change due:

ROLLS-ROYCE LIMITED

Continued...

It is emphasised that the 2 Years Service Schedule will only be carried out at the request of the owner and it is the responsibility of the Service Manager to advise the owner that the Service is due.

The part number of the thermostat which should be used for all replacements in the S series cars is UE 30193.

IMPORTANT Should an engine be suspected of overheating it is essential that the thermostat be changed.

CATEGORY C

COOLANT PUMP OVERHAUL

APPLICABLE TO:

All Rolls-Royce Silver Cloud III cars including L.W.B.
All Bentley S3 cars including L.W.B. and Continental.
All Rolls-Royce Phantom V cars from Chassis No. 5.VA.1.

DESCRIPTION

The purpose of this Service Bulletin is to advise Distributors and Retailers that a special adaptor is available for separating the bearing housing from the main casing of the coolant pump on the above cars.

By using this adaptor, in conjunction with a slide hammer, the bearing housing and pump casing can be separated without risk of damage, thereby eliminating the necessity for Distributors and Retailers to return these units to Rolls-Royce Limited for overhaul.

It is intended that the following is read in conjunction with Chapter L Section L5 of the Workshop Manual (T.S.D. Publication 729).

OVERHAUL PROCEDURE

1. Remove the coolant pump complete with the main casing from the engine as described on Pages L12 and L13 of the Manual.
2. Remove the coolant pump driving spider using the extractor tool (part No. RH 7099) as shown in Figure L18 of the Manual.
3. Remove the eight setscrews securing the coolant pump bearing housing to the main casing.
4. Fit the adaptor (part No. RH 7314) over the bearing spindle and onto the nose end of the bearing housing: locate the two extractor legs of the adaptor into the two gland drain holes in the bearing housing.

Continued...

- 2 -

5. Tighten the setscrews in the extractor legs sufficiently to secure the legs in the drain holes and tighten the adaptor steady screw onto the nose of the bearing housing; it is sufficient just to 'nip' the screws when tightening them.
6. Assemble the slide hammer (part No. RH 7313) onto the adaptor.
7. Operate the slide hammer in the approved manner noting that several applications may be necessary to effect separation of the housings.
8. Continue the coolant pump overhaul as detailed on Pages L14 to L18 of the Manual.

TOOLS REQUIRED

<u>Part number</u>	<u>Description</u>
RH 7099	Spider extractor
RH 7313	Slide hammer
RH 7314	Adaptor

For additional information concerning the slide hammer and the adaptor refer to Spares Information Sheet 2.A.2.

No. S3/L5

Circulation - United Kingdom Distributors
and Retailers only

CATEGORY C

ENGINE COOLANT ANTI-FREEZE

APPLICABLE TO:

All Rolls-Royce Silver Cloud III cars including L.W.B.
All Bentley S3 cars including L.W.B. and Continental.
All Rolls-Royce Phantom V cars from Chassis No.5.VA.1 and onwards

DESCRIPTION

The Ford Motor Company have recently begun to market a new anti-freeze solution under the trade name 'Ford Anti-freeze'.

Only anti-freeze solutions conforming to British Standard Specification 3150 : 1959 are approved by Rolls-Royce Limited and since the Ford anti-freeze solution does not conform to this standard, it should NOT be used in the cooling system of any Rolls-Royce or Bentley manufactured car.
