

## WORKSHOP MANUAL C ELECTRICAL 90-91 TOOLS ELECTRICAL 92-93 ELECTRICAL 94-96 PARTS CATALOGUE 04 ELECTRICAL 97-98

# Air Conditioning - R134A refrigerant conversions

## Applicable to

All Rolls-Royce and Bentley motor cars from Vehicle Identification Numbers (VIN's) listed below that have been converted to use refrigerant R134A.

Rolls-Royce Silver Shadow from SRH 1002 to SRH 30000.

Rolls-Royce Corniche from CRH 9770 to 22582

Bentley T1 from SBH 1001 to 30000.

## Introduction

This Product Support Information Sheet has been issued to instruct parts and service personnel of the correct procedures when servicing vehicles converted to use refrigerant R134A by fitment of RH 20397 conversion kit.

## Description

Motor cars converted to use R134A may be identified by:-

- 1.) Note in the service book "refrigerant system updated to use R134A". When servicing the system only use Refrigerant R134A and ICI Emkarate RL 100S oil (part number RH 20006). When replacing any disturbed 'O' rings refer to figure C17-1

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**C17-1 'O' ring replacement** C17-1.

- 2.) By the label RH 20211 adhered to the top of the compressor.

## Refrigerant R134A (Tetrafluoroethane)

The new refrigerant is more 'environmentally friendly' than the refrigerant R 12 used before. It has been introduced to comply with world-wide legislation restricting the use of ozone depleting substances.

## Polyol Ester Refrigerant Oil

A new Polyol Ester based refrigerant oil is used on all vehicles converted to use refrigerant R134A. The Polyol Ester oil used in the retrofit is miscible with the mineral oil based refrigerant oil previously used on R12 systems. Do not use Polyol Alkylene Glycol (PAG) oils. PAG oils are used in production built R134A systems from vehicle identification number (VIN) \*SCAZD02C5RCX50001\*. It is not miscible with either Polyol Ester based refrigerant oil or mineral based refrigerant oil.

## 'O'Rings

The 'O' rings used in R12 refrigerant systems are compatible with R134A refrigerant systems as long as the joints are not broken. All 'O' rings must be replaced when either the 'O' ring is disturbed or a component is changed (see fig.

C17-1

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**C17-1 'O' ring replacement** C17-1).

## Precautions

The following safety precautions should be observed and adhered to when handling R134A refrigerant and ICI Emkarate RL 100s oil.

- 1.) Always observe all the precautions stated in the appropriate service literature when handling R134A refrigerant or carrying out service operations on a system containing it.
- 2.) Always wear safety glasses and protective clothing when handling R134A refrigerant or working on systems containing it. Take care to cover all exposed skin, for example do not roll up the sleeves of your overalls.
- 3.) Always ensure that suitable first aid equipment is close at hand when handling R134A refrigerant or working on systems containing it.
- 4.) R134A refrigerant systems have special service fittings to avoid cross-contamination with R12 systems. Do not attempt to remove these fittings.
- 5.) ICI Emkarate RL 100S oil has very high affinity for moisture. Under no circumstance should the oil be used in the compressor if it has been open to the atmosphere. Moisture within a refrigeration system can lead to premature or total system failure. Always replace the container cap after use.
- 6.) Use only refrigerant R134A. Cross contamination with other refrigerant types will cause severe damage to the Air Conditioning System and to service tools and equipment. Do not mix refrigerant types through a system or in the same container.
- 7.) Do not pressure test or leak test the system using compressed air. Air/HFC-134A mixture is potentially dangerous at elevated pressure and may cause fire or explosion resulting in injury or property damage.
- 8.) Always read the additional safety instructions supplied with the refrigerant recovery and recycling equipment before use.
- 9.) Do not flush the system or components with R134A refrigerant.
- 10. Do not spray R134A refrigerant on to components to cool them during fault diagnosis procedures.

## Service Instructions

- 1.) When servicing the system only use refrigerant R134A and ICI Emkarate RL 100S oil (Part number RH 20006). The method of evacuating, sweeping and charging the system is identical to the procedure shown in the workshop manual TSD 2476 Chapter

C4, except for the quantities of oil and refrigerant.

The quantities required are of oil 280 ml and refrigerant 1.05 kg (37 oz).

Always use a suitable recovery unit to discharge the refrigerant.

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| <b>Warning:</b> |
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| Do not allow the refrigerant to be discharged to atmosphere. |
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- 2.) When assembling the refrigeration system, always lubricate the 'O' rings with Emkarate RL 100S oil before fitting.
- 3.) Should it become necessary to replace the existing receiver drier, part number RH 20389 must be fitted as a replacement.
- 4.) Should it become necessary to replace the low pressure throttling valve a new low pressure service adaptor (part number RH 20205) will be required to be fitted to the new throttling valve noting the following point:

Before fitting the new low pressure service adaptor to the new throttling valve ensure that the schraeder valve in the throttling valve is fully screwed into the connector otherwise the schraeder valve will leak.

- 5.) In the event of a compressor change:
  - a)) a new two part compressor label (part number RH 20211) must always be fitted to the compressor. All the information required for this label should be transferred across from the label on the replaced compressor except the compressor serial number which should be read from the new compressor and placed in the space directly above the date.

Remove the existing label from the new compressor and then adhere the new label on to the top of the compressor between the connection points.

- b)) drain the mineral oil from the new compressor, flush with Polyol Ester oil to remove traces of mineral oil and refill the compressor with 280 ml of Emkarate RL 100 oil.

### Parts Affected

| New Part No. | Description.     | Quantity per car |
|--------------|------------------|------------------|
| RH 20397     | Kit CFC Free ACU | 1                |

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