



Workshop Manual

Rolls-Royce & Bentley motor cars

Cars built from the following vehicle
identification numbers (VIN)

Rolls-Royce Silver Spirit

Rolls-Royce Silver Spur

Bentley Mulsanne (excluding
Mulsanne Turbo)

SCAZS0000ACH01001

Rolls-Royce and Bentley Corniche

*SCAZD0006CCH05037 *

Bentley Eight

*SCBZS8004ECH08862 *

Bentley Mulsanne Turbo

*SCBZSOT05CCH04233 *

Bentley Turbo R

*SCBZSOT0XFCH12834 *

Bentley Continental

*SCAZD0001FCX09028 *

Volume 1

TSD 4400

April 1985

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Introduction

TSD 4400

April 1985

This workshop manual has been compiled to assist Service Personnel responsible for the maintenance and overhaul of Rolls-Royce Silver Spirit, Rolls-Royce Silver Spur and Bentley Mulsanne motorcars built from vehicle Identification number (VIN) *SCAZS0000ACH01001*. Information relating to any subsequent modification will be circulated by the issue of either amended pages or service information sheets.

It should be noted that this Workshop Manual also applies to Corniche motorcars (from vehicle identification number *SCAZD0006CCH05037* and to the Bentley Continental.

At the beginning of each chapter is an issue record sheet showing the issue of sections and amended pages.

When a section or amended page is issued a new issue record sheet will also be attached. This record sheet will record the amendment, thus providing an up-to-date record of sections and pages.

Throughout the manual reference is made to the right-hand and left-hand side of the car. This is determined when sitting in the driver's seat.

In order to identify the two banks of engine cylinders, it should be noted that A-bank of cylinders is on the right-hand side and B-bank on the left-hand side when viewed from the driver's seat. Service Personnel at Rolls-Royce Motors Limited are always prepared to answer queries or give advice on individual servicing problems.

When making an enquiry it is essential that the full vehicle identification number (VIN) be quoted.

Chapter contents page

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General information

Contents	Sections					
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Issue record sheet 1

August 1985 -

The dates quoted below refer to the issue date of individual pages within this chapter.

Sections	A1	A2	A3	A4	A5	A6	A7	A8	A9	
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2	Jul 83	Jul 83	Aug 85	Aug 85	Nov 84	Jul 83	Nov 84	Nov 84		
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Identification

The locations of the various vehicle identification numbers quoted in this section indicates their main positions. The numbers may also be found in other places depending upon the specification of the vehicle. Build sequence numbers will usually be found on the majority of main assemblies.

Vehicle identification number (VIN)

The vehicle identification number consists of

seventeen digits as shown in figure A1-1.

The check digit is used to ensure the VIN is correct i.e. if the VIN is incorrect at any one digit, the check digit will show this.

Note

The letters I, O, and Q are not used in a VIN, because they can be easily confused with the figures 1 and 0.

On cars other than those conforming to a North American specification, vehicle identification plates are

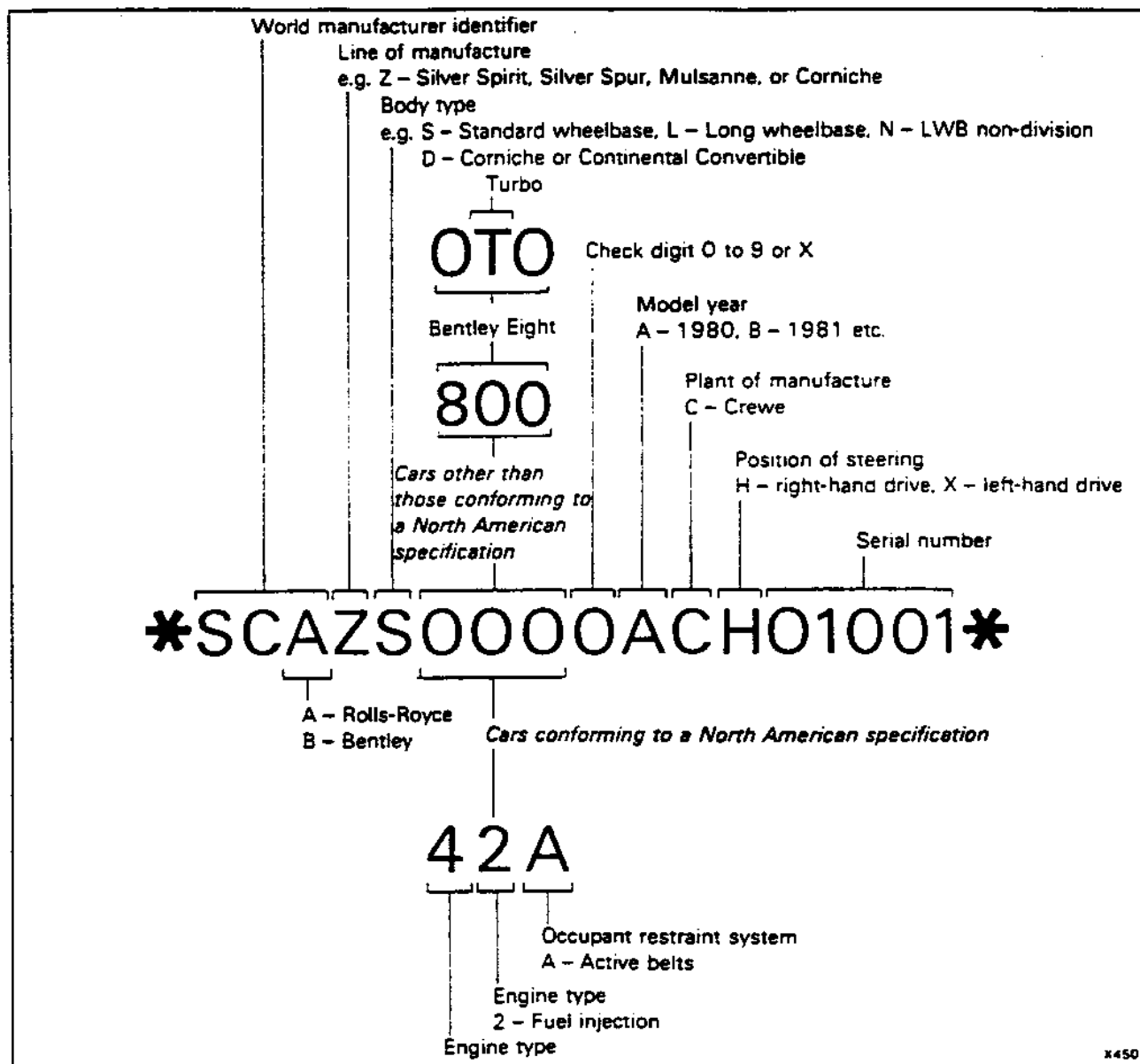


Fig. A1-1 Vehicle identification number

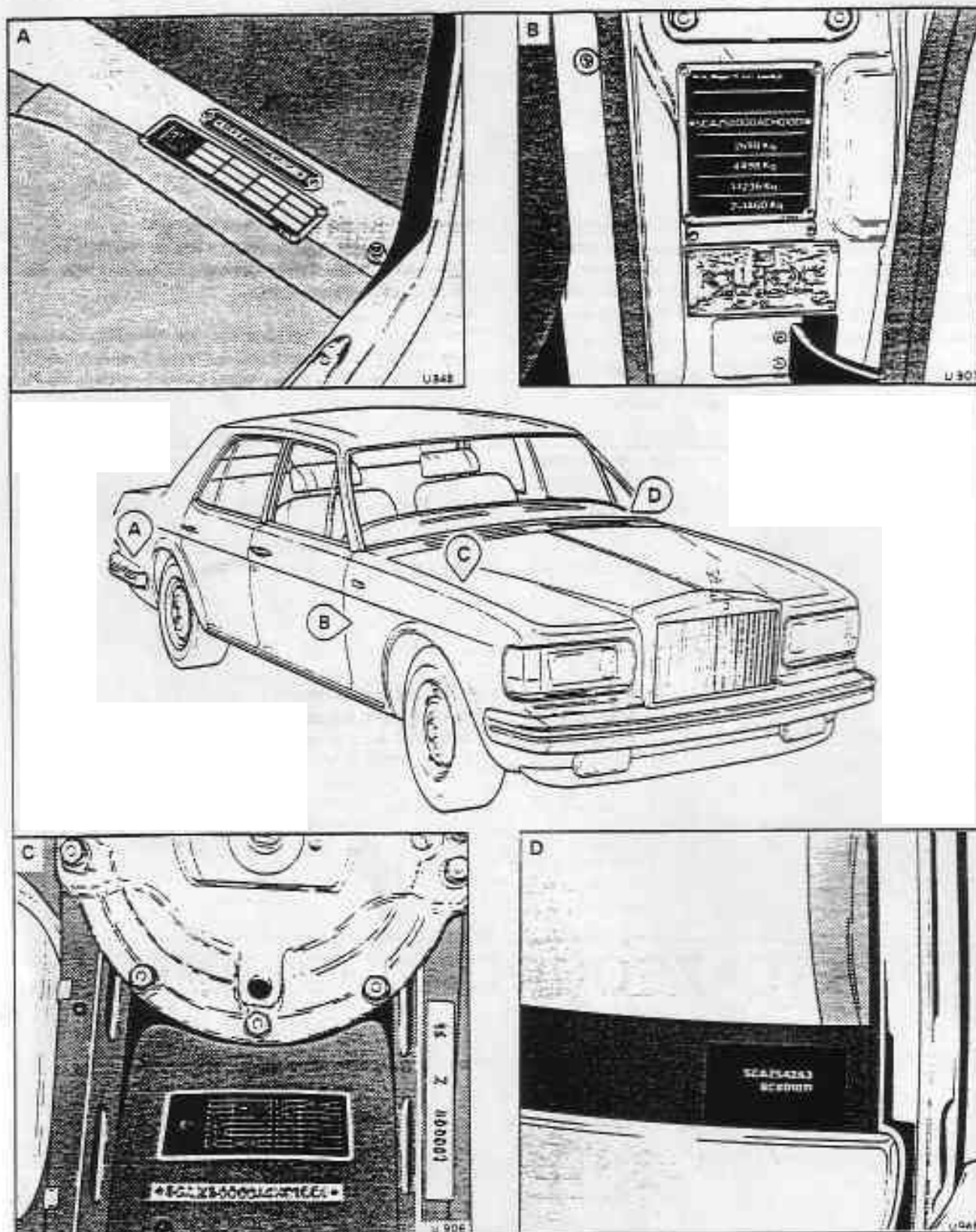


Fig. A1-2 Vehicle identification plates Silver Spirit, Silver Spur, and Mulsanne (including Turbo)

- A** VIN plate adjacent to lower stowage compartment (*Swedish specification*)
- B** Right-hand front door pillar (left-hand front door pillar - *North American specification*)
- C** Between right-hand front road spring pot support brackets
- D** Left-hand corner of demist panel (*North American specification*)

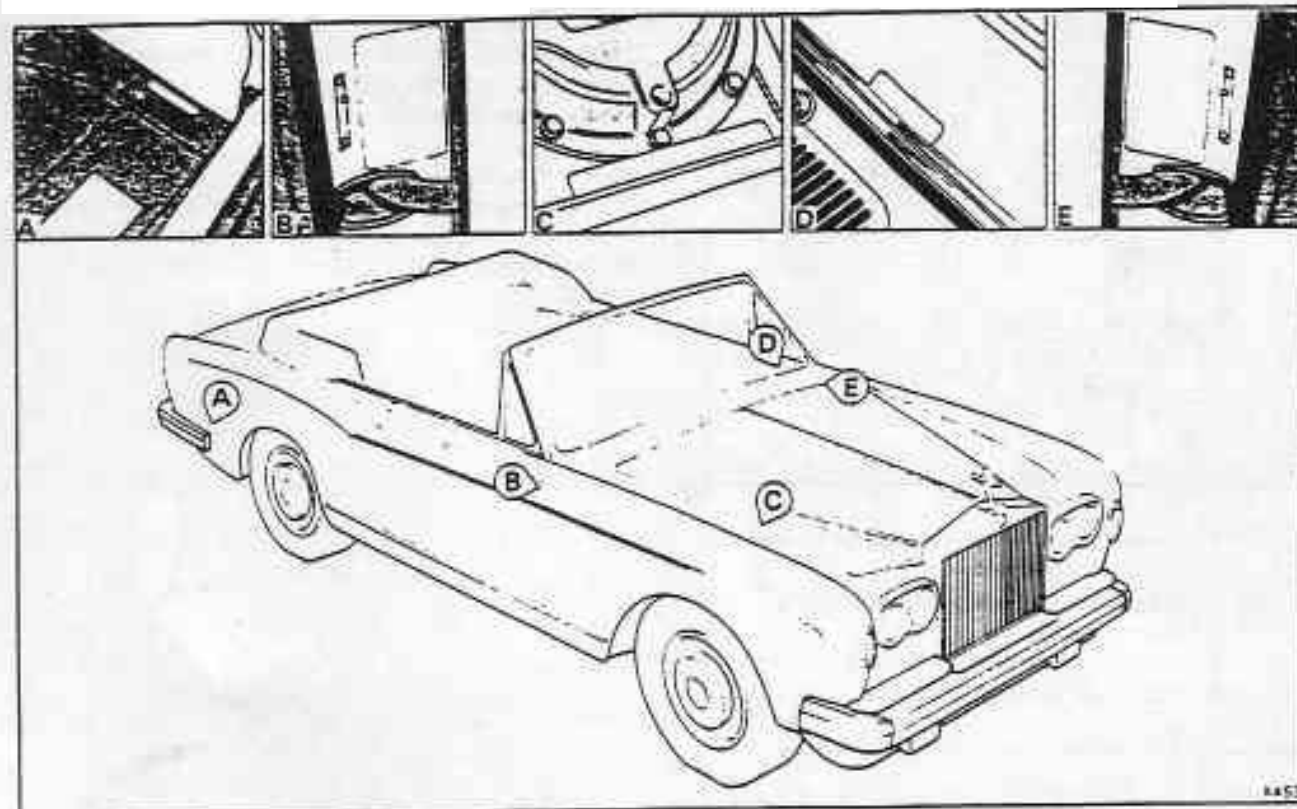


Fig. A1-3 Vehicle identification plates Corniche

- A Right-hand side of luggage compartment (*Cars conforming to a Swedish specification*)
- B Right-hand door hinge pillar (*Cars other than those conforming to a North American specification*)
- C Right-hand valance in engine compartment
- D Left-hand lower corner of windscreen (*Cars conforming to a North American specification*)
- E Left-hand door hinge pillar (*Cars conforming to a North American specification*)

fitted below the upper hinge of the right-hand front door pillar and the vehicle identification number is stamped directly into the body between the supports of the right-hand front road spring pot (see fig. A1-2).

On cars conforming to a North American specification, the identification plates are fitted in two positions, below the upper hinge of the left-hand front door pillar and on top of the demister panel, visible from outside the car in the left-hand lower corner of the windscreen. The vehicle identification number is stamped directly into the body between the supports of the right-hand front road spring pot as shown in figure A1-2.

On cars conforming to a Swedish specification, a further VIN plate is fitted beneath the carpet in the luggage compartment adjacent to the lower stowage compartment.

When making any enquiries to Rolls-Royce Motors Limited (or any appropriate member of the group) relating to the car, it is essential that the full vehicle identification number is quoted.

Engine serial number

The engine serial number is stamped on the front of the crankcase as shown in figure A1-4.

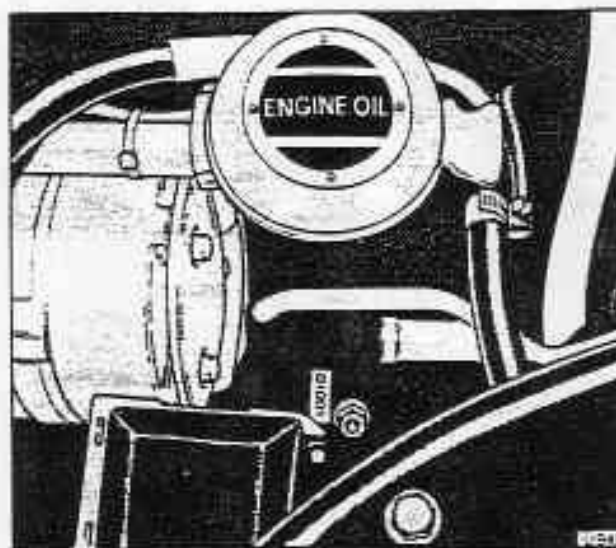


Fig. A1-4 Engine serial number (Other than turbocharged engines)

On Turbocharged engines, the engine serial number is stamped in three places.

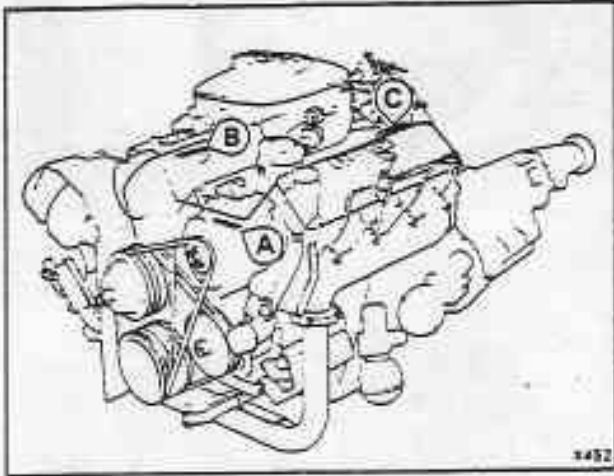


Fig. A1-5 Positions of the engine serial number (Turbocharged engines)

- A Front of engine crankcase between cylinder heads
- B Front of 'A' bank cylinder head
- C Rear of 'B' bank cylinder head

Transmission serial number

The transmission serial number is located on a metal plate attached to the right-hand side of the transmission casing as shown in figure A1-6.

Body serial number

The body serial number is stamped on a metal plate which is attached to the front support bracket adjacent to the right-hand front road spring pot (see fig. A1-2, inset C).

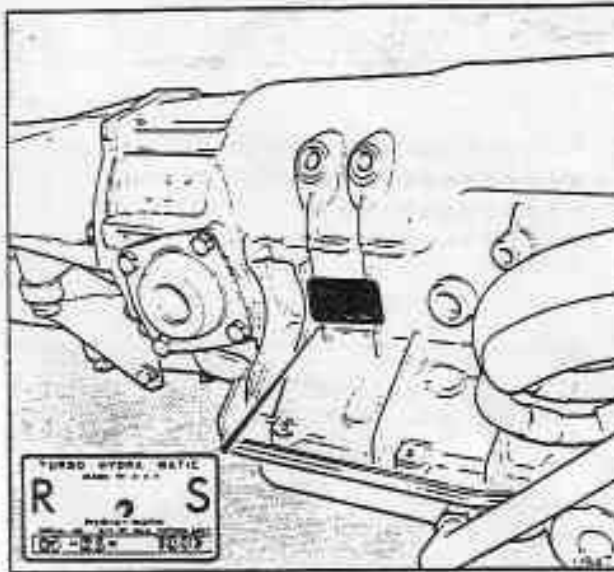


Fig. A1-6 Transmission serial number

The front of the engine crankcase between the engine cylinder heads.

The front of 'A' bank cylinder head.

The rear of 'B' bank cylinder head.

Engine build code number

The engine build code number is stamped on a crankcase boss beneath the rear of the refrigeration compressor. The letters refer to the engine code and the number refers to the engine build sequence.

This is not the engine serial number.

On Turbocharged engines, the engine build code number is stamped on a boss at the front of the crankcase beneath the rear of the alternator.

at frequent intervals. The person lifting the compressed assembly out of the car must keep their head and body clear of the tool.

Caster and Camber angles

The caster and camber angles must always be checked at the same time, as adjustment of one effects the other.

'Jacking up' the car

Care must be taken not to leave the car jacked up for long periods without support to the trailing arms, otherwise damage may result to the trailing arm mounting points or height control ball pin brackets.

When using a hydraulic jack to raise the car ensure that a hardwood block is placed between the jack and the underneath of the car.

The engine front pulley should not be used to support the engine.

Rear suspension

Warning



Before any work is carried out on the rear suspension frame tubes, etc., reference must be made to the appropriate section in the Workshop Manual.

Chapter K - Fuel system

Fuel - To drain

The fuel is highly inflammable, and extreme care must be exercised whenever the system is opened (i.e. pipes or unions disconnected) or when the fuel is drained. The following basic rules should apply.

1. Disconnect the battery.
2. Place 'No Smoking' signs in the vicinity of the vehicle.
3. Ensure that adequate fire fighting equipment is available in the vicinity of the vehicle.
4. Protective clothing including safety goggles, gloves, and aprons should be worn at all times by the operator.
5. If fuel is to be drained from the tank, it should be siphoned into a suitable covered container.
6. When draining the fuel system on cars fitted with catalytic converters, it is most important that the fuel system is not completely drained by running the engine, otherwise damage to the catalytic converter will result.

Health risk

Unleaded gasoline may contain up to 5% of Benzene as an anti-knock additive. Benzene is extremely injurious to health, being carcinogenic and therefore all contact, particularly inhalation should be kept to an absolute minimum.

The fuel has a sufficient high vapour pressure to cause a hazardous build-up of vapour in poorly ventilated areas. The vapours are irritant to the eyes and lungs, if high concentrations are inhaled it may cause nausea, headache, and depression. The liquid is also irritant to the eyes and skin and may cause dermatitis with prolonged or repeated contact.

Carburettors

SU HIF7 carburettors are set and balanced by accurate flow measuring techniques during manufacture and therefore, adjustment of the mixture screws should not be necessary.

SU Carburettors - To dismantle

Dismantling of the components within the carburettors is not recommended as all carburettors are set and balanced by accurate flow measuring techniques during manufacture.

SU Carburettors - To inspect

When cleaning the inside of the suction chamber and piston rod guide use either fuel or methylated spirit (denatured alcohol) and then wipe dry. Abrasives must not be used.

Solex 4A1 Carburettor

The Solex 4A1 carburettor is tested and set by the manufacturer using special equipment. Therefore, adjustment of the mixture screws should not be necessary.

Solex 4A1 Carburettor - To dismantle

Dismantling of the carburettor is not recommended as it has been set and balanced by accurate measuring techniques during manufacture.

Fuel injection system

During manufacture, the components of the fuel injection system are precisely adjusted in order to comply with the relevant emission control regulations. Therefore, alterations to any of the settings should not normally be necessary.

Before carrying out any tests, ensure that the battery is in a fully charged condition.

It should be noted that all components of the system (except the injectors and the overrun valve) can be tested on the vehicle.

The control piston, if removed, should be handled with care as it is machined to very fine tolerances.

Fuel pressure

The fuel injection system contains fuel that may be under high pressure [approximately 4.8 bar (70 lbf/in²)]. Therefore, to reduce the risk of possible injury and fire, always ensure that the system is depressurized (see the relevant section of Chapter U for details).

Turbocharging system

The turbocharger assembly should never be dismantled. If the turbocharger is faulty, a service exchange unit should be fitted.

Prior to the turbocharger being fitted to the engine, it should be primed with engine oil through the oil feed pipe.

Never run the engine with the oil feed pipe to the turbocharger disconnected.

Whenever any components are removed from the turbocharging system, they should be handled with

care to avoid damaging the machined faces.

An application of Neverseaz or similar anti-seize lubricant should be applied to any exhaust bolts whenever they are removed to aid dismantling at a future date.

The wastegate assembly when removed from the car should be tested with air pressure only and care should be taken to avoid blanking off the spring cover vent hole (limiter tapping) whilst doing so, as this can cause damage to the diaphragm.

Care should be taken when fitting the fuel pressure regulator, due to the soft material used, not to cross-thread the fuel pipe unions.

The engine knock sensor (fitted towards the rear of 'B' bank manifold) is very sensitive. Therefore, when any work is being carried out in this area, special care must be taken.

Whenever filter maintenance is carried out, the air flow through the filter should be noted (i.e. the clean side of the element is the outside, any dirt will accumulate in the centre).

Do not run the engine with the air cleaner disconnected. The only possible exception being in the workshop, where care should be taken to avoid dirt and foreign matter entering the system.

Important

In conditions of high ambient temperature the electrically operated cooling fan may continue to operate after the ignition switch has been turned to the OFF position. This operation is dependent on engine coolant temperature and may continue for a period of up to fifteen minutes whenever the coolant temperature is above the fan's predetermined temperature setting.

Chapter L - Cooling system

Cooling system - To flush

Under no circumstances use a strong alkaline compound or detergent to clean the cooling system. Such compounds have a detrimental chemical action on aluminium alloys.

Thermostat - To test

Important

If the water is heated too quickly, or if the circulation is poor, a false reading may result.

The thermostat has its opening temperature stamped on the base of the unit, e.g. 88°C.

When fully open, the valve should have travelled a minimum of 9.50 mm (0.375 in).

Chapter M - Electrical system

It is important that no 'live' connections or disconnections are made where fuel vapour or other inflammable materials are present.

The battery master switch must not be operated whilst the engine is running.

The engine must be switched off before attempting to disconnect a lead from the charging system.

Always check for correct polarity before fitting a battery.

Whenever a lead is disconnected, it should be identified in relation to its terminal to facilitate reconnection. Short circuiting or reverse polarity no matter how brief, will cause immediate and permanent damage to transistors and diodes.

Radio interference suppressors are fitted to the 'A' terminal of the regulator and to the 'A' and '+' terminal of the alternator. Do not connect suppressors to the 'F' terminals (brown/green lead).

Battery

It is imperative that the battery is disconnected before commencing work on the electrical system or components, or if any electric arc welding is to be used on the car.

Battery - To charge

The gases given off during charging are highly inflammable.

Always remove the battery from the car before charging.

Chapter N - Steering system

Rack and pinion unit

Do not strike this unit with a hammer as extreme damage could result.

Belt tension

A slipping belt will squeal and produce judder at the steering wheel nearing full lock. Belt dressing must not be applied to prevent slip.

Steering pump - Priming and filling

When filling an empty system with the engine running, it is essential that at no time the fluid level in the pump reservoir be allowed to drop sufficiently for air to be drawn into the system. If this occurs, irreparable damage will result.

Chapter R - Wheels and Tyres

Tyre - To fit

Dunlop tyre bead lubricant TBL1 or TBL2 is recommended for use when fitting valves and tyres. It is most important that soap or other similar agents are not used.

Tyre service

Periodically the balance of each wheel should be checked and corrected if necessary. In the interest of increased tyre life, the wheels may be changed back and forth on any one side. Do not change the wheels from one side of the car to the other.

To ensure the designed handling characteristics of the car are achieved, it is important to maintain the differential in tyre pressures between the front and rear wheels. For full information refer to Chapter R.

Under no circumstances should any tyres be fitted which have been branded 'Regraded Quality', 'Remould Quality' or 'seconds', or those which have had the speed rating removed or altered.

Care of tyres

Clean any oil or grease from the tyres using a soap

solution and water, then rinse off with clean water. Always remove any oil spillage from the tyres immediately as certain oils, in particular hydraulic system mineral oil, have a harmful effect on the tyre rubber if not cleaned off immediately.

Chapter S - Body

Before using adhesives, paints, primers, thinners, solvents, etc., refer to Section S2 - Precautions.

Urethane foam filled cavities

The lower 'A' post and 'D' post (from waist downwards) are filled with urethane foam. When using cutting or welding equipment on these areas suitable precautions should be taken not to inhale the toxic gases given off when the temperature exceeds 200°C (392°F).

Chapter T - Transmission

Torque converter transmission - To remove

When removing the transmission from the car always use the retaining clamp RH 7952 (J-21366), otherwise the converter may fall as the transmission is withdrawn.

Chapter U - Emission control systems

Australia, Japan, Middle East, and North America

Exhaust emission control system

The exhaust emission control system is designed to reduce the carbon monoxide, hydrocarbon, and oxides of nitrogen content in the exhaust gases.

The system does not eliminate the danger caused by inhaling exhaust gases in a confined area.

Before commencing work on the exhaust emission control system, care should be taken to ensure that the relevant components are not hot.

Unleaded fuel

Japan and North America

Use the correct grade of unleaded fuel only. The use of leaded fuel will result in a substantial reduction in the performance of the catalyst. Under no circumstances add fuel system cleaning agents for induction into the engine, as the materials may have a detrimental effect on the catalytic converter.

Do not allow the vehicle to run out of fuel. If the vehicle does run out of fuel at a high speed, possible damage to the catalyst could result.

General precautions

Cleaning agents and solvents

Throughout this Workshop Manual various cleaning agents and solvents are recommended. The following precautions should be observed in their storage and use.

Reference should also be made to the Special precautions section contained in Chapter S when carrying out work on the items covered in Chapter S.

1. Cleaning agents and solvents should only be used in well ventilated areas.
2. Ensure that cleaning agents and solvents are kept in clean containers. Also ensure that the lids fit

securely and are replaced immediately after use.

Do not store or carry solvents in open containers.

3. Clearly label all containers.
4. The issue of all solvents should be closely controlled. Containers should be kept in locked storerooms with a responsible person in possession of the key.
5. In the event of a major spillage, the area should be evacuated and then thoroughly ventilated.
6. Do not dispose of any solvents into open drains.
7. Avoid skin contact as far as possible. If contact is likely, wear PVC gloves and an appropriate barrier cream, such as Rozalex No. 9.
8. Always protect the eyes with goggles if there is any danger of the solvents coming into contact with the eyes.
9. Use solvents sparingly, cleaning only small areas at a time. After use, cloths should be deposited into a closed metal container.
10. Care should be taken when working in an inspection pit to avoid being overcome with the vapours from some solvents i.e. Genklene. These vapours are heavier than air, and therefore collect at low levels.
11. Do not smoke in the vicinity of any solvents.
12. Do not allow solvents near any naked flames, hot surfaces, or welding arcs.

Genklene

Genklene is the I.C.I. trade name for trichloroethane. It possesses anaesthetic properties and the inhalation of high concentrations of vapour will cause drowsiness, headache, and giddiness.

Vapours exposed to high temperatures degrade and produce toxic gases (e.g. Phosgene).

Important

Anyone suffering from over exposure to Genklene vapour should be moved into the fresh air and medical attention sought immediately. Do not walk the patient.

Methylated spirit

The main hazard of methylated spirit is fire, its low flash point making it easily ignited by heat or flame.

Avoid prolonged or frequent contact with the skin as it removes the natural oils, which can lead to dermatitis.

Paraffin

Prolonged or frequent skin contact with paraffin can cause defatting of the skin, which can lead to dermatitis. Therefore, it should not be used for cleaning the hands. Protective clothing should be worn to prevent contact with the skin, either directly or through contaminated clothing.

Paraffin is flammable, therefore, the creation of spray, mist, or vapours, not only increases the fire risk, but also introduces a health hazard. The inhalation of high concentrations, may cause dizziness, headache, and nausea. The vapour is also irritating to the eyes and mucous membranes.

Petrol

The vapours from petrol are highly flammable, creating the risks of fire and explosion when exposed to heat, flame, or a spark. Due to the volatile nature of the liquid, vapours are readily formed and unless adequately ventilated, hazardous concentrations may easily form.

Petrol is a narcotic and inhalation of heavy concentrations of vapour should be avoided.

Repeated or prolonged contact with the skin can cause dermatitis. Therefore, it should not be used for cleaning the hands, as it removes the natural oils from the skin.

Unleaded fuel may contain up to 5% of Benzene as an anti-knock additive. Benzene is extremely injurious to health (being carcinogenic) therefore, all contact should be kept to an absolute minimum, particularly inhalation.

Suitable protection should be used at all times e.g. gloves, aprons, goggles, etc.

White spirit

The major hazard of white spirit is skin irritation, therefore, it should not be used for removing grease, grime, paint, etc., from the skin. Skin contact should be avoided and gloves, aprons, etc., should be worn. If there is any risk of splashes entering the eyes, goggles should be used.

White spirit should only be used in well ventilated areas and unnecessary breathing of the vapours should be avoided.

Treatment in the event of poisoning

In the event of acute poisoning occurring as a result of exposure to methylated spirit, paraffin, petrol, or white spirit, the patient should be removed from the hazard, into the fresh air, and medical attention obtained immediately.

Specification

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental (Bentley Continental introduced from VIN # SC8ZD0001 FCH- 09030#)
Audio equipment	Combined radio/cassette tape play unit. Bosch 'Bremen', 'Geneva', 'Toronto', or 'Washington' depending upon the car's specification	Non-division as 1 Division Combined radio/cassette tape play unit; remote control. Fujitsu Ten 'Mini Wizard'	as 1	as 1	Combined radio/ cassette tape play unit. Philips (Model 22 AC 741)	as 1
	—	'Centenary' Combined radio/cassette tape play unit; remote control. Panasonic CQ- 073 or CQ-074	—	—	—	—
	North American cars from 1985 model year and onwards	Combined radio/cassette tape play unit. (2000 ETR VF)	Non-division (including Centenary) as 1	—	—	as 1
Automatic air conditioning system Refrigeration system	Supplies hot or cold air to independently ducted upper and lower systems. Each system has its own set of air temperature sensors, air temperature selector, servo, and servo electronics. All air entering the system is refrigerated. Refrigeration is provided from a compressor, through a condenser to an evaporator matrix. On cars from 1984 fitted with a cycling clutch refrigeration compressor, auxiliary engine cooling fans were introduced to aid refrigeration, (refer to Cooling system within this Section). The fans are switched from either engine coolant temperature or from refrigerant pressure.					
Braking system 	Castrol hydraulic system mineral oil. Refer to Chapter D - Lubricants Maximum operating pressure (pump cut-out pressure) 172.37 bar (2500 lbf/in ²) Pump cut-in pressure 124.10 bar (1800 lbf/in ²)	as 1 as 1 as 1	as 1 as 1 as 1	as 1 as 1 as 1	as 1 as 1 as 1	as 1 as 1 as 1
Caliper type Front	Four M16 calipers	as 1	as 1	as 1	as 1	as 1
Rear	Two T11/11 calipers	as 1	as 1	as 1	as 1	as 1
Brake pads Service (power) - car sets only	Mintex V1431 FF or Ferodo 3416F FF	as 1	as 1	as 1	as 1	as 1

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	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Brake pads (continued)						
Parking brake	Mintex M68/IGG	as 1	as 1	as 1	as 1	as 1
Pad area						
Service brake - Front	260 cm ² (40.30 in ²)	as 1	as 1	as 1	as 1	as 1
Rear	238 cm ² (36.90 in ²)					
Parking brake	41,03 cm ² (6.360 in ²)	as 1	as 1	as 1	as 1	as 1
Swept area						
Front	1503 cm ² (233 in ²)					
Rear	1596 cm ² (247 in ²)	as 1	as 1	as 1	as 1	as 1
Disc diameter Nominal	279,40 mm (11.00 in)					
Actual { Front Rear	281 mm (11.060 in)					
	277 mm (10.90 in)	as 1	as 1	as 1	as 1	as 1
Disc width						
Front (ventilated)	31,80 mm (1.250 in)					
Rear	12,70 mm (0.50 in)	as 1	as 1	as 1	as 1	as 1
Capacities	Metric	Imperial	US			
 Brake and height control	4 litres	7 pt	8.50 pt	as 1 and 2	5 litres 8.80 pt 10.5 pt	as 1 and 2
Drive-shaft ball and trunnion joint (each)	150 ml	—	—	as 1 and 2	as 1 and 2	as 1 and 2
Cooling system	16 litres	28 pt	33.75 pt	as 1 and 2	as 1 and 2	as 1 and 2
Engine oil						
Without changing oil filter	8,40 litres	14.75 pt	17.70 pt	—	—	as 1 and 2
When changing oil filter	9,40 litres	16.50 pt	19.80 pt	—	—	as 1 and 2
Turbocharged cars only						
Sump	—	—	8,40 litres	14.75 pt	17.70 pt	—
Filter	—	—	1,0 litre	1.75 pt	2.10 pt	—
Cooler	—	—	0,50 litre	0.90 pt	1.0 pt	—
Total capacity	—	—	9,90 litres	17.40 pt	20.80 pt	—
Final drive unit	2.30 litres	4 pt	4.80 pt	as 1 and 2	as 1 and 2	as 1 and 2
Fuel tank	108 litres	23.75 gal	28.50 gal	as 1 and 2	as 1 and 2	as 1 and 2
Steering system	0.75 litre	1.30 pt	1.60 pt	as 1 and 2	as 1 and 2	as 1 and 2
Torque converter						
transmission (dry)	10,60 litres	18.60 pt	22.50 pt	as 1 and 2	as 1 and 2	as 1 and 2
When changing fluid in sump only	2,80 litres	5 pt	6 pt	as 1 and 2	as 1 and 2	as 1 and 2
When changing fluid in sump and renewing intake strainer	4,50 litres	8 pt	9.50 pt	as 1 and 2	as 1 and 2	as 1 and 2
Windscreen/Headlamp washer reservoir	5 litres	8.75 pt	10.50 pt	as 1 and 2	as 1 and 2	as 1 and 2
Headlamp power wash reservoir						
1985 model year and onwards	6,50 litres	11.50 pt	13.70 pt	as 1 and 2	as 1 and 2	—
Power operated hood	—	—	—	—	—	0.43 litre 0.75 pt 0.90 pt
Dimensions						
Wheelbase	3060 mm (120.50 in)	3162 mm (124.50 in)	as 1	as 1	as 1	3050 mm (120.062 in)
	—	—	—	—	—	From 1986 M.Y. 3060 mm (120.50 in)

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Track Front	1537 mm (60.50 in) —	as 1 —	as 1 —	1549 mm (61.0 in) —	as 1 —	1524 mm (60.0 in) From 1986 M.Y. 1537 mm (60.50 in)
Rear	1537 mm (60.50 in)	as 1	as 1	1549 mm (61.0 in)	as 1	1537 mm (60.50 in)
Overall length <i>Cars other than those conforming to a North American specification</i>	Silver Spirit 5268 mm (207.40 in) — Mulsanne 5309 mm (209.01 in) From 1985 5268 mm (207.40 in)	Silver Spur 5370 mm (211.40 in) — Mulsanne L 5411 mm (213.01 in) From 1985 5370 mm (211.40 in)	5309 mm (209.01 in) From 1985 5268 mm (207.40 in) LWB 5411 mm (213.01 in) From 1985 5370 mm (211.40 in)	— From 1985 5268 mm (207.40 in)	5309 mm (209.01 in) From 1985 5268 mm (207.40 in)	5196 mm (204.60 in) —
<i>Cars conforming to a North American specification</i>	Silver Spirit 5277 mm (207.75 in) Mulsanne 5313 mm (209.17 in) From 1985 as Spirit	Silver Spur 5379 mm (211.75 in) Mulsanne L 5414 mm (213.17 in) From 1985 as Spur	—	—	—	5270 mm (207.50 in)
Overall width	1887 mm (74.29 in)	as 1	as 1	as 1	as 1	1836 mm (72.33 in)
Overall height	1485 mm (58.46 in)	as 1	as 1	1480 mm (58.27 in)	as 1	1518 mm (59.75 in)
Ground clearance	165,1 mm (6.50 in)	as 1	as 1	160,1 mm (6.30 in)	as 1	152,4 mm (6.0 in)
Electrical system Alternator A <i>Cars conforming to Middle East and North American specifications, prior to vehicle identification numbers and</i> B <i>Cars other than those conforming to Middle East and North American specifications, prior to vehicle identification numbers and</i> All Mulsanne Turbo cars	*SCAZS42A9 ECX09179 * *SCAZS0004 ECH09533 * C.A.V. AC5B12-53 (75 amperes), alternator control (model 440) in luggage compartment	*SCAZN42A7 ECX09071 * *SCAZN0001 ECX09557 * as 1	— — as 1	— — —	— — —	*SCAZD42A0 FCX09289 * *SCAZD0009 FCX09570 * as 1

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	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Alternator (continued) <i>Cars conforming to Middle East and North American specifications, from vehicle identification numbers quoted in A. and Cars other than those conforming to Middle East and North American specifications, from vehicle identification numbers quoted in B.</i>	Motorola 9AR 5003T (90 amperes) - integral control	Non-division as 1 Division C.A.V. AC5B12-53 (75 amperes)	—	—	as 1	as 1
Turbocharged cars from approximately April 1985 fitted with cycling clutch air conditioning units	—	—	Delco Remy 17 SI (108 amperes)	as 3	—	—
Battery (Negative earth 'low maintenance') Make and type 12 volts	Lucas Pacemaker QOCP 13/11 or Chloride 369 or Varta 57024 or Chloride 069 'Maintenance free'	as 1	as 1	as 1	as 1	as 1
Cellular telephone 1986 model year and onwards <i>Cars conforming to a United Kingdom specification</i>	—	Silver Spur Motorola 6000X	—	—	—	—
<i>Cars conforming to a North American specification</i>	—	Silver Spur Motorola 6000X	—	—	—	as 2
Ignition timing <i>Cars other than those conforming to an Australian, Japanese, Middle East, or North American specification</i>	25°btdc at 2200 rev/min. with the hose to the vacuum advance capsule disconnected and blanked off	as 1	Initial setting 4°btdc at 650 rev/min. Check settings - 14°- 18°btdc at 2200 rev/min. 24°-28°btdc at 4000 rev/min. Timing set with the hoses to the vacuum/ pressure capsule disconnected and blanked off. Refer to Chapter M for the full procedure	as 3	as 1	20°btdc at 2100 rev/min, with the hose to the vacuum advance capsule disconnected and blanked off
<i>Cars conforming to an Australian, Japanese, Middle East, or North American specification</i>	Refer to the relevant section of Chapter U	as 1	as 1	as 1	as 1	as 1

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Ignition coil <i>Cars other than those conforming to an Australian, Japanese, or North American specification, prior to 1983 model year</i> Make and type	Lucas 22 C12 negative earth with ballast resistance	as 1	Lucas 32 C5 negative earth	—	—	as 1
<i>Cars conforming to an Australian, Japanese, or North American specification, prior to 1983 model year</i> Make and type	Lucas 23 C12 negative earth with ballast resistance	as 1	—	—	—	as 1
1983 model year and onwards Make and type	Lucas 32 C5 negative earth	as 1	as 1	as 1	as 1	as 1
Radio interference and suppression equipment	Capacitor on positive '+' terminal of coil 2 μ F	as 1	as 1	as 1	as 1	as 1
Ignition distributor Make and type <i>Prior to 1983 model year</i>	Lucas 35 DE8 Opus	as 1	Lucas 35 DM8 constant energy with knock sensing automatic retard system	—	—	as 1
1983 model year and onwards	Lucas 35 DM8	as 1	as 1	as 1	as 1	as 1
Rotation	Anti-clockwise, viewed from the top	as 1	as 1	as 1	as 1	as 1
Advance mechanism	Automatic centrifugal advance	as 1	as 1	as 1	as 1	as 1
Firing order	A1,B1,A4,B4, B2,A3,B3,A2. 'A' bank is on the right when viewed from the driver's seat	as 1	as 1	Prior to 1986 model year as 1 1986 model year and onwards A1,A3,B3,A2, B2,B1,A4,B4.	as 1	as 1
Drive	Through camshaft skew gears	as 1	as 1	as 1	as 1	as 1
Sparking plugs Make and type	Champion RN 12Y or RN 12YC	as 1	NGK BPR 5 ES (Champion RN 11 YC alternative)	as 3	as 1	as 1
Gap setting <i>Cars other than those conforming to an Australian, Japanese, or North American specification</i>	0.76 mm (0.030 in)	as 1	as 1	as 1	as 1	as 1

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	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Sparking plugs (continued) <i>Cars conforming to an Australian, Japanese, or North American specification</i>	0.89 mm (0.035 in)	as 1	—	—	—	as 1
Starter motor Make and type	Lucas 2M113	as 1	as 1	as 1	as 1	as 1
Windscreen wipers	Two 457 mm (18 in) wiper blades operated by a two-speed 28W permanent magnet motor	as 1	as 1	as 1	as 1	Two 356 mm (14 in) wiper blades operated by a two-speed 16W permanent magnet motor
Headlamp wash/wipe <i>Cars other than those conforming to a Japanese or North American specification</i>	Two 153 mm (6 in) wiper brushes operated by a 16W permanent magnet motor	as 1	as 1	—	as 1	as 1
Headlamp power wash 1985 model year and onwards <i>Cars other than those conforming to a Japanese or USA specification</i>	Two jets mounted in bumper; one central to each headlamp unit	as 1	as 1	as 1	as 1	—
	<i>Cars conforming to a Japanese or USA specification</i> Four jets; one mounted above each headlamp unit	as 1	—	—	—	—
Engine Type	Over square 90°V formation	as 1	as 1	as 1	as 1	as 1
Number of cylinders	Eight, in two banks of four	as 1	as 1	as 1	as 1	as 1
Bore	104.10 mm (4.10 in)	as 1	as 1	as 1	as 1	as 1
Stroke	99.10 mm (3.90 in)	as 1	as 1	as 1	as 1	as 1
Total capacity	6.75 litres (411.90 in ³)	as 1	as 1	as 1	as 1	as 1
Compression ratio	8:1 or 9:1 according to the car's specification	as 1	8:1	8:1	9:1	as 1
Engine and transmission mounting points	Flexibly mounted on rubber at three points; one at the front, two at the rear	as 1	as 1	as 1	as 1	as 1
Camshaft Material	Alloy cast iron	as 1	as 1	as 1	as 1	as 1
Bearings	Surface machined in crankcase	as 1	as 1	as 1	as 1	as 1
Thrust taken	On front end	as 1	as 1	as 1	as 1	as 1
Drive	Through helical gears	as 1	as 1	as 1	as 1	as 1

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Connecting rods	'H' section forgings, balanced before fitting to engine	as 1	as 1	as 1	as 1	as 1
Material	Chrome molybdenum steel	as 1	as 1	as 1	as 1	as 1
Big-end bearings	Split steel backed shells lined with 20% tin-aluminium	as 1	as 1	as 1	as 1	as 1
Small-end bushes	Pressed into connecting rod small-end bosses	as 1	as 1	as 1	as 1	as 1
Material	Lead-bronze, steel backed	as 1	as 1	as 1	as 1	as 1
Crankshaft	Dynamically balanced two-plane crankshaft with four crankpins and integral balance weights	as 1	as 1	as 1	as 1	as 1
Material	Chrome molybdenum steel, Nitride hardened	as 1	as 1	as 1	as 1	as 1
Damping	Bonded rubber vibration damper	as 1	as 1	as 1	as 1	as 1
Direction of rotation	Clockwise (when viewed from front of engine)	as 1	as 1	as 1	as 1	as 1
Cylinder block Type	Monobloc casting	as 1	as 1	as 1	as 1	as 1
Material	Cast aluminium alloy	as 1	as 1	as 1	as 1	as 1
Cylinder heads	Two detachable heads, each having four separate inlet and exhaust ports	as 1	as 1	as 1	as 1	as 1
Material	Aluminium alloy, with phosphor bronze exhaust valve guides, cast iron inlet guides and valve seat inserts of austenitic alloy	as 1	as 1	as 1	as 1	as 1
Cylinder liners Type	Detachable wet liners	as 1	as 1	as 1	as 1	as 1
Material	Cast iron	as 1	as 1	as 1	as 1	as 1
Main bearings	Split steel backed shells lined with 20% tin-aluminium	as 1	as 1	as 1	as 1	as 1

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	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Pistons	Full skirt with off-set gudgeon pins. The crown of the pistons differ to give a compression ratio of either 8:1 or 9:1 dependent upon the car's specification	as 1	as 1 (8:1)	as 1 (8:1)	as 1 (9:1)	as 1
Material	Aluminium alloy	as 1	Aluminium alloy with steel struts	as 3	as 1	as 1
Number of rings	Two compression and one oil control ring	as 1	as 1	as 1	as 1	as 1
Valve gear						
Inlet valves	Overhead push rod operated	as 1	as 1	as 1	as 1	as 1
Material	Alloy steel	as 1	Austenitic steel with stellite tip	as 3	as 1	as 1
Exhaust valves	Overhead push rod operated	as 1	as 1	as 1	as 1	as 1
Material	Austenitic steel with stellite tip and valve seat	as 1	as 1	as 1	as 1	as 1
Tappets	Self-adjusting hydraulic tappets. The base of the tappets have a spherical radius	as 1	as 1	as 1	as 1	as 1
Material	Alloy cast iron	as 1	as 1	as 1	as 1	as 1
Push rods	Rods are hollow and have spherical ends	as 1	as 1	as 1	as 1	as 1
Lubrication system						
Type	Wet sump	as 1	as 1	as 1	as 1	as 1
Relief valve setting	2,74 bar (40 lbf/in ²)	as 1	as 1	as 1	as 1	as 1
Oil pump	Helical gear type with fine mesh strainer	as 1	as 1	as 1	as 1	as 1
Oil filter	Sealed disposable type; full flow with filter by-pass relief valve	as 1	as 1	as 1	as 1	as 1
Oil cooler - Prior to 1986 model year	—	—	Mounted forward of radiator	as 3	—	—
1986 model year and onwards	Mounted forward of radiator	as 1	—	as 1	as 1	—
Cooling system						
Type	Pressurized system	as 1	as 1	as 1	as 1	as 1
Pump type	Centrifugal	as 1	as 1	as 1	as 1	as 1
Pump drive	Twin 'V' belts	as 1	as 1	as 1	as 1	as 1

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Cooling system (cont.)						
Radiator matrix type	Tube and fin construction	as 1	as 1	as 1	as 1	as 1
Thermostat opening temp.	85°C to 89°C	as 1	as 1	as 1	as 1	as 1
System pressure	1.03 bar (15 lbf/in ²)	as 1	as 1	as 1	as 1	as 1
Fans	Viscous drive coupling with a seven blade 508 mm (20 in) dia. plastic fan located at the rear of the radiator	as 1	as 1	—	as 1	as 1
	—	—	Seven blade 483 mm (19.0 in) dia. metal fan from approx. mid 1984	From approx. April 1985 as 3	—	as 3
<i>Cars other than those with fuel injection or turbocharged engines</i>	Electrically operated seven blade 318 mm (12.520 in) dia. plastic auxiliary fan located forward of the radiator	as 1	—	—	as 1	as 1
<i>Cars with fuel injection or turbocharged engines</i>	Electrically operated eleven blade 282 mm (11.10 in) dia. plastic auxiliary fan located forward of the radiator	as 1	as 1	—	—	as 1
	—	—	Electrically operated eleven blade 384 mm (15.130 in) dia. auxiliary fan located forward of the radiator, from approx. mid 1984	—	—	—
<i>Cars with cycling clutch air conditioning units (1984 and onwards)</i>	Twin electrically operated four blade 250 mm (9.813 in) dia. plastic auxiliary fans located forward of the radiator	Non-division cars as 1	Electrically operated eleven blade 384 mm (15.130 in) dia. auxiliary fan located forward of the radiator	as 3	1985 model year and onwards as 1	as 1
<i>1986 model year and onwards, except United Kingdom specification cars</i>	Electrically operated eleven blade 384 mm (15.130 in) dia. auxiliary fan located forward of the radiator	as 1	—	as 1	as 1	—

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	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Turbocharging system	—	—	Engine fitted with a Garrett AiResearch TO4B exhaust driven turbocharger. Boost pressure limited by a 'wastegate' in the exhaust system	as 3	—	—
Exhaust system Type	Twin pipe balanced system	as 1	Single down-take pipe leading to a twin pipe system	as 3	as 1	as 1
Silencers <i>Cars other than those conforming to a Japanese or North American specification</i>	Six	as 1	Three	Three	as 1	as 1
<i>Cars conforming to a Japanese or North American specification</i>	Four (plus one catalytic converter assembly)	as 1	—	—	—	as 1
Fuel system SU carburettors <i>Cars other than those conforming to a Japanese or North American specification</i> Type	Twin SU HIF7 47.6 mm (1 7/8 in) bore side draught. Under wing air silencer/cleaner with paper filter element	as 1	—	—	as 1	<i>Cars conforming to an Australian specification prior to 1985 model year and Middle East specification cars from 1985 model year - as 1</i>
Solex carburettor <i>Cars other than those conforming to an Australian, Japanese, or North American specification and Middle East specification from 1985 model year</i> Type	—	—	—	—	—	Solex 4A1, four throttle down draught. Pan type air silencer with paper filter element
Fuel recirculation system	Excess fuel not required by the carburettor(s) returned to the fuel tank via a non-return valve	as 1	—	—	as 1	as 1

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Fuel filters						
Main fuel filter	Disposable element	as 1	—	—	as 1	as 1
Pierburg fuel pump internal filter	No maintenance required	as 1	—	—	as 1	as 1
Carburettor intake connection(s) Solex	—	—	—	—	—	Nylon mesh filter
SU	Disposable elements	as 1	—	—	as 1	as 1
Fuel tank internal filter	Nylon mesh filter	as 1	—	—	as 1	as 1
Fuel tank	Located behind the trim panel at the forward end of the luggage compartment	as 1	as 1	as 1	as 1	as 1
Fuel gauge	Facia mounted, electrically operated	as 1	as 1	as 1	as 1	as 1
Fuel grade						
<i>Cars other than those conforming to a Japanese or North American specification</i>	97 octane (minimum) 4 star where BS 4040 is applicable	as 1	as 1	as 1	as 1	as 1
<i>Cars conforming to a Japanese specification</i>	Unleaded fuel only (88 octane minimum)	as 1	—	—	—	as 1
<i>Cars conforming to a North American specification</i>	Unleaded fuel only (91 RON minimum)	as 1	—	—	—	as 1
Fuel injection system Type <i>Cars conforming to a Japanese or North American specification and 1986 model year (4 door) cars destined for Australia</i>	Bosch K-Jetronic continuous fuel injection, with 'closed loop' mixture control. Under wing air silencer/cleaner with paper filter element	as 1	—	—	—	as 1
Fuel recirculation system	Excess fuel not required by the engine returned to the fuel tank via a non-return valve	as 1	—	—	—	as 1
Fuel filters						
Main fuel filter	Disposable canister	as 1	—	—	—	as 1
Fuel tank internal filter	Nylon mesh filter	as 1	—	—	—	as 1

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	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Turbocharging system Carburettor Type	—	—	Solex 4A1, four throttle down-draught (housed within an airtight chest downstream of turbocharger). Under wing air silencer/cleaner with paper filter element	as 3	—	—
Fuel recirculation system	—	—	Excess fuel not required by the carburettor returned to the fuel tank via a non-return valve	as 3	—	—
Fuel filters Main fuel filter	—	—	Disposable element	as 3	—	—
Carburettor intake connection	—	—	Nylon mesh filter	as 3	—	—
Fuel tank internal filter	—	—	Nylon mesh filter	as 3	—	—
Kerb weights Car unladen but complete with oil, coolant, and a full tank of fuel <i>Cars other than those conforming to an Australian, Japanese, or North American specification</i>	2245 kg (4950 lb)	Non-division 2295 kg (5060 lb) Division 2385 kg (5259 lb)	2291 kg (5051 lb) LWB 2317 kg (5108 lb)	2315 kg (5105 lb) LWB 2341 kg (5161 lb)	2245 kg (4950 lb)	2360 kg (5203 lb)
<i>Cars conforming to an Australian specification prior to 1986 model year</i>	2261 kg (4985 lb)	Non-division 2283 kg (5035 lb) Division 2324 kg (5125 lb)	—	—	—	2356 kg (5195 lb)
<i>Cars conforming to an Australian specification from 1986 model year</i>	2263 kg (4990 lb)	Non-division 2286 kg (5040 lb) Division 2326 kg (5130 lb)	—	—	—	—
<i>Cars conforming to a Japanese specification</i>	2256 kg (4975 lb)	Non-division 2279 kg (5025 lb) Division 2320 kg (5115 lb)	—	—	—	2356 kg (5195 lb)
<i>Cars conforming to a North American specification</i>	2283 kg (4990 lb)	Non-division 2286 kg (5040 lb)	—	—	—	2358 kg (5200 lb)
Suspension Front	Independent coil spring arrangement with lower wishbones, compliant controlled upper levers, telescopic dampers, anti-roll bar and anti-dive characteristics.					
— Rear	Independent coil spring arrangement with semi-trailing arms, suspension struts, gas springs, and anti-roll bar. Automatic height control achieved by displacement of hydraulic system mineral oil in the struts.					

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Steering Type	Power assisted rotary valve, integral rack and pinion steering with centre off-take	as 1	as 1	as 1	as 1	as 1
Power steering ratios						
Gear	17.5:1	as 1	as 1	as 1	as 1	as 1
Overall	16.9:1	as 1	as 1	as 1	as 1	as 1
Turns of steering wheel lock-to-lock	3.25	as 1	as 1	as 1	as 1	as 1
Front and rear hubs	Taper roller bearings	as 1	as 1	as 1	as 1	as 1
Front wheels steering geometry						
Camber	0.5° ± 15' negative	as 1	as 1	as 1	as 1	as 1
Kingpin inclination	11.5°	as 1	as 1	as 1	as 1	as 1
Caster	2°30' to 3°30' positive	as 1	as 1	as 1	as 1	as 1
Toe-in	12 ± 5'	as 1	as 1	as 1	as 1	as 1
Turning angle of inner steered wheel for 20° turn of outer steered wheel	21°6'	as 1	as 1	as 1	as 1	as 1
Rear wheels geometry						
Unloaded sub-frame settings removed from car, mounted on setting jig						
Camber	0° ± 15'	as 1	as 1	as 1	as 1	as 1
Maximum difference in Camber across the sub-frame	15'	as 1	as 1	as 1	as 1	as 1
Total toe-in	28 ± 4'	as 1	as 1	as 1	as 1	as 1
Diameter of steering wheel	338 mm (15.30 in)	as 1	as 1	392 mm (15.430 in)	as 1	as 1
Turning circle	11.28 m (37 ft) —	11.66 m (38.25 ft) —	as 1 —	12.16 m (39.90 ft) —	as 1 —	11.89 m (39 ft) From 1986 model year 11.28 m (37 ft)
Transmission						
Final drive unit and drive-shafts						
Crown wheel teeth	40	as 1	35	as 3	as 1	as 1
Bevel pinion teeth	13	as 1	13	as 3	as 1	as 1
Final drive unit ratio	3.08:1	as 1	2.69:1	as 3	as 1	as 1
Top gear speed per 1000 rev/min	42.14 km/h (26.20 mile/h)	as 1	48.1 km/h (29.9 mile/h)	as 3	as 1	as 1

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Final drive unit and drive-shafts (continued)						
Overall gear ratios- Forward	7.70:1 4.62:1 3.08:1	as 1 as 1 as 1	6.73:1 4.04:1 2.69:1	as 3 as 3 as 3	as 1 as 1 as 1	as 1 as 1 as 1
Reverse	6.16:1	as 1	5.38:1	as 3	as 1	as 1
Final drive unit	Hypoid bevel	as 1	as 1	as 1	as 1	as 1
Torque converter transmission						
Type	Automatic torque converter	as 1	as 1	as 1	as 1	as 1
Make	General Motors Turbo Hydra-matic Model 400 - 3 speed	as 1	as 1	as 1	as 1	as 1
Converter gear ratios - Forward	2.5:1 1.5:1 1.0:1	as 1 as 1 as 1	as 1 as 1 as 1	as 1 as 1 as 1	as 1 as 1 as 1	as 1 as 1 as 1
Reverse	2.0:1	as 1	as 1	as 1	as 1	as 1
Gearchange	Electrically operated, steering column mounted selector	as 1	as 1	as 1	as 1	as 1
Transmission lock	Engaged when gear range selector is in 'Park' position or when ignition key is removed from switchbox	as 1	as 1	as 1	as 1	as 1
Wheels and Tyres						
Wheels						
Rim	6JK x 15 Flat ledge Mulsanne from 1986 model year 6½J x 15 H2 ET41	as 1 Mulsanne L from 1986 model year as 1	as 1 —	7½J x 15 AH2 ET41 —	as 1 —	as 1 Continental from 1986 model year as 1
Type	Disc, pressed steel Mulsanne from 1986 model year Aluminium alloy	as 1 Mulsanne L from 1986 model year as 1	as 1 —	Aluminium alloy —	as 1 —	as 1 Continental from 1986 model year Aluminium alloy
Fixing	5 stud, right-hand wheel nuts have right-hand threads; left-hand wheel nuts have left-hand threads	as 1	as 1	as 1	as 1	as 1
Tyres	235/70 HR15 (HR70 HR15) or 235/70 VR 15 (HR70 VR 15) steel braced radial ply	as 1	235/70 VR 15 (HR70 VR 15) steel braced radial ply	275/55 VR 15 steel braced radial ply	as 1	as 1

	1 Silver Spirit Mulsanne	2 Silver Spur Mulsanne L	3 Mulsanne Turbo	4 Bentley Turbo R	5 Bentley Eight	6 Corniche/ Continental
Tyres (continued)	—	—	—	From 1986 model year 255/65 VR 15 or 275/55 VR 15 steel braced radial ply	—	—
Recommended tyre inflation pressures - cold	Refer to Chapter R - Wheels and Tyres	as 1	as 1	as 1	as 1	as 1



This symbol identifies the items using hydraulic system mineral oil within this section

Automatic air conditioning system

The automatic air conditioning system supplies hot, warm, cool or cold air to the interior of the car.

Air temperature (blend) flaps form the basis of the system as they are operated by an electro-mechanical servo mechanism controlled by an electronic circuit. These circuits are fed with air temperature information from certain parts of the car and, acting on this information drive the servos so that the air temperature (blend) flaps are moved into the correct positions to achieve the required in-car air temperature. The upper and lower systems operate independently, each system having its own set of air temperature sensors, air temperature selector, servo, and servo electronics.

The system is operated by four switch controls situated on the fascia.

The control marked AIR CONDITIONER has five positions and enables three automatic positions or a demist position to be selected. The system can be switched off by turning the control to the OFF position.

A control switch is provided to override the automatic mode of its upper system air, and is marked AUTO and FACIA. This enables upper system air from the windscreen outlets to be diverted to the three fascia outlets.

The switch controls marked UPPER TEMP and LOWER TEMP control the air temperature in the upper and lower systems.

Automatic height control system



The automatic height control system has only one rate of levelling.

Hydraulic levelling is achieved by using suspension struts in conjunction with gas springs. Alterations to the vehicle weight are supported by the gas springs and the height control is effected by pumping extra oil (under pressure from the accumulators) into the gas spring and strut assemblies.

Automatic speed control system

The controls for the automatic speed control systems are fitted to the end of the gear range selector lever. The regulator and bellows servo are mounted on the engine.

Any cruising speed over 48 km/h (30 mile/h)

Data

and up to 137 km/h (85 mile/h) can be selected to give satisfactory operation of the automatic speed control system.

This system only operates when the vehicle is in top gear.

Body

The car body is steel and is of a monocoque construction. The doors, luggage compartment lid, and bonnet are made of light alloy, combining lightness with strength and rigidity. The under-frame and body shell are welded together.

Braking system



Pressurized mineral oil is supplied from two camshaft driven pumps and fed into two hydraulic accumulators. Power pressure is metered out to the brakes by two distribution valves actuated by operation of the brake pedal.

Braking units

Discs front (ventilated) and rear; two double cylinder calipers on each front wheel and one four cylinder caliper on each rear wheel.

Service (power) brakes

Two entirely independent hydraulic systems, each separately powered. Each system operates one of two individual disc brake caliper assemblies on each front wheel and one of two individual pairs of pistons and pads, housed in a single disc brake caliper assembly, on each rear wheel.

Parking brake

Separate mechanically controlled calipers are attached to service brake calipers at each rear wheel. Parking brake operation is by foot pedal application with separate hand lever release.

Electrical system

C.A.V. alternator control

For cars fitted with the C.A.V. alternator, the alternator control unit is located on the right-hand side of the luggage compartment behind the trim panel. It is a transistorised unit with a printed base circuit; it varies the alternator field current in order to maintain the stator output voltage within close limits. It is a sealed unit and cannot be adjusted.

Note

Two temperature sensing switches are included in the voltage regulator circuit. These switches control the charge rate in accordance with the battery temperature.

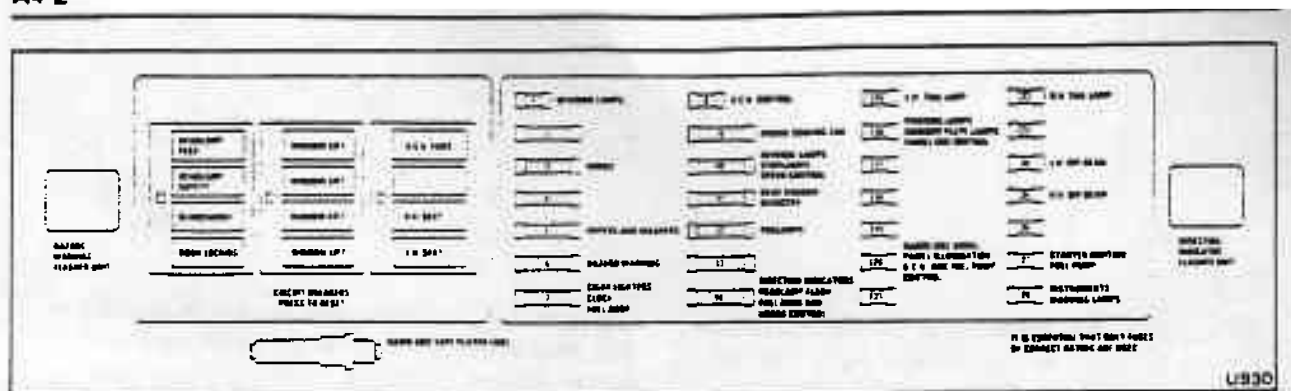


Fig. A4-1 Typical fuseboard identification plate (Prior to 1986 model year)

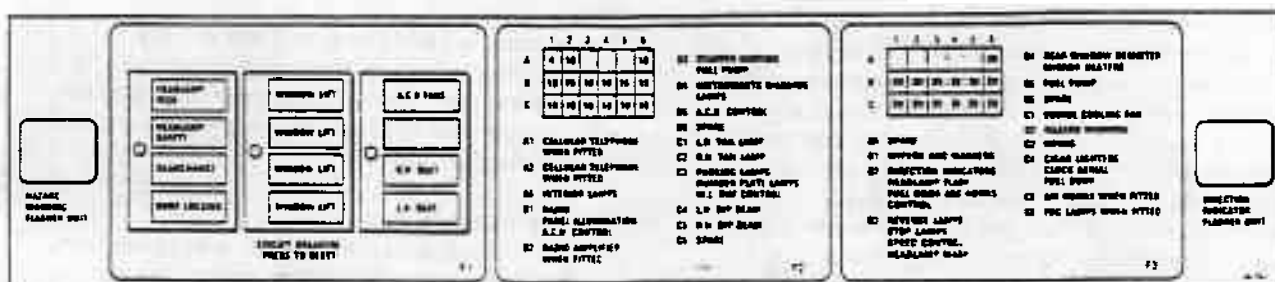


Fig. A4-2 Typical fuseboard identification plate (Four door cars from 1986 model year)

Battery

Rolls-Royce Silver Spirit, Silver Spur, Bentley Mulsanne (excluding Turbo), Bentley Eight, and Corniche/Continental cars

The battery is located in the forward end of the covered well, on the right-hand side of the luggage compartment. Access is gained by lifting the carpet and removing the rearward piece of the well covering, then pulling the forward covering towards the rear of the car.

Mulsanne Turbo and Bentley Turbo R

The battery is situated at the right-hand side of the luggage compartment. To gain access to the battery, release the carpet fasteners on the right-hand side of the luggage compartment and turn back the carpet.

Turn the two battery trim cover fasteners to their release position and remove the trim.

Unclip the battery cover securing strap and lift off the cover.

Battery master switch

On cars other than those conforming to a West German specification, a battery master switch (which enables the battery to be isolated from the electrical circuits) is provided on the right-hand side of the luggage compartment.

Note

Never operate the master switch with the engine running.

Exterior lamps

Four headlamps are fitted and operate whenever the main lighting switch is turned to the HEAD position. The headlamps contain either sealed beam units or

bulbs dependent upon the car's specification. The two inner lamps provide long range illumination. The two outer lamps are dual purpose lamps, providing both long range illumination and short range 'flood' illumination. When switched to main beam all four headlamps are illuminated. The two inner lamps are extinguished when the headlamps are dipped.

A small warning lamp situated on the fascia illuminates when the headlamps are switched to main beam.

For certain countries twin front and/or rear fog lamps are fitted.

The front position (side), rear position (tail) and rear number plate lamps illuminate whenever the main lighting switch is moved from the OFF position.

Interior lamps

Rolls-Royce Silver Spirit, Silver Spur, Bentley Mulsanne (including Turbo), Bentley Eight, prior to 1985 model year, and all Corniche/Continental cars Interior roof lamps and step illumination lamps are fitted. These lamps illuminate whenever a door is opened. The roof lamps will also illuminate when the appropriate switch is operated.

The lamp in the luggage compartment illuminates automatically whenever the luggage compartment lid is raised. Similarly, the bonnet lamp illuminates whenever the bonnet lid is raised.

Rolls-Royce Silver Spirit, Silver Spur, Bentley Mulsanne (including Turbo), Bentley Eight, and Bentley Turbo R from 1985 model year and onwards In addition to the lamps described in 'cars prior to 1985 model year', front and rear footwell lamps are fitted and operate whenever a door is opened. Also,

the vanity mirror (if fitted) in the passenger's sun visor has a small illumination lamp (except on Bentley Eight). This lamp is operated from a dual function switch alongside the fascia stowage compartment. However, if the lamp is left switched on and the sun visor is raised, the lamp will extinguish.

Fuseboard

The fuseboard is situated in the lower fascia (knee roll) below the stowage compartment. Access is gained by pressing a button situated in the outer edge of the fascia panel.

The fuseboard identification plate is visible when the cover is lowered (see figs. A4-1 and A4-2).

Washer reservoir

The washer reservoir is located in the engine compartment on the right-hand valance, adjacent to the front road spring pot. The reservoir supplies fluid for the windscreen washers and also, on those cars fitted with headlamp wash/wipe, for the headlamp washers.

Operation of the washer is controlled by a switch situated in the end of the direction indicator lever. If there is a low level of fluid in the washer reservoir, the warning panel marked WASHER FLUID situated on the fascia will illuminate whenever the switch is depressed with the ignition switched on.

Headlamp wash/wipe (if fitted)

The headlamp wash/wipe system is controlled by the washer switch. The system will only operate when the main lighting switch is moved to the HEAD position.

Headlamp power wash reservoir

Cars from 1985 model year and onwards (except Corniche and Continental)

The headlamp power wash reservoir is situated under the right-hand front wing, directly behind the headlamp unit(s). If there is a low level of fluid in the reservoir, the warning panel marked WASHER FLUID situated on the fascia will illuminate whenever the washer switch is depressed with the ignition switched on.

Note

If the warning panel marked WASHER FLUID is illuminated the low level may be in either the power wash or windscreen washer bottles.

Headlamp power wash (if fitted)

Cars from 1985 model year and onwards

Cars other than those conforming to a Japanese or USA specification: two jets in the bumper, one mounted centrally to each headlamp unit.

Cars conforming to a Japanese or USA specification: four jets, one mounted above each headlamp unit.

The headlamp power wash system is controlled by the push button switch situated in the end of the direction indicator lever. The system will only operate when the main lighting switch is moved to the HEAD position.

Windscreen wipers

Rolls-Royce Silver Spirit, Silver Spur, Bentley Mulsanne (including Turbo), Bentley Eight, prior to 1985 model year, and Corniche/Continental cars prior to 1986 model year

Operation of the wipers is controlled by a switch on the fascia marked either WIPERS or . The switch has two clockwise positions and one anti-clockwise position. The first clockwise position provides wiping at the normal speed, the second position increases the speed. The anti-clockwise position provides intermittent operation, giving one complete wipe at approximately seven seconds intervals.

Rolls-Royce Silver Spirit, Silver Spur, Bentley Mulsanne (including Turbo), Bentley Eight, Bentley Turbo R from 1985 model year and Corniche/Continental cars from 1986 model year

Operation of the wipers is controlled by a switch on the fascia marked . The clockwise positions of the switch are as mentioned for 'cars prior to 1985 model year'. However, turning the switch anti-clockwise provides 4 intermittent operations at pre-set intervals. The time interval between wipes increases as the switch is rotated i.e. approximately 4 seconds in the first position, 7 seconds in the second position, 14 seconds in the third position, and 21 seconds in the fourth (fully anti-clockwise) position.

Engine

Lubrication system

The engine oil from the sump is circulated by a gear type pump mounted to the front of the crankcase and driven by the crankshaft through skew gears.

High pressure oil is fed to the turbocharger (if fitted), crankshaft, big end bearings, camshaft bearings and timing gears, tappets, push rods, and rocker ball end seatings. Low oil pressure is fed through the front camshaft bearing to the rocker shafts, rocker arms and valve tips. The connecting rod small-ends, gudgeon pins and cylinder walls are lubricated by a splash feed.

Cooling system

Corniche cars prior to mid-1984

The engine cooling system comprises a matrix, a separate header tank and a centrifugal pump. The pump is driven by the crankshaft through twin matched belts. The header tank is mounted separately above the radiator to reduce aeration in the system.

Rolls-Royce Silver Spirit, Silver Spur, Bentley Mulsanne (including Turbo), Bentley Eight, Bentley Turbo R, and also Corniche/Continental cars from mid 1984

The engine cooling system comprises a matrix, a separate expansion tank and a centrifugal pump. The pump is driven by the crankshaft through twin matched belts. The expansion tank is mounted separately on the left-hand valance.

All cars

A viscous drive coupling is fitted in conjunction with

the fan attached to the coolant pump pulley, to prevent fan noise at high speeds.

An electrically operated booster fan is mounted behind the radiator grille. This fan is energised when the coolant reaches a pre-determined temperature.

On cars fitted with cycling clutch air conditioning units, a single fan or twin booster fans are fitted. Both assemblies are switched from either engine coolant temperature, or from refrigerant pressure.

Cooling system corrosion and freeze protection
 UT 184 (BP-Hythe Chemicals) or Prestone II Winter/Summer Concentrate.

A 50% mixture with water gives frost protection down to a temperature of -37°C (-35°F). The mixture should be used all the year round as it not only provides protection against frost but also prevents corrosion of the cooling passages.

Specific gravity of coolant

The coolant should be checked for 50% anti-freeze/water mixture with a hydrometer. To give a 50% mixture at room temperature the specific gravity should be between 1.060 and 1.070.

Emission control systems

Refer to the appropriate specification within Chapter U.

Front and rear hubs

The front hubs are mounted onto the yoke stub axle. The rear hubs are mounted on hollow stub axles connected to the final drive unit by universal couplings and drive-shafts.

Power assisted steering

Power assisted steering with energy absorbing collapsible steering column is fitted. The steering unit, which is a rack and pinion arrangement with centre off-takes, is supplied with hydraulic fluid under pressure by an engine driven pump. The fluid feed line incorporates an anti-joggle valve and a fluid cooler is fitted into the return line.

Sub-frames

The front sub-frame manufactured from welded sheet steel is mounted on rubber mounts to the car underframe.

The rear sub-frame is mounted to the car body at its four corners by cylindrical rubber mounts. These mounts have a horizontal axis in a fore and aft direction.

Suspension



The compliant front suspension is an independent coil spring arrangement with double acting hydraulic shock dampers, and anti-roll stabiliser bar and compliance rods, all of which are attached to the front sub-frame.

The rear suspension is an independent coil spring arrangement with trailing arms, suspension struts and anti-roll bar. The trailing arms are pivoted on the rear

suspension crossmember. Suspension struts are attached to extension brackets on the rear ends of the trailing arms.

Transmission

Final drive unit and drive-shafts

The final drive unit is mounted onto a crossmember which forms part of the rear sub-frame. Bolt on extension brackets connect the final drive crossmember to rubber mounts attached to the body underfloor. The rear suspension crossmember is attached to the final drive crossmember by six frame tubes and a torque arm.

The final drive unit comprises a centre differential gearbox which contains the hypoid crownwheel, pinion gears, a differential housing and two drive-shafts which transmit the drive to the rear wheels. The joints on the drive-shafts are enclosed by convoluted seals to prevent dirt and water entering the joint and to prevent oil leakage.

Propeller shaft

The shaft is connected to the torque converter transmission output shaft flange and to the final drive input flange by either universal joints or flexible couplings, depending upon the car's specification.

The propeller shaft assembly is dynamically balanced to fine limits.

Torque converter transmission

The torque converter transmission transmits the drive automatically in three forward ranges and reverse. Gear changes are made automatically and are obtained through a three element hydraulic torque converter and a compound planetary gear train. A parking lock incorporated in the torque converter transmission operates when the gear range selector lever is moved to the Park position or when the ignition key is removed from the switchbox.

Body and coachwork

Care of the exterior

Retractable mascot

On cars conforming to a European specification, the Rolls-Royce 'Flying Lady' mascot will retract into a well in the radiator shell if it is deflected by a rearward or sideways force.

The mascot retracts quite suddenly, therefore care must be taken to avoid any contact with the mascot as it retracts.

To prevent retraction, all contact with the mascot should be kept to a minimum and when cleaning the mascot or adjacent parts of the car, the mascot should be held with a slight pressure so that the locking catch cannot disengage.

When the mascot has retracted, it can easily be returned to its raised position by lifting it upwards, against spring pressure, until it locks into position. Do not release the mascot until the locking catch has engaged.

Should it be required to retract the mascot, for example to avoid damage when the car is being transported, press the mascot rearward to disengage the locking catch. Care must be taken to avoid contact with the mascot as it retracts.

When the mascot is to remain in the retracted position for any length of time, the retraction well should be covered with masking tape to prevent any items falling into the recess which could cause damage to the retraction mechanism.

Paintwork

In order to maintain the paintwork in good condition, the following procedures are recommended.

Always wash the paintwork with clean, preferably running, cold water. Frequent washing is the best safeguard against contaminants.

Do not use excessive pressure from the hose but thoroughly wet the car all over before commencing cleaning.

Start at the top of the car and work down using clean sponges and fresh water. If washing with cold water is not effective, warm water with a small amount of a mild detergent such as Teepol will help remove the gummy deposits exuded by some trees in the summer months, but always rinse off well with clean cold water.

Remove the water with a chamois leather. When leathering off the car, the leather should be washed frequently in clean, cold water. Also sponge and leather all window frames, door edges, exterior lamps and mirrors.

Finally, clean the windscreen, rear window and door windows inside and out. Lower the door windows

to clean the portion normally covered by the channels.

Remove any road tar from the car by gently rubbing with a soft cloth moistened with turpentine substitute.

Under no circumstances should any attempt be made to remove dirt, mud or dust when dry or with a dry cloth. This practise can produce serious scratching of the surface finish, which will probably require professional repair.

The use of automatic car washes is not recommended as the detergents used and the nylon brush washing action may stain or seriously scratch the paintwork or damage the windows and radiator shell.

At least every three months, after normal cleaning with cold water, the paintwork should be restored by the application of a suitable cleaner/polish. In climatic conditions where long periods of sunshine prevail, more frequent cleaning/polishing may be necessary.

Do not polish the car in a dusty or gritty atmosphere or in direct sunlight.

When polishing the car, do not apply a wax polish on top of previous wax layers and traffic film as a build-up of wax can induce its own type of rain spotting or discolouration defects. A good quality friction emulsion cleaner/polish should be applied in accordance with the manufacturer's instructions.

After the cleaner/polish has been applied and removed, a good quality wax polish should then be applied.

If regular maintenance polishing is not carried out, the original gloss will become obscured and rain spotting may reach objectionable proportions. Paintwork should therefore be cleaned and polished as soon as the gloss begins to fade, not when it has already become dull.

Roof materials

Should the material which is used to cover the hood/roof panel on certain cars become ingrained with dirt, wash the material with a solution of water and a mild detergent such as Teepol. If necessary, use a soft bristled brush to work the detergent into the material; brush in a fore-aft direction along the line of the stitching, not across the material. Afterwards, wash with clean cold water to remove all traces of the detergent.

Under no circumstances should chemical solvents, polishes, or detergents (other than those specified) be applied to the roof materials.

The following is applicable to Everflex roof material only

A special vinyl top dressing preparation is applied

to protect the Everflex roof material prior to delivery. Also, as a further protection the stitching is sealed with a wax dressing, which is rubbed into the stitching after the vinyl dressing has been applied. Further applications may be required at approximately 18 monthly intervals. Both of these preparations are available from the Parts Distribution Centre at Rolls-Royce Motors Limited, Crewe.

Power operated hood

To avoid creasing the hood material it is advisable to always erect the hood when the car is immobile for any length of time.

Plating

Stainless steel and chromium plating should be cleaned with a damp cloth and then polished with a soft dry cloth. Under no circumstances should a metal polish be applied.

Where tarnishing has occurred, a dilute solution of ammonia will usually suffice to remove it. This solution must not be allowed to lie upon the paintwork for any length of time.

De-icing fluid

If de-icing fluid is used on the exterior of windows, the instructions marked on the fluid container should be strictly observed. Undiluted de-icing fluid should not be allowed to come into contact with the paintwork or with the windscreen wiper blades, if it does however wipe off immediately.

Windscreen washer jet adjustment

The windscreen washer jets are situated on the scuttle between the air intake grilles. Fluid from the jets should impinge onto the windscreen towards the top of the arc traversed by the wiper blades. To adjust the direction of spray from a jet, place a suitable tube over the jet nozzle and swivel it to the required position.

The washer reservoir should be filled with special washing fluid which is available from the Parts Distribution Centre at Rolls-Royce Motors Limited, Crewe. This fluid is in concentrated form and should be diluted with distilled water as described on the container.

Windscreen wipers arm replacement

When the windscreen wiper blades are worn, causing unsatisfactory cleaning of the windscreen, they should be replaced as follows.

Move the wiper arm away from the windscreen, then press the small tab situated in the end of the arm in order to release the blade locking catch. Pull the wiper blade off the arm and press on the new blade. Check that the new blade is held securely onto the arm by the locking catch, then return the arm to the windscreen.

Care of the interior

Carpets

The carpets should be cleaned periodically with a vacuum cleaner or soft brush in order to remove dust

and dirt. The carpets are secured in position by press fasteners and can easily be removed to facilitate cleaning.

Stains or grease marks may be removed from the carpets by means of a mild detergent diluted with clean, warm water but care should be taken not to over-wet the material.

Lambskin rugs

The rugs should be cleaned by removing them from the car and shaking off any loose dirt.

Impregnated or congealed dirt such as mud should be removed using a solution of a light domestic type soap mixed with lukewarm water.

Immerse a clean cloth into the solution then lightly wring out. Clean an area of approximately 0.10 m² (1.0 ft²), taking care not to over-wet the rug, then wipe with a clean dry cloth. Repeat this procedure over the remaining area of the rug.

Allow the rugs to dry before returning them to the car.

If the rugs have oil or grease marks they should be sent to a specialist who operates a full cleaning service.

Leather upholstery

Leather upholstery should be cleaned with a damp cloth. If necessary, the application of a little neutral soap will remove more obstinate marks.

Caustic soap, petrol or volatile cleaning solvents such as acetone, thinners, and nail varnish remover, must not be used to clean the upholstery.

An occasional application of Connolly's Hide Food will preserve the upholstery. This compound should be applied evenly with a clean cloth, then polished with a clean dry cloth.

Cloth upholstery

Cloth upholstery should be cleaned by first brushing the soiled area to remove any loose particles of dirt.

The affected area should then be cleaned with a good quality carpet shampoo, used in accordance with the maker's instructions. Alternatively, a solution of a synthetic detergent and lukewarm water can be used. Whichever method is used, care should be taken not to over-wet the upholstery.

Finally, the upholstery should be wiped with a clean cloth and allowed to dry naturally.

Headlining material

For cloth headlining, clean as 'Cloth upholstery'.

For simulated leather and hide headlinings, clean as 'Leather upholstery'.

Interior woodwork

Interior woodwork should be cleaned with a damp cloth, then dried and polished with a clean dry cloth.

Water must never be allowed to lie upon the woodwork.

Door hinges and locks

The door hinges incorporate Oilite bushes and should

not be lubricated. The application of oil may result in damage by causing dirt to adhere to the working surfaces.

The working surfaces of the door hinge check plates and the door slam plates should occasionally be wiped clean and then smeared with a small quantity of grease.

Bonnet fasteners

If the bonnet fasteners become difficult to operate due to an accumulation of dirt on the mechanism, they should be cleaned and lightly oiled.



This symbol identifies the items using hydraulic system mineral oil within this section

Heli-coil inserts

Heli-coil inserts are used on various aluminium parts of the engine. They offer a far greater resistance to wear, stripping, seizing, and corrosion than direct type threads.

Heli-coils have been used only where the parts are secured by setscrews, not where studs are fitted.

The Heli-coil inserts are made of stainless steel wire and can therefore be easily identified when fitted into their aluminium components.

Heli-coil insert - To remove (see fig. A6-1)

1. Fit the blade of the Heli-coil insert extraction tool into the top of the threaded insert.
2. Press downwards onto the insert and then turn the blade anti-clockwise; the insert should then wind out of the hole.
3. Examine the condition of the threads in the hole from which the Heli-coil was removed. If necessary rectify any damage by using a special Heli-coil insert tap.

Heli-coil insert - To fit

As it is necessary to remove the tang from the end of the Heli-coil insert after fitting, it is important to ensure that the insert tang is notched.

Using the Heli-coil insertion tool shown in figure A6-2 proceed as follows.

1. Withdraw the mandrel from the threaded nozzle and loading chamber.
2. Fit the insert into the chamber with the tang end positioned towards the nozzle.
3. Slide the mandrel through the insert and engage the tang into the slot.
4. Turn the handle clockwise, applying gentle pressure on the insert until it is located into the nozzle.
5. Continue turning until the first coil of the insert just emerges from the nozzle.
6. Fit the insertion tool over the tapped hole ensuring that it is square to the work face.
7. Commence winding until the insert is transferred from the nozzle to the tapped hole. Do not apply any pressure during this operation.
8. The Heli-coil insert is finally fitted when the coil is between $\frac{1}{8}$ and $\frac{1}{4}$ inch below the surface of the work face.
9. Fit the special tang break off tool (punch) into the insert as shown in figure A6-3.
10. Allow the interpiece of the punch to slide downward to locate onto the tang.

Special procedures

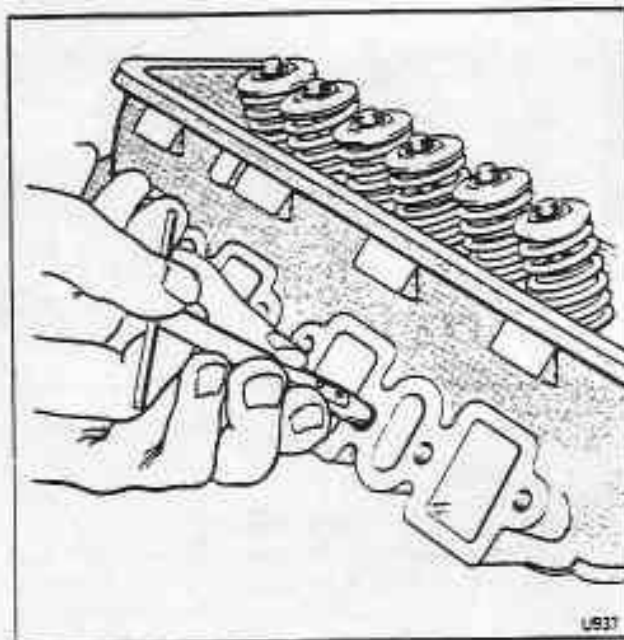


Fig. A6-1 Heli-coil extraction tool

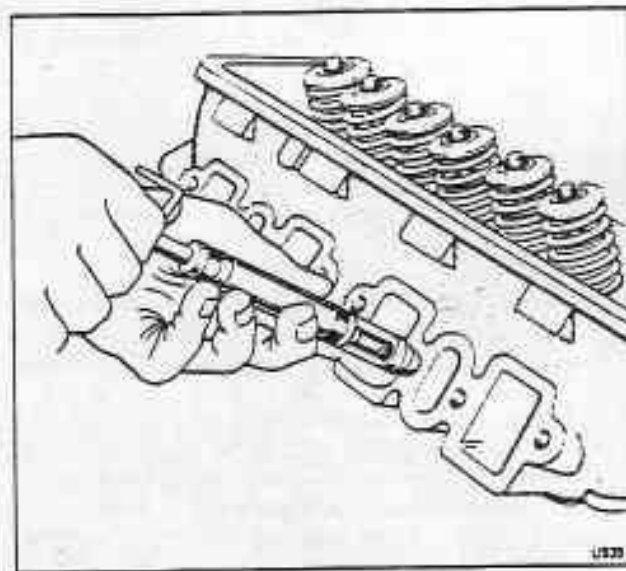


Fig. A6-2 Heli-coil insertion tool

11. Apply a sharp tap to the end of the punch so that the tang breaks off at the notch.
12. Ensure that the tang does not fall into any part of the engine, etc., where it could cause damage.

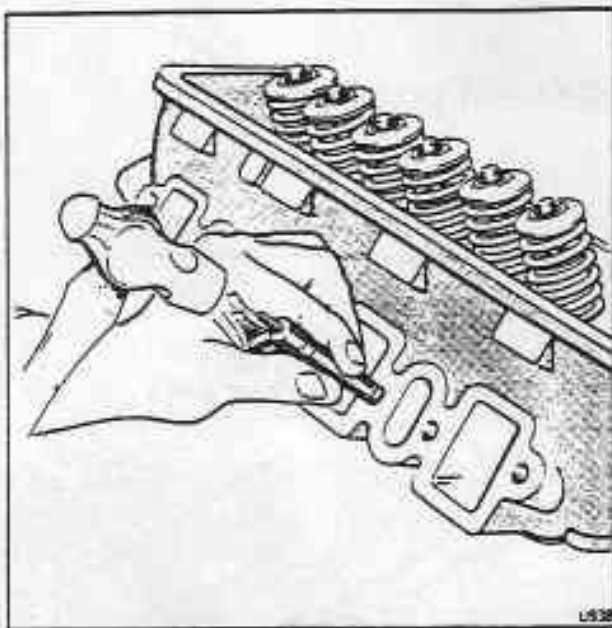


Fig. A6-3 Heli-coil tang 'break-off' tool

Hydraulic systems to depressurize



Either of the two following methods may be employed to depressurize the systems but generally it will be found that the first is the more convenient.

Method 1

Switch on the ignition and pump the brake pedal between 50 and 60 times until both hydraulic warning lamps on the instrument panel are illuminated and remain illuminated.

Switch off the ignition.

To depressurize the rear suspension struts, place a bleed tube to each strut bleed screw in turn, open the bleed screws and allow the hydraulic mineral oil to bleed into a clean container until the flow ceases.

Method 2

With the ignition switched off, open the bleed screw on both accumulators and allow sufficient time for the mineral oil pressure to discharge back to the reservoir.

These bleed screws are an integral part of the accumulator, the mineral oil being allowed to flow from the accumulator sphere back to the reservoir when the bleed screw is opened. Switch on the ignition and check that the warning lamps marked 1 BRAKE PRESSURE or  and 2 BRAKE PRESSURE or  on the instrument panel are illuminated.

Depressurize the rear suspension struts as described in Method 1.

Jacking up the car

The car can be raised using either the car jack or a trolley jack.

Two jacking points are provided on either side of the car. These jacking points are for use with the car jack. However, other suitable jacking points for a

trolley jack or similar equipment are as follows.

Front - The front pivot mounting for the lower triangle levers on the sub-frame.

Rear - Either the centre of the final drive casing (not on the final drive crossmember) or under the flat portion at the rear of the trailing arms.

Note

When using a hydraulic jack to raise the car ensure that a hardwood block is placed between the jack and the underneath of the car.

Immediately a car is raised and before commencing any work, it is recommended that vehicle support stands or blocks are placed in suitable positions beneath the car.

Raising and supporting the car

Workshop safety

Never work beneath the car if it is only supported on a jack. Always ensure car stands or blocks are used as a safety precaution.

Raising the front of the car

Position the car on a level surface, place the gear range selector lever in the Park position, remove the gearchange thermal cut-out from the fuseboard, apply the parking brake, and chock the rear road wheels.

To jack up the front of the car, position a trolley jack under the front pivot mounting for the lower triangle levers on the sub-frame (see fig. A7-1, item 1).

Alternatively, jack up the car using one of the two front jacking points situated on the car underbody (see fig. A7-1, item 3), utilizing the car jack.

Raising the rear of the car

Position the car on a level surface, place the gear range selector lever in the Park position, remove the gearchange thermal cut-out from the fuseboard, apply the parking brake, and chock the front road wheels.

To jack up the rear of the car, position a trolley jack under the centre of the final drive casing (see fig. A7-1, item 6), not on the final drive crossmember. Ensure

a piece of soft wood is placed between the jack head and the final drive casing.

Alternatively, jack up the car using one of the two rear jacking points situated on the car underbody (see fig. A7-1, item 4), utilizing the car jack.

Supporting the car on stands and/or blocks

When jacking up the rear of the car to support on stands and/or blocks, follow the procedure described previously, then remove the road wheels. Place axle stands under the positions shown in figure A7-1, item 5.

When jacking up the front of the car, follow the procedure described previously, then place axle stands under the positions shown in figure A7-1, item 2. Remove the road wheels if necessary.

If all the car is to be supported on stands and/or blocks, the car body should also be supported using wooden sill blocks, etc., placed under the jacking points of the car (see fig. A7-1, items 3 and 4). Refer to figure A7-3 when producing these wooden sill blocks.

Transporting the car

The ideal and simplest method of securing the car for transportation, is by strapping all the wheels to the carrier, using strong webbing straps, **not chains**.

This method securely fastens the car without

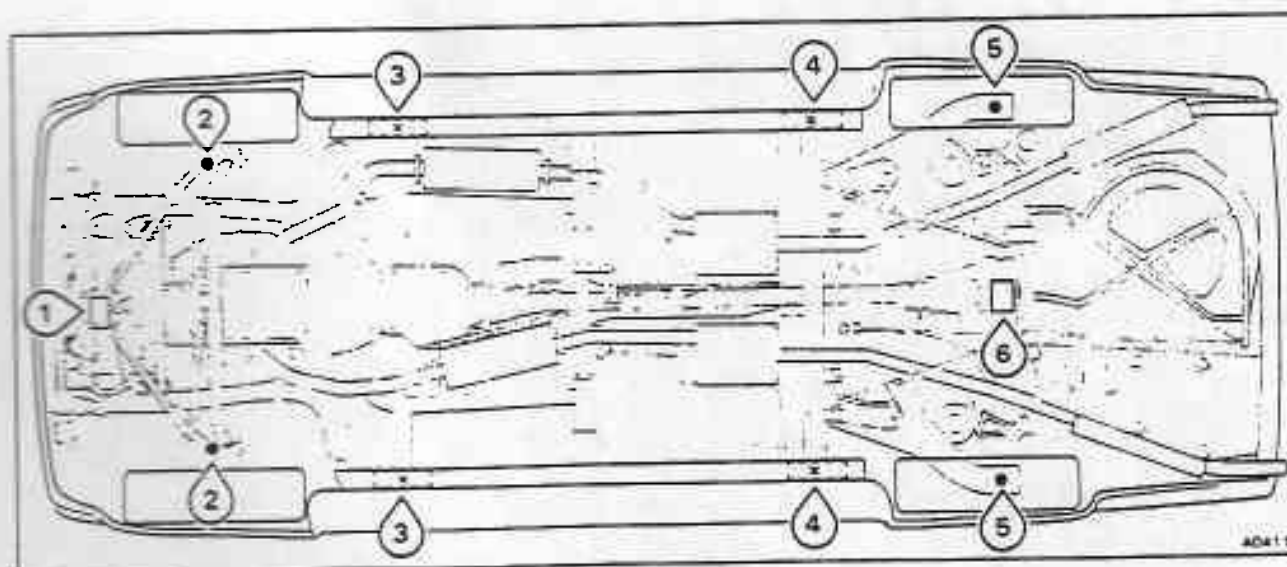


Fig. A7-1 Car jacking positions and support locations

- | | |
|---|--|
| 1 Trolley jack positions (front) | 4 Car jack and sill block positions (rear) |
| 2 Car stands (front) | 5 Car stands (rear) |
| 3 Car jack and sill block positions (front) | 6 Trolley jack positions (rear) |

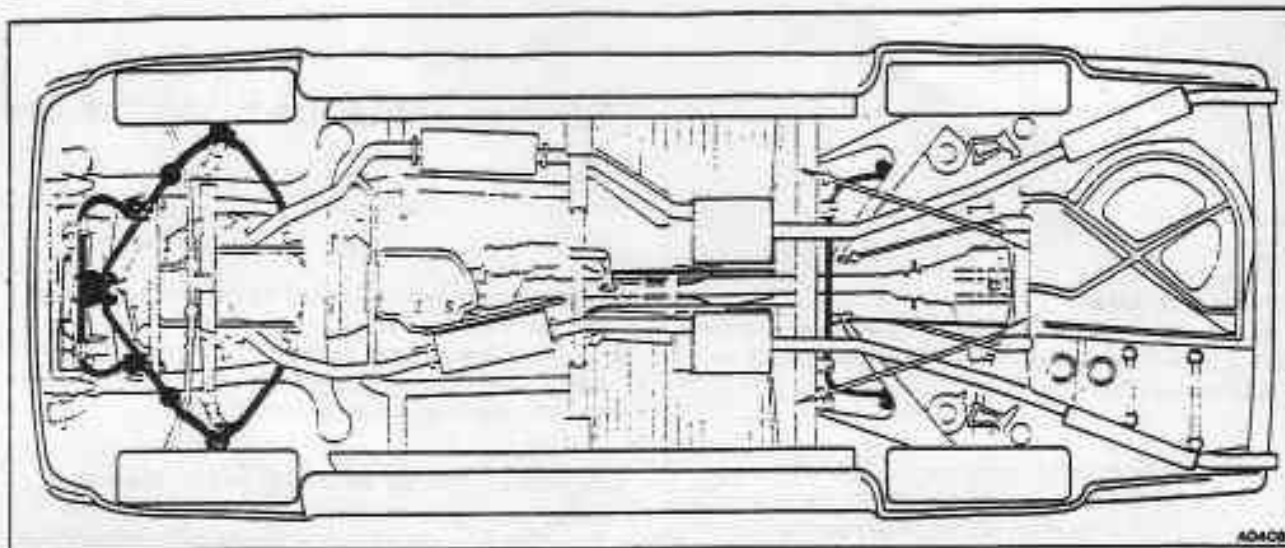


Fig. A7-2 Suitable suspension members for securing when transporting

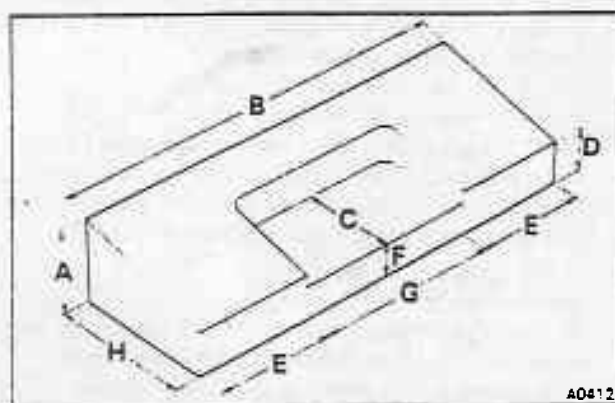


Fig. A7-3 Hardwood sill block

A	44,45 mm (1.750 in)
B	228,60 mm (9.0 in)
C	53,98 mm (2.125 in)
D	25,40 mm (1.0 in)
E	63,50 mm (2.50 in)
F	19,05 mm (0.750 in)
G	101,60 mm (4.0 in)
H	79,38 mm (3.125 in)

damage and undue strain on any of the suspension or body components. However, the car is still free to move on its own suspension system. Therefore, it is important to ensure that there is sufficient clearance all round the car to accommodate this movement.

An alternative method is to use slings/chains around the front lower triangle levers and also around the front and rear anti-roll bars (see fig. A7-2).

Note

Never use any other components beneath the car other than those specified.

Abbreviations, terminology, and symbols



This symbol identifies the items using hydraulic system mineral oil within this section

This section gives details of the abbreviations and symbols used throughout this Workshop Manual with the exception of the Electrical System (which has specialized abbreviations and symbols that can be found in Chapter M).

A list containing the interpretation of specialized motor engineering terminology is also included in this section.

Abbreviations

Across flats	A/F
After bottom dead centre	abdc
After top dead centre	atdc
Ampere	A
Bar (pressure)	bar
Before bottom dead centre	bbdc
Before top dead centre	btdc
Bottom dead centre	bdc
Brake horse power	bhp
Brake mean effective pressure	bmep
British standards	BS
Carbon monoxide	CO
Centigrade (Celsius)	C
Cubic feet	ft ³
Cubic inch	in ³
Cubic metre	m ³
Degree (angle)	deg or °
Degree (Centigrade)	°C
Diameter	d
Farad	F
Feet	ft
Feet per second	ft/s
Fluid ounce	fl oz
Gallon (Imperial)	Imp gal
Gallon (US)	US gal

Gram (mass)	g
Hertz	Hz
Hour	h
Inch	in
Inches of mercury	in Hg
International Standards Organisation	ISO
Joule	J
Kelvin	K
Kilogram (mass)	kg
Kilohertz	KHz
Kilojoules	kJ
Kilometres	km
Kilometres per hour	km/h
Kilonewton (force)	kN
Kilonewton per metre	kN/m
Kilopascal	kPa
Kilowatt	kW
Litres	litre
Litres per 100 kilometres	litre/100 km
Maximum	max
Megahertz	MHz
Metre	m
Metres per second	m/s
Microfarad	μF
Miles per Imperial gallon	mpg
Miles per US gallon	mile/US gal
Miles per hour	mile/h
Milligram	mg
Millilitre	ml
Millimetres	mm
Millimetres of mercury	mm Hg
Minute (angle)	'
Minute (time)	min
Newton (force)	N

Newton metres (torque)	Nm	Volt	V
Newton metre per degree	Nm/deg	Watt	W
Newtons per square metre	Nm ²		
Number	No		
Ohm	Ω	Terminology	
Ounce (mass)	oz	Air Chest (Turbo)	
Part number	Part No	Mounted centrally over the eight branch induction manifold, it houses the Solex 4A1 carburettor for the turbocharging system.	
Pascal	Pa		
Percentage	%	Airflow sensor plate (Fuel injection system)	
Pints (Imperial)	Imp pt	Balances the airflow entering the induction system with the fuel pressure acting on the end of the control piston.	
Pints (US)	US pt		
Pound (force)	lbf	Allen key	
Pounds force inch	lbf in	Cranked wrench of hexagonal section for use with socket head screws.	
Pound (mass)	lb		
Pound feet (torque)	lbf ft	Alternator	
Pound inch (torque)	lbf in	Electrical generator producing alternating current. Rectified to direct current for battery charging.	
Pounds per square inch	lbf/in ²		
Pounds (force) inch per degree	lbf in/deg	Ambient temperature	
		Surrounding temperature.	
Ratio	:	Ampere hours	
Revolutions per second	rev/s	Refers to battery capacity (current X hours it flows).	
Revolutions per minute	rev/min		
Second (time)	s	Annulus	
Second (angle)	..	The outer ring gear of an epicyclic gear train.	
Society of Automobile Engineers	SAE	Armature	
Square centimetres	cm ²	The shaft carrying the windings, which rotates in the magnetic field of a generator or starter motor. That part of a solenoid or relay which is activated by the magnetic field.	
Square feet	ft ²		
Square inch	in ²	Automatic choke	
Square metre	m ²	For cold starting, enriches fuel/air mixture by reducing air supply.	
Square millimetre	mm ²		
Standard	Std	Auxiliary air valve (Fuel injection system)	
Standard wire gauge	swg	Allows a higher volume of air to the engine (during cold starts), therefore, raising the idling speed. As the engine warms-up a bi-metallic strip gradually relaxes, allowing a return spring to close a control orifice. This reduces the engine speed to the normal idle speed setting.	
Thread formations			
British Association	BA		
American, pipe, taper fuel (dry seal)	NPTF	Axial	
Unified coarse	UNC	In line or pertaining to an axis.	
Metric	M	Backlash	
		Play in meshing gears.	
Top dead centre	tdc	Bevel pinion	
Ton	ton	A conical shaped gearwheel, designed to mesh with a similar gear with an axis usually at 90 deg to its own.	
Tonne	t		

Boost limiter (Turbo)

Limits the amount of boost pressure supplied to the engine, thus preventing the maximum road speed being exceeded.



Brake caliper

Cylinders with hydraulic operated pistons acting on brake pads.

Brake disc

Steel disc rotating with wheel. Operation of brake pedal causes two friction pads to squeeze disc and reduce speed.

Brake horse-power (bhp)

Horse-power available at the flywheel, usually measured on a dynamometer.

Brake mean effective pressure (bmep)

Average pressure on a piston during the working stroke.

Camber

Angle at which a road wheel is tilted from the vertical when viewed from the front or rear of the car.

Camshaft

Revolving shaft with eccentric projections to operate valve mechanism and hydraulic systems pumps.

Capacitor

Term for an electrical condenser. Part of a distributor assembly. Also acts as an interference suppressor.

Carburettors

Atomise fuel by mixing it with air in varying proportions to suit engine operation conditions.

Castellated

Top face of a nut, slotted across the flats, to take a locking split pin.

Caster

Angle at which the kingpin or swivel-pin is tilted when viewed from the side of the car.

Choke stove pipe

A 'U' - shaped pipe assembly situated in 'B' bank exhaust manifold. Air from the engine intake elbow passes through the choke stove pipe assembly where it is heated by the exhaust gases. The heated air is then drawn back into the induction system via the choke heat sink, where heat is transferred from the air to the choke bi-metal coil.

Clevis

'U' - shaped fork connector used with a clevis pin.

Clevis pin

A pin that is used to secure components within the fork type of clevis connector; usually retained by a split pin.

Cold start injector (Fuel injection system)

Sprays finely atomised fuel during engine cranking (cold engine) into the plenum chamber.

Collet

A type of collar, split and located in a groove in a shaft and held in place by a retainer. The arrangement usually used to retain the spring on a valve stem.

Commutator

Rotating segmented current distributor between armature windings and brushes in generator or motor.

Compression ratio

Ratio of volume above piston at bottom of stroke and top of stroke.

Control piston (Fuel injection system)

Cylindrical plunger type of valve that moves vertically in the fuel distributor. A precision machined edge on the control piston opens the metering slits in the fuel distributor.

Crankshaft

Converts vertical movement of the pistons into rotary motion.

Crownwheel

Large bevel gear in rear axle, driven by a bevel pinion attached to the propeller shaft.

Demister

Directs heated air over the screen to clear internal condensation. The system will also melt frost on the outside of the windscreen.

Depression

The lowering of atmospheric pressure (as in the inlet manifold and carburettor).

Differential pressure valves (Fuel injection system)

One for each cylinder (housed in the fuel distributor), maintains the correct pressure of fuel at the metering slits.

Dowel

Close tolerance pin, peg, tube or bolt, which accurately locates mating parts.

Dump valve (Turbo)

Allows air to recirculate through the air chest and back into the compressor at low engine loads. At high engine loads it closes and pressure is allowed to build up to increase part throttle engine power and improve throttle progression on the primary chokes.

Electrode

Terminal, part of an electrical component, such as the points or 'Electrodes' of a sparking plug.

Electrolyte

In lead-acid car batteries a solution of sulphuric acid and distilled water.

Electronic control unit (ECU) (Fuel injection system)
Converts the electrical signal from the oxygen sensor into a hydraulic correction of the fuel mixture.

End-float

The axial movement between associated parts, end play.

Engine capacity

Engine capacity is derived by multiplying the volume of the cylinder (bore area X stroke) by the number of cylinders (i.e. swept volume X number of cylinders).

Engine cylinder

Bore in the engine crankcase is sleeved with a wet cylinder liner. Piston operates within the cylinder/liner.

EP

Extreme pressure. In lubricants, special grades for heavily loaded bearing surfaces, such as the crownwheel and pinion assembly in the final drive unit.

Field coils

Windings on the polepieces of electric motors.

Fillets

Narrow finishing strips usually applied to interior bodywork.

Flexplate

Combined plate and starter ring attached to the rear of the crankshaft which forms a positive connection to the torque converter.

Frame tubes

Link members of the rear sub-frame, between the rear crossmember and final drive crossmember.

Fuel accumulator (Fuel injection system)

When the engine is stopped, fuel held in the accumulator (under pressure from the accumulator spring) maintains pressure in the primary fuel circuit to ensure good 'hot starting'.

Fuel distributor (Fuel injection system)

Apportions the fuel to the injectors adjacent to each engine cylinder.

Full flow filter

One which filters all the oil pumped to the engine. If the element becomes clogged, a by-pass valve operates to pass unfiltered oil to the engine.



Gas spring

A sphere, half filled with nitrogen gas (above a diaphragm), part of the suspension strut.

Gear pump

Two meshing gears in a close fitting casing. Oil is carried from the inlet round the outside of both gears in the spaces between the gear teeth and casing to the

outlet, the meshing gear teeth prevent oil passing back to the inlet, and the oil is forced through the outlet port.

Gear ratio

Relative speeds at which two gears revolve. If the input gear rotates twice as fast as the output gear, the gear ratio is 2:1.

Grommet

A ring of protective or sealing material. Can be used to protect pipes or leads passing through dividing partitions.

Gudgeon pin

Shaft which connects a piston to its connecting rod.

Helical

Inspiral form. The teeth of helical gears are cut at a spiral angle to the side faces of the gearwheel.

Hot spot

Hot area that assists vaporization of fuel on its way to the cylinders.

HT

High Tension. The secondary voltage produced by the ignition coil for the sparking plugs.

Hydrometer

A device for checking the specific gravity of liquids. Used to check specific gravity of electrolyte or coolant.

Hypoid bevel gears

A form of bevel gear used in the rear axle drive gears. The bevel pinion meshes below the centre line of the crownwheel, giving a lower propeller shaft line.

Impeller

A centrifugal pumping element. Used in coolant pumps to generate flow.

Injector (Fuel injection system)

One injector is used for each engine cylinder and sprays finely atomised fuel under all running conditions into the induction system.

Journals

Those parts of a shaft that are in contact with the bearings.

'Jury' bolt

Used on the rear suspension when removing the frame tubes. Holds the suspension rigid by temporarily being fitted in place of the short in-line damper.

Knock sensor (Turbo)

Senses abnormal engine noise and detonation (knock) and then produces an output signal which is processed by the electronic control unit. If knock is present the ECU signals the ignition amplifier to retard the ignition timing until knock ceases.

Laminated glass

Two thin sheets of glass bonded one to each side of a thin sheet of transparent plastic, giving good resistance to shattering and penetration.

lbf ft

A measure of twist or torque. A pull of 10 lbf at a radius of 1 ft is a torque of 10 lbf ft.

LT

Low Tension. The voltage output from the battery.

Mandrel

Accurately manufactured bar or rod used for test or centring purposes.

Manifold

A pipe, duct or chamber, with several branches.

Needle rollers

Bearing rollers with a length many times their diameter.

Overall gear ratio

Number of engine revs per revolution of the driving wheels (gearbox ratio X final drive ratio).

Overlap

Period during which inlet and exhaust valves are open together.

Overrun valve

During engine overrun (decelerating with a closed throttle), the overrun valve allows air to by-pass the closed throttle plate, when a high intake manifold depression exists.

Oxygen sensor (Fuel injection system)

Measures the oxygen content in the exhaust gas and by means of an electrical signal transmits the information to the electronic control unit.

Parking pawl

Pivoted catch that engages in the gear ring on the transmission rear unit planet carrier and locks the output shaft.

Phillips/Pozidriv screwdriver

A cross-point screwdriver for use with the cross-slotted heads of Phillips/Pozidriv screws.

Pinion

A small gear, usually in relation to another gear.

Plenum chamber (Fuel injection system)

Air reservoir mounted centrally over the eight branch induction manifold.

Pre-loading

Pre-set static pressure on ball or roller bearings not due to working loads.

Pressure control valve (Fuel injection system)

Operating from an electrical signal received from the electronic control unit, the valve varies the fuel pressure in the lower chambers of the differential pressure valves.

Pressure damper (Fuel injection system)

Dampens the pressure pulses caused by the operation of the pressure control valve.

Radial ply tyres

Refers to the construction of the tyres because the cords of the plies are at right-angles to the rim.

Shock absorber

Damper to control body movement in relation to the suspension preventing continuous bouncing on the spring.

Small-end

The small, or piston end of a connecting rod. Sometimes called the 'little-end'.

Stoichiometric ratio

Ideal air/fuel ratio for full combustion of the fuel.



Strut

Integral damper and height control arm. Damping achieved by displacement of hydraulic system mineral oil under pressure from the gas spring.

System pressure regulator (Fuel injection system)

Maintains a constant primary circuit fuel pressure when the engine is running. When the engine is stopped, the regulator valve allows the fuel pressure in the primary circuit to fall rapidly to just below the injector opening pressure.

Thermal time switch (Fuel injection system)

Situated in the thermostat housing, it limits the length of time that the cold start injector remains open.

Thermostat

In cooling system, prevents coolant circulating to the radiator until the engine has warmed up.

Toeboard socket

A toeboard socket provides a convenient junction box for electrical connections between the engine compartment and car interior.

Torque

Mean turning effort exerted on crankshaft by pistons, available for propelling the car.

Turbocharger (Turbo)

Increases the power and torque of the engine by utilizing energy from the exhaust gas.

Warm-up regulator (Fuel injection system)

Increases the control pressure as the engine warms-

up, so that at normal operating temperature, full control pressure is exerted on the end of the control piston.

Wastegate (Turbo)

Regulates the flow of exhaust gas to the turbocharger turbine when either boost pressure or road speed reach a predetermined level.

Wet liner

Engine cylinder liner fitted into the crankcase bore and sealed top and bottom thus allowing engine coolant to circulate directly onto the liner. Should excessive wear take place a new liner can be installed.

Woodruff key

A semi-circular piece of metal that fits into a similar shaped slot on a shaft. The flat edge of the key protrudes out from the shaft and locates in a groove in the internal bore of a gear thus accurate location of the gear to the shaft is obtained.

Symbols

The ISO symbols used on the car are as follows

 Low brake pressure, System 1

 Low brake pressure, System 2

 Low mineral oil level, reservoirs
FLUID

 Brake stop lamp failure
LAMP

 Parking brake

 Hazard warning

 Fasten seat belts

 Battery charging

 Oil pressure

 Fuel

 Engine coolant temperature

 Windscreen wipers

 Windscreen washers

 Windscreen demist

 Lights

 Headlamp main beam

 Front and rear position lamps

 Rear fog lamps

 Front fog lamps

 Direction indicators

 Horn selection switch

Conversions

mm	to	in	x 0.0394	litre	to	US gal	x 0.264
in	to	mm	x 25.4	US gal	to	litre	x 3.785
m	to	ft	x 3.281	litre	to	Imp pt	x 1.76
ft	to	m	x 0.305	Imp pt	to	litre	x 0.57
m	to	yd	x 1.094	lbf ft	to	Nm	x 1.356
yd	to	m	x 0.914	Nm	to	lbf ft	x 0.7376
km	to	mile	x 0.621	lbf	to	N	x 4.448
mile	to	km	x 1.609	N	to	lbf	x 0.225
mm ²	to	in ²	x 0.0015	lbf in	to	Nm	x 0.113
in ²	to	mm ²	x 645.16	Nm	to	lbf in	x 8.851
cm ²	to	in ²	x 0.155	lbf/in ²	to	bar	x 0.069
in ²	to	cm ²	x 6.452	bar	to	lbf/in ²	x 14.5
m ²	to	ft ²	x 10.764	mile/h	to	km/h	x 1.609
ft ²	to	m ²	x 0.093	km/h	to	mile/h	x 0.621
m ²	to	yd ²	x 1.196				= <u>282.473</u>
yd ²	to	m ²	x 0.836	litre/100 km	to	mpg	litre/100 km
cm ³	to	in ³	x 0.061	mpg	to	litre/100 km	= <u>282.473</u>
in ³	to	cm ³	x 16.387			mpg	
m ³	to	ft ³	x 35.315	km/litre	to	mpg	x 2.825
ft ³	to	m ³	x 0.028	mpg	to	km/litre	x 0.354
m ³	to	yd ³	x 1.308	km/litre	to	mile/US gal	x 2.352
yd ³	to	m ³	x 0.765	mile/US gal	to	km/litre	x 0.425
g	to	oz (Avoir)	x 0.035	kgf m	to	lbf ft	x 7.233
oz (Avoir)	to	g	x 28.35	lbf ft	to	kgf m	x 0.1383
ml	to	fl oz	x 0.035	kgf cm	to	lbf in	x 0.868
fl oz	to	ml	x 28.41	lbf in	to	kgf cm	x 1.152
kg	to	lb (Avoir)	x 2.205	oz in	to	g cm	x 0.1116
lb (Avoir)	to	kg	x 0.454	g cm	to	oz in	x 8.960
kg	to	cwt	x 0.019				
cwt	to	kg	x 50.802				
tonne	to	ton	x 0.984				
ton	to	tonne	x 1.01604				
ton	to	kg	x 1016				
Imp gal	to	US gal	x 1.201				
US gal	to	Imp gal	x 0.833				
litre	to	Imp gal	x 0.220				
Imp gal	to	litre	x 4.546				

Special processes

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Issue record sheet 1

July 1985

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Storage and recommissioning

Introduction

To ensure the correct degree of protection the information given under the heading 'Recommended storage procedure' should be adopted.

The success of this procedure depends upon correct initial preparation, regular inspection and maintenance.

Care must be taken to ensure that, when topping-up the reservoirs of the hydraulic brakes and height control systems, only Hydraulic Systems Mineral Oil is used.

Where reference is made within this chapter to storing the car, it is recommended that the car is covered with a light cotton or muslin dust sheet. It should be noted that plastic or similar materials should not be used for this purpose as they can create condensation which, under certain climatic conditions, can damage the paintwork.

Storage

The storage building should be dry and well ventilated. If the building is heated, the temperature must remain constant.

When the car is stored, always ensure that the battery master switch (if fitted) is turned to the off position. On cars not fitted with a battery master switch, disconnect the battery.

On Corniche cars, ensure that the hood is raised with the hood clips securely fastened.

Recommended storage procedure

Prior to storage, thoroughly clean the carpets, rugs and upholstery; treat all leather upholstery with Connolly's Hide Food.

Thoroughly wash the exterior bodywork of the car as described in Chapter A. Any damaged paintwork discovered during this operation should be reported to the Owner.

Apply a good quality cleaner/polish followed by a good quality wax polish.

Finally cover the car with a light cotton or muslin dust sheet.

Throughout the storage period the following procedures should be carried out every two weeks.

1. Check the coolant level in the radiator and top-up if necessary.
2. Ensure that the fluid levels in the engine sump, torque converter transmission, steering pump, final drive unit and the brake and height control reservoirs are to the maximum level marks.

On Corniche cars, also ensure that the fluid level of the power operated hood reservoir is to the maximum level marks.

3. Check the tyre pressures including the spare tyre and adjust if necessary (see Chapter R).

4. Ensure that all controls, instruments, warning panels and lamps are operating satisfactorily.

5. Run the car for a minimum of 16 kilometres (10 miles) to ensure complete lubrication of internal components.

6. Allow the car to cool, then wash the exterior bodywork.

When the car has thoroughly dried, cover it with a light cotton or muslin dust sheet.

7. Every six months, remove, clean and fully charge the battery. If necessary top-up with distilled water.

If it is not possible to carry out the recommended storage procedure, the following storage procedures may be adopted though they will not provide the same degree of protection.

Storage periods between one and three months

1. Remove, clean and fully charge the battery. If necessary top-up with distilled water.
2. Check the coolant level in the radiator and top-up if necessary.
3. Ensure that the fluid levels in the engine sump, torque converter transmission, steering pump, final drive unit and the brake and height control reservoirs are to the maximum level marks.

On Corniche cars, also ensure that the fluid level of the power operated hood reservoir is to the maximum level marks.

4. Wash the exterior bodywork of the car. Any damaged paintwork discovered during this operation should be reported to the Owner.

5. Apply a good quality cleaner/polish followed by a good quality wax polish.

6. Increase the tyre pressures. Other than Bentley Turbo R 2.8 bar (40 lbf/in²). Bentley Turbo R 3.5 bar (50 lbf/in²).

7. Cover the car with a light cotton or muslin dust sheet. Ensure that the tyres are covered if there is a possibility of sunlight penetrating into the storage area.

Storage periods between three and six months

1. Drive the car for approximately 16 kilometres (10 miles) to ensure complete lubrication of internal components.
2. Check the coolant level in the radiator and top-up if necessary. Do not leave the cooling system dry.
3. Remove the sparking plugs and inject two tablespoons of a corrosion preventive oil into each cylinder. Suitable oils are BP Energol Protective Oil 20 and Castrol Storage Oil 20. Using the starter motor,

Shipping precautions

Introduction

When transporting a Rolls-Royce or Bentley motor car overseas, always contact a reputable shipping agent to obtain the correct advice and service. The following points should be brought to the notice of the shipping agent.

Precautions

1. *On cars other than those conforming to a Japanese or North American specification*, drain or siphon the fuel from the tank and run the engine until the fuel system is empty.
2. *On cars conforming to a Japanese or North American specification*, damage to the catalytic converter in the exhaust system could occur if the engine is allowed to run until the fuel system is completely empty. Therefore, drain the fuel from the system but do not run the engine.
3. It is of the utmost importance that service personnel should fully appreciate that the hydraulic systems of the car operate at high pressures and that personnel are fully conversant with the precautions which must be taken to ensure correct operation of the systems. Special attention should therefore be given to the sections on Special Precautions in Chapters A and G.
4. Ensure that the battery is disconnected and the terminals taped up.
5. Cover the radiator, bumpers and all outer chromed parts with masking tape.
6. When the car is shipped in a container, place a bag of silica-gel adjacent to each wheel trim and one inside the engine compartment.