Data

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 electronic actuators controlled by signals from a micro-processor board. The micro-processor board is fed with air temperature information from certain parts of the car and, acting on this information drives the actuators 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.

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

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

The override/recirculation switch marked SCREEN-FACIA and RECIRC can be used to divert the flow of air from the windscreen to the facia outlets and vice versa, or to obtain in-car air recirculation.

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

Automatic height control system

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 levelling 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 system are fitted to the end of the gear range selector lever. The actuator is mounted on the engine.

Any cruising speed from 48 km/h (30 mile/h) up to speeds in excess of 161 km/h (100 mile/h) may be selected to give satisfactory operation of the system.

Warning Always ensure that the legal maximum speed limits are not exceeded.

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.

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.

The system comprises two independent power hydraulic circuits.

On cars incorporating anti-lock braking features (ABS), one hydraulic circuit operates two twin-piston caliper assemblies on each front wheel. The other circuit operates a four-piston caliper assembly on each rear wheel.

On cars not incorporating anti-lock braking features, each hydraulic circuit operates a twin-piston caliper assembly on each front wheel and a pair of pistons, housed in a four-piston caliper assembly, on each rear wheel.

All cars

A pad wear sensor, linked with a warning panel on the facia, is fitted into the inboard brake pad on each leading front brake caliper assembly.

Braking units

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

Parking brake

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

Electrical system

Battery

The battery is situated in a well below the floor of the luggage compartment. To gain access to the battery, turn back the carpet at the right-hand side of the luggage compartment and lift off the battery cover panel.

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, or two headlamps and two fog lamps are fitted dependent upon the car and country specification. The headlamps contain either sealed beam

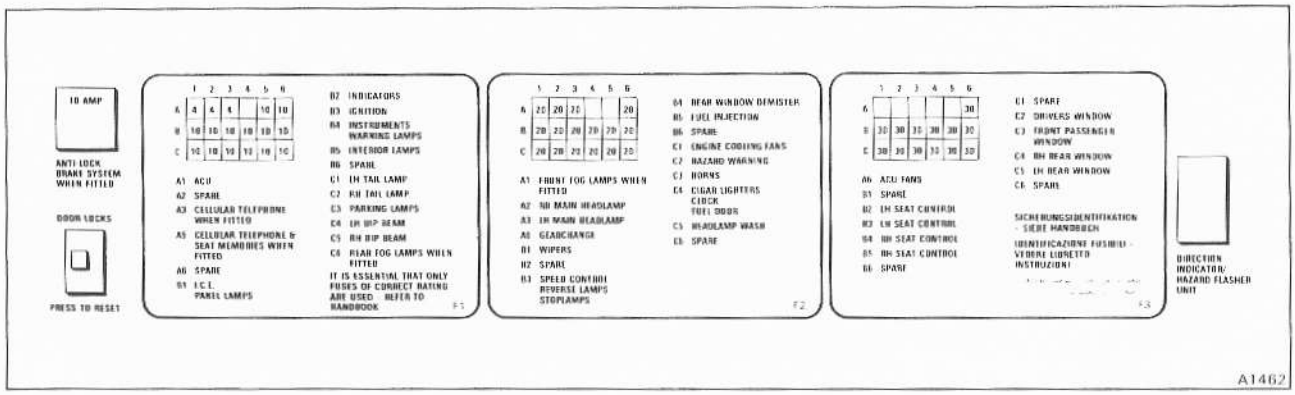

Fig. A5-1 Typical fuseboard identification plate

units or bulbs dependent upon the car's specification. The two inner headlamps provide long range illumination. The two outer headlamps may be dual purpose or single, dependent upon the car's specification. The dual purpose headlamps provide both long range illumination and short range 'flood' illumination. When switched to main beam all headlamps are illuminated.

On cars conforming to a United Kingdom specification, the two dual purpose outer lamps also operate at a reduced intensity when switched to the PARK position, with the ignition key in the RUN position.

1989 model year cars

All Bentley cars have twin round headlamps. The only exception being *four door cars conforming to a Japanese or USA specification,* which have separately switched fog lamps in the inner positions.

On cars conforming to a Canadian specification, the two dual purpose outer lamps also operate at a reduced intensity, with the ignition key in the RUN position.

All cars

A warning lamp situated on the facia 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

Four door cars

Interior roof lamps, footwell illumination lamps, and step illumination lamps are fitted. These lamps illuminate whenever a door is opened. Certain interior lamps will also illuminate when the main lighting switch is withdrawn, or the map/mirror switch and rear companion switches are operated. Also, the vanity mirror (if fitted) in the passenger's sun visor has a small illumination lamp (except Bentley Eight; *cars other than those conforming to a North American specification).* This lamp is operated from a dual function switch alongside the facia stowage compartment. However, if the lamp is left switched on and the sun visor is raised, the lamp will extinguish.

Corniche/Continental

Interior roof lamps and footwell illumination lamps are fitted. These lamps illuminate whenever a door is opened. The roof lamps and rear footwell lamps can also be illuminated by withdrawing the main lighting switch, or by operating either of the two rear switches situated on each rear arm rest. When a rear switch is operated, only the lamps on the same side of the car as the switch will be illuminated.

Fuseboard

The fuseboard is situated in the lower facia below the stowage compartment. Access is gained by pressing a button situated in the outer edge of the facia panel.

The fuseboard identification plate is visible when the cover is lowered (see fig. A5-1).

Windscreen washers reservoir

The windscreen washers reservoir is located in the engine compartment on the right-hand valance, adjacent to the front road spring pot.

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

Headlamps power wash reservoir

Four door cars – Prior to 1989 model year

The headlamps 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 facia will illuminate whenever the washer switch is depressed with the ignition switched on.

Note If the warning panel marked WASHER FLUID is illuminated, the level may be low in **either** the windscreen or headlamps washer bottles.

Windscreen/headlamps power wash reservoir

Four door cars – 1989 model year

The windscreen/headlamps power wash reservoir is situated under the left-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 on the facia will illuminate whenever the washer switch is depressed with the ignition switched on.

Headlamps power wash
Four door cars
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.
1989 model year Bentley cars, two twin jet modules in the bumper; one mounted centrally to each pair of headlamp units.

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
Operation of the wipers is controlled by a switch on the facia marked . The switch has two clockwise positions and four anti-clockwise positions. The first clockwise position provides wiping at the normal speed, the second position increases the speed.

However, turning the switch anti-clockwise provides four intermittent operations at pre-set intervals of approximately 4, 7, 14, and 21 seconds. The time intervals increase as the switch is rotated anti-clockwise.

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

A viscous drive coupling is fitted in conjunction with the fan attached to the coolant pump pulley, to reduce fan noise at high speeds.

Twin electrically operated booster fans are mounted behind the radiator grille. Both fans are switched from either engine coolant temperature, or from refrigerant pressure.

Cooling system corrosion and freeze protection
ICI 007/400F Coolant/Anti-freeze.

A 50% mixture with water gives frost protection down to a temperature of –37°C (–35°F). This 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 a 50% concentration with a refractometer (see Chapter L). However, if a refractometer is not available and a hydrometer has to be used, a scale reading of between 1.060 and 1.070 should be obtained, with the coolant at room temperature for the mixture to be correct.

Front and rear hubs

The front hubs are mounted onto the yoke stub axle. The rear hubs are mounted on hollow stub axles and are connected to the final drive unit by constant velocity joints 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-take, 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.

Suspension

The compliant front suspension is an independent coil spring arrangement with double acting hydraulic shock dampers, anti-roll stabilizer 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

The following information is applicable to Rolls-Royce cars conforming to an Australian, European, Middle East, or United Kingdom specification.

The '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, mirrors, air dams, bumpers, and wheel trims.

Finally, using clean water 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 remove dirt, mud, or dust when dry or with a dry cloth. This practise can produce serious scratching of the surface finish.

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.

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 Motor Cars 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 occured, 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.

On four door cars, fluid from the jets should impinge onto the windscreen approximately 419 mm (16.5 in) from the centre line of the windscreen and 190 mm (7.5 in) below the windscreen top finisher.

On Corniche/Continental cars, 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.

Windscreen wiper blade replacement
When the windscreen wiper blades are worn, causing unsatisfactory cleaning of the windscreen, they should be replaced.
Four door cars

To renew the wiper blade fitted to the passenger's side of the windscreen, lift the wiper arm away from the windscreen and pivot the blade backwards through 90°. Press the small release tag, situated on the underside of the blade pivot block and push the blade out of the crooked end on the wiper arm. Withdraw the wiper blade from the arm. Fit the new blade by reversing the removal procedure.

To renew the wiper blade on the driver's side of the windscreen, lift the wiper arm away from the windscreen. Press the top half of the blade forward until the blade is released from its location clip on the wiper arm. To fit the new blade position it on the wiper arm and press it firmly into the location clip.
Corniche/Continental

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

Note Care must be taken during these operations. Ensure that the wiper arm is not allowed to spring back on to the windscreen when the blade has been removed or damage to the windscreen could occur.

Radio aerial
To ensure the best reception, the aerial should be kept clean and periodically lubricated with a non-abrasive electrical contact cleaner.

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.

Lambswool rugs
To clean the rugs remove them from the car, then shake and beat them to release any dust and grit. Comb the wool with a suitable wire comb or coarse bristle brush to free the wool fibres.

If a rug is wet, allow it to dry at room temperature. Never expose the rug to direct heat or dry it on a radiator or towel rail.

To remove slight stains or congealed dirt use a mild carpet shampoo solution.

Immerse a clean cloth into the solution, then lightly wring out. Clean an area of approximately 0,1 m^2 (1 ft^2), 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 rug to dry then comb the rug to free the wool fibres.

If the rugs become heavily soiled or stained they should be sent to a specialist sheepskin cleaner.

Never send the rugs to a laundry or drycleaner.

Never use an aqueous washing process.

Always ensure that the cleaning specialist is aware that the inner felt of the rugs **must** be removed prior to the cleaning process being carried out.

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, used in accordance with the manufacturer's instructions, will preserve the upholstery.

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 manufacturer'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.

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Special procedures

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. A7-1)

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 A7-2 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 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 ¼ and ½ a pitch below the surface of the work face.
9. Fit the special tang break off tool (punch) into the insert as shown in figure A7-3.
10. Allow the innerpiece of the punch to slide downward to locate onto the tang.
11. Apply a sharp tap to the end of the punch so that the tang breaks off at the notch.

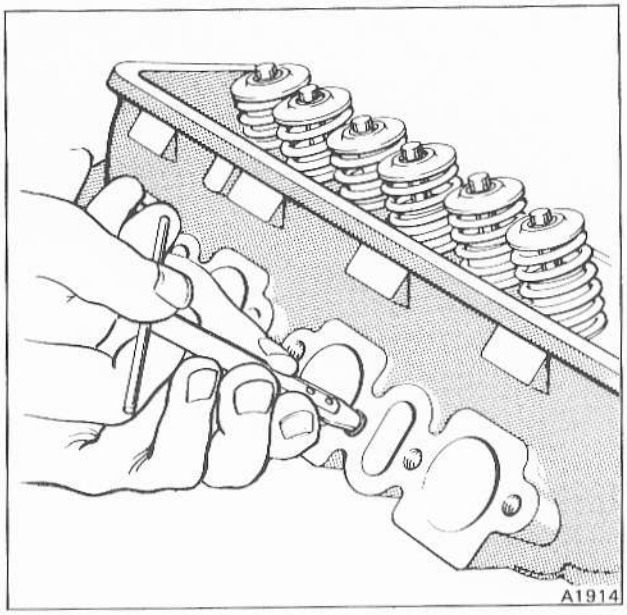

Fig. A7-1 Heli-coil extraction tool

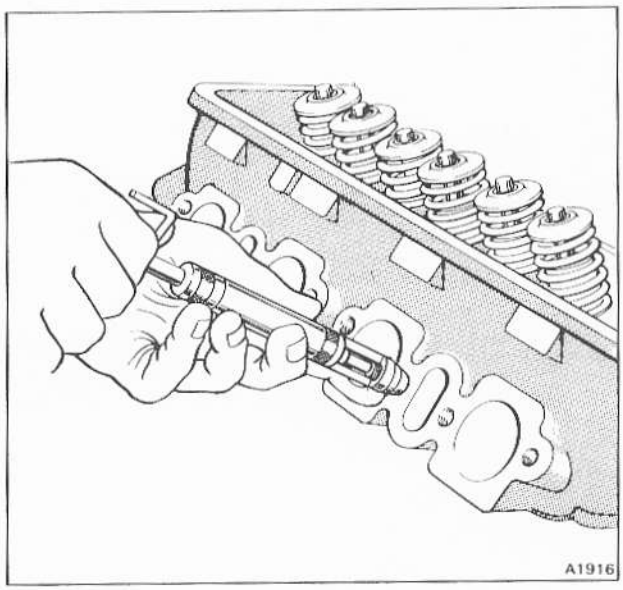

Fig. A7-2 Heli-coil insertion tool

12. Ensure that the tang does not fall into any part of the engine, etc., where it could cause damage.

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.

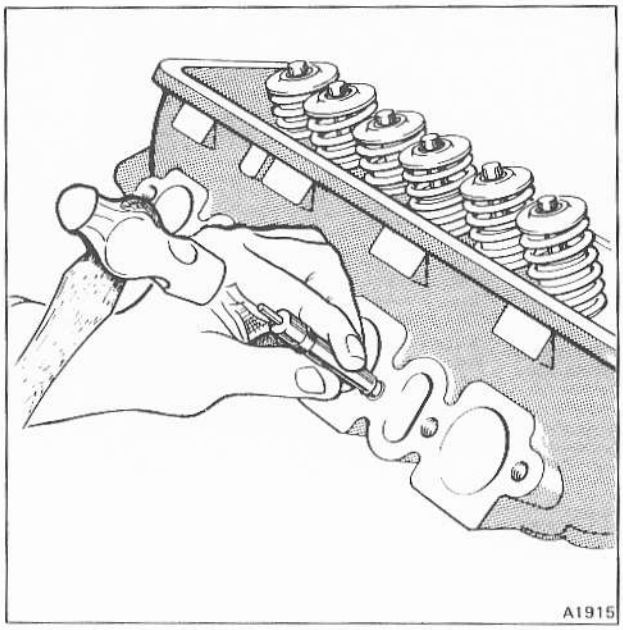

Fig. A7-3 Heli-coil tang 'break-off' tool

Method 1
Switch on the ignition and pump the brake pedal 50 to 60 times until the resistance felt at the pedal reduces indicating that the systems are depressurized. The facia warning panels should be illuminated. Switch off the ignition.

To depressurize the rear suspension struts, attach a bleed tube to the struts bleed screw. Open the bleed screw and allow the hydraulic system mineral oil to bleed into a clean container until the flow ceases.

Method 2
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 facia warning panels 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 fuse A6 from fuse panel F2 on the main 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. A8-1, item 1).

Alternatively, jack up the car using one of the two front jacking points situated on the car underbody (see fig. A8-1, 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 fuse

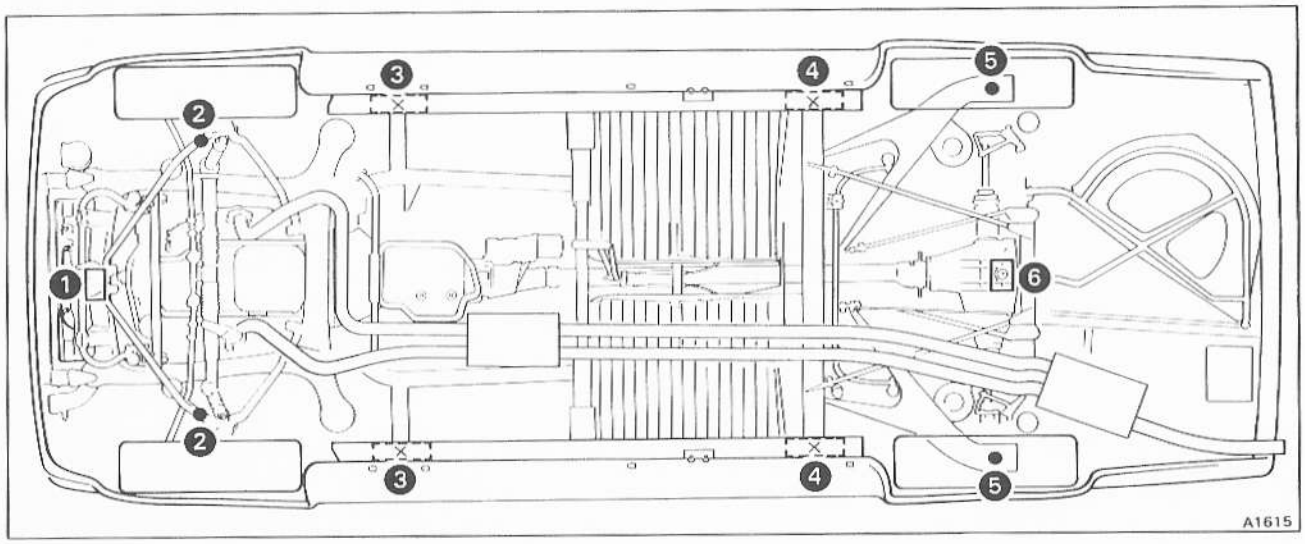

Fig. A8-1 Car jacking positions and support locations
1 Trolley jack position (front)
2 Car stands (front)
3 Car jack and sill block positions (front)
4 Car jack and sill block positions (rear)
5 Car stands (rear)
6 Trolley jack position (rear)

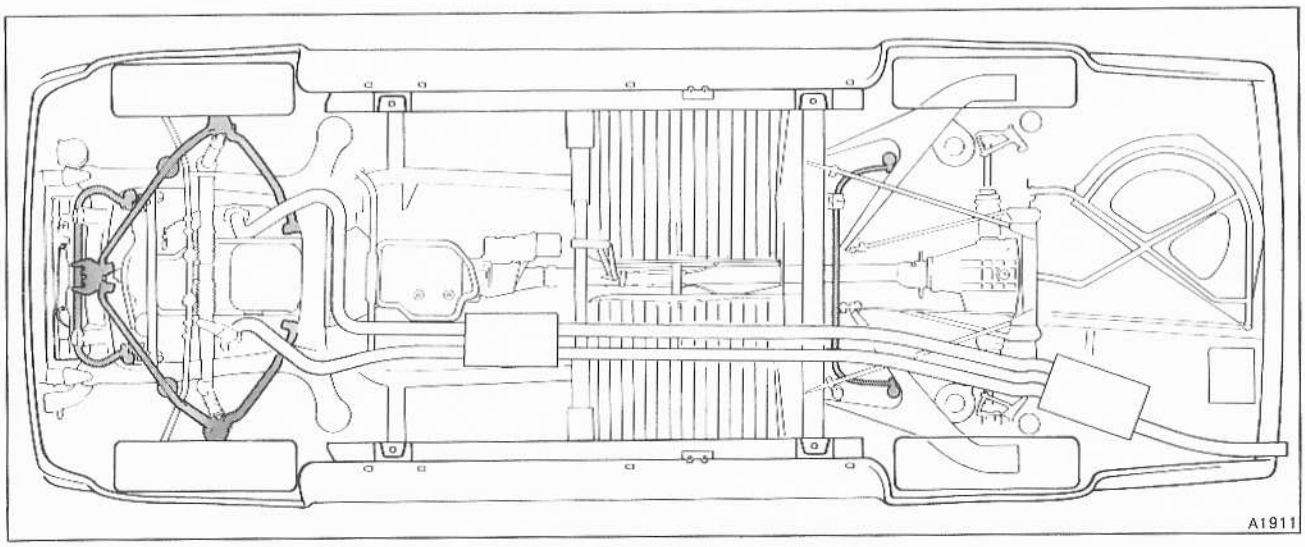

Fig. A8-2 Suitable suspension members for securing when transporting

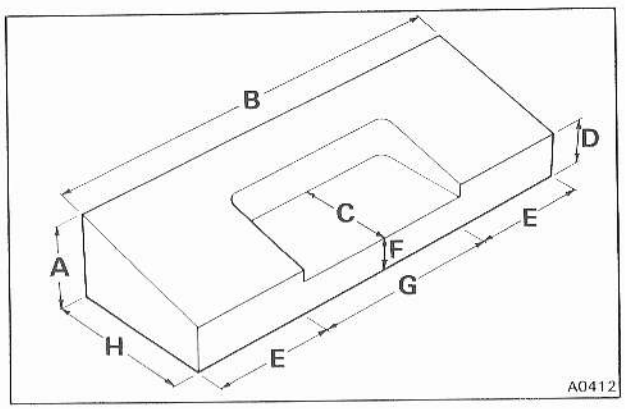

Fig. A8-3 Hardwood sill block

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)

A6 from fuse panel F2 on the main 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. A8-1, item 6), **not on the final drive crossmember.** Ensure a piece of hardwood 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. A8-1, 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 A8-1, 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 A8-1, 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. A8-1, items 3 and 4). Refer to figure A8-3 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 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. A8-2).

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.

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
Degree (Fahrenheit)	°F
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
Newton metre per degree	Nm/deg
Newtons per square metre	Nm^2
Number	No
Ohm	Ω
Ounce (mass)	oz

3/87
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Part number	Part No
Pascal	Pa
Percentage	%
Pints (Imperial)	Imp pt
Pints (US)	US pt
Pound (force)	lbf
Pounds force inch	lbf in
Pound (mass)	lb
Pound feet (torque)	lbf ft
Pound inch (torque)	lbf in
Pounds per square inch	lbf/in^2
Pound (force) inch per degree	lbf in/deg
Ratio	:
Revolutions per second	rev/s
Revolutions per minute	rev/min
Second (time)	s
Second (angle)	"
Society of Automobile Engineers	SAE
Square centimetres	cm^2
Square feet	ft^2
Square inch	in^2
Square metre	m^2
Square millimetre	mm^2
Standard	Std
Standard wire gauge	swg
Thread formations	
British Association	BA
American pipe, taper fuel (dry seal)	NPTF
Unified coarse	UNC
Unified fine	UNF
Metric	M
Top dead centre	tdc
Ton	ton
Tonne	t
Volt	V
Watt	W

Terminology

Allen key
Cranked wrench of hexagonal section for use with socket head screws.

Alternator
Electrical generator producing alternating current. Rectified to direct current for battery charging.

Ambient temperature
Surrounding temperature.

Ampere hours
Refers to battery capacity (current X hours it flows).

Annulus
The outer ring gear of an epicyclic gear train.

'A' post
The forward post of the front door aperture.

Armature
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.

Axial
In line or pertaining to an axis.

Backlash
Play in meshing gears.

Bevel pinion
A conical shaped gearwheel, designed to mesh with a similar gear with an axis usually at 90 deg to its own.

'B' post
The rearward post of the front door aperture.

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 contact the 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.

Bulkhead
Vertical partition dividing the engine compartment and car interior.

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.

Cantrail
Connecting rail between the top of the 'A' post and the top of the 'D' post, viewed from inside the car.

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

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.

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.

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.

Companion frame
Contained within the rear quarter panel, it houses the rear interior lamps switch, etc.

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

'C' post
The forward post of the rear door aperture.

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).

Diaphragm panel
Upright body panel directly behind the front headlamps.

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

'D' post
The rearward post of the rear door aperture.

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.

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.

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.

Heelboard
Vertical body panel connecting the floorpan and the rear seat pan.

Helical
In spiral 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.

Inner wing valance panel
Connecting panel between outer wing panel and longeron.

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.

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.

Longeron
Longitudinal box section; part of the body underframe.

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.

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.

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

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

Rear decking panel
Body panel between the bottom of the rear window aperture and the luggage compartment.

Rear squab panel
Connecting panel between rear seat base and parcel shelf.

Scuttle panel
Detachable body panel between bonnet and windscreen aperture.

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 conecting rod. Sometimes called the 'little-end'.

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

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

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

Toeboard panel
Lower body panel between bulkhead and floor pan.

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

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 (Non anti-lock system)

Low brake pressure, System 2 (Non anti-lock system)


Low brake pressure, System 1 (Anti-lock system)

Low brake pressure, System 2 (Anti-lock system)


Brake pad wear

Brake stop lamp failure


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


Headlamp beam selector and flashing switch

Front and rear position lamps

Rear fog lamps

Front fog lamps

Direction indicators

Horns

Pad wear and stop lamp failure
(Corniche/Continental)

Static sensitive components

Components containing asbestos

Conversions

mm	to	in	×0.0394
in	to	mm	×25.4
m	to	ft	×3.281
ft	to	m	×0.305
m	to	yd	×1.094
yd	to	m	×0.914
km	to	mile	×0.621
mile	to	km	×1.609
mm^2	to	in^2	×0.0015
in^2	to	mm^2	×645.16
cm^2	to	in^2	×0.155
in^2	to	cm^2	×6.452
m^2	to	ft^2	×10.764
ft^2	to	m^2	×0.093
m^2	to	yd^2	×1.196
yd^2	to	m^2	×0.836
cm^3	to	in^3	×0.061
in^3	to	cm^3	×16.387
m^3	to	ft^3	×35.315
ft^3	to	m^3	×0.028
m^3	to	yd^3	×1.308
yd^3	to	m^3	×0.765
g	to	oz (Avoir)	×0.035
oz (Avoir)	to	g	×28.35
ml	to	fl oz	×0.035
fl oz	to	ml	×28.41
kg	to	lb (Avoir)	×2.205
lb (Avoir)	to	kg	×0.454
kg	to	cwt	×0.019
cwt	to	kg	×50.802
tonne	to	ton	×0.984
ton	to	tonne	×1.01604
ton	to	kg	×1016.0
Imp gal	to	US gal	×1.201
US gal	to	Imp gal	×0.833
litre	to	Imp gal	×0.220
Imp gal	to	litre	×4.546
litre	to	US gal	×0.264
US gal	to	litre	×3.785
litre	to	Imp pt	×1.76
Imp pt	to	litre	×0.57
lbf ft	to	Nm	×1.356
Nm	to	lbf ft	×0.7376
lbf	to	N	×4.448
N	to	lbf	×0.225
lbf in	to	Nm	×0.113
Nm	to	lbf in	×8.851
lbf/in^2	to	bar	×0.069
bar	to	lbf/in^2	×14.5
mile/h	to	km/h	×1.609
km/h	to	mile/h	×0.621
litre/100 km	to	mpg	$=\frac{282.473}{\text{litre/100 km}}$
mpg	to	litre/100 km	$=\frac{282.473}{\text{mpg}}$
km/litre	to	mpg	×2.825
mpg	to	km/litre	×0.354
km/litre	to	mile/US gal	×2.352
mile/US gal	to	km/litre	×0.425
kgf m	to	lbf ft	×7.233
lbf ft	to	kgf m	×0.1383
kgf cm	to	lbf in	×0.868
lbf in	to	kgf cm	×1.152
oz in	to	g cm	×0.1116
g cm	to	oz in	×8.960

3/87
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