



Wheels and Tyres

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Issue record sheet

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Wheels

Introduction

This section incorporates the removal and fitting procedure of individual wheels. If it is necessary to raise the complete car, reference must be made to Chapter A.

Rolls-Royce Silver Spirit, Silver Spur, Corniche, and Corniche II cars are fitted with 6JK x 15 heavy gauge pressed steel wheels.

Bentley Eight, Mulsanne, Mulsanne S, and Continental cars are fitted with 6½ J x 15 aluminium alloy wheels.

Bentley Turbo R cars are fitted with 7½ J x 15 aluminium alloy wheels.

The removal and fitting procedure is identical for each type of wheel, noting that on cars fitted with aluminium alloy wheels extra care must be taken to prevent damaging the surface coating of the wheels.

Refer to figure R2-1 for the car jacking positions. The car jack is stowed behind the trim panel situated at the front of the luggage compartment (see fig. R2-2).

Workshop safety

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

Wheel trims – To remove and fit

One-piece wheel trim (see fig. R2-4, insets A and B). To remove a wheel trim proceed as follows using the tommy bar provided in the tool kit.

Place the tommy bar in one of the positions indicated, noting the relationship between the removal

points and the tyre valve. Then, whilst supporting the wheel trim, press the tommy bar towards the tyre. Do not twist the tommy bar as this could damage the wheel trim.

To fit a wheel trim, position it against the wheel ensuring that the tyre valve is aligned centrally with the hole in the trim. Then, strike the trim firmly with the heel of the free hand until it is seated on the wheel.

Two-piece wheel trim (see fig. R2-4, inset C). The outer wheel trim is secured by eight equally spaced clips situated around its circumference. The inner wheel trim is a clip-on fit over three equally spaced protrusions on the road wheel.

To remove an outer wheel trim proceed as follows using the tommy bar provided in the tool kit.

Position the tommy bar as indicated, then press towards the tyre. Repeat this operation at several points around the circumference of the wheel until the trim is released. Do not twist the tommy bar as this could damage the wheel trim.

To remove an inner wheel trim, position the tommy bar as indicated. Then, whilst supporting the wheel trim, press the tommy bar in the direction indicated by the arrow.

To fit an inner or outer trim, position it against the wheel then strike it firmly with the heel of the free hand until it is seated on the wheel.

Lockable wheel trim (see fig. R2-4, inset D). Each road wheel incorporates a locking wheel trim, the lock being concealed by a protective cover. A small tool for removing the cover and a key for the wheel trim lock are contained in a pocket on the inside of the tool stowage compartment trim flap (see fig. R2-2).

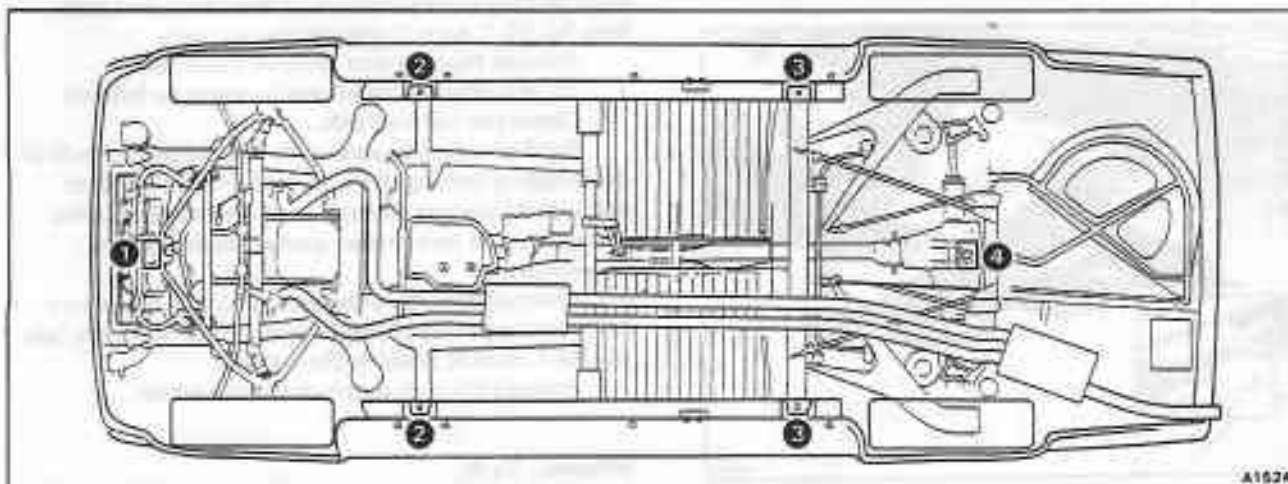


Fig. R2-1 Car jacking positions

- | | |
|--|---|
| 1 Front jacking point using a trolley jack | 3 Rear jacking points using the car jack |
| 2 Front jacking points using the car jack | 4 Rear jacking point using a trolley jack |



Note When removing or fitting a wheel trim, extreme care must be taken to prevent damaging the surface coating of the trim and road wheel.

To remove a wheel trim proceed as follows.

1. Insert the removal tool through the holes in the lock cover, then pull the cover from its location. Note that the cover is retained to the wheel trim by a short strap.

2. Insert the key into the lock and turn it anti-clockwise a quarter of a turn. With the key in this position pull the trim from the wheel.

To fit a wheel trim proceed as follows.

1. Ensure that the rubber seal is correctly located around the circumference of the wheel trim.

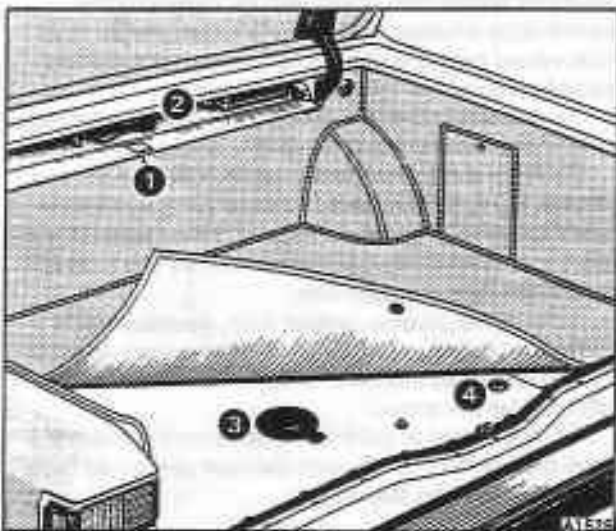


Fig. R2-2 Luggage compartment

- 1 Location of key and wheel trim removal tool
- 2 Tools stowage area
- 3 Rubber plug
- 4 Lowering bolt for spare wheel carrier



Fig. R2-3 Car jack correctly positioned

- A Spigot on the jack head located in the jacking bracket

2. Locate the lower edge of the trim into its retaining channel in the wheel. Align the spigot on the rear of the trim with one of the recesses situated between the wheel nuts. Then, with the key in the unlocked position, firmly press the wheel trim into the centre of the wheel. Do not apply pressure to the head of the key. When the trim is fully inserted turn the key clockwise to the locked position and remove the key.
3. Press the lock cover into position, then return the key and removal tool to their stowage location.

Note The wheel trim locks should be lubricated, in accordance with the recommended service schedules, using BP Keenomax L3 lubricant. Ideally 2 ml of lubricant should be injected into each lock.

Alternatively the lubricant may be applied to the key and the key inserted into the lock several times. Lubricant should also be lightly applied to the rear of the lock and the latch.

Wheels – To remove

1. Position the car on a level surface and place the gear range selector lever in the park position.
2. Remove fuse A6 from fuse panel F2 on the main fuseboard.
3. Apply the parking brake.
4. Remove the wheel trim (see Wheel trims – To remove and fit).
5. Prior to raising the car, slacken the wheel nuts approximately half a turn.

Note Each wheel nut is marked with an arrow indicating the direction of its removal. Nuts on left-hand wheels have left-hand threads. Nuts on right-hand wheels have right-hand threads.

6. To raise the front of the car proceed as follows.
Chock the rear wheels.
Position a trolley jack under the front pivot mounting for the lower triangle levers on the sub-frame (see fig. R2-1, item 1). Place a piece of soft wood between the jack head and the mounting.

Alternatively, raise the car using one of the two front jacking points situated on the car underbody (see fig. R2-1, item 2) utilizing the car jack.

Release the nuts and remove the wheel.

7. To raise the rear of the car proceed as follows.
Chock the front wheels.

Position a trolley jack under the centre of the final drive casing (see fig. R2-1, item 4). Place a piece of soft wood between the jack head and the final drive casing. **Do not jack the car under the final drive crossmember.**

Alternatively, raise the car using one of the two rear jacking points situated on the car underbody (see fig. R2-1, item 3) utilizing the car jack.

Release the nuts and remove the wheel.

Wheels – To fit

Reverse the procedure given for removal noting the following.

1. Ensure that the spherical seatings of the nuts and wheel are not damaged.



One-piece wheel trim

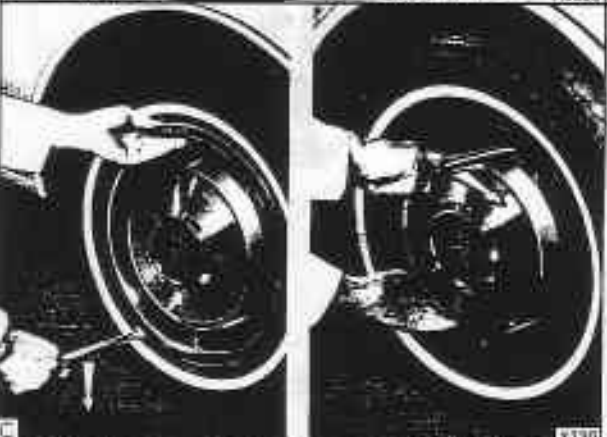
Prior to 1989 model year
Rolls-Royce Silver Spirit
Bentley Eight

1989 model year
Rolls-Royce Silver Spirit



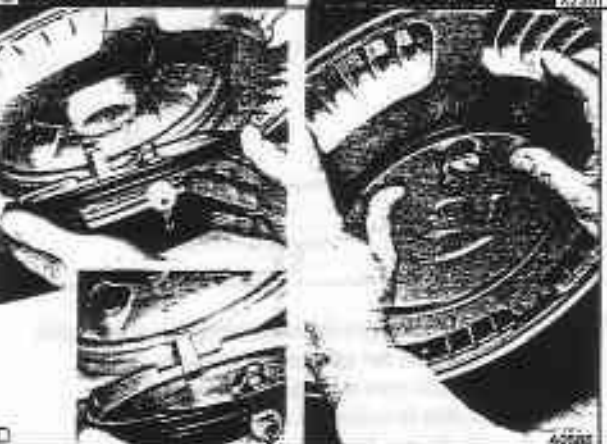
One-piece wheel trim

Rolls-Royce Silver Spur
Rolls-Royce Corniche II



Two-piece wheel trim

Rolls-Royce Corniche



Lockable wheel trim

Prior to 1989 model year
Bentley Mulsanne
Bentley Mulsanne S
Bentley Continental
Bentley Turbo R

1989 model year
Bentley Eight
Bentley Mulsanne S
Bentley Continental
Bentley Turbo R

Fig. R2-4 Wheel trim removal



2. Prior to fitting, lightly grease the spherical seats of the wheel nuts.
3. Fit the wheel and torque tighten the wheel nuts to between 61 Nm and 68 Nm (6 kgf m and 7 kgf m; 45 lbf ft and 50 lbf ft).

Failure to observe the torque figures can damage the spherical seating faces and cause difficulty in removing and fitting the wheel nuts.

Wheel and tyre balance

Wheels can be balanced using either a vertical or horizontal type of balancing machine.

The Dunlop adapter plate AP30 is designed for use in conjunction with the Dunlop balancing machine WBM20.

Balancing machines are also obtainable from Hofmann Balancing Techniques Limited, Carl Schenck

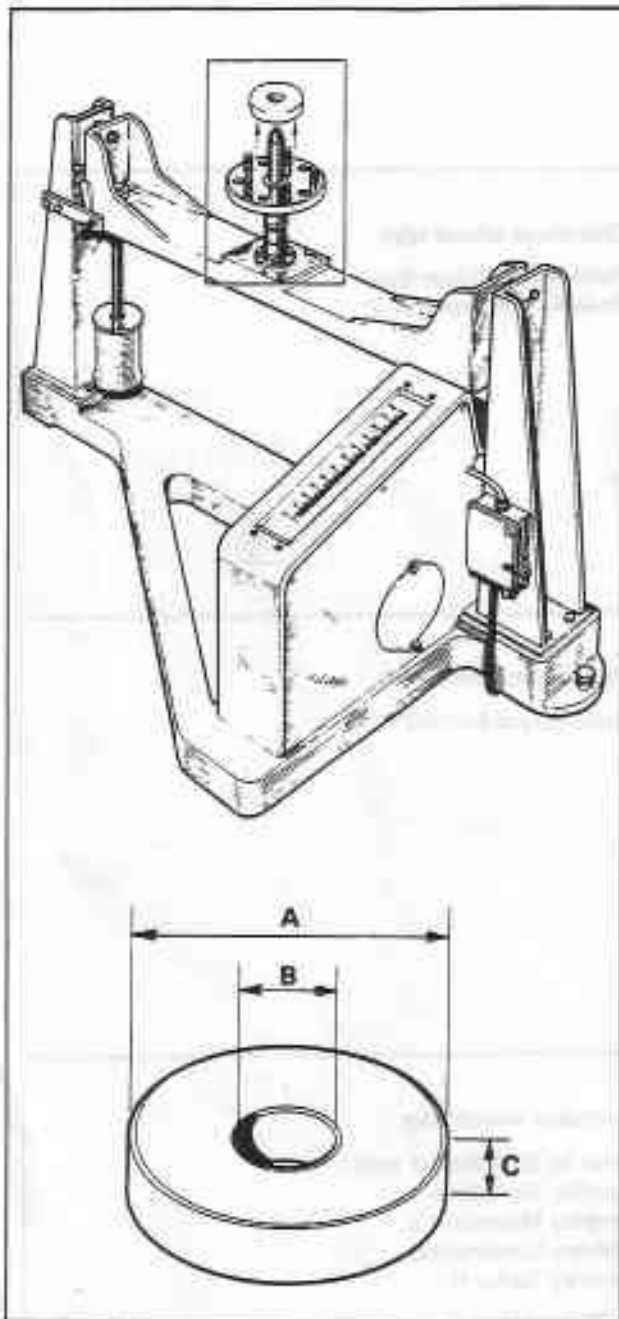


Fig. R2-5 Horizontal type of balancing machine with adapter for spigotted wheels

- A 117,50 mm minus 0,05 mm (4.626 in minus 0.002 in)
- B Bore to give 0,05 mm to 0,076 mm (0.002 in to 0.003 in) clearance on spindle
- C 25,40 mm (1.0 in)

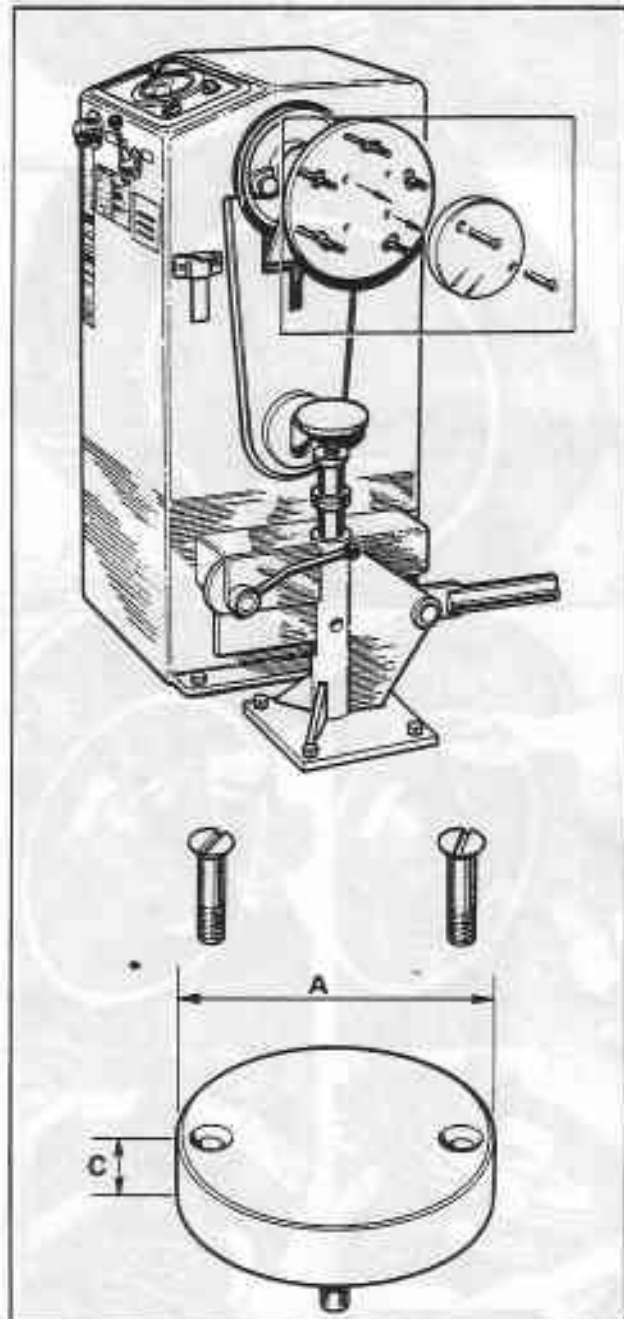


Fig. R2-6 Vertical type of balancing machine with adapter for spigotted wheels

- A 117,50 mm minus 0,05 mm (4.626 in minus 0.002 in)
- C 25,40 mm (1.0 in)

(UK) Limited and Leycock Engineering Limited.

If the specified balancing equipment is not available, reference should be made to figures R2-5 and R2-6. These illustrations show two types of small adapter collars which convert existing wheel balancing equipment for use on spigotted road wheels.

When fitting the adapter collar, it must be accurately centralized on the adapter plate.

The manufacturer's instructions must be observed when using the balancing equipment, and the following points noted.

1. Before balancing, ensure that the tyres are inflated to the correct cold inflation pressure (see Section R4).
2. When checking wheel balance on the car, it is essential that, after stopping the car the weight of the car is removed from the tyres as soon as possible. This prevents temporary 'flats' from forming on the tyres. No attempt should be made to balance wheels on which 'flats' have formed, as the static balance may be affected by as much as 720 g cm (10 oz in).
3. The static and dynamic balance of the wheels should be within 216 g cm and 360 g cm (3 oz in and 5 oz in) respectively.

4. Balance weights should be removed and fitted with a special tool supplied by the manufacturer of the wheel balancing machine. When fitting the weights to the rim, only sufficient force should be used to secure them; excessive force will only tend to slacken them.

Note On cars fitted with aluminium alloy road wheels, coated balance weights matching the surface finish of the wheels must be fitted. Extreme care must be taken when removing and fitting the balance weights to prevent damaging the surface coating of the wheel.

5. If an 'on-the-car' wheel balancing machine is available, it should be used to check the balance of the front wheels after they are fitted to the car. This type of balancing machine enables any small amount of run-out which exists in the tyre, wheel, hub, and brake disc to be removed.

Spare wheel – To remove (see fig. R2-8)

1. Remove the rubber access plug situated underneath the luggage compartment floor carpet (see fig. R2-2).
2. To release the spare wheel retainer (if fitted) proceed as follows.

On cars fitted with pressed steel wheels, turn the retainer locking arm to its horizontal position (see fig. R2-7, inset A). Then, press the retainer arm to its fully down position.

On cars fitted with aluminium alloy wheels, pull the retainer locking arm fully rearward (see fig. R2-7, inset B).

3. Using the wheel nut spanner and bar provided in the tool kit, turn the carrier lowering bolt (see fig. R2-2) anti-clockwise until further rotation is prevented.
4. If fitted, raise the hinged spare wheel access panel.
5. If a spare wheel carrier lifting tube is fitted (see fig. R2-8, item 1) proceed as follows.

Remove the protective cover from the lifting tube

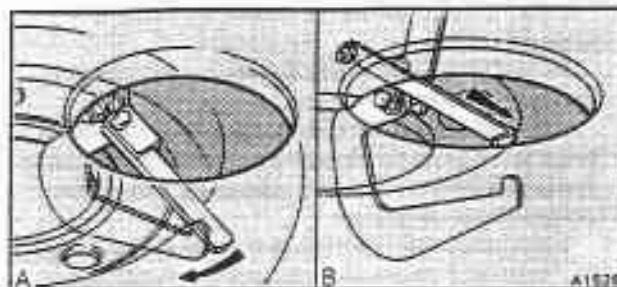


Fig. R2-7 Spare wheel retainers

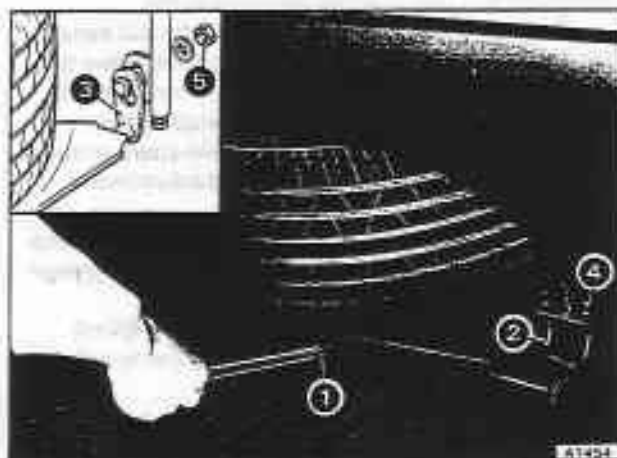


Fig. R2-8 Lowering the spare wheel and carrier adjustment

and insert the wheel nut spanner bar.

Lift the rear of the carrier sufficiently to either clear the support hook (item 2) or to allow the lowering tube to be disengaged from the slotted carrier support bracket (item 3).

Pivot the lowering tube assembly clear. Then, lower the rear of the carrier to the ground and remove the bar.

6. Slide the spare wheel from the carrier.

Spare wheel – To fit (see fig. R2-8)

Reverse the procedure given for removal noting the following.

1. When the carrier is fully raised, check that the spare wheel is securely clamped against the underside of the luggage compartment floor. If the wheel is not securely held, adjust the position of the carrier as follows.

Carriers fitted with a lifting tube.

Lower the carrier slightly by loosening the operating bolt two or three complete turns.

On carriers fitted with a support hook (item 2) proceed as follows.

Support the carrier. Then, raise the support hook by turning each adjusting nut (item 4) clockwise one or two complete turns.

Raise the carrier and check that the spare wheel is



securely held. If necessary repeat the adjustment operation.

On carriers fitted with a slotted support bracket (item 3) proceed as follows.

Support the carrier. Then, loosen the support bolt securing nut (item 5). Move the carrier support bolt to a higher position within the adjustment slot. Then, tighten the securing nut.

Raise the carrier and check that the spare wheel is securely held. If necessary repeat the adjustment operation.

Carriers not fitted with a lifting tube.

Lower the carrier slightly by loosening the operating bolt two or three complete turns.

Support the carrier. Then, loosen the nut securing the rear of the carrier to the lowering tube. Move the carrier securing bolt to a higher position within the adjustment slot. Then, tighten the securing nut.

Raise the carrier and check that the spare wheel is securely held. If necessary repeat the adjustment operation.

2. Check that the spare wheel is positioned with the tyre valve aligned with the access hole in the luggage compartment floor.

3. Ensure that the spare wheel retainer (if fitted) passes through the centre of the wheel and is locked into position.

Tyres – General information

Introduction

Under no circumstances should tyres other than those approved in this Workshop Manual or in subsequent Product Support Information Sheets be fitted to the car, as this could have undesirable effects on the handling and stability of the car.

When new tyres have been fitted, speeds of 80 km/h (50 mile/h) should not be exceeded during the first 80 km (50 miles). For a further 724 km (450 miles) sustained speeds of 112 km/h (70 mile/h) or over must not be undertaken. Fast cornering, hard braking, and harsh acceleration must also be avoided. On completion of 800 km (500 miles), wheel and tyre balance should be checked and adjusted if necessary (see Section R2). In view of the high road speeds attainable, it is recommended that wheel balancing is carried out at regular intervals.

Tyre characteristics

On Bentley Turbo R cars fitted with Pirelli tyres, high speed driving followed by a prolonged period of parking, may result in a 'flat' forming on the tyres as they cool. This condition is not permanent, but is dependent upon the temperature that the tyres have attained during driving and the length of time the car is parked.

Upon commencement of driving it may take several miles for the temperature of the tyres to rise sufficiently for the 'flats' to disappear. While these flats are present, some harshness and vibration may be felt in the motor car.

Another characteristic of these tyres, is that they are sensitive to ridges and raised lines on the road surface which may result in steering pull. This is not abnormal and may increase slightly as the tyres become worn.

Tyre mixing

Where possible tyres should be fitted in complete sets e.g. five new 235/70 HR15 (HR70 HR15) steel braced tyres of the same make.

The mixing of different makes of tyres is not recommended. However, if the tyres are mixed, the new tyres must be fitted in pairs across the car, preferably at the rear.

New tyres should not be fitted to the front wheels in combination with rear tyres that have less than 3 mm (0.12 in) of tread remaining as rear end car stability could be affected.

Tyre – To remove

Cars fitted with pressed steel wheels.

1. Remove the dustcap and deflate the tyre by removing the valve core.
2. Using a suitable tyre removal/fitting machine, unseat each tyre bead in turn.

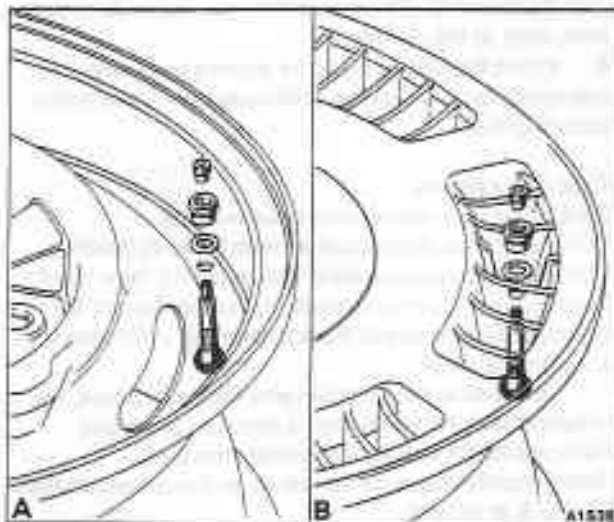


Fig. R3-1 Clamp-in tyre valves

3. Lubricate the wheel rim and tyre bead area on both sides of the wheel using bead lubricant Dunlop TBL 1, TBL 2, or Tip Top 593063 mounting paste.
4. Clamp the wheel in position with the inner rim uppermost. Then, roll off each tyre bead in turn and remove the tyre.

Tyre – To fit

Cars fitted with pressed steel wheels.

1. Inspect the wheel, removing any burrs, high spots, or scale, paying particular attention to the tyre bead seating areas.
2. Always fit a new clamp-in valve assembly.
3. Insert the valve into the hole in the wheel rim, then fit the valve securing nut and washer (see fig. R3-1). When fitting a new valve, do not use tyre bead lubricant or grease of any kind. Using a 14 mm ($\frac{9}{16}$ A/F) long reach socket, torque tighten the nut to between 2,9 Nm and 3,3 Nm (29,9 kgf cm and 33,4 kgf cm; 26 lbf in and 29 lbf in). Do not overtighten.
4. Lubricate the tyre beads, and the rim seat areas of the wheel using bead lubricant Dunlop TBL 1, TBL 2, or Tip Top 593063 mounting paste.
5. Fit the tyre to the wheel, ensuring that the force variation mark, indicated by a green paint spot on the sidewall, is aligned with the letter 'H' stamped on the wheel rim (see fig. R3-2).

Note Certain tyres are marked with a white paint spot. These tyres should be positioned with the white spot diametrically opposite the letter 'H' stamped on the wheel rim (see fig. R3-2). Any additional colour spot markings should be ignored as they are merely used by tyre manufacturers for inspection purposes.



6. To seat the tyre beads, inflate the tyre to a **maximum** of 2,1 bar (30 lbf/in²). If the tyre beads do not seat correctly, completely deflate the tyre and re-lubricate the tyre beads and rim seat areas of the wheel. Then, re-inflate the tyre.

7. Adjust the tyre to its correct running pressure (see Section R4). Check that the valve core does not leak, then fit the dustcap.

8. When the tyre is set to its correct pressure, it is advisable to re-check the tightness of the tyre valve securing nut.

Tyre – To remove

Cars fitted with aluminium alloy wheels.

The aluminium alloy road wheels fitted to Bentley Turbo R cars incorporate a 'safety hump' tyre bead location rim. The purpose of the 'safety hump' is to prevent the tyre beads from unseating in the event of sudden deflation.

To assist in the removal and fitting of a tyre, the height of the 'safety hump' is reduced at a point adjacent to the valve on the outer rim and diametrically opposite the valve on the inner rim (see fig. R3-3, arrowed).

When removing or fitting a tyre extreme care must be taken to prevent damaging the surface coating of the wheel.

To remove a tyre proceed as follows.

1. Remove the dustcap and deflate the tyre by removing the valve core.
2. Using a suitable tyre removal/fitting machine, (e.g. Corghi Artiglio Automatico or Repco model F68), unseat the outer bead of the tyre at a point adjacent to

the valve. Then, progressively unseat the remainder of the bead circumference. Similarly, unseat the inner bead commencing at a point diametrically opposite the valve.

3. Lubricate the wheel rim and tyre bead area on both sides of the wheel using bead lubricant Dunlop TBL 1, TBL 2, or Tip Top 593063 mounting paste.

4. Clamp the wheel in position with the outer rim uppermost. Then, commencing at a point adjacent to the valve, roll off the outer bead. Similarly, roll off the inner bead and remove the tyre commencing at a point diametrically opposite the valve. Care must be taken to prevent damaging the tyre beads and the surface coating of the wheel. **Do not use tyre levers.**

Tyre – To fit

Cars fitted with aluminium alloy wheels.

1. Always fit a new clamp-in valve assembly.
2. Insert the valve into the rim, then fit the valve securing nut and washer (see fig. R3-1). When fitting a new valve, **do not** use tyre bead lubricant or grease of any kind. Using a 14 mm (9/16 A/F) long reach socket, torque tighten the nut to between 2,9 Nm and 3,3 Nm (29,9 kgf cm and 33,4 kgf cm; 26 lbf in and 29 lbf in). **Do not overtighten.**

3. Lubricate the tyre beads, and the rim seat areas of the wheel using bead lubricant Dunlop TBL 1, TBL 2, or Tip Top 593063 mounting paste.

4. Clamp the wheel to the tyre fitting machine with the outer rim uppermost.

5. Position the tyre on the wheel ensuring that the force variation mark on the tyre, indicated by a green spot on the sidewall, is adjacent to the valve. Then,

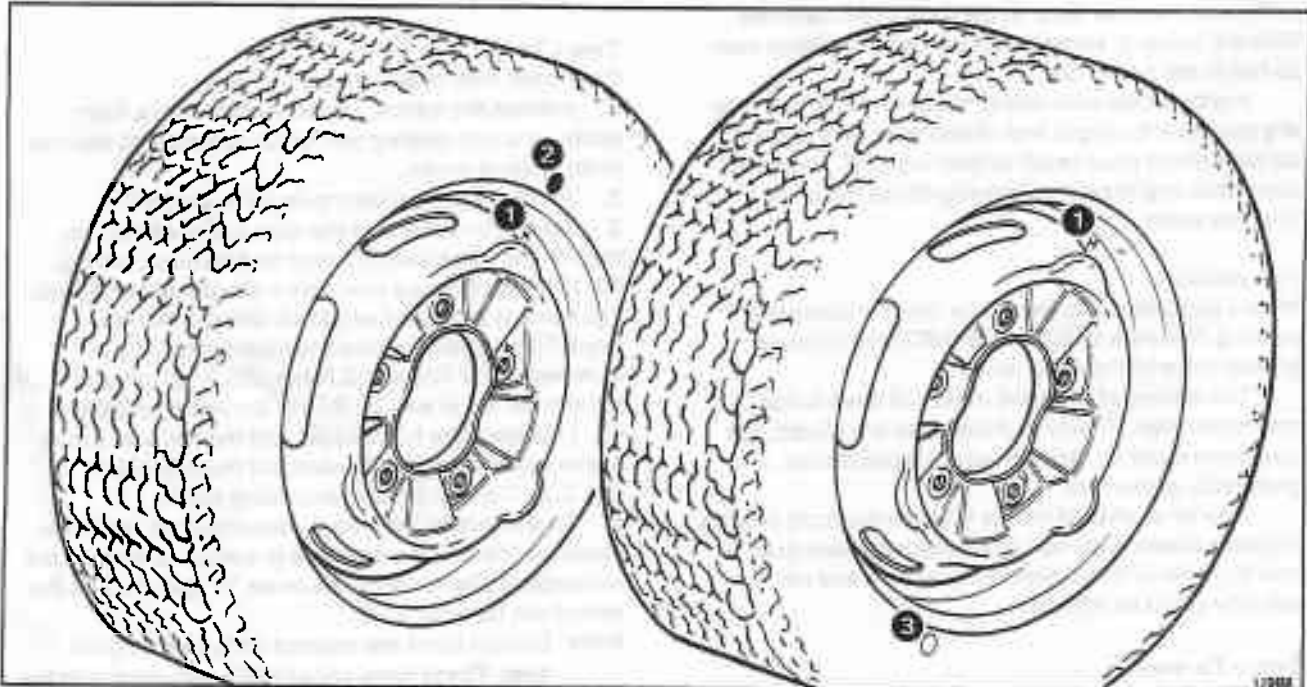


Fig. R3-2 Wheel and tyre alignment markings

- 1 'H' marking
- 2 Green spot marking
- 3 White spot marking

carefully roll each tyre bead in turn over the outer rim of the wheel taking care not to damage the tyre beads or the protective coating of the wheel. **Do not use tyre levers.**

6. To seat the tyre beads, inflate the tyre to a **maximum** of 2,75 bar (40 lbf/in²). If the tyre beads do not seat correctly, completely deflate the tyre and re-lubricate the tyre beads and rim seat areas of the wheel. Then, re-inflate the tyre.

7. Adjust the tyre to its correct running pressure (see Section R4). Check that the valve core does not leak, then fit the dustcap.

8. When the tyre is set to its correct pressure, it is advisable to re-check the tightness of the tyre valve securing nut.

Note On Bentley Turbo R cars, Avon Turbospeed 255/65 tyres are fitted as standard. If they are replaced by tyres of a different size specification (e.g. Pirelli P7 275/55) it will be necessary to fit a new speedometer drive. Refer to Chapter T.

Tyre service

It is recommended that, to increase the life of any of the steel braced radial ply tyres approved by Rolls-Royce Motors, the positions of the tyres should be alternated front to rear on the same side of the car at 10 000 km (6000 miles). Do not change the tyres from one side of the car to the other.

If a tyre has been damaged or punctured, contact a tyre specialist. **Never attempt to carry out a temporary repair.**

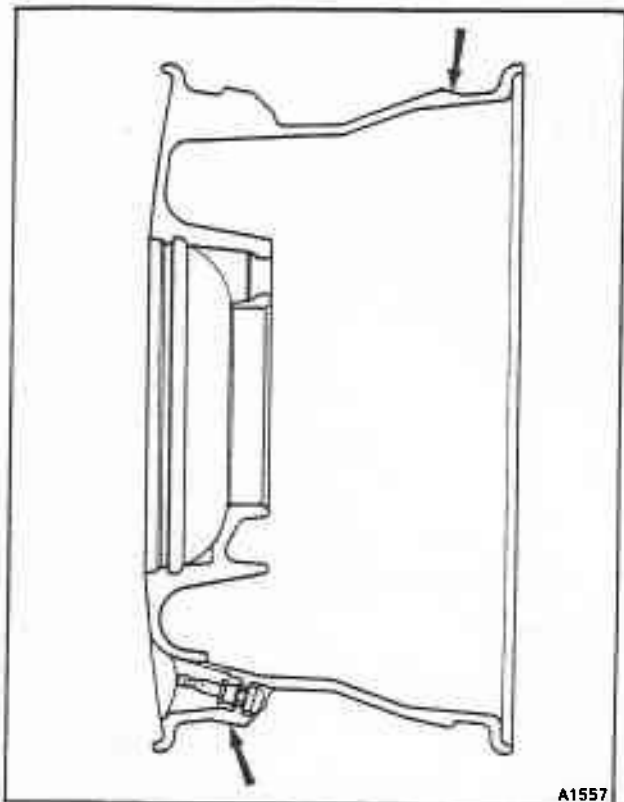
If the sidewalls of the tyre are damaged, the tyre **must** be examined by a tyre specialist as damage to the fabric of a tyre renders it unsafe for further use.

Tyre wear

The wear pattern on partially worn steel braced radial ply tyres should be reasonably consistent across the full width of all primary grooves. The tyres should be alternated front to rear on the same side of the car after completing the **first** 10 000 km (6000 miles). Alternating the tyres in this manner assists in producing an even tyre wear pattern and should increase the tread life of the tyres by more than twenty percent.

When assessing tyre wear, the following points should also be noted.

1. The recommended tyre inflation pressures must be maintained as under-inflation is the most frequent cause of premature tyre failure. It is also important not to over-inflate as this can make the tyres more vulnerable to impact fractures.
2. The wear rate on the outer shoulders of the front and rear tyres which run on the kerb side of the road will be slightly greater than the outer shoulders of the other tyres, particularly if the car is driven on roads with a pronounced camber.
3. The higher the speed at which a car is driven through corners, the more the tyres will wear on the inner shoulders. The effects of hard cornering will be shown also by 'feathering' which occurs on the rib edges.



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Fig. R3-3 Sectional view of Bentley Turbo R wheel

Tread wear indicators

Tread wear indicators are incorporated into the construction of the tyres. These indicators are integral moulded ribs spaced at frequent intervals around the circumference of the tyre and extend across the full width of the tyre tread in all primary grooves.

Tyres with badly worn treads are a safety hazard therefore, when a tyre has worn so that one or more of the indicators are flush with the tread, a new tyre is required.

It is important to note that the wet grip properties of a tyre rapidly deteriorate when the tread depth approaches that of the tread wear indicators.

Legal requirements

All Franchise Holders are advised to familiarize themselves with the legal requirements covering tyres and tyre wear for the country in which they operate. An example of a requirement which applies in the United Kingdom is as follows.

The original tyre tread pattern must be visible over the complete contact area of the tyre. Tread depth must not be less than 1 mm (0.039 in) in a continuous area extending to a minimum of 75% of the tread width and this must extend around the complete circumference of the tyre.

Remould tyres

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.



Recommended tyres, tyre pressures, and snow chains

Recommended tyres

Tyre manufacturer	Car model	Country	Tyre construction	Size	Speed rating	Sidewall markings
Avon	Rolls-Royce Silver Spirit Rolls-Royce Silver Spur Rolls-Royce Corniche Rolls-Royce Corniche II	Other than North America	Radial ply steel	235/70	VR	RR Turbosteel 70 235/70 VR15
	Bentley Eight Bentley Mulsanne Bentley Mulsanne S Bentley Continental	Other than North America	Radial ply steel	235/70	HR	RR Turbosteel 70 101H 235/70 HR15
	Bentley Turbo R	All markets	Radial ply steel	255/65	VR	RR Turbospeed CR27 255/65 VR15
Dunlop	Rolls-Royce Silver Spirit Rolls-Royce Silver Spur Rolls-Royce Corniche Rolls-Royce Corniche II Bentley Eight Bentley Mulsanne Bentley Mulsanne S Bentley Continental	Middle East, South Africa, Malaysia, and Singapore	Radial ply steel	235/70	HR	Dunlop SP Sport D7 235/70 HR15
Goodyear	Rolls-Royce Silver Spirit Rolls-Royce Silver Spur Rolls-Royce Corniche Rolls-Royce Corniche II Bentley Eight Bentley Mulsanne Bentley Mulsanne S Bentley Continental	Other than North America	Radial ply steel	235/70	VR	Goodyear Eagle NCT 70 235/70 VR15
		North America	Radial ply steel	235/70	HR	Goodyear NCT HR70 235/70 HR15
Michelin	Rolls-Royce Silver Spirit Rolls-Royce Silver Spur Rolls-Royce Corniche II Bentley Eight Bentley Mulsanne Bentley Mulsanne S Bentley Continental	North America	Radial ply steel	235/70	HR	Michelin XVS 235/70 HR15
Pirelli	Bentley Turbo R	United Kingdom, Europe, and the Middle East	Radial ply steel	275/55	VR	Pirelli P7R 275/55 VR15

Note The tyres listed above are available with the sidewalls in either black or black with a white band. The only exceptions are the Goodyear Eagle VR15 and the tyres recommended for the Bentley Turbo R, which are available with black sidewalls only.



Recommended winter tyres (Applicable to all countries)

Tyre manufacturer	Construction	Size	Sidewall	Tyre/Marking
Dunlop	Radial ply textile	205-15	Black	Dunlop Weathermaster SP44TT/L
Firestone	Radial ply steel	P225/75 – R15	White	Firestone Town & Country Snowbiter
Goodrich	Radial ply steel	P225/75 – R15	White	BF Goodrich MS Trailmaker
Michelin	Radial ply steel	HR78 – 15	White	Michelin X
Goodyear	Radial ply textile	HR70 – 15	Black with white band	Goodyear MS All Winter Radial

Tyre pressures and snow chains

Tyre manufacturer/ Tyre marking	Size	Tyre pressures		Maximum speed*	Snow chains
		Front	Rear		
Dunlop Weathermaster SP44TT/L	205 – 15	2,0 bar (28 lbf/in ²) 2,2 bar (32 lbf/in ²)	2,0 bar (28 lbf/in ²) 2,2 bar (32 lbf/in ²)	137 km/h (85 mile/h) 153 km/h (95 mile/h)	Union S2 3081 Union S2 3082 Rud Kantenspur 07 – 745 Rud Kantenspur 06 – 237 Rud Super Griefsteg S8143 Pewag Austro S/A77S Thiele Nordland Eifelspur Gruppe 351
Firestone Town & Country Snowbiter	P225/75 – R15	1,7 bar (24 lbf/in ²)	2,0 bar (28 lbf/in ²)	121 km/h (75 mile/h)	
BF Goodrich MS Trailmaker	P225/75 – R15	1,7 bar (24 lbf/in ²)	2,0 bar (28 lbf/in ²)	121 km/h (75 mile/h)	
Michelin X MS	HR78 – 15	1,7 bar (24 lbf/in ²)	2,0 bar (28 lbf/in ²)	161 km/h (100 mile/h)	
Goodyear MS All Winter Radial	HR70 – 15	1,7 bar (24 lbf/in ²)	2,0 bar (28 lbf/in ²)	137 km/h (85 mile/h)	

*Note – When studs are fitted the maximum speed should not exceed 121 km/h (75 mile/h)



Tyre pressures

To ensure the designed handling characteristics of the car are achieved, it is important to maintain the differential in tyre pressure between the front and rear wheels.

When checking tyre pressures, ensure that the tyres are cold.

After checking the tyre pressures, ensure that the valve caps are fitted, as they not only protect the valve from the ingress of water, but also provide a secondary

air seal. Always ensure that a valve cap of the same metal as the valve stem is fitted. The fitting of a different metal cap will result in corrosion and prevent subsequent cap removal.

Spare tyre inflation

1. Lift up the carpet on the luggage compartment floor to expose the rubber plug (see fig. R2-2).
2. Remove the plug to gain access to the tyre valve.
3. Adjust the tyre pressure as necessary.

Rolls-Royce Silver Spirit and Silver Spur

Model year	Specification	Loading conditions	Tyre pressures
1987 onwards	<i>Cars other than those conforming to an Australian, Japanese, and North American specification</i>	Up to five occupants and 115 kg (250 lb) of luggage	Speeds up to 180 km/h (110 mile/h) Front 1,7 bar (24 lbf/in ²) Rear 2,0 bar (28 lbf/in ²) Sustained speeds in excess of 180 km/h (110 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,4 bar (34 lbf/in ²)
		Up to five occupants and 115 kg (250 lb) of luggage	Speeds up to 140 km/h (87 mile/h) Front 1,7 bar (170 kPa, 24 lbf/in ²) Rear 1,9 bar (190 kPa, 27 lbf/in ²) Sustained speeds in excess of 140 km/h (87 mile/h) Front 2,2 bar (220 kPa, 32 lbf/in ²) Rear 2,4 bar (240 kPa, 34 lbf/in ²)
	<i>Cars conforming to a North American specification</i>	Up to four occupants and 46 kg (100 lb) of luggage	Front 1,7 bar (24 lbf/in ²) Rear 2,0 bar (28 lbf/in ²)
		Up to five occupants and 135 kg (300 lb) of luggage	Front 1,8 bar (26 lbf/in ²) Rear 2,2 bar (32 lbf/in ²)

Rolls-Royce Corniche and Corniche II

Model year	Specification	Loading conditions	Tyre pressures
1987 onwards	<i>Cars other than those conforming to a Japanese and North American specification</i>	Up to four occupants and 100 kg (220 lb) of luggage	Speeds up to 180 km/h (110 mile/h) Front 1,7 bar (24 lbf/in ²) Rear 2,0 bar (28 lbf/in ²) Sustained speeds in excess of 180 km/h (110 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,4 bar (34 lbf/in ²)
		Up to two occupants and 22 kg (50 lb) of luggage	Front 1,7 bar (24 lbf/in ²) Rear 2,0 bar (28 lbf/in ²)
	<i>Cars conforming to a Japanese and North American specification</i>	Up to four occupants and 115 kg (250 lb) of luggage	Front 1,8 bar (26 lbf/in ²) Rear 2,2 bar (32 lbf/in ²)



Bentley Mulsanne, Mulsanne S, and Bentley Eight

Model year	Specification	Loading conditions	Tyre pressures
1987 onwards	<i>Cars other than those conforming to an Australian, Japanese, and North American specification</i>	Up to five occupants and 115 kg (250 lb) of luggage	Speeds up to 180 km/h (110 mile/h) Front 1,7 bar (24 lbf/in ²) Rear 2,1 bar (30 lbf/in ²) Sustained speeds in excess of 180 km/h (110 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,5 bar (36 lbf/in ²)
	<i>Cars conforming to an Australian and Japanese specification</i>	Up to five occupants and 115 kg (250 lb) of luggage	Speeds up to 140 km/h (87 mile/h) Front 1,7 bar (170 kPa, 24 lbf/in ²) Rear 1,9 bar (190 kPa, 27 lbf/in ²) Sustained speeds in excess of 140 km/h (87 mile/h) Front 2,2 bar (220 kPa, 32 lbf/in ²) Rear 2,4 bar (240 kPa, 34 lbf/in ²)
	<i>Cars conforming to a North American specification</i>	Up to four occupants and 46 kg (100 lb) of luggage	Front 1,7 bar (24 lbf/in ²) Rear 2,0 bar (28 lbf/in ²)
		Up to five occupants and 135 kg (300 lb) of luggage	Front 1,8 bar (26 lbf/in ²) Rear 2,2 bar (32 lbf/in ²)

Bentley Continental

Model year	Specification	Loading conditions	Tyre pressures
1987 onwards	<i>Cars other than those conforming to a Japanese and North American specification</i>	Up to four occupants and 100 kg (220 lb) of luggage	Speeds up to 180 km/h (110 mile/h) Front 1,7 bar (24 lbf/in ²) Rear 2,1 bar (30 lbf/in ²) Sustained speeds in excess of 180 km/h (110 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,5 bar (36 lbf/in ²)
		Up to two occupants and 22 kg (50 lb) of luggage	Front 1,7 bar (24 lbf/in ²) Rear 2,0 bar (28 lbf/in ²)
	<i>Cars conforming to a Japanese and North American specification</i>	Up to four occupants and 115 kg (250 lb) of luggage	Front 1,8 bar (26 lbf/in ²) Rear 2,2 bar (32 lbf/in ²)



Bentley Turbo R Avon Turbospeed 255/65 tyres

Model year	Specification	Loading conditions	Tyre pressures
1987 onwards	<i>Cars other than those conforming to a European, Middle East, North American, and United Kingdom specification</i>	Up to four occupants and 22 kg (50 lb) of luggage	Speeds up to 210 km/h (130 mile/h) Front 2,1 bar (210 kPa, 30 lbf/in ²) Rear 2,6 bar (260 kPa, 37 lbf/in ²) Sustained speeds in excess of 210 km/h (130 mile/h) Front 2,1 bar (210 kPa, 30 lbf/in ²) Rear 2,6 bar (260 kPa, 37 lbf/in ²)
		Up to five occupants and 115 kg (250 lb) of luggage	Speeds up to 210 km/h (130 mile/h) Front 2,1 bar (210 kPa, 30 lbf/in ²) Rear 2,6 bar (260 kPa, 37 lbf/in ²) Sustained speeds in excess of 210 km/h (130 mile/h) Front 2,3 bar (230 kPa, 33 lbf/in ²) Rear 3,1 bar (310 kPa, 44 lbf/in ²)
	<i>Cars conforming to a European, Middle East, and United Kingdom specification</i>	Up to four occupants and 22 kg (50 lb) of luggage	Speeds up to 210 km/h (130 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,6 bar (37 lbf/in ²) Sustained speeds in excess of 210 km/h (130 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,6 bar (37 lbf/in ²)
		Up to five occupants and 115 kg (250 lb) of luggage	Speeds up to 210 km/h (130 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,6 bar (37 lbf/in ²) Sustained speeds in excess of 210 km/h (130 mile/h) Front 2,5 bar (36 lbf/in ²) Rear 3,3 bar (48 lbf/in ²)
	<i>Cars conforming to a North American specification</i>	Up to four occupants and 22 kg (50 lb) of luggage	Speeds up to 210 km/h (130 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,6 bar (37 lbf/in ²) Sustained speeds in excess of 210 km/h (130 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,6 bar (37 lbf/in ²)
		Up to five occupants and 135 kg (300 lb) of luggage	Speeds up to 210 km/h (130 mile/h) Front 2,1 bar (30 lbf/in ²) Rear 2,6 bar (37 lbf/in ²) Sustained speeds in excess of 210 km/h (130 mile/h) Front 2,3 bar (33 lbf/in ²) Rear 3,1 bar (44 lbf/in ²)



Special torque tightening figures

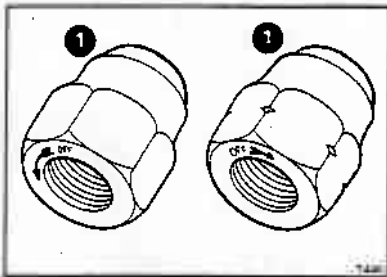
Introduction

This section contains the special torque tightening figures applicable to Chapter R.

For standard torque tightening figures refer to Chapter P.

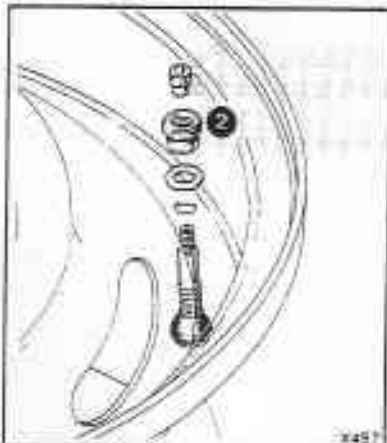
Components used during manufacture of the vehicle have different thread formations (Metric, UNF, UNC, etc.). Therefore, when fitting nuts, bolts, and setscrews it is important to ensure that the correct type and size of thread formation is used.

Section R2

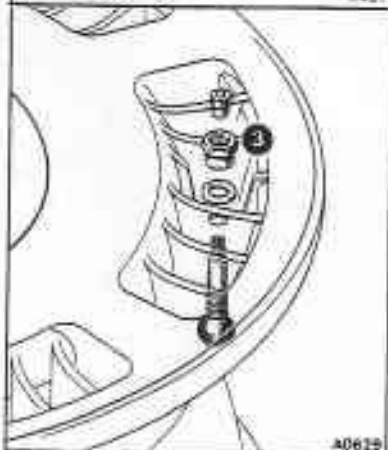


Ref.	Component	Nm	kgf m	lbf ft
1	Road wheel nut	61-68	6-7	45-50

Section R3



Ref.	Component	Nm	kgf cm	lbf in
2	Tyre valve retaining nut (steel road wheels)	2,9-3,3	29,9-33,4	26-29



3	Tyre valve retaining nut (aluminium alloy road wheels)	2,9-3,3	29,9-33,4	26-29
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