






Chapter 10

Suspension and steering

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Degrees of difficulty

Easy , suitable for novice with little experience 	Fairly easy , suitable for beginner with some experience 	Fairly difficult , suitable for competent DIY mechanic 	Difficult , suitable for experienced DIY mechanic 	Very difficult , suitable for expert DIY or professional 
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Specifications

Front suspension

Type Independent, MacPherson struts, coil springs, anti-roll bar

Rear suspension

Type Independent, cross-tube with trailing arms, torsion bars, inclined shock absorbers, anti-roll bar

Steering

Type Rack-and-pinion. Power-assistance optional on certain models

Power steering fluid type See "Weekly checks"

Wheel alignment and steering angles

Front wheel toe setting:

All models, except GTI and automatic transmission - up to 1988 ... 3.0 ± 1.0 mm toe-in

1.6 GTI models - up to 1988 2.0 ± 1.0 mm toe-in

1.9 GTI models - up to 1988 2.5 ± 1.0 mm toe-in

Automatic transmission models - up to 1988 3.5 ± 1.0 mm toe-in

All models from 1988 onward 1.0 ± 0.5 mm toe-in

Roadwheels

Type Pressed-steel or aluminium alloy (depending on model)

Size 4.5 B x 13, 4.5J x 13, 5 B x 13, 5.5J x 14 or 6.6J x 15 (depending on model)

Tyres

Size 135 SR 13, 145 SR 13, 165/70 SR 13, 185/60 HR 14 or 185/55 VR 15 (depending on model)

Tyre pressures See "Weekly checks"

Torque wrench settings	Nm	lbf ft
Front suspension		
Driveshaft/hub nut:		
Non-GTI models	250	185
GTI models	260	192
Automatic transmission models	265	196
Strut top mounting	12	9
Shock absorber piston rod nut:		
Self-locking type	45	33
Crimped type	70	52
Strut clamp bolt	58	43
Anti-roll bar clamp	35	26
Anti-roll bar end (non-GTI models)	75	55
Lower balljoint clamp bolt:		
Manual transmission models	35	26
Automatic transmission models	45	33
Anti-roll bar guide bar	30	22
Lower suspension arm pivot bolt	35	26
Anti-roll bar end (GTI models)	58	43
Lower suspension arm rear pivot bolt (GTI models)	78	58
Rear suspension		
Shock absorber upper mounting	75	55
Shock absorber lower mounting	118	87
Anti-roll bar arm	35	26
Torsion bar plug	20	15
Suspension top mountings	45	33
Suspension front mounting pivot bolt	80	59
Steering		
Steering gear mounting bolts	35	26
Power steering fluid pipe unions	23	17
Column-to-pinion clamp bolt	15	11
Track rod end balljoint nut	35	26
Track rod inner joint	50	37
Steering wheel nut	30	22
Roadwheels		
Roadwheel bolts (all wheel types)*	85	63

*On alloy wheels, oil the ends of the bolt threads over a maximum length of 10 mm before fitting.

1 General information

The front suspension is of independent type; incorporating MacPherson struts with coil springs and integral shock absorbers. On non-GTI models the lower suspension arm movement is controlled by the anti-roll bar, but on GTI models the arm has two inner pivot points and the anti-roll bar operates separately on the struts.

The rear suspension is also of independent type; incorporating a cross-tube with trailing arms set in each end and supported on needle or plain bearings. Torsion bars are fitted to the trailing arms and, on certain models, an anti-roll bar located inside the cross-tube stabilises the car when cornering. The telescopic shock absorbers are inclined with their top mountings attached to the suspension side-members.

The steering system is of rack and pinion type with side track rods connected to the hub carriers by track rod end balljoints.

Further balljoints on the inner ends of the track rods are screwed into the rack. Power-assisted steering is available as an option on later models. Power assistance is derived from a hydraulic pump, belt-driven from the crankshaft pulley.

The steering column incorporates a single universal joint at its lower end connected to an intermediate shaft which also incorporates a universal joint at its connection to the pinion on the steering gear. The steering column is angled to prevent direct movement into the passenger compartment in the event of a front end impact.

2 Front suspension hub carrier - removal and refitting



Removal

1 Fully apply the handbrake then, where possible, remove the front wheel centre trim. Tap up the staking securing the hub nut to the driveshaft groove or, on later models, extract the R-clip and withdraw the locking collar

(see illustration). Using a socket and a long extension bar, slacken the hub nut. On models without a centre trim, the hub nut must be loosened after removing the front wheel. Do not apply the footbrake when loosening the nut as damage can occur to the brake disc retaining screws.

2 Chock the rear wheels then jack up the front of the car and support it on axle stands (see "Jacking and vehicle support"). Remove the front roadwheel.



2.1 R-clip and locking collar fitted to hub nut on later models



2.4a Unscrew the lower balljoint clamp bolt . . .



2.4b . . . and pull the suspension arm down from the hub carrier



2.11 Unscrew the clamp bolt securing the lower end of the suspension strut to the hub carrier

3 If the hub nut has yet to be loosened, fabricate a tool from two lengths of steel strip (one long, one short) and a nut and bolt; the nut and bolt form the pivot of a forked tool. Bolt the tool to the hub flange using two wheel bolts, and hold the tool to prevent the hub from rotating (see Chapter 8, Section 2). Slacken the hub nut using a socket and a long extension bar.

4 Unscrew the clamp bolt securing the front suspension lower balljoint to the bottom of the hub carrier then pull the lower suspension arm down from the carrier (see illustrations).

5 Recover the balljoint guard plate, where fitted.

6 Turn the front wheels to full right-hand lock (left-hand hub carrier), or full left-hand lock (right-hand hub carrier) and remove the hub nut and, where fitted, the washer. Note that a new hub nut will be required for refitting.

7 Pull the hub carrier outwards and at the same time withdraw the outer end of the driveshaft from the hub. Suitably support or tie up the driveshaft in a near horizontal position to avoid damage to the inner CV joints.

8 Unbolt the disc brake caliper from the hub carrier and either place it on a stand or tie it to one side.

9 Remove the two screws and withdraw the brake disc.

10 Unscrew the nut and use a balljoint removal tool to separate the track rod end balljoint from the hub carrier steering arm.

11 Unscrew the clamp bolt securing the lower end of the suspension strut to the hub carrier (see illustration). Spread the slot on the hub carrier using a screwdriver or suitable wedge and slide the carrier from the bottom of the strut. Remove the hub carrier from the car.

Refitting

12 Refitting is a reversal of removal, but refer to Chapters 8 and 9 respectively when refitting the driveshaft and disc brake caliper.

3 Front hub bearings - renewal



Note: The bearing is a sealed, pre-adjusted and pre-lubricated, double-row ball type, and is intended to last the car's entire service life without maintenance or attention. Never overtighten the driveshaft nut beyond the specified torque wrench setting in an attempt to "adjust" the bearing.

Note: A press will be required to dismantle and rebuild the assembly; if such a tool is not available, a large bench vice and spacers (such as large sockets) will serve as an adequate substitute. The bearing's inner races are an interference fit on the hub; if the inner race remains on the hub when it is pressed out of the hub carrier, a knife-edged bearing puller will be required to remove it. A new bearing retaining circlip must be used on refitting.

1 Remove the hub carrier assembly as described in Section 2.

2 Support the hub carrier securely on blocks or in a vice. Using a tubular spacer which bears only on the inner end of the hub flange, press the hub flange out of the bearing. If the bearing's outboard inner race remains on the hub, remove it using a bearing puller (see note above).

3 Extract the bearing retaining circlip from the inner end of the hub carrier assembly (see illustration).



3.3 Front hub bearing retaining circlip (arrowed)

4 Where necessary, refit the inner race back in position over the ball cage, and securely support the inner face of the hub carrier. Using a tubular spacer which bears only on the inner race, press the complete bearing assembly out of the hub carrier.

5 Thoroughly clean the hub and hub carrier, removing all traces of dirt and grease, and polish away any burrs or raised edges which might hinder reassembly. Check both for cracks or any other signs of wear or damage, and renew them if necessary. Renew the circlip, regardless of its apparent condition.

6 On reassembly, apply a light film of oil to the bearing outer race and hub flange shaft, to aid installation of the bearing.

7 Securely support the hub carrier, and locate the bearing in the hub. Press the bearing fully into position, ensuring that it enters the hub squarely, using a tubular spacer which bears only on the bearing outer race.

8 Once the bearing is correctly seated, secure the bearing in position with the new circlip, ensuring that it is correctly located in the groove in the hub carrier.

9 Securely support the outer face of the hub flange, and locate the hub carrier bearing inner race over the end of the hub flange. Press the bearing onto the hub, using a tubular spacer which bears only on the inner race of the hub bearing, until it seats against the hub shoulder. Check that the hub flange rotates freely, and wipe off any excess oil or grease.

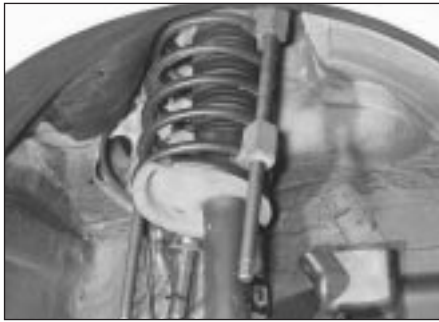
10 Refit the hub carrier assembly as described in Section 2.

4 Front suspension strut - removal and refitting



Removal

1 Before raising the car it is recommended that a retaining tool is fitted to the coil spring to hold the spring in a semi-compressed state. This will provide sufficient clearance to enable the strut to be withdrawn from the hub carrier. Peugeot garages use two special cables inserted through the holes at the top of



4.1 Coil spring compressors fitted to strut spring

the front suspension tower and engaged with further holes in the bottom coil spring seat. If available use these, otherwise fit universal coil spring compressors (see illustration). Do not attempt to use any makeshift tool, as considerable damage could occur if the spring breaks free. To fit either type of tool it will be necessary to turn the front wheel to full lock in alternate directions.

2 Loosen, but do not remove, the three strut top mounting nuts (see illustration).

3 Chock the rear wheels then jack up the front of the car and support it on axle stands (see "Jacking and vehicle support"). Remove the relevant front roadwheel.

4 On GTI models, unscrew the nut and disconnect the anti-roll bar link from the strut.



4.2 Front suspension top mounting nuts

5 Unscrew the clamp bolt securing the lower end of the strut to the hub carrier. Spread the slot on the hub carrier using a screwdriver or suitable wedge, push the suspension arm down, and slide the carrier from the bottom of the strut.

6 Support the strut then unscrew the top mounting nuts and withdraw it from under the wheel arch. Recover the washers.

Refitting

7 Refitting is a reversal of removal but ensure that the strut fully enters the hub carrier. If there is any doubt about this, loosen the clamp bolt with the full weight of the car on the suspension, and the strut will be forced fully home. Retighten the bolt to the specified torque.

5 Front suspension strut - overhaul



Warning: Before attempting to dismantle the suspension strut, a suitable tool to hold the coil spring in compression must be obtained.

Adjustable coil spring compressors which can be positively secured to the spring coils are readily available, and are recommended for this operation. Any attempt to dismantle the strut without such a tool is likely to result in damage or personal injury.

1 Remove the strut from the car as described in Section 4.

2 Clean away all external dirt from the strut and coil spring.

3 Fit the spring compressors to the coils of the spring. Ensure that the compressors used are of a type that incorporate a method for positively locking them to the spring (usually by a small clamp bolt). Any other type may slip off or slide round the spring as they are tightened. Tighten the compressors until the load is taken off the spring seats. If applicable, remove the Peugeot cables.

4 Unscrew the piston rod nut, counterholding the piston rod with a 7 mm Allen key (see illustration). Note that a new nut will be required for reassembly.

5 Remove the washer and top mounting, followed by the coil spring. The spring may remain in the compressed state ready for refitting to the strut. If the spring is to be renewed, release the compressors very gently and evenly until they can be removed and fitted to the new spring.

6 If necessary, remove the gaiter and bump stop from the piston rod. Note the location of each component to ensure correct refitting.

7 Check the strut for signs of fluid seepage at the piston rod seal. Temporarily refit the upper mounting to the piston rod and, with the bottom of the strut gripped in a vice, fully extend and retract the piston rod. If the resistance is not firm and even in both directions, or if there are signs of leakage or damage, the strut must be renewed.

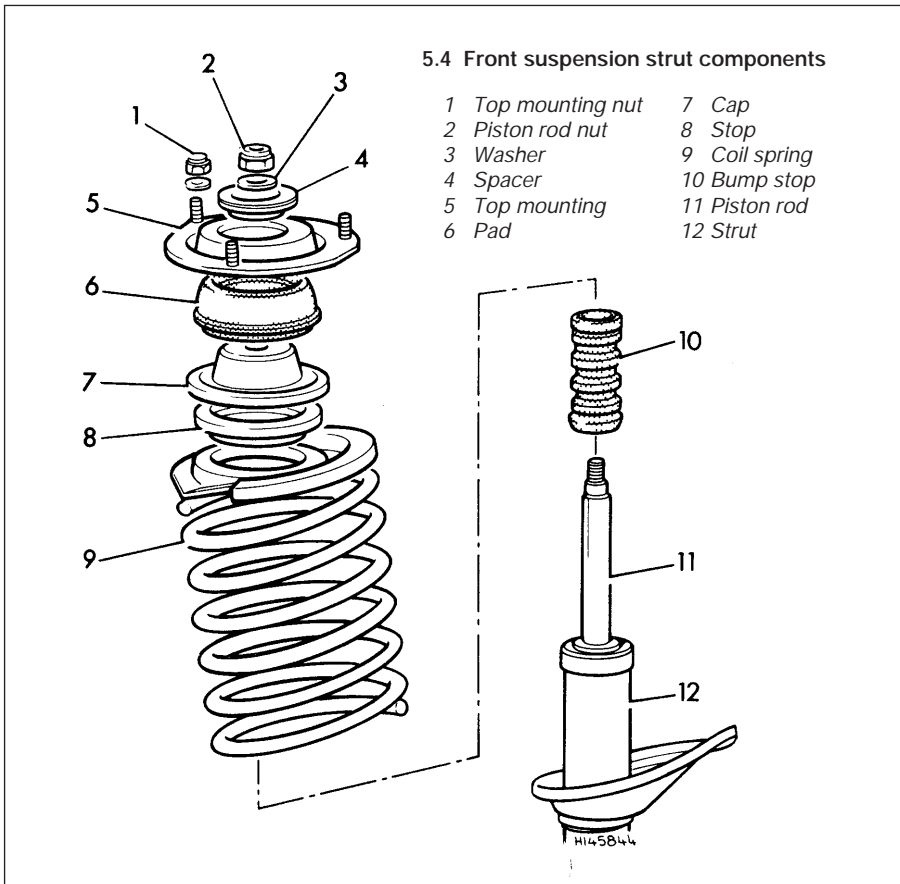
8 Reassemble the strut using the reverse of the dismantling procedure but note that the bump stop must be fitted with the largest diameter uppermost. Use a new piston rod nut and tighten it to the specified torque. Refit the strut to the car as described in Section 4 on completion.

6 Front lower suspension arm - removal and refitting



Removal

1 Chock the rear wheels then jack up the front of the car and support it on axle stands (see "Jacking and vehicle support"). Remove the relevant front roadwheel.



5.4 Front suspension strut components

- 1 Top mounting nut
- 2 Piston rod nut
- 3 Washer
- 4 Spacer
- 5 Top mounting
- 6 Pad
- 7 Cap
- 8 Stop
- 9 Coil spring
- 10 Bump stop
- 11 Piston rod
- 12 Strut



6.2 Anti-roll bar attachment to lower suspension arm on non-GTI models

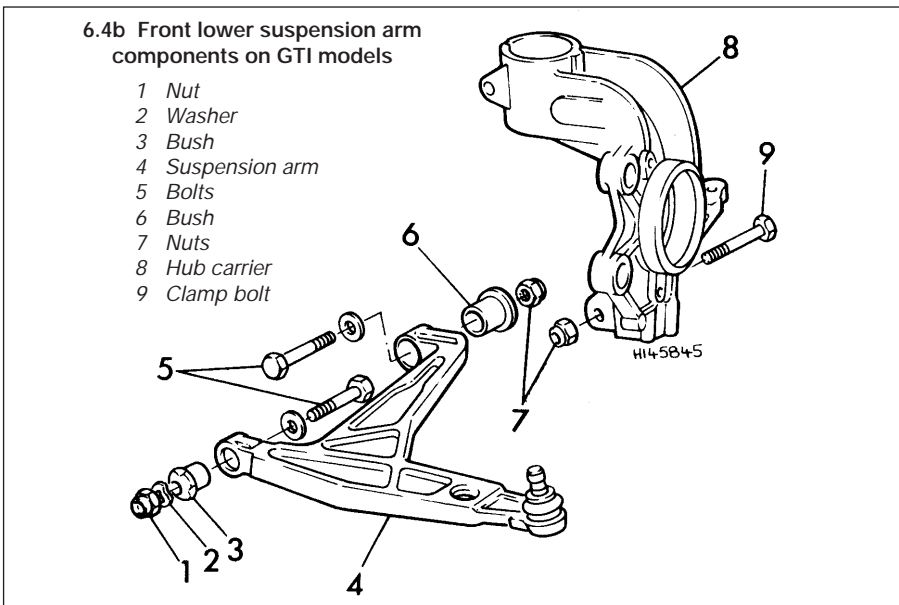


6.4a Front lower suspension arm inner pivot bolt (arrowed) on non-GTI models

5 Lever down the anti-roll bar where necessary and withdraw the arm from the car.
 6 Check the inner pivot bushes for wear and deterioration. Check the lower balljoint on the outer end of the arm for excessive wear indicated by up and down movement of the ball in the socket. Check the arm for damage or deterioration. The bushes may be renewed using a simple puller consisting of a metal tube and washers, together with a long bolt and nut. It is not possible to renew the balljoint separately.

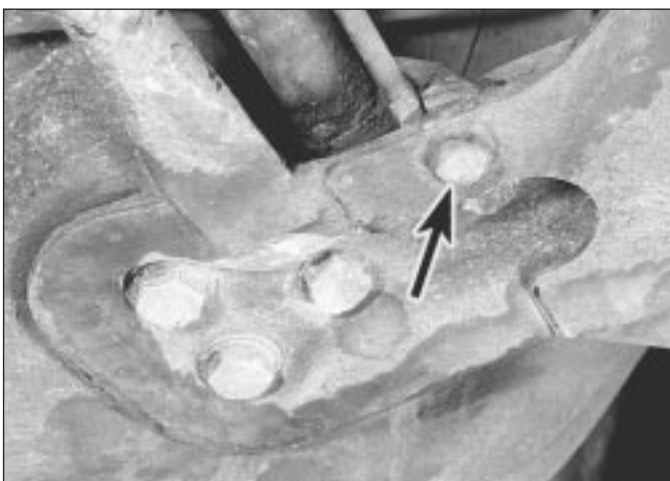
Refitting

7 Refitting is a reversal of removal, but delay final tightening of the inner pivot bolt until the full weight of the car is on the suspension.

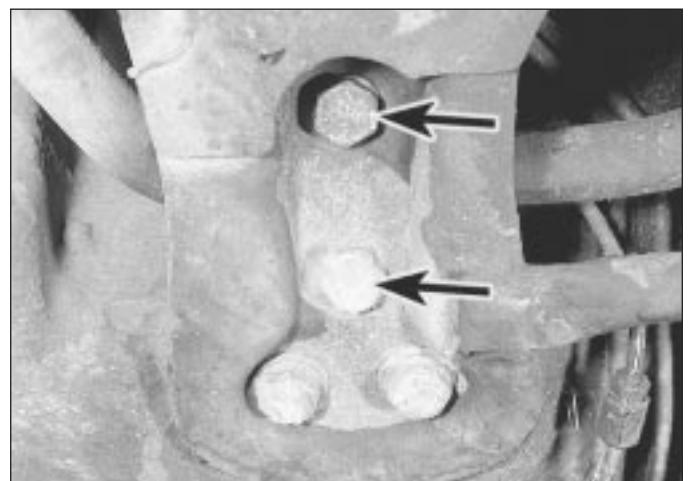


2 On non-GTI models, unscrew the nut securing the anti-roll bar to the suspension arm and remove the washer (see illustration).
 3 Unscrew the clamp bolt securing the front suspension lower balljoint to the bottom of the

hub carrier then pull the lower suspension arm down from the carrier. Recover the balljoint guard plate, where fitted.
 4 Unscrew and remove the inner pivot bolt(s), noting their fitted direction (see illustrations).



7.3 Anti-roll bar guide bar bolt (arrowed) on non-GTI models



7.4 Anti-roll bar mounting clamp bolts (arrowed)

7 Front anti-roll bar - removal and refitting



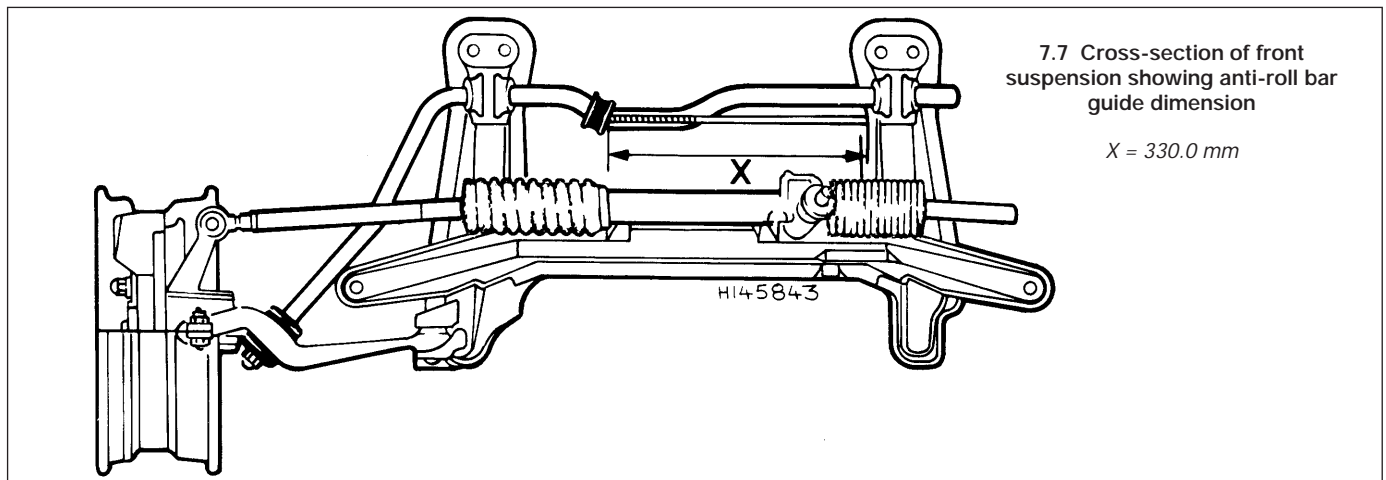
Non - GTI models

Removal

1 Remove the lower suspension arm from one side, as described in Section 6.
 2 Unscrew the nut securing the remaining end of the anti-roll bar to the other suspension arm and recover the washer.
 3 Unbolt the guide bar from the subframe (see illustration).
 4 Unscrew the mounting clamp bolts (see illustration) and withdraw the anti-roll bar over the subframe.
 5 Examine the rubber bearings for damage and deterioration, and renew them if necessary. The bearings in the suspension arms can be prised or driven out.

Refitting

6 Refitting is a reversal of removal, but delay fully tightening the clamp bolts until the full weight of the car is on wheels. The guide bar bolts should also remain loosened until after the bearing clamp bolts have been tightened.



7.7 Cross-section of front suspension showing anti-roll bar guide dimension

$X = 330.0 \text{ mm}$

7 The guide bar length must be adjusted to the dimension shown when refitting (see illustration). Note that a full-circle clamp is fitted to early models with a 6.0 mm diameter anti-roll bar, whereas a split clamp is fitted to later models with a 7.0 mm diameter bar. On the later type, position the clamp centrally on the turned-back end of the bar before tightening the bolts.

GTI models

Removal

8 Chock the rear wheels then jack up the front of the car and support it on axle stands (see "Jacking and vehicle support"). Remove the front roadwheels.

9 Unscrew the self-locking nuts from the bottom of the link arms (see illustration) and if necessary use a separator tool to release the joints.

10 Unscrew the bearing clamp bolts and withdraw the anti-roll bar over the subframe.

11 Unscrew the self-locking nuts from the tops of the link arms and remove the arms from the suspension struts, again using a separator tool if required.

12 Examine the rubber bearings for damage and deterioration and renew them if necessary. Check the balljoints on the link arms for excessive wear, and the rubber boots for any damage. The balljoints cannot be renewed separately, so if any damage is



7.9 Anti-roll bar link arm bottom mounting on GTI models

evident the complete link arm must be renewed.

13 The left-hand side anti-roll bar bearing incorporates a location ring and therefore the bearings must always be fitted to their correct sides. The left-hand bearing is colour-coded in grey or red and the right-hand bearing in yellow or white.

Refitting

14 Refitting is a reversal of removal, but delay fully tightening the mountings until the weight of the car is on its wheels.

8 Rear hub/drum and bearings - general information

The removal and refitting of the rear hub/drum assembly is described in Chapter 9, together with the inspection of the drum for wear.

On pre-1986 models the hub/drum and bearings are a sealed assembly and it is not possible to renew the bearings separately. If the bearings are worn excessively it will therefore be necessary to renew the complete hub/drum assembly.

If the hub/drum oil seal is worn or damaged it can be renewed by prising it out with a screwdriver and pressing in the new one with a metal tube. Clean and grease the seal contact surface on the trailing arm before refitting the hub/drum.

Models manufactured from early 1986 are fitted with modified rear hub/drum assemblies which do allow separate renewal of the bearings.

Bearing renewal requires the use of a press in conjunction with special tools to remove the old bearing, and this is best entrusted to your Peugeot dealer (once removed, a bearing is rendered unserviceable).

When renewing the oil seal, Peugeot recommend the use of special tool No. 7.052Y to seat the new seal. If unavailable, make a careful note of the position of the original seal before removing it.

9 Rear suspension components - general information

Although it is possible to remove the rear suspension torsion bars, trailing arms and anti-roll bar independently of the complete rear axle assembly, it is essential to have certain special tools available to complete the work successfully.

Due to the complexity of the tasks, and the requirement for special tools to accurately set the suspension geometry and vehicle ride height on refitting, the removal and refitting of individual rear suspension components is considered to be beyond the scope of DIY work, and should be entrusted to a Peugeot dealer.

Procedures for removal and refitting of the rear shock absorbers, and the complete rear suspension assembly are given in Sections 10 and 11 respectively.

10 Rear shock absorber - removal and refitting

Removal

1 Position the rear of the car on ramps or alternatively jack it up and support it beneath the wheels. Apply the handbrake.

2 Unscrew the shock absorber bottom mounting nut and tap the bolt outwards until it clears the shock absorber (see illustration). If the bolt head fouls the handbrake cable bracket, loosen the bracket bolt on the side of the trailing arm and lift the bracket as required. Do not forget to tighten the bolt after refitting the shock absorber.

3 Unscrew the upper mounting nut, remove the washer, and tap out the bolt.

4 Withdraw the shock absorber from under the car.

5 A thorough check of the shock absorber may now be made by gripping the bottom





10.2 Rear shock absorber bottom mounting

mounting in a vice and attempting to extend and retract it. If the resistance is not firm and even in both directions, or if there are signs of leakage or damage, the shock absorber must be renewed.

Refitting

6 Refitting is a reversal of removal, but renew the self-locking nuts. The nuts must be tightened when the distance between the mounting bolt centres is 288.0 mm. The Peugeot tool 80911 for this operation consists of a bar and adjustable bolt located beneath the lifting ramp and hooked on the suspension tube; however, loading the rear of the car by trial and error will produce the same result.

11 Rear suspension assembly - removal and refitting



Removal

- 1 Chock the front wheels then jack up the rear of the car and support it on axle stands (see "Jacking and vehicle support").
- 2 Remove the handbrake cables, with reference to Chapter 9.
- 3 Remove the complete exhaust system, with reference to Chapter 4D.
- 4 Disconnect the flexible brake hoses from the rear suspension assembly, with reference to Chapter 9.
- 5 Unscrew the left-hand rear mounting nut, remove the exhaust bracket then temporarily refit the nut.



14.2 Steering column lower trim panel screws (arrowed)



11.6 Rear suspension cross-tube front clamp and seat belt anchorage

6 Unbolt and remove the front clamp and bracket (see illustration), but do not unscrew the seat belt anchorage (where fitted).

7 Adjust the position of the car on the axle stands so that the rear wheels are just touching the ground, then place additional stands or jacks beneath the suspension tube.

8 Working in the luggage compartment unscrew the front and rear mounting nuts then carefully withdraw the assembly from under the car.

Refitting

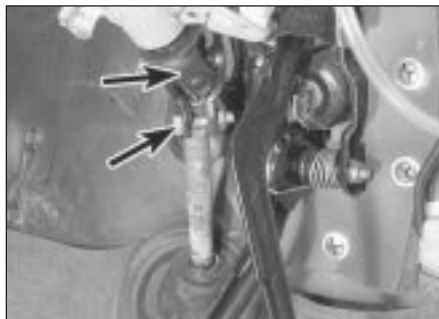
9 Refitting is a reversal of removal, but tighten all nuts and bolts to the specified torque. When tightening the front clamp make sure that the ring is centred in the seat belt anchorage bracket. Refer to Chapter 4D and 9 when refitting disturbed exhaust and braking system components and bleed the brake hydraulic system on completion.

12 Vehicle ride height - checking

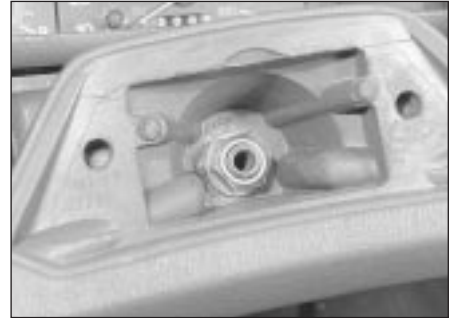


Checking of the vehicle ride height requires the use of Peugeot special tools to accurately compress the suspension in a suspension checking bay.

The operation should be entrusted to a Peugeot dealer, as it not possible to carry out checking accurately without the use of the appropriate tools.



14.3 Steering column lower universal joint and clamp bolt (arrowed)



13.2 Steering wheel retaining nut

13 Steering wheel - removal and refitting



Removal

- 1 Set the front wheels in the straight-ahead position.
- 2 Prise out the centre pad, then use a socket to unscrew the retaining nut (see illustration).
- 3 Mark the hub in relation to the inner column then pull off the steering wheel.



If the wheel is tight, tap it up near the centre, using the palm of your hand, or twist it from side to side, whilst pulling upwards to release it from the shaft splines.

Refitting

4 Refitting is a reversal of removal, but check that the steering wheel is correctly centred with the front wheels straight ahead. Tighten the nut while holding the steering wheel rim.

14 Steering column and lock - removal and refitting



Removal

- 1 Remove the steering wheel, (Section 13).
- 2 Remove the lower trim panel from under the steering column (see illustration).
- 3 Mark the column lower universal joint in relation to the intermediate shaft then unscrew and remove the clamp bolt (see illustration).
- 4 Remove the combination switches, as described in Chapter 12.
- 5 Disconnect the ignition switch wiring connectors.
- 6 Unscrew the mounting nuts and bolts, disconnect the inner column from the intermediate shaft, and withdraw the steering column from the car. Where shear bolts are fitted they must be drilled to remove the heads, then unscrewed after removing the column.



14.7 Steering column intermediate shaft (arrowed)

7 If necessary, the intermediate shaft can be removed after prising out the grommet and unscrewing the bottom clamp bolt (see illustration).

8 To remove the steering lock, unscrew the retaining bolt then, with the ignition key aligned with the small arrow between the 'A' and 'M' positions, depress the plunger in the housing and withdraw the lock (see illustration).

Refitting

9 Refitting is a reversal of removal.

15 Steering gear - removal and refitting



Manual steering gear

Removal

1 Chock the rear wheels then jack up the front of the car and support it on axle stands (see "Jacking and vehicle support"). Remove the front roadwheels.

2 Unscrew the track rod end locknuts then use a separator tool to detach the track rod end balljoints from the hub carrier steering arms.

3 Mark the lower column in relation to the pinion on the steering gear.

4 Unscrew and remove the column-to-pinion clamp bolt.

5 Unscrew and remove the two mounting bolts and withdraw the steering gear from one side of the subframe (see illustration).

Refitting

6 Refitting is a reversal of removal, but tighten all nuts and bolts to the specified torque. On completion, have the front wheel toe setting checked (see Section 21).

Power-assisted steering gear

Removal

7 Chock the rear wheels then jack up the front of the car and support it on axle stands (see "Jacking and vehicle support"). Remove the front roadwheels.

8 Prepare a suitable container, then disconnect the fluid pipes from the steering gear, and allow the fluid to drain into the container.

9 Unscrew the track rod end balljoint locknuts, then use a separator tool to detach the track rod end balljoints from the hub carrier steering arms.

10 Mark the lower column in relation to the pinion on the steering gear.

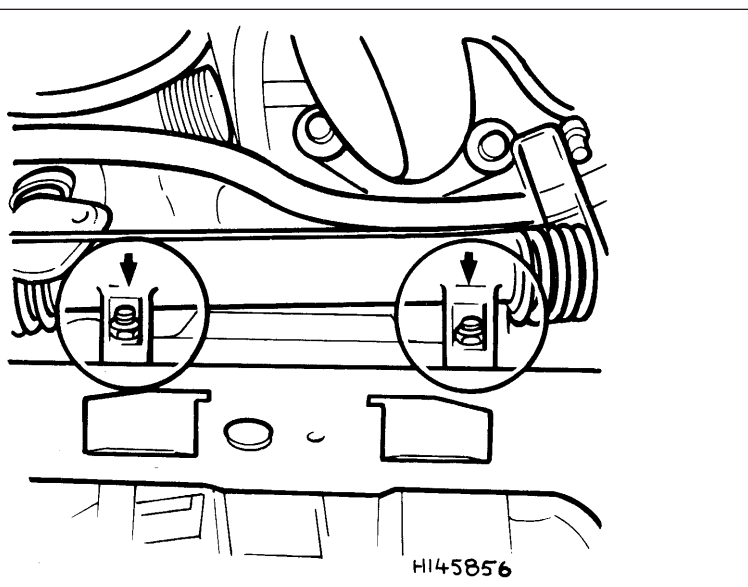
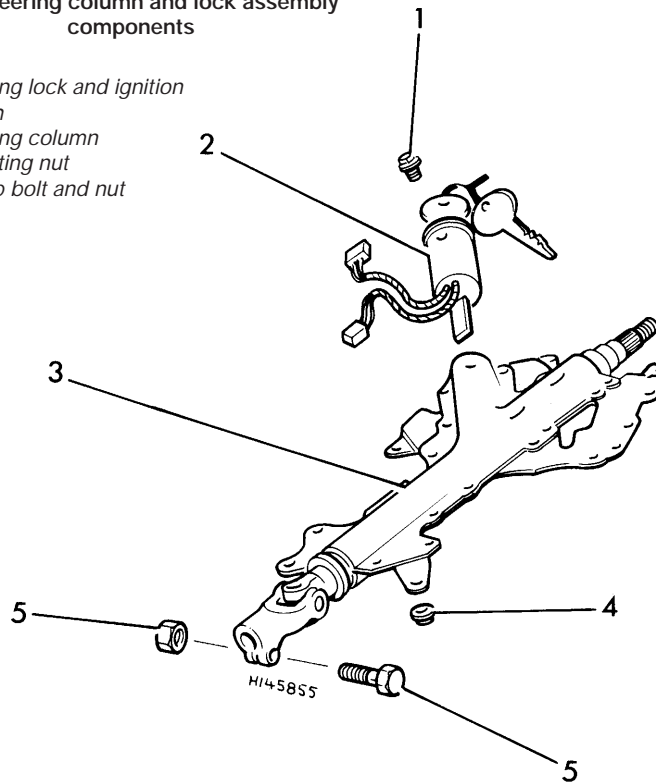
11 Unscrew and remove the column-to-pinion clamp bolt.

12 On manual transmission models, disconnect the three gearchange control rods from the levers on the transmission.

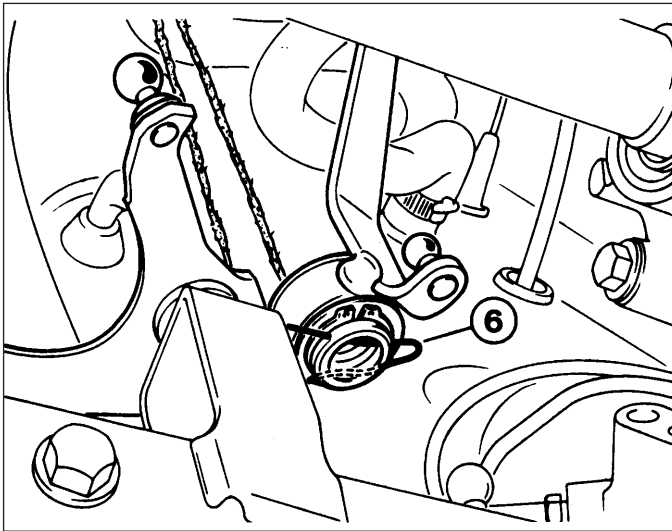
13 Extract the spring clip from the gearchange linkage (see illustration), then unclip the transmission selector and

14.8 Steering column and lock assembly components

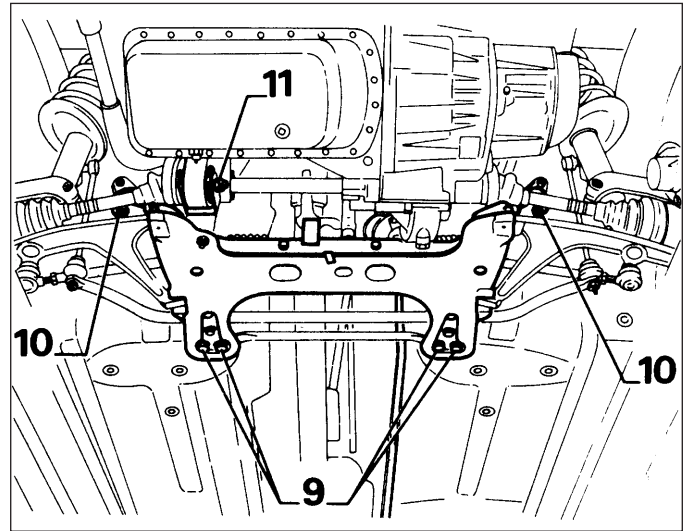
- 1 Bolt
- 2 Steering lock and ignition switch
- 3 Steering column
- 4 Mounting nut
- 5 Clamp bolt and nut



15.5 Steering gear mounting bolt locations (arrowed)



15.13 Extract the spring clip (6) from the gearchange linkage



15.16 Front subframe attachments

9 Rear securing bolts
10 Front securing bolts

11 Lower engine mounting nut

engagement rods, and support them in an upright position out of the way, using wire or string.

14 Remove the two steering gear securing bolts, and recover the spacer tubes from the subframe, then disconnect the steering gear pinion from the steering column shaft.

15 Support the front subframe using a trolley jack and interposed block of wood positioned under the subframe crossmember.

16 Remove the four bolts securing the rear of the subframe to the body, and the two nuts or bolts, as applicable, securing the front of the subframe to the body (see illustration). Also remove the nut and bolt from the lower engine mounting.

17 Carefully lower the subframe sufficiently

to enable removal of the steering gear, ensuring that the subframe is adequately supported.

18 Rotate the steering gear towards the rear of the vehicle, and withdraw the assembly over the rear of the subframe, taking care not to damage the rack bellows.

Refitting

19 Refitting is a reversal of removal, bearing in mind the following points:

- a) Ensure that the spacer tubes are fitted to the steering gear securing bolts.
- b) Tighten all fixings to the specified torque.
- c) Ensure that the marks made on the steering gear pinion and the lower column during removal are aligned.

d) When reconnecting the fluid pipes to the steering gear, the high pressure fluid pipe must be vertical (see illustration).

e) Secure the hose to the high-pressure fluid pipe using a cable-tie.

f) Check the gearchange mechanism for correct operation after reconnecting the linkages.

g) On completion, bleed the power steering hydraulic system as described in Section 17, and have the front wheel toe setting checked (see Section 21).

16 Steering gear rubber bellows - renewal



1 Remove the relevant track rod end, as described in Section 19.

2 Release the clips from each end of the bellows then ease the bellows from the steering gear and pull it from the track rod.

3 Clean the track rod and bellows location on the steering gear.

4 Slide the new bellows onto the track rod and steering gear, check that it is not twisted, then fit the clips.

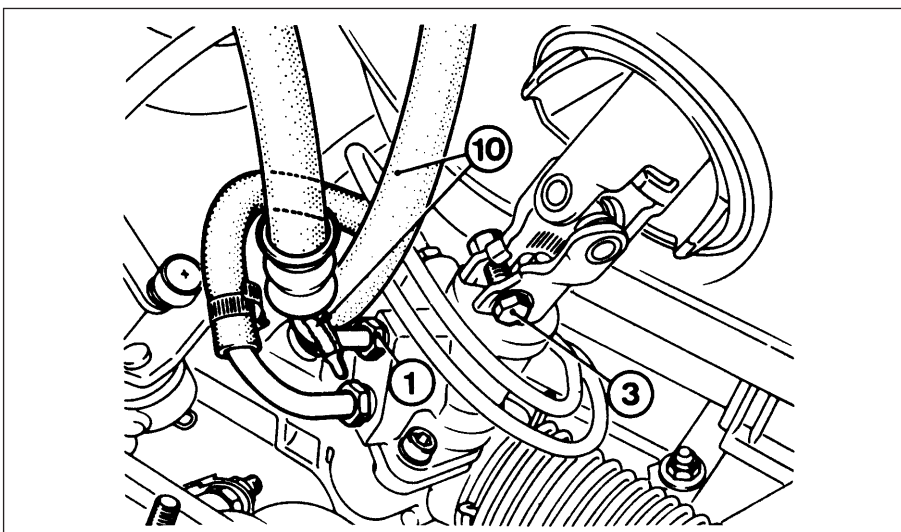
5 Refit the track rod end with reference to Section 19.

17 Power steering system - bleeding



1 This procedure will only be necessary when any part of the hydraulic system has been disconnected.

2 Referring to "Weekly checks", remove the fluid reservoir filler cap, and top-up with the specified fluid to the maximum level mark.



15.19 Correct refitting of power assisted steering gear

1 High-pressure pipe
3 Column-to-pinion clamp bolt

10 Hose secured with cable tie



19.3 Separating the track rod end from the hub carrier steering arm

3 With the engine stopped, slowly move the steering from lock-to-lock several times to purge out the trapped air, then top-up the level in the fluid reservoir. Repeat this procedure until the fluid level in the reservoir does not drop any further.

4 Start the engine, then slowly move the steering from lock-to-lock several times to purge out any remaining air in the system. Repeat this procedure until bubbles cease to appear in the fluid reservoir.

5 If, when turning the steering, an abnormal noise is heard from the fluid lines, it indicates that there is still air in the system. Check this by turning the wheels to the straight-ahead position and switching off the engine. If the fluid level in the reservoir rises, then air is present in the system, and further bleeding is necessary.

6 Once all traces of air have been removed from the power steering hydraulic system, turn the engine off and allow the system to cool. Once cool, check that the fluid level is up to the maximum mark on the power steering fluid reservoir, topping-up if necessary.

18 Power steering pump - removal and refitting



Removal

- 1 Remove the alternator as described in Chapter 5A.
- 2 Prepare a suitable container, then disconnect the fluid hoses from the pump, and allow the fluid to drain into the container.
- 3 Unscrew and remove the power steering pump mounting bolts, then withdraw the pump.

Refitting

- 4 Refitting is a reversal of removal, but on completion, tension the drivebelt as described in Chapter 1, and bleed the power steering hydraulic system as described in Section 17.

19 Track rod end - removal and refitting



Removal

- 1 Chock the rear wheels then jack up the front of the car and support it on axle stands (see "Jacking and vehicle support"). Remove the relevant front roadwheel.
- 2 Loosen the locknut on the track rod end by a quarter of a turn.
- 3 Unscrew the balljoint locknut and use an extractor tool to separate the balljoint tapered shank from the hub carrier steering arm (see illustration).
- 4 Unscrew the track rod end from the track rod, noting the number of turns necessary to remove it. Remove the locknut from the track rod end threads.

Refitting

- 5 Screw on the locknut then screw the new track rod end the same number of turns onto the track rod.
- 6 Clean the taper surfaces then fit the balljoint shank to the hub carrier steering arm and tighten the nut to the specified torque.



If difficulty is experienced in loosening or tightening a balljoint taper pin nut due to the taper pin turning in the eye, apply pressure with a jack or long lever to the balljoint socket to force the taper pin into its conical seat.

- 7 Tighten the locknut on the track rod end.
- 8 Refit the roadwheel and lower the car to the ground.
- 9 On completion, have the front wheel toe setting checked (see Section 21).

20 Track rod - removal and refitting



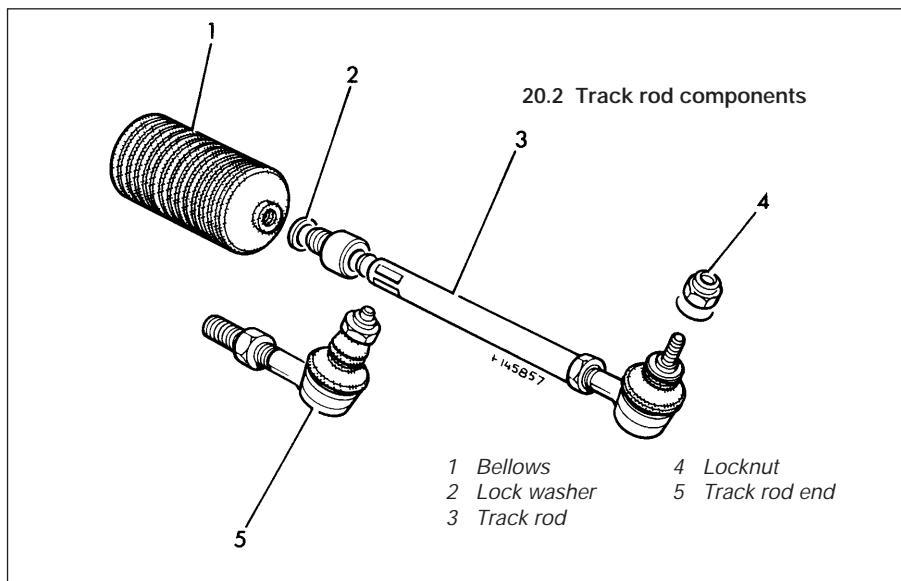
Removal

Note: A new inner balljoint lockwasher must be used on refitting.

- 1 Remove the track rod end as described in Section 19.
- 2 Release the retaining clips and slide the rubber bellows off the end of the steering gear housing and track rod (see illustration).
- 3 Unscrew the track rod inner balljoint from the steering rack end, preventing the steering rack from turning by holding the balljoint lockwasher with a pair of grips. Take great care not to mark the surfaces of the rack and balljoint.
- 4 Remove the track rod assembly, and discard the lockwasher - a new one must be used on refitting.
- 5 Examine the track rod inner balljoint for signs of slackness or tight spots, and check that the track rod itself is straight and free from damage. If necessary, renew the track rod.

Refitting

- 6 Locate the new lockwasher assembly on the end of the steering rack, and apply a few drops of locking fluid to the track rod inner balljoint threads.
- 7 Screw the balljoint into the steering rack, and tighten it to the specified torque whilst retaining the lockwasher with a pair of grips. Again, take great care not to damage or mark the track rod balljoint or steering rack.
- 8 Carefully slide on the rubber bellows, and locate it on the steering gear housing. Turn the steering fully from lock-to-lock, to check that the gaiter is correctly positioned on the track rod, then secure it in position with new retaining clips.
- 9 Refit the track rod end as described in Section 19.





21.11 Adjusting the front wheel toe setting

21 Wheel alignment and steering angles - general information

1 A car's steering and suspension geometry is defined in four basic settings - all angles are expressed in degrees (toe settings are also expressed as a measurement); the relevant settings are camber, castor, steering axis inclination, and toe-setting. With the exception of front wheel toe-setting, none of these settings are adjustable.

Front wheel toe setting - checking and adjustment

2 Due to the special measuring equipment necessary to accurately check the wheel alignment, and the skill required to use it properly, checking and adjustment is best left to a Peugeot dealer or similar expert. Note that most tyre-fitting shops now possess sophisticated checking equipment. The following is provided as a guide, should the owner decide to carry out a DIY check.

3 The front wheel toe setting is checked by measuring the distance between the front and

rear inside edges of the roadwheel rims. Proprietary toe measurement gauges are available from motor accessory shops. Adjustment is made by screwing the track rod ends in or out of their track rods, to alter the effective length of the track rod assemblies.

4 For **accurate** checking, the vehicle **must** be at the kerb weight, ie unladen and with a full tank of fuel, and the ride height must be correct (see Section 12).

5 Before starting work, check the tyre pressures and tread wear, the condition of the hub bearings, the steering wheel free play, and the condition of the front suspension components (see Chapter 1). Correct any faults found.

6 Park the vehicle on level ground, check that the front roadwheels are in the straight-ahead position, then rock the rear and front ends to settle the suspension. Release the handbrake, and roll the vehicle backwards 1 metre, then forwards again, to relieve any stresses in the steering and suspension components.

7 Measure the distance between the front edges of the wheel rims and the rear edges of the rims. Subtract the rear measurement from the front measurement, and check that the result is within the specified range.

8 If adjustment is necessary, apply the handbrake, then jack up the front of the vehicle and support it securely on axle stands (see "Jacking and vehicle support"). Turn the steering wheel onto full-left lock, and record the number of exposed threads on the right-hand track rod end. Now turn the steering onto full-right lock, and record the number of threads on the left-hand side. If there are the same number of threads visible on both sides, then subsequent adjustment should be made equally on both sides. If there are more threads visible on one side than the other, it will be necessary to compensate for this during adjustment. **Note:** *It is most important*

that after adjustment, the same number of threads are visible on each track rod end.

9 First clean the track rod end threads; if they are corroded, apply penetrating fluid before starting adjustment. Release the rubber bellows outboard clips (where necessary), and peel back the bellows; apply a smear of grease to the inside of the bellows, so that both are free, and will not be twisted or strained as their respective track rods are rotated.

10 Use a straight-edge and a scribe or similar to mark the relationship of each track rod to its track rod end then, holding each track rod in turn, unscrew its locknut fully.

11 Alter the length of the track rods, bearing in mind the note made in paragraph 8. Screw them into or out of the track rod ends, rotating the track rod using an open-ended spanner fitted to the flats provided on the track rod. Shortening the track rods (screwing them into their track rod ends) will reduce toe-in/increase toe-out (see illustration).

12 When the setting is correct, hold the track rods and securely tighten the track rod end locknuts. Count the exposed threads to check the length of both track rods. If they are not the same, then the adjustment has not been made equally, and problems will be encountered with tyre scrubbing in turns; also, the steering wheel spokes will no longer be horizontal when the wheels are in the straight-ahead position.

13 If the track rod lengths are the same, lower the vehicle to the ground and re-check the toe setting; re-adjust if necessary. When the setting is correct, securely tighten the track rod end locknuts. Ensure that the rubber bellows are seated correctly, and are not twisted or strained, and secure them in position with new retaining clips (where necessary).

