

Chapter 10

Suspension and steering systems

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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



Specifications

Front suspension

Type	Independent, incorporating transverse lower wishbones and coil spring strut units with integral shock absorbers. Anti-roll bar fitted to all models.
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Rear suspension

Type	Independent, incorporating trailing arms with telescopic shock absorbers and coil springs. Anti-roll bar fitted to all models.
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Steering

Type	Rack-and-pinion, power assisted standard on UK models, but manual on certain other markets
Turns lock-to-lock:	
Pre-1998 models	2.9 approx.
1998-on models	3.0

Wheel alignment and steering angles

Front wheel:	
Toe-in	-1.0 to +1.0 mm
Camber:	
Pre-1998 models	-7' ± 30'
1998-on models	-33' ± 30'
Castor:	
Pre-1998 models without PAS	3° 30' ± 30'
Pre-1998 models with PAS	2° 50' ± 30'
1998-on models	2° 50' ± 30'
Rear wheel:	
Toe-in:	
Up to chassis number 4.050.319	-2.5 to +1.5 mm
From chassis number 4.050.320	0 to 4.0 mm
Camber	0° 46' ± 30'

Roadwheels

Type	Pressed steel
Size	5½ Jx14, 6Jx14, 6Jx15
Tyre pressures	see <i>Weekly Checks</i>

Torque wrench settings	Nm	lbf ft
Front suspension		
Anti-roll bar clamp nuts	40	30
Anti-roll bar end nuts	70	52
Anti-roll bar link to lower arm	31	23
Hub (driveshaft) nut (M22)	240	177
Lower arm to subframe	69	51
Rear engine mounting and bracket	50	37
Strut:		
Damper rod nut	100	74
Upper mounting bolts	40	30
Strut to hub carrier	70	52
Subframe:		
Front bolt with wide flange	108	80
Rear bolt with normal flange	80	59
Track-rod balljoint to hub carrier	40	30
Rear suspension		
Anti-roll bar:		
End bolt	56	41
Clamp bolt	28	21
Rear axle assembly mounting	108	80
Rear hub nut	280	207
Rear suspension trailing arm pivot bolt	150	111
Shock absorber:		
Upper	60	44
Lower	88	65
Steering		
Lower arm-to-hub carrier clamp bolt	70	52
Power steering gear	70	52
Power steering pump drivebelt tensioner bolt	48	35
Power steering pump mounting bolt:		
M6 and M8 bolt	25	18
M10 bolt	50	37
Power steering pump mounting bracket nut	48	35
Power steering pump pulley	25	18
Return union on steering gear	20	15
Steering column mounting bolts	55	41
Steering wheel nut	50	37
Supply union on steering gear	30	22
Track-rod end balljoint to steering arm on hub carrier	40	30
Universal joint clamp bolts	20	15
Roadwheels		
Wheel bolts	86	63

1 General information

Front suspension

The front suspension is independent, comprising transverse lower wishbones, coil spring strut units with integral shock absorbers, and an anti-roll bar. The hub carriers are bolted to the base of the strut units and are linked to the lower arms by means of balljoints. The entire front suspension assembly is mounted on a subframe, which is in turn bolted to the vehicle body.

Rear suspension

The rear suspension incorporates a torsion beam axle, trailing arms, coil springs and

separate telescopic shock absorbers. A rear anti-roll bar is fitted to all models.

Steering

The two-piece steering column assembly is bolted to a bracket mounted on the bulkhead. The upper section of the inner column runs in bearings located in the tubular outer column. The lower section of the column incorporates two universal joints, the lower one being clamped to the splined steering gear pinion.

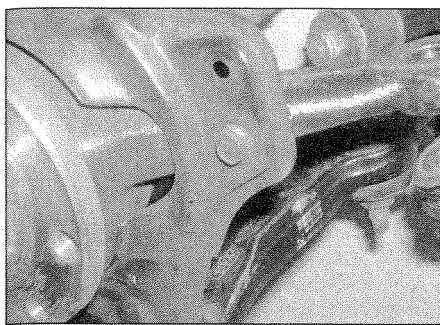
The steering gear is mounted on the front suspension subframe, and is connected to the steering arms projecting rearwards from the hub carriers. The track-rods are fitted with balljoints at their inner and outer ends, to allow for suspension movement, and are threaded to facilitate adjustment.

Hydraulically-assisted power steering is fitted to all UK models. The hydraulic system is powered by a belt-driven pump, which is driven from the crankshaft pulley.

All models are fitted with an airbag system and seat belt tensioners. Sensors built into the vehicle body are triggered in the event of a front end collision, and prompt an Electronic Control Unit (ECU) to activate the airbag mounted in the centre of the steering wheel and the facia. This reduces the risk of the front seat occupants striking the steering wheel, windscreen or facia during an accident. At the same time the seat belt tensioners are activated.



Warning: For safety reasons, owners are strongly advised to entrust to an authorised FIAT dealer any work on the airbag system components. The airbag inflation devices contain explosive material and legislation exists to control their handling and storage. In addition, specialised test equipment is needed to check that the airbag system is fully operational following reassembly.



2.5 Splash shield securing bolt on the hub carrier

2 Front hub bearings - renewal

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Note: A balljoint separator tool, and a press or suitable alternative tools (see text) will be required for this operation. The bearing will be destroyed during the removal procedure.

1 Remove the wheel trim from the appropriate wheel, then loosen the driveshaft/hub nut with the vehicle resting on its wheels and the handbrake firmly applied. The nut is very tight and an extension bar may be necessary to loosen it. Also loosen the wheel bolts half a turn.

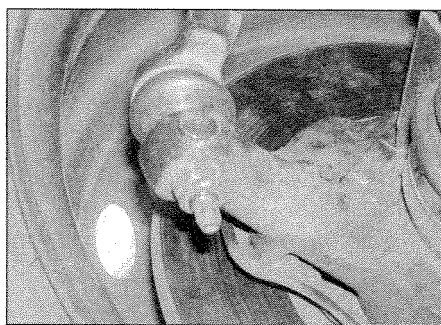
2 Apply the handbrake, then jack up the front of the vehicle and support on axle stands (see *Jacking and vehicle support*). Remove the appropriate roadwheel.

3 Unscrew and remove the driveshaft/hub nut and discard it - a new one must be used on refitting.

4 Remove the brake disc and caliper, with reference to Chapter 9. Note that the caliper body can remain bolted to its bracket, and there is no need to disconnect the brake fluid hose from the caliper. Tie the caliper to the coil spring without straining the flexible brake hose.

5 Unbolt and remove the caliper splash shield (see illustration).

6 Unscrew the nut securing the steering track-rod end to the hub carrier steering arm (see illustration). Using a balljoint removal tool, separate the track-rod end from the arm.



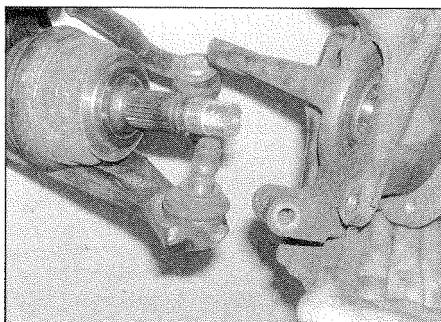
2.6 Nut securing the steering track rod end to the hub carrier steering arm

7 On models with ABS, undo the screw securing the ABS sensor to the hub carrier. Suspend the sensor away from the working area.

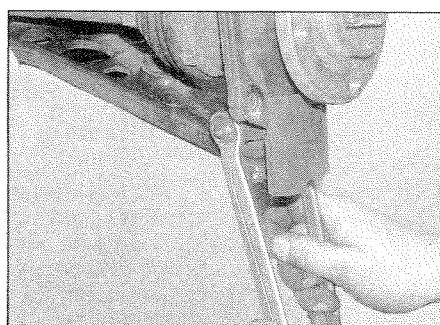
8 Unscrew and remove the clamp bolt from the bottom of the hub carrier, then push the lower arm down and separate the balljoint from the hub carrier (see illustrations).

9 Unscrew and remove the bolts securing the hub carrier to the bottom of the strut, then withdraw the hub carrier from the splined driveshaft (see illustrations). Note which way round the bolts are fitted. If necessary, use a hide mallet to tap the driveshaft from the hub.

Caution: Do not allow the end of the driveshaft to hang down under its own weight, as this places strain on the CV joints; support the end of the shaft using wire or string.



2.8b ... then push the lower arm down and separate the balljoint from the base of the hub carrier

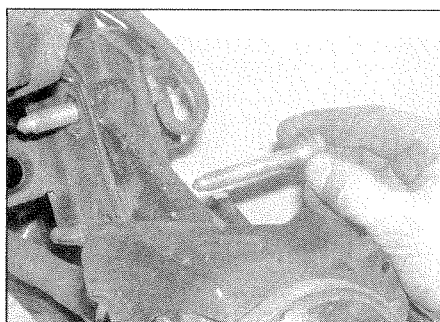


2.8a Unscrew and remove the clamp bolt ...

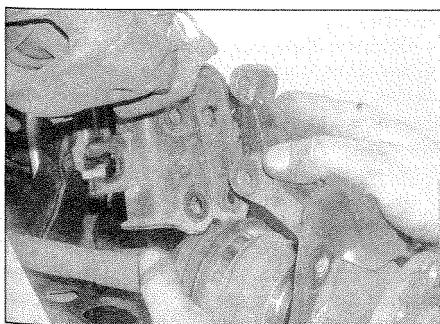
10 At this stage, it is recommended that the hub carrier be taken to an engineering workshop, as the hub and bearing should ideally be removed from the hub carrier using a hydraulic press. Owners wishing to attempt the work themselves should proceed as follows.

11 Support the hub carrier on blocks of wood with the hub drive flange facing downwards. Press or drive the hub from the hub carrier. Alternatively, use a slide hammer to remove the hub (see illustration). Note that the inner race will remain on the hub. To remove the race, initially mount the hub in a vice and use a cold chisel to force it a few millimetres from the shoulder, then use a puller to withdraw it.

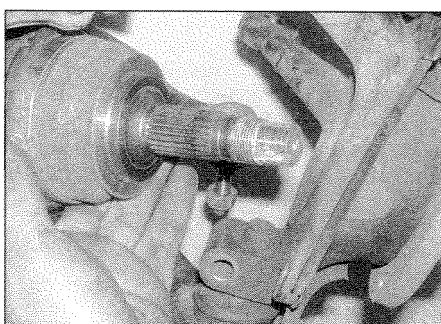
12 Extract the bearing circlip from the inside face of the hub carrier, then press or drive out



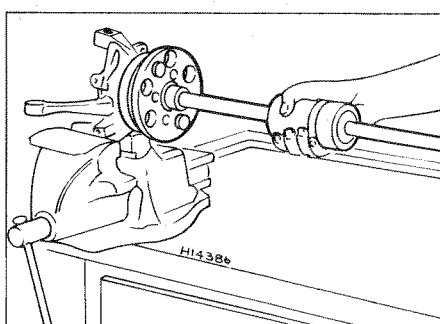
2.9a Remove the bolts ...



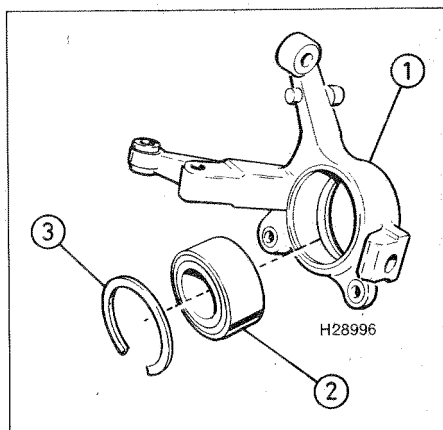
2.9b ... separate the hub carrier from the bottom of the strut ...



2.9c ... and withdraw the hub carrier from the splined driveshaft



2.11 Using a slide hammer to extract the hub



2.12 Wheel bearing components

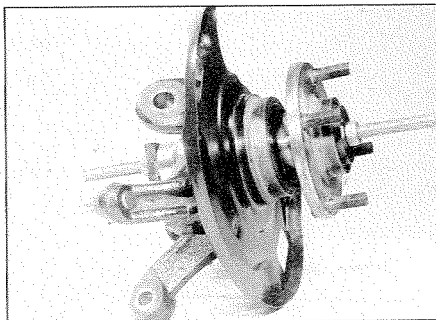
1 Hub carrier 2 Wheel bearing 3 Circlip

the bearing using a metal tube (**see illustration**). If necessary, temporarily refit the inner race removed in paragraph before removing the bearing. Note that the flange on the outer side of the carrier means that the bearing can only be driven out in one direction.

13 Before installing the new bearing, thoroughly clean the bearing location in the hub carrier.

14 Fit the new bearing from the inboard side of the hub. Press or drive the bearing into position, applying pressure **only** to the bearing outer race.

15 Fit the bearing retaining circlip to its groove in the hub carrier.



2.16 Typical method of drawing the hub into the wheel bearing using improvised tools

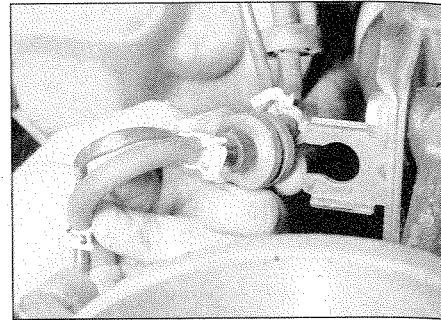
16 Carefully press or draw the hub into the bearing, noting that the bearing inner race **must** be supported during this operation, to prevent it from being separated from the outer race. This can be achieved using a suitable socket, threaded rod, washers and a length of bar (**see illustration**).

17 Locate the hub on the splined end of the driveshaft, then refit the hub carrier to the bottom of the strut. Insert the bolts as previously noted, and tighten to the specified torque.

18 Locate the lower arm balljoint in the bottom of the hub carrier, then insert the clamp bolt and tighten to the specified torque. Make sure that the bolt enters the groove in the balljoint stub.

19 On models with ABS, refit the ABS sensor and tighten the screw.

20 Refit the steering track-rod end to the hub



3.2 Release the brake fluid line (and where applicable, the pad wear/ABS sensor wiring) from the strut

carrier steering arm, and tighten the retaining nut to the specified torque.

21 Refit the caliper splash shield and tighten the bolt.

22 Refit the brake caliper and disc with reference to Chapter 9.

23 Screw on the driveshaft/hub nut and moderately tighten it at this stage.

24 Refit the roadwheel and lower the vehicle to the ground.

25 Fully tighten the driveshaft/hub nut to the specified torque.

26 Have the front wheel alignment checked by a FIAT dealer or a tyre specialist at the earliest opportunity.

3 Front suspension strut - removal, overhaul and refitting



Warning: If renewing the strut shock absorber during overhaul, both the left and right hand units should be renewed as a pair, to preserve the handling characteristics of the vehicle.

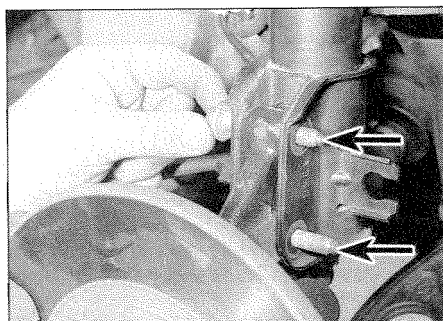
Removal

1 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (**see Jacking and vehicle support**). Remove the relevant roadwheel.

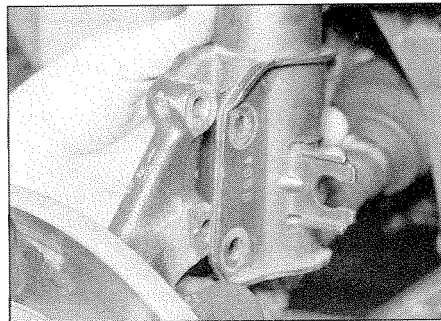
2 Release the brake fluid line (and where applicable, the pad wear/ABS sensor wiring) from the bracket on the base of the strut (**see illustration**).

3 Remove the two nuts from the bolts securing the lower end of the strut to the hub carrier, noting which way round they are fitted (**see illustrations**). Withdraw the bolts, and support the hub carrier on a trolley jack.

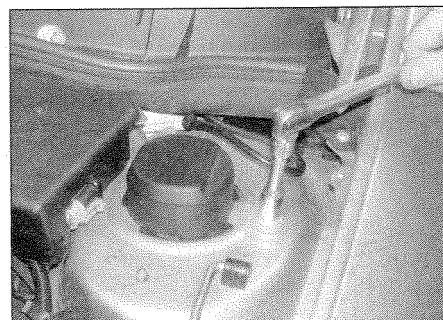
4 Have an assistant support the strut from under the wheel arch then, working in the engine compartment, unscrew the upper mounting bolts. Note that the location studs ensure the strut can only be fitted in one position. *Do not unscrew the centre damper rod nut yet.* Release the lower end of the strut from the hub carrier, then withdraw the assembly from under the wheel arch (**see illustrations**).



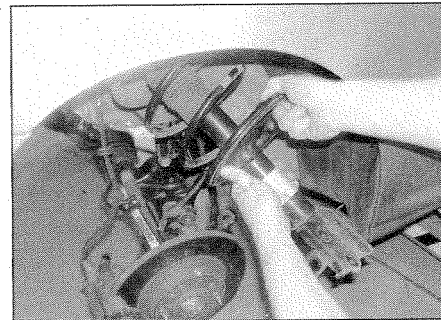
3.3a Remove the two bolts (arrowed) ...



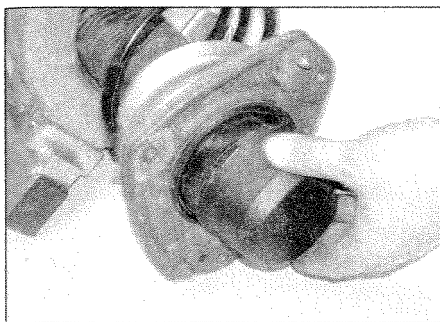
3.3b ... and detach the lower end of the strut from the hub carrier



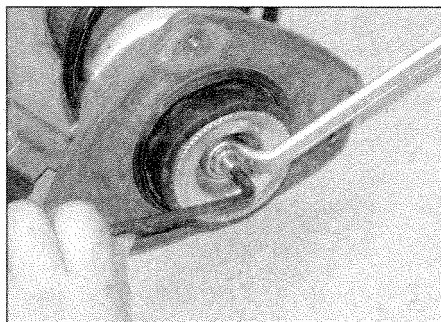
3.4a Unscrew the upper mounting bolts ...



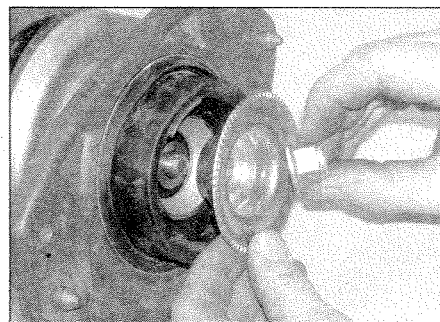
3.4b ... and withdraw the strut assembly from under the wheel arch



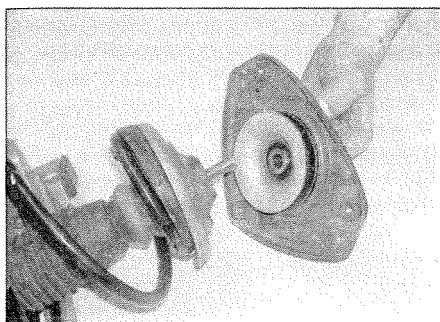
3.5 Remove the plastic protective cap from the top of the strut



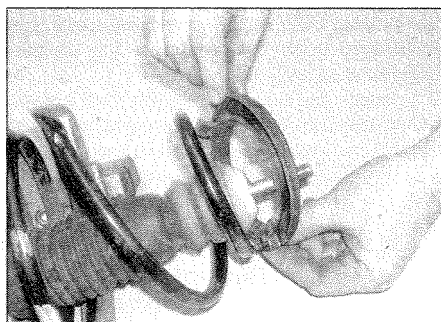
3.7a Unscrew the strut upper nut, while counterholding the damper rod with an Allen key ...



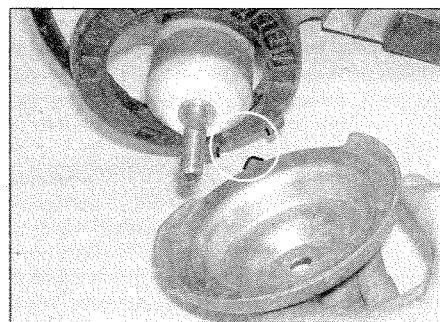
3.7b ... then remove the nut and cup



3.8a Remove the strut upper mounting plate/bearing ...



3.8b ... and seat



3.8c The plate has an arrow formed on its outer edge which is located between the plastic tabs

Overhaul

Note: Suitable coil spring compressor tools will be required for this operation, and a new strut top nut must be used on reassembly.

5 Clamp the lower end of the strut in a vice fitted with jaw protectors - take care to avoid deforming the mounting bracket at the lower end of the strut. Remove the protective plastic cap from the top of the strut (see illustration).

6 Fit spring compressor tools to the coil spring, and compress the spring sufficiently to enable the upper spring seat to be turned by hand.



Warning: Use purpose-made compressor tools, and ensure that the coil spring is compressed sufficiently to

remove all the tension from the upper spring seat before attempting to remove the damper rod nut.

7 Unscrew and remove the strut upper nut and cup. Counterhold the damper rod, using a suitable Allen key or hex bit, as the nut is unscrewed (see illustrations). Discard the nut - a new one must be used on reassembly.

8 Withdraw the upper mounting plate/bearing and seat. Note that the plate has an arrow formed on its outer edge which is located between the plastic tabs (see illustrations).

9 Withdraw the spring, complete with the compressors, then withdraw the bump rubber/dust cover (see illustrations).

10 With the strut assembly now dismantled, examine all the components for wear, damage

or deformation. Check the upper bearing for wear and roughness, and check the rubber components for deterioration. Renew any of the components as necessary.

11 Examine the shock absorber for signs of fluid leakage. Check the shock absorber rod for signs of pitting along its entire length, and check the strut body for signs of damage. While holding it in an upright position, test the operation of the shock absorber by moving the rod through a full stroke, and then through short strokes of 50 to 100 mm. In both cases, the resistance felt should be smooth and continuous. If the resistance is jerky, or uneven, or if there is any visible sign of wear or damage to the strut, renewal is necessary. Note that the shock absorber cannot be renewed independently, and if leakage, damage or corrosion is evident, the complete strut/shock

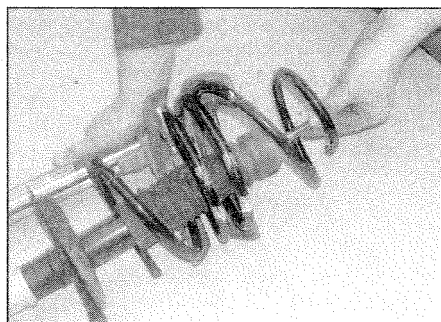
absorber assembly must be renewed. The spring and associated components can be transferred to the new strut.

12 If any doubt exists about the condition of the coil spring, carefully remove the spring compressor tools, and check the spring for distortion and signs of cracking. Renew the spring if there is any doubt about its condition.

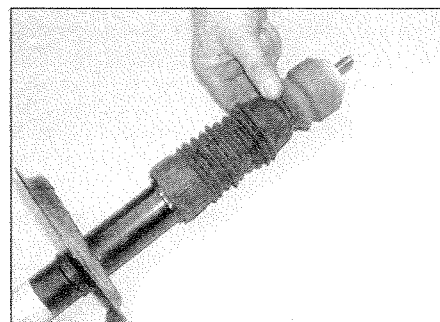


Warning: Coil springs are classified by a coloured paint marking on the central coil (either green or yellow). Both coil springs fitted to the vehicle must be of the same classification to ensure the correct ride height.

13 Clamp the strut body in a vice, as during dismantling, then refit the bump rubber/dust cover.



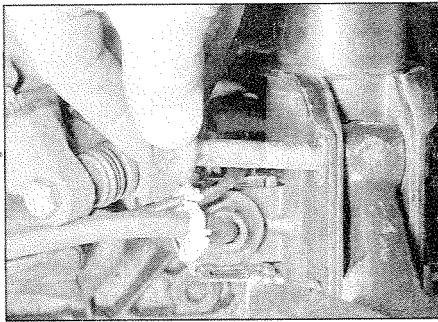
3.9a Remove the coil spring complete with compressor ...



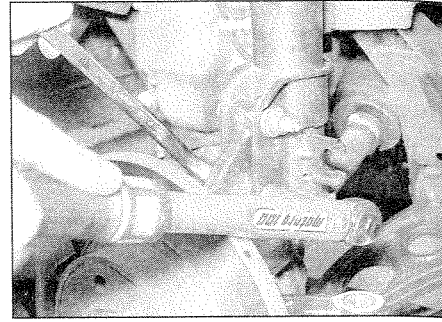
3.9b ... then remove the bump rubber/dust cover



3.14 Make sure that the lower end of the coil spring is correctly located in the recess on the lower spring seat



3.19a Fit the securing bolts, noting that the nuts fit on the rear side of the strut ...



3.19b ... and tighten them to the specified torque

14 Ensure that the coil spring is compressed sufficiently to enable the upper mounting components to be fitted, then fit the spring onto the strut, ensuring that the lower end of the spring is correctly located in the recess on the lower spring seat (see illustration).

15 Refit the upper mounting plate/bearing followed by the cup and new nut, making sure that the arrow is pointing between the plastic tabs. Ensure that the top end of the spring is correctly located on the upper spring seat.

16 Tighten the nut to the specified torque, counterholding the damper rod in a manner similar to that used during dismantling. Note that a suitable crows-foot adapter will be required to tighten the damper rod top nut to the specified torque.

17 Remove the spring compressor tools, and refit the protective plastic cap to the top of the strut.

Refitting

18 Manoeuvre the strut assembly into position under the wheel arch, and engage the locating studs with the holes in the body turret. Fit the upper mounting bolts, and tighten them to the specified torque.

19 Attach the hub carrier to the bottom of the strut. Insert the bolts the correct way round as previously noted, and tighten to the specified torque (see illustrations).

20 Refit the brake fluid line (and where applicable, the pad wear/ABS sensor wiring) to the bracket on the base of the strut.

21 Refit the roadwheel, and lower the vehicle to the ground.

4 Front suspension lower arm - removal and refitting

Removal

Note: A balljoint separator tool may be required for this operation.

1 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and vehicle support*). Remove the relevant roadwheel.

2 Unscrew and remove the clamp bolt from

the bottom of the hub carrier, then push the lower arm down and separate the balljoint from the hub carrier.

3 Unscrew the nut securing the front anti-roll bar to the lower arm, and remove the washer and rubber. Also unscrew the nut securing the link to the anti-roll bar and remove the washer. Withdraw the link and recover the washer and rubber.

4 Unscrew the mounting bolts and withdraw the lower arm from the subframe.

5 With the lower arm removed, examine the lower arm itself, and the mounting bushes, for wear, cracks or damage.

6 Check the balljoint for wear, excessive play, or stiffness. Also check the balljoint dust boot for cracks or damage.

7 The mounting bushes and balljoint assembly are integral with the lower arm, and cannot be renewed independently. If either the bushes or the balljoint are worn or damaged, the complete lower arm assembly must be renewed.

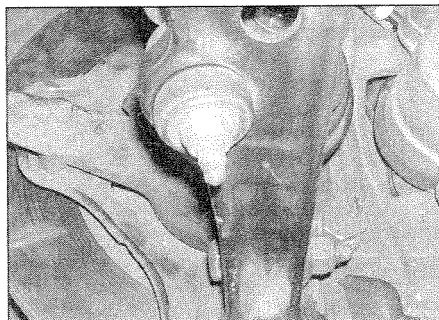
Refitting

8 Locate the lower arm in the subframe, and refit the mounting bolts. Tighten them to the specified torque.

9 Refit the link, washer and nut to the anti-roll bar, and at the same time refit the rubber and washer and locate the link in the lower arm.

10 Refit the rubber and washer under the lower arm, and fit the nut. Tighten the link nuts to the specified torque.

11 Locate the lower arm balljoint in the



6.2 Nut securing the anti-roll bar to the front suspension lower arm

bottom of the hub carrier, then insert the clamp bolt and tighten to the specified torque. Make sure that the bolt enters the groove in the balljoint stub.

12 Refit the roadwheel and lower the vehicle to the ground.

13 On completion the front wheel alignment should be checked.

5 Front suspension lower arm balljoint - renewal

The balljoint is integral with the suspension lower arm. If the balljoint is worn or damaged, the complete lower arm must be renewed as described in Section 4.

6 Front suspension anti-roll bar - removal and refitting

Removal

1 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and vehicle support*). Remove the relevant roadwheels.

2 Unscrew the nuts securing the anti-roll bar links to the front suspension lower arms on each side, and remove the washers and rubbers (see illustration). Note that the convex sides of the washers contact the rubbers.

3 Unscrew the nuts and remove the washers from each end of the anti-roll bar, and remove the links and upper rubbers and washers. Note that the convex sides of the washers contact the rubbers.

4 Mark the top of the anti-roll bar with a dab of paint to ensure correct refitting.

5 Unscrew the anti-roll bar clamp bolts located under the subframe, then withdraw the anti-roll bar from one side of the vehicle. Recover the clamps.

6 Inspect the rubber bushes for cracks or deterioration. If renewal is necessary, slide the old bushes from the bar, and fit the new items, using soapy water as a lubricant. Do

not apply grease or oil as this will attack the rubber.

7 Check the anti-roll bar for signs of damage, wear or serious corrosion.

Refitting

8 Refitting is a reversal of removal, but tighten all nuts and bolts to the specified torque where given.

7 Front suspension subframe - removal and refitting

Removal

1 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and vehicle support*). Remove both front roadwheels.

2 Remove the exhaust front downpipe with reference to Chapter 4C.

3 Remove both front suspension lower arms as described in Section 4.

4 Remove the anti-roll bar as described in Section 6.

5 Unbolt the rear engine mounting from the subframe, then unbolt the bracket from the transmission and withdraw the mounting and bracket from under the vehicle.

6 Undo the screws and remove the exhaust heatshield from the underbody.

7 Unscrew and remove the two central bolts securing the steering gear to the subframe.

8 Support the weight of the subframe on a trolley jack and length of wood.

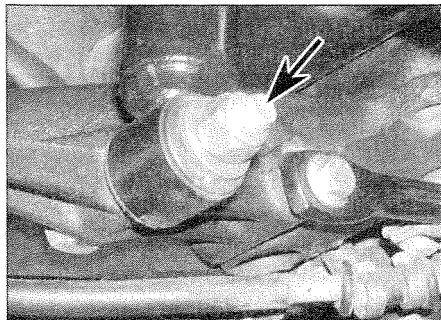
9 Unscrew and remove the remaining mounting bolts and lower the subframe to the ground. Withdraw the subframe from under the car.

Refitting

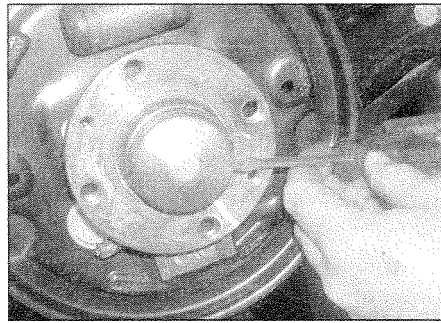
10 Lift the subframe on the trolley jack, and insert the mounting bolts, hand-tight at this stage.

11 Using two 12.0 mm diameter metal rods inserted through the two holes at the rear of the subframe, align the subframe, then tighten the mounting bolts progressively to the specified torque.

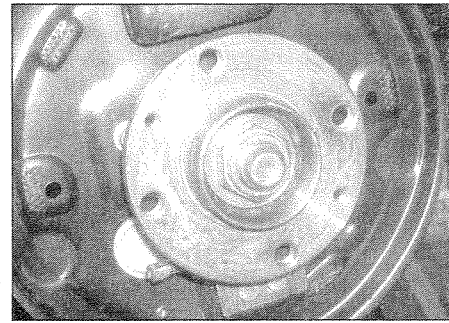
12 Insert and tighten the steering gear mounting bolts to the specified torque.



9.3 Rear shock absorber lower mounting bolt



8.4 Prise the dust cap from the hub with a screwdriver



8.5 The rear hub nut

13 Refit the exhaust heatshield.

14 Refit the rear engine mounting and bracket and tighten the bolts to the specified torque.

15 Refit the anti-roll bar with reference to Section 6.

16 Refit both front suspension lower arms with reference to Section 4.

17 Refit the exhaust front downpipe with reference to Chapter 4C.

18 Refit the roadwheels and lower the vehicle to the ground.

8 Rear hub bearings - renewal

Note: A new rear hub nut must be used on refitting.

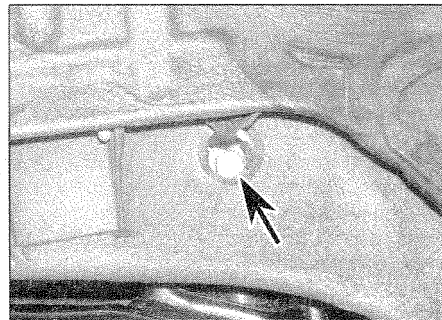
1 The rear hub bearings are integral with the hubs themselves, and cannot be renewed separately. If the bearings are worn excessively, the complete hub assembly must be renewed.

2 Chock the front roadwheels, then jack up the rear of the vehicle and support on axle stands (see *Jacking and vehicle support*). Remove the appropriate rear roadwheel.

3 Remove the brake drum as described in Chapter 9. **Do not** depress the brake pedal whilst the brake drum is removed.

4 Prise the dust cap from the hub with a screwdriver (see illustration).

5 Unscrew and remove the hub nut and recover the washer (see illustration).



9.4 Rear shock absorber upper mounting bolt

Caution: The nut is tightened to a high torque. Use a socket and long extension bar and ensure that you have access to torque wrench capable of tightening the new nut to the specified torque setting, before removing the existing nut.

6 Withdraw the hub and bearing assembly from the stub axle, and recover the inner washer. Discard the hub nut - a new one must be used on refitting.

7 Thoroughly clean the stub axle, then slide the inner washer and new hub assembly into position.

8 Fit the outer washer, then screw on the new hub nut. Hold the stub axle stationary using a suitable Allen key, then tighten the hub nut to the specified torque.

9 Apply a little grease around the edge of the dust cap, then carefully tap it into the hub. Refit the brake drum with reference to Chapter 9.

10 Refit the roadwheel then lower the vehicle to the ground.

9 Rear shock absorber - removal and refitting

Removal

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

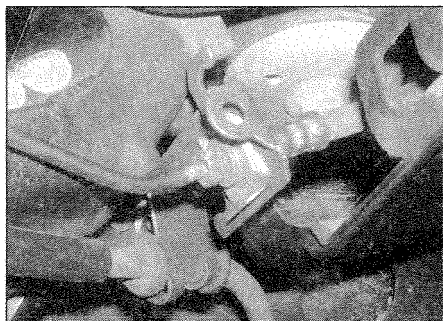
2 Using a trolley jack positioned under the trailing arm, raise the trailing arm slightly to compress the coil spring.

3 Unscrew and remove the lower mounting bolt (see illustration).

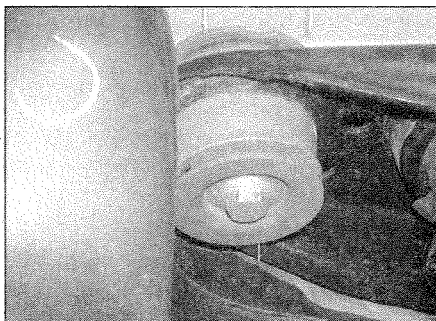
4 Unscrew and remove the upper mounting bolt using a socket through the access hole (see illustration), then pull the top of the shock absorber from the rear suspension subframe.

Refitting

5 Refitting is a reversal of removal. Tighten the upper and lower mounting bolts to the specified torque with the trolley jack supporting the weight of the car so that the rear suspension is compressed.



13.5 Rear brake hydraulic line and union nut on the underbody in front of the rear axle



13.9 One of the rear axle mountings

10 Rear suspension coil spring - removal and refitting

Removal

- 1 Chock the front wheels, then jack up the rear of the vehicle and support on axle stands (see *Jacking and vehicle support*). Remove the relevant rear roadwheel.
- 2 Using a trolley jack positioned under the trailing arm, raise the trailing arm slightly to compress the coil spring.
- 3 Unscrew and remove the shock absorber lower mounting bolt.
- 4 Lower the trailing arm gradually on the trolley jack, until the coil spring is released from its lower seat on the trailing arm and its upper seat on the subframe. Make a note of the orientation of the coil spring, to ensure correct refitting later.
- 5 Remove the upper and lower spring seats, and the bump stop rubbers.

Refitting

- 6 Refitting is a reversal of removal. Tighten the shock absorber lower mounting bolt to the specified torque.

11 Rear suspension trailing arm - removal and refitting

Removal

- 1 Chock the front wheels, then jack up the rear of the vehicle and support on axle stands (see *Jacking and vehicle support*). Remove the relevant rear roadwheel.
- 2 Remove the brake drum and rear brake shoes as described in Chapter 9. **Do not** depress the brake pedal whilst the brake drum is removed.
- 3 Fit a brake hose clamp to the flexible hose leading to the relevant rear brake. Unscrew the union nut from the rear of the rear wheel cylinder, then unbolt the brake line support from the trailing arm.
- 4 Remove the handbrake cable from the backplate, then unbolt the backplate from the trailing arm.

- 5 Remove the rear hub (Section 8) and coil spring (paragraphs 6 to 9 of this Section).
- 6 Unbolt the anti-roll bar from the trailing arm.
- 7 Unscrew and remove the front pivot bolt and withdraw the trailing arm from the rear suspension subframe.
- 8 Check the bearings for excessive wear, particularly on the outer bearing. Note that it is not possible to renew the bearings separately; the complete trailing arm must be renewed.

Refitting

- 9 Refitting is a reversal of removal. Tighten all suspension fixings to the specified torque settings, but delay this operation until the full weight of the vehicle is resting on the roadwheels.
- 10 On completion, bleed the brake hydraulic system and adjust the operation of the handbrake, with reference to Chapter 9.

12 Rear suspension anti-roll bar - removal and refitting

Removal

- 1 Chock the front roadwheels, then jack up the rear of the vehicle and support on axle stands (see *Jacking and vehicle support*). Remove both rear roadwheels.
- 2 Where fitted, disconnect the rear brake pressure proportioning valve spring from the middle of the rear anti-roll bar.
- 3 Unscrew the bolts securing the anti-roll bar to the trailing arms, and withdraw it from under the car.

Refitting

- 4 Refitting is a reversal of removal, but tighten the mounting bolts securely.

13 Rear axle assembly - removal and refitting

Removal

- 1 Chock the front wheels, then jack up the rear of the vehicle and support on axle stands

(see *Jacking and vehicle support*). Remove the relevant rear roadwheel.

- 2 Remove the fuel tank as described in Chapter 4A or 4B.
- 3 Remove the rear section of the exhaust system as described in Chapter 4C.
- 4 Unscrew the filler cap from the brake fluid reservoir, and tighten it down onto a piece of polythene sheeting. This will reduce the loss of fluid when the brake lines are disconnected.
- 5 Working under the rear of the car, identify for position then unscrew the union nuts and disconnect the rear brake hydraulic lines on the underbody in front of the rear axle (see *illustration*). Plug the lines to prevent loss of fluid.
- 6 Back off the handbrake cable adjustment (see Chapter 9), and disconnect the cables from the equaliser bar. Also detach the outer cables from the underbody.
- 7 Where necessary, unbolt and remove the ABS sensors from each rear brake backplate.
- 8 Support the rear axle assembly with a trolley jack and length of wood. An assistant would also be helpful to steady the assembly as it is being lowered to the ground.
- 9 Unscrew the four mounting bolts securing the rear axle assembly to the underbody, then lower it to the floor (see *illustration*).
- 10 Remove the component parts of the rear axle assembly with reference to the relevant Sections of this Chapter.

Refitting

- 11 Refitting is a reversal of removal; tighten all nuts and bolts to the specified torque where given. Bleed the brake hydraulic system and adjust the handbrake cables as described in Chapter 9.

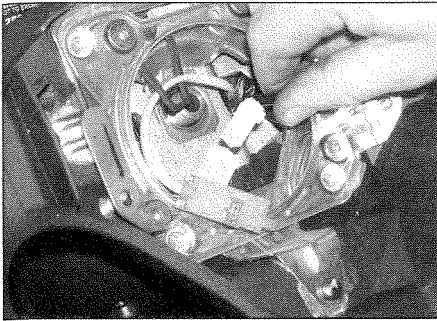
14 Steering wheel - removal and refitting



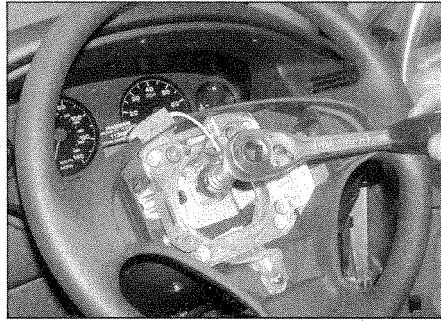
Warning: For safety reasons, owners are strongly advised to entrust to an authorised FIAT dealer any work which involves disturbing the airbag system components. The airbag inflation devices contain explosive material and legislation exists to control their handling and storage. In addition, specialised test equipment is needed to check that the airbag system is fully operational following reassembly. The following information is given for the home mechanic who may have access to the necessary equipment and storage.

Removal

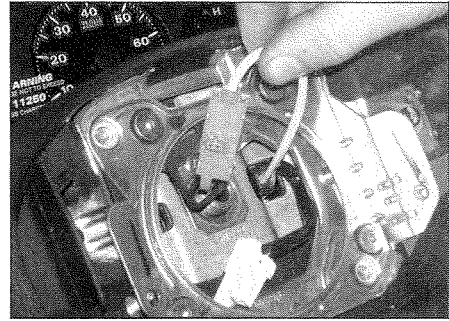
- 1 Disconnect the battery negative (earth) lead (see *Disconnecting the battery*). **Note:** The ignition must be switched off before



14.3 Disconnect the horn wiring (white) from the base of the steering wheel



14.6 Unscrew and remove the steering wheel securing nut



14.7 Feed the airbag clockspring and horn wires through the hole when removing the steering wheel

disconnecting the battery leads, then it is important to wait 10 minutes before removing the driver's air bag.

2 Remove the driver's air bag with reference to Chapter 12.

3 Disconnect the horn wiring (white) from the base of the steering wheel (see illustration).

4 Turn the steering wheel to its centre position, so that the roadwheels are pointing straight ahead.

5 Make alignment marks between the steering wheel and the end of the steering column shaft, to aid correct refitting later.

6 Unscrew and remove the steering wheel securing nut (see illustration).

7 Remove the steering wheel from the inner column splines, while feeding the airbag clockspring and horn wires through the hole (see illustration). If the steering wheel is tight, rock it from side to side whilst pulling upwards to release it from the shaft splines. If the wheel is particularly tight, a suitable puller should be used. **Do not** strike the steering wheel.

Refitting

8 Refitting is a reversal of removal, but align the previously made marks, and tighten the securing nut to the specified torque. Make sure that the clockspring wires are pulled completely through the hole in the base of the steering wheel, otherwise they may jam against the plastic location tabs on the clockspring and break them. This would require the renewal of the clockspring.



15.6 The clamp bolt attaching the steering column universal joint to the steering gear pinion shaft

15 Steering column - removal, overhaul and refitting

Removal

1 Refer to Section 14 and remove the steering wheel.

2 Remove the airbag clockspring unit from the column with reference to Chapter 12.

Note: The clockspring incorporates spring tensioned clips which prevent the upper and lower sections of the unit from turning in relation to each other when removed from the column.

3 Undo the screws and remove the lower steering column shroud, then remove the upper shroud.

4 Remove the combination switch as described in Chapter 12, Section 14.

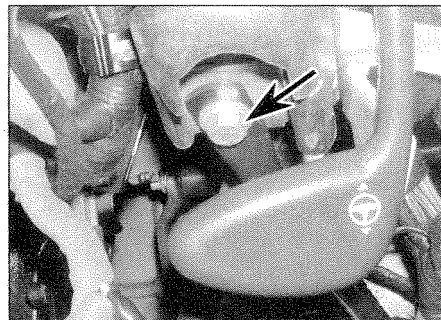
5 Undo the screws and remove the left foot rest located next to the clutch pedal.

6 At the bottom of the steering column, unscrew and remove the clamp bolt attaching the universal joint to the steering gear pinion shaft (see illustration).

7 Disconnect the wiring plug from the ignition switch.

8 Unclip and remove the lower fusebox trim panel located beneath the right-hand side of the fascia.

9 Unbolt the steering column support bar (see illustration).



15.9 Steering column support bar bolt

10 Support the steering column, then unscrew and remove the upper mounting bolts and lower it from the bulkhead (see illustration). Lift the steering column and release the lower universal joint from the steering gear pinion. Note that the pinion has a master spline.

11 Withdraw the steering column from inside the vehicle.

Overhaul

12 The height adjustment mechanism can be removed by removing the nut from the end of the pivot shaft and withdrawing it.

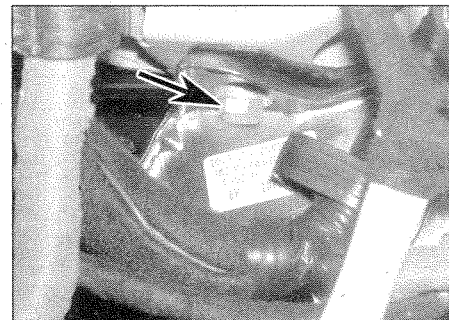
13 The upper and lower bushes are held in position by staking at the ends of the column tube. Relieve the staking using a mallet and punch to extract the bushes.

14 Check for excessive radial and axial play in the universal joints at both ends of the lower steering column. The lower section of the steering column may be renewed separately if required, by slackening the clamp bolt and detaching it from the upper section.

15 If the vehicle has been involved in an accident, check for deformation in all of the steering column components, particularly the mounting bracket and centre tube. Renew as required.

Refitting

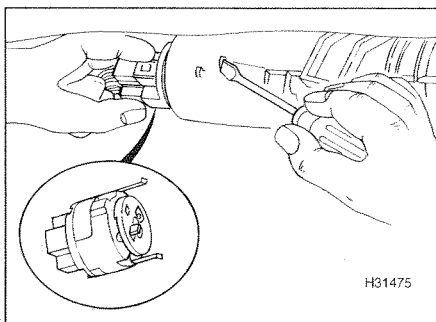
16 Refitting is a reversal of removal. Tighten all fixings to the specified torque setting.



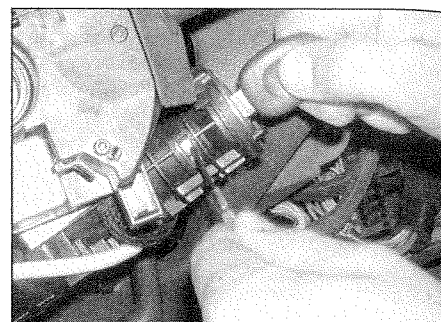
15.10 Steering column upper mounting bolt



16.3 Disconnecting the ignition switch wiring



16.4 Depress the two plastic tabs to remove the ignition switch



17.4a With the ignition key in the 'ignition on' position, depress the lug with a screwdriver . . .

16 Ignition switch - removal and refitting

Removal

- 1 Disconnect the battery negative (earth) lead (see *Disconnecting the battery*), and remove the ignition key from the switch.
- 2 Undo the screws and remove the lower steering column shroud.
- 3 Disconnect the ignition switch wiring at the connector beneath the fascia (see *illustration*).
- 4 Depress the two plastic tabs, using a screwdriver in the lock housing holes, and pull the switch from the steering lock housing (see *illustration*).

Refitting

- 5 Refitting is a reversal of removal, but make sure that the ignition key is removed when the switch is inserted in the steering lock housing.

17 Steering column lock and barrel - removal and refitting

Removal

- 1 Disconnect the battery negative (earth) lead (see *Disconnecting the battery*). Remove the ignition key.
- 2 Undo the screws and remove the lower

steering column shroud, then undo the screws and remove the upper shroud.

- 3 Insert the ignition key and turn it to the 'ignition on' position.

- 4 Using a screwdriver, depress the retaining lug located on the side of the switch housing, then use the key to withdraw the lock and barrel from the housing (see *illustrations*).

- 5 With the assembly on the bench, extract the circlip holding the barrel in the lock (see *illustration*).

- 6 Depress the parking light button on the lock and turn the ignition key fully anticlockwise (key in the parking light position).

- 7 Pull out the key approximately 2 or 3 mm so that the retaining tab is released, then withdraw the barrel from the lock (see *illustration*).

- 8 To remove the lock housing, use a pin punch to unscrew the shear bolts, then withdraw the housing from the steering column. New shear bolts must be obtained for refitting.

Refitting

- 9 Locate the lock housing on the steering column, and insert the new shear bolts. Hand-tighten the bolts at this stage.

- 10 Reassemble the barrel to the lock using a reversal of the dismantling procedure. Before reconnecting the battery negative lead, check that the ignition key can be turned to all positions, then remove the key and check that the steering lock works correctly. Tighten the lock housing shear bolts until their heads are

broken off, then refit the shrouds and reconnect the battery negative lead.

18 Manual steering gear assembly - removal and refitting

Removal

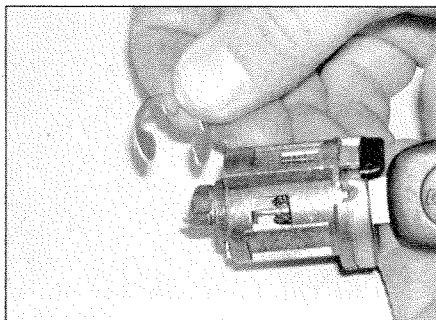
- 1 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and vehicle support*). Remove both front roadwheels.
- 2 Inside the car, unscrew and remove the clamp bolt at the base of steering column lower universal joint.
- 3 In the engine compartment, disconnect the link from the gearchange.
- 4 Unscrew the nuts from the track-rod ends on each side, then use a balljoint removal tool to separate the track-rod ends from the steering arms on the hub carriers.
- 5 Prise the gear selector rod from the top of the steering gear.
- 6 Unscrew and remove the steering gear mounting bolts. Withdraw the steering gear through the wheel arch on one side of the car.

Refitting

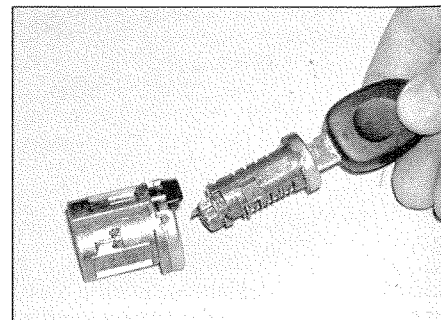
- 7 Refitting is a reversal of removal, but tighten all nuts and bolts to the specified torque where given. On completion, have the front wheel alignment checked by a FIAT dealer or tyre specialist.



17.4b . . . and withdraw the lock and barrel from the housing



17.5 Extract the circlip holding the barrel in the lock . . .



17.7 . . . and withdraw the barrel from the lock

19 Power steering gear assembly - removal and refitting



Removal

1 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and vehicle support*). Remove both front roadwheels.

2 Disconnect the battery negative (earth) lead (see *Disconnecting the battery*).

3 Syphon as much fluid as possible from the power steering reservoir, using a pipette or an old poultry baster. Alternatively, fit a hose clamp to the hose leading to the steering gear.

4 Undo the screws and remove the foot rest located next to the clutch pedal.

5 Unscrew and remove the clamp bolt at the base of the steering column, to release the lower universal joint from the steering gear pinion.

6 Unscrew the nuts from the track-rod ends on each side, then use a balljoint removal tool to separate the track-rod ends from the steering arms on the hub carriers.

7 Disconnect the gearchange socket from the ball on the transmission lever, then pull up the clip and disconnect the gearchange outer cable. Position it to one side.

8 Where applicable, disconnect the reverse inhibition wiring from the retaining clip on top of the transmission.

9 On the front of the engine, disconnect the oxygen sensor wiring, then unbolt the exhaust bracket from the cylinder block. Remove the front exhaust downpipe by unscrewing the nuts securing it to the exhaust manifold, and also unscrewing the bolts securing it to the catalytic converter (see Chapter 4C).

10 Support the engine using a trolley jack and piece of wood beneath the sump, then unbolt and remove the rear engine mounting from the transmission and underbody.

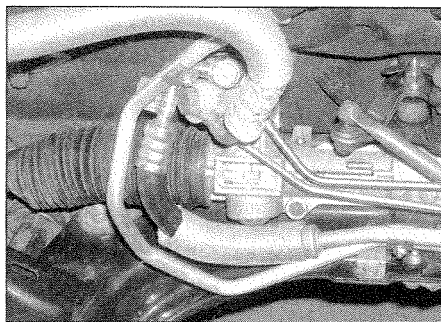
11 From under the engine, prise off the gearchange from the transmission mounting.

12 Position a container beneath the steering gear, then unscrew the nut and bolts and detach the hydraulic fluid line support brackets from the subframe and steering gear.

13 Note the location of the hydraulic fluid supply and return lines, then unscrew the union nuts and disconnect the lines from the steering gear (see *illustration*). Recover the sealing washers. Plug the ends of the lines to prevent loss of fluid.

14 Unscrew and remove the two bolts securing the steering gear to the subframe. Lower the steering gear and disconnect the splined pinion shaft from the bottom of the column universal joint. Note that the pinion shaft has a master spline to ensure it is only fitted in one position.

15 Move the complete steering gear to the



19.13 Hydraulic fluid supply and return lines on the power steering gear

left, then withdraw it downwards from the engine compartment.

Refitting

16 Refitting is a reversal of removal with reference to Chapter 4C where necessary, but tighten the nuts and bolts to the specified torque where given. Refill the hydraulic system with the specified grade and quantity of power steering fluid, then bleed the hydraulic system as described in Section 21. On completion, have the front wheel alignment checked at the earliest opportunity by a FIAT dealer or a tyre specialist.

20 Steering gear rubber gaiters - renewal



Note: New gaiter retaining clips should be used on refitting.

1 Remove the relevant track-rod end as described in Section 23.

2 If not already done, unscrew the track-rod end locknut from the end of the track-rod, but measure the distance from the locknut to the end of the track-rod before removing it.

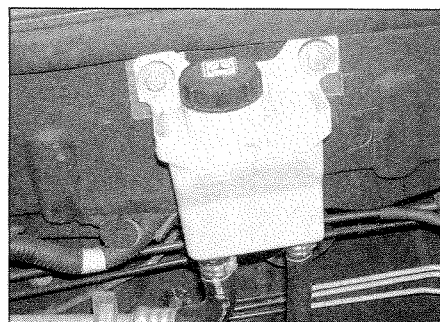
3 Mark the fitted position of the gaiter on the track-rod, then release the gaiter securing clips. Slide the gaiter from the steering gear, and off the end of the track-rod. Note that on manual steering gear models, it will be necessary to unscrew the nuts and remove the damper and rack bracket for access to the inner gaiter.

4 Thoroughly clean the track-rod and the steering gear housing. Scrape off all the grease from the old gaiter, and apply it to the track-rod inner balljoint. This assumes that grease has not been lost or contaminated as a result of damage to the old gaiter. Use fresh grease if in doubt.

5 Carefully slide the new gaiter onto the track-rod, and locate it on the steering gear housing. Align the outer edge of the gaiter with the mark made on the track-rod prior to removal, then secure it in position with new retaining clips.

6 Screw the track-rod end locknut onto the end of the track-rod.

7 Refit the track-rod end as described in Section 23.



21.3 Power steering hydraulic fluid reservoir at the rear of the engine compartment

21 Power steering hydraulic system - bleeding



General

1 The following symptoms indicate that there is air present in the power steering hydraulic system:

- a) *Generation of air bubbles in fluid reservoir.*
- b) *Clicking noises from power steering pump.*
- c) *Excessive 'buzzing' or 'groaning' from power steering pump.*

2 Note that when the vehicle is stationary, or while moving the steering wheel slowly, a 'hissing' noise may be produced in the steering gear or the fluid pump. This noise is inherent in the system, and does not indicate any cause for concern.

Bleeding

3 Unscrew the filler cap from the power steering fluid reservoir (see *illustration*), and check that the fluid level is up to the MAX mark on the dipstick. If necessary, top-up the fluid level.

4 Start the engine and allow it to idle.

5 Have an assistant turn the steering from lock to lock, while you observe the fluid level. If the fluid level drops, add more fluid, and repeat the operation until the fluid level no longer drops and there are no visible air bubbles in the fluid.

6 With the fluid level correct, refit and tighten the filler cap.

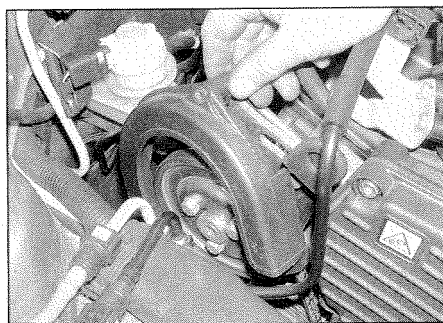
22 Power steering pump - removal and refitting



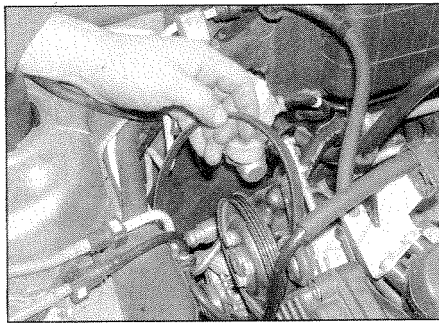
Removal

1.2 litre models

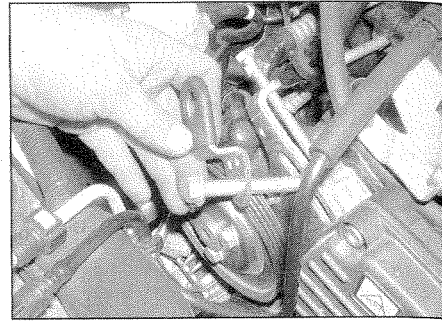
1 The power steering pump is located on the front right-hand side of the engine, and is belt-driven from the crankshaft pulley. First, apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see



22.22 Removing the guard from over the power steering pump drivebelt



22.24 Removing the drivebelt



22.26a Unscrew the upper pivot bolt . . .

Jacking and vehicle support). Remove the front right-hand roadwheel.

2 Remove the splash guard for access to the power steering pump.

3 Unbolt the shield from over the power steering pump pulley.

4 Loosen the lower lock/pivot bolt securing the pump to the adjustment plate, then back off the adjustment bolt and remove the drivebelt.

5 Drain as much fluid as possible from the power steering fluid reservoir, using a pipette or an old poultry baster. Alternatively, fit a hose clamp to the hydraulic hose leading from the reservoir to the pump.

6 Loosen the clip and disconnect the supply hose from the top of the pump.

7 Unscrew the union nut and disconnect the steering gear pressure supply line from the pump.

8 Unscrew the upper and lower mounting bolts and withdraw the power steering pump from its bracket on the front of the engine.

1.4 litre models

9 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and vehicle support*). Remove the right-hand front roadwheel.

10 Drain as much fluid as possible from the power steering fluid reservoir, using a pipette or an old poultry baster. Alternatively, fit a hose clamp to the hydraulic hose leading from the reservoir to the pump.

11 Loosen the clips and remove the air intake

pipe from between the air cleaner and the throttle housing body.

12 From the right-hand side of the engine, unbolt and remove the guard from over the auxiliary drivebelt.

13 Loosen the clip and disconnect the reservoir hose from the pump. Position a suitable container beneath the pump to catch spilled fluid.

14 Unscrew the union nut and disconnect the steering gear pressure supply line from the pump.

15 Remove the fasteners and remove the wheel arch liner from the right-hand side.

16 Loosen the bolts securing the pulley to the power steering pump.

17 Remove the auxiliary drivebelt with reference to Chapter 1.

18 Fully unscrew the bolts and remove the pulley from the pump.

19 Unscrew the mounting bolts and remove the pump.

1.6 litre models

20 Drain as much fluid as possible from the power steering reservoir, using a pipette or an old poultry baster. Alternatively, fit a hose clamp to the hydraulic hose leading from the reservoir to the pump.

21 Release the clips and remove the alternator cooling pipe from the right-hand side of the engine compartment.

22 Unbolt and remove the plastic guard from over the power steering pump drivebelt on the

right-hand side of the engine (see *illustration*).

23 If necessary, the pulley retaining bolts may be loosened at this stage, and the pulley removed after removing the drivebelt.

24 Loosen the power steering pump pulley bolts, then loosen the locknut and back off the adjustment bolt. Swivel the pump to release the tension, then remove the drivebelt (see *illustration*).

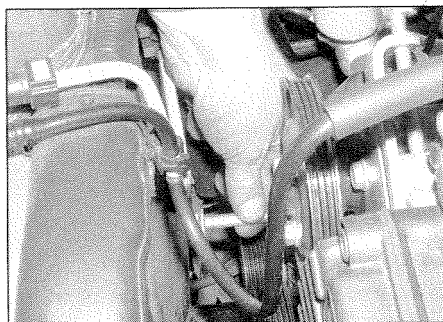
25 Place a container beneath the pump, then loosen the clip and disconnect the inlet hose from the pump. Unscrew the union nut and disconnect the outlet pressure line from the pump.

26 If the pulley has already been removed, unscrew and remove the mounting bolts and remove the pump from the mounting bracket. Alternatively, unscrew the lower pivot bolt and upper adjustment lock bolt, and remove the pump together with the mounting bracket (see *illustrations*). Note that the upper bolt also secures the engine lifting eye.

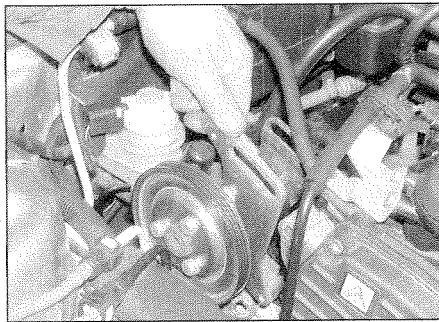
1.8 litre models

27 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands (see *Jacking and vehicle support*). Remove the right-hand front roadwheel.

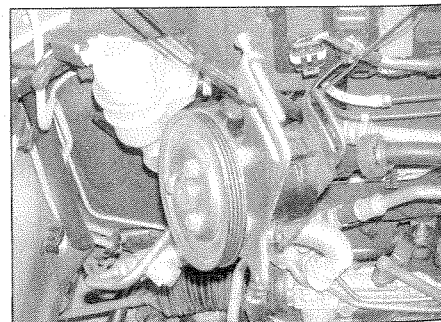
28 Drain as much fluid as possible from the power steering reservoir, using a pipette or an old poultry baster. Alternatively, fit a hose clamp to the hydraulic hose leading from the reservoir to the pump.



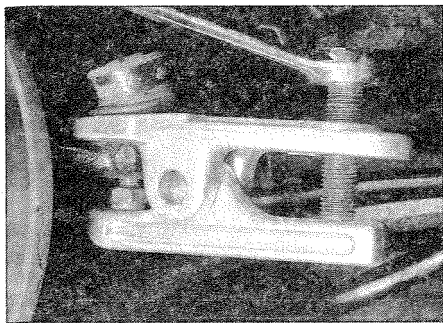
22.26b . . . and lower pivot bolt . . .



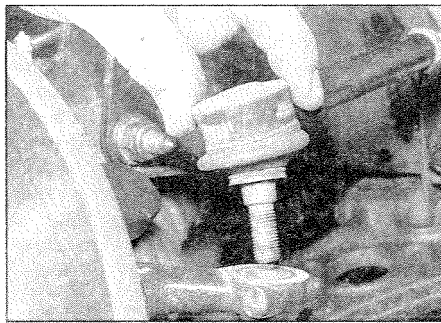
22.26c . . . and withdraw the power steering pump from the engine together with the mounting bracket



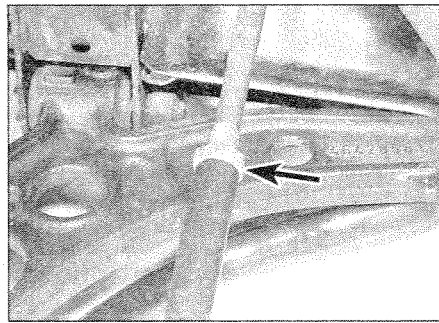
22.26d Power steering pump



23.2a Balljoint separator tool in use on the track-rod end



23.2b Separate the track-rod end from the steering arm



23.3 Counterhold the track-rod end, then loosen the locknut (arrowed)

29 Loosen the power steering pump pulley bolts.

30 Remove the fasteners and remove the wheel arch liner from the right-hand side.

31 Remove the auxiliary drivebelt with reference to Chapter 1.

32 Fully unscrew the bolts and remove the pulley from the pump.

33 Unbolt the engine support mounting link from the right-hand side of the engine, then unbolt the link bracket from the body.

34 Disconnect the wiring connector and earth wire from over the power steering pump.

35 Loosen the clip and disconnect the reservoir hose from the pump. Position a suitable container beneath the pump to catch spilled fluid.

36 Unscrew the union nut and disconnect the steering gear pressure supply line from the pump.

37 Working beneath the car, unbolt the inlet manifold support bracket from the rear of the engine.

38 Unbolt the alternator mounting bracket from the rear of the engine.

39 Unscrew the mounting bolts and remove the pump.

Refitting

40 Refitting is a reversal of removal, but tighten the nuts and bolts to the specified torque where given. Refill the hydraulic system with the specified grade and quantity of power steering fluid, then bleed the hydraulic system as described in Section 21. Adjust the tension of the power steering pump drivebelt as described in Chapter 1.

23 Track-rod end - removal and refitting



Removal

Note: A balljoint separator tool will be required for this operation. A new track-rod end nut split pin should be used on refitting.

1 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands

(see *Jacking and vehicle support*). Remove the relevant front roadwheel.

2 Unscrew the nut securing the track-rod end to the steering arm on the hub carrier. Using a balljoint separator tool, separate the track-rod end from the steering arm (see illustrations).

3 Counterhold the track-rod end using the flats provided, then loosen the track-rod end locknut a quarter turn (see illustration).

4 Unscrew the track-rod end from the track-rod, counting the exact number of turns required to do so. If necessary, mark the relationship between the track-rod end and the track-rod using a dab of paint.

Refitting

5 Check the track-rod end rubber boot for damage, and if necessary obtain a new one. Renew the track-rod end if the movement of the balljoint is either sloppy or too stiff. Also check for other signs of damage such as worn threads.

6 Carefully clean the track-rod end and the track-rod threads.

7 Screw the track-rod end onto the track-rod by the number of turns noted before removal. Tighten the locknut.

8 Ensure that the balljoint taper is clean, then engage the taper in the steering arm on the hub carrier.

9 Refit the balljoint nut, and tighten to the specified torque.

10 Refit the roadwheel, and lower the vehicle to the ground.

11 Have the front wheel alignment checked by a FIAT dealer or tyre specialist at the earliest opportunity.

24 Wheel alignment and steering angles - general information

General information

1 A car's steering and suspension geometry is defined in four basic settings; camber, castor, steering axis inclination, and toe-setting. With the exception of toe setting, all angles are expressed in degrees and are not adjustable. Toe-setting is adjustable.

Front wheel toe setting

Checking

2 Due to the special measuring equipment necessary to check the wheel alignment, and the skill required to use it properly, the checking and adjustment of these settings is best left to a FIAT dealer or similar expert. Most tyre-fitting shops now possess sophisticated checking equipment.

3 For accurate checking, the vehicle must be at the kerb weight specified in *Dimensions and weights*.

4 Before starting work, check first that the tyre sizes and types are as specified, then check tyre pressures and tread wear. Also check roadwheel run-out, the condition of the hub bearings, the steering wheel free play and the condition of the front suspension components (Chapter 1). Correct any faults found.

5 Park the vehicle on level ground, with the front roadwheels in the straight-ahead position. Rock the rear and front ends to settle the suspension. Release the handbrake and roll the vehicle backwards approximately 1 metre, then forwards again, to relieve any stresses in the steering and suspension components.

6 Two methods are available to the home mechanic for checking the front wheel toe setting. One method is to use a gauge to measure the distance between the front and rear inside edges of the roadwheels. The other method is to use a scuff plate, in which each front wheel is rolled across a movable plate which records any deviation, or scuff, of the tyre from the straight-ahead position as it moves across the plate. Such gauges are available in relatively-inexpensive form from accessory outlets. It is up to the owner to decide whether the expense is justified, in view of the small amount of use such equipment would normally receive.

7 Prepare the vehicle as described in paragraphs 3 to 5 above.

8 If the measurement procedure is being used, carefully measure the distance between the front edges of the roadwheel rims and the rear edges of the rims. Subtract the front measurement from the rear measurement,

and check that the result is within the specified range. If not, adjust the toe setting as described in paragraph 10.

9 If scuff plates are to be used, roll the vehicle backwards, check that the roadwheels are in the straight-ahead position, then roll it across the scuff plates so that each front roadwheel passes squarely over the centre of its respective plate. Note the angle recorded by the scuff plates. To ensure accuracy, repeat the check three times, and take the average of the three readings. If the roadwheels are running parallel, there will of course be no angle recorded; if a deviation value is shown on the scuff plates, compare the reading obtained for each wheel with that supplied by the scuff plate manufacturers. If the value recorded is outside the specified tolerance, the toe setting is incorrect, and must be adjusted as follows.

Adjustment

10 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. 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 important to ensure that, after adjustment, the same number of threads are visible on the end of each track rod.*

11 First clean the track-rod threads; if they are corroded, apply penetrating fluid before starting adjustment. Release the steering gear rubber gaiter outboard clips, then peel back the gaiters and apply a smear of grease, so that both gaiters are free and will not be twisted or strained as their respective track-rods are rotated.

12 Use a straight-edge and a scribe or similar to mark the relationship of each track-rod to the track-rod end. Working on each track-rod end in turn, unscrew its locking nut.

13 Alter the length of the track-rods, bearing in mind the note in paragraph 10, by screwing them into or out of the track-rod ends. Rotate

the track-rod using an open-ended spanner fitted to the flats provided. If necessary, counterhold the track-rod end using a second spanner. Shortening the track-rods (screwing them into their track-rod ends) will reduce toe-in and increase toe-out.

14 When the setting is correct, hold the track-rods and securely tighten the locking nuts. Check that the balljoints are seated correctly in their sockets, and count the exposed threads on the ends of the track-rods. If the number of threads exposed is not the same on both sides, 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.

15 When the track-rod lengths are the same, lower the vehicle to the ground and re-check the toe setting; readjust if necessary. When the setting is correct, tighten the locking nuts. Ensure that the steering gear rubber gaiters are seated correctly and are not twisted or strained, then secure them in position with the retaining clips.