

**SAAB**

**9000**

**SERVICE  
MANUAL**

**7** **Suspension,  
wheels**

**M 1986—**



# Technical data

## Suspension

### Front coil springs

Total number of coils		6 1/2	6 1/2	6 1/2
Number of active coils		5 1/2	5 1/2	5 1/2
Rod diameter	mm (in)	12.86 (0.506)	12.97 (0.510)	13.09 ((0.515)
Free length	mm (in)	455 (17.913)	455 (17.913)	455 (17.913)
Colour coding, No. 1		Brown	Orange	Black
Colour coding, No. 2		Violet	Pink	White

### Rear coil springs

Total number of coils		9 1/2	9 1/2
Number of active coils		8	8
Rod diameter	mm (in)	13.4 (0.528)	13.6 (0.535)
Free length	mm (in)	321 (12.638)	321 (12.638)
Colour coding, No. 1		Brown	Black
Colour coding, No. 2		Blue	White

## Wheels

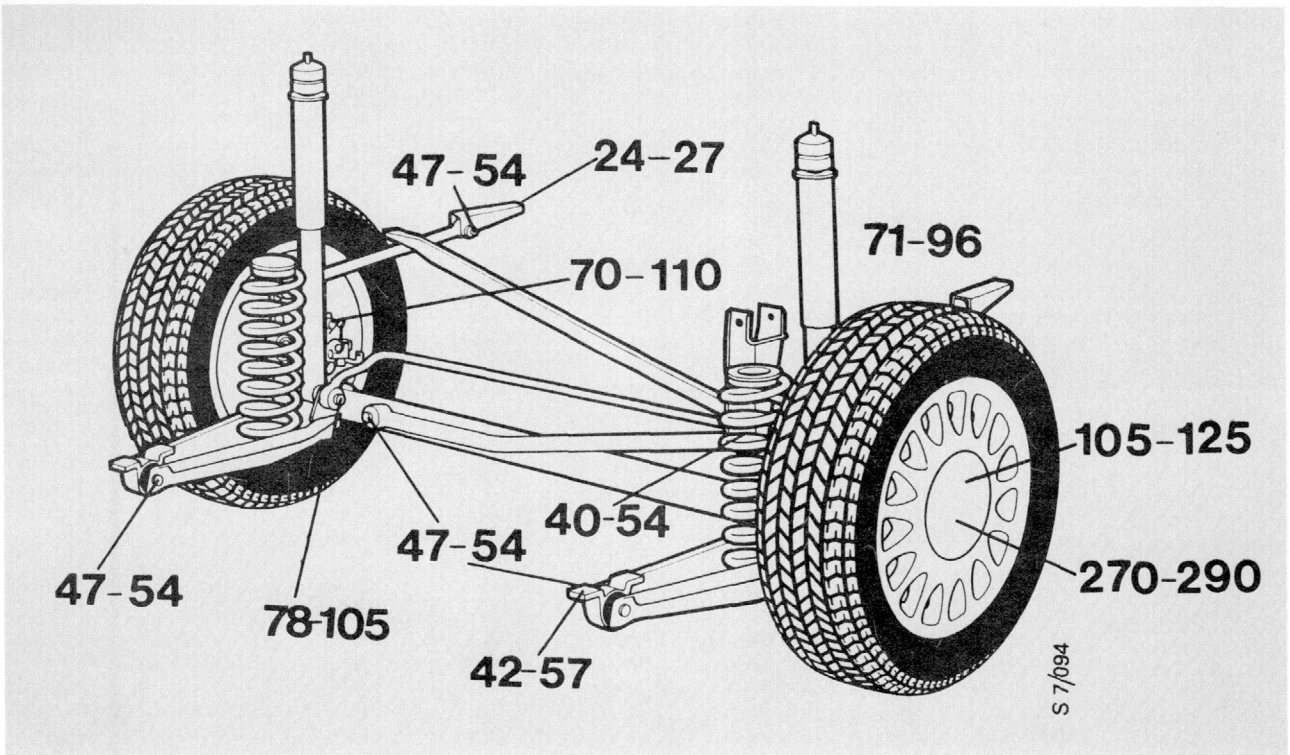
Maximum radial runout	mm (in)	0,5 (0.02)
Maximum lateral runout	mm (in)	0,5 (0.02)

## Rims

		Spare wheel	
Type		Aluminum	Steel
Dimension		6 J x 15 H2	4 J x 15H2
Offset	mm (in)	33 (1.3)	50 (2.0)

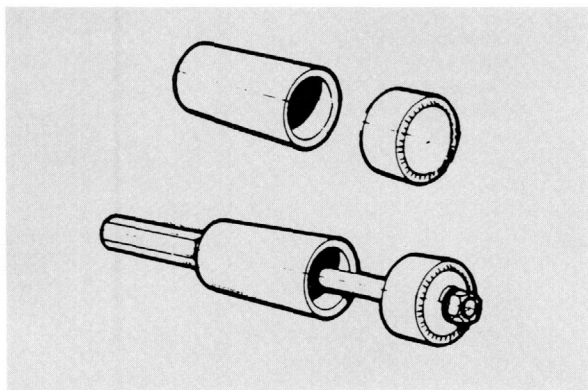
## Tyres

		Spare wheel		
Markets			GB	Others
Type		Radial (steel braced)	Radial	Cross-ply
Size		205/55 VR15	195/60 VR 15	T115/70R15 T115/70 D15
Rolling radius	mm (in)	295 (11.614)	299 (11.772)	—
Speed rating	km/h (mph)	>210(>130)	>210(>130)	80 (50) 80 (50)





## Special tools



89 96 274 (A3) Tool for rubber bush, rear axle

# Technical description

Suspension . . . . . 700-1  
 Rear suspension . . . . . 700-2

Wheels . . . . . 700-3  
 Drive shafts and drive-shaft joints . . . 700-3

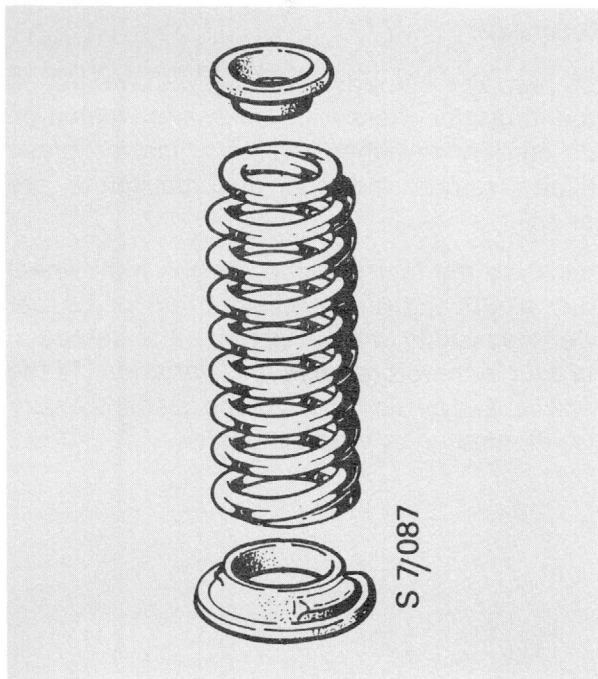
## Suspension

### Springs

Helical compression springs (open-springs) are fitted both front and rear.

The top coil of the spring is narrower than the others, thereby providing greater deflection in a given working space.

Rubber spring cups are located at either end of the spring and are held in place by the tension of the partially compressed spring.



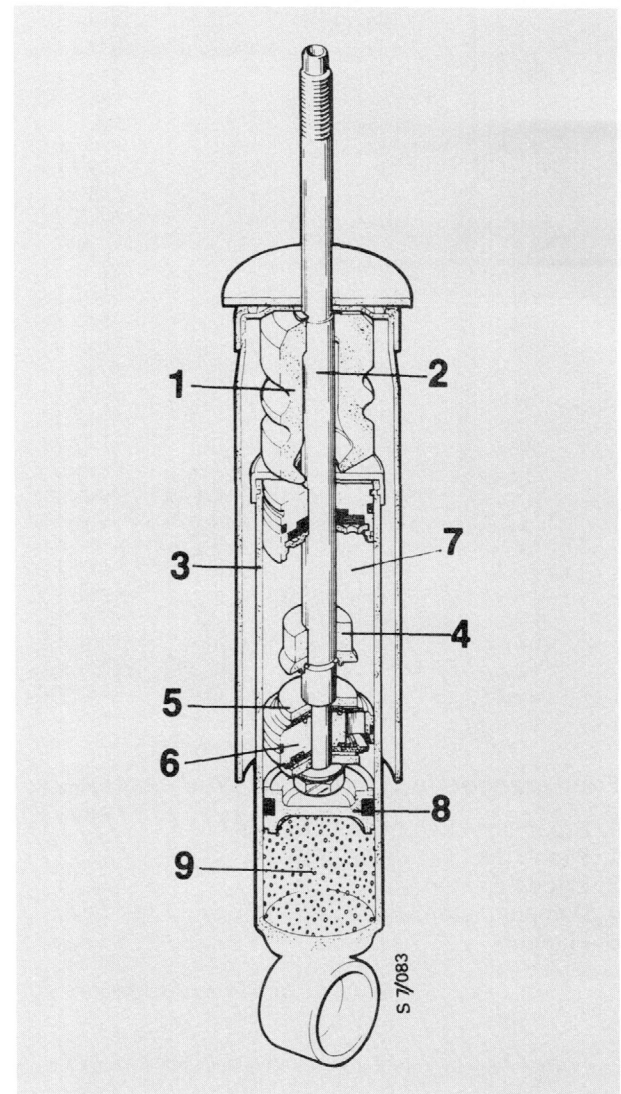
The stop for the spring on compression is incorporated in the damper.

The movement of the spring on extension is limited by a specially designed stop on the damper piston rod, which provides smooth damping of the oscillating movement of the spring, keeping the stresses on the attachment points slight.

## Rear dampers

The rear dampers are of the double-acting, single-tube, gas-filled type.

The gas pressure is used to maintain pressure on the damper oil. This pressure reduces the foaming tendencies of the oil and also the formation of air bubbles that can result in noisy operation of the damper.

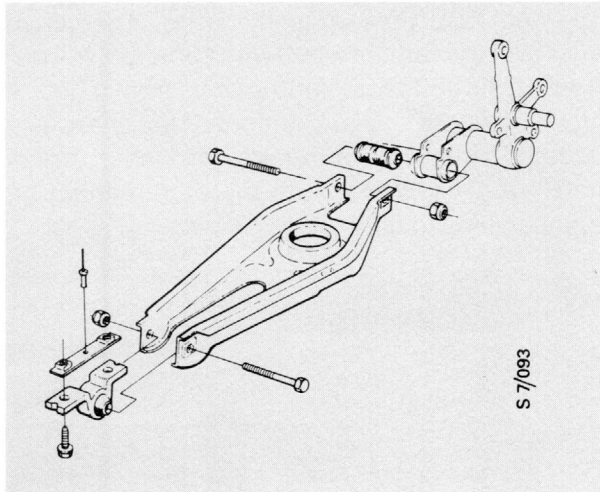


Rear damper

- |                    |                 |       |
|--------------------|-----------------|-------|
| 1 Compression stop | 5 Valve         | 9 Gas |
| 2 Piston rod       | 6 Damper piston |       |
| 3 Telescopic tube  | 7 Oil           |       |
| 4 Extension stop   | 8 Plunger       |       |

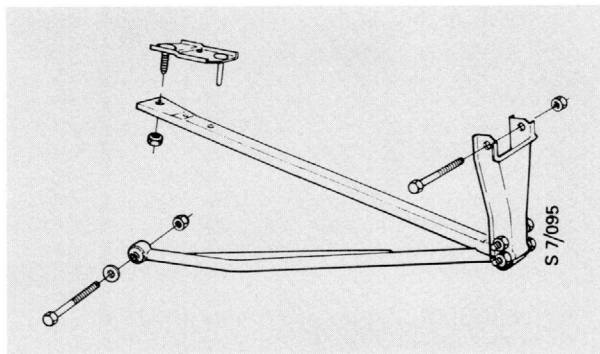
### Spring links

The spring links are galvanized, and pivoted at either end in rubber bushes.



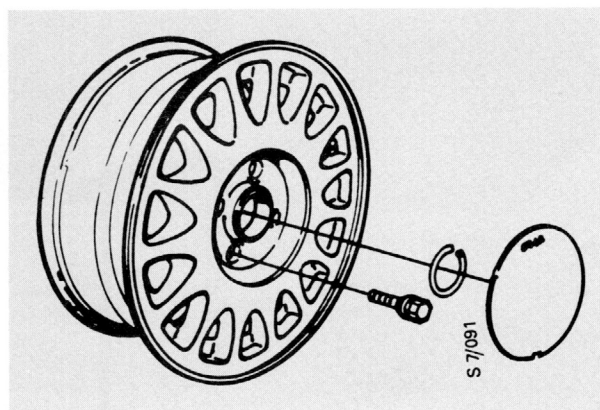
### Panhard rod

The Panhard rod is located in a low position, with one end attached to a hanging bracket. The low position of the rod ensures that lateral movement of the car is minimal.



### Wheels

The Saab 9000 is equipped with aluminium wheels having a 6-inch rim width.



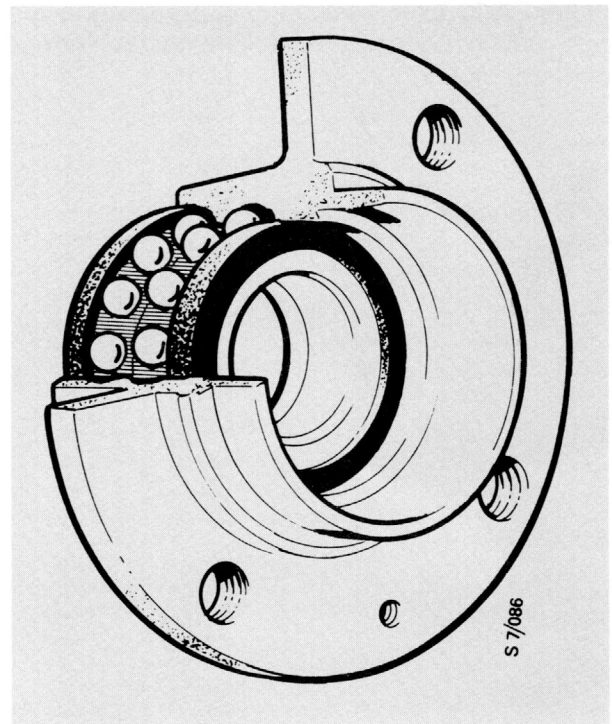
The wheel is centred direct on the hub. In addition, the wheel bolts are tapered to locate the wheel correctly.

The wheel designation is: 6J x 15H2 ET33

- H2 = Rim type
- 15 = Rim diameter in inches
- 6 = Rim width in inches

### Hubs

In contrast to other Saab models, the wheel bearings on the Saab 9000 are not press-fitted on the outboard drive shaft or stub axle but are incorporated in the hub. The wheel bearings are double-row angular contact bearings which are permanently lubricated and maintenance free. The bearings cannot be replaced individually. The design of the hub makes possible a light-weight construction and centralizing of the hub direct on the bearing.



### Drive shafts and drive-shaft joints

An extremely flexurally stiff intermediate drive shaft extends from the right-hand side of the differential through an additional bearing bracket on the engine body. It has therefore been possible to make the two outboard drive shafts identical and with the same geometry relative to the wheel.

# Front suspension

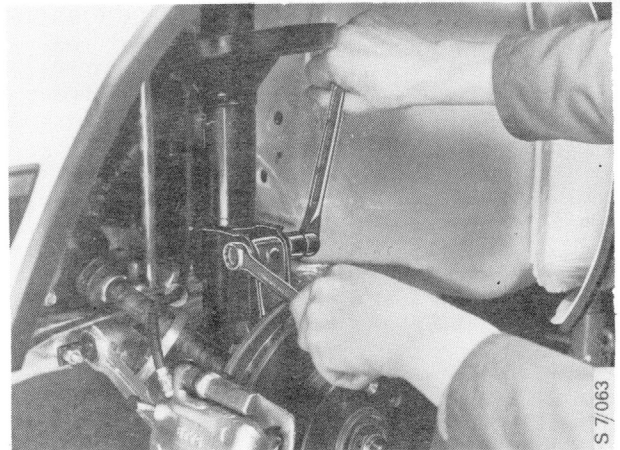
Front dampers . . . . . 731-1

Anti-roll bar . . . . . 731-5

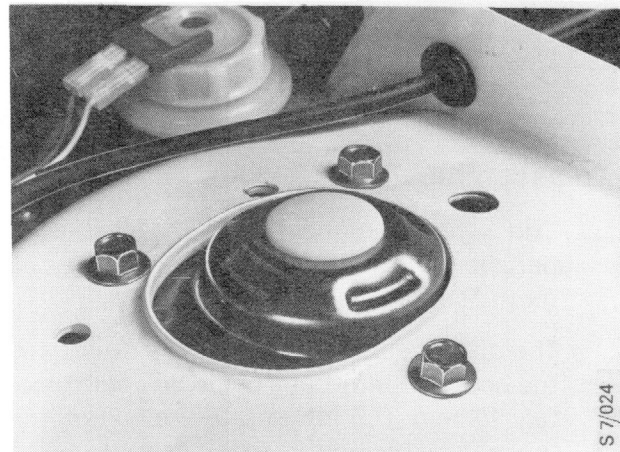
## Front dampers (MacPherson struts)

### To remove

- 1 Jack up the front of the car, support it on axle stands and remove the wheel.
- 2 Detach the flexible brake hose from the clip on the strut. Unbolt the strut from the steering swivel member.

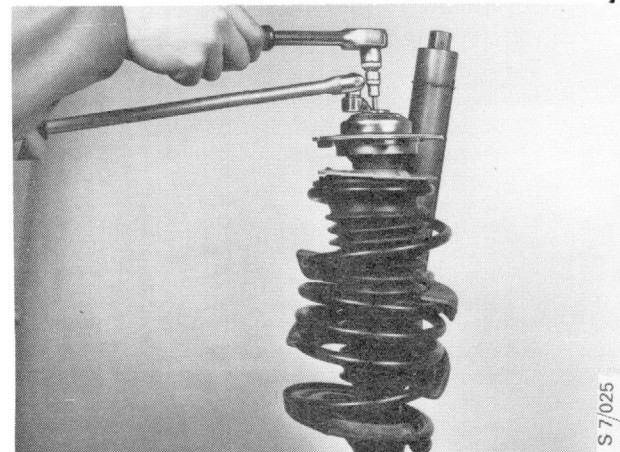


- 3 Undo the three bolts in the fixing for the top of the strut. Remove the cap on the centre-nut.
- 4 Lift out the strut.



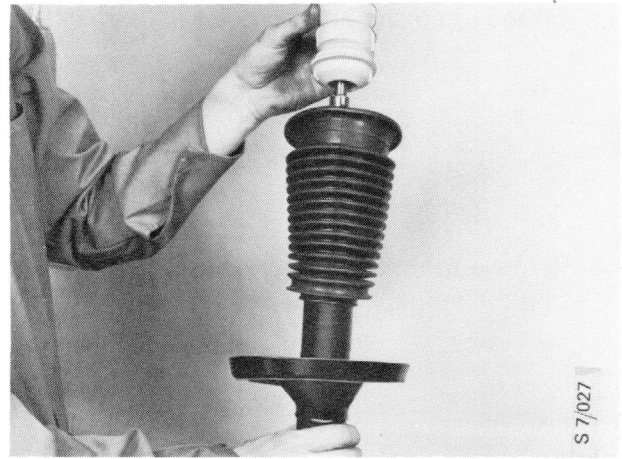
### To dismantle

- 1 Use a suitable tool to compress the spring.
- 2 Remove the nut securing the top fixing, and remove the fixing and the cup.

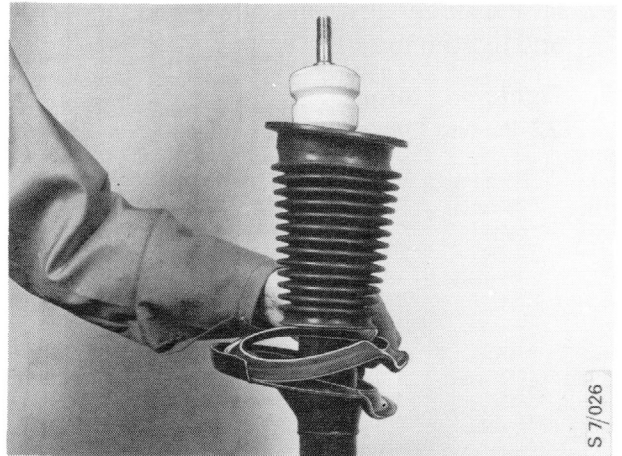




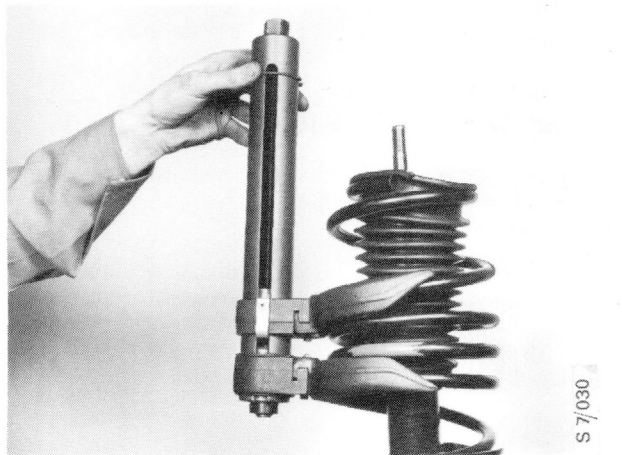
2 Fit the compression stop.



Fit the the spring cup.

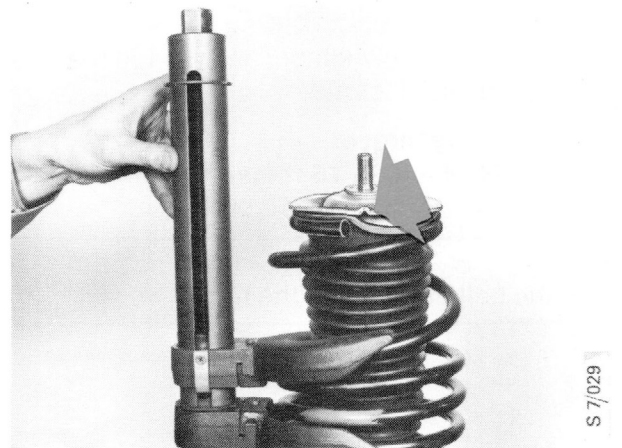


3 Fit the spring. Fit the rubber gaiter over the top coil of the spring.



4 Fit the top spring cup with the notch in line with the mark on the rubber gaiter.

Check that these marks are in line with the swivel-pin mounting.



- 4 Fit the flexible brake hose to the clip on the strut.
- 5 Replace the wheel, remove the axle stands and lower the car.

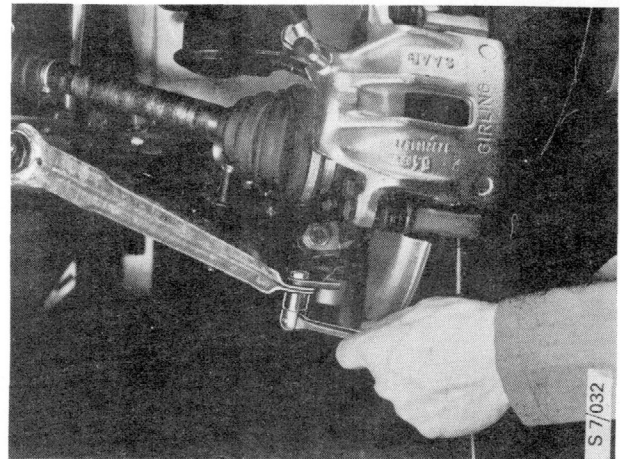
Tighten the wheel bolts to the specified torque.

## Anti-roll bar

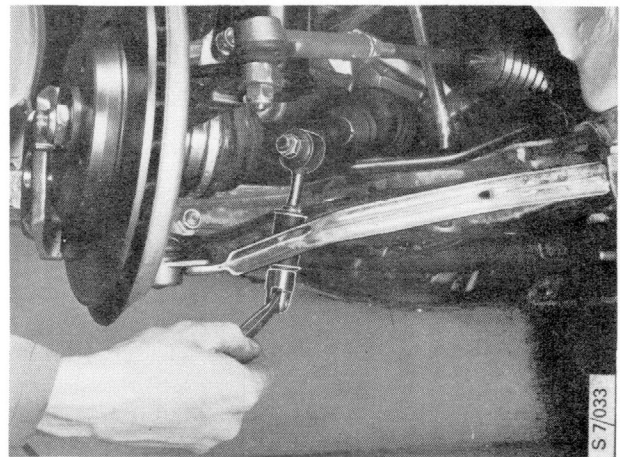
### To remove

- 1 Jack up the front of the car, support it on axle stands and remove the wheels.
- 2 Undo the two U-clamps for the anti-roll bar.
- 3 Undo the three bolts securing the ball joint to the suspension arm.

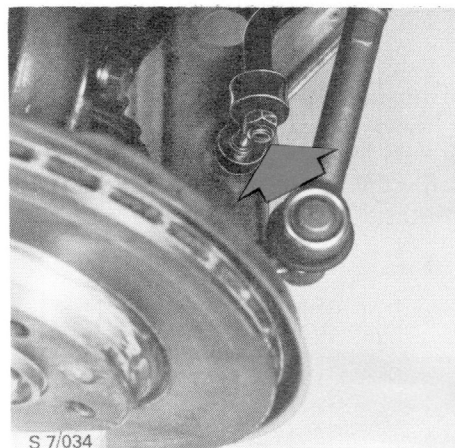
Alternatively, remove the ball-joint pinch-bolt.



- 4 Undo the nut securing the anti-roll bar link to the suspension arm.



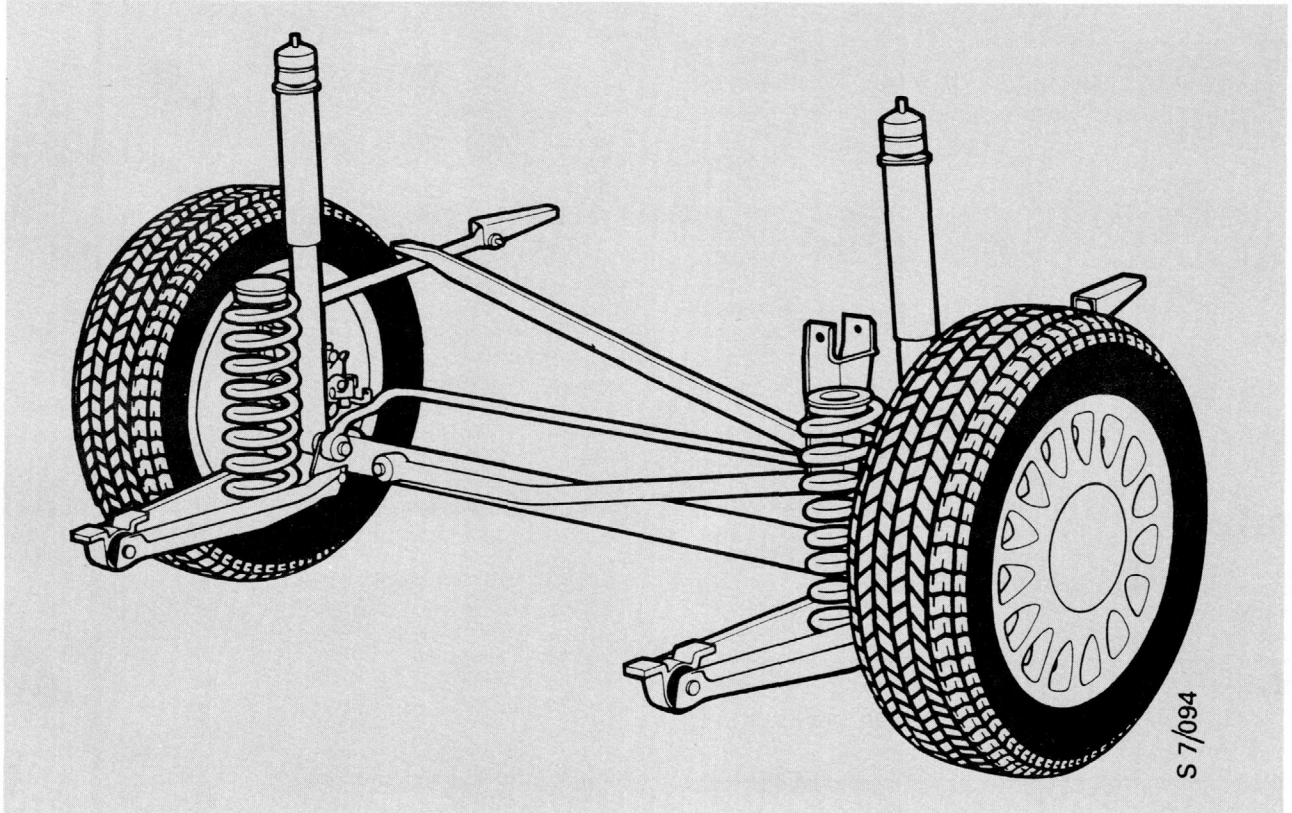
Undo the top securing bolt for the link.



# Rear coil springs

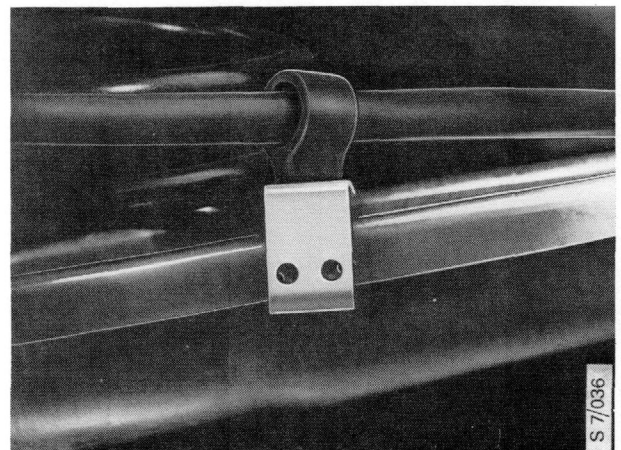
Rear coil springs . . . . .	732-1	Rear axle . . . . .	732-6
Spring links . . . . .	732-3	Anti-roll bar . . . . .	732-10
Torque arms . . . . .	732-6	Panhard rod . . . . .	732-12

## Rear coil springs



### To remove

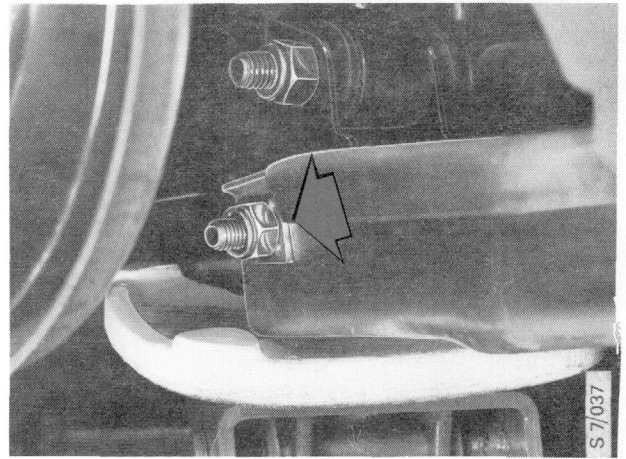
1. Jack up the rear of the car, support it on axle stands and remove the wheel.
2. Detach the handbrake cable from the lead-through bracket on the spring link.





- 2 Jack up the spring link and make sure that the spring locates properly.

Fit the bolt in the trailing-end mounting of the spring link.

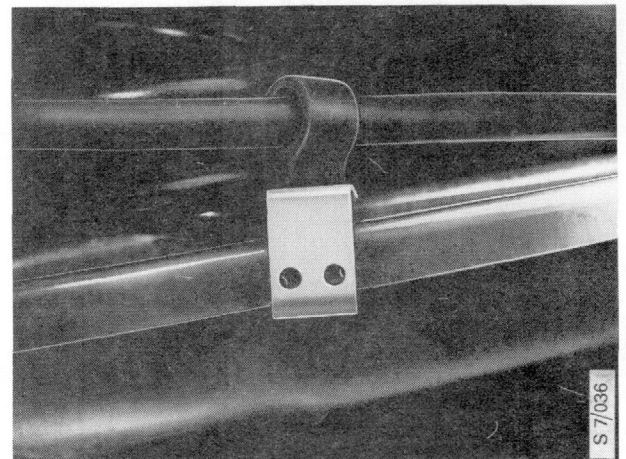
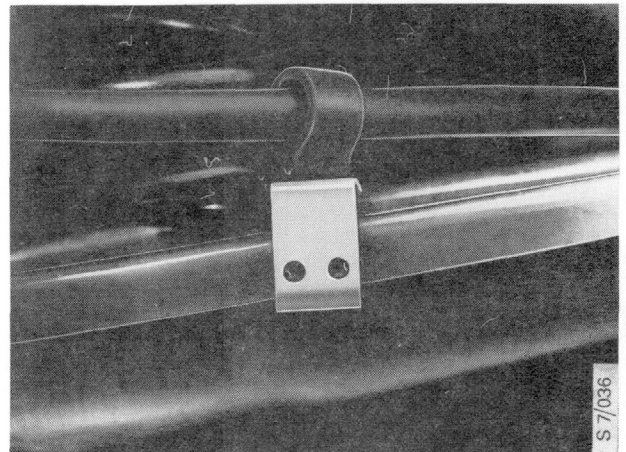


- 3 Secure the handbrake cable in the lead-through bracket on the spring link. Replace the wheel, remove the axle stands and lower the car. Tighten the wheel bolts to the specified torque.

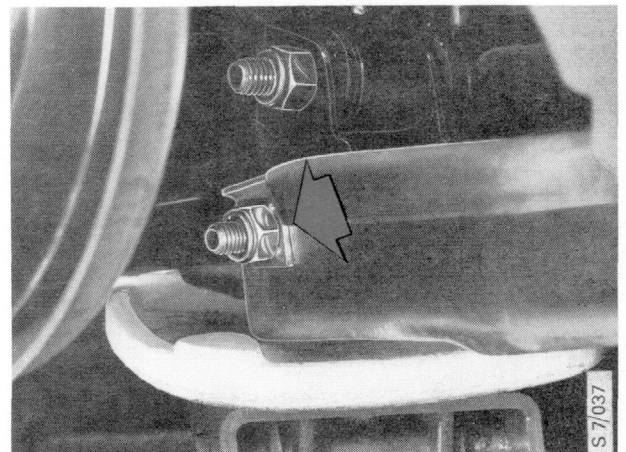
## Spring links

### To remove

- 1 Jack up the rear of the car, support it on axle stands and remove the wheel.
- 2 Detach the handbrake cable from the lead-through bracket on the spring link.



- 3 Position a jack under the spring link. Remove the bolt in the trailing-end mounting of the spring link.

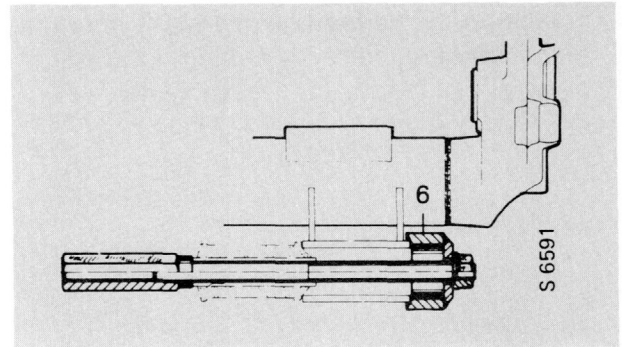




- 2 Lubricate the new bush with a solution of soapy water or the like.
- 3 Use tool 8996274 to press the bush into the mounting. Apply the tool as shown.
- 4 Make sure that the bush is centralized in the mounting.

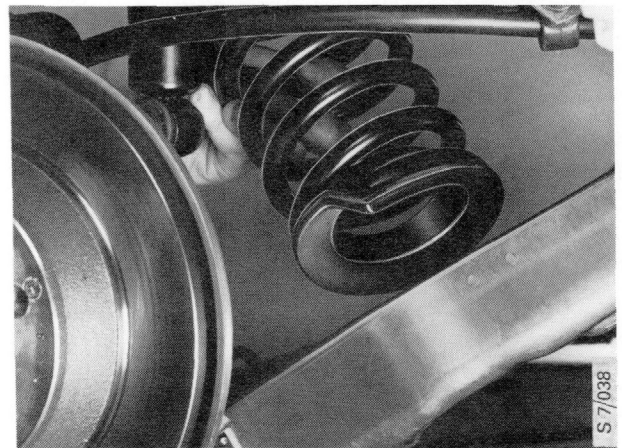
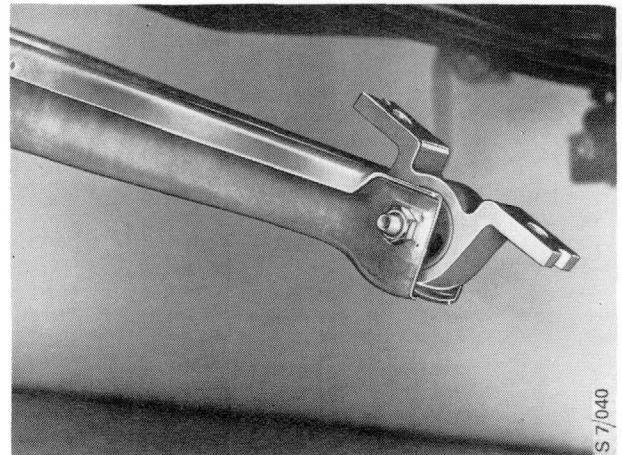
**To fit**

- 1 Fit the leading-end mounting of the spring link.



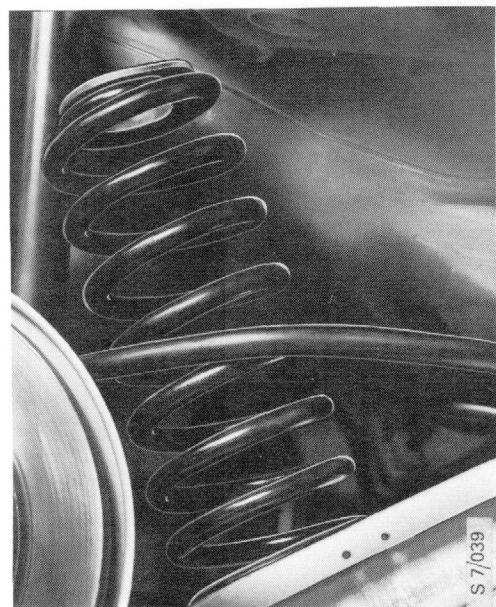
6 Fitting sleeve

- 2 Position the spring on the spring link.



**N.B.**

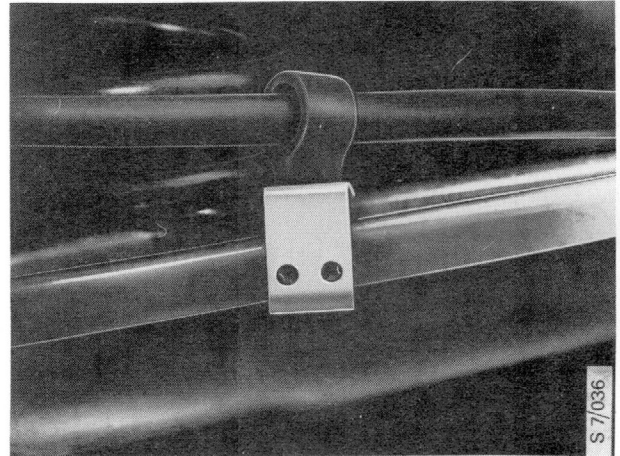
Check that the rubber and spring are correctly seated on the spring link.



## Rear axle

### To remove

- 1 Jack up the rear of the car, support it on axle stands and remove the wheels.
- 2 Detach the handbrake cables from the lead-through brackets on the spring links.



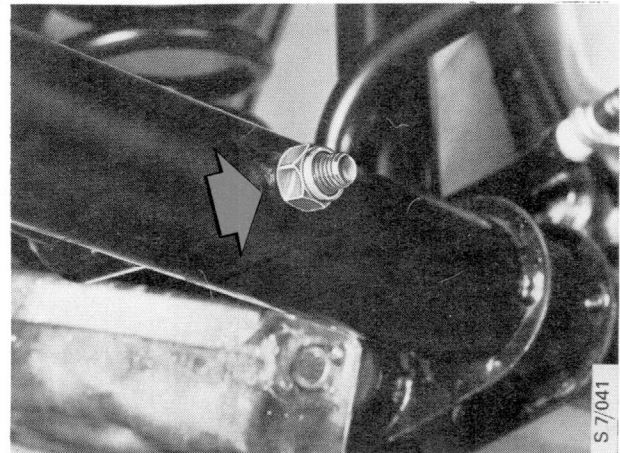
- 3 Undo and remove the securing bolts for the brake calipers and disc backplates. Lift off the brake calipers and tie them back out of the way.
- 4 Remove the Panhard rod. Position a jack under the middle of the rear axle and raise the axle sufficiently to partially relieve the load on it.

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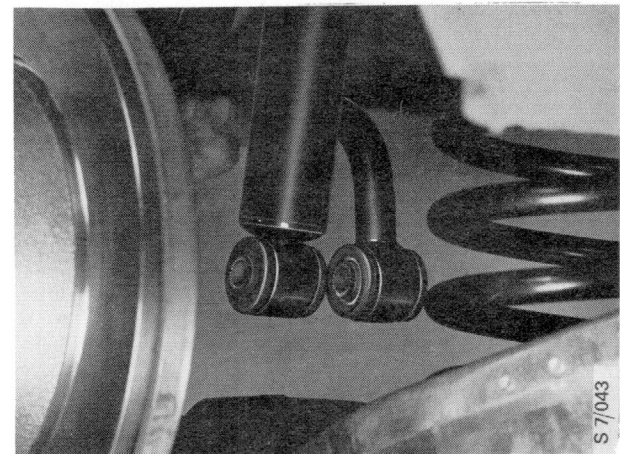
**N.B.**

Never jack up the car by means of a jack positioned under the rear axle.

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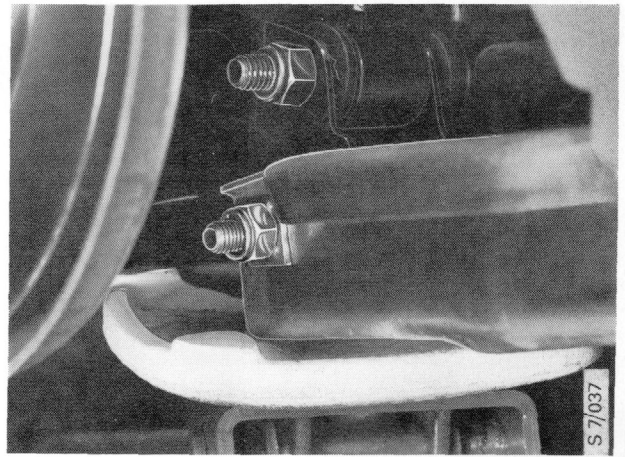


- 5 Unbolt the bottom mountings for the dampers and anti-roll bar.



- 2 Fit the bolt and nut in the trailing-end mounting for the spring link but leave slack.

Loosely fit the bolt, washer and nut for the torque arm.

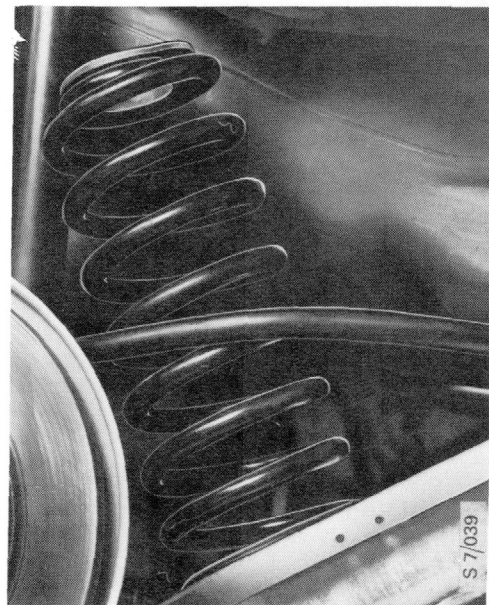


- 3 Check that the rubbers for the coil springs are correctly positioned and seat the springs on the spring links.

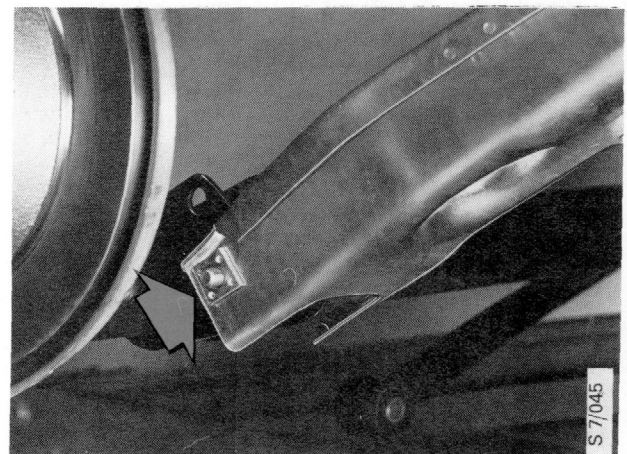
**N.B.**

Also make sure that the anti-roll bar is correctly positioned.

Carefully raise the rear axle and check that the springs are correctly seated.



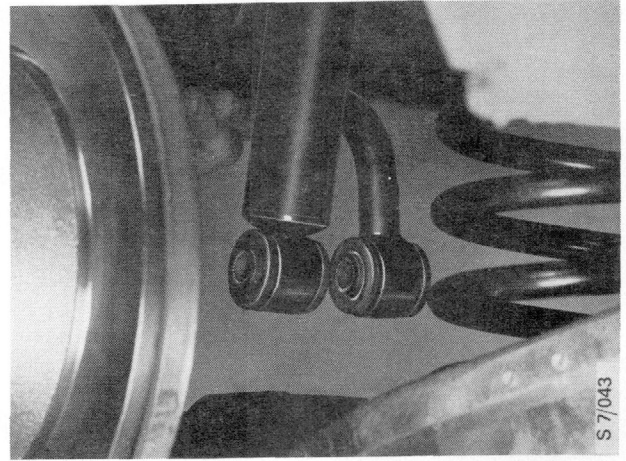
- 4 Fit the anti-roll bar and secure the bottom mountings for the dampers.



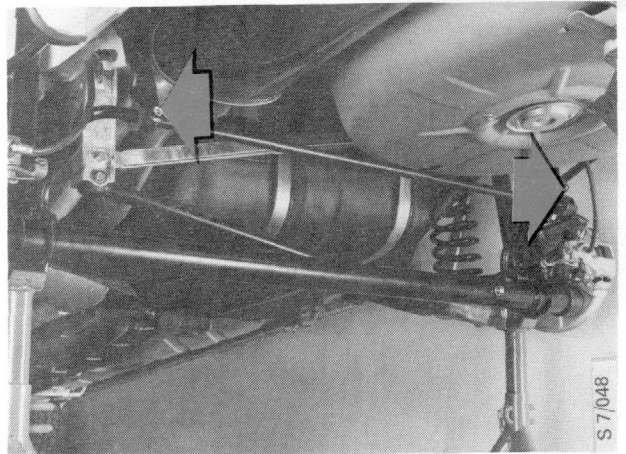


- 2 By means of a jack applied to the rear jacking point, raise the car sufficiently to relieve the load on the anti-roll bar.

Undo and remove the securing bolts in the outboard mountings for the anti-roll bar.



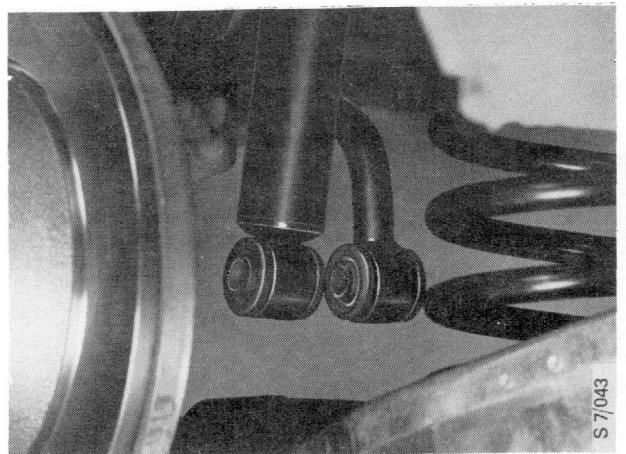
- 3 Separate the anti-roll bar from the anti-roll bar links and lift it out.



### To fit

- 1 Secure the anti-roll bar to the anti-roll bar links.
- 2 Securely fit the bolts in the outboard mountings for the anti-roll bar.

**Tightening torque:**  
**80 - 90 Nm (58 - 65 ft.lbs)**



- 3 Replace the wheels, remove the axle stands and lower the car.

Tighten the wheel bolts to the specified torque.



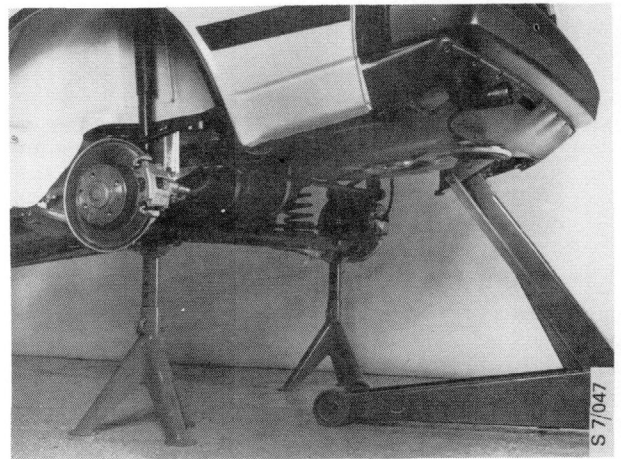
# Dampers

Rear dampers . . . . . 761-1

## Rear dampers

### To remove

- 1 Jack up the rear of the car, support it on axle stands placed under the trailing-end mountings of the spring links, and remove the wheels.
- 2 By means of a jack applied to the rear jacking point, raise the car sufficiently to relieve the load on the dampers and anti-roll bar.



- 3 Remove the bolts from the bottom mountings on the dampers.
- 4 Remove the panel over the spare wheel and fold back the carpet. Remove the nut, cup and bush from the top mounting of each damper.



# Wheels

Rims . . . . .	771-1	Spare wheel . . . . .	771-1
Tyres . . . . .	771-1		

## Rims

The Saab 9000 is equipped with aluminium wheels with 6-inch rims.

The wheel is centred direct on the hub. In addition, the wheel bolts are tapered to locate the wheel correctly.

The wheel designation is: 6J x 15H2 ET33

- H2 = Rim type
- 15 = Rim diameter in inches
- 6 = Rim width in inches

## Tyres

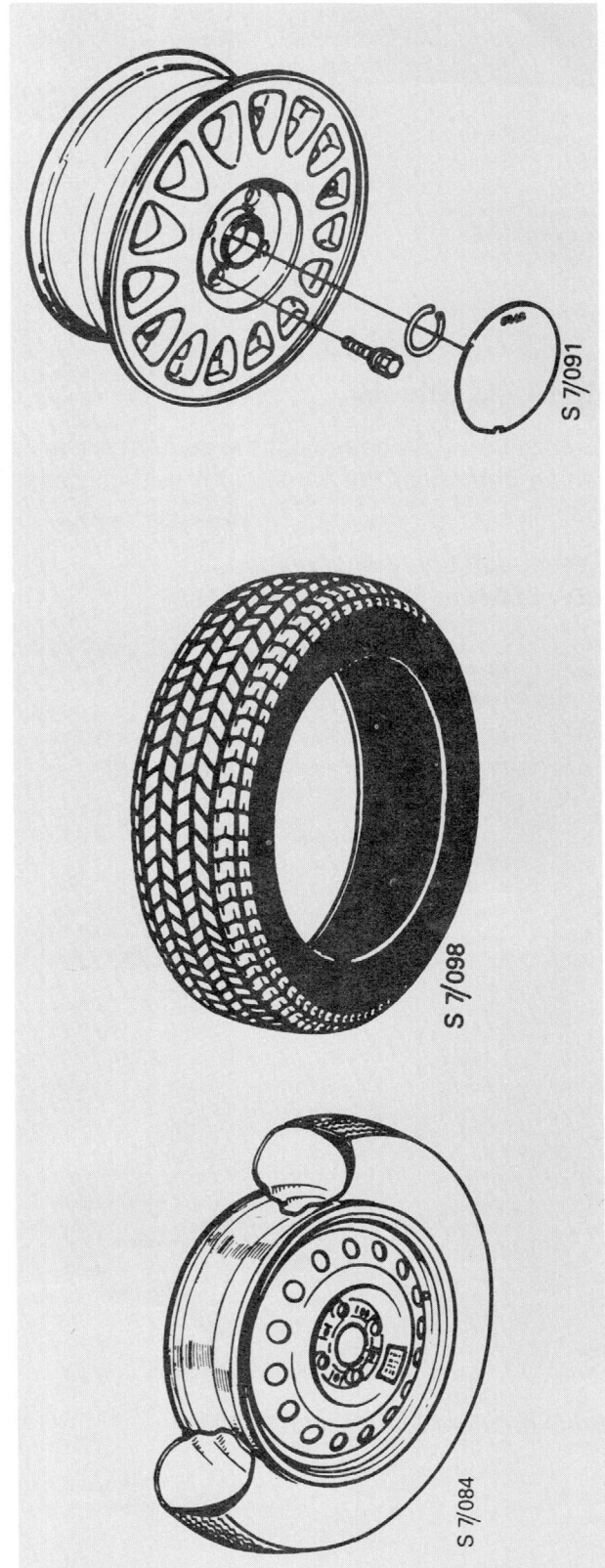
The tyres are low-profile tyres and have the following designation: 195/60 VR 15 86, 205/55 VR15.

- 195 = Tyre section width in millimetres
- 60 = Aspect ratio. This means that the section height is 60% of the section width.
- V = Speed marking: V = Very High Speed, i.e. speeds above 130 mph (210 km/h)
- R = Radial
- 15 = Rim diameter at bead seats in inches
- 86 = Load index; 86 = Maximum load of 530 kg.

## Spare wheel

The spare wheel is made of steel and has a 4-inch rim. For cars destined for Britain, the spare wheel is fitted with a radial tyre with designation T 115/70 R15.

For other market specifications, the tyre is a cross-ply with designation: T115/70 DI5. In both cases, the tyre is only intended as a temporary replacement and, with the spare wheel fitted, the car should not be driven at speeds exceeding 50 mph (80 km/h).



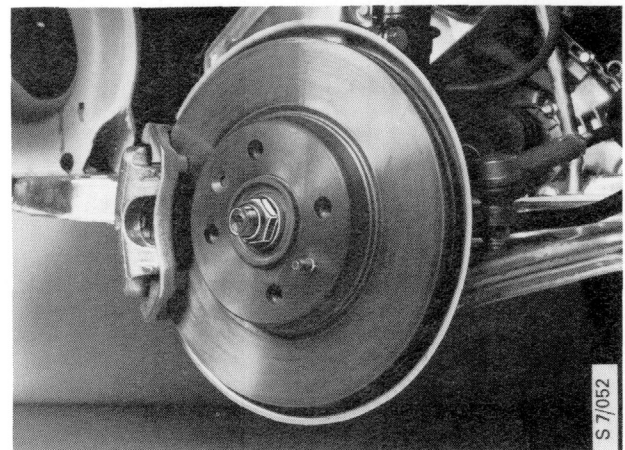
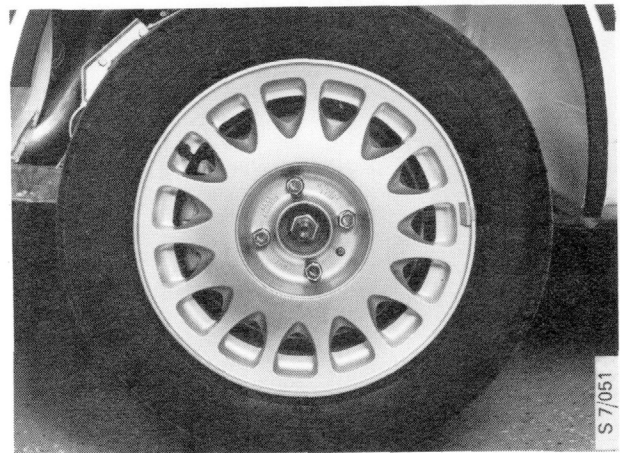
# Hubs

Front-wheel hubs . . . . .	774-1	Inboard drive-shaft joints . . . . .	774-6
Rear-wheel hubs . . . . .	774-4	Constant velocity (CV) joints . . . . .	774-9
Drive shafts . . . . .	774-6		

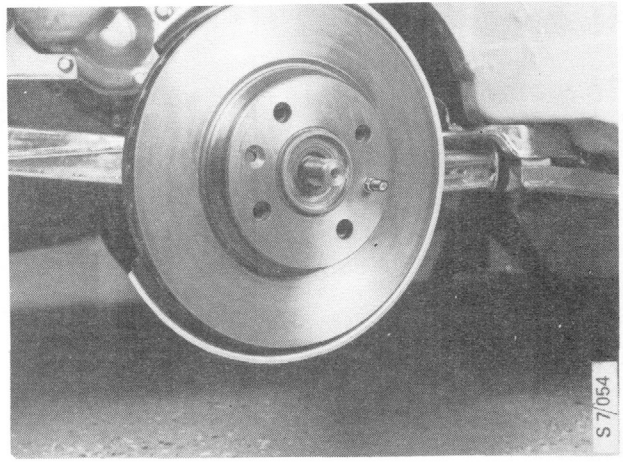
## Front-wheel hubs

### To remove

- 1 Slacken the hub centre-nut and the wheel bolts.
- 2 Jack up the front of the car, support it on axle stands and remove the wheel.
- 3 Remove the hub centre-nut and thrust washer.
- 4 Detach the flexible brake hose from the clip. Unbolt the brake caliper and rest it on the suspension arm.

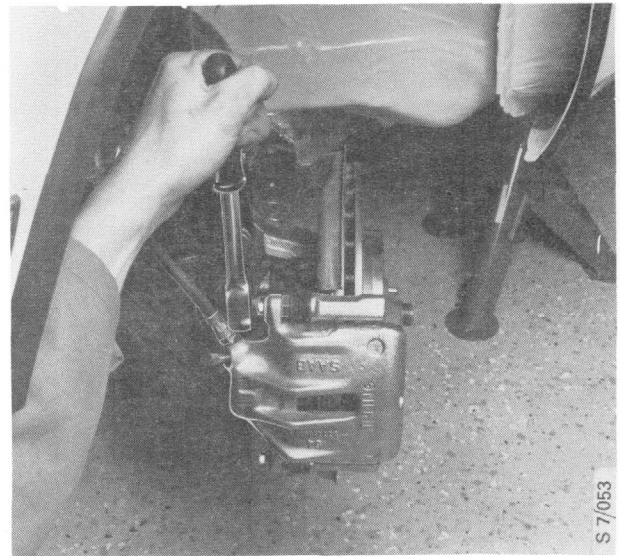


- 2 Fit the brake disc.

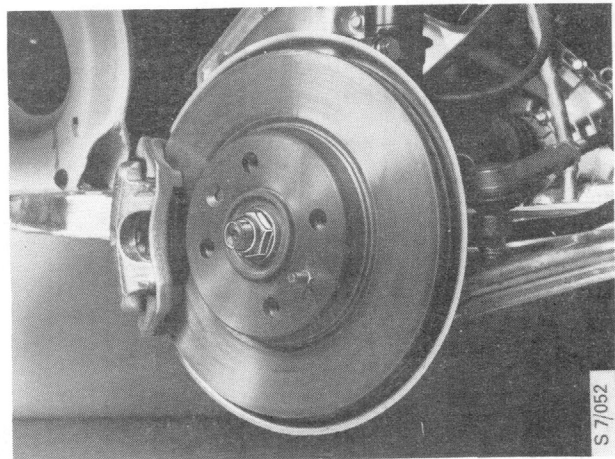


- 3 Fit the brake caliper and fit the flexible brake hose in the clip.

**Tightening torque for caliper securing bolts:  
70 - 110 Nm (51 - 79 ft.lbs)**



- 4 Fit the thrust washer and the hub centre-nut.

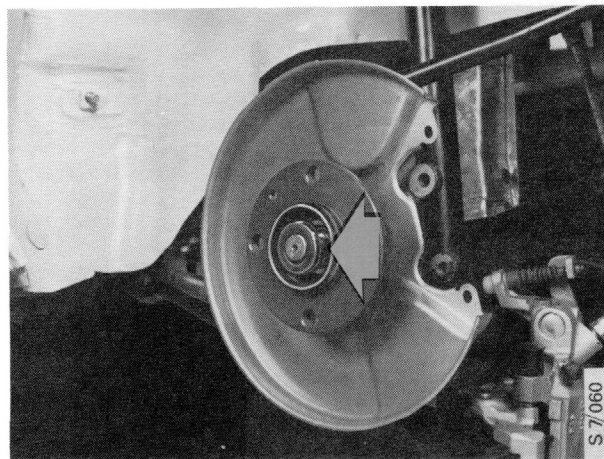


- 5 Replace the wheel, remove the axle stands and lower the car. Tighten the wheels to the specified torque.
- 6 Tighten the hub centre-nut to the specified torque.

**Tightening torque:  
270 - 290 Nm (195 - 208 ft.lbs)**

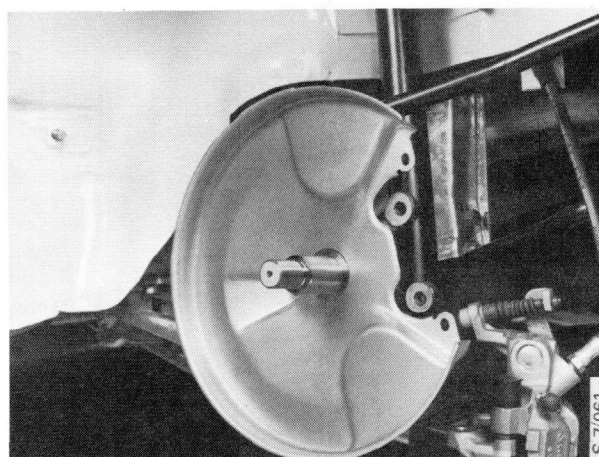


- 5 Remove the hub centre-nut and thrust washer and pull off the hub.

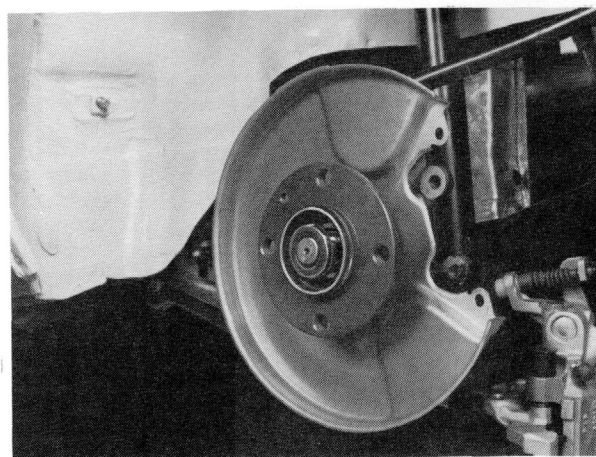


### To fit

- 1 Check that the stub axle has not been damaged. Fit the hub and the thrust washer.



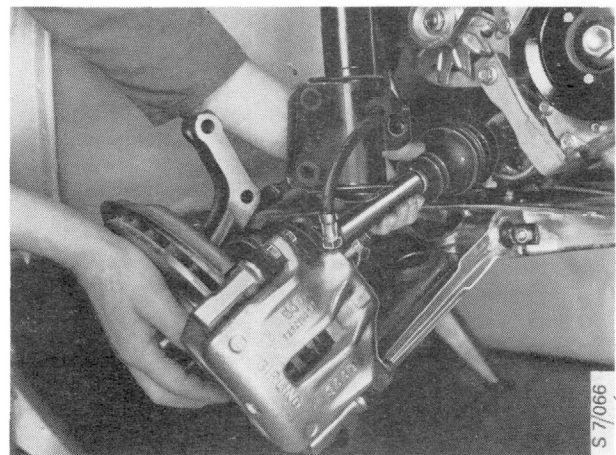
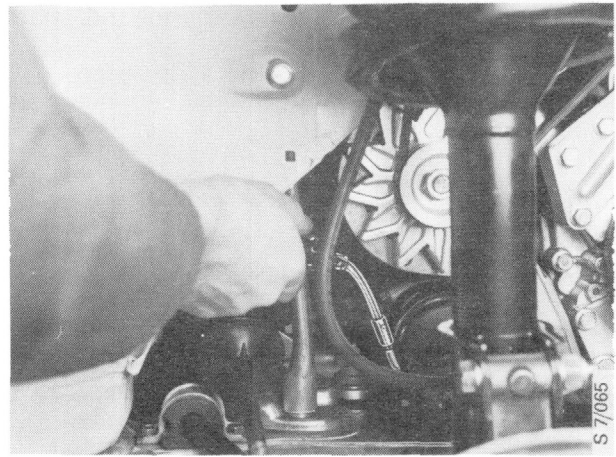
- 2 Tighten the hub centre-nut.



**Tightening torque:**  
**270 - 290 Nm (195 - 208 ft.lbs)**

Lock the nut by using a drift to upset the flange of the nut in the stub-axle thread. Replace the dust cap.

- 5 Undo the clip on the rubber gaiter on the in-board universal joint. Separate the two halves of the joint and fit a dust cover over the gaiter and driver.



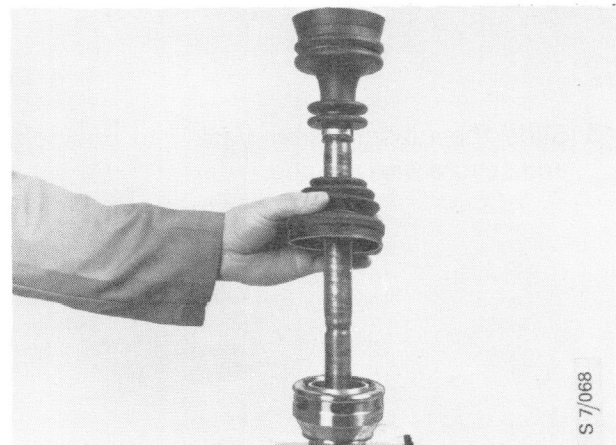
- 6 Remove the hub centre-nut and withdraw the drive shaft from the steering swivel member.



## Constant velocity (CV) joints

### To dismantle

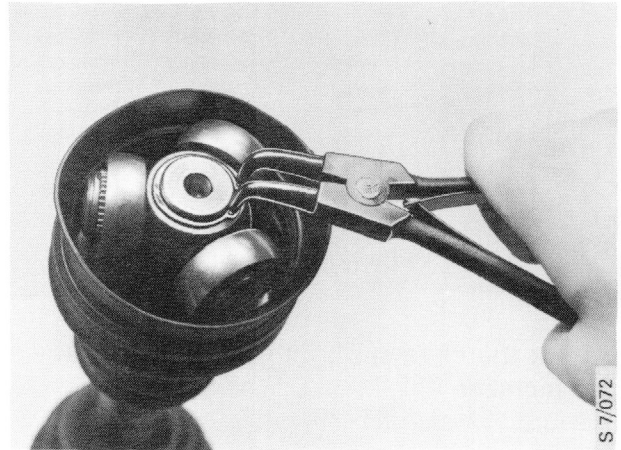
- 1 Remove all traces of grease from the joint. Undo the clip on the rubber gaiter on the constant velocity joint and slide the gaiter back along the shaft.



## Inboard drive-shaft joints

### To dismantle

- 1 Remove all traces of grease from the joint. Remove the circlip and pull the joint off the shaft.



### To assemble

- 1 Check that the rubber gaiter is not cracked or perished.
- 2 Fit the universal joint onto the shaft. Pack the gaiter with 60 g of Esso Beacon EP2 grease.

#### Caution

Take care to keep the grease off all painted surfaces, as the grease is liable to discolour the paint.



### To change the rubber gaiters

Remove all dirt from the external surfaces of the gaiters. Separate the inboard universal joint. Undo the clips on the gaiters and slide them off the shaft.

Fit the new gaiters and assemble the inboard universal joint. Pack the joint with grease.

#### Caution

Take care to keep the grease off all painted surfaces, as the grease is liable to discolour the paint.





- 4 Fit the thrust washer and the hub centre-nut.  
Tighten the nut.

**Tightening torque:**

**270 - 290 Nm (195 - 208 ft.lbs)**

- 5 Fit the wing liner and the wheel. Remove the axle stands and lower the car. Tighten the wheel bolts to the specified torque.

Saab-Scania AB  
Saab Car Division  
Nyköping, Sweden

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 American Edition. Ordering No. **326538**. Printed in Sweden by Graphic Systems AB, Göteborg, 1985.

