

SAAB

90

**SERVICE
MANUAL**

7 Suspension
Wheels

M 1985-

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7 Suspension Wheels

M1985-

027 Specifications

107 Special tools

731 Suspension, front

732 Suspension, rear

761 Shock absorbers

771 Wheels

774 Hubs

Specifications

Suspension system

Suspension

Front	Independent, with transverse withbones
Rear	Solid axle with longitudinal links and Panhard rod.
Front and rear springs	Coil springs

Coil springs

	Front	Right-hand rear	Left-hand rear
Total number of turns	8 ¼	9	9
Number of free turns	6 ¾	7 ½	7 ½
Wire diameter	14.0 mm	14.8 mm	15.0 mm
Free length, approx.	375 mm	310 mm	310 mm
Colour code, * class I	Blue	Green	Black
class II	Pale blue	Pale green	White

* Class I = Spring within negative tolerance (0–100 N)

Class II = Spring within positive tolerance (0–100 N)

Rear wheel alignment

Camber	$-\frac{1}{2}^{\circ} \pm \frac{1}{4}^{\circ}$
Toe-in	4 ± 1 mm (1–3 mm per side)

Wheels

	Steel wheels	Aluminium wheels
Maximum permissible radial throw	1.0 mm	0.5 mm
Maximum permissible lateral throw	1.0 mm	0.5 mm
Wheel nut tightening torques:	90–110 Nm (9–11 kgf m)	

Hubs

Maximum play of wheel bearings	2 mm measured at edge of rim
Tightening torques:	
Bolts securing front brake discs to hubs	30–50 Nm (3–5 kgf m)
Front hub nuts	340–360 Nm (34–36 kgf m)
Front hub nuts	290–310 Nm (29–31 kgf m)
Rear hub nuts	290–310 Nm (29–31 kgf m)

Wheels

4-speed: 5J x 15 CH steel
 5-speed: 5.5J x 15 H2 steel

*Recommended tyre pressures in lb/in² (psi) for cold tyres
 (Figures in parentheses show the equivalent in bar (kg/cm²)).*

Size	1-3 persons car cruising at under 100 mph (160 km/h)		1-3 persons car cruising at over 100 mph (160 km/h)		More than 3 persons car cruising at under 100 mph (160 km/h)		More than 3 persons car cruising at over 100 mph (160 km/h)	
	front	rear	front	rear	front	rear	front	rear
165 SR 15	1.9	1.9	2.2	2.4	2.2	2.4	2.2	2.4
175/70 R 15	1.9	1.9	2.2	2.4	2.2	2.4	2.2	2.4

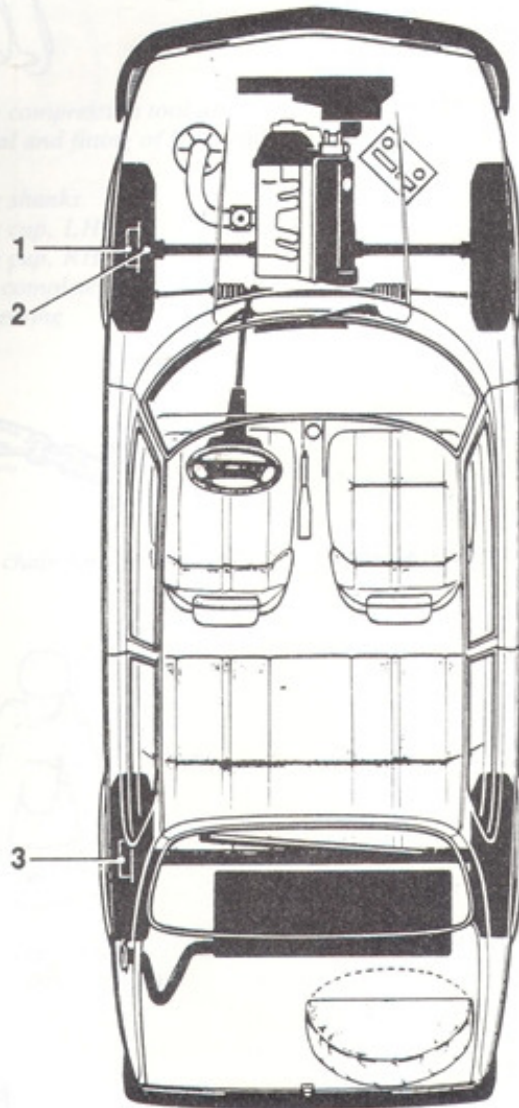
Spare wheel

Type
 Size
 Tyre pressure

Compact spare
 T 115/70 D15
 60 lb/in² (4.2 bar)

Great Britain, Australia
 T95/110 R 15
 80 lb/in² (5.5 bar)

Item	Lubrication point	Lubricant
1	Front wheel bearing Front wheel bearing support Hub splines	Totally enclosed permanently lubricated Molybdenum paste, part. no. (45) 30 06 632 Molybdenum paste, part. no. (45) 30 06 632
2	Outer universal joint	Esso ES 125 (Nebula EP 2), Molycote VN 24616, Optimol OLISTAMOLY 2 LN 584 or K.S. PAUL G 800
3	Rear wheel hub	Totally enclosed, permanently lubricated



7/007

Special tools



85 95 839 (A3) *Spring compression tool for removal and fitting of front coil spring*

89 95 847

Spring shanks

89 95 854

Spring cup, LH

89 95 862

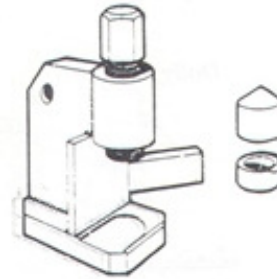
Spring cup, RH

89 95 714

Screw complete

89 95 128

Ball bearing



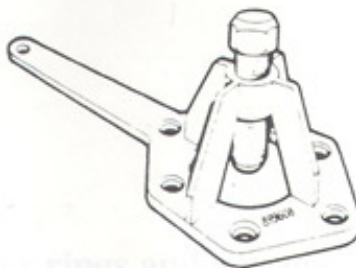
89 95 920 (A3) *Tool for removal and fitting of wheel studs*



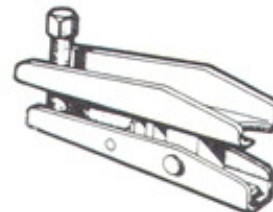
89 96 274 (A3) *Tool for rubber bushing: rear axle and pivot plate*



89 96 076 (A3) *Safety chain for spring shanks*



89 96 084 (A2) *Puller, later design*
(89 95 185) *Puller, earlier design*



89 95 409 (A1) *Taper breaker for removal of tie rod ends and ball bolts*



89 96 050 (A2) *Extension (set of 4) for puller*
89 95 185



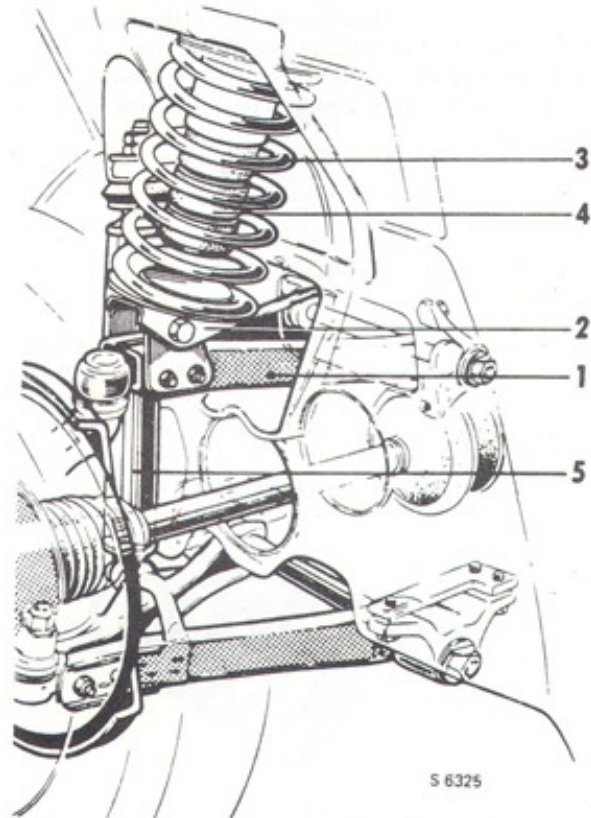
89 96 456 (A1) *Support plate*

Suspension, front

General

The front suspension has coil springs, transverse rubber-seated control arms and double-acting shock absorbers. The coil springs operate between the upper control arm and the wheel housing. The top seat consists of a steel cone held in place in the wheel housing by the pressure of the spring itself and located in a pressed boss in the wheel housing. The steel cone is fitted with a rubber buffer which acts as a stop. A rubber ring is positioned between the spring and the steel cone. A spacer is also fitted on heavier model cars. The rubber ring is supplied in different thicknesses depending on the equipment and weight of the vehicle. The lower spring seat is attached by a rubber bearing to the control arm. The downward stroke of the control arm is limited by two rubber buffers on the chassis.

The shock absorbers are attached by rubber bearings at both ends, to the bodywork at the top and to the lower control arm at the bottom.



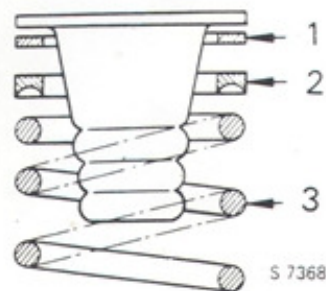
Front suspension

1. Upper control arm
2. Lower spring support
3. Coil spring
4. Rubber buffer
5. Shock absorber

Rubber rings and spacers

A spacer and two upper rubber rings of different thicknesses are provided to match the front suspension to the weights of different models.

The rubber rings and spacer are combined as follows:



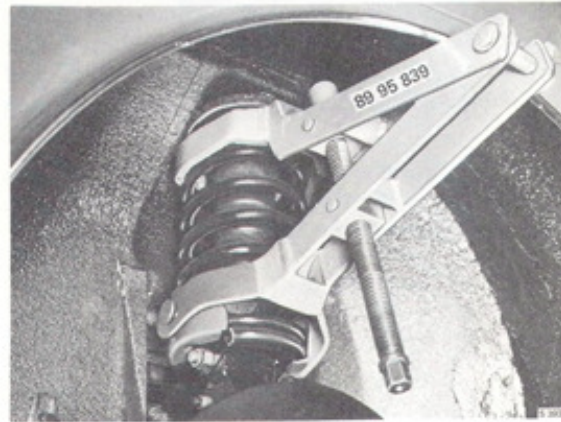
1. Spacer
2. Thick rubber ring
Thin rubber ring
3. Spring

Changing the front coil springs and rubber stops

Under no circumstances must the front and rear springs or springs for different models be interchanged. (The differences between the springs are described in section 027.) The springs are delivered with a rustproof coating. If this coating has been rubbed off, it should be touched up before the spring is installed.

Removal

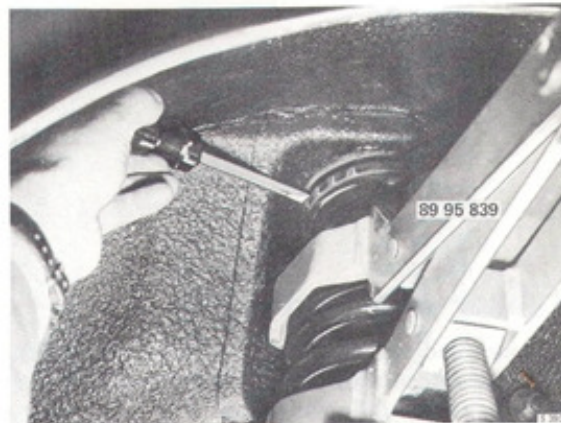
1. Raise and block up the front of the car and remove the wheel.
2. Apply spring compression tool 89 95 839, engaging the upper shanks direct in the spring at the second free turn from the top and the lower shanks round the spring cups, i.e. on the last turn of the spring with the colour-coded cup immediately adjacent to the end of the coil.



3. Compress the spring to give 30–40 mm (roughly 1 1/2 in) clearance at the top. If necessary, remove the upper spring seat or sheet steel cone, using a chisel or the like.

Note

Do not overload the spring compression tool. This can happen if the two shanks of the tool are tightened hard against each other using a nut tightener.

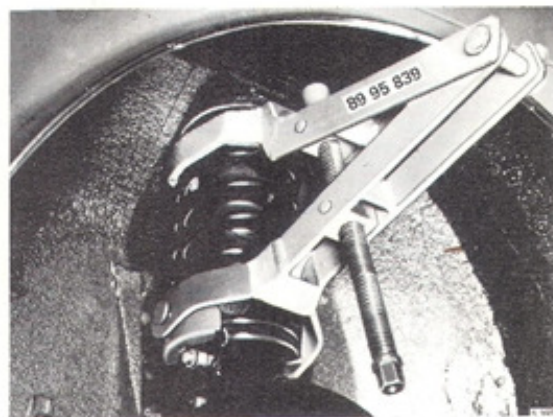
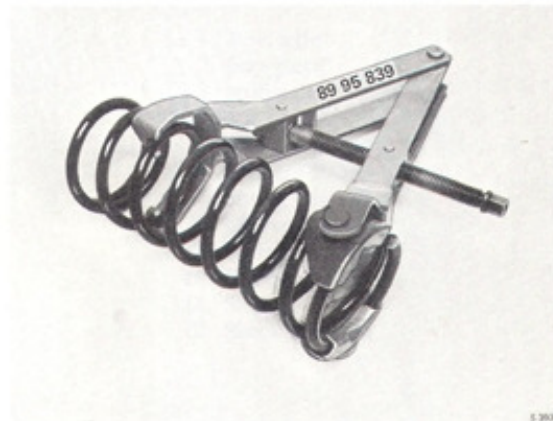


4. Remove the spring and steel cone.
5. Check and, if necessary, change the rubber ring or steel cone together with the rubber buffer.
6. Check and, if necessary, renew the bottom spring seat bearing (the pivot plate bearing).



To refit

1. If the spring has been taken out of the compression tool or if a new spring is to be fitted: Locate the colour-coded cup immediately adjacent to the end of the coil, and hook the upper shanks of the tool over the second turn from the top.
2. Compress the spring. Place the steel cone and rubber ring in the top of the coil.
3. Locate the spring on its bottom seat. Slacken off gradually on the compression tool, guiding the steel cone into its seat in the wheel housing. Remove the compression tool. If the bottom seat has been removed, it is advisable when reassembling to mount the seat loosely and wait until after the spring is in place before securing the seat, which will automatically take up the correct position due to pressure from the spring.
4. Mount the wheel. Remove the blocks and lower the front of the car.

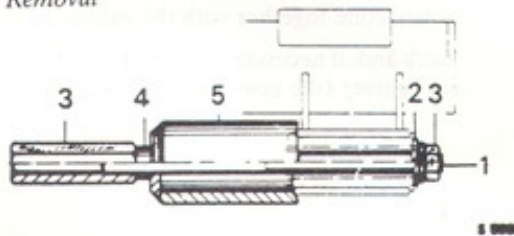


Changing the rubber bush for the pivot plate bearing

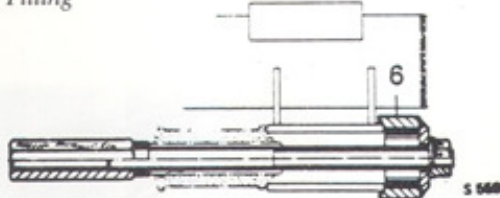
The rubber bush for the pivot plate can be changed using tool No. 89 95 789.

The procedure can be deduced from the illustration.

Removal



Fitting



Tool No. 89 95 789

1. Spindle
2. Spring washer
3. Nut
4. Brass washer
5. Removing sleeve
6. Fitting sleeve

Suspension, rear

The rear suspension comprises a rigid rear axle with coil springs and double-acting telescopic shock absorbers. The rear axle is a straight tube carrying end pieces into which the stub axles are force-fitted. The wheel hubs are journalled to the stub axles on taper roller bearings. The disc brake shields are bolted to the outside of the end pieces. The rear axle is movable in relation to the body, being attached to the latter by two spring links, the front ends of which are journalled to the body and the rear ends attached by two rubber bushes to the rear axle tube. There are also two links between the end pieces of the rear axle and the body behind the rear axle. These links take up torsional stresses in the axle. Lateral forces are taken up by a Panhard rod with one end journalled in a rubber bearing in a bracket fixed to the underbody. The other end of the rod is attached to a bracket on the axle.

The spring links carry seats for the lower ends of the coil springs, the upper seats being attached by spring insulators to the body. Upward movement of the wheel is limited by a buffer, bolted to the body, which at extreme spring compression strikes a stop on the rear axle. The rear shock absorbers are journalled in rubber bearings at either end, the upper ends being attached to the body and the lower to the rear axle spring links.

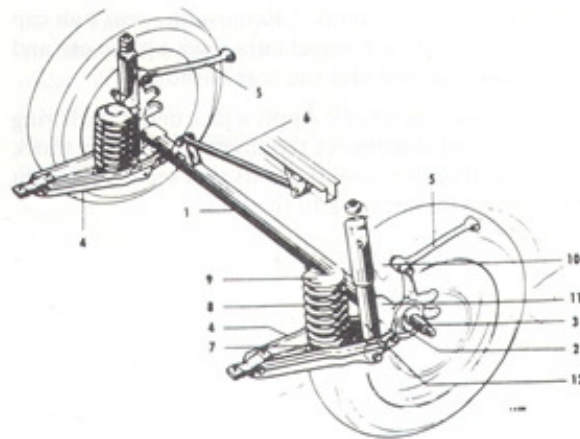
Caution

The shock absorbers are of a special design with a built-in rubber buffer.

For this reason, always use original Saab shock absorbers.

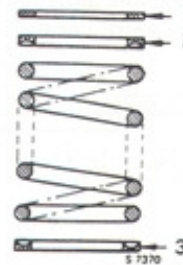
Springs, rubber rings and spacers

Springs of different ratings, rubber rings of different thicknesses and spacers are available to match the rear suspension to different weights of model variants.



Rear suspension

1. Rear axle
2. End piece
3. Stub axle
4. Spring links
5. Reaction links
6. Panhard rod
7. Spring seat
8. Coil spring
9. Spring insulator
10. Rubber buffer
11. Stop
12. Shock absorber

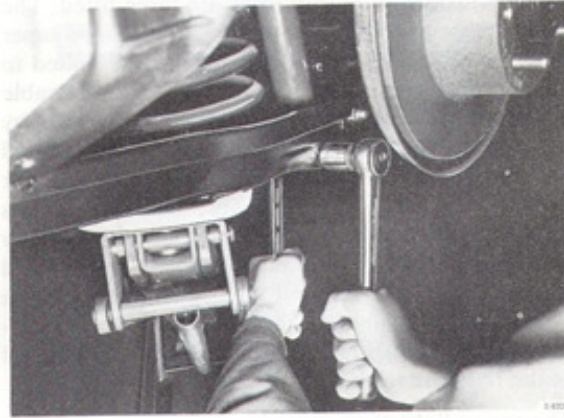


1. Spacer
2. Upper ring
3. Lower ring

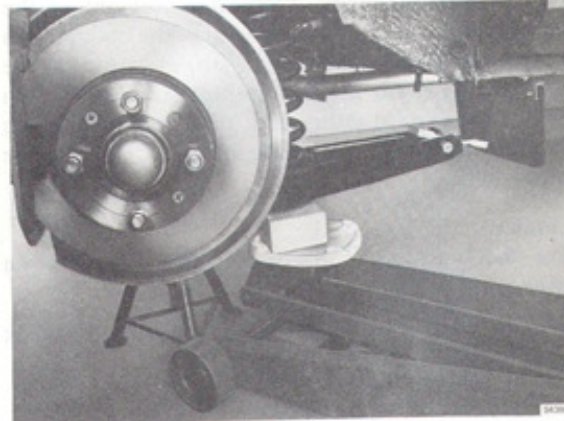
Changing the rear coil springs

Removal

1. Apply the handbrake. Remove the rear hub cap and slacken the wheel nuts. Jack up the car and place stands under the rear of the car.
2. Remove the wheel. Apply a jack under the spring link and disconnect the lower end of the shock absorber. Remove the bolts that secure the front spring link bearing to the body.



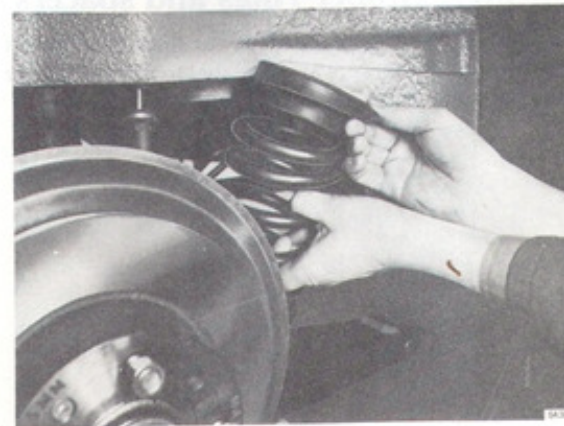
3. Place a stand of suitable height under the rear axle to prevent the brake pipes between the body and the rear axle being stretched and damaged.



4. Lower the spring link and remove the spring, the upper spring support and the rubber spacer.

To refit

Proceed in the reverse order.



Rear axle

Removal

1. Apply the handbrake. Jack up the rear of the car, place two stands under the body and remove the rear wheels.

Note

Never place the jack directly under the rear axle, as this is liable to deform the axle.

2. Disconnect the brake hoses at the rear axle, and unbolt the reaction link from the body. Remove the Panhard rod.
3. Using a jack, raise the rear axle slightly. Unbolt the lower ends of the shock absorbers, lower the axle and remove the springs.
4. Unbolt the spring links from the axle and then lift out the rear axle.

Changing the rubber bush between the rear axle and spring link

Once the spring link has been removed from the axle, the bush can be pressed in or out by means of tool 89 96 274.

The various components of the tool are shown in the illustration.

Removal

Position the tool as shown in the illustration and withdraw the bush which will be pressed into the removing sleeve of the tool.

(N.B. Make sure that the thread of the tool and the contact surfaces of the nut and brass washer are well greased.)

Fitting

1. Lubricate the outside of the bush, e.g. with soapy water, to facilitate fitting.
2. Press in the bush, positioning the tool as shown in the illustration.
3. After fitting ensure that the bush protrudes the same amount on both sides of the bush holder.

To refit

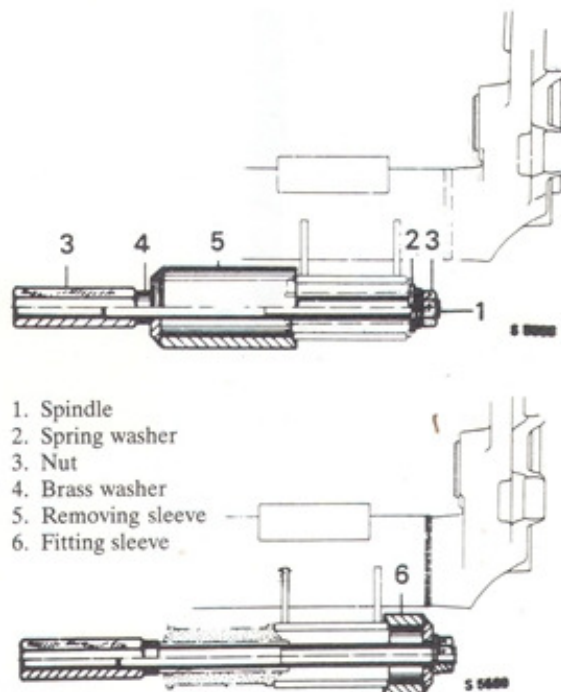
Clean and inspect all parts thoroughly and exchange any that are worn or damaged. Install in the reverse order. When lifting the axle into position, never apply a jack under the middle of the axle: either use two jacks or support one end while jacking the other into position.

Note

When fitting the rubber bushes, that with the car unladen and standing on all four wheels, the bushes should not be under any tension. The bolts for the bushes should therefore be tightened only when the car is in this position. The bolt securing the Panhard rod to the body should be inserted from the back of the car, with the nut to the front.

Note

Remember to bleed the brake system.



1. Spindle
2. Spring washer
3. Nut
4. Brass washer
5. Removing sleeve
6. Fitting sleeve

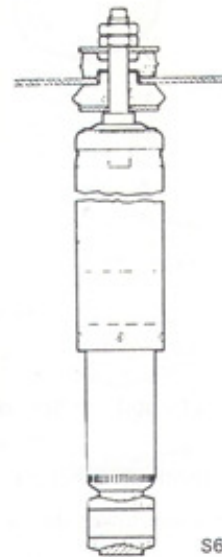
Shock absorbers

General

Defective shock absorbers should be exchanged. This is extremely important, as the shock absorbers play a large part the good roadholding and steering characteristics of the car.

Shock absorbers on the same axle should be exchanged in pairs.

The shock absorbers also limit the downward movement, for which reason they incorporate a rubber buffer. Therefore always use genuine Saab shock absorbers.



S6382

Front shock absorbers

Removal

1. Block up the car and remove the wheels.
2. Remove the shock absorber, saving the washers and rubber parts.

To fit

Inspect the rubber parts and exchange any that are defective using only genuine Saab parts. Before a shock absorber is fitted, any air present in it must be expelled. To bleed the shock absorber, hold it upright in the same position as when fitted, pump it up and down for a few full strokes, and then fit it on the car. If the shock absorber is laid flat, air will be able to enter through the valve system.

1. Fit the shock absorber with rubber bushes and washers.

The nuts should be tightened as far as they go to achieve correct compression of the rubber bushes.

2. Fit the wheel and lower the car.



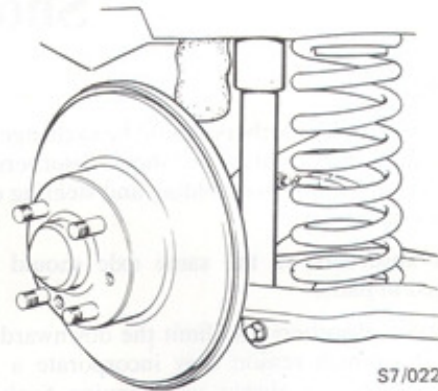
S6382

Front

Rear shock absorbers

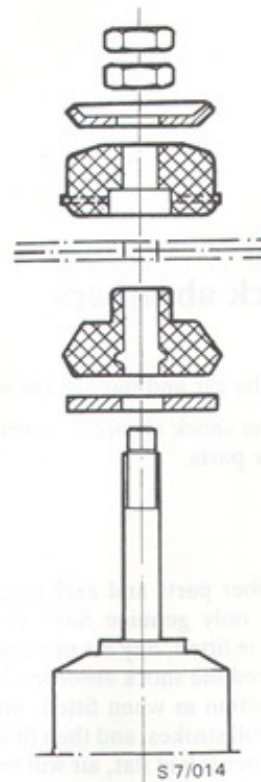
Removal

1. Raise and block up the car under the spring links.



Fitting

1. Fit the washers and bushes as shown on the drawing.
2. Tighten the shock absorber nuts.
3. Fit the wheels and lower the car.



Fitting sequence for new design.

Checking of hydraulic shock absorbers in situ

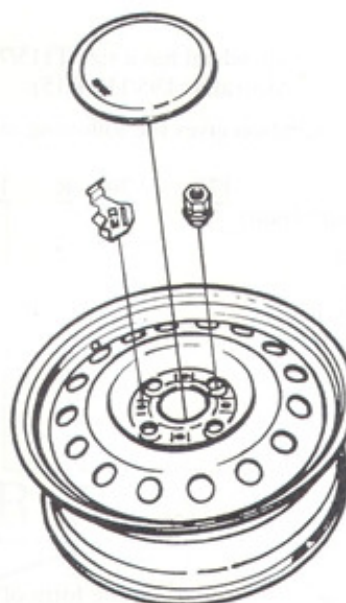
Check the condition of the shock absorbers as follows:

1. Check for any signs of oil leakage from the shock absorbers.
2. Check for external damage, extensive corrosion or deformed plungers.
3. Check that the nuts are tight.
4. Check the condition of the rubber bushes.
5. Test the functioning of the shock absorbers by rocking the car or taking it for a road test.

Wheels

Saab 99 L and 99 GL cars are fitted with steel wheels which are secured and centred on the hub by conical-ended (taper) nuts and a spigot on the hub.

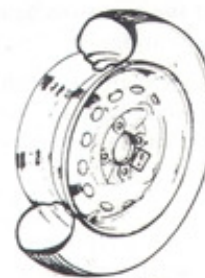
Wheel dimensions: 15 in. dia.
5-5.5 in. rim width.



S 7/018

The compact spare wheel, with which the car is equipped has a 15-inch diameter and a rim width of 4 in. As for standard wheels, it is secured by conical-ended nuts.

The tyre is of radial ply type for GB and Australia. The tyres for other markets are of diagonal ply type.



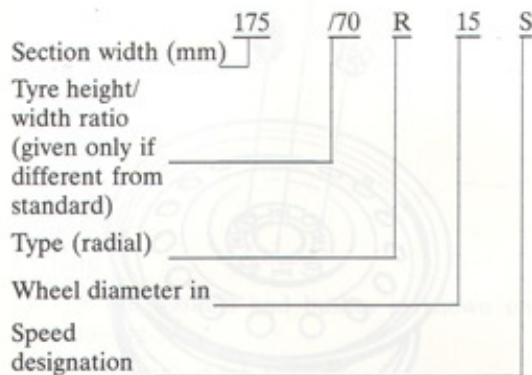
4 J x 15 HI

Tyres

The tyres are tubeless and the size is 175/70 R15 S or 165 R15 S.

The compact spare wheel has a size T115/70 D15 tyre (N.B. GB and Australia: T95/110 R15).

The tyre designation gives the following information:



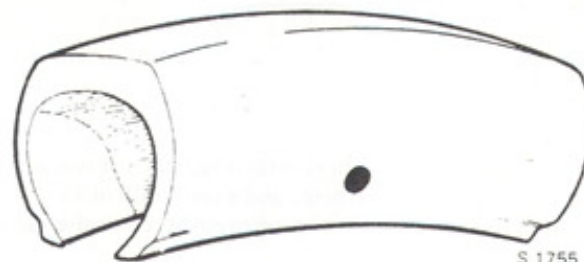
Tyres have a locating mark in the form of a coloured solid circle on one side wall (see illustration). This mark denotes the lighter side and should be in line with the valve when the tyre is fitted.

The fluted bead of the tyre seals against the inside of the rim – the bead seating.

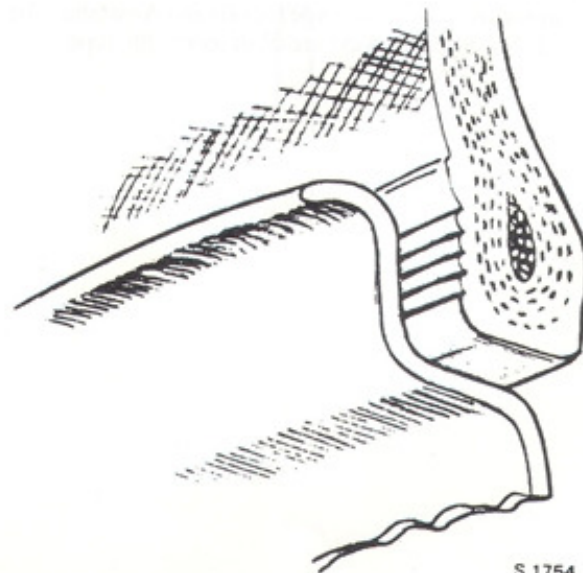
The tyres incorporate a tread depth indicator; when the tread pattern is worn down to 1.6 mm, unpatterned cross bands appear. This is a sign that it is time to fit a new tyre.

Note!

Avoid fitting tyres of different types or makes, or with varying degrees of wear, on the same axle.



S 1755



S 1754

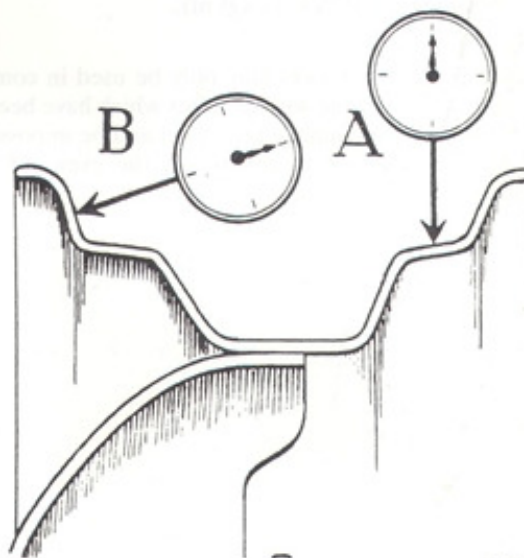
Overhauling and repairing wheels

Wheels may be damaged by the car being involved in a collision, going off the road or running on underinflated tyres. Since tubeless tyres seal direct against the rim, air will escape if the rim is deformed or otherwise damaged. In such cases, remove and inspect the wheel. If the rim is corroded on the bead seating, clean the surface using a wire brush or wire wool. If the rim is pitted, smooth it over using a file. If any minor pitting remains apply thick rubber solution to the rim and the bead, and fit the tyre before the solution dries.

Note

Before fitting the tyre, check that the rim is neither out-a-round nor out-of-true.

On a correctly fitted and rotating wheel, the difference between the highest and lowest points measured at A on the rim (see illustration) must not exceed 0.5 mm. The lateral throw B (see illustration) should be measured in the same way and must not exceed 1 mm (Light-alloy wheels: 0.5 mm.) When these measurements are made, the wheel should be mounted in the usual way, either on a hub or in special apparatus, so that the rim can be rotated.



S 1761

Fitting of wheels

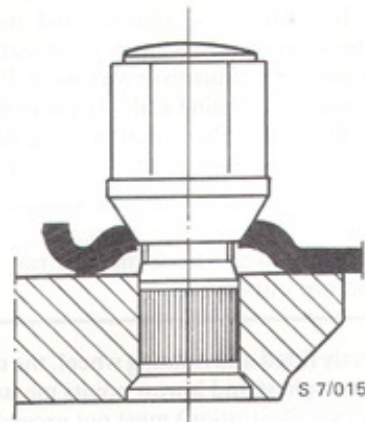
For reasons of comfort and safety, it is important that the wheels are fitted correctly.

Steel wheels

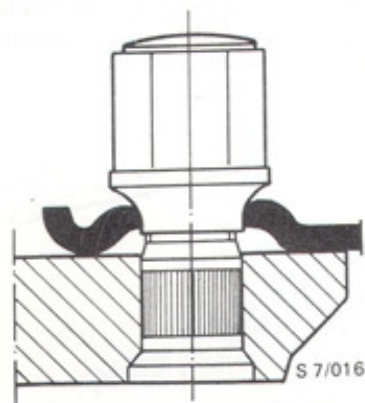
1. Check the taper and threads of the nuts. Nuts which bind or on which the taper is worn should be replaced.
2. Mount the wheel on the hub and tighten the nuts so that the wheel is drawn into its correct position on the hub.
3. Tighten the nuts to a torque of 90–110 Nm (65–80 lbf ft 9–11 kgf m).

Note

Pneumatic nut tighteners may only be used in combination with a torque wrench. Nuts which have been overtightened can damage the wheel and be impossible for the motorist to remove in the event of a puncture.



New nut



Nut with worn taper

Tyre maintenance

The working life of a tyre depends very much on the care it receives and the conditions in which the car is used. Some of the factors affecting tyre wear are listed below.

1. Tyre pressures. It is important to maintain the correct tyre pressure and to adjust it according to load. For correct tyre pressures, follow the recommendations in the Owner's Manual.
2. Wheel balancing is necessary to avoid vibration and consequent wear. Wheels must be balanced both statically and dynamically.
3. Wheel alignment. Faulty alignment of the wheels can cause heavy wear on the tyres.
4. Speed. Tyre mileage diminishes sharply with rising speed, mainly due to the greater frictional heat generated.
5. Engine power. Powerful engines give rapid acceleration and high speed, which in turn create the need for powerful brakes. This contributes to faster tyre wear.
6. Road surface. Dry roads offering a good grip for the tyres cause a great deal of wear.
7. Manner of driving. The temperament of the driver may weigh more heavily than any other factor. If the acceleration and braking resources of the car are regularly utilized to the limit, this will quickly wear down the tyres.

A statically balanced wheel should be able to come to rest in any position when suspended and free to rotate. A dynamically balanced wheel should rotate in a plane perpendicular to the axis of rotation, i.e. it should have no tendency to skew during rotation.

The balancing operation should not be performed on new wheels, but only after some 600-900 miles (1,000-1,500 km) of motoring; this is to give the tyres time to "shake down" on the rims.

Wheels need rebalancing after long mileage because tyre wear alters the distribution of weight.

Note

When a wheel spinner is used, the speedometer reading must not exceed 40 mph (70 km/h).



S 1762

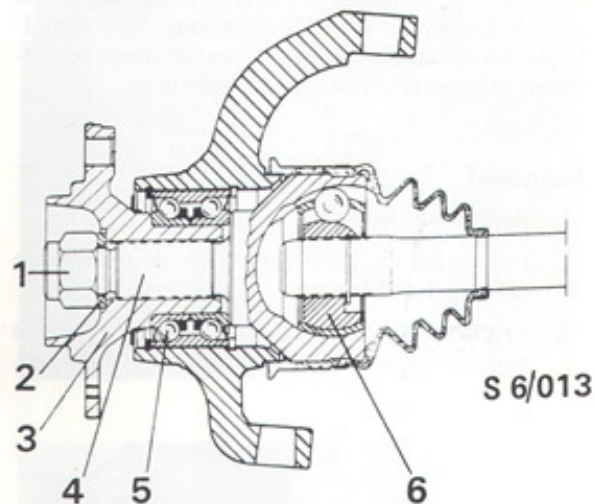
Contact between the tyre and the road

Hubs

Front wheel hubs

The front wheel outer drive shaft and hub are journalled in a double-row angular contact bearing in the steering knuckle housing. The bearing is permanently lubricated and has built-in seals.

The hub is splined to the outer drive shaft and secured by a nut with a flange which is upset in the locking groove in the shaft. The brake disc and wheel studs are fitted to the hub. The inner end of the outer drive shaft is connected to the intermediate shaft through the outer universal joint.



Front wheel hub

1. Locknut
2. Washer
3. Hub
4. Outer drive shaft
5. Wheel bearings with seals
6. Outer universal joint

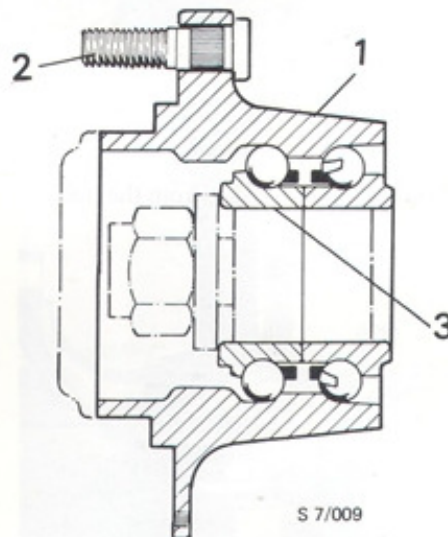
Rear wheel hubs

The wheel bearing is integrated into the hub.

The wheel hub bearing consists of a two-row angular contact bearing with a built-in seal.

The bearing and seal remain captive in the hub on dismantling.

The hub, bearing and seal are not replaceable separately, and the entire hub must be replaced as a unit.



Rear wheel hub

1. Hub
2. Wheel stud
3. Wheel bearings

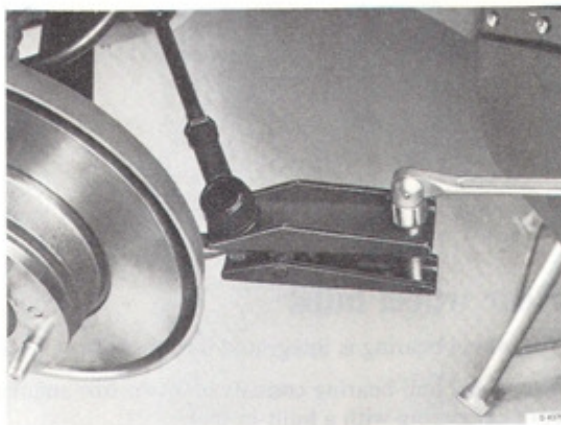
Wheel bearings

Changing the front wheel bearings

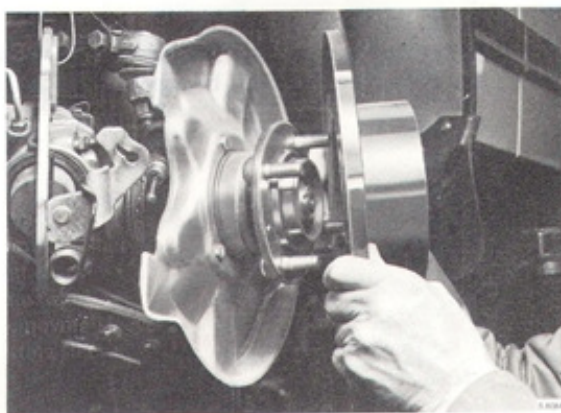
In time, wheel bearings may become so worn that they develop play. If the play measured at the wheel rim exceeds 2 mm, the wheel bearing must be renewed. Under no circumstances must wheel bearings be subjected to impact, as this may damage them.

Removal

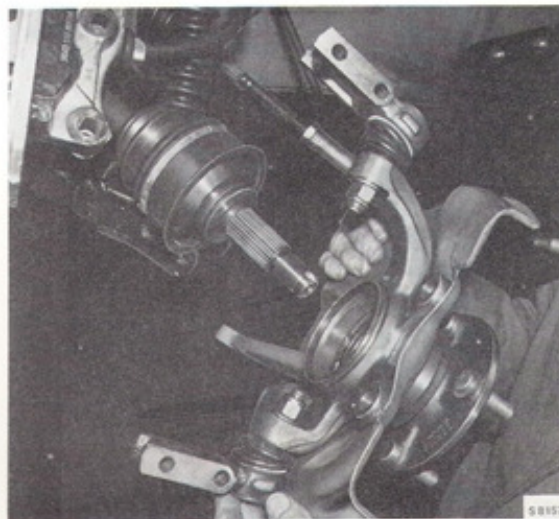
1. Remove the hub nut.
2. Jack up the car, support it on stands and remove the wheel and hub nut.
3. Remove the brake housing and hang it to one side so that the brake hose and pipe are not damaged.
4. Use tool 89 95 409 to separate the tie rod end from the steering arm.



5. Remove the brake disc from the hub.



6. Remove the bolts holding the upper and lower ball joints in their respective control arms. Pull the steering knuckle housing and the hub off the drive shaft and control arms.

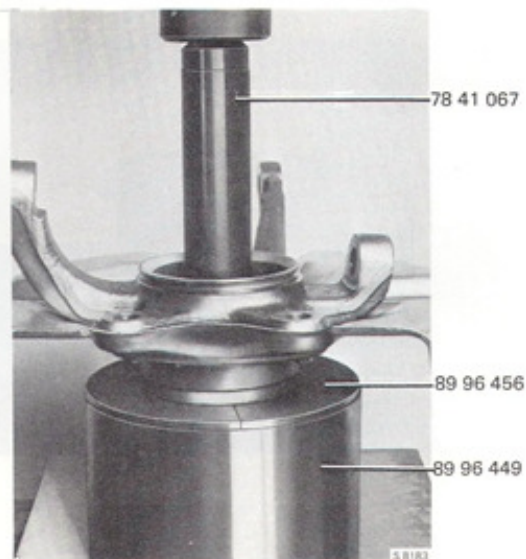
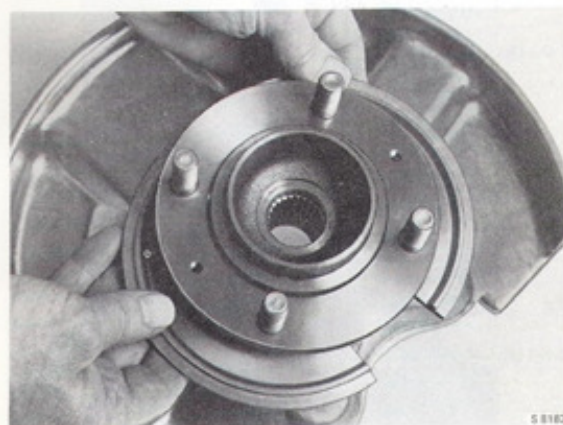


7. Use tools 78 41 067, 89 96 456 and 89 96 449 to press off the hub.

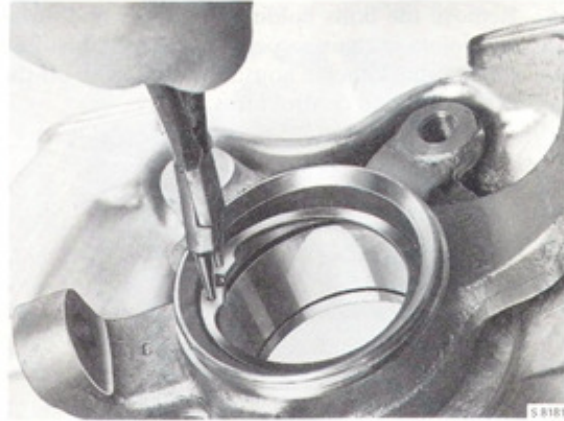
Use a universal puller to pull the inner bearing race off the hub. If there are no recesses for the puller, chisel off the race.

Note

Pressing off the hub destroys the bearing and a new one must therefore be fitted.



8. Remove the circlips from the steering knuckle housing and press out the bearing using tools 83 90 114, 89 96 456 and 89 96 449.



Removing the circlip

9. Press out the bearing. Use tools 83 90 114, 89 96 456 and 89 96 449.



Pressing out the bearing (outer race)

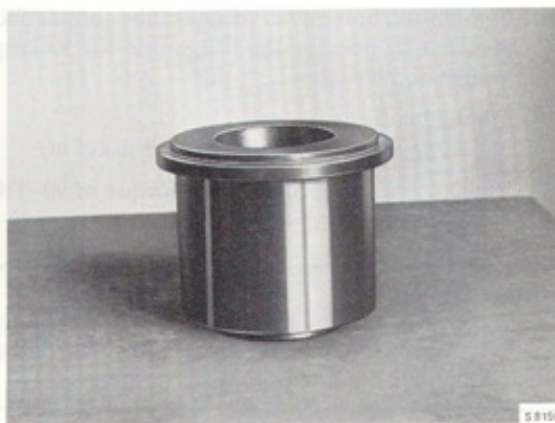
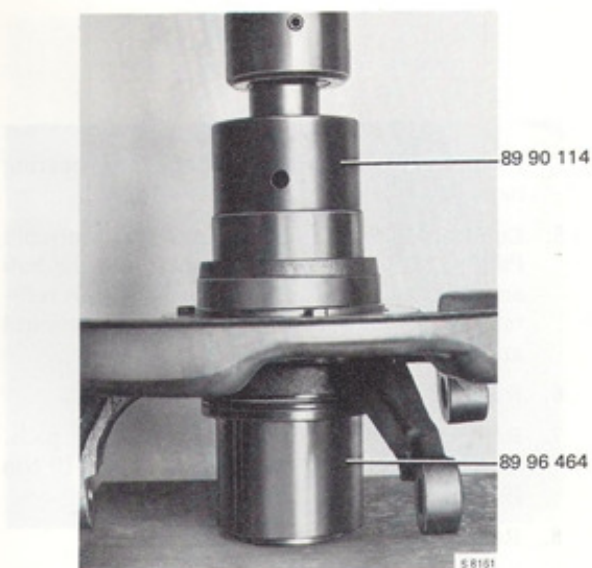
To assemble

1. Lubricate the bearing recess in the steering knuckle housing with Molycote Paste G. Fit the circlip in the inner groove in the steering knuckle housing.

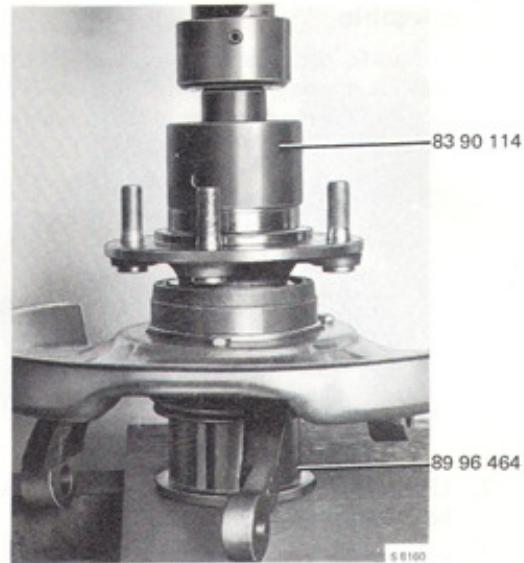


2. Use tools 83 90 114 and 89 96 464 to press in the bearing up to the circlip.

Note how tool 89 96 464 is positioned.



3. Fit the outer circlip.
4. Use tools 83 90 114 and 89 96 464 to press the hub into the bearing.



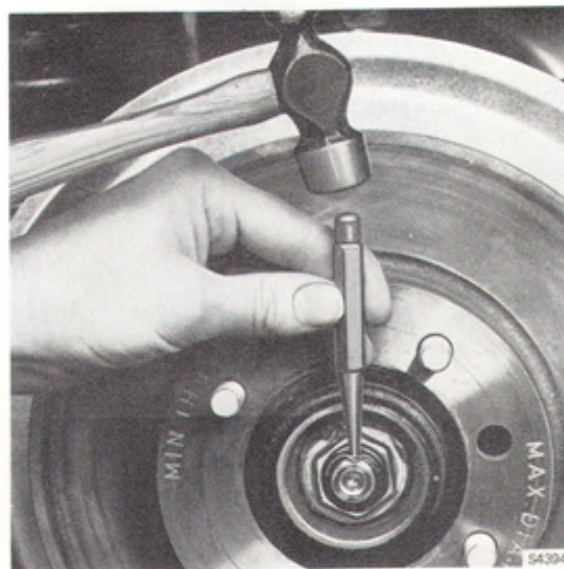
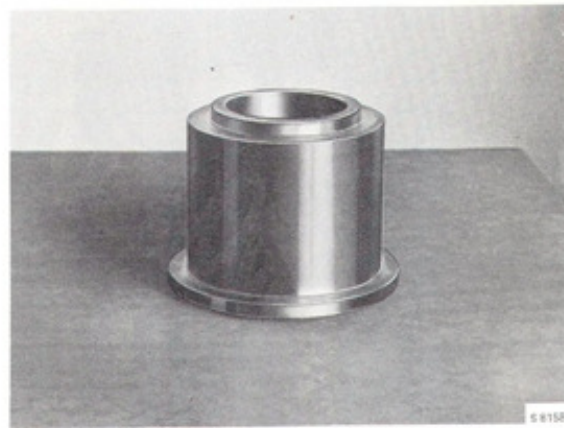
Position tool 89 96 464 against the inner bearing race.

5. Lubricate the drive shaft splines with Molycote Paste G, introduce the drive shaft into the hub and replace the steering knuckle housing by refitting the ball joints to the upper and lower control arms.
6. Refit the hub nut and brake disc.
7. Refit the brake housing and the brake pads. Tighten with a torque of 90–110 Nm (9–11 kgf m)
8. Refit the tie rod to the steering arm.
9. Refit the wheel and lower the car.
10. Tighten the hub nut to the specified torque and secure it by peening the flange into the locking groove in the shaft.

Tightening torque:
350 ± 10 Nm (258 ± 7 lbf ft; 35 ± 1 kgf m)
11. Tighten the wheel nuts with a torque of 90–110 Nm (9–11 kgf m).

Caution

The brake pads must be advanced to their operating position, close to the disc, by repeated pumping of the brake pedal, for the brakes to work properly.



Rear wheel hubs

Removal

1. Jack up the car and remove the wheel. Support the car on stands.

Caution

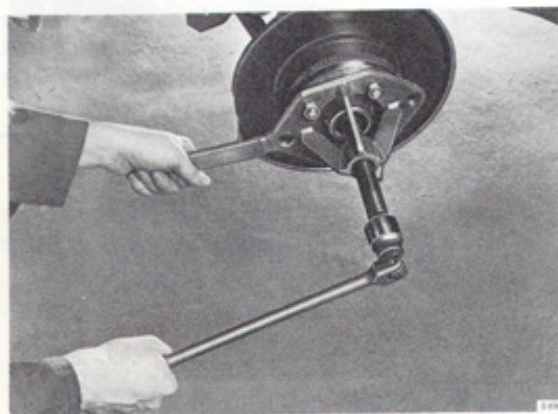
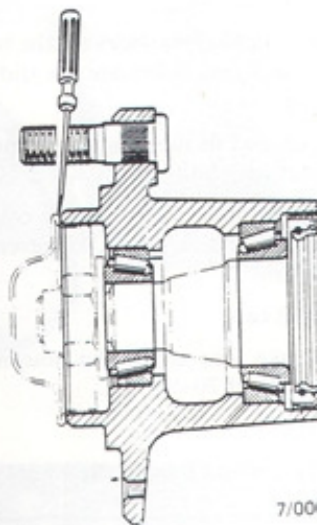
Never jack up the car with the jack applied direct under the rear axle.

2. Remove the brake housing and suspend it.
3. Remove the brake disc.

Note

Tie back the brake housing to obviate damage to the brake line.

4. Prize out the dust cap using a screwdriver.
5. Lift the peened edge of the locknut and then remove the nut and the washer.
6. Pull off the hub. If necessary, use puller 89 96 084.



To fit

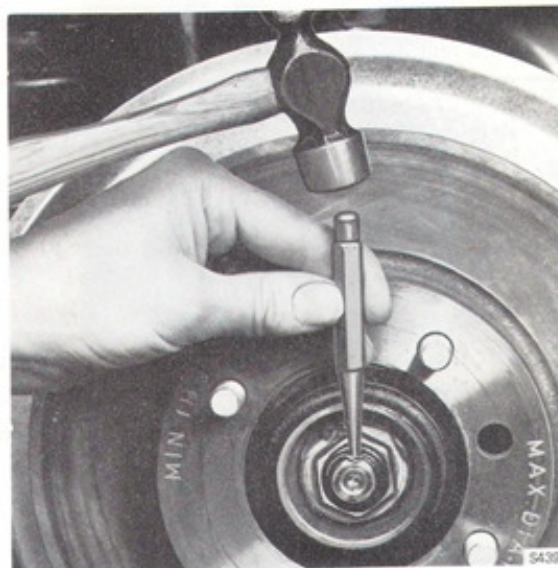
1. Check that the shaft surfaces for the bearings are in good condition. Lubricate the sliding surface with grease.
2. Fit the hub and fit the washer and nut. Tighten the locknut with a torque of 300 ± 10 Nm.
Lock the nut by pressing over the collar into the slot, using a round-face drift, to prevent the collar from splitting.
3. Fit the dust cap.
4. Fit the brake disc and brake housing. Tighten with a torque of 70–90 Nm.
5. Fit the wheel.
6. Lower the car and tighten the wheel nuts.

Caution

The brake pads must be advanced to their operating position close to the disc, by pumping the brake pedal repeatedly. Otherwise the brake will not work properly.

Note

If a nut tightener is used, a torque rod must also be used. Overtightening can damage the nuts and the wheel.

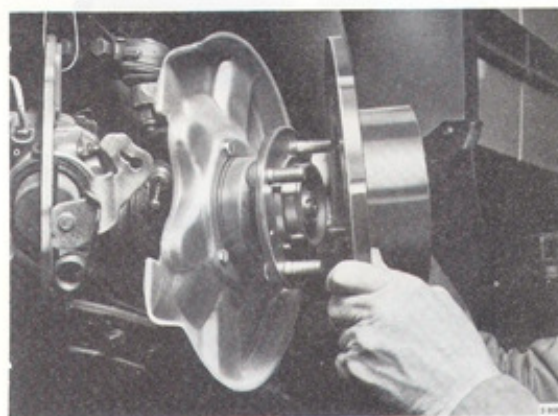
**Changing the wheel studs****Front wheels****Removal**

1. Remove the hub nut.
2. Support the front of the car on stands and remove the wheel.
3. Turn the brake disc so that one of the recesses in the edge of the disc is in line with the aperture for brake pads. Unhook the handbrake cable and remove the brake housing. Hang up the brake housing to avoid damage to the brake hose or pipe.

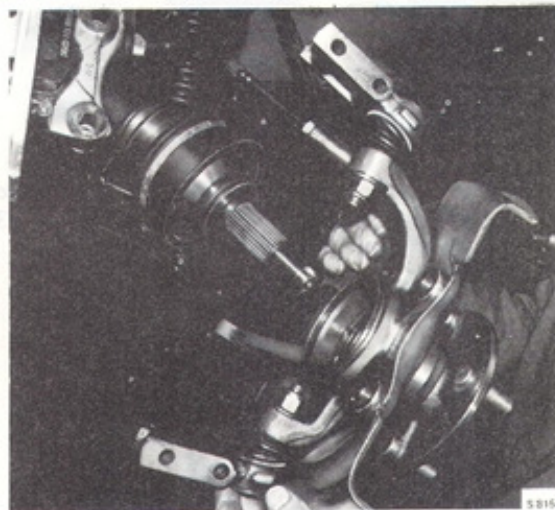
4. Use tool 89 95 409 to separate the tie rod end from the steering arm.



5. Remove the brake disc from the hub.



6. Remove the bolts holding the upper and lower ball joints in their respective control arms. Pull the steering knuckle housing and the hub off the drive shaft and control arms.

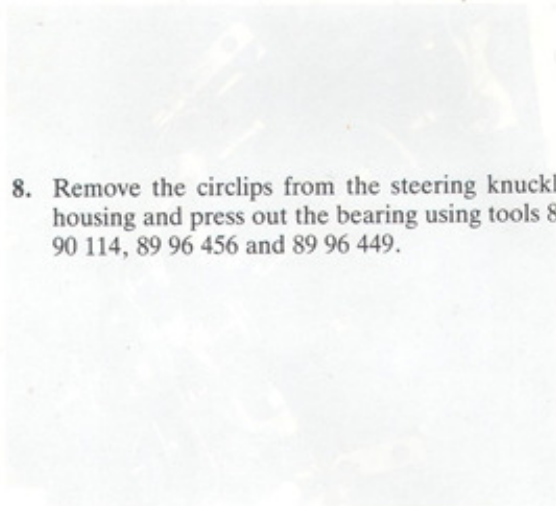
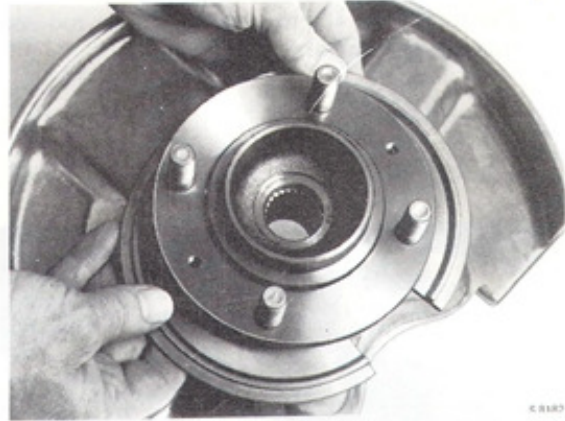


7. Use tools 78 41 067, 89 96 456 and 89 96 449 to press off the hub.

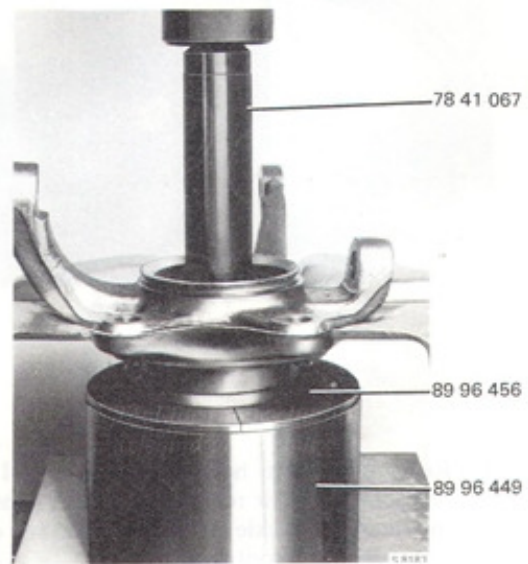
Use a universal puller to pull the inner bearing race off the hub. If there are no recesses for the puller, chisel off the race.

Note

Pressing off the hub destroys the bearing and a new one must therefore be fitted.



8. Remove the circlips from the steering knuckle housing and press out the bearing using tools 83 90 114, 89 96 456 and 89 96 449.



Removing the circlips

9. Press out the bearing. Use tools 83 90 114, 89 96 456 and 89 96 449.
10. Remove the wheel studs from the hub, using a press or special tool 89 95 920.



Pressing out the bearing (outer race)

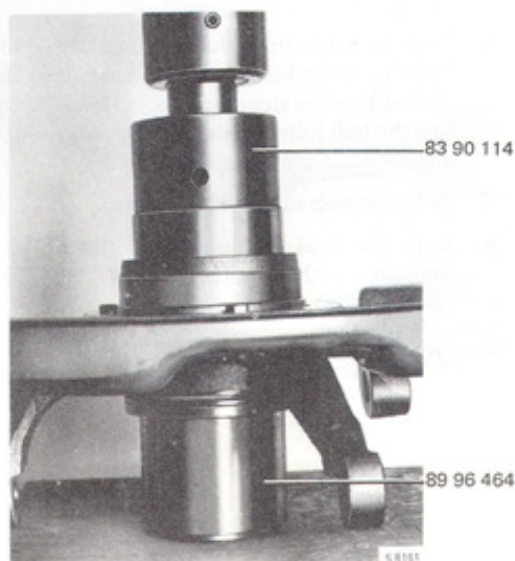
To fit

1. Press in the new studs using a press or pressing tool 89 95 920 with fitting sleeve.
2. Lubricate the bearing recess in the steering knuckle housing with Molycote Paste G. Fit the circlip in the inner groove in the steering knuckle housing.

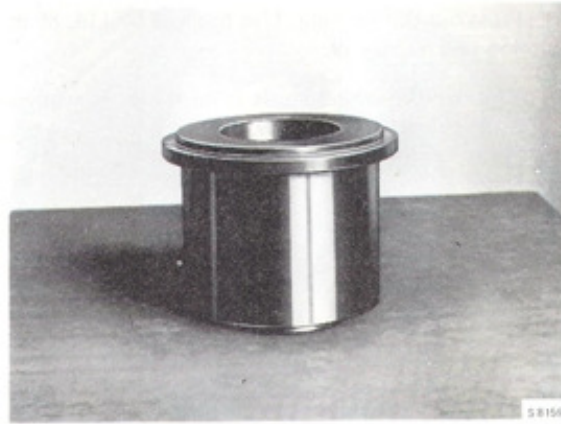


3. Use tools 83 90 114 and 89 96 464 to press in the bearing up to the circlip.

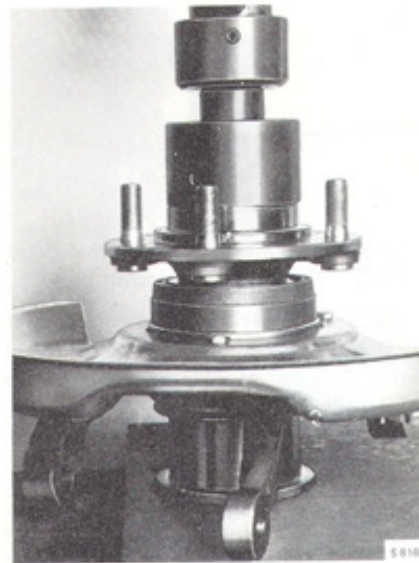
Note how tool 89 96 464 is positioned.



4. Fit the outer circlip.

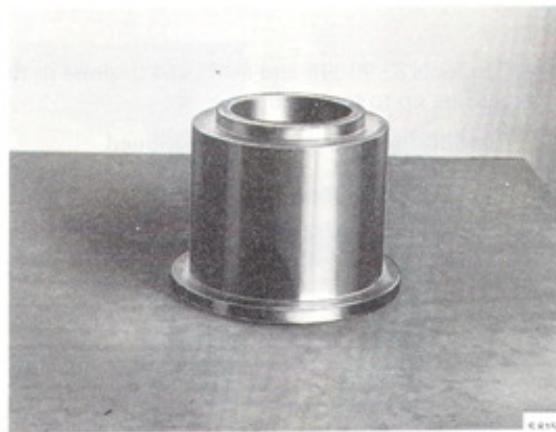


5. Use tools 83 90 114 and 89 96 464 to press the hub into the bearing.



Position tool 89 96 464 against the inner bearing race.

6. Lubricate the drive shaft splines with Molycote Paste G, introduce the drive shaft into the hub and replace the steering knuckle housing by refitting the ball joints to the upper and lower control arms.
7. Refit the hub nut and brake disc.
8. Refit the brake housing and the brake pads. Tighten with a torque of 90–110 Nm (9–11 kgf m).
9. Refit the tie rod to the steering arm.



10. Refit the wheel and lower the car.
11. Tighten the hub nut to the specified torque and secure it by peening the flange into the locking groove in the shaft.

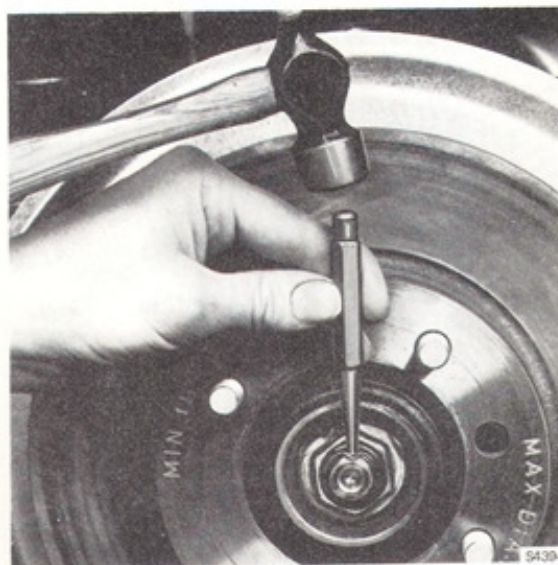
Tightening torque:

350 ± 10 Nm (258 ± 7 lbf ft; 35 ± 1 kgf m)

12. Tighten the wheel nuts with a torque of 90–110 Nm (8–11 kgf m).

Caution

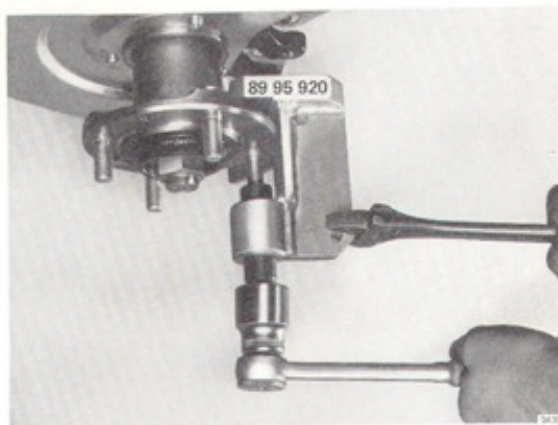
The brake pads must be advanced to their operating position, close to the disc, by repeated pumping of the brake pedal, for the brakes to work properly.



Rear wheels

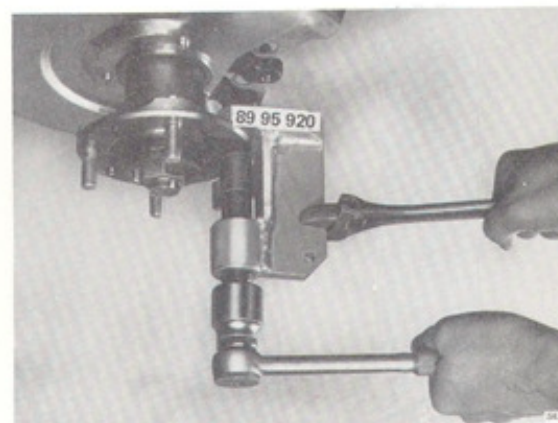
Removal of wheel studs

1. Support the rear of the car on stands and remove the wheel.
2. Remove the brake housing and suspend it. Remove the brake disc.
3. Press out the wheel studs using pressing tool 89 95 920 with the removal sleeve on the inside of the hub.



To fit

1. Press in the new studs with pressing tool 89 95 920 with the fitting sleeve on the outside of the hub.
2. Fit the brake disc and brake housing. Tighten with a torque of 79–90 Nm.
3. Fit the wheel and lower the car.



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