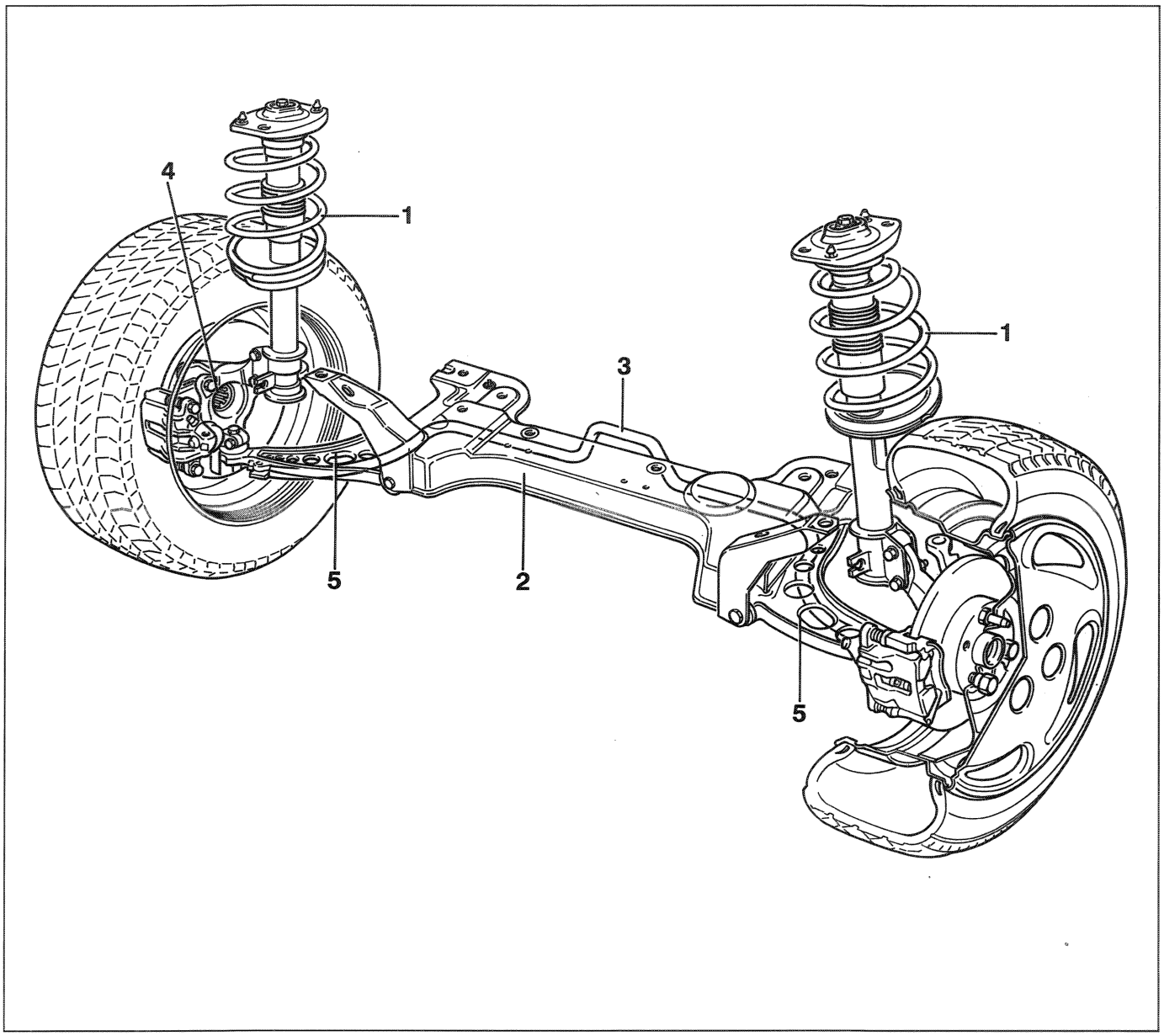
DIAGRAM OF FRONT SUSPENSION ASSEMBLY



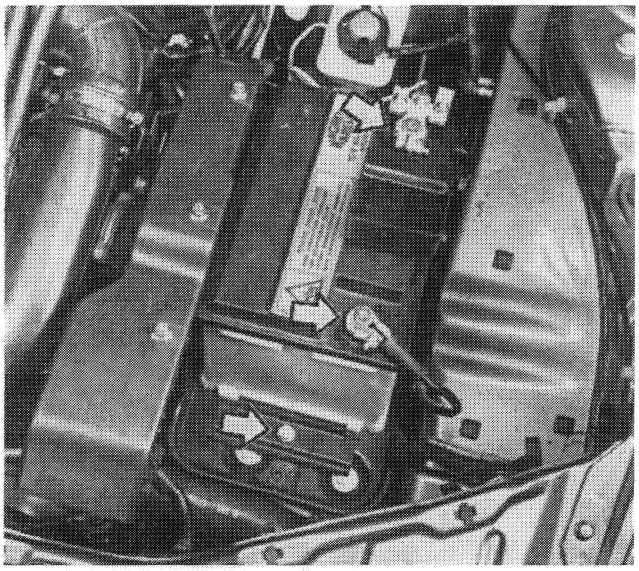
P3M001G01

1. Damper
2. Steering subframe
3. Anti-roll bar
4. Wheel hub
5. Wishbone

44.

REMOVING-REFITTING STEERING SUBFRAME

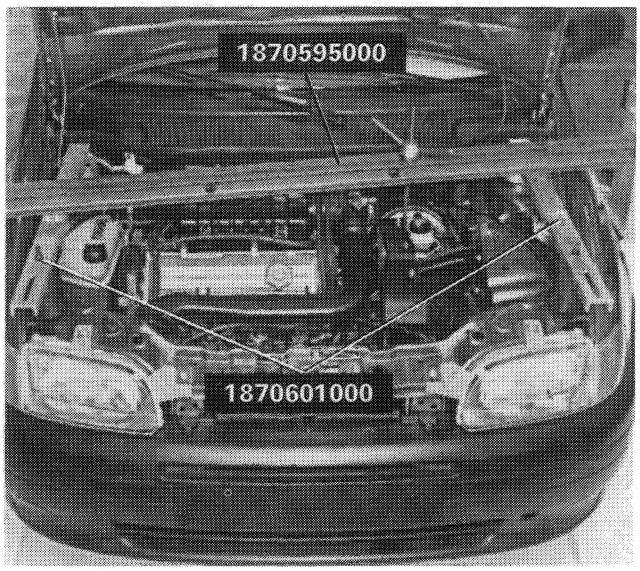
To remove-refit the steering subframe, disconnect the engine mounting on the gearbox side; to do this, fit the engine support crossbeam 1870595000 on the special brackets 1870601000.



P3M002G01

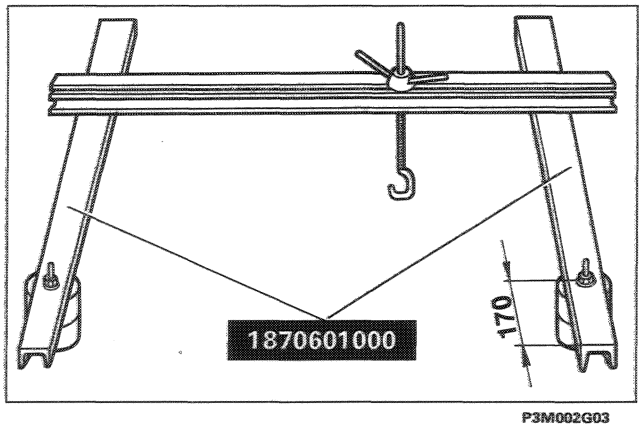
Removing-refitting battery

The battery has to be disconnected before the engine support hook can be secured.



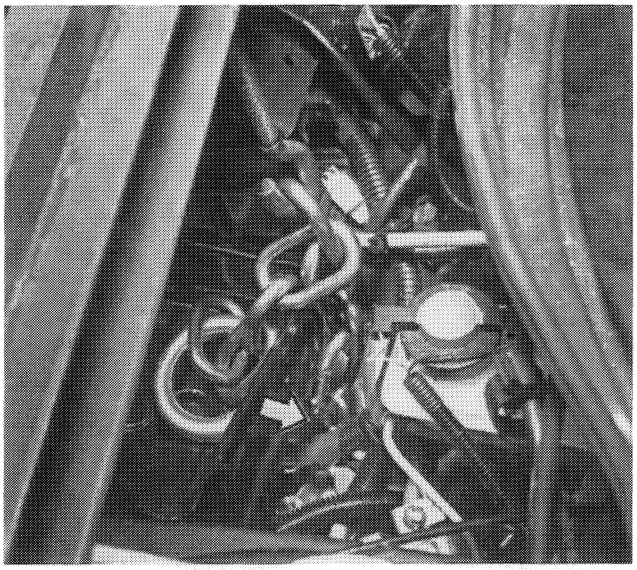
P3M002G02

Fitting the engine support bar 1870595000 together with the special brackets 1870601000

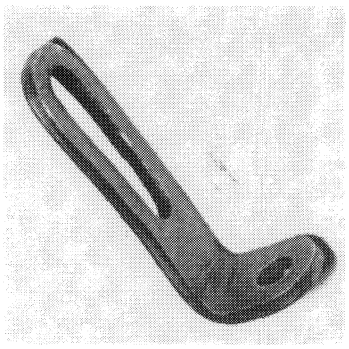


P3M002G03

The brackets 1870601000 must be modified by making a hole at 170 mm for securing the support buffer (see figure).



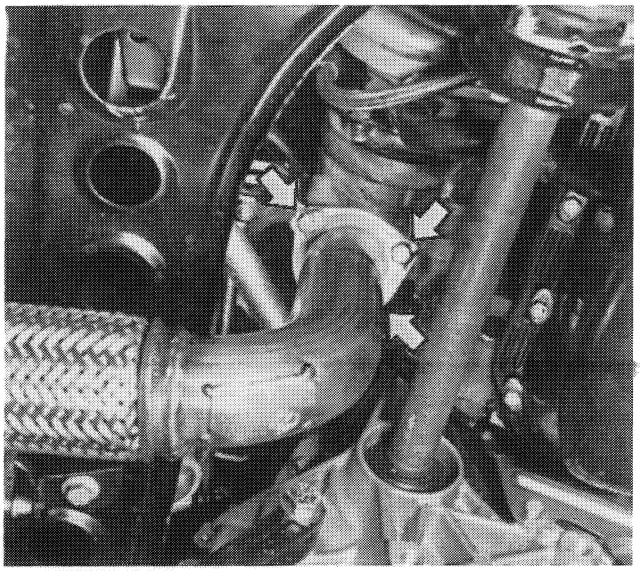
P3M003G01



P3M003G02

Fitting the engine support hook

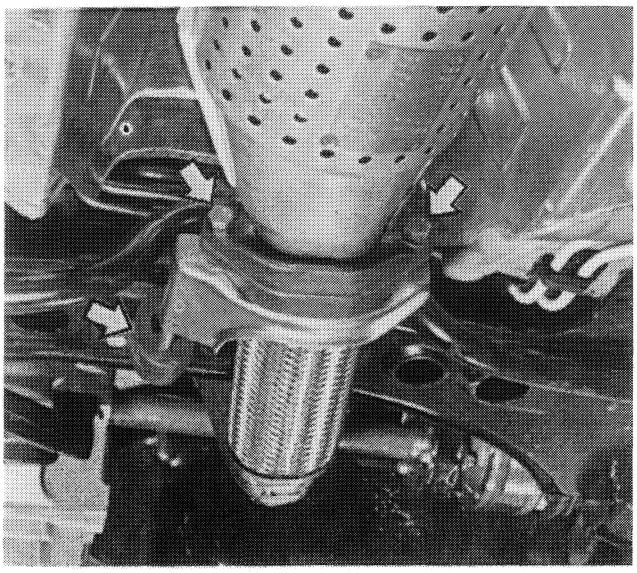
Fit the hook as shown in the figure.



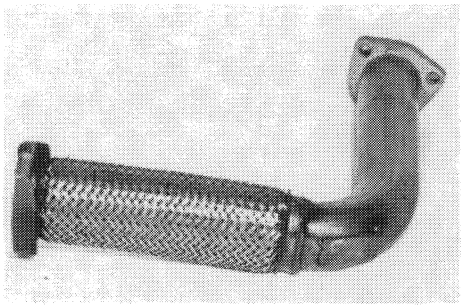
P3M003G03

Removing-refitting exhaust pipe front section

- Disconnect the exhaust pipe front section by undoing the 3 bolts indicated.



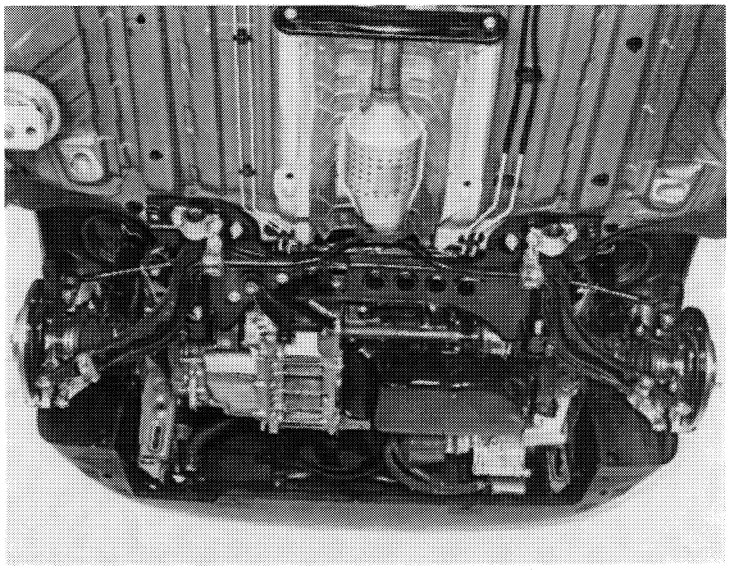
P3M003G04



P3M003G05

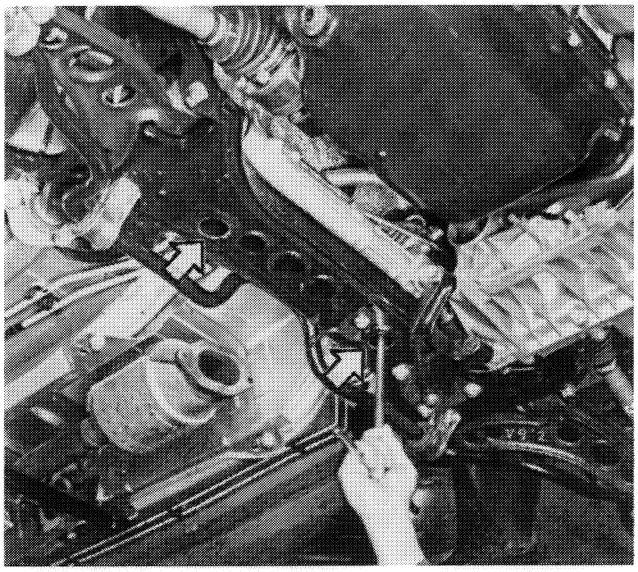
- Removing exhaust pipe, catalytic converter side.

44.



P3M004G01

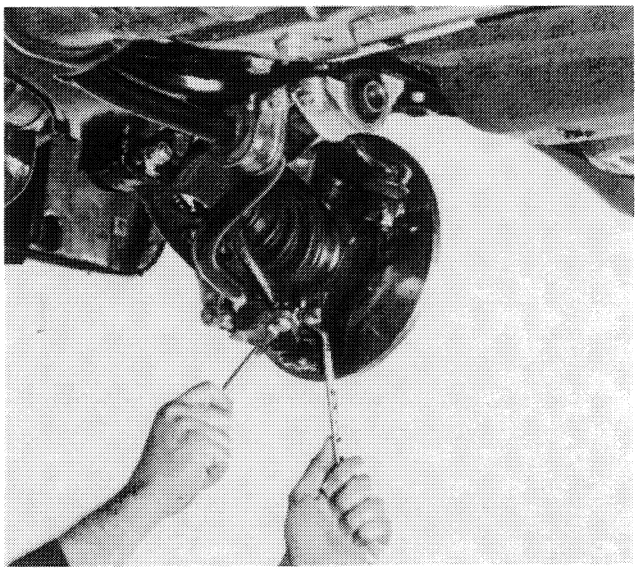
View of steering subframe



P3M004G02

Removing bolts securing steering gear to subframe

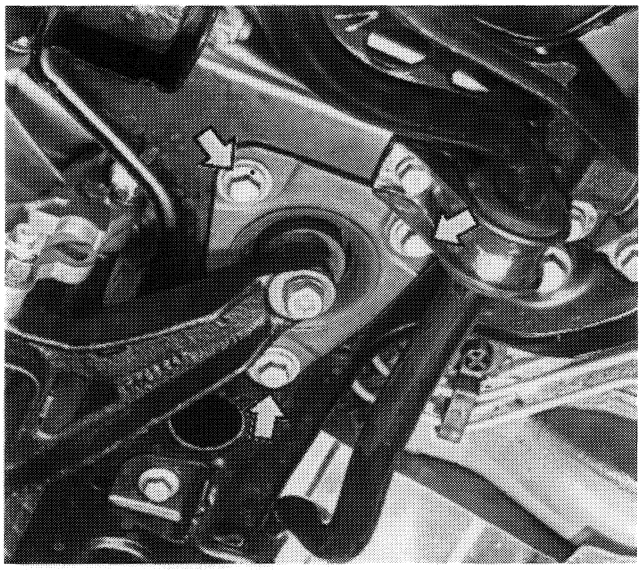
Secure the steering gear in an appropriate manner before undoing the attachment bolts.



P3M004G03

Removing-refitting nut securing wishbone to vertical link

Repeat the procedure for the left wishbone.

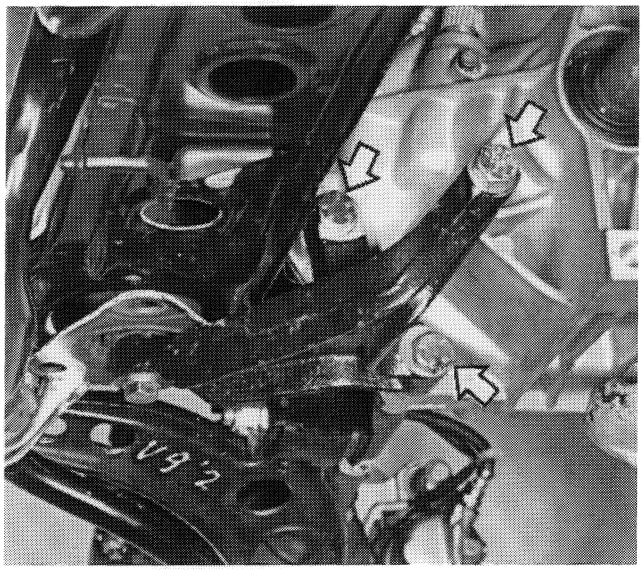


P3M005G01

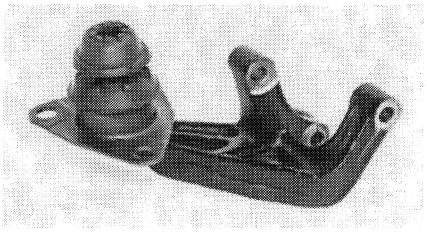
Removing-refitting engine mounting, gearbox side

- Undo the 3 bolts indicated;

To perform this operation, support the engine by means of a hydraulic jack. Ensure that the engine support bar is supporting the engine properly, then move the jack away.

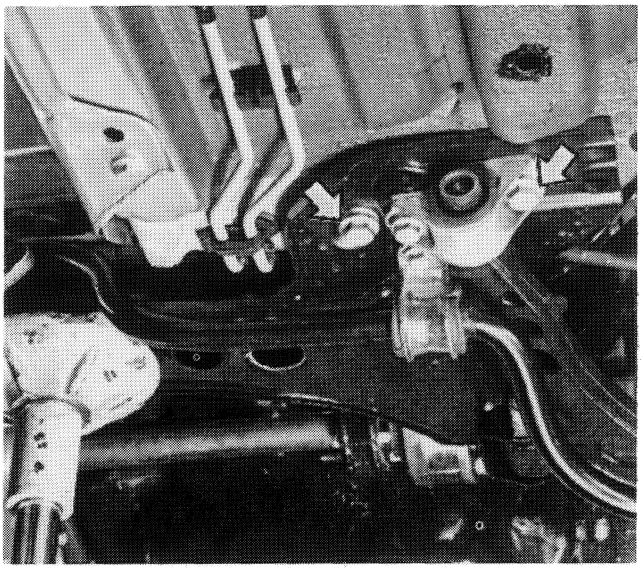


P3M005G02



P3M005G03

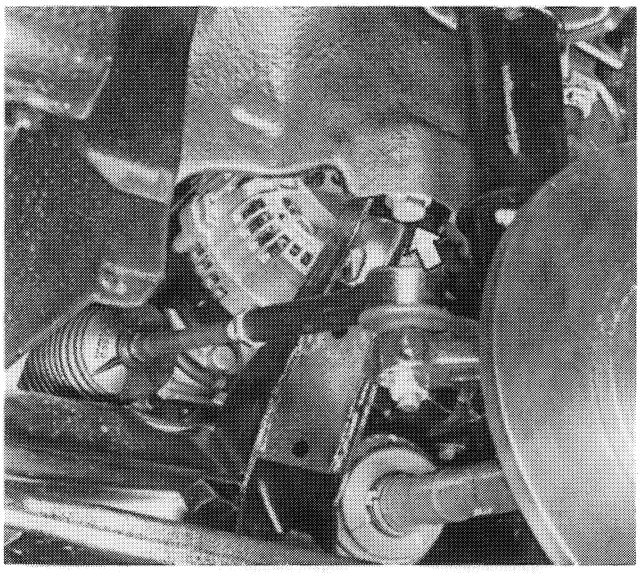
- Undo the 3 bolts indicated, which secure the engine mounting to the gearbox.



P3M005G04

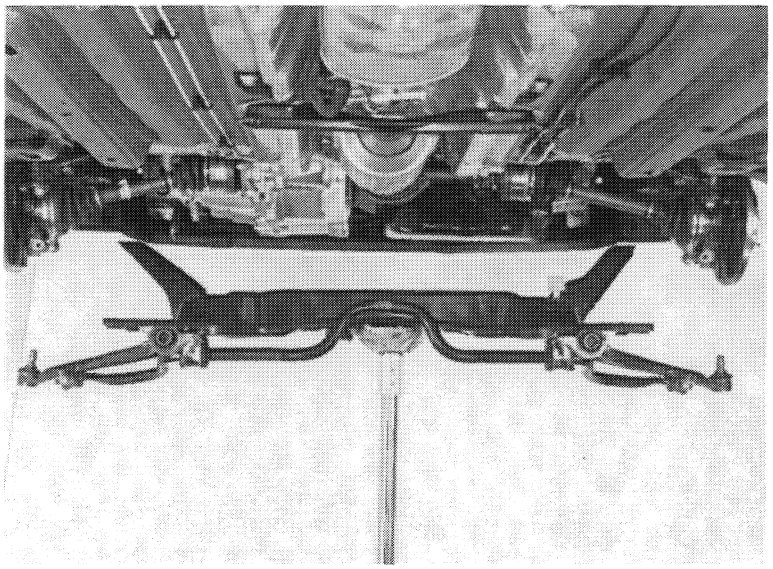
Removing bolts securing subframe/wishbone to body shell

Place the hydraulic jack under the steering subframe.



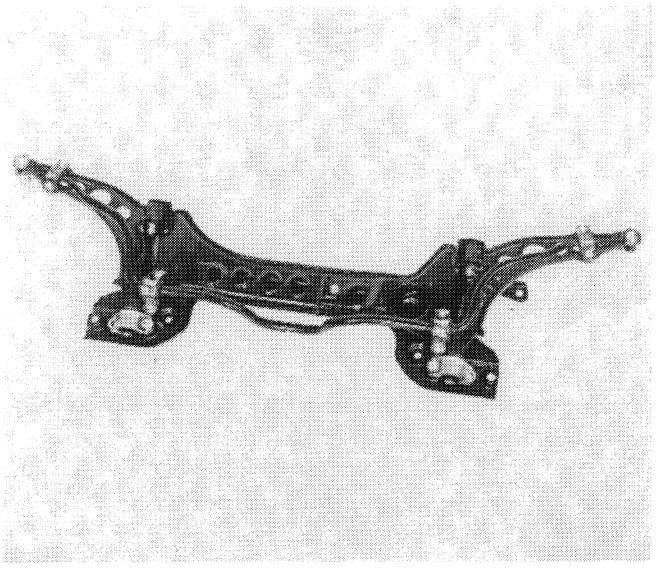
P3M006G01

Removing bolts (right and left sides) securing subframe to body shell



P3M006G02

Removing-refitting subframe using a hydraulic jack

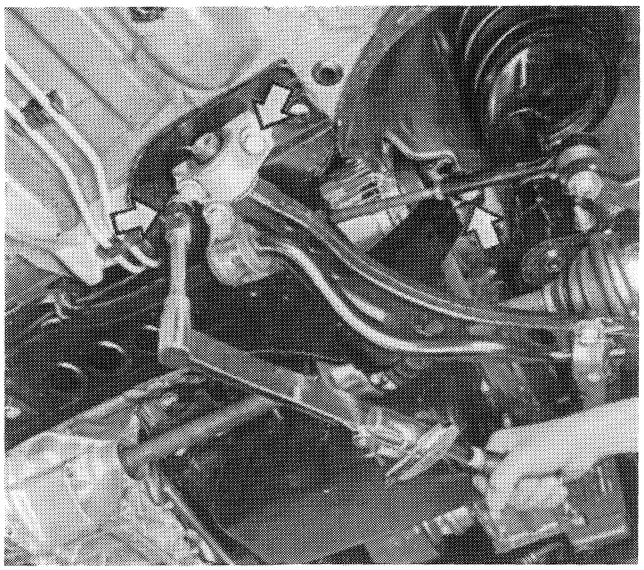


P3M006G03

Steering subframe

Check that the steering subframe is not cracked or deformed such that its efficiency is impaired.

To remove the wishbones and anti-roll bar, refer to the procedure for removing-refitting the individual components, described in the sections below.

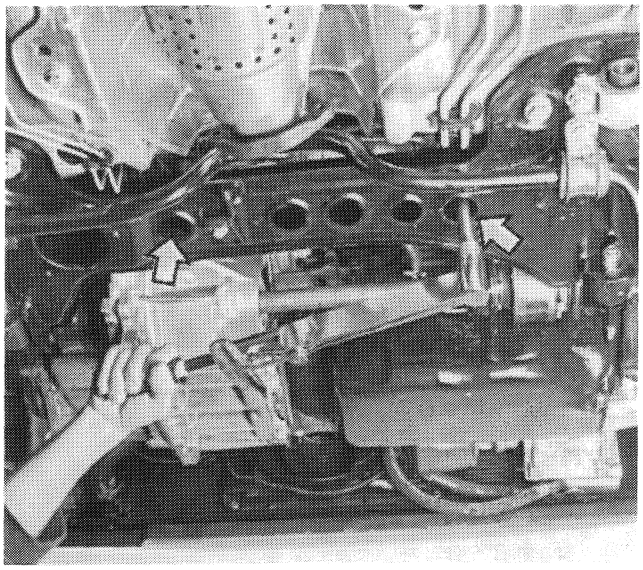


P3M007G01

11,5 daNm

Refitting steering subframe

Refit the subframe by inserting the bolts attaching it to the body shell, then tighten them to the torque of 11.5 daNm.

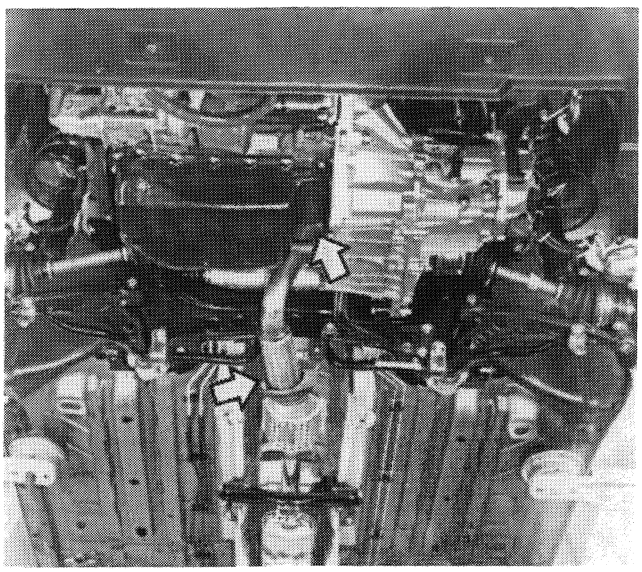


P3M007G02

7 daNm

Tightening bolts securing steering gear to subframe to correct torque

Tighten the bolts to a torque of 7 daNm.



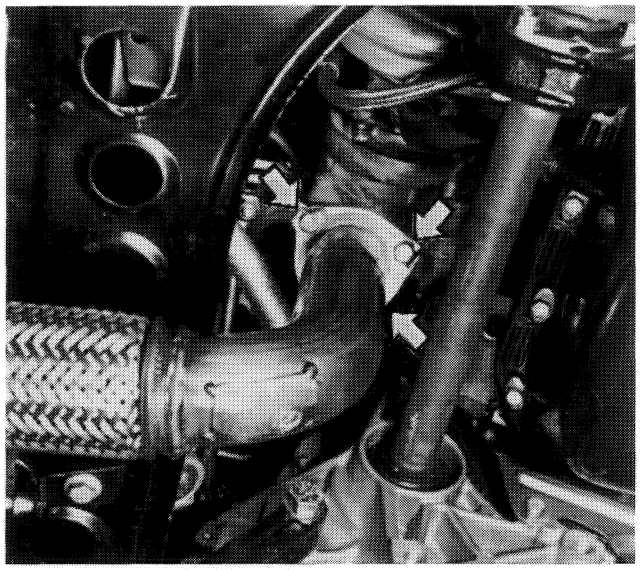
P3M007G03

REMOVING-REFITTING ANTI-ROLL BAR

Removing-refitting exhaust pipe front section

The exhaust pipe front section must be disconnected in order to remove the anti-roll bar.

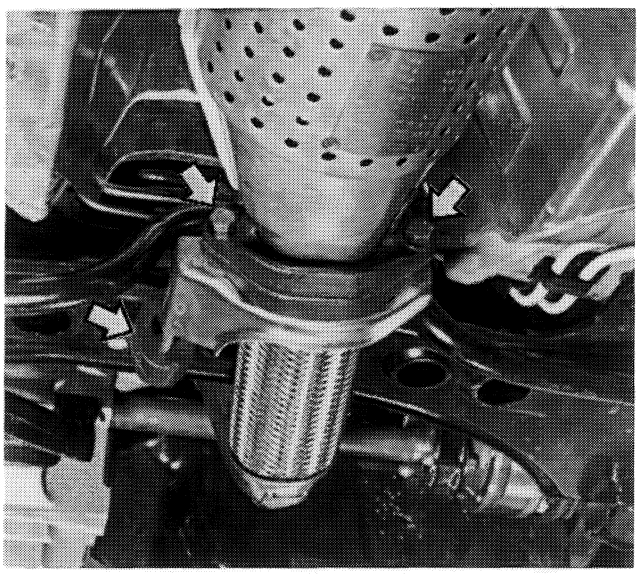
44.



P3M003G03

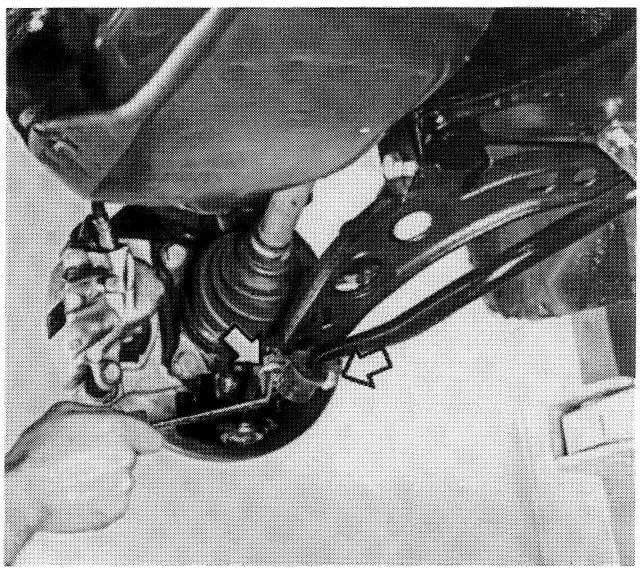
Removing-refitting exhaust pipe

- Remove the three bolts securing the exhaust pipe front section.



P3M003G04

- Removing-refitting exhaust pipe, catalytic converter side.



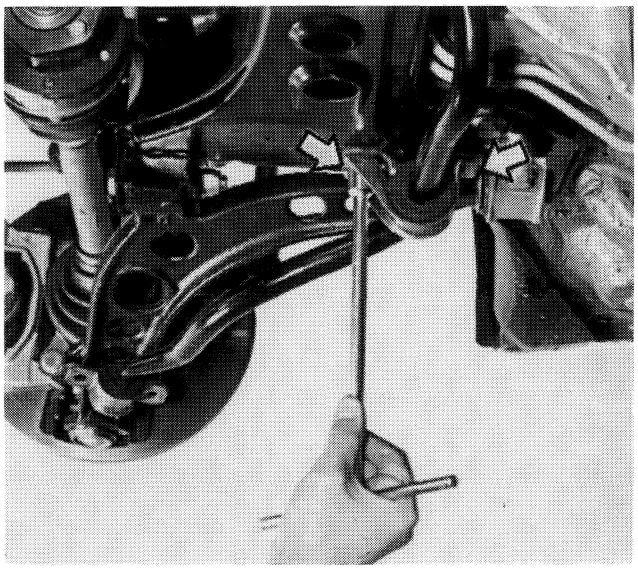
P3M008G01

Removing-refitting anti-roll bar on wishbone.

Undo/refit the two bolts indicated.

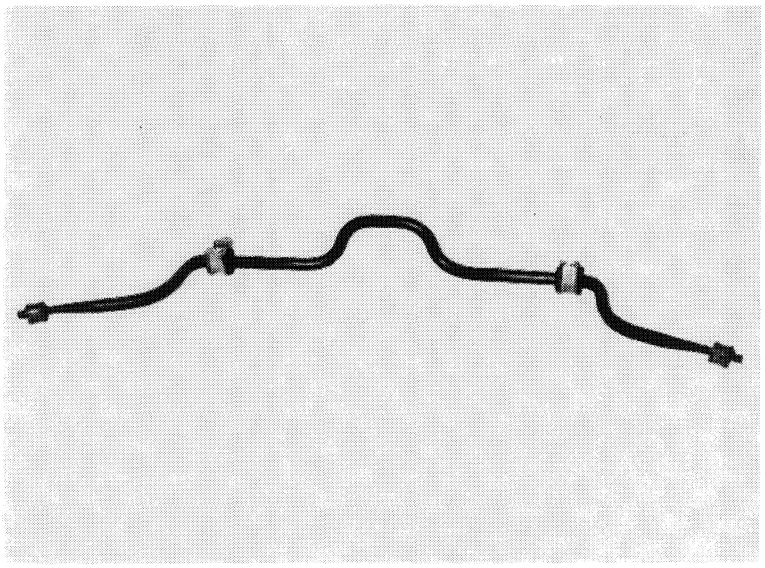
The anti-roll bar is fitted with some preload. During removal, take care not to damage the the bolt threads because of the force exerted by the bar.

During refitting, adjust the end of the bar to line up the holes with those on the wishbone.



P3M009G01

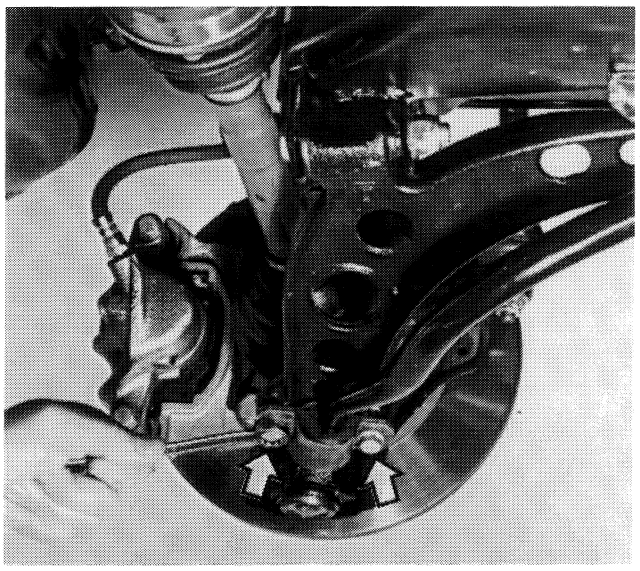
Removing-refitting bolts securing anti-roll bar to steering subframe



P3M009G02

Anti-roll bar

Inspect the components carefully.
The rubber buffers and the anti-roll bar must not show signs of damage, otherwise they must be renewed.

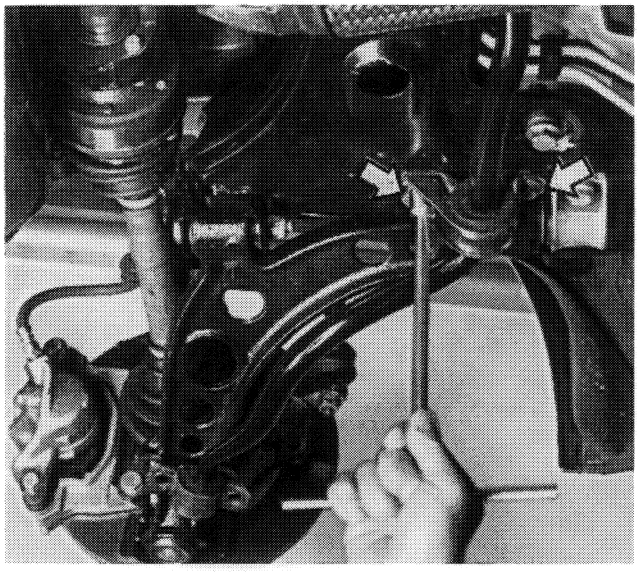


P3M009G03

REMOVING-REFITTING WISHBONE

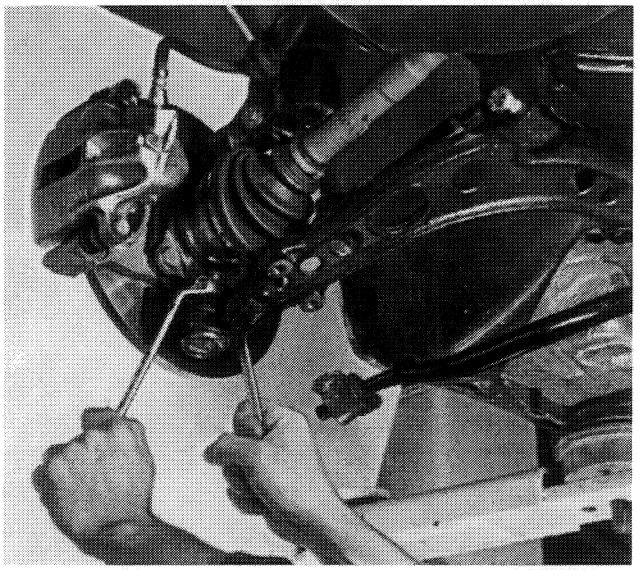
Removing-refitting bolts securing anti-roll bar to wishbone

44.



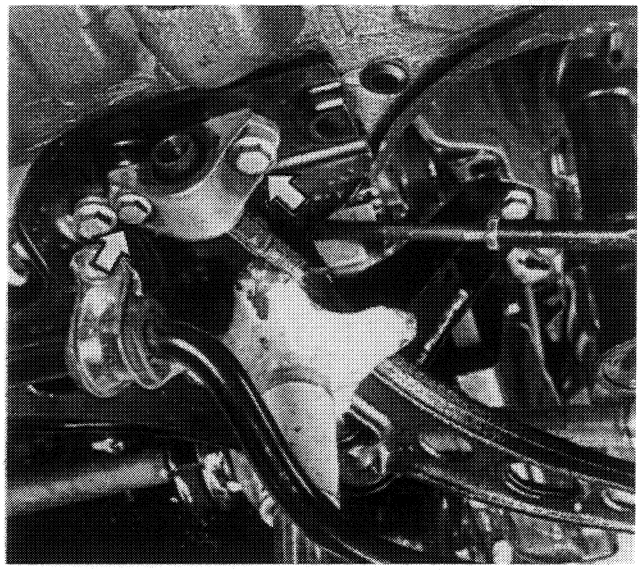
P3M010G01

Removing-refitting bolts securing anti-roll bar to steering subframe



P3M010G02

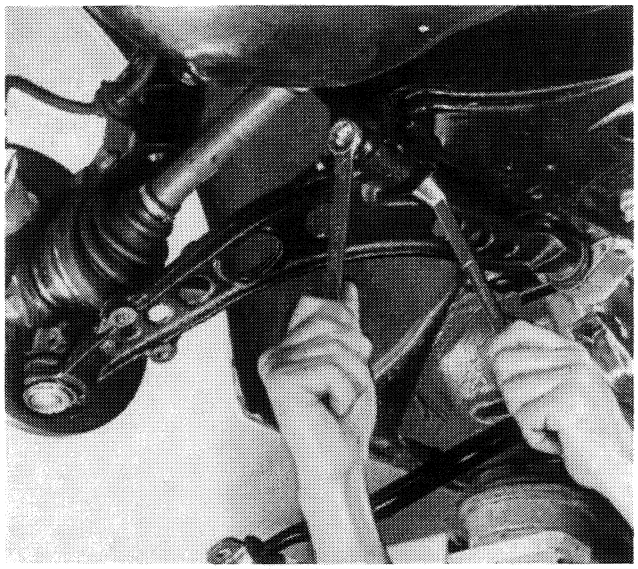
Removing-refitting nut securing wishbone to vertical link



P3M010G03

Removing rear bolts securing wishbone to steering subframe

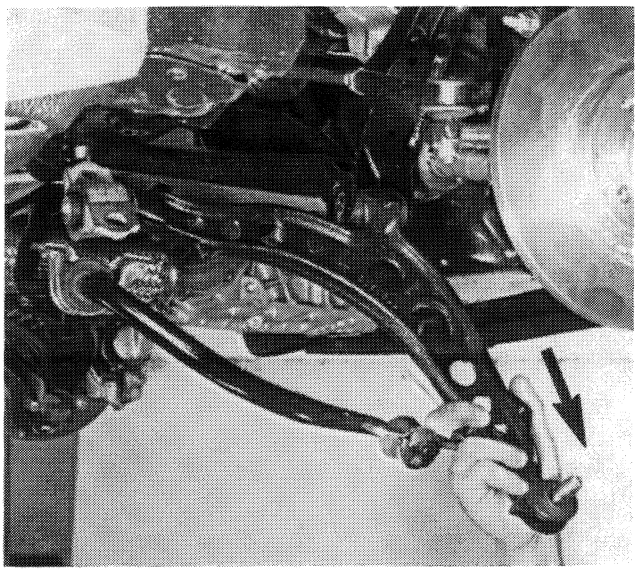
For this procedure, support the wishbone with a hydraulic jack in order not to damage the threads on the attachment bolts.



P3M011G01

Removing front bolt securing wishbone to subframe

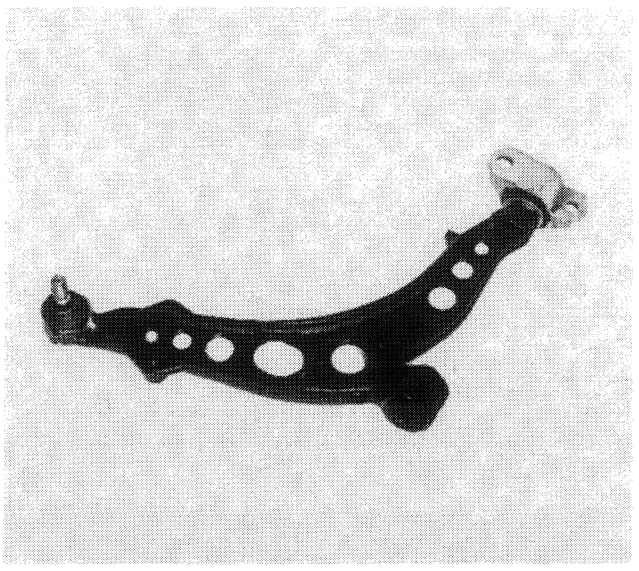
When refitting, do not fully tighten the bolt securing the wishbone to the front crossmember. To tighten to the correct torque, refer to the procedure described on page 12.



P3M011G02

Withdrawing the wishbone

Withdraw the wishbone in the direction indicated by the arrow.



P3M011G03

Wishbone removed from the car

44.

Tightening bolts securing wishbone to steering subframe to correct torque

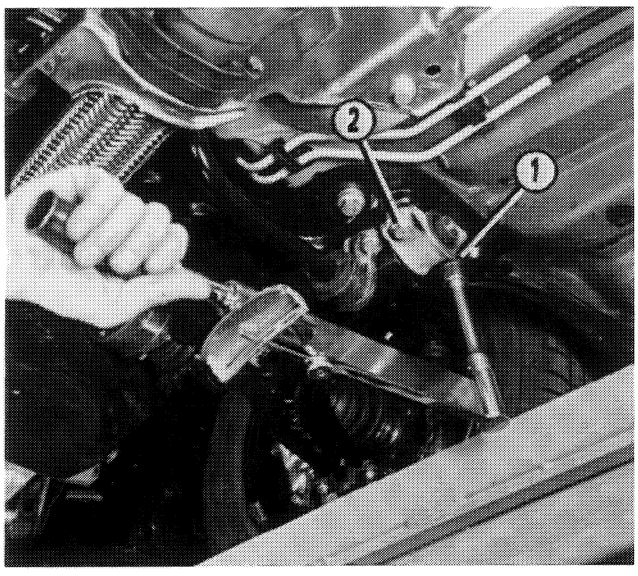
The bolts securing the wishbone, loosely fitted previously, must be tightened to the correct torque with the wishbone held in the design theoretical load position.
The wheels should then be fitted and the car placed on the ground or on ramps.
The design theoretical load conditions are obtained by ballasting the vehicle as appropriate until the distance between the maximum point of curvature of the front mudguard and the ground (passing through the wheel centre) is 609 mm.
In this position, tighten the bolts securing the wishbone to the steering subframe to the correct torque.

It should be remembered that this procedure is essential to ensure the correct operation of the front suspension, and to avoid premature damage to the wishbone's rubber bushes.

P3M012G01

609 mm

Under the design theoretical load conditions, the distance between the maximum point of curvature of the front mudguard and the ground (passing through the wheel centre) must be 609 mm.

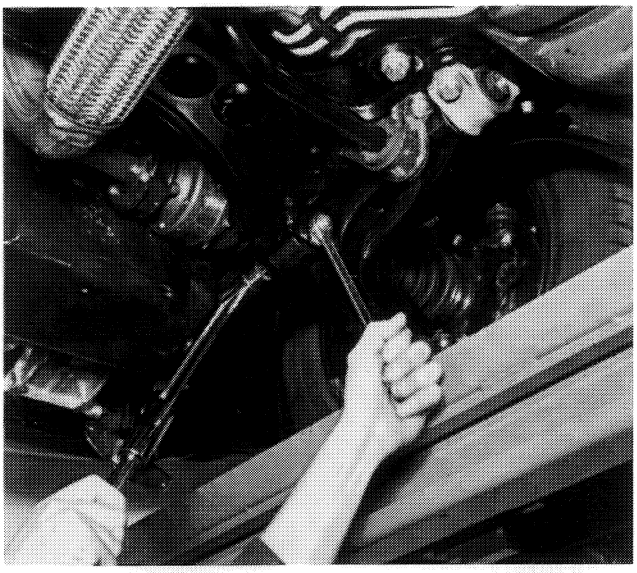


P3M012G02

1	11.5 daNm
2	7 daNm

Tightening rear bolts securing wishbone to subframe to correct torque

Tighten the bolt (1) to a torque of 11.5 daNm and the bolt (2) to a torque of 7 daNm.

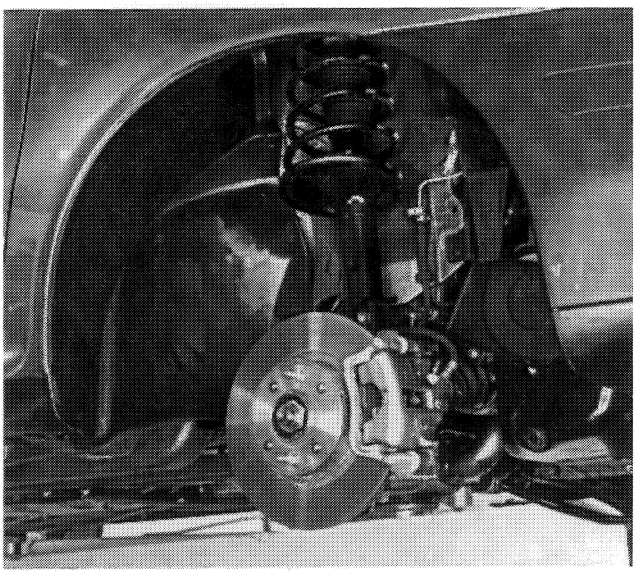


P3M013G01

9,5 daNm

Tightening front bolt securing wishbone to subframe to correct torque

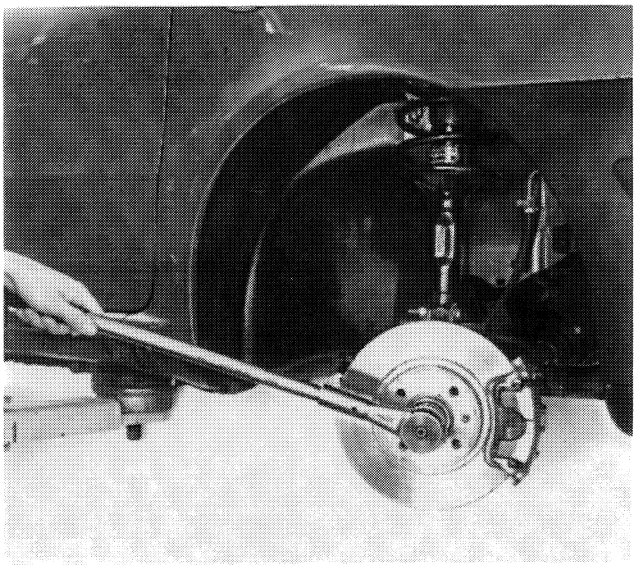
Tighten the front bolt securing the wishbone to the subframe to the torque of 9.5 daNm.



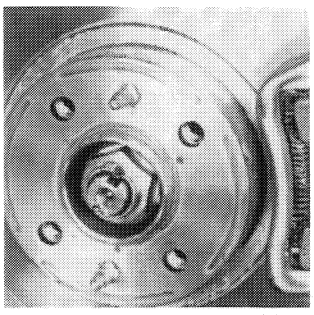
P3M013G02

REMOVING-REFITTING VERTICAL LINK-WHEEL HUB

View of front suspension assembly, fitted on car



P3M013G03

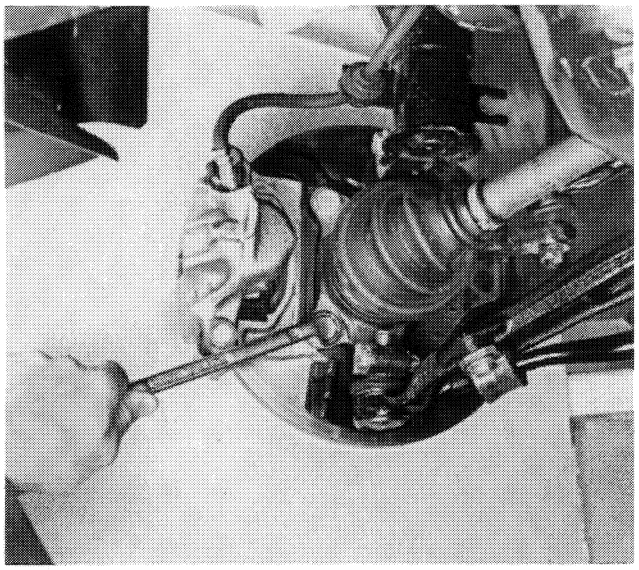


P3M013G04

Removing nut securing front wheel hub to stub axle

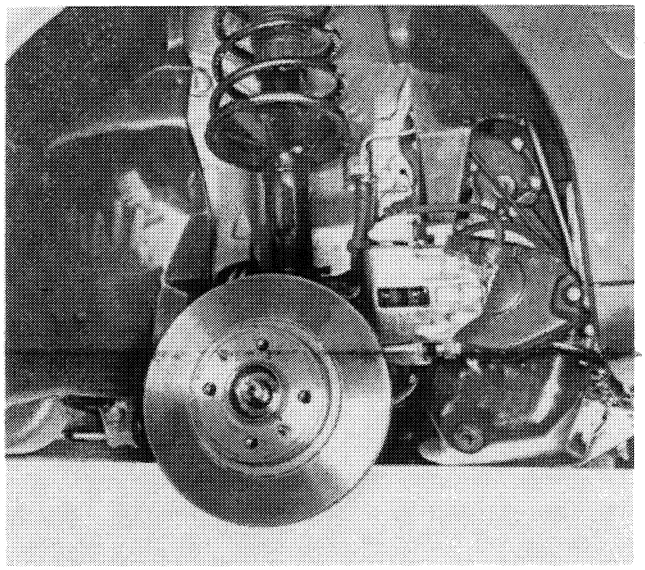
To facilitate this operation, first unstake the nut as shown in the insert.

44.



P3M014G01

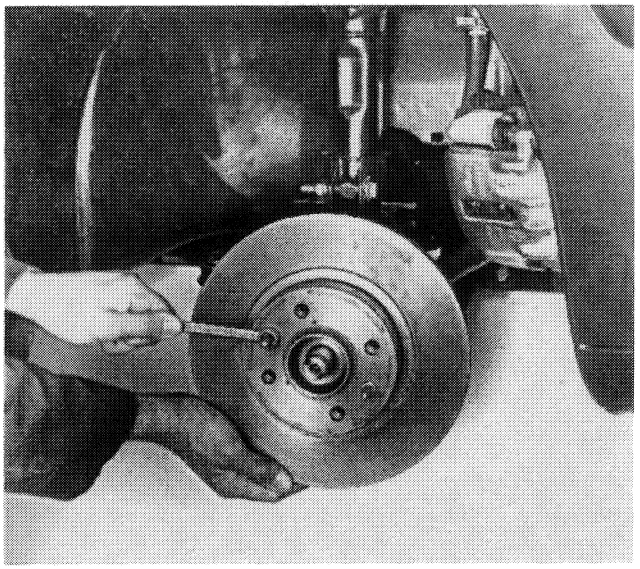
Dismantling bolts securing brake caliper assembly



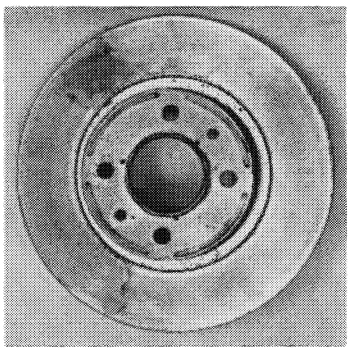
P3M014G02

Dismantling-fitting brake caliper assembly and its mounting bracket

After removing the brake caliper and its mounting bracket, place the assembly back in the wheel compartment **without disconnecting the brake pipe.**

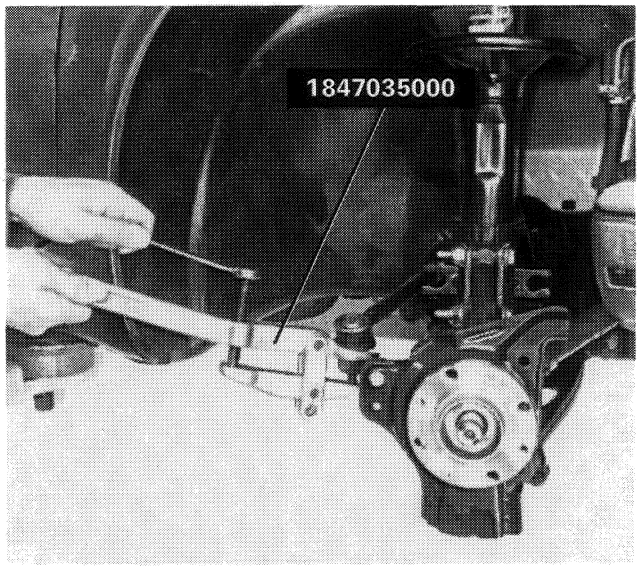


P3M014G03



P3M014G04

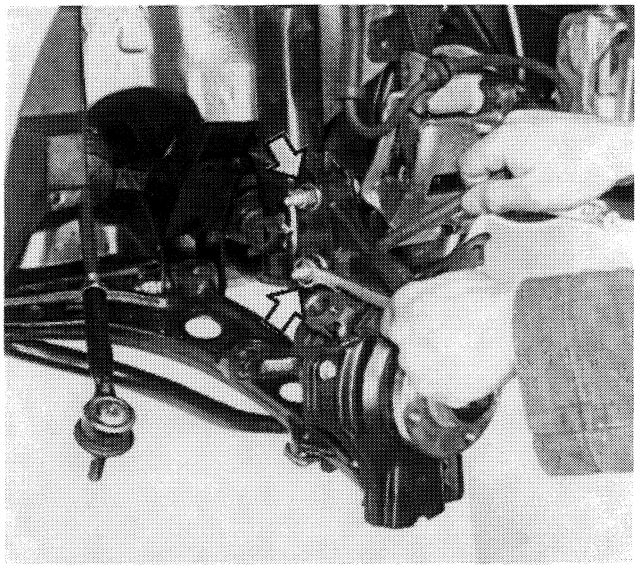
Dismantling-fitting brake disc



P3M015G01

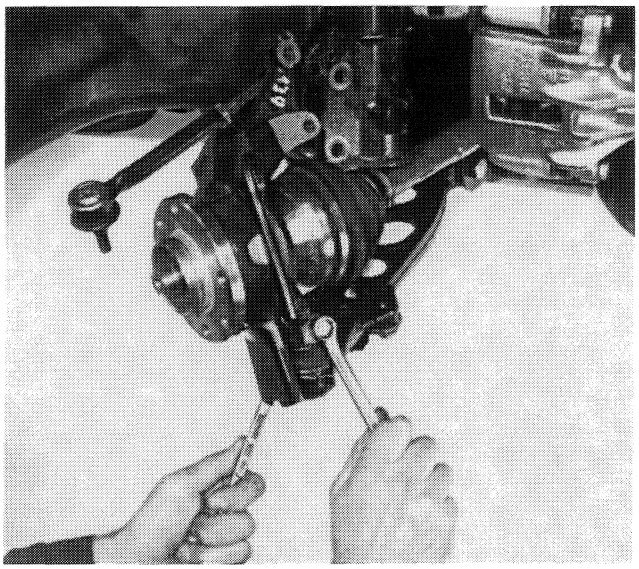
Removing tie-rod end balljoint bolt

Use tool 1847035000.



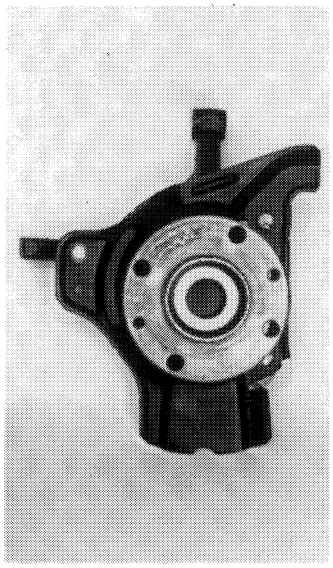
P3M015G02

Removing vertical link from damper assembly

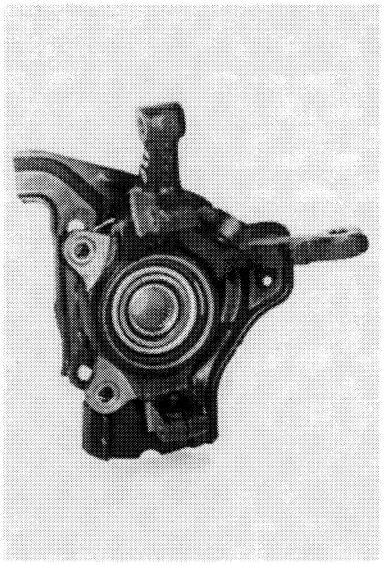


P3M015G03

Dismantling-fitting vertical link on wishbone



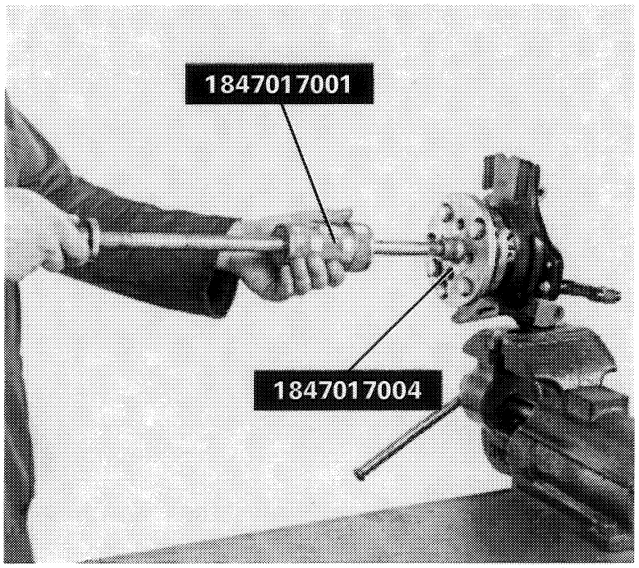
P3M016G01



P3M016G02

DISMANTLING-FITTING

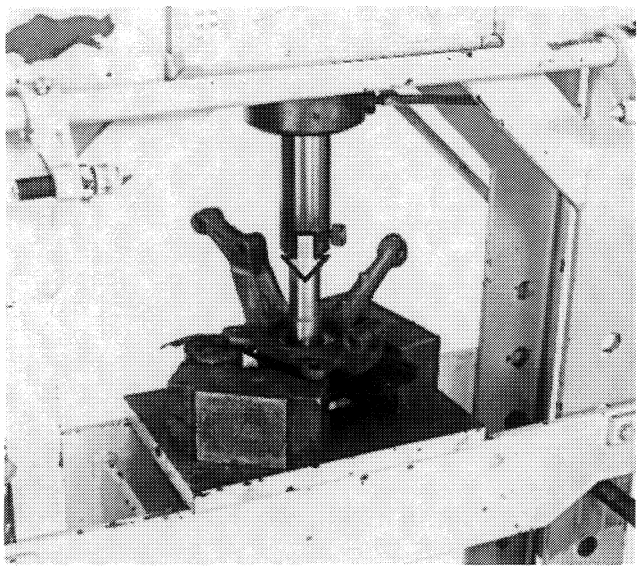
Front and rear views of vertical link complete with hub



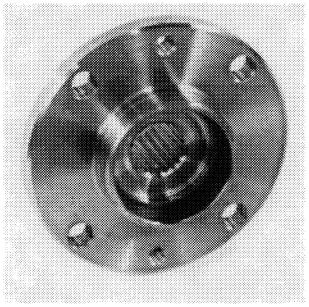
P3M016G03

Dismantling hub from vertical link

Dismantle the hub from the vertical link using tool 1847017004 together with tool 1847017001, attached to the hub by means of the wheel nuts.



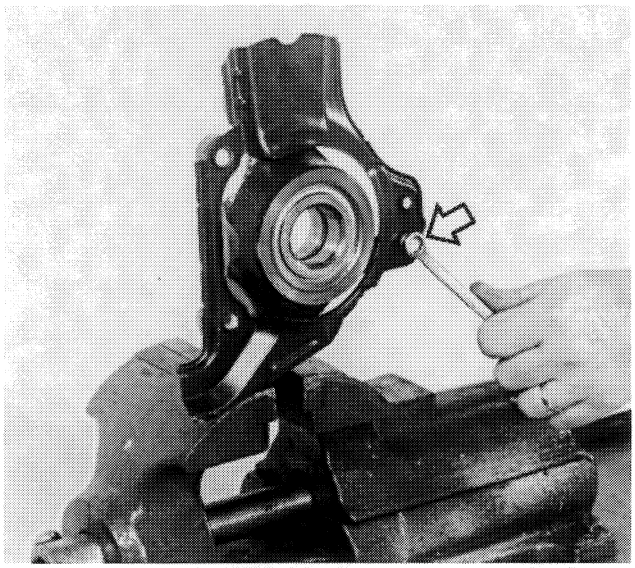
P3M016G04



P3M016G05

Removing hub from vertical link using a press

While working, take care not to damage the ball head cover heat shield, by positioning the shims as appropriate under the vertical link.



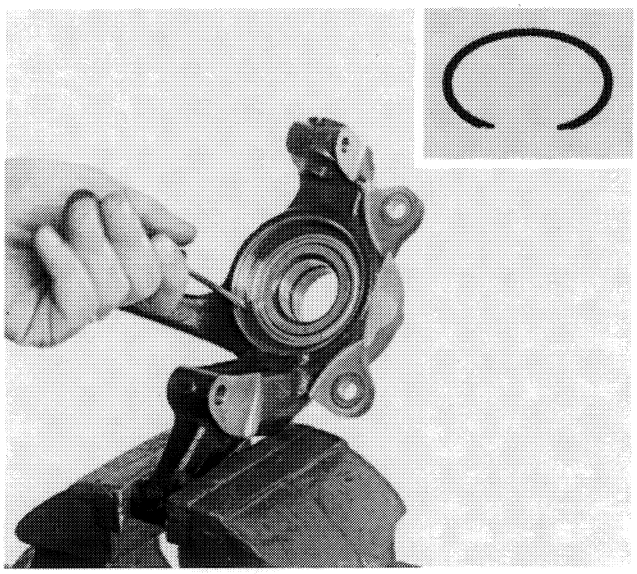
P3M017G01

P3M017G02

Removing-refitting ball head cover heat shield

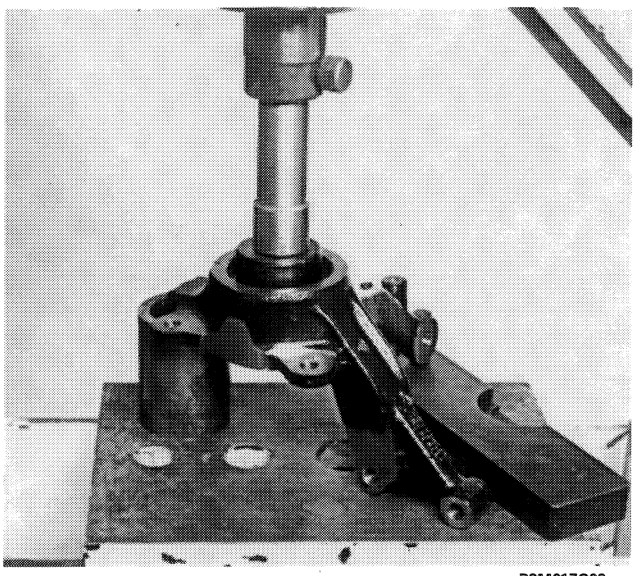
Undo the bolt indicated in the figure.

P3M017G05



P3M017G04

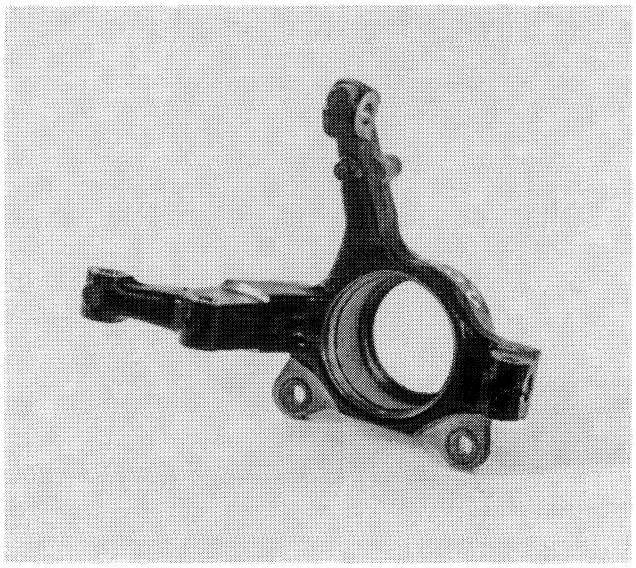
Removing snap ring which retains bearing outer race, from vertical link



P3M017G03

Removing bearing outer race from vertical link, using a press

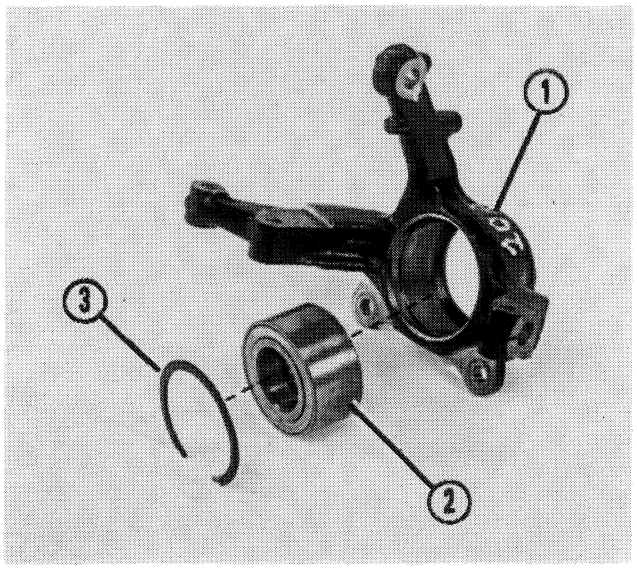
44.



P3M018G01

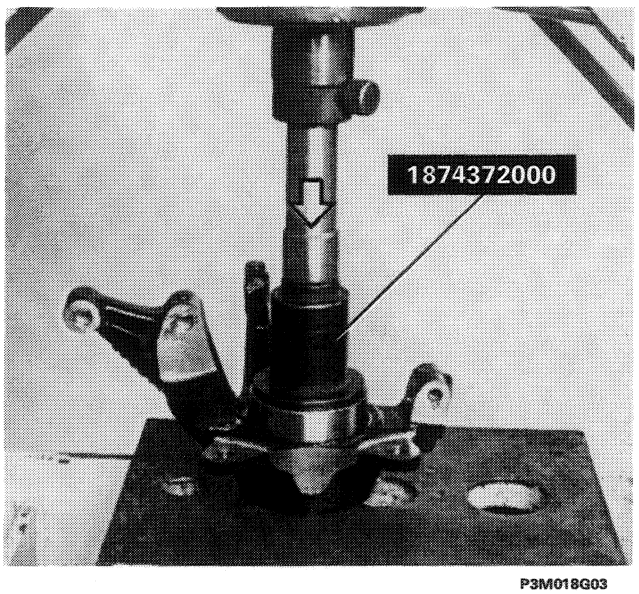
Complete vertical link

Check that the inner surfaces do not show signs of seizure, and that the arms have not sustained visible impact and do not show signs of breaks, otherwise the complete vertical link will have to be renewed.

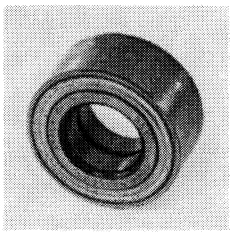


P3M018G02

1. Vertical link
2. Bearing
3. Bearing retaining snap ring



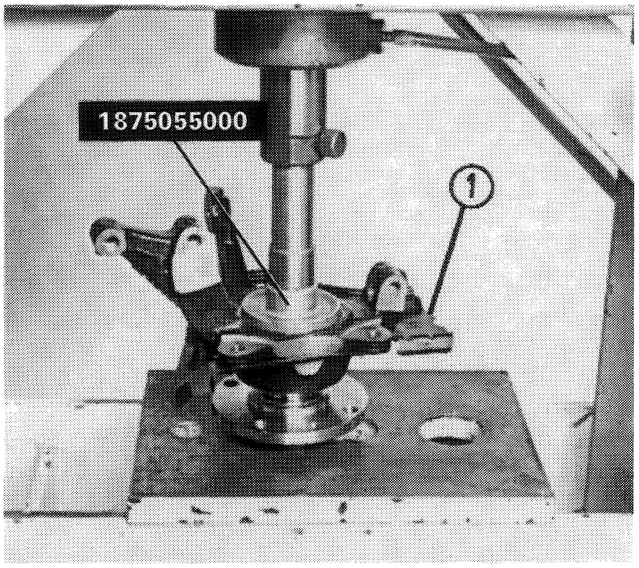
P3M018G03



P3M018G04

Fitting bearing on vertical link

Fit the bearing in the vertical link using a press, with the aid of the drift 1874372000. Then fit the bearing retaining snap ring.

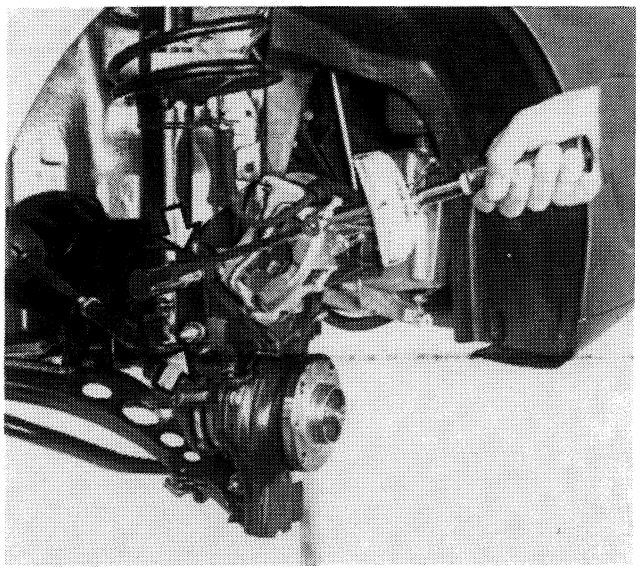


P3M019G01

Fitting hub in bearing on vertical link, using a press

Support the bearing inner race by means of the drift 1875055000.

Before refitting the hub, remember to fit the ball head cover heat shield (1).

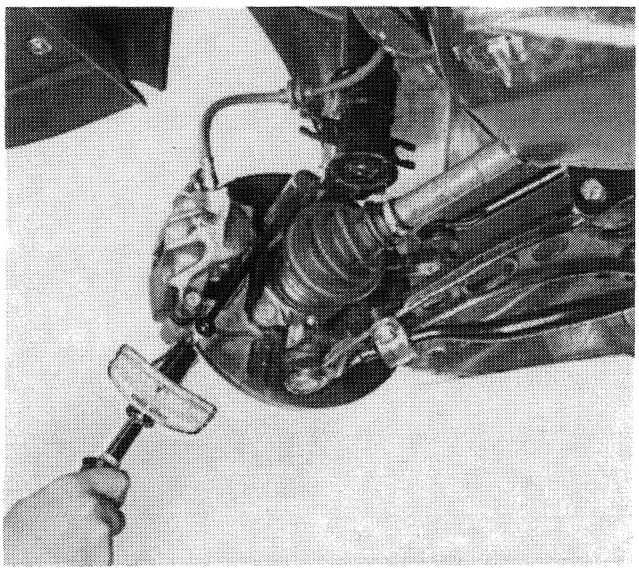


P3M019G02

7 daNm

Refitting bolts securing vertical link to damper assembly to correct torque

Tighten the bolts securing the vertical link to the damper assembly to a torque of 7 daNm.



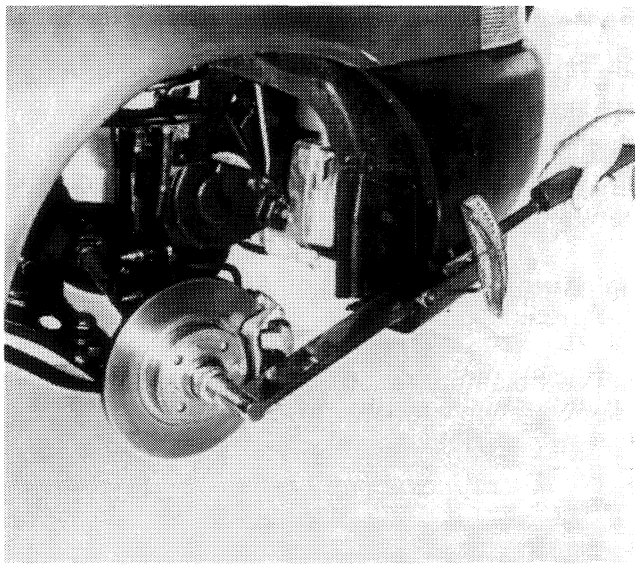
P3M019G03

5,3 daNm

Refitting brake caliper assembly

Tighten the bolts securing the brake caliper assembly to the vertical link to a torque of 5.3 daNm.

44.



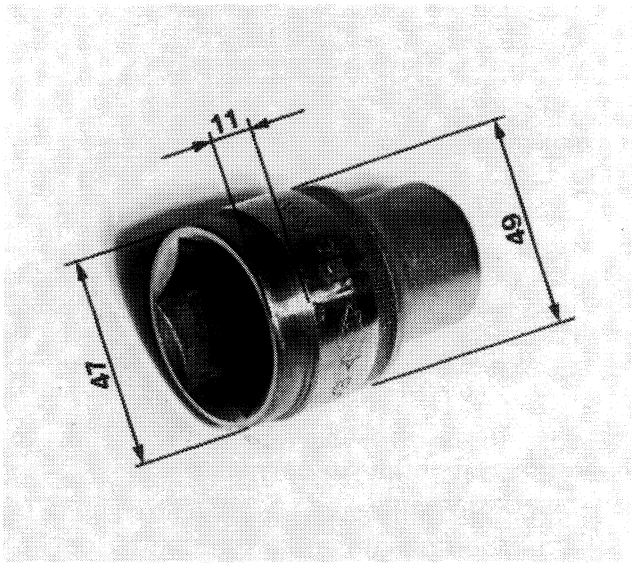
P3M020G01

M 22 × 1,5	24 daNm
M 24 × 1,5	28 daNm

1372 turbo

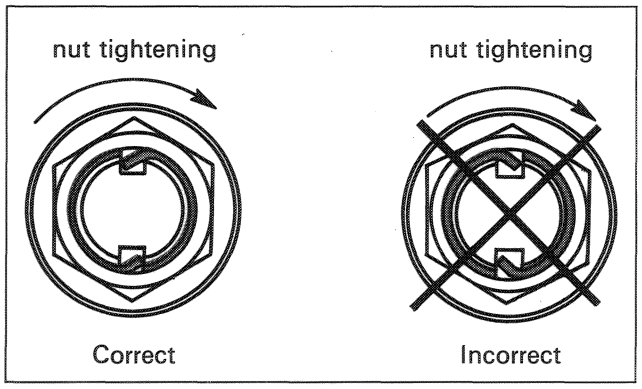
Fitting hub nut and tightening to correct torque

The nuts securing the constant velocity joints to the hubs must always be renewed.



P3M020G02

Use the socket shown in the insert, turned on a lathe to the dimensions stated.

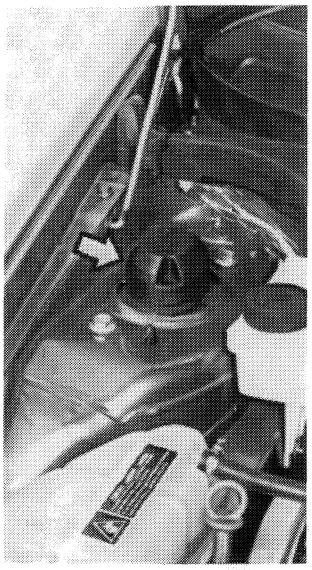


P3M020G04 P3M020G03

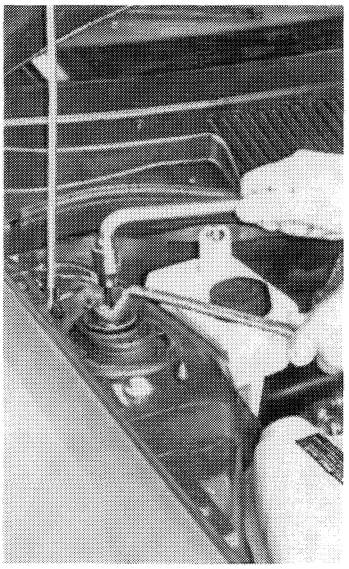
Stake the nut collar using a chisel as described below.
The cuts on the collar are made in the hub recess on the side opposite that of closure of the nut, so that the safety lug is more resistant to accidental slackening.

Also check front wheel geometry

REMOVING - REFITTING DAMPER



P3M021G01

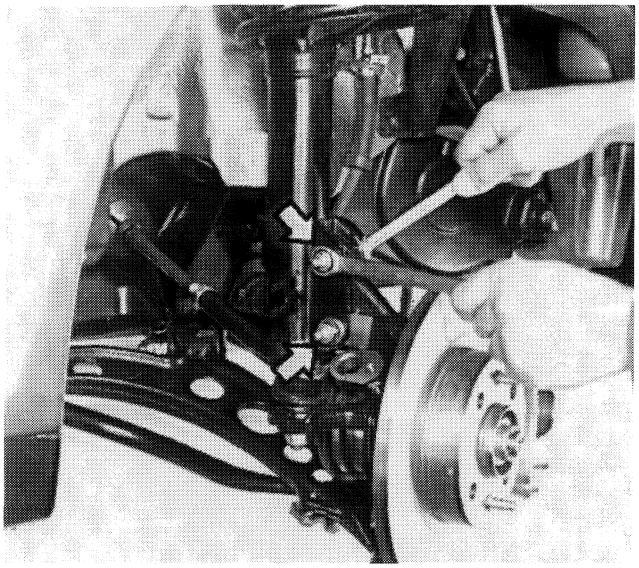


P3M021G02

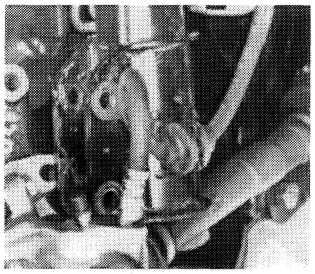
Withdrawing protective cover shown in the figure

Undo the nut securing the damper to the top mounting.

It is essential for the car to be on the ground for this procedure.



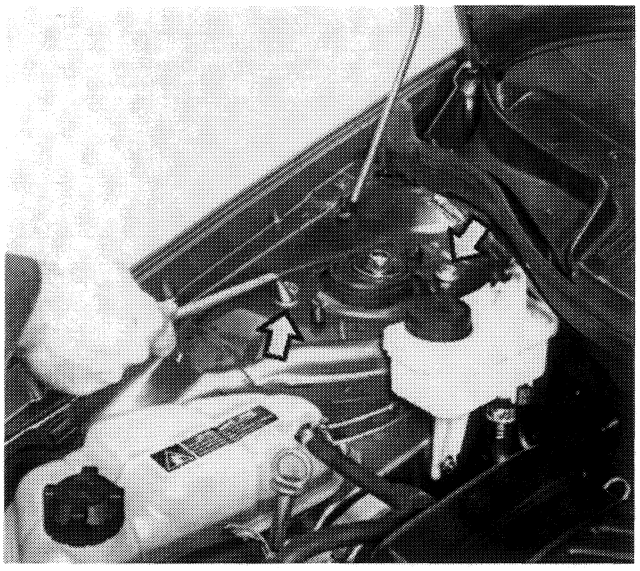
P3M021G03



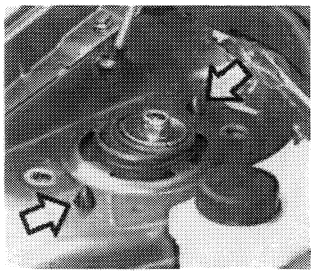
P3M021G04

Removing bolts securing damper assembly to vertical link.

Disconnect the brake pipes from the bracket located at the end of the damper.



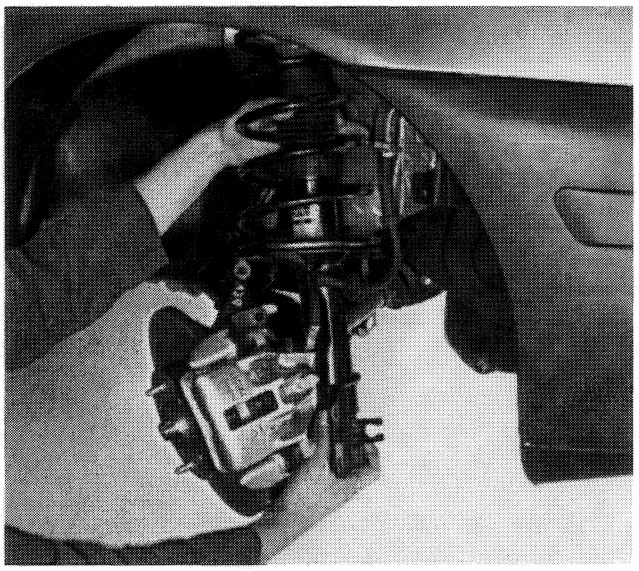
P3M021G05



P3M021G06

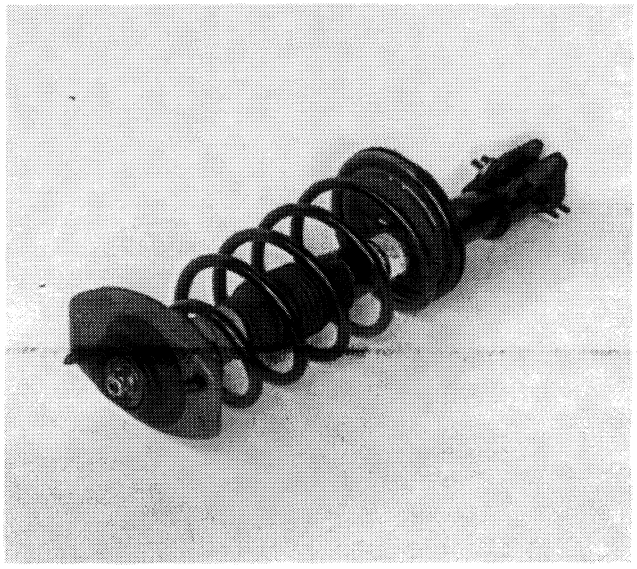
Removing-refitting damper on dome

Once the bolts securing the damper to the dome have been removed, pass the two pins (arrowed in the insert) in the appropriate holes.



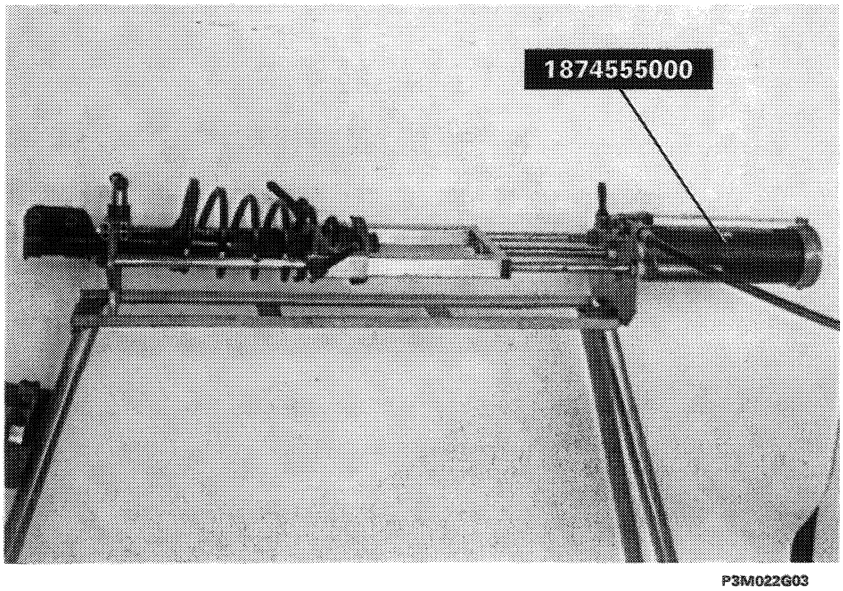
P3M022G01

Removing-refitting coil spring and damper assembly



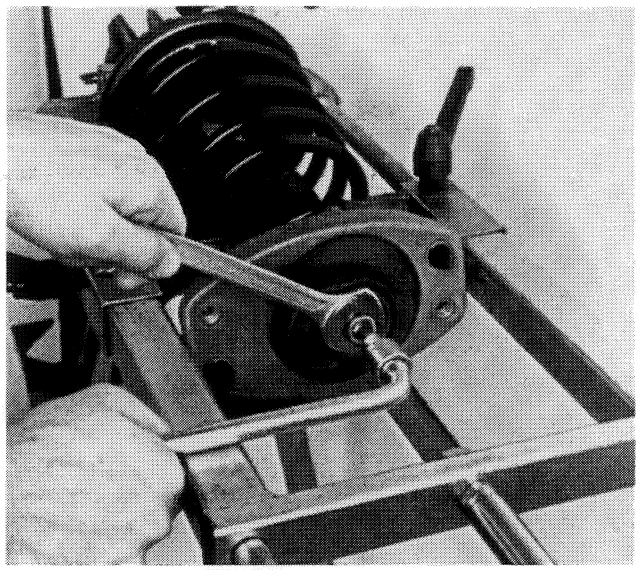
P3M022G02

Assembly with offset coil spring



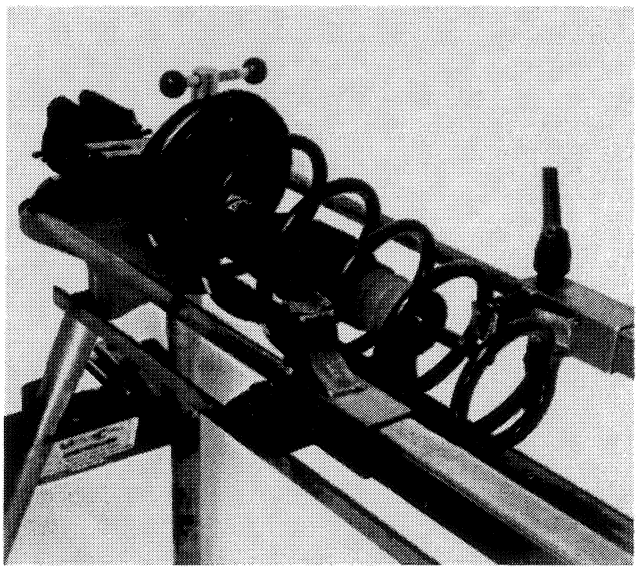
P3M022G03

Fitting coil spring-damper assembly on the pneumatic spring compressor 1874555000



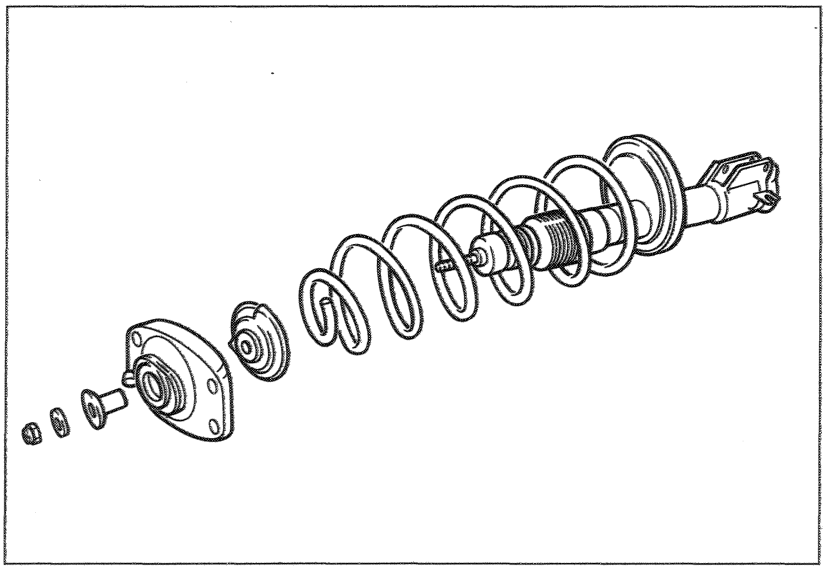
P3M023G01

Removing coil spring-damper assembly



P3M023G02

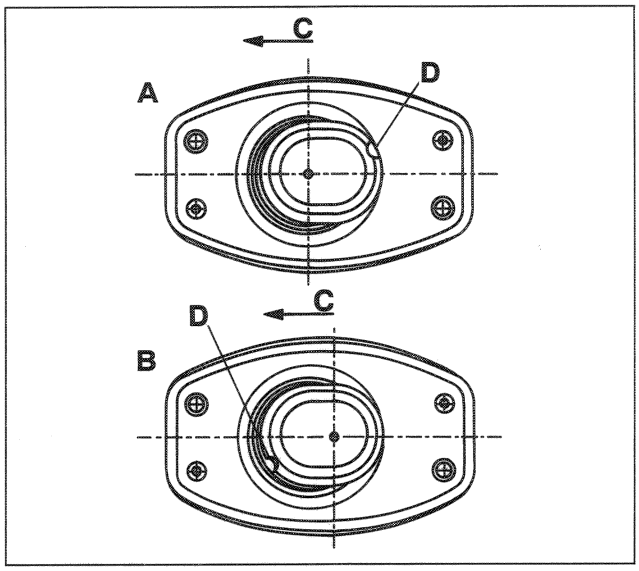
Removing-refitting coil spring on damper



P3M023G03

View of components of coil spring-damper assembly

44.



P3M024G01

When refitting, the rubber mounting must be positioned in relation to the desired caster of the car.

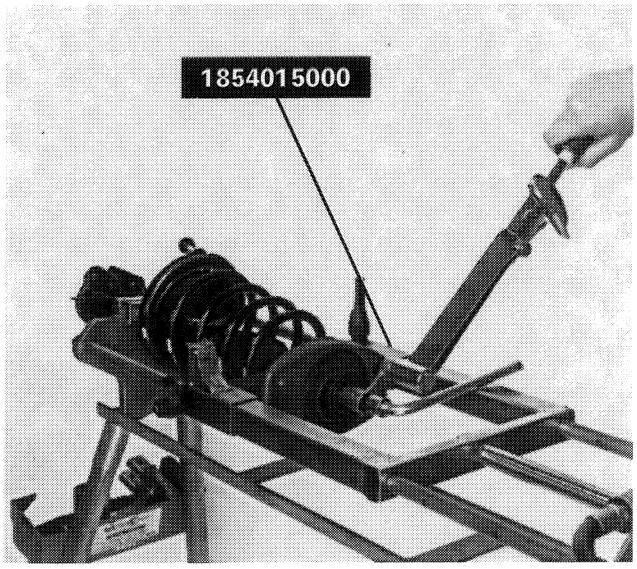
A. Left mounting for cars with caster of 1°30'(*) (mechanical steering).

B. Left mounting for cars with caster of 2°30'(*) (hydraulic steering).

(*). With car in running order, tyres inflated to the correct pressure and fuel tank full.

C. Direction of movement of the car

D. Reference notch for correct assembly



P3M024G02

5,9 daNm (coppia nominale)

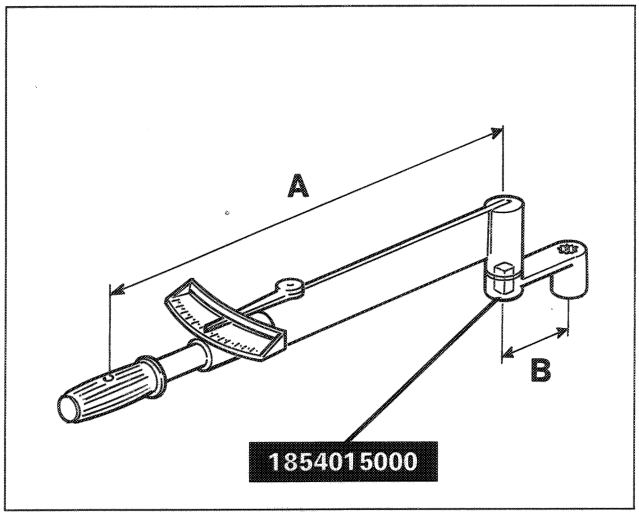
5,1 daNm (coppia reale di chiusura)

Tightening nut securing damper to mounting to correct torque

When tool 1854015000 is fitted on a torque wrench, the nominal torque wrench setting varies in accordance with the formula given below:

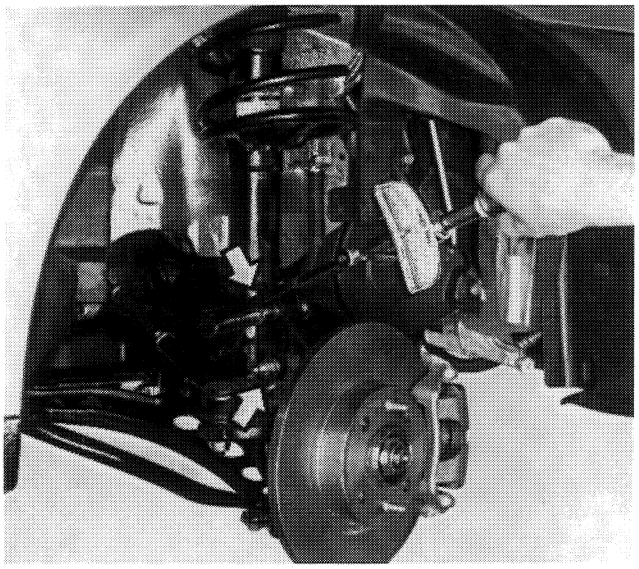
$$\frac{\text{length of torque wrench (A)} \times \text{nominal torque wrench setting (C)}}{\text{length of torque wrench (A)} + \text{length of tool (B)}} =$$

$$= \frac{A \times C}{A + B} = \frac{0.4\text{m} \times 5.9\ \text{daNm}}{0.4\text{m} + 0.06\text{m}} = 5.1\ \text{daNm}$$



P3M024G03

5.1 daNm = actual torque wrench setting



P3M025G01

7 daNm

Tightening bolts securing damper to vertical link to correct torque

Tighten the damper attachment bolts to a torque of 7 daNm.