

AVANTIME

Technical Note 3666E

DE0T

Basic manual: Workshop Repair Manuals 315 and 350

**Reminder of the main information
applying to both Espace and Avantage**

**(Supplement to Avantage Workshop
Repair Manual)**

77 11 306 758

JULY 2002

EDITION ANGLAISE

"The repair methods given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The methods may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which his vehicles are constructed."

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EXCESSIVE NOISE FROM THE EXHAUST SYSTEM

Test the vehicle to locate the source of the noise (as required, on customer request). Then attempt to reproduce the fault with the vehicle stationary. To do this, you must accelerate sharply to cover the wide range of engine noises.

Once you have reproduced the fault:

- ensure that the exhaust system is not in contact with the vehicle body,
- check the alignment, conformity and condition of the exhaust assembly,
- try to eliminate the noise by exerting pressure on the faulty exhaust system or heat shield.

If the noise is located at the catalytic converter, you must remove it and carry out the following checks:

- inspect the inner walls (monolith melted),
- listen for noise after shaking the converter vigorously (monolith melted or foreign body present).

If the monolith has melted, you must find out why (see Section **14** Checks to be made before emissions control) and check that particles from the catalytic converter have not blocked up the downstream exhaust system.

Only replace the catalytic converter if one of the above faults is present.

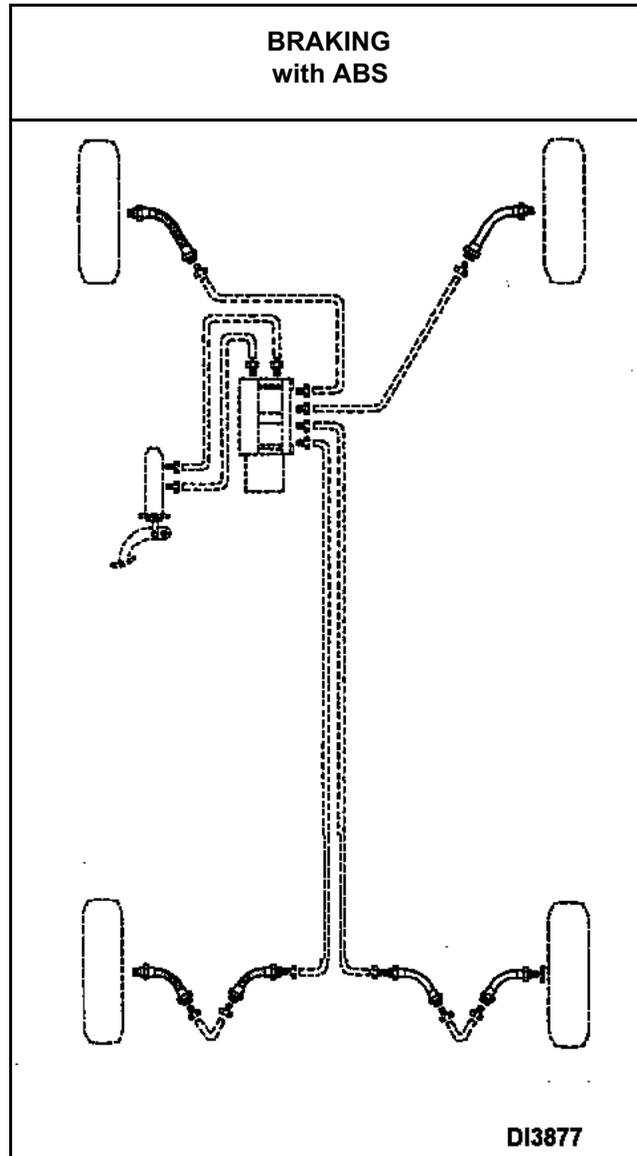
GENERAL INFORMATION

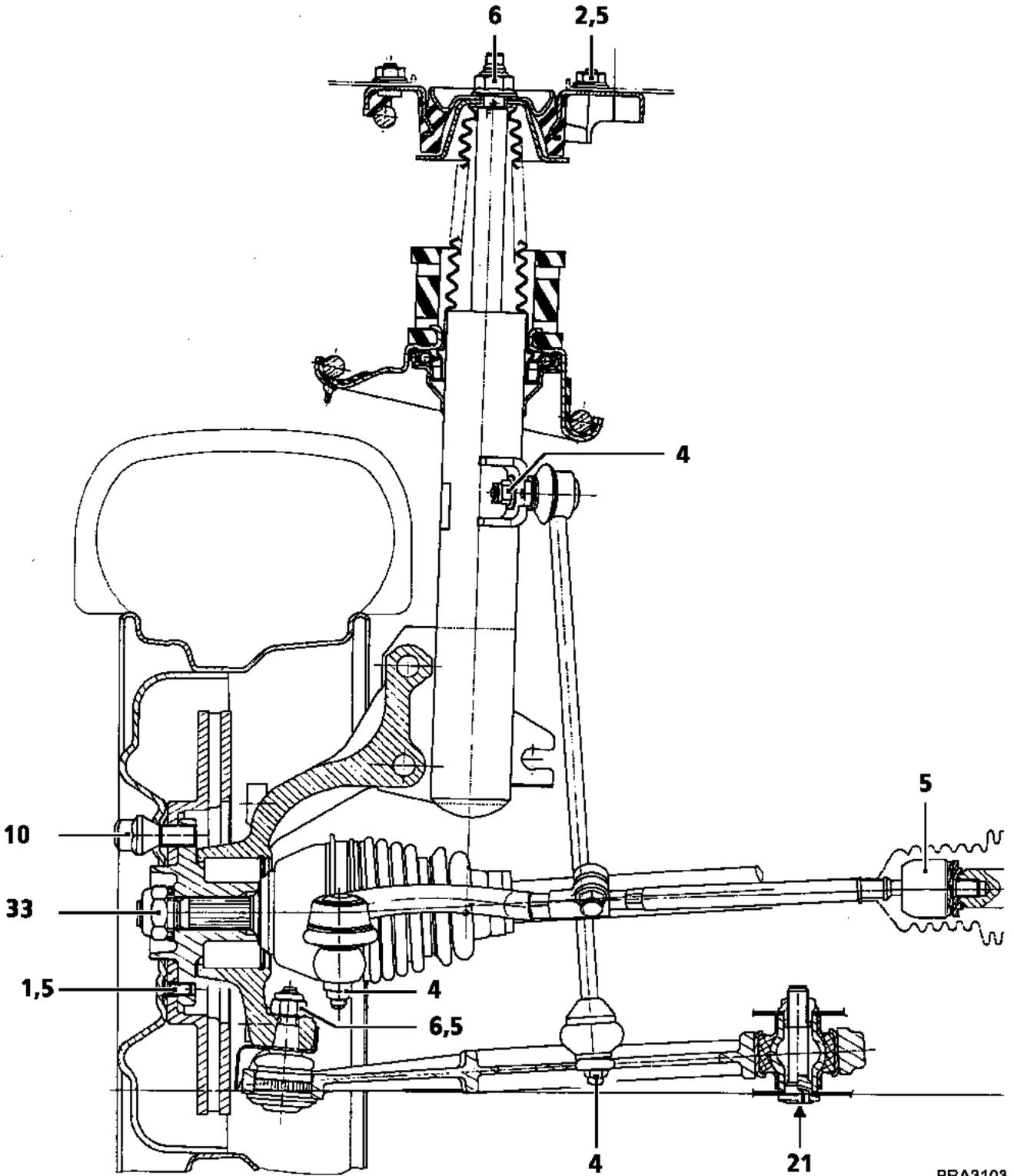
General diagram of braking circuits

30

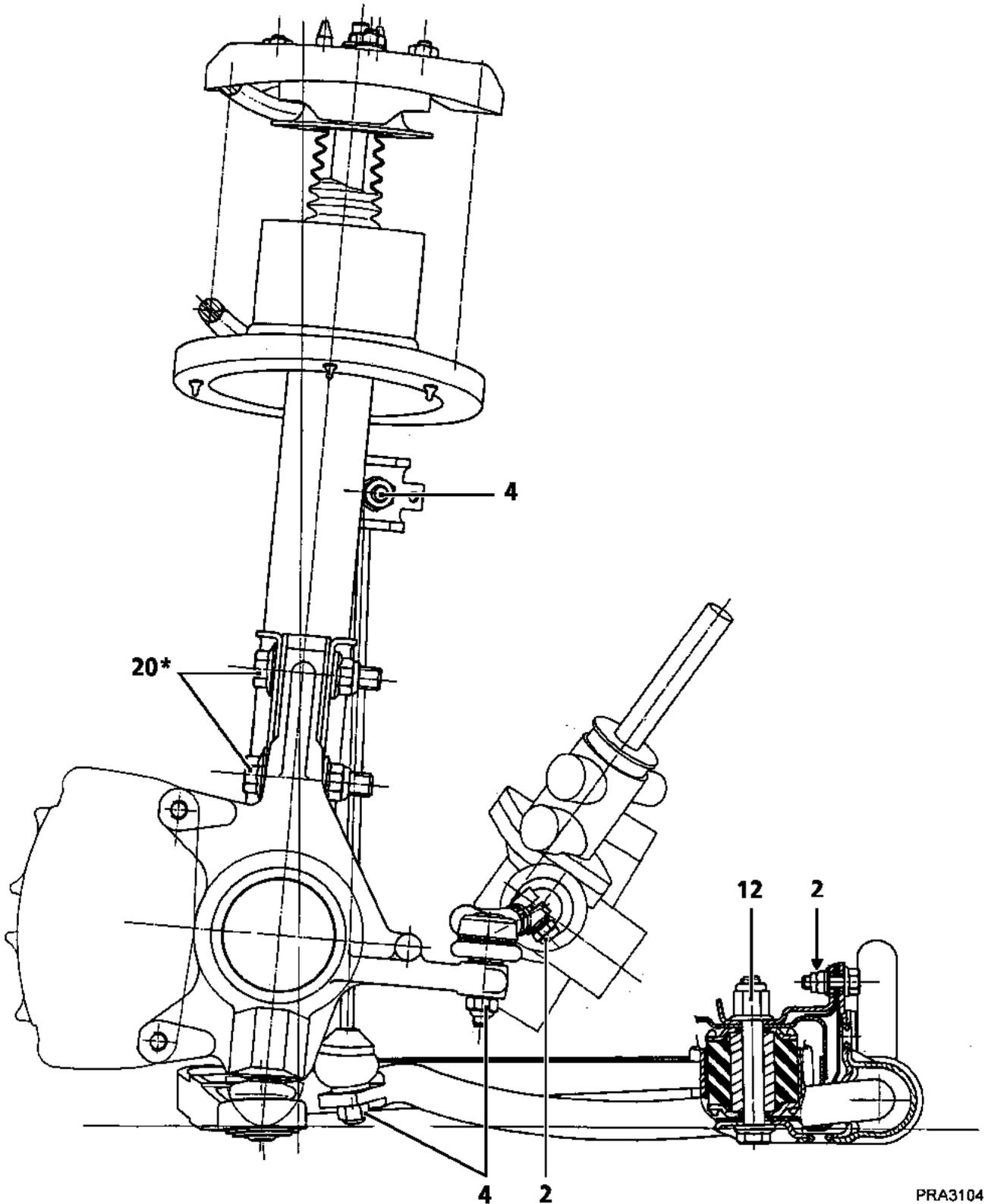
NOTE:

The diagram below shows the general principle; in no case should it be taken as reference for the take-off points and circuit allocations. When replacing one of the components of the brake circuit on a vehicle, always mark the pipes before removing them so that they can be connected back in their original positions.



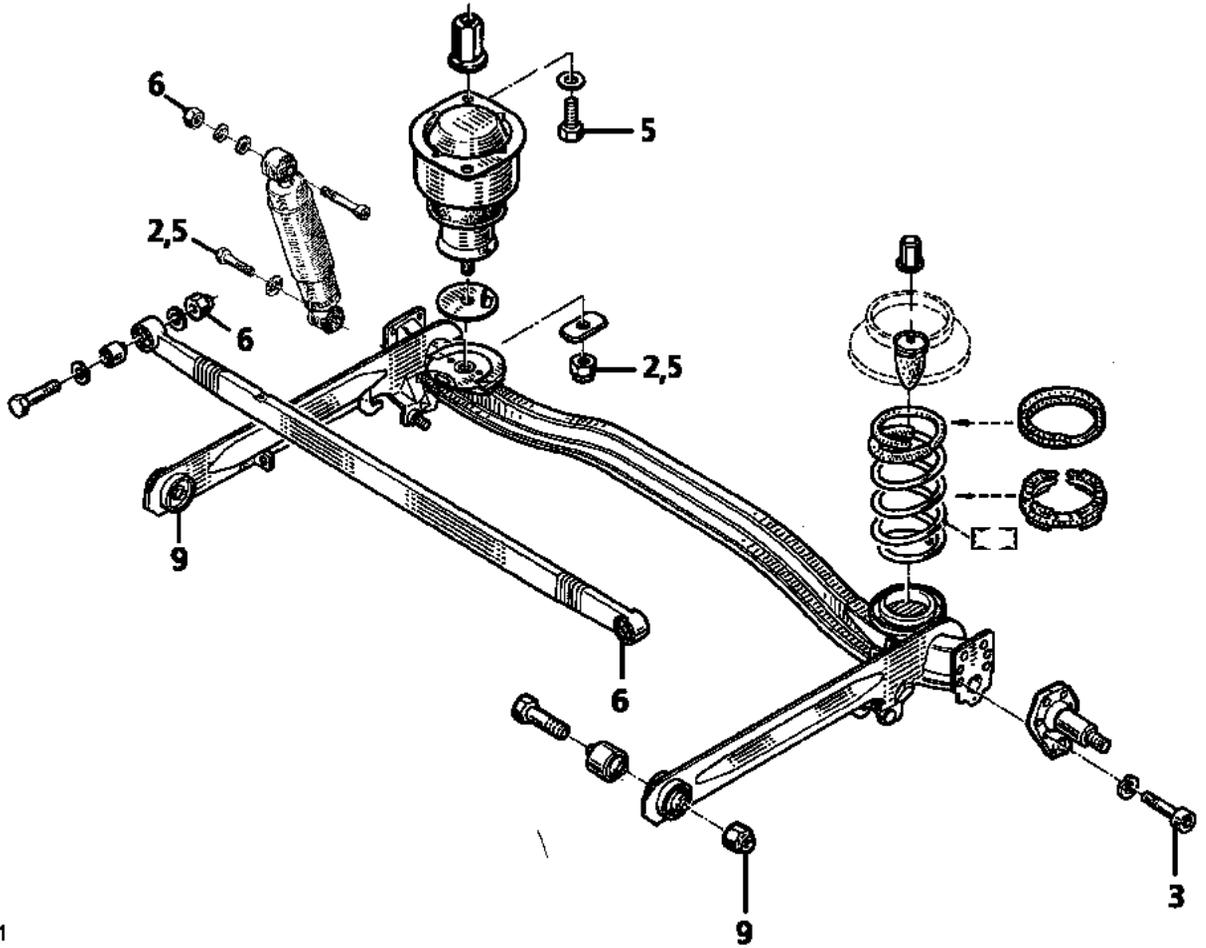


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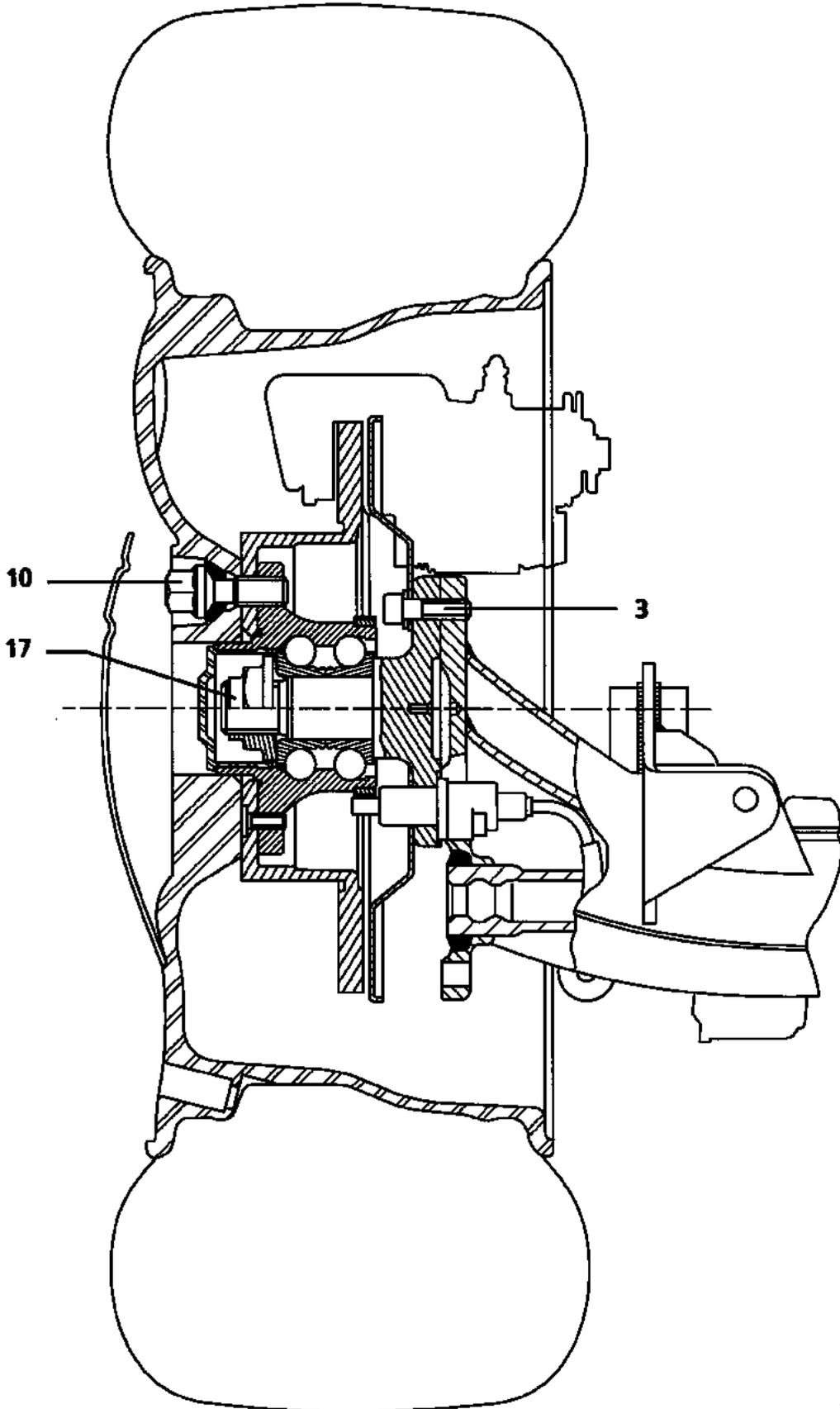


PRA3104

(*) direction of fitting



PRA3301



GENERAL INFORMATION

Tightening torques (in daNm)

30



	DIMENSIONS	TIGHTENING TORQUES
Bleed screw	-	0.6 to 0.8
Front calliper hoses	M 10 X 100	1.7
Rear slave cylinder hoses	M 10 X 100	1.7
Master cylinder output	M 10 X 100 or M 12 X 100	} 1.7
Compensator inlet	M 12 X 100	1.7
Compensator outlets	M 10 X 100	1.7
ABS hydraulic unit inlets and outlets	M 10 X 100 or M 12 X 100	} 1.7

Parts to be replaced when they have been removed

- Axial ball joint stop.
- Balance weight hook.
- Hub bearing.
- Driveshaft bearing / gaiter.
- Calliper guide bolts,
- Brake servo self-locking nuts,
- Brake nut and stub-axle mounting bolt.
- Steering rack mounting bolts.
- Axle components self-locking mounting nuts.

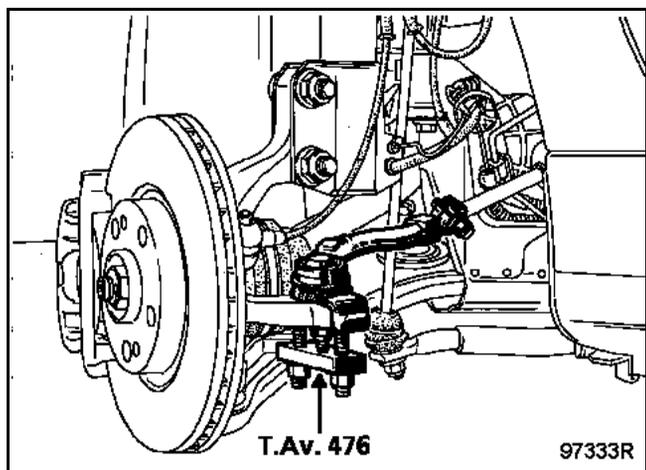
SPECIAL TOOLING REQUIRED	
T. Av. 476	Ball joint extractor
EQUIPMENT REQUIRED	
Ball joint setter	
22 mm 12-sided socket	

TIGHTENING TORQUES (in daNm)		
Shock absorber base mounting bolt M 16 X 200	20	
Axle sub-frame rubber bushing mounting	point A	21
	point B	12
Lower ball joint	6.5	
Steering ball joint	4	
Anti-roll bar tie-rod	4	
Brake calliper guide bolt	3.5	
Wheel bolt	10	

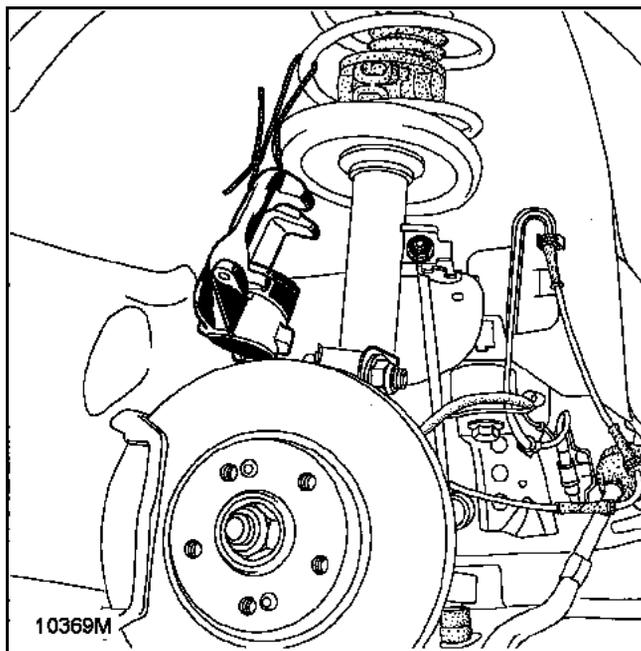
REMOVAL

Remove:

- the wheel,
- the track rod end (using tool T. Av. 476 if necessary),

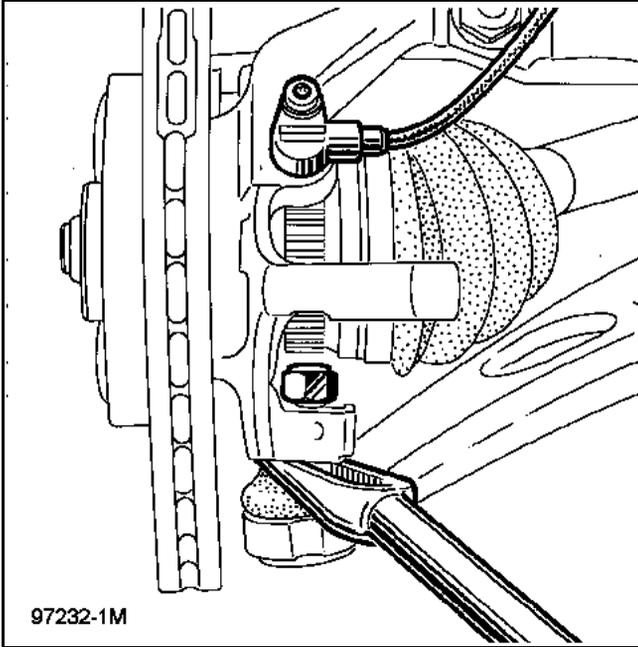


- the brake calliper (see the relevant section) and attach it to the spring so as not to damage the pipe.

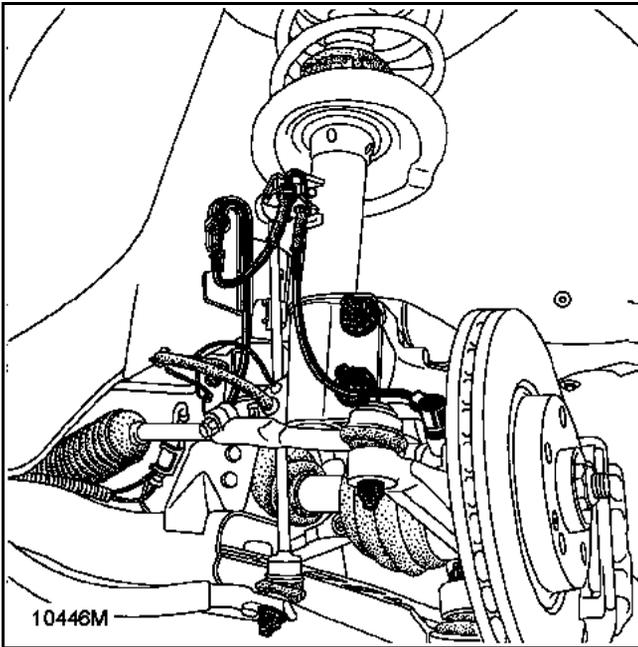


- Fit a protective piece to the driveshaft gaiter (wheel side).

Slacken the lower arm ball joint nut and release the ball joint using a ball joint setter if necessary.

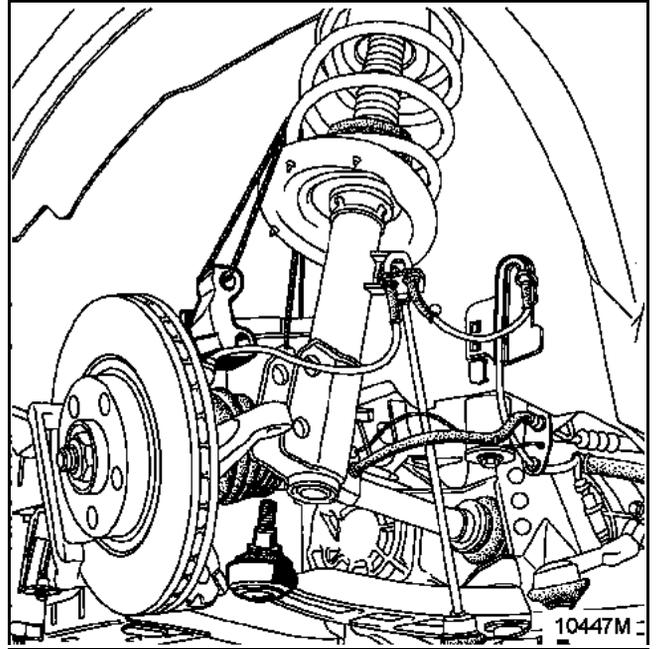


Remove the shock absorber base mountings.

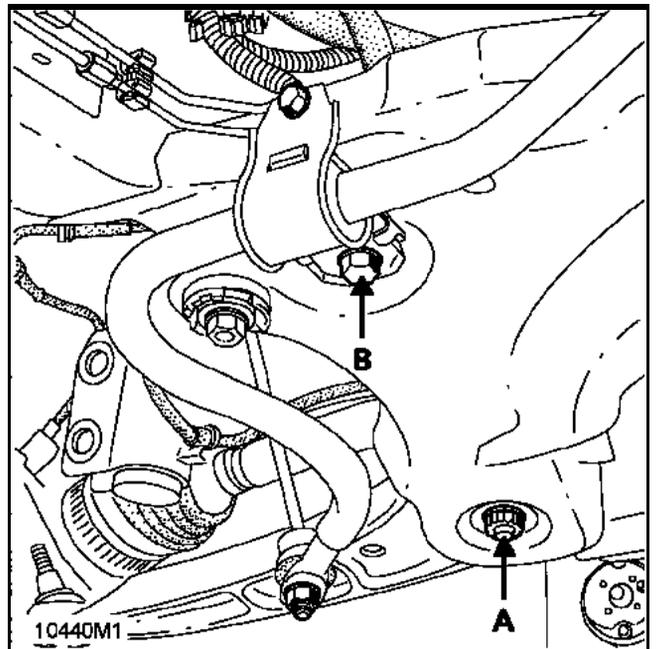


Detach the stub-axle carrier from the shock absorber base, taking care not to damage the lower arm ball joint gaiter.

Detach and suspend the stub-axle carrier / driveshaft assembly.



Slacken the two arm mountings (A) and (B) on the sub-frame and release it.



To remove bolt (A) it will be necessary to use a 22 mm 12-sided socket.

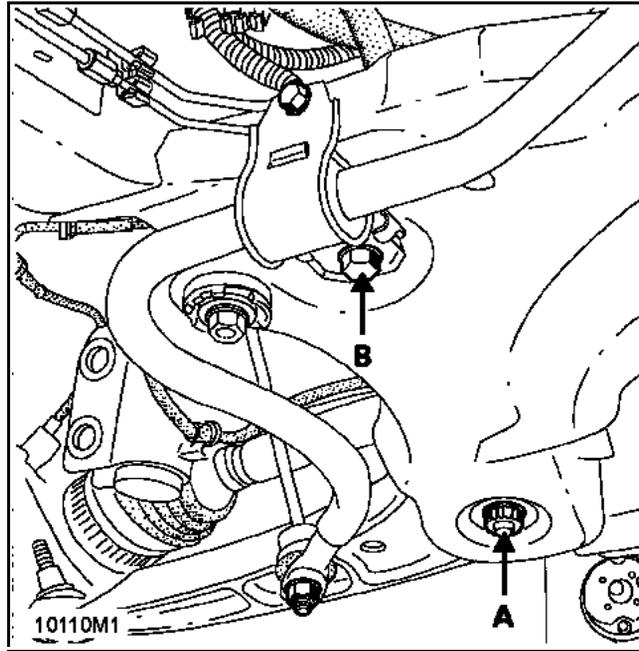
REFITTING

The nut and bolt from point (A) and the nut from point (B) of the lower arm must always be replaced and the tightening torques **MUST** be observed.

Refit nut and bolt assemblies (A) and (B) and tighten to torque before refitting the arm ball joint.

Proceed in the reverse order to removal.

Take care not to damage the driveshaft gaiter.



Depress the brake pedal repeatedly to bring the piston into contact with the brake shoes.

Check the front axle geometry and adjust the wheel alignment if necessary.

FRONT AXLE

Lower arm rubber bushes

31

SPECIAL TOOLING REQUIRED

T. Av. 1274	Tool for replacing lower arm rubber bushes
T. Av. 1274-01	Additional bushing for point B bush

To ensure that the bushes are correctly positioned in relation to the lower arm, they are replaced one after the other: bush (1) then (2).

WARNING:

During these operations, the threaded rod of the ball joint must always be pointed downwards.

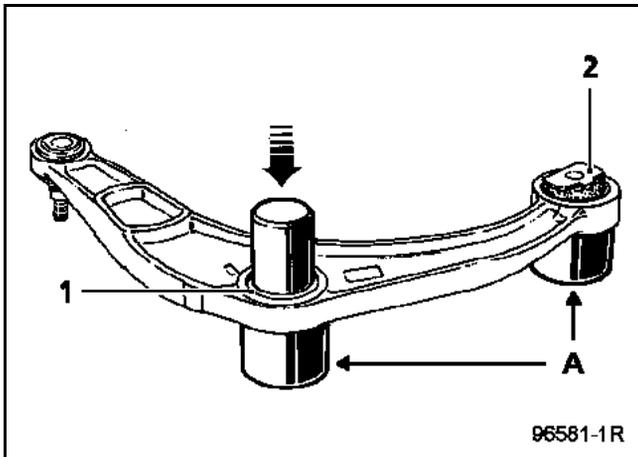
REPLACEMENT

BUSH 1

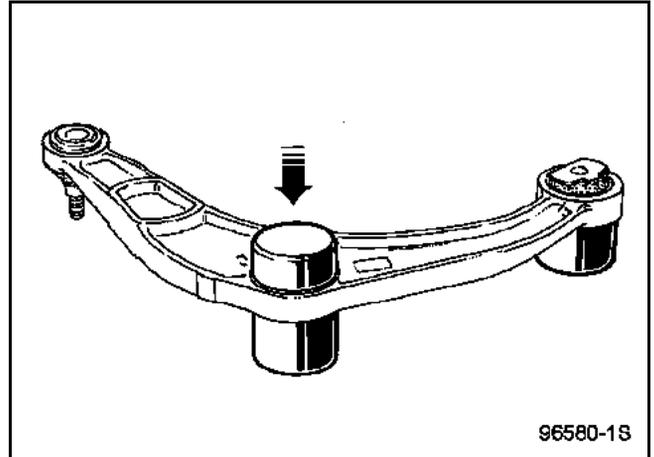
Fit the two bushes (A) under the arm.

Extract and refit bush (1) using a press.

REMOVAL



REFITTING



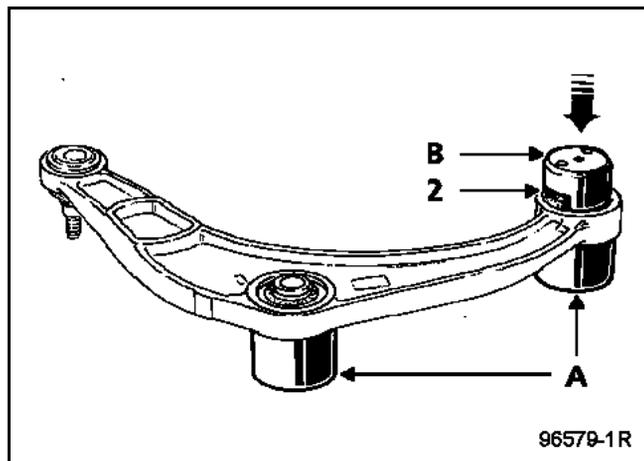
Insert the latter until the refitting ring comes into contact with the arm bearing face.

BUSH 2

Fit the two bushes (A) under the arm.

Extract bush (2) using a press and bush (B) from kit T. Av. 1274-01.

REMOVAL



REFITTING

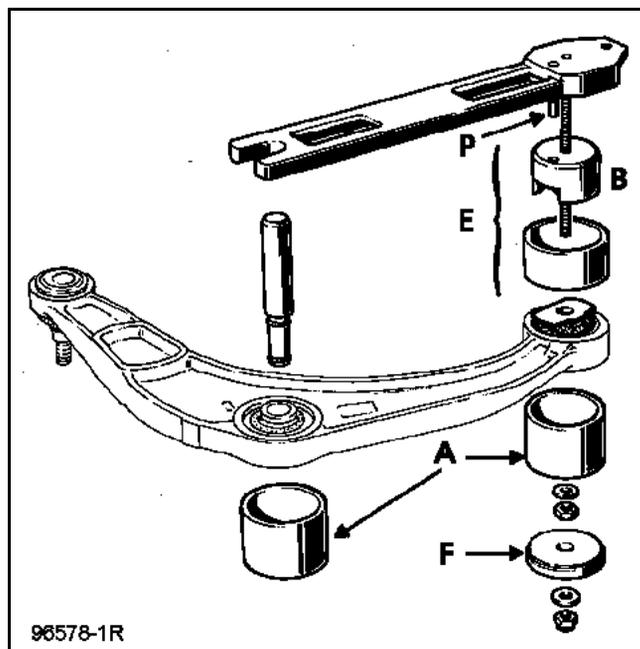
Refitting bush (2) is carried out in two stages:

1. Fit assembly (E) on the manipulator:
 - bush (B),
 - spacer (T. Av. 1274-01),
 - new bush,
 - threaded rod (screwed onto the manipulator),
 - washer,
 - nut.
2. At one end, insert the manipulator into the guide tube and, at the other end, fit stack (E) into the bearing shell bore.

NOTE:

Remove the O-rings and sand down the lower section of the guide tube using abrasive paper, if necessary.

In this position, fit centring washer (F) and tighten the assembly (nut / washer).



F Spacer ring T. Av. 1274-01

Then place the assembly on the two bushes (A).

At the press, insert the bush until the spacer comes into contact with the arm bearing face.

FRONT AXLE

Lower arm ball joint

31

IMPORTANT

No more than one ball joint may be replaced on the same arm. For this reason, the replacement ball joints are marked with a notch on the bearing face of the unit (reaming).

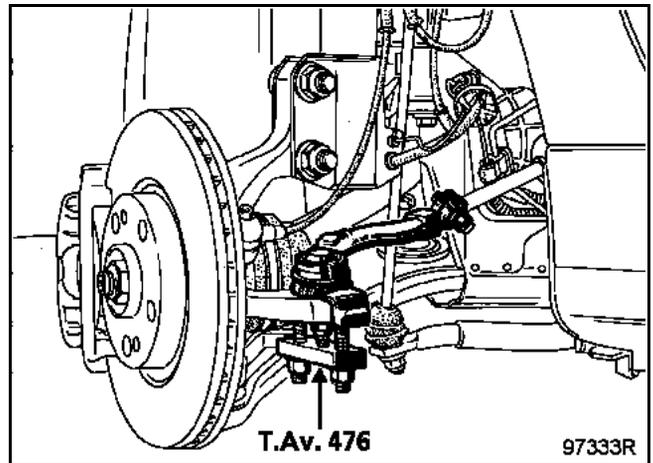
- Unmarked ball joint —————> standard part: **replacement possible**
- Ball joint with notch —————> part previously replaced: **new replacement prohibited**, the lower arm **MUST** be replaced completely

SPECIAL TOOLING REQUIRED	
T. Av. 476	Ball joint extractor
T. Av. 1261	Lower arm ball joint removal/ refitting tool
T. Av. 1261-01	Additional bush for refitting the ball joint
EQUIPMENT REQUIRED	
Ball joint setter	

TIGHTENING TORQUES (in daNm)	
Shock absorber base mounting bolt M16 X 200	20
Lower ball joint	6.5
Track rod end	4
Brake calliper guide bolt	3.5
Wheel bolt	10

REMOVAL

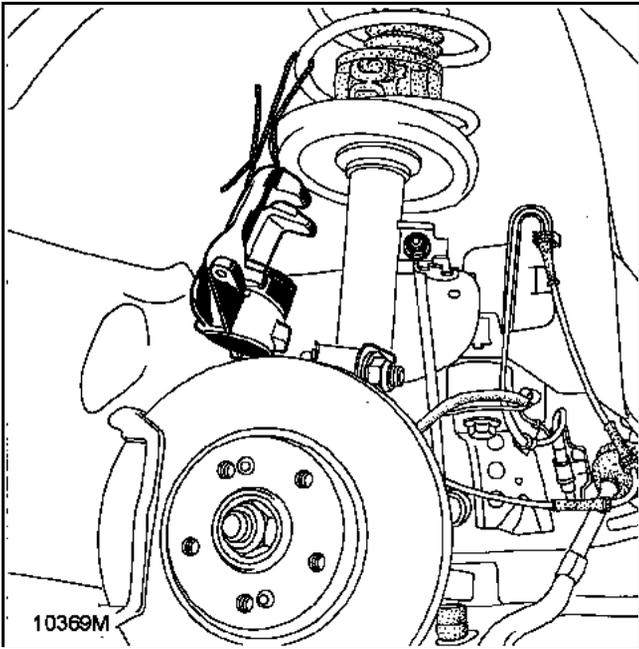
- Remove:
- the wheel,
 - the track rod end using tool **T. Av. 476** (if necessary),



FRONT AXLE

Lower arm ball joint

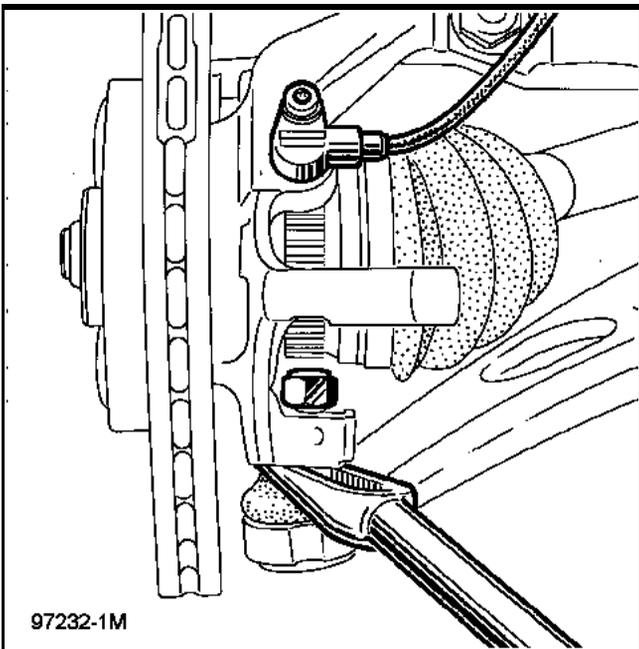
– the brake calliper (see the relevant Section).



Attach the calliper to the spring so as not to damage the pipe,

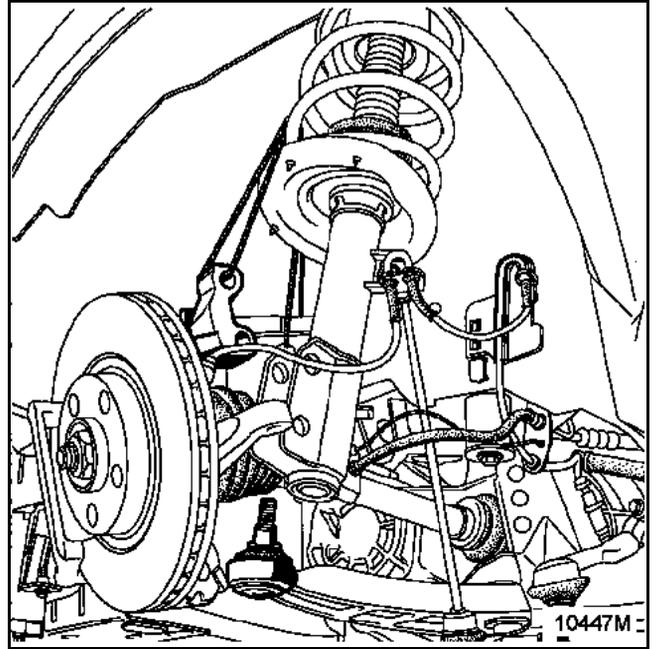
Fit a protective piece to the driveshaft gaiter.

Slacken the lower arm ball joint nut and release the ball joint using a ball joint setter if necessary.

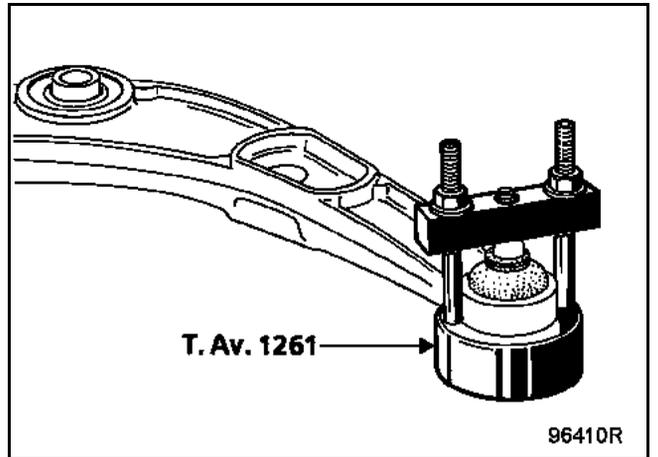


Remove the shock absorber base mountings.

Detach the stub-axle carrier from the shock absorber base, then separate and suspend the stub-axle carrier / driveshaft assembly.



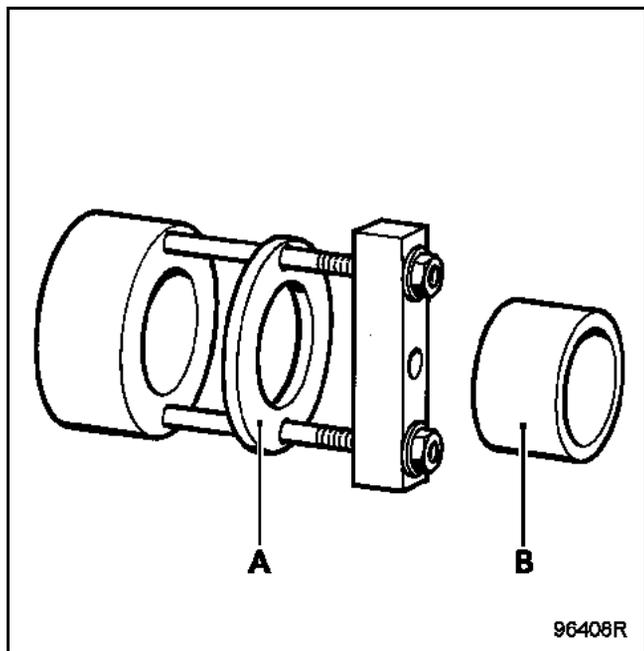
Extract the ball joint from the arm using tool **T. Av. 1261**.



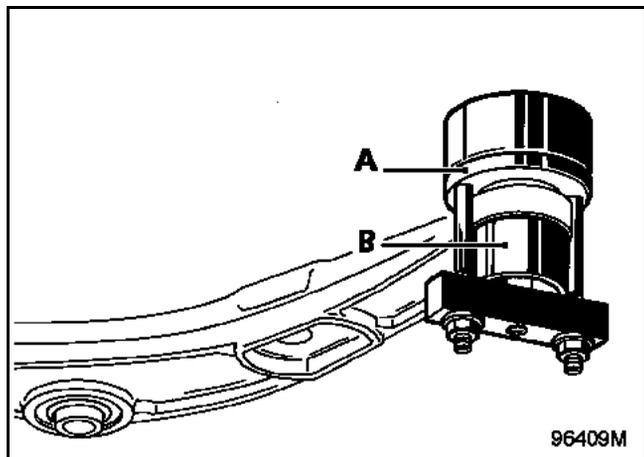
To fit tool **T. Av. 1261**, remove the burr from the sides of the arm using a file if necessary.

REFITTING

Fit the new ball joint (with notch) using tool **T. Av. 1261** inserting washer (A) and spacer (B) (**T. Av. 1261-01**).



Tool **T. Av. 1261** in place for refitting the ball joint.



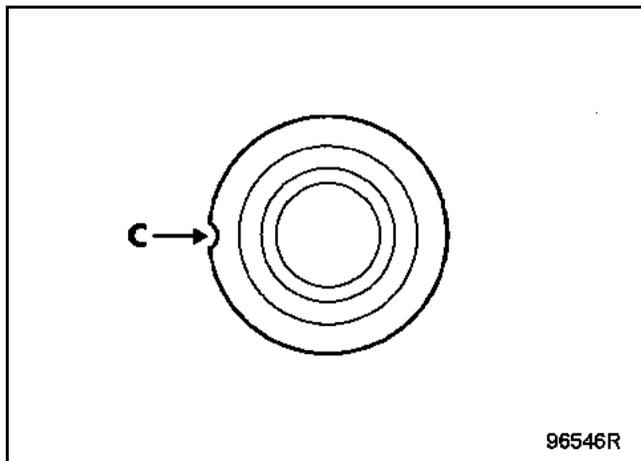
Proceed in the reverse order to removal.

Take care not to damage the driveshaft gaiter.

Observe the tightening torques.

After the operations have been completed, depress the brake pedal several times to bring the piston into contact with the pads.

APPEARANCE OF THE REPLACEMENT BALL JOINT



Replacement ball joint with notch (C) on the bearing face (seen from below).

REMINDER

- Ball joint without notch → replacement possible.
- Ball joint with notch → replacement forbidden (part already replaced).

SPECIAL TOOLING REQUIRED

Fre. 823	Tool for pushing calliper pistons back
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TIGHTENING TORQUES (in daNm)

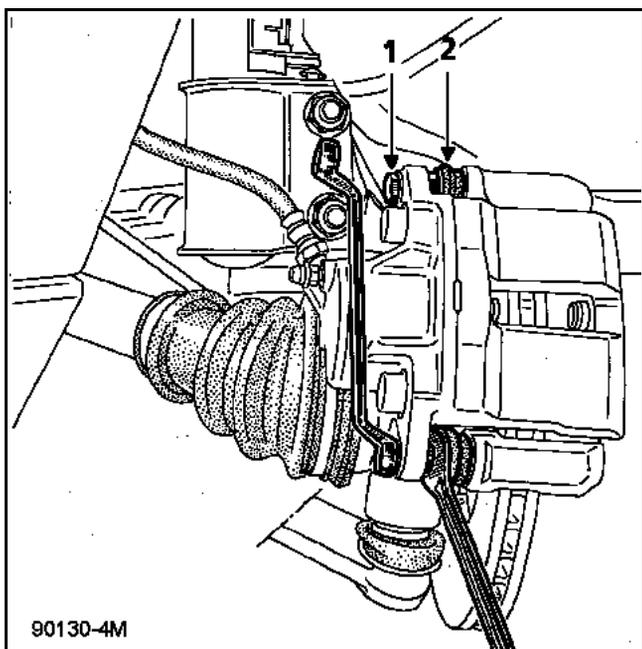


Wheel bolt	10
Brake calliper guide bolt	3.5

REMOVAL

Disconnect the wear warning light wire.

Push back the piston by manually sliding the calliper towards the outside.



Remove the guide bolts (1) using two spanners.

Do not reuse the bolts.

Release the sliding calliper.

Remove the soundproofing pad.

Remove the pads.

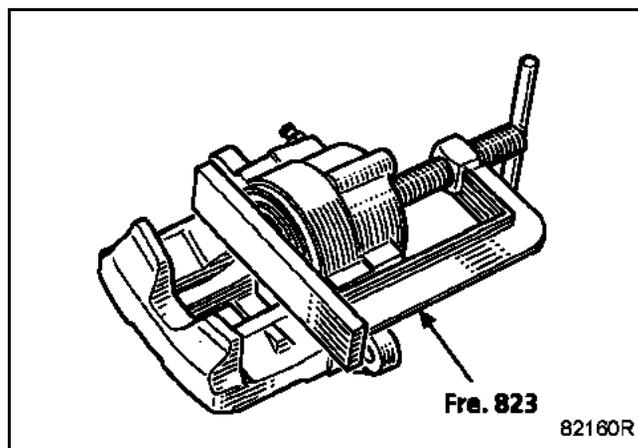
CHECKING

Check:

- the condition and mounting of the piston dust cover and its retaining ring,
- the condition of the guide dust cover (2) (pillars).

REFITTING

Push back the slave cylinder piston using tool Fre. 823.



Fit the new shoes assembled with their spring, observing the order of tightening.

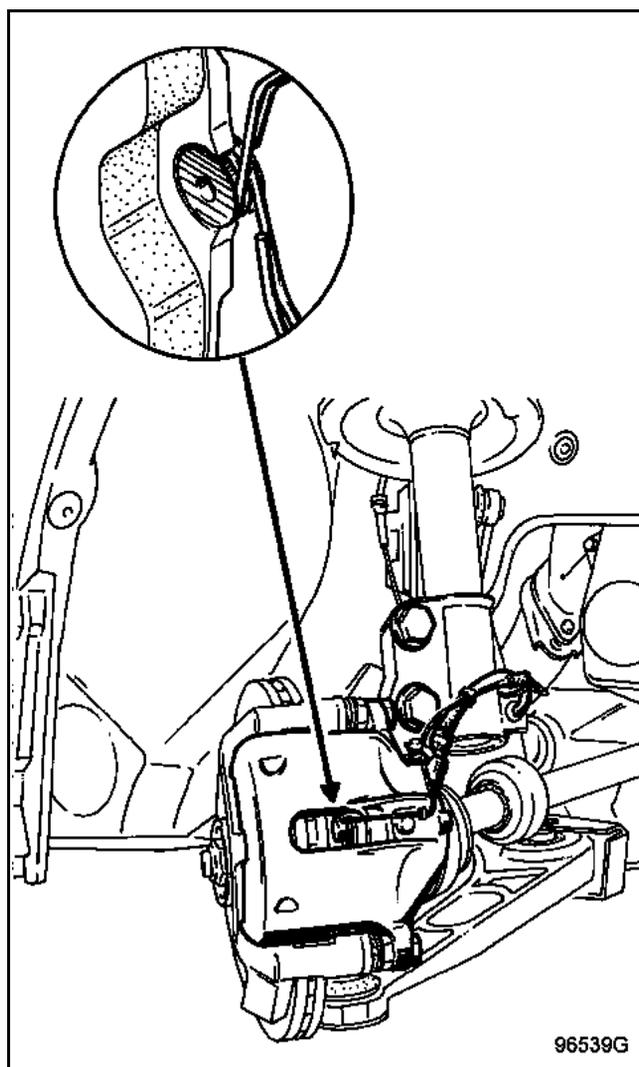
The shoe with the wear warning light wire fitted inside.

Replace the soundproofing pad, the arrow points towards the front of the vehicle.

Position the calliper and fit the new lower guide bolt.

Press on the calliper and fit the upper guide bolt.

Tighten the guide bolts to torque starting with the lower bolt.



Reconnect the wear warning light wire observing its routing.

Press the brake pedal several times in order to bring the piston into contact with the brake shoes.

TIGHTENING TORQUES (in daNm)	
Wheel bolt	10
Calliper yoke mounting bolt	10
Guide bolt	3.5

REMOVAL

Fit a pedal press to the brake pedal to restrict the flow of brake fluid.

Release the brake pipe at the wheel cylinder end.

Remove the brake pads (see the relevant information).

Undo the slave cylinder on the hose (be prepared for brake fluid to flow out).

Check the condition of the hose and replace it if necessary (see Replacing a hose).

If the calliper is being replaced, the hose must be replaced.

REFITTING

Retighten the slave cylinder.

Remove the pedal press.

Slacken the slave cylinder bleed screw and wait for the brake fluid to flow out (check that the compensation reservoir level is sufficient).

Retighten the bleed screw.

Check the condition of the pads and change them if they are oily.

Bleed the brake fluid circuit partially only if the compensation reservoir is not completely emptied during the operation, otherwise bleed it completely.

Press the brake pedal several times in order to bring the piston into contact with the brake pads.

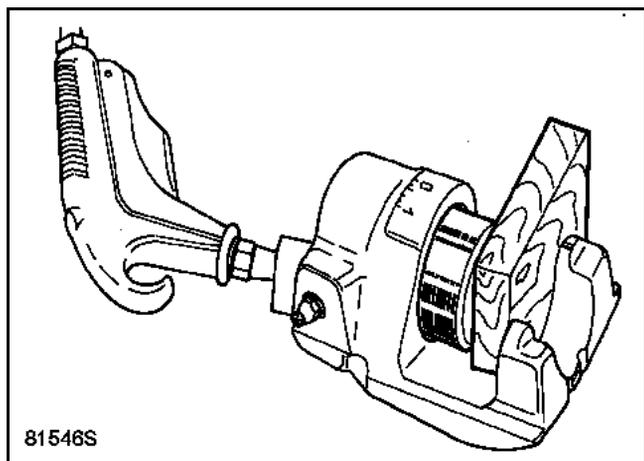
REPAIR

The complete calliper must automatically be changed if the calliper bore is scored.

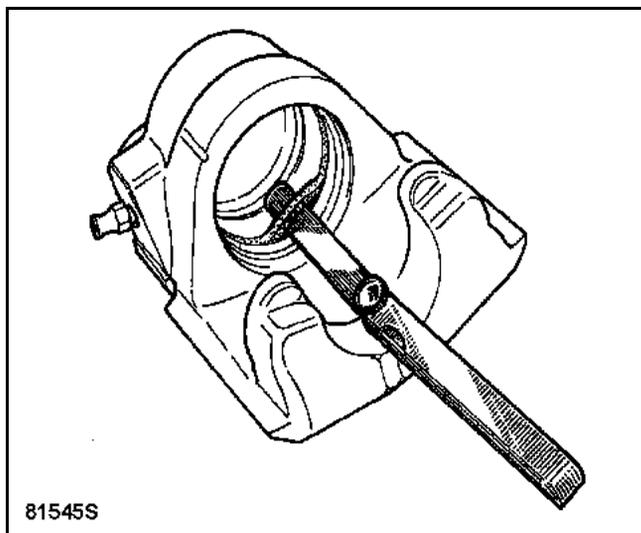
Remove the brake calliper.

Remove the rubber dust seal.

Remove the compressed air piston, inserting a wooden block between the calliper and the piston to prevent damage to the piston: any trace of damage to the piston skirt will render it unusable.



Using a flexible strip with a rounded edge (such as a feeler gauge), remove the rectangular section seal from the calliper groove.



Clean the parts using methylated spirits.

Replace any faulty parts with original parts and then refit the seal, piston, dust seal and its retaining strip.

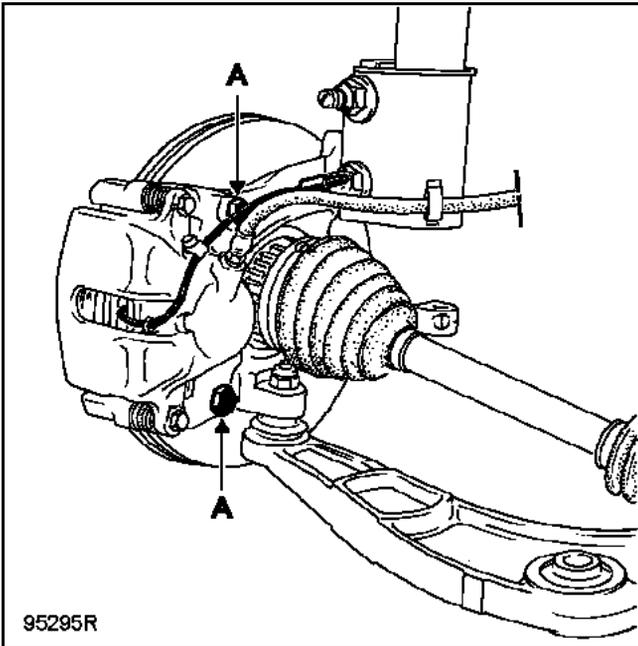
Brake discs cannot be reground. If they are too heavily worn or are scratched they must be replaced.

TIGHTENING TORQUES (in daNm)	
Wheel bolt	10
Brake yoke mounting bolt	10
Brake disc mounting bolt	1.5

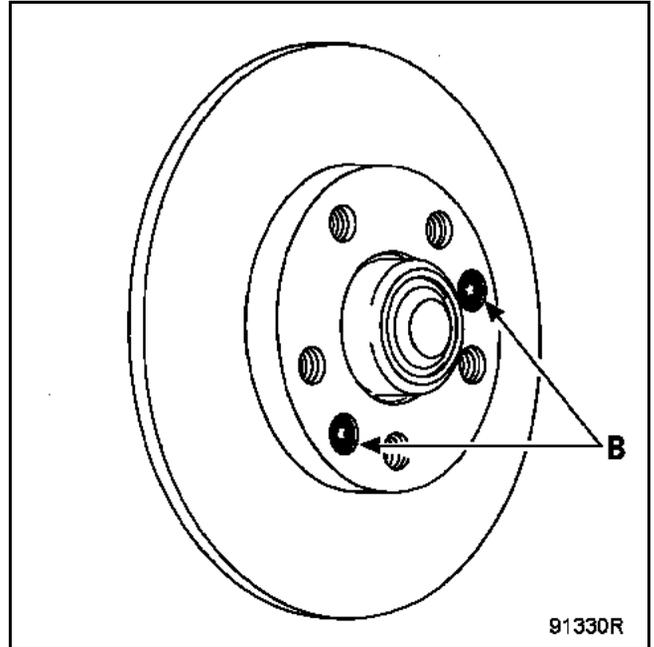
REMOVAL

Remove:

- the brake pads (see the relevant information),
- the two yoke mounting bolts (A),



- the two disc mounting bolts (B) using a **30 mm torx driver**,



- the disc.

REFITTING

Clean the disc / hub mating face of any traces of **LOCTITE**.

Position the disc on the hub and fit it with the two bolts (B).

Coat the yoke bolts with **LOCTITE FRENBLOC** and tighten them to torque.

Press the brake pedal several times in order to bring the piston into contact with the brake pads.

TIGHTENING TORQUES (in daNm)	
Longitudinal arm mounting nut	9
Shock absorber lower bolt	2.5
Shock absorber upper bolt	6
Wheel bolt	10
Transverse guide bar	6

REMOVAL

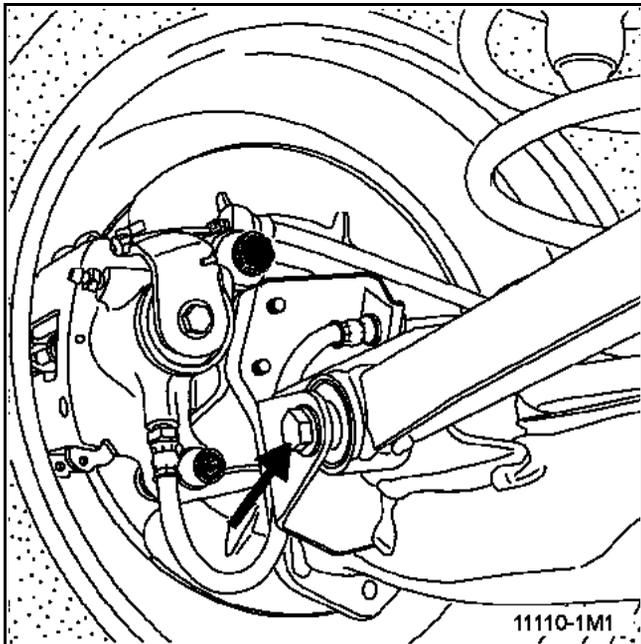
Put the car on a four-post lift and raise the lift.

Place a large axle stand with a rubber cross piece under the emergency spare wheel and lower the lift slightly.

Remove:

- the two shock absorber lower mounting bolts,
- the bolt mounting the transverse guide bar onto the axle. Do not touch the brake limiter (vehicle not fitted with ABS).

Lower the lift again and remove the springs.



Place the vehicle on axle stands.

Remove:

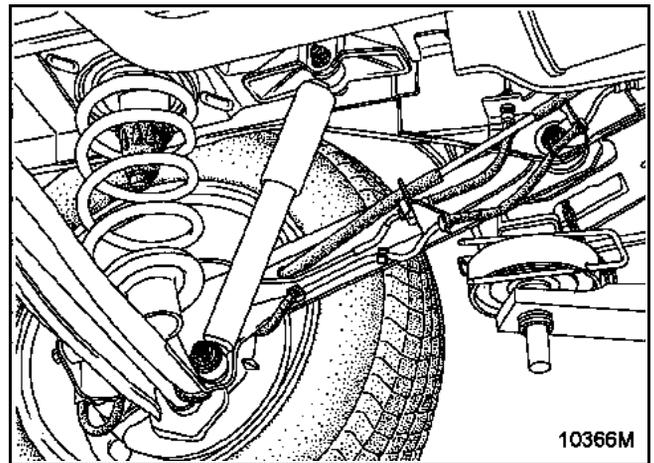
- the two rear wheels,
- the two brake drums.

Disconnect the handbrake cables:

- from the lever,
- from the drum end piece,
- from the longitudinal arm.

Fit a pedal press to prevent brake fluid from flowing out.

Disconnect the brake pipes from the longitudinal arm.



Place a component jack under the axle.

Remove the longitudinal arm mounting bolts.

Release the axle.

REFITTING

Proceed in the reverse order to removal.

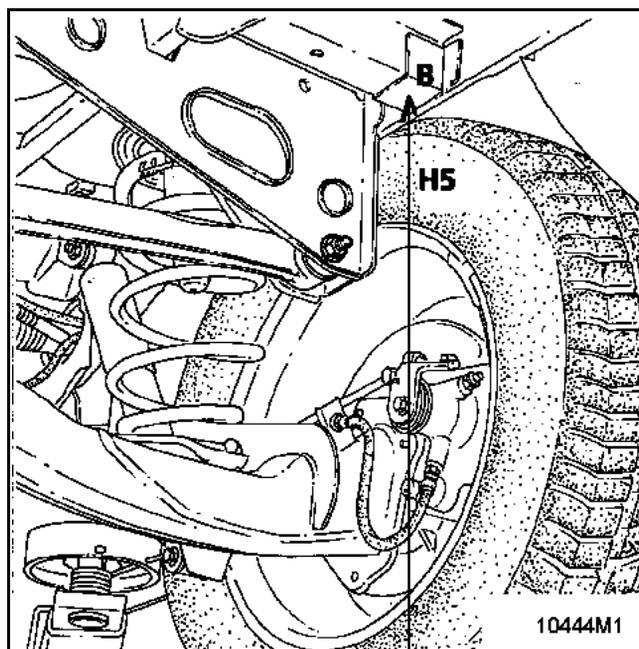
Tighten the flexible joint mountings to torque, with the vehicle under load.

Set the vehicle to height **(H5) = 408 mm** measured between the 3rd line floor cross member and the ground.

To do this:

- compress the rear axle assembly using straps,
- or load the vehicle;

this measurement corresponds to the vehicle having 4 people on board, 5 seats, a full fuel tank and 50 kg. Check measurement (H5).



Bleed the brake circuit.

Check the rear axle geometry if necessary (no adjustment possible).

SPECIAL TOOLING REQUIRED

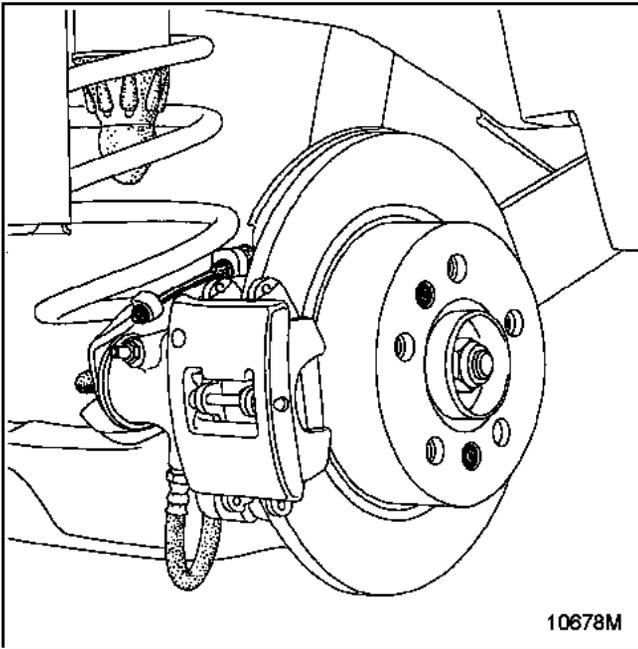
Fre. 1190 **BREMBO brake calliper piston return spanner**

TIGHTENING TORQUES (in daNm)

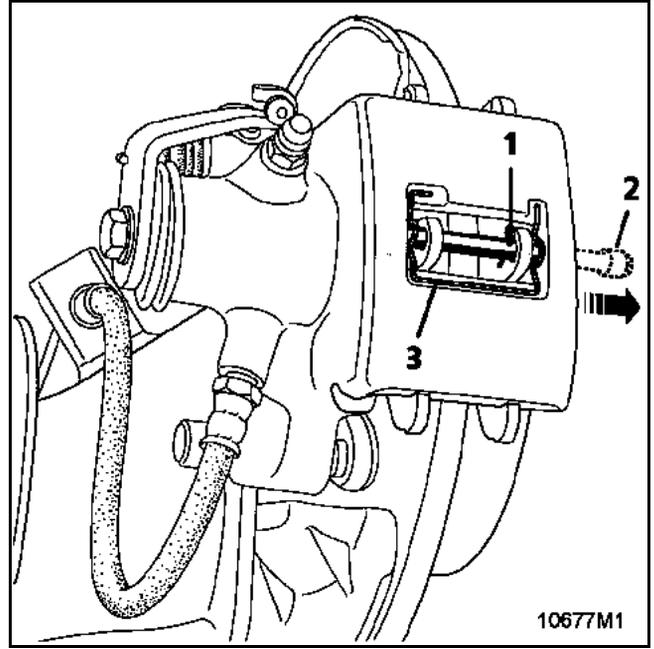


Wheel bolt	10
Secondary pillar bolt	3.5
Primary pillar bolt	7

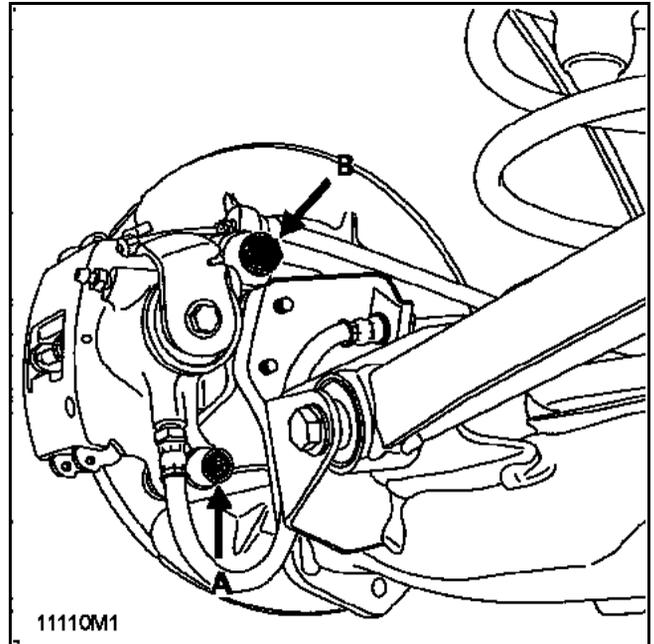
REMOVAL



Remove:
– the pin (1),

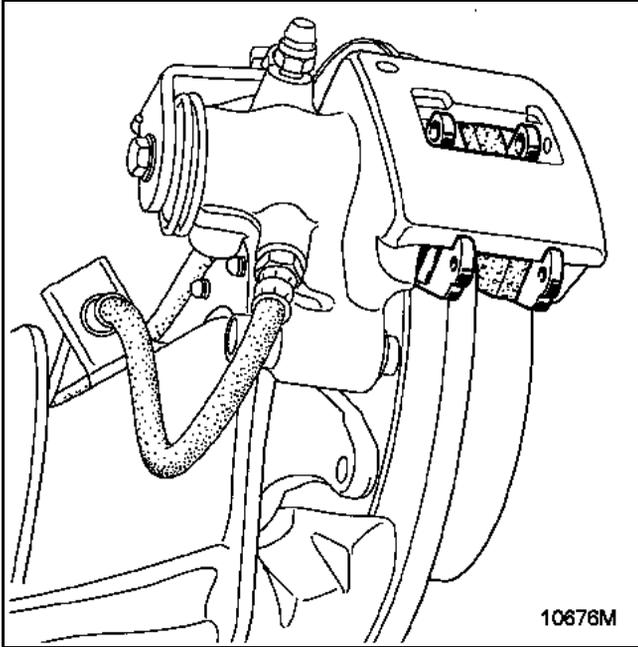


– the pad retaining shaft (2) using a pin punch,
– the spring (3),



– secondary pillar mounting bolt (A).

Pivot the calliper around primary pillar (B) (see previous page).



Remove the outer brake pad then the inner.

CHECKING

Check:

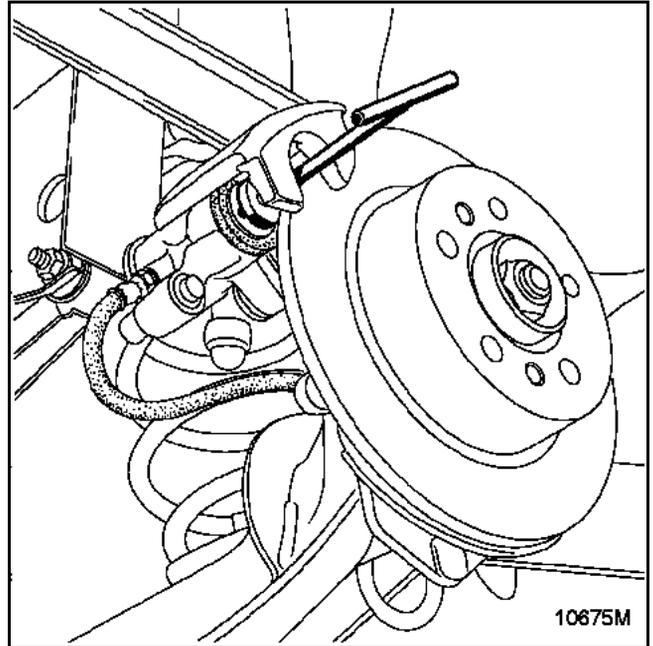
- the condition and fitting of the dust seal, the piston and the springs,
- the calliper's freedom of movement on its primary pillar.

REFITTING

Push the piston back, tightening it using tool **Fre. 1190** until it is at the bottom of its bore.

NOTE:

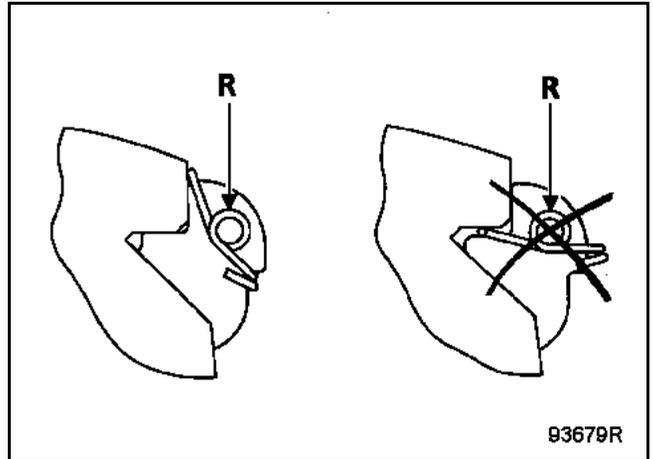
To fit the tool, slacken primary pillar mounting bolt (B) if necessary.



Fit new linings, beginning with the interior.

WARNING:

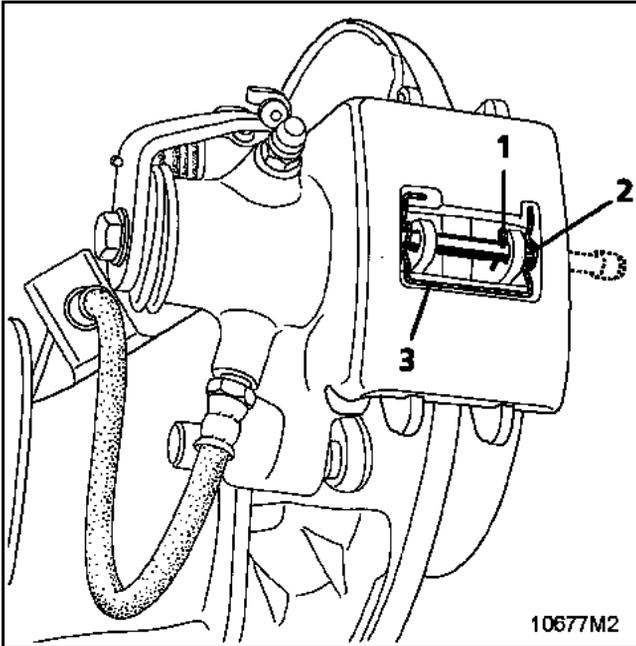
It is **ESSENTIAL** to position lateral springs (R) correctly.



Reset the calliper in its operating position and fit secondary pillar mounting bolt (A) coated in **LOCTITE FRENBLOC**, then tighten it to torque.

NOTE:

If primary pillar mounting bolt (B) has been removed, it must be refitted, coated with **LOCTITE FRENBLOC** and tightened to torque.

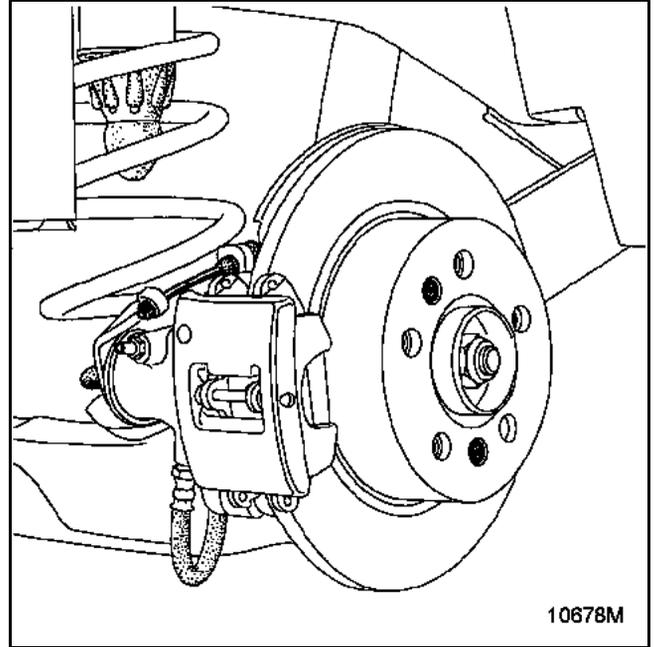


Position brake pad retaining shaft (2) passing it through the spring buckles (3).

Then clip the retaining shaft with a pin punch.

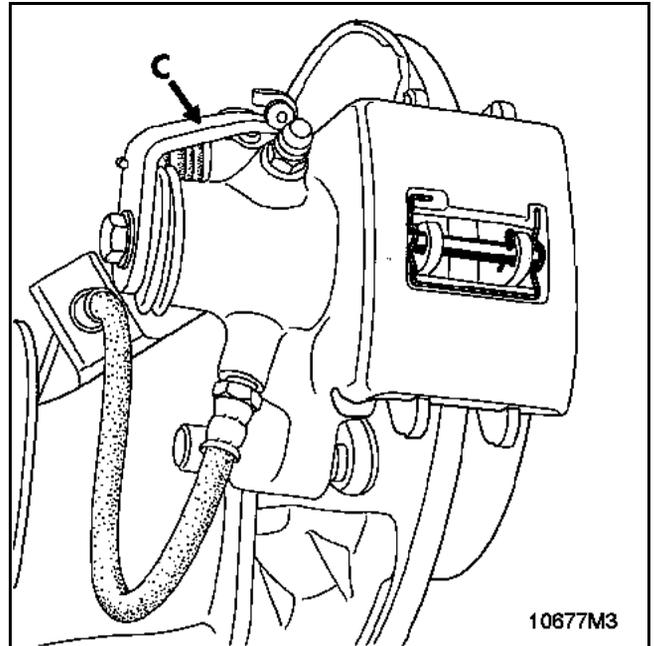
Refit safety mounting pin (1).

Depress the brake pedal repeatedly to bring the piston into contact with the brake shoes.



Check the handbrake adjustment.

The levers (C) must **detach between the 1st and 2nd notch** of the control lever travel and remain detached on the 2nd notch.



TIGHTENING TORQUES (in daNm)	
Wheel bolt	10
Secondary pillar bolt	3.5
Primary pillar bolt	7

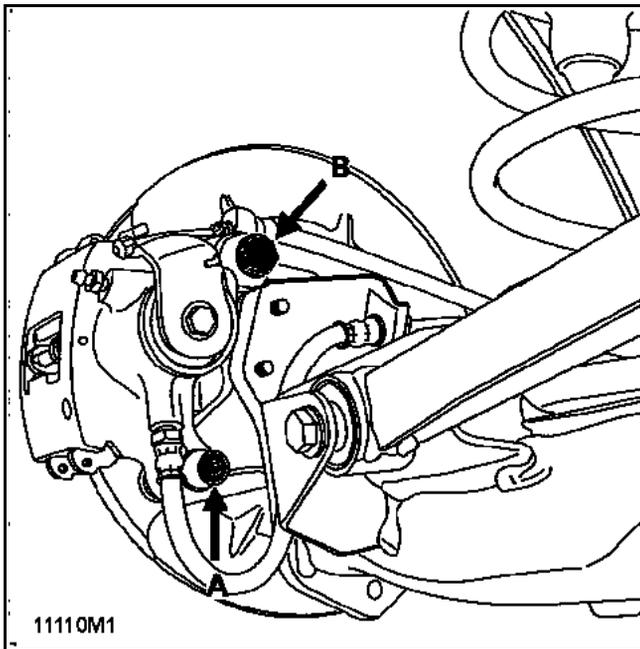
REMOVAL

Fit a pedal press to prevent brake fluid from escaping.

Release the brake pipe at the wheel cylinder end.

Remove:

- the brake pads (see the relevant information),
- the handbrake cable,
- primary pillar mounting bolt (B).
- secondary pillar mounting bolt (A).



Unscrew the hose.

Check the condition of the hose and replace it if necessary (see Replacing a hose).

Always replace the hose if replacing the calliper.

REFITTING

Proceed in the reverse order to removal.

Retighten the hose.

Check the condition of the linings. Replace them if they are greasy.

Refit the pads (see the relevant information).

The primary and secondary pillar bolts should be coated with **LOCTITE FRENBLOC** then tightened to torque.

Press the brake pedal several times to bring the piston into contact with the pads.

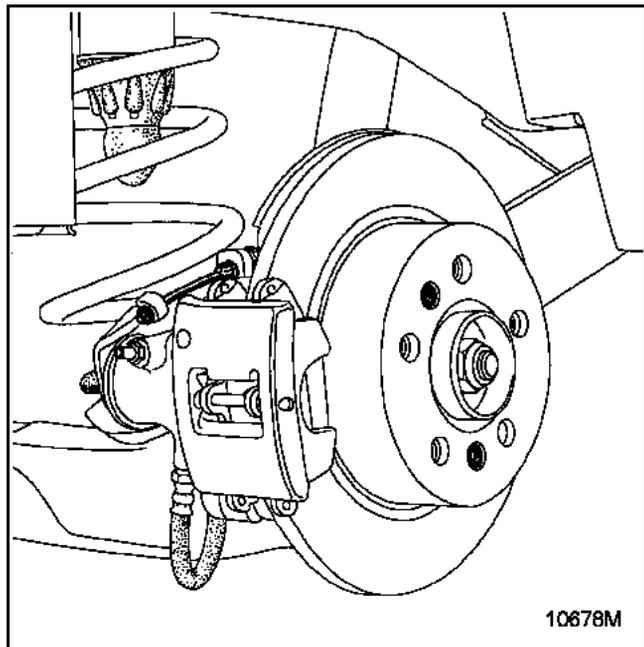
Bleed the brake circuit.

Brake discs

Brake discs cannot be reground. If they are too heavily worn or are scratched they must be replaced.

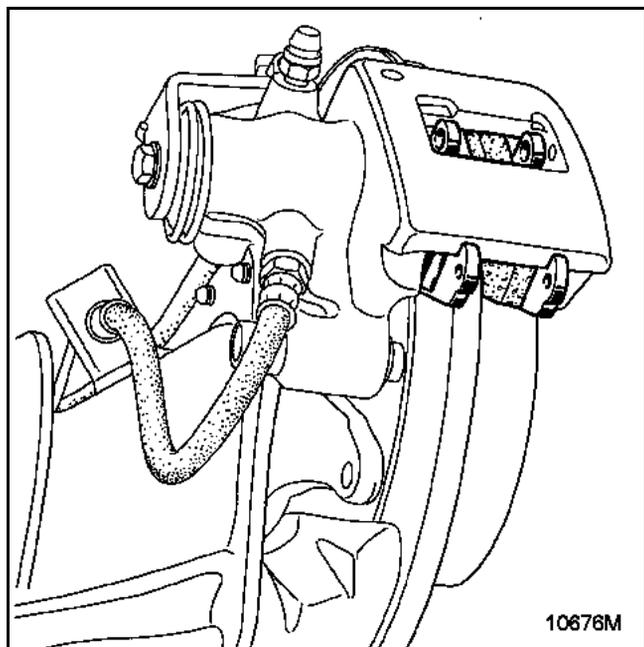
TIGHTENING TORQUES (in daNm) 	
Wheel bolt	10
Brake disc mounting bolt	1.5
Secondary pillar bolt	3.5
Primary pillar bolt	7

REMOVAL

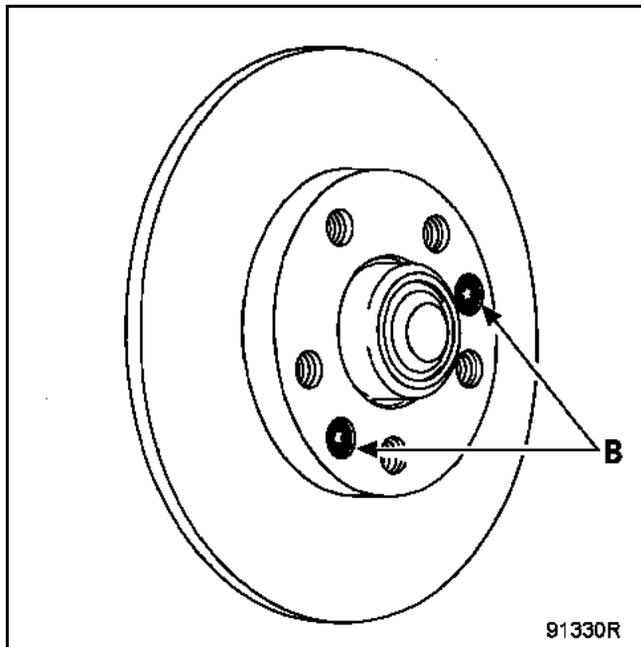


Remove:

- the brake pads (see the relevant information),



- the two disc mounting bolts (B) using a 30 mm torx driver.



REFITTING

Position the disc on the hub and fit it with the two bolts (B).

Fit the new brake pads.

Coat the secondary pillar bolt with **LOCTITE FRENBLOC** and tighten it to torque.

Press the brake pedal several times in order to bring the piston into contact with the pads.

REAR AXLE COMPONENTS

Stub-axle assembly (disc)

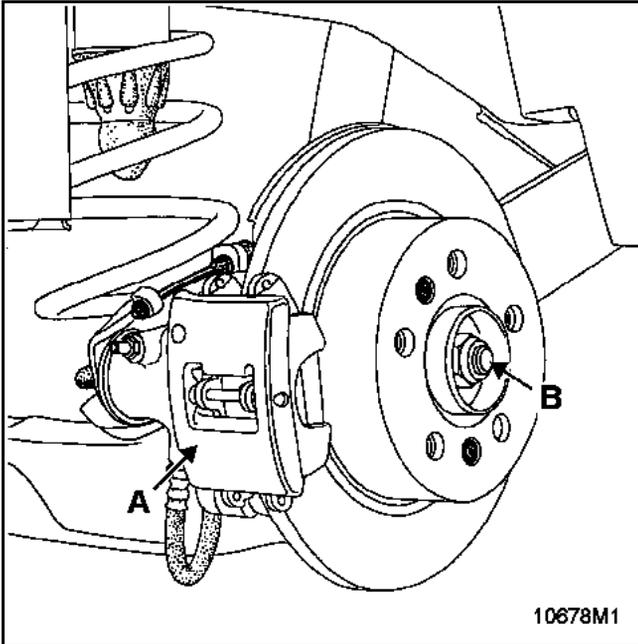
33

TIGHTENING TORQUES (in daNm)	
Stub-axle nut	17
Wheel bolt	10
Stub-axle mounting bolt	3
Secondary pillar bolt	3.5

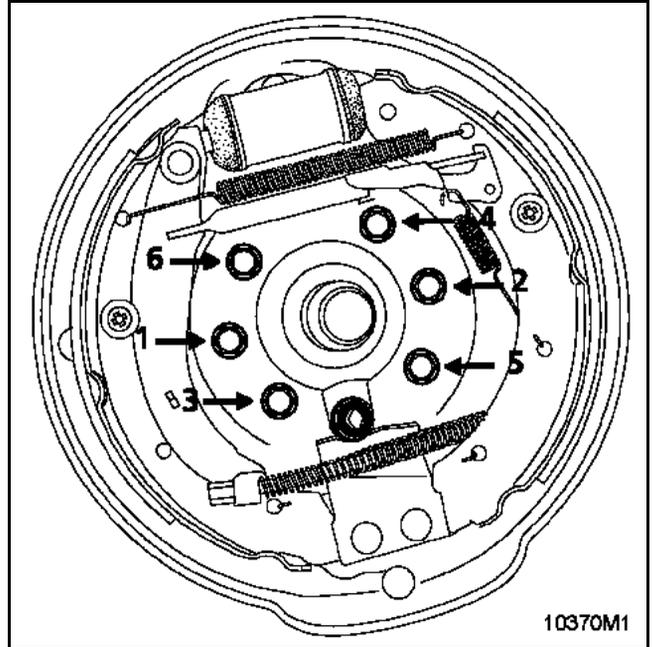
REMOVAL

Remove:

- the brake calliper / pads assembly (A),
- the brake disc and hub (B) (see relevant information),



- the six stub-axle mounting bolts,
- the wheel speed sensor bolt (if fitted to the vehicle).



REFITTING

Proceed in the reverse order to removal.

If the stub-axle bolts are being reused, they must be coated with **LOCTITE FRENBLOC**.

Tighten the stub-axle bolts in the order of 1-2-3-4-5-6 (see previous page) to a torque of **3 daNm**.

Tighten stub-axle nut to a torque of **17 daNm**.

TIGHTENING TORQUES (in daNm)

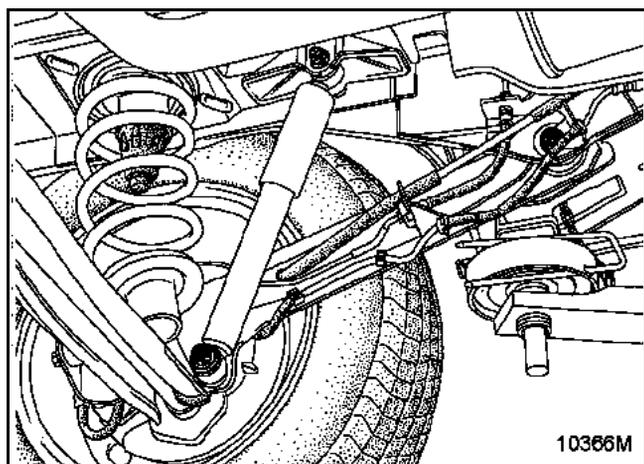


Upper mounting bolt	6
Lower mounting bolt	2.5

REMOVAL

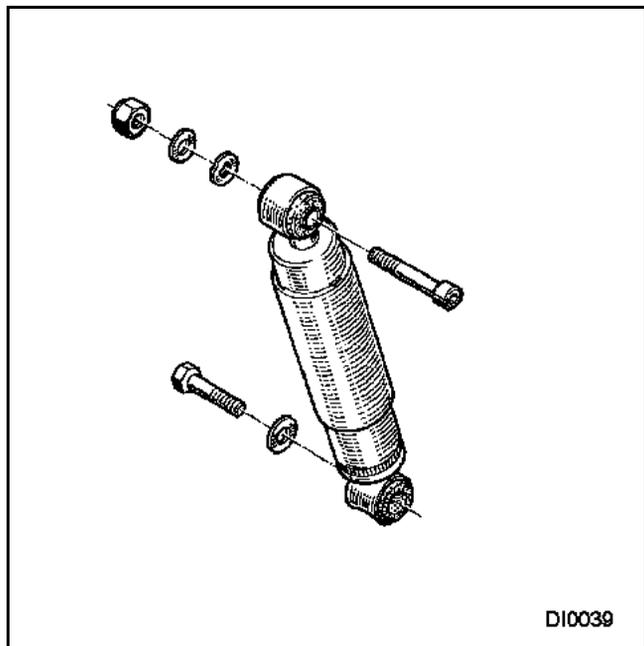
Put the vehicle on a four-post lift.

Place a large axle stand under the emergency spare wheel (see the **Rear axle** section) and lower the lift slightly.



Remove:

- the lower mounting,
- the upper mounting,
- the shock absorber.



REFITTING

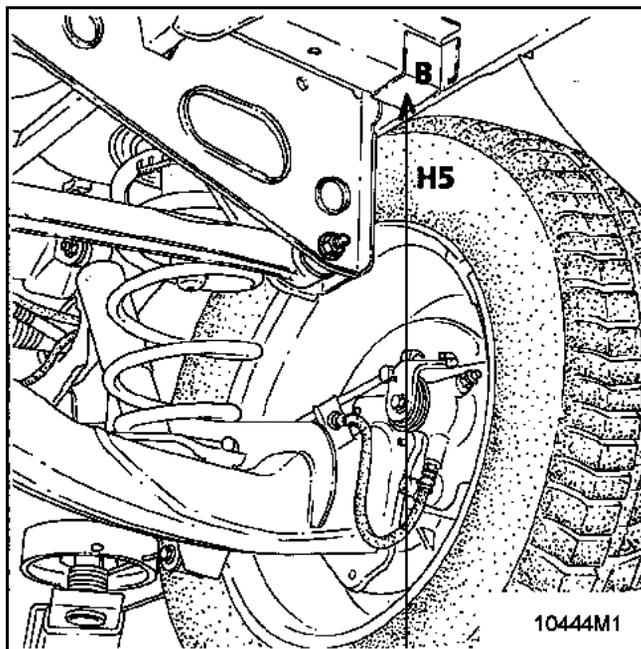
Fit the shock absorber and its mountings.

Set the vehicle to height (**H5**) = 408 mm measured between the 3rd line chassis cross member and the ground.

To do this:

- compress the rear axle assembly using straps,
 - or load the vehicle;
- this measurement corresponds to the vehicle having 4 people on board, 5 seats, a full fuel tank and 50 kg. Check measurement (H5).

Tighten the two bolts to the recommended torque, with the vehicle laden.



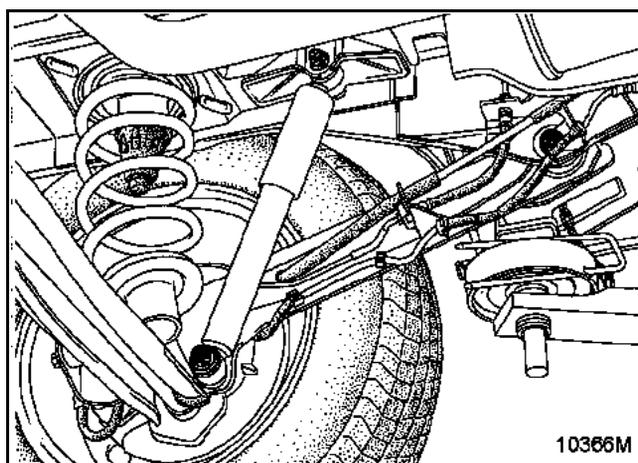
TIGHTENING TORQUE (in daNm)	
Lower shock absorber bolt	2.5

REMOVAL

Put the vehicle on a ramp lift.

Place an axle stand under the rear emergency spare wheel (see the **Rear axle** section) and lower the lift slightly.

Remove the shock absorber lower mounting bolts.



Lower the lift and move the axle away until the springs detach.

Remove the springs.

REFITTING

Proceed in the reverse order to removal.

For spring indexing, examine the upper retainer (boss).

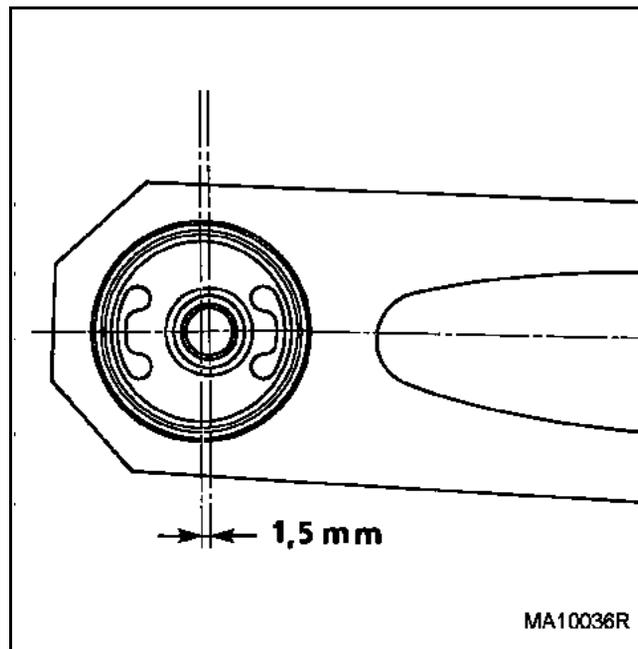
Tighten the shock absorber lower mountings to torque, with the vehicle laden (see the information on the shock absorbers).

The rubber blocks are replaced at the press, with the rear axle removed.

PRECAUTION FOR FITTING RUBBER BLOCKS

Refit the rubber block, taking care to position it as in the diagram.

The arm mounting passage axis is offset towards the rear of the vehicle in relation to the axis of the rubber block.



WHEEL RIMS

The identification marking of the wheel rims comes in two forms:

- Engraved markings for steel rims.
- Cast marking for alloy rims.

The marking gives the main dimensional specifications of the wheel rim.

The marking may be complete:

Example: 5 1/2 J 14 4 CH 36

or in abbreviated form

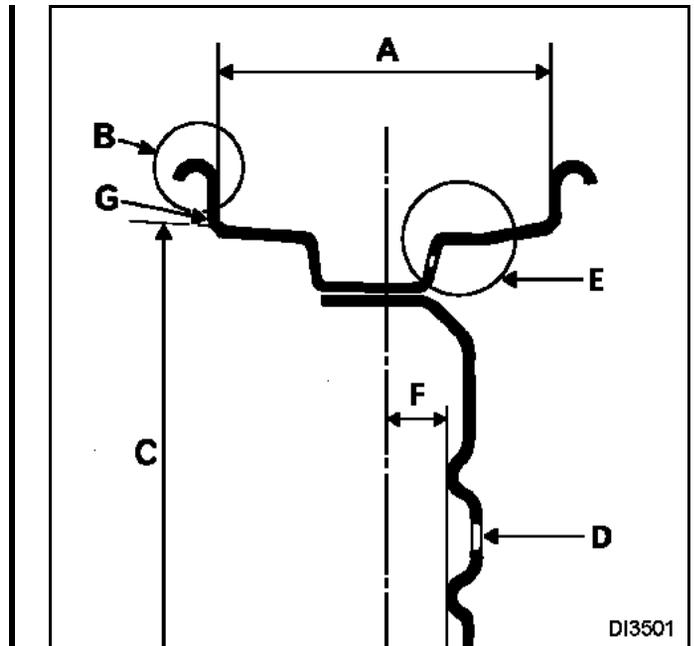
Example: 5 1/2 J 14

	A	B	C	D	E	F
TYPE OF RIM	WIDTH (in inches)	RIM PROFILE	Ø NOMINAL (in inches). under tyre bead	Number of holes	Tyre bead profile	Offset in mm
5 1/2 J 14 4 CH 36	5 1/2	J	14	4	CH	36

The 4 wheel bolts are **108 mm** in diameter.

Maximum run-out: 1.2 mm measured on the rim edge (at G).

Maximum eccentricity: 0.8 mm measured on the pressure face of the tyre beads.



DI3501

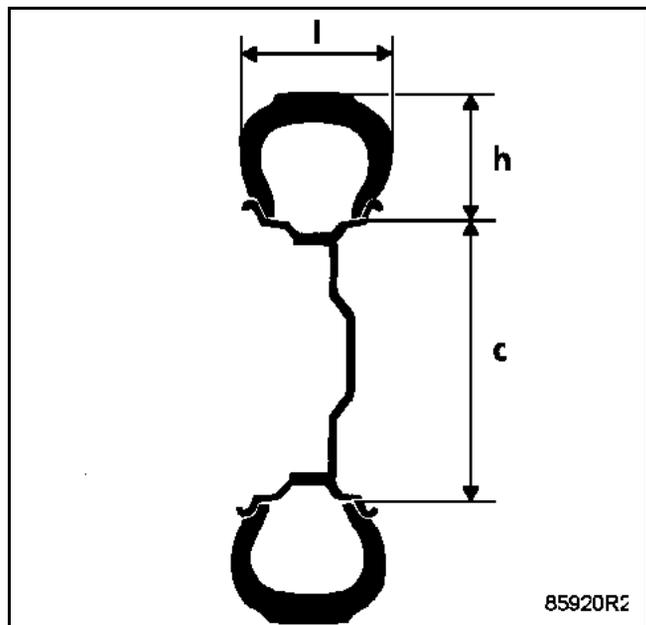
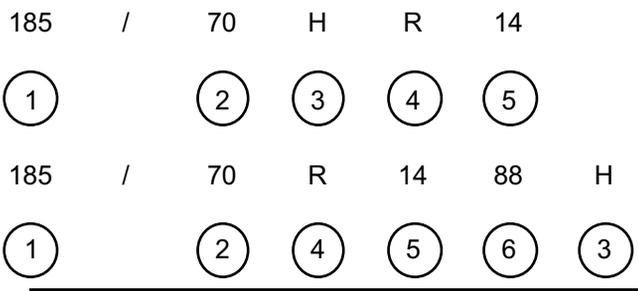
WHEELS AND TYRES

Specifications

TYRES

The identification marking can be in two forms for the same type of tyre.

Example: 185/70 H R 14
 or 185/70 R 14 88 H



- ① 185 Tyre width in mm
- ② 70 Ratio h/w $\frac{\text{height}}{\text{width}}$
- ④ R Radial structure
- ⑤ 14 Internal diameter in inches. Corresponds to the diameter of the rim.
- ⑥ 88 Load index 88 (560 kg)
- ③ H Speed code 130 mph (210 km/h) maximum

Some speed symbols:	Maximum speed	mph
	R	170
	S	180
	T	190
	U	200
	H	210
	V	240
	Z R + than	240

Types of structure:	
Cross ply	No marking
Radial	R
Bias belted	B (Bias belted)

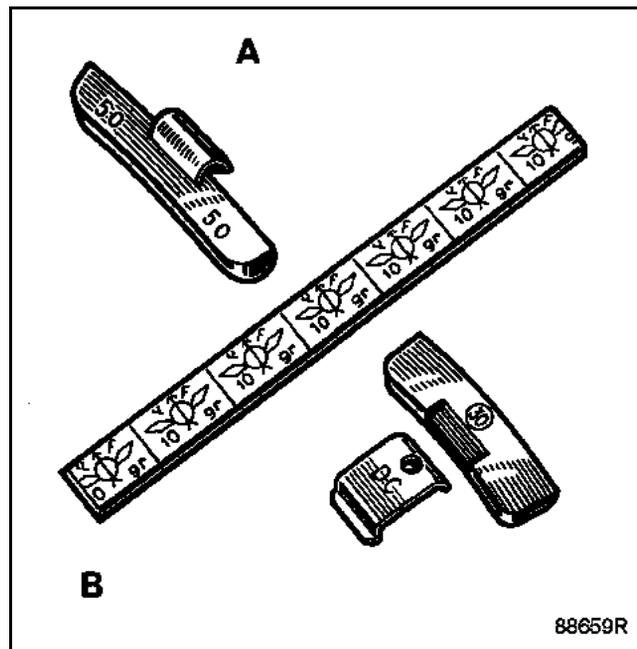
BALANCE WEIGHTS

Only use weights supplied by the Parts Department which are:

- secured to the metal rims by hooks (hooks incorporated in the weight),
- secured by hooks (flat hooks) or self adhesive for alloy wheels.

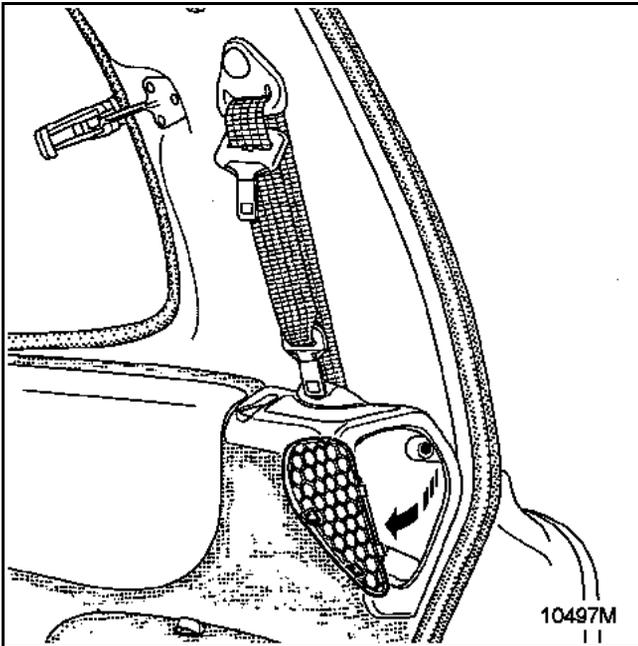
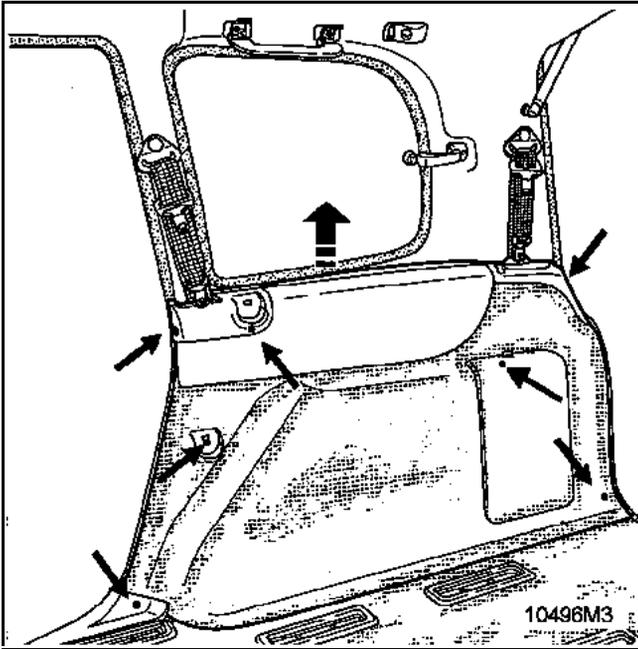
A Steel rim

B Aluminium rim



REMOVAL

Remove one of the wheel arch liners (see Section 7).

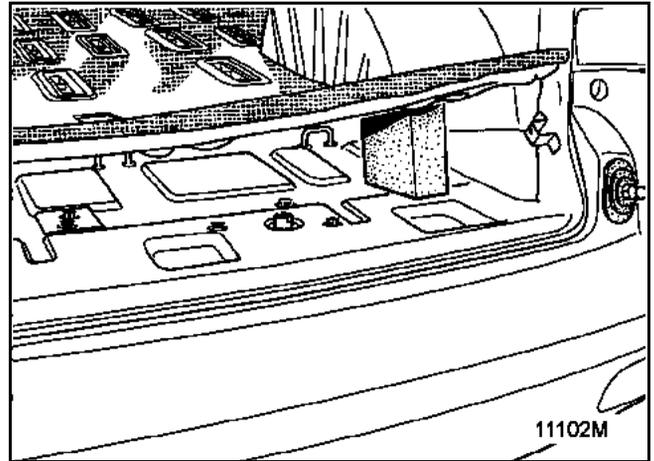


Remove the emergency wheel.

Remove:

- the tailgate seal at the carpet,
- the winch metal tab.

Detach the carpet (see Section 7) and fit a shim to access the winch bolts.



Remove the 5 winch mounting bolts.

REFITTING

To refit, proceed in the reverse order to removal.

Check that the mechanism is working correctly and fit the emergency spare wheel fully inside.

STEERING ASSEMBLY

Power assisted steering rack

36

The obstruction of the steering rack requires that the sub-frame and axle be detached from the body and that specifically-designed tools T. Av. 1233-01 be used. The steering rack must be removed through the left-hand side.

SPECIAL TOOLING REQUIRED	
T. Av. 1233-01	Kit for operating on the sub-frame/axle
Dir. 1303-01	Steering rack adjusting tool
Dir. 1408	Steering column adjustment tool
Dir. 1282-01	17 mm spanner for high-pressure steering column tube
Dir. 1282-02	19 mm spanner for low-pressure steering column tube

TIGHTENING TORQUES (in daNm)		
Steering ball joint nut		4
Universal joint bolt		2.5
Sub-frame mounting bolt: front Ø 10 rear Ø 12		3.5
		11
Steering rack sub-frame mounting nut		7
High-pressure hose on valve		2.2
Low-pressure hose on valve		3
Anti-roll bar tie-rod nut		4
Gear selector fork bolt		3
Engine tie-bar	F engines	5
	Z-G engines	15
Wheel bolt		10

REMOVAL

Set the vehicle wheels straight.

Remove:

- the wheels,
 - the left-hand wheel arch protector,
 - the track rod ends (tool **T. Av. 476** if necessary),
 - the anti-roll bar tie-rod lower ball joint nuts.
- Slacken the lower arm ball joint nuts.

STEERING ASSEMBLY

Steering column

36

SPECIAL TOOLING REQUIRED

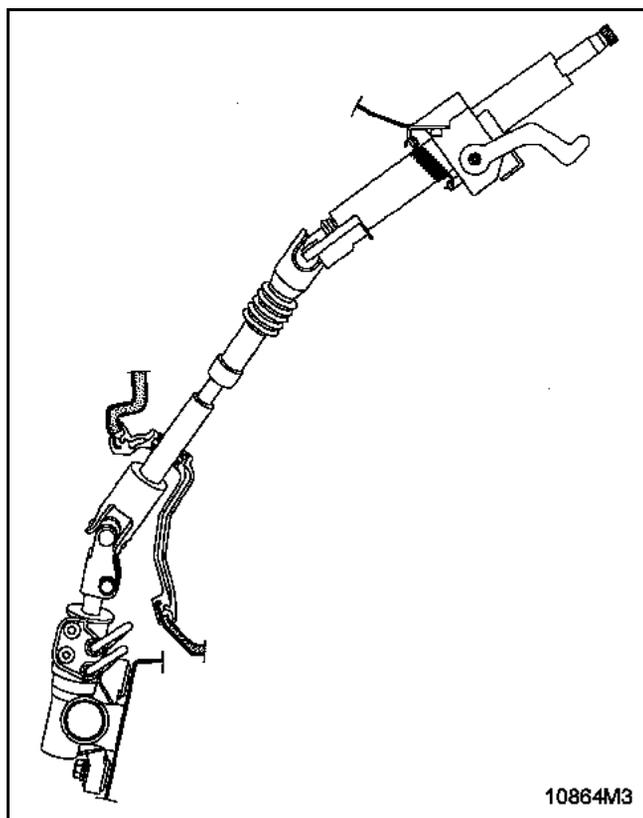
Dir. 1408 Steering column adjustment tool

TIGHTENING TORQUES (in daNm)



Steering wheel nut	4.5
Driver's frontal airbag bolt	0.5
Steering column universal joint eccentric bolt	2.5
Steering column mounting nuts	1.5

The steering column is sold complete. Components are not sold separately.



WARNING:

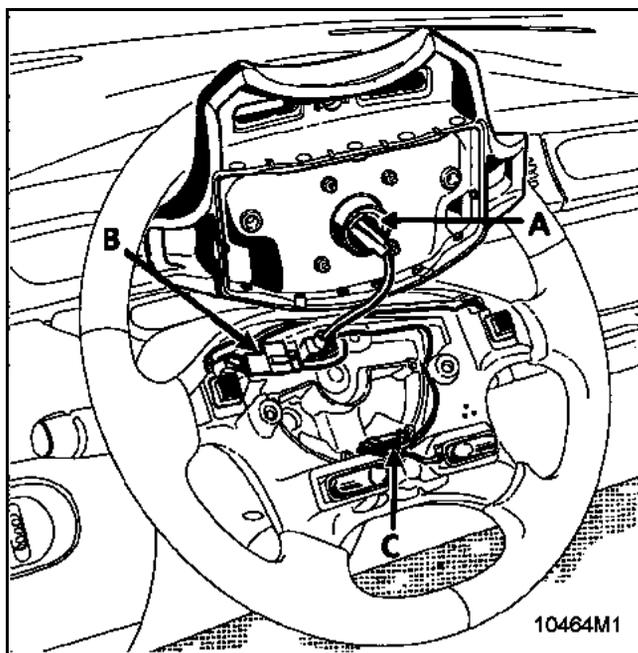
When removing the steering wheel, the airbag / pretensioner system must be deactivated (see the Steering wheel section).

If these instructions are not followed the system may not operate normally and could even be triggered accidentally.

REMOVAL

Remove:

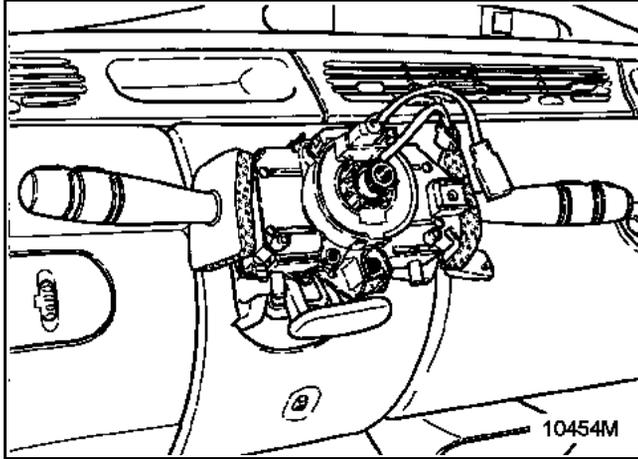
- the driver's frontal airbag attached by two bolts behind the steering wheel and disconnect its connector (A).



- horn connector (B),
- cruise control connector (C) (if fitted),

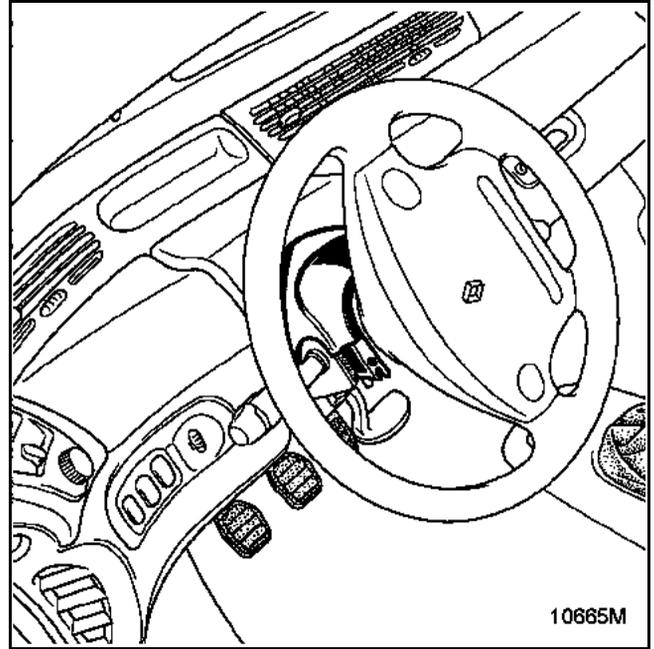
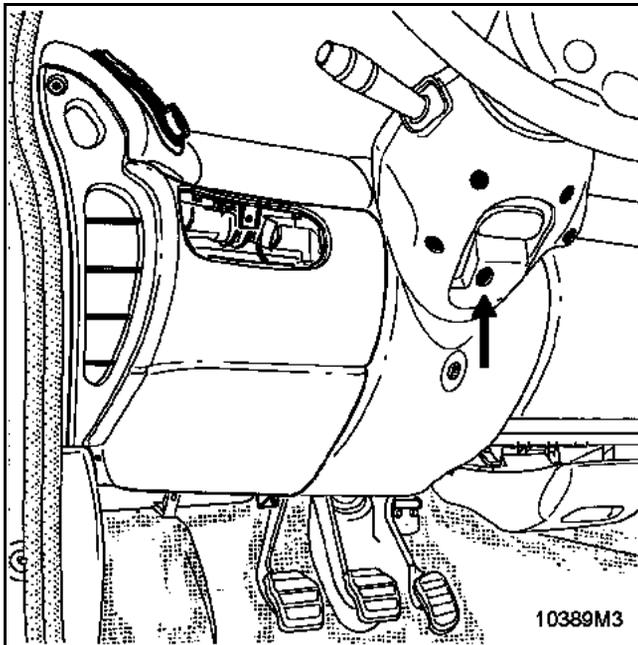
- the steering wheel nut (it must be replaced when refitting),
- the steering wheel, ensuring that the wires are not pinched.

Immobilise the rotary switch with adhesive tape to prevent it from moving off-centre.

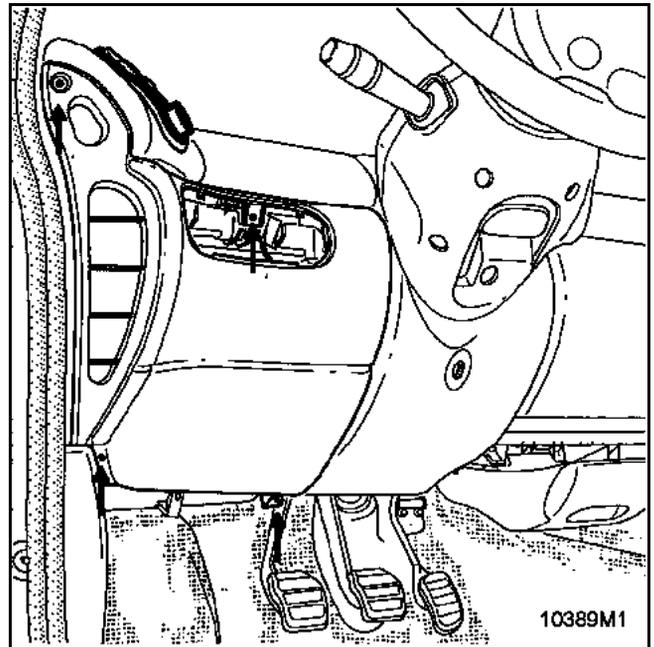


Remove:

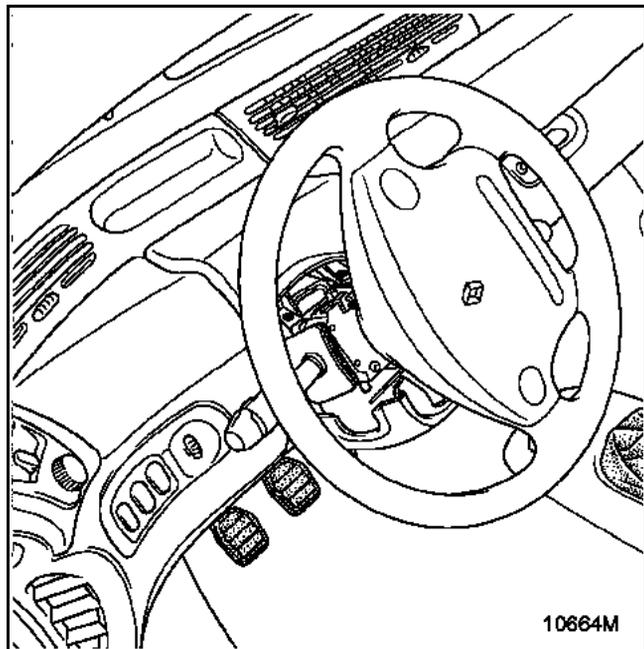
- the radio remote control,
- the steering wheel upper and lower cowlings,



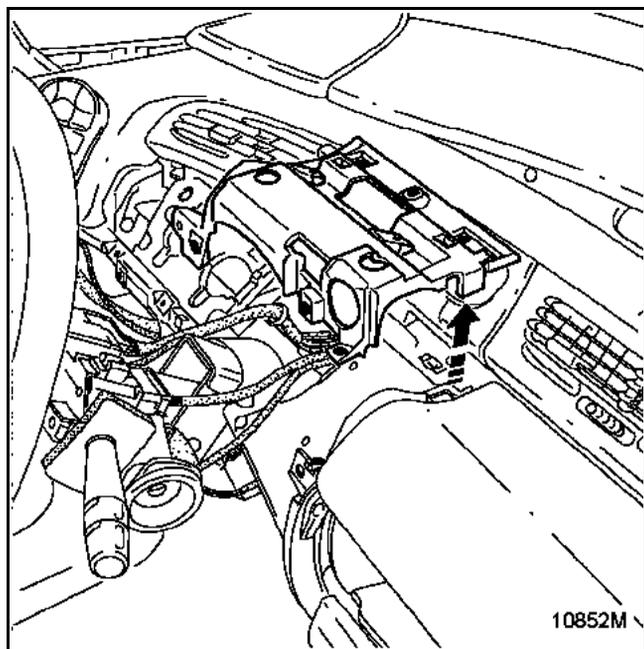
- the lower LH console;



- the material cover or automatic transmission repeater surround (if fitted to the vehicle),
- the under-steering wheel console (disconnect the lighting dimmer switch),



- the steering surround and disconnect the automatic transmission repeater (if fitted to the vehicle) to access the column mountings.



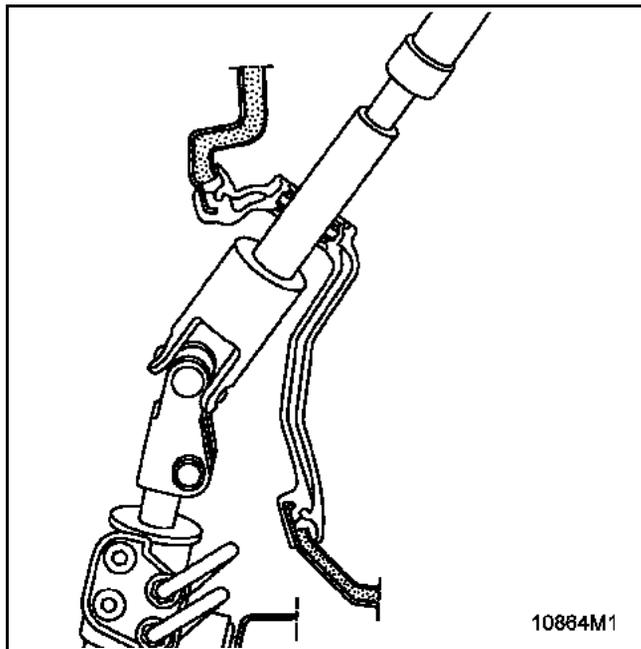
Disconnect the connectors:

- ignition switch,
- screen wash / wipe combined switch,
- lighting stalk.

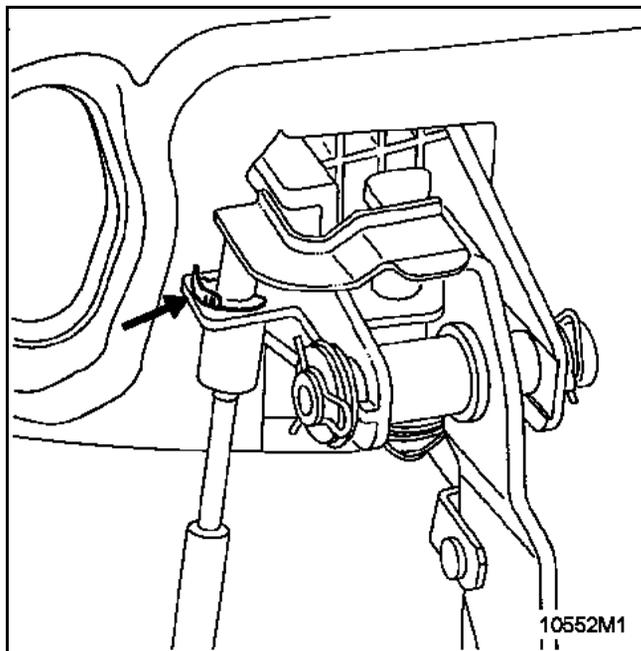
Detach the carpet to access the column seal.

Release the column seal. Important, this is composed of two lips:

- one for soundproofing,
- the other for the bulkhead.



Remove the clip to disconnect the gearshift safety cable (if the vehicle is fitted with automatic transmission).

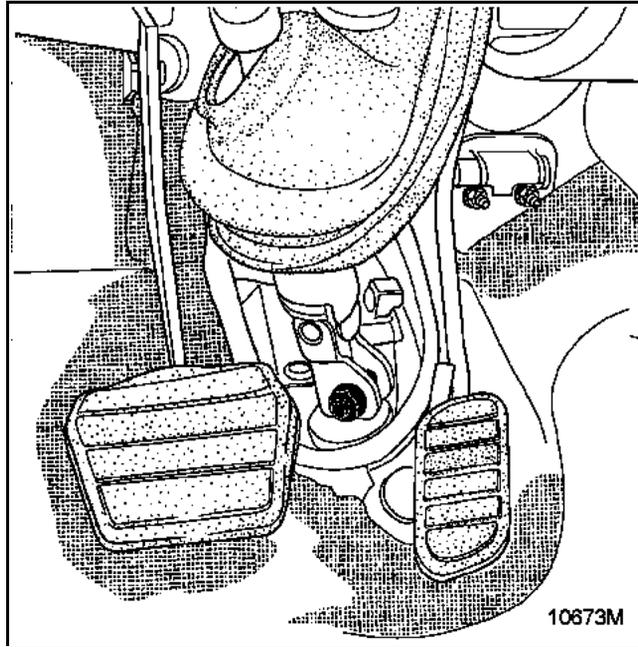


STEERING ASSEMBLY

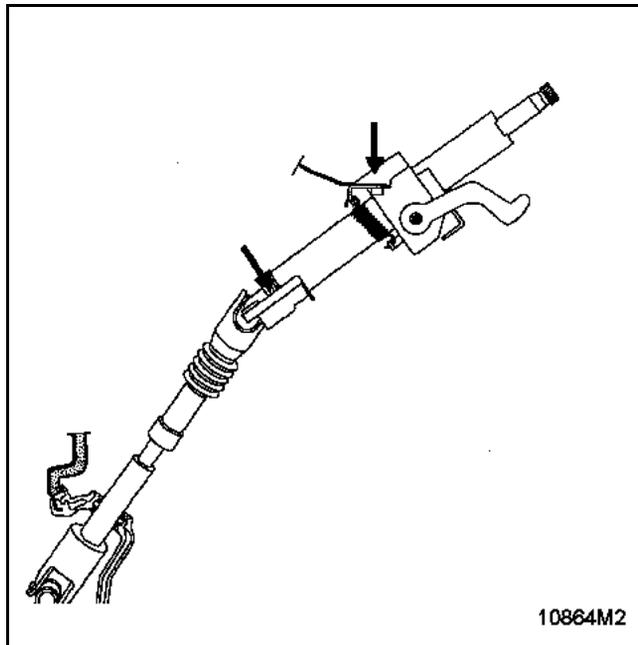
Steering column

36

Set the wheels straight and remove the steering column universal joint eccentric bolt and nut through the passenger compartment.



Remove the column mounting nuts and bolts and remove the column/stalk switching assembly.



REFITTING (special notes)

Refit the steering column.

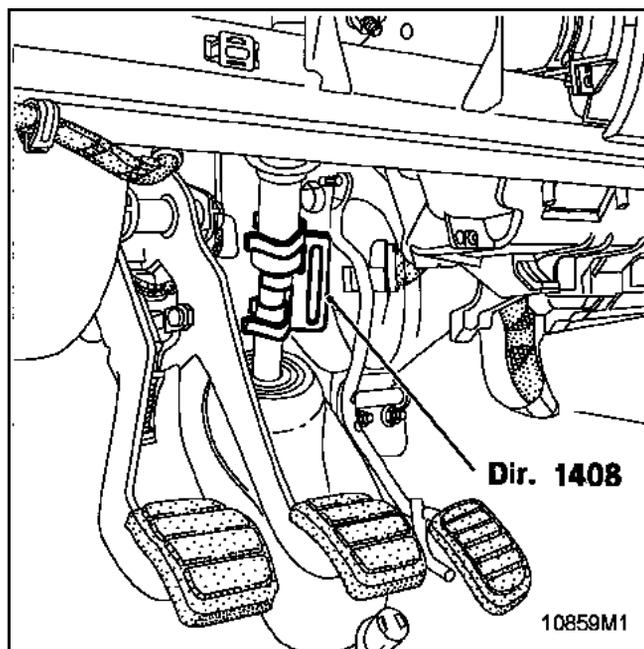
Refit the steering column universal joint and its nut.

IMPORTANT:

As the lower section of the steering column slides, the position of the universal joint must be adjusted on the steering rack.

In the passenger compartment, place tool **Dir. 1408** on the lower section of the column.

Refit the yoke mounting and tighten to torque. Remove the tool.



With the wheels set straight, if the steering column is locked by the ignition switch, the steering wheel is positioned at its centre point.

Check that the rotary switch is still immobilised by the adhesive tape. If it is not, or if there is some doubt, recentre the steering (see the **Steering wheel** section).

Remove the adhesive tape.

Refit the steering wheel using a new bolt and tighten to a torque of **4.5 daNm**.

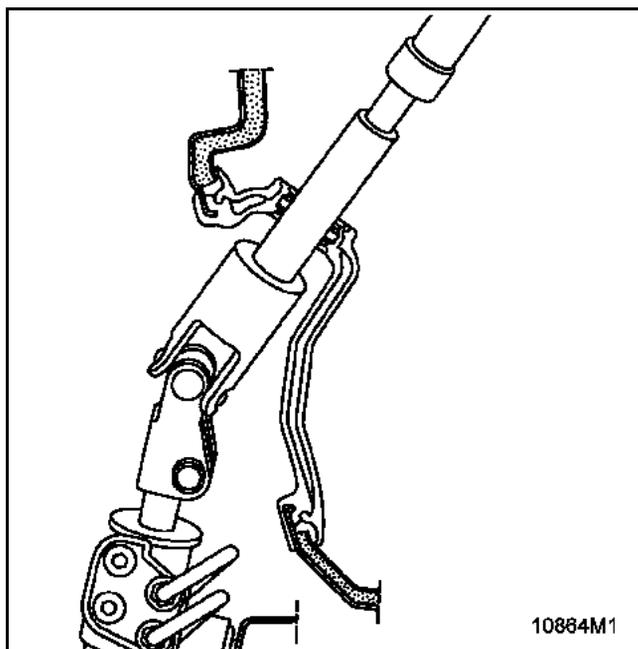
Refit the driver's frontal airbag

IMPORTANT:

- Connect then bolt the driver's frontal airbag to the steering wheel (tightening torque **0.5 daNm**).
- **The airbag / pretensioner system must be reactivated (see the Steering wheel section).**

Fit the column seal.

Use a spatula or a length of string to refit the outer lip.



Proceed in the reverse order to removal.

IMPORTANT:

Tighten the column mounting bolts to a torque of **1.5 daNm**.

HEATING

Passenger compartment filter

61

REPLACEMENT

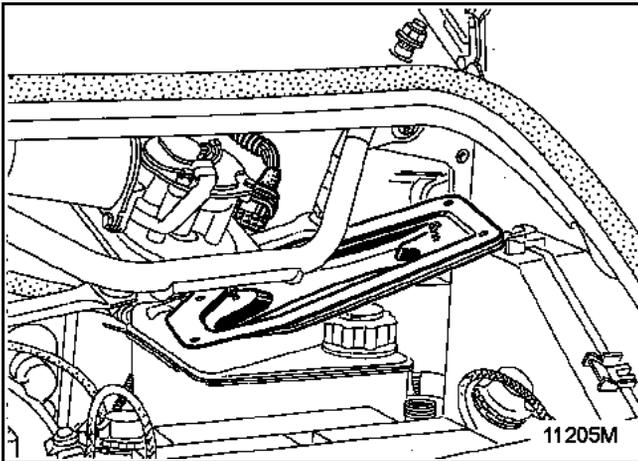
The two filter cartridges must be replaced at the same time.

Disconnect the battery and the connector from the wiper motor.

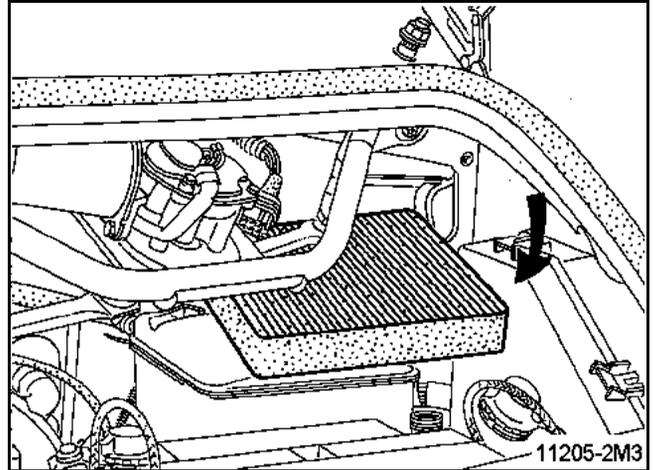
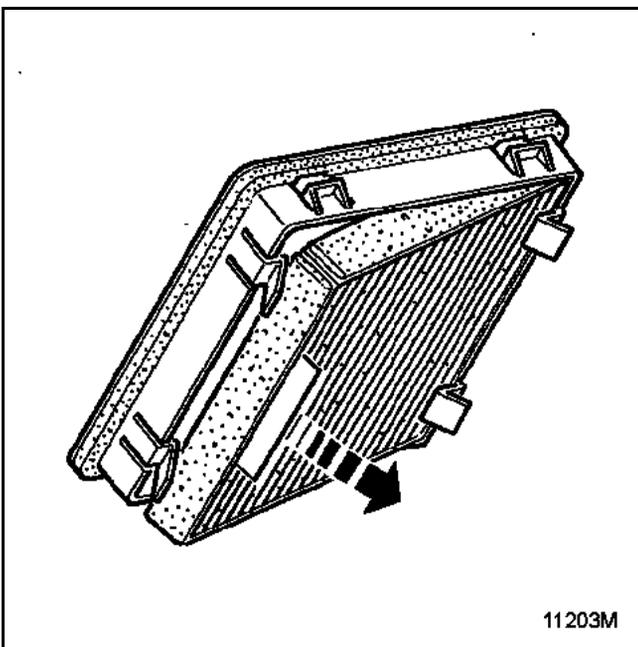
Put the wipers into vertical position by moving the motor rods directly.

Remove the soundproofing pads.

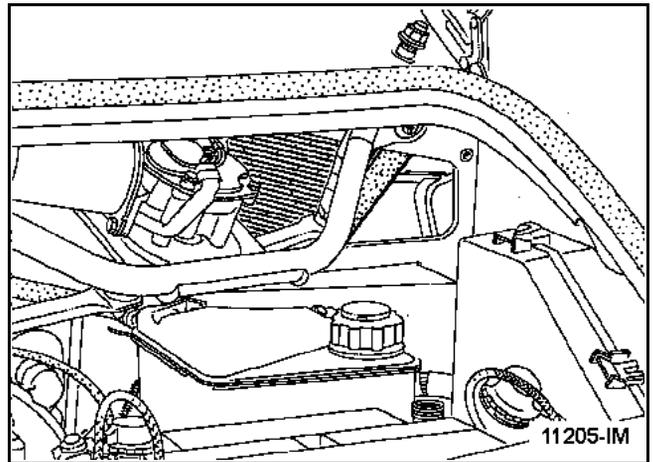
Remove the shock absorber cage housing closing plates.



Take hold of the tab and remove the old cartridge through the same route as the closure panel.



Insert the new filter element, with the tab on the outside by clipping it into its diagonal housing.



Refit the closure panels with their soundproofing.

Reconnect the electric motor connector.

WARNING:

Connect the battery; carry out the necessary programming (see Section 8).

The blades return to the zero position when the ignition is switched on.

RECIRCULATION MOTOR

The recirculation control positions the air inlet flap according to position of the recycling control button or the requirements determined by the See Clear button.

The flap is moved by a stepper motor which can be accessed once the upper section of the dashboard and the closure panel have been removed.

REMOVAL

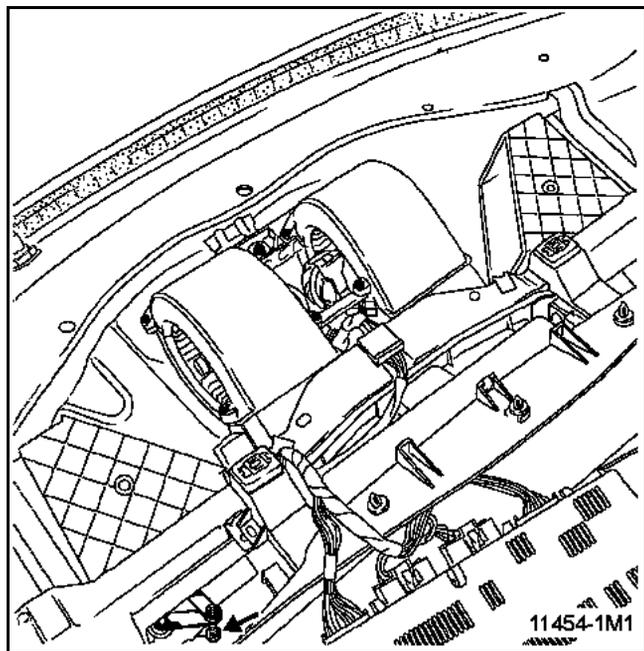
IMPORTANT:

Disconnect the battery, this is very important for adjustment.

Disconnect the motor concerned.

Disconnect the flap control linkage.

Remove the three mounting bolts, disconnect the linkage carefully and remove the motor.



REFITTING

Proceed in the reverse order to removal.

No adjustment is necessary, disconnecting the battery means that the motor is reinitialised when the battery is reconnected and the system is operational.

VENTILATION FAN MOTOR

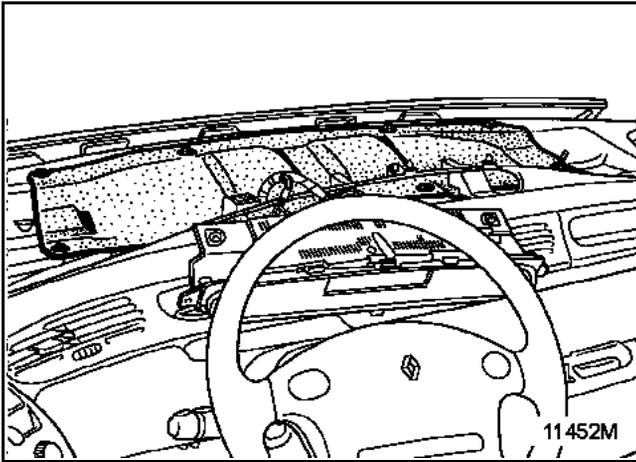
REMOVAL

Disconnect the battery.

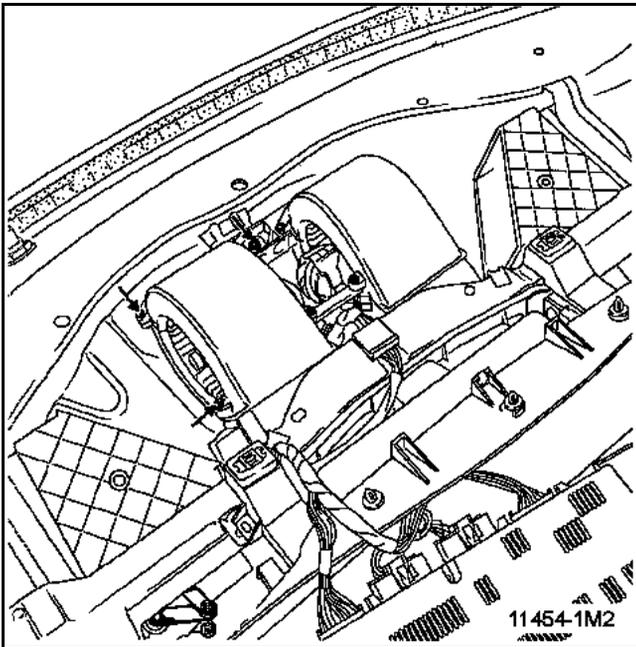
Remove the dashboard front panel.

Remove the display cluster.

Remove the upper section of the soundproofing, so that the ventilation unit cover is removed.



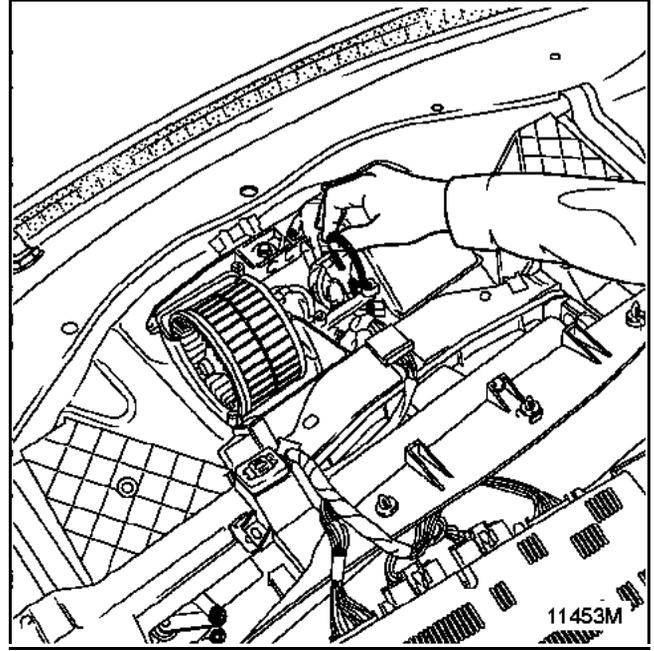
Remove the housing mounting bolts of the ventilation fan concerned, and disconnect the motor.



Remove the housing mounting bolts of the ventilation fan concerned.

Disconnect the motor.

Disengage the retaining clip using a workshop-prepared hook.



REFITTING

Proceed in the reverse order to removal.