



TECHNICAL NOTE 3487A

Basic manual: Workshop Repair Manual 305

Special features of Twingos fitted with 14 inch wheels

77 11 301 982

MARCH 2001

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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ELECTRONIC CONTROL SYSTEM

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Type	Rim	Tyres	Tyre pressure when cold (in bar) (1)	
			Front	Rear
X06C X06K X066	5.5 J 14	155/65 R14 T	2.2	2.0

(1) With full load and on motorways.

Tightening torque of the wheel nuts: **10.5 daNm**
Rim run-out: **1.2 mm**

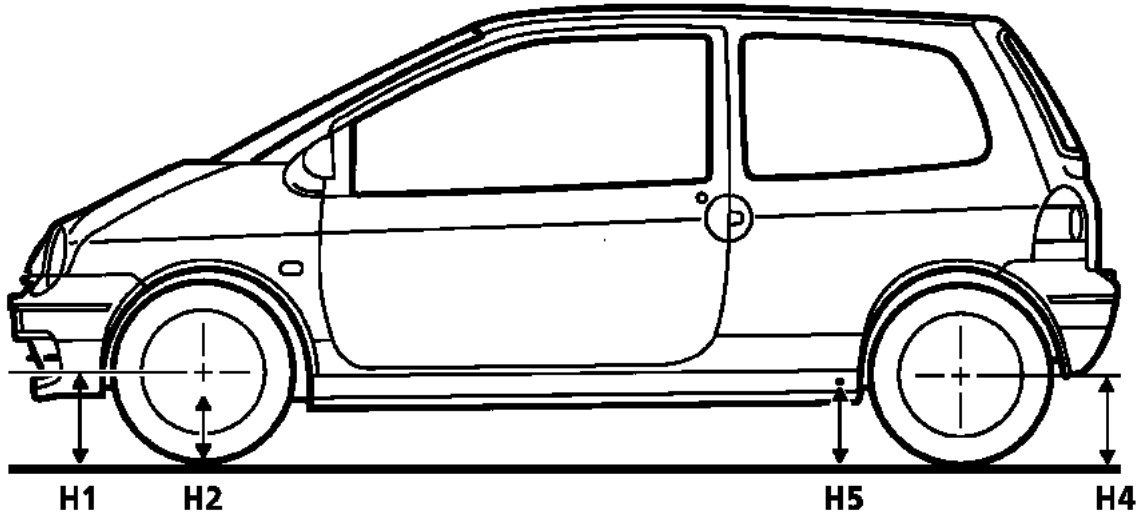
VALUES AND SETTINGS

Brakes

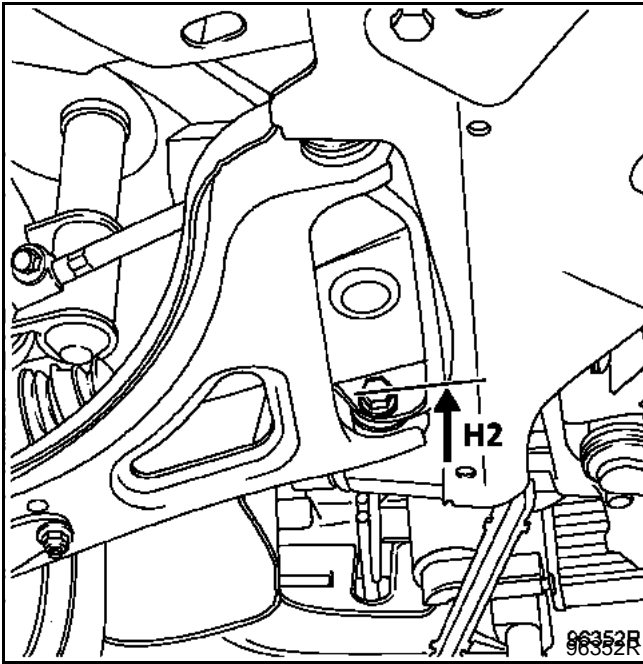
Type		Disc thickness (in mm)		Drum diameter or Disc thickness (in mm)		Max. disc run-out (in mm)
		Front		Rear		
		Normal	Min.	Normal	Max. (1)	
X06C	X06K	20.6	17.7	203	204.45	0.07
X066						

(1) Drum: maximum wear diameter

Type		Lining thicknesses (in mm) (including backing)				Brake fluid
		Front		Rear		
		New	Min.	New	Min.	
X06C	X06K	18	6.5	6.5	4.5	SAE J1703 DOT 4
X066						

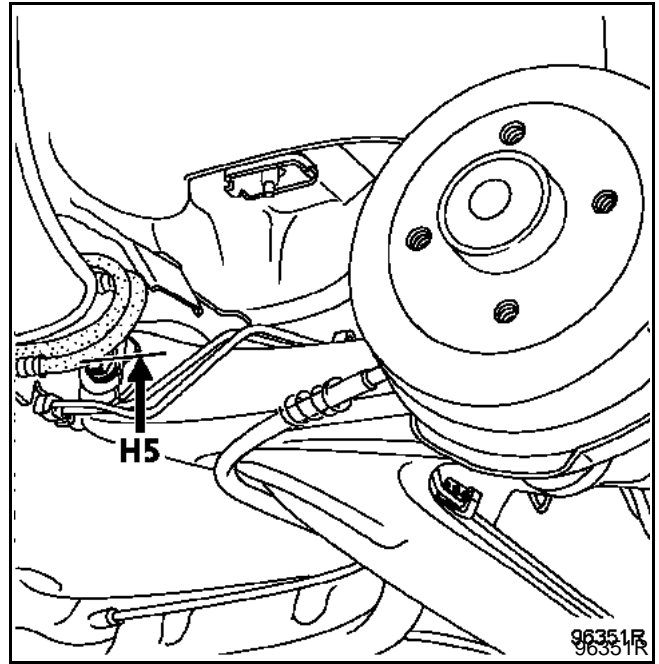


95915R



96352R
96352R

Dimension **H2** is measured on the axis of the front mounting of the lower suspension arm on the sub-frame.



96351R
96351R

Dimension **H5** is measured on the axis of the rear axle mounting bolt on the bearing.

VALUES AND SETTINGS

Underbody height

VEHICLE	At the front H1 - H2 = ... mm	At the rear H4 - H5 = ... mm	Dimension (X) (in mm) RH and LH
X06C X06K X066	90	-6.5	-

Tolerance: ± 7.5 mm

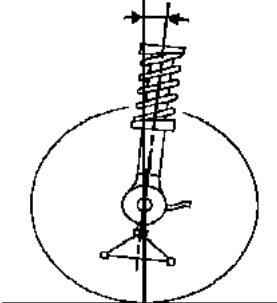
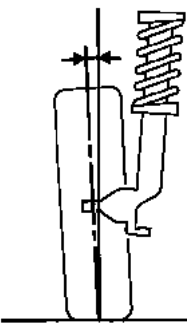
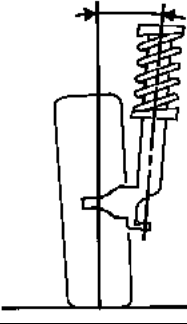
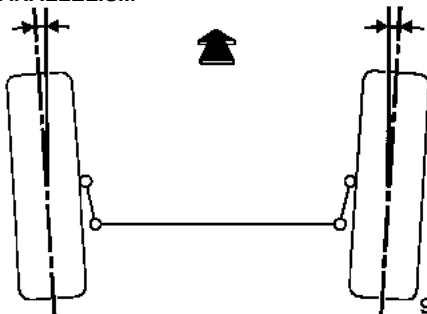
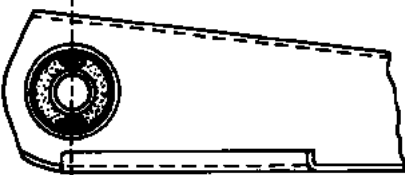
The difference between the right and left-hand sides of the same axle of a vehicle must not exceed 5 mm, the driver's side always being higher.

Any alteration to the underbody height also requires adjustment of the brake compensator and of the headlights.

VALUES AND SETTINGS

Front axle angle checking values

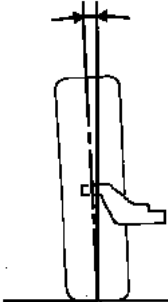
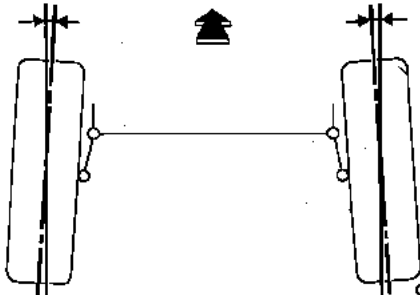
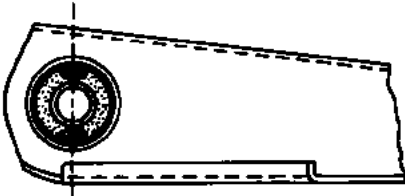
07

ANGLES	VALUES	POSITION OF FRONT AXLE (mm)	ADJUSTMENT
CASTOR  93012-1S	$\left. \begin{array}{l} 0^{\circ}20' \\ 0^{\circ}50' \\ 1^{\circ}20' \end{array} \right\} \pm 30'$ Max. right/left difference = 1°	$H5 - H2 = 110$ $H5 - H2 = 90$ $H5 - H2 = 70$	Non adjustable
CAMBER  93013-1S	$\left. \begin{array}{l} - 0^{\circ}30' \\ - 0^{\circ}50' \\ - 1^{\circ} \end{array} \right\} \pm 30'$ Max. right/left difference = 1°	$H1 - H2 = 90$ $H1 - H2 = 100$ $H1 - H2 = 115$	Non adjustable
PIVOT  93014-1S	$\left. \begin{array}{l} 10^{\circ}35' \\ 10^{\circ}55' \\ 11^{\circ}30' \end{array} \right\} \pm 30'$ Max. right/left difference = 1°	$H1 - H2 = 90$ $H1 - H2 = 100$ $H1 - H2 = 115$	Non adjustable
PARALLELISM  93011-1S	(For two wheels) Toe-out $+0^{\circ}10' \pm 10'$ $+1 \text{ mm} \pm 1 \text{ mm}$	Unladen	Adjustable by rotating track rod sleeves 1 turn= 30' (3 mm)
POSITION FOR TIGHTENING RUBBER BUSHES  81603S1	-	Unladen	-

VALUES AND SETTINGS

Rear axle angles checking values


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ANGLES	VALUES	POSITION OF REAR AXLE	ADJUSTMENT
CAMBER  93013-2S	-0°50' ± 20'	Unladen	Non adjustable
PARALLELISM  93011-2S	(For two wheels) Toe-in - 20' ± 30' - 2 mm ± 3 mm	Unladen	Non adjustable
POSITION FOR TIGHTENING RUBBER BUSHES  81603S1	-	Unladen	-

FRONT AXLE ELEMENT

Stabiliser bar

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TIGHTENING TORQUES (in daNm)		
Stabiliser bar bearing bolt	4.4	
Stabiliser bar tie-rod nut	4.4	
Wheel bolts	10.5	

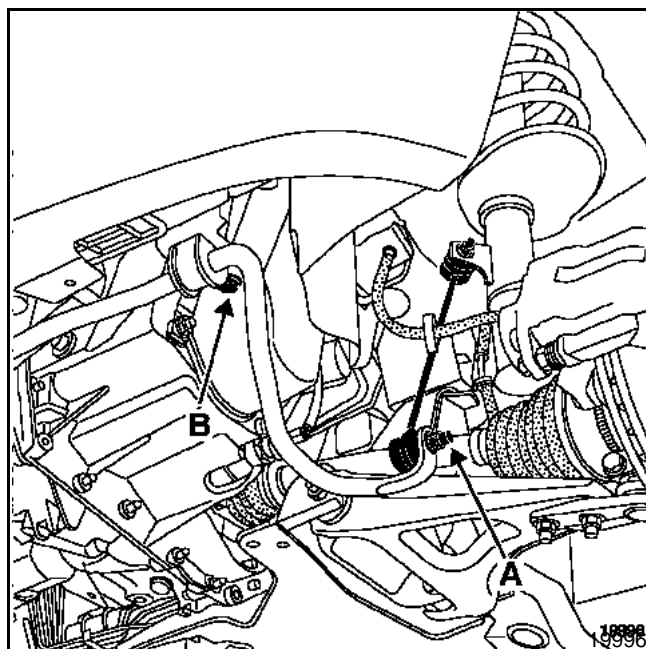
REMOVAL

Put the vehicle on a two-post lift.

Disconnect the battery.

Remove:

- the engine undertray,
- the wheels,
- the stabiliser bar return tie-rod nuts (A),
- the two stabiliser bar bearing bolts (B).



REFITTING

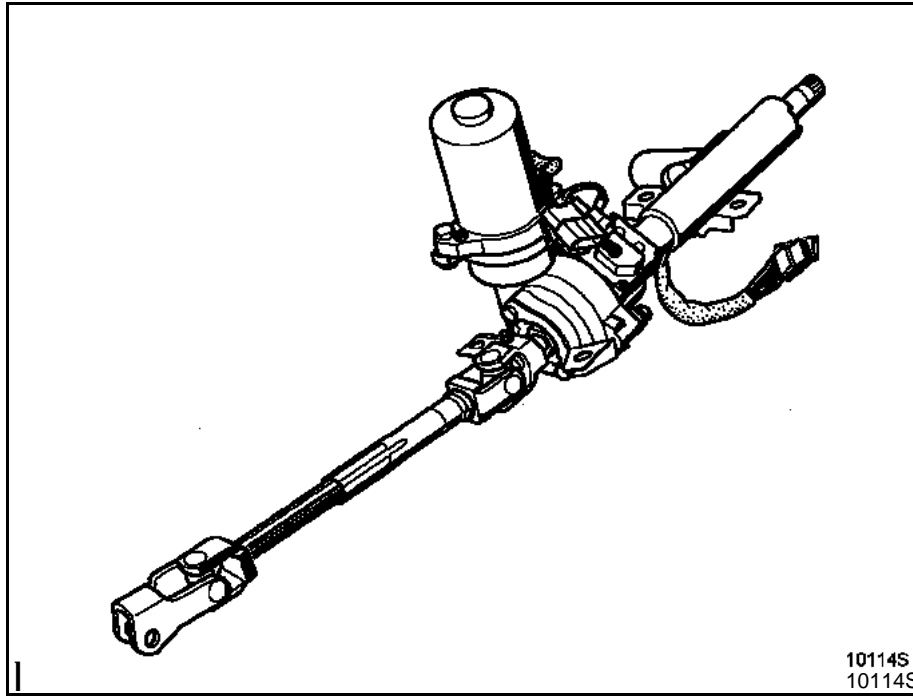
Proceed in the reverse order to removal.

NOTE: no special equipment is required for refitting the bearing bolt.

The system is made up of:

- the complete steering column only,
- the complete intermediate shaft,
- the computer,
- the manual steering rack.

ELECTRIC STEERING COLUMN



TIGHTENING TORQUES (in daNm)

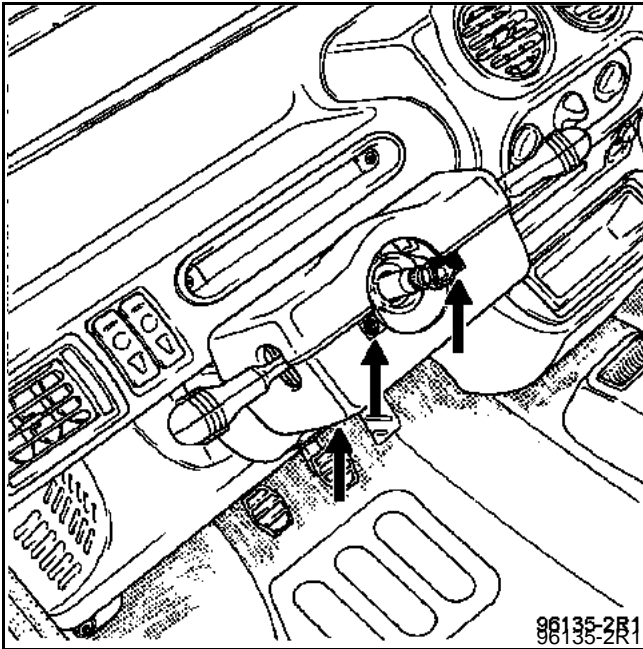


Steering wheel bolt	4.5
Steering column universal joint eccentric bolt	2.5
Steering column mounting bolt	2.5

REMOVAL

After having disconnected the battery, remove:

- the steering wheel after marking its position,
- the satellite bolt if vehicle is fitted with satellite,
- the lower half cowling by loosening the bolt and pulling it down.



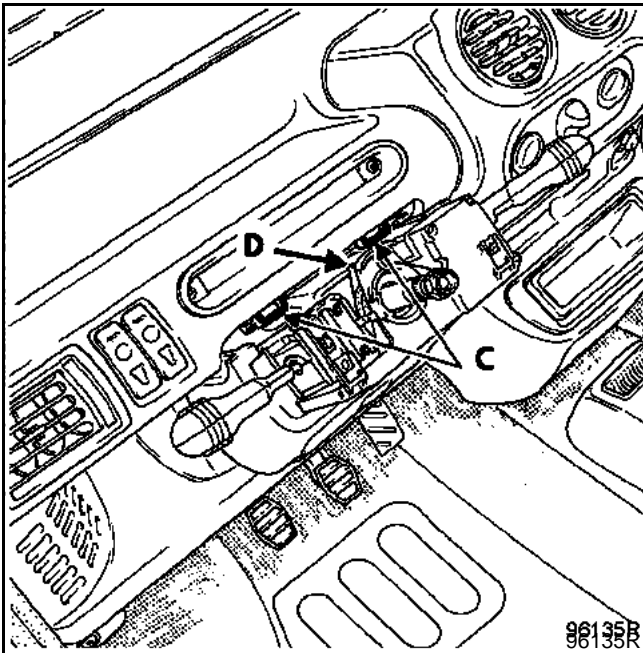
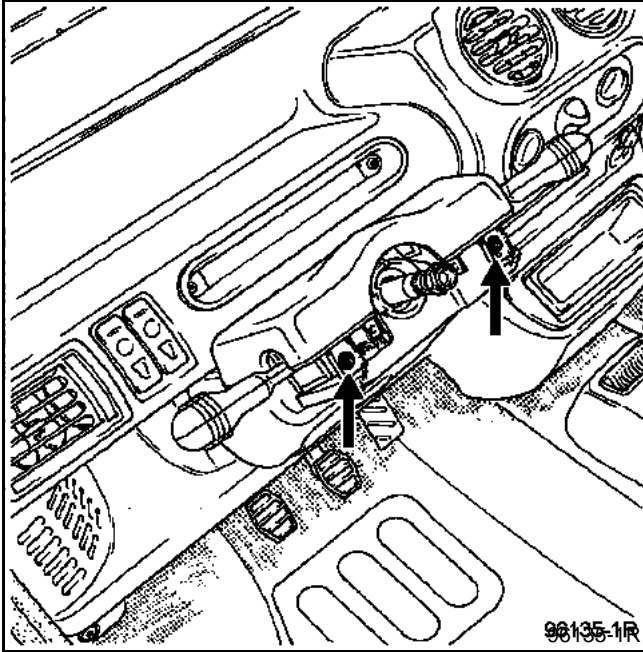
IMPORTANT

In order to eliminate any risk of damaging the rotary switch under the steering wheel, observe the recommendations below:

- Before the steering column and the steering rack are uncoupled, the steering wheel **MUST** be immobilised with the wheels straight for the duration of the operation using a steering wheel locking tool.
- If there is any doubt regarding the correct alignment of the rotary switch the steering wheel must be removed so that the alignment procedure described in section 88 "AIR BAG" can be applied.

REMINDER: in this case, only qualified and trained personnel may carry out the operation.

Remove the upper half cowling by loosening the two mountings and pulling it to the rear while maintaining the angle to free the two notches (C).



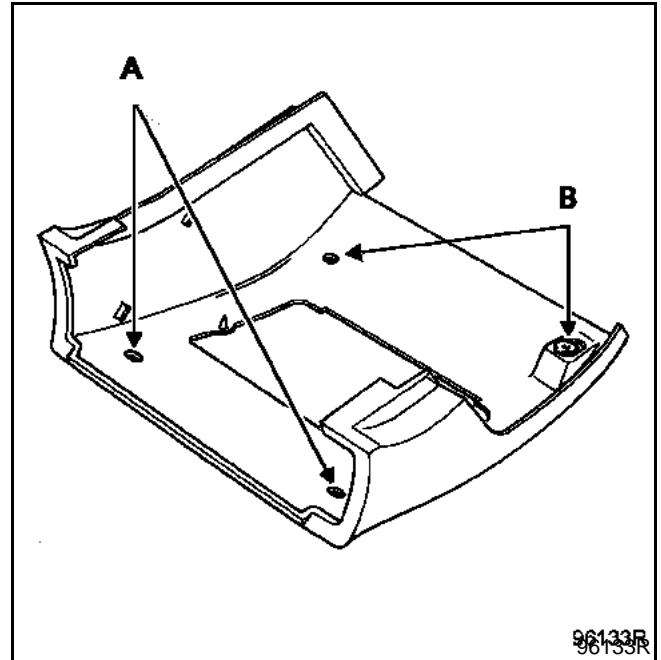
Release the switch-holder assembly by loosening the bolt (D).

Gently pull the assembly towards the rear.

Disconnect the connectors.

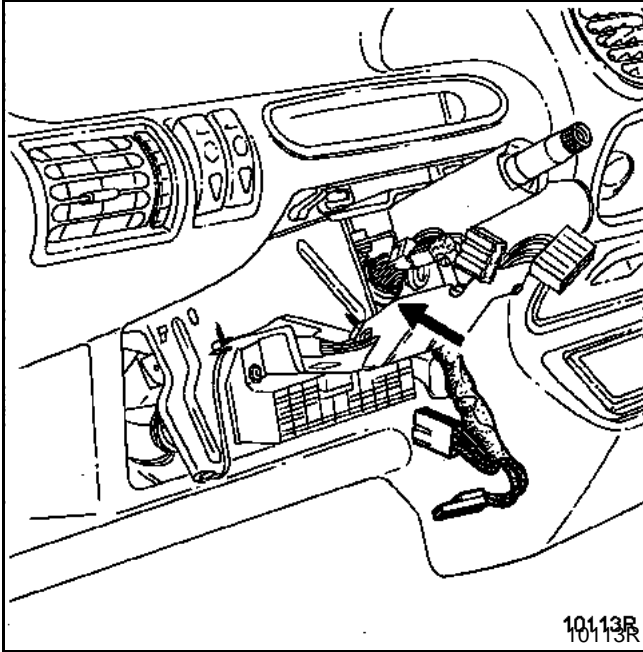
Remove:

- the lighting switch-holder assembly,
- the steering column cover (under steering wheel trim) by loosening the two bolts (A) and pulling it downwards to unclip the pins (B) located in the bottom right,



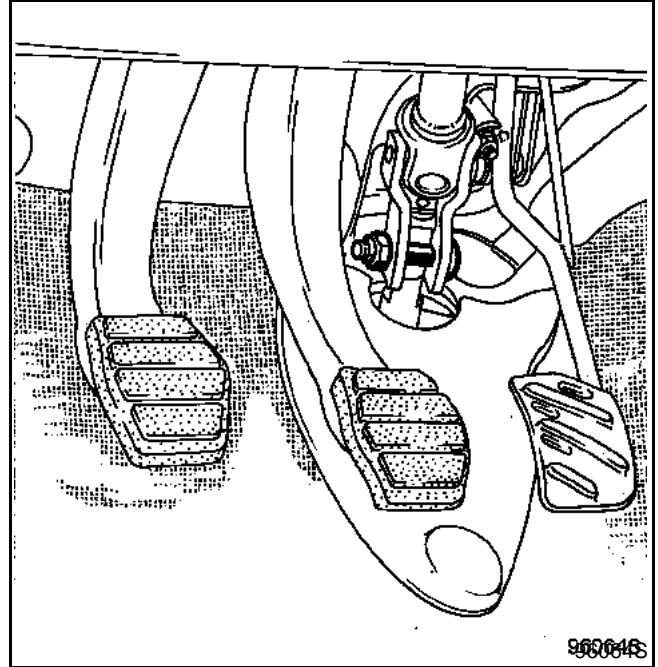
- the under steering column protective cowling.

Release the clip harness and remove the clip to release the steering column.



Disconnect the ignition switch connectors.

Remove the nut and eccentric bolt of the steering column universal joint.



Disconnect the two steering column supply connectors (located to the left of the column).

Remove:

- the connector mounting bolts on the column,
- the four column mounting bolts.

Release the steering column.

REFITTING

Check the length of the retractable shaft (see relevant paragraph).

When the steering column is locked with the ignition switch, the steering wheel is at the centre point.

Consequently:

- Place the steering rack at the centre point (wheels straight).
- Protect the bottom of the dashboard.
- Fit the steering column (locked) and fit the steering column universal joint on the steering pinion stalk.

Fit the steering column (finger-tighten the bolts located on the left starting at the top, then repeat for the right hand side).

Reconnect:


- the column supply connectors,
- the ignition switch connectors.

Fit the clip and retain the switch-holder assembly harness.

Refit:

- the lighting switch-holder assembly,
- the steering wheel upper and lower half cowlings,
- the lower cover under the steering wheel,
- the steering wheel in the position marked during removal,
- the eccentric bolt,
- the steering wheel bolt and tighten it to torque (use a new pre-pasted bolt).

RETRACTABLE SHAFT

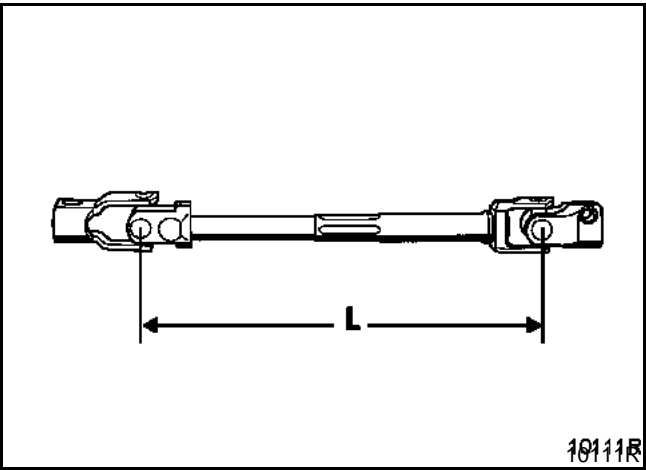
TIGHTENING TORQUES (in daNm)		
Steering column retractable shaft mounting bolt		
		3

The retractable shaft can be dismantled.


If it is impossible to fit the steering column universal joint eccentric bolt, check that the length of the shaft is correct, otherwise replace it.

Checking:

$L = 273.4 \pm 1 \text{ mm}$



COMPUTER

TIGHTENING TORQUES (in daNm)	
Computer mounting bolt	1.1

REMOVAL

Remove:

- the left-hand air vent,
- the glove compartment.

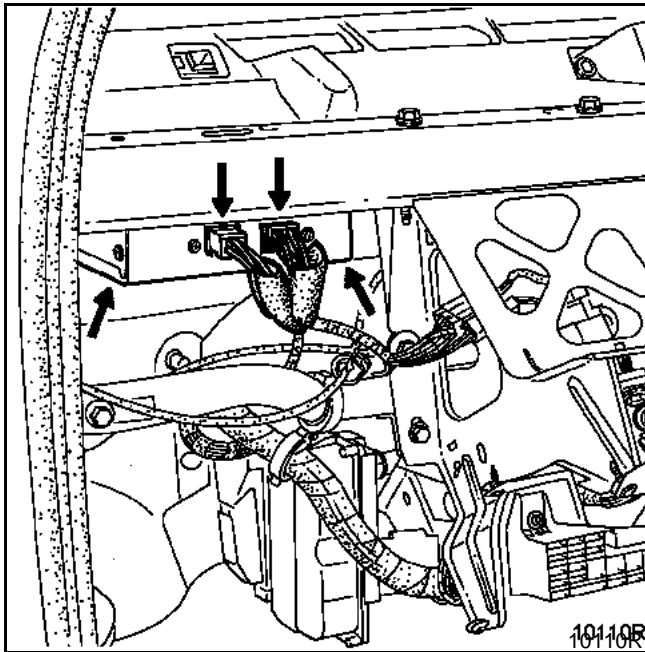
Disconnect the **4 track** and **16 track** connectors.

Loosen the two computer mounting bolts by several turns.

Release the computer, by turning it, to pass it through the side air vent.

REFITTING

Proceed in the reverse order to removal.



For all fault finding problems refer to **Technical Note 2492A**.

STEERING RACK

The procedure is the same as that described in **Workshop Repair Manual 305 section 36**.