

**REAR SUSPENSION
SPRINGS
REMOVING - REFITTING**

- Raise the rear axle tube and engage the spring centre pin into its location on the axle.
- Tighten : fig. IV the spring front securing pin nut (6) to 15 m.daN (150 Nm, 111 lbf ft).
- Fit : fig. I.
 - the "U" bolts (2),
 - NEW locking plates (3),
 - the nuts (1).
- Release the rear suspension.
- Bleed the brakes (see relevant section).
- Tighten the wheel bolts to 16 m.daN (160 Nm, 118 lbf ft).
- Tighten them to a torque of : 8 m.daN (80 Nm, 59 lbf ft).
- Lock the nuts (1).
- Connect : fig. V
 - the rigid brake pipe (7) to the brake hose (9) and fit the clip (10) that secure the hose (9) to the body.
- Fit the wheel.
- Lower the vehicle to the ground.
- Compress the rear suspension to obtain a dimension $h = 107$ mm between the face "a" to which the bump stops (4) are secured and face "b" with which they make contact on the axle : fig. III.
- Tighten : fig. III, the shackle nuts (5) to 12 m.daN (120 Nm, 88 lbf ft).

Page

A - FRONT SUSPENSION UNITS

Identification - specifications

Suspension identification - specifications

A1.001 to 003

Removing - refitting

Removing and refitting a front suspension unit

A4.001 to 005

B - FRONT SPRINGS

Removing - refitting

Removing and refitting a front spring

B4.001 to 009

E - REAR SUSPENSION

Identification - specifications

Rear suspension specifications

E1.001 to 003

Checking - adjusting

E2.001 to 003

F - REAR SPRINGS

Removing - refitting

Removing and refitting a rear suspension spring
(on the vehicle).

F4.001 to 007

DATA

MAC-PHERSON independent suspension comprising, on each side, a stub axle carrier with an integral suspension damper and a concentric coil spring.

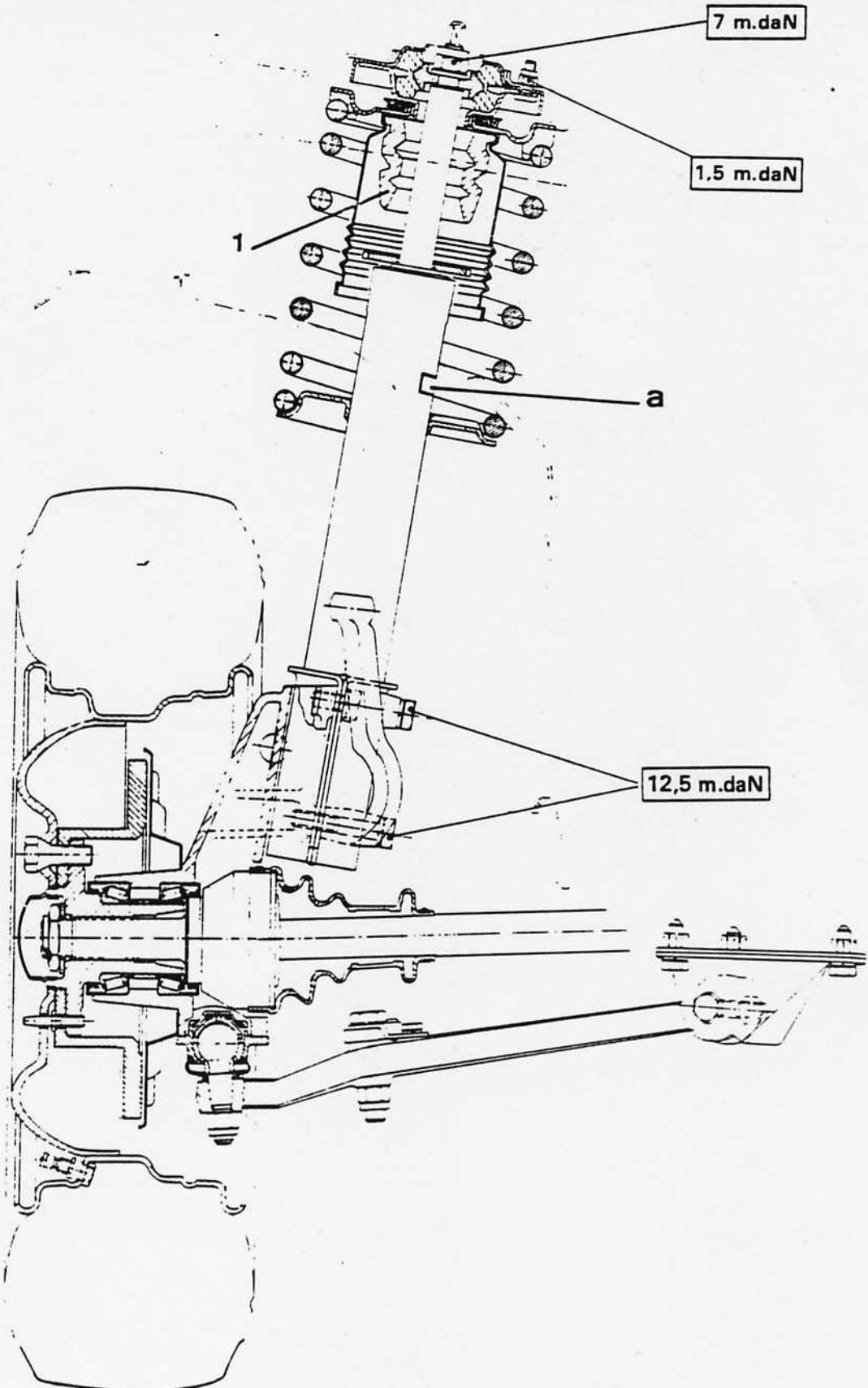
- Lower suspension arm (forged) with a double taper bush (at the body end) and a ball joint.
- Front reaction arm with a rubber bush (at the body end).
- Needle thrust race between the upper end of the coil spring and the body.

Travel limiting systems :

- In compression : a suspension stop (1) secured to the damper protection cup.
- Out stop : an integral stop inside the damper.

SPECIAL FEATURES

VEHICLE	Springs		Damper Ref. « a »
	Wire ø	Free height	
1000-1500 - Petrol engined short	16	= 390	
1000-1500 - Petrol engined long - Di	16.8	= 383	7569 730
1800 Petrol engined	17.6	= 363	
1800 Di	17.6	= 373	5995 829



2.000 TJAIGE92

Pages

Special tools - Tightening torques	A4.002 and 003
Removing - refitting	A4.004 and 005

2.000 TJAIGE92

...six dice art or somesort to one novel genuine stic...
(11 101 52 , mit 257) Neb.m 8.2)

REMOVING AND REFITTING
A FRONT SUSPENSION UNIT

SPECIAL TOOLS

Fig. A :

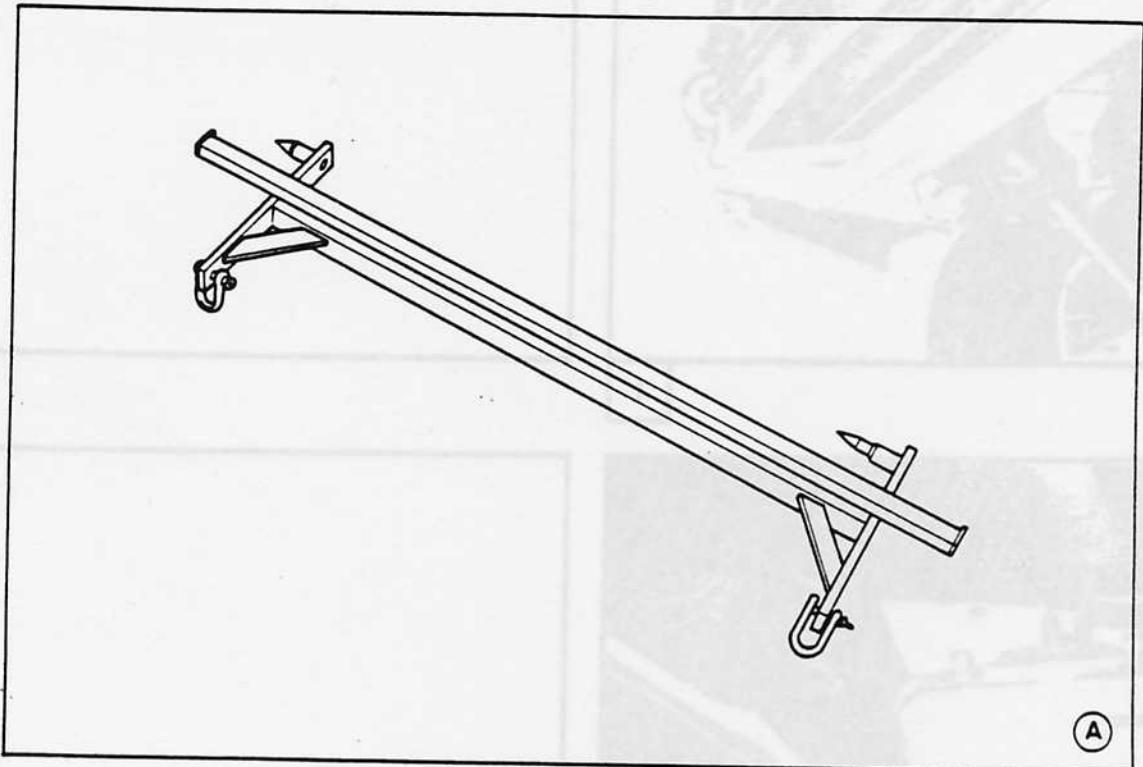
- 8.1514

Front lifting bar.

MAIN TIGHTENING TORQUES

Bolts securing lower end of the damper to the stub axle carrier :

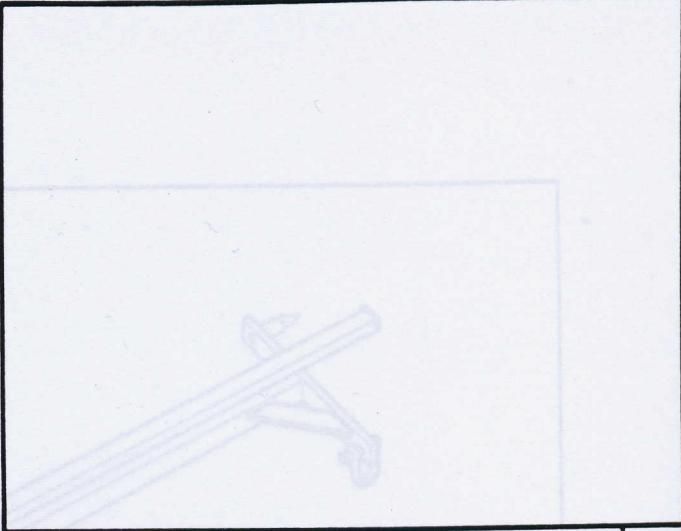
12.5 m.daN (125 Nm, 92 lbf ft).



(A)



I



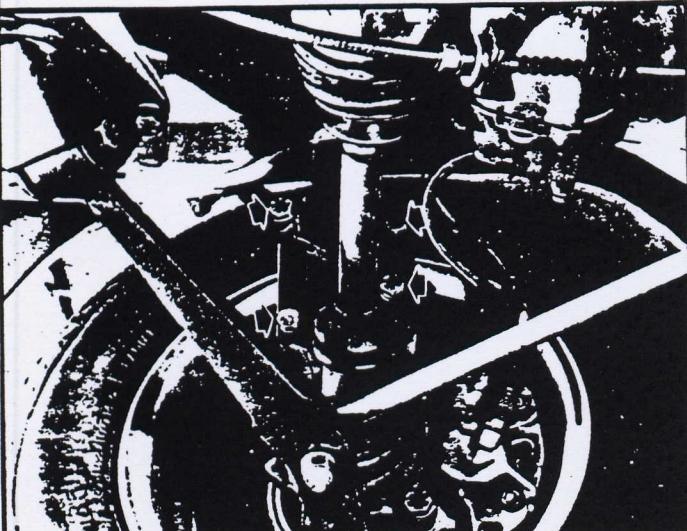
IV



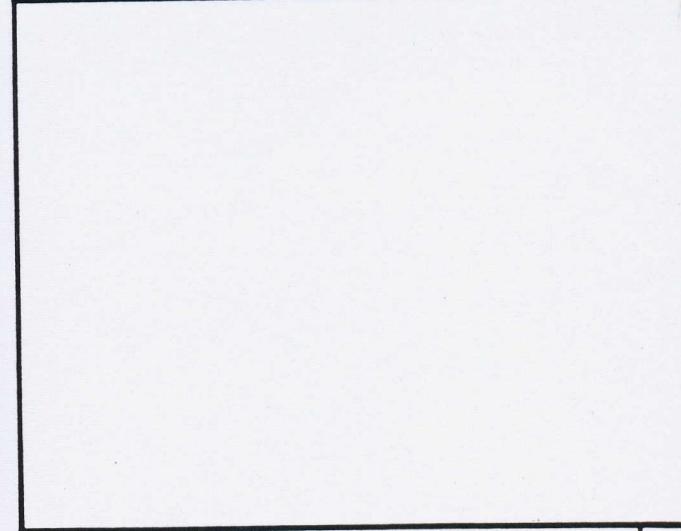
II



V



III



VI

The method described below is as carried out on lift.

However, the operation can be undertaken with the vehicle on the ground, with its front end raised on stands, by placing a jack under the wishbone or the hub.

REMOVING

REFITTING

Under the vehicle

- Fit the lifting bar 8.1514.
- Lift the front of the vehicle, fig. I, on the side to be worked on, until the wheel leaves the ground.
- Lower the wheel until it just makes contact with the lift.

— Refit the suspension unit by carrying out the removal operations in reverse.

— Torque for the lower securing bolts on stub axle carrier : 12.5 m.daN (125 Nm, 92 lbf ft).

Inside the vehicle

- Remove the three upper securing nut, fig. II.

Under the vehicle

- Remove the 4 lower bolts, fig. III, that secure the suspension unit to the stub axle carrier.
- Remove the suspension unit by pulling it towards the rear.

SPECIAL TOOLS

Pages

Special tools - tightening torques	B4.002
Removing and refitting a front spring	B4.005
Preparing the upper spring cup	B4.006
Refitting a front spring	B4.007

REMOVING AND REFITTING
A FRONT SPRING

SPECIAL TOOLS

Fig. A :

from kit 8.0910 ZV

AZ - Suspension spring compressor

B - Front spring claws.

Fig. B :

(-) .0913

A - Spanner, retaining rod.

B - Socket, upper damper nut.

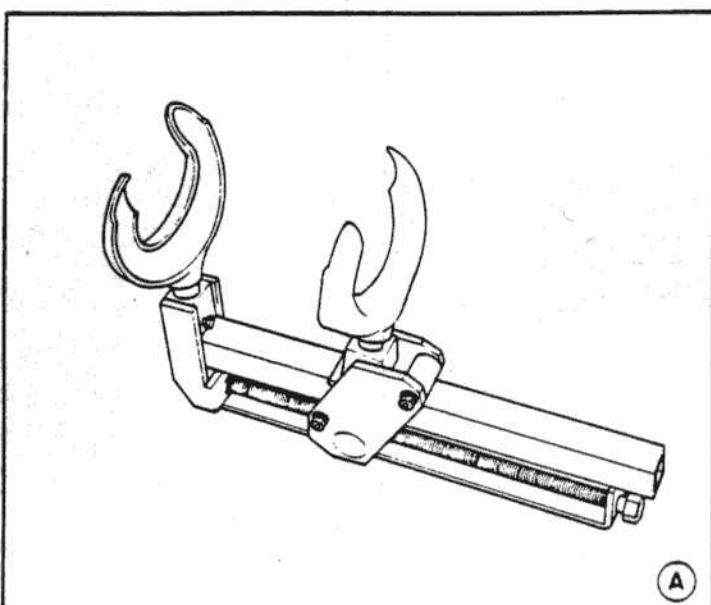
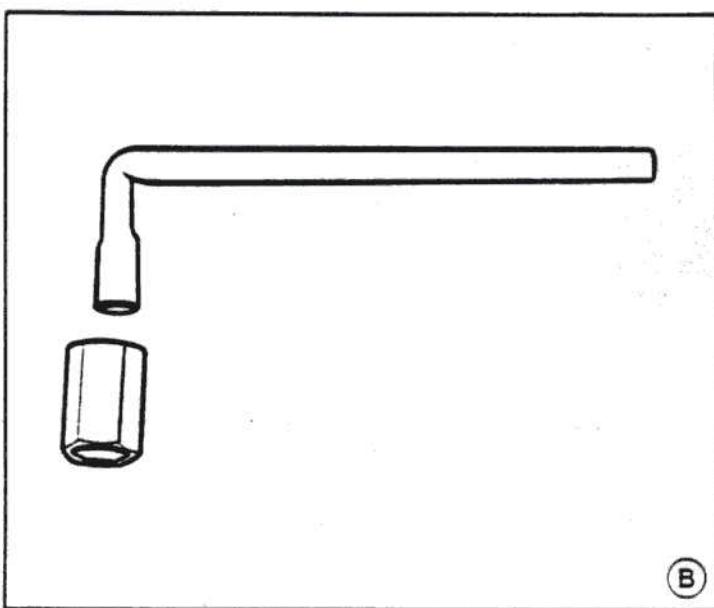
RECOMMENDED TOOLS

- "Facom S 203" torque wrench.

- Adaptor, 27 mm AF spanner.

MAIN TIGHTENING TORQUES

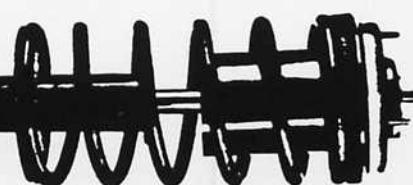
Upper damper nut : 7 m.daN (70 Nm, 52 lbf ft).

**(A)****(B)**

B4 004

9

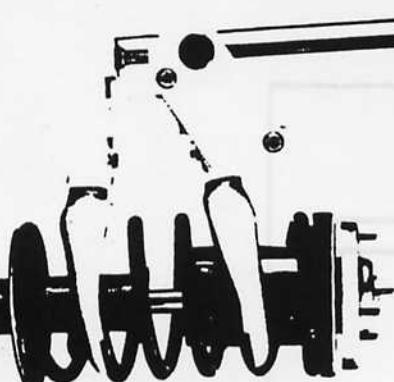
J5



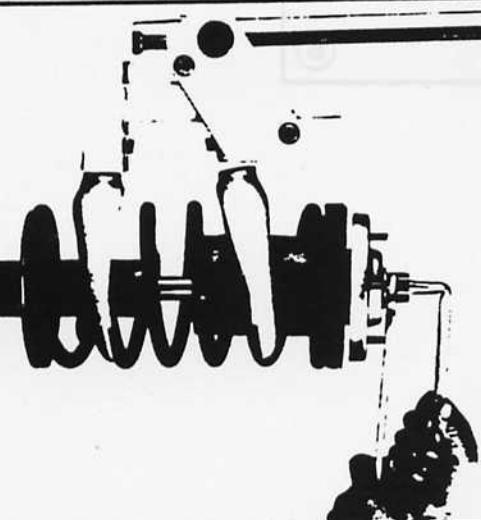
I



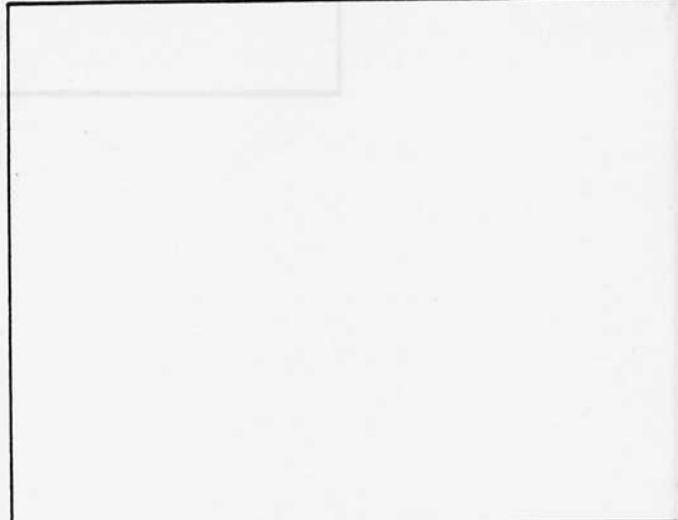
IV



II



III



V

REMOVING

- Carefully clean the suspension unit.
- Grip it horizontally in a vice, fig. I.
- Remove the upper cup, needle thrust bearing and bump stop assembly, fig. IV.
- Retrieve the rubber locating spacer for the spring.
- Adjust the opening between the claws of the compressor to 160 mm.
- Fit spring compressor 8.0910 ZZ, equipped with its front spring claws, fig. II.
- Compress the spring, to release the pressure on the upper support.
- Use the combination spanner 8.0913 to remove the nut from the damper rod (1) fig. III and remove the washer (2).

SUSPENSION
FRONT SPRING
REMOVING - REFITTING

PREPARING THE UPPER CUP

— Lubricate the various locating faces with
ESSO MULTIPURPOSE grease 4746.

— Details of arrangement, fig. I :

- 1 - Upper cup,
- 2 - Locating washer, needle thrust bearing,
- 3 - Beidle thrust bearing,
- 4 - Bronze bush, locating the upper cup,
- 5 - V-ring seal,
- 6 - Spring upper locating cup,
- 7 - Bump stop.

Refit the bronze bush (4), fig. IV.

NOTE - Parts (2), (3), (4) and (5) must be replaced by new ones every time they are removed.

— Remove the needle thrust bearing (3), fig. II.

— Refit the needle thrust bearing (3), fig. V,
by tapping lightly on its inner track.

— Refit the bump stop (7) to the spring
locating cup (6).

— Remove the bronze bush (4), fig. III.

— Refit the V-ring seal (5), fig. VI.

— Fit the needle bearing locating washer (2)
after first lubricating the sealing area.

— Refit the upper cup.

1 2 3 4 5 6 7



I

IV



II

V



III

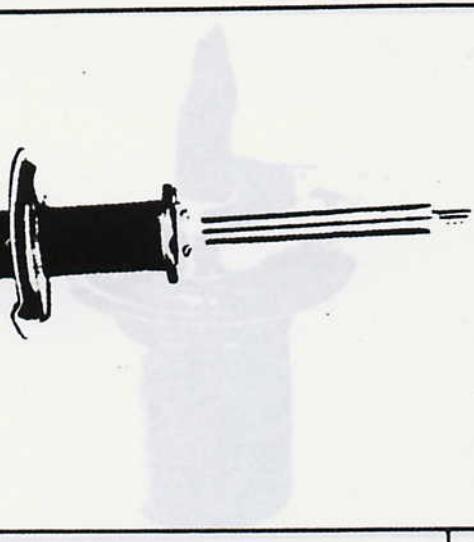
VI



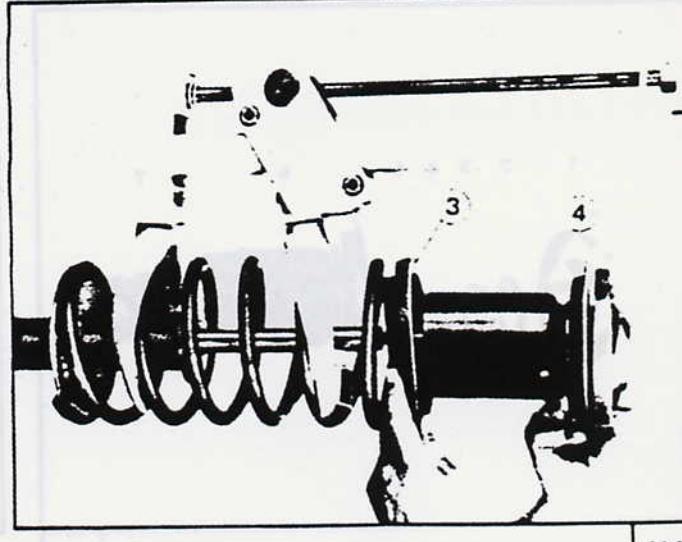
B4008

9

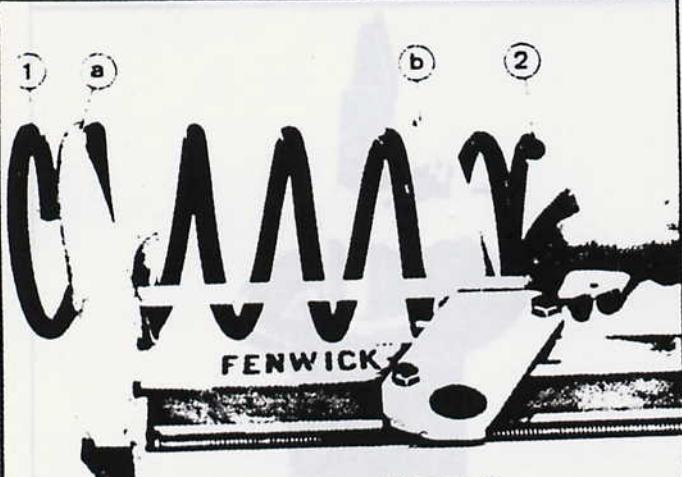
J5



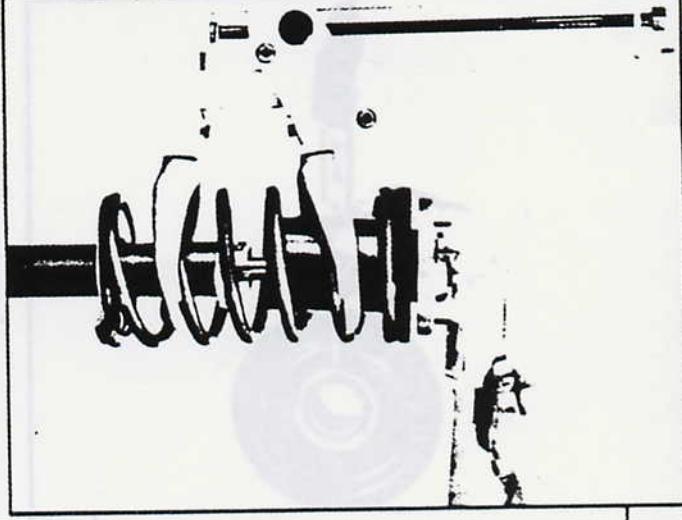
I



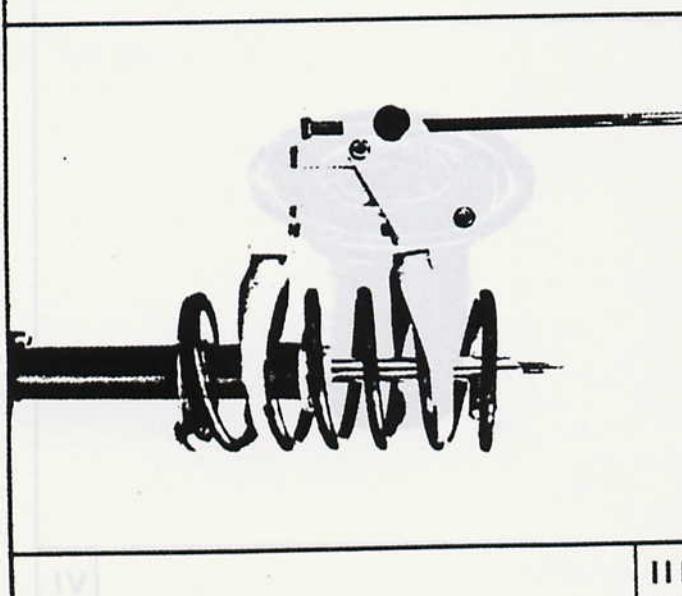
IV



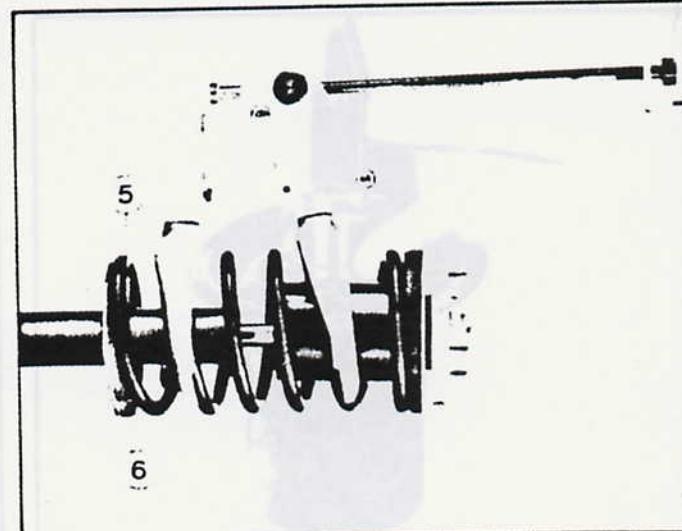
II



V



III



VI

REFITTING

- Support the suspension unit horizontally in a vice, fig. I.
- Pull out the damper rod to its MAXIMUM extent.
- Open the compressor to 210 mm, fig. II.
- Position the spring so that coil ends (1) and (2) are between the arms on the claws (a) and (b).
- Compress the spring, fig. III, until the distance between the compressor jaws is 110 mm.
- Fit the spring - compressor assembly - over the damper rod.
- Fit the locating spacer (3), to the spring fig. IV.
- Place the assembly formed by the upper cup, the needle thrust bearing and the bump stop already prepared (4), on the damper rod.
- Place a washer and a new "NYLSTOP" nut on the damper rod.
- Tighten the damper nut to 7 m.daN (70 Nm, 52 lbf ft).
- Release the spring, fig. VI, taking care :
 - to ensure that its ends (5) are correctly positioned in the locating cups,
 - to bring the spring coils against the shoulder (6).

REAR SUSPENSION

DATA

The rear suspension unit is connected to the body by :
Two longitudinal leaf springs.

Each spring consists of two main leaves and two delayed action leaves.

The spring is secured to the axle by two clamps.

The spring is secured to the body :

- at the front : by a pin and a moving support.
- at the rear : by a shackle with pins welded to it and by a moving support.

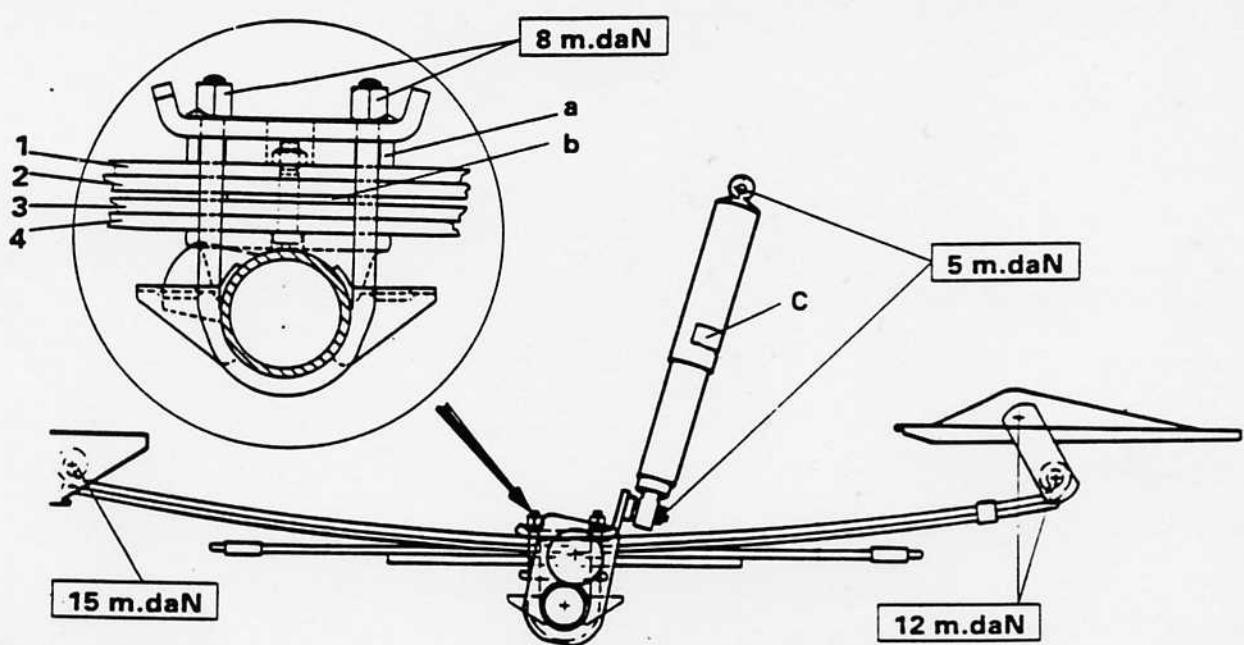
The front bush in the spring and the pins on the rear shackle are covered with a rubber coating that carries out the same functions as a rubber bush.

Suspension travel limiting systems :

- in compression : two rubber stops on either side.
- out stop : an integral stop inside the damper.

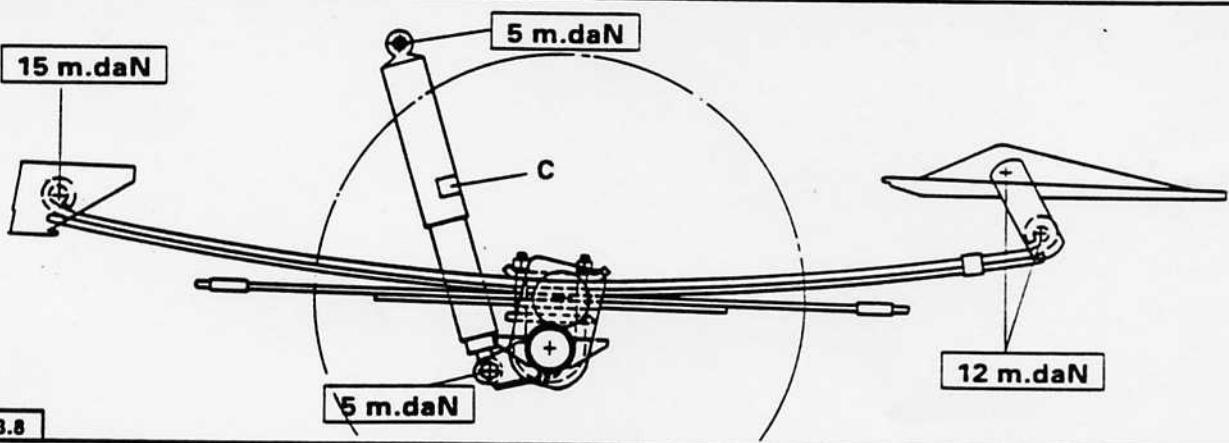
Two double acting telescopic dampers.

Vehicle	Th : Leaf springs Fig. I						Dampers Ref : C
	1	2	space	3	4	Total	
Van 1000 Van, ambulance conversion Combi 1000	8	8	a 14	8	8	32	5965 476 Fig. I - III
Van 1300 to 1500	8	8	b 4	13	13	46	4439 194 Fig. I - III
Platform cab 1300 to 1500	8	8	b 4	13	13	46	7534 624 Fig. I - III
Chassis cab } 1300 } to Bare chassis } 1500							ref. white 7576 729 Fig. II - IV
Van 1800	9	9	b 4	12.5	12.5	47	7562 124 Fig. I - III
Chassis cab 1800							7543 566 Fig. II - IV



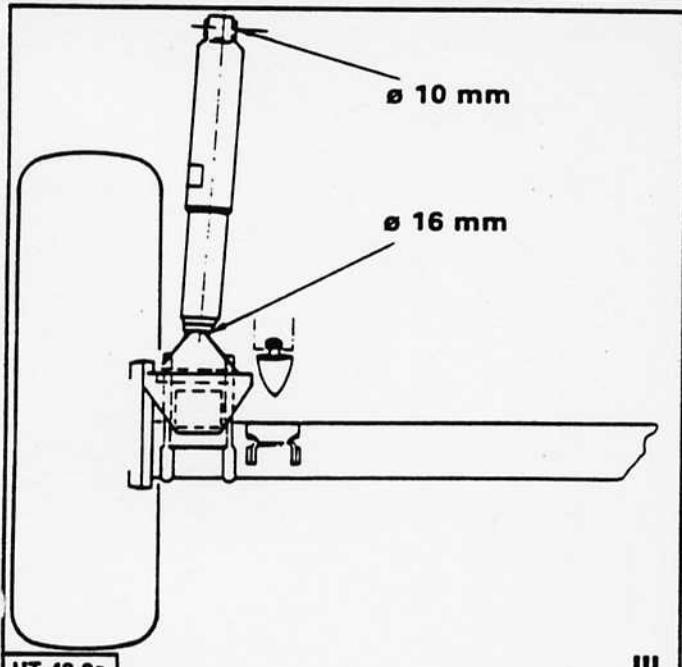
UT 43.2a

I



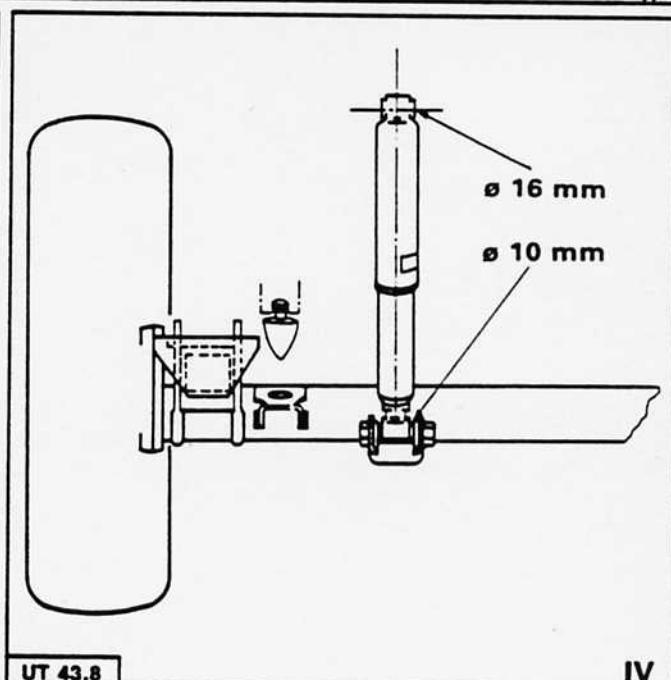
UT 43.8

II



UT 43.2a

III



UT 43.8

IV

DATA

PRIOR REQUIREMENTS FOR CHECKING AND ADJUSTING THE SUSPENSION

The tyre pressures are to be correct.

Toe-in/out (not adjustable) : ± 1 mm

SPECIAL FEATURES

The rear axle is of the lower type : Fig. I and III

The centreline « A » of the stub axles is higher than the centre of the axle tube B.

Wheel hubs : Fig. II

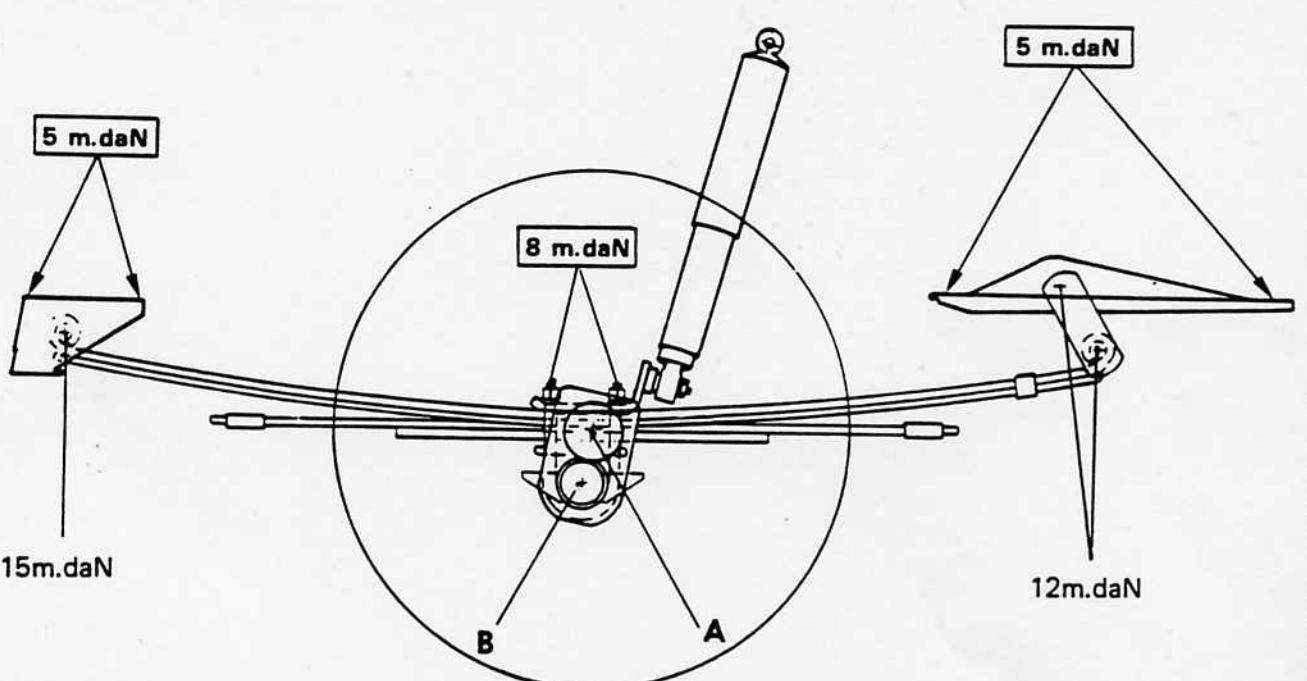
Bearing operating play : 0.025 to 0.10 mm

Tightening the hub nuts : See Operation (5) E4.006 - 4.007

NOTE : the stub axle on the right hand side has a left hand thread on it. It is identified by a drill point mark on the edge of the base plate flange.
the stub axle on the left hand side has a right hand thread.

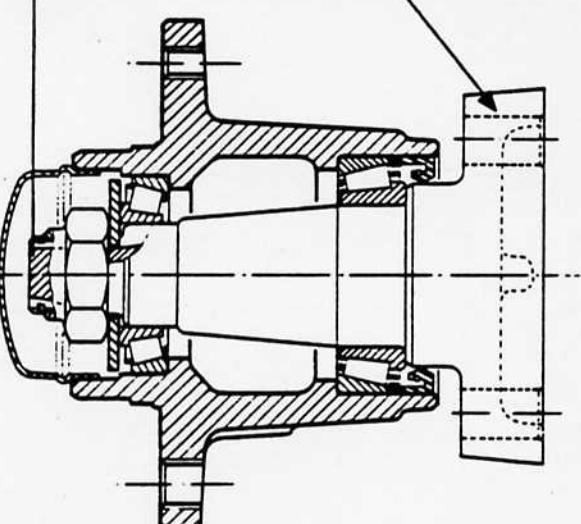
REPLACEMENT : only the stub axle with the right hand thread is supplied as a replacement part.

1800 kg vehicles are equipped with hubs and stub axles on which the bearings are wider.

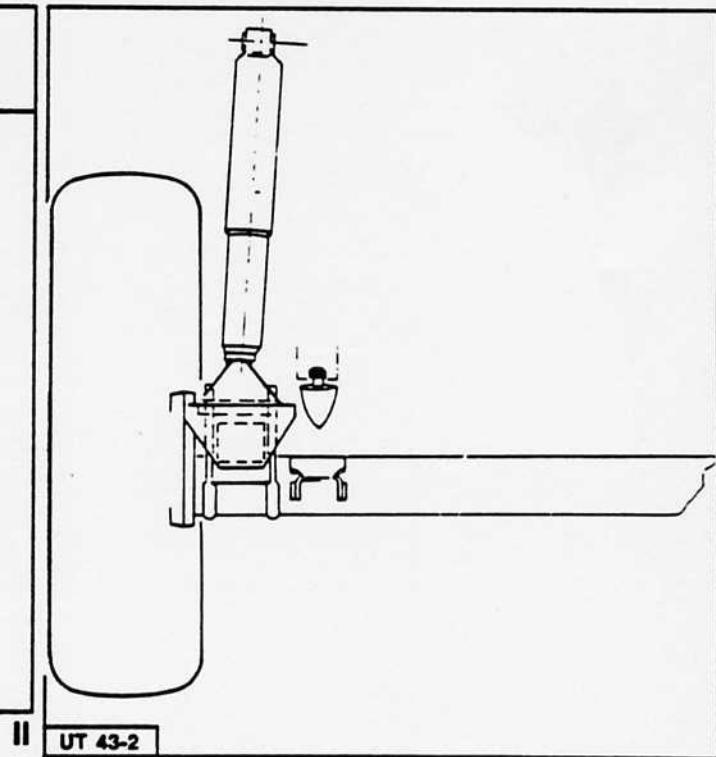


UT 43.2

$\varnothing 20 \text{ mm}$ (\rightarrow 06/86) - $\varnothing 12 \text{ mm}$: **10,5 m.daN**
 $\varnothing 22 \text{ mm}$ (\rightarrow 06/86) - $\varnothing 14 \text{ mm}$: **17 m.daN**



UT 42-2



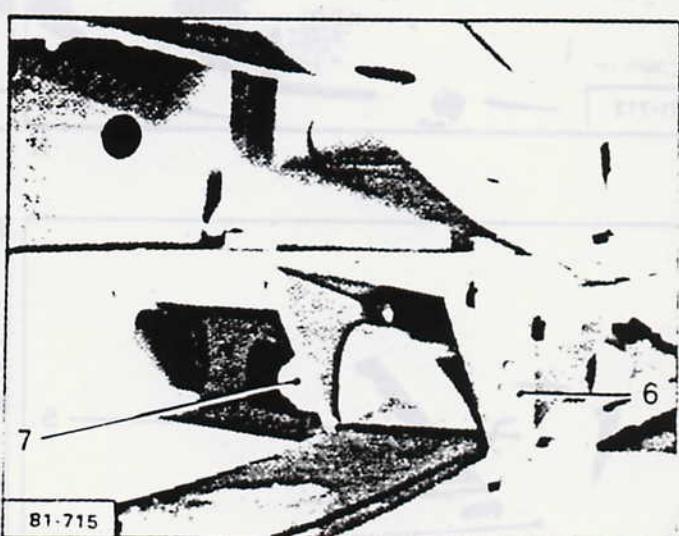
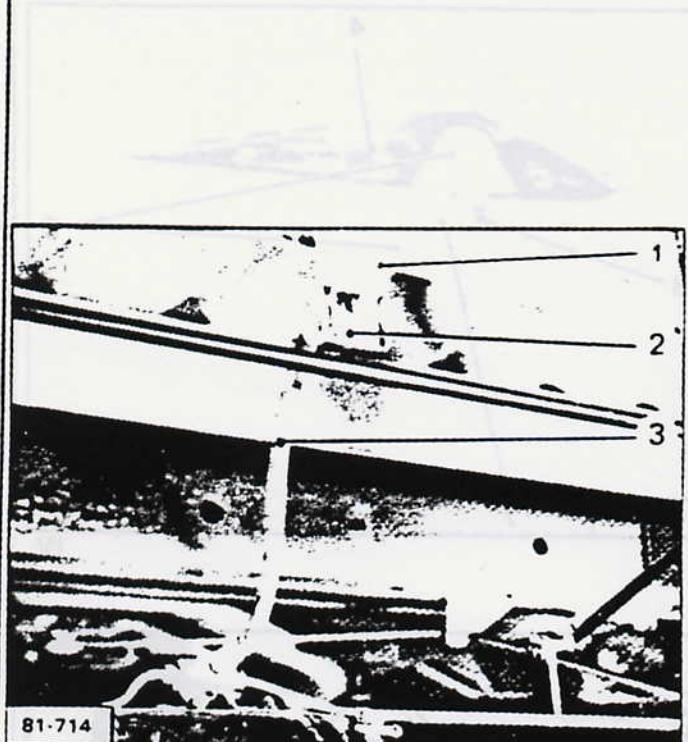
II UT 43-2 III

TIGHTENING TORQUES

	m.daN	Nm	Lbf ft
Nuts securing spring to axle	8	80	59
Front and rear mounting plate securing bolts	5	50	37
Nut on spring front securing pin.	15	150	111
Shackle nuts	12	120	88

REMOVING

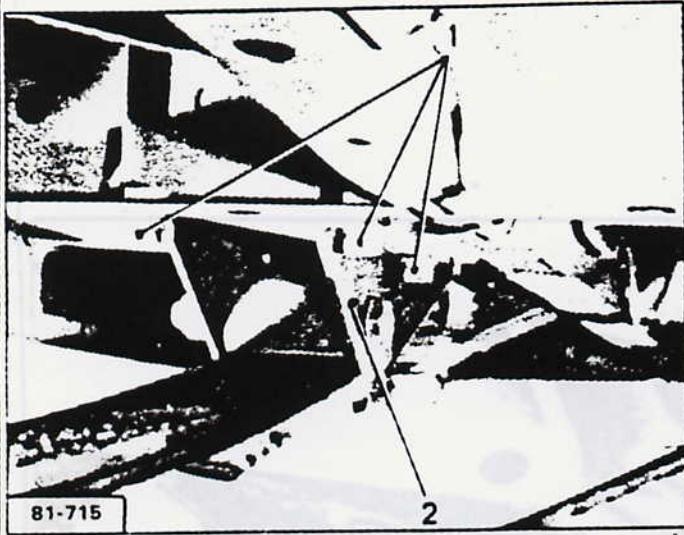
- Loosen the wheel bolts. Raise the rear of the vehicle, and support it on a stand, with the wheel hanging free, on the side on which the operation is to be carried out.
- Remove the wheel.
- Disconnect : fig. I, the rigid brake pipe (1) from the brake hose (3).
- Remove : fig. I, the clip (2) securing the hose (3) to the body.
- Place a trolley jack under the axle tube on the side on which the operation is to be carried out.
- Remove : fig. II, the nuts (4) securing the axle tube to the spring.
- Loosen : fig. III and IV.
 - the shackle nuts (5),
 - the nut (7) on the front securing pin (6).



F4.004

9

J5

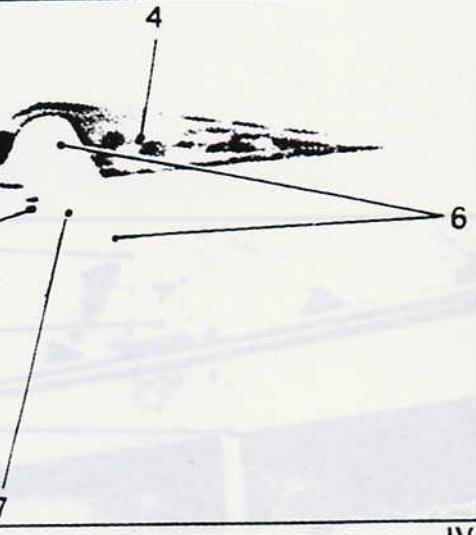


81-715

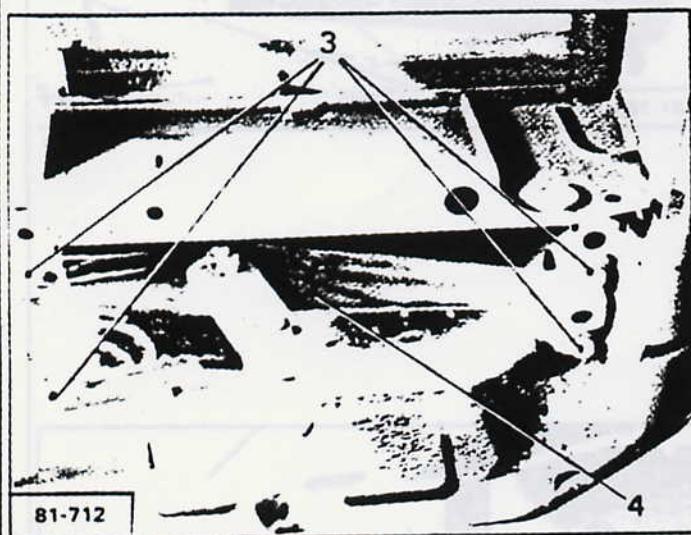
2

I

81-866



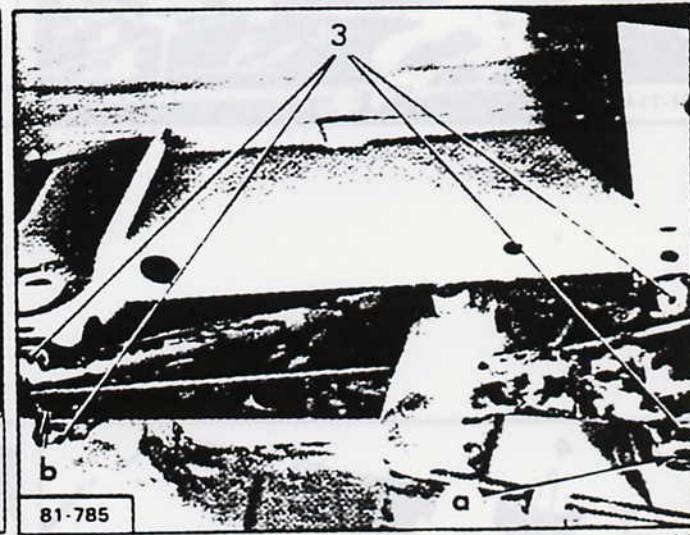
IV



81-712

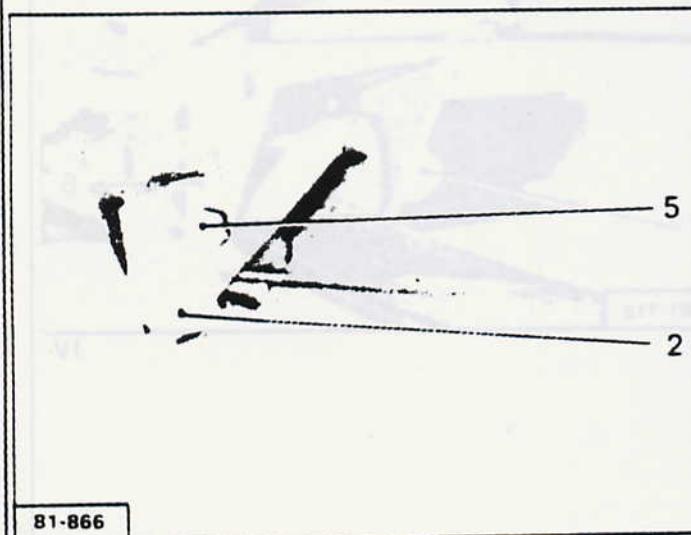
4

II



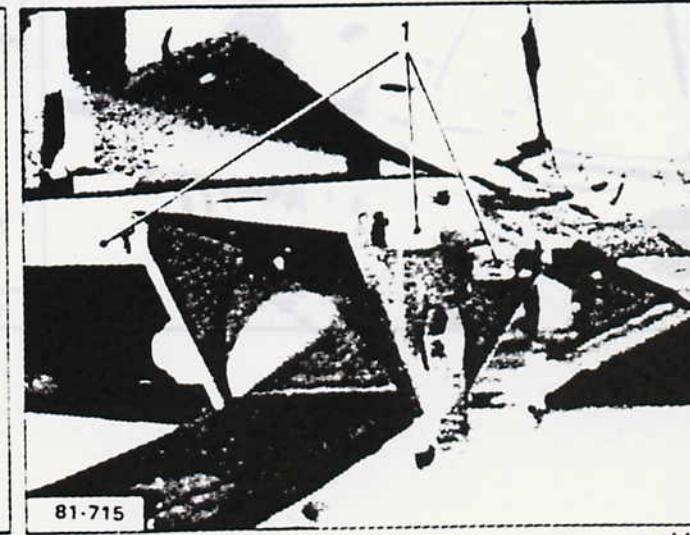
81-785

V



81-866

III



81-715

VI

— Remove : fig. I and II.
- the nuts (6), plate (7), shackle (8) and the rear securing plate (4).

- the bolts (1) that secure the front plate (2),

- the bolts (3) that secure the rear plate (4).

— Lower the axle tube by a few centimetres.

— Remove the spring, by releasing the spring centre pin from its location on the axle tube.

— Remove : fig. III and IV.

- the nut, front securing pin (5) and the plate (2).

REFITTING

— Fit : fig. III and IV

- the rear plate (4), the shackle (8), plate (7) and nuts (6), without tightening them,

- front plate (2), pin (5) and its nut, without tightening it.

— Position the spring under the body.

— Fit : fig. V

- the rear plate securing bolts (3).

— Locate : fig. V.

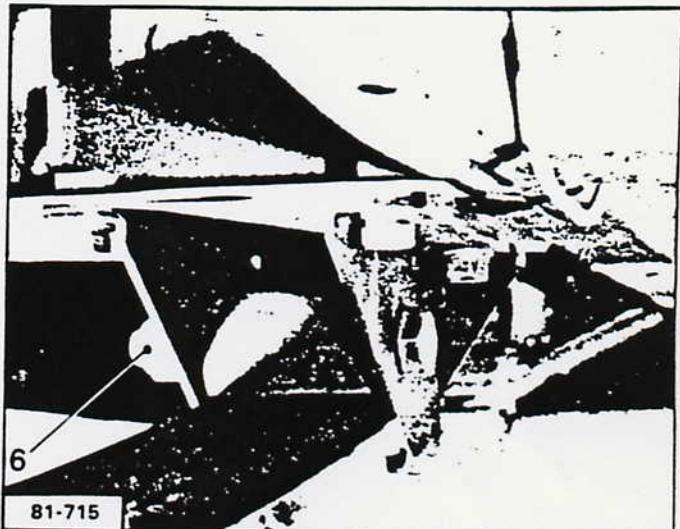
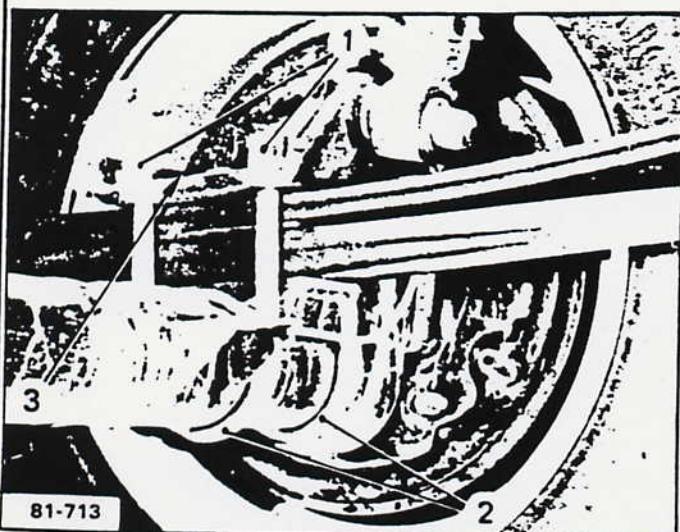
- the rear securing plate by fitting :

- a locating rod, 16 mm, in a Ø at "a",
- a locating rod 12 mm, in a Ø at "b".

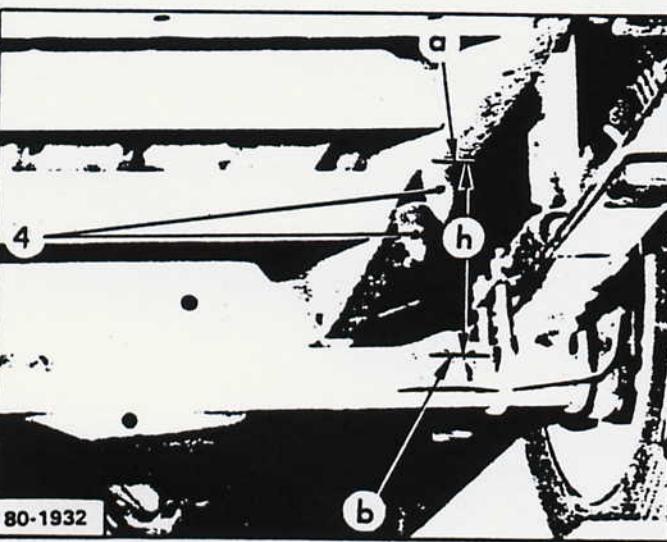
— Tighten the bolts (3) to a torque of 5 m.daN (50 Nm, 37 lbf ft).

— Fit : fig. VI

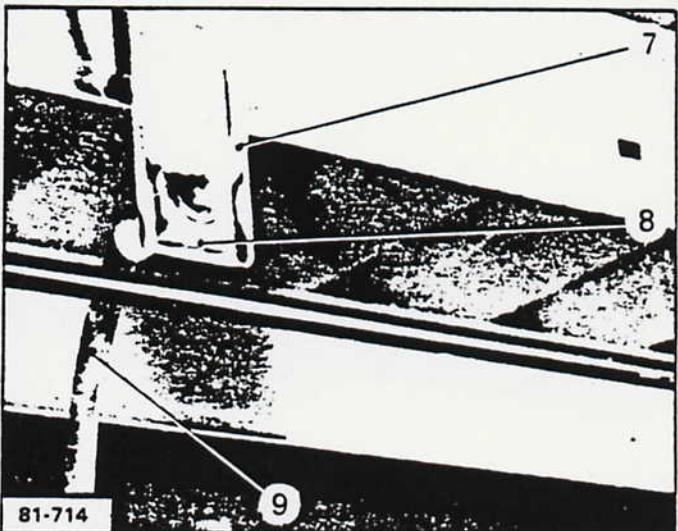
- the front plate securing bolts (1), tightening them to 5 m.daN (50 Nm, 37 lbf ft).



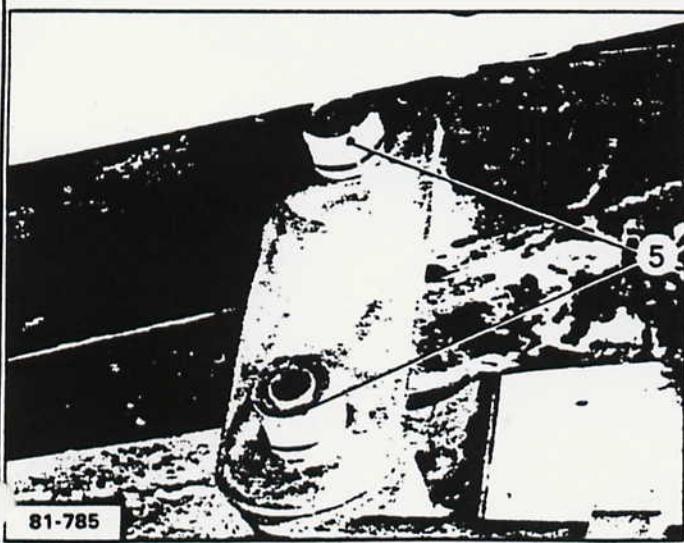
IV



II



V



III