

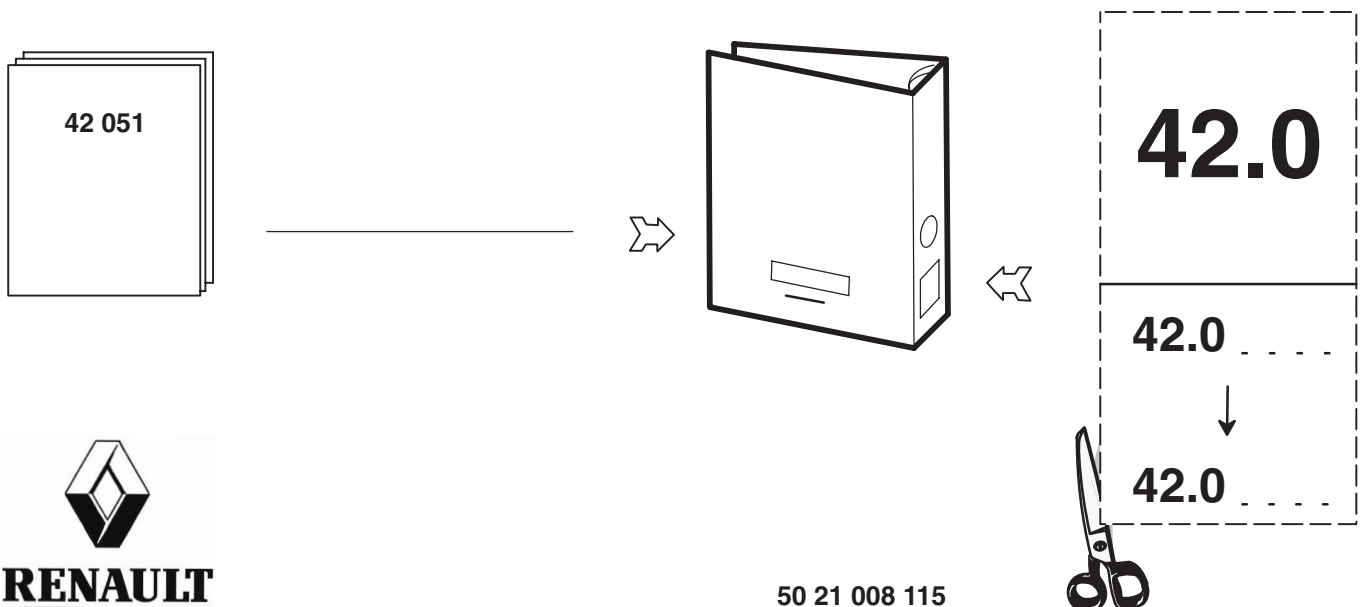
42 051 – AN – 11.2001

AXLE E 60

AXLE	VEHICLE
E 60 C.LISA	MIDLUM
E 60 PAN 19	

NOTE

The above information may change in the course of time.
 Only the "Consult" section of the workshop manuals repertory in standard N° 10320 serves as reference.



AXLE E 60**CONTENTS**

VOLUMES	DESIGNATION	PAGES
	Conventional symbols	2
A	Specifications	A1 → A4
B	Hubs	B1 → B4
C	Stub axle	C1 → C2
D	Tools	D1 → D2

CONVENTIONAL SYMBOLS

Tighten to torque (Nm) (right-hand thread)



Rotational load



Grease or oil (see "Consumables" table)



Depending on versions or options



Place in contact



Dimension to be assured (mm)



Directional movement



Machining tolerance



Part to be replaced



Wear limit



Direction of disassembly (the arrow shows the direction)



Direction of assembly (the arrow shows the direction)

SPECIFICATIONS


Symbol code

Example

E	Axle
6	Load per axle in metric tons
2	Axle beam offset and center line distance between springs
A	Track rod connection arm
B	Steering arm

Consumables

Grease

Symbol	Huiles Renault Diesel	Standards
 Superol EP2	NLGI 2 lithium soap grease calcium lead-free EP additive

Preparation prior to assembly

Carefully clean and inspect all the parts.

Wash the bearings in clean solvent.

Let them drip dry naturally.

Immediately prior to assembly, lubricate them lightly with thin oil.

Do not unpack a new bearing until you are ready to install it.

Do not clean the the protective grease off new bearings.

Seals and lock-plates must always be discarded and new ones fitted.

Never force-fit parts with copper or brass punches or drifts.

Use a specially adapted plunger each time so as to prevent metallic particles getting into the casings and bearings.

Always oil parts prior to force fitting.

The inside of the lips of seal rings must be smeared with grease.

Shrink fitted parts must be heated with a hot air blower or in an oven, etc... Flame heating is strictly forbidden.

NOTE

When using a torque multiplier, calibrate the torque wrench-torque multiplier assembly to the desired torque.

Locking, fastening, sealing and gluing products

Prior to assembly, carefully clean the surface of the parts to which the product is to be applied. Get rid of any old product residue. Threaded portions are to be brushed, tapped and cleaned if necessary using a suitable cleaner.

Using the product

Always adapt the recommended product by following the directions for use appearing on the pack

- surface finish,
- operating temperature,
- reaction, drying times, etc...,
- shelf-life.

Comply with the method of assembly so as to guarantee the quality of the repair.

For angle checking, see CMR **42 038**.

Tightening torques

There are several types of tightening

- Tightening to torque (in **Nm.**)
- Tightening to angle (in $^{\circ}$)
- Tightening to torque-angle (in **Nm. + $^{\circ}$**)

Torques given in **Nm** are nominal torques (average value calculated on the basis of the minimum torque and the maximum torque).

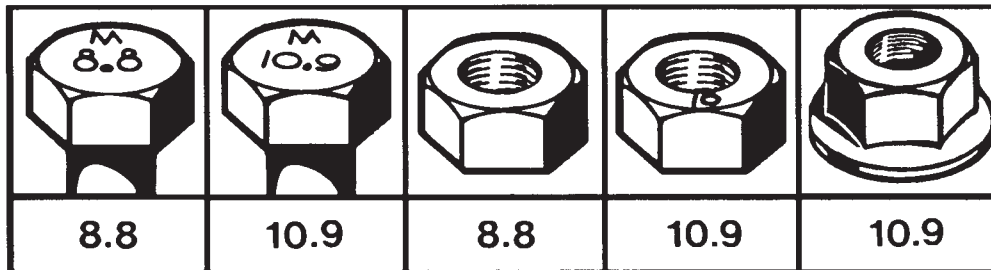
The tightening accuracy class defines the tolerance of this torque in percent as a function of the nominal torque applied.

Tightening accuracy classes

- **Class I** : Special threaded hardware (tolerances variable depending on assembly)
- **Class II** : Reserved for precise tightening (tolerance $\pm 10\%$ of the nominal torque)
- **Class III** : Reserved for normal standard tightening (tolerance $\pm 20\%$ of the nominal torque)

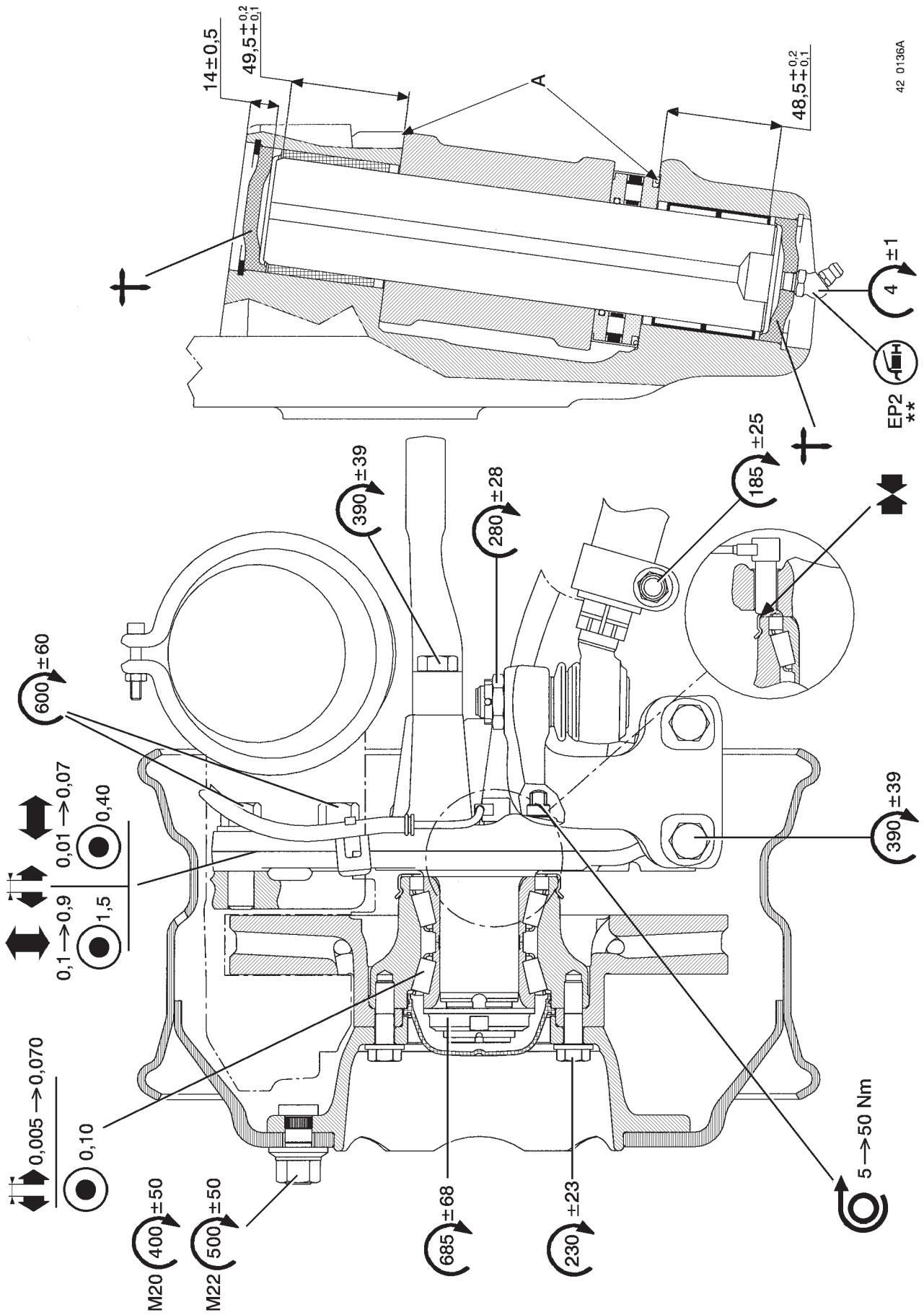
For standard threaded hardware indicated in the table below, use tightening class **III**.

For other torques, see pages **A3** → **A4**.



21 0122

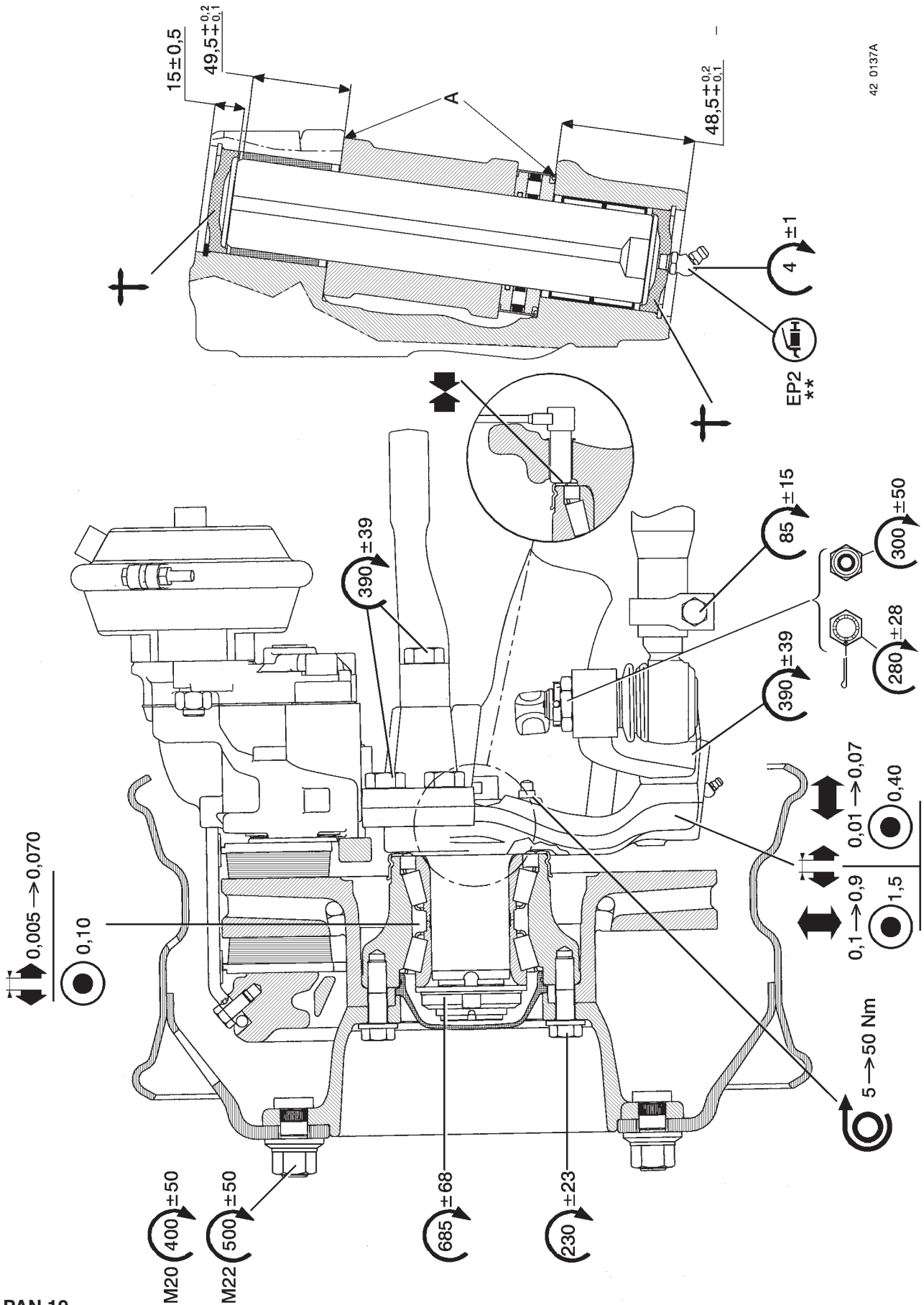
Tightening torques for conventional nut and bolt hardware to "METRIC system" standard 01.50.4002		
Dia. and pitch of nuts and bolts (in mm)	Quality class 8.8	Quality class 10.9
	Tightening class III ($\pm 20\%$)	Tightening class III ($\pm 20\%$)
6 x 1.00	7.4	10.8
7 x 1.00	12.1	17.8
8 x 1.00	19.2	28.2
8 x 1.25	17.9	26.3
10 x 1.00	39.4	58
10 x 1.25	37.4	55
10 x 1.50	35.4	52
12 x 1.25	67	98
12 x 1.50	64	94
12 x 1.75	61	90
14 x 1.50	105	155
14 x 2.00	98	143
16 x 1.50	161	237
16 x 2.00	151	222
18 x 1.50	235	346
18 x 2.50	210	308
20 x 1.50	328	481
20 x 2.50	296	435
22 x 1.50	444	652
22 x 2.50	406	596



42 0136A

C.LISA

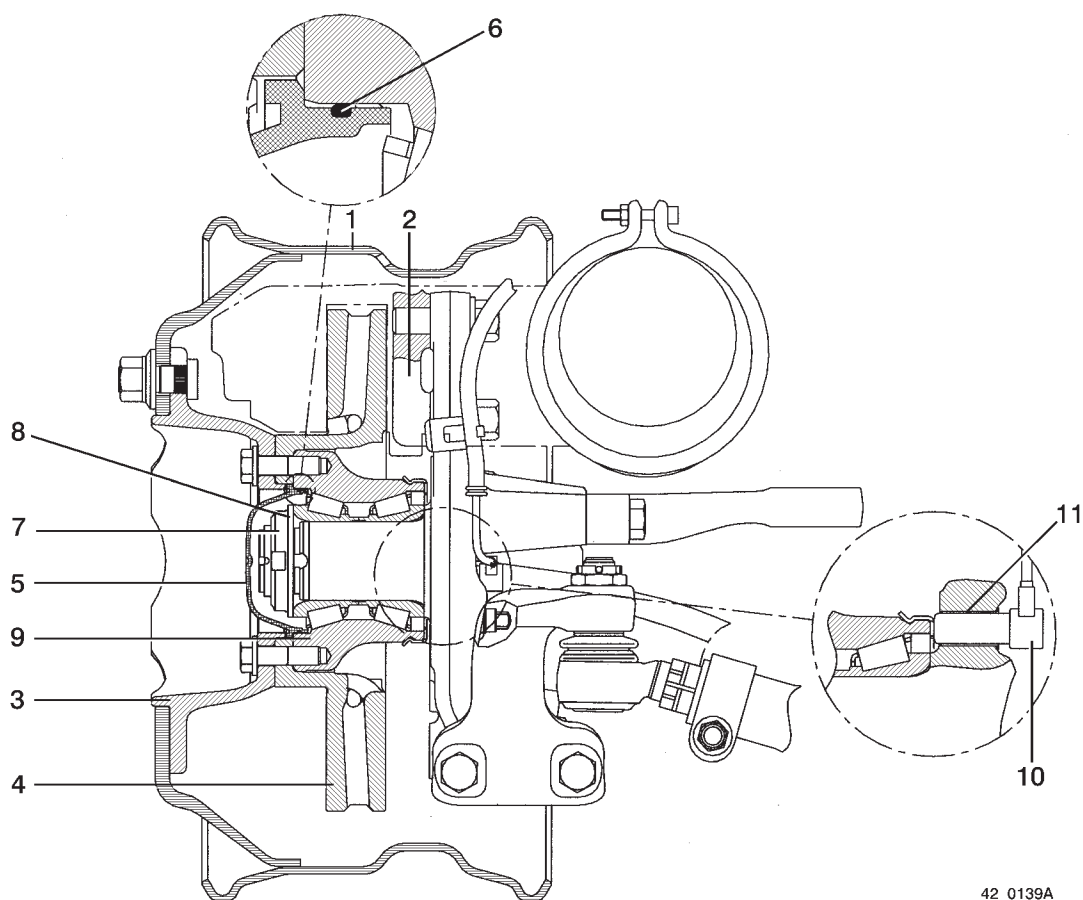
** King pins are to be greased with the axle roadwheels resting on the ground. Grease must emerge from points A.



42 0137A

PAN 19

** King pins are to be greased with the axle roadwheels resting on the ground. Grease must emerge from points A.



42 0139A

Hubs

Disassembly

The item numbers indicated in the drawing on page **B1** correspond to the **sequence of disassembly**.

The table indicates the designation and the reference number of tools necessary for assembly / disassembly of the itemized parts.

Item	Tool designation	Reference N°	Assembly	Disassembly
7	Castellated box wrench	2449	X	X

Remove the hub (9).

If necessary

Use tool(s) **0843**.

IMPORTANT

*Do not degrease the interior of the hub.
Do not separate the bearings.*

Assembly

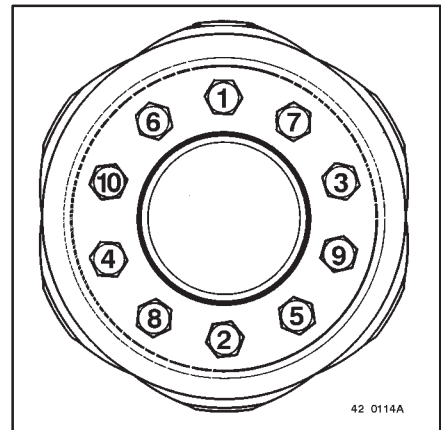
The numbers shown in the text refer to figure on page **B1**.

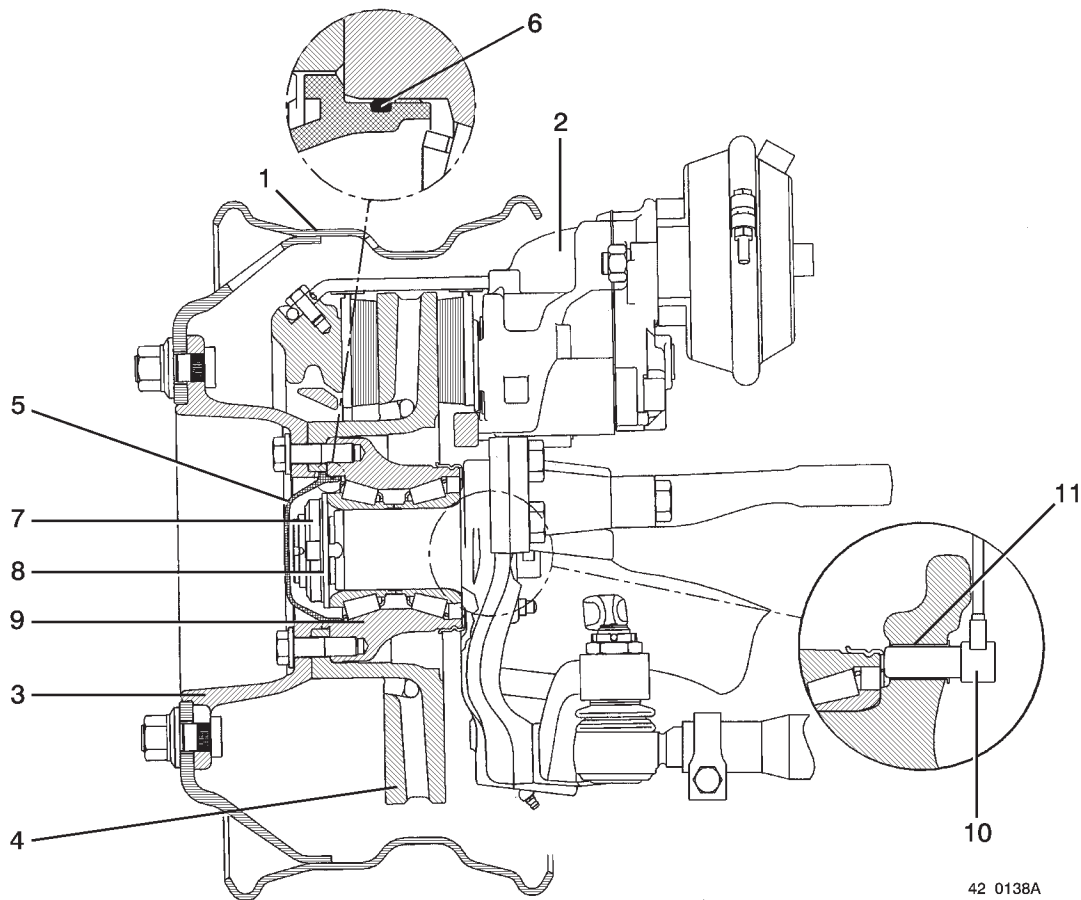
Setting of wheel flange (3).

Tighten initially at the recommended torque in the order shown ; then tighten again at the recommended torque.

Anti-lock braking system (ABS)

Adjust the sensor (10) to make contact with the inner toothed crown wheel.





42 0138A

Hubs

Disassembly

The item numbers indicated in the drawing on page **B3** correspond to the **sequence of disassembly**.

The table indicates the designation and the reference number of tools necessary for assembly / disassembly of the itemized parts.

Item	Tool designation	Reference N°	Assembly	Disassembly
7	Castellated box wrench	2449	X	X

Remove the hub (9).

If necessary

Use tool(s) **0843**.

IMPORTANT

*Do not degrease the interior of the hub.
Do not separate the bearings.*

Assembly

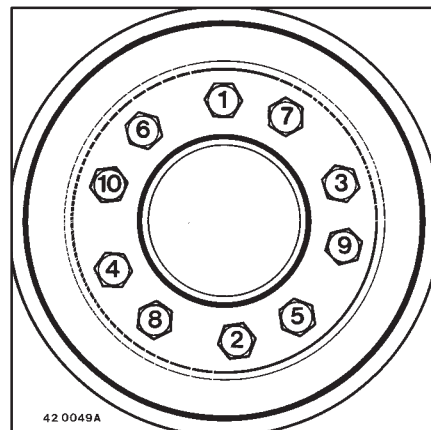
The item numbers indicated in the text correspond to the figure on page **B3**.

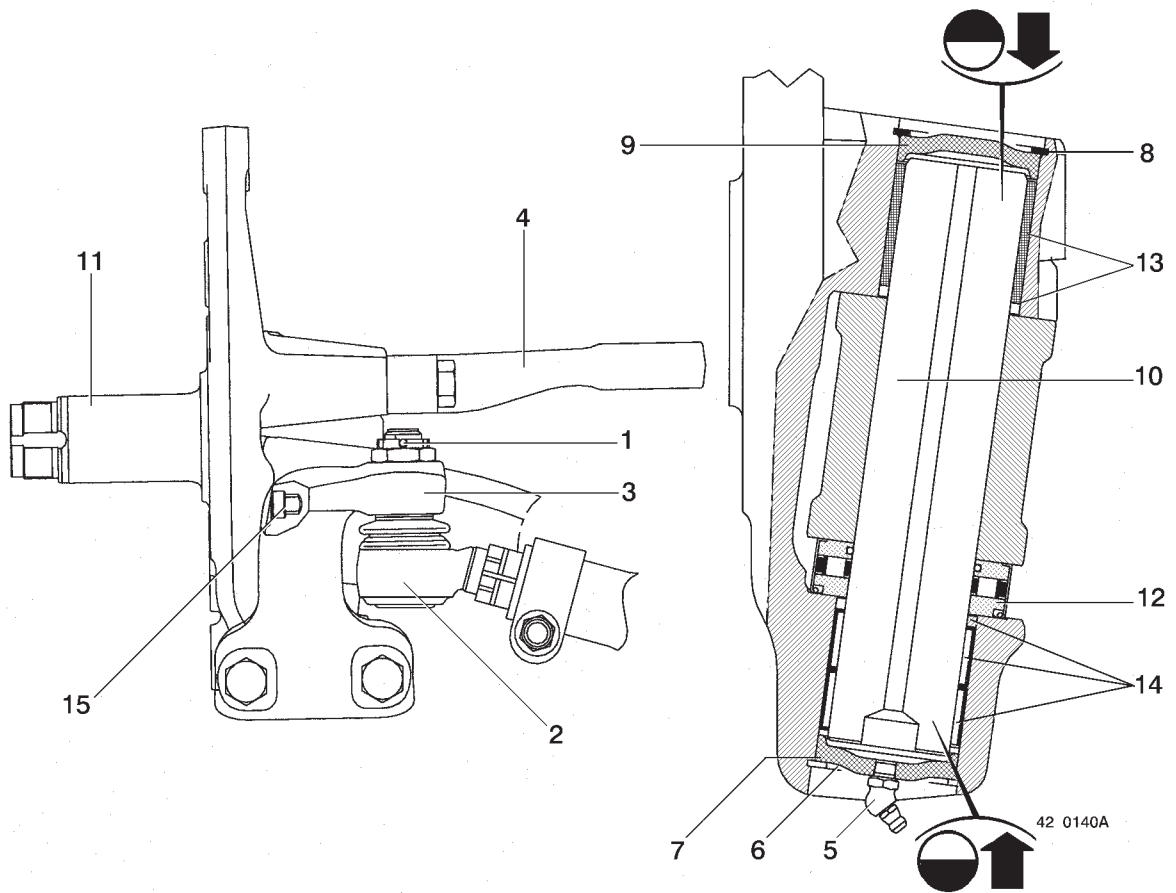
Setting of wheel flange (3).

Tighten initially at the recommended torque in the order shown ; then tighten again at the recommended torque.

Anti-lock braking system (ABS)

Adjust the sensor (10) to make contact with the inner toothed crown wheel.





Stub axle

On vehicle or on support.
 Remove the hub.
 (See chapter : **B**).

Disassembly

The item numbers indicated in the drawing on page **C1** correspond to the **sequence of disassembly**.

The table indicates the designation and reference number of the tools required for assembly / disassembly of the itemized parts.

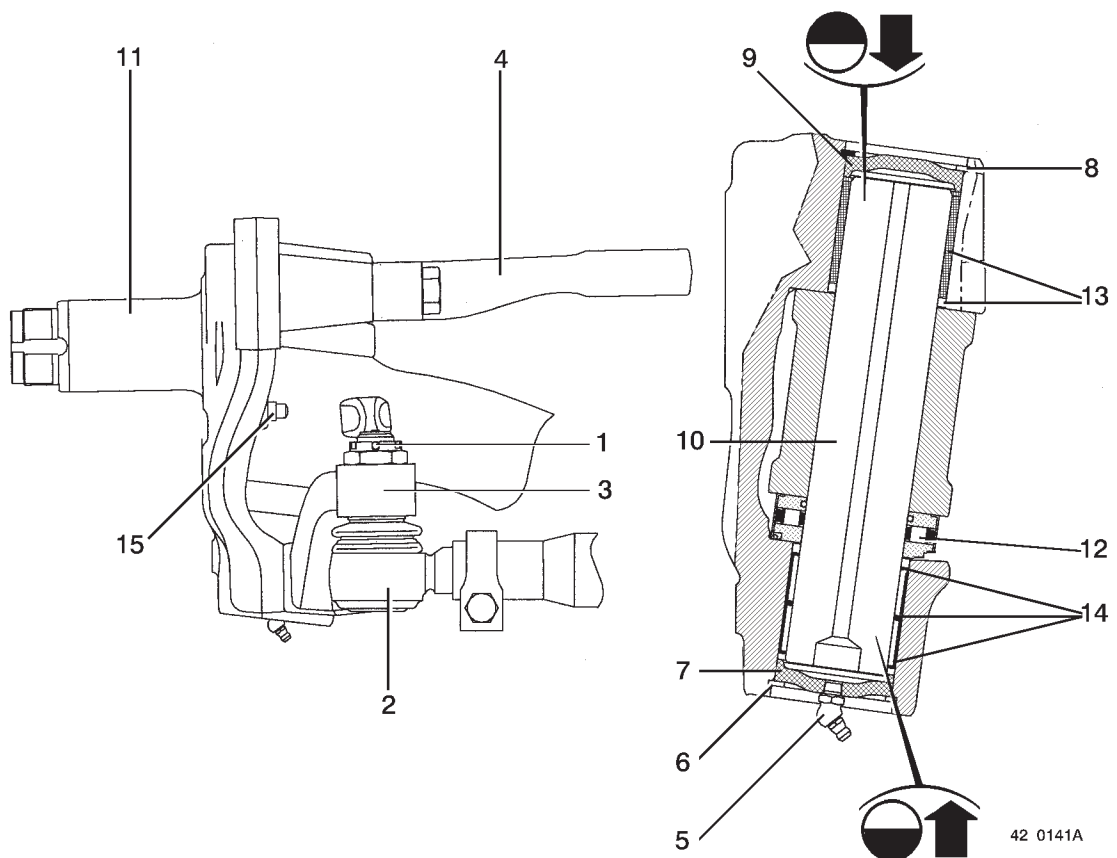
Item	Tool Designation	Reference N°	Assembly	Disassembly
2	Puller	1744		X

Remove king pin (10).
 Use tool(s) **9423**.

Assembly

Proceed in the reverse sequence to disassembly.

Grease.



42 0141A

Stub axle

On vehicle or on support.
Remove the hub.
(See chapter : **B**).

Disassembly

The item numbers indicated in the drawing on page **C2** correspond to the **sequence of disassembly**.

The table indicates the designation and reference number of the tools required for assembly / disassembly of the itemized parts.

Item	Tool Designation	Reference N°	Assembly	Disassembly
2	Puller	1744		X

Remove king pin (10).
Use tool(s) **9423**.

Assembly

Proceed in the reverse sequence to disassembly.

Grease.

TOOL

RENAULT V.I. divide tools into 3 categories

- **General-purpose tools** : Commercially available tools.
 - . **50 00 26 reference number** (possibility of purchasing through the Renault V.I. Spare Parts department).
 - . **4-figure reference number** (tools with Renault V.I. reference number, but available from the supplier).
- **Special tools** : Specially created tools, distributed by the RENAULT V.I. spare parts division.
- **Locally manufactured tools** : these tools are classified differently according to their degree of sophistication
 - . **4-figure reference number** (represented by a drawing) : tools that are simple to make without need for special qualification.
 - . **50 00 26 reference number** (possibility of purchasing through the Renault V.I. Spare Parts department) : a certain skill is needed to make these tools.

Three levels (or echelons) determine their assignment

- **LEVEL 1** : Tools for servicing and minor tasks.
- **LEVEL 2** : Tools for major repairs.
- **LEVEL 3** : Tools for refurbishment.

NOTE

Standard tools mentioned in this manual do not appear in the tools list. These tools are identified in the standard tools manual (MO) by a 4-figure number.

General-purpose tools				
Ref. Renault V.I.	Description	Level	Quantity	Page
50 00 26 0843	Puller	2	1	B1
50 00 26 1744	Ball-joint puller	1	1	C1

Special tools				
Ref. Renault V.I.	Description	Level	Quantity	Page
50 00 26 2449**	Castellated box wrench	2	1	B1

(**) Tool to be modified (see page D2).

