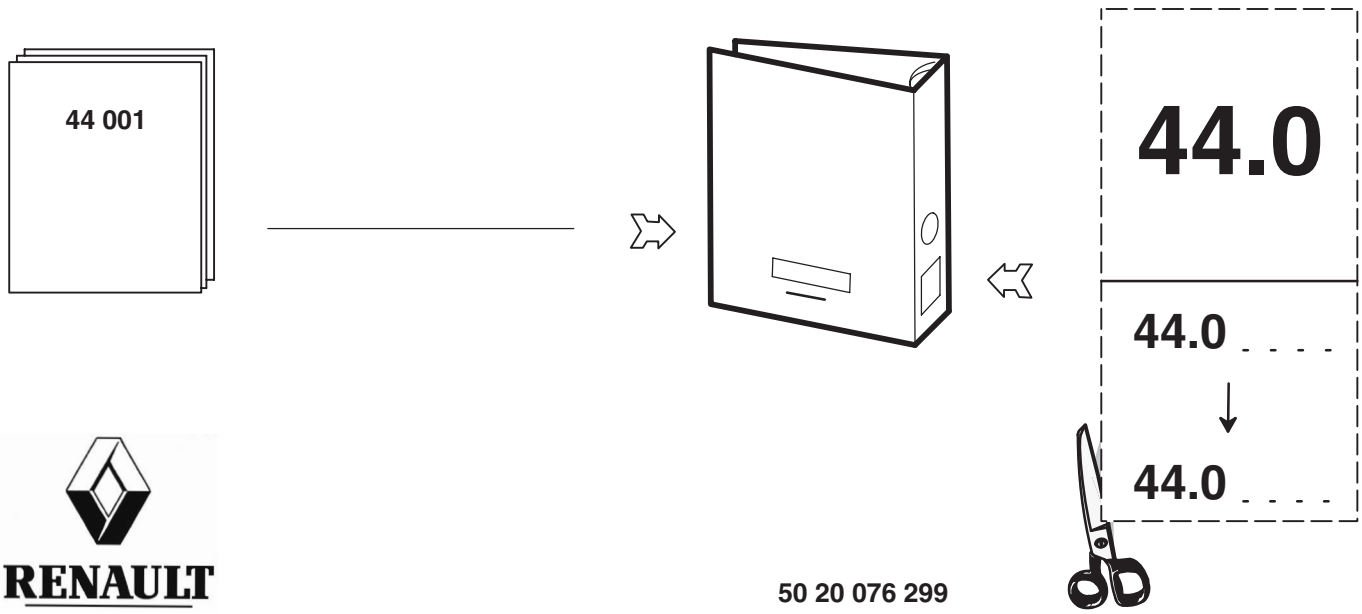
44 001 – AN – 12.1998

AXLE ER 8 / ER 11 / AUSTERAS

AXLE	VEHICLE
ER 8	MAGNUM PREMIUM
ER 11	
AUSTERAS	

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.



RENAULT

AXLE ER 8 / ER 11 / AUSTERAS

CONTENTS

CONVENTIONAL SYMBOLS

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

Loosen by the indicated value

Heat or cool. Temperature in degrees Centigrade (e.g.: 80 ° C)

Weld bead

Repair time – Heating time

Smear (see “Consumables” table)

Grease or oil (see “Consumables” table)

Place in contact

Maximum out–of–true

... Greater than **...**

Part to be replaced

SPECIFICATIONS

Axle type . . . . . **ER 8 / ER 11**

Symbol code

Example

E	Axle
R	Lift–up
8	Load on axle in tonnes
A	Braking index

Axle type . . . . . **AUSTERAS**

Wheel alignment (toe–in) . . . . . **2.5 ± 1 mm/m**
Lockover angle (right) . . . . . **13°**
Lockover angle (left) . . . . . **13°**

Consumables

Oil capacities and specifications (See Servicing Handbook)

Fastening, locking and sealing products	
Industrial reference	**Automotive reference**
Loctite 270	LT 270 Strong thread–locking
Loctite 549	LT 549 Autoform

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.

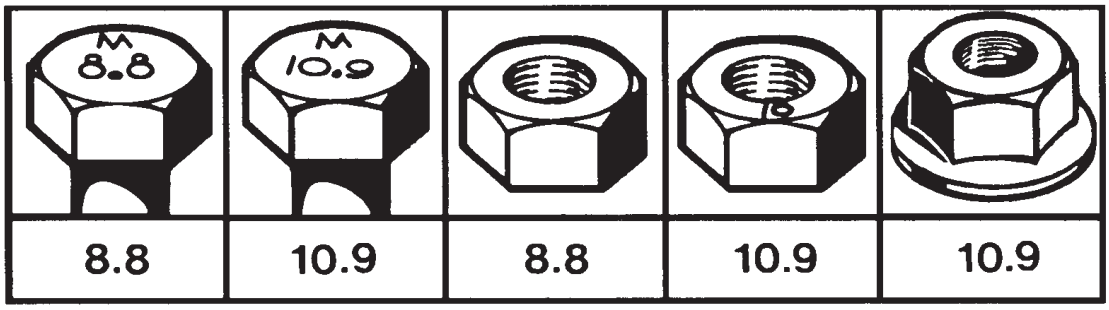
Tightening torques
There are several types of tightening
– Tightening to torque (in **Nm.**)
– Tightening to angle (in °)
– Tightening to torque–angle (in **Nm. +** °)

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 ± 10% of the nominal torque)
– **Class III** : Reserved for normal standard tightening (tolerance ± 20% of the nominal torque)

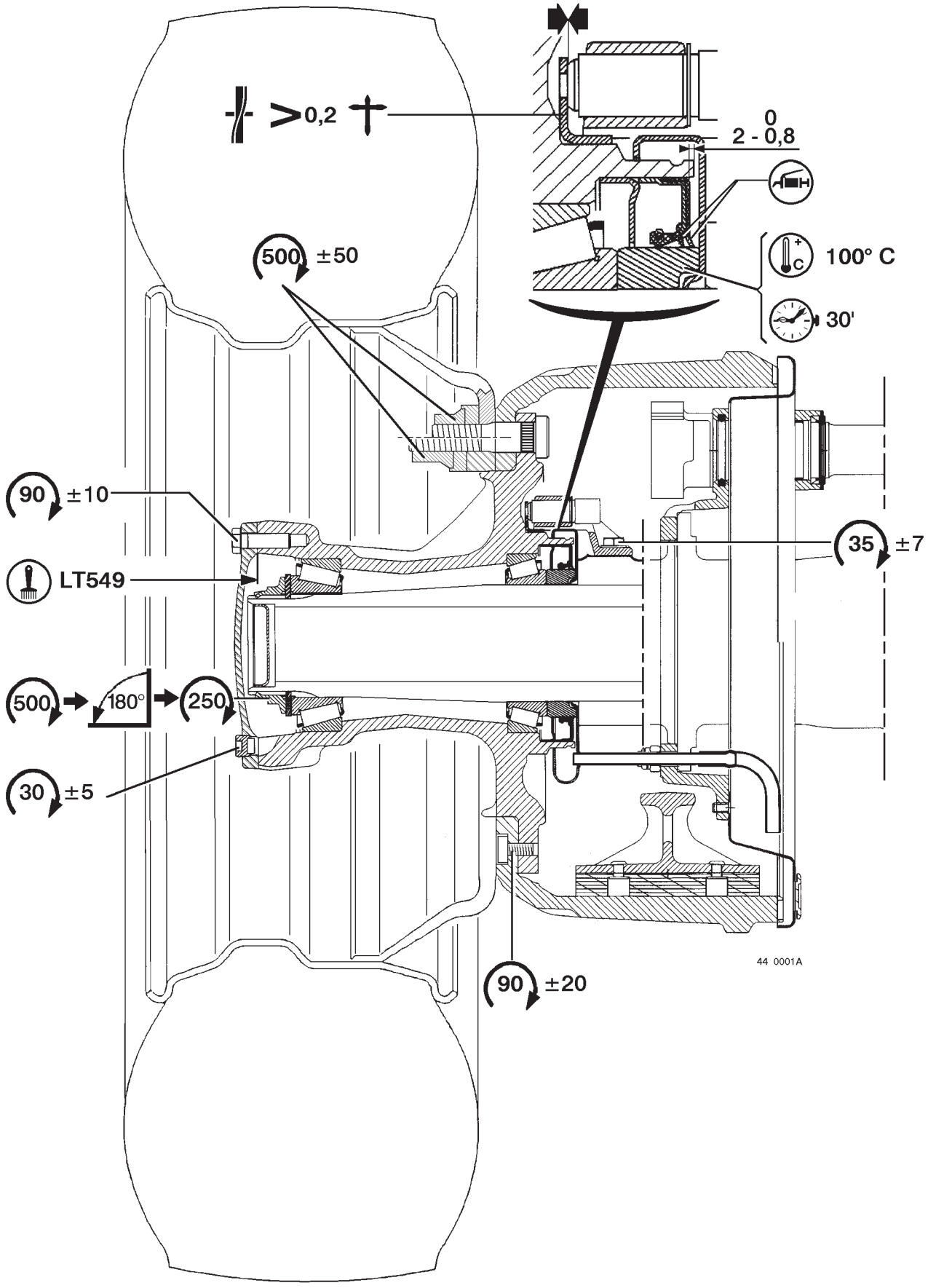
For standard threaded hardware indicated in the table below, use tightening class **III**.

For other torques, see pages **A3** → **A6**.

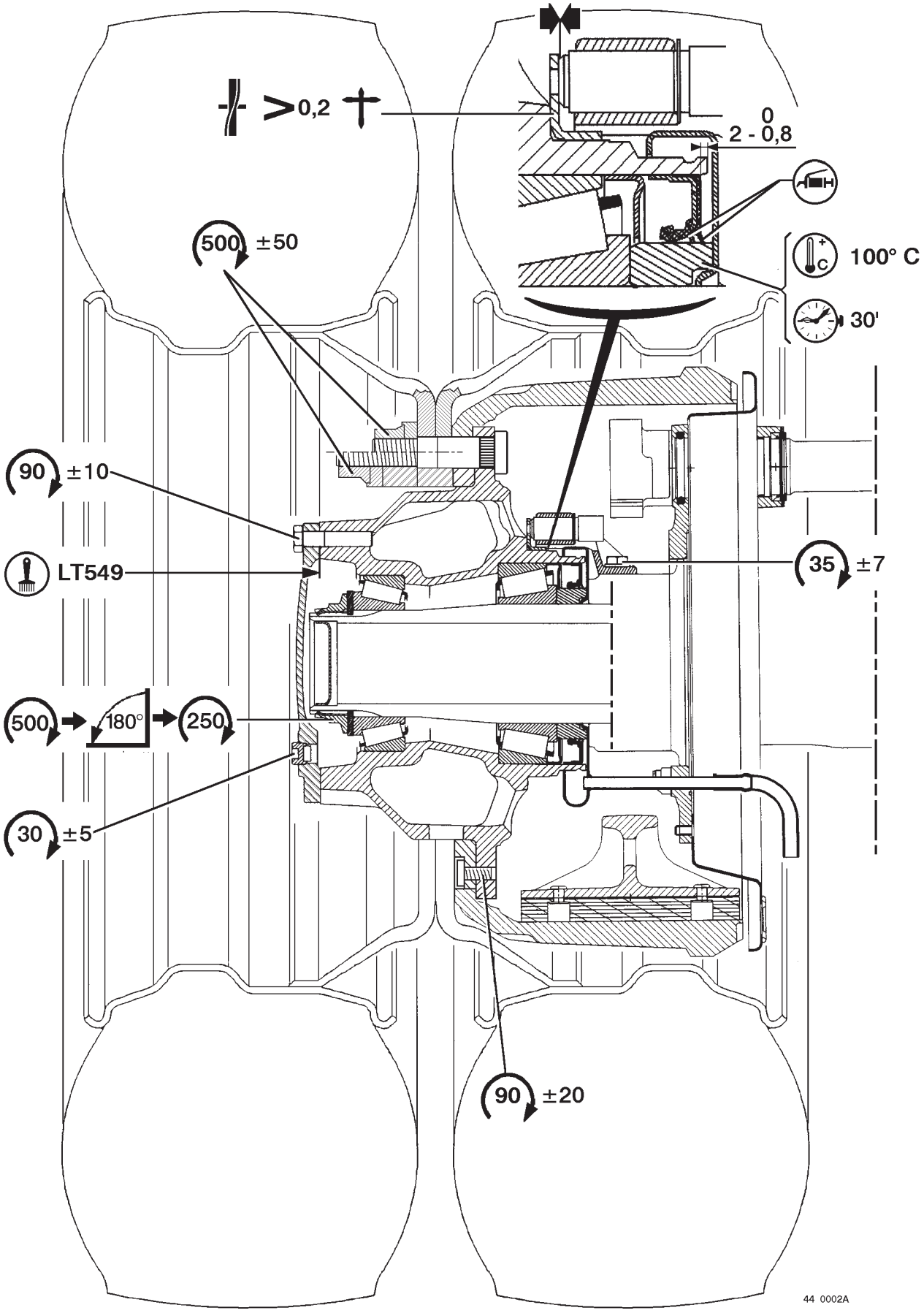


21 0122

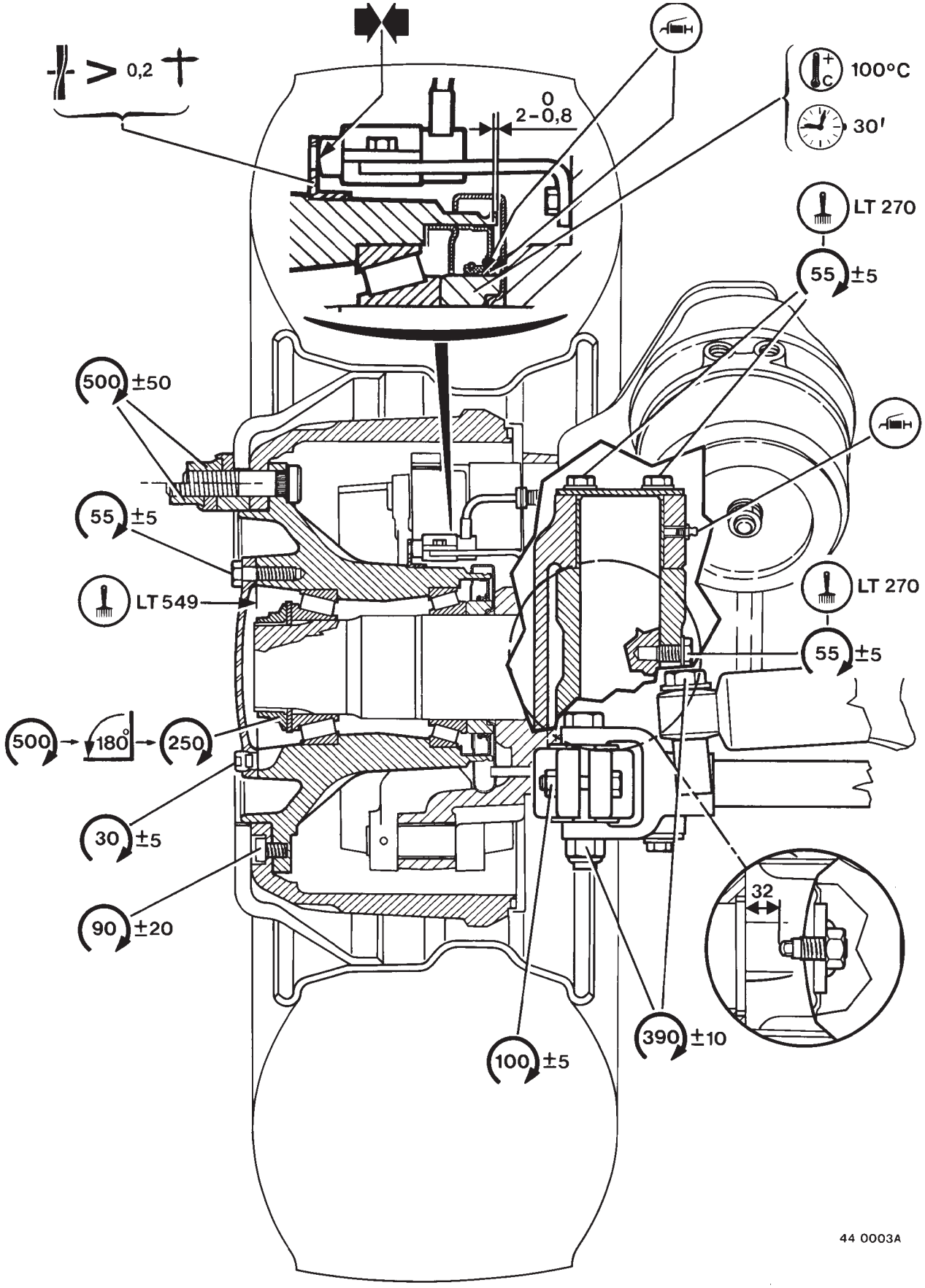
Tightening torques for conventional nut and bolt hardware to "METRIC system" standard 01.50.4002		
Dia. and pitch of nuts and bolts (in mm)	**Quality class 8.8**	**Quality class 10.9**
	Tightening class III (± 20 %)	**Tightening class III (± 20 %)**
6 x 1.00	7.4	10.8
7 x 1.00	12.1	17.8
8 x 1.00	19.2	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


>0,2
0
2 - 0,8
500 ±50
100° C
30'
90 ±10
LT549
35 ±7
500
180°
250
30 ±5
90 ±20
44 0001A

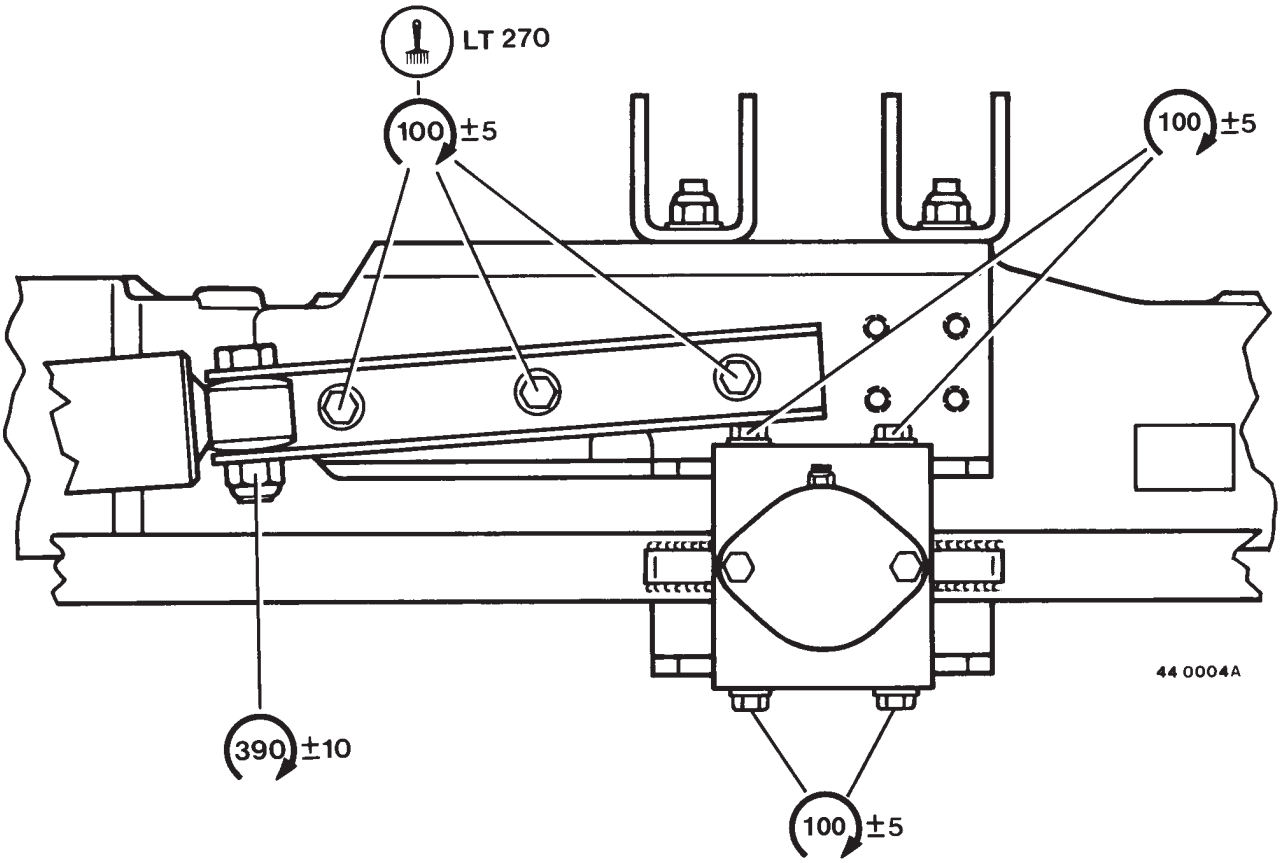
ER 8

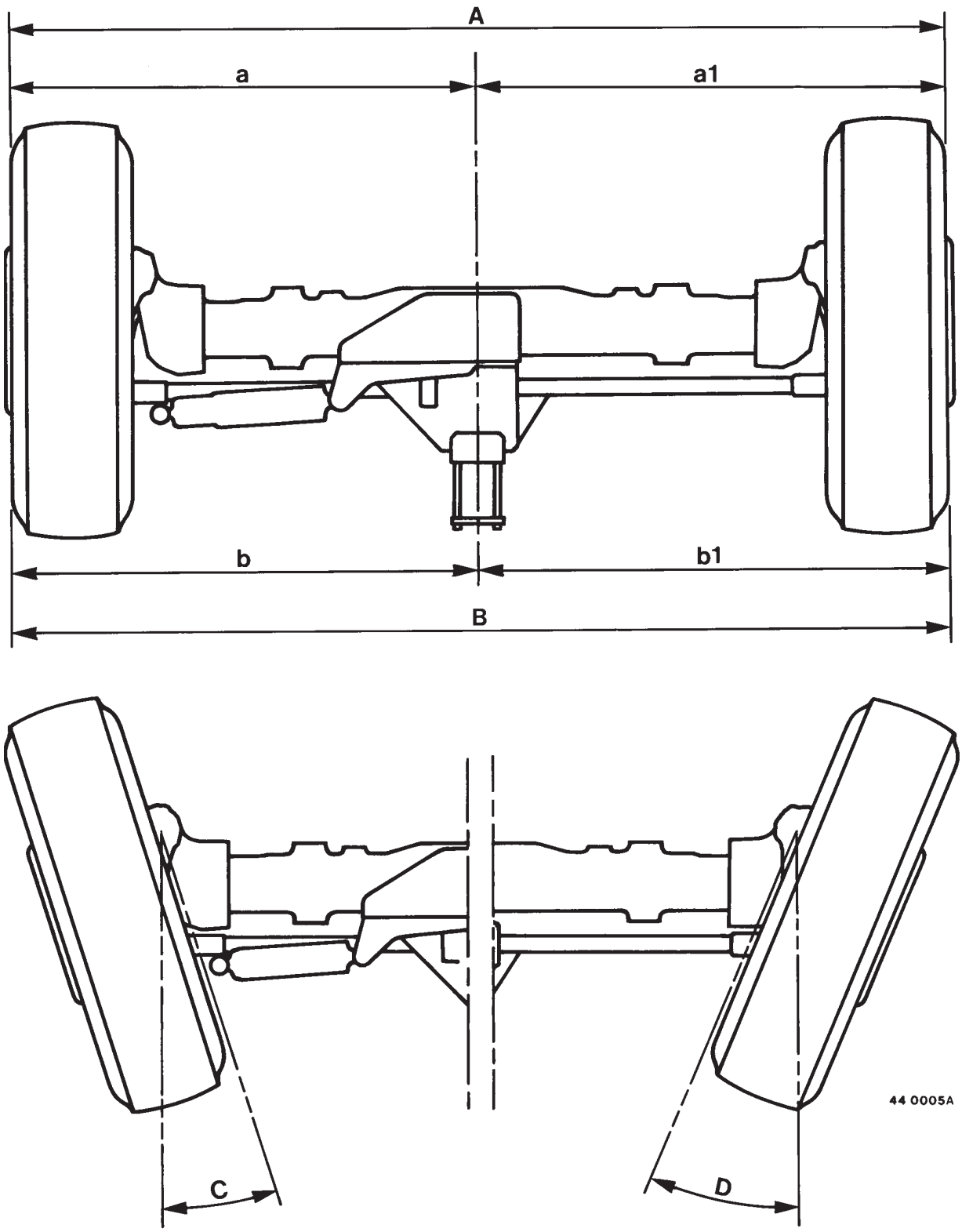

>0,2
0
2 - 0,8
500 ±50
100° C
30'
90 ±10
LT549
35 ±7
500 180° 250
30 ±5
90 ±20
44 0002A

ER 11


> 0,2
0
2-0,8
100°C
30'
LT 270
55 ±5
500 ±50
55 ±5
LT 549
500
180°
250
30 ±5
90 ±20
LT 270
55 ±5
32
100 ±5
390 ±10
44 0003A

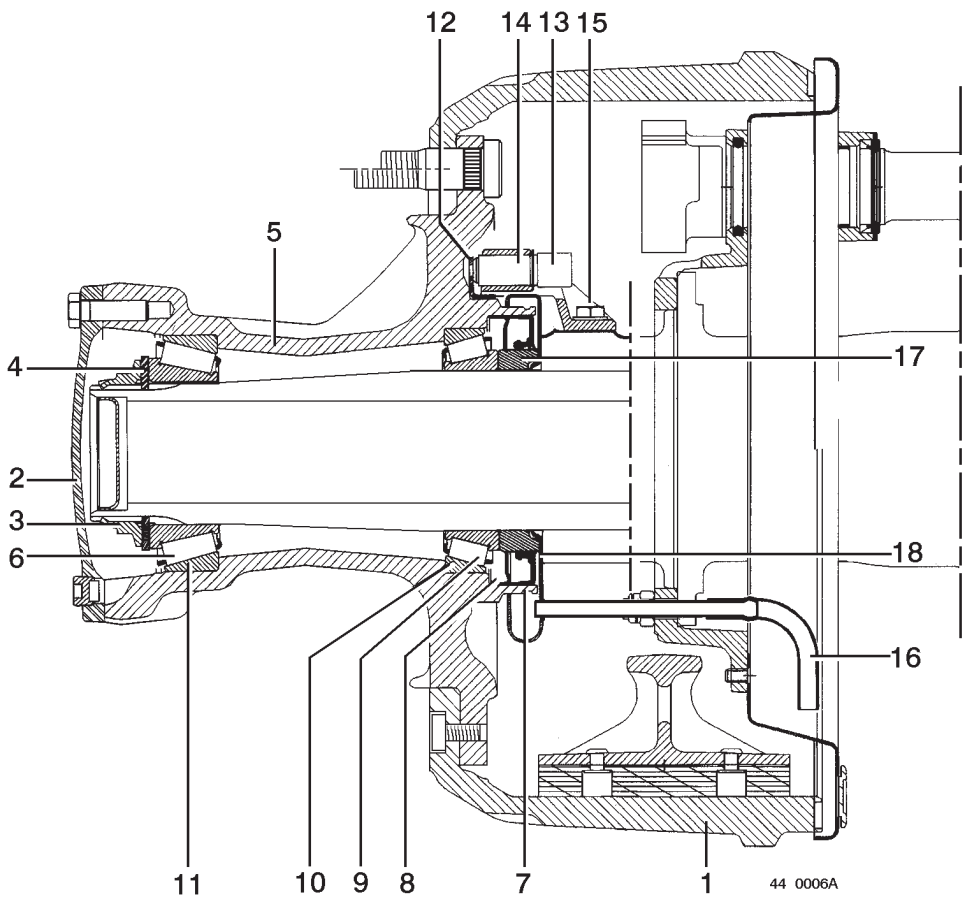
AUSTERAS

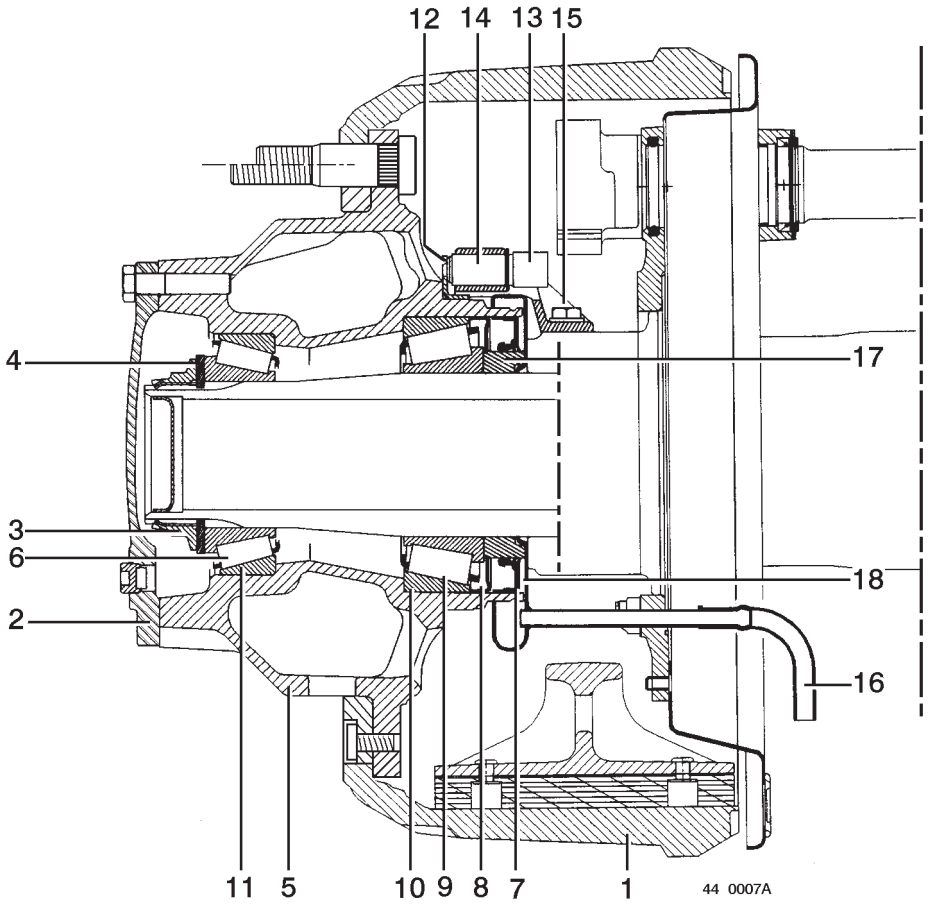

LT 270
100 ±5
100 ±5
390 ±10
100 ±5
44 0004A



A < B
B = A + 2.5 ± 1 mm/m
a < b / a1 < b1
a = a1
b = a + 1.25 ± 0.5 mm/m
b = b1
(C = D) = 13°

HUBS


12
14
13
15
5
4
17
2
3
6
18
16
11
10
9
8
7
1
44 0006A


12
14
13
15
4
17
3
6
18
2
16
11
5
10
9
8
7
1
44 0007A

ER 8 / ER 11

Removal

On vehicle or on support.
Remove the roadwheels.
Drain the oil from the hub.

Disassembly

The item numbers indicated in the drawing on page **B2** correspond to the **sequence of disassembly**.

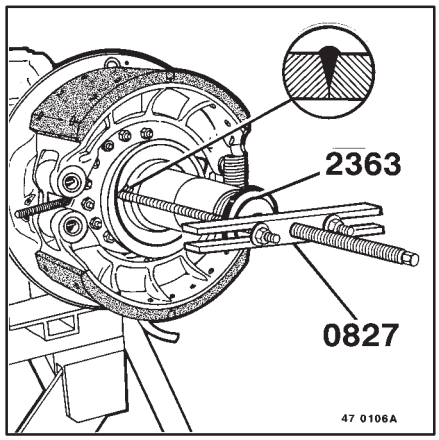
The table indicates the designation and the reference number of tools necessary for assembly / disassembly of the itemized parts.

Item	Tool designation	Reference N°	Assembly	Disassembly
3	Centering device	7079	X	X
5 / 17	Puller	0827		X
7	Pusher set	2351	X	
10 / 11 / 12	Pusher set	2363	X	
12	Pusher	1762	X	

Unlock (**3**).

Remove the ring (**17**).
Use **2** threaded rods, diameter : **14 mm**, length : **400 mm**.
Weld. Use a “MIG” process welding set.
Use tool(s) **0827 + 2363**.

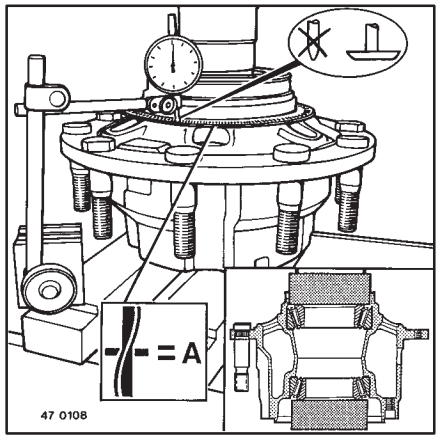
For the braking system portion see “MR : **50 619**”.



Assembly

Proceed in the reverse sequence to disassembly.
Each hub must be fitted with bearings of the same make.

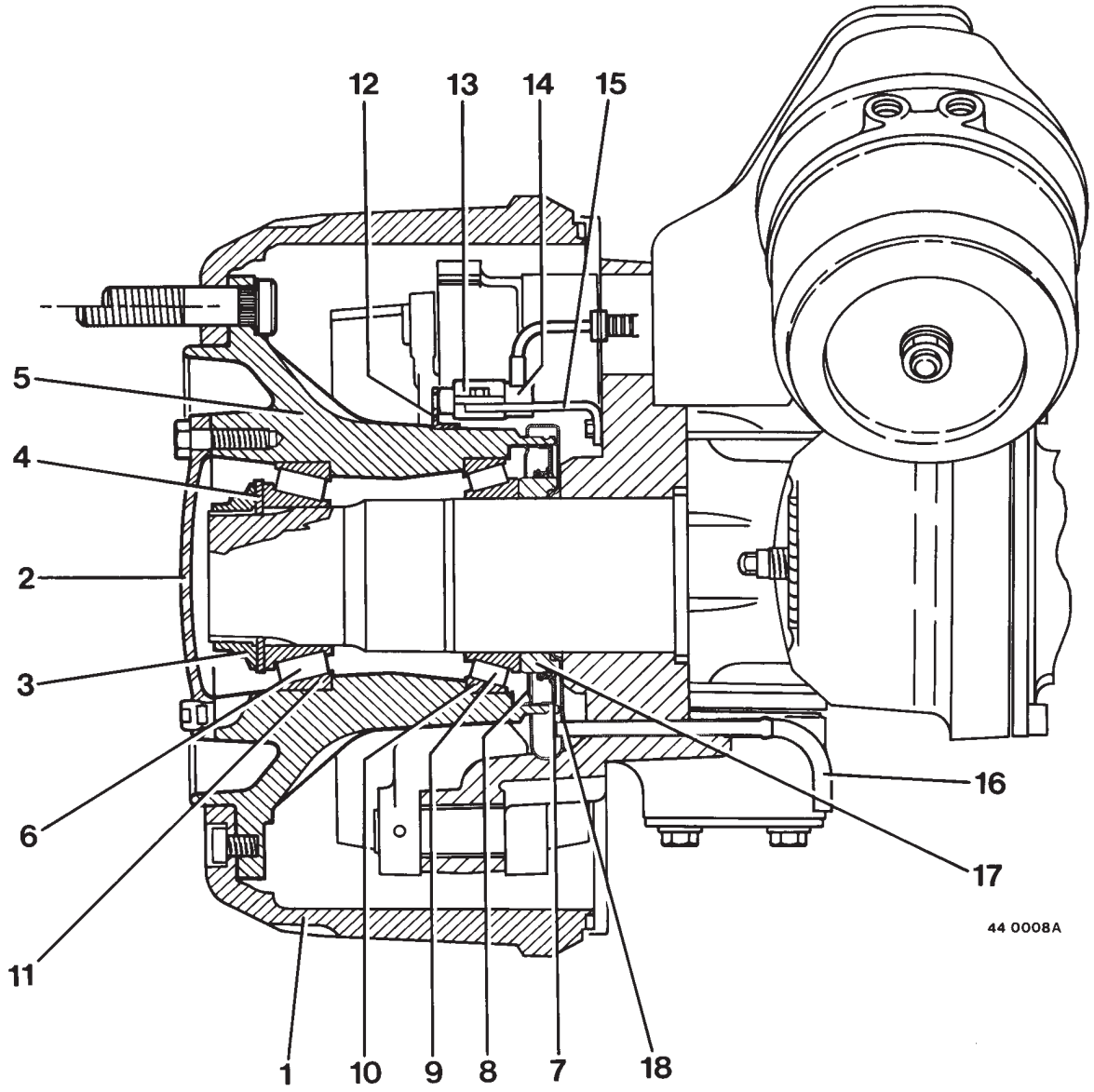
Position the hub (**5**), complete with bearings (**6 / 9**).
Turn the hub and exert light pressure to guarantee installation.
Check the toothed wheel (**12**) for buckle.
Replace part (**12**) if **A > 0.2 mm**.



Assemble the hub (**5**).
Install the bearing (**6**).

Tighten the nut (**3**) in a preliminary stage at a torque of **500 Nm**, while turning the hub several times in both directions.
Slacken the nut by about half a turn and bring the hub back onto the nut.
Retighten the nut (**3**) at a torque of **250 Nm**, while turning the hub several times in both directions.
Lock the nut (**3**)

Fill the hub with oil.



AUSTERAS

Removal

On vehicle or on support.
Remove the roadwheels.
Drain the oil from the hub.

Disassembly

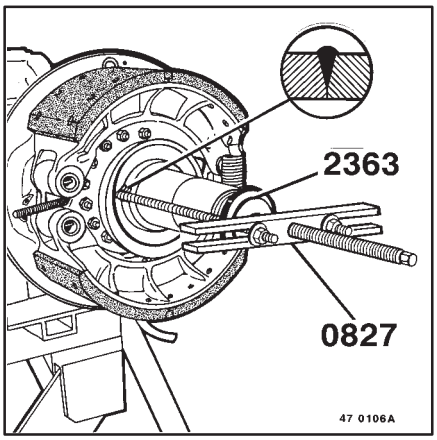
The item numbers indicated in the drawing on page **B4** correspond to the **sequence of disassembly**.

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
3	Centering device	7079	X	X
5 / 17	Puller	0827		X
7	Pusher set	2351	X	
10 / 11 / 12	Pusher set	2363	X	
12	Pusher	1762	X	

Unlock (**3**).

Remove the ring (**17**).
Use **2** threaded rods, diameter : **14 mm**, length : **400 mm**.
Weld. Use a “MIG” process welding set.
Use tool(s) **0827 + 2363**.

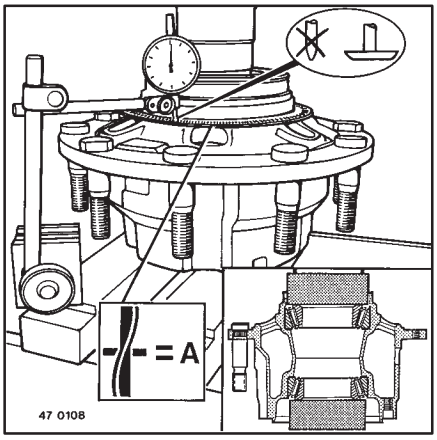


For the braking system portion see “MR : **50 619**”.

Assembly

Proceed in the reverse sequence to disassembly.
Each hub must be fitted with bearings of the same make.

Position the hub (**5**), complete with bearings (**6 / 9**).
Turn the hub and exert light pressure to guarantee installation.
Check the toothed wheel (**12**) for buckle.
Replace part (**12**) if **A > 0.2 mm**.

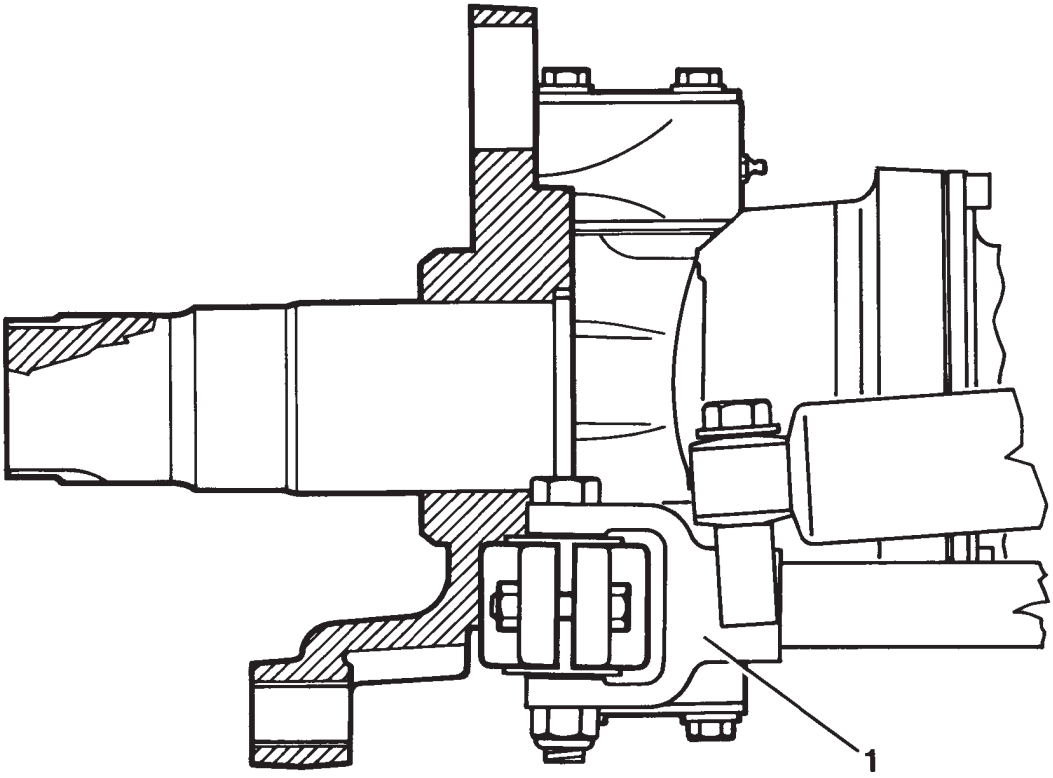


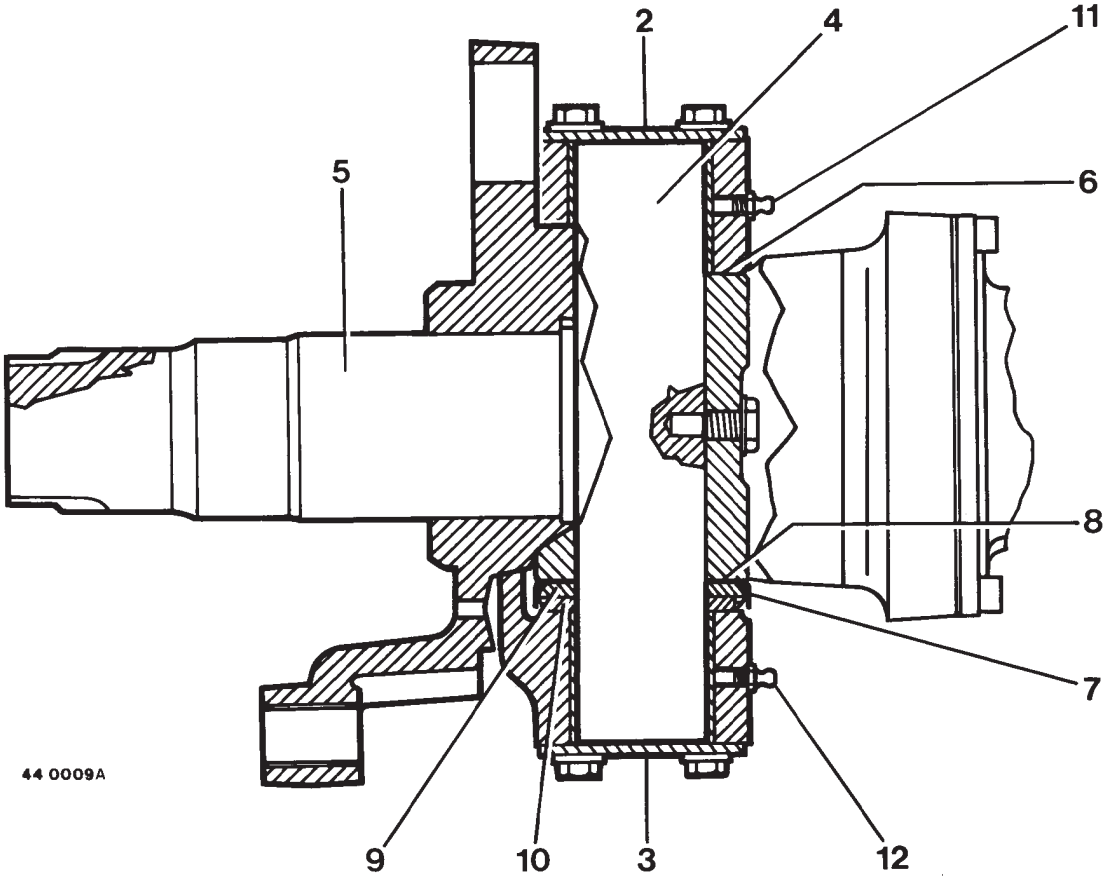
Assemble the hub (**5**).
Install the bearing (**6**).

Tighten the nut (**3**) in a preliminary stage at a torque of **500 Nm**, while turning the hub several times in both directions.
Slacken the nut by about half a turn and bring the hub back onto the nut.
Retighten the nut (**3**) at a torque of **250 Nm**, while turning the hub several times in both directions.
Lock the nut (**3**)

Fill the hub with oil.

STUB AXLE


1


2
4
11
5
6
8
7
44 0009A
9
10
3
12

Removal

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

For the braking system portion see “MR : **50 619**”.

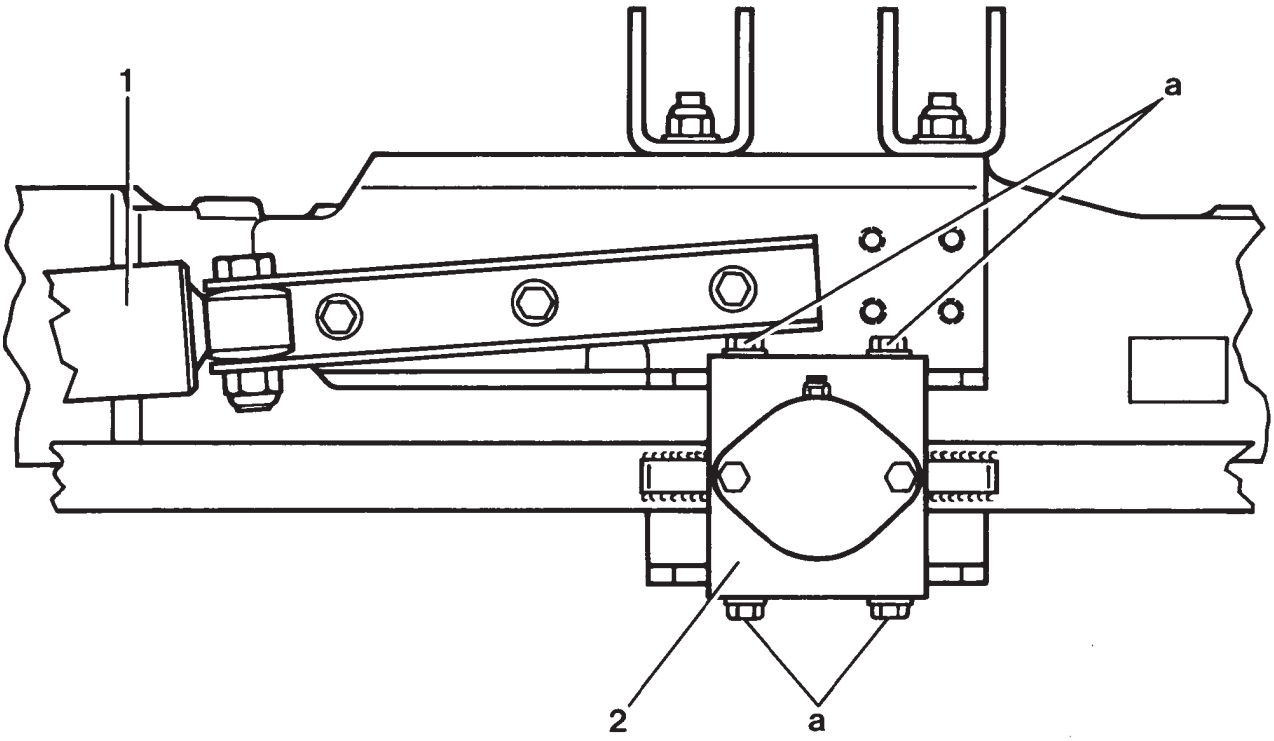
Disassembly

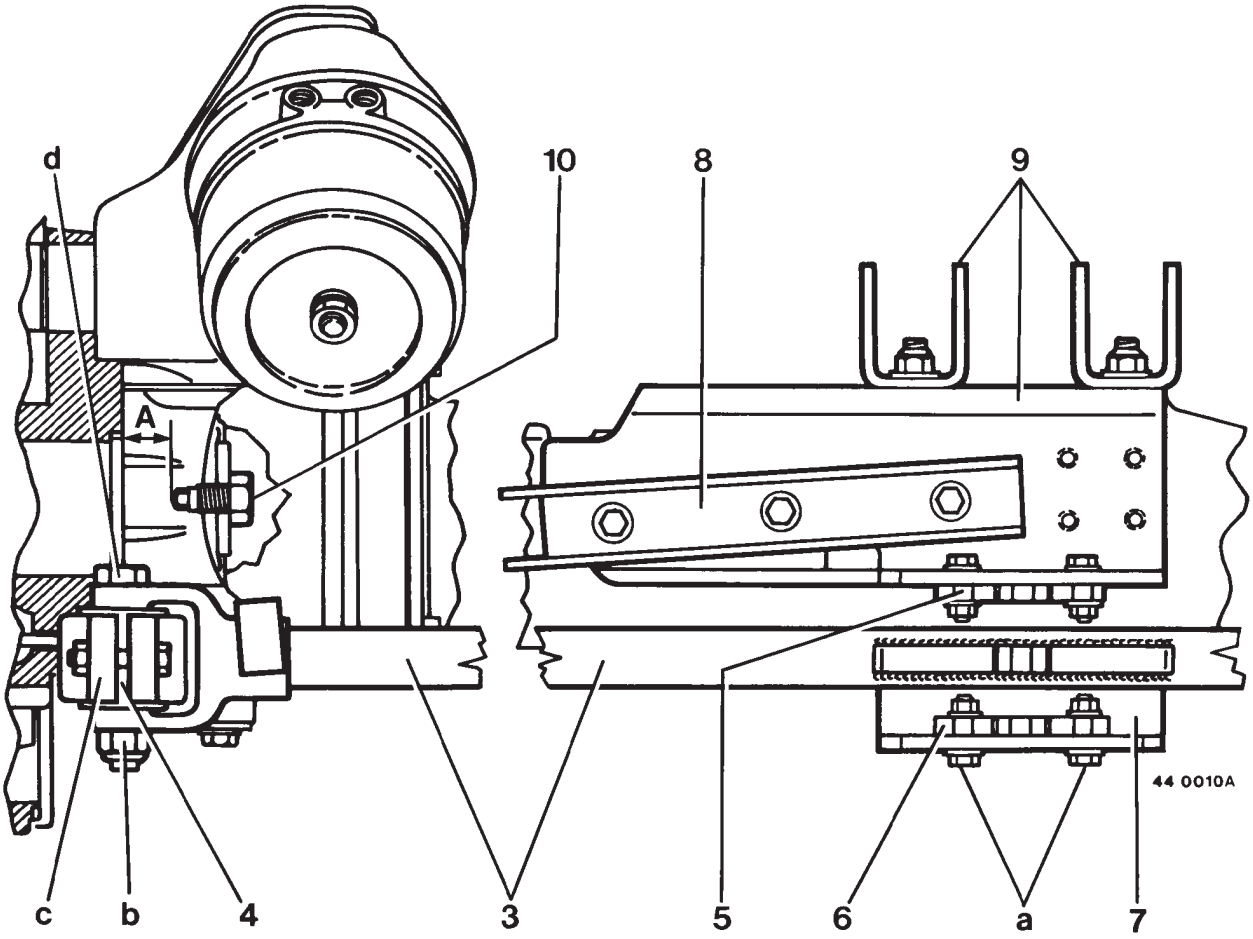
The item numbers indicated in the drawing on page **C2** correspond to the **sequence of disassembly**.

Assembly

Proceed in the reverse sequence to disassembly.

Grease.


1
a
2
a


d
10
8
9
A
44 0010A
c
b
4
3
5
6
a
7

Track rod

Disassembly

On vehicle or on support.
The item numbers indicated in the drawing on page **C4** correspond to the **sequence of disassembly**.

Assembly

Proceed in the reverse sequence to disassembly.

Assemble the plates (**5 / 6**).
Screw up the screws without tightening them.

Assemble the track rod (**3**).

Fit the actuator ram (**2**).
Tighten the screws (**a**) at the recommended torque.

Connect up the compressed air system and check for correct operation of the locking device.

Adjustment

The axle is adjusted on the vehicle.
Prior to adjustment, check the following:
– State and pressure of the tyres.
– State and height of the suspension.
– Vehicle unladen and in running order on flat ground, axle roadwheels on pivoting plates.
Install the front axle checking apparatus.
Lock the track rod.
Loosen nut (**b**) and clamp (**c**). Turn (**d**) to obtain the wheel alignment value
(toe–in: **1.25** → **1.5 mm/m**).
Tighten clamp (**c**) to torque. Tighten nut (**b**) to torque.
Adjust the steering lock stop (**10**). Respect the dimension “**A = 32 mm**”.

TOOL

RENAULT TRUCKS divide tools into 3 categories

– **General–purpose tools :** Commercially available tools.
  . **50 00 26 .... reference number** (possibility of purchasing through the RENAULT TRUCKS Spare Parts department).
  . **4–figure reference number** (tools with RENAULT TRUCKS reference number, but available from the supplier).

– **Special tools :** Specially created tools, distributed by the RENAULT TRUCKS 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 TRUCKS Spare Parts department) : a certain skill is needed to make these tools.

Three levels (or echelons) determine their assignment

– **LEVEL1 :** Tools for servicing and minor tasks.

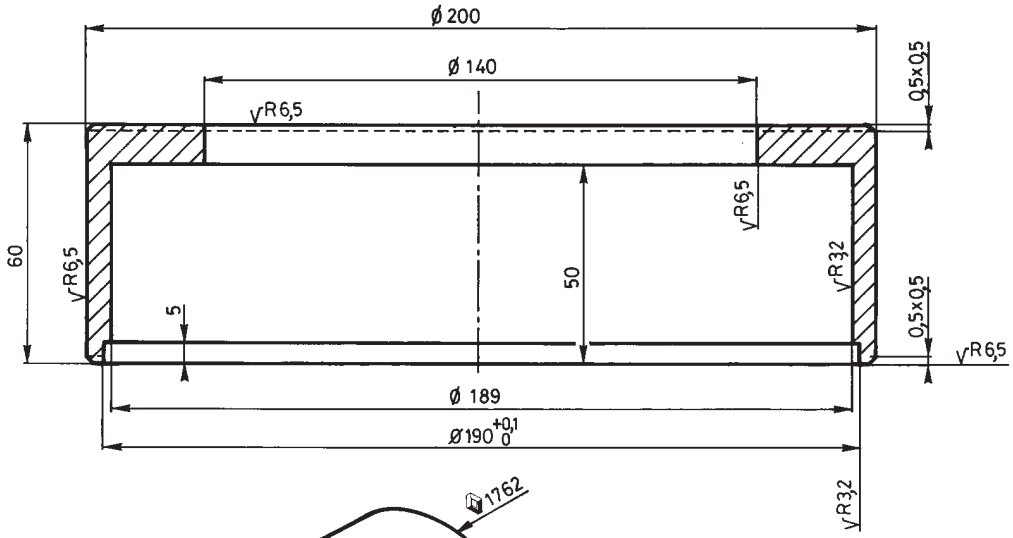
– **LEVEL 2 :** Tools for major repairs.

– **LEVEL 3 :** Tools for refurbishment.

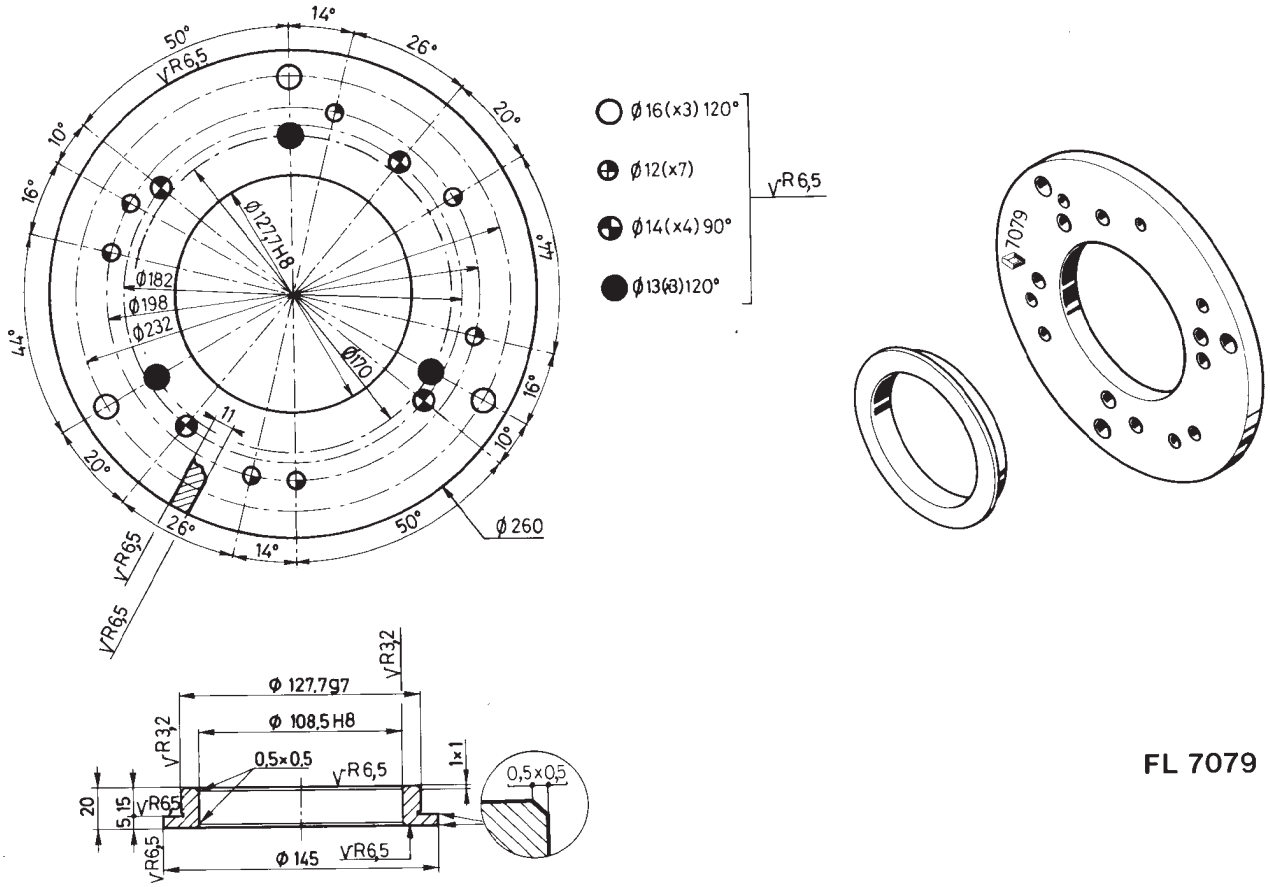
General–purpose tools				
Ref. RENAULT TRUCKS	**Description**	**Level**	**Quantity**	**Page**
50 00 26 **0827**	Puller	1	1	B3
50 00 26 **2351**	Pusher set	1	1	B3
50 00 26 **2363**	Pusher set	1	1	B3

Locally manufactured tools				
Ref. RENAULT TRUCKS	**Description**	**Level**	**Quantity**	**Page**
1762	Pusher	2	1	B3
50 00 26 **7079**	Centering device	1	1	B3

Locally manufactured tools



FL 1762



FL 7079