

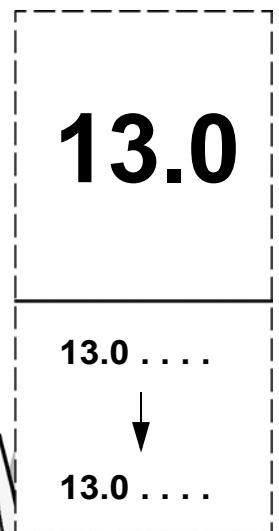
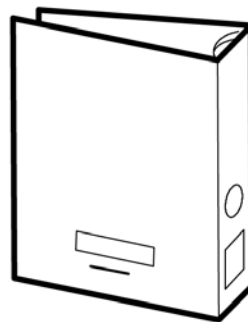
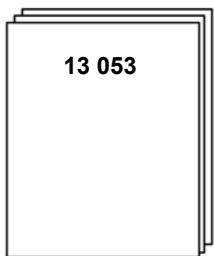
13 053 - GB - 09/2005

SUSPENSION

| RANGE | FAMILY | VARIANT |
|-------------------------------------|----------------------|---------|
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | - |
| | 27JC - TR 6X2 Pusher | |
| | 27RC - PR 6x2 | |
| | 27SC - PR 4x2 | |
| | 27TC - TR 4x2 | |



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.



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| — Tightening torques | B1-5 → 10 |
| — Specific tightening torques | B2-1 → 6 |
| — Technical data | B3-1 → 1 |

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| | |
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|---|----------------|

GENERALITIES

APPLICABILITY

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|-------------------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Warnings | | | | 31/03/2003 | A-3 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Conventional symbols | | | | 23/05/2002 | A-4 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Operating principle | | | | 17/11/2004 | A-6 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Key to diagrams | | | | 27/09/2004 | A-10 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Schematic diagram | | | | 21/03/2005 | A-11 |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27RC - PR 6x2 | Schematic diagram | | | | 21/03/2005 | A-12 |
| RENAULT PREMIUM DXi 11 EURO 3 | 27JC - TR 6X2 Pusher | Schematic diagram | | | | 21/03/2005 | A-13 |

Warnings

In this document, safety instructions are symbolized as follows:



DANGER! NON-OBSERVANCE OF THE PROCEDURE DESCRIBED OR LACK OF CARE OR ATTENTION, RISK CAUSING SERIOUS INJURY OR EVEN DEATH.



WARNING! Any different or inappropriate working method risks causing damage to the product.








NOTE! Draws attention to particular or important points of the method.













Comply without fail with the regulations in force relative to the recovery and treatment of used parts and waste.

Conventional symbols









Fitting

| | | | |
|---|---|---|----------------------------|
|  | Tighten to torque (Nm) (left-hand thread) |  | Tighten by indicated value |
|  | Tighten to torque (Nm) (right-hand thread) |  | Loosen by indicated value |
|  | Tightening torque with lubricated threaded hardware | | |










Dimensioning

| | | | |
|---|-------------------------------|---|----------------------------------|
|  | Tightening |  | ... Greater than or equal to ... |
|  | Equal to |  | Wear limit |
|  | ... Less than ... |  | Machining limit or dimension |
|  | ... Greater than ... |  | Maximum out-of-true |
|  | ... Less than or equal to ... |  | Maximum parallelism error |



















Repair

| | | | |
|---|---|---|--|
|  | Force to be exerted in the direction shown (hammer - press) |  | Smear or coat (see "Consumables" table) |
|  | Heat or cool: Temperature in degrees Celsius (e.g. + 80 °C) |  | Fill to level (see "Technical Data" and "Consumables" table) |
|  | Weld bead |  | Grease or oil (see "Consumables" table) |
|  | Repair time - Heating time |  | Mark - Assemble according to marking |

Adjustment

| | | | |
|---|------------------------------|---|---|
|  | Rotating friction torque |  | Turn anti-clockwise |
|  | Turn in alternate directions |  | Turn anti-clockwise (the figure shows the number of turns) |
|  | Turn clockwise |  | Turn clockwise (the figure shows the number of turns) |
|  | Place in contact |  | Move in the direction shown |
|  | Dimension to be assured (mm) | | |

Various information

| | | | |
|---|----------------------------------|---|---|
|  | Exhaust - Outlet |  | Operation with a sequence |
|  | Intake - Inlet |  | Involves |
|  | Weight in kg (example: 275 kg) |  | Return to numbered operation - Connected with numbered operation |
|  | Depending on versions or options |  | Withdraw - Delete |
|  | Wrong |  | Direction of disassembly (the arrow shows the direction) |
|  | Correct |  | Direction of assembly (the arrow shows the direction) |
|  | Injection |  | ... to ... |
|  | Repair dimension |  | Inspect - Check condition of part |
|  | Part to be replaced |  | Danger for persons, vehicle or equipment |

Operating principle

The ECU (**G004**) constantly receives information coming from the level sensors (**C0..**), for remote control box (**B001**), engine and cab ECUs.

Electrovalves block (**V03.**) pilot-controlled by the ECU permanently corrects the height of the vehicle's suspension according to the information received.

A diagnostic socket (**X913**) serves to analyse system operation via the RENAULT TRUCKS test tool.

Depending on your vehicle's equipment

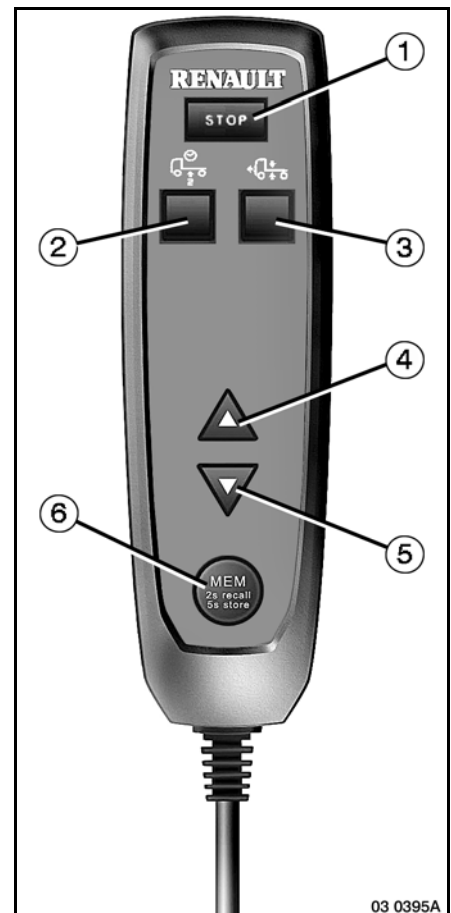
With remote control

It is connected to the ECS electronic box, which provides power supply to the internal electronics system.

The ECS system does not take account of controls transmitted by the remote control if the air pressure is more than **8 bars** and if the road speed is less than **10 km/h**.

Controls available:

- "STOP" control (1).
- "Standby" control (2).
- "Return to road position" control (3).
- "Up" control (4).
- "Down" control (5).
- "Memorize" control (6).



IN THE EVENT OF DANGER, IT IS POSSIBLE TO STOP THE MOVEMENT STRAIGHT AWAY BY PRESSING SWITCH (1) ONCE.



If the speed of movement is considered too fast by the electronic system, it limits that speed by cutting the air flow.

Without remote control

Switches **(B1–B2–B3)**, located on the dashboard, serve to raise and lower the rear suspension and return to the road level.

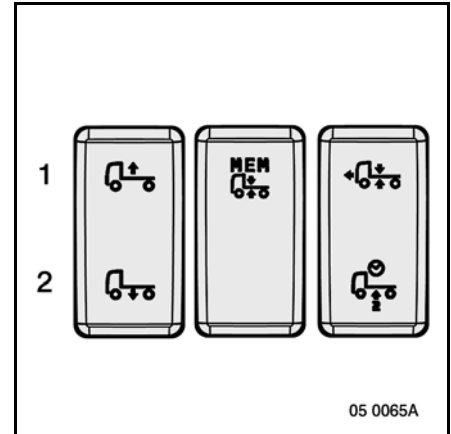
The ECS system only takes account of commands transmitted by the switches if the air pressure is above **8** bars and the road speed is below **10** km/h.

Controls available:

- **(B1)** "raise / lower" control,
- **(B2)** "memorize / recall memorized setting" control,
- **(B3)** "return to road level / standby" control.

Return to road level

To recall the road level, move toggle switch **(B3)** to position **(1)**.



IN THE EVENT OF DANGER, IT IS POSSIBLE TO STOP THE MOVEMENT STRAIGHT AWAY BY PRESSING SWITCH (B1) ONCE.



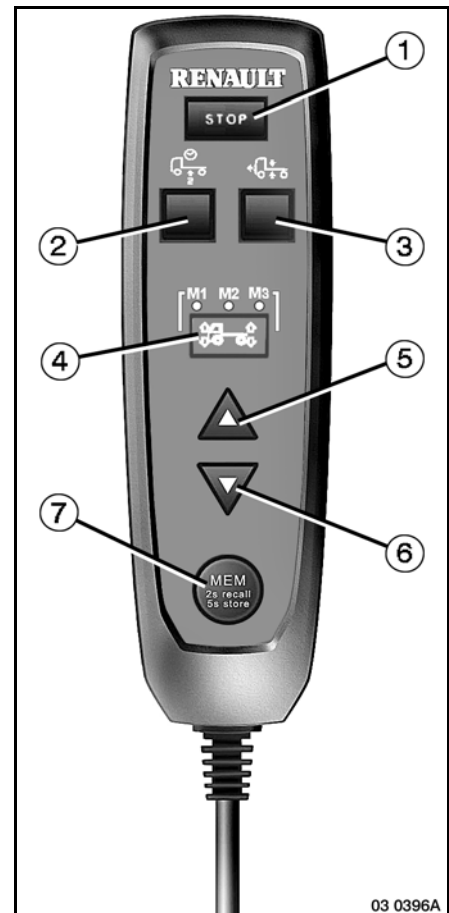
If the speed of movement is considered too fast by the electronic system, it limits that speed by cutting the air flow.

Integral air suspension

The ECS system does not take account of controls transmitted by the remote control if the air pressure is more than **8 bars** and if the road speed is less than **10 km/h**.

Controls available:

- "STOP" control (1).
- "Standby" control (2).
- "Return to road position" control (3).
- Selection control: "drive axle and axle(s)" / "memorized heights" (4).
- "Up" control (5).
- "Down" control (6).
- "Memorize" / "Recall memorized setting" control (7).



IN THE EVENT OF DANGER, IT IS POSSIBLE TO STOP THE MOVEMENT STRAIGHT AWAY BY PRESSING SWITCH (1) ONCE.



IF YOUR VEHICLE HAS A GROSS TRAIN/COMBINATION WEIGHT (GTW/GCW) OF 60 TONNES, THE PARKING BRAKE ACTS ON THE FRONT AXLE IN ADDITION TO THE DRIVE AXLE. DURING SUSPENSION ADJUSTMENT OPERATIONS, THE FRONT AXLE BRAKE IS RELEASED SO AS TO NOT GENERATE ANY MECHANICAL STRESS. BEFORE ADJUSTING THE SUSPENSION, MAKE SURE THERE IS NO RISK OF THE VEHICLE MOVING.



If the speed of movement is considered too fast by the electronic system, it limits that speed by cutting the air flow.

Lift-up axle**Lowering the axle**

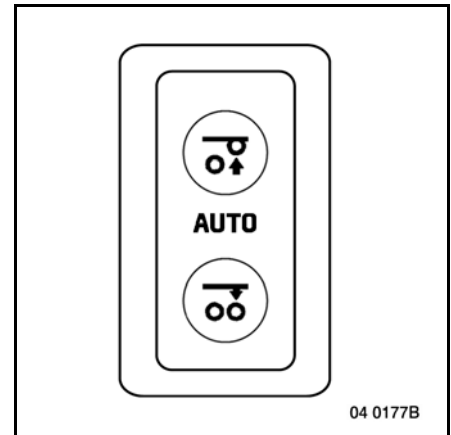
Press the bottom of the switch.

In case of danger, reverse the direction of movement of the axle by pressing the top of the switch.

Raising the axle

Press the top of the switch .

In case of danger, reverse the direction of movement of the axle by pressing the bottom of the switch.



It is only possible to raise the axle if the drive axle load does not exceed the authorized maximum load.

Special **6x2** feature.

The load distribution between the **2** rear axles is managed by the ECU.



Prior to carrying out any work, move the air suspension to the "down" position.

If any mechanical component is removed, empty the air from the air suspension system.

Key to diagrams

Description of system

A – Auxiliary circuit lead-out

B – Air springs pressure (vehicle load) information take-off for servo control of other functionalities
(load sensing valve, EBS, fuel-injection, etc...)

C – With front air suspension

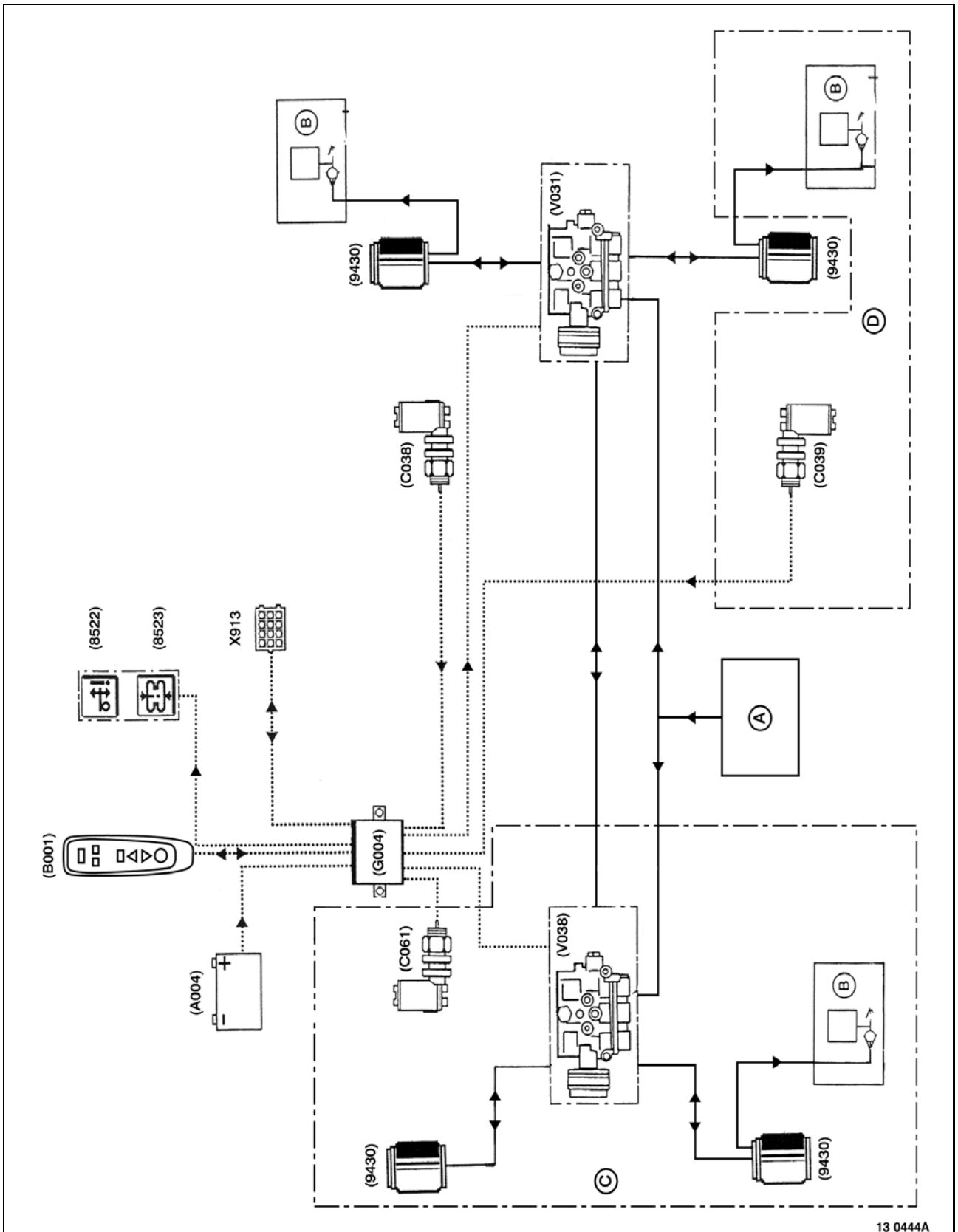
D – With rear air suspension: **2** sensors

E – Switch

| | |
|-------------|--|
| A004 | Batteries |
| B001 | Air suspension remote control |
| C038 | Drive axle suspension RH position sensor |
| C039 | Drive axle suspension LH position sensor |
| C061 | Front axle suspension position sensor |
| G004 | Air suspension ECU |
| V031 | Drive axle rear suspension main electrovalve |
| V035 | Rear axle suspension main electrovalve |
| V038 | Front suspension electrovalve |
| X913 | Vehicle diagnostic socket |
| 8522 | Suspension information warning lamp |
| 8523 | Suspension alert warning lamp |
| 9430 | Suspension air spring |
| 9431 | Lift-up air spring |

Schematic diagram

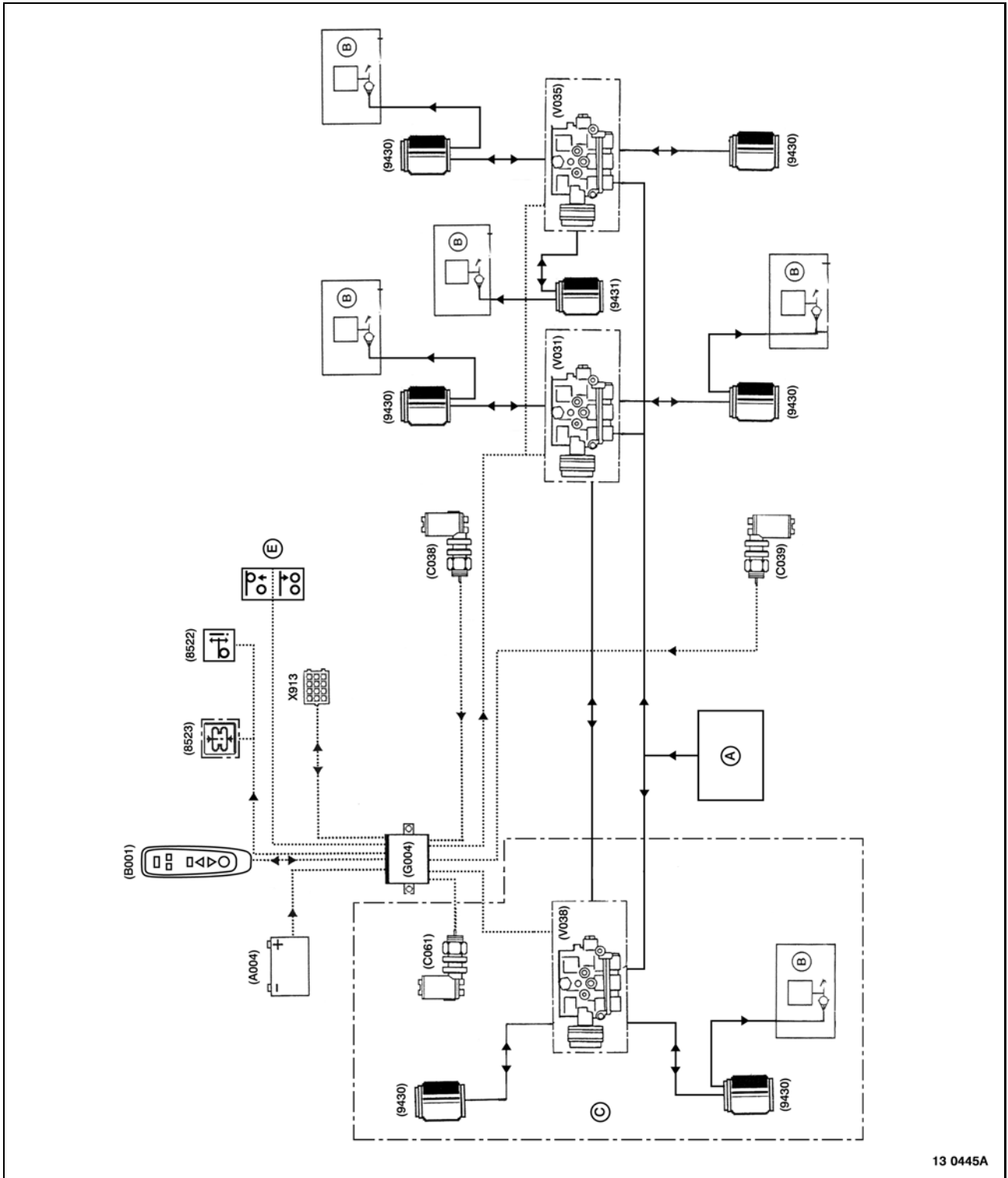
Vehicle 4x2



13 0444A

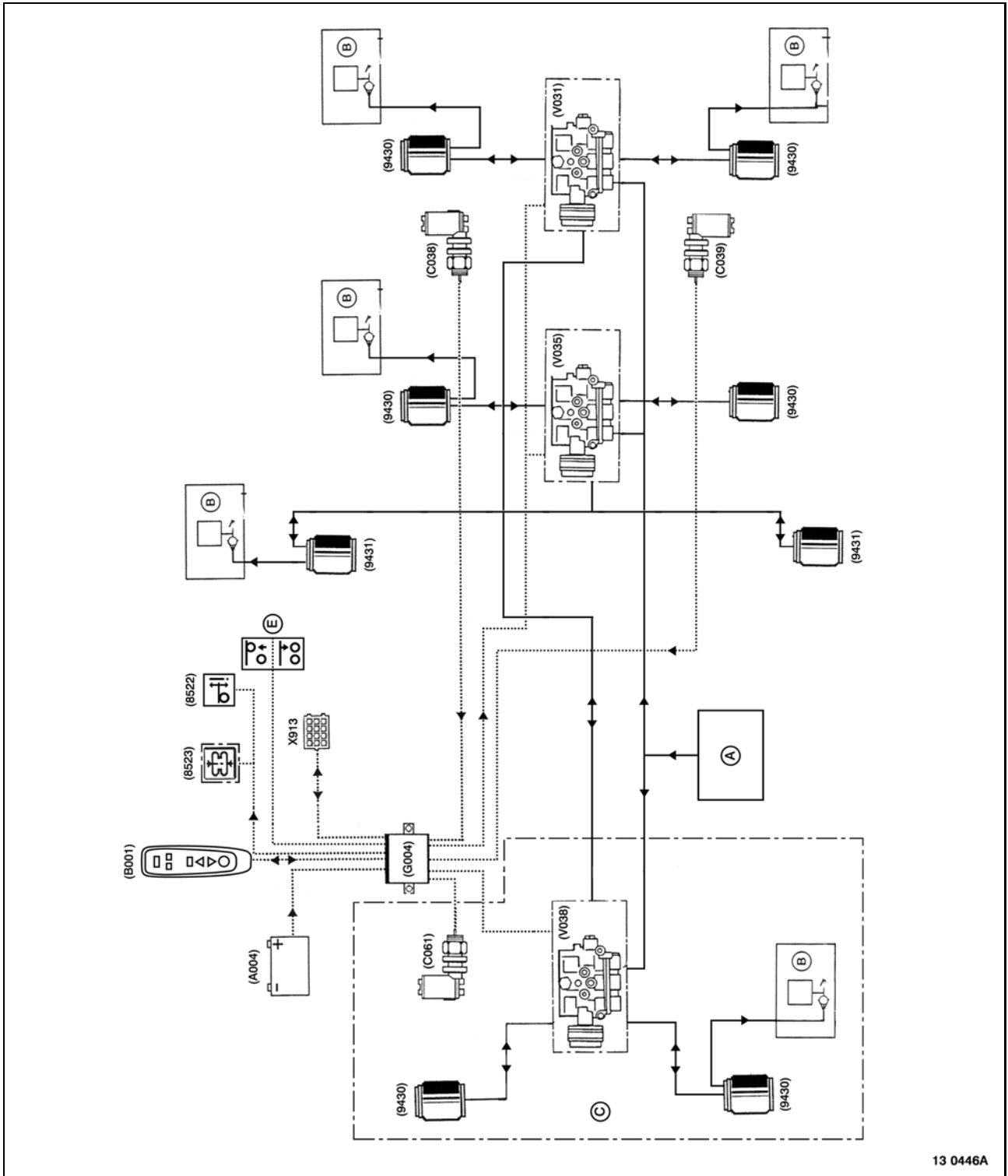
Schematic diagram

Vehicle 6x2



Schematic diagram

Vehicle 6x2 Pusher



13 0446A

TECHNICAL DATA

APPLICABILITY

Tightening torques

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|--|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Definitions | | | | 27/02/2003 | B1-5 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Standard nut and bolt tightening torques table | | | | 06/06/2003 | B1-6 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Tightening of unions | | | | 24/05/2002 | B1-7 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Tightening the wheel nuts | | | | 04/05/2004 | B1-8 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Front end anti-roll bar | | | | 01/04/2005 | B1-9 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|----------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Clamping shims | | | | 01/04/2005 | B1-10 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |

Specific tightening torques

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|---------------------------------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Front mechanical suspension | | | | 17/11/2004 | B2-1 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Front air suspension | | | | 24/06/2004 | B2-2 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Rear suspension (drive axle) | | | | 07/06/2004 | B2-3 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27RC - PR 6x2 | Rear suspension (axle) | | | | 06/10/2004 | B2-4 |
| RENAULT PREMIUM DXi 11 EURO 3 | 27RC - PR 6x2 | Rear suspension lift-up air spring | | | | 12/01/2005 | B2-5 |
| RENAULT PREMIUM DXi 11 EURO 3 | 27JC - TR 6X2 Pusher | Rear air suspension Pusher | | | | 12/01/2005 | B2-6 |

Technical data

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|-----------------------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Appliance technical data | | | | 31/01/2005 | B3-1 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |

Tightening torques

Definitions

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 precision class defines the tolerance of this torque in percent as a function of the nominal torque applied.

Tightening precision classes:

- **Class I:** Special threaded hardware (tolerances $\pm 10\%$ of the final torque).
- **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 the following page(s).



"FIH" type (Nylstop) locknuts must be replaced whenever removed. "DRH" type (oval) locknuts can be re-used. If locknuts (DRH, FIH or other) are re-used, make absolutely certain that the screw-thread of the bolt protrudes least two threads above the top edge of the nut.

Standard nut and bolt tightening torques table

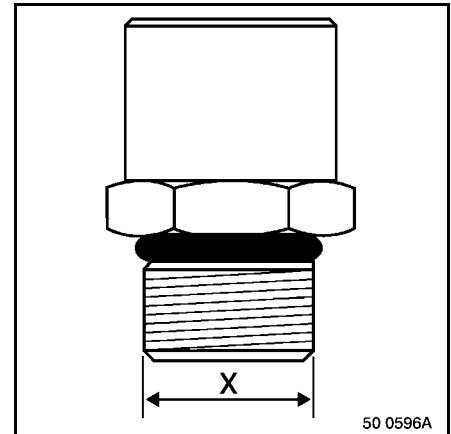


The tightening torque values given in the table are based on standard 01.50.4002 and apply to new nuts and bolts fitted dry and re-used nuts and bolts with oil applied to the screw-threads. If any nuts and bolts are replaced, **it is absolutely essential to use nuts and bolts recommended by the RENAULT TRUCKS Spare Parts Department (coefficient of friction in compliance with standard 01.50.4002).**

| Tightening torque values in Nm for conventional "metric system" threaded hardware based on standard 01.50.4002 (H: normal and HE: with flange) | | |
|--|-------------------|--------------------|
| Diameter and pitch of nuts and bolts | Quality class III | |
| | Quality class 8.8 | Quality class 10.9 |
| 6 x 1.00 | 7.5 ± 1.5 | 11 ± 2.2 |
| 7 x 1.00 | 15 ± 3 | 20 ± 4 |
| 8 x 1.00 | 20 ± 4 | 30 ± 6 |
| 8 x 1.25 | 20 ± 4 | 27 ± 5.4 |
| 10 x 1.00 | 40 ± 8 | 60 ± 12 |
| 10 x 1.25 | 40 ± 8 | 60 ± 12 |
| 10 x 1.50 | 40 ± 8 | 50 ± 10 |
| 12 x 1.25 | 70 ± 14 | 100 ± 20 |
| 12 x 1.50 | 65 ± 13 | 95 ± 19 |
| 12 x 1.75 | 60 ± 12 | 90 ± 18 |
| 14 x 1.50 | 105 ± 21 | 155 ± 31 |
| 14 x 2.00 | 100 ± 20 | 145 ± 29 |
| 16 x 1.50 | 160 ± 32 | 220 ± 44 |
| 16 x 2.00 | 150 ± 30 | 220 ± 44 |
| 18 x 1.50 | 240 ± 48 | 340 ± 68 |
| 18 x 2.50 | 210 ± 42 | 310 ± 62 |
| 20 x 1.50 | 330 ± 66 | 480 ± 96 |
| 20 x 2.50 | 300 ± 60 | 435 ± 87 |
| 22 x 1.50 | 450 ± 90 | 650 ± 130 |
| 22 x 2.50 | 410 ± 82 | 595 ± 119 |
| 24 x 2.00 | 560 ± 112 | 820 ± 164 |
| 24 x 3.00 | 510 ± 102 | 750 ± 150 |

Tightening of unions

| dia. X | Tightening torque |
|---------------|--------------------------|
| 1/8 gas | $9^{\pm 1}$ Nm |
| M 10x100 | $9^{\pm 1}$ Nm |
| M 12x150 | $15^{\pm 3}$ Nm |
| M 14x150 | $15^{\pm 3}$ Nm |
| M 16x150 | $25^{\pm 5}$ Nm |
| M 22x150 | $25^{\pm 5}$ Nm |



Tightening the wheel nuts

Tightening sequence

- Disc wheels

Steel wheels

Wheel nuts tightening torque:

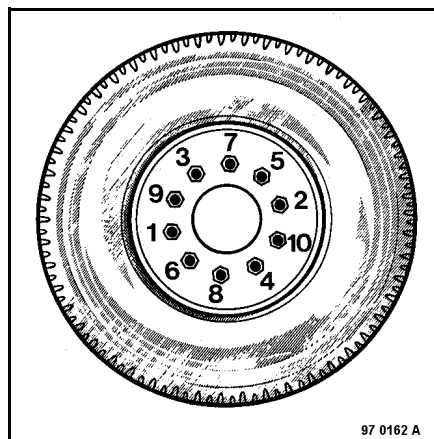
$200^{\pm 8}$ Nm. + $90^{\pm 10^\circ}$

Light alloy wheels

Wheel nuts tightening torque:

$200^{\pm 8}$ Nm. + $90^{\pm 10^\circ}$.

Wheel nuts tightening torque: at least **670** Nm.

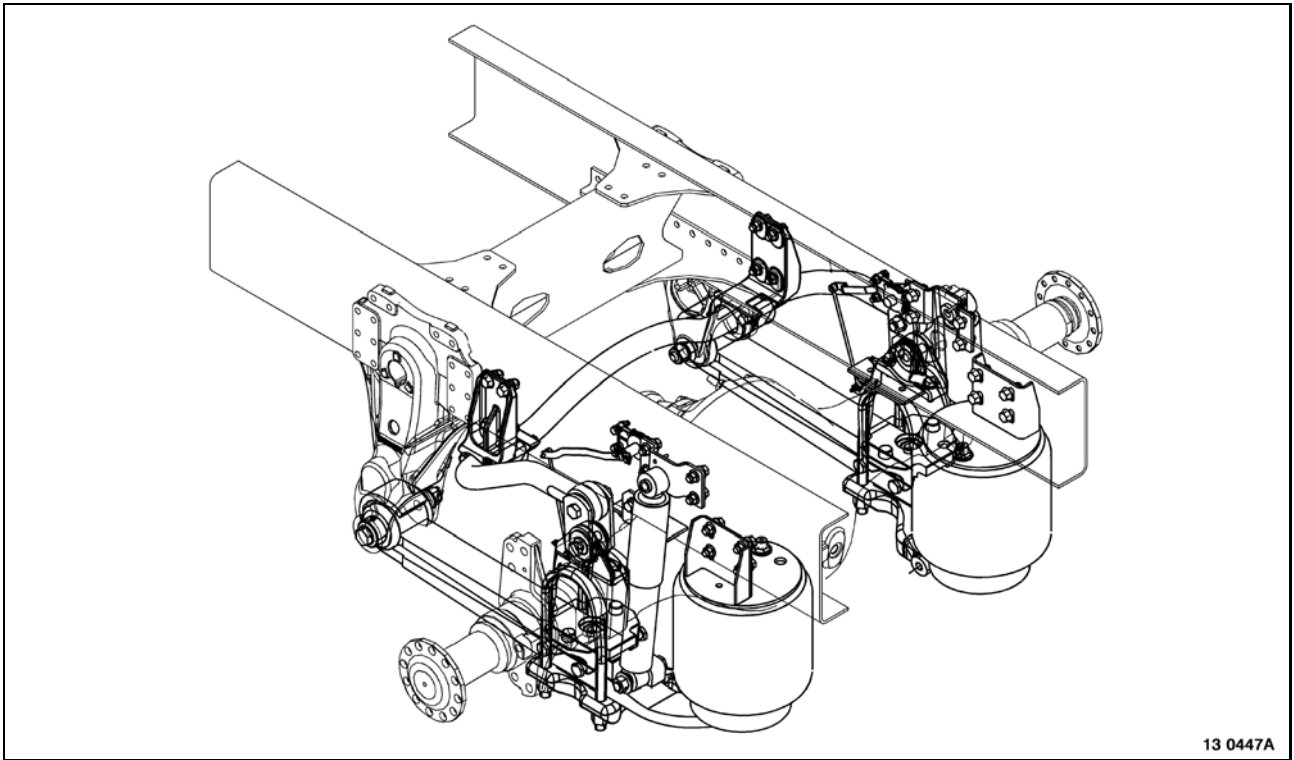
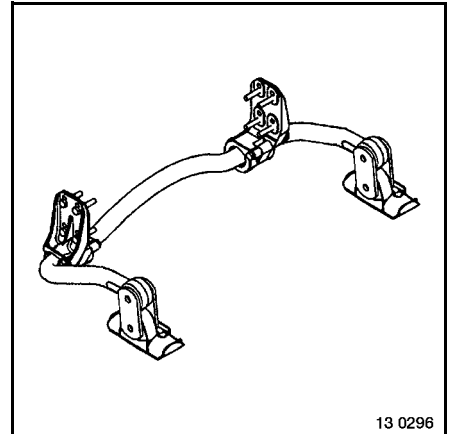


CHECK THE TIGHTNESS OF THE WHEEL NUTS AFTER FITTING A NEW WHEEL OR AFTER A WHEEL CHANGE: AFTER 20 TO 30 KM, THEN BETWEEN 150 AND 250 KM.

CHECK THE TIGHTNESS OF THE WHEEL NUTS EVERY 6 MONTHS WHETHER THE WHEEL HAVE BEEN REMOVED OR NOT.

DURING THE CHECK, IF JUST ONE WHEEL NUT HAS NOT BEEN TIGHTENED TO THE MINIMUM TORQUE OF 670 NM, LOOSEN ALL THE WHEEL NUTS AND RETIGHTEN TO THE RECOMMENDED TORQUE AND ANGLE.

FAILURE TO CARRY OUT THESE ELEMENTARY PRECAUTIONS MAY RESULT IN LOOSENING OF THE WHEEL NUTS AND LEAD TO SERIOUS CONSEQUENCES.

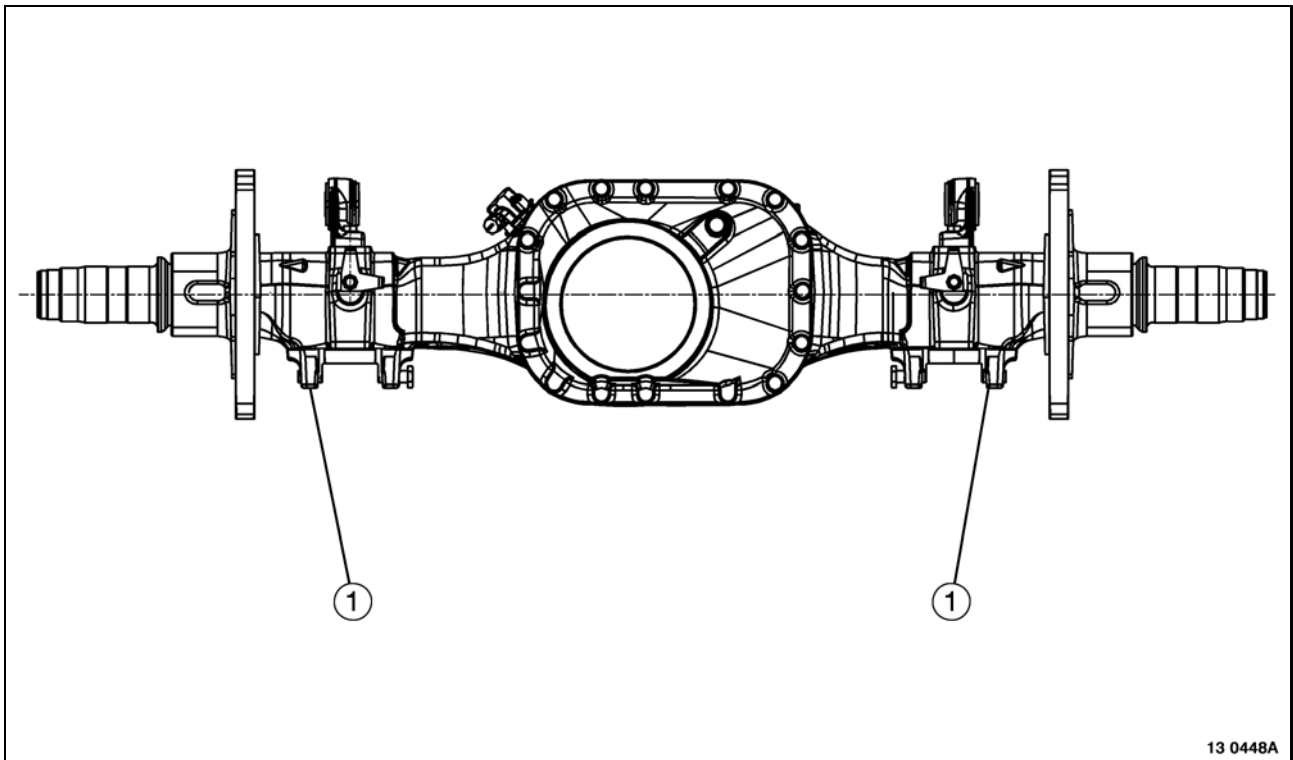
Front end anti-roll bar**Rear anti-roll bar assembly**

Essential: Do not insert washers under the bolt heads - tightening work must be carried out on the nuts.

For tightening torques, see page(s) B-1-6.

Clamping shims

Assembly of rear air suspension clamping shims set to drive axle or axle



The headless screws (1) for the clamping shims set to drive axle or axle must be placed on the brake caliper side.

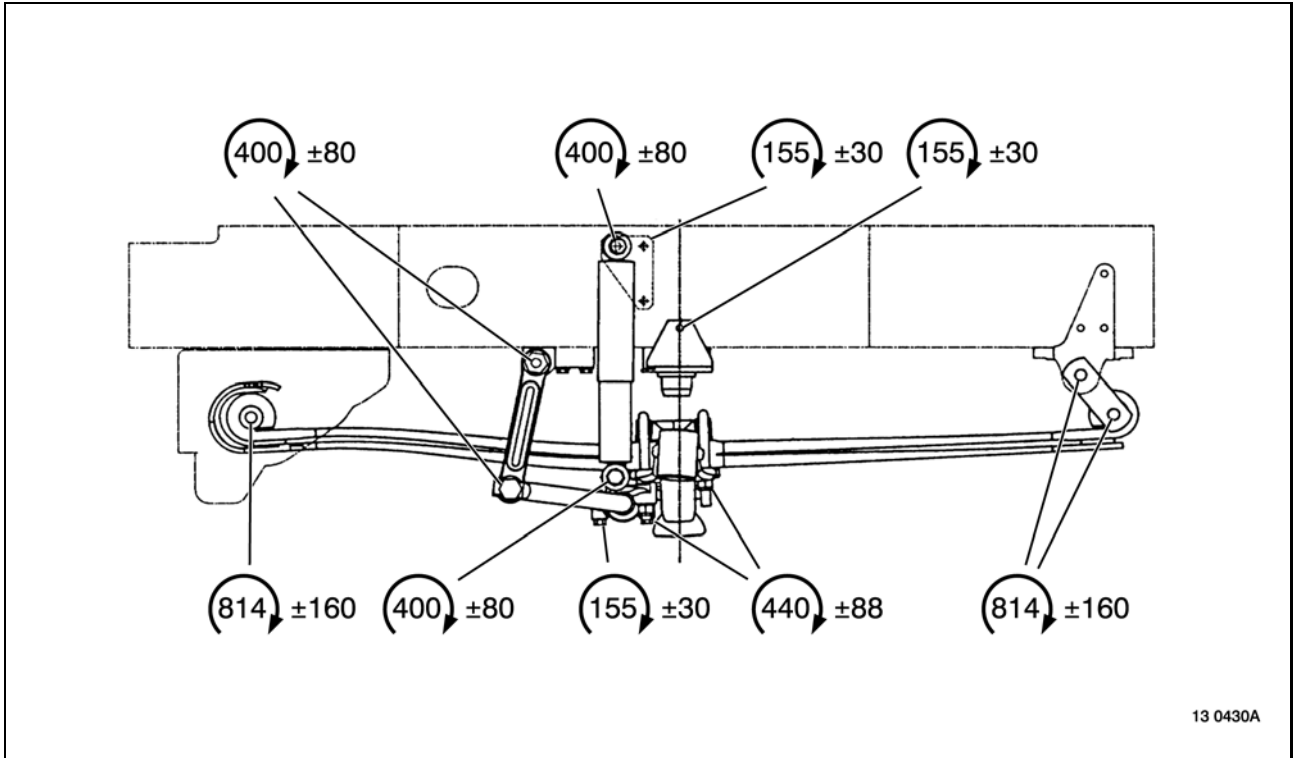


The bolt screw-threads and support faces must be free from paint.

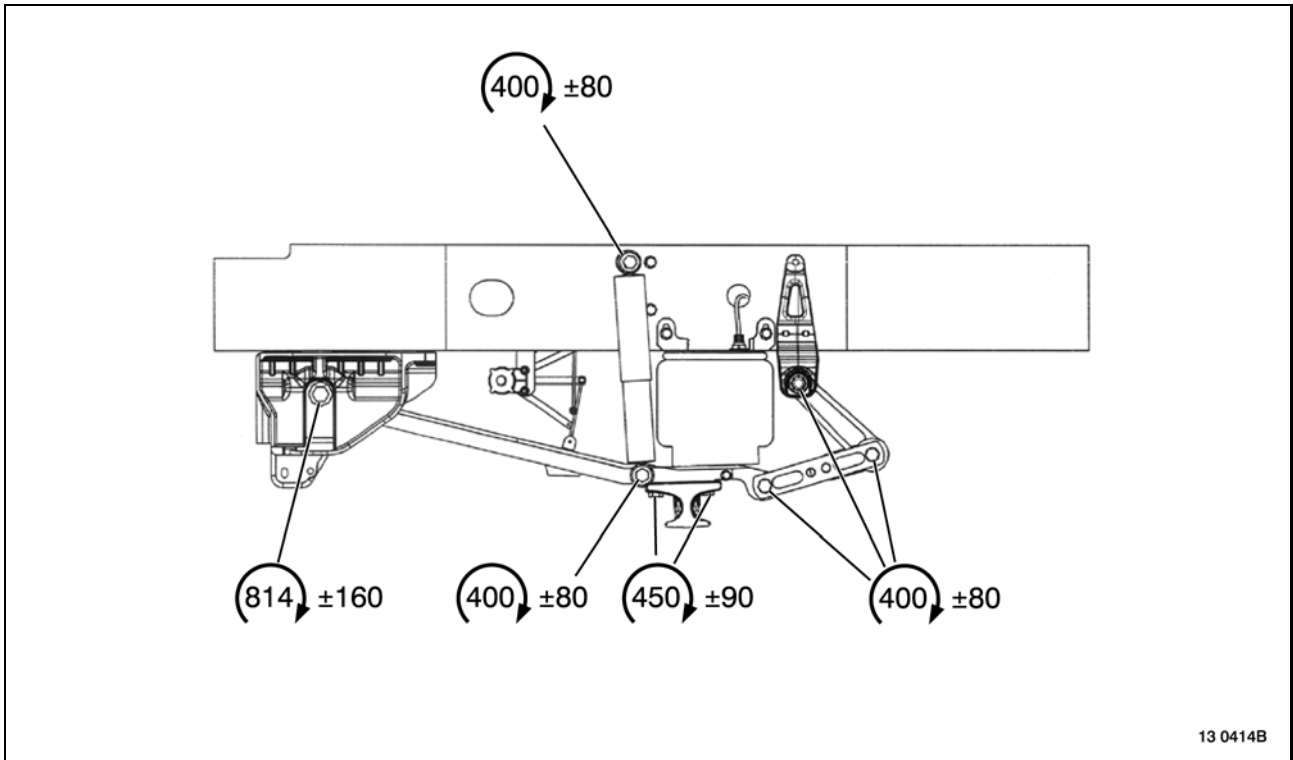
For tightening torques, see page(s) B-1-6.

Specific tightening torques

Front mechanical suspension

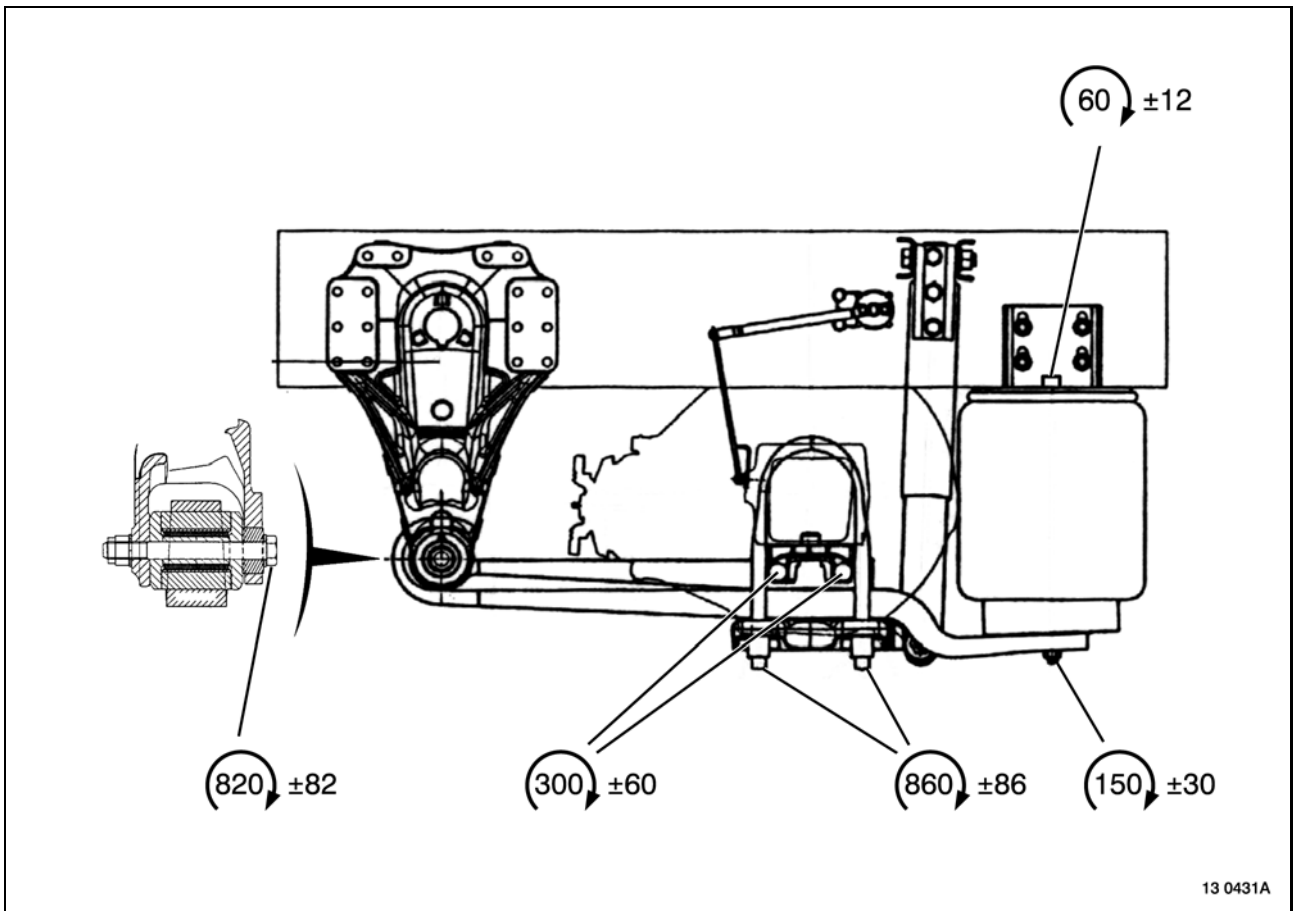


Tightening torques are given in **Nm**.
For other tightening torques, see page(s) B-1-6.

Front air suspension

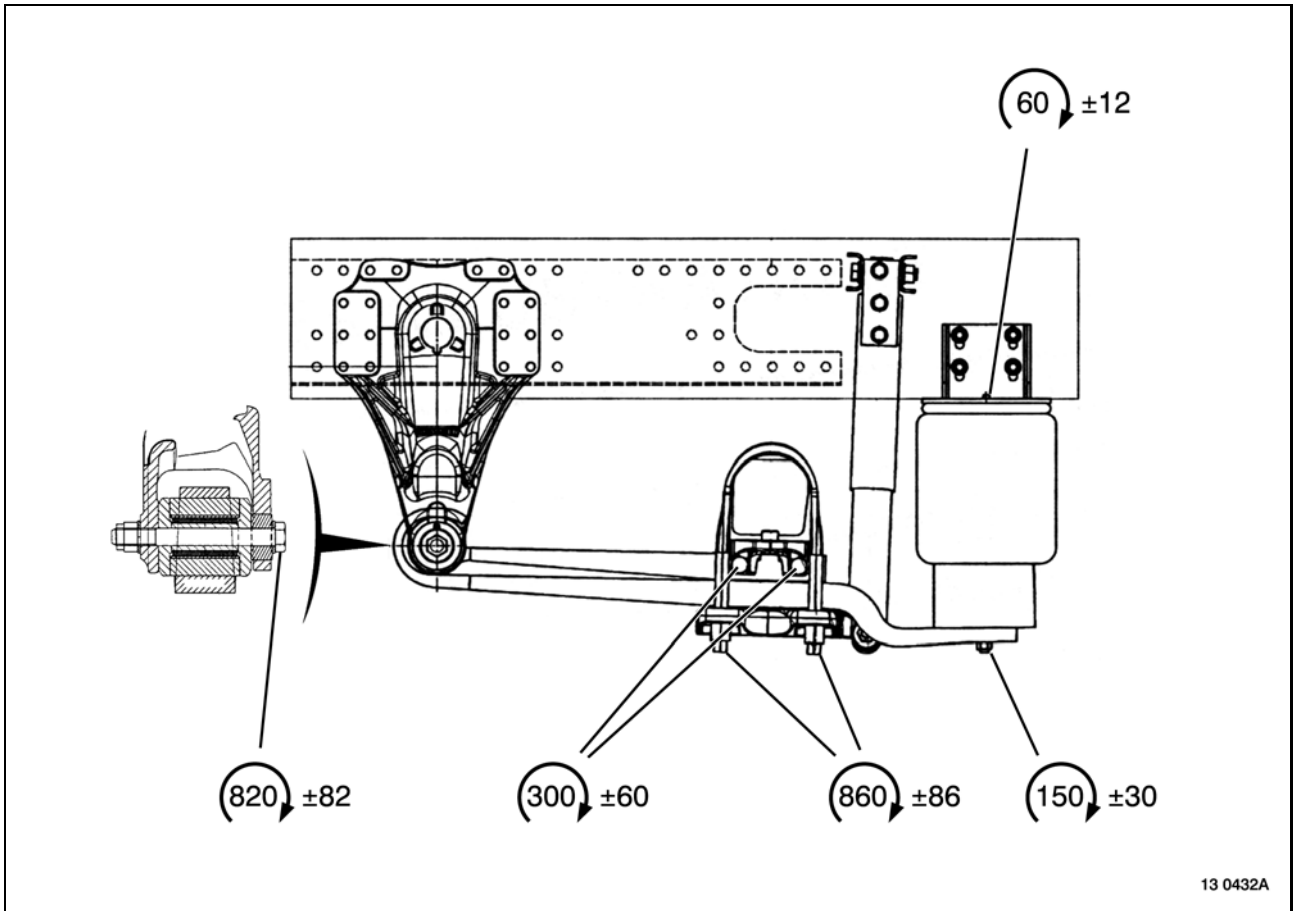
Tightening torques are given in **Nm**.
For other tightening torques, see page(s) B-1-6.

Rear suspension (drive axle)

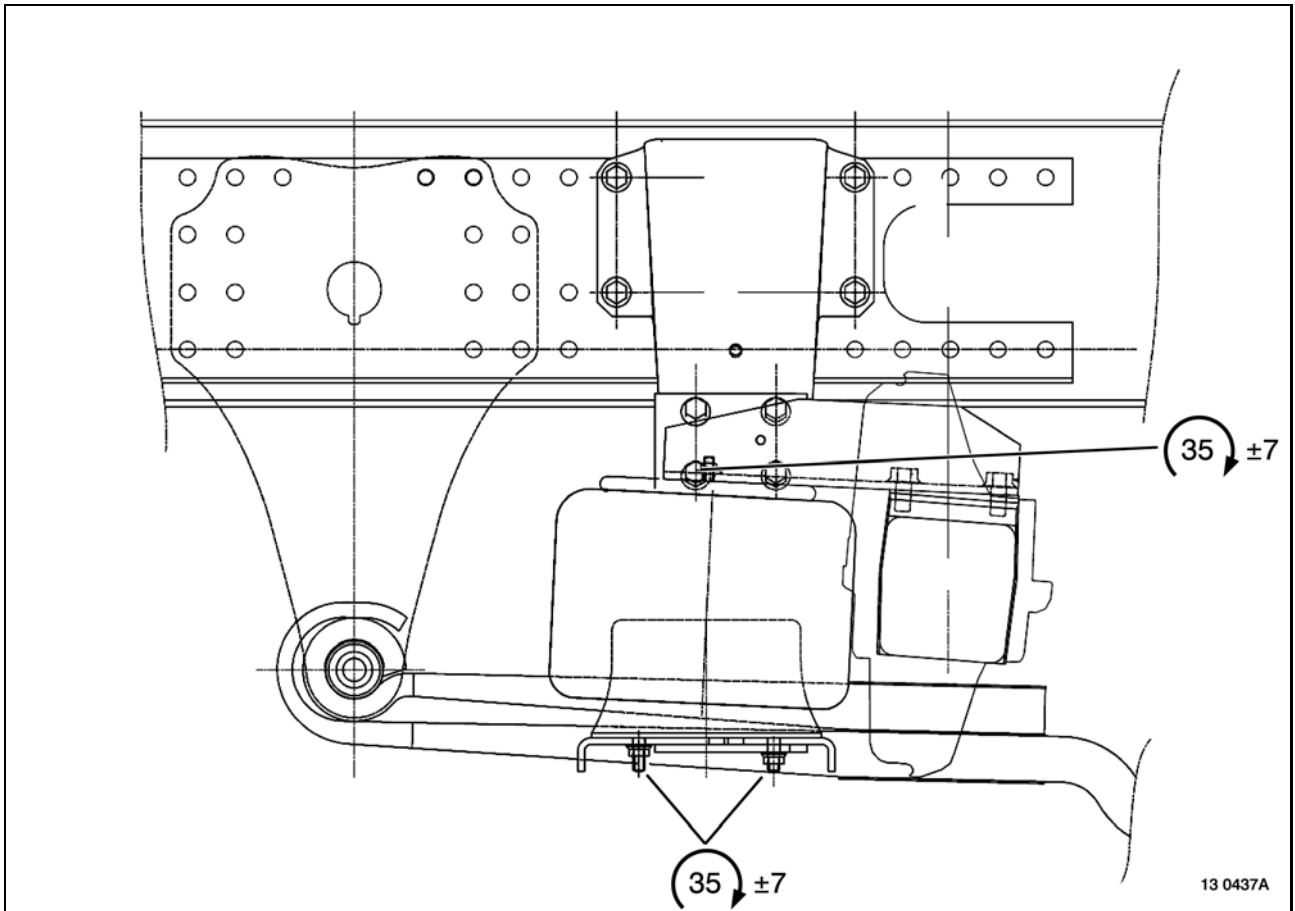


Tightening torques are given in **Nm**.
For other tightening torques, see page(s) B-1-6.

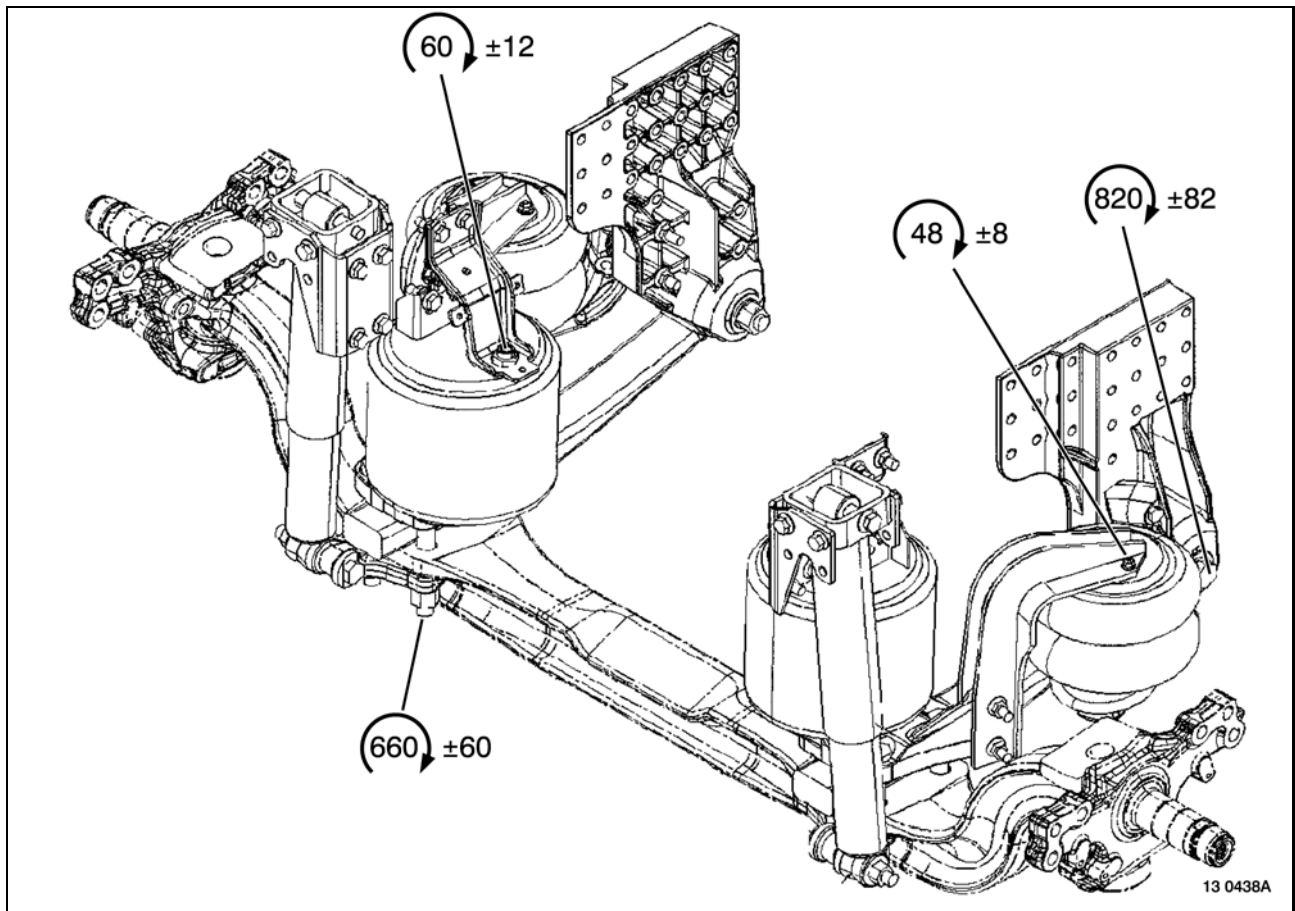
Rear suspension (axle)



Tightening torques are given in **Nm**.
For other tightening torques, see page(s) B-1-6.

Rear suspension lift-up air spring

Tightening torques are given in **Nm**.
For other tightening torques, see page(s) B-1-6.

Rear air suspension Pusher

Tightening torques are given in **Nm**.
For other tightening torques, see page(s) B-1-6.

Technical data**Appliance technical data****Level sensor KNORR BREMSE A500 114024010**

| | |
|----------------------|----------------------------|
| Part N° | 7420514066 |
| Power supply voltage | 5 V |
| Electrical resistor | 5 ^{±1} K Ω |

Min. ECU

| | |
|---------|------------|
| Part N° | 7420569216 |
|---------|------------|

Max. ECU

| | |
|---------|------------|
| Part N° | 7420569215 |
|---------|------------|

Electrovalves block WABCO 472 880 020 0 - front suspension

| | |
|--------------------------|------------|
| Part N° | 5010457151 |
| Power supply voltage | 24 V |
| Maximum working pressure | 13 bars |
| Port screw-threads | M 22x1.5 |

Electrovalves block WABCO 472 880 030 0 - rear suspension 1C

| | |
|--------------------------|------------|
| Part N° | 5010457434 |
| Power supply voltage | 24 V |
| Maximum working pressure | 13 bars |
| Port screw-threads | M 22x1.5 |

Electrovalves block WABCO 472 880 001 0 - rear suspension 2C

| | |
|--------------------------|------------|
| Part N° | 5010422345 |
| Power supply voltage | 24 V |
| Maximum working pressure | 13 bars |
| Port screw-threads | M 22x1.5 |

Pressure transmitter - rear or front suspension

| | |
|--------------------------|------------|
| Part N° | 7420514065 |
| Maximum working pressure | 12 bars |
| Port screw-threads | M 16x1.5 |

TOOLS

APPLICABILITY

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|--------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM DXi 11 EURO 3 | 27BC - TR 4X2 LC | Generalities | | | | 24/11/2004 | C-3 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |

Generalities

RENAULT TRUCKS divides tools into three categories:

- **General-purpose tools:** proprietary tools
 - **50 00 26 reference number** (possibility of purchasing through the RENAULT TRUCKS Spare Parts department).
 - **4-figure reference number** (tools classified by RENAULT TRUCKS but available from the supplier).
- **Special tools:** specifically created tools distributed by the RENAULT TRUCKS Spare Parts Department
 - To be ordered according to the reference numbers appearing in the list of tools on the following pages.
- **Locally manufactured tools:**
 - **4-figure reference number** (represented by a drawing): tools that are simple to make without need for special qualification.

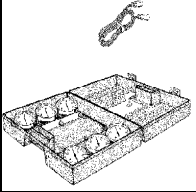
Three levels (or echelons) determine their assignment:

- **Level 1:** tools for servicing, maintenance and minor tasks
- **Level 2:** tools for major repairs
- **Level 3:** tools for refurbishment

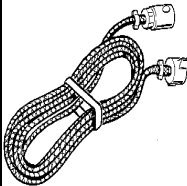

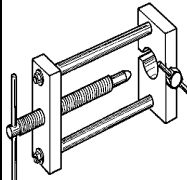


*Proprietary tools mentioned in this manual do not appear in the tools list.
These tools are identified in the standard tools manual (MO) by a 4-figure number.*

TOOLS**General-purpose tools**

| Illustration | RENAULT TRUCKS Ref. | Designation | Manu- facturer reference | Manu- facturer code | Level | Qty |
|---|---------------------|-------------|--------------------------------|---------------------------|-------|-----|
|  | 5000262423 | Test case | | | 1 | 1 |

Special Tools

| Illustration | RENAULT TRUCKS Ref. | Designation | Manu- facturer reference | Manu- facturer code | Level | Qty |
|---|---------------------|--------------------|--------------------------------|---------------------------|-------|-----|
|  | 5000267096 | Flexible pipe | | | 1 | 1 |
|  | 5000262467 | Unclipper | | | 1 | 1 |
| | 5000262464 | RILAX 2000 case | | | 1 | 1 |
| | 5000262599 | RILAX 2000 case | | | 1 | 1 |
|  | 5000265132 | Clamp | | | 1 | 1 |

PNEUMATIC CIRCUIT DIAGRAM

APPLICABILITY

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|---------------------------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Key to diagrams | | | | 29/04/2005 | D-3 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Front suspension | | | | 10/05/2005 | D-4 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Rear suspension (drive axle) | | | | 26/01/2005 | D-5 |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27RC - PR 6x2 | Rear suspension (axle) | | | | 06/10/2004 | D-6 |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27JC - TR 6X2 Pusher | Rear suspension (axle) | | | | 31/01/2005 | D-7 |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Front suspension | | | | 19/11/2004 | D-8 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Rear suspension | | | | 10/05/2005 | D-9 |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27RC - PR 6x2 | Rear suspension | | | | 06/10/2004 | D-10 |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27JC - TR 6X2 Pusher | Rear suspension | | | | 21/12/2004 | D-11 |

Key to diagrams**Key to appliances**

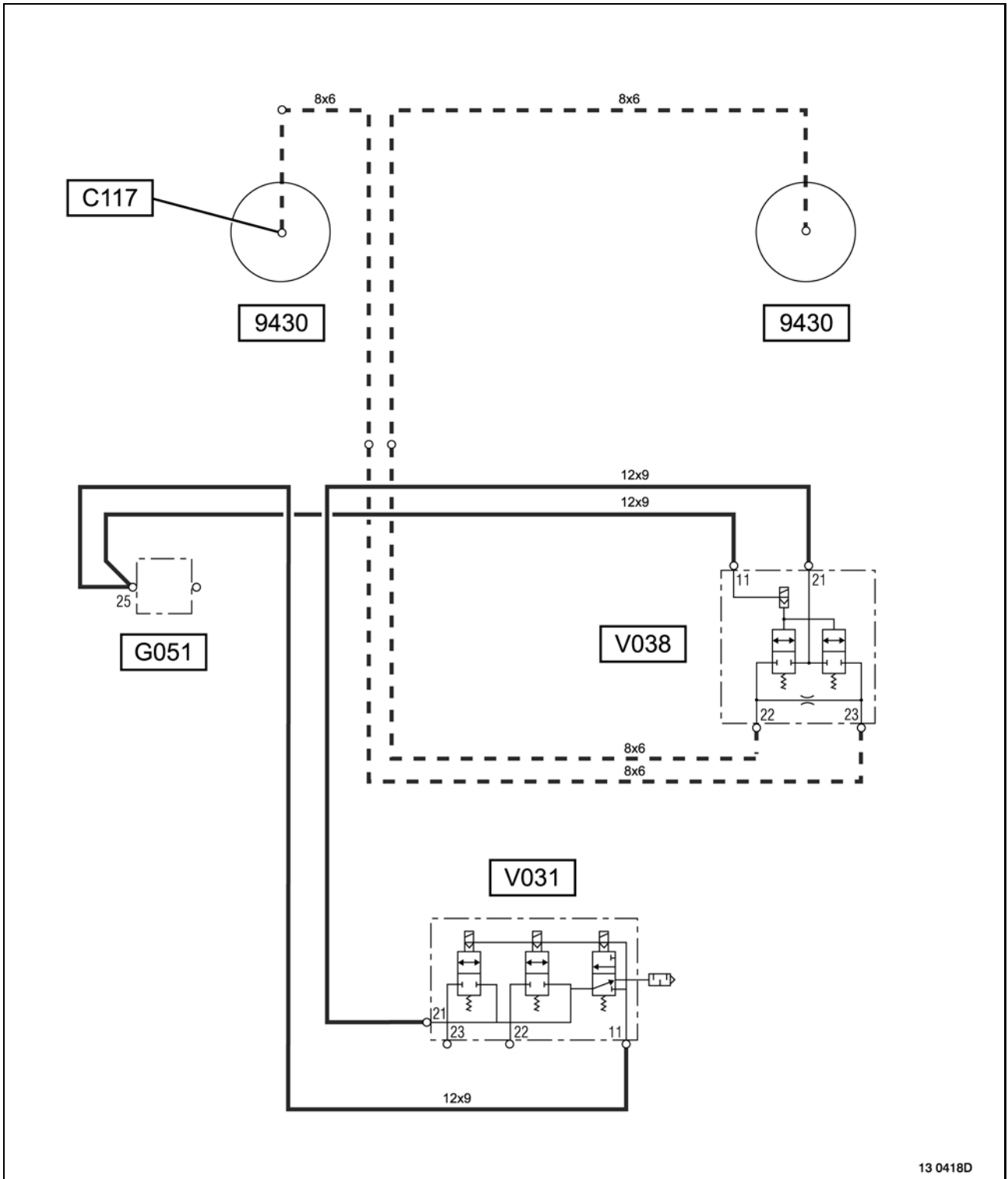
| | |
|-------------|--|
| C040 | Rear drive axle air springs pressure sensor |
| C115 | Lift-up air spring pressure sensor |
| C117 | Front air spring pressure sensor |
| G051 | Air production management ECU |
| V031 | Drive axle rear suspension main electrovalve |
| V035 | Rear axle suspension main electrovalve |
| V038 | Front suspension electrovalve |
| 5011 | Pneumatic pressure take-off |
| 9430 | Suspension air spring |
| 9431 | Lift-up air spring |

Key to cross-references

A – To port **21**, if fitted with front air suspension

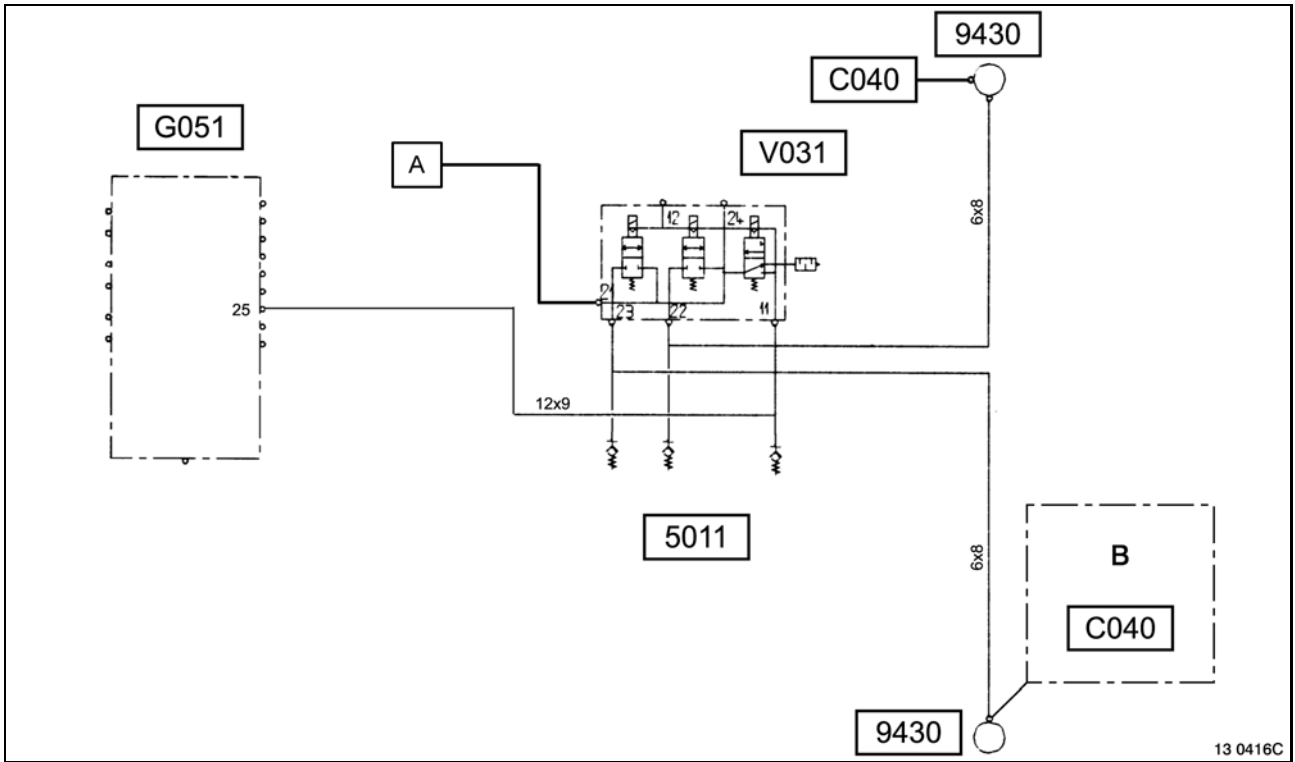
B – With rear air suspension: **2** sensors

Front suspension



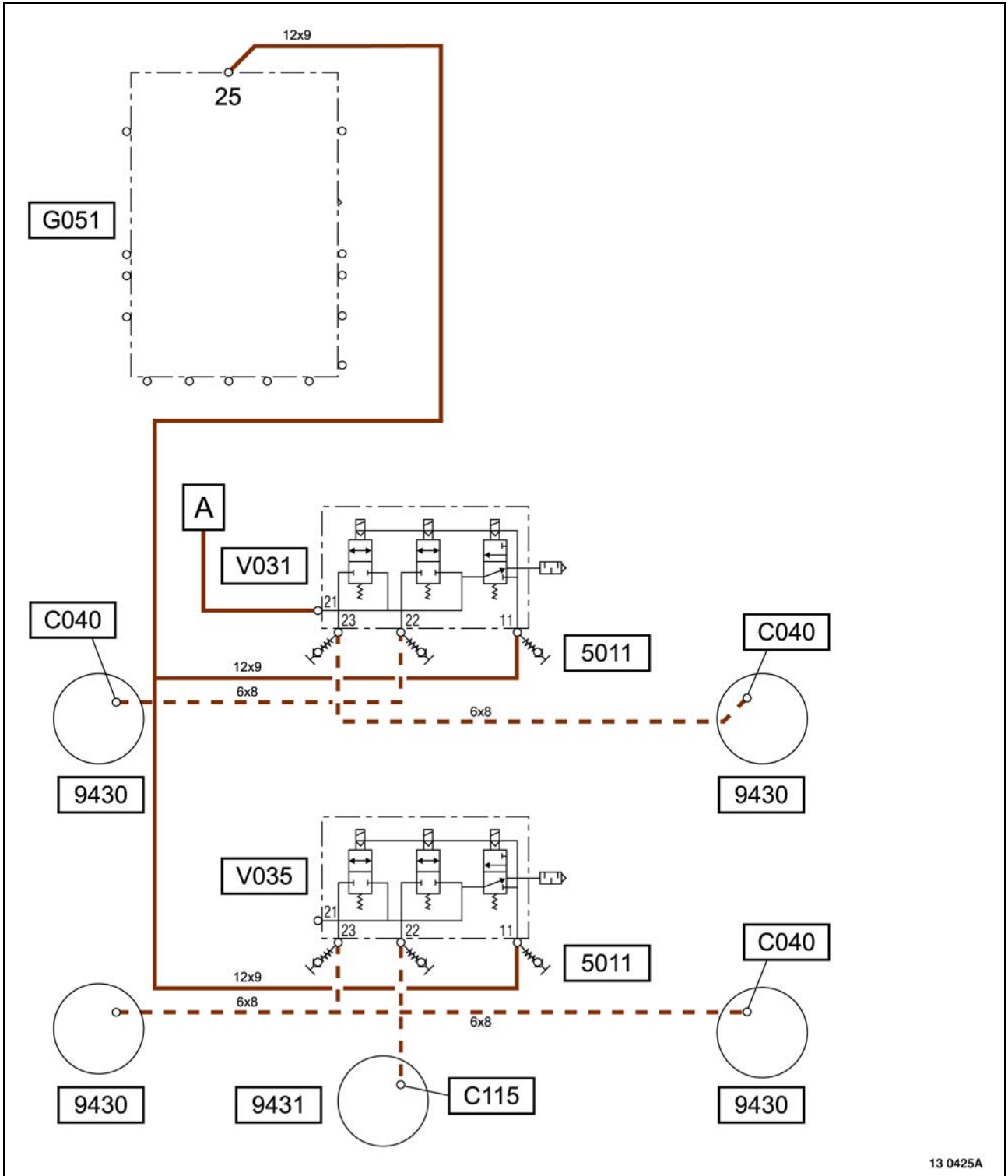
13 0418D

Rear suspension (drive axle)



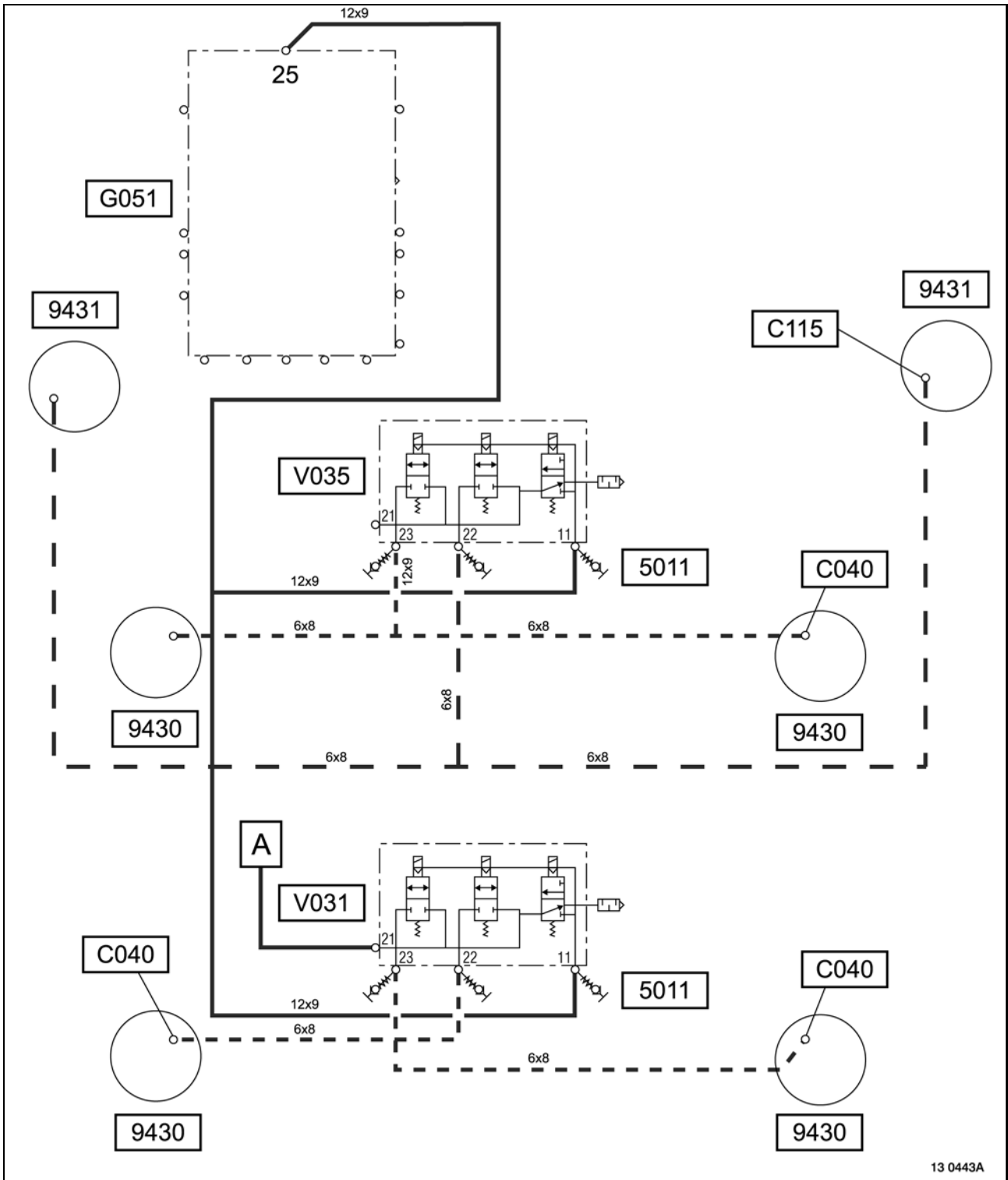
Rear suspension (axle)

Vehicle 6x2



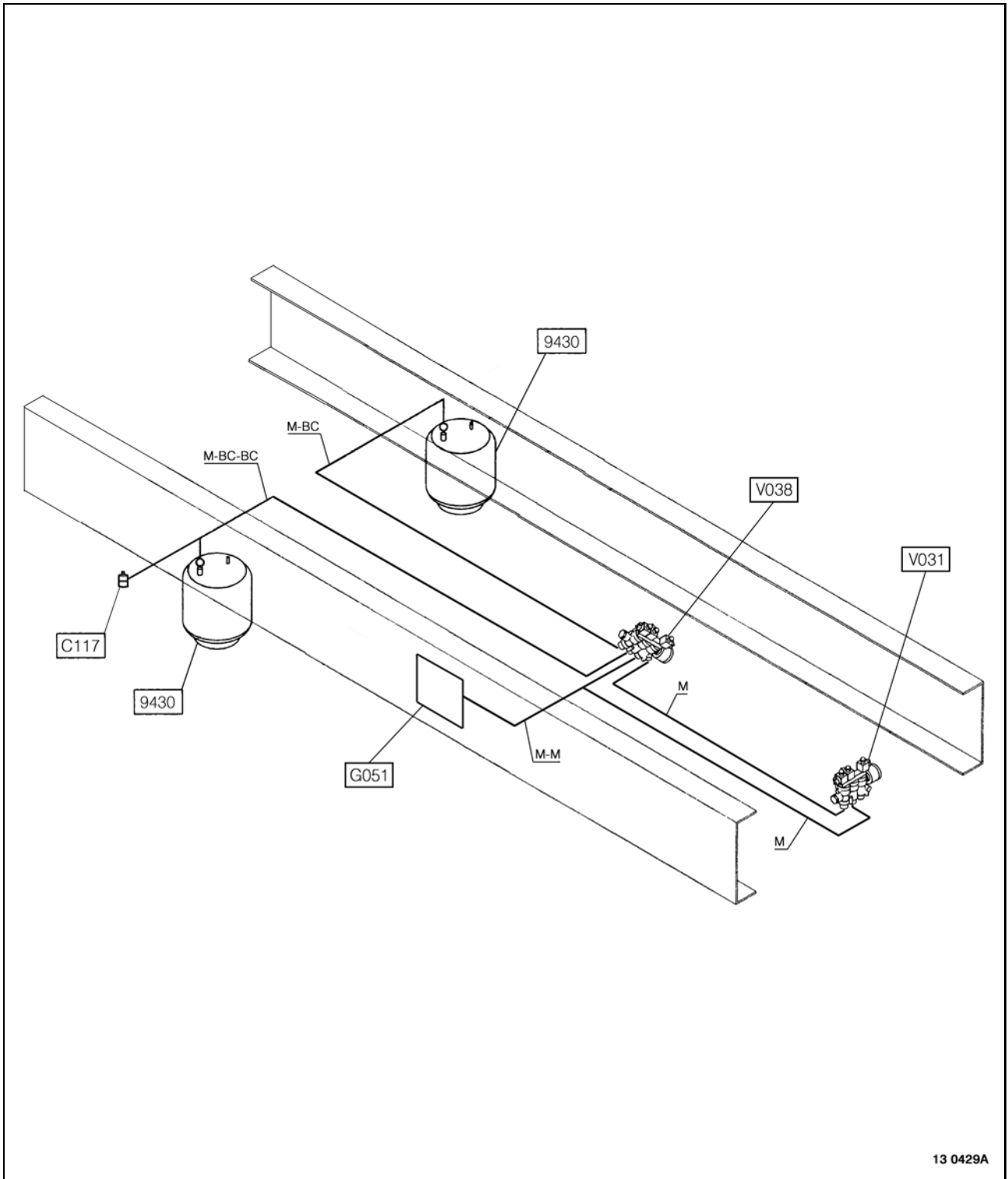
Rear suspension (axle)

Vehicle 6x2 Pusher



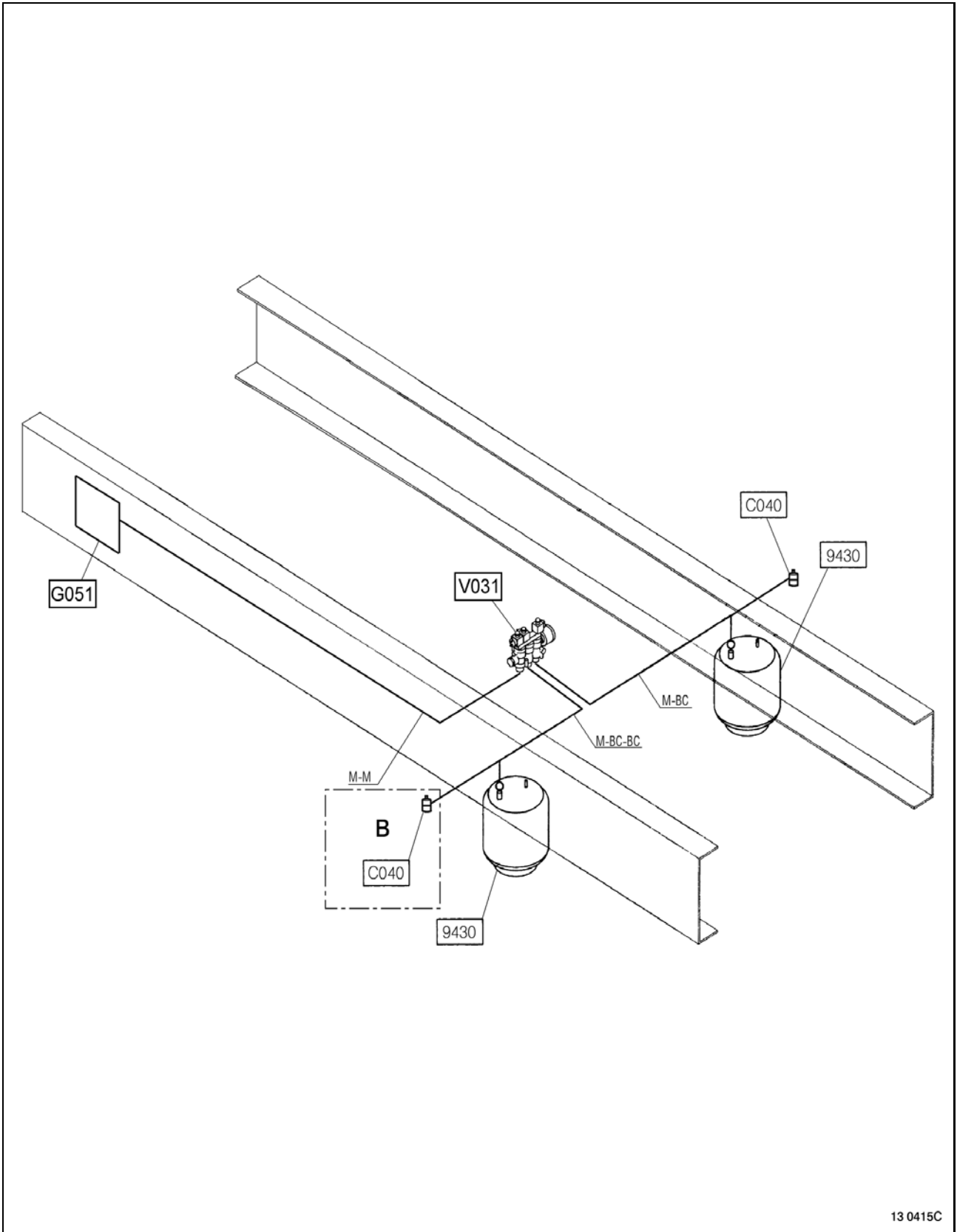
13 0443A

Front suspension



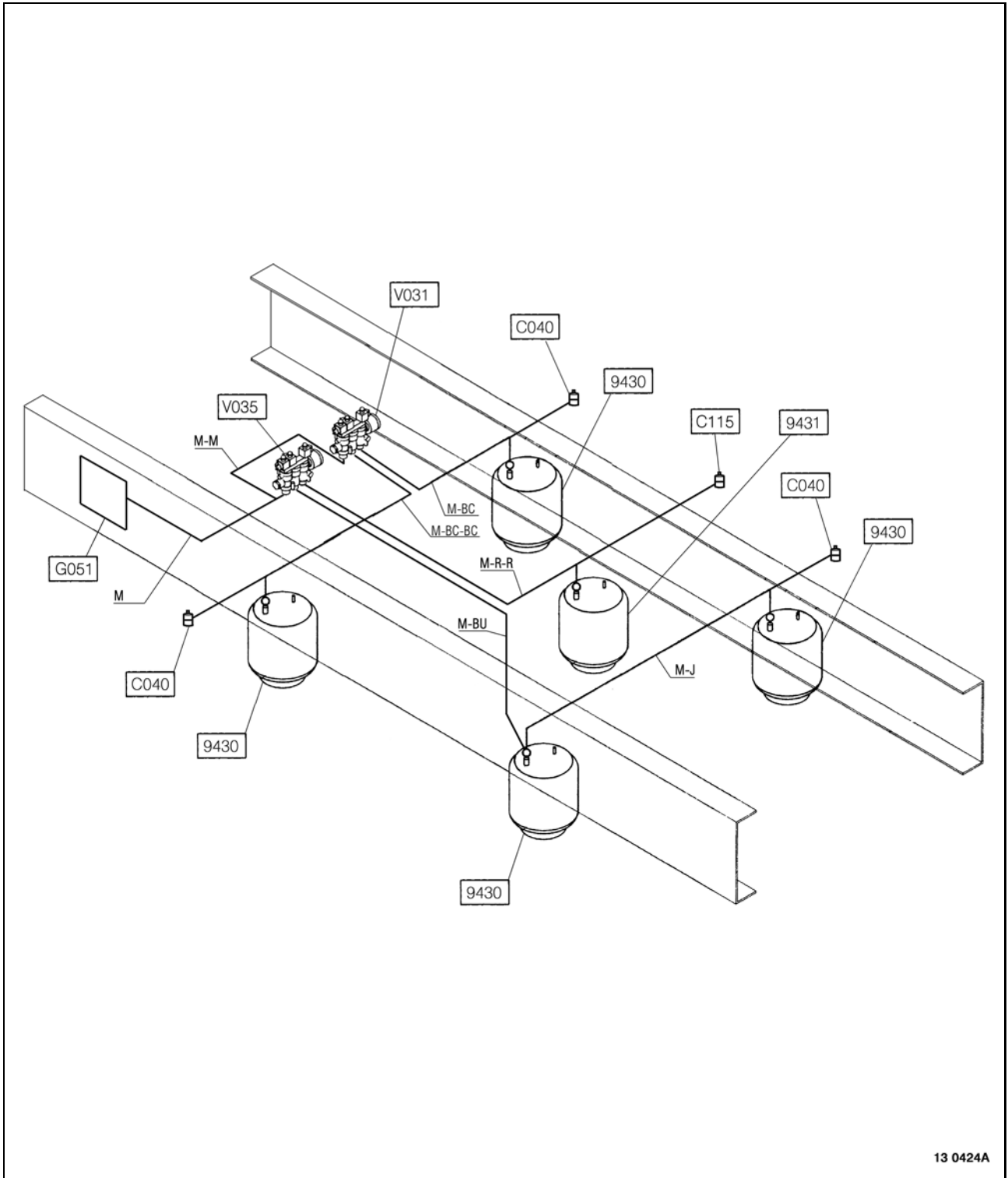
Rear suspension

Vehicle 4x2



Rear suspension

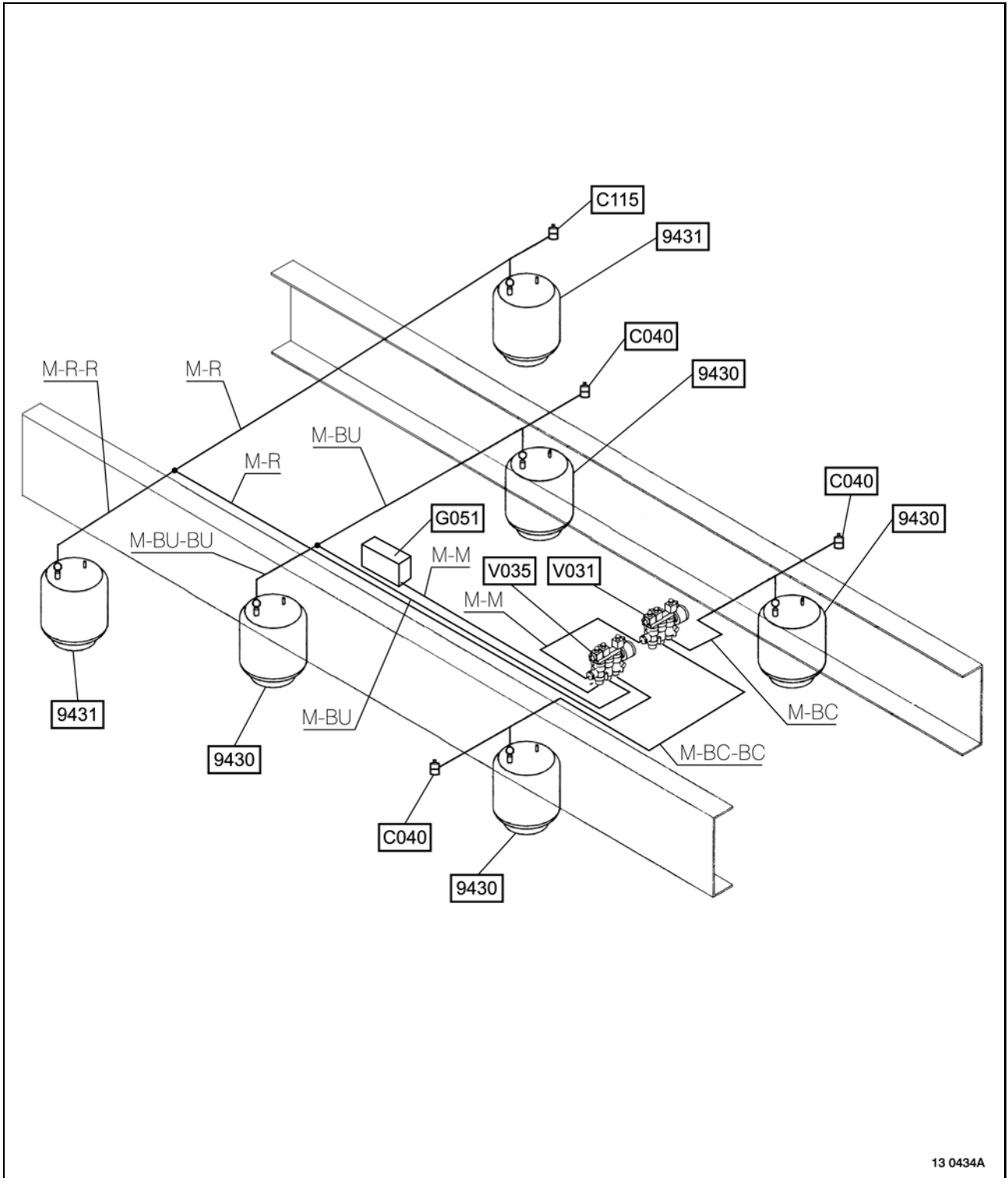
Vehicle 6x2



13 0424A

Rear suspension

Vehicle 6x2 Pusher



DIAGNOSTICS

APPLICABILITY

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|----------------------------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Suspension faults diagnostics | | | | 17/11/2004 | E-3 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |

Suspension faults diagnostics

Preliminary checks

The suspension system comprises 3 major portions:

- mechanical portion,
- pneumatic portion,
- electrical portion.

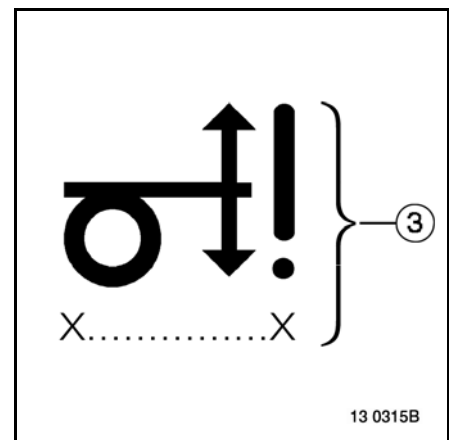
Before commencing diagnostics, there are **5** points to be checked:

- 1° General condition of the mechanical portion (shock absorbers, air springs...),
- 2° Cut-in pressure (see "**Brakes**" workshop manual for the vehicle concerned),
- 3° Battery voltage (it should be \geq **22 Volts**),
- 4° Status of fuses,
- 5° Status of indicator lights.

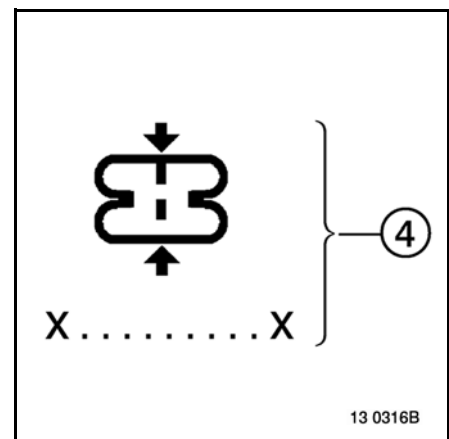
For electrical diagrams, see "**Electrics**" workshop manual for the vehicle concerned.

Instrument panel indicator lights

(3) – Suspension information pictogram (on display screen)



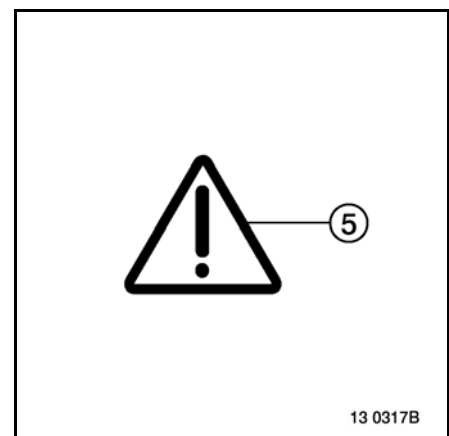
(4) – Suspension failure pictogram (on information display screen).



Pictogram (4) is coupled with "SERVICE" indicator light (5).

When the ignition is switched on, pictogram (5) is displayed and must **be extinguished 2 seconds later if no fault has been detected** (pictogram test).

Pictograms (3 – 4) are only displayed if a fault is detected.

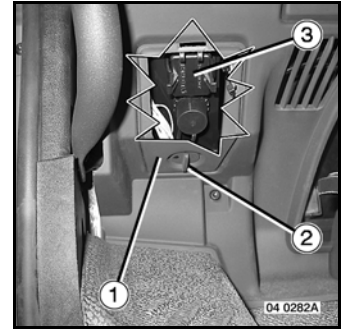


Diagnostics

Full diagnostic checks on the system should preferably be run using the RENAULT TRUCKS test tool.

Plug the tool into diagnostic socket.

To gain access to diagnostic socket (3), open cover (1) by turning lock (2) through 1/4 of a turn.



The testing procedure runs in stages according to a well-defined chronological sequence:

- ECU link-up and recognition test,
- Reading of memorized faults,
- Diagnostics,
- Parameter programming,
- Calibration.



To check the different air pressures, use test case 2423 and flexible pipe 7096.



To unclip the pipes, use only one of the dismantling tools 2467 in relation to the diameter of the tube.

To replace a union, use test case 2464 or 2599, or box 5132.



With the ignition switched on and level sensor link rods disconnected, it is **FORBIDDEN** to use the remote control to avoid the risk of causing **SERIOUS** damage.



PRIOR TO ANY WORK ON THE SUSPENSION (OTHER THAN CALIBRATION), PLACE AXLE STANDS UNDER THE CHASSIS.

TESTING / ADJUSTMENT / CALIBRATION

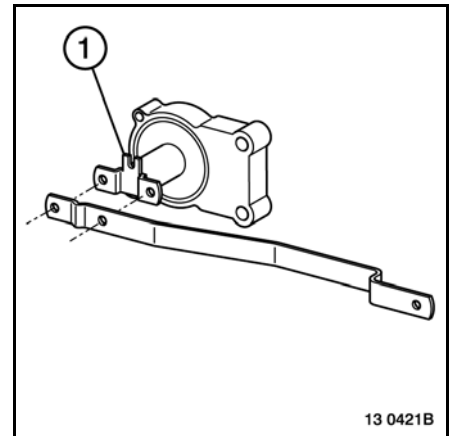
APPLICABILITY

| Range | Family | Title | Variant | Applicability date | | Updating | Page N° |
|-------------------------------------|-------------------------|-------------------------------|---------|--------------------|-----|------------|---------|
| | | | | Start | End | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Assembly of level sensors | | | | 30/08/2004 | F-3 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Calibrating the suspension | | | | 12/07/2005 | F-4 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |
| RENAULT PREMIUM Dxi 11 EURO 3 | 27BC - TR 4X2 LC | Calibration method | | | | 24/09/2004 | F-5 |
| | 27JC - TR 6X2 Pusher | | | | | | |
| | 27RC - PR 6x2 | | | | | | |
| | 27SC - PR 4x2 | | | | | | |
| | 27TC - TR 4x2 | | | | | | |

Assembly of level sensors

Master switch open and ignition switched off

- Turn the shaft of the sensor to a neutral position by placing pointer **(1)** opposite the hole in the "up" position.
- Fit the lever to the sensor as per drawing; the lever arm must be on the side of the two securing bolts.
- Fit the sensor to the chassis.
- Couple the link rod to the sensor lever and the bracket on the drive axle



Calibrating the suspension

Calibration is an operation that serves for the ECU to memorize its reference values in relation to the information received by the level sensors.

Calibrating the suspension

The calibration operation using the RENAULT TRUCKS rest tool must be carried out after:

- replacement of the ECU,
- reprogramming of ECU parameters,
- replacement or removal of level sensors,
- any other action on the mechanical portion of the suspension (replacement of a mechanical part).

To carry out this operation, it is essential to use the RENAULT TRUCKS test tool.



To calibrate correctly, it is VITAL that the vehicle is:
- for a tractor: coupled to a semi-trailer and unladen;
- for a rigid: fitted with body and unladen.

Calibration method

Tractor vehicle: coupled to an semi-trailer and unladen.

Rigid vehicle: fitted with body and unladen.

- Fully deflate all the suspension air springs of the axle and/or drive axle to be calibrated with the suspension remote control or the dashboard switches.
- Use the suspension remote control or the dashboard switches to draw close to the adjustment value.
- Using the suspension remote control, the dashboard switches or the pressure take-offs on the electrovalve(s) block(s), adjust to the recommended value (tolerance: ± 3 mm).

Rear air suspension

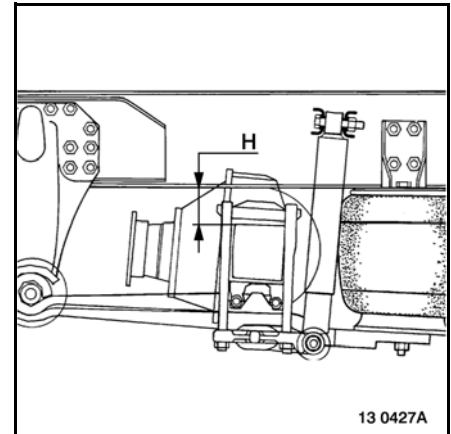
Dimension **H**: between the drive axle and the bottom of the sidemember.

Vehicles with dropped suspension or large volume dropped suspension.

Adjustment height: **H = 80** mm.

Vehicles with normal suspension

Adjustment height: **H = 120** mm.



Front air suspension

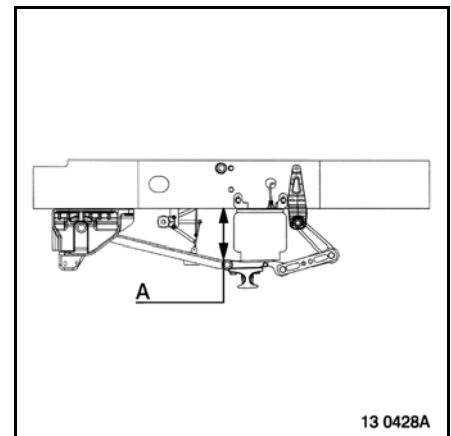
Dimension **A**: between the air spring lower bracket and the bottom of the sidemember.

Vehicles with dropped suspension or large volume dropped suspension.

Adjustment height: **A = 240** mm.

Vehicles with normal or dropped suspension.

Adjustment height: **A = 280** mm.



Perform calibration using the RENAULT TRUCKS test tool.

