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contents

Chapter

RENAULT V.I.

Société Anonyme au capital de 50 000 000 €
Siège social : 99, route de Lyon
69802 Saint–Priest
Siret 954 506 077 00 120 – RCS LYON B 954 506 077

WELCOME ON BOARD YOUR NEW RENAULT
You have now taken possession of your new vehicle.
We trust that it will give you the entire satisfaction you have the right to expect and which was the reason for your original choice.
This driving and servicing handbook has been compiled to provide all the information you need and will enable you to:
– Get to know your Renault better to derive maximum benefit from its advanced technical features in optimum working conditions.
– Permanently guarantee optimum operations by following the maintenance recommenda–tions.
– Cope with any minor problems not requiring assistance from a specialist, without losing too much time.

NOTE
This handbook covers all the options proposed to customers. Take into consideration only the indications regarding the model owned by you.

The few moments devoted to reading this handbook will be well worthwhile for the information it contains and by the new technical features you will discover. If any details remain unclear, our Dealer Staff will be pleased to provide you with any further information you may require.

HOW TO READ CROSS–REFERENCES
The reference numbers, figures and letters mentioned in the text refer back to two types of illustration:
– *figures correspond to figures or photographs situated in proximity to the text*
– *letters, sometimes followed by a figure, correspond to the Instrument Panel diagram to be found inside the handbook.*

"Bon voyage" at the wheel of your Renault !

RENAULT TRUCKS AND BUSES: FRONTIER–FREE SERVICE
Renault Service 24 has been in operation in Europe for several years now.
19 emergency call centres are listening in for you 365 days a year.
Spare parts officially approved by RENAULT TRUCKS meet both the requirements of the vehicle specification and the regulations in force. Only premium Renault parts will ensure:
– Original Equipment safety standards.
– Maintenance of original characteristics and performance.
– Full Manufacturer's Warranty.

The manufacturer reserves the right to make any modifications deemed necessary during production. This handbook should not be considered as a specification for the model in question.

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GENERAL USAGE INSTRUCTIONS FOR COMMERCIAL VEHICLES

If you are a professional driver using your own vehicle, or a haulier entrusting one of your vehicles to a member of your staff, it is essential to follow and ensure the application of the following instructions. They are only a reminder of the basics of the trade and standard professional practice and in no way are to be taken as exhaustive. In this way you will obtain the maximum profit from your material and prevent any risk of accidents and incidents.

1. BASIC INSTRUCTIONS

- Every driver must possess all necessary licences and should only drive when physically fit and sufficiently rested.
- The vehicle must be in conformity with current legislation in the country or countries in which it is used.
- Any signs or panels indicating hazardous substances must be affixed and be in good condition.
- Loads:
  - All–up or per–axle weights (regulatory or technical) must not be exceeded.
  - Loading and securing of loads must be carried out using conventional procedures, tarpaulins and side curtains must be correctly stretched and fastened and doors and sideboards locked, etc.
- In the cab:
  - Never carry dangerous products (such as petroleum, trichlorethylene, thinner, etc.).
  - If an animal Is carried, it must be kept away from the driving position.
- Getting in and out of the vehicle:
  - Use the steps and the handles provided. Never jump down from the vehicle.
  - When leaving the vehicle, observe the traffic flow, particularly if you have been driving for a long time.
  - Take extra care when the climatic conditions are bad (rain, snow, ice) and at night.

2. BEFORE GETTING INTO THE VEHICLE, CHECK

- General condition of your vehicle, visually (as per handbook).
- Tyre condition, tyre pressures (including the spare wheel), and that nothing is jammed between the twin wheels.
- Cleanliness of cab windows, rearview mirrors, headlights and other lights and number plates.
- Regulatory and optional lighting systems for correct operation.
- Semi–trailer and/or trailer for correct coupling (hook, brake hoses – colour coding – electrical connector...).
- For the presence and contents of the onboard tool kit.
- In winter, for the presence of anti–skid chains and that they are securely fastened.
- Vehicles equipped with side guard panels and beams should be permanently provided with this equipment. At the time of removal, make sure that the locks are correctly locked and tighten the setbolts moderately.

3. ONCE ONBOARD

– Check the condition of the non–slip pedal covers.
– Ensure that the safety controls. steering wheel, pedals, gear lever etc. are never cleaned with a slippery product like silicone.
– Adjust your driving position:
  . Steering wheel: check that the steering column is locked.
  . Seat: check that the seat is firmly locked.
  . Rearview mirrors.
  . If the vehicle is fitted with a seat belt, use it.
– Prior to starting the engine. ensure that the gear lever is in neutral.
– Check that all instrument panel indications are normal (if you are not certain of what the nominal readings are supposed to be, refer to the driving handbook) and that the tachograph disc is in place and that the unit is working properly.

4. WHEN DRIVING

– If you detect any anomaly in the way the vehicle is operating, stop and locate the mal–function.
  Do not move off again until you are sure that the incident has not impaired technical performance and safety.
– When driving, the use of some of the standard–fitted equipment, and other optional or added equipment is strictly forbidden (CB, telephone, i.e. hand–operated sun–roofs, television sets, etc.) or only permitted if all necessary precautions are taken so as not to affect road safety (cigar lighter, manual selection of radio stations...).
– Adapt your driving style to suit your load (cant or bend, if the centre of gravity is high, etc.) to take account of weather conditions and the time of day.
  If necessary, adjust the headlight beam levels.
– Never shut down the engine when the vehicle is moving (as this will cut off the supply to the power–assisted steering system and could decrease brake effectiveness).

5. WHEN PARKING

– Check that the vehicle is correctly parked (i.e. that it does not obstruct traffic flow or threaten the security of neighbouring installations).
– If the vehicle is going to remain stationary for some time, use one or more wheel chocks to Prevent it from moving (e.g. semi–trailer compressed air leakage, or in black ice conditions...).
– Check that:
  . parking brake is locked and immobilizes the road train or rig,
  . gear lever is in neutral,
  . battery isolating switch is OFF,
  . electromagnetic retarder is switched OFF,
  . air vents are not blocked (i.e. if an independent heating system is used),
  . parking lights are on at night.
– Check that you have not left in the cab:
  . important documents (personal, vehicle, load),
  . unaccompanied animals.

6. WHEN REPAIRING / SERVICING THE VEHICLE

IMPORTANT
Prior to carrying out any work on the electronic air suspension (other than calibration), place axle stands under the chassis.

– Check the tightness of the wheel nuts according to recommendations.
– Prior to tilting the cab:
  . Check that there is enough space in front of the vehicle and take care that during this manipulation nobody tries to cross this area or park in it.
  . Stop the engine, put the gear lever into neutral and make sure that no object is likely to fall onto the windscreen. If a refrigerator is fitted, drain it. Close the doors.
  . Tilt the cab as far as possible. If the cab is only partially tilted, wedge it to prevent accidental movement.
– If the engine is running:
  . Do not approach moving parts (fan, drive belts, etc.).
  . Do not turn off the electrical power supply (shut down the engine first).
– When climbing up onto or down from the catwalk behind the cab (tractor), use the steps and grab handles provided. Never jump down from the catwalk. Take care not to burn yourself (on the vertical exhaust pipe and silencer).
– Fuel is inflammable, if the fuel filler cap is open, smoking is forbidden and there must be no naked flame in the vicinity.
– Batteries are filled with acids which can cause serious injuries. They must be handled with great care.
– If you start the engine using an external power source:
  . Use cables of the correct dimensions.
  . Make sure that the + and – polarities are connected properly.
– When changing a fuse, it is vital to use another fuse of the same size.
– Only specialists should install additional power lines.
– The installation of additional air lines requires a technical study to be carried out or approved by the manufacturer.
– It is strictly forbidden to heat polyamide hoses (braking circuit pipes).
– Raising the vehicle with a jack: chock the wheels prior to jacking.
– Immobilizing the vehicle: use one or several wheel chocks as necessary.
– Wheels and tyres:
  . Never check tyre pressures or inflate or deflate a tyre which is hot.
  . Never stand in front of a tyre when checking the pressure or inflating it.
  . When fitting a roadwheel, take great care to centre wheels fitted with centring clamps (for trilex wheels, position the clamp at the segment crossover point).
– Repairs on the open road: collect all fluids which have been drained (such as oil, fuel, coolant...).
– With an eye to environmental protection, take into consideration the laws in force (recovery of oil / anti–freeze / cartridges).

– When draining oils (engine / gearbox / drive axles), you run the risk of burning yourself (hot oil).
– Independent heater, use vehicle diesel fuel only.
– If anti–skid chains are used, the rear wings should be removed, road speed should be reduced and chain tension should he tested at regular intervals.

Any modification to circuits (electrical, electronic or compressed air) may have serious consequences. Such work should only be undertaken in agreement with the manufacturer. RENAULT TRUCKS decline any responsibility in the event of non–conformity in assembly.
Only original RENAULT TRUCKS parts and circuits defined by the manufacturer guarantee quality, safety and reliability.

By observing the above instructions, you will be using your vehicle in the best possible way. However, you must also carefully read the driving handbook and consult the RENAULT TRUCKS network whenever you need any further information.

We remind you that application of the contractual warranty by RENAULT TRUCKS is subject, among other things, to proof by the customer that servicing and maintenance of the vehicle have been carried out according to our recommendations (frequency, operations to be performed, quality of expendable and consumable products guaranteed by genuine certified or recommended spare parts, quality and training of repair staff and use of specific tools...). Observance of these recommendations will also guarantee long–term reliability of the vehicle.
Servicing and maintenance conducted by the RENAULT TRUCKS network is a guarantee of observance of these recommendations. If the operations are conducted outside our network, the customer must provide formal proof that our recommendations have been observed.

A1 alphabetical index

A2 alphabetical index

B1 specifications

ENGINE

Depending on your vehicle's equipment

	MIDR 06.24.65 A66/B66/C66+J01
Capacity	11 929 cm3
Bore / stroke	124/165 mm
Injection equipment "BOSCH"	PLD 20 CCRS
Firing order	1.5.3.6.2.4
Maximum no–load speed	2 350 rpm
Idling speed	700 rpm

CLUTCH

Depending on your vehicle's equipment

430 DTE

MFZ 2–400

GEARBOX

Depending on your vehicle's equipment

ZF 16.S 181

ZF 16.S 221

ZF ASTRONIC

Depending on your vehicle's equipment

POWER TAKE–OFF

NH.1B/C *

NH.4B/C **

N221–10.B/C *

HYDROCAR S81Z1 B/C *

HYDROCAR S81Z2 C *

HYDROCAR S84Z1 B/C **

HYDROCAR S84Z3 **

*: continuous service

**: intermittent service < 30 mins (30 minute break between two periods of use)

PROPELLER SHAFTS

Tubular shafts fitted with universal joints.

FRONT AXLE

E81

B2 specifications

REAR DRIVE AXLE
Depending on your vehicle's equipment

P 1345
P 1370
PMR 2141

With inter–wheel and inter–axle differential locks.

Depending on your vehicle's equipment
LIFT–UP AXLE

ER8
ER11
HENDRICKSON

Depending on your vehicle's equipment
SELF–TRACKING LIFT–UP AXLE

AUSTERAS

STEERING

ZF 8098

Hydraulic power assisted

FRONT SUSPENSION
Depending on your vehicle's equipment
Leaf springs, hydraulic shock absorbers and anti–roll bars.
Air suspension.

REAR SUSPENSION
Depending on your vehicle's equipment
Leaf springs, hydraulic shock absorbers and anti–roll bars.
Leaf springs, hydraulic shock absorbers, anti–roll bars and air springs.
Air suspension.
Leaf springs and reaction rods.
Leaf springs swivelling on pivots

BRAKES
Air
"EBS" braking system

B3 specifications

RETARDER

Depending on your vehicle's equipment

Exhaust brake

Electric retarder

"J" engine–brake

ZF "INTARDER" Hydrodynamic

ELECTRICS

Depending on your vehicle's equipment

24 Volts

2 batteries . . . . . 190/230 Ah
Alternator: . . . . . "BOSCH" NL1 80 A
Starter: . . . . . "MITSUBISHI" P 105 D

IMPORTANT
Vehicle equipped with "EBS" braking system:
- *the alternator and batteries form part of the system – their specifications are inte–grated in the vehicle type approval dossier. For any modification, contact your dealer or nearest approved agent.*

BODYWORK

It is essential to obtain 1/20 scale chassis drawings from your dealer when fitting bodywork or special equipment (loading crane, fifth wheel, etc.). For the attachment of this bodywork or equipment and also electrical connections, we ask manufacturers and body builders to comply with the RENAULT TRUCKS specifications and standards drawn up for this purpose. These are readily available from your dealer.

B4 specifications

WELDING ON VEHICLE

Important precautions
The vehicle is equipped with numerous electronic circuits.
Prior to carrying out any electric welding work, disconnect the positive (+) cable from the terminals of the battery and connect it to earth.
Place the earthing clamp as close as possible to the weld, but never attach it to a rotating part (prop shaft, hub, fan, etc.), nor to any sub–assembly having moving parts (air compressor, turbocharger, etc.).
Nearby plastic pipes and electrical cables are to be protected or removed. This also applies for grinding or drilling work.

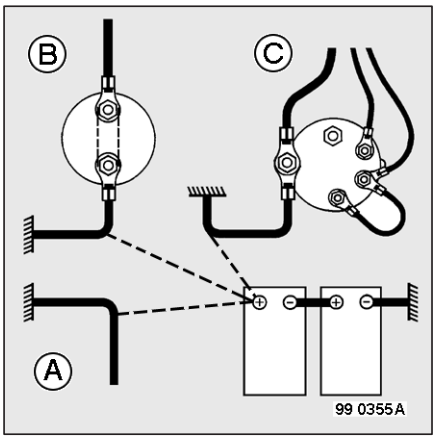


Diagram A: Vehicle without master switch

Diagram B: Vehicle with mechanical master switch
The master switch must be closed.

Diagram C: Vehicle with electrical master switch
Disconnect the two cables and connect them together.

Soundproofing screen(s)
Any damage to the interior protective film of the screen requires replacement of the film.
See that no flammable products are applied to the screen protective films. The screens are to be cleaned using a cloth. If necessary, use soapy water (any other product is strictly forbidden).
The application of solvent or paint to either inner or outer faces of soundproofing screens is to be prohibited.

B5 specifications

CAPACITIES

Litres

OIL

Engine
– engine dry 36
– without filter change 32
– with filter change 36

Gearbox ZF 16 S 181 / 221

Normal oil change 10
Dry oil sump 13
Power take–off 1

Gearbox ZF 16 S 181 / 221 + INTARDER

Normal oil change 18
Dry oil sump 21.5
Power take–off 1

Gearbox ZF ASTRONIC 16 AS 2601

Normal oil change 10.5
Dry oil sump 12
Power take–off 1

Gearbox ZF ASTRONIC 16 AS 2601 + INTARDER

Normal oil change 20
Dry oil sump 23
Power take–off 1

Rear drive axle P 1345
Pan 15
Hub reduction units . . . . . 2 x 0.8

Rear drive axle P 1370
Pan 15
Wheel hub . . . . . 2 x 0.5

Rear drive axle PMR 2141
Middle with adaptation 18
Rear 14.5
Hub reduction units . . . . . 4 x 0.8

B6 specifications

CAPACITIES

	Litres
OIL	
Suspension swivels	2 x 0.9
Lift–up axle ER 8	
Wheel hub	2 x 0.7
Lift–up axle ER 11	
Wheel hub	2 x 0.6
Power steering hydraulic system	4.5
Clutch hydraulic system	0.5
Cab tilt mechanism hydraulic system	1.5
COOLANT	
Cooling system	42
Cooling system + ZF Intarder retarder	54
WATER	
Windscreen washer reservoir	26
FUEL	
Depending on your vehicle's equipment	
Fuel tank	410 420 555 595 735
Extra fuel tank	275 410 420 555 595
Depending on your vehicle's equipment	
Independent heating system tank	18.5

KEYS:

Make a note of your key numbers here:

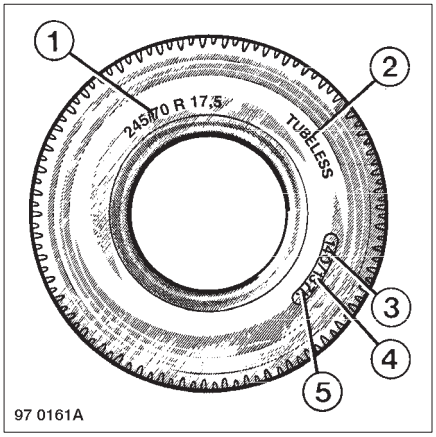
– Ignition key:

– Door key:

B7 specifications

TYRES

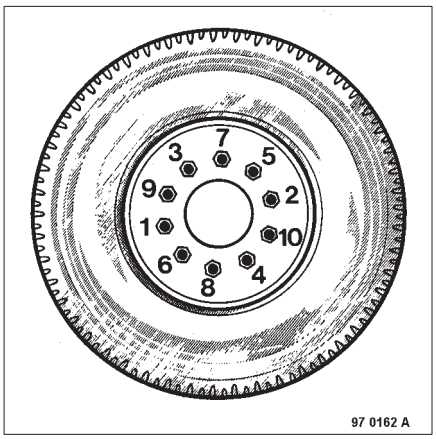
1 – Tyre type
2 – "Tubeless"
3 – Load index: single fitment
4 – Load index: twin fitment
5 – Symbol indicating maximum speed authorized for tyre



Tyre pressures

NOTE
These pressures are given for guidance. Consult the manufacturer's data concerning specific type and usage information. Respect the load/speed indices marked on the sidewalls of the tyres.

Tightening sequence
– Disc wheels



Steel wheels
Wheel nuts tightening torque
450 → 550 N.m

Light alloy wheels
Tightening torque of wheel nuts
450 → 550 N.m

IMPORTANT
For any modification to tyre type. you must redefine the braking system parameters without fail. Contact your dealer or nearest approved agent.

Depending on your vehicle's equipment

Tyre type: fitting at front only

Tyre type	Load in kg as per fitment Single	Twin	Pressure in Bars
	6 500		6.5
385/65 R 22.5	7 000		7.0
	7 500		7.5
	8 000		8.0

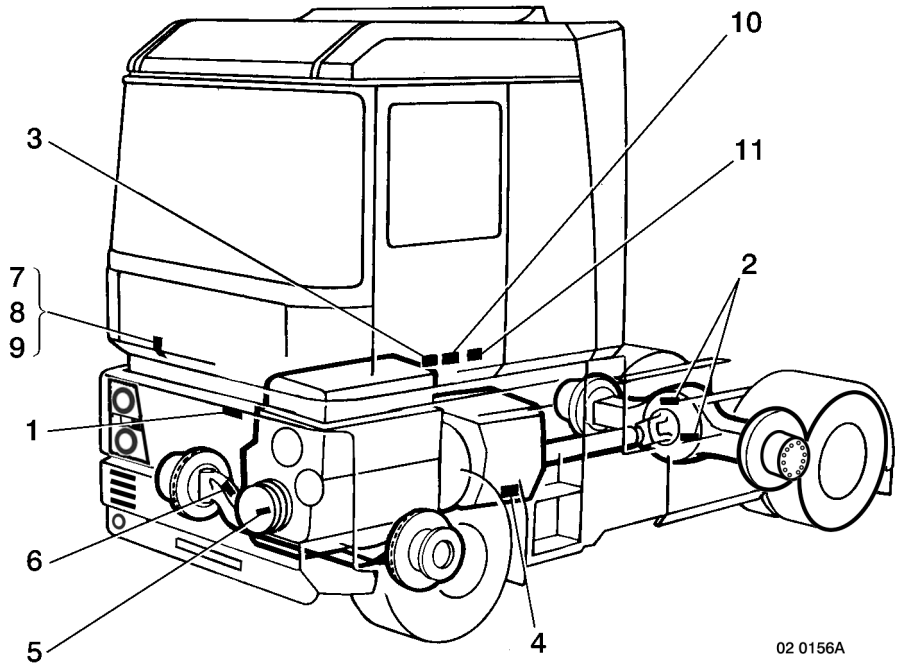
B8 specifications

Depending on your vehicle's equipment

Tyre type	Load in kg as per fitment Single	Twin	Pressure in Bars
	5 330	9 800	7.0
	5 680	10 420	7.5
295/60 R 22.5	6 020	11 050	8.0
	6 360	11 680	8.5
	6 700	12 300	9.0
	5 900	11 500	8.0
305/60 R 22.5	6 300	11 900	8.5
	6 700	12 300	9.0
	5 560	10 550	7.0
	6 030	11 240	7.5
315/60 R 22.5	6 390	11 920	8.0
	6 760	12 600	8.5
	7 100		9.0
	5 660	10 555	7.0
	6 030	11 240	7.5
305/70 R 22.5	6 395	11 920	8.0
	6 760	12 600	8.5
	7 100		9.0
	6 700	12 300	8.5**
	5 980	11 225	7.0
	6 370	11 955	7.5
315/70 R 22.5	6 755	12 675	8.0
	7 140	13 400	8.5
	7 500		9.0
	7 100	12 600	8.5**
	5 560	9 880	6.5
	5 950	10 560	7.0
295/80 R 22.5	6 330	11 240	7.5
	6 720	11 920	8.0
	7 100	12 600	8.5
	6 270	11 090	6.5
	6 700	11 860	7.0
315/80 R 22.5	7 140	12 640	7.5
	7 570	13 400	8.0
	8 000		8.5
	7 500	13 400	8.0**
	5 560	9 880	6.5
12 R 22.5	5 950	10 560	7.0
	6 330	11 240	7.5
	6 720	11 920	8.0
	7 100	12 600	8.5
	5 790	10 340	6.0
	6 210	11 100	6.5
	6 640	11 870	7.0
13 R 22.5	7 070	12 630	7.5
	7 500	13 400	8.0
	8 000	13 400	8.0**

**: according to load index and speed symbol.

B9 specifications

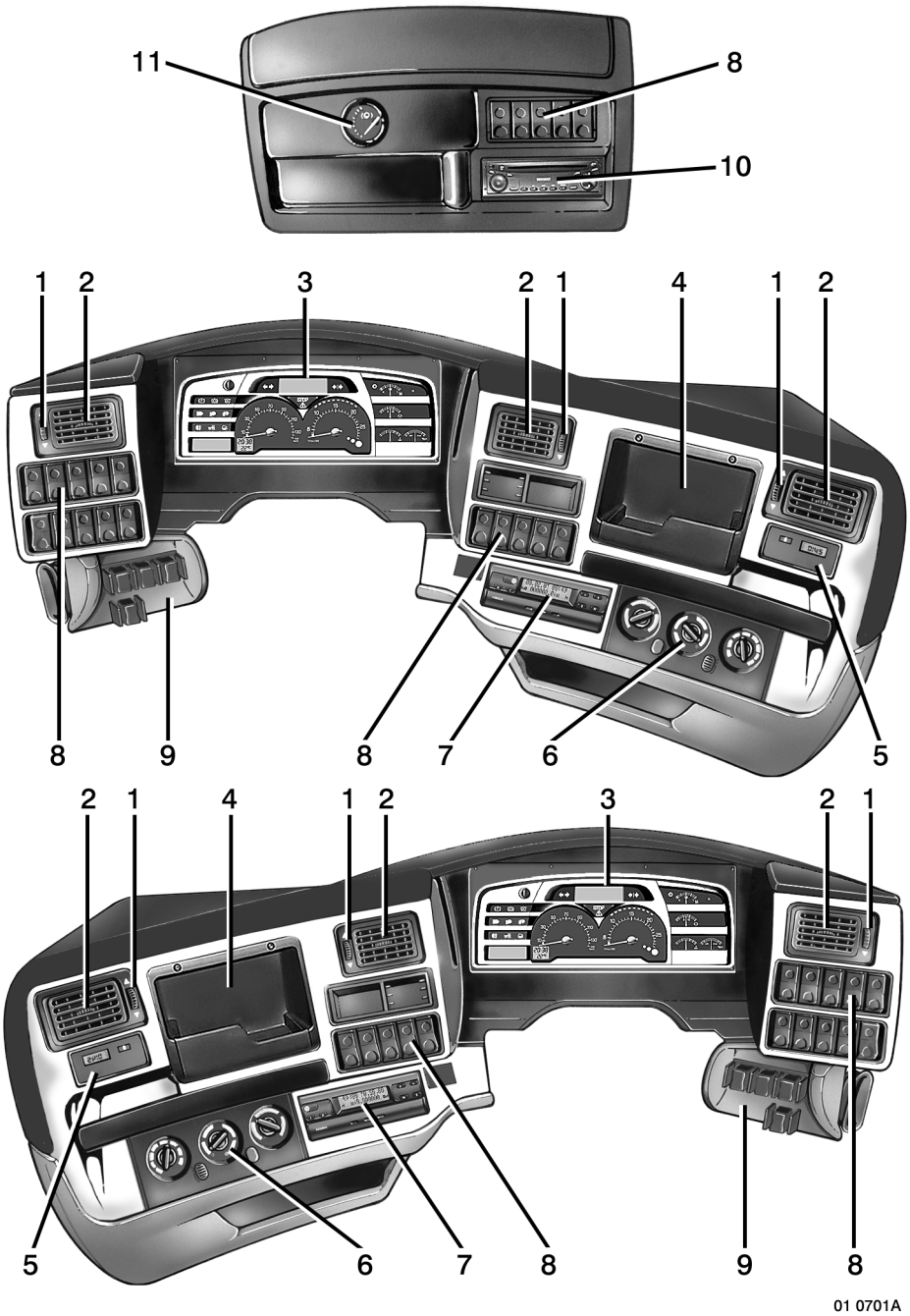


Depending on your vehicle's equipment

VEHICLE IDENTIFICATION

1 – Chassis
2 – Drive axle
3 – Tachograph plate
4 – Gearbox
5 – Engine
6 – Axle
7 – CAM reference
8 – Paint reference
9 – Manufacturer's production number
10 – Manufacturer's identity plate
11 – Conformity plate

C1 use of the vehicle

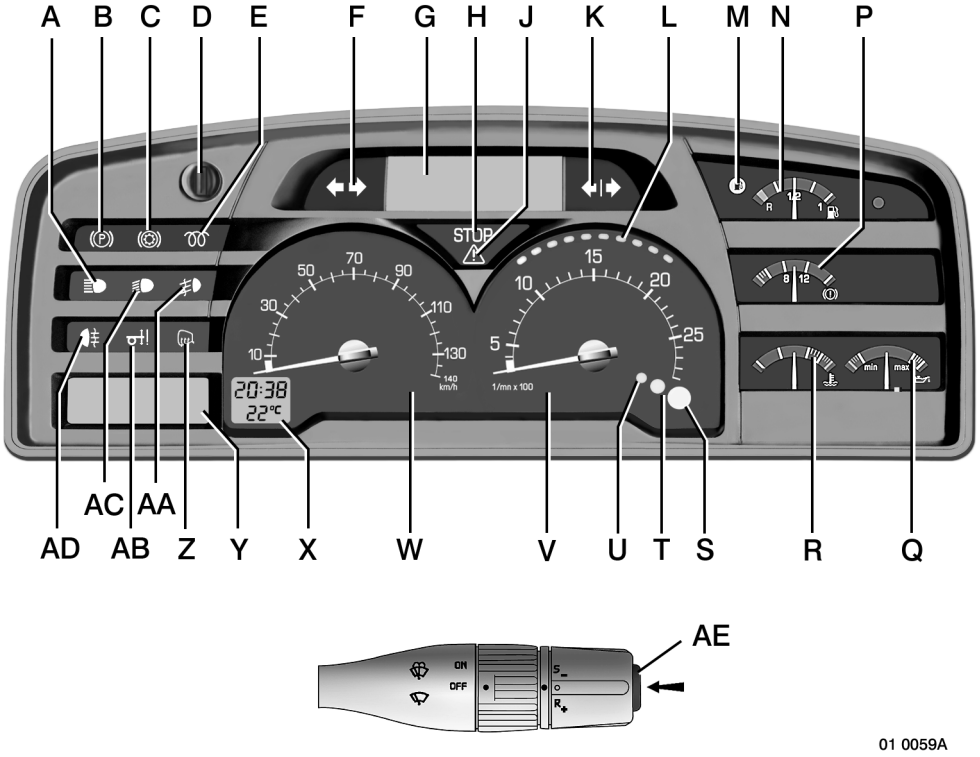

11
8
10
1 2 3 2 1 4 1 2
8 9 8 7 6 5
2 1 4 1 2 3 2 1
5 6 7 8 9 8
01 0701A

C3 use of the vehicle

DASHBOARD

Depending on your vehicle's equipment

1 – Air vent(s) control
2 – Air vent
3 – Display
4 – Driver's map pocket
5 – Clock
6 – Climate control panel
7 – Tachograph
8 – Switches (see page C12 / C13)
9 – Control cluster (see page C14)
10 – Space for radio
11 – Brakes air pressure gauge


A B C D E F G H J K L M N P
STOP
20:38
22°C
AC AA
AD AB Z Y X W V U T S R Q
AE
ON
OFF
01 0059A

C5 use of the vehicle

DASHBOARD

A – Main beam headlights warning light
B – Parking brake warning light
C – Electric retarder warning light
D – Menu selection control
E – Preheating warning light
F – Tractor direction indicator lights warning light
G – Multi–function display (see page C15 → C30)
H – “DANGER” warning light: immediate stop
J – “SERVICE” warning light: drive to your dealer or nearest approved agent
K – Trailer direction indicators warning light
L – Engine operating speed zone
M – Fuel minimum reserve warning light
N – Fuel level gauge
P – Air pressure gauge
Q – Engine oil level and pressure gauge
R – Engine cooling system temperature gauge
S – Engine overspeed warning light
T – Engine brake in operation warning light
U – Engine–brake pre–selection and in operation warning light
V – Rev counter
W – Speedometer
X – Comfort display:
. clock
. external temperature indicator
Y – Radio display
Z – Windscreen defrosting warning light
AA – Fog driving lights warning light
AB – Electronic air suspension “Information” warning light
– Axle load shedding “Information” warning light
AC – Dipped beam headlights warning light
AD – Rear fog lights warning light
AE – Driving information selection button

C6 use of the vehicle

MULTI–FUNCTION DISPLAY

Key to illuminated warning pictograms

Depending on your vehicle's equipment


G1 – Display defect


G2 – Batteries:
. small pictogram: complementary information
. large pictogram: charging defect


G3 – Engine oil pressure


G4 – Vehicle electronics


G5 – Engine electronics


G6 – Minimum air pressure "Alert"
– EBS defect


G7 – Trailer "ABS/EBS":
. small pictogram: check–out of device upon ignition switch–on (no defect)
. large pictogram: device defect "alert"


G8 – Tractor "ABS/EBS":
. small pictogram: check–out of device upon ignition switch–on (no defect)
. large pictogram: device defect "alert"


G9 – Maintenance alert


G10 – Brake pads wear


G11 – Servo steering oil insufficient level or pressure defect

C7 use of the vehicle

Key to illuminated warning pictograms

Depending on your vehicle's equipment

 G12 – Electronic air suspension "Alert"

 G13 – Engine cooling system temperature "Alert"

 G14 – Engine coolant low level

 G15 – Air filter clogging and/or fuel filter clogging

 G16 – Tachograph defect

 G17 – Gearbox defect

 G18 – Electronic anti–theft defect

 G19 – Engine overspeed

 G20 – Engine downrated (fall–back mode)

 G21 – Retarder defect

 G22 – Cruise control activated

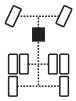
 G23 – AIRBAG
. small pictogram: check–out of device upon ignition switch–on (no defect)
. large pictogram: device defect "alert"

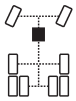
C8 use of the vehicle

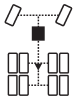
Key to illuminated warning pictograms

Depending on your vehicle's equipment

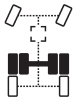

G24 – Gearbox PTO in operation

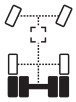

G24 – Gearbox PTO in operation


G24 – Gearbox PTO in operation

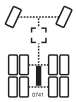

G24 – Gearbox PTO in operation


G25 – Inter–wheel diff. lock in operation


G25 – Inter–wheel diff. lock in operation


G25 – Inter–wheel diff. lock in operation


G25 – Inter–wheel diff. lock in operation


G26 – Inter–axle diff. lock in operation


G27 – Wheel slip or "ASR" in operation

C9 use of the vehicle

Key to illuminated warning pictograms

Depending on your vehicle's equipment

G28 – "ASR" threshold change

G29 – Self–tracking axle lock in operation

G30 – Working spotlight

G31 – Tailgate in dangerous position

G32 – Tipper raised "Information"

G33 – Special machine (tanker handrail) deployed

G34 – Sideboard open

G35 – Crane / tower platform deployed

G36 – Message received (fleet management)

G37 – Centralized lubrication in operation

C10 use of the vehicle

Key to gearbox warning pictograms

Depending on your vehicle's equipment

G38 – ASTRONIC selector moved to (D)

G39 – ASTRONIC selector moved to (N)

G40 – ASTRONIC accelerator pedal released

Test G41 – ASTRONIC test

G42 – "ASTRONIC" gearbox defect

Auto G43 – OPTIDRIVER: "integral automatic mode"

Manu G44 – OPTIDRIVER: "permanent or temporary manual mode"

Power G45 – OPTIDRIVER: "maximum vehicle mobility"

G46 – OPTIDRIVER: "use brakes or retarders"

~~Auto~~ G47 – OPTIDRIVER: "automatic mode unavailable"

~~Manu~~ G48 – OPTIDRIVER: "manual mode unavailable"

C11 use of the vehicle

Key to tachograph tell–tale pictograms

Depending on your vehicle's equipment

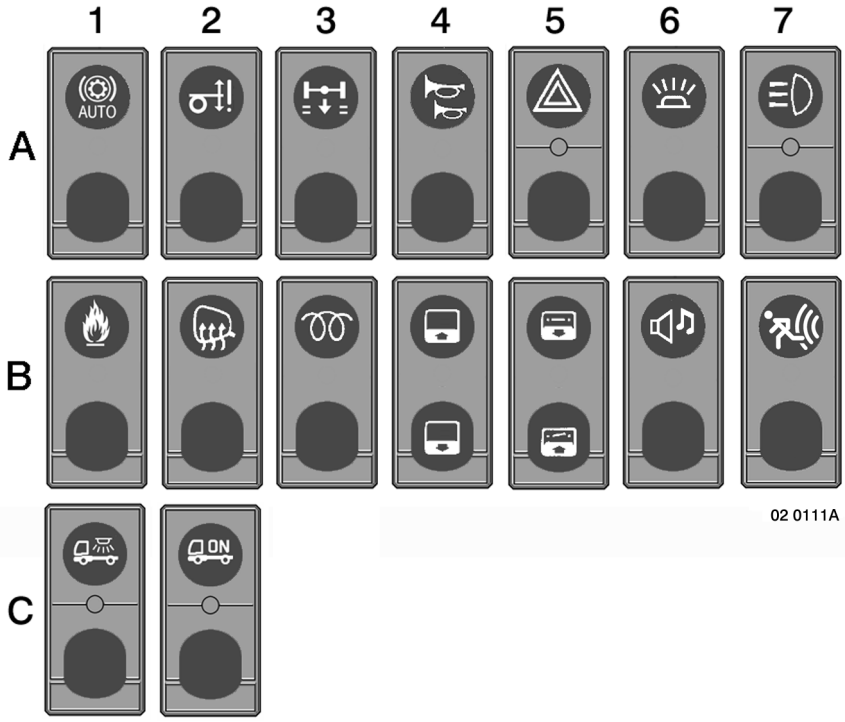
 G49 – Cumulated driving time indication

 G50 – Cumulated rest time indication

 G51 – Rest in progress indication

 G52 – Availability time indication

 G53 – Working time indication


1
2
3
4
5
6
7
A
AUTO
B
C
ON
02 0111A

C13 use of the vehicle

KEY TO SWITCHES

Depending on your vehicle's equipment

A1 – Retarder control (manual / automatic)

A2 – Axle load shedding switch

A3 – "ASR" switch

A4 – Horns selection switch

A5 – Hazard lights control

A5 – Hazard lights warning light

A6 – Roof light switch

A7 – Long beam driving lights switch

A7 – Long beam driving lights warning light

B1 – Independent heating switch

B2 – Rearview mirrors and heated windscreen switch

B3 – Engine preheat switch

B4 – Front sun visor control

B5 – Sun–roof switch

B6 – Cab rear radio power switch

B7 – "Panic" alarm button

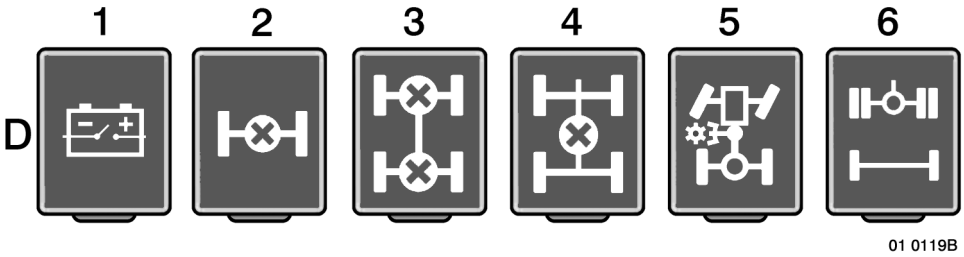
C1 – Bodybuilder's lighting switch

C1 – Bodybuilder's lighting warning light

C2 – Bodybuilder's equipment control

C2 – Bodybuilder's equipment warning light

C14 use of the vehicle



KEY TO PNEUMATIC CONTROLS

Depending on your vehicle's equipment

D1 – Master switch pneumatic cut–off control (TMD)
D2 – Inter–wheel diff. lock switch (4x2)
D3 – Inter–wheel diff. lock switch (6x4)
D4 – Inter–axle diff. lock switch
D5 – Power take–off control switch
D6 – Self–tracking lift–up axle control

C15 use of the vehicle

MULTI–FUNCTION DISPLAY

Controls

NOTE
For safety reasons, you are advised to use button (D) while the vehicle is stationary and parked correctly.

Button (D) features 3 control capabilities (+ / – / V).

Nudge or push towards (+) or (–):
- to gain access to the different menus and sub–menus.
- to make an adjustment or choice in an opened menu.

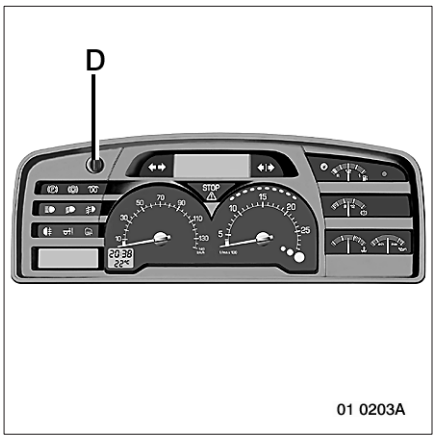
Short pulses (V):
- to open a selected menu.
- to validates an adjustment or a choice in the menu selected.
- to scroll through present or memorized defects in succession.

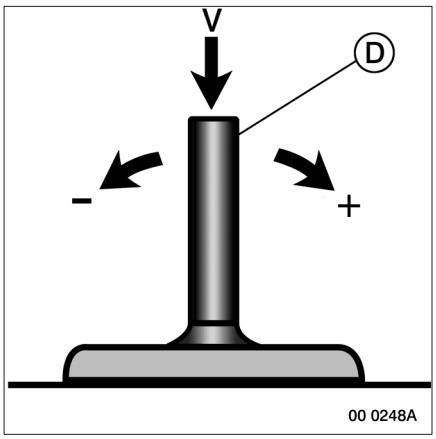
Long push (V):
- to return to zero in the maintenance menu.

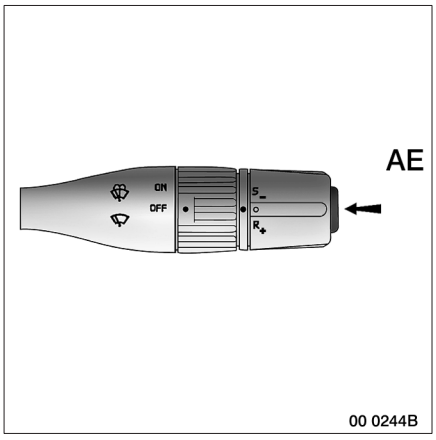
Button (AE) features 2 control capabilities.

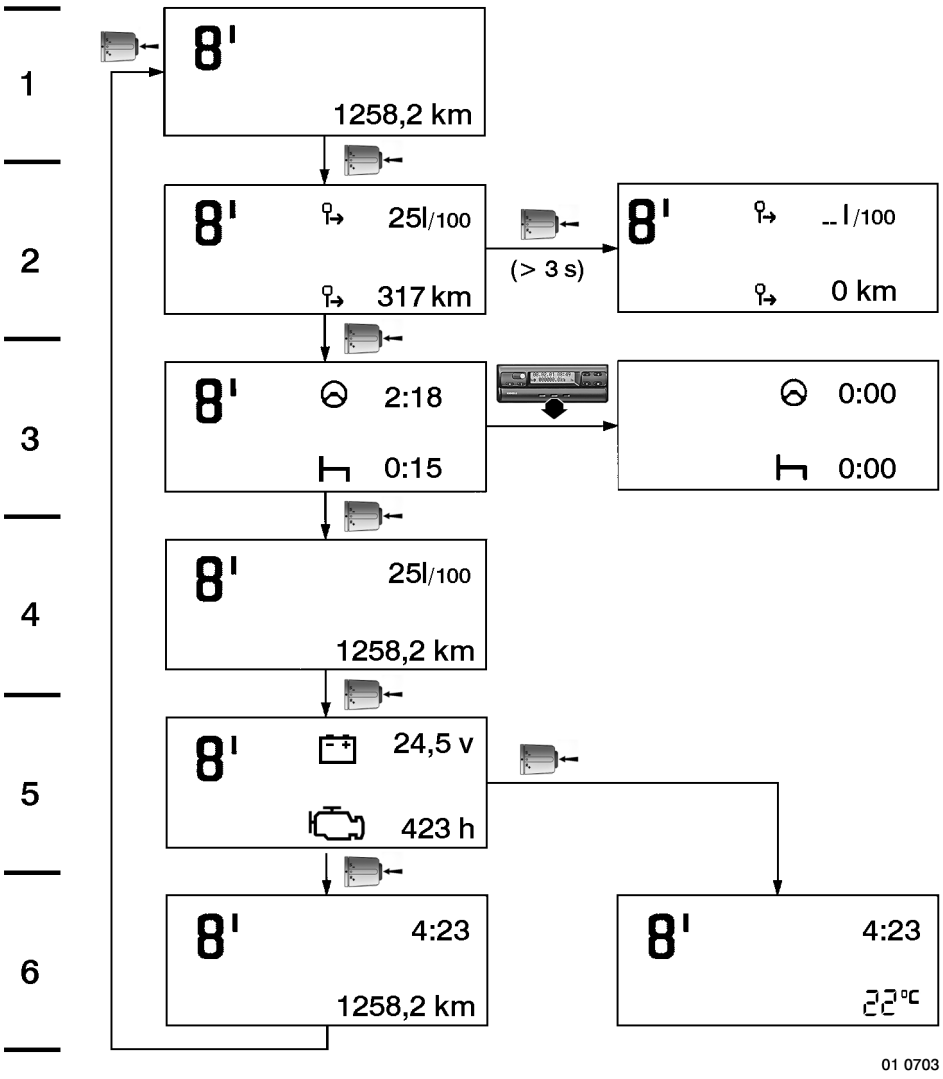
Short pulses:
- to go back to the default display.
- to close an opened menu without validating the adjustment or choice.
- to display the different driver's supple–mentary driving menus.

Long push:
- to return to partial mileage and average fuel consumption per 100 km.








1
2
3
4
5
6
1258,2 km
25l/100
317 km
(> 3 s)
-- l/100
0 km
2:18
0:15
0:00
0:00
25l/100
1258,2 km
24,5 v
423 h
4:23
1258,2 km
4:23
22°c
01 0703

C17 use of the vehicle

Supplementary driving information

Using the control (AE) (see page C15), it is possible to display different information items in succession, which can amount to 6 and vary depending on your vehicle's equipment .
The display of this information is time–delayed when the ignition is switched on, with the engine running or shutdown, and when the vehicle is not moving.
As soon as the vehicle moves off, if you select an information item, it remains permanently displayed, provided you have not selected another one, except for total mileage counter information.

1 – Total mileage counter (in km).

2 – Average fuel consumption in litres per 100 km and partial mileage (in km). When a zero (0) is placed before the partial mileage value, it means the vehicle has covered 9999 km.
To zero this information, press button (AE).and keep it depressed for more than 3 seconds.

3 – Cumulative driving time and cumulative rest time.
The cumulative rest time is increased in increments based on 15 minutes periods of rest or availability in one stretch.
The cumulative driving time displayed on the instrument panel corresponds to the effective vehicle running time (speed different from 0 km/h).
Brief stops, connected with traffic conditions, are automatically deducted.
This information is zeroed:
– When the tachograph disk tray is closed.
– When driving or working is resumed after 45 minutes of cumulative rest.

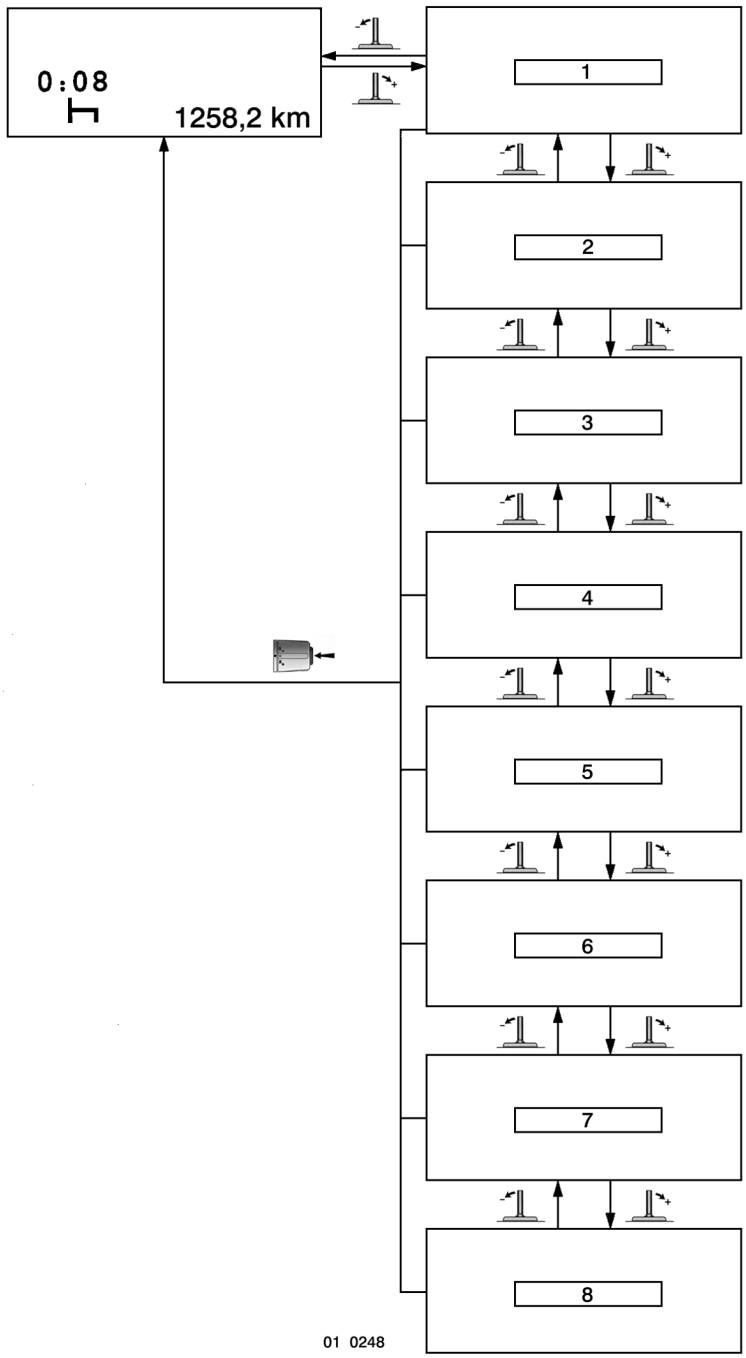
> ***IMPORTANT***
> *The times displayed are given for information purposes. Only the information recorded on the chart has legal value.*

4 – Instant fuel consumption in litres per 100 km and total mileage (in km).
The instant fuel consumption is given for guidance purposes – it may reach substantial proportions during acceleration or when moving off, but it is not significant of the vehicle's average fuel consumption.

5 – Battery voltage and engine operating hourmeter.

6 – Legal time of day and total mileage counter (X).

C18 use of the vehicle

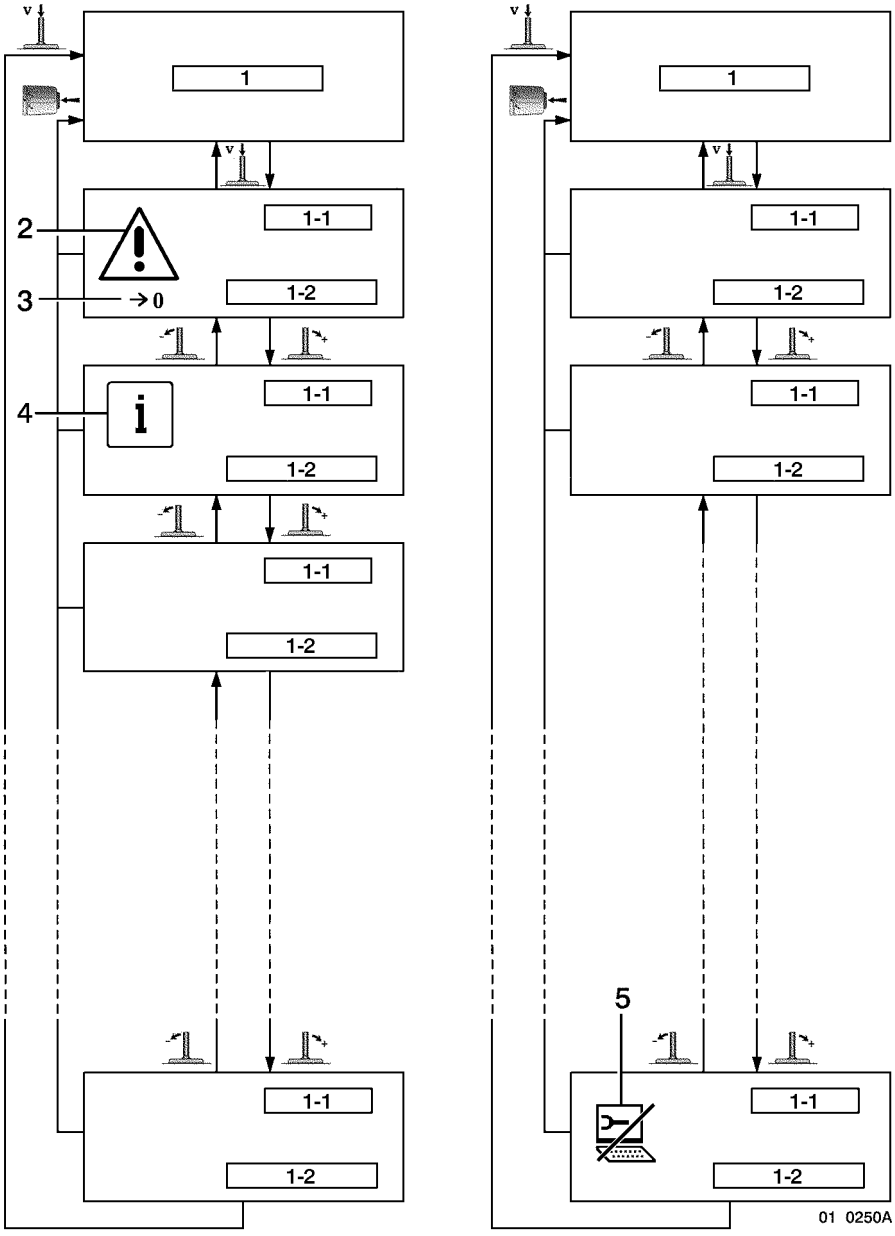


use of the vehicle

Menus
Use the controls (AE / D) (see page C15)
1 – Maintenance
2 – Diagnostics
3 – Auto–test
4 – Brightness adjustment
5 – Sound volume
6 – Choice of language
7 – Hour of day adjustment
8 – Warm–up selection

To use the different menus, see the following pages.

C20 use of the vehicle



C21 use of the vehicle

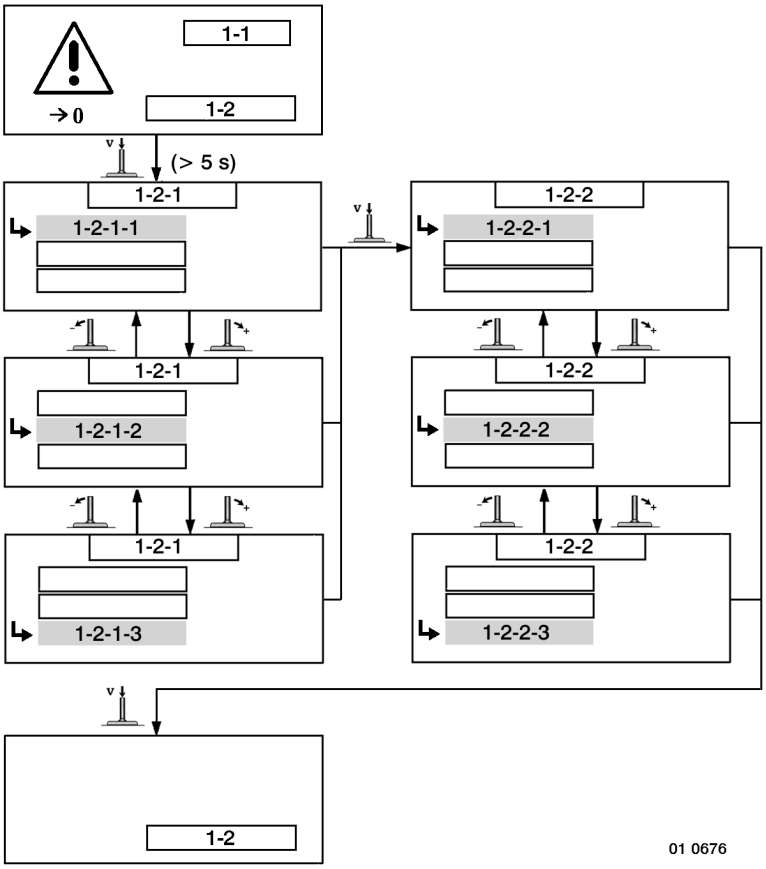
1 – Maintenance menu
Use controls (AE / D) (see page C15)
When consulting the maintenance menu, only engine oil, air dryer and brake linings (for vehicles equipped with EBS) information items are active. It is possible to activate other maintenance features (see page F2) by using the RENAULT DIAGNOSTICA tool or the INFOMAX software after the first oil change has been carried out.

1–1 : Time when the maintenance should be carried out.
The display is shown in kilometres, date or engine operating time depending on which term is closest.

1–2 : Display of maintenance features (see page F2).
The “pre–alert” pictogram (4) means that the maintenance term in question is close.
The “alert” pictogram (2) means that the maintenance term is due. The maintenance in question must be carried out.
The display “” 0” (3) means that zeroing of the term is possible by the user (after carrying out the maintenance operations). Such zeroing may be forbidden by using the RENAULT DIAGNOSTICA tool or INFOMAX software.
The pictogram (5) means that the predictive maintenance feature is no longer active. Contact a dealer or approved agent.

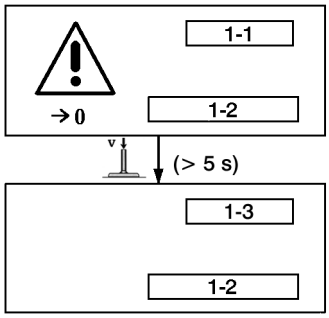
NOTE
For all vehicles, including vehicles with EBS, only the “brake pad wear” pictogram (G10) indicates that the brake pads are to be replaced. In this case, the “alert” pictogram (2) does not appear.

C22 use of the vehicle



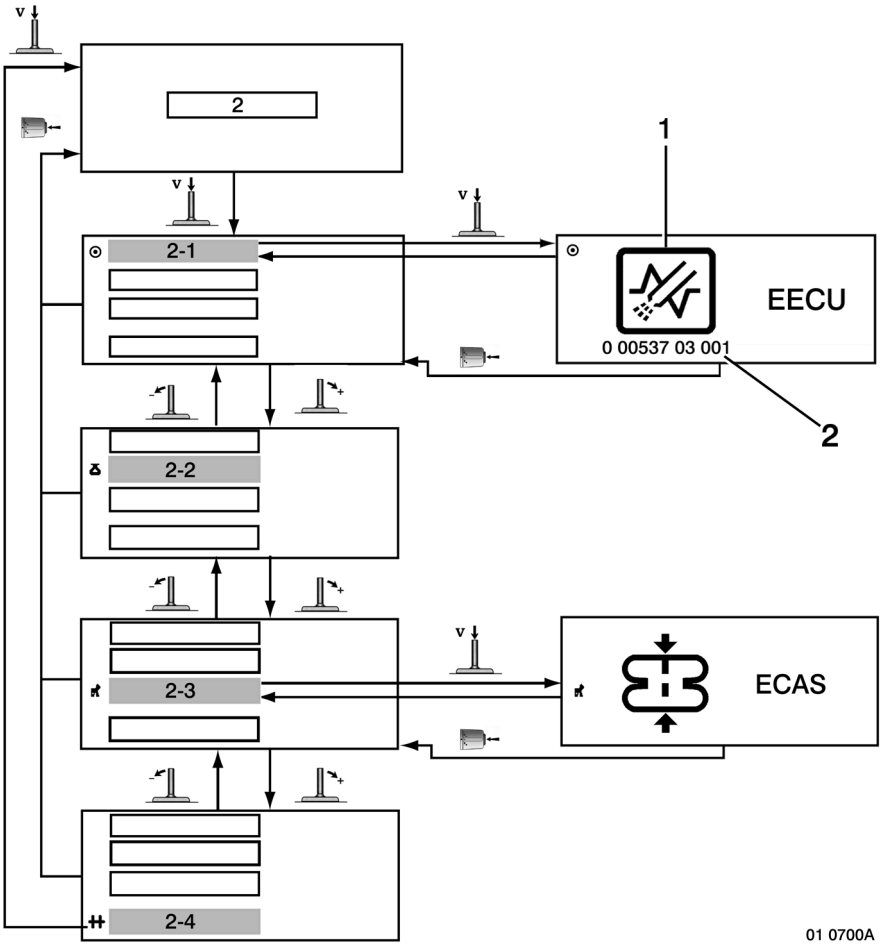
Zeroing the engine oil maintenance feature
Use control (D) (see page C15)
This maintenance feature involves the choice of oil grade and diesel fuel sulphur content. This choice sets a new term which will be calculated and changed according to engine use. The new term will be displayed after 100 or so hours of engine operation.

1–1 : Term
1–2 : Engine oil
1–2–1 : Engine oil grade
1–2–1–1 : RD
1–2–1–2 : RLD
1–2–1–3 : RXD
1–2–2 : Diesel fuel sulphur %
1–2–2–1 : 0 to 0.05
1–2–2–2 : 0.05 to 0.3
1–2–2–3 : 0.3 to 1



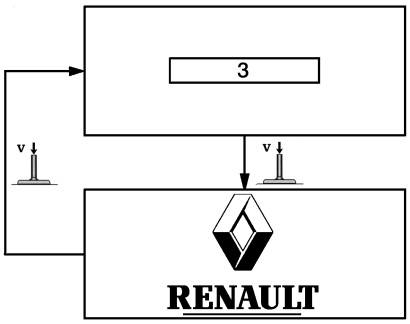
Zeroing another maintenance feature other than engine oil
1–1 : Term due
Press control (D) and keep it depressed for more than 5 seconds to zero the term (see page C15).
1–2 : Display of the maintenance feature
1–3 : New term after zeroing

NOTE
For vehicles equipped with EBS, zeroing of the “brake pads wear” term is automatic whenever the brake pads are replaced. The new term will not be displayed before the pads have reached 20% of their predictive wear.

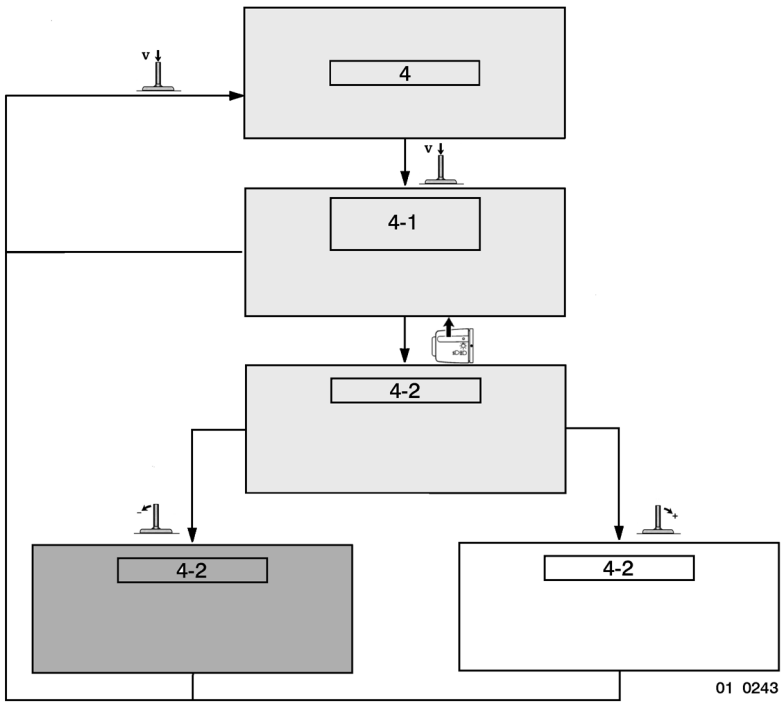


2 – Diagnostics menu
Use controls (AE / D) (see page C15)
When the menu is open, the stop warning light (H) comes on.
Sub–menus
2–1 : Present defects
Whatever the case, the pictogram (1) shows the function or system presenting a defect. To see the other defects, actuate the control (D) as often as necessary. The code number (2) characterizes the present defect.
2–2 : Sub–menu reserved for the dealer or approved agent
2–3 : Blink code
2–4 : Quit

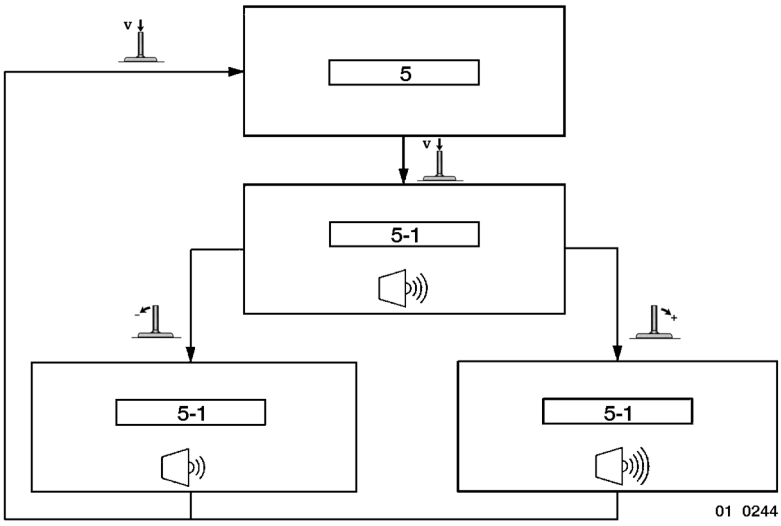
C25 use of the vehicle



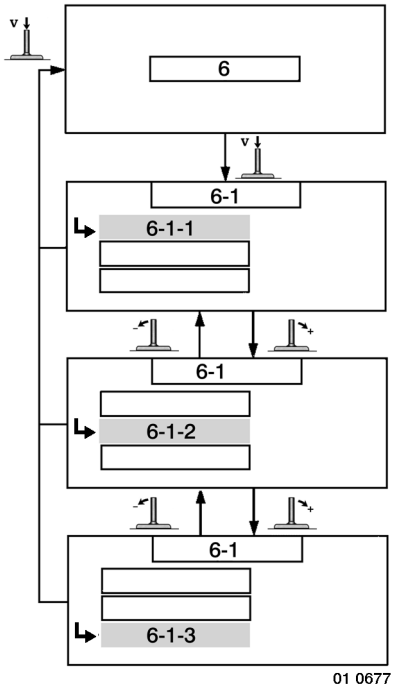
3 – Auto–test menu
Use control (D) (see page C15)
Tests all the instrument panel warning lights and indicators.



4 – Brightness adjustment menu
Use controls (AE / D) (see page C15)
4–1 : Side/parking lights switched on
4–2 : Brightness adjustment
Perform this adjustment at night with the side/parking lights switched on. During the day, a cell corrects and adapts the brightness of the display according to the ambient light.



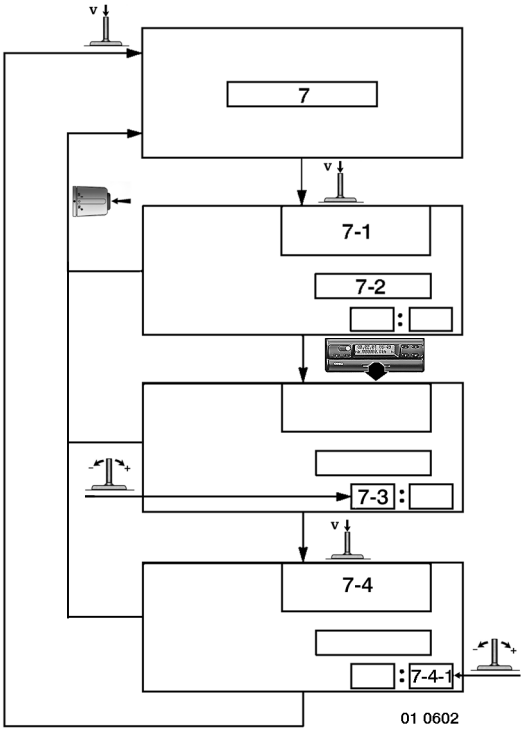
5 – Sound volume menu
Use control (D) (see page C15)
5–1 : Sound volume



6 – Choice of language menu
Use control (D) (see page C15)
6–1 : Memorized language active
6–1–1 : First language
6–1–2 : Second language
6–1–3 : Third language

Three languages are proposed to you, by default. The choice of language can be modified by a dealer or approved agent.

C29 use of the vehicle

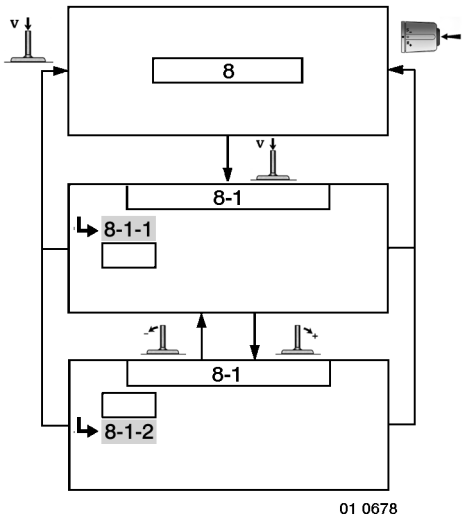


7 – Time of day adjustment menu
Use controls (AE / D) (see page (C15)).
7–1 : Hour display
Consult handbook
7–2 : Date display
7–3 : Adjustment of hour
7–4 : Minutes display
Consult handbook
7–4–1 : Adjustment of minutes

The tachograph chart(s) must be removed and the tray closed.
To open the tray, see the tachograph operating instructions.

NOTE
The date cannot be adjusted.
Closing of the tachograph tray with the chart inside causes automatic zeroing of display of the driving time and cumulative rest time.

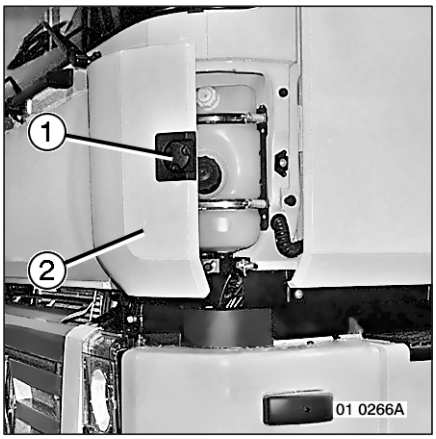
C30 use of the vehicle



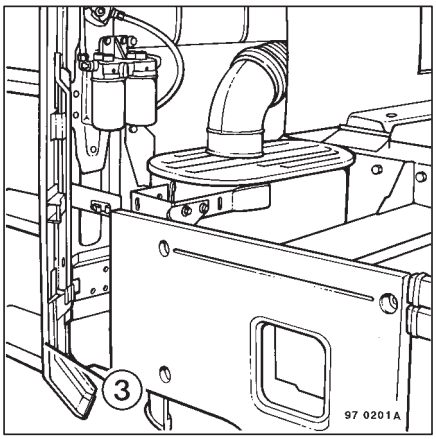
8 – Warm–up selection menu
Use controls (AE / D) (see page C15)
8–1 : Warm–up selection
8–1–1 : Yes
8–1–2 : No
For operation, see page D5.

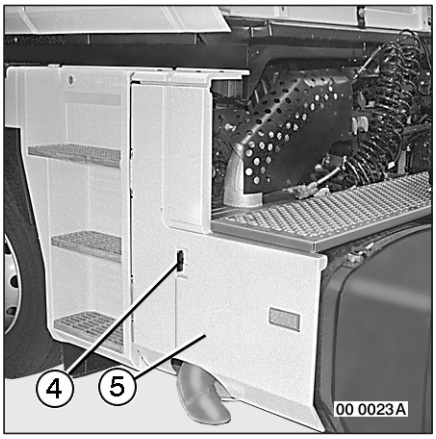
C31 use of the vehicle

Front panel inspection covers
To open:
Loosen captive screw (1) and pull the cover outwards (2).
To close:
Push in the cover and tighten captive screw (1) whilst exerting light pressure.
Left side (LH drive):
Right side (RH drive):
Access to:
– expansion chamber.
– hydraulic circuit tank for the clutch.
– cable for air tank drain valves.
– inflation valve.
Instructions for use are shown behind the cover.



Side panel inspection covers
To open:
Rigid: pull the cover (3).
Tractor: unlock the knurled wheel (4) and pull the cover (5) outwards.
To close:
Push the cover inwards.
Left hand side
Access to:
– fuel filter.
– independent cab heater tank.
– cab “emergency” unlocking system.
– cab tilt control.
– tool box.
Right hand side
Access to:
– engine oil dipstick.
– engine oil filler.
– cab tilt hydraulic pump.
– cab tilt control.
– windscreen washer tank.
– electrical box.
– tool box.
– cab “emergency” unlocking system (rigid).



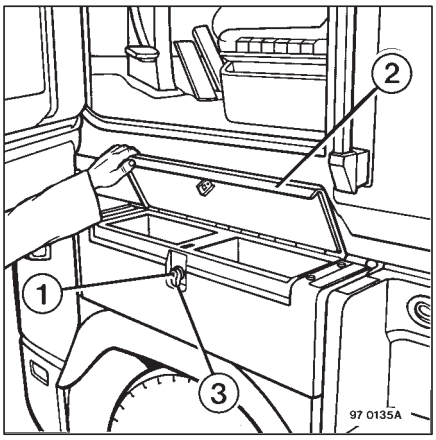


C32 use of the vehicle

Step locker
To lock/unlock:
Use key in lock (1).

To open:
Swivel knob (3) and raise top (2).

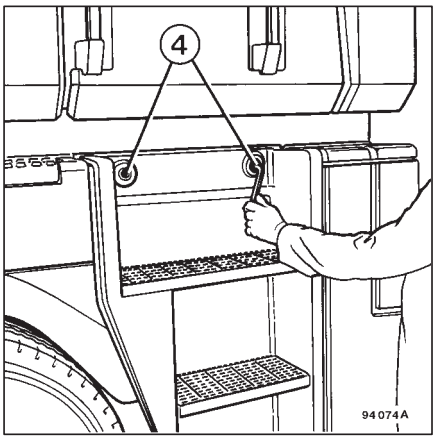
To close:
Lower the top (2).

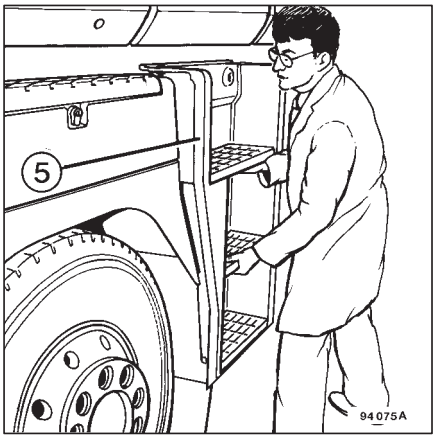


Steps
Removal remove screws (4) then raise and lift off the step (5).

Left hand side
Acces to:
– independent cab heater.

Right hand side
Access to:
– (tractor) “emergency” cab lock release.





C33 use of the vehicle

AIR TANKS

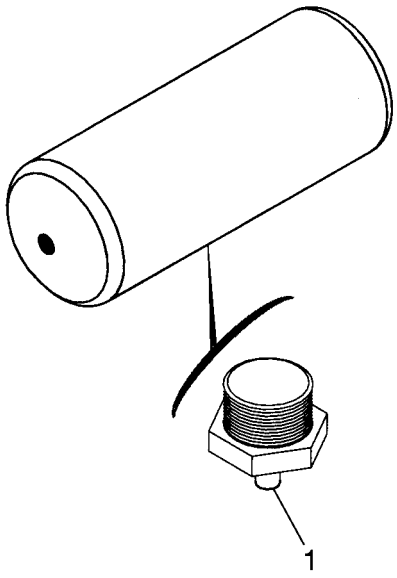
Actuate the drain valves (1) to ensure there is no water in the air tanks.
Perform this operation:
- Daily (in winter).
- Weekly (outside winter).

If there is water in the tanks, get the air dryer checked out (see page F33).

NOTE
As safety precaution, move the gear lever into neutral before draining the air tanks.

The valve (2) also serves as an inflator. Do not inflate tyres using this valve without having previously drained the tank.

C34 use of the vehicle



AIR TANKS

Depending on your vehicle's equipment

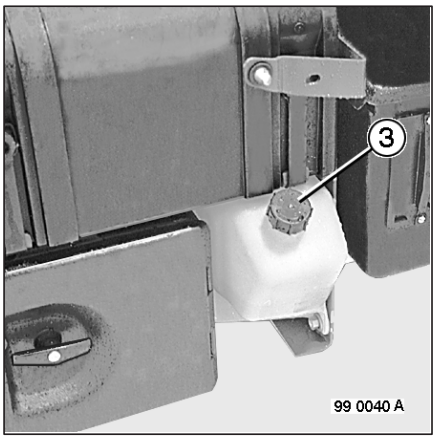
Actuate the drain valves (1) to ensure there is no water in the air tanks.
Perform this operation:
- Daily (in winter).
- Weekly (outside winter).

If there is water in the tanks, get the air dryer checked out (see page F33).

NOTE
As safety precaution, move the gear lever into neutral before draining the air tanks.

WINDSCREEN WASHER RESERVOIR

Regularly check the water level in the reservoir (3). If necessary, top up with soft water. To avoid scale deposits and jet and tube clogging, we recommend the addition of a RENAULT TRUCKS windscreen washer product. As this product also contains an anti–freeze, it can be used all the year round.

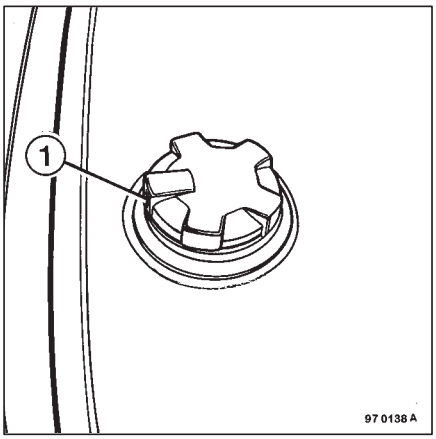


FUEL TANK

Filler cap
The filler cap is secured by a lock.
Move cover (1) to insert the key.

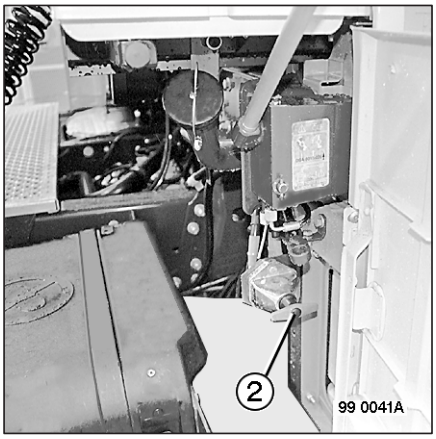
Vehicle fitted with two tanks without an independent fuel supply shut–off system

WARNING
As there is no individual fuel gauge per tank, the dashboard fuel gauge (N) shows the combined total for both tanks.



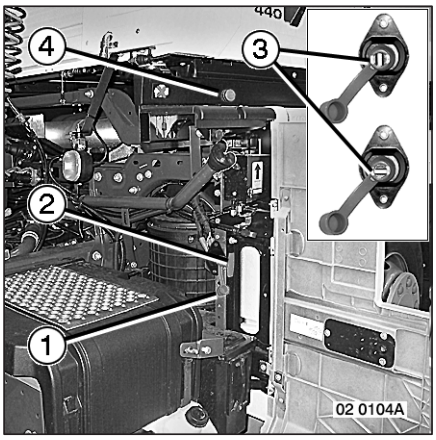
MASTER SWITCH

Turn the handle (2) through one quarter of a turn to isolate the electrical installation except for alarm, central door locking, tachograph, independent heating timer and hazard lights.



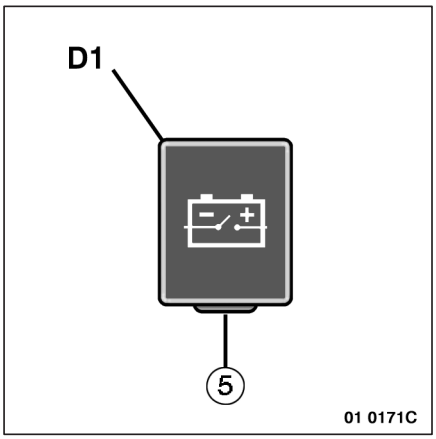
"ADR" MASTER SWITCH
(Transport of Hazardous Substances)

Use in the event of air pressure loss
Remove the guard cap (1). Place the removable handle (2), supplied with the vehicle keys, in position and turn it through one quarter of a turn to open and close the electrical circuit except for the tachograph.
Circuit open: electrical current does not pass - only the tachograph remains powered. The mark (3) is in a vertical position.
Circuit closed: electrical current passes. The mark (3) is in a horizontal position.
Put back the guard cap (1) each time after use.

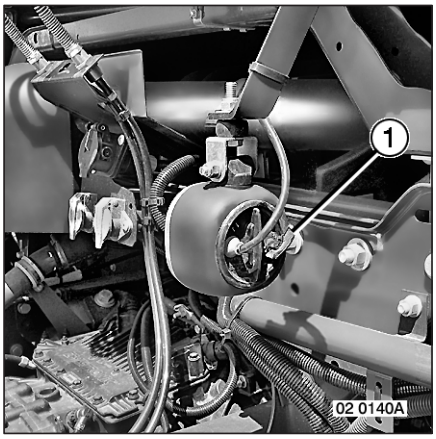


Master switch control on the outside
(normal use or case of emergency)
To open the circuit: press and rotate the control (4) until the engine stops.
To close the circuit: press the button (5) and pull the control (D1) or use the removable handle (2).

Master switch control in cab
(normal use or case of emergency)
To open the circuit: press the button (5) and the control (D1) until the engine stops.
To close the circuit: press the button (5) and pull the control (D1) or use the removable handle (2).

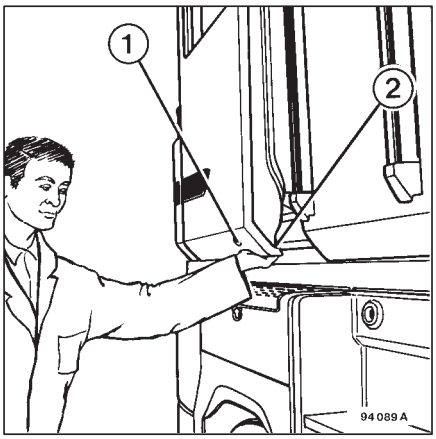


LOADING FLOODLIGHT (tractor)
1– Lighting switch. Warning light (G30) comes on.

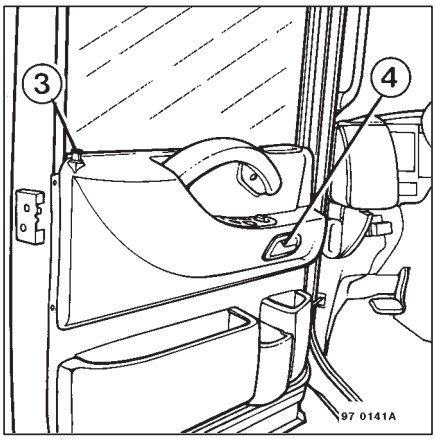


DOORS
Opening from the exterior.
Use the key to unlock lock (1).
Press handle (2) and pull door outwards.
Closing
Push the door until it closes automatically.
Key–lock via lock (1).

NOTE
The cab overhead light and step light are automatically activated by opening the door.



Opening from the interior
Unlocking:
Pull knob (3). Swivel lever (4) to rear and push the door.
Closing
Pull the door until the catch engages.
Locking:
Push knob (3).



Central locking from the inside:
Proceed as follows for central locking:
– Push button (3) by hand.
– Press one of the buttons (5–6) on the remote control .

Using the remote control:
Upon locking, the direction indicator warning light (F) and the hazards light warning light (A5) flash:
– twice with button (5),
– four times with button (6).
Upon unlocking, they flash once when one of the buttons (5–6) is pressed.

NOTE
Manual opening of the doors from the inside is neutralized by the central locking system.
When the door is open, central locking is neutralized.

Depending on your vehicle's equipment

DOORS RADIO FREQUENCY REMOTE CONTROL

This device does the same job as the door keys. The doors can be locked and unlocked without discrimination by keys or by the remote control.

Use

The remote control is powered by batteries (CR 1620 – 3 V) that have to be replaced when the battery warning light (2) flashes rapidly or no longer comes on. The warning light (2) stays on for the entire time the buttons (1–3) are pressed.

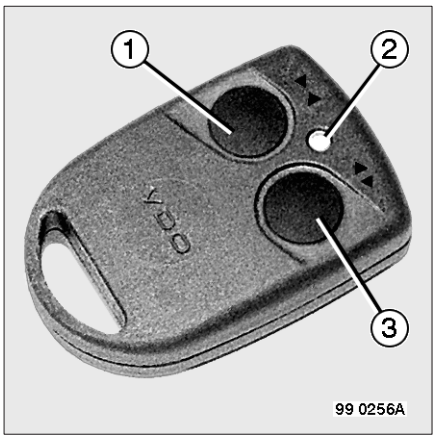
Unlocking the doors

Press one of the buttons (1–3). This action, signalled by the flashing lights flashing once, orders the doors to be unlocked.

Locking the doors

Press the button (1). This action, signalled by the flashing lights flashing twice, orders the doors to be locked.

Press the button (3). This action, signalled by the flashing lights flashing four times, orders the doors to be locked.



NOTE

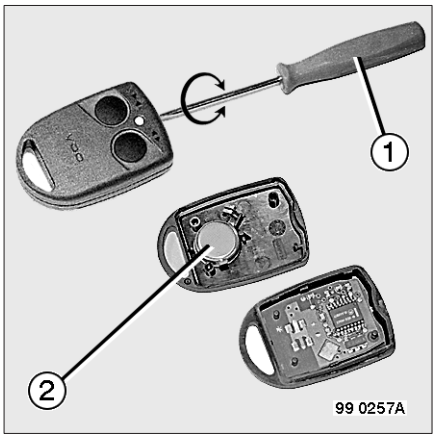
When the ignition is switched on, the remote control is inoperative.

If the flashing lights flash more than four times (after replacing the batteries, for example), press one of the buttons twice while the lights are flashing to re–activate the remote control.

To replace the batteries

Using a screwdriver (1), open the casing and replace the batteries (2), while observing the polarity engraved on the cover. Use alkaline type batteries: **CR 1620 – 3 V**.

The service life of such batteries is about 1 year.



IMPORTANT

Do not forget to make a note of the number of your keys.

If you lose them or would like another set of keys or remote control, contact your Renault dealer. Tell him the numbers and show him the vehicle documents.

C39 use of the vehicle

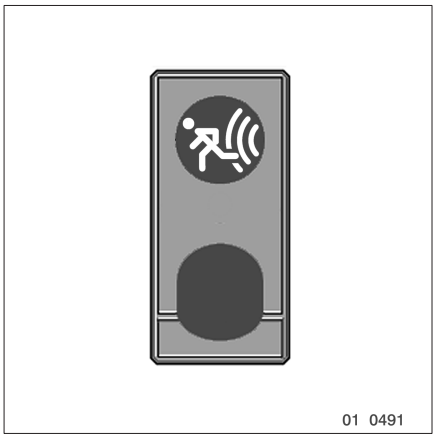
ALARM

Features
– Panic button in the event of aggression to the driver.
– Cab volumetric protection.
– Perimetric protection of cab doors.
– Cab tilting protection.
– “After ignition positive” protection.
– Protection against disconnection of batteries and disconnection of siren (self–powered siren).
– Surveillance of the protected zone by means of a control box.
– Display, on the control box, of a “blink code” to identify the nature of the aggression.

Features according to equipment
– Remote transmission of aggression information by means of the onboard management sys–tem.

NOTE
The following features are only possible if the vehicle body and/or the coupled trailer is equipped with the freight protection box distributed by the RENAULT TRUCKS Boutique.
– Perimetric protection of vehicle body and/or trailer doors.
– Surveillance of onboard freight while at a standstill or when moving (opening of doors and unplugging of trailer electrical socket).

Panic button
In the event of aggression, press the “panic” button” (B7), for about 2 seconds to give the alert. The siren sounds immediately and the hazard lights flash. To stop the siren and the hazard lights, press the button (B7) again for about 2 seconds.
Depending on the vehicle’s equipment, it may be possible to link up with the onboard manage-ment system.



C40 use of the vehicle

Activating the alarm

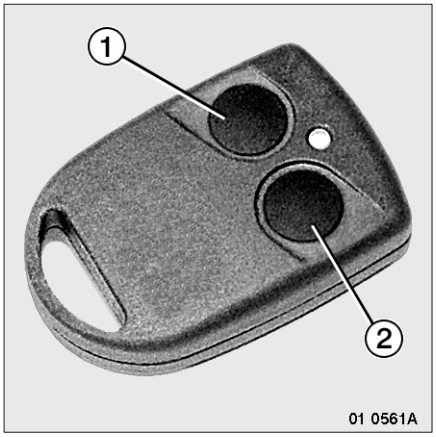
NOTE
It is essential for the onboard radio to be switched off.

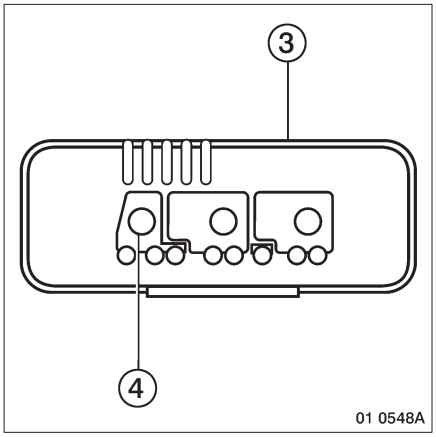
The alarm is activated and de–activated by means of the radio frequency remote control. If the vehicle body and/or trailer are equipped with the freight protection box, it will be automatically taken into account by the central alarm box.

Vehicle powered up (master switch closed): there are two possibilities proposed, depending on use.

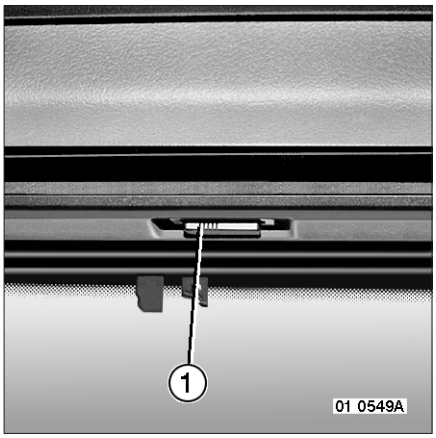
1– Press the remote control button (1):
– The cab doors lock.
– The hazard lights flash twice.
– The red Led (4) of the control box (3) comes on for 40 seconds, then flashes – the alarm is activated.

2– Press the remote control button (2):
– The cab doors lock.
– The hazard lights flash twice.
– The vehicle is powered down (only for vehicles equipped with an electrical master switch).
– The red Led (4) of the control box (3) comes on for 40 seconds, then flashes – the alarm is activated.





Control box position (1)

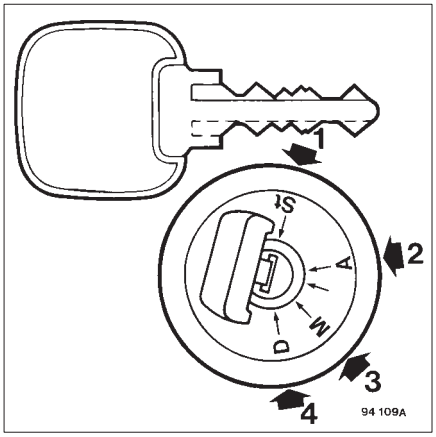


C41 use of the vehicle

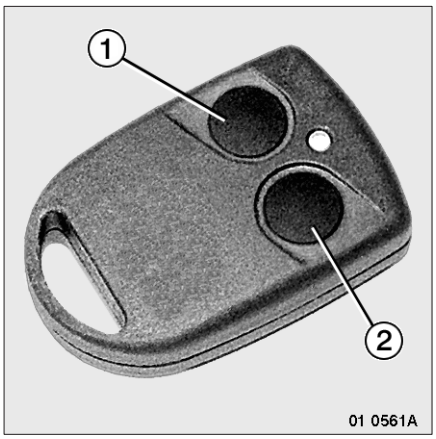
Activation of the alarm without volumetric protection and without cab tilting protection

Vehicle powered up (master switch closed), there are two possibilities proposed:

1– From the inside of the cab, anti–theft ignition key in position (1).
Press the remote control button (1) or (2):
– The cab doors lock.
– The hazard lights flash 4 times and the alarm buzzer sounds once.
– The red Led (4) of the control box (3) comes on for 40 seconds, then flashes – the perime–tric alarm is activated.

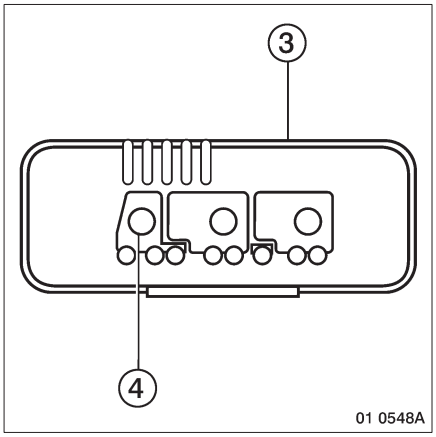


2– From the outside of the cab, anti–theft ignition key in your possession.
Press the remote control button (1) or (2):
– The cab doors lock.
– The hazard lights flash 4 times.



Power down the vehicle (automatic for vehicles equipped with an electrical master switch and if you use the remote control button (2):
– The red Lede (4) of the control box (3) stay lit for 40 seconds.
During this period of time only, simultaneously press remote control buttons (1) and (2):
– The hazard lights flash 4 times and the alarm buzzer sounds once.
– After 40 seconds have elapsed, the red Led (4) of the control box (3) flashes – the perimetric alarmis activated.

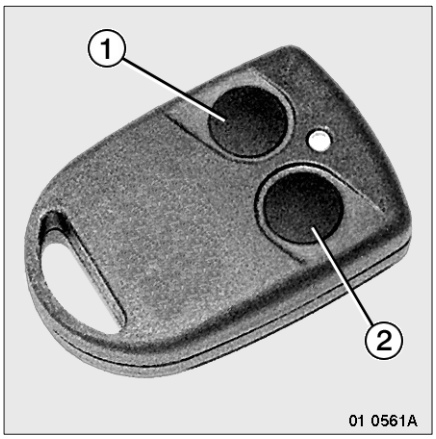
NOTE
When your vehicle is being transported by boat or rail convoy, activate the alarm without volu-metric protection and without cab tilting protection to avoid any inadvertent triggering of the alarm.

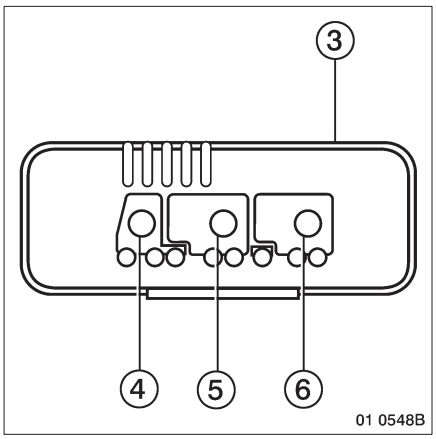


Fall–back mode
During the 40 seconds when the Led (4) is lit, all the alarm sensors are checked out. If a door has been left open, the siren sounds to draw attention to the problem. After 40 seconds, the door in question will be excluded and not protected. The fall–back mode can be used while freight is being unloaded.

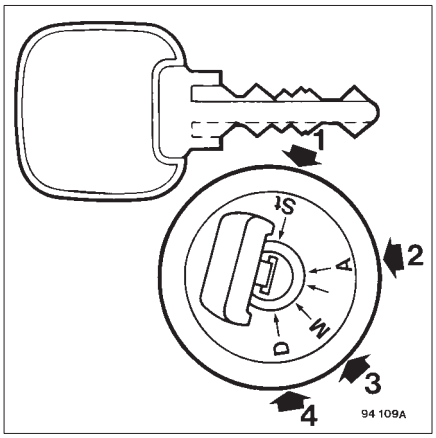
De–activating the alarm
With the vehicle powered up (master switch closed), press the remote control button (1) or (2), or, if the vehicle has been subjected to aggression, close the cab doors and press remote control button (1) ou (2) twice:
– The vehicle is powered up (only for vehicles equipped with an electrical master switch).
– The cab doors lock.
– The red Led (4) of the control box (3) goes out.

NOTE
In the event of remote control malfunction, you can de–activate the alarm by moving the anti–theft ignition key to the “ignition” position (3). After this, it is necessary to re–synchronize the remote control with the alarm by activating and de–activating the system once.



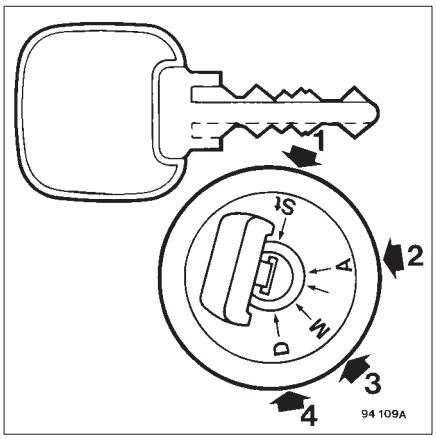


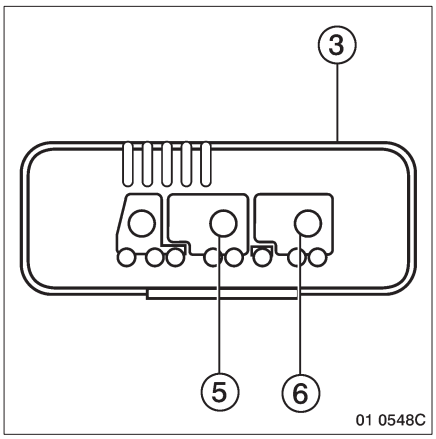
If there is an attempt at theft of the vehicle or its freight, the siren sounds after the alarm has been de–activated. It is possible to find out what kind of intrusion has been perpetuated by means of the Leds (4–5–6) of the control box (3) that display a “blink code”.
Each Led corresponds to a monitored zone (see table, page (C 43)).
The “blink code” is erased when the ignition is switched one, with the anti–theft ignition key in position (3).



C43 use of the vehicle

Surveillance of the freight
Surveillance of onboard freight is active as soon as the ignition key is moved to position (3).
If there is an attempt at theft of the onboard freight, the control box (3) buzzer sounds for 3 seconds (short 2–tone signal corresponding to the trailer). A “blink code” is simultaneously displayed by means of the Leds (5–6) of the control box (3), to identify the intrusion.
Each Led corresponds to a surveillance zone (see table below).
If you switch on the ignition while a vehicle or trailer door is open, that door will not be taken into account by the freight surveillance system. In such case, the control box (3) buzzer sounds for a few seconds and the corresponding Led flashes.





Number of LED flashes	Cab zone red LED	Vehicle body zone yellow LED	Trailer zone orange LEDLed
1	Driver’s door	Door 1	Door 1
2	Ultrasonic sensor	Door 2	Door 2
3	–	Door 3	Door 3
4	After ignition positive	Door 4	Door 4
5	Cab tilting	–	–
6	Passenger’s door	–	–
8	Siren sabotage	Body sabotage	Trailer unhitching

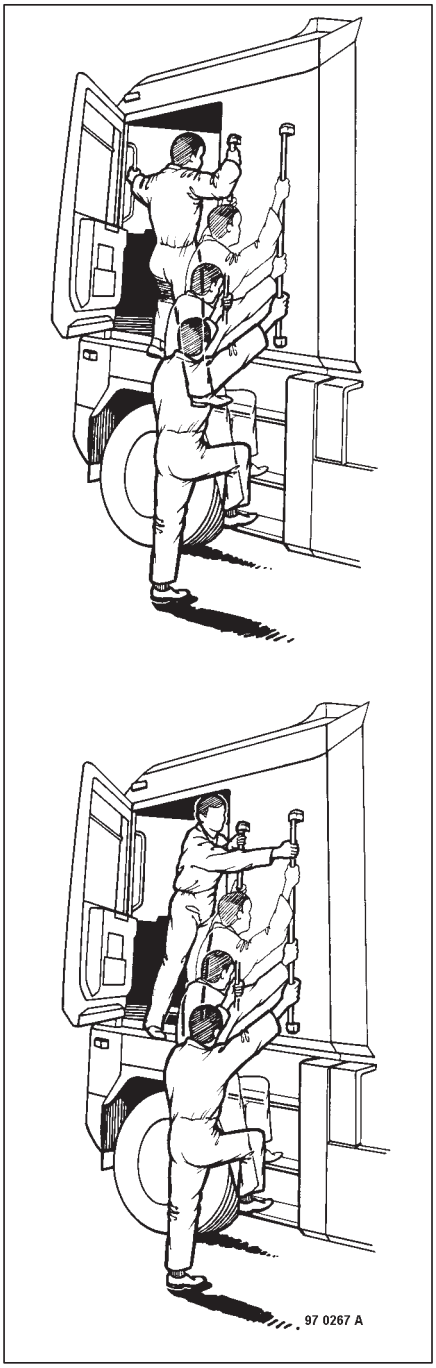
C44 use of the vehicle

Access to the cab
The step has been designed in line with the cab comfort concept. The flat floor of the cab and dominant position give remarkable control when driving and ensure excellent access safety.
The totally flat floor (with no engine tunnel) enables access through both doors. This means protection from traffic as drivers can enter and exit from the pavement side. We thoroughly recommend adopting this excellent safety procedure.

– **Entering**
Use all the steps and grab rails provided.

– **Exiting**
Use all the steps and grab rails provided.

Never jump down from the cab.



C45 use of the vehicle

Driver's seat

Passenger(s) seat

Depending on your vehicle's equipment

NOTE
Depending on seat use (i.e. driver, passenger, left or right hand drive), controls are located to one side or the other. The seat type shown is just one possible solution.

1 – Suspension "vertical" flexibility adjustment
Upwards: hard suspension
Downwards: supple suspension

2 – Fast suspension lowering

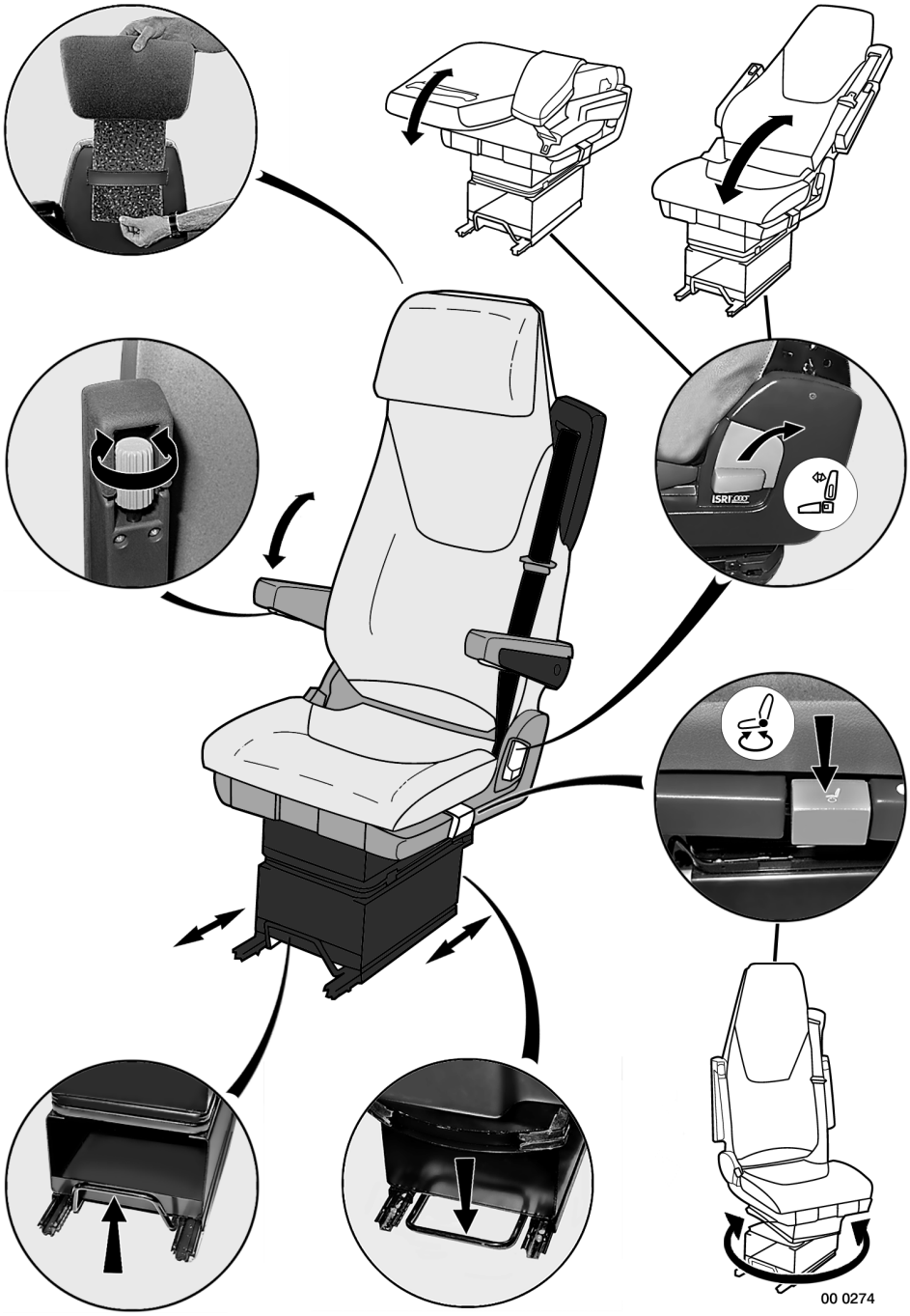
3 – "Lower" lumbar support adjustment control

4 – "Upper" lumbar support adjustment control

5 – Side support adjustment

6 – Heated seat cushion and squab (automatic thermostat–regulated operation)

IMPORTANT
For safety reasons, all seat adjustment operations must be carried out when the vehicle is at a standstill.
When the vehicle is moving, any use of the seats in a position other than that of "facing the road" involves the responsibility of the users.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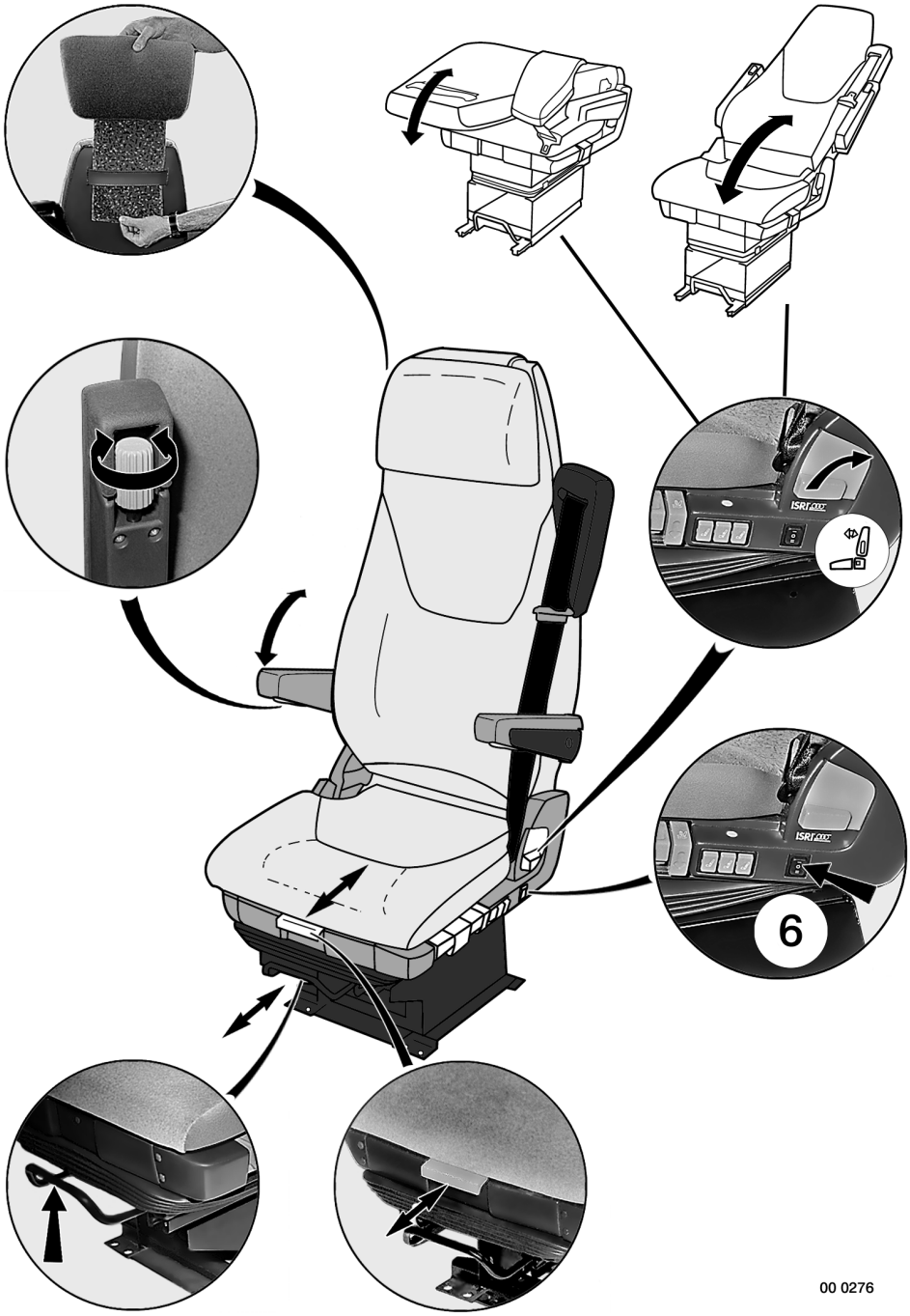
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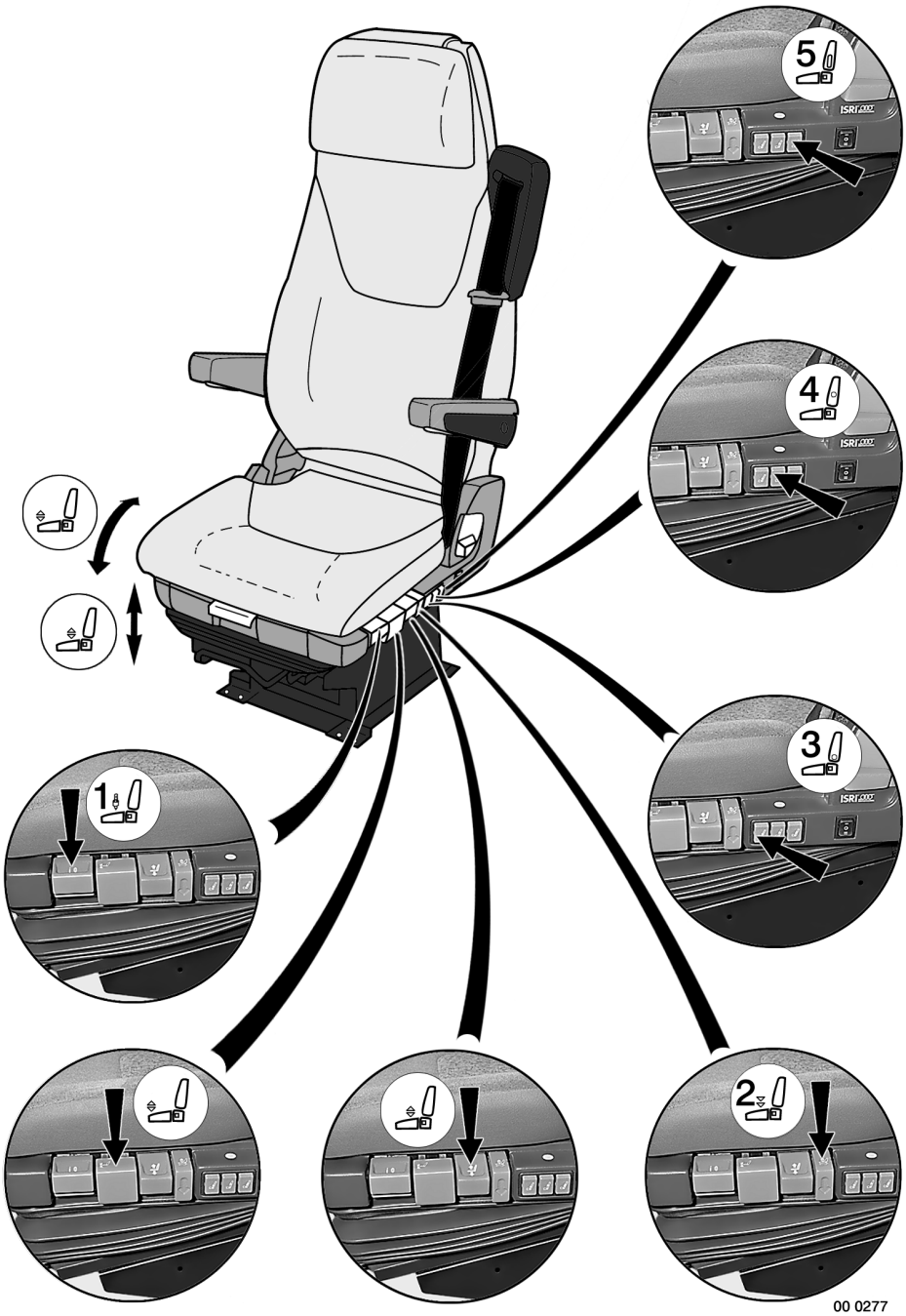
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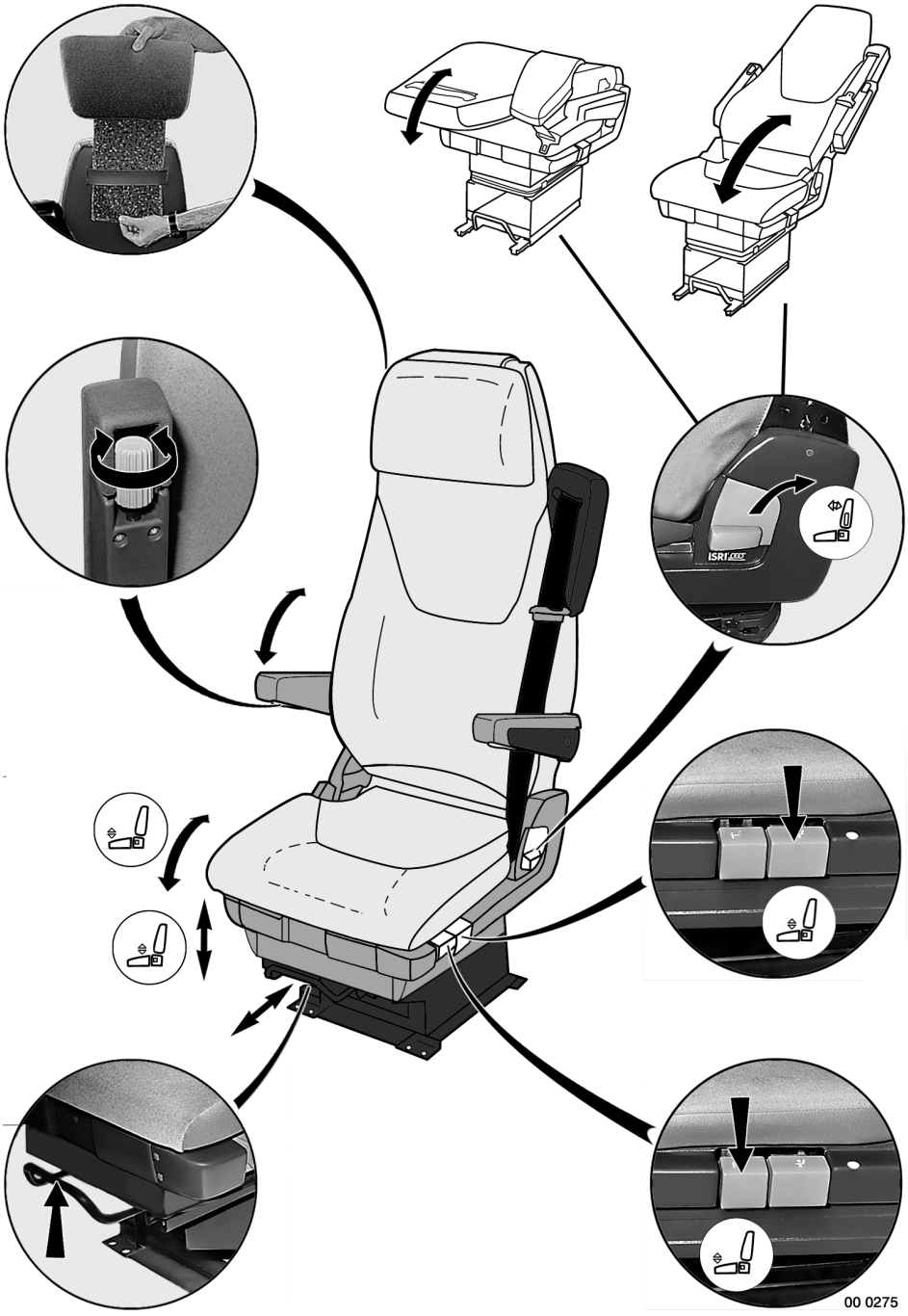
4
3
1
2
00 0277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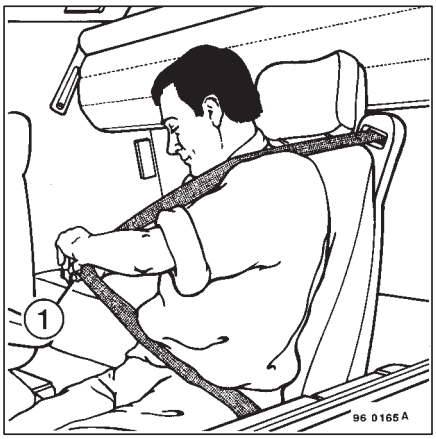
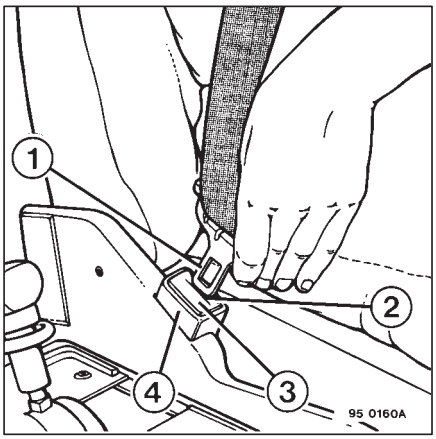
SEAT– BELTS
Inertia reel safety belts
Slowly unwind the strap so as to be able to engage tongue (1) in buckle (2).
If the strap locks, pull it back a little, then continue unwinding.

Unlocking
Press button (3) on buckle (4), the belt is returned by the retractor.
Accompany tongue (1) with your hand to facilitate this operation.





ADJUSTING THE STEERING WHEEL
Depress foot control (1).
Pull, lift, raise or push the steering wheel to the required position.
Release foot control (1).

NOTE
The foot control (1) is operative only when the circuit air pressure is sufficient.

C51 use of the vehicle

Depending on your vehicle's equipment

AIRBAG

The airbag system uses a pyrotechnic principle which explains why, upon deployment, it produces heat, gives off smoke (which is not the sign of an outbreak of fire) and generates a detonating noise. Deployment of the airbag, which must be immediate, may cause minor, reversible injuries to the surface of the skin.

The system consists of:
– an airbag and its gas generator mounted under the steering wheel protective cover (1).
– an electronic box located under the driver's seat.
– an "AIRBAG" "Information" and defect test warning light (G23)

A marking "Airbag" on the steering wheel protective cover (1) and a self–adhesive sticker on the windscreen remind the presence of this equipment.

Operation

In the event of violent **head–on** impact, the bag inflates and deadens the impact of the driver against the steering wheel, then de–inflates.
When the ignition is switched on, the warning light (G23) comes on for 5 seconds and then goes out. The system is operational. An illumination defect or permanent illumination of the warning light (G23) indicates system trouble. Call upon your dealer or an approved agent.

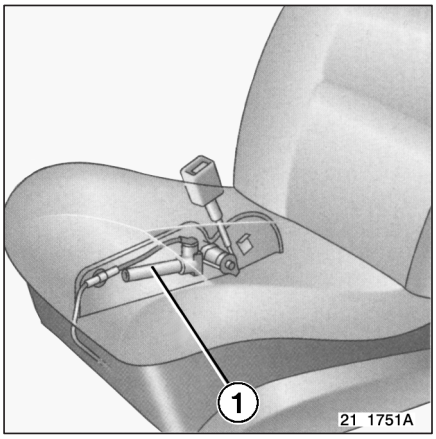
NOTE

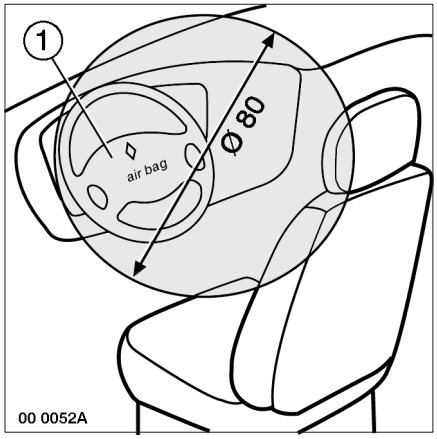
When the ignition is switched off or the warning light (G23) is illuminated, the airbag system is inoperative.

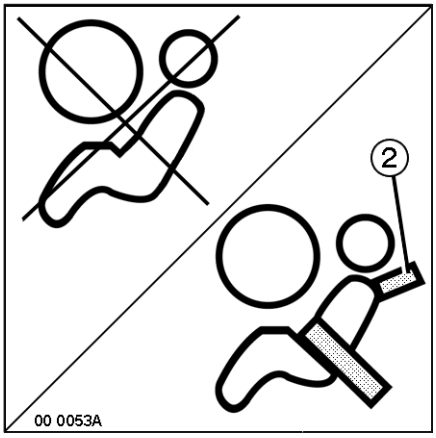
Depending on your vehicle's equipment

Seat belt pretensioner

The pretensioner system uses a piston (1) which instantaneously retracts the seat belt buckle, flattening it against the body and thus increasing its effectiveness.







IMPORTANT

– *If an airbag system is fitted, the seat belt (2) must be worn.*
– *If the driver's seat designed for the airbag system has to be changed, it must be replaced by a seat identical to the one originally fitted.*
– *Adjust the seat and the squab correctly so that the airbag offers optimum protection. When the driver has his back against the squab his arms must be slightly bent upon reaching the steering wheel.*
– *The protective cover (1) must be free from any article (ledge, clock, adhesive, various accessories...).*
– *There should be no objects within the airbag deployment area (Ø 80 cm).*
– *To avoid any inadvertent release of the airbag capable of causing bodily injury, it is forbidden to remove the steering wheel or work on the airbag system. Only the RENAULT TRUCKS network is qualified to work on the airbag system.*
– *Get the airbag system checked out in the case of accident or if there has been attempted theft of or from the vehicle.*
– *For safety reasons, replace the airbag every 15 years.*
– *If water is splashed onto the electronic box, replace it.*
– *Any significant modification to the front end of the vehicle or any vehicle over–loading may lead to inadvertent release of the airbag system.*
– *When lending or reselling the vehicle, inform the borrower or purchaser of all these conditions. Get him to read the driving and servicing handbook.*

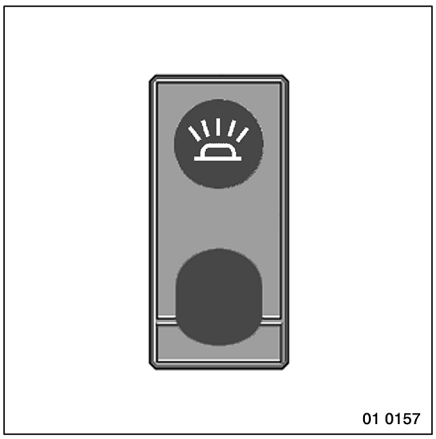
C53 use of the vehicle

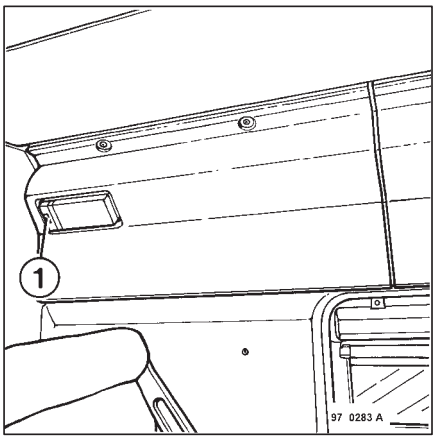
CAB OVERHEAD LIGHTS

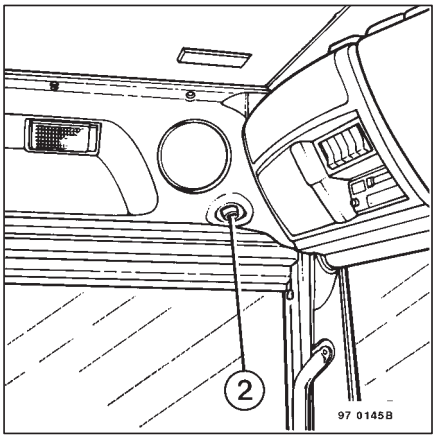
Switch (A6) operates all the cab overhead lights.

Each overhead light can also be operated individually with switch (1).

Map reader (2) is operational by rotation.

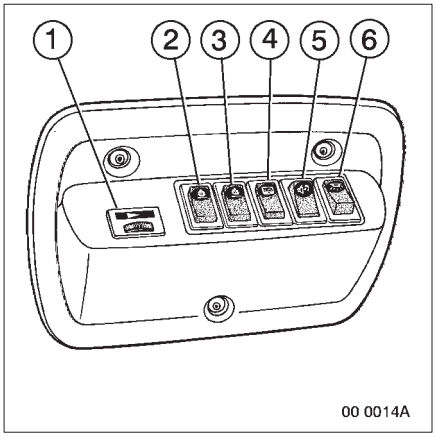






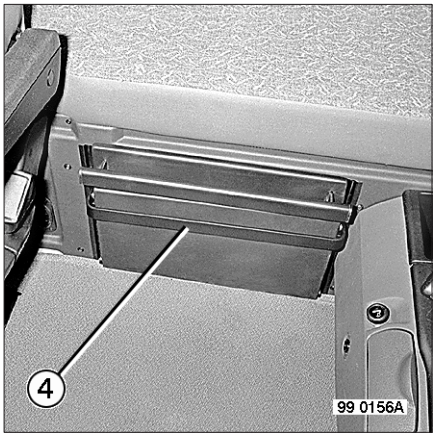
CAB COMFORT
Depending on your vehicle's equipment

Bunk compartment control panel
1 – Ambient temperature thermostat
2 – Add–on heater control (B1)
3 – ADR add–on heater control
4 – Sun–roof control (B5)
5 – Radio control (B6)
6 – Bunk lighting control

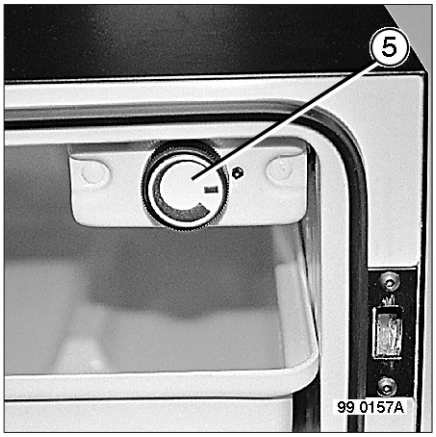


Depending on your vehicle's equipment

Refrigerator
To open
Open the door with the handle (4).
To close
Push the door until it snaps shut automatically.
Operation
A thermostat (5) regulates the operation. To stop the refrigerator, move the thermostat to position "0".
Access to the thermostat
The thermostat is to be found to the top right–hand side of the cab with access through the door.



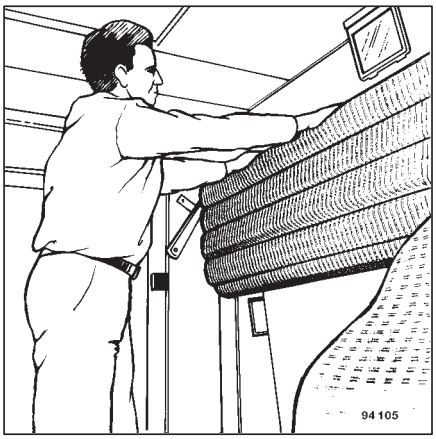
NOTE
In the event of malfunction, contact your RENAULT TRUCKS dealer or an approved agent.



C55 use of the vehicle

Depending on your vehicle's equipment

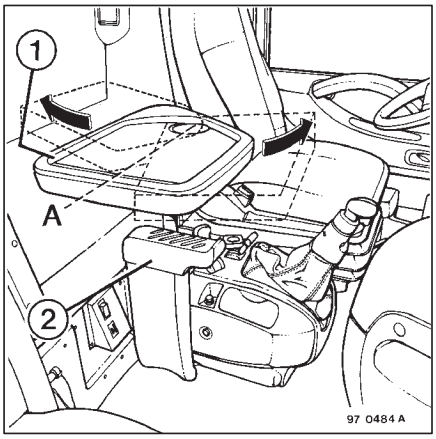
Top bunk
To position the bunk, move the seats forward.
Before taking the road, raise the bunk.



Bottom bunk
1 – Stowage lockers.
2 – Refrigerator.

Depending on your vehicle's equipment
Use of table (1)
- Whenstationary: tilt the table to the position you require.
- While rolling: the table must be in the locked position (A).

Step (2) serves to gain access to the top bunk.



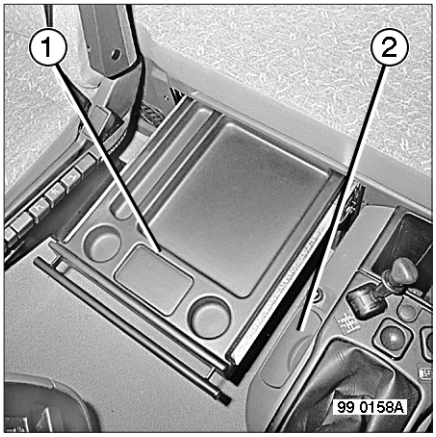
Depending on your vehicle's equipment

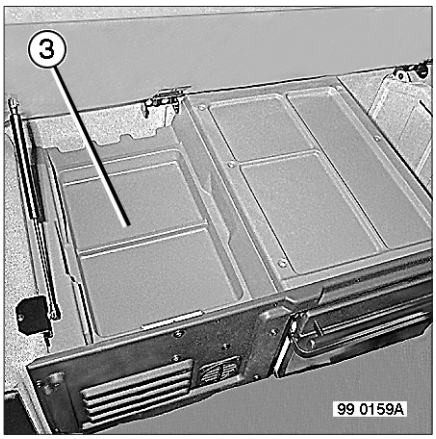
Cab comfort
1 – Storage ledge.
2 – Ashtray**.**
3 – Storage compartment on add–on heater.
4 – Storage compartment.
4 – Refrigerator.

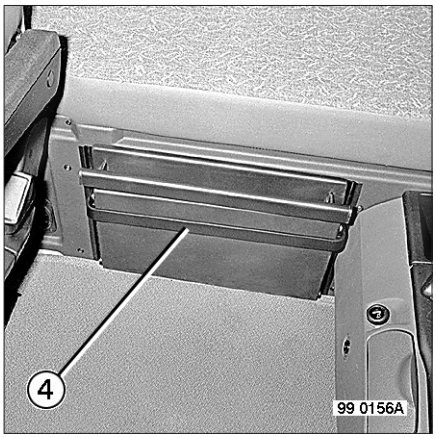
Storage compartment (4)
To open
Tilt the handle upwards and pull the door.
To close
Push the door until it snaps shut automatically.

NOTE
Before using the ledge (1), remember to close the ashtray (2). Avoid climbing on it. The storage compartment (3) on the add–on heater supports a load below 10 kg.

Before tilting the cab, stop the refrigerator, empty it and then empty the storage compartments.



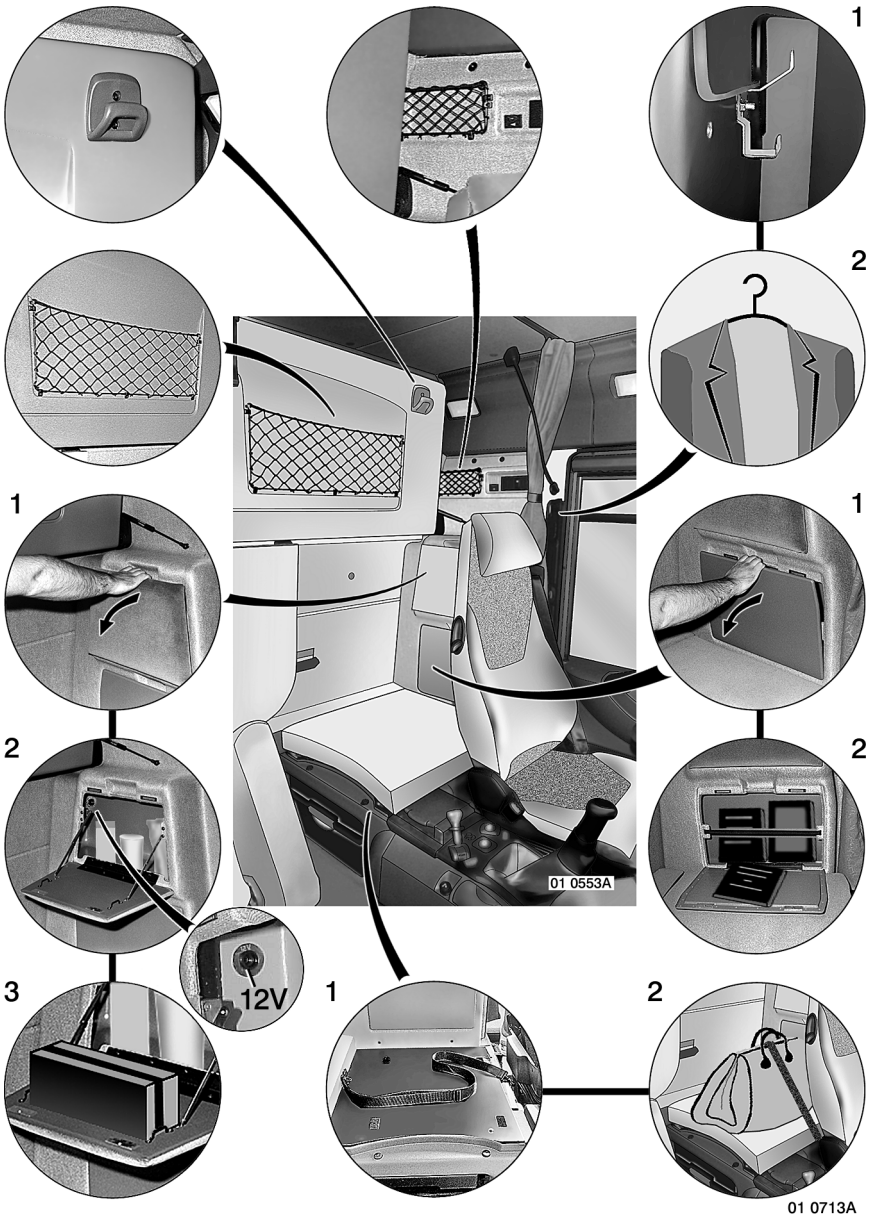




C57 use of the vehicle

Depending on your vehicle's equipment

Driver's side storage / tidying units



C58 use of the vehicle

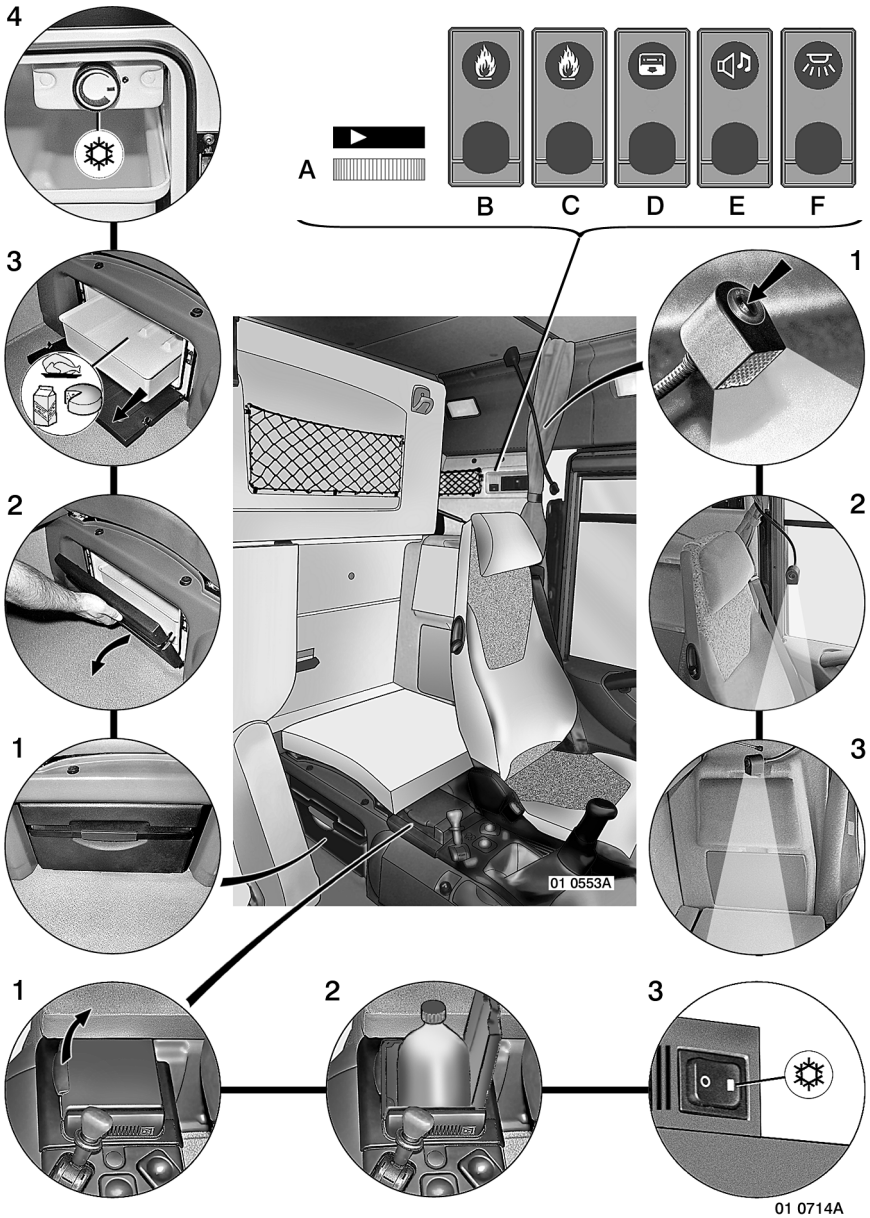
Depending on your vehicle's equipment

Bunk compartment control panel
A – Ambient temperature thermostat
B – Add–on heater control (B1)
C – ADR add–on heater control
D – Sun–roof contro (B5)
E – Radio control (B6)
F – Bunk lighting control

C59 use of the vehicle

Depending on your vehicle's equipment

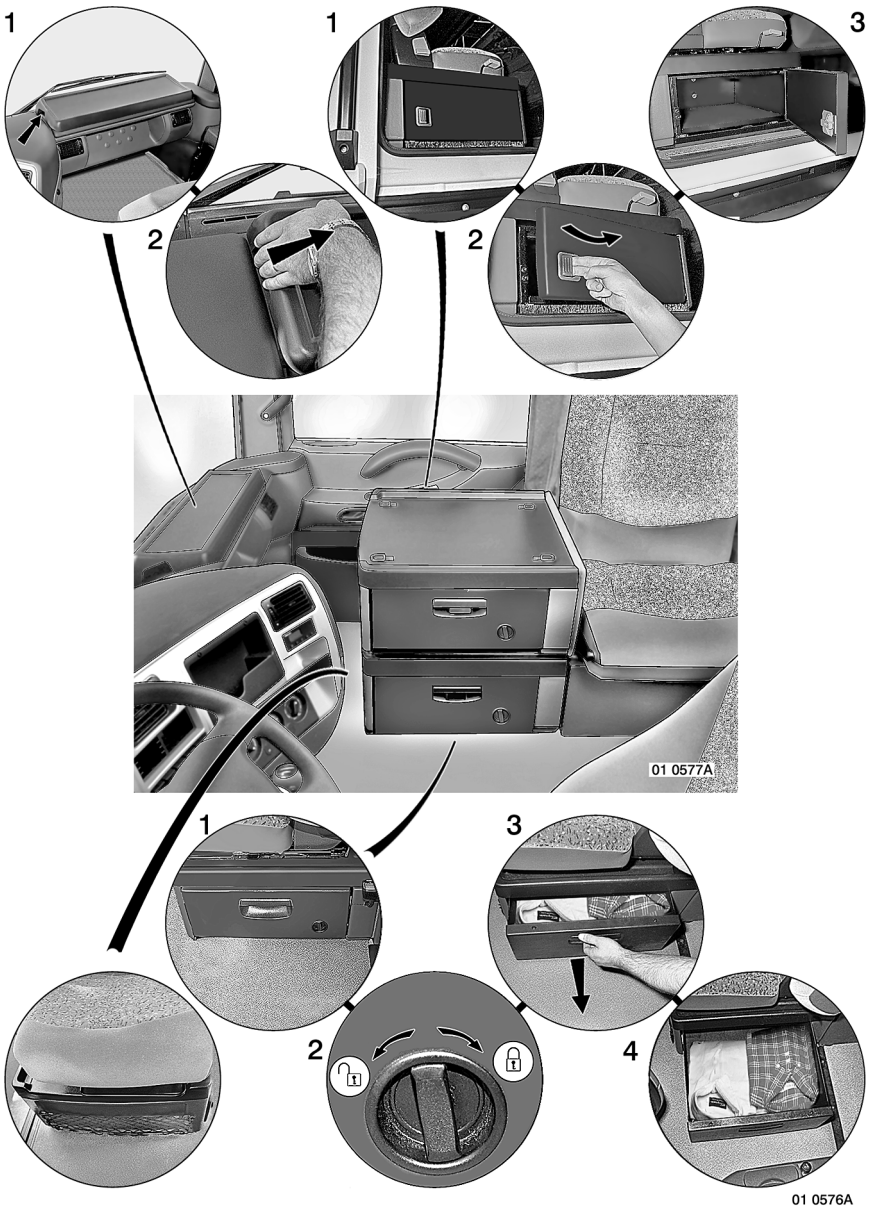
Refrigerator units, reading light, bunk control panel



C60 use of the vehicle

Depending on your vehicle's equipment

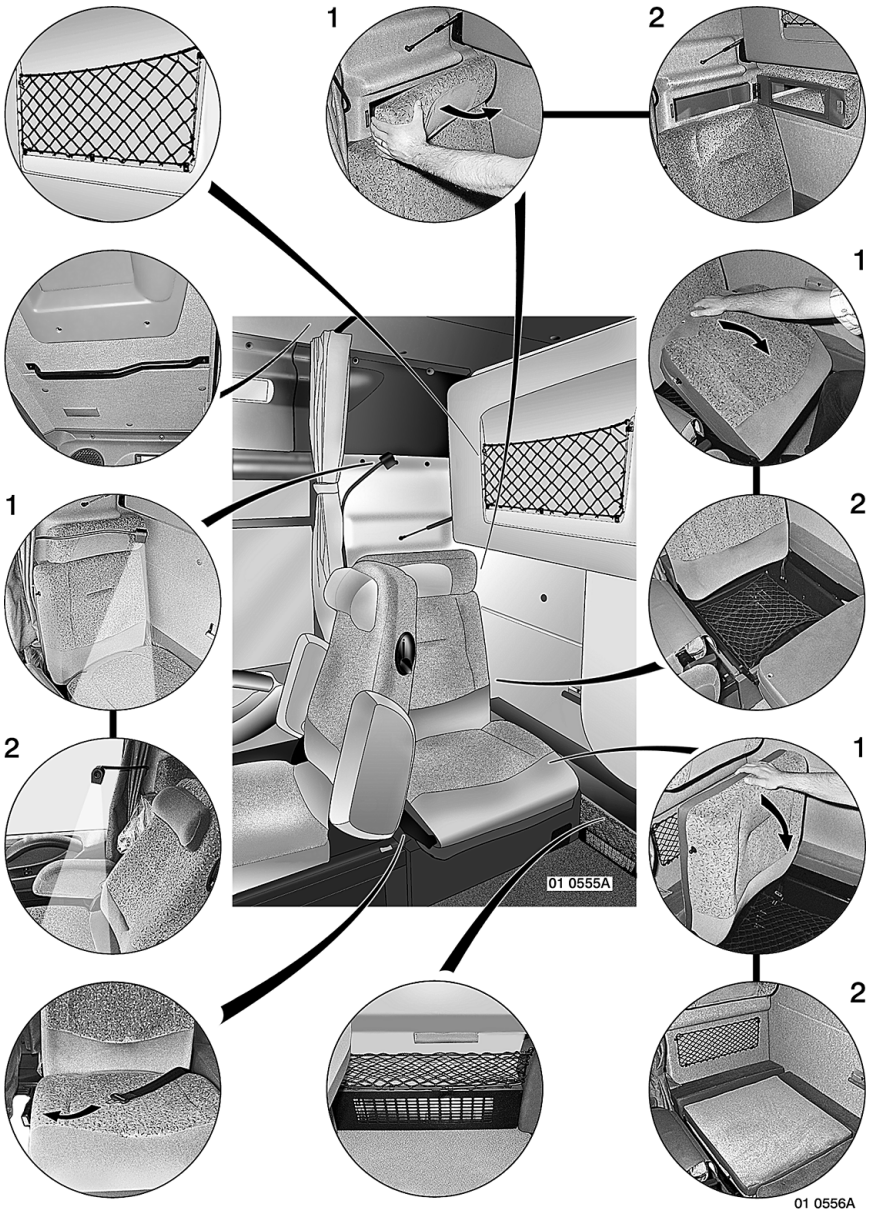
Passenger's side storage / tidying units



C61 use of the vehicle

Depending on your vehicle's equipment

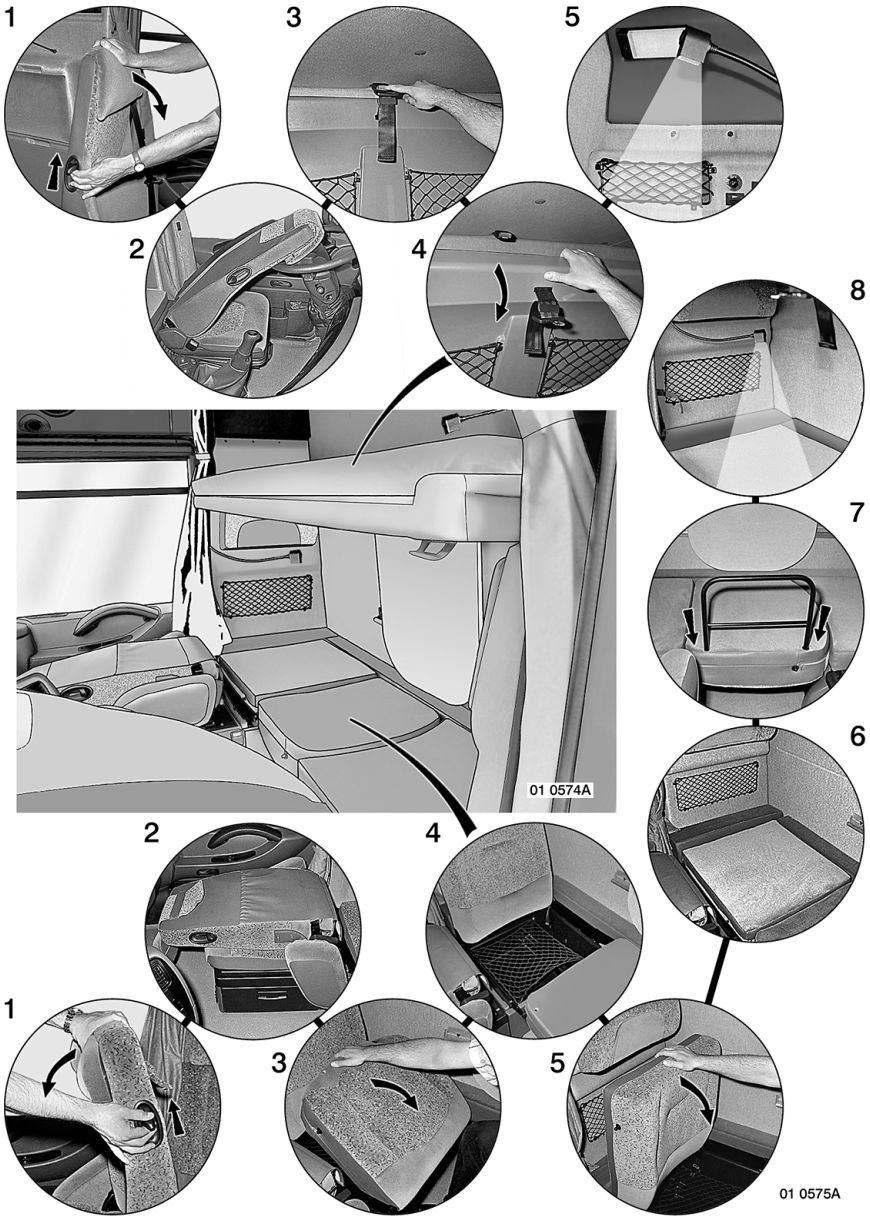
Storage / tidying units and accessories



C62 use of the vehicle

Depending on your vehicle's equipment

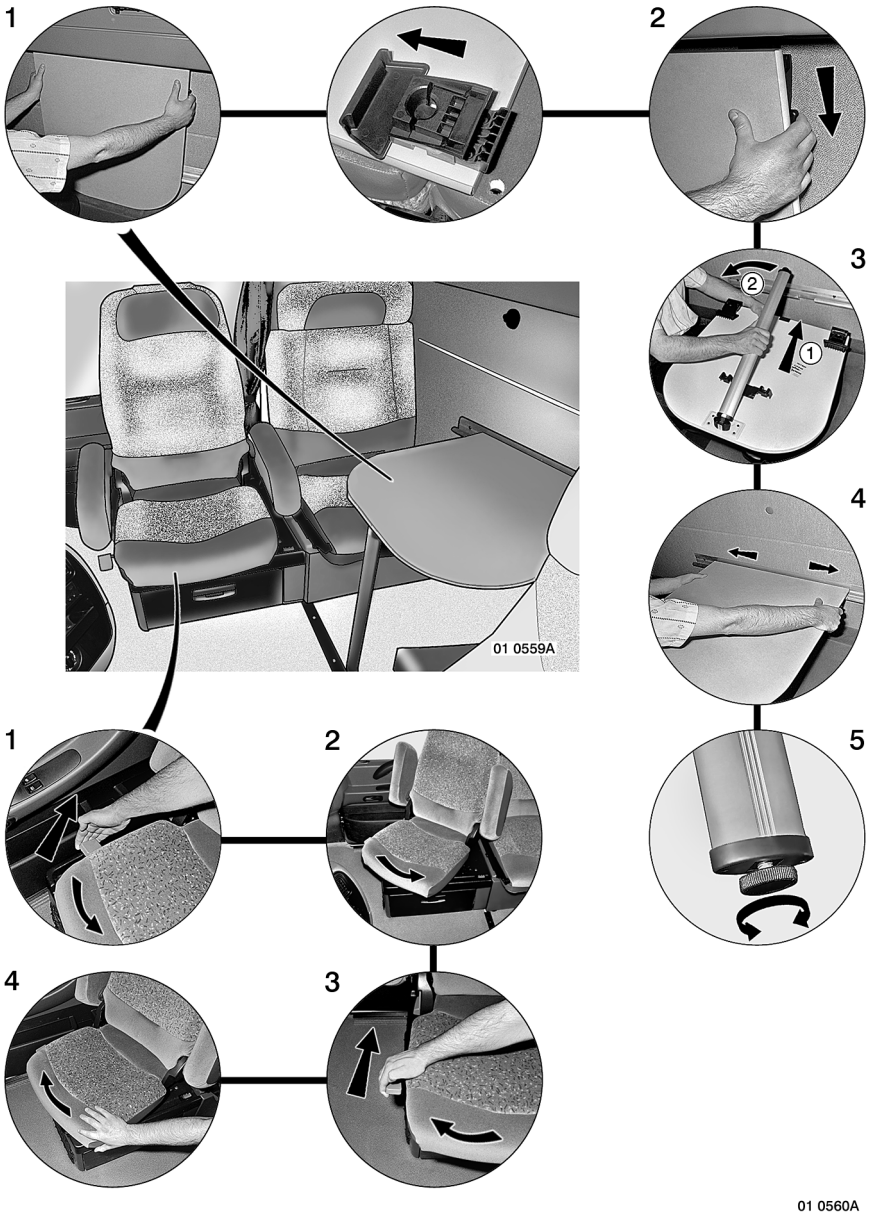
Setting up bunks



C63 use of the vehicle

Depending on your vehicle's equipment

Setting up meal, working, etc. environments



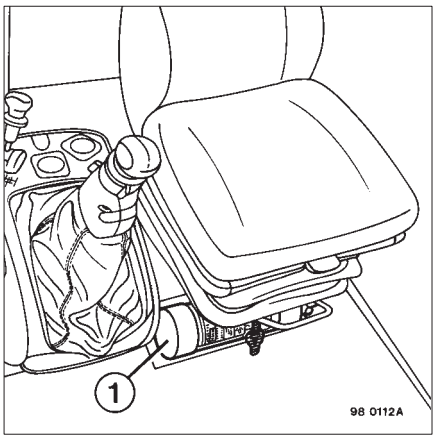
C64 use of the vehicle

Depending on your vehicle's equipment

FIRE EXTINGUISHER

A fire extinguisher (1) is located close to the driving position. Its exact location varies according to its capacity.

This appliance is subject to regulations. It must be regularly inspected by an approved body.



Depending on your vehicle's equipment

INFOMAX

"SAE" socket (1) for plugging in Infomax.

C65 use of the vehicle

Depending on your vehicle's equipment

PREHEATING THE ENGINE COOLING SYSTEM

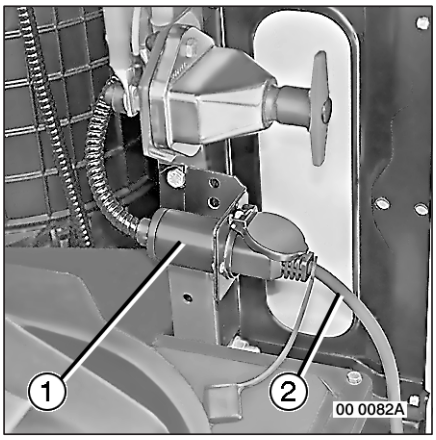
The connector (1) serves to supply power to the cooling system preheater.

With the engine shut down, plug the electrical extension (2) from the onboard kit into the connector (1) to connect up with an external power source of 220 / 240 V 16 A meeting the standards in force.

WARNING

220 V current is present on the cooling system preheater when an electrical cord is plugged into the connector.

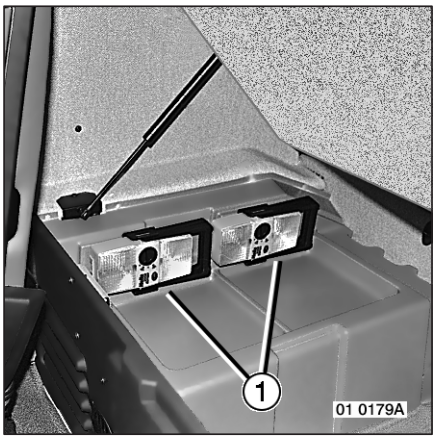
Unplug the elctrical extension and stow it away before using the vehicle.

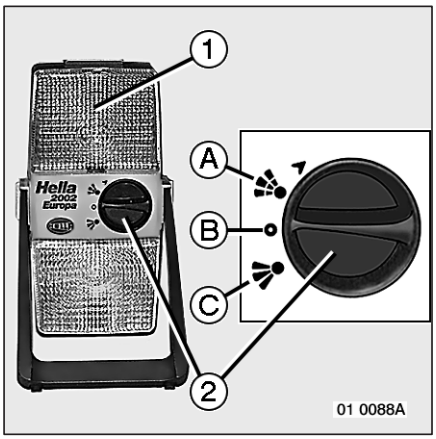


Depending on your vehicle's equipment

ADR vehicle (transport of hazardous substances)
Self–contained lights (1).
The switch (2) features three positions:
A orange flashing light
B off
C white steady light

NOTE
The self–contained lights are supplied without battery.





COMBINED LIGHTS/HORN STALK SWITCH

Direction indicator (flashers)
Push the control stalk parallel to the steering wheel in the direction you are going to turn.
1 – RH indicator lights.
2 – LH indicator lights.
The control stalk incorporates an automatic return feature.

Horn
Push down on the end of the control stalk to sound.

Headlamps flasher warning unit
Lightly pull the stalk towards you to flash. Warning light (A) comes on.

Lighting

Parking/side lights
Turn the control to position “3”.

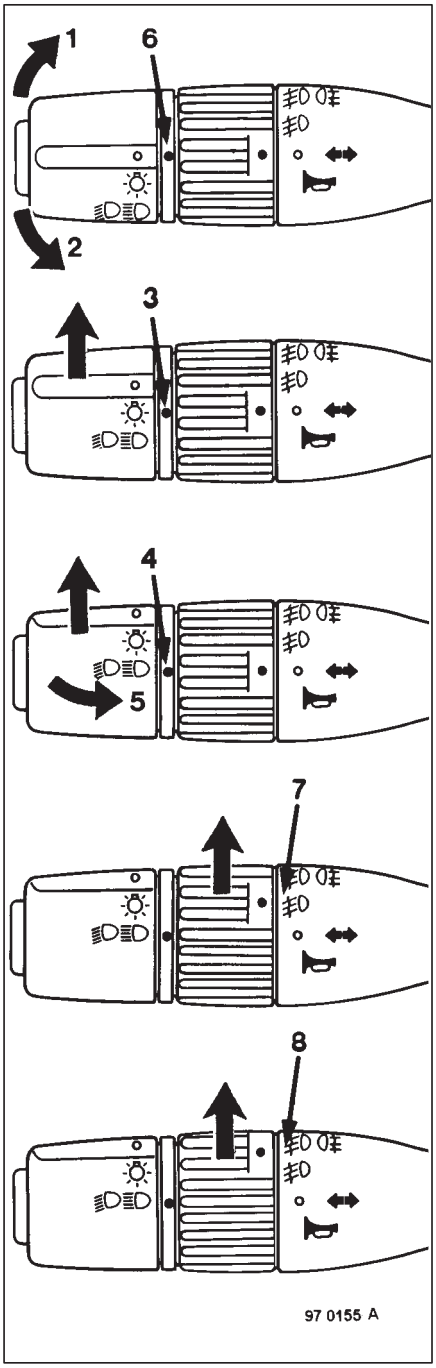
Dipped beam headlights
Turn the control to position “4”. Warning light (AC) comes on.

Main beam headlamps
With the control stalk in position “4”, pull the stalk towards you in the direction of position “5”. Warning light (A) comes on.
To revert to dipped headlights, pull the stalk again towards you in the direction of position The instrument panel lighting comes on in all “Lights On” positions.

Lights out
The control stalk must be in position “6”.

Fog driving lights
With the side lights on or the headlamps dipped, turn the ring to position “7”. Warning light (AA) comes on.

Fog driving lights and fog lights
With the side lights on or the headlamps dipped, turn the ring to position “8”. Warning lights (AA – AD) come on.

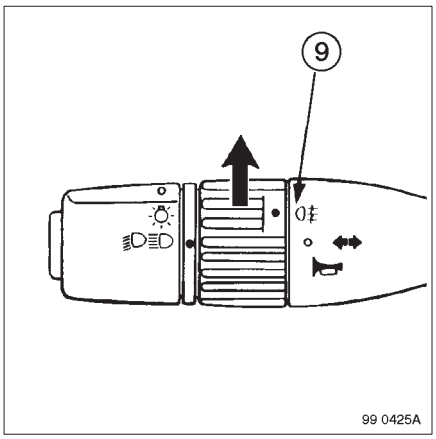


Depending on your vehicle's equipment

COMBINED LIGHTS / HORN STALK SWITCH

Control without fog driving lights

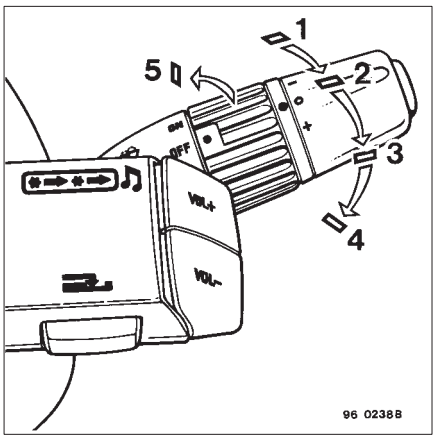
Fog lights
With the headlamps dipped, turn the ring to position "9". Warning light (AD) comes on.



WINDSCREEN WASH/WIPE AND HEADLAMPS WASHER CONTROL STALK

Move the stalk parallel to the steering wheel:
1 – Stop position
2 – Intermittent wiping
3 – Slow wiping
4 – Fast wiping

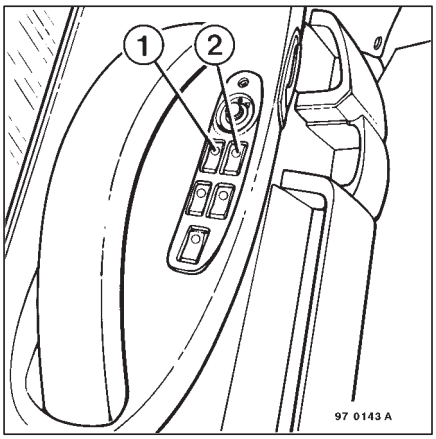
Flick wiping:
Move the control to position "5", and let it return automatically to its initial position. The wiper will make two fast forward and backward movements.
Hold the stalk in position "5" to simultaneously operate:
– windscreen wiper and washer
– headlamps washer (if fitted to the vehicle) provided that the headlights are ON.
When you release the pressure on the stalk, the wiper will stop after a few wipes.

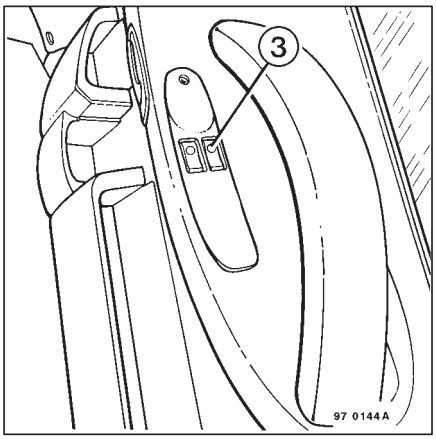


ELECTRIC WINDOW WINDERS CONTROL

1 – LH side window control, driver's side.
2 – RH side window control, driver's side.
3 – RH side window control, passenger's side.

To use the controls:
To lower: press the rear of the control.
To raise: press the front of the control.





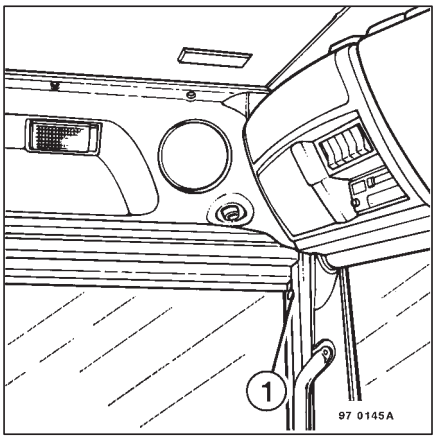
Depending on your vehicle's equipment

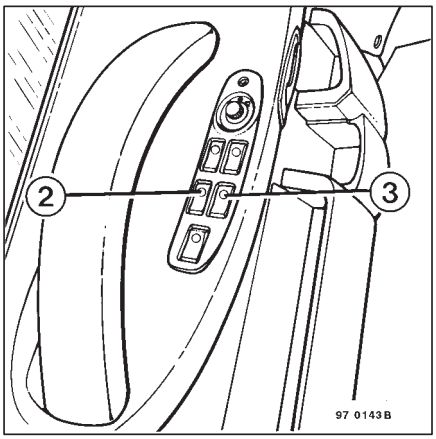
SUN BLINDS

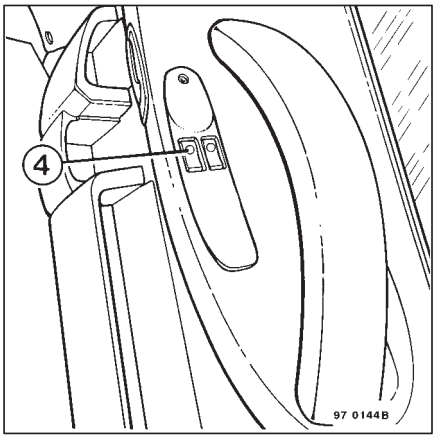
Mechanically operated side blinds:
Move the blind to the required position.
Actuate control (1) to wind up the blind.

Electrically operated side blinds:
2 – LH side blind control, driver's side.
3 – RH side blind control, driver's side.
4 – RH side blind control, passenger's side.

To use the controls:
To lower: press the downward arrow.
To raise: press the upward arrow.





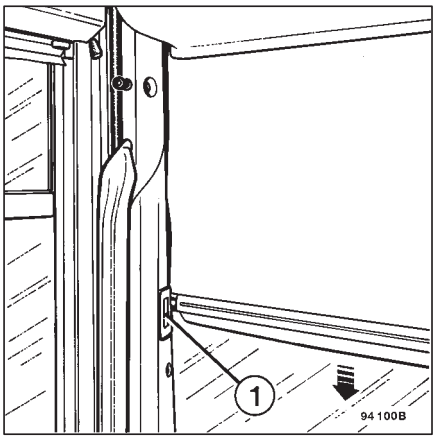


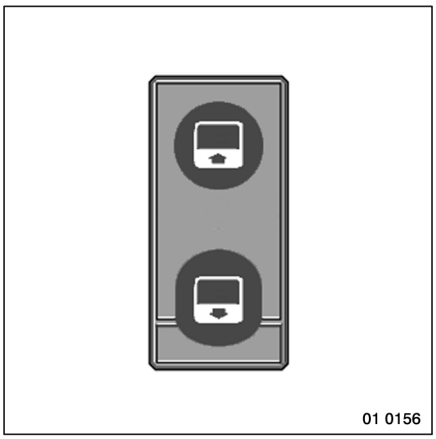
C71 use of the vehicle

Depending on your vehicle's equipment

SUN BLINDS

Electrically operated front blind:
To lower: press the rear of control (B4).
To raise: press the front of control (B4).
To fully lower the blind, actuate both controls (B4) and (1).



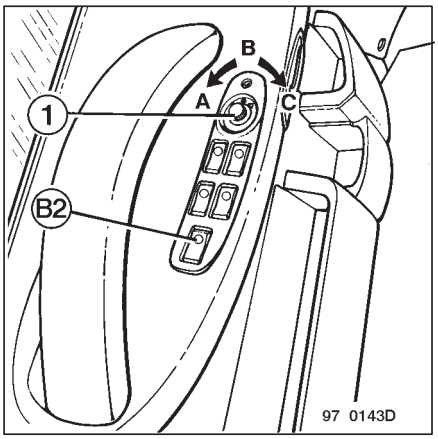


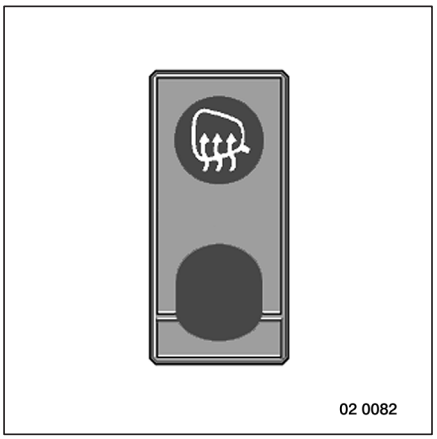
ELECTRICALLY OPERATED REAR-VIEW MIRRORS

With the master switch engaged, move control (1) to position :
- **A** to adjust the LH rearview mirror,
- **C** to adjust the RH rearview mirror,
- **B** to render the control inactive.

Adjustment :
Select the rearview mirror to be adjusted, then press control (1).The control is of the omni-directional type.

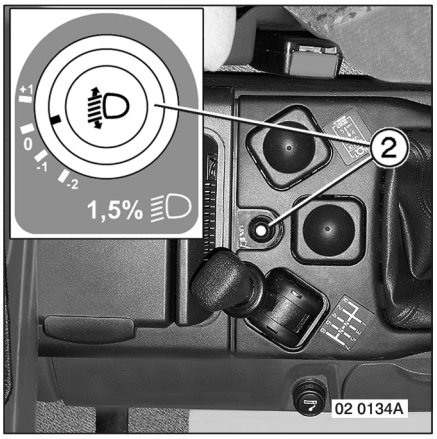
Defrosting :
To defrost, actuate the control (B2).
The warning light (Z) comes on during the defrosting operation.





Depending on your vehicle's equipment
HEADLIGHT ADJUSTMENT:

Vehicle unladen: the control (2) is in position 0.
Vehicle laden: turn the control anti–clockwise to correct the beam height.



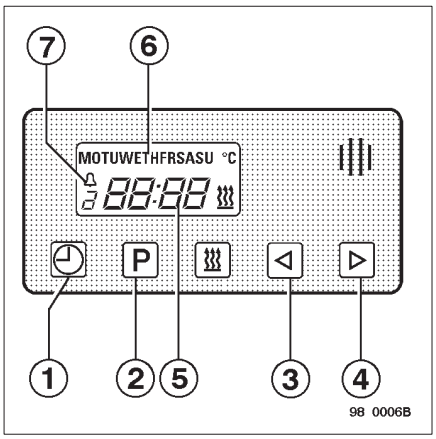
ALARM CLOCK

When the ignition is switched on, the dial lights up and the figures appear.
If there is nothing on the display, check the fuse.

Adjusting the time of day
Press and hold down key (1) and press key (3) or (4) to set the time of day (5).

Adjusting the day
Press and hold down key (2) and press key (4) to set the day (6).

Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Lun	Mar	Mer	Jeu	Ven	Sam	Dim



Alarm feature
To adjust the time
Press key (2) to set the alarm time. The “alarm” symbol (7) (a bell) appears.
Press keys (3–4) to adjust the alarm time. After adjusting the time, press control (2) to return to the clock feature. The “alarm” symbol (7) (a bell) disappears.
To activate the alarm feature:
Press keys (3–4) simultaneously. The “alarm” symbol (a bell) appears.
To de–activate the alarm feature:
Press keys (3–4) simultaneously. The “alarm” symbol (a bell) disappears.

When the alarm clock key is activated, the buzzer goes off at the preselected time and stops, either automatically after 5 minutes, or by pressing key (4). After the alarm clock has operated, it remains activated.

Depending on your vehicle's equipment
RADIO

Carefully read the notice supplied in the onboard kit.

Radio remote control

1 – Selection of set frequencies.
2 – Adjustment of sound volume.
3 – Activation of stations automatic search.
4 – Call–up of memorized stations.

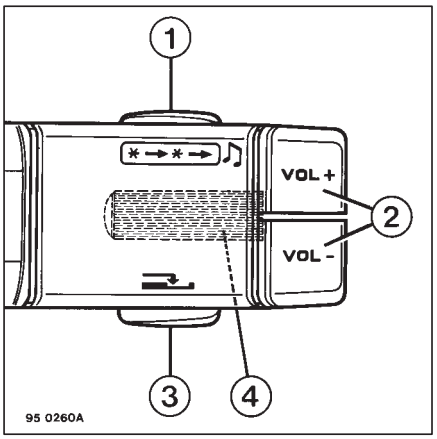
IMPORTANT
For any work on the radio, consult a dealer or approved agent.
Any modification to the radio installation may lead to vehicle malfunction.

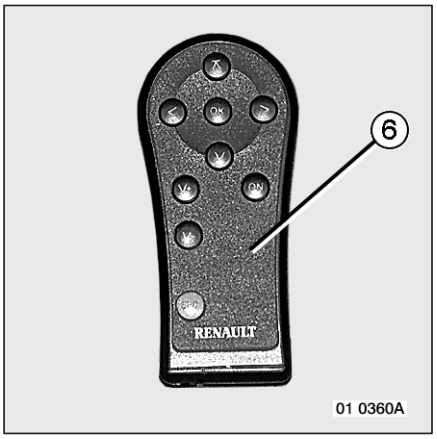
Your vehicle is equipped with a radio/cassette player or a radio/mono CD player. To these two equipment items can be added a CD loader (5) and an infra–red remote control (6).

In the case of infra–red remote control equipment (6), there is no bunk radio switch (B6).

The radio is supplied with 24 V current and can be used with the ignition switched off but with the master switch engaged.

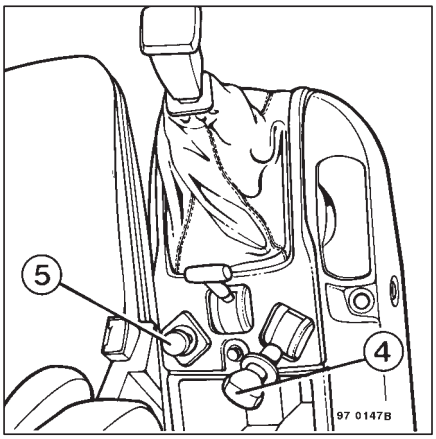
Anti–theft code
Your set is supplied with the code not activated.



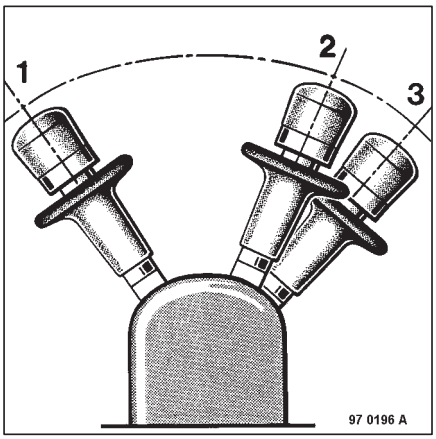


PARKING BRAKE

The parking brake valve acts simultaneously on the rear axle of the tractor and on the trailer.



Release
With locking valve (5):
Ensure that valve (5) is depressed. If not, wait for the air circuit to be pressurized before depressing it.
Lift the locking sleeve and move the lever (4) from position (2) to position (1). Warning light (B) goes out.
Without locking valve (5):
Lift the locking sleeve and move the lever (4) from position (2) to position (1). Warning light (B) goes out.



Application
Move the lever (4) from position (1) to position (2) (pull past the hard spot).
Make sure the lever is correctly locked in position (2). Warning light (B) comes on.
Before leaving the vehicle, move the lever to the "**Test**" position to verify the efficiency of the parking brake.

Testing
Press the lever and move it from position (2) to position (3). This position releases the trailer brakes and the road combination is immobilized by the tractor. This position also serves to check that the tractor brakes alone are capable of immobilizing the combination.
Keep this position for at least 30 seconds.
As soon as the lever is released, it automatically returns to the "Parking" position (2).

Moving away on hills
To make for easy moving away on hills, you can use the parking brake until it reaches the hard spot, without pulling past it. As soon as the lever is released, it automatically returns to position (1).

NOTE
If warning light (B) stays on during release of the parking brake, it may be due to lack of circuit air pressure.

C76 use of the vehicle

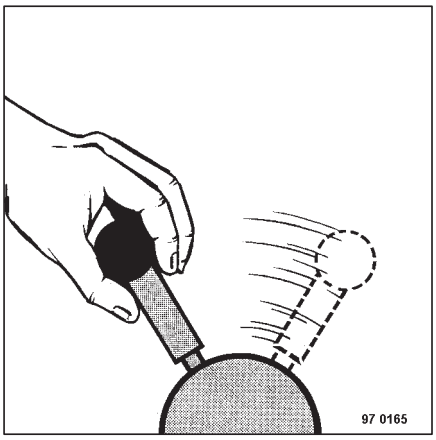
Depending on your vehicle's equipment

TRAILER BRAKE

If the tractor is equipped with a lever actuating the trailer brake valve and thus enabling the tractor–trailer unit to be braked by the towed trailer, only use this possibility under exceptional circumstances.

Application
Pull the lever.

Release
Release the lever, it automatically returns to its initial position.



EMERGENCY BRAKE

If service braking fails on one axle, emergency braking is provided by the other axle.

C77 use of the vehicle

PRIOR TO GETTING INTO THE VEHICLE

Check in particular:
– That there are no traces of oil, coolant or fuel under the vehicle.

– Oil levels

  . engine

  . power steering

  . clutch circuit

– Coolant level.

– Tyre pressures.

– Air filter clogging indicator.

– That the connections between tractor and trailer have been made correctly.

– Cab locking system.

– Leaks from major units. Should a leak occur, clean the breather. A clogged breather allows pressure to build up in the casing and leads to leaks.

Air dryer: Actuate the drain valves to ensure there is no water in the air tanks.
Perform this operation:
– **Daily**: in winter.
– **Weekly**: outside winter.
If there is water in the tanks, get the air dryer checked out (see page F33).

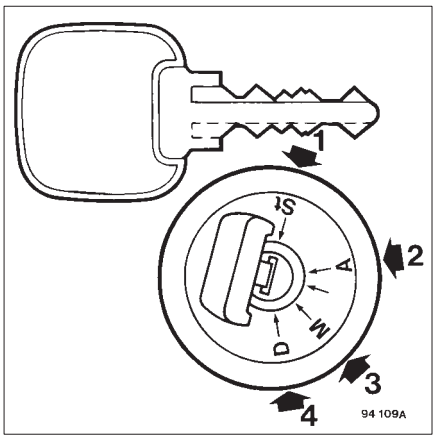
Engage the master switch.

use of the vehicle

PRIOR TO STARTING

STARTING SWITCH

Steering lock
– Stop and column lock position (1): withdraw the ignition key and turn the steering wheel until the steering lock clicks into place.
– Power supply to “comfort” accessories (2): engine stopped, steering column free.
– “Ignition” position (3).
– “Starting” position (4).



NOTE
To stop the engine, turn the key from position (3) to position (1).
If the key remains jammed in position, do not apply force to turn it and call in an electrician.

Depending on your vehicle’s equipment

Starting switch with electronic anti–theft device
The vehicle is supplied with coded keys paired up to the electronic anti–theft device.
With the master switch engaged, insert the ignition key and turn it to the “ignition” position (3).
Warning pictogram (G18) is displayed for a few seconds.
The system has recognized the code number of the key and authorizes engine starting (turn the key to the “starting” position (4)).

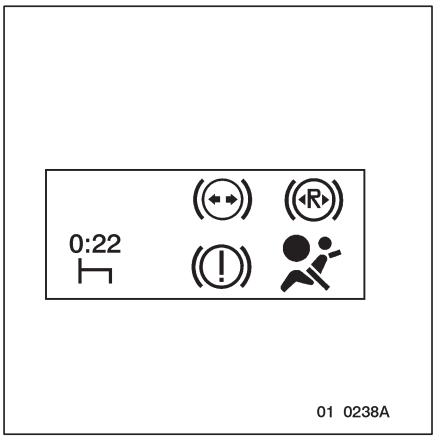
If warning pictogram (G18) stays displayed, the engine will not start. In such case, contact a dealer or approved agent.

IMPORTANT
Any fraudulent action on the electronic anti–theft system will lead to malfunction and represents a real danger when using the vehicle.

Switch on the ignition.

Display test
When the ignition is switched on, an auto–test runs for 4 seconds. This test serves to check all the instrument panel indicators for correct operation.

Regulatory test display
After the display test, the regulatory test mode is activated.
Depending on your vehicle's equipment, warning pictograms (G6–G7–G8) for the functions to be tested are displayed for about 3 seconds.

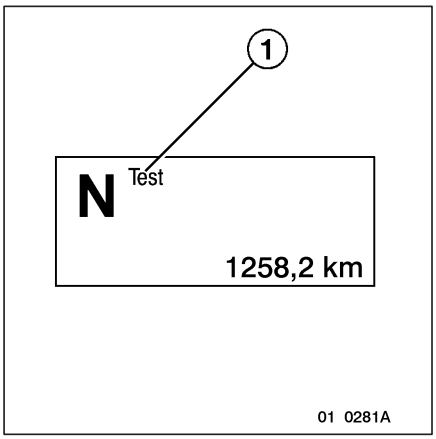


Depending on your vehicle's equipment

ASTRONIC test display

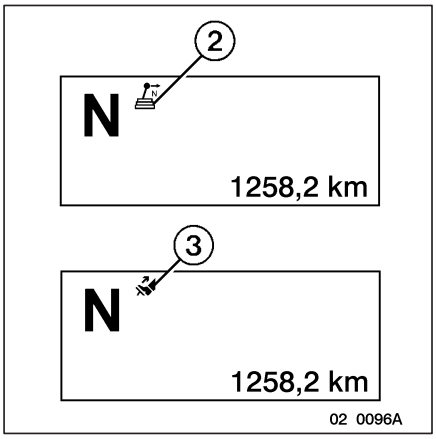
Parking brake engaged and gear selector in position "**N**":
– Switch on the ignition.
– Start the engine without accelerating: the display indicates "**N**" and the "**TEST**" pictogram (1) (autotest in progress).
– Autotest finished - the "**TEST**" display (1) disappears. The gearbox is in neutral.

If a different message is displayed, refer to page C80.

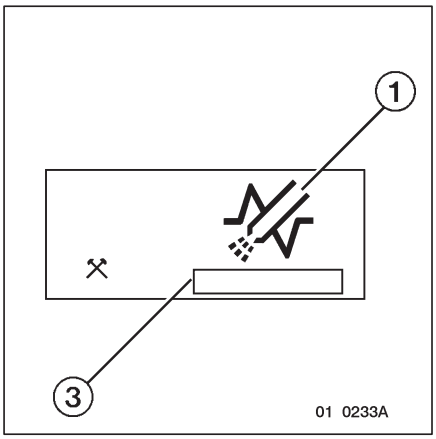


Corrective messages
– If the gear selector is not in position "**N**", pictogram (2) invites you to place it there.
– If the selector has been moved to position "**D**" before the end of the test, you are invited to put it back to position "**N**". The pictogram (2) is displayed.
– At the end of testing, if pictogram (3) is displayed, you are invited to release the accelerator pedal.

NOTA
When the engine is shut down, it is impossible to change gear.

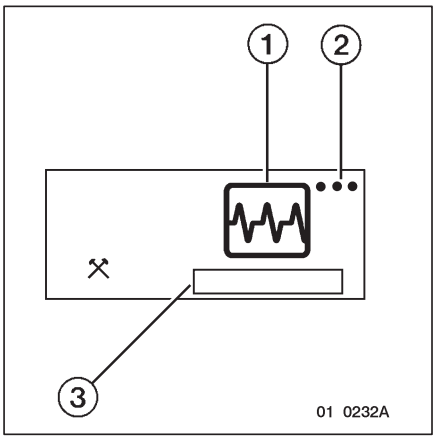


Defect(s) display
In the event of defects, one or several instrument panel warning pictograms (1) are displayed. In this case, the (STOP or SERVICE) warning light comes on simultaneously to distinguish the importance level of the defect(s).
There are 2 possible cases:
If the SERVICE warning light (J) comes on: you must, if possible, identify the problem and get it remedied or drive to your dealer or nearest approved agent.
If the STOP warning light (H) comes on: you must, if possible, identify the problem and, where applicable, consult your dealer or nearest approved agent.
If the warning pictogram (G6) is displayed, start the engine so as to pressurize the compressed air circuit to see if it disappears. If it stays displayed, it may involve an EBS defect or a compressed air system problem.
If different defects are present (STOP and SERVICE), only STOP warning light (H) comes on.

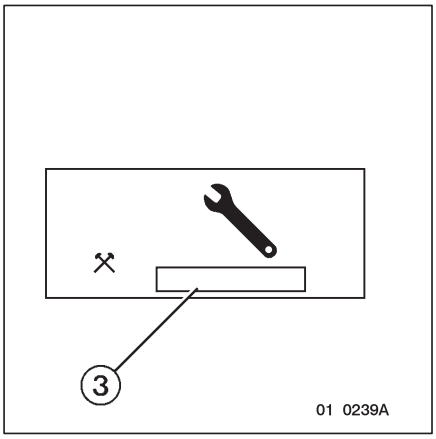


NOTE
When several defects are present, points of suspension (2) appear and the warning pictograms (1) (that depend on the nature of the defect) are displayed every 3 seconds in succession.

A text (3), showing the steps to take or information on the defect, is displayed below the pictogram (1).



Maintenance display
The maintenance pictogram (G9) may be displayed in 2 possible cases:
– The warning pictogram (G9) is displayed, as pre–alert, about 30 seconds after the regulatory test. Consult the maintenance menu (see page C21→C23).
– The warning pictogram (G9) is displayed, as alert, and the warning light (J) comes on. Consult the maintenance menu (see page C21→C23) and drive to your dealer or nearest approved agent to get the maintenance carried out.



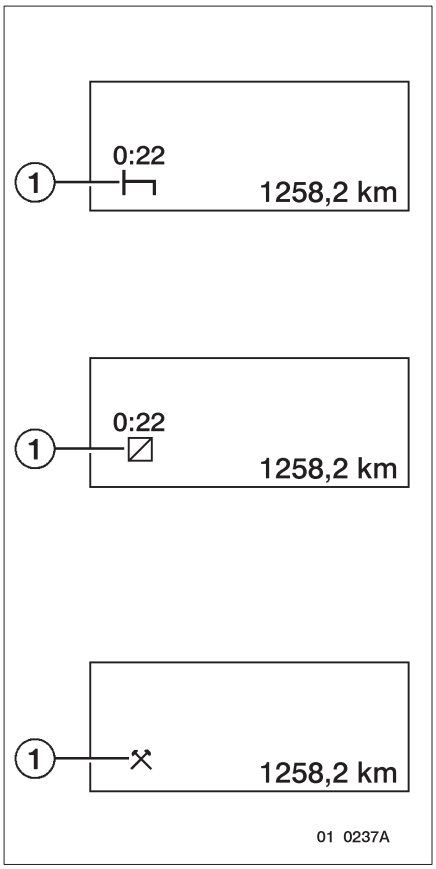
C81 use of the vehicle

State after display test
The sector of the zone (L) remaining lit shows the engine speeds for optimum fuel consumption.
The comfort display (X) shows the time of day and the outside temperature.
The radio display (Y) can show different information concerning the radio (see page C74).

Tachograph
To avoid damage to the tachograph, carefully read the manufacturer's instruction book supplied with your vehicle's onboard documents.
If warning pictogram (G16) is displayed, make sure the disk is inserted in the tachograph. If this is not the case, drive to your dealer or nearest approved agent to get the repair carried out.

IMPORTANT
To open the tachograph disk tray, the vehicle must be at a standstill and the ignition switched on. Upon opening the tray, the driving time and rest time information shown on the multi–function display is automatically zeroed.

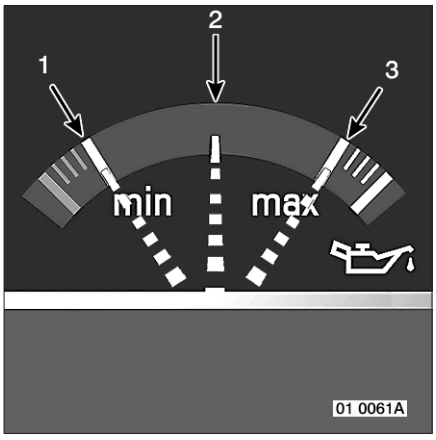
The multi–function display (G) indicates the driver's activity (1) according to the tachograph selection chosen.



Engine oil level and pressure gauge:
Engine stopped: Oil level gauge
Switch the ignition ON and wait until the needle stabilizes.
1 – Danger (top up oil level at once).
2 – Mid–point (top up oil level as soon as possible).
3 – Maximum level.

NOTE
For a more accurate reading, make the measurement on horizontal ground 5 minutes after switching the engine off.

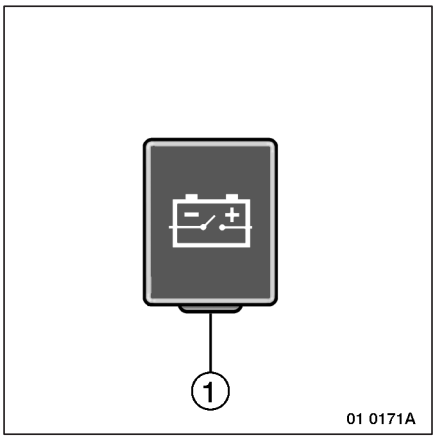
Engine running: Oil pressure gauge.



C83 use of the vehicle

STARTING

IMPORTANT
Depending on your vehicle's equipment, check that the engine cooling system pre-heater is disconnected. Do not start the engine if the preheater is connected for you run the risk of destroying the pre-heater resistor.



Make sure the parking brake is applied.

Make sure the gear lever is in neutral.

Press the button (1) to override the "Emergency stop" control (D1) (case of ADR vehicles).

Engine starting
Actuate the starter, without accelerating.
Temperatures below 5°C: see page D5 (Quick warm–up feature).
Temperatures above 5°C: the engine speed varies according to engine temperature.

Do not move away until:

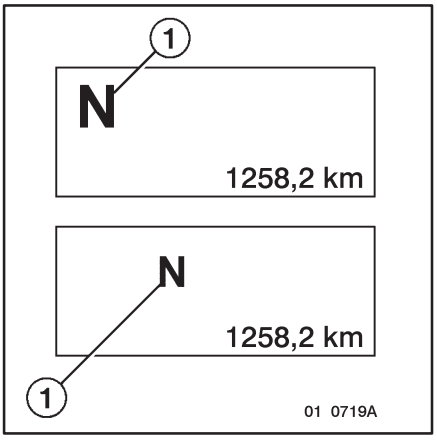
– Brakes air pressure warning light (G6) has gone out and all circuits are operating correctly.

– You are certain that warning light (B) goes out when the parking brake lever is moved to the "road" position.

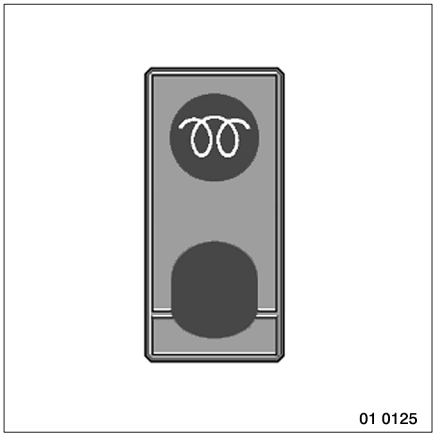
NOTE
If the vehicle is equipped with a lift–up axle, warning light (AB) stays on for as long as the axle is raised.

Depending on your vehicle's equipment

Check that there is no defect warning pictogram displayed on the multi–function display (G).
The symbol (N) (1) means that the gearbox is in neutral.



Starting the engine in cold weather
Depress switch (B3) for 20 to 30 seconds to preheat the engine.
Warning light (E) comes on.
Keep the preheat switch depressed, turn the ignition key fully clockwise, then release it when the engine fires.

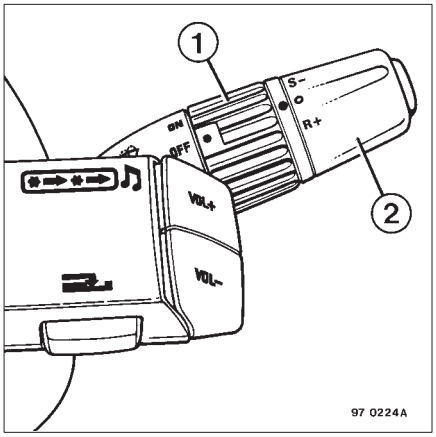


Depending on your vehicle's equipment

Engine idling adjustment device
This device serves to adjust the engine idling speed in a band of between 700 and 750 rpm.

Use
With the vehicle at a standstill, parking brake engaged, engine idling, turn ring (1) from the "OFF" to the "ON" position three times in less than 2 seconds (OFF → ON → OFF → ON → OFF → ON).
With ring (1) on "ON", the engine speed rises to 700 rpm.
To again adjust the idling speed:
- Turn ring (2) to bring "R+" opposite the mark, to increase the engine speed.
- Turn ring (2) to bring "S–" opposite the mark, to lower the engine speed.

Once the engine idling speed is defined: depress, then release either the clutch pedal or the brake pedal to memorize the new engine speed and quit the adjustment mode.



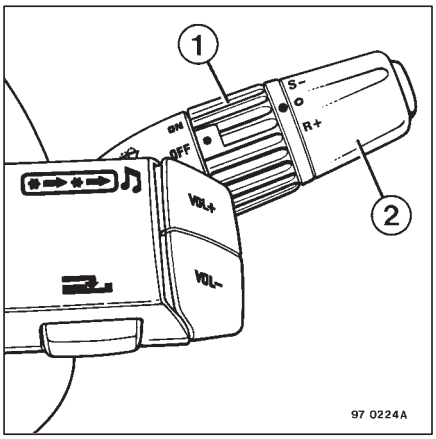
Fast idling device
This device serves to adjust the engine idling speed when the vehicle is stationary.

Use
Move the ring (1) to the "ON" position and turn the ring (2) to bring "R+" or "S–" opposite the mark and then release it.
With the help of the accelerator, bring the engine to the required speed and, in that position, turn the ring (2) to bring "S–" opposite the mark to memorize the engine speed and release it.
Release the accelerator.
To finely adjust the engine speed:
- Turn ring (2) to bring "R+" opposite the mark, to increase the engine speed.
- Turn ring (2) to bring "S–" opposite the mark, to lower the engine speed.

Any action on the brake pedal or any gearshifting or moving the ring (1) to the "OFF" position overrides the feature.

Vehicle fitted with power take–off: When the PTO is in operation, the first action on the ring (2) ("S–" or "R+") calls up the works set engine rotating speed 1 000 rpm.
This engine speed can be adjusted but is limited to 1 200 rpm (see page C121).
Depending on the equipment fitted by the equipment manufacturer, the engine rotating speed can be modified by means of the RENAULT TRUCKS testing tool.

WARNING
Avoid actuating the accelerator pedal during the use of the fast idling feature.



Depending on your vehicle's equipment

Vehicle equipped with a fuel preheater featuring a thermostatic valve
The fuel preheater is piloted automatically according to the fuel temperature.

Do not move away until:

- The engine oil pressure warning light has gone out.
- Air suspension warning lights (G5–G12) are out.
- You are certain that warning light (B) goes out when the parking brake lever is moved to the "road" position.
- Brakes air pressure warning light (G6) has gone out and all circuits are operating correctly.

Depending on your vehicle's equipment

Vehicle with "EBS" braking system

Do not move away until:

Warning lights (G6–G8–H) are out and the braking functions are assured.

–If warning lights (G6–H) stay on, with the vehicle at governing pressure, **it is forbidden to move off – call your dealer or nearest approved agent**.

–If warning lights (G8–J) stay on, **you can move off, but take great care in getting to your dealer or nearest approved agent**.

C87 use of the vehicle

SPECIAL CONDITIONS

USE DURING WINTER OR IN COLD CLIMATES

Engine starting
(see “STARTING”)
Prior to setting off, allow the engine to run for a few minutes to ensure that oil pressure has built up. It is best not to warm up the engine by prolonged running at idle or no–load, but, to drive slowly using the lower gears until normal running temperature is attained. Never demand maximum power from your engine until the water temperature reaches 80°C.

CAUTION
Under no circumstance should a radiator blind or shutter be fitted on vehicles equipped with an intercooled engine. Such accessories prevent cooling of the turbocharger air and thus affect engine efficiency and service life.

Engine cooling system
This vehicle is supplied with Renault Trucks Oils “ULTRACOOLING PLUS” which is in conformity with RENAULT TRUCKS specifications. Depending on its destination, this fluid gives frost protection down to – 25°C or – 40°C.

Batteries
Keep the batteries well charged since their resistance to frost depends on their charge level.

USE DURING SUMMER OR IN HOT CLIMATES

Check the battery electrolyte level frequently. Do not labour the engine, change gear as often as necessary to maintain optimum engine speed. Thus the circulation of water in the cooling system will be improved, keeping the engine temperature within the required specification limits.
Frequently clean the exterior of the radiator by blowing compressed air through the core from the engine side, to remove any insects or dust that may restrict the air flow. Ensure that the radiator is in good condition and if necessary, descale.

USE IN DUSTY ATMOSPHERES

It is recommended to strictly monitor the air filter in dusty atmospheres. Check its condition regulary.

Air filter
Normal servicing (see page F10).
Do not forget that clogging of the filter depends on engine revs. If low gear ratios are constantly used (mountainous terrain, etc.) then the filter should be serviced on a time basis rather than mileage.
A blocked filter can cause serious damage.

USE AT HIGH ALTITUDE

Use of the vehicle at high altitudes affects engine performance. A power loss of approximately 10 % for normally aspirated engines and approximately 5 % for turbocharged can be expected per 1,000 metres of altitude. Also remember that the boiling point of water decreases by 3.5°C every 1,000 metres increase in altitude.

C88 use of the vehicle

RUNNING–IN

During the running–in period (5,000 km approximately), do not run the engine at maximum revs, except for short distances.
Do not use high engine speeds or allow the engine to labour at low or high speeds.
A careful watch should be kept on the water temperature gauge and the oil level.
The vehicle must be loaded as for normal operation.

DRIVING A SOLO TRACTOR UNIT
With no load, rear wheel grip is reduced. Drive carefully.

ECONOMIC DRIVING
To obtain the very best performance from your gearbox, and more particularly lower fuel consumption, carefully observe the following driving rules:
Always select a gear ratio which will enable you to keep the engine in the optimum speed range. The maximum engine torque giving the lowest fuel consumption lies within this range.
Carefully select the gear ratio in relation to the contour of the road.
Remember that: **ALL GEAR CHANGES ENTAIL AN INCREASE IN FUEL CONSUMPTION.**

RATIONAL USE OF BATTERIES
Only fully charged batteries will allow you to start your vehicle properly.
The original battery / alternator unit ensures the usage of different electrical equipment and optimum battery charging.
Get the charging capacity of your batteries checked regularly. It diminishes in cold weather. In winter, only use necessary electrical equipment.
In the case of numerous accessories (refrigerator, coffee–maker, micro–wave, television, add–on heater, etc.) being mounted on the vehicle, it is desirable to fit batteries with higher rated capacity. Get advice from your dealer.
The capacity of a battery is expressed in ampere–hours (Ah).
The consumption of an electrical appliance in amperes (A) is connected with the time of use.
e.g.: Television (2 A) x 2 hours = 4 Ah.
Engine running: the alternator supplies the energy; the batteries compensate, if necessary.
Engine shut–down: only the batteries supply the energy.
Limit your consumption and realize that a minimum of 50% of the battery capacity is necessary for starting the engine.

Main appliances and their consumption in 1 hour:
- Ignition position = 4 A
- Side lights = 5 A
- "Air" add–on heater = 2 A
- "Air/water" add–on heater = 10 A
- Cab overhead light = 2 A
- Refrigerator = 3 A
- Tailgate = 150 A
- Coffee maker = 10 A

If the forecast calculation reveals a battery discharge of more than 50%, limit the number of appliances or compensate by intermediate charging (engine running at 1500 rpm for at least 1 hour).

NOTE
Batteries in parallel: the capacities add together (2 x 12V – 230 Ah = 12V – 460 Ah).
Batteries in series: invariable capacity (2 x 12V – 230 Ah = 24V – 230 Ah).

C89 use of the vehicle

FIFTH WHEEL COUPLING

NOTE
Only the fifth wheels mounted by RENAULT TRUCKS are covered in this document. For using fifth wheels mounted as adaptation, refer to the manufacturer's brochure.
These instructions are only a reminder as they form part of the rules of the road haulage profession. Use of the locking handle and safety system: see pages C90 → C92.

Hitching
Prior to hitching the trailer, check that:
- the fifth wheel locking system is open,
- the support face of the semi–trailer is slightly below the fifth wheel skid plate (about 5 cm). If necessary, adjust the height of the semi–trailer or of the tractor if it is equipped with air suspension,
- the skid plate, the locking system and the kingpin are plentifully greased,
- there is no foreign matter on the friction surfaces,
- the trailer is immobilized by its parking brake or by wheel chocks.

Reverse the tractor slowly into the alignment of the semi–trailer until the skid plate comes into contact with the semi–trailer. Engage the vehicle under the semi–trailer until the fifth wheel locks automatically.

Visually ensure that:
- the fifth wheel is properly locked and in particular that the unlocking prevention system (snap–hook, lock pin, safety lever or catch) is engaged (see pages C90 → C92),
- the semi–trailer is applied over the full extent of the skid plate.

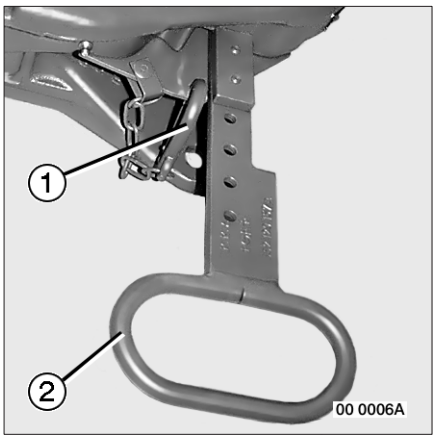
Carry out a pulling test (with the semi–trailer brake applied, begin to move away gently to ensure that the kingpin is correctly locked in the fifth wheel: the tractor must be held by the semi–trailer).
Connect the yellow brake line, then the red brake line, in sequence.
Connect the hydraulic and electric pipes and lines.
Release the semi–trailer parking brake, according to the assembly.
Raise the landing legs and return the suspension to the "normal" position.
The vehicle is ready to move off.

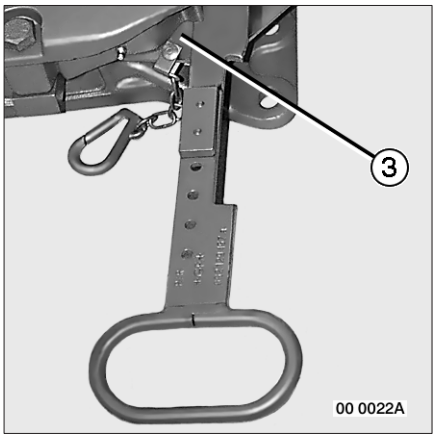
IMPORTANT
If the fifth wheel is provided with an instruction plate, scrupulously follow the directives it contains.
*Checks on correct locking (visual and towing test) are **vital**. They avoid inadvertent unhitching of the semi–trailer and all serious consequences that may entail. If the coupling has not been performed correctly, repeat the hitching operation **in full**.*
Vehicles equipped with double oscillation systems: free the double oscillation when driving on hilly ground.

Unhitching
Immobilize the semi–trailer on flat and stable ground.
Apply the parking brake and scotch the semi–trailer wheels with chocks.
Lower the landing legs and raise the semi–trailer to the coupling level.
Disconnect the red brake line, then the yellow brake line, in sequence.
Disconnect the electric and hydraulic lines and pipes.
Take the strain off the coupling by reversing the tractor very slightly and operate the handle in the direction of “unlocking”.

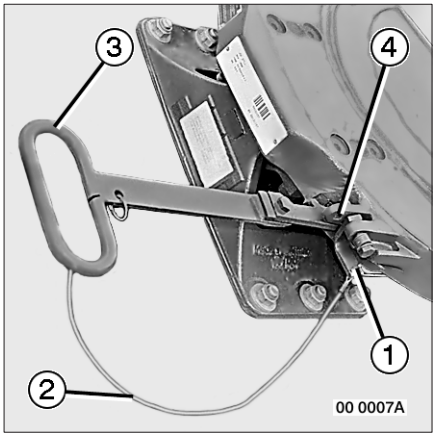
NOTE
Vehicles with air suspension: see page C136.

Fifth wheel coupling “GEORG FISCHER”
Unlocking
Remove the snap–hook (1). Swing the lever (2) rearwards and pull it fully outwards. Engage the safety catch (3) of the lever (2) on the edge of the skid plate.
Locking
Locking takes place automatically when the lever (2) is returned to its initial position during the hitching phase.
Place the snap–hook (1) without fail in position after hitching.



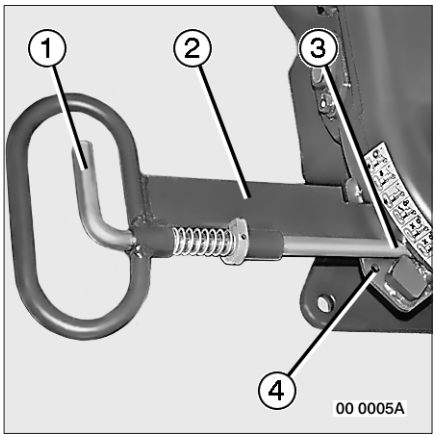


Fifth wheel coupling "JOST"
Unlocking
Pull the cable (1) to lift the bolt (2).
Swing the lever (3) forwards and pull it fully outwards. The lever (3) immobilizes in the "unlocking" position.
Locking
Locking takes place automatically when the lever (3) is returned to its initial position during the hitching phase.
Checking locking
Make sure the bolt (1), back in the "locking" position, forbids any forward movement of the lever (3).
The opening (4) can be used to place a snap–hook in position.

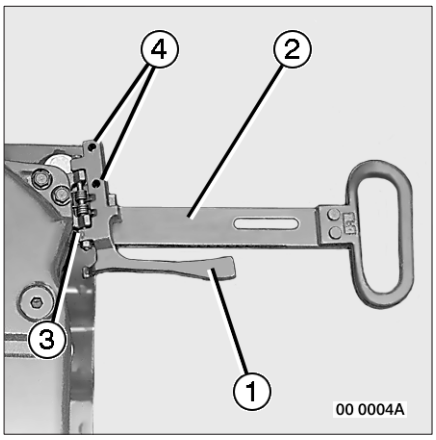


NOTE
The fifth wheel "JSK 38" is not provided with a cable (2). Lift the bolt (1) by hand.

Fifth wheel coupling "VBG"
Unlocking
Pull the handle (1). Swing the lever (2) forwards and pull it fully outwards. The lever (2) immobilizes in the "unlocking" position.
Locking
Locking takes place automatically when the lever (2) is returned to its initial position during the hitching phase.
Checking locking
Make sure the bevelled end(3) of the handle (1) is engaged in its housing.
The opening (4) must be fully uncovered. It can be used to place a snap–hook in position.



Fifth wheel coupling “ROCKINGER”
Unlocking
Lift up the shank of the forbidding handle (1). Swing the lever (2) rearwards and pull it fully outwards. Engage the safety catch (3) of the lever (2) on the edge of the skid plate before releasing the lever.
Locking
Locking takes place automatically when the lever (2) is returned to its initial position during the hitching phase.
Checking locking
Make sure the handle (1), back in the “locking” position, forbids any rearward movement of the lever (2).
The openings can be used to place a snap–hook (4) in position.



C93 use of the vehicle

ON THE ROAD

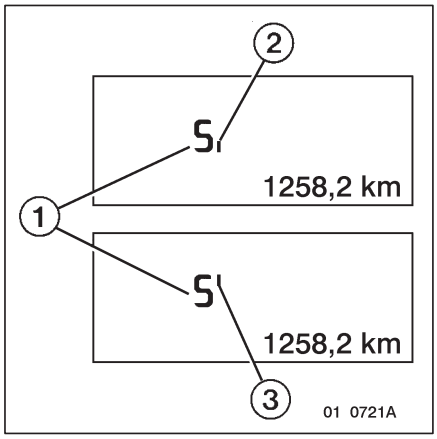
Accelerator pedal
Kicking through the slight hard spot at the end of the pedal travel allows full power to be made available at the actual engine operating speed.

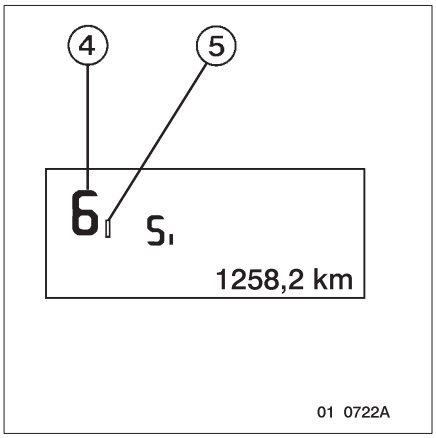
Engine operating speed
Choose the step–down ratio allowing you to use the engine at its best operating speed: green zone (1).

Driving Monitoring System
For vehicles equipped with a ZF 16S 181 or ZF 16S 221, gearbox, a device called “Driving Monitoring System” determines then suggests the best gear to be engaged in order to optimize the use of your engine and gearbox. Several information items appear on the display (G) to guide you while driving. The “DMS” suggestions take into account vehicle load, road gradient and accelerator pedal position. In such case, favour the “DMS” suggestion over use of the rev counter green zone (L).

NOTE
The “DMS” system cannot anticipate the contour of the road (approaching a slope, downhill section, etcÉ). In this case, it is desirable to not follow the “DMS” suggestion.

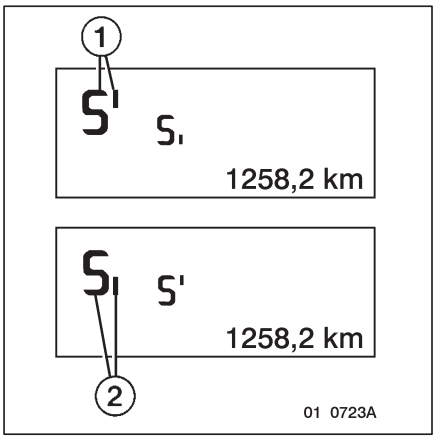
Operation
Since the gear engaged is higher than 2nd low, the “gear engaged” information (1) and the position of the splitter (low range warning light (2) or high range warning light (3)) are displayed only when:
– The vehicle is running, accelerator pedal depressed.
– A retarder is in service and there is no action on the accelerator pedal.
– There is no action (even slight) on the clutch pedal.
When it is necessary to change gear and/or shift the splitter, the “recommended gear” (4) information and the recommended splitter position light (5) are displayed. Only during changing up does a “bleeper” sound accompany the display of this information. This bleeping sound avoids you having to permanently keep an eye on the display for notification of a new recommendation, but it does not sound when a second recommendation is displayed if the first recommendation has not been followed.
Several combination of recommendations are possible (see page C94 / C95)





Suggestion (1)
Shift the splitter to high range without changing gea.

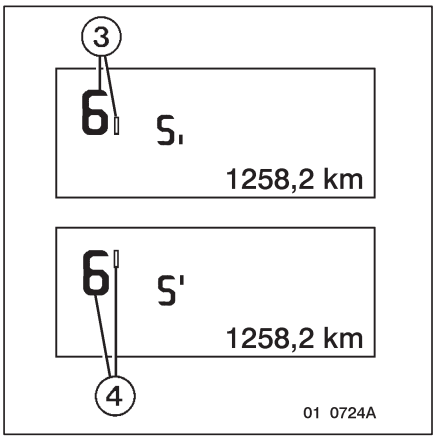
Suggestion (2)
Shift the splitter to low range without changing gear.



IMPORTANT
Splitter light (3–4) *empty*: *no change in splitter position*.
Splitter ligh (5–6) *full*: *change in splitter position.*

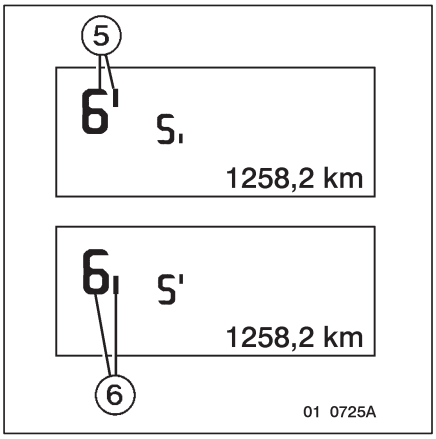
Suggestion (3)
Engage the gear shown while leaving the splitter in low range.

Suggestion (4)
Engage the gear shown while leaving the splitter in high range.

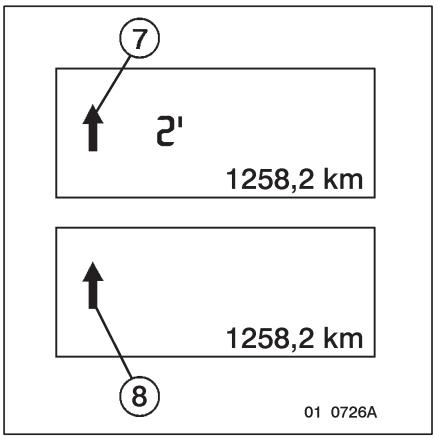


Suggestion (5)
Engage the gear shown and shift the splitter to high range.

Suggestion (6)
Engage the gear shown and shift the splitter to low range.

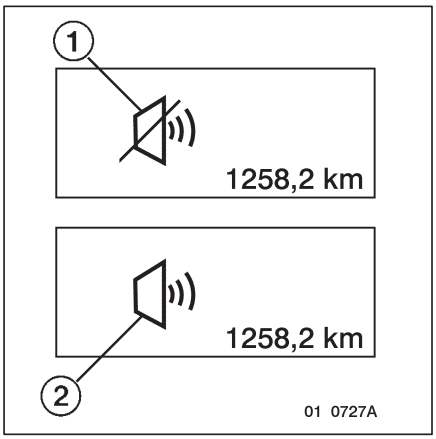


Suggestion (7–8)
Engage a suitable higher gear.



Modification of parameter definitions

On leaving the works, the beeper is activated by default. It is possible to adjust the sound volume (see page C27).
You can activate or inhibit the beeper according to the following procedure:
With the engine shutdown, ignition switched on, gearbox in neutral, fully depress the accelerator pedal and the brake pedal simultaneously for 5 seconds. The warning pictogram (1) is displayed for 3 seconds. Release the pedals. The beeper is inhibited.
To activate the beeper, perform the operations described above. The warning pictogram (2) is displayed for 3 seconds. The beeper is activated.



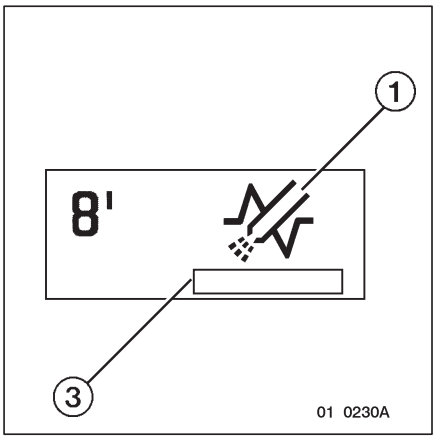
NOTE
It is possible to definitively inhibit or activate the bleeper using the RENAULT TRUCKS DIAGNOSTICA tool.

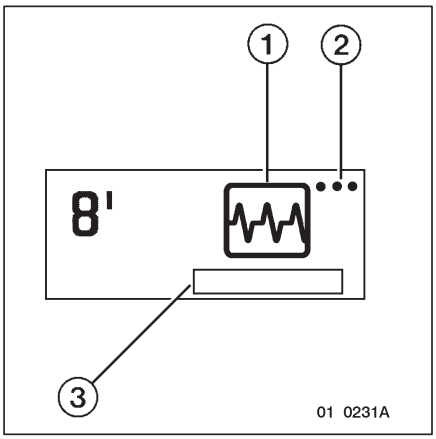
Defect(s) display
In the event of defects, one or several instrument panel warning pictograms (1) are displayed. In this case, the (STOP or SERVICE) warning light comes on simultaneously to distinguish the importance level of the defect(s).
There are 2 possible cases:
– The SERVICE warning light (J) means that you must drive to your dealer or nearest approved agent.
– The STOP warning light (H) (danger immediate stop) means that you must immediately stop the vehicle.

If different defects are present (STOP and SERVICE), only STOP warning light (H) comes on.

NOTE
When several defects are present, points of suspension (2) appear and the warning pictograms (1) (that depend on the nature of the defect) are displayed every 3 seconds in succession.

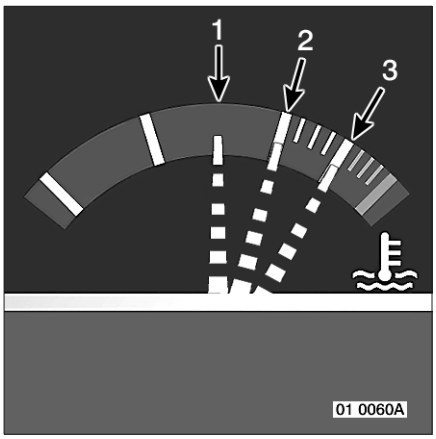
A text (3), showing the steps to take or information on the defect, is displayed below the pictogram (1).





C97 use of the vehicle

Keep an eye on the coolant temperature gauge (R): the temperature should stabilize at around 85/90°C. If the coolant temperature alert pictogram (G13) is displayed, stop the vehicle and find the cause.

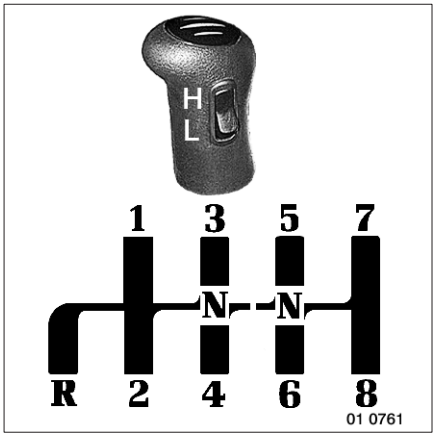


Coolant temperature gauge
Needle in position:
1 – approx. 85°C
2 – approx. 100°C
3 – approx. 105°C

ELECTRONIC SPEED LIMITER

The vehicle is equipped with the “EUP” system. Speed limitation is managed by the system. In the event of malfunction, only (RENAULT TRUCKS) approved workshops are empowered to take action.

GEARBOX



Depending on your vehicle's equipment
Type "ZF 16 S 181 / ZF 16 S 221"

Always start off in first gear, then change through the gears in a regular sequence to prevent premature wear of the clutch.

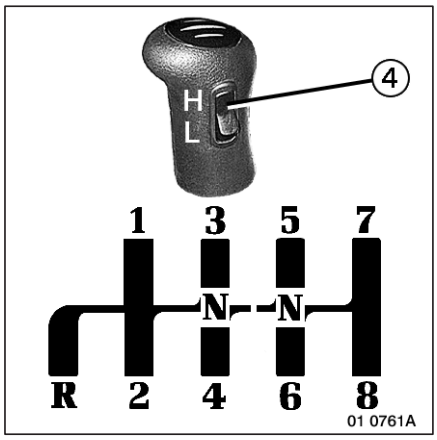
Gear changing
Gear pattern.

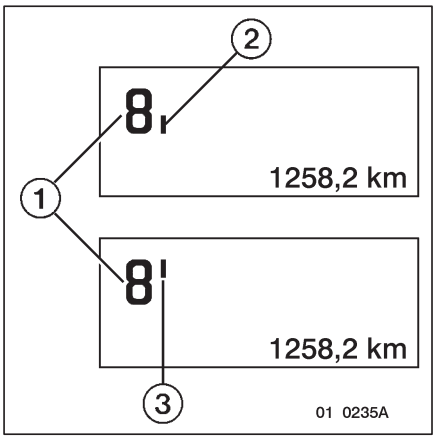
Depending on your vehicle's equipment
Reverse buzzer
When you change into reverse gear, a buzzer sounds to warn other road users and passers–by that the vehicle is reversing.

Gearbox
Driving
Since the gearbox is synchronized, gear changes should be made without double declutching.

CAUTION
The gear lever is spring loaded in the neutral gate to the 3rd/4th plane in low range and 5th/6th plane in high range, which in effect gives two neutral positions. It is therefore necessary to overcome this bias when selecting 1st/2nd, and 7th/8th gears. The change from low to high range or vice versa is activated pneumatically when the gear lever passes over a detent mechanism situated between the 3rd/4th and 5th/6th gear planes. This mechanism is easily negotiated and the range changed by sharply tapping the gear lever through the central portion of the neutral gate with the palm of your hand.
Do not change from 5th to 4th gear at speeds in excess of 30 km/h.

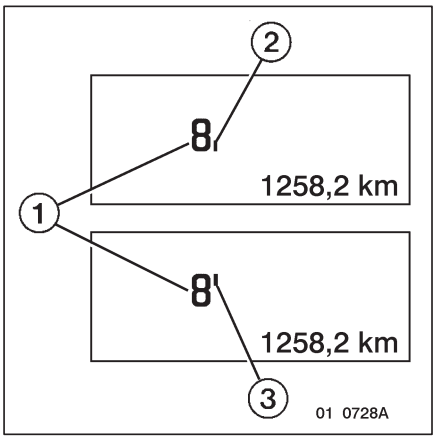
VERY IMPORTANT
This gearbox is equipped with an oil lubrication pump, therefore coasting downhill in neutral (free–wheeling) will cause rapid damage to the gearbox (for towing, see Towing paragraph).



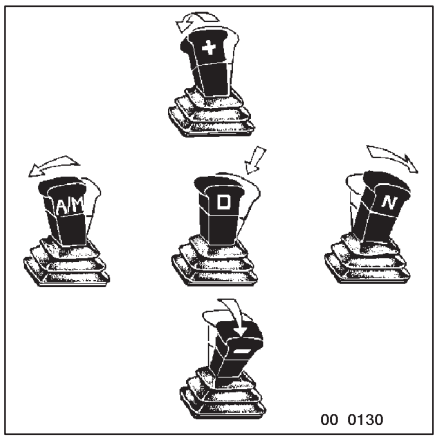


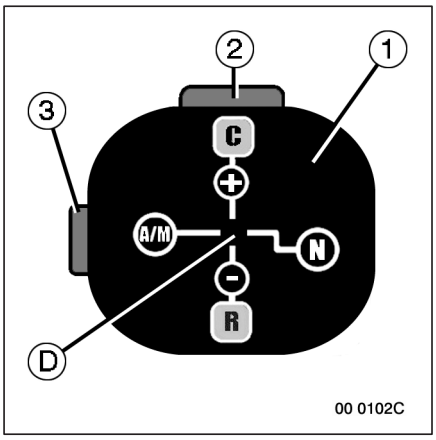
Depending on your vehicle's equipment
The splitter can be shifted from "low/high" range and vice versa at all speeds and to do so, proceed as follows:
Flip the gear lever switch (4) to position "H", fully depress the clutch pedal, release the clutch pedal: splitter high range is engaged and warning indication (2) is displayed while it is in use.
To engage splitter low range, flip the gear lever switch (4) to position "L", fully depress the clutch pedal, release the clutch pedal: splitter high range is engaged and warning indication (3) is displayed while it is in use.

NOTE
Preselect splitter "low/high" range: the splitter changes from low to high range, and vice versa, only when the clutch is depressed.



C100 use of the vehicle





GEARBOX

Depending on your vehicle's equipment

I – FIRST CONTACT WITH ASTRONIC

1 – Moving off
- With the parking brake applied, press the gear selector and move it from position "N" to position (D).
- The moving off gear is engaged.
- Release the parking brake and accelerate: the vehicle moves off.

2– Gear changing
- To shift up a gear, nudge the selector forwards (+).
- To shift up a half–gear, nudge the selector forwards (+) while simultaneously pressing button (3).
- To shift down a gear, nudge the selector rearwards (–).
- To shift down a half–gear, nudge the selector rearwards (–) while simultaneously pres–sing button (3).

Right–hand drive vehicles
Button (3) is located on the "N" side.

NOTE
It is recommended to not change the position of the accelerator pedal when changing gear.

3 – Manoeuvring
1st low
Nudge the selector forwards (+) while simultaneously pressing button (2).

Reverse
With the vehicle at a standstill: nudge the selector rearwards (–) while simultaneously pressing button (2).
With reverse gear engaged: nudge the selector rearwards (–) to select high or low range.

NOTE
In 1st low and reverse, 3/4 of the travel of the accelerator pedal is available to manoeuvre the vehicle at low speed.
If you exceed 3/4 of the pedal travel, the vehicle will accelerate sharply.
Any change of gear, while the vehicle is moving, will override the low moving speed feature.

4 – Optimized gear ratios
It is possible to request a search for engagement of an optimum gear ratio in relation to the desired engine speed:

Maximum torque (e.g. when coming out of a roundabout)
Move the selector to position (A/M).

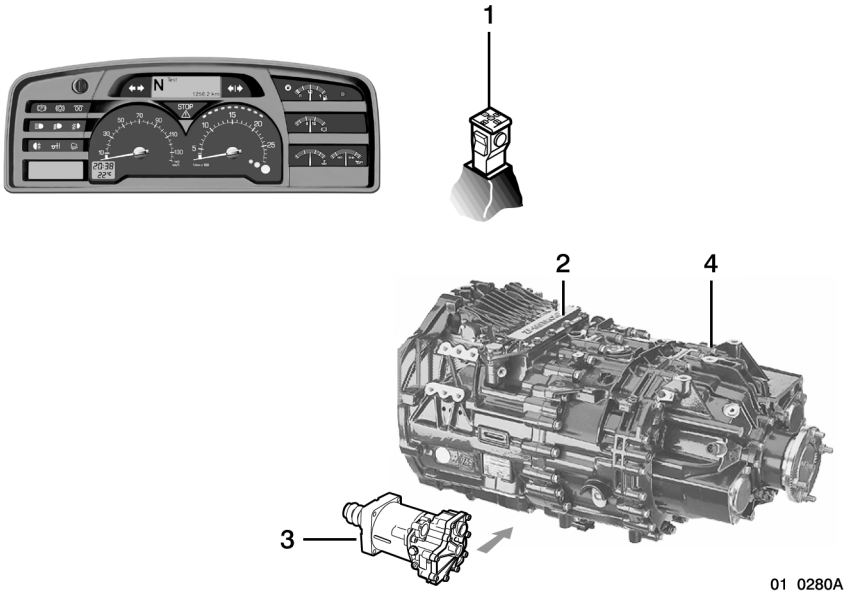
Maximum power (e.g. when overtaking)
With the accelerator pedal depressed, move the selector to position (A/M) while simultaneously pressing button (3).

Maximum engine speed (to obtain maximum engine braking)
With the accelerator pedal released, move the selector to position (A/M) while simultaneously pressing button (3).

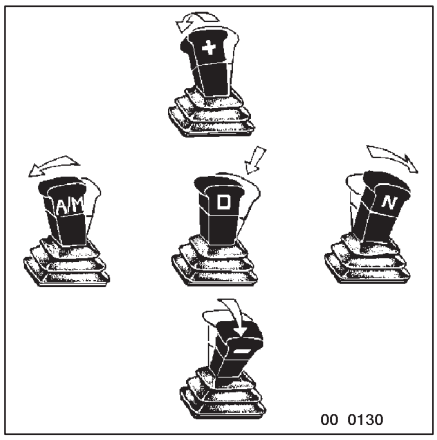
Stopping
Lock the selector in neutral before leaving the vehicle.
Apply the parking brake before leaving the vehicle.

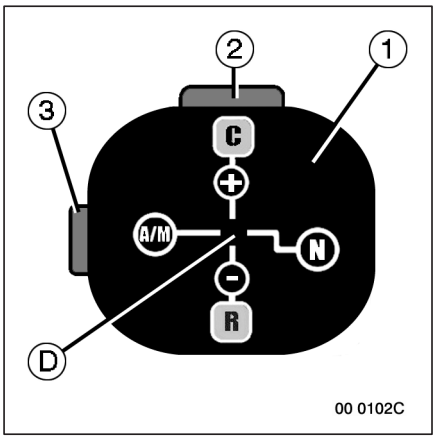
C102 use of the vehicle

II – DESCRIPTION OF THE ASTRONIC GEARBOX



1 – The **ASTRONIC gearbox** consists of 4 major components:
– A manual gearbox incorporating dog clutches (4).
– A gear control module (2) with integrated ECU.
– A clutch control device (3).
– A gear selector (1) with integrated ECU.





2 – Gear selector
Right–hand drive vehicles: Button (3) is located on the "**N**" side.
The selector can be moved in 4 directions starting from the central position (D):

Right–hand side: position "N"
The gearbox is in neutral. Press the selector to unlock and move it to the central position (D).

– Forwards: "C/+"
Nudge the selector to shift up a gear (simultaneously press button (2) to shift up a half–gear).

– Rearwards: "–/R"
Nudge the selector to shift down a gear (simultaneously press button (2) to shift down a half–gear).

Left–hand side: "A/M"
(Optimized gear ratio search feature: see page C106).

NOTE
The selector locks only in position "**N**". For each of the other manipulations, it returns automatically to the central position (D).

3 – Moving off gear ratio
Move the selector from position “N” to position (D).
Whenever the ignition is switched on, the system engages the programmed moving off gear.
If necessary, engage a lower gear in relation to the load and the road contour.

4 – Starting and moving off
Moving off
Start the engine and select a moving off gear.
Depress the brake pedal and release the parking brake.
Depress the accelerator pedal: the vehicle moves forward.

NOTE
The system allows moving off ratios to be selected up to 4th low.

IMPORTANT
If the accelerator pedal is not depressed, the vehicle may move forwards: use the brake pedal to hold it on the service brake.

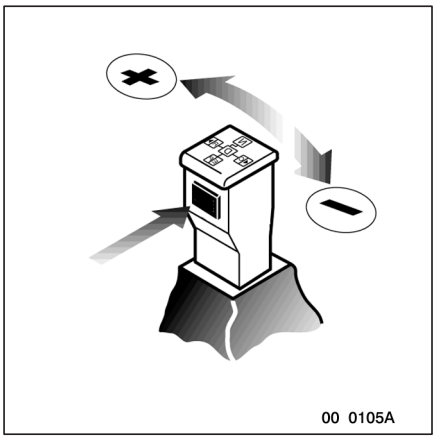
Moving off uphill
Start the engine and select a moving off gear.
Depress the brake pedal and release the parking brake: the vehicle moves forward.

Moving off downhill
Start the engine and select a moving off gear.
Release the parking brake: the vehicle moves forward (the clutch engages).

NOTE
If you move the selector from position “N” to position “D” while the vehicle is moving forwards: the system chooses a gear suited to the travelling speed and the clutch engages.

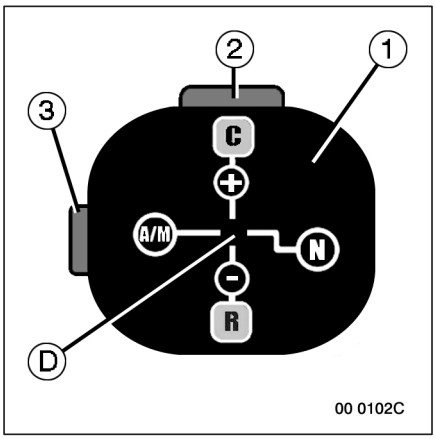
IMPORTANT
It is forbidden to let the vehicle move backwards with the gear selector in neutral.

Right–hand drive vehicles: Button (3) is located on the “N” side.

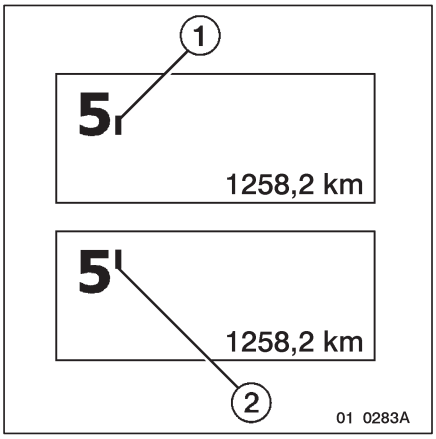


5 – Gear changing
– To shift up a gear, nudge the selector for–wards (+).
– To shift up a half–gear, nudge the selector forwards (+) while simultaneously pressing button (3).
– To shift down a gear, nudge the selector rear–wards (–).
– To shift down a half–gear, nudge the selector rearwards (–) while simultaneously pressing button (3).

NOTE
It is recommended to not change the position of the accelerator pedal when changing gear.
The system refuses to engage gears that might result in runaway.

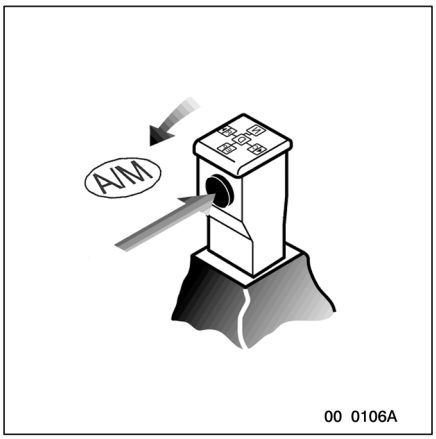


Example of display of gear engaged on the screen:
– 1 : the screen shows 5th low.
– 2 : the screen shows 5th high.



6 – Search for optimized gear ratios
It is possible to request a search for engagement of an optimum gear ratio in relation to the desired engine speed:
Maximum torque (e.g. when coming out of a roundabout)
Move the selector to position (**A/M**).
Maximum power (e.g. when overtaking)
With the accelerator pedal depressed, move the selector to position (**A/M**) while simultaneously pressing button (3).
Maximum engine speed (to obtain maximum engine braking)
With the accelerator pedal released, move the selector to position (**A/M**) while simultaneously pressing button (3).

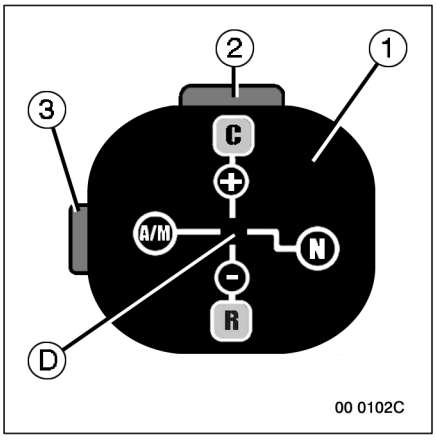
7 – Manoeuvring
1st low
With the vehicle at a standstill, nudge the selector forwards (+) while simultaneously pressing button (2).



NOTE
Under normal driving conditions, it is possible to change to 1st low by downshifting.

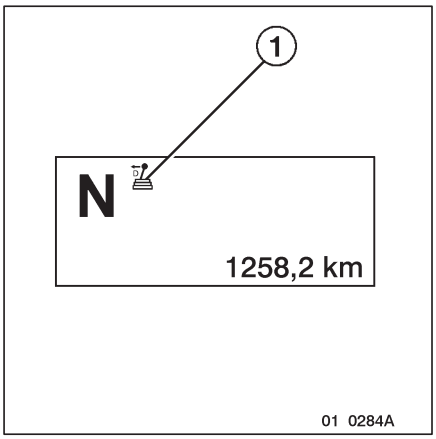
Changing to reverse
With the vehicle at a standstill: nudge the selector rearwards (–) while simultaneously pressing button (2). The system engages reverse low range gear.
With reverse gear engaged, nudge the selector rearwards (–) to change from low to high range or high to low range. This can be done while the vehicle is moving.

Changing from reverse to forward running
When the vehicle is at a standstill, there are 2 possibilities:
– Nudge the selector forwards (+) to change to 1st low.
– Move the selector to position (**A/M**) to obtain the moving off gear.



Manoeuvring mode
In 1st low and reverse, 3/4 of the travel of the accelerator pedal is available to manoeuvre the vehicle at low speed.
If you exceed 3/4 of the accelerator pedal travel, the vehicle will accelerate sharply. Any change of gear, while the vehicle is moving, will override the low moving speed feature.
To couple or uncouple a semi–trailer, to make for easy manoeuvring, adjust the trailer landing legs to give minimum load on the fifth wheel of the tractor (see pages C89 → C92).

8 – Changing to neutral
The gearbox shifts automatically to neutral whenever the ignition is switched on or off.
It is possible to start the engine with the gear selector in position (D).
However, it is essential to move the selector to position "**N**" to engage a gear.



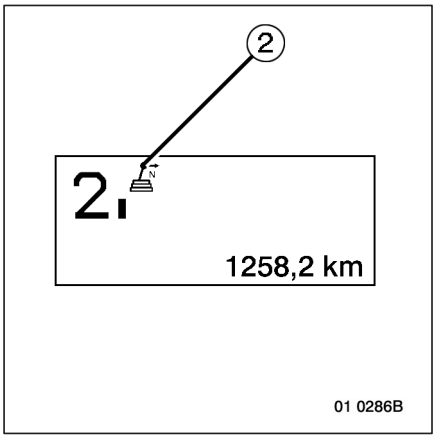
IMPORTANT
When driving, above a speed of 30 km/h, any change into neutral is announced by the display of pictogram (1) accompanied by a bleeping sound inviting the driver to move the gear selector back to position (D).
*When you shift the gear selector from position "**N**" to position (D), the gearbox engages a gear suited to the vehicle speed.*

9 – Engine brake
It is not necessary to de–activate the engine brake when you change gear. The system de–activates it automatically, then re–activates it at the end of gear changing.

10 –Stopping

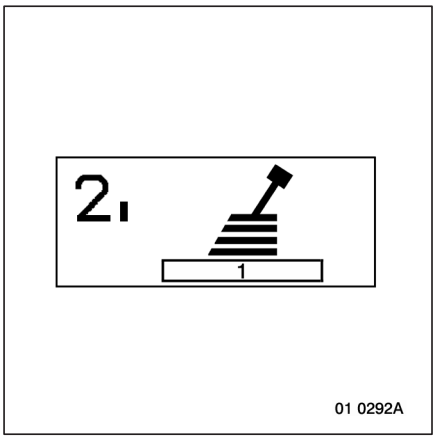
IMPORTANT
With the engine running and before leaving the vehicle:
*– Move the selector to position "**N**".*
– Apply the parking brake.

Opening of the driver's door with the gear selector in position (D) is signalled by a bleeping sound and the display of pictogram (2) inviting the driver to move the gear selector back to position "**N**".



11 – Final stopping of the vehicle
When the vehicle is at a complete standstill, apply the parking brake. Lock the selector in position "**N**" and stop the engine using the ignition key.

12 – Protection of the clutch
Primarily in manoeuvring mode, any risk of clutch overheating is notified by the display of a message “Clutch wear” (1) inviting the driver to change his style of driving.
If you do not take these signals into consideration:
– The clutch is engaged as soon as the accele–rator pedal is depressed and this might cause the engine to stall.
– The clutch is released as soon as the accele–rator pedal is released.



IMPORTANT
In reverse and 1st low gears, the manoeuvring time is unlimited. The clutch protection feature is de–activated: the display message warns you that the clutch is overloaded, which may cause it irreparable damage.

NOTE
To avoid clutch wear:
– Accelerate sharply when moving off.
– Choose the lowest most suitable moving off gear.
– Move the gear selector to position “**N**” whenever stopping for more than 1 minute.

13 – Protection against overspeed
The system prevents the engagement of gears that might result in overspeed.

14 – Roller test bench
On roller test benches, move the gear selector to position “**N**”.

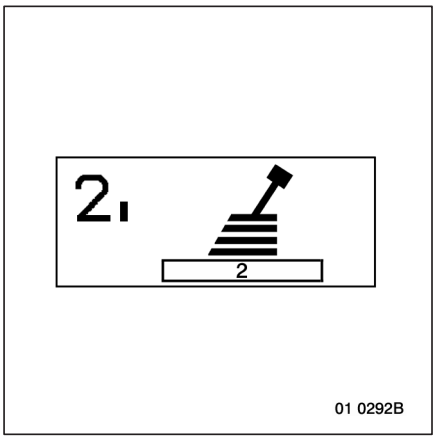
IMPORTANT
On roller test benches, the system recognizes the “vehicle moving” feature. Do not engage a gear or the vehicle might well jump over the rollers.

15 – Gearbox power take–off
Vehicle at a standstill:
– Move the gear selector to position “N”.
– Engage the power take–off.
The display shows (N) and warning pictogram (G24).
The PTO is engaged; the gearbox is in neutral.

16 – Setting into service in low temperatures
Comply with the following instructions:
– For outdoor temperatures lower than – 20°C, let the engine run for 10 minutes so as to obtain the correct gearbox operating temperature.
– For outdoor temperatures lower than – 25°C, before starting the engine, it is necessary to bring the gearbox to a temperature higher than – 25°C using a hot air blower without exceeding a temperature of 110°C.

III – ACCELERATOR PEDAL TROUBLE (limp–home mode)

If the accelerator pedal is defective, the engine speed is set at 900 rpm. A message (2) “Push lever” is displayed.
To operate closure of the clutch while at a standstill, push the lever and hold it in that position for 3 seconds.
The clutch then closes and the vehicle can be moved.
Apply the brakes to re–open the clutch.



Depending on your vehicle's equipment

"OPTIDRIVER" system

The "Optidriver" system makes it possible to automatically determine, then engage a gear suited to vehicle load, road contour, accelerator pedal position and activation or not of the retarders. It improves driving smoothness and safety by reducing driver fatigue as he no longer has to concentrate on traffic conditions.

Overall operation and safety devices remain identical to an ASTRONIC gearbox (see pages C100 → C109).

The device can be used in two different ways: in integral automatic mode or in manual mode.

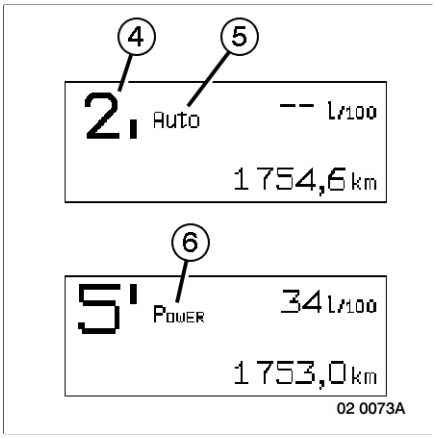
You are strongly advised to use the integral automatic mode in order to benefit from optimum management of the powertrain.

In the event of system trouble, you can benefit from a fall–back mode.

Integral automatic mode

Whenever the engine is running, when you move the gear selector from position "**N**" to position (D), the appropriate moving off gear (4) and "**Auto**" information **(5)** is displayed by default.

One or several gears is/are shifted automatically depending on the position of the accelerator pedal, which acts directly on vehicle mobility.



NOTE

On uphill runs, let gear shifting be managed by the system even though the engine speed seems too low to you.

Activation of the "Power" feature

When you wish to overtake and have more power to obtain maximum vehicle mobility, you have two ways open to you:

– Depress the accelerator pedal rapidly and fully: "**Power**" information **(6)** is displayed accompanied by a bleep.

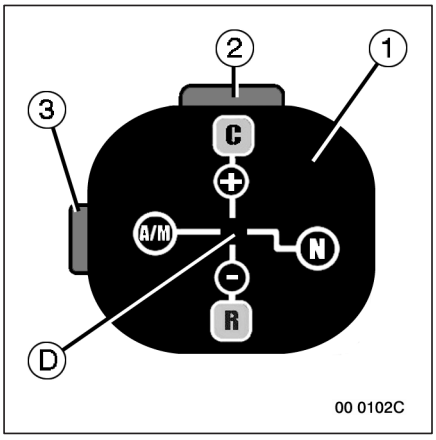
– With the accelerator pedal fully depressed, press button (3) on the gear selector (1), "**Power**" information **(6)** is displayed accompanied by a bleep.

De–activation of the "Power" feature

Gently release the accelerator pedal or press button (3) – "**Power**" information **(6)** disappears.

NOTE

The "**Power**" feature accentuates fuel consumption.



Use on downhill runs

In integral automatic mode, if you are on a steep downhill section or the engine speed is high with the accelerator pedal fully released, no gear is changed automatically. In this case, pictogram (7) is displayed meaning that the vehicle must be slowed down using the brakes or the retarder(s).

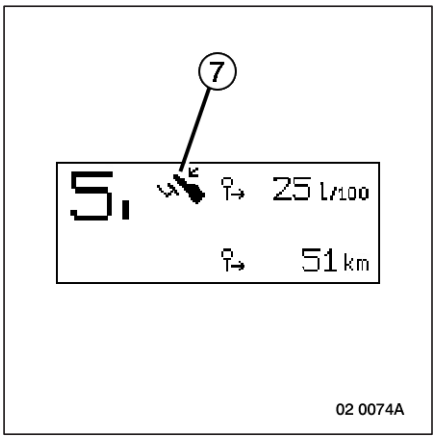
However, if the road contour or traffic conditions permit, you can change to a higher gear in two different ways:

– Change over to manual mode to upshift one or one half gear.

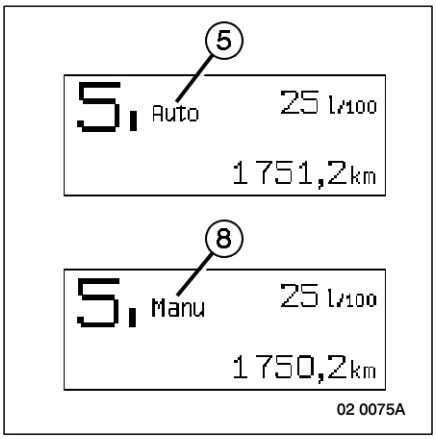
– Depress the accelerator pedal very slightly to upshift one half–gear.

IMPORTANT

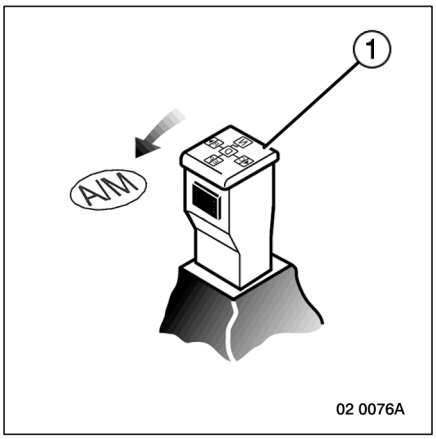
If you press hard down on the accelerator pedal, maximum mobility is demanded and the gearbox will upshift through several undesired gears.

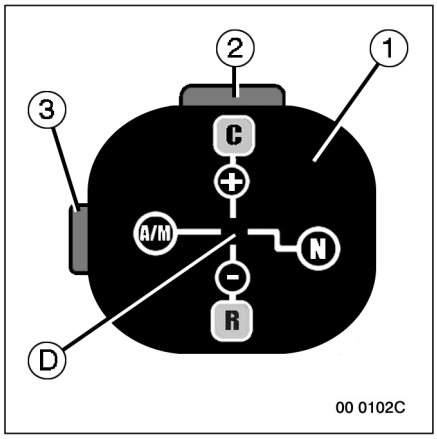


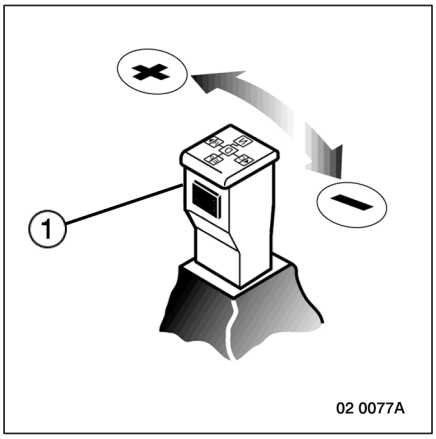
Permanent manual mode
To change from automatic mode ("**Auto**" information **(5)** displayed) to permanent manual mode ("**Manu**" information **(8)** displayed) or vice versa, nudge the gear selector (1) in direction "**A/M**". Changeover can be done with the vehicle stationary or moving.
Operation in manual mode is identical to that of an ASTRONIC gearbox (see pages C100 → C109) except for gear changing where you have one extra possibility. You can in effect upshift through one and a half gears. You have two possible courses of action:
– Push the gear selector (1) towards "+" or "–" and hold it there.
– Push the gear selector (1) and simultaneously press buttons (2) and (3).



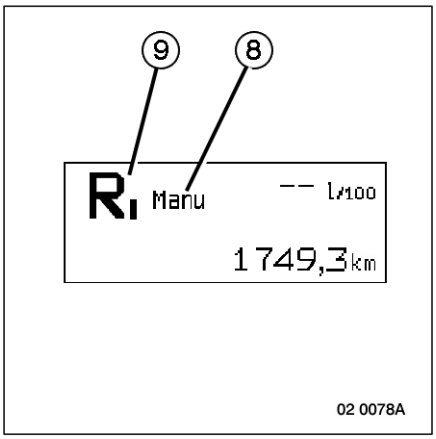
Temporary manual mode
The vehicle is moving, you are in "Auto" mode, information (5) is displayed. If you wish to change the gear engaged by the system, to anticipate a change in the road contour, you can push the gear selector (1) in the direction of "+" or "–" to upshift or downshift one gear. "**Manu**" information **(8)** flashes: you are in temporary manual mode. To change back to "**Auto**" mode, you have several courses of action:
– Fully release the accelerator pedal and then depress it again.
– Actuate the "**Cruise control**" feature.
– Push the gear selector (1) in the direction "**A/M**".

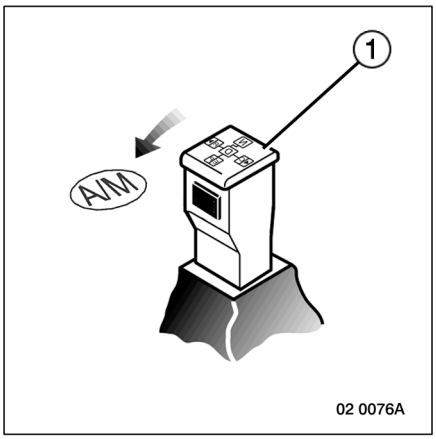




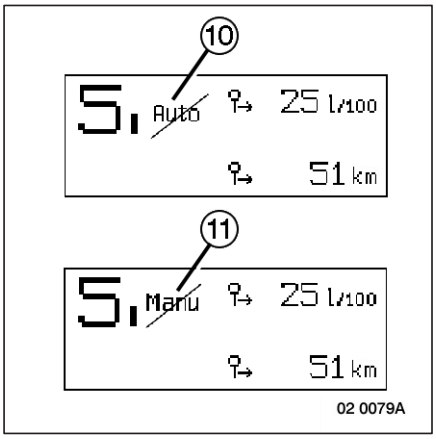


NOTE
When you change into reverse gear, the information "**Manu**" (8) and **"R"** (9) are displayed. Make your manoeuvre, push the gear selector (1) in the direction "**A/M**" to change back into integral automatic mode.





Fall–back mode
Information display (10) indicates that integral automatic mode is not available. You can use permanent manual mode (see page C100 → C109).
Information display (11) indicates that manual mode is not available and you cannot engage reverse gear.
– You can change into neutral by applying the parking brake.
– You can engage a moving off gear by releasing the parking brake, then depressing the brake pedal.
In both cases, drive to the nearest dealer or approved agent.



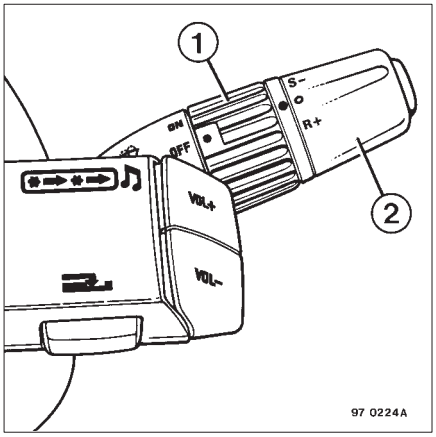
Cruise control

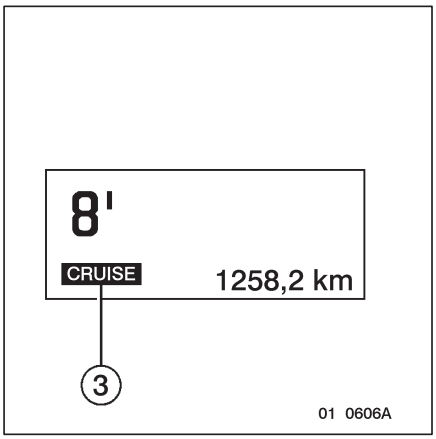
IMPORTANT
Do not use the cruise control on slippery roads.

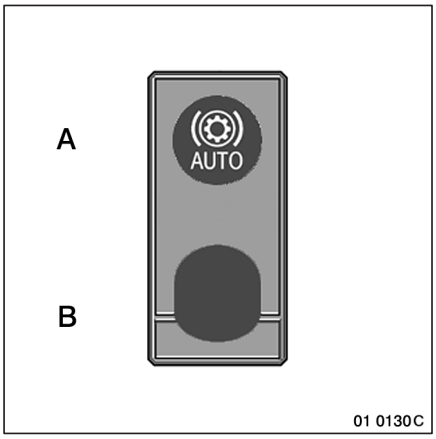
At speeds of more than 30 km/h, this feature allows you to travel at the required steady road speed without having to use the accelerator pedal, whatever the road contour.

Use

– Bring the vehicle to the required road speed using the accelerator pedal, the retarder control or the service brake.
– Move switch (A6) to position “A” (vehicle with EBS and 5–position retarder control).
– Move ring (1) to the “ON” position.
– Turn ring (2) to bring “S–” opposite the mark so as to memorize the speed.
– The information “CRUISE” (3) is displayed.
– Release the accelerator pedal, the retarder control or the brake pedal.





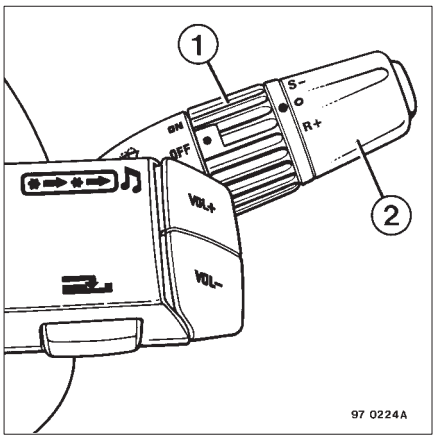


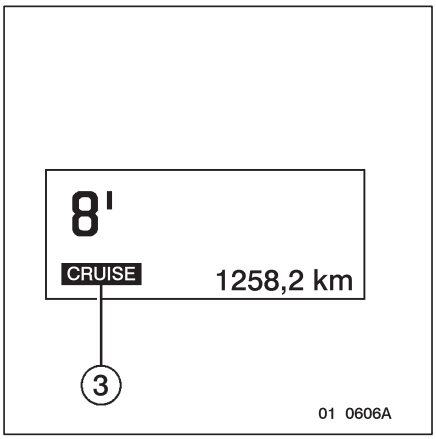
To adjust the cruise control speed:
- Turn ring (2) to bring “R+” opposite the mark to increase the speed.
- Turn ring (2) to bring “S–” opposite the mark to reduce the speed.
- Nudge the ring to one of the (R+ / S–) positions to alter the speed by 0.25 km/h.

Holding (2) in one of the (R+ / S–) positions varies the speed until the ring is released.
At any moment, any action on the accelerator pedal allows the vehicle road speed to be momentarily exceeded.
Any action on the clutch pedal momentarily overrides the feature. Release the clutch pedal: the cruise control feature is automatically resumed.
The feature is cancelled, “CRUISE” information (3) disappears, if:
- The road speed is less than 20 km/h.
- You actuate the brake pedal or the retarder control, except on downhill sections, if the road speed remains less than 2 km/h higher than the cruise control speed.

To return to the memorized road speed, turn ring (2) to bring “R+” opposite the mark.
Moving ring (1) to the “OFF” position, cancels the feature.

NOTE
The cruise control is not a speed limiter and cannot be used as such.

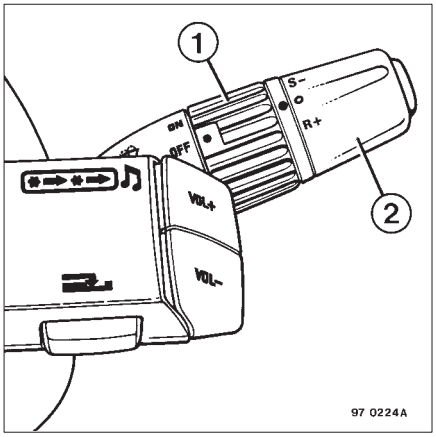




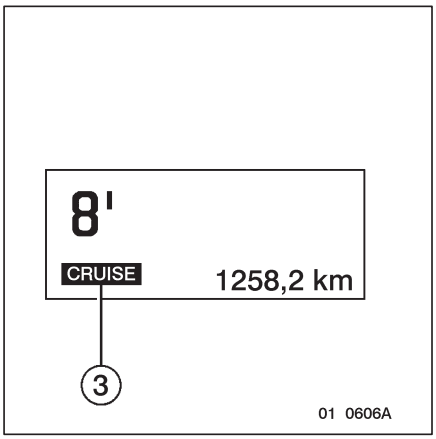
Integral cruise control

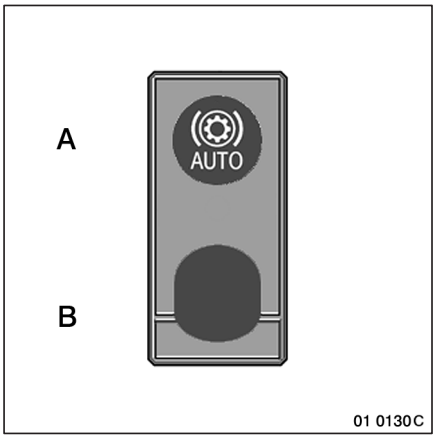
IMPORTANT
Do not use the cruise control on slippery roads.

At speeds of more than 30 km/h, this feature allows you to travel at the required steady road speed without having to use the accelerator pedal, whatever the road contour. Use of the retarder control inhibits the cruise control feature. On downhill sections, if necessary, the cruise control automatically pilot–controls the different retarders to maintain the memorized road speed. The different warning lights (C–U–T) come on according to the retarders activated (see page *C119*).



Use:
- Bring the vehicle to the required road speed using the accelerator pedal, the retarder control or the service brake.
- Move switch *(A1)* to position “B” (vehicle with EBS and 5–position retarder control).
- Move ring (1) to the “ON” position.
- Turn ring (2) to bring “S–” opposite the mark so as to memorize the speed.
- The information “CRUISE” (3) is displayed.
- Release the accelerator pedal, the retarder control or the brake pedal.



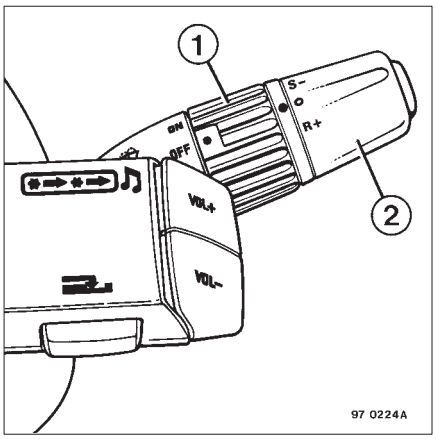


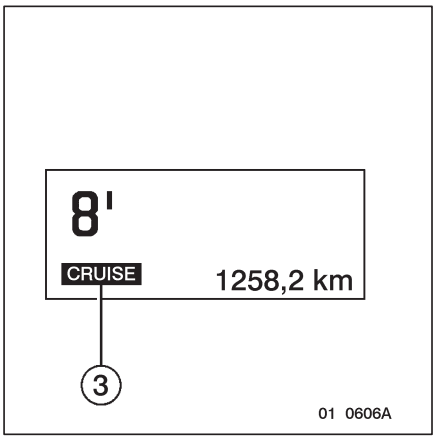
To adjust the cruise control speed:
- Turn ring (2) to bring “R+” opposite the mark to increase the speed.
- Turn ring (2) to bring “S–” opposite the mark to reduce the speed.
  The retarders are activated if the vehicle deceleration is insufficient.
- Nudge the ring to one of the (R+ / S–) positions to alter the speed by 0.25 km/h.

Holding ring (2) in one of the (R+ / S–) positions varies the speed until the ring is released.
At any moment, any action on the accelerator pedal allows the vehicle road speed to be momentarily exceeded.
Any action on the clutch pedal momentarily overrides the feature. Release the clutch pedal: the cruise control feature is automatically resumed.
The feature is cancelled, “CRUISE” information (3) disappears, if:
- The road speed is less than 20 km/h.
- You actuate the brake pedal or the retarder control, except on downhill sections, if the road speed remains less than 2 km/h higher than the cruise control speed.

To return to the memorized speed, turn ring (2) to bring “R+” opposite the mark.
Moving ring (1) to the “OFF” position, cancels out the feature.

NOTE
The cruise control is not a speed limiter and cannot be used as such.





"EBS" SYSTEM

The "EBS" electronic braking system assures the anti–lock braking (ABS) and anti–slip regulator (ASR) features.

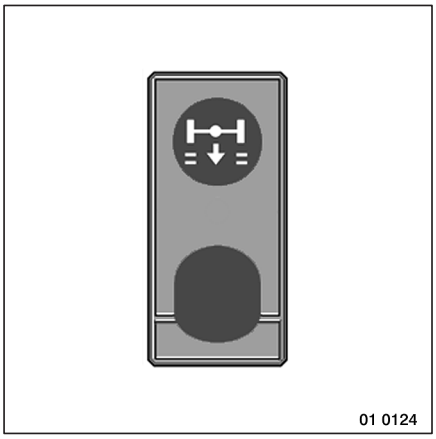
Anti–lock braking system (ABS)

This system prevents the roadwheels from locking when you apply your brakes sharply.
– Vehicle coupled to a trailer with anti–lock braking system: below the threshold, variable from 5 to 15 km/h, depending on the system installed, warning light (G7) must be on. Above the limit, it must go out.
– Vehicle coupled to a trailer without anti–lock braking system: warning light (G7) stays out.
In the event of system trouble or malfunction (warning lights (G7 – G27) on), its action is cancelled and the vehicle reverts to normal braking. Consult your dealer or an approved agent rapidly, to get the system overhauled.

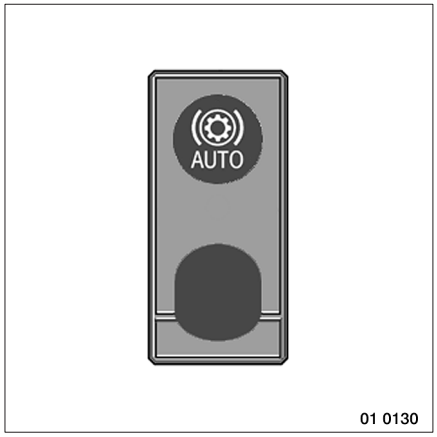
Anti–slip regulator (ASR)

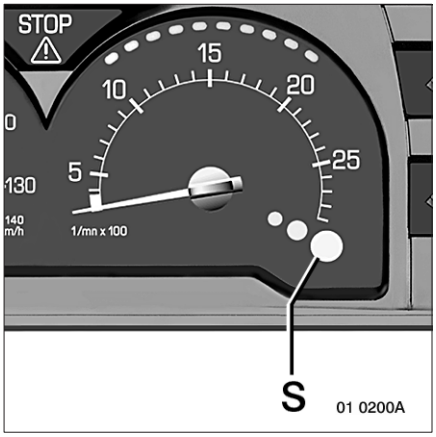
When you move off or during acceleration, this system prevents the roadwheels from slipping, whatever the condition of the road surface.
The system enters into action:
1) If a roadwheel spins, it applies the brakes to that wheel to lower its speed to that of the other wheel on the same axle.
2) If both roadwheels on the same axle spin, it limits the engine speed, then applies the brakes to the wheel that is still spinning to lower its speed to that of the other wheel.

On the road:
During operation of the ASR system, warning light (G27) comes on.
On surfaces giving poor wheel grip (snow, ice, gravel...), it is possible to push back the operating threshold of the ASR system by actuating the switch (A3). Warning light (G28) flashes.



use of the vehicle





RETARDER

IMPORTANT
Choose the step–down ratio allowing you to use the engine at its best speed. On hilly runs, use the retarder, if necessary.
Never drive downhill in neutral.
Do not use the retarder on slippery surfaces. Actuate switch (A1) to de–activate automatic operation.

NOTE
When the warning light (S) is on, it indicates the maximum working speed of the engine–brake retarder (engine overspeed).
The engine–brake and propeller shaft retarder features are inhibited in the ABS phase.

A single control under the steering wheel serves to activate the different retarders.
Two possible options:
– Control with 1 active position: (see page C120).
  This serves to retard the vehicle by actuating the exhaust brake or the Jake engine–brake.
– Control with 5 active positions: (see page C121).
  This serves to retard the vehicle by actuating the exhaust brake or the Jake engine–brake coupled with the hydraulic retarder.

Exhaust brake with or without Jake engine–brake

Use the gearbox ratios to select a gear suitable for the gradient you are descending. To slow the vehicle, release the accelerator pedal and move control (1) to:

– **Position 0**:

The feature is not active. The retarder warning lights are out.

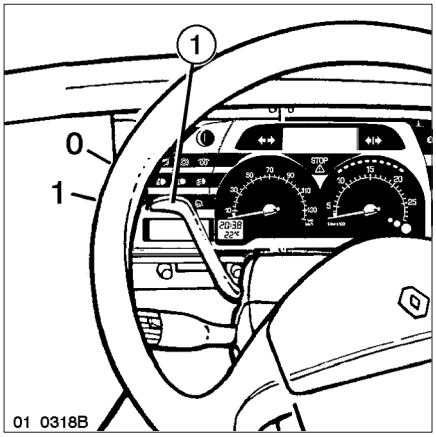
– **Position 1 with action on the accelerator pedal**:

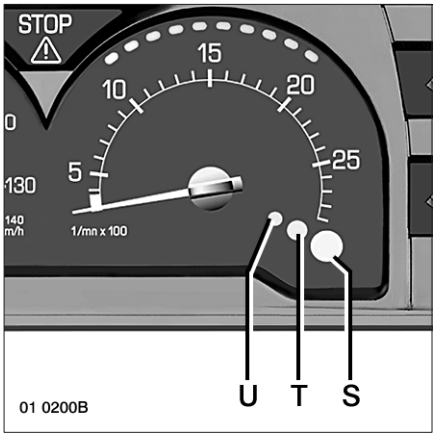
The engine–brake retarder feature is preselected. Warning light (U) is on.

– **Position 1 without action on the accelerator pedal**:

Above 900 rpm, the engine–brake retarder is active, but its efficiency is low. Warning light (U) is on. When the engine–brake feature is active with optimum efficiency, warning lights (U–T) are on.

Do not drive while warning light (S) is on (engine overspeed).





Depending on your vehicle's equipment

Exhaust brake with or without Jake engine–brake coupled with electronic or hydraulic electric retarder

Use the gearbox ratios to select a gear suitable for the gradient you are descending. To slow the vehicle, release the accelerator pedal and progressively actuate control (1).

Control with 5 positions: except in case of absolute need, never move control (1) directly from position 0 to position 5.

Temperature below 70°C (see page C122 "Engine quick warming").

– **Position 0**:

The feature is not active. The retarder warning lights are out.

– **Position 1 to 4 with action on the accelerator pedal**:

The propeller shaft retarder feature is preselected. Warning light (C) is out.

– **Position 1 to 4 without action on the accelerator pedal**:

The propeller shaft retarder feature is active. Warning light (C) is on.

– **Position 5 with action on the accelerator pedal**:

The propeller shaft and engine–brake retarder features are preselected but are inactive. Warning light (U) is on.

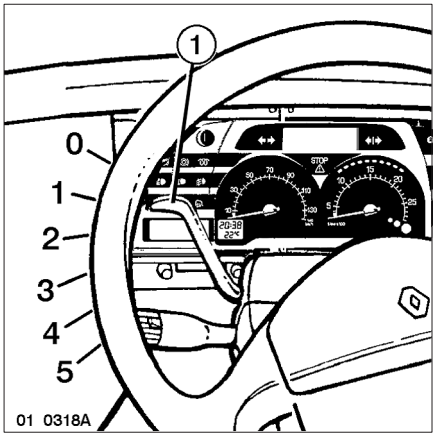
– **Position 5 without action on the accelerator pedal**:

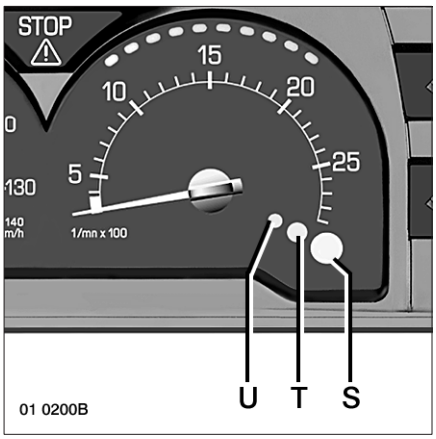
The propeller shaft feature is active. Warning lights (C–U) are on.

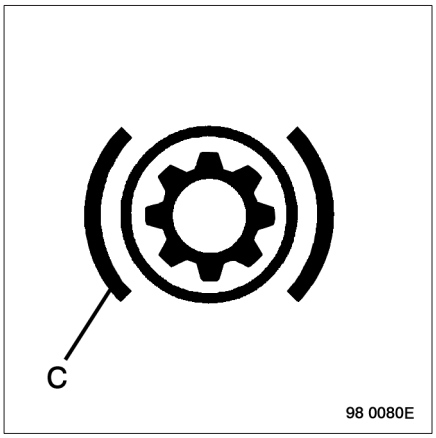
Above 900 rpm, the engine–brake retarder is active, but its efficiency is low. Warning lights (C–U) are on. When the engine–brake feature is active with optimum efficiency, warning lights (C–U–T) are on.

In the case of load–shedding due to overheating of the electric or hydraulic retarder, the engine–brake retarder is activated automatically. Warning lights (U–T) are on. To optimize cooling of the hydraulic retarder on steep downhill runs, keep the engine speed above 1500 rpm.

Do not drive while warning light (S) is on (engine overspeed).

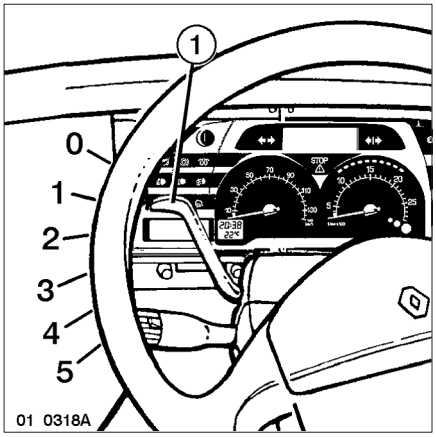






Vehicle equipped with a hydraulic retarder

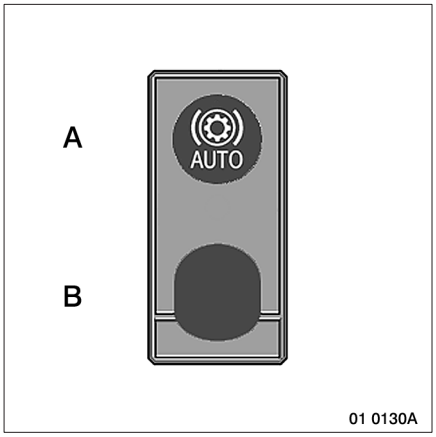
Engine quick warming
When the engine is cold, it is possible to accelerate build–up temperature of the coolant system by moving the retarder control (1) to position 1 or 2 while the vehicle is moving. Warning light (C) comes on.
You can use the accelerator normally without inhibiting the retarder feature provided that the cooling circuit temperature has not reached 70°C. Above this temperature, the function is automatically overridden.



Switch (A1)
A = Not activated: manual operation (see page C121).

B = Activated:
– coupling of retarder with brake pedal (main brake).
The propeller shaft retarder is acted upon whenever the brake pedal is depressed.
The retardation power is modulated according to the vehicle load and the pressure exerted on the brake pedal. The engine–brake retarder is inhibited. Warning light (C) is out.

– Retarder coupling with cruise control (steady speed).
Warning light (C) comes on when the propeller shaft retarder feature is active.
Warning lights (C–U–T) come on when the propeller shaft and engine–brake retarder features are active (see page C116).

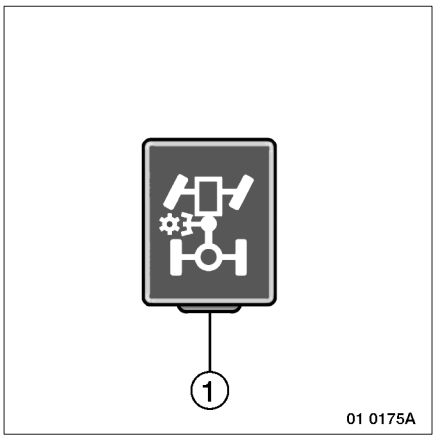


C123 use of the vehicle

Depending on your vehicle's equipment
POWER TAKE–OFF (PTO)

Gearbox–mounted PTO

With the vehicle at a standstill, engine idling, gearbox in neutral, release the clutch and wait for 6 seconds.
Depress switch (D5).
Engage the clutch. At this moment, the PTO rotates. Warning light (G24) should come on.
To put the PTO into neutral, release the clutch and depress control (1). Switch (D5) returns to its initial position. Warning light (G24) goes out.



Rotating speed
In the event of hydraulic pump drive, do not exceed the rotating speed indicated by the equipment manufacturer.

The engine rotating speed is limited to 1200 rpm as works setting.
Depending on the equipment fitted by the equipment manufacturer, the engine rotating speed can be modified by means of the RENAULT TRUCKS testing tool.

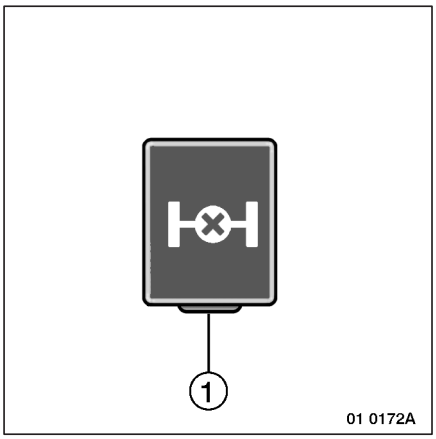
Depending on your vehicle's equipment
DIFFERENTIAL

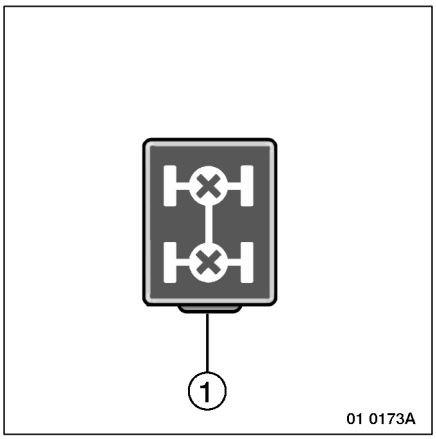
"Rear axle(s)" inter–wheel differential lock
Do not use:
– On surfaces giving a firm grip (roads, dry or rocky ground).
– On bends or corners.
– When the vehicle is equipped with an anti–skid device (chains, etc.).

Engagement
On surfaces with poor grip or slippery roads (without changing road speed), actuate switch (D2 / D3). Warning light (G25) will come on.

NOTE
Never engage the inter–wheel diff. lock if one of the drive wheels spins. If a drive wheel fails to grip, declutch and actuate switch (D2 / D3). Engage the clutch but only accelerate after warning light (G25) comes on.

Release
Press push–button (1).
Control (D2 / D3) returns to its initial position. Warning light (G25) goes OFF. If it does not, reduce your speed to a crawl and gently turn the steering wheel to the right and to the left in order to release the dog clutch and to extinguish the warning light.





NOTE
The inter–wheel diff. lock switch also acts on the inter–axle diff. lock.
Warning lights (G25 – G26) come on.

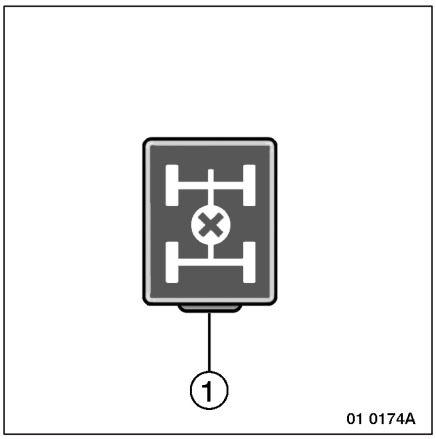
C125 use of the vehicle

Depending on your vehicle's equipment
Inter–axle differential lock
Do not use on surfaces giving a firm grip (roads, dry or rocky land).

Engagement
On surfaces with poor grip or slippery roads (without changing road speed) actuate switch (D4). Warning light (G26) will come on.

NOTE
Never engage the inter–axle diff. lock if one of the drive wheels or a drive axle spins. If a drive wheel or drive axle fails to grip, declutch, and actuate switch (D4). Engage the clutch but only accelerate after warning light (G26) comes on.

Release
Press push–button (1).
Control (D4) returns to its initial position. Warning light (G26) goes OFF. If it does not, reduce your speed to a crawl and gently turn the steering wheel to the right and to the left in order to release the dog clutch and to extinguish the warning light.



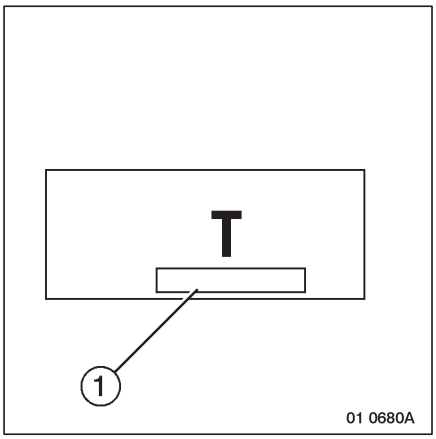
C126 use of the vehicle

STOPPING

Apply the parking brake and move the gear lever into neutral. Always wait for the engine to return to idling speed before actuating the shut–down control.
To stop the engine, switch off the ignition.

Disengage the master switch to cut the current. Never turn off the master switch while the engine is running to avoid damage to the alternator and the vehicle's electronic components.

If the tachograph tray is open when the ignition is switched off, the buzzer sounds and the message (1) "tachograph tray open" is displayed for around 6 seconds. Close the tachograph tray before getting out of the vehicle.



IMPORTANT
If the vehicle is to be laid up for a prolonged period of time (more than 10 days), disconnect the circuit by means of the circuit–breaker or remove the fuse (F25 – F34) to avoid discharging the batteries through the tachograph.

NOTE
In the event of fracture of a propeller shaft, if the gearbox is in neutral and the output shaft is moving, take out the fuse (F25) and switch off the ignition to stop the engine.

C127 use of the vehicle

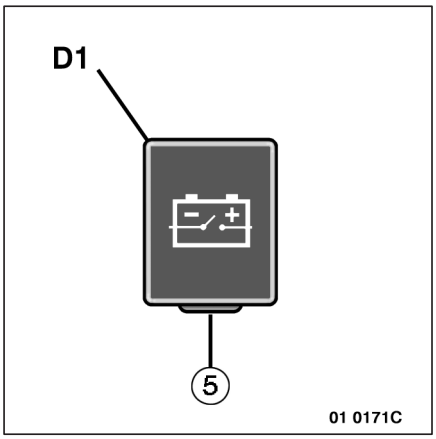
ADR vehicle (transport of hazardous substances)

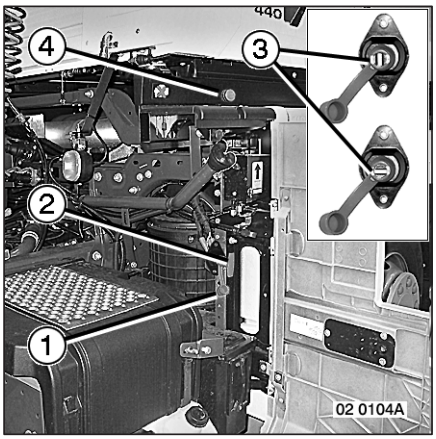
> ***IMPORTANT***
> *It is absolutely essential to follow engine stopping instructions according to the situation with which you are confronted. Any other procedure could prove to be dangerous.*

Control (D1) inside the vehicle
Press button (5) and the control (D1) until the engine stops. The master switch is open.

Control (4) outside the vehicle
Press and rotate the control (4) until the engine stops. The master switch is open.

The master switch can be re–engaged manually or by using the control (D1) (see pages C36).





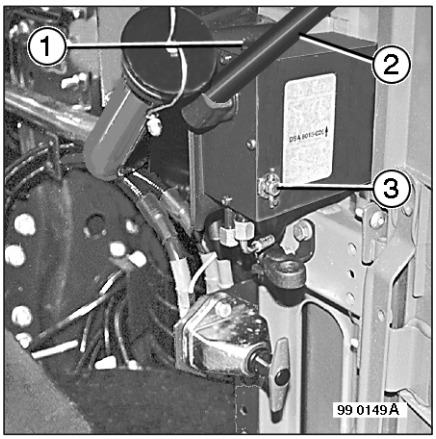
C128 use of the vehicle

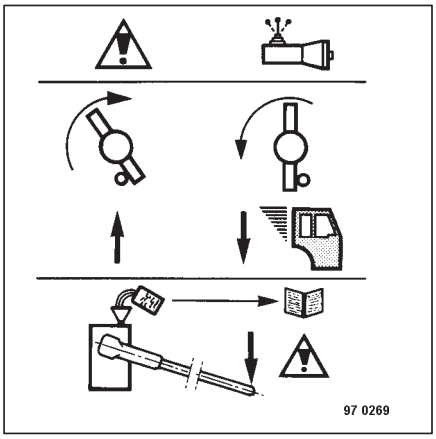
Depending on your vehicle's equipment
CAB TILTING

IMPORTANT
Never tilt the cab with the engine running.
Before restarting the engine, check:
– Cab raised: That the gear lever is in neutral.
– Cab lowered: That the gearshift linkage is locked, after checking that all gears shift correctly.
When working underneath the cab (on the engine, etc.) the cab must be fully tilted.
Any work on the cab tilt hydraulic system implies strict observance of the safety instructions and must be carried out by a dealer or approved distributor.

Mechanical control
With the vehicle stationary, engine shut down, gear lever in neutral, doors properly closed, make sure that no loose articles in the cab can be thrown against the windscreen. Clear the area in front of the cab. Place lever (3) in the "up" position. Use operating bar (2).
Since unlocking is automatic, pump until the cab tilts fully. To return the cab to the "road" position, place lever (3) in the "down" position, pump until the cab locks automatically. Check that the instrument panel "cab locking" warning light is out.

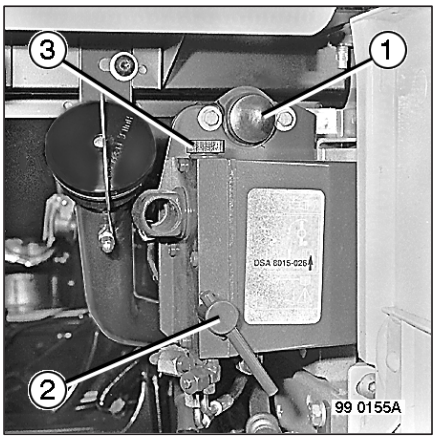
NOTE
If the cab does not tilt correctly, return it to the driving position and check the oil level. Top up if necessary through filler hole (1) on the tank. Carefully implement a full tilting cycle (i.e. up and down). If an incident occurs, consult a dealer or approved distributor.



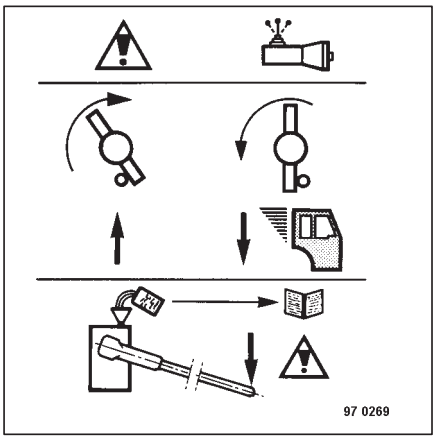


C129 use of the vehicle

Depending on your vehicle's equipment
Electrical control
Apply the parking brake and switch on the ignition to supply current to the control.
With the vehicle stationary, engine shut down, gear lever in neutral, doors properly closed, make sure that no loose articles in the cab can be thrown against the windscreen. Clear the area in front of the cab.
Move the lever (2) to the "Up" position and press the control (1).
Since locking is automatic, keep the control pressed until the cab tilts fully.
To return the cab to the road position, move the lever (2) to the "Down" position and press the control (1). Keep the control pressed until the cab locks automatically.



NOTE
After two complete successive tilting manoeuvres (up and down), wait for 15 minutes for the motor pump to cool before recommencing.
If you experience difficulty in tilting, move the cab to the road position and check the oil level. Top up with oil, if necessary, through the reservoir port (3).
Carefully make one complete tilting manoeuvre (up / down). In the event of malfunction, call upon your dealer or an approved agent.
In the event of electrical failure, use the manual control.



C130 use of the vehicle

TYRES

ROADWHEELS – TYRES

Changing a roadwheel
Precautions to be taken when fitting the wheels on the vehicle:

Before fitting
Carefully clean the wheel naves and hubs. In particular, clean all parts in contact with the wheels and remove all grease, earth, mud, metal burrs, excess paint, etc.

Upon fitting
Lightly lubricate the studs and nuts with engine oil. Tighten the nuts gradually using the wheel nut spanner provided in the onboard tool kit. Correct tightening pressure is obtained by pulling the tool lever harm.

> ***IMPORTANT***
> *Overtightening may cause damage. Do not use tubes, bars or other devices to increase the leverage.*

In–service checks
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 km and 250 km.
Failure to carry out these elementary precautions may result in loosening of the wheel nuts and lead to serious consequences.

Principal causes of premature tyre wear
– Manner of driving (excessive braking, driving through potholes, etc.).
– Overloading of vehicle or bad load distribution of loads.
– Over–inflation or under–inflation (inflate to pressure corresponding to the weight per axle).
– Incorrect pairing (always twin tyres of the same dimension, type and same degree of wear).
– Incorrect front end steering geometry.

Tyre inflation chart (vehicle laden)
See “Specifications” chapter.

Checking tyre pressures
Frequency
The tyre pressures must be checked regularly.

Method
The tyre pressures must always be checked when the tyres are cold.

It is essential to never deflate hot tyres.

Safety
In the event of a tyre hitting an obstacle or if it is necessary to stop as the result of a puncture, it is essential to get the tyre immediately checked by a specialist.

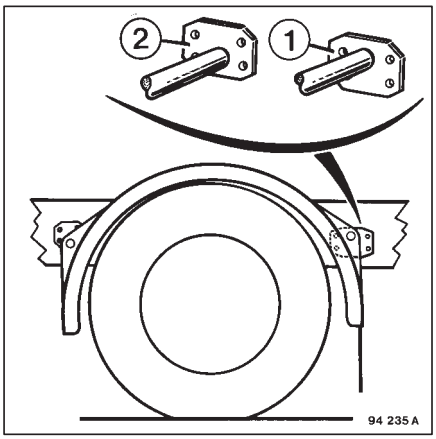
C131 use of the vehicle

LIGHT ALLOY WHEELS

INSTRUCTIONS FOR WHEEL FITTING:
To facilitate wheel removal at a later date, grease the hub centering zone with a copper–free grease such as “FREYLUBE, ROCOL. MG or ESSO MOBY”.

WARNING
Only use nickel–or chromium–plated RENAULT TRUCKS valves. When replacing a valve, grease the valve hole and the seating inside the rim with “FREYLUBE, ROCOL. MG or ESSO MOBY”.

REAR WINGS on 4x2 tractor
Depending on the tyre fitment, move the rear part of the wing.
1 – bracket in high position.
2 – bracket in low position.

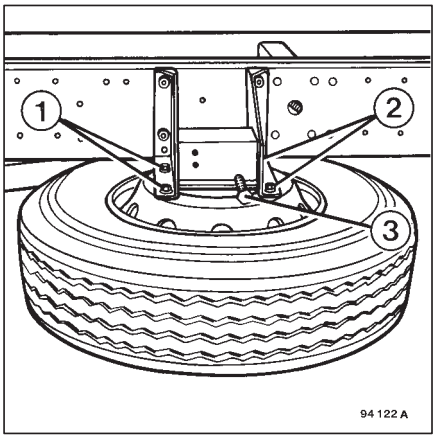


SPARE WHEEL CARRIER

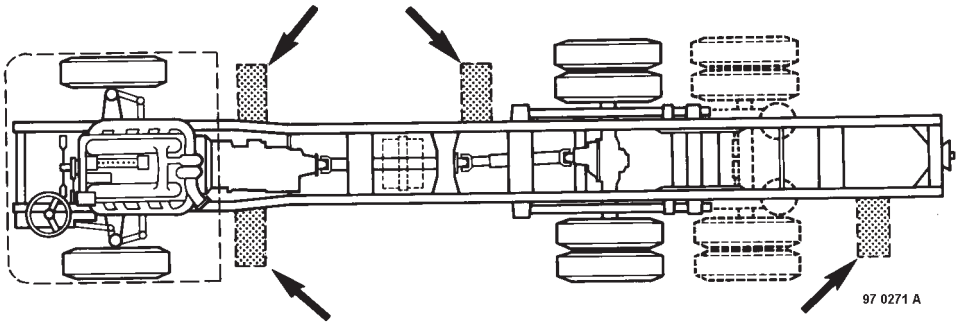
Removal
Remove the side fairing.
Unscrew nuts (1–2) and lower the wheel with winch (3).

Replacement
Raise the wheel using winch (3) and tighten nuts (1–2).
Fit the side fairing.

CAUTION
After locking the spare wheel to the spare wheel carrier, slacken the winch rope.



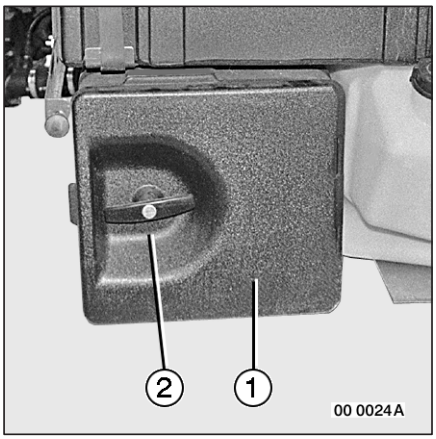
C132 use of the vehicle

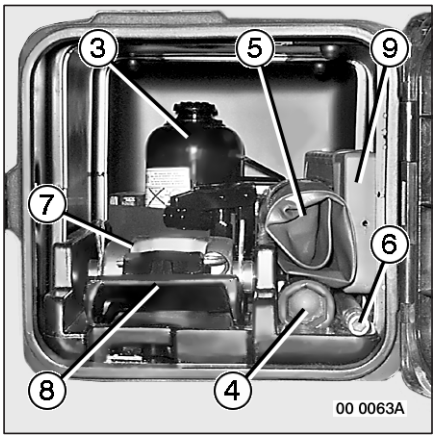


Depending on your vehicle's equipment
Location of jack and on–board kit:

To open the locker: Turn handle (2) and open locker (1). The locker is provided with a lock.

Arrangement of tools in the locker:
3 – Jack
4 – Wheel wrench
5 – Tool kit
6 – Cab tilt operating bar
6 – Jack and wheel wrench handle
7 – Towing yoke
8 – Jack mounting
9 – Warning triangle





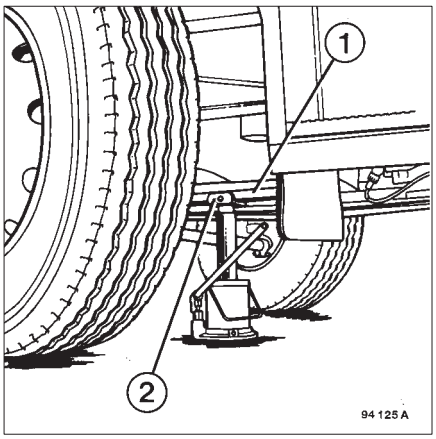
C133 use of the vehicle

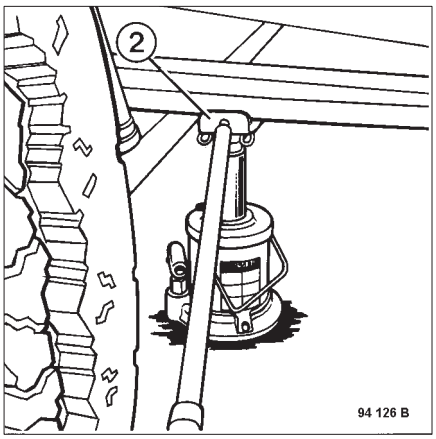
Depending on your vehicle's equipment
Using the jack

Front end support points (1)
Position the mounting plate (2) on the jack. If necessary, use the jack handle to disengage the mounting plate (2).

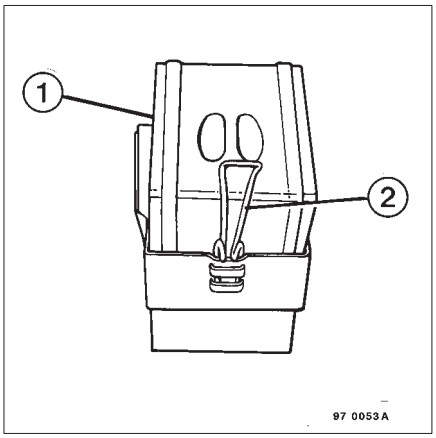
With air suspension
Place the jack as close as possible to the axle (3).
If necessary, depending on the tyre fitment, move the suspension to the "up" position to facilitate passage of the jack. After putting the jack into position, move the suspension to the "road" position and turn off the master switch.

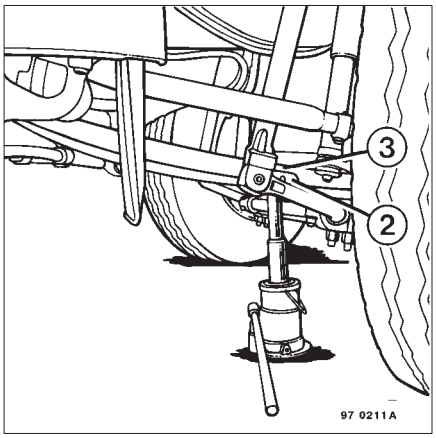
IMPORTANT
Chock the rear roadwheels.





Wheel chocks
Top remove the chock (1), undo clip (2). Upon assembly, ensure the correct position fo chock (1) and lock the clip (2) .

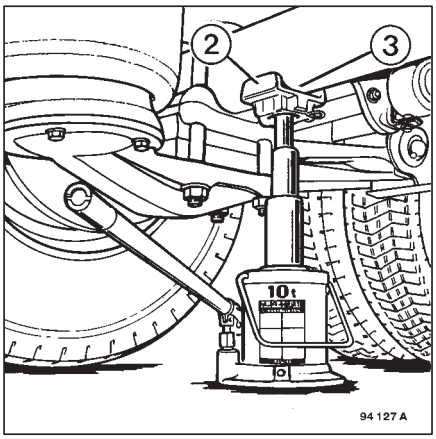


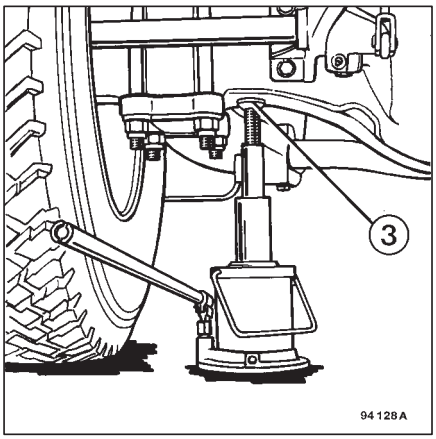


C134 use of the vehicle

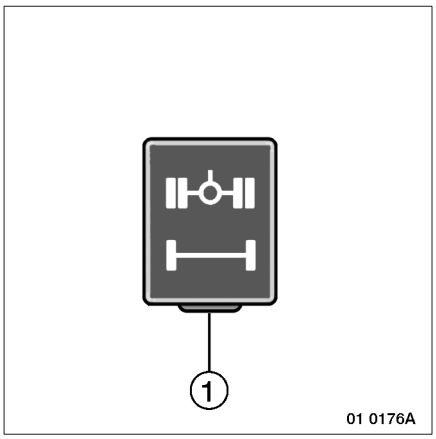
Depending on your vehicle's equipment
Rear end support points (3)

IMPORTANT
Chock the front roadwheels.
Air suspension: move the suspension to the "down" position.





Depending on your vehicle's equipment
"SELF–TRACKING" LIFT–UP AXLE
The operating principle for lowering and raising the axle is identical to that for a normal lift–up axle.
It is completed by:
– a system allowing automatic lockover of the roadwheels while the vehicle is moving;
– a locking device enabling the automatic loc over to be overridden. This device is operated by manual control button (D6) and when it is in operation, instrument panel warning pic–togram (G29) is displayed.



With the vehicle at a standstill, warning pictogram (G29) is displayed and the axle locks automatically if the roadwheels are in a straight line.

Prior to reversing
Lock the roadwheels in a straight line via control button (D6). Warning pictogram (G29) is displayed.
Depress button (1). Control button (D6) returns to its initial position, warning pictogram (G29) disappears.

Self–tracking lift–up axle "AUSTERAS"
Raising/lowering feature
The operating principle is identical to that of the normal lift–up axle.
Lockover feature
When the vehicle is travelling at a speed below 50 km/h, the axle wheels lock over automatically.
Below 50 km/h, a system automatically locks the axle wheels. Warning pictogram (G29) is displayed. Reduce the vehicle road speed to below 40 km/h so as to unlock the axle. Warning pictogram (G29) disappears.
Manual roadwheel locking control
Control (D6) serves to lock the axle wheels. Warning pictogram (G29) is displayed.
To unlock the wheels, press button (1). Warning pictogram (G29) disappears.
Use the manual locking control when reversing.

REAR SUSPENSION

Depending on your vehicle's equipment
ELECTRONIC AIR SUSPENSION

This is a microprocessor–controlled air suspension system. On top of the advantages of a conventional air suspension system, it contributes the following benefits:
– Optimization of loading bay services and memorizing of the last level setting (even after a power cut).
– Automatic level correction to bring it parallel with the centre–line of the vehicle (even if the load is poorly distributed).
– Savings on tyre wear (with lift–up axle option).
– Operations controlled by one remote control box.
– Reduced number of air lines.
– Speedy adjustment of level and low air consumption.
– Built–in safety systems (alarm, limp–home operation).
– System programming depending on the individual vehicle and current legislation in the country of use.
– At speeds of more than 10 km/h, return of chassis to the "normal" level.

Operation
– Automatic mode
The system keeps the suspension at a "normal" level, defined by programming.
– Manual mode
Manual mode is programmed. But operation in manual mode is only possible at speeds below 10 km/h.
The manual mode allows the height of the chassis to be adjusted to the required level (known as "current" level).
Press any of the keys on the remote control box to select the mode.
Press the "normal level" key on the remote control box to return to automatic mode.
– Information warning light (AB)
This light comes on when the vehicle level is different from the normal level or during shedding of the load from the lift–up axle (if fitted).
The light flashes if the air pressure is too low (6x2).
– Alarm warning light (G12)
This light comes on as soon as the stop control is actuated or if a malfunction is identified. Depending on the kind of malfunction, the light stays on or flashes. Automatically, the electronic box safety feature partially or totally neutralizes the control system.

On the road
Warning lights (G12 or AB) come on when a suspension malfunction is detected.

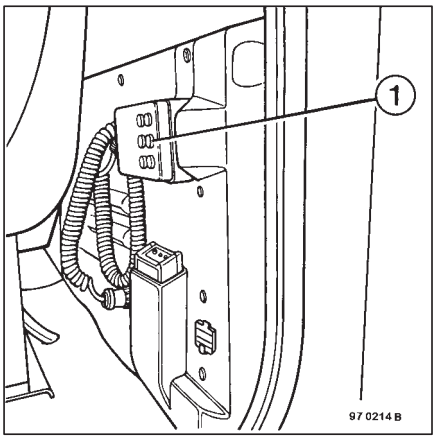
WARNING
Braking efficiency may be greatly reduced. Immobilize your vehicle and run a test.

At a standstill
Warning light (G12) comes on when a suspension malfunction is detected. Run a test (see page C144).

C137 use of the vehicle

Remote control box
For each suspension model, there is a corresponding control box type.

Location of remote control box (1) in cab.



IMPORTANT
Loading and unloading operations must be carried out with the master switch engaged and the ignition switched on.

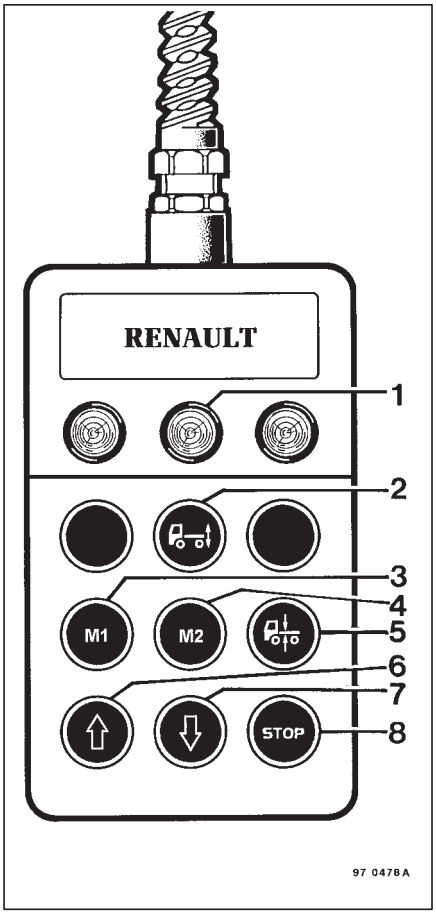
Coupling/Uncoupling a trailer to/from vehicle equipped with air suspension
To unhitch the semi–trailer:
- Raise the suspension to the “UP” position.
- Lower the trailer landing legs.
- Unlock the fifth wheel coupling.
- Move the vehicle forwards slightly to disengage the kingpin.
- Lower the vehicle slightly to dislodge the fifth wheel.
- Disengage the tractor, then return the suspension to the “NORMAL” position before moving off.

To hitch the trailer:
- Adjust the height of the fifth wheel before engaging the vehicle.
- When coupling is completed, return the suspension to the “NORMAL” position before moving off.
- Retract the trailer landing legs.
- Return the vehicle suspension to the “normal” position before moving off.

4x2 – 6x2 vehicles with adjustable rear suspension

Using the remote control box
Engage the master switch.
Switch on the ignition (if the air pressure is too low, start the engine).
To activate the function
Press key (2). Warning light (1) comes on.
To de–activate the function, press key (2) again. Warning light (1) goes out.
Lowering the chassis
Keep key (7) depressed to reach the required height. Release the key when the required height is reached.
Raising the chassis
Keep key (6) depressed to reach the required height. Release the key when the required height is reached.
Adjusting to "normal" height
Press key (2) to activate the remote control. Warning light (1) comes on.
Press key (5) once. The chassis returns to the "normal" level.
To de–activate the remote control, press key (2) again. Warning light (1) goes out.

IMPORTANT
In the event of danger, it is possible to stop the movement straight away by pressing key (8) once.



Time–delayed stabilization of suspension height (ignition switched off)
Once the required loading bay height is adjusted, either by memory button or manual adjustment, you can stabilize that height for one hour by simultaneously pressing the stop control button and switching off the ignition.

Memorizing the levels
This control box allows two reference levels to be memorized. Press button (2) to activate the remote control. Warning light (1) comes on. Press “Up” button (6) or “Down” button (7) to obtain the required height. Simultaneously press “Stop” button (8) and “Memory 1” button (3) to memorize that height.
To memorize a second chassis height: after the adjustment operations, simultaneously press “Stop” button (8) and “Memory 2” button (4) to memorize that height.
Whenever you wish to return to one of the two memorized chassis heights, just press one of the memory buttons. To modify an already memorized height**,** repeat the above adjustment operations.
Button (5) serves for return to the “normal” position.

WARNING
Never move off when warning lights (AB–G12) are on. Give a pulse on button (5) to bring the chassis height to the “normal” position. The system changes into automatic mode.

C140 use of the vehicle

4x2 vehicle with adjustable front and rear suspensions

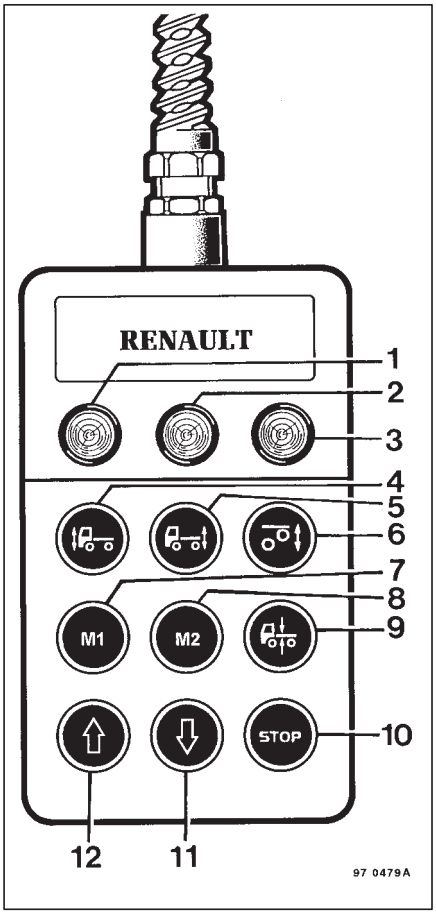
6x2 vehicle with adjustable rear suspension + lift–up axle

6x2 vehicle with adjustable front and rear suspensions + lift–up axle

Use of the remote control box
Engage the master switch.
Switch on the ignition (if the air pressure is too low, start the engine).

Rear suspension
Press button (5). Warning light (2) comes on.
To de–activate the feature, press button (5) again. Warning light (2) goes out.
Lowering the chassis
Keep button (11) depressed until it reaches the required height. Release it when the required height is reached.
Raising the chassis
Keep button (12) depressed until it reaches the required height. Release it when the required height is reached.

Front suspension
Press button (4). Warning light (1) comes on.
To de–activate the feature, press button (4) again. Warning light (1) goes out.
Lowering the chassis
Keep button (11) depressed until it reaches the required height. Release it when the required height is reached.
Raising the chassis
Keep button (12) depressed until it reaches the required height. Release it when the required height is reached.



Simultaneous adjustment of front and rear suspensions
Press buttons (4 and 5). Warning lights (1 and 2) come on.
To de–activate the feature, press button (4 and 5) twice. Warning lights (1 and 2) go out.
Lowering the chassis
Keep pressing button (11) to attain the required height. Release the button when the required height is reached.
Raising the chassis
Keep pressing button (12) to attain the required height. Release the button when the required height is reached.

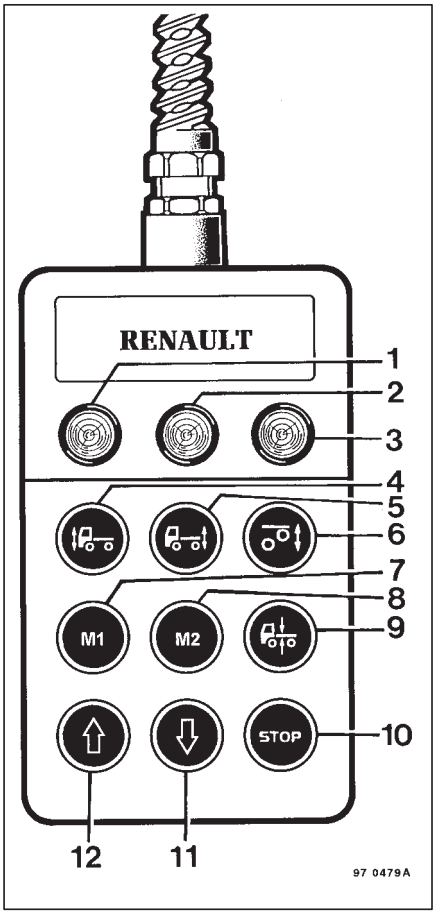
Time–delayed stabilization of suspension height (ignition switched off)
Once the required loading bay height is adjusted, either by memory button or manual adjustment, you can stabilize that height for one hour by simultaneously pressing the stop control button and switching off the ignition.

Returning to "normal" height
Give a pulse on button (4 or 5) to activate the remote control. Warning light (1 or 2) comes on.
Give a pulse on button (9). The chassis returns to the "normal" level.
To de–activate the remote control, press button (4 or 5) again. Warning light (1 or 2) goes out.

> ***IMPORTANT***
> *In the event of danger, it is possible to stop the movement straight away by giving a pulse on button (10).*

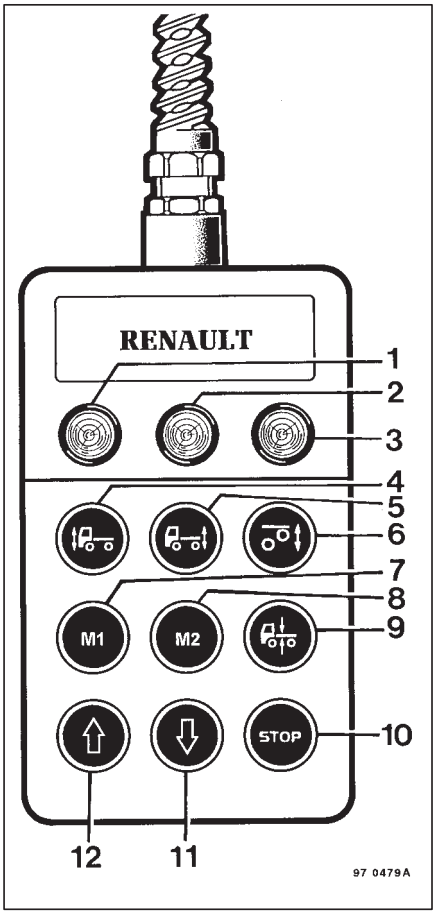
Memorizing the levels
This control box allows two reference levels to be memorized.
Press button (4 or 5) to activate the remote control. Warning light (1 or 2) comes on.
Press "Up" button (12) or "Down" button (11) to obtain the required height. Simultaneously press "Stop" button (10) and "Memory 1" button (7) to memorize that height.
To memorize a second chassis height: after the adjustment operations, simultaneously press "Stop" button (10) and "Memory 2" button (8) to memorize that height.
Whenever you wish to return to one of the two memorized chassis heights, just press one of the memory buttons.
To modify an already memorized height, repeat the above adjustment operations.
Button (9) serves for return to the "normal" position.
Both memories can be exploited:
– simultaneously, for both axles,
– for one same axle,
– one per axle.

WARNING
Never move off when warning lights (AB–G12) are on. Give a pulse on button (9) to bring the chassis height to the "normal" position. The system changes into automatic mode.

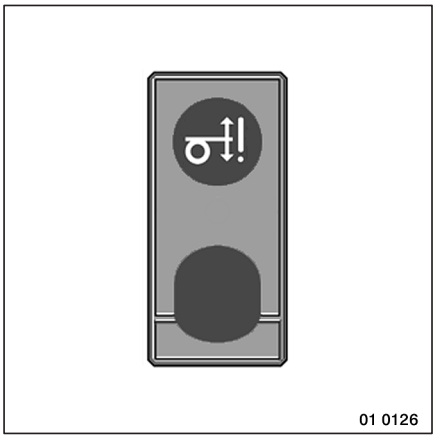


Lift–up axle
Automatic lowering
Loading of vehicle in progress, axle raised:
As soon as the load attains the specified value, the axle is automatically lowered. A safety device prevents inadvertent lowering of the axle due to movement of the suspension while rolling.

Manual control
Vehicle empty and stationary: to activate the feature, press button (6). Warning light (3) flash.
To de–activate the feature, press button (6) again. Warning light (3) go out.
Button (6) is overridden when the vehicle is laden and the axle is down.
Lowering the axle
Button (6) activated: give a pulse on button (11).
In case of danger, reverse the direction of movement of the axle by giving a pulse on button (12).
Raising the axle
Button (6) activated: give a pulse on button (12).
In case of danger, reverse the direction of movement of the axle by giving a pulse on button (11).

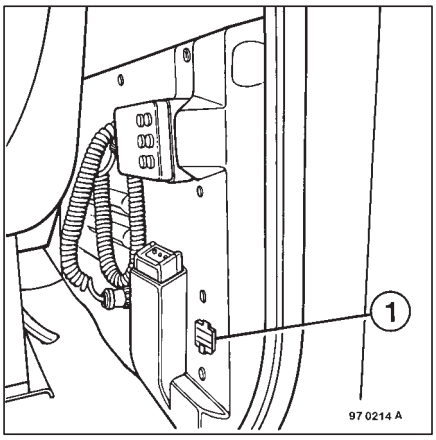


Load–shedding time–delay control
In the event of lack of driving wheel grip when moving off, transfer the load from the lift–up axle to the driving axle. To do this, actuate control (A2). Warning light (AB) comes on.
At the end of load transfer, warning light (AB) goes out.
Wait for about 70 seconds after warning light (AB) goes out before actuating control (A2) again.



C144 use of the vehicle

Test procedure
Disengage the master switch, wait for 10 seconds, then engage it again.
If warning lights (AB–G12) come on or start flashing again, consult the nearest dealer or approved agent.
Press the remote control “Stop” button to neutralize the system.
Drive at a maximum speed of 20 km/h and take extra care to maintain ample stopping distances.
If warning lights (AB–G12) go out, the minor malfunction has cleared. Nevertheless, consult your dealer or approved agent.
Fault finding and maintenance is to be carried out using the RENAULT TRUCKS diagnostics tester plugged into socket (1).

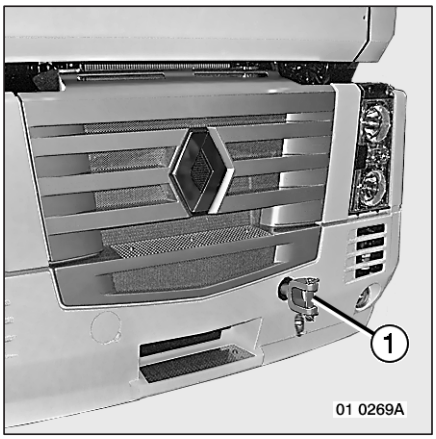


WARNING
Any work carried out on sensors, linkage or controls, or replacement of the electronic control unit requires parameters to be redefined recalibration. Such operations need to be carried out by qualified personnel.

C145 use of the vehicle

TOWING

If your vehicle has to be towed, use towing yoke (1) supplied in the vehicle on–board kit.

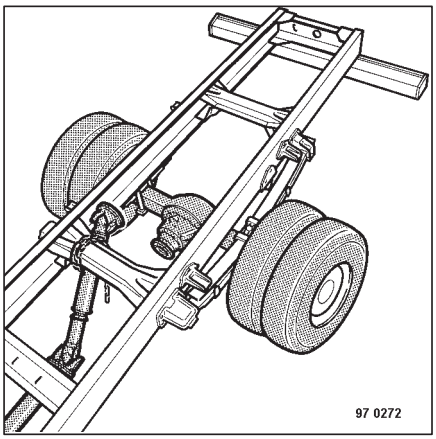


WARNING
The yoke (1) attached to the front cross–member is designed for on–road towing under normal conditions. When pulling bogged down vehicles with spinning drive wheels out of mud or loose soil, it is vital to take the customary precautions.
Proceed with towing only when the engine is running.

In the event of engine breakdown
– Mechanically neutralize the brake cylinders if the vehicle has suffered loss of air.
– The steering will be hard to turn as the power assistance system is inoperative.

“4x2 – 6x2” Type

– Put the gear lever into neutral.
– Uncouple the propeller shaft at the drive axle.
– Use the towing yoke.

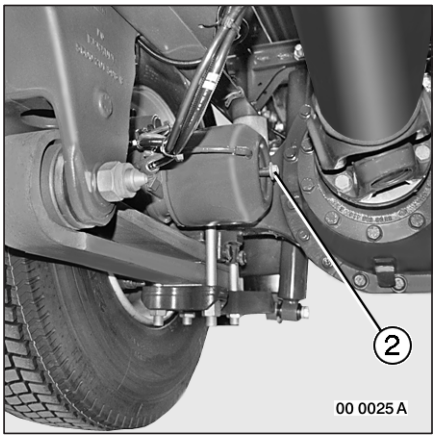


“6x4” Type

– Uncouple the propeller shaft at the middle drive axle.
– Use the towing yoke.

Releasing the parking brake
To enable a disabled vehicle that has suffered accidental loss of air pressure to be towed, the spring brakes can be wound off. On each rear cylinder: Unscrew the bolt (2) using a 24 mm wrench until the roadwheels are free.
Putting back into service: Apply an air pressure of approximately 5 bars to the circuit. Bring the bolt (2) into contact with the cylinder and tighten it at a torque of 35 Nm for 6x2 / 6x4 vehicles and at100 Nm for 4x2 vehicles.

IMPORTANT
Chock the roadwheels.



POWER ASSISTED STEERING

CAUTION
When the engine is turned off, hydraulic power assistance to the steering is lost and a much greater effort is needed to turn the steering wheel. If warning light (J) comes on when driving, stop the vehicle and determine the cause.
– Check the fluid level in the reservoir,
– Check for leaks from hose and pipe unions and rectify if possible (tighten the unions or change the hoses).

Top up the fluid reservoir with clean fluid to the recommended specification. Restart the engine and check that the pump performs normally. Test at low engine and road speed.
If warning light (J) stays on, or any doubt remains concerning the pump's efficiency, the unit must be inspected by an approved specialist.

Under no circumstances must hydraulic components be removed or their initial settings altered. This work must be carried out by a specialist.

A hydraulic system must be perfectly clean to operate correctly. Great care must therefore be taken to ensure cleanliness when carrying out the operations described above.

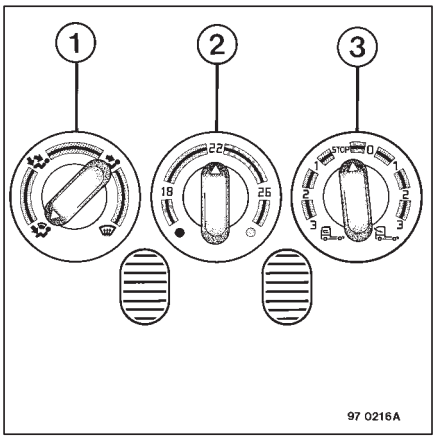
D1 air conditioning

HEATING – VENTILATION

Depending on your vehicle's equipment

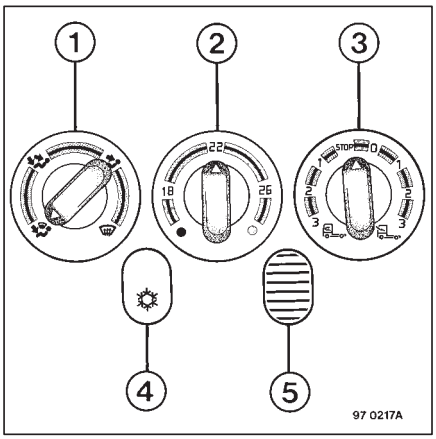
Version without air conditioning

1 – Cab air distribution control knob (see detail, page D2).
2 – Temperature variator knob (see detail, page D5).
3 – Ventilation control knob (see detail, page D4).



Version with regulated air conditioning

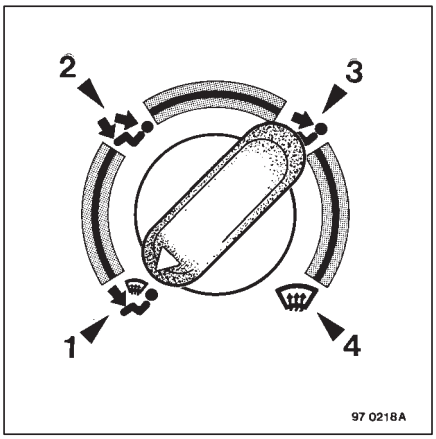
1 – Cab air distribution control knob (see detail, page D2).
2 – Temperature variator knob (see detail, page D5).
3 – Ventilation control knob (see detail, page D4).
4 – Air conditioner control (see detail, page D4).
5 – Air temperature probe.



IMPORTANT
So as to limit risks of leaks due to prolonged standstill, it is recommended to run the air conditioning for about 15 minutes at least once a week.

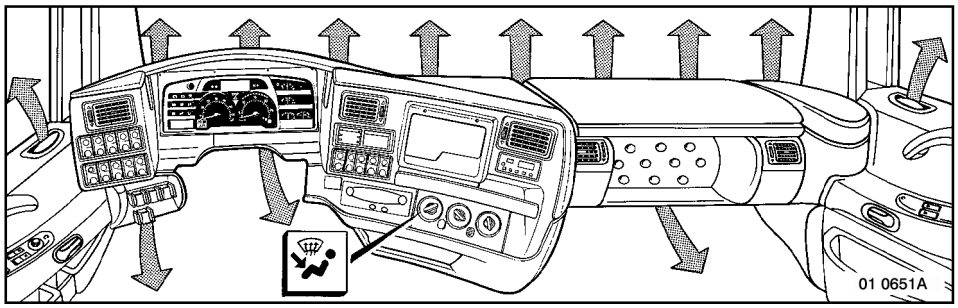
D2 air conditioning

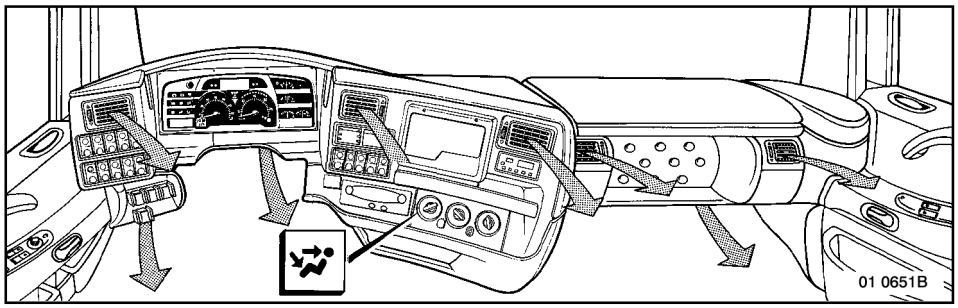
Air distribution control knob
The control distributes the air between the various outlet ports according to the position chosen.
Combined with the temperature variator and the ventilation control, it assures optimized temperature according to the positioning of the outlets.

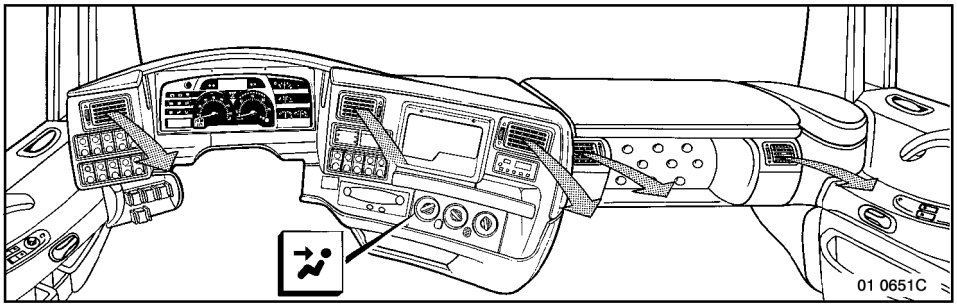


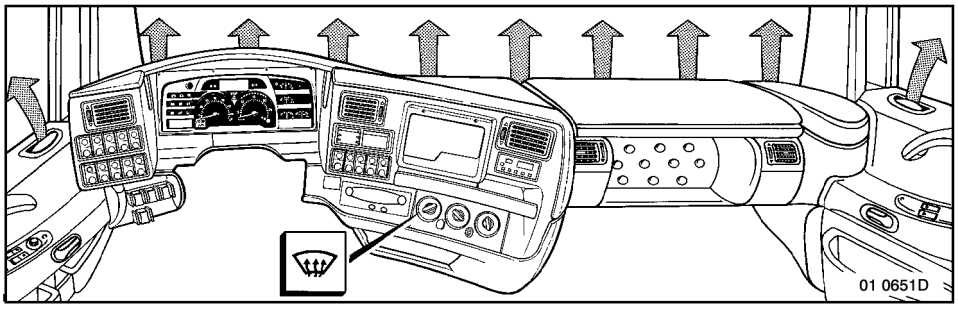
Position 1
Air directed downwards (to footwell air vents) and gentle flow upwards (to windscreen and side window air vents).
Position 2
Air directed upwards (to dashboard and side window air vents).
Position 3
Air directed upwards (to dashboard air vents) and gentle flow downwards (to footwell air vents).
Position 4
Air directed upwards only (to windscreen and side windows air vents).

D3 air conditioning









D4 air conditioning

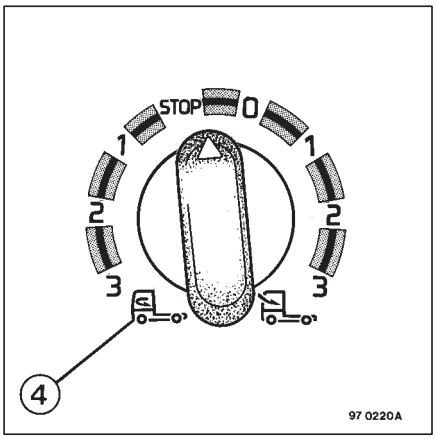
Ventilation control knob
This control knob incorporates two functions:

External air ventilation function
Turn the knob clockwise:
- Position STOP: stop (air intake closed).
- Position 0: stop (air intake slightly open).
- Position 1: fan control (1st speed).
- Position 2: fan control (2nd speed).
- Position 3: fan control (3rd speed).

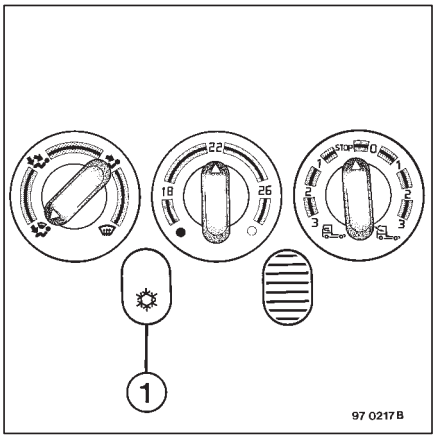
Internal air ventilation function
Turn the knob anti–clockwise:
- Position STOP: stop (air intake closed).
- Position 1: fan control (1st speed).
- Position 2: fan control (2nd speed).
- Position 3: fan control (3rd speed).

A warning light (4) comes on when the control knob is in the air recycling mode: position Stop, 1, 2 or 3.
Recycling makes it possible to:
- avoid breathing in stale air from the exterior (road tunnel, polluted area...),
- obtain maximum cooling or maximum heating power from the air conditioner.

Only use the recycling feature in short spells.

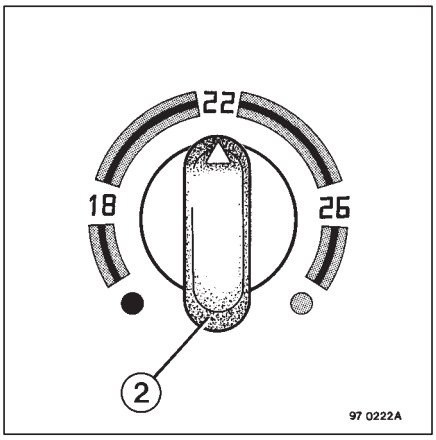


Air conditioner control button (1)
With the engine running, move the ventilation control knob to at least position 1 and press the air conditioner control button to operate the air conditioning.
A built–in warning light comes on when the air conditioning feature is activated.
Set the temperature variator to the desired temperature.



air conditioning

Temperature variator knob (2)
Move the temperature variator knob to the desired temperature and wait for a few moments to appraise the result before changing it slightly, if necessary. The figures 18, 22, 26 serve to situate the temperature level but do not exactly correspond to a precise value in degrees.



Depending on your vehicle's equipment
Quick defrosting (quick engine warm–up feature)
This device accelerates the defrosting feature described on page D5
With the vehicle at a standstill, for a temperature below 5°C, a device for accelerating the engine to a speed of 800 → 1000 rpm and actuating the exhaust brake enables fast build–up of the temperature of the engine cooling system.
This feature is overridden when the cooling system temperature reaches 70 °C, when the accelerator is actuated or when the vehicle is moving.

Use in cold weather:
Defrosting / demisting
– Move the fan control to position "0" (external air side).
– Move the air distribution control knob to the "defrosting/demisting" position.

As soon as the temperature rises:
– Move the ventilation control knob to position 1.
– Increase the air flow as the engine temperature rises.

When the "defrosting/demisting" action is finished, move the temperature variator into the desired zone. The reaction time varies according to the position chosen. Maintain a minimum air flow for better efficiency.

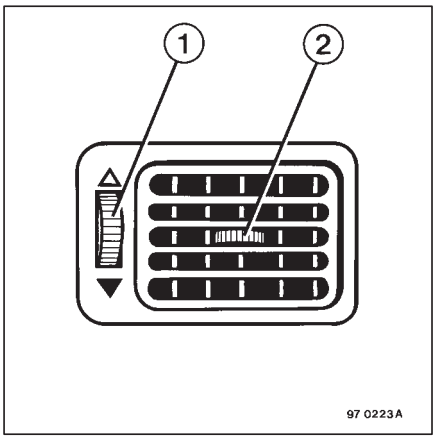
Use in hot weather:
If the temperature inside the cab is higher than the outside temperature:
– Aerate the cab by driving for a few minutes with the windows down.
– Move the temperature variator knob to "max. cold" and the ventilation control knob to position 3 to obtain maximum air flow.
With air conditioning:
– Press the air conditioner control button.
As soon as the desired level of comfort is reached:
With or without air conditioning:
– Return the temperature variator knob to a more moderate position.
– Choose the air distribution control knob position.
– Reduce the ventilation. Maintain a minimum air flow for better efficiency (position 1 minimum).

If you wish to increase the heating or cooling power, use the cab air recycling feature with the air conditioner engaged. Only use the recycling feature in short spells.

D6 air conditioning

Air vents
To open the flow: Turn knurled wheel (1) upwards.
To close the flow: Turn knurled wheel (1) downwards.
To swivel horizontally: Use control (2).
To swivel vertically: Tilt the air vent.

> ***IMPORTANT***
> *The evolution of climate control and soundproofing have led to cabs becoming more and more hermetically sealed. It is therefore necessary, when you have to stay inside the cab for a long period, to provide adequate ventilation (windows partly open, roof air vent) to avoid confinement of the air.*



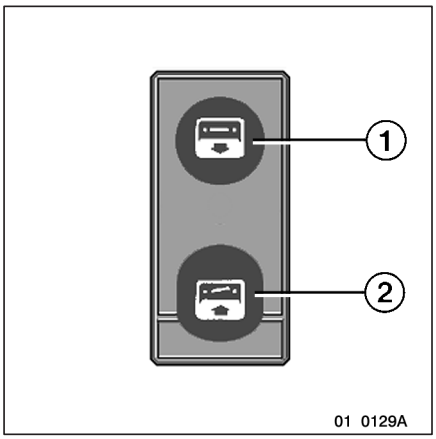
Electrically operated roof air vent

The air vent is operated by means of a 2–position control (B5).

To open
Press end “1” of the control until the required opening is obtained.

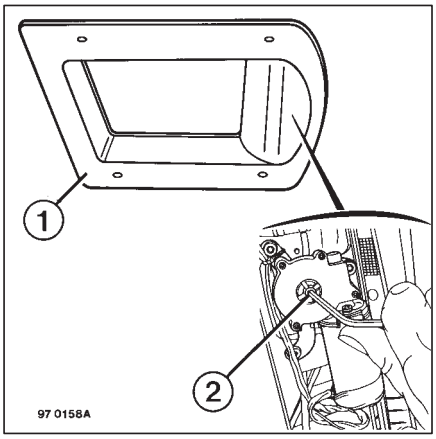
To close
Press end “2” of the control until the flap is fully closed.

Before leaving your vehicle, as a precaution, ensure the air vent is properly closed.



Electrically operated roof air vent

In the event of problem, it is possible to operate the air vent manually.
Remove trim (1) to gain access to the emergency control.
Insert a 5 mm Allen key into socket (2). Drive in the key to release the motor clutch and turn the key to open/close the air vent.



D7 air conditioning

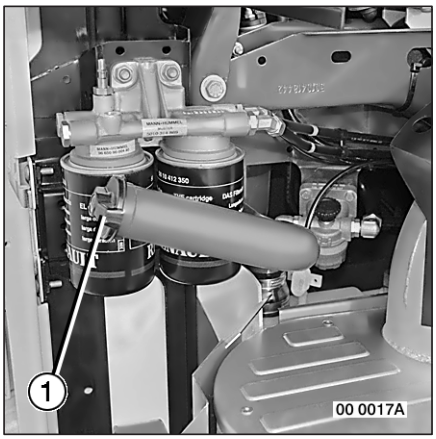
INDEPENDENT HEATING

Depending on your vehicle's equipment

IMPORTANT
Shut off the heater unit near filling stations. Whenever electric welding is carried out on the vehicle it is absolutely essential to disconnect the batteries to avoid destruction of the electronic monitoring system.
Stop the heater before disengaging the master switch.

IMPORTANT
The evolution of climate control and soundproofing have led to cabs becoming more and more hermetically sealed. It is therefore necessary, when you have to stay inside the cab for a long period, to provide adequate ventilation (windows partly open, roof air vent) to avoid confinement of the air.

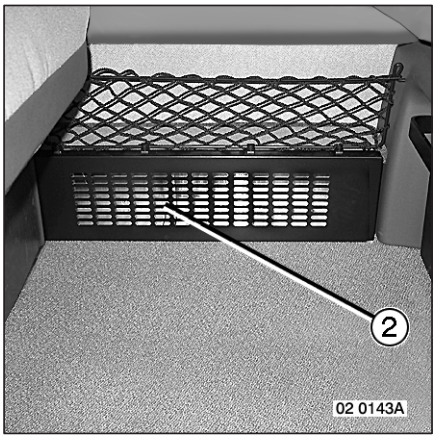
Independent heating tank
– Capacity: 18.5 litres
– Autonomy: approximately 75 hours
– Filler inlet (1).



INDEPENDENT HEATER FUEL SUPPLY

The independent add–on heater operates perfectly with commercial diesel fuel. If the heater is supplied from a separate tank, it must contain the same diesel fuel as the vehicle fuel tank. When changing over from summer diesel fuel to winter diesel fuel, run the independent heater to purge the fuel pipes.

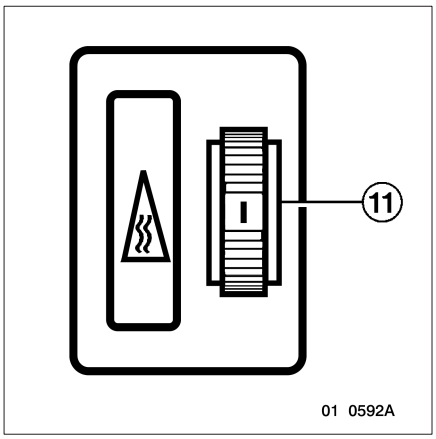
IMPORTANT
While the independent heater is running, make certain the delivery vent (2) is not obstructed.



INDEPENDENT ADD–ON HEATER WEBASTO AT 2000 S

Prior to making any manoeuvre, make sure the suction and discharge apertures are not obstructed. There should be nothing cluttering up the area reserved for the heater.

Regulating the temperature
Set the required temperature on ambient temperature thermostat (11).

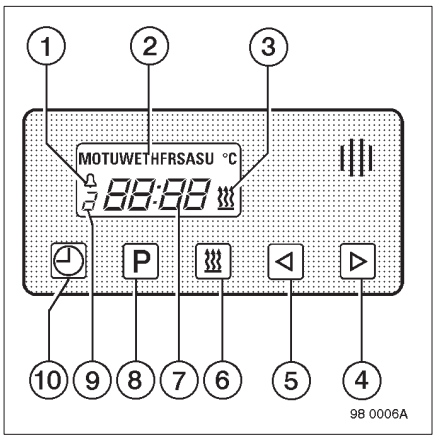


SETTING THE TIMER INTO SERVICE

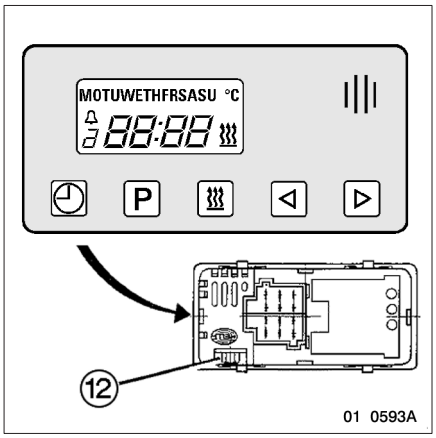
When the heater is switched on, the control panel lights up.
If there is an electrical power cut at the timer, all the indications flash. Press button (10). **12: 00** is displayed and flashes for 5 seconds, then the day flashes for 5 seconds and the screen becomes dim.

Adjusting the time of day and the day
Press and hold down button (10). When the time of day display (7) flashes, press button (4) or (5) to set the time of day.
When the day display (2) flashes, press buttons (4–5) to set the day.

mo	**tu**	**we**	**th**	**fr**	**sa**	**su**
Mon	Tues	Wed	Thurs	Fri	Sat	Sun



Replacing bulb (12)
A kit sold by RENAULT TRUCKS Spare Parts with directions for use serves for replacing the control panel bulb.



D9 air conditioning

Depending on your vehicle's equipment

Alarm clock function

Press button (8) four times. The "alarm clock" symbol (1) (a bell) appears. Press button (4) or (5) to make the time of day display flash. Adjust the time of day (7) using buttons (4 – 5). The time of day display (7) disappears after 5 seconds.

Choice of the day is not possible.

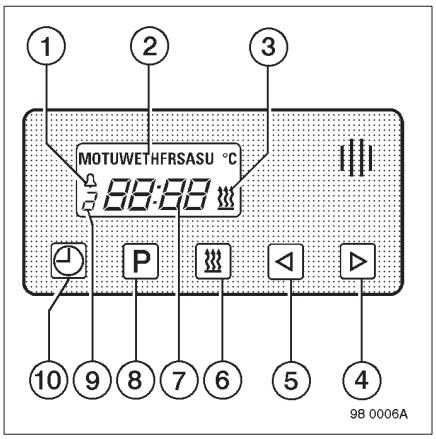
To activate:

Press button (8) four times. The "alarm clock" symbol (1) (a bell) appears.

The buzzer goes off at the preselected time and stops, either automatically after 5 minutes, or by pressing button (4) or (5).

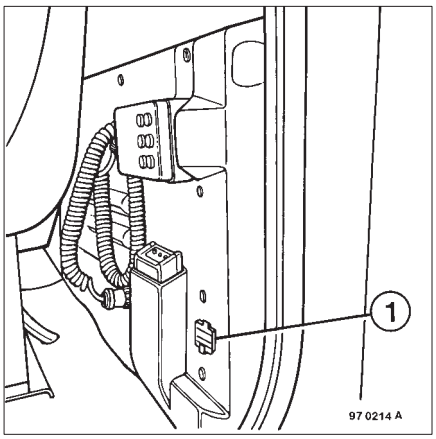
To de–activate:

Press buttons (8) five times. The "alarm clock" symbol (1) (a bell) disappears.



Diagnostics socket (1)

The diagnostics socket serves to check the state of the independent add–on heater using the RENAULT TRUCKS tester.



D10 air conditioning

Engage the master switch.

HEATING FEATURE

Start–up without programming
Press button (6). Symbol (3) appears together with the heating period of time.
Press buttons (4–5) to alter the heating period of time. See “Heating operating time” paragraph to memorize the period of time.
The flame glow plug is supplied with voltage and the blower runs at low speed. After about 30 seconds, combustion commences. Check that the heater is operating correctly. The blower speed varies according to temperature.

Start–up with programming
3 time of day and day possibilities:

Selection 1: Press button (8) once. Warning display “1” (9) flashes. Press buttons (4–5) to select the time of day. Wait for the day display to flash and press buttons (4–5) to choose the day. The selection is memorized. Warning display “1” stays on. The time of day display (7) disappears after 10 seconds.
Selection 2: Press button (8) twice. Warning display “2” (9) flashes. Proceed as per selection 1 to adjust the time of day and the day.
Selection 3: Press button (8) three times. Warning display “3” (9) flashes. Proceed as per selection 1 to adjust the time of day and the day.

Heating operating time:
The timer has a heating duration limited to 120 minutes.
“Heating de–activated”: Press button (5) for 3 seconds: a heating duration display appears. As soon as it flashes, press buttons (4–5) to adjust the duration (adjustment from 10 to 120 minutes possible). The screen goes dim, the heating duration is memorized. This heating time is common to all heating selections.
“Heating activated”: You can alter the heating duration at any moment when it is activated. Press button (4) or (5) to alter the duration (adjustment from 1 to 120 minutes possible). Such forced duration does not modify the memorized duration.

When the heating is started up again (forced or preselected mode), the memorized duration is displayed.

To activate a preselection:
Press button (8) once, twice or three times, depending on the chosen selection. The corresponding warning display (9) appears.
To de–activate a preselection:
If you have activated a preselection, press button (8) several times until the selections disappear.

Stopping
Press button (6). Warning light (3) disappears together with the preselection. The blower continues turning to cool the heater (retarded shutdown) and stops automatically.

D11 air conditioning

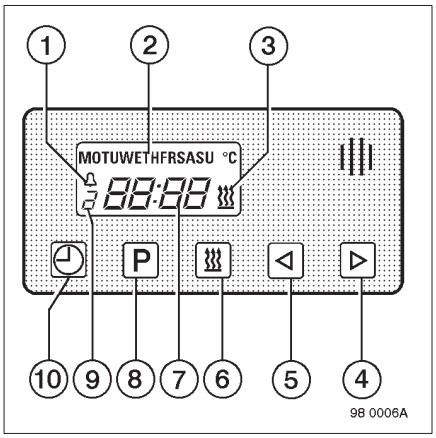
TROUBLESHOOTING

Heater will not start:
The control panel allows the heating function to be programmed, but the heater will not start.
Check fuse (F22). Actuate button (6) again.
The control panel no longer displays any information. Check fuse (F22).
Reprogram the timer and actuate button (6) again.
If after the starting cycle, the heater will not start, call in a qualified agent.

Heater stops when in operation:
Heater overheating:
Make sure the suction and discharge apertures are not obstructed.
After a few minutes, restart the heater (warning light (3) visible).
If it stops again, call in a qualified agent.

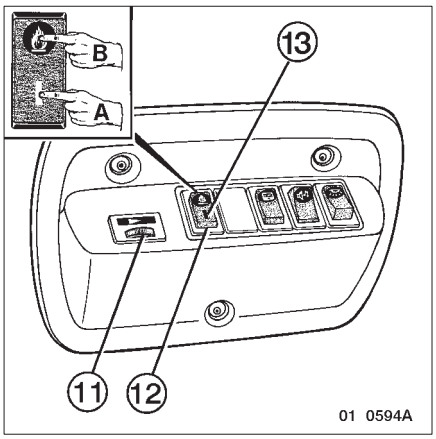
Flame goes out: Determine the cause.
. Fuel supply defect.
. Electrical power supply failure.
. Appliance or regulation control unit defect.
To restart, press button (6) and repeat the procedure (no more than three times).
If the heater stops again, call in a qualified agent.

IMPORTANT
If the vehicle is laid up for a prolonged period of time, remove fuse (F34).
It is forbidden to use the heater in closed premises or in places where inflammable or explosive vapours or accumulations of dust might be present.
Avoid exposing gas cartridges and spray canisters to the hot air flow.
If electric welding work is carried out on the vehicle, it is essential to disconnect the batteries to prevent causing irreparable damage to the electronic monitoring system.
Stop the heater before disengaging the master switch.



D12 air conditioning

INDEPENDENT HEATER "AT 2000 S" (ADR) add–on heater



Prior to starting
Make sure the suction and discharge apertures are not obstructed. There should be nothing cluttering up the area reserved for the heater.
The knob (12) should be in position "A".

Start–up
Move the knob (12) to position "B". Warning light (13) comes on. The flame glow plug is supplied with voltage and the blower runs at low speed. After about 50 seconds, combustion begins. Check that the heater is operating correctly. The blower speed varies according to temperature.

Regulation
Set the required temperature using the rheostat (11).

Stopping
Move the knob (12) to position "A". Warning light (13) goes out. The blower continues turning to cool the heater (retarded shutdown) and stops automatically**.** The blower speed varies according to the temperature.

Troubleshooting
Heater will not start:
If the heater will not start: check fuse (F22). Replace the fuse if necessary.
Determine the cause.
Restart the heater with the knob (12).
If the heater has not started after the third attempt, call in a qualified agent.

D13 air conditioning

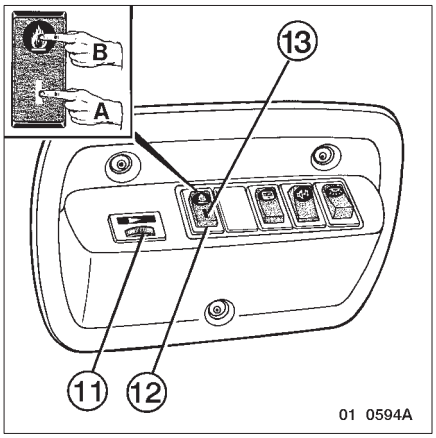
Heater stops when in operation

Upon starting the engine or when using an auxiliary pump, the heater stops.

Heater overheat:
Make sure the suction and discharge apertures are not obstructed.
Move the knob (12) to position “A”. After a few minutes, restart the heater.
If it stops again, call in a qualified agent.

Flame goes out: Determine the cause.
. Fuel supply defect.
. Electrical power supply failure.
. Appliance or regulation control unit defect.
To restart, move the knob (12) to position “B”.
Repeat the procedure if necessary (no more than three times).
If the heater stops again, call in a qualified agent.

IMPORTANT
It is forbidden to use the heater in closed premises or in places where inflammable or explosive vapours or accumulations of dust might be present.
Avoid exposing gas cartridges and spray canisters to the hot air flow.
If electric welding work is carried out on the vehicle, it is essential to disconnect the batteries to prevent causing irreparable damage to the electronic monitoring system.
Stop the heater before disengaging the master switch.



D14 air conditioning

Depending on your vehicle's equipment

WEBASTO INDEPENDENT ADD – ON HEATER type Thermo 90 S

This heating system provides excellent thermal comfort and enables the engine cooling circuit to be isolated when the engine is shut down.
Move the temperature variator knob into the "hot" zone.
Engine shut down:
- With control (12) in "0" position **A**, the independent heater heats the engine cooling circuit and the cab heating circuit.
- With control (12) on "Flame" position **B**, the independent heater heats the cab heating circuit.

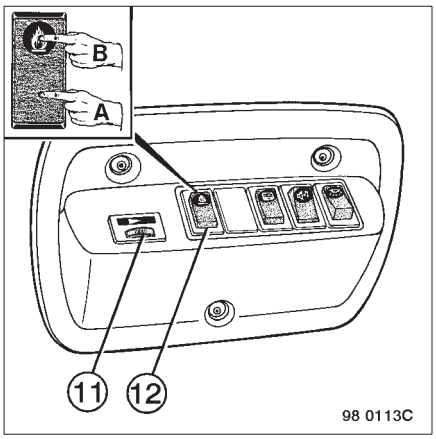
In this position, the master switch must be closed.

Engine running: Whatever the position of control (12), the heating function is provided by the engine. The independent heating system compensates, if necessary.

To improve heating efficiency, use the cab air recycling control.

Prior to starting
Make sure that all suction and delivery apertures are unobstructed.

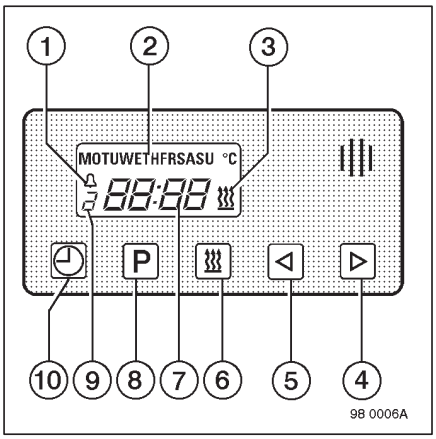
Regulating the temperature
Set the required temperature on ambient temperature thermostat (11).



D15 air conditioning

SETTING THE TIMER INTO SERVICE

When the heater is switched on, the control panel lights up.
If there is an electrical power cut at the timer, all the indications flash. Press button (10). **12: 00** is displayed and flashes for 5 seconds, then the day flashes for 5 seconds and the screen becomes dim.



Adjusting the time of day and the day
Press and hold down button (10). When the time of day display (7) flashes, press button (4) or (5) to set the time of day.
When the day display (2) flashes, press buttons (4–5) to set the day.

mo	**tu**	**we**	**th**	**fr**	**sa**	**su**
Mon	Tues	Wed	Thurs	Fri	Sat	Sun

Alarm clock function
Press button (8) four times. The “alarm clock” symbol (1) (a bell) appears. Press button (4) or (5) to make the time of day display flash. Adjust the time of day (7) using buttons (4 – 5). The time of day display (7) disappears after 5 seconds.
Choice of the day is not possible.
To activate:
Press button (8) four times. The “alarm clock” symbol (1) (a bell) appears.
The buzzer goes off at the preselected time and stops, either automatically after 5 minutes, or by pressing button (4) or (5).
To de–activate:
Press buttons (8) five times. The “alarm clock” symbol (1) (a bell) disappears.

Replacing bulb
A kit sold by RENAULT TRUCKS Spare Parts with directions for use serves for replacing the control panel bulb.

D16 air conditioning

HEATING FEATURE

Start–up without programming
Press button (6). Symbol (3) appears together with the heating period of time.
Press buttons (4–5) to alter the heating period of time. See “Heating operating time” paragraph to memorize the period of time.
The flame glow plug is supplied with voltage and the blower runs at low speed. After about 30 seconds, combustion commences. Check that the heater is operating correctly. The blower speed varies according to temperature.

Start–up with programming
3 time of day and day possibilities:

Selection 1: Press button (8) once. Warning display “1” (9) flashes. Press buttons (4–5) to select the time of day. Wait for the day display to flash and press buttons (4–5) to choose the day. The selection is memorized. Warning display “1” stays on. The time of day display (7) disappears after 10 seconds.
Selection 2: Press button (8) twice. Warning display “2” (9) flashes. Proceed as per selection 1 to adjust the time of day and the day.
Selection 3: Press button (8) three times. Warning display “3” (9) flashes. Proceed as per selection 1 to adjust the time of day and the day.

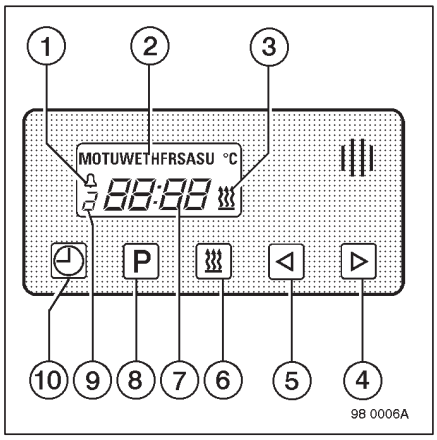
Heating operating time:
The timer has a heating duration limited to 120 minutes.
“Heating de–activated”: Press button (5) for 3 seconds: a heating duration display appears. As soon as it flashes, press buttons (4–5) to adjust the duration (adjustment from 10 to 120 minutes possible). The screen goes dim, the heating duration is memorized. This heating time is common to all heating selections.
“Heating activated”: You can alter the heating duration at any moment when it is activated. Press button (4) or (5) to alter the duration (adjustment from 1 to 120 minutes possible). Such forced duration does not modify the memorized duration.

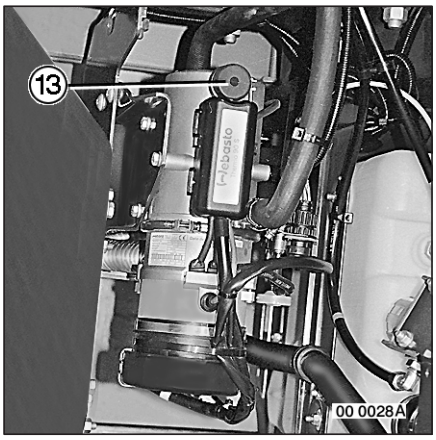
When the heating is started up again (forced or preselected mode), the memorized duration is displayed.

To activate a preselection:
Press button (8) once, twice or three times, depending on the chosen selection. The corresponding warning display (9) appears.
To de–activate a preselection:
If you have activated a preselection, press button (8) several times until the selections disappear.

Stopping
Press button (6). Warning light (3) disappears together with the preselection. The blower continues turning to cool the heater (retarded shutdown) and stops automatically.

D17 air conditioning





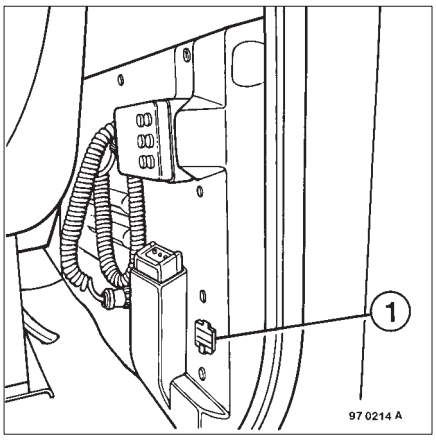
TROUBLESHOOTING

Heater will not start:
The control panel allows the heating function to be programmed, but the heater will not start.
Check fuse (F22). Actuate button (6) again.
The control panel no longer displays any information. Check fuse (F22).
Reprogram the timer and actuate button (6) again.
If the heater does not start after the start–up cycle, call in a qualified agent.
Heater stops when in operation:
Heater overheating:
Make sure the suction and discharge apertures are not obstructed.
Let the heater cool, then press the rubber finger to re–engage circuit–breaker (13). Restart the heater (warning symbol light (3) visible).
If it stops again, call in a qualified agent.
Flame goes out: Determine the cause.
– Fuel supply defect.
– Electrical power supply failure.
– Appliance or regulation control unit defect.
– Cooling circuit bleeding.
– Appliance or regulation control unit defect.
To restart, press button (6) and repeat the procedure (no more than three times).
If the heater stops again, call in a qualified agent.

IMPORTANT
If the vehicle is laid up for a prolonged period of time, remove fuse (F34).
It is forbidden to use the heater in closed premises or in places where inflammable or explosive vapours or accumulations of dust might be present.
Avoid exposing gas cartridges and spray canisters to the hot air flow.
If electric welding work is carried out on the vehicle, it is essential to disconnect the batteries to prevent causing irreparable damage to the electronic monitoring system.
Stop the heater before disengaging the master switch.

D18 air conditioning

Diagnostics socket (1)
The diagnostics socket serves to check the state of the independent add–on heater using the RENAULT TRUCKS tester.



E1 consumable products

LUBRICANTS

Adapt the viscosity of the oil used to the climatic conditions of the region in which you use your vehicle.
The use of lower grade oil calls for more frequent oil changes. Our dealer is at your disposal to advise you.

Engine oil filter cartridge
For your own safety, use authorized filters only, their filtration sill (15 microns) and filtration area (75 dm^2) have been designed to guarantee correct engine operation and long service life.

Diesel fuel
The sulphur content of the diesel fuel is taken into account by the oil wear calculation system and must be configured without fail (see page C22).
If the fixed engine oil change interval is chosen, it must be divided by two if the sulphur content is more than 0.3%.

Engine oil(s)

Renault Trucks Oils	RENAULT TRUCKS specifications
Maxima 15 W 40 / Maxima Eco 15 W 30	**RD**
Maxima RLD 15 W 40 / Maxima RLD Eco 10 W 30	**RLD**
Extensia 10 W 40 / Extensia Eco 5 W 30	**RXD**

RD: Specification for RENAULT TRUCKS lubricant to level ACEA 99–E3.

RLD: Specification for RENAULT TRUCKS lubricant to level ACEA 99–E5 and meeting the requirements of test MACK T9 according to specification MACK EO–M PLUS.

RXD: Specification for RENAULT TRUCKS lubricant to level ACEA 99–E4 and meeting the requirements of test MACK T9 according to specification MACK EO–M PLUS.

For the choice of lubricants according to operating temperatures, see pages E3–E4.

E2 consumable products

Gearbox oils ZF (+ INTARDER)

Renault Trucks Oil	API standards
Prexima 40	CF–4 / SF
Longevia 75 W 80	GL4*

75W80 (GL4)*: Synthetic oil conforming to ZF specifications: TE–ML 02 (ZFN 13010)

Drive axle oil P 1345 – PMR 2141

Renault Trucks Oils	API standards
Longevia P 80 W 90	GL5**
Longevia PXD 75 W 90	GL5**
HD Eco 80 W 90	GL5
HD 80 W 90	GL5

(GL5) High temperature extreme pressure oil conforming to oxidation test N° CEC L48A95 at 140° C.**

Drive axle oil P 1370

Renault Trucks Oils	API standards
Longevia P 80 W 90	GL5**
Longevia PXD 75 W 90	GL5**

(GL5) High temperature extreme pressure oil conforming to oxidation test N° CEC L48A95 at 140° C.**

For the choice of lubricants according to operating temperatures, see pages E3–E4.

E3 consumable products

INTERNATIONAL STANDARDS

Choice of lubricants according to operating temperature

Engine

Oil	Operating temperature
SAE 5 W 30	– 25°C to + 30°C
SAE 10 W 30	– 20°C to + 30°C
SAE 10 W 40	– 20°C to + 50°C
SAE 15 W 30	– 15°C to + 30°C
SAE 15 W 40	– 15°C to + 50°C

Gearbox ZF (+ INTARDER)

Power take–off

Oil	MIL–L	API	Operating temperature
SAE 40	2104 E	CE / SF	– 10°C to + 40°C
SAE 75 W 80	2105	GL4*	– 25°C to + 40°C

75W80 (GL4)*: Synthetic oil conforming to ZF specifications: TE–ML 02 (ZFN 13010)

Rear drive axle P 1345 – PMR 2141

Hub reduction units

Wheel hubs

Oil	MIL–L	API	Operating temperature
SAE 80 W 90	2105 D	GL5	– 25°C to + 30°C
SAE 80 W 90	2105 D	GL5**	– 25°C to > + 50°C
SAE 75 W 90	2105 D	GL5**	– 35°C to + 40°C

(GL5) High temperature extreme pressure oil conforming to oxidation test N° CEC L48A95 at 140° C.**

Rear drive axle P 1370

Wheel hubs

Oil	MIL–L	API	Operating temperature
SAE 80 W 90	2105 D	GL5**	– 25°C to > + 50°C
SAE 75 W 90	2105 D	GL5**	– 35°C to + 40°C

(GL5) High temperature extreme pressure oil conforming to oxidation test N° CEC L48A95 at 140° C.**

E4 consumable products

RENAULT TRUCKS recommend Renault Trucks Oil

Choice of lubricants according to operating temperature

Engine

Oil	Operating temperature
Maxima 15 W 40	– 15°C to + 50°C
Maxima ECO 15 W 30	– 15°C to + 30°C
Maxima RLD 15 W 40	– 15°C to + 50°C
Maxima RLD ECO 10 W 30	– 20°C to + 30°C
Extensia 10 W 40	– 20°C to + 50°C
Extensia ECO 5 W 30	– 25°C to + 30°C

Gearbox ZF (+ INTARDER)

Power take–off

Oil	Operating temperature
Prexima 40	– 10°C to + 40°C
Longevia 75W80	– 25°C to + 40°C

Rear drive axle P 1345 – PMR 2141

Wheel hubs

Hub reduction units

Oil	Operating temperature
HD 80 W 90	– 25°C to + 30°C
HD ECO 80 W 90	– 25°C to + 30°C
Longevia P 80 W 90	– 25°C to + 50°C
Longevia PXD 75 W 90	– 35°C to + 40°C

Rear drive axle P 1370

Wheel hubs

Oil	Operating temperature
Longevia P 80 W 90	– 25°C to + 50°C
Longevia PDX 75 W 90	– 35°C to + 40°C

E5 consumable products

Hydraulic system(s)

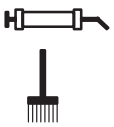
Circuit	Renault Trucks Oils	Standards
Steering	STARMATIC 3	ATF DEXRON III
Clutch	FLUID FE 4	SAE J 1703 F / DOT4
Cab tilting T>–15°C	STARMATIC 3	ATF DEXRON III
Cab tilting T<–15°C	ST 15M	HV ISO 15
Cab tilting T<–37°C	HGF 26	HV ISO 15
Engine coolant	Ultracooling Plus	RENAULT Type D*
Engine cooling system anti–freeze	Maxigel Plus	RENAULT Type D*

* : Organic

Grease

…… RAE …… NLGI 2 lithium soap grease
EP additive

…… GC 000 …… For central lubrication system



Greasing

2 G	Two grease nipples on left	Location on chassis
1 D	One grease nipple on right	

E6 consumable products

CENTRALIZED LUBRICATION SYSTEM

OPERATING PRINCIPLE

When the ignition switch is ON, timer (1) sends a regular power pulse to the solenoid valve on pump (4), to warning light (3) on the instrument panel and to the lubrication warning light located on the timer.
The solenoid valve opens compressed air circuit (6) from pump (4). The pump injects grease into primary circuit (5). Once the pressure at pressure controller (10) (located at the end of the primary circuit line) reaches 15 bars, the timer receives an electrical signal and this turns ON the pressure light on the timer ; this signal cuts off the power supply to the solenoid valve on pump (4) after 28 seconds.
The warning lights go OFF.

NOTE

The lubrication system will not operate correctly below a pressure of 6 bars.

REPAIRS TO THE LUBRICATION CIRCUIT

Whenever a component is replaced (i.e. pump, distributors, primary grease line, pressure controller) or if the lubrication circuit runs out of grease, the system must be bled. To bleed, press the manual button on the timer down for at least 10 seconds and open bleed screw (11) at the end of the primary circuit.
The bleeding cycle stops automatically after 3' 45''. Pressing the button again stops the cycle immediately. Do not forget to reclose bleed screw (11).

NOTE

The distributors are factory pre–set by RENAULT TRUCKS If settings need to be altered, consult the local RENAULT TRUCKS or MECAFLUID representative.
We strongly recommend using the original settings established by the vehicle manufacturer as these correspond to the grease requirements of the moving parts concerned.
For major technical interventions, use the control kit **RVI 9961** and the troubleshooting chart supplied.

> ***WARNING***
> *Warning light on the instrument panel must never stay ON or OFF continuously. In both these cases, the system should be examined by qualified personnel.*

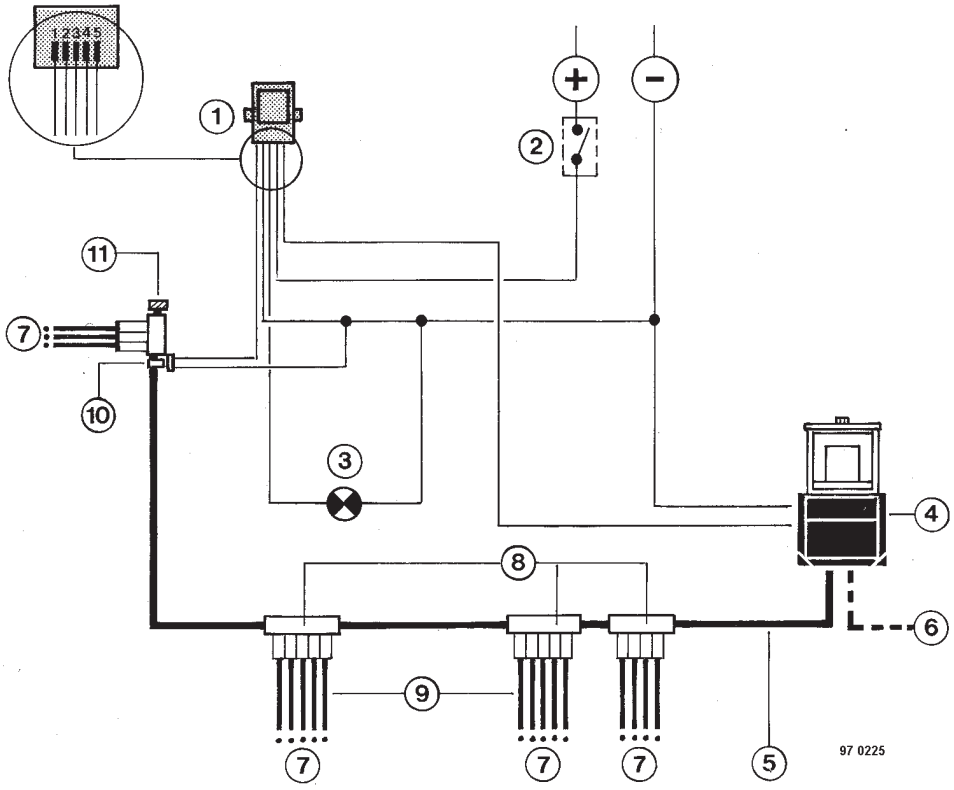
BASIC LAYOUT

1 – Control timer
2 – Vehicle switch on instrument panel
3 – Operating warning light on instrument panel
4 – Compact air pump comprising (pump, solenoid valve, tank)
5 – Primary grease line
6 – Compressed air supply (pressure over 8 bars)
7 – Lubrication points
8 – Metering distributor
9 – Secondary line
10 – Pressure controller
11 – Bleed screw

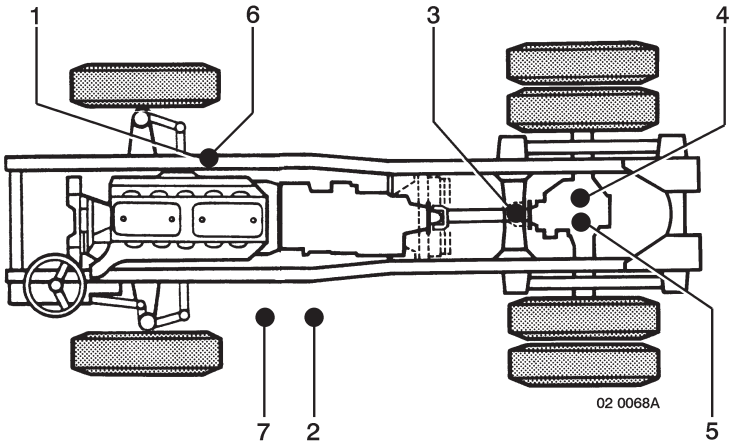
WARNING

The centralized lubrication system does not provide for initial lubrication of all the mechanical components and especially the fifth wheel.

E7 consumable products



E8 consumable products

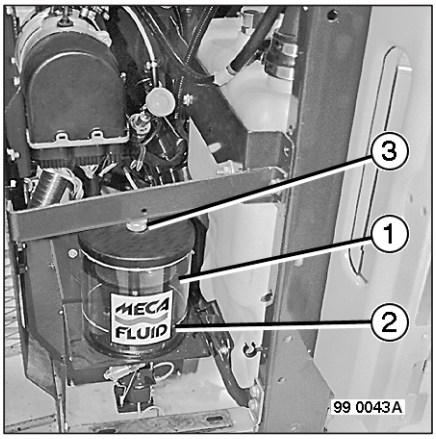


CENTRALIZED LUBRICATION DIAGRAM (tractor 4x2)
1 – 4 port distributor (RH & LH swivel pins)
2 – Lubrication pump
3 – Distributor with 2x4 outputs (fifth wheel lubrication pre–arrangement)
4 – Distributor with 4 outputs (RH brake cam and bearings)
5 – Distributor with 4 outputs (LH brake cam and bearings)
6 – Pressure controller
7 – Timer box (behind driver's seat)

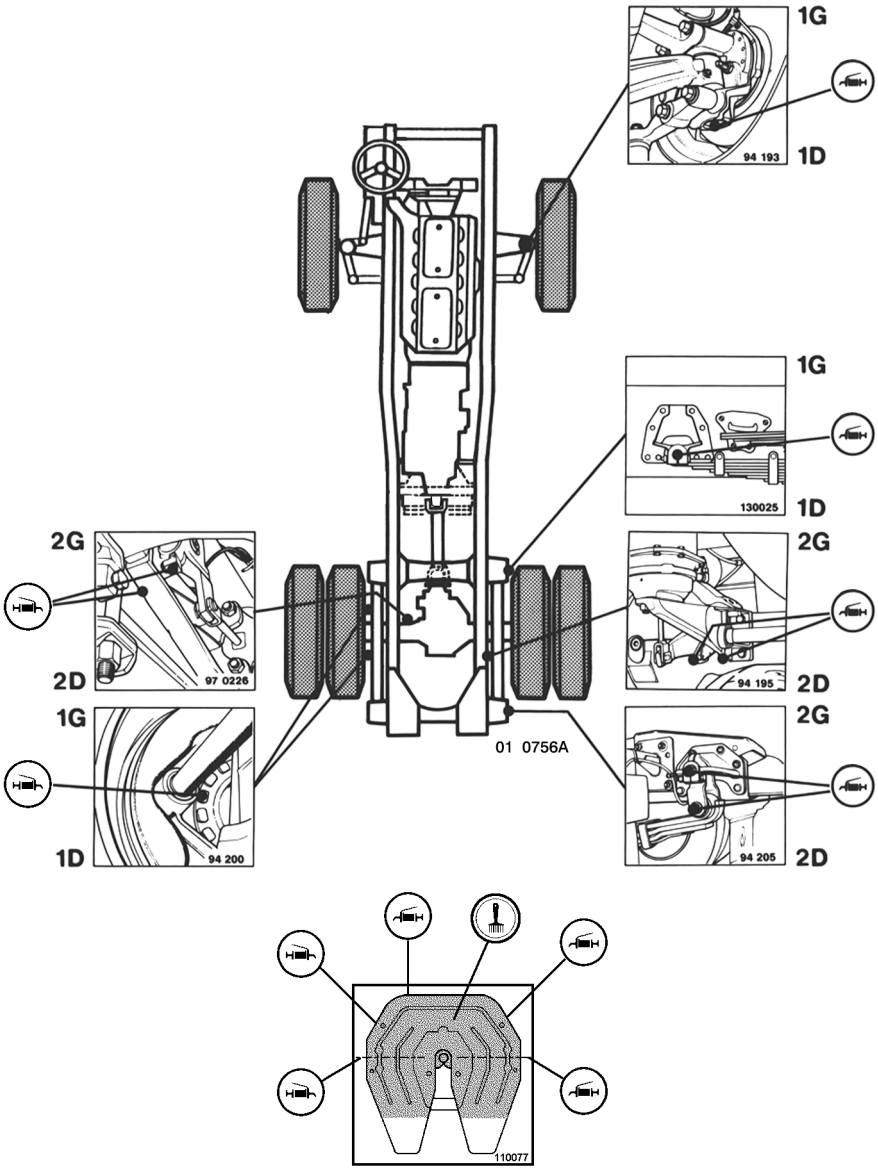
LUBRICATION PUMP
This is accessed either by tilting the cab or removing the right hand side step.

Filling
Remove cap (3) and fit the quick–release coupling (RENAULT TRUCKS part n° 50 0026 2308) to the filling pump.
Fill the tank with grease up to the "max" level mark (1). Only use GC 000 grease (Huiles Renault Diesel).

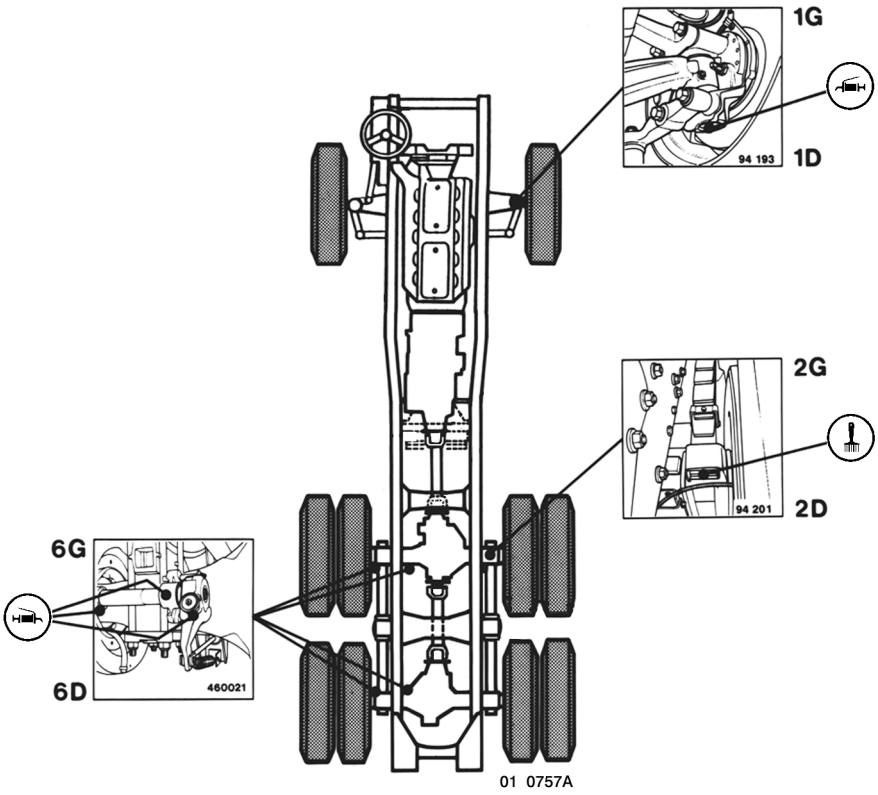
IMPORTANT
Never allow the grease level to drop below the "min" level mark (2). Should this occur accidentally, bleed the circuit.

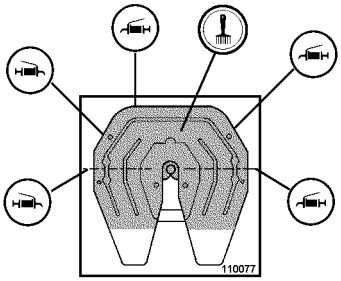


E9 consumable products

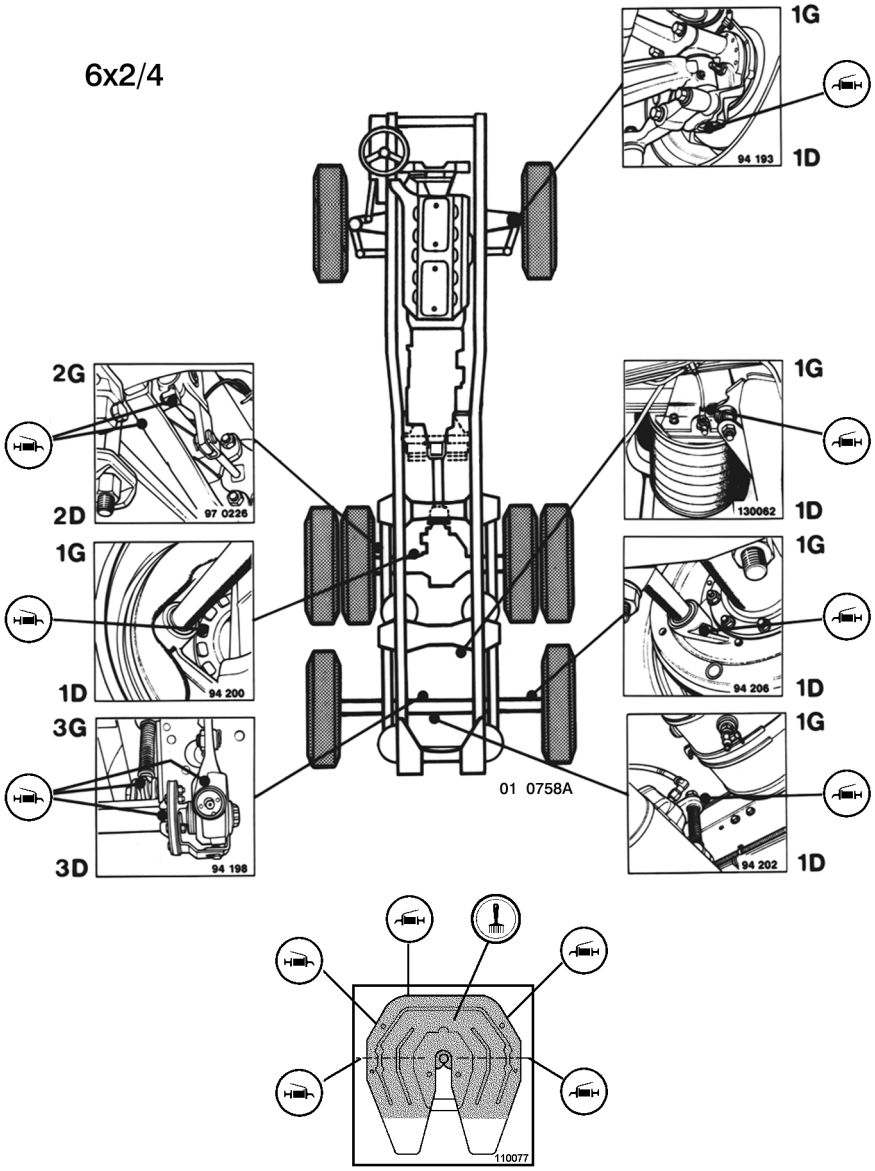


E10 consumable products

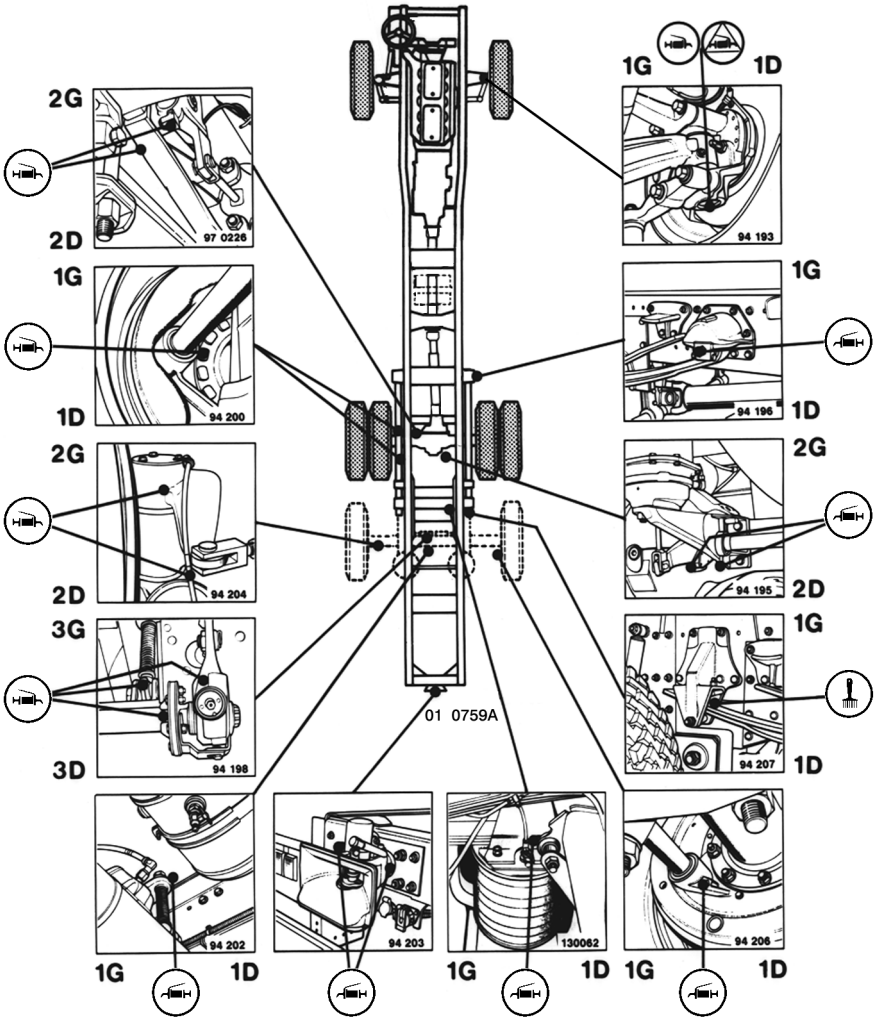




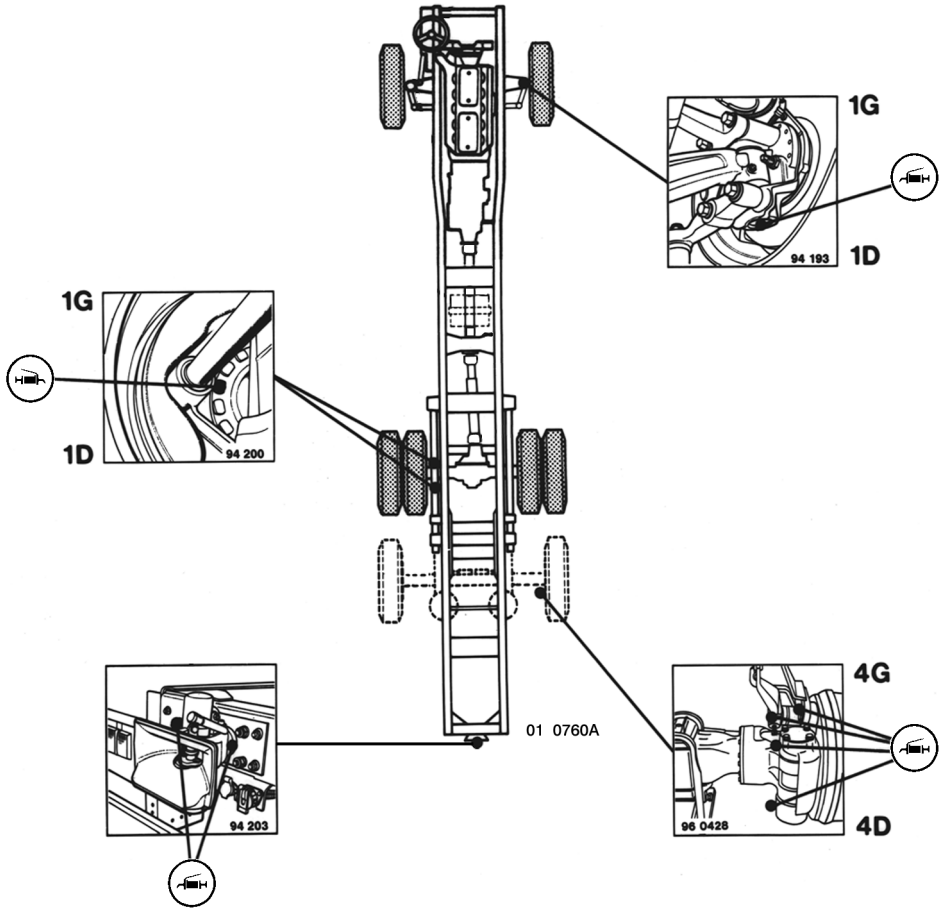
E11 consumable products



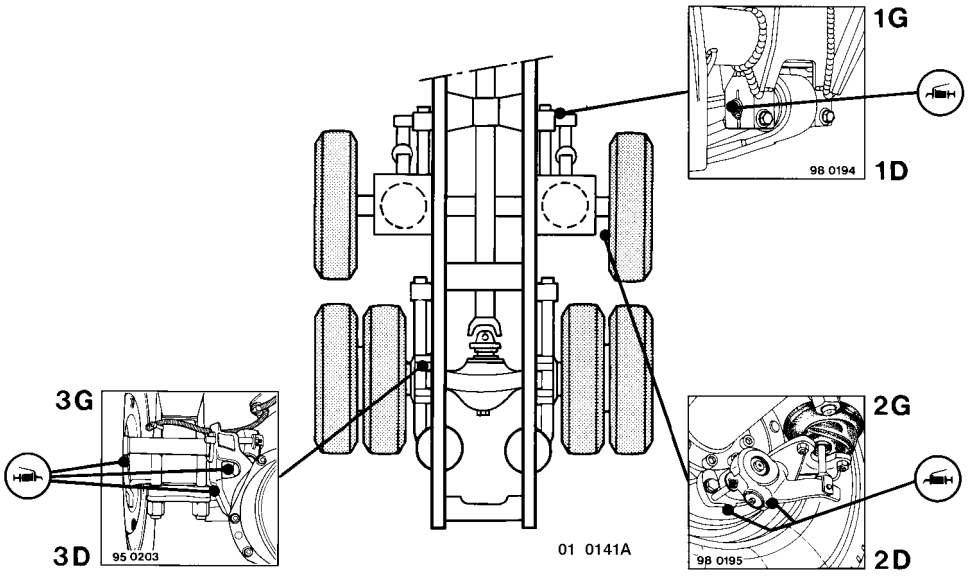
E12 consumable products



E13 consumable products



E14 consumable products



F1 servicing

WARRANTY

Servicing is the prime guarantee
Recommended inspection and servicing intervals are given as a guide and are intended for vehicles operating under normal road conditions. The tougher the operating conditions, the shorter the service and inspection intervals. In some cases it will be necessary to consider servicing and inspection intervals in terms of hours rather than mileage. The Manufacturer cannot be held responsible for damage caused by driving errors, or failure to comply with the recommendations made in this handbook, particularly regarding the use of lubricants that are not in conformity with the performance specifications given.

First service: see recommendations pages F5 → F8.
This is obligatory and **at the customer's expense**.

NOTE
The engine lubrication system is to be topped up with **E3 (RD)** grade oil until the first service is performed. Subsequently, the choice of oil to be used is defined by the customer according to use of the vehicle.

Implementation of the above checks are essential for the validity of vehicle warranty. To obtain these inspections, consult your normal dealer and give him the warranty certificate you received when the vehicle was supplied.

Lubrication
The manufacturer specifies the performance levels of the lubricants required for the correct operation of the vehicles supplied, and also defines the lubrication intervals.

These recommendations must be strictly followed.
Their observance will increase the service life of the equipment and components. Failure to comply can invalidate the warranty offered.

IMPORTANT
Draining major units: always drain oils on level ground with the oils hot to aid the flow. When refitting the drain plugs, fit new gaskets.

Checking the oil levels (all major units). Oil levels must always be checked on flat ground and conditions should always be identical (i.e. vehicle empty or laden). Wait for 5 minutes after the vehicle has stopped before carrying out the check.

NOTE
Engine oil level: for a more accurate reading, the oil level should be checked when the engine is cold, after prolonged shutdown (2 hours minimum), in the morning, prior to start–up, for example:
– Vehicle with mechanical suspension: check the level with the vehicle empty.
– Vehicle with air suspension: check the level with the suspension in the "road" position.

Road tests
After the first service, the dealer should make sure that the user clearly understands all the driving and servicing instructions in the handbook.

F2 servicing

SERVICING FREQUENCIES

Your vehicle is equipped with a system for optimizing servicing intervals in relation to its use. The maintenance alert warning pictogram (G9) is displayed on the instrument panel to warn the driver that the term for a maintenance operation is close or due, based on the works parameter definitions.

If the pictogram is displayed, with the vehicle at a standstill, consult the maintenance menu on the display (see page C20–C23) to visualize the term and the operation(s) concerned.

The display is shown in kilometres, date or engine operating time depending on which term is closest.

Table of maintenance features consultable on the dashboard display in relation to parameter definitions

Component	Fixed	Predictive	km	Date	Time
Engine oil	X*	X	X		
Gearbox oil	X		X	X	X
Drive axle oil	X		X	X	X
Coolant	X		X	X	X
Brake linings	X	X	X	X	X
Drive belts	X		X	X	X
Air filter	X		X	X	X
Air dryer	X		X	X	X
Regulatory test	X			X	
Tachograph test	X			X	

x* : Fixed up to M0, then predictive.

New vehicle: only engine and air dryer maintenance features are active. At the time of the first maintenance operations (M0), it is possible to initialize the other components, as well as the type of maintenance best suited to the use of your vehicle (predictive or fixed), using the INFOMAX software or the RENAULT TRUCKS DIAGNOSTICA tool. To do this, consult a dealer.

Predictive maintenance: means that the terms are worked out by the onboard electronic boxes and vary according to vehicle use.

Fixed maintenance: means that the terms are predetermined and invariable.

F3 servicing

First oil change (first term reached)

UNIT	KM	
	All uses	
Engine “EUP” MIDR 06.24.65	30 000 or 6 months (M0)	
Drive axle P 1345 P 1370 PMR 2141 Wheel hubs or reduction gears	30 000 or 6 months (M0)	
	Harsh use	**Standard use**
ZF 16 S 181 16 S 221 ASTRONIC + INTARDER gearbox PTO	200 000 or 2 years	300 000 or 2 years

IMPORTANT
1 hour’s operation = 50 km.
Every 10 000 km: Grease the fifth wheel locking mechanism and the towing hook.

F4 servicing

Maximum intervals after the first oil change (first term reached)

UNIT	RENAULT TRUCKS OILS	KM	
		All uses	
		Predictive maintenance	Fixed maintenance
Engine "EUP" MIDR 06.24.65	Maxima Eco Maxima	Term calculated according to use, oil grade, fuel sulphur rate	40 000 or 2 years
	Maxima RLD Eco Maxima RLD		
	Extensia Eco Extensia		

UNIT	RENAULT TRUCKS OILS	KM	
		Fixed maintenance	
		Harsh use	Standard use
ZF 16 S 181 16 S 221 + INTARDER gearbox PTO	Prexima 40	90 000 or 2 years	160 000 or 2 years
	Longevia 75W80	200 000 or 2 years	300 000 or 2 years
ASTRONIC + INTARDER gearbox PTO	Prexima 40	90 000 or 1 year	160 000 or 2 years
	Longevia 75W80	200 000 or 2 years	300 000 or 2 years
Drive axle P 1345 PMR 2141	HD 80W90 HD Eco 80W90	80 000 or 2 years	120 000 or 2 years
	Longevia P 80W90	120 000 or 2 years	240 000 or 2 years
	Longevia PXD 75W90	240 000 or 2 years	400 000 or 3 years
Drive axle P 1370 Wheel hubs	Longevia P 80W90	120 000 or 2 years	240 000 or 2 years
	Longevia PXD 75W90	240 000 or 2 years	400 000 or 3 years

IMPORTANT
1 hour's operation = 50 km.
Every 10 000 km: Grease the fifth wheel locking mechanism and the towing hook.

F5 servicing

M0: First maintenance (at time of first engine oil change)
M1: With each engine oil change (as from the second engine oil change)
M3: Every year
MP: Special maintenance
A : Every 800 000 km
B : Every 3 years or 400 000 km
C : Every year or 120 000 km
D : At time of gearbox oil change
E : Every 2 years or 200 000 km
F : Every 2 years or 120 000 km

SERVICE	M0	M1	M3	MP
Drain and refill:				
Gearbox (**see page F3→F4**)				X
Hydraulic servo clutch system			X	
Cooling system and replace pressure–vacuum cap				B
Engine	X	X		
Rear drive axle(s) (**see page F3→F4)**	X			X
Suspension swivels (see page F28)	X	X		
Power take–off		X		
Hub reduction units (**see page F3→F4**)	X			X
Fuel tank (drain water)			X	
Carry out the following:				
Replace preheat plugs(BERU)				C
Replace air dryer cartridge				F
Renew power steering reservoir filter element	X		X	
Replace dry air filter cartridge and clean bowl			X	
Renew fuel filter element(s)	X	X		
Replace engine oil filter cartridge(s)	X	X		
Replace engine centrifugal oil filter cartridge	X	X		
Replace drive belts				E
Replace gearbox oil filter (+Intarder)				D
Renew chilling fluid and dehydrator filter				B
Replace water pump drive belt tensioner roller				A

F6 servicing

M0: First maintenance (at time of first engine oil change)
M1: With each engine oil change (as from the second engine oil change)
M3: Every year
MP: Special maintenance
F : Every 160 / 180 / 200 000 km

SERVICE	M0	M1	M3	MP
Lubricate all points without grease nipples: door hinges, locks, striker plates, cab lock, etc.			X	
Grease all points	X	X		
Drain fuel prefilter	X	X		
Drain air tanks	X	X		
Clean:				
Air conditioner condenser by blowing low pressure compressed air (or hot water) from the engine side of the condenser **(Carry out this operation early in spring or summer)**			X	
Fuel prefilter(s) sediment bowl and filter element	X	X		
Air conditioning filter		X		
Radiator mosquito net by blowing through with low pressure compressed air (or hot water) **(Carry out this operation early in spring and summer)**			X	
Air prefilter	X	X		
Radiator(s) by blowing low pressure compressed air (or hot water) from the engine side of the radiator **(Carry out this operation early in spring or summer)**			X	
Electric retarder			X	
Breathers				F
Check:				
Batteries (attachment), battery isolation switch (operation)		X		
Accelerator control, maximum engine speed		X		
Gearbox for leaks (huile et air)	X	X		
Cab tilting assistance system for leaks	X	X		
Steering hydraulic assistance system for leaks	X	X		
Air supply system for leaks (position of hoses, tightness of clamps...)	X	X		
Major units for leaks • Engine (oil, coolant, fuel)	X	X		

F7 servicing

M0: First maintenance (at time of first engine oil change)
M1: With each engine oil change (as from the second engine oil change)
M3: Every year
MP: Special maintenance

SERVICE	M0	M1	M3	MP
Check:				
Heater unit(s) for leaks and operation		X		
Clutch release hydraulic system for leaks	X	X		
Lift–up axle hub for leaks	X	X		
Power take–off for leaks	X	X		
Drive axle(s) / hub reduction units (oil) for leaks	X	X		
Condition of wiring harnesses, supports, pipes		X		
Condition of brakes • Condition of brake pads and discs	X	X		
Condition of steering components (hub/swivel play)		X		
Condition of suspension springs, pads and front and rear anti–roll bars		X		
Condition of ball–joints and rubber protective bellows seals			X	
Condition and security of fastening of brakes, steering pipes, flexible pipes...			X	
Condition and security of fastening of engine cooling system preheater wiring harnesses and connections		X		
Condition and security of engine, transmission and radiator rubber sandwich mountings			X	
Condition and tension of drive belts	X	X		
Condition and wear of tyres, spare wheel and security of attachment		X		
General condition of bodywork (doors, locks, remote controls)		X		
Condition of engine cooling system preheater connector and gasket		X		
Secure mounting of cab (stability, air suspension)		X		
Attachment and condition of shock absorbers		X		
Operation of dashboard instrumentation (warning lights, pressure gauges, heating controls)		X		
Operation of steering		X		
Operation of signalling devices (lighting, headlamps, marker lights, stop lights, reversing lights, overhead lights, windscreen wiper, horns, etc.)		X		

F8 servicing

M0: First maintenance (at time of first engine oil change)
M1: With each engine oil change (as from the second engine oil change)
M3: Every year
MP: Special maintenance
G : Every 240,000 km

SERVICE	M0	M1	M3	MP
Check:				
Operation of towing hook locking and safety system (rigid vehicle)		X		
Operation of 5th wheel attachment and locking system (tractor)		X		
Operation of warning lights	X			
Air filter inlet grille (clean if necessary)			X	
Propeller shaft(s) play		X		
End play of electric retarder bearings and air gap			X	
Clutch master cylinder push–rod clearance, stroke of clutch servo slave cylinder			X	
Valve clearances				G
Adjust the Jake engine–brake				G
Clearance between fifth wheel coupling and semi–trailer (**see page F37**)		X		
Cooling system degree of protection			X	
Circuits for leaks (fuel, braking, auxiliary equipment, steering, cooling)	X	X		
Atmospheric venting of electronic suspension pressure sensor connectors (6x2)		X		
Atmospheric venting of fuel tanks		X		
Positioning of control arm and running clearance of automatic brake adjustment levers	X	X	X	
Tyre and spare wheel inflation pressures	X			
External cleanliness of radiator cores		X		
Braking reaction and directional stability		X		
Engine maximum no–load speed				G
Wheel nut tightness	X			
Security of prop shaft universal joint nuts and bolts			X	
Air suspension and remote control		X		
All levels	X	X	X	
Visually check brake lining wear	X	X		

ENGINE

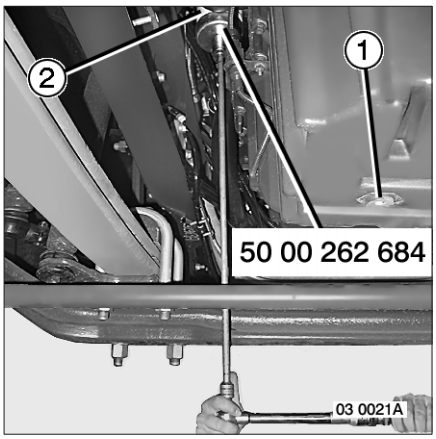
Drain plug (1).

Filler plug (6).

Check the oil level with dipstick (7).

To gain access to the underside of the engine, remove the soundproofing screen.
After completing the work, refit the soundproofing screen in its correct position.

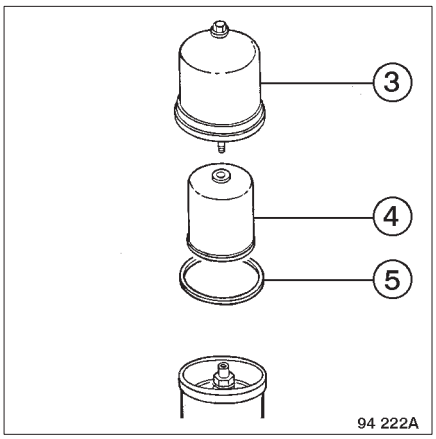
Soundproofing screen(s)
Any damage to the interior protective film of the screen requires replacement of the film.
See that no flammable products are applied to the screen protective films. The screens are to be cleaned using a cloth. If necessary, use soapy water (any other product is strictly forbidden).



OIL FILTERS

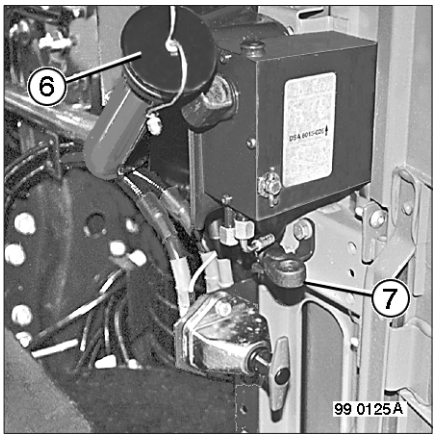
Oil filter with throw–away cartridge(s)
To replace, unscrew the cartridge(s) (2).
When fitting:
Fill the cartridge(s) (2) with oil.
Oil the seals.
Tighten the cartridge(s) by hand until contact is made with the filter head.

IMPORTANT
– Tighten to a torque of 25^{+5} Nm
– Use tool part N° 5000262684
– Use a torque wrench.



Run the engine and check for leaks.
In the event of leakage, remove the cartridge, inspect the joint face and repeat the fitting operations

Centrifugal filter
Remove bowl (3). Replace element (4). Clean bowl (3) and replace seal (5).

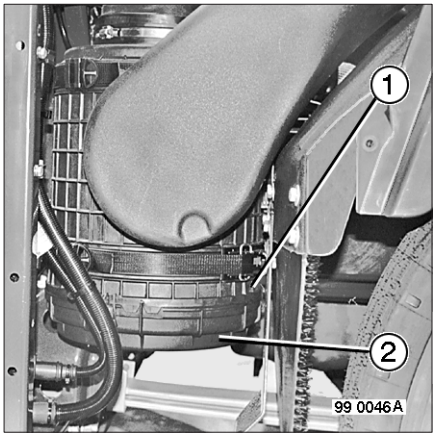


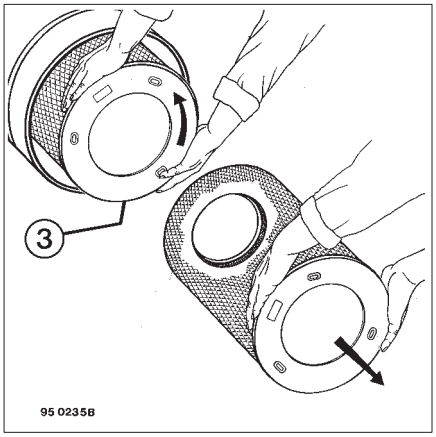
AIR FILTERS

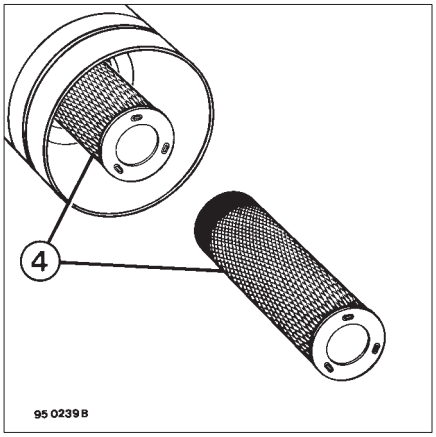
Air filter clogging indicator
Check regularly.
If warning light (G15) comes on, it means that the air filter cartridge is clogged. Replace the cartridge. At the scheduled intervals, check operation of the clogging indicator by blanking off the filter inlet (with the engine running at 1500 rpm.)

Dry element air filter
When the clogging indicator gives the alert, or once a year, replace primary element (3).
Undo clips (1). Withdraw cover (2).
Remove primary element (3). Turn and pull out the element.

Depending on the assembly, the filter is fitted with a safety element (4). Replace safety element (4) every three primary element changes (3).

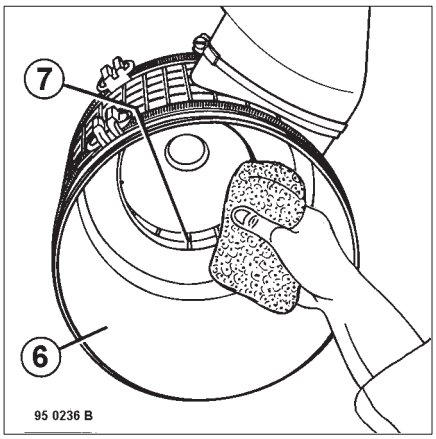


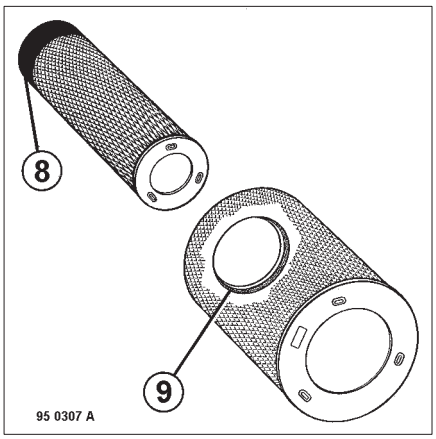


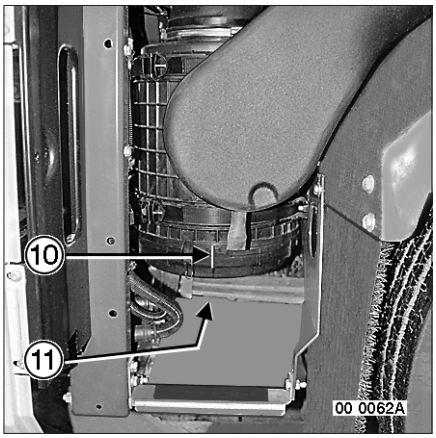


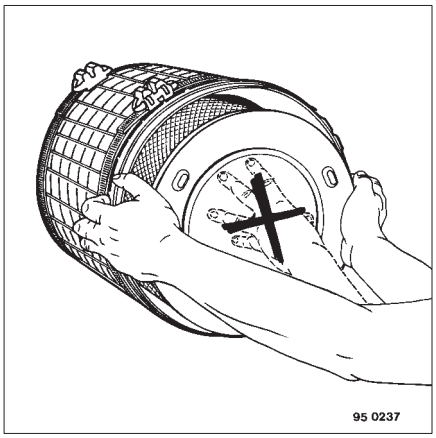
F11 servicing

Prior to installing the element(s), clean and carefully inspect the bowl (6) and the sealing zone (7). The sealing zone should not be damaged.
New elements should be free from signs of knocks and distortion. Inspect sealing zones (8–9) in particular.
Upon assembly, ensure the elements are correctly positioned. Exert firm pressure on the ends of the elements.
Before clipping the cover (2) shut, check it is clean and ensure that the drain holes (11) are not obstructed. Position the cover according to pointer (10).







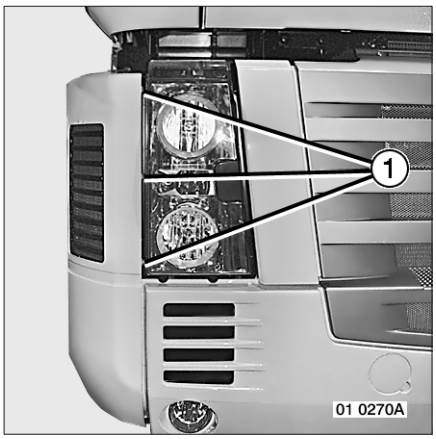


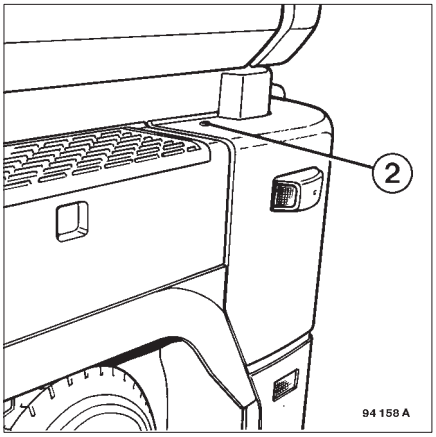
Air filter inlet grille

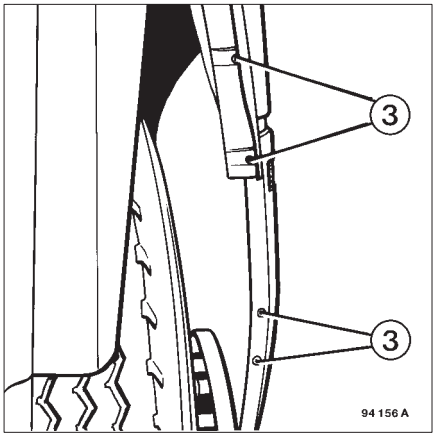
At the scheduled intervals, remove screws (1–2–3), move the angle panel aside, unplug connector (4) and remove the panel.

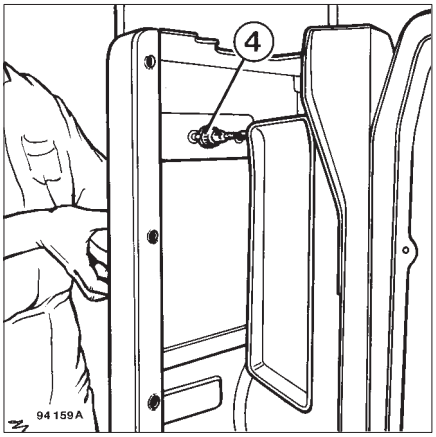
Blow through grille (5) with an air jet, maximum pressure 7 bars, from the inside towards the outside.

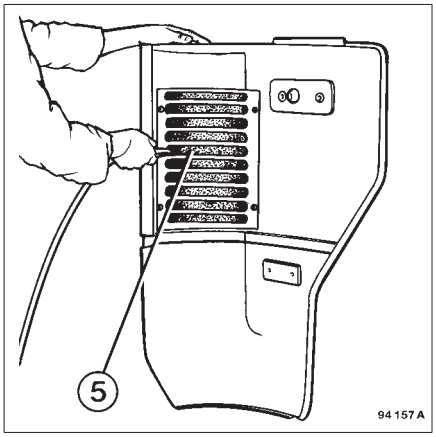
After cleaning, refit the panel and do not forget to plug in connector (4) again.



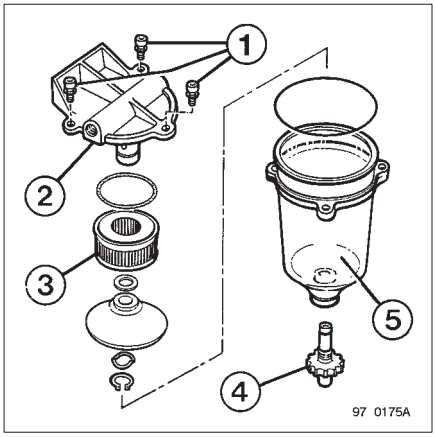








FUEL SYSTEM



Fuel tank
At the scheduled intervals, it is recommended that any impurities which may have been deposited in the tank are cleaned out. This is achieved by removing the drain plug in the bottom of the tank, allowing the contaminated fuel to drain off, and then replacing the plug.

Fuel prefilter

Depending on your vehicle's equipment

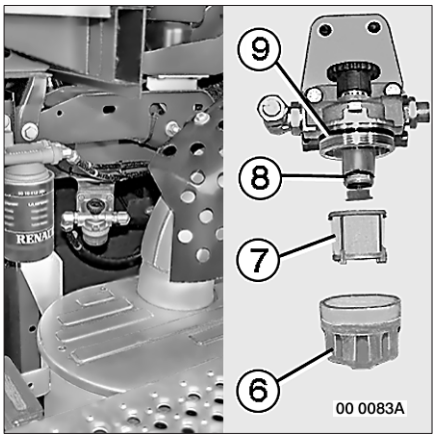
Draining the sediment bowl
Remove bleed screw (4).

Cleaning
After draining bowl (5), remove it by withdrawing screws (1). Clean element (3) and blow it through with compressed air. Replace the element if necessary. Only use diesel fuel to clean out bowl (5).
On reassembly, check the condition and correct positioning of seals. Tighten screws (1) on filter head (2) moderately.

IMPORTANT
Fuel filter(s)
Your vehicle is equipped with a high–performance fuel–injection system. It is vital to use fuel filters provided for that purpose.
The use of poorly adaptation filtration can be quite harmful.
Since the "EUP" system is more sensitive to pollution than in–line pump systems, risks of damage are higher. Hence, observance of assembly of original parts guaranteed by the manufacturer.

Fuel prefilter

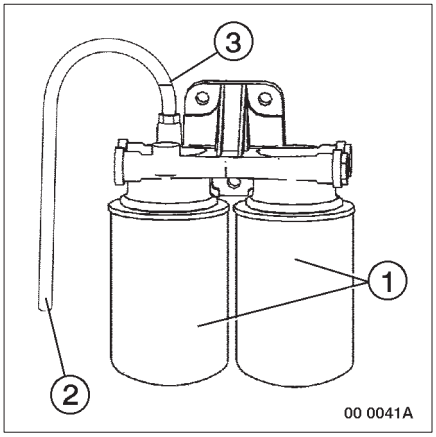
Remove the sediment bowl (6). Withdraw the filter (7). Clean with diesel fuel and reassemble the unit. Make sure seal (8–9) is in good condition upon reassembly.

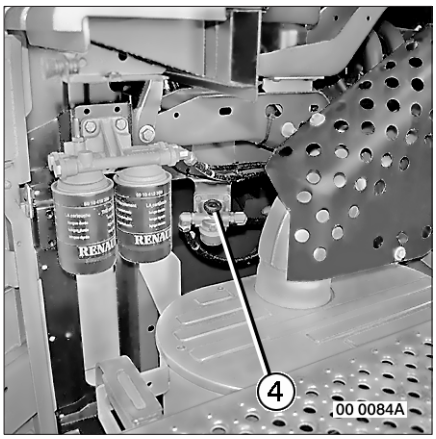


Replacing filter cartridges
Unscrew cartridges (1). Upon assembly, make sure the seals are quite clean, smear them with diesel fuel and tighten the cartridges by hand.

Bleeding the circuit
Bleeding of air from a fuel circuit is required after:
– prolonged engine shut–down.
– complete draining of fuel tank.
– cleaning or replacement of filter(s).
– dismantling of a pipe union or leak at a union.

Bleeding the fuel system
Place a pipe (2) in position. Open the bleed screw (3). Unscrew the feed pump plunger (4), then operate it until fuel flows without air bubbles.
Close the bleed screw (3). Pump until the plunger (4) becomes hard.
Screw up the pump plunger (4) and withdraw the pipe (2).





Fuel preheater
This equipment serves to lower the filterability limit threshold temperature of the diesel fuel. The filterability limit temperature is different according to the type of diesel fuel used.

WARNING
If your vehicle is equipped with a fuel preheater, the incorporation of additives (paraffin or kerosene) is strictly forbidden.

Injectors
Opening pressure: 260 bar
If you replace an injector nozzle or holder assembly, it is essential that you use one of the same type.

Injector pipes
If an injector pipe has to be changed, replace it with a 'genuine spare part' only.
Call upon your dealer or an approved agent.

CYLINDER HEAD(S)

Valve rocker clearances

(Engine cold)
Inlet: 0,40 mm
Exhaust: 0,60 mm

"J" engine–brake clearance value 0,43 ± 0,05 mm
Call upon a dealer or an approved agent for this operation.

F15 servicing

Protecting diesel fuel against freezing

Different makes of diesel fuel are commercially available. The quality of the diesel fuel differs according to the period of use (winter or summer). The filterability limit temperature (FLT) varies according to the type of diesel fuel used. At a temperature close to the filterability threshold, paraffin crystals begin to form in diesel fuel and these block the fuel lines and filters.
So as to improve the properties of the diesel fuel when cold, it is possible to incorporate an additive: paraffin or kerosene, or the special product sold by our network Spare Parts warehouses.
The use of products lowering the viscosity of the diesel fuel is strictly forbidden outside the winter period.

– For protection down to **– 15° C**: use diesel fuel Class "**E**" (**TLF – 15 °C**)
– For protection down to **– 20° C**: use diesel fuel Class "**E**" + 20 % kerosene (or paraffin).
– For protection as from **– 25 °C**: use diesel fuel Class "**ARTIC 4**" (**TLF – 44 °C**)

NOTE
a) For maximum efficiency, the additives should be mixed with the fuel at a temperature above 0°C.
b) In France, do not exceed 30 % paraffin or kerosene (Customs regulations).
c) In other countries, always limit paraffin or kerosene addition to 50 % maximum (check national regulations).
d) However, we recommend that at all times the percentage be kept to the minimum necessary and that paraffin be used in preference to petrol.
e) On the other hand, the use of the RENAULT TRUCKS additive is not subject to any legal restriction.

IMPORTANT
Use only commercially available diesel fuel for automotive vehicles (to standard EN 590).
A maximum rate of 5% "bio–diesel" (with rapeseed oil base) is authorized on condition that it meets the requirements of standard EN 590.
You are advised against using diesel fuel containing additives.
The use of diesel fuel containing additives might invalidate the vehicle warranty.
Storage of diesel fuel in drums or jerry cans might allow the ingress of impurities capable of causing fuel supply system malfunction. In such case, it is necessary to filter the diesel fuel before pouring it into the fuel tank.
The use of "Aquazole"** (emulsified fuel) **is strictly forbidden.

COOLING SYSTEM "MIDR 06 24 65"

Protecting the system throughout the year
This vehicle is supplied with Renault Trucks Oils "ULTRACOOLING PLUS" which is in conformity with RENAULT TRUCKS specifications. Besides its antifreeze properties, this fluid ensures protection of the cooling system (anticorrosion, scale inhibition, etc.). It gives frost protection in temperatures down to –25°C.
For temperatures below this, it is essential to replace part of the cooling fluid with undiluted "MAXIGEL PLUS".
. + 5 % of "MAXIGEL PLUS" for circuit protection down to –33°C.
. + 10 % of "MAXIGEL PLUS" for circuit protection down to –40°C.

NOTE
Coolant can remain in the cooling circuit for 3 years or 400,000 kilometres.
In all countries, whatever the climate or the season, only use "ULTRACOOLING PLUS" coolant.
Depending on the destination, the vehicle is delivered with cooling system filled with a "ULTRACOOLING PLUS –35" (cold climate) coolant mix. This protection is indicated on a label affixed to the vehicle.

CAUTION
Never mix the recommended coolant with other anti–freezes or coolants. It is strictly forbidden to use additives.

Radiator(s): external cleaning
Once a year, preferably at the beginning of spring or summer, or if the water temperature "DANGER" warning light comes on, clean the radiator tube bank by blowing compressed air or a high pressure hot water/detergent mixture through the radiator core from the engine side.

IMPORTANT
Never use greasy products such as kerosene, paraffin, diesel fuel, etc.

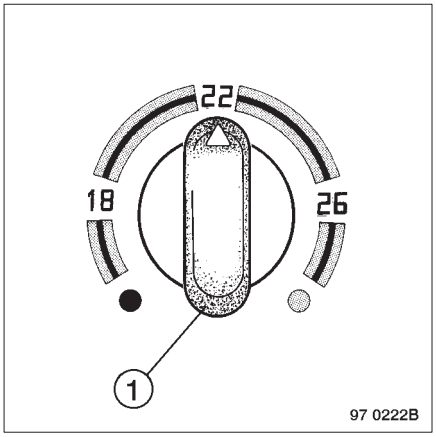
Radiator mosquito net
If your vehicle is equipped with this accessory, see page F20 for servicing.

F17 servicing

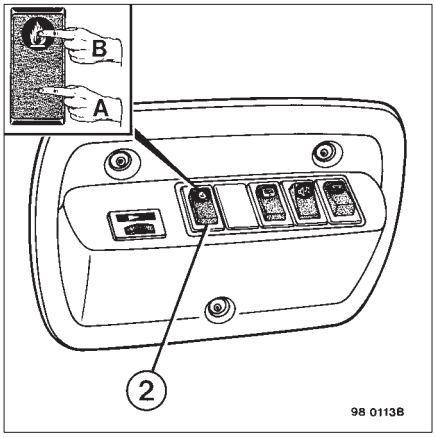
Depending on your vehicle's equipment

Draining the system

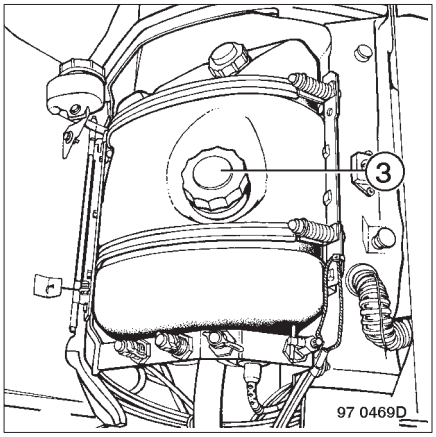
Open the fan–coil heater valve (1) (max. hot).
Engage the master switch.



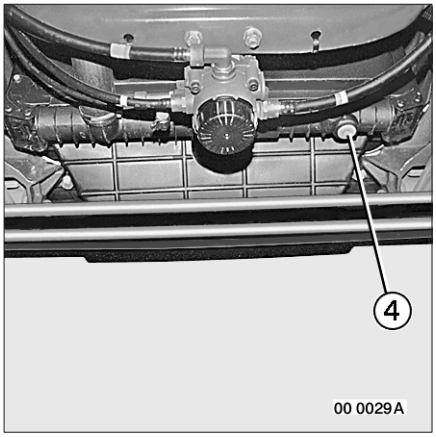
Move control (2) to (A).



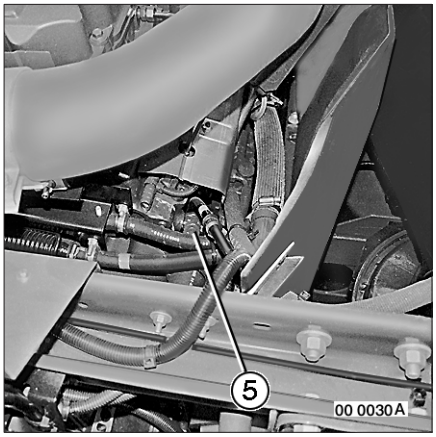
Remove filler cap (3).



Remove radiator drain plug (4).

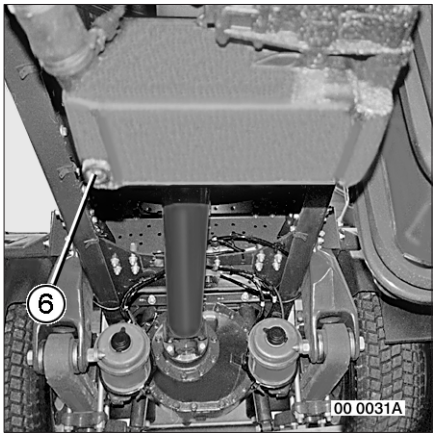


Remove engine block drain plug (5).



Remove plug(s) (6) (with ZF INTARDER retarder).
Plug tightening torque: 36 Nm.

Unclip the two pipes and open the bleed screws (7).



F19 servicing

Depending on your vehicle's equipment

Filling the system

Check that the drain plugs are quite tight.

Initially fill through the filler (1), pouring the coolant slowly to enable all the air to escape from the system.

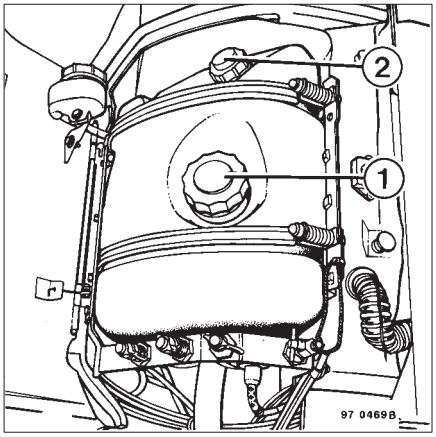
Close the bleed screws (7) as soon as the coolant flows through the bleed screws.

Top up with coolant until flush with the port.

Refit filler cap (1).

Start up the engine.

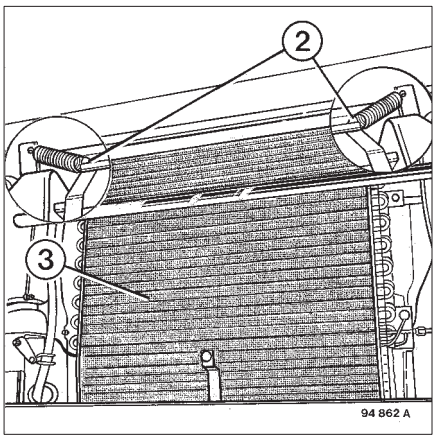
Run the engine at a speed of 1200 rpm for 3 minutes, then stop it.
Carefully remove the cap (1).
Check the coolant level and top up, if necessary.
Put back the cap (1).
Run the engine until it reaches its operating temperature (thermostat open), then stop it.
Let the engine cool down and top up the coolant level, if necessary.
Start up the independent (add–on) heater. If it stops due to cut–out, repeat the cooling system bleeding operation.



IMPORTANT
In addition to the dashboard 'alert' warning light (G14), the coolant level in the expansion chamber is visible through a transparent wall.
If for some vital reason the coolant has to be topped up while the engine is hot, first of all carefully release the pressure–vacuum cap (2) by 1/4 of a turn to decompress the system.
Retighten the cap immediately. Then remove the filler cap and top up the coolant.

Radiator mosquito net
Disassembly
Remove radiator grille (1).
Unhook springs (2) and disengage mosquito net (3). Do not unhook it from the bottom.
Cleaning
Early in spring or summer, clean radiator mosquito net (3) by blowing through with low pressure compressed air or hot water. Avoid high pressure cleaning jets.
Assembly
Upon assembly, ensure correct fastening of the mosquito net. Fasten the radiator grille.

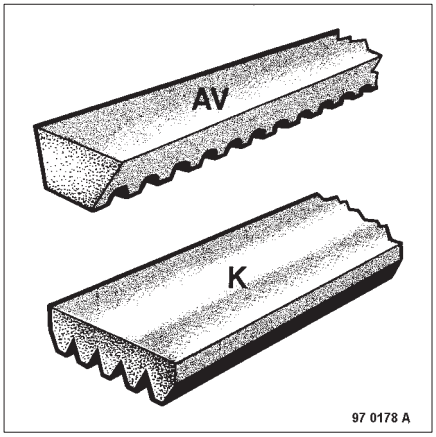
Variable–drive fan
If the coolant circuit temperature exceeds 90°C on the temperature gauge and the declutching fan does not engage or the declutching fan engages at a temperature below 90°C on the temperature gauge, call upon your dealer or the nearest approved agent.



TURBOCHARGER

Turbocharger problems
Indications of incorrect turbocharger operation are lack of engine power, strange noise or the presence of oil in the inlet manifold.
Should this occur, consult the nearest dealer or service point. On no account must any internal work be carried out on the turbocharger.

DRIVE BELT TENSION



Checking tool: SEEM 00 00 127 300

Procedure
– Adjust the belt tension.
– Run the engine at idling speed for about 1 minute.
– Check the belt tension and readjust.

NOTE
During maintenance operations, avoid splashing oil, coolant or even paint on the drive belts.

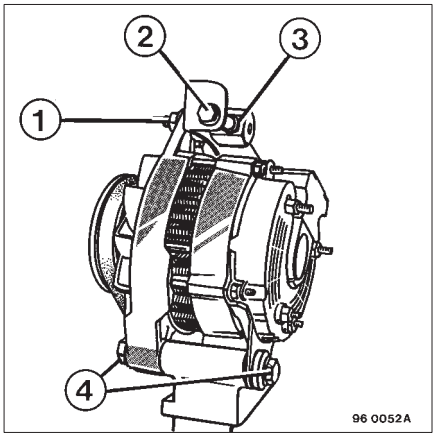
Tension values
Tensions are given in SEEM points.

Drive belts				Min. value
Type	Number	New	Run–in	
AV 13 G*	1	65 → 70	52 → 57	48
K 6 H* D*	1 1	99 → 109 69 → 79	75 → 80 59 → 65	55 45
K10 H*	1	146 → 161	115 → 125	87

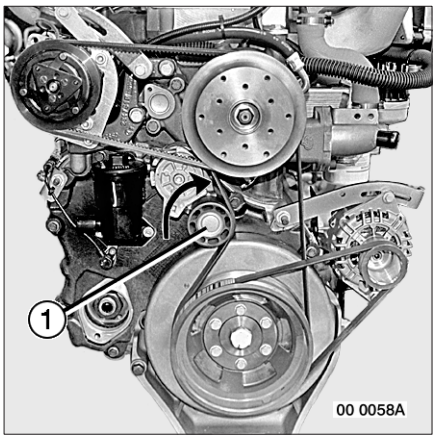
* D = Dayco ; G = Gates ; H = Hutchinson

Alternator

Loosen the nuts and bolts (1–3–4). Turn screw (2) to adjust the tension. Tighten the nuts and bolts (1–3–4).



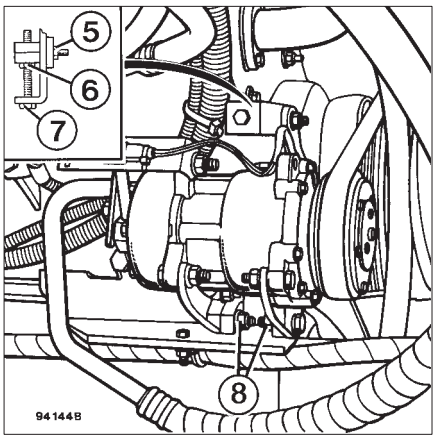
Automatic belt tensioner
To remove the water pump drive belt, use a 1/2 inch square headed wrench to compress the spring of the automatic belt tensioner (1).
To replace the drive belt, proceed in the reverse sequence to removal.
The belt tension value is obtained by the automatic tensioner.



Depending on your vehicle's equipment

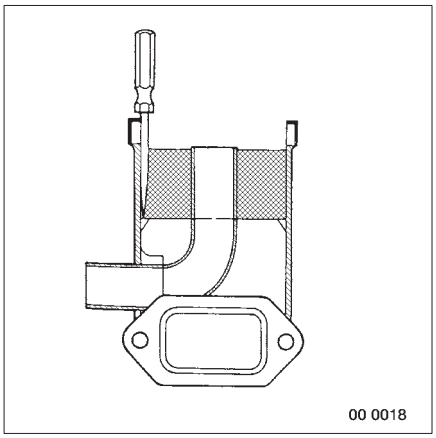
Air conditioner

Loosen the nuts and bolts (5–6–8). Turn screw (7) to adjust the tension. Tighten the nuts and bolts (5–6–8).



BREATHER

Cleaning
Remove the cover. Extract the filter.
Clean the filter with a solvent. Blow through and leave to dry.
Smear the filter with engine oil and fit.
Fit the cover and screw up through 3/4 of a turn.



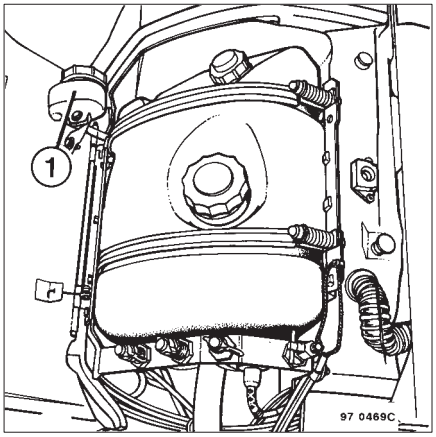
CLUTCH

Depending on your vehicle's equipment

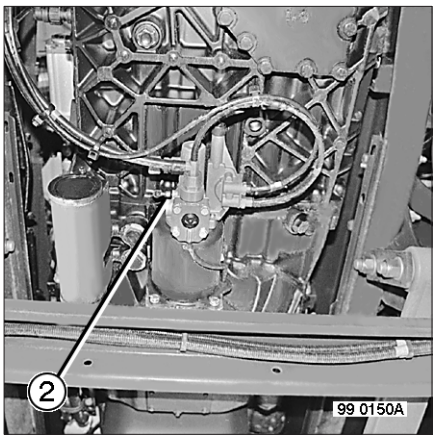
The clutch release bearing clearance must be: 0 mm.

Consult a dealer or an approved agent for this adjustment.

Hydraulic system
– Check the fluid level in reservoir (1).
– Use recommended fluid only.



Bleeding the system
Using a pressure bleeder, pressurize the reservoir (2 bar approx.). Bleed the clutch servo by means of bleed screw (2).



GEARBOX ZF 16 S 181/221

Depending on your vehicle's equipment

To drain
Remove plugs (1–2).

NOTE
Replace the seal(s) and clean the magnet whenever you change the oil.

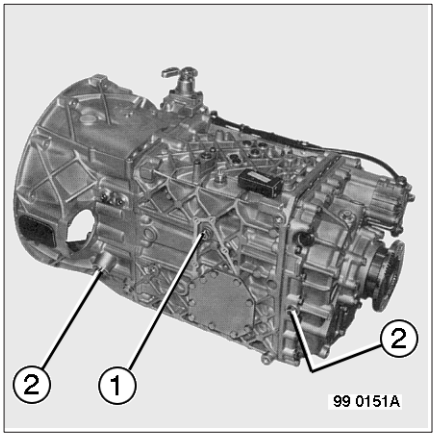
Filling
Fill with oil through port (3).
As soon as the oil overflows, screw up the plug but do not tighten.
With the vehicle at a standstill, run the engine for 5 minutes. Stop the engine and let it rest for 5 minutes. Remove plug (3) and top up the oil level. Refit the plug.

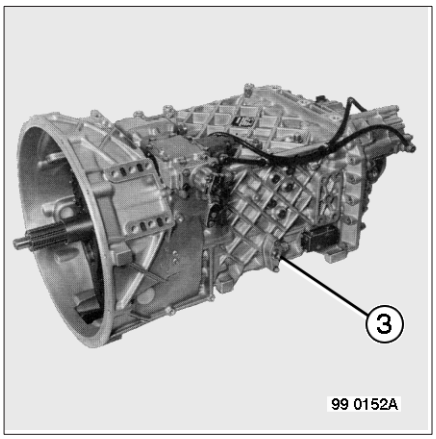
Plug (1) tightening torque: 60 Nm.

Plug (2) tightening torque: 60 Nm.

Plug (3) tightening torque: 60 Nm.

Breather
Wash the breather in diesel fuel and dry it with compressed air before refitting.





GEARBOX ZF ASTRONIC

Depending on your vehicle's equipment

To drain
Remove plugs (1–2).

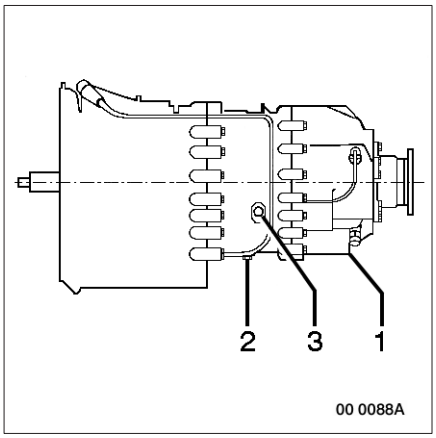
NOTE
Replace the seal(s) and clean the magnet whenever you change the oil.

Filling
Fill with oil through port (3).
As soon as the oil overflows, screw up the plug (3).

Plug (1) tightening torque: 60 Nm.

Plug (2) tightening torque: 60 Nm.

Plug (3) tightening torque: 60 Nm.



GEARBOX ZF + INTARDER

Depending on your vehicle's equipment

To drain
Remove plugs (1–2).

NOTE
Replace the seal(s) and clean the magnet whenever you change the oil.

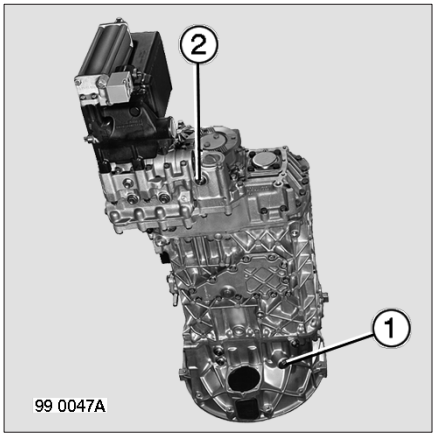
Plug (1) tightening torque: 120 Nm.

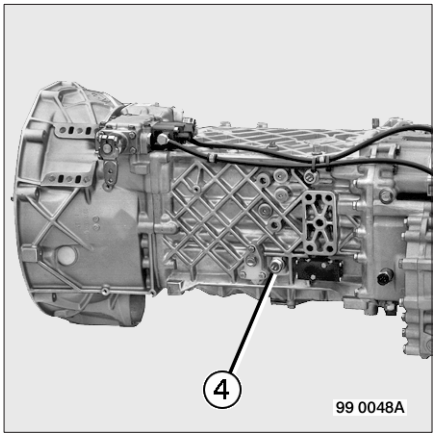
Plug (2) tightening torque: 60 Nm.

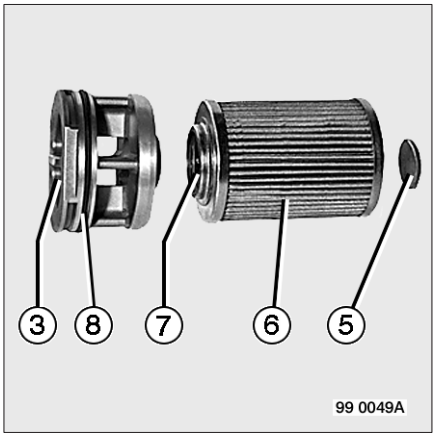
Filling
Fill with oil through port (4) until flush with the edge. Screw up the plug (4).
Run the vehicle at a speed above 10 km/h for at least 1 minute without actuating the ZF Intarder retarder.
Check the oil level through (4) and tighten the plug to a torque of 60 Nm.

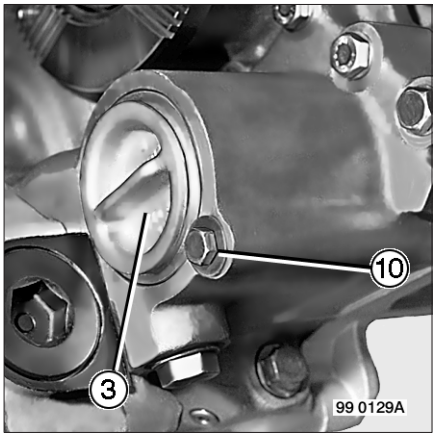
Replacing the retarder oil filter
Remove the setscrew (10), take off the cover (3), replace the filter (6).
Oil O–ring (7–8). Fit filter (6). Check the O–ring (7–8). Replace it, if necessary.
Fix the magnet (5) to the new filter.
Fit the cover (3). Fit the setscrew (10) (tightening torque : 23 Nm).

Breather
Wash the breather in diesel fuel and dry it with compressed air before refitting.









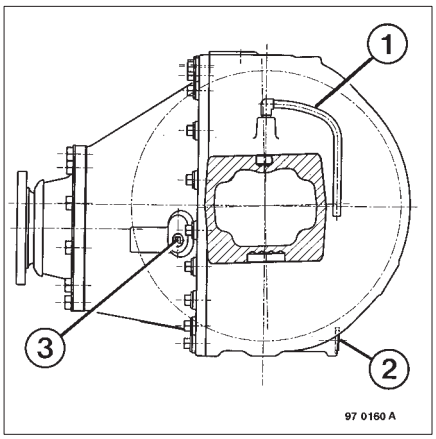
PROPELLER SHAFTS

When washing down, limit the jet pressure to 80 bars and do not dwell on bearing cup seals and joints.

REAR DRIVE AXLE P 1370

Filler and level plug (3).
Drain plug (2).

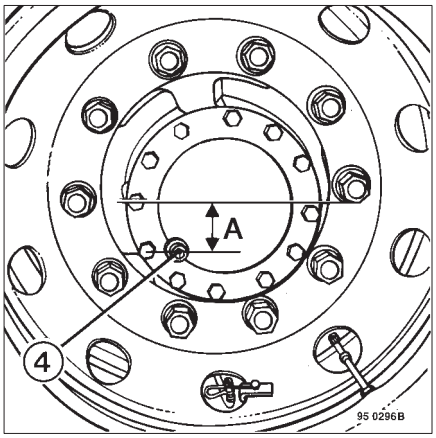
Breather
Remove tube (1) and blow through with compressed air before refitting.



Wheel hub
Drainage: Remove plugs (4) in the downwards position.

Level: When plug (4) is in position **"A = 30 mm"**, the oil should be at the same level as the hole.

Filling
With plug (4) in the upwards position, pour 1 litre of oil into each hub and refit plug (4). The surplus will drain into the axle pan. End the filling phase through the pan plug (3) until the correct level is obtained.



NOTE
Replace the gasket(s) each time and clean the magnet.

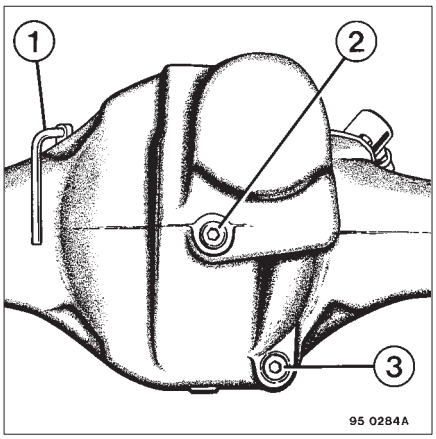
Plug (4) tightening torque: 30 Nm.

REAR DRIVE AXLE PR 1341 – P 1345

MIDDLE DRIVE AXLE PMA 1341

Filler and level plug (3).
Drain plug (2).

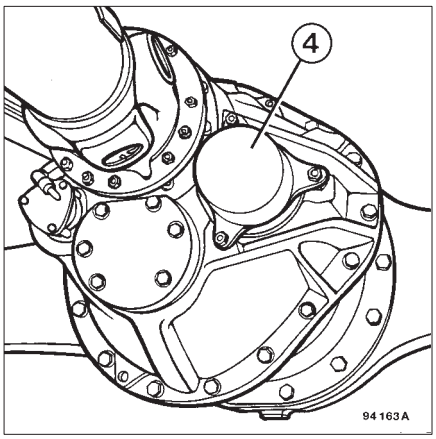
Breather
Remove tube (1) and blow through with compressed air before refitting.



MIDDLE DRIVE AXLE PMA 1341

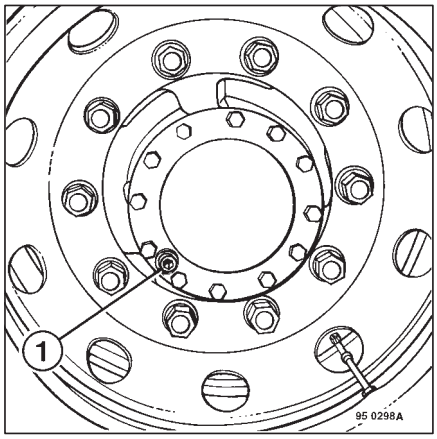
Replacement of filter cartridge on middle drive axle
Remove guard (4), then unscrew and replace the filter cartridge. On assembly, oil the seal lightly and tighten by hand. After road testing the vehicle, check for leaks. Retighten if necessary.

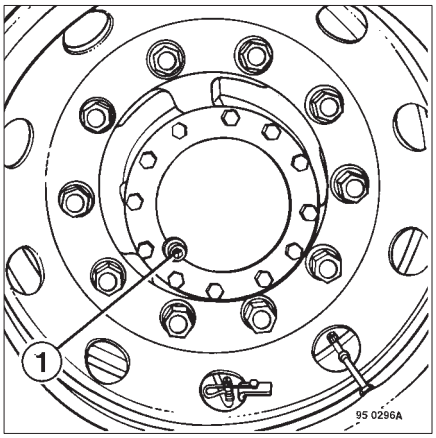
Depending on your vehicle's equipment



Wheel hubs
Drainage: Remove plug (1) in the downwards position.
Filling: With plug (1) located in the upwards position, pour 1 litre of oil into each wheel hub. Refit the plug. Any surplus will flow into the drive axle pan where the overall level can be checked.

NOTE
Replace the seal(s) whenever the oil is changed, and clean the plug magnet.



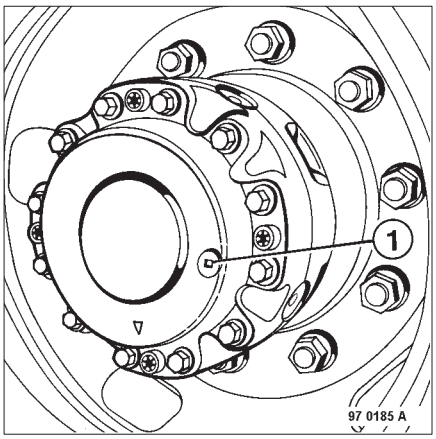


Depending on your vehicle's equipment

Hub reduction units
Drainage : Remove plug (1) in the downwards position.
Level: When the arrow points downwards, the oil should be flush with the port (1).

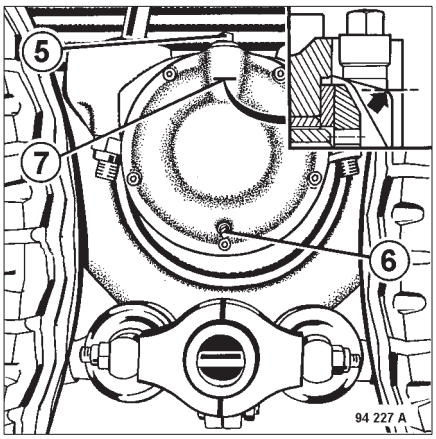
Filling
With plug (2) in the upwards position, pour 2.5 litres of oil into each reduction gear and refit plug (2).
The surplus will drain into the axle pan.
Finish filling through the pan plug port until the correct level is obtained.

NOTE
Replace the seal(s) each time and clean the magnet.



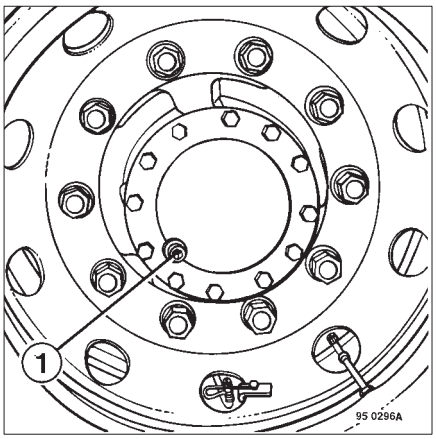
Depending on your vehicle's equipment

Suspension swivels
– Filler plug (5)
– Drain plug (6)
– Level (7)



LIFT–UP AXLE

Wheel hubs
To drain: Remove plug (1) from the port placed in the downwards position.
To fill: With plug port (1) placed in the upwards position, pour 0.7 litre of oil into each hub, then refit plug (1).
Level: With plug port (1) placed in the horizontal position, the oil should be flush with the port.

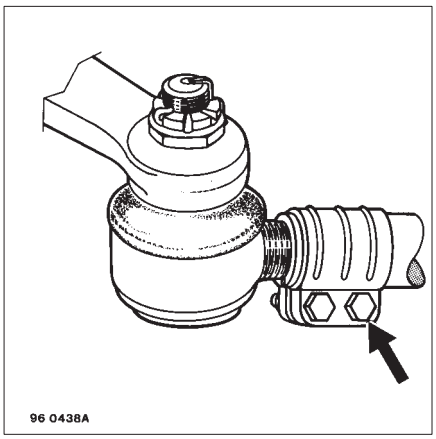


FRONT AXLE

NOTE
To avoid any risk of damage to the steering system, it is essential that the stub axle lock stops are adjusted after any changes to the stub axle assy (i.e. change of steering arms, track rod arms, etc.). Consult your dealer or an approved agent.

Track rod clamps

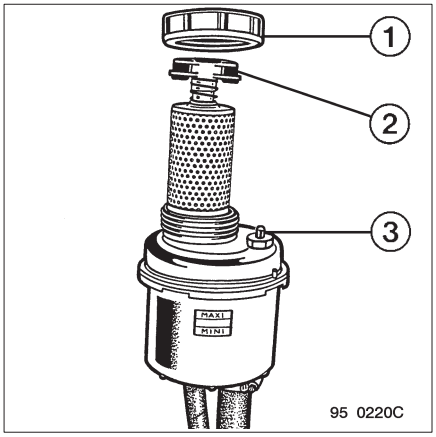
IMPORTANT
Whenever you touch the nuts and bolts (e.g. when adjusting wheel alignment), you must systematically replace the track rod clamps.



STEERING

Replacing the filter element

Remove filler cap (1). Press handle (2) and turn by 1/4 of a turn. Withdraw the filter element assembly. Fit a new filter element, press and turn handle (2) so as to engage it under the catches on the reservoir.
Check the oil level (3).



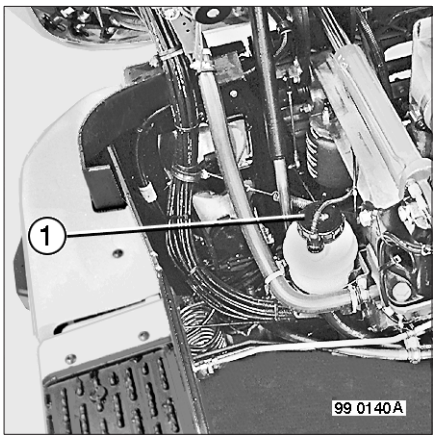
Filling the system and bleeding

Raise the front of the vehicle.

Fill the reservoir with fluid via filler (1). When the reservoir level stabilizes, operate the starter a few times to turn the pump, top up accordingly. When the level is stabilized once again, run the engine at idling speed.
Turn the steering wheel fairly quickly from one lock to the other several times so as to bleed air from the system.
Watch the fluid level during this operation, top up if necessary. Repeat this until the fluid level remains constant.

Stop the engine and top up the level. Lower the roadwheels onto the ground.

Continue moving the steering wheel until no fluid flow noise is heard and until the fluid in the reservoir has become clear and is no longer emulsified.



NOTE
A hydraulic circuit can only operate if it is perfectly clean. The utmost care must therefore be taken to ensure that no dirt enters the system when performing the above operations.

F31 servicing

FRONT SUSPENSION

REAR SUSPENSION

Suspension components
Shock absorbers do not require any special maintenance. However, at the scheduled intervals, remove them and make sure they are checked by a specialist.

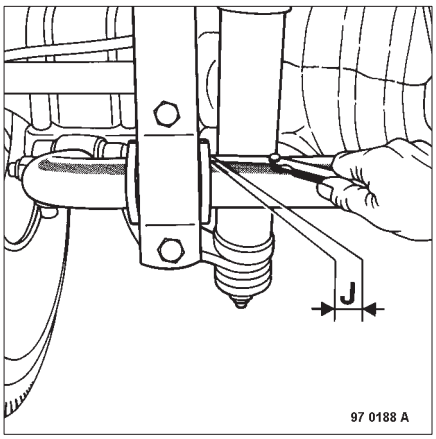
U–bolt tightening torques

4 x 2
Front: 450 N.m

6 x 2
Front axle: 450 N.m

6 x 4
Front: 450 N.m
Rear: (PMR 2141) 750 N.m

Anti–roll bar play
At the scheduled intervals, check the play between the bushes and the anti–roll bars. The play "J" should not exceed 2 mm.

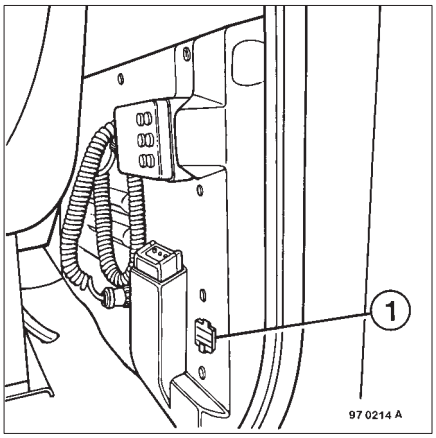


Depending on your vehicle's equipment

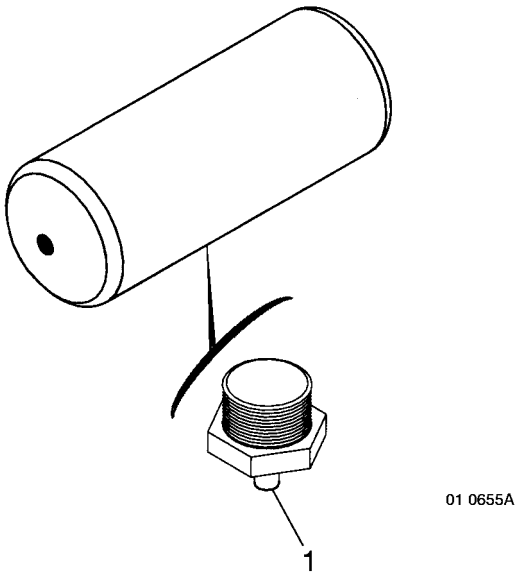
Air suspension

CAUTION
Never spray oil or diesel fuel on the flexible rubber air bellows or pipes. Regularly check the external condition of the air bellows.

Electronic air suspension
Any work on sensors, control linkage or replacement of the electronic control unit require the system to be calibrated.
Troubleshooting and maintenance are to be carried out using the RENAULT TRUCKS tester plugged in to socket (1).
These test and programming operations should be carried out by a qualified agent.



IMPORTANT
Before carrying out any work on the suspension (other than calibration), place axle stands under the chassis.



Air tanks (absence of water)
Actuate the bleed valves (1) to ensure there is no water in the air tanks.
If there is water, bleed the air tanks.
Get the air dryer checked out by an approved specialist and replace the air dryer canister.

The vehicle is equipped with sealed snap–on unions. If at a standstill the air pressure in the braking system air tanks drops suddenly, get the compressed air circuit checked out by the nearest dealer or approved agent.

F33 servicing

BRAKING SYSTEM

CAUTION
We remind you that it is forbidden to modify the brake circuit or brake components. Users are advised that they are fully responsible for ensuring that when any additional pneumatic equipment is connected to the vehicle, all the regulations in force are complied with.

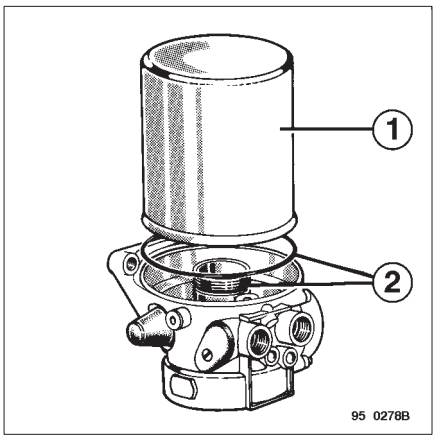
The vehicle is equipped with sealed snap–on unions. If at a standstill the air pressure in the braking system air tanks drops suddenly, get the compressed air circuit checked out by the nearest dealer or approved agent.

Brake valve
This does not require any special maintenance. In the event of malfunction, get it checked by an approved specialist.

Air dryer (1–canister)
At the scheduled intervals, replace the canister.

Canister replacement:
Clean the air dryer and its surrounds.
Fully bleed all air tanks.
Replace canister (1). Tighten by hand.
When refitting, lightly grease seals (2).

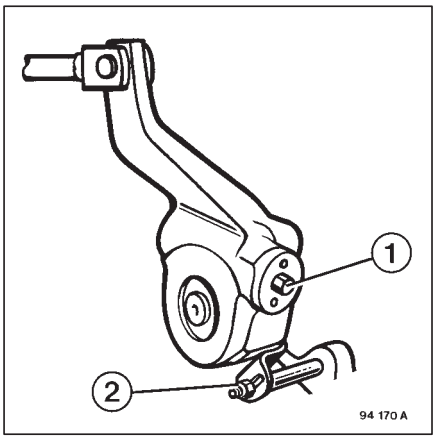
NOTE
Spent canisters should be considered as special industrial waste and must meet treatment regulations. Take the laws in force into account.

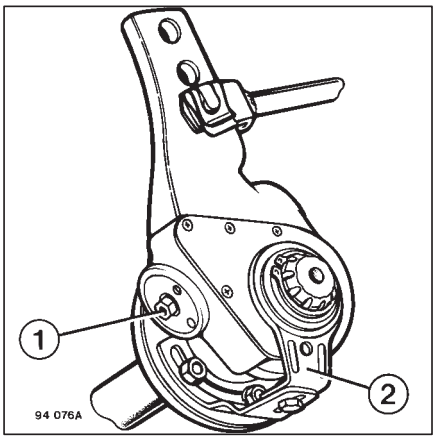


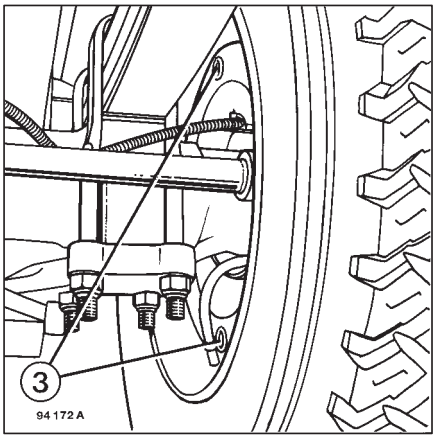
Depending on your vehicle's equipment

Adjusting the brake levers

The brake levers are equipped with automatic adjusters. However, at the scheduled intervals, check the position of control arm (2) and the operating clearance between lining and drum (0.5 to 0.7 mm) through the inspection holes (3). These 2 inspection holes enable the brake lining life to be checked. Carry out these checks with cold drums. At the scheduled intervals, check the unscrewing torque of bolt (1). Turn anticlockwise with a torque wrench.
Perform the operation three times and work out the average. If the average torque is less than 18 Nm, replace or repair the brake lever.



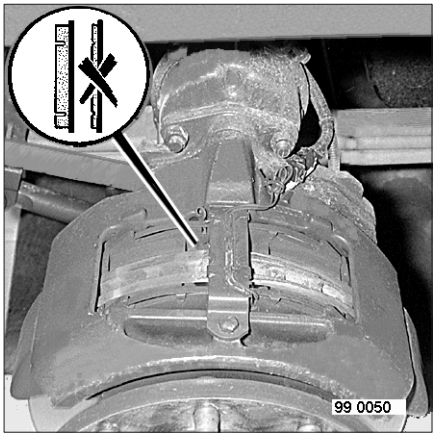


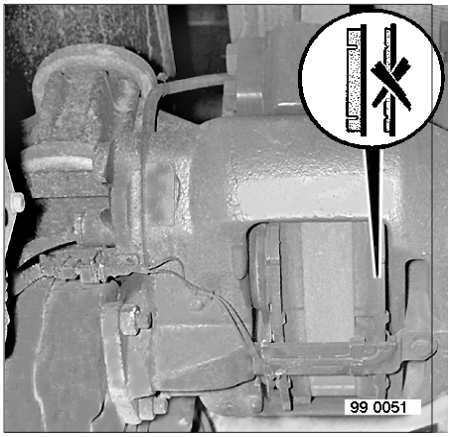


F35 servicing

Depending on your vehicle's equipment
Brake pads
At the scheduled intervals, or if the warning light (G10) comes on, check the degree of wear of the brake linings.
Checking the linings requires removal of the roadwheels.

NOTE
Replacement of a brake pad requires replacement of all the pads on the same axle or drive axle.





RETARDER

Depending on your vehicle's equipment

Electric retarder
Servicing
At the scheduled interval, check the bearing end float and air gap setting. Entrust these operations to a specialist.
Washing
Pronounced fouling of the electric retarder requires high pressure washing. This is to be carried out when the retarder is cold. Then dry through with compressed air.

F36 servicing

BODYWORK
Washing:
To prolong bodywork life and maintain the sparkle of the paintwork, we recommend that your vehicle be washed regularly. We advise against the use of brushes, especially during the first few months of use of the vehicle. Do not use a high temperature steam spray.
Neutral washing products are commercially available which do not dull the paintwork.
For grease spot removal, use cleaning fluid (and not automobile petrol).
If the aluminium components are very dirty, clean them with water to which has been added a small amount of non–alkaline washing product, and rinse with clean water.

Cleaning the interior:
Spray or wipe a cleaning product on with a rag (soapy water, methylated spirits).
Never use petroleum–based or trichlorethylene–based products.
Lightly smear the door and window seals and runners with talc.

Cleaning the fascia panel:
Only use soapy water (and no other product whatsoever).

Cleaning the seats:
Plastic parts: Use soapy water or an alcohol–based product.
Fabric parts: Clean with a degreasing product (spirits of turpentine, stain–remover, etc.).
Leather parts: To supple and preserve the gloss of the leather, use a damp cloth. For other products, take a visit to the RENAULT TRUCKS boutique.

Cleaning windows and headlamps:
Since the headlamps feature plastic lenses, use a soft or cotton cloth.
If this is not sufficient, use a soft (or cotton) cloth soaked with soapy water.
Rinse with a soft or damp cotton cloth, then dry carefully with a soft dry cloth.
Any other products are strictly forbidden.

Washing the vehicle:
To limit any risk of damage, do not apply too much water to:
– electronic boxes, electrical junction boxes and electrical appliances.
– window runner seals.
– hinge pins.
– air inlets to heater, engine intake and air filter.
– air–operated units.
– noise baffles and soundproofing screens.

WARNING
Stop the engine and turn off the master switch before washing the vehicle.
Limit wash jet pressure to a maximum of 80 bar.

IMPORTANT
When washing the vehicle, grease all points. More particularly, grease fifth wheel locking mechanism, towing hook locking mechanism and propeller shafts.

CB RADIO ANTENNA
When washing the vehicle, remove the CB radio antenna.

Fifth wheel coupling
At the recommended intervals, check the clearance between the fifth wheel coupling and the semi–trailer. This clearance should not originate from play in either the locking mechanism or the bearings.
– Play in locking mechanism: Check the kingpin. Adjust locking.
  If adjustment is impossible, replace the locking mechanism.
– Play in bearings: Check bearings for wear. Replace, if necessary.

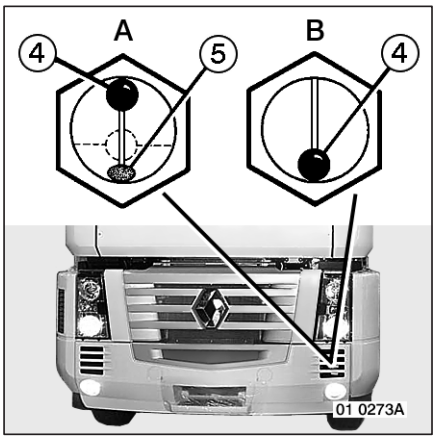
NOTE
The fifth wheel is a coupling unit that must meet extreme safety requirements.
Contact your dealer, the original equipment manufacturer or an approved specialist to obtain the tools, gauges and parts needed for inspecting and repairing the fifth wheel.

IMPORTANT
Grease the fifth wheel coupling before taking the road for the very first time.
Every 10,000 km: grease the fifth wheel locking mechanism.

HEATING – VENTILATION

Depending on your vehicle's equipment

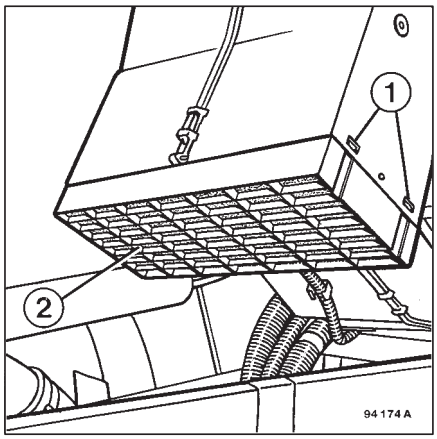
Air Conditioner
Make regular inspections of chilling fluid circuit level and fluid condition through the sight located on the dryer filter.

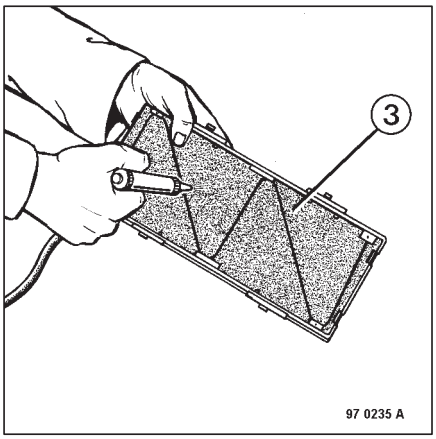


Circuit level:
Check the level of ball (4) after 5 minutes of air conditioner operation.
A = The level is correct when the ball floats between the top and the bottom of the sight glass.
B = The level is incorrect when the ball remains at the bottom of the sight glass without moving (consult your dealer or an approved agent).

Refrigerant fluid:
Inspect the colour of sight glass (5).
Blue = fluid correct.
Pink = humidity in the circuit (consult your dealer or an approved agent).

WARNING
Specific safety precautions must be taken when working on the chilling circuit and/or appliances.
(Consult your dealer or an approved agent).





Air conditioner filter
At the scheduled intervals, press the 4 catches (1) to remove the filter assembly (2).
Blow through filter (3) with an air jet, maximum pressure 7 bars, from the inside towards the outside.
Replace the filter, if necessary.

INDEPENDENT HEATING

At the scheduled intervals, get the heater serviced by an approved agent.
Outside the heating period, the heater should be run for 15 minutes every month.
Check the suction and discharge apertures and clean, if necessary.

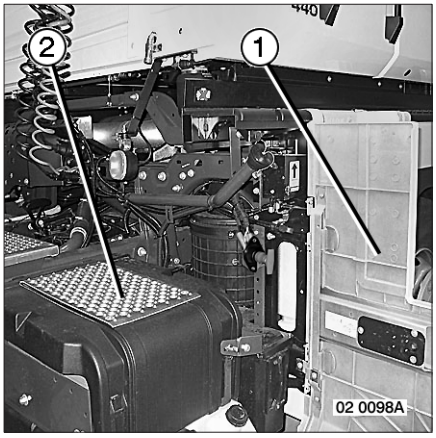
IMPORTANT
If electric welding work is carried out on the vehicle, it is essential to disconnect the batteries to prevent causing irreparable damage to the electronic monitoring system.

Type "Thermo 90" add–on heater
When renewing the engine coolant, it is important to bleed air from the heater. To do so, run the heater for 15 to 20 seconds and operate the electric water feed pump. Top up with coolant when the heater has stopped.

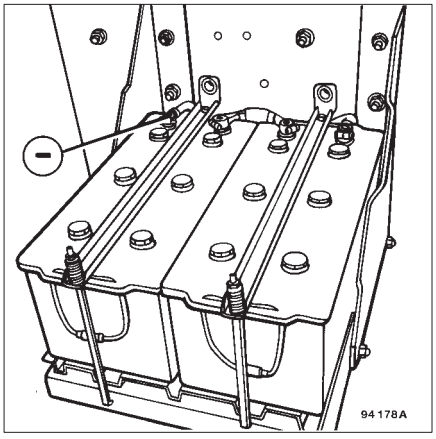
G1 electrical equipment

Before working on the electrical system, disconnect the batteries. Always remove the negative (–) terminal first.

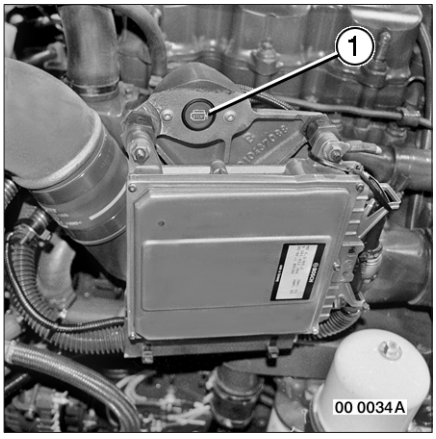
Tractor
Batteries:
Open the RH cover (1) and withdraw plastic cap (2).
Disconnect the positive (+) and negative (–) terminals.



Rigid
Batteries 1 and 2:
Remove the plastic cap and disconnect the positive (+) and negative (–) terminals.



Engine stop control (1).



G2 electrical equipment

BATTERIES

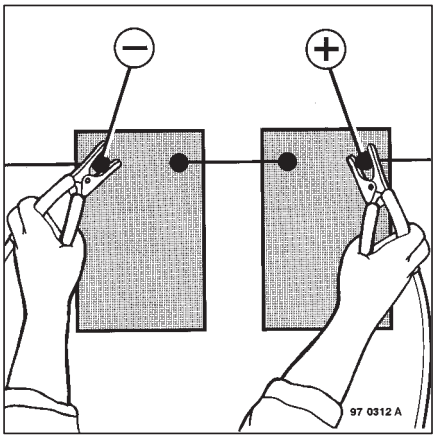
Measure the voltage across the terminals. This should be slightly higher than the rated voltage. A lower voltage indicates that the batteries need recharging. Check the specific gravity of the electrolyte. Compare the specific gravity of each cell. The difference in specific gravity between cells must not exceed 0.030. To check the exact condition of the battery, use a battery tester. Trickle charge the batteries at 1/10th of their capacity for 10 hours. The electrolyte level must stay at 3 cm above the plates. Top up if necessary, using distilled water. Resistance to freezing depends on state of charge.
A battery charged to a specific gravity of:
1.115 withstands – 7°C approx.
1.160 withstands – 15°C approx.
1.210 withstands – 30°C approx.
1.250 withstands – 45°C approx.
In addition, the available capacity of a fully charged battery varies with temperature as follows:
100% at 27°C
66% at 0°C
41% at – 20°C

Never use a naked flame near the cell vents (risk of explosion).

Maintenance–free batteries
For these vehicles, this type of battery does have filler plugs.
Take the same precautions as for ordinary batteries. However, the trickle charging current must not exceed 1 Amp.

Before using a charger, disconnect the batteries.
If starting with an auxiliary battery, make sure to connect the (+) terminal of the auxiliary battery to the (+) terminal of the vehicle battery and the (–) terminal of the auxiliary battery to the (–) terminal of the vehicle battery.

12 Volts power supply
The supply voltage for the installed equipment must be equal to the vehicle's rated voltage. Any appliance having a 12 Volts rated voltage needs the use of a voltage dropper.
Connection to the mid–point of the two batteries is strictly forbidden.



G3 electrical equipment

Starting the vehicle using an external power source
If the engine will not start due to discharged batteries, it is possible to use an external power source (battery cart).
Procedure:
- Disengage the master switch.
- Connect up the battery cart, while respecting polarities.
- Engage the master switch.
- Actuate the starter.
- Run the engine at a speed of **1 300 rpm** for about **5 minutes**.
- Switch on the dipped beam headlights before lowering the engine speed to idling.
- Let the engine run at idling speed for 1 minute.
- Disconnect the battery cart, starting with the negative terminal.
- Switch off the headlights.

IMPORTANT
The use of a power charger as starting aid is forbidden (damage to electronic systems).

ALTERNATOR

The voltage regulator may be integral with the alternator, or external to it. Never leave the alternator switched on when the vehicle is stopped (ignition key, master switch). Never break the circuit while the engine is running. Avoid making any connection errors. Never run an engine with batteries disconnected or removed.

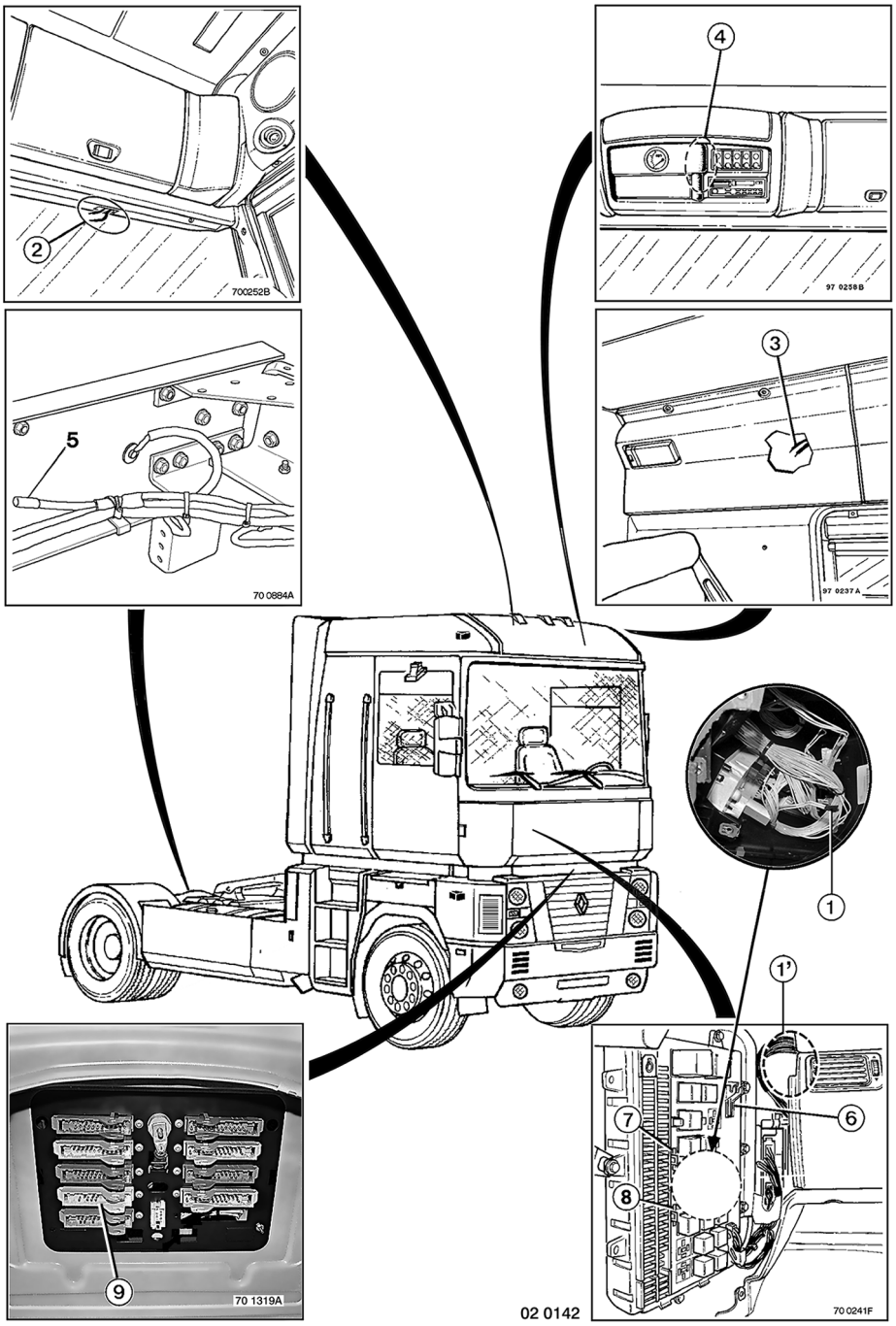
FLASHER UNIT

(with electronic protection)
In the event of an overload, the unit ceases to operate. To reset the unit:
1) Move the flasher stalk to the “OFF” position.
2) Trace and eliminate the cause of the overload (cables or lights).
You may then re–use your direction indicators normally.

IMPORTANT
Overloading the electrical system by adding bulbs or supplementary or more powerful equipment than that for which the system was designed may cause extremely serious damage to all the equipment installed and may produce abnormal discharging of the batte–ries. Such action will invalidate the manufacturer’s warranty.

Problems with electrical equipment on tractor vehicles are very often caused by defects in the trailer electrical system. Before connecting to a trailer, carefully check that its electrical system is in order, to avoid blowing of fuses, and pay particular attention to the earth connection.

G4 electrical equipment



G5 electrical equipment

AVAILABLE POWER SUPPLY

All electrical connections must be made without fail at the available power points made available by RENAULT TRUCKS.
It is forbidden to hook up to the different wiring harnesses on the vehicle.
Use and adapt connectors and wiring harnesses approved and distributed by RENAULT TRUCKS.
The cross–section of the cables should be adapted to the desired use (5 Ampères per mm^2).
Respect the circuit protections recommended by RENAULT TRUCKS: it is forbidden to change fuse ratings.

Equivalence of connector colours:

White . . . Bc	Black . . . . . N
Brown . . . M	Grey . . . . . G
Orange . . . Or	Yellow . . . . . J
Red . . . . . R	Blue . . . . . Bu
Purple Vi	Green . . . . . Ve

Depending on your vehicle's equipment

LOCATION 1

Application	Wire	Fuse
Available + 12V power supply (radiotelephone)	46	–
Available – power supply (radiotelephone)	155	–

LOCATION 1'

Radiotelephone antenna

LOCATION 2

Application	Wire	Fuse
Earth	1	–
Available power supply (lighting)	632	F5/10A

LOCATION 3

Application	Wire	Fuse
Earth	1	–
Available power supply (video)	473	F53/10A

LOCATION 4

Application	Wire	Fuse
Available + 12V power supply (CB)	4000	–
Available – power supply (CB)	144	–
CB radio antenna		
Front air pressure gauge		
Earth	1	–
Available power supply (after ignition)	24	F16/10A
Available power supply (lighting)	64	F6/10A
Available power supply (front air pressure)	72	–

LOCATION 5

Application	Wire	Fuse
Available power supply (after master switch)	208	F21/15A
Available power supply (after ignition)	275	F35/10A
Available power supply (lighting)	632	F5/10A

LOCATION 6

BROWN connector

Application	Wire	Fuse
Earth	1	–
Available power supply (lighting)	64	F6/10A
Available power supply (after ignition)	960	F55/10A
Available power supply (relay 17)	961	–
Available power supply (relay 17)	962	–
Available power supply (relay 47)	963	–
Available power supply (after master switch)	964	F40/10A
Available power supply (relay 47)	965	–
Available power supply (relay 47)	966	–
Available power supply (relay 48)	967	–
Available power supply (relay 48)	968	–

LOCATION 7

GREY connector

Application	Wire	Fuse
Earth	1	–
Available power supply (after master switch)	208	F21/15A

LOCATION 8

Application	Wire	Fuse
Earth	1	–
Available power supply (after ignition)	275	F35/10A

LOCATION 9

WHITE connector

Application	Wire	Fuse
Available power supply (engine speed +)	045	–
Available power supply (engine speed –)	047	–
Available power supply (PTO)	88	–
Available power supply (after master switch)	208	F21/15A
Available power supply (lighting)	618	F21/15A
Available power supply (equipment in road position “Alert” warning light)	651	–
Available power supply (engine speed)	1025	–
Available power supply (PTO)	1026	–
Available power supply (PTO)	1141	–
Available power supply (bodybuilder’s equipment control)	8083	F21/15A
Available power supply (handrail retracted “Information” tell–tale light)	8084	–
Available power supply (fast idling)	8067	–

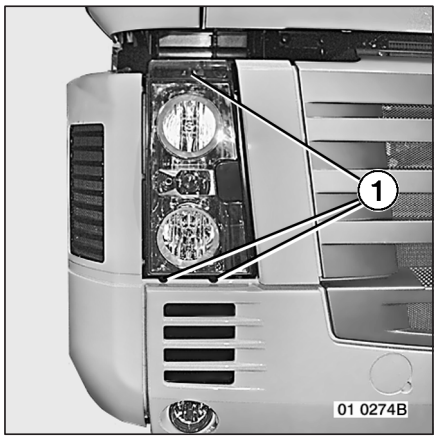
G7 electrical equipment

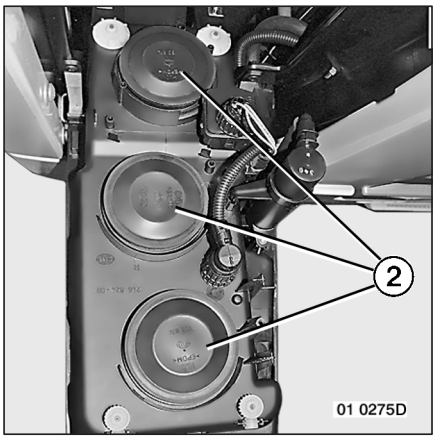
BULBS

If a bulb has to be changed, always replace it with a bulb of the same wattage and type.

Table of bulbs:

Assignment	Power
Front side / parking lights	5W
Lateral / parking lights	3W
Rear side / parking lights	2x5W
Front flashing lights	21W (PY21W)
Side flashing lights	21W
Rear flashing lights	21W
Dipped beam headlights	70W (H7)
Main beam headlights	70W (H1)
Fog driving lights	70W (H1)
Marker lights	5W
Number plate light	10W
Stop lights	21W
Fog light(s)	21W
Reversing light(s)	21W
Step lighting	5W
Cab overhead light	10W
Bunk interior light	10W
Map reader	10W
Yellow loading spotlamps (tractor)	21W
White loading spotlamps (tractor)	70W (H3)





Replacing a bulb
To gain access to the lamps, unscrew the screws (1) and tilt the headlamp insert unit downwards.

Take off the rubber guards (2) to gain access to the bulbs.

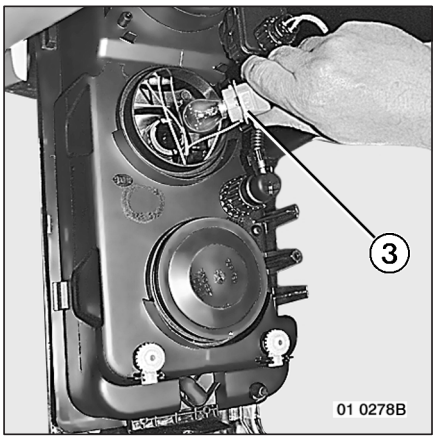
Front direction indicators.
Withdraw the socket (3).

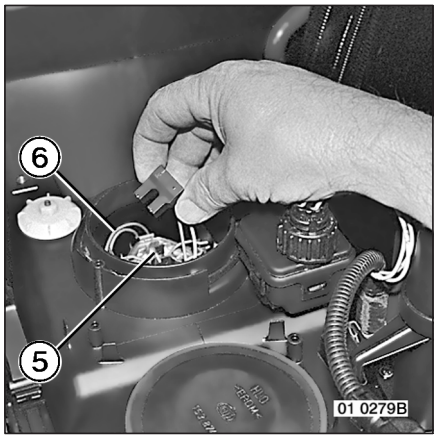
Main beam headlights (4)

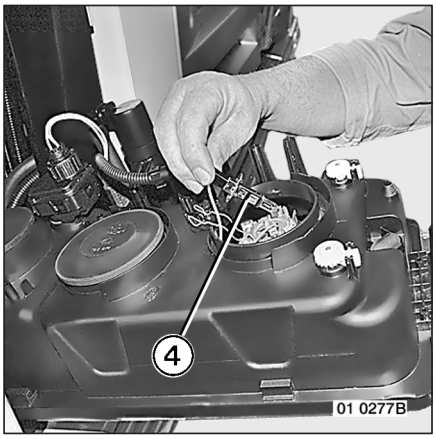
Dipped beam headlights (5)

NOTE
When changing a bulb, carefully put back the rubber or plastic blanking plug to ensure perfect sealing of the headlamp insert unit.

Front side / parking lights (6)

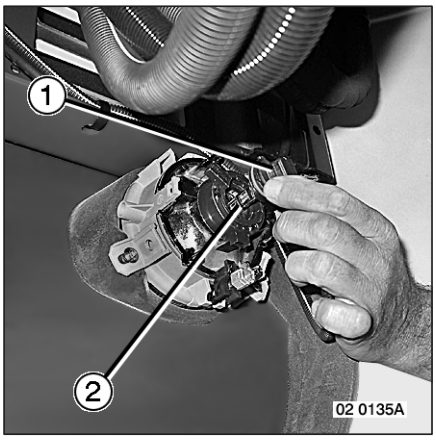






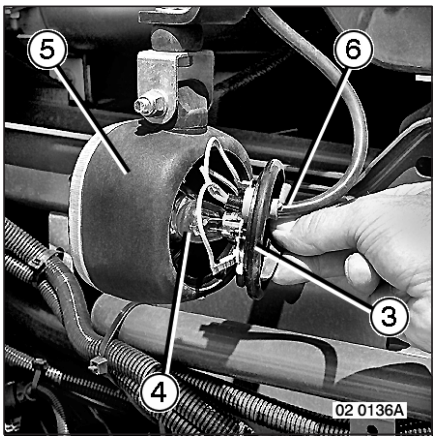
Fog driving lamps

Turn the socket (1) anticlockwise as far as the stop, then withdraw.
Remove the bulb (2).

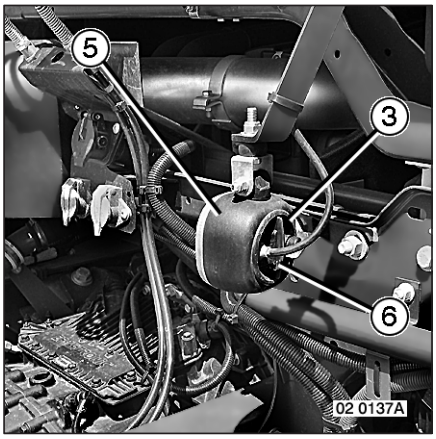


Loading spotlamp (5)

Pivot the loading spotlamp (5) through one quarter of a turn.
Unscrew the cover (3) with the handle (6) as far as the stop. Remove the cover (3).
Remove the bulb (4).



Reassembly :
Screw on the cover (3) until the handle (6) is in a vertical position.
Reposition the loading spotlamp (5) correctly.

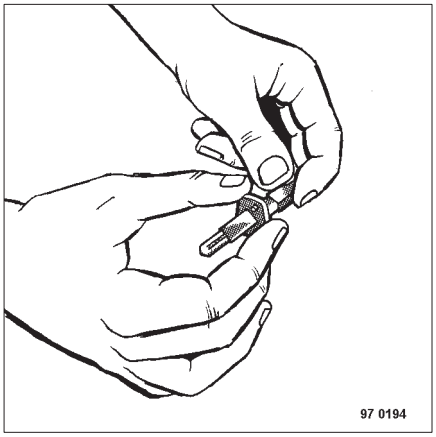


G10 electrical equipment

Map light
Replacing the bulb
To gain access to the bulb, withdraw the diffuser.

Quartz–Halogen bulbs

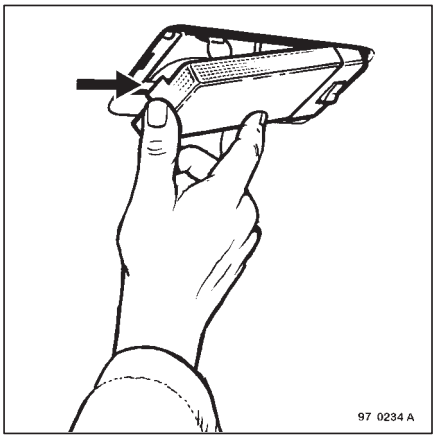
CAUTION
To fit these bulbs, preferably hold them by their metal end–piece.
If you have to take hold of the glass part, use a rag or clean paper. The least trace of a fingermark or grease risks making the bulb ineffective when lighting up. If you are not sure whether the bulb is clean before fitting, clean it with alcohol. Before removing a bulb, if it has been previously lit, wait for it to cool down for a few minutes to avoid the risk of being seriously burned.

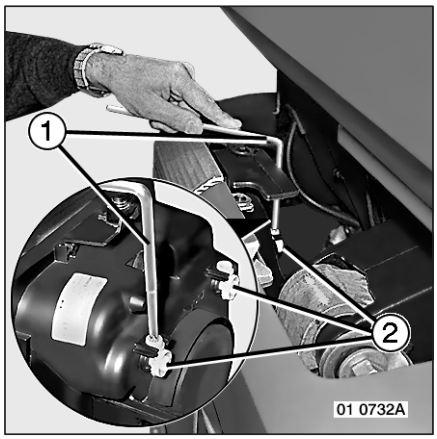


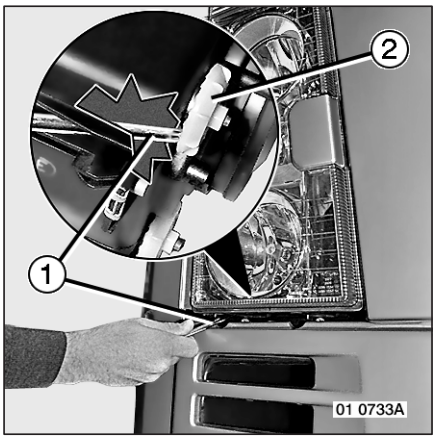
Cab overhead light

Bunk overhead light

Step light

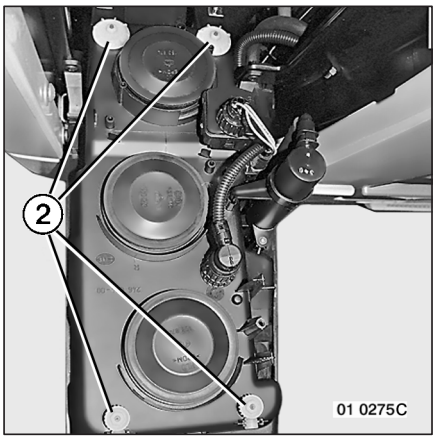






ADJUSTING THE HEADLIGHTS

Adjust the headlights using the specific screwdriver (1) included in the onboard kit.
Turn the knurled adjusting wheels (2) to vary the headlight beams.
NOTE
All headlight adjustment work must be carried out in a specialized workshop.



IMPORTANT
It is essential to use the specific offset screwdriver (1) from the onboard tool kit to avoid damaging the adjusting thumbwheels (2).

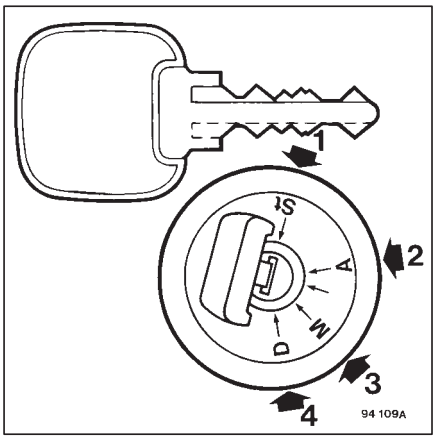
Cab interior control (3)
The headlights are adjusted by the manual control (3) inside the cab (see page C72).

G12 electrical equipment

Depending on your vehicle's equipment

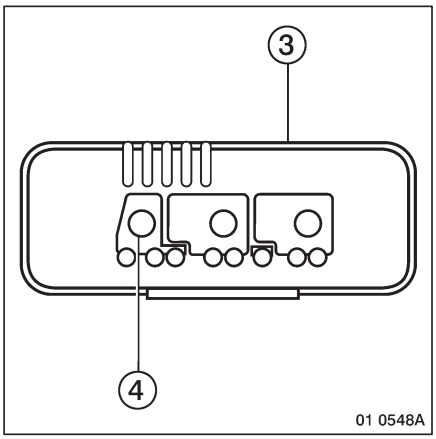
ALARM

Vehicle equipped with a "Cobra" alarm.
To disconnect the vehicle batteries.
De–activate the alarm, switch on the ignition (move the ignition key to position (3)), take out the fuse (F45), wait for 10 seconds, then disconnect the batteries.
To reconnect the vehicle batteries.
Switch on the ignition, put back the fuse (F45), then reconnect the batteries.



Siren power supply

If the internal power supply to the siren becomes insufficient, the control box buzzer sounds, which means that the siren must be replaced.
To disconnect the siren, the procedure is identical as for disconnection of the batteries (see page C43).

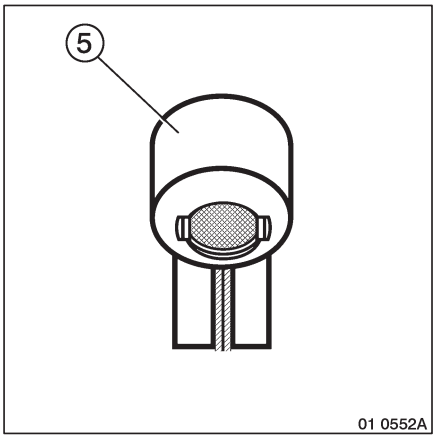


Defective sensors

If the siren sounds when you activate the alarm with vehicle doors and windows closed, de–activate the alarm for the 40 seconds that the LED (4) remains lit.
A "blink code" is displayed on the control box (3) to pinpoint the defective sensor (see table, page C43).

Ultrasonic sensors test

To check out the operation of the ultrasonic sensors (5), proceed as follows:
Activate the alarm for the 40 seconds that the red LED (4) on the control box (3) remains lit, pass your hand in front of each ultrasonic sensor (5): the red LED (4) should go out then come back on if the sensors are functioning normally.



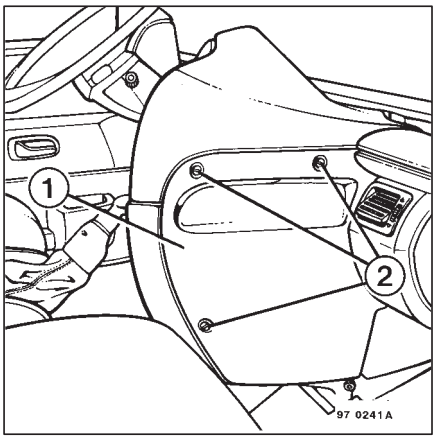
G13 electrical equipment

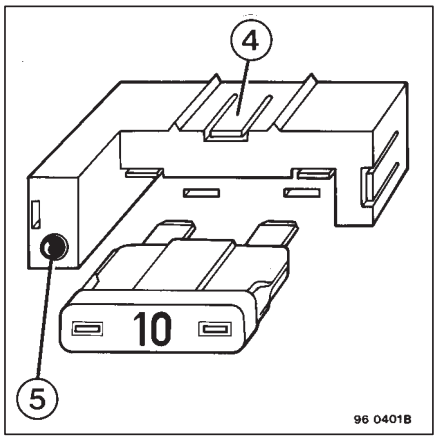
FUSES

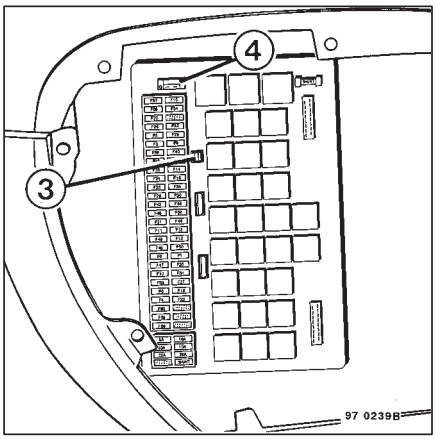
To gain access to the fuses:
– Withdraw screws (2).
– Remove cover (1).
When you have finished, refit cover (1) and tighten screws (2) by hand.

Replace faulty fuses using the tweezers (3).

Fuses test
To check a fuse:
– Engage the master switch,
– Place the fuse in tester (4).
If the fuse is defective, test light (5) stays out.

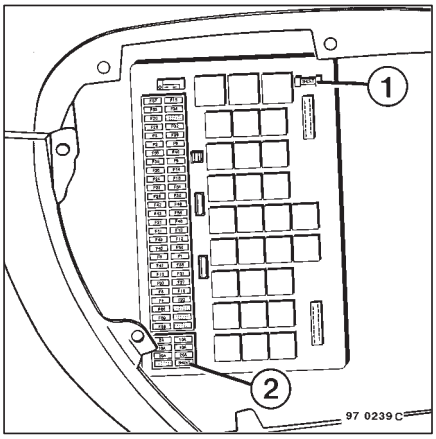


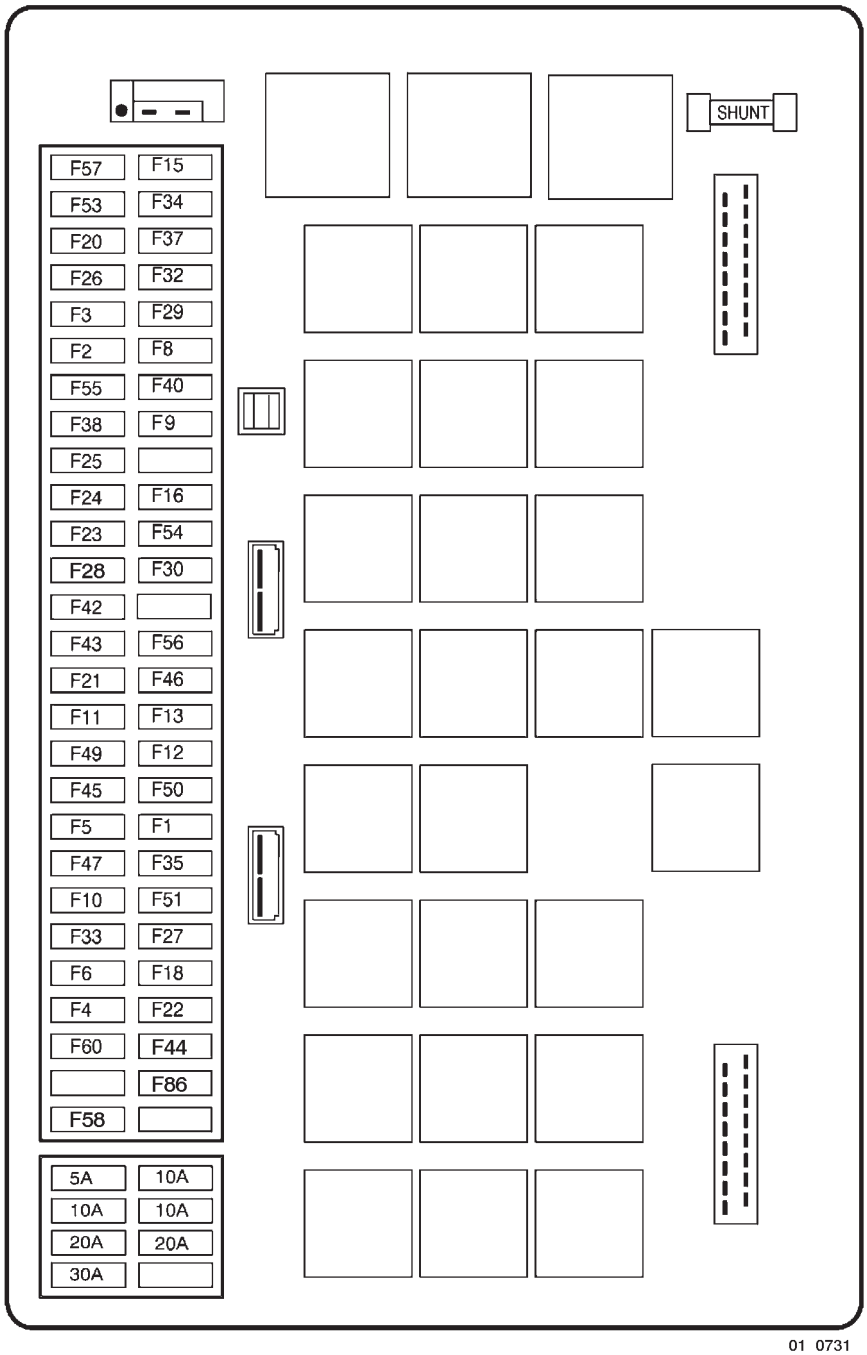




DAY LIGHTS

Depending on the laws in force in certain countries, the side lights and dipped beam headlights must light up when the engine is started.
To obtain this function, position shunt (2) in location (1).




SHUNT
F57
F53
F20
F26
F3
F2
F55
F38
F25
F24
F23
F28
F42
F43
F21
F11
F49
F45
F5
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F33
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F16
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F56
F46
F13
F12
F50
F1
F35
F51
F27
F18
F22
F44
F86
5A
10A
20A
30A
10A
10A
20A

01 0731

G15 electrical equipment

TABLE OF FUSES

Always replace a fuse by another fuse with the same rating.

Depending on your vehicle's equipment

Assignment	Item	Amp.
Bodybuilder's pre–arrangements management ECU	F1	10
Trailer socket, 7–pin type "EBS"	F1	10
Trailer socket, 7–pin type 24 S	F1	10
Engine preheating control	F1	10
Electric or hydraulic retarder control	F1	10
RH side/parking lights	F2	10
RH marker lights	F2	10
RH central marker light(s)	F2	10
LH central marker light(s)	F3	10
LH side/parking lights	F3	10
LH marker lights	F3	10
Trailer side lights	F4	10
Available power supply (lighting)	F5	10
Available power supply (poor visibility light barrier)	F5	10
Dashboard instruments lighting	F6	10
Switch lighting	F6	10
Headlamps wash time–delay relay	F6	10
Fog light(s)	F8	10
Fog lights warning light	F8	10
Fog driving lights	F9	10
Fog driving lights warning light	F9	10
RH main beam headlight	F10	10
LH main beam headlight	F11	10
Main beam headlights warning light	F11	10
LH dipped beam headlight	F12	10
Dipped headlamps warning light	F12	10
RH dipped beam headlight	F13	10
Windscreen wiper speed controller relay	F15	10
Anti–theft alarm ECU	F15	10
Electronic anti–theft box	F16	10
"AIRBAG" ECU	F16	10
Reversing buzzer	F16	10
Defrosting rearview mirror control	F16	10
Air pressure gauge	F16	10
Air conditioning	F18	20
"EBS" ECU	F20	20
Power supply (after master switch)	F21	15
Ventilation control box	F22	30
Independent heater programming control	F22	30
Independent heater	F22	30
Main water circuit solenoid valve	F22	30
3–level air conditioning pressure controller	F22	30
Air conditioning relay.	F22	30

G16 electrical equipment

TABLE OF FUSES

Always replace a fuse by another fuse with the same rating.

Assignment	Item	Amp.
Step light	F23	20
Overhead light(s)	F23	20
Map reader	F23	20
Voltage dropper (telecommunications)	F23	20
Gearbox ECU “ASTRONIC”	F24	20
Tachograph clock	F25	5
Trailer socket, 7–pin type “EBS”	F26	20
Stop lights	F27	10
Trailer stoplights	F27	10
Hydraulic retarder ECU	F28	10
LH swivelling defrosting rearview mirror	F29	10
RH swivelling defrosting rearview mirror	F29	10
Radio	F30	10
Headlamps adjustment motors	F30	10
Windscreen wiper motor	F32	20
Windscreen washer pump	F32	20
Headlamps washer pump	F32	20
Diagnostics socket	F33	10
Suspension ECU	F33	10
Radio tuner + 24 Volts power supply	F34	10
Anti–theft alarm siren	F34	10
Independent heater programming control	F34	10
Available power supply (after key ignition)	F35	10
Horn	F37	20
Two–tone horn solenoid valve	F37	20
Self–tracking axle electrovalve	F37	20
Roof air vent motor	F37	20
Main display	F38	5
Available relays	F40	10
Gearbox ECU “ASTRONIC”	F42	10
Onboard management pre–arrangement	F43	15
Working spotlight (tractor)	F43	15
Trailer + 24 Volts power supply	F43	15
Cab tilt pump	F44	30
Doors central locking box	F45	20
Driver’s side electric striker	F45	20
Passenger’s side electric striker	F45	20
Flasher unit	F45	20
Hazard lights control	F45	20
Anti–theft alarm ECU	F45	20
Air dryer heater	F46	20
Centralized lubrication timer	F46	20
Self–tracking axle safety relay	F46	20
Suspension ECU	F47	10
Suspension remote control box	F47	10
Rear drive axle air springs pressure sensor	F47	10

G17 electrical equipment

TABLE OF FUSES

Always replace a fuse by another fuse with the same rating.

Assignment	Item	Amp.
Reversing lights relay	F49	10
Refrigerator	F50	20
Heated driver's seat	F51	20
Heated passenger seat	F51	20
Voltage dropper (12V socket)	F51	20
"SAE" plug socket	F51	20
Cigar lighter	F51	20
Refrigerant bottle rack	F51	20
Available power supply (video)	F53	10
Front sun blind motor	F54	10
Side sun blind motors	F54	10
Available power supply (after key ignition)	F55	10
Available relays	F55	10
Window winder motors	F56	20
Vehicle monitoring ECU	F57	10
Tachograph	F57	10
"EUP" ECU	F58	20
Exhaust brake electrovalve	F58	20
"EBS" ECU	F60	5
Hydraulic retarder ECU	F86	10
Electric retarder ECU	F86	10

G18 electrical equipment

Voltage dropper
A fuse (1) protects the appliance against polarity reversal at battery level.

IMPORTANT
Before replacing the fuse, the appliance must be switched off (ignition OFF).
Respect the 10 A fuse rating.

Location of “telecommunications” voltage dropper: behind radio mounting plate (roof).

Location of “12 Volts” socket” voltage dropper: in stowage locker under bottom bunk (in the middle).