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General instructions

Practical advice

Prior to any work:

- Clean the major unit and its surrounds (See Driving Servicing Handbook, "Vehicle washing").
- Ensure the batteries are disconnected.
- Mark the pipes and wiring harnesses, if necessary.
- Protect all ports to prevent the ingress of foreign matter.
- Before disconnecting an air pipe, drop the circuit pressure.
- If liquid is splashed onto the bodywork, clean quickly with a cleaning product recommended by RENAULT TRUCKS.

Preparation prior to assembly:

Carefully clean and check all the parts.

Do not unpack a new bearing until you are ready to install it. Do not clean off the protective grease on new bearings.

Old seals and lock-plates must be discarded and new ones fitted.

Never force fit parts with copper or brass punches or drifts. Always use a specially adapted driver to prevent ingress of metal particles into the casings and bearings. Always oil parts prior to force fitting.

Always apply grease on the inside of seal ring lips.

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



When using a torque multiplier, calibrate the torque wrench/multiplier unit at the required torque loading.

Fastening, locking, sealing and adhesive products:

Prior to assembly, carefully clean the product application surfaces of the parts. Old product residue is to be removed. Threaded portions are to be brushed, tapped and, if necessary, cleaned with a suitable product.

Using the product:

Always adapt the recommended product while observing the utilization conditions appearing on the pack:

- Surface finish,
- Working temperature,
- Reaction, drying, etc. time,
- Shelf life.

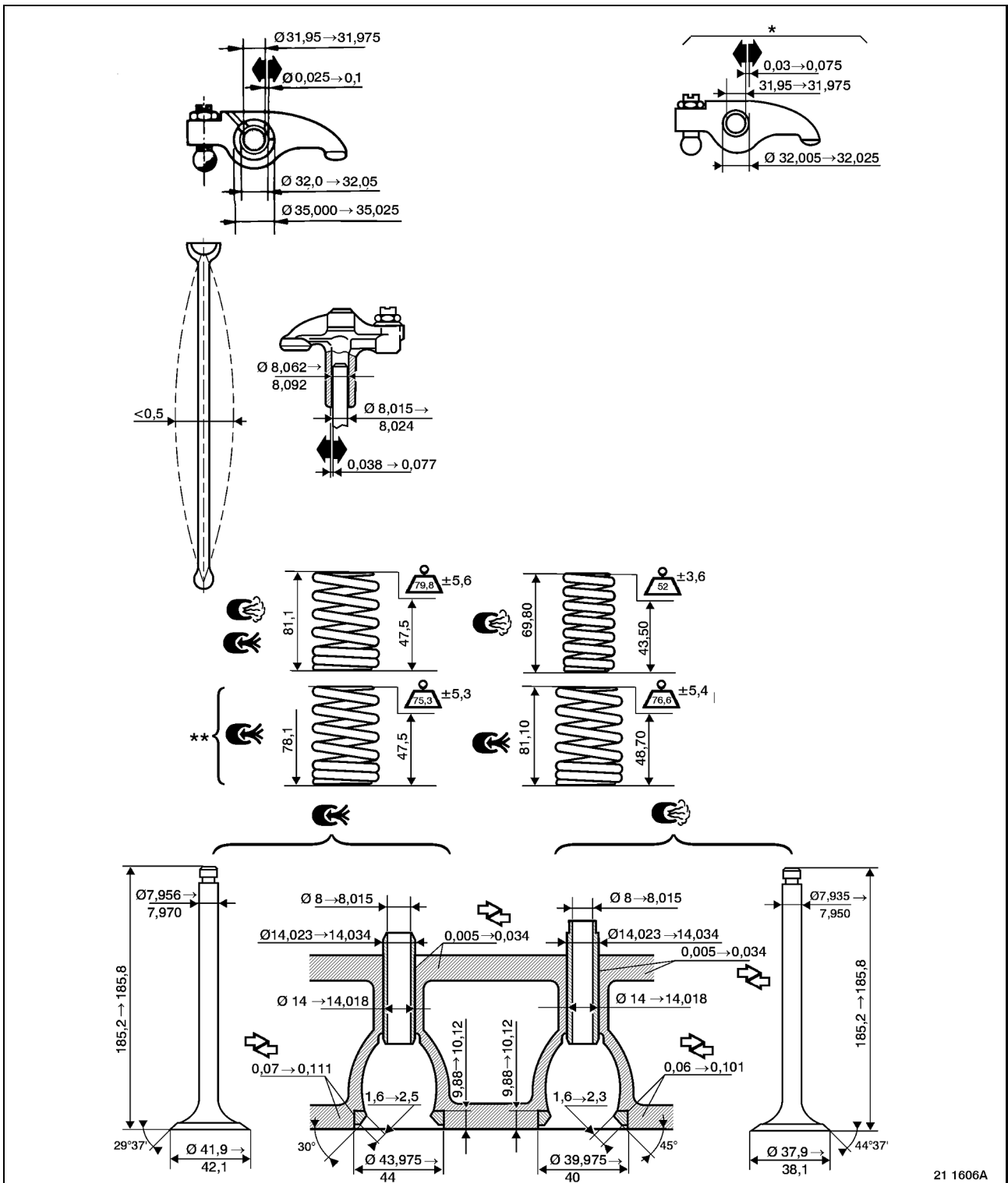
Observe the assembly method so as to guarantee the quality of the repair.

Symbolization

a	D	Diesel
b	C	Common Rail
c	I	Injection
d		
e	11	Capacity: 11: 11 litres 6: 6 litres 4: 4 litres
f		
g		
h	B	
i		
j	+	+ : Multi-mode (several power ratings available) Blank space: Single-mode (one single power rating available)
k	J	Month of application of pollutant emissions regulation: A: January B: February C: March L: December
l	01	Year of application of pollutant emissions regulation: 00: 2000 01: 2001 02: 2002
m		
n		Post-combustion equipment (particulate filter): Blank space or 0: without 1: with






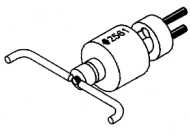


Dimensions and tolerances

Cylinder head



* Only for: dCi 11 B43

** With Jake brake

	5000262363	SET OF PUSHERS			1	1
	5000262556	GUIDE			1	1
	5000261220	PUSHER			1	1
	5000261281	PULLER			1	1
	5000261282	PUSHER			1	1
	5000262561	PUSHER			1	1
	5000261230	PULLER			1	1
	5000262334	FLANGE			1	1

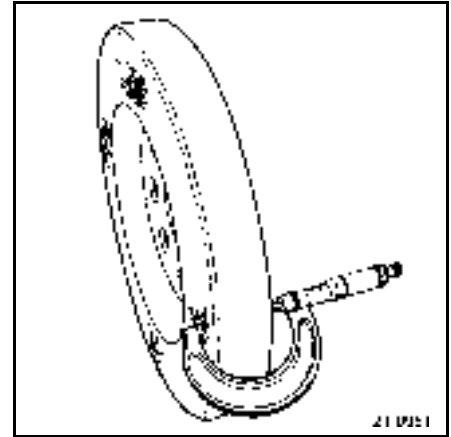
Inspection

Check for the absence of:

- knock marks and bellmouthing of fixing holes;
- any cracks;
- points of impact;
- incorrect crimping on the outer part (there should be a regular thickness of 3 mm);
- distortion on the outer part;
- convexity;
- noise when shaking the damper.

Remove the paint at 4 points on both sides and measure the thickness of the damper. The deviation between the check points should be less than 0.25 mm.

If any one of the above defects is noted, replace the damper.



It is essential to clean the damper prior to assembly.

Assembly

The item numbers indicated in the text refer to the drawing on page D-6-1.

Assemble hub **(2)** to damper **(3)**.

Fit setscrews.

In the indicated sequence

Tighten to torque.

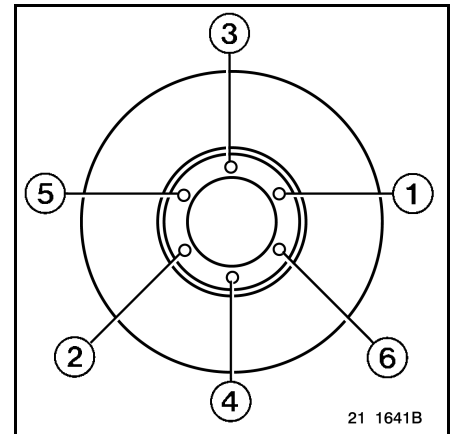
See page B-2-3

Assemble the pulley **(1)**.

Fit setscrews.

Tighten to torque.

See page B-2-3



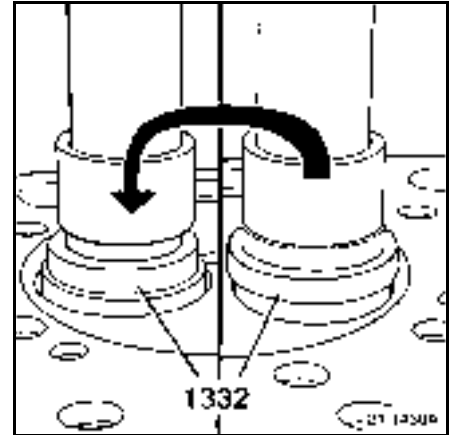
Valve seats

Shrink parts in liquid nitrogen or for 12 hours in a deep freezer.

Assemble valve seats (19 - 20).

Use tool 1332.

Use a press.

**Grinding valve seats**

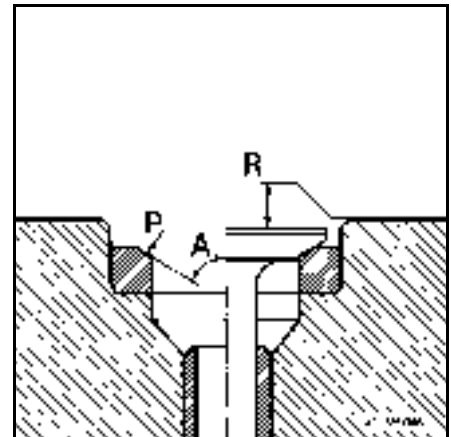
Prior to grinding the valve seats, make sure the valve guides are in good condition. Replace them, if necessary.

Method:

The valve guides should serve to centre the tool.

Take into consideration the valves set-back values R to determine the amount of metal to be removed.

- Grind bearing surface **P** while ensuring angle **A**:
 - Inlet = 60°
 - Exhaust = 45°



Depending on the tool used, the angles are datum located either in relation to the cylinder heat joint face or in relation to the valve centre-line.

Use tool 9732.

Valves

Do not grind the valves.

Do not lap the valves.

Assemble seals on exhaust guides.

Use a suitable tube.

Oil the valve stems and install the valves.

Fit cups.

Fit the springs.

Tension the springs.

Use tool 9838.

Fit valve cotters.

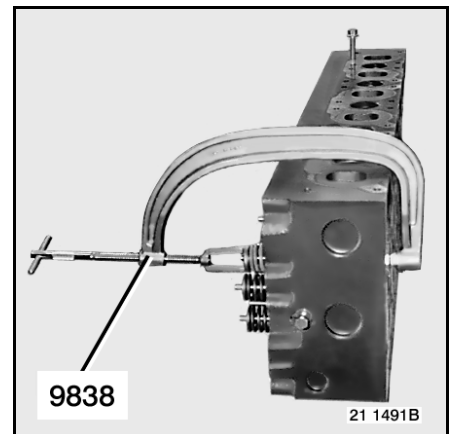
Injector nozzle-holders

Install the nozzle-holders.

See page J-2-10

Check the injector protrusion.

See page B-3-2



Connecting rods

Pistons

Version dCi 11 B43

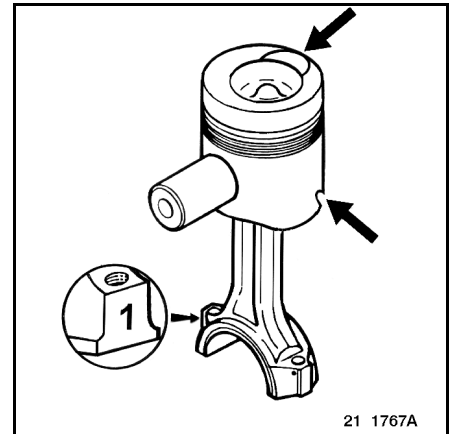
Apply oil.

Assemble piston crowns (9), skirts (11) and connecting rods (5) with gudgeon pins (7).

Match the direction of orientation.

Install circlips (6 - 10).

Fit setscrews.



Version dCi 11 + J01

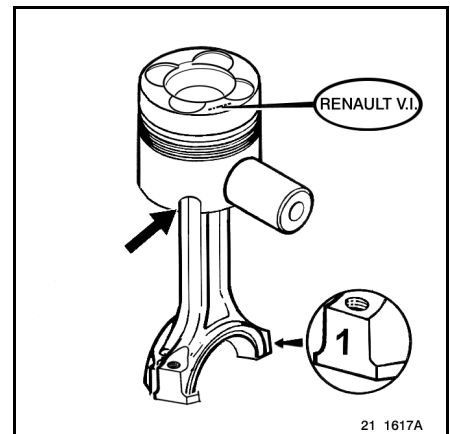
Apply oil.

Assemble piston crowns (9), skirts (11) and connecting rods (5) with gudgeon pins (7).

Match the direction of orientation.

Install circlips (6 - 10).

Fit setscrews.



Version dCi 11

(variant 14102) E + J01, G + J01, I + J01, F + J01, H + J01.

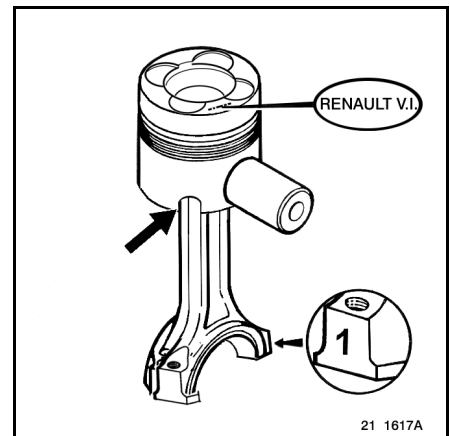
Apply oil.

Assemble pistons (9) and connecting rods (5) with gudgeon pins (7).

Match the direction of orientation.

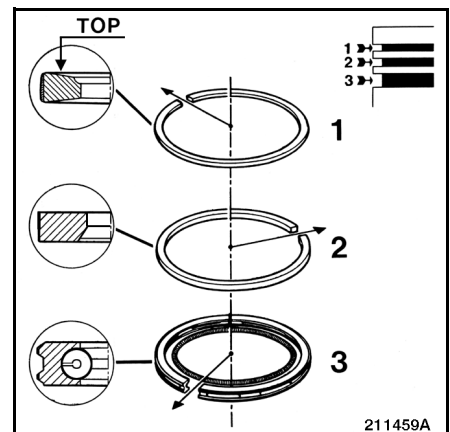
Install circlips (6 - 10).

Fit setscrews.



Install piston rings (8).

Match the direction of orientation.

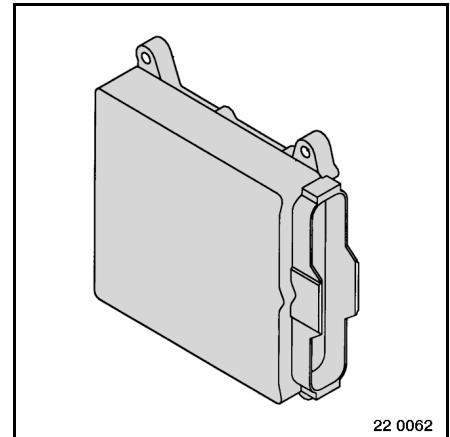


Technical data

Engine master electronic control unit (EECU)

The EECU receives information from the sensors and the vehicle electronic control unit (VECU). Depending on the input data, it pilot-controls fuel-injection and certain ancillary functions (engine cooling fan, retarder, fast idling).

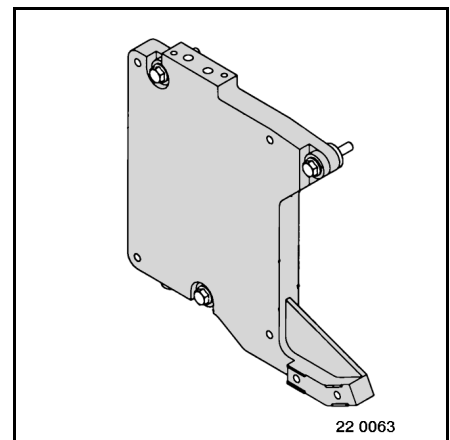
It informs the driver of the status of the system by means of instrument panel tell-tale lights and, in the event of fault, operates in fall-back mode or emergency mode (refer to the "Diagnostics" chapter).



ECU cooler

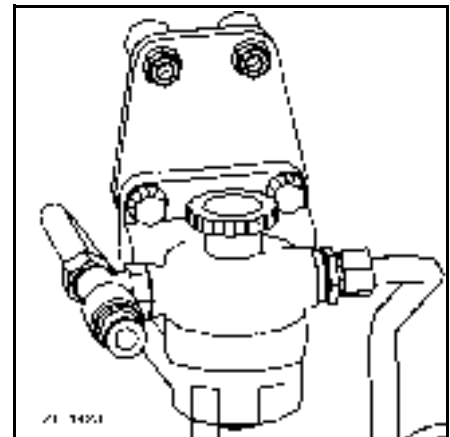
The ECU cooler is fastened to the engine block on rubber sandwich mountings and damps vibrations while supporting the ECU.

It dissipates the heat energy given off by the engine and by the electrical current (injectors control) crossing the ECU.

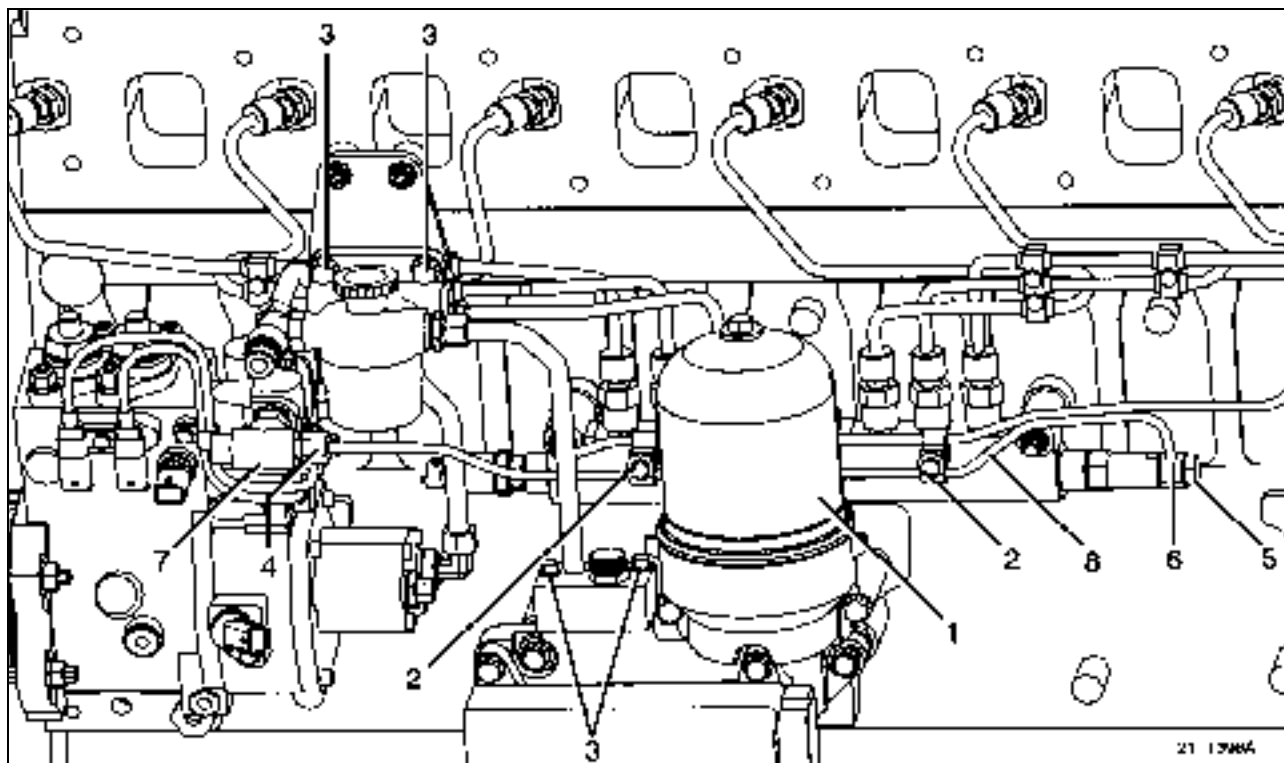


Fuel hand priming pump and prefilter

The fuel priming pump incorporates a gauze prefilter that can be washed in diesel fuel.



Rail leak-off return pipe



Removal

Remove centrifugal filter (1).

Remove the nuts (2).

Remove securing bolts (3).

Unscrew connectors (4 - 5).

Loosen union (5) while holding end (6) of leak-off return pipe with a wrench.

Loosen union (4) while holding union (7).

Blank off the ports.

Remove pipe (8).

Save the pipe fastening clamps.

Watch out not to bend the pipes.

Put each part in a new watertight plastic bag immediately after its removal.

Fitting

To fit, proceed in the reverse sequence to removal.

Replace all seals and gaskets without fail.

Tighten union (5) while holding end (6) of leak-off return pipe with a wrench.

Tighten union (4) while holding union (7).

Tighten to torque.

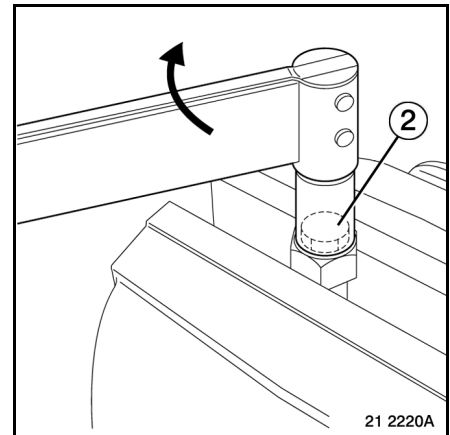
See page B-2-6

Bleed the fuel system.

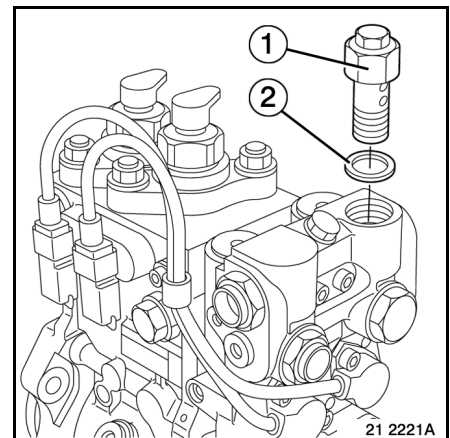
Assembly

Proceed in the reverse sequence to dismantling.
Replace gasket (3).

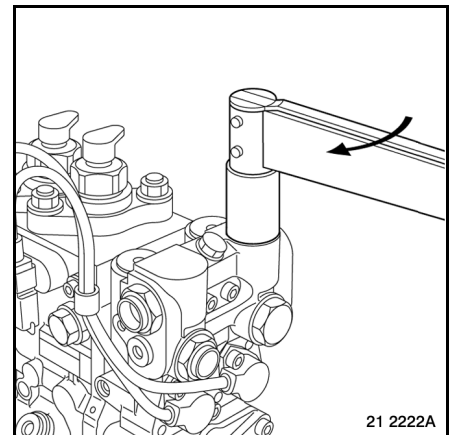
Tighten plug (2) to torque.
See page B-2-6

**Fitting**

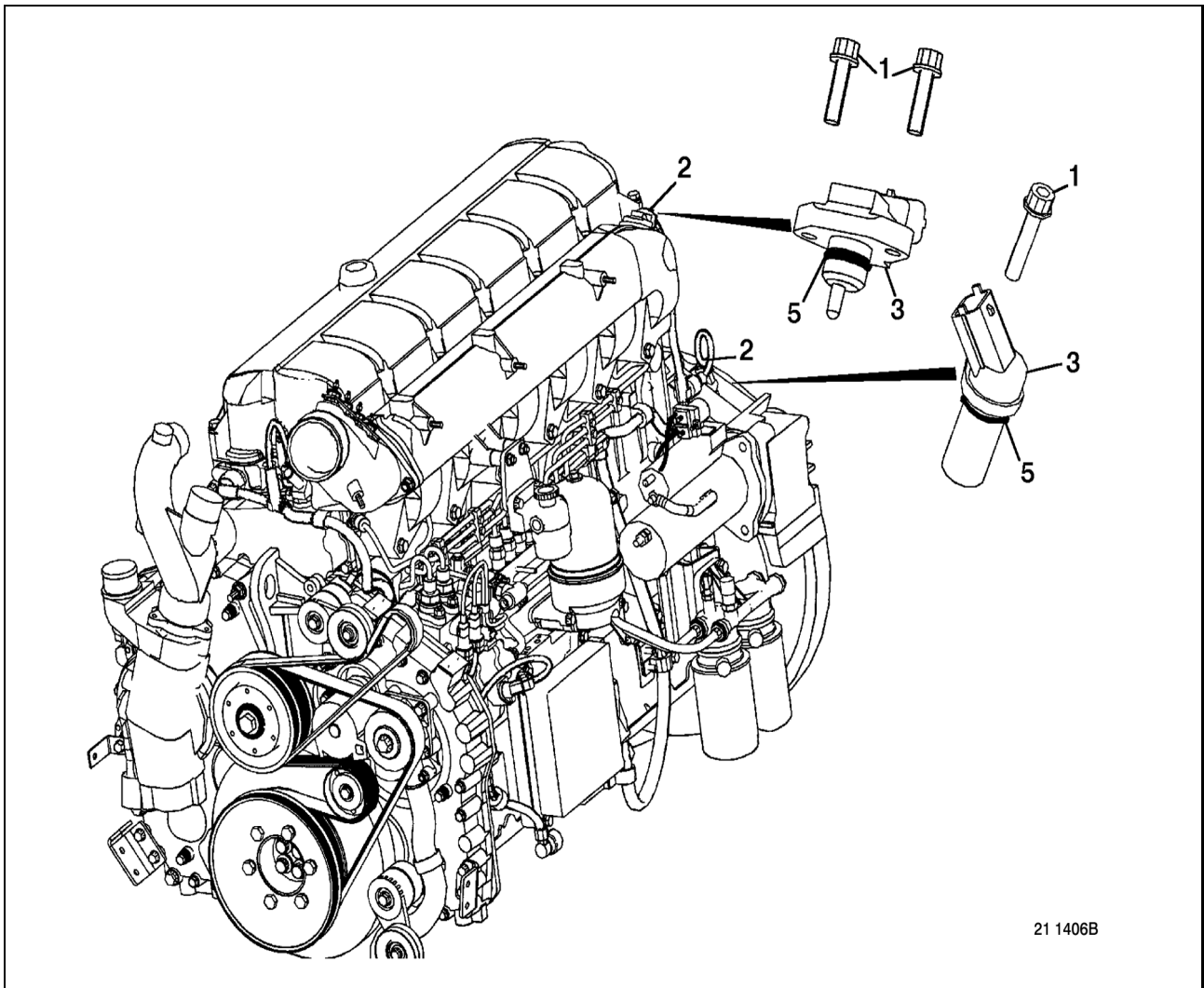
To fit, proceed in the reverse sequence to removal.
Replace gasket (2).



Tighten to torque.
See page B-2-6



Engine speed, boost air pressure and temperature sensors



21 1406B



To remove and fit the other components quoted in the paragraph, refer to their respective chapters.

Removal

- Remove setscrew(s) **(1)**.
- Unplug connector **(2)**.
- Remove sensors **(3)**.

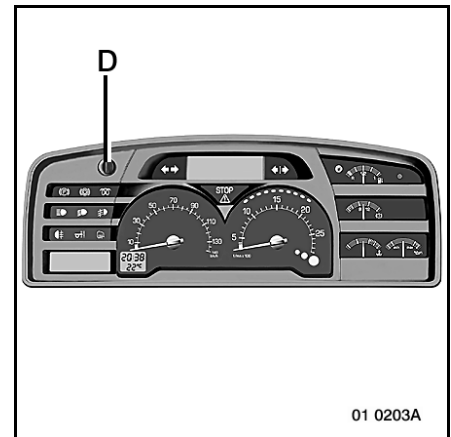
Fitting

- Replace seals **(5)**.
- Grease seals **(5)**.
- To fit, proceed in the reverse sequence to removal.
- Tighten to torque.

See page B-2-6

Diagnostics using instrument panel display

Controls



You are advised to use button (D) while the vehicle is stationary and correctly parked.

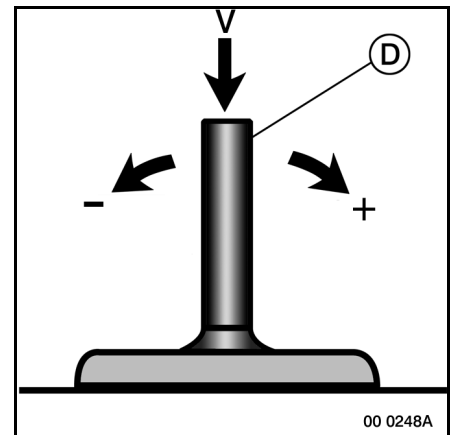
Button (D):

Push towards (+) or (-)

- to gain access to the different menus and sub-menus
- to make an adjustment or choice in the opened menu

Short pulses (V):

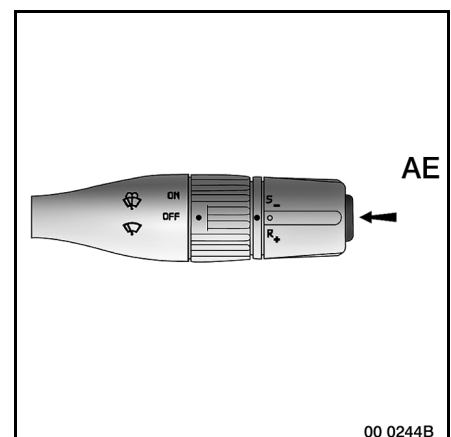
- open a selected menu.
- validate an adjustment or a choice in the menu selected
- scroll through present or memorized faults in succession



Button (AE):

Short pulses:

- serve to go back to the default display.
- close an opened menu without validating the adjustment or choice
- display the driver's various supplementary driving menus



Diagnostic (dCi 11 +J01)

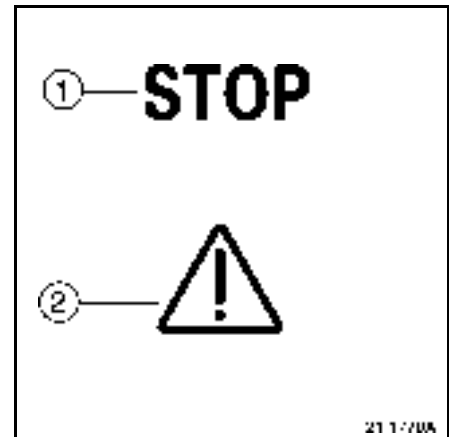
Instrument panel indicator lights

Indicator lights (1 - 2 - 3 - 4) inform the driver on the state of the system and on the kind of faults possibly detected or memorized. Warning light (1) indicates a major fault and requires the vehicle to be stopped immediately.

Warning light (2) indicates a minor fault.

Tell-tale light (3) indicates that the fault originates from a component managed by the engine master electronic control unit (EECU).

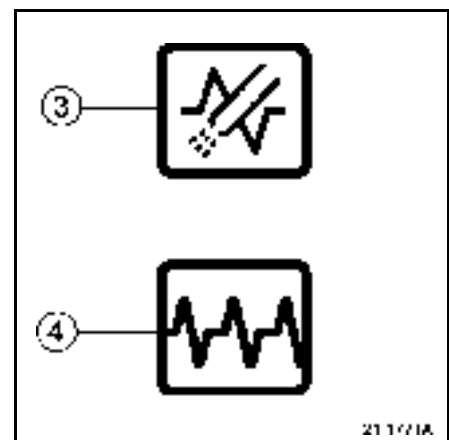
Tell-tale light (4) indicates that the fault originates from a component managed by the vehicle master electronic control unit (VECU).



The system functions by virtue of default values that replace values that can no longer be measured. Certain functions may be inhibited or operate in fall-back mode.

In all cases, the fuel-injection system needs urgent maintenance.

In the case of detection of fault, engine performance may be impaired.



Faults can be visualized by using the RENAULT TRUCKS diagnostics tool DIAGNOSTICA plugged into the vehicle diagnostics socket (5) .

Faults can also be visualized on the instrument panel information display with the display of code numbers in the "present faults" or "memorized faults" sub-menus

After taking action, erase the fault code numbers using the RENAULT TRUCKS diagnostics tool DIAGNOSTICA.

