



# RENAULT CONFIDENTIAL

## CLIO 2

Type

BB0 J

CB0 J

SB0 J

## Mégane

Type

XA0 R

## KANGOO

Type

XC0 J

XC0 N

*Fitted with the EPIC diesel fuel injection pump*

**13B** DIFFICULT TO START, ENGINE HESITATION, WARNING LIGHT ILLUMINATION

Other sub-section concerned:

**01A**

- Engine: **F8Q 622 - 632**
- Gearbox: **XXX**

Basic manual:

Workshop Repair Manual: **312, 337, 380**

Technical Note: **3420A, 3682A**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed."

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### TECHNICAL INFORMATION

#### Customer complaint

In order of appearance:

- Difficult to start.
- Accelerator pedal has no effect.
- Lack of power.
- Engine hesitation.
- Injection warning light comes on.
- Impossible to start.

#### Possible cause

- Faulty rotor sensor inside the EPIC pump.

#### Fault finding

- Confirm the customer complaint.
- The diagnostic tool displays **DF066**, 2 or 3 DEF.
- Apply the fault finding procedure for **DF066** according to **Technical Note 3420A**.
  - If the result is correct:
    - Apply this Technical Note.

#### Operation to be carried out

- Addition of a shim between the rotor sensor core and the pump casing to compensate for the deviation in reading the rotor sensor position.

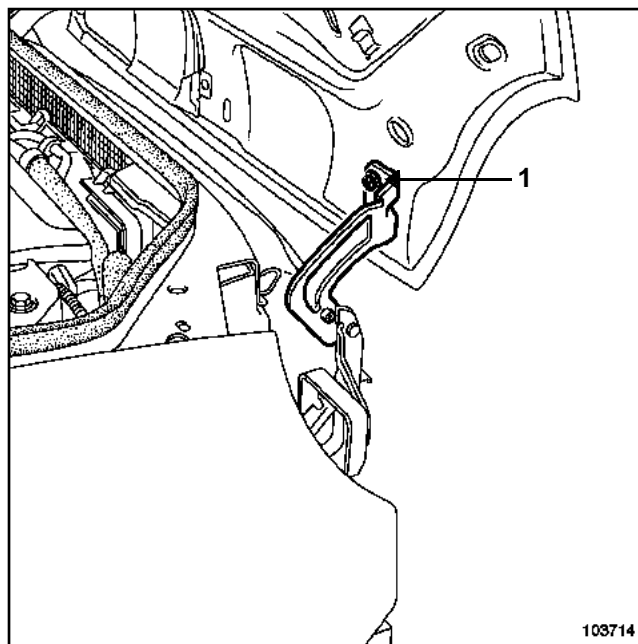
#### Description of the operation

#### REMOVAL

#### *Special notes for Kangoo*

#### Note

The following operation requires two people.



1 - Bonnet bolt

- Remove the mounting bolts (1) from the bonnet.
- Remove the bonnet.

#### *All vehicles*

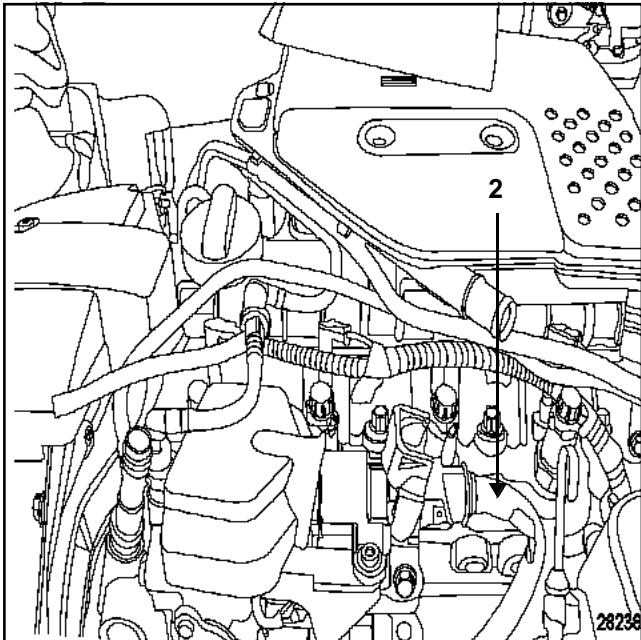
- Disconnect the battery.

#### IMPORTANT

Please observe the recommendations when disconnecting and reconnecting the battery (see **Electrical equipment, Battery: Removal – Refitting**) (MR 380, 80A, Battery).

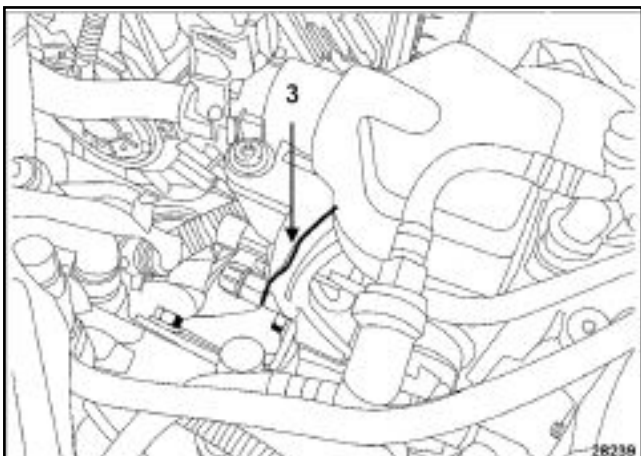
- Protect areas sensitive to leaking fuel (alternator and air conditioning compressor).
- Clean the exterior of the rotor sensor and the high pressure pipe unions:
  - Spray **brake cleaner, part number: 77 11 226 128** on the edges of the sensor and the high pressure pipe unions,
  - Wipe using lint-free **cloths, part number: 77 11 211 707**,
  - Blow compressed air over the cleaned parts.

- Remove:
  - the injector return pipes,
  - the oil vapour recirculation pipe,
  - the high pressure pipes.
- Plug the unions:
  - 8 yellow blanking covers for the pump and injectors,
  - 8 red flexible blanking covers for the high pressure pipes.
- Disconnect the wiring harness from the pump (2).
- Move the wiring harness away from the pump (2).



2 – Pump wiring harness

- Unclip the rotor sensor wiring harness (3) from its support on the pump side.



3 – Rotor sensor wiring harness

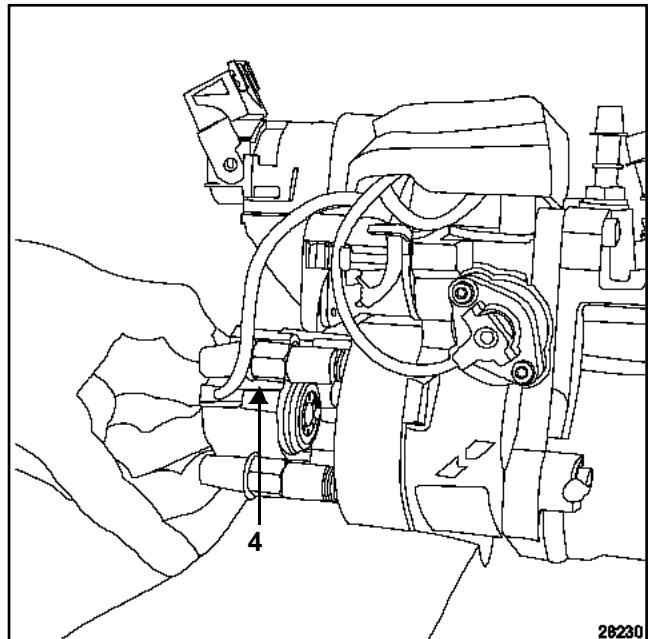
### Note

For the operation to be a success, it is **ESSENTIAL** to observe the procedure described below.

- While keeping the rotor sensor pressed against the pump:
  - undo the mounting bolts,
  - remove the two bolts.
- Remove the sensor.

### IMPORTANT

Ensure that the sensor does not touch the core.

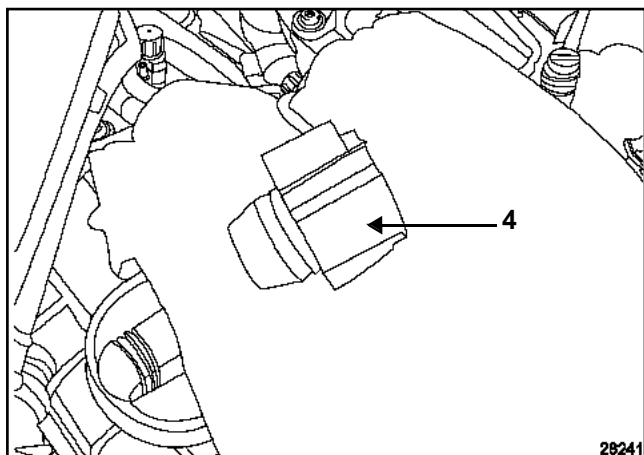


4 – Rotor sensor

- Fit the blanking plug on the sensor.
- Fit the sensor on the engine.

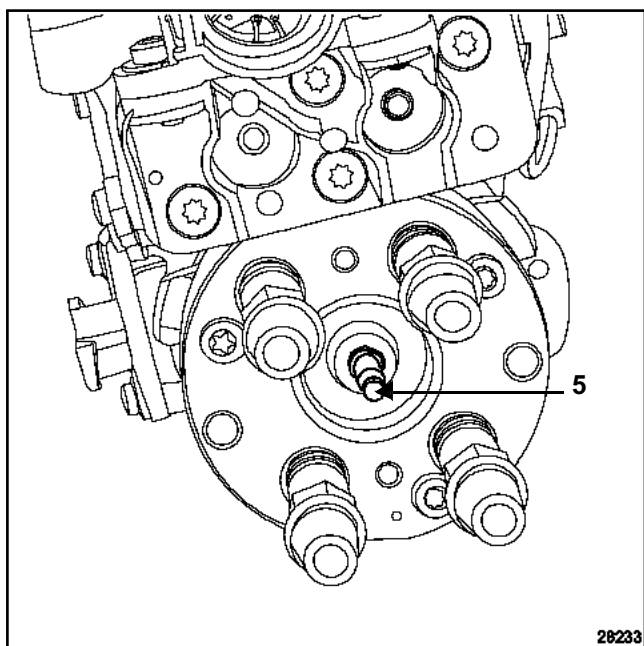
### Note

Do not disconnect the sensor wiring harness on the pump.

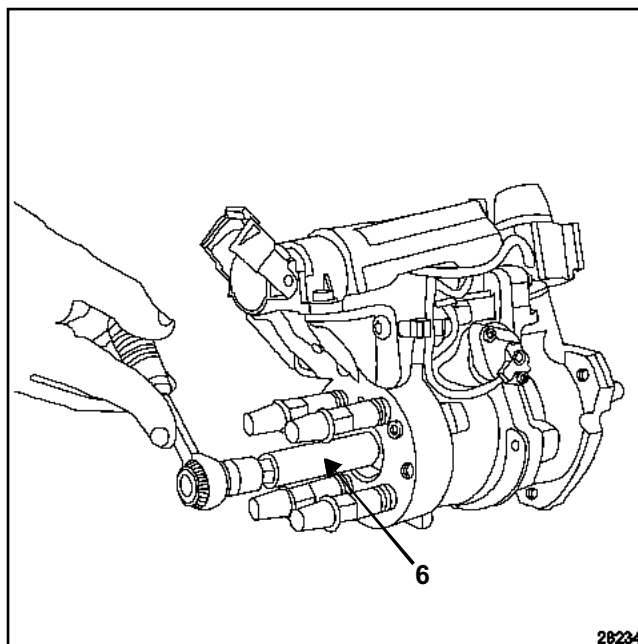


4 – Rotor sensor

- Remove the O-ring from the rotor sensor.
- Using the special socket supplied in the repair kit:
  - undo the core (5) of the rotor sensor.



5 – Core



6 – Special socket

### IMPORTANT

1 or 2 shims are positioned between the core of the rotor sensor and the rotor.

During the removal operation, these shims can be found:

- either at the base of the pump,
- or on the core.

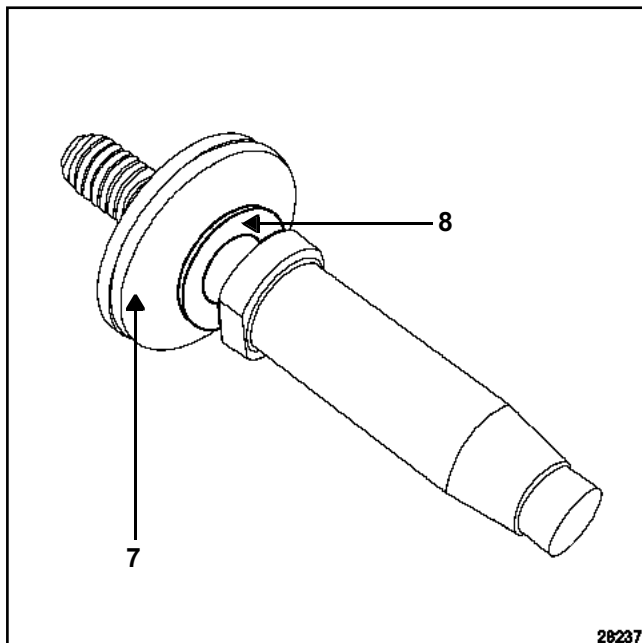
### IMPORTANT

Ensure that the shims do not fall into the engine or pump.

- Remove the core of the rotor sensor by hand.

### ADDITION OF THE SPECIAL SHIM

- Remove the 2 original shims from the core.
- Fit the special **0.25 mm** shim.
- Refit the original shim(s).



7 – Original shim(s)

8 – Special shim

- Refit the core of the rotor sensor whilst holding the shims.

### IMPORTANT

Do not mark or cover the core of the sensor.

- Screw in the core of the rotor sensor completely by hand.
- Tighten it a quarter of a turn using the tool.

### Note

Tightening torque of the core: **1.6 N.m**

- Lubricate the new O-ring.
- Remove the blanking plug from the rotor sensor.
- Fit the O-ring on the sensor body.
- Refit the rotor sensor, without putting the core under any strain.
- While keeping the rotor sensor pressed against the pump:
  - fit the sensor mounting bolts,
  - tighten the bolts by hand until contact is made,

### IMPORTANT

Do not exceed this value as this may damage the injection pump.

- torque tighten the mounting bolts to **6 N.m**.

### REFITTING

- Clip on the electrical sheath of the rotor sensor.
- After having removed the blanking plugs, refit the high pressure pipes:
  - **torque tighten to 25 N.m** on the pump side only.
- Refit the injector return and oil vapour recirculation pipes.
- Protect the area around the high pressure pipes (from splashes during the bleed operation).
- Connect the battery.

### Note

It is **ESSENTIAL** to carry out the necessary programming (see **Battery: Advice**) (Technical Note 3682A, 80A, Battery) or (**Electrical equipment, Battery: Removal - Refitting**) (MR for the vehicle, 80A, Battery).

- Bleed the injection system:
  - engage the starter for **5 seconds**,
  - prime the circuit using the priming bulb,
  - repeat the operation until air is released from the diesel circuit.
- **Torque tighten** the high pressure pipes on the injector side to **25 N.m**.

### Special notes for Kangoo

- Refit the bonnet.
- Tighten the bolts to a **torque of 8 N.m**.

- Clear the fault codes using the diagnostic tool.

### Note

The fault code must not reappear after having run **the flow actuator** and **advance actuator tests** on the pump.

- Carry out an operational test.

### Marking the vehicle after work has been carried out:

- Add the red **CLIP** (supplied in the kit) to the wiring harness of the rotor sensor.

# EPIC INJECTION PUMP

## Repairing the rotor sensor

# 13B

### CLAIM COMPLETION AND CODING

#### When to take action

- Upon receipt of a customer complaint.

#### Parts required

Quantity	Description of parts	Part number
1	Brake cleaner	77 11 226 128
1	Special injection cloths	77 11 211 707
1	EPIC pump repair kit composed of: <ul style="list-style-type: none"><li>– 8 yellow blanking covers</li><li>– 8 red blanking covers</li><li>– 1 white blanking cover</li><li>– 1 sensor seal</li><li>– 1 shim</li><li>– 1 disposable tool for removing the rotor core</li><li>– 1 clip</li></ul>	77 01 478 776

#### Tooling required

- Conventional.

#### Time required

##### *Clio 2*

Code	Description	Time
7697	Repair of the EPIC pump	0.8
0331	Vehicle programming	0.2
0145	Operational test	0.3
	<b>TOTAL</b>	<b>1.3</b>

##### *Mégane*

Code	Description	Time
7697	Repair of the EPIC pump	0.8
0331	Vehicle programming	0.2
0145	Operational test	0.3
	<b>TOTAL</b>	<b>1.3</b>

##### *Kangoo*

Code	Description	Time
4191	Remove and refit bonnet	0.5
7697	Repair of the EPIC pump	0.8
0331	Vehicle programming	0.2
0145	Operational test	0.3
	<b>TOTAL</b>	<b>1.8</b>

#### Destination of removed parts

- In accordance with warranty directives.

#### Codification items

- **With PGCS**
  - Cause Opecode: **7608**
- **Without PGCS**
  - NITG code: **M4C1**
- **With or without PGCS**
  - Supplier code: **153**
  - Customer complaint code: **7ML, 7C**