RENAULT

WORKSHOP MANUAL

N.T. 2330 A

Basic manual : **M.R. 305**

ENGINE

IMMOBILISERS

77 11 179 640 **MARCH 1995** **Edition Anglaise**

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

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

Contents

ALARM SYSTEM
Engine immobiliser

GENERAL

From now on TWINGO vehicles can be equipped with an engine immobiliser system which can be controlled in one of two ways:

- **By the Plip remote control** for Pack and Easy versions (called engine immobiliser with plip remote control).
  In this case the engine immobiliser has a rolling infrared code. The infrared code transmitted by one or other of the vehicle receivers will therefore be different each time the plip remote control is pressed (rolling code).
  This system will prevent a vehicle being stolen because the infrared code has been copied.
  The engine immobiliser can be activated either by locking the doors using the Plip remote control or by the system setting passively (see conditions on page 82-3).

- **By a KEY recognition system** for the basic versions (called the key-operated engine immobiliser) .
  A coded electronic system (which operates without a battery) is integrated in each of the vehicle key heads. When the ignition is switched on, a ring around the starter switch scans and detects the code transmitted by the key and transmits it to the decoder. If the decoder recognises the code, the vehicle can be started. The engine immobiliser is activated a few seconds after the key is taken out of the ignition switch

Irrespective of whether the vehicle is fitted with an engine immobiliser with a remote control or key recognition system, the fact that the engine immobiliser is activated is indicated by the flashing of a red tell-tale light situated in the centre of the warning light display.

If the system fails (infrared remote control or key recognition), a security code can be entered via the readout key on the multifunction display (at the end of the wiper control) and the red engine immobiliser tell-tale light so that the vehicle can be started again.

Upon request, this security code will be given to the repair engineer via the dealer network or the local roadside assistance network (for example, from the RAC in the UK or Delta Assistance in France), depending on the country.

NOTE : For this generation of engine immobiliser, the service engineer will have to tell the customer the confidential number when he repairs the vehicle (system resets automatically approximately 10 minutes after the ignition has been switched off).

A card containing the security code will not be supplied with the vehicle for reasons of confidentiality.

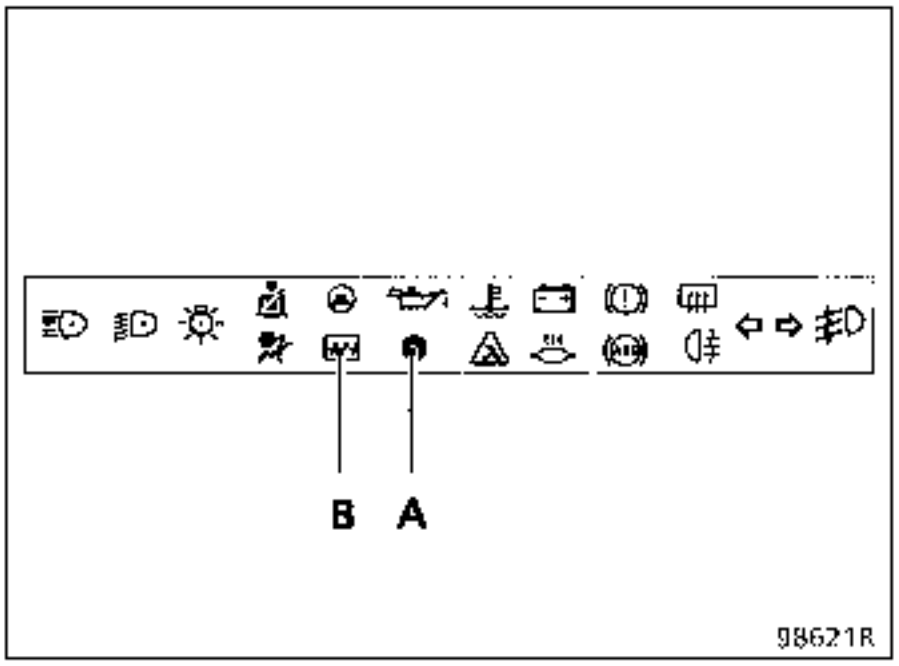
ATTENTION :
Fault finding with the XR25 is only possible with the key-operated engine immobiliser system (not the plip remote control engine immobiliser).

ALARM SYSTEM
Engine immobiliser with Plip

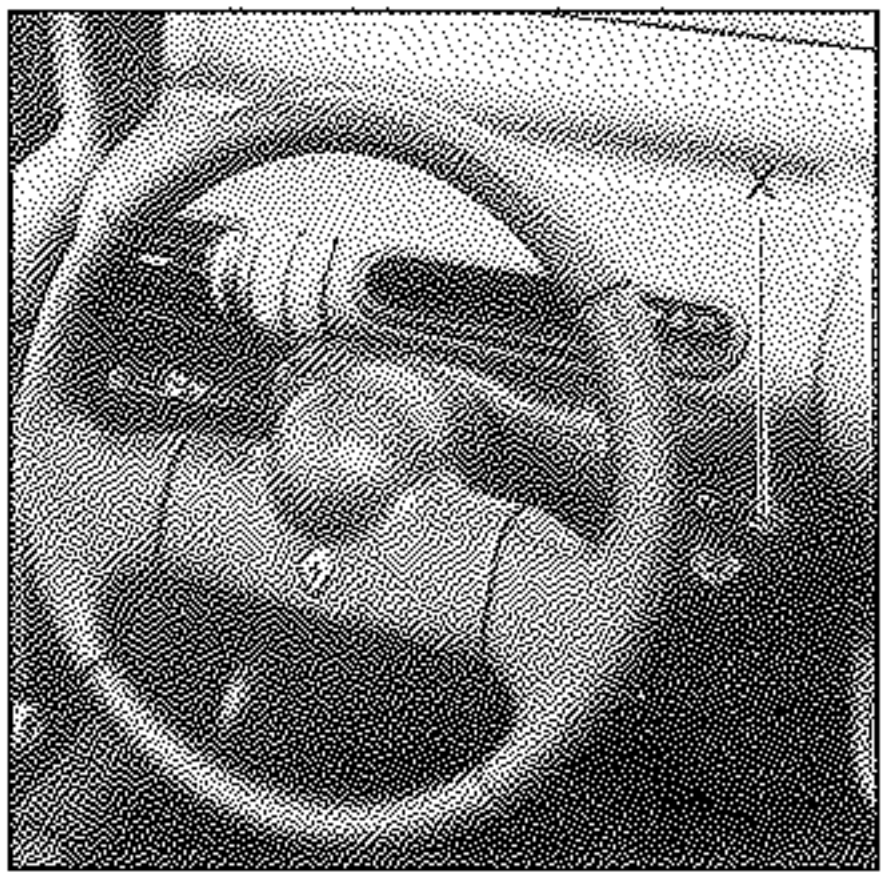
DESCRIPTION OF ENGINE IMMOBILISER WITH PLIP INFRARED REMOTE CONTROL

With this system the engine immobiliser can be activated either when the doors are locked with the Plip infrared remote control or it can be set passively.

It consists of:
- Two receivers specifically matched to a different rolling code.
- A red engine immobiliser tell-tale light (A) indicating that the system has been activated (also used for entering the security code).
- An injection tell-tale light (B) used to indicate an injection fault or a fault in the engine immobiliser system when the engine is running (flashes when decelerating or at idling speed).



- A multifunction display readout key (X) which is also used for entering the security code.



- A special printed circuit board (D) (which acts as a decoder) is situated in the roof console and carries out the following operations:
  - Decoding the infrared signal from the transmitter
  - Managing the engine immobiliser system, sending an injection computer code to authorise or prevent the vehicle from being started
  - Locking or unlocking doors and tailgate
  - Time delay function for the courtesy light:
    - when one of the doors is opened (with no + after the ignition),
    - after the Plip infrared remote control has sent a signal to unlock the doors.

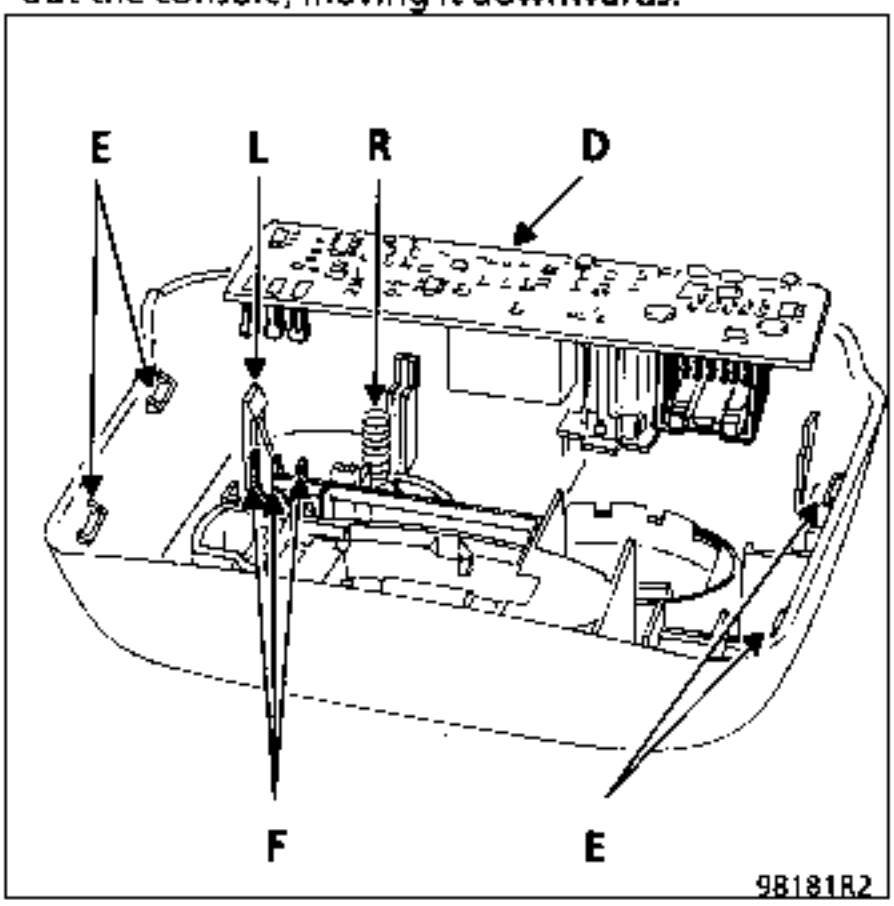
    The time delay is approximately 15 seconds. It starts again each time the Plip is activated (locking, unlocking) and each time a door is opened manually.

  - The courtesy light is switched off when + after ignition is detected, all doors are closed and after the doors have been locked using the Plip remote control, even if the time delay has been activated.

- A special injection computer which can be coded.

REMOVING THE PRINTED CIRCUIT BOARD (D) (decoder)

Apply pressure simultaneously to the front and rear surfaces of the roof console in order to release the four retaining clips (*E*), and then take out the console, moving it downwards.



Then unclip the printed circuit board from its bracket, releasing tab (L).

Disconnect the 12-track connector.

Special points relating to refitting

Before clipping the printed circuit board back into position, be sure to refit:
- the spring (R) on its support,

- the three terminals (F) in the appropriate contacts on the printed circuit board.

PASSIVE SETTING OF THE ENGINE IMMOBILISER

If the doors of the vehicle have not been locked using the plip infrared remote control, the engine immobiliser will be passively set (no + after ignition)

Conditions

1. If the front doors remain closed after the ignition is switched off, the engine immobiliser will be set passively after 30 minutes or 10 minutes (depending on country) if the + auxiliaries or the + after ignition are not turned on again in the intervening period.

2. If one of the doors is opened after the ignition is switched off, the engine immobiliser will be set passively after 1 minute (for the UK) or after 10 minutes (for other countries) if the + auxiliaries or the + after ignition are not turned on in the intervening period.
   The 1- or 10-minute time delay starts from when one of the front doors is opened. If one of the doors is already open when the ignition is switched off, the time delay will start immediately.

3. The engine immobiliser will be passively set 10 minutes after the doors are unlocked using the plip infrared remote control, if the + auxiliaries or the + after ignition are not activated in the intervening period.

REMINDER:

- To start the vehicle after the engine immobiliser has been passively set, it will be necessary to lock and unlock the doors using the plip infrared remote control.

- To start the vehicle after disconnecting the battery (or disconnecting the + before ignition of the decoder), it will be necessary to use the plip transmitter once (unlock or lock).

- The engine immobiliser system is set (in circumstances other than passive setting) by locking the doors using the plip infrared remote control.

CAUTION: When the vehicle battery charge is low, the drop in voltage caused by activating the starter may reactivate the engine immobiliser.

ALARM SYSTEM
Engine immobiliser with Plip

OPERATION

When the engine immobiliser is operating (after the doors have been locked using the Plip infrared remote control or after the system has been passively set), the red engine immobiliser tell-tale light flashes (slow flashing).

When a signal is sent by the Plip to unlock the doors, the printed circuit board electronics (D) identify the infrared code received (rolling code).
If this code is recognised, the system's electronic unit unlocks the doors, extinguishes the red engine immobiliser tell-tale light and, when the ignition is switched on, a code is sent to the computer via the coded link.

At this point, several situations may arise:

- The injection computer does not have a reference code in its memory :
  - The code which is sent is written in its memory.

- The injection computer has the reference code in its memory :
  - The code sent is compared with its reference code.

  - If the two codes match, the computer unlocks the injection system and allows the engine to be started.
    When the ignition is switched on, the injection tell-tale light and the engine immobiliser tell-tale light illuminate steadily for a few seconds and then extinguish, indicating that the system is operating correctly.
  - If the two codes do not match, the computer does not unlock the computer and this prevents the engine from being started.
    When the ignition is switched on, the injection tell-tale light illuminates for a few seconds and then extinguishes, while the red engine immobiliser tell-tale light flashes (rapid flashing).
    No authorisation is given to start up the vehicle.

NOTE : Pressing the remote control has no effect if there is a + after the ignition.

REPLACING A PLIP RECEIVER

If the receiver is defective :

Order a receiver as a replacement part using the number which appears on or inside the key head (7 characters) and resynchronise (see "Resynchronisation procedure").

In a situation where the customer needs to use his vehicle immediately, it is possible to fit a complete kit (decoder + 2 receivers). (See "Replacing a set".)

If the receiver has been lost :

Order a receiver as a replacement part using the number which appears on the head of the second key (7 characters) or on the bar code label (included with the keys when the vehicle is delivered) and resynchronise. (See "Resynchronisation procedure").

In this case, also make provision to order the key number insert.

NOTE : In cases where it is impossible to find the numbers on the key head (2 keys lost as well as the bar code label) the entire set will need to be replaced (decoder plus two receivers, and the injection computer).

ATTENTION : This system cannot operate with three remote control units. (The printed circuit board can only manage two different rolling codes.)

RESYNCHRONISATION PROCEDURE

This resynchronises the two receivers with the printed circuit board (rolling code).
The procedure must be used in the event of a plip receiver being replaced or when the plip rolling code is no longer synchronised (if the receiver is pressed consecutively more than 1,000 times without activating the engine immobiliser).

IMPORTANT :

For the plip receivers to be operational after resynchronisation, both have to be resynchronised even if only one of them is defective. If this procedure is not followed, only the receiver used for resynchronisation will operate. In a situation where a customer is far from home and only has one receiver with him, he will need to visit his local dealer for the resynchronisation process to be carried out using both Plips.
The vehicle security code will need to be entered to carry out this procedure.This security code is to be obtained from the Technical Services Department in the UK, stating the 7-digit number written on the key head. (For other countries, please contact Head Office or Technical Services Department, depending on the local situation.)

ATTENTION : This procedure does not decode the injection computer (or the printed circuit electronics).

1 - The engine immobiliser system must be activated (by the second Plip remote control or by the system being passively set). The red engine immobiliser tell-tale light flashes.

2 - Switch on the ignition.

3 - Re-enter the security code using the readout key on the multifunction display and the engine immobiliser tell-tale light (see procedure for entering the security code).

4 - Switch off the ignition.

5 - Press the central door locking switch for more than 2 seconds. (The doors are locked and unlocked.)

The operator has 10 seconds from this moment (indicated by the steady illumination of the red engine immobiliser tell-tale light) to carry out the next two operations (6 and 7).

6 - Press the first receiver once. (The doors will lock and unlock.)

7 - Press the first receiver once. (The doors will lock and unlock.)

ATTENTION : To transmit the infrared code correctly, it is essential to point the plip receiver towards the transmitter to perform operations 6 and 7. If the procedure fails, it will be necessary to start at the beginning again.

REMINDER: Unless both plip receivers are resynchronised together, one or the other may not function.

8 - The procedure is complete. Check that the central door locking and the engine immobiliser operate correctly.

REPLACING A PRINTED CIRCUIT BOARD ONLY (decoder)

The electronics on a printed circuit board are not coded. It will be necessary to teach the two new receiver codes to the printed circuit board so that the system can operate (see "teaching procedure).

NOTE : In this case, it is not necessary to perform any work on the injector computer. It keeps the same engine immobiliser code.

ATTENTION : Once the printed circuit has been taught the key code, it is not possible to erase this code or to authorise another code in its place.

"TEACHING" PROCEDURE

This procedure can only be carried out once for each printed circuit board. If this procedure has not been carried out, the vehicle cannot be started (except if the injection computer is not coded).

IMPORTANT : For the printed circuit board to allow the vehicle to start, it is essential for both receivers to be used for the "teaching" procedure.

1 - The ignition must be switched off.

2 - Press the central door locking switch for more than 2 seconds. The doors will lock and unlock.

The operator has 10 seconds from this moment (indicated by the red engine immobiliser tell-tale light illuminating steadily) to carry out the next two operations (3 and 4).

3 - Press the first receiver once. (The doors will open and close.)

4 - Press the second receiver once. (The doors will open and close.)

5 - The procedure is complete. Check that the central door locking and engine immobiliser operate correctly.

ATTENTION: The receiver (Plip) must be correctly pointed at the transmitter during operations 3 and 4 to allow the infrared code to be transmitted correctly. If the operation fails, the procedure must be repeated from the beginning.

COMMENT:

Turning the ignition switch to ignition on position will stop the "teaching procedure". The decoder will remain in the uncoded state. This is indicated by the doors unlocking.

The procedure will fail if the second receiver is identical to or incompatible with the first one. It has thus been ensured that the two receivers have been matched.

REPLACING A SET (printed circuit board plus 2 receivers)

If a set is replaced, the following operations are required:

- Teach the two new receiver codes to the printed circuit board electronics (supplied uncoded).
- Erase the previous code memorised in the injection computer using the repair procedure. (Security code number to be requested from the Technical Services Department in the UK or, for other countries, please contact your Head Office or Technical Services Department, depending on the local situation.)

ATTENTION : To erase the old code (stored in the injection computer memory), it is essential to follow the procedure described below in the correct sequence.
The injection computer code can only be erased with the security code (using the same number as the old set) if the printed circuit board on the vehicle has learnt a different code. (This is the case for the procedure described below.)

NOTE : If the security code is entered when the printed circuit board has the same code as the injection computer, the injection computer will not be decoded.

1 - Remove the printed circuit board (see page 82-3).

2 - Fit the new printed circuit board in its place.

3 - Teach the printed circuit board the codes of the two new receivers (supplied uncoded). (See "teaching" procedure.)

4 - With the vehicle doors locked using the Plip remote control, erase the old code memorised in the injection computer using the repair procedure and the code number for the old set. (See procedure for entering the repair code.)

NOTE : It is possible to check whether the injection computer has been properly coded using the XR25 (in injection fault finding).

Connect the XR25 to the diagnostic socket, take fiche no. 23, set the ISO to S8 and enter code D13.

- bargraph 2 RH (engine immobiliser) should be illuminated. Enter *22. The text "2 def" should appear on the XR25 display. The injection computer has been correctly erased.

- If the display indicates "1 def", it indicates an anomaly on the coded line. In this case, repair the line and recommence the procedure.

- If bargraph 2 RH (engine immobiliser) is extinguished and the display indicates "bon" (*22), it indicates that the injection computer code has not been erased. In this case, check that the security code is correct, unlock and relock the doors using the plip remote control and repeat the repair procedure.

5 - Teach the injection computer the code of the new set.
- Unlock the doors using the Plip.
- Switch on the ignition

NOTE : Using the XR25 and fault finding fiche no. 23 (ISO selector on S8, code D13), check that the injection computer has learned the code correctly. Bargraph 2 RH (engine immobiliser) should be extinguished. Type in *22: the display should indicate "bon".
The injection computer has been coded correctly.

6 - The procedure is complete. Check that central door locking and the engine immobiliser operate correctly.

REPLACING THE INJECTION COMPUTER

The injection computers are delivered without a code. An electronic engine immobiliser code therefore has to be stored in their memory when they are fitted.

Adopt the following procedure:

- Unlock the doors using the plip infrared remote control.
- Switch on the ignition for a few seconds.
- Lock the doors using the plip infrared remote control. The engine immobiliser system is in operation

NOTE : To check the activation of the system, lock the doors from inside the vehicle using the plip receiver. (The red engine immobiliser tell-tale light should flash.) Switch the ignition on. The red engine immobiliser tell-tale light should flash more quickly and it should not be possible to start up the engine.

SPECIAL POINTS TO NOTE WHEN TESTING THE INJECTION COMPUTER (TEST PART)

ATTENTION : Some injection computers on the Twingo can be coded and others not. These can be identified from the third digit of the Magnéti Marelli part number.
If this is a zero (example: 16085.114), the computer cannot be coded (computer not envisaged for vehicle with engine immobiliser).
If this digit is a 2 (example: 16231.004), the computer can be coded (computer can be fitted on the vehicle with or without the engine immobiliser system).

Computer which cannot be coded

Example: Magnéti Marelli Part No. 16085.114 (borrowed from the stores or from another vehicle). This type of computer can be used for a test on a vehicle equipped with an engine immobiliser. It cannot under any circumstances learn the system code . After the test, refit an injection computer with the correct specification for the faulty vehicle (intended for a vehicle with an engine immobiliser) and check that the engine immobiliser system operates correctly before returning the vehicle to the customer.

ATTENTION : When checking injection using the XR25 (fiche no. 23, code D13) during a test of an uncoded computer, it is normal for bargraph 2 RH to be illuminated (*22 2 def = computer uncoded or not codable).

→

New computer which can be coded

Example: Magnéti Marelli Part No. 16231.004 borrowed from the stores.
This type of injection computer can be used for a test provided that certain precautions are taken to prevent the engine immobiliser code being memorised (if the computer is to be returned to the stores).

Remove the door locking fuse before fitting the test computer in the vehicle.

Do not replace this fuse while the test computer is fitted on the vehicle.

The fact that this fuse (which feeds the printed circuit board) has been removed allows the vehicle to be started without the risk of the injection computer being coded.

The test can then be carried out.

The computer can be returned to the stores after the test. It is essential to remove the computer before refitting the door locking fuse.

If the computer is to remain on the vehicle, replace the fuse and teach the injection computer the engine immobiliser code. (See injection computer replacement.)

If the test computer is to be returned to the stores, (before it is removed from the vehicle) the XR25 in connection with fiche no. 23 can be used to check that the computer has not been coded during the test. (Possible reason: incorrect procedure).

Connect the XR25, set the rotary selector to S8 and type in code D13.
Bargraph 2 RH (engine immobiliser) must be illuminated. After entering *22, the text "2 def" should appear on the XR25 display.

This indicates that the injection computer has not been coded: it can be returned to the stores.

If bargraph 2 RH (engine immobiliser) is extinguished and after typing in *22, the text "bon" will appear on the XR25 display. This indicates that the computer has learned the engine immobiliser code (incorrect procedure).

In this case, the computer must be decoded before it is returned to the stores.

The procedure for decoding the injection computer involves replacing the printed circuit board "in the roof console" of the vehicle with another printed circuit board coded with a different code (with its receiver) and
re-entering the vehicle security code. This security code is to be obtained from the Technical Services Department in the UK, stating the 7-digit number written on the key head. (For other countries, please contact Head Office or Technical Services Department, depending on the local situation.)

- With the ignition switched off, fit a coded printed circuit with a different number in place of the original printed circuit board. (The procedure does not work; with a coded or uncoded printed circuit board with the same number as the injection.)

- Unlock and lock the vehicle doors with the Piip used for decoding. (If you do not have a plip, wait 15 minutes.).

- Switch on the ignition. The red engine immobiliser tell-tale light flashes (fast flashing).

- Enter the vehicle security code (number corresponds to original key number).

Once the security code has been entered, the red tell-tale light will flash again. The text "2 def" should appear on the XR25 display (under D13, Fiche no. 23), indicating that the injection computer has been properly decoded.

- Switch off the ignition, remove the decoded computer and return it to the stores.
- Refit the computer and original printed circuit board on the vehicle.

Computer borrowed from another vehicle fitted with an engine immobiliser (if available)

Example: Magnéti Marelli Part No. 16231004 (already coded).
To avoid the procedure for coding and decoding the injection computer, it will be simpler to borrow the following items from another vehicle with the same specifications :

- the injection computer
- the printed circuit board
- the Plip.

After the test, refit the parts described on the vehicle to which they were originally fitted.

SYSTEM FAILURE WITH ENGINE RUNNING

If a system failure is identified by the injection computer with the engine running, the injection tell-tale light on the instrument panel will flash when the vehicle is decelerating and at idling speed (engine speed below 1 500 rpm).

IMPORTANT: In this case, after making the repair it will be necessary to erase the fault memorised in the injection computer by disconnecting the battery (for approx. 30 seconds) in order to allow the engine immobiliser to be reactivated.

NOTE : This fault can be displayed using the XR25 (Fiche no. 23),

- Connect the XR25, set the rotary switch to S8 and enter code D13,
- The fault can be displayed by bargraph 2 RH.
- Enter *22. The text "1 def" on the XR25 display indicates a fault on the coded line.

Once this has been repaired, this bargraph can only be erased if the battery is disconnected. In this case, "bon" will appear on the XR25 display.

COMMENT: To avoid possible problems with engine performance at idling speed, when the battery has been disconnected it is necessary to wait for approx. 10 seconds between switching on the ignition and starting the engine.
This will allow the stepping motor for idling speed regulation to reposition itself (see T.N. 2024).

PROCEDURE FOR ENTERING SECURITY CODE

On the engine immobiliser, the printed circuit board manages the procedure for entering the security code.

This code is entered with the help of the multi-function display readout key and the red engine immobiliser tell-tale light.

This code can only be entered if the engine immobiliser is activated. The red tell-tale light should flash when the ignition is switched on (rapid flashing).

ATTENTION : If the battery, printed circuit board or the door locking fuse have been disconnected and it has not been possible to unlock and relock the doors using the Plip, it will be necessary to wait approximately 15 minutes before the code can be entered.

PROCEDURE FOR ENTERING THE SECURITY CODE (continued)

Obtain the security code. This security code is to be obtained from the Technical Services Department in the UK, stating the 7-digit number written on the key head. (For other countries, please contact Head Office or Technical Services Department, depending on the local situation.)

1 - With the ignition off, the red engine immobiliser tell-tale light should flash (slow flashing).

2 - Switch on the ignition. The injection tell-tale light illuminates approximately three seconds and then extinguishes while the red engine immobiliser tell-tale light flashes more quickly.

3 - Press and hold down the multifunction display readout key: the red tell-tale light will extinguish.

4 - Without releasing the key, the tell-tale light will illuminate in a cycle (every 1.5 seconds) so that it is possible to count the flashes.
Count the number of times the red tell-tale light illuminates and release the button when the number of times it has flashed is the same as the first figure of the security code.

5 - Press the readout key again, count the number of times the red tell-tale light flashes and release the key when the light has flashed the same number of times as the second figure in the security code.

6 - Repeat the operation described under 5 to enter in sequence the two other figures of the security code.

Once the fourth figure in the code has been entered:

- **If the code is correct**, the engine can be started.
  The red engine immobiliser tell-tale light should illuminate steadily for approximately 3 seconds , extinguish for 3 seconds and then illuminate steadily for approximately 30 seconds.

This tell-tale light illumination cycle will be repeated each time the ignition is switched on while the vehicle is unprotected (for up to approximately 10 minutes after the ignition is switched off).This reminds the customer that his vehicle is no longer protected.

The vehicle will be protected again:
- approximately 10 minutes after the ignition is switched off (passive setting),
- after the doors have been locked with the Plip,
- after the battery has been disconnected.

- **If the code is incorrect**, the vehicle cannot be started.

The red engine immobiliser tell-tale light and the injection tell-tale light flash.

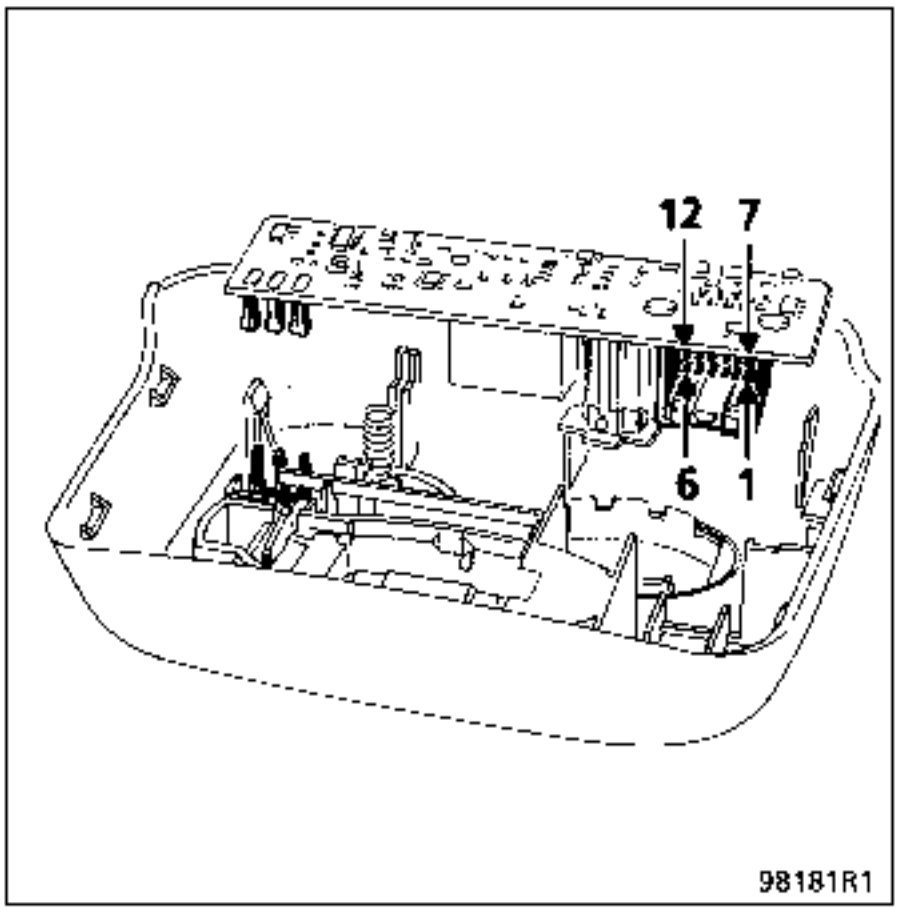
Switch off the ignition then repeat the procedure for entering the code.

WARNING: You may make three attempts at entering the code. If the code is incorrect after the third attempt, you will have to wait approximately 15 minutes before making another attempt.

When this time has elapsed, switch the ignition off and on. Three more attempts may be made.

REMINDER : This procedure does not decode the injection computer. It only allows the vehicle to be started.

CONNECTIONS FOR PRINTED CIRCUIT BOARD (decoder)

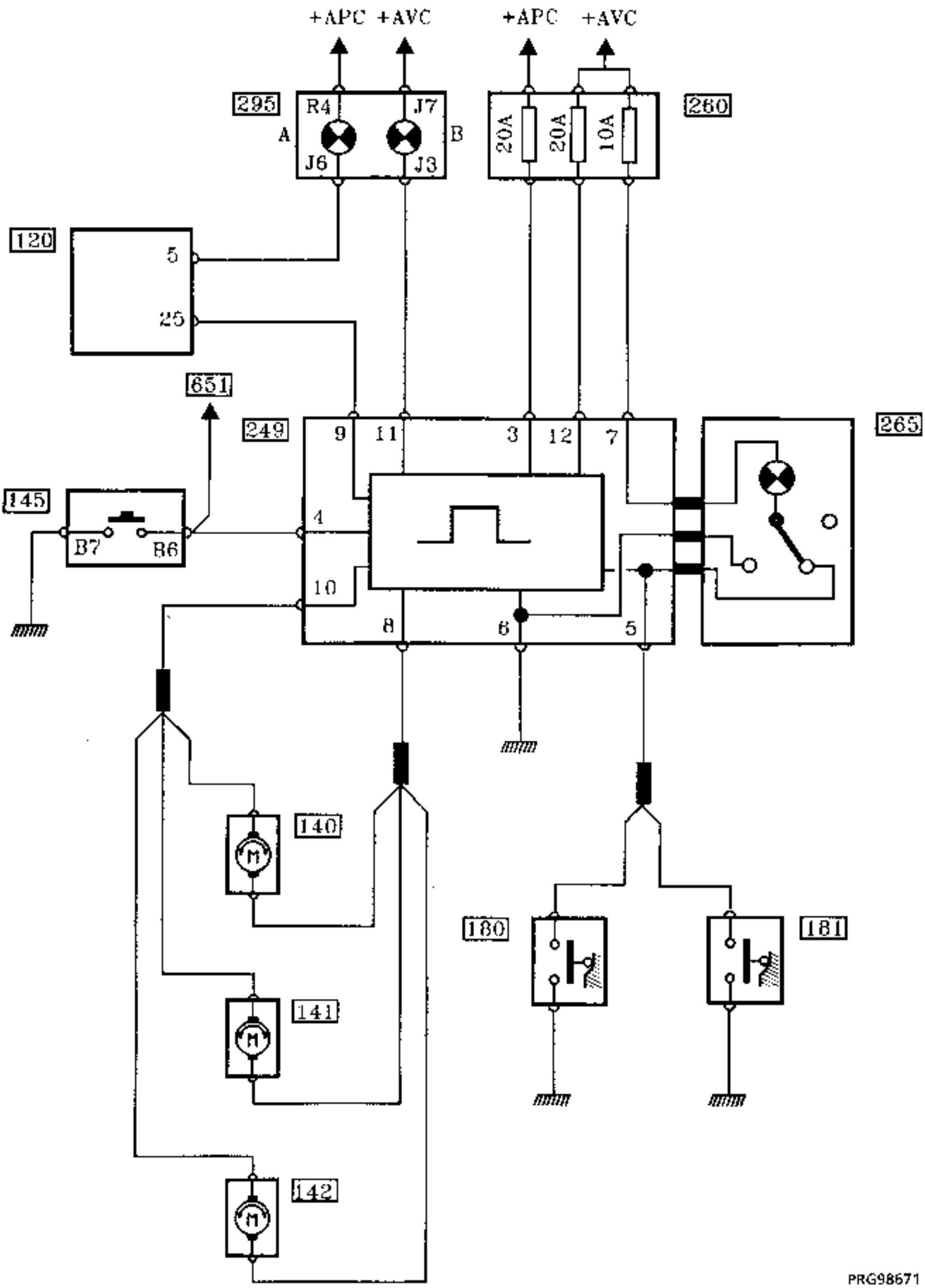


12-track connector

Track	Description
1	Door unlocking information*
2	Door locking information*
3	+ after ignition
4	Multifunction display readout key
5	Interior lighting via door contact switches
6	Earth
7	Interior light feed (+ before ignition)
8	Door unlocking
9	Coded information to injection computer
10	Door locking
11	Red engine immobiliser tell-tale light
12	Receiver feed (+before ignition)

* Information for auxiliaries alarm

OPERATIONAL DIAGRAM



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LIST OF UNITS

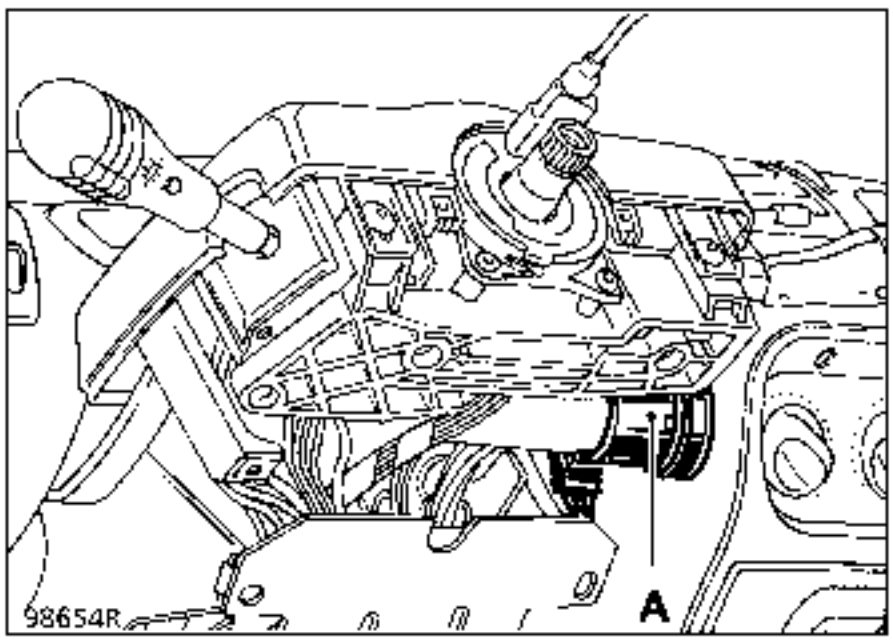
120 Injection computer
140 Driver's door locking motor
141 Passenger's door locking motor
142 Tailgate locking motor
145 Screen wiper steering wheel switch
180 Driver's door contact switch
181 Passenger's door contact switch
249 Infrared receiver
260 Fuse box
265 Interior light console
295 Warning light display
651 Panel (multifunction display)

A Injection tell-tale light
B Engine immobiliser tell-tale light

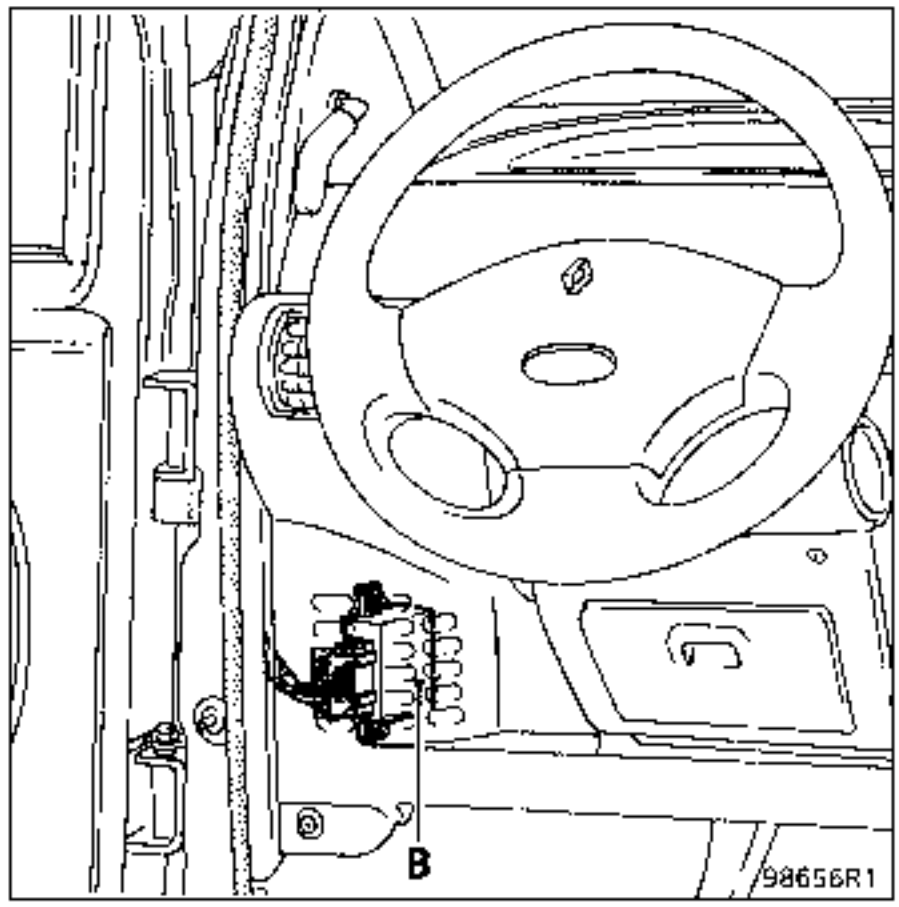
DESCRIPTION OF THE KEY-OPERATED ENGINE IMMOBILISER

With this system the engine immobiliser is activated approximately 10 seconds after the ı after the ignition is switched off (indicated by the red engine immobiliser tell-tale light flashing).
It consists of:

- Two matched key heads equipped with coded electronics.
- A receiver ring (A) around the ignition switch is equipped with electronics which are used to transmit the key code to the decoder (B).



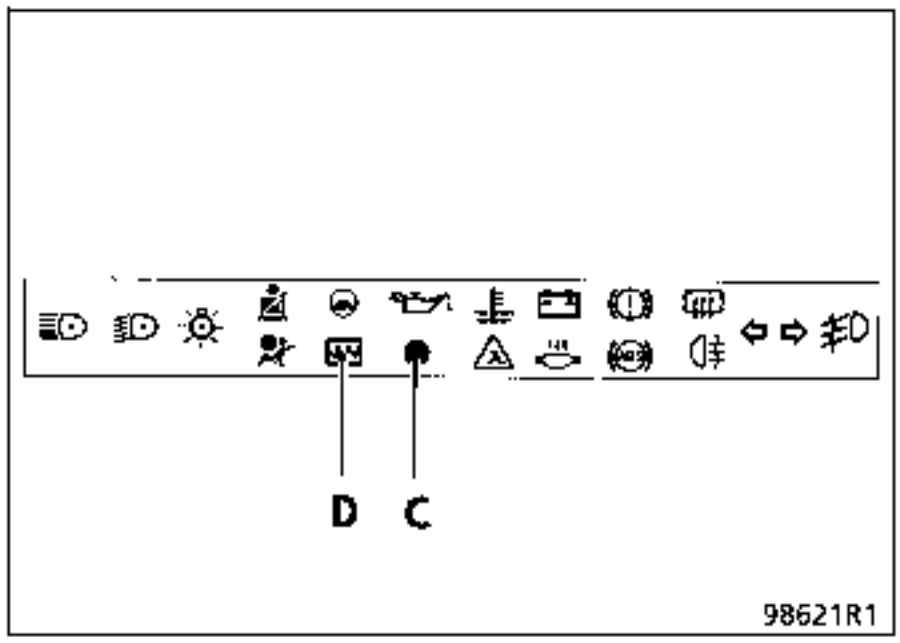
- A decoder (B) behind the front left-hand speaker which performs the following functions:
  - Decoding the key signal from the receiver ring
  - Managing the engine immobiliser by sending a code to the injection computer which will allow the vehicle to start



- A red engine immobiliser tell-tale light (C) used to:
  - Indicate that the engine immobiliser is active
  - Enter the engine immobiliser code
  - Indicate a fault in the multifunction display readout key (X).

NOTE : Switching off the ignition does not necessarily stop this tell-tale light from illuminating if this light has not completed its timed sequence.

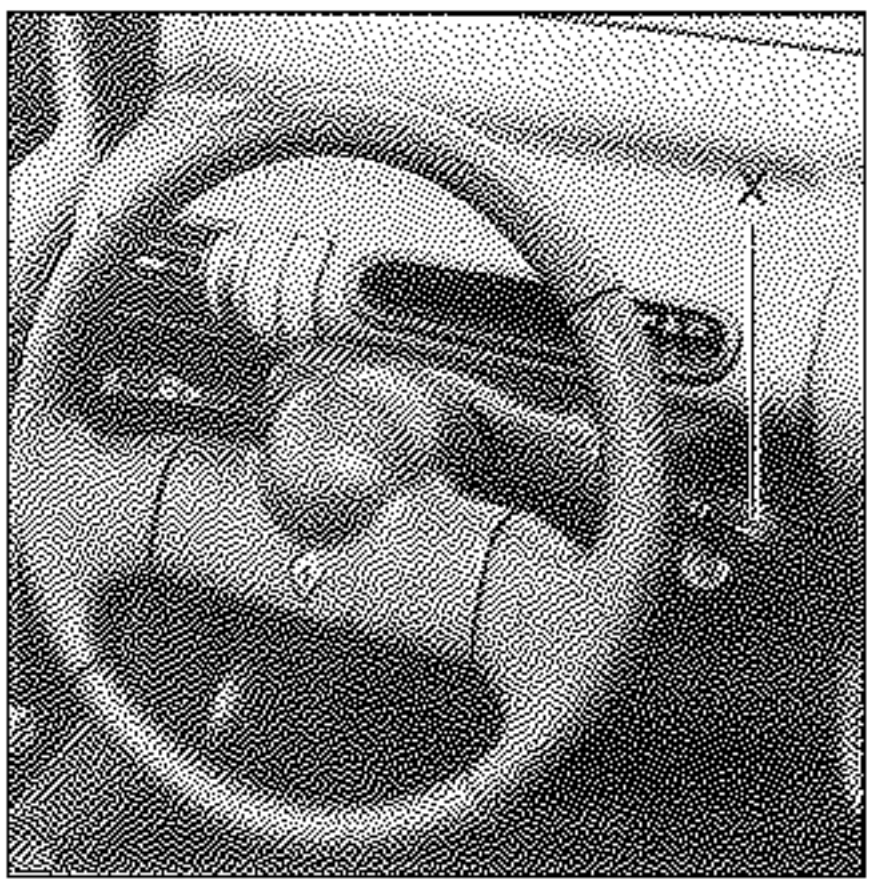
- An injection tell-tale light (D) used to indicate an injection fault or a fault in the immobiliser when the engine is running (flashes when the vehicle is decelerating or at idling speed).



- A multifunction display readout key (X) which also allows the security code to be entered.

NOTE: If a fault is present on this key (ignition permanently on) and if it continues for approximately the next 20 times the ignition is switched on, the tell-tale light will illuminate for 3 seconds and then 20 seconds each time the ignition is switched on again.
This fault can be displayed using the XR25 (see bargraph interpretation, page 82-30). After the fault has been repaired, clear the fault by disconnecting the battery for approx. 30 seconds (or using the XR25 if the bargraph is flashing).

COMMENT : To avoid possible problems with engine performance at idling speed, when the battery has been disconnected it is necessary to wait for approx. 10 seconds between switching on the ignition and starting the engine.
This will allow the stepping motor for idling speed regulation to reposition itself (see T.N. 2024)



- A special injection computer which can be coded.

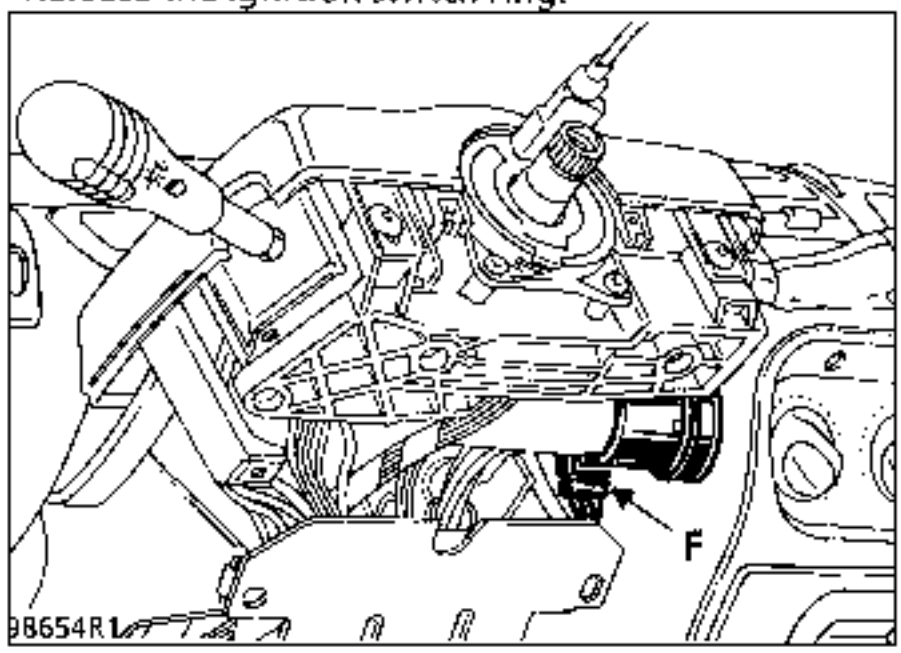
REMOVING - REFITTING THE RECEIVING RING

Remove :

- the steering wheel (for vehicles equipped with an airbag, see the Technical Note on the Twingo airbag),
- the lower half casing,
- the steering column cover.

Disconnect the connector (F).

Release the ignition switch ring.



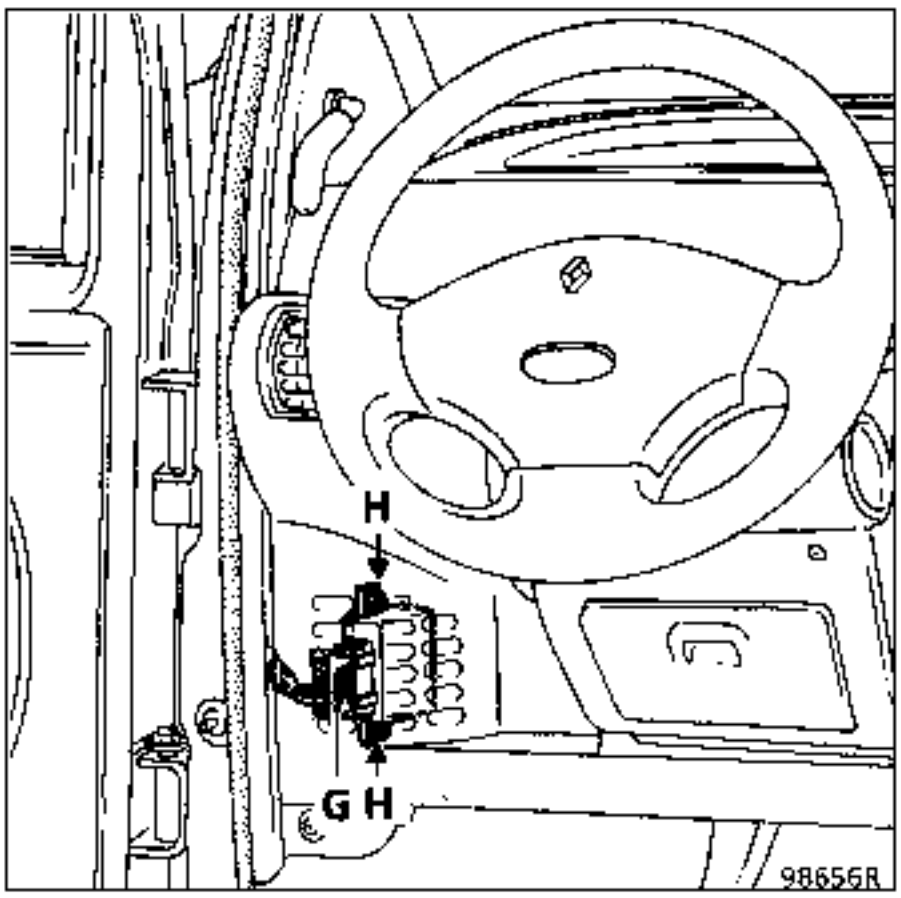
When refitting, make sure that the ring and its clips are correctly positioned.

NOTE : This ring is not coded.

REMOVING - REFITTING THE DECODER

The decoder is removed from below the dashboard.

- Disconnect connector (G),
- Remove the two flat nuts (H),
- Remove the decoder, taking it downwards.



When the decoder is refitted, make sure that it is clipped in position properly.

OPERATION

When the system is operational (approximately 10 seconds after the + after ignition is switched off), the red engine immobiliser tell-tale light flashes (slow flashing, illuminates once per second).

After the ignition has been switched on, the receiver ring analyses the code and sends it to the decoder.
If the decoder recognises the code, it sends a code to the injection computer via the coded link and extinguishes the red engine immobiliser tell-tale light (after approximately 3 seconds).

At this point, several situations may arise:

- The injection computer does not have a reference code in its memory:
  - The code which is sent is written in its memory.
- The injection computer has the reference code in its memory:
  - The code sent is compared with its reference code,
  - If the two codes match, the computer unlocks the injection system and allows the engine to be started.
    When the ignition is switched on, the injection tell-tale light and the engine immobiliser tell-tale light illuminate steadily for a few seconds and then extinguish, indicating that the system is operating correctly
  - If the two codes do not match, the computer does not unlock the computer and this prevents the engine from being started. When the ignition is switched on, the injection tell-tale light illuminates for a few seconds and then extinguishes, while the red engine immobiliser tell-tale light flashes (rapid flashing). No authorisation is given to start up the vehicle.

ALARM SYSTEM
Engine immobiliser - key-operated

NOTE : To ensure that the system operates correctly, no objects (e.g. key rings) are to be inserted between the key and the ring.

CAUTION : . When the vehicle battery charge is low, the drop in voltage caused by activating the starter may reactivate the engine immobiliser. If the voltage is below 6 volts, it will not be possible to start the vehicle, even by giving it a push start.

REPLACING A KEY HEAD

If the coded electronic unit on the key head is faulty:
- Order a key head as a service part, using the number shown in the faulty key head (alphanumeric characters),
- Where the customer requires the problem to be solved immediately (second key not available) it is possible to fit a complete new set (decoder plus two key heads) (see instructions on how to replace a complete set).

The key has been lost:
- Order a spare key head using the number shown in the second key head or on the bar code (normally attached to the keys when the vehicle is handed over).
  In this case, also arrange to order the metallic insert for the key number.

ATTENTION : Do not touch the key electronic unit when noting the number on the key head. It is essential that any key head where the electronic unit has been handled be replaced.

NOTE : In cases where the head numbers cannot be found (both keys lost as well as the bar code) the complete set must be replaced (decoder, plus two keys, plus injection computer).

REPLACING THE DECODER ONLY

A new decoder is not coded. Once it is fitted on the vehicle, it has to be "taught" the key code for it to work. (See "Teaching procedure".)

IMPORTANT : If the customer has not left you the second key, the system can be programmed with one key only, using the XR25.
Before programming the system:
- Connect the XR25 on the vehicle.
- Set the rotary switch to S8 and enter code D38 (key-operated engine immobiliser).
- Enter G05* and program with one key only.

NOTE : If only a decoder is replaced, no work is required on the injection computer. It retains the same engine immobiliser code.

ATTENTION : When a decoder has learned the key code, it is impossible to delete this code from the memory or replace it by another code.

ALARM SYSTEM
Engine immobiliser - key-operated

"TEACHING" PROCEDURE

This procedure can only be carried out once by the decoder. If this procedure has not been performed, the vehicle cannot be started (except if the injection computer is not coded).

The procedure can be carried out:
- With both the keys if the set is replaced (thus checking that they have been correctly matched).

NOTE : The procedure will not work if the same key is used twice or if the keys have not been matched.

- With one key only if it is only a decoder which is to be replaced and if the XR25 is used (for a situation when the customer does not leave both keys at the workshop).

The XR25 can be used for this procedure but it is not indispensable (except when programming a system with one key only, see replacement of the decoder only).

1 - Connect the XR25 to the vehicle. Set the selector to S8 and enter code D38 (fault finding fiche no. 38). Bargraph 19 RH should be illuminated (decoder not coded).

2 - Switch on the ignition (but do not start the engine) using the first key (approx. 2 seconds). Bargraphs 18 and 19 LH illuminate. The operator then has 30 seconds to carry out the following operation.

3 - Switch on the ignition (but do not start the engine) using the second key (approx. 2 seconds). Bargraphs 19 RH and LH extinguish.

NOTE :
When bargraph 19 RH is illuminated, ignore bargraphs 6, 10, 11, 12 and 13 RH (illuminated as long as the decoder is not coded).
Ignore bargraph 7 LH (erase it with G0**).
Bargraph 18 LH may remain illuminated after this command has been entered. Ignore this. (It will be cleared after the battery has been disconnected.)

4 - Check that the engine immobiliser system is operating correctly :
- With the ignition switched off, the red engine immobiliser tell-tale light should flash (slow flashing). Bargraph 10 LH should be illuminated. It will not be possible to start the vehicle with other keys.

NOTE: To simulate the engine immobiliser function before switching on the ignition, enter G04* (imposed protected mode) on the XR25 (bargraph 8 RH illuminates) and wait approx. 10 seconds. When the ignition is switched on, the red engine immobiliser tell-tale light should flash (rapid flashing) and it should be impossible to start the vehicle.

5 - The procedure is complete. After switching the ignition off and on, check that the vehicle starts.

NOTE : if the programming procedure fails, wait until bargraph 19 LH extinguishes to repeat the attempt with both keys.

REPLACING A SET (printed circuit board plus 2 key heads)

If a set is replaced, the following operations are required :

- Teach the codes of the two new key heads to the new decoder (supplied uncoded).

- Erase the previous code memorised in the injection computer using the repair procedure. (Security code number to be requested from the Technical Services Department in the UK or, for other countries, please contact your Head Office or Technical Services Department, depending on the local situation.)

ATTENTION : To erase the old code (stored in the injection computer memory), it is essential to follow the procedure described below in the correct sequence.
The injection computer code can only be erased with the security code (using the same number as the old set) if the decoder on the vehicle has learnt a different code. (This is the case for the procedure described below.)

NOTE : If the security code is entered when the decoder has the same code as the injection computer, the injection computer will not be decoded.

1 - Fit the metallic inserts of the old keys on the new key heads.

2 - Note the numbers of the old key heads in order to obtain the security code.

3 - Remove the decoder (see page 82-16)

4 - Fit the new decoder in its place.

5 - Teach the decoder the codes of the two new keys (supplied uncoded). (See "teaching" procedure.)

6 - Erase the old code memorised in the injection computer using the repair procedure and the code number for the old set. (See procedure for entering the repair code.)

NOTE : The security can only be entered if the engine immobiliser is activated. The red engine immobiliser tell-tale light should flash when the ignition is switched on (rapid flashing). In this case, it will be necessary to use the XR25 to activate it (diagnostic fiche no. 38).

Before switching on the ignition, enter G04* (preset protected mode) on the XR25 (bargraph 8 RH illuminates) and wait approximately 10 seconds.

The red tell-tale light should flash when the ignition is switched on (rapid flashing).

The security code can be entered.

IMPORTANT: In this case, the code MUST be entered via the multifunction display readout key and not via the XR25.

COMMENT : The XR25 can be used to check that the injection computer has been decoded (in injection diagnostic mode).

Use fiche no. 23, and enter code D13 on the XR25.

- Bargraph 2 RH (engine immobiliser) must be illuminated and the text "2 def" should appear on the XR25 display when *22 is entered. The injection computer has then been properly erased.

- If the display shows "1 def", it indicates that there is an incident on the coded line. In this case, repair the line and repeat the procedure.

- If bargraph 2 RH (engine immobiliser) is extinguished and the display indicates "bon" (*22), this means that the injection computer code has not been erased. In this case, check that the security code number is correct and repeat the procedure .

7 - "Teach" the injection computer the engine immobiliser code of the new set.
Switch the ignition off and then switch it on again for a few seconds without starting the engine

NOTE : A check can be made to ensure that the injection computer has registered the new code correctly using the XR25 (in injection diagnostic mode)

- bargraph 2 RH (engine immobiliser) should be extinguished (diagnostic fiche no. 23).
- after entering *22 the XR25 display should indicate "bon".

This indicates that the injection computer has been properly coded.
If the display indicates "2 def", the injection computer has still not been coded.

8 - Check that the engine immobiliser system operates correctly:
- With the ignition switched off, the red engine immobiliser tell-tale light should flash (slow flashing). It will then be impossible to start the vehicle with other keys.

NOTE : The XR25 can be used to check whether the vehicle can be started:

- Use diagnostic fiche no. 38 and enter code D38 on the XR25.

- With the ignition off, enter G04* (preset protected mode) on the XR25 (bargraph 8 RH illuminates) and wait for approx. 10 seconds.

- When the ignition is switched on the red engine immobiliser tell-tale light should flash (rapid flashing) and it should not be possible to start the vehicle.

9 - The procedure is complete. Switch the ignition off and on again. Check that the vehicle starts.

REPLACING THE INJECTION COMPUTER

The injection computers are delivered without a code. An electronic engine immobiliser code therefore has to be stored in their memory when they are fitted.

Adopt the following procedure:

- Switch on the ignition using the vehicle's coded key.

- Switch off the ignition. The engine immobiliser will be activated after approximately 10 seconds (engine immobiliser tell-tale light flashes).

NOTE : The XR25 can be used to check whether the engine immobiliser is operating.

- Use fiche 38 and enter code D38 on the XR25.

- With the ignition off, enter G04* (preset protected mode) on the XR25 (bargraph 8 RH is illuminated).

- When the ignition is switched on, the red engine immobiliser tell-tale light should flash (rapid flashing) and it should not be possible to start the vehicle.

SPECIAL POINTS TO NOTE WHEN TESTING THE INJECTION COMPUTER (test part)

ATTENTION : Some injection computers on the Twingo can be coded and others not. These can be identified from the third digit of the Magnéti Marelli part number.
If this is a zero (example: 16085.114), the computer cannot be coded (computer not envisaged for vehicle with engine immobiliser).
If this digit is a 2 (example: 16231.004), the computer can be coded (computer can be fitted on the vehicle with or without the engine immobiliser system).

Computer which cannot be coded

Example: Magnéti Marelli Part No. 16085.114 (borrowed from the stores or from another vehicle). This type of injection computer can be used for a test on a vehicle equipped with an engine immobiliser. It cannot under any circumstances be taught the system code .
After the test, refit an injection computer with the correct specification for the faulty vehicle (intended for a vehicle with an engine immobiliser) and check that the engine immobiliser system operates correctly before returning the vehicle to the customer.

ATTENTION : When checking injection using the XR25 (fiche no. 23, code D13) during a test of an uncoded computer, it is normal for bargraph 2 RH to be illuminated (*22 ⟶ 2 def = computer uncoded or not codable).

New computer which can be coded

Example: Magnéti Marelli Part No. 16231.004 borrowed from the stores.
This type of computer can be used for a test provided that certain precautions are taken to prevent the engine immobiliser code being memorised (if the computer is to be returned to the stores).

Remove the decoder fuse before fitting the test computer in the vehicle (same fuse as buzzer).

Do not replace this fuse while the test computer is fitted on the vehicle.

The fact that the fuse has been removed prevents the decoder from sending the engine immobiliser code to the injection

The test can therefore be carried out without the risk of coding the test computer.

The computer can be returned to the stores after the test. It is essential to remove the computer before refitting the decoder fuse.

If the computer is to remain on the vehicle, replace the fuse and teach the injection computer the engine immobiliser code. (See injection computer replacement.)

If the test computer is to be returned to the stores, (before it is removed from the vehicle) the XR25 in connection with fiche no. 23 can be used to check that the computer has not been coded during the test. (Possible reason: incorrect procedure).

Connect the XR25, set the rotary selector to S8 and type in code D13.
Bargraph 2 RH (engine immobiliser) must be illuminated. After entering *22, the text "2 def" should appear on the XR25 display.

This indicates that the injection computer has not been coded: it can be returned to the stores.

If bargraph 2 RH (engine immobiliser) is extinguished and after typing in *22, the text "bon" appears on the XR25 display, this indicates that the computer has learned the engine immobiliser code (incorrect procedure).

In this case, the computer must be decoded before it is returned to the stores.

The procedure for decoding the injection computer involves replacing the decoder "in the roof console" of the vehicle with another decoder coded with a different code and re-entering the vehicle security code. This security code is to be obtained from the Technical Services Department in the UK, stating the 7-digit number written on the key head. (For other countries, please contact Head Office or Technical Services Department, depending on the local situation.)

- With the ignition switched off, wait for the red engine immobiliser tell-tale light to flash.
- Fit a decoder with a different number in place of the vehicle's original decoder (the procedure will not work with a new coded or uncoded decoder with the same number as the injection computer).
- Switch on the ignition. The red injection tell-tale light will flash rapidly.
- Enter the vehicle security code (number corresponds to the vehicle key set).

IMPORTANT : In this case, the code MUST be entered using the multifunction display readout key and not the XR25.

"2 def" should appear on the display of the XR25 (under D13 fiche no. 23).
This indicates that the injection computer has been properly decoded.
- Switch off the ignition, remove the decoded injection computer and return it to the stores.
- Refit the original computer and decoder.

Computer borrowed from another vehicle fitted with an engine immobiliser (if available)

Example: Magnéti Marelli Part No. 16231004 (already coded).

To avoid the procedure for coding and decoding the injection computer, it will be simpler to borrow the following items from another vehicle with the same specifications :
- the injection computer,
- the decoder,
- the key head.

After the test, refit the parts described above on the vehicle to which they were originally fitted.

SYSTEM FAILURE WITH ENGINE RUNNING

If a system failure is identified by the injection computer with the engine running, the injection tell-tale light on the instrument panel will flash when the vehicle is decelerating and at idling speed (engine speed below 1 500 rpm).

IMPORTANT: In this case, after making the repair it will be necessary to erase the fault memorised in the decoder and injection computer by disconnecting the battery (for approx. 30 seconds) in order to allow the engine immobiliser to be reactivated.

ATTENTION : Even if the fault memorised in the decoder is erased by entering G0** under (D38), it will not erase the fault memorised in the injection computer (under D13) which can only be erased by disconnecting the battery.

COMMENT: To avoid possible problems with engine performance at idling speed, when the battery has been disconnected it is necessary to wait for approx. 10 seconds between switching on the ignition and starting the engine.
This will allow the stepping motor for idling speed regulation to reposition itself (see T.N. 2024).

PROCEDURE FOR ENTERING SECURTY CODE

On the engine immobiliser, the decoder manages the procedure for entering the security code.

This code is entered with the help of the multifunction display readout key and the red engine immobiliser tell-tale light.

This code can only be entered if the engine immobiliser is activated. The red tell-tale light should flash when the ignition is switched on (rapid flashing).

NOTE : In some cases the XR25 will have to be used to preset engine immobiliser activation in order to enter the code (example: replacement of a decoder set/key heads).

Before switching on the ignition, connect the XR25 (use diagnostic fiche 38), enter code D38 and then G04* (preset protected mode). Bargraph 8 RH will illuminate: wait approximately 10 seconds.

When the ignition is switched on, the red engine immobiliser tell-tale light should flash (rapid flashing).

The security code can be entered.

Obtain the security code. This security code is to be obtained from the Technical Services Department in the UK. (For other countries, please contact Head Office or Technical Services Department, depending on the local situation:)

1 - With the ignition off, the red engine immobiliser tell-tale light should flash (slow flashing).

2 - Switch on the ignition. The injection tell-tale light illuminates approximately three seconds and then extinguishes while the red engine immobiliser tell-tale light flashes more quickly.

3 - Press and hold down the multifunction display readout key: the red tell-tale light will extinguish.

4 - Without releasing the key, the tell-tale light will illuminate in a cycle (every 1.5 seconds) so that it is possible to count the flashes.
Count the number of times the red tell-tale light illuminates and release the button when the number of times it has flashed is the same as the first figure of the security code.

5 - Press the readout key again, count the number of times the red tell-tale light flashes and release the key when the light has flashed the same number of times as the second figure in the security code.

6 - Repeat the operation described under 5 to enter in sequence the two other figures of the security code.

Once the fourth figure in the code has been entered:
- **If the code is correct**, the engine can be started. The red engine immobiliser tell-tale light should illuminate steadily for approximately 3 seconds , extinguish for 3 seconds and then illuminate steadily for approximately 30 seconds.

This tell-tale light illumination cycle will be repeated each time the ignition is switched on while the vehicle is unprotected (for up to approximately 10 minutes after the ignition is switched off).This reminds the customer that his vehicle is no longer protected.

NOTE : If the ignition is switched off, this does not necessarily interrupt the illumination of the tell-tale light, if this light has not completed its timed sequence.

The vehicle will be protected again:
- approximately 10 minutes after the ignition is switched off (passive setting),
- when the decoder recognises the key again.
- after the battery has been disconnected (≈30 seconds).

If the code is incorrect, the vehicle cannot be started.

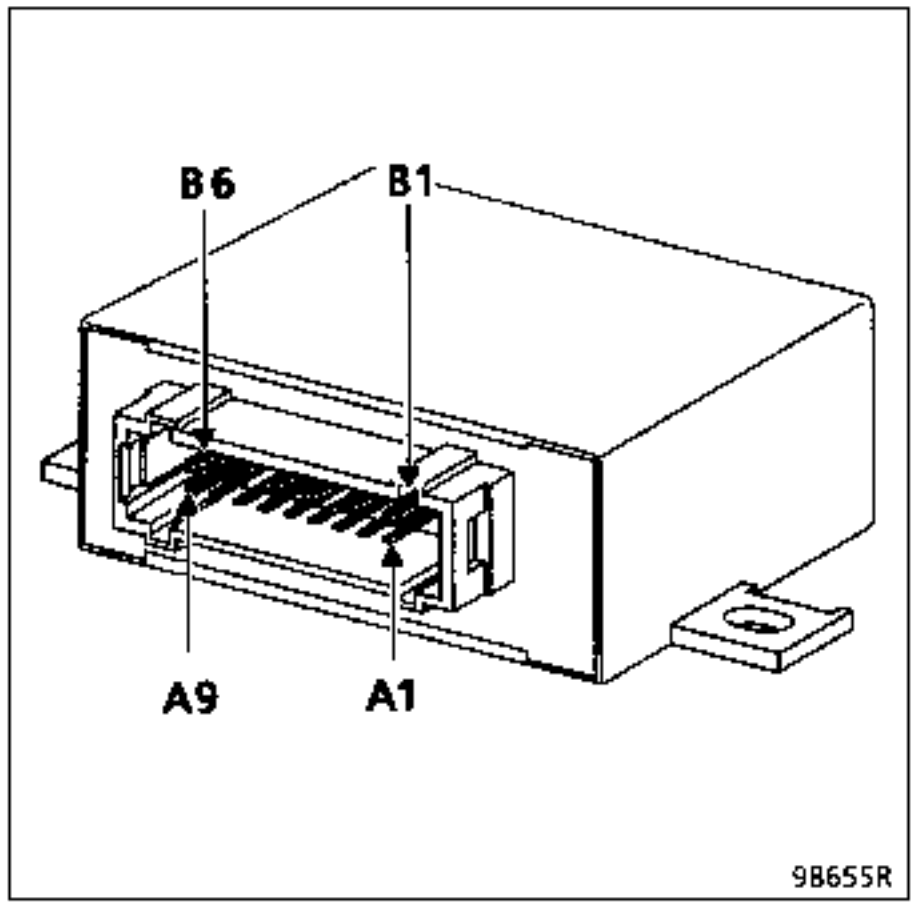
The red engine immobiliser tell-tale light and the injection tell-tale light flash.

Switch off the ignition then repeat the procedure for entering the code.

IMPORTANT : You may make three attempts at entering the code. If the code is incorrect after the third attempt, wait for the flashing to become faster before making another attempt (after approximately 15 minutes with the ignition on).
When this time has elapsed, switch the ignition off and on. Three more attempts may be made.

REMINDER : This procedure does not decode the injection computer. It only allows the vehicle to be started.

CONNECTIONS FOR DECODER

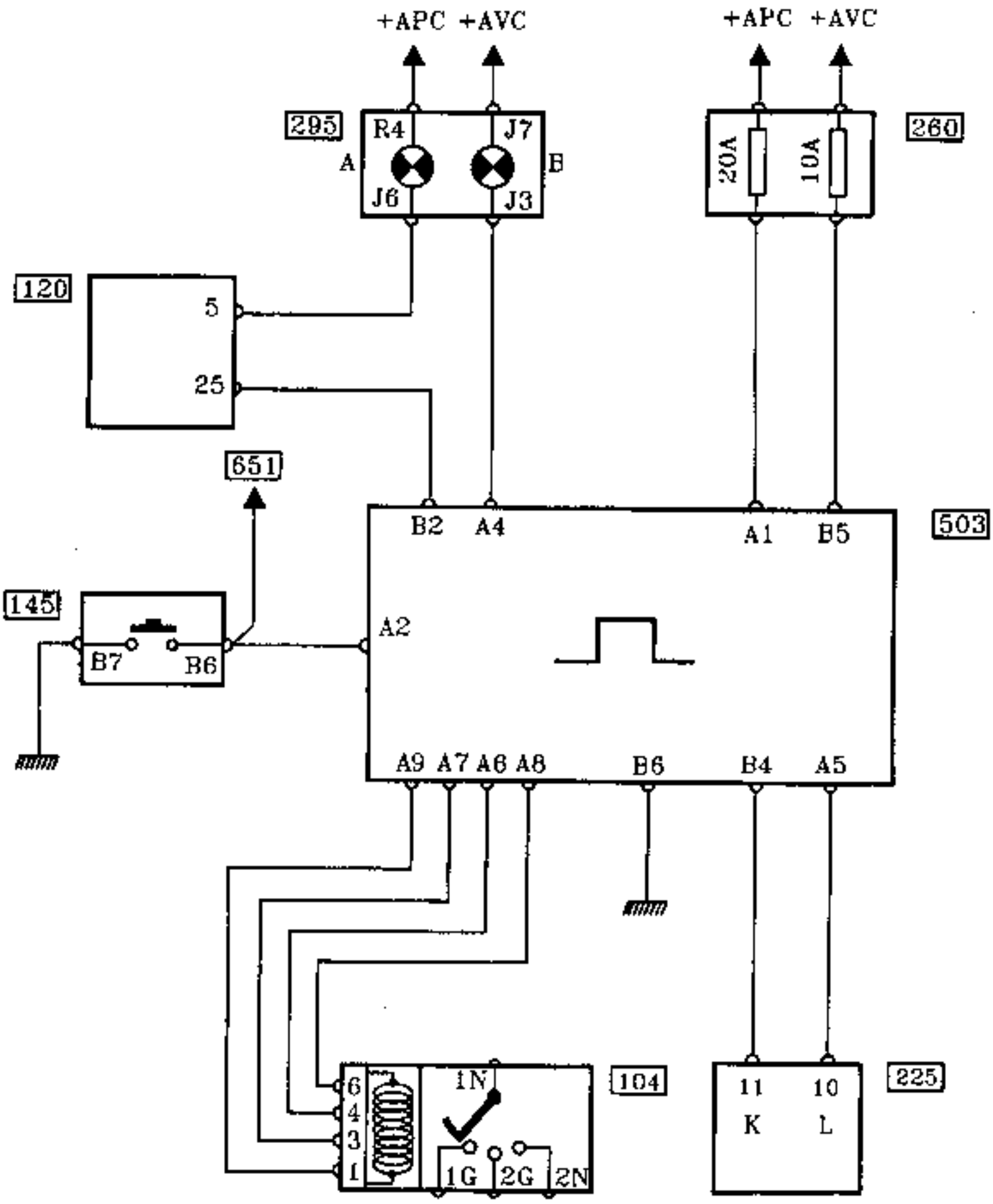


15-track connector

Track	Description
A1	+ after ignition
A2	Multifunction display readout key
A3	Not used
A4	Red engine immobiliser tell-tale light
A5	Diagnostic socket information (line L)
A6	Coded line ring/decoder
A7	Interrogation ring
A8	Ring earth
A9	Ring feed
B1	Not used
B2	Coded information to injection computer
B3	Not used
B4	Diagnostic socket information (line K)
B5	+before ignition
B6	Earth

ALARM SYSTEM
Engine immobiliser - key-operated

OPERATIONAL DIAGRAM



PRG98672

ALARM SYSTEM
Engine immobiliser - key-operated

LIST OF UNITS

104 Starter switch (receiver ring)
120 Injection computer
145 Screen wiper steering wheel switch
225 Diagnostic socket
260 Fuse box
295 Warning light display
503 Decoder
651 Panel (multifunction display)

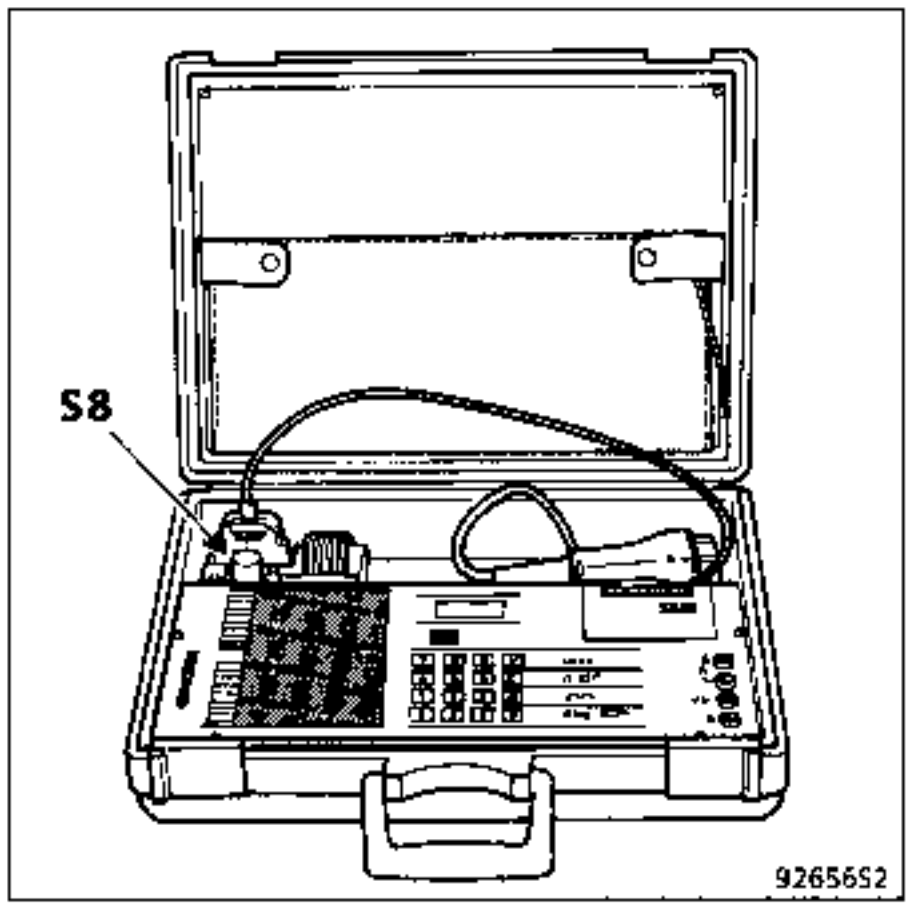
A Injection tell-tale light
B Engine immobiliser tell-tale light

FAULT FINDING

In the event of a failure on this engine immobiliser system, it is possible to use the XR25 for fault finding.

CONNECTION

Use cassette no. 14 and the corresponding diagnostic fiche no. 38.



Connect up the XR25 to the diagnostic socket.

Position the ISO selector on S8.

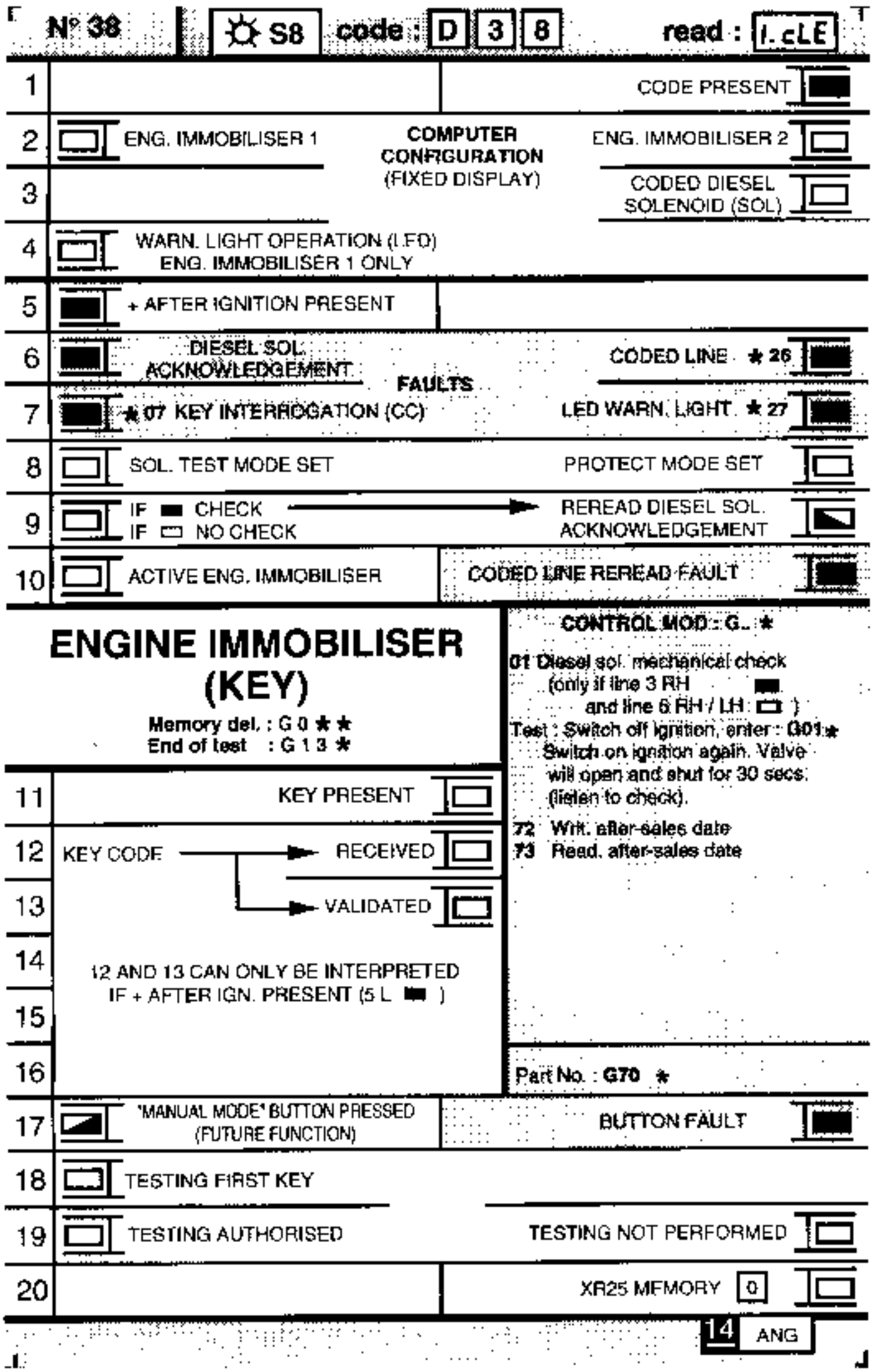
Switch on the ignition.

Enter the specific code (D38) for the key-operated engine immobiliser

NOTE : For the Twingo, the XR25 can only be used for fault finding on the key-operated engine immobiliser (and not for the engine immobiliser using the Plip).

ALARM SYSTEM
Engine immobiliser - key-operated

FAULT FINDING

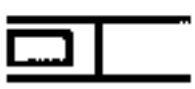


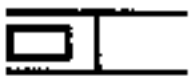
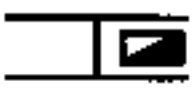
FI21438

The bargraphs on the coloured background represent a fault.
The bargraphs on a white background represent a status.

ALARM SYSTEM
Engine immobiliser - key-operated

Interpreting bargraphs

Bargraph	
1 Right 	Code present. Should illuminate after the introduction of code D38 (ISO dial on S8). Indicates that the connection has been established between the XR25 and decoder.
2 Left 	Not used on TWINGO
2 Right 	Indicates that it is a second generation engine immobiliser system (illuminates after entry of D38)
3 Right 	Not used
4 Left 	Not used for second generation engine immobiliser system (ignore)
5 Right 	Illuminated if the + after ignition is present at the decoder
6 Left 	Not used
6 Right 	Illuminated if an incident is identified on the coded line (connection between the decoder and the injection computer). If the incident is present when the check is made, bargraph 10 RH must be illuminated. If the bargraph flashes, the fault is no longer present (memorised fault). *26 indicates the origin of the fault on the XR25 display : – CO.0 indicates either A break in the coded line. A short circuit in the coded line to earth. – CC.1 indicates a short circuit to + **Attention :** After the repair has been made, it will be necessary to wait until bargraph 6 RH starts to flash (approx. 16 seconds) before entering G0** to erase the fault, memorised in the decoder, and also to erase the fault which is also memorised in the injection computer by disconnecting the battery for 30 seconds (see D13 fiche no. 23, bargraph 2 RH).

7 Left 	Illuminated if a short circuit is identified on the receiving ring data line (between track 4 of the ring and track A7 of the decoder). If this bargraph flashes, the fault is no longer present (fault memorised). **Attention :** If this bargraph illuminates during the programming procedure, ignore it (erase it). **NOTE :** Only take note of this bargraph after the ignition has been switched on again.
7 Right 	Illuminated if an incident is identified on the red engine immobiliser tell-tale light line (between the decoder and the warning light display). *27 indicates the origin of the fault on the XR25 display . – CO.0 indicates either : A break in the line (the tell-tale light remains extinguished). A short circuit to earth (the tell-tale light remains extinguished). – CC.1 indicates a short circuit on the + (the tell-tale light remains extinguished). **NOTE :** This bargraph does not operate on all vehicles.
8 Left 	Not used
8 Right 	Illuminates when command mode G04* is being used (preset protected mode)
9 Left 	Not used
9 Right 	Not used
10 Left 	Illuminated if the engine immobiliser is activated.
10 Right 	Illuminated if an incident is present on the coded line. Extinguishes as soon as the fault disappears. (Connection between the decoder and the injection computer)
11 Right 	Illuminates when the ignition is switched on if it is a coded key. (Providing that the vehicle was protected before the ignition was switched on, engine immobiliser tell-tale light flashing) This bargraph remains illuminated when the ignition is switched off. Ignore this. **NOTE :** If operation is normal, bargraphs 11, 12 and 13 must be illuminated together.

ALARM SYSTEM
Engine immobiliser - key-operated

12 Right 	Illuminates when the ignition is switched on if it is a coded key with the correct format (provided that the vehicle was protected before the ignition was switched on; engine immobiliser tell-tale light flashes). This bargraph remains illuminated when the ignition is switched off. Ignore this **NOTE :** If operation is normal, bargraphs 11, 12 and 13 must be illuminated together.
13 Right 	Illuminates when the ignition is switched on if it is a coded key with the correct format (key corresponds to vehicle). Provided that the vehicle was protected before the ignition was switched on, the engine immobiliser tell-tale light flashes. This bargraph remains illuminated when the ignition is switched off. Ignore this. **NOTE** : If operation is normal, bargraphs 11, 12 and 13 must be illuminated together.
17 Left 	Illuminates when the multifunction display readout key is pressed. Extinguishes when key is released.
17 Right 	Illuminated if the multifunction display readout key is faulty (ignition is switched on the whole time). This fault is identified by the decoder after the ignition is switched on approximately 20 times with the fault present. Once the fault has been repaired, it will be necessary to disconnect the battery for approx. 30 seconds to erase the fault. (If the bargraph flashes, enter G0** to erase it.)
18 Left 	Illuminates when the first key is being programmed. (See programming procedure.) Once the programming process is complete, it will be necessary to disconnect the battery to erase the fault.
19 Left 	Illuminated during the programming procedure. (See programming procedure.)
19 Right 	Illuminated if the decoder is not coded as long as the programming procedure has not been implemented (new decoder). **NOTE** : Ignore the illumination of bargraphs 6, 10, 11, 12, and 13 RH as long as the programming procedure has not been successful.
20 Right 	Memory function of XR25.

CONTROL MODES G--*

To use this function, type in G on the XR25 keyboard and then the control number selected followed by a star.

02 Check of red engine immobiliser tell-tale light (rapid flashing).
To stop this control mode, enter another number or switch off the ignition.

03 Check of red engine immobiliser tell-tale light (illuminated steadily).
To stop this control mode, enter another number or switch off the ignition.

04 Preset protected mode : Activates the engine immobiliser function even if the key is to specification. This allows the starter locking function to be checked and to re-enter the security code in certain cases. (Example: Replacing a decoder set plus two key heads.) Bargraph 8 RH illuminates.
This control mode must be entered a minimum of 10 seconds before the ignition is switched on.

05 Programming with one key only : Allows the programming procedure to be carried out with one key only if only a decoder is being replaced (situation when customer does not have both keys available).
This control mode must be entered before starting the programming procedure.

07 Ring feed: Allows a check to be made that the decoder feeds the receiving ring correctly when the ignition is switched on.
This control mode must be entered with the ignition switched off and the engine immobiliser activated (red tell-tale light flashing). The XR25 display indicates "?".

Switch on the ignition. "bon" should appear on the XR25 display. This indicates that the decoder feeds the receiving ring correctly when the ignition is switched on.

If "?" is still displayed, this indicates either:
- the system was not activated when the ignition was switched on (red tell-tale light flashing),
- the decoder has not received the + after ignition information (displayed by bargraph 5 LH),
- the decoder is faulty.

40 Introduction of the repair code (bargraph 10 LH must be illuminated).
This control mode can be used to enter the security code.

With the ignition on, enter the vehicle security code number on the XR25 and press the * key to validate (switch the ignition off and on to start the vehicle).
If the code number is correct, "bon" will be displayed on the XR25 and bargraph 10 LH will extinguish.
If the code number is incorrect, "def" will be displayed and bargraph 10 LH will remain illuminated.
Switch the ignition off and on to make another attempt.
This procedure cannot be used to decode an injection computer

ATTENTION : You are entitled to make three attempts to enter the code. If the code is invalid after the third attempt, you will need to wait for approximately 15 minutes with the ignition on before making another attempt.

70 Reading the parts number (decoder part number)

72 Writing the after sales date : Allows the last date work was carried out on the system to be entered.
When G72* is entered : Display indicates "J ?" (day)

Enter the day, e.g. : 10; enter * : Display indicates "M?" (month)

Enter the month, e.g. : 2; enter * : Display indicates "A?" (year)

Enter the year, e.g.: 95.

Enter * : the display will show the complete date: "J10" then "M02" then "A95" to follow twice.
An audible signal indicates the validation.

73 Reading the after sales date: Allows the last date work was carried out on the system to be read (memorised in the decoder).