OBD2 diagnosis Hand - Held Tester AEB214

Instruction manual

This manual could be modified in every moment for updating it with any variation or technological, qualitative and informative improvement

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Tester updating procedure

After you have installed the software included in the CD - ROM supplied in the pack onto your PC, you will see the icon shown opposite on your PC's display.

Click twice on the icon to open the software for the reprogramming Kit.

1) Key to start HAND - HELD TESTER reprogramming. The computer does not have to be connected to the Internet during the reprogramming of the Tester.
Connection to the Internet is only required to update the REPROGRAMMING SOFTWARE.

2) Software version available for updating the HAND - HELD TESTER.

3) Key for updating the REPROGRAMMING SOFTWARE.
This function can only be operated if the computer is connected and can be connected up to the INTERNET; the updating procedure is automatic.

4) Key to exit the programme.

5) Click on the flags to change the setting of the language for the reprogramming software.

The programming software's main page
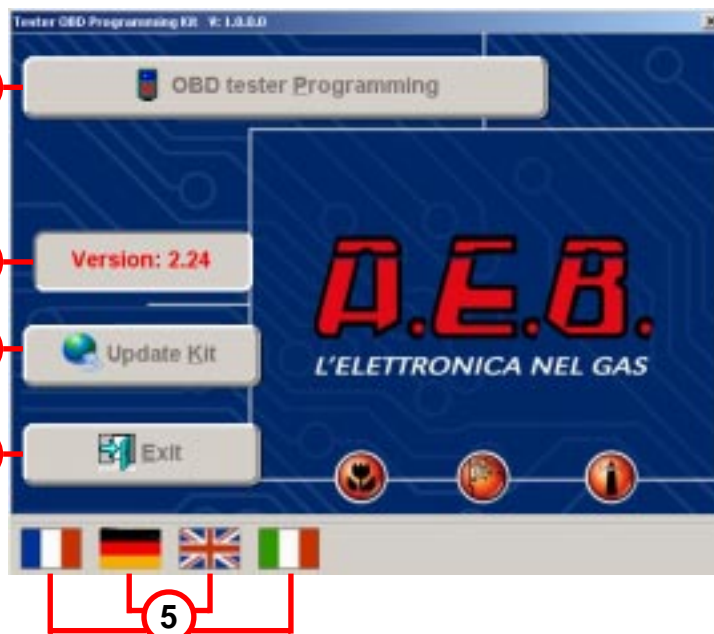
CONNECTION FOR REPROGRAMMING

OBD HAND - HELD TESTER Code 214

PERSONAL COMPUTER

220V 50Hz OUTLET

PC - Tester connection cable

POWER SUPPLY

Updating the software

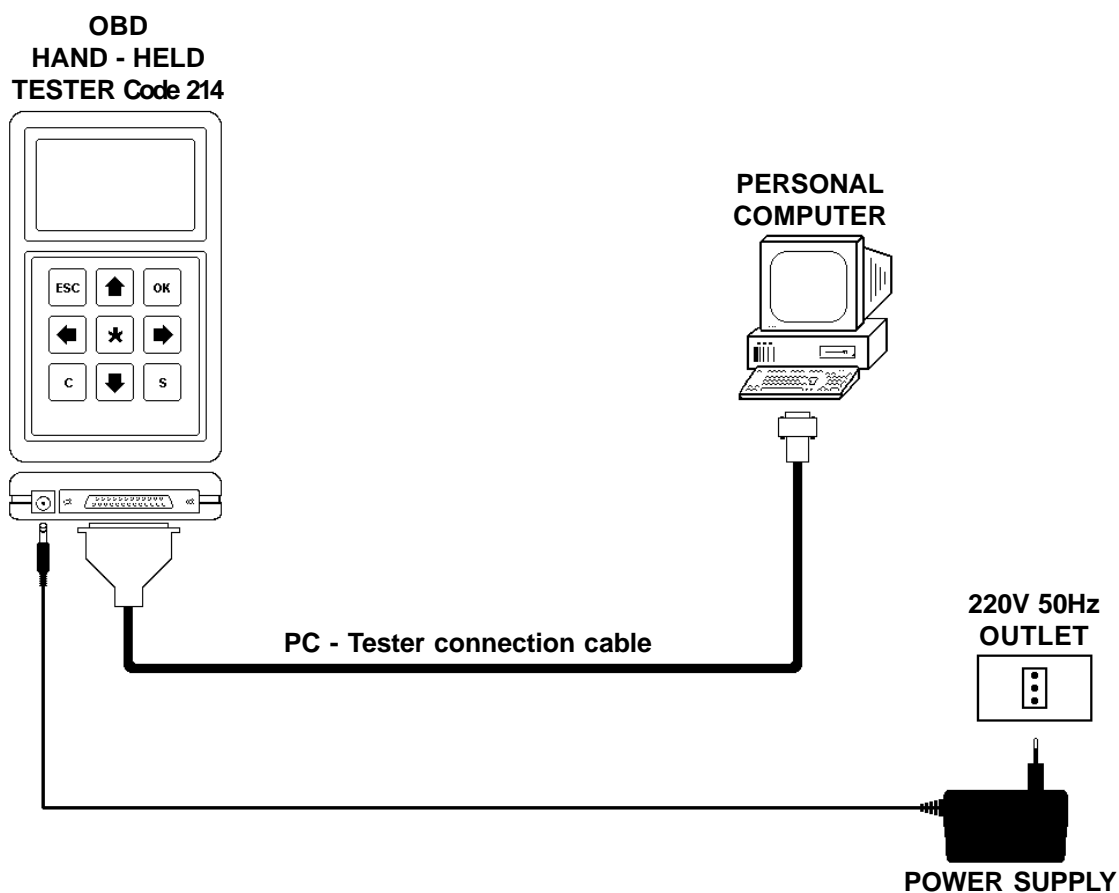Those who already have an AEB214 OBD2 HAND - HELD TESTER, with **"Version 1.00"** software, will find the following new functions will be added when the TESTER is updated with the new **"Version 2.24"** software:

• management of latent errors;

• management of the new CAN communications standard currently used mainly for new vehicles by FORD and GENERAL MOTORS.
If the TESTER is connected to one of these vehicles, one of the following will appear on the display:

```
Connection type 6
Connection type 7
Connection type 8
Connection type 9
```

N.B. if the TESTER recognises one of these types of connection, all the diagnostics functions regarding the injection system enabled by the motor vehicle manufacturer will be accessible by means of the TESTER.
ATTENTION: there is no type of emulator OBD2 available for these vehicles.
For conversion to GAS, we recommend you contact your local dealer or the A.E.B. Technical Assistance.

TYPES OF CONNECTION CURRENTLY AVAILABLE

```
Connection type 1 = ISO9141
Connection type 2 = KWP-2000 Fast Init
Connection type 3 = KWP-2000 Slow Init
Connection type 4 = SAE J1850 VPW
Connection type 5 = SAE J1850 PWM
Connection type 6 = CAN 250 bps Standard Format
Connection type 7 = CAN 250 bps Extended Format
Connection type 8 = CAN 500 bps Standard Format
Connection type 9 = CAN 500 bps Extended Format
```

General description of the Tester

The AEB214 OBD2 Diagnosis Hand - Held Tester can be used on all motor vehicles that use OBD2 (American standard) and EOBD (European standard) diagnostics systems.

The following actions are possible with the AEB214 Tester:

- Determination of the type of OBD2 µFIX emulator required on the vehicle that it is connected to.
- Reading and deletion of errors stored in the memory of the original injection control unit.
- Display of the vehicle's operating parameters (engine RPM, engine temperature, etc.).

The Tester is provided with a reprogrammeable memory that enables it to receive future updates.
The Tester complies in part with ISO 15031-4.

Description of the Tester

1) Outlet for external power supply, used for reprogramming.
2) Connector for connection to the diagnostics outlet on the vehicle.
3) Backlit, point matrix LCD display.
4) [**ESC**] key to exit the page and return to the previous menu.
5) [⇑] key to move the cursor or scroll upwards in the page.
6) [**OK**] key to confirm data or enter a page.
7) [⇐] key to move the cursor to the previous page.
8) [*] key to access the help page.
9) [⇒] key to move the cursor to the next page.
10) [**C**] key to unselect parameters.
11) [⇓] key to move the cursor or scroll downwards in the page.
12) [**S**] key to select parameters.
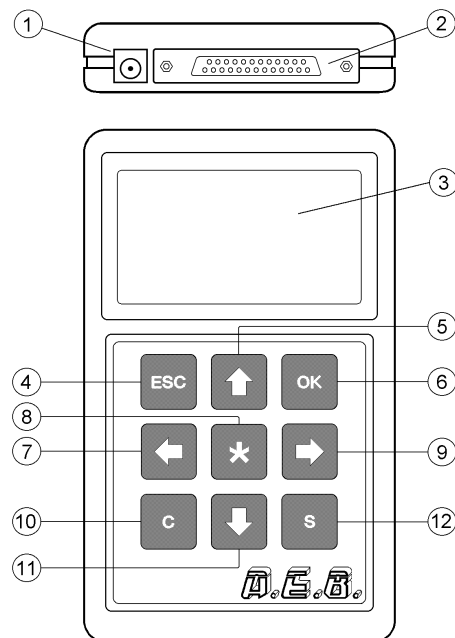
Pack contents

The Tester is supplied in a case containing:
Nr. 1 OBD2 Diagnosis Hand - Held Tester.
Nr. 1 cable for connection to the OBD diagnostics outlet, type SAE J1962.
Nr. 1 serial cable for Tester software updates.
Nr. 1 220 V 50 Hz / 12 V output mains power supply.
Nr. 1 OBD2 tester reprogramming CD Kit.

Updating the software

If necessary, the Tester can be updated using a Personal Computer with the special serial cable supplied with the pack.

Please Note

- Do not use the power supply when the Tester is connected to a vehicle's OBD diagnostics outlet: only for use for software updates.
- Do not use any other power supplies than that supplied by A.E.B.. Should the original power supply be damaged, contact the A.E.B. Technical Assistance.

General description of the Tester

Switching on the Tester

The Tester AEB214 switches on automatically when it is connected to the vehicle's diagnostics outlet with the special cable. When it switches on, the A.E.B. logo and the version of the programme appear on the display for a few seconds (Fig. 1). Then the main page automatically appears (Fig. 2) where it is possible to change the language used by the Tester or connect up to the injection control unit.


```
Я.Е.Б.
OBD Scan Tool v.2.24
```
Fig. 1

Selecting the language

Change the language used by the Tester as follows: in the Tester main page (Fig. 2) press the [**ESC**] key down for about four seconds. The Language selection option will appear on the display. Use the [⇑] or [⇓] key to select the language required from the options shown and press the [**OK**] key to confirm.


```
OBD Scan Tool v.2.24
        English
_____
Please turn ignition
       key on
   [*] for help
  [OK] to continue
```
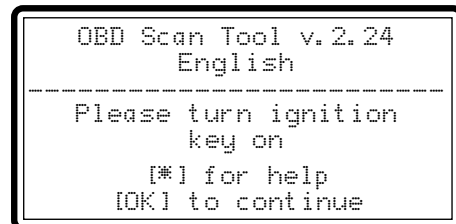Fig. 2

Connecting up to the control unit

In the Tester main page (Fig. 2), make sure that the key contact is on and press [**OK**]. Finding connection Please wait will appear on the display for a few seconds.

Once connection has been established, the Connection type will be indicated (Fig. 4). On of the following options can be selected in the following page (Fig. 5):

Parameters, Trouble codes, Freeze frame, Latent trouble codes and Clear trouble codes. Use [⇑] or [⇓] to access one of these options and press [**OK**].

ATTENTION: there may be vehicles with setting for standard OBD2 or EOBD outlets but have the diagnostics part disabled or with a different connections standard than those currently known. It will not be possible, therefore, to connect up to the injection control unit and "*Connection failed*" will appear on the display. Should this occur, contact the Technical Help Desk at A.E.B..


```
Language selection
_____
      Italiano
      English
      Français
      Deutsch
```
Fig. 3

Identifying the type of connection and the type of OBD2 µFIX Emulator

The possible connections and corresponding Emulators are listed below:

Connection type 1 - if the front oxygen sensor is a 4 - wire version, use the AEB426 type Emulator; if the front oxygen sensor is a 5 - wire version (E.g. Volkswagen) use the AEB425 type Emulator.
Connection type 2 - use the AEB426 type Emulator.
Connection type 3 - use the AEB426 type Emulator.
Connection type 4 - use the AEB424 type Emulator.
Connection type 5 - use the AEB424 type Emulator.
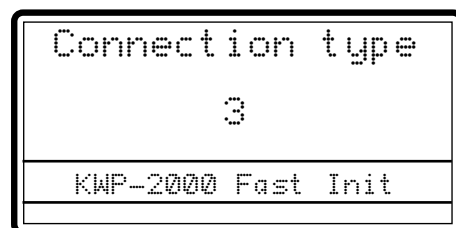
ATTENTION: the electrical connections to the emulator may vary depending on the type of vehicle in question. We recommend you follow the fitting instructions provided with the Emulator itself. Contact our A.E.B. Technical Assistance, if necessary.


```
Connection type

       3
_____
KWP-2000 Fast Init
```
Fig. 4


```
KWP-2000 Fast Init
_____
      Parameters
     Trouble codes
     Freeze frame
  Latent trouble codes
  Clear trouble codes
      [*] for help
```
Fig. 5

Parameters

This option is used to display certain parameters regarding vehicle operation (e.g. engine RPM, T.P.S., Oxygen sensors etc).

The list of available parameters is displayed initially (Fig. 6). Use the [⇑] or [⇓] keys to place the cursor [≫] on the required parameter (Fig. 6) and select it with the [**S**] key. Selected parameters are shown with a black background (Fig. 7).

Press [**OK**] to display all the parameters that have been selected in the order of their selection (Fig. 8).

To cancel selection of a parameter selected previously, place the cursor [≫] on the required parameter and press [**C**].

The display window (Fig. 8) can show 3 parameters at any one time; if more are selected, use the [⇑] or [⇓] keys to scroll through the parameters one at a time and the [⇐] [⇒] keys to go onto the next 3 parameters selected.

Press the [∗] key to consult the help.

ATTENTION: the list of available parameters may vary depending on the type of vehicle you are connected to. It is possible, therefore, that some parameters are not available on certain vehicles even if they were previously displayed for other vehicles.
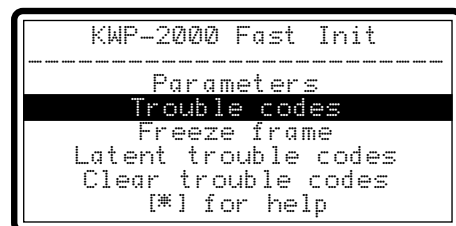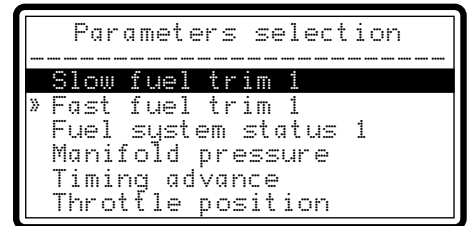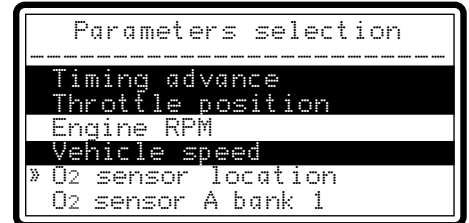
```
   Parameters selection
——————————————————————————
 Slow fuel trim 1
» Fast fuel trim 1
 Fuel system status 1
 Manifold pressure
 Timing advance
 Throttle position
```
Fig. 6

```
   Parameters selection
——————————————————————————
 Timing advance
 Throttle position
 Engine RPM
 Vehicle speed
» O2 sensor  location
 O2 sensor A bank 1
```
Fig. 7

```
     Timing advance
         12°
      ————————
    Throttle position
         19%
      ————————
     Vehicle speed
        50 km/h
```
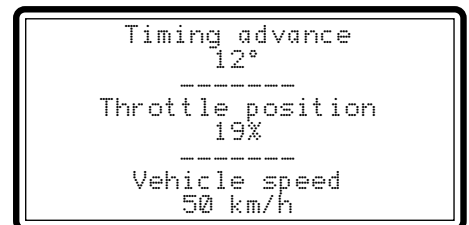Fig. 8

Trouble codes

This option is used to verify if there are any errors stored in the injection control unit's memory and provides the option to delete them. Use the [⇑] or [⇓] keys to access this option by selecting `Trouble codes` (Fig. 9) and then press [**OK**]. If no errors are present, `No trouble code present` will be displayed.

If errors are present in the memory, they will be displayed one at a time (Fig. 10).

The index of the current error appears next to `Trouble code` with the total number of errors (e.g. the number `1/4` shown in fig. 10 indicates that there are 4 errors and the one currently displayed in the first in the list).

Use the [⇑] or [⇓] keys to go to the next errors.

Press [∗] to view the help page.

Press [**C**] to delete the errors from the memory; the `Clear trouble codes` page will appear (Fig. 11).

Press [**OK**] to delete the errors in the control unit (Fig. 12) or press [**ESC**] to return to the previous page.

ATTENTION: certain vehicles do not permit deletion of errors when the engine is running. If the same errors are still present after deleting them, you must delete them when the vehicle is not running and the dashboard is on.

Freeze frame

This option is used to display the vehicle's operating parameters at the moment when the injection control unit stores an error in its memory.

To access this option, use the [⇑] or [⇓] keys to select `Freeze frame` (Fig.13) and press [**OK**]. One of two displays will appear if there are no errors in the memory: `No trouble code.`

However, if one or more errors are present in the control unit's memory, the vehicle's operating parameters at the time the error was detected will be displayed (Fig. 14).

The frozen data provided by the injection control unit only refer to the first error that was detected.

3 parameters are shown at a time in the page. Use the [⇑] or [⇓] keys to scroll through the next parameters one at a time. Use the [⇐] [⇒] keys to go onto the next 3 parameters.

Press [**ESC**] to return to the main page.
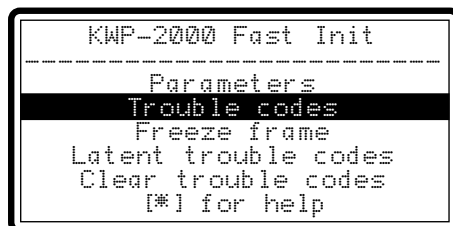
```
   KWP-2000 Fast Init
------------------------
       Parameters
      Trouble codes
      Freeze frame
   Latent trouble codes
    Clear trouble codes
       [*] for help
```
Fig. 9

```
    Trouble code 1/4
------------------------
 P0133: Sensor Circuit
 Slow Response (Bank 1
 Sensor 1)

      [ *] for help
```
Fig. 10

```
   Clear trouble codes
------------------------

    [OK] to do clearing

     [ESC] to cancel
```
Fig. 11

```
   Clear trouble codes
------------------------

      Clearing done
```
Fig. 12

```
   KWP-2000 Fast Init
------------------------
       Parameters
      Trouble codes
      Freeze frame
   Latent trouble codes
    Clear trouble codes
       [*] for help
```
Fig. 13

```
     Trouble code
        P0133
       -------
     System status
      Closed Loop
       -------
      Engine RPM
       3200 RPM
```
Fig. 14
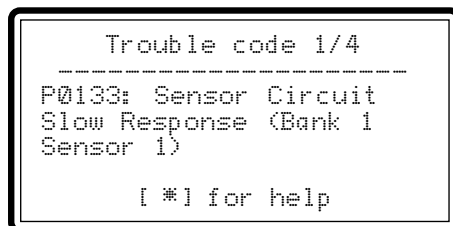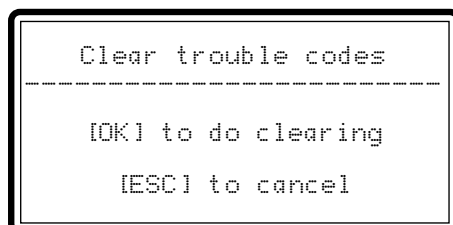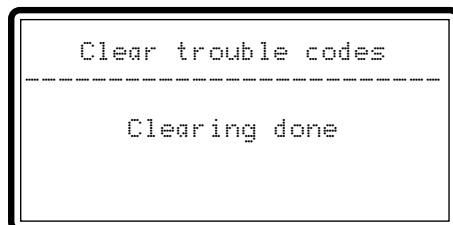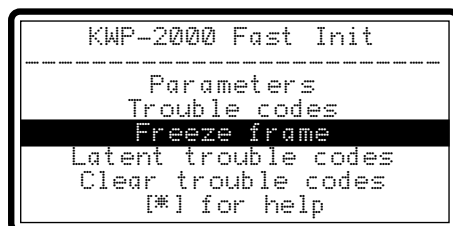
Latent trouble codes

This option is used to verify if the injection control unit has stored any errors in its memory but has not yet lit up the diagnostics warning light.

It also provides the option to delete them Use the [⇑] or [⇓] keys to access this option by selecting `Latent trouble codes` (Fig. 15) and then press [**OK**]. If no errors are present, `No latent trouble codes or function not supported` will be displayed. If errors are present in the memory, they will be displayed one at a time (Fig. 16).

The index of the current error appears next to `Trouble code` with the total number of errors (e.g. the number `1/4` shown in fig. 16 indicates that there are 4 errors and the one currently displayed in the first in the list).

Use the [⇑] or [⇓] keys to go to the next errors.

Press [*] to view the help page.

Press [**C**] to delete the errors from the memory; the `Clear trouble codes` page will appear (Fig. 17).

Press [**OK**] to delete the errors in the control unit (Fig. 18) or press [**ESC**] to return to the previous page.

ATTENTION: certain vehicles do not permit deletion of errors when the engine is running. If the same errors are still present after deleting them, you must delete them when the vehicle is not running and the dashboard is on.

```
    KWP-2000 Fast Init
-------------------------
       Parameters
      Trouble codes
      Freeze frame
   Latent trouble codes
   Clear trouble codes
      [*] for help
```
Fig. 15

```
    Trouble code 1/4
-------------------------
P0133: Risposta lenta
del sensore O2 (Banco
1 Sensore 1)

      [*] per aiuto
```
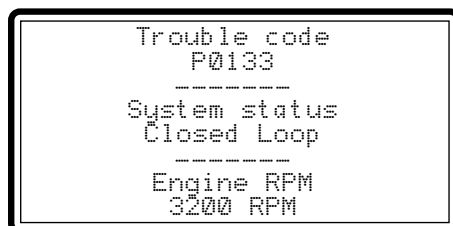Fig. 16

```
   Clear trouble codes
-------------------------

    [OK] to do clearing

    [ESC] to cancel
```
Fig. 17

```
   Clear trouble codes
-------------------------
      Clearing done
```
Fig. 18

```
    KWP-2000 Fast Init
-------------------------
       Parameters
      Trouble codes
      Freeze frame
   Latent trouble codes
   Clear trouble codes
      [*] for help
```
Fig. 19

```
   Clear trouble codes
-------------------------

    [OK] to do clearing

    [ESC] to cancel
```
Fig. 20
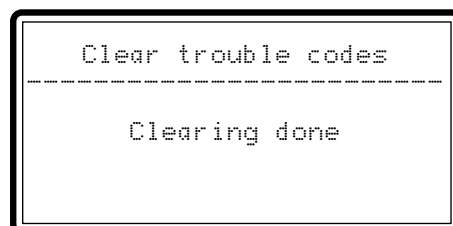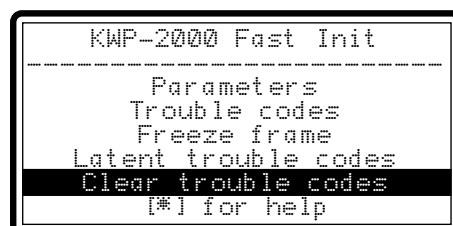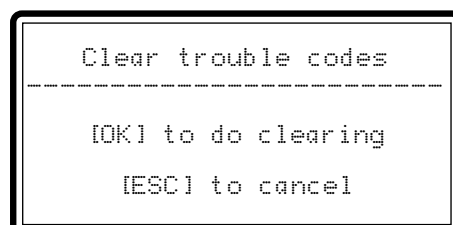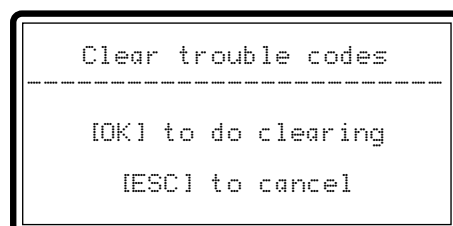
Clear trouble codes

This option is used to delete the errors stored in the injection control unit's memory.

Use the [⇑] or [⇓] keys to select `Clear trouble codes` (Fig. 19) and then press [**OK**] to access the `Clear trouble codes` page (Fig. 20).

Press [**OK**] to delete the errors in the control unit's memory (Fig. 21) or press [**ESC**] to return to the previous page.

ATTENTION: certain vehicles do not permit deletion of errors when the engine is running. If the same errors are still present after deleting them, you must delete them when the vehicle is not running and the dashboard is on.
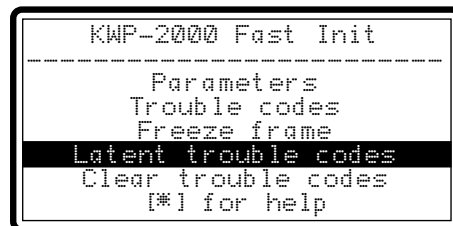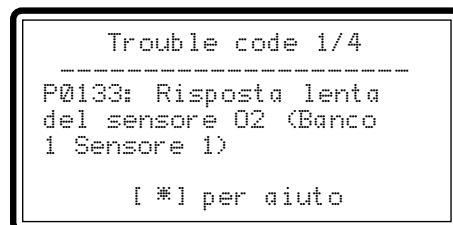
```
   Clear trouble codes
-------------------------

    [OK] to do clearing

    [ESC] to cancel
```
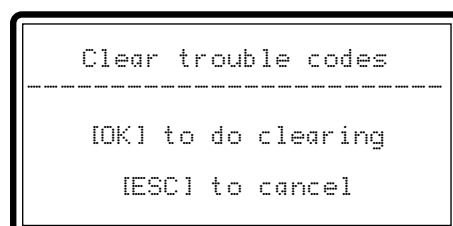Fig. 21

Warranty Certificate

- Dear Customer,
Thank you for the trust given to **A.E.B.** in buying this product. All **A.E.B.** products are subjected to severe quality checks. If, nevertheless, these should have some malfunctions, we recommend you to immediately refer to the installer for any necessary check - up and intervention.

- General Warranty terms
A.E.B. warrants that the product is in good working order and free of construction flaws and defects. Any defect arising during the warranty period, shall be repaired or replaced, at **A.E.B.'s** cost, by the original installer or by employing someone else agreed in common. The replacement of defected parts shall be supplied ex - works and dispatch fees are at consignee' charge. For all those accessories and components not of **A.E.B.** production, the recognised warranty terms are those given by the third party constructor. This warranty is the only one given by **A.E.B.**, and therefore excludes any other. **A.E.B**. is liable to no obligations owing to harm to persons or things due to malfunction of the product, except in case of fraud or bad fault. This warranty is valid only for those whose payments are up to date.

- Conditions
This warranty shall remain valid for a period of **12 months from date of installation** and against presentation of this certificate. The certificate must have the installer stamp and must mention installation date, product serial number and vehicle on which the product has been installed. The invoice or receipt given by the installer must also be attached to the certificate and must mention the serial numbers of the installed products. If the above information is missing, **A.E.B.** will, nevertheless, warrant the product for a period of **18 months from the date printed, with permanent paint, on the product**. **A.E.B.** may refuse to recognise the warranty if this information is incomplete or tampered with after purchase. The warranty is valid only if, at moment of purchase, the product is well kept and whole in its package and wrapping, prearranged by **A.E.B**, and which ensures its origin and an adequate protection.

- Warranty Exclusions
This warranty does not cover:
a) periodical controls, maintenance, repairs and replacement due to normal wear;
b) malfunction due to negligence, bad installation, improper use or not in accordance with the technical instructions provided and in general any malfunction not owing to product flaws or defects and therefore leading to **A.E.B.** responsibility;
c) products that have been modified, repaired, replaced, assembled and in any case tampered with without prior written approval of **A.E.B.**;
d) accidents caused by "force majeure" reasons or other (for e.g. water, fire, lightning, poor ventilation etc.) not depending on **A.E.B.'s** will.

Nobody must resell or install products with flaws or defects that are recognisable by ordinary care. The place of jurisdiction for any controversy concerning the interpretation and execution of this warranty is only Reggio Emilia.

Car Model : _____

Serial Number : ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Day   *Month*   *Year*

Date of installation : ☐☐   ☐☐   ☐☐☐☐

Installer's stamp