

# OBD2 diagnosis Hand-Held Tester Cod. AEB214

## *Instruction manual*



***Any information supplied in this manual can be changed at any moment by A.E.B. in order to update it according to any quality and informative variation or technological improvement.***

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## 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.

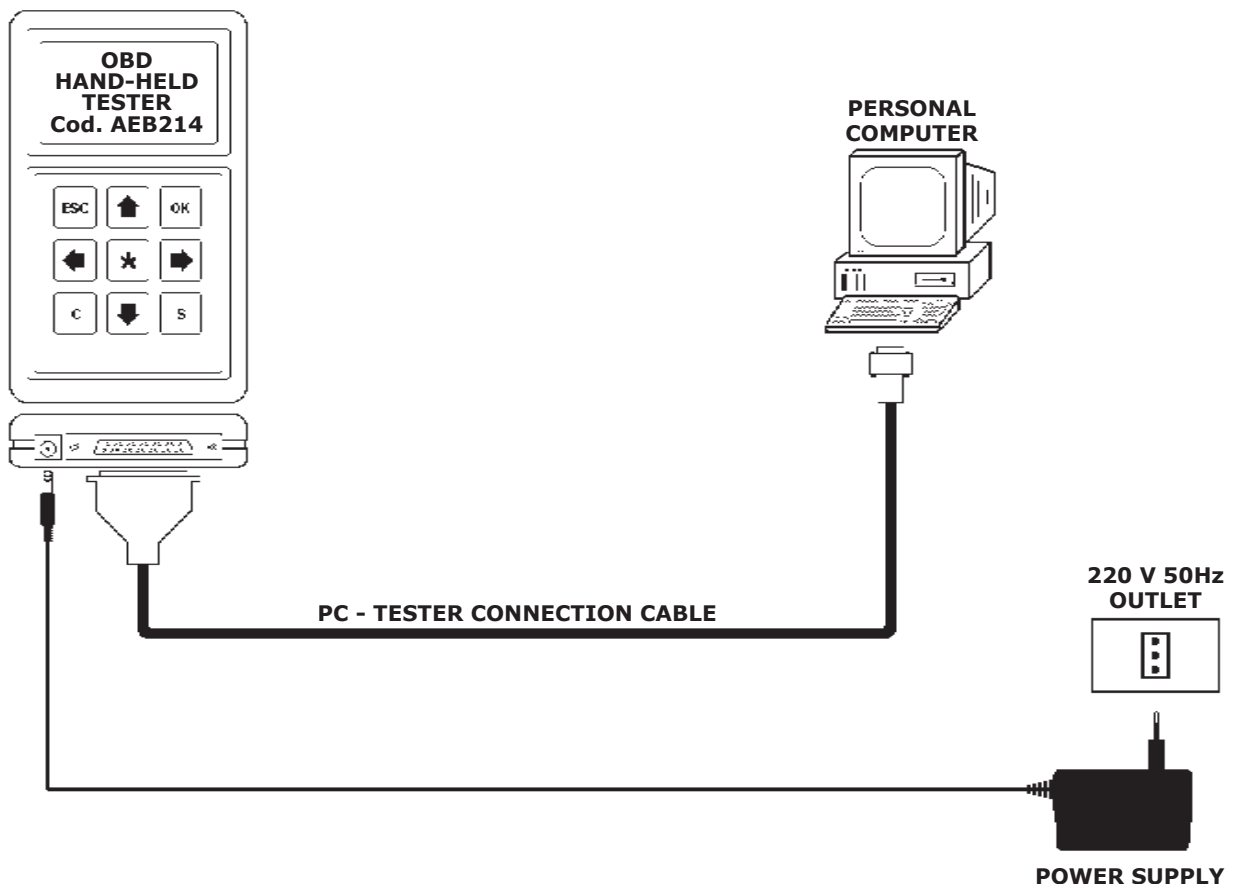
**3)** Key for updating the REPROGRAMMING SOFTWARE.  
This function can only be operated if the computer is connected and can be connected up to the INTERNET; the updating procedure is automatic.

**4)** Key to exit the programme.

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



## CONNECTION FOR REPROGRAMMING



## UPDATING SOFTWARE

Those who already have an AEB214 OBD2 HAND-HELD TESTER, with "**Version 3.05**" software, will find the following new functions will be added when the TESTER is updated with the new "**Version 5.10**" software:

- programming in 5 different languages: Italian, English, German, French and Turkish;
- management O2 sensor monitoring;
- management of all the new controls introduced with the latest revision of the ISO15031 standard (which specifies the characteristics of the OBD communication standard);
- a few minor bugs have been corrected.

### 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 Standard 250 kbps**
- Connection type 7 = CAN Extended 250 kbps**
- Connection type 8 = CAN Standard 500 kbps**
- Connection type 9 = CAN Extended 500 kbps**

The management of the new CAN communications standard currently is 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**

**NOTE:** 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.

## GENERAL DESCRIPTION

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.

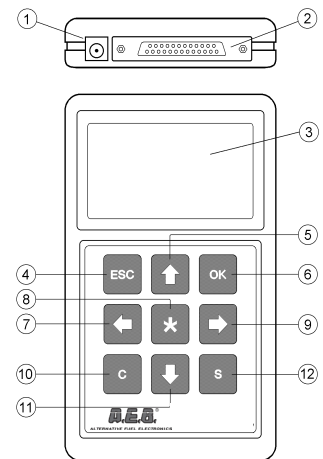
The following actions are possible with the AEB214 Tester:

- determination of the type of OBD2  $\mu$ FIX 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 reprogrammable 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) [  $\uparrow$  ] key to move the cursor or scroll upwards in the page.
- 6) [ **OK** ] key to confirm data or enter a page.
- 7) [  $\leftarrow$  ] key to move the cursor to the previous page.
- 8) [ \* ] key to access the help page.
- 9) [  $\rightarrow$  ] key to move the cursor to the next page.
- 10) [ **C** ] key to unselect parameters.
- 11) [  $\downarrow$  ] 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.

### 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.



Fig. 1

### Selecting the Language

To change the language of the Palmtop, you have to reprogram it with the relevant reprogramming kit, Cod. AEB016 supplied. In the program, select the command "OBD Tester Programming" and the desired language, then select the command "OK".

### 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. 3).

On of the following options can be selected in the following page (Fig. 4):

**Parameters, Trouble codes (DTC), Freeze frame, Latent trouble codes, Clear trouble codes, Vehicle data, O2 sensor monitoring, Component monitoring and Performance tracking.**

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 A.E.B. Technical Assistance.

### 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.**

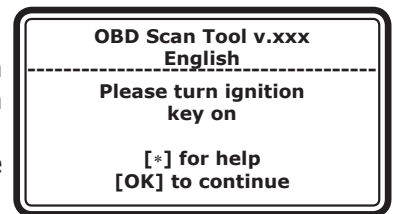


Fig. 2

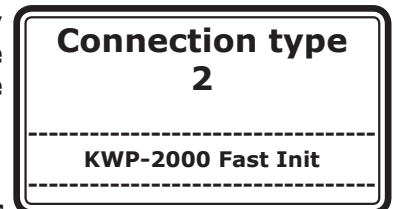


Fig. 3

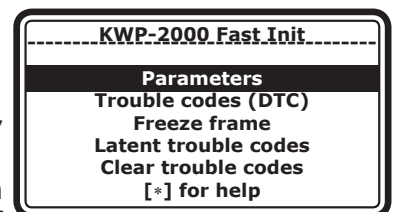


Fig. 4

## 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. 5).

Use the [ ↑ ] or [ ↓ ] keys to place the cursor [ » ] on the required parameter (Fig. 5) and select it with the [ S ] key.

Selected parameters are shown with a black background (Fig. 6).

Press [ OK ] to display all the parameters that have been selected in the order of their selection (Fig. 7).

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

The display window (Fig. 7) 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.**

## Trouble codes (DTC)

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 (DTC)" (Fig. 8) and then press [ OK ]. If no errors are present, "No trouble codes" will be displayed.

If errors are present in the memory, they will be displayed one at a time (Fig. 9).

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. 9 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. 10).

Press [ OK ] to delete the errors in the control unit (Fig. 11) 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.**

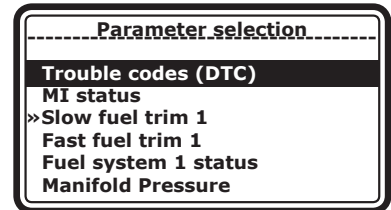


Fig. 5

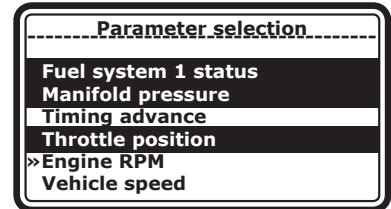


Fig. 6

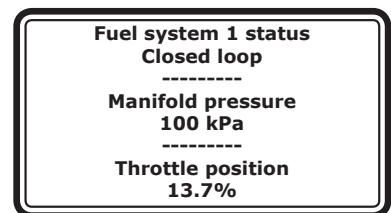


Fig. 7

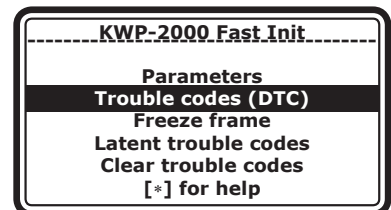


Fig. 8

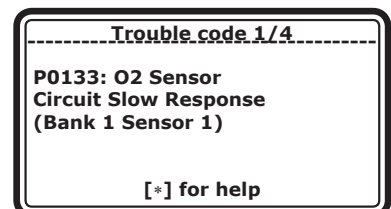


Fig. 9

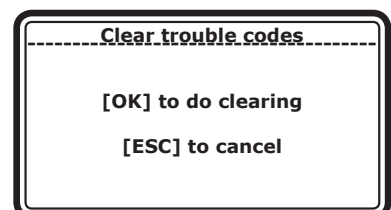


Fig. 10

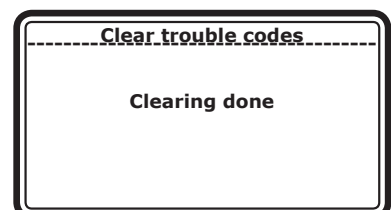


Fig. 11

### 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.12) 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. 13).

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.

### 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. 14) and then press [ OK ].

If no errors are present, **“No 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. 15).

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. 15 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. 16).

Press [ OK ] to delete the errors in the control unit (Fig. 17) 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.**

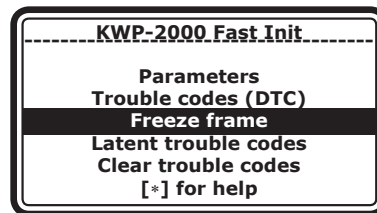


Fig. 12

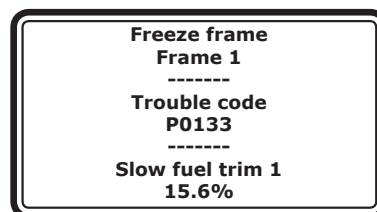


Fig. 13

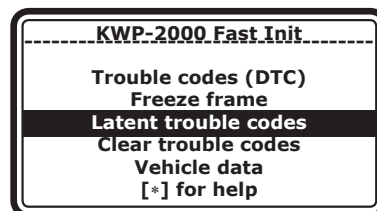


Fig. 14

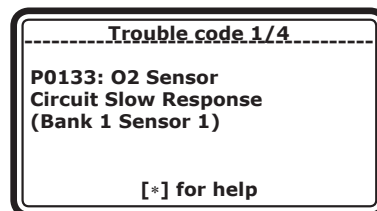


Fig. 15

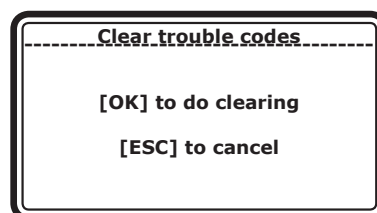


Fig. 16

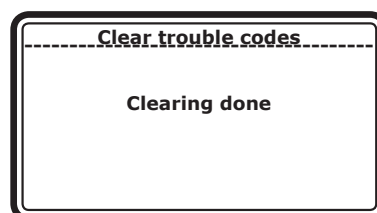


Fig. 17

## 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. 18) and then press [ **OK** ] to access the "Clear trouble codes" page (Fig. 19).

Press [ **OK** ] to delete the errors in the control unit's memory (Fig. 20) or press [ **ESC** ] to return to the previous page.

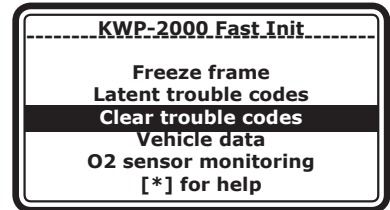


Fig. 18

**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.**

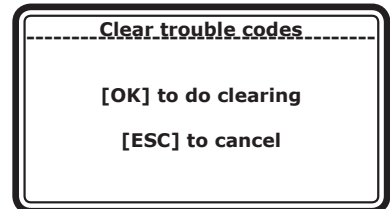


Fig. 19

## Vehicle data

This option lets you display some ID data of the car.

Use keys [ **↑** ] [ **↓** ] to select "Vehicle data" (Fig. 21) and click on [ **OK** ]. If this function isn't managed, the message "Not managed" is displayed; otherwise the relevant page appears (Fig. 22).

To scroll through the parameters displayed, use keys [ **↑** ] [ **↓** ]; press [ **ESC** ] to return to the main menu.

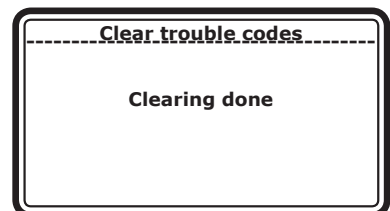


Fig. 20

**WARNING: the list of available parameters can vary on the basis of the type of car you are connecting to.**

**Therefore on some cars, the parameters displayed previously on other cars are not available.**

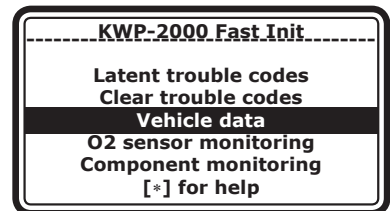


Fig. 21

## O2 sensors monitoring

This option lets you display the operating parameters of the oxygen sensor on the car.

Use keys [ **↑** ] [ **↓** ] to select "O2 sensors monitoring" (Fig. 23) and press the key [ **OK** ], to open the relevant page (Fig. 24).

Two parameters at a time are displayed in this page; to scroll through them one at a time use keys [ **↑** ] [ **↓** ].

To pass to the parameters of the next oxygen sensor (if present), use keys [ **←** ] [ **→** ].

Press [ **ESC** ] to return to the main menu.



Fig. 22

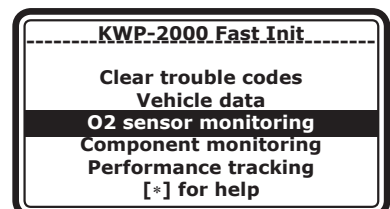


Fig. 23

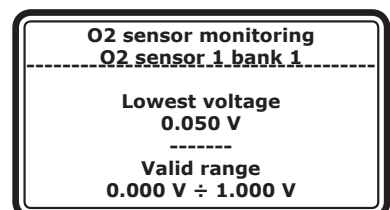


Fig. 24

## Component monitoring

This option lets you display some operating values of the components of the car.

Use keys [  $\uparrow$  ] [  $\downarrow$  ] to select **"Component monitoring"** (Fig. 25) and click on [ **OK** ].

If this function isn't managed, the message **"Not managed"** is displayed; otherwise the relevant page appears (Fig. 26).

To scroll through the parameters displayed use keys [  $\uparrow$  ] [  $\downarrow$  ]; press [ **ESC** ] to return to the main menu.

**NOTE: to identify the type of component and the meaning of the value displayed, refer to the car manufacturer's manual.**

**WARNING: the list of available parameters can vary on the basis of the type of car you are connecting to.**

**Therefore on some cars, the parameters displayed previously on other cars are not available.**

## Performance tracking

This option lets you display some parameters relevant to the performance of the car.

Use keys [  $\uparrow$  ] [  $\downarrow$  ] to select **"Performance tracking"** (Fig. 27) and click on [ **OK** ].

If this function isn't managed, the message **"Not managed"** is displayed; otherwise the relevant page appears (Fig. 28).

To scroll through the parameters displayed use keys [  $\uparrow$  ] [  $\downarrow$  ]; press [ **ESC** ] to return to the main menu.

**WARNING: the list of available parameters can vary on the basis of the type of car you are connecting to.**

**Therefore on some cars, the parameters displayed previously on other cars are not available.**

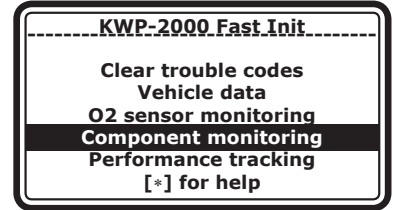


Fig. 25

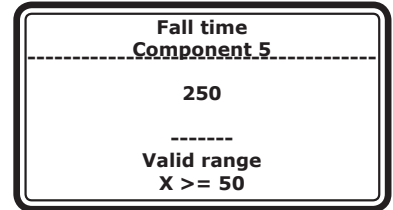


Fig. 26

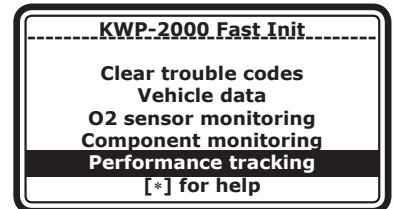


Fig. 27

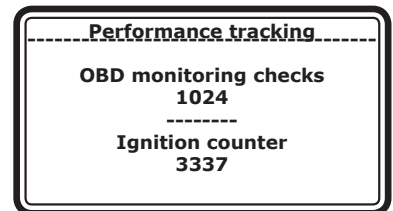


Fig. 28

## 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's 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 **24 months from the date printed, with permanent paint, on the product.**

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.**

---

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