

# **KEY PROGRAMMING OPERATING MANUAL**

**Version 12.9**



**World Leaders In Automotive Key Programming Equipment**

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*The information has been drawn up by the manufacturer in his own language (English) to provide users with the necessary indications to use the device independently, economically and safely.*

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## USING THE MANUAL

This manual has been drawn up by the Manufacturer and is an integral part of the device equipment.

The manual gives information that is compulsory for the operator to know and that makes it possible to use the device safely.

## OPERATING MANUAL

This operating manual provided with the machine is essential for using the machine properly and performing any necessary maintenance operations.

The manual must be kept throughout the device 's working life, including decommissioning. Keep it in a dry place close to the machine where it is always to hand for the operator.



**IT IS OBLIGATORY TO READ THE MANUAL CAREFULLY BEFORE USING THE MACHINE.**

## USERS

This manual must be used by personnel assigned to the machine after having read and understood its contents.

## MANUFACTURER ID

Device has an ID plate on the back of the machine, showing its serial number:



1. The hand held diagnostic tool is an electronic piece of equipment, and although designed for hostile environments it should not be exposed to excessive sunlight, high temperatures or immersed in liquids.
2. Return unit to carrying case when not in use.
3. Observe normal health and safety precautions when using this equipment.
4. Keep clear of all moving objects when near engine compartment.
5. Incorrect connections may damage sensitive electronic devices fitted to the vehicle.
6. **Switch off** the vehicle ignition when making or breaking connections.
7. Keep the unit away from spark plugs and coil leads to avoid measurement errors.
8. **DO NOT** disconnect any wiring harnesses or electronic component while ignition is ON.
9. **DO NOT** disconnect battery while engine is running.
10. Before any work is carried out, consult the Vehicle Manufacturers recommended procedures to ensure any work is carried out in accordance with their instructions.
11. Before any work is carried out, consult the Vehicle Manufacturers warranty specifications to ensure any work is carried out in accordance with their instructions.
12. Keep the LCD clean and free of debris. Please don't use sharp objects on the touch screen.

# B

## AD100Pro KEY PROGRAMMING



## OPERATING MANUAL

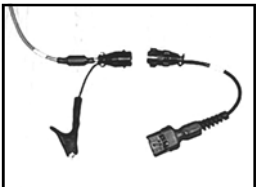
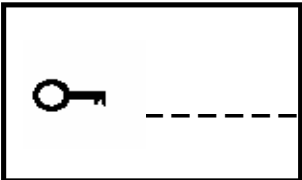
## PRODUCT DESCRIPTION

AD100Pro builds on the success of the AD100 and is the next generation in key transponder programming. Designed with simplicity in mind, AD100Pro integrates the variety of adaptors previously required for AD100 by using simple colour coded dongles that configure the tester, thus reducing the quantity of cables/adaptors required.

The AD100Pro is a hand held portable diagnostic system, equipped with 64MB of RAM used for the application data, and 512MB of Flash memory for the protocol handling system. In addition, it has a USB interface connection for fast software downloads.

The large LCD 320x240 Touch Screen provides easy navigation/selection and the ability to display more information, diagrams and incorporate a keypad entry system to allow easy alphanumeric entry for pin codes etc. Alternatively the menus and screens can be fully navigated using the keypad.

The unit is capable of reading/clearing fault codes, displaying live data, programming keys/remotes, extracting pin codes (certain vehicles), erasing/resetting immobiliser ECU's along with other functions that a particular system may allow.

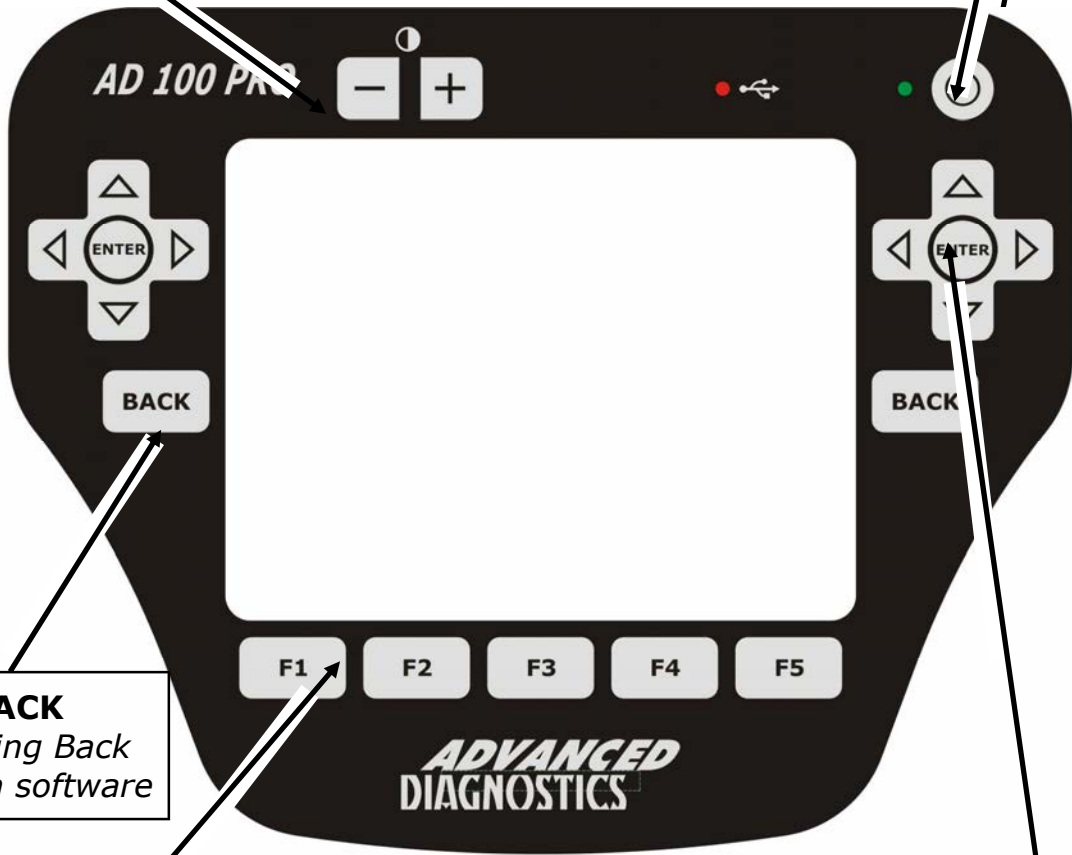
<b>POWER CONNECTION</b>	Powered via the diagnostic socket through a 25 way D-Type cable system. If no power is available through the vehicle diagnostic socket then the adapter cable will have the vehicle battery connections.
<b>VEHICLE CONNECTION</b> 	The unit is supplied with a range of cables to cover various manufacturers. The smaller adaptor cables use the ADC100 Master Cable, which connects to the tester. These adaptor cables can then be connected depending on which system is being tested
<b>LCD BACKLIGHT</b>	The LCD BACKLIGHT is automatically switched on when the unit has power. This cannot be switched off or adjusted. If the unit is not used for a period of time the LCD backlight will automatically switch off, and as soon as any key is pressed it will switch back on again.
<b>PASSWORD OPERATION</b> 	To stop unauthorised access the unit is fitted with a password system. If the password is entered incorrectly 3 times the tester will be locked.  Providing your tester has V17 or later operating software loaded, then this can be unlocked. Please refer to the relevant section.
<b>SOFTWARE</b>	AD100Pro has the ability to store both a <b>Standard</b> version and <b>Beta</b> version of software. The required software is selected each time the tester is used.



## KEYPAD OPERATION

**Contrast Brightness Control**

**Power**  
Turns tester ON/OFF.  
Hold button down for approx 1 sec



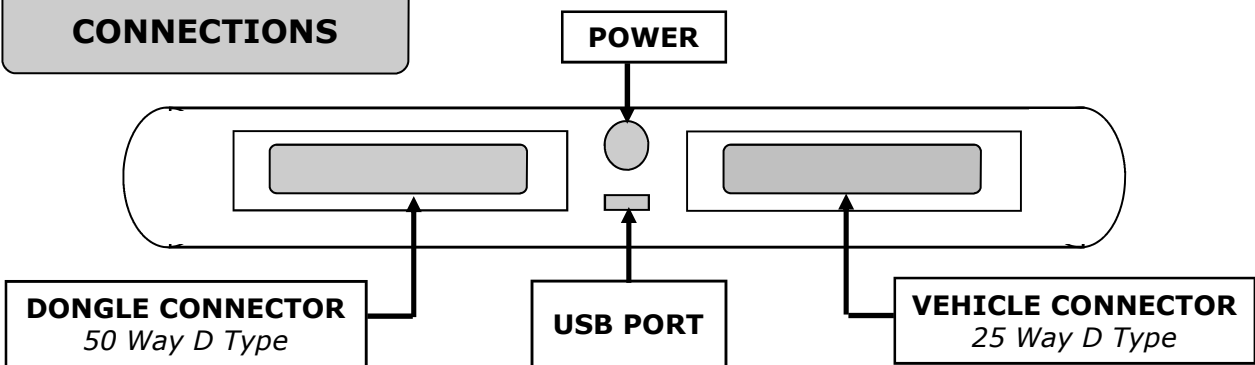
**BACK**  
Stepping Back  
through software

**Function Buttons**  
Used to *SELECT & CONTINUE*  
operations. Function of  
buttons will vary but will be  
indicated on the appropriate  
screen

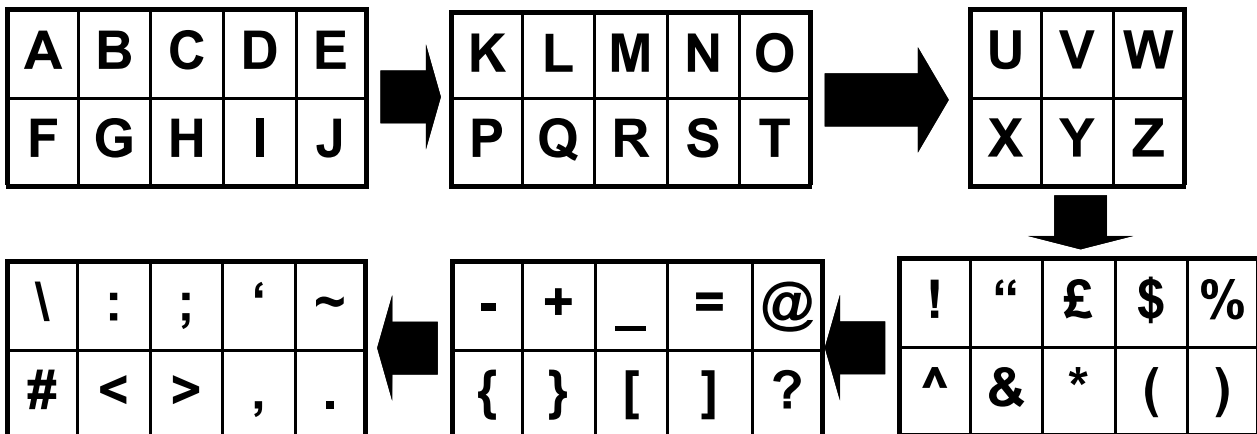
**Directional Arrows**  
Used for Screen navigation

**Enter Key**  
Used to *SELECT & CONTINUE*  
operations

## CONNECTIONS



## KEYPAD OPERATION



### TOUCH SCREEN KEYPAD

At various stages in the software, you will be required to enter data (letters and/or numbers). These are entered via the touch screen keypad.

When the screen requires data to be entered, the first keypad option will be numbers 0 to 9. By pressing the right arrow, you will move to the next set of characters as shown. Pressing the left arrow moves you back to the previous set of characters.

Note: If a character is entered incorrectly, Press the **BACK** key

### IMPORTANT:

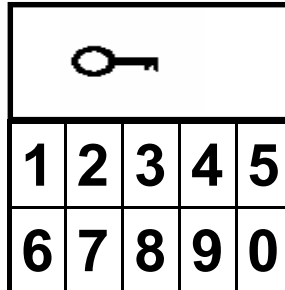
If the screen is not calibrated or has drifted out of calibration due to temperature variations, then character selection can be inaccurate.

Re-calibrate the screen periodically and each time you download new software.

## PASSWORD OPERATION

To stop unauthorised access the unit is protected by a unique password, which must be entered each time the tester is switched on.

FIG 5



Additionally this password will also be required for a number of other services such as updating software etc.

If the tester is locked (ie password entered 3 times incorrectly), the 'Locked screen will be displayed. You will need to contact your distributor with the 8 digit number displayed. Within 48 hours you will be provided with an 8 digit **un-lock** code to enter into the tester.

Notes:

1. Once your tester is locked, switching the tester on and off **DOES NOT** change the code. Once you enter your 8 digit un-lock code you will need to re-load your Standard & Beta software.
2. If you lock the tester again, the code will change and you will need to re-apply for a new un-lock code



1 2 3 4 5 6 7 8

-----

### WARNING

**If the password is entered incorrectly 3 times the unit will 'lock' and the AD100Pro will require unlocking.**

**If this occurs then please contact your local distributor. The process for unlocking will take up to 48 hours dependant on the time zone**

**ENSURE THE SCREEN IS CALIBRATED**

## VEHICLE CONNECTIONS & DONGLES

The unit is supplied with a range of cables to connect to various manufacturers diagnostic sockets. The smaller adaptor cables use the ADC100 Master Cable (Fig 7), which connects to the AD100Pro. These adaptor cables can then be connected depending on which system is being tested.

The unit is also supplied with a range of dongles (Fig 6) that configure the tester for the particular system being tested. The tester screen will advise if the incorrect dongle is fitted when the tester attempts to communicate with the vehicle.

**NOTE:** In the majority of cases for modern vehicles, the OBD cable ADC151 and SMART Dongle 'A' is used. Refer to the appropriate vehicle manufacturer section for which cable and dongle to use.

FIG 6 - Dongle

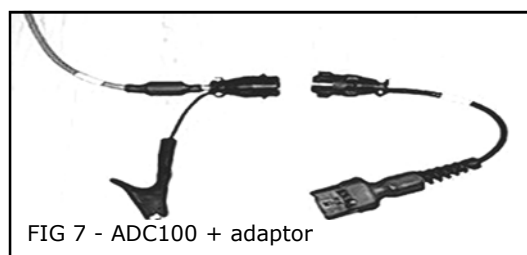
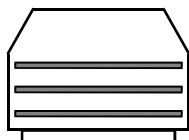
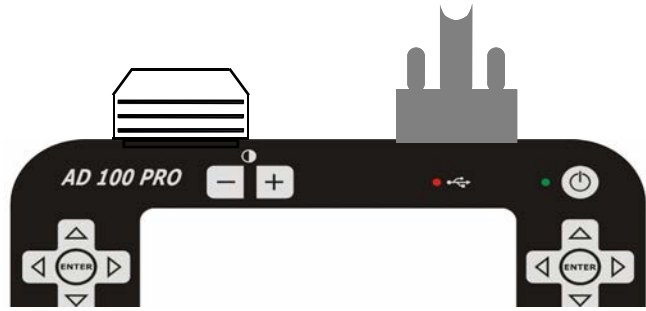


FIG 7 - ADC100 + adaptor

## INITIAL OPERATION


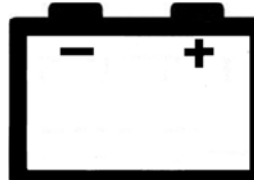
1. Connect the appropriate dongle and diagnostic cable for the vehicle being connected to.  
The tester screen will advise if the incorrect dongle is fitted when the tester attempts to communicate with the vehicle.



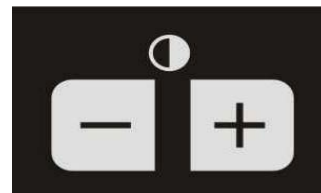
2. Press & hold the **Power** button until the green LED illuminates / the tester emits a beep.



3. The main menu selection screen will appear. **SEE IMPORTANT NOTE BELOW**

<b>STANDARD SOFTWARE</b> V XXX	<b>BETA SOFTWARE</b> V XXX
F1	F3
F5 	

4. If required the contrast can be adjusted using the '+ or -' buttons.  
**Note:** The contrast can be adjusted on any screen.


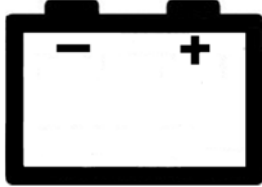


Contrast Adjust Buttons

### **IMPORTANT**

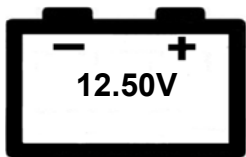
**If the AD100Pro is being loaded from a blank state then the screen calibration process must be completed initially.**  
**If the unit is blank and any part of the screen is touched the unit will enter the calibration process.**

## INITIAL OPERATION

MEMORY 1 <b>STANDARD SOFTWARE</b> V XXX	MEMORY 2 <b>BETA SOFTWARE</b> V XXX
	

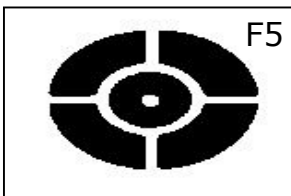
### Main Menu

To select a function either press the **Function buttons (F1 to F5)** or touch the appropriate icon.



### Battery Voltage

This displays the battery voltage of the vehicle connected to. Ensure the battery voltage is sufficient before proceeding. Note the voltage is displayed inside the icon and is not a selectable function



### Calibration

This function is selected to calibrate the touch screen. Once selected a '+' will appear on the screen. The user must touch the centre of this cross either with a finger or pointer (not sharp and careful not to damage screen). Whilst being pressed a progress bar will fill up. Keep pressing the '+' until the progress bar fills. This process needs to be repeated as another '+' will appear in a different area of the screen, which must be touched centrally again. Repeat this for all the '+' that appear on the screen. Once complete the screen will indicate that calibration was successful and then revert to the main menu.

**STANDARD SOFTWARE**  
V XXX

F1

### Software Selection

Select either Standard or Beta software

The vehicle selection menu will then be displayed.

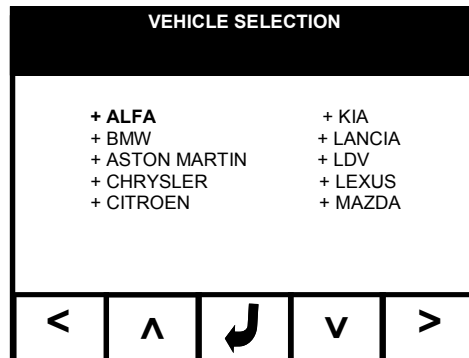
**BETA SOFTWARE**  
V XXX

F3

### Download

The unit is updated whilst the main menu is being displayed.

Refer to the **Software Update** section of this manual.



In addition to the keypad arrows, the symbols can be used to move around the main vehicle manufacturer selection screen quicker.



Used to move across to the next column.



Used to move across to the next page when the tester is loaded with a lot of software.

Enter key - Used to confirm a selection.

Note: The F1 / F2 / F4 & F5 keys can also be used to obtain the same function as pressing the symbols above the appropriate key.

The + sign that appears before each menu item indicates that there is another menu selection below. These + signs will appear at every menu level until you reach the final level.

## INITIAL OPERATION


### SELECT

**STANDARD SOFTWARE**  
V XXX

**BETA SOFTWARE**  
V XXX

Select either **STANDARD** or **BETA** software

The software version loaded on the tester is displayed

 <span style="margin-left: 50px;">-----</span>				
1	2	3	4	5
6	7	8	9	0

Enter the 6 Digit security code using the screen keypad.

**WARNING**

**If the password is entered incorrectly 3 times the unit will 'lock'.**

**If the tester is locked (ie password entered 3 times incorrectly), the 'Locked screen will be displayed. You will need to contact your distributor with the 8 digit number displayed. Within 48 hours you will be provided with an 8 digit un-lock code to enter into the tester.**

**ENSURE THE SCREEN IS CALIBRATED**

**VEHICLE SELECTION**

ILLEGAL COPYING  
 OF THIS SOFTWARE  
 WILL RESULT IN SEVERE  
 CRIMINAL ACTION  
 SOFTWARE WILL BE  
 ERASED FROM THIS UNIT

**PRESS ENTER KEY**

Software warning screen.

**VEHICLE SELECTION**

+ ALFA	+ KIA
+ BMW	+ LANCIA
+ ASTON MARTIN	+ LDV
+ CHRYSLER	+ LEXUS
+ CITROEN	+ MAZDA

<	^	↶	v	>
---	---	---	---	---

Using the arrows select the required manufacturer, and then press **ENTER**.

Or the touchscreen symbols can be used to navigate the menu.

**NOTE :** For further information and operation refer to the specific application manual.

The functionality of the software will vary dependant upon the vehicle.  
Typical functions are as follows

<b>FAULT CODES</b>	<p><b>READING FAULT CODES</b> Lists fault codes that are stored on the vehicle. NOTE : Fault codes can be either current, historic or intermittent.</p> <p><b>CLEARING FAULT CODES</b> Allows fault codes to be cleared.</p>
<b>LIVE DATA</b>	<p>Allows values of certain components to displayed in real time ie battery voltage</p>
<b>ACTUATOR OPERATION</b>	<p>Allows actuators to be operated via the tester to check they are working eg Immobiliser LED.</p>
<b>SPECIAL FUNCTIONS</b>	<p>A variety of functions that are available, dependant upon the system ie all systems do not have the same options available. These Include:</p> <p><b>KEY INFORMATION</b> Displays specific information ie no. of keys programmed.</p> <p><b>KEY PROGRAMMING</b> Ability to Clear, Add or re-program keys.</p> <p><b>REMOTE PROGRAMMING</b> Ability to Clear, Add or re-program remotes.</p> <p><b>EMS</b> On some systems the Engine Management System data is available whilst the AD100 is communicating to the vehicle. In these circumstances this information can accessed on tester via the EMS menu selection.</p> <p><b>ECU LEARN/RESET</b> On certain systems the immobiliser control unit needs to be either initialised, cleared or matched to the engine Control Unit. This facility is not generally available via the tester, however when it is, this menu option will appear.</p>



## INTRODUCTION

Advanced Diagnostics are constantly improving the existing software and developing new software. To ensure you get all software updates it is recommended that you connect to our website and download the latest software on a regular basis ie every 2 weeks.

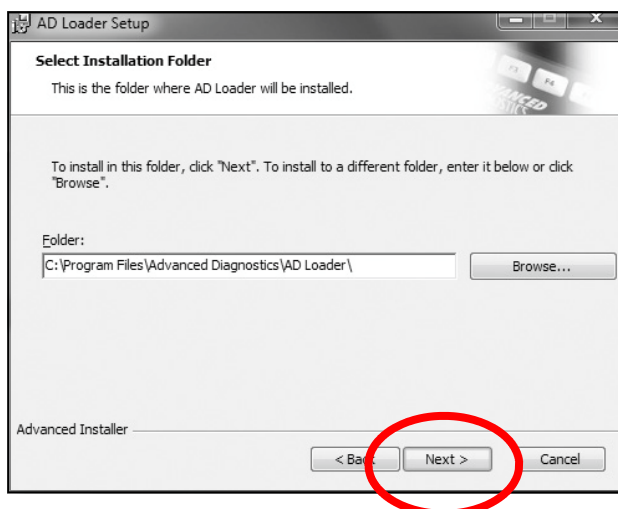
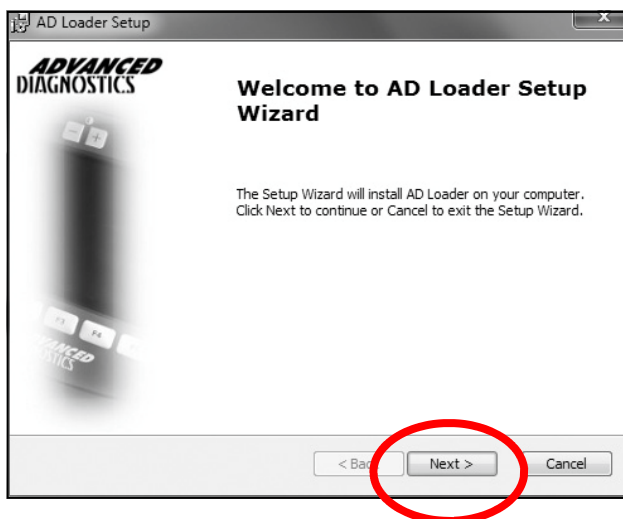
AD100Pro has the ability to store both a **Standard** version and **Beta** version of software. The required software is selected each time the tester is used. Each time you have downloaded new software, re-calibrate the touch screen.

## DOWNLOADING SOFTWARE

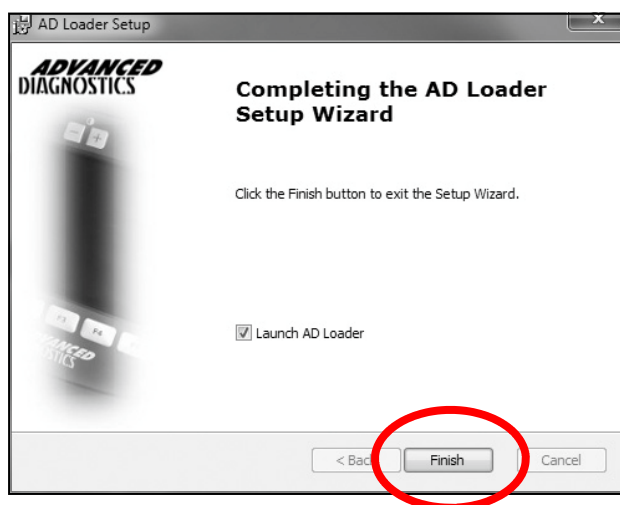
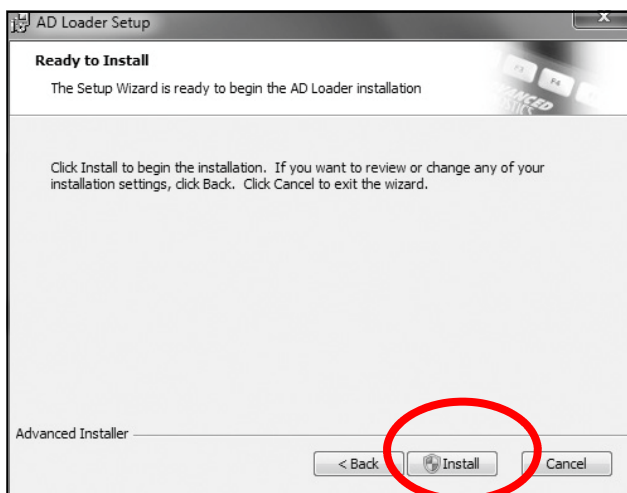
The following procedure will guide you through the necessary steps to download the software.

### Step 1 - AD Loader

- Visit Advanced Diagnostics website at [www.advanced-diagnostics.co.uk](http://www.advanced-diagnostics.co.uk)
- Select the **AD Loader** from the **Downloads** section and download to your computer.  
Note: You will need to either download or the 32 bit version or 64bit version dependant upon your PC.
- Follow the on-screen instructions in the dialogue boxes that appear.



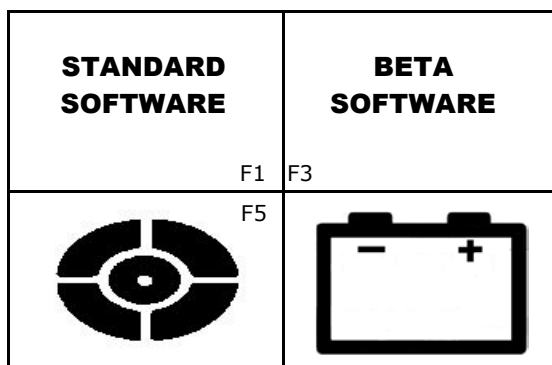
- d. At this stage your PC may display a warning about the installation not being verified. Select allow/continue...



- e. Once you click finish, the AD Loader will launch automatically (providing the check box is ticked)

## UPDATING YOUR TESTER

- Connect the power cable to the AD100Pro.
- Connect the USB cable between PC and AD100Pro
- Turn the tester on and leave with the main menu being displayed.

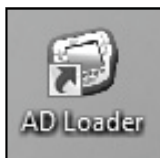


- The first time the tester is connected to the PC, the PC will detect new hardware and install the driver. Leave the PC to fully install the driver before proceeding.

Note:

- It is important that you always have the latest version of download program loaded on your PC.
- The version number can be found in the title bar of the AD100Pro Loader program when launched.
- When loading a new version of the Loader program you must fully uninstall the previous version.

- Open the AD100Pro Loader program from your desktop by double clicking the icon on your desktop.



- The Loader program will open.  
The Loader program version number will appear in the top right-hand corner of the program.



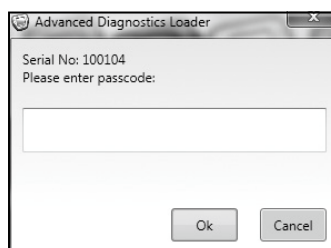
As the loader opens it performs a series of automatic checks as follows:

- If you don't have the latest loader program installed on your PC, a message advising you will appear and then take you through the process of automatically updating to the latest version.  
NOTE: There is no need to install the old loader program first.
- If you are able to connect to the internet and Advanced Diagnostics website.  
If you have a connection problem indicated after this test, you will need to check your firewall/anti-virus program settings with someone that understands how to configure the settings.

G. Select product type ie either Pro or Classic. The following information is for when Pro is selected.



H. Enter the tester 6 digit passcode



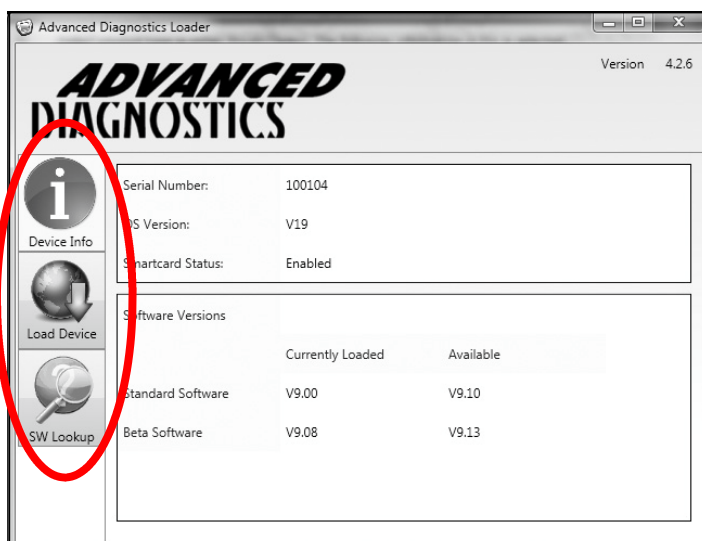
I. The **DEVICE INFO** screen will be displayed. The other options are listed down the left hand side of the dialogue box. The options are:

Device Info - Details information regarding your tester. It also indicates the version of software you currently have loaded on your tester and the version available on the website for download.

Load Device - Enables you to update your tester.

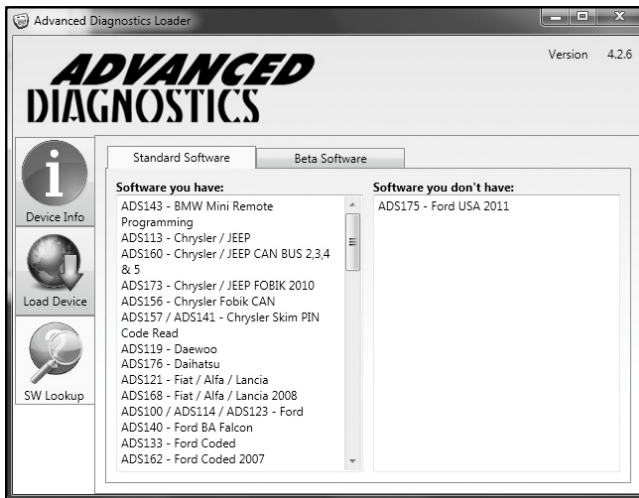
SW Lookup - Lists the software that 'YOU HAVE' and 'DON'T HAVE' loaded on your tester

Tokens - This tab will only be visible if a token tester is connected. Enables Tokens to be viewed and loaded from the internet bank



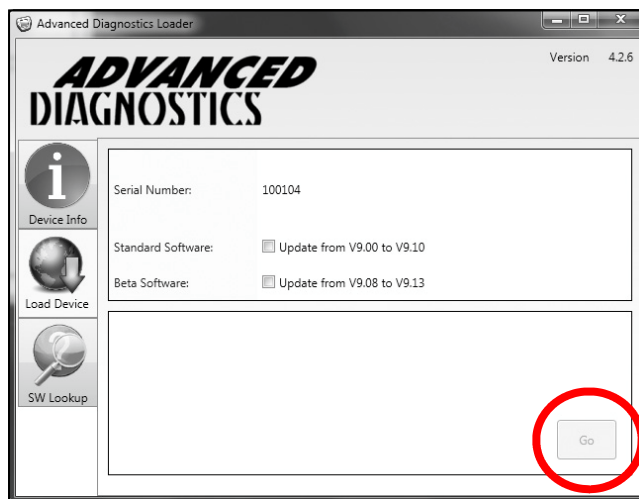
## J. SOFTWARE LOOKUP

Two tabs listing the software that 'YOU HAVE' and 'DON'T HAVE' for standard and beta software.



## K. LOAD DEVICE

Enables you to update your tester

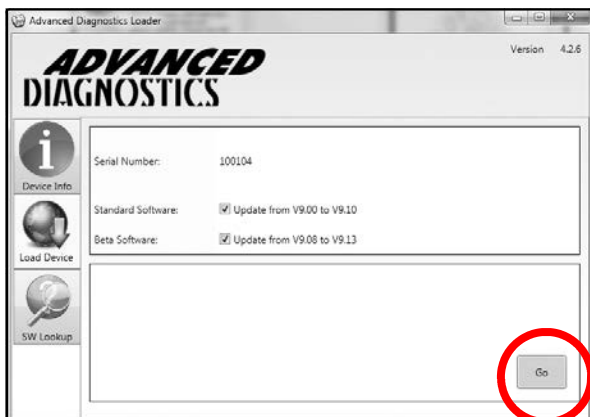


Tick the appropriate check boxes (or both) depending on what software you wish to update ie Standard or Beta

- i) When either Standard or Beta is selected it will be downloaded & previous sw versions on the tester are over written.
- ii) If the unit has no software loaded, then Standard software must always be loaded onto the tester prior to loading Beta or both at the same time.
- iii) Please note that BETA software is the latest software that we are working on and is not fully tested, however it allows customers to use the latest software at their own risk. Standard software must always be loaded onto the tester prior to loading Beta.

**WARNING**  
**IF YOU CHOOSE BETA SOFTWARE, THIS IS ENTIRELY AT YOUR OWN RISK.**  
**ADVANCED DIAGNOSTICS TAKE NO**  
**RESPONSIBILITY FOR THIS SOFTWARE**

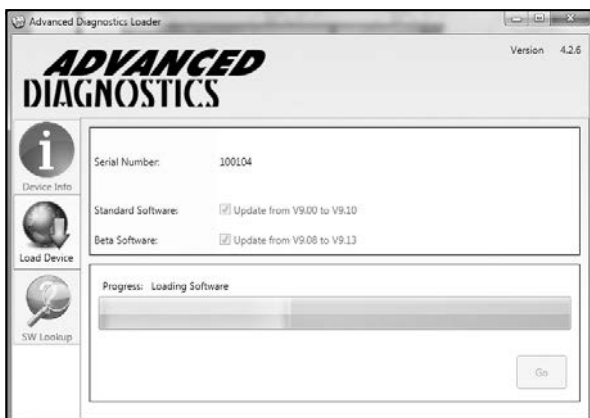
- L. Once at least one check box has been ticked, the **GO** button will become active.



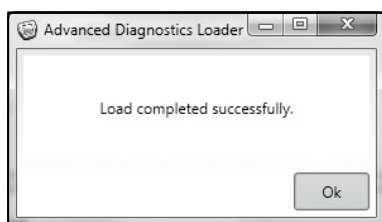
- M. Click **GO**, the tester will now be updated.

Notes:

- i) If there is a newer version of operating software (OS) for the tester, the loader will indicate. If the OS on the tester is V15 or later the OS will be automatically updated. Earlier versions of OS will require manual intervention and the instructions will be provided.
- ii) Do not disconnect the tester during the update procedure.
- iii) The red USB LED on the tester flashes during data transfer.



- N. Click OK when completed. The tester has now been fully updated and can now be disconnected.



**After Downloading new software, re-calibrate your screen**

**WARNING**

**If the password is entered incorrectly 3 times the unit will 'lock' and the AD100Pro will require unlocking. If this occurs then please contact your local distributor. The process for unlocking will take up to 48 hours dependant on the time zone**

**ENSURE THE SCREEN IS CALIBRATED**

## VERSION WITH SMARTCARD AND DONGLE

### INTRODUCTION

A number of vehicles use coded access to gain security access to program keys. Coded access systems consist of obtaining a challenge code from the vehicle, this code then needs to be converted into a response code that the vehicle will recognise and therefore allow access to the programming function to be performed.

The response code can be generated by 2 methods, as follows:

#### **Emergency Smartcard Security**

The function can be used temporarily if **ALL** smartcards have been lost.

#### **SmartCard Security**

The technician uses the SmartCard security system to generate the response code. The advantage of this system is that website access is not required. (Except for SSangyong)



The smart card security system consists of a calculator and smart card.

The smart card is required for each vehicle manufacturer after the system has been selected from the main vehicle menu. The tester will display a CHALLENGE code, to continue, the user must enter this code on the smartcard calculator. A corresponding RESPONSE code is then displayed on the smartcard calculator, which must be entered back into the tester. Providing the CHALLENGE/RESPONSE codes correspond, access to continue will be granted. After each RESPONSE code is given the smart card's uses count on the smart card will be reduced by 1.

To protect the smart card and software the smart card has a number of security features built in as follows:

1. Each smart card can be used a maximum of 5000 times.
2. After 500 uses the smart card will need to be re-charged via the Advanced Diagnostics website <http://www.advanced-diagnostics.co.uk/htm/SmartCard-English.php>. The card has a total of 10 recharges providing the 5000 limit.
3. Once the card has reached its 5000 limit, a new smart card will need to be used.
4. The smart card is unique to each tester.
5. The user has 90 seconds to enter a RESPONSE code. If it is not entered within this time then the tester will generate a new CHALLENGE code. The code changes every 90 seconds while no RESPONSE code is entered.
6. The user will have 3 attempts to enter a correct RESPONSE code. After 3 incorrect RESPONSE codes the tester will have to be turned off and re-started.

#### **Operation**

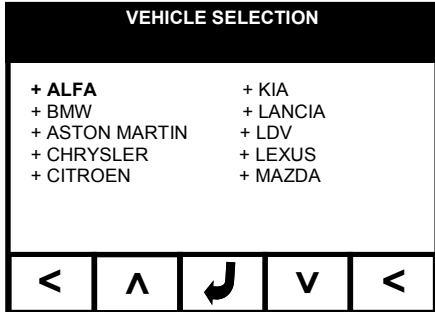
The PRO displays the SmartCard preparation screen, you click TICK to continue, when ready.

- A) SmartCard Challenge code is displayed with a 90 second countdown.
- B) User enters the 8 digit Response Code.
- C) The TICK and CROSS appear on the screen.

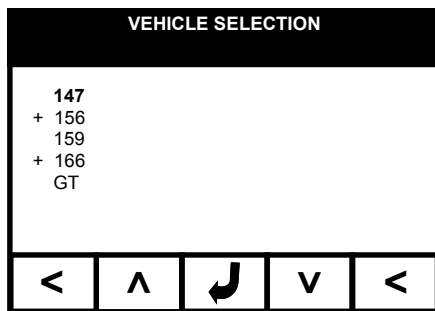
The user then has 4 options;

- i) Select TICK and the Response Code is CORRECT, the tester continues.
- ii) Select TICK and the Response Code is INCORRECT. A new Challenge Code is displayed and the Response Code entry is blanked and the 90 second countdown is reset. If the user continues to enter the incorrect response code 3 times then the padlock screen is displayed and the tester must be restarted.
- iii) If the user has mistyped the Response code, they can select the CROSS. The Challenge code remains the same the Response Code entry is blanked and the countdown continues. They can repeatedly click the CROSS to reenter the Response Code but when the countdown reaches 0 then a new Challenge Code will be generated and the countdown is reset to 90 seconds.
- 1v) The user does nothing. When the countdown reaches 0 a new challenge code is generated and the countdown is reset to 90 seconds.

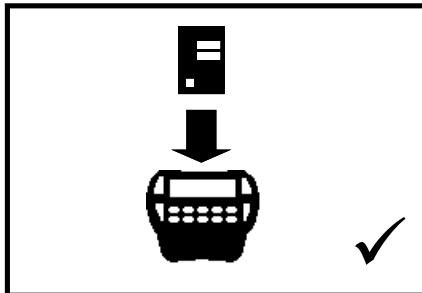
## USING SMARTCARD SECURITY



1. Select the vehicle manufacturer.



2. Select vehicle model etc



3. Warning Screen to advise you to put the smartcard into the calculator in order to allow the maximum time to enter the challenge/response code.

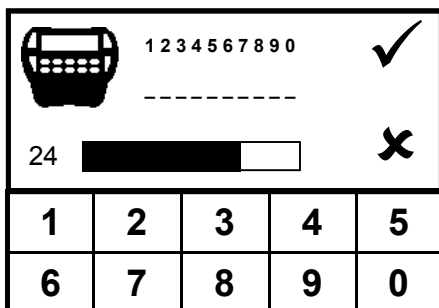
When the card is inserted, the calculator will power up and after a few Seconds, display Enter Code:

Enter Code:

Note: After 30 seconds the calculator will automatically power off if no **RESPONSE CODE** is entered.

4. Then press the **TICK**

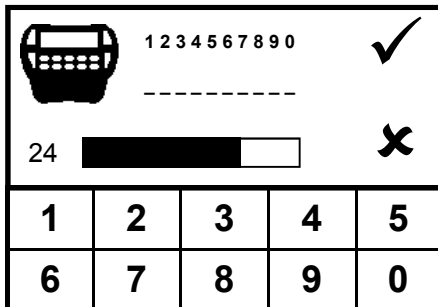
5. The smartcard security screen is displayed.





Enter Code: 1234567890

Response: [499]  
1234567890



6. Enter the 10 digit code displayed on the tester into the calculator and press **E**.

7. A 10 digit **RESPONSE** code will be displayed on the calculator

**[x]** indicates how many uses are left before the card needs re-charging.

In this example 499 uses are left.

When you get close to **zero [0]**, it is best to re-charge the card (see recharging section).

The user then has 4 scenarios, as follows:

- Enter the **RESPONSE** code into the tester, check it is correct and then press the ✓
- If the code is incorrect press the ✗  
A new Challenge Code is displayed and the Response Code entry is blanked and the 90 second countdown is reset.  
If the user continues to enter the incorrect response code 3 times then the padlock screen is displayed and the tester must be restarted.
- If the user has mistyped the Response code, they can select the ✗. The Challenge code remains the same but the Response Code entry is blanked and the countdown continues. They can repeatedly click the ✗ to reenter the Response Code but when the countdown reaches 0 then a new Challenge Code will be generated and the countdown is reset to 90 seconds.
- The user does nothing. When the countdown reaches 0 a new challenge code is generated and the countdown is reset to 90 seconds.

10. Remove card from calculator, however it will auto-power off after 30 seconds.

## NOTE

Once you have gained access, if you have selected the wrong vehicle or system you can step back and select another vehicle without having to use the smart card system.

However if you turn the tester off then you will need to go through the smart card system again.

## RECHARGE SMARTCARD

Limit reached

Recharge now

When the display indicates limit reached then the smartcard will need recharging with a further 500 uses.

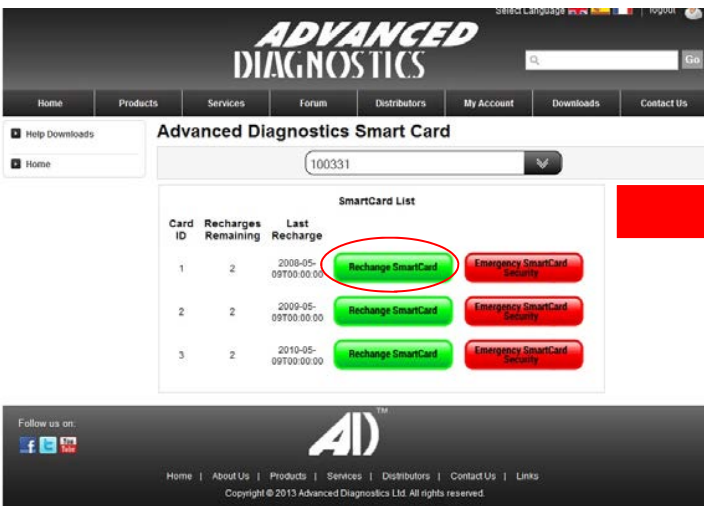
The smart card can be re-charged at any point rather than waiting until its at zero, however the number of uses left at the point of re-charging will be lost.

The smartcard can be used a maximum of 5000 times. Therefore the card has a total of 10 re-charges providing the 5000 limit.

Once the card has reached its 5000 limit, a new card needs to be purchased.

### Re-Charging Procedure

1. Select SmartCard Security from the **services** menu.



2. Click Recharge SmartCard button.

3. Enter the response Code and click **Validate Response**

Note: Card ID is written on the card itself.

### Recharge Sequence

To Complete this process you will need the calculator & smartcard to be recharged.

Card ID 0002

1. Insert Smartcard into the calculator
2. Enter the code: **1406454033**
3. Press the 'E' button on the calculator
4. Remove the smartcard
5. Insert the smartcard
6. Enter the code **1428682775**
7. Press the 'E' button on the calculator
8. Remove the smart card
9. Insert the smart card
10. Enter the code: **2180103842**
11. Press the 'E' button on the calculator
12. Enter response code from calculator below

13. Click on validate response below

**Validate Response**

4. Follow the instructions on the website, as shown.

After the 3 recharge codes have been entered into the calculator, a **RESPONSE** code will be displayed on the Calculator.

Enter the Response Code from the calculator and click **Validate Response**.

## **Recharge Status**

**Recharge Success**

**Tester Serial Number:110125  
Issue Number: 1**

**This smartcard can be  
recharged 9 more time(s)**

After completion of the process the following message will be displayed on the website.

The number of re-charges that are left for the particular card is displayed.

## ENABLE SMARTCARD SECURITY

This function should only be selected if you have received a new smartcard and calculator for the first time.

By selecting this function, you will be advising Advanced Diagnostics to disable the web security and enable the smartcard security.

1. Select your tester serial number from the drop down list.
2. Enter the smartcard ID into the box on the website.
4. You will be by e-mailed (not immediately) to update your tester when the smartcard security has been enabled.

The screenshot shows the Advanced Diagnostics website interface. At the top, the logo 'ADVANCED DIAGNOSTICS' is displayed in a stylized font. Below the logo is a navigation menu with links for Home, Products, Services, Forum, Distributors, My Account, Downloads, and Contact Us. A search bar with a 'Go' button is also present. The main content area is titled 'Advanced Diagnostics Smart Card'. It features a dropdown menu for selecting a tester serial number, currently showing '100003'. Below this is a form with three instructions: 1. Please complete the form and press Enable Smartcard. 2. An email will be sent (not immediately) to advise when to update your tester. 3. Your tester will need to be updated before the SmartCard System can be used. A text input field labeled 'Enter SmartCard ID:' is highlighted with a red oval. Below the input field is a blue button labeled 'Enable SmartCard'. At the bottom of the page, there are social media links for Facebook, Twitter, and YouTube, followed by the AD logo and a footer with navigation links and copyright information.

## EMERGENCY SMARTCARD SECURITY

This function should only be selected if **ALL** smartcards have been lost.

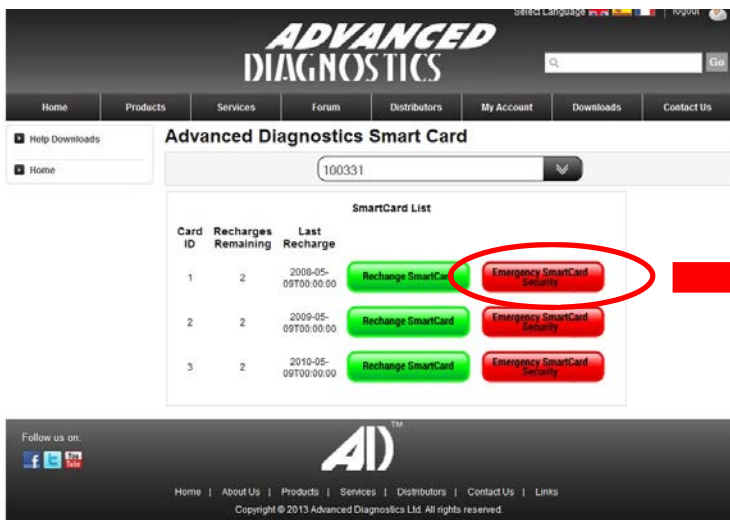
By using this function, you will be disabling the smartcards you have lost and enabling a web version of the Smartcard. The web security operation will be the same as actually having a smartcard and calculator except be via the website.

You must then order a replacement card(s) from your distributor. Once you have received the card you should start using the Smartcard.

2. Click **Emergency Smartcard Security** button.

3. Complete the web form and click **SUBMIT**.

**Note:** You insert the **Challenge code from the tester** that you would normally enter on the calculator. Once you press SUBMIT, the Smartcards you have lost will be disabled.



**ONLY SUBMIT THIS REQUEST IF ALL SMARTCARDS HAVE BEEN LOST.**

**ALL CURRENT SMARTCARDS WILL BE DISABLED.**

This function will allow you to temporarily use a web based security system whilst you purchase new Smartcards.

Enter Response Code

Submit

Cancel

## IMPORTANT - WHAT TO DO NEXT

Once you use the Emergency Web Security, ALL your smartcards will be disabled and you will be required to purchase a new one(s).

Please contact your local distributor to order a replacement card(s).

Once you have received this card(s) please use immediately.

# C

## MVP Pro KEY PROGRAMMING



US PATENT #7,315,238

## OPERATING MANUAL

## PRODUCT DESCRIPTION

MVP Pro has the same software functionality and coverage as the AD100Pro, except uses electronic tokens when programming.

Designed with simplicity in mind, MVP Pro integrates the variety of adaptors previously required for MVP by using simple colour coded dongles that configure the tester, thus reducing the quantity of cables/adaptors required.

The MVP Pro is a hand held portable diagnostic system, equipped with 64MB of RAM used for the application data, and 512MB of Flash memory for the protocol handling system. In addition, it has a USB interface connection for fast software downloads.

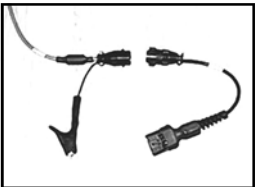
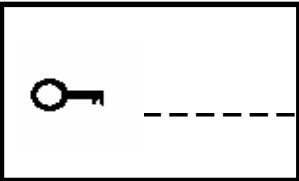
The large LCD 320x240 Touch Screen provides easy navigation/selection and the ability to display more information, diagrams and incorporate a keypad entry system to allow easy alphanumeric entry for pin codes etc. Alternatively the menus and screens can be fully navigated using the keypad.

The unit is capable of reading/clearing fault codes, displaying live data, programming keys/remotes, extracting pin codes (certain vehicles), erasing/resetting immobiliser ECU's along with other functions that a particular system may allow.

This revolutionary 'Pay As You Go' key programming system, uses electronic tokens which can be purchased easily and quickly on the internet.

The MVP Pro is supplied with all available software applications and easily updated with new software from the internet, at no cost, ensuring the technician always has the latest developed software.

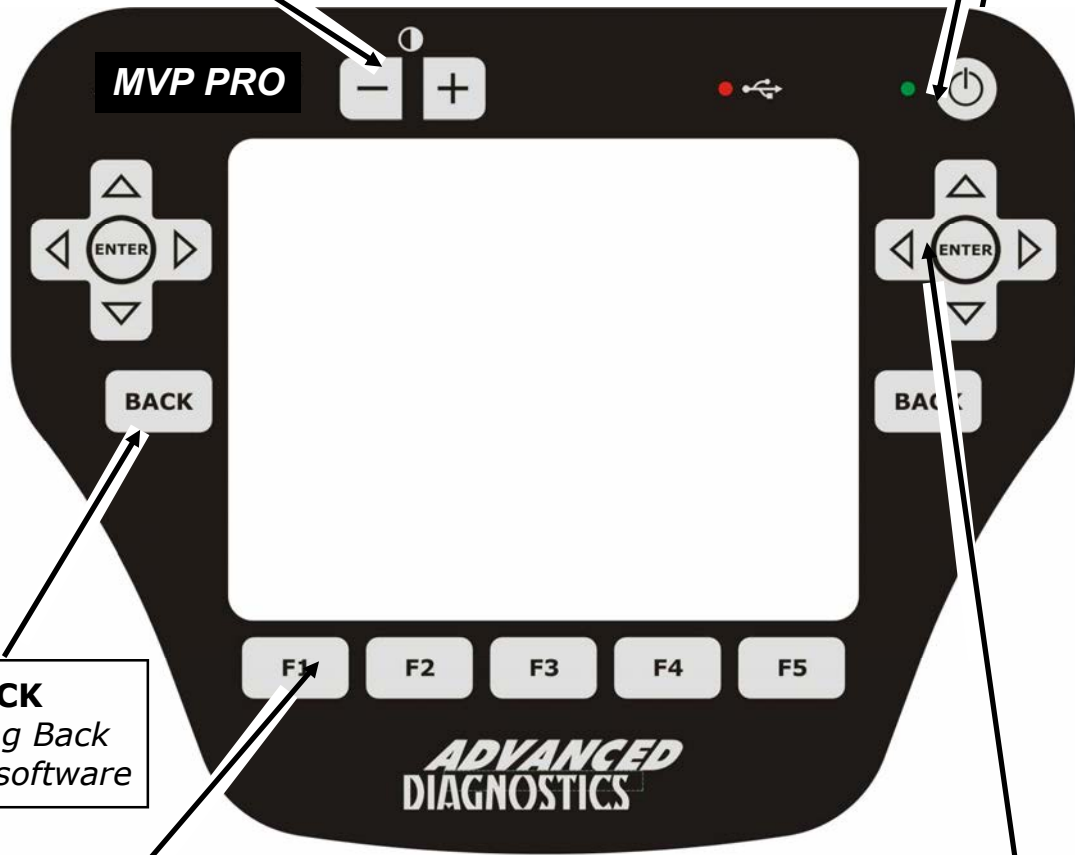
This system uses electronic tokens to program vehicles, one token per vehicle and, along with never having to purchase software again, allows anyone who wants to offer key programming, a step in the door at an affordable price.

<b>POWER CONNECTION</b>	Powered via the diagnostic socket through a 25 way D-Type cable system. If no power is available through the vehicle diagnostic socket then the adapter cable will have the vehicle battery connections.
<b>VEHICLE CONNECTION</b> 	The unit is supplied with a range of cables to cover various manufacturers. The smaller adaptor cables use the ADC100 Master Cable, which connects to the tester. These adaptor cables can then be connected depending on which system is being tested
<b>LCD BACKLIGHT</b>	The LCD BACKLIGHT is automatically switched on when the unit has power. This cannot be switched off or adjusted. If the unit is not used for a period of time the LCD backlight will automatically switch off, and as soon as any key is pressed it will switch back on again.
<b>PASSWORD OPERATION</b> 	To stop unauthorised access the unit is fitted with a password system. If the password is entered incorrectly 3 times the tester will be locked.  Providing your tester has V17 or later operating software loaded, then this can be unlocked. Please refer to the relevant section.
<b>SOFTWARE</b>	AD100Pro has the ability to store both a <b>Standard</b> version and <b>Beta</b> version of software. The required software is selected each time the tester is used.

## KEYPAD OPERATION

**Contrast**  
Brightness Control

**Power**  
Turns tester ON/OFF.  
Hold button down for approx 1 sec



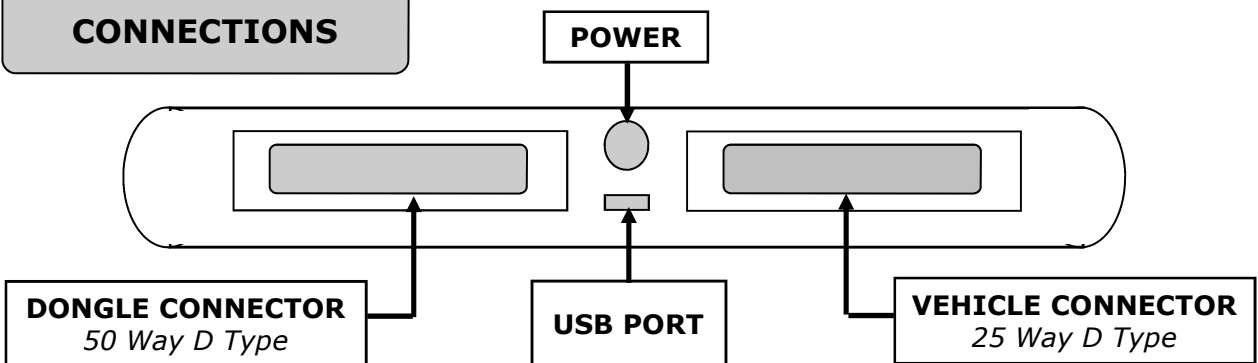
**BACK**  
Stepping Back  
through software

**Function Buttons**  
Used to *SELECT & CONTINUE*  
operations. Function of  
buttons will vary but will be  
indicated on the appropriate  
screen

**Directional Arrows**  
Used for Screen navigation

**Enter Key**  
Used to *SELECT & CONTINUE*  
operations

## CONNECTIONS





## KEYPAD OPERATION (CONT)



A	B	C	D	E
F	G	H	I	J



K	L	M	N	O
P	Q	R	S	T



U	V	W
X	Y	Z



\	:	;	'	~
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-	+	_	=	@
{	}	[	]	?



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^	&	*	(	)

### TOUCH SCREEN KEYPAD

At various stages in the software, you will be required to enter data (letters and/or numbers). These are entered via the touch screen keypad.

When the screen requires data to be entered, the first keypad option will be numbers 0 to 9. By pressing the right arrow, you will move to the next set of characters as shown. Pressing the left arrow moves you back to the previous set of characters.

Note: If a character is entered incorrectly, Press the **BACK** key

### IMPORTANT:

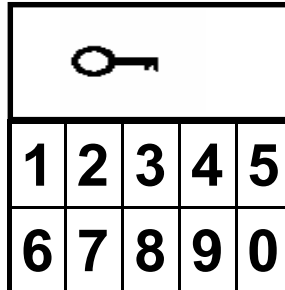
If the screen is not calibrated or has drifted out of calibration due to temperature variations, then character selection can be inaccurate.

Re-calibrate the screen periodically and each time you download new software.

## PASSWORD OPERATION

To stop unauthorised access the unit is protected by a unique password, which must be entered each time the tester is switched on.

FIG 5



Additionally this password will also be required for a number of other services such as updating software etc.

If the tester is locked (ie password entered 3 times incorrectly), the 'Locked screen will be displayed. You will need to contact your distributor with the 8 digit number displayed. Within 48 hours you will be provided with an 8 digit **un-lock** code to enter into the tester.

Notes:

1. Once your tester is locked, switching the tester on and off **DOES NOT** change the code. Once you enter your 8 digit un-lock code you will need to re-load your Standard & Beta software.
2. If you lock the tester again, the code will change and you will need to re-apply for a new un-lock code



1 2 3 4 5 6 7 8

-----

### **WARNING**

**If the password is entered incorrectly 3 times the unit will 'lock' and the AD100Pro will require unlocking.**

**If this occurs then please contact your local distributor. The process for unlocking will take up to 48 hours dependant on the time zone**

**ENSURE THE SCREEN IS CALIBRATED**

## VEHICLE CONNECTIONS & DONGLES

The unit is supplied with a range of cables to connect to various manufacturers diagnostic sockets. The smaller adaptor cables use the ADC100 Master Cable (Fig 7), which connects to the AD100Pro. These adaptor cables can then be connected depending on which system is being tested.

The unit is also supplied with a range of dongles (Fig 6) that configure the tester for the particular system being tested. The tester screen will advise if the incorrect dongle is fitted when the tester attempts to communicate with the vehicle.

**NOTE:** In the majority of cases for modern vehicles, the OBD cable ADC151 and Dongle 'A' is used. Refer to the appropriate vehicle manufacturer section for which cable and dongle to use.

FIG 6 - Dongle

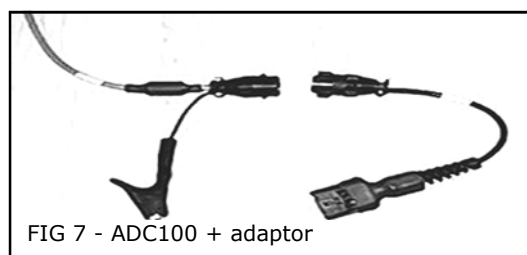
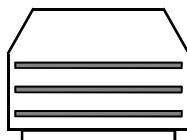
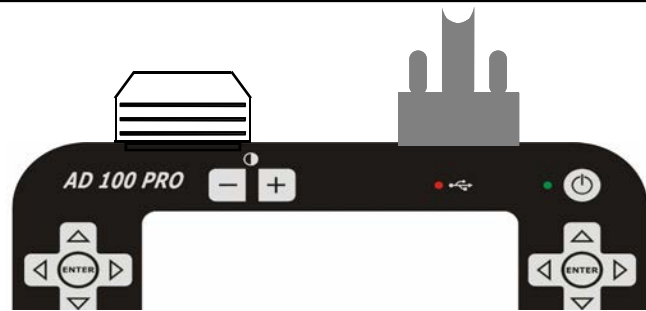


FIG 7 - ADC100 + adaptor

## INITIAL OPERATION


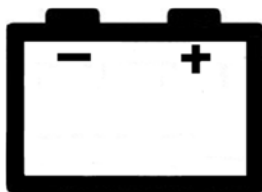
1. Connect the appropriate dongle and diagnostic cable for the vehicle being connected to.  
The tester screen will advise if the incorrect dongle is fitted when the tester attempts to communicate with the vehicle.



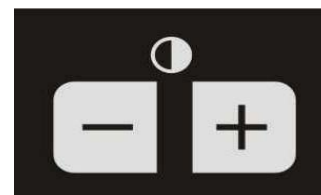
2. Press & hold the **Power** button until the green LED illuminates / the tester emits a beep.



3. The main menu selection screen will appear.  
**SEE IMPORTANT NOTE BELOW**

MEMORY 1 <b>STANDARD SOFTWARE</b> V XXX	MEMORY 2 <b>BETA SOFTWARE</b> V XXX
F1	F3
F5 	

4. If required the contrast can be adjusted using the '+ or -' buttons.  
**Note:** The contrast can be adjusted on any screen.


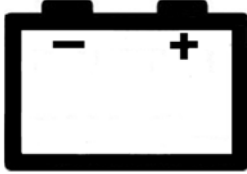


Contrast Adjust Buttons

### **IMPORTANT**

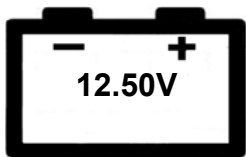
**If the MVPPro is being loaded from a blank state then the screen calibration process must be completed initially.**  
**If the unit is blank and any part of the screen is touched the unit will enter the calibration process.**

## INITIAL OPERATION

<p>MEMORY 1</p> <p><b>STANDARD SOFTWARE</b></p> <p>V XXX</p>	<p>MEMORY 2</p> <p><b>BETA SOFTWARE</b></p> <p>V XXX</p>
F1	F3
	
F5	

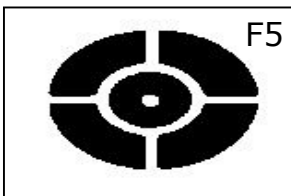
### Main Menu

To select a function either press the **Function buttons (F1 to F5)** or touch the appropriate icon.



### Battery Voltage

This displays the battery voltage of the vehicle connected to. Ensure the battery voltage is sufficient before proceeding. Note the voltage is displayed inside the icon and is not a selectable function



### Calibration

This function is selected to calibrate the touch screen. Once selected a '+' will appear on the screen. The user must touch the centre of this cross either with a finger or pointer (not sharp and careful not to damage screen). Whilst being pressed a progress bar will fill up. Keep pressing the '+' until the progress bar fills. This process needs to be repeated as another '+' will appear in a different area of the screen, which must be touched centrally again. Repeat this for all the '+' that appear on the screen. Once complete the screen will indicate that calibration was successful and then revert to the main menu.

**STANDARD SOFTWARE**  
V XXX

### Software Selection

Select either Standard or Beta software

The vehicle selection menu will then be displayed.

**BETA SOFTWARE** F3  
V XXX

### Download

The unit is updated whilst the main menu is being displayed.

Refer to the **Software Update** section of this manual.



In addition to the keypad arrows, the symbols can be used to move around the main vehicle manufacturer selection screen quicker.



Used to move across to the next column.



Used to move across to the next page when the tester is loaded with a lot of software.



Enter key - Used to confirm a selection.

Note: The F1 / F2 / F4 & F5 keys can also be used to obtain the same function as pressing the symbols above the appropriate key.

The + sign that appears before each menu item indicates that there is another menu selection below. These + signs will appear at every menu level until you reach the final level.


## INITIAL OPERATION

### SELECT

**STANDARD SOFTWARE**    **BETA SOFTWARE**  
 V XXX                      V XXX

Select either **STANDARD** or **BETA** software

The software version loaded on the tester is displayed

 -----				
1	2	3	4	5
6	7	8	9	0

Enter the 6 Digit security code using the screen keypad.

**WARNING**

**If the password is entered incorrectly 3 times the unit will 'lock'.**

**If the tester is locked (ie password entered 3 times incorrectly), the 'Locked screen will be displayed. You will need to contact your distributor with the 8 digit number displayed. Within 48 hours you will be provided with an 8 digit un-lock code to enter into the tester.**

**ENSURE THE SCREEN IS CALIBRATED**

**VEHICLE SELECTION**

ILLEGAL COPYING  
 OF THIS SOFTWARE  
 WILL RESULT IN SEVERE  
 CRIMINAL ACTION  
 SOFTWARE WILL BE  
 ERASED FROM THIS UNIT

**PRESS ENTER KEY**

Software warning screen.

**VEHICLE SELECTION**

+ ALFA	+ KIA
+ BMW	+ LANCIA
+ ASTON MARTIN	+ LDV
+ CHRYSLER	+ LEXUS
+ CITROEN	+ MAZDA

<	^	↩	v	>
---	---	---	---	---

Using the arrows select the required manufacturer, and then press **ENTER**.

Or the touchscreen symbols can be used to navigate the menu.

**NOTE :** For further information and operation refer to the specific application manual.

The functionality of the software will vary dependant upon the vehicle.  
Typical functions are as follows

<b>FAULT CODES</b>	<p><b>READING FAULT CODES</b> Lists fault codes that are stored on the vehicle. NOTE : Fault codes can be either current, historic or intermittent.</p> <p><b>CLEARING FAULT CODES</b> Allows fault codes to be cleared.</p>
<b>LIVE DATA</b>	<p>Allows values of certain components to displayed in real time ie battery voltage</p>
<b>ACTUATOR OPERATION</b>	<p>Allows actuators to be operated via the tester to check they are working eg Immobiliser LED.</p>
<b>SPECIAL FUNCTIONS</b>	<p>A variety of functions that are available, dependant upon the system ie all systems do not have the same options available. These Include:</p> <p><b>KEY INFORMATION</b> Displays specific information ie no. of keys programmed.</p> <p><b>KEY PROGRAMMING</b> Ability to Clear, Add or re-program keys.</p> <p><b>REMOTE PROGRAMMING</b> Ability to Clear, Add or re-program remotes.</p> <p><b>EMS</b> On some systems the Engine Management System data is available whilst the AD100 is communicating to the vehicle. In these circumstances this information can accessed on tester via the EMS menu selection.</p> <p><b>ECU LEARN/RESET</b> On certain systems the immobiliser control unit needs to be either initialised, cleared or matched to the engine Control Unit. This facility is not generally available via the tester, however when it is, this menu option will appear.</p>

## INTRODUCTION

Advanced Diagnostics are constantly improving the existing software and developing new software. To ensure you get all software updates it is recommended that you connect to our website and download the latest software on a regular basis ie every 2 weeks.

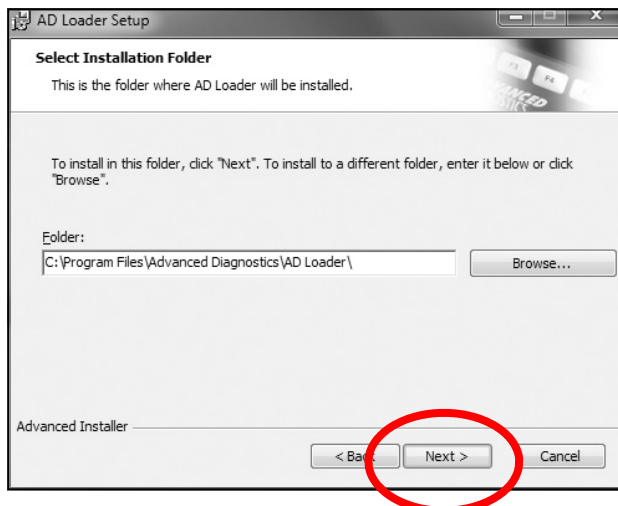
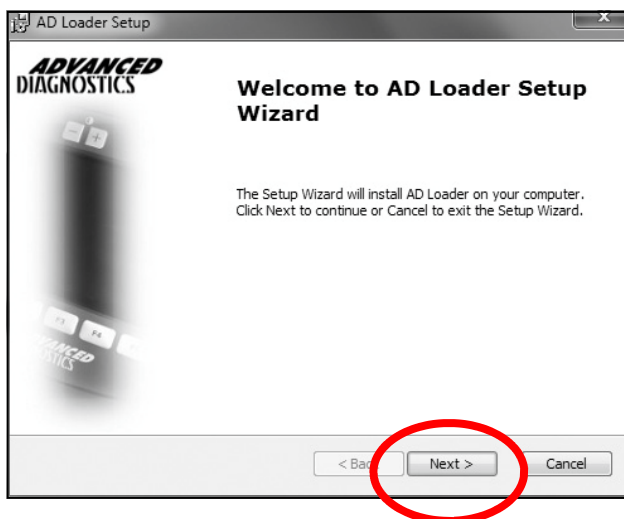
AD100Pro has the ability to store both a **Standard** version and **Beta** version of software. The required software is selected each time the tester is used. Each time you have downloaded new software, re-calibrate the touch screen.

## DOWNLOADING SOFTWARE

The following procedure will guide you through the necessary steps to download the software.

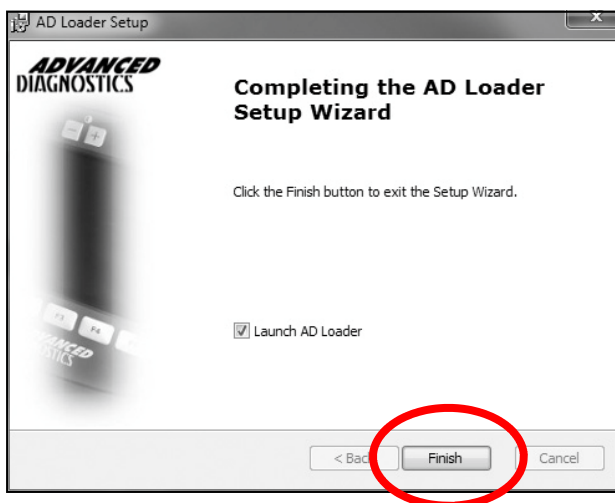
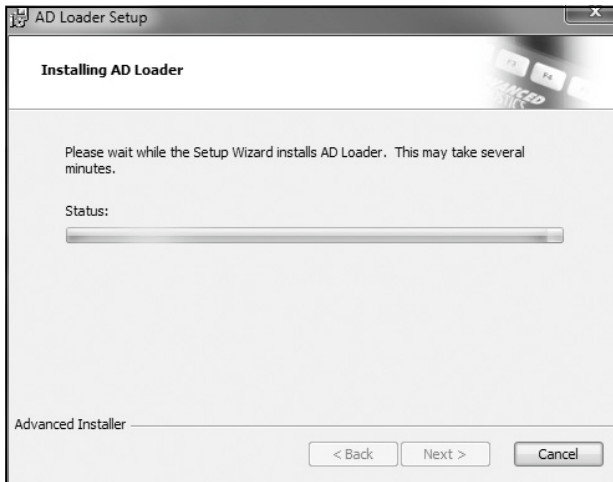
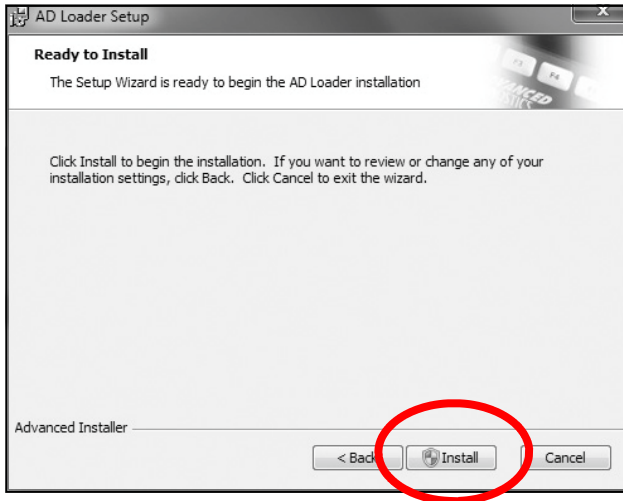
### Step 1 - AD Loader

- Visit Advanced Diagnostics website at [www.advanced-diagnostics.co.uk](http://www.advanced-diagnostics.co.uk)
- Select the **AD Loader** from the **Downloads** section and download to your computer.  
Note: You will need to either download or the 32 bit version or 64bit version dependant upon your PC.
- Follow the on-screen instructions in the dialogue boxes that appear.







- d. At this stage your PC may display a warning about the installation not being verified. Select allow/continue...



- e. Once you click finish, the AD Loader will launch automatically (providing the check box is ticked)

## UPDATING YOUR TESTER

- A. Connect the power cable to the AD100Pro.
- B. Connect the USB cable between PC and MVPPro
- C. Turn the tester on and leave with the main menu being displayed.

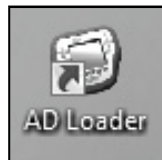
<b>STANDARD SOFTWARE</b>	<b>BETA SOFTWARE</b>
F1	F3
F5	
	

- D. The first time the tester is connected to the PC, the PC will detect new hardware and install the driver. Leave the PC to fully install the driver before proceeding.

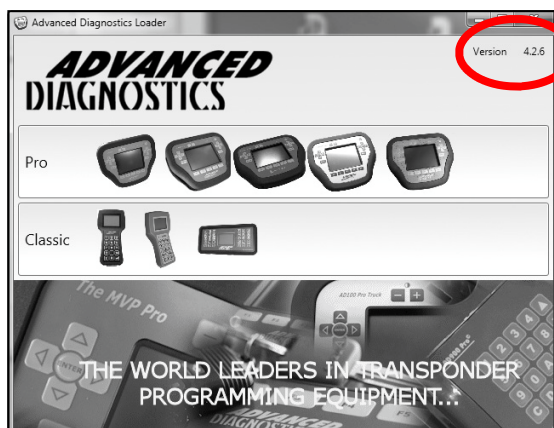
Note:

- It is important that you always have the latest version of download program loaded on your PC.
- The version number can be found in the title bar of the AD100Pro Loader program when launched.
- When loading a new version of the Loader program you must fully uninstall the previous version.

- E. Open the AD100Pro Loader program from your desktop by double clicking the icon on your desktop.



- F. The Loader program will open.  
The Loader program version number will appear in the top right-hand corner of the program.



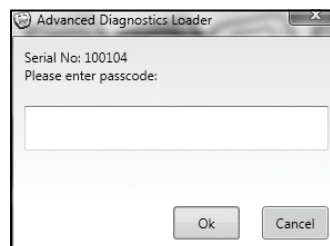
As the loader opens it performs a series of automatic checks as follows:

- If you don't have the latest loader program installed on your PC, a message advising you will appear and then take you through the process of automatically updating to the latest version.  
NOTE: There is no need to install the old loader program first.
- If you are able to connect to the internet and Advanced Diagnostics website.  
If you have a connection problem indicated after this test, you will need to check your firewall/anti-virus program settings with someone that understands how to configure the settings.

G. Select product type ie either Pro or Classic. The following information is when Pro is selected.



H. Enter the tester 6 digit passcode



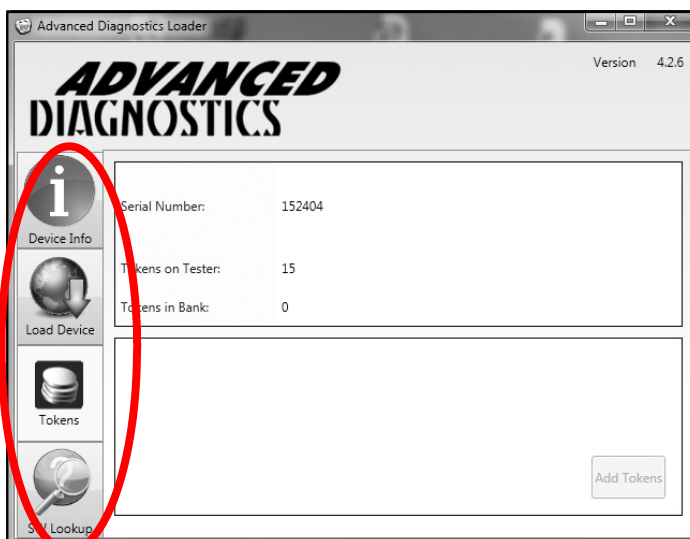
I. The **DEVICE INFO** screen will be displayed. The other options are listed down the left hand side of the dialogue box. The options are:

Device Info - Details information regarding your tester. It also indicates the version of software you currently have loaded on your tester and the version available on the website for download.

Load Device - Enables you to update your tester.

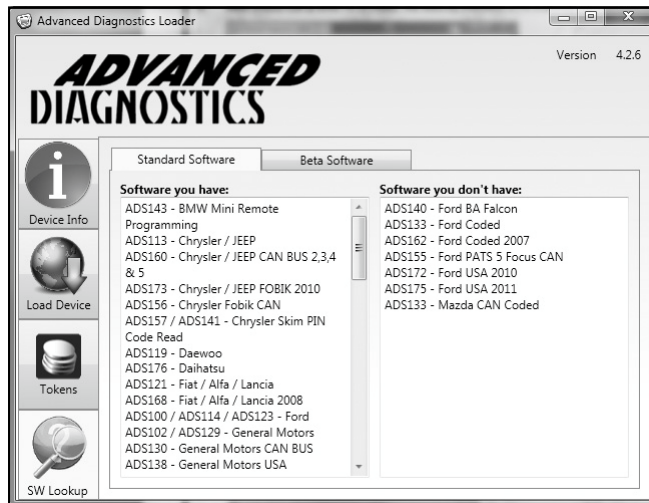
SW Lookup - Lists the software that 'YOU HAVE' and 'DON'T HAVE' loaded on your tester

Tokens - This tab will only be visible if a token tester is connected. Enables Tokens to be viewed and loaded from the internet bank



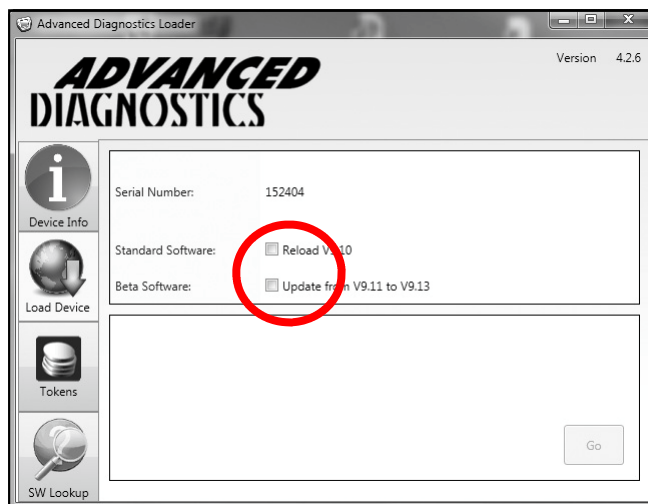
## J. SOFTWARE LOOKUP

Two tabs listing the software that 'YOU HAVE' and 'DON'T HAVE' for standard and beta software.



## K. LOAD DEVICE

Enables you to update your tester

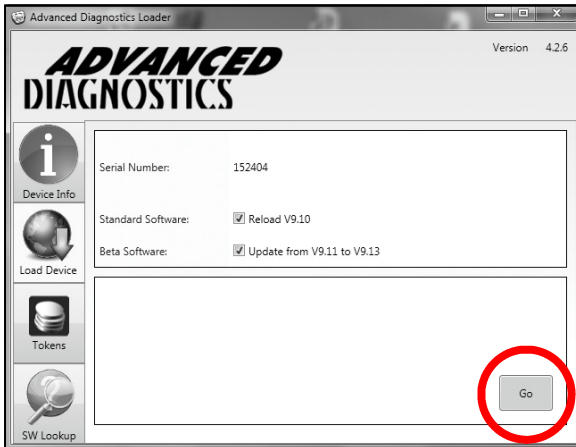


Tick the appropriate check boxes (or both) depending on what software you wish to update ie Standard or Beta

- i) When either Standard or Beta is selected it will be downloaded & previous sw versions on the tester are over written.
- ii) If the unit has no software loaded, then Standard software must always be loaded onto the tester prior to loading Beta or both at the same time.
- iii) Please note that BETA software is the latest software that we are working on and is not fully tested, however it allows customers to use the latest software at their own risk. Standard software must always be loaded onto the tester prior to loading Beta.

**WARNING**  
**IF YOU CHOOSE BETA SOFTWARE, THIS IS ENTIRELY AT YOUR OWN RISK.**  
**ADVANCED DIAGNOSTICS TAKE NO**  
**RESPONSIBILITY FOR THIS SOFTWARE**

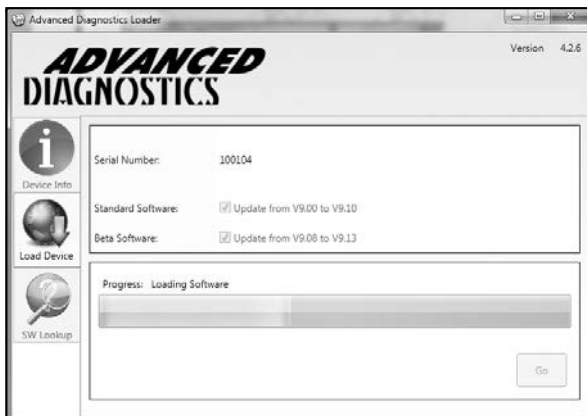
- L. Once at least one check box has been ticked, the **GO** button will become active.



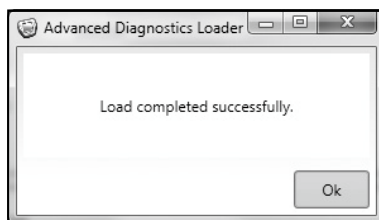
- M. Click **GO**, the tester will now be updated.

Notes:

- i) If there is a newer version of operating software (OS) for the tester, the loader will indicate. If the OS on the tester is V15 or later the OS will be automatically updated. Earlier versions of OS will require manual intervention and the instructions will be provided.
- ii) Do not disconnect the tester during the update procedure.
- iii) The red USB LED on the tester flashes during data transfer.



- N. Click OK when completed. The tester has now been fully updated and can now be disconnected.



**After Downloading new software, re-calibrate your screen**

**WARNING**

**If the password is entered incorrectly 3 times the unit will 'lock' and the tester will require unlocking.**

**If this occurs then please contact your local distributor. The process for unlocking will take up to 48 hours dependant on the time zone**

**ENSURE THE SCREEN IS CALIBRATED**

## INTRODUCTION

The tokens are stored on the MVP Pro and used each time a vehicle or key is Programmed, pin code is read. A warning will appear before a token is taken.

The balance of tokens will stay on your web account until required. Each time tokens are loaded it will load the number of tokens that you require added the tester.

Using a token only occurs when the key(s) have been programmed. Dependant upon which function is selected under key programming will determine how many keys are programmed for each token, as follows:

### **Selecting 'Add Key'**

This normally only allows the programming of one key at a time and will use 1 token per key.

### **Selecting 'Clear Keys'**

This function will normally clear all keys and allow the programming of a number of keys eg GM Can on a Vectra allows up to a max of 5 keys to be programmed. Programming the 5 keys in this method will only use 1 token not 5.

Tokens are not taken for:

- Programming Remotes (unless the remote is also used as the immobiliser)
- Live Data
- Fault Code Read/Clear
- Vehicles that are problematic to program do not use a token.

### **Warning**

Be aware tokens are used in the cases of operator error ie incorrect system used to program keys, incorrect transponders etc.

It is in your interest to ensure that you always maintain a reasonable level of tokens on your tester so that you don't run out at an inconvenient time.

## EMERGENCY TOKENS

In those rare instances where no tokens are left on the tester, there are 5 **Emergency Tokens** that can be used from the tester.

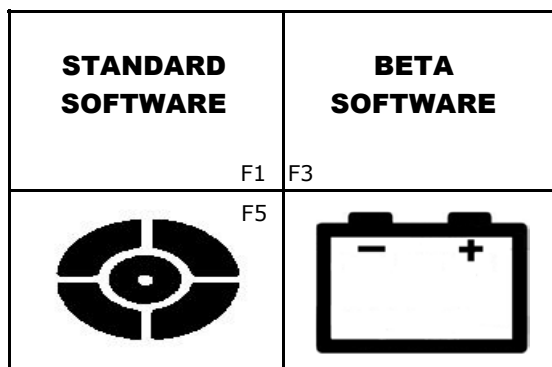
## HOW TO CHECK YOUR TOKENS

The number of tokens remaining on your tester is displayed each time the unit is powered up.

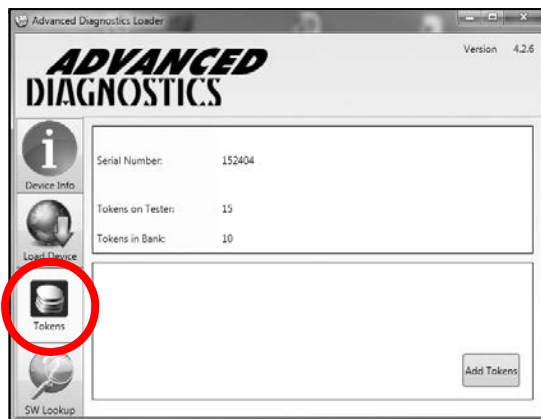
Additionally you can check from the vehicle selection menu by selecting **Check Tokens**.

With the tester connected to your computer and the **AD Loader** program open, the number of tokens loaded on the tester or held within the website bank can be checked.

1. Ensure your tester is at the main vehicle menu.



2. Select **Tokens** tab from the side menu



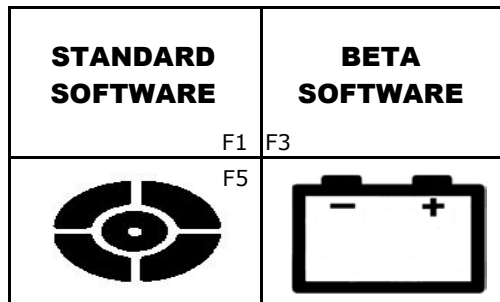
This screen will show how many tokens you have on the tester and how many are in your web bank. will now be downloaded with the tokens.

Note: A maximum of 500 tokens can be stored at any one time on the tester. The balance of tokens will stay on your web account until required.

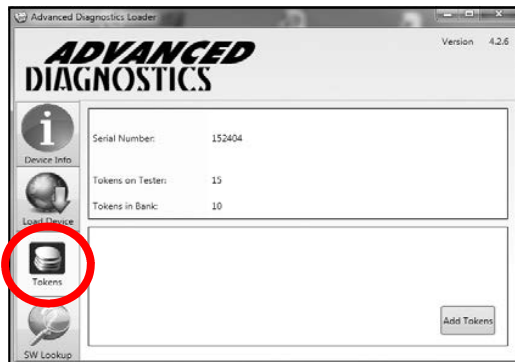
## DOWNLOADING TOKENS

With the tester connected to your computer and the **AD Loader** program open, additional tokens can be loaded onto your tester.

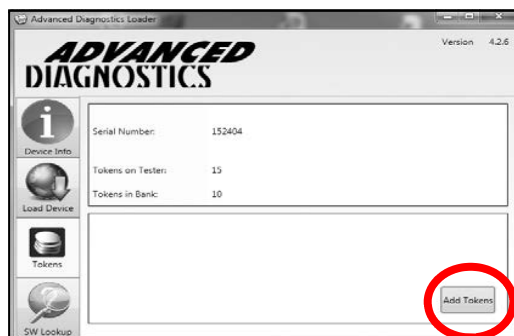
1. Ensure your tester is at the main vehicle menu.



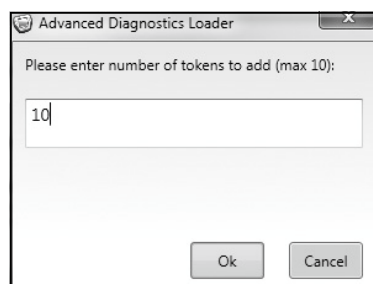
2. Select **Tokens** tab from the side menu



3. Click **Add Tokens**

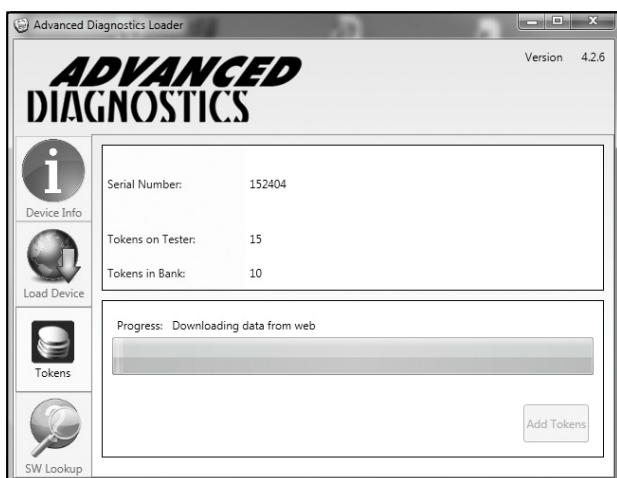


4. Enter how many tokens you would like to add and click **OK**

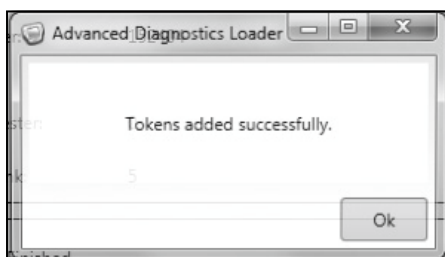




5. The tokens will load onto your tester.



6. Click Ok when completed



## VERSION WITH SMARTCARD AND DONGLE

### INTRODUCTION

A number of vehicles use coded access to gain security access to program keys. Coded access systems consist of obtaining a challenge code from the vehicle, this code then needs to be converted into a response code that the vehicle will recognise and therefore allow access to the programming function to be performed.

The response code can be generated by 2 methods, as follows:

#### Emergency Smartcard Security

The function can be used temporarily if **ALL** smartcards have been lost.

#### SmartCard Security

The technician uses the SmartCard security system to generate the response code. The advantage of this system is that website access is not required. (Except for SSangyong)



The smart card security system consists of a calculator and smart card.

The smart card is required for each vehicle manufacturer after the system has been selected from the main vehicle menu. The tester will display a CHALLENGE code, to continue, the user must enter this code on the smartcard calculator. A corresponding RESPONSE code is then displayed on the smartcard calculator, which must be entered back into the tester. Providing the CHALLENGE/RESPONSE codes correspond, access to continue will be granted. After each RESPONSE code is given the smart card's uses count on the smart card will be reduced by 1.

To protect the smart card and software the smart card has a number of security features built in as follows:

1. Each smart card can be used a maximum of 5000 times.
2. After 500 uses the smart card will need to be re-charged via the Advanced Diagnostics website <http://www.advanced-diagnostics.co.uk/htm/SmartCard-English.php>. The card has a total of 10 recharges providing the 5000 limit.
3. Once the card has reached its 5000 limit, a new smart card will need to be used.
4. The smart card is unique to each tester.
5. The user has 90 seconds to enter a RESPONSE code. If it is not entered within this time then the tester will generate a new CHALLENGE code. The code changes every 90 seconds while no RESPONSE code is entered.
6. The user will have 3 attempts to enter a correct RESPONSE code. After 3 incorrect RESPONSE codes the tester will have to be turned off and re-started.

#### Operation

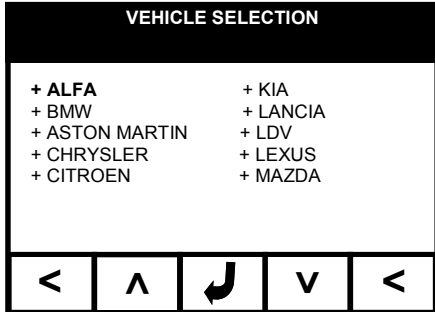
The PRO displays the SmartCard preparation screen, you click TICK to continue, when ready.

- A) SmartCard Challenge code is displayed with a 90 second countdown.
- B) User enters the 8 digit Response Code.
- C) The TICK and CROSS appear on the screen.

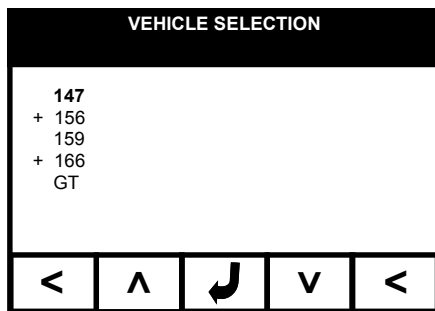
The user then has 4 options;

- i) Select TICK and the Response Code is CORRECT, the tester continues.
- ii) Select TICK and the Response Code is INCORRECT. A new Challenge Code is displayed and the Response Code entry is blanked and the 90 second countdown is reset. If the user continues to enter the incorrect response code 3 times then the padlock screen is displayed and the tester must be restarted.
- iii) If the user has mistyped the Response code, they can select the CROSS. The Challenge code remains the same the Response Code entry is blanked and the countdown continues. They can repeatedly click the CROSS to reenter the Response Code but when the countdown reaches 0 then a new Challenge Code will be generated and the countdown is reset to 90 seconds.
- 1v) The user does nothing. When the countdown reaches 0 a new challenge code is generated and the countdown is reset to 90 seconds.

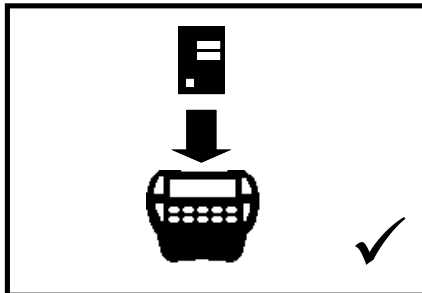
## USING SMARTCARD SECURITY



1. Select the vehicle manufacturer.



2. Select vehicle model etc



3. Warning Screen to advise you to put the smartcard into the calculator in order to allow the maximum time to enter the challenge/response code.

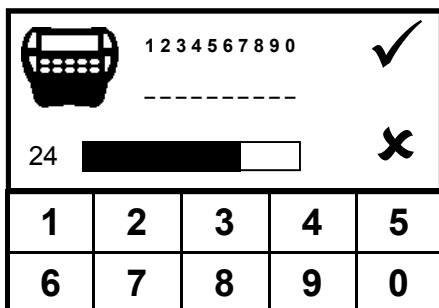
When the card is inserted, the calculator will power up and after a few Seconds, display Enter Code:



Note: After 30 seconds the calculator will automatically power off if no **RESPONSE CODE** is entered.

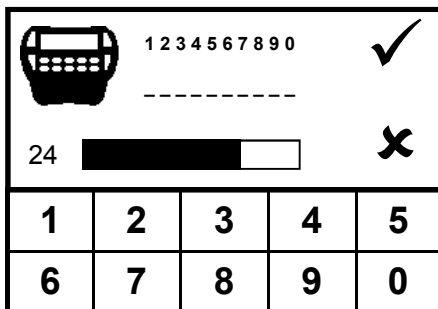
4. Then press the **TICK**

5. The smartcard security screen is displayed.



Enter Code: 1234567890

Response: [499]  
1234567890



6. Enter the 10 digit code displayed on the tester into the calculator and press **E**.

7. A 10 digit **RESPONSE** code will be displayed on the calculator

**[x]** indicates how many uses are left before the card needs re-charging.

In this example 499 uses are left.

When you get close to **zero [0]**, it is best to re-charge the card (see recharging section).

The user then has 4 scenarios, as follows:

- Enter the **RESPONSE** code into the tester, check it is correct and then press the ✓
- If the code is incorrect press the ✗  
A new Challenge Code is displayed and the Response Code entry is blanked and the 90 second countdown is reset. If the user continues to enter the incorrect response code 3 times then the padlock screen is displayed and the tester must be restarted.
- If the user has mistyped the Response code, they can select the ✗. The Challenge code remains the same but the Response Code entry is blanked and the countdown continues. They can repeatedly click the ✗ to reenter the Response Code but when the countdown reaches 0 then a new Challenge Code will be generated and the countdown is reset to 90 seconds.
- The user does nothing. When the countdown reaches 0 a new challenge code is generated and the countdown is reset to 90 seconds.

10. Remove card from calculator, however it will auto-power off after 30 seconds.

## NOTE

Once you have gained access, if you have selected the wrong vehicle or system you can step back and select another vehicle without having to use the smart card system.

However if you turn the tester off then you will need to go through the smart card system again.

## RECHARGE SMARTCARD

Limit reached

Recharge now

When the display indicates limit reached then the smartcard will need recharging with a further 500 uses.

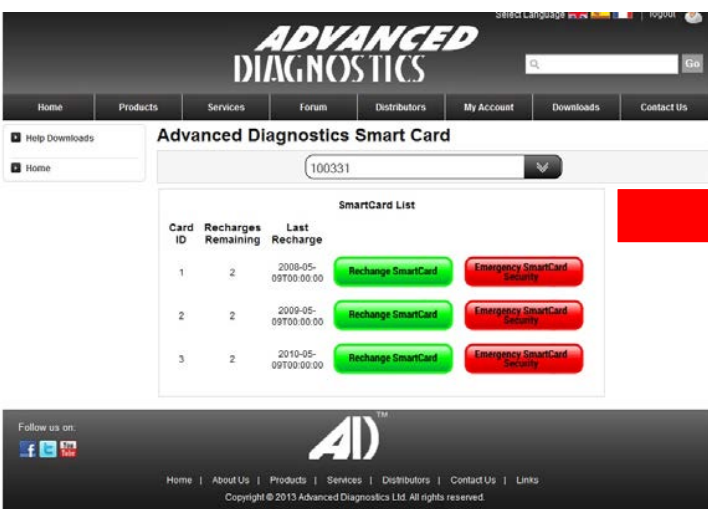
The smart card can be re-charged at any point rather than waiting until its at zero, however the number of uses left at the point of re-charging will be lost.

The smartcard can be used a maximum of 5000 times. Therefore the card has a total of 10 re-charges providing the 5000 limit.

Once the card has reached its 5000 limit, a new card needs to be purchased.

### Re-Charging Procedure

1. Select SmartCard Security from the **services** menu.



### Recharge Sequence

To Complete this process you will need the calculator & smartcard to be recharged.

Card ID 0002

1. Insert Smartcard into the calculator
2. Enter the code: **1406454033**
3. Press the 'E' button on the calculator
4. Remove the smartcard
5. Insert the smartcard
6. Enter the code **1428682775**
7. Press the 'E' button on the calculator
8. Remove the smart card
9. Insert the smart card
10. Enter the code: **2180103842**
11. Press the 'E' button on the calculator
12. Enter response code from calculator below

13. Click on validate response below

Validate Response

2. Click Recharge SmartCard button.

3. Enter the response Code and click **Validate Response**

Note: Card ID is written on the card itself.

4. Follow the instructions on the website, as shown.

After the 3 recharge codes have been entered into the calculator, a **RESPONSE** code will be displayed on the Calculator.

Enter the Response Code from the calculator and click **Validate Response**.

## Recharge Status

**Recharge Success**

Tester Serial Number:110125  
Issue Number: 1

**This smartcard can be  
recharged 9 more time(s)**

After completion of the process the following message will be displayed on the website.

The number of re-charges that are left for the particular card is displayed.

## ENABLE SMARTCARD SECURITY

This function should only be selected if you have received a new smartcard and calculator for the first time.

By selecting this function, you will be advising Advanced Diagnostics to disable the web security and enable the smartcard security.

1. Select your tester serial number from the drop down list.
2. Enter the smartcard ID into the box on the website.
4. You will be by e-mailed (not immediately) to update your tester when the smartcard security has been enabled.

The screenshot shows the Advanced Diagnostics website interface. At the top, there is a navigation menu with links for Home, Products, Services, Forum, Distributors, My Account, Downloads, and Contact Us. Below the navigation, there is a search bar and a 'Go' button. The main content area is titled 'Advanced Diagnostics Smart Card'. It features a dropdown menu with the value '100003' and a downward arrow. Below this, there are three numbered instructions:

1. Please complete the form and press Enable Smartcard.
2. An email will be sent (not immediately) to advise when to update your tester.
3. Your tester will need to be updated before the SmartCard System can be used.

Below the instructions, there is a text input field labeled 'Enter SmartCard ID:' and a blue button labeled 'Enable SmartCard'.

At the bottom of the page, there is a footer with social media icons for Facebook, Twitter, and YouTube, the AD logo, and a copyright notice: 'Copyright © 2013 Advanced Diagnostics Ltd. All rights reserved.'

## EMERGENCY SMARTCARD SECURITY

This function should only be selected if **ALL** smartcards have been lost.

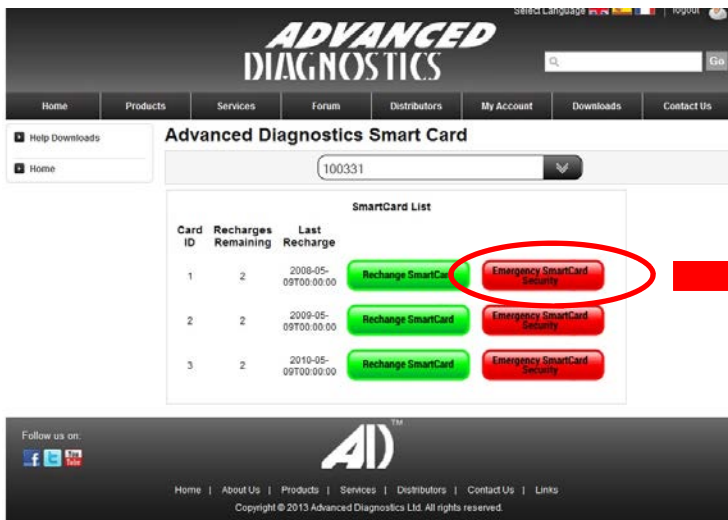
By using this function, you will be disabling the smartcards you have lost and enabling a web version of the Smartcard. The web security operation will be the same as actually having a smartcard and calculator except be via the website.

You must then order a replacement card(s) from your distributor. Once you have received the card you should start using the Smartcard.

2. Click **Emergency Smartcard Security** button.
3. Complete the web form and click **SUBMIT**.

**Note:** You insert the **Challenge code from the tester** that you would normally enter on the calculator.

Once you press SUBMIT, the Smartcards you have lost will be disabled.



**ONLY SUBMIT THIS REQUEST IF ALL SMARTCARDS HAVE BEEN LOST.**

**ALL CURRENT SMARTCARDS WILL BE DISABLED.**

This function will allow you to temporarily use a web based security system whilst you purchase new Smartcards.

Enter Response Code

Submit

Cancel

## IMPORTANT - WHAT TO DO NEXT

Once you use the Emergency Web Security, ALL your smartcards will be disabled and you will be required to purchase a new one(s).

Please contact your local distributor to order a replacement card(s).

Once you have received this card(s) please use immediately.



# D



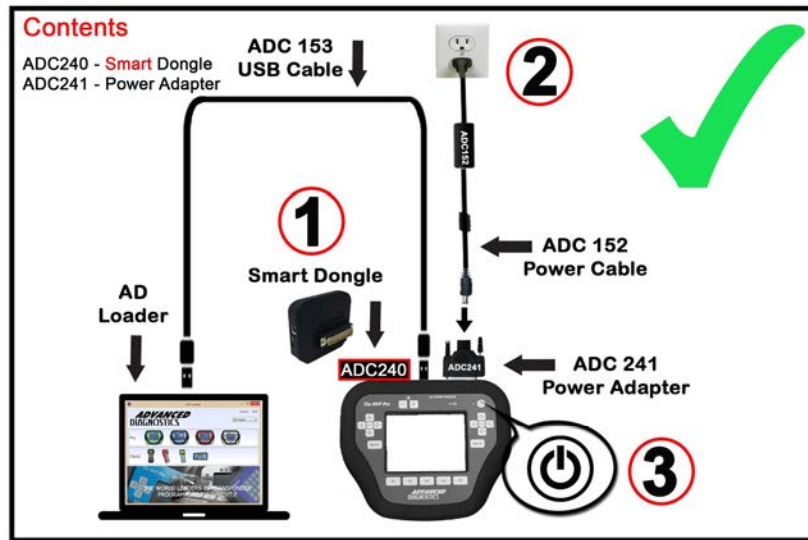
**SMART** Dongle

## SMART Dongle

### Activate Smart Dongle Using AD Loader

Start by connecting your AD100Pro to the Loader Program and then follow the instructions in diagram below to activate your Smart Dongle.

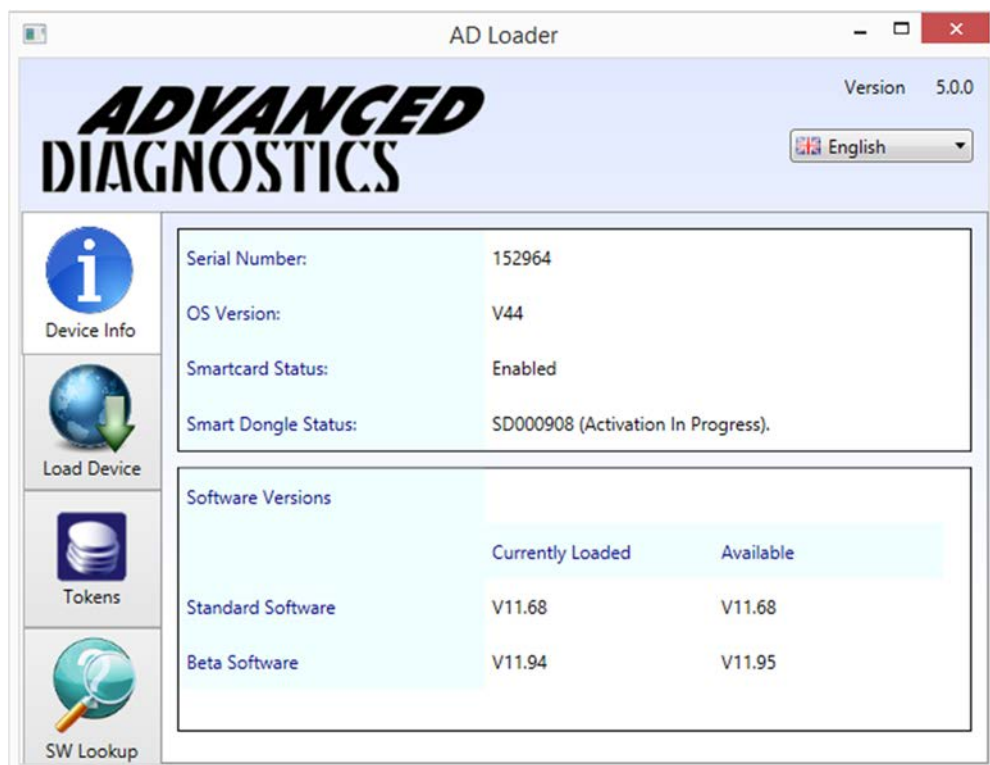
#### Activating Smart Dongle



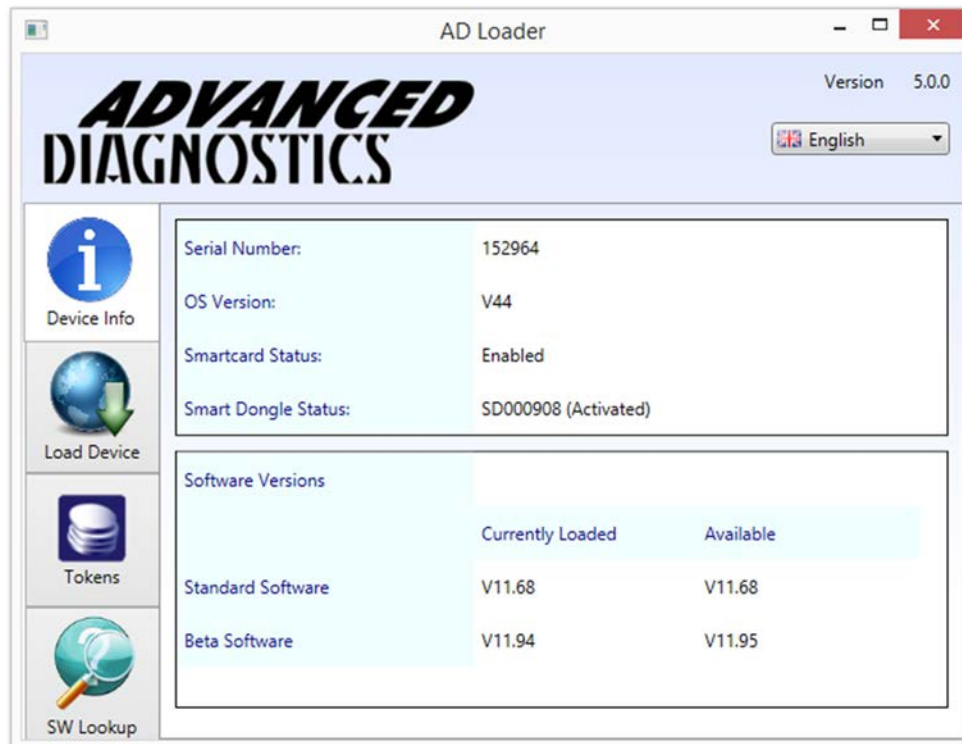
## Activate Smart Dongle With AD Loader



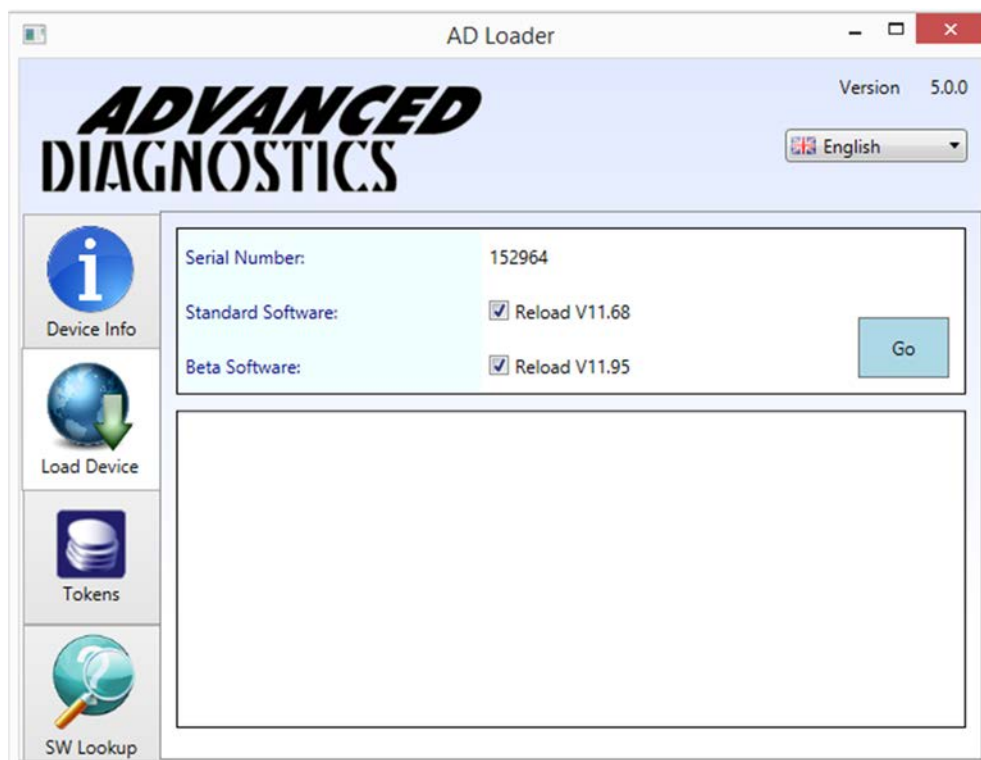
**Click on Yes**



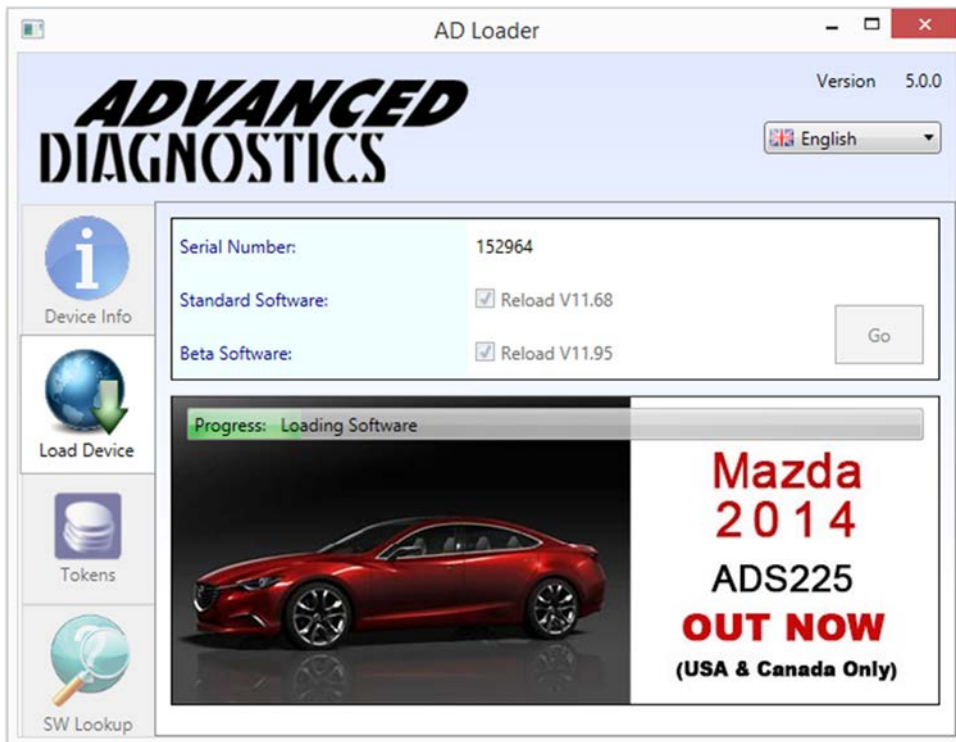
## Activate Smart Dongle With AD Loader



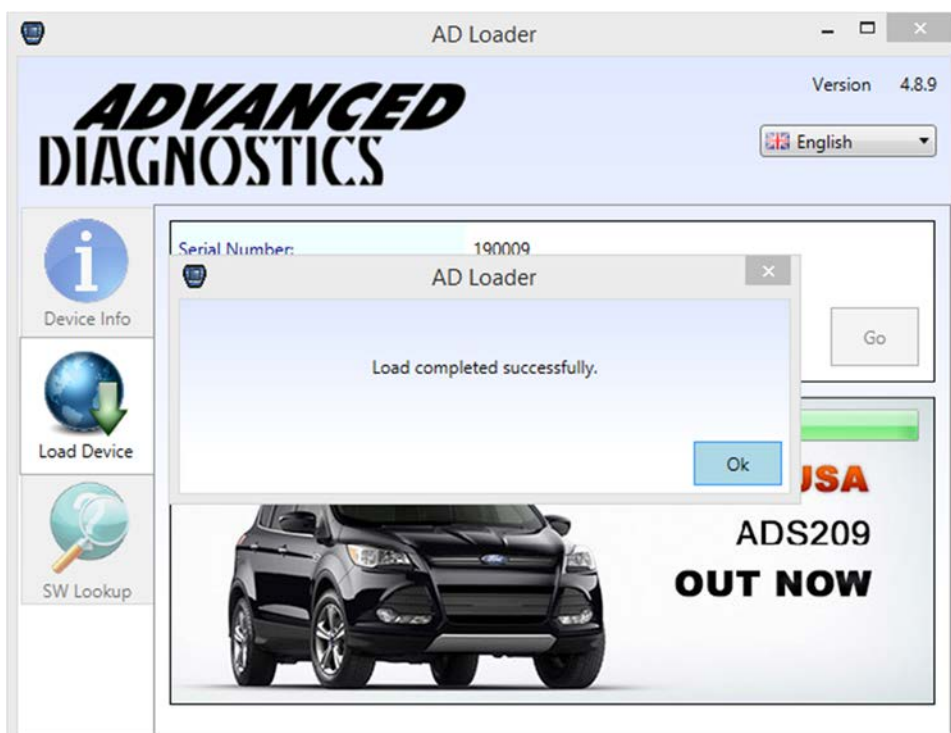
Click Update icon (Latest Update Available)



## Activate Smart Dongle With AD Loader



**Please wait while the AD Loader is updating software & Smart Dongle**

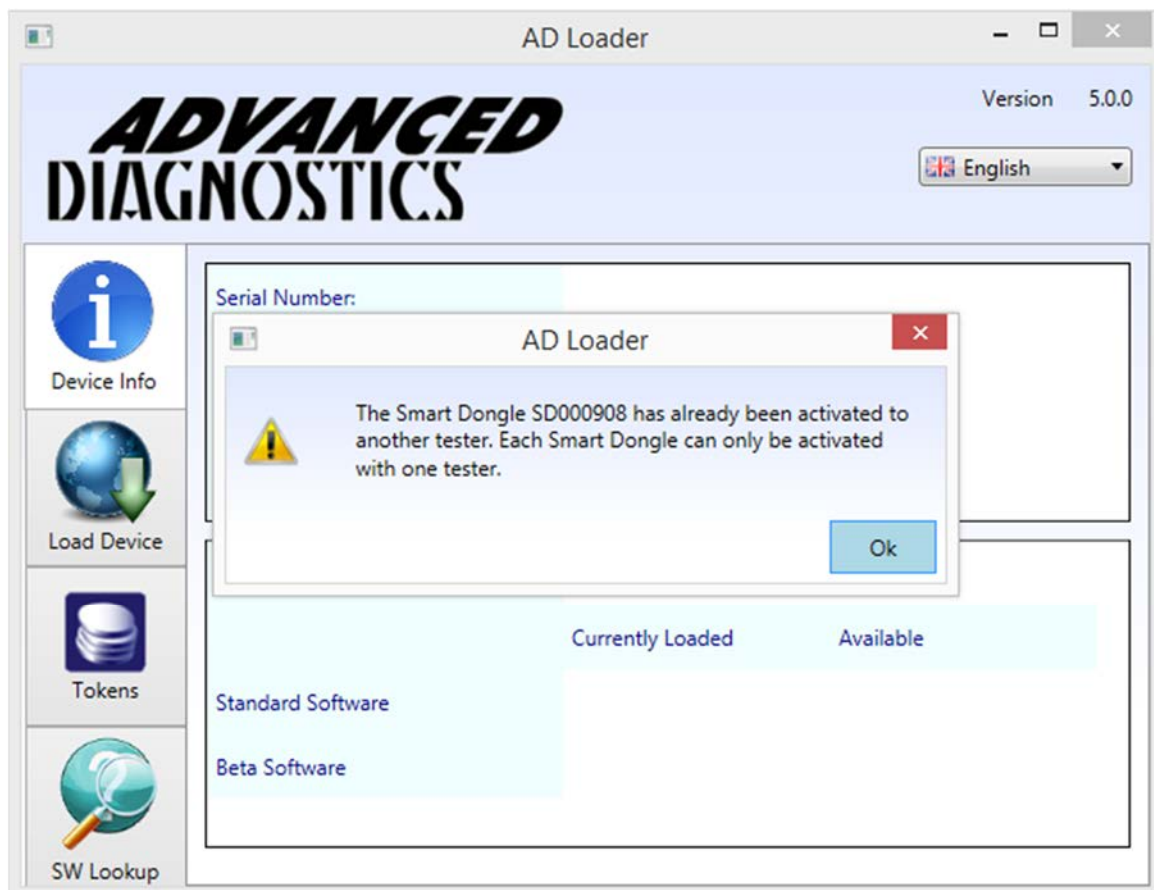


## Activate Smart Dongle With AD Loader

### Error Message

**Note:** You may see this message if you try and connect and link a different pro tester to the same Smart Dongle.

**Each Smart Dongle can only be paired with one pro tester.**



# E



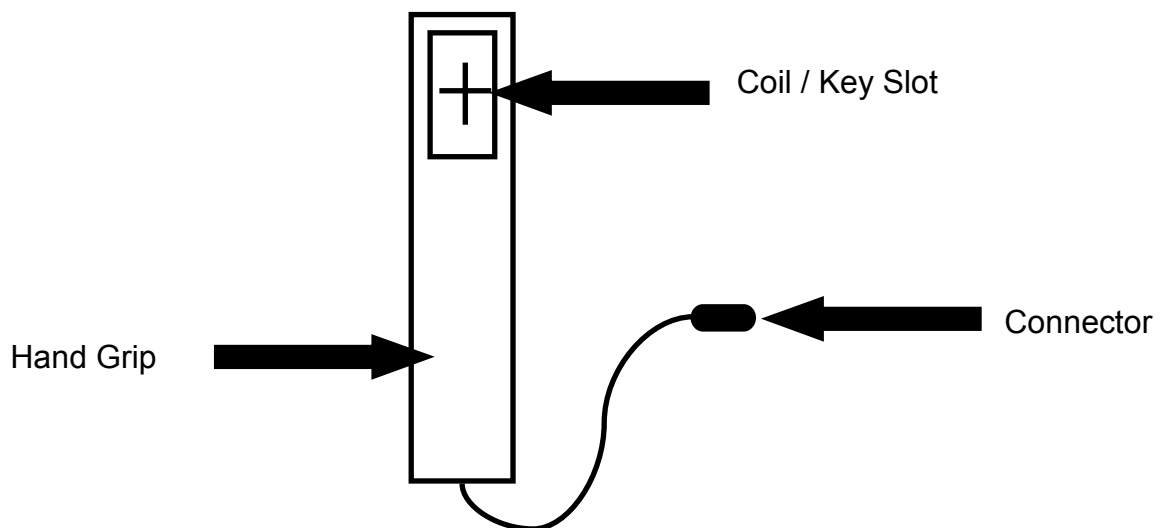
**SMART** Aerial

## SMART Aerial Introduction

**SMART AERIAL** is an antenna that connects to the SMART DONGLE. It is capable of pre-coding transponders for selected manufacturers. No additional cloning devices are required when using Smart Aerial.



The transponder type used will depend on the brand and geographic region where you are working, and pre-code data may be unique to each vehicle chassis.





## Connecting The Smart Aerial



Smart Aerial connects to the port found on the Smart Dongle. Please plug in securely to ensure a good connection.

## Updating Smart Aerial

**Step 1.** Connect the the Smart Dongle to the Pro tester—as per Smart Dongle instructions and then connect to the AD Loader program on your PC.

**Step 2.** Select update - the tester and Smart Dongle will be updated at the same time to the latest software version available.  
(AD Loader program is available to download from the AD website in the downloads section)

**Step 3.** Disconnect the tester from the AD Loader

**Step 4.** Connect the Smart Aerial to the Smart Dongle

**Step 5.** Using ADC241 or via a vehicle OBD port - Power up the tester  
(ensure **Smart Dongle** and **Smart Aerial** are connected to the the Pro tester)

**Step 6.** On the pro tester screen - scroll down to the bottom of the vehicle manufacturer list and select ' **Smart Aerial**'

**Step 7.** Select - "Smart Aerial Update"

**Step 8.** The tester will display the current version and any new software version updates available

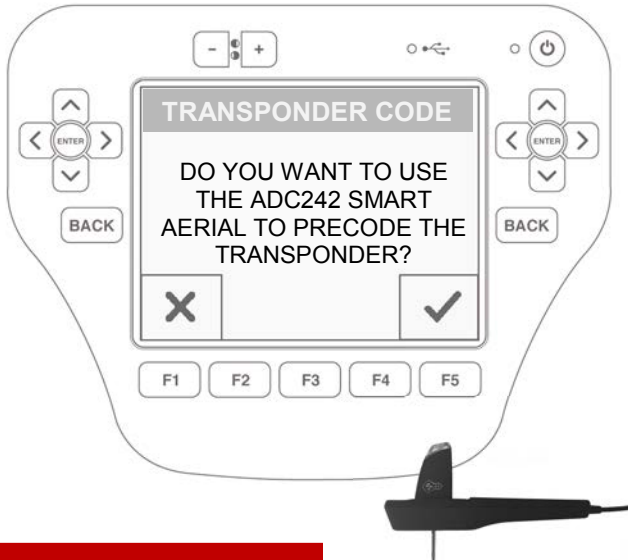
**Step 9.** Once the update is complete - the new version number will be displayed

**Step 10.** Update Complete - Smart Aerial is ready to use.

## Positioning The Key / Transponder

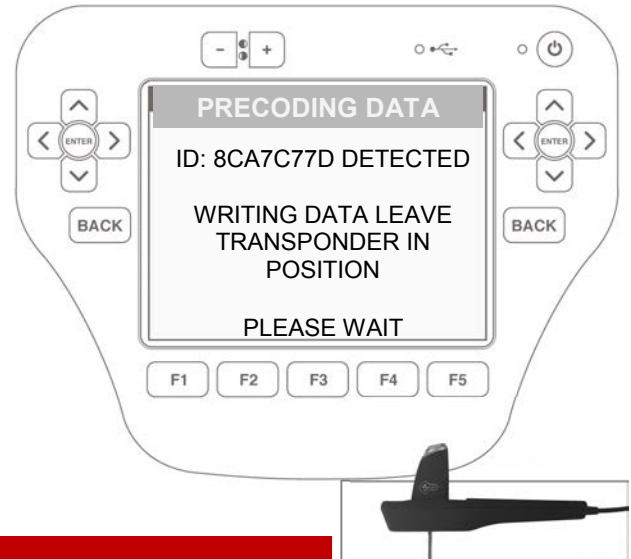


## General Operation



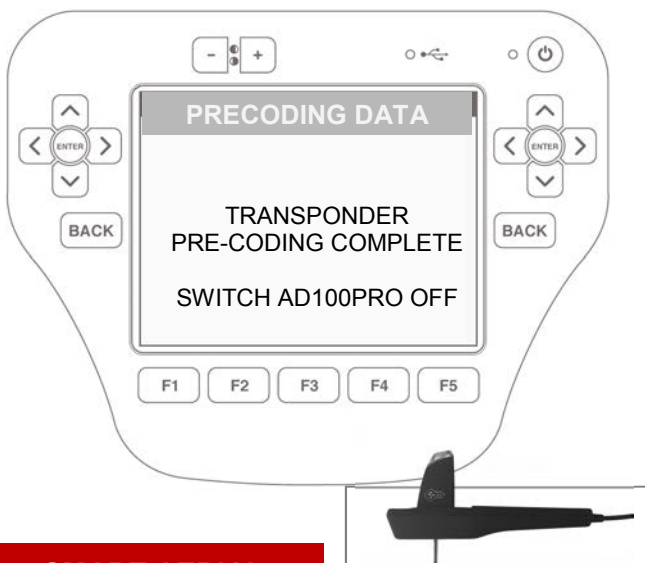
**SMART AERIAL**

After displaying the PIN, you will be given the option to precode the transponder directly using ADC242, Smart Aerial



**SMART AERIAL**

Once you place the transponder in the antenna, this will be recognized, and the header information from the transponder will be displayed on the tester screen









**SMART AERIAL**

The transponder at this point is ready to be programmed into the vehicle. Please check the manual to program the transponder in each make and model

As the procedure varies between manufacturers please consult the manufacturer manual available on the AD website within the downloads section.

The following symbols are used in the vehicle application sections

	<b>VEHICLE TYPE</b>
	<b>VEHICLE MODEL YEARS</b>
	<b>KEY PROGRAMMING</b>
	<b>REMOTE CONTROL PROGRAMMING</b>
	<b>PIN CODE READING</b>
<b>1 2 3 4</b>	<b>PIN CODE REQUIRED</b>
<b>@</b>	<b>PIN CODES AVAILABLE VIA ADVANCED DIAGNOSTICS WEBSITE</b>
	<b>REMOTE CONTROL PROGRAMMING MANUAL PROCEDURE</b>

D46375XA

DESCRIPTION	SPECIFICATION	
	AD100Pro	MVP PRO
OPERATING SUPPLY	12 VOLTS DC	12 VOLTS DC
USER INTERFACE	KEYPAD & TOUCHSCREEN	KEYPAD & TOUCHSCREEN
DISPLAY	320 x 240 DOT MATRIX LCD TOUCHSCREEN BACKLIGHT	320 x 240 DOT MATRIX LCD TOUCHSCREEN BACKLIGHT
COMMUNICATION PROTOCOLS	CAN, J1850, ISO9141, SCP, 5 VOLTS, CCD & VPW PROTOCOLS	CAN, J1850, ISO9141, SCP, 5 VOLTS, CCD & VPW PROTOCOLS
PC INTERFACE	USB	USB
REVERSE POLARITY PROTECTION	YES	YES
SIZE (MM)	265 X 220 X 50	265 X 220 X 50
WEIGHT	1030gms	1030gms
MEMORY	512KB RAM 64MB FLASH	512KB RAM 64MB FLASH
STORAGE TEMPERATURE	0°C to +50°C	0°C to +50°C
OPERATING TEMPERATURE	+5°C TO +40°C	+5°C TO +40°C
CURRENT CONSUMPTION	200mA 360mA (Back Lit)	200mA 360mA (Back Lit)
ELECTRONIC TOKENS	NO	YES
PATENT		US PATENT #7,315,238

## DECOMMISSIONING



### INFORMATION TO USERS

*Under the terms of art. 10 of Directive 2002/96/CE dated 27/01/2003  
regarding waste from electric and electronic equipment (WEEE),*

The symbol shown above is also attached to equipment and indicates that it has been placed on the market and must be separated and disposed of when no longer wanted (including all components, sub-assemblies and consumables that are an integral part of the product).

Please contact Advanced Diagnostics or any other subject on the national registers of other countries in the European Union for information about waste disposal systems for the equipment. Household waste (or of similar origins) can be disposed of by the separate urban waste collection system.

When purchasing new equipment of an equivalent kind the unwanted equipment can be given back to the dealer. The dealer will then contact the authority responsible for collecting it.

Separate waste collection of unwanted equipment and its forwarding to treatment, recovery and environmentally friendly disposal makes it possible to avoid potential negative effects on the environment and human health, and assists recycling and recovery of materials.

Unauthorized disposal of the product by the user is punished by the application of fines established by the countries which have received Directives 91/156/CE and 91/689/CE.

## FCC DECLARATION OF CONFORMITY

Manufacturer's Name: Advanced Diagnostics

Manufacturer's Address: Diagnostics House

Eastboro Fields

Hemdale

Nuneaton

Warwickshire

CV11 6GL

UK

Product Type: Passenger, Commercial & Marine  
Transportation Diagnostic Tools

Product Models: AD100 Pro  
AD100 Pro Truck  
AD100 Pro Marine  
The MVP Pro  
AD100Pro+  
STATS  
SEVED  
T-Code Pro  
Smart Dongle

Product Options: All

Conforms to: Specifications

Following the Provisions of EMC Directive: FCC CFR 47 Part 15B:2012

AD100 & MVP	Date: 30th October 2001
AD100 Pro	Date: May 2006
AD100 Pro Truck	Date: July 2007
AD100 Pro Marine/ Seved	Date: September 2010
STATS	Date: July 2012
AD100Pro+	Date: July 2014
Smart Dongle	Date: December 2014

All products conform to class A emission standards

Signed .....



Shaun Garrett

Print Name .....

[www.advanced-diagnostics.com](http://www.advanced-diagnostics.com)

Tel: +44 (0) 2476 347000 Fax: +44 (0) 2476 347100 Email: [sales@advanced-diagnostics.com](mailto:sales@advanced-diagnostics.com)

ADVANCED DIAGNOSTICS LTD • DIAGNOSTICS HOUSE • EASTBORO FIELDS • HEMDALE • NUNEATON • CV11 6GL

Advanced Diagnostics Limited • Company No: 04466062 • Directors: Karmjit Kalsi, Shaun Garrett

Registered Office: Cheriton • Farnham Lane • Haslemere • Surrey • GU27 1HD • VAT No: 770611542



## CE DECLARATION OF CONFORMITY

Manufacturer's Name: Advanced Diagnostics  
Manufacturer's Address: Diagnostics House  
Eastboro Fields  
Hemdale  
Nuneaton  
Warwickshire  
CV11 6GL  
UK

Product Type: Passenger, Commercial & Marine  
Transportation Diagnostic Tools

Product Models: AD100 Pro  
AD100 Pro Truck  
AD100 Pro Marine  
The MVP Pro  
AD100Pro+  
STATS  
SEVED  
T-Code Pro  
Smart Dongle

Product Options: All

Conforms to: Specifications  
EN55022:2010  
EN55024:2010

Following the Provisions of EMC Directive: 2004/108/EC

AD100 & MVP	Date: 30th October 2001
AD100 Pro	Date: May 2006
AD100 Pro Truck	Date: July 2007
AD100 Pro Marine/ Seved	Date: September 2010
STATS	Date: July 2012
AD100Pro+	Date: July 2014
Smart Dongle	Date: December 2014

All products conform to class A emission standards



Signed .....

Shaun Garrett

Print Name .....

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## CE DECLARATION OF CONFORMITY

Manufacturer's Name: Advanced Diagnostics  
Manufacturer's Address: Diagnostics House  
Eastboro Fields  
Hemdale  
Nuneaton  
Warwickshire  
CV11 6GL  
UK

Smart Aerial: Date: October 2015  
Conforms to: Specifications  
Directive 1999/5/EC  
EN62479  
EN60950-1:2006 +A1:2009 +A1:2010 +A12:2011 + A2:2013  
EN301489-3 V1.6.1  
EN301489-1 V1 9.2  
EN300330-2 V1.6.1  
EN300330-1 V1.8.1

Product conforms to class A emission standards



Signed .....

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## FCC & IC DECLARATION OF CONFORMITY

Manufacturer's Name: Advanced Diagnostics  
Manufacturer's Address: Diagnostics House  
Eastboro Fields  
Hemdale  
Nuneaton  
Warwickshire  
CV11 6GL  
UK

Smart Aerial: Date: October 2015  
Conforms to: Test Standards:

FCC CFR 47 Part 15 Subpart C covering the FCC requirement for intentional Radiators;

IC RSS-210 Issue 8 Covering the Industry Canada requirements for Low-power License-exempt Radio communication Devices;

IC RSS-GEN Issue 4\* Covering General Requirements for Compliance of Radio Apparatus;

EMC testing against FCC CFR 47 Parts 15.107 & 15.109 and ICES-003 Issue 5.



Signed .....

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## FCC Warning Statement

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operation.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment



## **AD35**

### **Remote Control Tester**

AD35 is an innovative remote control tester developed to assist with the diagnosis of all types of (IR) Infra Red & (RF) Radio Frequency remote controls for all makes & models.

[www.advanced-diagnostics.com](http://www.advanced-diagnostics.com)

