PC-MAX

Wireless Automotive Diagnostic System

USER MANUAL

Version 1.0

Statement

The PC-MAX can only be operated by qualified technicians.

Trade mark

You may contact AUTOBOSS by visiting AUTOBOSS at www.autoboss.net , or writing to AUTOBOSS, 5/F, Bldg.304, Shangbu Industrial Park, Zhenxing Rd., Futian, Shenzhen 518028, P.R. China, to request written permission to use Materials on this manual for purposes or for all other questions relating to this manual.

PC-MAX User Manual instructions

- Please read this user manual carefully before using the scanner.
- The current user manual is based on the current features and functions available. Any new added features and functions of PC-MAX will be added to the user manual in the future. Updated versions of user manual will be available to download at AUTOBOSS website (http://www.autoboss.net).
- When reading the manual, please pay special attention to the words "Note", "Caution" and "Warn". Read them carefully for appropriate operation.

PC-MAX main unit maintenance:

- Avoid shaking or dismantling as it may damage the internal components
- Do not use hard or sharp objects to touch it; do not use excessive force; do not expose the screen to strong sunlight for a long period
- Caution: keep it away from water, moisture, high temperature or very low temperature;
- Keep the main unit away from strong magnetic fields.

Operation Instructions

- For safe operation please follow the instructions below;
- Keep the scanner away from heat or fumes when using it;
- If the vehicle battery contains acid, Please keep your hands and skin or fire sources away from the battery during test
- Exhaust gas of vehicle contains harmful chemicals, please ensure adequate ventilation.
- Do not touch the cooling system components or exhaust manifolds when engine is running to high temperature;
- Make sure the car is securely parked and the selector is at P or N position to prevent the vehicle from moving when engine starts;
- Make sure the diagnostic link connector (DLC) is OK before starting the test; otherwise the scanner may be damaged. Autoboss suggests you test the Power/Earth with multi-meter first.
- Do not switch off the power or unplug the connectors during testing, otherwise you may damage the ECU or scanner;

Content

1 Introduction

1.1 Function and Feature

- OE level coverage for European, Asian, American and Chinese cars
- Supports Multi-language
- Multi-functions
- Wireless diagnosis operated on PC
- CAN-BUS with high/low speed
- One OBDII connector for all CAN bus systems
- Continuous software update online
- 6-layer electronic circuit board
- Self-check function

1.2 Layout of Main Unit

The main unit layout is as shown in left picture.
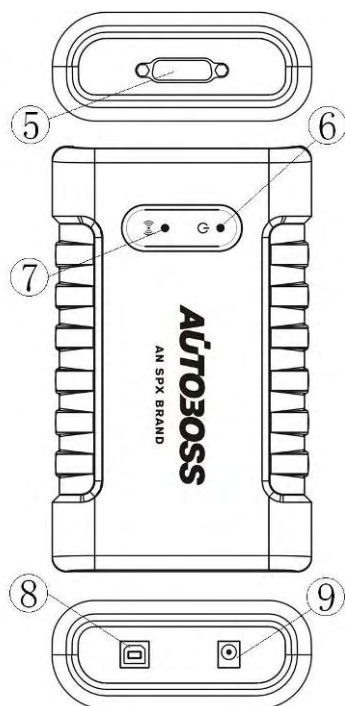
① PC/laptop (NOT INCLUDED)
② Wireless adaptor
③ PC-MAX main unit
④ Vehicle (ECU)
⑤ Main cable port
⑥ Power indicator
⑦ Wireless operation indicator
⑧ USB port
⑨ Power supply (+12V) port

1.3 Technical Parameters

  PC configuration

  CPU: Pentium 4 (or Celeron R series) or above

  Memory: Minimum 256MB

  Operating system: WINDOWS XP/2000

  PC-MAX

- Power supply: DC 12V, AC 110~250V 50/60Hz;
- Wireless working frequency: 2402 MHz-2480 MHz. (ISM-Band)
- Wireless communication distance: around 20~100 Meters (depending on environment)
- Wireless transfer speed: max. 2Mbps, self-adaptation and power control
- Memory temperature: -30~90ºC
- Working temperature: -10~70ºC
- Humidity: <90%

1.4 Configuration

Picture	Item	Description
	Name: PC/laptop **Quantity**: 1 **Note: This is not included in standard configuration.**	**Function**: Used for wireless diagnosis and display
	Name: Wireless adaptor **Quantity**:1	**Function**: Connect to PC/Laptop for wireless data transmission
	Name: PC-MAX main unit **Quantity**: 1	**Function**: Data transfer connecting with vehicle

Picture	Item	Description
	Name: Installation CD **Quantity**: 1	**Function**: Used to install operating software in PC
	Name: Main Cable **Quantity**: 1	**Function**: Connect the main unit and connectors with vehicle
	Name: BENZ-38 connector **Quantity**: 1	**Function**: Used for testing Mercedes-Benz vehicles equipped with a circular 38-pin DLC
	Name: Benz-14 connector **Quantity:** 1	**Function**: Used for testing Mercedes-Benz sprinter
	Name: Chrysler-16 connector **Quantity:** 1	**Function**: Used for testing Chrysler with CCD protocol **Note: Optional adaptor**
	Name: BMW-20 connector **Quantity**: 1	**Function**: Used for testing BMW vehicles equipped with a 20-pin DLC

Picture	Item	Description
	Name: Chery/Fiat -3 connector **Quantity**: 1	**Function**: Used for testing Chery/Fiat vehicles equipped with a 3-pin DLC
	Name: GM-12 connector **Quantity**: 1	**Function**: Used for testing GM/Daewoo vehicles equipped with a 12-pin DLC
	Name: Kia-20 connector **Quantity**: 1	**Function**: Used for testing KIA vehicles equipped with a 20-pin DLC
	Name: Mazda-17 connector **Quantity**: 1	**Function**: Used for testing MAZDA vehicles equipped with a 17-pin DLC
	Name: Toyota-17 connector **Quantity**: 1	**Function**: Used for testing Toyota/Lexus vehicles equipped with a semi-circular 17pin DLC
	Name: Toyota-22 connector **Quantity**: 1	**Function**: Used for testing Toyota/Lexus vehicles with a rectangular 22-pin DLC

Picture	Item	Description
	Name: MIT-12+16 connector **Quantity**: 1	**Function**: Used for testing Mitsubishi and Hyundai vehicles equipped with a 12-pin or 16-pin DLC
	Name: Honda-3 connector **Quantity**: 1	**Function**: Used for testing HONDA and ACURA vehicles equipped with a 3-pin DLC
	Name: Benz-4 connector **Quantity**: 1	**Function**: Used for testing Mercedes-Benz before 1997 with flash codes, which are usually equipped with either a rectangular 8-pin or 16-pin DLC
	Name: Audi-4 connector **Quantity**: 1	**Function**: Used for testing VW/Audi vehicles with a 4-pin (2x2) DLC
	Name: Nissan-14 connector **Quantity**: 1	**Function**: Used for testing Nissan and Infiniti vehicles equipped with a 14-pin DLC
	Name: OBD-16 connector **Quantity**: 1	**Function**: Used for testing all vehicles compliant with OBDII, EOBD and J1962 with 16-pin DLC

Picture	Item	Description
	Name: Citroen-16C connector **Quantity**: 1	**Function**: Used for testing Citroen vehicles equipped with a 16-pin DLC
	Name: Jumper **Quantity**: 1	**Function**: Short circuit test for flash code reading
	Name: Battery power cable **Quantity**: 1	**Function**: Gains power supply from battery
	Name: Cigarette lighter power cable **Quantity**: 1	**Function**: Gains power supply via cigarette lighter on car
	Name: DC adaptor **Quantity**: 1	**Function**: Used to connect with power supply of 12V DC voltage
	Fuse 5A 30*6	Function: Spare parts
	Fuse 5A 20*5	Function: Spare parts

NOTE: Configuration varies as per software package. For complete configuration, please refer to the relevant shipping list.

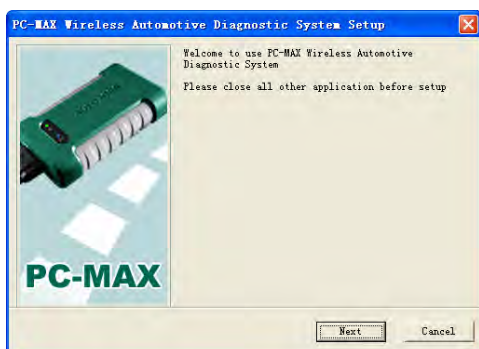## 2 Operation

2.1 Software installation & cable connection

2.1.1 Diagnostic software installation

Steps for installation of PC-MAX diagnostic software:
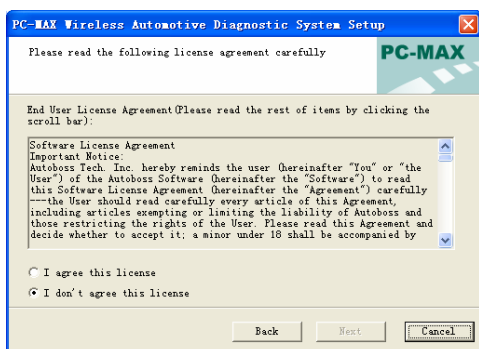
(1). Put the PC-MAX CD into CD driver in PC.
Installation information will popup.
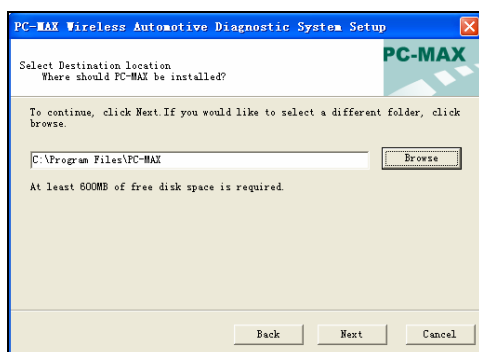Click on **[Next]** to continue.

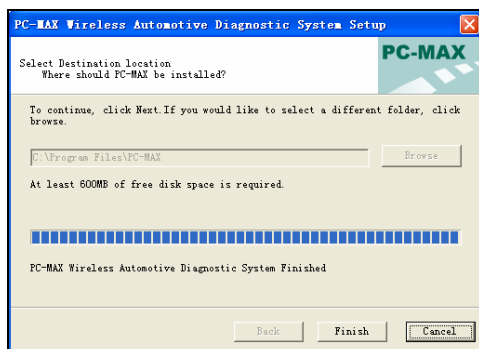(2). In PC-MAX installation interface, click on **[I agree this license]** and then **[Next]**.

(3). Choose the path for installation. The default path is C:\Program Files\PC-MAX.
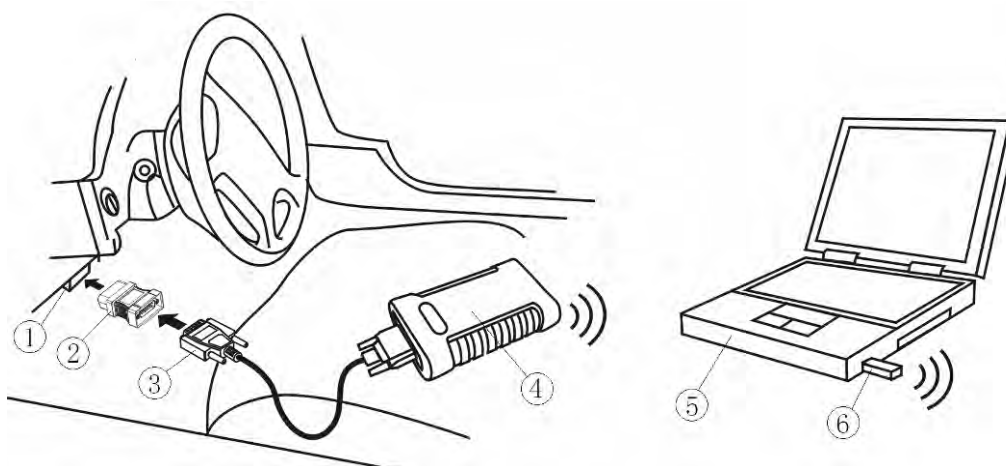To continue, click on **[Next]**.

(4). Click on **[Finish]** to complete Installation.
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2.1.2 Cable connection

Please check the following chart for connection instruction:

Diagnostic connection：

1. DLC
2. Connector
3. Main cable
4. Main unit of PC-MAX
5. PC/laptop
6. Wireless adaptor

① Check the position of DLC and see if it is OK.
② Select corresponding connectors for car make and DLC.
③ Connect one end of main cable to the main unit and the other end to the connector.
④ Wireless adaptor is connected with USB port in PC
⑤ Connect the diagnostic connector with vehicle DLC after connecting with main cable.
⑥ Make sure the indicator of PC-MAX power is on and wireless working indicator is flashing. If power is not on and working indicator is not flashing, please make sure the DLC has power supply. If it has no power, please connect the vehicle with PC-MAX power port (+12V) with a cigarette lighter power cable.
⑦ When power indicator of PC-MAX main unit is on and wireless working indicator is flashing. Cable connection is finished.

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AUTOBOSS

2.2 Interface Instruction

2.2.1 Starting Interface

The interface shown on the left picture will appear on the screen after the PC-MAX software is run on PC.

2.2.2 Diagnostic Program

In the diagnostic interface you can select regional vehicle makes including: China, Europe, Asia, America and Others (OBDⅡ/EOBD).

Europe: This section includes diagnostic programs for European vehicles.

Asia: This section includes diagnostic programs for Asian vehicles.

America: This section includes diagnostic programs for American vehicles.

China: This section includes diagnostic programs for Chinese vehicles.

Others: This diagnostic program can test all vehicles with OBDⅡ/EOBD and CAN-OBD.

2.2.3 System Setting

Click on the button [Option] to enter settings for language, Compulsive download MCU software and communication port selection.
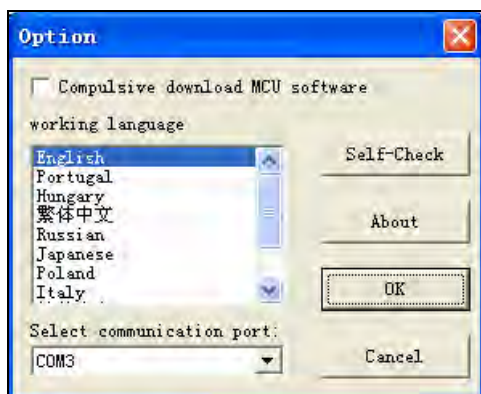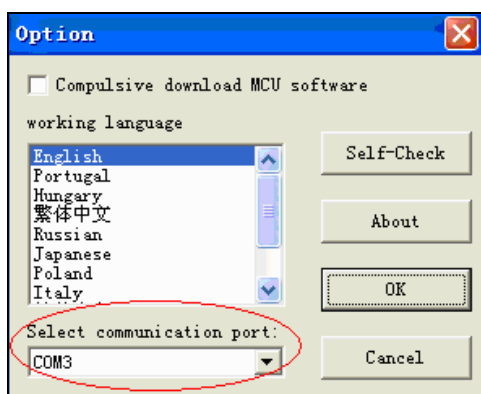
.2.2.3.1 Language Setting

PC-MAX supports Multilanguage. Choose any language needed under **[working language]** and press **[OK]** to finish language setting.
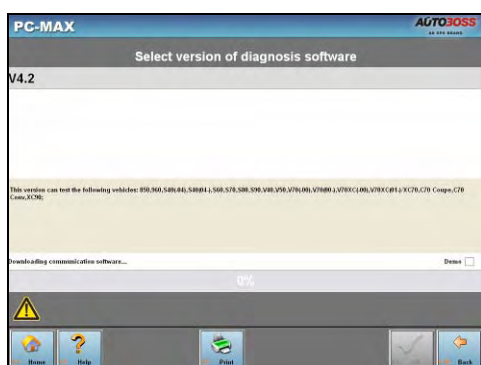
2.2.3.2 Compulsive download MCU software

If you choose this option, it will download the program again every time when you choose a car for testing in order to insure the success of test.

2.2.3.3 Select communication port

After connecting with wireless adaptor, you will see different options for communication port selection. If there is more that one port, please choose the right one.

2.2.4 Self check

This is for hardware checking. Click on the button **[Self check]** in **[Option]** and any hardware faults will be displayed. Please contact local distributor if a hardware problem is reported.

If there are no hardware errors, the checking result will be like the left photo.

Note: The main cable should be disconnected when self checking. And PC-MAX main unit is connected with power supply.

2.2.5 Version Information

Click on the button **[About]** in **[Option]** to get the version information of Hardware, Software Serial number, Release date, etc

You will also see the register password at the bottom.

Note: Every time when you enter "PC-MAXClient.exe", you will need the serial number and password to login.
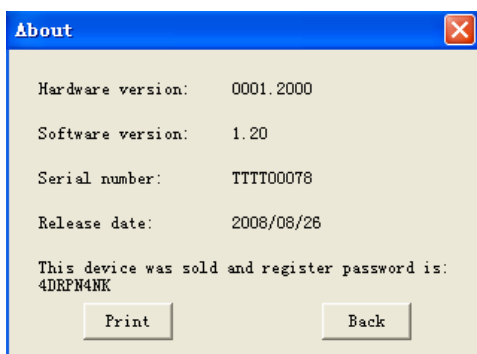
2.2.6 Homepage

Due to certain reasons, the operating interface may freeze up. You could click on the button **[**Home**]** to exit and continue testing.

2.2.7 Print

Every time when you click on **[Print]**, the information will be saved in the folder named "print" in your PC. To print the information, please refer to the relevant path.
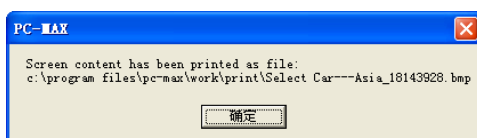
2.2.8 Exit

Click on **[Exit]** of main menu and choose **[OK]** to exit from the operating program and choose **[Cancel]** to continue the diagnosis.
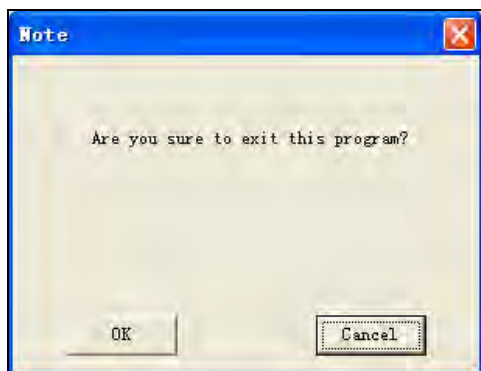
2.3 Software update

2.3.1 Upgrading Instructions

Fig 2-1 update client starting interface

2.3.1.1 Run PC-MAX update client program
Double click to run the "PC-MAXClient.exe" program under the folder named "tools" in the CD program. You will go to update interface as shown in Fig 2-1.
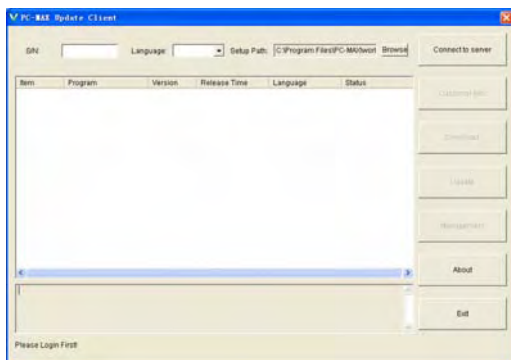
2.3.1.2 Login the Server

(1) Input the serial number and click on **[Connect to server]** to enter the Fig 2-2 interface.

(2) Server. The default server is 'www.autoboss.net'. Normally you do not need to change the server.

(3) Input the password (see 2.2.5) and click on **[OK]**.
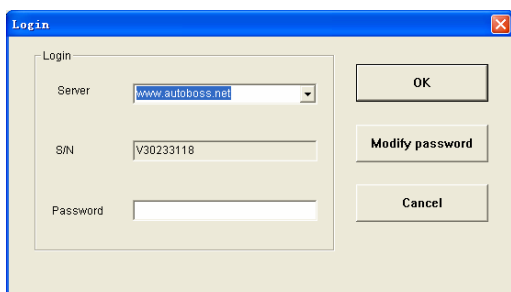
Fig 2-2 login interface

Note:

① Be sure that both S/N and password are correct. Please pay attention if the letters are capitalized or not.

② If login takes a long time because of low internet speed, you can exit and retry;

③ Internet firewall might affect the login. If login fails, please make sure you have an internet connection, and ensure any installed firewall is not blocking the connection to the server. You may contact your local distributor for further operating instructions.
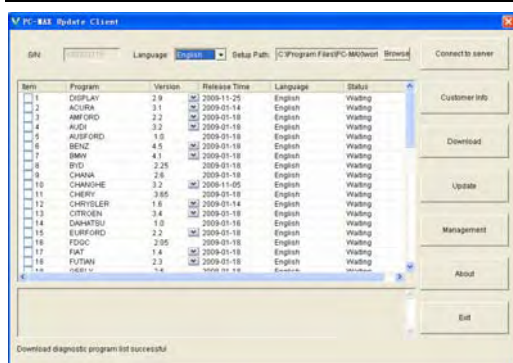
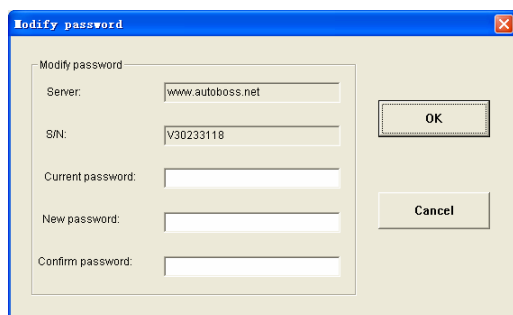Fig2-3 Program list interface
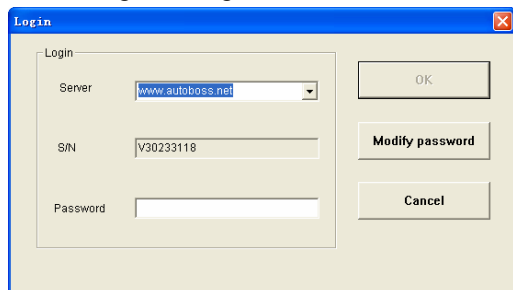
Fig2-4

Fig2-5 Modify password interface

(4) After login succeeds, the diagnosis program for the different manufacturers will be displayed as shown in Fig2-3, please wait for a short time for complete download.
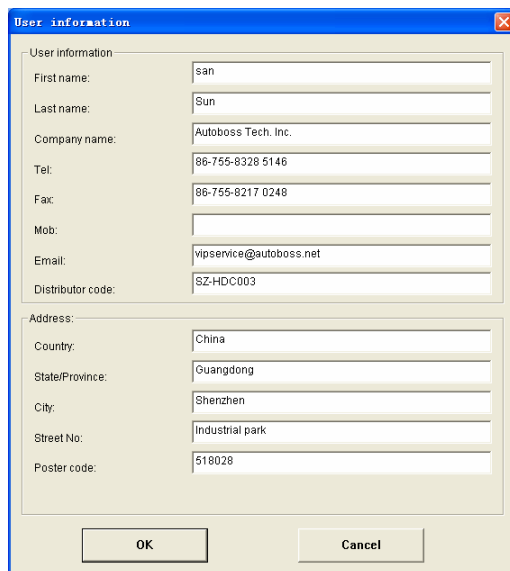
2.3.3.3 Modify Password

After login succeeds, users can change the original password.

Operation instruction:

(1) Click on the button **[Connect to server]** in the interface shown in Fig.2-3 to enter the interface shown in Fig.2-4.

(2) Click on button **[Modify password]** to enter interface in Fig.2-5. After inputting the current password and new password, click on **[OK]**. You will get a confirmation for successful modification if the new password is OK.

Note: If you forget the password, please contact Autoboss or your local dealer.
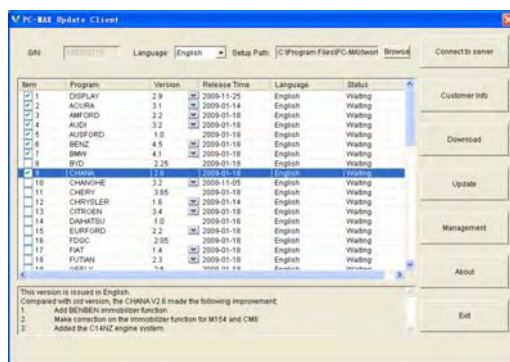
Fig2-6 Input customer info interface

Fig.2-7 Download interface

Fig.2-8 Download interface 2

2.3.3.4 Input Customer Information

You must fill in your personal information when you first login to PC-MAX update client; otherwise you will not be able to download the diagnostic program.

Operation instruction:
Click on the button **[Customer info]** after login succeeds. You can see the interface shown in Fig2-6. Input your information in relevant space and click **[OK]** to save the information.

2.3.3.5 Software Download

After user information is saved, you can download the program needed.
Operation instruction:
(1) Choose the language version and browse the setup path on the top of update client. The default path is "C:\Program Files\PC-MAX\work\".
(2) Tick the small box before the relevant program as shown in Fig.2-7;
(3) Click on the button **[Download]** in right column to enter download status. Programs that are not downloaded are in black. If download succeeds, they will be highlighted in blue. Failed downloads are highlighted in red.
Note: A maximum of 10 items can be selected to download simultaneously.
(4) The programs will be downloaded to your PC hard drive automatically.

Fig.2-9 software installation interface

2.3.3.6 Update

After download is complete, click on [Update] on the right column to finish the software update.

2.3.3.7 Software Management

You can delete old versions of software on the download list by entering software management.

Operating instruction:
Click on the button **[Management]** to enter the interface shown in Fig. 2-10. Select the software not needed and click on **[Delete].** The selected software will be uninstalled automatically.
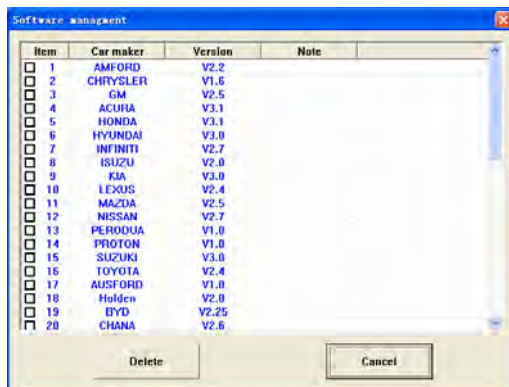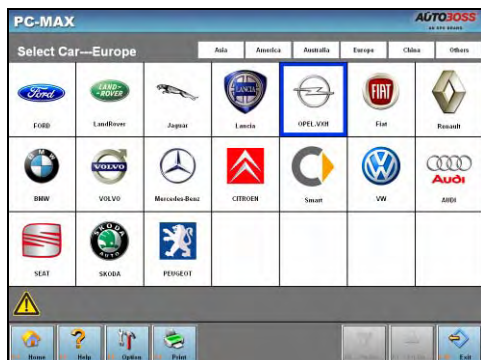
2.3.3.8 Exit

After finishing all of the steps, click on **[Exit]** to exit from the update client.
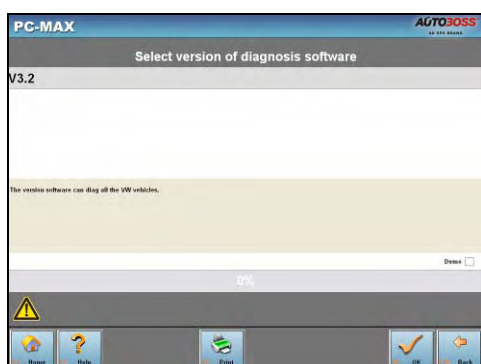
3 Test Procedure

## 3.1 Engine ECU Testing Methods

3.1.1 Testing Description

(1) Connect the cable and adaptors well. And run the PC-MAX program.
(2) Click on **[Europe]** to enter interface as shown on the left image;

(3) Select diagnostic program
   (take Volkswagen/Audi for example)

Click on **[VW]** to enter its diagnostic program as shown in the left image.
Note: Program descriptions will be displayed under the version information. It is changed depending on different versions.
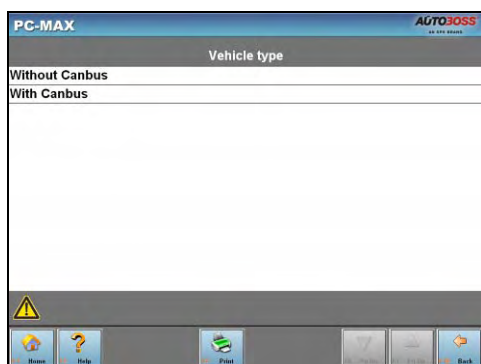
(4). Select a version such as V3.2 and click on **[OK]** to download the diagnosis program as shown in left image. Click on **[Cancel]** to go back to the previous menu if necessary;
(5). Select vehicle type. Take Volkswagen/Audi for example, we have two vehicle types for selection: **[With Canbus]** and **[Without Canbus].** Here we choose **[Without CANbus]** as an example to introduce the test.
NOTE: VEHICLES WITH CANBUS WILL HAVE DLC PINS 6 AND 14 POPULATED
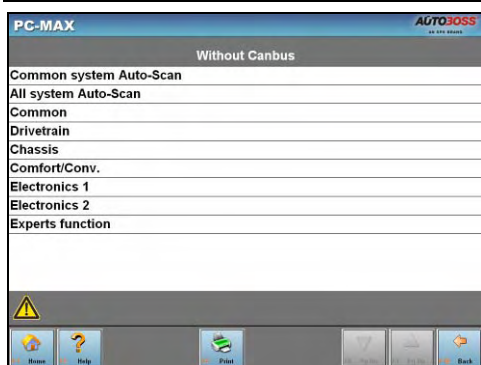
(6) Select system:

[Common system Auto-Scan]: Test the common-use ECU automatically;

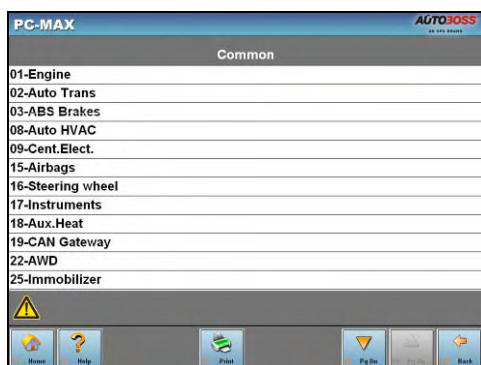**[All system Auto-Scan]:** Test all ECU automatically;

[Common]: by choosing this item, all common-use ECU will be displayed on the screen, users can then select ECU required accordingly;

Other systems: Enter the systems as per relevant ECU type.

(7) Click on **[Common]** to enter the interface shown on the left.

Select **[01-Engine]** to enter the interface with the following functions.

[01-Interrogate control unit versions]

[02-Interrogate fault memory]

[03-Final control diagnosis]

[04-Introduction of basis setting]

[05-Erase fault memory]

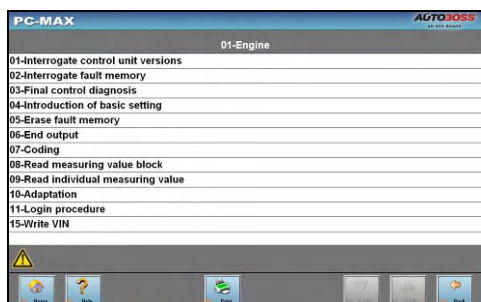**[06-End output]**

[07-Coding]

[08-Read measuring value block]

[09-Read individual measuring value]

[10-Adaptation]

[11-Login procedure]
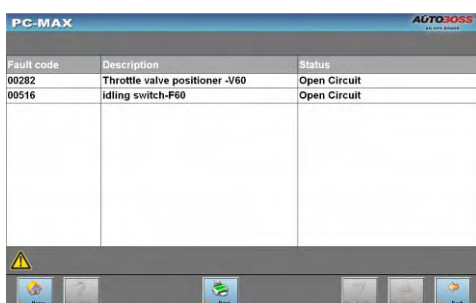
[15-Write VIN]

Note: Functions 04,07,10,15 require knowledge of the systems operation, please use properly.

①**[01-Interrogate control unit versions]**

Click on **[01-Interrogate control unit versions]** to see the information of control unit as shown on the left.

**Note:** Read out old ECU codes with this function when performing ECU coding.

② **[02-Interrogate fault memory]**

To display the DTC saved in the current control unit, click **[02-Interrogate fault memory]**. Please refer to the left image.
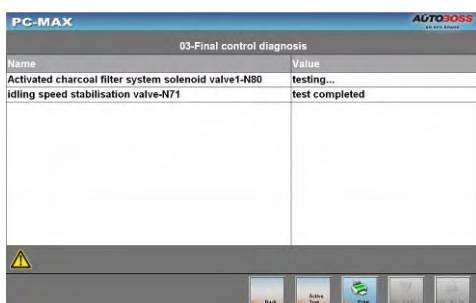
③ **[03-Final control diagnosis]**

Click on the button **[03-Final control diagnosis]** to test relevant actuator automatically as shown on the left image. Click on **[Active Test]** to begin the actuator test.
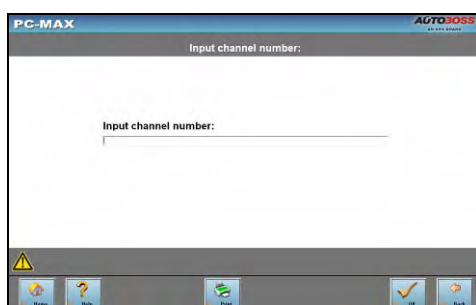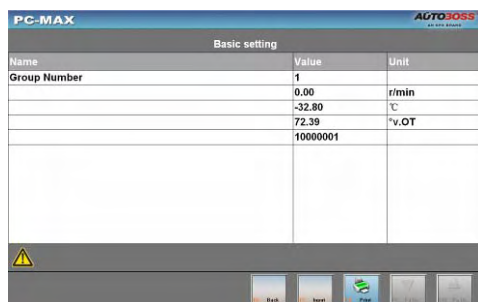
④ **[04-Introduction of basis setting]**

Click on the button **[04-Introduction of basis setting]** for basic setting. Input desired text using the number keys and click on the button **[OK]** to start the basic setting.

- **[Del]**: Delete the input numbers;
- **[Left]**: Move cursor to left;
- **[Right]**: Move cursor to right;
- **[Home]**: Move cursor to Home;
- **[End**: Move cursor to End;
- **[Enter]**: confirm enters.

The window of "Basic setting!" in left image will popup after Basic Setting is done.

● **[Input]**: continue to Input Channel number;

● **[Back]**: Back to the Function Menu.

Note: Under basic setting mode, you can perform solenoid and engine control unit adaptation without starting the engine, or finish λ control process self-adaptation when engine starts. Also you can check faults or ignition timing by connecting or disconnecting λ control.
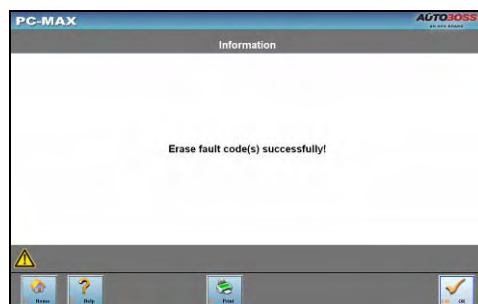
⑤ **[05-Erase fault memory]**

Click on the button **[05-Erase fault memory]** to erase DTC as shown on the left image.
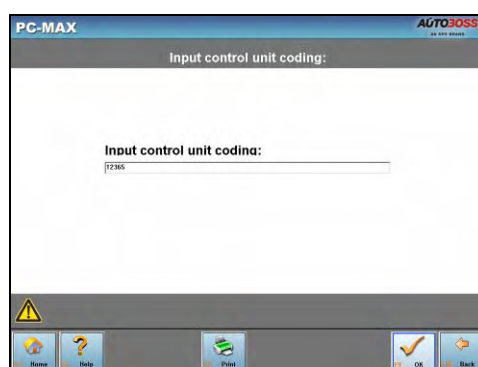
● **[OK]**: Return to the previous menu
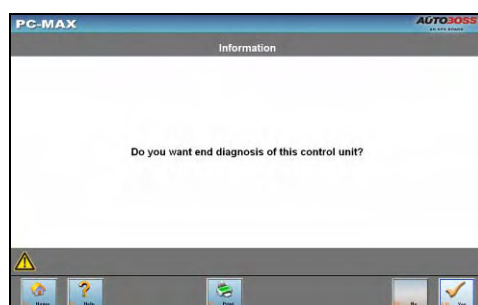
⑥ **[06-End output]**

To exit from the diagnostic program, please click on **[06-End output]**.

● **[Yes]**: Exit the diagnosis program

[No]: Return to the previous menu

⑦ **[07-Coding]**

Click on **[07-Code control unit]** to go to interface shown in left image. Then input the code and click on **[OK]**, the scanner will begin the coding. Click on **[OK]** after coding succeeds.

Note: Please only code the ECU after the ECU has been changed or a function has been added (ie Cruise control). You can get the code of the old ECU by choosing [01-Interrogate control unit versions], then recode the new ECU accordingly.
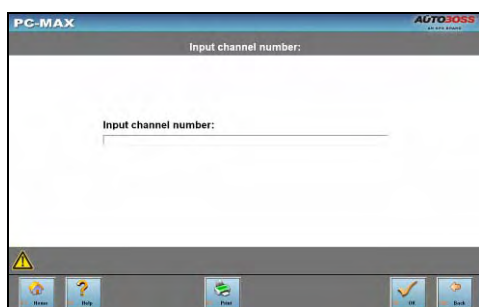
⑧ **[08-Read measuring value block]**

Click on **[08-Read measuring value block]** to enter interface shown in left image.   Please input the relevant channel number, and click on **[OK]** to read data stream information.

**Note: For channel definition, please refer to relevant technical manual.**

The left image is the data stream of Group 01.

- **[PageUp]**: See previous group data stream;
- **[PageDown]**: See next group data stream;
- **[Waveform]**: Review data stream in graph;
- **[Replay]**: Review data stream;
- **[Channel]**: Return to the interface to input channel number;
- **[Back]**: Return to the Function Menu.
- **[Print]**: save the current screen to SD card.
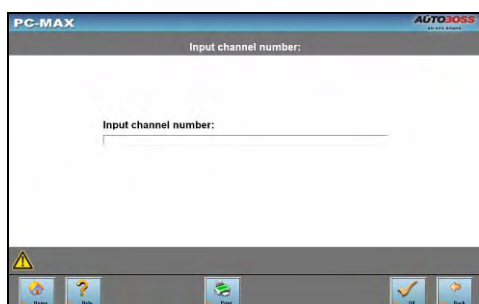
⑨ **[09-Read individual measuring value]**

Click on **[09-Read individual measuring value]** to enter the interface shown in the left image. Input the channel number and click on **[OK]** to view the relative data.
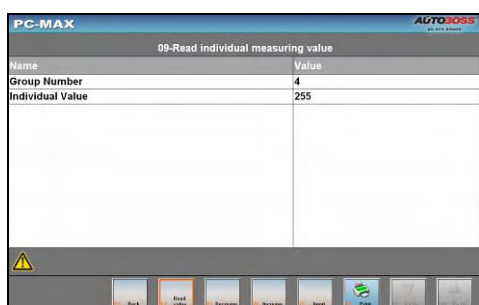
Click on **[Read Value]**, and current value will be displayed.

- **[Input]**: Back to the input interface;
- **[Increase]**: View the data of next channel number.
- **[Decrease]**: View the data of the previous channel number;
- **[Read value]**: Read current value;
- **[Back]**: Back to function list menu;
- **[Print]:** Save the current screen to SD card
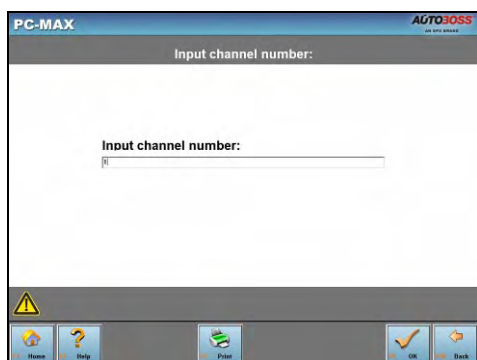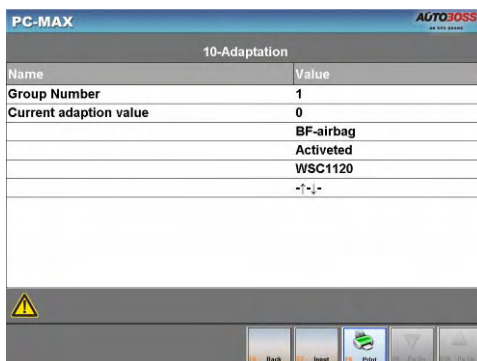
⑩ **[**10-Adaptation**]**

Click on **[10-Adaptation]** to enter the interface of inputting channel number as shown in left image.

Note: Self-adaptation includes: self-study during idle, service reset, IMMO adaptation and so on. You should login first for some of the functions. For login methods, please refer to ⑪ [11-Login procedure] on page 26.
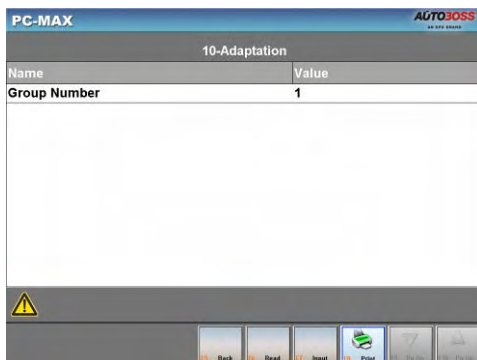
After inputting the relative channel number, click on **[OK]** to enter the interface as shown in left image.

- **[Input]**: Back to the "input channel number" interface;
- **[Read]**: Read the adaptation value of current channel;
- **[Back]**: Back to function list interface;
- **[Print]**: Save the current screen to SD card.

Click on the button **[Read]** to read the adaptation value of current channel.

- **[Input]**: Input new adaptation value;
- **[Back]**: Back to function list menu.
- **[Print]**: Save the current screen to SD card.
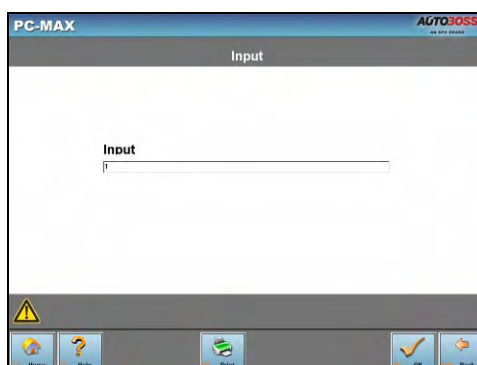
Click on **[Input]** in enter the "input adaptation value" interface shown on the left. Input the new value and then click the button **[Ok]** to go to the next step.

After inputting the new value, new adaptation value will be displayed on the screen. If no error is found, please click on the button **[Change]** to go to the next step.
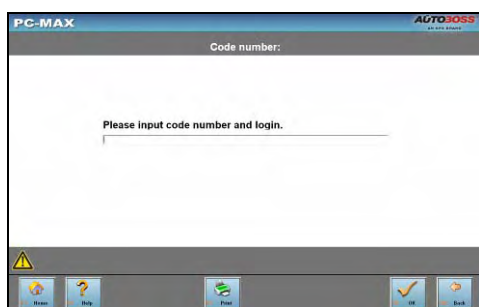

Last step: Click on the button **[Save]** to save the new adaptation value and go back to the self-adaptation interface.

⑪ **[11-Login procedure]**

To perform adaptation in some group, login will be needed first. Just click on the button **[11-Login procedure]**, input the code number and then click on **[OK]**.

Note: Login is required when performing functions such as ECU coding, change channel adaptation and IMMO, etc.

⑫ **[15-Write VIN]**

Volkswagen/Audi uses the 3rd generation anti-theft technology, if you change engine control unit and instrument cluster at the same time you must rewrite the VIN code. Please click on **[15-Write VIN]** to input the new VIN.

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