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General Notice

- Other product names used herein are for identification purposes only and may be trademarks of their respective owners. LAUNCH disclaims any and all rights in those marks.
- There is a possibility that this unit is inapplicable to some of the vehicle models or systems listed in the diagnosis section due to different countries, areas, and/or years. Do not hesitate to contact LAUNCH if you come across such questions. We are to help you solve the problem as soon as possible.

Disclaimer

- To take full advantage of the unit, you should be familiar with the engine.
- All information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make change at any time without notice.

Table of Contents

Introduction

X-431 is the most advanced automobile diagnostic unit in the world at present. Please refer to X-431 User's Manual for its features, hardware configuration, printer operation, button description, conditions for test, etc.

Here we describe the operation procedure for American Ford diagnostic program.

Select Diagnostic Connector

One of the following two types of diagnostic socket may be equipped in the Ford vehicle: OBDII-16PIN and Ford 6+1PIN.

Select [Smart OBDII] diagnostic connector for vehicles equipped with OBDII-16PIN diagnostic socket; and select [Ford 6+1PIN] diagnostic connector for vehicles equipped with Ford 6+1PIN diagnostic socket.

Diagnostic Socket Location

The OBDII-16PIN diagnostic socket is usually located in the cab under the instrument panel, but the location may vary for different vehicle type.

The Ford 6+1PIN Diagnostic Socket is usually in the engine compartment.

Pin Definitions

OBDII-16PIN Diagnostic Socket

The OBDII-16PIN diagnostic socket is as shown in Figure 01.

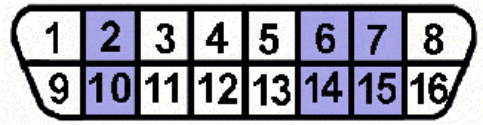

Figure 01

PIN definition of 16PIN OBDII diagnostic socket

PIN	Definition
1	Manufacturer's discretion
2	SAE J1850 Line (Bus +)
3	Manufacturer's discretion
4	Chassis Ground
5	Signal Ground
6	Manufacturer's discretion
7	ISO 9141 K Line
8	Manufacturer's discretion
9	Manufacturer's discretion
10	SAE J1850 Line (Bus -)
11	Manufacturer's discretion
12	Manufacturer's discretion
13	Manufacturer's discretion
14	Manufacturer's discretion
15	ISO 9141 L Line
16	Vehicle Battery Positive

Ford 6+1PIN Diagnostic Socket

The Ford 6+1PIN Diagnostic Socket is as shown in Figure 02.

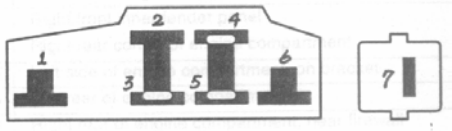

Figure 02

PIN definition of Ford 6+1PIN diagnostic socket

PIN	Definition
1	Not used
2	Not used
3	Communication line
4	Chassis ground
5	ABS diagnostic trigger
6	Not used
7	PCM diagnostic trigger

Connection

Refer to Figure 03 for connecting OBDII-16PIN diagnostic connector before performing diagnosis.

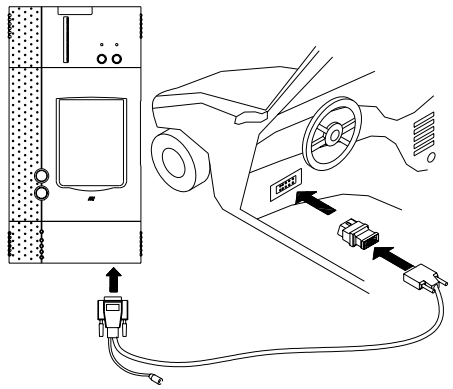

Figure 03

- Insert the CF card into the CF card slot, ***(Note: keep the face labeled "UPSIDE" upward),*** and make sure the card is fully seated.
- Insert one end of the main cable into the diagnostic socket on SMARTBOX.
- Connect the other end of the main cable to the [Smart OBDII] diagnostic connector.
- Connect the other end of the diagnostic connector to the 16PIN OBDII diagnostic socket.

Note:
If the power supply on vehicle diagnostic socket is insufficient or the power pin is damaged, you can get power in the following ways:

- ***From cigarette lighter: insert one end of the cigarette lighter cable into the lighter socket in vehicle and connect the other end to the power connector of X-431 main cable.***

- ***From battery: clamp the two clips of battery cable on the positive and negative poles of battery and insert another end of the cable into the power connector of X-431 main cable.***

- ***From power adapter: connect the power adapter to the 100-240V AC outlet with power cord. Insert the 12V DC plug of power adapter into the power connector of X-431 main cable.***

Operation

Entering Function Menu

After connection, press [**POWER**] key to start X-431.

After starting the main unit, press [**HOTKEY**] (or click [**Start**] button on **the main menu**, and select [**GAG**]→[**GD Scan**] on the pop-up menu). The screen will display the home page of vehicle diagnosis as shown in Figure 04.

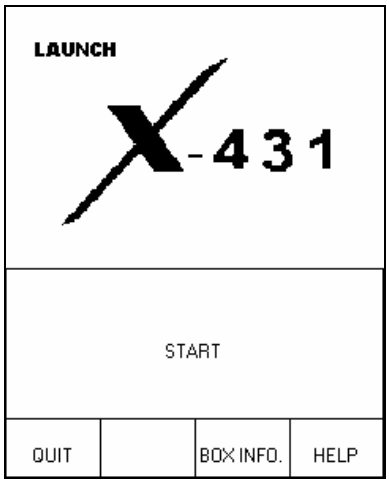

Figure 04

Button descriptions:
- ***[QUIT]: to exit the diagnostic program.***
- ***[BOX INFO.]: to display hardware and software version of SMARTBOX.***
- ***[HELP]: to display help information.***
- ***[START]: to start diagnosis.***

Click [**START**] button, the screen will display **the vehicle make menu** as shown in Figure 05.

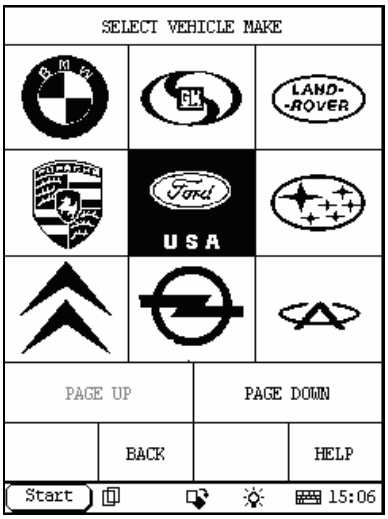

Figure 05

Button descriptions:

- ***[BACK]: to return to the previous interface.***
- ***[PAGE UP]: to display the previous page, it is inactive if the current page is the first page.***
- ***[PAGE DOWN]: to display the next page, it is inactive if the current page is the last page.***
- ***[HELP]: to display the help information.***

Click the icon of USA Ford on the vehicle make menu. The screen as shown in Figure 06 will appear.

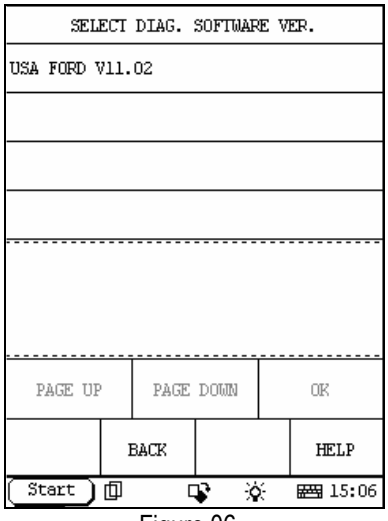

Figure 06

Click [**USA FORD V11.02**]. The screen will display the information as shown in Figure 07.

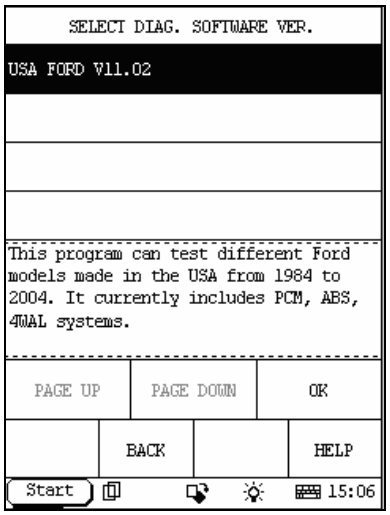

Figure 07

The software can diagnose Ford vehicles made in USA, from model year 1984 to 2004. The tested system includes PCM, ABS and 4WAL.

Click [**OK**] button. X-431 begins to reset and check the SMARTBOX, and load the diagnostic program from the CF card. After that, the screen will display the message as shown in Figure 08.

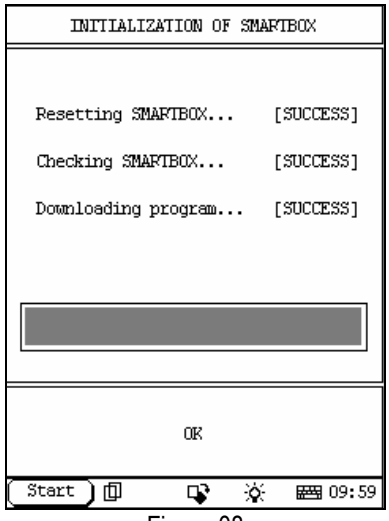

Figure 08

Button descriptions:
[OK]: to go on the test.

Click [**OK**] button. The screen shows the menu of model years. See Figure 09.

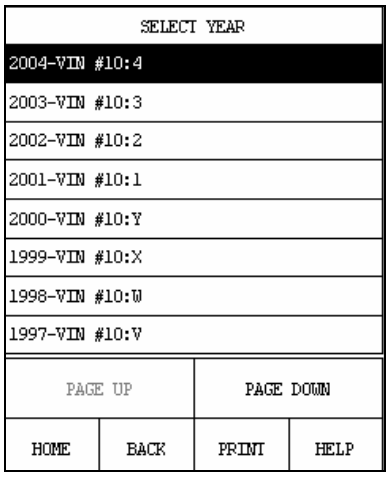

Figure 09

Note:

- ***The menu covers more than one page. Click [PAGE DOWN] to turn to next page.***
- ***The diagnostic procedure for different vehicle model and system is similar, so we take [2004-VIN #10:4] → [2004 AVIATOR 4.6L] → [PCM-POWERTRAIN CONTROL MODULE] as an example to describe the operation.***

Click [**2004-VIN #10:4**]. The screen displays the menu of vehicle model year as shown in Figure 10.

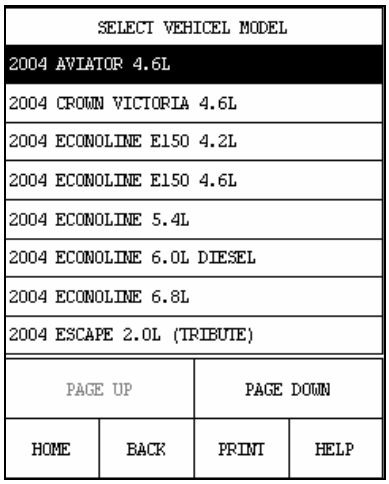

Figure 10

Click [**2004 AVIATOR 4.6L**]. The screen displays the system menu as shown in Figure 11.

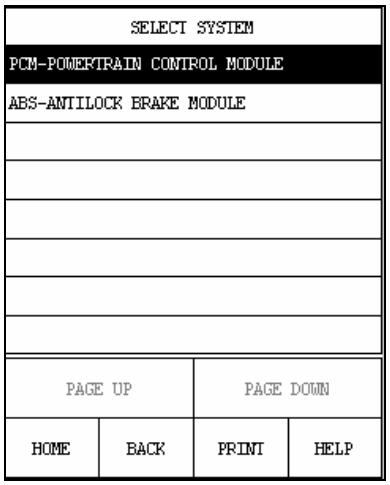

Figure 11

Click [**PCM-POWERTRAIN CONTROL MODULE**] on the screen. X-431 will show prompts for turning on the ignition. See Figure 12.

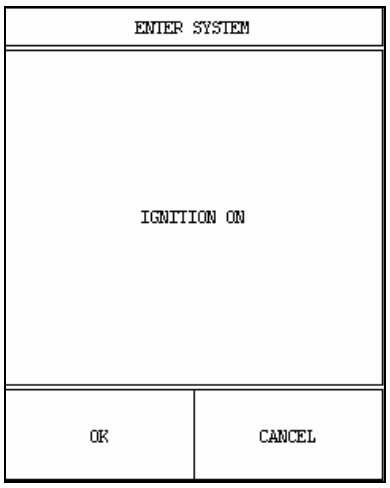

Figure 12

Click [OK] button. Then the screen displays the function menu as shown in Figure 13.

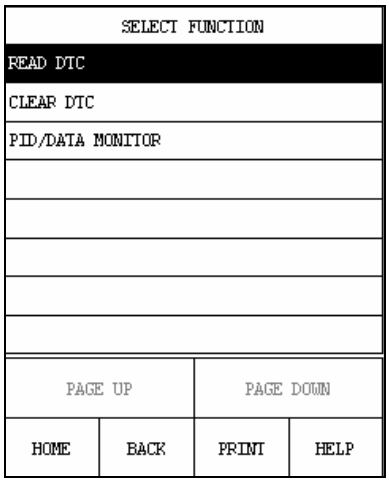

Figure 13

The following functions can be performed:
1. Read DTC;
2. Clear DTC;
3. PID/Data monitor.

Let's describe the functions one by one.

Read DTC

Click [READ DTC] in the menu. X-431 starts to read the trouble code stored in the vehicle ECU and displays the results on the screen. See Figure 14 for an example.

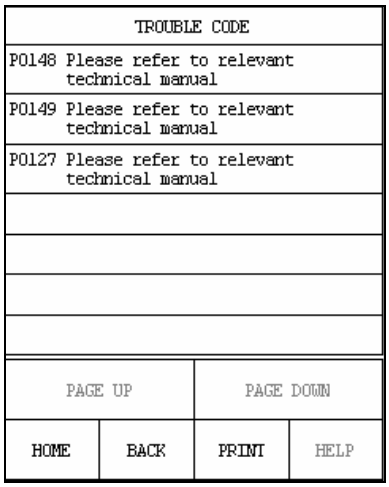

Figure 14

Note:
Click [PRINT] button if you want to print the result.

Clear DTC

Click [CLEAR DTC] in the function menu as shown in Figure 13. This function will clear the trouble codes stored in the vehicle ECU. X-431 may ask a question as shown in Figure 15.

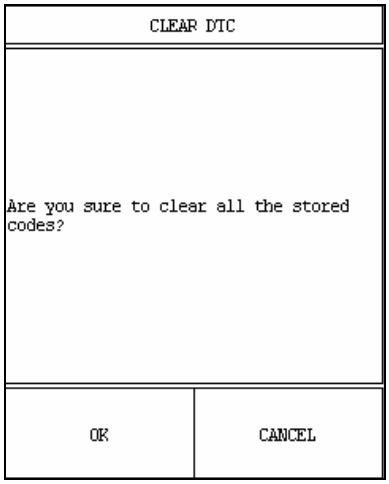

Figure 15

Click [OK] button if you are sure to clear the trouble codes.

When the trouble codes are cleared successfully, the screen will display the message as shown in Figure 16.

Figure 16

Click [OK] button to return to the function menu.

Data Monitor

Click [PID/DATA MONITOR] in the function menu as shown in Figure 13 for reading data stream. The screen will display a list of data stream items. Figure 17 shows an example.

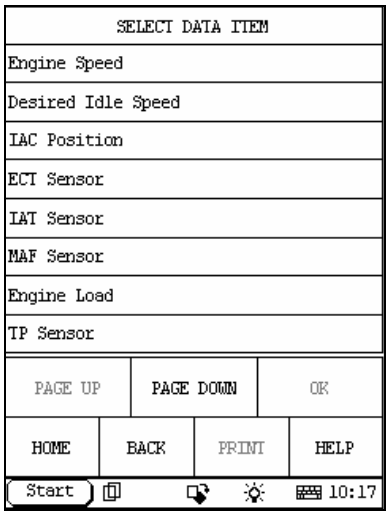

Figure 17

Button description:

- ***[PAGE UP]: to display the previous page of data stream items.***
- ***[PAGE DOWN]: to display the next page of data stream items.***
- ***[HOME]: to return to the home page of vehicle diagnosis.***
- ***[BACK]: to go back to the previous interface.***

Click one or more items to see the data. The selected items will be highlighted as shown in Figure 18.

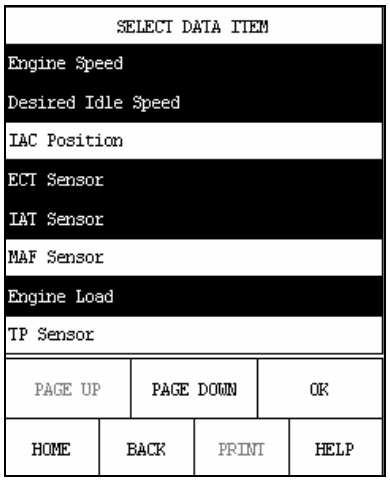

Figure 18

After selecting the items, click [OK] button. Then the screen will display the live value of the selected data stream items. See Figure 19.

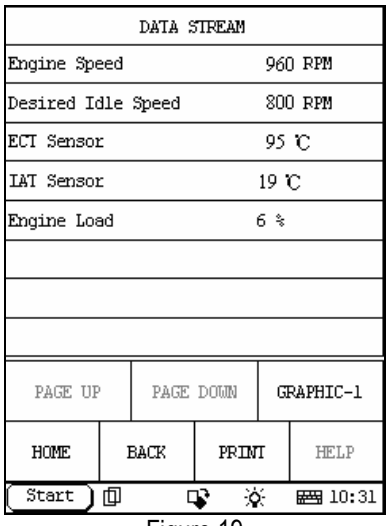

Figure 19

Button description:

- ***[GRAPHIC-1]: to display the waveform of a data stream item.***
- ***[PRINT]: to print the test result.***

Click [GRAPHIC-1] button to display the waveform of one data stream item. Figure 20 shows an example.

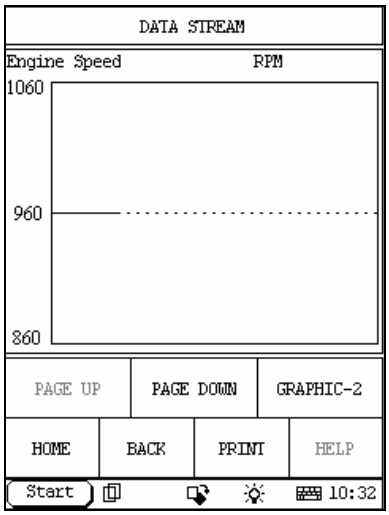

Figure 20

Button description:

- ***[PAGE DOWN]: to display the waveform of next data stream item.***
- ***[GRAPHIC-2]: to display the waveforms of 2 data stream items.***

In the screen of single waveform display, click [GRAPHIC-2] to display the waveforms of 2 data stream items. See Figure 21. This is helpful to make live comparison between two correlative data stream items.

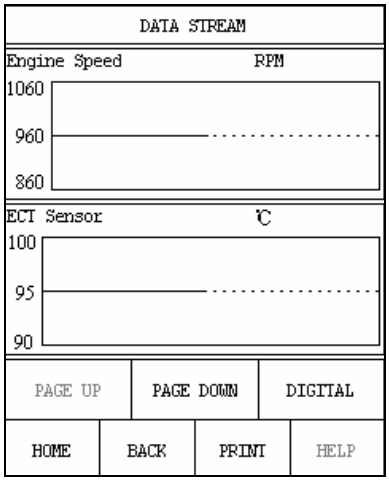

Figure 21

Note:

- ***The screen will display the live value of data stream again if the [DIGITAL] button is clicked on the screen.***
- ***The three display modes -- [DIGITAL], [GRAPHIC-1] and [GRAPHIC-2] can be switched in turn.***

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Order Information

Replaceable and optional parts can be ordered directly from your LAUNCH authorized tool supplier. Your order should include the following information:

1. Quantity
2. Part number
3. Item description

Customer Service

If you have any questions on the operation of the unit, please contact us:

Tel: 86-755-82269474,
Fax: 86-755-82264570,
E-mail: overseasales @ cnlaunch. com.

If your unit requires repair service, return it to the manufacturer with a copy of the sales receipt and a note describing the problem. If the unit is determined to be in warranty, it will be repaired or replaced at no charge. If the unit is determined to be out of warranty, it will be repaired for a nominal service charge plus return freight. Send the unit pre-paid to:

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