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1. Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the scan tool, read this instruction manual first and observe the following safety precautions whenever working on a vehicle:

- Always perform automotive testing in a safe environment.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well-ventilated work area: Exhaust gases are poisonous.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.
- Be extra cautious when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components produce hazardous voltages when the engine is running.
- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Keep a fire extinguisher suitable for gasoline/chemical/ electrical fires nearby.
- Don't connect or disconnect any test equipment while the ignition is on or the engine is running.
- Keep the scan tool dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool, when necessary.

2. General Information

2.1 On-Board Diagnostics (OBD) II

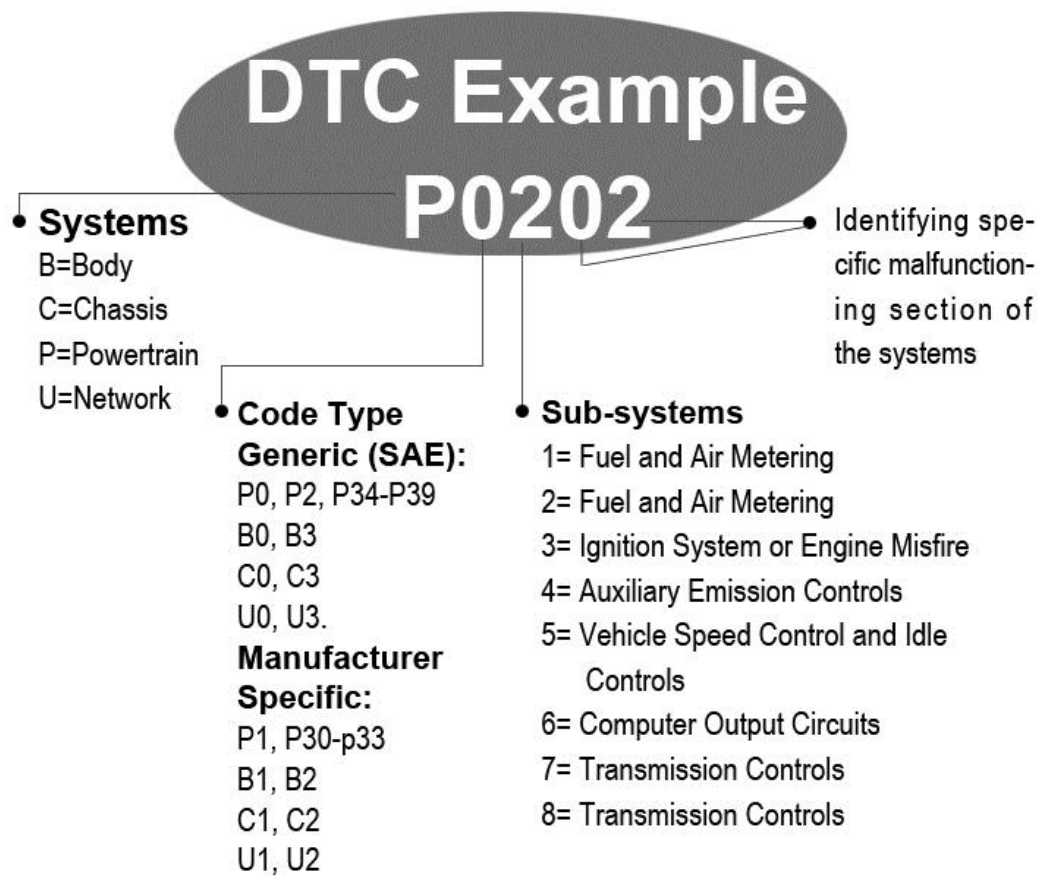
The first generation of On-Board Diagnostics (called OBD I) was developed by the California Air Resources Board (ARB) and implemented in 1988 to monitor some of the emission control components on vehicles. As technology evolved and the desire to improve the On-Board Diagnostic system increased, a new generation of On-Board Diagnostic system was developed. This second generation of On-Board Diagnostic regulations is called "OBD II".

The OBD II system is designed to monitor emission control systems and key engine components by performing either continuous or periodic tests of specific components and vehicle conditions. When a problem is detected, the OBD II system turns on a warning lamp (MIL) on the vehicle instrument panel to alert the driver typically by the phrase of "Check Engine" or "Service Engine Soon". The system will also store important information about the detected malfunction so that a technician can accurately find and fix the problem. Here below are three pieces of such valuable information:

- 1) **Whether the Malfunction Indicator Light (MIL) is commanded 'on' or 'off';**
- 2) **Which, if any, Diagnostic Trouble Codes (DTCs) are stored;**
- 3) **Readiness Monitor status.**

2.1.1 Diagnostic Trouble Codes (DTCs)

OBD II Diagnostic Trouble Codes are codes that stored by the on-board computer diagnostic system in response to a problem found in the vehicle. These codes identify a particular problem area and are intended to provide you with a guide as to where a fault might be occurring within a vehicle. OBD II Diagnostic Trouble Codes consists of a five-digit alphanumeric code. The first character, a letter, identifies which control system sets the code. The other four characters, all numbers, provide additional information on where the DTC originated and the operating conditions that caused it to set. Here below is an example to illustrate the structure of the digits:



2.1.2 OBDII Modes of Operation

Below is a brief description of OBDII 10 modes.

Mode \$01 – Identifies the Powertrain information and shows current data available to the scan tool. This data includes: DTC set, status of on-board tests, and vehicle data such as engine RPM, temperatures, ignition advance, speed, air flow rates, and closed loop status for fuel system.

Mode \$02 – Displays Freeze Frame data. Same data as in mode 1, but it was captured and stored when a malfunction occurred and a DTC was set. Some of the PIDs for mode one are not implemented in this mode.

Mode \$03 – Displays the type of powertrain or emission related DTCs stored by a 5 digit code identifying the faults. There may be

more than one response message if there are more trouble codes than will fit in the data bytes of the response message, or if there are more than one ECU computer responding.

Mode \$04 – Used to clear DTCs and Freeze Frame data. This clears all diagnostic trouble codes that may be set including freeze frame data and readiness monitors.

Mode \$05 – Displays oxygen sensor test results. This mode displays the oxygen sensor monitor screen and the test results gathered about the oxygen sensor.

There are ten numbers available for diagnostics:

1. \$01 Rich-to-Lean O2 sensor threshold voltage.
2. \$02 Lean-to-Rich O2 sensor threshold voltage.
3. \$03 Low sensor voltage threshold for switch time measurement.
4. \$04 High sensor voltage threshold for switch time measurement.
5. \$05 Rich-to-Lean switch time in ms.
6. \$06 Lean-to-Rich switch time in ms.
7. \$07 Minimum voltage for test.
8. \$08 Maximum voltage for test.
9. \$09 Time between voltage transitions in ms.

Mode \$06 – Non-continuously Monitored Systems test results. There are typically a minimum value, a maximum value, and a current value for each non-continuous monitor. This data is optional, and it is defined by a given vehicle maker if it's used.

Mode \$07 – A request for DTCs (pending) from Continuously Monitored Systems after a single driving cycle has been performed to determine if the repair has fixed a problem. This is used by service technicians to verify repair was performed properly and after clearing diagnostic trouble codes.

Mode \$08 – This special Control Mode requests control of the on-board system, test, or component bi-directionally (where applicable). This mode is manufacturer specific.

Mode \$09 – Reports vehicle information. This information includes VIN number and calibration information stored in the vehicle ECUs.

Mode \$0A – Requests emission-related DTCs with permanent status. This mode is required for all emissions-related DTCs. The presence of permanent DTCs at an inspection without the MIL illuminated is an indication that a proper repair was not verified by the on-board monitoring system.

2.2 Oil Service Reset Review

The Engine Oil Life System calculates when to change the engine oil and filter based on vehicle use. An oil change is required whenever indicated by the display or according to the recommended maintenance schedule. Whenever the oil is changed, reset the system so it can calculate when the next oil change is required. If you change the oil prior to a service indicator being turned on, please also reset the system.

2.3 EPB Review

The EPB is a system which controls the brake force by pulling the parking cable as in conventional existing parking brakes. EPB system includes a DC motor, a gearbox, a screw, a nut, a current sensor, a Hall-effect force sensor, an acceleration sensor and an ECU.

Generally, if a driver or a high level system operates the EPB system, the controller calculates a target force from the parking cable based on the car mass as well as the inclination of the road as measured by the acceleration sensor. The EPB increases the brake force by pulling the parking cable using the DC motor until the brake force reaches the target force. Brake force is measured by the Hall-effect force sensor.

3. Using the Scan Tool

3.1 Tool Description



- 1) **CONNECTOR** -- Connects the scan tool to the vehicle's Data Link Connector (DLC).
- 2) **LCD DISPLAY** -- Indicates test results.
- 3) **FUNCTION BUTTON** – Corresponds with “buttons” on screen for executing commands.

- 4)  **ESC BUTTON** -- Cancels a selection (or an action) from a menu or returns to the previous screen.
- 5)  **LEFT SCROLL BUTTON** -- When looking up DTC definitions, moves to the previous character and views additional information on previous screens if the DTC definition covers more than one screen; views previous screen or previous frames of recorded data. It is also used to view previous trouble code when viewing DTCs.
- 6)  **HELP BUTTON** -- Provides help information and the description of DTCs.
- 7)  **DOWN SCROLL BUTTON** -- Moves down through menu and submenu items in menu mode. When more than one screen of data is retrieved, moves down through the current screen to the next screens for additional data. When looking up DTC, it is used to change the value of selected character.
- 8)  **RIGHT SCROLL BUTTON** -- When looking up DTC definitions, moves to the next character and view additional information on the next screens if the DTC definition covers more than one screen; views next screen or next frames of recorded data. It is also used to view next trouble code when viewing DTCs.
- 9)  **OK BUTTON** -- Confirms a selection (or an action) from a menu.
- 10)  **UP SCROLL BUTTON** -- Moves up through menu and submenu items in menu mode. When more than one screen of data is retrieved, moves up through the current screen to the previous screens for additional data. When looking up DTC, it is used to change the value of selected character.
- 11) **TF CARD SLOT** – Holds the TF card.
- 12) **USB PORT** -- Connects the scan tool to the PC for printing.

3.2 Specifications

Display	2.8" TFT color display (320 x 240 dpi)
Operating Temperature	0 to 60 °C (32 to 140 °F)
Storage Temperature	-20 to 70 °C (-4 to 158 °F)
Dimensions (W x H x D)	100mm (3.94") x 200mm (7.87") x 37.5mm (1.48")
Weight (Without wire)	0.26kg (0.57lb.)

3.3 Accessories Included

- 1) **User's Manual** -- Instructions on tool operations.
- 2) **CD** -- Includes user manual, Autel update software, etc.
- 3) **OBD II Cable** -- Provides power to the tool and communicates between the tool and the vehicle.
- 4) **USB Cable** -- Used to upgrade the scan tool, and to print retrieved data.
- 5) **TF Card** -- Contains the scan tool's operation software and applications.
- 6) **Carry Case** -- A nylon case to store the scan tool.

3.4 Keyboard

No solvents such as alcohol are allowed to clean the keypad or the display. Use a mild, nonabrasive detergent and a soft cotton cloth. Do not soak the keypad as it is not waterproof.

3.5 Power

The scan tool is powered via the Data Link Connector (DLC). Just follow the steps below to turn on the scan tool:

- 1) Connect the cable to scan tool.
- 2) Find DLC on the vehicle.

- *A plastic DLC cover may be found for some vehicles and you need to remove it before plugging the OBD II cable.*
- 3) Plug the cable into the vehicle's DLC.
 - 4) Power up the scan tool, and wait for the **Main Screen** to appear. (Figure 3.1)

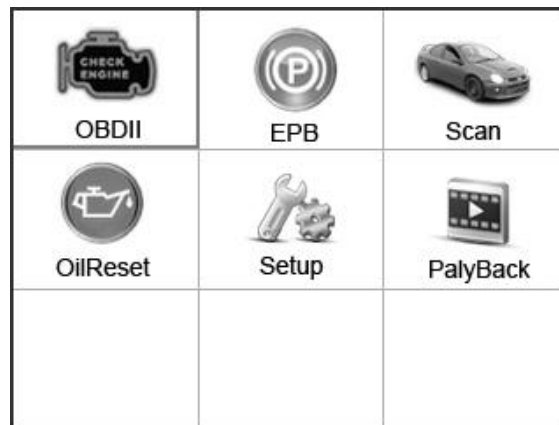


Figure 3.1

3.6 System Setup

The system Setup functions allow you to adjust default settings and view information about the scan tool.

- 1) **Language:** Selects the desired language.
 - 2) **Unit of Measure:** Sets the unit of measure to English or Metric.
 - 3) **Beep Set:** Turns on/off the beep.
 - 4) **LCD Test:** Checks if the LCD display is working properly.
 - 5) **Key Test:** Checks if the keyboard is working properly.
 - 6) **About:** Provides information of the scan tool.
- *Settings of the unit will remain until a change to the existing settings is made.*

To enter the Setup menu

From the **Main Screen**, use **LEFT/RIGHT** scroll button to select **Setup**, and press the **OK** button. Following the instructions to make

adjustments and settings could make your diagnosis easier and more convenient. (Figure 3.2)

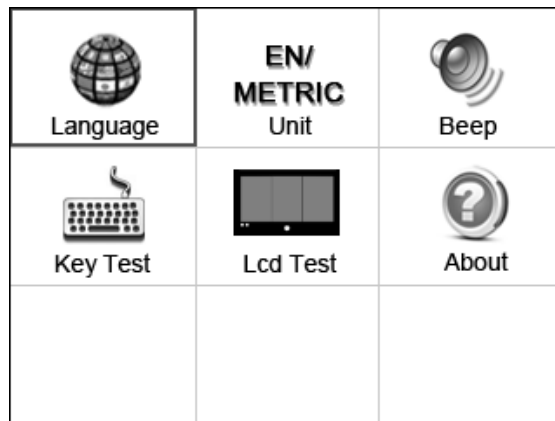


Figure 3.2

Language Setup

- *English is the default language.*

- 1) From **Setup** screen, use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **Language**, and press the **OK** button.
- 2) Use the **UP/DOWN** scroll button to select the desired language and press the **OK** button to save your selection and return to the previous screen. (Figure 3.3)

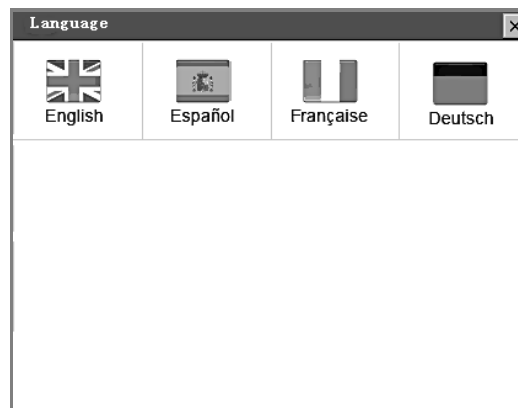


Figure 3.3

Unit of Measure

- *Metric is the default measurement unit.*
- 1) From **Setup** screen, use the **LEFT/RIGHT** scroll button to select **EN/METRIC Unit** and press the **OK** button.
 - 2) From **Unit of Measure** screen, use the **LEFT/RIGHT** scroll button to select the desired unit of measurement. (Figure 3.4)

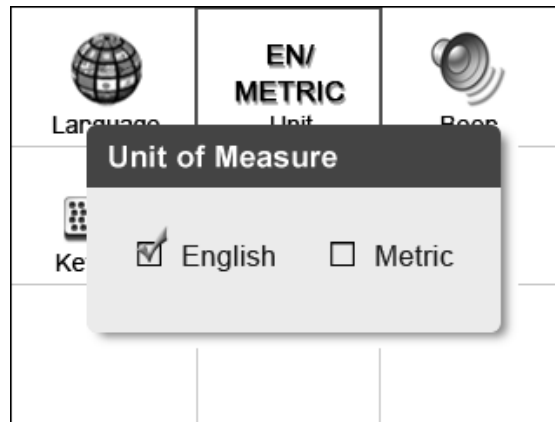


Figure 3.4

- 3) Press the **OK** button to save your selection and return to the previous menu. Or, press the **ESC** button to exit without saving.

Beep Set

- *The default setting is Beep On.*
- 1) From **Setup** screen, use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **Beep** and press the **OK** button.
 - 2) From **Beep Set** menu, use the **LEFT/RIGHT** scroll button to select **ON** or **OFF** to turn on/off the beep. (Figure 3.5)

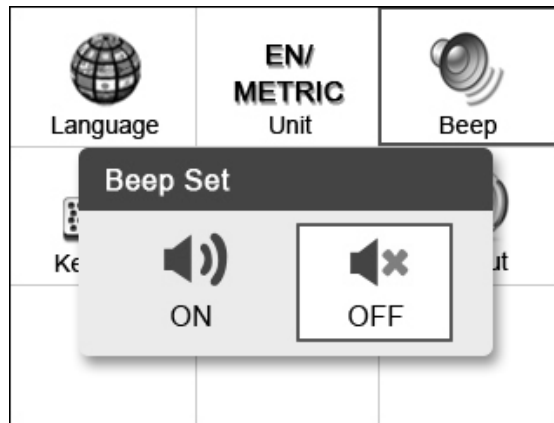


Figure 3.5

- 3) Press the **OK** button to save your selection and return to the previous menu. Or, press the **ESC** button to exit without saving.

Key Test

The Key Test function checks if the keyboard is working properly.

- 1) From **Setup** screen, use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **Key Test**, and press the **OK** button.
- 2) Press any key to start the test. When you press a key, the edge around the corresponding key on the screen should turn to red. Otherwise, the key is not functioning properly.
- 3) Double press the **ESC** button to return to the previous menu.

LCD Test

The **LCD Test** function checks if the LCD display is working normally.

- 1) From **Setup** screen, use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **LCD Test**, and press the **OK** button.
- 2) Look for missing spots in the blue, green, red, white and black LCD display.
- 3) When completed, press the **ESC** button to exit.

About

The **About** function allows viewing of some important information such as serial number and software version number of the scanner.

- 1) From **Setup** screen, use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **About** and press the **OK** button; wait for the **About** screen to appear.
- 2) View tool information on the screen. Press the **ESC** button to exit.

3.7 Vehicle Coverage

On the basis of all OBD II compliant vehicles, including those equipped with universal protocol -- Control Area Network (CAN), MaxiDiag[®] MD805 Scanner expands vehicle system coverage and offers more diagnostic power to the vehicle technicians. Featuring expanded global vehicle coverage, the scan tool offers technicians a significant improvement on model years covered by supported manufacturers.

For a complete listing of all the added vehicle coverage, download a copy of the official Software Release Note.

3.8 Product Troubleshooting

Vehicle Linking Error

A communication error occurs if the scan tool fails to communicate with the vehicle's ECU (Electronic Control Unit). You need to do the following to check up:

- ✓ Verify that the ignition is ON.
- ✓ Check if the scan tool's connector is securely connected to the vehicle's DLC.
- ✓ Turn the ignition off and wait for about 10 seconds. Turn on the ignition again and continue the testing.
- ✓ Verify the control module is not defective.

Operating Error

If the scan tool freezes, then an exception occurs or the vehicle's ECU (Electronic Control Unit) is too slow to respond to requests. You need to do the following to reset the tool:

- ✓ Reset the scan tool.
- ✓ Turn the ignition off and wait for about 10 seconds. Turn the ignition back to on and continue the testing.

Scan tool doesn't power up

If the scan tool won't power up or operates incorrectly in any other way, you need to do the following to check up:

- ✓ Check if the scan tool's connector is securely connected to the vehicle's DLC;
- ✓ Check if the DLC pins are bent or broken. Clean the DLC pins if necessary.
- ✓ Check the vehicle battery to make sure it is still good with at least 8.0 volts.

4. Playback Data

The Playback data function allows viewing data from the last test recorded by the scan tool.

 **NOTE:** The amount of files that can be saved depends on the space available on the TF card.

4.1 Reviewing Data

- 1) Use the **LEFT/RIGHT** scroll button to select **Playback** from **Main Screen** (Figure 3.1), and press the **OK** button. Wait for the **Scan** screen to appear. (Figure 4.1)
- 2) Use the **UP/DOWN** scroll button to select the desired item from **Scan** screen, and press the **OK** button.

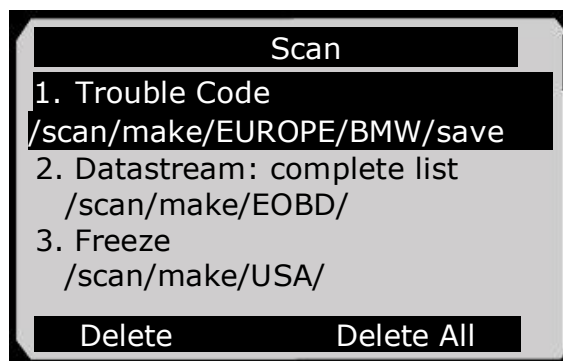


Figure 4.1

- If no data from previously tested vehicle is recorded, a message "**No data available!**" shows on the screen.
- 3) Review selected data on the screen. (Figure 4.2)

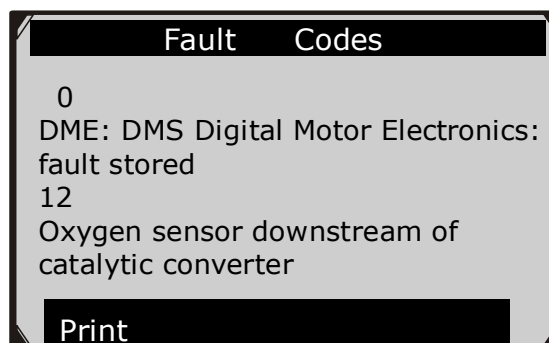


Figure 4.2

4.2 Deleting Data

By selecting **Delete** on the **Scan** screen, you can erase the selected data on the scan tool. Review the recordings thoroughly before erasing. You could also erase all recordings by select **Delete All**.

 **NOTE:** *Don't use **Delete All** unless you are definitely sure what you are going to proceed.*

4.3 Printing Data

The **Print** option allows you to print the recorded files to your computer and then to the printer.

For more details, please refer to chapter 9. **Print Data**.

5. Diagnostics

 **NOTE:** The screens shown below in this chapter are examples. Actual screens will vary by vehicle makes and models.

5.1 Entering Vehicle Information

Before using the scan tool to diagnose, you must input the vehicle information. There are generally three ways to input the vehicle information.

- Vehicle information manual acquisition.
- VIN code automatic acquisition.
- VIN code manual acquisition.

The way to enter diagnostic procedure depends on the vehicle being tested.

5.1.1 Vehicle Information Manual Acquisition

Follow these steps to acquire the vehicle information and begin diagnostics. (Take **Ford** as an example)

- 1) Turn on the scan tool and wait for the **Main Screen** to appear.
- 2) Select the **Scan** icon on the **Main Screen** (Figure 3.1) and then select the desired vehicle area and make.

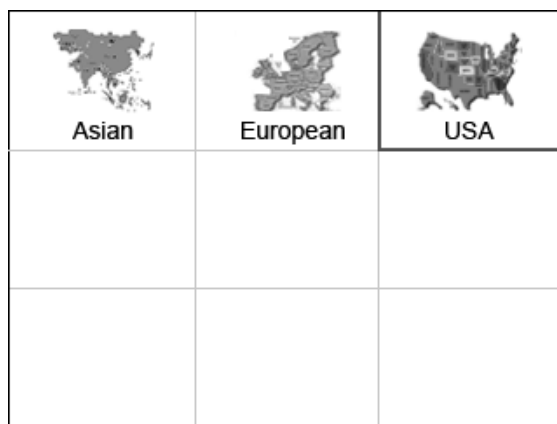


Figure 5.1

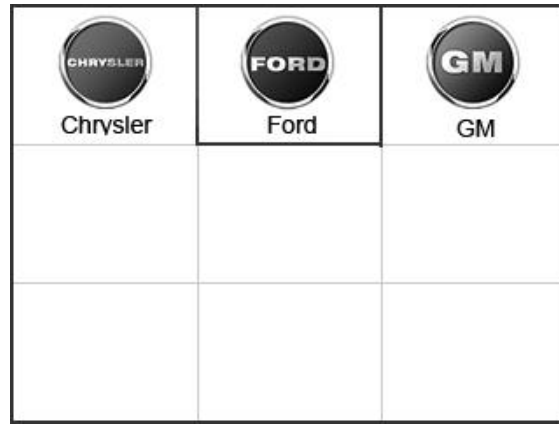


Figure 5.2

- 3) Step by step, select the right options for the vehicle according to each screen that appears.

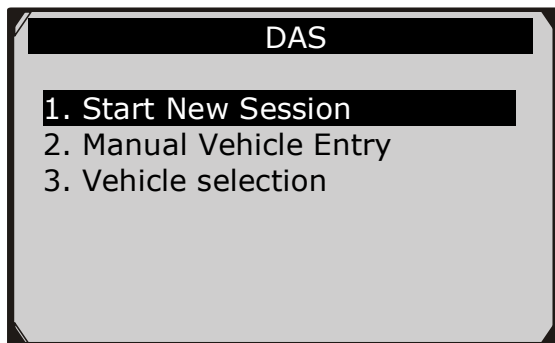


Figure 5.3

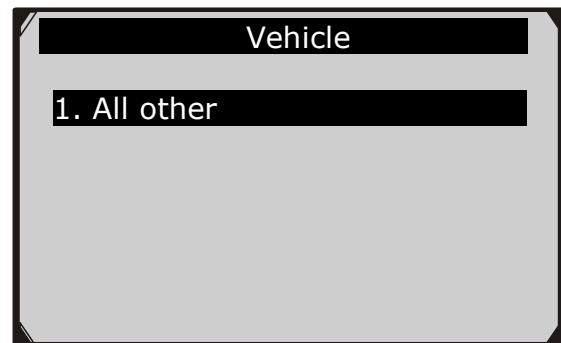


Figure 5.4

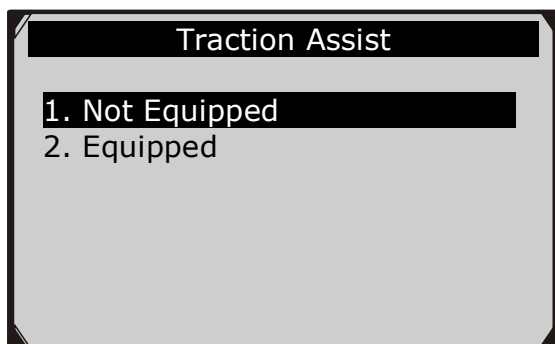


Figure 5.5

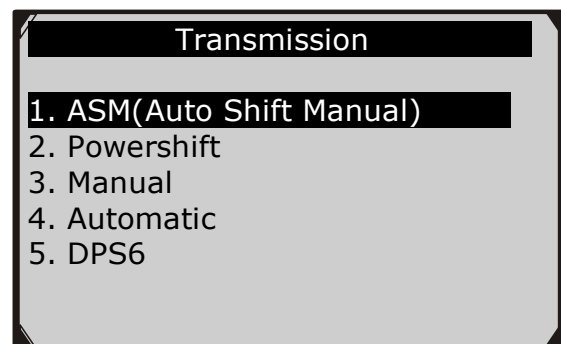


Figure 5.6

- 4) Follow the steps until the complete vehicle information is entered. Then the scan tool will ask for your confirmation.

Vehicle Specification	
Vehicle: Mustang	
Engine Type: Other	
Capacity: 3.8L	
Transmission: Manual	
Fuel Type: Gasoline	
Emission Level: Federal Emission	
Is this correct?	
Yes	No

Figure 5.7

5.1.2 VIN Code Automatic Acquisition

For some vehicles, the scan tool could identify the VIN code intelligently, saving your time to enter complex information. (Take **Renault** as an example)



Figure 5.8

RENAULT
1. VIN acquisition

Figure 5.9

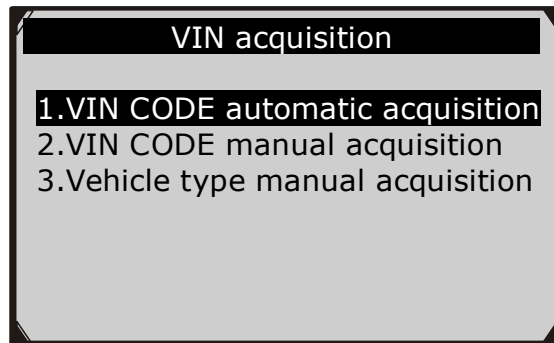


Figure 5.10

In this mode, the scan tool will communicate with the vehicle and read off the VIN code automatically. It will ask for your confirmation about the VIN code if ECU response is received. If there is no response from the ECU, it will turn to manual mode. *(Please see **VIN Code Manual Acquisition**)*

5.1.3 VIN Code Manual Acquisition

For some vehicles, you can enter the VIN code manually to acquire the vehicle information after automatic acquiring failed. (Take **Benz** as an example)



Figure 5.11

In the Benz **Cars** menu, select the option “**1. Vehicle detect**”. If the automatic acquiring failed, enter the VIN code manually.

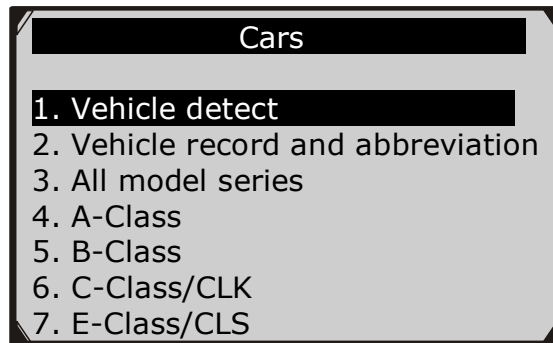


Figure 5.12

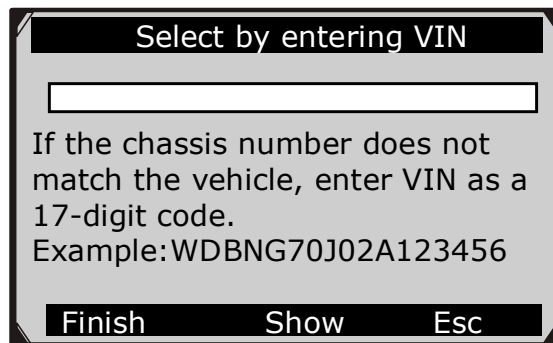


Figure 5.13

Press the function button corresponding to **Show** to pop up a keyboard. Use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select digits and characters, and then press the **OK** button to confirm. Press the function button corresponding to **Backspace** to delete the previous digit or character. When finished, press the function button corresponding to **Finish** to proceed. The scan tool will identify the VIN code and turn to diagnostic procedure.

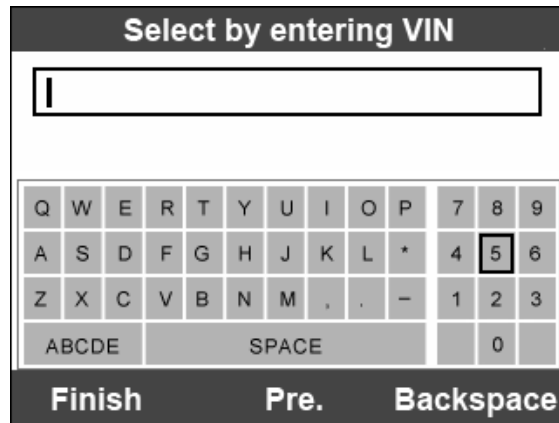


Figure 5.14

5.2 Diagnostic Test

After you have entered the correct vehicle information, the diagnostic selection will display as below:

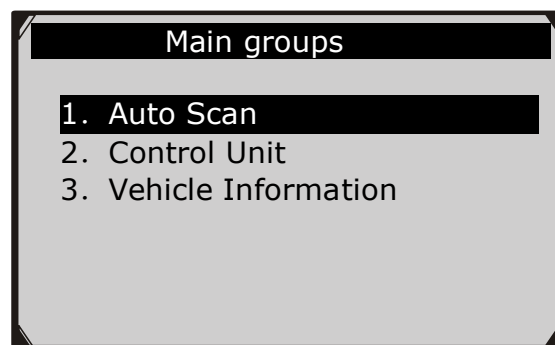


Figure 5.15

5.2.1 Auto Scan

Depending on the scan tool model, the **Auto Scan** function will carry out an overall scan to check the status of all systems or four systems (engine, transmission, airbag, and ABS) on the vehicle being tested. Selecting **Auto Scan** will lead to retrieving the trouble codes in each system of the vehicle one by one. It will take a few minutes.

Use the **UP/DOWN** scroll button to select **Auto Scan** from **Main Groups** menu (Figure 5.15), and press the **OK** button.

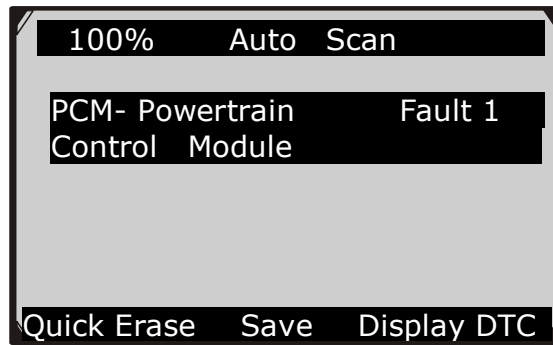


Figure 5.16

You can check the details of each system, quickly erase DTC, save the data, and display DTC from the **Auto Scan** menu screen. To select the options on the bottom, simply press the corresponding function button.

- **Save** – this option allows you to save the Auto Scan information as “Vehicle Record” so that you will not need to follow the vehicle selection process again on the same vehicle in later tests. For detailed instructions, please refer to **5.2.4 Save and retrieve files**.
- **Quick Erase** – this option allows you to erase all displaying DTCs and read the data once again and check the latest status of the system. If a fault is not fixed, its trouble code will keep on displaying.
- **Display DTC** – this option allows you to read DTC definitions in the highlighted system. If more than one fault is detected in a system, the scan tool will display a list for you to view different kinds of DTCs or freeze frames.

In **Auto Scan** screen (Figure 5.16), pressing the **OK** button will turn to diagnostic operation. For more details, refer to **5.3 Diagnostic Operation**.

To exit the **Auto Scan** option, press the **ESC** button. The scan tool will display a message “**Are you sure to quit?**” to ask for your confirmation. Select **Yes** to quit, or select **No** to cancel the command.

5.2.2 Control Unit

The **Control Unit** function will list down all systems that are available on the vehicle for you to select to test. Select a system to display the function menu and start testing.

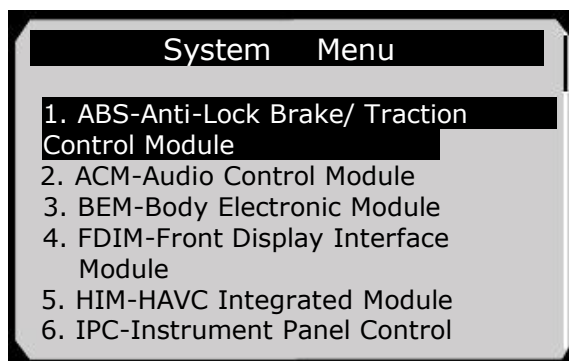


Figure 5.17

 **NOTE:** The actual systems displayed in the **System Menu** screen may be different from Figure 5.17 due to various vehicle configurations.

5.2.3 Vehicle Information

The **Vehicle Information** function allows you to view vehicle-specific information, including Specifications, System Type, and other Identification information.

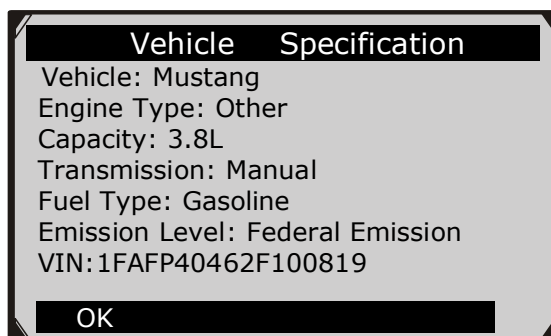
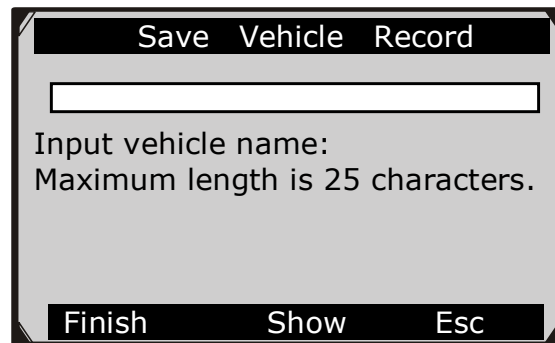


Figure 5.18

5.2.4 Save and Retrieve Files

The **Save and Retrieve Files** function will save the detected vehicle information. You can directly get the vehicle information next time.

Follow the instructions above to finish the **Auto Scan** process (Figure 5.15), and press the function button corresponding to **Save**, and name the record on the **Save Vehicle Record** screen.

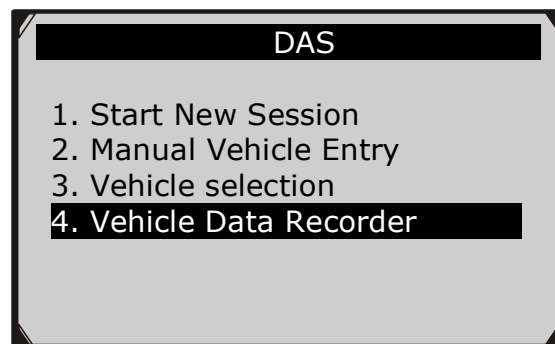


The screen is titled "Save Vehicle Record" in a black header bar. Below the header is a white rectangular input field. Underneath the field, the text "Input vehicle name:" is displayed, followed by "Maximum length is 25 characters." At the bottom of the screen, there is a black bar containing three white buttons labeled "Finish", "Show", and "Esc".

Figure 5.19

To enter the diagnostic functions through the vehicle record option in future, please follow the steps below:

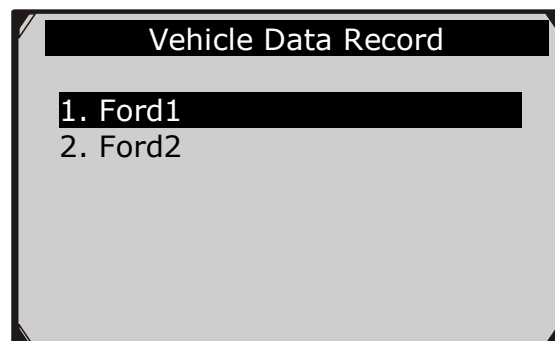
- Select **Vehicle Data Recorder** from the DAS menu.



The screen is titled "DAS" in a black header bar. Below the header, a list of four options is shown: "1. Start New Session", "2. Manual Vehicle Entry", "3. Vehicle selection", and "4. Vehicle Data Recorder". The fourth option is highlighted with a black background and white text.

Figure 5.20

- Click on the vehicle file to enter the diagnostic menu directly.



The screen is titled "Vehicle Data Record" in a black header bar. Below the header, a list of two options is shown: "1. Ford1" and "2. Ford2". The first option is highlighted with a black background and white text.

Figure 5.21

5.3 Diagnostic Operation

This function allows you to read and clear DTCs, read and save live data. (Take **Ford** as an example)

5.3.1 Read Codes

The Read Codes procedure varies for each vehicle being tested. This section includes the following Read Codes procedures.

In the **Function Menu** screen, select **Read Codes**. It will display the **Read Codes** menu screen. (Figure 5.23)

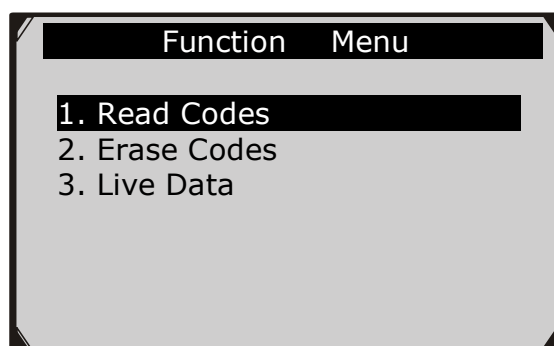


Figure 5.22

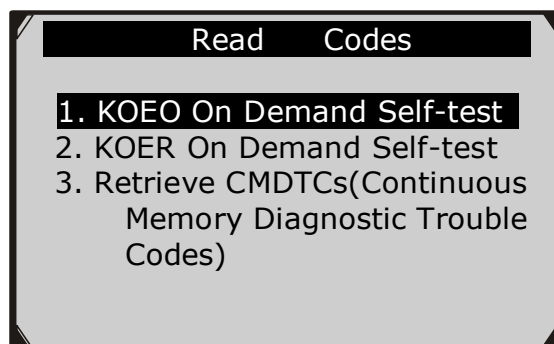


Figure 5.23

In the **Read Codes** menu, select one of the options to proceed. The screen will show as below.

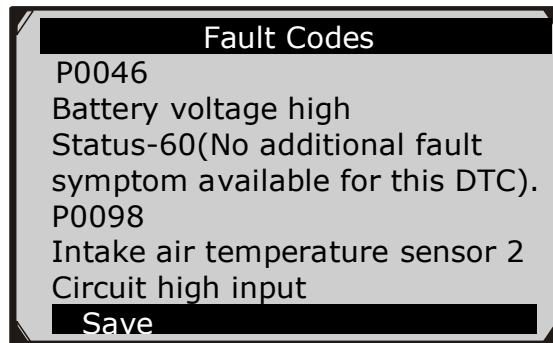


Figure 5.24

You can save the code results for later review by selecting the **Save** option on the bottom. When you finish viewing the DTCs, press the **ESC** button to return to the previous screen.

5.3.2 Erase Codes

After reading/reviewing the diagnostic trouble codes, take the following steps to erase codes from the vehicle. If **Erase Codes** is not an available menu option, consult the manufacturer's service manual for the correct "clear code" method.

✍ **NOTE:** The **Erase Codes** function clears DTCs from the selected ECU or provides instructions for how to manually clear the codes from the ECU.

Before performing this procedure, make sure the vehicle's ignition key is in the On (Run) position with the engine off.

To Erase DTCs, please follow the steps below:

1. With the **Function Menu** screen displayed (Figure 5.22), select **Erase Codes**. The scan tool displays an instruction message.
2. Follow the instructions on the screen until the procedure is completed.
3. When finished, press any key to exit.
4. Use the **Read Codes** function again to check if DTCs have been erased successfully. If any codes remain, it indicates that the vehicle needs maintenance. Please repeat the **Erase Codes** steps after repairing the vehicle.

5.3.3 Live Data

The **Live Data** function enables you to view the real-time live data, including the values (volt, RPM, temperature, speed, etc.) and system status information (open loop, closed loop, etc.) generated by vehicle sensors, switches, and actuators.

 **NOTE:** *If the vehicle must be driven in order to perform a troubleshooting procedure, **ALWAYS** have a second person help you. One person should drive the vehicle while the other person observes the Scan Tool data. It is dangerous to drive and operate the Scan Tool at the same time because a serious traffic accident might be caused.*

- 1) To view live data, use the **UP/DOWN** scroll button to select **Live Data** from the **Function Menu** screen, and press the **OK** button. The screen will show as below.

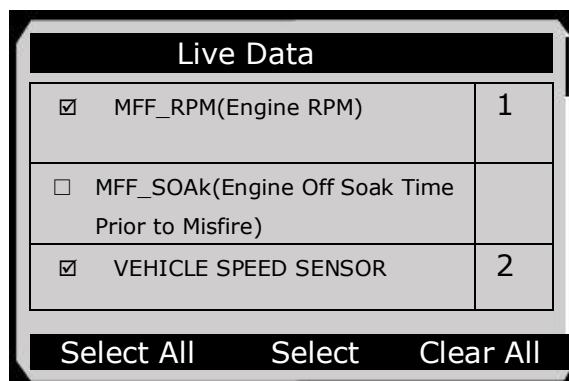


Figure 5.25

- The number to the right of the selected item indicates the sequence of this item.
 - If you want to select the item, press the function button corresponding to **Select**.
 - To select all the items on the screen, press the function button corresponding to **Select All**. To clear all the selected items on the screen, press the function button corresponding to **Clear All**.
- 2) Press the **OK** button to view the information.

Live Data		
MFF_RPM(Engine RPM)	837	RPM
VEHICLE SPEED SENSOR	0	km/h
Pause one Graphic Save		

Figure 5.26

The three keyboard function buttons work as below.

[One Graphic]: To view the live data waveform.

[Save]: To save the live data.

[Pause]: To suspend viewing or stop saving live data.

- 3) Press the function button corresponding to **One Graphic**. The screen will show the live data waveform.

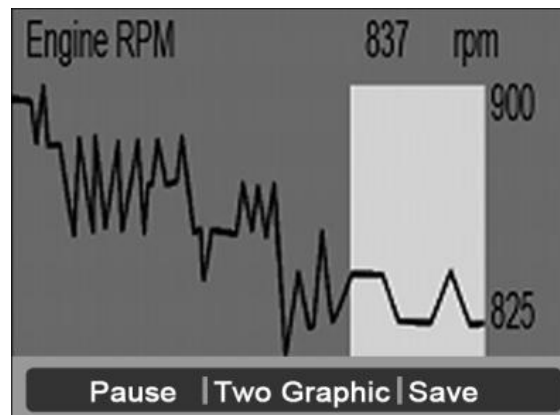


Figure 5.27

- 4) Press the function button corresponding to **Two Graphic**, the screen will show two graphs.

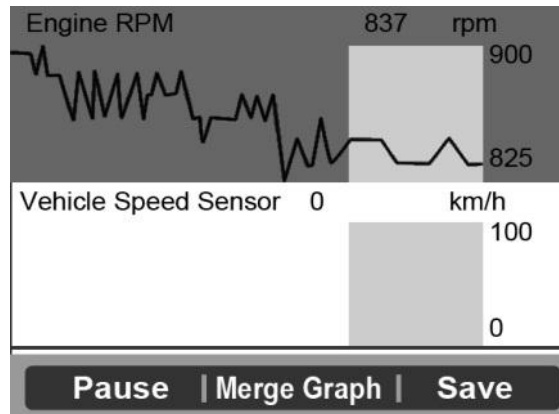


Figure 5.28

- 5) Press the function button corresponding to **Merge Graph**, the above two graphs will merge together.

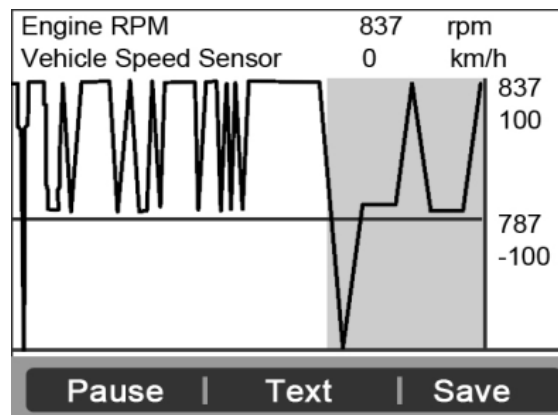


Figure 5.29

 **NOTE:** *Merge Graph* can be used to compare two related parameters in graphic mode. It is especially convenient that you could select two interacted parameters to merge and see their relationship.

- 6) Select **Text** to return to view the live data in text form
- 7) Select **Save** to record retrieved live data and graphs.

 **NOTE:** *The scan tool can only playback text data even though the data is saved in graphic mode. Since what you are viewing is “real time” Live Data, the data changes as the vehicle’s operating conditions change.*

- When there is not enough memory space, a warning message prompts you to delete previously recorded data.

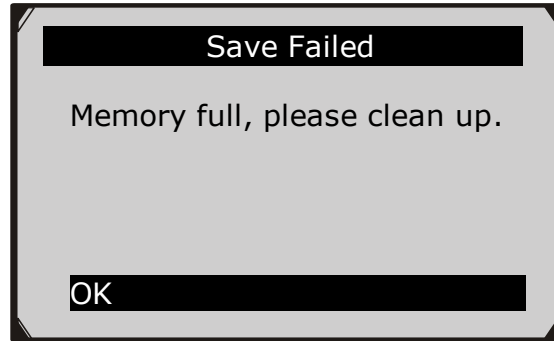


Figure 5.30

- If you wish to delete the data, select **OK** and then go to the **Playback** screen to delete the data.
- Select **Pause** to suspend recording. You could resume the recording process by selecting **Continue**.
- You may review the saved data by the **Playback** function.
- Press the **ESC** button to exit.

6. OBD II Diagnostics

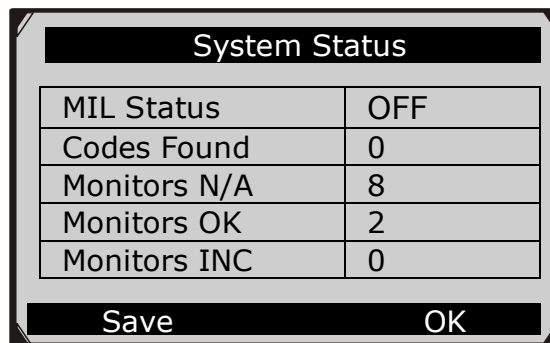
The OBD II Diagnostics function is a fast-access option that allows you to carry out a quick test on the engine system of OBD II vehicles.

When more than one vehicle control module is detected by the scan tool, you will be prompted to select the module where the data may be retrieved. The most often to be selected are the Powertrain Control Module [PCM] and Transmission Control Module [TCM].

CAUTION: Don't connect or disconnect any test equipment with ignition on or engine running.

- 1) Turn the ignition off.
 - 2) Locate the vehicle's 16-pin Data Link Connector (DLC).
 - 3) Plug the scan tool cable connector into the vehicle's DLC and wait for the scan tool to boot up.
 - 4) Turn the ignition on. The engine can be off or be running.
 - 5) Select **OBDII** from the **Main Screen**. (Figure 3.1)
 - 6) Press the **OK** button to wait for the Menu to appear. A sequence of messages displaying the OBDII protocols will be observed on the display until the vehicle protocol is detected.
- ***If the scan tool fails to communicate with the vehicle's ECU (Engine Control Unit) more than three times, a "LINKING ERROR!" message shows up on the display.***
 - ✓ Verify that the ignition is ON.
 - ✓ Check if the scan tool's OBD II connector is securely connected to the vehicle's DLC.
 - ✓ Verify that the vehicle is OBDII compliant.
 - ✓ Turn the ignition off and wait for about 10 seconds. Turn on the ignition again and repeat the procedure from step 5.
 - ***If the "LINKING ERROR" message does not go away, there might be problems in the scan tool to communicate with the vehicle. Contact your local distributor or the manufacturer's customer service department for assistance.***

- 7) View a summary of system status (MIL status, DTC counts, Monitor status) on screen. (Figure 6.1) Press the **ESC** button for **Diagnostic Menu** (Figure 6.3) to come up.



System Status	
MIL Status	OFF
Codes Found	0
Monitors N/A	8
Monitors OK	2
Monitors INC	0

Save OK

Figure 6.1

- If more than one module is detected, you will be prompted to select a module before testing. (Figure 6.2)

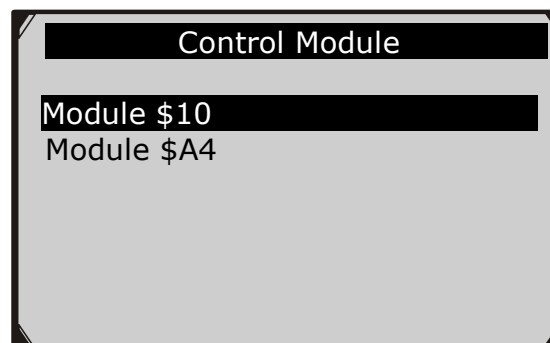


Figure 6.2

- Use the **UP/DOWN** scroll button to select a module and press the **OK** button.

6.1 Read Codes

- ◆ *Reading Codes can be done with key on engine off (KOEO) or with key on engine running (KOER).*
- ◆ *Stored Codes are also known as “hard codes”, which are fault codes, or trouble codes that have been stored in the vehicle computer memory because the faults have reoccurred for more than a specified amount of key cycles. These codes will cause the control module to illuminate the malfunction*

indicator light (MIL) when an emission-related fault occurs.

- ◆ *Pending Codes are also referred to as “maturing codes” or “continuous monitor codes”. They indicate problems that the control module has detected during the current or last driving cycle but are not considered serious yet. Pending Codes will not turn on the malfunction indicator lamp (MIL). If the fault does not occur within a certain number of warm-up cycles, the code will be cleared from memory.*
 - ◆ *Permanent Codes are DTCs that are "confirmed" and are retained in the non-volatile memory of the computer until an appropriate monitor for each DTC has determined that the malfunction is no longer present and is not commanding the MIL on. Permanent DTC shall be stored in non-volatile memory and may not be erased by any diagnostic services or by disconnecting the power supply for ECU.*
- 1) Use the **UP/DOWN** scroll button to select **Read Codes** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)

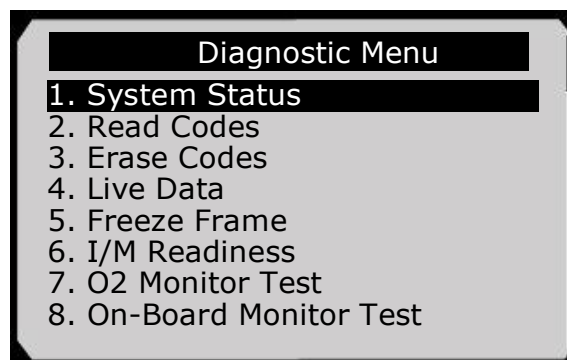


Figure 6.3

- 2) Use the **UP/DOWN** scroll button to select **Stored Codes**, **Pending Codes** or **Permanent Codes** from the **Read Codes** menu and press the **OK** button. (Figure 6.4)

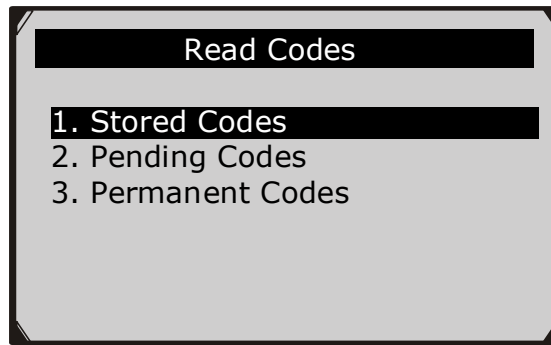


Figure 6.4

- If there is no DTC, the display indicates “**No (pending) codes are stored in the module!**” Wait for a few seconds or press any key to return to the previous screen.
- ✍ **NOTE:** *Permanent Codes function is available for mere vehicles supporting the CAN protocols.*
- 3) View DTCs and the definitions on the screen.
- 4) If more than one DTC is found, use the **UP/DOWN** scroll button to check all the codes.
- If retrieved DTCs contain any manufacturer specific or enhanced codes, a “Manufacturer specific codes are found! Press any key to select vehicle make!” message comes up prompting you to select a proper vehicle manufacturer before viewing DTC definitions. Use the **UP/DOWN** scroll button to select the desired manufacturer and then press the **OK** button to confirm.

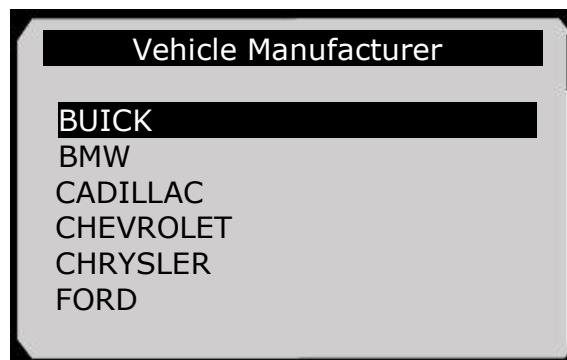


Figure 6.5

- If the selected vehicle manufacturer is not listed, use the **UP/DOWN** scroll button to select **Other** and press the **OK** button.

6.2 Erase Codes

WARNING: Erasing the Diagnostic Trouble Codes may allow the scan tool to delete not only the codes from the vehicle's on-board computer, but also "Freeze Frame" data and manufacturer specific enhanced data. Further, the I/M Readiness Monitor Status for all vehicle monitors is reset to Not Ready or Not Complete status. Do not erase the codes before the system has been checked completely by a technician.

 **NOTE:** Erasing codes does not mean that trouble codes in ECU have been eliminated completely. As long as there is a fault with the vehicle, the trouble code keeps presenting.

◆ **This function is performed with key on engine off (KOEO). Do not start the engine.**

- 1) Use the **UP/DOWN** scroll button to select **Erase Codes** from **Diagnostics Menu** and press the **OK** button. (Figure 5.3)
- 2) A message will come up asking you to check the ignition and engine status. (Figure 6.6)

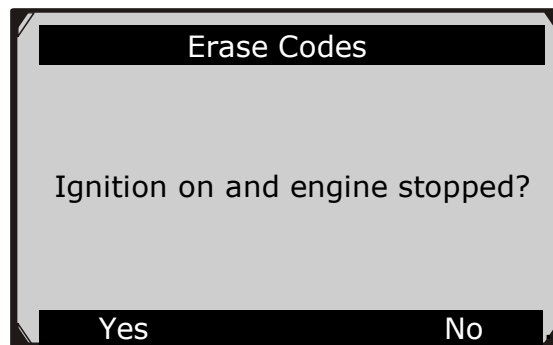


Figure 6.6

- If you do not want to proceed with erasing codes, press the **ESC** button or select **NO** to exit and return to the previous screen.
- If you press the function button corresponding to **Yes** or the **OK** button, a warning message will come up asking for your confirmation. (Figure 6.7)

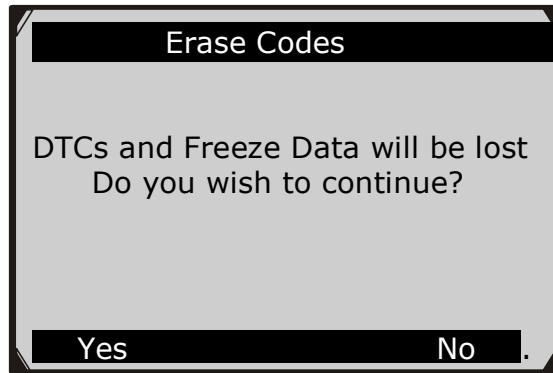


Figure 6.7

3) Press the **OK** button to confirm.

- If the codes are cleared successfully, an “Erase Done!” confirmation message shows on the display.(Figure 6.8)

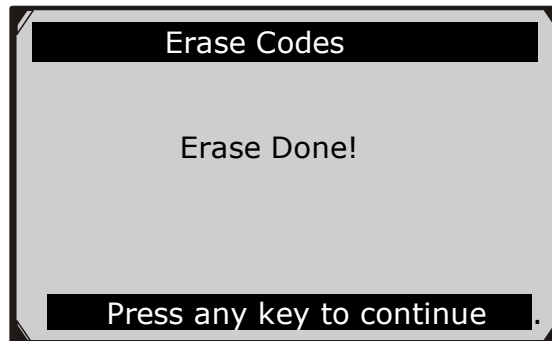


Figure 6.8

- If the codes are not cleared, an “Erase Failure. Turn Key on with Engine off!” message appears. (Figure 6.9)

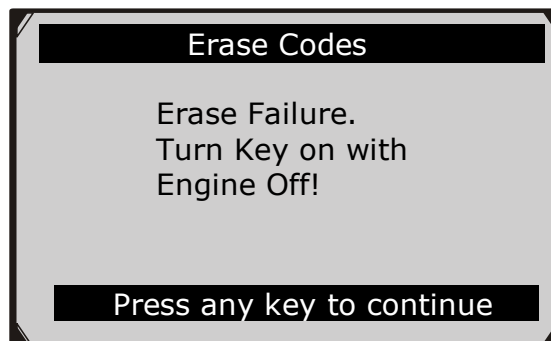


Figure 6.9

4) Press any button to return to **Diagnostic Menu**.

6.3 Live Data

With this function, you can not only read the live data but also record data for later review.

Viewing Data

The **View Data** function allows viewing of live or real time PID data of vehicle's computer module(s).

- 1) To view live data, use the **UP/DOWN** scroll button to select **Live Data** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
- 2) Wait for a few seconds while the scan tool validates the PID MAP. (Figure 6.10)

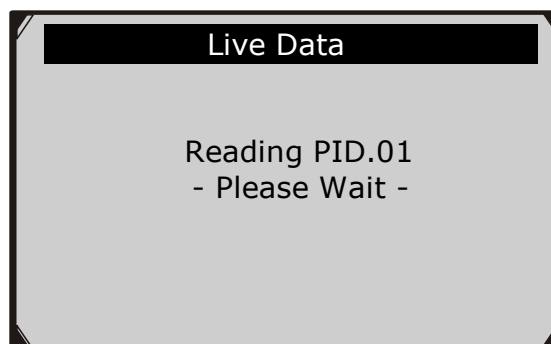


Figure 6.10

A. Viewing A Complete List

- 1) To view a complete set of data, use the **UP/DOWN** scroll button to select **Complete List** from **Live Data** menu and press the **OK** button. (Figure 6.11)

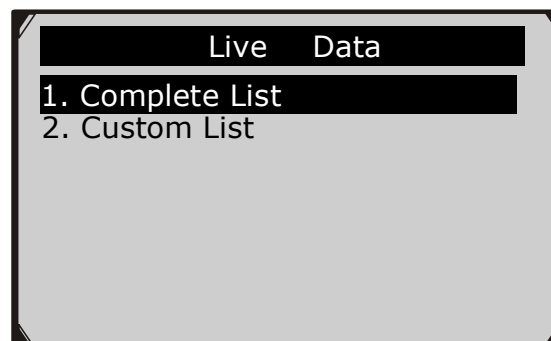


Figure 6.11

- 2) View live PIDs on the screen. Use the **UP/DOWN** scroll button for more PIDs if additional information is available on more than one page. (Figure 6.12)

Complete List		
Numbers of DTCs	0	
Fuel system 1 status	OL	
Fuel system 2 status	--	
Calculated load value	0.0	%
Engine coolant temperature	-40	°C
Pause Graphics Save		

Figure 6.12

- If the “**Graphics**” on the bottom appears when a PID is highlighted, graphic information is available. Select **Graphics** to view the graph. (Figure 6.13) for PID name, current value, maximum and minimum values.

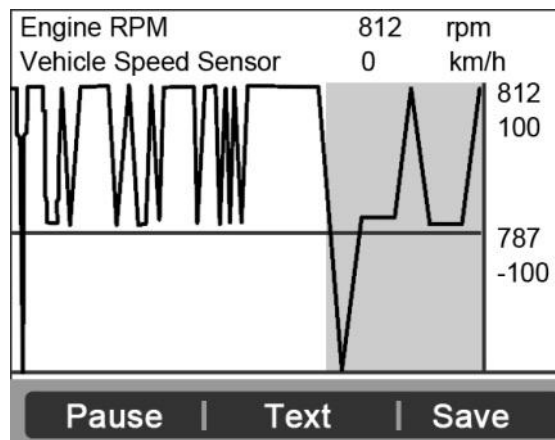


Figure 6.13

- If the “**Merge Graph**” on the bottom appears when a PID is selected to view, merged graph information is available. (Figure 6.14)
- NOTE:** *Merge Graph can be used to compare two related parameters in graphic mode, which is especially convenient in the **Custom List** option where you could select two interacted parameters to merge and see their relationship.*

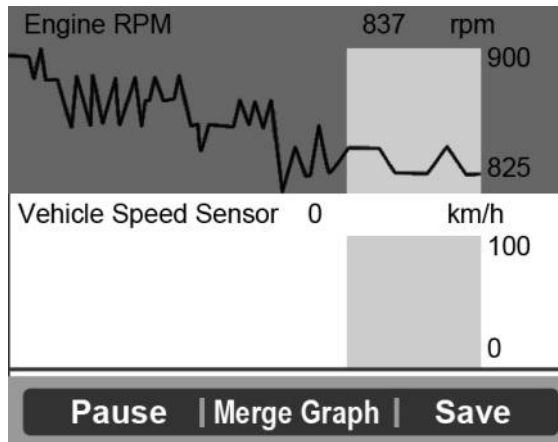


Figure 6.14

- Select **Text** to return to the text viewing of PID data.
- Select **Save** to record the retrieved live data and PID graphs.
- Select **Pause** to suspend viewing. You could resume the viewing process by selecting **Start**.

3) Press the **ESC** button to return to the previous menu.

B. Viewing A Custom List

- 1) To view customized PID data, use the **UP/DOWN** scroll button to select **Custom List** from **Live Data** menu and press the **OK** button. (Figure 6.11)
- 2) Use the **UP/DOWN** scroll button to move up and down to the desired items and choose **Select** to confirm. The selected parameters are marked with solid squares. (Figure 6.15)

Custom List		
☒	Numbers of DTCs	1
☒	Fuel system 1 status	2
☐	Fuel system 2 status	
☐	Calculated load value	
☐	Engine coolant temp	
Select All Clear Clear all		

Figure 6.15

- The number to the right of selected item indicates the sequence of this item.
 - If you want to deselect the item, press the function button corresponding to **Clear**.
 - To select all the items on the screen, press the function button corresponding to **Select All**. To clear all the selected items on the screen, press **Clear All** button.
- 3) Press the **OK** button to view selected PIDs on screen.

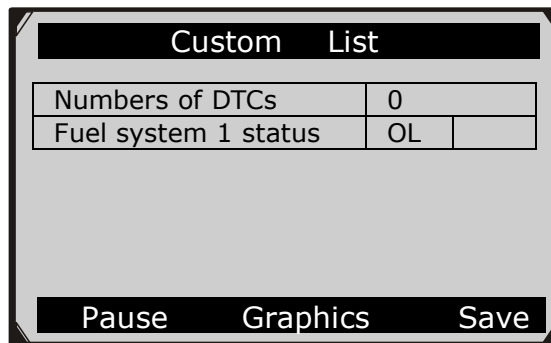


Figure 6.16

- 4) Press the **OK** button to view selected PIDs on screen.

Recording Data

The Record Data function allows recording vehicle modules' Parameter Identification (PID) data to help diagnose intermittent vehicle problems. You could save data files to the TF card and then use the Playback function to view the saved files.

 **NOTE:** The length of time for each frame varies per vehicle. Generally, one frame of data is about 1/4 second or 4 frames per second.

- 1) To record live data, with the live data screen displaying, select **Save** on the bottom. The scan tool will start timing to record retrieved live data and PID graphs.

- If you record live data under text mode, following screen shows:

Complete List		
Numbers of DTCs	0	
Fuel system 1 status	OL	
Fuel system 2 status	--	
Calculated load value	0.0	%
Engine coolant temperature	-40	°C
Pause Graphics Saving 94		

Figure 6.17

- If you record live data under graph mode, following screen shows:

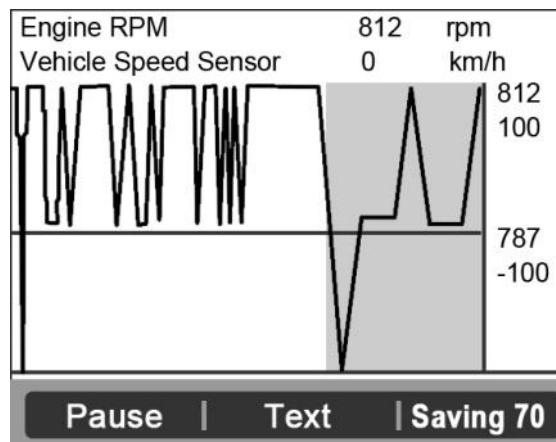


Figure 6.18

NOTE: The scan tool can only playback text data even though the data is saved in graphic mode.

- 2) When there is not enough memory space, a warning message prompting to delete previously recorded data.

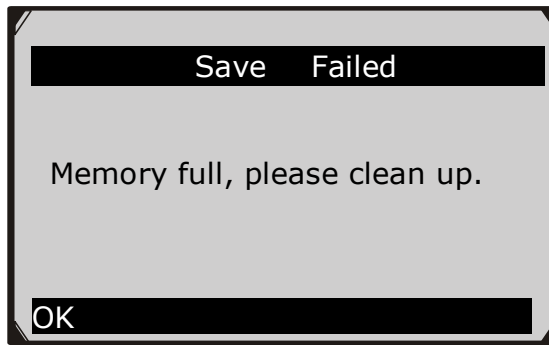


Figure 6.19

- If you wish to delete the data, select **OK** and then go to the **Playback** screen to delete the data.
- 3) Select **Pause** to suspend recording. You could resume the recording process again by selecting **Start**.
- 4) You may review the saved data in Playback function.
- 5) Press the **ESC** button to exit.

6.4 Freeze Frame

Freeze Frame Data allows you to view the vehicle's operating parameters at the moment a DTC (Diagnostic Trouble Code) is detected. For example, the parameters may include engine speed (RPM), engine coolant temperature (ECT), or vehicle speed sensor (VSS) etc. This information will aid the technician by allowing the parameters to be duplicated for diagnostic and repair purposes.

- 1) To view freeze frame data, use the **UP/DOWN** scroll button to select **Freeze Frame** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
- 2) Wait for a few seconds while the scan tool validates the PID MAP.
- 3) If retrieved information covers more than one screen, use the **DOWN** scroll button, as necessary, until all the data are shown up. (Figure 6.20)

Freeze Frame		
DTC that caused required freeze frame data storage	P0193	
Fuel system 1 status	OL	
Fuel system 2 status	--	
Calculated load value	0.0	%
Engine coolant temperature	-40	°C

Save

Figure 6.20

- If there is no available freeze frame data, an advisory message “**No freeze frame data stored!**” shows on the display.
- 4) Select **Save** to record freeze frame. A confirming message “**Save success!**” shows on the display and the scan tool returns to the previous menu.
 - 5) If you don’t want to save the freeze frame data, press the **ESC** button to return to the previous screen.

6.5 Retrieving I/M Readiness Status

The I/M Readiness function is used to check the operations of the Emission System on OBD II compliant vehicles. It is an excellent function to use prior to having a vehicle inspected for compliance with a state emissions program.

CAUTION - *By clearing trouble codes you also clear the readiness status for the individual emission system readiness test. In order to reset the monitors, the vehicle must be driven through a complete drive cycle with no trouble codes in memory. The number of reset times varies depending on the vehicle models.*

Some latest vehicle models may support two types of I/M Readiness tests:

- Since DTCs Cleared** - indicates the status of monitors since DTCs are erased.
- This Drive Cycle** - indicates the status of monitors since the beginning of the current drive cycle.

An I/M Readiness Status result of “NO” does not necessarily indicate that the vehicle being tested fails the state I/M inspection. For some states, one or more such monitors may be allowed to be “Not Ready” to pass the emission inspection.

- **“OK”** -- Indicates that a particular monitor being checked has completed its diagnostic testing.
 - **“INC”** -- Indicates that a particular monitor being checked has not completed its diagnostic testing.
 - **“N/A”** -- The monitor is not supported on the vehicle.
- 1) Use the **UP/DOWN** scroll button to select **I/M Readiness** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
 - 2) Wait for a few seconds while the scan tool validates the PID MAP.
 - 3) If the vehicle supports both types of tests, both are displayed on the screen for selection. (Figure 6.21)

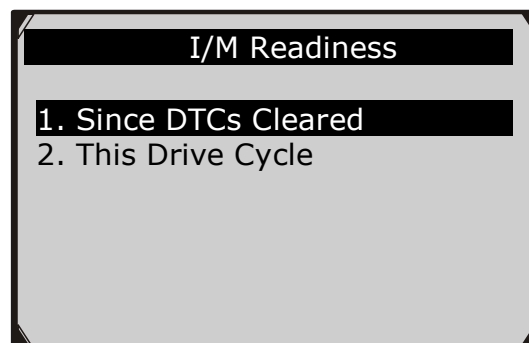


Figure 6.21

- 4) Use the **UP/DOWN** scroll button, as necessary, to view the MIL status (**“ON”** or **“OFF”**) and the following monitors:

For spark ignition engines:

- **MIS** -- Misfire Monitor
- **FUEL** -- Fuel System Monitor
- **CCM** -- Comprehensive Component Monitor
- **EGR** -- EGR System Monitor
- **O2S** -- O2 Sensors Monitor

- **CAT** -- Catalyst Monitor
- **EVAP** -- Evaporative System Monitor
- **HTR** -- O2 Sensor Heater Monitor
- **AIR** -- Secondary Air Monitor
- **HCAT** -- Heated Catalyst Monitor

For compression ignition engines:

- **MIS** -- Misfire Monitor
- **FUEL** -- Fuel System Monitor
- **CCM** -- Comprehensive Component Monitor
- **EGR** -- EGR System Monitor
- **HCCAT** -- NMHC Catalyst Monitor
- **NCAT** -- NOx Aftertreatment Monitor
- **BP** -- Boost Pressure System Monitor
- **EGS** -- Exhaust Gas Sensor Monitor
- **PM** -- PM Filter Monitor

Since DTCs cleared		
MIL Status	OFF	
Misfire Monitoring	N/A	
Fuel system monitoring	OK	
Comprehensive component monitoring	OK	
Catalyst monitoring	N/A	
Heated catalyst monitor	N/A	

Figure 6.22

- 5) If the vehicle supports readiness test of “**This Drive Cycle**”, a screen as followed displays: (Figure 6.23)

This Drive Cycle		
MIL Status	OFF	
Misfire Monitoring	N/A	
Fuel system monitoring	OK	
Comprehensive component monitoring	OK	

Figure 6.23

- 6) Use the **UP/DOWN** scroll button for more PIDs if additional information is available on more than one page. Or use the **LEFT/RIGHT** scroll button to view PIDs on the previous/next page.
- 7) Press the **ESC** button to return to the **Diagnostic Menu**.

6.6 O2 Monitor Test

OBDII regulations set by SAE require that relevant vehicles monitor and test on the oxygen (O2) sensors to identify problems related to fuel efficiency and vehicle emissions. These tests are not on-demand tests and they are done automatically when engine operating conditions are within specified limits. These test results are saved in the on-board computer's memory.

The O2 Monitor Test function allows retrieval and viewing of O2 sensor monitor test results for the most recently performed tests from the vehicle's on-board computer.

The O2 Monitor Test function is not supported by vehicles which communicate over a controller area network (CAN). For O2 Monitor Test results of CAN-equipped vehicles, see the chapter "On-Board Mon. Test".

- 1) Use the **UP/DOWN** scroll button to select **O2 Monitor Test** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
- 2) Wait for a few seconds while the scan tool validates the PID MAP.

- 3) Use the **UP/DOWN** scroll button to select O2 sensor from **O2 Monitor Test** menu and press the **OK** button. (Figure 6.24)

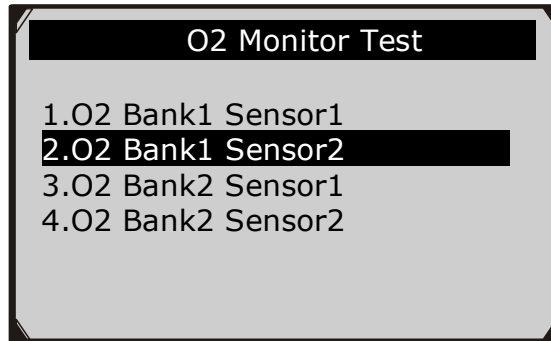


Figure 6.24

- If the vehicle does not support the mode, an advisory message will be displayed on the screen. (Figure 6.25)

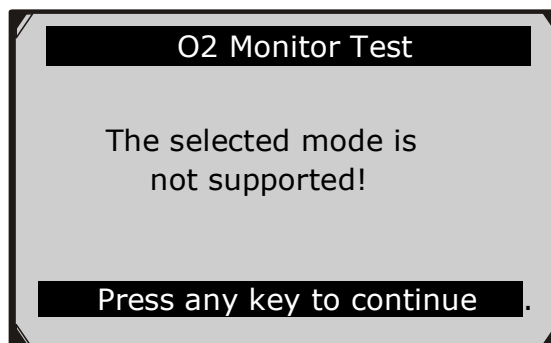


Figure 6.25

- 4) View test results of the selected O2 sensor. (Figure 6.26)

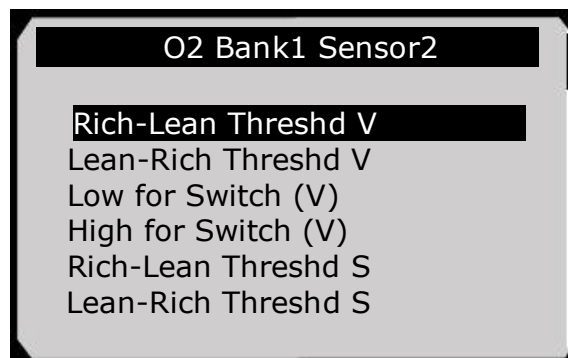


Figure 6.26

- 5) Use the **UP/DOWN** scroll button to view more screens of data if additional information is available on more than one page.
- 6) Press the **ESC** button to return to the previous menu.

6.7 On-Board Monitor Test

The **On-Board Monitor Test** is useful after service or after a vehicle's control module memory is erased. The **On-Board Monitor Test** for non-CAN-equipped vehicles retrieves and displays test results for emission-related powertrain components and systems that are not continuously monitored. The **On-Board Monitor Test** for CAN-equipped vehicles retrieves and displays test results for emission-related powertrain components and systems that are and are not continuously monitored. Tests and components IDs are determined by the vehicle manufacturer.

In this test, there are typically a minimum value, a maximum value, and a current value for each monitor. By comparing the current value with the minimum and maximum values, the scan tool will determine if it is OK.

- 1) Use the **UP/DOWN** scroll button to select **On-Board Monitor Test** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
- 2) Wait for a few seconds while the scan tool validates the PID MAP.
- 3) The scan tool will prompt you to select the vehicle make. (If you have selected the vehicle before, the **Vehicle Manufacturer** screen would not appear again)

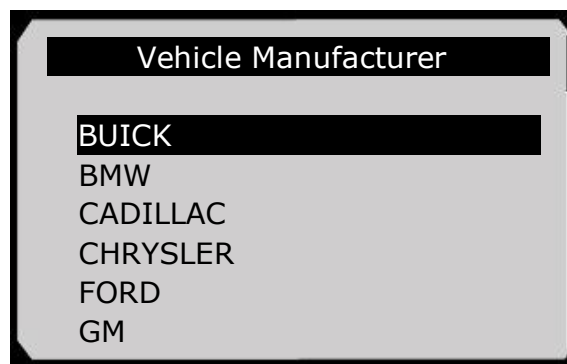


Figure 6.27

- 4) After selecting the vehicle manufacturer, the scan tool displays the On-Board Monitors tests for specific monitoring systems.
- 5) From the **On-Board Monitor Test** menu, use the **UP/DOWN** scroll button to select a test to view and then press the **OK** button. (Figure 6.28)

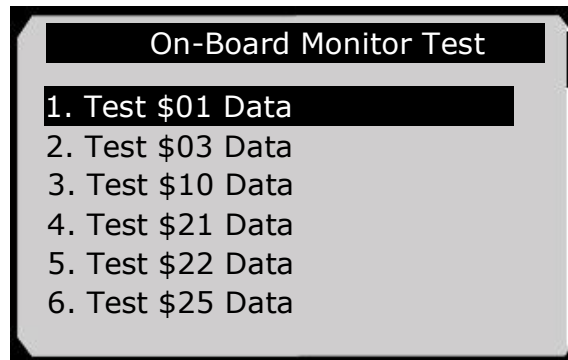


Figure 6.28

- If the vehicle does not support the mode, an advisory message will be displayed on the screen. (Figure 6.29)

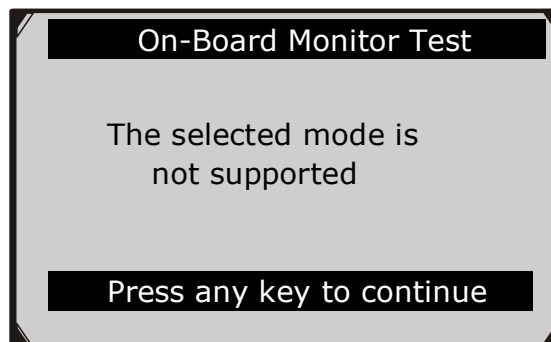


Figure 6.29

- For CAN-equipped vehicles, test selections are as below:

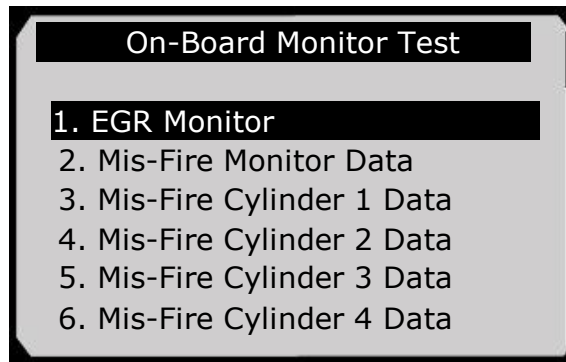


Figure 6.30

- 6) Use the **UP/DOWN** scroll button to select the desired monitor from the **On-Board Monitor Test** menu and press the **OK** button.
- 7) View test data on the screen.

The image shows a handheld device screen with a table titled "Test \$01 Data". The table has three columns: a label column, a value column, and an empty column for additional data.

Test \$01 Data		
ID	11	
Module	\$10	
Test Value	0400	
Min Limit	0200	
Max Limit	----	
Status	OK	

Figure 6.31

- For CAN-equipped vehicles, test results displayed can be as below:

The image shows a handheld device screen with a table titled "Flow Test". The table has three columns: a label column, a value column, and a unit column.

Flow Test		
ID	11	
Module	\$10	
Test Value	0.10	%
Min Limit	0.00	%
Max Limit	95.0	%
Status	OK	

Figure 6.32

- 8) Press the **ESC** button to return to the previous menus.

6.8 Component Test

The **Component Test** function allows initiating a leak test for the vehicle's EVAP system. The scan tool itself does not perform the leak test, but commands the vehicle's on-board computer to start the test. Different vehicle manufacturers might have different criteria and methods for stopping the test once it has been started. Before starting the **Component Test**, refer to the vehicle service manual for instructions to stop the test.

- 1) Use the **UP/DOWN** scroll button to select **Component Test** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
- 2) Wait for the scan tool to display the **Component Test** menu.

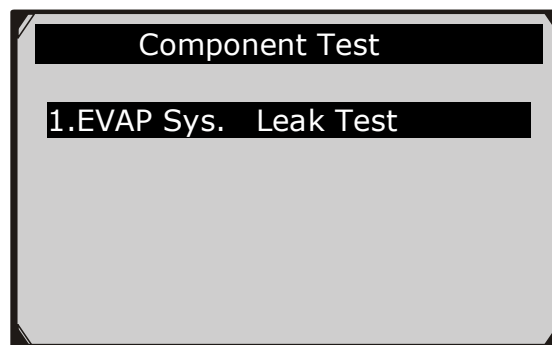


Figure 6.33

- 3) If the test has been initiated by the vehicle, a confirmation message will be displayed on the screen.

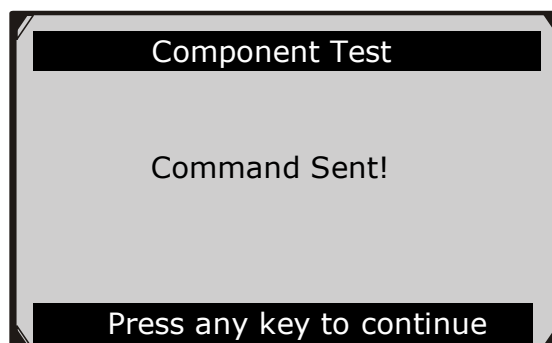


Figure 6.34

- Some vehicles do not allow scan tools to control vehicle systems or components. If the vehicle does not support the EVAP Leak Test, an advisory message is displayed on the screen.

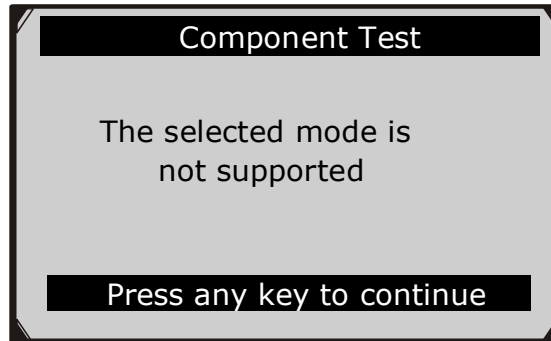


Figure 6.35

- 4) Wait for a few seconds or press any key to return to the previous screen.

6.9 Viewing Vehicle Information

The **Vehicle Info.** function enables retrieval of **Vehicle Identification No. (VIN)**, **Calibration ID Nos. (CINs)**, **Calibration Verification Nos. (CVNs)** and **In-use Performance Tracking** on 2000 and newer vehicles that support Mode 9.

- 1) Use **UP/DOWN** scroll button to select **Vehicle Info.** from the **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
- 2) An advisory message comes up to remind you. Wait for a few seconds or press any key to continue.

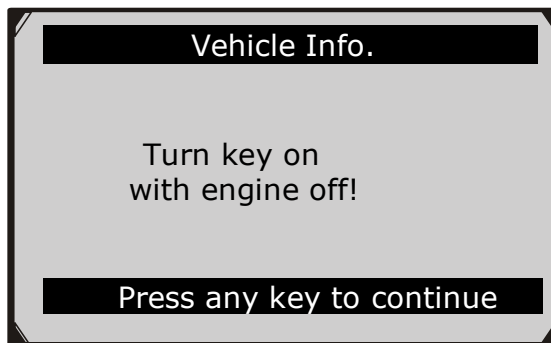


Figure 6.36

3) Wait for the scan tool to display the **Vehicle Info.** menu.

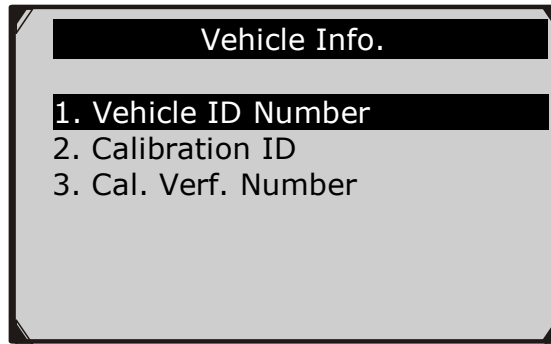


Figure 6.37

- If the vehicle does not support this mode, a warning message displays on the screen saying that the mode is not supported.
- 4) From the **Vehicle Info.** menu, use the **UP/DOWN** scroll button to select an available item to view and then press the **OK** button.
- 5) View retrieved vehicle information on the screen.

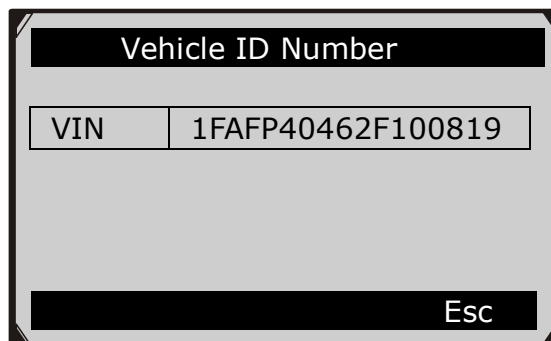


Figure 6.38

6) Press the **ESC** button to return the previous menu

6.10 Modules Present

The Modules Present function allows viewing of the module IDs and communication protocols for OBDII modules in the vehicle.

- 1) Use the **UP/DOWN** scroll button to select **Modules Present** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)

- 2) View modules present with their IDs and communication protocols.

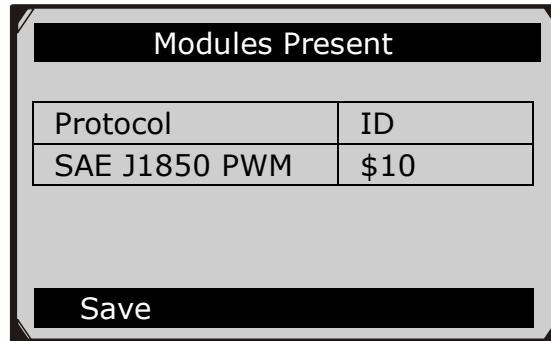


Figure 6.39

- 3) Select **Save** to save the modules data and return to the previous menu. Or press the **ESC** button to exit.

6.11 DTC Lookup

The DTC Lookup function allows you to search for definitions of DTC stored in the built-in DTC library.

- 1) Use the **UP/DOWN** scroll button to select **DTC Lookup** from **Diagnostic Menu** and press the **OK** button. (Figure 6.3)
- 2) Wait for the scan tool to display the **DTC Lookup** screen.

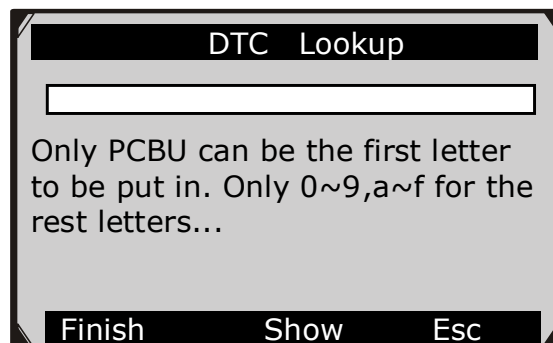


Figure 6.40

- 3) Select **Show** and a soft keyboard will pop up. Use the **LEFT/RIGHT** button and **UP/DOWN** button to move to the desired character. Then press the **OK** button to confirm.

- 4) After entering the DTC code, select **Finish** and the scan tool will display this code's definition on screen.

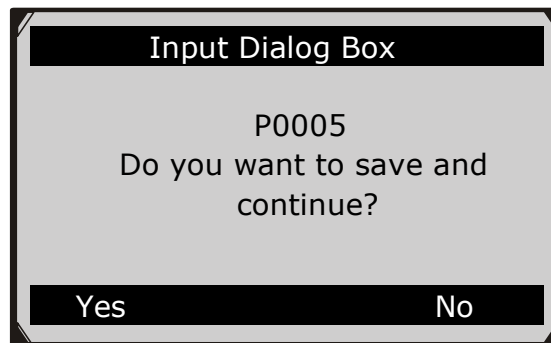


Figure 6.41

- 5) Press the function button corresponding to **Yes** or the **OK** button to proceed. The scan tool will display the DTC definition as below.

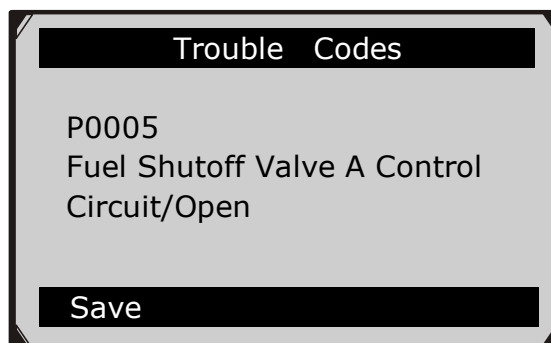


Figure 6.42

- Use the **LEFT/RIGHT** scroll button to view the previous/next DTC.
 - Select **Save** to record the code definition.
 - For manufacturer specific codes, you need to select a vehicle make on an additional screen to look for DTC definitions.
 - If the definition could not be found (SAE or Manufacturer Specific), the scan tool displays “**Please refer to vehicle service manual!**”
- 6) Press the function button corresponding to **No** or the **ESC** button to return to the previous menu.

7. Oil Reset

7.1. General Information

The Engine Oil Life System calculates when to change the engine oil and filter based on vehicle use. An oil change is required whenever indicated by the display or according to the recommended maintenance schedule. Whenever the oil is changed, reset the system so it can calculate when the next oil change is required. If a situation occurs where the oil is changed prior to a service indicator being turned on, also reset the system.

 **IMPORTANT:** Always reset the engine oil life to 100% after every oil change.

 **NOTE:** All required work must be carried out before the service indicators are reset. Failure to do so may result in incorrect service values and cause DTCs to be stored by the relevant control module.

 **NOTE:** For some vehicles, the scan tool can perform added functionality to reset additional service lights (maintenance cycle, service interval). Take BMW as an example, its service reset function includes engine oil, spark plugs, front/rear brakes, coolant, particle filter, brake fluid, microfilter, vehicle inspection, exhaust emission inspection and vehicle check.

All software screens shown in this manual are examples, actual test screens may vary for each vehicle being tested. Observe the menu titles and onscreen instructions to make correct option selections.

7.2. Reset Operation

1. Turn the ignition on but do not start the engine.
2. Turn on the scan tool and wait for the **Main Screen** to appear.
3. Select the **OilReset** icon on **Main Screen** (Figure 3.1) and wait for the vehicle manufacturer screen. Choose the correct vehicle make.

There are two ways to perform the reset service.

A. Manual Reset

Almost all Asian vehicles and most American and European vehicles can be reset manually by technicians.

 **NOTE:** *In this manner, the scan tool will not communicate with the vehicle being tested.*

To finish the procedures, please follow the steps below (Take **Ford** as an example):

- 1) From the vehicle make screen, select **Ford** and press the **OK** button.

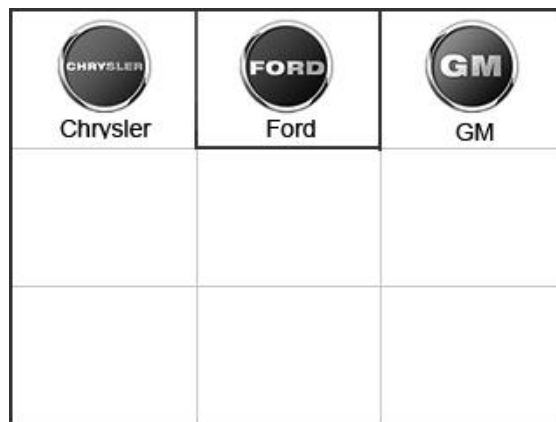


Figure 7.1

- 2) Step by step, select the right options for your vehicle according to each screen that appears.

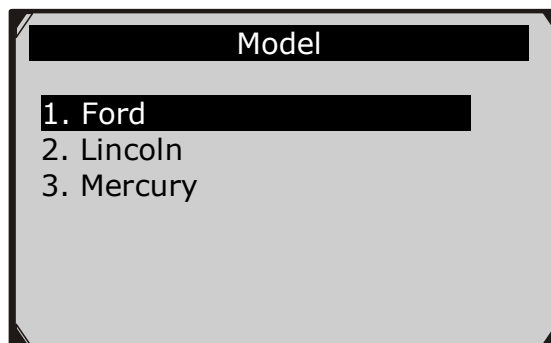


Figure 7.2

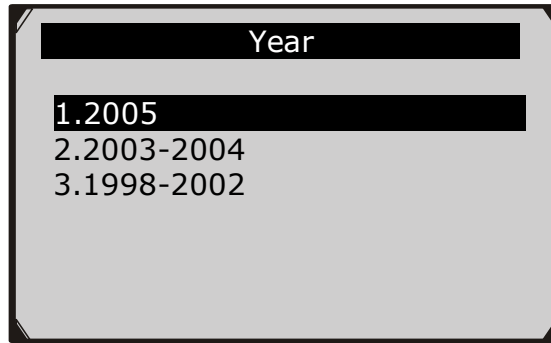


Figure 7.3

- 3) After entering the vehicle information, the scan tool displays manual reset messages as below.

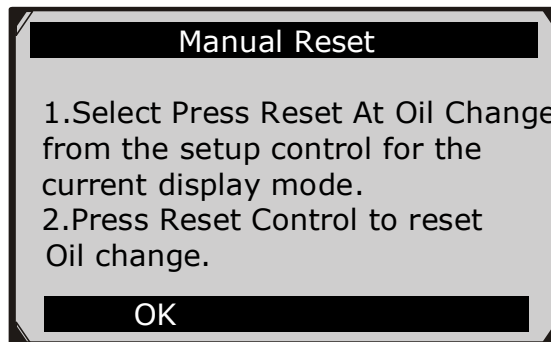


Figure 7.4

- 4) Follow the instructions to reset the service manually.
- 5) Press the **ESC** button to exit.

B. Auto Reset

Most American and European vehicles can be reset automatically by the scan tool.

 **NOTE:** *In this manner, the scan tool will communicate with the vehicle being tested. If there is a linking error, please refer to 3.8 product troubleshooting.*

To finish the procedure, please follow the steps below (Take **Peugeot** as an example):

- 1) From the vehicle make screen, select **Peugeot** and press the **OK** button.



Figure 7.5

- 2) Step by step, select the right options for your vehicle according to each screen that appears.

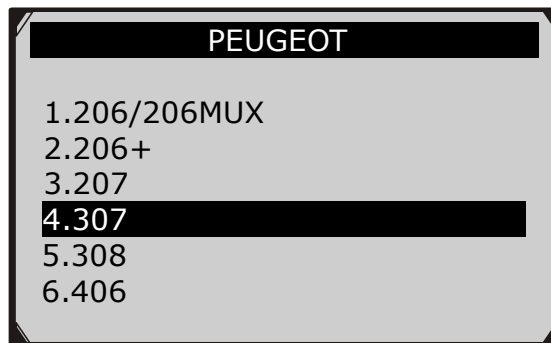


Figure 7.6

- 3) After entering the vehicle information, the oil reset screen will display as below.

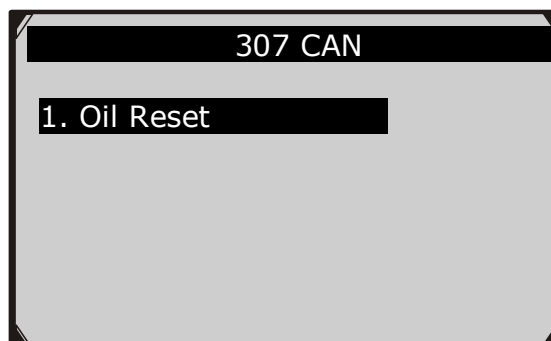


Figure 7.7

- In the **Oil Reset** menu, select the **Resetting to zero of the service mileage** function and press the **OK** button.

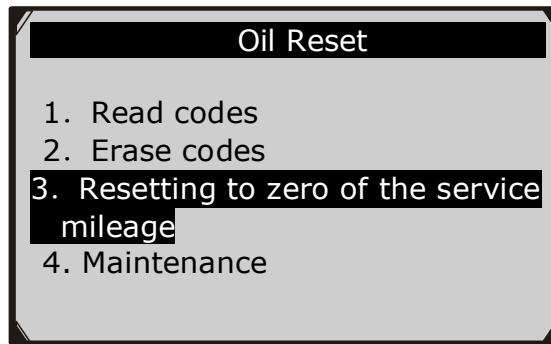


Figure 7.8

- Read the information on the screen carefully and press the **OK** button to continue. The tool will reset the oil service to zero automatically.

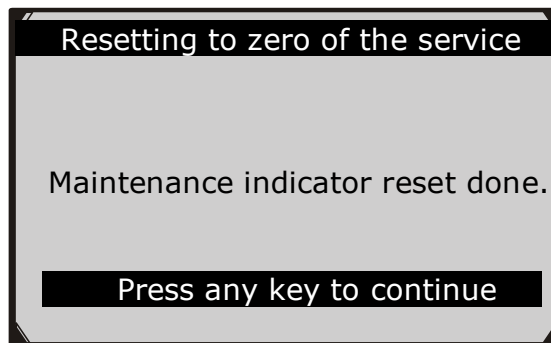


Figure 7.9

- ✓ In the **Oil Reset** menu, select the **Maintenance** function and press the **OK** button. The screen will display the preset maintenance information of the vehicle. The information items vary with different vehicles.

Maintenance	
Period before service (month(s))	6
First maintenance threshold	China
Maintenance limit(km)	7400
Finish	Edit ESC

Figure 7.10

- ✓ For the **First maintenance threshold**, you have two choices. Select the correct option and press the **OK** button to save the change.



Figure 7.11

- ✓ For the **Period before service** or **Maintenance limit**, press the **Edit** key on the bottom to pop up a soft keyboard to facilitate your input.

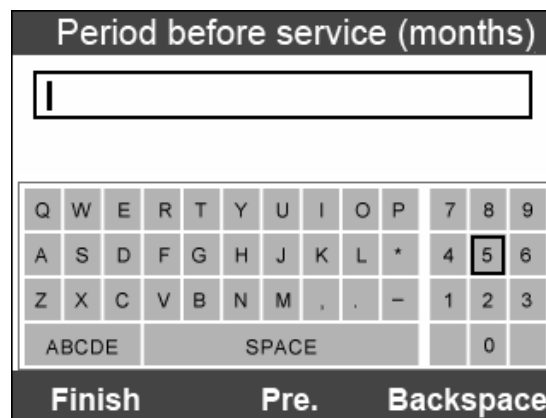


Figure 7.12

The three keyboard function keys work as below.

Finish --- When you finish the input, select this key to confirm your input and exit.

Pre. --- Use this key to move a space to the left.

Backspace --- Use this key to erase the previous digit or character when typing.

- ❏ **NOTE:** The data you input must be in the reasonable range, which is defined by the preset values in ECU. If you enter a data out of range, the tool will display a warning message.

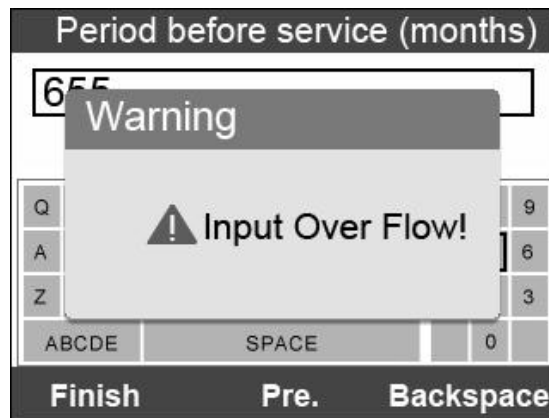


Figure 7.13

- ✓ When you have finished your configuration, select the **Finish** key on the bottom of the screen. Then the tool will begin the oil reset service.

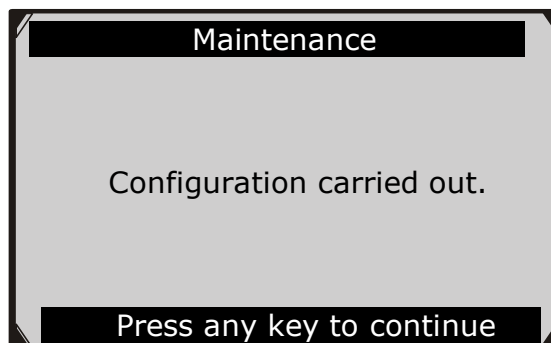


Figure 7.14

8. EPB

This Electric Parking Brake (EPB) function has a multitude of uses to maintain the electronic braking system safely and effectively. The applications include deactivating/activating the brake control system, assisting with brake fluid control, brake diagnostics, opening and closing brake pads, setting brakes after disc or pad replacement and also reading and clearing EPB/SBC trouble codes. It is also capable of retrieving Fault Codes information from the ECU.

8.1. EPB Safety

It may be dangerous to perform electric parking brake (EPB) system maintenance, therefore, please keep the following rules in mind before you begin the service work.

- Ensure that you are fully familiar with the braking system and its operation before commencing any work.
- The EPB control system may be required to be deactivated before you carry out any maintenance/diagnostic work on the brake system. This can be done from the tool menu.
- Only carry out maintenance work when the vehicle is stationary and on a level ground.
- Ensure that the EPB control system is reactivated after the maintenance work has been completed.

 ***NOTE: Autel accepts no responsibility for any accident or injury arising from the maintenance of the Electric Parking Brake system.***

8.2. EPB Maintenance

- 1) Turn the ignition off.
- 2) Release the parking brake and make sure the car is properly blocked.

- 3) Connect the tool to the vehicle and turn it on.
- 4) Turn the ignition on.
- 5) Select the **EPB** icon on **Main Screen** (Figure 3.1) and wait for the vehicle manufacturer screen. Choose the correct vehicle make. (Take **Peugeot** as an example)



Figure 8.1

- 6) After you have selected the vehicle make, the electric parking brake system screen will display as below.

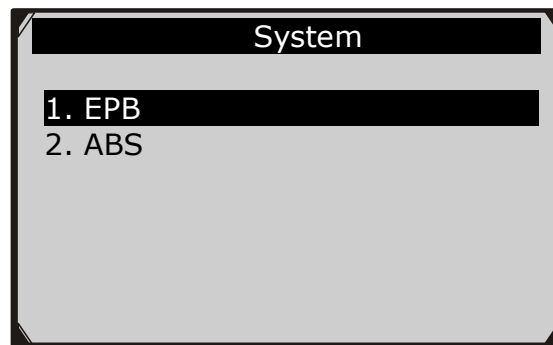


Figure 8.2

- 7) In the electric parking brake system screen, use the **UP/DOWN** button to select **EPB** to enter the EPB system. In the EPB diagnostic function, the tool can read codes, erase codes, record live data, read ECU information, perform active test and special function. For the functions already being described before, please refer to Chapter 5. **OBDII Diagnostics** for details.

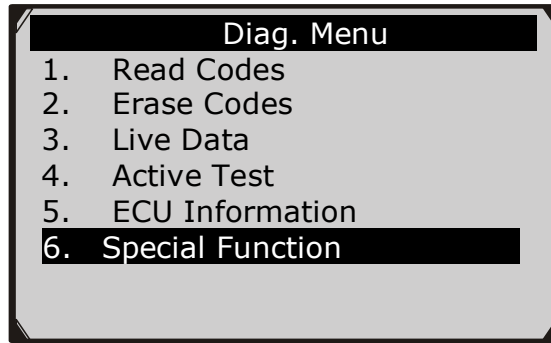


Figure 8.3

Special Function

- 1) In **Diag. Menu** (Figure 8.3), use the **UP/DOWN** button to select **Special Function** to perform the EPB test, which includes **Brake cable replacement** and **Electric parking brake replacement**.

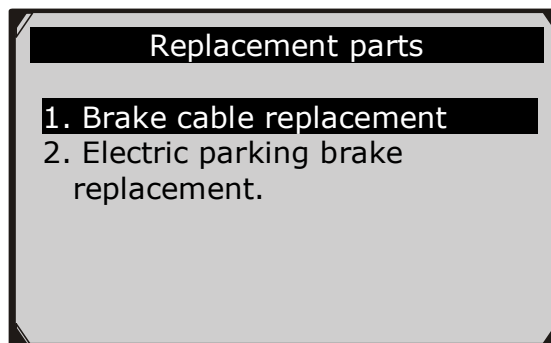


Figure 8.4

- 2) In the **Replacement parts** screen, use the **UP/DOWN** button to select **Brake cable replacement**. The screen shows as below.

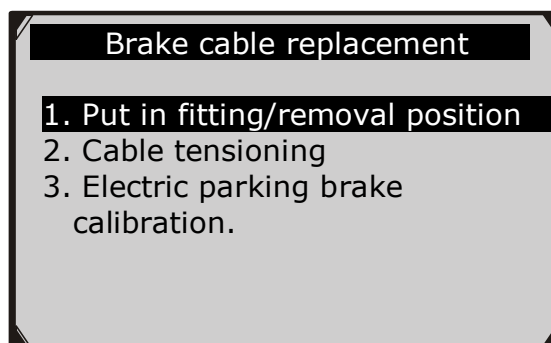


Figure 8.5

In the **Brake cable replacement** screen, the tool can perform three functions.

A. Put in fitting or removal position

This function enables you to fit in or remove the brake cable safely and easily. It will take a few seconds to execute this command.

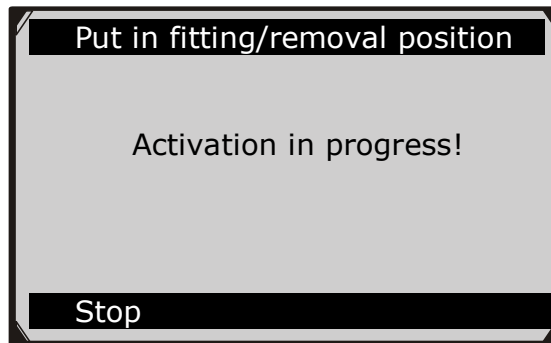


Figure 8.6

When the job is done successfully, the tool will display a message to confirm.

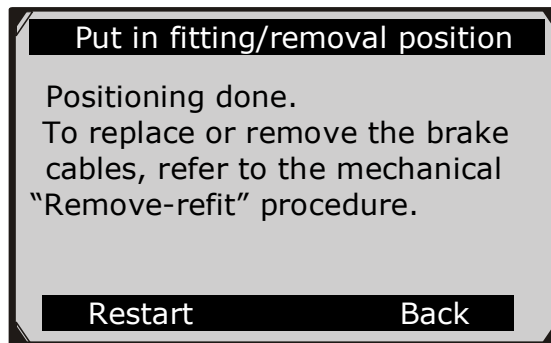


Figure 8.7

If the job fails to finish, the tool will display a message to remind you of the problem. After you exit the diagnostic program, please repair the problem immediately.

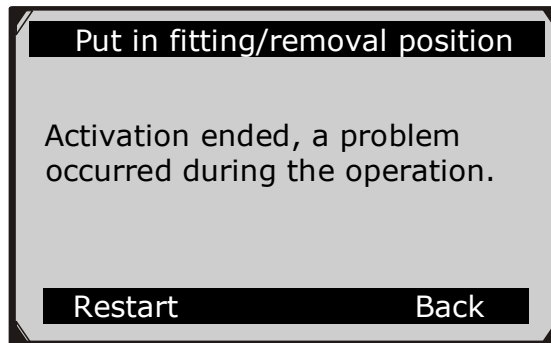


Figure 8.8

B. Cable tensioning

Once the brake cable is fitted in, you would use this function to adjust its tension. It will take a few seconds to execute this command.

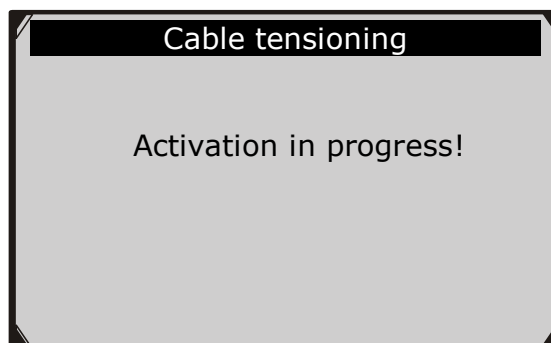


Figure 8.9

When the job is done successfully, the tool will display a message to confirm.

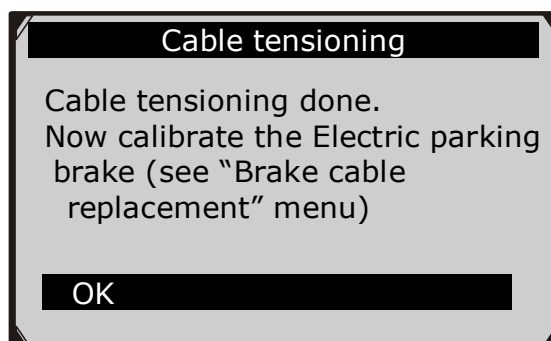


Figure 8.10

If the job fails to finish, the tool will display a message to remind you of the problem. After you exit the diagnostic program, please repair the problem immediately.

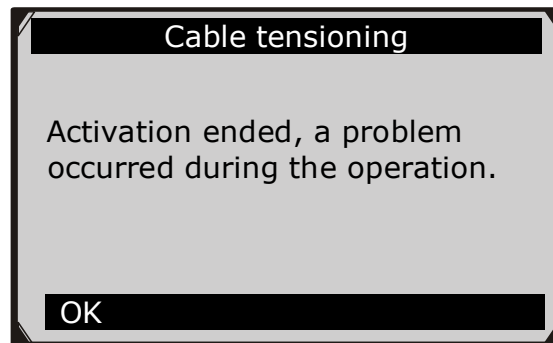


Figure 8.11

C. Electric parking brake calibration

When both functions above have completed successfully, you still need to calibrate the electric parking brake system.

This function is to check if the EPB is working correctly, which should be performed after work has been completed on the EPB or the vehicle braking system. It will remove any air gap from the brake pads and check the EPB pressure.

After you select this function, the tool will automatically run the following procedure.

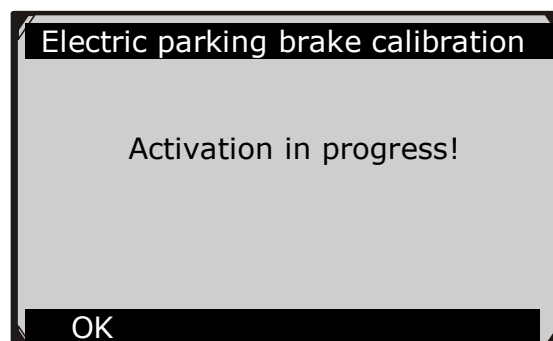


Figure 8.12

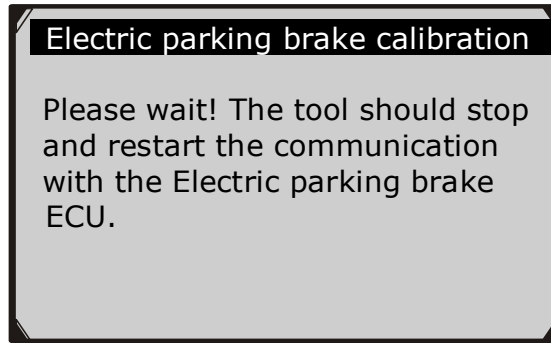


Figure 8.13

When the job is done successfully, the tool will display a message to confirm.

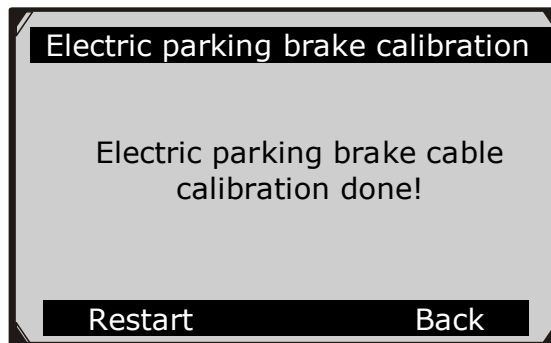


Figure 8.14

If the job fails to finish, the tool will display a message to remind you of the problem. After you exit the diagnostic program, please repair the problem immediately.

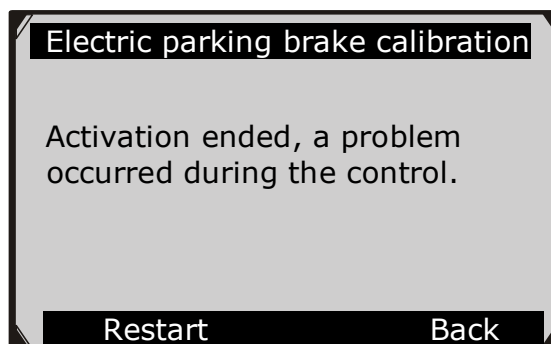


Figure 8.15

- 3) In the **Replacement parts** screen (Figure 8.4), use the **UP/DOWN** button to select **Electric parking brake replacement**. The screen shows as below.

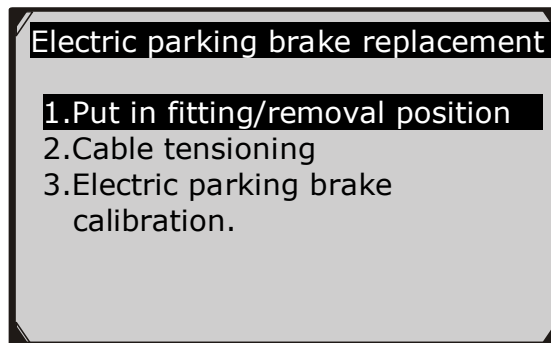


Figure 8.16

In the **Electric parking brake replacement** screen, the tool can also perform the three functions described before in the **Brake cable replacement** menu.

Active Test

During an active test, the tool is used for outputting commands to the ECU in order to drive the actuators. This test determines the integrity of the system or parts by monitoring the operation of the actuators or by reading the EPB ECU data.

To carry out an active test, please follow the steps below.

1. Follow the instructions above to display the **Diag. menu** screen.(Figure 8.3)
2. Select **Active Test** and a list of possible tests appears. The test items in the list vary with different vehicles.

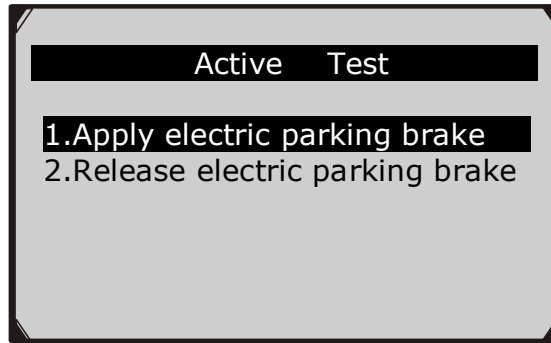


Figure 8.17

3. Select a test and the tool will display an information screen as **“The 'apply electric parking brake' operation is used to test the operation of the brake cables statically. If you start the actuator test, you must wait for the component to stop operating before starting another actuator test. Press 'OK' to apply the electric parking brake or press 'Cancel' to go back to the list of possible operations.”** Select **OK** to continue or **Cancel** to exit.
4. The tool may display information during and after the test. The information varies by the vehicle.

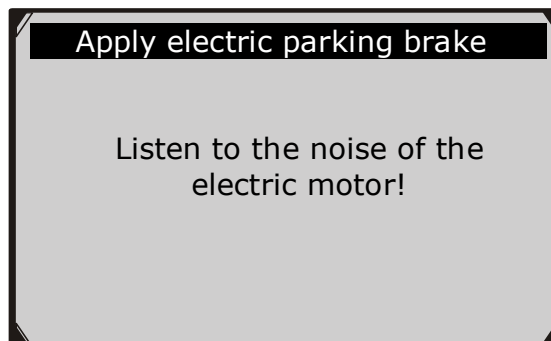


Figure 8.18

5. When the test is finished, there may be three results displaying on the screen.
 - The test is finished successfully.
 - The test is stopped by the user.

- The test has not finished yet.

In the first condition, the tool will display an information screen as **“The operation was performed correctly. Put the vehicle on a vehicle lift and check that the rear wheels are locked. Check that the 'Electric parking brake on' message is displayed on the control panel and that the LED illuminates on the control panel.”**

In the second condition, the tool will display an information screen as **“Operation of the actuator test was stopped by the user. Press ‘Cancel’ to go back to the list of possible operations.”**

In the third condition, the tool will display an information screen as **“The actuator test did not finish operating. Please perform the following check: Read the faults to resolve any possible faults relating to the electric motor or to the cables.”**

❗ IMPORTANT: *Make sure that the components to be tested are not physically damaged and are well assembled.*

⚠ WARNING: *Please stop repairing the components to be tested before the test starts and keep a certain distance during the test.*

8.3. ABS Maintenance

In the **System** menu (Figure 8.2), use the **UP/DOWN** button to select **ABS** to do ABS maintenance. The scan tool displays as below:

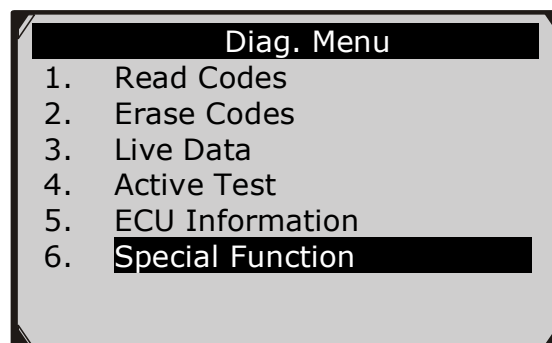


Figure 8.19

In the ABS diagnostic function, the tool can read codes, erase codes, record live data, read ECU information, perform active test special

function. For the functions already described before, please refer to Chapter 5. *OBDII Diagnostics* for details.

Special Function

- 1) In the **Diag. Menu** (Figure 8.19), use the **UP/DOWN** button to select **Special Function** to do the ABS test. The scan tool displays as below.

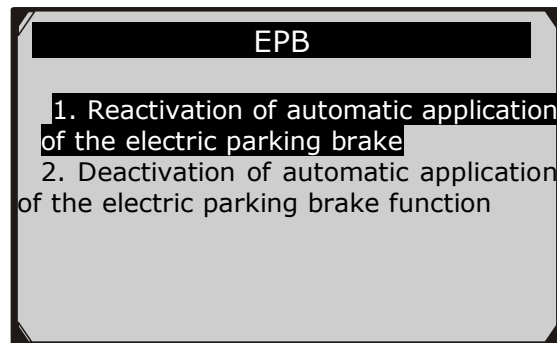


Figure 8.20

- 2) In the **EPB** menu, select the desired function and press **OK** button. If the operation is finished successfully, the scan tool will display a confirmation message. Otherwise, it will display a message to remind you of the problem. After you exit the diagnostic program, please repair the problem immediately.

Active Test

- 1) In the **Diag. Menu** (Figure 8.19), use the **UP/DOWN** button to select **Active Test** to perform the actuator test. The scan tool displays as below.

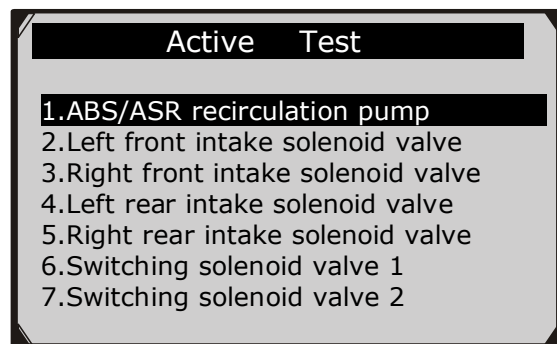


Figure 8.21

- 2) In the **Active Test** menu, use the **UP/DOWN** button to select the desired actuator to begin the test. If the selected actuator works correctly, the tool will display a confirmation message as below (Figure 8.22). Otherwise, it will display a message to remind you of the problem. After you exit the diagnostic program, please repair the problem immediately.

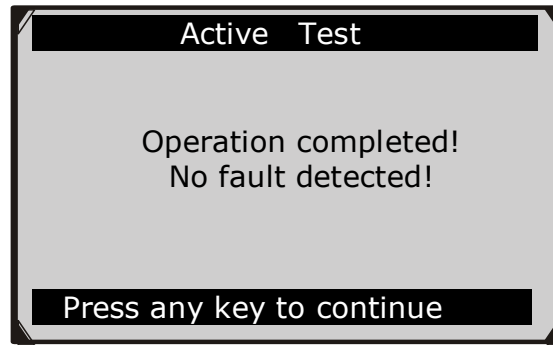


Figure 8.22

9. Print Data

The **Print Data** function allows printing out diagnostic data recorded by the scan tool or customized test reports by connecting the scan tool to a PC or laptop with the USB cable supplied.

- *To print out retrieved data, you need the following tools:*

MaxiDiag MD805 scan tool

A PC or laptop with USB ports

A USB cable

- 1) Install **Autel PC Suit** through the included CD, or download the applications from our website: www.autel.com or our distributors' website.
- 2) Connect the scan tool to computer with the USB cable supplied.
- 3) Run **Autel Printer** software on computer.
- 4) Select **Playback** function in **Main Screen** of the scan tool. In **Scan** screen, use the **UP/DOWN** scroll button to select the files you want to print. Wait for the reviewing window to display (Figure 4.2), and then select **Print** function on the bottom. The selected file will be uploaded to your computer.
- 5) The **Autel Printer** screen will show as below.

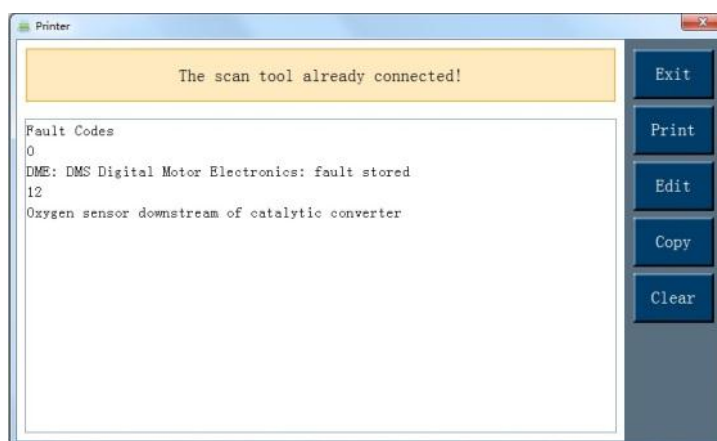


Figure 9.1

6) The selected data will be displayed in the textbox of **Autel Printer**. By selecting the function buttons on the right, you could execute the following operations:

- **Print** – Send all data in the textbox to the computer-connected printer for printing.
- **Edit** – Once clicked, the software will automatically open a NOTEPAD window displaying all recorded data.
- **Copy** – Copy all data in the textbox to the clipboard.
- **Clear** – Delete all data in the textbox.
- **Exit** – Quit the operation.

You can also edit, copy, and delete the data in the textbox of **Autel Printer** window directly.

 **NOTE:** *The scan tool can only print text data even if the data is saved in graphic mode.*

10. Software Update

This function allows you to update the scan tool software through a computer.

10.1. Register the Tool

You can update the scan tool **ONLY** after you have registered the tool on our website: www.autel.com. Then you can download software, update online, retrieve information and get warranty service.

 **NOTE:** *Prior to registration, please confirm your network is available.*

1. Visit the website <http://pro.autel.com>.
2. If you already have an account, use your ID and password to log in.
3. If you are a new member to Autel and do not have an account, click on the **Create Autel ID** button on the left side.
4. Enter the required information in the input fields, read through Autel's Terms and Conditions and tick on **Agree**, and then click on **Create Autel ID** at the bottom to continue.
5. The online system will automatically send a confirmation email to the registered email address. Validate your account by clicking the link provided in the mail. A product registration screen opens.
6. Select the product model of your device, enter the product serial number and password on the Product Registration screen, and click on **Submit** to complete the registration procedure.

 **NOTE:** *Please use the About function to find out the Product Serial No. and Register Password. For details, please refer to Section 3.6 System Setup.*

10.2. Update Procedure

Autel updates the software on a regular basis. Read the following procedures before update.

1. Install **Autel PC Suit** through the included CD.
2. Make sure that your computer is connected to the Internet.
3. Load the TF card of the scan tool to your PC.
4. Run **Autel Update** software on your computer. Wait for the Log In window to pop up. (Figure 10.1)



Figure 10.1

5. Enter your Autel ID and password and wait for the Update window to display. If you forget your password, click on "**Forget Password?**" to link to the specific page and find your password back.
6. Select the product type and serial number if necessary, and then click on **OK** to continue.
7. In the **Update** window, select the items you want to install. Usually, you should install all available updates.

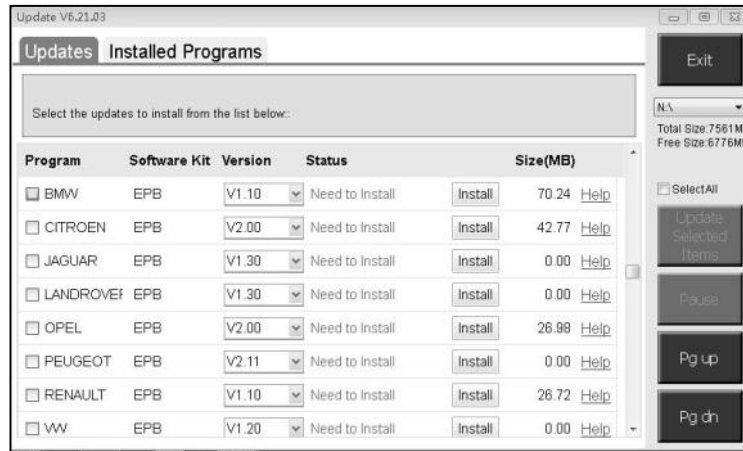


Figure 10.2

There are two ways to update programs:

Batch Updating

- Select the items that you would like to update by clicking on the check boxes next to those items. Then click on the **Update Selected Items** button on the right side of the screen.
- Or, click on the **Select All** checkbox on the right side of the screen and all updatable items will be selected automatically. Then click on the **Update Selected Items** button on the right side of the screen.
- Check the updating process by observing the upper left progress bar “**Downloads**” and upper right progress bar “**Installs**”. You may also find progress information in the Status column of updated items.
- Click on the **Pause** button on the right side of the screen to suspend all progresses anytime, and the state of those suspended items would change to “Stopped”.
- To resume updating process, you may need to select those suspended items again, and then click on the **Update Selected Items** button. The progress will resume from the break point.
- When the downloading is completed, the downloaded programs will be installed automatically. The new version will replace the old one.

Single Updating

- Find out the desired item and click on the **Install** button in the same line.
- Check the updating process through the upper left progress bar “**Downloads**” and upper right progress bar “**Installs**”. You may also find progress information in the Status column of updated items.
- Click on the **Pause** button in the line to suspend this progress anytime, and the state of this item would change to “Stopped”.
- To resume the updating process, click on the **Install** button in the line again. The progress will resume from the break point.
- When the downloading is completed, the downloaded program will be installed automatically. The new version will replace the old one.

10.3. View or Delete Programs

To view the list of installed programs or to delete an installed program, please follow the steps below:

- Click on the **Installed Programs** tag entry and a list of installed programs will be displayed.
- Select the program(s) that you would like to delete.
 - ✧ **Batch delete:** Select the programs that you would like to delete by clicking on the check boxes on the left of those items. Then click on the **Delete** button on the right side of the screen.
 - ✧ **Single delete:** Click on the **Uninstall** button in the line of your would-be-deleted program.
- A window asking “**Are you sure to delete the software?**” will pop up for your confirmation.

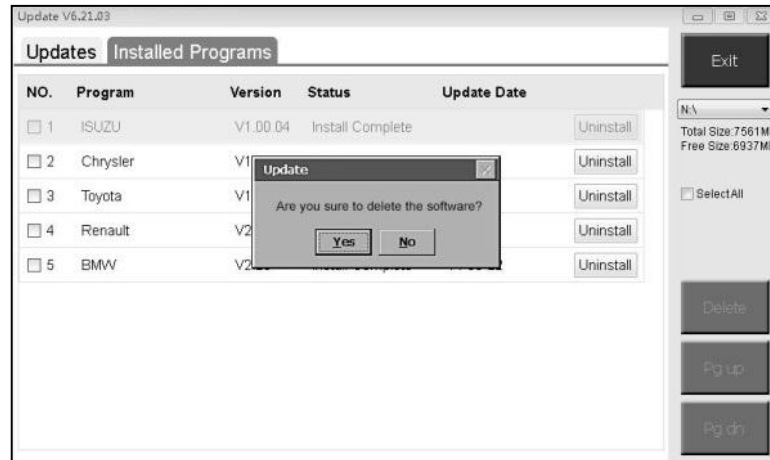


Figure 10.3

- Click **Yes** to delete the selected program(s), or **No** to cancel the action.
- The deleted program will be automatically added to the end of the program list in the Update page in case you would like to install again.

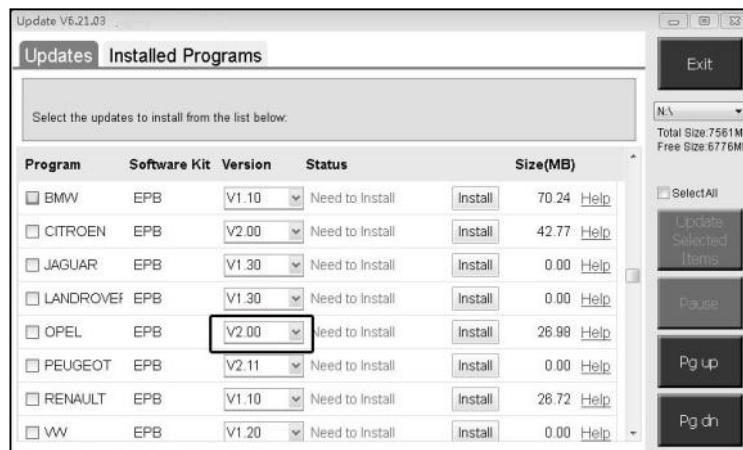


Figure 10.4

If you want to retrieve the older version for some programs, you may need to delete the latest version first before installing the older version again. Choose the older version from the pull-down menu of the program version.

11. Warranty and Service

11.1. Limited One Year Warranty

Autel warrants to its customers that this product will be free from all defects in materials and workmanship for a period of one (1) year from the date of the original purchase, subject to the following terms and conditions:

- 1) The sole responsibility of Autel under the Warranty is limited to either the repair or, at the option of Autel, replacement of the scan tool at no charge with Proof of Purchase. The sales receipt may be used for this purpose.
- 2) This warranty does not apply to damages caused by improper use, accident, flood, lightning, or if the product was altered or repaired by anyone other than the Manufacturer's Service Center.
- 3) Autel shall not be liable for any incidental or consequential damages arising from the use, misuse, or mounting of the scan tool. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.
- 4) All information in this manual is based on the latest information available at the time of publication and no warranty can be made for its accuracy or completeness. Autel reserves the right to make changes at any time without notice.

11.2. Service Procedures

If you have any questions, please contact your local store, distributor or visit our website at www.autel.com.

If it becomes necessary to return the scan tool for repair, contact your local distributor for more information.