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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 at a minimum 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.
- Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create 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

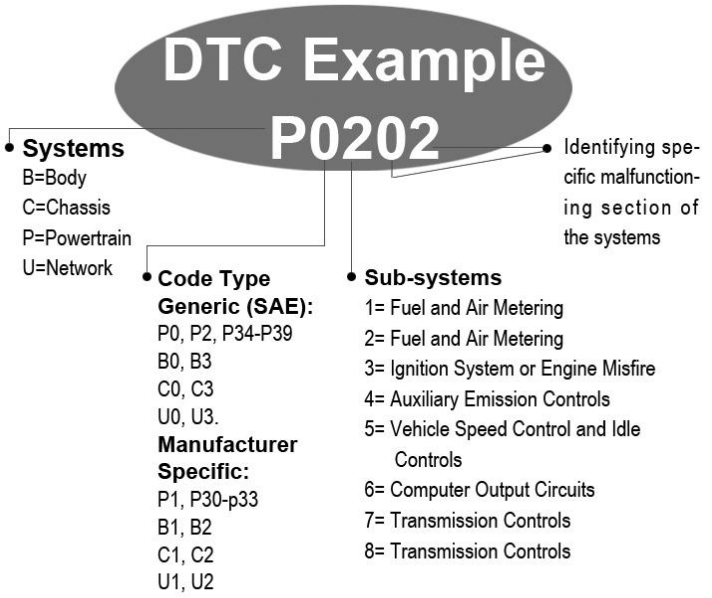
The first generation of On-Board Diagnostics (called OBD I) was developed by the California Air Resources Board (ARB) and implemented in 1988 to monitor some of the emission control components on vehicles. As technology evolved and the desire to improve the On-Board Diagnostic system increased, a new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

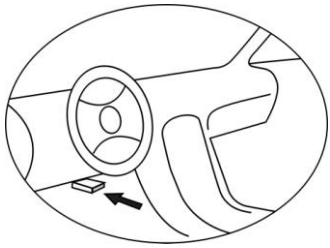
2.2 Diagnostic Trouble Codes (DTCs)

OBD II Diagnostic Trouble Codes are codes that are 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:



2.3 Location of the Data Link Connector (DLC)

The DLC (Data Link Connector or Diagnostic Link Connector) is the standardized 16-cavity connector where diagnostic scan tools interface with the vehicle's on-board computer. The DLC is usually located 12 inches from the center of the instrument panel (dash), under or around the driver's side for most vehicles. If Data Link Connector is not located under dashboard, a label should be there telling location. For some Asian and European vehicles, the DLC is located behind the ashtray and the ashtray must be removed to access the connector. If the DLC cannot be found, refer to the vehicle's service manual for the location.



2.4 OBD II Readiness Monitors

An important part of a vehicle's OBD II system is the Readiness Monitors, which are indicators used to find out if all of the emissions components have been evaluated by the OBD II system. They are running periodic tests on specific systems and components to ensure that they are performing within allowable limits.

Currently, there are eleven OBD II Readiness Monitors (or I/M Monitors) defined by the U.S. Environmental Protection Agency (EPA). Not all monitors are supported by all vehicles and the exact number of monitors in any vehicle depends on the motor vehicle manufacturer's emissions control strategy.

Continuous Monitors -- Some of the vehicle components or systems are continuously tested by the vehicle's OBD II system, while others are tested only under specific vehicle operating conditions. The continuously monitored components listed below are always ready:

1）Misfire

2）Fuel System

3）Comprehensive Components (CCM)

Once the vehicle is running, the OBD II system is continuously checking the above components, monitoring key engine sensors, watching for engine misfire, and monitoring fuel demands.

Non-Continuous Monitors -- Unlike the continuous monitors, many emissions and engine system components require the vehicle to be operated under specific conditions before the monitor is ready. These

monitors are termed non-continuous monitors. For different ignition type engines, the available monitors are different too.

The following monitors are to be used for spark ignition engines only:

1) **EGR System**
2) **O2 Sensors**
3) **Catalyst**
4) **Evaporative System**
5) **O2 Sensor Heater**
6) **Secondary air**
7) **Heated Catalyst**

The following monitors are to be used for diesel engines only:

1) **EGR System**
2) **NMHC Catalyst**
3) **NOx aftertreatment**
4) **Boost pressure system**
5) **Exhaust gas sensor**
6) **PM filter**

2.5 OBD II Monitor Readiness Status

OBD II systems must indicate whether or not the vehicle's PCM's monitor system has completed testing on each component. Components that have been tested will be reported as "Ready", or "Complete", meaning they have been tested by the OBD II system. The purpose of recording readiness status is to allow inspectors to determine if the vehicle's OBD II system has tested all the components and/or systems.

The power-train control module (PCM) sets a monitor to "Ready" or "Complete" after an appropriate drive cycle has been performed. The drive cycle that enables a monitor and sets readiness codes to "Ready" varies for each individual monitor. Once a monitor is set as "Ready" or "Complete", it will remain in this state. A number of factors,

including erasing of diagnostic trouble codes (DTCs) with a scan tool or a disconnected battery, can result in Readiness Monitors being set to "Not Ready". Since the three continuous monitors are constantly evaluating, they will be reported as "Ready" all of the time. If testing of a particular supported non-continuous monitor has not been completed, the monitor status will be reported as "Not Complete" or "Not Ready."

In order for the OBD monitor system to become ready, the vehicle should be driven under a variety of normal operating conditions. These operating conditions may include a mix of highway driving and stop and go, city type driving, and at least one overnight-off period. For specific information on getting your vehicle's OBD monitor system ready, please consult your vehicle owner's manual.

2.6 OBD II Definitions

Power-train Control Module (PCM) -- OBD II terminology for the on-board computer that controls engine and drive train.

Malfunction Indicator Light (MIL) -- Malfunction Indicator Light (Service Engine Soon, Check Engine) is a term used for the light on the instrument panel. It is to alert the driver and/or the repair technician that there is a problem with one or more of vehicle's systems and may cause emissions to exceed federal standards. If the MIL illuminates with a steady light, it indicates that a problem has been detected and the vehicle should be serviced as soon as possible. Under certain conditions, the dashboard light will blink or flash. This indicates a severe problem and flashing is intended to discourage vehicle operation. The vehicle onboard diagnostic system can not turn the MIL off until necessary repairs are completed or the condition no longer exists.

DTC -- Diagnostic Trouble Codes (DTC) that identify which section of the emission control system has malfunctioned.

Enabling Criteria -- Also termed Enabling Conditions. They are the vehicle-specific events or conditions that must occur within the engine before the various monitors will set, or run. Some monitors require the vehicle to follow a prescribed "drive cycle" routine as part

of the enabling criteria. Drive cycles vary among vehicles and for each monitor in any particular vehicle.

OBD II Drive Cycle -- A specific mode of vehicle operation that provides conditions required to set all the readiness monitors applicable to the vehicle to the "ready" condition. The purpose of completing an OBD II drive cycle is to force the vehicle to run its onboard diagnostics. Some form of a drive cycle needs to be performed after DTCs have been erased from the PCM's memory or after the battery has been disconnected. Running through a vehicle's complete drive cycle will "set" the readiness monitors so that future faults can be detected. Drive cycles vary depending on the vehicle and the monitor that needs to be reset. For vehicle specific drive cycle, consult the vehicle's Owner's Manual.

Freeze Frame Data -- When an emissions related fault occurs, the OBD II system not only sets a code but also records a snapshot of the vehicle operating parameters to help in identifying the problem. This set of values is referred to as Freeze Frame Data and may include important engine parameters such as engine RPM, vehicle speed, air flow, engine load, fuel pressure, fuel trim value, engine coolant temperature, ignition timing advance, or closed loop status.

3. Using the Scan Tool

3.1 Tool Description

1) **CONNECTOR** -- Connects the scan tool to the vehicle's Data Link Connector (DLC).
2) **SD Card Slot –** Holds the System SD card.
3) **LCD DISPLAY** -- Indicates test results. TFT color display (320 x 240 dpi).

4) **FUNCTION BUTTON** – Corresponds with "buttons" on screen for executing commands.

5)  **ESC BUTTON** -- Cancels a selection (or action) from a menu or returns to the previous screen.

6)  **HELP BUTTON** -- Provides help information and Code Breaker function.

7)  **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 value of selected character.

8)  **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 next screens for additional data. When looking up DTC, it is used to change value of selected character.

9)  **LEFT SCROLL BUTTON** -- When look up DTC definitions, moves to previous character and views additional information on previous screens if 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.

10)  **RIGHT SCROLL BUTTON** -- When look up DTC definitions, moves to next character and view additional information on next screens if 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.

11)  **OK BUTTON** -- Confirms a selection (or action) from a menu.

12) **External DC Power Port** – Connects the 12 volt power adapter to power the tool when disconnected from the vehicle.

13) **USB CONNECTOR** -- Connects the scan tool to the PC for printing.

3.2 Specifications

1) Display: TFT color display (320 x 240 dpi)
2) Operating Temperature: 0 to 60°C (32 to 140 F°)
3) Storage Temperature: -20 to 70°C (-4 to 158 F°)
4) External Power: 12.0 to 18.0 V power provided via vehicle battery or adapter.
5) Dimensions:

Length	Width	Height
212 mm (8.35”)	110.5 mm (4.35”)	37.5 mm (1.48”)

6) Weight: 0.28kg(without wire) 0.484kg(with wire)

3.3 Accessories Included

1) **User’s Manual** -- Instructions on tool operations.
2) **CD** -- Includes user’s manual, MaxiLink update software, and etc.
3) **OBD2 cable** -- Provides power to tool and communicates between tool and vehicle.
4) **USB cable** -- Used to upgrade the scan tool, and to print retrieved data.
5) **SD card** -- Contains the scan tool’s operation software and applications.
6) **Carry case** -- A nylon case to store the scan tool when not in use.

3.4 Keyboard

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

3.5 Power

Before using the scan tool, you must provide power to the scan tool. There are two methods for providing power to the scan tool.

- **DC** external power adapter.

- Cable connection to vehicle.

During vehicle testing, power for the scan tool is usually provided through the vehicle cable connection. When the scan tool is not connected to a vehicle, the scan tool can be powered with an AC/DC external power adapter.

While the scan tool is powered via the vehicle 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 vehicle.

- ***A plastic DLC cover may be found for some vehicles and you need to remove it before plugging the OBD2 cable.***

3) Plug the cable to 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 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 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 do adjustments and settings could make your diagnosis more conveniently and easily. (Figure 3.2)

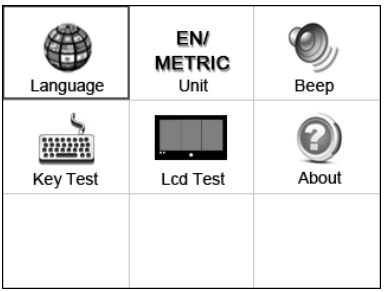


Figure 3.2

Language Setup

- ***English is the default language.***

1) From **System 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 previous screen. (Figure 3.3)

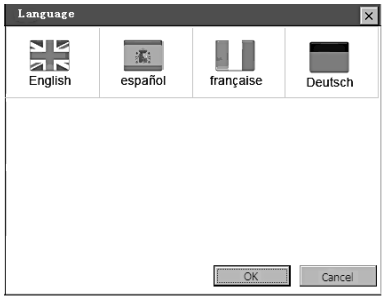


Figure 3.3

Unit of Measure

- ***Metric is the default measurement unit.***

1) From **System 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)

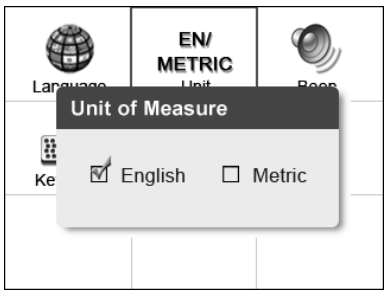


Figure 3.4

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

Beep Set

- ***The default setting is Beep On.***

1) From **System 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)

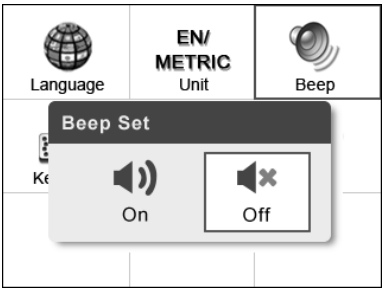


Figure 3.5

3) Press the **OK** button to save your selection and return to 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 **System Setup** screen, use the **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select **Key Tes**t, and press the **OK** button.

2) Press any key to start test. When you press a key, the edge around corresponding key on the screen should turn to red. Otherwise, the key is not functioning properly.

3) Double press **ESC** to return to previous menu.

LCD Test

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

1) From **System 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 red, green, blue, black and white 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 **System 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 screen. Press the **ESC** button to exit without saving.

3.7 Vehicle Coverage

On the basis of all OBD II compliant vehicles, including those equipped with universal protocol -- Control Area Network (CAN), MOT Pro 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 manufactures. In

addition to adding new vehicle coverage through 2010/2011, we've also worked backwards to include non-OBDII vehicles, which can be diagnosed by setting up with optional OBDI adaptors.

3.8 Product Troubleshooting

Vehicle Linking Error

A communication error occurs if the scan tool fails to communicate with the vehicle's ECU (Engine 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 the ignition back to on 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 (Engine 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 vehicle battery to make sure it is still good with at least 8.0 volts.

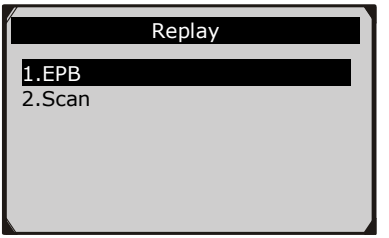
4. Playback Data

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

NOTE: *The amount of files that can be saved depends on the space available in the SD 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) To review the data saved in the scan function, select **SCAN** in the **Replay** menu. To review the data in the saved EPB function, select **EPB** in the reply menu. Then press **OK** to continue.

3) Use the **UP/DOWN** scroll button to select the desired item from **Scan** screen, and press the **OK** button.

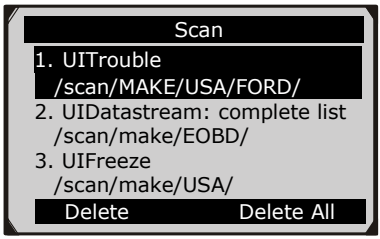


Figure 4.1

- If no data from previously tested vehicle is recorded, a message "**No data available!**" shows on the screen.

4) Review selected data on screen. (Figure 4.2)

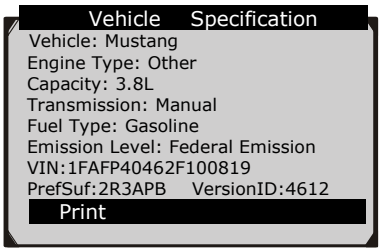


Figure 4.2

4.2 Deleting Data

By selecting **Delete** on the **Scan** screen, you are allowed to 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

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

For more details, please refer to chapter ***7. Print Data***.

5. Diagnostics

NOTE: *The screens shown below in this chapter are examples. The screens actually appear vary by vehicle.*

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 vehicle being tested.

Vehicle information manual acquisition

Follow these steps to enter the vehicle information and begin diagnostics. (Taking Ford as an example)

1) Turn on the scan tool and wait for the **Main Screen** to appear.
2) Select **Scan** icon in the **Main Screen** (Figure 3.1) and wait for the vehicle manufacturer screen. Choose the correct vehicle make.

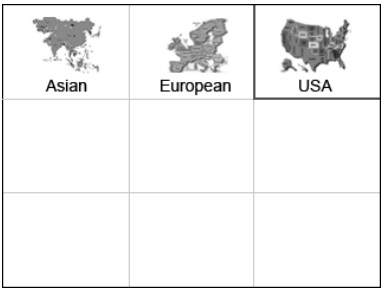


Figure 5.1

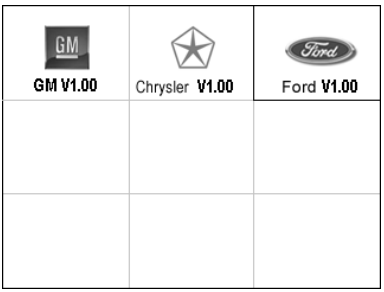


Figure 5.2

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

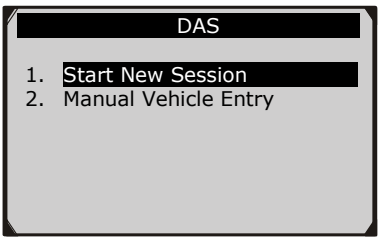


Figure 5.3

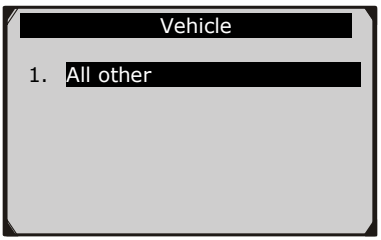


Figure 5.4

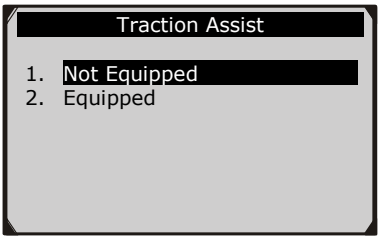


Figure 5.5

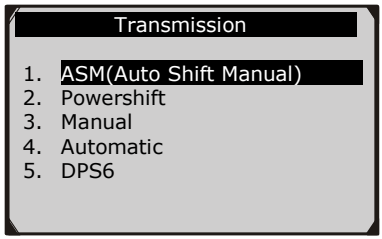


Figure 5.6

4) Do this until the complete vehicle information is entered. Then the scan tool will ask your confirmation.

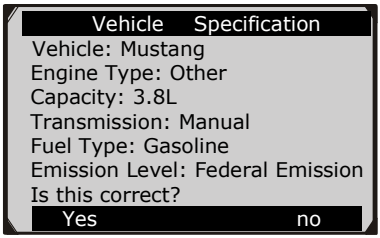


Figure 5.7

VIN code automatic acquisition

Some vehicles could identify the VIN code intelligently, saving customer's time to input complex information. (Taking Renault as an example)

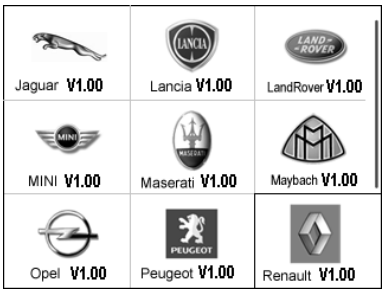


Figure 5.8

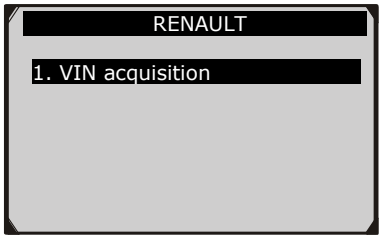


Figure 5.9

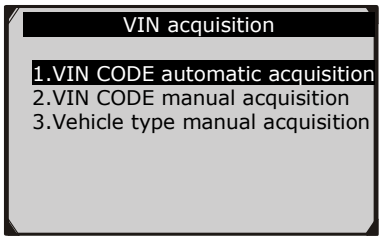


Figure 5.10

In this mode, the scan tool will communicate with the vehicle and read off the VIN code automatically, then it will ask for your confirmation if the VIN code is correct. If the VIN code is incorrect, it will turn to manual mode to input VIN code. (***see VIN code manual acquisition***)

VIN code manual acquisition

For some vehicles, both selecting the options manually and acquiring the VIN are available for you to enter the vehicle information. (Taking Benz as an example)

Figure 5.11

In the Benz Cars menu, choose the item "**2. Select by entering VIN**" and you can enter the VIN code directly.

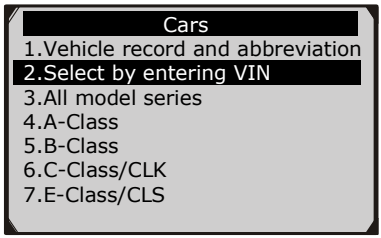


Figure 5.12

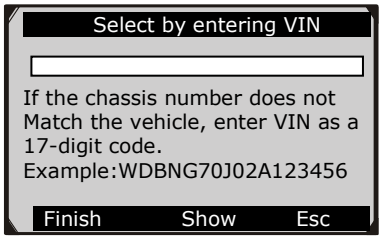


Figure 5.13

When you choose to enter VIN directly, a pop-up soft keyboard is used to input VIN code. (Figure 5.14)

To pop up the keyboard, press the Function button corresponding to **Show**. Use **UP/DOWN** scroll button and **LEFT/RIGHT** scroll button to select digit and character, and then press **OK** button to confirm. Use **Backspace** button 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.

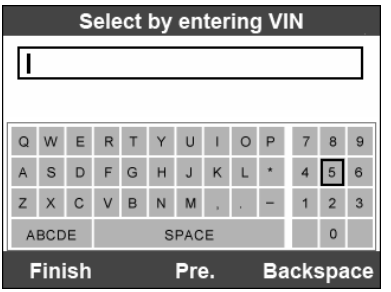


Figure 5.14

5.2 Diagnostic test

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

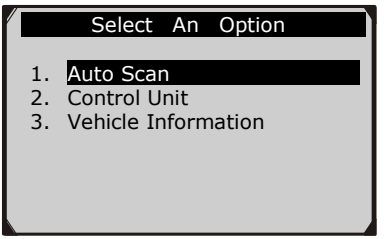


Figure 5.15

1) Auto Scan

Depending on the scan tool model**, 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 retrieve the trouble codes in each system of the vehicle one by one. It will take a few minutes to display.

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

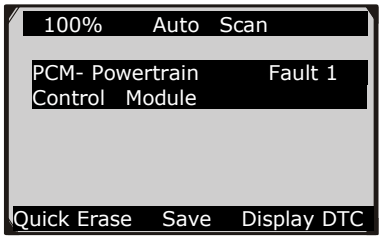


Figure 5.16

User is allowed to 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** -- You can 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 ***4) Save and retrieve files***.

- **Quick Erase** -- By selecting this option, the scan tool will erase all displaying DTCs and once again read the data and check the latest status of the system. If the system did not repair, the trouble codes 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 an option list for you to view different kind of DTCs or freeze frames.

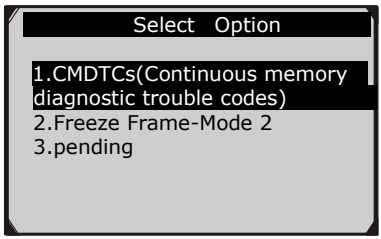


Figure 5.17

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

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

2) Control Unit

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

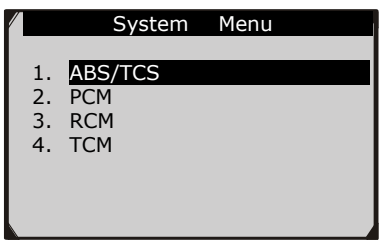


Figure 5.18

3) Vehicle Information

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

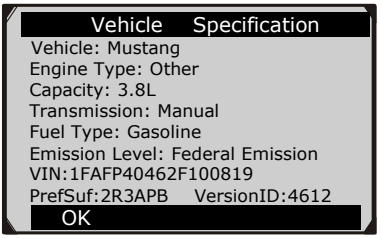


Figure 5.19

4) Save and retrieve files

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

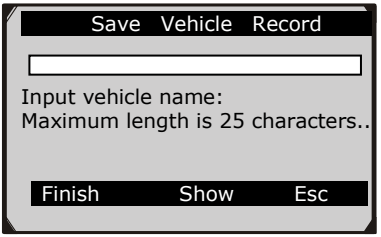


Figure 5.20

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

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

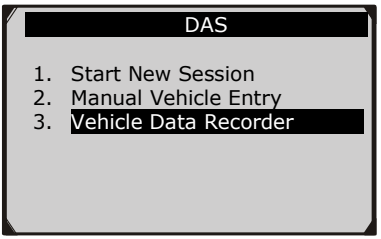


Figure 5.21

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

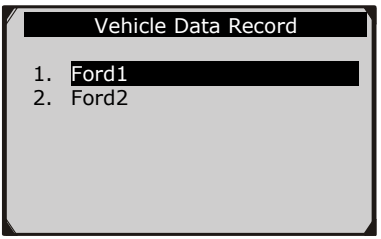


Figure 5.22

5.3 Diagnostic Operation

This function allows you to read and clear diagnostic trouble codes (DTCs) from a vehicle.

A. 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 (Figure 5.23), select **Read Codes**. This will display the **Read Codes** menu screen. (Figure 5.24)

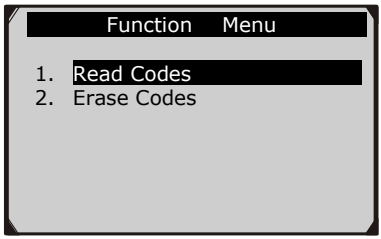


Figure 5.23

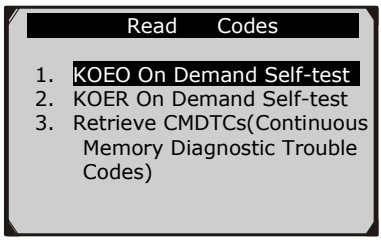


Figure 5.24

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

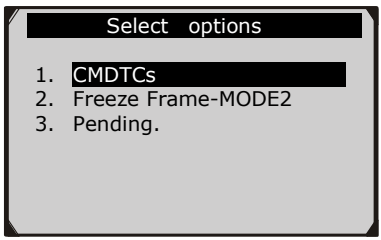


Figure 5.25

Select one of the DTC options to view detailed diagnostic trouble code information.

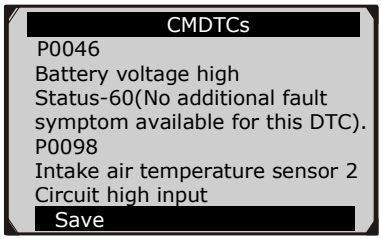


Figure 5.26

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

B. Erase Codes

After reading and / or reviewing the diagnostic trouble codes, use the following steps to erase the 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**: This **Erase Codes** function clears the DTCs from the selected ECU or provides instructions for how to manually clear the codes from the ECU.*

***NOTE**: 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 these steps:

1. With the **Function Menu** screen displayed (Figure 5.23), click on **Erase Codes**. The scan tool displays an instruction message.
2. Follow the instructions on each screen that appears until the procedure is complete.
3. When finished, press any key to exit.
4. Use **Read Codes** function to check the codes again to see if DTCs have been erased successfully. If any codes remain, repeat the **Erase Codes** steps.

6. Generic OBDII 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 Power train 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.

4) Turn the ignition on. Engine can be off or running.

5) Turn on the scan tool. Select **OBDII V1.00** in 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 OBD2 compliant.

✓ Turn the ignition off and wait for about 10 seconds. Turn the ignition back to on and repeat the procedure from step 5.

- ***If the "LINKING ERROR" message does not go away, then there might be problems for 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 **OK** button for **Diagnostic Menu** (Figure 6.3) to come up.

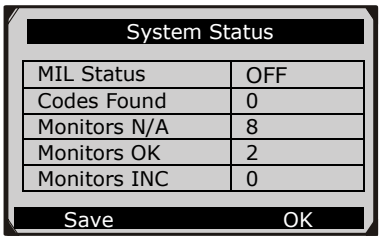


Figure 6.1

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

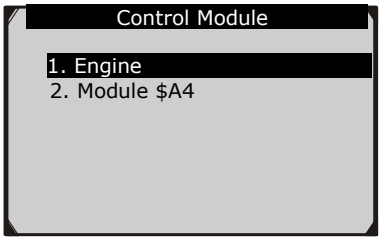


Figure 6.2

- 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 the key on engine off (KOEO)***

or with the 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 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 clears from memory.***
- ***Permanent Codes are DTCs that are "confirmed" and are retained in the non-volatile memory of the computer until the 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 power to ECU.***

1) Use **UP/DOWN** scroll button to select **Read Codes** from **Diagnostic Menu** and press **OK** button. (Figure 6.3)

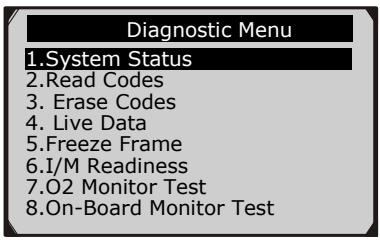


Figure 6.3

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

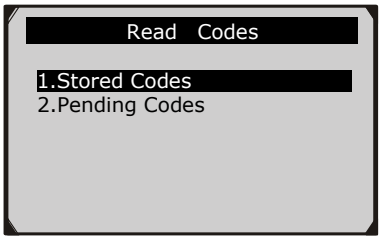


Figure 6.4

- If there is not any Diagnostic Trouble Code, the display indicates "**No (pending) codes are stored in the module!**" Wait a few seconds or press any key to return to previous screen.

NOTE: Permanent Codes function is available for merely vehicles supporting the CAN protocols.

3) View DTCs and their definitions on 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 vehicle manufacturer to view DTC definitions. Use **UP/DOWN** scroll button to select manufacturer and then press **OK** button to confirm.

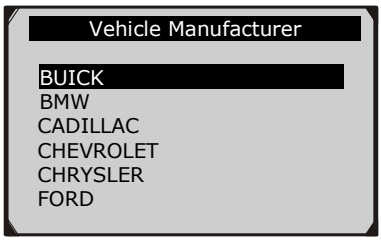


Figure 6.5

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

6.2. Erasing Codes

CAUTION: 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 fault with the vehicle, the trouble codes keeps on presenting.

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

1) Use the **UP/DOWN** scroll buttons to select **Erase Codes** from **Diagnostics Menu** and press the **OK** button. (Figure 6.3)

2) A warning message comes up asking for your confirmation. (Figure 6.6)

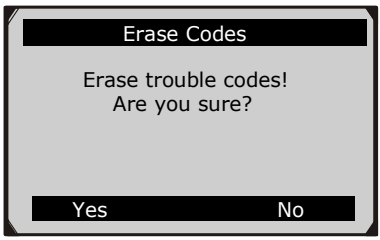


Figure 6.6

- If you do not want to proceed with erasing codes, press **ESC** button or select **NO** to exit and return to previous screen.

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

- If the codes are cleared successfully, an "Erase Done!" confirmation message shows on the display.(Figure 6.7)

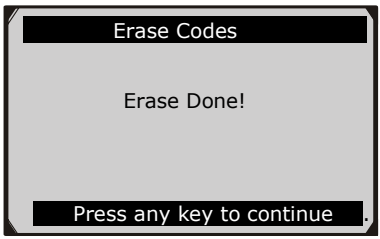


Figure 6.7

- If the codes are not cleared, then an "Erase Failure. Turn Key on with Engine off!" message appears. (Figure 6.8)

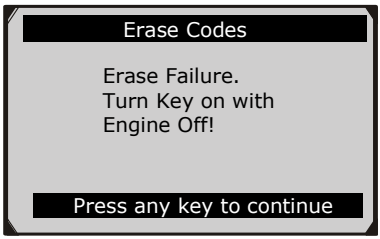


Figure 6.8

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

6.3. Live Data

In 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 a few seconds while the scan tool validates the PID MAP. (Figure 6.9)

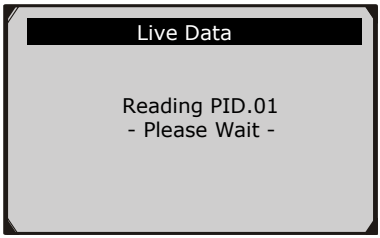


Figure 6.9

A. Viewing Complete List

1) To view complete set of data, use **UP/DOWN** scroll button to select **Complete List** from **Live Data** menu and press the **OK** button. (Figure 6.10)

Figure 6.10

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 6.11)

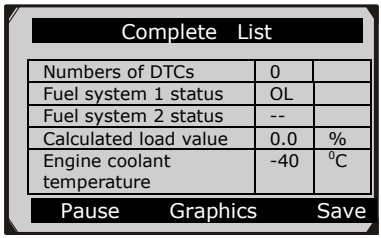


Figure 6.11

- If the "**Graphics**" on the bottom appears when a PID is highlighted, graphic information is available. Select **Graphics** to view graph. (Figure 6.12). PID name, current value, maximum and minimum values are displayed on the screen.

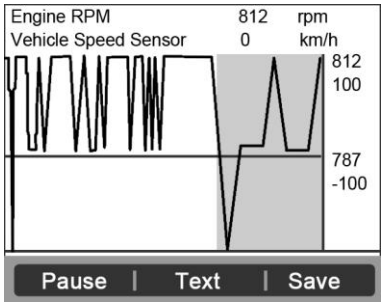


Figure 6.12

- If the "**Merge Graph**" on the bottom appears when a PID is selected to view, merged graph information is available. (Figure 6.13)

***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 parameter to merge and see their relationship.*

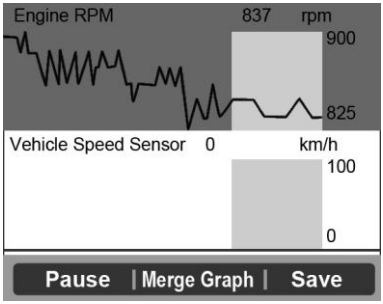


Figure 6.13

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

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

B. Viewing 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 6.10)

2) Use the **UP/DOWN** scroll button to move up and down to the desired items and click **Select** button to confirm. The selected parameters are marked with solid squares.(Figure 6.14)

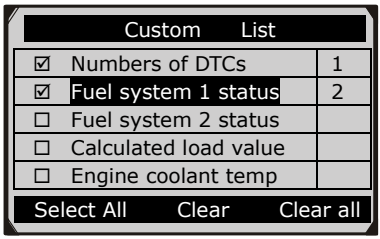


Figure 6.14

- The number to the right of selected item indicates sequence of this item.

- If you want to deselect the item, press **Clear** button.

- To select all the items on the screen, press **Select All** button. To clear all the selected items on the screen, press **Clear All** button.

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

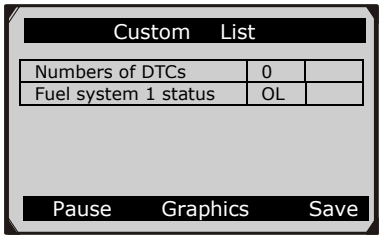


Figure 6.15

4) Use the **ESC** button to return to previous menu.

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

SD 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:

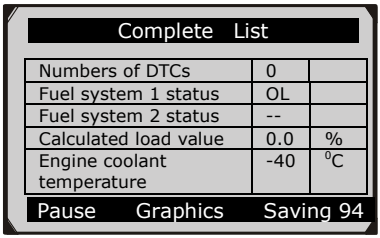


Figure 6.16

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

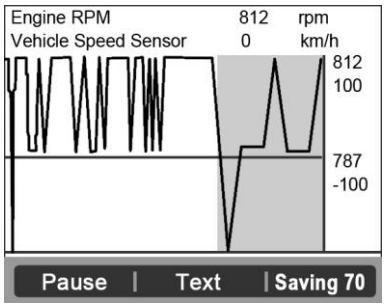


Figure 6.17

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.

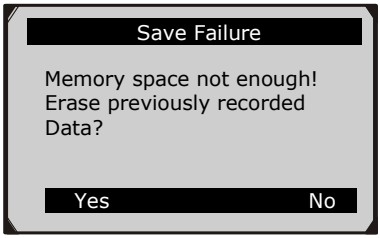


Figure 6.18

- If you wish to delete the data, select **Yes** and save currently retrieved data in the SD card.

- If you do not wish to delete the data, select **No** to return to previous screen.

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 **ESC** button to exit.

6.4. Freeze Frame

Freeze Frame Data allows the technician 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 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 have been shown up. (Figure 6.19)

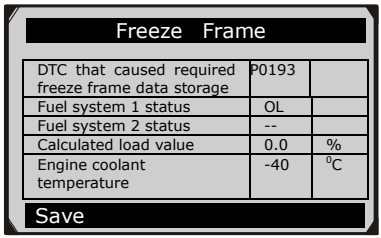


Figure 6.19

- 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 scan tool return to previous menu.

5) If you don't want to save the freeze frame data, press **ESC** button to return to previous screen.

6.5. Retrieving I/M Readiness Status

I/M Readiness function is used to check the operations of the Emission System on OBD2 compliant vehicles. It is an excellent function to use prior to having a vehicle inspected for compliance to a state emissions program.

CAUTION - By clearing trouble codes you also clear the readiness status for the individual emission system readiness tests. In order

to reset these monitors, the vehicle must be driven through a complete drive cycle with no trouble codes in memory. Times for reset vary depending on vehicle.

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

A. ***Since DTCs Cleared*** - indicates status of the monitors since the DTCs are erased.

B. ***This Drive Cycle*** - indicates 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 will fail the state I/M inspection. For some states, one or more such monitors may be allowed to be "Not Ready" to pass the emissions 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 that vehicle.

1) Use the **UP/DOWN** scroll button to select **I/M Readiness** from **Diagnostic Menu** and press **OK** button. (Figure 6.3)

2) Wait a few seconds while the scan tool validates the PID MAP.

3) If the vehicle supports both types of tests, then both types will be shown on the screen for selection. (Figure 6.20)

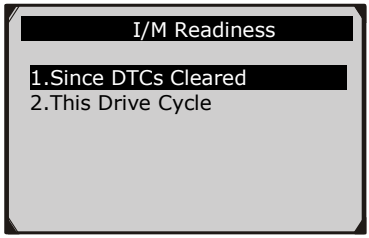


Figure 6.20

4) Use the **UP/DOWN** scroll button, as necessary, to view the status of the MIL light (**"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

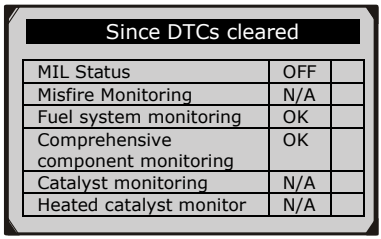


Figure 6.21

5) If the vehicle supports readiness test of "**This Drive Cycle**", a screen of the following displays: (Figure 6.22)

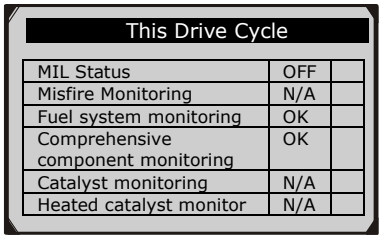


Figure 6.22

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 in the previous/next page.

7) Press the **ESC** button to return to **Diagnostic Menu.**

6.6. O2 Monitor Test

OBD2 regulations set by SAE require that relevant vehicles monitor and tests 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 using a controller area network (CAN). For O2 Monitor Test results of CAN-equipped vehicles, see chapter "On-Board Mon. Test".

1) Use the **UP/DOWN** scroll button to select **O2 Monitor Test** from **Diagnostic Menu** and press **OK** button. (Figure 6.3)

2) Wait 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 **OK** button. (Figure 6.23)

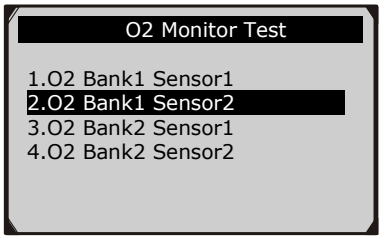


Figure 6.23

- If the vehicle does not support the mode, an advisory message will be displayed on the screen. (Figure 6.24)

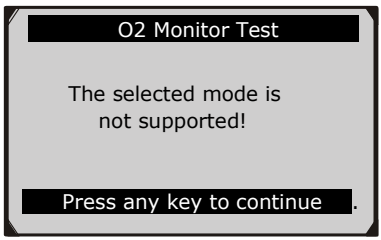


Figure 6.24

4) View test results of selected O2 sensor. (Figure 6.25)

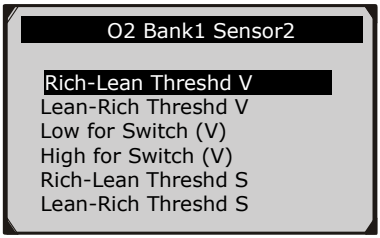


Figure 6.25

5) Use the **UP**/**DOWN** scroll button to view more data if additional information is available in 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 servicing or after erasing a vehicle's control module memory. The On-Board Monitor Test for non-CAN-equipped vehicles retrieves and displays test results for emission-related power train 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 power train components and systems that are and are not continuously monitored. Test 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 value, 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 a few seconds while the scan tool validates the PID MAP.

3) The scan tool will prompt you to select the vehicle make.

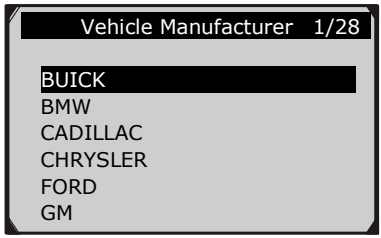


Figure 6.26

4) After you select the vehicle manufacturer, the scan tool shows the On-Board Monitors tests for specific monitoring systems.

5) From **On-Board Monitor Test** menu, use the **UP**/**DOWN** scroll button to select a test to view and press the **OK** button. (Figure 6.27)

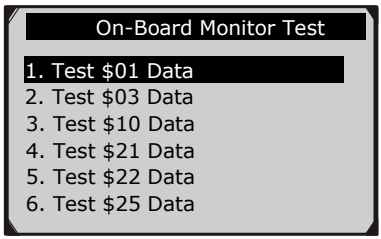


Figure 6.27

- If the vehicle under test does not support the mode, an advisory message will be displayed on the screen. (Figure 6.28)

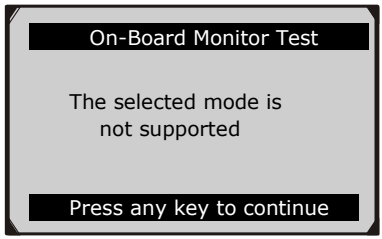


Figure 6.28

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

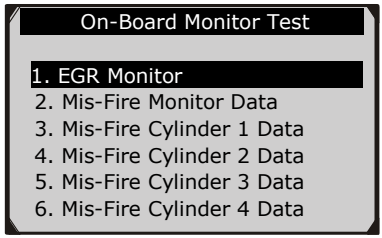


Figure 6.29

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

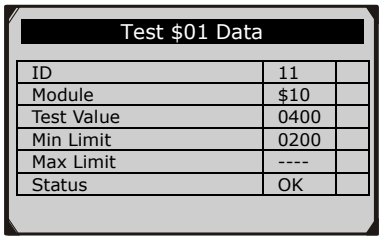


Figure 6.30

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

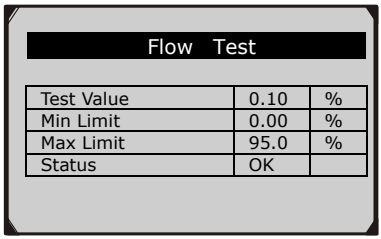


Figure 6.31

8) Press **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.

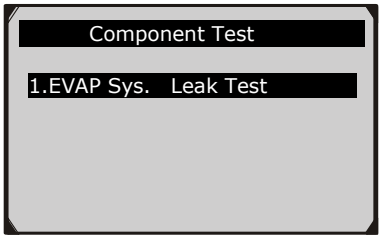


Figure 6.32

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

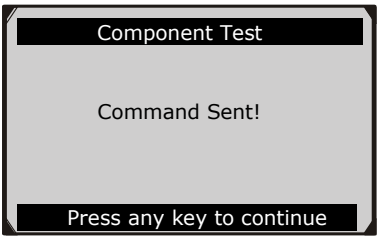


Figure 6.33

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

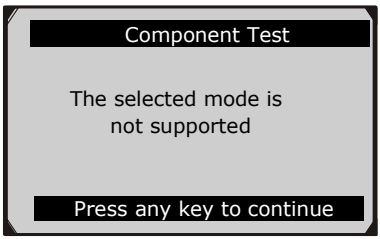


Figure 6.34

4) Press any key to return to 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 **OK** button. (Figure 6.3)

2) An advisory message comes up to remind you. Wait a few seconds or press any key to continue.

Figure 6.35

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

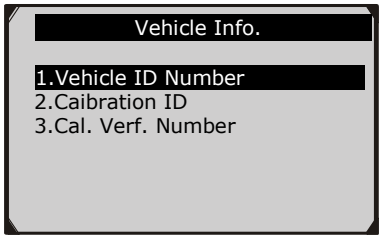


Figure 6.36

- If the vehicle does not support this mode, a message shows on the display warning that the mode is not supported.

4) From **Vehicle Info.** Menu, use the **UP/DOWN** scroll button to select an available item to view and press the **OK** button.

5) View retrieved vehicle information on screen.

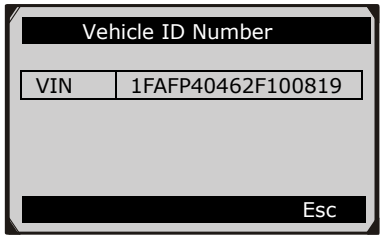


Figure 6.37

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

6.10.Modules Present

The Modules Present function allows viewing of the module IDs and communication protocols for OBD2 modules in the vehicle.

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

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

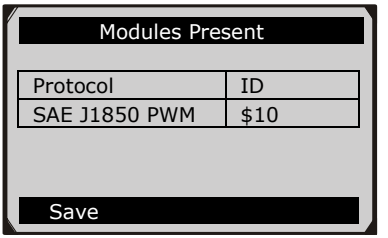


Figure 6.38

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

6.11.DTC Lookup

The DTC Lookup function allows user to search definitions of DTC stored in built-in DTC library.

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

2) Wait for the scan tool to display the **DTC Lookup** screen**.**

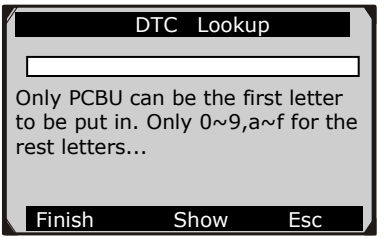


Figure 6.39

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

4) After you input the DTC code, select **Finish** and the scan tool will ask for your confirmation.

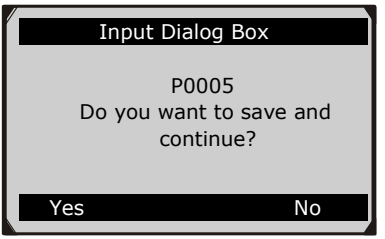


Figure 6.40

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

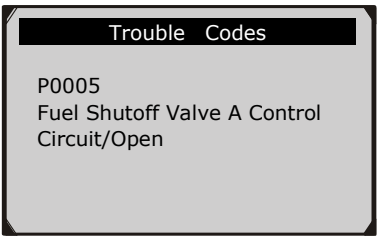


Figure 6.41

- Use the **LEFT/RIGHT** scroll button to view the previous / next DTC.

- Select **Save** to record code definition.

- For manufacturer specific codes, you need to select a vehicle make on an additional screen to look for DTC definitions.

- If definition could not be found (SAE or Manufacturer Specific), the scan tool displays "**Please refer to vehicle service manual**!"

6) Press **No** or **ESC** button to return to previous menu.

7. 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® Elite Series scan tool

  A PC or laptop with USB ports

  A USB cable

1) Install **MOT Pro PC Suit** through the included CD, or download the applications in our website: www.autel-tech.com or our distributors' site.

2) Connect the scan tool to computer with the USB cable supplied.

3) Run **MOT Pro 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), then select **Print** function on the bottom. The selected file will be uploaded to your computer. For more detailed instructions, please refer to ***4. Playback Data***.

5) The **MOT Pro Printer** will show as below.

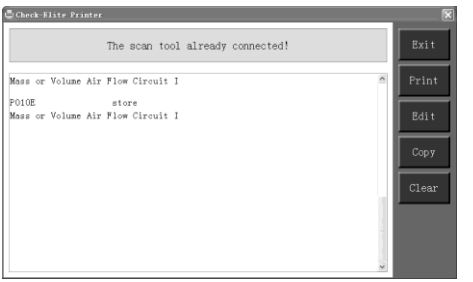


Figure 7.1

6) The selected data will display on the textbox of **Check-Elite Printer**. By selecting the function keys on the right, you could execute the following operations:

- **Print** – Print all data in the textbox to a printer connected to your computer.
- **Edit** – Once clicked, the software will automatically open an NOTEPAD window with all recorded data showing on.
- **Copy** – Copy all data in the textbox to the clipboard.
- **Clear** – Delete all data in the textbox.
- **Exit** – Quit the operation.

7) You are also allowed to edit, copy, and delete the data in the **Check-Elite Printer** window.

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

8. Software Update

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

8.1. Register the Tool

User would update the scan tool **ONLY** after you had registered the tool on our website: www.maxidas.com. Then you could download software, update online, retrieve information and get warranty service.

NOTE: Prior to registration, please confirm your network is working properly.

1. Log on the website www.maxidas.com.
2. Click on the **Update** tool bar at the top of the screen, and then select **User Register**. Or,

   Click on the **Updates** column in the lower right corner of the screen, and select **Register**.
3. The screen of Register Information appears. Please read through the instructions, and click on **Agree** to continue.
4. Put in the Product Serial No. and Register Password, and click on **Next**. (Figure 8.1)
5. Follow the instructions on screen to finish the registration.

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

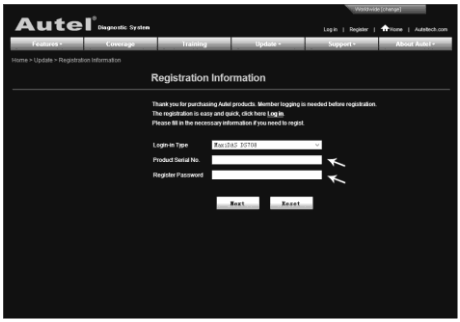


Figure 8.1

8.2. Update Procedure

Autel frequently releases software updates that you can download. The Update feature makes it very easy to determine and get exactly what you need.

1. Install **MOT Pro PC Suit** through the included CD, or download the applications in our website: www.auteltech.com or our distributors' site.
2. Make sure that your computer is connected to the Internet.
3. Load the SD card of the scan tool to your PC.
4. Run the update option in **MOT Pro PC Suit** software. Wait for the Log In window to pop up. (Figure 8.2)

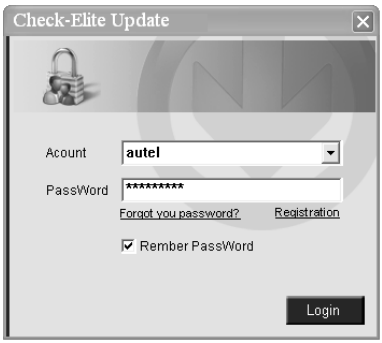


Figure 8.2

5. Put in the user name and password and wait for the MOT Pro Update window to display. If you forget your password unintentionally, you may always click the [**Forget your password?**] to link to our website and find your password back.

6. In the Update window, select the items you want to install. Usually, you should install all available updates.

Figure 8.3

Generally, there are two ways to update programs:

Batch updating

- Select the programs that you would update by clicking on the check boxes next to those items. Then click the **Update Selected Items** button on the right side of screen.
- Or, click on the SELECT ALL checkbox on the right side of screen and all updatable items will be selected automatically. Then click the **Update Selected Items** button on the right side of screen.
- Check the updating process by observing the upper left progress bar [downloading] and upper right progress bar [installing]. You may also find progress information in the Status column of updated items.
- Anytime you could click the **Pause** button on the right side of screen to suspend all progresses, and the state of those suspended items would change to STOPPED.
- To resume updating process, you may need to select those

suspended items again, then click 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 version.

Single updating

- Find the desired updating item and click the INSTALL button in the same line. With updating in progress, the INSTALL button changes to STOP.
- Check the updating process by observing the upper left progress bar [downloading] and upper right progress bar [installing]. You may also find progress information in the Status column of updated items.
- Anytime you could click the **Pause** button in the line to suspend this progress, and the state of this item would change to STOPPED.
- To resume updating process, click 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 version.

8.3. View or Delete Programs

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

- Click on the Installed Programs tag entry and the page will show the list of programs installed.
- Select the program(s) that you would delete.
  - ✧ **Batch delete**: Select the programs that you would delete by clicking on the check boxes to the left of those items. Then click the **DELETE** button on the right side of screen.
  - ✧ **Single delete**: Click 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 8.4

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

Theoretically, all programs in latest versions will be automatically compatible with the older versions, but if your scan tool do have a compatible problem and want to retrieve the older version for some programs, you may need to delete them first then install the older version again. Choose older version from the pull-down menu of program version.

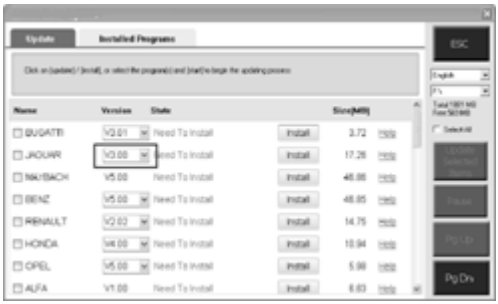


Figure 8.5

9. Oil Reset

9.1 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 and 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). Taking 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.

9.2 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 **Oil Reset** icon in the **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 this procedure, please follow these steps (Taking Ford as an example):

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

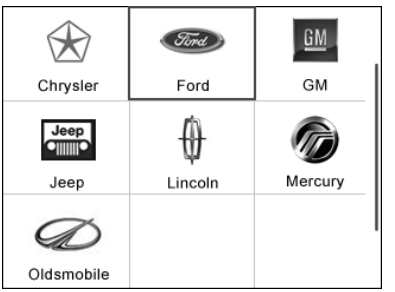


Figure 9.1

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

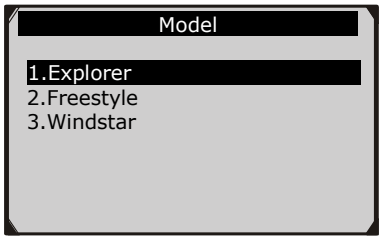


Figure 9.2

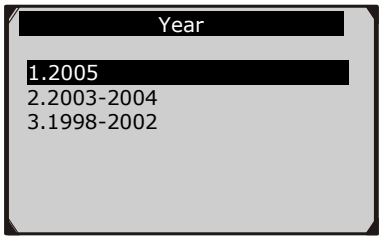


Figure 9.3

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

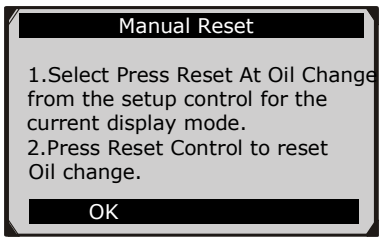


Figure 9.4

4) Follow the instructions to reset the service manually.

5) Press **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 product troubleshooting.

To finish this procedure, please follow these steps (Taking PEUGEOT as an example):

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

Figure 9.5

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

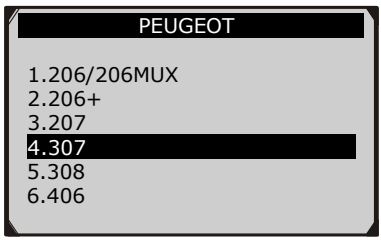


Figure 9.6

3) After you have entered the vehicle information, the oil reset screen will display as below.

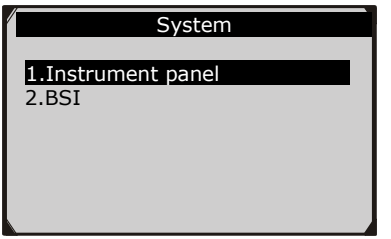


Figure 9.7

4) The **Instrument Panel** option enables you to finish oil reset service in one step by resetting the ECU to default values automatically. The procedures work as below.

- In the **Oil Reset** menu, select **Service Zero Reset** function and press **OK** button.

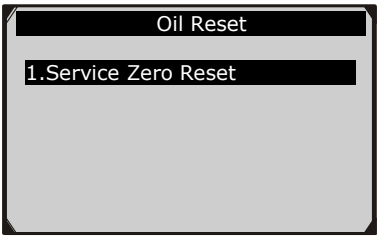


Figure 9.8

- The tool will automatically begin resetting the vehicle ECU to default values.

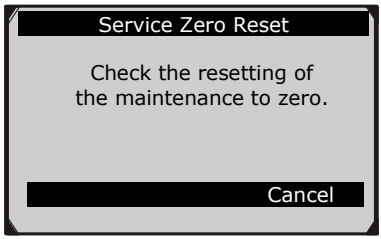


Figure 9.9

- When the resetting is finished, the tool will display a confirmation message.

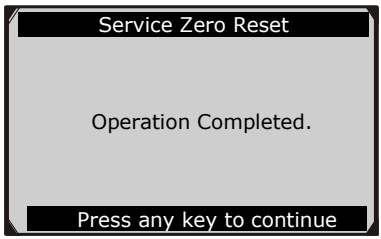


Figure 9.10

5) The **BSI** option enables you to finish oil reset service automatically and manually. The procedures work as below.

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

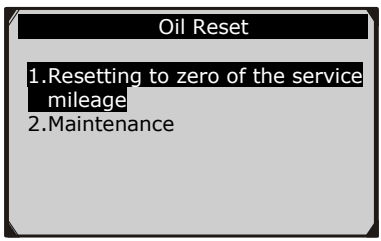


Figure 9.11

- The tool will reset the oil service to zero automatically.

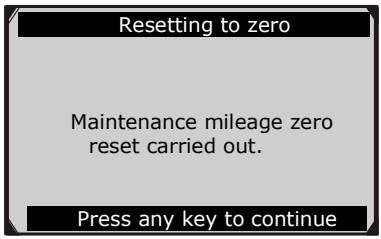


Figure 9.12

✓ In the **Oil Reset** menu (Figure 9.11), select **Maintenance** function and press **OK** button. The screen will display the preset maintenance information of the vehicle. The information items vary with different vehicles.

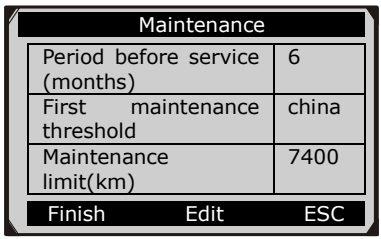


Figure 9.13

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

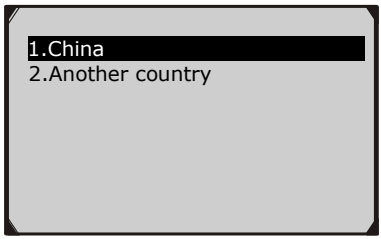


Figure 9.14

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

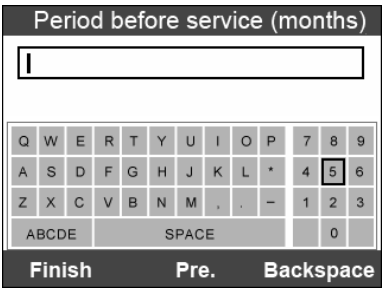


Figure 9.15

The three keyboard function keys work as below.

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

Pre. --- Moves a space to the left.

Backspace --- Uses 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.*

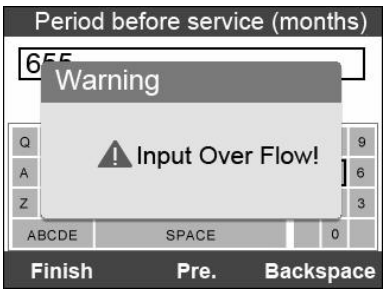


Figure 9.16

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

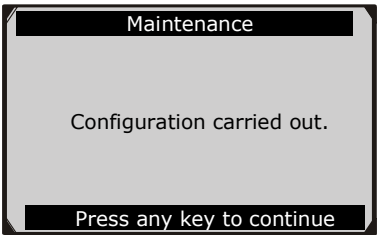


Figure 9.17

10.EPB

This electric parking brake (EPB) function has a multitude of uses to maintain the electronic braking systems 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.

11. EPB Safety

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

- 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 carrying 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 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.

11.1 EPB Maintenance

1) Turn the ignition off.
2) Release the park brake and make sure the car is properly blocked.
3) Connect the tool to vehicle and power on.
4) Turn the ignition on.
5) Select **EPB** icon in the **Main Screen** (Figure 3.1) and wait for the vehicle manufacturer screen. Choose the correct vehicle make. (Take PEUGEOT as an example)

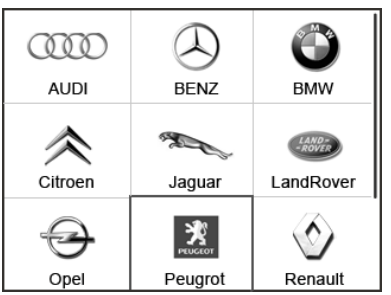


Figure 11.1

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

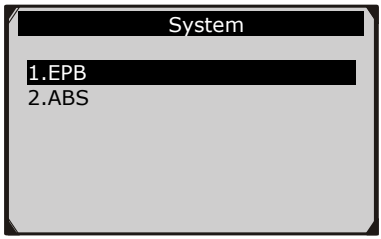


Figure 11.2

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

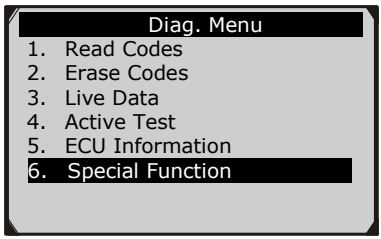


Figure 11.3

Special Function

1) In the **Diagnostic Menu** (Figure 11.3), use the **UP/DOWN** button to select **Special Function** to do the EPB test, which includes **Brake cable replacement** and **Electric parking brake replacement.**

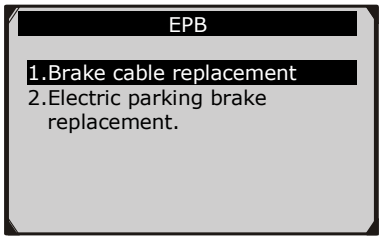


Figure 11.4

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

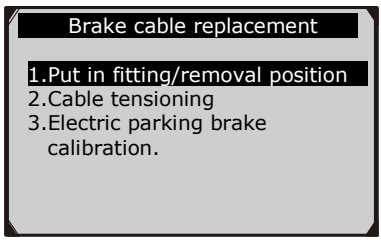


Figure 11.5

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.

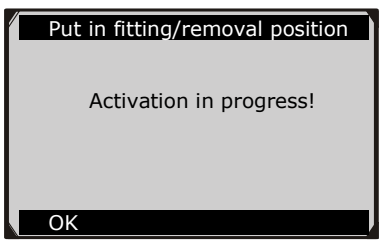


Figure 11.6

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

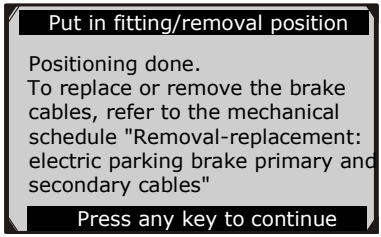


Figure 11.7

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

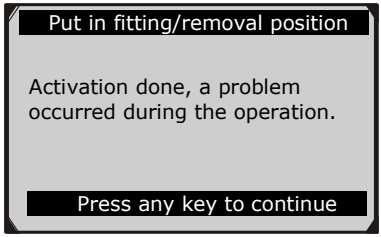


Figure 11.8

B. Cable tensioning

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

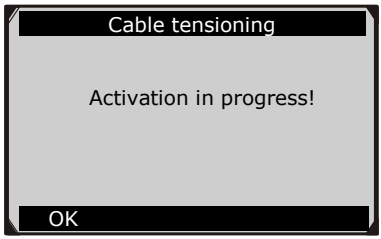


Figure 11.9

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

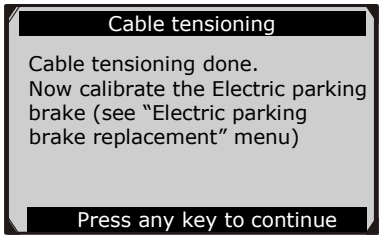


Figure 11.10

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

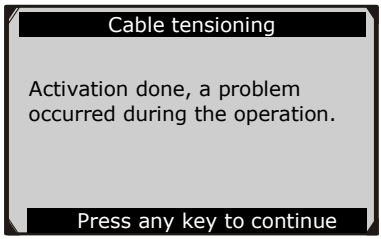


Figure 11.11

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 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 work in the following procedure.

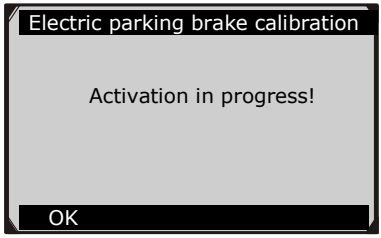


Figure 11.12

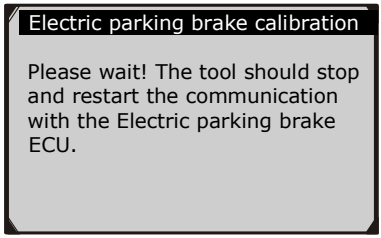


Figure 11.13

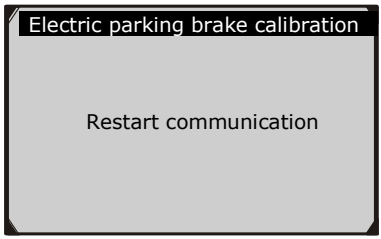


Figure 11.14

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

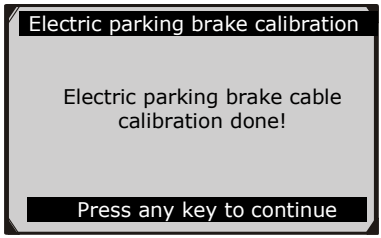


Figure 11.15

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

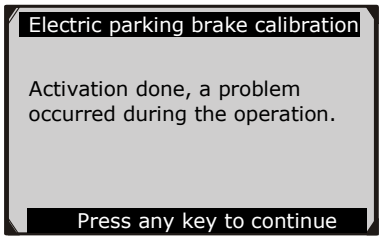


Figure 11.16

3) In the **EPB** screen, use the **UP/DOWN** button to select **Electric parking brake replacement.** The screen shows as below.

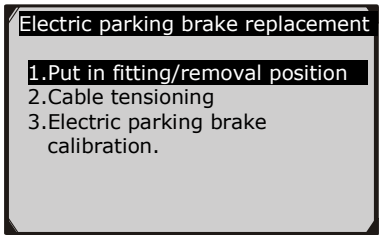


Figure 11.17

In the **Electric parking brake replacement** screen, the tool can also perform three functions, which details could refer to the same functions described in the **Brake cable replacement** menu above.

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 these steps.

1. Follow the instructions above to display the **Diag. menu** screen.(Figure 11.3)
2. Select **Active Test** and a list of possible tests appear. The test items in the list vary with different vehicles.

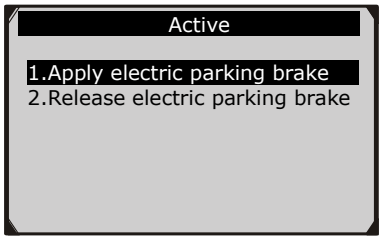


Figure 11.18

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 operation.**" Select **OK** to continue or **Cancel** to exit.

4. The tool may display information during and after the test. The information varies by vehicle.

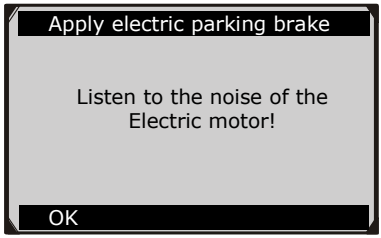


Figure 11.19

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 did not finish.

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 display 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.*

11.2 ABS Maintenance

In the **System** menu (Figure 11.2), use **UP/DOWN** button to select **ABS** to do ABS maintenance. The scan tool displays as below:

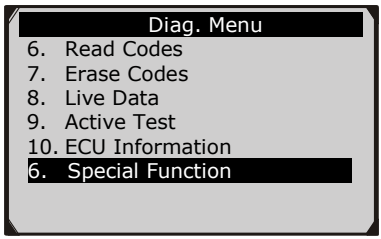


Figure 11.20

In the ABS diagnostic function, the tool can read codes, erase codes, record live data, read ECU information, perform active test, and perform special function. For the functions already being described before, please refer to chapter ***5. OBDII Diagnostics*** for details.

Special Function

1) In the **Diagnostic Menu** (Figure 11.20), use the **UP/DOWN** button to select **Special Function** to do the ABS test**.** The scan tool displays as below.

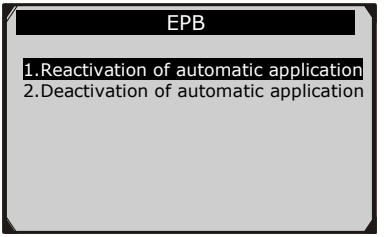


Figure 11.21

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 user of a problem. After you exit the diagnosis program, please repair the problem immediately.

Active Test

1) In the **Diagnostic Menu** (Figure 11.20), use the **UP/DOWN** button to select **Active Test** to do the actuator test**.** The scan tool displays as below.

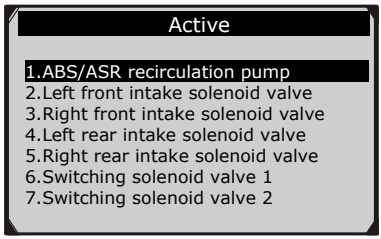


Figure 11.22

2) In the Active menu, use the **UP/DOWN** button to select the desired actuator to begin test. If the selected actuator works correctly, the tool will display a confirmation message as below (Figure 11.23). Otherwise, it will display a message to remind user of a problem. After you exit the diagnosis program, please repair the problem immediately.

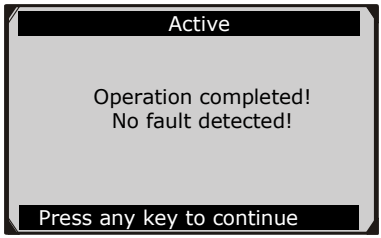


Figure 11.23

12. ABS/SRS

The **ABS/SRS** diagnostic function is used to retrieve and clear DTCs, display and save data streams or module information, and perform various function tests on the vehicle's ABS/SRS systems. It also provides the definition of each trouble code to help diagnose problem areas within the system that have caused the Malfunction Indicator Light to turn on.

NOTE: AUTEL accepts no responsibility for any accident or injury arising from servicing the ABS/SRS systems. When interpreting DTCs retrieved from the vehicle, always follow the manufacturer's recommendation for repair.

NOTE: 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.

Please follow these steps to start the ABS/SRS diagnostic testing procedure:

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.
4) Turn the ignition on but do not start the engine.
5) Turn on the scan tool and wait for the **Main Screen** to appear.
6) Use the **UP/DOWN** scroll button or **LEFT/RIGHT** scroll button to select **AbsSrs** in the **Main Screen**. (Figure 3.1)

12.1 Vehicle Selection

There are three ways for users to enter the vehicle information in the scan tool.

A. Select vehicle step by step

In this mode, the scan tool will communicate with the vehicle and a series of vehicle identification screens appears for user to identify the vehicle (These may include vehicle Model, Year, Type and Vehicle Part etc. for selection.).

On each screen that appears, use the **UP/DOWN** scroll button to select the correct option and then press the **OK** button. Do this until the vehicle is completely identified. (Taking **Fiat** as an example)

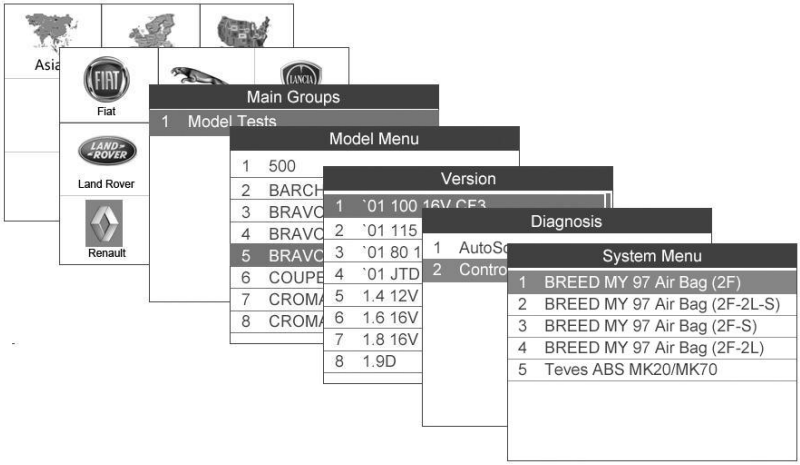


Figure 12.1

- For some vehicles, the vehicle identification procedure will ask you to select a letter which indicates one character of VIN code. (Taking Chevrolet as an example)

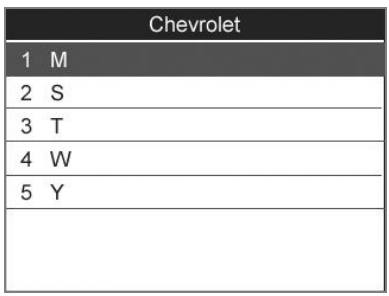


Figure 12.2

- For some vehicles, the ABS and SRS systems are divided into two systems. SRS is located in Body system, while ABS is located in Chassis system. In this case, you will need to select the correct system to run the desired diagnostics.

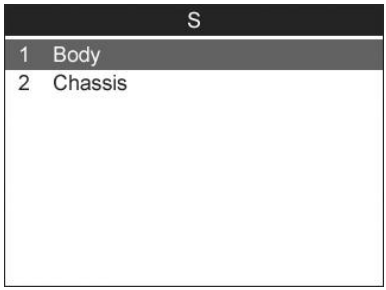


Figure 12.3

B. Manual vehicle entry

This mode allows users to input and save specific vehicle information (i.e. PCM Part Number, Vehicle Calibration Number Tear Tag, and VIN) manually. This function enables direct access to the vehicle's ABS system and makes the diagnostic testing more convenient, saving time doing step-by-step entry selections. (Taking **Ford** as an example)

1) Select the **Ford** logo from the car make screen.

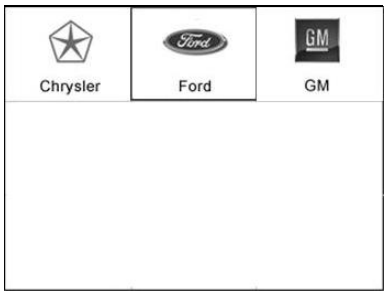


Figure 12.4

2) Use the **UP/DOWN** scroll button to select the **Manual Vehicle Entry** option from the **DAS** menu.

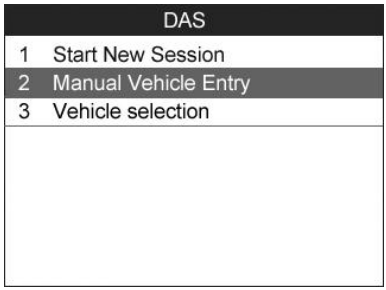


Figure 12.5

3) To enable the scan tool to identify the vehicle specifications, select one of the three entries in the option screen - **PCM Part Number, Calibration Number** or **Tear Tag** - to fill up the vehicle information.

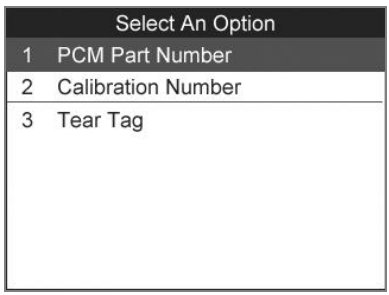


Figure 12.6

4) Taking the **PCM Part Number** entry for example, you will need to fill up the accurate vehicle information in the input entry.

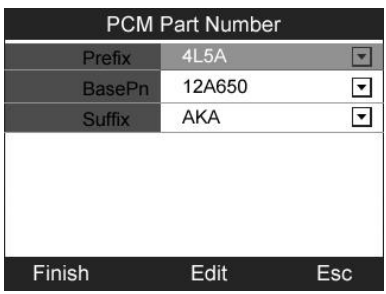


Figure 12.7

The three keys at the bottom of the screen work as below.

[**Finish**]: After entering a new value, use this key to save the value to the tool.

[**Edit**]: Press this key to pop up a soft keyboard to facilitate your input. (Figure 12.8)

[**Esc**]: Press this key to exit.

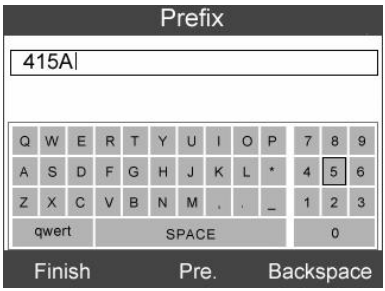


Figure 12.8

The three keys at the bottom of the screen work as below.

[**Finish**]: When you finished the input, select this key to confirm your input and exit.

[**Pre**.] : Moves a space to the left.

[**Backspace**]: Uses this key to erase the previous digit or character when typing.

NOTE: The data you input must be in the reasonable range. If the input data is out of range, the tool will display a warning message "Input over flow!"

5) A screen message with the vehicle information will come up, asking for your confirmation. If the information is correct select **Yes** to continue, otherwise select **No** to return to previous screen.

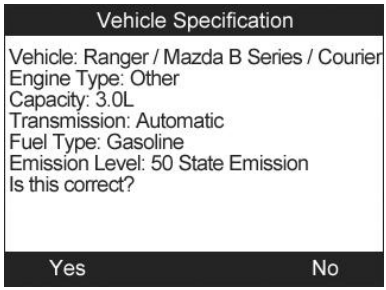


Figure 12.9

C. Auto vehicle entry

Some vehicles provide an auto scan feature, which allows users to skip time-wasting step-by-step vehicle identification procedure and retrieve the specific vehicle information from vehicle computer directly.

NOTE: This function may not be available for all vehicles.

Take **Ford** as an example.

1) Select the **Ford** logo from the vehicle make screen.

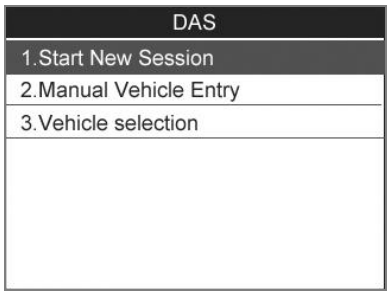


Figure 12.10

2) Use the **UP/DOWN** scroll button to select the **Start New Session** from the **DAS** menu.

3) A screen message with the vehicle information will come up, asking for your confirmation. If the information is correct

select **Yes** to continue, otherwise select **No** to return to previous screen.

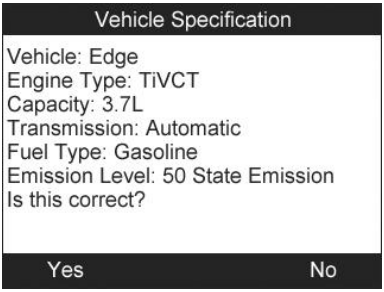


Figure 12.11

After the vehicle information is entered correctly, you will need to select SRS and ABS systems as below.

12.2 ABS Diagnostics

After the vehicle information is entered correctly, select ABS system to perform ABS diagnostics. Take **GM** as an example.

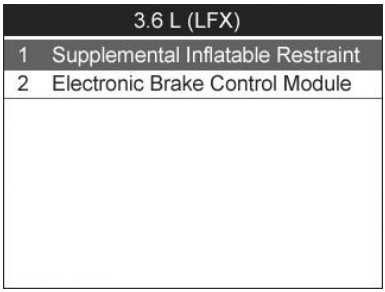


Figure 12.12

From the ABS and SRS menu use the **UP/DOWN** scroll button to select **Electronic Brake Control Module** and press the **OK** button. The screen displays as below.

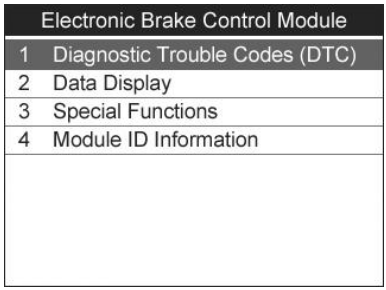


Figure 12.13

- **Read Codes**

This function allows user to read the ABS DTCs from vehicle ECU.

1) From the diagnostic function menu (Figure 12.13) use the **UP/DOWN** scroll button to select **Diagnostic Trouble Codes** and press the **OK** button.

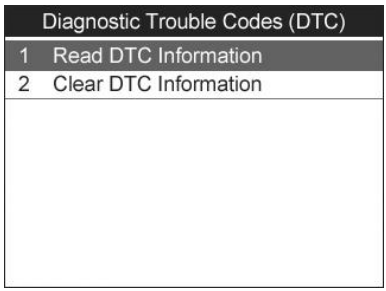


Figure 12.14

2) Use the **UP/DOWN** scroll button to select **Read DTC Information** and press the **OK** button.(Figure 12.14)

3) View DTCs and their definitions on screen.

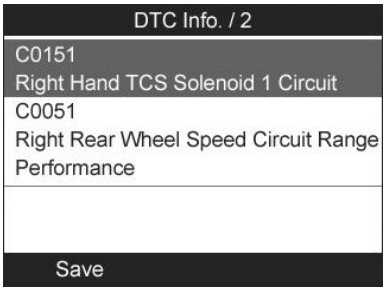


Figure 12.15

4) Select **Save** option to store the codes or press **ESC** button to exit without saving.

● Erase Codes

This function allows user to erase the ABS DTCs in vehicle ECU.

NOTE: If you plan to take the vehicle to a Service Center for repair, DO NOT erase the ABS DTCs from the vehicle's computer. If the codes are erased, valuable information that might help the technician troubleshoot the problem will be erased.

1) From the diagnostic function menu (Figure 12.13) use the **UP/DOWN** scroll button to select **Diagnostic Trouble Codes** and press the **OK** button.
2) Use the **UP/DOWN** scroll button to select **Clear DTC Information** and press the **OK** button. (Figure 12.14)
3) A warning message will come up asking your confirmation.

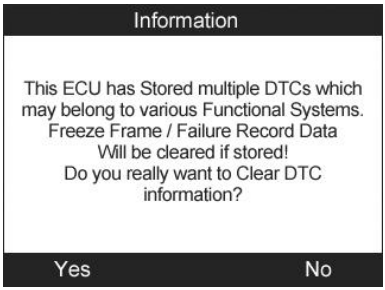


Figure 12.16

4) Select **Yes** to continue or **No** to exit. When the command is sent, the tool will display a message as below:

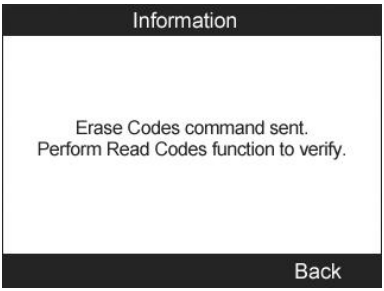


Figure 12.17

5) To make sure the codes are erased completely, perform **Read DTC Information** function to verify.

● Data Display

This function enables you view ABS-related data readings from a selected ECU. With the live data screen displayed, you can view the data in Text or graphical format, record and save files for later viewing, pause the readings and view past data, and more.

1) From the diagnostic function menu (Figure 12.13) use the **UP/DOWN** scroll button to select **Data Display** and press the **OK** button.

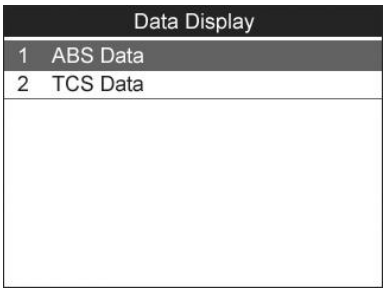


Figure 12.18

2) Use the **UP/DOWN** scroll button to select **ABS Data** or **TCS Data** and press the **OK** button to view the data streams.

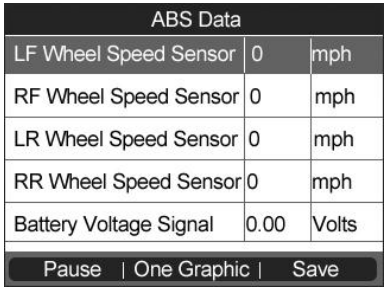


Figure 12.19

3) To view the live PIDs onscreen, use the **UP/DOWN** scroll button for all PIDs to display if additional information is available on more than one page.

The function keys at the bottom of the screen work as below.

- Press the corresponding **FUNCTION BUTTON** '**Save'** to store the retrieved live data for later playback or printing.
- Press the corresponding **FUNCTION BUTTON** '**Stop Save'** to stop saving data and resume live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Pause**' to suspend live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Continue**' to resume live sensor data retrieving.
- If the '**One Graphic**' option is highlighted when a specific item is selected, the graphic information is available. The PID name, current value, maximum and minimum values are displayed on the screen.
- When the data is shown in graph, the tool offers two more options: **Two Graphic** and **Merge Graph**. The first option can display two graphs on the same screen, and the last option can merge the two graphs into one.

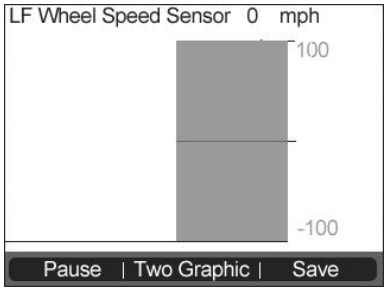


Figure 12.20

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

● Special Functions

This function allows users to do various active tests or module programming. The function options vary with the vehicles being tested.

1) From the diagnostic function menu (Figure 12.13) use the **UP/DOWN** scroll button to select **Special Functions** and press the **OK** button.

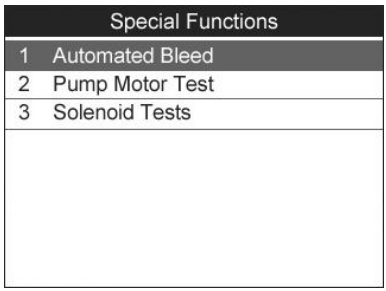


Figure12.21

2) Use the **UP/DOWN** scroll button to select the desired function, and press the **OK** button. (Taking **Automated Bleed** as an example)

3) A series of message screens appears to instruct users on the whole procedure. Follow the on-screen instructions step by step to take the proper operation.

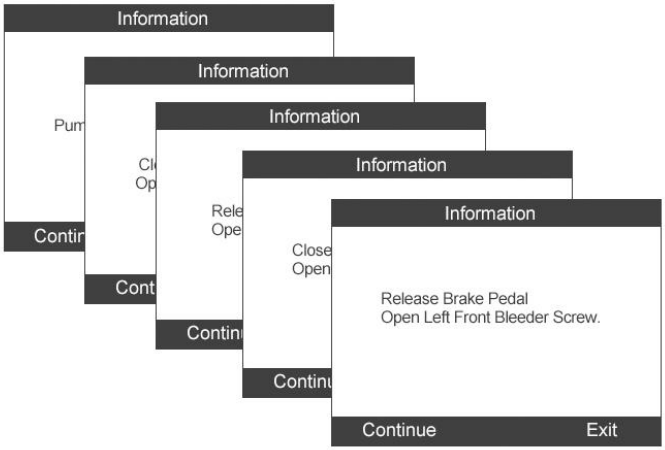


Figure1 12.22

4) Take actions properly until the tool displays a completion message.

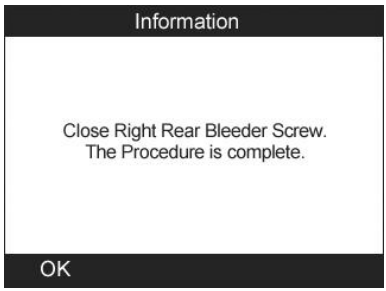


Figure 12.23

- **Module ID Information**

This function allows users to view the selected control module information.

1) From the diagnostic function menu (Figure 12.13) use the **UP/DOWN** scroll button to select **Module ID Information** and press the **OK** button.

2) View module information present with its IDs and part numbers.

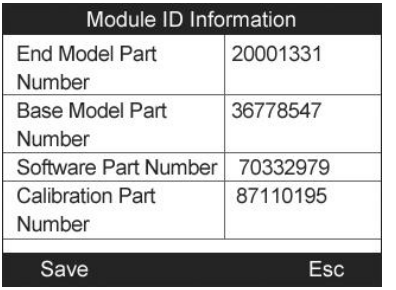


Figure 12.24

3) Select **Save** to store the module ID information or press the **ESC** button to exit without saving.

- If the vehicle does not support ABS communication, an advisory message shows on the screen. Press **ESC** button to return to the previous menu.

12.3 SRS Diagnostics

After the vehicle information is entered correctly, select SRS system to perform SRS diagnostics. Take **GM** as an example.

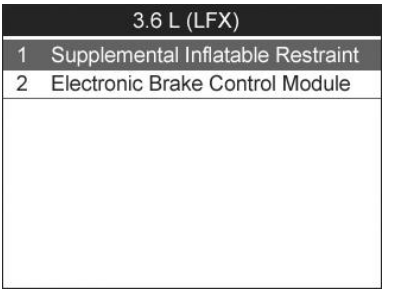


Figure 12.25

From the ABS and SRS menu use the **UP/DOWN** scroll button to select **Supplemental Inflatable Restraint** and press the **OK** button. The screen displays as below.

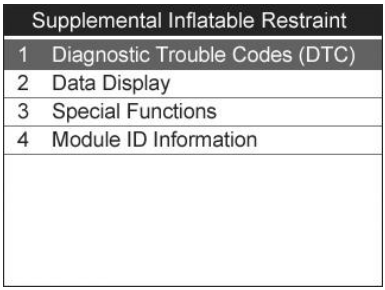


Figure 12.26

A. Read Codes

This function allows user to read the SRS DTCs from vehicle ECU.

1) From the diagnostic function menu (Figure 12.26) use the **UP/DOWN** scroll button to select **Diagnostic Trouble Codes (DTC)** and press the **OK** button.

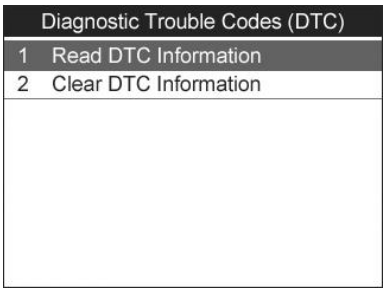


Figure 12.27

2) Use the **UP/DOWN** scroll button to select **Read DTC Information** and press the **OK** button. (Figure 12.27)

3) View DTCs and their definitions on screen.

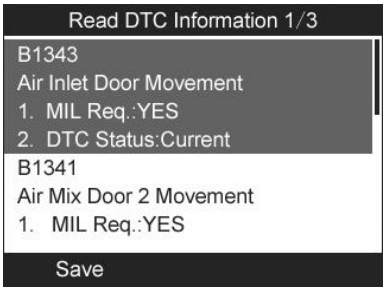


Figure 12.28

4) Select **Save** option to store the codes or press **ESC** button to exit without saving.

B. Erase Codes

This function allows user to erase the SRS DTCs in vehicle ECU.

NOTE: If you plan to take the vehicle to a Service Center for repair, DO NOT erase the SRS DTCs from the vehicle's computer. If the codes are erased, valuable information that might help the technician troubleshoot the problem will be erased.

1) From the diagnostic function menu (Figure 12.26) use the **UP/DOWN** scroll button to select **Diagnostic Trouble Codes** and press the **OK** button.

2) Use the **UP/DOWN** scroll button to select **Clear DTC Information** and press the **OK** button. (Figure 12.27)

3) A warning message will come up asking your confirmation.

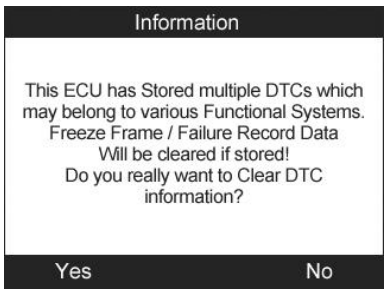


Figure 12.29

4) Select **Yes** to continue or **No** to exit. When the command is sent, the tool will display a message as below:

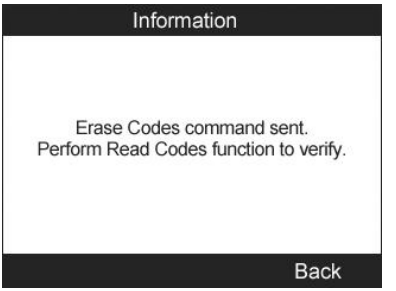


Figure 12.30

5) To make sure the codes are erased completely, perform **Read DTC Information** function to verify.

C. Data Display

This function enables users view SRS-related data readings from a selected ECU. With the live data screen displayed, you can view the data in Text or graphical format, record and save files for later viewing, pause the readings and view past data, and more.

1) From the diagnostic function menu (Figure 12.26) use the **UP/DOWN** scroll button to select **Data Display** and press the **OK** button.

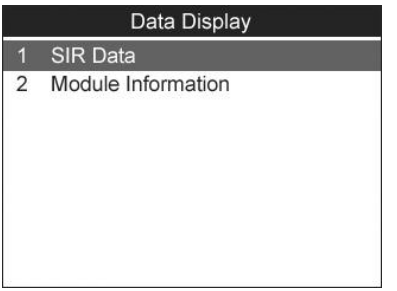


Figure 12.31

2) Use the **UP/DOWN** scroll button to select **SIR Data** and press the **OK** button to view the data streams.

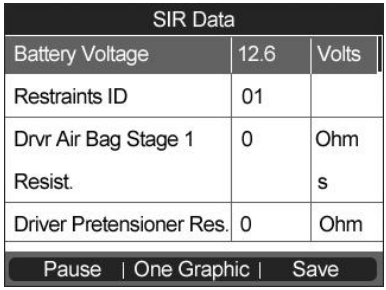


Figure12.32

3) To view the live PIDs onscreen, use the **UP/DOWN** scroll button for all PIDs to display if additional information is available on more than one page.

The function keys at the bottom of the screen work as below.

- Press the corresponding **FUNCTION BUTTON** '**Save'** to store the retrieved live data for later playback or printing.
- Press the corresponding **FUNCTION BUTTON** '**Stop Save'** to stop saving data and resume live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Pause**' to suspend live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Continue**' to resume live sensor data retrieving.
- If the '**One Graphic**' option is highlighted when a specific item is selected, the graphic information is available. The PID name, current value, maximum and minimum values are displayed on the screen.
- When the data is shown in graph, the tool offers two more options: **Two Graphic** and **Merge Graph**. The first option can display two graphs on the same screen, and the last option can merge the two graphs into one.

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

D. Special Functions

This function allows users to do various active tests or module programming. The function options vary with the vehicles being tested.

1) From the diagnostic function menu (Figure 12.26) use the **UP/DOWN** scroll button to select **Special Functions** and press the **OK** button.

2) The tool will display a list of available special functions for the vehicle being tested. Use the **UP/DOWN** scroll button to select the desired function, and press the **OK** button. (Taking **Chime Output** as an example)

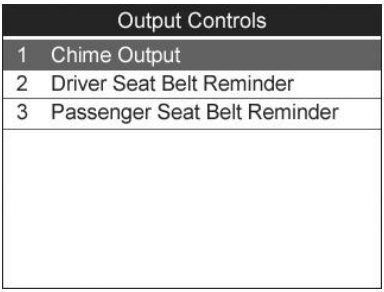


Figure 12.33

3) Press the corresponding **FUNCTION BUTTON** '**ON**' or "**OFF**" to check whether the Chime on the vehicle is turning on or off.

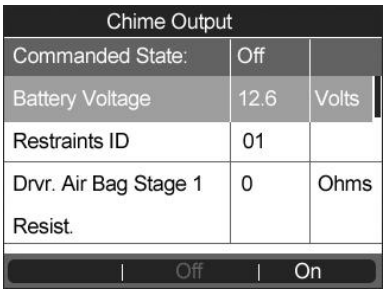


Figure 12.34

E. Module ID Information

This function allows users to view the selected control module information.

1) From the diagnostic function menu (Figure 12.26) use the **UP/DOWN** scroll button to select **Module ID Information** and press the **OK** button.

2) View module information present with its IDs and part numbers.

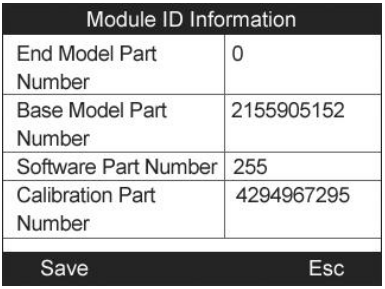


Figure 12.35

3) Select **Save** to store the module ID information or press the **ESC** button to exit without saving.

- If the vehicle does not support SRS communication, an advisory message shows on the screen. Press **ESC** button to return to the previous menu.

13. SAS (Steering Angle Sensor) Calibration

Steering Angle Sensor Calibration permanently stores the current steering wheel position as the straight-ahead position in the steering angle sensor EEPROM. Therefore, the front wheels and the steering wheel must be set exactly to the straight-ahead position before calibration. In addition, the vehicle identification number is also read from the instrument cluster and stored permanently in the steering angle sensor EEPROM. On successful completion of calibration, the steering angle sensor fault memory is automatically cleared.

Calibration must always be carried out after the following operations:

- Steering wheel replacement
- Steering angle sensor replacement
- Any maintenance that involves opening the connector hub from the steering angle sensor to the column
- Any maintenance or repair work on the steering linkage, steering gear or other related mechanism
- Wheel alignment or wheel track adjustment
- Accident repairs where damage to the steering angle sensor or assembly, or any part of the steering system may have occurred

NOTE: AUTEL accepts no responsibility for any accident or injury arising from servicing the SAS system. When interpreting DTCs retrieved from the vehicle, always follow the manufacturer's recommendation for repair.

NOTE: 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.

NOTE: Before starting procedure, make sure vehicle has ESC. Look for button on dash.

Take **Toyota** as an example.

While performing the Zero Point Calibration on Toyota vehicles, do not tilt, move or shake the vehicle. The vehicle must remain in a stationary condition throughout the entire process. Be sure to perform the procedure on a level surface with an inclination of less than 1%.

C. If the vehicle is equipped with an A/T, ensure that the shift lever is in the "P" range and the parking brake is applied. If the vehicle is equipped with a M/T, ensure that the parking brake is applied.

D. Turn the ignition off.

E. Locate the vehicle's 16-pin Data Link Connector (DLC).

F. Plug the scan tool cable connector into the vehicle's DLC.

G. Turn the ignition on but do not start the engine.

H. Turn on the scan tool and wait for the **Main Screen** to appear.

I. Use the **UP/DOWN** scroll button or **LEFT/RIGHT** scroll button to select **SAS** in the **Main Screen**. (Figure 3.1)

J. Wait for a series of vehicle identification screens appears for user to identify the vehicle. (Figure 13.1) On each screen that appears, use the **UP/DOWN** scroll button to select the correct option and then press the **OK** button. Do this until the vehicle is completely identified.

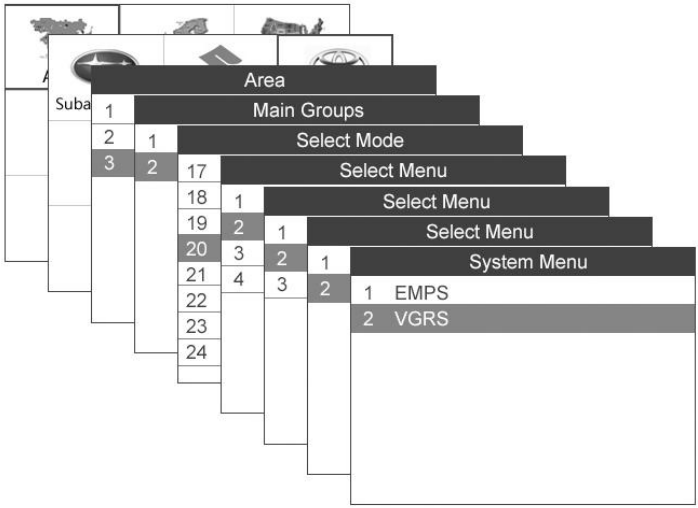


Figure 13.1

K. Use the **UP/DOWN** scroll button to select **VGRS** in the menu. The screen displays as below.

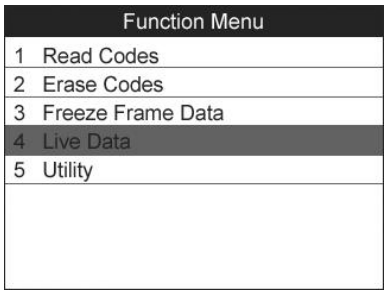


Figure 13.2

13.1 Read Codes

This function allows user to read the SAS DTCs from vehicle ECU.

1) From the function menu (Figure 13.2) use the **UP/DOWN** scroll button to select **Read Codes** and press the **OK** button.

2) View DTCs and their definitions on screen.

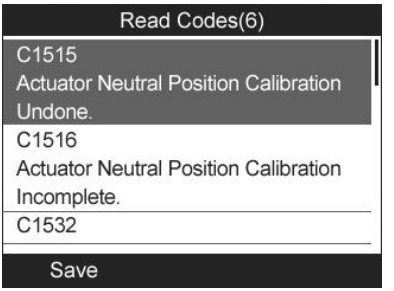


Figure 13.3

3) Select **Save** option to store the codes or press **ESC** button to exit without saving.

13.2 Erase Codes

This function allows user to erase the SAS DTCs in vehicle ECU.

1) From the function menu (Figure 13.2) use the **UP/DOWN** scroll button to select **Erase Codes** and press the **OK** button.

2) A warning message will come up asking your confirmation.

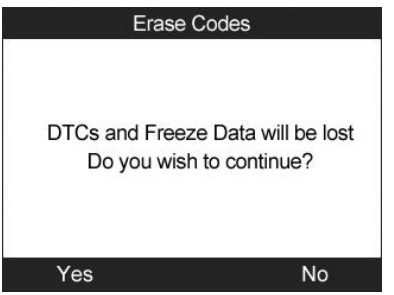


Figure 13.4

3) Select **Yes** to continue or **No** to exit. When the command is sent, the tool will display a message as below:

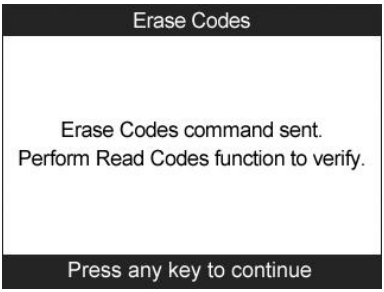


Figure 13.5

4) To make sure the codes are erased completely, perform **Read Codes** function to verify.

13.3 Freeze Frame Data

This function allows user to view the vehicle's operating parameters at the moment a DTC is detected.

1) From the function menu (Figure 13.2) use the **UP/DOWN** scroll button to select **Freeze Frame Data** and press the **OK** button.

2) View the related operating parameters on screen.

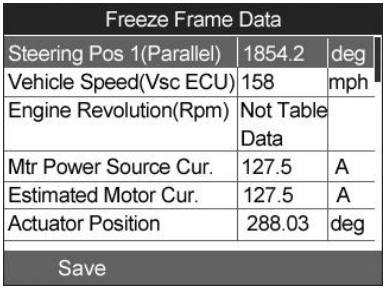


Figure 13.6

3) Select **Save** option to store the codes or press **ESC** button to exit without saving.

13.4 Live Data

This function enables users view SAS-related data readings from a selected ECU. With the live data screen displayed, you can view the data in Text or graphical format, record and save files for later viewing, pause the readings and view past data, and more.

From the function menu (Figure 13.2) use the **UP/DOWN** scroll button to select **Live Data** and press the **OK** button.

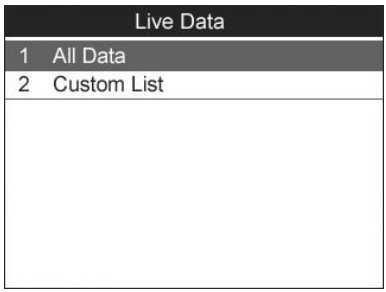


Figure 13.7

A. All Data

1) From the Live Data menu (Figure 13.7), use the **UP/DOWN** scroll button to select **All Data** and press the **OK** button.

2) The tool will display a list of all live sensor data. (Figure 13.8)

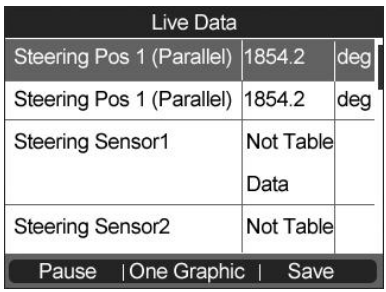


Figure 13.8

- Press the corresponding **FUNCTION BUTTON** '**Save'** to store the retrieved live data for later playback or printing.

- Press the corresponding **FUNCTION BUTTON** '**Stop Save'** to stop saving data and resume live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Pause**' to suspend live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Continue**' to resume live sensor data retrieving.
- If the '**One Graphic**' option is highlighted when a specific item is selected, the graphic information is available.
- When the sensor data is shown in graph, the tool offers two more options: **Two Graphic** and **Merge Graphic**. The first option can display two graphs on the same screen, and the last option can merge the two graphs into one.

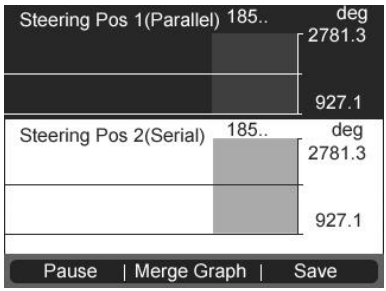


Figure 13.9

- Press the corresponding **FUNCTION BUTTON 'Text'** or the **ESC** button to return to previous screen.

B. Custom List

This feature lets you customize the scan tool display to show only those PIDs that are of interest at the current time. You can customize the Live Data display by placing the Scan Tool in "Custom List" mode and selecting only the PIDs that you wish to display. To customize the Live Data display, proceed as follows:

1) To retrieve customized live sensor data, use the **UP/DOWN** scroll button to select **Custom List** from **Live Data** menu (Figure 13.7) and press the **OK** button.

2) Use the **UP/DOWN** scroll button to move to the desired item and press the corresponding **FUNCTION BUTTON** '**Select**' to choose.

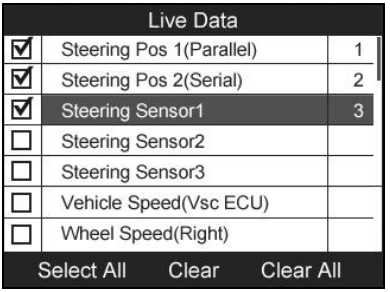


Figure 13.10

- The Selected items are marked with ticks on the left.
- The number on the right indicates sequence of the selected item.
- Press the corresponding **FUNCTION BUTTON** '**Clear**' to unselect items, or press the corresponding **FUNCTION BUTTON** '**Select All**'/'**Clear All**' to select or unselect all items.

3) Press the **OK** button to confirm your selection and retrieve the selected live sensor data.

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

13.5 Utility

This function allows users to do steering angle sensor calibration, clear records and clear counter. The function options vary with the vehicles being tested.

From the function menu (Figure 13.2) use the **UP/DOWN** scroll button to select **Utility** and press the **OK** button. The scan tool displays function menu as below.

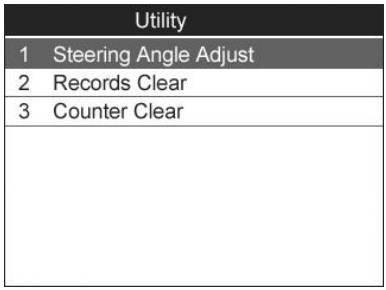


Figure 13.11

A. Steering Angle Adjust

1) From the **Utility** function menu (Figure 13.11) use the **UP/DOWN** scroll button to select **Steering Angle Adjust** and press the **OK** button.

2) The tool will display a series of instructions. Follow the onscreen instructions step by step until the operation is completely finished. If the operation is finished successfully, the scan tool will display a confirmation message. (Figure 10.12) Otherwise, it will display a message to remind user of a problem. After you exit the diagnosis program, please repair the problem immediately.

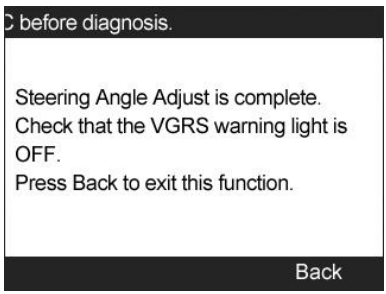


Figure 13.12

B. Records Clear

1) From the Utility function menu (Figure 13.11) use the **UP/DOWN** scroll button to select **Records Clear** and press the **OK** button.

2) The tool will display a list of records.

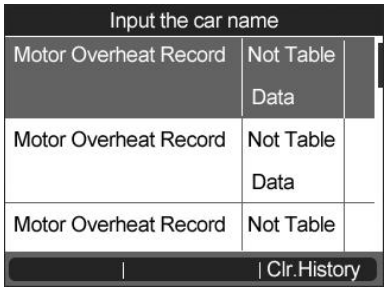


Figure 13.13

3) Select **Clr Histroy** to continue operation or **ESC** to exit. When the command is sent, the tool will display a message as below.

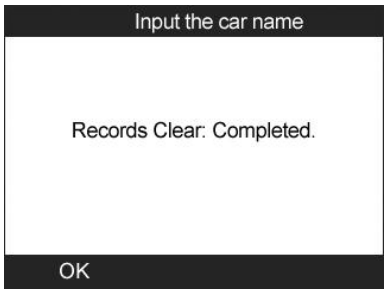


Figure 13.14

C. Counter Clear

1) From the Utility function menu (Figure 13.11) use the **UP/DOWN** scroll button to select **Counter Clear** and press the **OK** button.

2) The tool will display a prerequisite message as below. Select **Yes** to continue or **No** to exit.

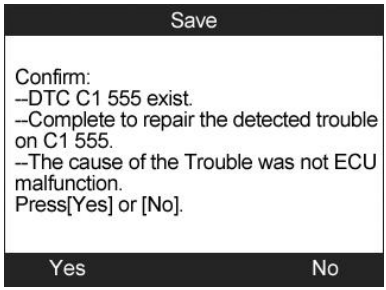


Figure 13.15

3) When the command is sent, the tool will display a message as below.

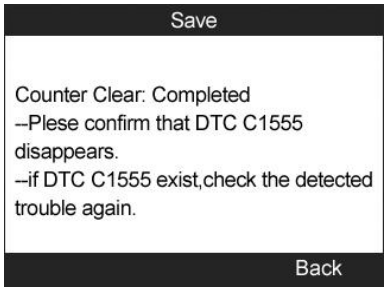


Figure 13.16

14. DPF service

14.1 DPF safety

The DPF function allows you to carry out numerous functions on the Diesel Particulate Filter system without having to send the car to a main dealer. The tool will retrieve/erase DPF-related codes, reset the DPF light after the filter has been replaced, micromanage the injection rate, and burn off collected particles when a maximum fill level is reached by performing a static /dynamic regeneration.

ECM monitors driving style and selects a suitable time to employ regeneration. Cars driven a lot at idling speed and low load will attempt to regenerate earlier than cars driven more with high loads and engine speeds. In order for regeneration to take place, a prolonged high exhaust temperature must be attained.

In the event of the car being driving in such a way that regeneration is not possible, i.e. frequent short journeys, a diagnostic trouble code will eventually be registered, DPF light and "Check Engine" indicator come on. A service regeneration can be requested in the workshop, using the diagnostic tool.

Before carrying out a forced DPF regeneration using the tool, check the following items:

- The fuel light is not on.
- No DPF-relevant faults stored in system.
- The vehicle has the correct spec engine oil.
- The oil for diesel is not contaminated.

IMPORTANT: Before diagnosing a problem vehicle and attempting to perform an emergency regeneration, it is important to obtain a full diagnostic log and read out relevant measured value blocks.

NOTE: The DPF will not regenerate if the engine management light is on, or there is a faulty EGR valve.

NOTE: The ECU must be re-adapted when replacing the DPF and when topping up the fuel additive Eolys.

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

- ***NOTE: If the vehicle needs to be driven in order to perform a DPF service, ALWAYS have a second person help you. One person should drive the vehicle while the other person observes the screen on the Tool. Trying to drive and observe the Scan Tool at the same time is dangerous, and could cause a serious traffic accident.***

Take **BMW** as an example. Follow the steps below to do the tests.

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.
4. Turn the ignition on, and the engine may be off or running.
5. Turn on the scan tool and wait for the **Main Screen** to appear.
6. Use the **UP/DOWN** scroll button or **LEFT/RIGHT** scroll button to select **DPF** in the **Main Screen**. (Figure 3.1)
7. Wait for a series of vehicle identification screens appears for user to identify the vehicle. On each screen that appears, use the **UP/DOWN** scroll button to select the correct option and then press the **OK** button. Do this until the vehicle is completely identified.

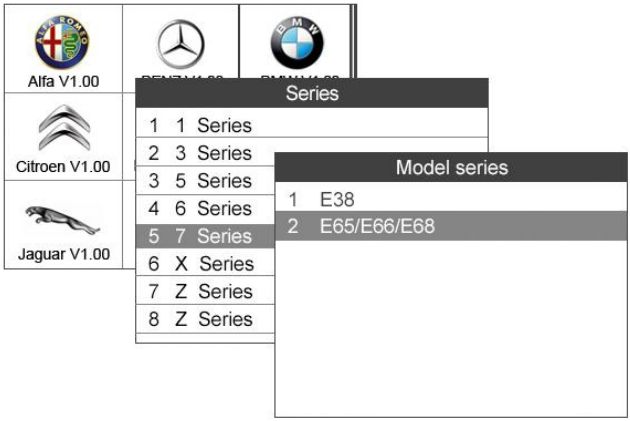


Figure 14.1

8. The screen displays as below.

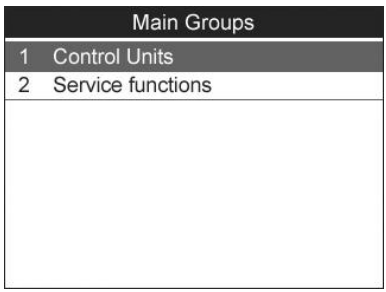


Figure 14.2

14.2 DPF Diagnostics

Use the **UP/DOWN** scroll button to select **Control Units** in the menu. (Figure 14.2) The computer will automatically detect the DPF-related system, DDE, which is dedicated for BMW. For other vehicles, the system may be different. Then the screen displays as below.

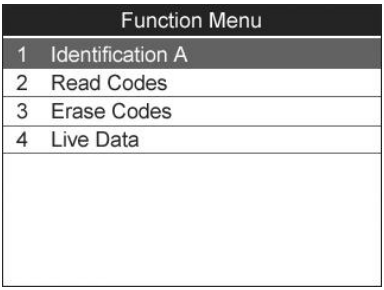


Figure 14.3

14.2.1 Read Codes

This function allows user to read the DPF DTCs from vehicle ECU.

1) From the function menu (Figure 14.3) use the **UP/DOWN** scroll button to select **Read Codes** and press the **OK** button.

2) View DTCs and their definitions on screen.

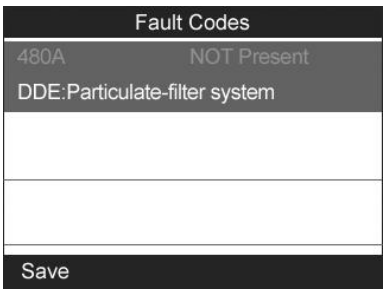


Figure 14.4

3) Select **Save** option to store the codes or press **ESC** button to exit without saving.

14.3 Erase Codes

This function allows user to erase the DPF DTCs in vehicle ECU.

1) From the function menu (Figure 14.3) use the **UP/DOWN** scroll button to select **Erase Codes** and press the **OK** button.

2) A warning message will come up asking your confirmation.

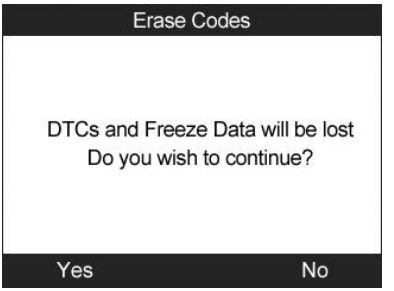


Figure 14.5

3) Select **Yes** to continue or **No** to exit. When the command is sent, the tool will display a message as below.

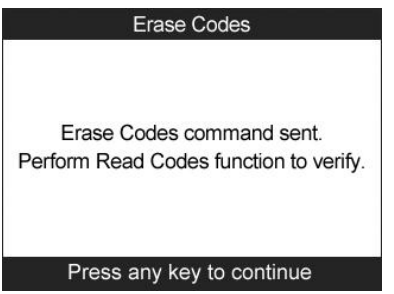


Figure 14.6

4) To make sure the codes are erased completely, perform **Read Codes** function to verify.

14.4 Live Data

This function enables users to view DPF-related data readings from a selected ECU. With the live data screen displayed, you can view the data in text or graphical format, record and save files for later viewing, pause the readings and view past data, and more.

1) From the function menu (Figure 14.3) use the **UP/DOWN** scroll button to select **Live Data** and press the **OK** button.

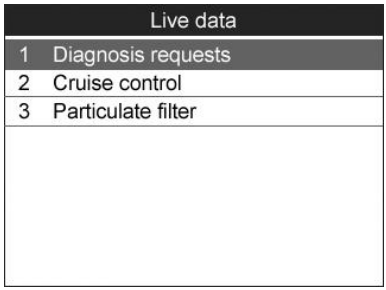


Figure 14.7

2) In this function list, **Diagnosis requests** retrieves signal data generated by the sensors, **Cruise control** shows the driving conditions, and **Particulate filter** displays the DPF system status information. (*Taking **Particulate filter** as an example.*)

3) Select only the PIDs that you wish to display. Use the **UP/DOWN** scroll button to move to the desired item and press the corresponding **FUNCTION BUTTON** '**Select**' to choose.

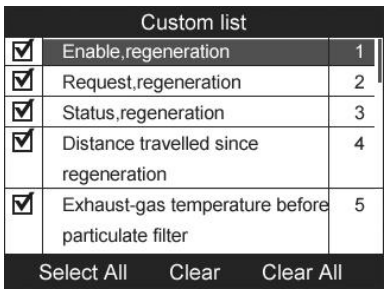


Figure 14.8

- The Selected items are marked with ticks on the left.
- The number on the right indicates sequence of the selected item.
- Press the corresponding **FUNCTION BUTTON** '**Clear**' to unselect items, or press the corresponding **FUNCTION BUTTON** '**Select All**'/'**Clear All**' to select or unselect all items.

4) Press the **OK** button to confirm your selection and retrieve the selected live sensor data.

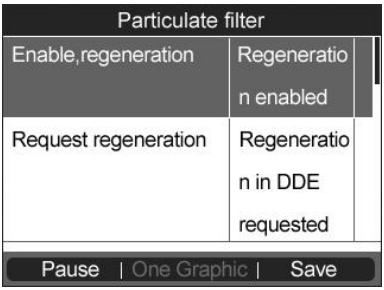


Figure 14.9

- Press the corresponding **FUNCTION BUTTON** '**Save'** to store the retrieved live data for later playback or printing.
- Press the corresponding **FUNCTION BUTTON** '**Stop Save'** to stop saving data and resume live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Pause**' to suspend live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Continue**' to resume live sensor data retrieving.
- If the '**One Graphic**' option is highlighted when a specific item is selected, the graphic information is available.
- When the sensor data is shown in graph, the tool offers two more options: **Two Graphic** and **Merge Graphic**. The first option can display two graphs on the same screen, and the last option can merge the two graphs into one.

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

14.5 Identification A

This function enables you to retrieve the DPF-related control unit information.

1) From the function menu (Figure 14.3) use the **UP/DOWN** scroll button to select **Identification A** and press the **OK** button.
2) The tool will display the ECU information for your viewing and saving.

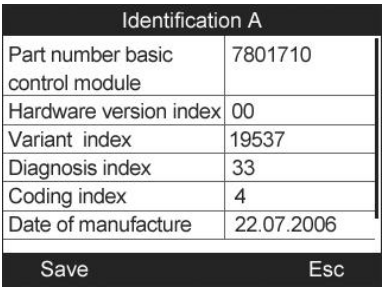


Figure 14.10

3) Select **Save** option to save the information for later review or press the **ESC** button to return to the previous menu.

14.6 DPF Service Functions

Use the **UP/DOWN** scroll button to select **Service Functions** in the menu. (Figure 14.2) The screen displays as below.

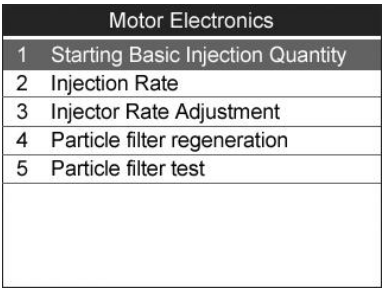


Figure 14.11

14.6.1 Starting Basic Inspection Quantity

This function enables you to start fuel delivery matching.

1) From the service functions menu (Figure 14.11) use the **UP/DOWN** scroll button to select **Starting Basic Inspection Quantity** and press the **OK** button.

2) The tool communicates with the vehicle and reads the fault codes memory. Follow the on-screen instructions to finish this procedure.

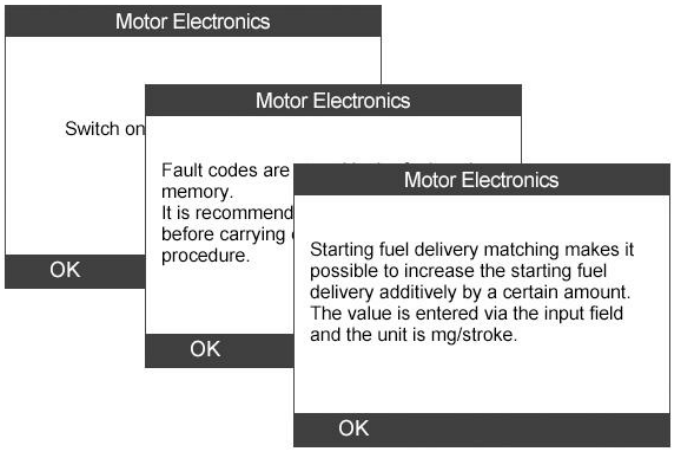


Figure 14.12

3) The tool will display a function list menu as below. In this menu, you can enter new value for adjustment, or reset adjustment to 0.

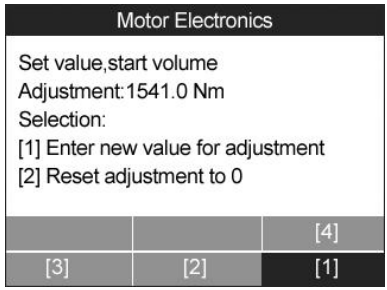


Figure 14.13

The option keys at the bottom of the screen work as below.

【1】Enter new value for adjustment

【2】Reset adjustment to 0

【3】End with programming (the new value is permanently stored)

【4】End without programming (the old value is retained)

A. Enter new value for adjustment

From the **Starting Basic Inspection Quantity** menu (Figure 14.13) use the **LEFT/RIGHT** scroll button to select 【1】 and press the **OK** button. The screen displays as below. You will need to input a new value for fuel delivery rate adjustment.

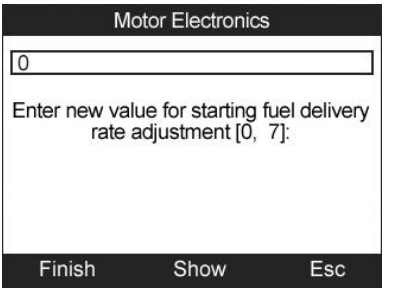


Figure 14.14

The three keys at the bottom of the screen work as below.

[**Finish**]: After entering a new value, use this key to save the value to the tool.

[**Show**]: Press this key to pop up a soft keyboard to facilitate your input. (Figure 14.15)

[**Esc**]: Press this key to exit.

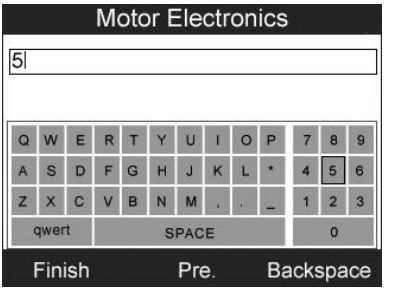


Figure 14.15

The three keys at the bottom of the screen work as below.

[**Finish**]: When you finished the input, select this key to confirm your input and exit.

[**Pre**.] : Moves a space to the left.

[**Backspace**]: Uses this key to erase the previous digit or character when typing.

NOTE: The data you input must be in the reasonable range. If the input data is out of range, the tool will display a warning message "Permissible adjustment range exceeded."

B. Reset adjustment to 0

From the **Starting Basic Inspection Quantity** menu (Figure 14.13) use the **LEFT/RIGHT** scroll button to select **【2】** and press the **OK** button. The tool will automatically reset the value to zero.

C. Store data and exit

When you have finished the fuel delivery rate adjustment, use the **LEFT/RIGHT** scroll button to select **【3】** and press the **OK** button to store the new value in the control units; or, select **【4】** and press the **OK** button to retain the old value.

14.6.2 Injection rate

This function enables you to adjust the injection volume.

1) From the service functions menu (Figure 14.11) use the **UP/DOWN** scroll button to select **Injection rate** and press the **OK** button.

2) The tool communicates with the vehicle and reads the fault codes memory. Follow the on-screen instructions to finish this procedure.

3) Then the tool will display as below. In this function, you can enter new value for matching, or reset matching to 100%.

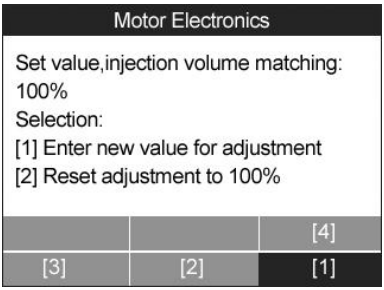


Figure 14.16

The option keys at the bottom of the screen work as below.

【1】Enter new value for adjustment

【2】Reset adjustment to 100%

【3】End with programming (the new value is permanently stored)

【4】End without programming (the old value is retained)

A. Enter new value for adjustment

From the **Injection rate** menu (Figure 14.16) use the **LEFT/RIGHT** scroll button to select 【1】 and press the **OK** button. The screen displays as below. You will need to input a new value for injection volume matching.

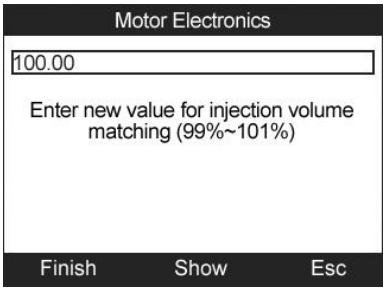


Figure 14.17

The three keys at the bottom of the screen work as below.

[**Finish**]: After entering a new value, use this key to save the value to the tool.

[**Show**]: Press this key to pop up a soft keyboard to facilitate your input. (Figure 14.18)

[**Esc**]: Press this key to exit.

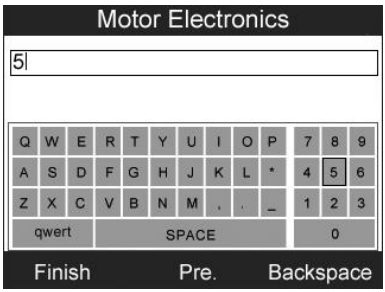


Figure 14.18

The three keys at the bottom of the screen work as below.

[**Finish**]: When you finished the input, select this key to confirm your input and exit.

[**Pre**.] : Moves a space to the left.

[**Backspace**]: Uses this key to erase the previous digit or character when typing.

NOTE: The data you input must be in the reasonable range. If the input data is out of range, the tool will display a warning message "Permissible adjustment range exceeded."

B. Reset adjustment to 100%

From the **Injection rate** menu (Figure 14.16) use the **LEFT/RIGHT** scroll button to select 【**2**】 and press the **OK** button. The tool will automatically reset the value to 100%.

C. Store data and exit

When you have finished the injection volume adjustment, use the **LEFT/RIGHT** scroll button to select 【**3**】 and press the **OK** button to store the new value in the control units; or, select 【**4**】 and press the **OK** button to retain the old value.

14.6.3 Injector rate adjustment

This function enables you to adjust the injector rate for individual cylinders.

1) From the service functions menu (Figure 14.11) use the **UP/DOWN** scroll button to select **Injector rate adjustment** and press the **OK** button.
2) The tool communicates with the vehicle and reads the fault codes memory. Follow the on-screen instructions to finish this procedure.
3) Then the tool will display as below. In this function, you can enter new value for each cylinder.

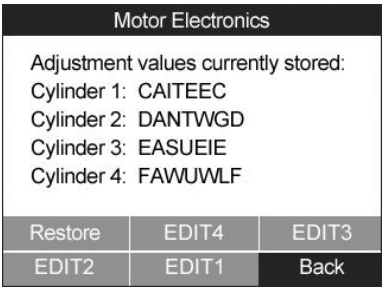


Figure 14.19

The option keys at the bottom of the screen work as below.

【**EDIT 1**】Edit Cylinder 1 injector code

【**EDIT 2**】Edit Cylinder 2 injector code

【**EDIT 3**】Edit Cylinder 3 injector code

【**EDIT 4**】Edit Cylinder 4 injector code

【**Back**】Return to the previous menu

【**Restore**】Retain the old value

A. <u>Enter new value for cylinder</u>

From the **Injector rate adjustment** menu (Figure 14.19) use the **LEFT/RIGHT** scroll button to select one option and press the **OK** button. The screen displays as below. You will need to input a new value for Cylinder injector.

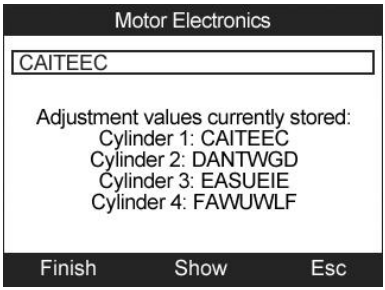


Figure 14.20

The three keys at the bottom of the screen work as below.

[**Finish**]: After entering a new value, use this key to save the value to the tool.

[**Show**]: Press this key to pop up a soft keyboard to facilitate your input. (Figure 14.21)

[**Esc**]: Press this key to exit.

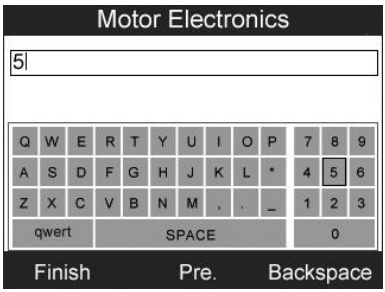


Figure 14.21

The three keys at the bottom of the screen work as below.

[**Finish**]: When you finished the input, select this key to confirm your input and exit.

[**Pre**.] : Moves a space to the left.

[**Backspace**]: Uses this key to erase the previous digit or character when typing.

B. Restore the old value

From the **Injector rate adjustment** menu (Figure 14.19) use the **LEFT/RIGHT** scroll button to select 【**Restore**】 and press the **OK** button. The tool will automatically retain the old value.

When you have finished the injector rate adjustment, use the **LEFT/RIGHT** scroll button to select 【**Back**】 and press the **OK** button to return to the previous menu.

14.6.4 Particle filter regeneration

This function enables you to perform the particle filter regeneration.

1) From the service functions menu (Figure 14.11) use the **UP/DOWN** scroll button to select **Particle filter regeneration** and press the **OK** button.

2) The tool communicates with the vehicle and reads the fault codes memory. Follow the on-screen instructions to check the prerequisites before particle filter regeneration, such as the fuel, the time and driving style.

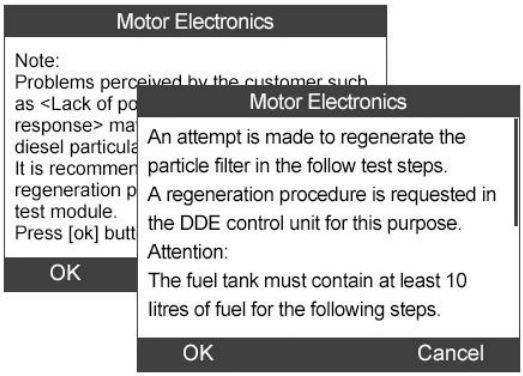


Figure 14.22

3) If every prerequisite is met, the tool will ask your confirmation to proceed as below. Select **Request** to begin a regeneration or **End** to end the service function and exit.

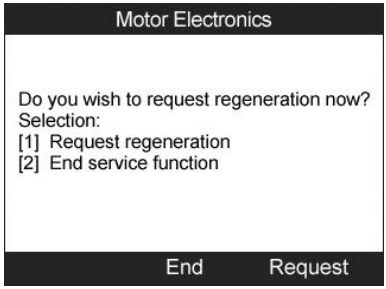


Figure 14.23

4) A series of instruction screens appears for users to perform the particle filter regeneration step by step. Follow the onscreen instructions and press the **OK** button.(Figure 14.24) Do this until the tool reads off the regeneration status as below.(Figure 14.25)

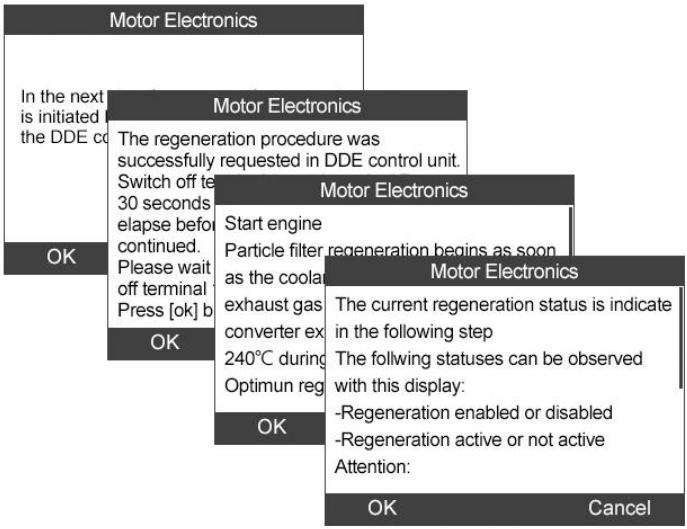


Figure 14.24

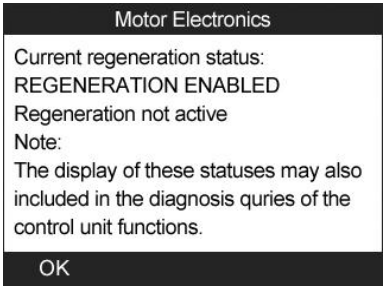


Figure 14.25

5) When the particle filter regeneration is complete, the tool will ask your confirmation to exit the display. Select **Repeat** to check the status again or **End** to end the service function and exit.

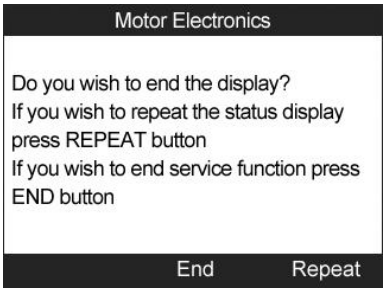


Figure 14.26

NOTE: In the case of a particle filter heavily loaded with soot, it can occur that the regeneration request is blocked again after a short time or is not released. In this case, it is required to regenerate the particle filter in a motorway or cross-country trip taking approx. 30 minutes at a speed that is as constant as possible. Subsequently, the service function "Particle filter regeneration" must be run again.

NOTE: During the regeneration phase and with the engine running, it can also occur that the display for "Regeneration active" jumps to "Regeneration not active". This behavior can

be seen exclusively with the vehicle stationary with the engine running. This behavior does not impair the scheduled course of the regeneration in general.

14.6.5 Particle filter test

It is advisable to carry out a series of particle filter tests as a result of constant DPF regeneration, such as checking oil level, oil change interval for diesel contamination, swirl flaps, backpressure sensors and particle filter soot remains.

1) From the service functions menu (Figure 14.11) use the **UP/DOWN** scroll button to select **Particle filter test** and press the **OK** button.
2) The tool communicates with the vehicle and reads the fault codes memory. If there is no relevant fault code stored in DDE, the screen displays as below. Select **Cancel** to exit this function.

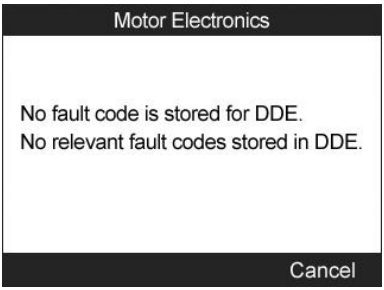


Figure 14.27

3) If there are DPF-related codes stored in DDE, the screen displays as below. Select **OK** to continue or **Cancel** to exit this function.

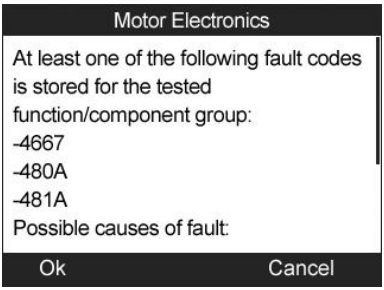


Figure 14.28

4) The tool shows a list of particle filter tests as below.

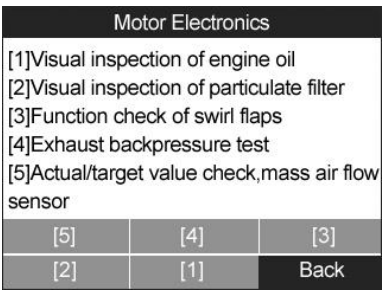


Figure 14.29

The option keys at the bottom of the screen work as below.

【1】Visual inspection of engine oil

【2】Visual inspection of particulate filter

【3】Function check of swirl flaps

【4】Exhaust backpressure test

【5】Actual/target value check-mass air flow sensor

【**Back**】Return to the previous menu

【1】Visual inspection of engine oil

a) From the particle filter test menu (Figure 14.29) use the **LEFT/RIGHT** scroll button to select 【1】 and press the **OK** button.

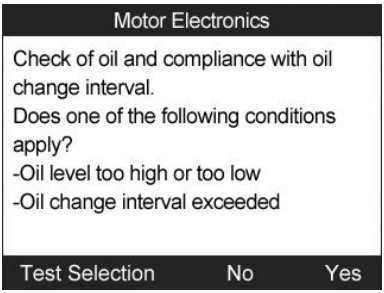


Figure 14.30

b) Select **No** if you visually find nothing wrong with your engine oil. The tool displays as below. Press **OK** button to return to previous menu.

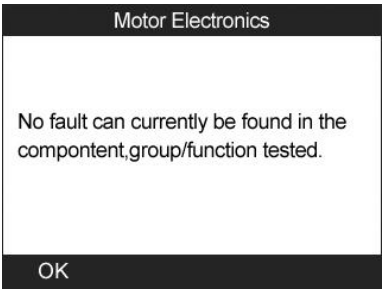


Figure 14.31

c) Or, select **Yes** if you visually find the engine oil level or oil change interval has some problems. The tool displays as below. Press **OK** button to return to previous menu.

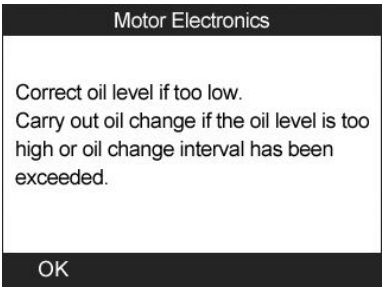


Figure 14.32

d) Or, select **Test Selection** to return to previous menu.

【2】Visual inspection of particulate filter

a) From the particle filter test menu (Figure 14.29) use the **LEFT/RIGHT** scroll button to select 【2】and press the **OK** button.

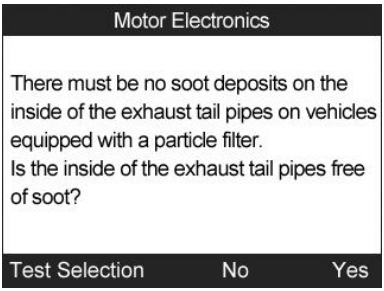


Figure 14.33

b) Select **Yes** if you visually find no soot on the inside of the exhaust tail pipes. The tool displays as below. Press **OK** button to return to previous menu.

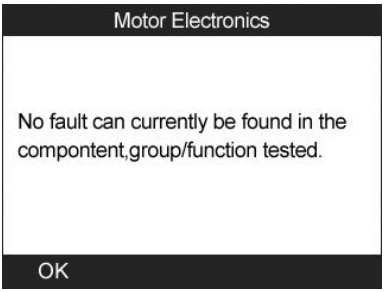


Figure 14.34

c) Or, select **No** if you visually find soot on the inside of the exhaust tail pipes. The tool displays as below. Follow the on-screen instructions to carry out particle filter visual inspections. Then select the correct options according to the test results.

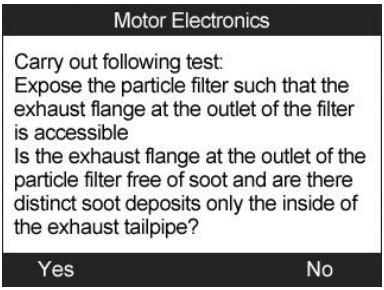


Figure 14.35

d) Or, select **Test Selection** to return to previous menu.

【3】Function check of swirl flaps

a) From the particle filter test menu (Figure 14.29) use the **LEFT/RIGHT** scroll button to select 【3】and press the **OK** button.

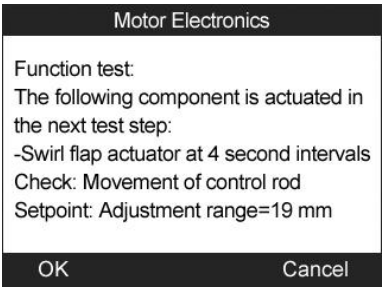


Figure 14.36

b) Select **OK** to activate swirl flaps and the tool displays as below. (Figure 14.37) Press **OK** button to end the activation and exit.

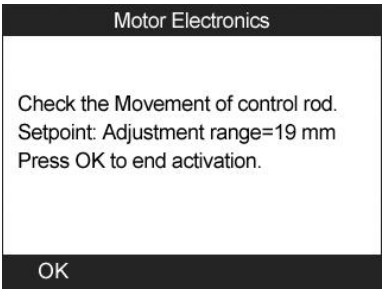


Figure 14.37

c) Or, select **Cancel** to return to previous menu.

【4】Exhaust backpressure test

a) From the particle filter test menu (Figure 14.29) use the **LEFT/RIGHT** scroll button to select **【4】** and press the **OK** button.

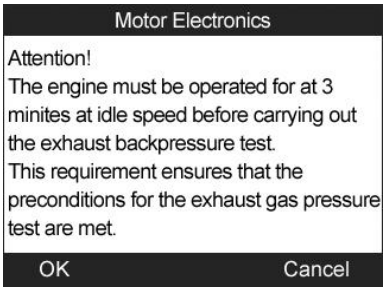


Figure 14.38

b) Press **OK** button to proceed and the tool displays as below. Or, select **Cancel** to return to previous menu.

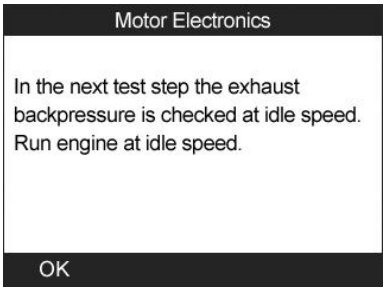


Figure 14.39

c) Check the exhaust backpressure with engine running idle. The tool will read off the actual backpressure value and compare with the upper limit. (Figure 14.40). Select **OK** to continue the test or **Cancel** to return to previous menu.

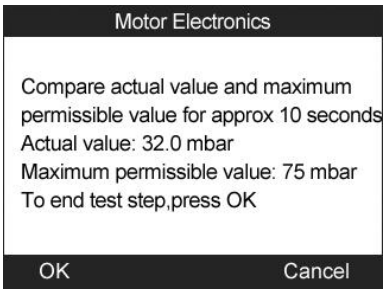


Figure 14.40

- If the engine is not running at idle speed, the tool will display a warning message. (Figure 14.41) Select **OK** to repeat the test or select **Cancel** to exit.

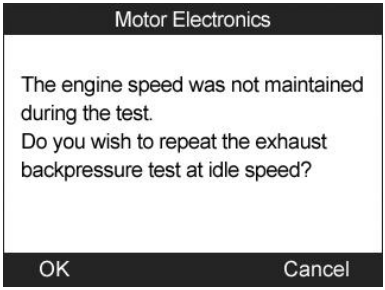


Figure 14.41

d) Check the exhaust backpressure with engine running at 2000 rpm. The tool will read off the actual backpressure value and compare with the upper limit. (Figure 14.42). Select **OK** to continue the test or **Cancel** to return to previous menu.

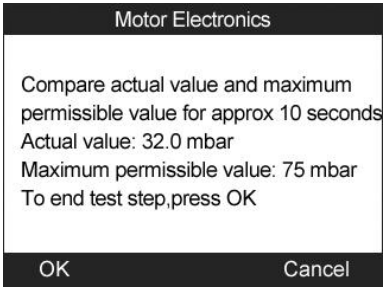


Figure 14.42

- If the engine is not running at 2000 rpm, the tool will display a warning message. (Figure 14.43) Select **OK** to repeat the test or select **Cancel** to exit.

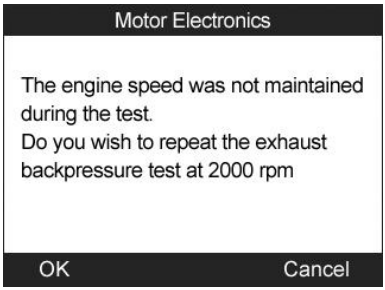


Figure 14.43

e) Check the exhaust backpressure with engine running at cut-off speed. The tool will read off the actual backpressure value and compare with the upper limit. (Figure 14.44). Select **OK** to end the test or **Cancel** to return to previous menu.

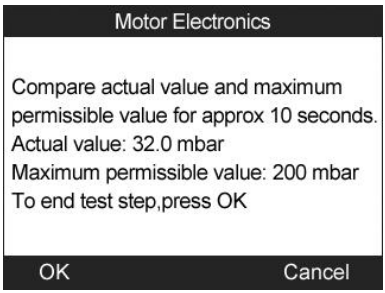


Figure 14.44

- If the engine is not running at cut-off speed, the tool will display a warning message. (Figure 14.45) Select **OK** to repeat the test.

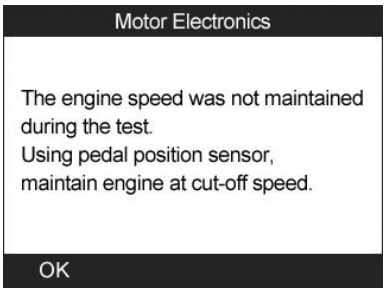


Figure 14.45

f) The tool will submit a summary report for your confirmation.(Figure 14.46)

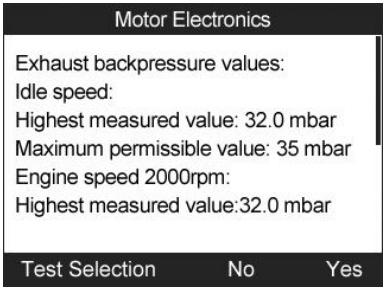


Figure 14.46

g) Select **Yes** if the actual values exceed the limits. The tool displays an instruction message as below. Press **OK** button to return to previous menu.

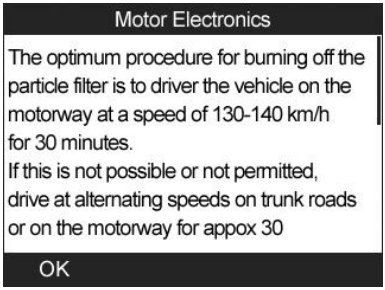


Figure 14.47

h) Or, select **No** if the actual values are within the limits, then the tool will return to previous menu.

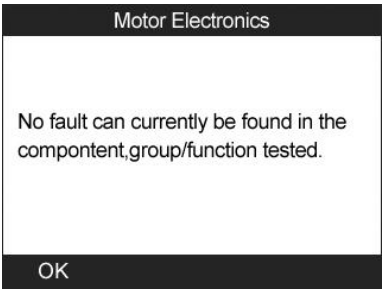


Figure 14.48

i) Or, select **Test Selection** to return to previous menu.

【5】Actual/target value check-mass air flow sensor

a) From the particle filter test menu (Figure 14.29) use the **LEFT/RIGHT** scroll button to select 【**5**】 and press the **OK** button.

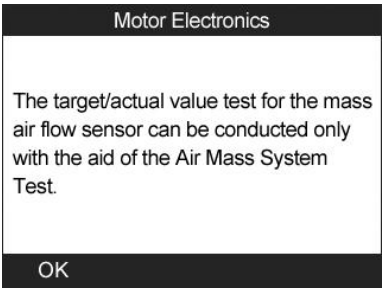


Figure 14.49

b) Press **OK** button to return to previous menu.

15. TPMS (Tire Pressure Monitor System)

This function allows user quickly look up vehicle TPMS information and reset procedures and perform Tire Pressure Monitor System diagnostics.

With the tool properly connected to a vehicle's data link connector (DLC), you can use the tool to read TPMS diagnostic trouble codes (DTCs) and view live data streams from the vehicle's TPMS-related ECUs. You can also save "recordings" of data readings and perform special TPMS programming and reset procedures.

NOTE: 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.

NOTE: For some operations, you may need to activate the TPMS sensors on the wheel. We offer a TPMS series of products. For more information, please visit our website: www.auteltech.com.

15.1 Enter the vehicle information

6) Turn the ignition off.

7) Make sure the car is properly blocked.

8) Connect the tool to vehicle and power on.

9) Turn the ignition on.

10) Select **TPMS** icon in the **Main Screen** (Figure 3.1) and press **OK** button. A series of vehicle identification screens appears for you to identify the vehicle. (Take **Nissan** as an example)

11) Select **Nissan** on the screen. This initiates communication with the vehicle's computer and displays the next screen—TPMS diagnostic function menu (Figure 15.1).

NOTE: If there is a linking error, a notice screen will show up.

Please refer to 3.8 Product Troubleshooting for more details.

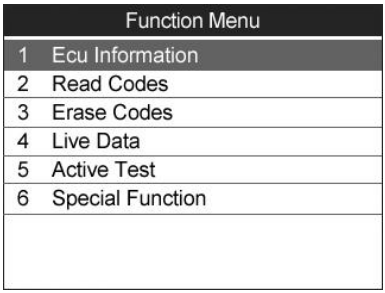


Figure 15.1

15.2 TPMS diagnostics

- **Read Codes**

This function enables you to read TPMS-related diagnostic trouble codes (DTCs) from a selected ECU.

1) From the TPMS diagnostic function menu (Figure 15.1), use the **UP/DOWN** scroll button to select the **Read Codes**, and press **OK** button.
2) The tool will display TPMS DTCs retrieved from the vehicle's ECU for your viewing. Select "**Save**" to store data for future review, or press **Esc** button to exit without saving. (Figure 15.2).

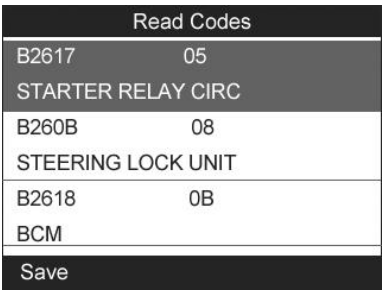


Figure 15.2

- **Erase Codes**

This function enables you to erase TPMS-related diagnostic trouble codes (DTCs) in a selected ECU.

1) From the TPMS diagnostic function menu (Figure 15.1), use the **UP/DOWN** scroll button to select the **Erase Codes**, and press **OK** button.
2) The tool will display a warning message for your confirmation. Select "**Yes**" to continue, "**No**" to exit.

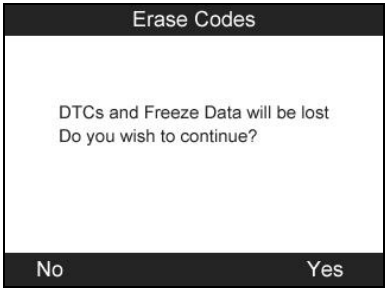


Figure 15.3

3) If the erase command is sent successfully, the screen will show as below (Figure 15.4). Press any button to continue. To make sure codes are erased clearly, run **Read Codes** again.

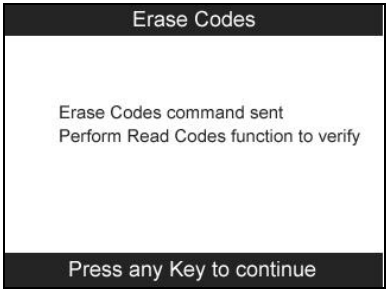


Figure 15.4

- **Live Data**

This function enables you view TPMS-related data readings from a selected ECU. With the live data screen displayed, you can view the data in Text or graphical format, record and save files for later

viewing, sort the data, pause the readings and view past data, and more.

From the TPMS diagnostic function menu (Figure 6.1), use the **UP/DOWN** scroll button to select the **Live Data**, and press **OK** button.

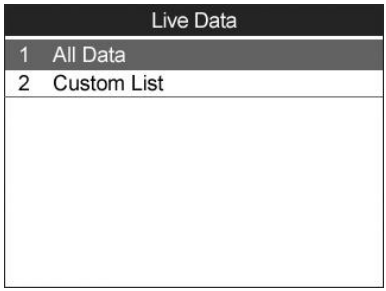


Figure 15.5

All Data

1) From the Live Data menu (Figure 15.5), use the **UP/DOWN** scroll button to select **All Data** and press the **OK** button.

2) The tool will display a list of all live sensor data. (Figure 6.6)

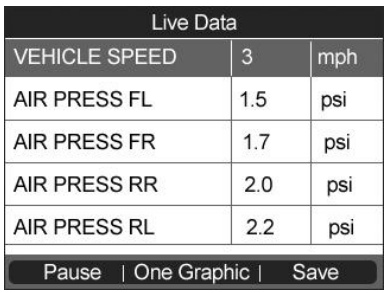


Figure 15.6

- Press the corresponding **FUNCTION BUTTON** '**Save'** to store the retrieved live data for later playback or printing.
- Press the corresponding **FUNCTION BUTTON** '**Stop Save'** to stop saving data and resume live sensor data retrieving.

- Press the corresponding **FUNCTION BUTTON** '**Pause**' to suspend live sensor data retrieving.
- Press the corresponding **FUNCTION BUTTON** '**Continue**' to resume live sensor data retrieving.
- If the '**One Graphic**' option is highlighted when a specific item is selected, the graphic information is available.
- When the sensor data is shown in graph, the tool offers two more options: **Two Graphic** and **Merge Graphic**. The first option can display two graphs on the same screen (Figure 15.7), and the last option can merge the two graphs into one. (Figure. 15.8)

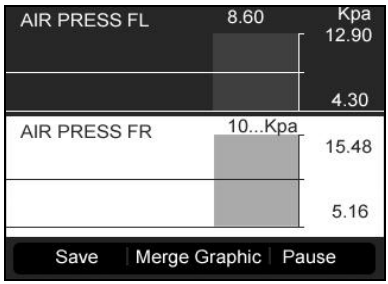


Figure 15.7

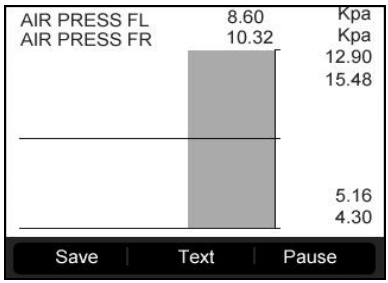


Figure 15.8

- Press the corresponding **FUNCTION BUTTON 'Text'** or the **ESC** button to return to previous screen.

Custom List

This option lets you select and view TPMS-related data readings for specific components (sensors, switches, etc.) controlled by a specific ECU.

1) To retrieve customized live sensor data, use the **UP/DOWN** scroll button to select **Custom List** from **Live Data** and press the **OK** button. (Figure 15.5)
2) Use the **UP/DOWN** scroll button to move to the desired item and press the corresponding **FUNCTION BUTTON** '**Select**' to choose.

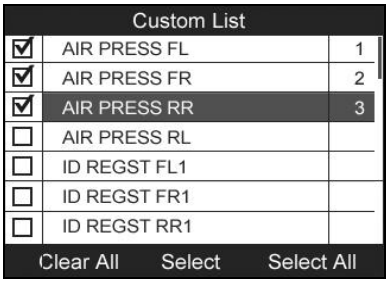


Figure 15.9

- The Selected items are marked with ticks on the left.
- The number on the right indicates sequence of the selected item.
- Press the corresponding **FUNCTION BUTTON** '**Clear**' to unselect items, or press the corresponding **FUNCTION BUTTON** '**Select All**'/'**Clear All**' to select or unselect all items.

3) Press the **OK** button to confirm your selection and retrieve the selected live sensor data.
4) Press the **ESC** button to return to the previous menu.

Active Test

This function enables you to perform actuator test for a specific component.

1) From the TPMS diagnostic function menu (Figure 15.1), use the **UP/DOWN** scroll button to select the **Active Test**, and press **OK** button.

2) The tool will display a list of available active tests for the vehicle being tested.

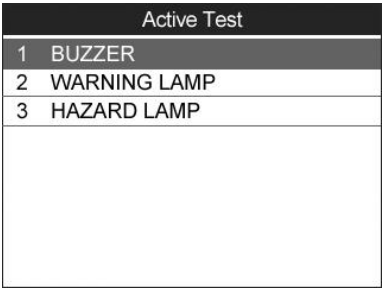


Figure 15.10

Taking **Warning Lamp** for example:

1) From **Active Test** Menu, use the **UP/DOWN** scroll button to select **Warning Lamp** function. (Figure 15.10)

2) Press the corresponding **FUNCTION BUTTON** '**ON**'or "**OFF**" to check whether the warning lamp on the vehicle is turning on or off. (Figure 15.11)

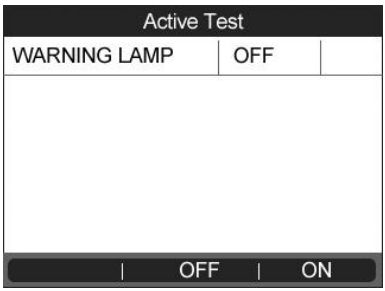


Figure 15.11

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

● Special Function

This function enables you to program and reset TPMS-related components or write TPMS sensor IDs to the ECU.

1) From the TPMS diagnostic function menu (Figure 15.1), use the **UP/DOWN** scroll button to select the **Special Function**, and press **OK** button.
2) The tool will display a list of available special functions for the vehicle being tested.

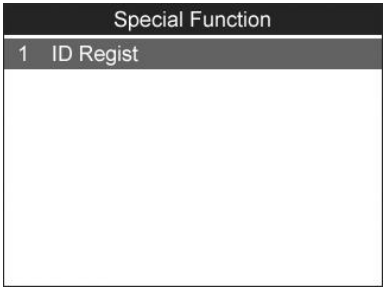


Figure 15.12

Taking **ID Regist** for example:

1) From **Special Function** Menu, use the **UP/DOWN** scroll button to select **ID Regist** function. (Figure 15.12)
2) The tool will communicate with vehicle computer and register the TPMS sensor IDs to the ECU. When the registration is completed, the screen displays as below.

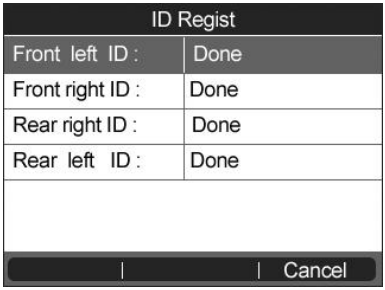


Figure 15.13

● Ecu Information

This function enables you to retrieve the ECU information.

1) From the TPMS diagnostic function menu (Figure 15.1), use the **UP/DOWN** scroll button to select the **Ecu Information**, and press **OK** button.
2) The tool will display the Ecu information for your viewing and saving.

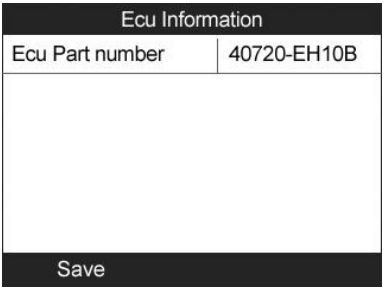


Figure 15.14

Select **Save** option to save the information for later review or press the **ESC** button to return to the previous menu.

16. Warranty and Service

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.

Service Procedures

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

UK : www.autel-tech.com

EU : www.autel-tech.eu

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