AUTOMOTIVE PRODUCTS

ECU-PRO

Vgatescan VS-890 *User Manual*

Welcome!
Thank you for buying Vgatescan OBDII Diagnostic Scanner!

The Vgatescan OBDII Diagnostic Scanner allows you to access your OBDII vehicle's data. Vehicle data, which was only available to dealership technicians using expensive proprietary scan tools, is now available to every people who has a Vgatescan! Vgatescan is the prime choice for users keen on DIY.

➢ Here is a list of Vgatescan's **Functions and Features**

- Scanners support **13 protocols** and you can use two modes to scan which includes **Auto scan** mode and **Manually scan** mode;
- Vgatescan tool can support from model $1 to model$ 9;
- More than **71 vehicle manufacturer** built-in for you.
- DTCs include Generic (**P0, P2, P3, B0, U0 and C0**) & manufacturer specific (**P1, P3, B1, B2, U1** and **C1, C2,**) codes.
- **80 percent trouble** codes have help information in scan tool.
- Scan tool has Black Mask OLED. You can read the content of scanner smoothly when in strong light.
- DTC definitions are written in user friendly words rather than obscure technical terms.

➢ Vgatescan's Main Diagnostics menu

~ Read Diagnostic Trouble Codes (DTCs)
~ Clear trouble codes
~ View real-time vehicle operation data (Data stream)
~ View Freeze Frame data
~ View I/M readiness
~Read O2 Monitor Test data
~Read On-Board Mon. Test
~Component Test
~View the vehicle's information

The Vgatescan OBDII Diagnostic Scanner is the perfect scan tool to make you diagnose a problem more easily!

Table of Contents

1. Safety Precautions and Warnings

For your Health and Safety, please read this manual thoroughly before using your Scan Tool. **First**, you should read the safety precautions and warnings. Safety messages are provided to help prevent personal injury and equipment damage.

- Do not drop or shock the scan tool.
- Overpressure can cause damage on liquid crystal display (LCD), and it can also provoke malfunction because of its own features.
- Do not connect or disconnect any test equipment with ignition on or engine running
- Operate the vehicle in a well-ventilated work area; exhaust gases are poisonous
- Users should not remodel or take the product apart by themselves.
- Do not use fuel injector cleaning solvents when performing diagnostic testing
- Do not place tools or test equipment on fenders or other places in engine compartment
- Use the scan tool only as described in the user's manual
- Follow service manual warnings when working around air bag components or wiring
- Do not leave a running engine unattended.
- Keep code reader dry, clean and free from oil, water and grease. Use a mild detergent on a clean cloth to clean the

outside of the tool.

- Engine systems that malfunction can cause injury

⚠CAUTION

➢ ***The safety precautions and warnings discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.***

2. General Information

2.1 About On-Board Diagnostics (OBD) II

What is OBD II?

On-board diagnostics version II (OBD II) is a system that the Society of Automotive Engineers (SAE) developed to standardize automotive electronic diagnosis. Beginning in 1996, most new vehicles sold in the United States were fully OBD II compliant.

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.

Does My Car Have OBD-II?

All cars and light trucks built and sold in the United States after January 1, 1996 were required to be OBD II equipped. In general, this means all 1996 model year cars and light trucks are compliant, even if built in late 1995.

Two factors will show if your vehicle is definitely OBD II equipped:

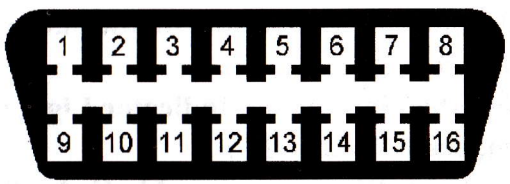
1) There will be an OBD II connector.

2) There will be a note on a sticker or nameplate under the hood: "OBD II compliant".

2.2 Data Link Connector (DLC)

What is DLC?

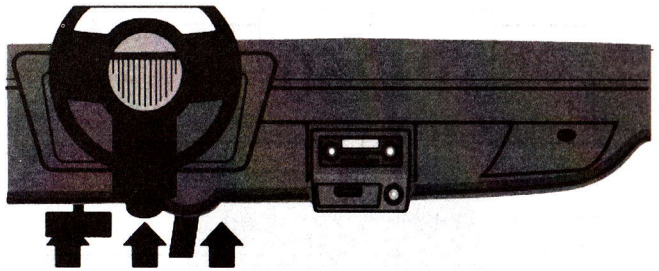
The data link connector (DLC) allows the Scan Tool to communicate with the vehicle's computer(s). Before OBD II, manufacturers used different DLC's to communicate with the vehicle. Use the proper DLC adapter cable to connect the Scan Tool to the vehicle. Also, the vehicle's DLC may be found in several different places and have many different configurations.



Where is the connector located?

The connector must be located within three feet of the driver

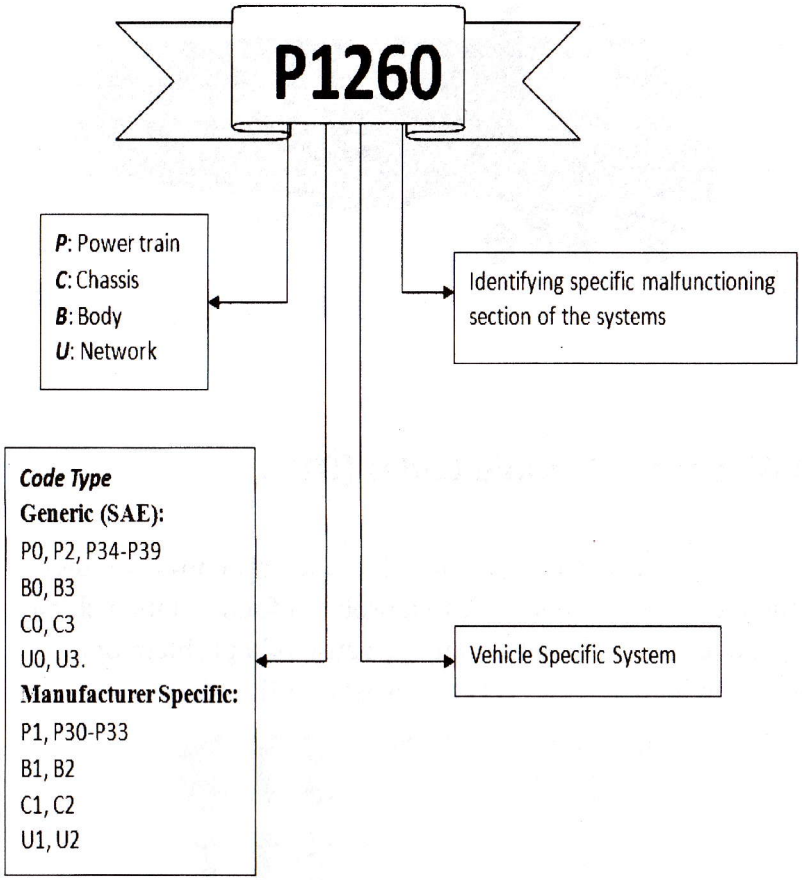
and must not require any tools to be revealed. Look under the dash and behind ashtrays.



2.3 Diagnostic Trouble Codes (DTCs)

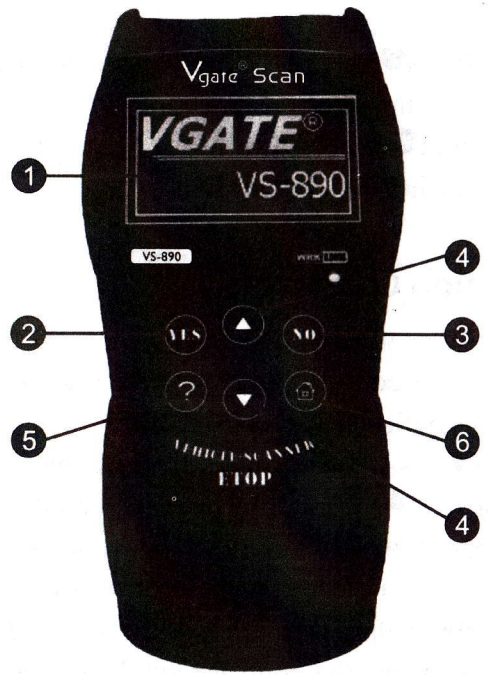
DTCs are codes that are stored by the on-board computer diagnostic system in response to a problem found in the vehicle. They are used to help determine the cause of a problem or problems with a vehicle. DTCs consist of a five-digit alphanumeric code such as P1260.

Example of Diagnostic Trouble Code



3. About Vgatescan

3.1 Scan Tool Description



1.LCD DISPLAY: Indicates test results. Backlit, 128 x 64 pixel display with contrast adjustment.

2. YES: Press YES to confirm or enter the next menu. You can press YES to selected/ deselected items in the ***"Customize data set"*** of *"**Data stream**"* and ***"Freeze frame"*** .Hold YES to enter the selected items.

3. : Cancels a selection from a menu or returns to the menu. It is also used to reset code to P0000 in the ***DTC Lookup***.

4. /: moves up or down through menu and submenu items. Hold up or down to read the previous/next page. If you keep holding/key it can change page automatically. When looking up DTC, it is used to change value of selected character and hold up or hold down to select the digit which needed to be changed.

5. : Press to read the help information when "?" icon observed on the upper of the screen.

6. : Hold to return to Main Menu and press to return to Main Menu when looking up DTC.

3.2Navigation Characters

Characters used to help navigate the scan tool are:

1) "►" -- Indicates current selection

2) "▲/▼" -- If the current screen has more than one item you can choose, "▲/▼" will be displayed on the upper of the screen, it means that scroll up/down is available.

3) "?" -- It indicates help information is available. Press button to view help information of the selected item.

4) "$" -- Means the control module address from which the data is retrieved.

5) "xx/yy"--The number "yy" to the upper right corner of the screen indicates total number of items under this menu and "xx" means current sequence of cursor"►"pointed. When the message information more than one screen, "yy" means total number of pages and "xx" is current page.

3.3 Scanner power

The power of the scan tool is provided via the vehicle Data Link Connector (**DLC**). Just follow the steps below to turn on the scan tool:

1) Find DLC on vehicle.

2) Connect the scan tool and diagnostic connector with the cable supplied.

3.4 Suggestions for users

1) Please do not use solvents such as alcohol to clean the keyboard or display.

2) Please use a mild nonabrasive detergent and a soft cotton cloth

3) A plastic DLC cover may be found for some vehicles and you need to remove it before plugging the EOBD cable

4. Using the Scan Tool

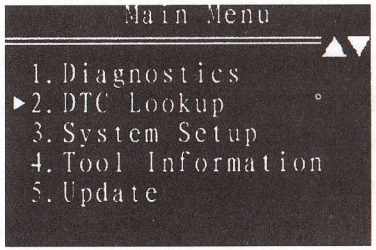
4.1 DTC Lookup

The ***DTC Lookup*** function is used to search for definitions of DTCs stored in the Scan Tool.

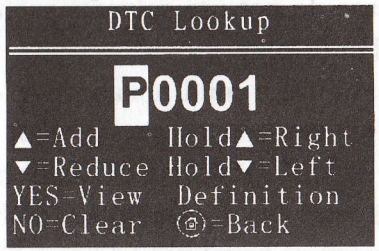
1).Enter DTC Lookup:

From the ***Main Menu***, use/to select ***DTC Lookup*** and

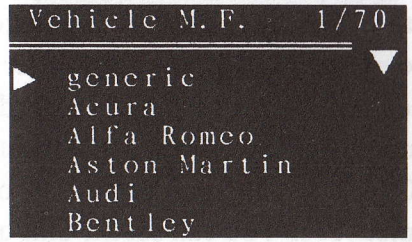
press YES to enter.



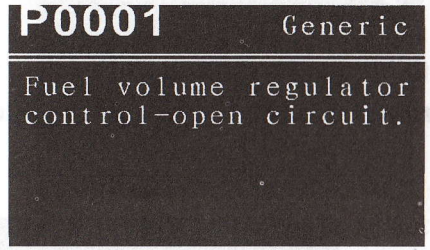
2).From ***DTC Lookup*** menu, hold ▲/▼ to move to the desired character, press ▲/▼ button to change selected character and press YES button to confirm. If you want to change the code to P0000, you can press NO key to clear the code.



3) Before you read the DTC definition, you must select the vehicle manufacturer, use the ▲/▼ scroll buttons to select the vehicle manufacturer and hold ▲/▼ to view previous or next screen. You can also keep holding ▲/▼to automatically scroll up and down. Then press YES to view the DTC definition.



4) View the DTC definition on screen. When the DTC's definition covers more than one screen, press ▲/▼ to view additional information on previous/next screens.



✓ If the code you have selected does not have definition, scan tool will display "No definition found for this DTC. Please select proper model or refer to vehicle service manual".

✓ Only one character can be changed at a time.

5) Press ⌂ key to return to ***Main Menu***.

4.2 System Setup

The scanner allows you to make the following settings:

●**Preference:** When the scanner is auto scanning, the scan tool will first try the default protocol which you have set. This

will save your time from scanning each protocol every time you connect your device to your vehicle. And after you selected the default manufacturer, the cursor points to the default manufacturer unless you press ▲/▼ key to change.

- **Adjust Contrast:** Adjusts the contrast of the LCD display
- **Unit of measure:** You can set the unit of measure to imperial or Metric.
- **Self-test:** You can check the scanner's display and keyboard that if they are working normally.
- **Language**: You can select different languages in this mode.

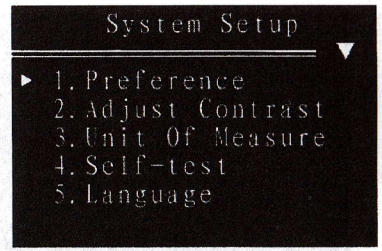
To enter the ***Setup*** menu mode:

From ***Main Menu*** use ▲/▼ scroll to select ***System Setup*** :

➢ **Preference Setup**

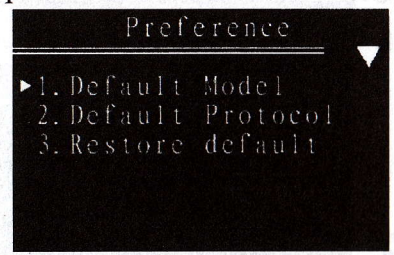
From ***System Setup*** menu use ▲/▼ scroll to select ***Preference,*** and press YES to enter.

You can make the manufacturer and protocol settings.

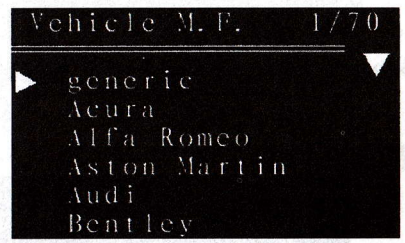


A. Vehicle manufacturer setup

1) From Preference menu, use ▲/▼ scroll button to select ***Default Model***, and press YES button.

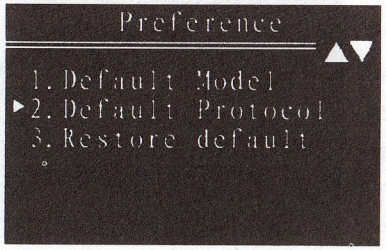


2) Use ▲ / ▼ scroll button to select the desired manufacturer and press YES button to save your selection. After you save your selection a message will tell you that **"The setting is in force."**

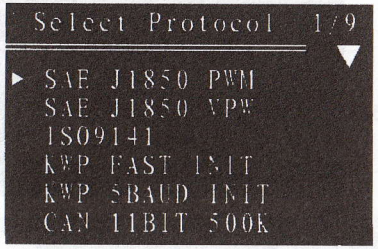


B. Protocol setup

1) From Preference menu, use ▲/▼ scroll button to select ***Default Protocol***, and press YES button.

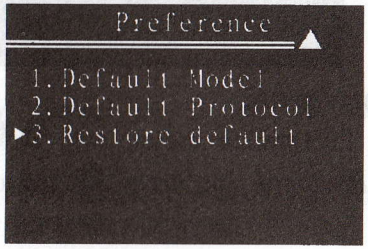


2) Use ▲/▼ scroll button to select the desired manufacturer and press YES button to save your selection. After you save your selection a message will tell you that **"The setting is in force."**



C. Restore default

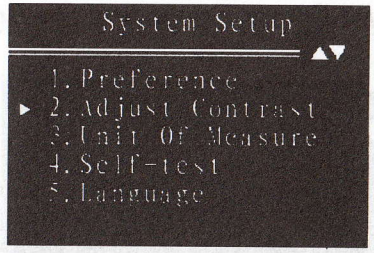
If you want to let the scan tool restore to factory setting, select ***restore default*** and press YES button. This operation will reset ***Default Model, Default Protocol, Adjust Contrast*** and ***Unit of measure to factory settings.*** After you save your selection a message will tell you that **"The setting is in force."**



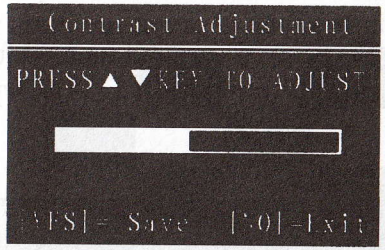
✓generic in the vehicle manufacturer and SAE J1850 PWM in the select protocol are the factory default settings. And Metric in the Unit of measure is the factory default settings.

➢ Adjust Contrast

1) From ***System Setup*** menu use ▲/▼ scroll button to select ***Adjust Contrast*** and press YES to enter.



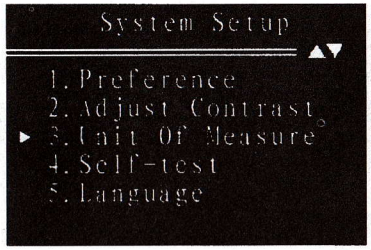
2) From ***Adjust contrast*** menu, use ▲/▼ button to increase or decrease contrast.



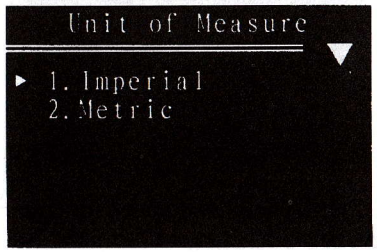
3) Press YES to save your settings and press NO to exit.

➢ Unit of measure

1) From ***System Setup*** menu use ▲/▼ to Select ***Unit of Measure*** and press YES to enter.



2) From ***Unit of Measure*** menu, use ▲/▼ scroll button to select the desired unit of measurement. The ***Unit of Measure*** is used in ***Data stream, Freeze Frame and On-Board Monitor Test.***



3) Press YES to save your choice. After you save your selection a message will tell you that **"The setting is in force."**

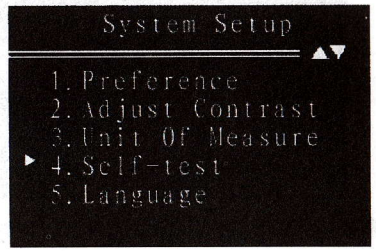
✓ ***Metric is the factory default settings.***

➢ Self-test

The Tool self-test function checks if the display and keyboard are working properly.

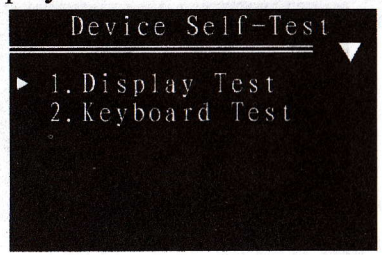
From ***System Setup*** menu, use ▲/▼ scroll button to select

Self-test, and press YES to enter.

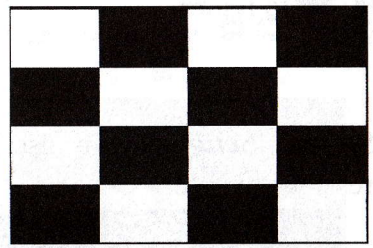


A. Display Test

1) Select ***Display Test*** from ***Device Self-Test*** menu and press YES button to start display Test.



2) Please pay attention to the LCD. Look for Missing Spots.

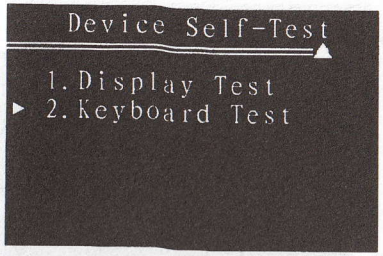


3) You can press any key to exit the test. Hold any key also can exit the test.

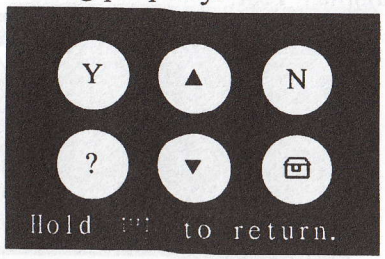
B. Keyboard Test

The ***Keyboard Test*** is used to verify keys are working correctly

1) Select ***Keyboard Test*** from ***Device Self-Test*** menu and press YES button to start display Test



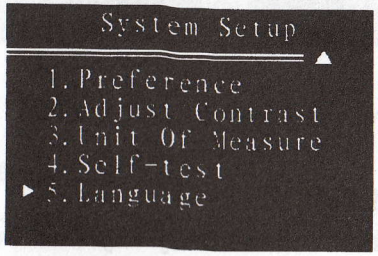
2) In this test you can press any key to check the keyboard. When you press a key, the corresponding icon will twinkle. If the corresponding icon does not twinkle, then the key is not functioning properly.



3) Hold to return.

➢ **Language**

1) From ***System Setup*** menu use / to Select ***Language*** and press to enter.



2) Use / button to select different Languages and press to confirm.

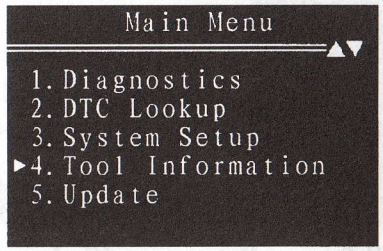
3) After your selection, it will return to ***system setup***. And the screen will display in the selected language.

✓If the device you bought is a single-language one, you can only choose English to use.

4.3 Tool Information

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

1) From ***Main menu***, use / scroll button to select Tool Information and press to view.



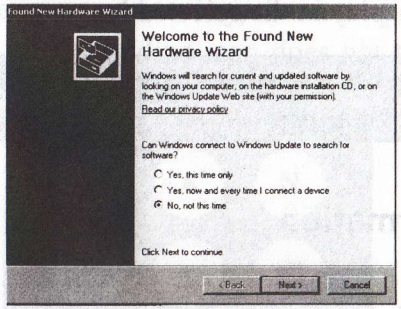
2) View tool information on screen.

3) Press key to return.

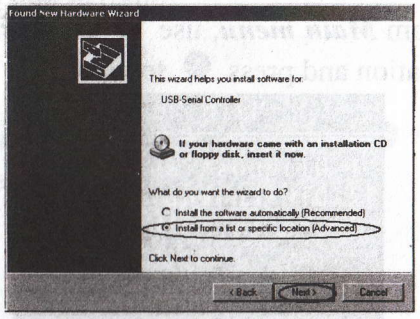
4.4 Installing the USB Drivers & PC Update

1）Install:

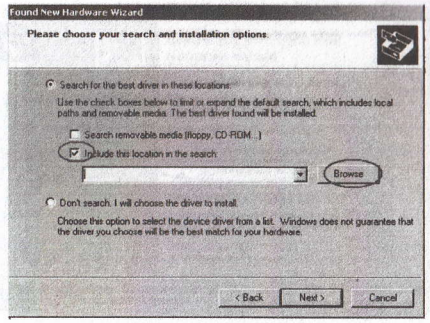
Please connect the Vgatescan USB cable to your computer, and then there will be a dialog window popped up titled **"Found New Hardware Wizard".**



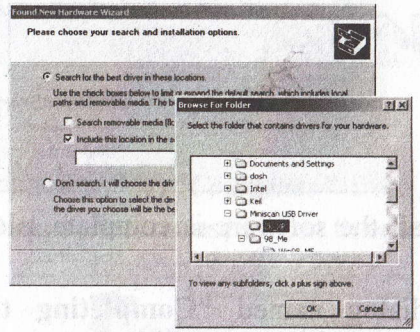
Select **"No, not this time"** and then click ***"Next"*** button to continue:



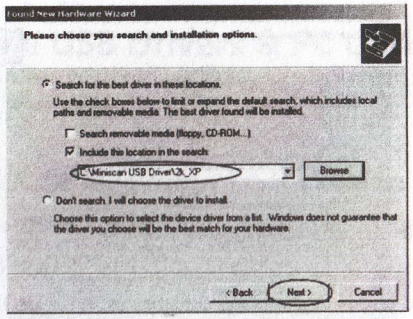
Select **"Install from a list or specific location (Advanced)"** and then click ***"Next"*** button to proceed:



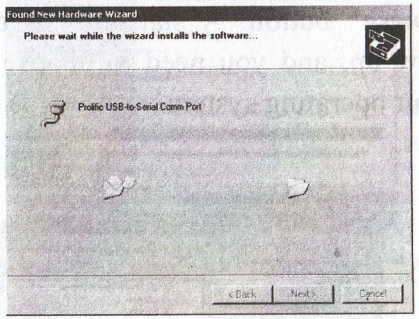
Check the **"Include this location in the search"** checkbox and click ***"Browse"*** button. A standard **"Browse for folder"** dialog will show up, and you need to choose a specific folder according to your operating system.



When select specified file is done, the file's name will be displayed in the browser location as follow. Choose a proper folder and click ***"OK"*** to close the dialog. Now there will be some text indicating the location you have just chosen beneath the *"Include this location in the search"* checkbox as shown in the following picture.



Click *"Next"* button to start installing the driver.



When install the software is complete, please click *"Next"* button.

Now, a dialog named **"Completing the Found New Hardware Wizard"** will show up. It means the wizard has finished installing the software for USB to serial Comm. port. Please click ***"Finish"*** button to close the wizard.

After installation, a balloon wills pop-up on the bottom of the screen as shown in the following picture.

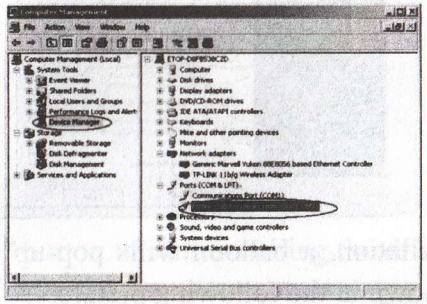
The Driver installation is complete now!

2）Setup

Right click on the ***"My Computer"*** from desktop. Select ***"Manage"*** and click the left mouse button to enter.

Click the left mouse button on the ***"Device Manger"*** from Computer Management, and then search the specified port which

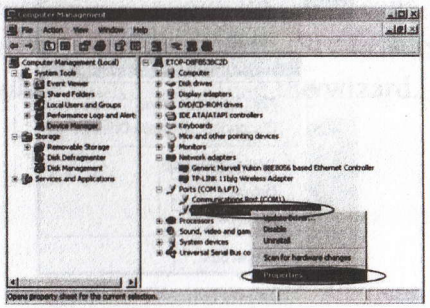
used to update. Left click "***Device Manger***" and click the + sign on the left of the Port icon.



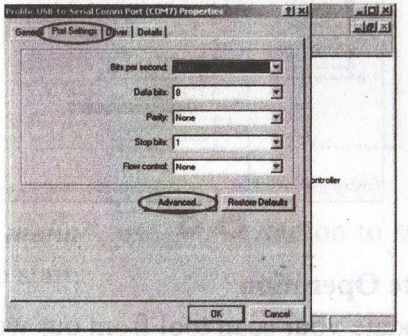
"Prolific USB-to-Serial Comm Portable (COM7)" is the port which used to update. **Please note**: the setup of this specific port must be same with the one which used in PC update, if they are different, the PC update will fail to connect to your device.

If the default port is beyond the one which is used in PC update, you need to setup the COM number manually as following:

Click the right mouse button on the "***Prolific USB-to-Serial Comm Portable（COM7）***", and select ***"Properties"*** to enter.

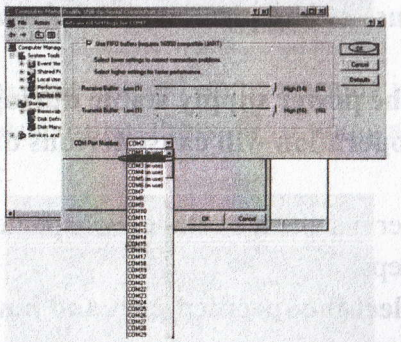


Select ***"Port Settings"*** on the Prolific USB-to-Serial Comm Portable（COM7）Properties as follow, and then click the ***"Advanced"*** button to enter.

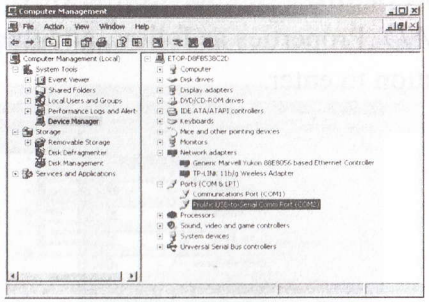


Select the port from **COM1** to **COM4** to be the specified port used to update.

Please note: this port must be same with the one used in PC update.



When you have selected a port, click ***"OK"*** button. Now, setup is completed!



3）PC Update Operation

You can update your scan tool from our web to add trouble codes and vehicle manufacture. To update your device successfully, please read the following information carefully before you want to update your scanner.

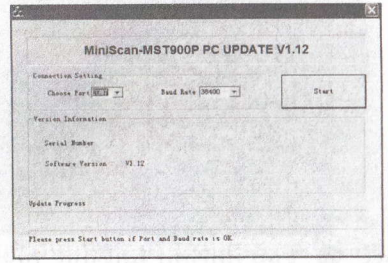
"1、Please make sure the firmware and device you use to update comes from authorized distributors.

2、Make use of any pirated firmware may cause lock-up to your device.

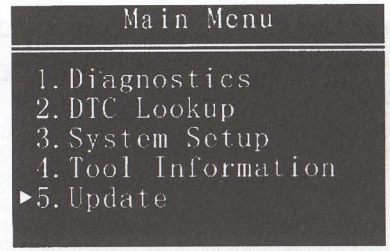
3、Keep the power supply stable during update, otherwise this operation will cause serious damage to your device."

After the driver installed, start the PC Update software, do as the following steps:

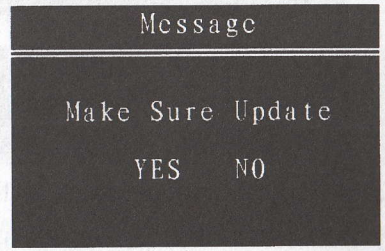
Select the specified port and baud rate which has been setup.



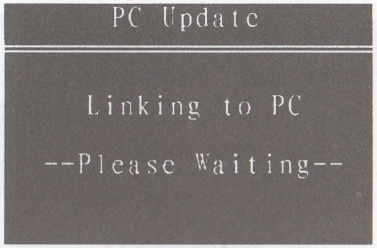
From "***Main menu***", use ▲/▼ button to select "***Update***" and press YES to start.



When you have entered, some warning information will be displayed first. Press YES if you want to update your device.

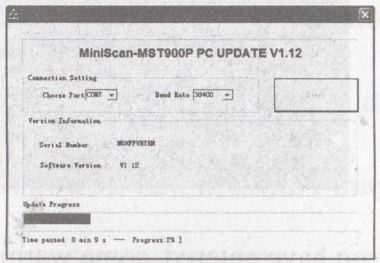


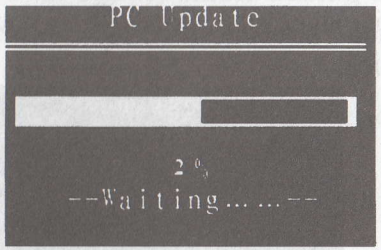
Press NO key to exit, and press YES to link to PC.



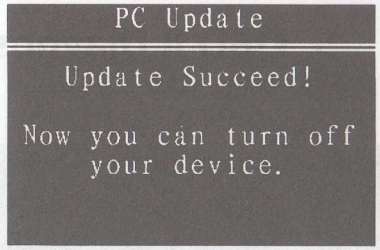
If you press NO key during linking, update will be canceled, and then Vgatescan will tell you that **"The update had been canceled. Press NO key to back".**

Press ***"Start"*** button on your computer. After the connection is established, you can learn the progress of update from the two status bars in the device and the PC.





If update is succeed. A message will display to tell you that **"Update Succeed! Now you can turn off your device"**



After update, the number of trouble codes or vehicle manufacturers will be increased. You can check these in ***"DTC LOADED"*** in ***Tool information*** and ***"Vehicle M.F."*** in ***DTC lookup***.

⚠CAUTION

✓The entire PC update process may need 3-5 minutes. Different computer speed and Serial Port's BAUD rate may cost different time to update. In order to keep the stability of update, please do not run other programs when you are updating the device!

✓Please do not connect the diagnostic cable when you are updating your device.

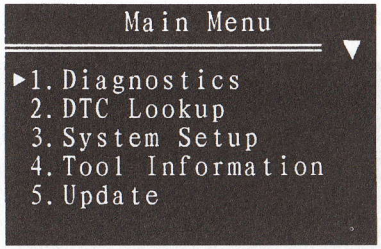
✓If update is interrupted, for example the power supply is disconnected, after you power on your device, you will get a screen telling you that Vgatescan has failed to finish the update last time. You need to use PC Update to perform the update once more. Start the PC Update software and Click ***Start***. Vgatescan will connect to PC automatically.

✓If scanner displays "Invalid firmware license. Contact your dealer or manufacture for more information" during update, please contact with the dealer. **Good luck!**

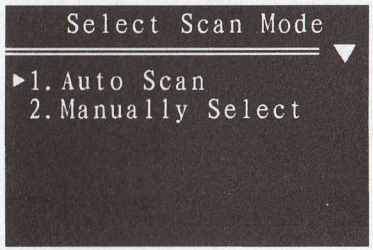
5. OBD II Diagnostics

✓ The picture of the menu in the user manual is for demonstration purpose only. In most case, the content of the menu may be different from vehicle to vehicle, or even different on the same vehicle when perform the test at different time.

From ***Main menu***, use ▲/▼ scroll button to select ***Diagnostics*** and press YES to enter.

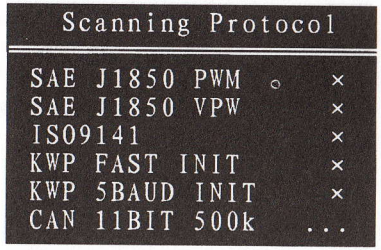


Before scan protocol, you should select a scan mode. The Vgatescan scan tool has two scan modes which are ***Auto Scan*** and ***Manually Select***.

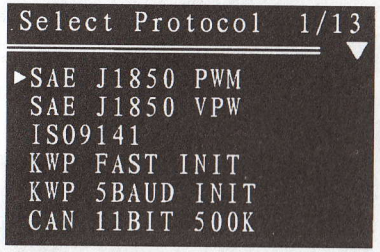


➢ **Auto scan** mode: A sequence of messages displaying the OBD II protocols will be observed on the screen .When the scan tool links to the vehicle, the communication protocol is automatically detected, and is used until another vehicle is

diagnosed.



➢ **Manually Select** mode: You can use ▲/▼ to select a protocol and press YES. The scan tool will links to the vehicle with the protocol you have selected.



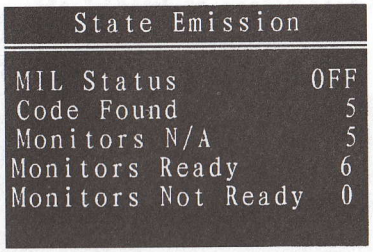
If the scan tool fails to communicate with the vehicle's ECU (Engine control Unit) ,A "***Link Error***!" message shows up on the display. You must make sure the following things:

- ❒ *The vehicle is OBD compliant.*
- ❒ *Turn the key ON with engine OFF.*
- ❒ *DLC is firmly connected.*
- ❒ *The integrity of diagnostic wiring harness.*

✓ Don't connect or disconnect any test equipment with ignition or engine running.

If the summary of system status (MIL status, Code found, Monitors N/A, Monitors Ready, Monitors Not Ready) show up on

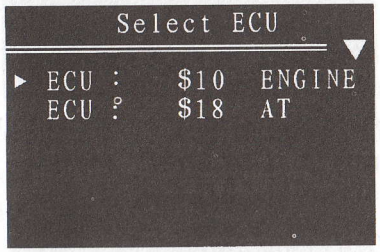
the screen, it means link succeed.



Press YES to enter Diagnostic menu and press NO key to return the ***Select Scan Mode.***

✓ The State Emission is displayed only if the vehicle supports PID $01.

When more than one vehicle control module is detected by the scan tool, you must select the module where the data may be retrieved. The most often to be selected are the ***ENGINE*** and ***AT***.



The Diagnostic menu includes the following modes:

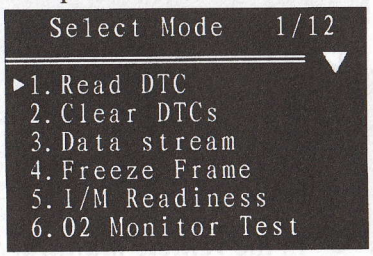
- **Read DTCs**
- **Clear DTCs**
- **Data stream**
- **Freeze Frame**
- **I/M Readiness**
- **O2 Monitor Test**
- **On-Board Mon. Test**
- **Component Test**

- **Vehicle Information**
- **Modules Present**
- **Unit of Measure**
- **State Emission**

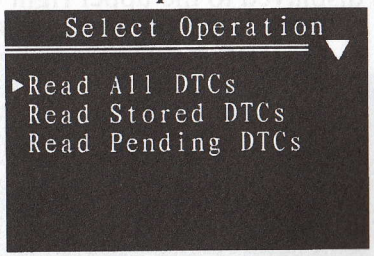
5.1Read DTCs

You can read the trouble codes of your vehicle in this mode. It includes ***All DTCs, Stored DTCs and Pending DTCs.***

1) Use ▲/▼ scroll button to select ***Read DTCs*** from Diagnostic Menu and press YES to enter.

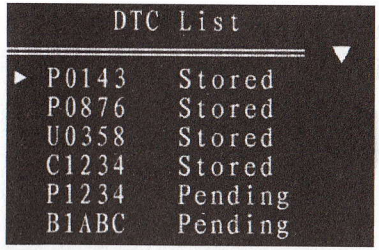


2) Use ▲/▼ to select ***All DTCs, Stored DTCs or Pending DTCs*** form ***Select Operation***. Press YES to enter.



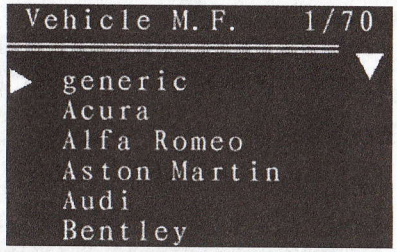
3) .View DTC List

After selected one item in the ***Select Operation*** you will enter the ***DTC List***.

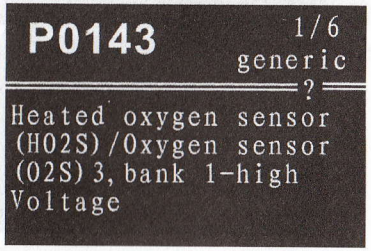


4) View DTCs and their definitions on screen

You must select vehicle manufacturer before you view the definition of the DTC. Press YES to confirm. If the manufacturer for your vehicle is not listed, use ▲/▼ to select ***Other*** and press YES button. Press NO key to return.



After press YES in the ***vehicle manufacturer*** list the definition of the DTC will display on the screen .The vehicle manufacturer is displayed to the upper right corner of the screen.

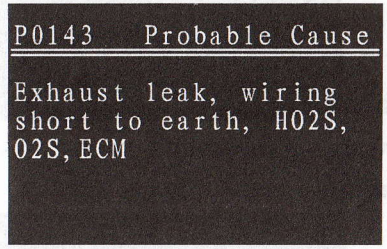


In this screen, you can hold ▲/▼ to view previous/next trouble code's definition. When DTC' definition covers more than one screen, "▲/▼" will be displayed on the upper of the screen. It means that scroll up/down is available, press ▲/▼ to

view additional information on previous/next screens.

5) View the help information

If an "?" icon display on the upper of the screen, it indicates the code you selected has help information. You can press "?" button to view the help information of this DTC. Press "?" again or press NO to return.



✓ If there are no Diagnostic Trouble Codes present, the message will tell you "NO emission-related DTC found"

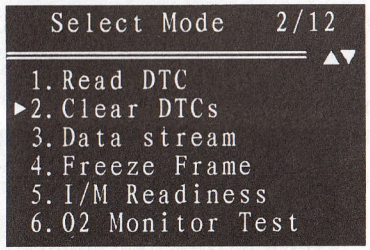
✓ If more than one DTC is found, hold ▲/▼ button to view the definition of other DTCs.

5.2 Clear DTCs

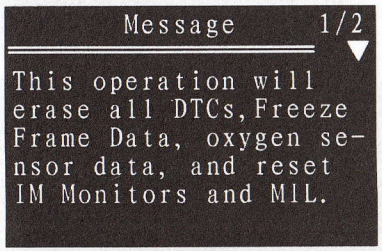
✓ Erasing the Diagnostic Trouble Codes may allow the scan tool to delete not only the codes from the vehicle's on-board computer, but also "Freeze Frame" data and "Oxygen sensor" data. Further, the I/M Readiness Monitor Status for all vehicle monitors is reset to Not Ready or Not Complete status. It also resets MIL status.

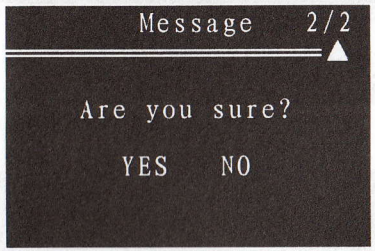
✓ If you want to clear the DTCs, you must turn key ON with engine OFF.

1) Use ▲/▼ scroll button to select ***Clear DTCs*** from diagnostics menu and press YES button.



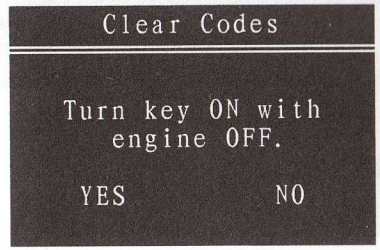
2) A warning message comes up asking for your confirmation.





If you do not want to clear DTCs, press NO key to exit.

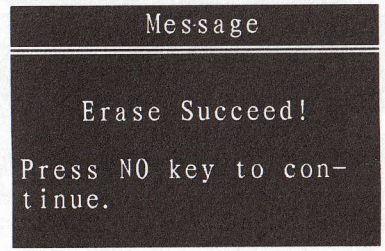
3) If you want to clear the DTCs, press YES and then another message comes up asking for your second selection.



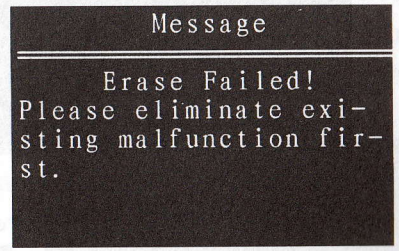
Press YES to continue and press NO to return the diagnostics menu.

4) The clearing result is "***Erase Succeed!***" or "***Erase Failed!***"

A) If the codes are cleared successfully, an "***Erase Succeed!***" message shows on the display.



B) If the codes are not cleared, then an "***Erase Failed!***" message appears.



5) Press YES or NO to return diagnostic menu.

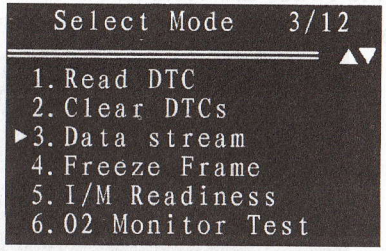
✓ ***If you press YES, the cursor "▶" will point to "Read DTCs" to read codes again.***

✓ *If you press NO, the cursor "▶" will point to "Clear DTCs".*

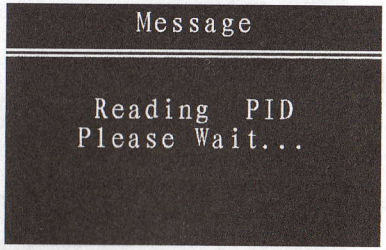
5.3 Data stream

This mode function allows viewing of live or real time data of vehicle's computer module(s). ***Data stream*** list shows all supported PID data for the vehicle being tested.

1) To view live data, use ▲/▼ button to select ***Data stream*** from diagnostic Menu and press YES to enter.

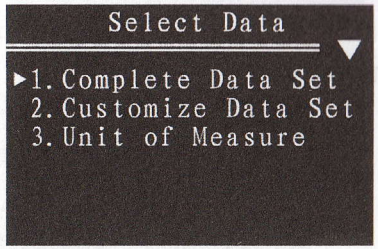


2) Please wait a moment while the scan tool reading PID.

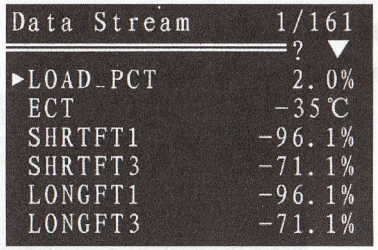


3) The ***Data stream*** list includes "***Complete Data Set***", "***Customize Data Set***" and "***Unit of Measure***".

A) To view ***Complete Data Set***, use ▲/▼ button to select ***Complete Data Set*** from "***Select Data***" menu and press YES to enter.

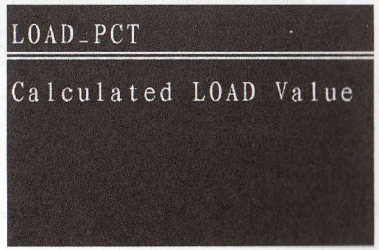


View live PIDs on the screen. If the retrieved information covers more than one screen, use ▲/▼ button, as necessary, until all data have been shown up.



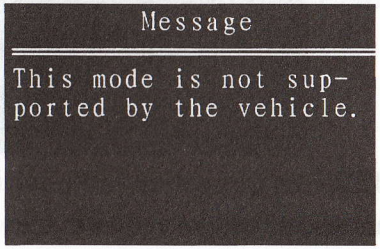
✓ *The number of "xx/yy" to the right of the screen indicates total number of items under Data stream list and current sequence of cursor "▶" pointed.*

If an "? " icon display on the upper of the screen, it indicates the live data item you selected have help information. You can press "?" button to view the help information of this data. The help information will show the full name of live data you selected.



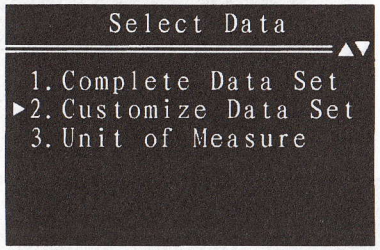
Press "?" again or press NO key to return.

✧ If it is not support, a message will display.

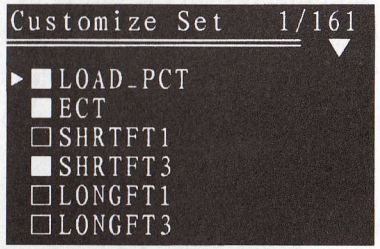


B) View ***Customize Data***

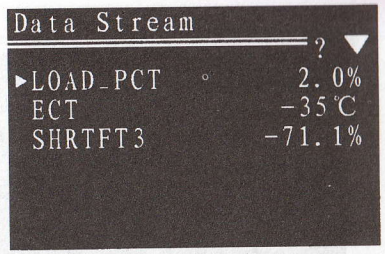
To view **customize data**, use ▲/▼ button to select ***Customize Data Set*** from ***Select Data*** and press YES to enter.



After you enter the customize set, you can press YES to select/deselect data, and press ▲/▼ to move up/down list. Selected parameters are marked with solid squares.



Then **hold** YES to confirm and read data you have selected.



✓ If you hold YES before you select item, a message will tell you that "You should select at least one item." Then press YES or NO key to return .

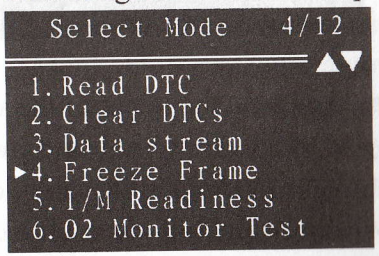
Press NO key to return.

C) Unit of Measure: Repeat procedures from ***System Setup*** to setup the unit of Measure.

5.4 Freeze Frame

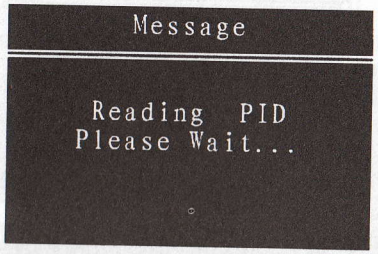
When an emission-related fault occurs, certain vehicle conditions are recorded by the on-board computer. This information is referred to as freeze frame data. View Freeze Data is a snapshot of the operating conditions at the time of an emission-related fault.

1) To view Freeze Frame, use ▲/▼ button to select ***Freeze Frame*** from diagnostic Menu and press YES to enter.

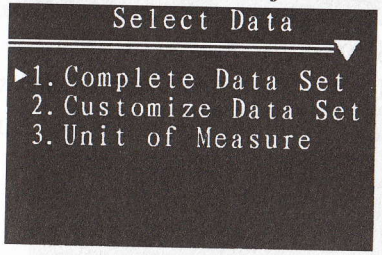


2) Please wait a moment while the scan tool reading

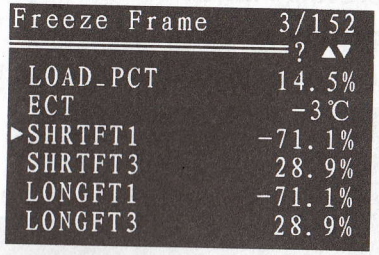
PID.



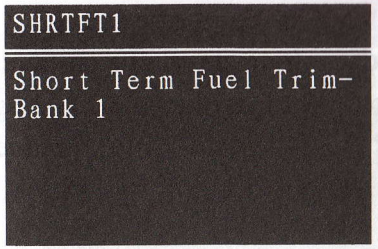
3) The **Data stream** list includes "***Complete Data Set***", "***Customize Data Set***" and "***Unit of Measure***"



A) To view ***Complete Data Set***, use ▲/▼ button to select ***Complete Data Set*** from ***"Select Data"*** menu and press YES to enter.



If an "?" icon display on the upper of the screen, it indicates the live data item you selected have help information. You can press "?" button to view the help information of this data. The help information will show the full name of live data you selected.



Press ? again or NO key to return.

B) ***Customize Data Set*** and ***Unit of Measure*** are the same to the ***Data stream***.

✓ If there is no freeze frame data available, an advisory message " There is no Freeze Frame or this mode is not supported by the vehicle ".

Press NO button to return to diagnostic Menu.

5.5 I/M Readiness

The ***I/M Readiness*** (Inspection / Maintenance) function is used to view a snapshot of the operations for the emission system on OBD II vehicles. It is an excellent function. To guarantee no fault exist make sure all monitors are OK or N/A and no DTC's exist.

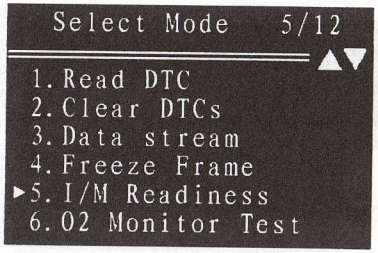
During normal driving conditions, the vehicle's computer scans the emission system. After a specific amount of drive time (each monitor has specific driving conditions and time required), the computer's monitors decide if the vehicles emission system is working correctly or not as well as detecting out of range values. When the monitor's status is:

●**Ready**-- Indicates that a particular monitor being

checked has completed its diagnostic testing.

- **Not Ready** -- Indicates that a particular monitor being checked has not completed its diagnostic testing.
- **N/A (Not Applicable)** -- Vehicle does not support that monitor.

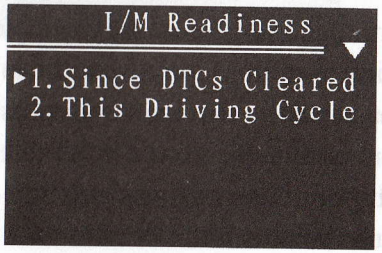
1) Use ▲/▼ button to select ***I/M Readiness*** from diagnostics menu and press YES.



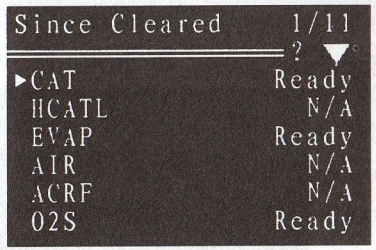
Our scan tool support two types of ***I/M Readiness*** tests:

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

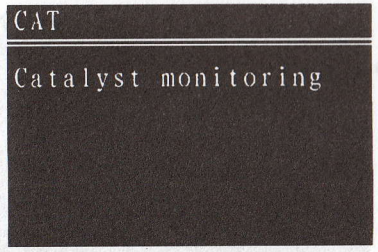
Use ▲/▼ to select ***Since DTCs Cleared*** or ***This Driving Cycle***. If the vehicle supports both types of tests, then both types will be shown on the screen for selection Press YES to enter.



If enter ***Since DTCs Cleared*** or ***This Driving Cycle***. You can view the information of the emission system on OBD II vehicles.



If there is an "? " icon on the upper of the screen, it means you can press "?" button to view the full name .



✓ ***Sometimes it maybe only support one item or do not support at all.***

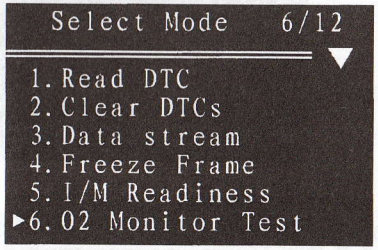
Press NO to return to diagnostic menu.

5.6 O2 Monitor Test

OBD II regulations require applicable vehicles monitor and test oxygen (O2) sensors to determine problems related to fuel and emissions. The O2 Monitor Test allows retrieval of completed O2 sensors monitor test results. These tests are not on-demand tests and they are done automatically when engine

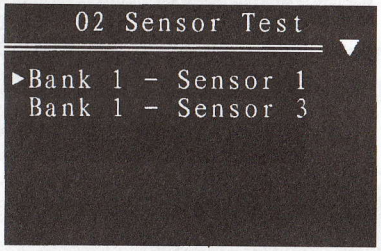
operating conditions are within specified limits. These test results are saved in the on-board computer's memory.

1) Use ▲/▼ button to select ***O2 Monitor Test*** from diagnostic menu and press YES button.

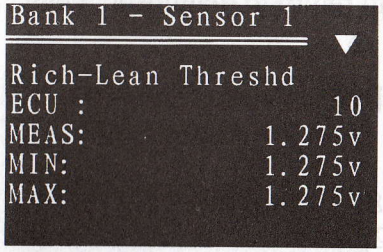


A) If your vehicle communicates is ***not use*** controller area network (**CAN**):

Use ▲/▼ button to select item from ***O2 Sensor Test*** menu and press YES to enter to view information.



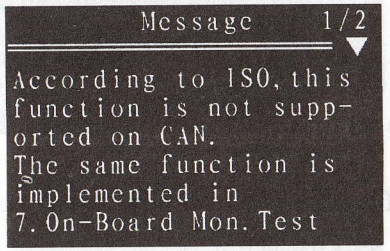
View test results of selected O2 sensor.



Use ▲/▼ button to view more screens of data if "▲/▼" icon displays. Press NO key to return.

✓ If the vehicle does not support the mode, an advisory message will be displayed on the screen.

B) If the vehicle communicates ***using*** a controller area network (**CAN**), O2 monitor tests are not supported by vehicle. A message displayed on the screen will tell you "According to ISO, this function is not supported on CAN. The same function is implemented in 7.On-Board Mon. Test for CAN bus". It means for O2 Monitor Test results of CAN-equipped vehicle, see chapter "On-Board Mon. Test". So you can press YES to enter ***On-Board Mon. Test*** or press NO key to return diagnostic menu.



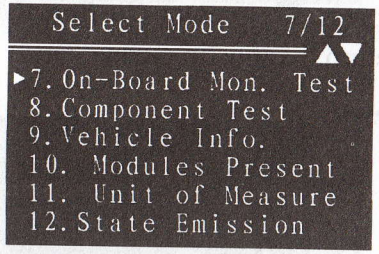
5.7 On-Board Mon. Test

The ***On-Board Mon. Test*** function is useful after servicing

or after erasing a vehicle's memory. Test results do not necessarily indicate a faulty component or system.

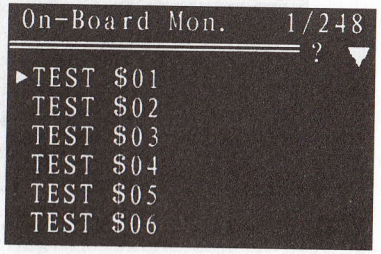
- **Non-CAN** vehicles ***On-Board Mon. Test*** receives test results for emission-related powertrain components and systems that are **not continuously monitored.**
- **CAN** vehicles ***On-Board Mon. Test*** receives test results for emission-related powertrain components and systems that **are and are not continuously monitored.**

1) Use ▲/▼ to selected ***On-Board Mon. Test*** from diagnostic menu and press YES to enter.

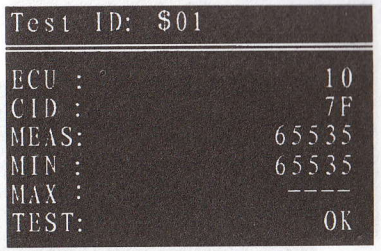


2) From ***On-Board Mon. Test*** menu, use ▲/▼ to select a test to view and press YES.

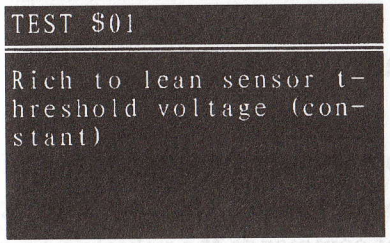
✧ If it is ***not a CAN-vehicle***, test selections will be as below:



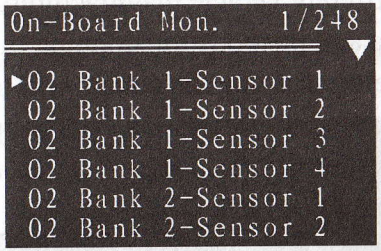
Press YES to view the information.



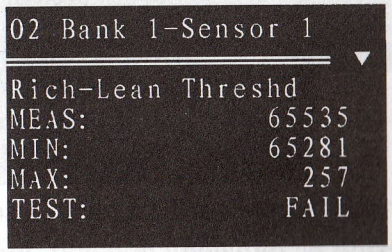
Press "?" key to view help information of the item you selected.



✧ For CAN-vehicles, test selections will be as below:

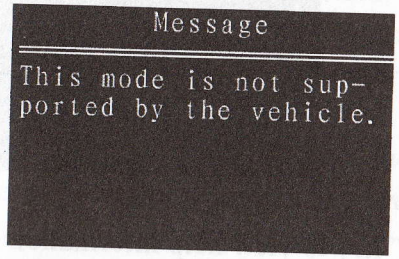


Press YES to view the information:



✧ If the vehicle under test does not support the mode, a

message will tell you "This mode is not supported by the vehicle"

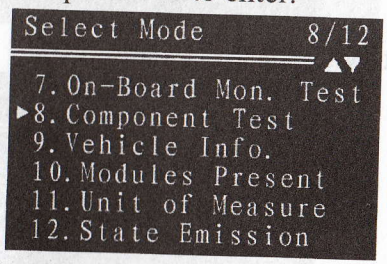


Press NO key to return to the previous menus.

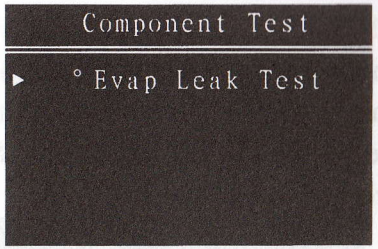
5.8 Component Test

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.

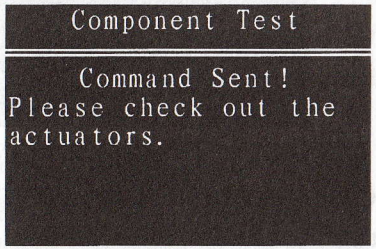
1) Use ▲/▼ to selected ***Component Test*** from diagnostic menu and press YES to enter.



2) From Component Test menu, use ▲/▼ button to select the test to be initiated.

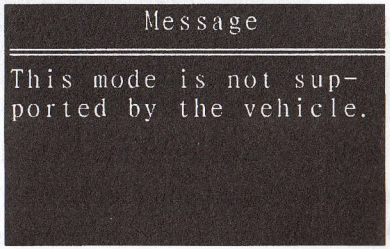


3) If the command has been sent, a message will be displayed on the screen.



Press YES or NO key to return to the previous menu.

✧ Some vehicles do not allow tools to control vehicle systems or components. If the vehicle does not support the EVAP Leak Test, a message will tell you "This mode is not supported by the vehicle".

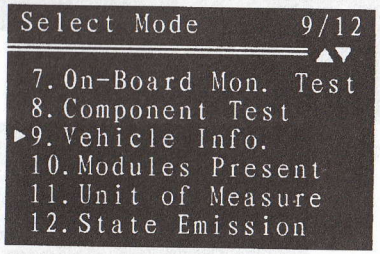


5.9 Vehicle Information

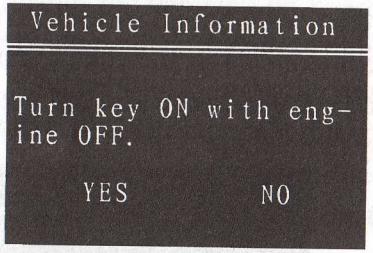
The ***Vehicle Info.*** function allows the Scan Tool to request

the vehicle's VIN number, calibration ID(s) which identifies software version in vehicle control module(s), calibration verification numbers (CVN(s)) and in-use performance tracking.

1) Use ▲/▼ to selected ***Vehicle Info.*** from diagnostic menu and press YES to enter.

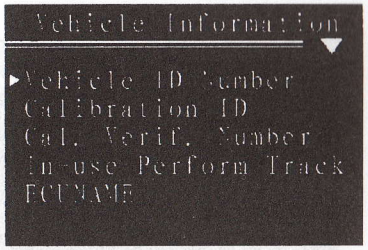


2) There is a message comes up to remind you. You must make a choice YES or NO.



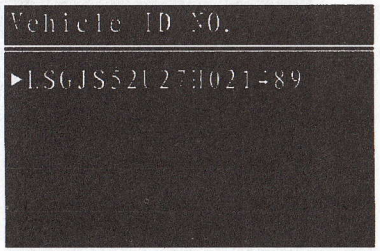
Select YES key, you will enter the Vehicle information list, press NO key return to diagnostic menu.

Use ▲/▼ to select an item from ***Vehicle Info.*** to view and press YES to enter.



✧ If the vehicle does not support this mode, a message will tell you "**This mode is not supported by the vehicle**".

3) View the information you have selected.



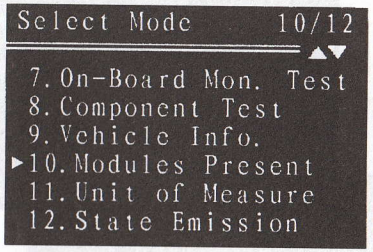
4) Press NO key to return.

✓ The operation to retrieve vehicle information may take as long as several minutes on some vehicles.

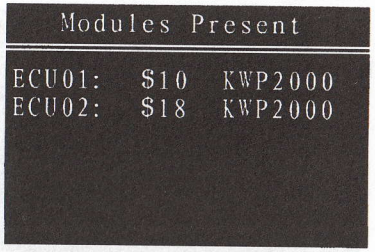
5.10 Modules Present

The Scan Tool identifies the module IDs and communication type for OBD II modules in the vehicle

1) Use ▲/▼ to select ***Modules Present*** from diagnostic menu.

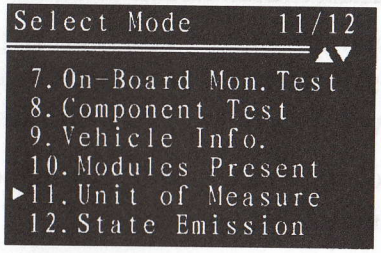


2) Press YES to view the modules present and press NO key to exit.



5.11 Unit of Measure

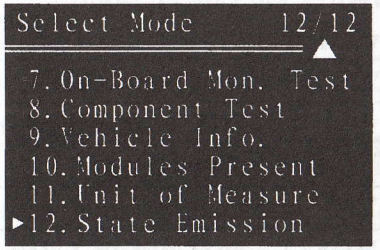
1) Use ▲/▼ to select ***Unit of Measure*** from diagnostic menu.



The ***Unit of Measure*** setting is the same to the ***Data stream.***

5.12 State Emission

In this section, you can view the system status (MIL status, Code counts, Monitor status) again. Select ***State Emission*** from diagnostic menu. Use ▲/▼ to select ***State Emission*** from diagnostic menu. Press YES to view and press NO or YES to return.



6.Appendix

Appendix 1-PID List

	PID Abbreviation	Full Name
1	DTC_CNT	Number of DTCs stored in this ECU
2	DTCFRZF	DTC that caused required freeze frame data storage
3	FUELSYS1	Fuel system 1 status:
4	FUELSYS2	Fuel system 2 status:
5	LOAD_PCT	Calculated LOAD Value
6	ECT	Engine Coolant Temperature
7	SHRTFT1	Short Term Fuel Trim - Bank 1
8	SHRTFT3	Short Term Fuel Trim - Bank 3
9	LONGFT1	Long Term Fuel Trim - Bank 1
10	LONGFT3	Long Term Fuel Trim - Bank 3
11	SHRTFT2	Short Term Fuel Trim - Bank 2
12	SHRTFT4	Short Term Fuel Trim - Bank 4
13	LONGFT2	Long Term Fuel Trim - Bank 2
14	LONGFT4	Long Term Fuel Trim - Bank 4

15	FRP	Fuel Rail Pressure (gauge)
16	MAP	Intake Manifold Absolute Pressure
17	RPM	Engine RPM
18	VSS	Vehicle Speed Sensor
19	SPARKADV	Ignition Timing Advance for No.1 Cylinder
20	IAT	Intake Air Temperature
21	MAF	Air Flow Rate from Mass Air Flow Sensor
22	TP	Absolute Throttle Position
23	AIR_STAT	Commanded Secondary Air Status
24	O2SB1S1	Oxygen Sensor Output Voltage Bank 1 - Sensor 1
25	SHRTFTB1S1	Short Term Fuel Trim Bank 1 - Sensor 1
26	O2SB1S2	Oxygen Sensor Output Voltage Bank 1 - Sensor 2
27	SHRTFTB1S2	Short Term Fuel Trim Bank 1 - Sensor 2
28	O2SB1S3	Oxygen Sensor Output Voltage Bank 1 - Sensor3
29	SHRTFTB1S3	Short Term Fuel Trim Bank 1 - Sensor 3
30	O2SB1S4	Oxygen Sensor Output Voltage Bank 1 - Sensor 4
31	SHRTFTB1S4	Short Term Fuel Trim Bank 1 - Sensor 4
32	O2SB2S1	Oxygen Sensor Output Voltage Bank 2 - Sensor 1

33	SHRTFTB2S1	Short Term Fuel Trim Bank 2 - Sensor 1
34	O2SB2S2	Oxygen Sensor Output Voltage Bank 2 - Sensor 2
35	SHRTFTB2S2	Short Term Fuel Trim Bank 2 - Sensor 2
36	O2SB2S3	Oxygen Sensor Output Voltage Bank 2 - Sensor 3
37	SHRTFTB2S3	Short Term Fuel Trim Bank 2 - Sensor 3
38	O2SB2S4	Oxygen Sensor Output Voltage Bank 2 - Sensor 4
39	SHRTFTB2S4	Short Term Fuel Trim Bank 2 - Sensor 4
40	OBDSUP	OBD requirements to which vehicle is designed
41	PTO_STAT	Power Take Off (PTO) Status
42	RUNTM	Time Since Engine Start
43	MIL_DIST	Distance Travelled While MIL is Activated
44	FRP	Fuel Rail Pressure relative to manifold vacuum
45	FRP	Fuel Rail Pressure
46	EQ_RATB1S1	Equivalence Ratio (lambda) Bank 1 - Sensor 1 (wide range O2S)
47	O2SB1S1	Oxygen Sensor Voltage Bank 1 - Sensor 1 (wide range O2S)
48	EQ_RATB1S2	Equivalence Ratio (lambda) Bank 1 - Sensor 2 (wide range O2S)

49	O2SB1S2	Oxygen Sensor Voltage Bank 1 - Sensor 2 (wide range O2S)
50	EQ_RATB1S3	Equivalence Ratio (lambda) Bank 1 - Sensor 3 (wide range O2S)
51	O2SB1S3	Oxygen Sensor Voltage Bank 1 - Sensor 3 (wide range O2S)
52	EQ_RATB1S4	Equivalence Ratio (lambda) Bank 1 - Sensor 4 (wide range O2S)
53	O2SB1S4	Oxygen Sensor Voltage Bank 1 - Sensor 4 (wide range O2S)
54	EQ_RATB2S1	Equivalence Ratio (lambda) Bank 2 - Sensor 1 (wide range O2S)
55	O2SB2S1	Oxygen Sensor Voltage Bank 2 - Sensor 1 (wide range O2S)
56	EQ_RATB2S2	Equivalence Ratio (lambda) Bank 2 - Sensor 2 (wide range O2S)
57	O2SB2S2	Oxygen Sensor Voltage Bank 2 - Sensor 2 (wide range O2S)
58	EQ_RATB2S3	Equivalence Ratio (lambda) Bank 2 - Sensor 3 (wide range O2S)
59	O2SB2S3	Oxygen Sensor Voltage Bank 2 - Sensor 3 (wide range O2S)
60	EQ_RATB2S4	Equivalence Ratio (lambda) Bank 2 - Sensor 4 (wide range O2S)
61	O2SB2S4	Oxygen Sensor Voltage Bank 2 - Sensor 4 (wide range O2S)
62	EGR_PCT	Commanded EGR
63	EGR_ERR	EGR Error ((EGR actual -EGR commanded) / EGR commanded) * 100 %

64	EVAP_PCT	Commanded Evaporative Purge
65	FLI	Fuel Level Input
66	WARM_UPS	Number of warm-ups since diagnostic trouble codes cleared
67	CLR_DIST	Distance since diagnostic trouble codes cleared
68	EVAP_VP	Evap System Vapour Pressure
69	BARO	Barometric Pressure
70	EQ_RATB1S1	Equivalence Ratio (lambda) Bank 1 - Sensor 1 (wide range O2S)
71	O2SB1S1	Oxygen Sensor Voltage Bank 1 - Sensor 1 (wide range O2S)
72	EQ_RATB1S2	Equivalence Ratio (lambda) Bank 1 - Sensor 2 (wide range O2S)
73	O2SB1S2	Oxygen Sensor Voltage Bank 1 - Sensor 2 (wide range O2S)
74	EQ_RATB1S3	Equivalence Ratio (lambda) Bank 1 - Sensor 3 (wide range O2S)
75	O2SB1S3	Oxygen Sensor Voltage Bank 1 - Sensor 3 (wide range O2S)
76	EQ_RATB1S4	Equivalence Ratio (lambda) Bank 1 - Sensor 4 (wide range O2S)
77	O2SB1S4	Oxygen Sensor Voltage Bank 1 - Sensor 4 (wide range O2S)
78	EQ_RATB2S1	Equivalence Ratio (lambda) Bank 2 - Sensor 1 (wide range O2S)
79	O2SB2S1	Oxygen Sensor Voltage Bank 2 - Sensor 1 (wide range O2S)
80	EQ_RATB2S2	Equivalence Ratio (lambda) Bank 2 -

		Sensor 2 (wide range O2S)
81	O2SB2S2	Oxygen Sensor Voltage Bank 2 - Sensor 2 (wide range O2S)
82	EQ_RATB2S3	Equivalence Ratio (lambda) Bank 2 - Sensor 3 (wide range O2S)
83	O2SB2S3	Oxygen Sensor Voltage Bank 2 - Sensor 3 (wide range O2S)
84	EQ_RATB2S4	Equivalence Ratio (lambda) Bank 2 - Sensor 4 (wide range O2S)
85	O2SB2S4	Oxygen Sensor Voltage Bank 2 - Sensor 4 (wide range O2S)
86	CATEMP11	Catalyst Temperature Bank 1+Sensor 1
87	CATEMP21	Catalyst Temperature Bank 2+Sensor 1
88	CATEMP12	Catalyst Temperature Bank 1+Sensor 2
89	CATEMP22	Catalyst Temperature Bank 2+Sensor 2
90	VPWR	Control module voltage
91	LOAD_ABS	Absolute Load Value
92	EQ_RAT	Commanded Equivalence Ratio
93	TP_R	Relative Throttle Position
94	AAT	Ambient air temperature (same scaling as IAT - $0F)
95	TP_B	Absolute Throttle Position B
96	TP_C	Absolute Throttle Position C
97	APP_D	Accelerator Pedal Position D
98	APP_E	Accelerator Pedal Position E
99	APP_F	Accelerator Pedal Position F
100	TAC_PCT	Commanded Throttle Actuator Control
101	MIL_TIME	Time run by the engine while MIL is activated

102	CLR_TIME	Time since diagnostic trouble codes cleared
103	FUEL_TYP	Type of fuel currently being utilized by the vehicle
104	ALCH_PCT	Alcohol Fuel Percentage
105	EVAP_VPA	Absolute Evap System Vapour Pressure
106	EVAP_VP	Evap System Vapour Pressure
107	STSO2FT1	Short Term Secondary O2 Sensor Fuel Trim - Bank 1
108	STSO2FT3	Short Term Secondary O2 Sensor Fuel Trim - Bank 3
109	LGSO2FT1	Long Term Secondary O2 Sensor Fuel Trim - Bank 1
110	LGSO2FT3	Long Term Secondary O2 Sensor Fuel Trim - Bank 3
111	STSO2FT2	Short Term Secondary O2 Sensor Fuel Trim - Bank 2
112	STSO2FT4	Short Term Secondary O2 Sensor Fuel Trim - Bank 4
113	LGSO2FT2	Long Term Secondary O2 Sensor Fuel Trim - Bank 2
114	LGSO2FT4	Long Term Secondary O2 Sensor Fuel Trim - Bank 4
115	FRP	Fuel Rail Pressure (absolute)
116	APP_R	Relative Accelerator Pedal Position
117	MIL	Malfunction Indicator Lamp (MIL) Status
118	MIS_SUP	Misfire monitoring supported

119	FUEL_SUP	Fuel system monitoring supported
120	CCM_SUP	Comprehensive component monitoring supported
121	MIS_RDY	Misfire monitoring ready
122	FUEL_RDY	Fuel system monitoring ready
123	CCM_RDY	Comprehensive component monitoring ready
124	CAT_SUP	Catalyst monitoring supported
125	HCAT_SUP	Heated catalyst monitoring supported
126	EVAP_SUP	Evaporative system monitoring supported
127	AIR_SUP	Secondary air system monitoring supported
128	ACRF_SUP	A/C system refrigerant monitoring supported
129	O2S_SUP	Oxygen sensor monitoring supported
130	HTR_SUP	Oxygen sensor heater monitoring supported
131	EGR_SUP	EGR system monitoring supported
132	CAT_RDY	Catalyst monitoring ready
133	HCAT_RDY	Heated catalyst monitoring ready
134	EVAP_RDY	Evaporative system monitoring ready
135	AIR_RDY	Secondary air system monitoring ready
136	ACRF_RDY	A/C system refrigerant monitoring ready
137	O2S_RDY	Oxygen sensor monitoring ready
138	HTR_RDY	Oxygen sensor heater monitoring ready
139	EGR_RDY	EGR system monitoring ready
140	MIS_ENA	Misfire monitoring enabled

141	FUEL_ENA	Fuel system monitoring enabled
142	CCM_ENA	Comprehensive component monitoring enabled
143	MIS_CMPL	Misfire monitoring completed
144	FUELCMPL	Fuel system monitoring completed
145	CCM_CMPL	Comprehensive component monitoring completed
146	CAT_ENA	Catalyst monitoring
147	HCAT_ENA	Heated catalyst monitoring
148	EVAP_ENA	Evaporative system monitoring
149	AIR_ENA	Secondary air system monitoring
150	ACRF_ENA	A/C system refrigerant monitoring
151	O2S_ENA	Oxygen sensor monitoring
152	HTR_ENA	Oxygen sensor heater monitoring
153	EGR_ENA	EGR system monitoring
154	CAT_CMPL	Catalyst monitoring completed
155	HCATCMPL	Heated catalyst monitoring completed
156	EVAPCMPL	Evaporative system monitoring completed
157	AIR_CMPL	Secondary air system monitoring completed
158	ACRFCMPL	A/C system refrigerant monitoring completed
159	O2S_CMPL	Oxygen sensor monitoring completed
160	HTR_CMPL	Oxygen sensor heater monitoring completed
161	EGR_CMPL	EGR system monitoring completed

Appendix 2 In-use Performance Tracking Data

Abbreviation	Full Name	Definitions
OBDCOND	**OBD Monitoring Conditions Encountered Counts**	OBD Monitoring Conditions Encountered Counts displays the number of times that the vehicle has been operated in the specified OBD monitoring conditions (general denominator).
IGNCNTR	**Ignition Counter**	Ignition Counter displays the count of the number of times that the engine has been started.
CATCOMP1	**Catalyst Monitor Completion Counts Bank 1**	Catalyst Monitor Completion Counts Bank 1 displays the number of times that all conditions necessary to detect a catalyst system bank 1 malfunction have been encountered (numerator).

CATCOND1	**Catalyst Monitor Conditions Encountered Counts Bank 1**	Catalyst Monitor Conditions Encountered Counts Bank 1 displays the number of times that the vehicle has been operated in the specified catalyst monitoring conditions (denominator).
CATCOMP2	**Catalyst Monitor Completion Counts Bank 2**	Catalyst Monitor Completion Counts Bank 2 displays the number of time that all conditions necessary to detect a catalyst system bank 2 malfunction have been encountered (numerator).
CATCOND2	**Catalyst Monitor Conditions Encountered Counts Bank 2**	Catalyst Monitor Conditions Encountered Counts Bank 2 displays the number of times that the vehicle has been operated in the specified catalyst monitoring conditions (denominator).
O2SCOMP1	**O2 Sensor Monitor Completion Counts Bank 1**	O2 Sensor Monitor Completion Counts Bank 1 displays the number of time that all conditions necessary to detect an oxygen sensor bank 1 malfunction have

		been encountered (numerator).
O2SCOND1	**O2 Sensor Monitor Conditions Encountered Counts Bank 1**	O2 Sensor Monitor Conditions Encountered Counts Bank 1 displays the number of times that the vehicle has been operated in the specified oxygen sensor monitoring conditions (denominator).
O2SCOMP2	**O2 Sensor Monitor Completion Counts Bank 2**	O2 Sensor Monitor Completion Counts Bank 2 displays the number of time that all conditions necessary to detect an oxygen sensor bank 2 malfunction have been encountered (numerator).
O2SCOND2	**O2 Sensor Monitor Conditions Encountered Counts Bank 2**	O2 Sensor Monitor Conditions Encountered Counts Bank 2 displays the number of times that the vehicle has been operated in the specified oxygen sensor monitoring conditions (denominator).

EGRCOMP	**EGR Monitor Completion Condition Counts**	EGR Monitor Completion Condition Counts displays the number of time that all conditions necessary to detect an EGR system malfunction have been encountered (numerator).
EGRCOND	**EGR Monitor Conditions Encountered Counts**	EGR Monitor Conditions Encountered Counts displays the number of times that the vehicle has been operated in the specified EGR system monitoring conditions (denominator).
AIRCOMP	**AIR Monitor Completion Condition Counts (Secondary Air)**	AIR Monitor Completion Condition Counts (Secondary Air) displays the number of time that all conditions necessary to detect an AIR system malfunction have been encountered (numerator).
AIRCOND	**AIR Monitor Conditions Encountered Counts (Secondary Air)**	AIR Monitor Conditions Encountered Counts (Secondary Air) displays the number of times that the vehicle has been operated in the specified AIR system monitoring conditions

		(denominator).
EVAPCOMP	**EVAP Monitor Completion Condition Counts**	EVAP Monitor Completion Condition Counts displays the number of time that all conditions necessary to detect a 0.020" EVAP system leak malfunction have been encountered (numerator).
EVAPCOND	**EVAP Monitor Conditions Encountered Counts**	EVAP Monitor Conditions Encountered Counts displays the number of times that the vehicle has been operated in the specified EVAP system leak malfunction monitoring conditions (denominator).

Appendix 3 I/M Readiness List

Number	Abbreviation	Full Name
1	CAT	Catalyst monitoring
2	HCAT	Heated catalyst monitoring
3	EVAP	Evaporative system monitoring
4	AIR	Secondary air system monitoring
5	ACRF	A/C system refrigerant monitoring
6	O2S	Oxygen sensor monitoring
7	HTR	Oxygen sensor heater monitoring
8	EGR	EGR system monitoring
9	MIS	Misfire monitoring
10	FUEL	Fuel system monitoring
11	CCM	Comprehensive component monitoring

Appendix 4 Vehicle Manufacturer

Number	Vehicle Manufacturer
1	generic
2	Acura
3	Alfa Romeo
4	Aston.Mt
5	Audi
6	Bentley
7	BMW
8	Buick
9	Cadillac
10	Chevrolet
11	Chrysler
12	Citroen
13	Daewoo
14	Daihatsu
15	Dodge
16	Ferrari
17	Fiat
18	Ford
19	GM
20	GEO
21	GMC
22	Honda
23	HYundai
24	Infiniti
25	Isuzu

26	Iveco
27	Jaguar
28	Jeep
29	Kia
30	Lambor
31	Lancia
32	Land Rover
33	Lanos
34	Leganza
35	Lexus
36	Lincoln
37	Lotus
38	MAN
39	Maserati
40	Mazada
41	MB
42	Mercury
43	MG
44	Mini
45	Mitsubishi
46	Nissan
47	Nubira
48	Oldsmobile
49	Opel
50	Peugeot
51	Pontiac
52	Porsche
53	Proton
54	Renault

55	Roll Royce
56	Rover
57	Saab
58	Saturn
59	Scania
60	Seat
61	Skoda
62	Smart
63	Ssangyong
64	Subaru
65	Suzuki
66	Toyota
67	Vauxhall
68	Volvo
69	Volkswagen

Appendix 5 Special abbreviation of Vgatescan

NO.	Abbreviation	Full Name
1.	OBD	On board diagnostic
2.	N/A	Not available not applicable
3.	Vehicle M.F.	Vehicle Manufacture
4.	TID	Test Identifier
5.	PID	Parameter Identifier
6.	Mon.	Monitor
7.	Vehicle Info.	Vehicle Information
8.	DTC	Diagnostic trouble codes
9.	ECU	Electronic control unit
10.	CID (On Board Monitor)	Calibration Identifier
11.	MEAS	Measured Value
12.	MIN	Minimum
13.	MAX	Maximum
14.	O2	Oxygen
15.	VIN	Vehicle ID Number
16.	CVN	Calibration Verification Numbers
17.	Perf. Track	In-use Performance Tracking
18.	O2 Bank **X**-Sensor **Y**	Oxygen Sensor Monitor Bank **X** - Sensor **Y**
19.	Catalyst Mon. B **X**	Catalyst Monitor Bank **X**

7. Warranty and Service

7.1 Limited One Year Warranty

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

1) The sole responsibility of Vgatescan under the Warranty is limited to either the repair or, at the option of Vgatescan, 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) Vgatescan 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. Vgatescan reserves the right to make changes at any time without notice.

7.2 Service Procedures

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