

# **OBDII Code Scanner**

( **CAN+VW/AUDI** )

*Manual*

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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 on drive wheels and never leave 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 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 with ignition on or engine running.
- Keep the scan tool dry, clean and free from oil, water and grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool, when necessary.

## 2. Product Information

### 2.1 Tool Description



- ① **LCD DISPLAY** -- Indicates test results. Backlit, 128 x 64 pixel display with contrast adjustment.
- ② **Y BUTTON** -- Confirms a selection (or action) from a menu. When a DTC's definition covers more than one screen, it is used to move down to the next screen for additional data.
- ③ **N BUTTON** -- Cancels a selection (or action) from a menu or returns to the menu. It is also used to setup the unit when being pressed and held for at least 3 seconds.

- ④ **UP SCROLL BUTTON** -- Moves up through menu and submenu items in menu mode. When more than one DTC is retrieved, moves up through the current screen to the previous screens for additional DTCs and definitions.
- ⑤ **DOWN SCROLL BUTTON** -- Moves down through menu and submenu items in menu mode. When more than one DTC is retrieved, moves down through the current screen to the next screens for additional DTCs and definitions.
- ⑥ **OBD II CONNECTOR** -- Connects the scan tool to the vehicle's Data Link Connector (DLC).

### 2.2 Specifications

- 1) Display: Backlit, 128 x 64 pixel display with contrast adjustment
- 2) Operating Temperature: 0 to 50°C (32 to 122 F°)
- 3) Storage Temperature: -20 to 70°C (-4 to 158 F°)
- 4) External Power: 8.0 to 15.0 Volts provided via vehicle battery
- 5) Dimensions:

Length	Width	Height
178 mm (7.00")	95 mm (3.75")	34 mm (1.35")

- 6) NW: 0.70kg(1.54lb), GW: 1.0kg(2.20lb)

### 2.3 Accessories Included

- 1) **User's Manual** -- Instructions on tool operations
- 2) **OBD2 cable** -- Provides Power to tool and communicates between tool and vehicle
- 3) **Carry Case** -- A nylon case to store the scan tool when not in use

### 2.4 Navigation Characters

Characters used to help navigate the scan tool are:

- 1) "▶" -- Indicates current selection.
- 2) "↓" -- A flashing **Down** Arrow indicates additional information is available on the next screen.
- 3) "↑" -- A flashing **UP** Arrow indicates additional information is available on the previous screen.
- 4) "Pd" -- Identifying a Pending DTC when viewing DTCs.

## 2.5 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.

## 2.6 Power

The external 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) Connect the OBD II 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 OBD II Cable to the vehicle's DLC.

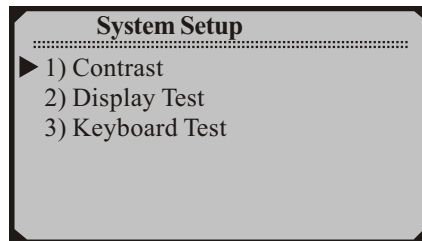
## 2.7 Product Setup

The scan tool allows you to make the following adjustments and settings:

- 1) **Contrast adjustment:** Adjusts the contrast of the LCD display.
- 2) **Display Test:** Tests the LCD display.
- 3) **Keyboard test:** Tests the keyboard.

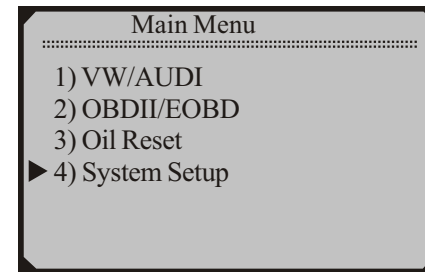
### To enter the setup menu mode

- 1) **From the keyboard:** Press and hold the **N** button for at least 3 seconds until the **System Setup** menu shows up. Follow the instructions to make adjustments and settings as described in the following setup options.



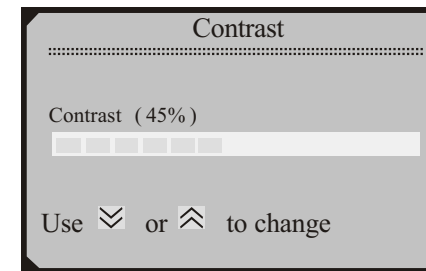
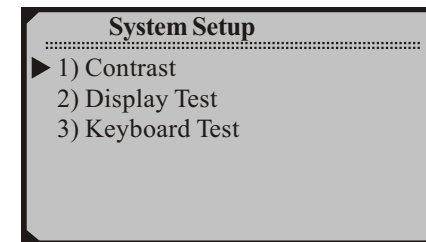
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- 2) **From the Main Menu:** Use the **UP/DOWN** Scroll Buttons to select **System Setup** and then press the **Y** button. Follow the instructions to make adjustments and settings as described in the following setup options.



### Contrast Adjustment

- 1) From the **System Setup** menu, use the **UP/DOWN** scroll buttons to select **Contrast**, and press the **Y** button.



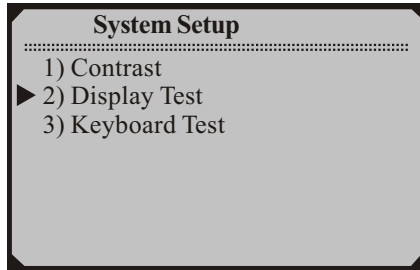
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- 3) Press the **Y** button to save your selection and return to previous menu.
- 4) Press the **N** button to return to previous menus.

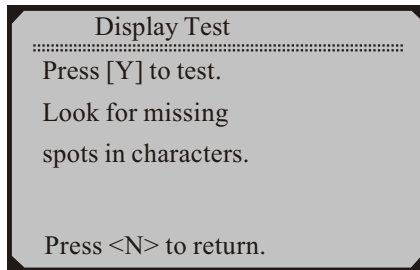
### Display Test

*The Display Test is used to check the LCD display.*

- 1) From the **System Setup** menu, use the **UP/DOWN** scroll buttons to select **Display Test** and press the **Y** button.



- 2) Select **Display Test** from the **Display Test** menu and press the **Y** button.
- 3) Press the **Y** button again to start test. Look for missing spots in the solid black characters.



- 4) When completed, press the **N** button to return.

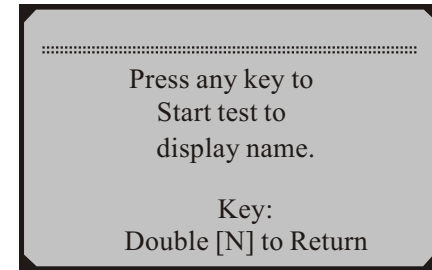
### Keyboard Test

*The Keyboard Test is used to verify that the keys are functioning properly.*

- 1) Use the **UP/DOWN** scroll buttons to select **Keyboard Test** from the **System Setup** menu, and then press the **Y** button.



- 2) Press any key to start test. When you press a key, the key name should be observed on the display. If the name does not show up, then the key is not functioning properly.



- 3) Double press **N** to return to the previous menu.

## 2.8 Vehicle Coverage

The VAG Scanner is specially designed to work with most Volkswagen and Audis sold worldwide of 1990 or newer models. If a VW/AUDI has a 16-pin "OBD - II style" Data Link Connector (DTC), the code reader will certainly work. If it has an old-style 2x2 Data Link Connector (DTC), then it depends on whether there are 4 or 3 wires connecting to the pins. If there are 4 wires, each connecting a pin, then it will work. If there are only 3 wires, leaving one pin disconnected, then it will not work. For VW/AUDI with old-style 2x2 Data Link Connector (DTC), you need to have a 2x2 cabling adapter which is not included in this product package.

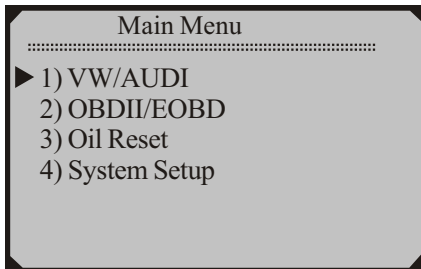
### 3. Operating Instructions

#### 3.1 VW/AUDI Diagnostics

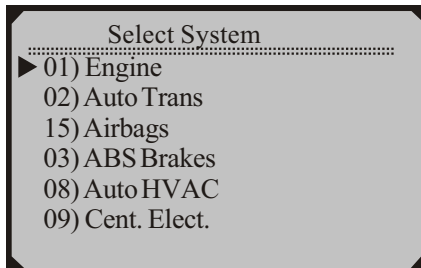
##### Reading Codes

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

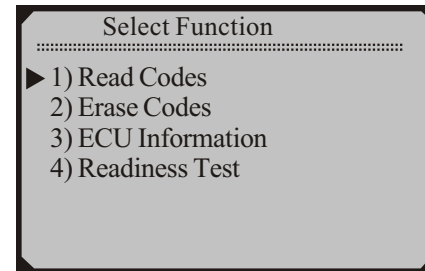
- 1) Turn the ignition off.
- 2) Locate the vehicle's 16-pin Data Link Connector (DLC).
- 3) Plug into the scan tool cable connector to the vehicle's DLC.
- 4) Turn the ignition on. But do not start the engine.
- 5) Press the **Y** button. The **Main Menu** will be observed on the display.
- 6) Use the **UP/DOWN** scroll buttons to select **VW/AUDI** from the menu and press the **Y** button.



- 7) Use the **UP/DOWN** scroll buttons to select the system from the **Select System** menu and press the **Y** button.

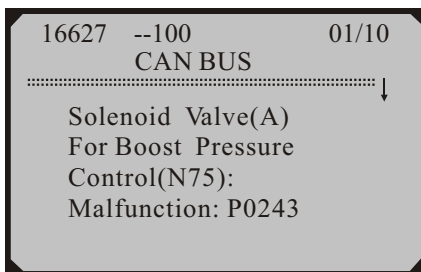


- *If the scan tool fails to communicate with the selected vehicle's ECU (Electronic Control Unit), a "LINK ERROR!" message shows up on the display.*
  - ✓ Verify that the ignition is ON;
  - ✓ Check if the scan tool's OBD II connector is securely connected to the vehicle's DLC;
  - ✓ Verify that the module is supported;
  - ✓ 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 "LINK ERROR" message does not go away, then there might be problems for the scan tool to communicate with the module being tested. The most common cause is that the scanned module is not supported on the vehicle.*
  - *The numbers (01, 02, 15, 03, 08, etc) in front of the system names refer to the physical addresses assigned to the systems, not the sequence of the systems to be arranged.*
- 8) Select **Read Codes** from the **Select Function** menu and press the **Y** button.



- **If there are no Diagnostic Trouble Codes present, the display will indicate "NO CODES ARE STORED IN THE MODULE!"**
- If there are any Diagnostic Trouble Codes present, the DTC number and its definition will show on the LCD display.
- The subcode, the communication protocol, the sequence of the DTC currently being observed and the total number of codes detected will be observed on the upper right hand corner of the display.

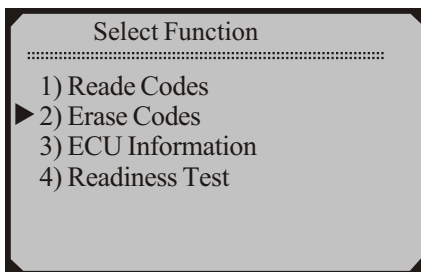
- When a DTC's definition covers more than one display screen, use the **Y** button, as necessary, to view any additional information.
- If the DTC definition is not available, an advisory message prompting you to refer to the vehicle service manual will be observed on the display.
- If more than one DTC is found, use the **UP/DOWN** scroll buttons, as necessary, until all the codes have been shown up.



## Erasing Codes

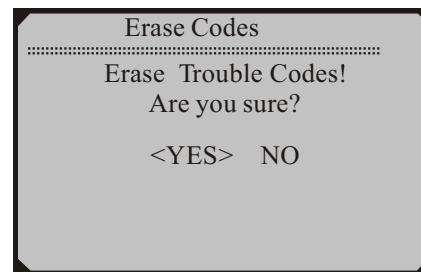
**CAUTION:** Erasing the Diagnostic Trouble Codes may allow the scan tool to delete not only the codes from the vehicle's on-board computer, but also "Freeze Frame" data and manufacturer specific enhanced data. Further, the I/M Readiness Monitor Status for all vehicle monitors is reset to Fail status.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

- 1) If you decide to erase the DTCs, use the **UP/DOWN** scroll buttons to select **Erase Codes** from the *Select Function* menu and press the **Y** button.



- If the scan tool is not connected or no communication is established with the vehicle yet, then refer to **Reading Codes** from 1 to 7 at Patagraph 3.1.

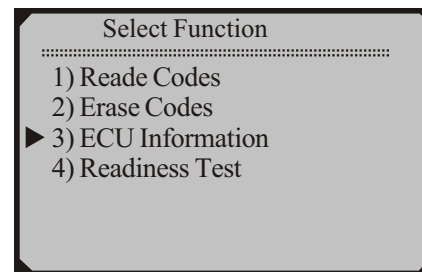
- 2) A warning message comes up asking for your confirmaton.



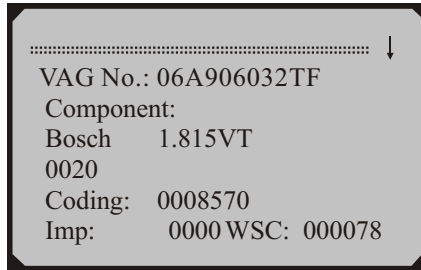
- 3) If you do not want to proceed with erasing the codes, press the **N** button.to exit. A message of "**command cancelled**" will show up.
- 4) If you do wish to proceed to erase the codes, then press the **Y** button.
- 5) If the codes are cleared successfully, an "**ERASE DONE!**" confirmation message will show on the display. Press any button to return to the previous menus.
- 6) If the codes are not cleated, then an "**ERASE FAILURE!**" message will appear. Press the **N** button to return to previous menus.

## Viewing ECU Information

- 1) To view **ECU Information**, use the **UP/DOWN** scroll buttons to select **ECU Information** from the *Select Function* menu and press the **Y** button.



- If the scan tool is not connected or no communication is established with the vehicle yet, then refer to **Reading Codes from 1 to 7 at Paragraph 3.1.**



- If there is no ECU Information available, a warning message shows on the display.

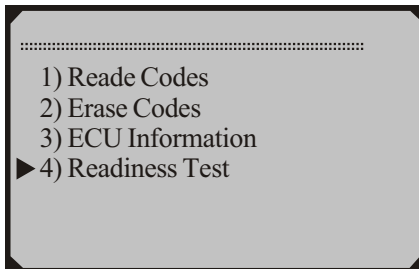
2) Press the **N** button to return to previous menus.

### Readiness Test

*Important: The Readiness Test function is used to check the operations of the Emission System on OBD2/EOBD compliant vehicles. It is an excellent function to use prior to having a vehicle inspected for compliance to an emissions program.*

- *“Pass” -- Indicates that a particular monitor being checked has completed its diagnostic testing.*
- *“Fail” -- Indicates that a particular monitor being checked has not completed its diagnostic testing or the monitor is not supported on that vehicle.*

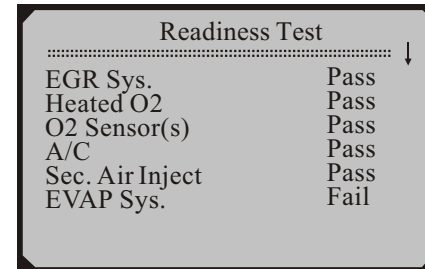
1) Use the **UP/DOWN** scroll buttons to select **Readiness Test** from the **Select Function** menu and press the **Y** button.



- If the scan tool is not connected yet, then refer to **Reading Codes from 1 to 7 at Paragraph 3.1.**

2) Use the **UP/DOWN** scroll buttons, as necessary, to view the status of the following monitors:

- EGR Sys.-- EGR System Monitor
- O2 Sensor(s) -- O2 Sensors Monitor
- Catalyst -- Catalyst Monitor
- EVAP Sys. -- Evaporative System Monitor
- Heated O2 --O2 Sensor Heater Monitor
- Sec Air Inject -- Secondary Air Monitor
- A/C -- A/C system Monitor
- Catalytic Conv. -- Catalytic Converter Monitor



3) Press the **N** button to return to previous menus.

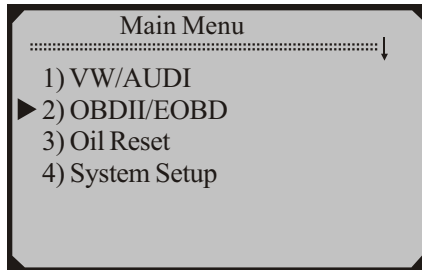
## 3.2 OBDII/EOBD Diagnostics

### Reading Codes

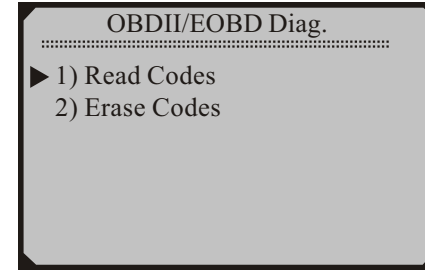
**CAUTION: Don't connect or disconnect any test equipment with ignition on or engine running.**

- 1) Turn the ignition off.
- 2) Locate the vehicle's 16-pin Data Link Connector (DLC).
- 3) Plug into the scan tool cable connector to the vehicle's DLC.
- 4) Turn the ignition on. But do not start the engine.
- 5) Press the **Y** button. The **Main Menu** will be observed on the display.
- 6) Use the **UP/DOWN** scroll buttons to select **OBDII/EOBD** from the menu.

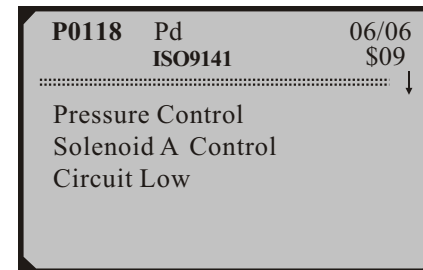




- 7) Press the **Y** button. A sequence of messages showing the **OBDII/EOBD** protocols will be observed on the display until the vehicle protocol is detected.
- *If the scan tool fails to communicate with the vehicle, s ECU (Engine Control Unit), a “LINK ERROR!” message shows up on the display.*
    - ✓ Verify that the ignition is ON;
    - ✓ Check if the scan tool’s OBD II connector is securely connected to the vehicle ’s DLC;
    - ✓ Verify that the vehicle is OBDII/EOBD 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 “LINK 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.*
- 8) After the vehicle protocol is displayed on the screen, press any key or wait about 2 seconds for the **OBDII/EOBD Diag** menu to come up.
- 9) Use the **UP/DOWN** scroll buttons to select **Read Codes** from the menu and press the **Y** button.



- If there are no Diagnostic Trouble Codes present, the display will indicate “**NO CODES ARE STORED IN THE MODULE!**”
- If there are any Diagnostic Trouble Codes present, the Fault Codes and Pending Codes will be reported on the display.

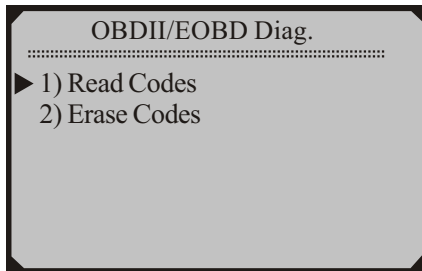


- The DTC number will appear on the upper left hand corner and its definition will show on the body of screen.
- The type of code (Generic or Manufacturer specific), the vehicle protocol, the sequence of the DTC currently being observed, the total number of codes detected and the module ID will be observed on the upper right hand corner of the display.
- If the code being displayed is a pending code, the **Pd** icon will be observed next to the DTC number on the upper right hand corner of the display.
- When a DTC’s definition covers more than one display screen, use the **Y** button, as necessary, to view any additional information.

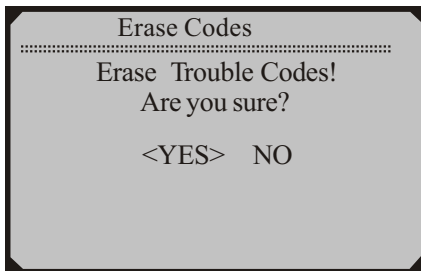
- If the retrieved DTCs contain any manufacturer specific or enhanced codes, you will be prompted to refer to the CD DTC library or the vehicle service manual to view the DTC definitions.
- 10) If more than one DTC is found, use the **UP/DOWN** scroll buttons, as necessary, until all the codes have been shown up.

### Erasing Codes

- 1) If you decide to erase the DTCs, use the **UP/DOWN** scroll buttons to select **Erase Codes** from the **OBDII/EOBD Diag.** menu and press the **Y** button.



- If the scan tool is not connected or no communication is established with the vehicle yet, then refer to **Reading Codes from 1 to 8 at Paragraph 3.2.**
- 2) A warning message comes up asking for your confirmation.

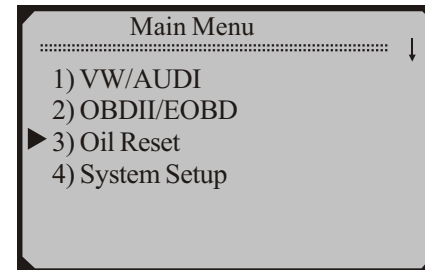


- 3) If you do not want to proceed with erasing the codes, press the **N** button to exit. A message of “**command cancelled**” will show up.

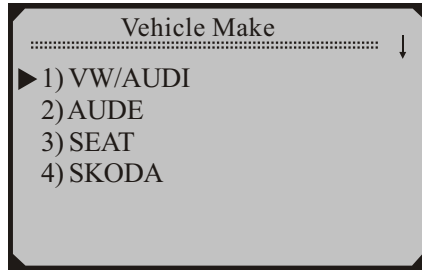
- 4) If you do wish to proceed to erase the codes, then press the **Y** button.
- 5) If the codes are cleared successfully, an “**ERASE DONE!**” confirmation will show on the display. Press any button to return to previous menus.
- 6) If the codes are not cleared, then an “**ERASE FAILURE!**” message will appear. Press the **N** button to return to previous menus.

### 3.3 Oil Reset

- 1) Turn the ignition off.
- 2) Locate the vehicle's 16-pin Data Link Connector (DLC).
- 3) Plug into the scan tool cable connector to the vehicle's DLC.
- 4) Turn the ignition on. But do not start the engine.
- 5) Press the **Y** button. The **Main Menu** will be observed on the display.
- 6) Use the **UP/DOWN** scroll buttons to select **Oil Reset** from the menu. Press the **Y** button to accept the option and to move to the next screen.



- 7) Do the following to select menu options:
- a) Use the **UP/DOWN** scroll buttons to move the cursor (▶) and select an option, then
  - b) Press the **Y** button to accept the option and to move to the next screen.
  - c) Repeat a) and b) to select the necessary options.



- 8) Follow any on-screen instructions. Optionally, use the **N** button to return to previous screens.
- 9) If the Service Reset Failed message appears, then there might be problems for the scan tool to communicate with the vehicle being tested. Refer to the vehicle service manual for more information.
- 10) When done, turn off the ignition and disconnect the scan tool.

## 4. Warranty and Service

### 4.1 Limited One Year Warranty

CEM 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 CEM under the Warranty is limited to either the repair or, at the option of CEM, 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, Service Center.
- 3) CEM 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. CEM reserves the right to make changes at any time without notice.

### 4.2 Service Procedures

If you have any questions, please contact your local store. If it becomes necessary to return the scan tool for repair, contact your local distributor for more information.

[Http://www.cem-instruments.com](http://www.cem-instruments.com)