AUTOMOTIVE SCAN TOOL

OBD2 CODE READER

INSTRUCTION MANUAL

SPECIFICATIONS

Support:	OBD2 Compliant Vehicles
Input:	8V to 25V
Operating Temp.:	0°C~50°C
Storage Temp.:	–20°C~70°C
Display:	128 x 64mm Backlit LCD
Weight:	0.15kg

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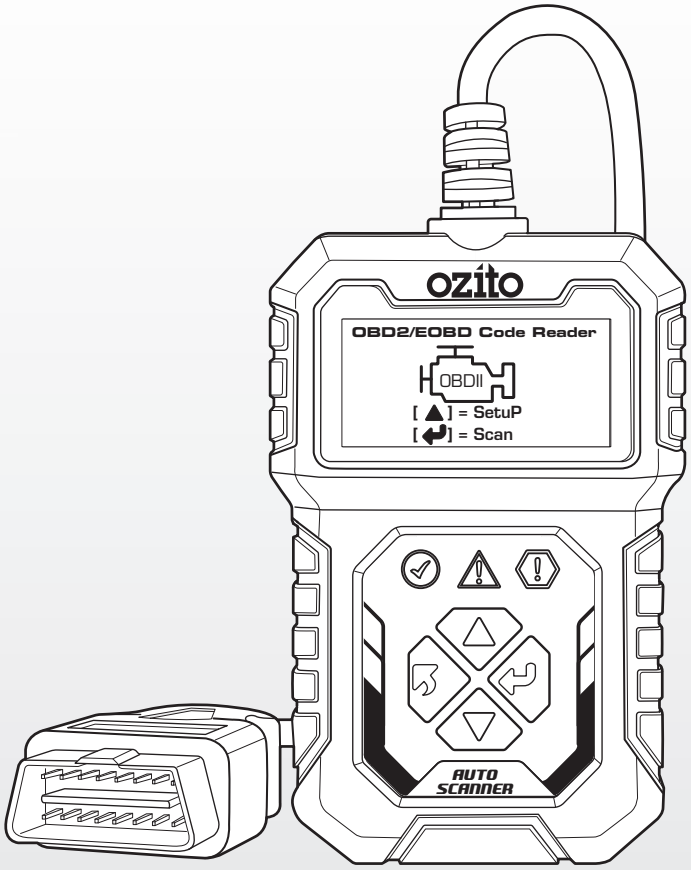
3 YEAR REPLACEMENT WARRANTY*



STANDARD EQUIPMENT

Automotive Scan Tool

OAST-050

WARRANTY

IN ORDER TO MAKE A CLAIM UNDER THIS WARRANTY YOU MUST RETURN THE PRODUCT TO YOUR NEAREST BUNNINGS WAREHOUSE WITH YOUR BUNNINGS REGISTER RECEIPT. PRIOR TO RETURNING YOUR PRODUCT FOR WARRANTY PLEASE TELEPHONE OUR CUSTOMER SERVICE HELPLINE:

Australia: 1800 069 486
New Zealand: 0508 069 486

TO ENSURE A SPEEDY RESPONSE PLEASE HAVE THE MODEL NUMBER AND DATE OF PURCHASE AVAILABLE. A CUSTOMER SERVICE REPRESENTATIVE WILL TAKE YOUR CALL AND ANSWER ANY QUESTIONS YOU MAY HAVE RELATING TO THE WARRANTY POLICY OR PROCEDURE.

The benefits provided under this warranty are in addition to other rights and remedies which are available to you at law.

Our goods come with guarantees that cannot be excluded at law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Generally you will be responsible for all costs associated with a claim under this warranty, however, where you have suffered any additional direct loss as a result of a defective product you may be able to claim such expenses by contacting our customer service helpline above.

3 YEAR REPLACEMENT WARRANTY*

Your product is guaranteed for a period of **36 months from the original date of purchase.** If a product is defective it will be replaced in accordance with the terms of this warranty. Warranty excludes consumable parts, for example: .

*This product is intended for DIY use only and replacement warranty covers domestic use.

WARNING

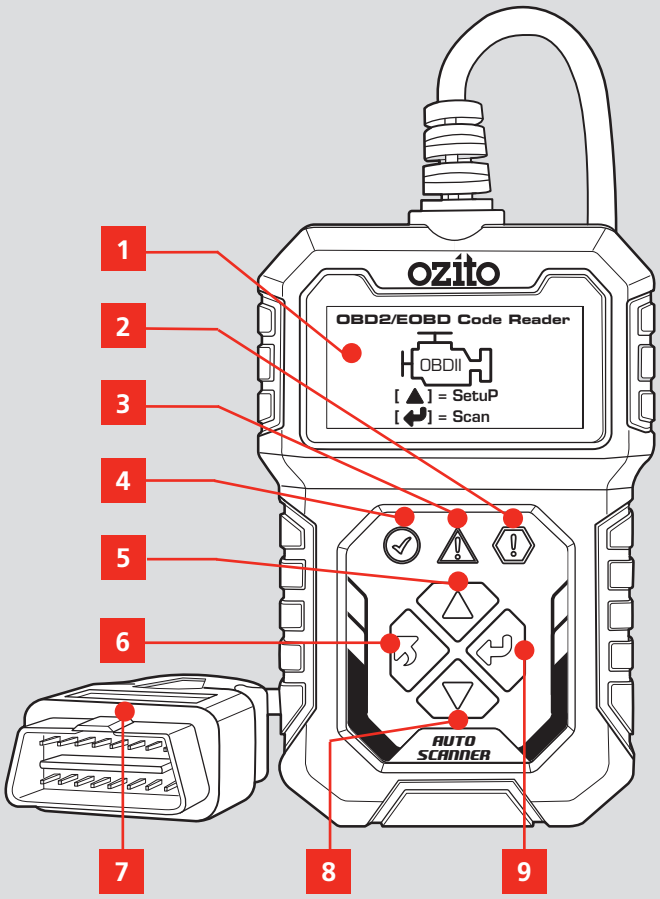
The following actions will result in the warranty being void.

- If the tool has been operated on a supply voltage other than that specified on the tool.
- If the tool shows signs of damage or defects caused by or resulting from abuse, accidents or alterations.
- Failure to perform maintenance as set out within the instruction manual.
- If the tool is disassembled or tampered with in any way.
- Professional, industrial or high frequency use.

KNOW YOUR PRODUCT

12V AUTOMOTIVE SCAN TOOL

1. Backlit LCD
2. Red LED
3. Yellow LED
4. Green LED
5. Up Button
6. Back Button
7. OBD2, 16-Pin Connector
8. Down Button
9. OK Button



ONLINE MANUAL

Scan this QR Code with your mobile device to take you to the online manual.

3 YEAR REPLACEMENT WARRANTY*

SETUP & PREPARATION

1. KNOW YOUR PRODUCT OVERVIEW

1. Backlit LCD
Indicates setup, scan, menu options and test results.

2. Red LED
Indicates there is a problem in one or more of the vehicle's systems. The red LED is also used to show that DTCs are present. DTCs are shown on the Scan Tool's display. In this case, the MIL lamp on the vehicle's instrument panel will light steady on.

3. Yellow LED
Indicates there is a possible problem. A "Pending" DTC is present and/or some of the vehicle's emission monitors have not run their diagnostic testing.

4. Green LED
Indicates that engine systems are running normally (The number of monitors on the vehicle which are active and performing their diagnostic testing is in the allowed limit, and no DTCs are present).

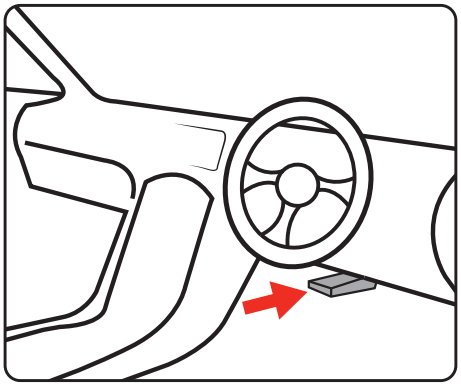
5. Up Button
Scrolls up through menu items

6. Back Button
Returns to previous menu.

7. OBD2 16-Pin Connector
Connects the scan tool to the vehicle's Data Link Connector (DLC).

Your DLC is usually located near centre under the instrument panel (dash), under or around the driver's side of most vehicles.

Do not force OBD2 Connector into the DLC, ensure the connector is in the correct orientation to the DLC to avoid damaging the pins.



Note: Refer to your vehicle's service manual for the location if the DLC cannot be found.

8. Down Button
Scrolls down through menu items.

9. OK Button
Confirms a selection (or action) from a menu item.

2. GERNERAL INFORMATION

OBD2 Readiness Monitors

An important part of a vehicle's OBD2 system is the Readiness Monitors, which are indicators used to find out if all of the emissions components have been evaluated by the OBD2 system. They are running periodic tests on specific systems and components to ensure that they are performing within allowable limits.
Currently, there are eleven OBD2 Readiness Monitors (or I/M Monitors) defined by the U.S. Environmental Protection Agency(EPA). Not all monitors are supported by all vehicles and the exact number of monitors in any vehicle depends on the motor vehicle manufacturer's emissions control strategy.

• **Continuous Monitors –** Some of the vehicle components or systems are continuously tested by the vehicle's OBD2 system, while others are tested only under specific vehicle operating conditions. The continuously monitored components listed below are always ready:
1. Misfire
2. Fuel System
3. Comprehensive Components (CCM)

Once the vehicle is running, the OBD2 system is continuously checking the above components, monitoring key engine sensors, watching for engine misfire, and monitoring fuel demands.

• **Non-Continuous Monitors –** Unlike the continuous monitors, many emissions and engine system components require the vehicle to be operated under specific conditions before the monitor is ready. These monitors are termed non-continuous monitors and are listed below:

1. EGR System	2. O2 Sensors
3. Catalyst	4. Evaporative System
5. O2 Sensor Heater	6. Secondary air
7. Heated Catalyst	8. A/C system

OBD2 Monitor Readiness Status

OBD2 systems must indicate whether or not the vehicle's PCM's monitor system has completed testing on each component. Components that have been tested will be reported as "Ready", or "Complete", meaning they have been tested by the OBD2 system. The purpose of recording readiness status is to allow inspectors to determine if the vehicle's OBDII system has tested all the components and/or systems.

The powertrain control module (PCM) sets a monitor to "Ready" or "Complete" after an appropriate drive cycle has been performed. The drive cycle that enables a monitor and sets readiness codes to "Ready" varies for each individual monitor. Once a monitor is set as "Ready" or "Complete", it will remain in this state. A number of factors, including erasing of diagnostic trouble codes (DTCs) with a scan tool or a disconnected battery, can result in Readiness Monitors being set to "Not Ready". Since the three continuous monitors are constantly evaluating, they will be reported as "Ready" all of the time. If testing of a particular supported non-continuous monitor has not been completed, the monitor status will be reported as "Not Complete" or "Not Ready".

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

OBD2 Definitions

• **Powertrain Control Module (PCM) –** OBD2 terminology for the on-board computer that controls engine and drive train.

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

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

• **Enabling Criteria –** Also termed Enabling Conditions. They are the vehicle-specific events or conditions that must occur within the engine before the various monitors will set, or run. Some monitors require the vehicle to follow a prescribed "drive cycle" routine as part of the enabling criteria. Drive cycles vary among vehicles and for each monitor in any particular vehicle.

• **OBD2 Drive Cycle –** A specific mode of vehicle operation that provides conditions required to set all the readiness monitors applicable to the vehicle to the "ready" condition. The purpose of completing an OBD2 drive cycle is to force the vehicle to run its onboard diagnostics. Some form of a drive cycle needs to be performed after DTCs have been erased from the PCM's memory or after the battery has been disconnected. Running through a vehicle's complete drive cycle will set the readiness monitors so that future faults can be detected. Drive cycles vary depending on the vehicle and the monitor that needs to be reset. For vehicle specific drive cycle, consult the vehicle's Owner's Manual.

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

OPERATION

3. MENU

WARNING! READ AND UNDERSTAND THE WARNINGS BEFORE SETUP.

The automotive scan tool is used to check engine of most OBD2 compliant vehicles from 1996 onwards with standard sized 16-Pin Data Link Connector (DLC).

Function Description

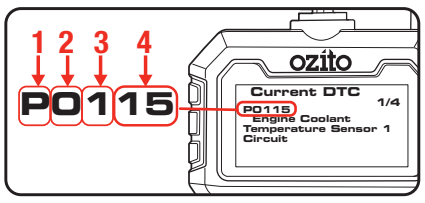
- Dual-system diagnostic, optional engine and transmission.
- Quickly indicate engine faults, with green / yellow / red LED indicators as fault lights.
- Read and clear the engine fault code and view Diagnostic Trouble Codes (DTC) definitions.
- Display of sensor data stream information such as vehicle revolutions per minute (rpm), engine coolant temperature in real time.
- View freeze frame data and I/M (readiness monitor status information.
- Read vehicle information:
  vehicle identification number (VIN)
  calibration identification numbers (ID's)
  calibration verification number (CVN's)
- Multi- language

Diagnostic Trouble Codes (DTC)

OBD2 Diagnostic Trouble Codes are codes that are stored by the on-board computer diagnostic system in response to a problem found in the vehicle. These codes identify a particular problem area and are intended to provide you with a guide as to where a fault might be occurring within a vehicle. OBD2 Diagnostic Trouble Codes consist of a five-digit alphanumeric code. The first character, a letter, identifies which control system sets the code. The other four characters, all numbers, provide additional information on where the DTC originated and the operating conditions that caused it to set. See below example to illustrate the structure of digits:

1. System

B = Body
C = Chassis
P = Powertrain
U = Network



2. Code Type

Generic = 0
Manufacturer Specific = 1

4. Identifying specific malfunctioning section of the systems

3. Sub-Systems

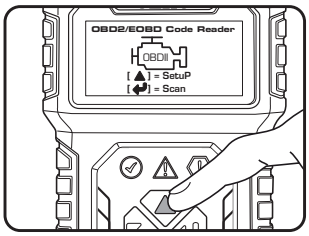
1 = Fuel and Air Metering
2 = Fuel and Air Metering
3 = Ignition System or Engine Misfire
4 = Auxiliary Emission Controls
5 = Vehicle Speed Control and Idle Controls
6 = Computer Output Circuits
7 = Transmission Controls
8 = Transmission Controls

4 VEHICLE CONNECTION

WARNING! DO NOT CONNECT OR DISCONNECT SCAN TOOL WITH IGNITION ON OR ENGINE RUNNING.

Setup

1. Connect OBD2 16-pin connector into the DLC.
2. Turn the ignition on. Setup can be done with engine off or engine running.
3. From the home screen, press the "UP" button to enter the Setup interface.

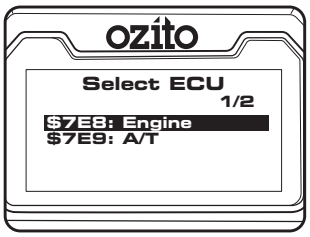


- **Language:** The default language from the factory is English, many other languages can be manually selected.

- **Unit of Measure**: The default units from the factory is metric, imperial can me manually selected.

- **Contrast:** Backlight contrast is adjustable, factory default 25%

- **System Section Module:** If more than one module is detected, you will be prompted to select a module before testing. Select the desired module and press the "OK" button to confirm.



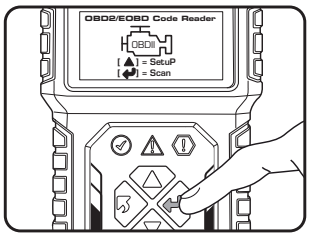
4. Press the Back button when setup is complete to return to the home screen.

WARNING! OPERATE VEHICLE IN A WELL- VENTILATED AREA, EXHAUST GASSES ARE POISONOUS.

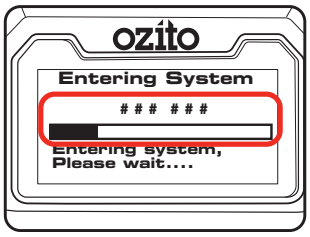
Scan

Ignition on, engine running.

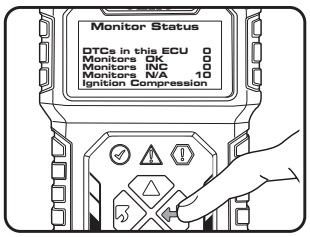
1. From the home screen, press the “OK” button to enter the Scan interface.



2. Wait for the menu to appear. A sequence of messages displaying the OBD2 protocols and progress bar will be observed on the backlit LCD until the vehicle protocol is detected.



3. View a summary of the system status (MIL status, DTC counts, Monitor status) on backlit LCD.



4. Press the “OK” button for **Diagnostic Menu**

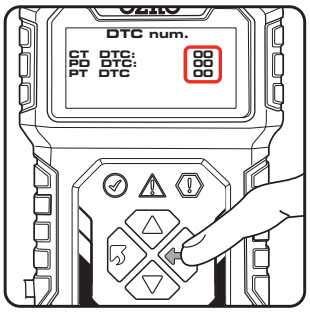
5. DIAGNOSTIC MENU

- **Read Codes:** Read the diagnostic trouble code (DTC) in the engine or transmission system and display the standard definition.

Ignition on, engine off or running

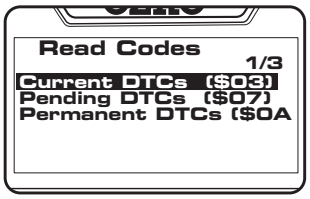
1. Use the “UP” and “DOWN” buttons to select a Read Codes and press the “OK” button to confirm.

   If there are DTC’s, the backlit LCD will display the number of codes:



2. Press “OK” button

CT (Current) DTC codes- Are generated by the current hardware failure. The current fault code(s) for the hardware failure are generated by a continuous fault and can only be cleared if the hardware is repaired.

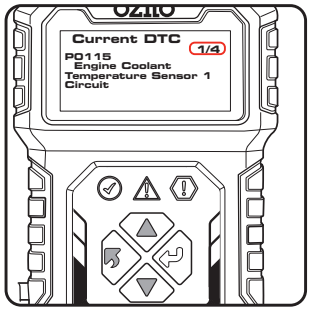


PD (Pending) DTC codes- They indicate problems that the control module has detected during the current or last driving cycle but are not considered serious yet. Pending Codes will not turn on the malfunction indicator lamp (MIL) unless the same problem is detected again. If the fault does not occur within a certain number of warm-up cycles, the code clears from memory.

PT (Permanent) DTC codes- These codes cause the control module to illuminate the malfunction indicator light (MIL) when emission-related fault occurs. These DTCs cannot be cleared until it is confirmed that the problem is fixed.

2. Use the “UP or “DOWN” button to select Current, Pending or Permanent codes from the Read Codes menu and press the “OK” button. See **Diagnostic Trouble Codes (DTC)** heading in this manual.

Note: If no DTCs, a “The vehicle has no fault codes” message shows on the backlit LCD.



3. View the DTCs and their definitions on the backlit LCD Display. Press “BACK” button to return to previous screen.
4. If more than one DTC is found, the number to the right of the backlit LCD indicates sequence of DTCs. Use the “UP” and “DOWN” button to check all the codes.

OPERATION (cont.)

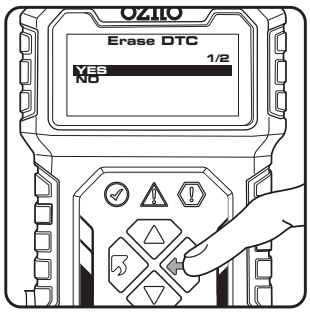
5. DIAGNOSTIC MENU (cont.)

- **Erase Codes**: This module can be used to clear DTCs in the system.
  Erasing the Diagnostic Trouble Codes may allow the automotive 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. Furthermore, the I/M Readiness Monitor Status for all vehicle monitors is reset to Not Ready or Not Complete status.

WARNING! DO NOT ERASE THE CODES BEFORE THE SYSTEM HAS BEEN CHECKED COMPLETELY BY A TECHNICIAN.

Note: Erasing codes does not mean that trouble codes in ECU have been eliminated completely. As long as there is fault with the vehicle, the trouble codes keeps on presenting. Ignition on engine off. Do not start the engine.

1. Use the "UP" and "DOWN" buttons to select Erase Codes from the Diagnostic Menu and press the "OK" button to confirm.
2. If you do not want to proceed with erasing codes, select NO and press "OK" button to return to Diagnostic Menu.
3. To erase codes, select YES and Press "OK" button to confirm. If the codes are cleared successfully, an "Erase Done!" confirmation message shows on the backlit LCD.
4. Press "BACK" button to return to Diagnostic Menu.



- **Date Stream:** Read and display all supported sensor data, up to 249 types of parameters.

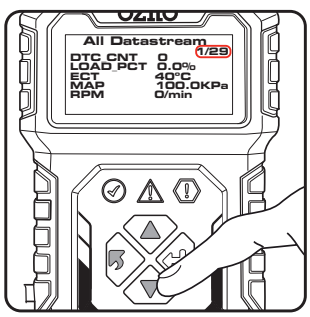
Ignition on, engine off or running.

Note: Engine running will provide live data.

1. Use the "UP" and "DOWN" buttons to select Data Stream from the Diagnostic Menu and press the "OK" button to confirm.
2. Wait a few seconds while the automotive scan tool validates the Performance Information Data (PID).

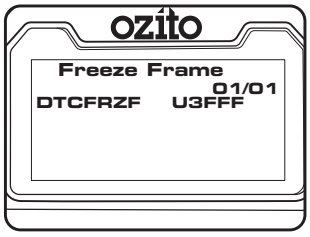
Note: The number to the right of the backlit LCD indicates sequence of highlighted item.

3. If retrieved information covers more than one screen, use the "UP and DOWN" button, as necessary, until all the data is displayed.
4. Press "BACK" button to return to previous menu.



- **Freeze Frame:** Records the vehicle operation, status information (fault code, vehicle speed, RPM, water temperature, etc.) at the moment when a DTC is detected. This information can aid the technician by allowing the parameters to be duplicated for diagnostic and repair purposes. This data will only exist when there is a fault code.

1. Use the "UP" and "DOWN" buttons to select Freeze Frame from the Diagnostic Menu and press the "OK" button to confirm.
2. Wait a few seconds while the automotive scan tool validates the PID.
3. If retrieved information covers more than one screen, use the "UP and DOWN" button, as necessary, until all the data is displayed.
   If there is no freeze frame data available, an advisory message "The vehicle does not have freeze frame data" shows on the backlit LCD.
4. Press "BACK" button to return to previous menu.



- **I/M Readiness:** Used to check the operations of the Emission System on OBD2 compliant vehicles.

CAUTION - By clearing trouble codes you also clear the readiness status for the individual emission system readiness tests. In order to reset these monitors, the vehicle must be driven through a complete drive cycle with no trouble codes in memory. Times for reset vary depending on vehicle.

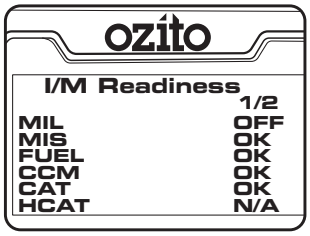
1. Use the "UP" and "DOWN" buttons to select I/M Readiness from the Diagnostic Menu and press the "OK" button to confirm.
2. Wait a few seconds while the automotive scan tool validates the PID.
3. If the vehicle supports both types of tests, then both types will be shown on the screen for selection.

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

This Drive Cycle- indicates status of monitors since the beginning of the current drive cycle.

4. Use the "UP and DOWN" button to select module and press the "OK" button to confirm.

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



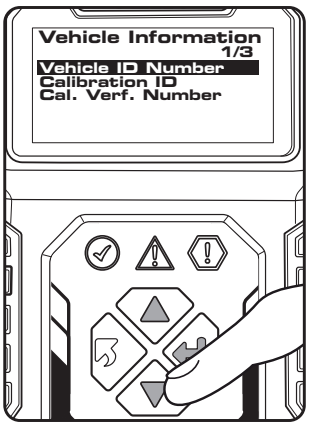
“OK” -- Indicates that a particular monitor being checked has completed its diagnostic testing.
“INC” -- Indicates that a particular monitor being checked has not completed its diagnostic testing.
“N/A” -- The monitor is not supported on that vehicle.

4. Press “BACK” button to return to previous menu.

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

Ignition on, engine off or running.

1. Use the “UP” and “DOWN” buttons to select Vehicle Information from the Diagnostic Menu and press the “OK” button to confirm .
2. From the Vehicle Information menu, use the “UP and “Down” buttons to select available item and press the “OK” button to view.
3. View retrieved vehicle information on the backlit LCD.



Note: If the vehicle does not support selected mode, a “Not Supported” message shows on the backlit LCD.

4. Press “BACK” button to return to previous menu.

TROUBLESHOOTING

Connection Error

When vehicle ignition is off or engine not running the automotive scan tool cannot communicate with the engine system, this message will be displayed. You will need to do the following to check:

1. Verify that the ignition is ON or the engine is running.
2. Check if the scan tool’s OBD2 connector is securely connected to the vehicle’s DLC.
3. Verify that the vehicle is OBD2 compliant.

Vehicle Link Error

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

1. Verify that the ignition is ON.
2. Check if the scan tool’s OBD2 connector is securely connected to the vehicle’s DLC.
3. Verify that the vehicle is OBD2 compliant.
4. Turn the ignition off and wait for about 10 seconds. Turn the ignition back to on and continue the testing.

Operator Error

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

– Reset the scan tool.

1. Turn the ignition off and wait for about 10 seconds.
2. Turn the ignition back to on and continue the testing.

Automotive Scan Tool Does Not Power On

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

1. Check if the automotive scan tool’s OBD2 connector is securely connected to the vehicle’s DLC;
2. Check if the DLC pins are bent or broken. Clean the DLC pins if necessary.
3. Check vehicle battery to make sure it is still good with at least 8.0 volts.
4. Verify the control module is not defective.

BATTERY TESTER SAFETY WARNINGS

WARNING! Save all warnings and instructions for future reference

WARNING! Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

- This appliance is not intended for use by young or infirm persons unless supervised by a responsible person to ensure that they can use the appliance safely.
- Young children should be supervised to ensure that they do not play with the appliance.
- The warnings, cautions and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur.
- Common sense and caution are factors that cannot be built into this product but must be supplied by the operator.
- Wear safety eye protection that meets AS/NZS standards.
- Always perform automotive testing in a safe environment.
- 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.
- Operate in a safe work environment. Keep your work area clean and well lit.
- Always lock up tools and keep them out of the reach of children.
- Do not expose OBD2 automotive Scan tool to rain, snow or wet conditions.
- Keep the OBD2 automotive Scan tool dry, clean and free from oil, water and grease.
- Stay clear of hot engine and car parts.
- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
- Use this product in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of this product for operations different from those intended could result in a hazardous situation.
- This product is not a toy. Keep it out of reach of children.
- Maintain labels and nameplates on the unit. These carry important safety information.
- Don't connect or disconnect any test equipment with ignition on or engine running.
- Ensure automatic vehicles are in park with the handbrake engaged before starting the engine.
- Ensure manual vehicles are in neutral with the handbrake engaged before starting the engine.
- Put blocks on drive wheels and never leave car unattended while running tests.
- Road Safety Road Rules 2009 penalty code 2135, it is illegal to leave "motor vehicle unattended with keys in ignition, motor running, brakes not secured or doors unlocked.
- 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.
- This battery tester was designed for specific functions. Do not modify, disassemble or alter the battery tester, all parts and accessories are designed with built-in safety features that may be compromised if altered.
- Do not use the battery tester in a way for which it is not designed.

MAINTENANCE

WARNING! BEFORE CLEANING THE APPLIANCE MAKE SURE THAT IT IS DISCONNECTED FROM THE VEHICLE.

Cleaning

- We recommend that you clean the device immediately each time you have finished using it.
- Keep the OBD2 automotive Scan tool dry, clean and free from oil, water and grease.
- Clean the appliance regularly with a cloth. Do not use cleaning agents or solvents; these may be aggressive to the plastic parts in the appliance. Ensure that no water can get into the interior of the appliance.

Storage

- The automotive scan tool should be placed in a dry room for storage.

Note: Ozito Industries will not be responsible for any damage or injuries caused by the repair of the tool by an unauthorised person or by mishandling of the tool.

DESCRIPTION OF SYMBOLS

V	Volts	A	Amperes
	Regulatory Compliance Mark (RCM)		Warning
 	Read Instruction Manual		

CARING FOR THE ENVIRONMENT

Power tools that are no longer usable should not be disposed of with household waste but in an environmentally friendly way. Please recycle where facilities exist. Check with your local council authority for recycling advice.

Recycling packaging reduces the need for landfill and raw materials. Reuse of recycled material decreases pollution in the environment. Please recycle packaging where facilities exist. Check with your local council authority for recycling advice.

SPARE PARTS

Spare parts can be ordered from the Special Orders Desk at your local Bunnings Warehouse.

For further information visit

www.ozito.com.au or contact Ozito Customer Service:

Australia 1800 069 486

New Zealand 0508 069 486

E-mail: enquiries@ozito.com.au