NEXAS

NL100

User's Manual

NexLink NL100

OBDII/EOBD+CAN

Table of Contents

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.
- Do not attempt to operate or observe the tool while driving a vehicle. Operating or observing the tool will cause driver distraction and could cause a fatal accident.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well ventilated work area: Exhaust gases are Poisonous.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.
- Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
- Don't connect or disconnect any test equipment while the ignition is on or the engine is running.
- Keep the scan tool dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool, when Necessary.

2. General Information

2.1 On-Board Diagnostics (OBD) II

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

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

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

2.2 Diagnostic Trouble Codes (DTCs)

OBD II Diagnostic Trouble Codes are codes that are stored by the on-board computer diagnostic system in response to a problem found in the vehicle. These codes identify a particular problem area and are intended to provide you with a guide as to where a fault might be occurring within a vehicle. OBD II Diagnostic Trouble Codes 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 be set. Below is an example to illustrate the structure of the digits:
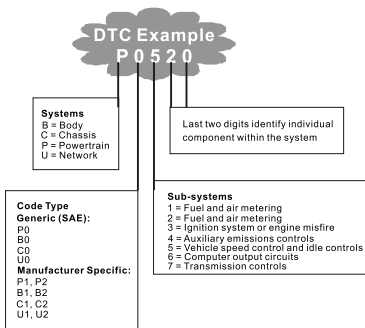
DTC Example
P 0 5 2 0

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

Last two digits identify individual
component within the system

Code Type
Generic (SAE):
P0
B0
C0
U0
Manufacturer Specific:
P1, P2
B1, B2
C1, C2
U1, U2

Sub-systems
1 = Fuel and air metering
2 = Fuel and air metering
3 = Ignition system or engine misfire
4 = Auxiliary emissions controls
5 = Vehicle speed control and idle controls
6 = Computer output circuits
7 = Transmission controls

Figure 1-2: Explanation of a diagnostic trouble code.

2.3 Location of the Data Link Connector (DLC)

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

Figure 1-3: The DLC connector (left) can be found in the area of the car interior seen at right (black arrow).
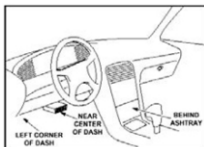
2.4 OBD II Readiness Monitors

Readiness Monitors are indicators used to find out if all of the emissions components have been evaluated by the OBD II system. They are running periodic tests on specific systems and components to ensure that they are performing within allowable limits.

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

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

1. **Misfire**
2. **Fuel System**
3. **Comprehensive Components (CCM)**

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

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

1. **EGR System - exhaust Gas Recirculation for reducing greenhouse gases.**

2. **O2 Sensors - monitor and adjust air/fuel mixture.**

3. **Catalyst - reduces exhaust emissions.**

4. **Evaporative System - monitors the integrity of the fuel tank system.**

5. **O2 Sensor Heater - brings O2 sensor to correct operating temperature.**

6. **Secondary air - reduces exhaust emissions.**

7. **Heated Catalyst - brings catalyst to correct operating temperature.**

8. **A/C system - monitors system for freon leaks.**

2.5 OBD II Monitor Readiness Status

OBD II systems must indicate whether or not the vehicle's PCM's monitoring has completed testing on each emission component. Components that have been OBD II tested will be reported as "OK". The purpose of recording readiness status is to allow inspectors to determine if the vehicle's OBDII system has tested all the emissions systems. This is handy to know before bringing vehicle to a state emissions testing facility.

The powertrain control module (PCM) sets a monitor to "OK" after an appropriate drive cycle has been performed. The drive cycle that enables a Monitor and sets readiness codes to "OK" varies for each individual monitor. Oncce a monitor is set as "OK", it will remain in this state. A number of factors, including erasing of diagnostic trouble codes (DTCs) with a code reader or a disconnected battery, can result in Readiness Monitors being set to "INC" (incomplete). Since the three continuous monitors are constantly evaluating, they will be reported as "OK" all of the time. As long as there are no DTCs stored in memory, the vehicle is running in accordance with the OBD II guidelines. If testing of a particular supportes non-continuous monitor has not been completed or not tested, the monitor status will be reported as "INC" (incomplete).

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

2.6 OBD II Definitions

Powertrain Control Module (PCM) – the OBD II terminology for the on-board computer that controls the engine and the 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) these identify which section of the emission control system has malfunctioned.

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

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

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

3. Using the Scan Tool

3.1 Tool Description - NL100

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

2. **ENTER BUTTON** – Confirms a selection (or action) from a menu.

3. **EXIT BUTTON** – Cancels a selection (or action) from a menu or returns to the menu. It is also used to setup system, exit DTC Lookup screen.

4. **UP SCROLL BUTTON** – Moves up through menu and submenu items in menu mode. When more than one screen of data is retrieved, moves up through the current screen to the previous screens for additional data. Update the DTC lib need press this button,When Tools connected with PC by Usb cable.

5. **DOWN SCROLL BUTTON** – Moves down through menu and submenu items in menu mode. When more than one screen of data is retrieved, moves down through the current screen to next screens for additional data.

6. **OBD II CONNECTOR** – Connects the scan tool to the vehicle's Data Link Connector (DLC).

3.2 Specifications

1) Display: Backlit, 128 × 64 pixel display with contrast adjustment
2) Operating Temperature: 0 to 60°C (32 to 140 F°)
3) Storage Temperature: -20 to 70°C (-4 to 158 F°)
4) External Power: 8.0 to 18.0 V power provided via vehicle battery
5) Dimensions:

Length	Width	Height
125 mm (5.00")	70 mm (2.80")	22 mm (0.90")

6) NW: 0.23kg (0.51lb), GW: 0.32kg (0.74lb)

3.3 Included

1) NL100 Scan Tool main unit
2) User's Manual
3) USB update cable

Updating the NL100

a.   Attach the USB cable.
b.   Go to www.nexastech.com and click on **Downloads.**
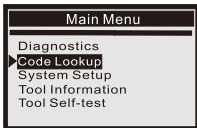c.   Click on Software Update for NL100 and follow on-screen**.**
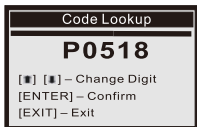
USB update cable attached to the tool.

3.4 Code Lookup

The Code Lookup function is used to search for definitions of Code stored in the built-in Code library.
1) From the **Main Menu**, use the **UP/DOWN** scroll button to select the **Code Lookup** and press the **ENTER** button.

2) From the **Code Lookup** menu, use the **LEFT/RIGHT** button to move to the desired character, use the **UP/DOWN** button to change the selected digit/character and press the **ENTER** button to confirm.

```
┌─────────────────────────────┐
│        Code Lookup          │
├─────────────────────────────┤
│                             │
│          P0518              │
│                             │
│   [▮] [▮] – Change Digit    │
│   [ENTER] – Confirm         │
│   [EXIT] – Exit             │
└─────────────────────────────┘
```

3) View the DTC definition on screen. When the DTC definition covers more than one screen, use the **LEFT/RIGHT** button to view additional information on previous/next screen(s).

- *For manufacturer specific codes, you'll need to select a vehicle make on an additional screen to look for DTC definitions.*
- *If definition could not be found (SAE or Manufacturer Specific), the scan tool displays "DTC definition not found! Please refer to vehicle service" manual!"*

4) To exit to the Main Menu, press the **EXIT** button.

3.5 System Setup

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

1) **Language**: Selects the desired language.
2) **Contrast**: Adjusts the contrast of the LCD display.
3) **Unit of Measure**: Sets the unit of measure to English or Metric.
4) **Beep Set**: Turns **ON/OFF** beep.

```
┌─────────────────────────────┐
│        System Setup         │
├─────────────────────────────┤
│ ▶ Language                  │
│   Contrast                  │
│   Unit of Measure           │
│   Beep Set                  │
│                             │
└─────────────────────────────┘
```
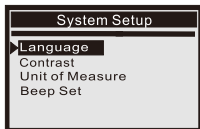
From the Main Menu: Use the **UP/DOWN** scroll button to select System **Setup**, and press the **ENTER** button. Follow the instructions to make adjustments and program settings as described in the following setup options.

Language Setup
- English is the default language.

From the **System Setup** menu, use the **UP/DOWN** scroll button to **Language**, and press **ENTER**.

```
┌─────────────────────────────┐
│        System Setup         │
├─────────────────────────────┤
│ ▶ Language                  │
│   Contrast                  │
│   Unit of Measure           │
│   Beep Set                  │
│                             │
└─────────────────────────────┘
```
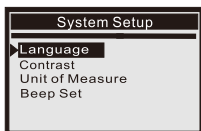
Adjust Contrast
1) From the **System Setup** menu, use the **UP/DOWN** scroll button to select **Contrast**, and press **ENTER**.

```
┌─────────────────────────────┐
│        System Setup         │
├─────────────────────────────┤
│   Language                  │
│ ▶ Contrast                  │
│   Unit of Measure           │
│   Beep Set                  │
│                             │
└─────────────────────────────┘
```
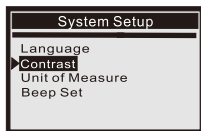
2) From the **Contrast** menu, use the **UP/DOWN** scroll button to increase or decrease contrast.

```
                Contrast

                 (40%)


        Use ▮ or ▮ to change
```
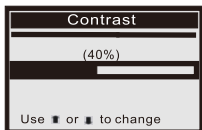
3) Press **ENTER** to save your settings and return to the previous menu.

Unit of Measure

•   Metric is the default measurement unit.

1) From the **System Setup** menu, use the **UP/DOWN** scroll button to select **Unit of Measure** and press **ENTER**.

```
              System Setup
        Language
        Contrast
       ▶Unit of Measure
        Beep Set
```
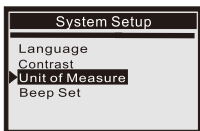
2) From the **Unit of Measure** menu, use the **UP/DOWN** scroll button to select the desired **Unit of Measure**.

```
             Unit Of Measure
        English
       ▶Metric
```
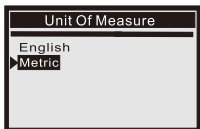
3) Press the **ENTER** button to save your selection and return to the previous menu.

Beep Set

- *The default setting is Beep On.*

1) Form the **System Setup** menu, use the **UP/DOWN** scroll button to select **Beep Set** and press **ENTER**.

```
┌─────────────────────────┐
│      System Setup       │
├─────────────────────────┤
│  Language               │
│  Contrast               │
│  Unit of Measure        │
│▶ Beep Set               │
│                         │
└─────────────────────────┘
```
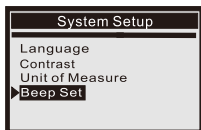
2) From the '**Beep Set**' menu, use the **UP/ DOWN** scroll button to select Beep ON or Beep OFF.

```
┌─────────────────────────┐
│       Beep Set          │
├─────────────────────────┤
│▶ Beep ON                │
│  Beep OFF               │
│                         │
│                         │
└─────────────────────────┘
```

3) Press **ENTER** to save your selection and return to the previous menu.

3.6 Tool Information

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

1) From the **Main Menu**, scroll to select **Tool Info.** and press **ENTER**.

```
┌─────────────────────────┐
│       Main Menu         │
├─────────────────────────┤
│  Diagnostics            │
│  Code Lookup            │
│  System Setup           │
│▶ Tool Information       │
│  Tool Self-test         │
└─────────────────────────┘
```
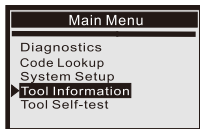
2) View tool information on screen.

```
┌─────────────────────────────────┐
│        Tool Information          │
│ ─────────────────────────────── │
│  S/W  Ver  :  V1.00             │
│  H/W  Ver  :  V1.30             │
│  L I B  Ver  :  V2.00           │
│                                  │
└─────────────────────────────────┘
```

3.7 Tool Self-test

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

A. Display test
The Display Test function checks if the LCD display is working properly.

1) From the **System Setup** menu, use the **UP/DOWN** scroll button to select **Tool Self-test**, and press **ENTER**.

```
┌─────────────────────────────────┐
│          Main Menu               │
│ ─────────────────────────────── │
│  Diagnostics                     │
│  Code Lookup                     │
│  System Setup                    │
│  Tool Information                │
│ ▶Tool Self-test                  │
└─────────────────────────────────┘
```

2) Select **Display Test** from the **Tool Self-test** menu and press **ENTER**.

```
┌─────────────────────────────────┐
│       Tool Self - test           │
│ ─────────────────────────────── │
│ ▶Display Test                    │
│  Keyboard Test                   │
│                                  │
│                                  │
└─────────────────────────────────┘
```

3) Press **ENTER** again to start test. Look for missing spots in the solid black characters.

4) When completed, press **EXIT** to return.

B. Keyboard Test

The Keyboard Test function verifies if the keys are functioning properly.

1) Use the **UP/DOWN** scroll button to select the **Keyboard Test** from the **Tool Self-test menu**, and then press **ENTER**.
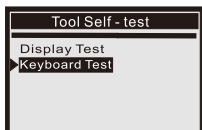
2) Press any key to start the test. When you press a key, the key name is observed on the display. If not, then key is not functioning properly.
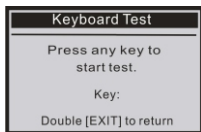

3) Double press the **EXIT** to return to the previous menu.

4. OBD II Diagnostics

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

1) Turn the ignition off.
2) Locate the vehicle's 16-pin Data Link Connector (DLC).
3) Plug the scan tool cable connector into the vehicle's DLC.
4) Turn the ignition on. Engine can be off or running.
5) Press **ENTER** to enter **Main Menu**. Use the **UP/DOWN** scroll button to select **Diagnostics** from the menu.

```
          Main Menu
            1/5
 ▶Diagnostics
  Code Lookup
  System Setup
  Tool Info.
  Tool Self-test
```
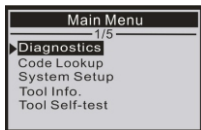
6) Press **ENTER** to confirm. A sequence of messages displaying the OBD II protocols will be observed on the display until the vehicle protocol is detected.

* *If the scan tool fails to communicate with the vehicle's ECU (Engine Control Unit), a "LINKING ERROR!" message shows up on the display.*

    - Verify that the ignition is ON;
    - Check if the scan tool's OBD II connector is securely connected to the vehicle's DLC;
    - Verify that the vehicle is OBD II compliant;
    - Turn the ignition 'off' and wait for about 10 seconds. Turn the ignition back to 'on' and repeat the procedure from step 5.

4.1 Read Codes

* *Stored codes are also known as "hard codes" or "permanent codes". These codes cause the control module to illuminate the malfunction indicator lamp (MIL) when an emission-related fault occurs.*
* *Pending Codes are also referred to as "maturing codes" or "continuous monitor codes". They indicate problems that the control module has detected during the current or last driving cycle, but are not considered*

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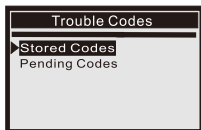*serious, yet. Pending Codes will not turn on the malfunction indicator lamp (MIL). If the fault does not occur within a certain number of warm-up cycles, the code clears from memory.*

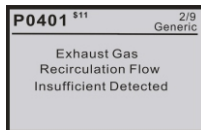1) Use the **UP/DOWN** scroll button to select **Read Codes** from the **Diagnostic Menu** and press **ENTER**.

```
┌─────────────────────────────┐
│      Diagnostic Menu        │
├─────────────────────────────┤
│▶ Read Codes                 │
│  Erase Codes                │
│  View Data                  │
│  View Freeze Frame          │
│  I/M Readiness              │
│  O2 Monitor Test            │
│                             │
└─────────────────────────────┘
```
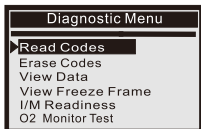
2) Use the **UP/DOWN** scroll button to select **Stored Codes** or **Pending Codes** from the **Trouble Codes** menu and press **ENTER**.

```
┌─────────────────────────────┐
│       Trouble Codes         │
├─────────────────────────────┤
│▶ Stored Codes               │
│  Pending Codes              │
│                             │
│                             │
│                             │
└─────────────────────────────┘
```

• *If there are no Diagnostic Trouble Codes present, the display indicates "No (pending) codes are stored in the module!" Wait a few seconds or press any key to return to the Diagnostic Menu.*

3) View DTCs and their definitions on screen.

```
┌─────────────────────────────┐
│ P0401 $11          2/9      │
│                    Generic  │
│                             │
│        Exhaust Gas          │
│      Recirculation Flow     │
│    Insufficient Detected    │
│                             │
└─────────────────────────────┘
```

• *The control module number, sequence of the DTCs, total number of codes detected and type of codes (Generic of Manufacturer specific) will be observed on the upper right hand corner of the display.*

4) If more than one DTC is found, use the **UP/DOWN** scroll button, as necessary, until all the codes have been viewed.

- *If retrieved DTCs contain any manufacturer specific or enhanced codes, a "Manufacturer specific codes are found! Press any key to select vehicle make!" message comes up prompting you to select vehicle manufacturer to view DTC definitions. Use the UP/DOWN scroll button to select manufacturer and then press ENTER to confirm.*
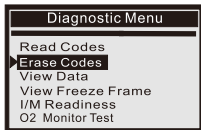
```
Select Manufacturer
        16/51
FIAT
Ford
GM
▶Honda
Hyundai
Isuzu
```
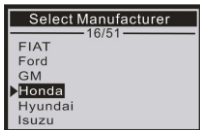
- *If the manufacturer for your vehicle is not listed, use the UP/DOWN scroll button to select "Other" and press ENTER.*

4.2 Erase Codes

Notes:
- *This function is performed with key on engine off . Do not start the engine.*
- *Before performing this function, make sure to retrieve and record the trouble codes.*
- *After clearing, you should retrieve trouble codes once more or turn ignition on and retrieve codes again. If there is still some trouble codes for hard troubles, please find the reason caused the trouble code firstly, and then solve the problem. Now, the trouble codes can be erased.*

1) Use the **UP/DOWN** scroll buttons to select **Erase Codes** from the **Diagnostic Menu** and press **ENTER**.

```
Diagnostic Menu
 Read Codes
▶Erase Codes
 View Data
 View Freeze Frame
 I/M Readiness
 O2  Monitor Test
```

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

```
┌─────────────────────────────┐
│        Erase codes          │
├─────────────────────────────┤
│     Erase trouble codes!    │
│        Are you sure?        │
│                             │
│       YES       NO          │
└─────────────────────────────┘
```
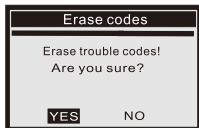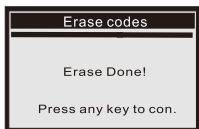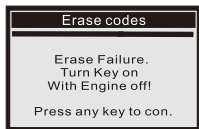
3) Press **ENTER** to confirm.

- *If the codes are cleared successfully, an "Erase Done!" confirmation message is displayed.*

```
┌─────────────────────────────┐
│        Erase codes          │
├─────────────────────────────┤
│                             │
│        Erase Done!          │
│                             │
│   Press any key to con.     │
└─────────────────────────────┘
```

- *If the codes are not cleared, then an "Erase Failure. Turn Key on with Engine off!" message is displayed.*

```
┌─────────────────────────────┐
│        Erase codes          │
├─────────────────────────────┤
│        Erase Failure.       │
│        Turn Key on          │
│      With Engine off!       │
│                             │
│   Press any key to con.     │
└─────────────────────────────┘
```

4.3 Live Data

The OBD II Scan Tool is a special diagnostic tool that communicates with the vehicle's computer. The Scan Tool lets you view "real-time" Live Data. This information includes values (volts, rpm, temperature, speed etc.) and system status information (open loop, closed loop, fuel system status, etc.) generated by the various vehicle sensors, switches and actuators.

Press ENTER

2) To view live PIDs on the screen. Use the **UP/DOWN** scroll button for more
   PIDs if an ⬆ or ⬇ arrow appears on the screen.

```
┌─────────────────────────────┐
│          Live Data          │
├─────────────────────────────┤
│  DTC_CNT              2 ⬆    │
│  FUELSYS1      OL-Drive      │
│  LOAD  PCT(%)       4.3      │
│ ▶ETC(°F)             97      │
│  SHRTFT1(%)         0.0      │
│  RPM(/min)          891  ⬇   │
└─────────────────────────────┘
```

• **If you want change unit of measure Press ENTER to change.**

```
┌─────────────────────────────┐
│          Live Data          │
├─────────────────────────────┤
│  DTC_CNT              2 ⬆    │
│  FUELSYS1      OL-Drive      │
│  LOAD  PCT(%)       4.3      │
│ ▶ETC(°C)             97      │
│  SHRTFT1(%)         0.0      │
│  RPM(/min)          891  ⬇   │
└─────────────────────────────┘
```

3) Press **EXIT** to return to **Diagnostic Menu**.

4.4 View 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.

• *if DTCs were erased, View Freeze Data may not be stored in vehicle memory depending on vehicle.*

Select [View Freeze Frame], the screen will display the interface as shown below:

```
┌─────────────────────────────┐
│     View Freeze Frame       │
├─────────────────────────────┤
│  DTCFRZF          P2122  ⬆  │
│  FUELSYS1       OL-Drive     │
│  LOAD  PCT(%)      4.3   G  │
│▶ ETC(°F)            97       │
│  SHRTFT1(%)        0.0       │
│  RPM(/min)         891   ⬇  │
└─────────────────────────────┘
```

• Use the **UP/DOWN** scroll button for more PIDs if an ⬆ or ⬇ arrow appears on the screen. Press **EXIT** to return to Diagnostic Menu.
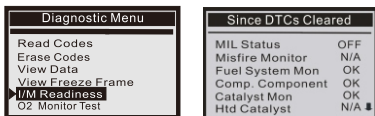
4.5 I/M Readiness

I/M refers to Inspection and Maintenance, that is legislated by the Government to meet federal clean-air standards. I/M Readiness indicates whether or not the varous emissions-related systems on the vehicle are operating properly and are ready for Inspection and Maintenance testing.

The purpose of the I/M Readiness Monitor Status is to indicate which of the vehicle's Monitors have run and completed their diagnosis and testing (as described in 2.5), and which ones have not yet run and completed testing and diagnosis of their designated sections of the vehicle's emissions system.

The I/M Readiness Monitor Status function also can be used (after repair of a fault has been performed) to confirm that the repair has been performed correctly, and/or to check for Monitor Run Status.

Select [I/M Readiness Test] and Press [ENTER], the screen will display the interface as shown below:


```
       Diagnostic Menu

  Read Codes
  Erase Codes
  View Data
  View Freeze Frame
▶ I/M Readiness
  O2  Monitor Test
```

```
      Since DTCs Cleared

  MIL Status            OFF
  Misfire Monitor       N/A
  Fuel System Mon       OK
  Comp. Component       OK
  Catalyst Mon          OK
  Htd Catalyst          N/A
```

Press **EXIT** return to the **Diagnostic Menu**.

4.6 O2 Sensor Test

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

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

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

1) Use the **UP/DOWN** scroll button to select **O2 Sensor Test** from **Diagnostic Menu** and press **ENTER**.

```
╔══════════════════════════════╗
║     Diagnostic Menu          ║
╠══════════════════════════════╣
║  Read Codes                  ║
║  Erase Codes                 ║
║  View Data                   ║
║  View Freeze Frame           ║
║  I/M Readiness               ║
║ ▶O2 Monitor Test             ║
╚══════════════════════════════╝
```
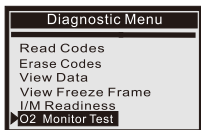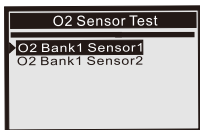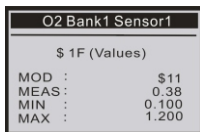
2) Use the **UP/DOWN** scroll button to select O2 sensor from **O2 Sensor Test** menu and press **ENTER**.

```
╔══════════════════════════════╗
║       O2 Sensor Test         ║
╠══════════════════════════════╣
║ ▶O2 Bank1 Sensor1            ║
║  O2 Bank1 Sensor2            ║
║                              ║
║                              ║
╚══════════════════════════════╝
```

3) View test results of the selected O2 sensor.

```
╔══════════════════════════════╗
║      O2 Bank1 Sensor1        ║
╠══════════════════════════════╣
║      $ 1F (Values)           ║
║                              ║
║   MOD  :          $11        ║
║   MEAS :          0.38       ║
║   MIN  :          0.100      ║
║   MAX  :          1.200      ║
╚══════════════════════════════╝
```
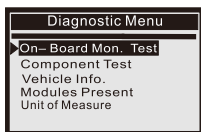
4) Press **EXIT** to return to the previous menu.
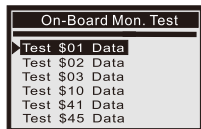

4.7 On-Board Monitor Test

The On-Board Monitor Test is useful after servicing or after erasing a vehicle's control module memory. The On-Board Monitor Test for non-CAN-equipped vehicles retrieves and displays test results for emission-related

powertrain components and systems that are not continuously monitored. The On-Board Monitor Test for CAN-equipped vehicles retrieves and displays test results for emission-related powertrain components and systems that are and are not continuously monitored. Test and component IDs are determined by the vehicle manufacturer.
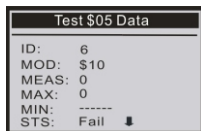
1) Use the **UP/DOWN** scroll button to select **On-Board Mon**. **Test** from **Diagnostic Menu** and press **ENTER**.

```
┌─────────────────────────────────┐
│       Diagnostic Menu           │
├─────────────────────────────────┤
│▶ On– Board Mon.  Test           │
│  Component Test                 │
│  Vehicle Info.                  │
│  Modules Present                │
│  Unit of Measure                │
│                                 │
└─────────────────────────────────┘
```

2) From **On-Board Mon**. **Test** menu, use the **UP/DOWN** scroll button to select a test to view and press **ENTER**.

```
┌─────────────────────────────────┐
│      On-Board Mon. Test         │
├─────────────────────────────────┤
│▶ Test $01 Data                  │
│  Test  $02  Data                │
│  Test  $03  Data                │
│  Test  $10  Data                │
│  Test  $41  Data                │
│  Test  $45  Data                │
└─────────────────────────────────┘
```

3) View test data on screen.

```
┌─────────────────────────────────┐
│         Test $05 Data           │
├─────────────────────────────────┤
│  ID:     6                      │
│  MOD:    $10                    │
│  MEAS:   0                      │
│  MAX:    0                      │
│  MIN:    ------                 │
│  STS:    Fail    ⬇              │
└─────────────────────────────────┘
```
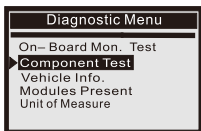
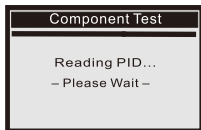4) Press **EXIT** to return to the previous menus.

4.8 Component Test

The test function lets you initiate a leak test for the vehicle's EVAP system. The OBD BOOK does not perform the leak test, but signals to Vehicle's on-board computer to initiate the test. Before using the system test function, refer to the vehicle's service repair manual to determine the procedures necessary to stop the test.
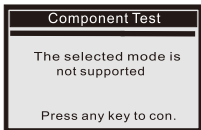
1) Use the **UP/DOWN** scroll button to select **Component Test** from **Diagnostic Menu** and press **ENTER**.

```
┌─────────────────────────────┐
│     Diagnostic Menu         │
├─────────────────────────────┤
│  On– Board Mon.  Test       │
│ ►Component Test             │
│  Vehicle Info.              │
│  Modules Present            │
│  Unit of Measure            │
└─────────────────────────────┘
```

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

```
┌─────────────────────────────┐
│     Component Test          │
├─────────────────────────────┤
│                             │
│     Reading PID…            │
│     – Please Wait –         │
│                             │
└─────────────────────────────┘
```

- *Some vehicles do not allow scan tools to control vehicle systems or components. If the vehicle under test does not support the EVAP System Test, an advisory message is displayed on the screen.*
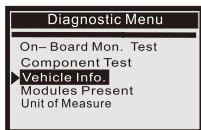
```
┌─────────────────────────────┐
│     Component Test          │
├─────────────────────────────┤
│   The selected mode is      │
│      not supported          │
│                             │
│   Press any key to con.     │
└─────────────────────────────┘
```

3) Press any key to return to **Diagnostic Menu**.

4.9 Vehicle Info.

Select [Vehicle Info.] and press [ENTER], the screen will display the formation such as VIN (Vehicle indentification Number), CID (Calibration ID) and CVN (Calibration verify number).
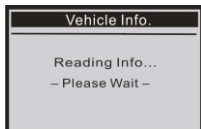
1) Use **UP/DOWN** scroll button to select **Vehicle Info**. from the **Diagnostic Menu** and press **ENTER**.

```
   Diagnostic Menu

  On– Board Mon.  Test
  Component Test
▶ Vehicle Info.
  Modules Present
  Unit of Measure
```

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

```
   Vehicle Info.

    Turn key on,
  with Engine off!

  Press any key to con.
```
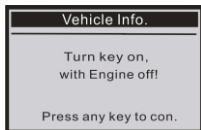
3) Wait a few seconds while the scan tool reads vehicle information.

```
   Vehicle Info.

    Reading Info…
   – Please Wait –
```
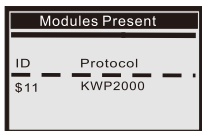
4) Press **EXIT** button to return **Diagnostic Menu**.

4.10 Modules Present

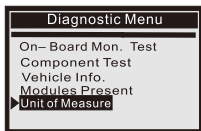1) Use the **UP/DOWN** scroll button to select **Modules Present** from the **Diagnostic Menu** and press **ENTER**.

```
┌─────────────────────────────┐
│     Diagnostic Menu         │
│                             │
│   On— Board Mon.  Test      │
│   Component Test            │
│   Vehicle Info.             │
│ ▶ Modules Present           │
│   Unit of Measure           │
└─────────────────────────────┘
```
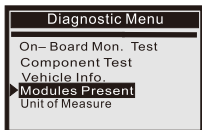
2) View **modules Information** with their Ids and communication protocols.

```
┌─────────────────────────────┐
│     Modules Present         │
│                             │
│   ID        Protocol        │
│ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─      │
│   $11       KWP2000         │
│                             │
└─────────────────────────────┘
```
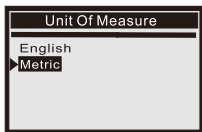
3) Press **EXIT** button to return **Diagnostic Menu**.

4.11 Unit Of Measure

1) Use the **UP/DOWN** scroll button to select **Unit Of Measure** from the **Diagnostic Menu** and press **ENTER**.

```
┌─────────────────────────────┐
│     Diagnostic Menu         │
│                             │
│   On— Board Mon.  Test      │
│   Component Test            │
│   Vehicle Info.             │
│   Modules Present           │
│ ▶ Unit of Measure           │
└─────────────────────────────┘
```

2) Use the **UP/DOWN** scroll button to select the **Unit Of Measure** for diagnostic test .

```
┌─────────────────────────────┐
│      Unit Of Measure        │
├─────────────────────────────┤
│   English                   │
│ ▶ Metric                    │
│                             │
│                             │
└─────────────────────────────┘
```

3) Press **EXIT** button to return **Diagnostic Menu**.

5. Warranty and Service

5.1 Limited One Year Warranty

THIS WARRANTY IS EXPRESSLY LIMITED TO PERSONS WHO PURCHASE NEXAS PRODUCTS FOR PURPOSES OF RESALE OR USE IN THE ORDINARY COURSE OF THE BUYER'S BUSINESS.

NEXAS electronic product is warranted against defects in materials and workmanship for one year (12 months) from date of delivery to the user.

This warranty does not cover any part that has been abused, altered, used for a purpose other than for which it was intended, or used in a manner inconsistent with instructions regarding use. The exclusive remedy for any automotive meter found to be defective is repair or replacement, and NEXAS shall not be liable for any consequential or incidental damages.

Final determination of defects shall be made by NEXAS in accordance with procedures established by NEXAS. No agent, employee, or representative of NEXAS has any authority to bind NEXAS to any affirmation, representation, or warranty concerning NEXAS automotive met ers, except as stated herein.

5.2 Service Procedures

If you have any questions, please contact your local store, distributor or visit our website at www.nexastech.com
If it becomes necessary to return the scan tool for repair, contact your local distributor for more information.

Nexas Tech Co., Ltd

www.nexastech.com