The CAN OBDII/EOBD Code Reader is an innovative and affordable solution specially designed for the owner to get easy and quick access to engine problems on all OBDII compliant petrol vehicles (2001<) and diesel vehicles (2004<) sold worldwide.
Safety Information

For your own safety and the safety of others, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your code reader. The safety messages presented below and throughout this user’s manual are reminders to the operator to exercise caution when using this device. Always refer to and follow safety messages and test procedures provided by vehicle manufacturer. Read, understand and follow all safety messages and instructions in this manual.

Safety Message Conventions Used

We provide safety messages to help prevent personal injury and equipment damage. Below are signal words we used to indicate the hazard level in a condition.

**DANGER**

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or bystanders.

**WARNING**

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or bystanders.

**CAUTION**

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or bystanders.

Important Safety Instructions

And always use your code reader as described in the user’s manual, and follow all safety messages.

**WARNING**

- Do not route the test cable in a manner that would interfere with driving controls.
- Do not exceed voltage limits between inputs specified in this user’s manual.
- Always wear ANSI approved goggles to protect your eyes from propelled objects as well as hot or caustic liquids.
- Fuel, oil vapors, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris produced by a malfunction engine can cause serious injury or death. Do not use the code reader in areas where explosive vapor may collect, such as in below-ground pits, confined areas, or areas that are less than 18 inches (45 cm) above the floor.
- Do not smoke, strike a match, or cause a spark near the vehicle while testing and keep all sparks, heated items and open flames away from the battery and fuel / fuel vapors as they are highly flammable.
- Keep a dry chemical fire extinguisher suitable for gasoline, chemical and electrical fires in work area.
- Always be aware of rotating parts that move at high speed when an engine is running and keep a safe distance from these parts as well as other potentially moving objects to avoid serious injury.
- Do not touch engine components that get very hot when an engine is running to avoid severe burns.
- Block drive wheels before testing with engine running. Put the transmission in park (for automatic transmission) or neutral (for manual transmission). And never leave a running engine unattended.
- Do not wear jewellery or loose fitting clothing when working on engine.
1 Using This Manual

Below are the conventions we use in this manual:

1.1 Bold Text
Bold text is used to highlight selectable items such as buttons and menu options.
Example:
Press the ENTER button to select.

1.2 Symbols and Icons

1.2.1 Solid Spot
Operation tips and lists that apply to specific tool are introduced by a solid spot ●.
Example:
When System Setup is selected, a menu that lists all available options displays. Menu options include:
- Languages.
- Configure monitors
- Unit of measure.
- Key Beep Set
- Diag Beep Set
- Tool self-test

1.2.2 Arrow Icon
An arrow icon indicates a procedure.
Example:
To change menu language:
1. Use the UP/DOWN key to highlight Language on the menu.
2. Press the ENTER button to select.

1.2.3 Note and Important Message
Note:
A NOTE provides helpful information such as additional explanations, tips, and comments.
Example:
NOTE:
Test results do not necessarily indicate a faulty component or system.

Important
IMPORTANT indicates a situation which, if not avoided, may result in damage to the test equipment or vehicle.
Example:
IMPORTANT:
Do not soak keypad as water might find its way into the code reader.

2 Introduction
The LASER 5091 is an OBDII and EOBD code reader; it is specially designed to support all 10 OBDII service modes, including live data, O2 sensor test and more, on OBDII/EOBD compliant cars, SUVs, and light commercial vehicles sold worldwide since 2001 (petrol engines) / 2004 (diesel engines).
2.1 Code Reader Descriptions

A. OBD II Cable - provides communication for vehicle DLC.
B. LCD Display - shows menus, test results and operation tips.
C. Green LED Display - indicates the engine system is working normally (all monitors on the vehicles are active and performing their diagnostic testing), and no DTCs are found.
D. Yellow LED Display - shows the tool finds a possible problem. Pending DTCs exist or/and some of the vehicle’s emission monitors have not run their diagnostic testing.
E. Red LED Display - indicates there are some problems in one or more of the vehicle’s systems. In this case, the MIL lamp on the instrument panel is on.
F. UP Key - quick access to the Read Codes function before going to diagnostic menu and moves selection up. When looking up DTC, it is used to change value of selected character.
G. DOWN Key - quick access to the Clear Codes function before going to diagnostic menu and moves selection down. When looking up DTC, it is used to change value of selected character.
H. LEFT SCROLL KEY - goes to previous character when looking up DTCs. Scrolls back and forth through codes found and through different screens of data. Also it is used to make selection of PIDs when viewing custom PID list, and to view PID graphs.
I. RIGHT SCROLL KEY - goes to next character when looking up DTCs. Scrolls back and forth through codes found and through different screens of data. Also it is used to cancel all selections of PIDs when viewing custom PID list.
J. One Click I/M Readiness Key - quick checks state emissions readiness and drive cycle verification.
K. BACK Key - cancels an action and returns to previous screen or level.
L. ENTER Key - confirms an action or movement and moves to next level.
M. Power Switch - reboot the code reader.
N. HELP Key - accesses to the Help function and it is also used to update the code reader when long pressed.
O. USB Port – provides a USB connection between the code reader and PC or laptop.

2.2 Accessory Descriptions

This section lists the accessories that go with the code reader. If you find any of the following items missing from your package, contact your local dealer for assistance.

2. USB Cable - provides connection between the code reader and a computer to upgrade the tool.
3. Software CD – includes the user’s manual, NT Wonder update software and update files.

2.3 Technical Specifications

- Display: 2.8" TFT colour display
- Working Temperature: 0 to 60°C (32 to 140°F)
- Storage Temperature: -20 to 70°C (-4 to 158°F)
- Power Supply: 8-18V vehicle power
- Supported Protocols: J1859-41.6, J1850-10.4, ISO9141, KWP2000 (ISO 14230), and CAN (Control Area Network ISO 11898)
- Dimensions (L*W*H): 145*94*32mm
- Weight: 0.6kg

3 Getting Started

This section describes how to provide power to the code reader, provides brief introductions of applications loaded on the code reader and display screen layout and illustrates how to input text and numbers with the code reader.

3.1 Providing Power to Code reader

Before using the code reader, make sure to provide power to the code reader.

The unit operates on any of the following sources:
- 12-volt vehicle power
- USB connection to personal computer.

3.1.1 Connecting to Vehicle Power

The code reader normally powers on whenever it is connected to the data link connector (DLC).

To connect to vehicle power:
1. Locate the data link connector (DLC). The DLC is generally located under the dash on the driver side of the vehicle.
2. Connect the code reader with the DLC.
3. Switch the ignition key to the ON position.
4. The code reader automatically boots up.

IMPORTANT
Never try to provide power for the code reader from USB connection when the code reader is communicating with a vehicle.

3.1.2 Connecting to Personal Computer with USB Cable

The code reader also receives power through the USB port when it is connected to a PC for updating software and transferring saved files.

To connect to PC:
1. Insert the small end of the USB cable to the USB port at the right side of the code reader and the large end to a computer.
2. Press the power switch of the code reader to power it on.

3.2 Application Overview

When the code reader boots up, the Home screen opens. This screen shows all applications loaded on the unit.

Following applications are preloaded into the code reader:
**4 OBDII/EOBD Operations**

OBD-II/EOBD menu lets you access all OBD service modes. According to ISO 9141-2, ISO 14230-4, and SAE J1850 standards, the OBD application is divided into several sub programs, called ‘Service $xx’. Below is a list of OBD diagnostic services:

- **Service $01** - request current powertrain diagnostic data
- **Service $02** - request powertrain freeze frame data
- **Service $03** - request emission-related diagnostic trouble codes
- **Service $04** - clear/reset emission-related diagnostic information
- **Service $05** - request oxygen sensor monitoring test results
- **Service $06** - request on-board monitoring test results for specific monitored systems
- **Service $07** - request emission-related diagnostic trouble codes detected during current or last completed driving cycle
- **Service $08** - request control of on-board system, test or component
- **Service $09** - request Vehicle Information
- **Service $0A** - request Emission related DTCs with permanent status

When Diagnostics application is selected from Home screen, the code reader starts to detect the communication protocol automatically. Once the connection has established, a menu that lists all of the tests available on the identified vehicle displays. Menu options typically include:

- Read Codes
- Freeze Frame Data
- Erase Codes
- Live Data
- I/M Readiness
- O2 Sensor Test
- On-board Monitor Test
- Component Test
- Vehicle Information
- Modules Present
- Unit of measure

**NOTE:**

Not all function options listed above are applicable to all vehicles. Available options may vary by the year, model, and make of the test vehicle. A "The selected mode is not supported!" message displays if the option is not applicable to the vehicle under test. When the code reader links to vehicle, it checks the status of I/M Monitors automatically, and gives a summary report on the display as illustrated below.

Diagnostic trouble codes stored in a control module are used to help identify the cause of a trouble or troubles with a vehicle. These codes have occurred a specific number of times and indicate a problem that requires repair.

Pending codes are referred to as maturing codes that indicate intermittent faults. If the fault does not occur within a certain number of drive cycles (depending on vehicle), the code clears from memory. If a fault occurs a specific number of times, the code matures into a DTC and the MIL illuminates or blinks.

Permanent Codes are DTCs that are "confirmed" and are retained in the non-volatile memory of the computer until the appropriate monitor for each DTC has determined that the malfunction is no longer present and is not commanding the MIL on. Permanent DTC shall be stored in...
non-volatile memory and may not be erased by any diagnostic services or by disconnecting power to ECU.

There are two ways to read codes using 5091:

- Press the Read hot key to read codes from home screen.
- Traditional way: select Read Codes from the diagnostic menu.

To read codes from a vehicle:

1. Press the Read hot key to directly read the codes from home screen. Or scroll with the UP/DOWN key to highlight Read Codes from Diagnostic Menu and press the ENTER key.

2. Select Stored Codes/Pending Codes/Permanent Codes and press the ENTER key to confirm.

3. A code list including code number and its description displays.

4.2 Erase Codes

Erase Codes menu lets you to clear all current and stored DTCs from the control module. Also it erases all temporary ECU information, including freeze frame. So make sure that the selected system are completely checked and serviced by technicians and no vital information will be lost before clearing codes.

There are two ways to erase codes:

- Press the Erase hot key to erase codes from home screen.
- Traditional way: select Erase Codes from the diagnostic menu.

NOTE:

- To clear codes, make sure that the ignition key is switched to ON with the engine off.
- Erase Codes does not fix the problem that caused the fault! DTCs should only be erased after correcting the condition(s) that caused them.

To clear codes:

1. Press the Erase hot key to directly erase the codes from the home menu. Or use the UP/DOWN key to highlight Erase Codes from Diagnostic Menu and press the ENTER key.

2. Follow the on-screen instructions and answer questions about the vehicle being tested to complete the procedure.

3. Check the codes again. If any codes remain, repeat the Erase Codes steps.
4.3 Live Data
Live Data menu lets you view, record and playback real time PID data from the electronic control module.

Menu options typically include:
- View Data
- Record Data
- Playback Data

4.3.1 View Data
The View Data function allows real time viewing of the vehicle’s electronic control unit’s PID data, including sensor data, operation of switches, solenoids and relays.

Menu options typically include:
- Complete Data
- Custom Data
- Unit of measure (Please refer to Chapter 7 System Set up)

4.3.1.1 Complete Data Set
Complete Data Set displays all supported PIDs of the vehicle being tested.

To view all live PID data:
1. Use the UP/DOWN key to highlight Live Data from Diagnostic Menu and press the ENTER key.
2. Select View Data from the list and press ENTER key to confirm.
3. Select Complete Data Set from the menu and press the ENTER key to display the datastream.
4. Scroll with the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.
5. Press the ENTER key to view PID graph if the PID gives a numeric reading.
6. Use the BACK key to return to diagnostic menu.
4.3.1.2 Custom Data List

Custom Data List menu lets you to minimize the number of PIDs on the data list and focus on any suspicious or symptom-specific data parameters.

To create a custom data list:
1. Select Custom List from the menu and press the ENTER key.
2. The custom datastream selection screen displays.
3. Use the RIGHT key to select or deselect a line or press LEFT key to deselect all if needed. Press the ENTER key to confirm and BACK key to cancel.
4. When finished selection, press the ENTER key to display selected items.

4.3.2 Record Data

The Record Data function is used to record PIDs to help diagnose intermittent drivability problems that can't be determined by any other method.

Menu options typically include:
- Complete Data
- Custom Data
- Unit of measure (Please refer to Chapter 7 Set Up)

NOTE

There are two types of trigger methods used.
- Manual Trigger—triggers recording whenever operators press the ENTER key.
- DTC trigger—automatically triggers recording when a code is detected by vehicle. DTC Trigger is not available on all vehicles. Some vehicles need to be driven for a long period of time to store a code after a drivability fault occurs. If DTC trigger is selected to make a recording, there might not be drastic change in the data before and after trigger.

CAUTION

Do not operate the code reader while driving; always have two persons in vehicle when recording – one to drive and the other to operate the code reader.

To record data:
1. Select Record data from the menu and press the ENTER key.
2. Refer to View Data to set up Complete Data Set or Customer Data Set to record.
3. Scroll with the up and down arrow keys to pick a trigger mode and press the ENTER key to confirm.

4. Use the UP/DOWN key to select a memory location and press ENTER to confirm.

5. If the recording is to be overwritten, selected Yes; if data is not to be overwritten, pick No to return to Select Memory screen and choose another one.

6. If Manual Trigger is selected, following screen displays:

7. If DTC Trigger is picked, following screen displays:

8. Press the ENTER key to start recording or wait codes to trigger.
NOTE
Different vehicles communicate at different speeds and support a different number of PIDs. Therefore, the maximum number of frames that can be recorded varies. The code reader keeps recording data until:
- the memory is full.
- the operator presses the BACK key.

9. After recording, the code reader displays a prompt to Playback.

10. Select YES to view recorded data; pick NO or press the BACK key to return to Record Data.

4.3.3 Playback Data
The Playback Data is used to playback recorded PID data.

To playback data:
1. Scroll with the up and down arrow key to select Playback Data from the Menu.

2. Use the UP/DOWN key to select a memory area that is marked with an asterisk (*) and press the ENTER to confirm.

3. Press the UP/DOWN key to view recorded PIDs of each frame. Press the BACK key to exit.

4.4 View Freeze Frame
Freeze Frame menu displays freeze frame data, a snapshot of critical vehicle operating conditions automatically recorded by the on-board computer at the time of the DTC set. It is a good function to help determine what caused the fault.

To view freeze frame data:
1. Select View Freeze Frame from the Diagnostic Menu. Details of freeze frame data displays.

2. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data. If no freeze frame detected, the message “No freeze frame data stored!” is displayed.
3. Use the BACK key to return to Diagnostic Menu.

4.5 Read I/M Readiness Status Data

I/M Readiness option allows to view a snapshot of the operations for the emission system on OBDII/EOBD vehicles.

I/M Readiness is a useful function used to check if all monitors are OK or N/A. The vehicle’s computer performs tests on the emission system during normal driving conditions. After a specific amount of drive time (each monitor has specific driving conditions and time required), the computer’s monitors decide if the vehicles emission system is working correctly.

When the monitor’s status is:
- OK - vehicle was driven enough to complete the monitor.
- INC (Incomplete) - vehicle was not driven enough to complete the monitor.
- N/A (Not Applicable) - vehicle does not support that monitor.

There are two types of I/M Readiness tests:
- Since DTCs Cleared - shows status of the monitors since the DTCs were last cleared.
- This Drive Cycle - shows status of monitors since the start of the current drive cycle.

Below is a list of abbreviations and names of OBD II monitors supported by the code reader.

<table>
<thead>
<tr>
<th>No.</th>
<th>Abbreviation</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Misfire Monitor</td>
<td>Misfire Monitor</td>
</tr>
<tr>
<td>2</td>
<td>Fuel System Mon</td>
<td>Fuel System Monitor</td>
</tr>
<tr>
<td>3</td>
<td>Comp. Component</td>
<td>Comprehensive Components Monitor</td>
</tr>
<tr>
<td>4</td>
<td>Catalyst Mon</td>
<td>Catalyst Monitor</td>
</tr>
<tr>
<td>5</td>
<td>Htd Catalyst</td>
<td>Heated Catalyst Monitor</td>
</tr>
<tr>
<td>6</td>
<td>Evap System Mon</td>
<td>Evaporative System Monitor</td>
</tr>
<tr>
<td>7</td>
<td>Sec Air System</td>
<td>Secondary Air System Monitor</td>
</tr>
<tr>
<td>8</td>
<td>A/C Refrig Mon</td>
<td>Air Conditioning Refrigerant Monitor</td>
</tr>
<tr>
<td>9</td>
<td>Oxygen Sens Mon</td>
<td>Oxygen Sensor Monitor</td>
</tr>
<tr>
<td>10</td>
<td>Oxygen Sens Hr</td>
<td>Oxygen Sensor Heater Monitor</td>
</tr>
<tr>
<td>11</td>
<td>EGR System Mon</td>
<td>Exhaust Gas Recirculation System Monitor</td>
</tr>
</tbody>
</table>

The built-in beeper works with the colored LED simultaneously, as an assistance to reflect the I/M Readiness test results:
- Green - two long beeps.
- Yellow - short, long, short beeps.
- Red - four short beeps.

NOTE: The built-in beeper which makes different tones corresponding to different LED indicators is invaluable when the test is performed while driving or in bright areas where LED illumination may not be visible.

To retrieve I/M Readiness Status data by one-click I/M readiness key:
1. Press the One-Click I/M Readiness Key on the keypad and the following screen displays.

To retrieve I/M Readiness Status data by typical way:
1. Scroll with UP/DOWN key to highlight I/M Readiness from Diagnostic Menu and press the ENTER key. If vehicle supports both types of monitors, a screen for monitor type selection displays. Select a monitor type and press the ENTER key.

NOTE: To review I/M Readiness status, make sure that the ignition key is switched to ON with the engine off.

Not all monitors are supported by all vehicles.
2. If the vehicle being tested supports both types of monitors, following screen displays.

3. Depending on readiness test, one of these 2 screens will be present. Use the up and down arrow keys to scroll through data. Press the BACK key to exit.

4.6 O2 Monitor Test

OBD II regulations require certain vehicles monitor and test oxygen (O2) sensors to isolate fuel and emissions related faults. The O2 Monitor Test function is used to retrieve completed O2 sensors monitor test results.

The O2 Monitor Test is not an on-demand test. O2 sensors are not tested when selected via the menu but tested when engine operating conditions are within specified limits.

If the vehicle uses a controller area network (CAN) protocol to communicate, this function is not supported by vehicle. Refer to “On-Board Monitor Tests” on page 38-39 for O2 monitor data of CAN-equipped vehicles.

To retrieve O2 monitor data:

1. Use the UP/DOWN key to highlight O2 Monitor Test from Diagnostic Menu and press the ENTER key. A screen with a list of available sensors displays.

2. Use the UP/DOWN key to highlight an O2 sensor and press the ENTER key to confirm. A screen with details of the selected sensor displays.
3. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

4. Press ENTER key to view data of selection.

5. Press the BACK key to exit and return.

4.7 On-Board Monitor Test

The On-Board Monitor Test function is useful after servicing or after clearing a vehicle ECU’s memory. It receives test results for emission-related powertrain components and systems that are not continuously monitored for Non-CAN vehicles. And for CAN vehicles, it receives test data for emission-related powertrain components and systems that are and are not continuously monitored. It is vehicle manufacturer who is responsible for assigning test and component IDs.

NOTE

Test results do not necessarily indicate a faulty component or system.

To request on-board monitor test results:

1. Use the UP/DOWN key to highlight On-Board Monitor Test from Diagnostic Menu and press the ENTER key.

2. Depending on the protocol the vehicle used, one of these 2 screens shows.

3. Use the UP/DOWN key to highlight a test group and press the ENTER key to confirm. A screen with details of the selected sensor displays. Use the up and down arrow keys to scroll through data to select lines, and left and right arrow keys to scroll back and forth through different screens of data.

For non-CAN vehicles, test screen is as illustrated on next page:
For non-CAN vehicles, test screen is illustrated below:

**Figure 4-41 Sample Non-CAN vehicle test screen**

For CAN vehicles, test screen is illustrated below:

**Figure 4-42 Sample CAN vehicle test screen**

### 4.8 Component Test

Component Test allows the code reader to control operation of vehicle components, tests or systems.

**NOTE**
- Some manufacturers do not allow tools to control vehicle systems.
- The manufacturer sets the criteria to automatically stop test. Refer to appropriate vehicle service manual before using this function.

To perform a component test:

1. Use the **UP/DOWN** key to highlight **Component Test** from Diagnostic Menu and press the **ENTER** key. A screen with a list of available tests displays.

**Figure 4-43 Sample Diagnostic Menu Screen**

2. Use the **UP/DOWN** key to highlight a system or component, press the **ENTER** key to start test and the code reader displays the message "Command Sent!".

**Figure 4-44 Sample Component test screen**

3. Press the **BACK** key to exit and return.

### 4.9 Request Vehicle Information

Vehicle Information allows to request the vehicle’s VIN number, calibration ID(s) which identifies software version in vehicle control module(s), calibration verification numbers (CVN(s)) and in-use performance tracking on model year 2000 and newer OBD II compliant vehicles.

CVNs are calculated values required by OBD II regulations. They are reported to check if emission-related calibrations have been changed. Multiple CVNs may be reported for a control module. It may take several minutes to do the CVN calculation. In-use performance tracking tracks performance of key readiness monitors.

**NOTE**
Available options will vary depending on the vehicle under test.
To request vehicle information:
1. Use the UP/DOWN key to highlight Vehicle Info. from Diagnostic Menu and press the ENTER key.

2. Follow on-screen instruction and send the command to read vehicle information. A screen with a list of available options displays.

3. Use the UP/DOWN key to highlight an available option and press the ENTER key. A screen with details of the selected option displays.

4. Press the BACK key to exit and return.

4.10 Modules Present
The code reader identifies module IDs and communication protocols for OBD2 modules in the vehicle.

To view module IDs and communication types:
1. Use the UP/DOWN key to highlight Modules Present from Diagnostic Menu and press the ENTER key.

2. A screen with the module IDs and protocols displays.

3. Press the BACK key to exit and return.

5. DTC Lookup
DTC Lookup menus allows to request DTC definitions stored in the code reader.

To Look up DTCs:
1. Use the LEFT/RIGHT key to highlight DTC Lookup from Home Screen and press the ENTER key.

2. Use the LEFT/RIGHT key to select the desired character, then press the UP/DOWN key to change the digit you want to enter a valid code number. Press the ENTER key to confirm.
3. A screen with code number and its definition displays. If definition could not be found (SAE or Manufacturer Specific), the code reader displays “DTC definition not found! Please refer to vehicle service manual!” If a P1xxx, C1xxx, B1xxx or U1xxx code is entered, select a vehicle make to look for DTC definitions. Press the BACK key to exit.

6 Review Data

The Playback option leads to screens for review of recorded test results.

To review recorded data:
1. Use the LEFT/RIGHT key to highlight Review Data from home screen and press the ENTER key.

2. A screen with a list of test records displays. If no data is recorded, the message “No Data available!” is displayed.

7 System Setup

This section illustrates how to program the code reader to meet your specific needs. When Setup application is selected, a menu with available service options displays. Menu options typically include:
- Language
- Configure monitors
- Unit of measure
- Key Beep Set
- Diag Beep Set
- Tool self-test

7.1 Select Language

Selecting Language opens a screen that allows you to choose system language.

To configure system language:
1. Use the LEFT/RIGHT key to highlight Setup from home screen and press the ENTER key.
3. Press the UP/DOWN key select a language and press the ENTER key to confirm. Press the BACK key to exit and return.

7.2 Configure Monitors

This menu allows the users to configure the monitors required to test spark ignition and compression ignition, the number of monitors to pass diagnosis, and restore the default settings.

Menu options typically include:

- Spark IGN Required Monitors
- Compression IGN Required Monitors
- Allowed INC Monitors
- Reset Factory Default

There are two different types of monitors: continuous and non-continuous. Continuous monitors are different in design from the non-continuous monitors. Continuous monitors are being constantly tested and evaluated by the car’s computer while the car is running. Conversely, the non-continuous monitors require certain conditions to be met before a test or series of tests can be completed.

Continuous Monitors:

- Misfire
- Fuel System
- Comprehensive Component

Non-Continuous Monitors:

**NOTE**

Non-continuous monitors are different for spark ignition cars (petrol / gasoline engines) and compression ignition cars (diesel engines).

Spark ignition vehicles (Petrol / Gasoline)

- Catalyst (CAT)
- Heated Catalyst
- Evaporative (EVAP) System
- Secondary Air System
- Oxygen (O2) Sensor
- Oxygen Sensor Heater
- EGR (Exhaust Gas Recirculation) and/or VVT System

Compression ignition vehicles (Diesel)

- NMHC Catalyst
- NOx/SCR After treatment
- Boost Pressure
- Exhaust Gas Sensor
- PM Filter
- EGR and/or VVT System

To configure monitors:

1. Use the UP/DOWN key to highlight **Configure Monitors** from Setup menu and press the ENTER key to confirm.

2. A screen with the optional monitors to be configured displays.

7.2.1 Spark IGN Required Monitors

In this menu, the operators can configure monitors for spark ignition cars (gasoline engines).

To configure spark IGN required monitors:

1. Use the UP/DOWN key to highlight **Spark IGN Required Monitors** from menu and press the ENTER key to confirm.

2. The custom monitors selection screen displays.
3. Use the **RIGHT** key to select or deselect a monitor or press the **LEFT** key to deselect all the monitors. Press the **ENTER** key to confirm and **BACK** key to cancel.

**NOTE**
The number to the upper right corner of display indicates the total number of optional monitors and sequence of currently selected monitor.

### 7.2.2 Compression IGN Required Monitors

In this menu, the operators can configure monitors for compression ignition cars (diesel engines).

To configure spark compression required monitors:

1. Use the **UP/DOWN** key to highlight **Compression IGN Required Monitors** from the menu and press the **ENTER** key to confirm.

2. The custom monitors selection screen displays and Use the **RIGHT** key to select or deselect a monitor or press the **LEFT** key to deselect all the monitors. Press the **ENTER** key to confirm and **BACK** key to cancel.

### 7.2.3 Allowed INC Monitors

Emissions tests vary depending on the geographic or regional area in which the vehicle is registered. 5091 provides a more flexible way to meet different standards, which allows the user to select 0, 1, 2, 3 INC monitors in test.

To configure allowed INC monitors:

1. Use the **UP/DOWN** key to highlight **Allowed INC Monitors** from the menu and press the **ENTER** key to confirm.

2. The custom INC monitors selection screen displays and scroll with the up and down arrow keys to select. Press the **ENTER** key to confirm and **BACK** key to cancel.
7.2.4 Reset Factory Default
This menu will allow the users to restore the default configuration settings in the Configure Monitors menu, and delete any customized settings. In this case, it will include all the available monitors for the Spark IGN Required Monitors and Compression IGN Required Monitors. Still, the Allowed INC Monitors will be set to 1.

To reset factory default:
1. Use the UP/DOWN key to highlight Reset Factory Default from the menu and press the ENTER key to confirm.

2. A message prompting to reset factory default displays. Answer Yes to confirm the request or answer No to abort and return.

7.3 Unit of Measure
Unit of measure opens a dialog box that allows you to choose between US customary or metric units of measure.

To change the unit setup:
1. Scroll the UP/DOWN keys to highlight Unit of Measure from Setup menu and press the ENTER key.

7.4 Key Beep Set
Key beep set opens a dialog box that allows you to turn on/off the built-in speaker for key pressing.

To set the key beep:
1. Use the UP/DOWN key to highlight Key beep set from Setup menu and press the ENTER key.
7.5 Diag Beep Set
Key beep set opens a dialog box that allows you to turn on/off the built-in speaker when performing diagnostics.

To set the diag beep:
1. Use the UP/DOWN key to highlight Key Beep Set from Setup menu and press the ENTER key.

7.6 Tool Self-test
Key beep set opens a dialog box that allows you to check if the LCD display and the operation of keypad and LED are working correctly. Typical menu includes:
- Display Test
- Keypad Test
- LED Test

7.6.1 Display Test
Selecting Display Test option opens a screen that allows you to check the functionality of the display.

To test the display:
1. Use the UP/DOWN key to highlight Display Test from Setup menu and press the ENTER key to start test.

2. Check if there are any missing spots in the LCD screen.

3. To quit the test, press the BACK key.

7.6.2 Keypad Test
Selecting Key Test option opens a screen that allows you to check the functionality of the keypad.

To test the keypad:
1. Use the UP/DOWN key to highlight Keyboard Test from Setup menu and press the ENTER key.
2. Press any key to start test. Key name or scroll direction should show on display when you press a key. **Double** press **BACK** to return.

7.6.3 LED Test

Selecting LED Test option opens a screen that allows you to check the functionality of the LED.

To test the LED:
1. Use the **UP/DOWN** key to highlight **LCD Test** from Setup menu and press the **ENTER** key to start test.
2. Scroll with the up and down arrow keys to select the desired LED lamps to check. The LED should turn on/off according to the selected commands.

4. To quit the test, press the **BACK** key.

8 Tool Information

Selecting About option opens a screen that show information about your code reader, such as serial number and software version.

To view information of your code reader:
1. Use the **LEFT/RIGHT** key to highlight About from home menu and press the **ENTER** key.
2. A screen with detailed information of the code reader displays.
3. Press the **BACK** key to exit and return to the Setup menu.
9 Printing & Update (NT Wonder Introduction)

NT Wonder is an extremely easy-to-use that is used to update 5091 code reader. Also, it allows you to upload recorded test results to your PC or laptop for analysis and printing. Still, it enables you to search DTC, read the manuals as well set up the language and style of the application.

This section illustrates how to use NT Wonder to perform its functions:

- Updating the Code Reader
- Printing
- Searching DTC
- Read the manuals
- Update tool settings

9.1 Updating the Code Reader

5091 is able to be updated to keep you stay current with the latest development of diagnosis.

To update the code reader, you need following tools:

- 5091 OBDII/EOBD Code Reader
- Update Tool NT Wonder
- PC or laptop with USB Ports and Internet explorer
- USB cable

To be able to use update tool, PC or laptop must meet the following minimum requirements:

- CPU: Intel PIII or better
- RAM: 64MB or better
- Hard Disk Space: 30MB or better
- Display: 800*600 pixel, 16 byte true color display or better
- Internet Explorer 4.0 or newer

IMPORTANT: Do not disconnect the code reader from computer, or power off the computer during the process of updating.

To update the code reader:

1. Download the update tool NT Wonder and update files from our website and save the applications and files in computer disk.
2. Unzip the update tool file. Follow instructions on computer screen to install the tool and driver.
3. Double click the desktop icon to launch the application.
4. Connect 5091 to computer with the USB cable provided.
5. Press and hold the Help key for 5s to enter the Update Mode, and the application detects 5091 automatically.

NOTE: After entering update mode successfully, there are two different ways for you to update the device.

- Update online: With internet connection, the tool NT Wonder automatically detects the software version of the code reader and read the latest software version from the server. If any new diagnosis software found, it will automatically upgrade your 5091. Otherwise a prompt of new version not detected displays.
- Update offline: Update files will be automatically stored in your computer hard drive with every successful online update. When picking Update offline, the update tool NT Wonder will detect these local files automatically and display them in a list. Ticking one of them will lead to an update process, which eliminates the need to download any file.

6. Click <Update online> or <Update offline> to start updating according to the software version conditions.

7. A Update Finished Message displays when the update is completed.

9.2 Printing

The Print Data function is used to print test results through computer. It is not available to perform this function when the device is in Update Mode.

To print test results:

1. Download and launch NT Wonder as instructed on page 44 of 9.1 Updating the Code Reader
2. Activate the application by clicking the Print Button from the menu.
3. Connect 5091 to computer with the USB cable supplied to power it on.

4. Use the LEFT/RIGHT key to select Print Data from home screen of the 5091 and press the ENTER key to confirm.

5. Use the UP/DOWN key to select desired data to print. If all recorded data to be printed, use the UP/DOWN key to select Print All Data.

6. Press the ENTER key to load data to the edit box of update tool NT Wonder. Click the Clear key to delete the data and Use Copy key to save the data to the clipboard on the computer. It also allows the users to edit the text by moving the cursor to the edit box.

7. With the printer correctly connected, use the Print key to print the testing data. Press the BACK key to return to home screen.

9.3 Searching DTC

Searching DTC option opens a screen that allows you to look up the DTC.

To search DTC:
1. Download and launch NT Wonder as instructed on page 44 of 9.1 Updating the Code Reader.
2. Start the printing application by clicking the Search DTC Button from the menu.
3. Input the valid code number and the definition of the code will be highlighted on the screen.

9.4 User Manual

User Manual option opens a screen that allows you to read the manual in PDF format.

To read the manual:
1. Download and launch NT Wonder as instructed on page 44 of 9.1 Updating the Code Reader.
2. Activate the application by clicking the User Manual Button from the menu.
3. Double click to open the manual you want to check.

Figure 9-4 Sample Printing Activation Function

Figure 9-5 Sample Home Screen Function

Figure 9-6 Sample Print Data Menu Screen

Figure 9-7 Sample Printing Data Screen.

Figure 9-8 Sample Search DTC Screen

Figure 9-9 Sample User Manual Screen
9.5 Update Tool Settings

Settings option opens a screen that allows you to set the language and style of the tool. Still, it offers the option for you to automatically check the update files from the server.

To set up the update tool:

1. Download and launch NT Wonder as instructed on page 43 of 9.1 Updating the Code Reader.
2. Activate the application by clicking the Settings from the menu.
3. Select the language and the style you want from the left to right column.
4. Select and tick the “Auto check for updates” on the bottom of the screen, then press Apply key to confirm.

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One-Year Limited Warranty

Subject to the conditions of this limited warranty, The Tool Connection Limited (TC) warrants its customer that this product is free of defects in material and workmanship at the time of its original purchase for a subsequent period of one (1) year.

In the event this product fails to operate under normal use, during the warranty period, due to defects in materials and workmanship, TC will, at its sole option, either repair or replace the product in accordance with the terms and conditions stipulated herein.

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