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Disclaimer

- To take full advantage of the unit, you should be familiar with the engine.
- All information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make change at any time without notice.
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Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or this tool, please read this user's manual first carefully 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 P (for A/T) or N (for M/T) 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 this tool dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the tool, when necessary.
- Please use the DC 5V power adaptor to charge this tool. No responsibility can be assumed for any damage or loss caused as a result of using power adaptors other than the right one.

Warning:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device has been evaluated to meet general RF exposure requirement. The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types Professional Diagnostic Tool with model Creader Professional 123X has also been tested against this SAR limit. The highest reported SAR values for body-worn is 1.19 W/kg. This device was tested for typical body-worn operations with the back of the handset kept 0mm from the body. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

Hereby, Launch Tech Co., Ltd declares that the Creader Professional 123X of Professional Diagnostic Tool is in compliance with Directive 201/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: http://www.cnlaunch.com/

Operation Frequency: WiFi 802.11b/g/n HT20:2412-2472MHz;

802.11n HT40:2422-2462MHz

Max. RF Output power: Wifi(2.4G): 19.88dBm

The RF frequencies can be used in Europe without restriction.

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1. Introduction

Creader Professional 123X is an evolutionary smart solution for passenger car diagnosis. It inherits from LAUNCH's advanced diagnosing technology and is characterized by covering a wide range of vehicles, featuring powerful functions, and providing precise test result.

Creader Professional 123X has the following functions and advantages:

- Smart(Auto-Detect) Diagnosis: Once the tool and the vehicle are properly connected, the system starts auto-detect process. Once the whole process is successfully finished, a diagnostic report will be automatically generated and sent to your email box (if bound).
- Manual Diagnosis: If Auto-Detect failure occurs, manual diagnosis is also available. Diagnosis functions include: Version Information, Read DTCs, Clear DTCs and Read Data Stream (supports 3 display modes: Value, Graph and Merged).
- OBDII Diagnosis: 10 modes of OBD II test are supported, including EVAP, O2 Sensor, I/M Readiness, MIL Status, VIN Info, and On-board monitors testing etc.
- One-click Update: Let you update your diagnostic software and APK online.
- Diagnostic History: This function provides a quick access to the tested vehicles and users can choose to view the test report or resume from the last operation, without the necessity of starting from scratch.
- Diagnostic Feedback: Use this option to submit the vehicle issue to us for analysis and troubleshooting.
- DTC Library: Allows you to retrieve the definition of the diagnostic trouble code from the abundant DTC database.
- Displays battery real-time voltage once properly connected to the vehicle.
- Touch & Keypad input are supported.

2. General Information

2.1 On-Board Diagnostics (OBD) II

The first generation of On-Board Diagnostics (OBD I) was developed by the California Air Resources Board (ARB) 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 of “Check Engine” or “Service Engine Soon”. The system will also store important information about the detected malfunction so that a technician can accurately find and fix the problem. Here below follow three pieces of such valuable information:

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

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 second character, a number, 0-3; other three characters, a hex character, 0-9 or A-F provide additional information on where the DTC originated and the operating conditions that caused it to set. Here below is an example to illustrate the structure of the digits:

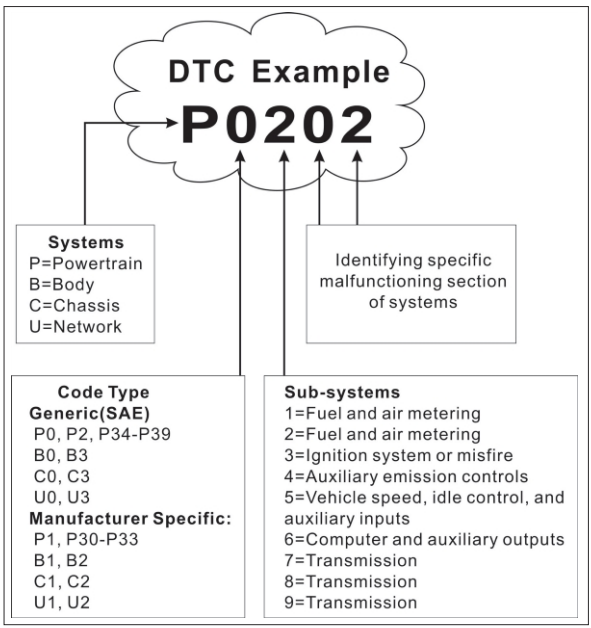


Figure 2-1

2.3 Location of the Data Link Connector (DLC)

The DLC (Data Link Connector or Diagnostic Link Connector) is typically a 16-pin connector where diagnostic code readers 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 Data Link Connector is not located under dashboard, a label should be there telling 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.

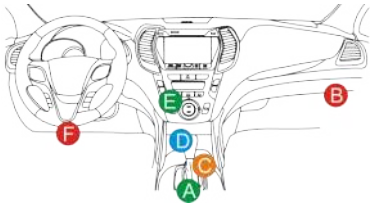


Figure 2-2

2.4 OBD II Readiness Monitors

An important part of a vehicle's OBD II system is the Readiness Monitors, which 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 in every 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 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
2) O2 Sensors
3) Catalyst
4) Evaporative System
5) O2 Sensor Heater

6) Secondary air Injection
7) Heated Catalyst
8) A/C system

2.5 OBD II Monitor Readiness Status

OBD II 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 OBD II system. The purpose of recording readiness status is to allow inspectors to determine if the vehicle's OBD II 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 code reader 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 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) -- OBD II 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 cannot turn the MIL off until the necessary repairs are completed or the condition no longer exists.

DTC -- Diagnostic Trouble Codes (DTC) that identifies 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. Please refer to the vehicle's factory service manual for specific enabling procedures.

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 service 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.

Fuel Trim (FT) - Feedback adjustments to the base fuel schedule. Short-term fuel trim refers to dynamic or instantaneous adjustments. Long-term fuel trim refers to much more gradual adjustments to the fuel calibration schedule than short-term trim adjustments. These long-term adjustments compensate for vehicle differences and gradual changes that occur over time.

3. Product Descriptions

3.1 Outline of Creader Professional 123X

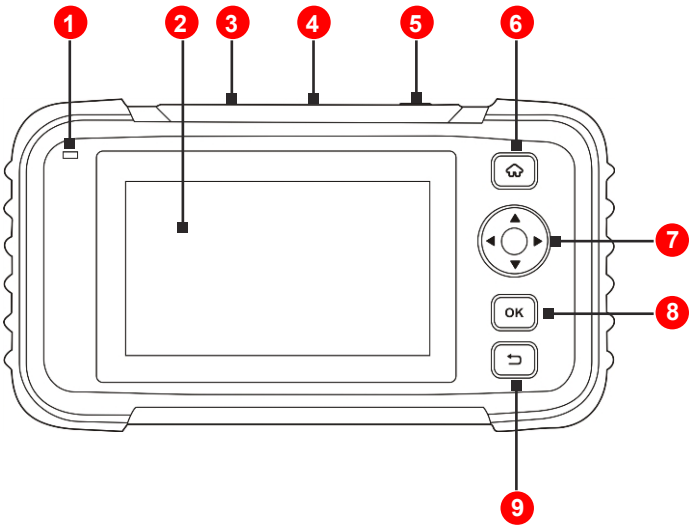


Figure 3-1

No.	Name	Descriptions
1	**Charging LED**	Red means Charging and Green means Fully charged.
2	**LCD**	Indicates test results.
3	**5V Charging port**	To connect to external DC power for charging the tool.
4	**DB-15 diagnostic connector**	To connect to vehicle's DLC (Data Link Connector) via diagnostic cable.

5	**Power**	• In Off mode, press it for about 5 seconds to turn the handset on.
		• In On mode:
		  • Press it to activate the LCD if the LCD is off.
		  • Press it to turn off the LCD if the LCD lights up.
		  • Press it for 3 seconds to turn it off.

6	**HOME**	Press to the home(Job menu) screen.
7	▲/▼	Move cursor up and down for selection.
	◀/▶	Move cursor left or right for selection; Or turn page up and down when more than one page is displayed.
8	**OK**	Confirms a selection (or action) from a menu list.
9	**Return**	Exit the current program or return to the previous screen.

3.2 Technical Specifications

- Screen: 5″ touch screen
- RAM: 1G
- ROM: 8GB
- OBDII input voltage range: 9~18V
- Touch & Keypad input
- Charging via:
  - DC 5V charging cable or
  - Diagnostic cable through connection to vehicle's DLC
- Dimension: 232mm x 126mm x 34mm
- Net weight: <565g
- Working temperature: -10 to 50°C (14 to 122 F°)
- Storage temperature: -20 to 70°C (-4 to 158 F°)

3.3 Accessories Checklist

For detailed accessory items, please consult from the local agency.

1. Creader Professional 123X handset
2. OBD II diagnostic cable
3. DC 5V charging cable
4. User manual
5. Carrying bag

4. Initial Use

4.1 Charging The Tool

There are two charging methods available:

Via Charging Cable: Plug one end of the included charging cable into the DC-IN port of the tool, and the other end to the external DC power.

Via Diagnostic Cable: Insert one end of the diagnostic cable into the DB-15 connector of the tool, and the other end to the vehicle's DLC.

Once the charging LED illuminates solid green, it indicates that the battery is fully charged.

4.2 Getting Started

If it is the first time you have used this tool, you need to make some system settings.

1. Press the [Power] button to power it on.
2. The screen displays a welcome page. Tap "Start" to go to next step.
3. Choose the desired system language, and tap "Next".



Figure 4-1

4. Choose the desired time zone, and tap "Next" to enter the WLAN setup page.
5. Slide the switch to ON, the system starts searching for all available wireless LANs. Choose the desired WLAN access point / network,



Figure 4-2

- If the network you chose is open, you can connect directly;
- If the selected network is encrypted, you have to enter the right security key (network password).

*Note: If you choose “Ignore” in WLAN setup, it will go into the date setting page. If the tool has been properly connected to the Internet, the system will automatically obtain the correct network date and time and navigate to step 6.

6. After the network connection is done, tap “Next Step” to configure email address. Input the email address, and tap “Next Step” to go to next step.

*Note: You are strongly recommended to fill in the valid email address. Once you configured this option, the system will automatically send the diagnostic report to your email box every time a complete Auto-Detect process is successfully finished.

7. Carefully read all terms and conditions of the user agreement, check the box before the “Agree to all the above terms”, and tap “OK” finish the sign-up process and navigate to Job Menu.

4.3 Job Menu

It mainly includes the following function modules.

Diagnose	To configures the tool to operate as a professional diagnostic tool.
I/M	A quick access to the I/M Readiness function of OBD II Diagnosis. 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 various emissions-related systems on the vehicle are operating properly and are ready for Inspection and Maintenance testing. *Note: This function also can be done by performing "OBD II (Diagnosis)" -> "I/M Readiness". For detailed operation, please refer to Chapter 5.3.
OBD II	This option presents a quick way to check for DTCs, isolate the cause of the illuminated Malfunction Indicator Lamp (MIL), check monitor status prior to emissions certification testing, verify repairs, and perform a number of other services that are emission-related.
Battery Voltage	Measures the current voltage of the vehicle's battery.
Update	To update vehicle diagnostic software and APK. *Note: This function requires a stable network connection.
Data	Includes Diagnostic report, Diagnostic record, Feedback and DTC library etc.
Settings	To make some system settings, including Network setup, Email and Brightness etc.

5. Diagnose

5.1 Connection

1. Turn the ignition off.
2. Locate vehicle's DLC socket: It provides standard 16 pins and is generally located on driver's side, about 12 inches away from the center of dashboard. See Figure 2-2. If DLC is not equipped under dashboard, a label indicating its position will be given. In case no DLC is found, please refer to Automobile Repair Manual.
3. Plug one end of the diagnostic cable into the DB-15 connector of the tool, and tighten the captive screws. Connect the other end to the vehicle's DLC.

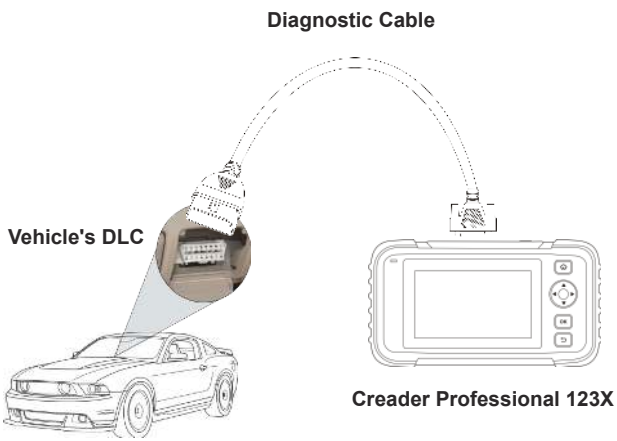


Figure 5-1

5.2 System Diagnosing

This function is specially designed to diagnose electronic control systems of single vehicle model.

5.2.1 Smart Diagnosis (Auto-Detect)

After connection, turn the ignition key on and the system enters auto-detect mode (*Note: Please make sure the "Automatic detection on connect" in "Settings" is set as ON).

*Note: To detect more and accurate VINs, a stable network connection is highly recommended for this function.

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

A. Once the system successfully obtains the VIN (Vehicle Identification Number) information of the currently identified vehicle, it will continue scanning the vehicle systems. After the scanning is complete, a diagnostic report will be automatically generated and sent to your email box (if bound).

B. If the tool failed to access the VIN information, the screen will display as below:

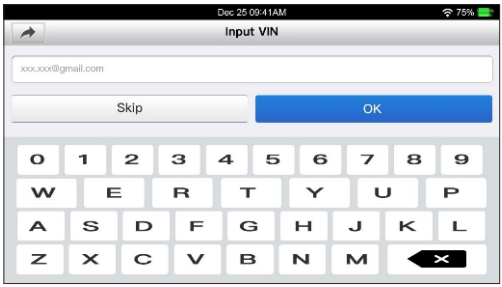


Fig. 5-2

Input the VIN, and tap "OK", the system will automatically identify the vehicle model. If the vehicle VIN is successfully decoded, it will perform auto-diagnosis until a diagnostic report is automatically output. Otherwise it will enter manual diagnosis mode. For details on manual diagnosis, see Chapter 5.2.2.

*Notes:

- The most recognizable location for this number is in the top left corner on the vehicle's dashboard. Other locations include the driver's door or post, and the firewall under the hood.
- In general, vehicle identification numbers are standardized - all contain 17 characters. VIN characters may be capital letters A through Z and numbers 1 through 0; however, the letters I, O and Q are never used in order to avoid mistakes of misreading. No signs or spaces are allowed in the VIN.

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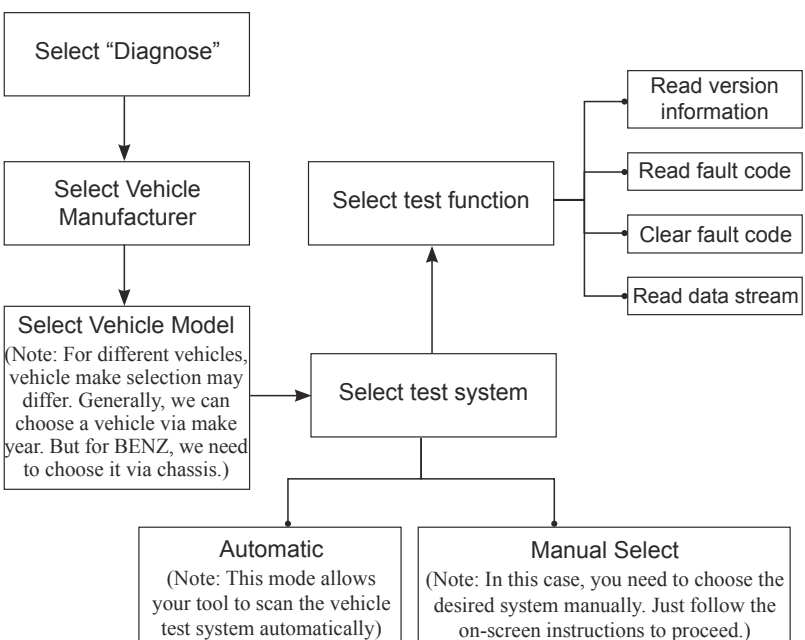
5.2.2 Manual Diagnosis

If the tool can not obtain the VIN information, you can also perform vehicle diagnosis manually. In this mode, you need to execute the menu-driven command and then follow the on-screen instruction to proceed.

*Notes:

- Before diagnosing, please make sure the diagnostic program corresponding to certain vehicle model has been installed on your tool.
- For vehicles manufactured by different vendors, it is possible that it has different diagnostic menus. For details, please follow the instructions on the screen to proceed.

Refer to the flowchart illustrated as below to diagnose a vehicle manually:



Take Demo as an example to demonstrate how to diagnose a vehicle.

1). Select diagnostic software version: Tap the "DEMO" to go to Step 2.



Fig. 5-3

2). Select test item: Select the desired test item to proceed.



Fig. 5-4

5.2.2.1 Health Report (Quick Test)

This function varies from vehicle to vehicle. It enables you to quickly access all the electronic control units of the vehicle and generate a detailed report about vehicle health.

Tap “Health Report”, the system starts scanning the ECUs. Once the scanning is complete, a screen similar to the following appears:

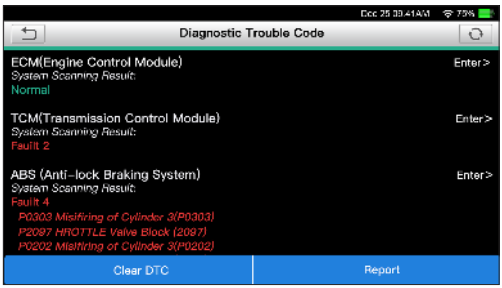


Fig. 5-5

In above figure, the tested system with fault code appears in red and the system with OK displays in black (normally).

On-screen Buttons:

▼: Tap to display the details of DTCs existing in the current system. Tap ▲ to hide it.

Enter: Tap to select other test functions. For detailed operations, refer to Chapter 5.2.2.2 “System Selection”.

Report: Tap to save the diagnostic result as a report.

Clear DTC: Tap to clear the existing diagnostic trouble codes.

5.2.2.2 System Selection

This option allows you manually select the test system and function step by step.

In Fig. 5-5, tap “System Selection”, and tap the desired system (take “ECM” for example) to jump to the test function page.

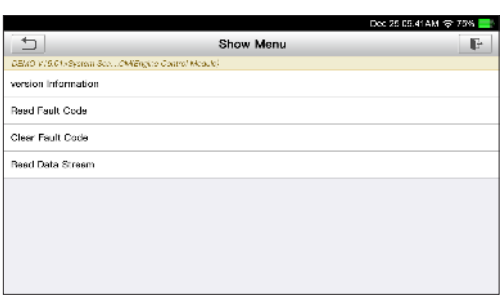


Fig. 5-6

*Note: Different vehicle has different diagnostic menus.

A. Version Information

This function is used to read the version information of system mode, vehicle VIN, software and ECU.

B. Read Fault Code

This function displays the detailed information of DTC records retrieved from the vehicle's control system.

In Fig. 5-6, tap "Read DTC", the screen will display the diagnostic result.

*Note: Retrieving and using DTCs for troubleshooting vehicle operation is only one part of an overall diagnostic strategy. Never replace a part based only on the DTC definition. Each DTC has a set of testing procedures, instructions and flow charts that must be followed to confirm the location of the problem. This information can be found in the vehicle's service manual.

On-screen Buttons:

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. Freeze frame data includes a snapshot of critical parameter values at the time the DTC is set.

Help: Tap to view the help information.

Code Search: Tap it to search for more information about the current DTC online.

Report: To save the current data in text format. All diagnostic reports can be accessed from "Data" -> "Diagnostic Report".

C. Clear Fault Memory

After reading the retrieved codes from the vehicle and certain repairs have been carried out, you can use this function to erase the codes from the vehicle. Before performing this function, please be sure the vehicle's ignition key is in the ON position with the engine off.

*Notes:

1. If you plan to take the vehicle to a Service Center for repair, DO NOT erase the codes from the vehicle's computer. If data is erased, valuable information that might help the technician troubleshoot the problem will also be erased.
2. Clearing DTCs does not fix the problem(s) that caused the code(s) to be set. If proper repairs to correct the problem that caused the code(s) to be set are not made, the code(s) will appear again and the check engine light will illuminate as soon as the problem that cause the DTC to set manifests itself.

D. Read Data Stream

This option retrieves and displays live data and parameters from the vehicle's ECU.

In Fig. 5-6, tap "Read Data Stream", the system will display data stream items.



Fig. 5-7

On-screen Buttons:

Select All: Tap it to select all items of the current page. To select certain data stream item, just check the box before the item name.

Unselect: Tap it to deselect all data stream items.

OK: Tap it to confirm and jump to the next step.

After selecting the desired items, tap "OK" to enter the data stream reading page.

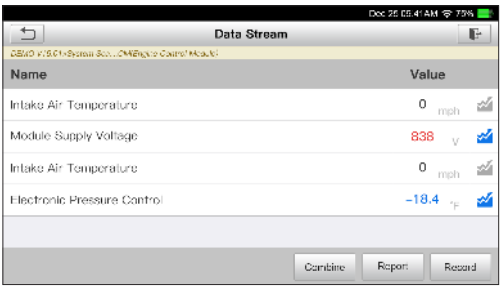


Fig. 5-8

*Notes:

1. If the value of the data stream item is out of the range of the standard (reference) value, the whole line will display in red. If it complies with the reference value, it displays in blue (normal mode).
2. The indicator 1/X shown on the bottom of the screen stands for the current page/ total page number. Swipe the screen from the right/left to advance/return to the next/previous page.

There are 3 types of display modes available for data viewing, allowing you to view various types of parameters in the most suitable way.

- Value – this is the default mode which displays the parameters in texts and shows in list format.
- Graph – displays the parameters in waveform graphs.
- Combine – this option is mostly used in graph merge status for data comparison. In this case, different items are marked in different colors.

On-screen Buttons:

: Tap it to view the waveform graph of the current data stream item.

Combine: Tap it, a pull-down list of the data stream items appears on the screen. Select the necessary items and the screen will display the waveforms corresponding to these items immediately.

Report: Tap to save the current data as a diagnostic report. All diagnostic reports can be accessed from “Data” -> “Diagnostic Report”. The tool logs the Date of Report (the date and time at which the report was created) and assigns a unique Report #.

Record: Tap to record and save Live Data. Recorded Live Data can serve as valuable information to help you in troubleshooting and diagnosing vehicle problems. The saved file follows the naming rule: It begins with vehicle type, and

then the record starting time and ends with .x431 (To differentiate between files, please configure the accurate system time). All diagnostic records can be viewed by tapping “Data” -> “Diagnostic Record”.

5.3 OBDII Diagnosis

This option presents a quick way to check for DTCs, isolate the cause of the illuminated Malfunction Indicator Lamp (MIL), check monitor status prior to emissions certification testing, verify repairs, and perform a number of other services that are emission-related.

On the Job menu, press [OBD II] to enter system, the screen will automatically navigate to the Monitor status screen.

Tap [OK], the following function list appears.

1. Read Codes

This option is used to identify which section of the emission control system has malfunctioned.

2. Erase Codes

After reading the retrieved codes from the vehicle and certain repairs have been carried out, you can use this function to erase the codes from the vehicle. Before performing this function, please be sure the vehicle’s ignition key is in the ON position with the engine off.

*Notes:

- 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 are still some trouble codes in the system, please troubleshoot the code using a factory diagnosis guide, then clear the code and recheck.

3. I/M Readiness

An important part of a vehicle’s OBD II system is the Readiness Monitors, which 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 in every 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 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
2) O2 Sensors
3) Catalyst
4) Evaporative System
5) O2 Sensor Heater
6) Secondary air Injection
7) Heated Catalyst
8) A/C system

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 various 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, 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.

This function can also be done by tapping [I/M Readiness] directly on the Job Menu.

4. Data Stream

This option retrieves and displays live data and parameters from the vehicle's ECU.

5. 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. Freeze Data is a snapshot of the operating conditions at the time of an emission-related fault.

*Note: If DTCs were erased, Freeze Data may not be stored in vehicle memory depending on vehicle.

6. O2 sensor test

The results of O2 sensor test are not live values but instead the results of the ECU's last O2 sensor test. For live O2 sensor readings, refer to any of the live sensor screens such as Graph Screen.

Not all test values are applicable to all vehicles. Therefore, the list generated will vary depending on vehicle. In addition, not all vehicles support the Oxygen Sensors screen.

7. On-board monitor test

This function can be utilized to read the results of on-board diagnostic monitoring tests for specific components/systems.

8. EVAP System Test

The EVAP test function lets you initiate a leak test for the vehicle's EVAP system. The tool 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.

9. Vehicle Info

This option displays the vehicle information, such as VIN (Vehicle Identification Number), CID (Calibration ID) and CVN (Calibration Verification Number).

5.4 History

Generally once a vehicle diagnosis is performed, the tool will record the every details of diagnostic session. The History function provides direct access to the previously tested vehicles and users can resume from the last operation, without the necessity of starting from scratch.

Tap "History" on the Manual Diagnosis main menu screen, all diagnostic records

will be listed on the screen in date sequence.

- Tap certain vehicle model to view the details of the last diagnostic report.
- To delete certain diagnostic history, select it and then tap “Delete”. To delete all historical records, tap “Select All” and then tap “Delete”.
- Tap “Quick access” to directly navigate to the function selection page of last diagnostic operation. Choose the desired option to proceed.

6. Update

If some new software or APK can be updated, a numeric indicator will display on the “Upgrade” module on the Job menu. In this case, you may use this option to keep it synchronized with the latest version.

*Notes:

- To enjoy more functions and better service, you are strongly suggested to update it on regular basis.
- This function requires a stable network connection.

Tap “Upgrade” on the Job menu to enter the update center.

By default, all diagnostic software is selected.

To deselect certain software, tap “Unselect”, and then check the box next to vehicle model.

Tap “Update” to start downloading. It may take several minutes to finish it, please be patient to wait. To pause downloading, tap “Stop”. To resume it, tap “Continue”. If network connection failure occurs, tap “Retry” to try again.

Once download is finished, the software packages will be installed automatically.

7. Data

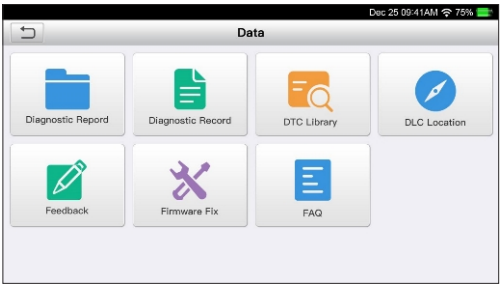


Fig. 7-1

7.1 Diagnostic Report

This module stores all diagnostic reports generated in process of vehicle diagnosis.

All the diagnostic reports are sorted by Date and Make. If there are too many reports stored, tap (Search) to filter and quickly locate it.

- To select certain report, just check the box at the right lower corner of the report. To select all reports, tap “Select All”. To deselect all, tap “Unselect”.
- Tap it to view its details.
- Select the desired report and then tap “Delete” to delete it.

7.2 Diagnostic Record

If user records the running parameters or waveform graphs while reading data stream, it will be saved as diagnostic records and appear under this tab.

Tap “Diagnostic Record” to enter and select the desired data stream items and tap “OK” to jump to the playback page.

On-screen Buttons:

Graph – displays the parameters in waveform graphs.

Combine – this option is mostly used in graph merge status for data comparison. In this case, different items are marked in different colors.

Value – this is the default mode which displays the parameters in texts and shows in list format.

Frame Playback – plays back the recorded data stream items frame by frame. Once it is in frame playback mode, this button changes into “Auto Playback”.

7.3 DTC Library

This option helps you to find the location of the vehicle's DLC.

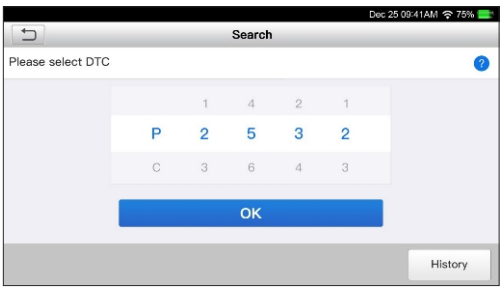


Fig. 7-2

Swipe the screen upwards/downwards to alter the value, then press [OK] button, the screen will display definition of the DTC.

7.4 DLC(Data Link Connector) Location

This option helps you to find the location of the vehicle's DLC.

7.5 Feedback

This item allows you to feedback your diagnostic problems to us for analysis and troubleshooting.

Tap "Feedback", the following 3 options will be displayed on the left column of the screen.

A. Feedback

Tap a tested vehicle model to enter the feedback screen.

1) Tap "Choose File" to open the target folder and choose the desired diagnostic logs.
2) Choose the failure type and fill in the detailed failure description in the blank text box and telephone or email address. After inputting, tap "Submit Result" to send it to us.

B. History

Tap it to view all diagnostic feedback records. Different process states are marked with different colors.

C. Offline list

Tap it to display all diagnostic feedback logs which have not been submitted successfully due to network failure. Once the handset gets a stable network signal, it will be uploaded to the remote server automatically.

7.6 Firmware Fix

Use this item to upgrade and fix diagnostic firmware. During fixing, please do not cut power or switch to other interfaces.

7.7 User Manual

Provides a detailed description on how to operate the tool. Before operating this tool, please carefully read it.

8. Settings

8.1 Units of measurement

It is designed to set the measurement unit. Metric System and English System are available.

8.2 Automatic detection on connect

This option enables you to determine whether to start an automatic VIN detection once the tool is properly connected to the vehicle's DLC.

8.3 Display & Brightness

This item allows you to set the standby time and screen brightness.

*Tips: Reducing the brightness of the screen is helpful to conserve the power of the handset.

8.4 Sound

This option lets you adjust the volume and other sound settings.

8.5 Network

*Note: Once WLAN is set as ON, the tool will consume more power. While it keeps unused, please set it off to save power. While WLAN keeps unused, please turn it off to conserve battery power.

The tool has built-in WLAN module that can be used to get online. Once you're online, you can register your tool, update diagnostic software & APK, send email on your network.

Slide the switch to ON, the system starts searching for all available wireless LANs. Choose the desired WLAN access point / network to connect.

8.6 Date/Time

This option allows you to set the system date & time.

*Note: Since all diagnostic reports are sorted by Make and Date. To differentiate between files, please configure the accurate system time.

8.7 Language

The tool supports multiple languages. You can use this option to change the target language.

8.8 Email Setup

This option is used to set up the default email address for automatically receiving the diagnostic reports.

8.9 Recovery

Use this item to reset this tool to the default factory setting.

*Warning: Resetting may cause data loss. Before doing so, please be careful to perform this operation.

8.10 Clean Up

This option allows user to clear some cache files and free up some storage space.

8.11 About

This option displays the hardware configuration information of the tool and license agreement.

9. FAQ

Here we list some frequently asked questions and answers related to this tool.

EN

1 System halts when reading data stream. What is the reason?

It may be caused by a slackened connector. Please turn this tool off, firmly connect the connector, and switch it on again.

2 Screen of main unit flashes at engine ignition start.

Caused by electromagnetic disturbing, and this is normal phenomenon.

3 There is no response when communicating with on-board computer.

Please confirm the proper voltage of power supply and check if the throttle has been closed, the transmission is in the neutral position, and the water is in proper temperature.

4 What to do if the system fails to start auto VIN detection?

Please check the following possible reasons:

- Whether the tool is properly connected to the vehicle's DLC.
- Whether the "Automatic detection on Connect" switch is OFF. If yes, slide it to ON.

5 Why are there so many fault codes?

Usually, it's caused by poor connection or fault circuit grounding.

6 How to upgrade the system software?

1. Switch the tool on and ensure a stable internet connection.
2. Tap "Setting" on the Job Menu, select "About" -> "Version", and tap "Detect the System Version" to enter the system upgrading page.
3. Follow the on-screen instructions step by step to finish the process. It may take several minutes depending on the internet speed, please be patient. After upgrade is successfully finished, the tool will automatically restart and enters the Job menu.

7 What if the tool cannot be switched on even after a period of recharging?

Please recharge it for at least 3 hours until the power LED lights up, then it can be switched on.

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Warranty

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

LAUNCH 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 LAUNCH shall not be liable for any consequential or incidental damages.

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

Order Information

Replaceable and optional parts can be ordered directly from your LAUNCH authorized tool supplier. Your order should include the following information:

1. Quantity
2. Part number
3. Item description

Customer Service

If you have any questions on the operation of the unit, please contact local dealer, or contact LAUNCH TECH CO., LTD.:

Website: www.x431.com

www.cnlaunch.com

Phone: +86 755 8455 7891

Email: overseas.service@cnlaunch.com

Statement: LAUNCH reserves the rights to make any change to this manual without notice. We have tried our best to make the descriptions and illustrations in the manual as accurate as possible, and defects are inevitable, if you have any question, please contact local dealer or LAUNCH TECH CO., LTD., LAUNCH does not bear any responsibility arising from misunderstandings.