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Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the 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.

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1. Introduction

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Creader Professional 129X 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 129X 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 Wave).
- 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 codes from the shipped 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 also 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's 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:

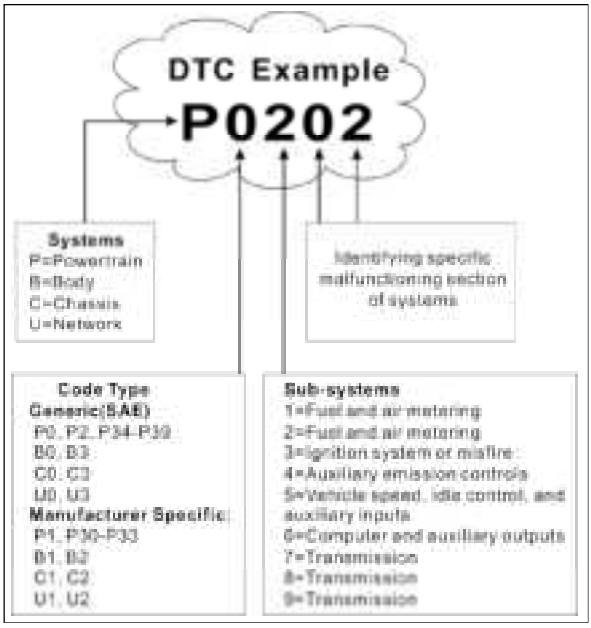

Figure 2-1

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 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 monitoring 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

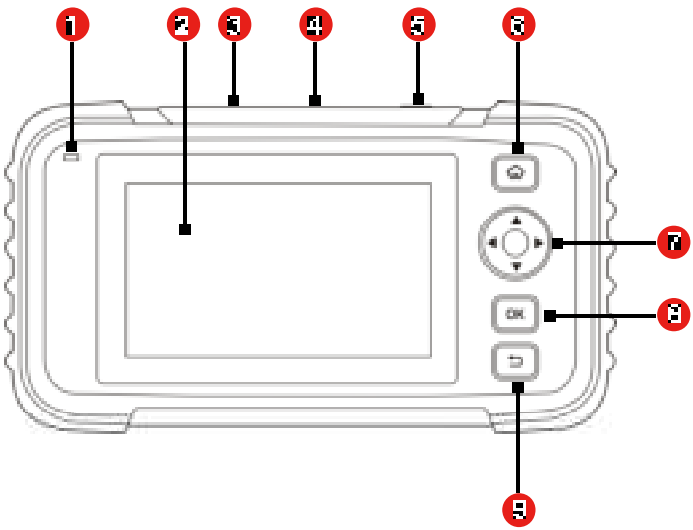

Figure 3.1

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
- OBD II 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: ≤585g
- 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 details accessory items, please consult from the local agency.

1. Creader Professional 129X 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".

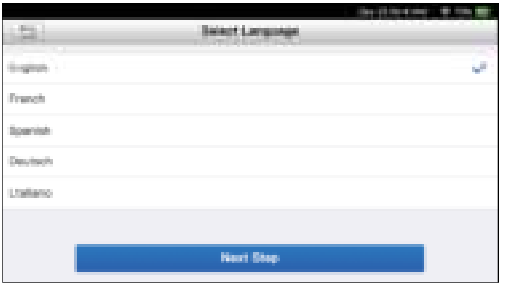

Figure 4-1

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.

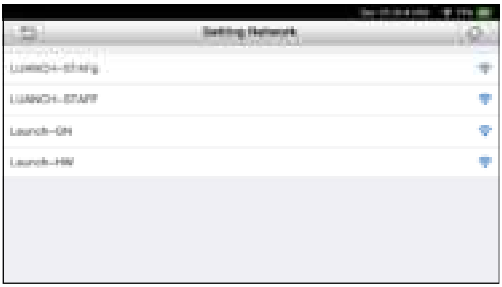

Figure 4-2

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

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* 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.

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6. After the network connection is done, tap "Next Step" to configure email address. Input the e-mail address, and tap "Next Step" to go to next step.

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

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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" besides an operation, please refer to the above.
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 record, Diagnostic report, 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 corner 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.

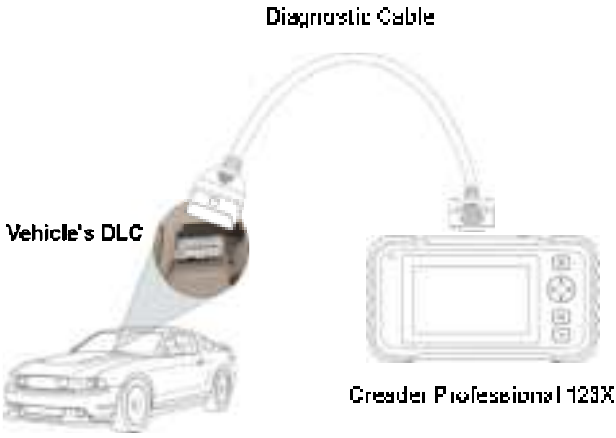

Figure 5-1

5.2 System Diagnosing

This function is specially designed to diagnose electronic control systems of a 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 e-mail 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 and contain 17 characters. VIN characters may be consist letters A through Z and numbers 1 through 0; however, the letters I, O and Q are never used in order to avoid confusion of transcribing. No signs or spaces are allowed in the VIN.

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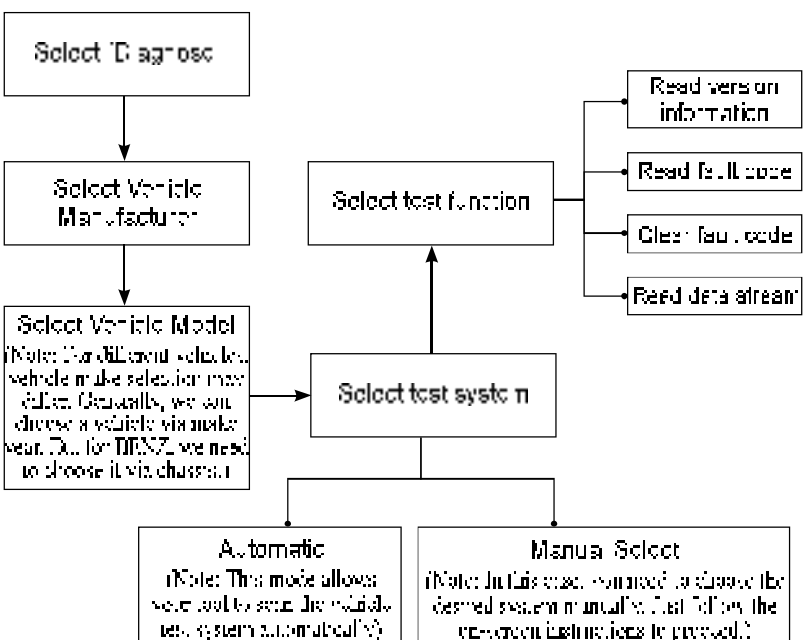
5.2.2 Manual Diagnosis

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 they have 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.

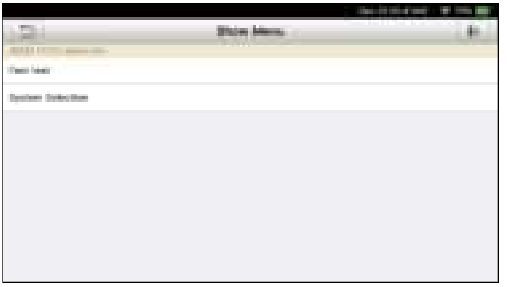


Fig 5.4

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:

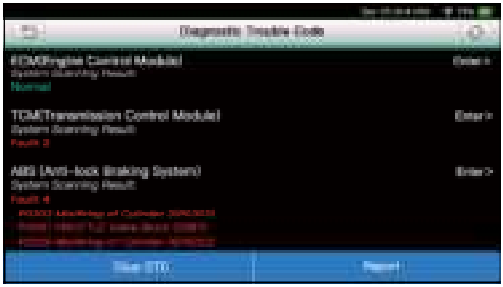


Fig 5.5

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

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.

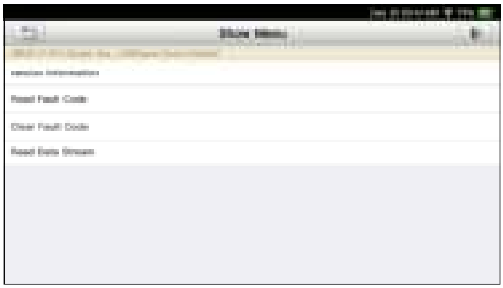


Fig 5.6

*Note: Different vehicle has different diagnostic menus.

A. Version Information

This function is used to read the version information of system model, 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.

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*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 repair is not carried out, 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 caused 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.

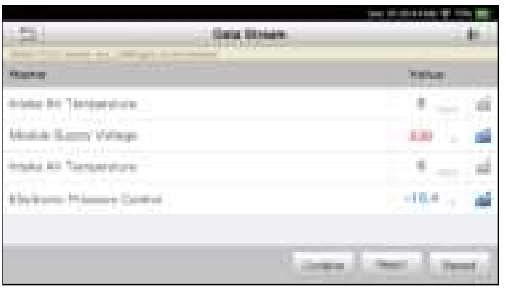

Fig 5.8

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 1/2 shown on the bottom of the screen marks for the current page/total page numbers. 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 scrolls 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 those items immediately.

Report: Tap to save the current data as a diagnostic report. A diagnostic report can be accessed from 'Data' -> 'Diagnostic Report'. This 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 "43". (To differentiate between files, please configure the accurate system time) All diagnostic records can be viewed by tapping "Data" -> "Diagnostic Record"

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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 Main menu, press [OBD II] to enter system, the screen will automatically navigate to the Vehicle 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.

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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.

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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.

6. 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.

8. 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

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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 number 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, 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 mainly used to group 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 scrolls 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

FCC 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.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

The 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, Creader Professional 123x, Creader Professiona 129x, Creader Professional 233, Creader Professional 239, Creader Professional 123xyz, Creader Professional 129xyz, Creader Professional Elite, CRP TOUCH PRO ELITE(" x or y or z"= any English letter or blank) (FCC ID: XUJCRP123X) has also been tested against this SAR limit. The highest reported SAR values for body-worn is 1.16W/kg. The use of accessories with metallic componentsthat may not comply with FCC RF exposure requirements, and should be avoided.