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Auto Diagnostic Tester User's Manual

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Safety Warning

- Always perform automotive testing in a safe environment.
- 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, for exhaust gases are poisonous.
- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while testing.
- Be extra cautious when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Keep a fire extinguisher suitable for gasoline, chemical, and electrical fires nearby.
- Do not connect or disconnect any test equipment while the ignition is on or the engine is running.
- Keep the test equipment dry, clean, free from oil, water or grease. Use a mild detergent on a clean cloth to clean the outside of the equipment as necessary.
- Do not drive the vehicle and operate the test equipment at the same time. Any distraction may cause an accident.
- Refer to the service manual for the vehicle being serviced and adhere to all diagnostic procedures and precautions. Failure to do so may result in personal injury or damage to the test equipment.
- To avoid damaging the test equipment or generating false data, make sure the vehicle battery is fully charged and the connection to the vehicle DLC is clean and secure.
- Do not place the test equipment on the distributor of the vehicle. Strong electro-magnetic interference can damage the equipment.

1. General Introduction

The Auto Diagnostic Tester scanner is the handheld model combing with the best possible coverage of OE-level to help you diagnose symptoms, codes, customer complaints easily, quickly and efficiently. It is a multifunctional vehicle fault diagnosis instrument that supports full system diagnosis of cars and nine OBD II/EOBD standard protocols.

The systems it supports, such as Motor electronics. Transmission Control, ABS System, SRS System. BODY System, Chasis System, Speaker System, CGW-Central gateway.IC-Instrument cluster, ATA-Anti-theft alarm system, ES-Electrical power steering, Suspension system, etc.

It has a plug and play function, which can quickly obtain vehicle fault codes and performance parameters, making it a comprehensive diagnostic tool for automobiles，This manual describes the construction and operation of the device and how it works.

1.1. Layout for Auto Diagnostic Tester Diagnostic Scanner

No.	Key Name	Key Definition
1	I/M	I/M Key One click reading of vehicle I/M value
2	DTC	DTC Key One click reading of vehicle fault codes
3	Direction Keys	Used for scrolling menu options up, down, left, or right, or for paging.
4	OK Key	Executes a selected option and generally goes to the next screen.
5	EXIT Key	Exits a screen and generally returns to previous screen.

6	USB Port	Provides power to the device and setup connection for data transmission between the device and PC.

1.2. Technical Specifications

1	Screen Display	2.8” TFT color display
2	Operating Temperature	0 to 60°C (32 to 140 F°)
3	Storage Temperature	-20 to 60°C (-4 to 140 F°)
4	Power	9 to 16 Volts provided via vehicle battery

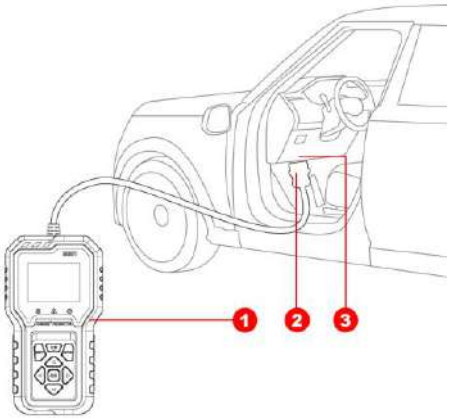
1.3. Standard Accessory Kits

1	Main Unit
2	OBD Main Cable
3	User Manual

2. Get Ready Before Diagnosis

2.1. Cable Connection for On-Board Diagnosis

Make sure the Auto Diagnostic Tester diagnostic scanner is well connected for vehicle diagnosis.

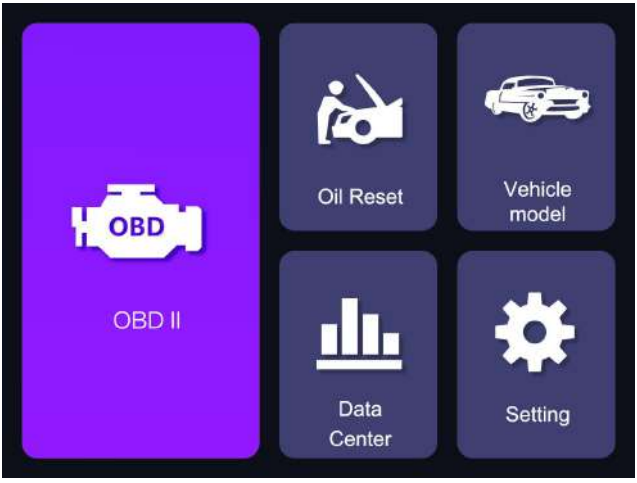


Connection:

To connect the main unit with the OBD main cable to get power supply.

No.	Description	Features and Functions
1	Main Cable	To connect the connector and the vehicle
2	Diagnostic Scanner Main Unit	To communicate with vehicle and display the diagnostic result
3	Diagnostic Socket on Car	Socket location varies based on different car makes/models

The system boots up and shows the screen with the Auto Diagnostic Tester diagnostic scanner Job Menu as below:



Almost all operations on the display are controlled by menu driven, which allows you to quickly locate the test procedure, or data that you need, through a of choices and questions. Detailed descriptions of the menu structures are found in the chapters for the

various applications.

2.2. Application Icon Introduction

The Application buttons configure the Auto Diagnostic Tester Diagnostic Scanner for the type of operation or activity to be performed.

Name	Pictures	Description
Oil Reset		Reset the car maintenance schedule and turn off the maintenance lights.
Vehicle Model		Support Benz(1997-2023), BMW(1996-2024), Audi(1997-2024), Toyota(1996-2024), Honda(1996-2024), Nissan(1993-2022) brands, enabling selection or automatic acquisition by chassis number, and measuring the full system functions of each vehicle, such as engine module, transmission module, SRS module, ABS module, body module, etc.
		Auto Match Automatically obtain vehicle information and locate the vehicle model.
		Manual Select Car Manually select vehicle information and chassis number.
OBDII		All modes of OBDII test for cars after1996 and newer.
		Read Code The DTCs provide valuable information about potential faults or malfunctions in various components and systems of the vehicle, such as the engine, transmission, emissions

		control, and more.
		Erase Code The process of clearing OBDII fault codes is typically done using a compatible scan tool or diagnostic equipment connected to the vehicle's OBDII port. Once connected, the tool provides an option to clear the codes.
		Freeze It provides valuable information to technicians during the vehicle diagnosis and repair process. The freeze frame data includes various parameters such as engine speed, vehicle speed, throttle position, coolant temperature, and intake air temperature, among others.
		I/M Including read/erase codes, view live data, view freeze frame data, view I/M readiness, O2 monitor test, on-board monitor test etc.
		Vehicle Info Can read car manufacturer information and VIN
		Data List This data provides a detailed snapshot of how the vehicle is operating at any given moment. The parameters included in the data stream can range from engine RPM, vehicle speed, fuel pressure, oxygen sensor readings, coolant temperature, and much more.

		Mode 6 Mode 6 is primarily used for obtaining detailed information related to the performance and health of various vehicle components and systems. It provides data that goes beyond the standard fault codes and basic parameters.
		O2 Sensor It measures the amount of oxygen in the exhaust gases. Based on this measurement, the vehicle's computer can adjust the fuel injection to maintain the optimal air-fuel ratio for efficient combustion and to minimize emissions.
		Mode 8 Mode 8 is designed to provide additional detailed and specialized information related to the vehicle's systems and components.
Battery		Measurable battery voltage waveform and vehicle starting waveform
Data Center		Cloud Print This function is very convenient when you need to view the electronic file or print it using your mobile phone.
		Review Replay the recorded data stream, fault codes, freeze frames,
		DTC Look To provide you with the latest definition of PCBU fault codes.
Setting		Adjusts and views system settings, including the measurement unit for the diagnostic system, the display language for the device, sound settings.

		Language English, German, French, Spanish, Italian, Russian, Polish, Portuguese, Chinese, Japanese, Korean
		Buzzer Sets the sound on or off.
		Self Test To provide the key test、 LCD Test、LED Test、Buzzer Test options.
		Tool Information To Provide device related information
		Unit To provide two options for the unit of live data: Metric Unit and Imperial Unit.
		Update Software Use USB Update Software via PC client
		Log Two options for Logging On and OFF with the slide button. [Logging ON] must be set to record the live data, otherwise the client cannot send logging files.
		Clear Log Clear logs from the device

3. Use OBDII To Start A New Test

To start a new test, you need toestablish the proper vehicle communication to the Auto Diagnostic Tester diagnostic scanner; you need to follow the screen instructions step by step for the car testing. The operations require connecting the Auto Diagnostic Tester diagnostic scanner main unit to the test vehicle through the main cable. (For details please refer to Chapter 2.1 Cable Connection for On-Board Diagnosis)

3.1. Diagnose the Vehicle

When the main unit is properly connected to the vehicle, click the OBDII icon button on the Auto Diagnostic Tester Diagnostic Scanner.

Communicate with the vehicle and inform it of the communication protocol

3.2. Function Selection

The OBDII software provides nine functions, and professional software features ensure the resolution of power system faults in your vehicle.

3.2.1. Read Code

Step one: Select the **Read code** icon, press OK to continue, the device is communicating with the vehicle, and the following interface appears.

Step two: After communication with the car is completed, the fault code reading result will be displayed.

3.2.2. Erase Code

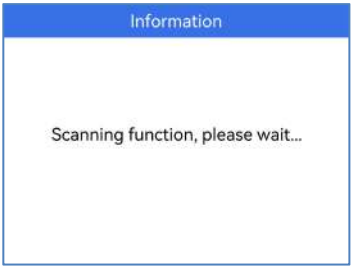
Step one: Select the **Erase code** icon, press OK to continue,and the following prompt interface appears.

Step two: Select **Yes** and Press OK Button to continue. the device is communicating with the vehicle, and the following prompt interface appears.

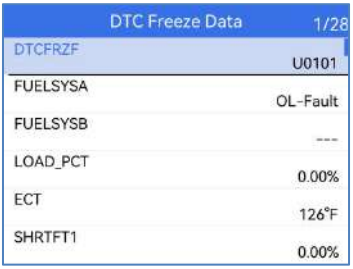
Step three: After communication with the car is completed, the Erase code function will display the following results.

3.2.3. Freeze

Step one: Select the **Freeze** icon, press OK to continue, and the following prompt interface appears.

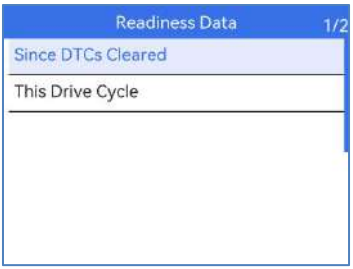


Step two: After the device is communicating with the vehicle, and the following prompt interface appears.



3.2.4. I / M

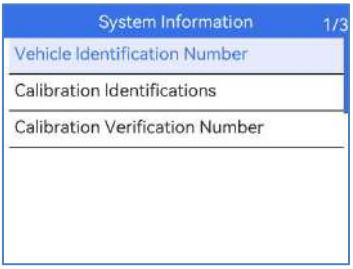
Step one: Select the **I / M** icon, press OK to continue, Select **[Since DTCs Cleared]** from the list as below:



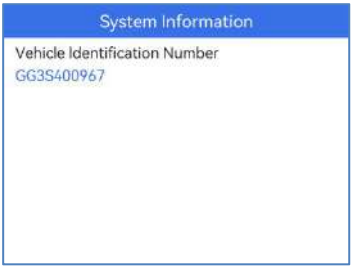
The result of displaying frozen frames is as follows

3.2.5. Vehicle Info

Step one:Select the **Vehicle Info** icon, press OK to continue,



Select **[Vehicle Identification Number]** from the list display result as below:

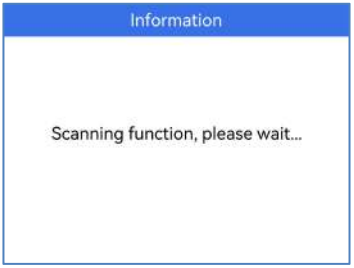


Select **[Calibration Identifications]** from the list display result as below:

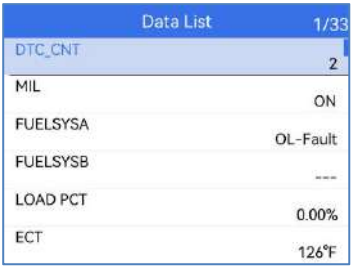
Select **[Calibration Verification Number]** from the list display result as below:

3.2.6. Data List

Step one:Select the **Data List** icon, press OK to continue.



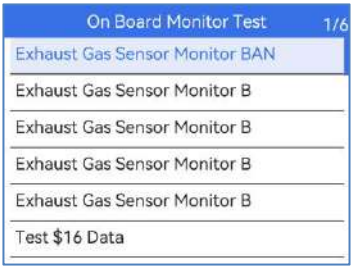
Step 2: After the device communicates with the vehicle, the following data stream result interface appears.



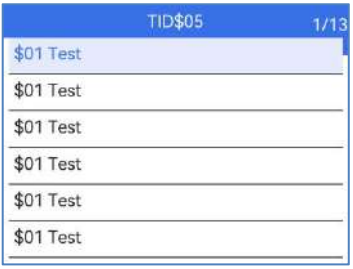
3.2.7. Mode 6

Step one:Select the **Mode 6** icon, press OK to continue,

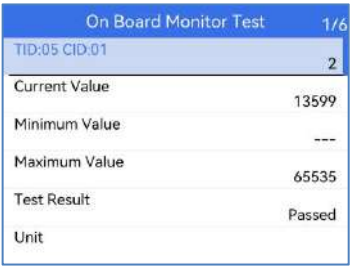
Step two: After the device communicates with the vehicle, Select the first line from the list display result as below:



Step three: Select the first line from the list display result as below:



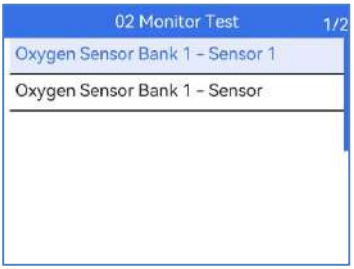
Step four: The result of presenting the selection is as follows:



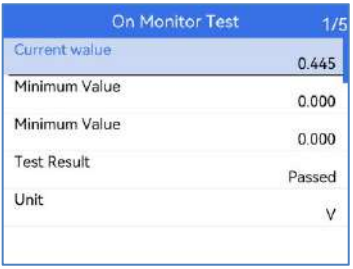
3.2.8. O2 Sensor

Step one: Select the **O2 Sensor** icon, press OK to continue

Step two: After the device communicates with the vehicle, Select the first line from the list display result as below:

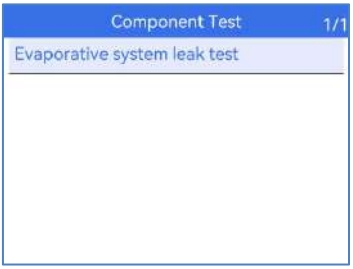


Step three: The result of presenting the selection is as follows:

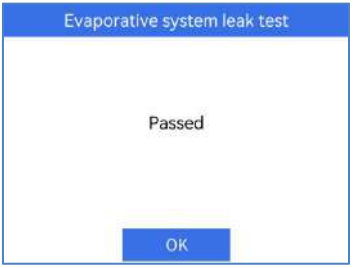


3.2.9. Mode 8

Step one:Select the **Mode 8** icon, press OK to continue



Step two: After the device communicates with the vehicle, Select the first line from the list display result as below:



4. Oil Reset

The Oil Reset function is very powerful, covering 61 car manufacturers on the market and continuously updated. Its measurable range includes vehicles on the market that support automatic or manual zeroing modes. If you cannot determine which

mode the vehicle belongs to when using it for the first time, you can try to find the vehicle from these two modes.

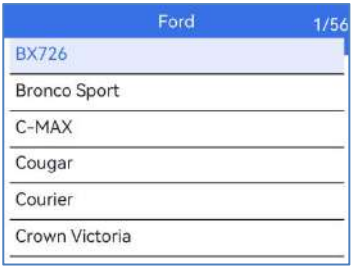
The following will take 2020 Ford models as an example.

The vehicle will be identified in a few seconds, and once the matching is successful, the system will guide you the diagnostics screen directly.

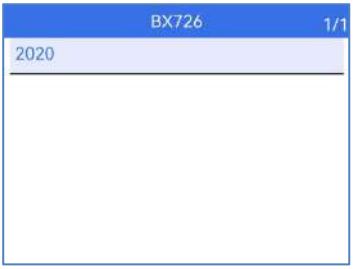
Select **[America]** from the list as below:

Select **[FORD]** as below:

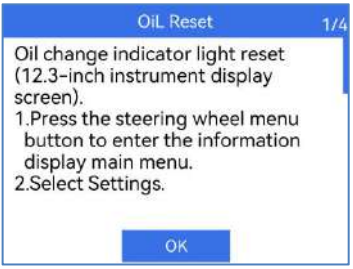
Select **[BX726]** from the list as below:



Select **[2020]** from the list as below:



Display instructions on how to perform manual zeroing steps and methods from the list as below:



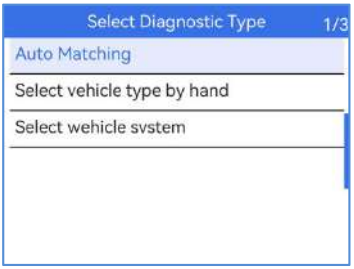
5. Vehicle Model

5.1. Vehicle Model

5.2. Such as Nissan

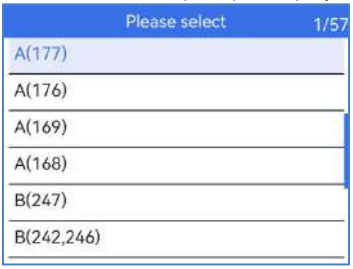
(1) After selecting Nissan, you will receive two options, as shown below:

- Automatically help you locate vehicle information directly.

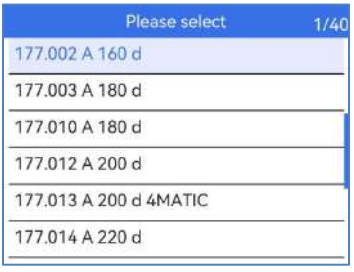


- Manual Select Car, you will need to follow the prompts step by step.

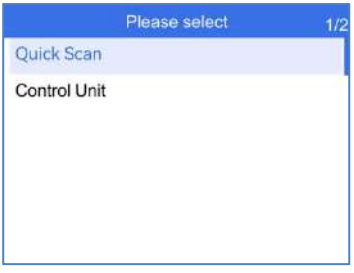
(2) If Select [Manual Select Car], Firstly, it is necessary to choose the correct vehicle model.



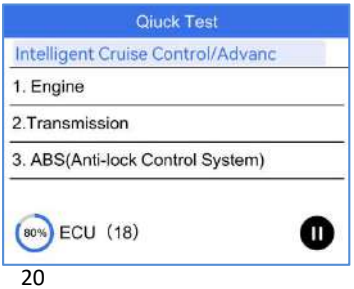
(3) Secondly, it is necessary to choose the chassis number of the Nissan model.



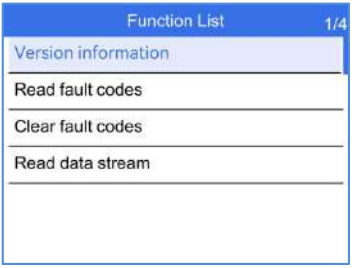
(4) The diagnostic function main interface has two methods as follows:



(5) Use Quick Test to quickly scan:



(6) After selecting the system, the functional interface is as follows

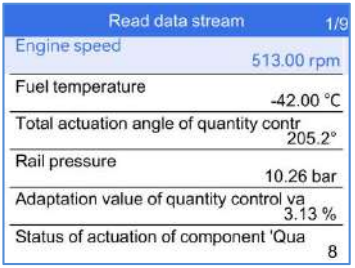


(7) The version information result is as follows

(8) The result of reading the fault code is as follows

(9) The operation to clear the fault code is as follows

(10) The interface for reading data stream values is as follows



6. Software Update

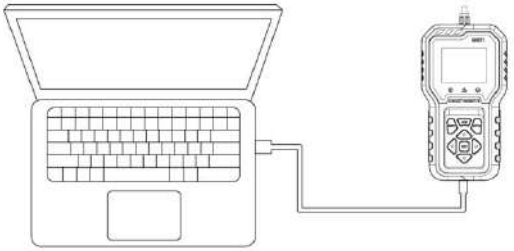
Providing USB mode ways for update:

6.1. Update Via USB

Providing the USB update procedures for software as below.

Login the website www.elm327.com and download the upgrade client

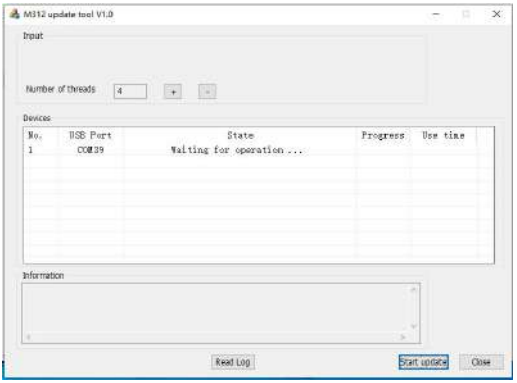
- Connect the main unit to PC with the USB cable.



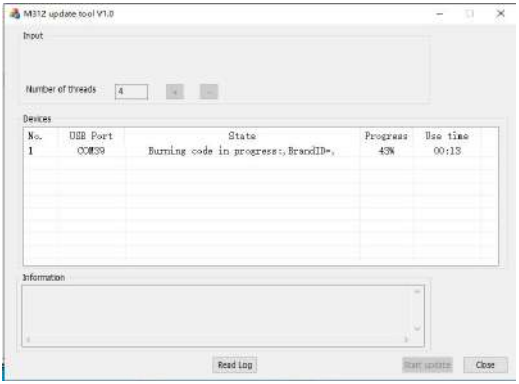
- The device will reboot and access the USB mode

- Double click the icon of Update Tool Client.

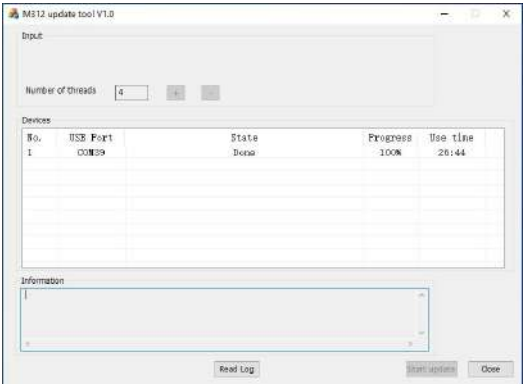
- One click on [Start update]



- The software will link to the server and download the upgrade package.



- Software upgrade completed and USB unplugged.



7. Troubleshooting

Why the vehicle linking error?

Follow the steps if the scanner fails to communicate with the ECU.

1. Verify the ignition is ON.
2. Check cable or connector securely connected to the vehicle DLC.
3. Turn the ignition off and wait for about 10 seconds and turn the ignition back to ON and continue the testing.
4. Verify the control module is not defective.

Why the device doesn't power up?

If the auto scanner won't power up or operate correctly in any other way, follow the steps to check the connections:

1. Check the connector properly inserted to the socket seat.
2. Check the DLC pins bent or broken.
3. Clean the DLC pins if necessary.

Why the devices have no permission to update?

Please contact the local distributor to get authorization.

When the display does not work properly:

Make sure the machine has been registered online.

Make sure the system software and diagnostic application software are properly updated.

Check all cables, connections, and indicators to see if the signal is being received.