THINKTOOL

User Manual

Content

1. Quick Start Manual

1.1 Initial Use

The following settings should be made when you initially use the tool.

1.1.1 Turn on the Machine

After pressing the power button, images will be shown on the screen as follows.

1.1.2 Appearance and Functions

Introductions to the host computer and functional modules will be shown after it is turned on. You can choose to skip this step.

1.1.3 Language Setting

Select the tool language from the languages displayed on the interface.

1.1.4 Connect WIFI

The system will automatically search all available WIFI networks and you can choose the WIFI needed. If the chosen network is open, you can connect it directly; If the chosen network is encrypted, you must enter the correct password. Then You can connect WIFI after clicking "connect".

Tips: Wi-Fi must be set. If no Wi-Fi network is available nearby, you can enable "Portable Mobile Hotspot".

1.1.5 Choose Time Zone

Choose the time zone of the current location, then the system will automatically configure the time according to the time zone you chose.
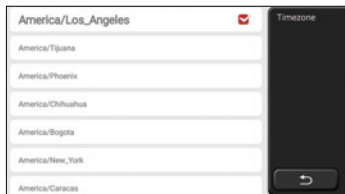
1.1.6 Create an Account

You need to register an account through your e-mail box. If you have owned other products of THINK series, you can directly log in by using the account available.
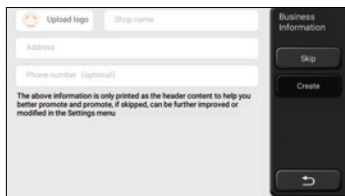
1.1.7 Typing in Repair Shop Information

Typing in the repair shop information, which will be shown in the diagnostic report.
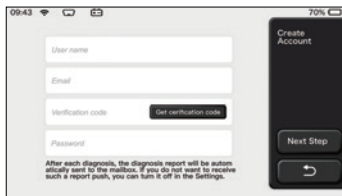
1.1.8 User Agreement

Please read all the terms and conditions of the user agreement carefully. Choose "Agree all the above terms", and click the "Agree" button to complete the registration process. Then the page will jump to the "Congratulations on your successful registration" interface.

Initial settings are finished after the above steps. It will automatically jump to the work interface after 3 seconds.

1.2 Selection and Purchase of Diagnostic Software

The purchase of ThinkTool refers to the ownership of a host computer and one-year free usage right of five software.

After completing the initial setting, the work interface will prompt you to choose and download five free diagnostic software. Click the prompt to jump to the software store, and select the diagnostic software you need. Enter the details page of the selected diagnostic software, and directly click the prompt button at the bottom of the page to download the software.

You are accessible to a detailed function introduction to each diagnostic software, and can rate and comment them. When other diagnostic software is needed, you need to buy it by entering the diagnostic software details page in the ThinkStore, or buy several software at the same time through adding them to the shopping cart.

1.3 Plug-in and Plug-out of the Diagnostic Cable

An aviation connector is used to connect the host and the diagnostic cable. When plugging in the connector, please note that the red dot of the connector and that of the socket are aligned. Refer to the following picture:

Tips: Make sure that the red dots are overlapped. Never plug in and plug out it forcefully, otherwise the pins of the connector may be damaged. As the aviation connector is also used in the endoscope function module, the plug-in and plug-out operations are the same as those of the diagnostic cable.

1.4 Printer Installation

The printer is installed on the back of the host. Please follow the steps below:
1. Unscrew the backplane screws and remove the host backplane.
2. Insert the host card slot into one side of the printer.
3. Press the buckle on the side of the printer to snap on it into the host.
4. When the host is on, it will automatically identify and connect the printer.

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- Other product names used herein are for identification purposes only and may be trademarks of their respective owners. THINKCAR disclaims any and all rights in those marks.
- There is a possibility that this unit is inapplicable to some of the vehicle models or systems listed in the diagnosis section due to different countries, areas, and/or years. Do not hesitate to contact THINKCAR if you come across such questions. We are to help you solve the problem as soon as possible.

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.

- Neither THINKCAR nor its affiliates shall be liable to the purchaser of this unit or third parties for damages, losses, costs or expenses incurred by purchaser or third parties as a result of: accident, misuse, or abuse of this unit, or unauthorized modifications, repairs, or alterations to this unit, or failure to strictly comply with THINKCAR operating and maintenance instructions.
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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.

An Introduction to the company

THINKCAR TECH is a highly creative developer of vehicle diagnosis tools. By marrying

user-friendly creative ideas with technologies, the company has produced Think series products featured as ultimate experience and extraordinary imagination, including THINKOBD，THINKSAN, THINKCAR, THINKDIAG, THINKPLUS, THINKSCAN and THINKTOOL. Those products prove to be a brand new generation of diagnosis tools through user-oriented creative products forms and service system. THINKCAR TECH keeps striving for perfection in all aspects such as its products design, material selection, manufacturing and software service.
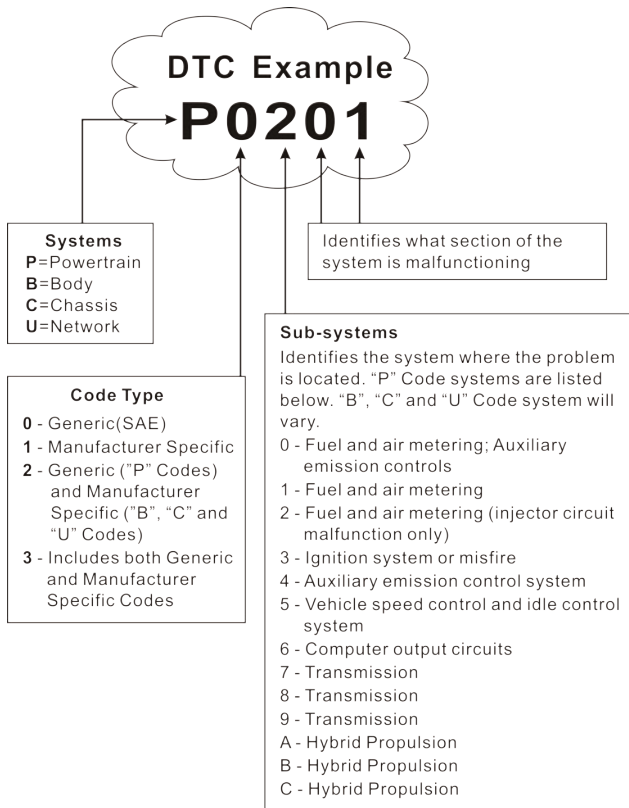
2 General information

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 OnBoard 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:

DTC Example

P0201

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

Identifies what section of the system is malfunctioning

Code Type

0 - Generic(SAE)
1 - Manufacturer Specific
2 - Generic ("P" Codes) and Manufacturer Specific ("B", "C" and "U" Codes)
3 - Includes both Generic and Manufacturer Specific Codes

Sub-systems

Identifies the system where the problem is located. "P" Code systems are listed below. "B", "C" and "U" Code system will vary.

0 - Fuel and air metering; Auxiliary emission controls
1 - Fuel and air metering
2 - Fuel and air metering (injector circuit malfunction only)
3 - Ignition system or misfire
4 - Auxiliary emission control system
5 - Vehicle speed control and idle control system
6 - Computer output circuits
7 - Transmission
8 - Transmission
9 - Transmission
A - Hybrid Propulsion
B - Hybrid Propulsion
C - Hybrid Propulsion

2.3 Data Link Connector (DLC) Location

The DLC (Data Link Connector or Diagnostic Link Connector) is typically a 16pin connector where diagnostic code readers interface with the vehicle's onboard 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.
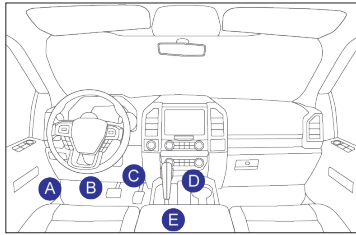
2.4 OBD II Readiness Monitors

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 noncontinuous 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 vehiclespecific 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. Introduction to the Product

3.1 General introductions

THINKTOOL, one of the diagnostic products launched by THINKCAR TECH INC, is the highest-level product of the THINK series. It boasts all the functions ranging from diagnosis, testing to TPMS, and is suitable for more than 160 automotive brands worldwide.The product adopts a modular design. In addition to the diagnostic host computer, it also contains 12 standard or optional function modules. In each application scenario, you can choose to assemble different modules for usage. A quick disassembly and assembly interface is set on the back of the host computer. You just need to insert the required module gently, and then the host can recognize the current module and start using it.

3.1.1 Diagnostic host

1. Screen
2. Power source/Lock screen button

When the host is off, turn on it by pressing the button for 3 seconds.

When the host is on, press the button to wake up the screen or turn off the screen;

Turn off the host by pressing the button for over 3 seconds; force a shut down by pressing the button for over 8 seconds.

3. Aviation socket：Connect the diagnostic cable or endoscope function extension module.
4. Camera button
5. Power inlet：Connect a charger for charging or data transmission.
6. USB expansion port
7. TPMS antenna：It's used for TPMS sensor communication.
8. Rear camera
9. Backplane: Remove the backplane of the host, and install function extension modules on the back of the host.
10. Loudspeaker
11. Buckle：Fasten function extension modules.
12. Pin: It's used for communication between the function extension module and the host.
13. Magnet：Fasten function extension modules.

Function Modules Diagram:

No.	Name	Description	Note
1	THINKTOOL Host Computer	Modular Comprehensive Automotive Diagnostic Tool	
2	Charging Cable	For the host computer	
3	Power Adapter	For the host computer	
4	THINKTOOL Diagnostic Cable	ThinkTool Special Diagnostic Cable	
5	THINKPRINTER	ThinkTool Diagnostic Report Thermal Printer	
6	THINKPRINTER Thermal Paper	Specially for ThinkPrinter	
7	THINKWORKLIGHT	ThinkTool High-Brightness LED Light	Optional
8	THINKTOOL Video Scope	ThinkTool HD Video Scope Module	Optional

9	THINKTOOL Thermal Imager	ThinkTool Infrared Thermal Imager Module	Optional
10	THINKTOOL Battery Tester	ThinkTool Battery Tester Module	Optional
11	TPMS Sensor	ThinkTool Special TPMS Sensor	Optional
12	THINKMODULEDOCK	ThinkTool Modules Connected to the Dock can be Used Independently	Optional
13	THINKTOOL ThinkDiag Box	ThinkTool Wireless Diagnostics Storage Box	Optional
14	THINKTOOL Oscilloscope	Used to check electric current and voltage	Optional
15	THINKTOOL Sensor detector	Used to check sensor parts	Optional
16	THINKTOOL Projector	Project the diagnostic process and the report	Optional

3.1.2 Technical indications

The host product package includes a host, a diagnostic cable, a printer, printing paper, a charging cable, and a power adapter. The following are performance parameters.

THINKTOOL host computer

- Battery Capacity:4850mAh 7.4V
- Screen Size: 7inches
- Resolution: 1280*720 pixel
- Working Voltage: 9V~18V⎓
- Working Current: ≤1.2A
- Working Environment: 14℉~122℉ (-10℃~50℃)
- Storage Environment: -4℉~140℉ (-20℃~60℃)

THINKTOOL Diagnostic Cable

- Working Voltage: 9V~18V
- Working Current: ≤1.2A
- Working Environment: 14℉~122℉ (-10℃~50℃)
- Storage Environment: -4℉~140℉ (-20℃~60℃)

<u>**THINKPRINTER**</u>

- Print Density: 576dots/line
- Print Width: 3.1inches (80mm)
- Print Speed: 2.3inches/s (60mm/s)
- Working Environment: 14℉~122℉ (-10℃~50℃)
- Storage Environment: -4℉~140℉ (-20℃~60℃)

<u>**THINKPRINTER Thermal Paper**</u>

- Specification: 3.1inches*1.1inches (80mm *30mm)
- Length: 19.6ft~22.9ft (6m~7m)/roll
- Working Environment: 14℉~122℉ (-10℃~50℃)
- Storage Environment: -4℉~140℉ (-20℃~60℃)

4 Preparation

4.1 Charge the host

Follow the steps below to charge the host:
1. Connect one end of the power cord to the USB socket of the power adapter.
2. Connect the other end to the charging jack on the bottom of the host.
3. Plug the charger power plug into a power outlet to start charging.

When the battery status icon displays ▢, the host has been charged. When it displays ▬, the charging process has been completed and you shall disconnect the host.

4.2 Battery

- It is normal that the host won't turn on when charging because the battery has not been used for a long time or it is exhausted. Please turn on the host again after charging the battery for a while.
- Please charge the host through the charger in the package. The company assumes no responsibility for damages and losses caused by charging with chargers other than those specified by the company.
- The battery can be recharged repeatedly. However, as the battery is wearable, the standby time of the device will be shortened after long-time use. Please avoid frequent repeated charging so as to extend battery life.
- The battery charging time varies with temperature and battery status.
- When the battery power is low, the system will pop up a prompt reminding you to connect the charger. When the battery power is too low, the device will turn off.

4.3 Power on and off

4.3.1 Power on

Long press the power button and then the start interface will appear.

Tips: The device may fail to turn on if you use it for the first time or haven't used it for a long time. This may be caused by too low battery power. Please try to turn it on again after charging the device for a while.

4.3.2 Power off

Long press the power button until the dialog box pops up, and then turn off the device according to the prompts. If you need to force shutdown, long press the power button for more than 8 seconds until the screen goes dark.

5 Functions Descriptions

The ThinkTool host computer have 10 functions, namely, full system diagnosis, maintenance, tire pressure monitoring, quick test and printing, ThinkStore, ThinkFile, repair information, remote diagnosis, ThinkMoments, and ThinkModule.
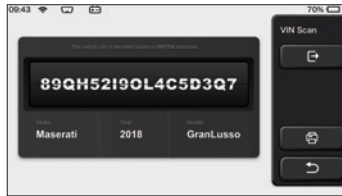

5.1 Diagnosis

Full system diagnosis: it supports more than 160 automobile brands, smart diagnosis and traditional diagnosis covering OBD II full-function diagnosis, full-system and full-function diagnosis: read fault codes, clear fault codes, read real-time data streams, special functions, motion tests, etc.. A diagnostic report will be automatically generated after the diagnosis.

Smart diagnosis

Connect the vehicle and click "Diagnose" on the main interface. Then, click AUTOSEARCH to start smart diagnosis. Read the VIN as shown below.

If it fails to read VIN, you need to enter VIN manually.

**Diagnosis starts**

1. Choose test mode: after reading VIN, the screen will enter the test mode selection interface:
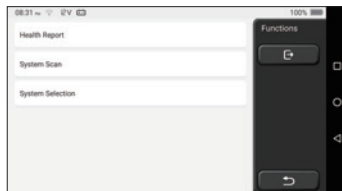

A. Health Report: this mode is to quickly check the vehicle and display the vehicle health report (it's available only when the the diagnosis software support this function). After clicking "quick test", the system starts scanning DTC respectively and show the result.
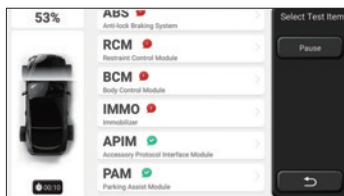
If you want to pause the scan, click "Pause".

After the scan is over, the system will display the diagnostic report directly. The DTC can be hidden by clicking the button after it.
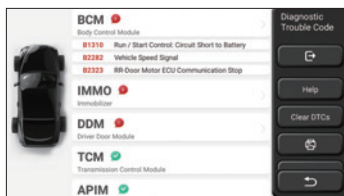
The system with DTC will be displayed on the screen in red font, and the specific number of DTC will be shown. A DTC-free system will be displayed as "OK".

Click the system name to see the specific definition of the DTC.

B. System Scan: automatically scan all systems of the vehicle.

C. System Selection: manually choose the automotive electronic control system.

2. Choose the system: Click "ECM" (e.g.), and the screen will enter selection interface.
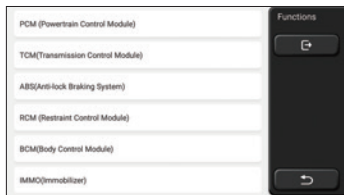
3. Choose the function: click the function to be tested.

Tips: The diagnosis menu varies with different vehicles

A. Version Information

As shown in the picture, click "Version Information" to read the current version information of the car ECU.

B. Read Fault Code

This function is to read the DTC in the ECU memory , helping maintenance personnel to quickly identify the cause of the vehicle breakdown.

Tips: Reading the DTC when troubleshooting a vehicle is only a small step in the entire diagnostic process. Vehicle DTC are for reference only, and parts cannot be replaced directly based on the given DTC definition. Each DTC has a set of test procedures. The maintenance technician must strictly conform to the operation instructions and procedures described in the car maintenance manual to confirm the root cause of the breakdown.

As shown below, click "Read Fault Code", and then the screen will display diagnostic results.

Screen buttons:

Freeze frame: If this button is highlighted, it means there is freeze frame information. The freeze frame serves to record some specific data streams at the moment when the car breaks down. The number is for verification.

(Help): Click to check the possible cause of the DTC.

Report: Save the current diagnosis result as a diagnosis report and print it directly.

C. Clear Fault Code

This function serves to clear the DTC of the ECU memory of the tested system.

Click "Clear Fault Code", and then the system can automatically delete the existing DTC and pop up the dialogue box saying "DTC successfully cleared".

Note: For general vehicles, please strictly follow the normal sequence: read the DTC , clear it, have a test run, read the DTC again for verification, repair the vehicle, clear the DTC , and try again to confirm that the DTC no longer appear.

D. Read Data Stream

This function is majorly used to read and display real-time data and parameters of the car ECU. Through observing these data streams, maintenance technicians can understand the vehicle's overall performance and offer maintenance suggestions.
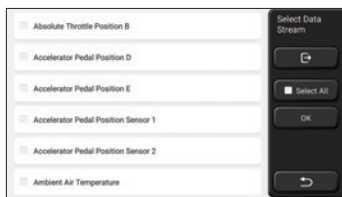
Screen buttons:

Select all: If you want to check some data stream, tick the box before its name. If you want to choose all the data streams, click this button.

Deselect: Click this button to deselect all checked data streams.

OK: Confirm current operations. Click "OK" after selection, and then the system will display the dynamic data of selected data streams.

Screen buttons:

🐡 (Graph): Click it and the data streams are displayed in dynamic wave patterns.

Report: Click the button to save the number of current data streams.

Record: It's used to record diagnosis data so that users can replay and check it. If you want to stop the reading, click "stop" (the white box before the progress bar)

Help: Choose some data stream and click the button to check the help information.

If the 1 / X appears, it means that the data stream options haven't fully displayed. Swipe the screen from bottom to top to display the remaining options. With 3 display modes available, you can browse it with suitable ways :

• <u>Figure</u>: Displays parameters with wave patterns.
• <u>Value</u>: The default display mode shows parameters with numbers and lists.

Note: If the value of the data stream is not within the standard value range, the data stream will be displayed in red.

• <u>Combine</u>: The graphs are presented together for users to make comparisons.

Note: different data flow options are marked in different colors.

How to check one wave pattern?

Click 📊.

On the display page of wave patterns, the user can perform the following operations:

• <u>Max./Min.:</u> Click to set the highest / lowest value. Once the running value exceeds the set value, the system will issue a warning.
• <u>User-defined:</u> Click "<" on the right side of the screen and then define the data stream options to be checked by yourself.
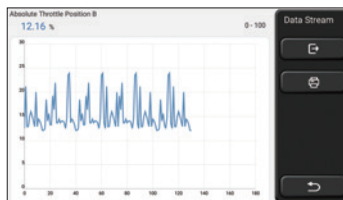
Choose the data stream options to be checked (Note: Only a maximum of 4 data streams can be displayed).

If you want to remove the wave pattern of some data stream, just deselect it.

How to check several wave patterns together?

Click [Combine] button and then the system will display the parameters of the selected data streams with wave patterns.

E. Actuation Test

This function is used to test whether the execution components in the electronic control system can work normally.

Diagnosis records

Usually, every time a car is diagnosed, the system will record each step. This function help users quickly enter a previously tested vehicle and continue its testing without starting anew. Click "diagnostic records" and all previous records will be displayed on the screen chronologically.
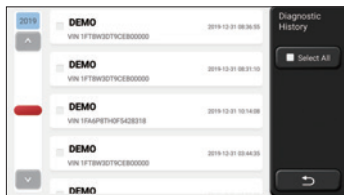
Screen buttons:

Select all: click it and select all diagnosis records.

Delete: click the button to delete some checked diagnosis record.

Deselect: click it to deselect all checked diagnosis records.

Click some diagnosis record to check details about vehicle information and DTC.

Click "Quick access" to test other systems.

Diagnosis report

The diagnostic report contains the information of the vehicle and its system failures. The report can be printed through the automatic connection to the printer, or can be shared to interactive communities, sent to designated e-mail boxes, or shared to a third-party platform such as FaceBook.

Tips: After the report is produced, the technician can take a real-time photo of the vehicle and save it as a vehicle maintenance file.
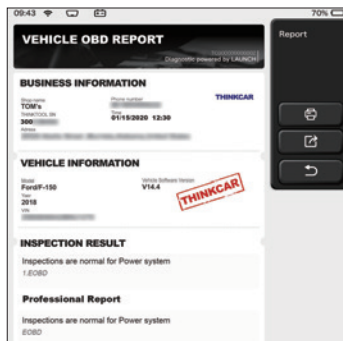
5.2 Maintenance

The host computer boasts the 15 most commonly used maintenance and reset functions, namely, headlight matching, throttle matching, anti-theft matching, fuel injection nozzle coding, brake pad reset, maintenance lamp reset, steering angle reset, ABS exhaust, battery matching, gearbox matching, DPF regeneration, Reset exhaust gas recirculation, tire pressure reset, sunroof initialization and suspension matching.

5.2.1 Maintenance light reset

The lightening of the car maintenance light indicates that the vehicle needs maintenance. Reset the mileage or driving time to zero after the maintenance, so the maintenance light will go out and the system will start a new maintenance cycle.

5.2.2 Steering angle reset

Find the position where the car keeps driving straight. With this position as a reference, the ECU can calculate the accurate angle when the car turns left and right. Generally, after replacing the steering angle position sensor, replacing the mechanical parts of the steering system (such as steering gear, steering column, tie rod ball head, steering knuckle), completing the four-wheel positioning, body repair, etc., it is required to reset the steering

angle to zero.

5.2.3 Battery matching

Battery matching is to use a car diagnostic tool to reset the monitoring unit of the car battery. By clearing the original breakdown information about the lack of battery power, rematch the battery. Based on the related information of the existing battery, the monitoring unit implements monitoring. Battery matching is required in the following situations:

1. Replacement of the main battery needs to utilize battery matching to clear the former information about the lack of power, thus avoid false information detected by the relevant control module which will cause the failure of some electronic auxiliary functions. For example, the vehicle automatically stops; the sunroof can't work by one key; electric windows can't open and close automatically.

2. The battery monitoring sensor uses the battery matching function to re-match the control module with the monitoring sensor, so as to more accurately detect the use of the battery power, and avoid receiving wrong information from instrument prompts and causing false alarms.

5.2.4 ABS exhaust

When the ABS system contains air, it is necessary to exhaust the brake system through the ABS exhaust function to restore its braking sensitivity. In addition, when replacing the ABS computer, ABS pump, brake master cylinder, brake cylinder, brake line, and brake fluid, the ABS exhaust function is a necessity.

5.2.5 Throttle matching

Throttle matching is to utilize the car decoder to initialize the throttle actuator so that the learning value of the ECU returns to the initial state. By doing these, the movement of the throttle (or idle motor) can be more accurately controlled, thus adjust the intake volume.

Situations when throttle matching is needed:

a) After replacing the electronic control unit, the relevant characteristics of the throttle operation have not been stored in the electronic control unit.

b) After the electric control unit is powered off, the memory of the electric control unit's memory is lost.

c) After replacing the throttle assembly, you need to match the throttle.

d) After replacing or disassembling the intake port, the controlling of the idle speed by the coordination between the electronic control unit and the throttle body is affected.

e) Although the characteristics of the idle throttle potentiometer have not changed, the intake volume has changed and the idle control characteristics have changed at the same throttle openings.

5.2.6 Brake pad reset

When the brake pad reaches certain thickness, the brake pad induction wire will be worn. At this time, the wire will send a signal induction wire to the on-board computer to prompt the replacement of the brake pad. After replacing the brake pad, the brake pad need to be reset, otherwise the car will continue to alarm. Situations when the reset is required:

a) After the brake pad is replaced and when brake pad wears sensors;

b) when the brake pad indicator lightens;

c) After the brake pad sensor circuit is repaired;

d) After the servo motor is replaced.

5.2.7 DPF regeneration

The DPF regeneration function is mainly to periodically use combustion oxidation methods (such as: high-temperature heating and combustion, the combustion through the use of fuel additives or catalysts to reduce the ignition point of particulate matters) to remove particulate matters from the trap, so that the performance of the trap is always stable. DPF regeneration matching is required in the following situations:

a) replace the exhaust back pressure sensor;

b) disassembly or replacement of the particle trap;

c) removal or replacement of fuel additive nozzles;

d) removal or replacement of catalytic oxidizer;

e) the DPF regeneration fault lamp is lit and matched after maintenance;

f) repair and replace the DPF regeneration control module.

5.2.8 Anti-theft matching

In order to prevent the car from being used by illegal keys, the car's anti-theft matching function enables the car's immobilizer control system to identify and authorize the remote control key before the car can be turned on and used normally. In addition, when replacing the ignition key, ignition switch, instrument cluster, engine control unit (ECU), body control module (BCM), and remote control battery, it is necessary to match the anti-theft key.

5.2.9 Nozzle coding

Write the actual code of the fuel injection nozzle or rewrite the code in the ECU to the code corresponding to the fuel nozzle of each cylinder, so that the fuel injection amount of each cylinder can be controlled or corrected more accurately. Usually after replacing the ECU and the fuel injector, the coding of each cylinder fuel nozzle needs to be confirmed or recoded, thus the cylinder can better identify the fuel injector of each cylinder and control the fuel injection accurately.

5.2.10 Tire pressure reset

When the car tire pressure fault indicator light is on, this function is to reset the tire pressure and turn off the tire pressure fault indicator.

If the tire pressure is too low or leaks, replace or install tire pressure monitoring equipment, and replace the tire. When the vehicle with a damaged tire pressure sensor and tire pressure monitoring function has rotated its tires, the tire pressure reset must be carried out after maintenance.

5.2.11 Suspension level calibration

This function can adjust the vehicle body height. When replacing the vehicle height sensor or control module in the air suspension system or the vehicle level is wrong, this function can adjust the vehicle height sensor for level calibration.

5.2.12 Headlight matching

This function can initialize the adaptive headlight system. This system can decide whether to automatically turn on the headlights based on the ambient light intensity, monitor the vehicle's driving speed, body posture, etc., and adjust the headlight lighting angle timely.

5.2.13 Gearbox matching

This function can complete the self-learning of the gearbox and improve the shift quality.

When the gearbox is disassembled or repaired (after some batteries are powered off), it will cause shifting delay or car impact. At this time, this function is to make the gearbox automatically compensate according to driving conditions, thus achieve more comfortable, more ideal shift quality.

5.2.14 Sunroof initialization

This function can set the sunroof lock off, close in rain, memory function of sliding / tilting sunroof, outside temperature threshold, etc.

5.3 TPMS monitoring

Activate and match the tire pressure sensor, study the diagnosis and monitor the tire pressure.

5.4 Quick Check and Printing

It adopts smart detection mode. After the vehicle is connected, the system will automatically recognize the vehicle information, automatically check the vehicle, and automatically generates a report. Automatic printing can be set so that no human intervention is needed throughout the process.
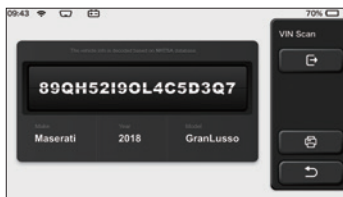

5.5 ThinkStore

ThinkStore, launched by THINKCAR TECH, is the place where you can download all diagnostic software and purchase hardware products. In the store, vehicle diagnostic and maintenance software can be bought. Each diagnostic software has a detailed function introduction, as well as user ratings and comments on the software. All THINKCAR hardware products can also be purchased online and the price can be deducted by using points (1 point = 1 USD).

Tips: The purchase of a ThinkTool host computer includes one-year free usage right of five software. When you need to use other diagnostic software, extra fees should be paid.


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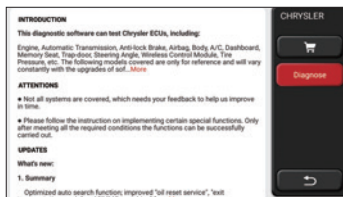
5.6 ThinkFile

It is used to record and establish the file of the diagnosed vehicles. The file is created based on the vehicle VIN and check time, including all diagnostic-related data such as diagnostic reports, data stream records, thermal images, endoscopic pictures and videos.


5.7 Repair info

It includes 4 items, namely, a fault code data base, a table of vehicles able to be diagnosed, videos, a learning course. The maintenance technician can quickly refer to the explanation of the fault codes, and understand all the vehicles that can be diagnosed through the table. The videos contain equipment usage guides, maintenance and diagnosis guides. The learning course demonstrates how tools are operated. These four functions help technicians quickly grasp the equipment use and improve diagnostic efficiency.
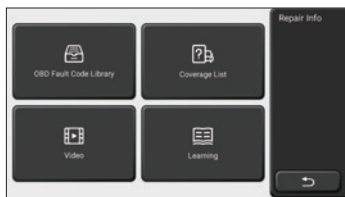

5.8 Remote Diagnosis

It provides real-time distance full-system diagnosis for THINKCAR owners. The vehicle can be quickly connected through the distance diagnosis entry of the host. After the maintenance technician enters the 6-digit check code provided by the owner, he/she can remotely control the owner's vehicle, diagnose it, determine vehicle problems, and provide maintenance suggestions.
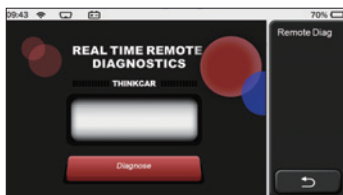
5.9 ThinkMoments

It is an interactive community where car owners can make exchanges about car maintenance and diagnosis, fault codes, products functions and usage introductions. Users can share their vehicle diagnosis to the community and exchange with other members. Maintenance technicians and experts can guide car owners online.
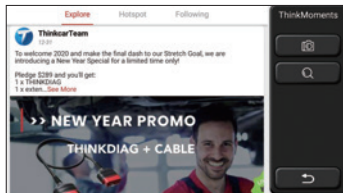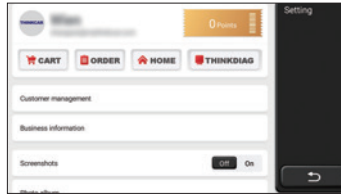

5.10 ThinkModule

It is the entry to use modular function components. On the screen, you can find and use functional modules already connected to the host, check functional modules already bought or buy functional modules needed.

5.11 Settings

The host uses system settings. After the initial setting is completed, the user can modify or add related information here.

5.11.1 Account information

ThinkTool users need to register the following information including email, points, orders, homepage, etc.

Orders: diagnostic software purchase records

Points: Points can be earned by participating in events organized by THINKCAR, or by recommending others to purchase our products. Every 1 point deducts 1 USD when purchasing THINKCAR's products and services.

THINKDIAG: It is used to activate ThinkDiag connector and bind to the host, which can realize wireless diagnosis by connecting to Bluetooth.

5.11.2 Customer management

Information of all clients whose vehicles have been diagnosed will be displayed here in turn.

5.11.3 Repair shop information

Add the repair shop information, which will be displayed to the owner in the diagnostic report.

5.11.4 Internet connection

Set the connectable WIFI network.

5.11.5 Firmware upgrade

Check if the firmware is the latest version. Click "Check Version" to check if there is the latest version on the server.

5.11.6 Language

Support English, French, German, Russian, Italian, Spanish, Portuguese, Japanese.

5.11.7 Time zone

Automatically configure the time based on the selected time zone.

6. Q&A

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

Q：**Why does it have no responses when connected to a car computer?**

A：Check whether the connection with the vehicle diagnostic seat is normal, whether the ignition switch is on, and whether the car supports the tool.

Q：**Why does the system stop while reading the data stream?**

A：This may be caused by loose connectors. Please turn off the tool, connect the connector firmly, and then turn it on again.

Q：**Why does the host screen flash when the engine ignition starts?.**

A：It is normal and caused by electromagnetic interference.

Q：**How to upgrade the system software?**

A：1. Start the tool and ensure a stable Internet connection.

2. Set up: select "System Version", and then click "Check Version" to enter the system upgrade interface.

3. Complete the process by following the instructions on the screen step by step. It may take a few minutes depending on the internet speed. please be patient. After successfully completing the upgrade, the tool will automatically restart and enter the main interface.

Q：**Please explain the account and points.**

A：To use TinkTooL, you need to register an account. Each account has the opportunity to earn points by recommending others to buy products and participating in official events. 1 point can be deducted for 1 dollar when purchasing products or services.

Q：**How to add function modules?**

A：In addition to the standard host and printer modules, THINKCAR TECH INC also offers 11 other functional modules. You can buy them on the official website or the ThinkStore within the tool.