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Safety Information

For your own safety and the safety of others, and to prevent damage to the device and vehicles upon which it is used, it is important that the safety instructions herein presented throughout this manual be read and understood by all persons operating or coming into contact with the device.

There are various procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the person doing the work. Because of the vast number of test applications and variations in the products that can be tested with this equipment, we cannot possibly anticipate or provide advice or safety messages to cover every circumstance.

It is the automotive technician's responsibility to be knowledgeable of the system being tested. It is crucial to use proper service methods and test procedures. It is essential to perform tests in an appropriate and acceptable manner that does not endanger your safety, the safety of others in the work area, the device being used, or the vehicle being tested.

Before using the device, always refer to and follow the safety messages and applicable test procedures provided by the manufacturer of the vehicle or equipment being tested. Use the device only as described in this manual. Read, understand, and follow all safety messages and instructions in this manual.

Safety Instructions

The safety messages herein cover situations ANCEL is aware of. ANCEL cannot know, evaluate or advise you as to all of the possible hazards. You must be certain that any condition or service procedure encountered does not jeopardize your personal safety.

Danger

When an engine is operating, keep the service area WELL VENTILATED or attach a building exhaust removal system to the engine exhaust system. Engines produce carbon monoxide, an odorless, poisonous gas that causes slower reaction time and can lead to serious personal injury or loss of life.

Do Not Turn the Volume Up Too Loud When Using Headphones Listening at high volumes that over-stimulate the ear for long periods of time may result in loss of hearing.

Safety Warning

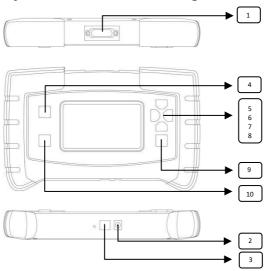
- Always perform automotive testing in a safe environment.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well-ventilated work area, for exhaust gases are poisonous.
- 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.

Chapter 1 General Introduction

The FX5000 diagnostic scanner is an evolutionary smart solution for specialized automotive diagnosis combing with the best possible coverage of OE-level diagnostics, the FX5000 diagnostic scanner information with test instrumentation to help you diagnose symptoms, codes, and customer complaints easily, quickly and efficiently. This manual describes the construction and operation of these devices and how they work together to deliver diagnostic solutions.

1.1 Layout for FX5000 Series Diagnostic Scanner



1	For main cable connection	2	Power Port
3	For USB Connection	4	Fn Key
5	Up Button	6	Down Button
7	Left Button	8	Right Button
9	OK Button	10	Esc Button

1.2 Technical Specifications

1	Screen Display	4.3-inch
2	Packing Dimension (LxWxH)	306 x 195 x 87mm
3	Gross Weight for Full Kits	1kg
4	OS Platform	Linux
5	Memory	16G
6	Input Voltage	DC 12V

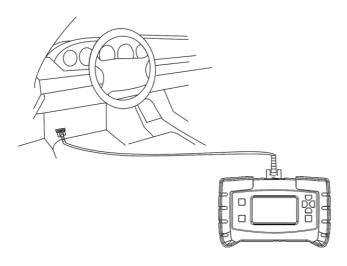
1.3 Standard Accessory Kits

1	Tool Box
2	Main Unit
3	OBD main cable
4	USB Cable
5	User Manual

Chapter 2 Get Ready before Diagnosis

2.1 Cable Connection for On-Board Diagnosis

Make sure the FX5000 Series 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 FX5000 Series 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 series 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 FX5000 Series Diagnostic Scanner for the type of operation or activity to be performed.

Providing 5 modules on the screen including Diagnose, Special Function, OBD, Update and Settings. Each module supports different functions.



NAME	PICTURES	DESCRIPTION
		Executes the corresponding vehicle diagnostic program based on the selected region and vehicle make.
		European Displays the European vehicle menu. Including BMW, Alfa, Jaguar, Land Rover, Fiat, Ford, Citroen, Mercedes-Benz, Volkswagen, Audi, Volvo, Renault, etc.
Diagnose		Asian Displays the Asian vehicle menu. Including Toyota, Lexus, Honda, Acura, Nissan, Infiniti, Mitsubishi, Daewoo, Mazda, Hyundai, Kia, Isuzu, Suzuki, etc.
		American Displays the USA vehicle menu. Including GM, Chrysler, Ford, etc
		Chinese Displays Chinese domestic vehicle menu. Including Chana, Chery, Geely, GWM, MG, Roewe, etc
Special Function		Provides quick access to vehicle systems for the most commonly performed service functions and maintenance experience.

	4	BMS Battery Module Reset
		ABS BLEED Anti-Brake System Bleeding
		OIL RESET Oil Service Light Reset
		SAS Steering Angle Sensor Reset
		EPB Electronic Park Brake Reset
		THROTTLE Electronic Throttle Sensor Reset
OBDII		All modes of OBDII test for cars after1996 and newer

	1/M • × × × × × × × × × × × × × × × × × ×	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.
	2.5.6.6	DTC Library To provide you with the latest definition of PCBU fault codes. For example, after entering "P02AE", you will get its definition as "Cylinder 6 – Fuel Trim at Max Limit"
Update		When the device is connected to the Internet, checks for the latest version for vehicle diagnostic programs, and performs updating procedures.
		Via WiFi Update via Wi-Fi
		Via USB Update via PC client
		Feedback You can upload the vehicle diagnosis log to faster solve your problems during vehicle diagnosing.
Settings	SETTINGS	Adjusts and views system settings, including the measurement unit for the diagnostic system, the display language for the device, log and sound settings.



Language

English, Portuguese, Hungarian, Russian, Polish, Italian, Traditional Chinese, Dutch, Simplified Chinese, Spanish, French, German, Turkish



Unit

To provide two options for the unit of live data: Metric Unit and English Unit.



Beep

Sets the sound on or off.



Log

Two options for Logging On and Logging OFF with the slide button. [Logging ON] must be set if the client wants to record the live data, otherwise the client cannot send logging files.



Button Test

To provide the key test options for the main unit.



LCD Test

To provide the display test option for the main unit.



About

Displays the device information including serial number, register password, firmware version and system software version.

Chapter 3 To Start a New Test

To start a new test, you need to establish the proper vehicle communication to the FX5000 Series Diagnostic Scanner; you need to follow the screen instructions step by step for the car testing. The operations require connecting the FX5000 Series Diagnostic Scanner main unit to the test vehicle through the main cable. (For details please refer to Chapter 2 for Cable Connection for Board Diagnosis)

3.1 Vehicle Selection

When the main unit is properly connected to the vehicle, click the Diagnostics icon button on the FX5000 Series Diagnostic Scanner.

The FX5000 Series Diagnostic Scanner supports more than three methods for Vehicle Identification with the Automatic Selection, Manual Selection, and Special Function.

3.1.1 Automatic selection

The FX5000 Series Diagnostic Scanner features the latest VIN-based Auto VIN Scan function to identify CAN vehicles in just one touch, which allows the technician to quickly detect vehicles, scan all the diagnose ECUs on every vehicle and run diagnostics on the selected system.

3.1.1.1 To perform Auto VIN Scan

Select [GM] from [AMERICAN]. The vehicle menu displays.



Three options come out including [Automatic Selection], [Manual Selection] and [Special Function].

Select [Automatic Selection] and the system will proceed to acquire VIN

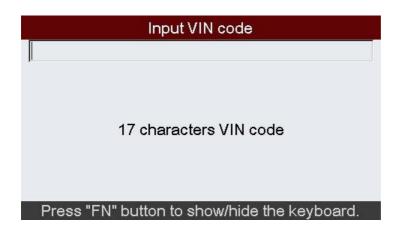
information automatically.



3.1.1.2 VIN code input code via virtual keyboard



In case the FX5000 diagnostic scanner provides an option for vehicle VIN scan allowing users to input the VIN manually.





Select the model of the vehicle accordingly. The ANCEL FX5000 Series Diagnostic Scanner display ECU information in details:

3.2 Manual Selection

The ANCEL FX5000 Diagnostic Scanner also provides manual selection (system selection) for some vehicles.

3.2.1 To perform Manual Selection

Tap the [Manual Selection] button on the screen as below.

Select the year to be tested accordingly. Take 2020 GM 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 [Buick] as below:

	GM	
		2/3
[1]	Automatic Selection	
[2]	Manual Selection	
[3]	GM(Brazil)	
[3]	GM(Brazil)	

Manual Selection		
		1/25
[1]	2020	
[2]	2019	
[3]	2018	
[4]	2017	
[5]	2016	
[6]	2015	
[7]	2014	

Select [Buick] from the list as below:

2020		
		1/5
[1]	Buick	
[2]	Cadillac	
[3]	Chevrolet	
[4]	GMC	
[5]	Holden	

Select [Enclave] as below:

	Buick		
		1/5	
[1]	Enclave		
[2]	Encore		
[3]	Envision		
[4]	LaCrosse		
[5]	Regal		

Select [Engine Control Module] from the list as below:

Enclave	
1/30	
[1]	Engine Control Module
[2]	Transmission Control Module
[3]	Electronic Brake Control Module
[4]	Body Control Module
[5]	Inflatable Restraint Sensing and Diagnostic
	Module
[6]	HVAC Control Module

3.3 Special Function

The ANCEL FX5000 Series Diagnostic Scanner also provides special functions for some vehicles with quick access to different car makes.

Click the button [Special Function] from the menu as below:



The following page will be displayed covering some special functions list:



Press [BMS], the screen displays the areas and vehicle for BMW starting.



Oil Reset Service

This function allows you to perform reset for the engine oil life system, which calculates an optimal oil life change interval depending on the vehicle driving conditions and climate.

This function can be performed in the following cases:

- 1. If the service lamp is on, you must provide service for the car. After service, you need to reset the driving mileage or driving time so that the service lamp turns off and the system enables the new service cycle.
- 2. After changing engine oil or electric appliances that monitor oil life, you need to reset the service lamp.

Electronic Parking Brake Reset

- 1. If the brake pad wears the brake pad sense line, the brake pad sense line sends a signal sense line to the on-board computer to replace the brake pad. After replacing the brake pad, you must reset the brake pad. Otherwise, the car alarms.
- 2. Reset must be performed in the following cases:
- a) The brake pad and brake pad wear sensor are replaced.
- b) The brake pad indicator lamp is on.
- c) The brake pad sensor circuit is short, which is recovered.
- d) The servo motor is replaced.

Steering Angle Calibration

To reset the steering angle, first find the relative zero point position for the car to drive in straight line. Taking this position as reference, the ECU can calculate the accurate angle for left and right steering.

After replacing the steering angle position sensor, replacing steering mechanical parts (such as steering gearbox, steering column, end tie rod, steering knuckle), performing four-wheel alignment, or recovering car body, you must reset the steering angle.

ABS Bleeding

This function allows you to perform various bi-directional tests to check the operating conditions of Anti-lock Braking System (ABS).

- 1. When the ABS contains air, the ABS bleeding function must be performed to bleed the brake system to restore ABS brake sensitivity.
- 2. If the ABS computer, ABS pump, brake master cylinder, brake cylinder, brake line, or brake fluid is replaced, the ABS bleeding function must be performed to bleed the ABS.

Tire Pressure Monitor System Reset

This function allows you to quickly look up the tire sensor IDs from the vehicle's ECU, as well as to perform TPMS replacement and sensor test.

- 1. After the tire pressure MIL turns on and maintenance is performed, the tire pressure resetting function must be performed to reset tire pressure and turn off the tire pressure MIL.
- 2. Tire pressure resetting must be performed after maintenance is performed in the following cases: tire pressure is too low, tire leaks, tire pressure monitoring device is replaced or installed, tire is replaced, tire pressure sensor is damaged, and tire is replaced for the car with tire pressure monitoring function.

Gear Learning

The crankshaft position sensor learns crankshaft tooth machining tolerance and saves to the computer to more accurately diagnose engine misfires. If tooth learning is not performed for a car equipped with Delphi engine, the MIL turns on after the engine is started. The diagnostic device detects the DTC P1336 'tooth not learned'. In this case, you must use the diagnostic device to perform tooth learning for the car.

After tooth learning is successful, the MIL turns off. After the engine ECU, crankshaft position sensor, or crankshaft flywheel is replaced, or the DTC 'tooth not learned' is present, tooth learning must be performed.

IMMO Service

An immobilizer is an anti-theft mechanism that prevents a vehicle's engine from starting unless the correct ignition key or other device is present. Most new vehicles have an immobilizer as standard equipment. An important advantage of this system is that it doesn't require the car owner to activate it since it operates automatically.

An immobilizer is considered as providing much more effective anti-theft protection than an audible alarm alone. As an anti-theft device, an immobilizer disables one of the systems needed to start a car's engine, usually the ignition or the fuel supply.

This is accomplished by radio frequency identification between a transponder in the ignition key and a device called a radio frequency reader in the steering column. When the key is placed in the ignition, the transponder sends a signal with a unique identification code to the reader, which relays it to a receiver in the vehicle's computer control module. If the code is correct, the computer allows the fuel supply and ignition

systems to operate and start the car. If the code is incorrect or absent, the computer disables the system, and the car will be unable to start until the correct key is placed in the ignition.

To prevent the car being used by unauthorized keys, the anti-theft key matching function must be performed so that the immobilizer control system on the car identifies and authorizes remote control keys to normally use the car.

When the ignition switch key, ignition switch, combined instrument panel, ECU, BCM, or remote control battery is replaced, anti-theft key matching must be performed.

Injector Coding

Write injector actual code or rewrite code in the ECU to the injector code of the corresponding cylinder so as to more accurately control or correct cylinder injection quantity.

After the ECU or injector is replaced, injector code of each cylinder must be confirmed or re-coded so that the cylinder can better identify injectors to accurately control fuel injection.

Battery Maintenance System Reset

This function enables you to perform a resetting operation on the monitoring unit of vehicle battery, in which the original low battery fault information will be cleared and battery matching will be done. Battery matching must be performed in the following cases:

- a) Main battery is replaced. Battery matching must be performed to clear original low battery information and prevent the related control module from detecting false information. If the related control module detects false information, it will invalidate some electric auxiliary functions, such as automatic start & stop function, sunroof without one-key trigger function, power window without automatic function.
- b) Battery monitoring sensor. Battery matching is performed to re-match the control module and motoring sensor to detect battery power usage more accurately, which can avoid an error message displaying on the instrument panel.

Diesel Particulate Filter (DPF) Regeneration

DPF regeneration is used to clear PM (Particulate Matter) from the DPF filter through continuous combustion oxidation mode (such as high temperature heating combustion, fuel additive or catalyst reduce PM ignition combustion) to stabilize the filter performance.

DPF regeneration may be performed in the following cases:

- a) The exhaust back pressure sensor is replaced.
- b) The PM trap is removed or replaced.
- c) The fuel additive nozzle is removed or replaced.
- d) The catalytic oxidizer is removed or replaced.
- e) The DPF regeneration MIL is on and maintenance is performed.
- f) The DPF regeneration control module is replaced.

Electronic Throttle Position Reset

This function enables you to make initial settings to throttle actuators and returns the "learned" values stored on ECU to the default state. Doing so can accurately control the actions of regulating throttle (or idle engine) to adjust the amount of air intake.

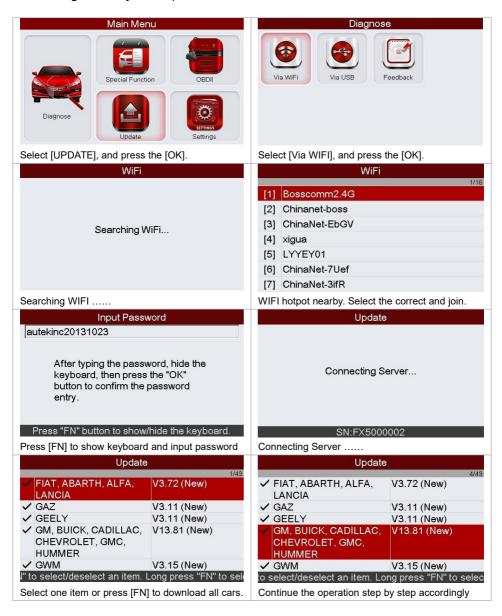
Note:

The numbers of the special functions may vary depending on the ANCEL FX5000 Series diagnostic scanner.

Chapter 4 Software Update

4.1 Update via WIFI

Providing two ways for update: USB mode and WIFI mode.



How to set WIFI if the mobile is iPhone 11 or higher version?

Step 1: Settings Person Hotspot

Personal Hotspot on your iPhone can provide Internet access to other devices signed into your iCloud account without requiring you to enter the password.

Step 2: Allow Others to Join

Allow other users or devices not signed into iCloud to look for your shared network when you are in Personal Hotpot settings.

Note:

The device can only display Wi-Fi name consisting of English character.

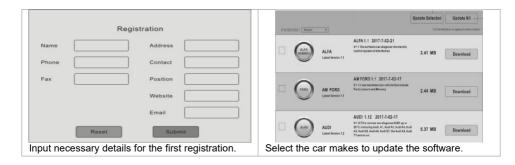
Step 3: Maximize Compatibility.

- 1- Choose the correct name from the Wi-Fi settings on your computer or other device.
- 2- Enter the password when promoted.

Update via USB 4.2

Providing the USB update procedures for software as below.





Chapter 5 Troubleshooting

Why can't the PC update client automatically identify the device serial number?

Please connect the scanner to PC before running the PC update client, and put the scanner in the USB update mode, that is, the screen displays "Files transfer via USB".

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.

Why cannot find the WIFI name?

The device can only display the Wi-Fi name consisting of English character or numbers.

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.

Make sure the machine is connected to the Internet.

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

Service Procedures

This section introduces information for technical support and repair. If you have any question or problem on the operation of the product, please contact ANCEL Tech Support for help.

OBDSPACE TECHNOLOGY CO ., LTD

D03,Block A, No.973 Minzhi Ave. Longhua District, Shenzhen,

Guangdong, China

Email: support@anteltech.com Website: www.anceltech.com

If it becomes necessary to return your device for repair, please contact ANCEL local dealer for help.

The following information must be included:

- Contact name
- Return address
- > Telephone number
- Product name
- Complete description of the problem
- Proof-of-purchase for warranty repairs

Warranty

Thank you choosing our products, we will provide you with the following services and promises.

After the warranty period expires, repairs will be charged for replacement parts.

After the failure, please contact the manufacturer, we will give you the most complete service in the shortest time.

12-Month Limited Warranty

OBDSPACE TECHNOLOGY CO., LTD warrants to the original retail purchaser of this auto scanner, that should this product or any part thereof during normal consumer usage and conditions, be proven defective in material or workmanship that results in product failure within twelve (12) months period from the date of delivery, such defects will be repaired, or replaced (with new or rebuilt parts) with Proof of Purchase, at the Company's option, without charge for parts or labor directly related to the defects.

The Company shall not be liable for any incidental or consequential damages arising from the use, misuse, or mounting of the auto scanner. Some states do not allow limitation on how long an implied warranty lasts, so the above limitations may not apply to you.

The following items are not covered by the warranty:

- Product subject to abnormal use or conditions, accident, mishandling, neglect, unauthorized alternation, misuse, improper installation or repair or improper storage;
- 2) Products whose mechanical serial number or electronic serial number has been removed, altered or defected;
- 3) Damage from expose to excessive temperatures or extreme environmental conditions;
- 4) Damage resulting from connection to, or use of any accessory or other product not approved or authorized by Company;
- 5) Defects in appearance, cosmetic, decorative or structural items such as framing and non-operative parts;
- 6) Product damaged from external causes such as fire, dirt, sand, battery leakage, blown fuse, theft or improper usage of any electrical source.

All contents of the product may be deleted during the process of repair. You should create a back-up copy of any contents of your product before delivering the product for warranty service.

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