

THINKCAR



THINKCAR Injector Cleaner & Tester

GDI 200

Installation Operation Service Manual

Matters needing attention :

- Please read this manual carefully before use and keep it for future reference.
- The equipment list should be checked carefully before use. If in doubt, contact Thinkcar Tech Inc immediately.
- Due to the continuous upgrading of the product, the manual and the physical have a slight difference, without notice, please prevail in kind.

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Safety Precautions

This instrument is made for people who have special techniques and certifications.

Read all service procedures and precautions, setup instructions, and equipment operating manuals thoroughly. Failure to observe these precautions or the improper use of equipment could result in property damage, serious injury, or death. Never allow improperly trained personnel to perform these procedures or operate the equipment.

- a. Read the operating instructions before attempting to operate the unit. Keep this manual with the unit at all times.
- b. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged until it has been examined by qualified service personnel.
- c. Do not hang cords over the edge of the table, bench, or counter, or come in contact with hot manifolds or moving fan blades.
- d. If an extension cord is needed, a cord with a rated current equal to or greater than that of the equipment should be used. Cords rated for a lower current than that of the equipment may overheat.
- e. Always unplug equipment from an electrical outlet when the machine is not in use. Never pull the cord when unplugging from the outlet.
- f. To protect against the risk of fire, do not operate the equipment in the vicinity of an open container containing flammable liquid (gasoline).
- g. Make sure that the unit is in a well-ventilated area when operating the fuel engine.
- h. Keep lighted cigarettes, sparks, flames, or other ignition sources away from fuel systems at all times.
- i. In order to avoid electric shock, keep away from the damp part of a working unit and avoid exposing it to the rain.
- j. Please operate the unit according to the operation procedures in the manual. Only use the accessories recommended by the manufacturer.
- k. Do not switch on the ultrasonic system when there is no ultrasonic detergent in the ultrasonic cleaning chamber. Otherwise, damage to the ultrasonic cleaner can result.
- l. Keep the unit well grounded.
- m. Always wear safety goggles. Commonly used glasses are not safety glasses.
- n. When disconnecting any connector of the pressurized fuel hose, wrap the connector with a towel to prevent the fuel from spurting out. Spurred fuel may cause personal injury or fire.

o. Test liquid is used by the main unit. Detergent is used for on-vehicle cleaning. The ultrasonic cleaning uses specified ultrasonic detergent (it can be replaced by detergent provided with the unit).

Note: Specifying operations that require attention when operating the equipment.

Warning: Specifying a possible hazard that could result in damage to the machine or personal injury.

PLEASE RESERVE THESE INSTRUCTION.

Special note: This user' s manual is an introduction to the structure, functions, operations, cautions, maintenance and troubleshooting for the proper use of the equipment, we retain the right of changing product design and specifications, the actual configuration according to the packing list.

1. Introduction

Thank you for purchasing the THINKCAR GDI 200 Injector Cleaner & Tester with the technology of ultrasonic cleaning and fuel pressure control, this equipment is an advanced electromagnetically product, which can clean or test injectors by simulating engine working conditions. It can also perform cleaning on the injectors and fuel supply system on vehicle.

1.1 Overview

Structures

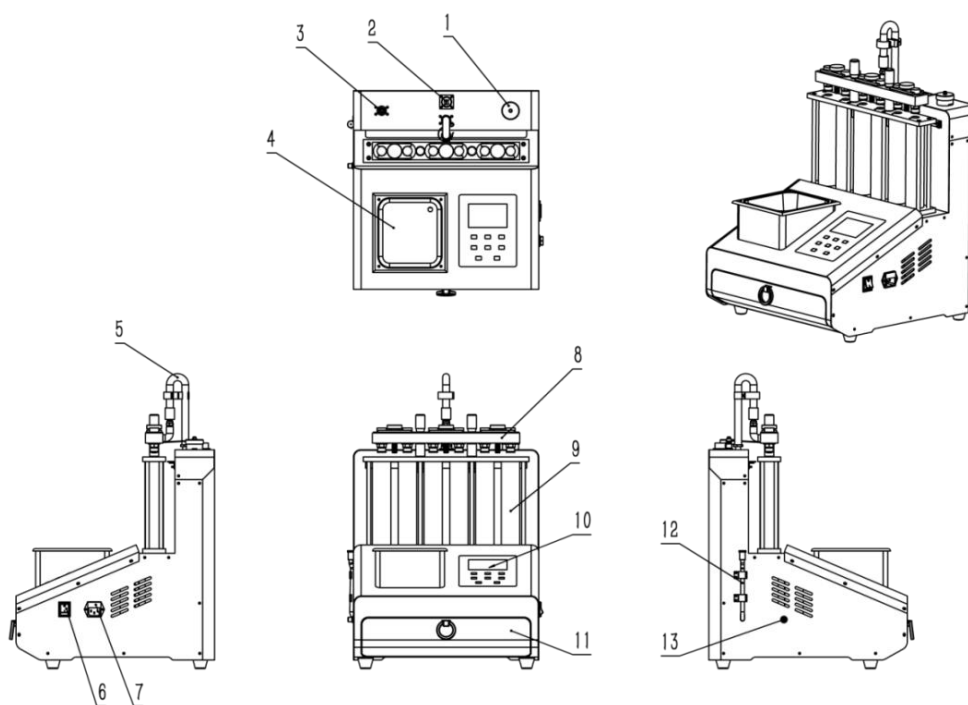


Fig 1

1-Fill port	2-Pulse cable socket	3- Compressed air intake port	4-Washing basin
5-Test agent output tube	6-Power switch	7-Power socket & Fuse	8-Oil distributor
9-Measuring glass tube	10-Control panel	11- Storage drawer FOR adapters	12-Level&drain tube
13-Drain port for ultrasonic agent			

Note: The image in this manual may be different from the actual product!

1.2 Control Panel

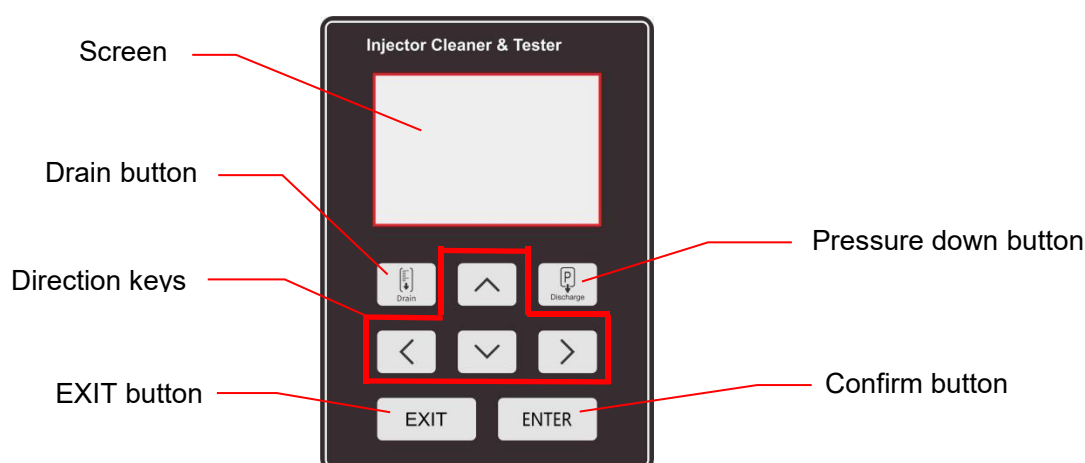


Fig 2

1.3 Features

➤ Colorful LCD screen	➤ Sensing button
➤ Oil resistant glass operating panel	➤ Digital pressure gauge
➤ Auto regulate & stabilize the pressure	➤ Standard test mode and professional test mode
➤ Database for testing	

1.4 Specifications

Voltage: AC220V or 110V (customized)	Main-unit Max Power: 300W
Display: 4.0 inch LCD	Ultrasonic power: 60W
Pulse range: 0.5~25ms , step 0.1ms	Simulated speed: 100~9900rpm , step100rpm
Resistance measuring precision: 0.1 Ω	Tank volume: 4L
Working pressure: 0~8 bar	Pressed air input: 3~8 bar
Ambient temperature: -10℃~+40℃	Main unit size: 420*440*503mm
Ambient Humidity: <85%	Package size: 460*490*555mm
Ambient magnetic strength: <400A/m	Main-unit weight: 20.4KG

1.5 Functions

This product is a professional cleaning and testing equipment for automotive engine fuel injectors.

Sign	Signified	Description
	Injector Test	Detect solenoid injectors voltage/resistance and Minimum Pulse width.
		Detect piezoelectric injector the minimum opening opening voltage.

	UNIFORMITY TEST	Inspect fuel injection of each injector by observing its uniformity.
	SPRAYABILITY TEST	Inspect atomization of each injector by observing its spray ability performance.
	LEAKAGE TEST	Inspect the sealing conditions of the injector needle valve under system pressure and to find out the injector with oil droplet.
	INJECTION TEST	Inspect injecting volume in 10 seconds meets the design specifications.
	AUTO MODE 1 test	Inspect the injectors according to the established program1 of the equipment
	AUTO MODE 2 TEST	Inspect the injectors according to the established program2 of the equipment
	ULTRASONIC TEST	Clean the carbon deposits inside the fuel injector through ultrasonic
	ON-VEHICLE CLEAN	Cleaning the engine fuel supply pipeline, injector, and combustion chamber with the machine does not require disassembling.
	SYSTEM	Set the language and unit of the device operating system, query device information, and restore device factory settings.
	DATABASE	Querying the working pressure of various vehicle models' fuel systems.
	HELP	Querying device fault code information

2. Setup and Connection

2.1 Unpacking

- 1) Move the machine onto the workbench after unpacking and loosen the strips on the outlet hoses.
- 2) Take the adjusting bolt out from the kit and set up it to the press plate on the top of the glass tube.
- 3) Take the fuel distributor from the kit and set up it on the knurled nuts and tighten them with the pressing nut.
- 4) Take the power cable out from the kit and insert it into the input socket at the bottom of the unit.

2.2 Test Preparation

- 1) Disassemble the injectors from the engine to check the o-rings inside for damage. If it is

damaged, we need to replace it. Put the outside of the injector in gasoline or detergent, and wipe it with a soft cloth after cleaning the outside oil sludge carefully.

2)ensure the liquid is enough test liquid inside the tank. Pour test liquid from the port at the top left side of the unit and watch the liquid level in the fuel level viewer. In most cases, fill the tank with liquid up to 1/2 of the capacity.

3)Pour ultrasonic detergent into the ultrasonic cleaning basin so that the needle valve of the injector is covered by the detergent.

4)Pour cleaning detergent in the ultrasonic cleaning basin and keep the detergent cover the injectors needle.

5)Turn on the power switch.

Note:

Test liquid and detergent are provided together with the unit. The test liquid is used for uniformity/sprayability test, leakage test, Injecting volume test and Auto. test. The cleaning detergent is used in Combustion Chamber cleaning. The ultrasonic cleaning uses special injector detergent (or test liquid and detergent that comes with by the unit).

2.3 Setup of top feed injector

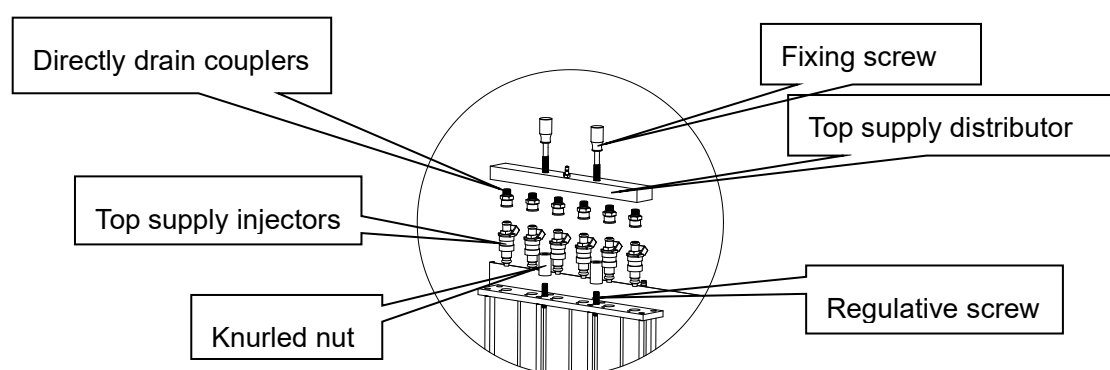


Fig 3

setup precautions:

1)Select a threaded or plug-in top oil feed connector based on the sealing form at the top feed fuel injector.

2)For threaded type, there are two forms: coarse tooth straight oil discharge joint and fine tooth straight oil discharge joint; For plug-in type, there are direct oil discharge connector 1 and direct oil discharge connector 2, which meet the use of different specifications of fuel injection nozzles.

3)If the injector is placed on the support plate and cannot be fixed directly through the through-hole, a wide edge sleeve/narrow edge sleeve needs to be used for auxiliary support.

4)It is necessary to adjust the relative position of the knurled nut and the adjusting screw to ensure that the fuel injector is reliably set up on the equipment.

2.4 Setup of side feed injectors

Note: The accessories for the side oil fuel feed injector are optional.

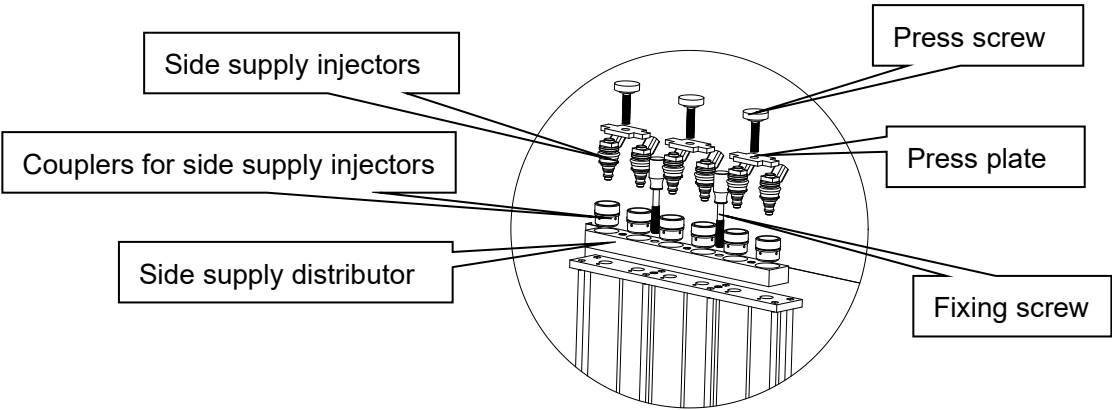


Fig 4

setup precautions:

- 1)Select the appropriate side drain joint according to the specifications of the fuel injector.
- 2)Before setup, it is recommended to apply lubricating the sealing ring to facilitate the setup of the fuel injection nozzle, joint, and oil distributor. For unused cylinder, distributor should be installed with plugs and plugs to ensure normal fuel supply testing.

3. Function operation description

3.1 First Use

The brand-new unit screen will display the first boot settings when power on. The booting set including unit and language, select the unit and language by direction keys then press ENTER key to start operate the machine.

First Startup Setting Unit BAR Language ENGLISH	THINKCAR
First use	Starting up

3.2 Symbol details

Homepage	The homepage of the machine is shown in the right illustration; it moves the cursor by pressing the direction buttons to select a function, and the description of the function is displayed at the bottom of the screen. Press	
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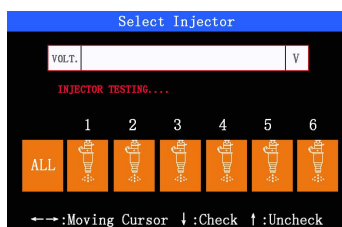
	the ENTER key to activate the function.	
Operation Panel	The direction icons on the panel are the selecting and regulating buttons. Press  button to confirm, press  button to escape, press  key to drain oil from glasses tube, and press  key to release the oil pressure.	

3.3 Regular Icons

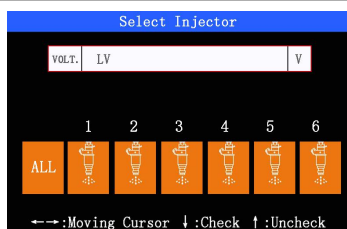
Icon			Illustration
			Injector working or not
			Vehicle speed simulation
			Pulse Time be adjust or not
			Working Time be adjust or not
			Working Pressure on or off

3.4 Injector Test

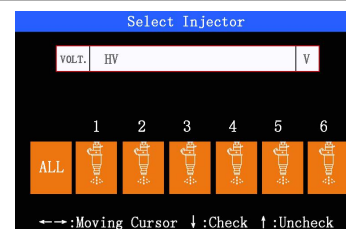
Select the  Injector Test function to detect the injectors type



Solenoid injectors



Piezoelectric injectors



INJECTION TEST

VOLTAGE/RESISTANCE TEST

PULSE WIDTH TEST

INJECTION TEST

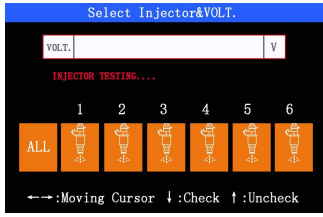
Minimum Voltage Detection

PULSE WIDTH TEST	PULSE WIDTH TEST	Minimum Voltage Detection
Vol 12 V	#1 1.0 ms	#1 100 V
R1 1.8 ohm	#2 1.0 ms	#2 100 V
R2 1.8 ohm	#3 1.0 ms	#3 100 V
R3 1.8 ohm	#4 1.0 ms	#4 100 V
R4 1.8 ohm	#5 1.0 ms	#5 100 V
R5 1.8 ohm	#6 1.0 ms	#6 100 V
R6 1.8 ohm	Test Done.Press "EXIT" to exit	

3.5 Uniformity & Spray ability

The uniformity and spray ability test is designed to find the differences in injecting between different injectors on one vehicle under the same working conditions. This test can show the combined effect of injector electrical performance, orifice variation and clogging on the injector nozzle.

Injectors mounting and testing instructions

1)Mount the injectors on the machine as Fig.3 or Fig.4.													
2)put the pulse cable plug into the injector socket.													
3)Press the  key to drain liquid in the glass tube before test.													
4)Select the icon  or icon  on the homepage and access the function operating page, the machine detect the injectors type automatically and then press  key start test.													
5)Different injector have different testing Parameters, solenoid injector is pulse width and the piezoelectric injector is duty ratio. Press  or  key select item and set the value by  or  key.	<table> <tr> <th>UNIFORMITY TEST</th><th>UNIFORMITY TEST</th></tr> <tr> <td>Timer 5 MIN</td><td>Timer 5 MIN</td></tr> <tr> <td>Rev 1000 r/m</td><td>Rev 1000 r/m</td></tr> <tr> <td>PW 5.0 ms</td><td>DR 50 %</td></tr> <tr> <td>P 3.0 BAR</td><td>P 3.0 BAR</td></tr> <tr> <td>VOLT. :12V</td><td>VOLT. :120V</td></tr> </table>	UNIFORMITY TEST	UNIFORMITY TEST	Timer 5 MIN	Timer 5 MIN	Rev 1000 r/m	Rev 1000 r/m	PW 5.0 ms	DR 50 %	P 3.0 BAR	P 3.0 BAR	VOLT. :12V	VOLT. :120V
UNIFORMITY TEST	UNIFORMITY TEST												
Timer 5 MIN	Timer 5 MIN												
Rev 1000 r/m	Rev 1000 r/m												
PW 5.0 ms	DR 50 %												
P 3.0 BAR	P 3.0 BAR												
VOLT. :12V	VOLT. :120V												
6)Press ENTER key to start test. Observe the liquid level and injectors. Adjusting the speed, pulse width(duty ratio) and pressure by press direction keys or press drain button to drain the liquid during the test.	<table> <tr> <th>NIFORMITY TEST...</th><th>NIFORMITY TEST...</th></tr> <tr> <td>Timer 5 MIN</td><td>Timer 5 MIN</td></tr> <tr> <td>Rev 800 r/m</td><td>Rev 800 r/m</td></tr> <tr> <td>DR 50 %</td><td>DR 50 %</td></tr> <tr> <td>P 3.0 BAR</td><td>P 3.0 BAR</td></tr> <tr> <td>VOLT. :12V</td><td>VOLT. :120V</td></tr> </table>	NIFORMITY TEST...	NIFORMITY TEST...	Timer 5 MIN	Timer 5 MIN	Rev 800 r/m	Rev 800 r/m	DR 50 %	DR 50 %	P 3.0 BAR	P 3.0 BAR	VOLT. :12V	VOLT. :120V
NIFORMITY TEST...	NIFORMITY TEST...												
Timer 5 MIN	Timer 5 MIN												
Rev 800 r/m	Rev 800 r/m												
DR 50 %	DR 50 %												
P 3.0 BAR	P 3.0 BAR												
VOLT. :12V	VOLT. :120V												
7)Press "ENTER" button while test finished.	Test Done Test Done, Press" ENTER" to exit												

Caution:

a)The drain solenoid valve is closed. The uniformity test performed in this state. Press the drain

button to drain the liquid during the test.

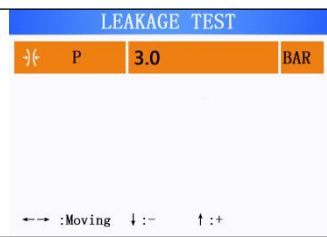
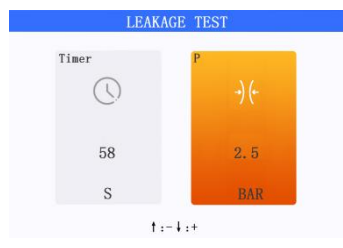
b) Normal injectors have the same spray angle and uniform and spray performance. Replace the bad injectors.

c) In this test mode, you can test the mini open pulse time through adjust the pulse time from short time to longer until the injectors is open. This time is the injector mini opening time.

3.6 Leakage test

The leakage test checks the sealing of the injector needle valve at rated pressure and determines if the injector is dripping poorly.

Leakage test instructions

1) Mount the injectors on the machine as Fig.3 or Fig.4.	
2) Put the pulse cable plug into the injector socket.	
3) Press the  key to drain liquid in the glass tube before test.	
4) Select the testing Parameters by press  or  key and set the value by  or  key. Referencing pressure data in the database.	
5) Press ENTER key after setting then access test session. Observe the glass tube and the injectors. The time is fixed during the test. Adjusting test pressure by press direction keys or press drain button to drain the liquid during the test.	
6) Press "ENTER" button while test finished.	

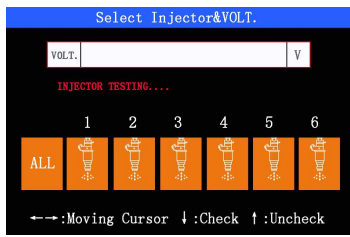
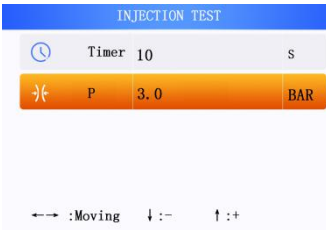
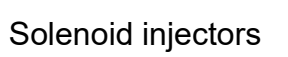
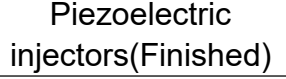
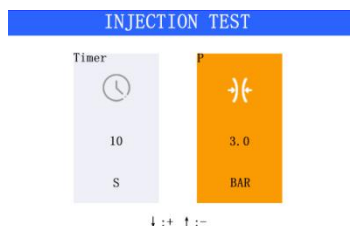
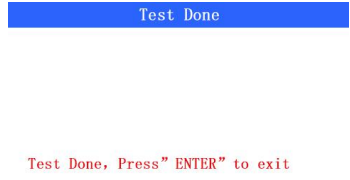
Remarks:

The injector drip should be less than 1 drop in 1 minute (or in accordance with vehicle specifications). The default time for the test is 1 minute.

3.7 Injection test

The injection test checks the spray rate of the injector in 10 seconds whether meets the corresponding technical requirements. It is injector wearing or clogging make spraying rate deviations. The technical characteristics of piezoelectric injectors do not support fuel injection quantity testing.

Injection test instructions

1)Mount the injectors on the machine as Fig.3 or Fig.4.	
2)put the pulse cable plug into the injector socket.	
3)Press the  key to drain liquid in the glass tube before test.	
4)Select the icon  on the homepage and access the function operating page, select the injectors to test, press  key access next.	
5)Select the testing Parameters by press  or  key and set the value by  or  key. Referencing pressure data in the database or vehicle maintenance manuals.	
	
	 
6)Press ENTER key to start test. Observe the glass tube liquid level and injectors. The test parameter is fixed during the test.	
7)Press "ENTER" button while test finished.	

3.8 Auto mode I test

The Auto mode 1 test process includes all of the above tests (leakage test, 10-second injection test, high-speed test, medium-speed test, idle test, acceleration&deceleration test). This function allows you to test a more comprehensive performance of the injectors by simulating various engine conditions.

Operation Procedure (setup as above)

- 1)Before the test, if there is any test liquid in the glass tube, please press the "Drain" button to drain it into the tank.
- 2)Select auto mode 1 in the main menu, then press the ENTER key to start the test.
- 3)According to the technical specification of the injector, press  and  to adjust the test pressure.
- 4)When the test is finished, the procedure will stop automatically and the buzzer will beep.

The solenoid injector auto mode 1 testing process as follows:



The piezoelectric injector auto mode 1 testing process as follow:



You can also run any test function individually and set the parameters according to the test requirements. For detailed operations, refer to the "Operations" section.

3.9 Auto mode 2 test

The Auto mode 2 test process includes all of the above tests (leakage test, 15-second injection test, high-speed test, medium-speed test, idle test, acceleration & deceleration test and Min. opening time test). This function allows you to test a more comprehensive performance of the injectors by simulating various engine conditions.

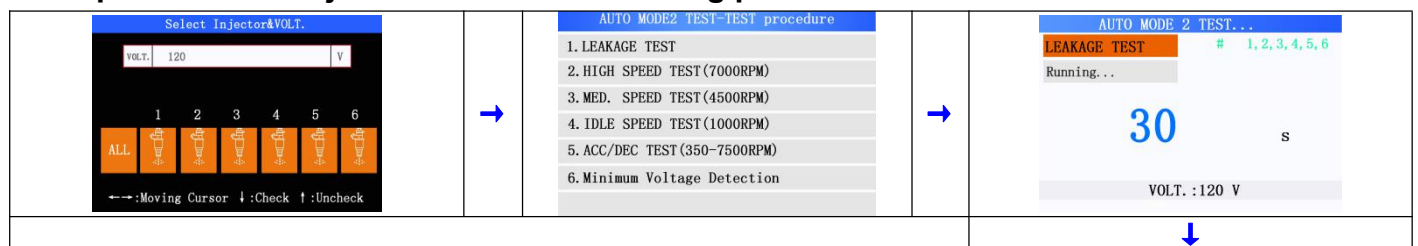
Operation Procedure (setup as above).

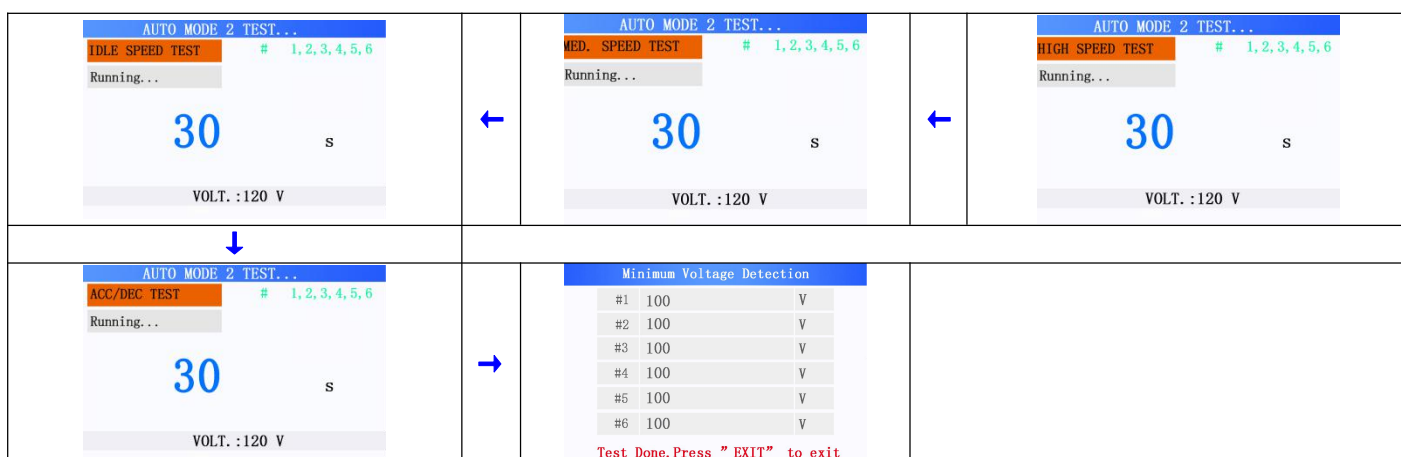
- 1) Before the test, if there is any test liquid in the glass tube, please press the "Drain" button to drain it into the tank.
- 2) Select auto mode 2 in the main menu, then press the ENTER key to start the test.
- 3) According to the technical specification of the injector, press  and  to adjust the test pressure.
- 4) When the test is finished, the procedure will stop automatically and the buzzer will beep.

The solenoid injector auto mode 2 testing process as follows:



The piezoelectric injector auto mode 2 testing process as follows:





3.10 Ultrasonic Cleaning

Description :

1) Plug the pulse cable into the injectors or pumps.	
2) Put injectors or pumps inside the tank.	
3) Fill the tank with cleaning solution and maintain the liquid level 20 mm above the injector nozzles.	
4) Select the icon on the homepage and press ENTER key then get in the injector page, select the injector number that you test.	
5) Press ENTER key to set the test time then press ENTER key to confirm to start ultrasonic cleaning.	
6) Press "ENTER" button while test finished.	

When the test is finished the test working auto stop, pick the injectors out and wiping the test liquid off and prepare the next test.

Caution:

- a) Do not run the ultrasonic cleaner without any liquid agent inside the tank which will damage the unit.
- b) Do not allow pulse signal wires or plugs to be immersed in the cleaning agent in the ultrasonic tank.

3.11 No-disassembly cleaning for vehicle fuel system

The no-disassembly cleaning function requires the no-disassemble connectors kit, the no-disassembly connector kit is optional and needs to be purchased separately.

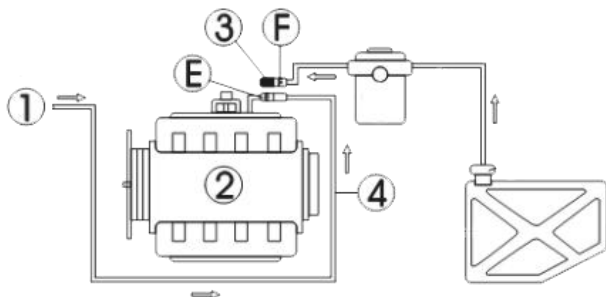
As the fuel contains impurities, after the car has been used for some time, the carbon and gum produced by fuel combustion will easily adhere to the injector nozzles, intake and exhaust ports, intake and exhaust hoses, throttle and combustion chambers, and the sludge and impurities accumulated on the fuel system piping and fittings will impede the flow of fuel. Therefore, the fuel supply system of your car engine must be cleaned regularly. No-frills cleaning is an easy, convenient way to maintain your fuel system.

Procedures:

- 1) Please check if there is test liquid or detergent inside the fuel tank before Combustion Chamber cleaning. If test liquid is in the tank, replace it with detergent.
- 2) Blend the detergent with the fuel at a certain ratio, and fill the mixture into the fuel tank.
- 3) The connection of engine fuel pipes has been shown in "Connecting" below.
- 4) Select **Combustion Chamber Cleaning** function, and set the cleaning time.
- 5) Press **ENTER** key to start the function, adjust the fuel pressure by pressing ◀ or ▶ keys.
- 6) Start the engine to begin cleaning.

Connecting:

- 1) Disconnect the fuel supply hoses (E, F) of engine fuel system (wrap the connector when disconnecting the connector), and then choose a proper connector and connect it to the E end.
- 2) Stop the other end of the disconnected end (F) with a proper stopper, (use when the fuel pump has the fuel return function only) or remove the fuse of fuel pump or disconnect the power cable of fuel pump.



- 1-Injector Cleaner & Tester;
- 2-Engine;
- 3-Stopper;
- 4-Fuel-inlet hose to engine.

3.12 Tidy up after cleaning

- 1) After the cleaning is completed, turn off the Motorcycle Ignition Switches reconstitute the link of the

fuel hoses then start the motorcycle to check the leakage of fuel system.

2)At last please clean the fuel tank and hose line with test liquid. (If there is residual detergent inside fuel tank, please.)

3)Tidy up and make preparation for the next cleaning.

Note:

a)When cleaning, care must be taken as the detergent is inflammable. Prepare for a fire extinguisher.

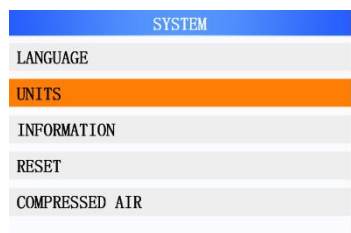
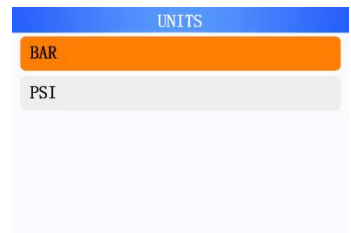
b)Be sure that all hose lines are well connected and there is no leakage on the hose lines before performing cleaning.

4. System

4.1 Language

1)Select setting icon  in homepage, press ENTER button to access setting page, select language then press ENTER key access language setting.	
2)Select the language you need and press ENTER to confirm your option.	

4.2 Units Setting

1)Select setting icon  in homepage, press ENTER button to access setting page, select UNITS then press ENTER key access unit setting.	
2)Select the BAR or PSI and press ENTER button to confirm the option.	

4.3 Equipment info query

Select the icon  on the homepage, press ENTER BUTTON access the system setting, then select the INFORMATION and press the ENTER button to query the equipment info.

SYSTEM		INFORMATION	
LANGUAGE	SN:	0000000000	
UNITS	Software:	V1.0.0	
INFORMATION	Hardware:	V1.0	
RESET			
COMPRESSED AIR			

4.4 System Reset

Select the icon  on the homepage, press ENTER button access the system setting, then select the RESET and press the ENTER button to access system reset, press ENTER button to reset system or press EXIT button back previous menu.

SYSTEM		RESET
LANGUAGE		Press "ENTER" to reset
UNITS		Press "EXIT" to exit
INFORMATION		
RESET		
COMPRESSED AIR		

4.5 Compressor Air

1) Mount the pneumatic male adapter in the AIR INTAKE port on the machine as the left figure.



2) Select the icon  on the homepage, press ENTER button access the system, then select the COMPRESSED AIR and press the ENTER button to access COMPRESSED AIR selection, select NO or YES by press  or  keys then press ENTER button to confirm selection or press EXIT button back previous menu.

SYSTEM		COMPRESSED AIR
LANGUAGE	COMPRESSED AIR	Y
UNITS		
INFORMATION		
RESET		
COMPRESSED AIR		

4.6 Database Inquiry

The system provides the most database of fuel system pressures for most models as a reference value for test data.

Select the icon  on the homepage, press ENTER button access DATABASE select the vehicle model press ENTER to query vehicle pressure info.

DATABASE		DATABASE (Unit: bar)	
TOYOTA	TOYOTA	MIN	MAX
HONDA	TOYOTA 3.0	2.8	
NISSAN	PREVIA	2.7	3.3
MITSUBISHI	LEXUS 300 400	2.7	3.0
MAZDA	CAMRY 3.0	2.7	3.0
BMW	LAND CRUISER	3.0	
GM	COROLLA	2.7	3.1

4.7 Help Info

Select the icon  on the homepage, press ENTER button to access the help info and press down button to next page.

HELP

W01:Test Fluid is insufficient

-Please supply enough test fluid.

-Check if the test fluid is sufficient

-Check if the fuel pump is working

5. FAQ

1)The unit does not respond when the power is turned on.

Check the fuse on the lower right side of the unit and replace the fuse (5A) if it is damaged or broken.

2)Fuel distributor (rail) is leaking.

Check the o-ring and replace if damaged or broken. Do not tighten the adapter fitting too much, otherwise, it may cause leakage.

3)When running, there is no working pressure.

When using a new machine for the first time, or if the machine has not been used for a long time, there may be no fuel pressure. In this case, select the "first time use" function in the system functions, and then do the following:

- a)Connect the test connector to the unit's fuel supply line and insert it into the fuel filler neck as shown in the illustration.
- b)Then, run the first time use function.
- c)When liquid comes out of the test connector, stop the operation. The device stops automatically after 30 seconds of operation.

4)There is no oil feed pressure, the buzzer sounds.

The machine has a lack of fuel warning function, when there is not enough fluid in the tank, the machine will beep, then automatically shut down the fuel pump and injector nozzle, and return to the stop state. Add test fluid to the unit until the buzzer stops beeping.

5)Completely emptying the test fluid from the glass tube requires pressing the Drain button several times.

The solenoid valve will automatically stop after 15 seconds and will need to be emptied more times if more fluid is present.

Precautions

- a)Do not place anything on the control panel to prevent breaking the test measuring cup/glass panel.
- b)Do not disconnect the oil feed connection until the system pressure reaches "0" to prevent test fluid from spraying out.
- c)Always ensure that the unit is reliably earthed when in use.

d)The device has a lack of oil alarm function. When the liquid level falls below the minimum line, the device will emit a warning sound and at the same time automatically stop the oil pump and injector nozzle work. Until the test liquid is sufficient, the equipment will be able to work normally.

e)Clean the control panel in time, pulse signal line please ask stained test liquid, cleaning agent.

WARNING

Do not disassemble this equipment for servicing without authorized personnel. Damage resulting from this is not covered by the warranty. In the energized state, there is strong electricity inside the device and the housing must not be opened. It is strictly forbidden to repair the equipment with electricity! All injuries resulting from violation of this warning are not covered!

Arrangement after use

- a)It need to do some job as below after use.
- b)Press the "Drain" icon to drain the test fluid into the fuel tank.
- c)Turn off and pull of the power plug.
- d)Clean the machine with a soft cloth.
- e)Drain the test fluid from the fuel tank into a container to avoid evaporation. If reuse, store the it in a safe place and dispose of it according to the relevant regulations if it is too dirty.

6. Transporting and Storing

6.1 Transporting

- 1)Before being packed, the liquid inside the fuel tank should be drained completely to avoid overflowing as transporting.
- 2)Move only by hand or lift with soft belt.
- 3)No package no lifting tools or long-distance transportation.
- 4)To prevent the unit from shocking and knocking, make sure it is on the base seat and in the packing case during transportation. Firstly pack the unit with the matter similar with plastic strip and add the filling material (such as foam or sponge, etc.) between the unit and packing case to avoid scratching the surface when the unit shakes.
- 5)Make sure that the maximum incline angel does not exceed 45 ° . Do not place the unit up-side-down.

6.2 Storing

- 1)Store only in dry area and keep away from water before the unit is unpacked.
- 2)Store the machine in well-ventilated area and do not expose it to direct sun shine or rain.

6.3 Setup Environment

1)Keep a distance of no less than 200mm between the unit and any wall or other substance. The unit should be put in well-ventilated area. Make sure the temperature is within $-10^{\circ}\text{C}+40^{\circ}\text{C}$.

2)The unit has been well grounded for safety operation. Please confirm that the power socket is also well grounded.

Warning!

If an extension cord is used, the rated current should be equal to or greater than that of the equipment.

Warranty terms

This warranty applies only to customers and dealers who have purchased Thinkcar products through the normal course of business.

For a period of one years from the date of delivery, Thinkcar Inc. warrants its electronic products against damage caused by defects in material or workmanship. Damage to this equipment or parts caused by misuse, unauthorized alteration, use for purposes other than those for which the product was designed, or failure to operate in the manner specified in the instruction manual is not covered by this warranty. Damage to automotive gauges caused by defects in this equipment is limited to repair or replacement only, and Thinkcar is not liable for consequential or incidental damages. Thinkcar will determine the nature of the damage to the equipment in accordance with its own prescribed methods of inspection. No agent, employee, or commercial representative of Thinkcar is authorized to make any confirmation, recommendation, or promise in connection with Thinkcar products. No agent, employee or commercial representative of Thinkcar is authorized to make any confirmation, representation or promise with respect to Thinkcar products.

Waiver of Declaration

The above warranty may be substituted for any other form of warranty.

Order Notification

Replacement parts and optional accessories can be ordered directly from Thinkcar authorized dealers, please specify the quantity, part number and part name.

Customer service center

If you encounter any problems during the operation of the equipment, please call: 1-909-757-1959.

When the equipment needs to be repaired, please send it to Thinkcar with the warranty card, product certificate, purchase invoice and a description of the problem. If the equipment is within the warranty, Thinkcar will repair it free of charge; if the equipment is outside the warranty, Thinkcar will charge for the repair and add the return shipping cost.

Thinkcar Company Address:

720 S Rochester Ave Unit B, Ontario, CA 91761 USA.

Customer Service Email: service@thinkcar.com

Thinkcar website: www.thinkcar.com

Statement:

Thinkcar reserves the right to change product design and specifications without prior notice. The appearance and color of the actual product may differ from that shown in the manual, please refer to the actual product. We have tried our best to make all the descriptions in the book accurate, but there are still some inaccuracies, if you have any questions, please contact the dealer or Thinkcar after-sales service center, the company does not assume any responsibility for any misunderstandings arising from the consequences.