

Manual of the CRS200A CR Injector flush & test bench



CHINAHANJI POWER CO.,LTD PUTIAN CITY



Letter to the user

Dear Users:

Thank you to purchase the CHJ's CRS200A test bench.

Before using, pls do read the manual carefully, and keep it well.

It's our great honour to be your supplier.

To make sure that you can use the CRS200A test bench asap, we prepare this instruction manual.

We try to make the manual comprehensive and concise. With this manual you can learn the basic knowledge of this test bench. We strongly recommend you to read this manual before using. It will help you to operate the test bed better.

We have done our utmost efforts to avoid any artificial errors to ensure all the information in this manual accurate and reliable. But we can't assure the errors what we haven't found out before printing, and the omission we can't control happened in the printing, binding and distributing.

Please understand us.

Sometimes, in order to improve the performance and the reliability of the parts and the whole bench, we'll do some minor adjustment on the hardware or software configuration. Maybe it will result in a little difference between the actual situation and the manual, but it won't take any materially effect on usage of this machine.

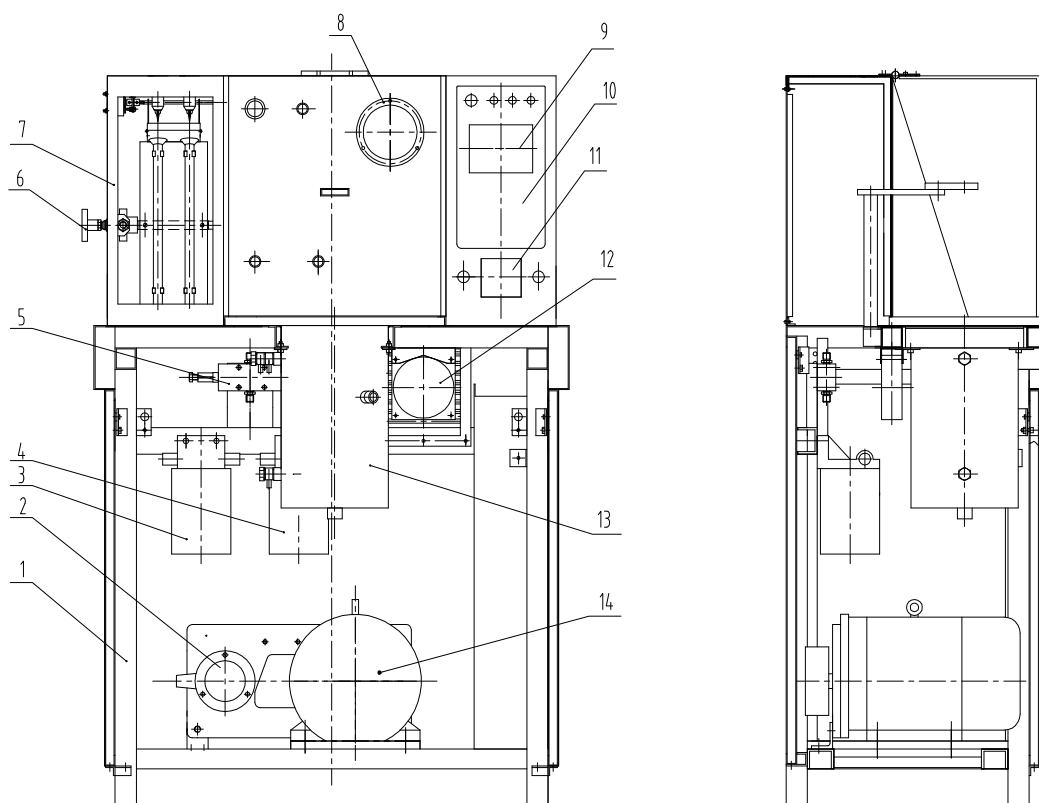
Thank you for your cooperation!

Statement:

ChinaHanji Power Co., Ltd. (CHJ) solemnly declares this product—CRS200A's copyright belongs to 2010CHJ. All rights reserved.

Please follow the manual's instructions to install and test the facility, so that you can use the test bench more safely and correctly.

一、Equipment Layout Description:



NO.	NAME	FUNCTION
1	Rack assembly	Parts-fixed
2	CR injection pump	Measurement system in high pressure
3	Secondary filter	Test oil impurities
4	Primary filter	Test oil impurities clean-up, oil-water separation
5	High-pressure oil rail	high-pressure-oil storage, pipelines and sensors connection
6	upturned handle for measuring-cup	Flip cup for the next measurement
7	Fuel delivery Measurement System	measurement of fuel injection amount
8	inlet oil pressure gauge of pump end	Display the oil inlet pressure of common rail pump



9	Display screen	Function Display
10	Function Button	Function Selection
11	printer	Print Out Of Results Comparison
12	cooling system	test liquid cooling
13	oil tank	liquid storage
14	motor	common rail pump power Source

一、Notes before using

- 1、Checking if the contents are consistent with the packing list; In case of any discrepancies , pls contact with the factory or dealer for solution.
- 2、Check if there is any damaged or abnormal about this equipment.
- 3、 Before using, please place the equipment on a flat ground to ensure it running smoothly.

二、Safety Precautions

- 1、 This test bed uses both 380V electric power and 220v electric lighting power supply. The plug of 220V power should be reachable when the test bench is installed in place. Don't unplug the power plug by pulling the power cord. The cord can't be pressed by the test bench legs and other heavy objects. The cord can't have the problem, such as broken, pressure fine and so on. 380V cable must be installed by user or onsite installation & commissioning personnel from the supply company.
- 2、 220V&380V power supply should use separate plug and separate controlled electrical box. The ground wire must be reliable grounded. The socket should be qualified for the 3C state certification.
- 3、 The users should use overload protection device of appropriate specification, such as electric meter, wires, socket, and gates, in which, 220V power socket should be able to withstand 10 amperes current, 380V gates should be able to withstand 25 amperes current.
- 4、 The user should determine the rotation of CR injection pump is left (CR pump output shaft is counter-clockwise as the observer facing the CR pump pulley) by trial before putting 380V power on.. After determining the wiring correct, reliably connect four power cables and the equipment.
- 5、 The test bench must be away from heat source and prevents the direct sunlight as much as possible from the plastic, rubber aging.
- 6、 Do not use flammable cleaning agents, organic solvents or corrosive liquid to clean bed's outside and the rubber parts. Don't use the flammable aerosol near the test bench. Don't pull in / out the socket and open & close the gates when



flammable gas leak.

- 7、 The test bench can't be put in the open air and over-humid places, otherwise water drops on the electrical parts will cause ignition damage or other accidents. In case the electric box or electric patch parts accidentally get wet or water leaked, it must be air-dry before use.
- 8、 Please don't put the test bench on the table above the ground to prevent falling.
- 9、 Please don't do any operation near the drive pulley when the motor is running to avoid danger.

一、 Caution:

- 1、 The bench's safety shield has a very good protective effect. Please make sure the safety shield is closed during operation.
- 2、 During working, the oil spray temperature is quite high and its pressure is also dangerous for people (especially if the injector has any faulty) , pls don't touch the oil spray by injector with your body directly.
- 3、 Please switch off the power after the motor stops in normal operation. Never switch off the power directly when the motor is running.
- 4、 In case the test oil leakage or ejected during the working process, pls stop the bench immediately for maintain and troubleshooting.
- 5、 When Bulging phenomenon found on some place of the high-pressure hose, pls stop using the bench immediately, and contact the manufacturer or dealer to replace or buy the equipment to avoid any danger.
- 6、 During the start of the test bench, the injector can be disassembled only after the lamp of "removable injector" lights.
- 7、 The test bench has the level alarm device itself. Once the liquid was below a certain capacity, the motor will automatically stop running and the level alarm lamp lights. Adding the test oil into the tank can solve the problem.
- 8、 When finishing, after one hour later, pls remember to add the shield on the bench, to prevent the dust from polluting the operating table and other oil collection site.
- 9、 Please ensure the minimum radius of curvature larger than 180mm when using the high-pressure hose, otherwise it will accelerate the aging.

二、 Equipment installation, calibrating (usually completed by our professional staff)

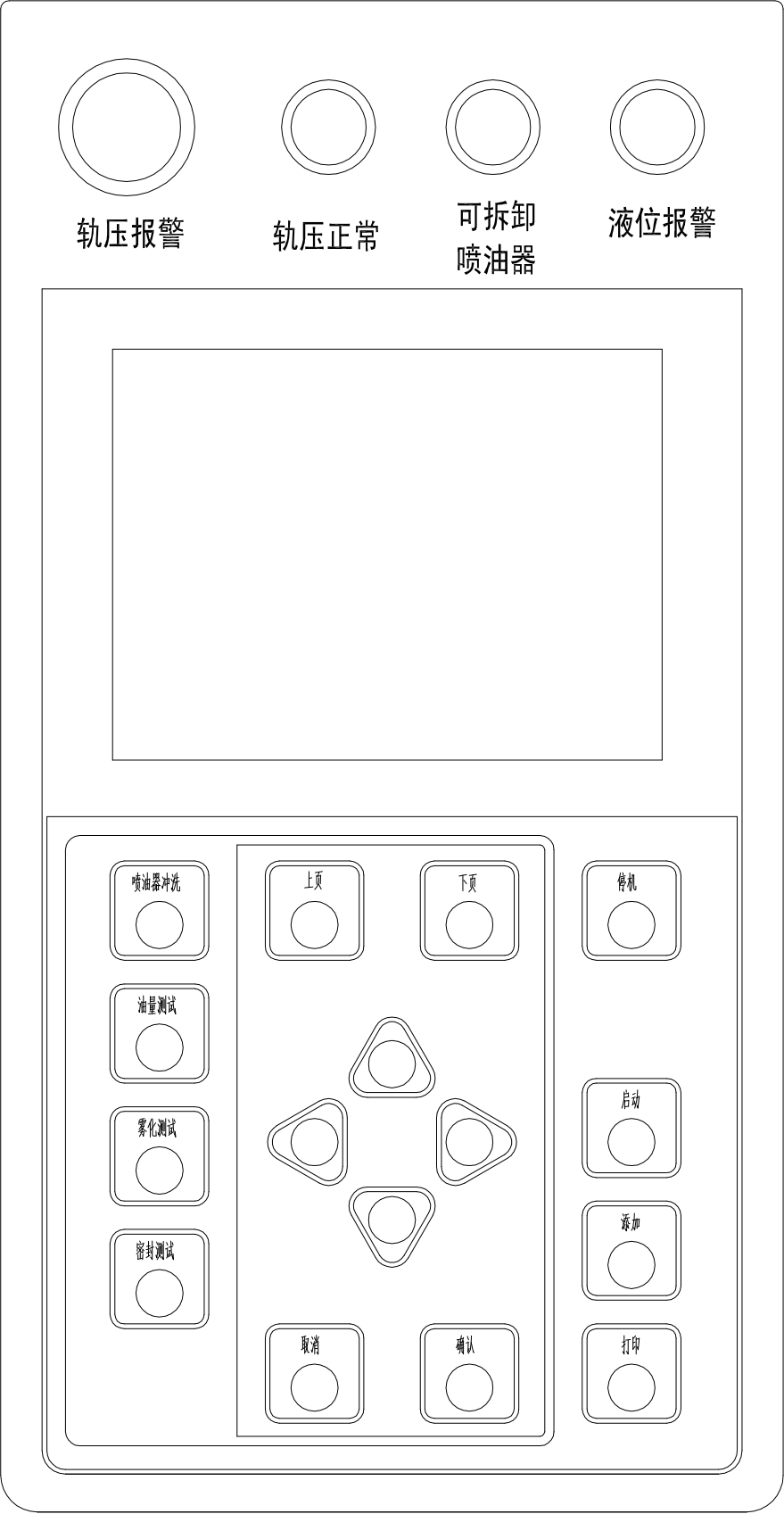
- 1、 Take out the bench and checking without exception. Remove the fuel tank cover, then add the test oil into tank to the level of peep hole. Due to the limited capacity of tank, after the equipment running, observing the fuel lever and feeding oil at



any needed time.

- 2、 Press the(primary) filter manual pump until the test oil flows back to the tank. (If long time no oil returned, pls check the pipeline's sealing).
- 3、 Open the side door of the electrical box, pull the cable through the wire hole on the bottom board of the electric box, connect the four cores wire separately to the block of the test bench, and close the gates. Plug on the socket of 220V power, checking whether the bench shell is charged or not with the test-charge pen. If with charge, pls check the connected wiring. If normal, go to the next step.
- 4、 Set the power switch to "ON", and select to start the motor. When the motor started, press the "stop"button immediately to observe the rotation of the CR pump (the rotation should be left), that is to say, the drive pulley of the CR pump should be counter-clockwise when the operator facing the CR pump's drive pulley. If not, please adjust the connecting wires until rotation of the CR pump becomes left , then to next step. Note: If the pressure gauge shows no pressure after the motor started, mostly the motor rotation is wrong. If not, pls contact the manufacturer for solution.
- 5、 Choose the suitable fixture to install the injector on the test bench for functional test. Notice, please select the appropriate tool and accessories to test different injectors.

三、 Keypad description



Keypad shown above is divided into 3 regions: Indicator area, Screen Display, keypad.

1、 Totally, 4 lamps in the indicator area:

Rail pressure alarm lamp: when the rail pressure exceeds 185Mpa (the motor stops working when relief valve opened on 205Mpa) the rail pressure alarm lamp will light, usually, at this time, the safety overflow valve will open to ensure the safety rail pressure. If the rail pressure continued to rise, pls press “stop” button to close the motor.

Lamp of normal rail pressure: This lamp lights with rail pressure in the range of 25-185Mpa

Removable lamp: This lamp lights as the rail pressure under 25Mpa.

Liquid lever alarm lamp: This lamp lights when the liquid level under the safety level.

2、 Screen display: this area shows the equipment operating instructions and displays the parameters of the injectors.

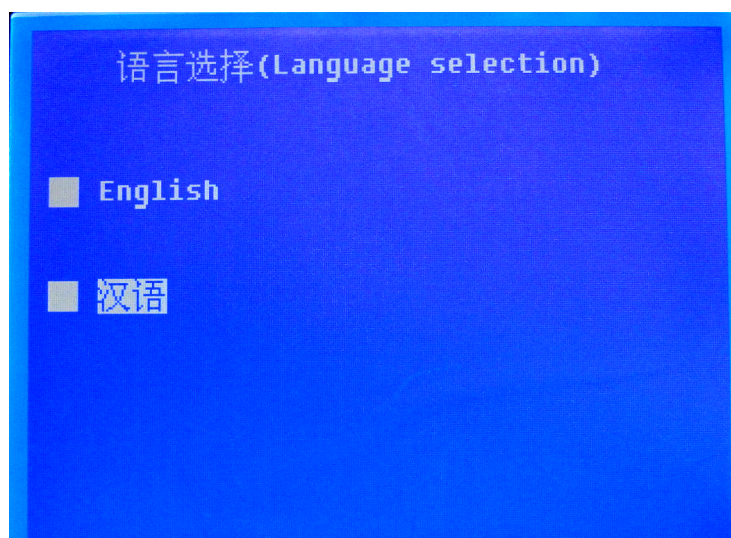
3、 Key areas: the functions are as follows:

No.	Key Name	Function
1	Direction key	Totally 4 arrow keys for cursor movement 4 directions.
2	Injector flush	After selecting the injector model, directly start the “injector flushing” function without any other testing before.
3	Fuel delivery	After selecting the injector model, you can start directly “Oil test” function without any other test or repeat this function after finishing one test.
4	Spray test	After selecting the injector model, directly start the “spray test”function. After the oil pressure set, injector sparys once so that the operator can observe facilitately with each press of this key
5	Sealing Test	After selecting the injector model, directly start the “ seal test” function, or repeat after finishing this function test.
6	Pageup	Page up and return to the function
7	pagedown	Page down
8	Stop	When the motor works, press this key to stop motor and return to the initial page. As motor not work, press this key to return to the initial page.
9	Start	As motor not work, press this key to start the motor.
10	Add	Press “adding injector parameter” button, the parameters which cursor located is cumulated or switched. Repeat pressing this button, parameter can be recycled.
11	Print	After finish the “fuel delivery test”, press the key and then the press

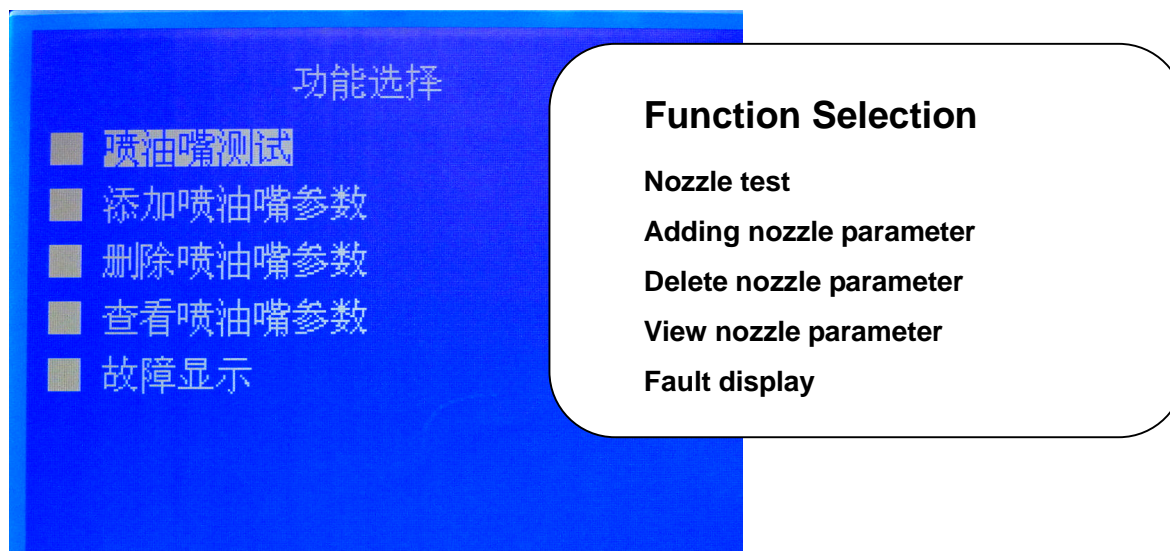
		reference will appear.
12	Enter	Press this button to run the selected function
13	Cancel	Press this button to escape the selected function, and return to the previous function.

Test bench operation:

Turn on the power switch and then the display screen appears (following contents of the images is only for illustration, and these datas aren't correspondence with any real injectors.)



Chinese is the default status for the equipments sold in China mainland. Simply press “enter” button to enter the function selection interface

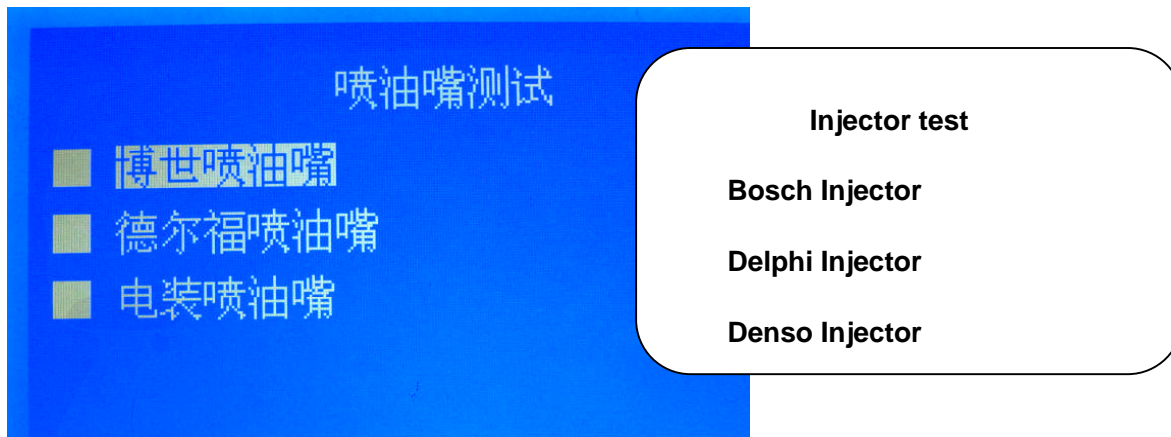


Select the appropriate fixture to fix the tested injector, to ensure good access of the return lines. and good seal.

(1)、Injector-test function

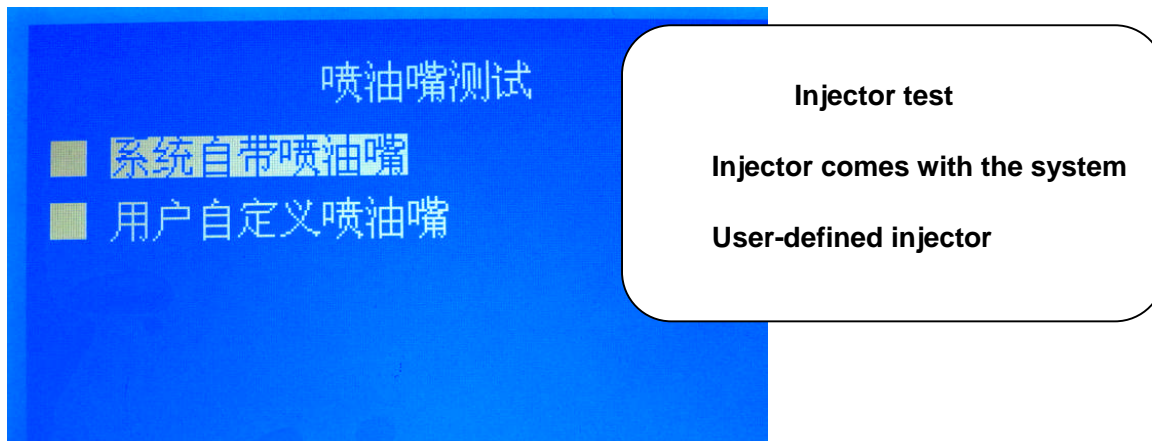
Use up & down button to select the appropriate function, and press “enter” button to enter.

If “nozzle test” function is selected, it will enter into the following interface:



Use up and down buttons to select the injector manufacturer, press “enter” to enter.

If “Bosch injector” is selected, then will enter into the flowing interface(same steps and methods if selected other injectors, not repeat here)



“Injector comes with the system” is on behalf of the equipment’s original data. “User-defined injector” is on behalf of the data which the user added. Selected via up and down button, and press “ enter” to enter

博世喷油嘴

0445120176

0445120171

0445120172

0445120173

0445120174

0445120175

0445120176

0445120177

0445120178

0445120179

0445120180

0445120181

0445120182

0445120183

0445120184

0445120185

0445120186

0445120187

0445120188

0445120189

0445120190

0445120191

0445120192

0445120193

Bosch Injector

Choose the tested injector model via direction key, press “enter” key to enter:

测试功能选择

■ 喷油嘴冲洗

■ 喷油量测试

■ 密封性测试

■ 雾化测试

Injector flush

Fuel Injection Quantity test

Sealing performance test

Spray test

Testing-function selection

Choose the testing function through the up/down key and press “enter” key to enter.

喷油嘴冲洗

测试前请确认：

1. 启动电机
2. 安装喷油器
3. 安装消雾器

按【确认】开始测试,按【取消】退出测试。

Injector flushing

Please confirm before testing;

- a) start the motor
- b) install the injector
- c) install antifogging filter

Press the “start” key to start the motor and press the “enter” key to start to flush the injector which is in testing.



press the "enter" key to start the test and press the cancel key to exit.

喷油嘴冲洗

喷油器类型: 0445120170

燃油温度: 108 度

目标轨压: 160 (±2) Mpa

实际轨压: 00 Mpa

正在建立轨压,请稍候...

Injector flushing

Injector model: 0 445 120 170

Fuel temperature: 108 Celsius degree

Target common-rail pressure: 160(±2)Mpa

Actual common-rail pressure:00 Mpa

Rail pressure is in established, pls wait

Start to flush after the common-rail pressure is established.

喷油嘴冲洗

喷油器类型: 0445120170

燃油温度: 108 度

目标轨压: 160 (±2) Mpa

实际轨压: 160 Mpa

正在进行喷油嘴冲洗,请稍候...

Injector flushing

Injector model: 0 445 120 170

Fuel temperature: 108 celsius degree

Target common-rail pressure: 160(±2)Mpa

Actual common-rail pressure:160 Mpa

The injector is being flushed, please wait

After finishing flushing, the menu will display as followings

喷油嘴冲洗

喷油器类型: 0445120170

燃油温度: 108 度

目标轨压: 160 (±2) Mpa

实际轨压: 160 Mpa

喷油嘴冲洗完成,按<喷油器冲洗>再次冲洗

Injector flushing

Injector model: 0 445 120 170

Fuel temperature:108 Celsius degree

Target common-rail pressure: 160(±2)Mpa

Practical common-rail pressure:160 Mpa

The injector flushing is finished, please press < injector flushing> to flush again!

Now press "injector flushing" to continue flushing and press "cancel" key to enter the following hint information.



提示信息

正在进行喷油嘴冲洗是否终止当前测试?

按【确认】退出当前测试

按【取消】返回当前测试

Hint information

The injector is being flushed now. Do you want to stop the current testing?

Press "enter" key to exit the current testing

Press "cancel" key to return the current testing

Press "cancel" key to return to the flushing menu. Press "enter" key to enter the function selection menu, and press "down" key to choose the injector testing function.

测试功能选择

- 喷油嘴冲洗
- 喷油量测试
- 密封性测试
- 雾化测试

Testing function selection

Injector flushing

Fuel Injection Quantity testing

Sealing performance testing

Spray testing

Press the "enter" key to enter.

喷油工况选择

喷油器类型: 0445120081

测试点	轨压 (Mpa)	喷油脉宽 (us)
全负荷	160	4000
校正	100	600
预喷	100	250
怠速	25	1000

Fuel-injection working condition selection

Injector model: 0 445 120 081;

Testing point:	(Mpa)	(μ s)
Full-load :	160	4000
Calibration:	100	600
Pre-injection:	100	250
Idle speed:	25	1000

Choose the test project by Up/Down key (Suggest going on from top to bottom), press "enter" key to enter:



喷油量测试

测试前请确认：

1. 启动电机
2. 安装喷油器
3. 安装消雾器
4. 放置油量测试量杯

按【确认】开始测试,按【取消】退出测试。

Fuel Injection Quantity Testing

Please confirm before testing;

- 1: Start the motor
- 2: Install the injector
- 3: Install antifogging filter
- 4: Place Fuel Quantity Measuring Cup

Press the "enter" key to start the test and press the "cancel" key to exit.

Please make sure the measuring cup is empty and aim

at the nozzle needle, press the "enter" key to enter the testing interface.

喷油量测试

喷油器类型：0445120170

标准喷油量：8.7 (±4.6) mm³/H

标准回油量：--- mm³/H

喷油脉宽：1000 us

喷油次数：1000 次

燃油温度：108 度

目标轨压：26 (±2) Mpa

实际轨压：17 Mpa

正在建立轨压,请稍候...

Fuel Injection Quantity Testing

Injector model: 0 445 120 170;

Standard injecting capacity: 8.7 (±4.6)mm³/H

Standard oil-return volume: ---mm³/H

Fuel-injection Pulse Width: 1000 us

Injection frequency: 1000 times

Fuel temperature : 108 Celsius degree

Target common rail-pressure 26 (±2) Mpa

Actual common rail-pressure: 17 Mpa

The rail pressure is under establishment, pls wait....

After oil pressure being set up, start the test. After it is completed, the result will be displayed as follows.



喷油量测试

喷油器类型: 0445120170

标准喷油量: 8.7 (±4.6) mm³/H

标准回油量: --- mm³/H

喷油脉宽: 1000 us

喷油次数: 1000 次

燃油温度: 108 度

目标轨压: 26 (±2) Mpa

实际轨压: 25 Mpa

测试完成,请核对试管中油量和标准值!

At present, press the "print" key and the interface display the hint information:

Fuel Injection Quantity Testing

Injector model: 0445120170;

Standard fuel-injection Quantity: 8.7 (±4.6)mm³/H

Standard oil return volume: ---mm³/H

Fuel-injection Pulse Width: 1000 ms

Fuel-injection frequency: 1000 times

Fuel temperature: 108 Celsius degree

Target common rail-pressure 26 (±2) Mpa

Practical common rail-pressure: 25 Mpa

The test completed, please check the fuel-injection Quantity measuring cup and the standard value.

提示信息

正在进行喷油量测试是否打印测试结果?

按【确认】打印测试结果

按【取消】返回当前测试

Hint information

The fuel-injection Quantity Testing is being tested. Do you want to print the test results?

Press "enter" key to print the testing results.

Press "cancel" key to return to the current testing

Press "enter" key to print the injector fuel-injection parameter and press the cancel key will display the Prompt Dialog Box

提示信息

正在进行喷油量测试是否终止当前测试?

按【确认】退出当前测试

按【取消】返回当前测试

Hint information

The fuel-injection capacity is being tested. Do you want to stop the current testing?

Press "enter" key to exit the current testing

Press "cancel" key to return the current testing

Press "enter" key to return the fuel-injection working condition interface

喷油工况选择

喷油器类型: 0445120081

测试点	轨压(Mpa)	喷油脉宽(us)
全负荷	160	40000
校正	100	600
预喷	100	250
怠速	25	1000

Fuel-injection working condition selection

Injector mode: 0445120081

Testing point: common rail pressure (Mpa)

fuel-injection Multisim

Full-load : 160 4000

Adjust: 100 600

Pre-injection: 100 250

Idle speed: 25 1000

Choose different working conditions to go ahead the testing by the "Up/ Down" key, same method as above. After all the testing completed, choose "page up" key to enter the function selection interface. Choose the "sealing performance testing" function by the "Up/Down" key, as following picture:

测试功能选择

- ☒ 喷油嘴冲洗
- ☒ 喷油量测试
- ☒ 密封性测试
- ☒ 雾化测试

Testing function selection

Injector flushing

Fuel Injection Quantity testing

Sealing performance testing

Spray testing

Press the "enter" key to enter.

密封性测试

测试前请确认：

1. 启动电机
2. 安装喷油器

按【确认】开始测试,按【取消】退出测试。

Sealing performance testing

Please confirm before testing;

- 1: start the motor
- 2: install the injector

Press the "enter" key to start the testing and press "cancel" key to exit the testing.

Disassemble or adjust the spray tool of the injection in testing, press "enter" key to start

密封性测试

喷油器类型：0445120170

燃油温度：108 度

目标轨压：160 (±2) Mpa

实际轨压：26 Mpa

正在建立轨压,请稍候...

Sealing performance testing

Injector model: 0 445 120 170

Fuel temperature: 108 celsius degree

Target rail pressure: 160 (±2)Mpa

Actual rail pressure: 26 Mpa

The rail pressure is in establishment, pls wait

After rail pressure established, start to test

密封性测试

喷油器类型：0445120170

燃油温度：108 度

目标轨压：160 (±2) Mpa

实际轨压：160 Mpa

请观察喷油嘴密封效果！

Sealing performance test

Injector model: 0 445 120 170

Fuel temperature: 108 Celsius degree

Target rail pressure: 160 (±2)Mpa

Actual rail pressure: 26 Mpa

Please observe the injector's sealing performance!

Dripping or leaking phenomenon should not exist at this moment. If yes, please check the injector. After test completed, press “cancel” key to release the pressure.

密封性测试

喷油器类型: 0445120170

燃油温度: 108 度

目标轨压: 160 (±2) Mpa

实际轨压: 160 Mpa

正在卸压,请稍候...

Sealing performance test

Injector model: 0 445 120 170

Fuel temperature: 108 Celsius degree

Target rail pressure: 160 (±2)Mpa

Practical rail pressure: 26 Mpa

Pressure relief, pls wait

After pressure released, return back to the function interface, press “up/down” key to select “spray test” function:

测试功能选择

- 喷油嘴冲洗
- 喷油量测试
- 密封性测试
- 雾化测试

Testing functions selection

Injector flushing

Fuel Injection Quantity testing

Sealing performance testing

Spray testing

Put the spray viewing cup to a relevant position and press the “enter” key



雾化测试

测试前请确认：

1. 启动电机
2. 安装喷油器
3. 放置雾化观察罩杯

按【确认】开始测试,按【取消】退出测试。

Spray test

Before testing, please confirm:

1. Start the motor
 2. Install injector
 3. Lay down the spray viewing cup
- Press "enter" to start testing, and press "cancel" to escape

Press "enter" to enter , and go ahead to " spray testing" :

雾化测试

喷油器类型：0445120170

燃油温度：108 度

目标轨压：30 (±2) Mpa

实际轨压：00 Mpa

正在建立轨压,请稍候...

Spray Testing

Injector model: 0 445 120 170

Fuel temperature: 108 celsius degree

Target Common Rail Pressure: 30(+2) Mpa

Actual Common Rail Pressure: 00 Mpa

The rail pressure is being set up, please wait.....

When fuel pressure finished establishment, enter testing interface:

雾化测试

喷油器类型：0445120170

燃油温度：108 度

目标轨压：30 (±2) Mpa

实际轨压：30 Mpa

完成轨压建立,请按<雾化测试>观察雾化效果

Spray testing

Injector model: 0 445 120 170

Fuel temperature: 108 celsius degree

Target Common Rail Pressure: 30(+2) Mpa

Actual Common Rail Pressure: 30 Mpa

Rail pressure setup is finished, please press "spray testing" to observe spray condition.

Under this interface, press the "spray testing" key to observe spray condition. After testing, press "cancel".

雾化测试

喷油器类型: 0445120170

燃油温度: 108 度

目标轨压: 30 (± 2) Mpa

实际轨压: 30 Mpa

正在卸压,请稍候...

Spray testing

Injector model: 0 445 120 170

Fuel temperature: 108 Celsius degree

Target Common Rail Pressure: 30(+/-2) Mpa

Actual Common Rail Pressure: 30 Mpa

Rail pressure is releasing, please wait....

When finished pressure releasing, system will automatically change into the interface of function options as follows:

功能选择

- ☐ 喷油嘴测试
- ☐ 添加喷油嘴参数
- ☐ 删除喷油嘴参数
- ☐ 查看喷油嘴参数
- ☐ 故障显示

Functions Selection

Injector testing

Adding injector parameters

Delete injector nozzle parameters

View nozzle parameters

Fault display

(2)、The function of adding injector parameters:

In the interface of functions selection, choose the function

“Adding injector parameters” by “Up” and “Down” keys, press “enter” to enter:

添加喷油嘴参数

- ☐ 博世喷油嘴
- ☐ 德尔福喷油嘴
- ☐ 电装喷油嘴

Adding injector parameters

Bosch injector

Delphi injector

Denso injector

Select a injector manufacturer that you want to add
by the “Up” and “Down” keys to, and press “enter” to enter:

添加喷油嘴参数

☒ 系统自带喷油嘴

☐ 用户自定义喷油嘴

Adding injector parameters

System automatically contained injectors

User-defined injectors

Press “Down” key to enter the interface of user-defined injectors:

添加喷油嘴参

喷油嘴型号: 020304050

驱动电源: 24

保持电流: 12.5

启动电流: 25.8

工况1:

目标轨压: 01000

喷油脉宽: 01000

喷油次数: 20000

标准喷油量: 00080

喷油量误差: 00200

标准回油量: 00100

标准回油量误差: 00010

第1页(共4页)

Adding injector parameters

Injector model:

Driving power:

Holding current:

Starting current:

Working condition 1:

Target rail pressure:

Injection pulse width:

Injection frequency:

Standardizing injection Quantity:

Injection quantity deviation:

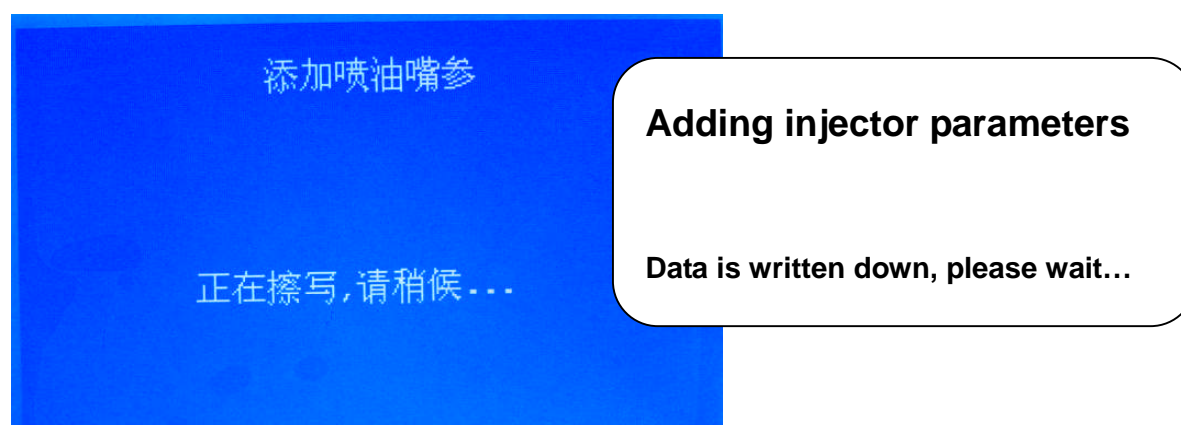
Standardizing returning fuel volume

Standardizing returning fuel deviation:

Each injector has four operation points in total, displayed respectively on four pages. Adjust the cursor to the character that needs amending by direction keys, then press “accumulation” key to amend the chosen character. Each time of pressing will add the chosen character to one. When the character is increased to nine, press once more will return the character to zero. Only the first page of injector type needs amending, the remaining three pages will be amended automatically. Move the cursor to the driving power value and press “accumulation” key, the driving power value will switch from 12V to 24V. Choose a driving power value matched with injector. The value of holding current and “starting current” does not need amending. According to the real condition, input the content of four operation points to the relevant position and press “enter” key, the interface will show you prompt message:



Press "confirm" to save added data, press "cancel" to return to adding interface.



If errors happened during setting, display screen will show error message:



Press "enter" key to return to the parameters adding interface. If errors happened when adding parameters and unable to save, parameters must be amended till reasonable. For example:

错误提示

- 目标轨压超限
- 按【确认】返回添加页面

Error display

Transfinite target rail pressure
Press “enter” to return to adding interface

If want to quit from the interface of injector parameters adding, press “page up” key to return to injector manufacturers choosing interface.

(3)、The function of deleting injector parameters

For the user-defined injector parameters, if not needed, can be deleted via this function

In function options interface, delete injector parameters via choosing keys “UP” and “DOWN”.
Seeing the following screen:

功能选择

- 喷油嘴测试
- 添加喷油嘴参数
- 删除喷油嘴参数
- 查看喷油嘴参数
- 故障显示

Functions selection

Injector testing
Adding injector parameters
Deleting injector parameters
Checking injector parameters
Fault display

Press “enter” key to enter:

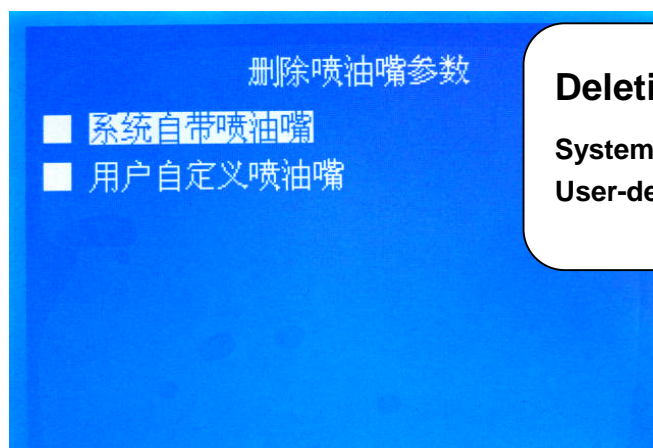
删除喷油嘴参数

- 博世喷油嘴
- 德尔福喷油嘴
- 电装喷油嘴

Deleting injector parameters

Bosch injector
Delphi injector
Denso injector

Select injector manufacturers via keys “UP” and “DOWN”, press “enter” to enter:



Deleting injector parameters

System automatically contained injectors

User-defined injectors

Press “down” key to choose user-defined injectors, press “enter” to enter:



Bosch injectors

0 4445 120 201

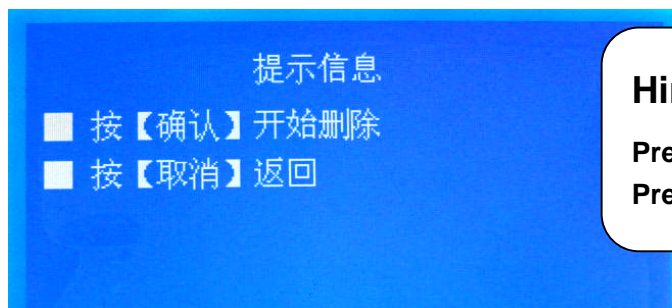
0 4445 120 202

0 4445 120 205

0 4445 120 170

0 4445 120 131

Through direction keys to choose unneeded injector types, press “enter” key to enter:



Hint information

Press “enter” to start deleting

Press “cancel” to return

System shows hint message, press “enter” to delete, press “cancel” to return to the interface of injector parameters

删除喷油嘴参数

Deleting injector parameters

正在删除,请稍 ...

Parameter is deleting, please wait.....

Declaration: If system automatically contained injector parameters are unable to delete, for example, malfunction happened, system will show error message:

错误提示

- 系统自带喷油嘴,不准操作
- 按【确认】返回

Error display

System automatically contained injectors, your operation is not allowed.
Press "enter" to return

Press "escape" key to do other operations

(4)、The function of checking injector parameters

In functions choosing interface, select checking injector parameters:

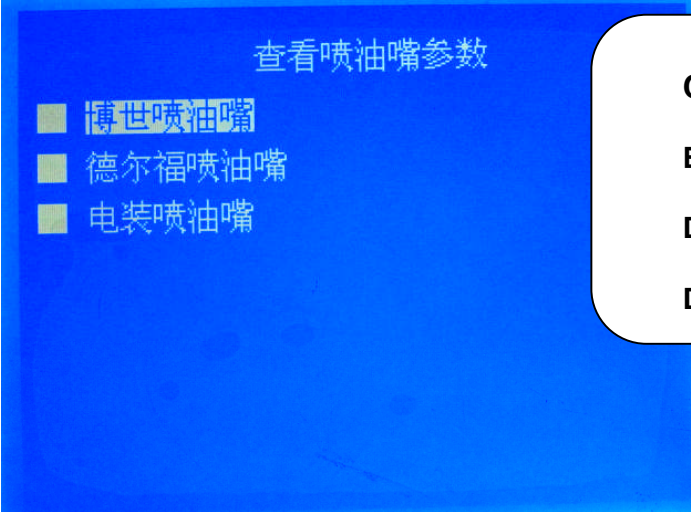
功能选择

- 喷油嘴测试
- 添加喷油嘴参数
- 删除喷油嘴参数
- 查看喷油嘴参数
- 故障显示

Functions selection

Testing injector
Adding injector parameters
Deleting injector parameters
Checking injector parameters
Fault display

Press "enter" to enter:



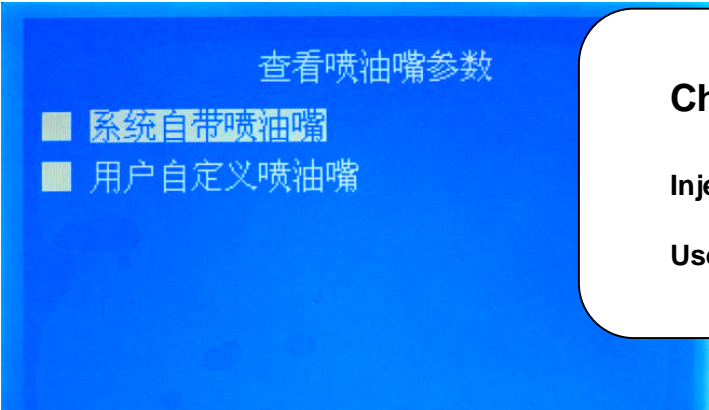
Checking injector parameter

Bosch injector

Delphi Injector

Denso Injector

Choose the injector manufacturer you want to check, press “enter” to enter:



Checking Injectors' parameter

Injector comes with the system

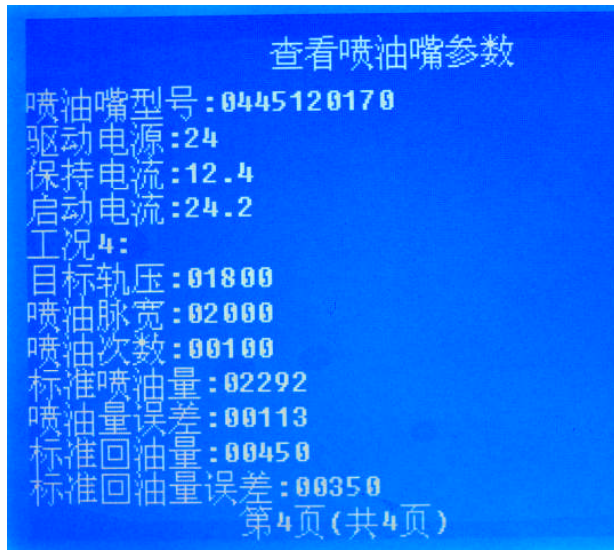
User-defined injector

Choose the location, press “enter” to enter:



Select the injector model which you want to check by direction keys,

press “enter” to enter, as following picture:



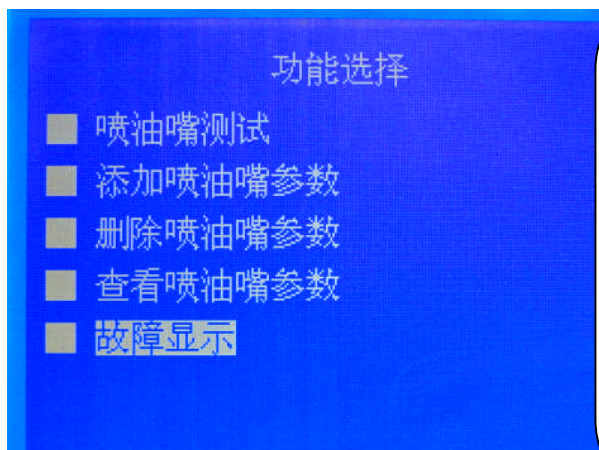
Checking injector's parameter

Injector model: 0 445 120 170
 Driving power: 24
 Holding current: 12.4
 Starting current: 24.2
 Working condition 4:
 Target rail pressure: 01800
 Injection pulse width: 02000
 Injection frequency: 00100
 Standardizing injection capacity: 02292
 Injection capacity deviation: 00113
 Standardizing returning fuel volume: 00450
 Standardizing returning fuel deviation: 00350

Parameters on 4 pages in total, can be selected by “page up/ page down” keys. If you want to escape this interface and go to the first page, then press “page up” key to escape the parameter interface.

(5)、Error-checking function:

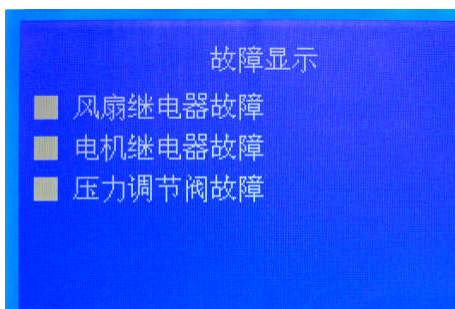
Select “error display” key on the function-selecting” interface:



Function selection

Testing Injector
 Adding injector parameter
 Deleting injector parameter
 Checking injector parameter
 Error display

Press “enter” to enter:



Error display

Fan relay error
 Motor relay error
 Regulating valve error

If error occurred, corresponding error will be displayed. If all normal, then “ no error” will be showed on the screen.

四、 Basic operation

1、 Change paper for printer

Press the right round button as following photo



Open it as following:



Open the front board, as following photo, set on the paper



Close the front board, as above photo.

五、 Clean and maintain

Switch off the power before cleaning and maintain.

Please check the leakage for high/ low oil pipeline each month. If problem occurred on the high oil pipeline, pls consult the manufacturer.

- 1、 Please check the fastening parts per quarter. In case any parts loosen, pls fasten it.
- 2、 The filter used on this equipment has the oil-water separation function. Please check whether the filter cup stratifies or not according to the test oil chosen. If stratified, pls clean the lower substance. After finishing, press the hand pump until hear the oil returned back to the tank.
- 3、 Change the filter cores of filter per 500 hours.
- 4、 Clean the filter net per 300 hours.

六、 Warranty

Dear users:

Thanks for using the test bench produced by ChinaHanji power co., ltd.. In accordance with the relevant principle, we would supply you the following services with invoice:

- 1、 One year free warranty for the whole test bench.
- 2、 The following situations isn't included in the free warranty:
 - 1)、 Due to the incorrect transport, assemble, use and maintain to damage
 - 2)、 Disassemble the products especially the electronic parts yourself
 - 3)、 Alter the invoice and warranty
 - 4)、 Due to the abnormal voltage, fire and other external causes damage
 - 5)、 Operate the bench not according to our manual, test bench's main attention signs and other precautions.

Note: 1. No special notice to informed, if the bench's structure is changed.