

User's Manual



**Car & Motorcycle Battery Tester
OBDII Diagnostic Scanner**

1.Product Profile:

KW870 Car battery tester & car OBDII Diagnostic Tool 2 in 1.

KW870 Works on all 1996 and newer 12V gasoline and diesel that are OBD II compliant. It can identify the cause of your CHECK ENGINE and perhaps fix it without going to see your dealer. It also assists you in easily passing annual emissions tests and SMOG CHECK. It covers full OBDII/ EOBD diagnostic functions for engine system. O2 sensor test, EVAP systems test, and board monitoring test give you full control of your vehicle's running status, while a graphical and numeric live data stream display will help you to find out the faulty sensor readings.

KW870 Battery Tester can test all automotive cranking lead acid battery, including ordinary lead acid battery, AGM flat plate battery, AGM spiral battery, and Gel battery, Lithium battery etc. it adopts the state-of-the-art conductance testing technology in the world to easily, quickly and accurately measure the actual cold cranking amps capability of the vehicle starting battery, healthy state of the battery itself, and common fault of the vehicle starting system and charging system, which can help maintenance personnel to find the problem quickly and accurately, thus to achieve quick vehicle repair.

It Support multi-languages, customer can select different language which includes English, French, German, Dutch, Spanish, Russian, Portuguese, Italian, Polish .

2 Technical Parameters

Voltage Measurement Range 6-16V DC.

Cold Cranking Amps Measurement Range

Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17-245H2
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000

3 . Main Menu Description :

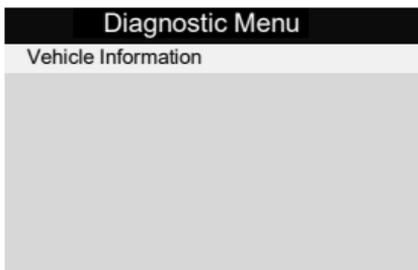
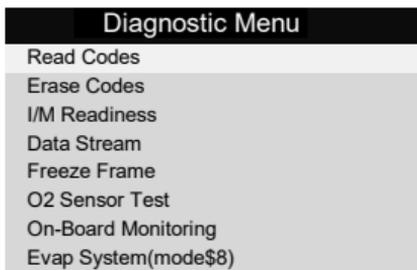
OBDDII Diagnostic Menu
Car Battery Tester Menu
Motorcycle Battery Tester Menu



3.1 Choose " Diagnostic " For OBDDII Diagnosis .

Monitor Status	
MIL Status	OFF
DTCs in this ECU	0
Readiness Completed	0
Readiness Not Completed	0
Readiness Not Supported	10
Datastream Supported	114
Lgnition	Spark
Protocol Type	CAN

3.2 After OBDDII Connected Well On Car ,Show "Monitor Status" ,
And Click " Enter " For Next Step To Look Through Below 9 Functions.



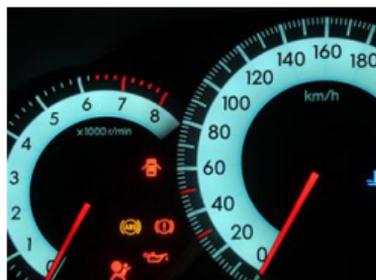
3.3 Read Codes: Check The Car Fault Problem:Select [Read Codes] and press **OK** button in Diagnostic Menu. If there are some codes, the screen will display the codes as shown below:

Read Codes
Current DTCs(\$03)
Pending DTCs(\$07)
Permanent DTCs(\$0A)
Record DTC

P0010	1/11
A camshaft Position Actuator Circuit/Open Bank 1	

3.4 Erase Codes : Select [Erase Codes],Until The Emission-Related Diagnostic Information has been Cleared!

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
O2 Sensor Test
On-Board Monitoring
Evap System(Mode\$8)



3.5 I/M Readiness: Select [I/M Readiness] and press OK button, the screen will display the interface as shown below:

I/M Readiness
Since DTCs Were Cleared
This Drive Cycle

I/M Readiness			
MIL		IGN	Spark
DTC	14	Pd DTC	15
MIS	✓	EVAP	✗
FUE	✓	AIR	⊘
CCM	✓	O2S	✗
CAT	✗	HRT	✗
HCAT	⊘	EGR	⊘

3.6 Data Stream: Press UP or DOWN button to select Data Stream in Main Menu interface and then press OK button to confirm, the screen will display the interface as shown below:

Datastream		1/17
Fuel system 1 status		CL
Fuel system 2 status		CL
Calculated LOAD Value		9.0%
Engine Coolant Temperature		158° F
Short Term Fuel Trim - Bank 1		-24.2%

View Graphic Items				
Max	9.0	158	-24.2	-89.2
Max	9.0	158	-24.2	-89.2
■ LOAD_PCT=9.0%			■ ECT=158° F	
■ SHRTFT1=24.2%			■ LONGFT1=89.1%	

3.7 Freeze Frame: When an emission-related fault occurs, certain vehicle conditions are recorded by the on-board computer. This information is referred to as freeze frame data. Freeze Data is a snapshot of the operating conditions at the time of an emission-related fault.

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
O2 Sensor Test
On-Board Monitoring
Evap System(mode\$8)

Freeze Frame
Freeze Frame
Record Freeze

3.8 O2 sensor Test: The results of O2 sensor test are not live values but instead the results of the ECU's last O2 sensor test. For live O2 sensor readings, refer to any of the live sensor screens such as Graph Screen.

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
O2 Sensor Test
On-Board Monitoring
Evap System(mode\$8)

Select O2 Sensor
Bank1 - Sensor1
Bank1- Sensor2

3.9 On-board monitoring: This function can be utilized to read the results of on-board diagnostic monitoring tests for specific components/systems.

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
O2 Sensor Test
On-Board Monitoring
Evap System(mode\$8)

On- Board Monitoring
Catalyst Monitor B1
Sensor Heater B1 - S1
Sensor Heater B1 - S2

3.10 Evap System: The EVAP test function lets you initiate a leak test for the vehicle^ EVAP system. The scan tool does not perform the leak test, but signals to vehicle's on-board computer to initiate the test. Before using the system test function , refer to the vehicle^ service repair manual to determine the procedures necessary to stop the test.

Diagnostic Menu
Read Codes
Erase Codes
I/M Readiness
Data Stream
Freeze Frame
O2 Sensor Test
On-Board Monitoring
Evap System(mode\$8)

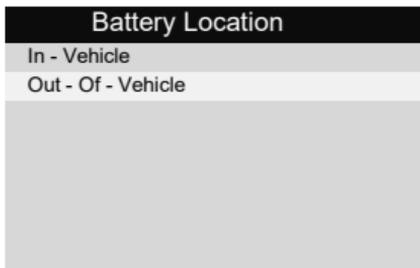
3.11 Vehicle Information: Select [Vehicle Information] and press OK, the screen will display the information

Diagnostic Menu
Vehicle Information

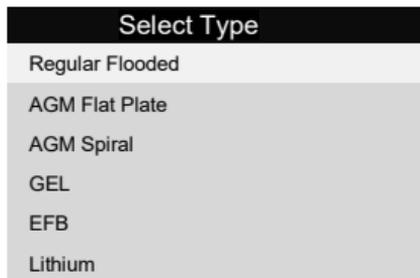
Vehicle Information
Vehicle Identification Number(VIN) Not supported
Calibration Identifications(CID) Not supported
Calibration Verification Numbers(CVN) Not supported

After entering car battery test program, tester displays Main Menu, Tester
“ Battery In-vehicle or Out-of-Vehicle”

Press UP/DOWN key to select the battery location, in vehicle or out of vehicle,
then press ENTER key to confirm



● For Example ,Select “ Battery Test out-of- vehicle” , Then show below data

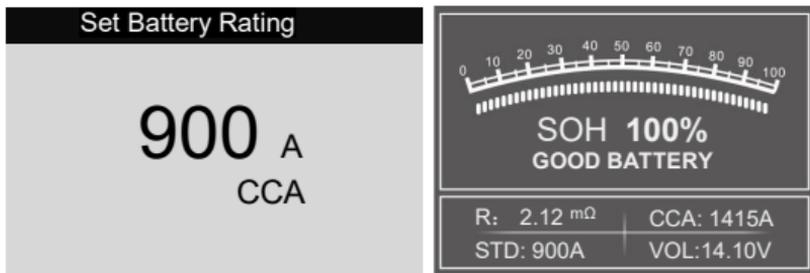


Cold Craning Amps Measurement Range

Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17-245H2
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000

1. CCA: Cold Cranking Amps, specified by SAE&BCI, most frequently used value for starting battery at 0°F(-18 °C)
2. BCI: Battery Council international standard
3. CA: Cranking Amps standard, effective starting current value at 0°C
4. MCA: Marine Cranking Amps standard, effective starting current value at 0°C
5. JIS: Japan Industrial Standard, displayed on the battery as combination of the numbers and letters, e.g. 55D23, 80D26
6. DIN: German Auto Industry Committee Standard
7. IEC: Internal Electron technical Commission Standard
8. EN: European Automobile Industry Association Standard
9. SAE: Society of Automotive Engineers Standard

Now Select one of them (CCA,IEC,EN, DIN, CA, BCI, MCA, SAE, JIS)
 (Please check your own battery standard). The test result will be showed as below , Press the up and down keys to switch between SOH and SOC.



The battery test result will show different type : (Good Battery / Good,

Recharge / Replace / Bad cell, Replace / Charge, Retest)

- For Example ,Select “ Battery in- vehicle” , Then show below data

Battery Location
In- Vehicle
Out - Of - Vehicle

In - Vehicle
Battery Test
Cranking Test
Charging Test

- For example , Select “ Battery Test” ,The current health status of the battery can be directly detected.

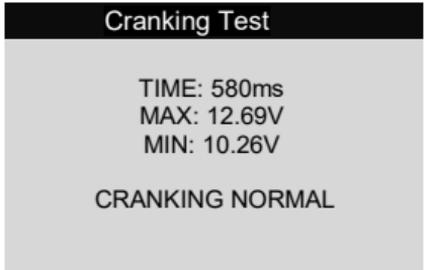
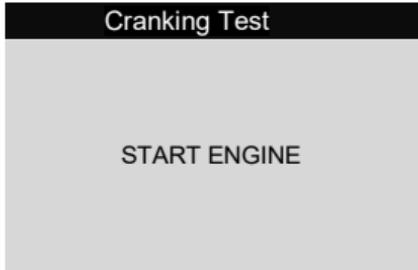
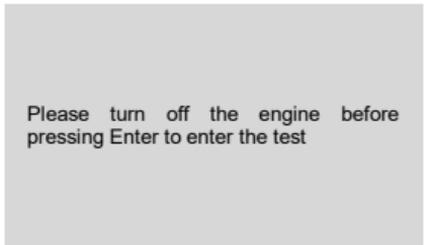
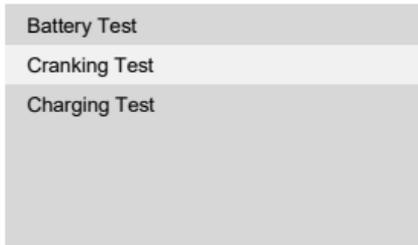
Battery Test
1. Check surface charge, Turn Lights on.
2. Take headlights on about 10 seconds.
3. Turn lights off.

There will be a prompt after entering, please proceed to the next step according to the prompt.

- For example , Select “ Cranking Test”, the data will be showed as below :

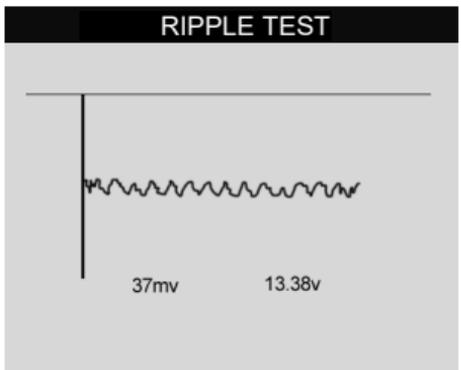
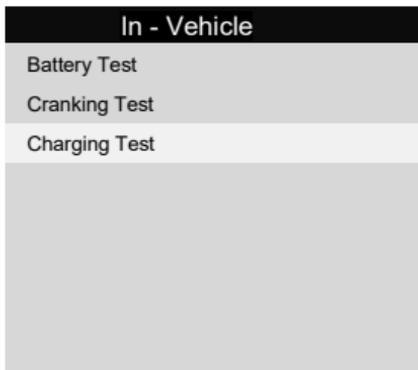
In - Vehicle

Cranking Test



There will be a prompt after entering, please proceed to the next step according to the prompt.

- For example , Select “ Charging Test”, the data will be showed as below :



37mvV 13.38v

Charging Test

Increase RPM to 2500 r/min and keep it 10 seconds, Press ENTER to continue

Charging Test

Loaded 14.44V
Unloaded 14.0V
Ripple 153mV
CHARGING NORMAL

There will be a prompt after entering, please proceed to the next step according to the prompt.

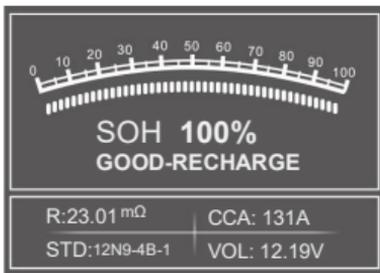
3.13 Motorcycle Battery Tester Menu

It can make sure the battery status, including voltage, CCA, electronic resistance, rated CCA, charging value, healthy value and testing result in one second. From the startup screen, or press ESC button to enter Main Menu. After select "Battery Rating" The screen will display the test result as below :

Press the up and down keys to switch between SOH and SO

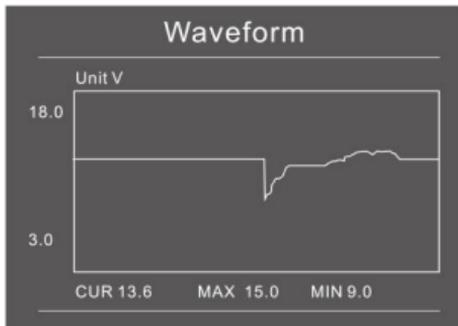
Set Battery Rating

51814	51913
53030	12N10-3A
12N10-3A-1	12N10-3A-2
1210-3B	12N11-3A-1
12N12A-4A-1	12N14-3A
12N16-3B	12N24-3
12N24-3A	12N5.5-3B



Battery test result includes 5 types as following: (Good Battery / Good, Recharge / Replace / Bad cell, Replace / Charge, Retest)

● Waveform: press WAVEFORM FUNCTION button, The screen will display the interface as shown below:



CUR: Current Voltage

MAX: Maximum Voltage during Ignition **MIN:** Minimum Voltage during Ignition

The waveform will stay in static until there's changes in the voltage changes detected

Various vehicle voltage analyses

- **Discharge Voltage:** When the ignition OFF, engine OFF (Over 20 Minutes), the Discharge Voltage should be around 12V. If the discharge voltage is lower than 11V, it will be hard to turn the ignition ON. If the discharge voltage continuously stay under 11V, it means the battery is aging and replacement is needed.
 - **Starting Voltage:** During ignition, the voltage will drop to a certain point, at this minimum point is Starting Voltage (Around 7.5- 9.5V). If the Starting Voltage continuously stay under 7.5, it means battery capacity is low and needs to be replaced
 - **Charging Voltage:** When the ignition ON, engine ON. The alternator will continuously charge the car battery, normally is around 14V

Battery Status corresponding with Battery Voltage (Before Ignition)

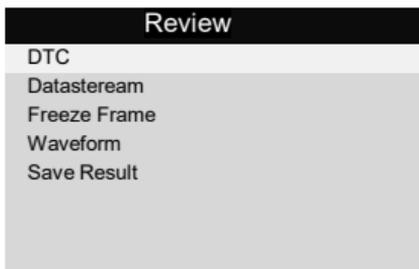
Battery Voltage	Battery Status	Effects and Measures
<10 BV	Too Low	Hard to start vehicles, replace battery
108V-118V	Slightly Low	Hard to start vehicles,

Battery Status corresponding with Battery Voltage (After Ignition)

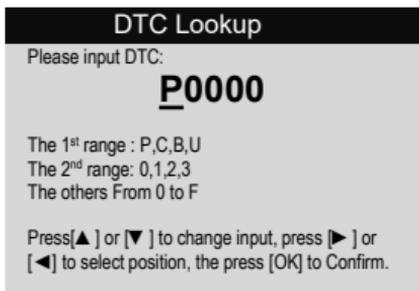
Battery Voltage	Battery Status	Effects and Measures
12.8V-13.2V	Too Low	Battery may not be charged; Check alternator or other electrical load
13.2-14.BV	Normal	Normal
>14.BV	High Voltage	May damage the battery, Check alternator stabilizer

Notice: If the current detected battery voltage is 11.9V, after a few hours trip, the battery voltage is still stay low, the cause could battery damage (Under circumstance of normal alternator). Please replace the battery ASAP

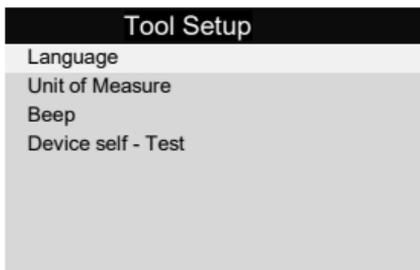
Review :From the startup screen, or press ESC button to enter Main Menu
Press UP/DOWN button to select the [Review] function in the Main Menu and press ENTER button, The screen will display the interface as shown below



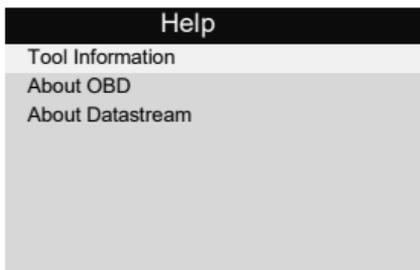
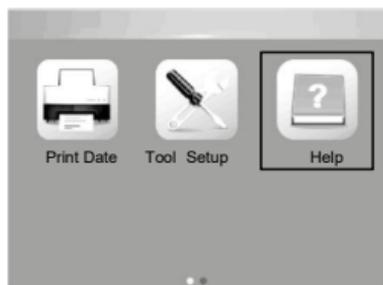
- DTC Lookup: check all test result



- Setup : Select language English, French, German, Dutch, Spanish, Russian,Portuguese, Italian,Polish



- Help:



4 . Print & Update

This function allows you to update and print the tool software through a computer .

To update and print your tool, you need the following items:

1. tester tool
2. A PC or laptop with USB ports
3. USB cable

Step :

- 1)Downloading the applications from our website www.konnwei.com
- 2)Run uplink.exe in your computer(Mac OS and linux does not compatible)
- 3)Press and hold any button until the USB cable is connected with computer and release it after the tool display a message "Update Mode"
- 4)Open the uplink software, click "Check update" button, will download the upgrade file from internet then update to tester tool
- 5)Wait for few minutes until update succeed
- 6)During the update procedure
- 7)Restart tester tool finish the whole update



5.Service Procedures

If you have any questions, please contact your local store, distributor or visit our website at www.konnwei.com

If it becomes necessary to return the tool for repair, contact your local distributor for more information

