

Automobile Ignition Coil Tester IG80

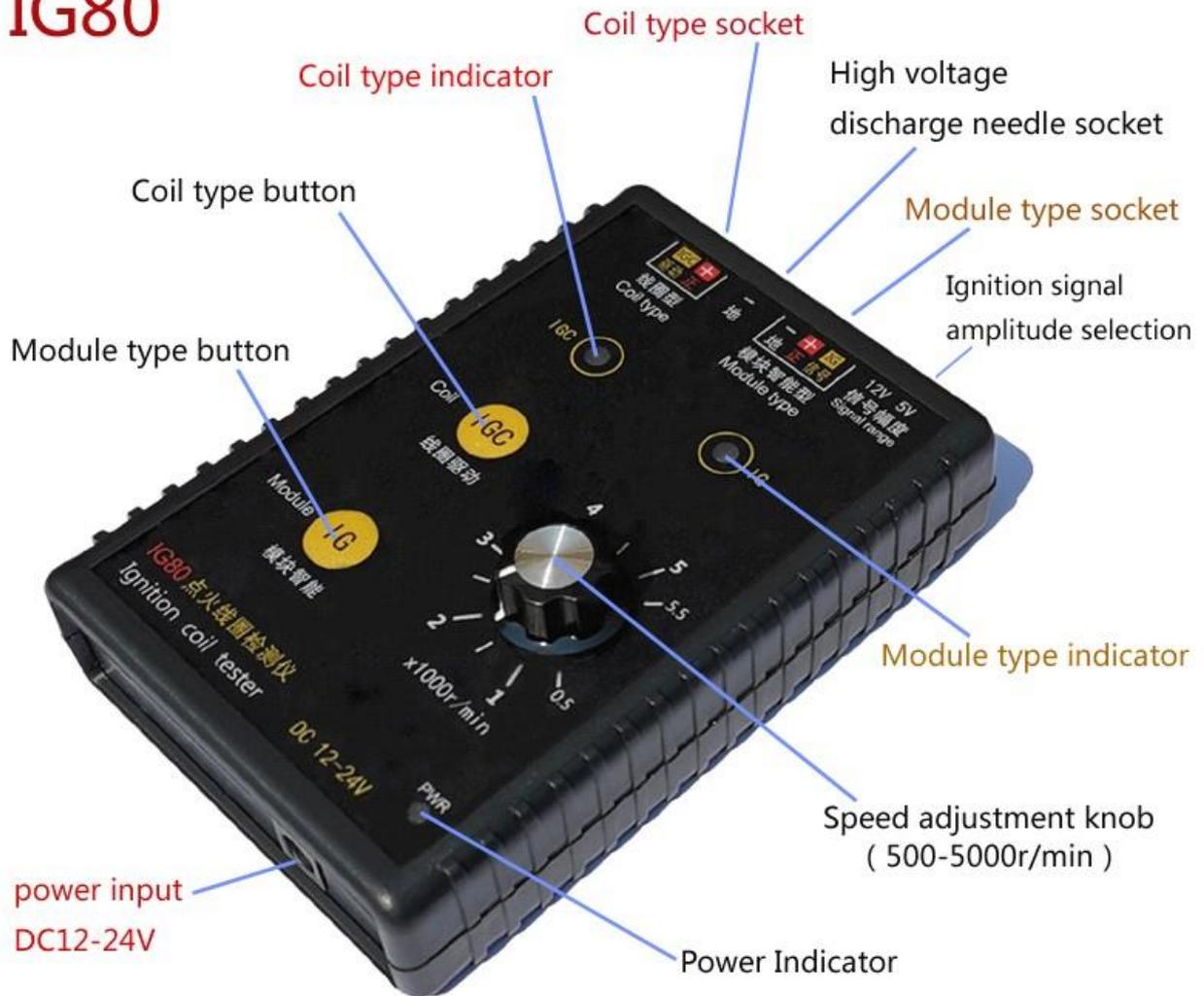
User Manual



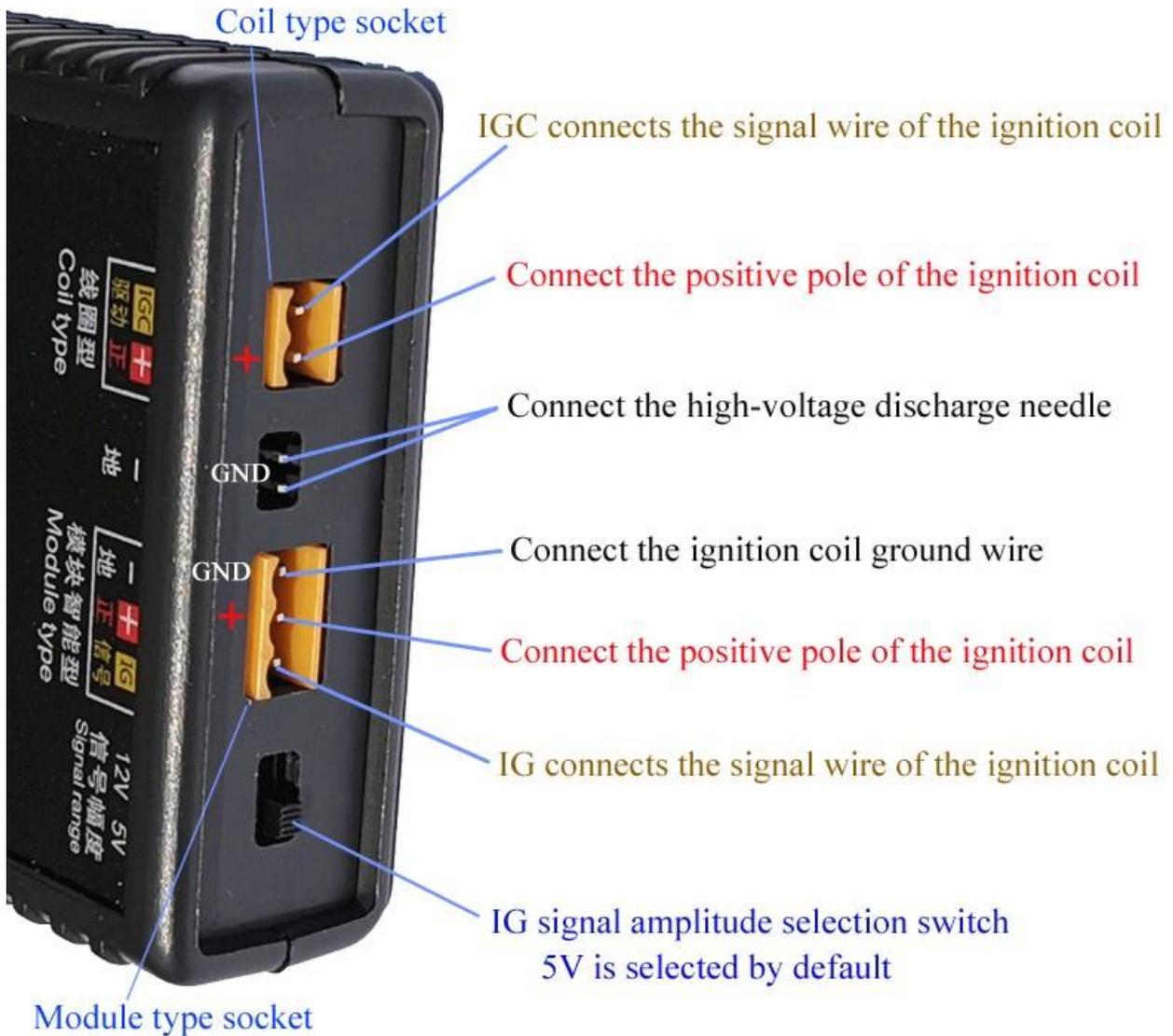
IG80 is a special equipment for detecting automobile ignition coils

Support gasoline engine 12V ignition coil, 12V and 24V natural gas engine ignition coil

IG80



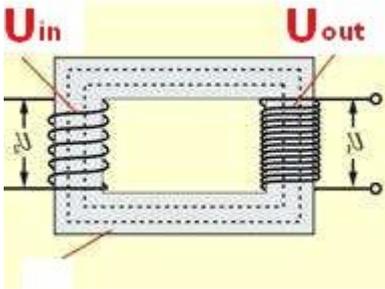
Description of IG80 ignition coil tester



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1. Working principle of automobile ignition coil:

The principle of the ignition coil is the same as that of the transformer. It is a step-up transformer. The primary coil has a small number of turns, a thick wire diameter, Resistance value is about 1 ohm, and a large current. The secondary coil has many turns, the wire diameter is very thin, the resistance value is large, and the current is small, input a few volts of AC voltage in the primary coil, and a high voltage pulse of tens of thousands of volts can be induced in the secondary coil



2. Common ignition coil terminals are: 2-wire, 3-wire, 4-wire, 5-wire, 6-wire

3. Common ignition methods are:

Independent ignition mode, only one spark plug is connected to one ignition coil

Two cylinders are ignited at the same time, one ignition coil is connected to two spark plugs

4. Ignition coils are divided into coil type and modular type

Coil type: there are only primary and secondary coils inside, no integrated power amplifier module

Modular type: not only the primary and secondary coils are inside, but also the power amplifier module is integrated

The two ignition coil test methods are different, and the wiring is also different, so they must be distinguished when testing.

Coil type ignition coil terminal wiring: 2-wire, 3-wire

Modular ignition coil terminal wiring: 3-wire, 4-wire

Combined ignition coils include: 3-wire, 4-wire, 5-wire, 6-wire, etc.

The combined ignition coil integrates multiple ignition coils and cannot be replaced separately

5. **Independent ignition coil:** You can use a multimeter to measure the resistance value to determine whether it is a coil type or a module type. The 2-wire type is the coil type, the 4-wire type is basically the module type, and the 3-wire type has a coil type and a module type. Multimeter to determine which type

6. **Test method:** Use a multimeter to measure the 3-wire ignition coil. As long as the resistance of any two terminals is $<2\Omega$, it is a coil type. If the resistance is several hundred ohms, it is a module type.

Combined ignition coil, you can use a multimeter to measure the resistance of each ignition coil to determine which type it is. The measurement method is the same as that of an independent ignition coil. You can also check the maintenance manual or circuit diagram.

7. IG80 test ignition coil steps

Since the ignition coil works in a pulsed state and the instantaneous current is very large, it is recommended to use a car battery for the IG80 external power supply or a regulated power supply with an output current greater than 5A

Ignition coil working voltage has two kinds of 12V and 24V

The external power supply voltage of IG80 should be the same as the working voltage of the ignition coil

IG80 has output short-circuit protection function. If the power indicator is off when

it is plugged in or tested, it means that the positive and negative poles are short-circuited, or the wires are connected incorrectly.

8. Coil type ignition coil test

(1). Positive + of ignition coil and positive + of IG80 coil type socket

(2). Three-wire ignition coil ground wire-and IG80 modular socket ground-connection (two wires without ground wire)

(3). The IGC signal wire of the ignition coil is connected to the IG80 coil type socket
IGC

(4). Connect the IG80 to the external power supply, the power indicator light is on, and the high-voltage end of the ignition coil (plug in the spark plug port) is close to the high-voltage discharge needle, the distance is about 10mm

(5). Press the IGC button, the ignition coil will start to spark, turn the speed knob to change the spark frequency, judge the ignition coil by observing the strength of the spark and the distance of the spark, the general 12V ignition coil, in the air, the spark gap can reach 10- 12mm, 24V ignition coil, flashover gap can reach 15mm



Hyundai Two lines Coil type



BMW Third line Coil type



GWM Third line Coil type

9. Modular ignition coil test

- (1). The positive + of the ignition coil is connected to the positive + of the IG80 modular socket
- (2). Ignition coil ground wire-and IG80 modular socket ground-connection
- (3). The IG signal wire of the ignition coil is connected to the IG of the IG80 modular socket
- (4). Connect the IG80 to the external power supply, the power indicator light is on, and the high-voltage end of the ignition coil (plug in the spark plug port) is close to the high-voltage discharge needle, the distance is about 10mm
- (5). Press the IG button, the ignition coil starts to spark, rotate the speed knob to change the spark frequency, judge the quality of the ignition coil by observing the strength of the spark and the distance of the spark, the general 12V ignition coil, in the air, the spark gap can reach 10- 12mm, 24V ignition coil, flashover gap can reach 15mm
- (6). If there is no flashover, look at the signal amplitude switch. Most modular ignition coils choose 5V signal amplitude. A few ignition coils, such as Mercedes-Benz, require 12V signal amplitude. IG80 has an internal output protection circuit. Even if the signal amplitude is selected incorrectly, Will not damage the ignition coil



AUDI/VW Four lines Modular



Mazda Third line Modular



Honda Third line Modular



Toyota Four lines Modular

10. Combined ignition coil

It is a combination of two or more ignition coils. If one of them is broken, a complete set must be replaced. Common models include old Volkswagen/Audi, Ford, Chevrolet, Citroen, Peugeot, Chery, Mercedes-Benz, etc.

The test method is the same as the independent ignition coil

If 4 modular ignition coils are integrated inside the combined ignition coil, IG80 can be tested at the same time

If 4 coil-type ignition coils are integrated inside the combined ignition coil, IG80 needs to test 2 of them separately, and then test the other 2 coils.

Safe use:

The instrument itself does not generate high voltage,

When the ignition coil is working, it will generate a high voltage of 20-30KV, so you need to pay attention to safety

1. Do not touch the ignition coil during testing
2. When testing, keep away from flammable and explosive materials
3. Connect the ignition coil first, then plug the instrument into the power source
4. Non-professionals prohibited use



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