

WHDTS Smart Tracking Car DIY Kits

I . Introduction

There is a 16 mm wide black runway in the white field. Our tracking car can drive along the black runway automatically. No matter how the runway is bent, the car can be driven automatically. We all know that the reflectivity is different when the light source to the white objects and black objects. Here we use red light source. The light is reflected through the ground to the photoresistor. By detecting the resistance of the photosensitive resistor can determine whether the car is driving in the white area. If the detection is black runway, then the car to change the direction of driving and motor will slow down or even stop and Red LED OFF on PCB front side. Drive the car in the opposite direction so that the car is always running along the runway.

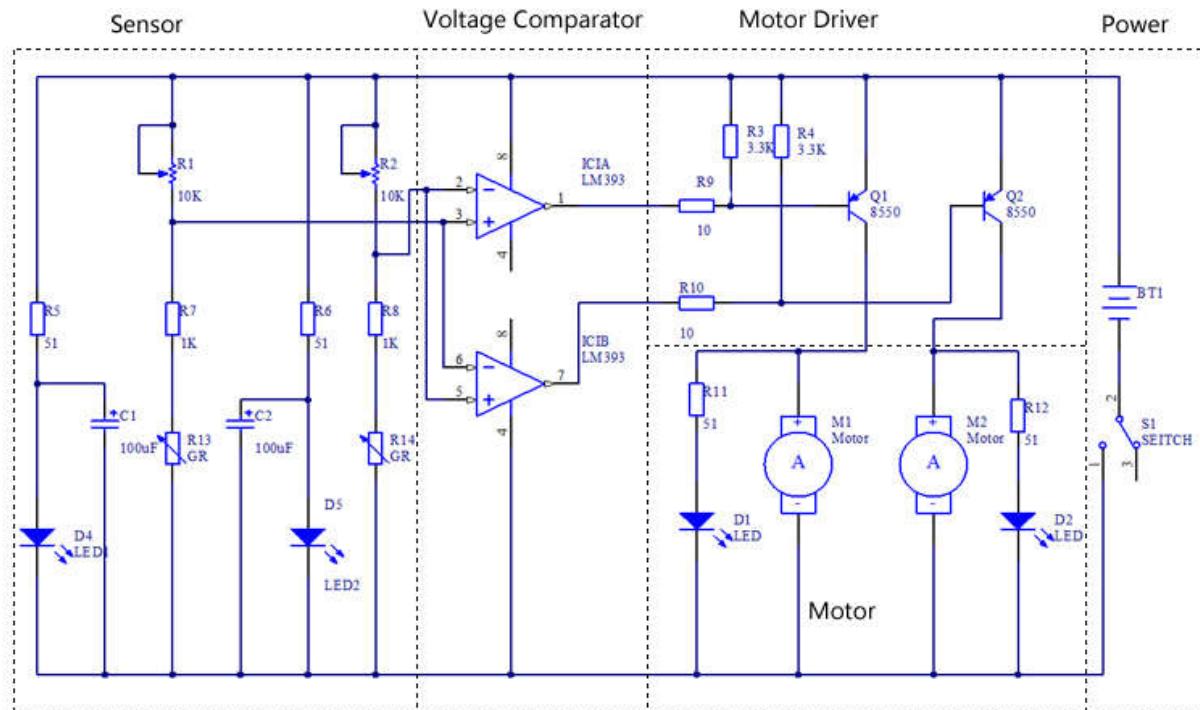
II . Parameter

PCB Size: 105*72*1.6mm

Installation dimension: 105*85*46mm

Work Voltage: 3V

III. Schematic Diagram



IV. Components List in The Package

NO.	Component Name	PCB Marker	Parameter	QTY
1	LM393	IC1	DIP-8	1
2	IC Socket	IC1	DIP-8	1
3	Electrolytic Capacitor	C1,C2	100uF	2
4	Potentiometer	R1,R2	103 10K	2
5	Metal Film Resistance	R5,R6,R11,R12	51ohm	4
6	Metal Film Resistance	R7,R8	1K	2
7	Metal Film Resistance	R9,R10	10ohm	2
8	Metal Film Resistance	R3,R4	3.3K	2
9	Photoresistor	R13,R14	CDS5	2
10	Red LED	D1,D2	5mm	2
11	White LED	D4,D5	5mm	2
12	S8550	Q1,Q1	TO-92	2
13	Self-Locking switch	S1	6*6mm	1
14	DC Motor	M1,M2		2
15	Wheel		40mm	2
16	Tires		40mm	2
17	Gaster Screw		M5*20mm	1
18	Gaster Nut		M5	1
19	Gaster Screw Cap		M5	1
20	Cable		6mm	4
21	Battery Case		AA*2	1
22	PCB D2-1		105*72*1.6mm	1

V. Installation Steps

1. Preparation:

- 1). This product comes to you is DIY kits that needs to be installed, not the finished product!
- 2). DIY Installation is a rather precise operation, which requires patience to finish the project.
- 3). Users need to prepare the welding tool first.
- 4). Users can complete the installation under the instruction of PCB Silk Screen and Components Listed.
- 5). Read the installation manual before starting installation carefully.
- 6). We have been keeping trying to improve the manual. If any words or steps of the instruction confuses you, please feel free to let us know because English is not our first language. We will appreciate for the generous help of pointing out our expression problem. Thank you in advance.

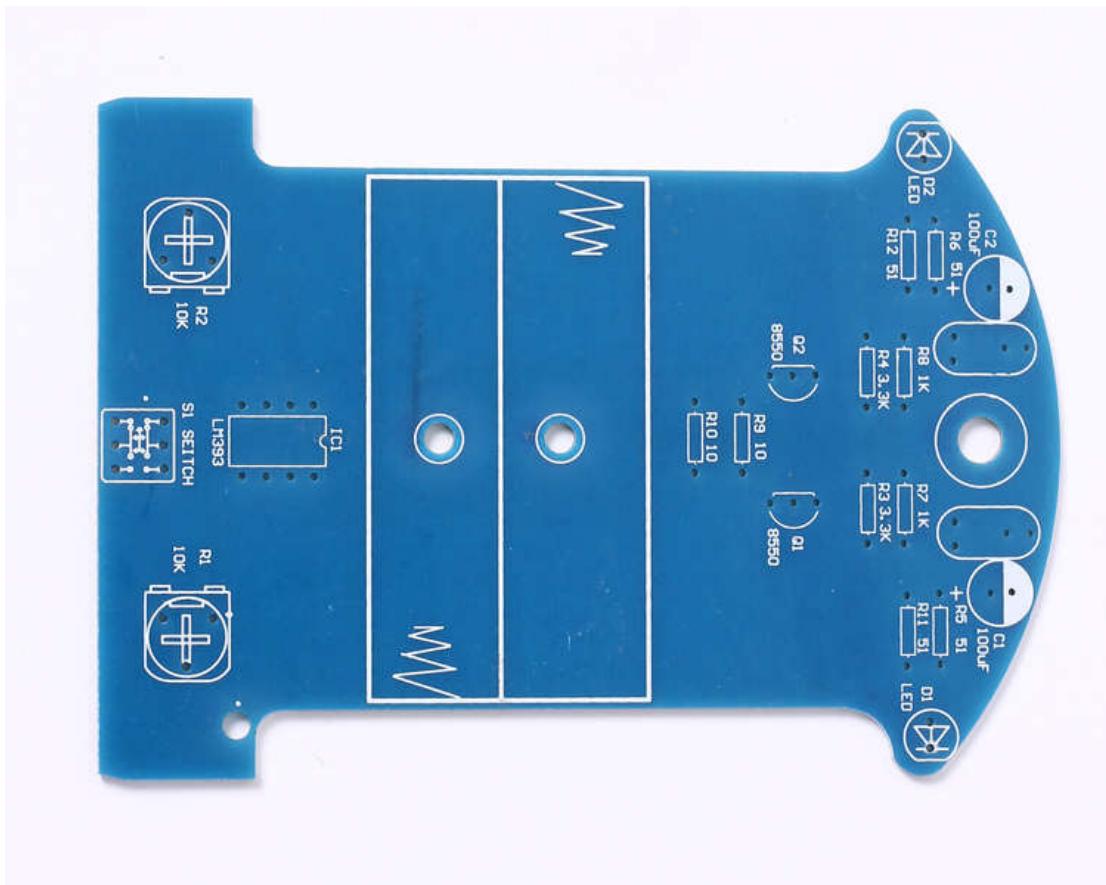
2. Operating Notice:

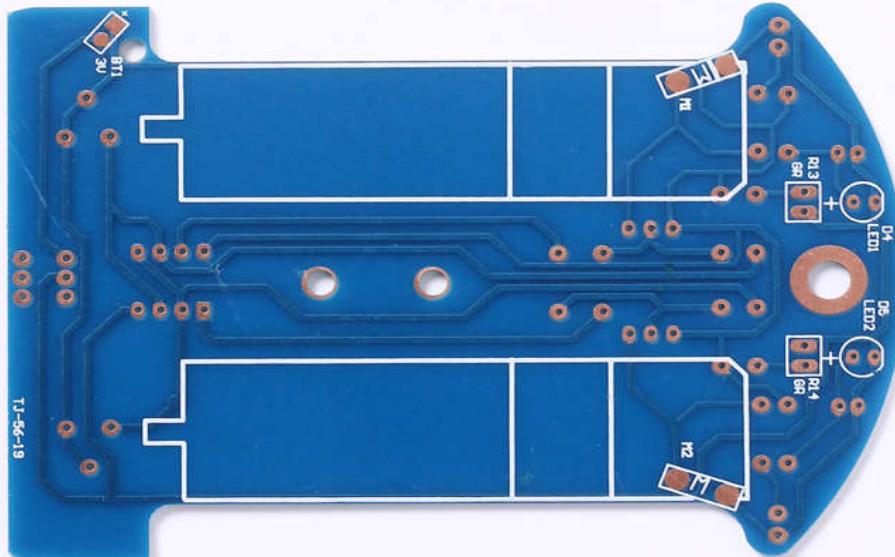
More tips about the DIY soldering that will directly affect the performance effect of the finished product as followed:

- 1). Pay attention to the positive and negative of some certain components. Make sure that all the components were soldered at right place in the right direction.
- 2). Make sure bonding pad not peel off and no pseudo /float soldering. (If it's not, you can repair the welding or reconnect adjacent components with superfluous metal pins to work things out.)
- 3). The soldering iron mustn't touch the components more than one second, or the high temperature of the soldering iron will damage the components.

- 4). Strictly prohibit short circuit.
- 5). If the soldering failed, it can be repaired through sucking out the components and re-soldering by means of a solder sucker.
- 6). User must install the LED according to the specified rules. Otherwise some LED will not give out light.
- 7>. Install complex components preferentially.

3. Installation Steps & Illustration (Please be patient to install!!!):

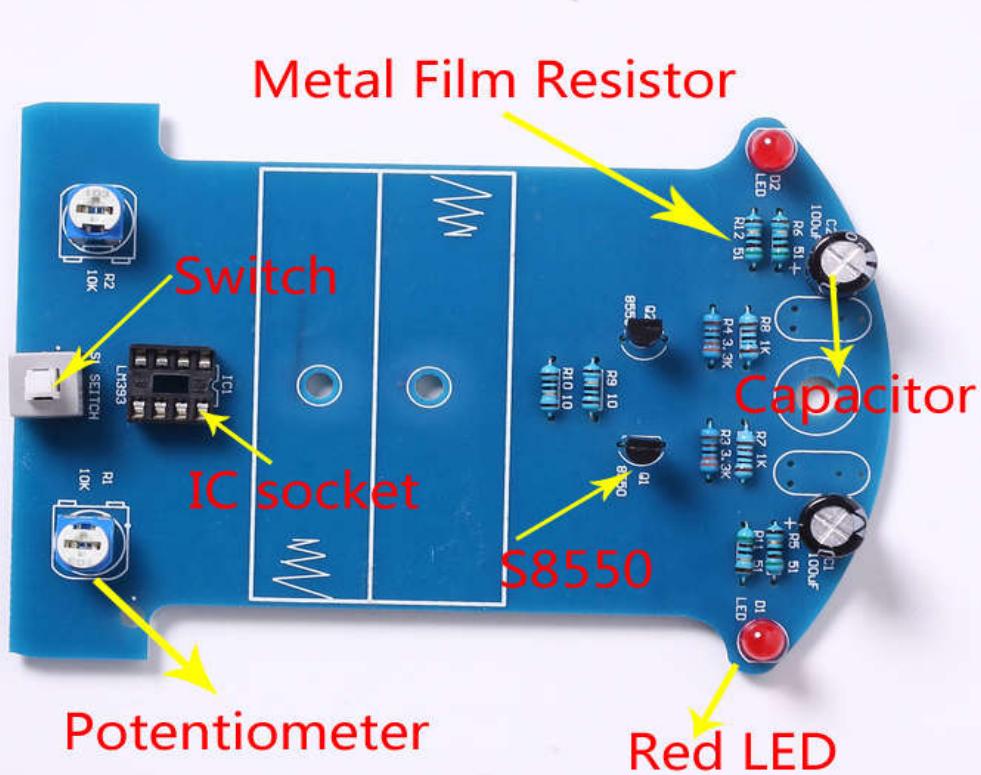




1>. Install metal film resistor, DIP-8P IC socket, Self-Locking switch, Potentiometer, S8550, Electrolytic capacitor, 5mm Red LED on PCB according to mark on PCB.

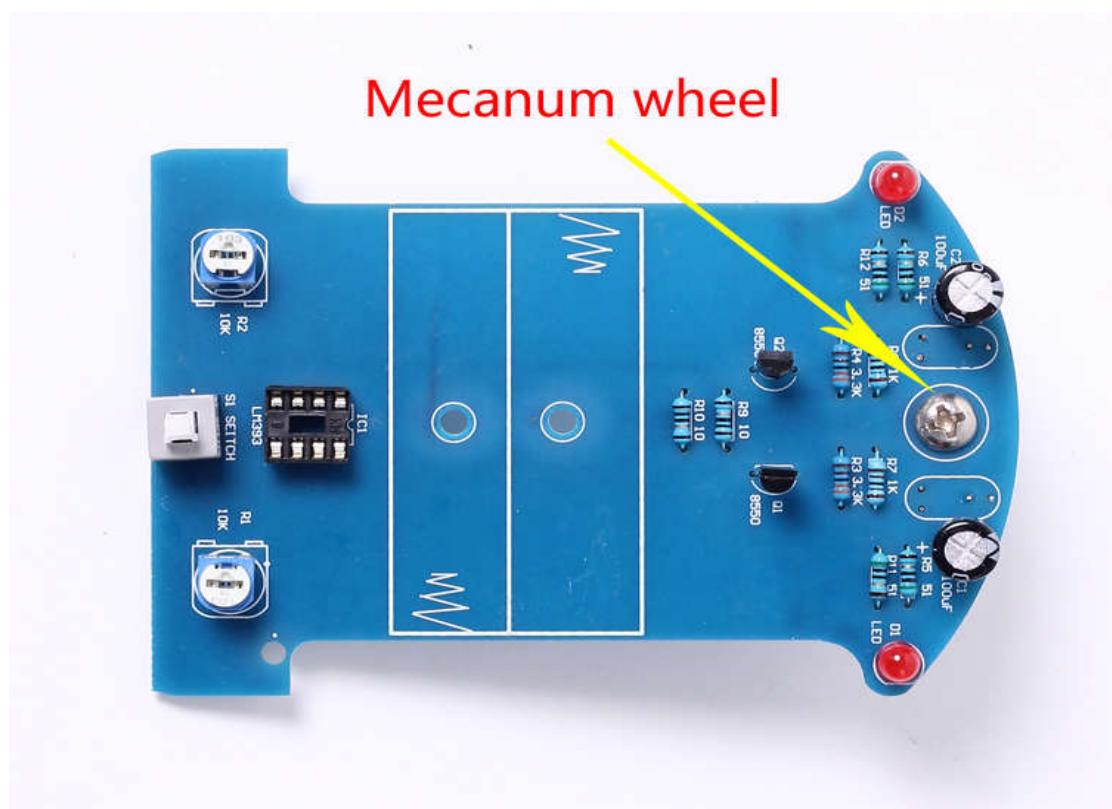
1.1 Pay attention to the direction of IC Socket.

1.2 In addition to facilitate debugging, don't install IC LM393 temporarily .

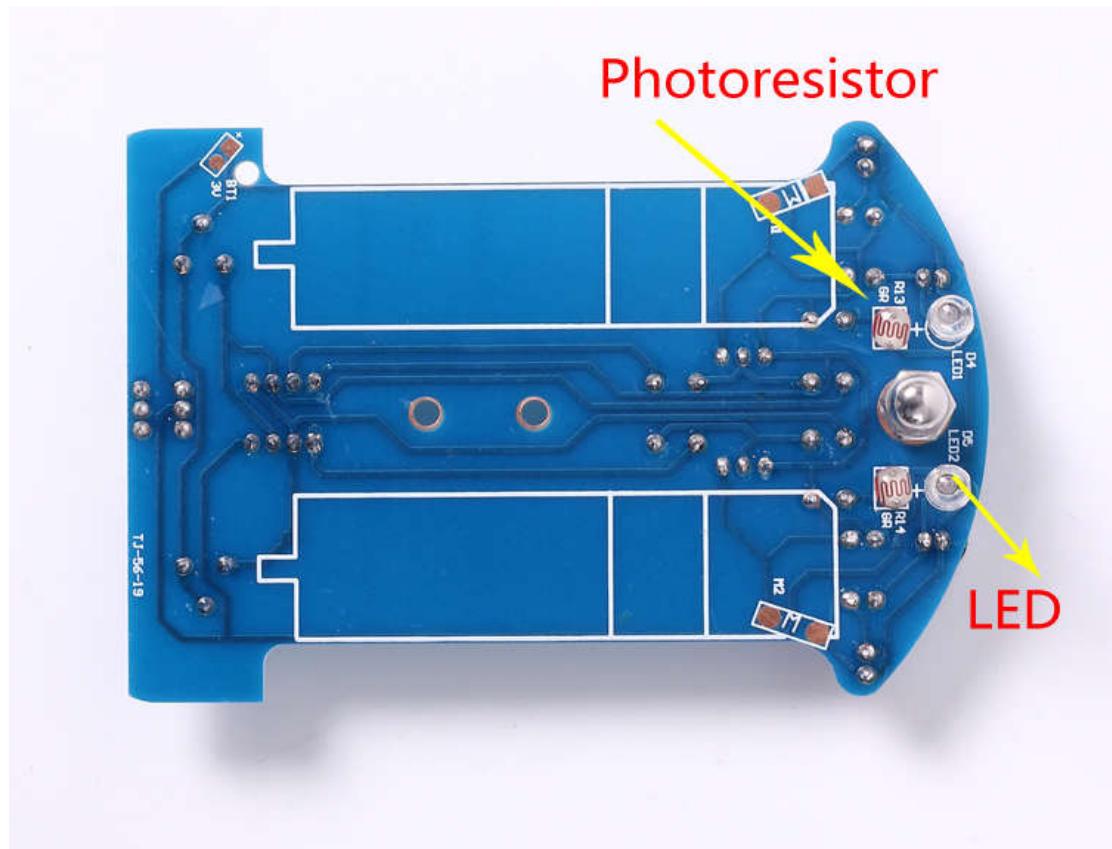


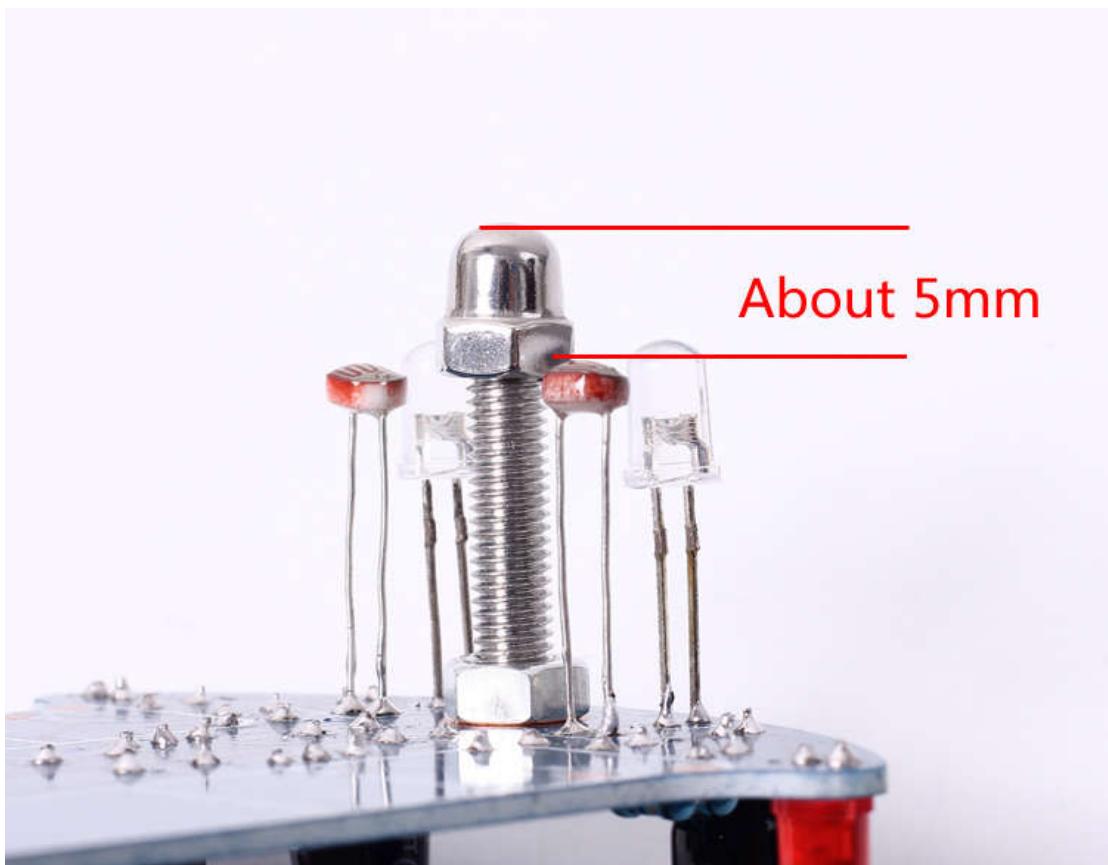
2>. PCB placed in front. The support bolts of the caster are inserted into the hole, tighten the

nuts screwed into the caster, and finally fit the caster and tighten.

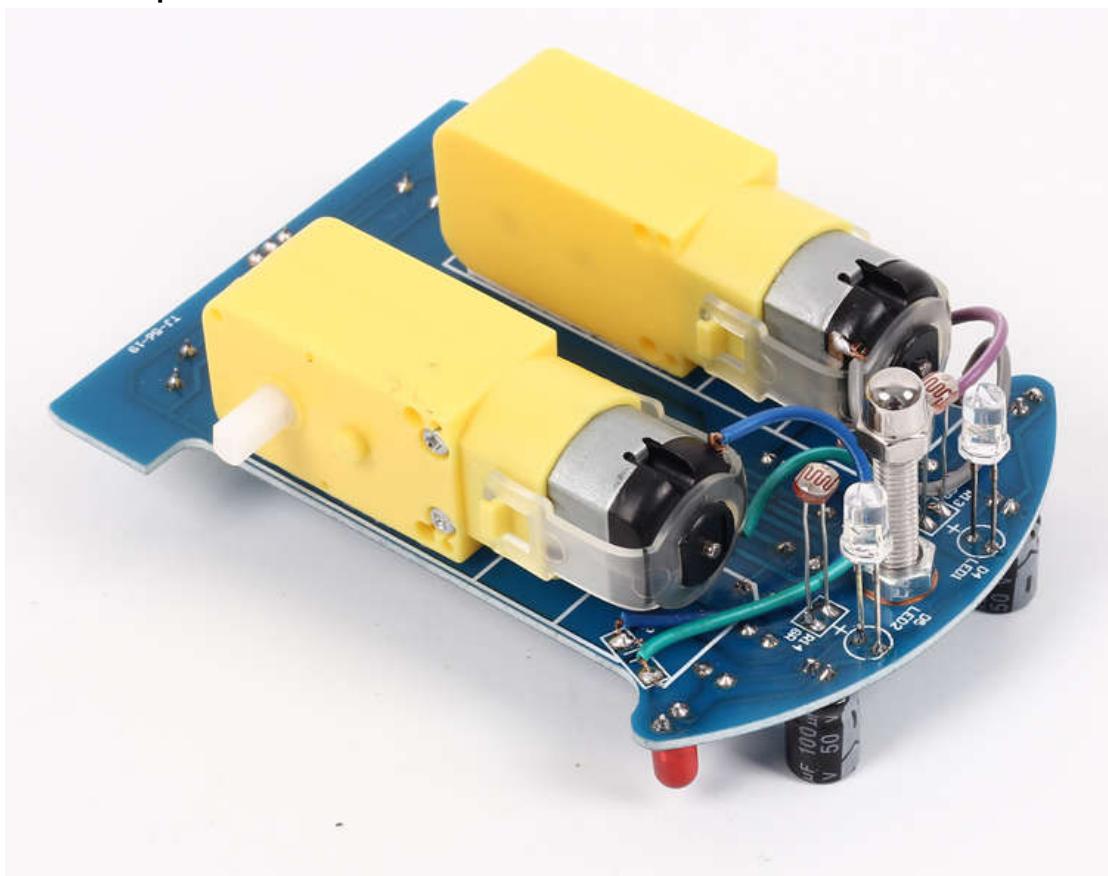


3>. Install photoresistor and white LED on PCB reverse. But please make sure the distance is about 5mm between top of mecanum wheel (top of screw cap top) and photoresistor/LED.

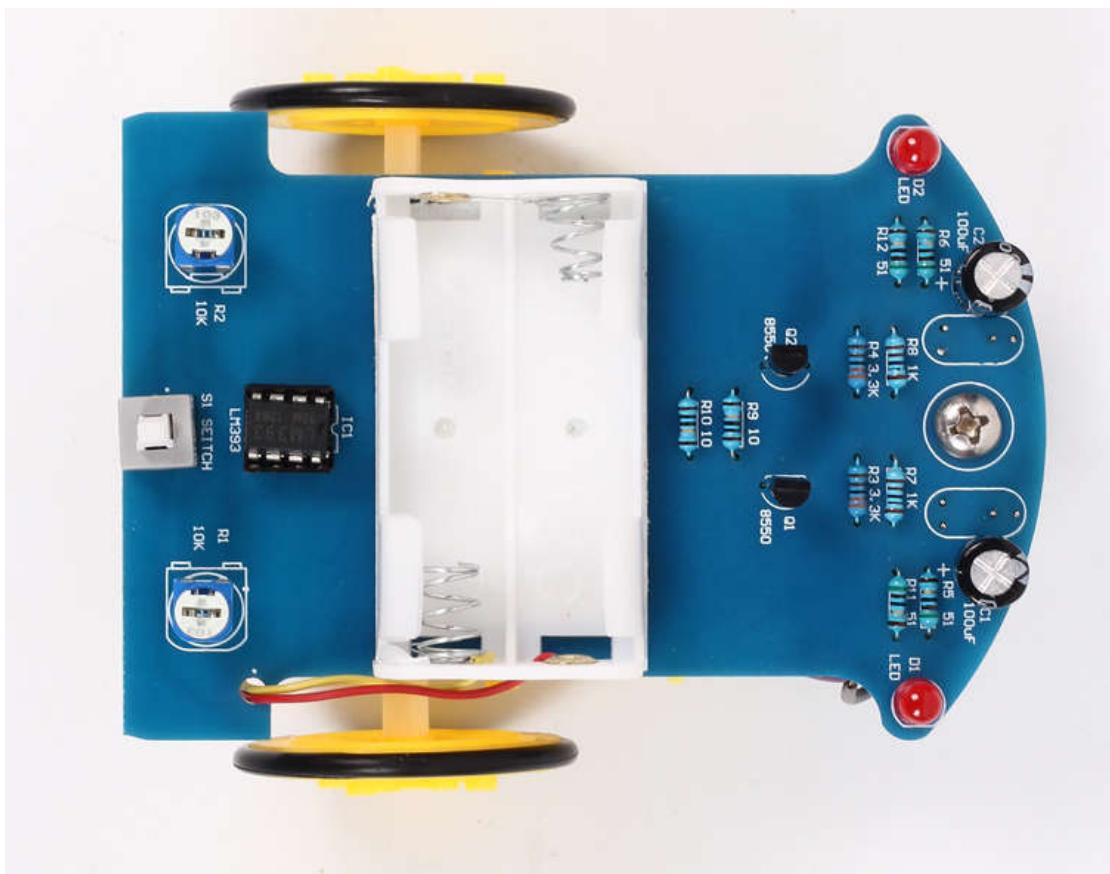




4>. Install 2pcs Motor.



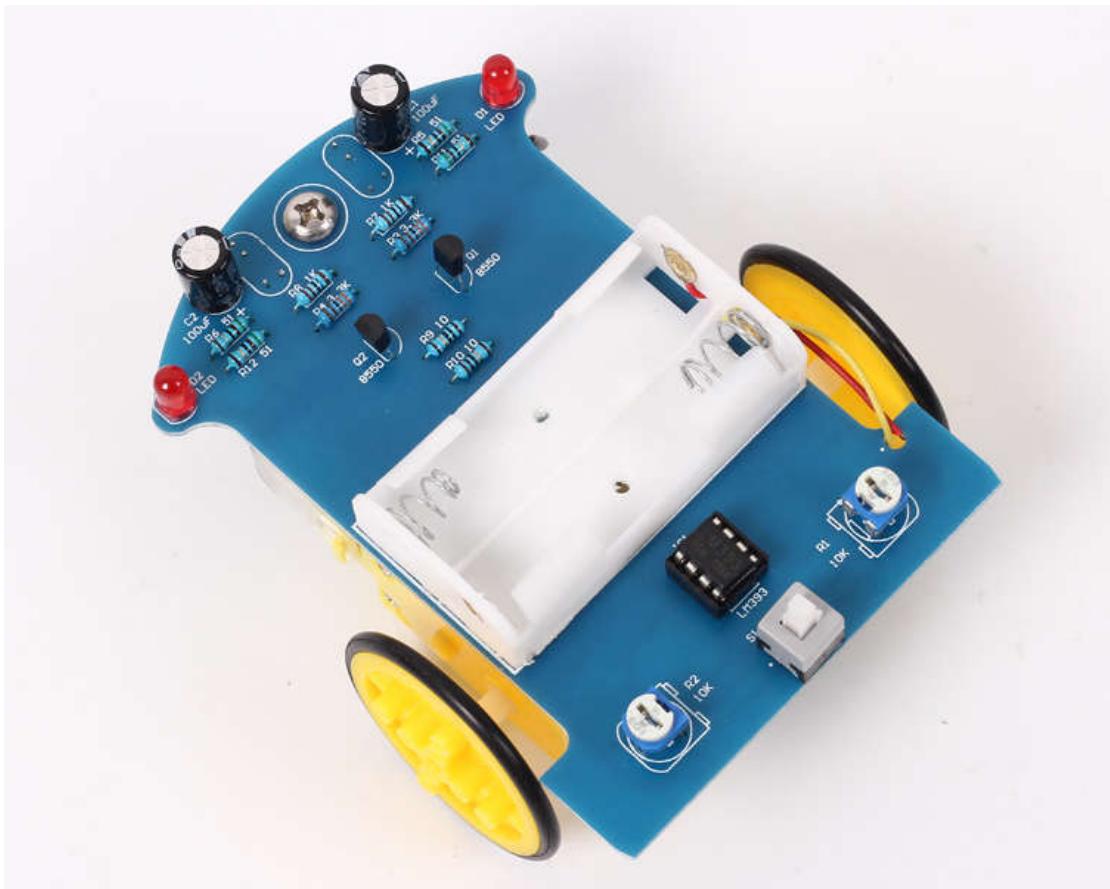
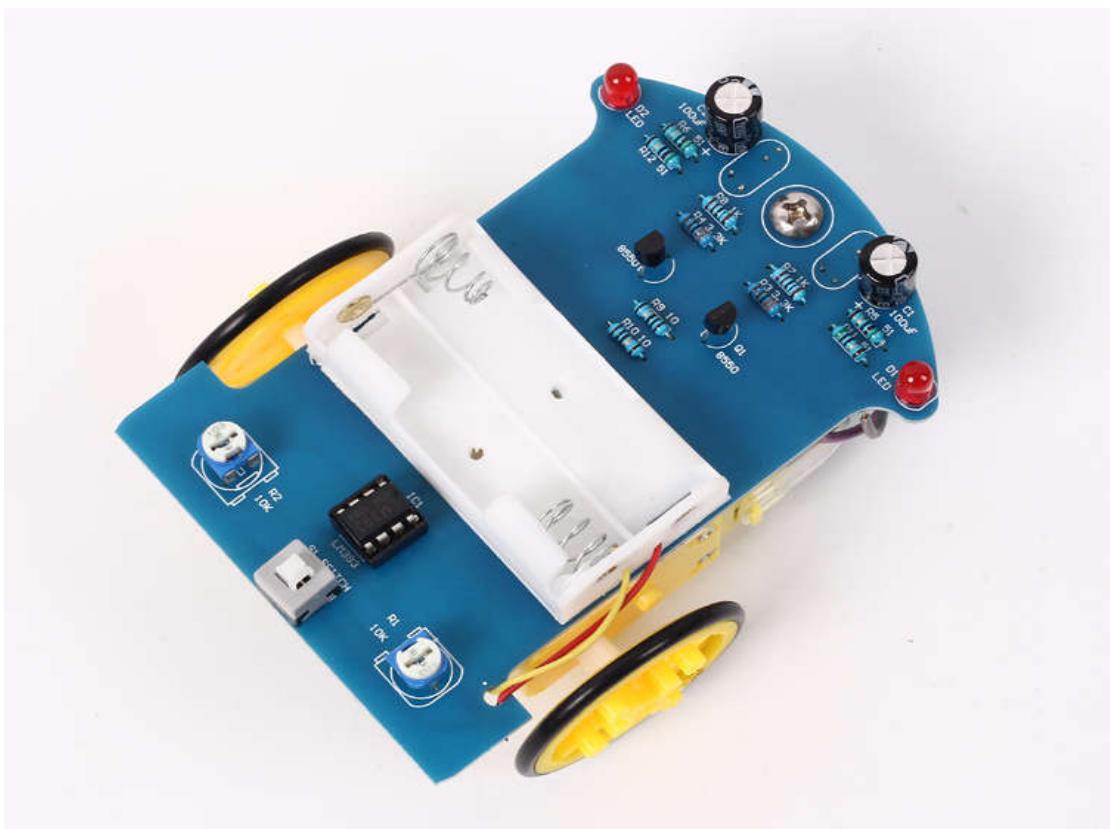
5>. Install battery case and wheel



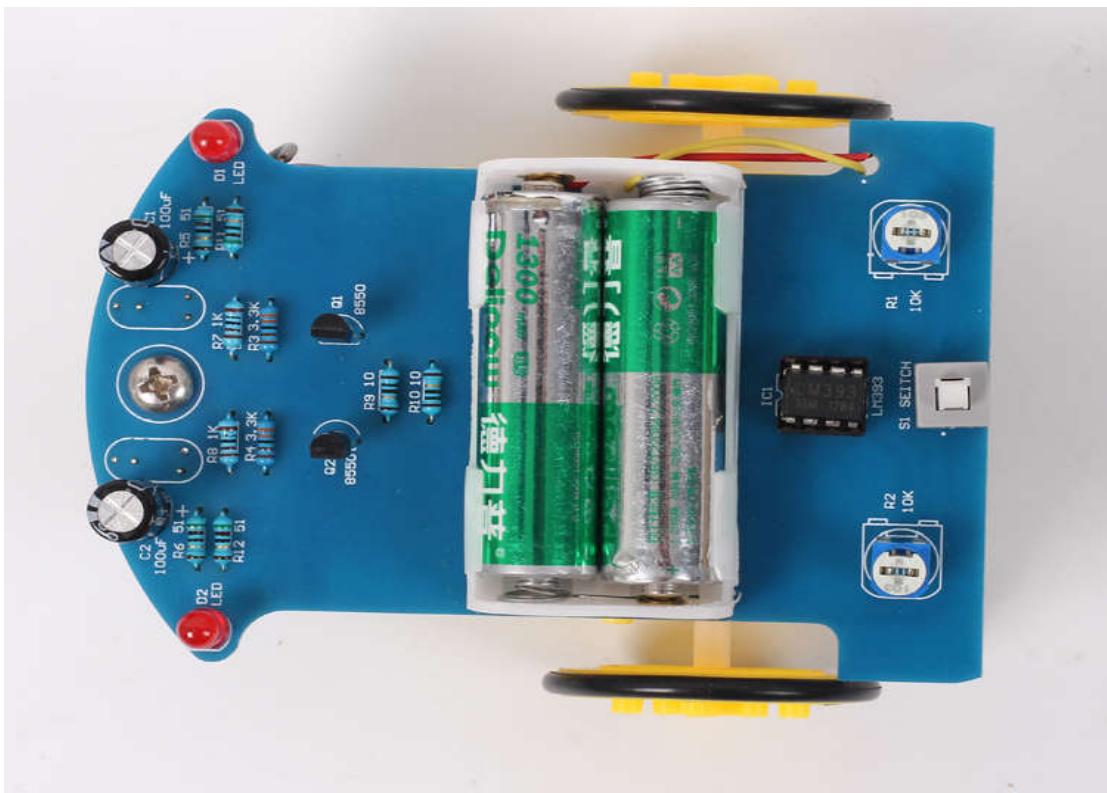
6>. Test.

- 6.1 Install 2pcs AA battery.
- 6.2 Press on switch. If 2pcs white LED ON, the installation is successful. If LED is off, please check the soldering. Pay attention to the direction of LED and other component and check pseudo Soldering.
- 6.3 Power on. Check S8550 or 10ohm resistor if motor don't move.
- 6.4 Install LM393 (Pay attention to the direction of IC).

VI. Finished Product Pictures







VII. Tips about DIY Electronics

This product comes to you is DIY kits that needs to be installed, not the finished product! Read the product instruction carefully before installing. And DIY Electronics Operation is a practice activity that **requires certain foundation** of basic electronic theoretical knowledge and welding and hands-on ability. We can't guarantee that all our friends will DIY successfully due to the varying learning phases.

We pledge seriously to you: We could fully satisfy you with our quality products, high-efficiency logistics and perfect after-sale service! We will **do our utmost to assist you** to complete the installation. Your satisfaction is our commitment.

If the finished product does not achieve the effect we described or you have any questions or problems with our product or the transaction unfortunately, **don't rush to give us a negative feedback** out of anger and impulse, please do not hesitate to **contact us** directly for further help.

VIII. Appendix

1. WHDTS specializes in Electronics Products, such as circuit components, function modules, wireless module, robotics accessories, DIY kits etc.. WHDTS devotes lifetime to providing excellent products with competitive price, fast delivery and 100% after-sales service for all makers, DIYer, R & D personnel, electronic enthusiasts, students and teachers. We are aimed at making your electronics projects go with a swing.
2. WHDTS has long been engaged in Electronics Related Products wholesale and retail business. Welcome letter calls to discuss the wholesale and retail business.
3. We have been keeping trying to improve the manual. If any words or steps of the instruction confuses you, please feel free to let us know because English is not our first language. We will appreciate for the generous help of pointing out our expression problem. Thank you in advance.