

## D2-6 kit instructions

Introduce:

D2-6 type bluetooth car kit is the latest version of D2 series kit, single-chip microcomputer as the core, through program control achieves tracking, obstacle avoidance, Bluetooth mobile phone control, gravity induction control functions.

The car with the serial interface, through the connecting the Bluetooth module to achieve wireless remote control function.

Compared to the previous D2 series car can only control forward, D2-6 added more features, not only can achieve forward, but also can be achieve fall back.

Lithium batteries, rechargeable, reduce the cost of use. (You need to prepare your own battery, this kit has no battery)

Feature:

Operating voltage: DC 3.7V (one lithium battery)

Circuit board size: 105mm \* 72mm

### Various light-emitting diodes



3MM infrared emitting diodes. Part of the lamp beads transparent, long legs positive, short legs negative



3MM infrared receiver diode, lamp beads part is black, long legs positive, short legs negative.



3MM green light-emitting diodes, lamp beads part is green, green light. Long legs positive, short legs negative.



5MM red light-emitting diodes, light beads part is red, red light. Long legs positive, short legs negative.

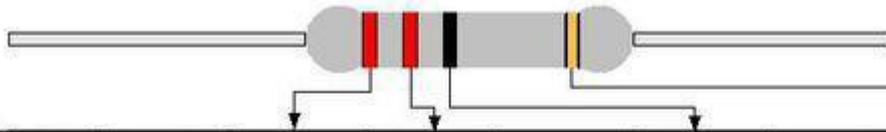
The above diodes in the car PCB installation location has the following symbols.

Here is the cathode, connect the long leg of the diode



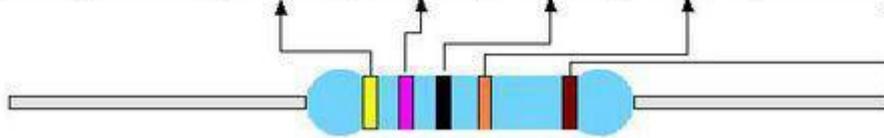
Here is the negative, connect the short leg diode

Color ring resistance



**22 ohms 5%**

color	Num.	Ring 1	Ring 2	Ring 3	% Ring 5 % letter
brown	1	1	1	1	10 ± 1 F
red	2	2	2	2	100 ± 2 G
orange	3	3	3	3	1K
yellow	4	4	4	4	10K
green	5	5	5	5	100K ± 0.5 D
blue	6	6	6	6	1M ± 0.25 C
purple	7	7	7	7	10M ± 0.1 B
grey	8	8	8	8	± 0.05 A
white	9	9	9	9	
black	0	0	0	0	1
golden	0.1				0.1 ± 5 J
silver	0.01				0.01 ± 10 K
NON		Ring 1	Ring 2	Ring 3	Ring 4 ± 20 M



**470KΩ 1%**

**If you are not sure the resistance, you can use a multimeter to measure before the installation.**



Electrolytic capacitor

Electrolytic capacitor, long legs for the cathode, short leg for the negative

Electrolytic capacitors in the car mounted on the PCB location of the following symbols

Here is the cathode, connect the electrolytic capacitor long legs

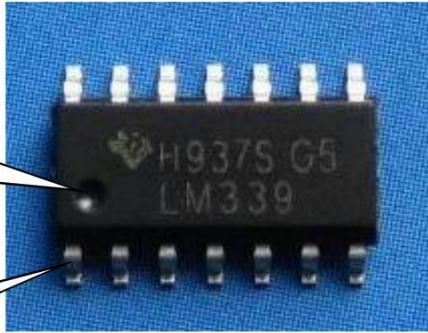


Here is the negative, then the electrolytic capacitor short legs

## SMD Integrated Circuit

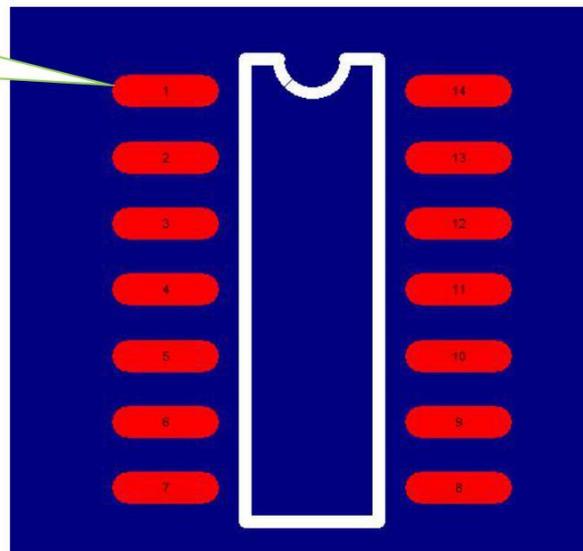
Learn to identify the first foot patch of IC

Note that there is a small concave point



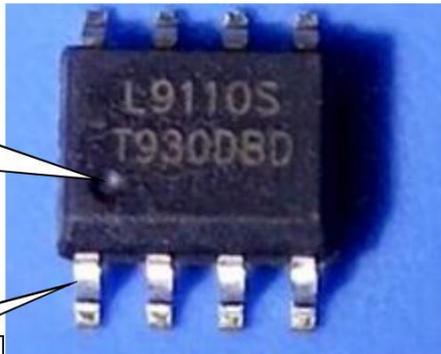
The bottom of the small point is the first foot

On the PCB, this pad connects to the first pin of the LM339



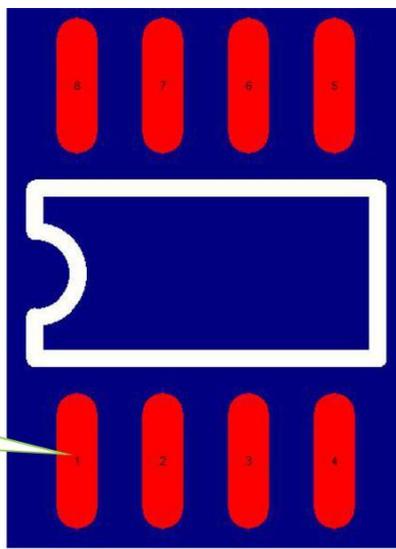
## SMD integrated circuit L9110S

Note that there is a small concave point



The bottom of the small point is the first foot

On the PCB, this pad connects to the first pin of the L9110S



Single - chip microcomputer STC15W201S

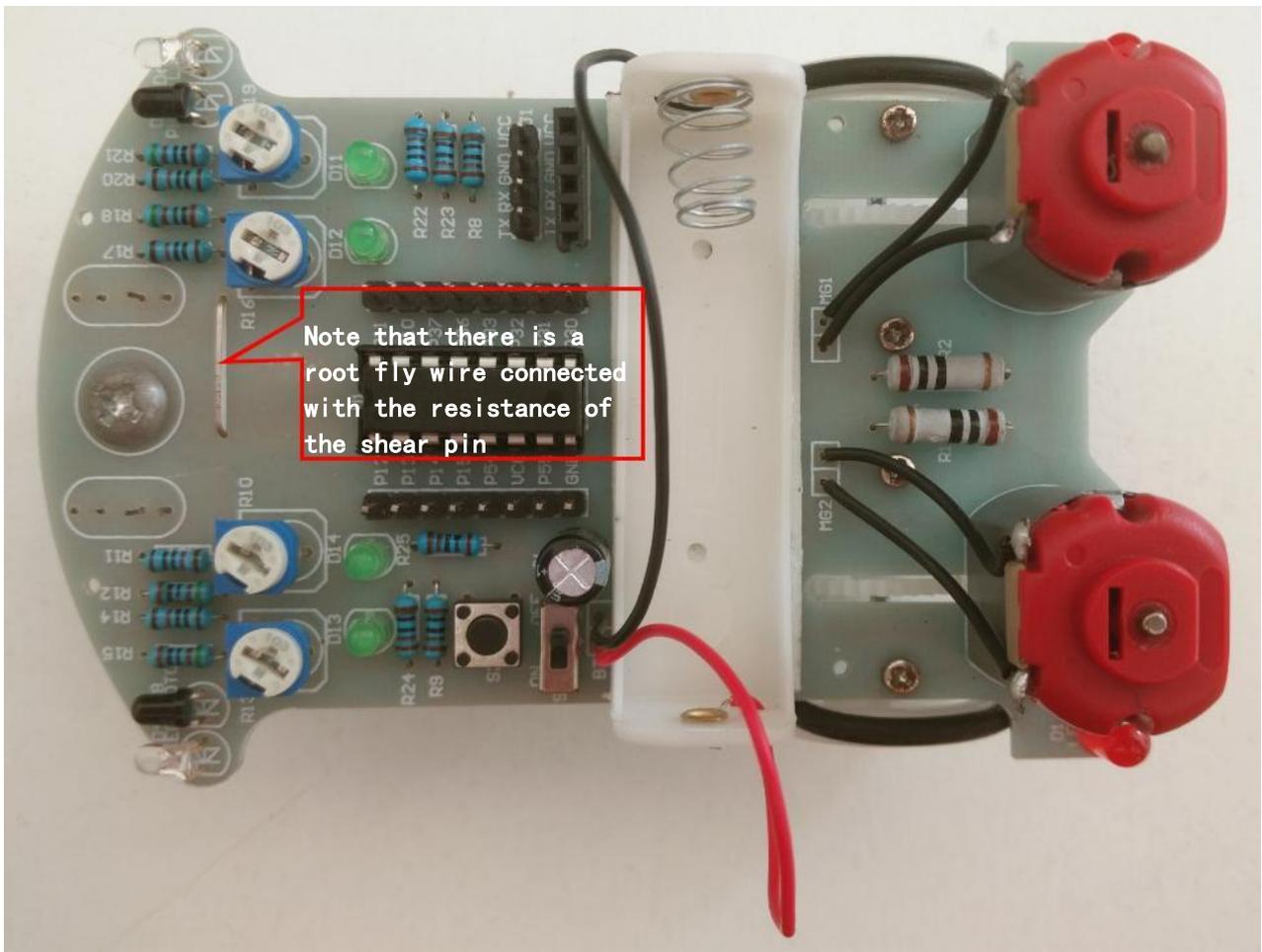


Single-chip is inserted on the IC Block, the assembly IC base, we should pay attention to the IC Block has a semi-circular small gap

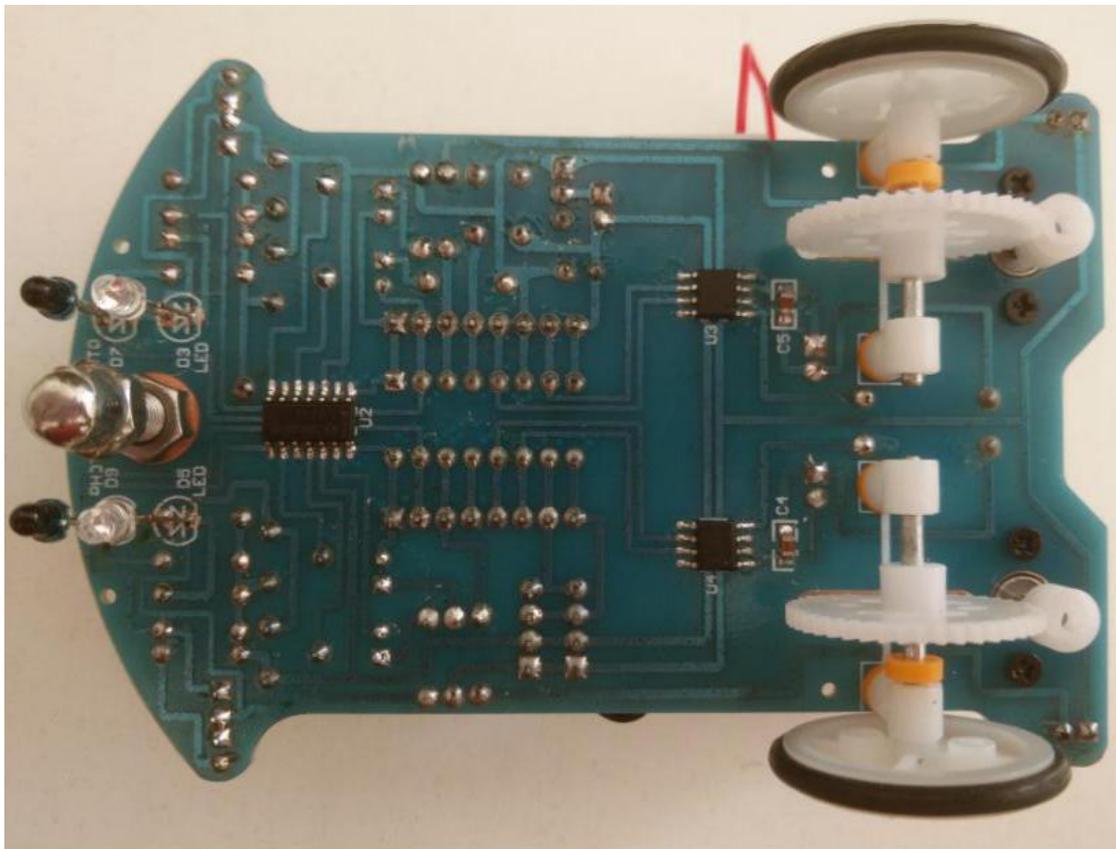


This mounting gap should be aligned with the semicircular notch on the top of the PCB. Single-chip IC insert into the seat, we must pay attention to the semi-circular chip on the gap should also be semi-circular gap with the IC on the same direction.

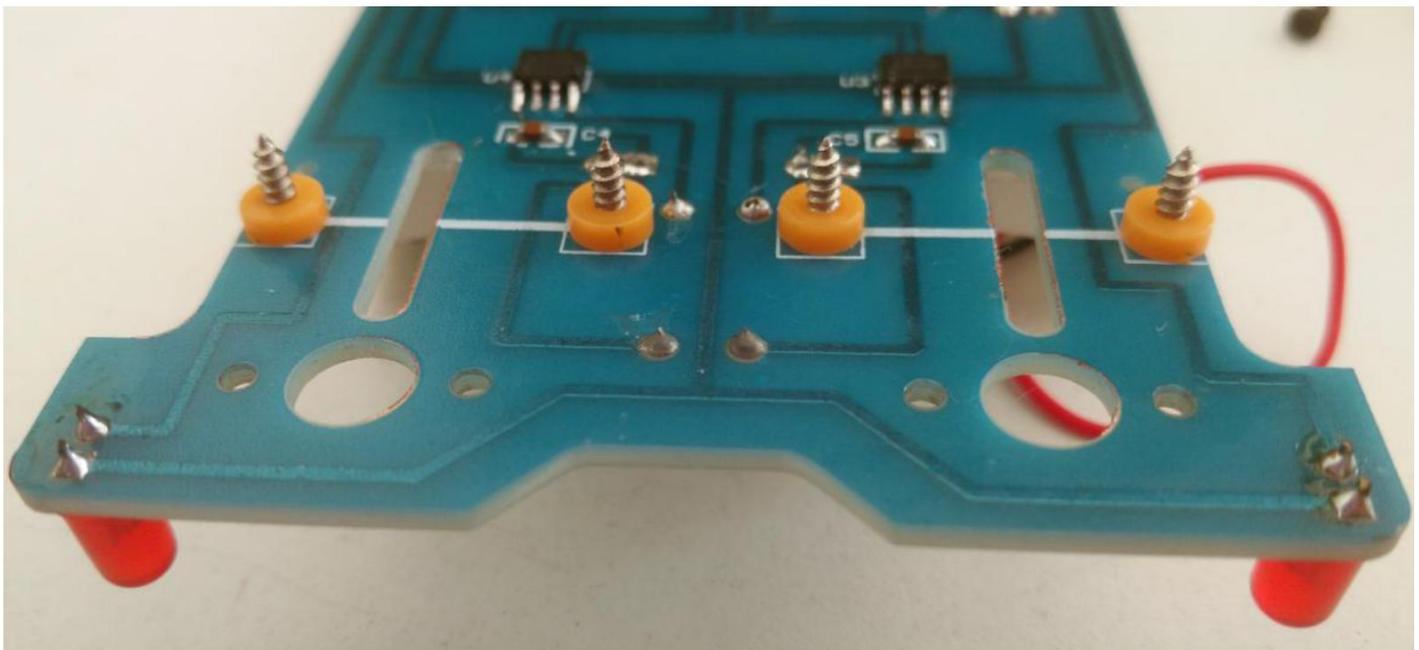
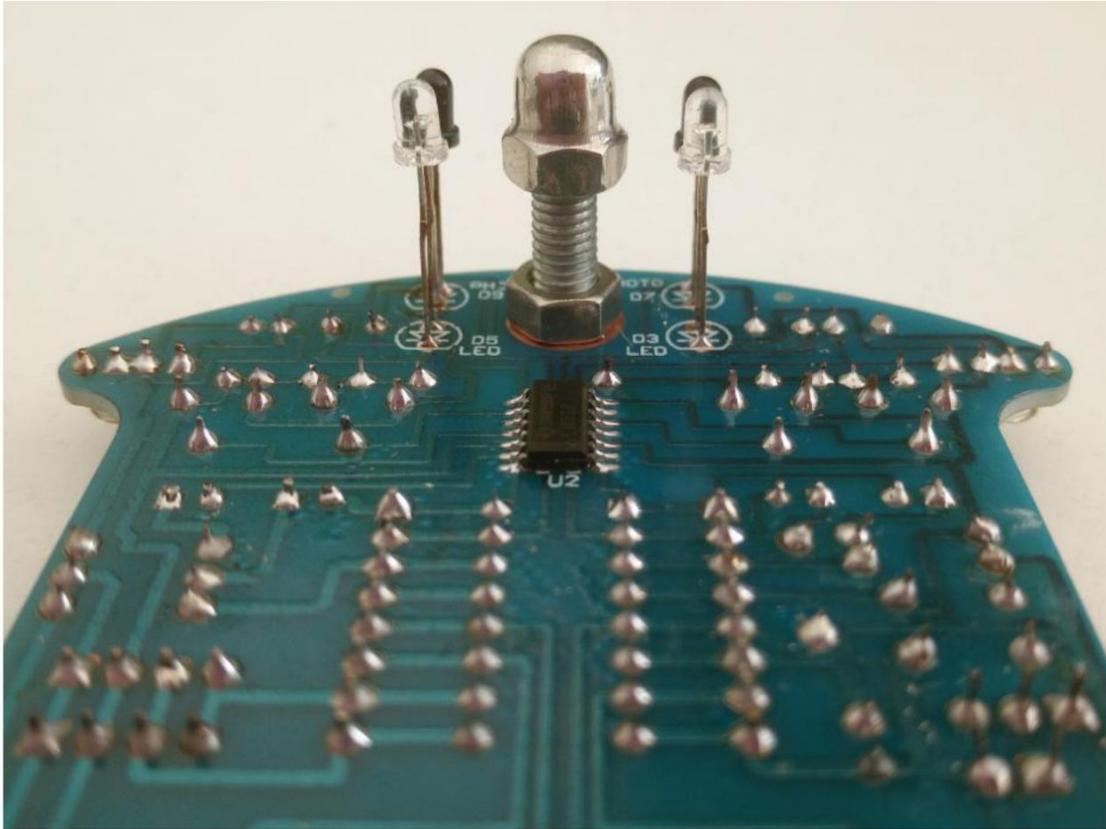
After the completion of the installation of all the pictures for reference only



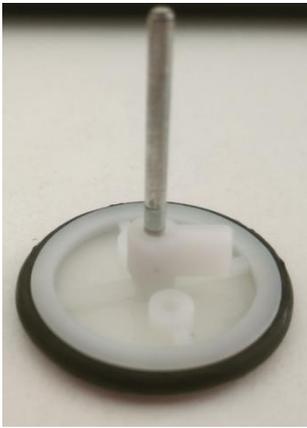
Backside of the picture



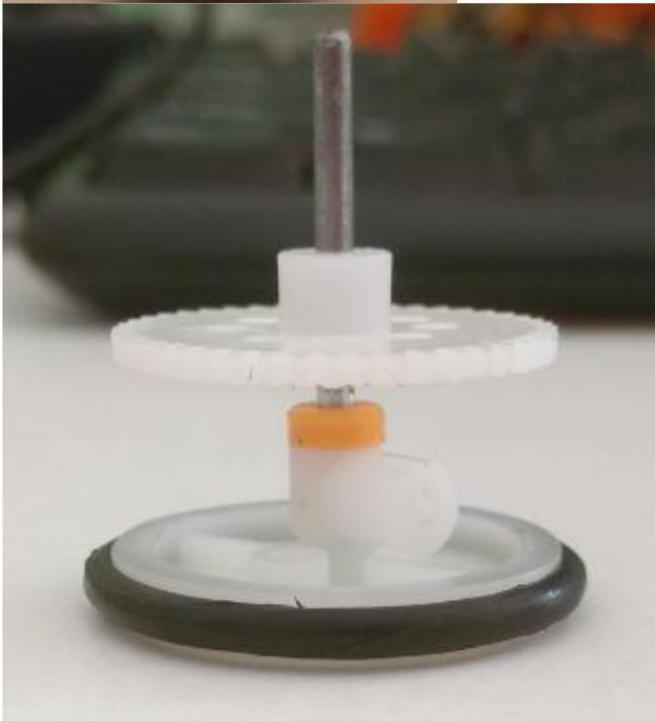
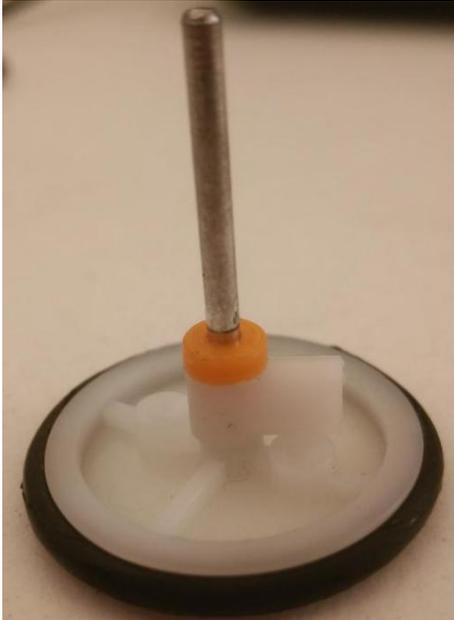
Two pairs of infrared diodes for tracking, the top and the caster vertex distance is about 5MM

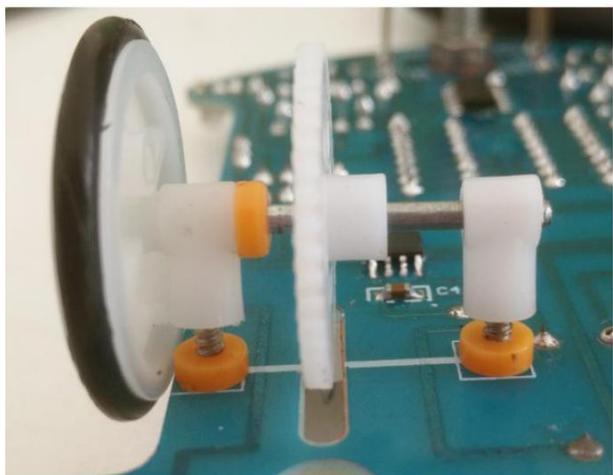
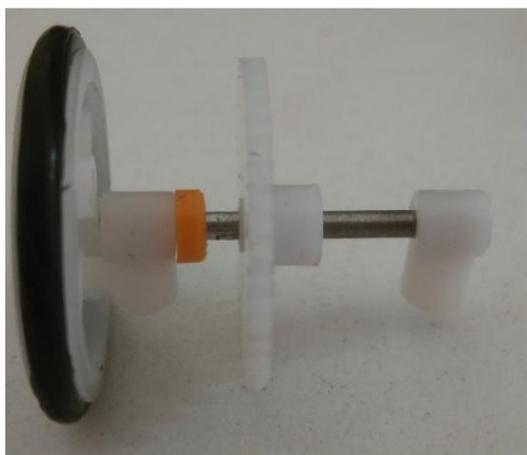
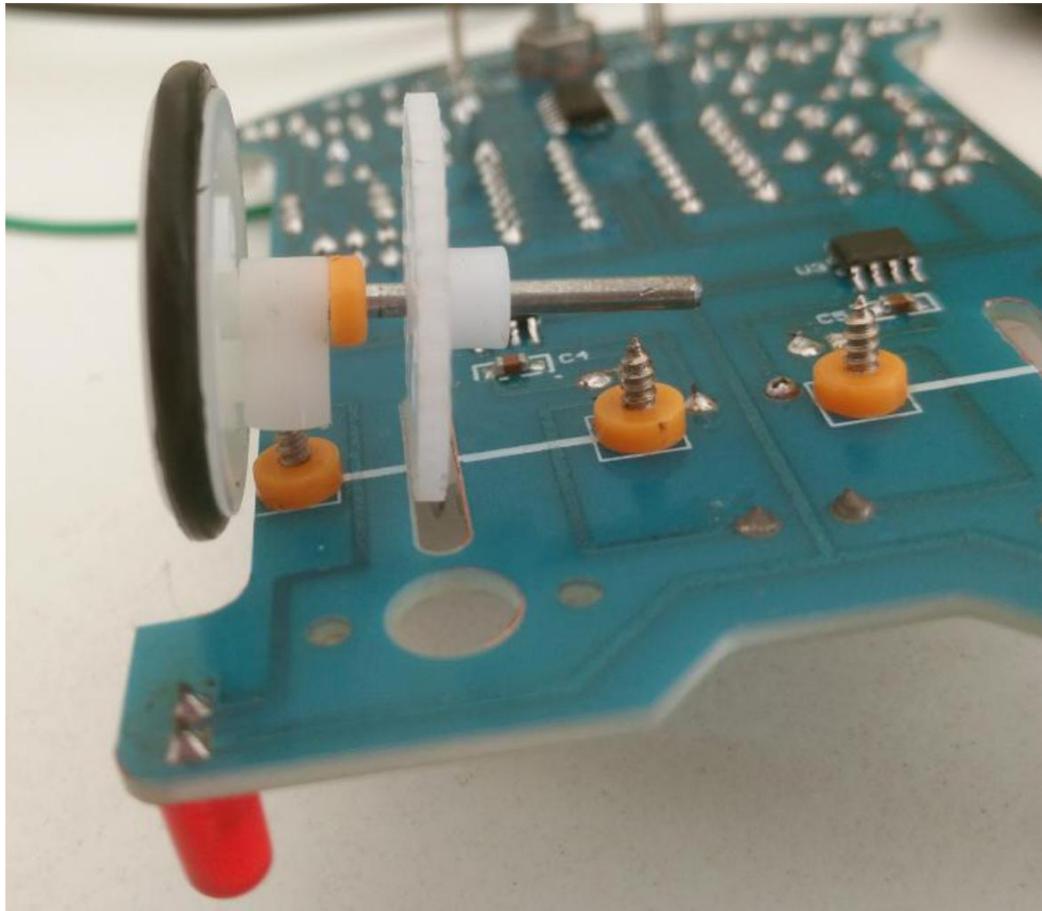


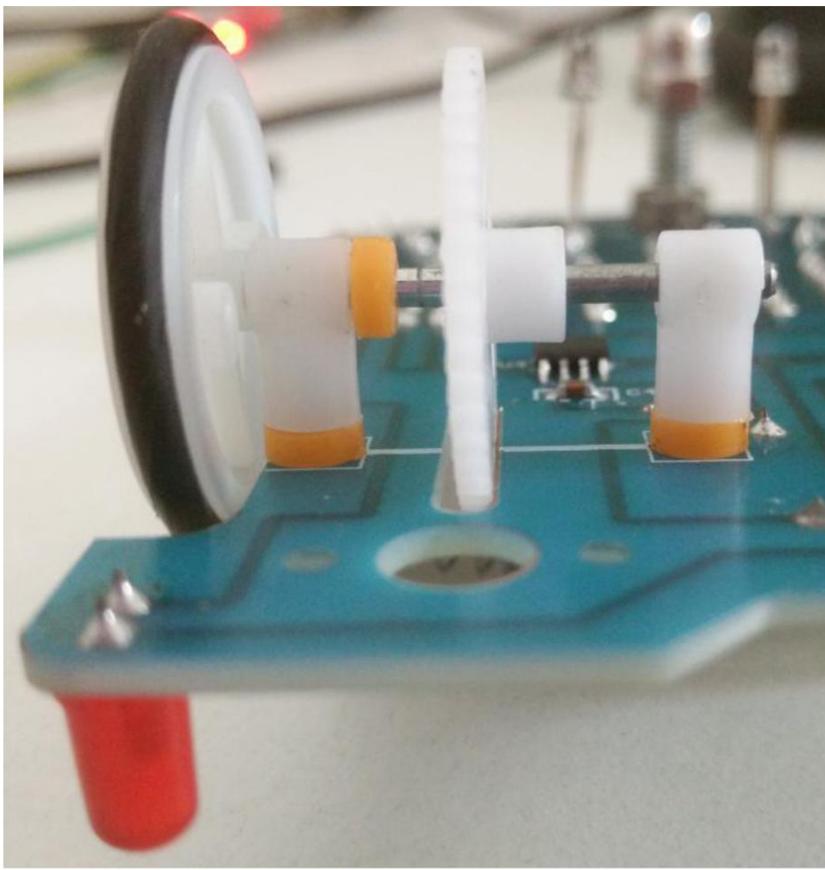
2B: put a three-way sleeve into the axle

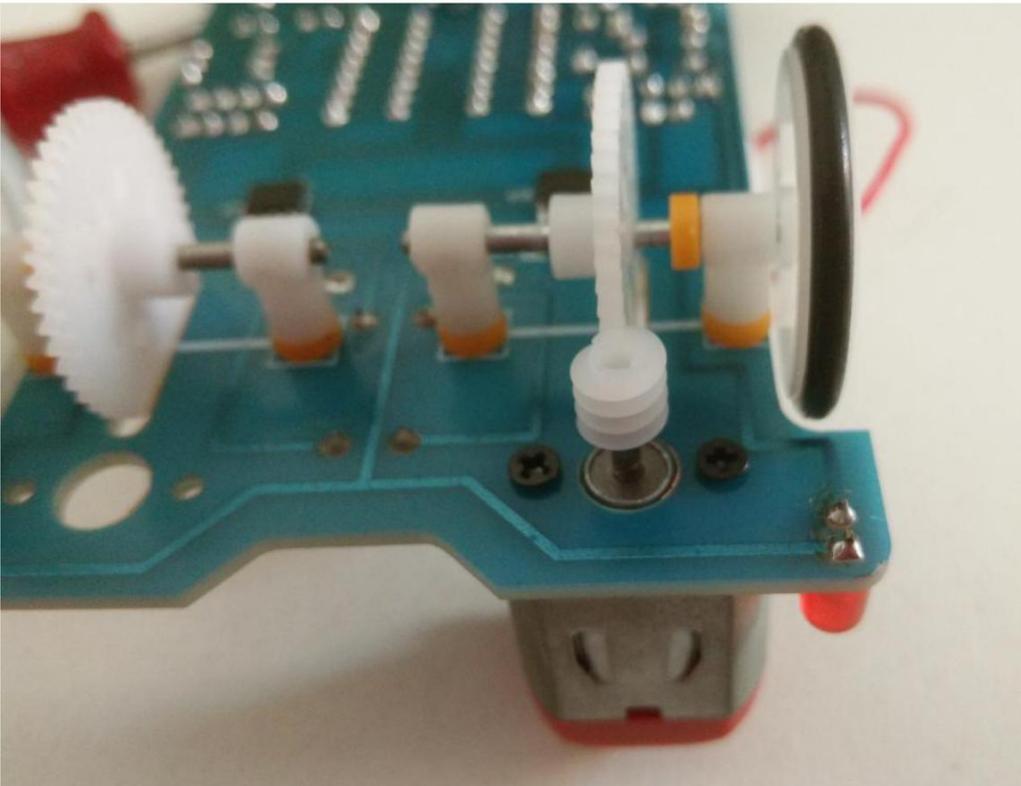
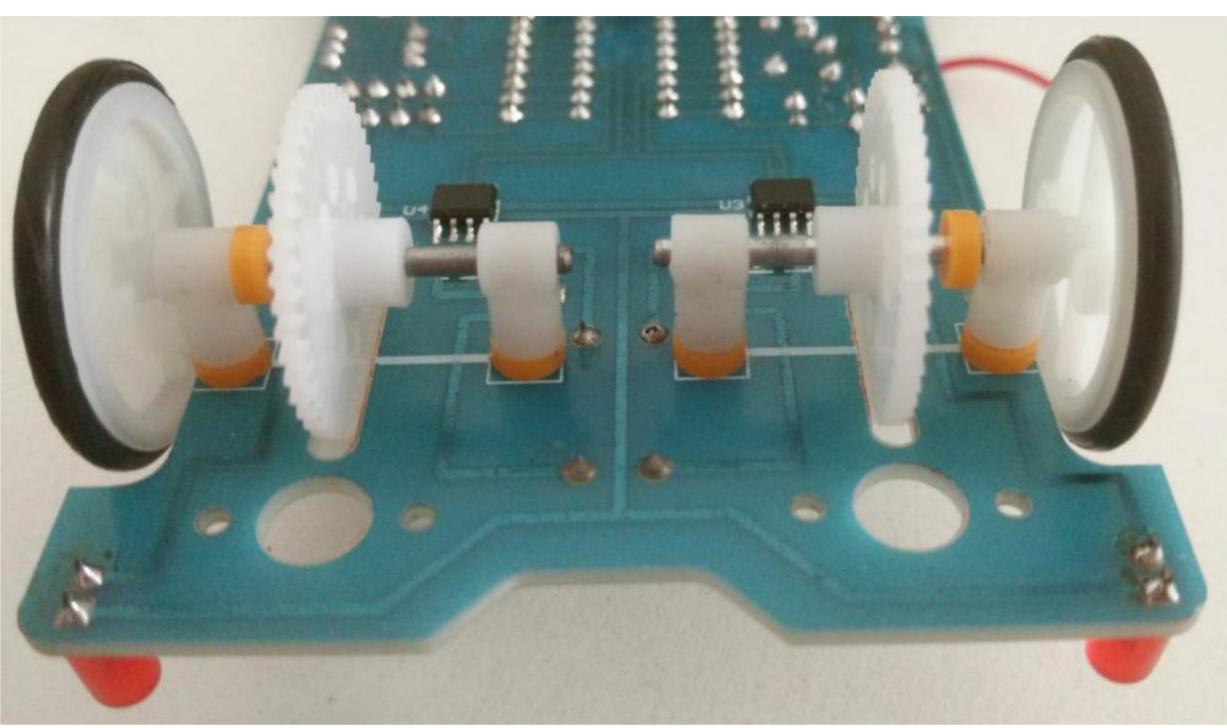


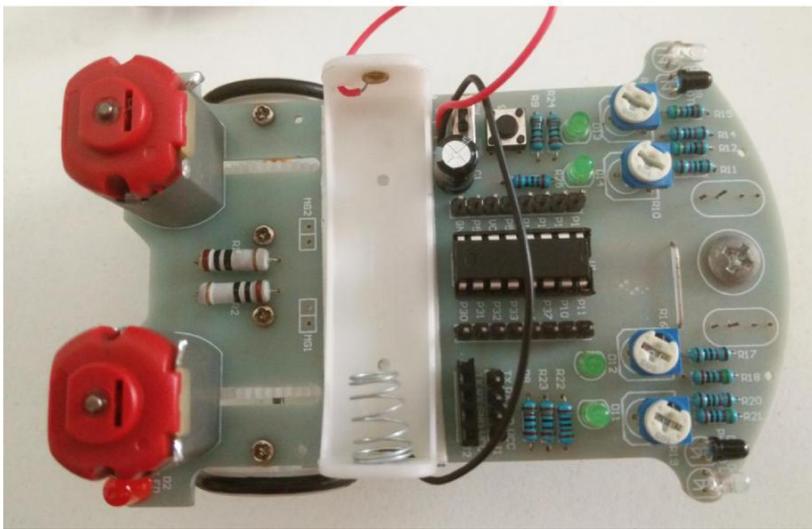
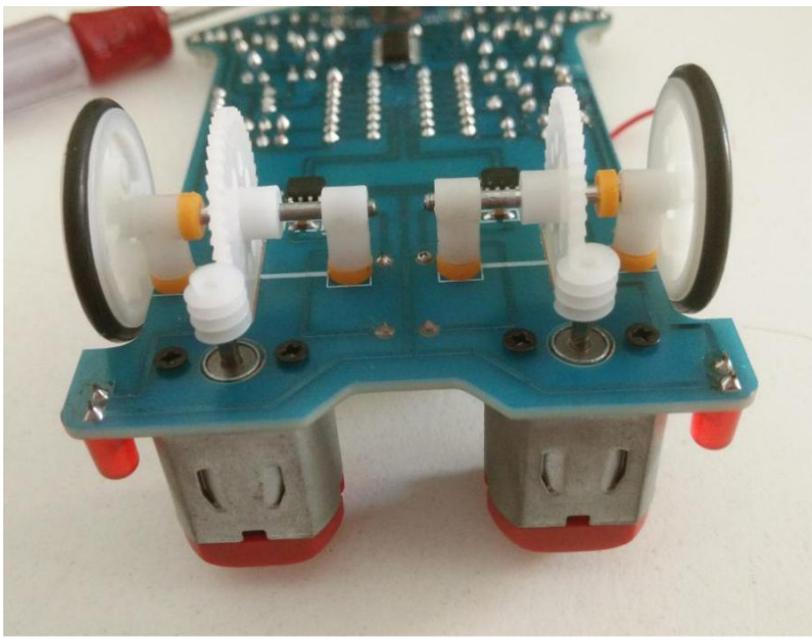
2C: Insert a washer into the steel shaft next to the 3-way sleeve



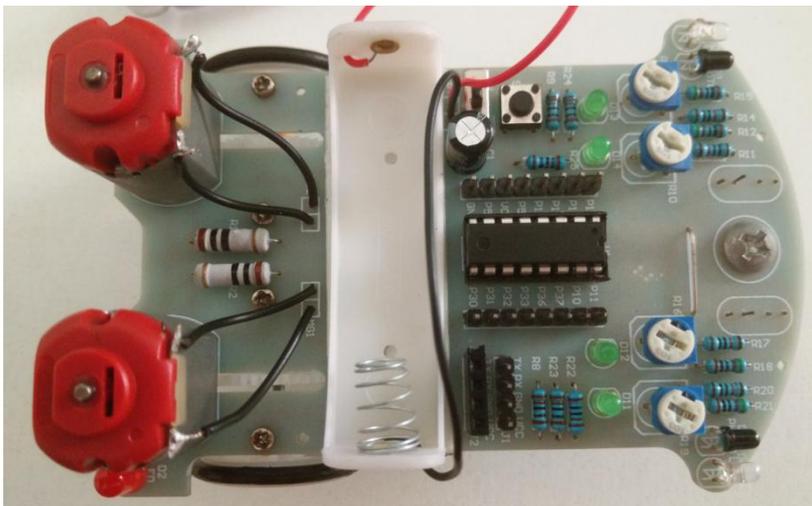








Solder the motor power cord

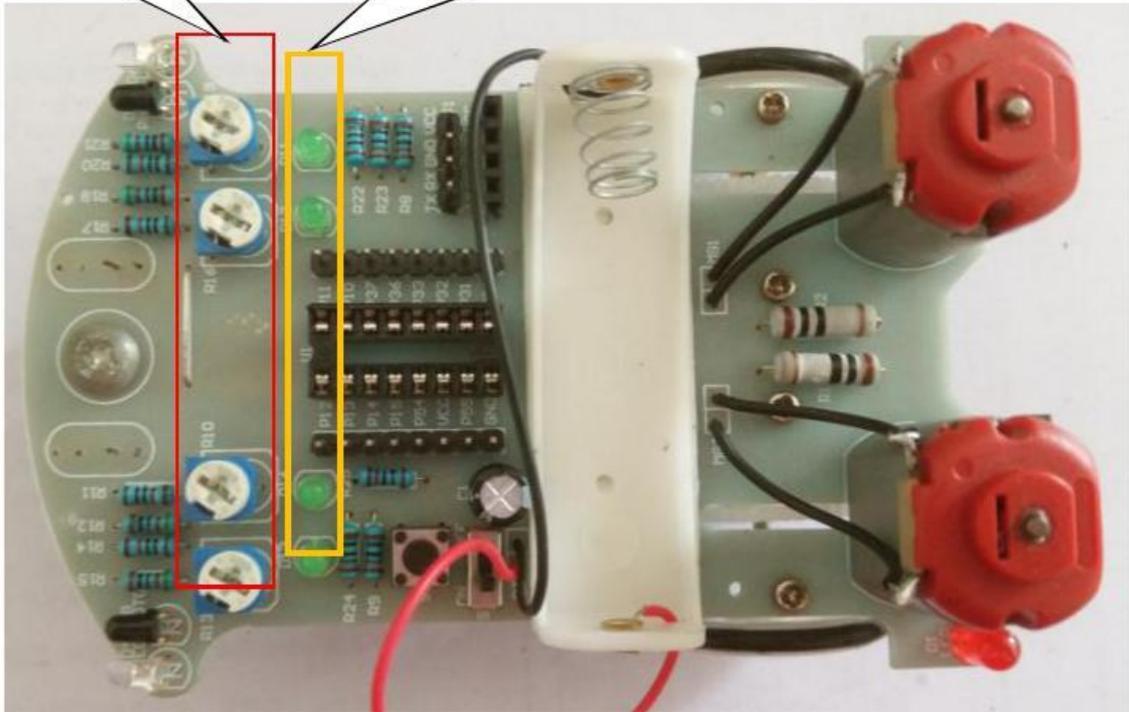


The following is the debug section

Infrared sensitivity adjustment

Four adjustable resistors are used for IR receiver sensitivity adjustment

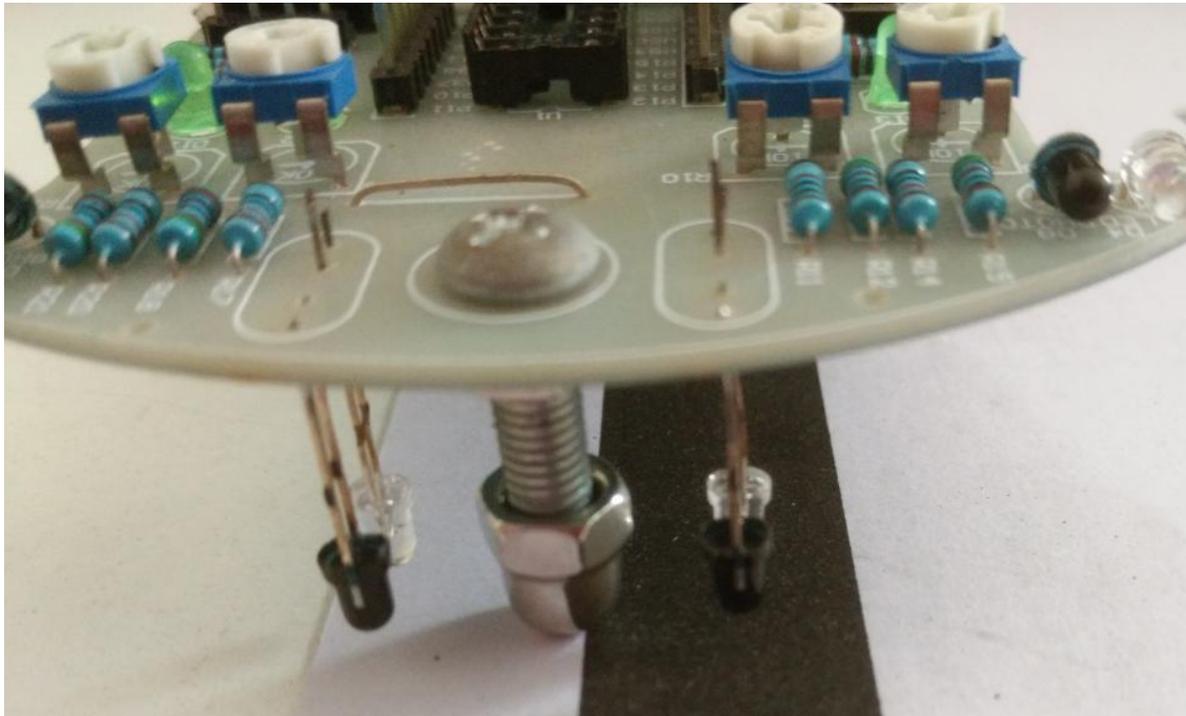
Four light-emitting diodes are used for infrared reception sensitivity indication.



Adjusts the sensitivity of the two infrared rays used for tracking

Remove the microcontroller

Car flat, first, a pair of infrared tube on the black track alignment, the figure is the D7 and D3 aligned black track

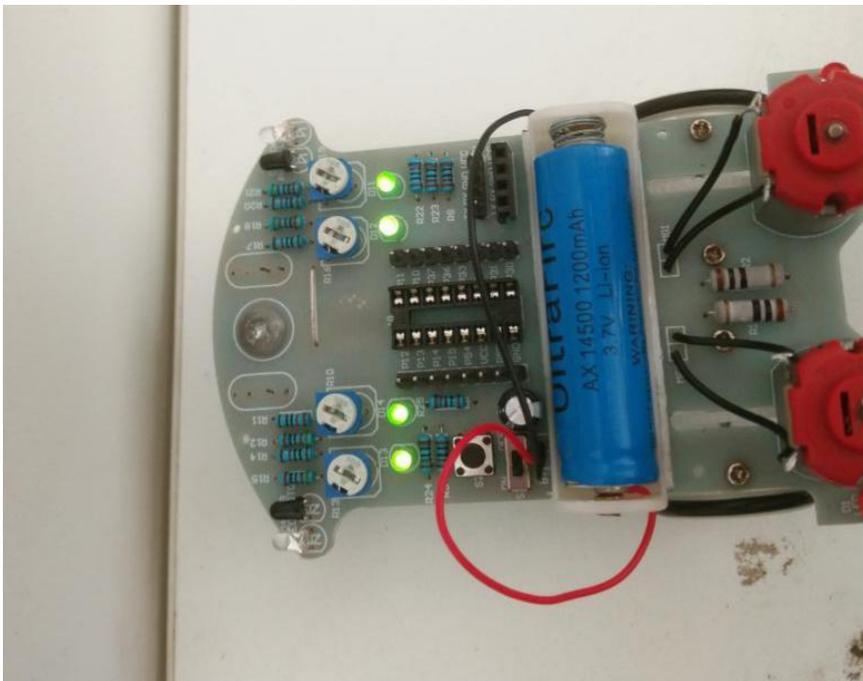


Counterclockwise adjust the adjustable resistor R10 until the light-emitting diode D14 light, and then clockwise adjust the adjustable resistance R10, until the light-emitting diode D14 completely extinguished, it adjusted. Move this set of infrared rays between the black track and the white area. It can be seen that when the black track is aligned, the light emitting diode D14 is turned off, and when the white area is aligned, the light-emitting diode D14 is turned on.

The remaining set of infrared pairs of traces, D5 and D9, is adjusted as described above, using the adjustable resistor R16, and the light-emitting diode D12 indicates the sensitivity. Note: Due to the use of infrared, the car is not suitable for outdoor use, outdoor sunlight in the infrared can also be received, causing interference.

### The sensitivity of the two sets of infrared rays used for obstacle avoidance is adjusted

flat car, erected a white paper in front, about 5CM or so



One set of infrared pairs of tubes D4 and D8, for example, another group of the D6 and D10 regulation of the same method, D4 and D8 adjustment using adjustable resistor R13, LED D13 used to indicate its sensitivity. Another set of regulators for the D6 and D10 use adjustable resistor R19, light-emitting diode D11 used to indicate its sensitivity.

First adjust clockwise R13, until the light-emitting diode D13 off, and then counter-clockwise adjustment R13, when the light-emitting diode D13 lit, stop the adjustment, so that the sensitivity is adjusted well.

Note: Obstacle avoidance function is only suitable for white and good reflective obstruction objects, and can not be used outdoors, outdoor sunlight in the infrared can also be received, causing interference.