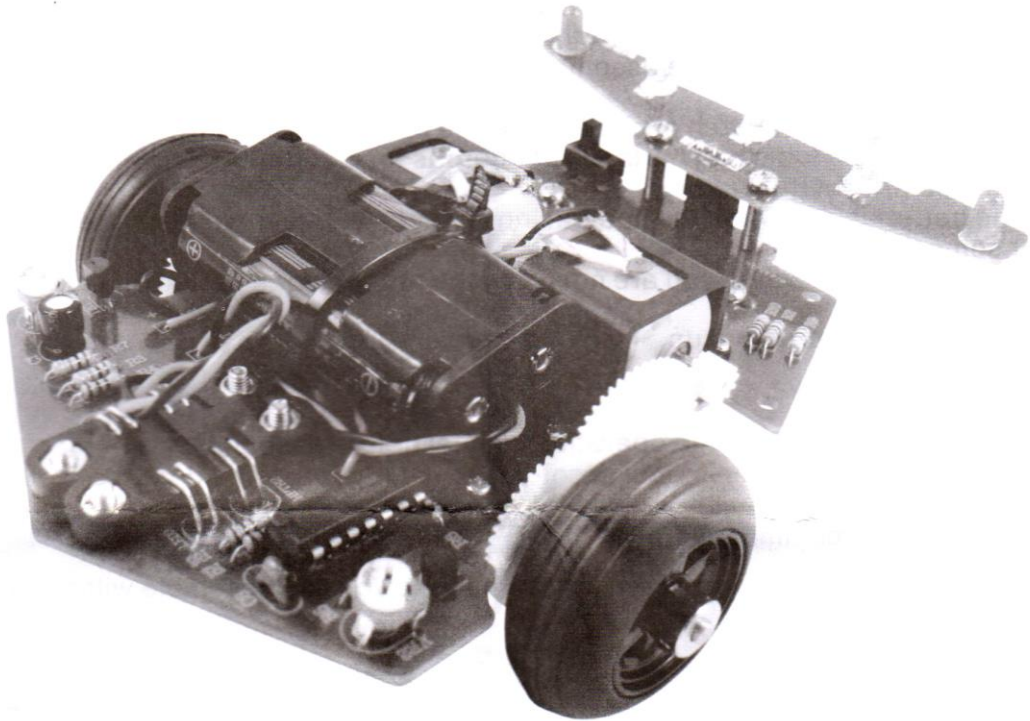




Line Tracing Car V2

Manual no: DG-2000V2



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The specifications, forms, contents of the product are subject to change without prior notice. We are not liable for disadvantage or damage caused by improper use or assembly.



Manufacturer & technology supporter:
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WWW.AREXX.COM



European Importer:
AREXX Engineering
ZWOLLE, HOLLAND

© DAGU CHINA

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TEL:0760-88811951
<http://www.arexx.com.cn>
E-mail:info@arexx.com.cn

Instruction :

This product takes the principle of light sensing. The two motors are activated by the two light sensors on the front which can sense the light they catch. Only If you paint a black line on the white paper and then turn on the switch ,The line tracing car can track the black line that you paint.

Specification:

Power source : 3v(AA battery X 2pc)
Power consumption : MAX :100mA, MIN:60mA
Size : 145x120x40mm
Net weight : 190g



Precaution:

- When you open the parts the return right will be disposed.
- Read carefully before you stare assembly the instruction manual.
- Be carefully with tools
- Keep this product out of reach of children and do not build this kit when children are in the neighbourhood, the tools and parts are dangerous for children
- Check the polarity of the battery.
- Keep the batteries dry, when the line tracing car gets wet, remove the batteries and let it dry for some time.
- Remove the batteries when you are not using the product for a period of time.



Recommended age 14 and up.

Necessary tools:

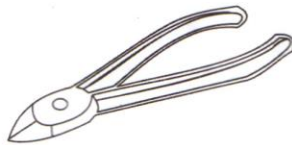
We advise you to read carefully the operation manual before assembly.

Please assemble this education model according to instruction manual, so that you can avoid mistake. If you study the assembly indication diagram carefully, then you can assemble a completed line tracing car immediately.

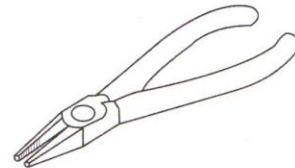
You must use these tools as follows before assembly, so you can assemble without difficulties.



HEX



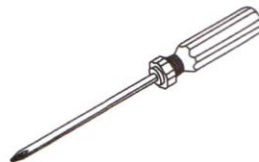
Diagonal Cutter



Long Nose Plier



Solder Iron












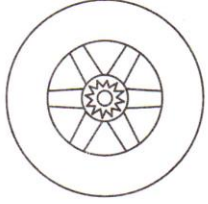
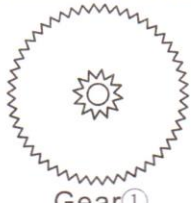
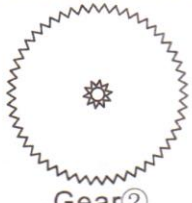

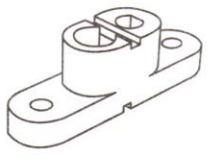

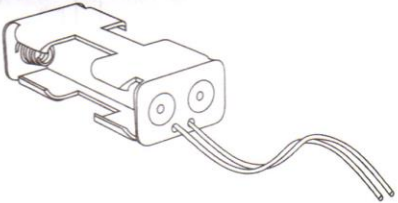
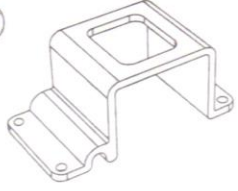
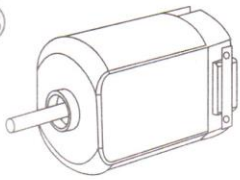
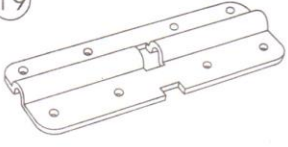
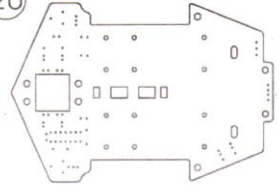
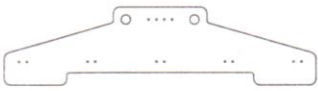


Screwdriver



AA Dry Cell


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TEL:0760-88811951
<http://www.arexx.com.cn>
E-mail:info@arexx.com.cn

Part list

<p>①</p>  <p>M2×8 Screw 12PCS</p>	<p>②</p>  <p>M2 Nut 12PCS</p>	<p>③</p>  <p>M3×8 Screw 6PCS</p>	<p>④</p>  <p>M3 Nut 8PCS</p>	<p>⑤</p>  <p>M3×5 Screw 2PCS</p>	<p>⑥</p>  <p>M3×20 Screw 2PCS</p>
<p>⑦</p>  <p>Tubular Nut 4PCS</p>	<p>⑧</p>  <p>Kimi Screw 2PCS</p>	<p>⑨</p>  <p>Universal Wheels 1PC</p>	<p>⑩</p>  <p>Black rubber wheel 2PCS</p>		
<p>⑪</p>  <p>Gear① (Main gear50, Cleputy gear12) 2PCS</p>	<p>⑫</p>  <p>Gear② (Main gear50, Cleputy gear10) 2PCS</p>	<p>⑬</p>  <p>Gear③ 2PCS</p>	<p>⑭</p>  <p>Shacing plastic parts 2PCS</p>		
<p>⑮</p>  <p>Black belt 1PC</p>		<p>⑯</p>  <p>Battary box 1PC</p>			
<p>⑰</p>  <p>Fixed motor plastic 2PCS</p>	<p>⑱</p>  <p>Motor 2PCS</p>	<p>⑲</p>  <p>Fixed Axis plastic 1PC</p>	<p>⑳</p>  <p>Main PCB 1PC</p>		
<p>㉑</p>  <p>Wing PCB 1PC</p>	<p>㉒</p>  <p>Metal Axis $\phi 3 \times 124\text{mm}$ 1PC</p>		<p>㉓</p>  <p>Metal Axis $\phi 3 \times 78\text{mm}$ 1PC</p>		


Electronic components

24




Resistor

<input type="checkbox"/> R1	100Ω	Brown Black Brown Golden
<input type="checkbox"/> R2	1K	Brown Black Red Golden
<input type="checkbox"/> R3	1K	Brown Black Red Golden
<input type="checkbox"/> R4	100Ω	Brown Black Brown Golden
<input type="checkbox"/> R5	1K	Brown Black Red Golden
<input type="checkbox"/> R6	100Ω	Brown Black Brown Golden
<input type="checkbox"/> R7~R9	1K	Brown Black Red Golden
<input type="checkbox"/> R10	100Ω	Brown Black Brown Golden




PCB Mark




Good soldering

25




Variable resistor

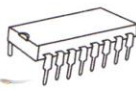
VR1.VR2
500K Ω



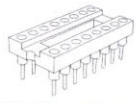
PCB Mark

Good soldering 

26




IC



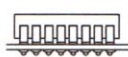
IC Socket

U1



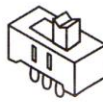
PCB Mark

Pay attention to orientation




Good soldering

27




Switch

SW

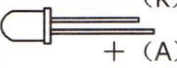


PCB Mark



Good soldering

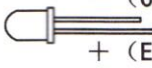
28 4PCS



LED (J1)

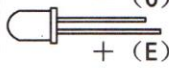
LED1.2.3.5
LED2,3 (main PCB)
LED1,5 (wing PCB)

29 2PCS



photographic tube (transparent)


30 3PCS




RGB LED

PHTR1
 PHTR2

LED2.3.4
(wing PCB)

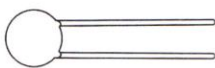


PCB Mark




Good soldering

31




Ceramic capacitor

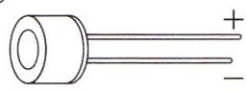
C6 100nF



PCB Mark


Good soldering 

32




Electrolytic capacitor

C1 100uF




PCB Mark




Good soldering

33




Transistor


TR1.TR2



PCB Mark

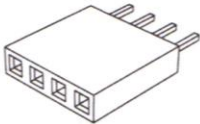
Good soldering 

34



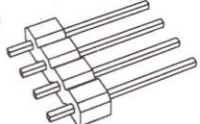
Wire 4PCS
Two red and black wire each (8CM)
(ML,MR)

35



4PIN-Female 1PC (J1)

36



4PIN-Male 1PC (J1)

The installation process:

The installation of electronic components:

Welding PCB shows clearly the position of each part, please refer to electronic diagram and installation instruction diagram for more information.

We always start to solder the lowest parts, usually the resistor is first, then capacitance. We advise to cut the component wires directly after soldering so they will be out of the way when you start soldering other parts.

Before soldering, we advise to install components (for example transistor, IC, diode), in this way when some parts do not fit properly, you can reinstall.

Suggestion:

Electrolytic capacitor, LED, photographic tube and IC have polarity, you must pay attention to the polarity when soldering.

Warning:

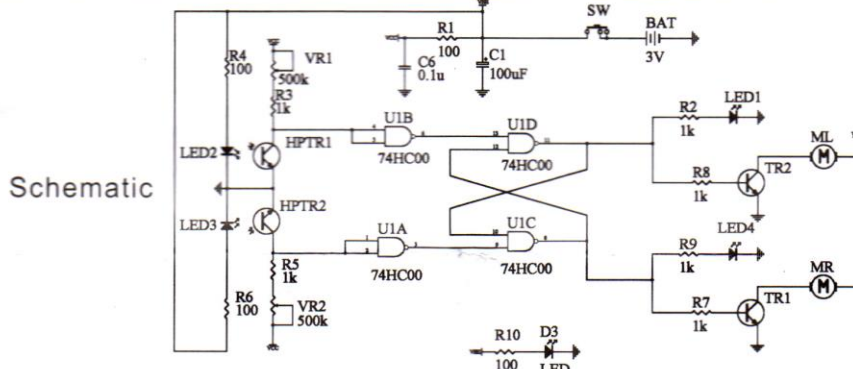
Do not solder IC directly, when you are soldering IC, it is better to use IC socket to avoid mistake. As after soldering, it is difficult to remove.

Attention:

You should align IC pins with a flat nose plier or bend them all together when all pins rest on the table.

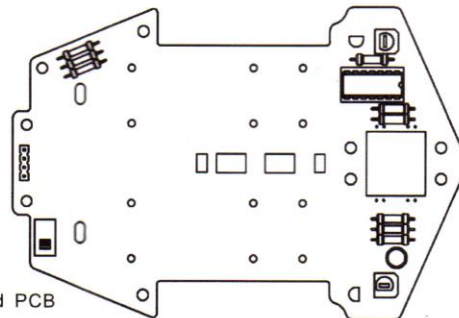


You must make sure the PCB is no electricity when soldering. It is not enough to only turn off the switch of battery, you must remove the battery.

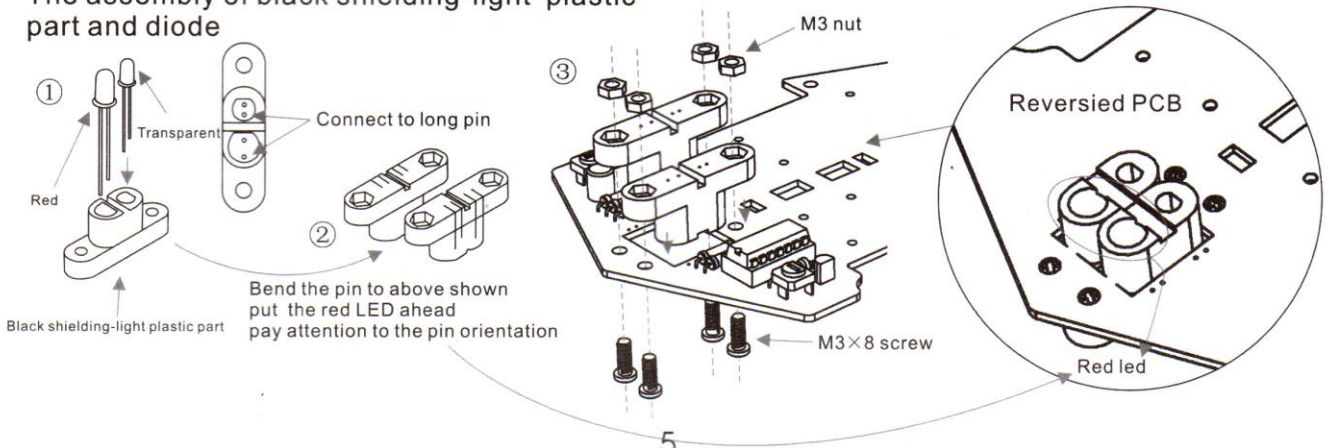


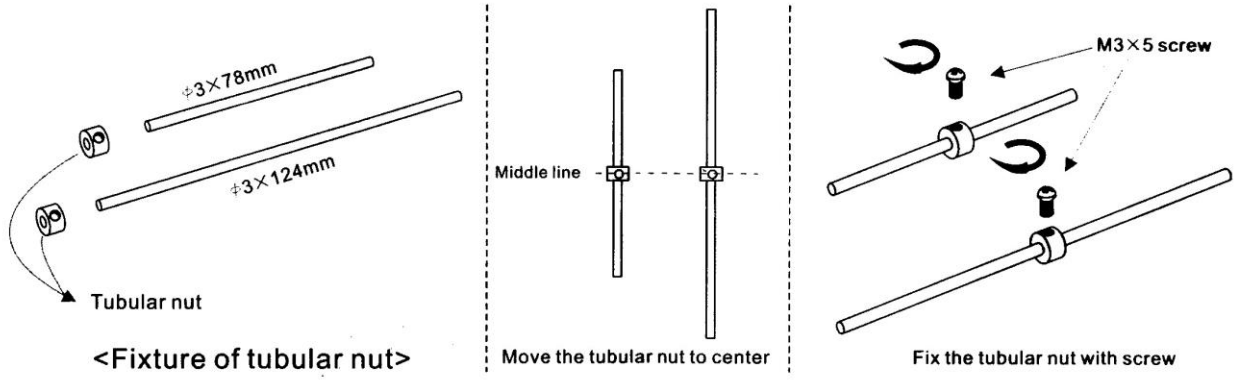
PCB soldering

Please solder each part according to instruction



The assembly of black shielding-light plastic part and diode

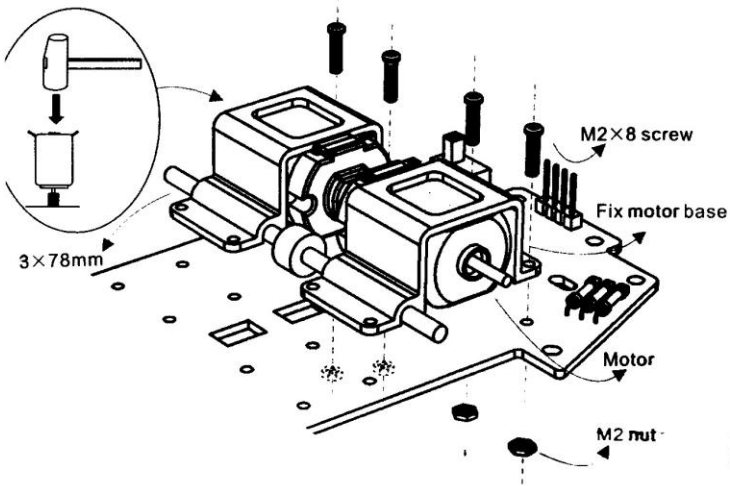




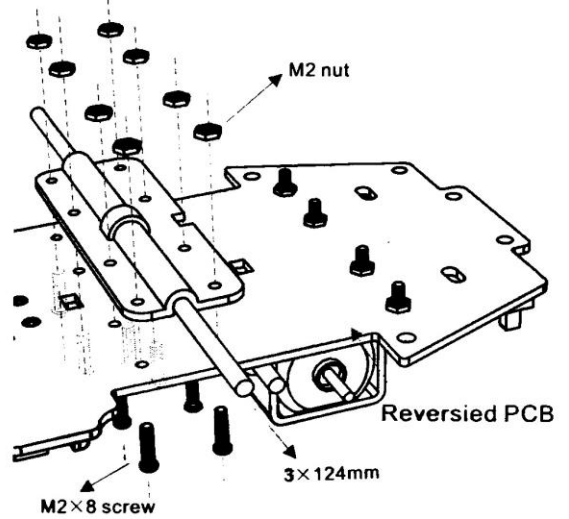
<Fixture of tubular nut>

Move the tubular nut to center

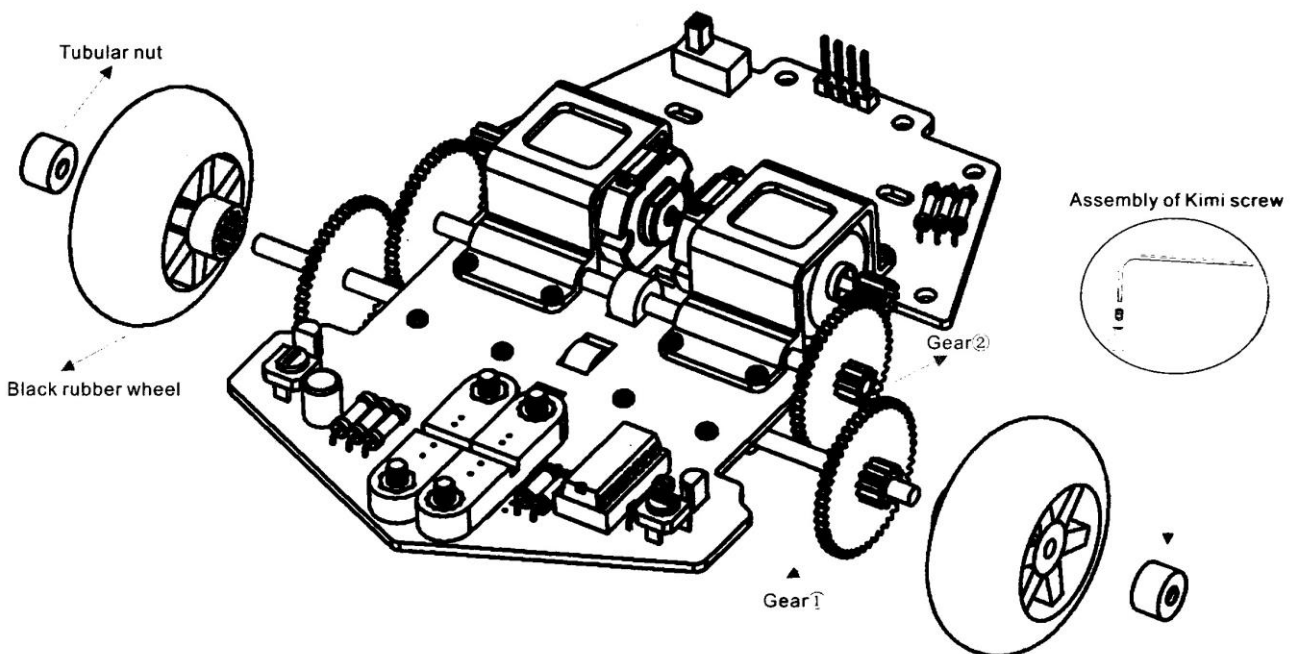
Fix the tubular nut with screw



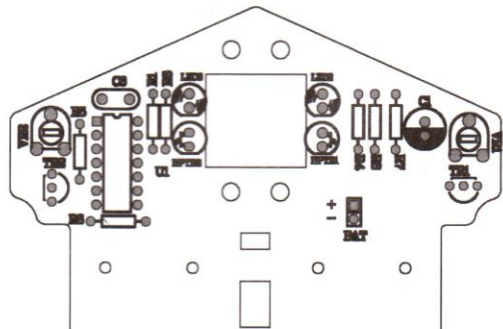
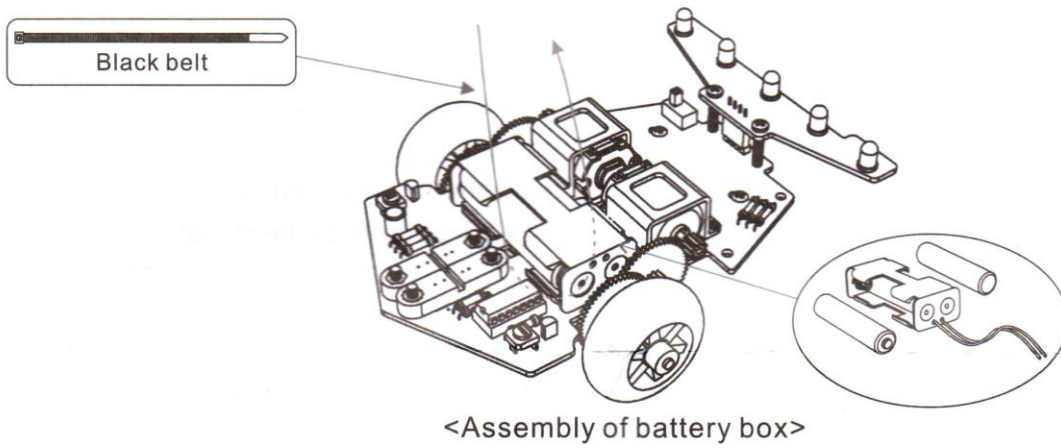
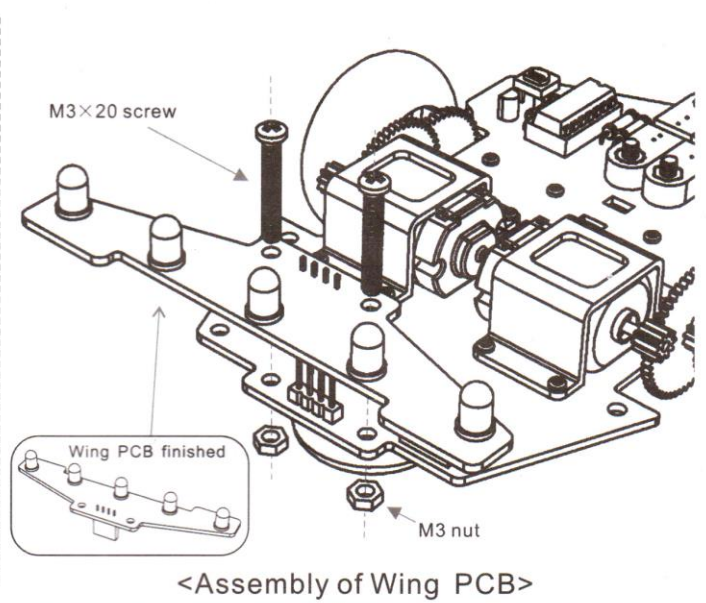
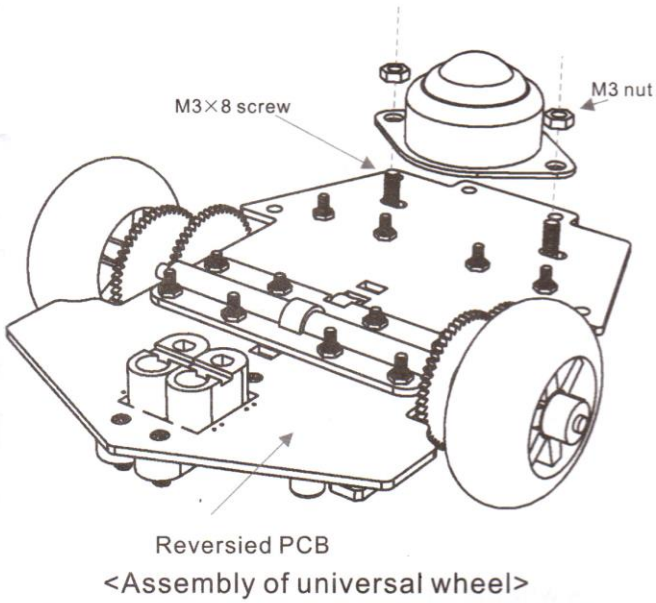
<Assembly of motor and short shaft>



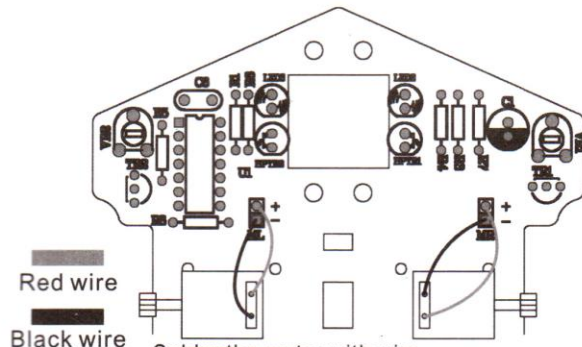
<Assembly of long shaft>



<Assembly of gear and front rubber wheel>

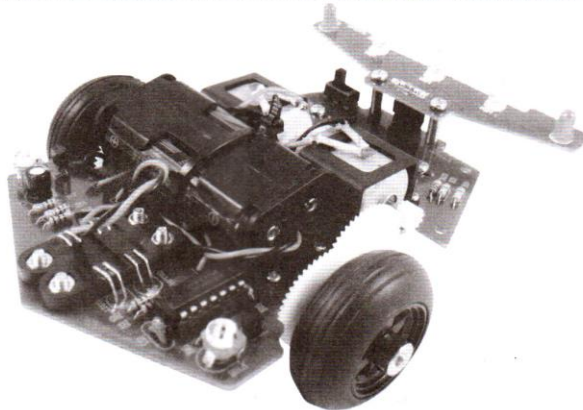


Connect to battery and pay attention to the polarity
red line is positive and black line is negative



Solder the motor with wire
the red point on the motor is positive

<Completed>



Debug:

After assembly, now you can debug your line tracing car; first you should paint a thick black line on the white paper(circuit is better), then put the paper on the table, turn on the switch, put precisely the sensing diode to the black line, in this way it can run along the black line.

Check here when it is not operated correctly.

Problem	Check
Motor can not be activated	<ul style="list-style-type: none">• Check the life of the battery• Check the polarity of the battery• Check the wiring of the motor
It can not run along the Black line	<ul style="list-style-type: none">• Check whether the black line is too thin (advise to 3cm width)• Check whether the black line is deep black• Check whether the variable resister is adjusted accordingly• Check the polarity of the light sensing diode.• Check whether the light is too strong around.• Check the polarity of the motor.



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