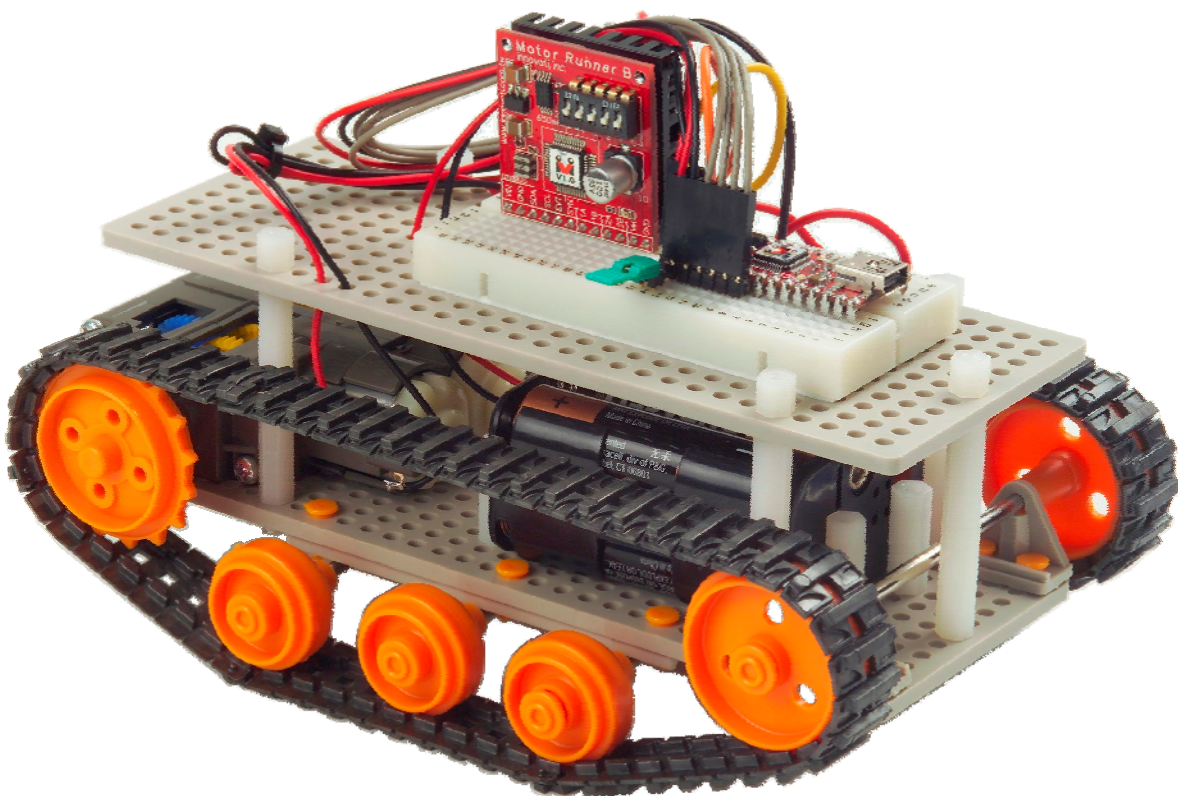



Tankbot

Instruction Manual

Version 1.01



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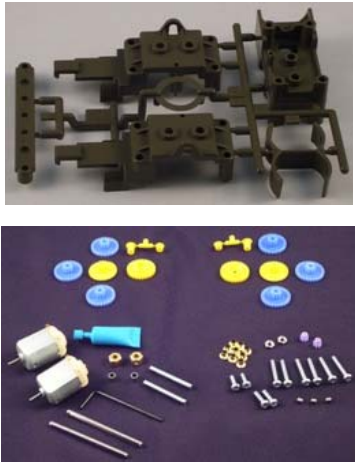
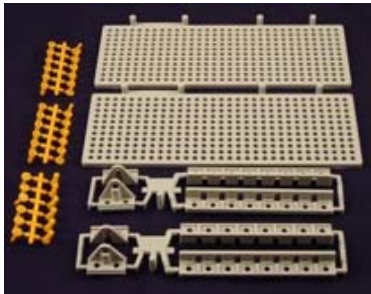
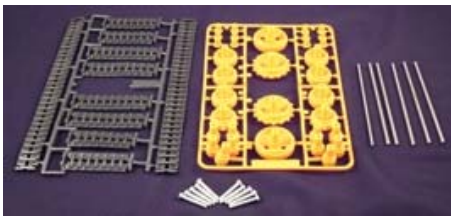
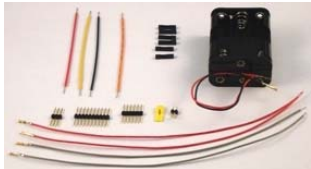

Disclaimer






The user shall undertake all the risks in the applications where this product is used. The company shall not be liable for any direct, indirect or consequential damages due to the use of the product including but not limited to the loss of equipment, the loss of human safety and health and the loss of profit and reputation. The product of the company shall not be used in life saving or any related instrument and equipment. Children under 14 shall not use this product for any related experiment without being accompanied by adults.

Correction of Errors

We hope the users may regard this document as a lively and practical assembly instruction manual. We have put tremendous efforts in making this instruction manual complete and correct; however, there may be unavoidable missing parts or errors. With a view to providing the user updated and complete information in the instruction manual, we keep improving and supplement the contents of this instruction manual. If you find any error in this manual, please contact us via the e-mail service@innovati.com.tw. Any related update information will be disclosed on our website. Please visit our website <http://www.innovati.com.tw> for more updated information.

Part List

Item	Illustration	Qt'y.	Specifications and instructions
Assembly Kit Parts			
Gearbox		1	Gearbox comprises: Two DC motors, gears, chassis, and gearbox mounting rack.
Machine Body PC Board		1	Comprises the top/bottom plate and the wheel mounting rack.
Wheels & Caterpillar Bands		1	For assembling the wheels and caterpillar bands.
Battery Box & Wires		1	Comprises a battery box, 4 jumper wires, 4 motor power cords, 6 DuPont pins, pin header, and jumper caps.
Plastic Posts & Nuts		1	For fixing the machine body and the battery box.

Module Kits			
BC1		1	Innovati® BasicComande is used for storing the program and controlling the operation of each module.
Motor Runner B		1	Innovati® Motor Runner B is used for controlling the operations of the two DC motors.
Bread Board		1	Breadboard can be used for installing BC1, Motor Runner A and other expansion modules and components.
cmdBUS Cable		1	This signal cable is used for connecting the Motor Runner A Module.
USB Cable		1	This cable is used for connecting the PC to BC1 to download the program code and upload data.

1. Tools

- Cross Screwdriver
- Long Nose pliers
- Wire Stripper

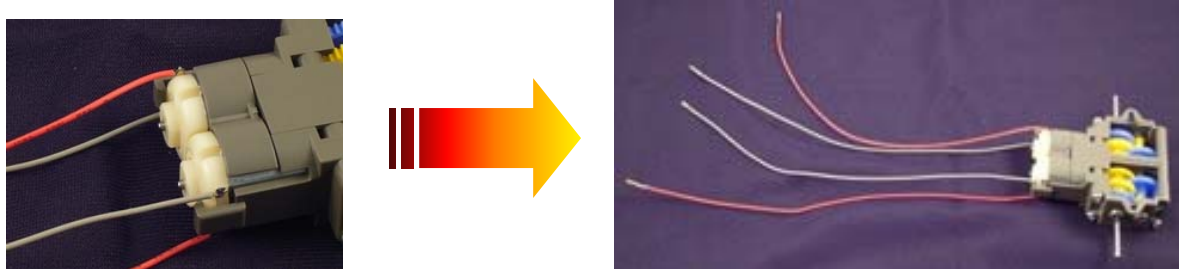
2. Assembly Procedure

A. Tankbot Chassis

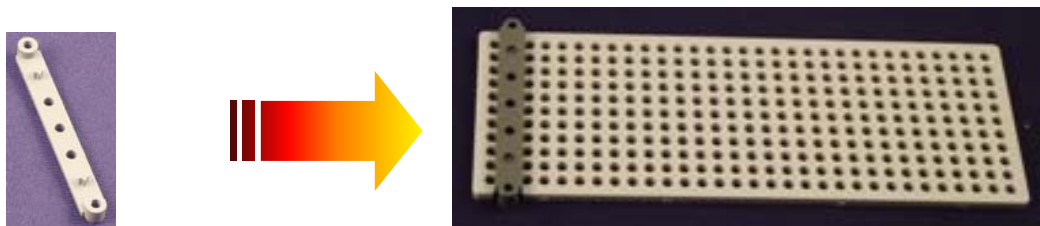
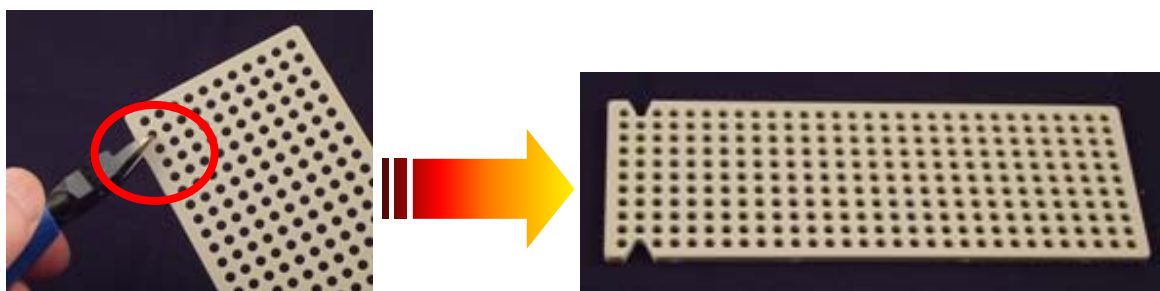
- i. Assemble the gearbox: Refer to the Assembly Instruction by TAMIYA Inc. delivered with the product and assemble the gearbox as shown as follows.



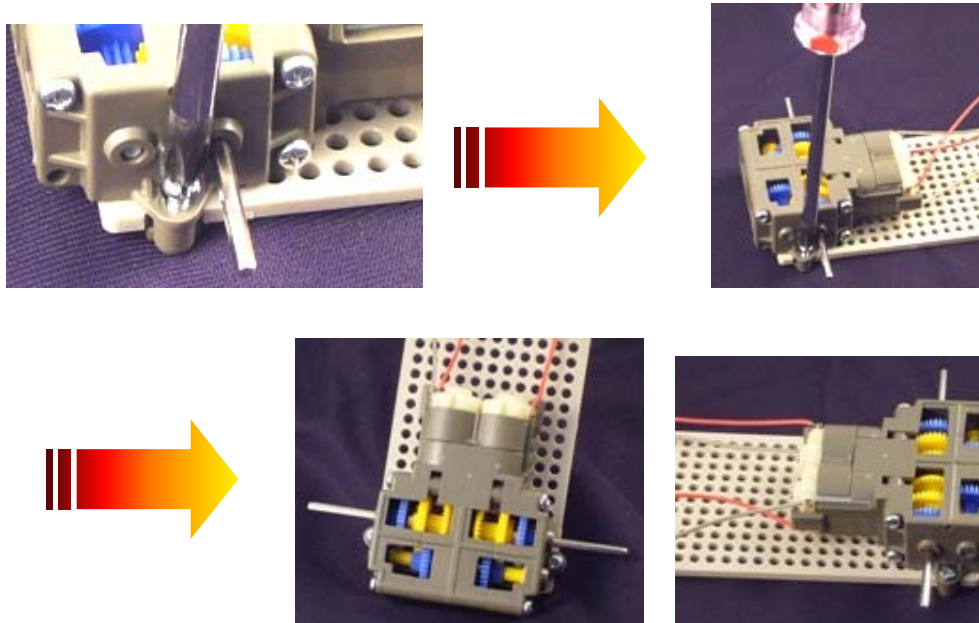
- ii. Solder the four power cords to the motor. Please notice that the two motors have reversed polarities.



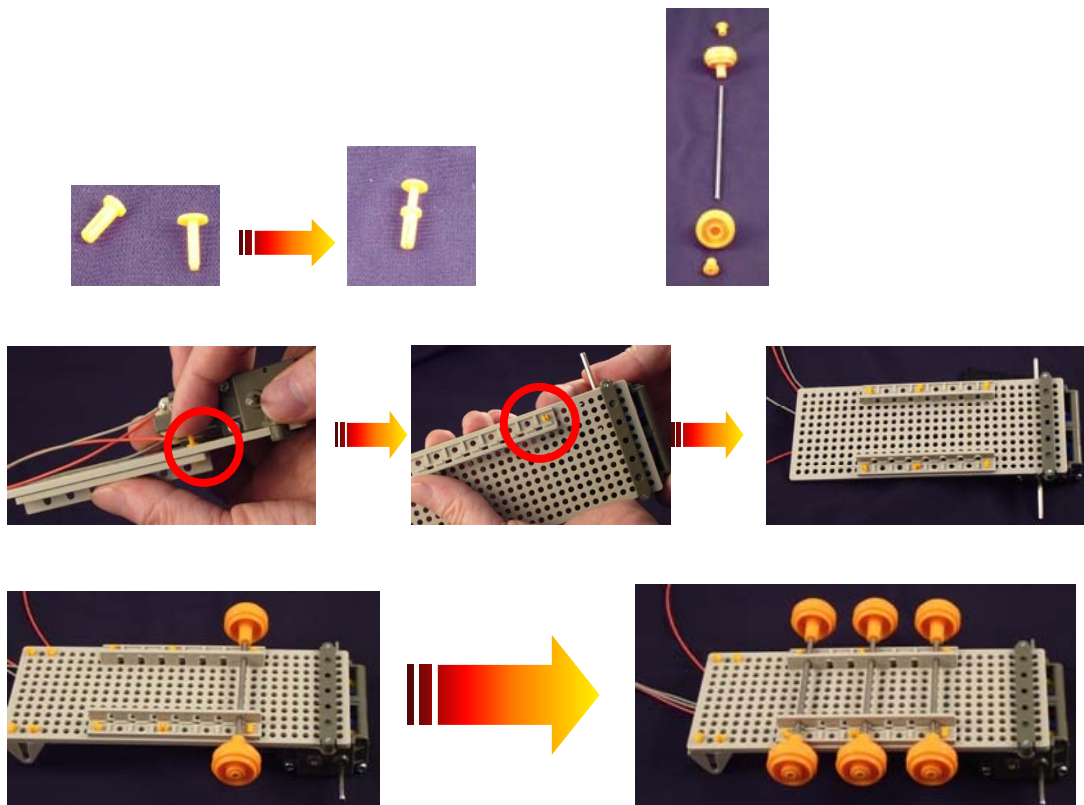
- iii. Use the cutting pliers to cut off a triangular shape each at the two edges of the machine body PC board so as to allow the gearbox mounting rack to be installed on the backside of the PC board.



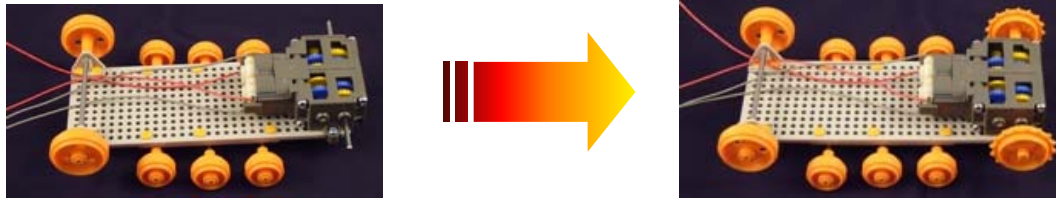
- iv. Fix the gearbox on the mounting rack. The gearbox is placed on the front side of the PC board and then fixed to the mounting rack on the backside with screws.



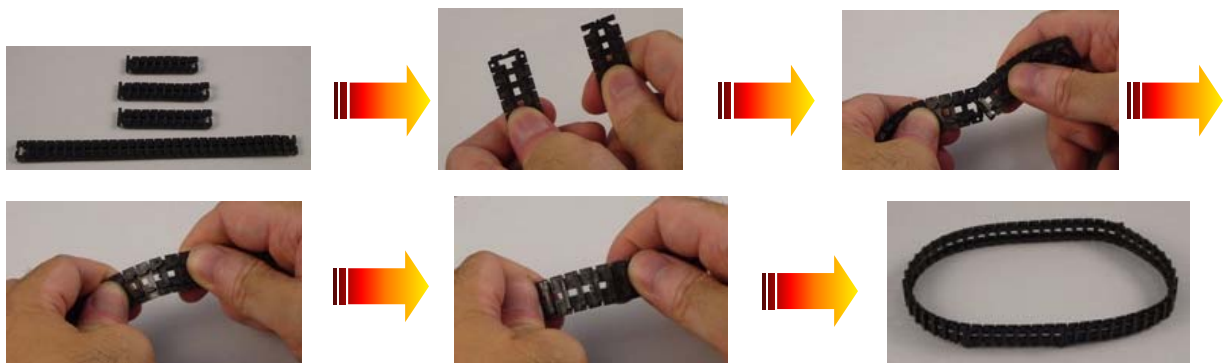
- v. Install the wheels at the bottom chassis: The pins and the wheels should be assembled in the ways as shown in the following figures. Fix the three wheels on the backside of the PC board.



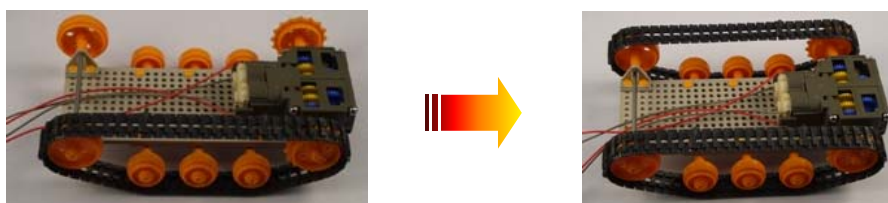
- vi. **Install the front and rear wheels:** Install the rear wheels (smooth wheels) on the triangular rack on the front side. Install the front wheels (saw-tooth wheels) into the metal axle on the gearbox.



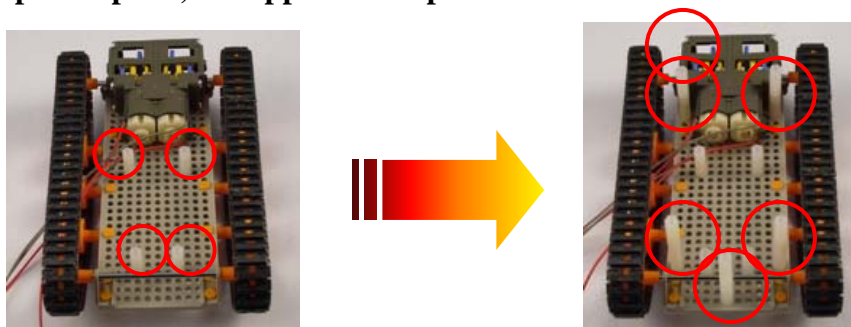
- vii. **Assemble the caterpillar band:** Assemble 1 long band, 2 medium bands and 1 short band into a caterpillar band shown as follows.



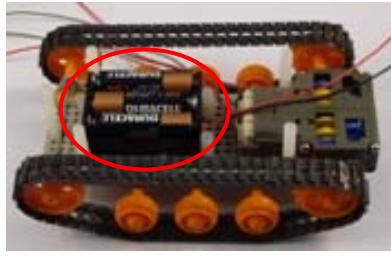
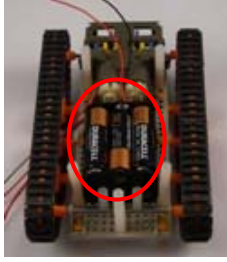
- viii. **Install the caterpillar band:** Install the caterpillar bands at the two sides as shown in the figure.



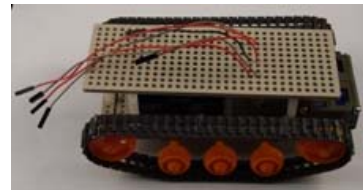
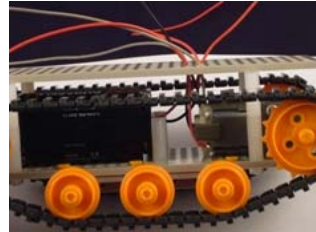
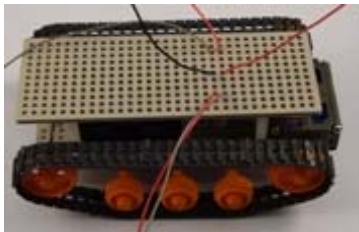
- ix. **Fix the plastic posts:** Fix the 4 short plastic posts first as the mounting rack for the battery box. Then fix the 5 long plastic posts (a long plastic post is composed by 2 short plastic posts) to support the top PC board.



- x. **Install the battery box:** In order to avoid short circuits, it is recommended not to install the battery cells in the beginning.

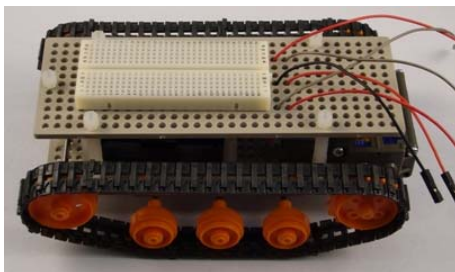


- xi. **Install the PC board:** Pass the 6 wires through the PC board, insert the DuPont pin at the end of each wire, and fix the PC board to complete the assembly of the Tankbot chassis.

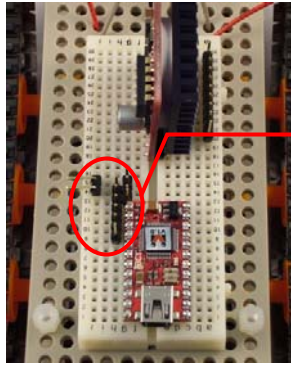


B. System Control Board

- i. **Attach the bread board**

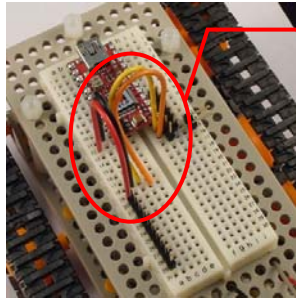
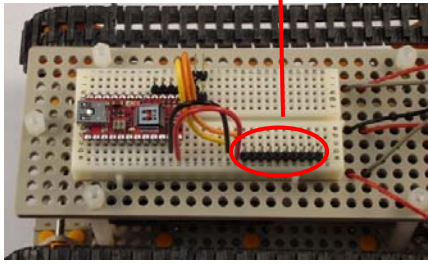


- ii. **Plug the BC1, Motor Runner B, jumper wires, and pin headers on the breadboard according to their arrangements shown in the following figure. BC1 should be located at the pin coordinate 1c-12c and 1g-12g. Motor Runner A should be located at the pin coordinate 18e-29e.**

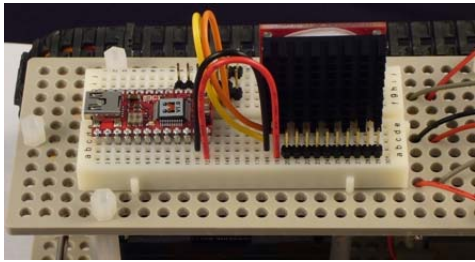


Pin coordinates are:
14J, 15J
9h-14h
13g-15g

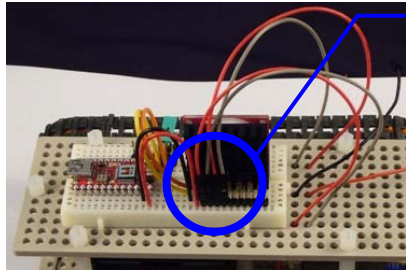
Pin coordinate 0a~29a



Pin coordinates are:
12a is connected to 19a
11b is connected to 18b
13f is connected to 18c
14f is connected to 19d

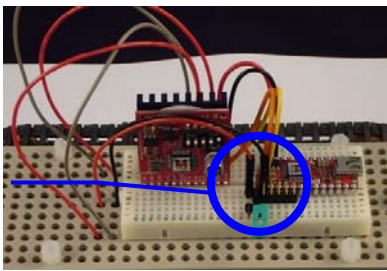


iii. Plug the 4 motor power wires and the 2 battery power wires.

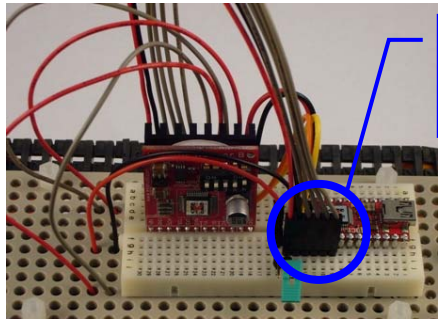


4 motor power wires:
20a, 21a, 22a and 23a

2 battery power wires:
Positive: 15g,
Negative: 13g

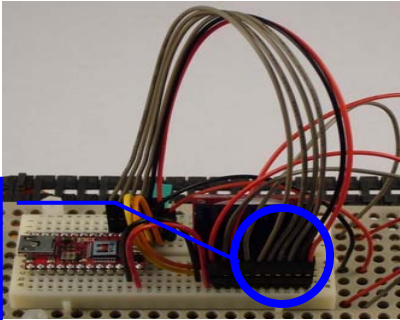


iv. Plug the cmdBUS™ ribbon cable.



BC1 side: 9h-14h
Red wire is at 14h.

Motor Runner A
side: 24a-29a
Red wire is at 29a.



v. Plug the Jumper as the power switch to complete the assembly of the Tankbot.

