



meArm.Joystick DIY en

by [ted99tw](#) on November 26, 2014

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Author:ted99tw
maker for educational kit since 2014

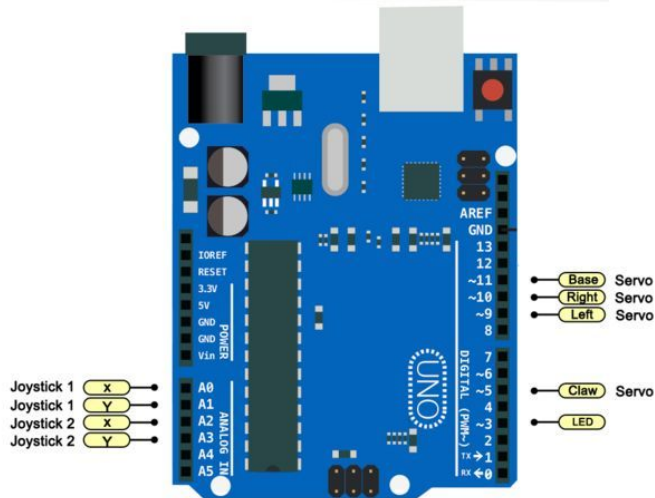
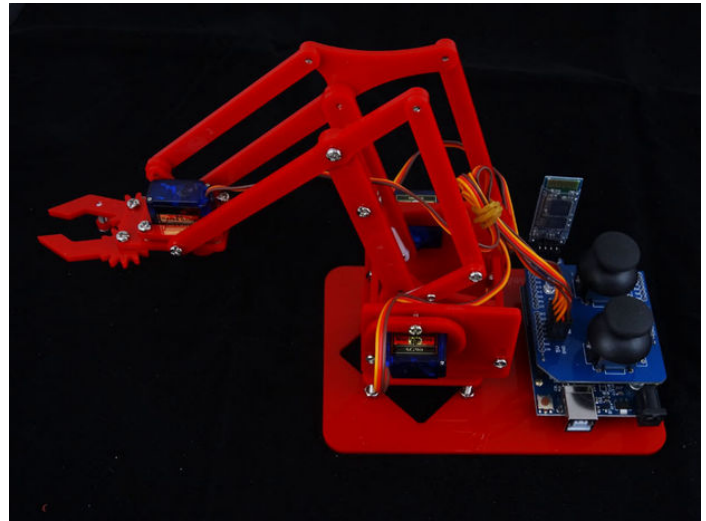
Intro: MeArm.Joystick DIY en

Original: Pheonoptix's [Pocket Sized Robot Arm](#).

[FB](#) , [HomePage](#)

Since meArm is great for educational use, I added joystick and [30 software lessons](#) for S4A/C/Ardublock. All of them are open. Bluetooth app for Android is on the way. Once available, I will open it as well. Enjoy!

meArm.Joystick will go crowdfunding on Indiegogo around Dec.10.2014.



File Downloads



[meArm.Joystick lasercut.pdf](#) (186 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'meArm.Joystick lasercut.pdf']

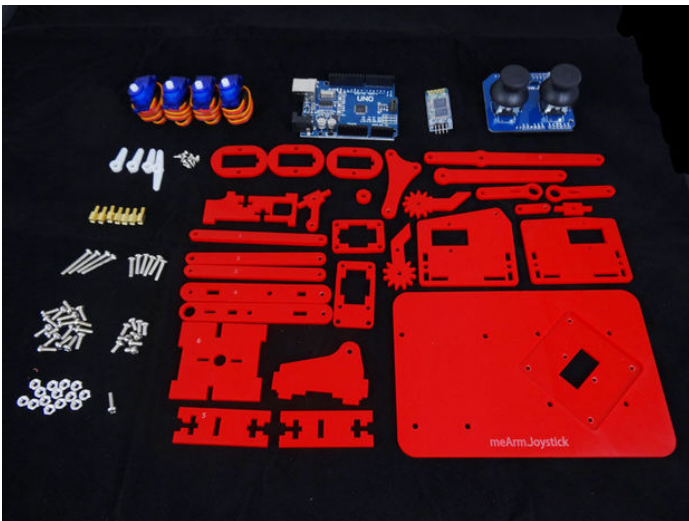


[Joystick shield.zip](#) (52 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'Joystick shield.zip']

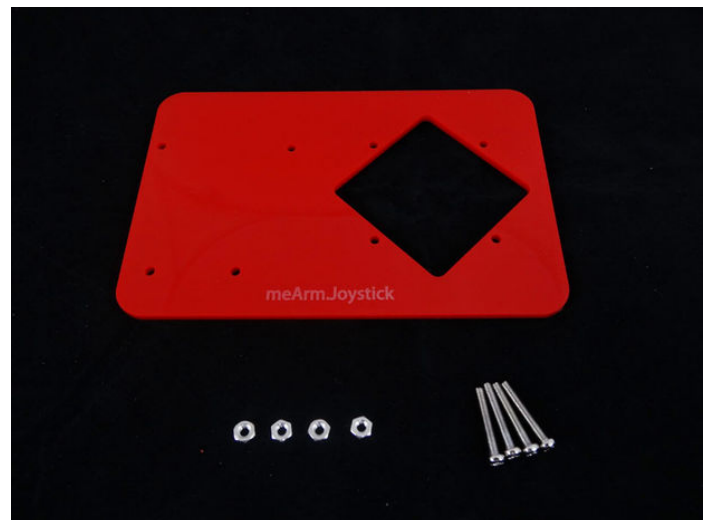
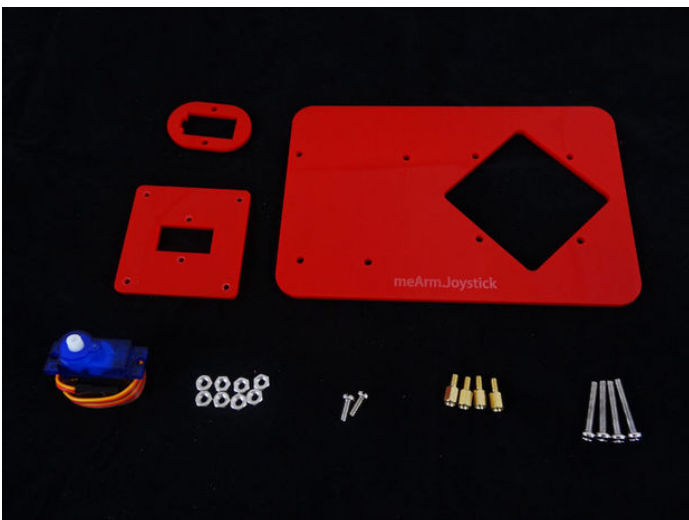
Step 1: Out of box

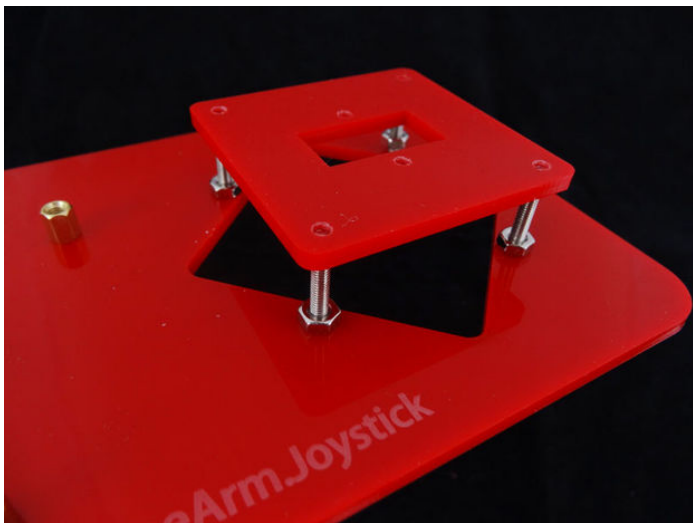
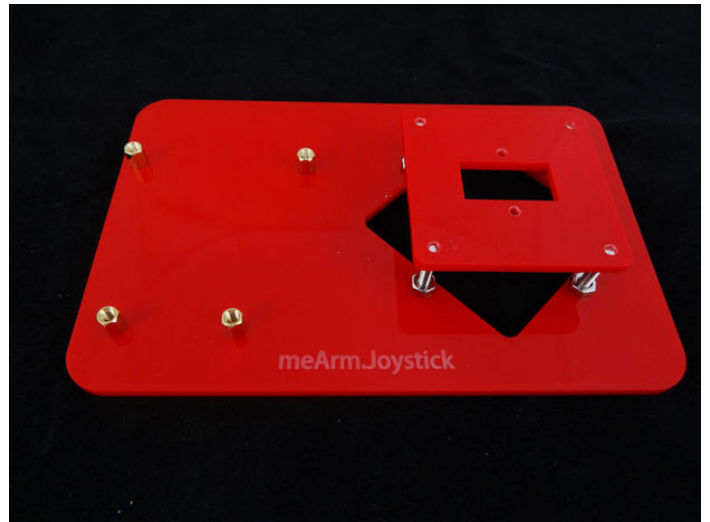
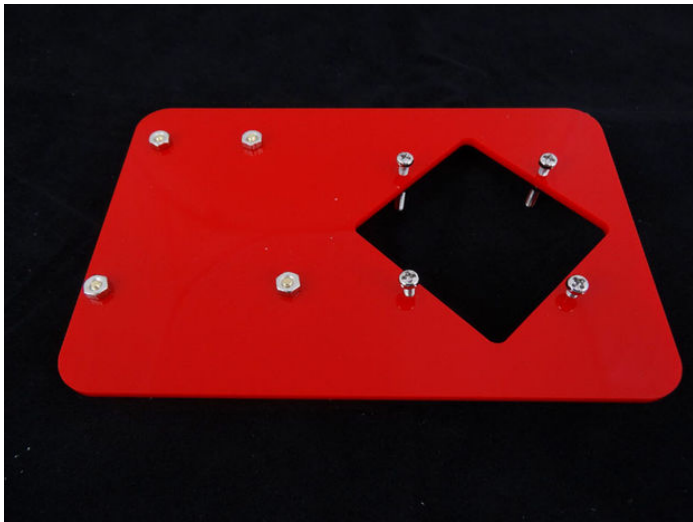
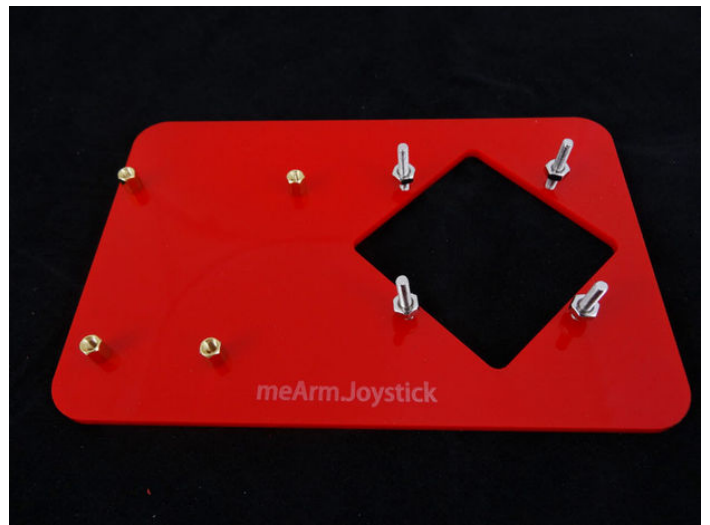
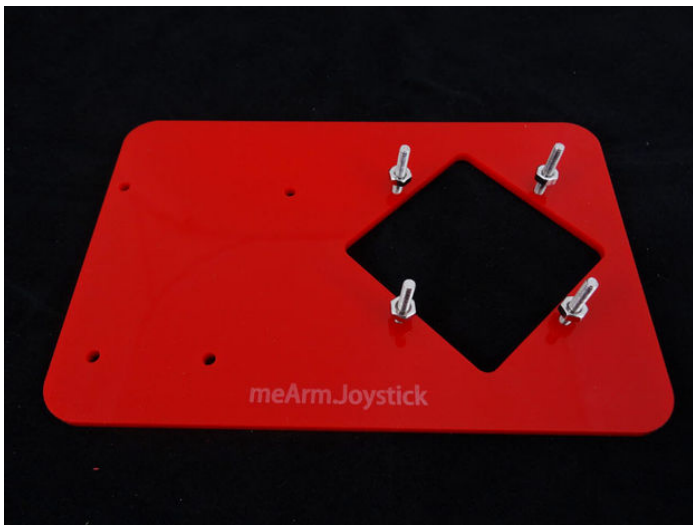
- 1) Arcrylic
- 2) Servo x 4
- 3) Arduino x 1
- 4) Joystick shield x 1
- 5) Bluetooth board x 1
- 6) elastomer gasket x 4
- 7) Screws M3
- 20mm x 4
- 12mm x 7
- 8mm x 16
- 6mm x 9
- Nut x 14
- Cooper pillar x 7



Step 2: Base

- Necessary screws:
- 1) 20 mm x 4
 - 2) Cooper Pillar x 4



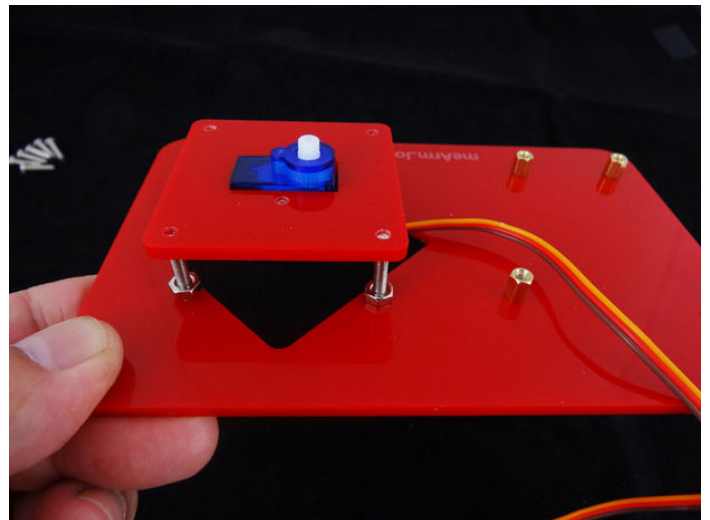
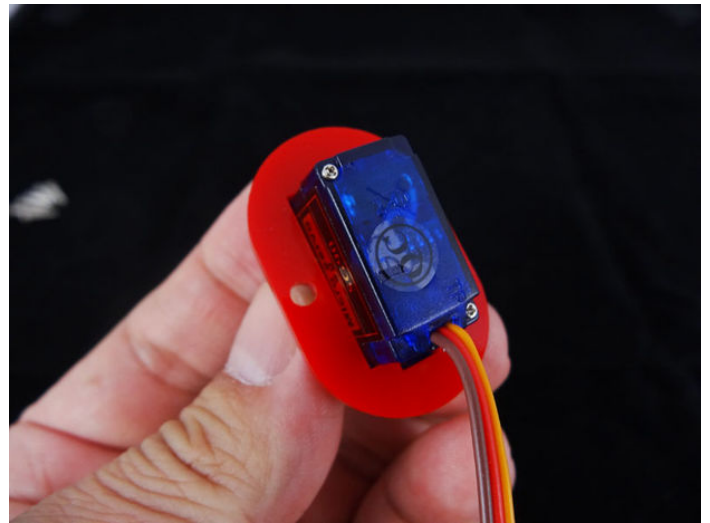
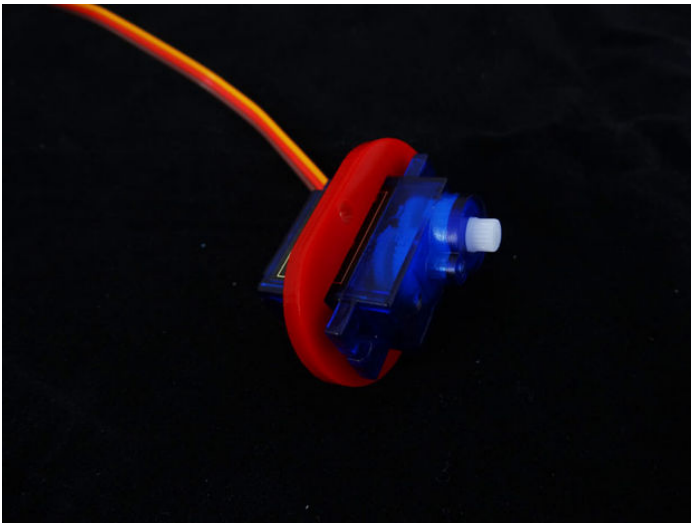
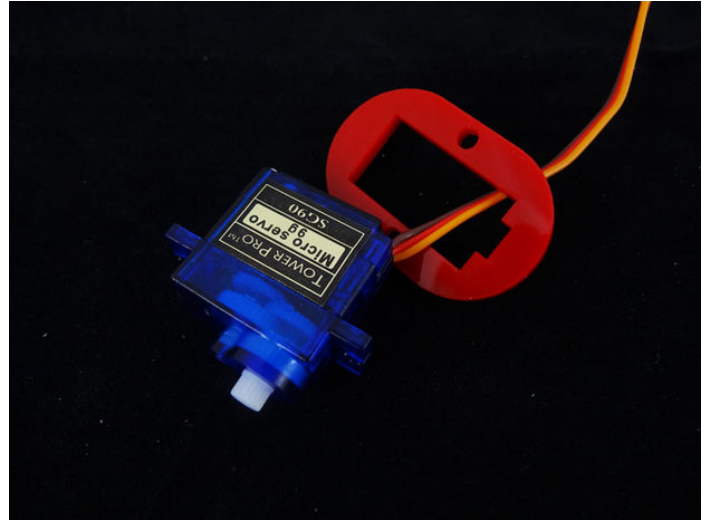
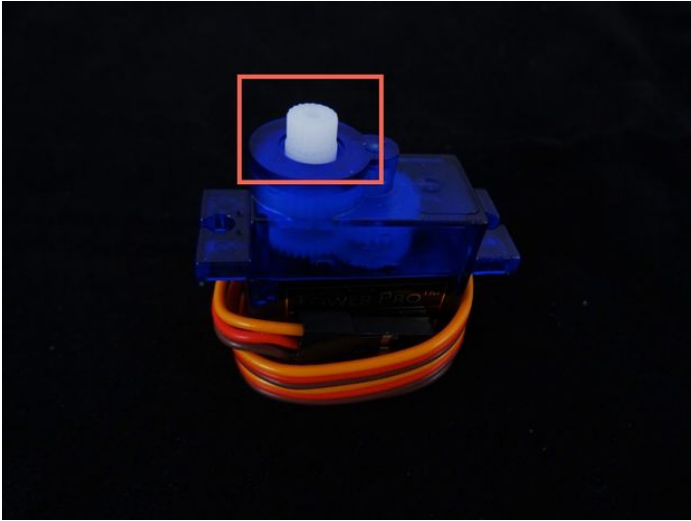


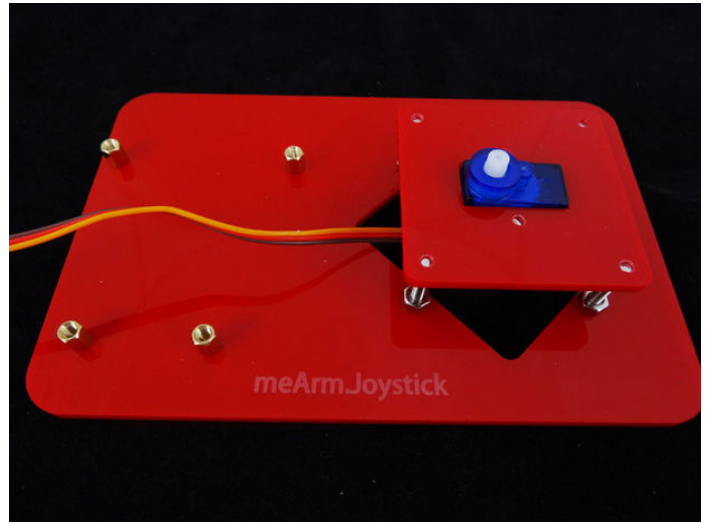
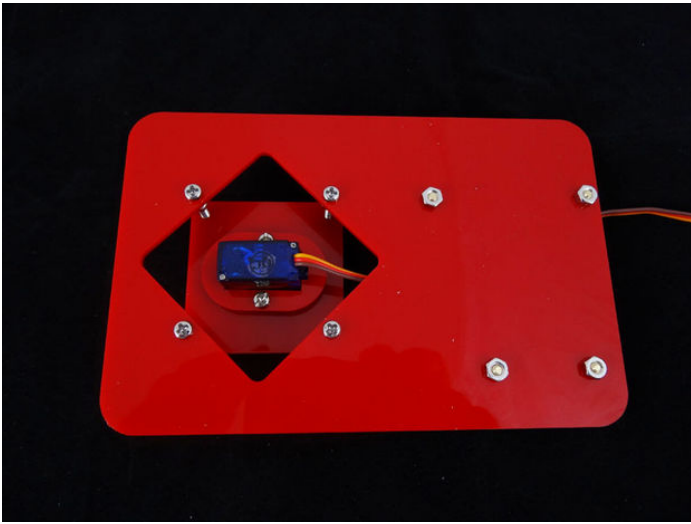
Step 3: First servo

As the first figure, please choose the servo with the longest axis. Please pay special care in each servo installation because servo can only rotate 180 degrees instead of 360 degrees.

Necessary screws:

- 1) 8mm x 2

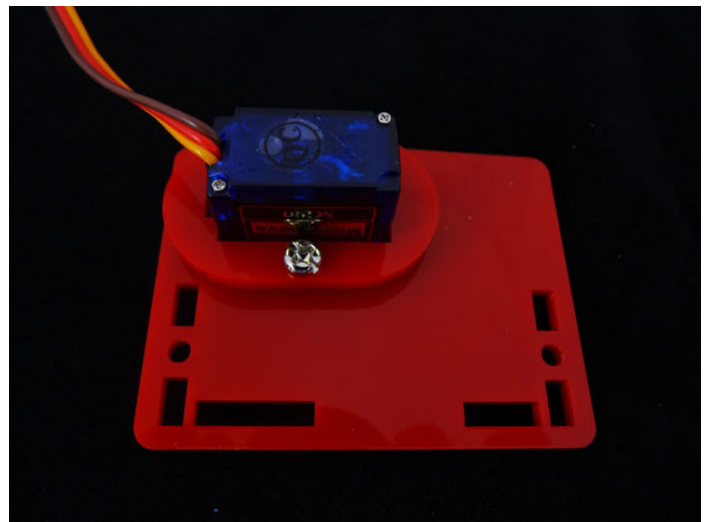
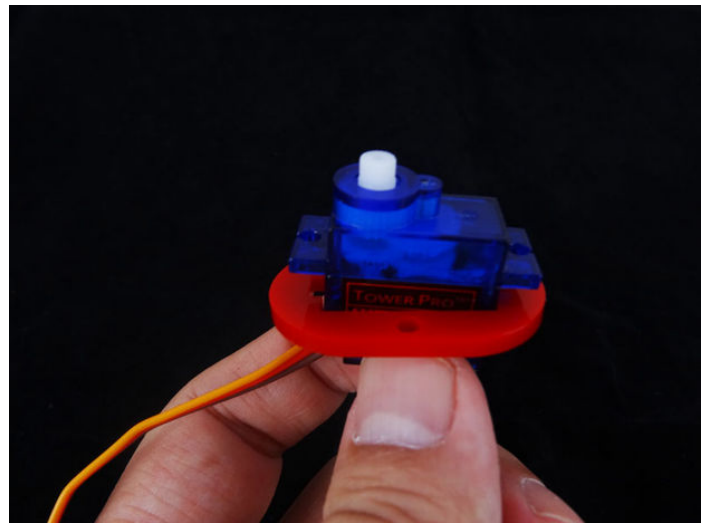


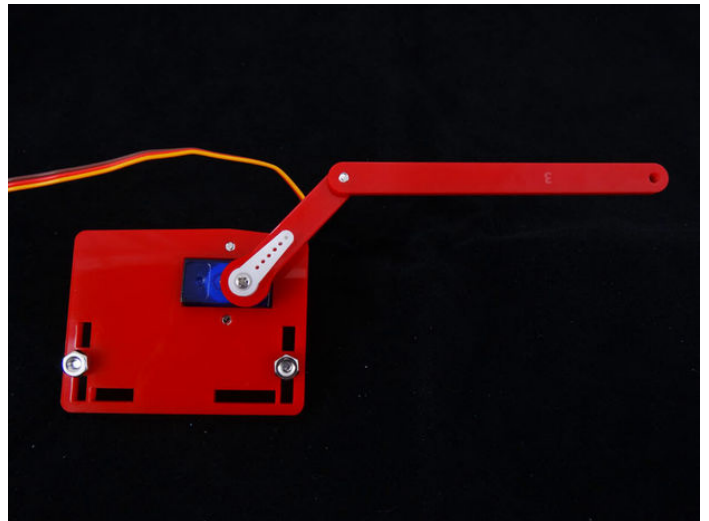
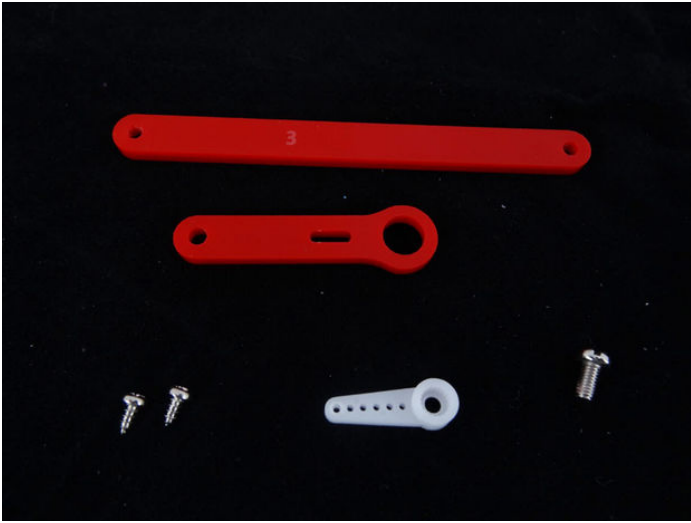
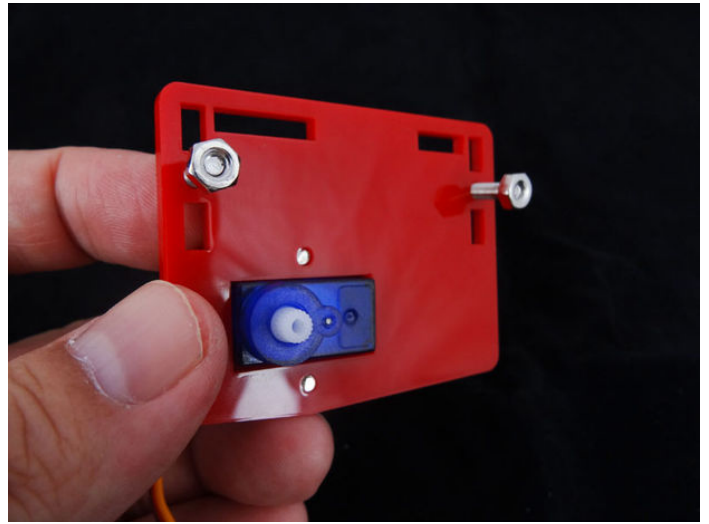


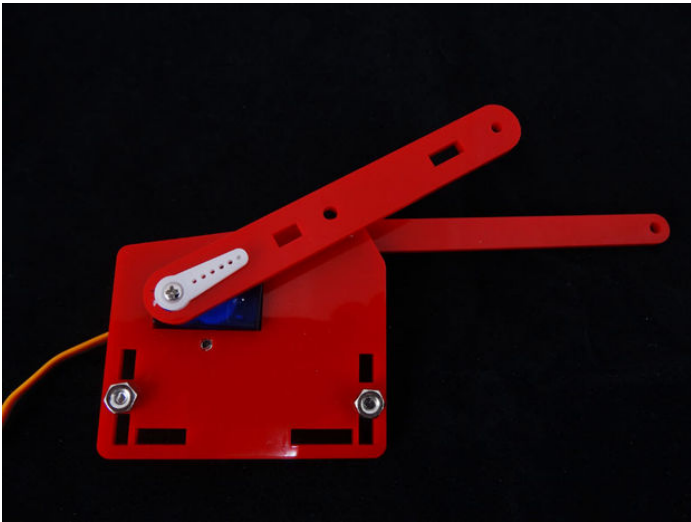
Step 4: Left arm

Please attach the stick and rotate the servo clockwise until it stops. Then fix the stick as the last fourth figure.
Necessary screws:

- 1) 12mm x 3
- 2) 8mm x 2





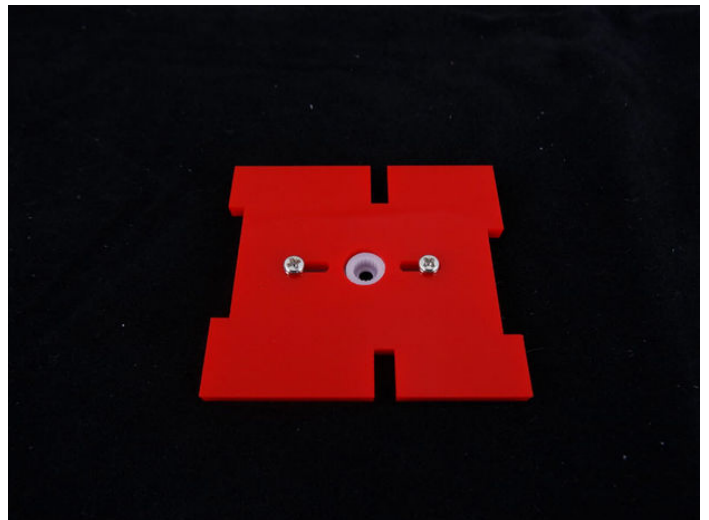
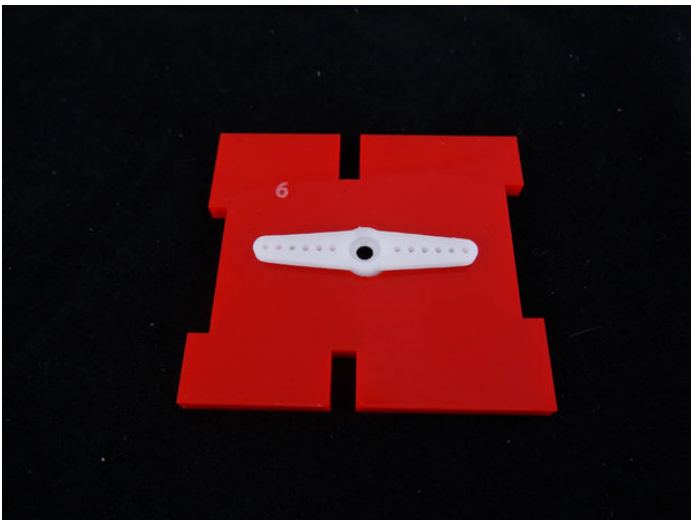


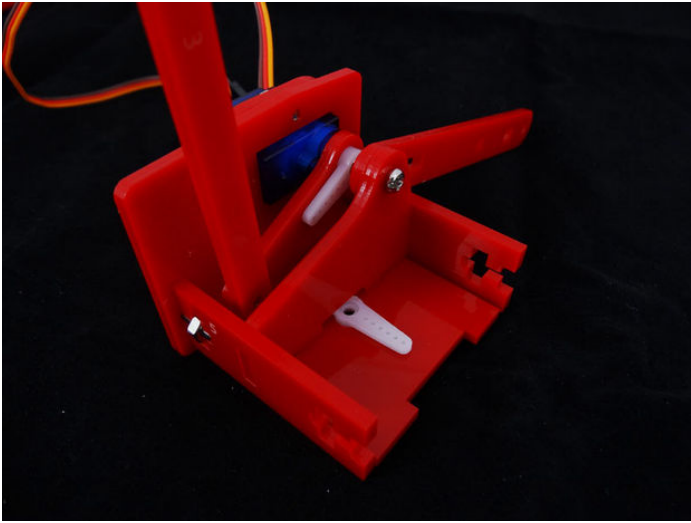
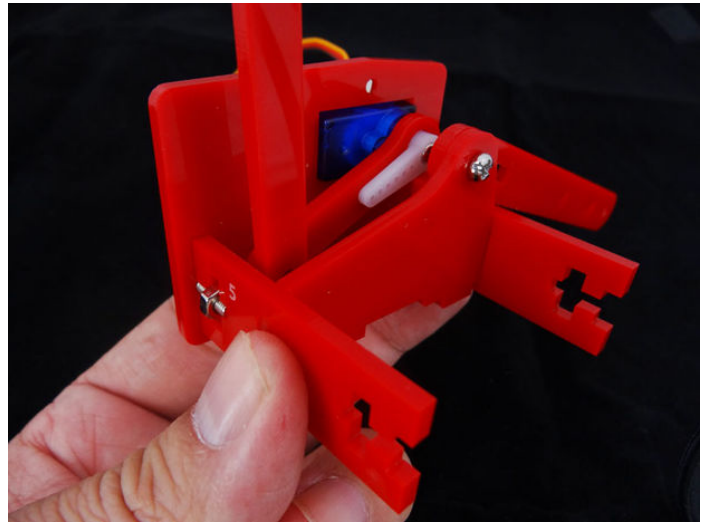
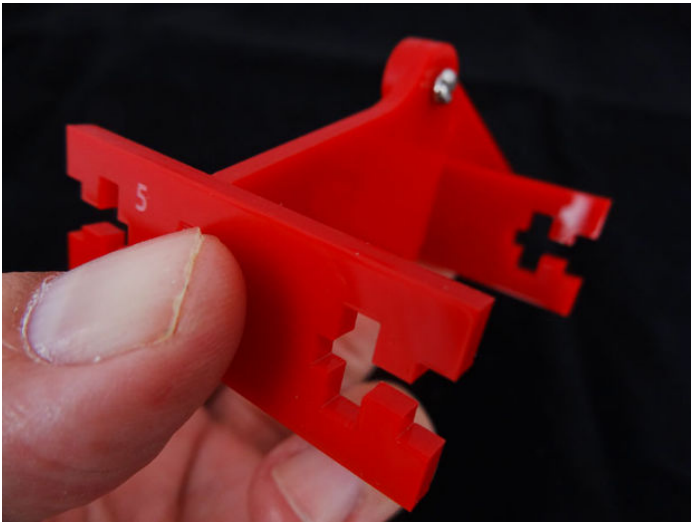
Step 6: Left arm + chassis

Necessary screws:

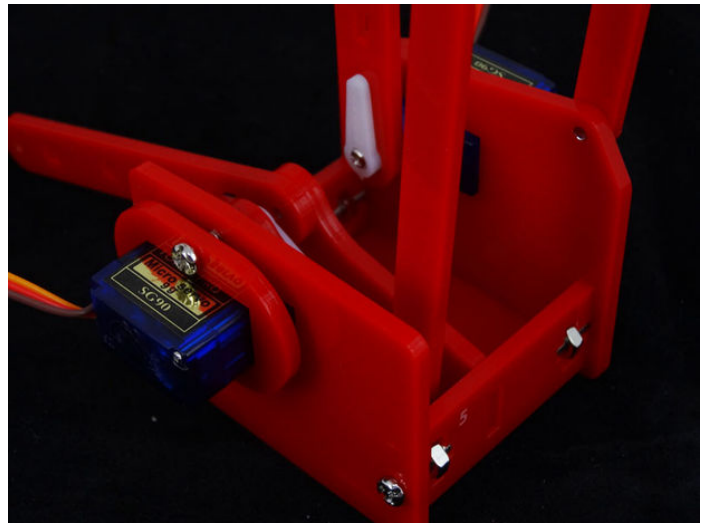
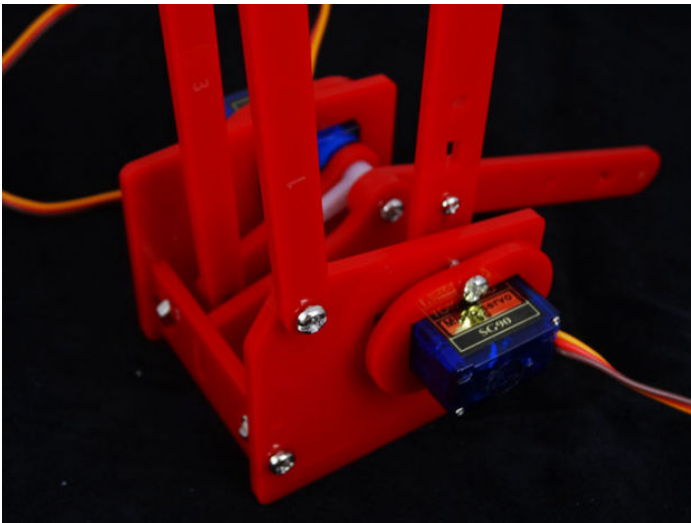
1) 12mm x 2

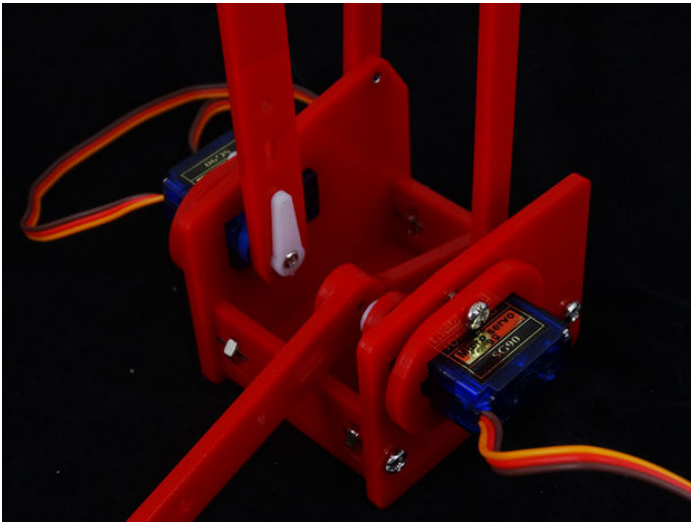
2) 6mm x 1



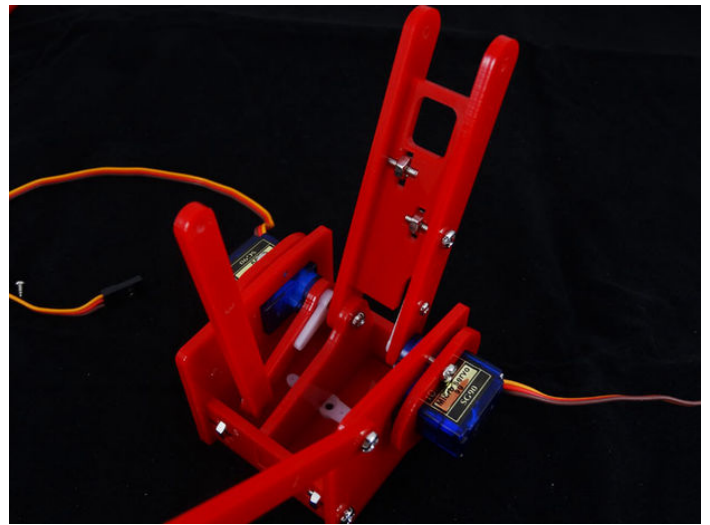
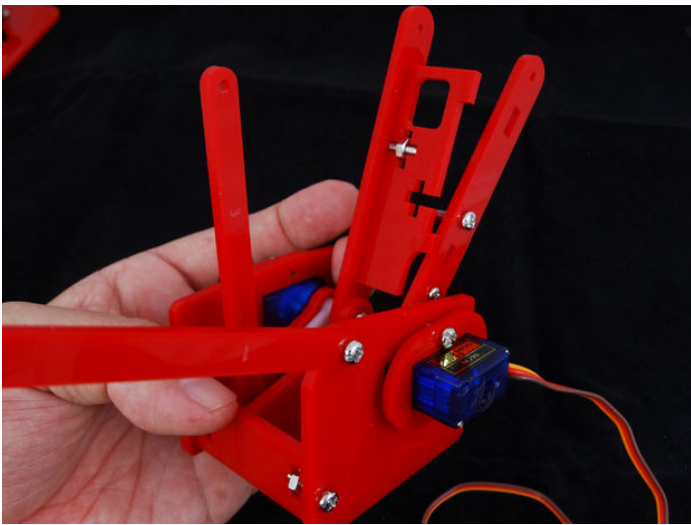


Step 7: Right arm + chassis



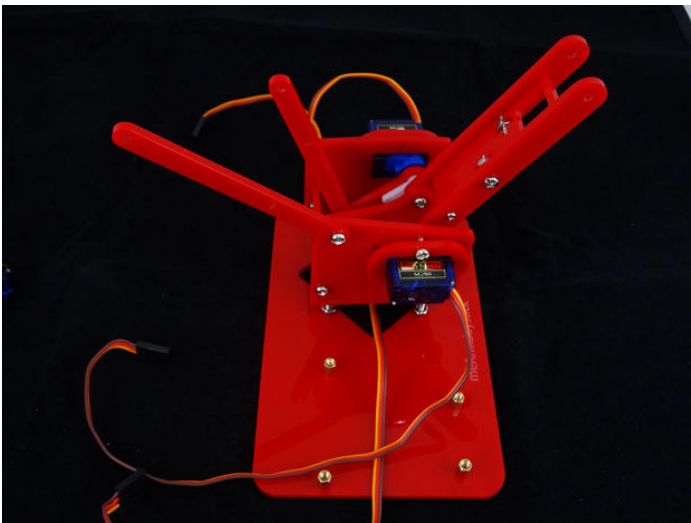


Step 8: Middle column



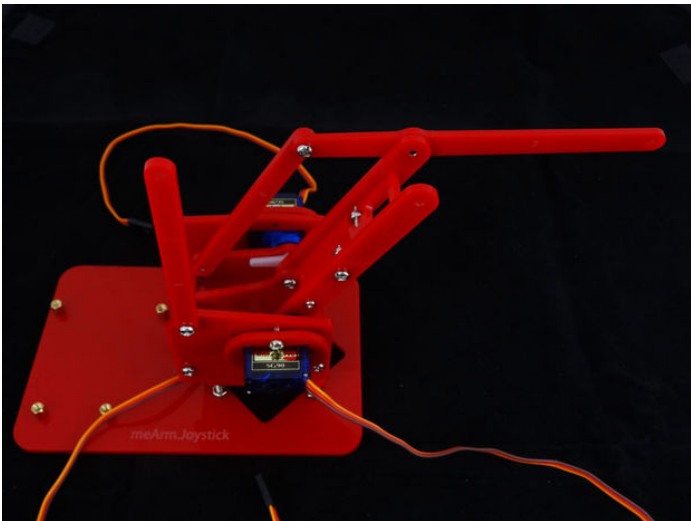
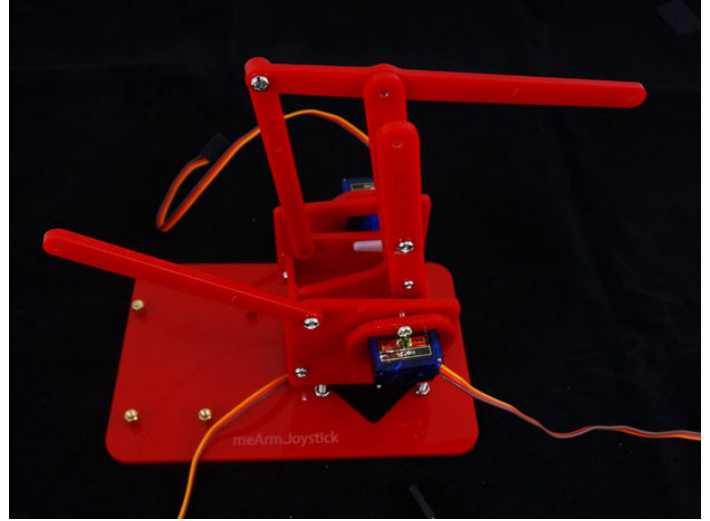
Step 9: Merging with the Base

Please attach the chassis to the base, rotate the servo clockwise until it stops. Then fix the servo on the base as the last figure.



Step 10: Branch 1

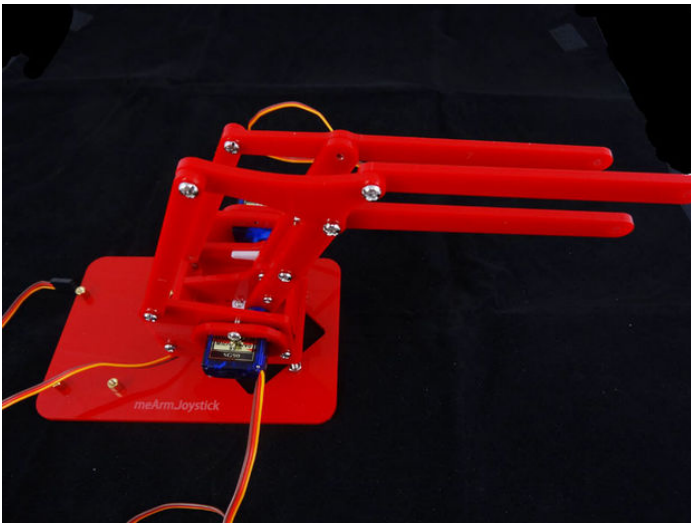
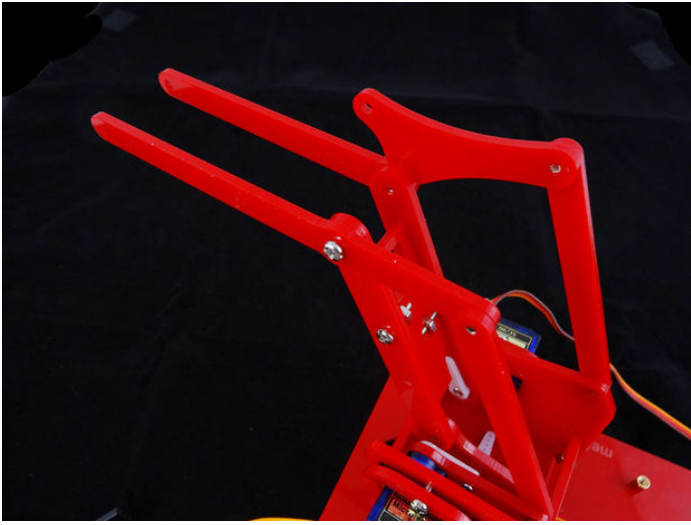
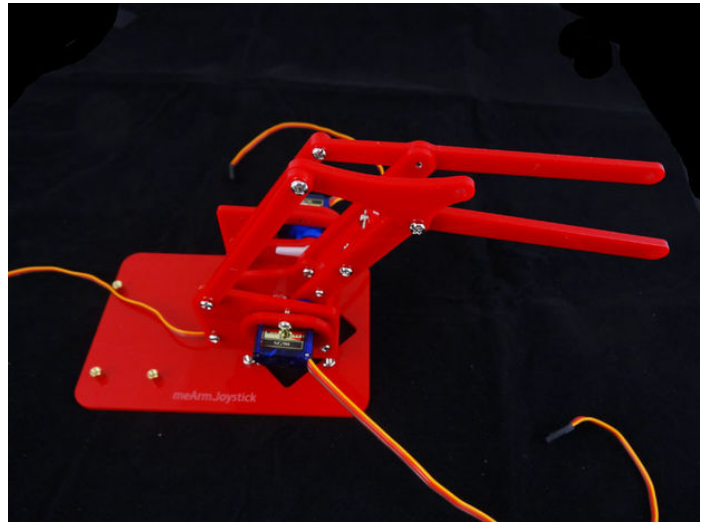
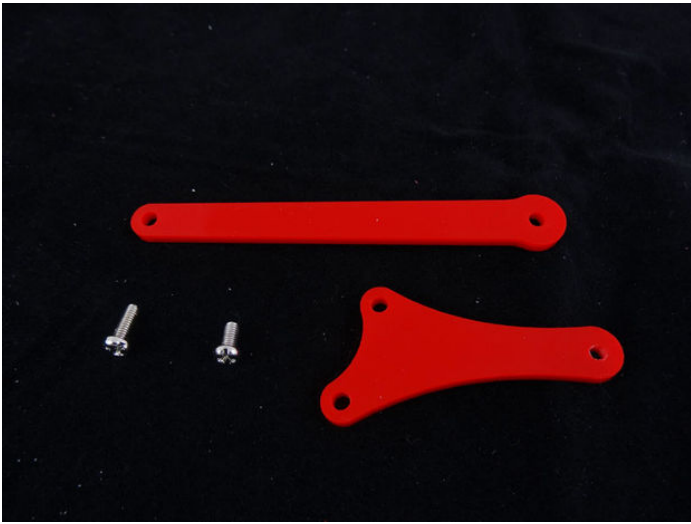
Necessary screws:
6mm x 2



Step 11: Branch 2

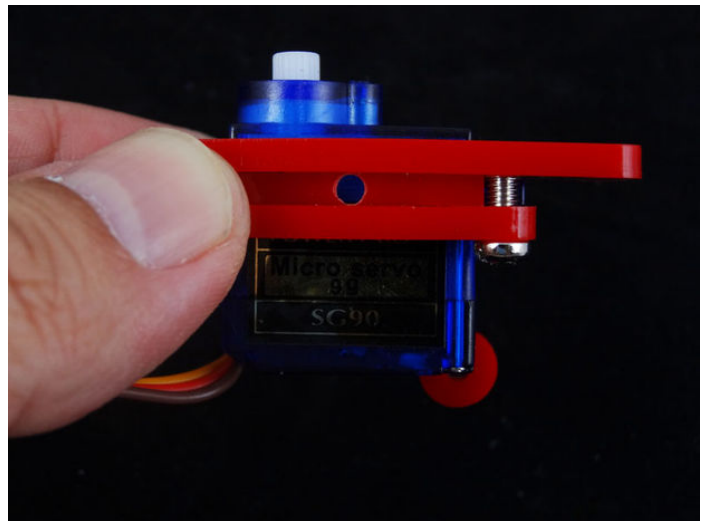
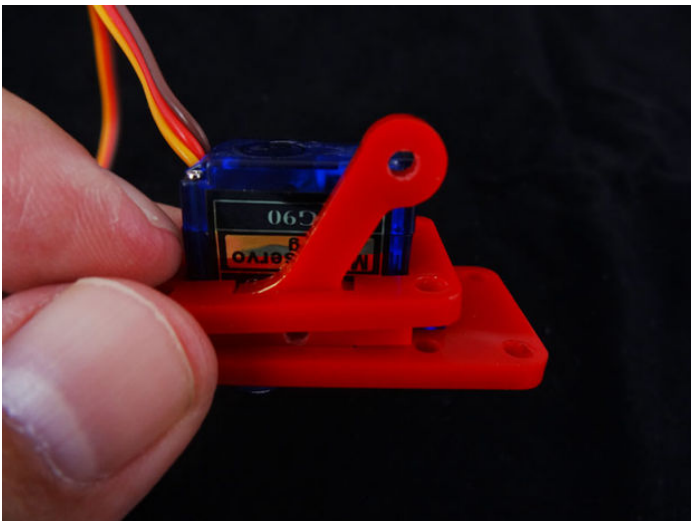
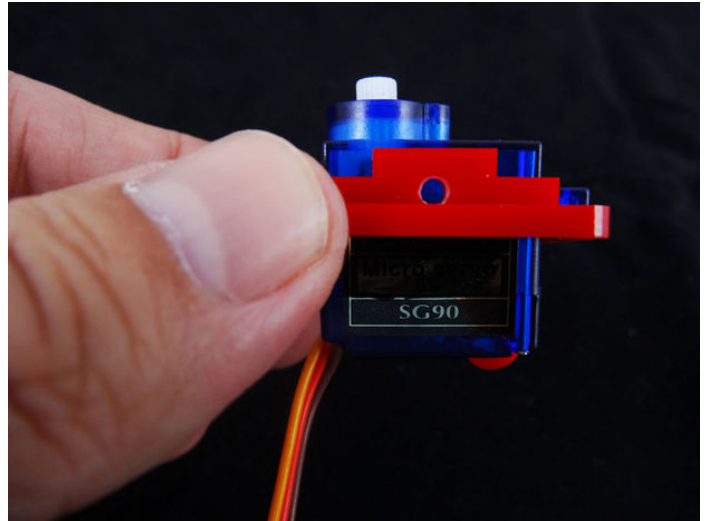
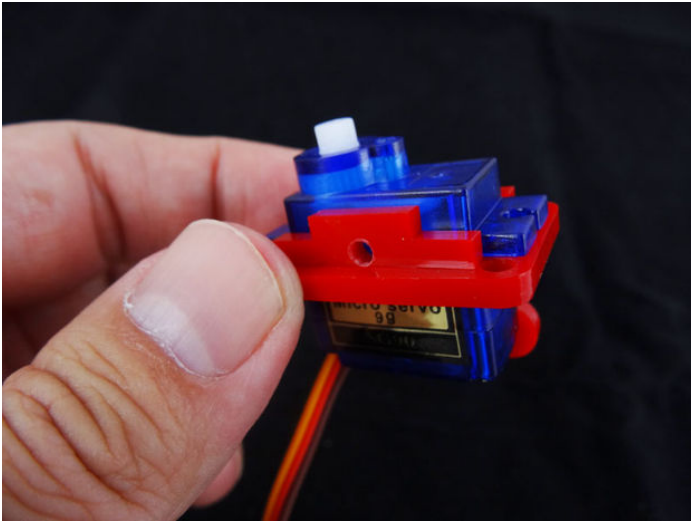
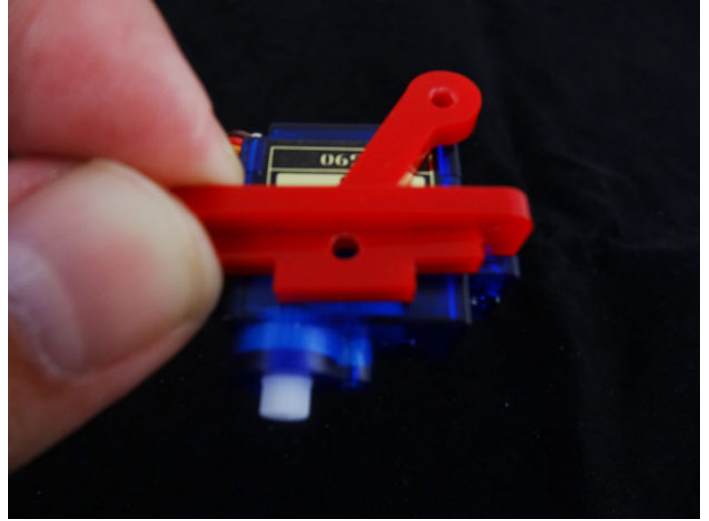
The number of the branch is 2.
Necessary screws:

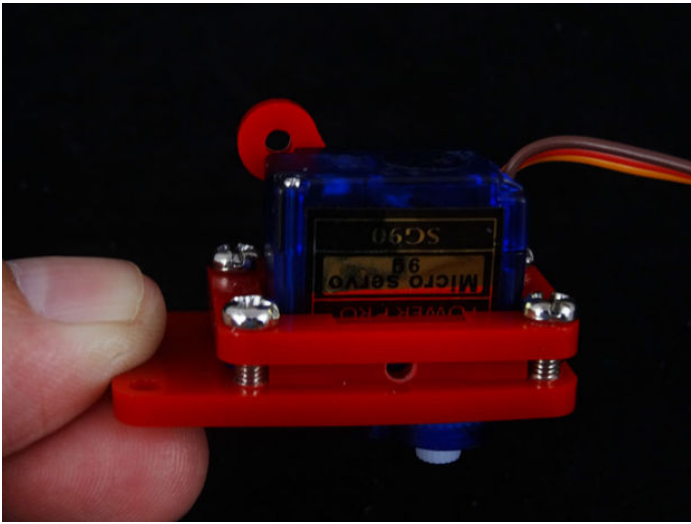
- 1) 8mm x 1
- 2) 6mm x 1



Step 12: Last servo

Necessary screws:
8mm x 4



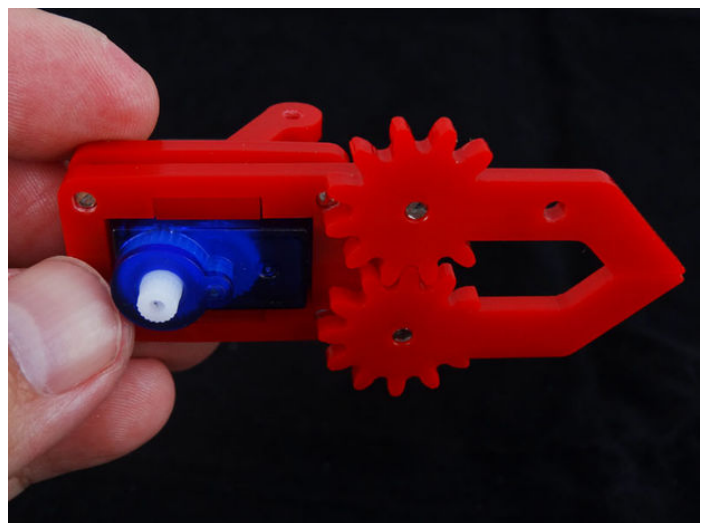
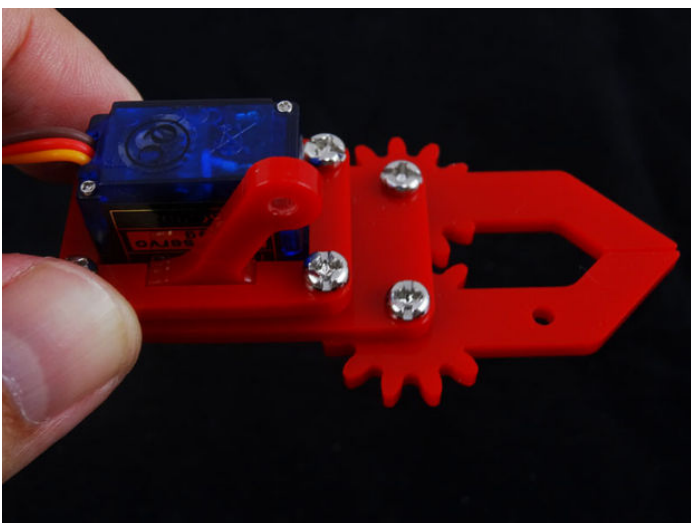
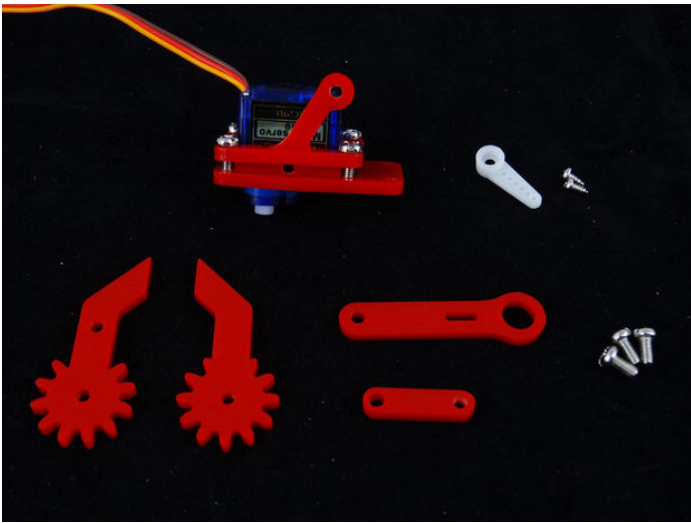


Step 13: Gripper 1

Necessary screws:

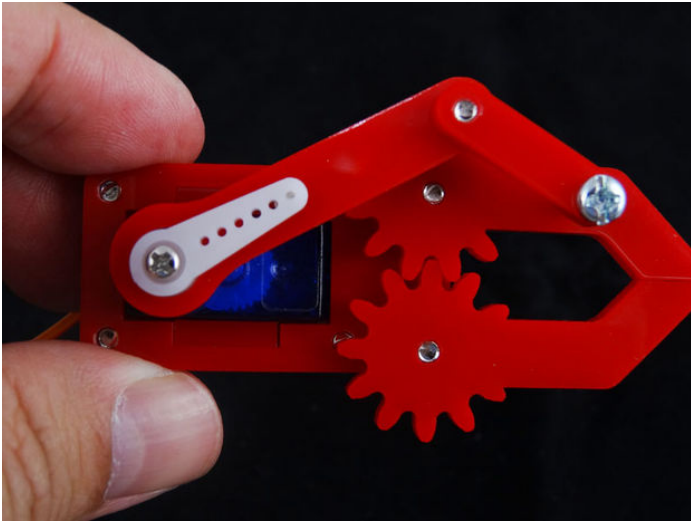
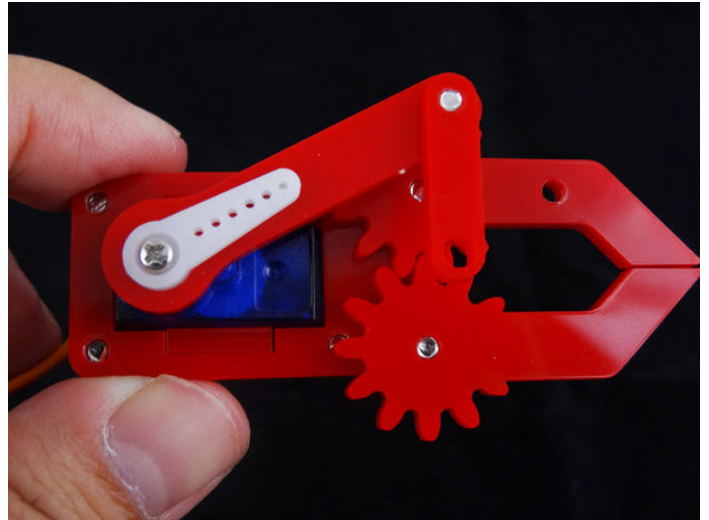
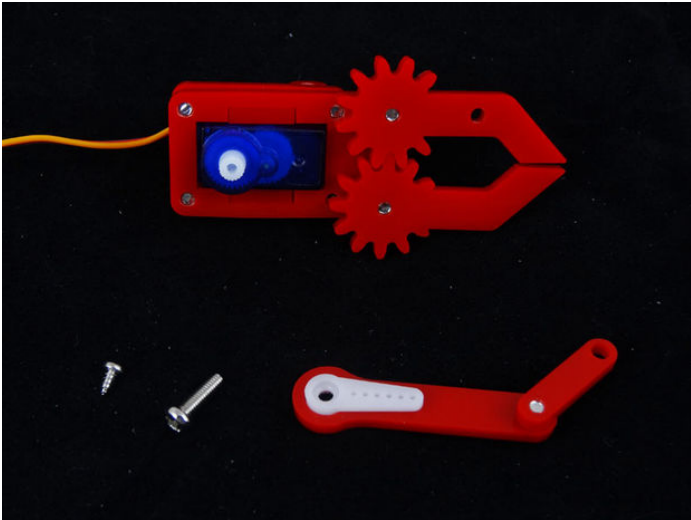
1) 8mm x 1

2) 6mm x 3

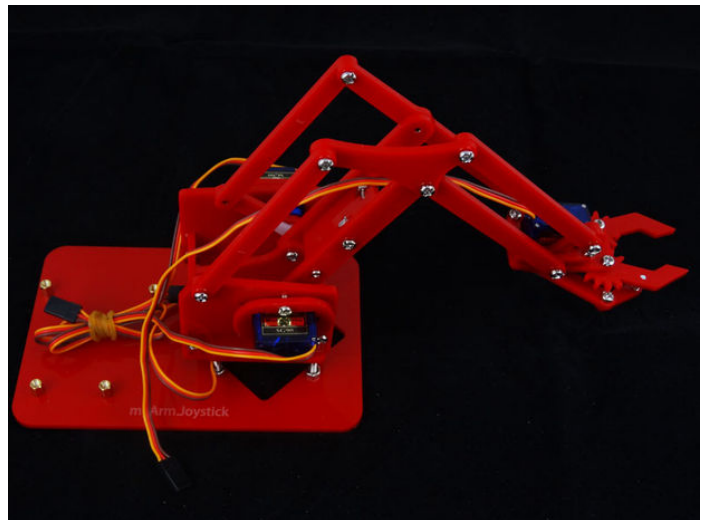
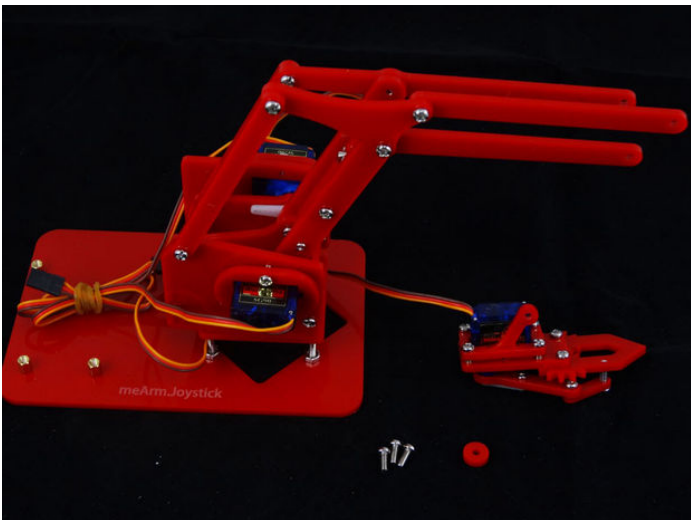


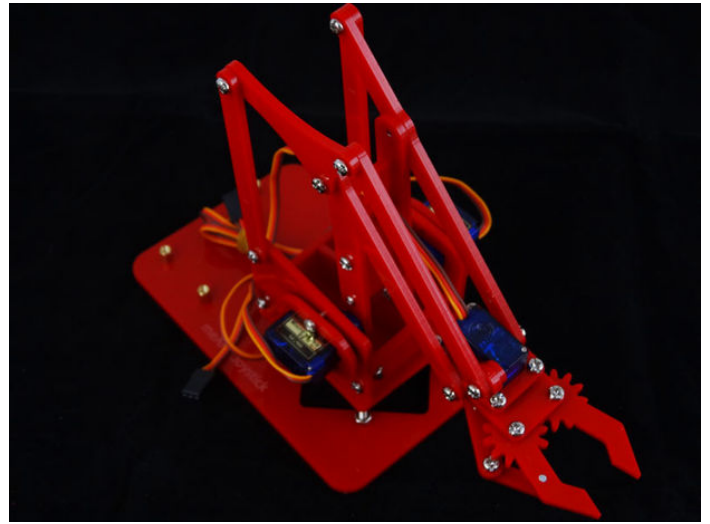
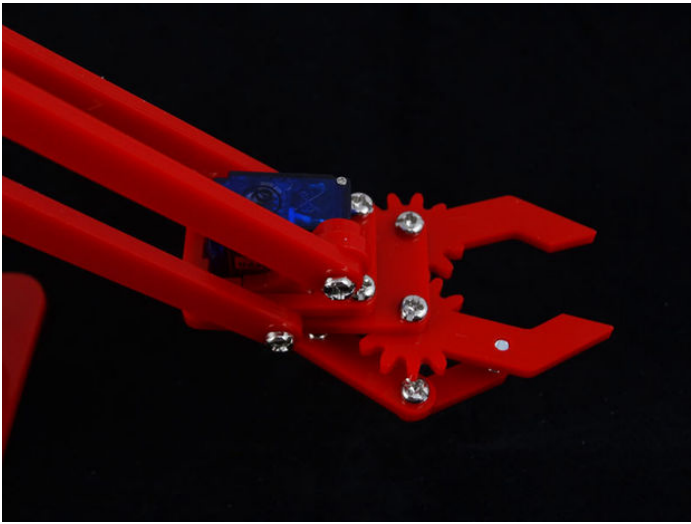
Step 14: Gripper 2

Rotate the servo clockwise until it stops and fix it as the last second figure. Rotate counterclockwise a little bit to connect the stick and the gripper.



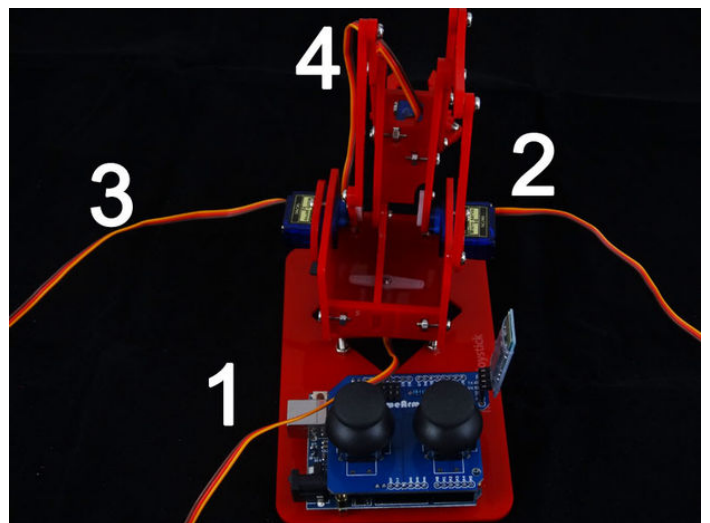
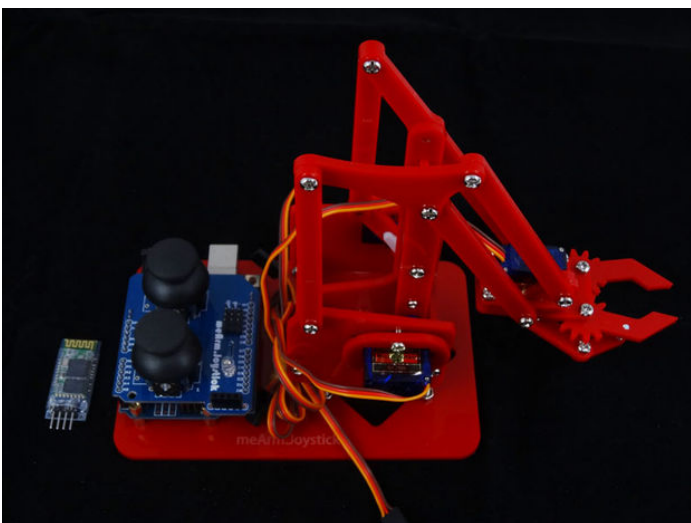
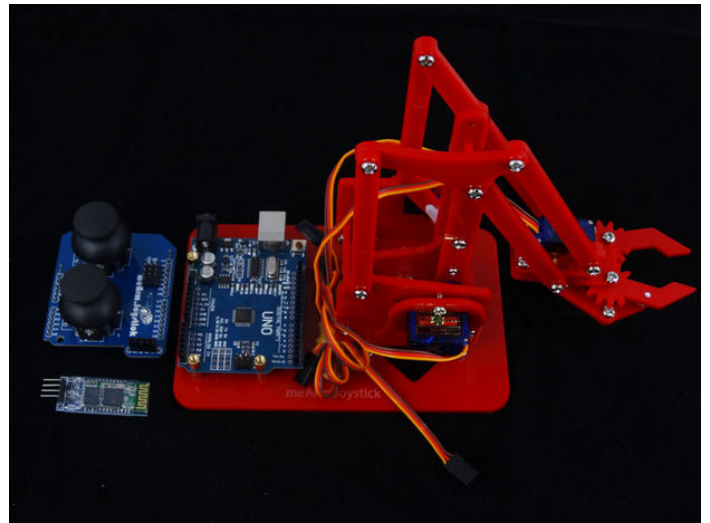
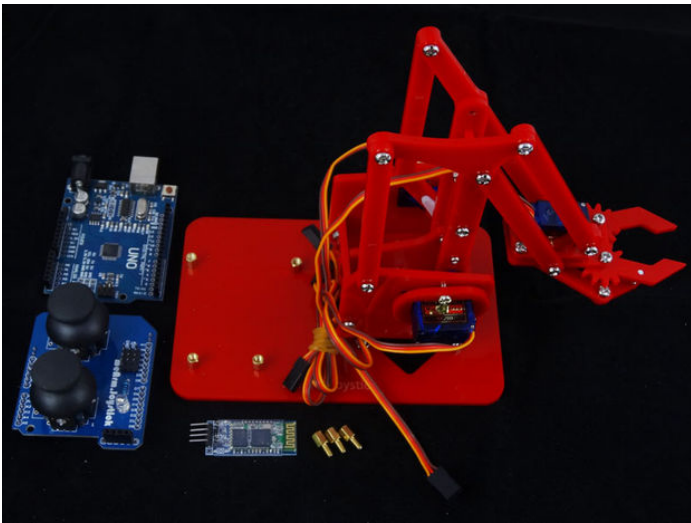
Step 15: Attach the gripper

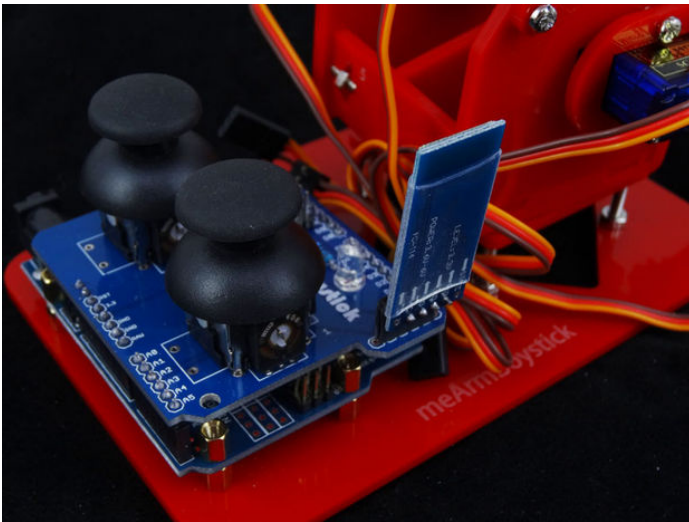
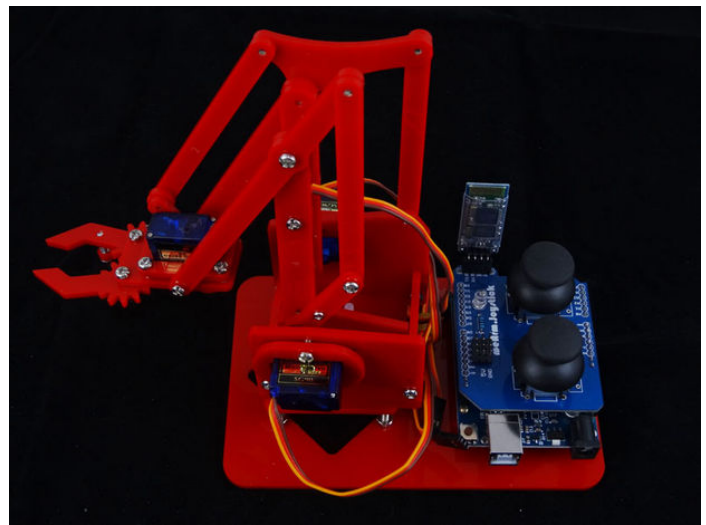
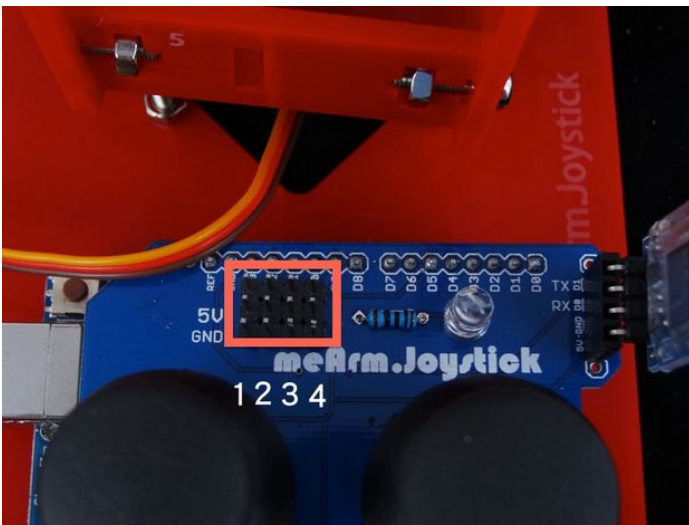




Step 16: Add control board

Please pay attention to the color of 4 servo cables. Yellow color is adjacent to the arm. Coffee color is next to joystick.





Step 17: Trouble shooting

1) Why the led on the joystick board flashes?

A) The led just lights up normally. It flashes when the board reboot and reboot. The reason is too much current on board. It may cause from servo angle out of range, screw driven too tight.

B) Solution: Loose the screws in each joint. Disconnect all servo cables and reconnect one by one. Please also check if you follow this manual when assembling servos.

For any problem, please email me at ted99 at gmail.com or add me as friend in FB. (Ted Lien)



Step 18: 30 Software lessons

[Click here for coding lesson on S4A/C/Ardublock.](#)



Related Instructables



meArm.Joystick Software en by ted99tw



meArm with joystick by ted99tw



MeArm - Build a Small Hackable Robot Arm by phenoptix



MeArm software by ted99tw



Giant Robot Arm "meArm" Remix by Jazzmyn



Robot Arm Arduino App by Micile

Comments

2 comments [Add Comment](#)



seamster says:

Very cool! Thanks for sharing these instructions. They look very easy to follow for anyone assembling this neat looking kit.

Nov 26, 2014. 10:33 AM [REPLY](#)



ted99tw says:

Thanks and it's great that you like it.

Nov 26, 2014. 4:54 PM [REPLY](#)
