How to make a XY-plotter with Makeblock

by **Makerworks** on September 22, 2013

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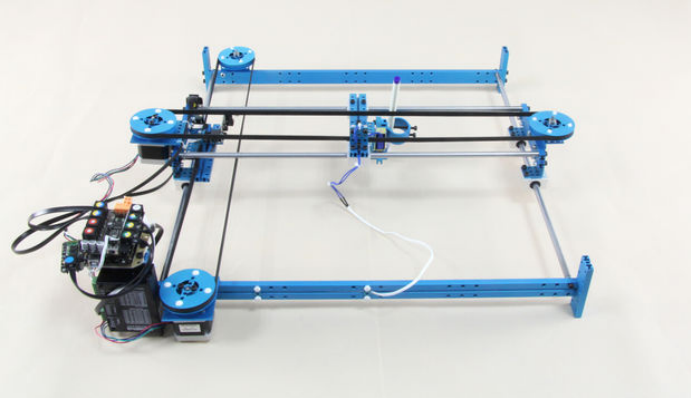
Intro: How to make a XY-plotter with Makeblock

Last month, I made a XY-plotter by Makeblock and use it to built a Drawing Robot.
This Drawing Robot was built with two Linear Motion Shaft D8x480mm, two Long Beam0824, the timing belt, two stepper motors, two stepper motor driver, and a micro-controller Arduino. You can send a picture from the phone or you can take a picture by the phone and then send it to the robot by Bluetooth. After that the robot will draw what you send.

For more information, please visit Makeblock website listed below:
www.makeblock.cc

Getting Started
This instructable, How to make a XY-plotter with Makeblock, will show you the step-by-step instructions on how to build a XY-plotter and a Drawing Robot by Makeblock. Now let's have some fun!



Step 1: Materials list

Materials List:
4 × Linear Motion Shaft D8x480
6 × Linear Motion Slide Unit 8mm
2 × Beam 0824-496
1 × Beam 0824-144
3 × Beam 0824-128
1 × Beam 0824-96
3 × Beam 0824-80
1 × Beam 0808-80
1 × General Bracket
2 × Bracket 3x6
11 × Bracket 3x3
1 × Plate 3×6
2 × Stepper Motor Bracket
4 × Timing Pulley 90T
8 × Timing Pulley Slice 90T
1 × Open-end Timing Belt (3m)
2 × Link Rod
2 × Shaft Connector-4
3 × Threaded Shaft 4x31mm
3 × Shaft Collar 4mm
4 × Flange Bearing 4x8x3mm
8 × Headless Set Screw M3x5
15 × Countersunk Screw M3×8
20 × Plastic Rivet 4120
25 × Plastic Ring 4x7x2mm
5 × Plastic Ring 4x7x1mm
30 × Screw M4×8
55 × Screw M4×14
2 × Screw M4×30
40 × Nylon Lock Nut M4
10 × Nylon Cable Ties

Electronic Modules List:
1 × Arduino
1 × Acrylic Arduino Bracket
1 × Me-BaseShield
1 × Solenoid - 12v
2 × Stepper Motor
2 × Stepper motor driver
1 × Me-Bluetooth modules
2 × Me-Limit Switch
3 × 6P6C RJ11 cable-20cm
2 × 6P6C RJ11 cable-50cm

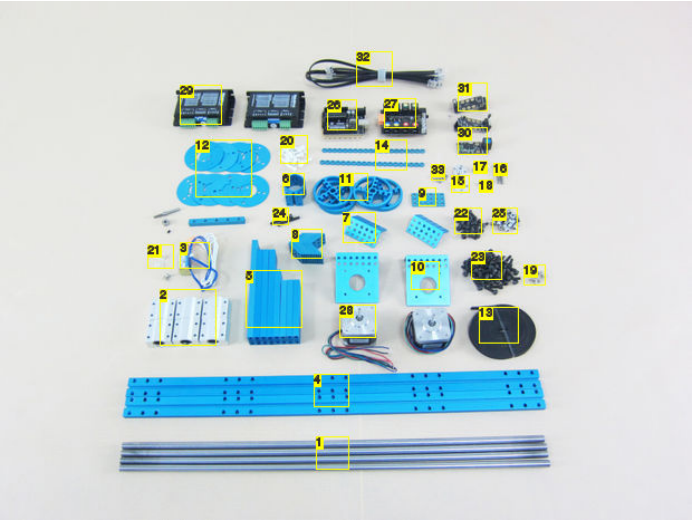


Image Notes
1. Linear Motion Shaft D8x480
2. Linear Motion Slide Unit 8mm
3. Solenoid
4. Beam 0824-496
5. Beam 0824-144 & Beam 0824-128 &Beam 0824-96 Beam 0824-80
6. General Bracket
7. Bracket 3x6
8. Bracket 3x3
9. Plate 3×6
10. Stepper Motor Bracket
11. Timing Pulley 90T
12. Timing Pulley Slice 90T
13. Open-end Timing Belt (3m)
14. Link Rod
15. Shaft Connector-4
16. Threaded Shaft 4x31mm
17. Shaft Collar 4mm
18. Headless Set Screw M3x5
19. Countersunk Screw M3×8
20. Plastic Rivet 4120
21. Plastic Ring 4x7x2mm
22. Screw M4×8
23. Screw M4×14
24. Screw M4×30
25. Nylon Lock Nut M4
26. Arduino & Acrylic Arduino Bracket
27. Me-BaseShield
28. Stepper Motor
29. Stepper motor driver
30. Me-Bluetooth modules
31. Me-Limit Switch
32. 6P6C RJ11 cable-20cm & 6P6C RJ11 cable-50cm
33. Flange Bearing 4x8x3mm

Step 2: Tools

Tools
1.5mm Hexagonal Screwdriver
3mm Hexagonal Screwdriver
Cross Screwdriver
Slotted Screwdriver
Pliers
Nylon CableTies

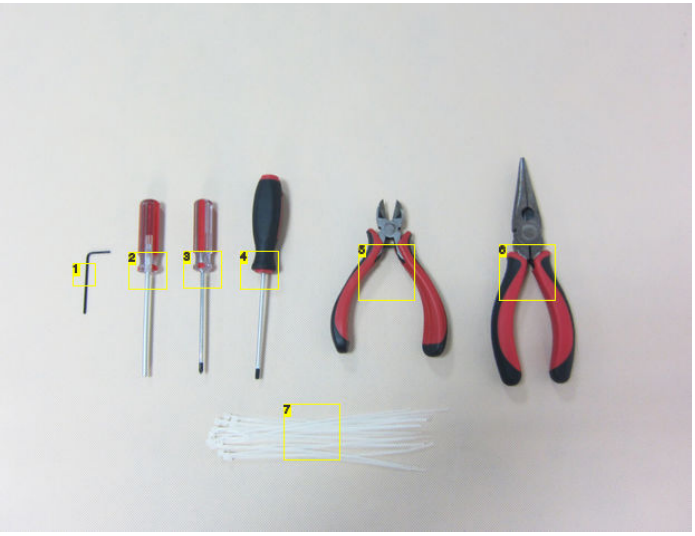
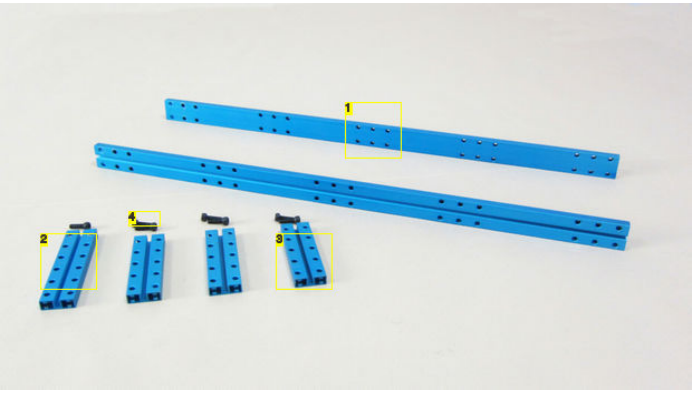


Image Notes
1. 1.5mm Hexagonal Screwdriver
2. 3mm Hexagonal Screwdriver
3. Cross Screwdriver
4. Slotted Screwdriver
5. Pliers
6. Pliers
7. Nylon CableTies

Step 3: Make the Holder

Materials List:
2 × Beam 0824-496
1 × Beam 0824-96
3 × Beam 0824-80
7 × Screw M4×14

Procedure:
1. Install the first Beam 0824-80 on Beam 0824-496 by using 2 Screw M4×14.
2. Install the second Beam 0824-80 on Beam 0824-496 with 2 Screw M4×14.
3. Install the third Beam 0824-80 on another Beam 0824-496 with 2 Screw M4×14.
4. Install the Beam 0824-96 on Beam 0824-496 with 1 Screw M4×14.



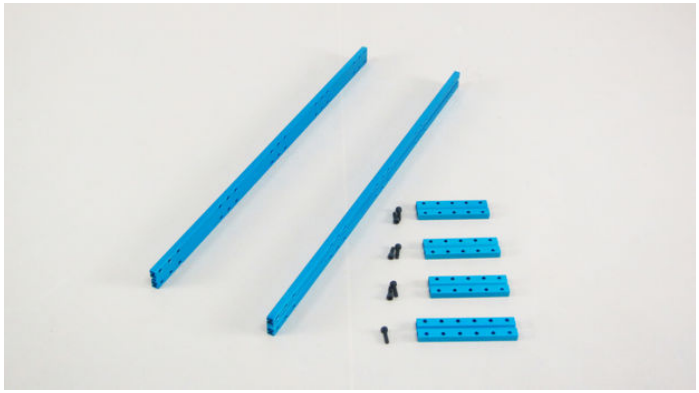


Image Notes
1. Beam 0824-496
2. Beam 0824-96
3. Beam 0824-80
4. Screw M4×14

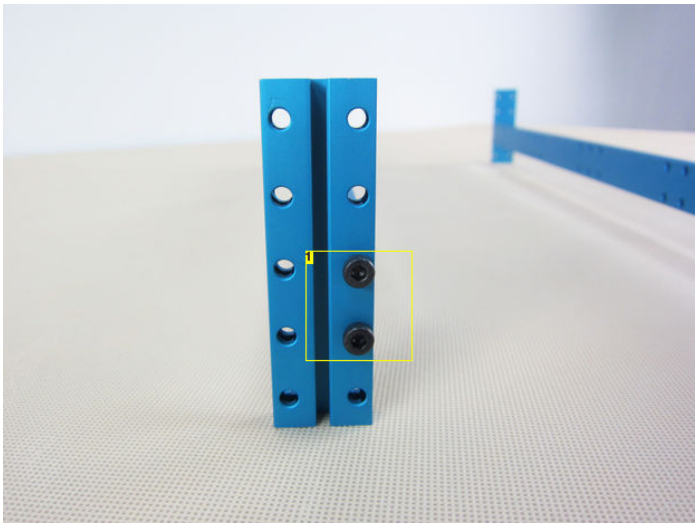


Image Notes
1. Step 1: Install the Beam 0824-80 on Beam 0824-496 by using 2 Screw M4×14.

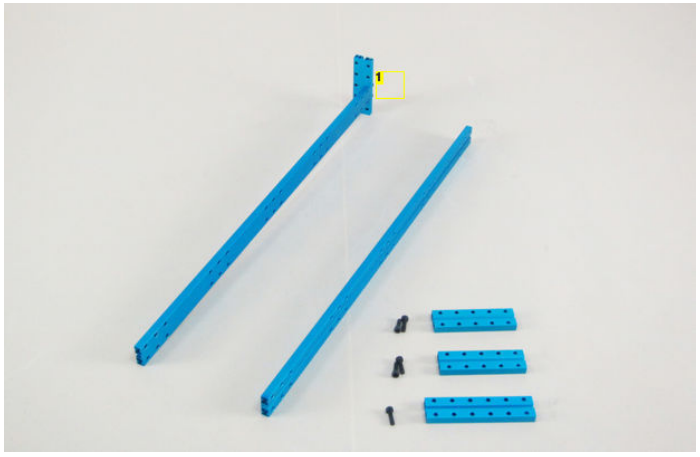


Image Notes
1. Step 1

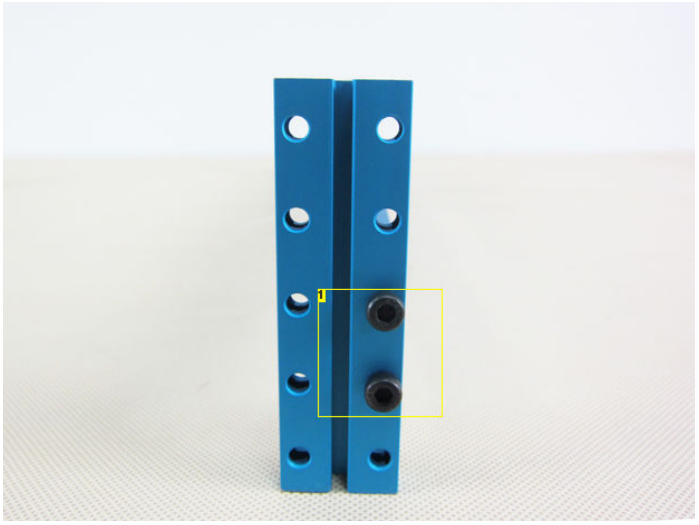


Image Notes
1. Step 2: Install another Beam 0824-80 on Beam 0824-496 with 2 Screw M4×14.

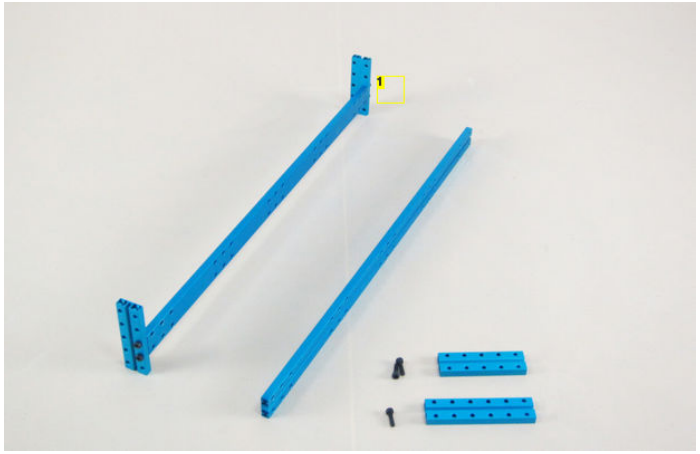


Image Notes
1. Step 2

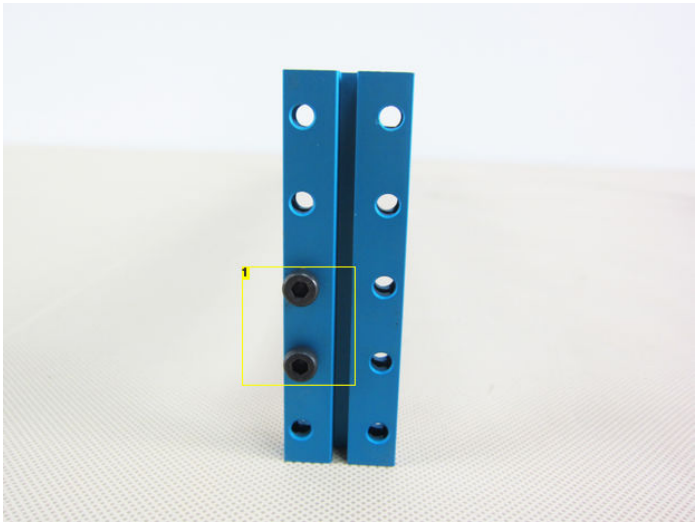


Image Notes
1. Step 3: Install the third Beam 0824-80 on another Beam 0824-496 with 2 Screw M4×14.

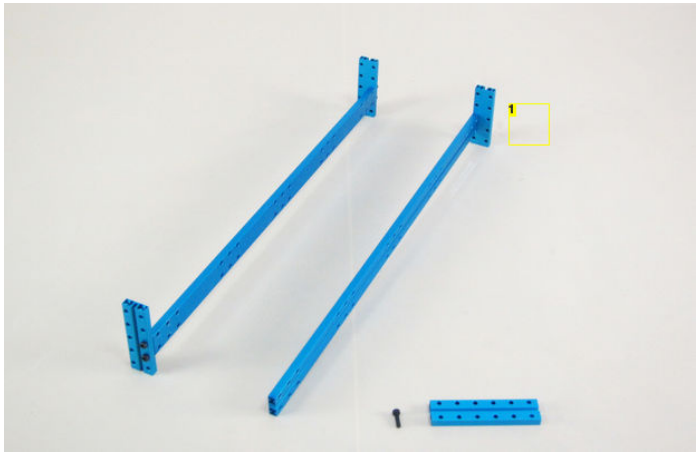


Image Notes
1. Step 3

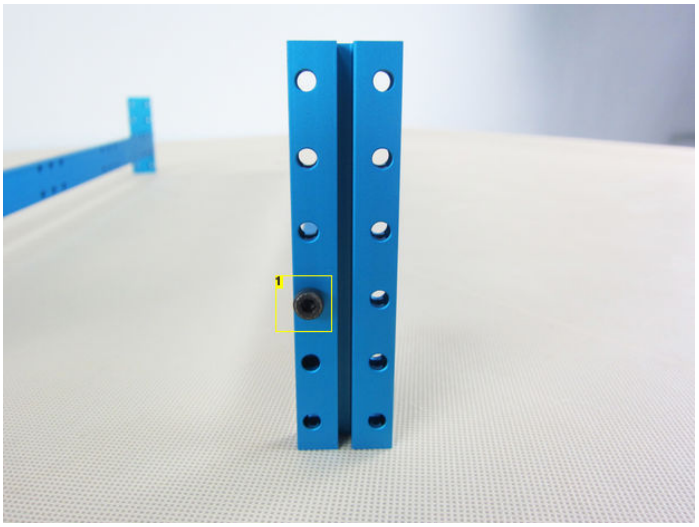


Image Notes
1. Step 4: Install the Beam 0824-96 on Beam 0824-496 with 1 Screw M4×14.

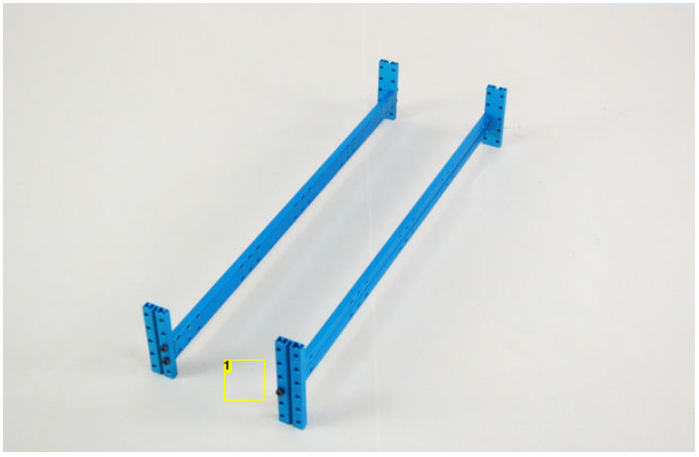
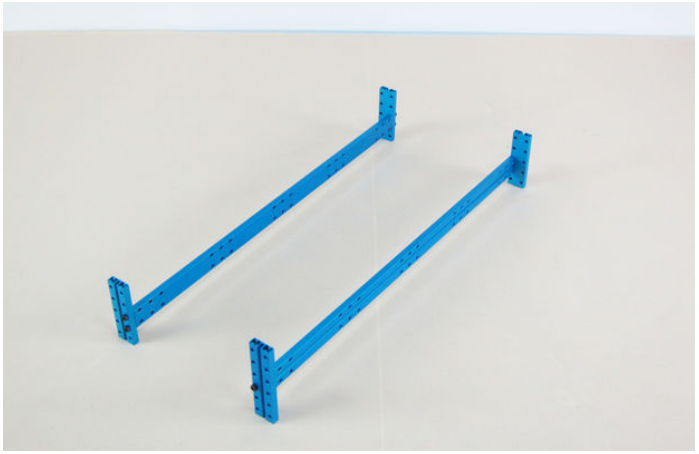


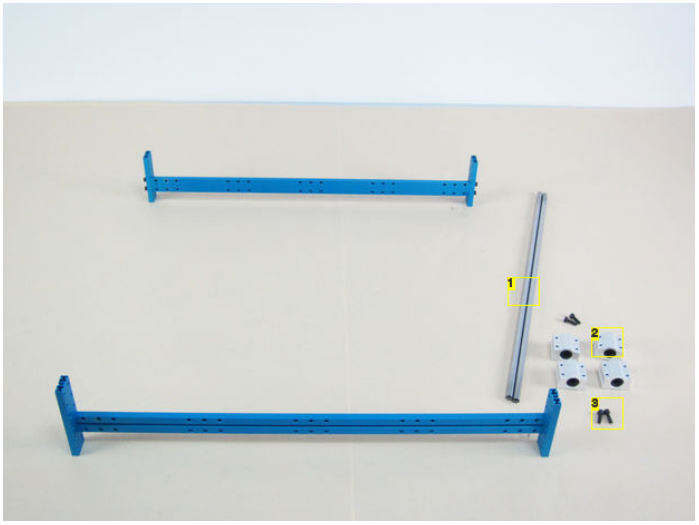
Image Notes
1. Step 4



Step 4: Build the Frame

Materials List:
2 × Linear Motion Shaft D8x480
4 × Linear Motion Slide Unit 8mm
4 × Screw M4×14

Procedure:
1. Install the 2 Linear Motion Shaft D8x480s on Beam 0824-496 by using 2 Screw M4×14.
2. Install 2 Linear Motion Slide Unit 8mm on each Linear Motion Shaft D8x480.
3. Install the 2 Linear Motion Shaft D8x480s on another Beam 0824-496 with 2 Screw M4×14.



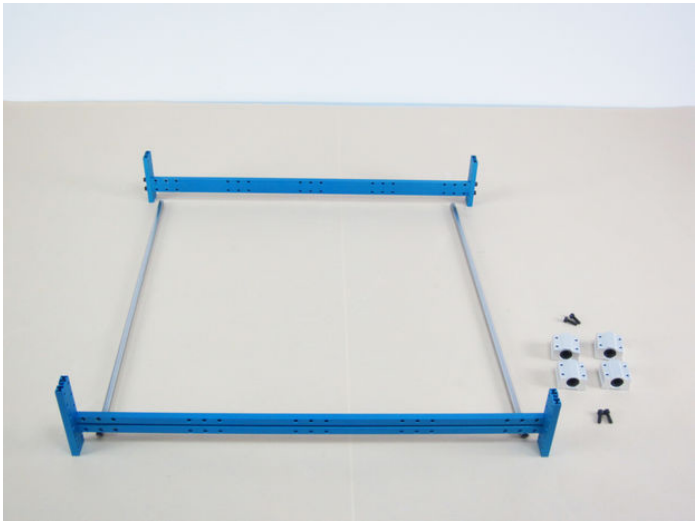


Image Notes
1. Linear Motion Shaft D8x480
2. Linear Motion Slide Unit 8mm
3. Screw M4×14

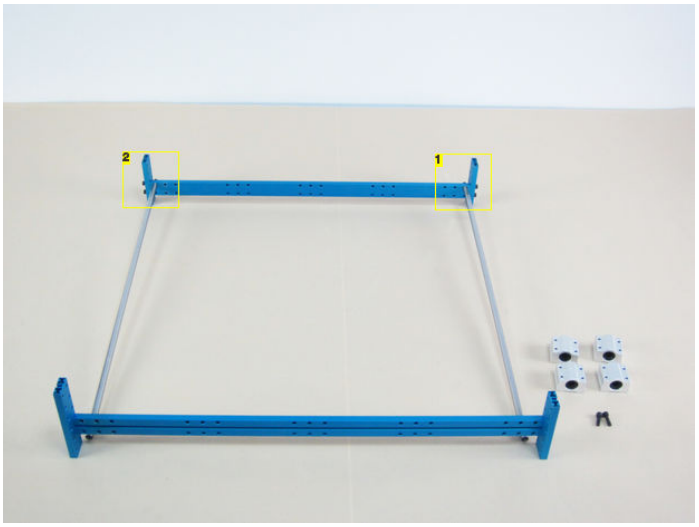


Image Notes
1. Step 1
2. Step 1: Install the Linear Motion Shaft D8x480s on Beam 0824-496 by using 2 Screw M4×14.

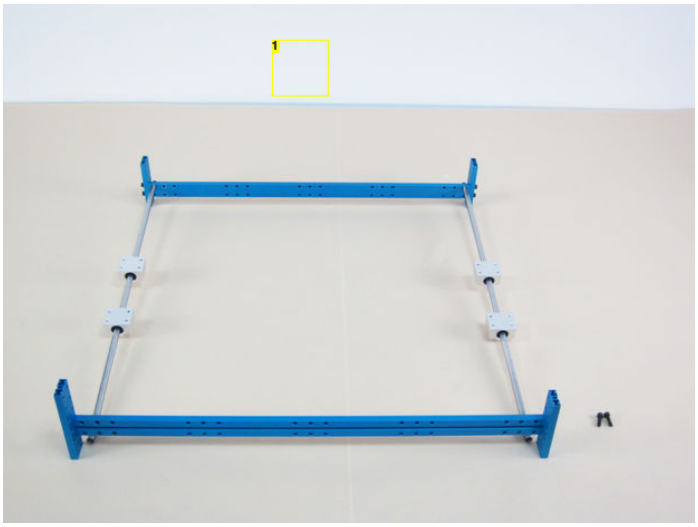


Image Notes
1. Step 2: Install 2 Linear Motion Slide Unit 8mm on each Linear Motion Shaft D8x480.

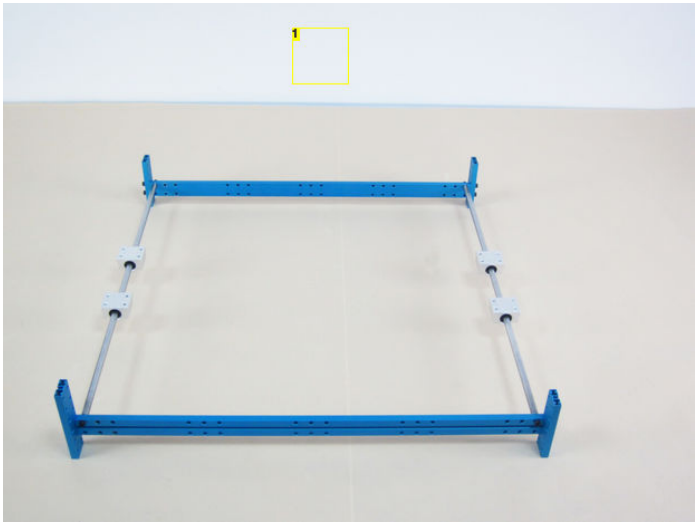


Image Notes
1. Step 3: Install the 2 Linear Motion Shaft D8x480s on another Beam 0824-496 with 2 Screw M4×14.

Step 5: Add Stepper Motor Driver Holder

Materials List:
2 × Bracket 3x3
4 × Screw M4×14
3 × Nylon Lock Nut M4

Procedure:
1. Install the first Bracket 3x3 to Beam 0824-96 on Beam 0824-496 by using 2 Screw M4×14 and a Nylon Lock Nut M4.
2. Install the second Bracket 3x3 to Beam 0824-96 on Beam 0824-496 by using 2 Screw M4×14 and 2 Nylon Lock Nut M4.

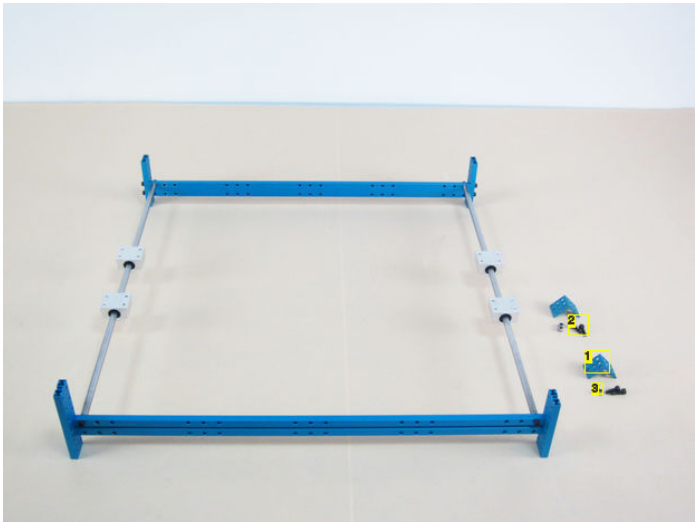


Image Notes
1. Bracket 3x3
2. Screw M4×14
3. Nylon Lock Nut M4

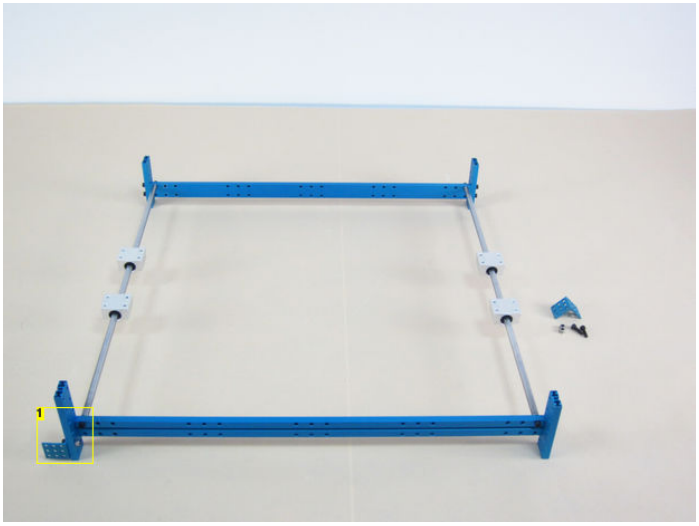


Image Notes
1. Step 1: Install the first Bracket 3x3 to Beam 0824-96 on Beam 0824-496 by using 2 Screw M4×14 and a Nylon Lock Nut M4.

Image Notes
1. Step 2: Install the second Bracket 3x3 to Beam 0824-96 on Beam 0824-496 by using 2 Screw M4×14 and 2 Nylon Lock Nut M4.

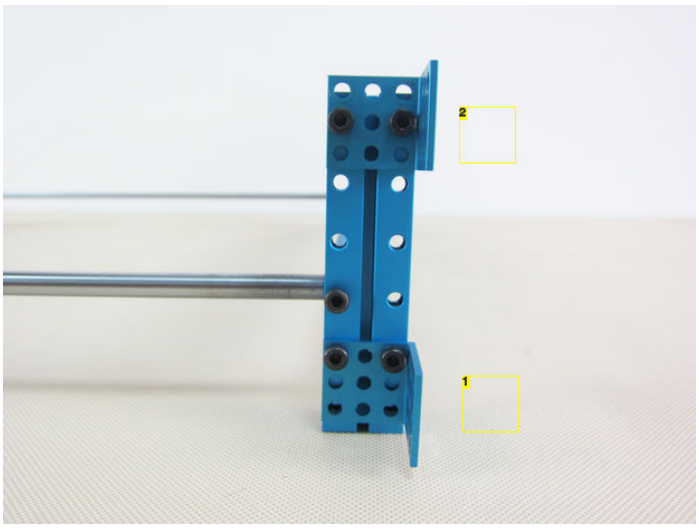


Image Notes
1. Step 1
2. Step 2

Step 6: Add Stepper Motor

Materials List:
1 × Bracket 3x6
1 × Stepper Motor Bracket
4 × Countersunk Screw M3×8
2 × Screw M4×8
3 × Screw M4×14
3 × Nylon Lock Nut M4
1 × Stepper Motor

Procedure:
1. Install the Stepper Motor Bracket on Beam 0824-496 by using 2 Screw M4×14 and 2 Nylon Lock Nut M4.
2. Install the Stepper Motor to Stepper Motor Bracket with 4 Countersunk Screw M3×8.
3. Install the Bracket 3x6 on Beam 0824-496 by using 2 Screw M4×8, 1 Screw M4×14 and 1 Nylon Lock Nut M4.

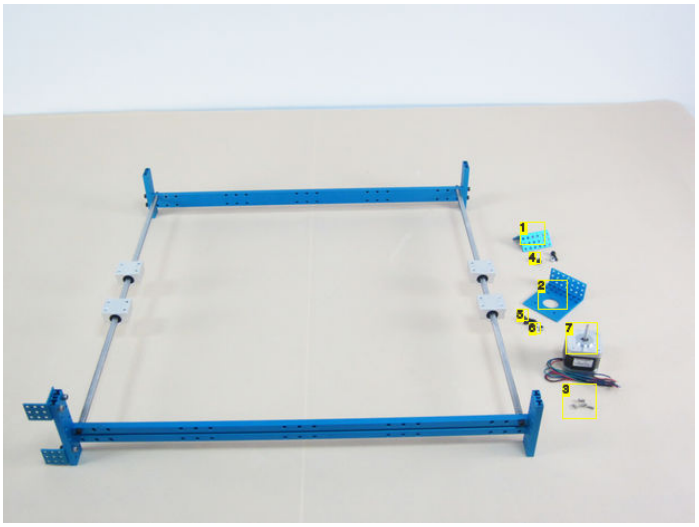


Image Notes
1. Bracket 3x6
2. Stepper Motor Bracket
3. Countersunk Screw M3×8
4. Screw M4×8
5. Screw M4×14
6. Nylon Lock Nut M4
7. Stepper Motor

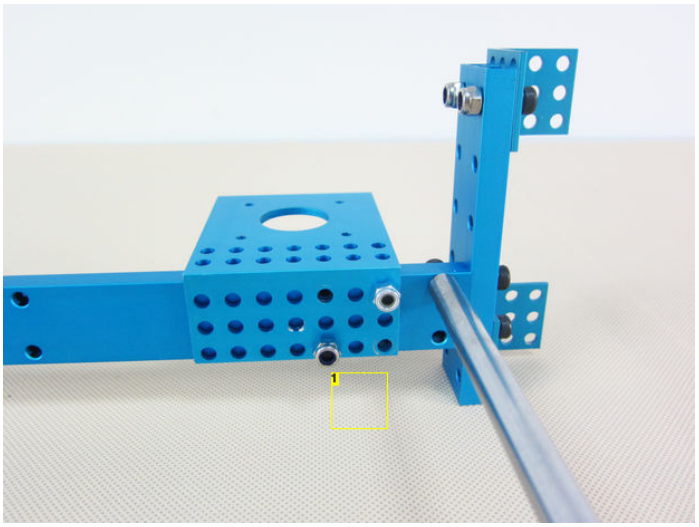


Image Notes
1. Step 1: Install the Stepper Motor Bracket on Beam 0824-496 by using 2 Screw M4×14 and 2 Nylon Lock Nut M4.

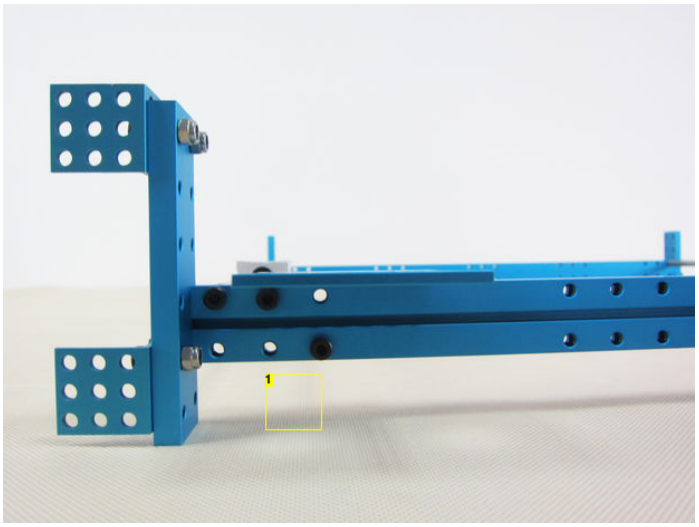


Image Notes
1. Step 1

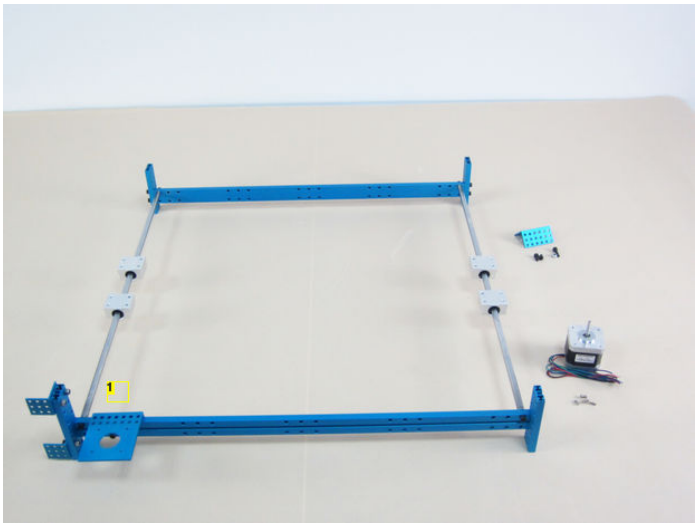


Image Notes
1. Step 1

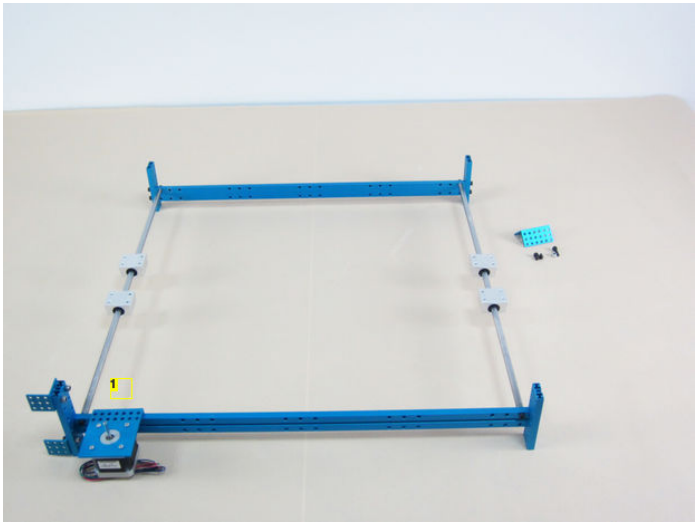


Image Notes
1. Step 2: Install the Stepper Motor to Stepper Motor Bracket with 4 Countersunk Screw M3×8.

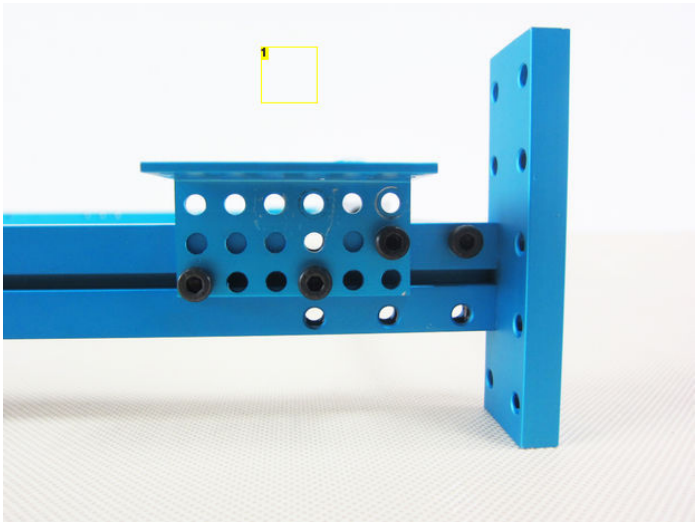


Image Notes
1. Step 3: Install the Stepper Motor Bracket on Beam 0824-496 by using 2 Screw M4×8, 1 Screw M4×14 and 1 Nylon Lock Nut M4.

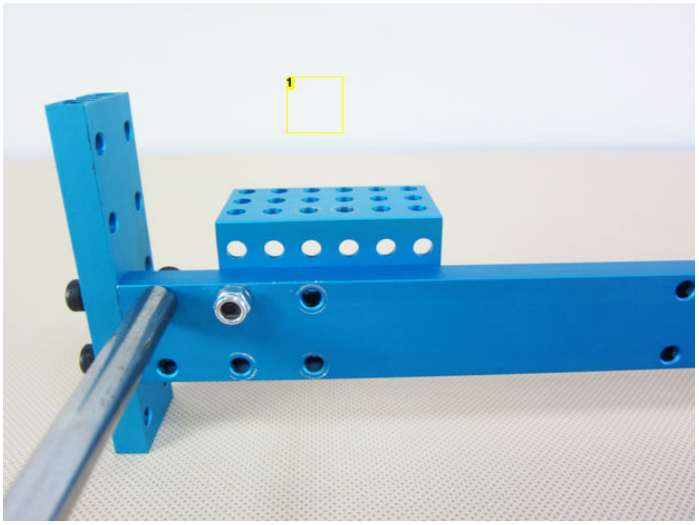
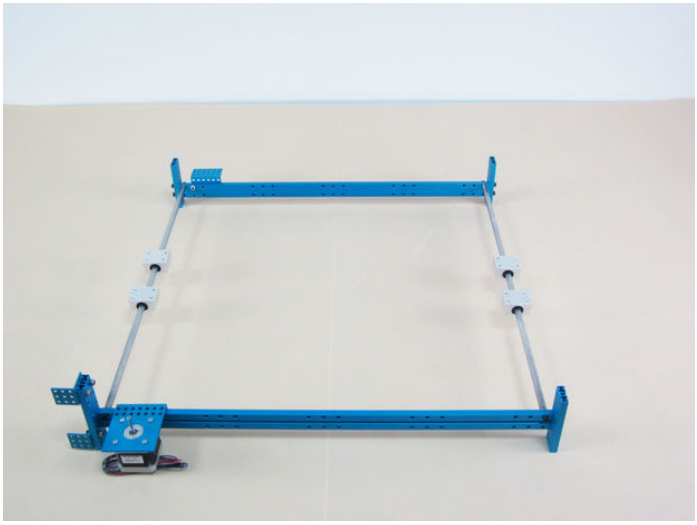


Image Notes
1. Step 3



Step 7: Make Timing Pulley

Materials List:
4 × Timing Pulley 90T
8 × Timing Pulley Slice 90T
2 × Threaded Shaft 4x31mm
2 × Shaft Collar 4mm
2 × Headless Set Screw M3x5
4 × Flange Bearing 4x8x3mm
16 × Plastic Rivet 4120

Procedure:
1. Insert 4 Plastic Rivet R4120 into the holes on the Timing Pulley Slice 90T.
2. Put a Timing Pulley 90T on the Timing Pulley Slice 90T.
3. Put another Timing Pulley Slice 90T on the Timing Pulley 90T and Press the Plastic Rivet R4120 to make them together.
4. Do the same as step1 to 3 discribe to make another Timing Pulley.
5. Insert the Threaded Shaft 4×31mm into the Flange Bearing 4×8×3mm.
6. Insert the Threaded Shaft 4×31mm with the Flange Bearing 4×8×3mm into the Timing Pulley 90T.
7. Insert the other Flange Bearing 4×8×3mm into the Timing Pulley 90T.
8. Put the Shaft Collar 4mm on the Threaded Shaft 4×31mm and insert a Headless Screw M3×5 into the Shaft Collar 4mm.
9. Do the same as step 1 to 8 discribe to make another two Timing Pulley.

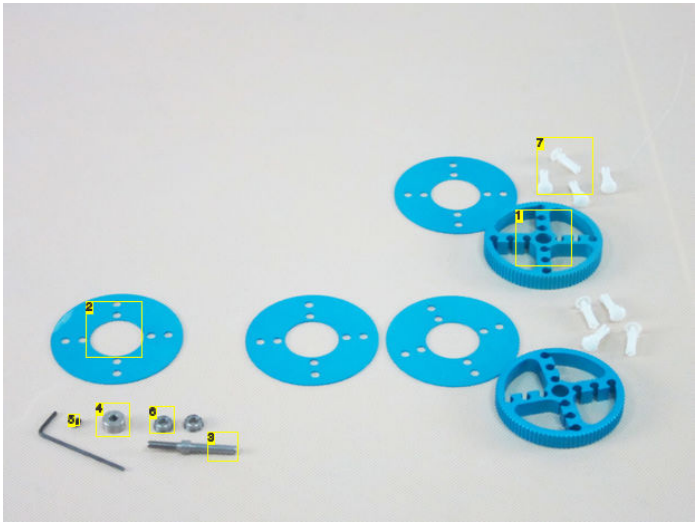


Image Notes
1. Timing Pulley 90T
2. Timing Pulley Slice 90T
3. Threaded Shaft 4x31mm
4. Shaft Collar 4mm
5. Headless Set Screw M3x5
6. Flange Bearing 4x8x3mm
7. Plastic Rivet 4120

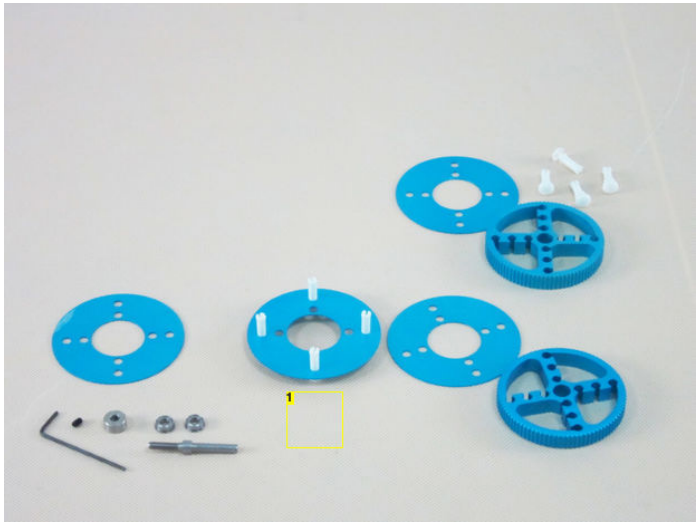


Image Notes
1. Step 1: Insert 4 Plastic Rivet R4120 into the holes on the Timing Pulley Slice 90T.

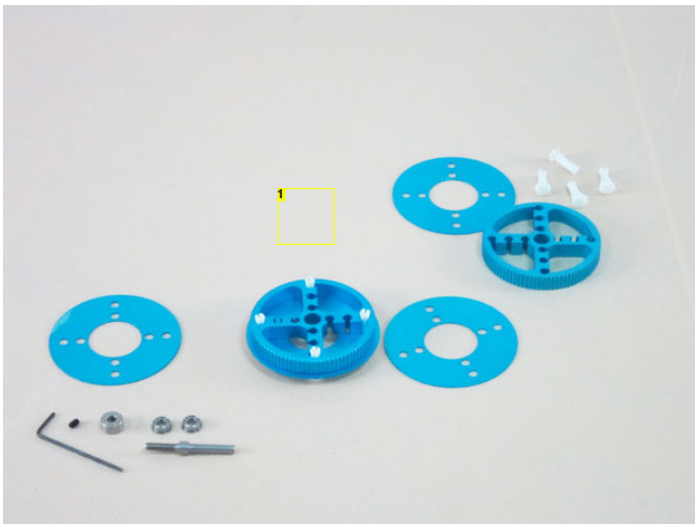


Image Notes
1. Step 2: Put a Timing Pulley 90T on the Timing Pulley Slice 90T.

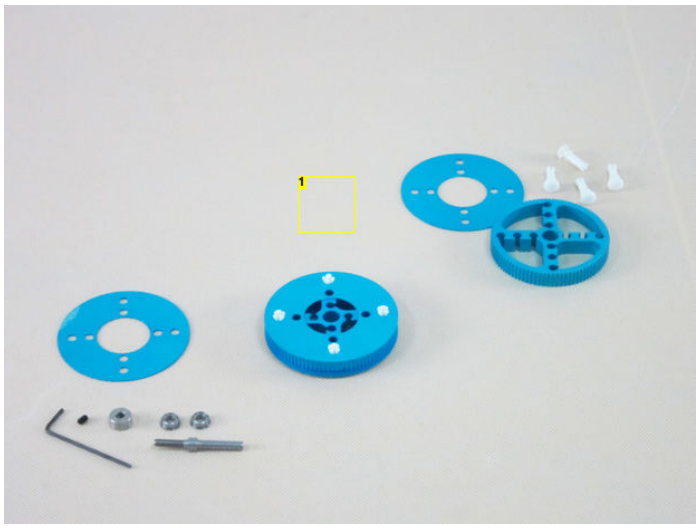


Image Notes
1. Step 3: Put another Timing Pulley Slice 90T on the Timing Pulley 90T and Press the Plastic Rivet R4120 to make them together.

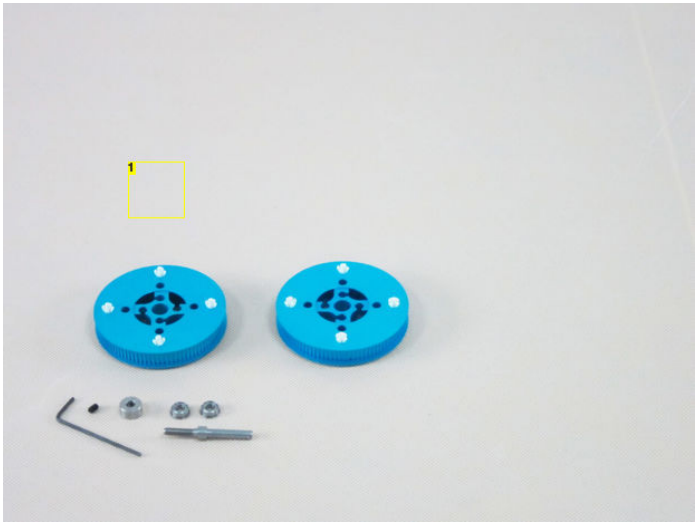


Image Notes
1. Step 4: Do the same as step1 to 3 discribe to make another Timing Pulley.

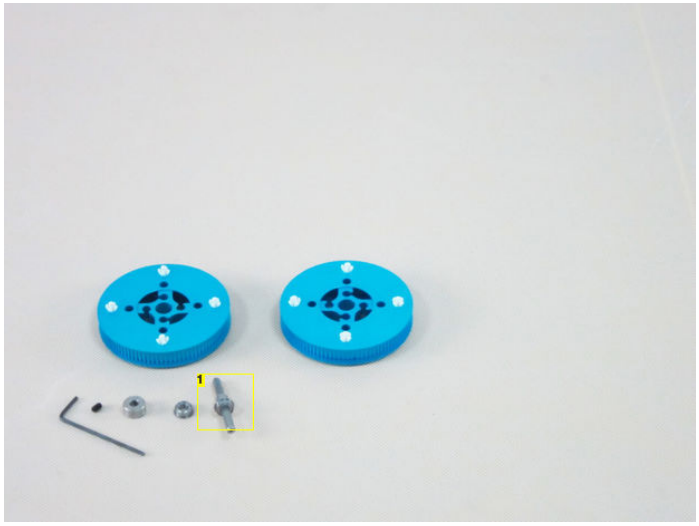


Image Notes
1. Step 5: Insert the Threaded Shaft 4×31mm into the Flange Bearing 4×8×3mm.

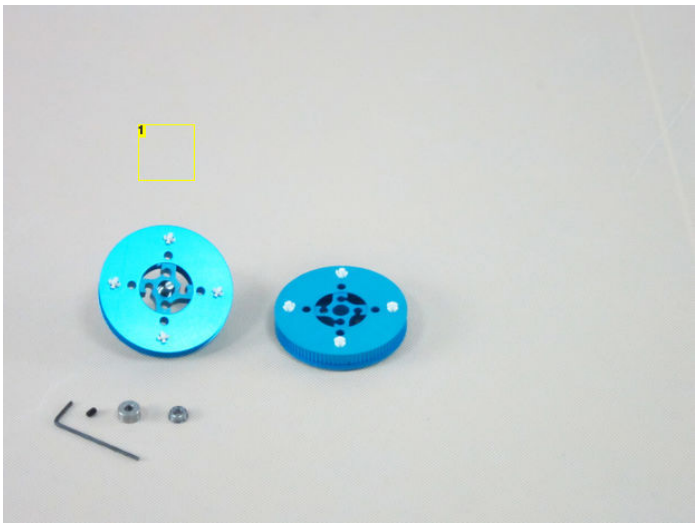


Image Notes
1. Step 6: Insert the Threaded Shaft 4×31mm with the Flange Bearing 4×8×3mm into the Timing Pulley 90T.

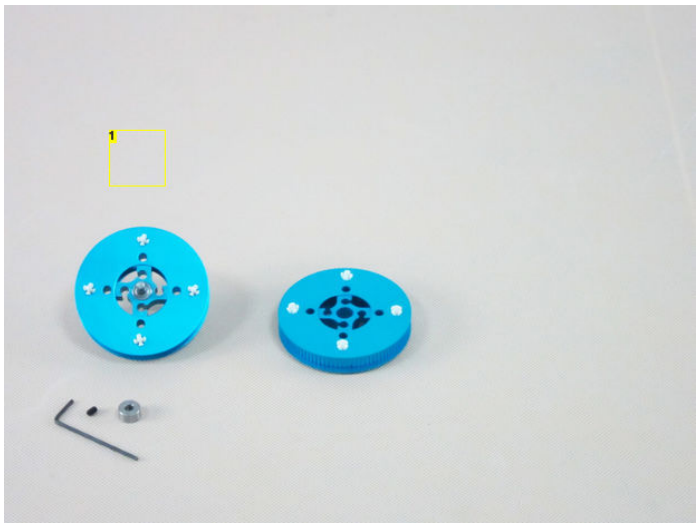


Image Notes
1. Step 7: Insert the other Flange Bearing 4×8×3mm into the Timing Pulley 90T.

Image Notes
1. Step 8: Put the Shaft Collar 4mm on the Threaded Shaft 4×31mm and insert a Headless Screw M3×5 into the Shaft Collar 4mm.

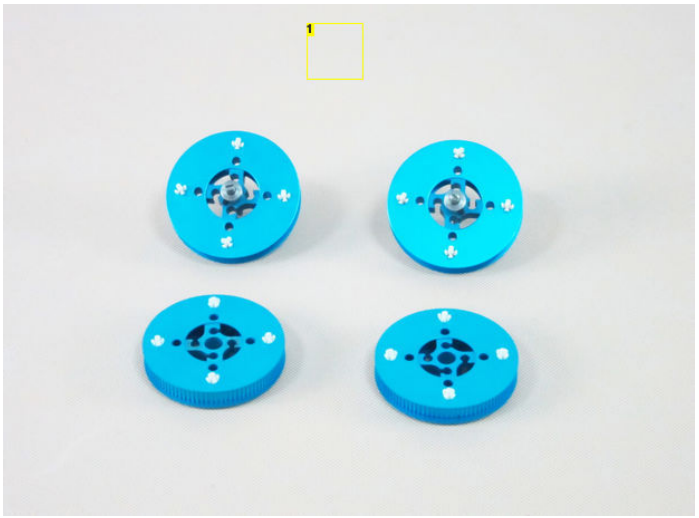


Image Notes
1. Step 9: Do the same as step 1 to 8 discribe to make another two Timing Pulley.

Step 8: Add Timing Pulley

Materials List:
1 × Shaft Connector-4
1 × Headless Set Screw M3x5
2 × Screw M4×14
1 × Nylon Lock Nut M4

Procedure:
1. Install the Driven Pulley to tht Bracket 3x6 with a Nylon Lock Nut M4.
2. Insert a Headless Screw M3×5 into the Shaft Connector-4 and install the Shaft Connector-4 to the Stepper Motor.
3. Install the Driving Pulley on the Shaft Connector-4 with 2 Screw M4×14.

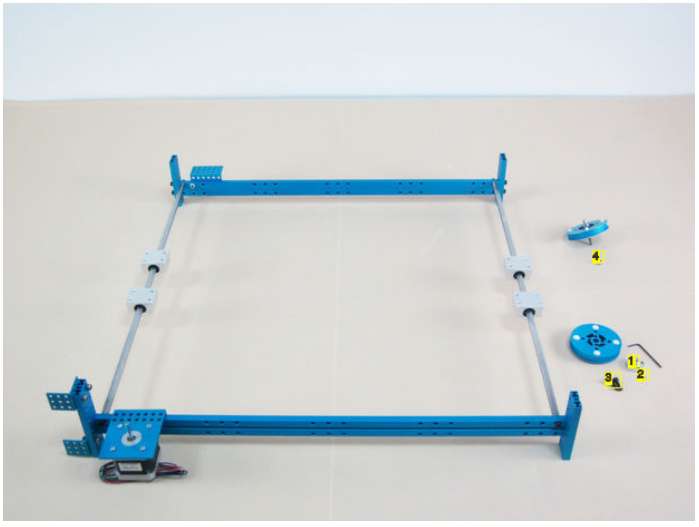


Image Notes
1. Shaft Connector-4
2. Headless Set Screw M3x5
3. Screw M4×14
4. Nylon Lock Nut M4

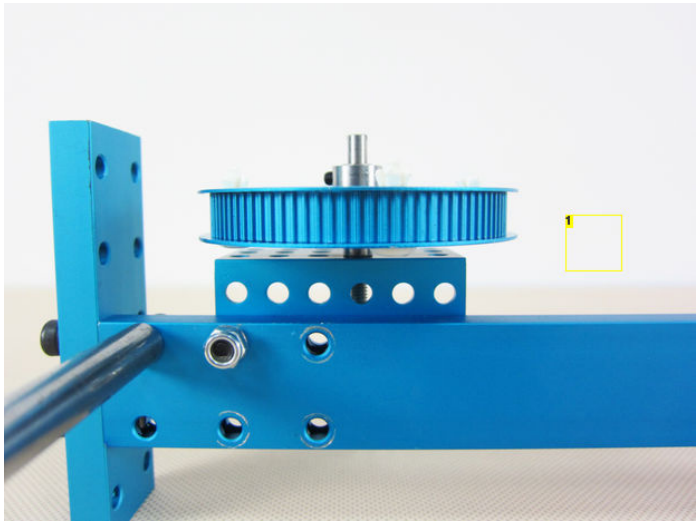


Image Notes
1. Step 1: Install the Driven Pulley to tht Bracket 3x6 with a Nylon Lock Nut M4.

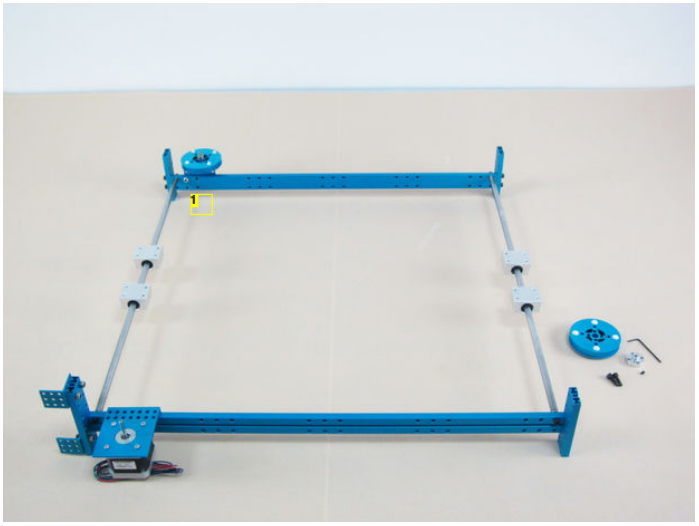


Image Notes
1. Step 1

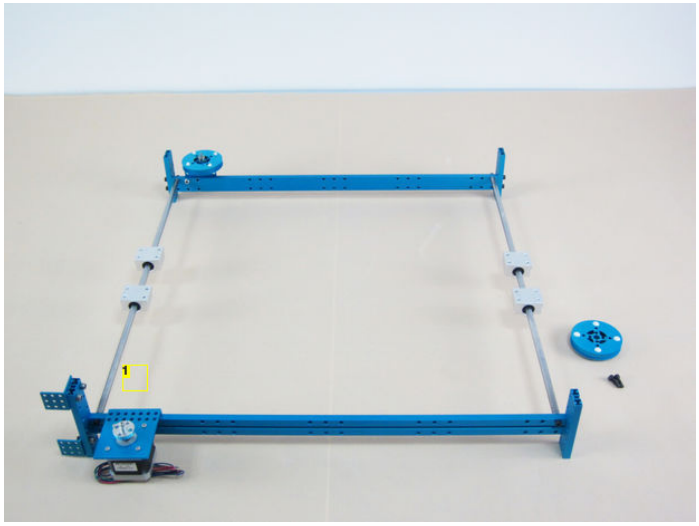


Image Notes
1. Step 2: Insert a Headless Screw M3×5 into the Shaft Connector-4 and install the Shaft Connector-4 to the Stepper Motor.

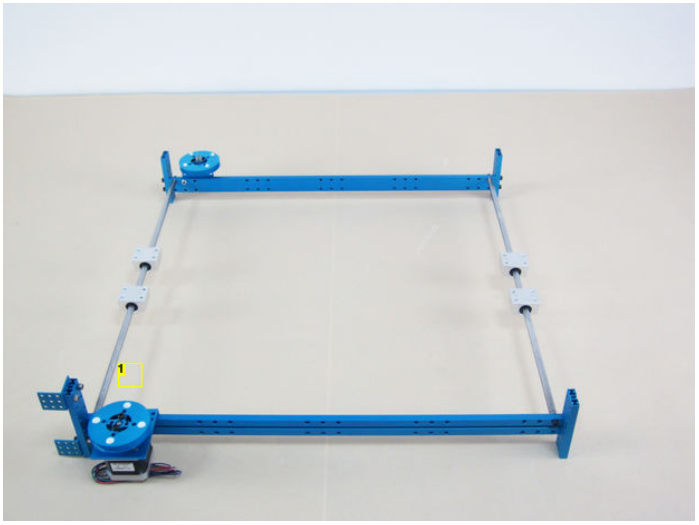


Image Notes
1. Step 3: Install the Driving Pulley on the Shaft Connector-4 with 2 Screw M4×14.

Step 9: Add Y-axis

Materials List:
3 × Beam 0824-128
6 × Bracket 3x3
10 × Screw M4×8
14 × Screw M4×14
10 × Nylon Lock Nut M4

Procedure:
1. Install the first Bracket 3x3 on a Linear Motion Slide Unit 8mm with 2 Screw M4×8.
2. Install the second Bracket 3x3 on another Linear Motion Slide Unit 8mm at the same side with 2 Screw M4×8.
3. Install the first Beam 0824-128 on the two Linear Motion Slide Unit 8mm with Bracket 3x3 by using 4 Screw M4×14.
4. Install the second Beam 0824-128 on the Bracket 3x3 by using 4 Screw M4×14 and 4 Nylon Lock Nut M4.
5. Install the third Bracket 3x3 on the first Beam 0824-128 with 2 Screw M4×8.
6. Install the fourth Bracket 3x3 on the first Beam 0824-128 with 2 Screw M4×8 and 2 Nylon Lock Nut M4.
7. Install the fifth and the sixth Bracket 3x3 on 2 Linear Motion Slide Unit 8mm with 4 Screw M4×8.
8. Install the third Beam 0824-128 on the fifth and sixth Bracket 3x3 by using 4 Screw M4×14 and 4 Nylon Lock Nut M4.

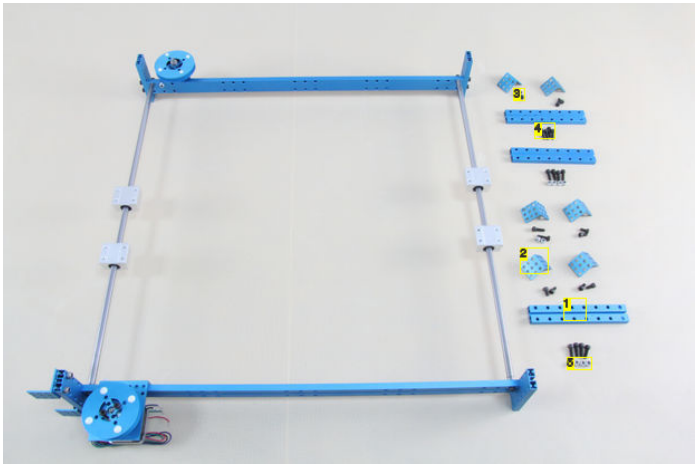


Image Notes
1. Beam 0824-128
2. Bracket 3x3
3. Screw M4×8
4. Screw M4×14
5. Nylon Lock Nut M4

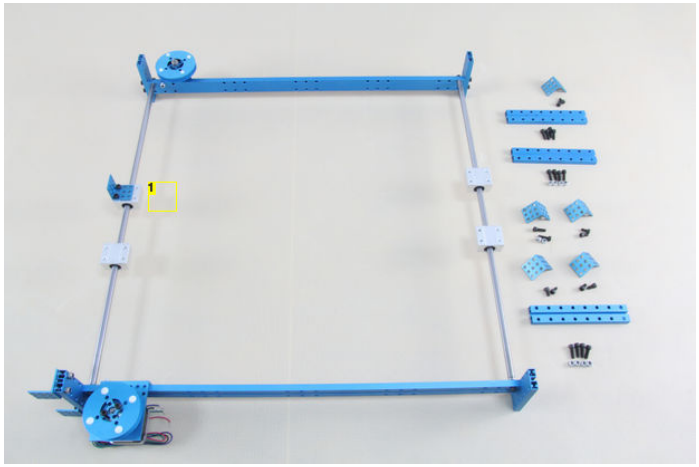


Image Notes
1. Step 1: Install a Bracket 3x3 on a Linear Motion Slide Unit 8mm with 2 Screw M4×8.

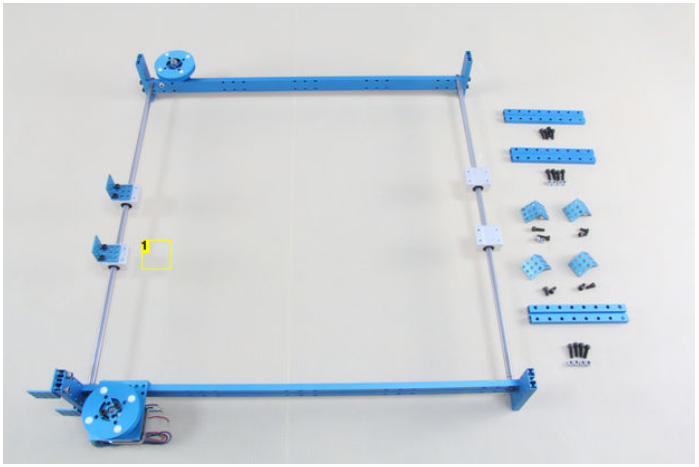


Image Notes
1. Step 2: Install the second Bracket 3x3 on another Linear Motion Slide Unit 8mm at the same side with 2 Screw M4×8.

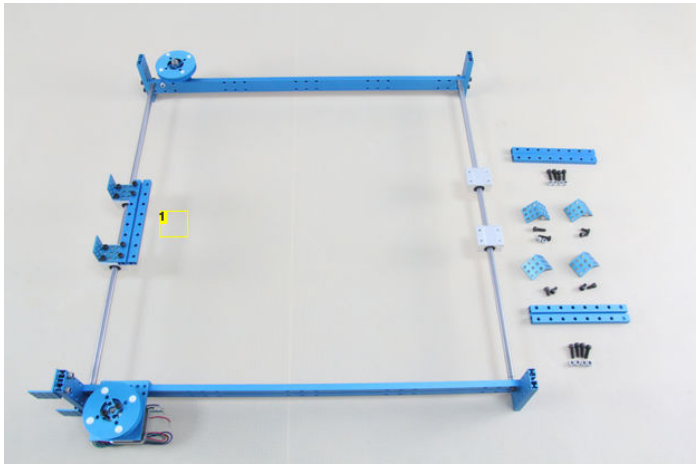
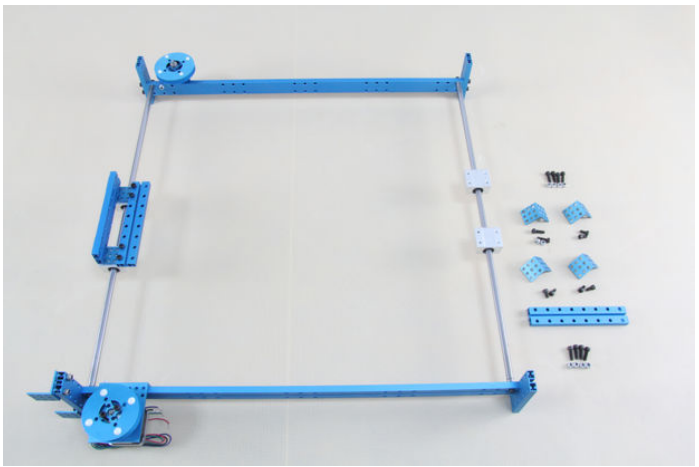


Image Notes
1. Step 3: Install a Beam 0824-128 on the two Linear Motion Slide Unit 8mm with Bracket 3x3 by using 4 Screw M4×14.



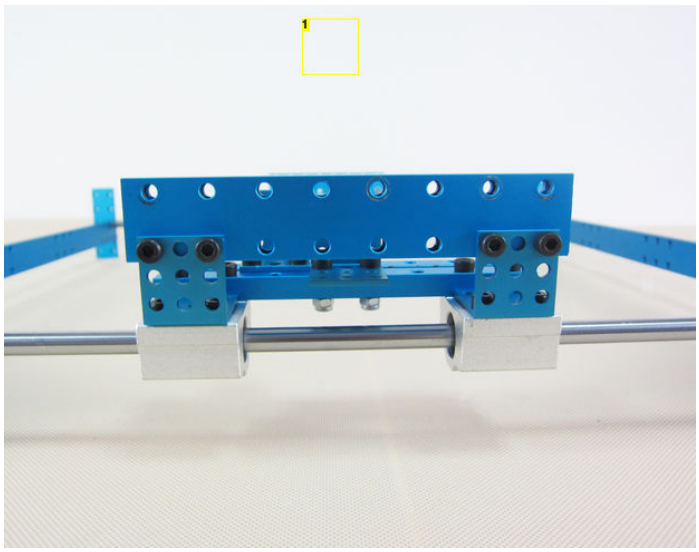


Image Notes
1. Step 4: Install the second Beam 0824-128 on the Bracket 3x3 by using 4 Screw M4×14 and 4 Nylon Lock Nut M4.

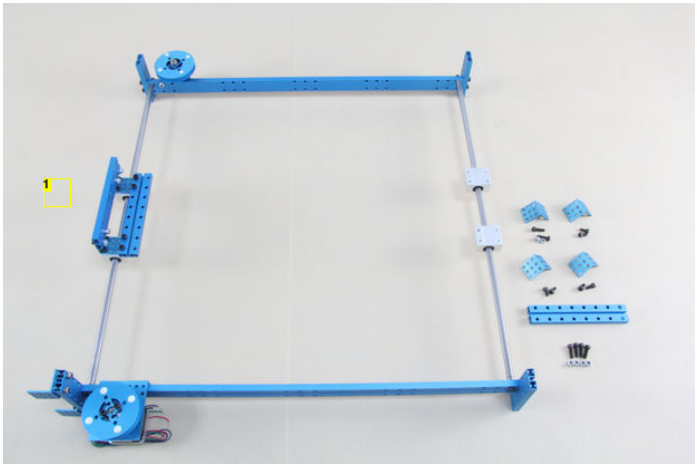


Image Notes
1. Step 4

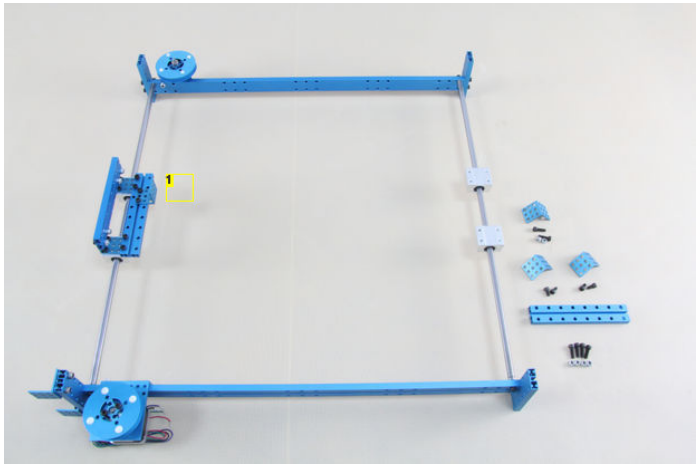


Image Notes
1. Step 5: Install the third Bracket 3x3 on the first Beam 0824-128 with 2 Screw M4×8.

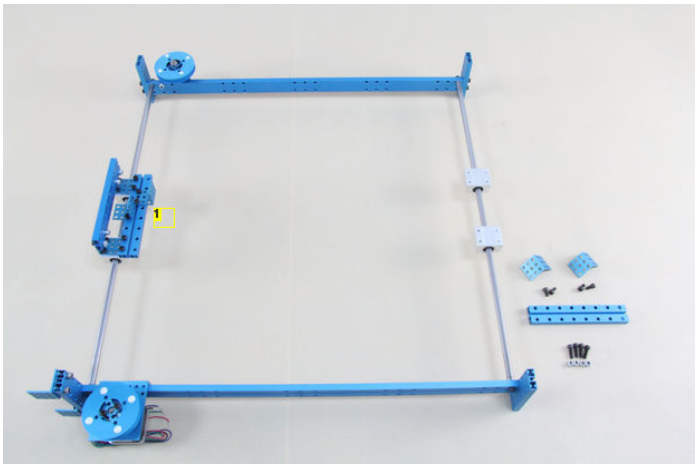


Image Notes
1. Step 6: Install the fourth Bracket 3x3 on the first Beam 0824-128 with 2 Screw M4×8 and 2 Nylon Lock Nut M4.

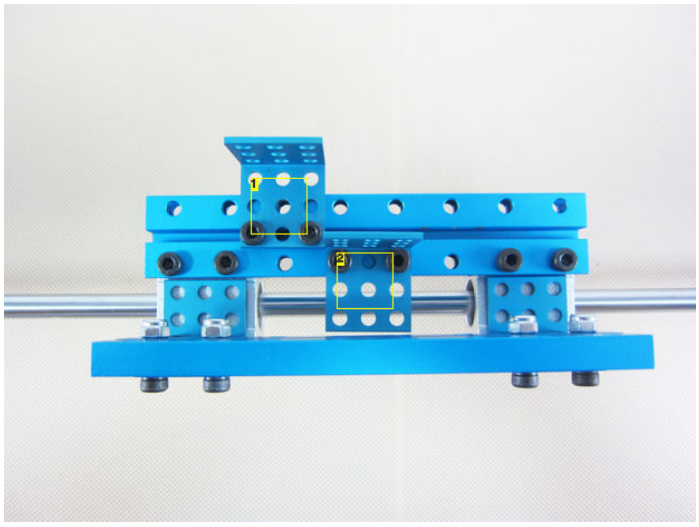


Image Notes
1. Step 5
2. Step 6

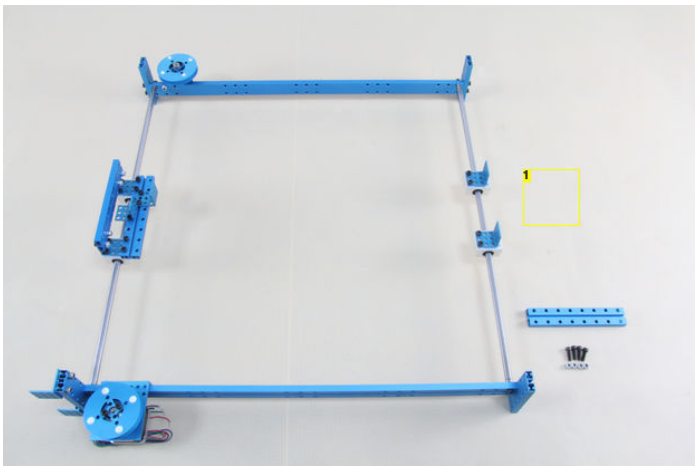
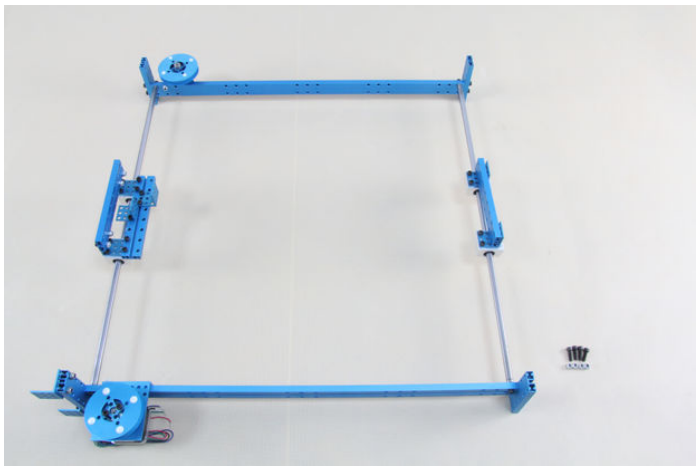


Image Notes
1. Step 7: Install the fifth and the sixth Bracket 3x3 on 2 Linear Motion Slide Unit 8mm with 4 Screw M4×8.



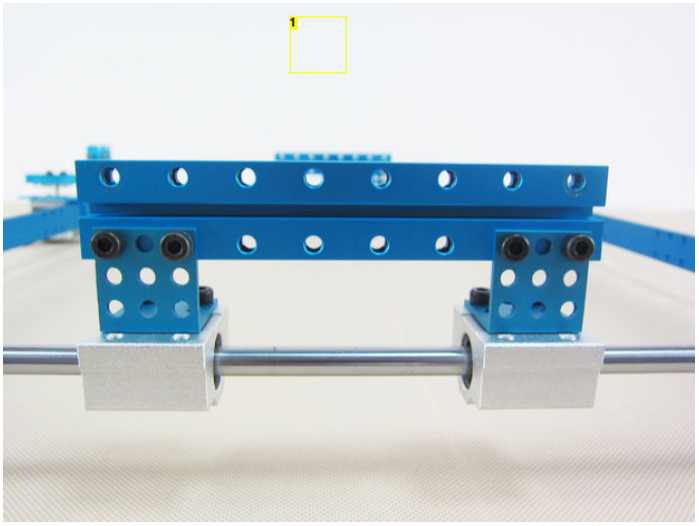


Image Notes
1. Step 8: Install the third Beam 0824-128 on the fifth and sixth Bracket 3x3 by using 4 Screw M4×14 and 4 Nylon Lock Nut M4.

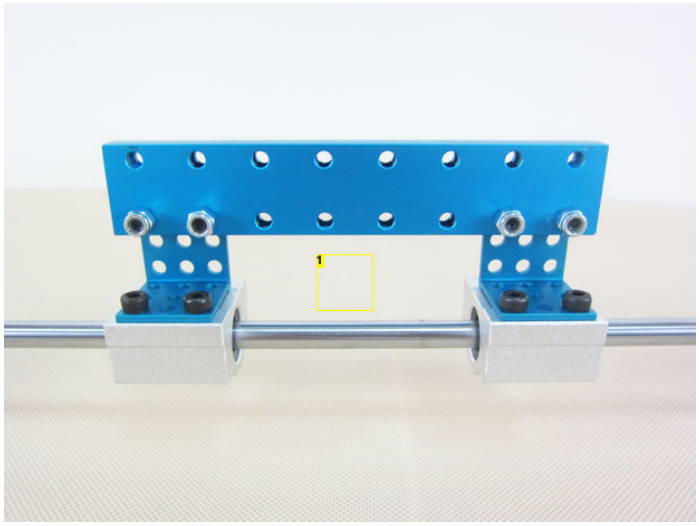
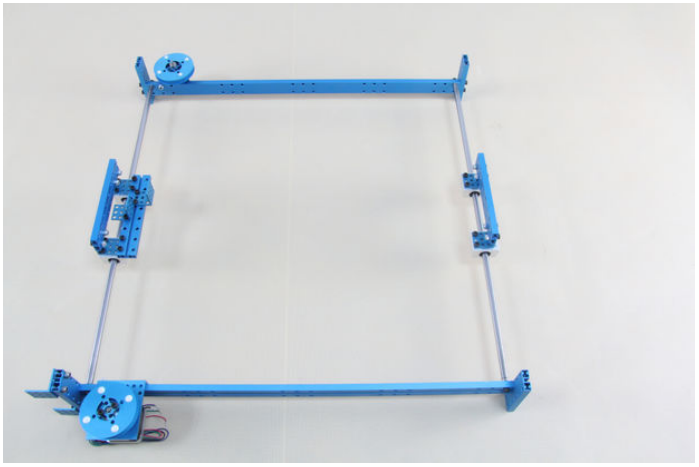


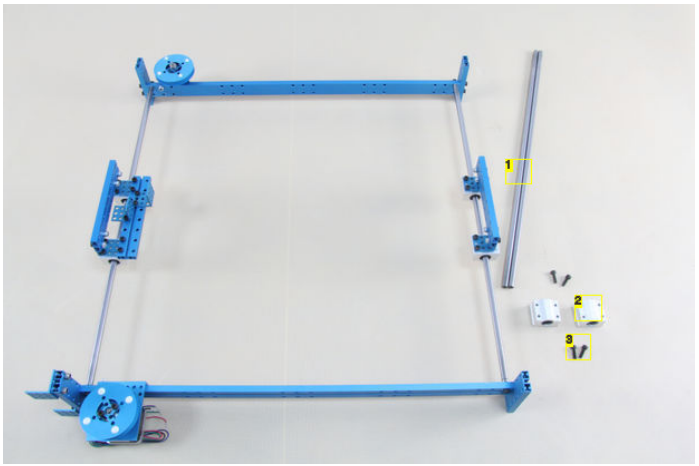
Image Notes
1. Step 8



Step 10: Add Linear Motion Shaft

Materials List:
2 × Linear Motion Shaft D8x480
2 × Linear Motion Slide Unit 8mm
4 × Screw M4×14

Procedure:
1. Install the first Linear Motion Shaft D8x480 on Beam 0824-128 with 1 Screw M4×14.
2. Install the second Linear Motion Shaft D8x480 on the same Beam 0824-128 with 1 Screw M4×14.
3. Install 2 Linear Motion Slide Unit 8mm on each Linear Motion Shaft D8x480.
4. Install the Linear Motion Shaft D8x480s to Beam 0824-128 on the other side with 2 Screw M4×14.



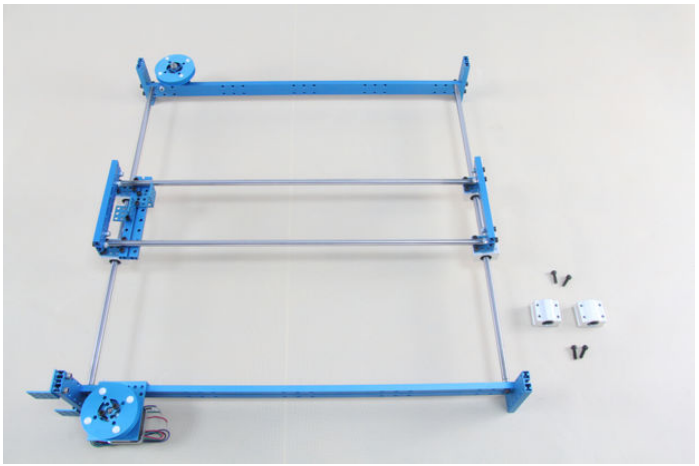


Image Notes
1. Linear Motion Shaft D8x480
2. Linear Motion Slide Unit 8mm
3. Screw M4×14

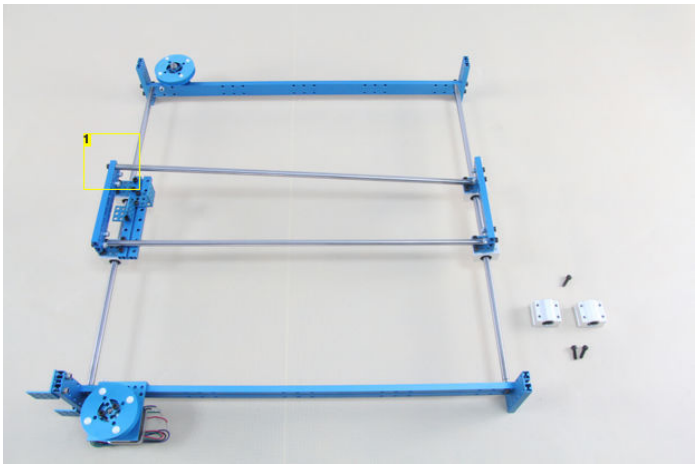


Image Notes
1. Step 1: Install the first Linear Motion Shaft D8x480 on Beam 0824-128 with 1 Screw M4×14.

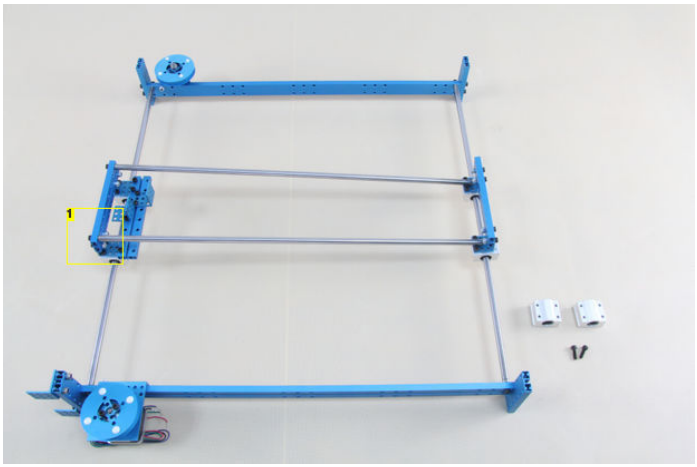


Image Notes
1. Step 2: Install the second Linear Motion Shaft D8x480 on the same Beam 0824-128 with 1 Screw M4×14.

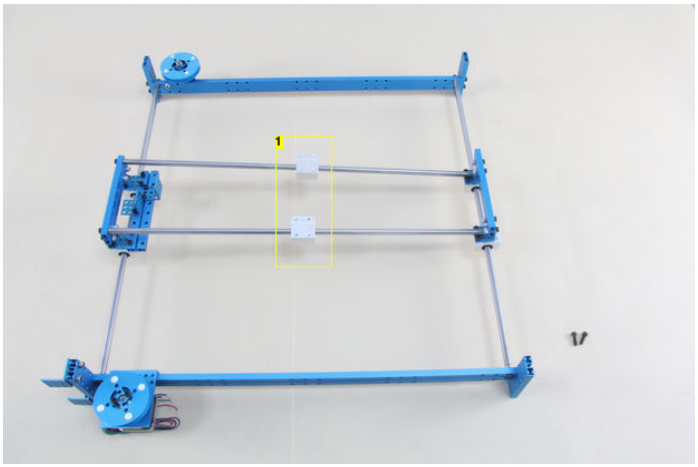


Image Notes
1. Step 3: Install 2 Linear Motion Slide Unit 8mm on each Linear Motion Shaft D8x480.

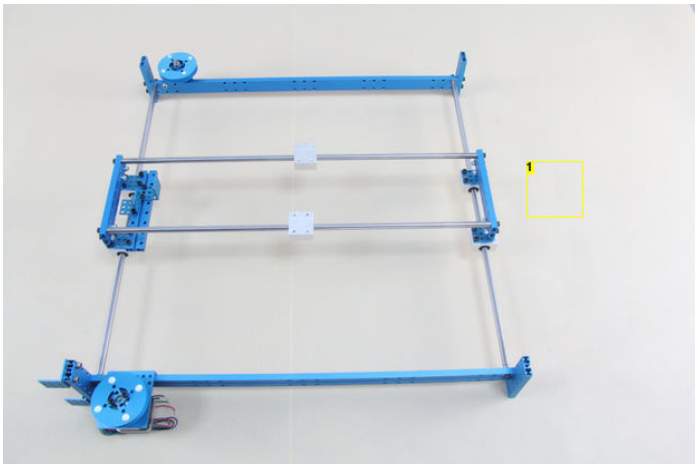


Image Notes
1. Step 4: Install the Linear Motion Shaft D8x480s to Beam 0824-128 on the other side with 2 Screw M4×14.

Step 11: Add Stepper Motor

Materials List:
1 × Bracket 3x6
1 × Stepper Motor Bracket
1 × Stepper Motor
4 × Countersunk Screw M3×8
4 × Screw M4×14
4 × Nylon Lock Nut M4

Procedure:
1. Install the Stepper Motor Bracket on Beam 0824-496 by using 2 Screw M4×14 and 2 Nylon Lock Nut M4.
2. Install the Stepper Motor to Stepper Motor Bracket with 4 Countersunk Screw M3×8.
3. Install the Bracket 3x6 on Beam 0824-496 by using 2 Screw M4×8, 1 Screw M4×14 and 1 Nylon Lock Nut M4.

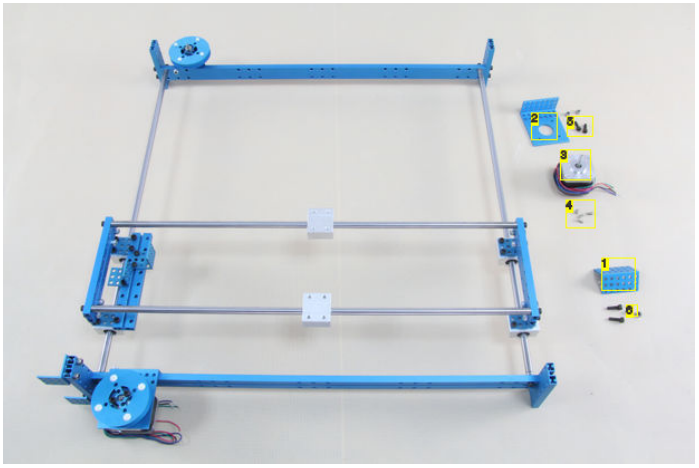


Image Notes
1. Bracket 3x6
2. Stepper Motor Bracket
3. Stepper Motor
4. Countersunk Screw M3×8
5. Screw M4×14
6. Nylon Lock Nut M4

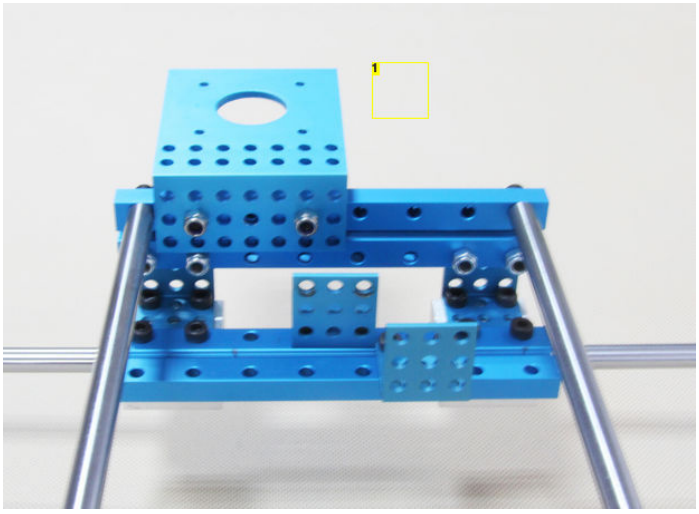


Image Notes
1. Step 1: Install the Stepper Motor Bracket on Beam 0824-496 by using 2 Screw M4×14 and 2 Nylon Lock Nut M4.

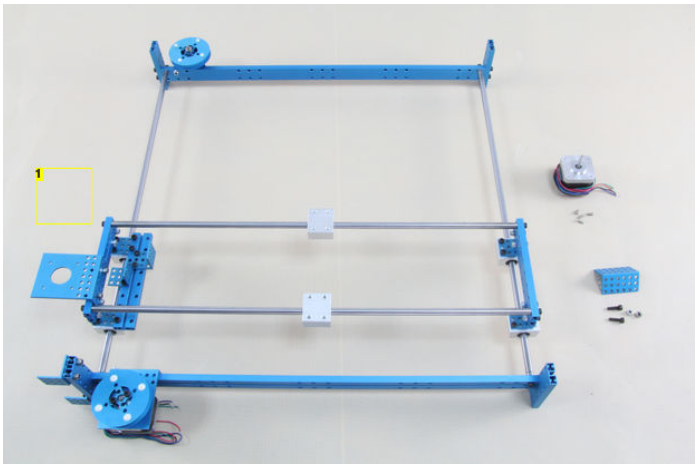


Image Notes
1. Step 1

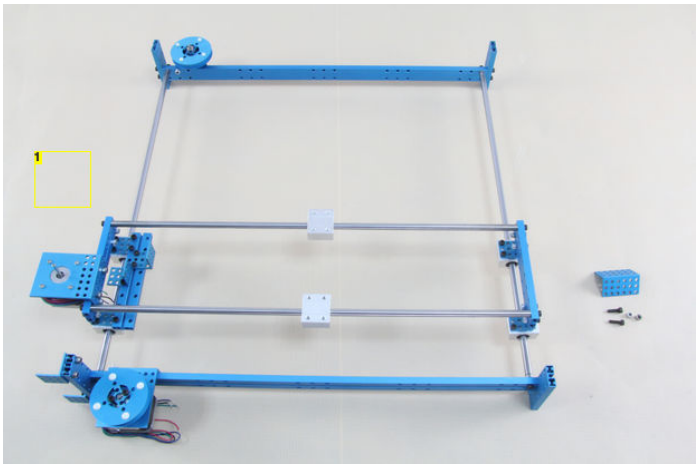


Image Notes
1. Step 2: Install the Stepper Motor to Stepper Motor Bracket with 4 Countersunk Screw M3×8.

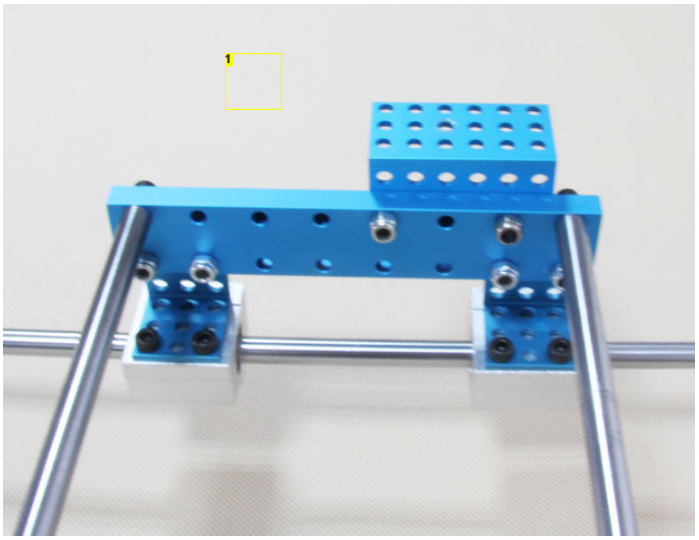
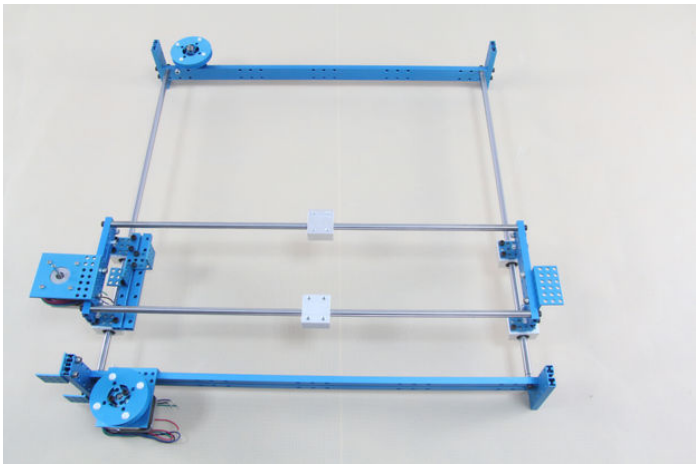


Image Notes
1. Step 3: Install the Bracket 3x6 on Beam 0824-496 by using 2 Screw M4×8, 1 Screw M4×14 and 1 Nylon Lock Nut M4.



Step 12: Add Timing Pulley

Materials List:
1 × Shaft Connector-4
1 × Headless Set Screw M3x5
2 × Screw M4×14
1 × Nylon Lock Nut M4

Procedure:
1. Install the Driven Pulley to tht Bracket 3x6 with a Nylon Lock Nut M4.
2. Insert a Headless Screw M3×5 into the Shaft Connector-4 and install the Shaft Connector-4 to the Stepper Motor.
3. Install the Driving Pulley on the Shaft Connector-4 with 2 Screw M4×14.

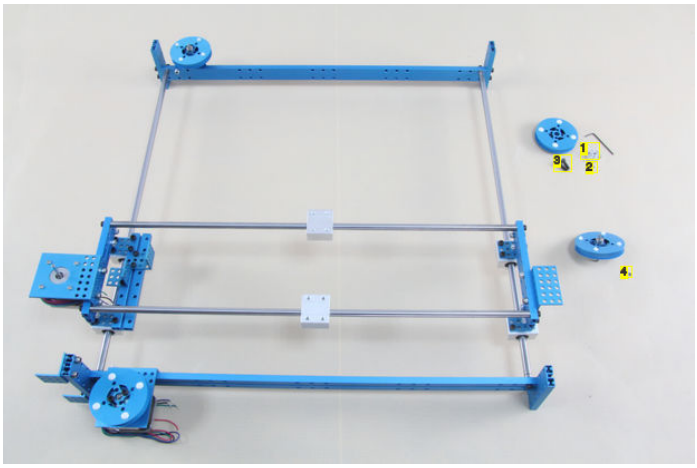


Image Notes
1. Shaft Connector-4
2. Headless Set Screw M3x5
3. Screw M4×14
4. Nylon Lock Nut M4

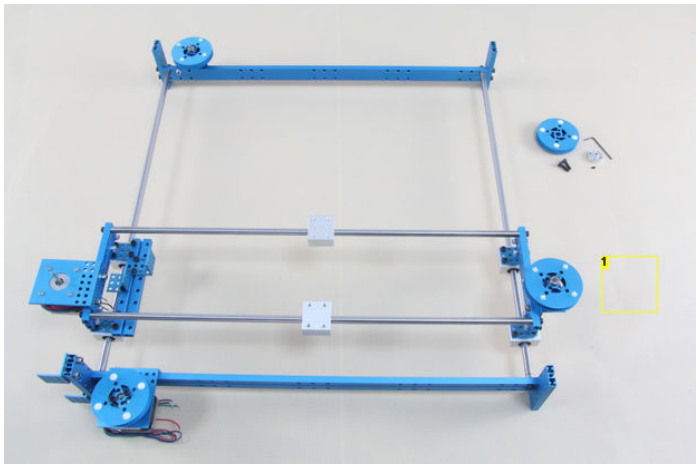


Image Notes
1. Step 1: Install the Driven Pulley to tht Bracket 3x6 with a Nylon Lock Nut M4.

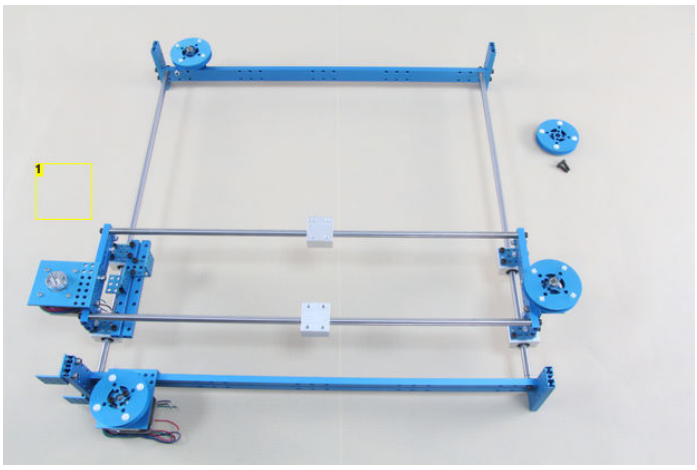


Image Notes
1. Step 2: Insert a Headless Screw M3×5 into the Shaft Connector-4 and install the Shaft Connector-4 to the Stepper Motor.

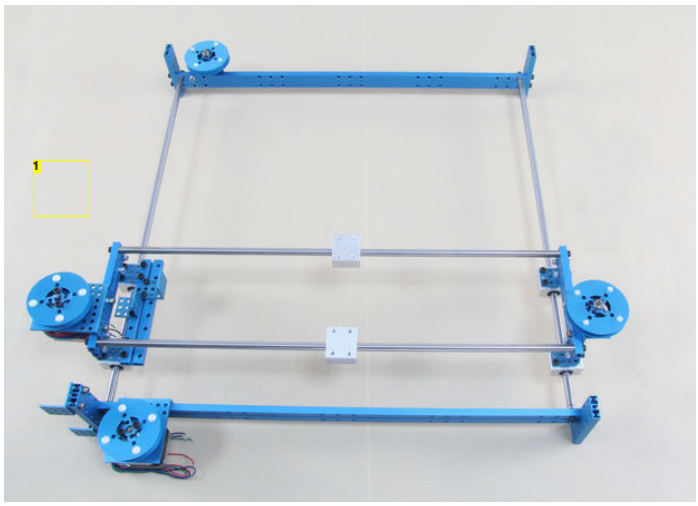
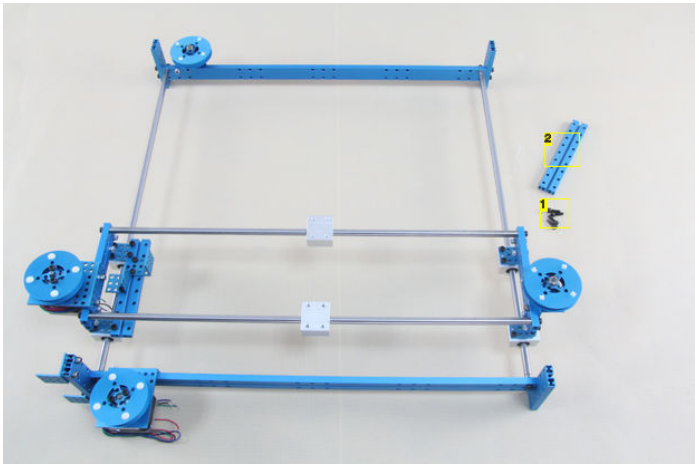


Image Notes
1. Step 3: Install the Driving Pulley on the Shaft Connector-4 with 2 Screw M4×14.

Step 13: Add Drawing Mechanism Holder

Materials List:
1 × Beam 0824-144
1 × Bracket 3×3
2 × Screw M4×8
4 × Screw M4×14

Procedure:
1. Install the Beam 0824-144 on the 2 Linear Motion Slide Unit 8mm with 4 Screw M4×14.
2. Install the Bracket 3×3 on the Beam 0824-128 with 2 Screw M4×8.



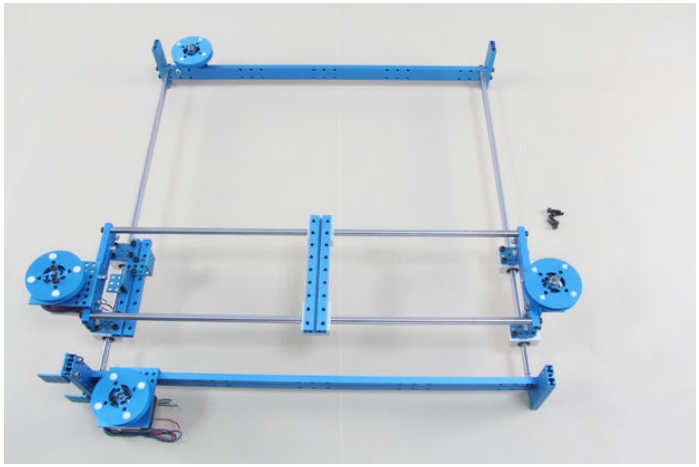


Image Notes
1. Screw M4×14
2. Beam 0824-144

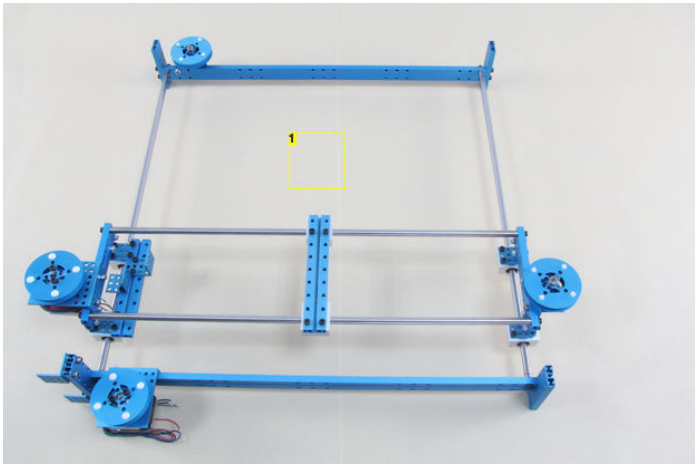


Image Notes
1. Step 1: Install the Beam 0824-144 on the 2 Linear Motion Slide Unit 8mm with 4 Screw M4×14.

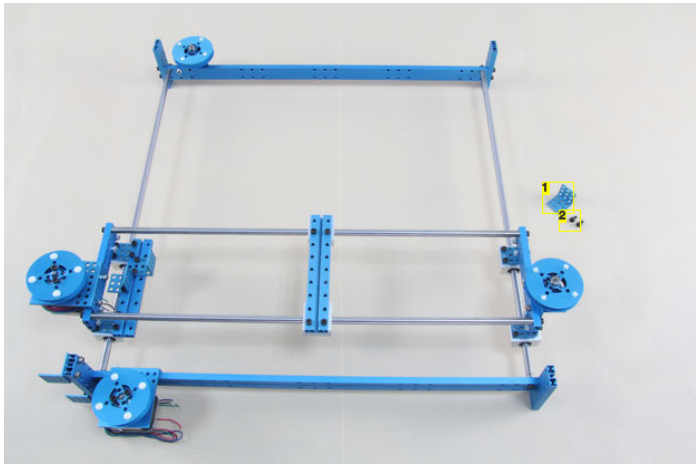


Image Notes
1. Bracket 3×3
2. Screw M4×8

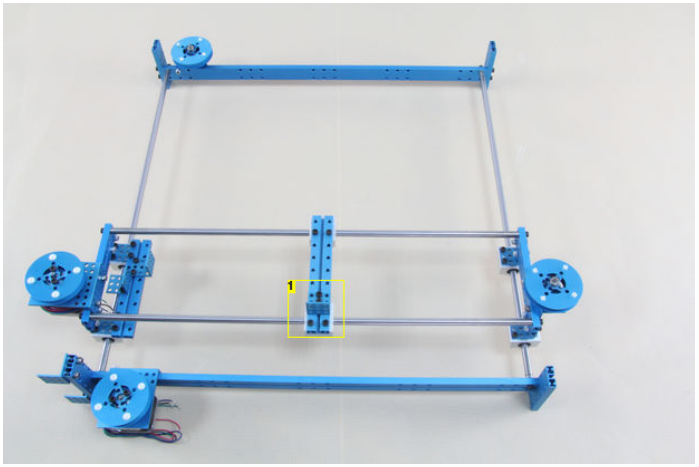
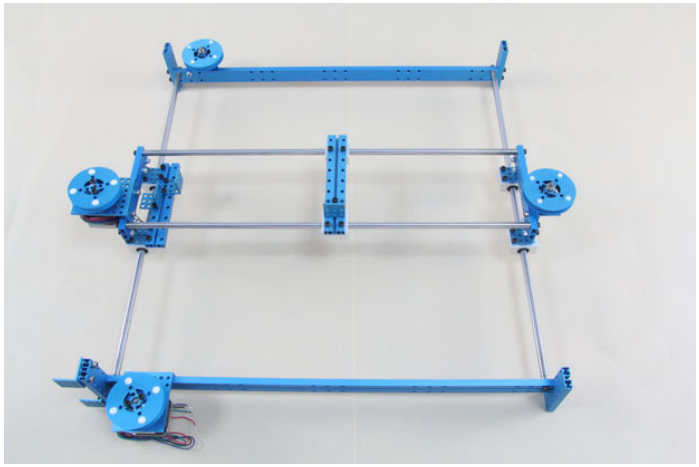


Image Notes
1. Step 2: Install the Bracket 3×3 on the Beam 0824-128 with 2 Screw M4×8.



Step 14: Add Timing Belt

Materials List:
1 × Open-end Timing Belt (3m)
1 × Link Rod
4 × Screw M4×8
4 × Nylon Lock Nut M4

Procedure:
1. Cut the Link Rod and the Timing Belt.
2. Install the Timing Belt on the Bracket 3×3 by the Link Rod and a Screw M4×8.
3. Install anotherTiming Belt.

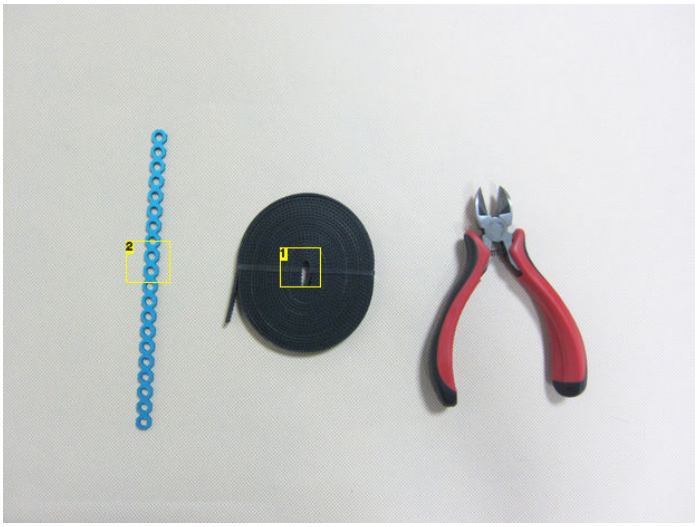


Image Notes
1. Open-end Timing Belt (3m)
2. Link Rod

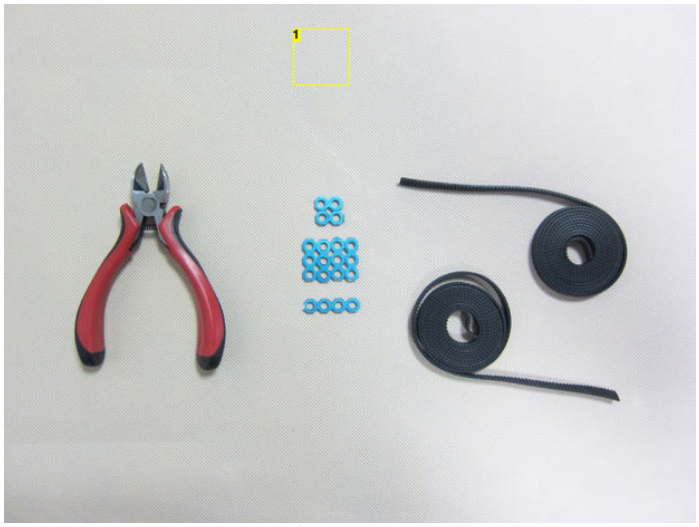
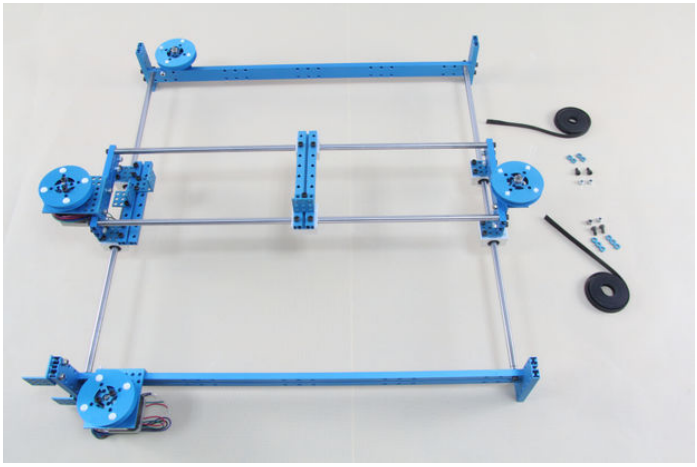
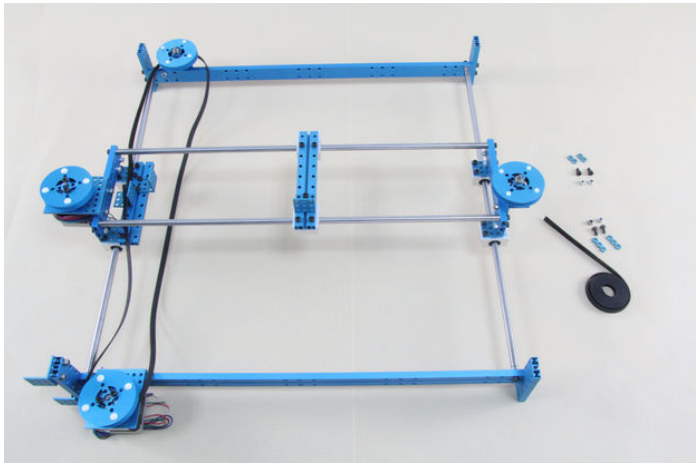
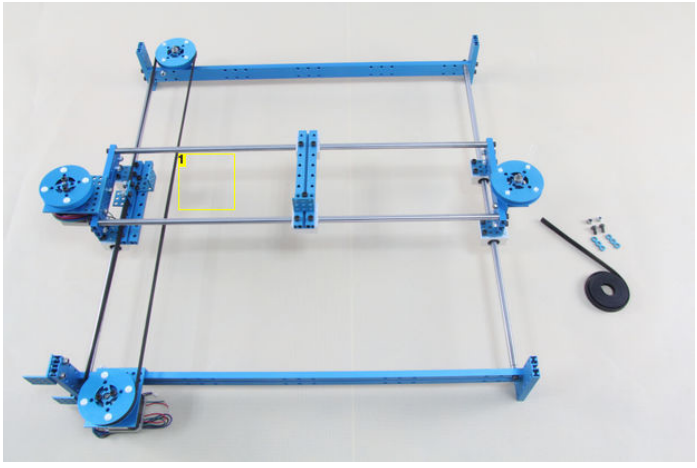


Image Notes
1. Step 1: Cut the Link Rod and the Timing Belt.







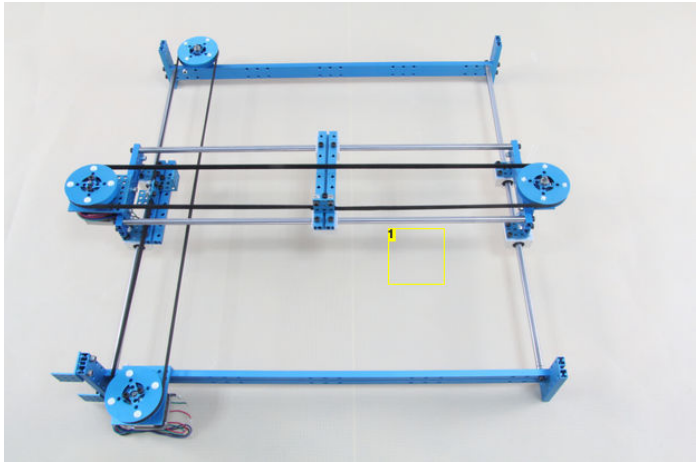


Image Notes
1. Step 2: Install the Timing Belt on the Bracket 3×3 by the Link Rod and a Screw M4×8.

Image Notes
1. Step 3: Install anotherTiming Belt.

Step 15: Build the Drawing Mechanism

Materials List:
1 × Solenoid - 12v
1 × Beam 0808-80
1 × General Bracket
2 × Bracket 3x3
1 × Plate 3×6
1 × Threaded Shaft 4x31mm
1 × Shaft Collar 4mm
1 × Headless Set Screw M3x5
2 × Countersunk Screw M3×8
2 × Plastic Ring 4x7x2mm
2 × Plastic Ring 4x7x1mm
3 × Screw M4×8
2 × Screw M4×14
4 × Nylon Lock Nut M4
1 × Nylon Cable Ties

Procedure:
1. Install the Solenoid - 12v on the first Bracket 3x3 with a Countersunk Screw M3×8, a Plastic Ring 4x7x2mm and a Plastic Ring 4x7x1mm.
2. Install the Plate 3×6 on the first Bracket 3x3 and the Solenoid - 12v with a Countersunk Screw M3×8 and a Plastic Ring 4x7x1mm.
3. Install the first Bracket 3x3 on the Plate 3×6 with a Screw M4×8 and a Nylon Lock Nut M4.
4. Insert the Threaded Shaft 4x31mm into the Beam 0808-80.
5. Put the Shaft Collar 4mm on the Threaded Shaft 4×31mm and insert a Headless Screw M3×5 into the Shaft Collar 4mm.
6. Install a Plastic Ring 4x7x2mm on the Threaded Shaft 4×31mm.
7. Insert the Threaded Shaft 4×31mm with the Beam 0808-80 into the hole of the Plate 3×6.
8. Install the Threaded Shaft 4×31mm with the Beam 0808-80 to the Plate 3×6 with a Nylon Lock Nut M4.
9. Install the Beam 0808-80 to the Solenoid - 12v by using a Nylon Cable Ties.
10. Install the second Bracket 3x3 on the Plate 3×6 with 2 Screw M4×8 and 2 Nylon Lock Nut M4.
11. Install the General Bracket to the Beam 0808-80 with 2 Screw M4×14.

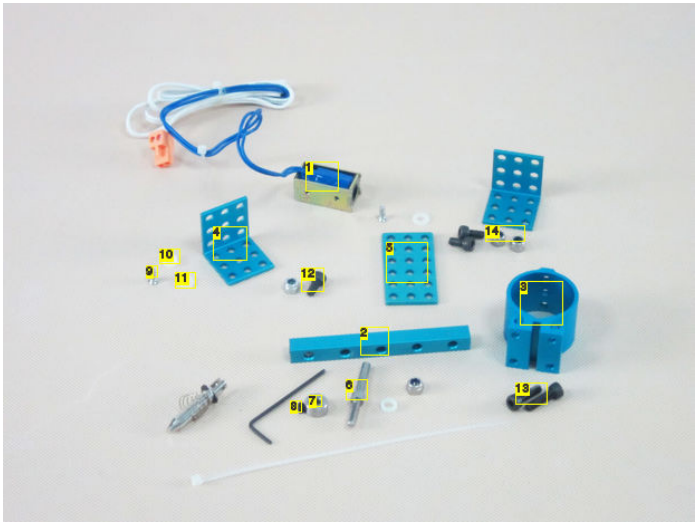


Image Notes
1. Solenoid - 12v
2. Beam 0808-80
3. General Bracket
4. Bracket 3x3
5. Plate 3×6
6. Threaded Shaft 4x31mm
7. Shaft Collar 4mm
8. Headless Set Screw M3x5
9. Countersunk Screw M3×8
10. Plastic Ring 4x7x2mm
11. Plastic Ring 4x7x2mm
12. Screw M4×8
13. Screw M4×14
14. Nylon Lock Nut M4

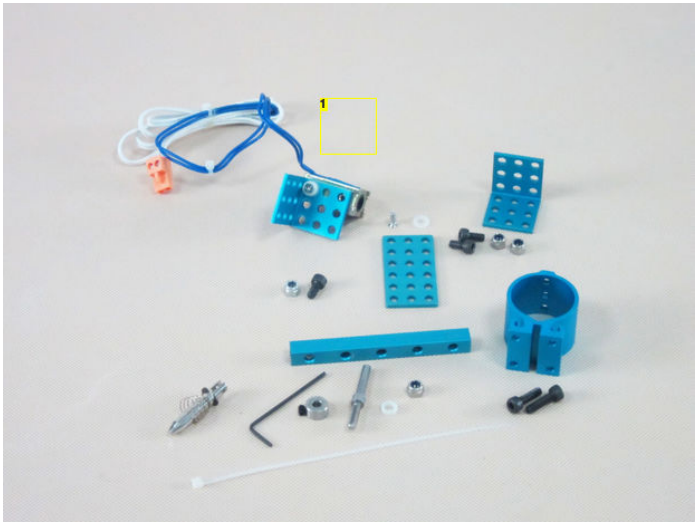


Image Notes
1. Step 1: Install the Solenoid - 12v on the first Bracket 3x3 with a Countersunk Screw M3×8, a Plastic Ring 4x7x2mm and a Plastic Ring 4x7x1mm.

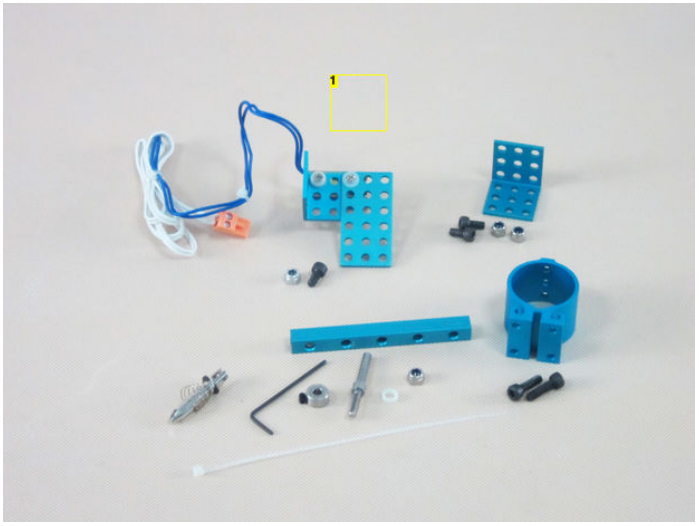


Image Notes
1. Step 2: Install the Plate 3×6 on the first Bracket 3x3 and the Solenoid - 12v with a Countersunk Screw M3×8 and a Plastic Ring 4x7x1mm.

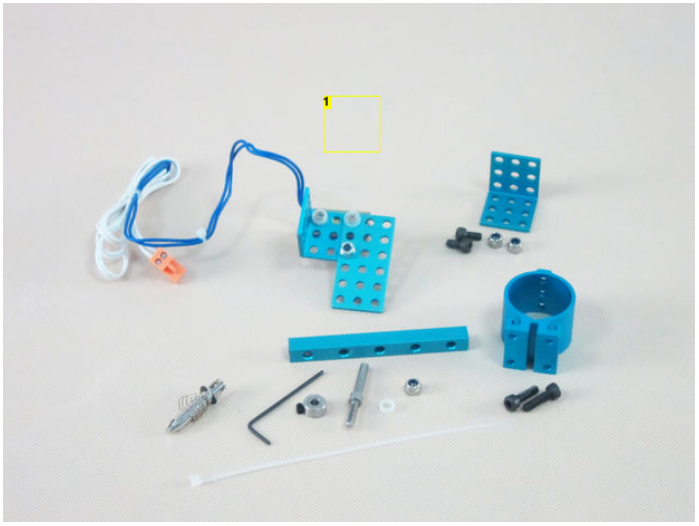
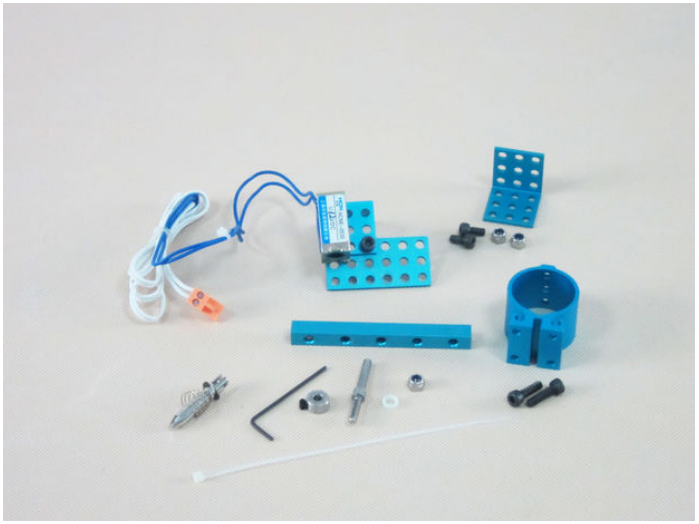


Image Notes
1. Step 3: Install the first Bracket 3x3 on the Plate 3×6 with a Screw M4×8 and a Nylon Lock Nut M4.



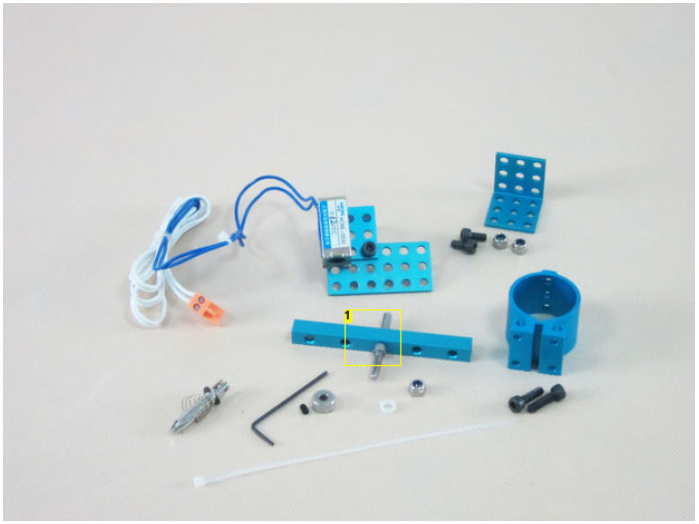


Image Notes
1. Step 4: Insert the Threaded Shaft 4x31mm into the Beam 0808-80.

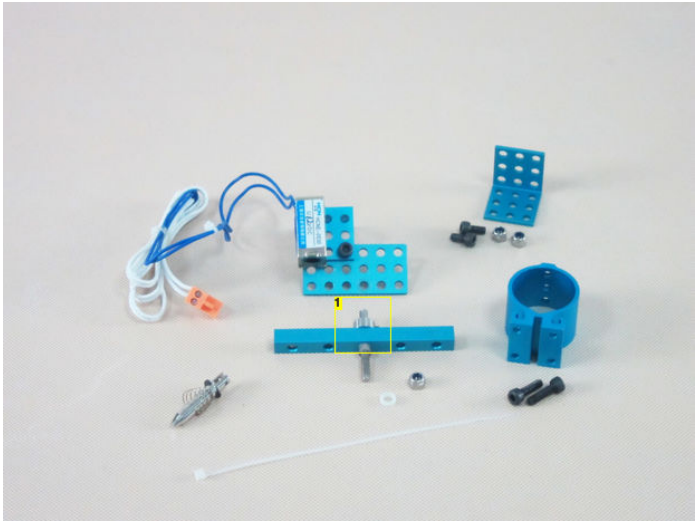


Image Notes
1. Step 5: Put the Shaft Collar 4mm on the Threaded Shaft 4×31mm and insert a Headless Screw M3×5 into the Shaft Collar 4mm.

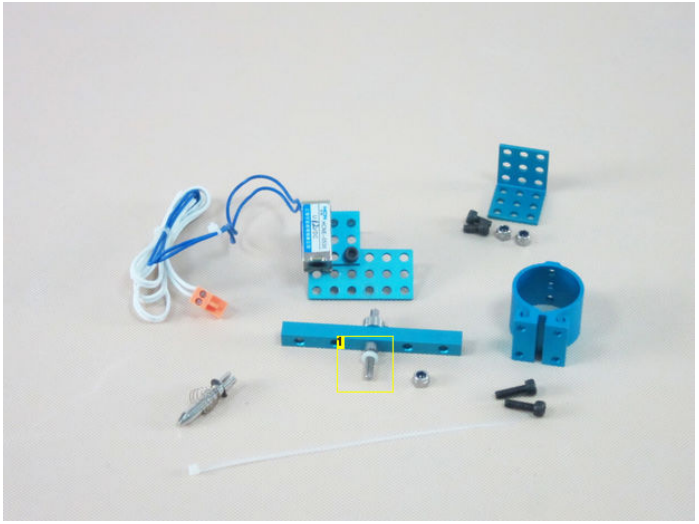


Image Notes
1. Step 6: Install a Plastic Ring 4x7x2mm on the Threaded Shaft 4×31mm.

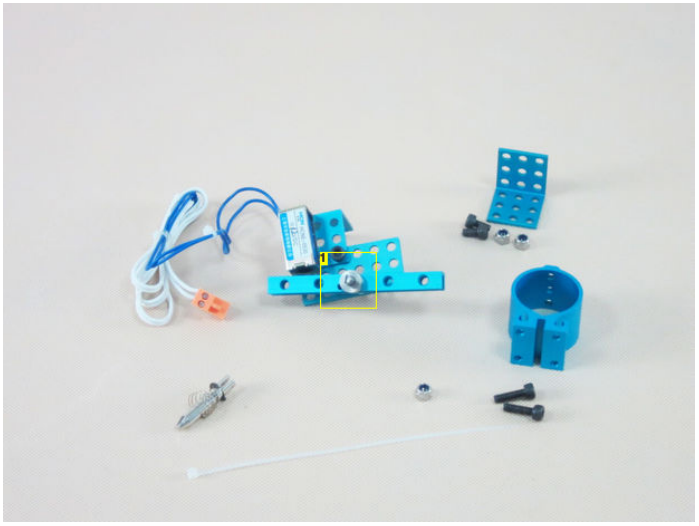


Image Notes
1. Step 7: Insert the Threaded Shaft 4×31mm with the Beam 0808-80 into the hole of the Plate 3×6.

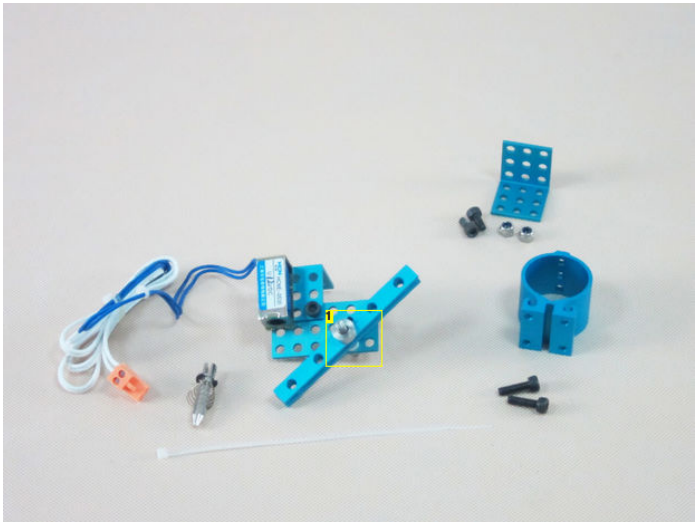
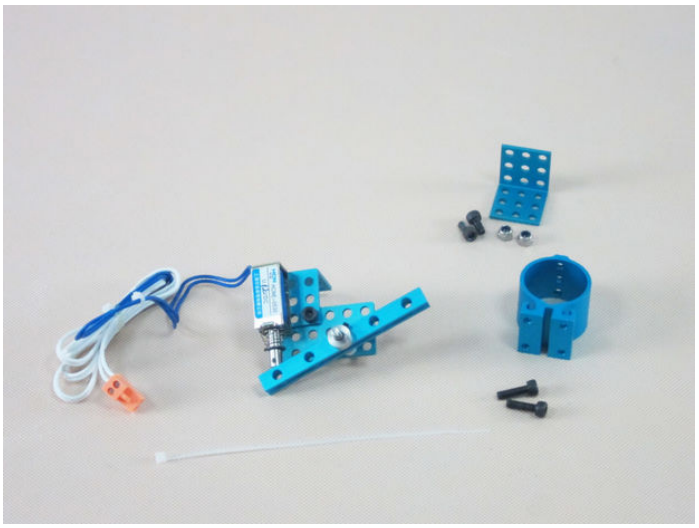


Image Notes
1. Step 8: Install the Threaded Shaft 4×31mm with the Beam 0808-80 to the Plate 3×6 with a Nylon Lock Nut M4.



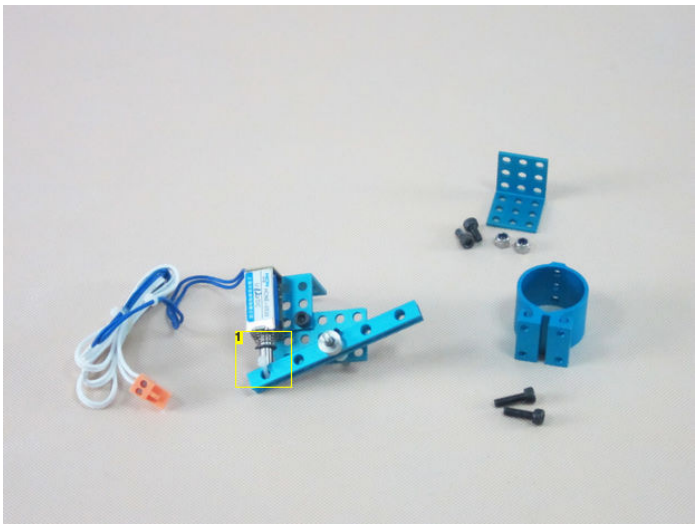
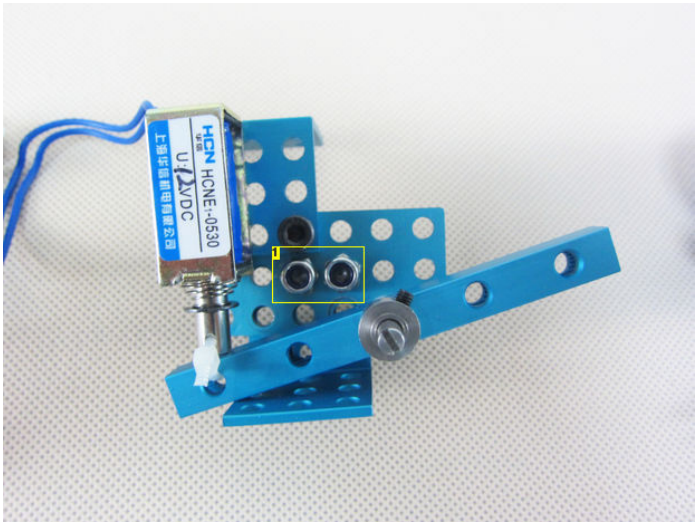


Image Notes
1. Step 9: Install the Beam 0808-80 to the Solenoid - 12v by using a Nylon Cable Ties.



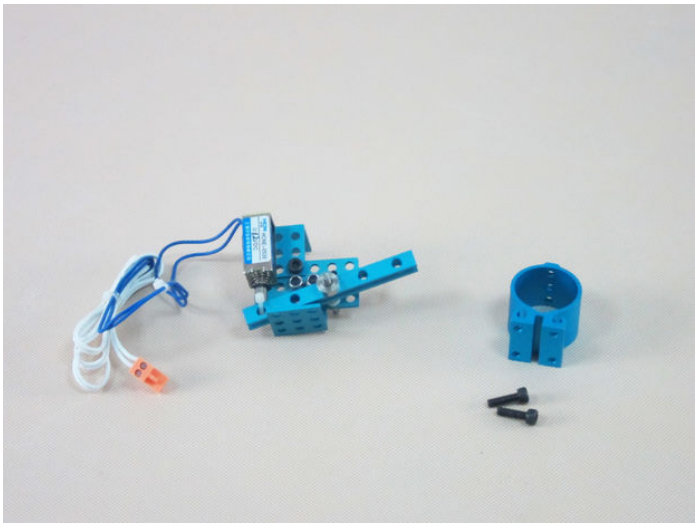
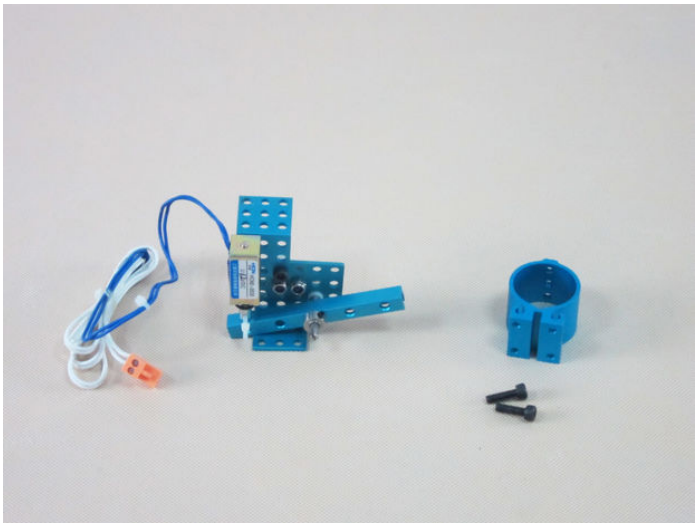


Image Notes
1. Step 10: Install the second Bracket 3x3 on the Plate 3×6 with 2 Screw M4×8

and 2 Nylon Lock Nut M4.



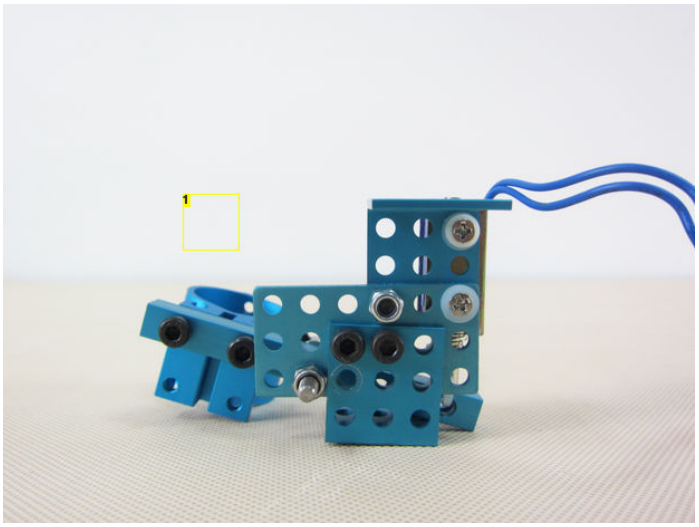
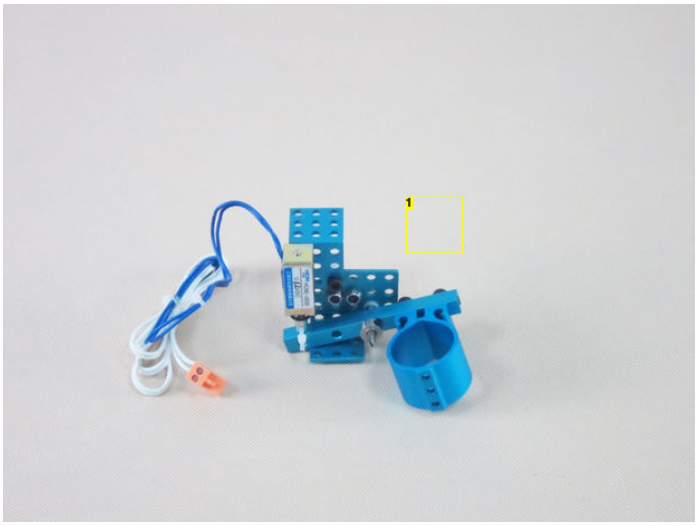


Image Notes
1. Step 11: Install the General Bracket to the Beam 0808-80 with 2 Screw M4×14.



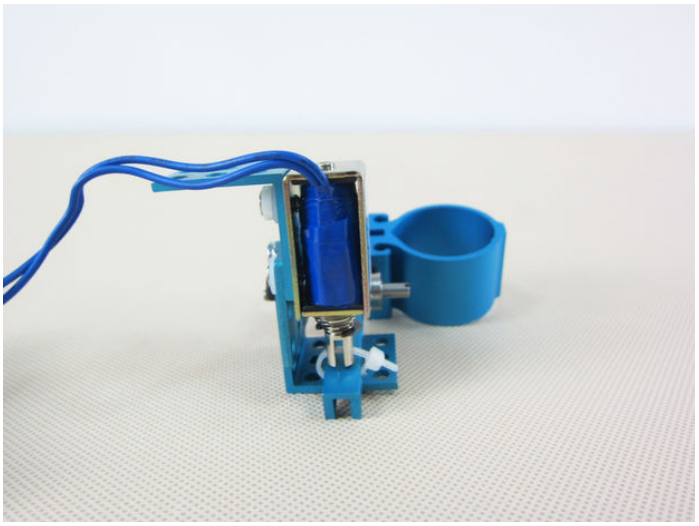
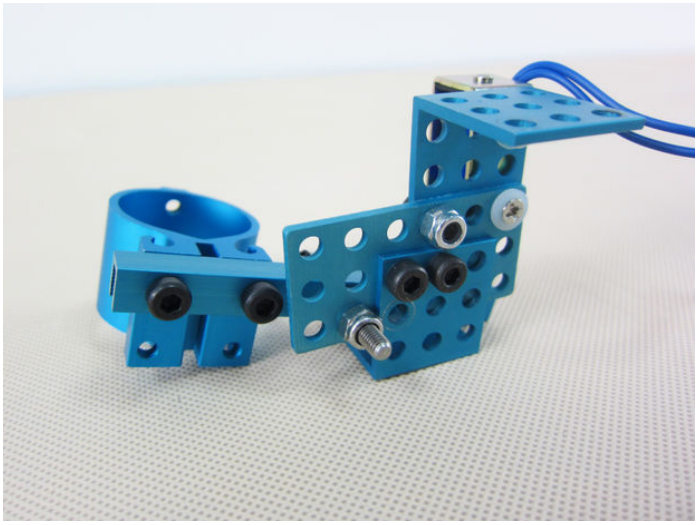
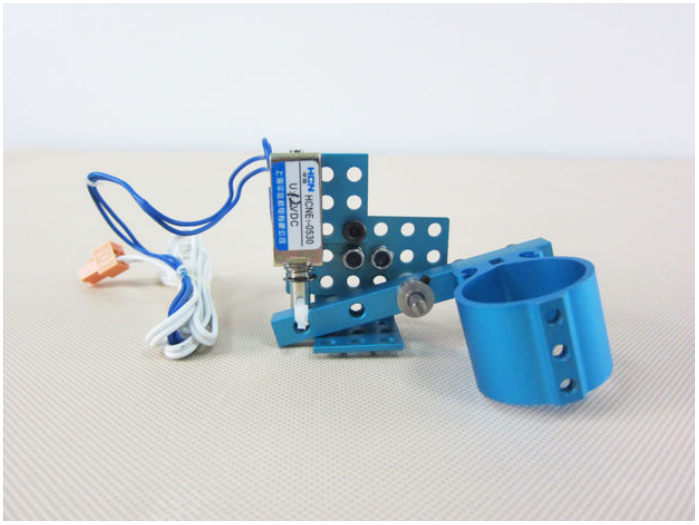


Image Notes
1. Step 11

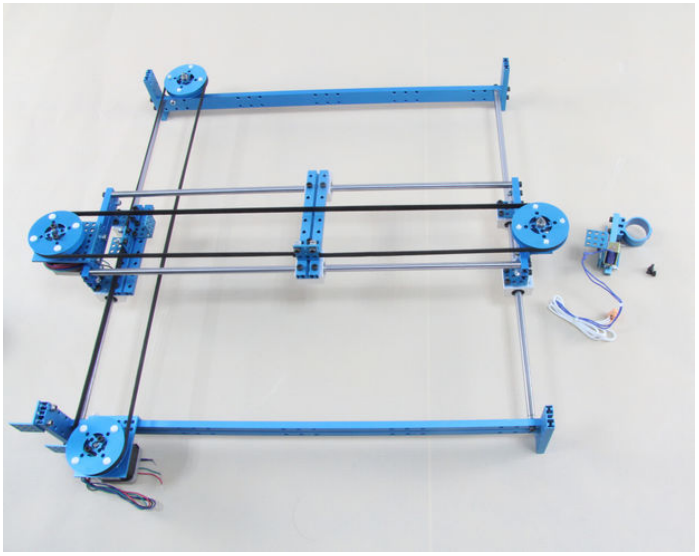


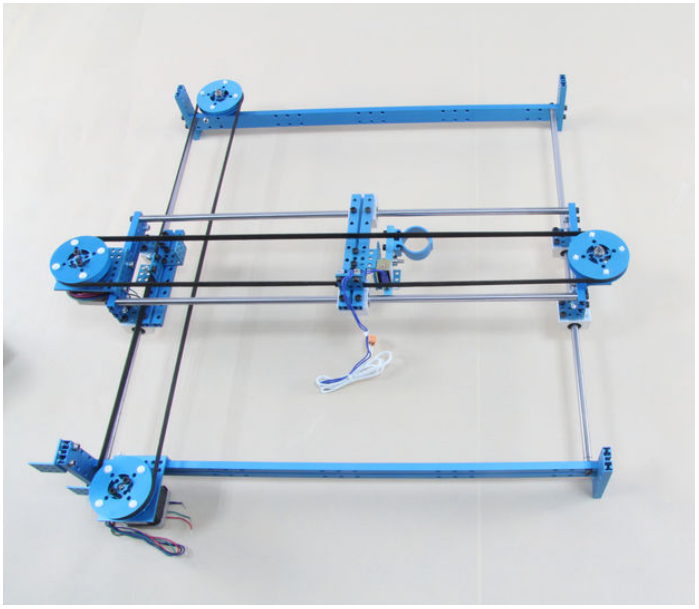


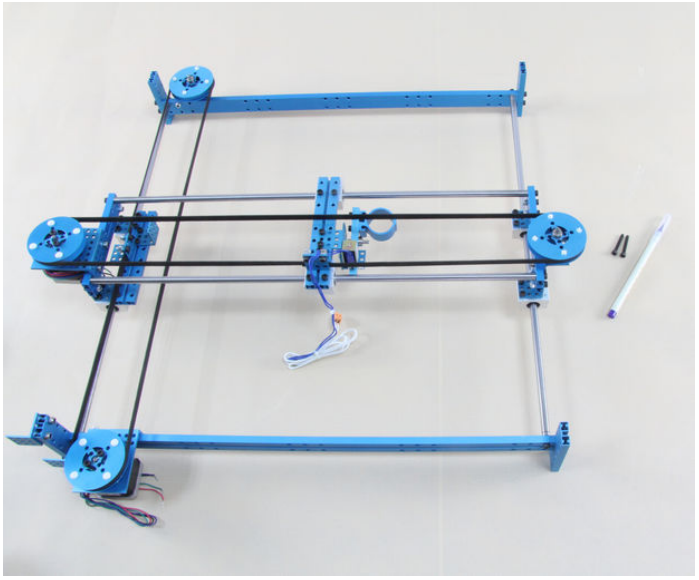
Step 16: Add Drawing Mechanism

Materials List:
2× Screw M4×8
2 × Screw M4×30

Procedure:
1. Install the Drawing Mechanism on Beam 0824-144 by using 2 Screw M4×8.
2. Insert 2 into the General Bracket.







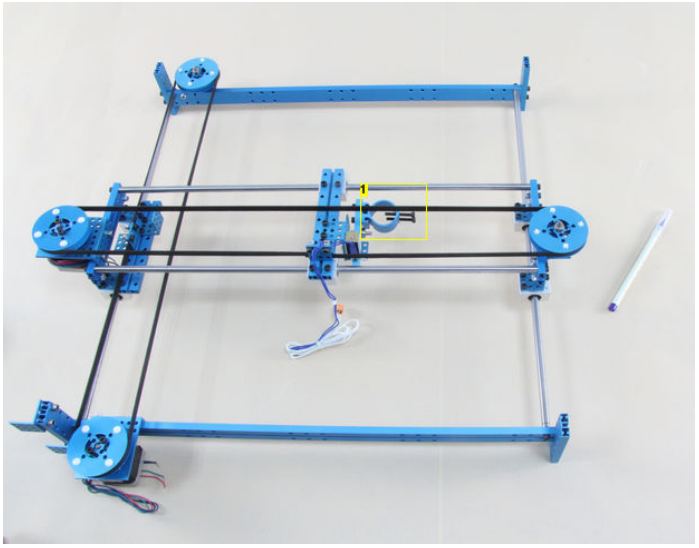
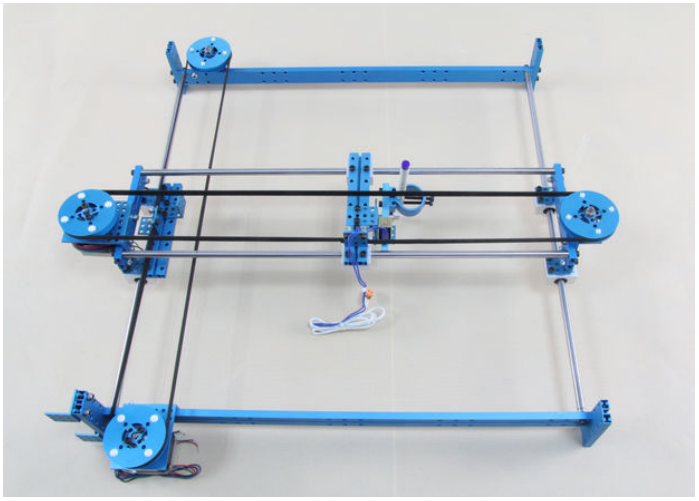
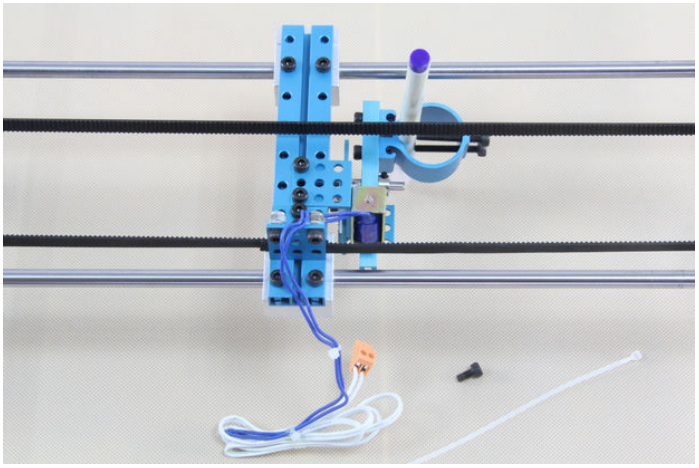
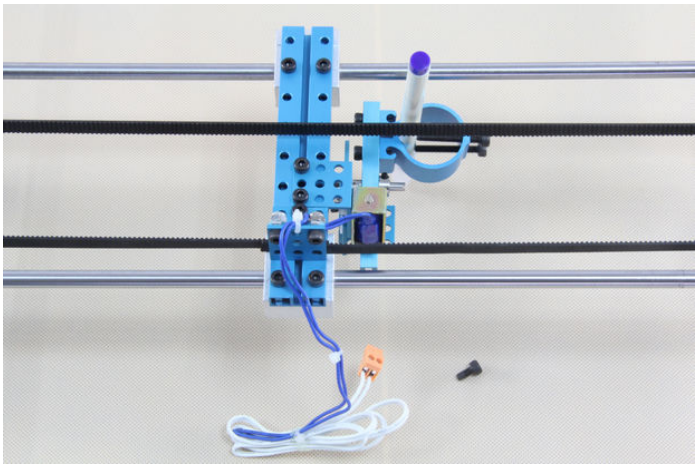
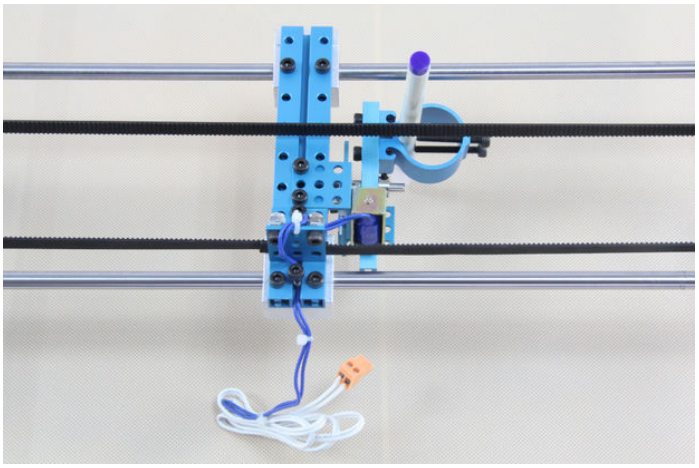


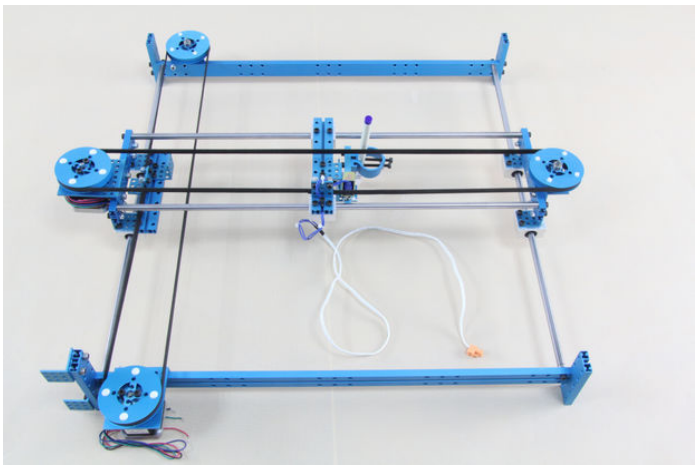
Image Notes
1. Step 2: Insert 2 into the General Bracket.











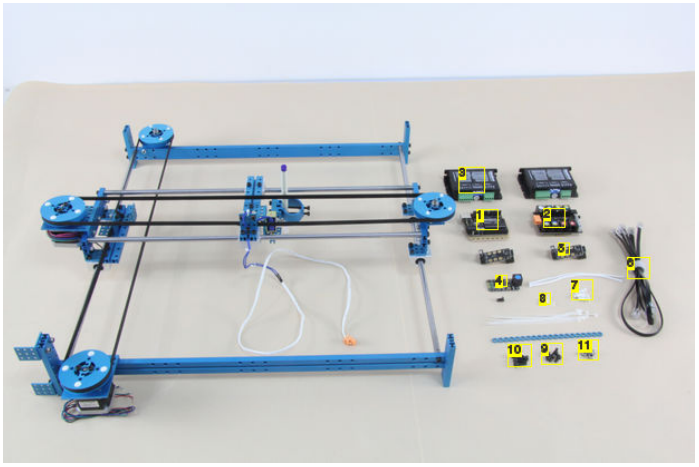
Step 17: Add Electronic Modules

Materials List:

1 × Arduino
1 × Acrylic Arduino Bracket
1 × Me-BaseShield
2 × Stepper motor driver
1 × Me-Bluetooth modules
2 × Me-Limit Switch
3 × 6P6C RJ11 cable-20cm
2 × 6P6C RJ11 cable-50cm
4 × Plastic Rivet 4120
6 × Plastic Ring 4x7x2mm
1 × Link Rod
4 × Screw M4×8
4 × Screw M4×14
4 × Nylon Lock Nut M4

8 × Nylon Cable Ties

Procedure:
1. Install 2 to the Bracket 3×3 on Beam 0824-96 with 2 Screw M4×14 and 2 Nylon Lock Nut M4.
2. Install Meduino on Beam 0824-96 with 2 Screw M4×14 and 6 Plastic Ring 4x7x2mm.
3. Plug Me-Base ShIeld in Meduino.
4. Connect power supply from Me-Base Shield to Stepper motor driver.
5. Connect Stepper motor driver with Stepper Motor.
6. Connect the first Me-Limit Switch on the Beam 0824-128 with 2 Screw M4×8.
7. Connect the second Me-Limit Switch on the Bracket 3×3 with 2 Screw M4×8 and 2 Nylon Cable Ties.
8. Connect Me-Bluetooth modules on Acrylic Arduino Bracket.
9. Connect all the electronic modules with Me-Base Shield.



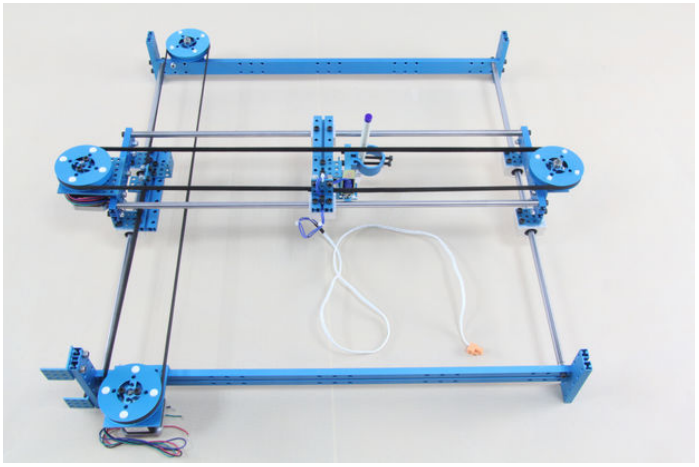
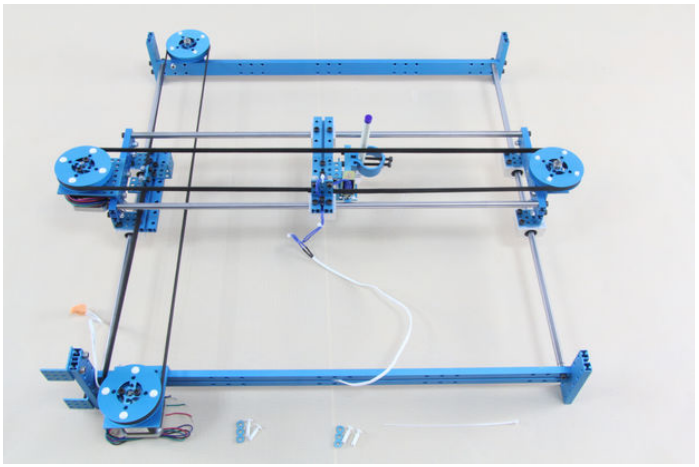
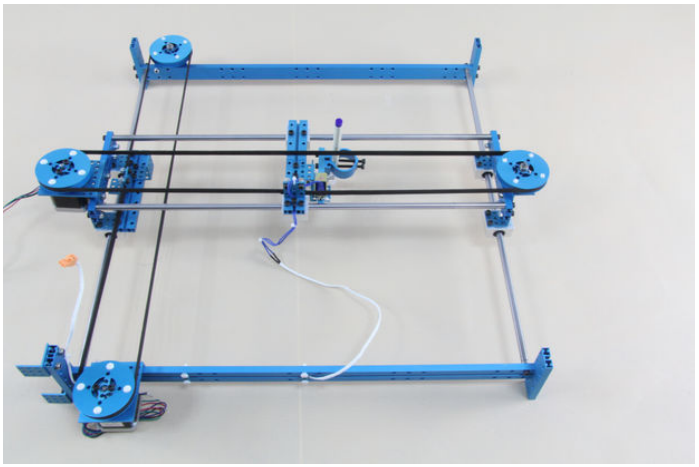
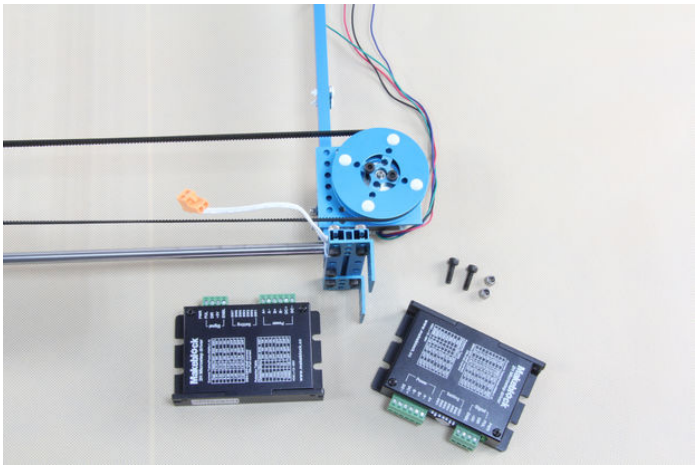
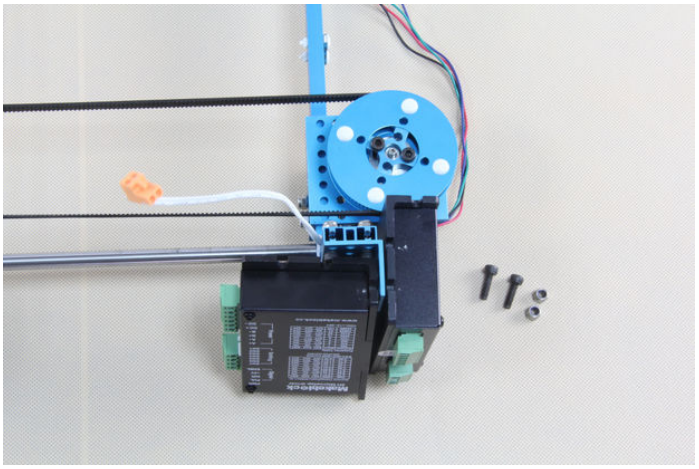


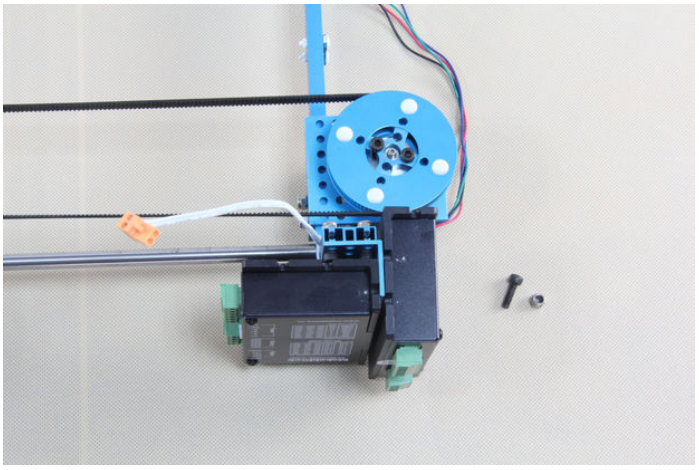
Image Notes
1. Arduino & Acrylic Arduino Bracket
2. Me-BaseShield
3. Stepper motor driver
4. Me-Bluetooth modules
5. Me-Limit Switch
6. 6P6C RJ11 cable-20cm & 6P6C RJ11 cable-50cm
7. Plastic Rivet 4120
8. Plastic Ring 4x7x2mm
9. Screw M4×8
10. Screw M4×14
11. Nylon Lock Nut M4











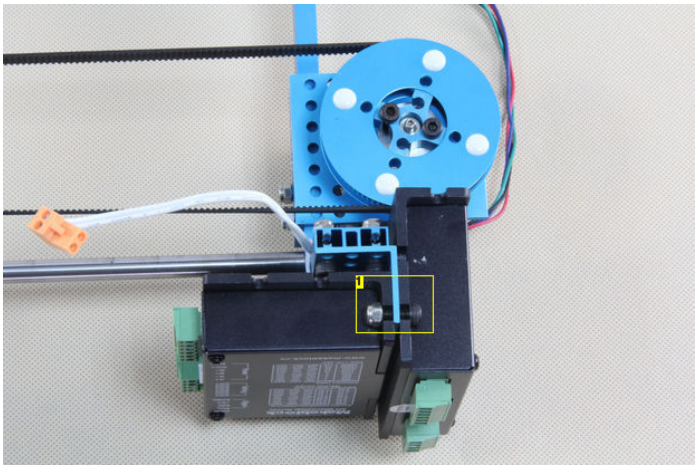
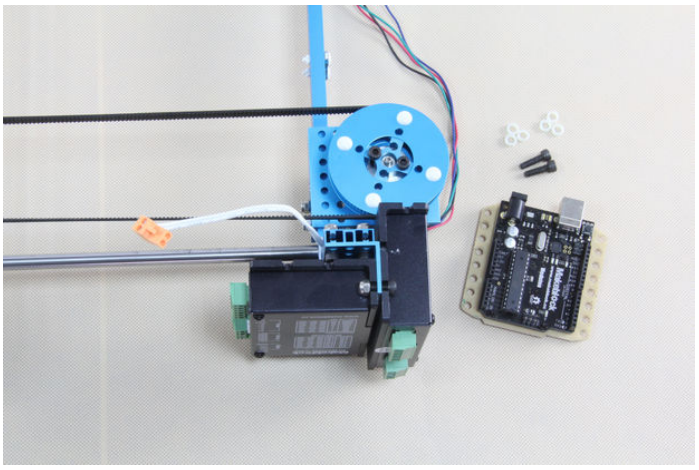
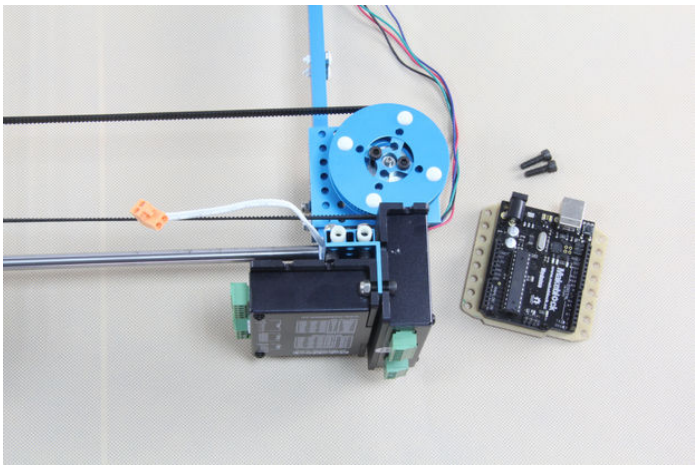
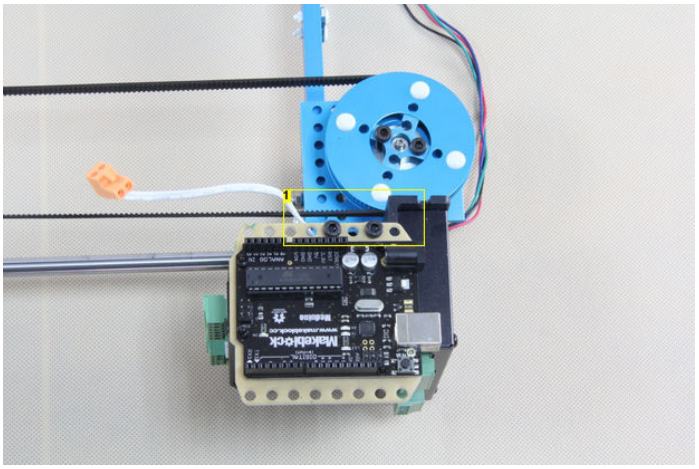


Image Notes
1. Step 1: Intall 2 to the Bracket 3×3 on Beam 0824-96 with 2 Screw M4×14 and 2 Nylon Lock Nut M4.







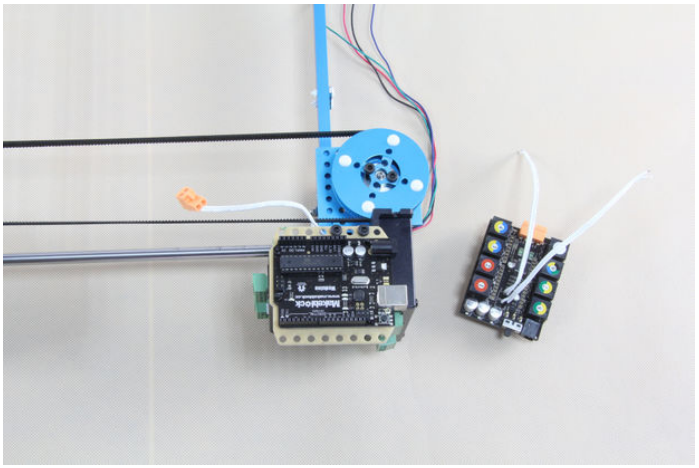
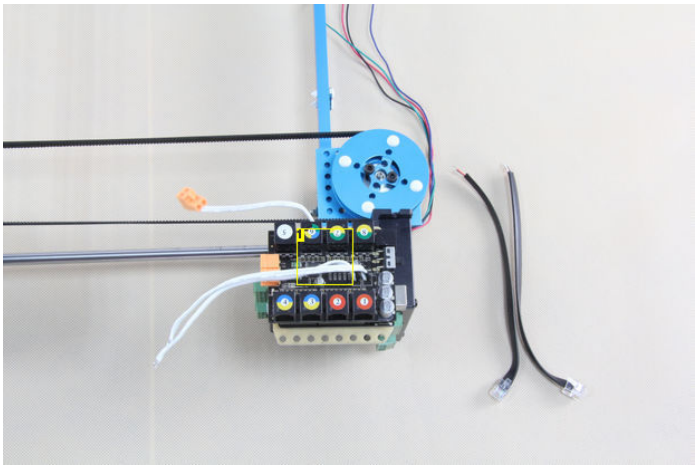


Image Notes
1. Step 2: Install Meduino on Beam 0824-96 with 2 Screw M4×14 and 6 Plastic Ring 4x7x2mm.



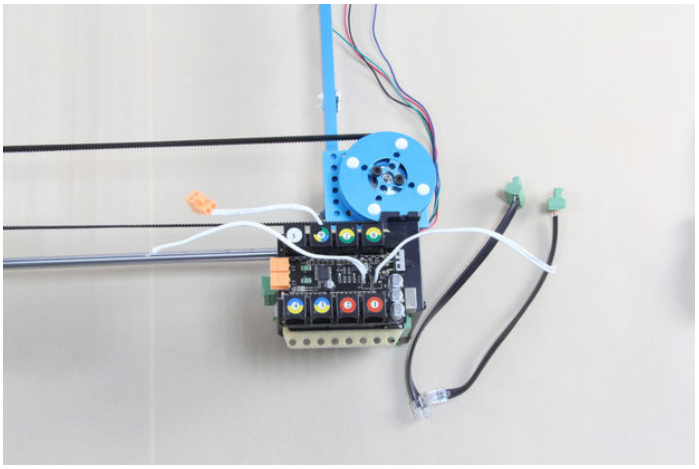
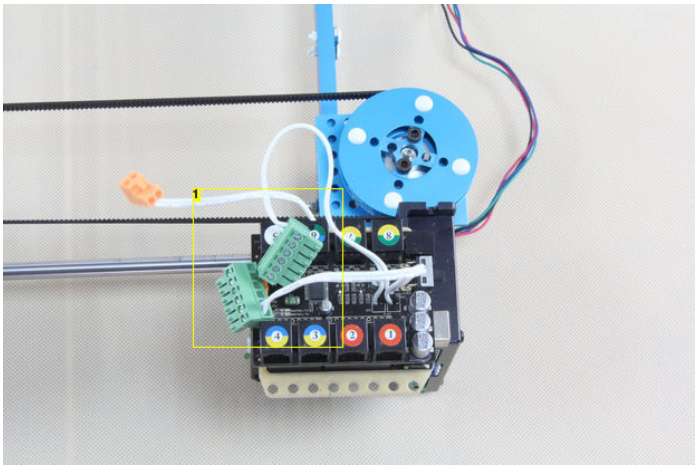
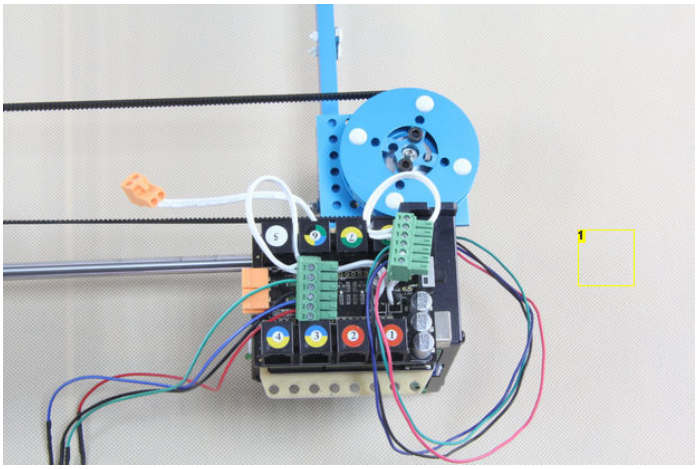


Image Notes
1. Step 3: Plug Me-Base ShIeld in Meduino.



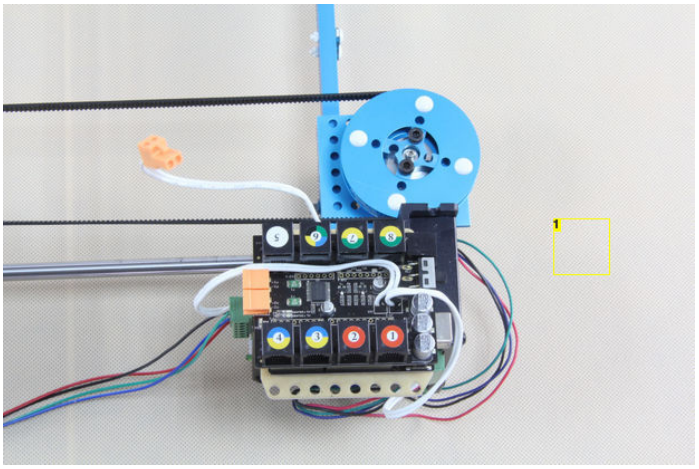
Step Motor	Step Motor Controller
Red	A +
Blue	A -
Black	B +
Green	B -

Image Notes
1. Step 4: Connect power supply from Me-Base Shield to Stepper motor driver.



Stepper Motor Driver Setting	
SW1	OFF
SW2	ON
SW3	OFF
SW4	OFF
SW5	OFF
SW6	OFF
SW7	ON

Image Notes
1. Step 5: Connect Stepper motor driver with Stepper Motor.



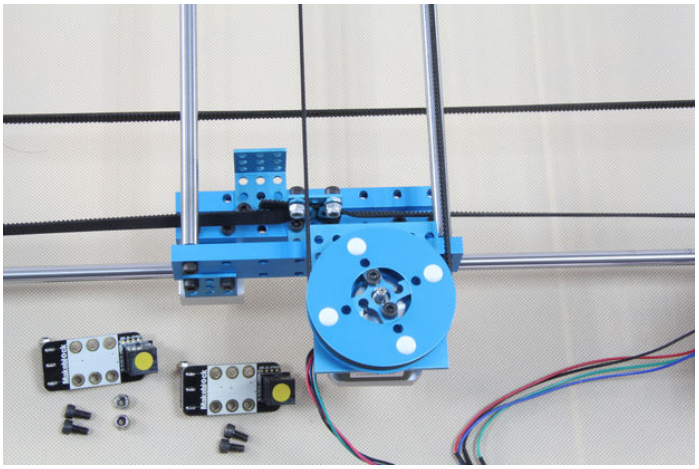


Image Notes
1. Step 5

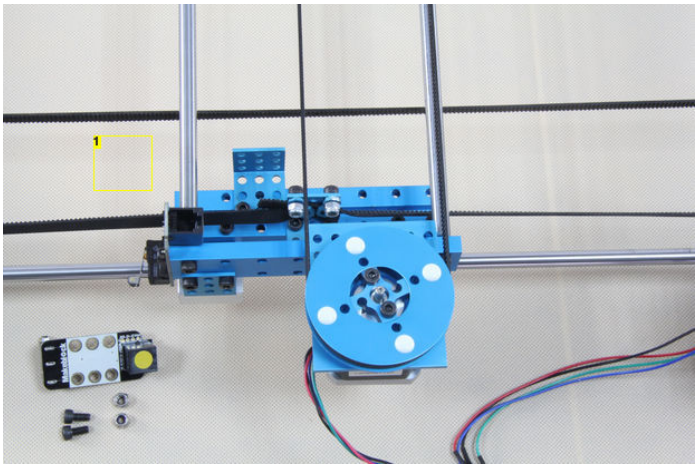


Image Notes
1. Step 6: Connect the first Me-Limit Switch on the Beam 0824-128 with 2 Screw M4×8.

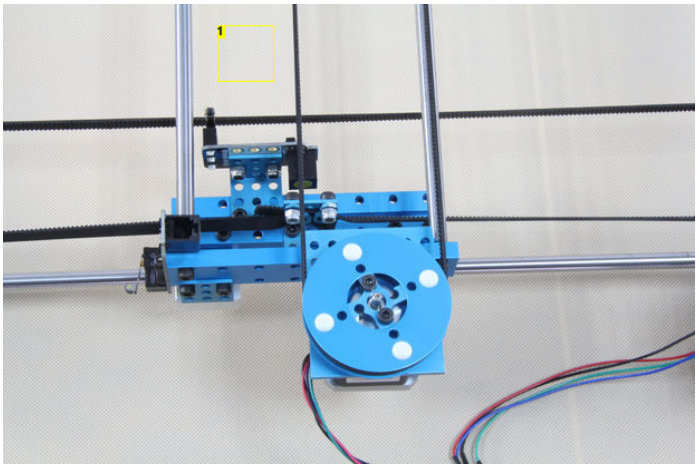
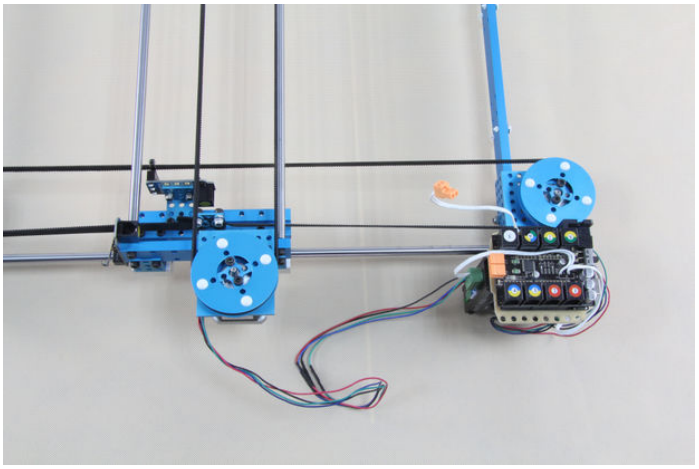


Image Notes
1. Step 7: Connect the second Me-Limit Switch on the Bracket 3×3 with 2 Screw M4×8 and 2 Nylon Cable Ties.



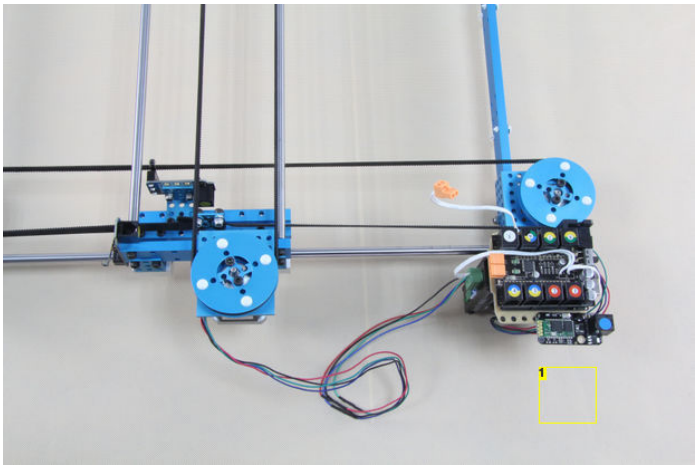


Image Notes
1. Step 8: Connect Me-Bluetooth modules on Acrylic Arduino Bracket.

Electronic Module	Port
Me-Limit Switch(On Bracket 3×3)	Port 3
Me-Limit Switch(On Beam 0824-128)	Port 4
Me-Bluetooth	Port 6
Stepper Motor Driver(On Beam 0824-128)	Port 7
Stepper Motor Driver(On Beam 0824-496)	Port 8

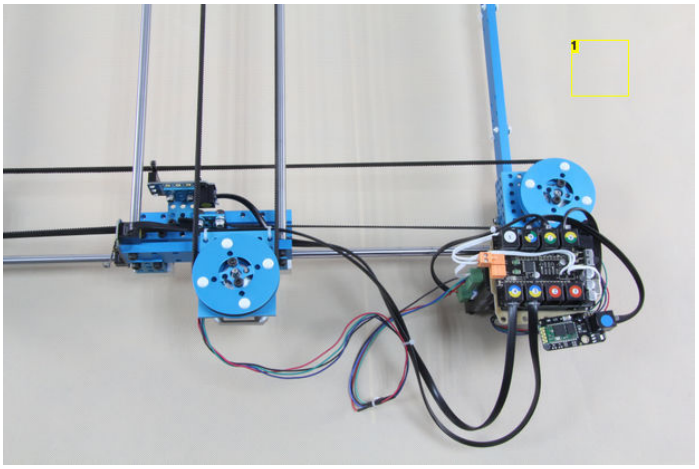
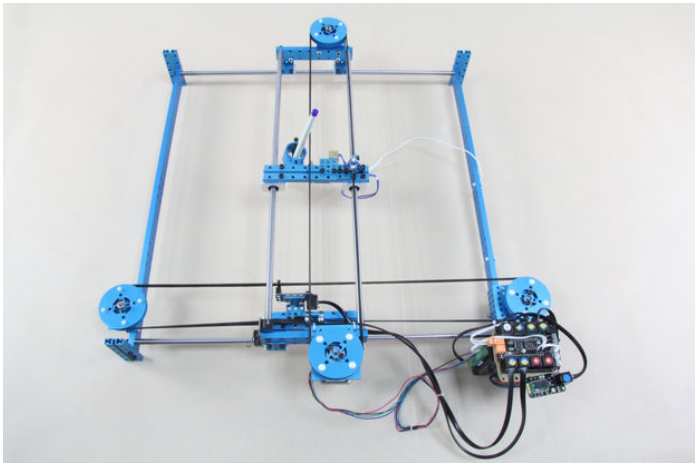


Image Notes
1. Step 9: Connect all the electronic modules with Me-Base Shield.



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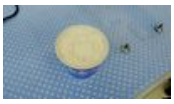

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