# ArTeC® Robo

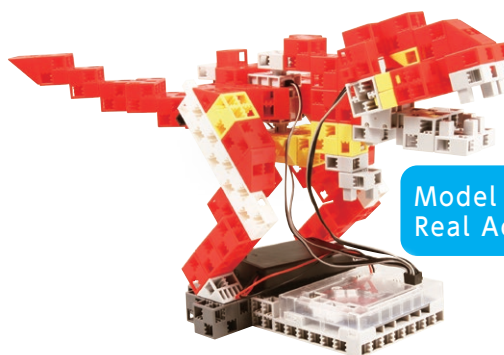# T. REX

# Assembly Instructions

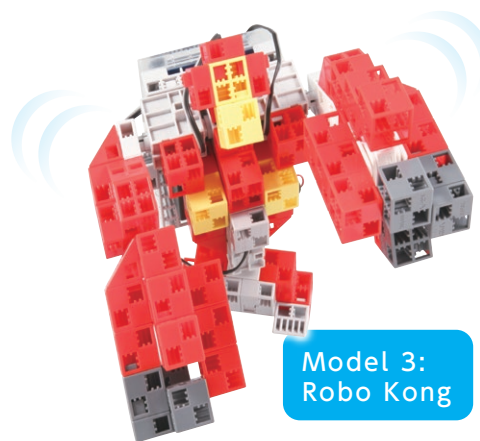**Get instructions for even more robots!**
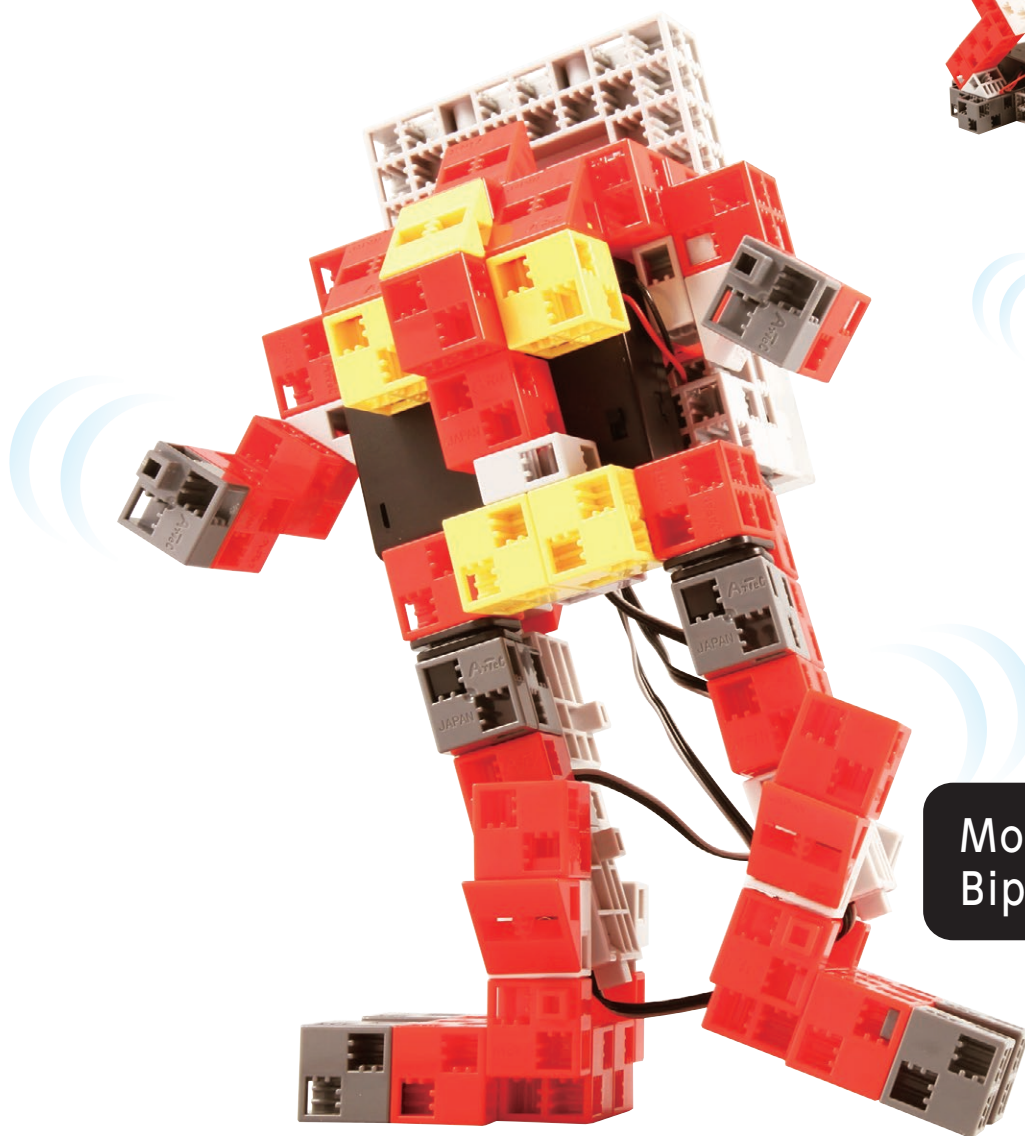
Model 1:
Bipedal T. REX
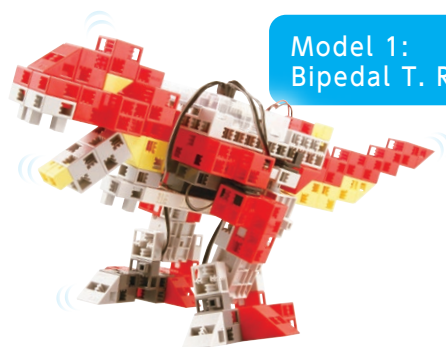
Model 2:
Real Action T. REX

Model 3:
Robo Kong

Model 4:
Biped Walking Robot

For ages
**8+**

ArTeC PAT.P

# Handling the Servomotor

## 1 Orientation

The photo to the right shows the servomotor facing you. There are two shafts, the one with the wider space is the drive shaft and the one with the narrower space is the movable shaft.

★ When turning the drive shaft by hand, do so very slowly and gently.
Excessive pressure when turning may cause damage to the servomotor.



Wider (drive shaft)    Narrower (movable shaft)
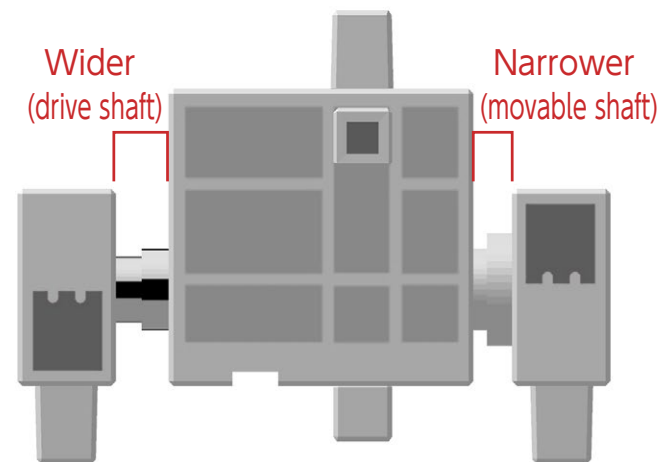
## 2 Calibration and Setting Connector Numbers

Before building your robot, read **6. Using Servomotors** in the **Studuino Icon Programming Environment Guide** (download from http://www.artec-kk.co.jp/artecrobo/) for instructions on how to calibrate your servomotor.
Building your robot without calibrating your servomotor may cause damage or improper functionality.

★ Do not change the connector or the servomotor after calibration.
Servomotor calibrations are unique to each servomotor.

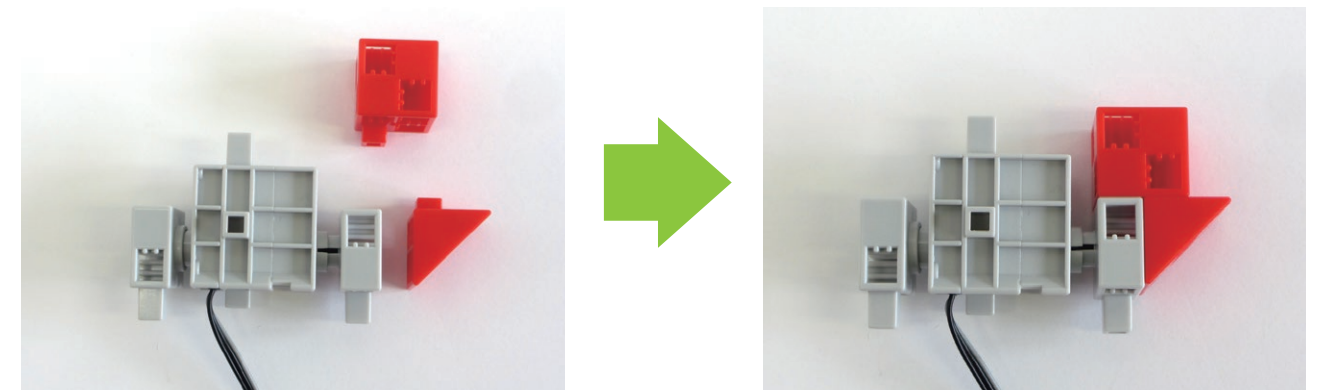### Attaching Number Stickers

After calibration, we recommend putting a sticker on the connector used for the servomotor so it can be easily identified.
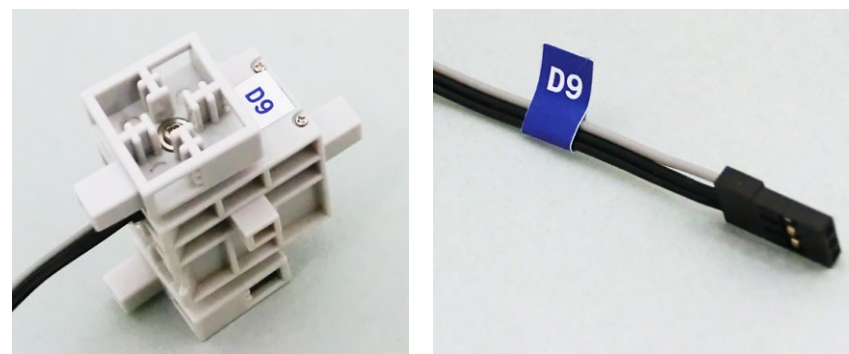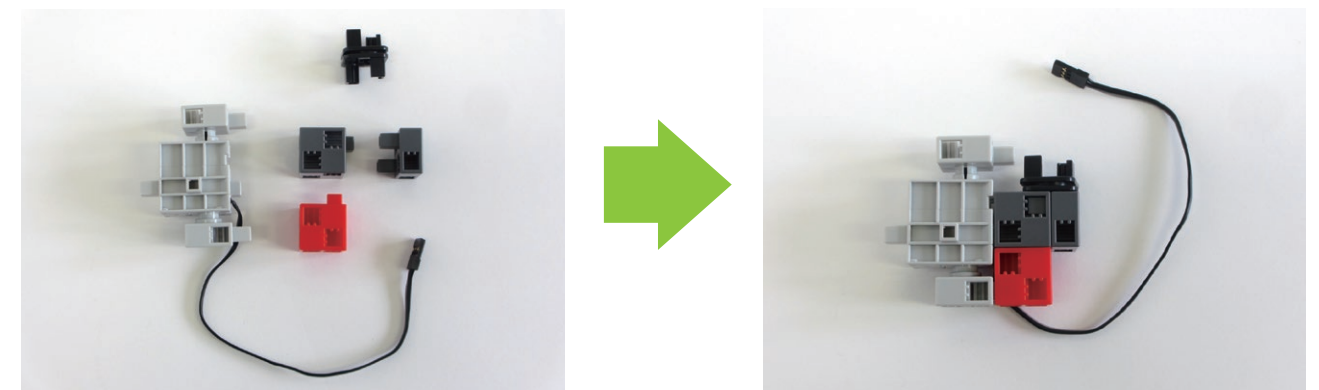


① Assemble the blocks as shown in the picture.
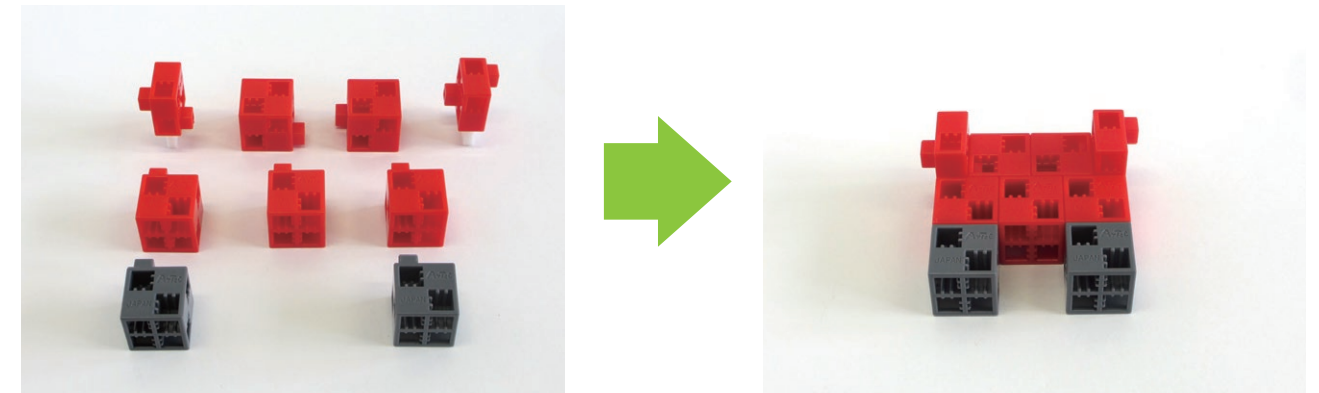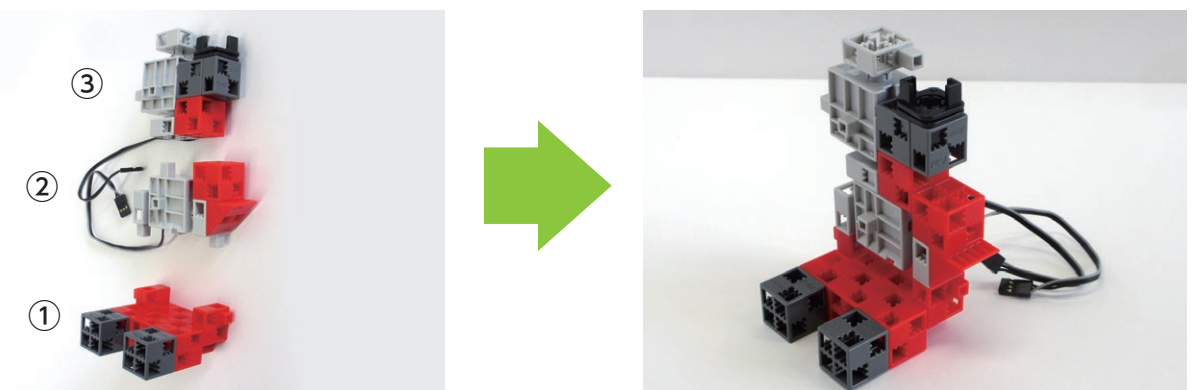


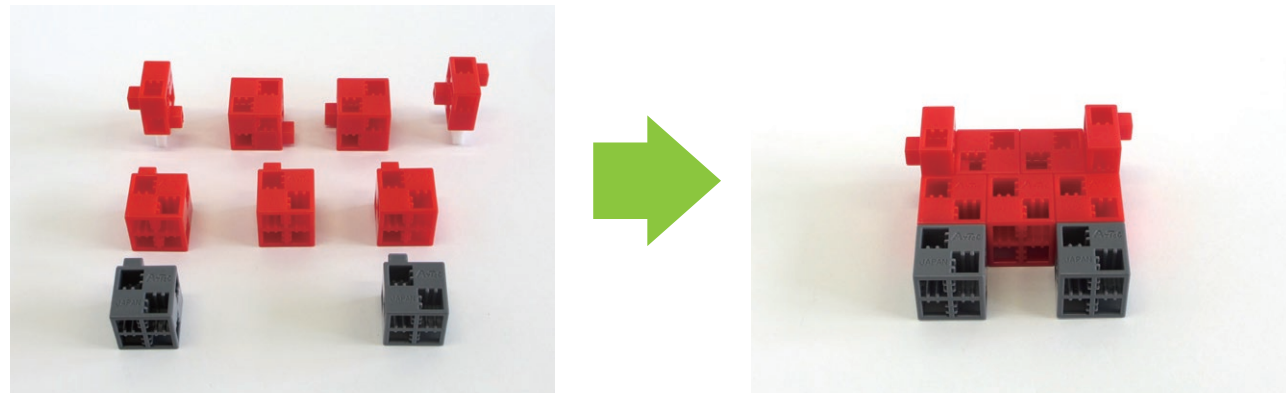② Add the blocks shown in the picture to the servomotor.



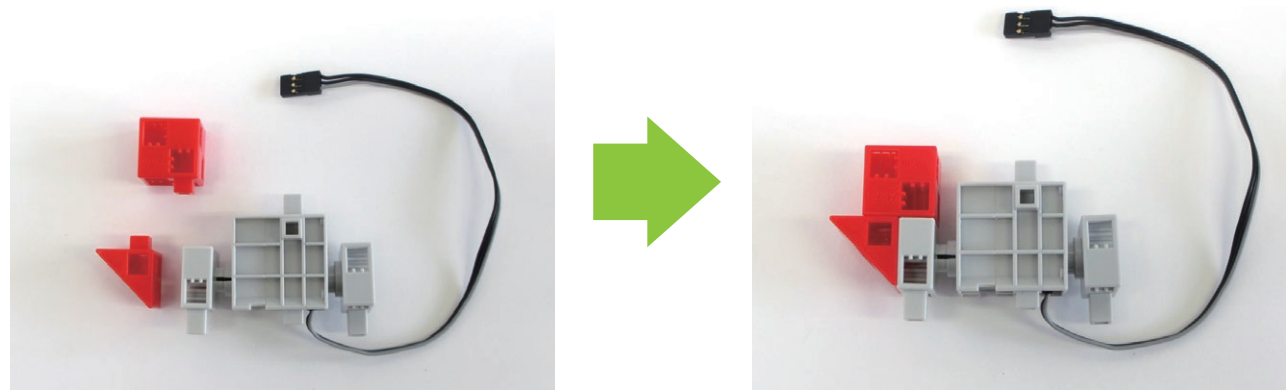③ Add the blocks shown in the picture to the servomotor.



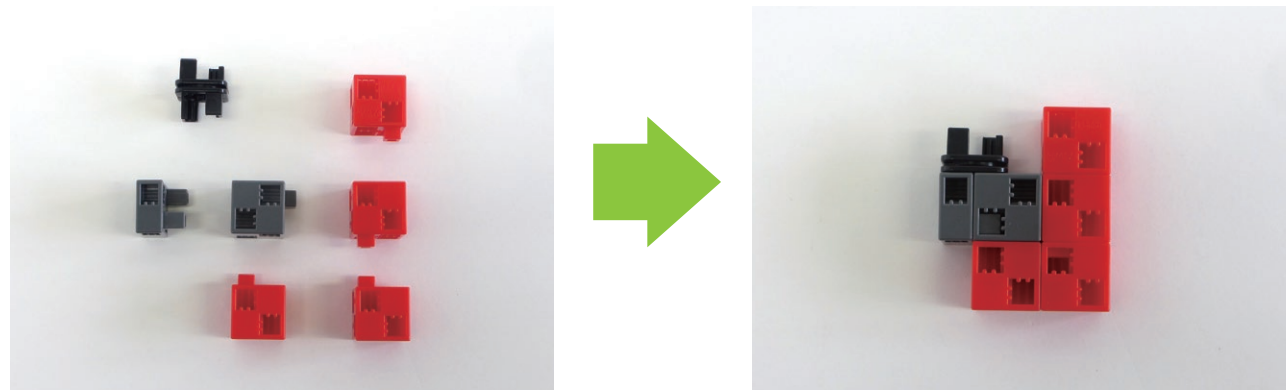④ Assemble parts ①, ② and ③ as shown in the picture.

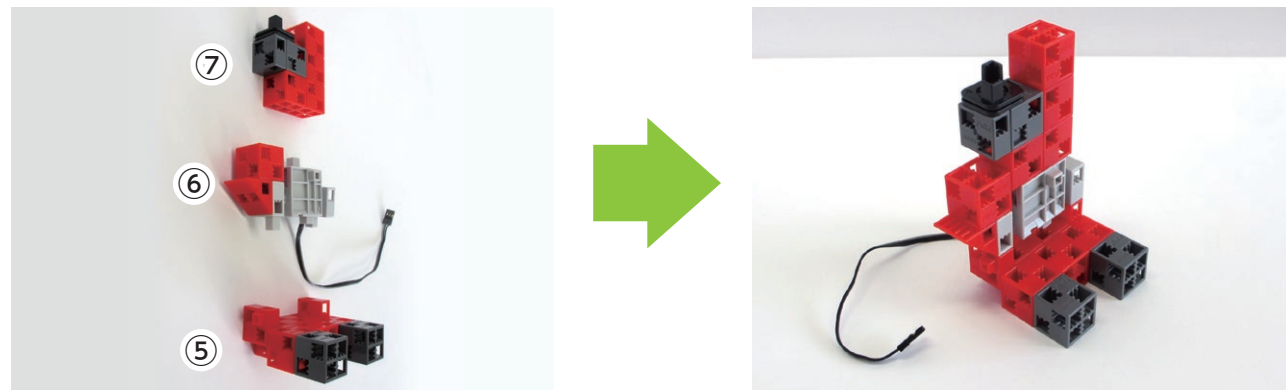⑤ Assemble the blocks as shown in the picture.



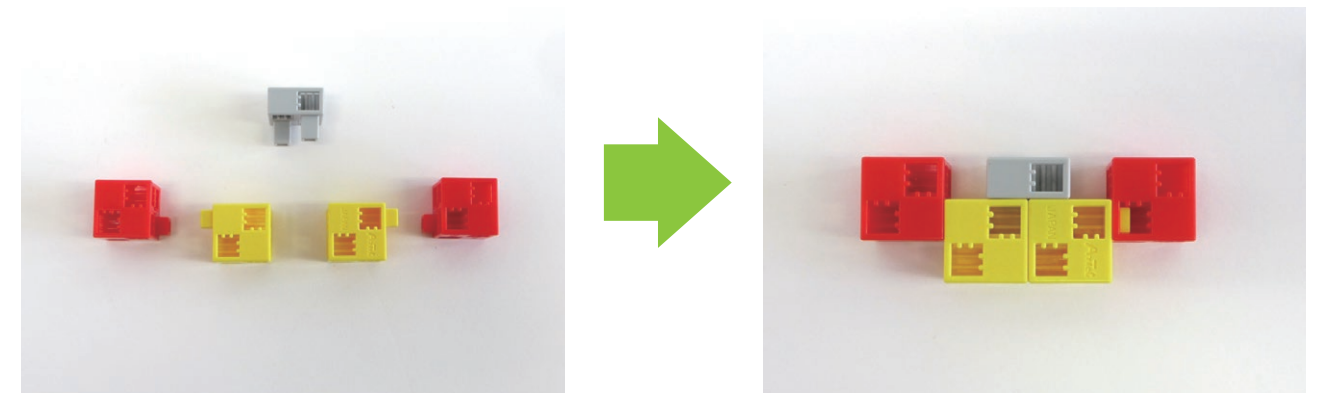⑥ Add the blocks shown in the picture to the servomotor.

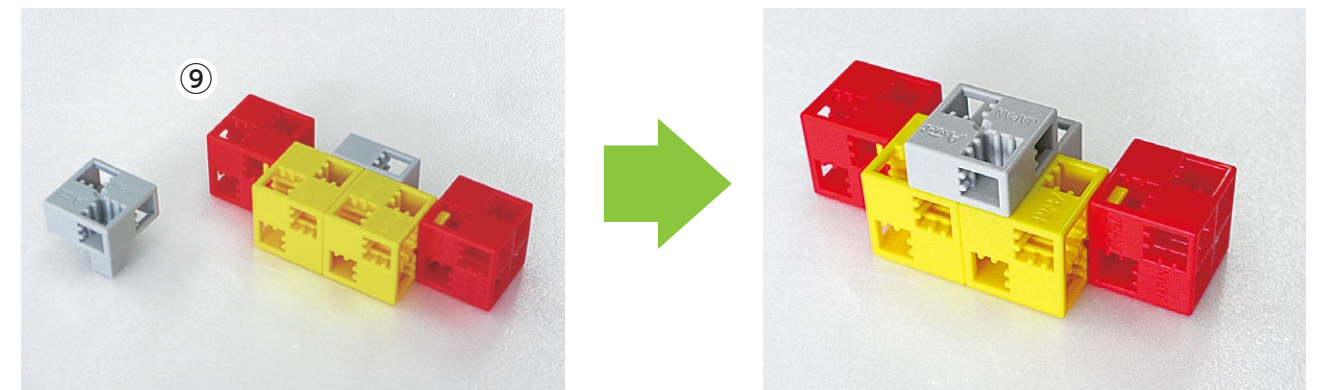

⑦ Assemble the blocks as shown in the picture.



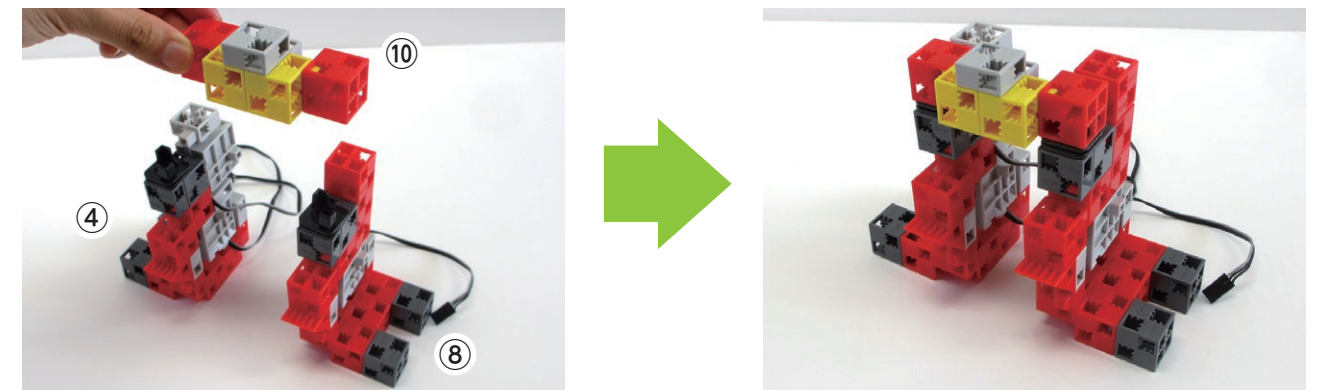⑧ Assemble parts ⑤, ⑥ and ⑦ as shown in the picture.



⑨ Assemble the blocks as shown in the picture.



⑩ Add the blocks shown in the picture to ⑨.



⑪ Assemble parts ④, ⑧ and ⑩ as shown in the picture.



⑫ Assemble the blocks as shown in the picture.

⑬ Add the blocks shown in the picture to the circuit board mount.



⑭ Assemble parts ⑫ and ⑬ as shown in the picture.



⑮ Add the blocks shown in the picture to ⑭.



⑯ Assemble parts ⑪ and ⑮ as shown in the picture.
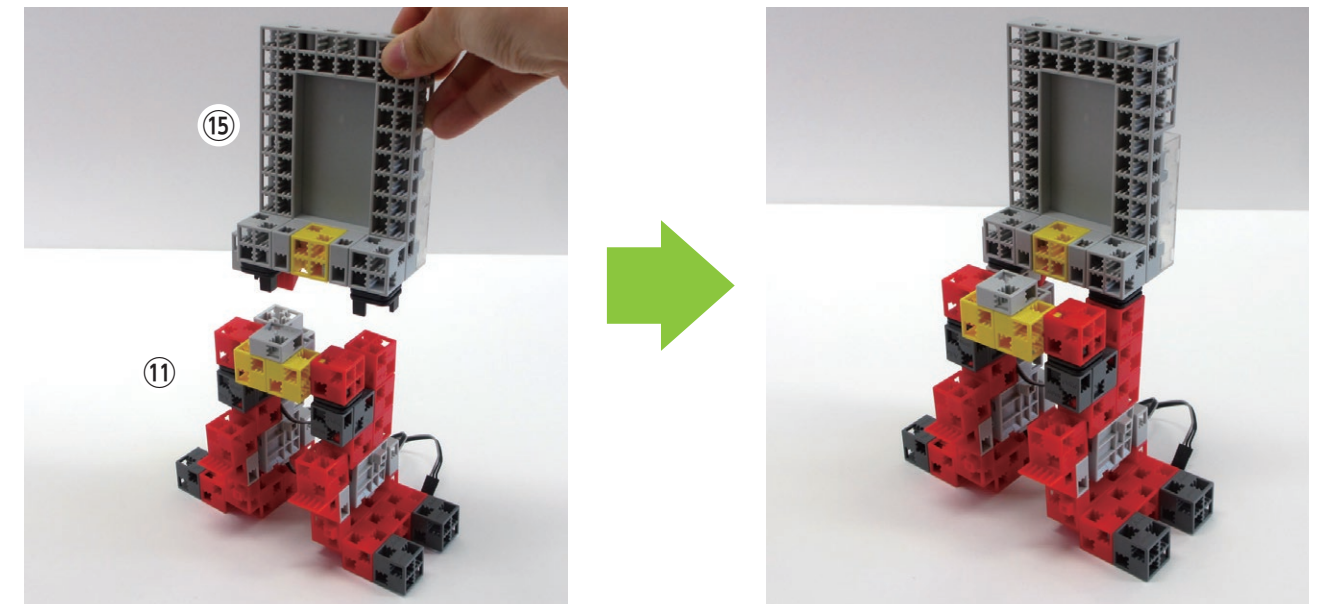


⑰ Make two sets of the blocks shown below.



X2
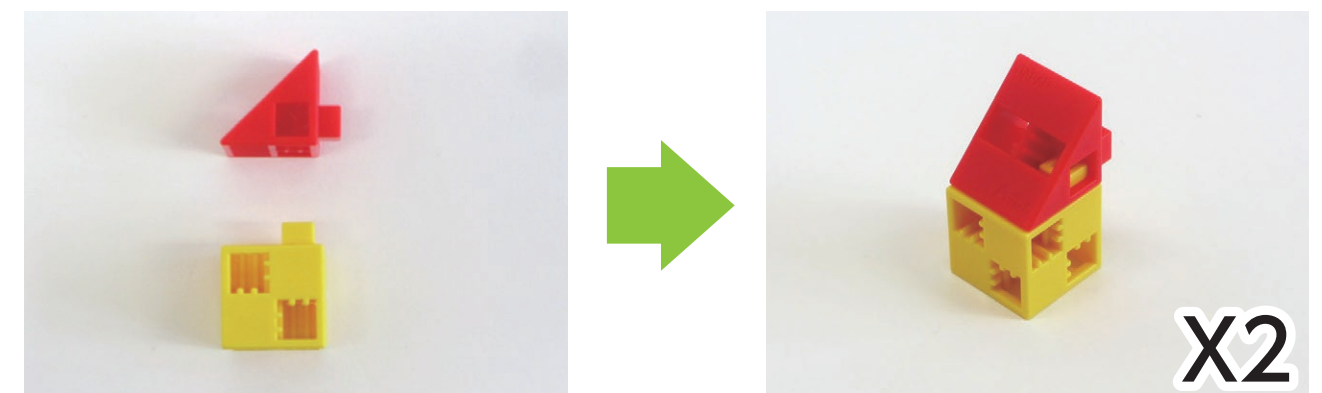
⑱ Add the blocks shown in the picture to ⑰.
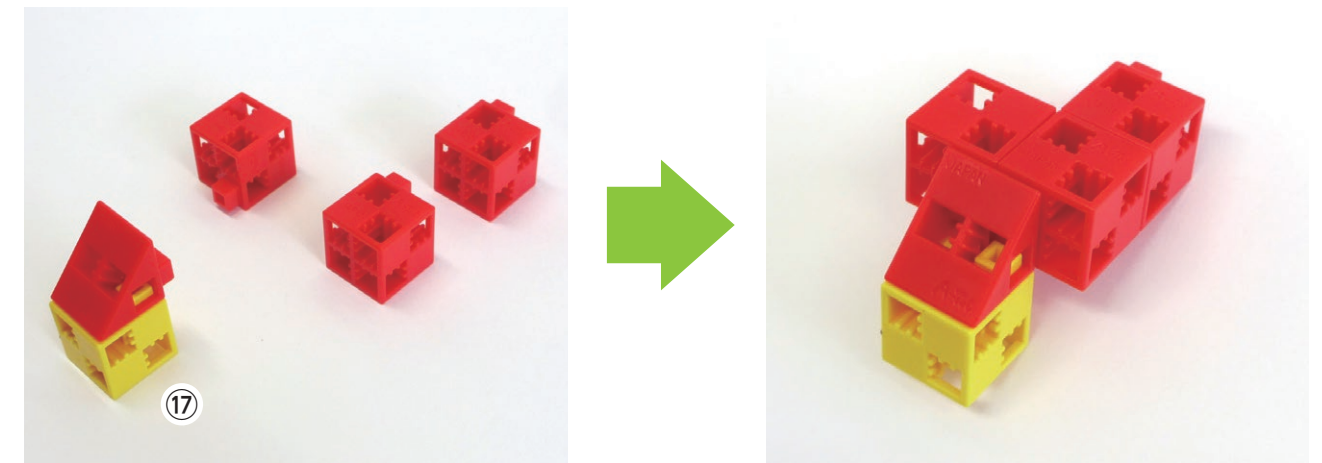
⑲ Add the blocks shown in the picture to ⑰.
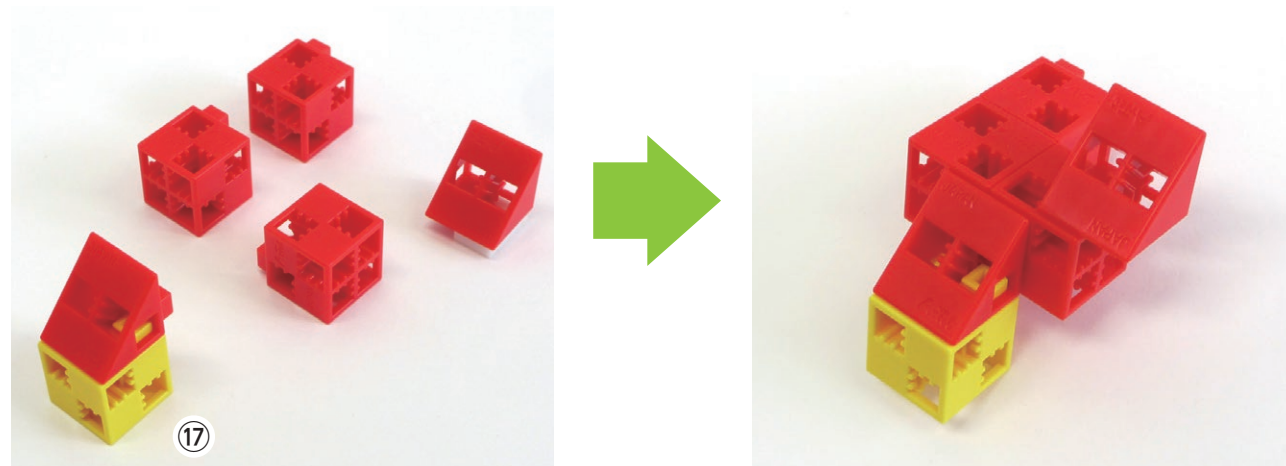


⑳ Assemble the blocks as shown in the picture.
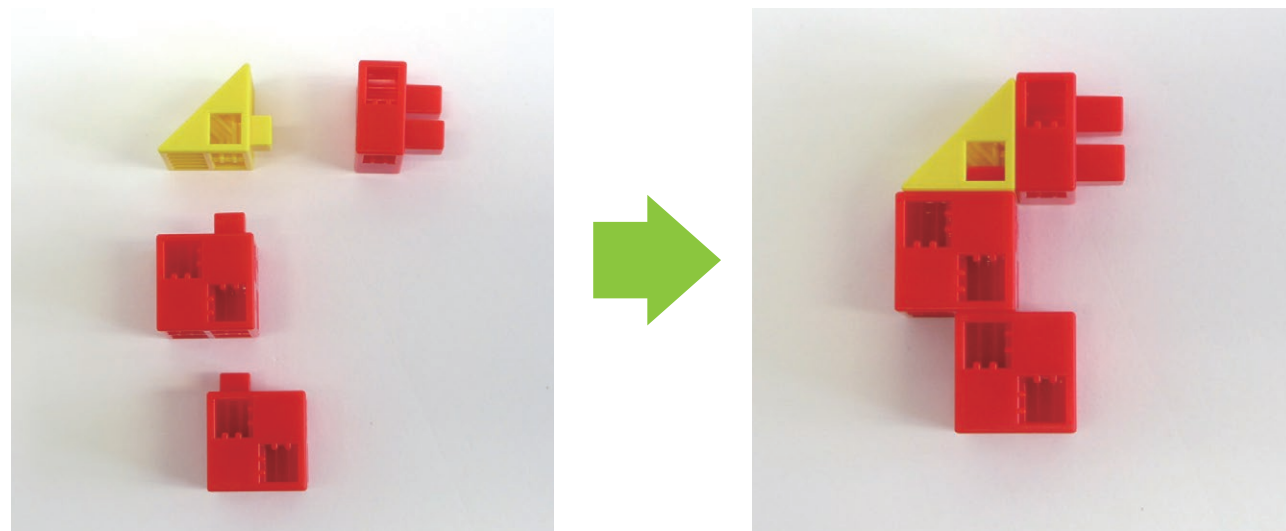


㉑ Assemble parts ⑱, ⑲ and ⑳ as shown in the picture.
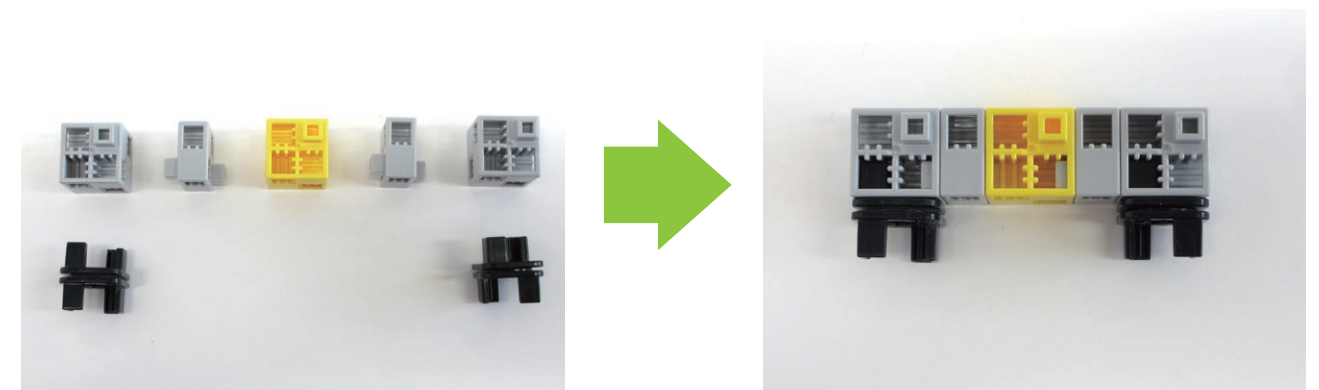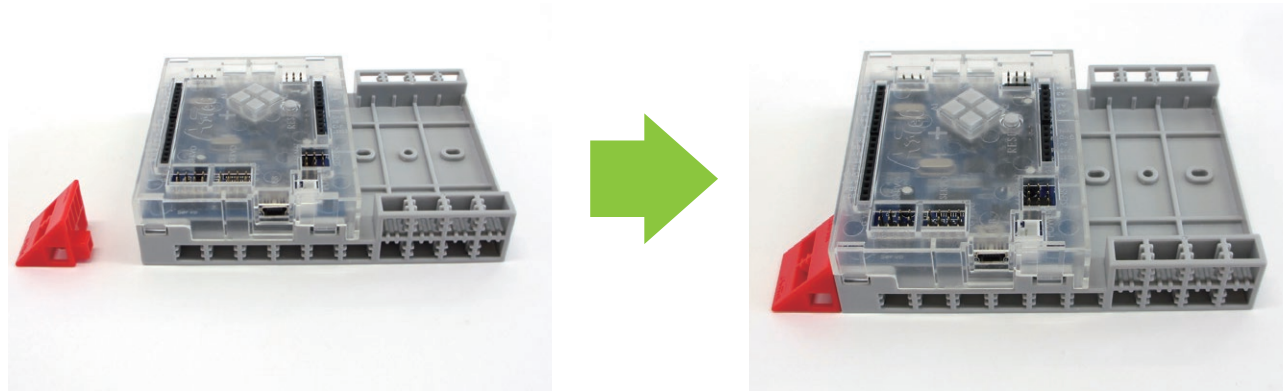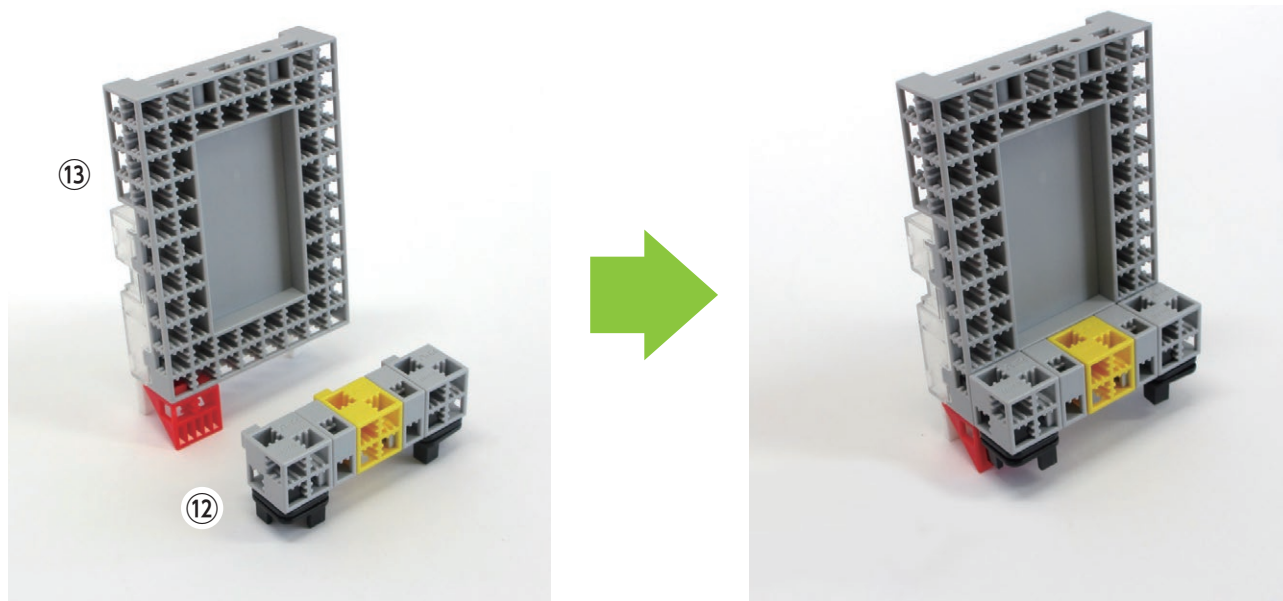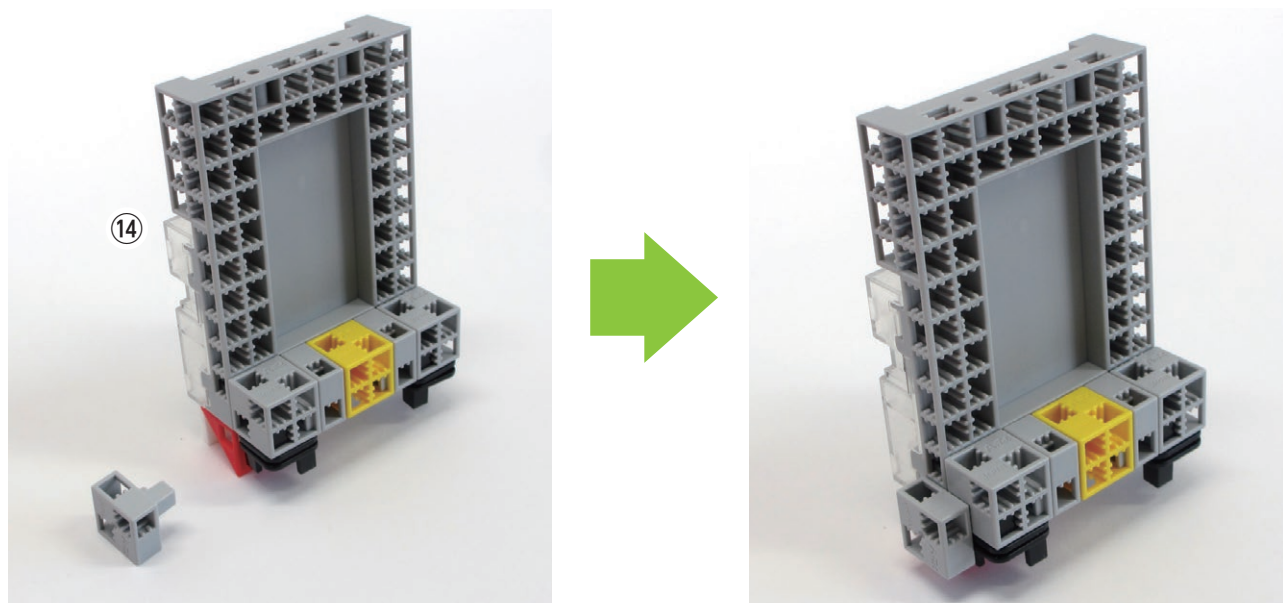


㉒ Assemble the blocks as shown in the picture.



㉒-A
㉒-B
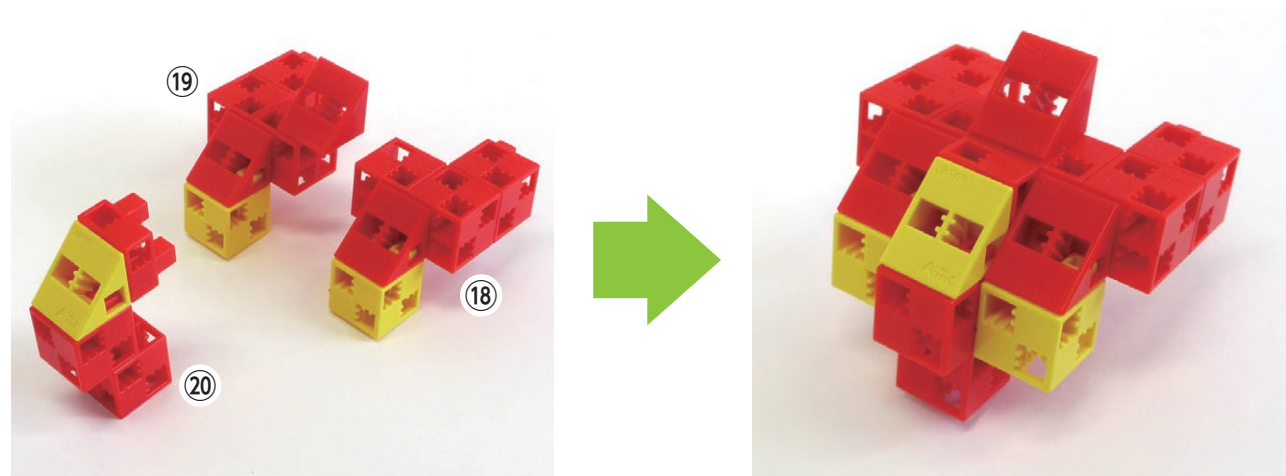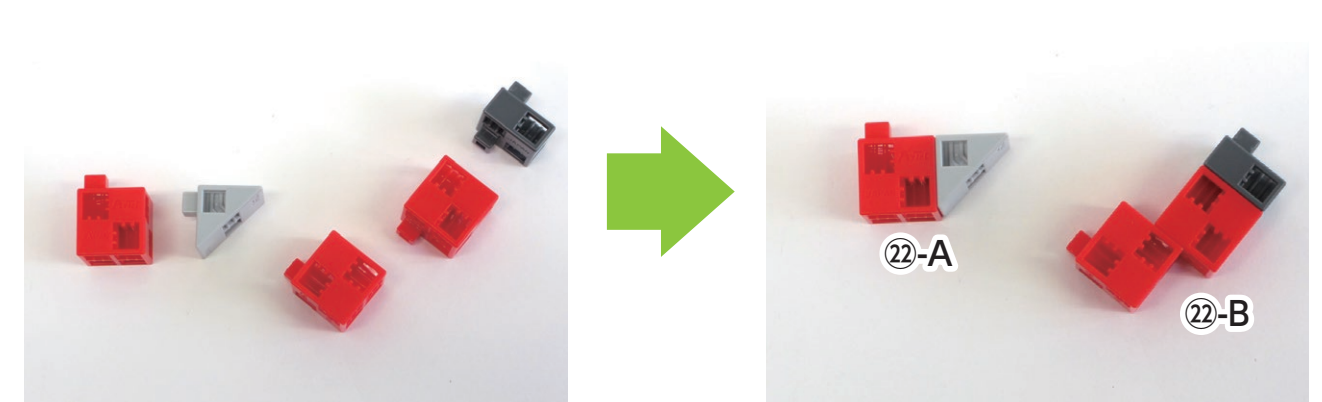
㉓ Assemble parts ㉒-A and ㉒-B as shown.



㉒-A
㉒-B
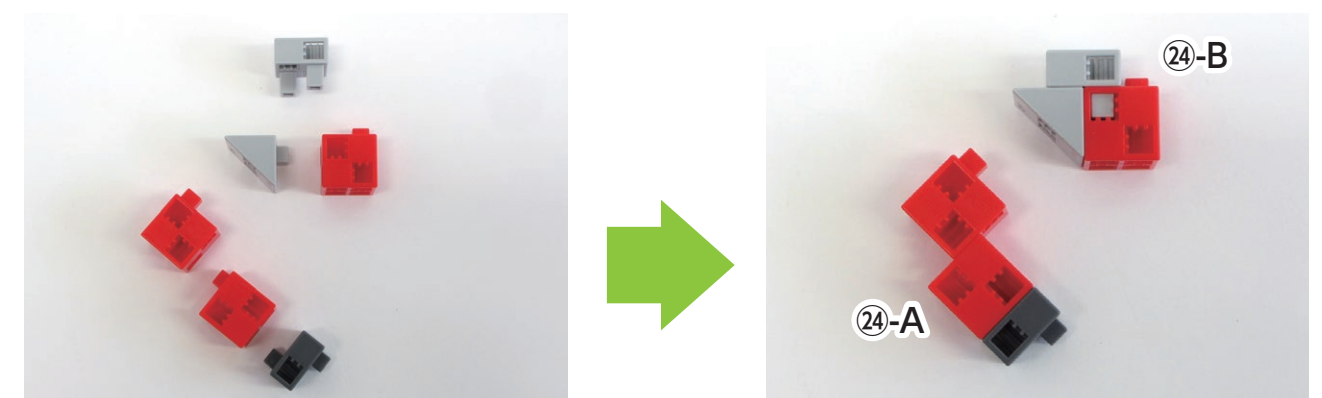
㉔ Assemble the blocks as shown in the picture.



㉔-B
㉔-A

㉕ Assemble parts ㉔-A and ㉔-B as shown.



㉔-B
㉔-A
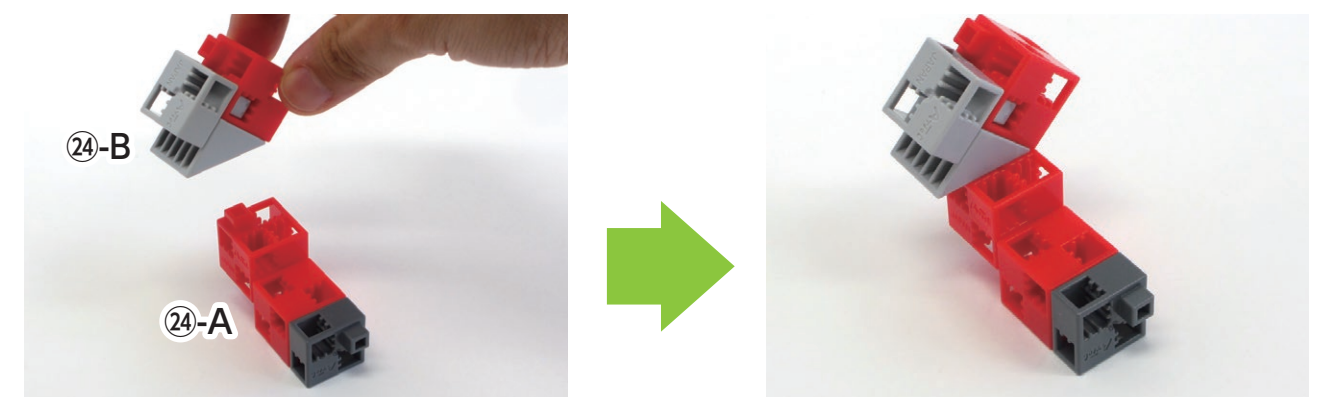
㉖ Assemble parts ㉑, ㉓ and ㉕ as shown in the picture.
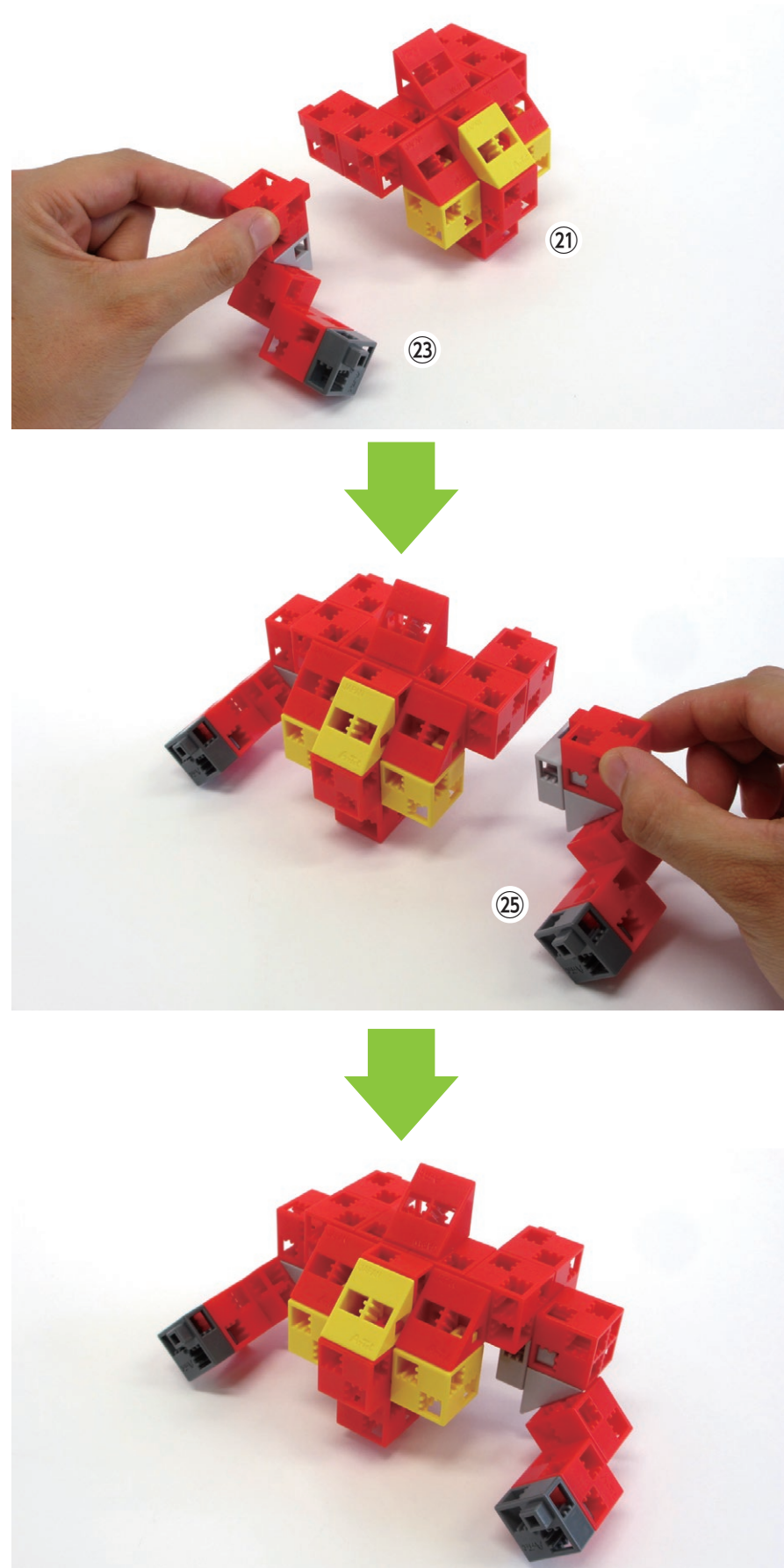


㉗ Add the battery box to part ⑯ as shown.



The switch should be on this side.

㉘ Assemble parts ㉖ and ㉗ as shown in the picture.



Battery box cables should be here
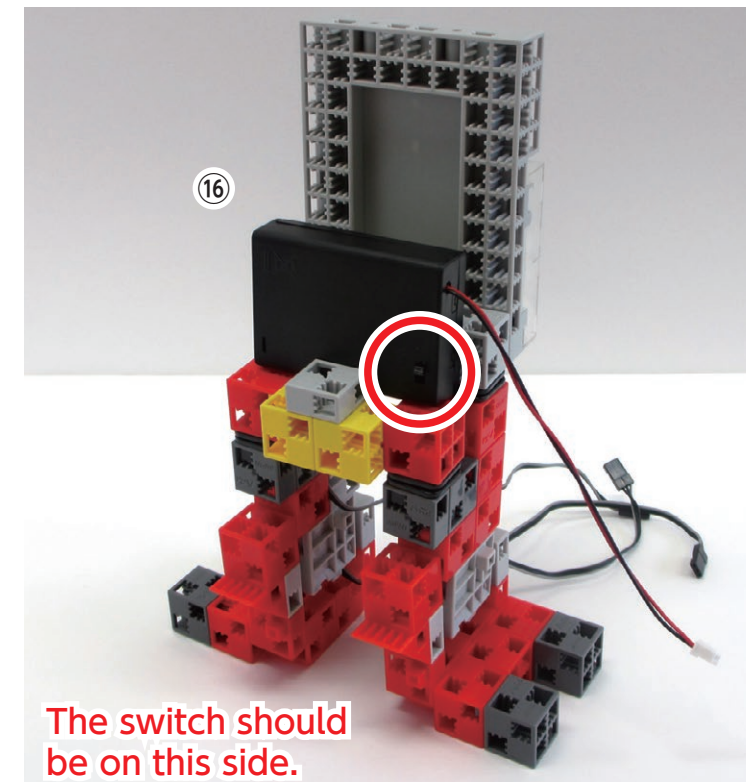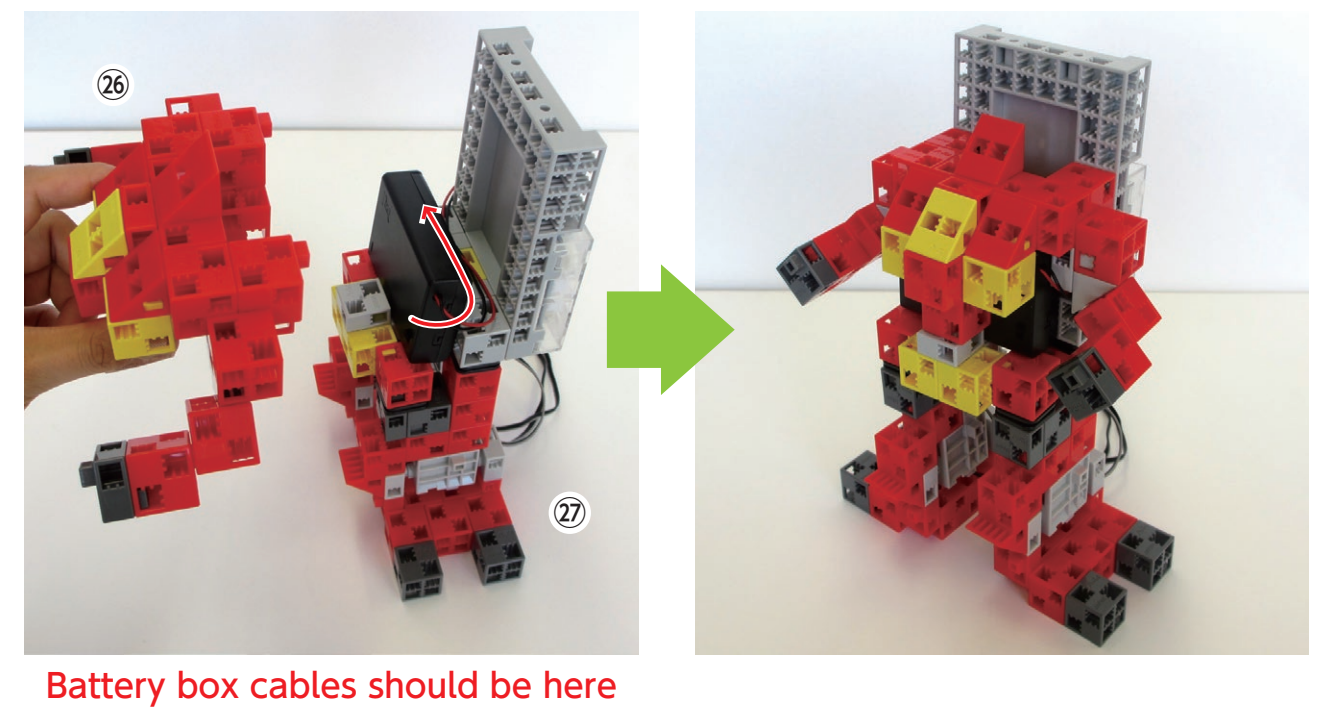
㉙ Plug the cables into your circuit board.



POWER

D11
D10
D9



D9
D10
D11
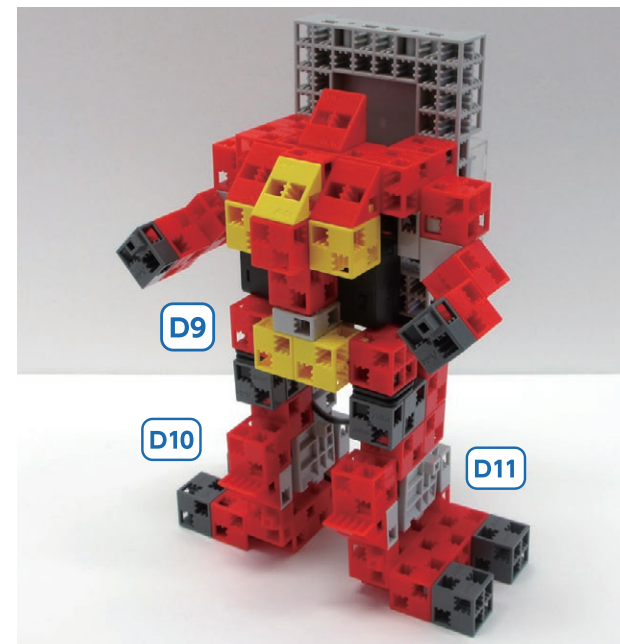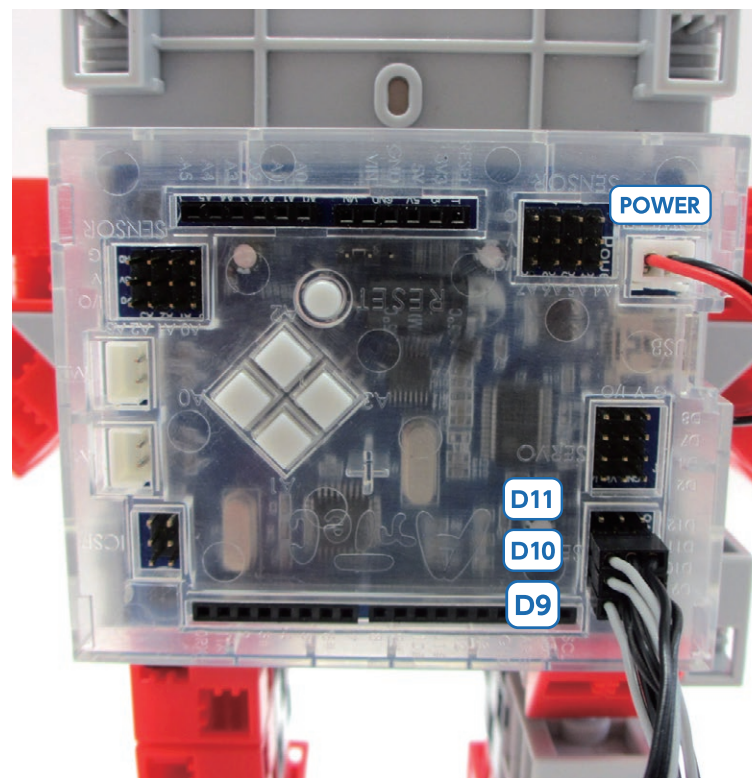
Gray servomotor wires should face inward as shown.

[Finished!]



## [Programming Your Robot]

Download your programming software from the Artec homepage at http://www.artec-kk.co.jp/studuino/download_en.html.

① Click on Start → Artec and open **Studuino Programming Environment.** Choose **Icon Programming Environment**.



② Use a USB cable to connect your circuit board mount to your PC.

③ Choose your port settings.

Tick the boxes for D9, D10, and D11 in the Port Settings dialog box.

④ Place the icons you see in the picture below.

Click Repeat indefinitely in the Repeat Settings dialog.

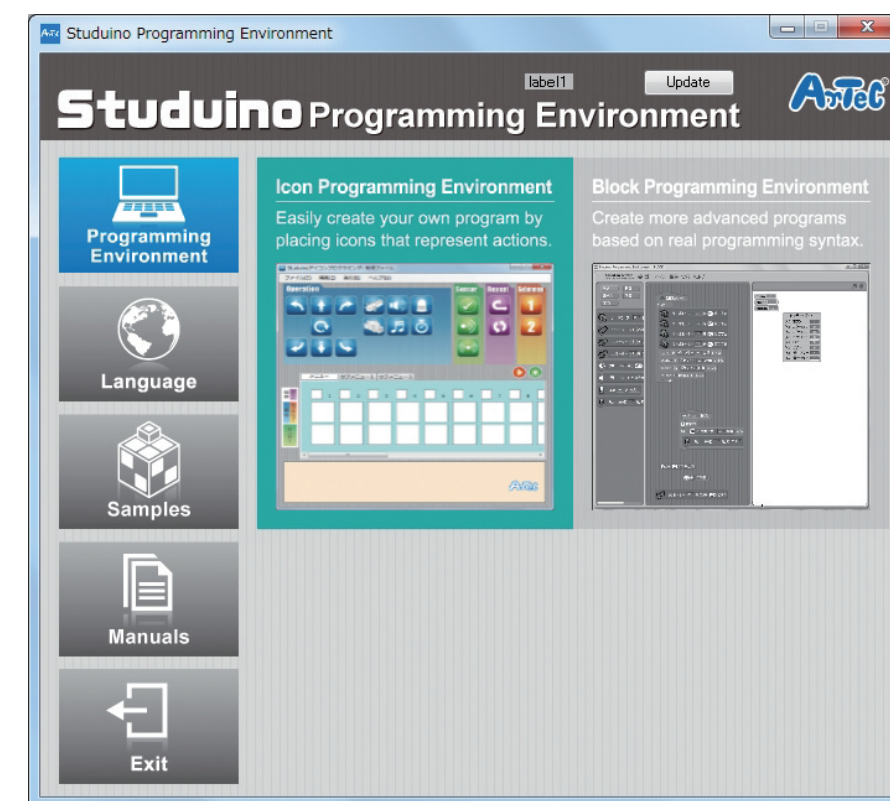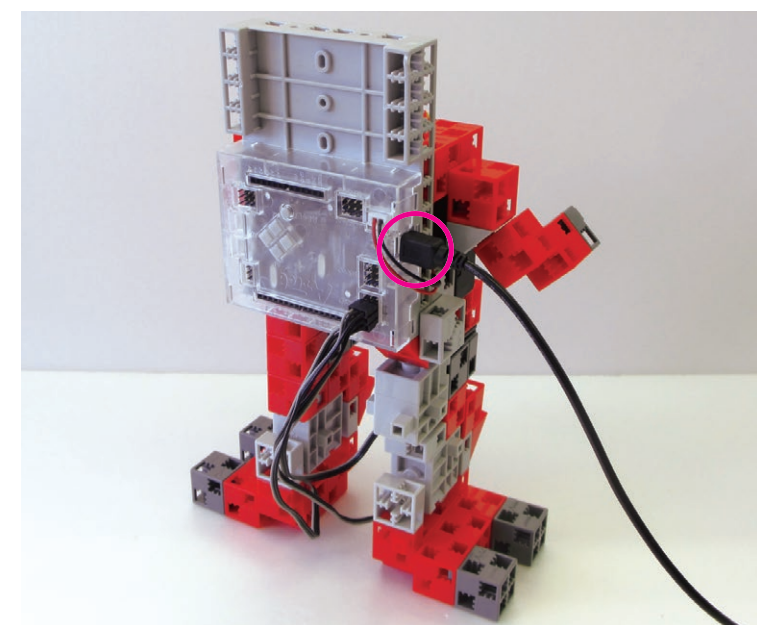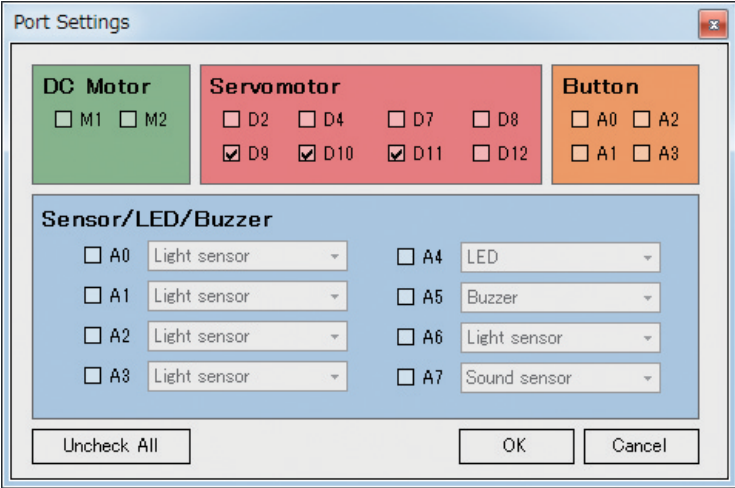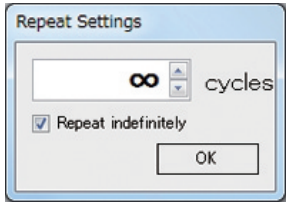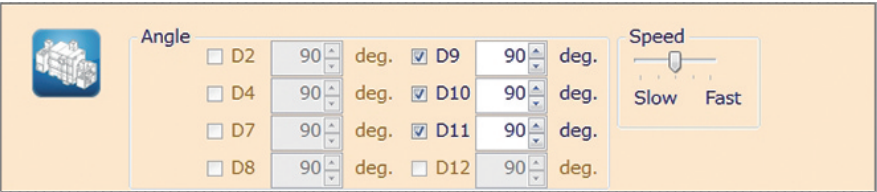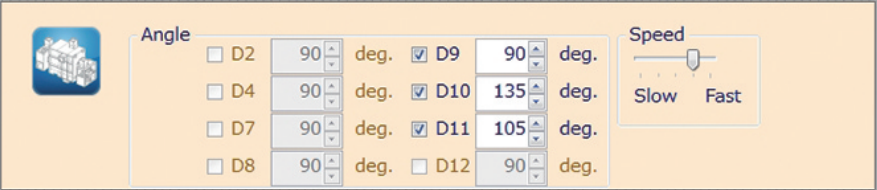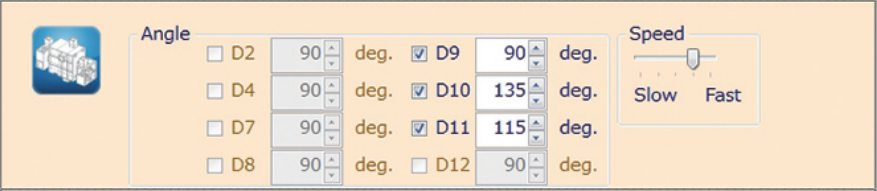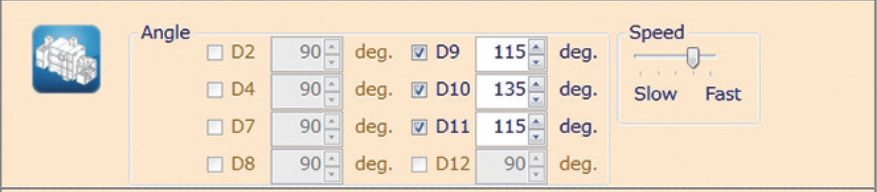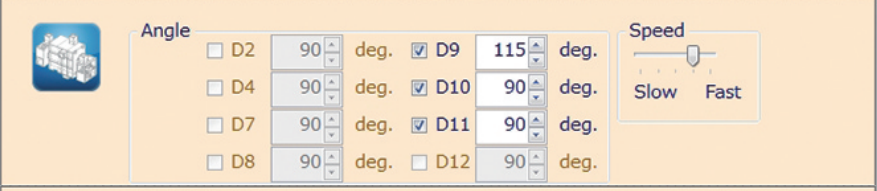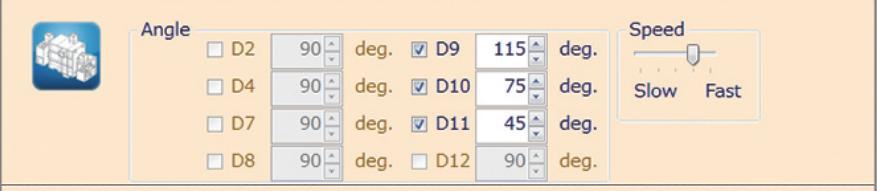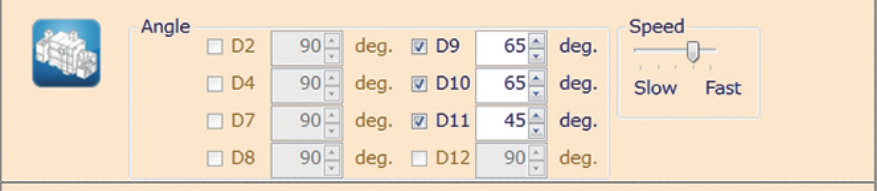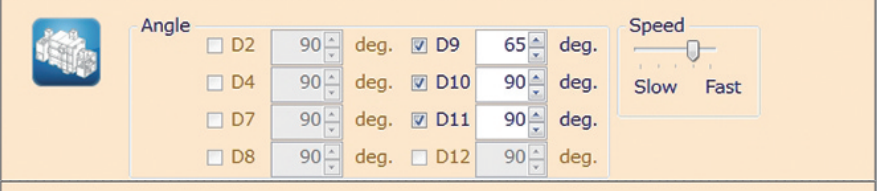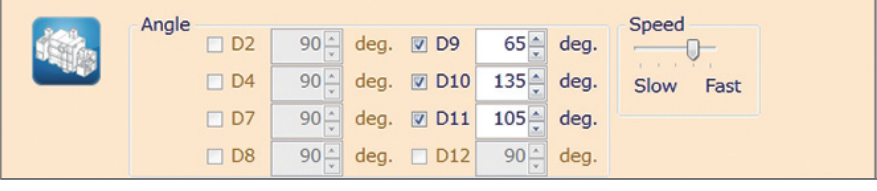| | | Angle | | | | | | | | Speed | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | | ☐ D2 | 90 | deg. | ☑ D9 | 90 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 90 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 90 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **2** | | ☐ D2 | 90 | deg. | ☑ D9 | 90 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 135 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 105 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **3** | | ☐ D2 | 90 | deg. | ☑ D9 | 90 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 135 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 115 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **4** | | ☐ D2 | 90 | deg. | ☑ D9 | 115 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 135 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 115 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **5** | | ☐ D2 | 90 | deg. | ☑ D9 | 115 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 90 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 90 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **6** | | ☐ D2 | 90 | deg. | ☑ D9 | 115 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 75 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 45 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **7** | | ☐ D2 | 90 | deg. | ☑ D9 | 115 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 65 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 45 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **8** | | ☐ D2 | 90 | deg. | ☑ D9 | 65 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 65 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 45 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **9** | | ☐ D2 | 90 | deg. | ☑ D9 | 65 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 90 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 90 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |
| **10** | | ☐ D2 | 90 | deg. | ☑ D9 | 65 | deg. | | | Slow — Fast | |
| | | ☐ D4 | 90 | deg. | ☑ D10 | 135 | deg. | | | | |
| | | ☐ D7 | 90 | deg. | ☑ D11 | 105 | deg. | | | | |
| | | ☐ D8 | 90 | deg. | ☐ D12 | 90 | deg. | | | | |

⑤ After sending the program to your circuit board, check that your robot is
operating correctly by turning it on.
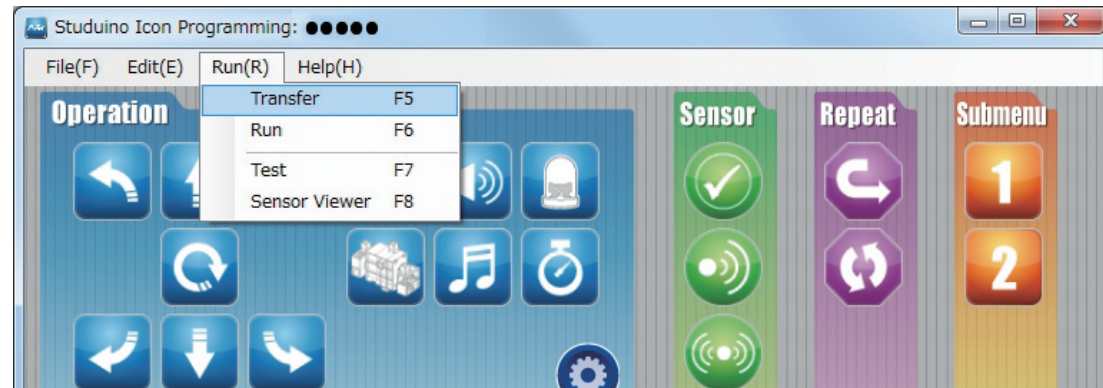


## Having trouble?

・Check to make sure you've assembled your robot correctly.

・Make sure that the cables have been properly inserted.

・Read **6. Using Servomotors** in the **Studuino Icon Programming Environment Guide**
(download from http://www.artec-kk.co.jp/artecrobo/) for instructions on how to
calibrate your servomotor.

K1016