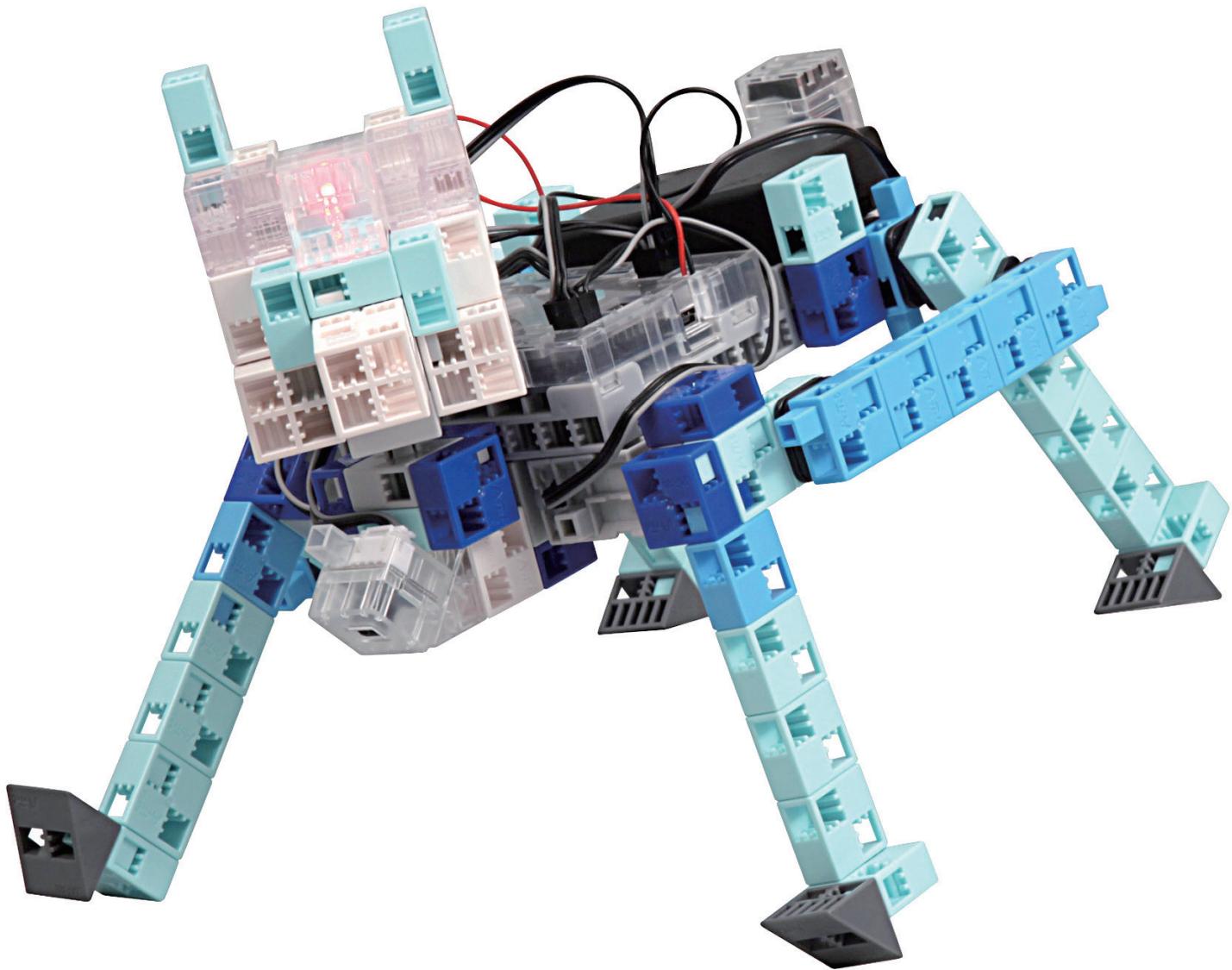


Doggy Robot

Assembly Instructions



Artec Co., Ltd.

Address: 3-2-21 Kitakamei-cho, Yao-shi, Osaka
581-0066 Japan
E-mail: export@artec-kk.co.jp
Website: www.artec-kk.co.jp/en

Artec® is a registered trademark of Artec Co., Ltd.
in multiple countries including Japan, South Korea,
Canada, and the USA.

Doggy Robot

Contents

Studuino Unit	x1	LED (red) Red x1	Reflective Infrared Sensor IR Photo reflector x1
Servomotor	x3	Basic Cube (white) x9	Basic Cube (clear) x2
		Triangle A (gray) x4	Triangle A (clear) x2
USB Cable	x1	Battery Box x1	Half B (blue) x9
Sensor Connecting Cable (three-wire 15 cm)	x3	Sound Sensor Sound Sensor x1	Half C (light aqua) x38
		Half D (aqua) x14	Rotor Axis C x8

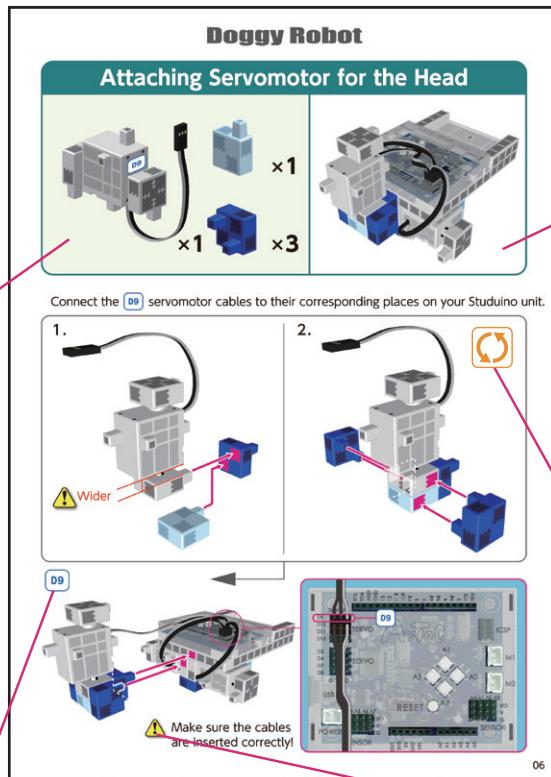
Assembly Instruction Labels

x1

Shows the parts needed for assembly. Indicates the number of parts needed for assembly.

D9

Shows the sticker number used for each servomotor. Use the motor with the correct sticker number.



Shows an image of the completely assembled item.



Indicates when the direction of a component must be changed for assembly.



Indicates tips or warning when building a specific item.

Sensor Controlled Robot

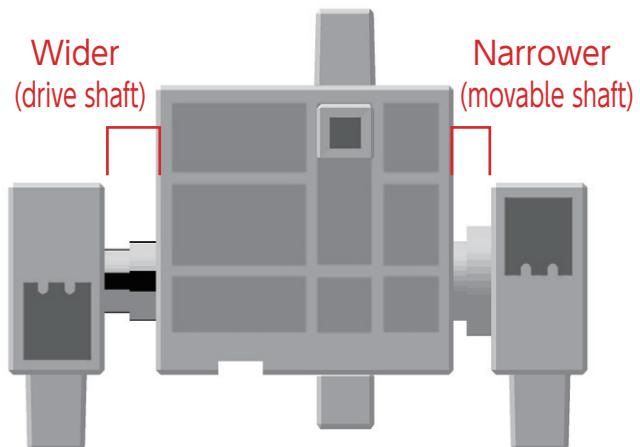
Handling the Servomotor

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.



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.

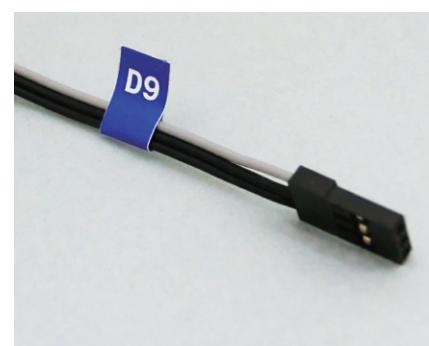
Building your robot without calibrating your servomotor may cause damage or improper functionality.

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

Attaching Number Stickers

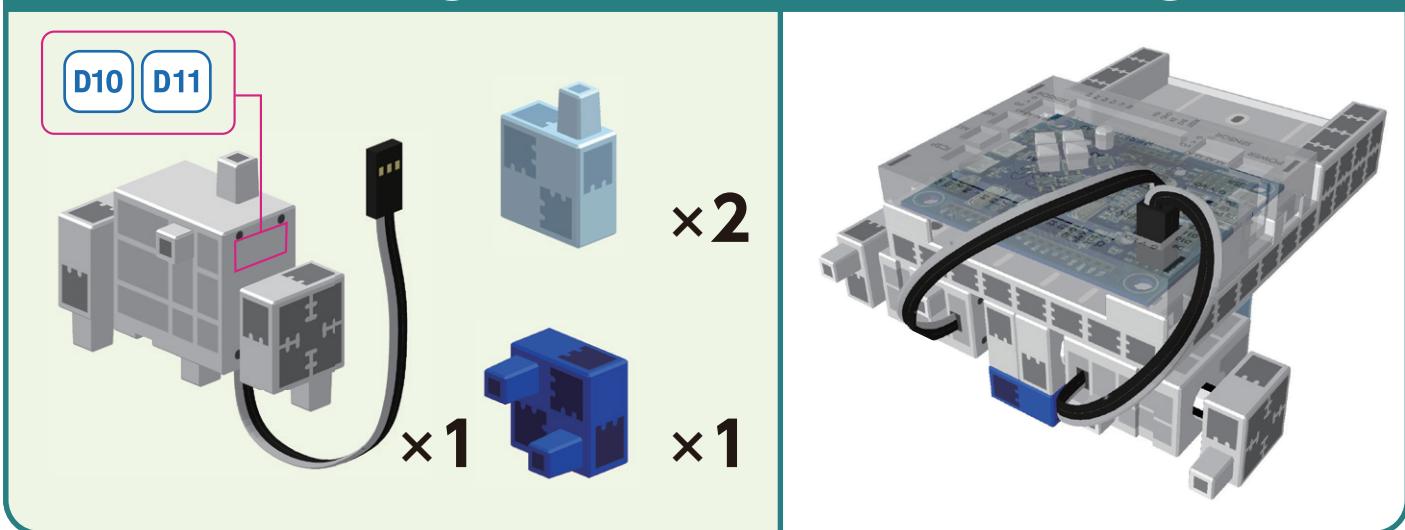
After calibration, we recommend putting a sticker on the connector used for the servomotor so it can be easily identified.

User stickers **D9**, **D10**, and **D11** when building your Sensor Controlled Robot.

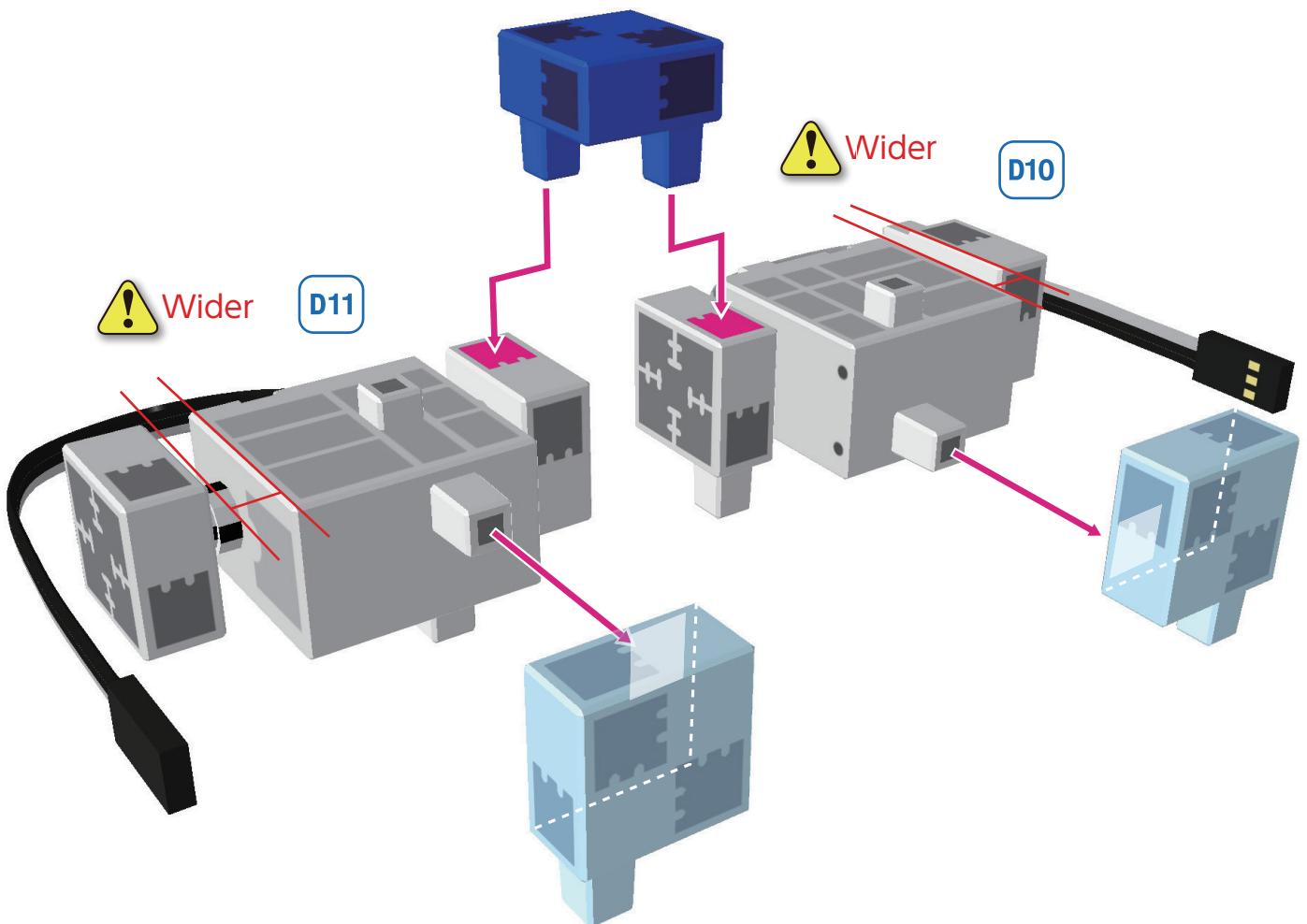


Doggy Robot

Attaching Servomotor for the Legs

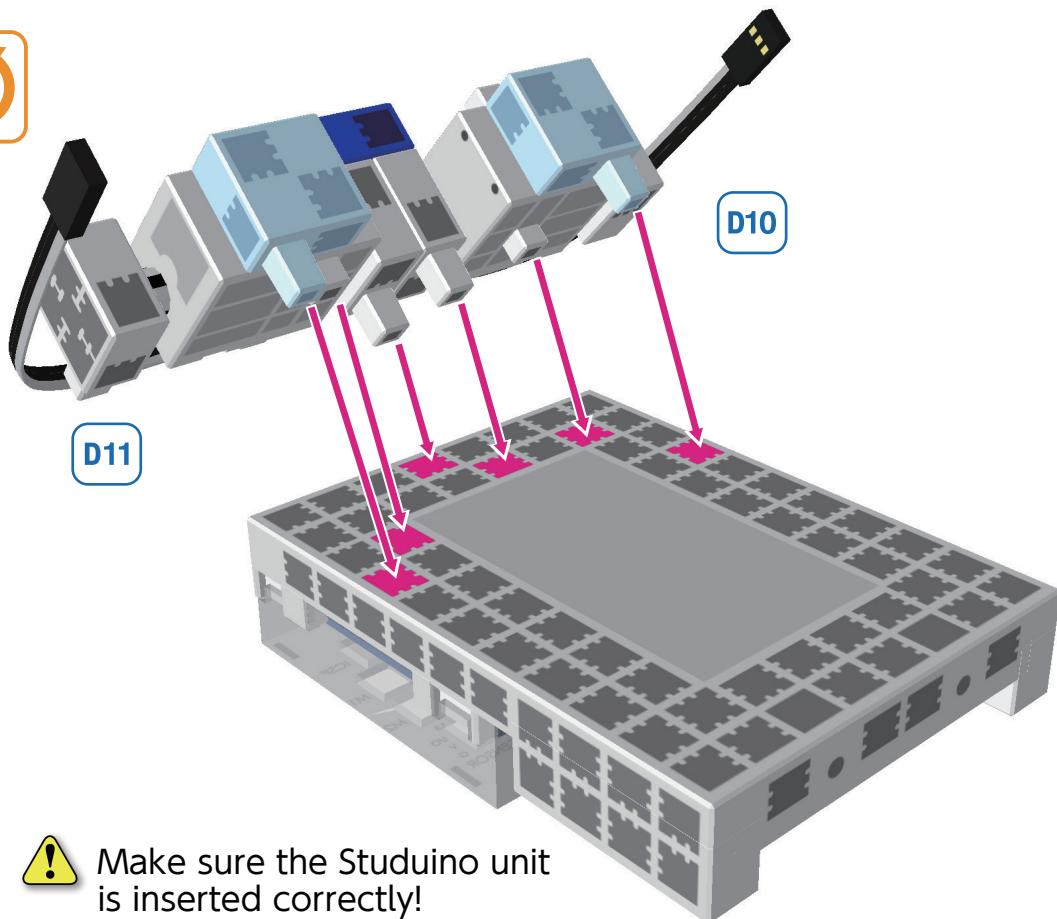


①



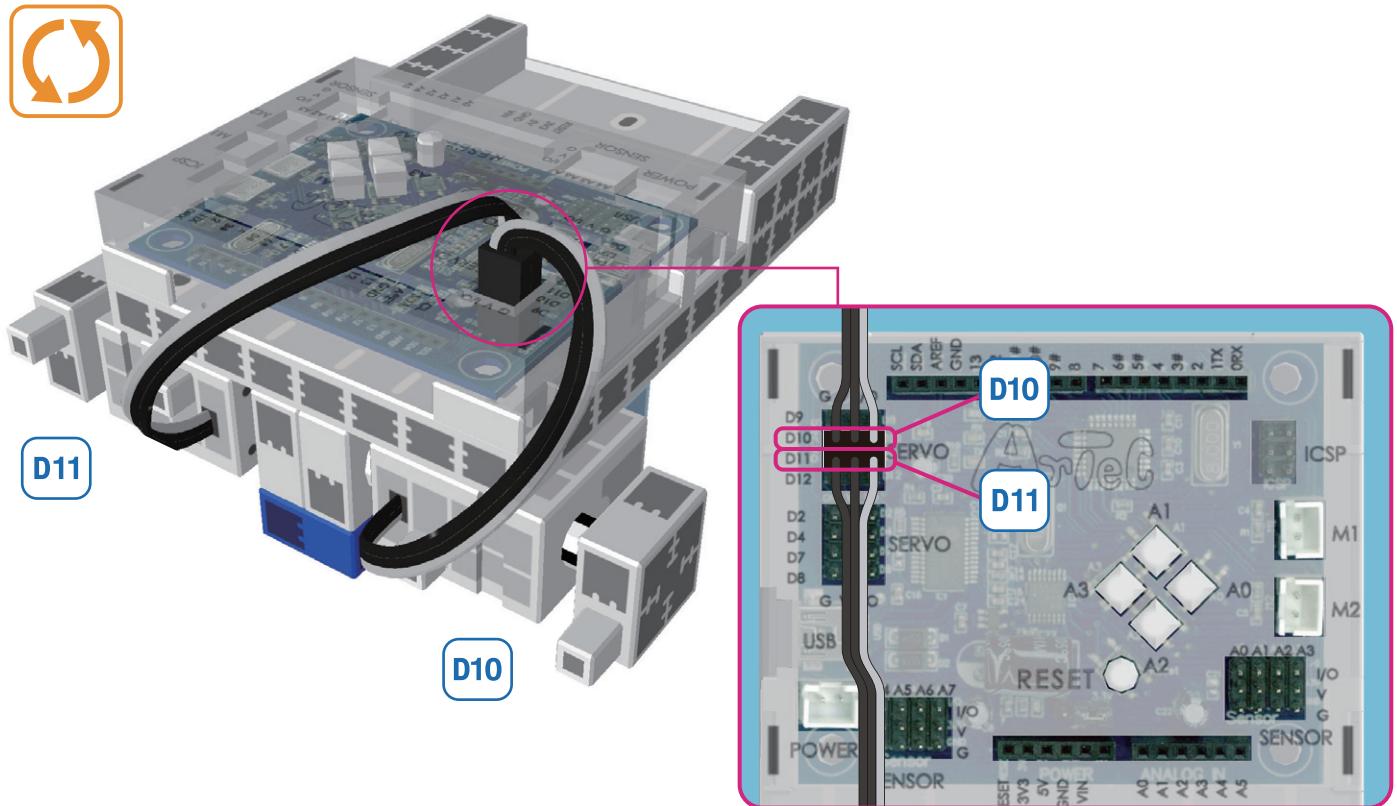
Doggy Robot

②



Make sure the Studuino unit
is inserted correctly!

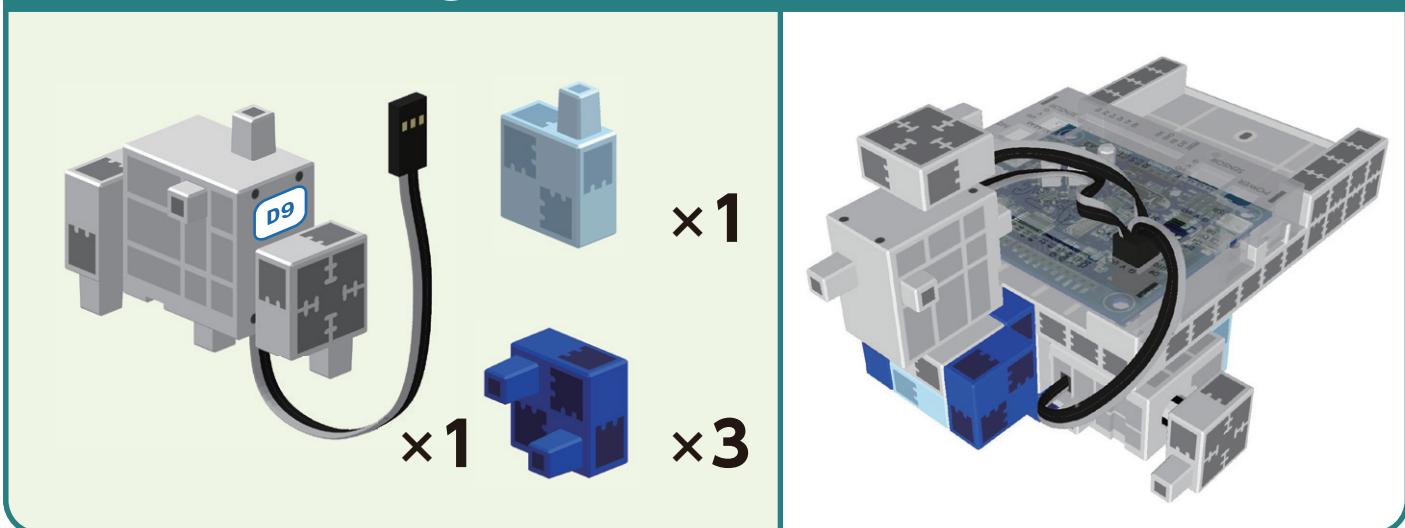
-
- ③ Connect the **D10** and **D11** from the servomotor to their corresponding places on your Studuino unit.



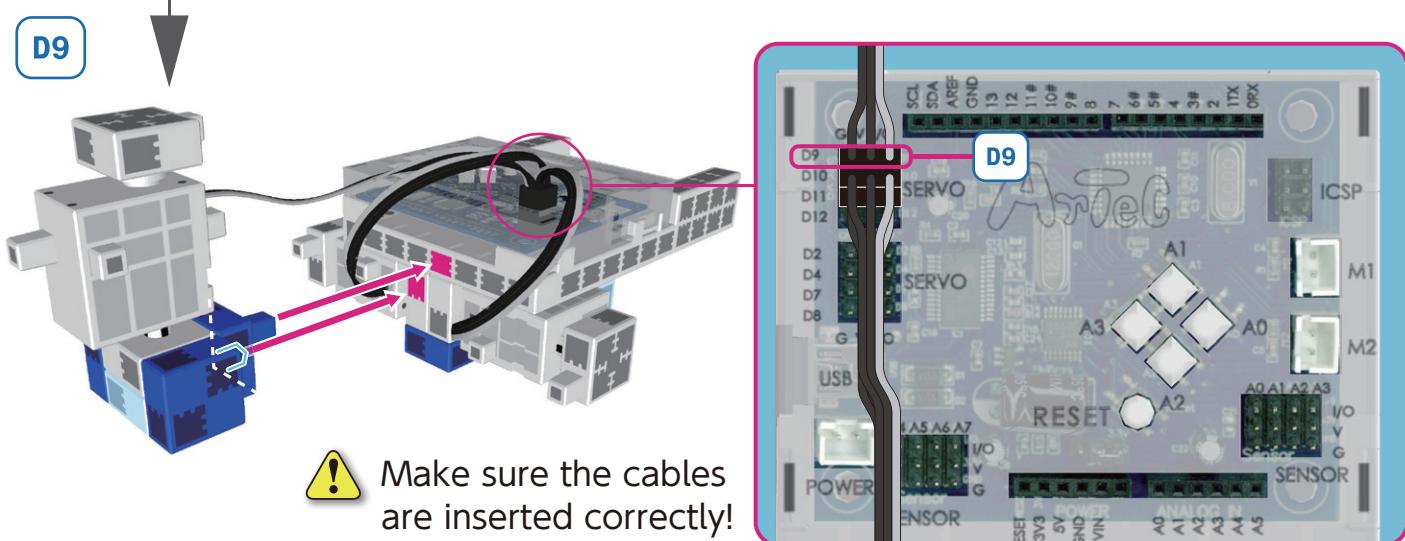
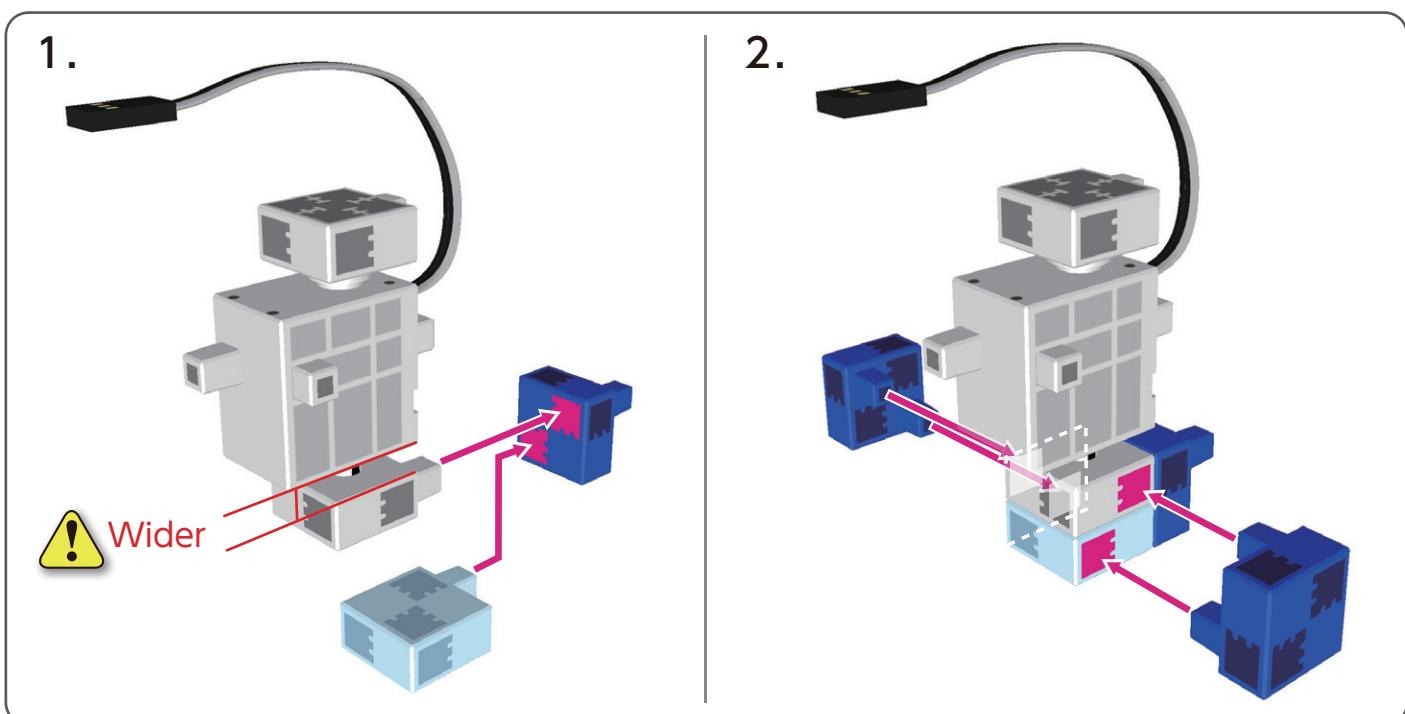
Make sure the cables are inserted correctly!

Doggy Robot

Attaching Servomotor for the Head

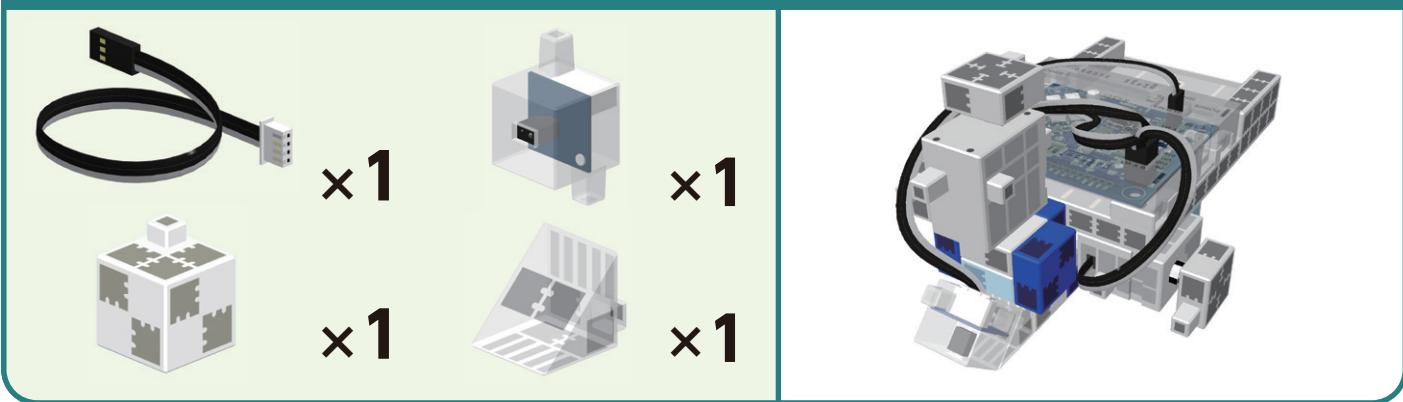


Connect the **D9** servomotor cables to their corresponding places on your Studuino unit.

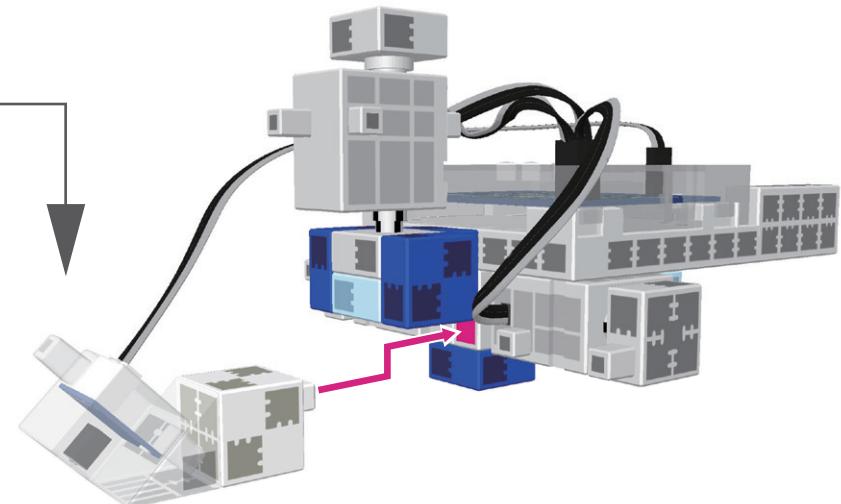
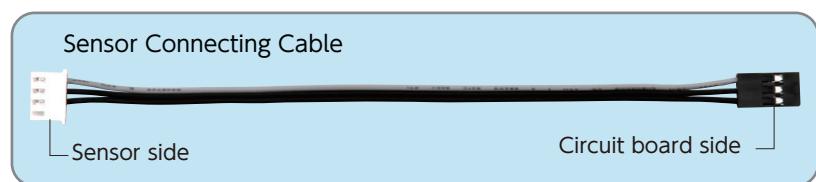
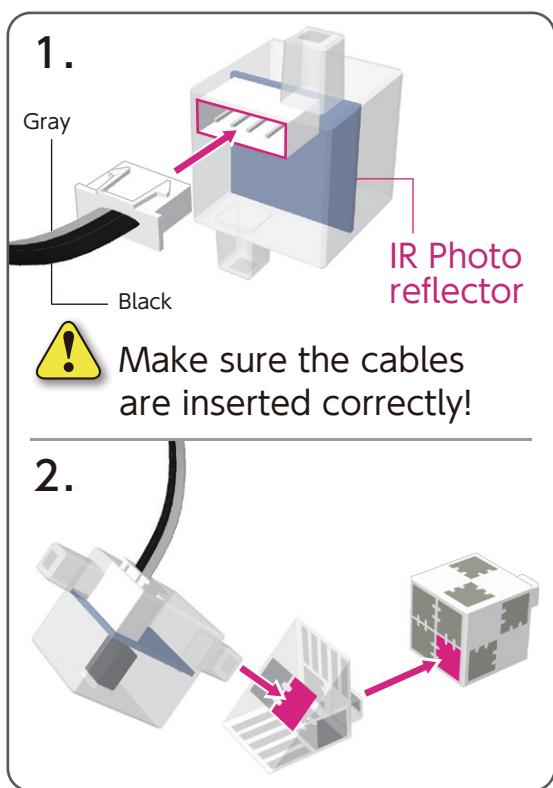


Doggy Robot

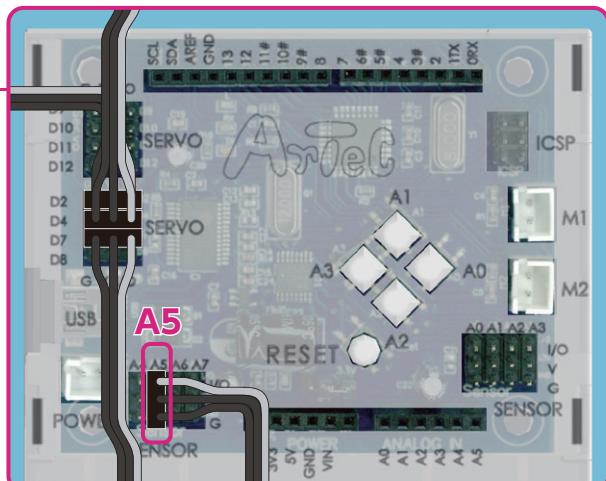
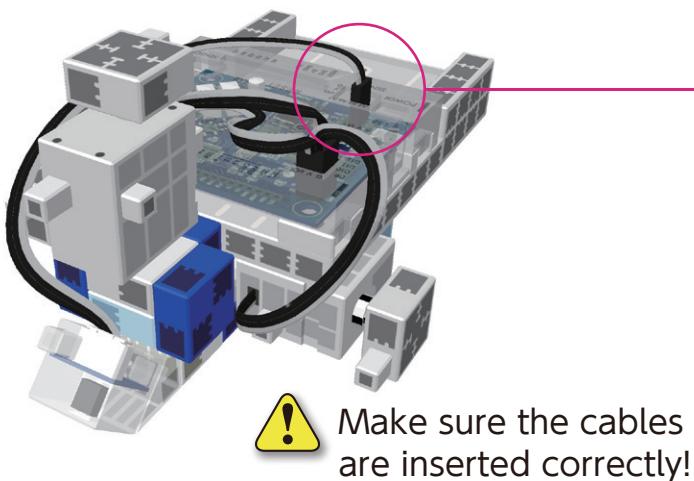
Attaching the Reflective Infrared Sensor



①

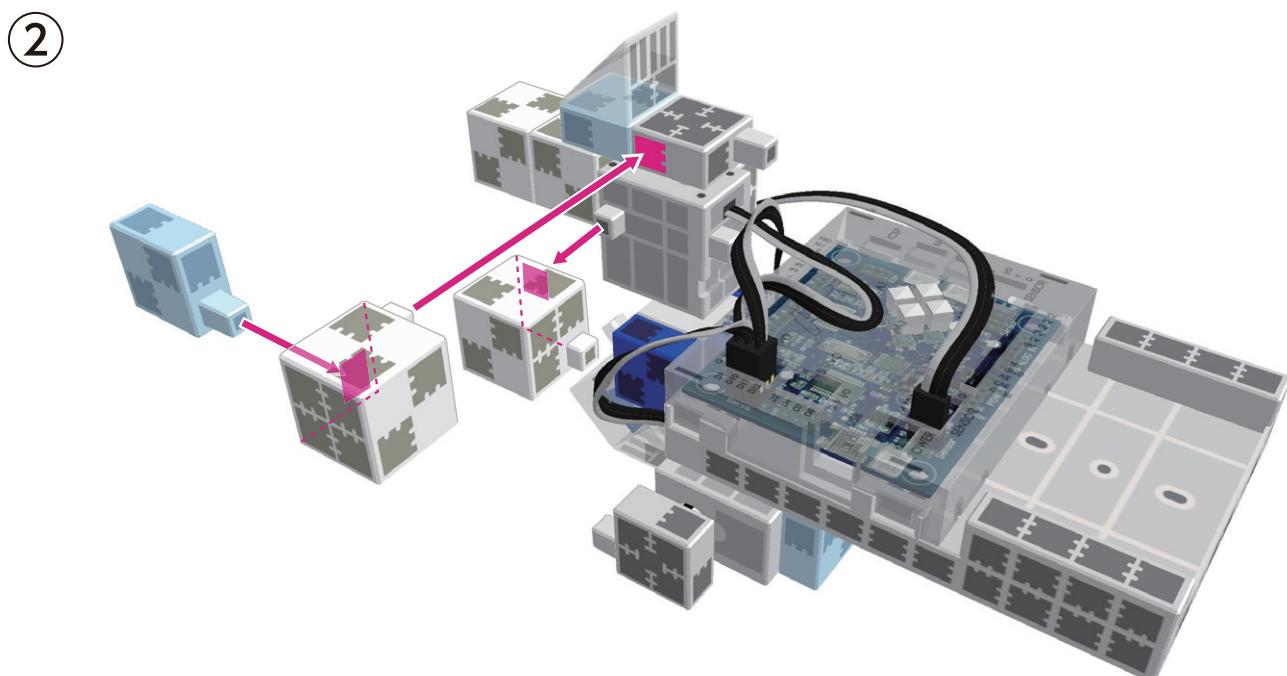
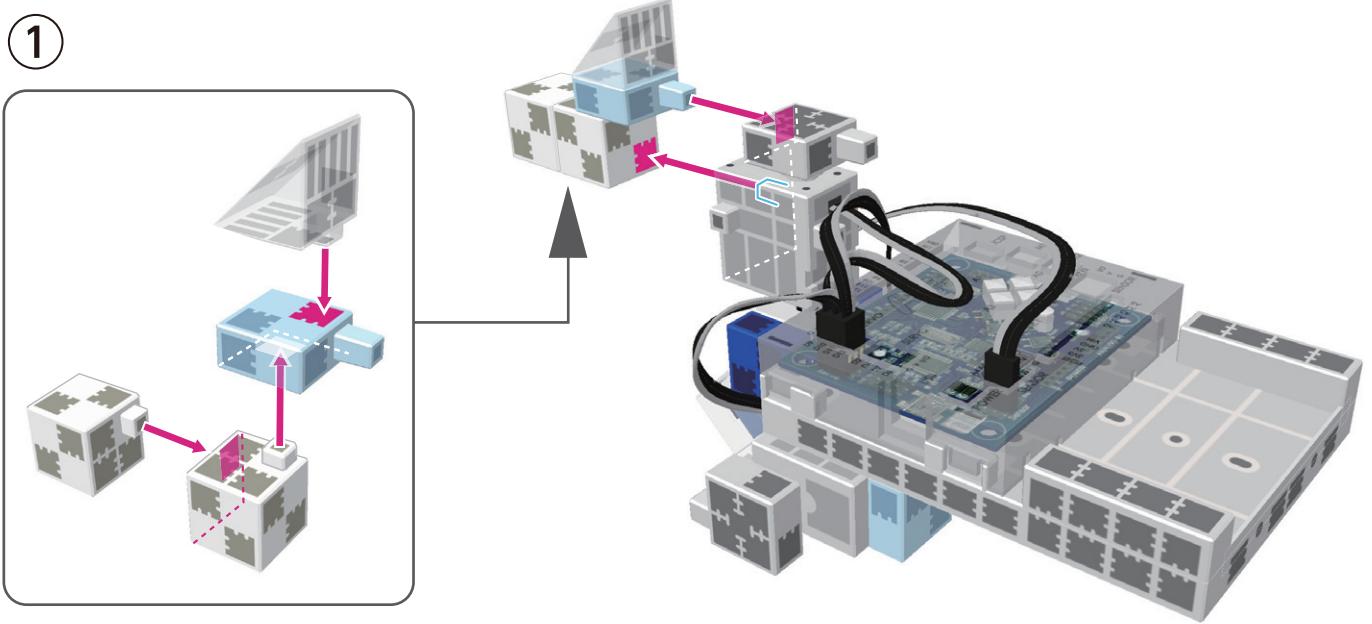
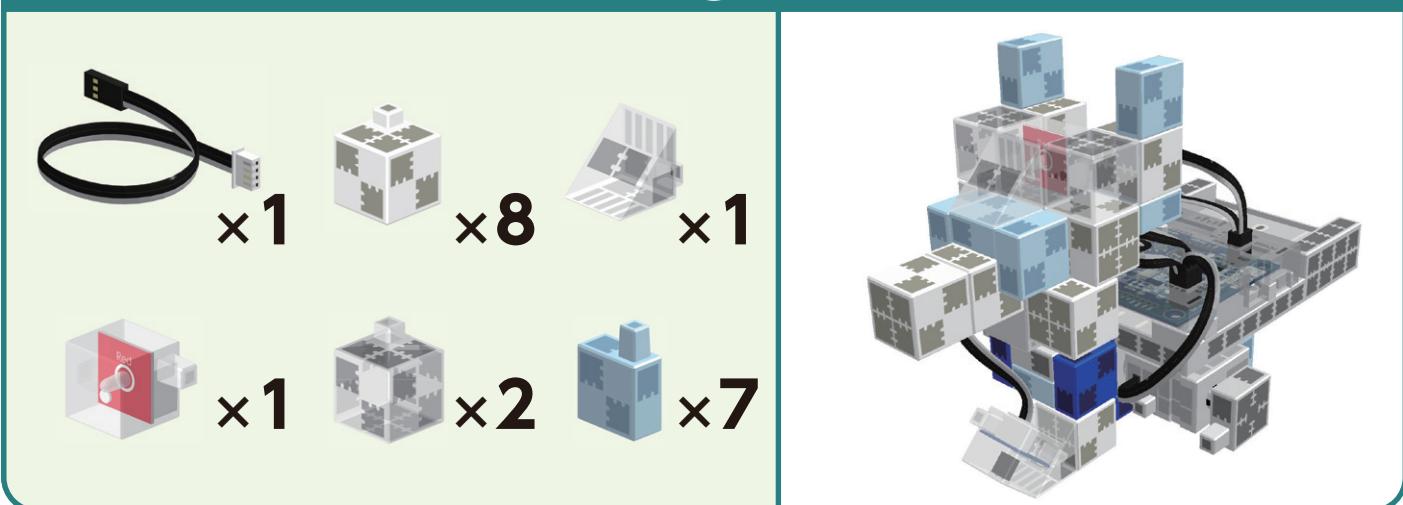


② Connect the cables from the reflective infrared sensor to **A5**.



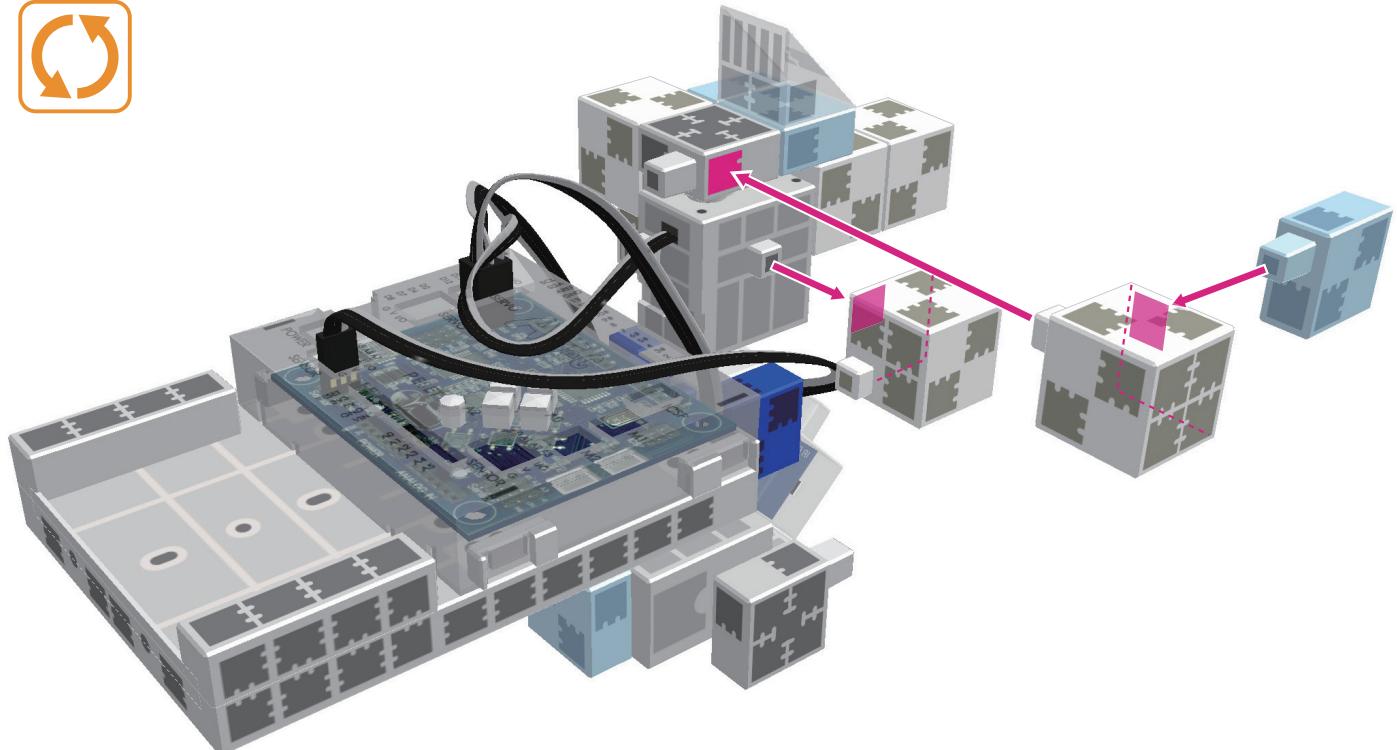
Doggy Robot

Assembling the Head

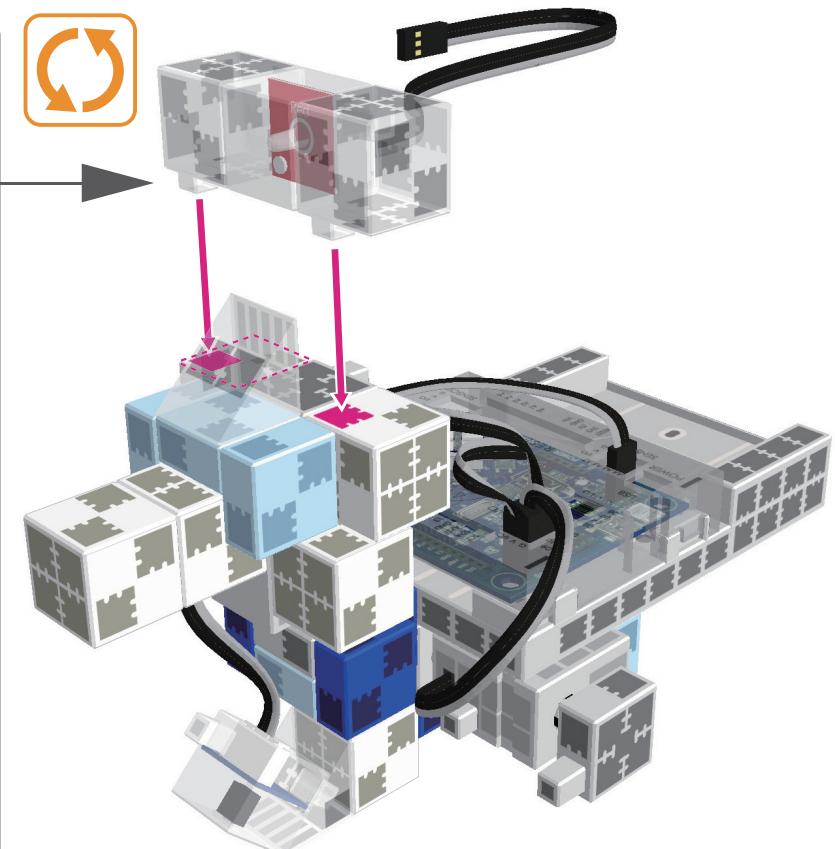
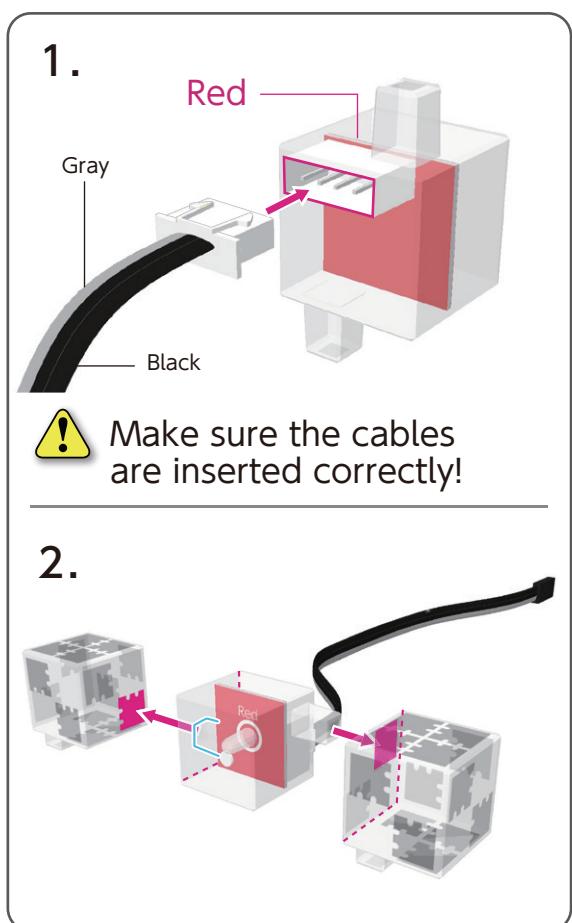


Doggy Robot

③

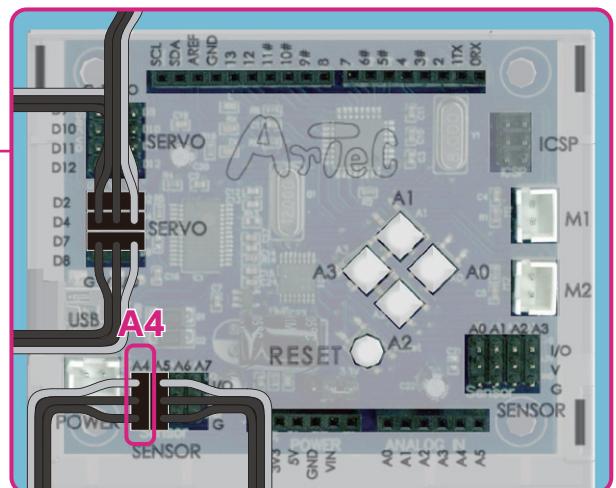
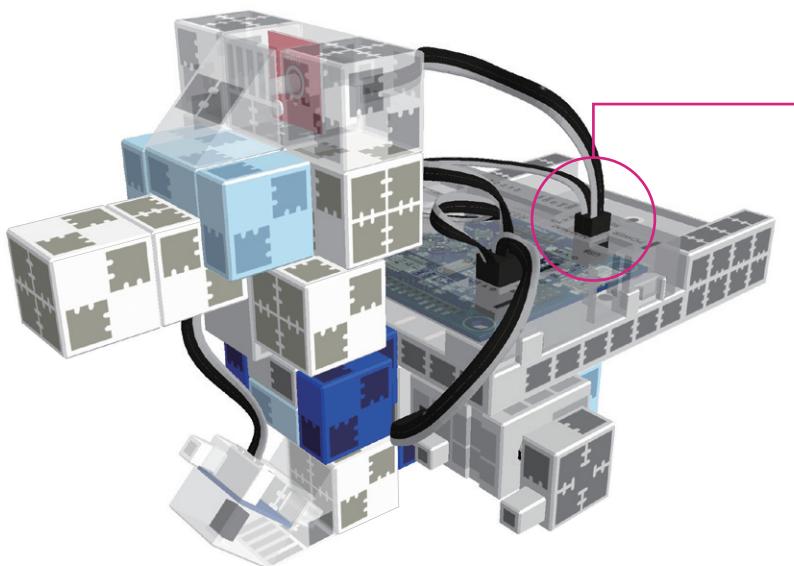


④



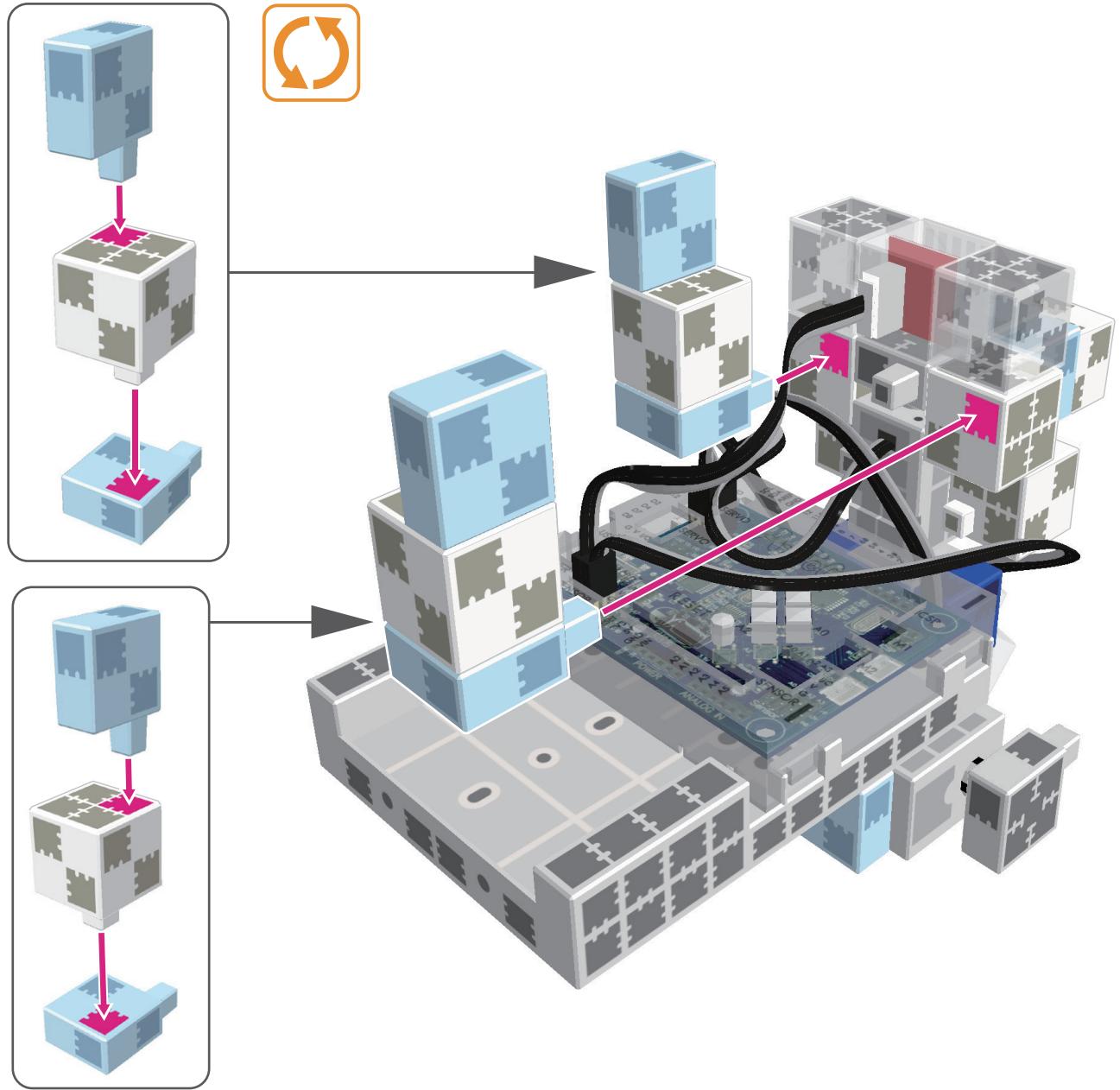
Doggy Robot

- ⑤ Connect the LED (red) cables to **A4**.



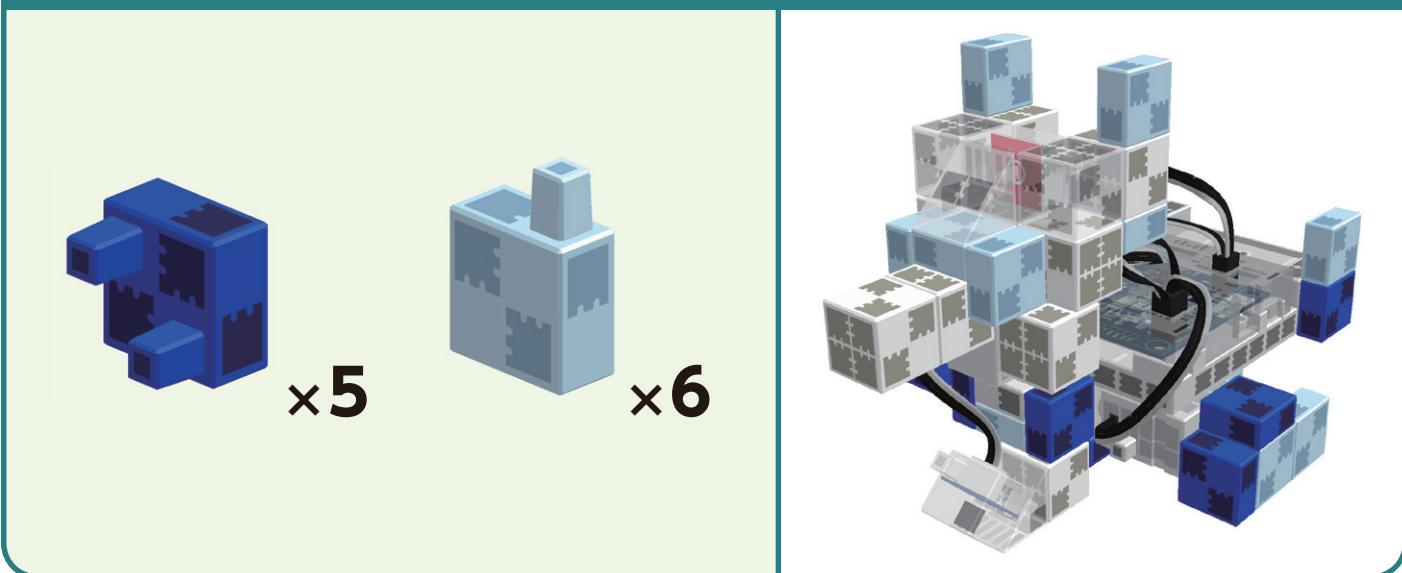
⚠ Make sure the cables are inserted correctly!

- ⑥

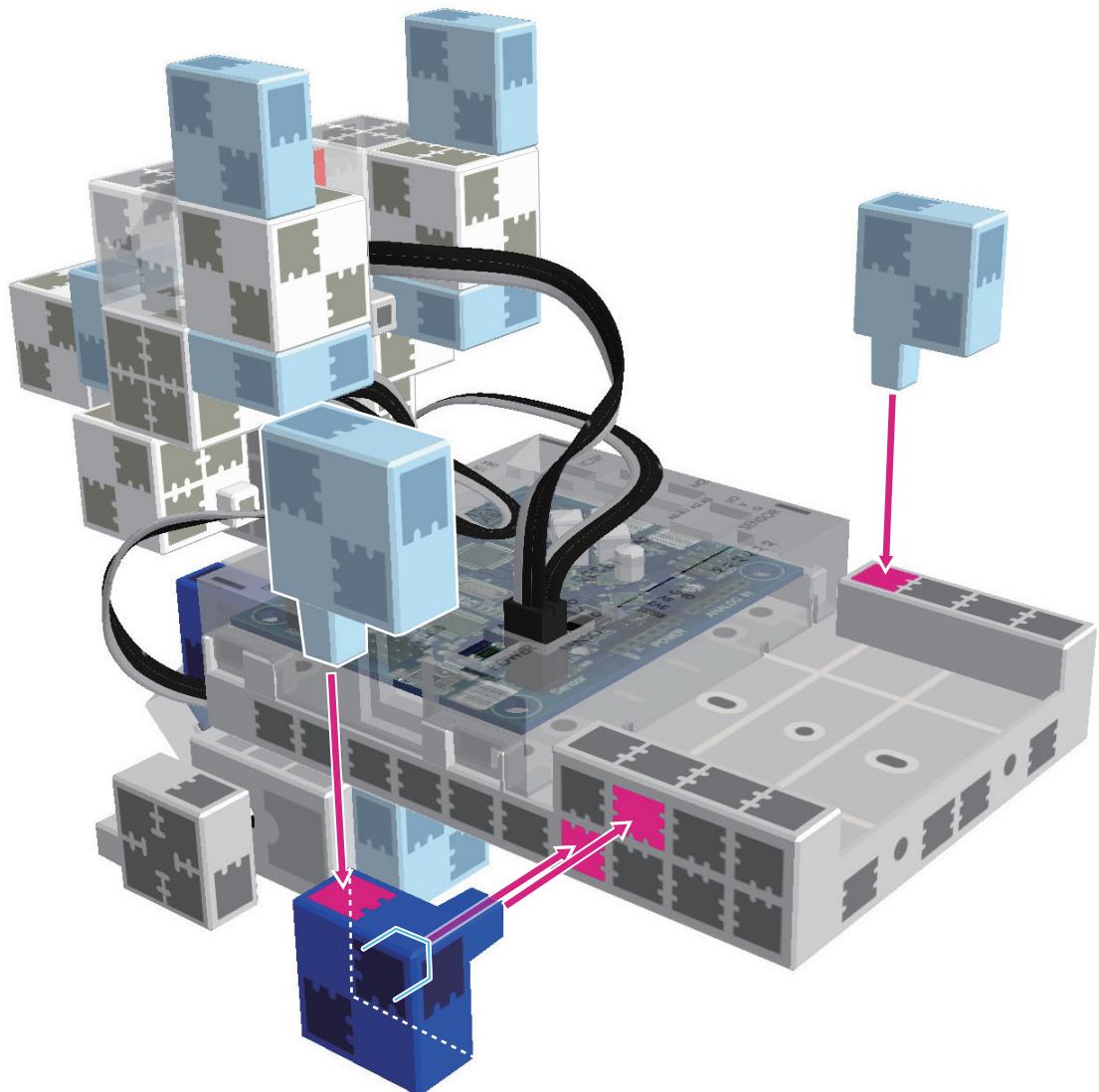


Doggy Robot

Assembling the Torso

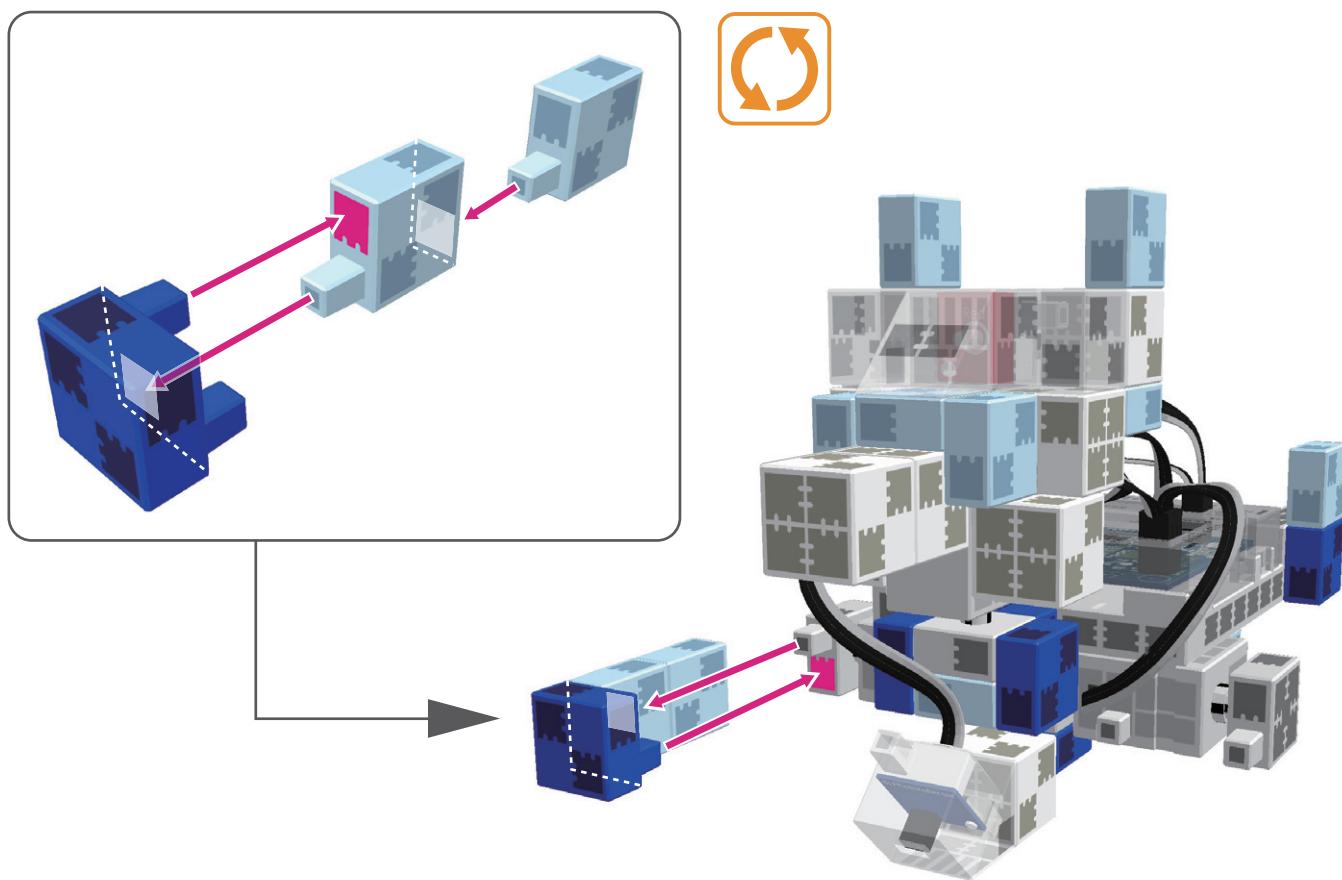


1

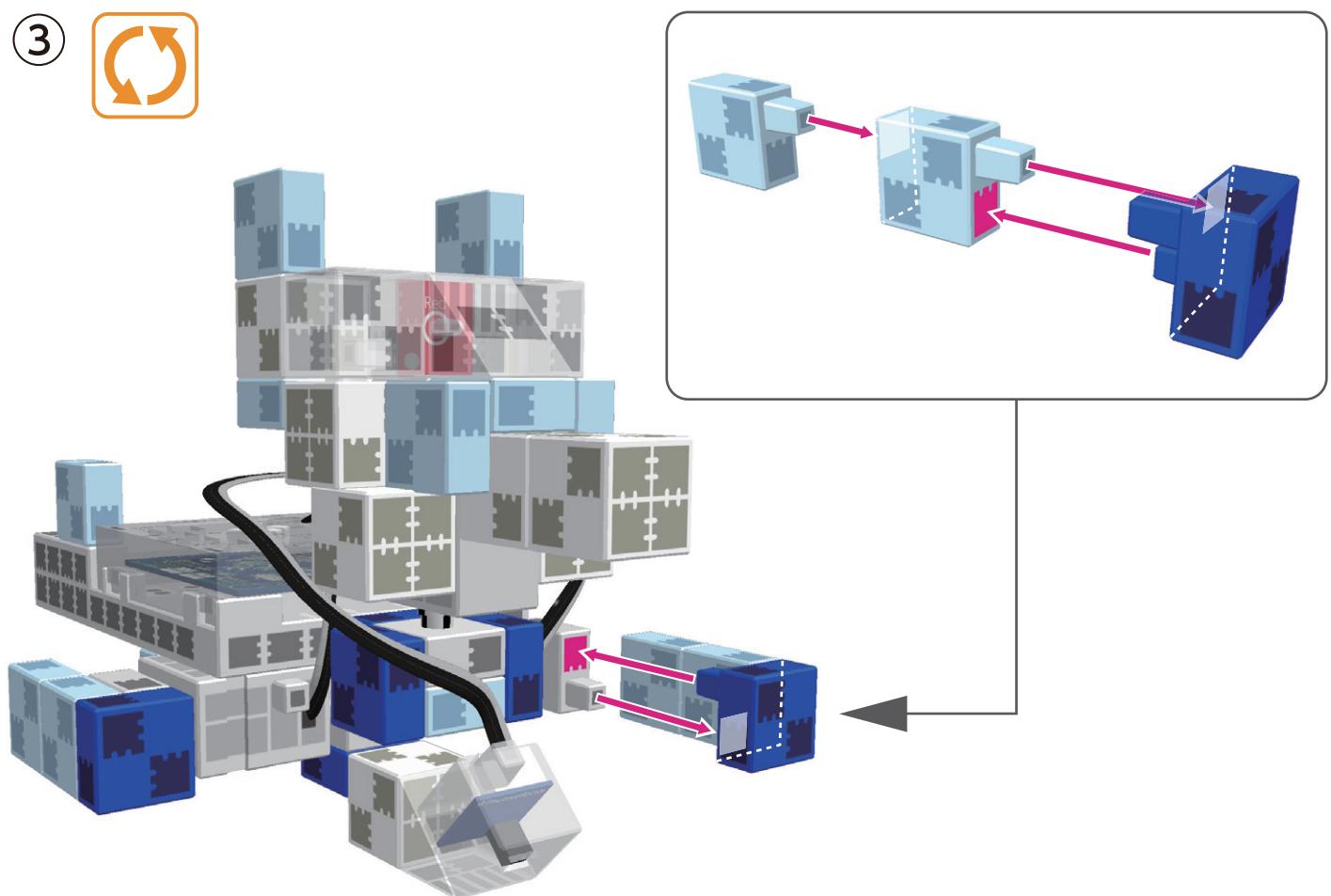


Doggy Robot

(2)

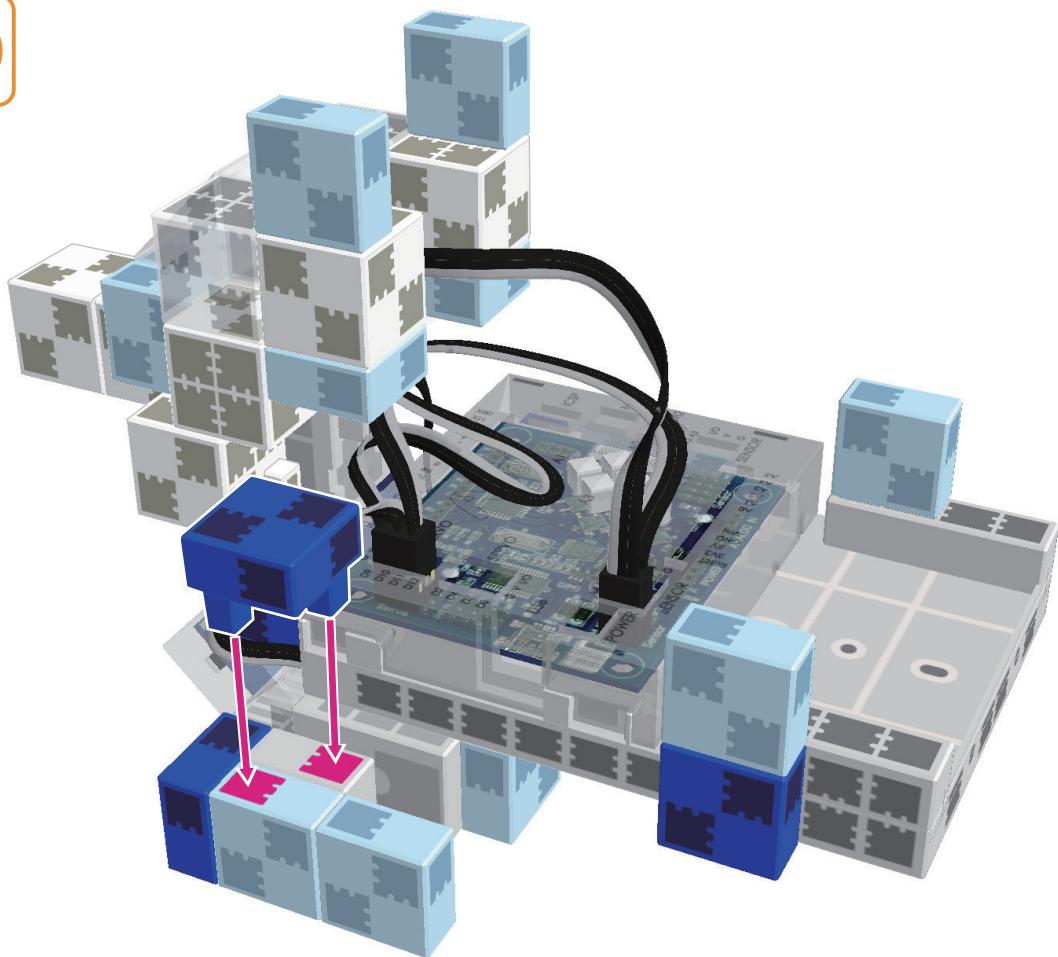


(3)

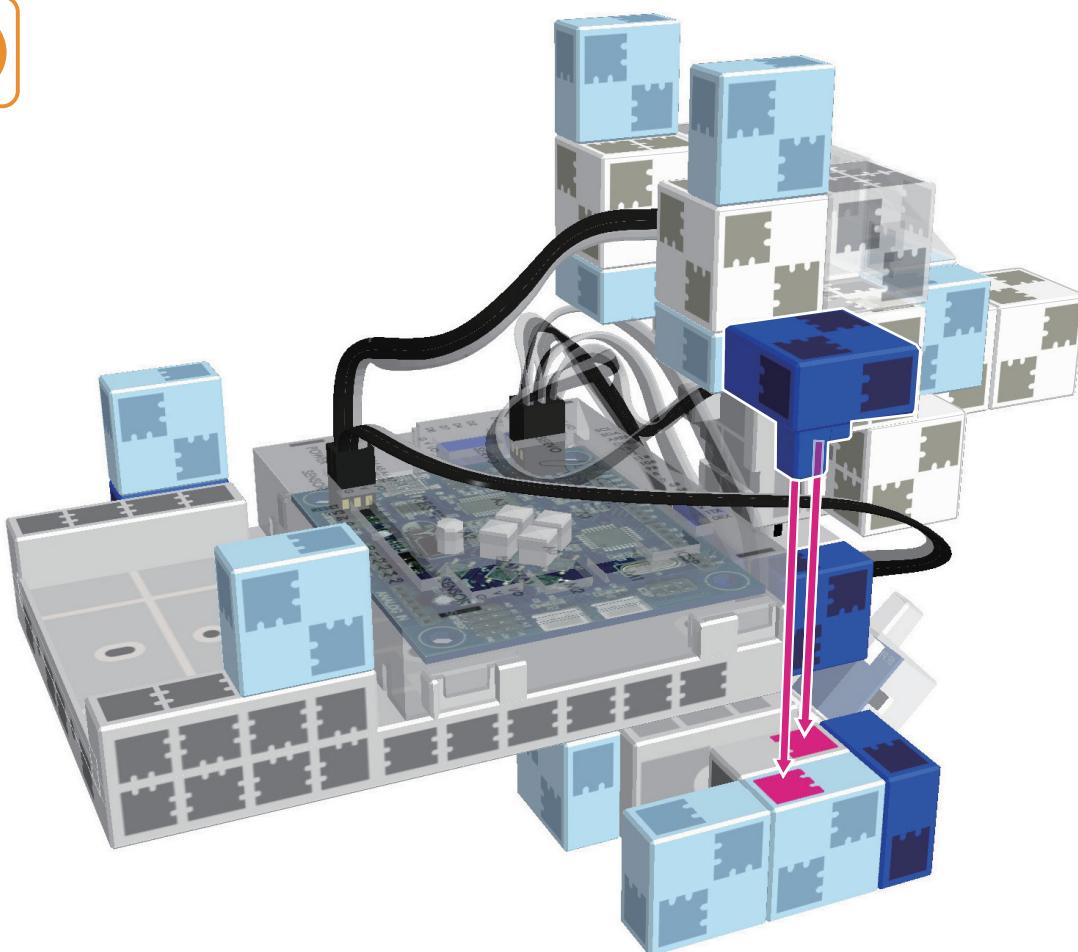


Doggy Robot

(4)



(5)

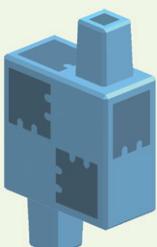


Doggy Robot

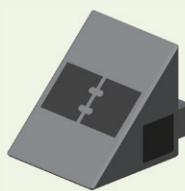
Assembling the Torso



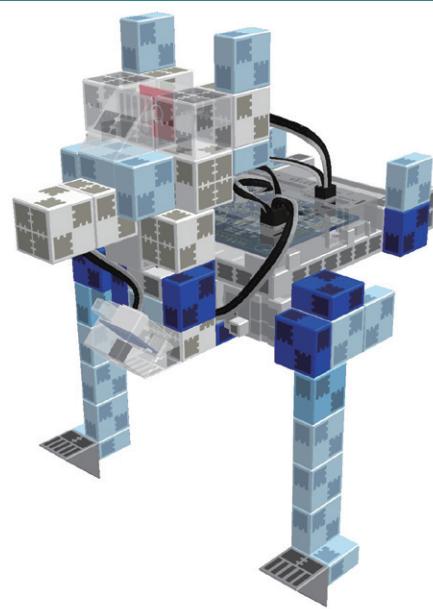
$\times 8$



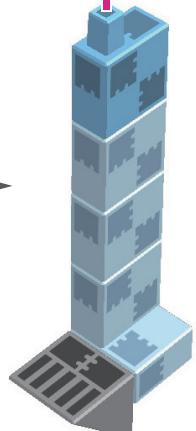
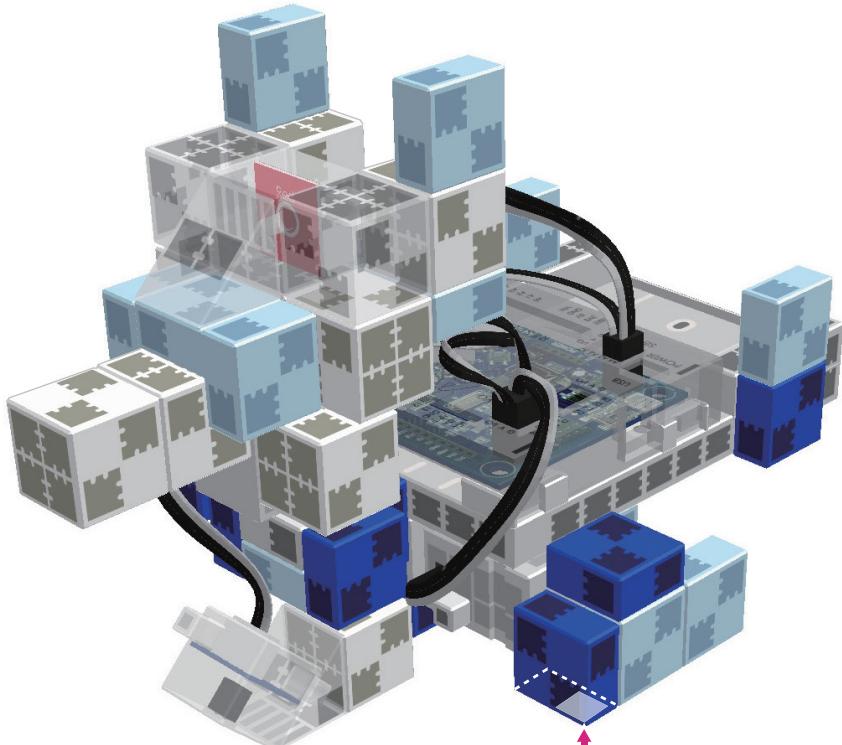
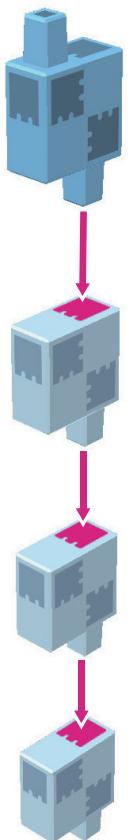
$\times 2$



$\times 2$

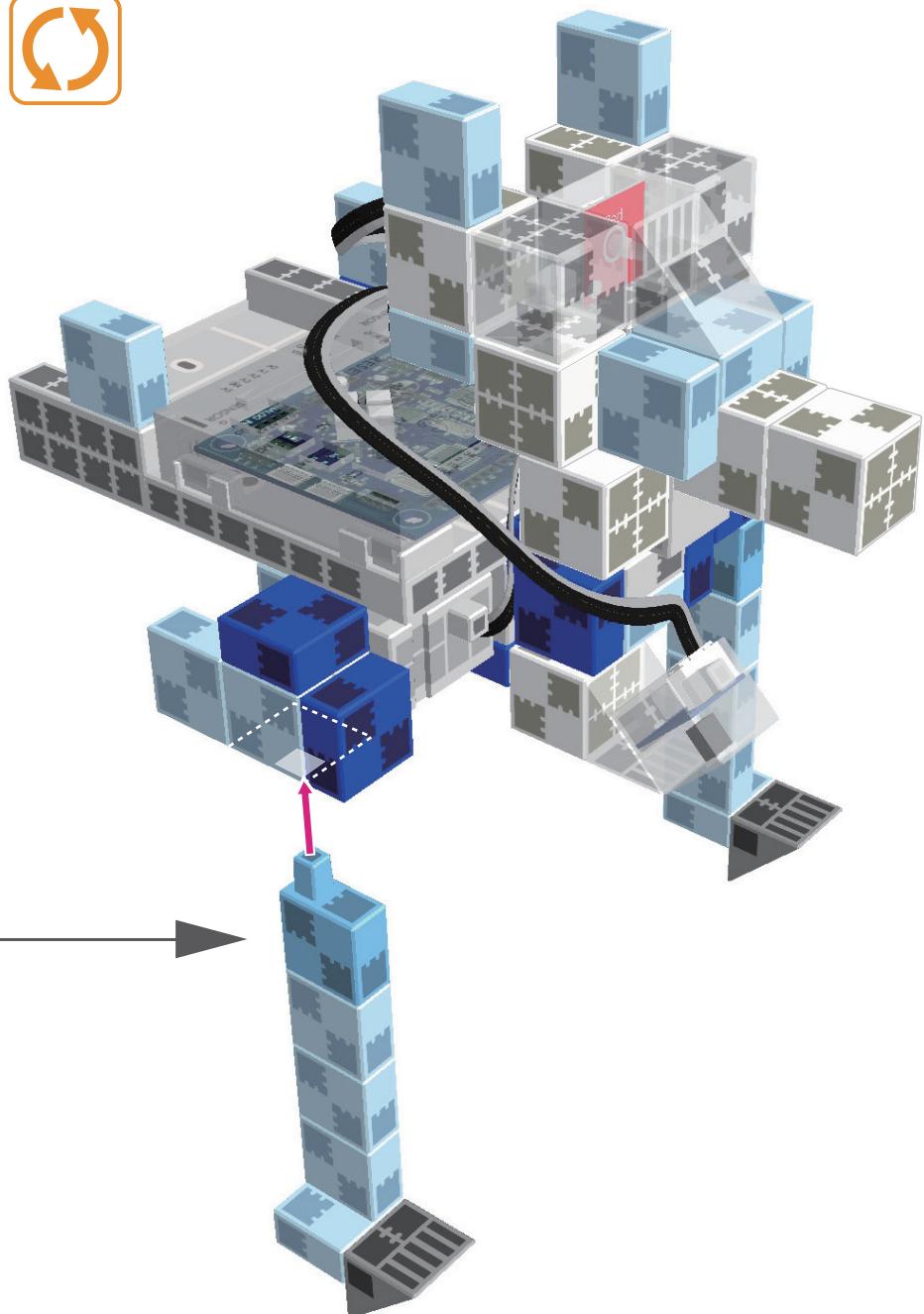
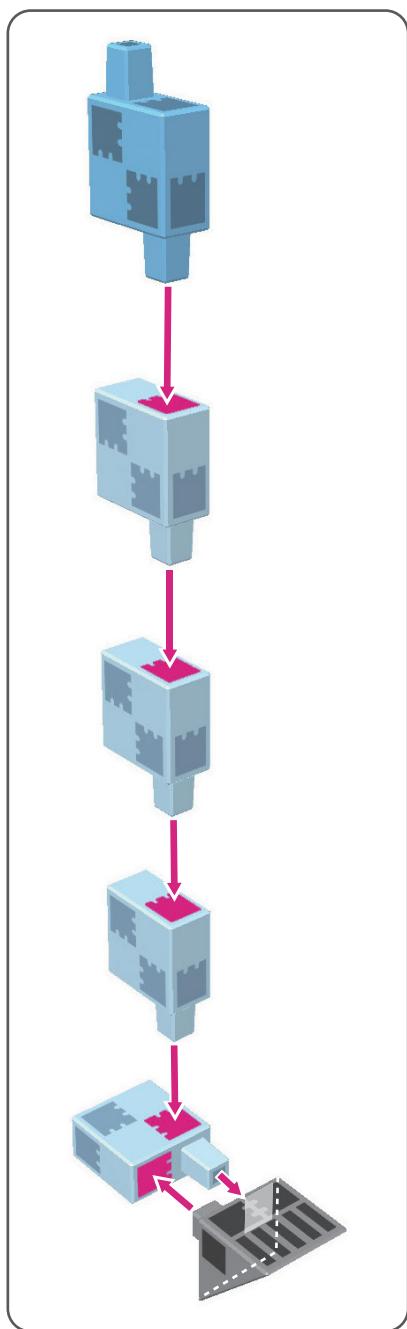


①



Doggy Robot

(2)

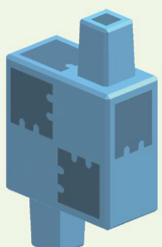


Doggy Robot

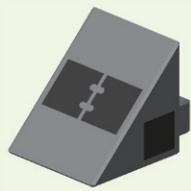
Assembling the Torso



$\times 12$



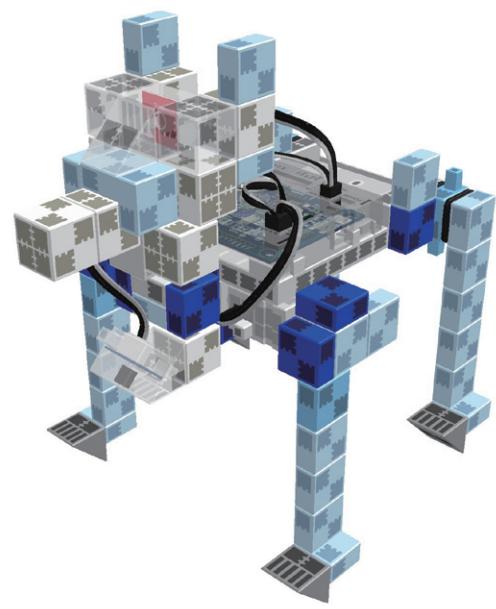
$\times 2$



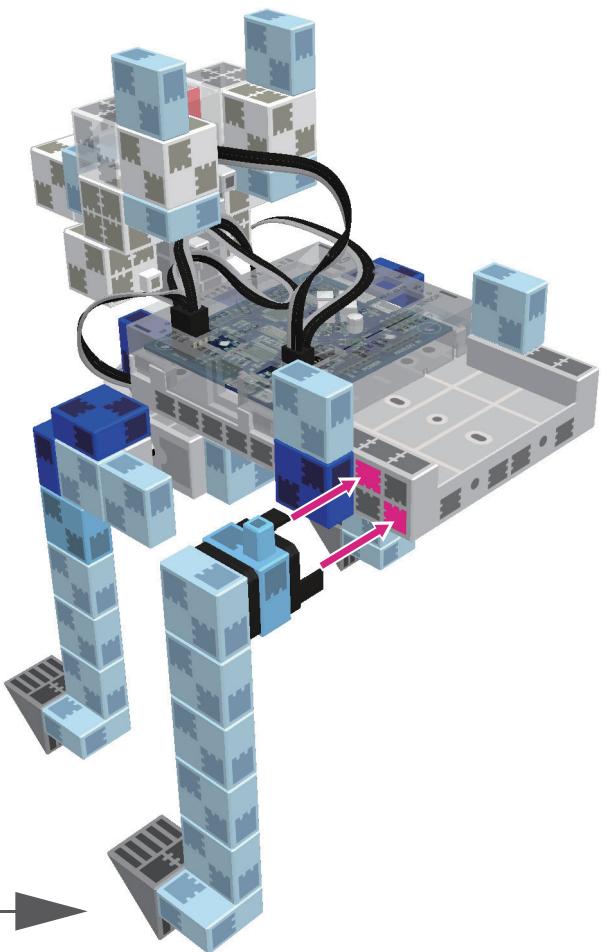
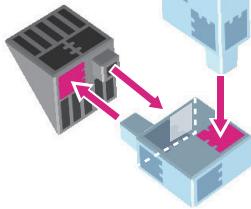
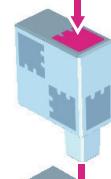
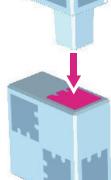
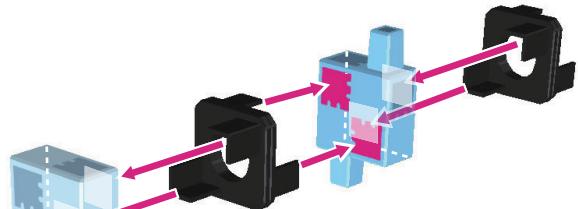
$\times 2$



$\times 4$

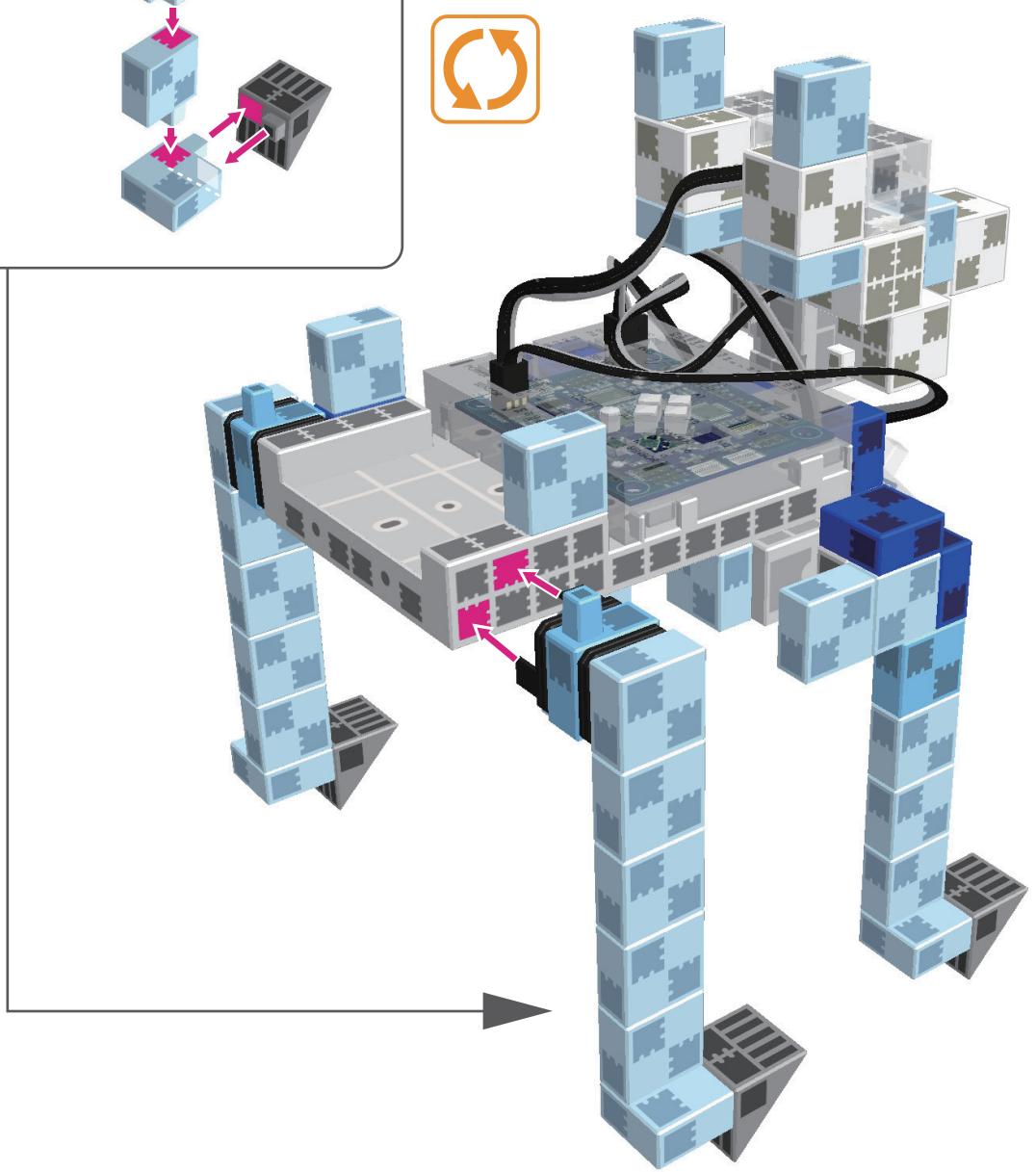
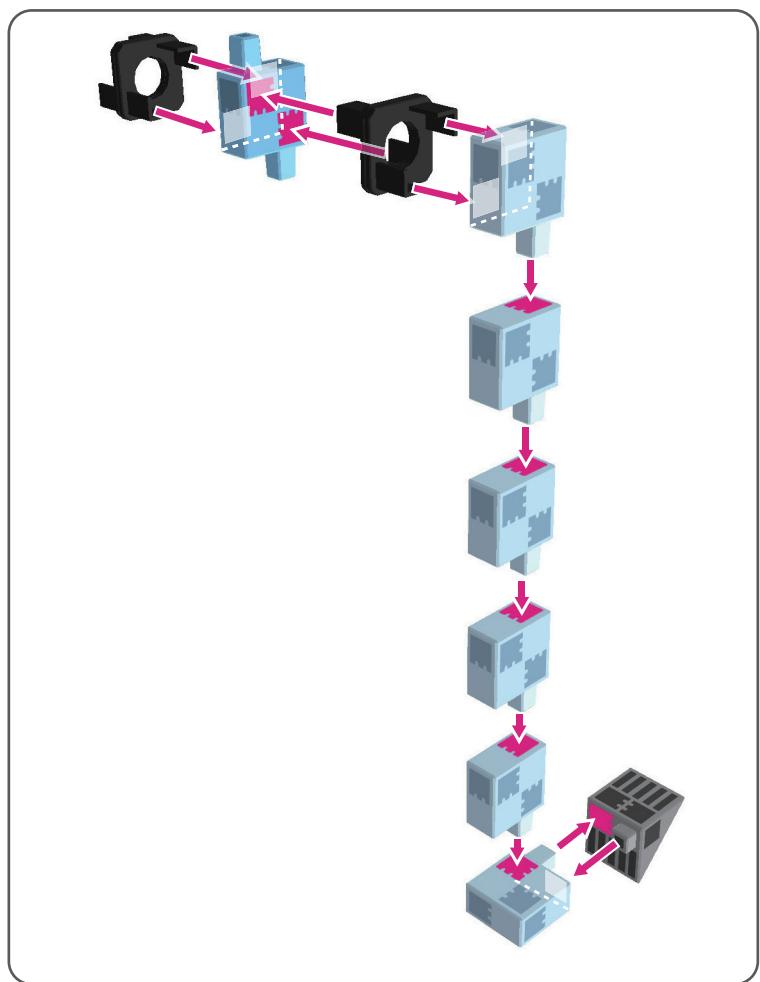


①



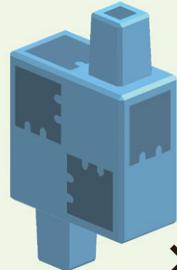
Doggy Robot

(2)

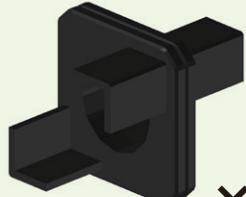


Doggy Robot

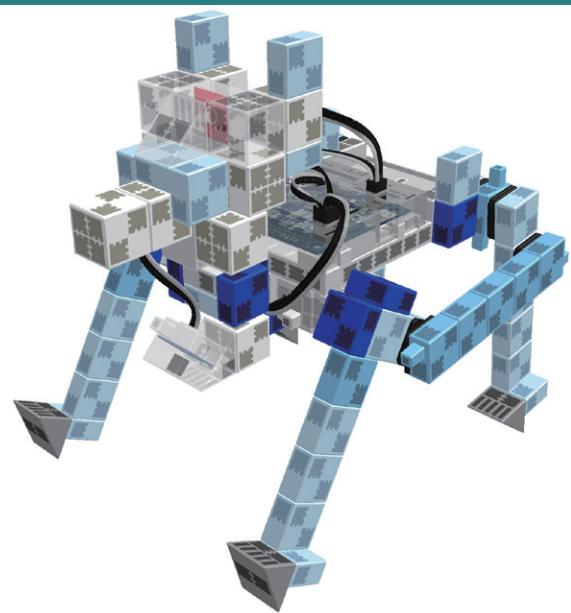
Assembling the Torso



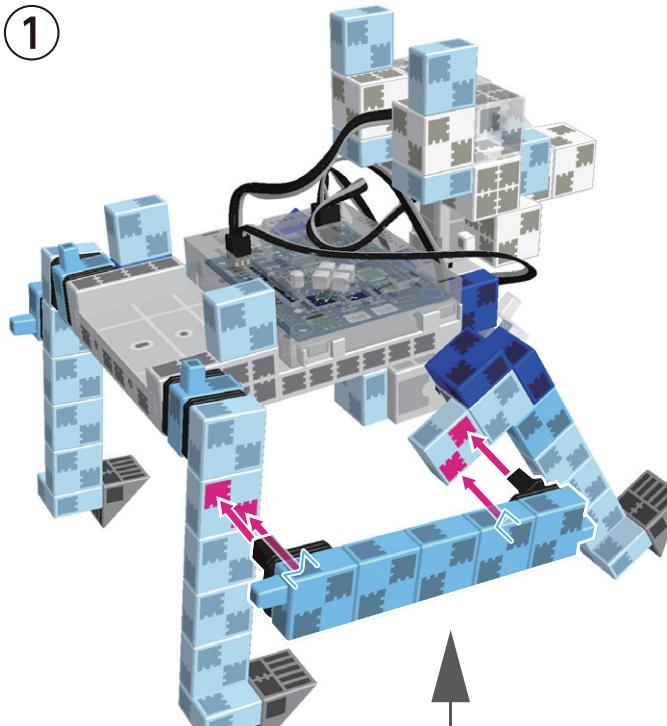
$\times 10$



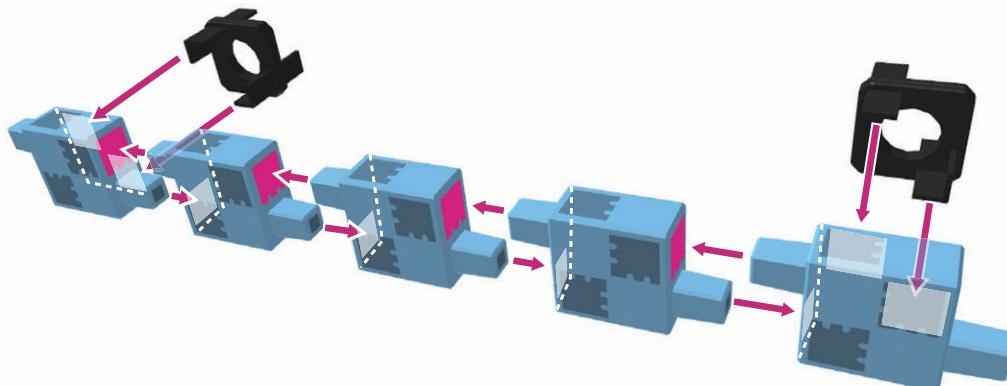
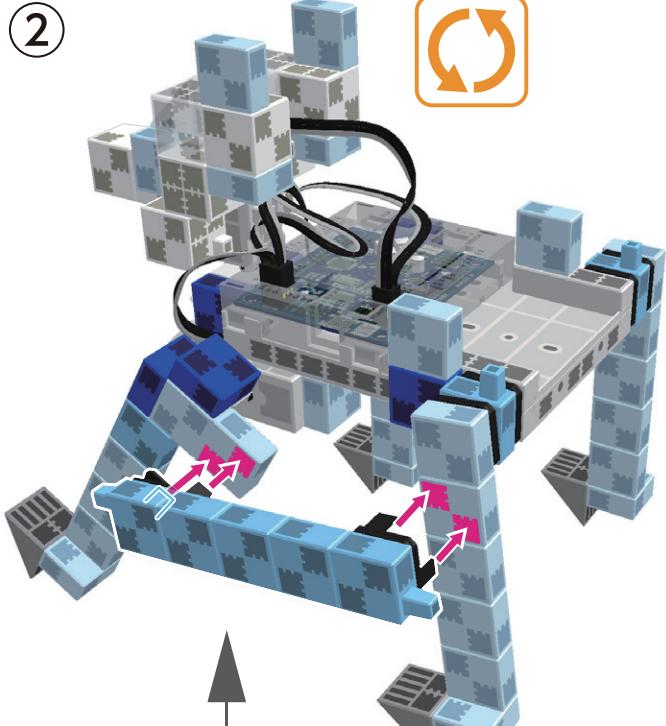
$\times 4$



①

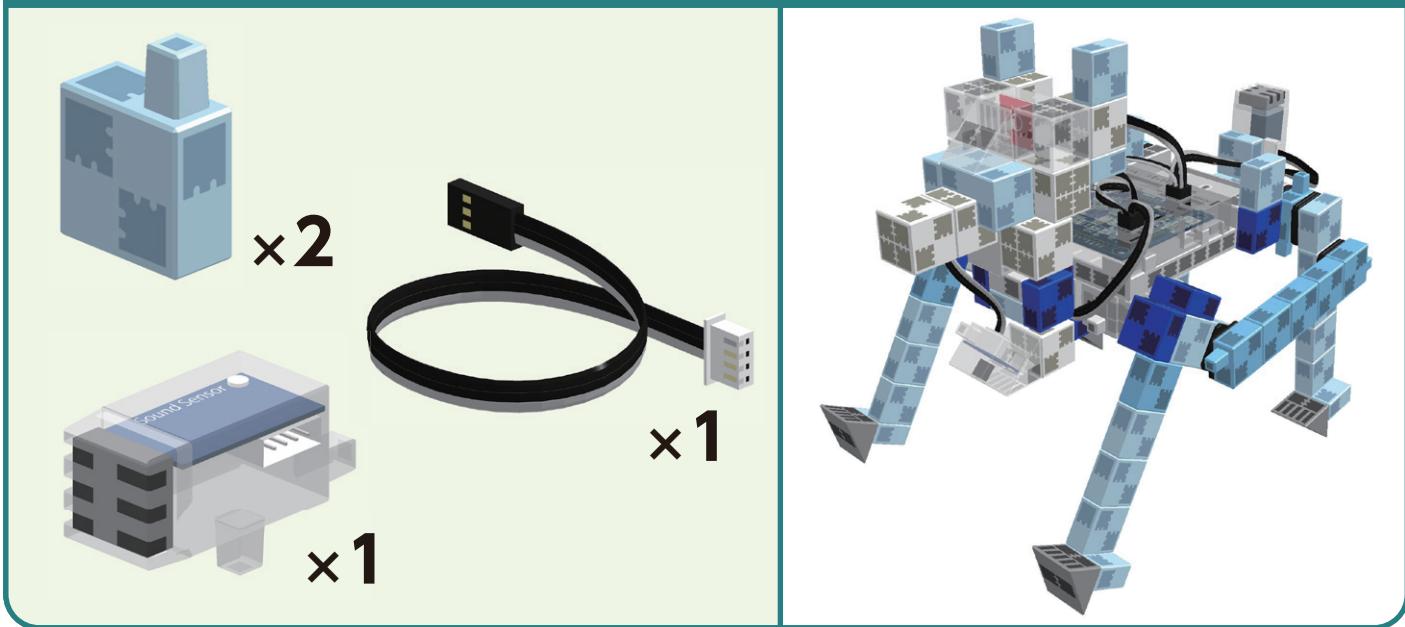


②

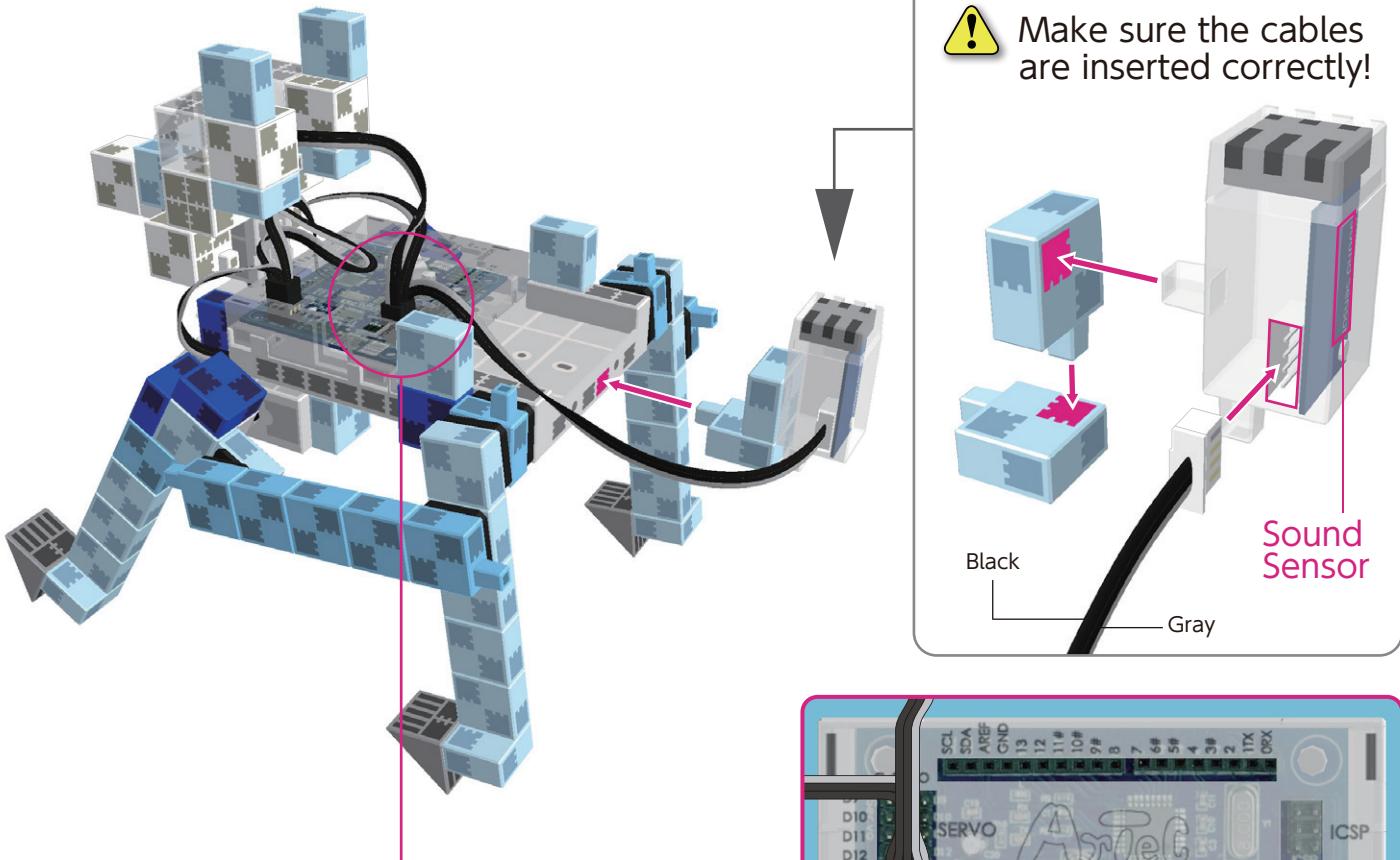


Doggy Robot

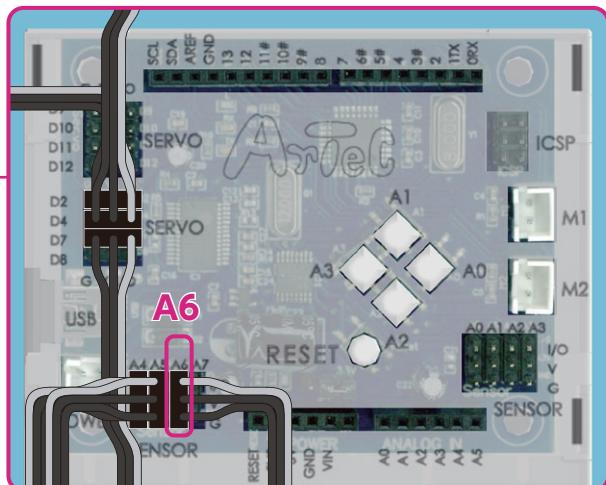
Assembling the Torso



Connect the sound sensor cables to **A6**.



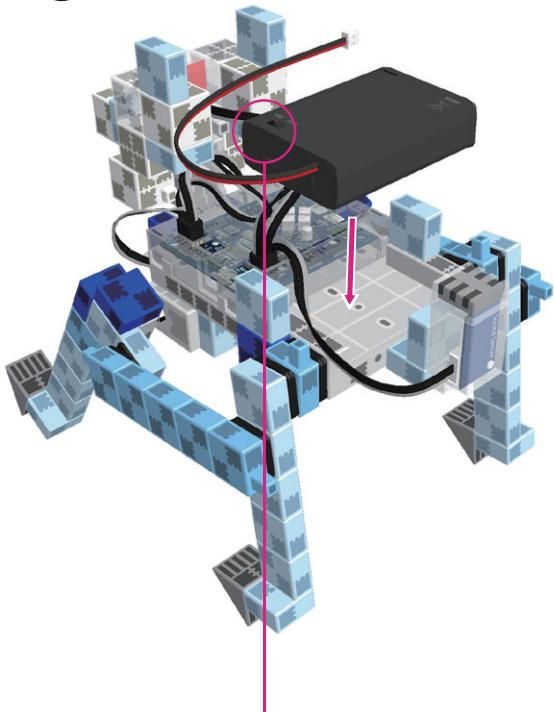
 Make sure the cables are inserted correctly!



Doggy Robot

Installing the Battery Box

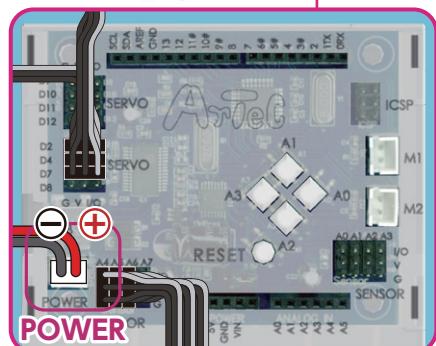
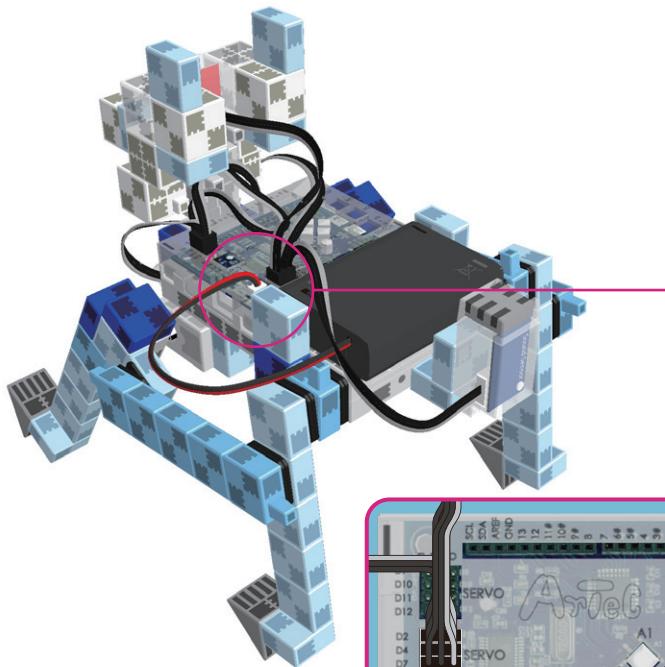
①



You should see the battery box switch here.

②

Connect the cable from the battery box to the **POWER** section.

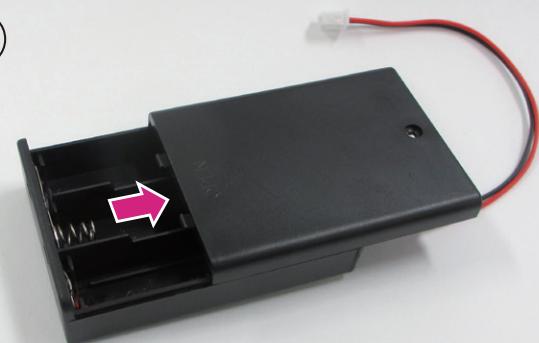


Replacing the Batteries

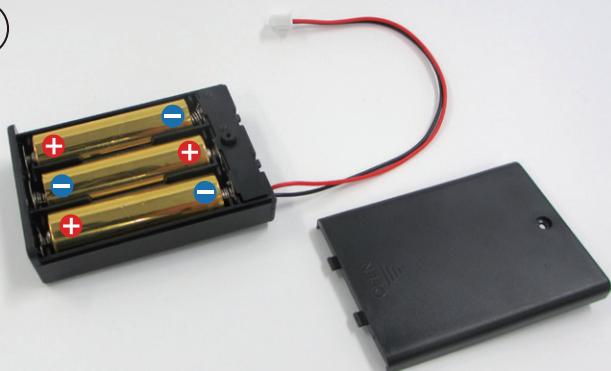
①



②



③



Use a screwdriver
(Phillips #1) to open.



Insert batteries in the
correct polarity.

Put the lid of the battery box
back in place.

Doggy Robot

Completed Doggy Robot

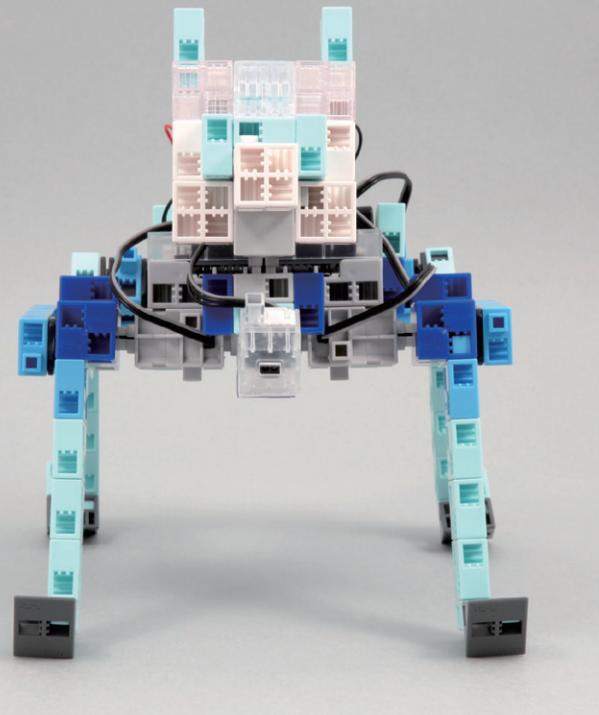


Be cautious of cables that could become entangled in the moving parts of the motor and cause the robot to disconnect. Take care when arranging cables.

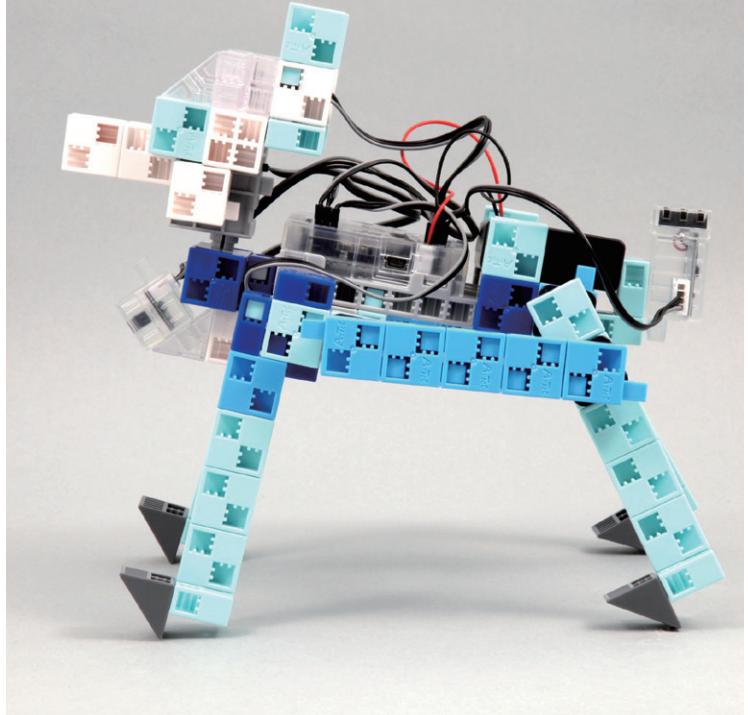


Before operating your robot, check the Assembly Instructions again to confirm your robot has been assembled correctly.

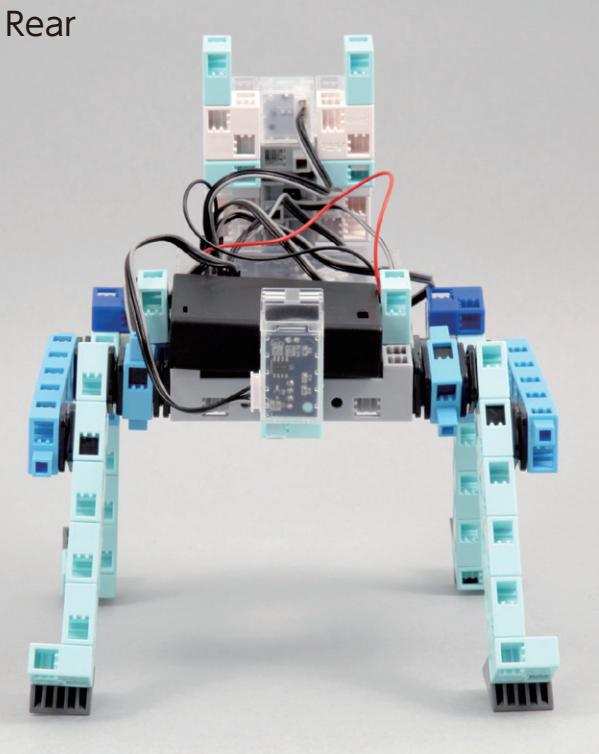
Front



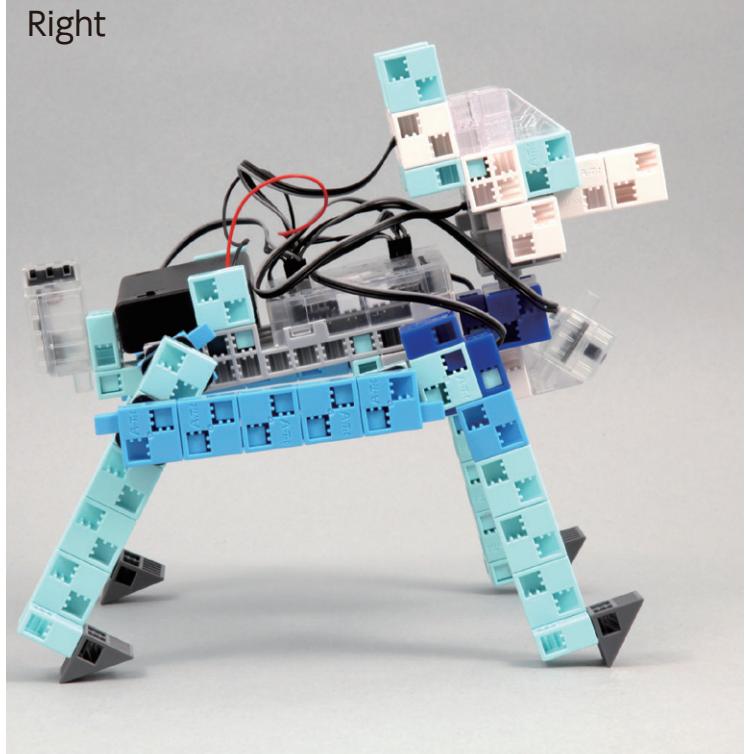
Lefta



Rear



Right



Doggy Robot

Operating Your Doggy Robot

Install the software from the URL below to setup
the **Studuino Programming Environment**.

★ Proceed to Step 1 when software installation is complete.

<http://www.artec-kk.co.jp/studuino/>

- ① Connect the USB cable to the PC and the Studuino unit.
Refer to **1.3. About Studuino** in **Studuino Programming Environment Manual** for more details.
- ② Download the program file **DoggyRobot.ipd** from the URL
below in the **ArtecRobo** section.

<http://www.artec-kk.co.jp/artecrobo/>

- ③ Open the downloaded file.

- ④ Transfer the program to
the Studuino unit by clicking
the Transfer button .



- ⑤ Remove the USB cable from the Studuino unit.

Doggy Robot

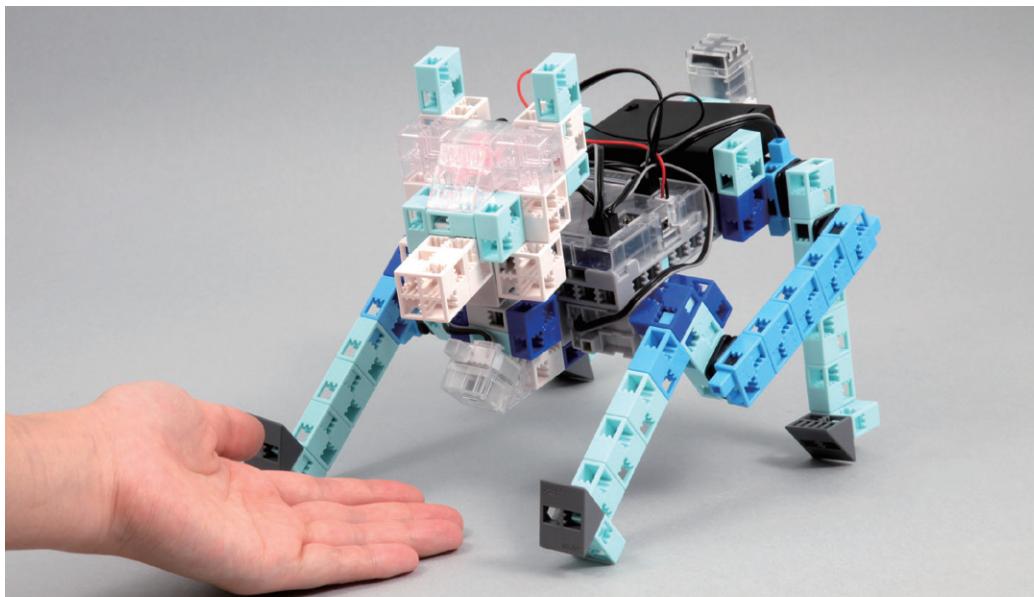
Operating Your Doggy Robot

- ⑥ Turn the switch of the battery box on and your robot will start walking.

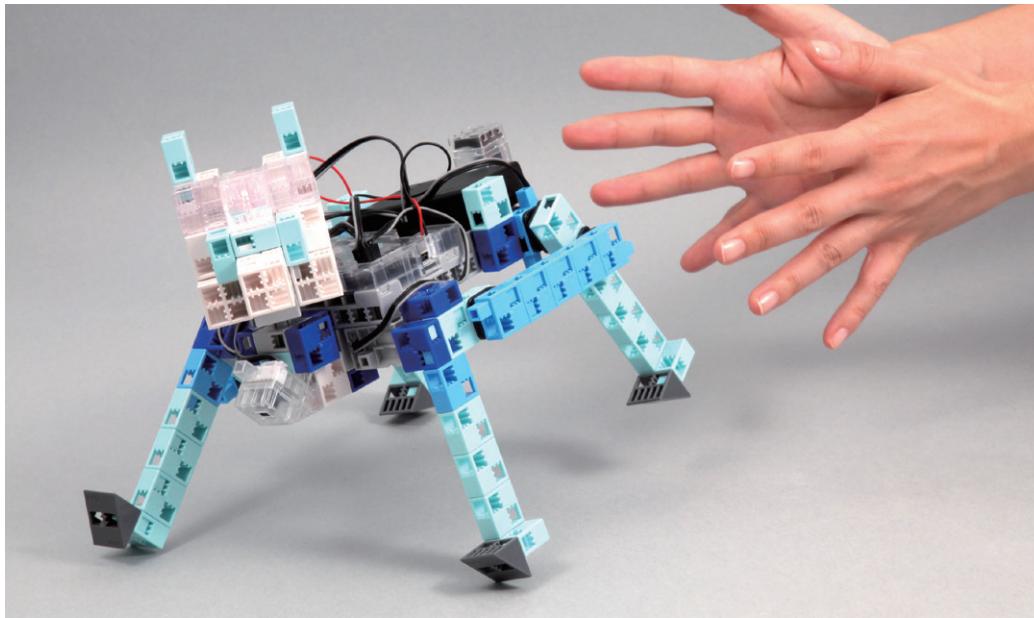
! Immediately turn the switch to off if your robot does not begin walking as shown in the picture below. Not doing so may damage the servomotor.

! If your robot does not move, the servomotor may be in the wrong position or the blocks may be improperly connected. Re-read the Assembly Instructions to make sure that your robot has been assembled correctly.

- ⑦ Put your hand in front of the reflective infrared sensor and your robot should move its head in the direction you move your hand.



- ⑧ When your robot recognizes sound, it should stop as shown in the picture below
★Your robot may not respond to low volume sounds.



Doggy Robot

Sensor Calibration

Some sensors may not function properly after you run the program for the first time. If the sensors are malfunctioning, calibrate the sensor settings.

Click the Submenu 1 tab to calibrate the sensors and you will see a box to adjust the range settings.

Drag the mouse left or right to adjust the range settings.



Refer to the **Sensor Condition Icon** sections in **4.4. The Attribute Field** of the **Studuino Programming Environment Manual** for more details.