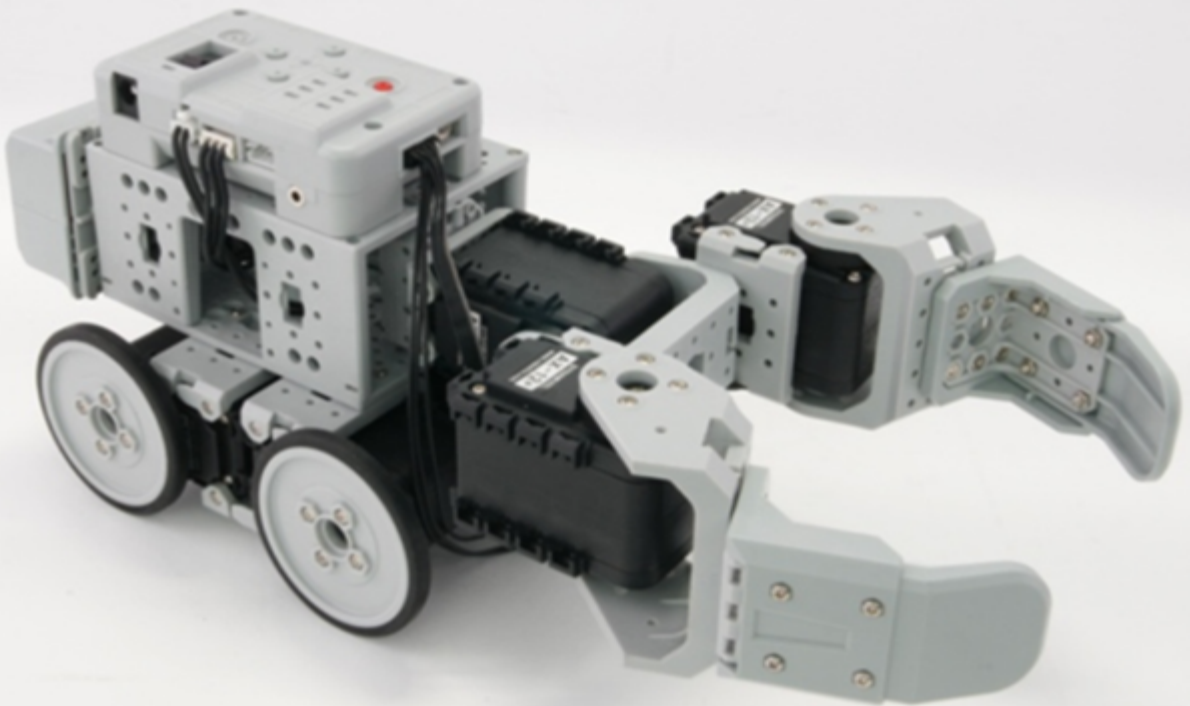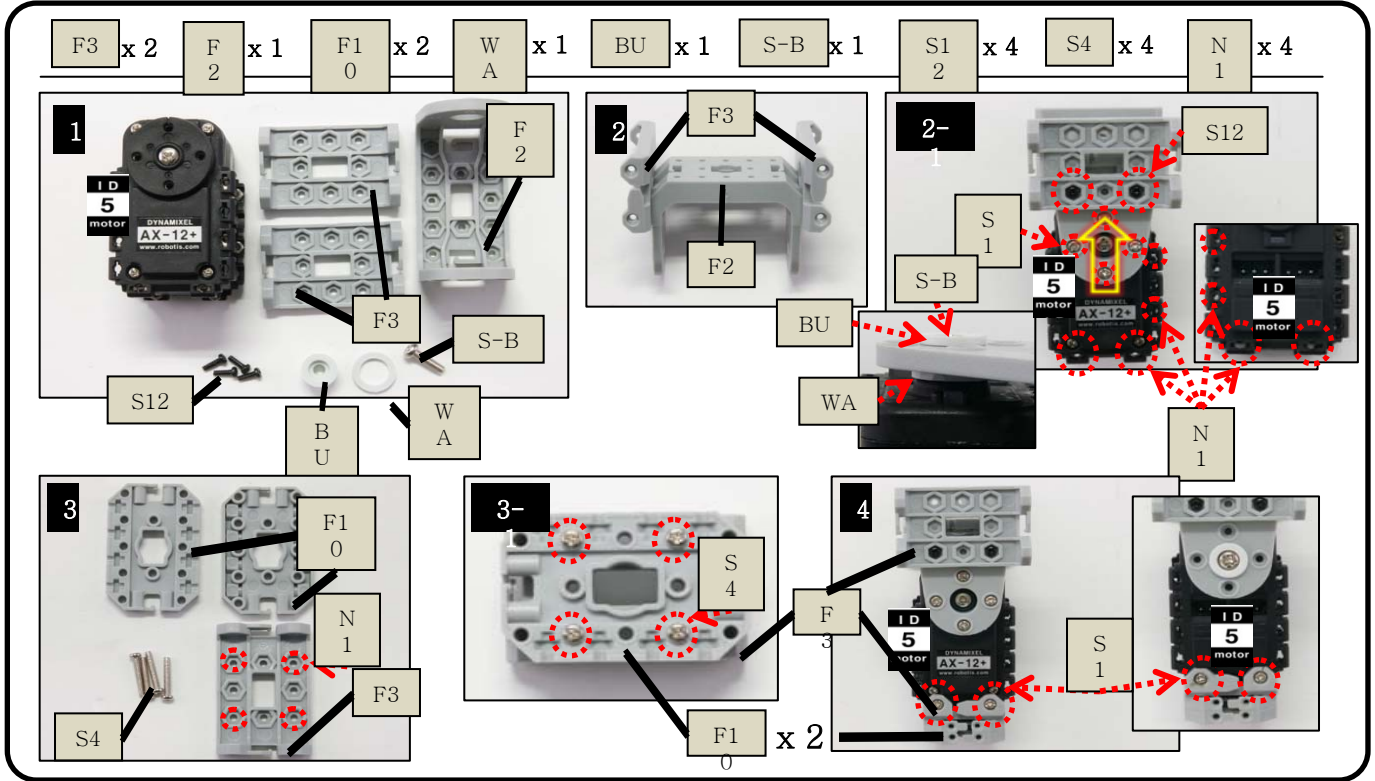**BIOLOID**

Bioloid

Premium Kit

Probing Robot

Assembly Manual

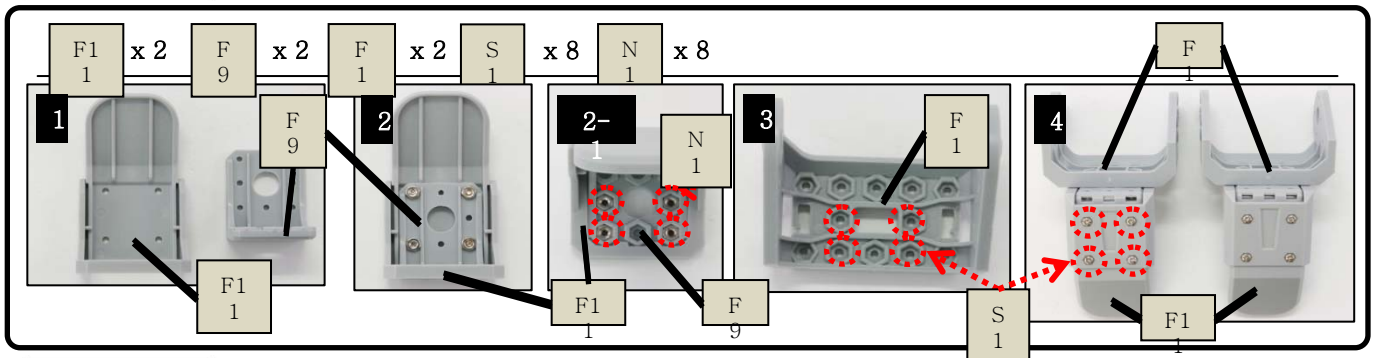# Bioloid Probind Robot – Getting Started

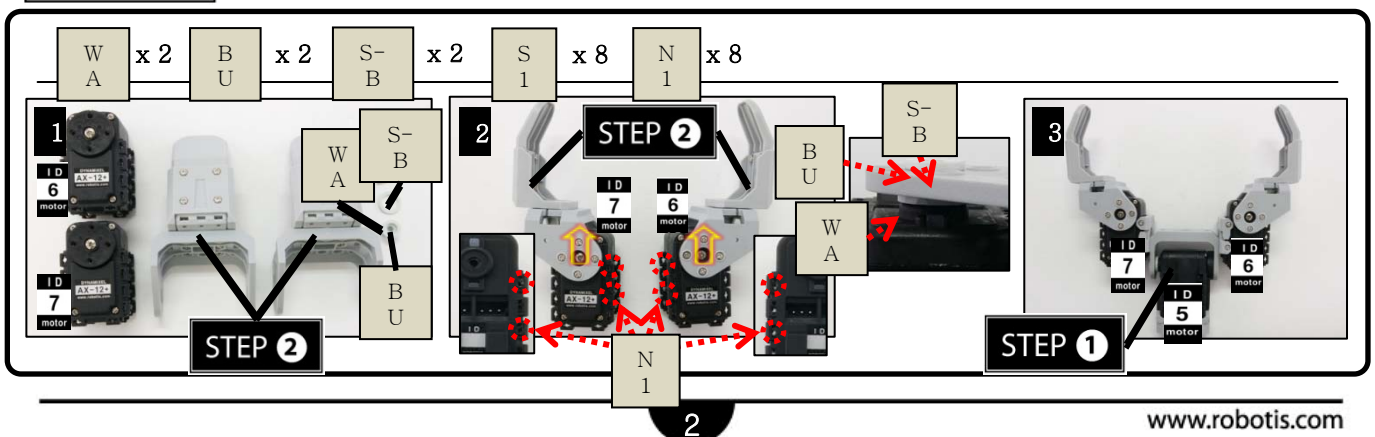**STEP ①** Attach ID5, F2, F3, and F10 together. (do not misalign horn position)

F3 x 2   F2 x 1   F10 x 2   WA x 1   BU x 1   S-B x 1   S12 x 4   S4 x 4   N1 x 4

1   ID 5 motor   F2   F3   S-B   S12   BU   WA

2   F3   F2

2-1   S12   S1   S-B   BU   WA   ID 5 motor   ID 5 motor   N1

3   F10   N1   F3   S4

3-1   S4

4   F3   ID 5 motor   S1   ID 5   F10 x 2

STEP ② Attach F1, F9, and F11 together.

F11 x 2   F9 x 2   F1 x 2   S1 x 8   N1 x 8

1   F9   F11

2   F11

2-1   N1   F11   F9

3   F1   S1

4   F1   F1

STEP ③ Attach STEP①, STEP②, ID6, and ID7 together. (do not misalign horn position)

WA x 2   BU x 2   S-B x 2   S1 x 8   N1 x 8

1   ID 6 motor   ID 7 motor   WA   S-B   BU   STEP ②

2   STEP ②   ID 7 motor   ID 6 motor   BU   S-B   WA   N1

3   ID 7 motor   ID 6 motor   ID 5 motor   STEP ①

STEP ④   Attach STEP③, F3, F54, IR SENSOR, and DMS together.

| F3 | x 1 | F54 | x 1 | DMS | x 1 | IR SENSOR | x 1 | RIVET | x 4 | 5P CABLE-15 | x 1 |

| S1 | x 8 | N1 | x 4 | CABLE-DMS | x 1 |

1
DMS
F3
F54
RIVET
IR SENSOR

2
5P CABLE-15
IR SENSOR
RIVET
F54

2-1
IR SENSOR
5P CABLE-15

3
DMS
RIVET
F54
N1

4
F54
S1

5
ID 6 motor
DMS
ID 5 motor
AX-12+
F3
S1

STEP ③
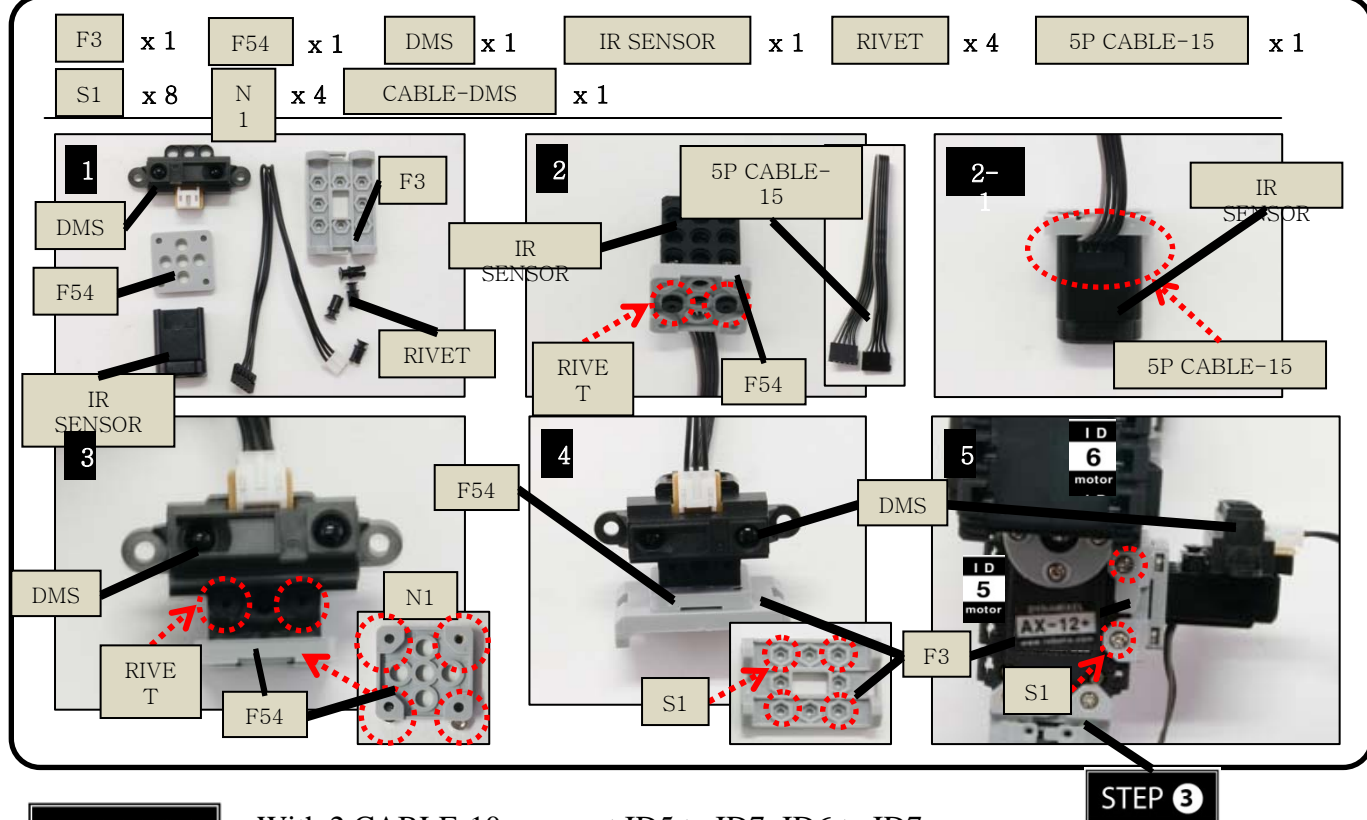
STEP ⑤   With 2 CABLE-10, connect ID5 to ID7; ID6 to ID7.
Connect ID5 with CABLE-10

| CABLE-10 | x 3 |

1
CABLE-10
ID 6 motor
ID 5 motor
ID 7 motor
CABLE-10

2
ID 7 motor
CABLE-10
ID 5 motor
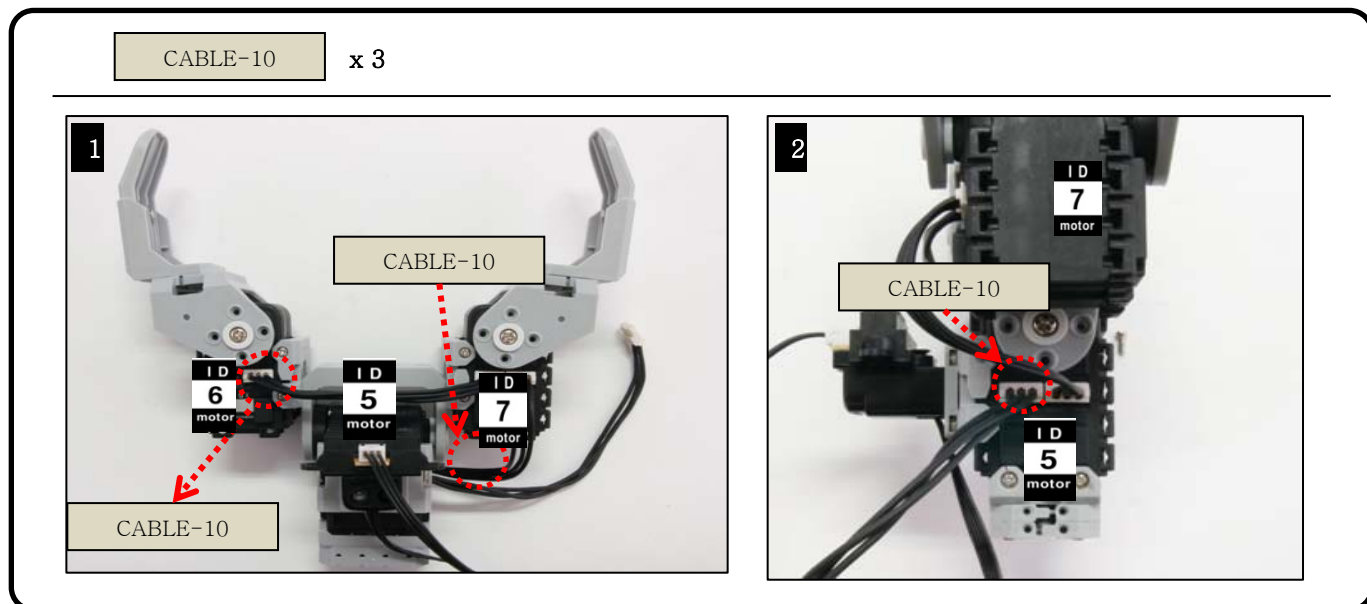
STEP 6

Attach ID1 through ID4, F3, and F55 together.

F3 x 6   F55 x 8   S1 x 24   N1 x 36

1   F3

2   ID 1 motor   ID 4 motor   N1   ID 2 motor   ID 3 motor

ID 2 motor   ID 3 motor   ID 1 motor   ID 4 motor

F55

N1

3   F3

DYNAMIXEL AX-12+   DYNAMIXEL AX-12+

ID 2 motor   ID 3 motor   ID 1 motor   ID 4 motor

S1

ID 2 motor   ID 3 motor   ID 1 motor   ID 4 motor

F3

4   ID 4 motor   ID 2 motor

F3

ID 3 motor   F3   ID 1 motor
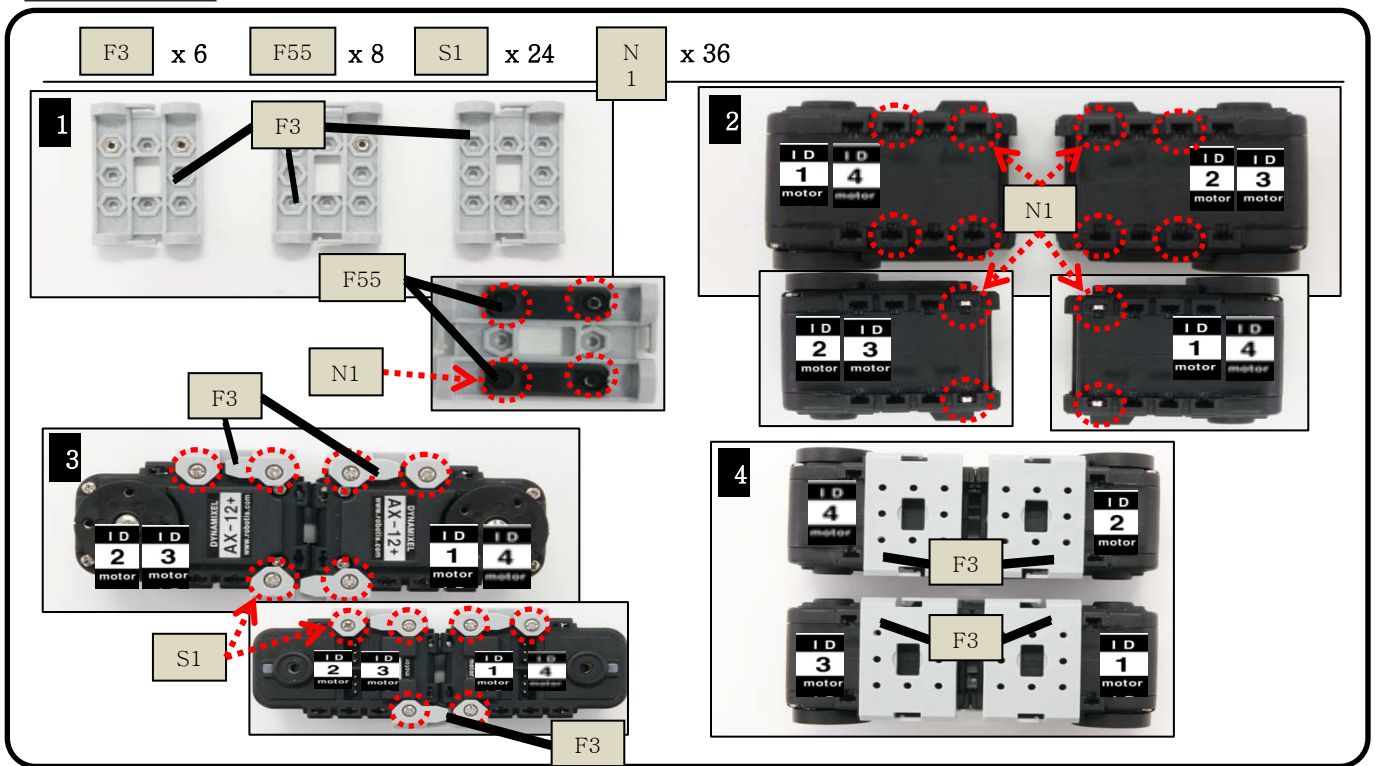
STEP 7

Attach STEP⑥, F13, F14, and F51 together.

F13 x 4   F14 x 4   F51 x 1   S1 x 8   S2 x 16

1   F14   F13

2   ID 2 motor   ID 4 motor

S2   STEP 6

ID 3 motor   ID 1 motor

3   ID 4 motor   ID 2 motor

F51   S1

ID 3 motor   ID 1 motor   STEP 6
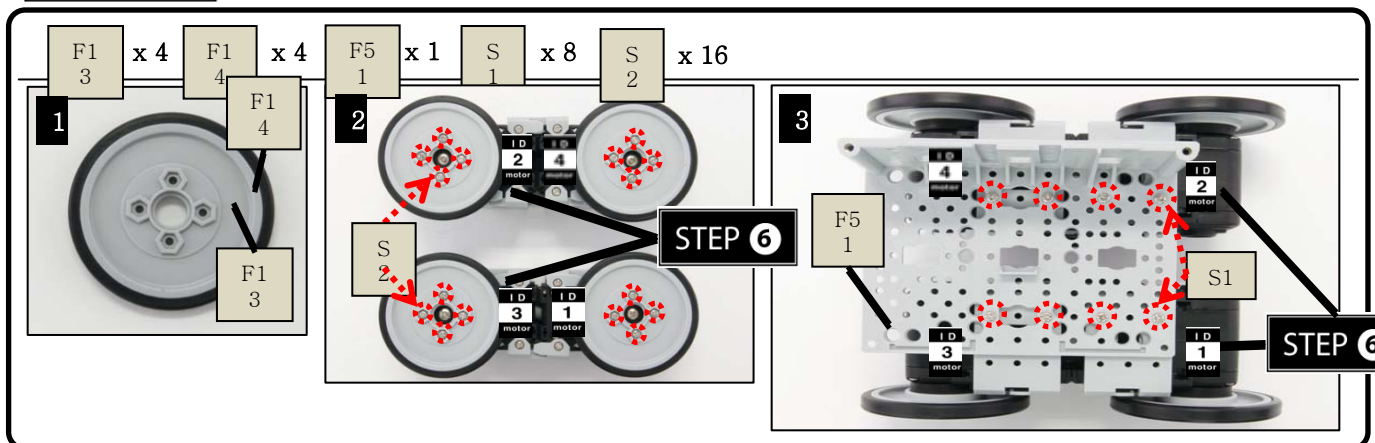
STEP 8

Attach F3, F10, and F60 together.

F3 x 1   F10 x 2   F60 x 1   S5 x 4   N1 x 4   F10 x 2

1   F3

F10   F60

S5   F10

2   F3

F60   N1

F60

4
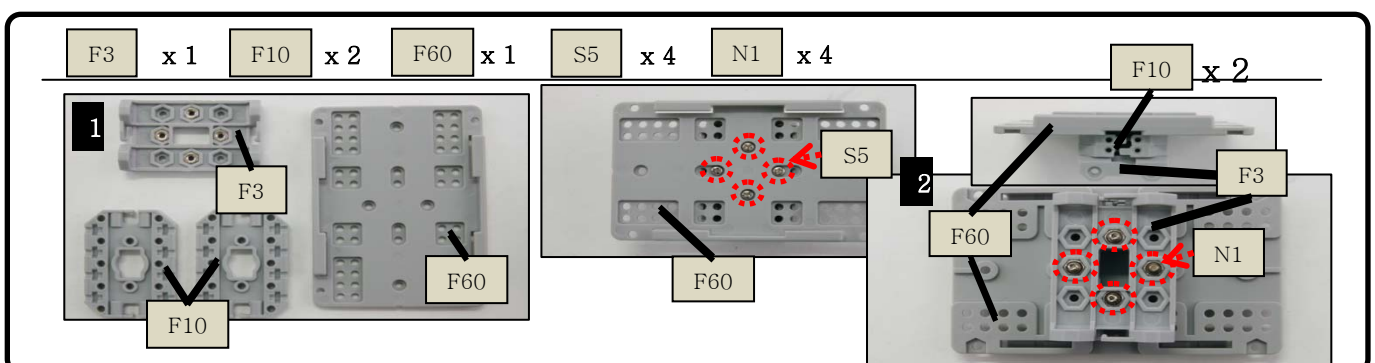
STEP 9

Attach STEP⑤, STEP⑦, and STEP⑧ together.
Connect ID4 to ID5 with CABLE-10.
With 3 CABLE-6, connect ID2 to ID4; ID1 to ID2; ID1 to ID3.
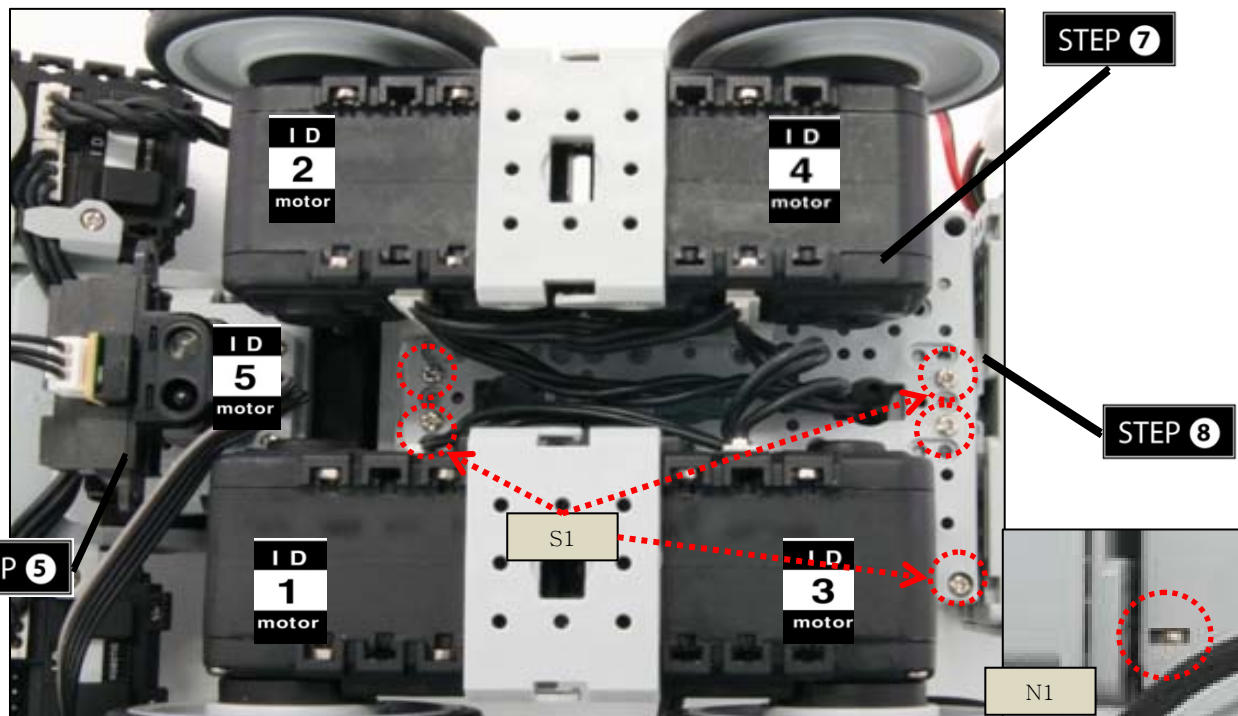Connect ID 3 with CABLE-20.

CABLE-6	x 3	CABLE-6	x 3	S1	x 5	N1	x 1

STEP 10

Attach STEP⑨, F52, and CM-510 together.
Connect ID3 to CM-510 with CABLE-20.
Connect IR SENSOR to Port 2 of CM-510 with 5P CABLE-15.
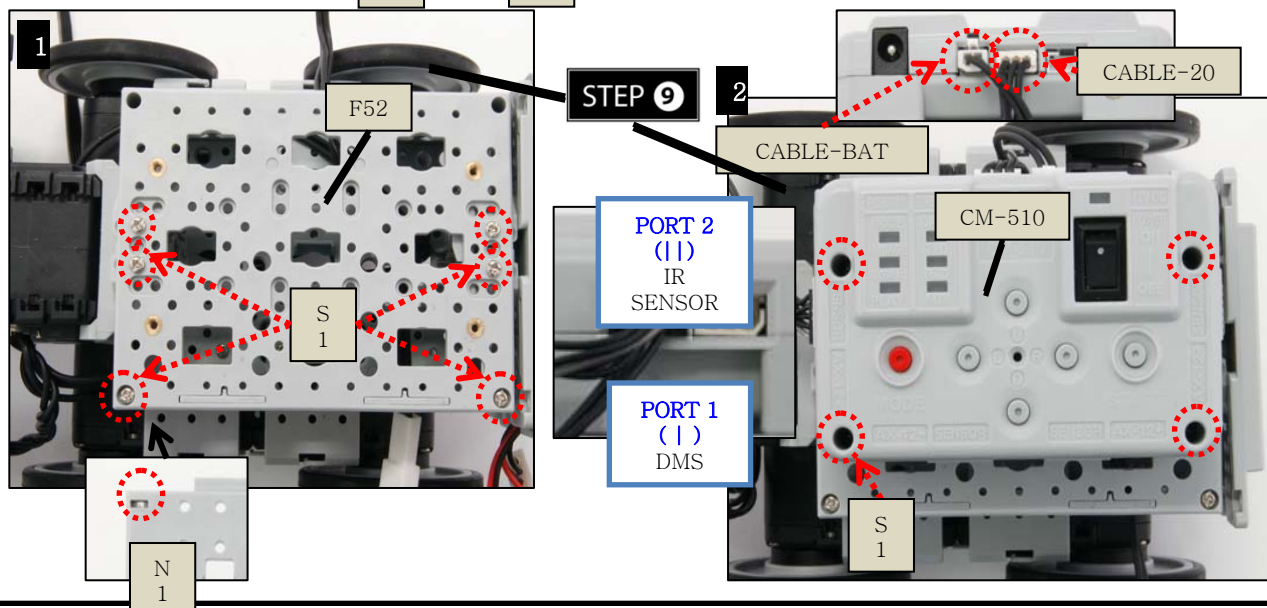Connect DMS to Port 1 of CM-510 with CABLE-DMS.

F52	x 1	CM-510	x 1	S 1	x 10	N 1	x 4	CABLE-BAT	x 1

PORT 2
(||)
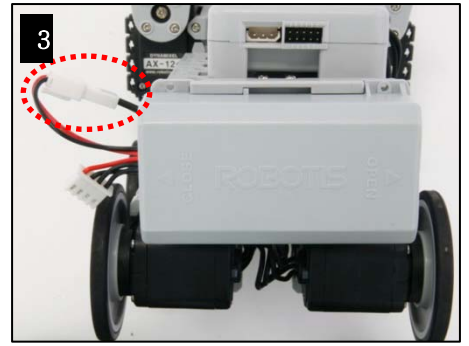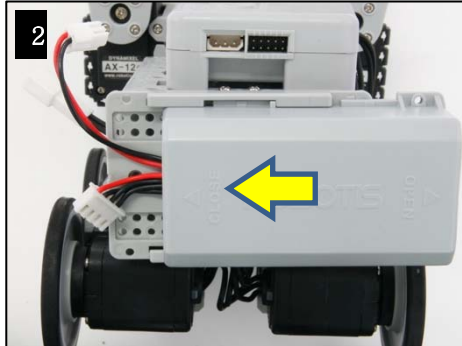IR SENSOR

PORT 1
(|)
DMS

STEP 11

Connect the battery through the battery cable.

BATTERY   x 1

1

BATTERY

2

3
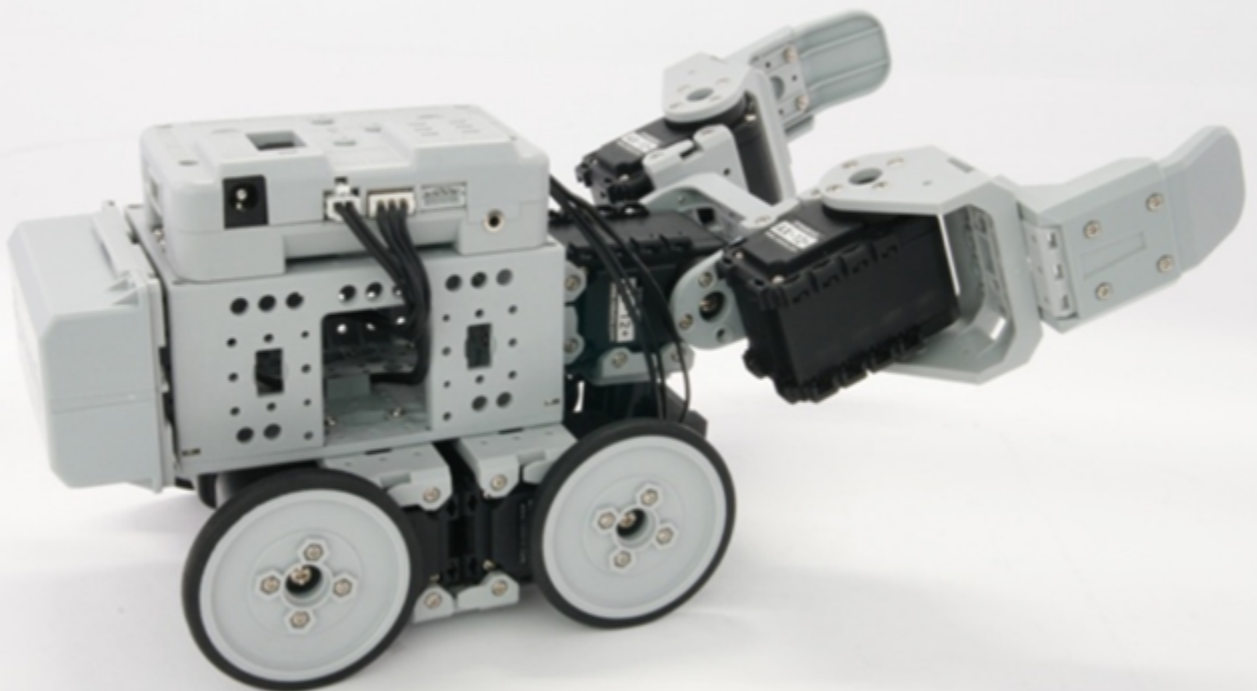
Assembly Check

After assembly please check the following procedure to ensure correctness.

STEP ①

Run the assembly check program
Set the robot in **PLAY** mode; hold the D button then press **START**.
Once the **START** button is pressed the assembly check program begins.

STEP ②

AX12+ initial position and ID check
Select each actuator separately and compare it to the picture below.
Ensure the actuators' horns are properly aligned (the horn's notch should be aligned with the actuator's).
Pressing the **U** or **D** button selects one actuator at a time.
The selected actuator's LED lights up and goes to its initial position.
Check starts from ID1.
U moves to the next ID in ascending numerical order; **D**, in descending numerical order.
If the actuator's ID does not exist, then the robot beeps.
Although the LED may lit if there is no power, then check the wiring on the actuator.
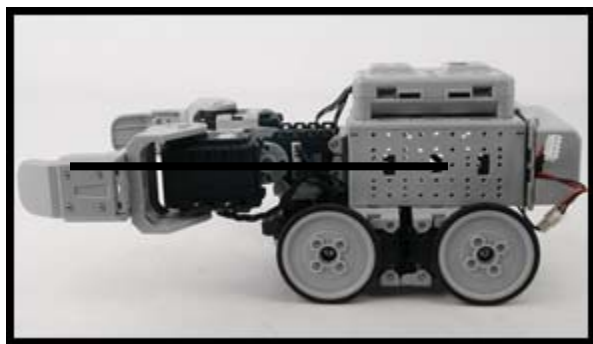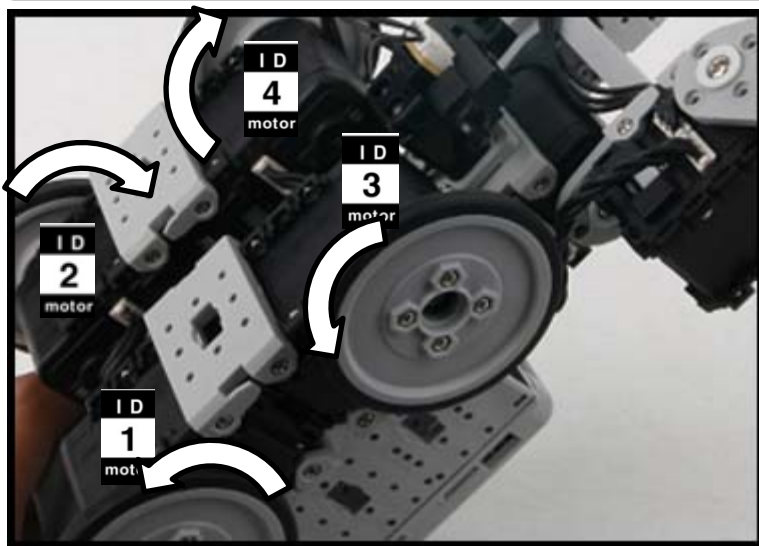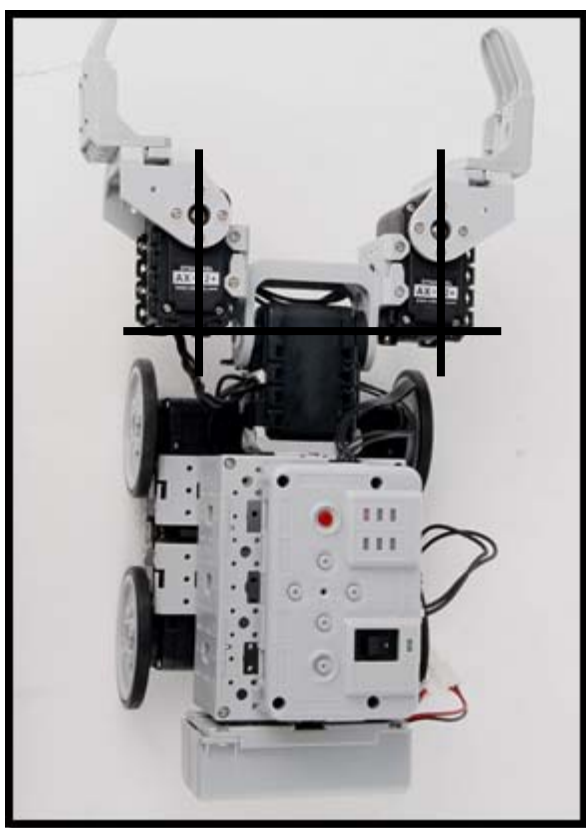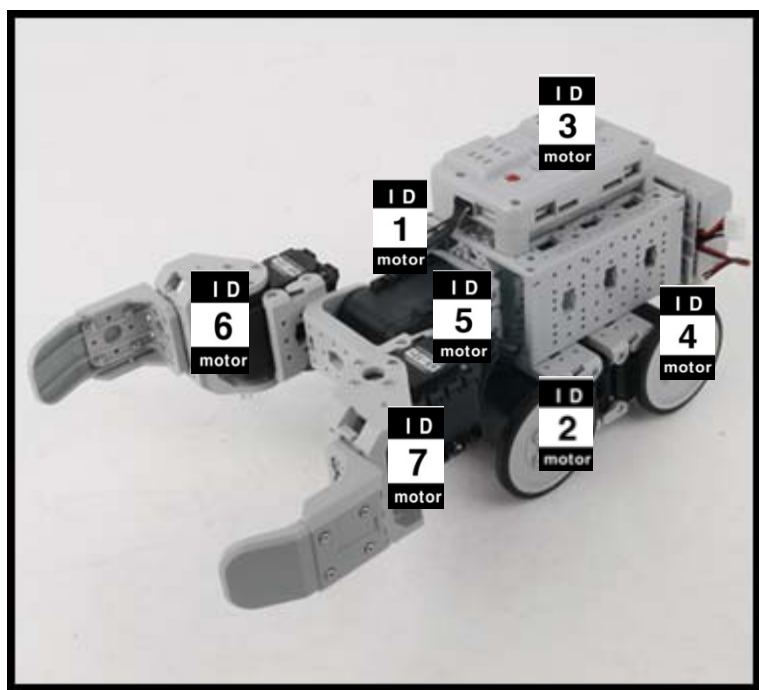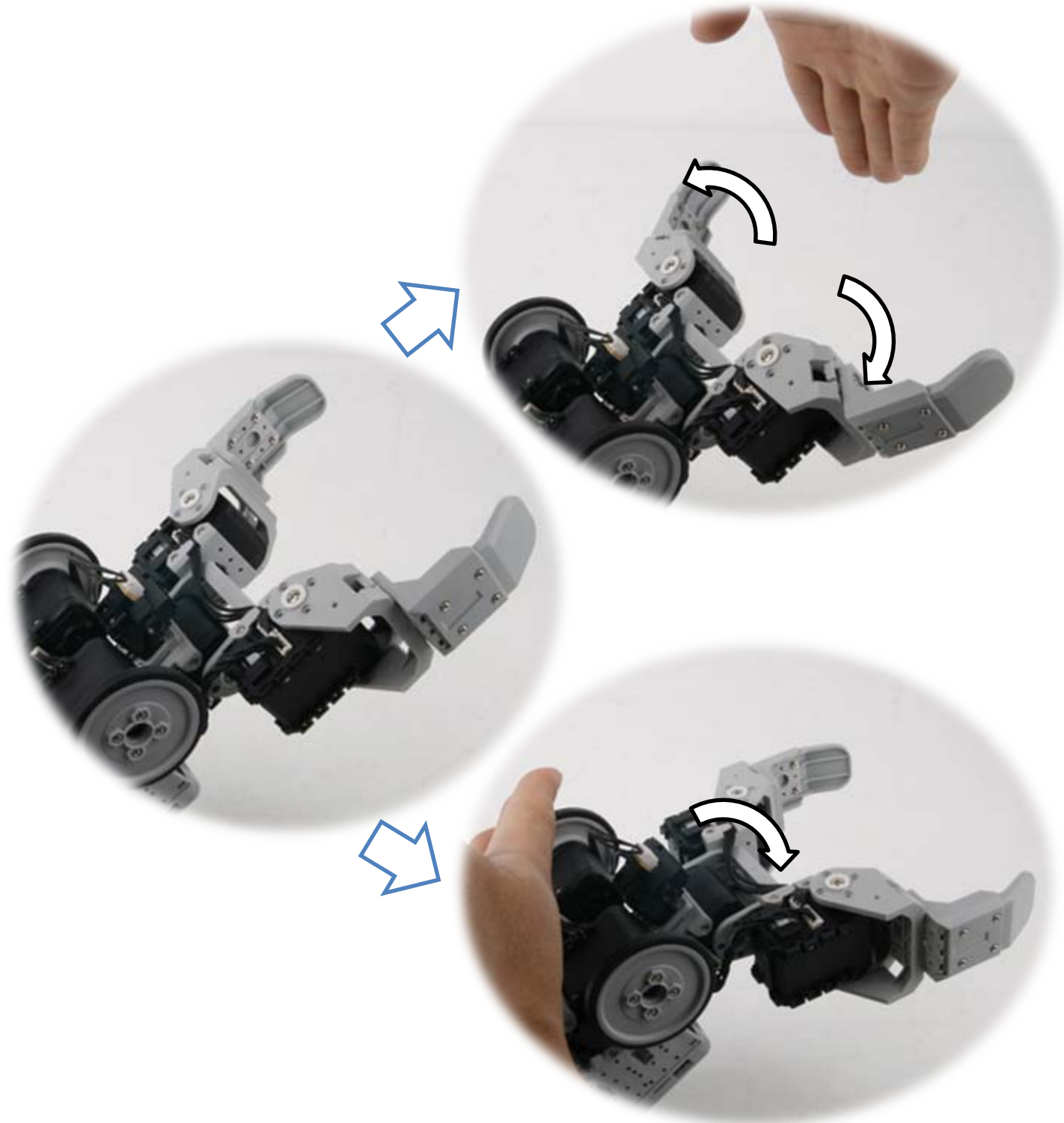
STEP ③

Sensor and behavior check
From STEP② press **R**. The robot returns to its initial position as pictured above.
Place your hand close to the sensors as pictured below. Robot behavior begins.
If the robot does not behave as pictured below, then check the sensor wiring and its port.
Pressing **L** will return the robot back to STEP②.

STEP ④

If everything works fine play the robot.
Set the robot in **PLAY** mode and press **START**. The robot will play