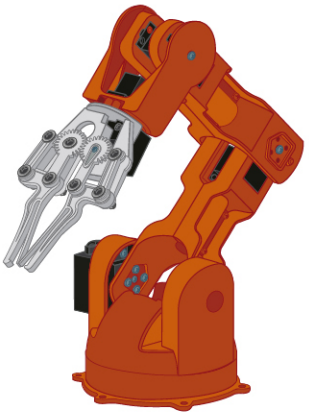
BRACCIO QUICK START GUIDE



TINKERKIT

UNLOCK THE UNLIMITED POSSIBILITIES
OF ROBOTICS WITH THE BRACCIO

WELCOME

❶ FOLLOW ASSEMBLY INSTRUCTIONS

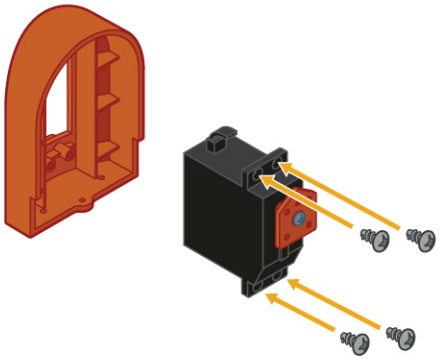
❷ CONNECT TO YOUR COMPUTER

❸ ENJOY!

ASSEMBLY INSTRUCTIONS

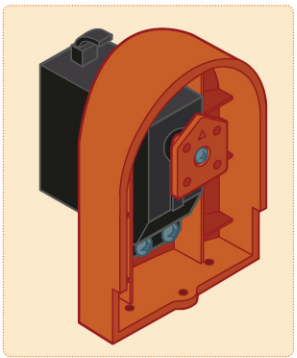
CAUTION: DO NOT OVER-TIGHTEN SCREWS

1



M2

4 × Ø 3mm



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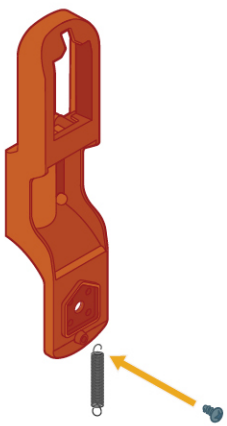
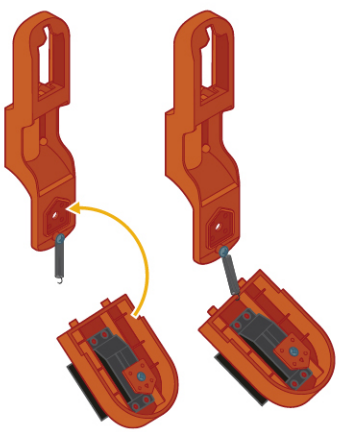
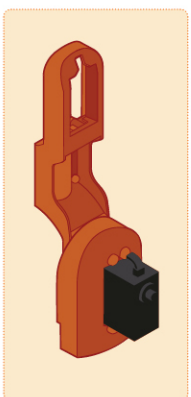


1 × Ø 2mm

1 ×

3





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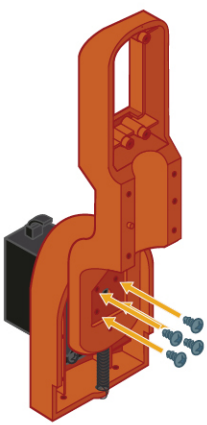
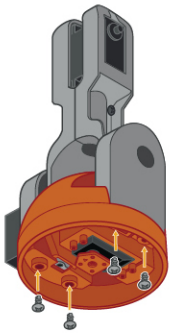
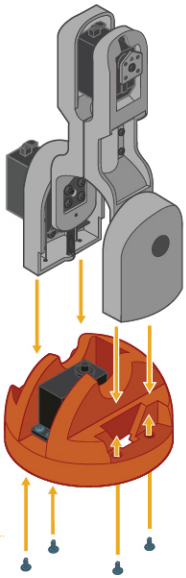


4 × Ø 3mm

9



4 × Ø 3mm



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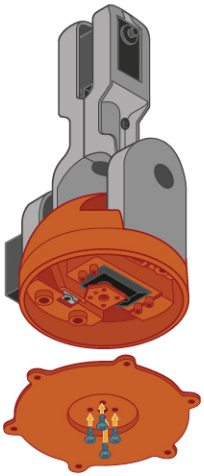
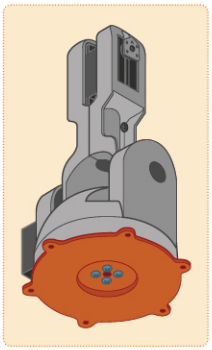


4 × Ø 3mm



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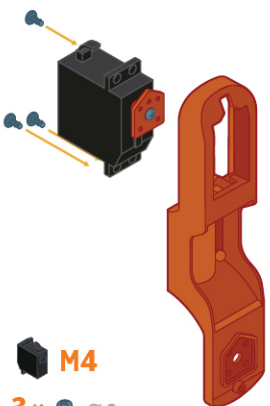
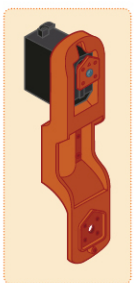


M4

3 × Ø 3mm



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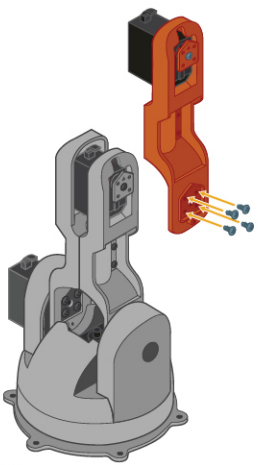
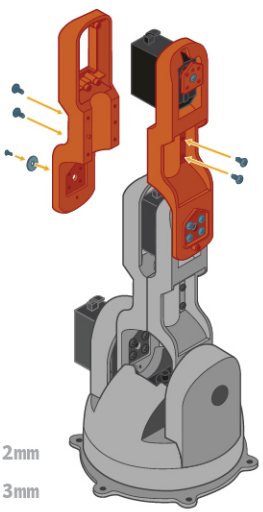


4 × Ø 3mm

13



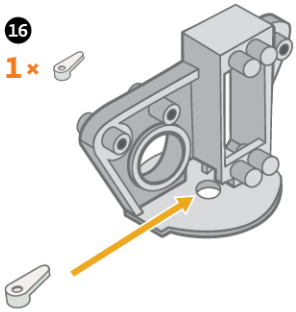
1 ×

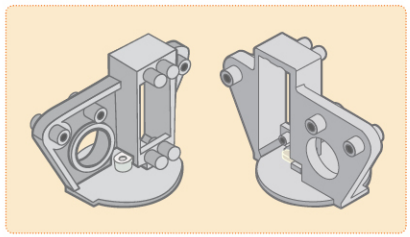
1 × Ø 2mm

4 × Ø 3mm

16

1 ×





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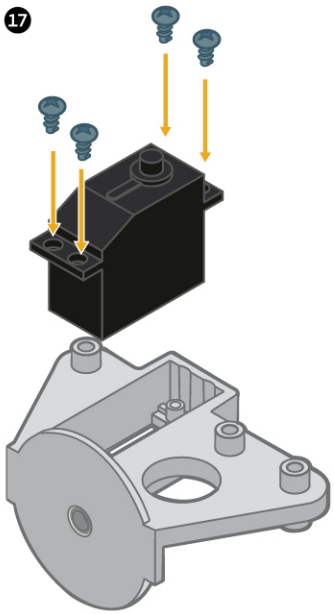
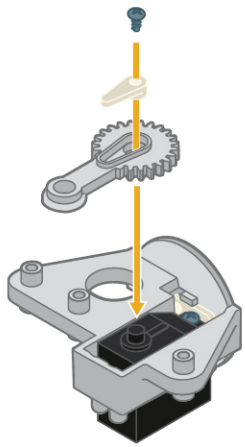


M6

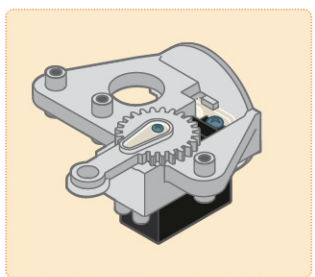
4 × ∅ 3mm

18



1 ×

1 × ∅ 3mm



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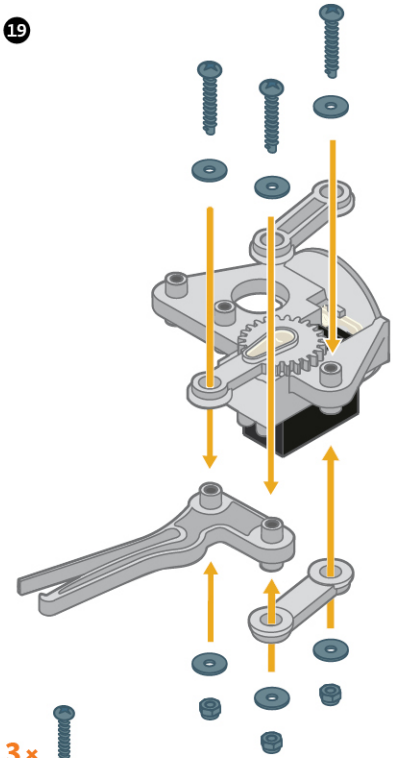
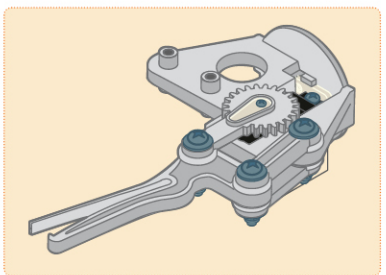


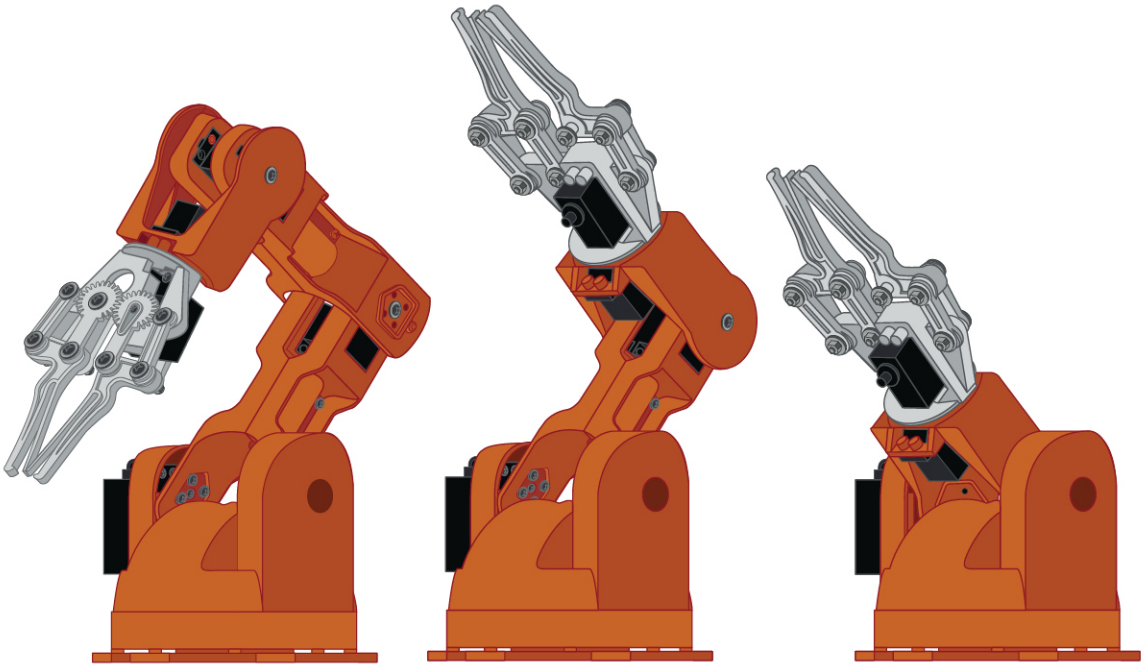
3 ×

7 ×

3 ×

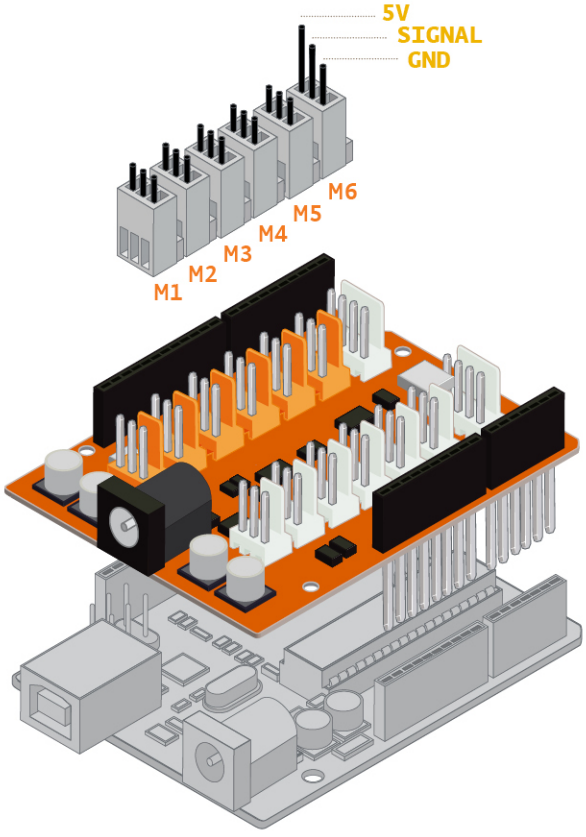


UNLOCK THE UNLIMITED
POSSIBILITIES OF ROBOTICS
WITH THE BRACCIO



MOTORS ASSEMBLY

MOTOR "1" BASE
MOTOR "2" SHOULDER
MOTOR "3" ELBOW
MOTOR "4" VERTICAL WRIST
MOTOR "5" ROTATORY WRIST
MOTOR "6" GRIPPER



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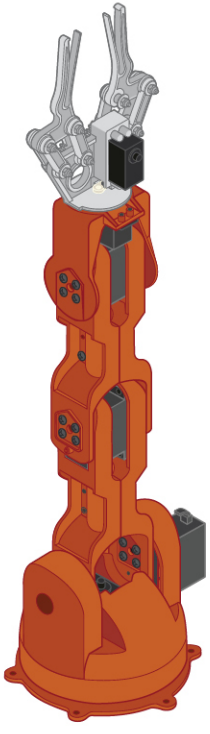
RUN YOUR SKETCH

❶ TESTBRACCIO90

"testBraccio90" is a setup sketch allowing you to check the alignment of all the servo motors. It is also the first sketch you need to run on the Braccio. The sketch will position the Braccio in the upright position as seen in the picture below. If it doesn't put the Braccio in the exact setting, you need to realign the position of the servo motors.



M1 = base degrees
M2 = shoulder degrees
M3 = elbow degrees
M4 = vertical wrist degrees
M5 = rotatory wrist degrees
M6 = gripper degrees

`Braccio.begin();`
Initialization functions and set up the initial position for Braccio.
All the servo motors will be positioned in the "safety" position: M1 = 90°, M2= 45°, M3 = 180°, M4 = 180°, M5 = 90°, M6 = 10°.

The sketch will position the Braccio in the upright position.

`Step Delay`: a milliseconds delay between the movement of each servo. Allowed values: from 10 to 30 msec.
M1 allowed values from 0° to 180°
M2 allowed values from 15° to 165°
M3 allowed values from 0° to 180°
M4 allowed values from 0° to 180°
M5 allowed values from 0° to 180°
M6 allowed values from 10° to 73°. (10°: the gripper is open, 73°: the gripper is closed).

❷ SIMPLEMOVEMENTS

The “simpleMovements“ sketch shows you how each servo motor of the Braccio moves.

M1 = base degrees
M2 = shoulder degrees
M3 = elbow degrees
M4 = vertical wrist degrees
M5 = rotatory wrist degrees
M6 = gripper degrees

`Braccio.begin();`
Initialization functions and set up the initial position for Braccio.
All the servo motors will be positioned in the “safety” position: M1 = 90°, M2= 45°, M3 = 180°, M4 = 180°, M5 = 90°, M6 = 10°.

The `delay()` function lets you stop the Arduino from executing anything for a period of time.

`Step Delay`: a milliseconds delay between the movement of each servo. Allowed values: from 10 to 30 msec.
M1 allowed values from 0° to 180°
M2 allowed values from 15° to 165°
M3 allowed values from 0° to 180°
M4 allowed values from 0° to 180°
M5 allowed values from 0° to 180°
M6 allowed values from 10° to 73°. (10°: the gripper is open, 73°: the gripper is closed).

❸ TAKETHESPONGE

This example tells the Braccio to take the sponge from the table and show it to the user.

M1 = base degrees
M2 = shoulder degrees
M3 = elbow degrees
M4 = vertical wrist degrees
M5 = rotatory wrist degrees
M6 = gripper degrees

`Braccio.begin();`
Initialization functions and set up the initial position for Braccio.
All the servo motors will be positioned in the "safety" position: M1 = 90°, M2= 45°, M3 = 180°, M4 = 180°, M5 = 90°, M6 = 10°.

Starting position.
One second `delay`.
The braccio moves to the sponge.
Close the tongue to take the sponge.
Brings the sponge upwards.
Show the sponge.
Return to the start position.
Open the gripper.

For `Step Delay` and Motors values please refer to the previous sketches.

NOTES:

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ARDUINO

TINKERKIT

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