CONNECTING TO YOUR COMPUTER

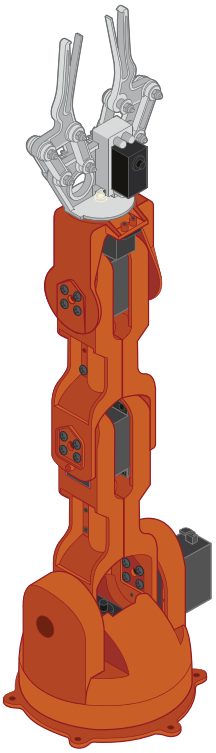
❶ **DOWNLOAD THE SOFTWARE**	Get the latest version of the Arduino Software from ARDUINO.ORG/DOWNLOADS
❷ **CONNECT THE BRACCIO**	Plug the USB cable to the control board port, and wait for hardware installation to finish
❸ **CONNECT YOUR BOARD**	Start the Arduino IDE Select Tools → Board → Select the board you are using Select the correct serial port from Tools → Port
❹ **LOAD A SKETCH**	Select a sketch from File → Examples → Braccio Press the Upload button  and wait for the program to finish uploading CONGRATULATIONS! You are ready to experiment and play

ONLINE TUTORIALS AND INFORMATION:
ARDUINO.ORG/BRACCIO

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).

```
#include <Braccio.h>
#include <Servo.h>

Servo base;
Servo shoulder;
Servo elbow;
Servo wrist_ver;
Servo wrist_rot;
Servo gripper;

void setup() {
  Braccio.begin();
}

void loop() {
                    //(step delay  M1,  M2,  M3,  M4,  M5,  M6);
  Braccio.ServoMovement(20,         90,  90,  90,  90,  90,  73);
}
```

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).

```
#include <Braccio.h>
#include <Servo.h>

Servo base;
Servo shoulder;
Servo elbow;
Servo wrist_ver;
Servo wrist_rot;
Servo gripper;

void setup() {
  Braccio.begin();
}

void loop() {
                    //(step delay  M1,  M2,  M3,  M4,  M5,  M6);
  Braccio.ServoMovement(20,         15,   0, 180, 180,   0,  73);
  delay(1000);
  Braccio.ServoMovement(20,        165, 180,   0,   0, 180,  10);
  delay(1000);
}
```

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.

```
#include <Braccio.h>
#include <Servo.h>

Servo base;
Servo shoulder;
Servo elbow;
Servo wrist_ver;
Servo wrist_rot;
Servo gripper;

void setup() {
  Braccio.begin();
}

void loop() {
                    //(step delay  M1,  M2,  M3,  M4,  M5,  M6);
  Braccio.ServoMovement(20,         0,   45, 180, 180,  90,  10);
  delay(1000);
  Braccio.ServoMovement(20,         0,   90, 180, 180,  90,  10);
  Braccio.ServoMovement(10,         0,   90, 180, 180,  90,  60);
  Braccio.ServoMovement(20,         0,   45, 180,  45,   0,  60);
  Braccio.ServoMovement(20,       180,   45, 180,  45,   0,  60);
  Braccio.ServoMovement(20,         0,   90, 180, 180,  90,  60);
  Braccio.ServoMovement(20,         0,   90, 180, 180,  90,  10);
}
```