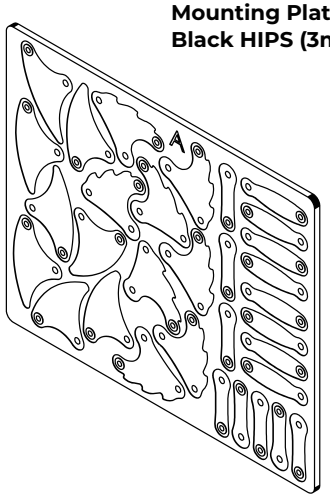
ASSEMBLY GUIDE

CYBER SPIDER

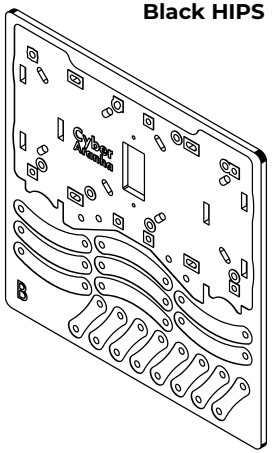
ROBOCORE®

CONTENT

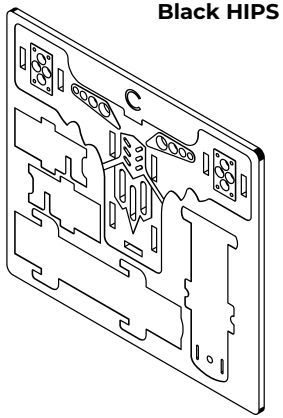
Mounting Plate A
Black HIPS (3mm)



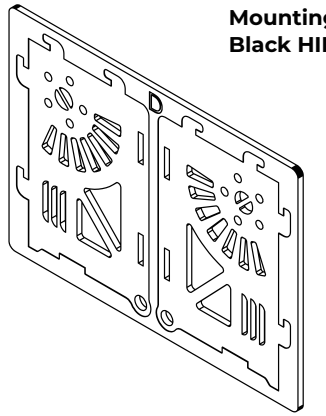
Mounting Plate B
Black HIPS (3mm)



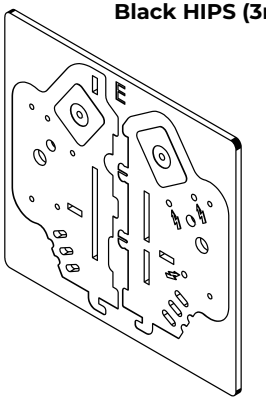
Mounting Plate C
Black HIPS (3mm)



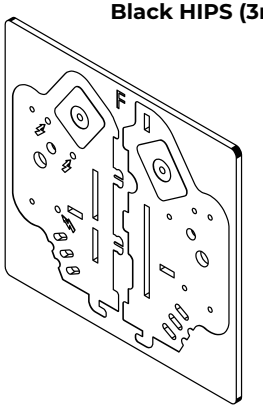
Mounting Plate D
Black HIPS (3mm)



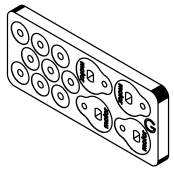
Mounting Plate E
Black HIPS (3mm)



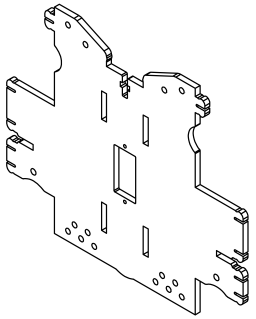
Mounting Plate F
Black HIPS (3mm)



Mounting Plate G
Yellow Acrylic (6mm)



Cyber Spider top mounting plate
Black HIPS (3mm)



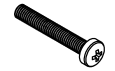
M3 Nut (x4)

Plastic Standoff (x4)

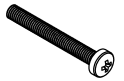
M3x6mm (x28)

M3x10mm (x8)

M3x16mm (x8)



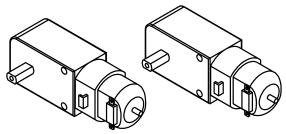
M3x20mm (x4)



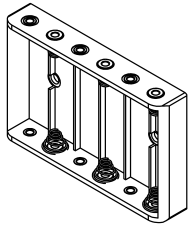
M3x25mm (x6)

Rocker
Switch (x1)

Eletric motor (x2)



Battery Holder (x1)



AA Battery (x6)

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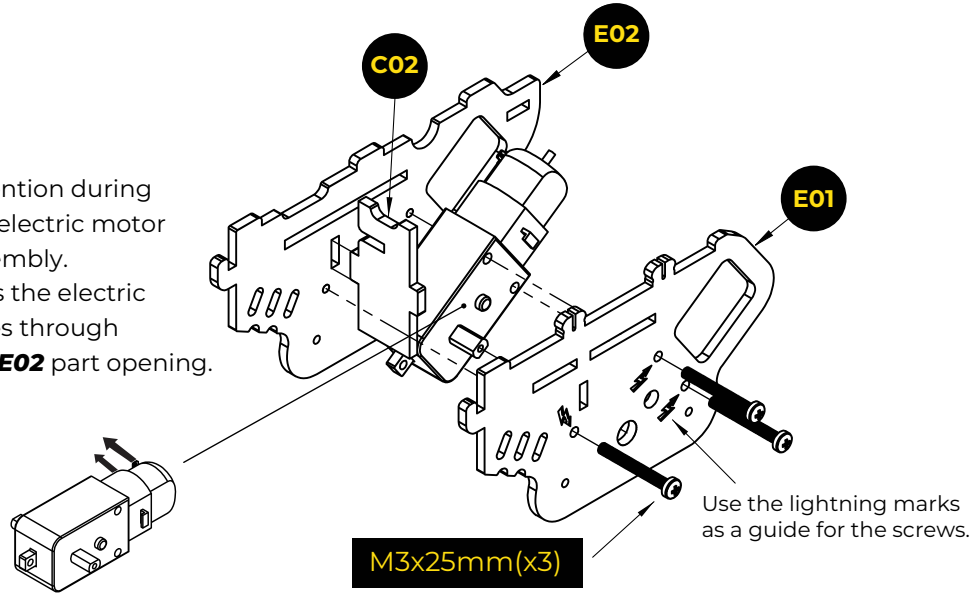
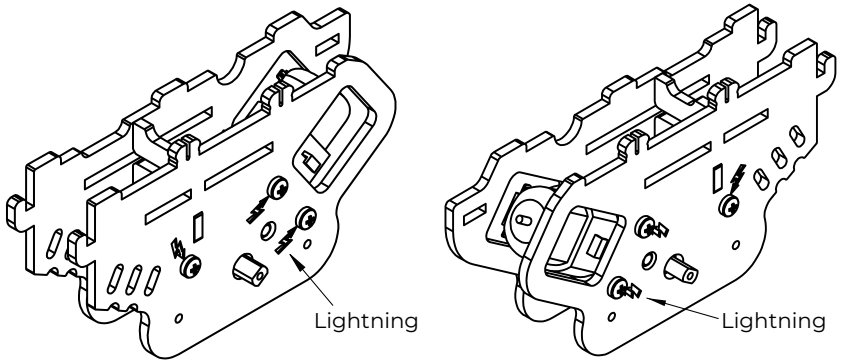
MOTOR'S BLOCK ASSEMBLY

Let's begin the motor's block assembly.
Keep ***E03*** parts for later.

Attention during the electric motor assembly.
Pass the electric wires through the ***E02*** part opening.



Repeat the process with the parts of mounting plate F.
Notice that the parts are mirrored.
Therefore the motors will be facing opposite sides, as the image below.



Bloco Motor Placa E

Bloco Motor Placa F

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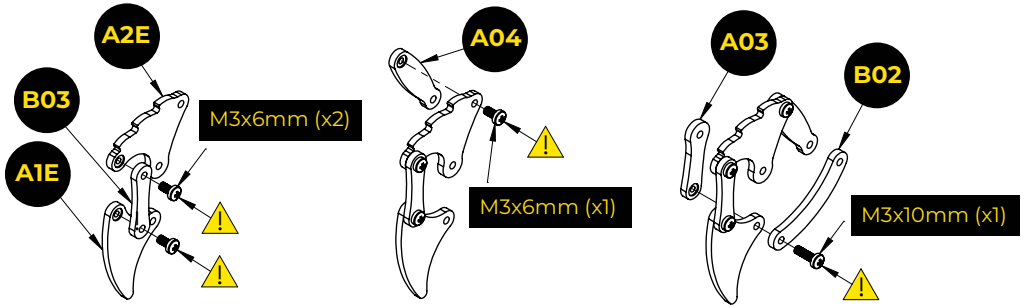
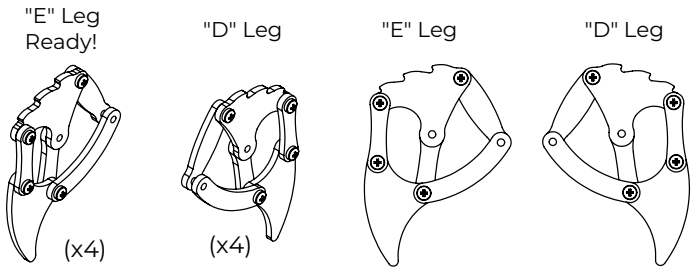
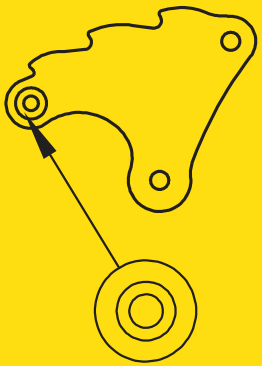
LEG'S ASSEMBLY

For this project we need to assemble 4 side "D" legs and 4 side "E" legs.
See below the assembly sequence for "E" leg.



Repeat the process to have 4 units of "E" legs assembled.
Follow the same process for the "D" legs.
Notice that they are mirrored. Use the images below as reference so you don't get lost.





HINT FOR THE LEG'S ASSEMBLY

IF YOU'RE IN DOUBT ABOUT:

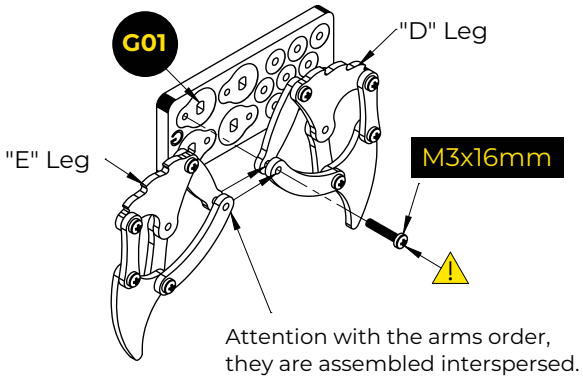
Which hole is a through hole and which one is threaded?
Notice that the threaded holes have a circle.
So, circled holes are tight and will have the function of a nut.

ATTENTION

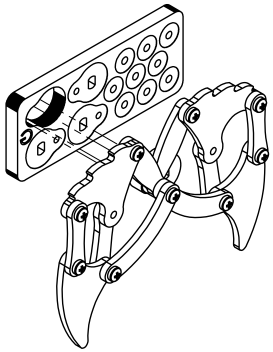
Screws marked with this symbol must be loosely assembled to allow movement.
A tip is; when tightening the screw to its maximum, back 1/4 of a turn the screwdriver, or more, giving it the necessary clearance.

FINISHING THE LEGS

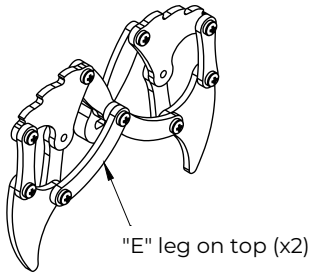
Flip the G Plate with the text to the back, and use it as a mounting bracket for the G01 part. Text (motors) must be facing opposite to the legs.

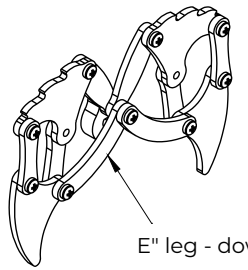


After screwing in, move the structure gently sideways, detaching the G01 part from the G plate.



Repeat this process until you have 4 sets.
To make the robot symmetrical, assemble 2 sets with the "E" leg on top, and 2 sets with it built downwards, as illustrated below. Let's use one of each for assembly in the motors.





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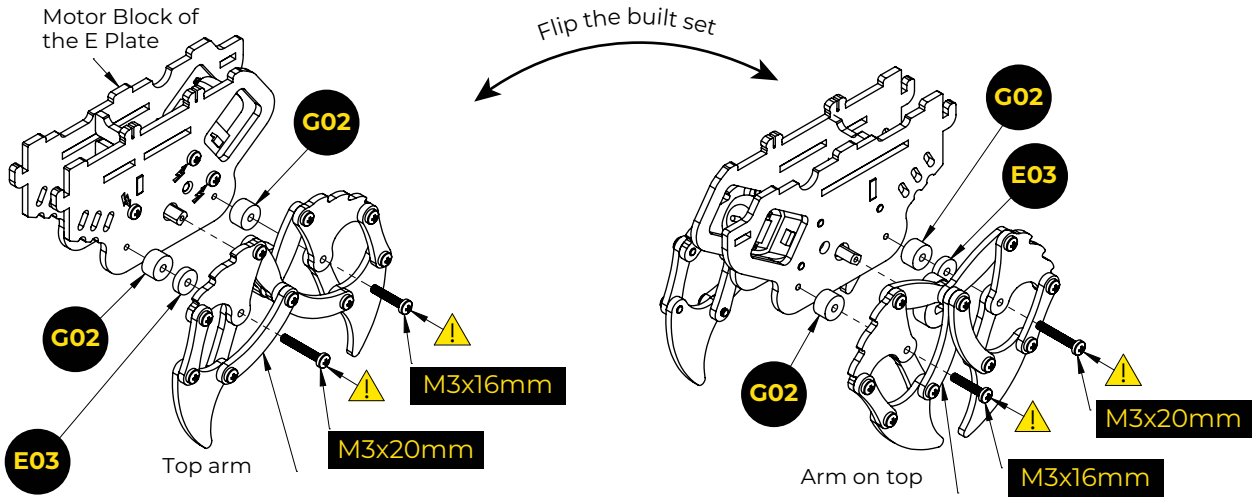
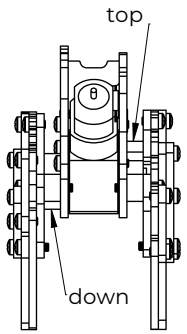
INSTALLING THE LEGS IN THE MOTOR'S BLOCKS

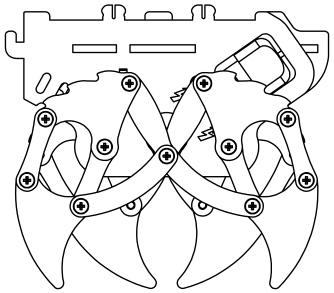


Notice that the E03 part must be used in the position where the leg arm is on the top, just like the longest screw.

When flipping the set to assemble the other side, notice that the E03 part and the long screw changed positions, because they always follow the higher side.



Now, repeat this assembly for the Motor Block of F plate.



Motor Block Done!

ASSEMBLY HINT

Be careful with the position of the parts G01 they must be assembled on the motor shaft, in opposite directions for the legs to work. One set must have the screw up and the other down, as in the image above. The motor shaft must not extend beyond the part G01. If this occurs during assembly, push the shaft gently with a screwdriver, to keep it faced with the piece G01

REMINDER

Repeat the leg's assembly to the Motor Block of the F plate.

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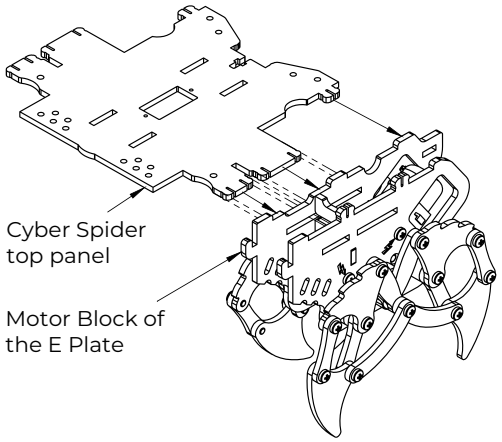
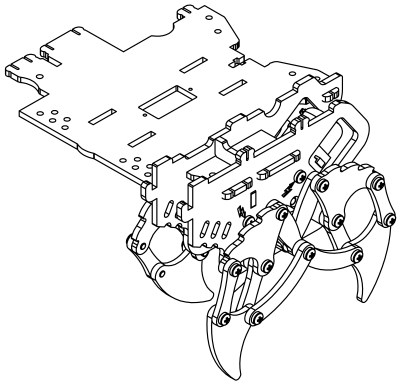
INSTALLING THE MOTORS IN THE CHASSIS

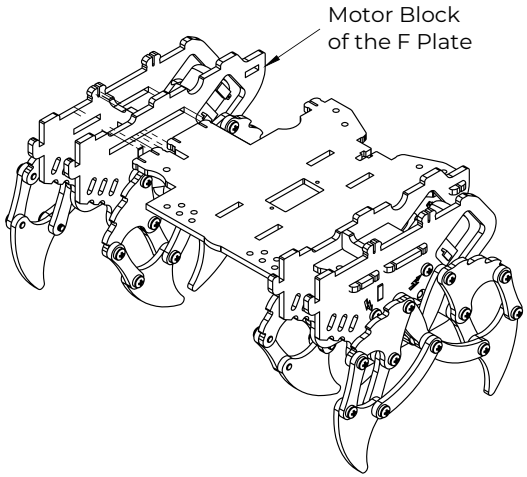
Cross over the top groove for the entire length of the motor block until the fittings lock. Use both hands to support the pieces and tighten with your fingers.



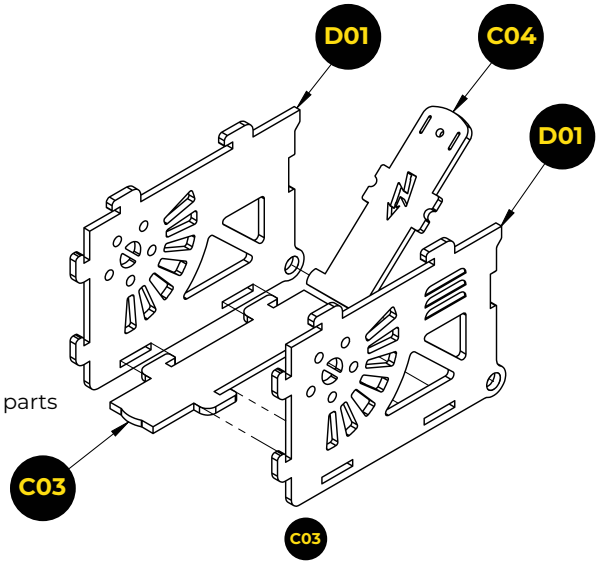
Final view of how the pieces must be after fitting.



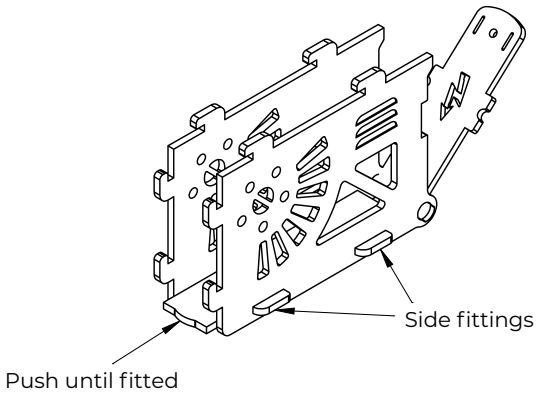
Follow the same process for the Motor Block of the F Plate



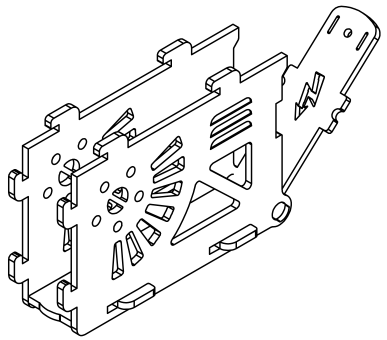
BATTERY COMPARTMENT ASSEMBLY



Pay attention to the direction of the parts



Battery compartment is ready to assemble!



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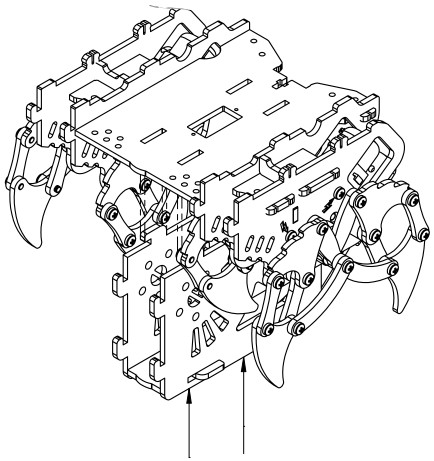
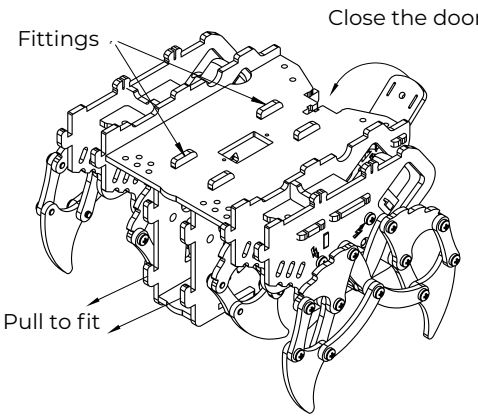
INSTALLING THE BATTERY COMPARTMENT IN THE CHASSIS

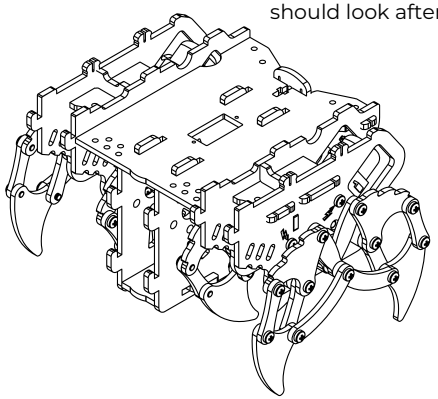


Assemble the battery compartment under the chassis structure. The lid must be facing backwards and the 4 fittings match with the lid.

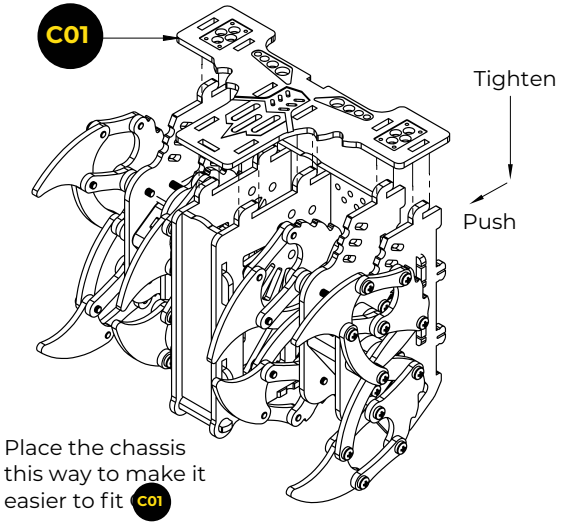


Pull the frame to the front to fit the teeth at the top. Also, close the door of the battery compartment. This helps to maintain the chassis aligned to the next step.

This is how your project should look after this step!



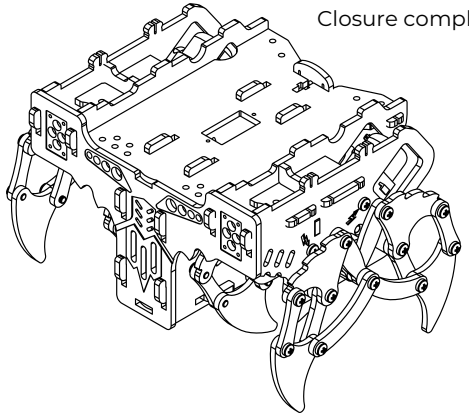
FRONTAL CHASSIS CLOSURE



Place the chassis this way to make it easier to fit C01

Assemble the C01 part in the slots indicated. However, you will notice that the piece will show resistance to descend to its final position.
This is normal as it has two latches.
So, to assemble it, hold the chassis against the table and press down the C01 part. Then push in the direction of the notches. Once in the forward position, it will not loosen and the chassis will be rigid and stable.

Closure complete!



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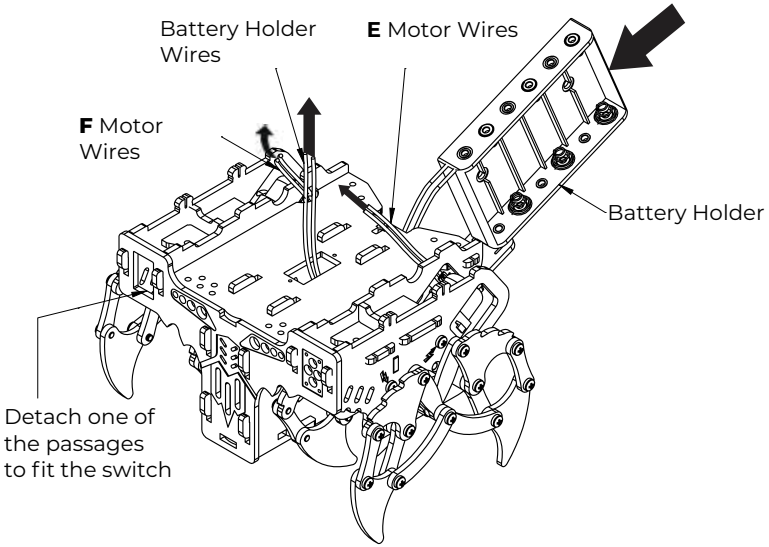
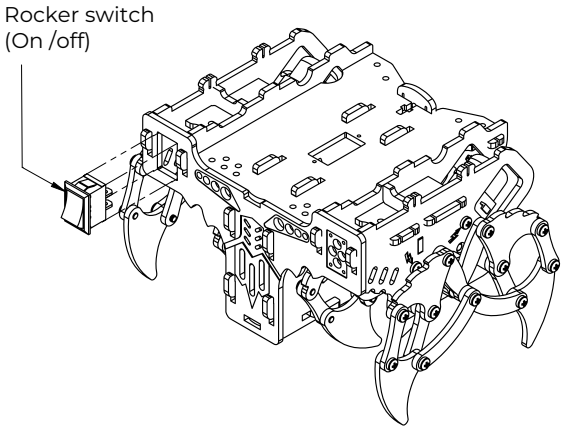
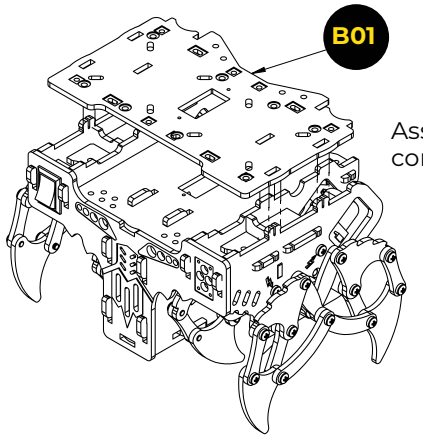
ELECTRICAL SECTION - SIMPLIFIED OPERATION WITHOUT ELECTRONIC CONTROLLER

Before we finish the structure with the B01 part, let's pay attention to the assembly of the simplified electrical section. Start by opening the battery compartment lid, take off the battery holder and pass the wires inside the structure, as illustrated. Make sure the motors wires are also running through the side windows towards the center panel of the robot. In front of the Spider, choose a passage to be removed and house our rocker switch.



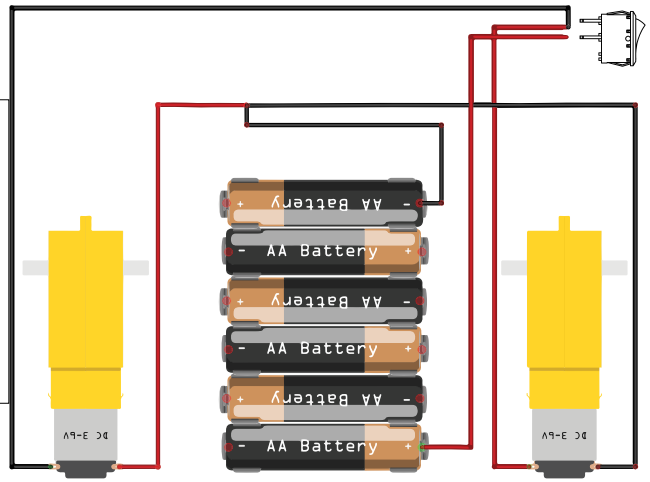


Finish the assembly with the B01 part, it has 4 pressure fittings.



ELECTRICAL DIAGRAM

Follow this schematic to make the electrical connections. The junction of the wires must be insulated with insulating tape at the end of the process to avoid short circuits. Before joining the motor wires, make sure they are turning the right way round (if not, reverse the wires). Use the batteries in the battery holder to test the motors. Attach the wires to the switch before attaching it to the robot.



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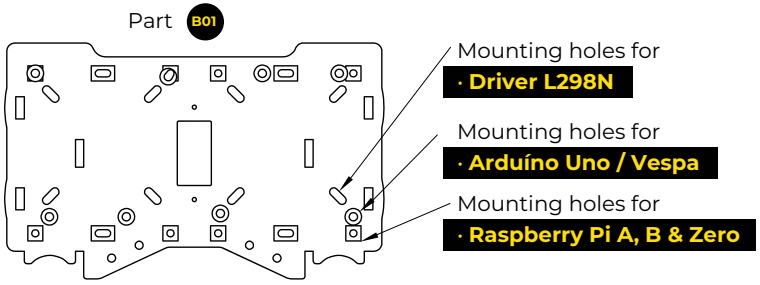
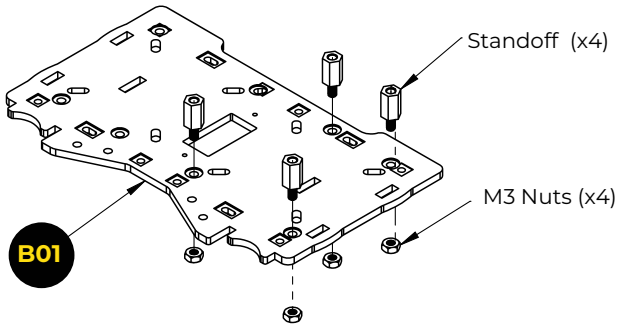
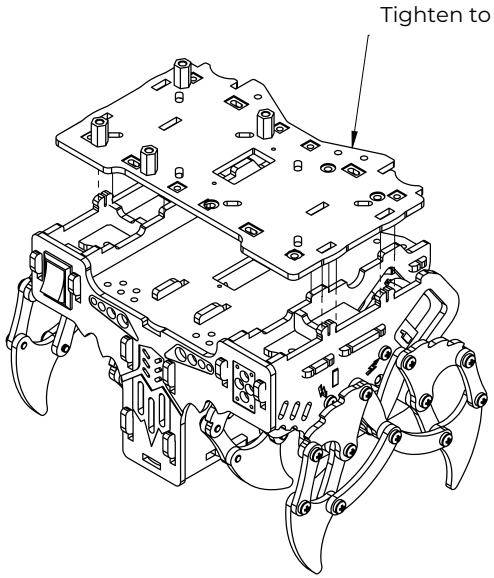
ASSEMBLE OF ELECTRONIC CONTROLLERS

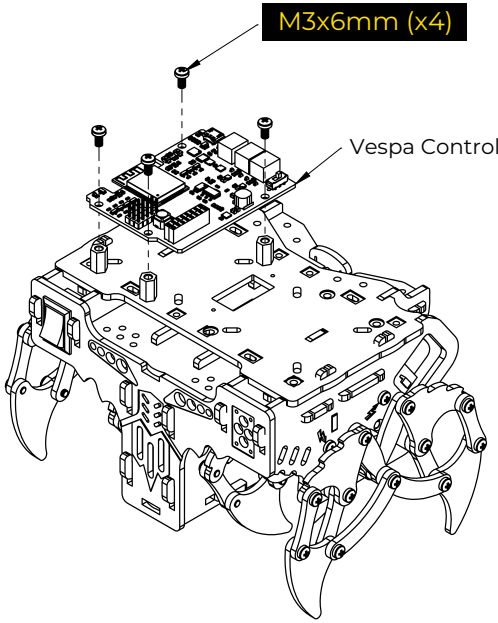
Part **B01** has several holes to assist in your robotics project. With these holes it is possible to assemble everything you need to control your robot using an electronic controller.



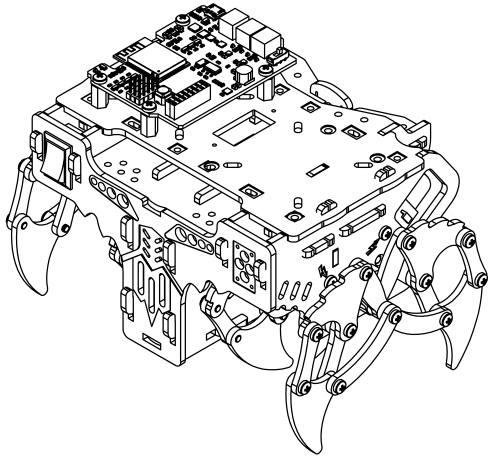
Kit includes 4 plastic standoffs, nuts and screws. Let's mount them in the Arduino UNO / Vespa plate position as an example.







Done! Now just connect the motors and battery wires and have fun.



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