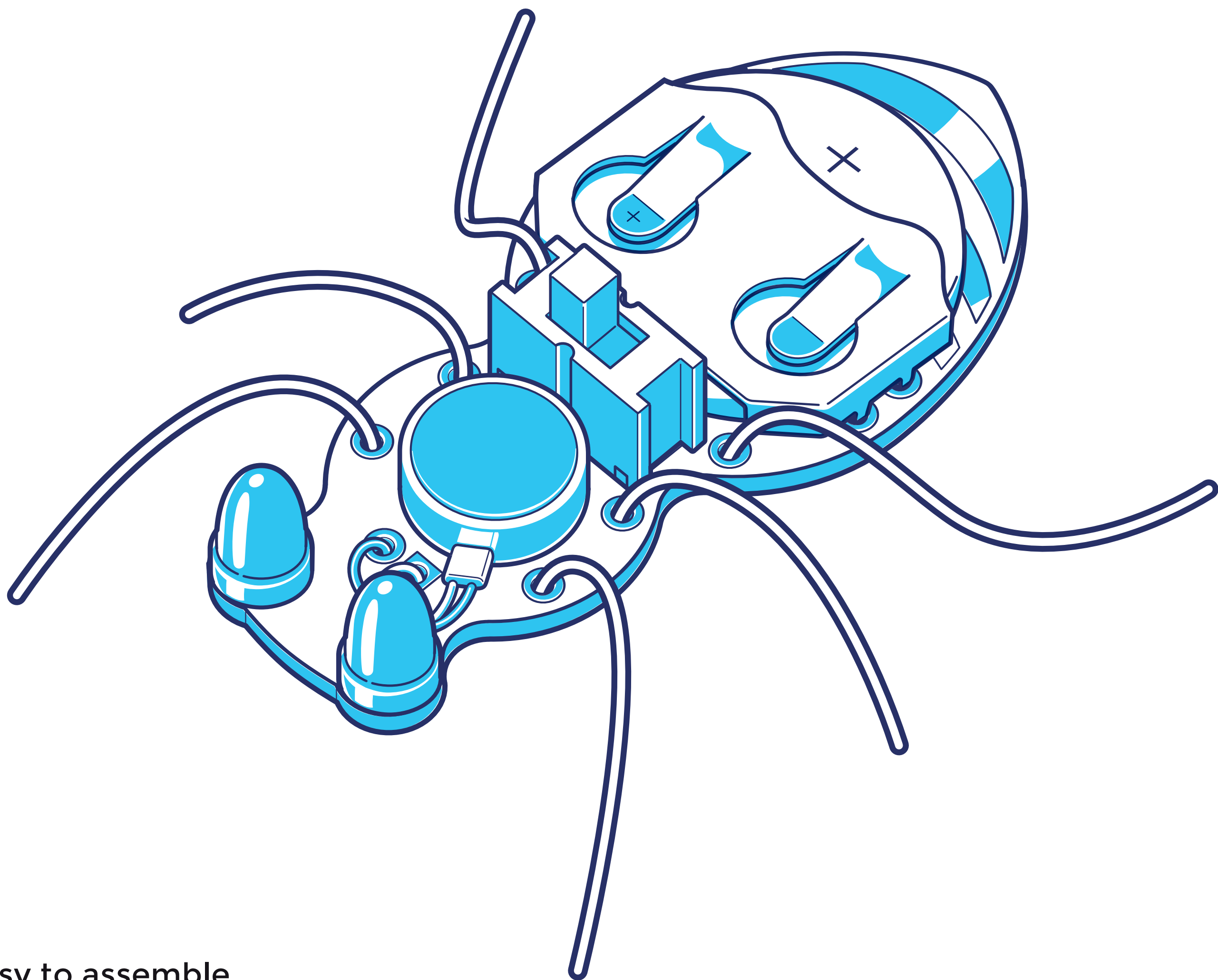




# Jitterbug

Learn to Solder Kit



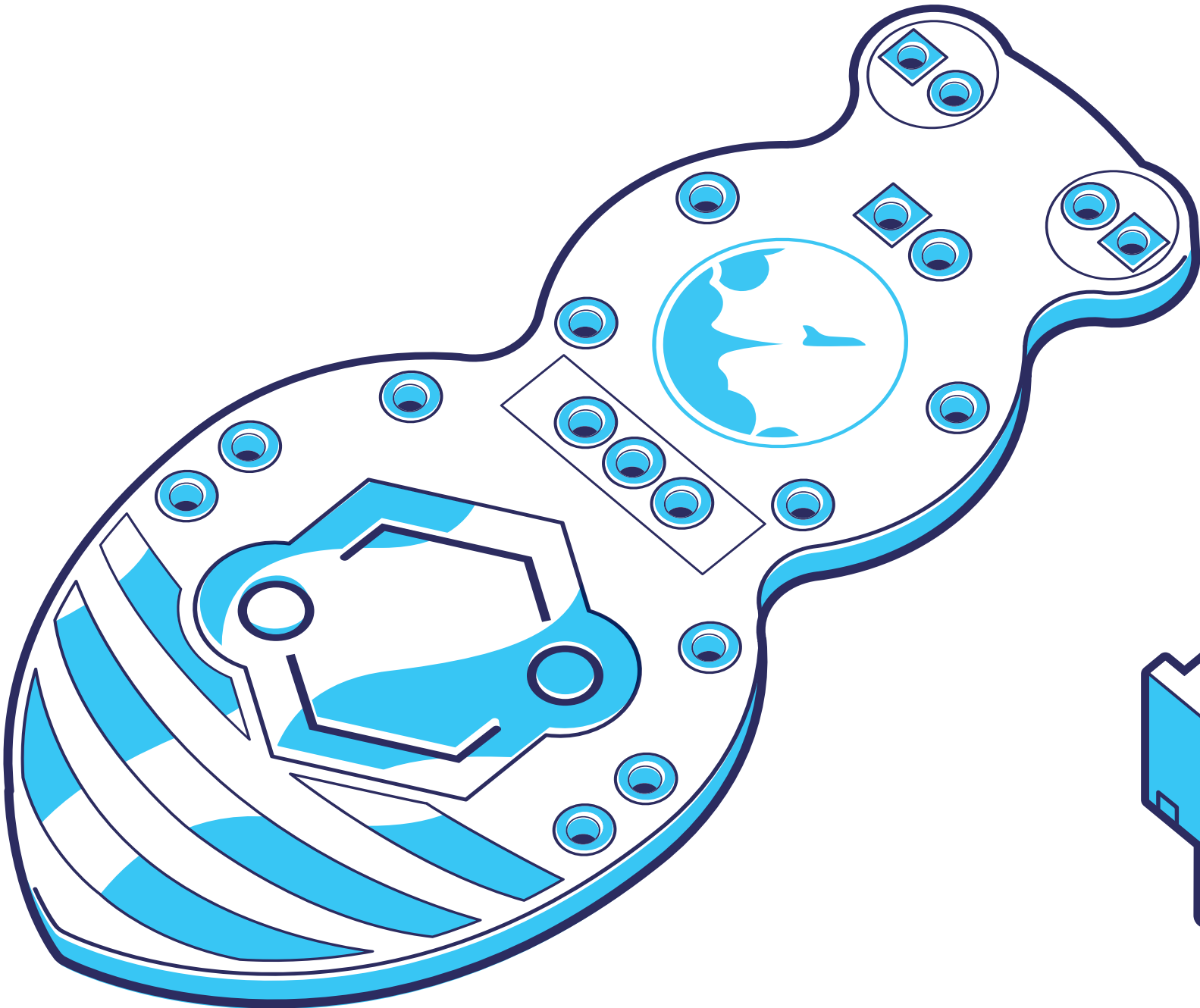
Easy to assemble

30-minutes or less

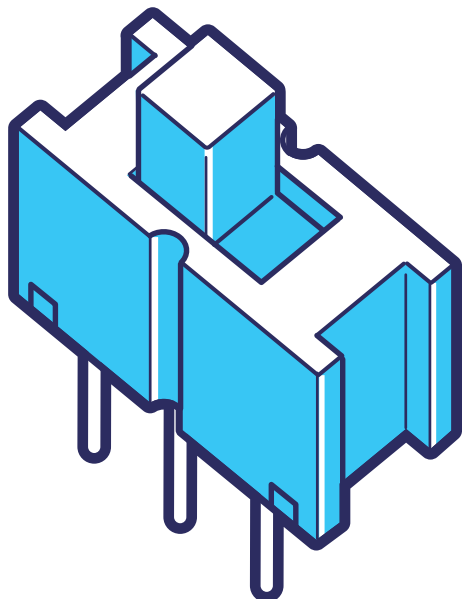
Made in California, USA

[learntosolderkit.com](http://learntosolderkit.com)

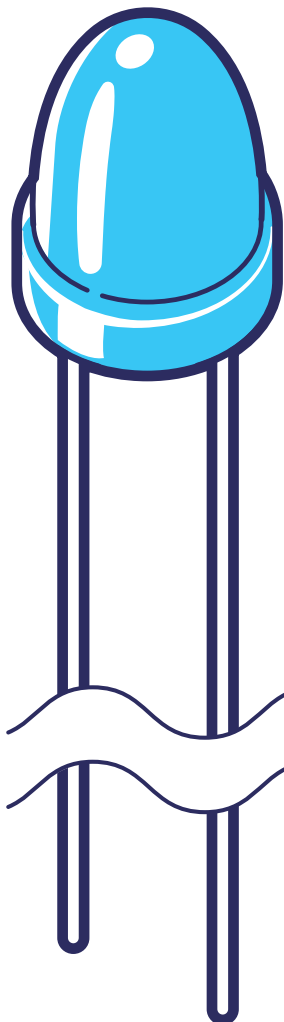
# 01. Parts



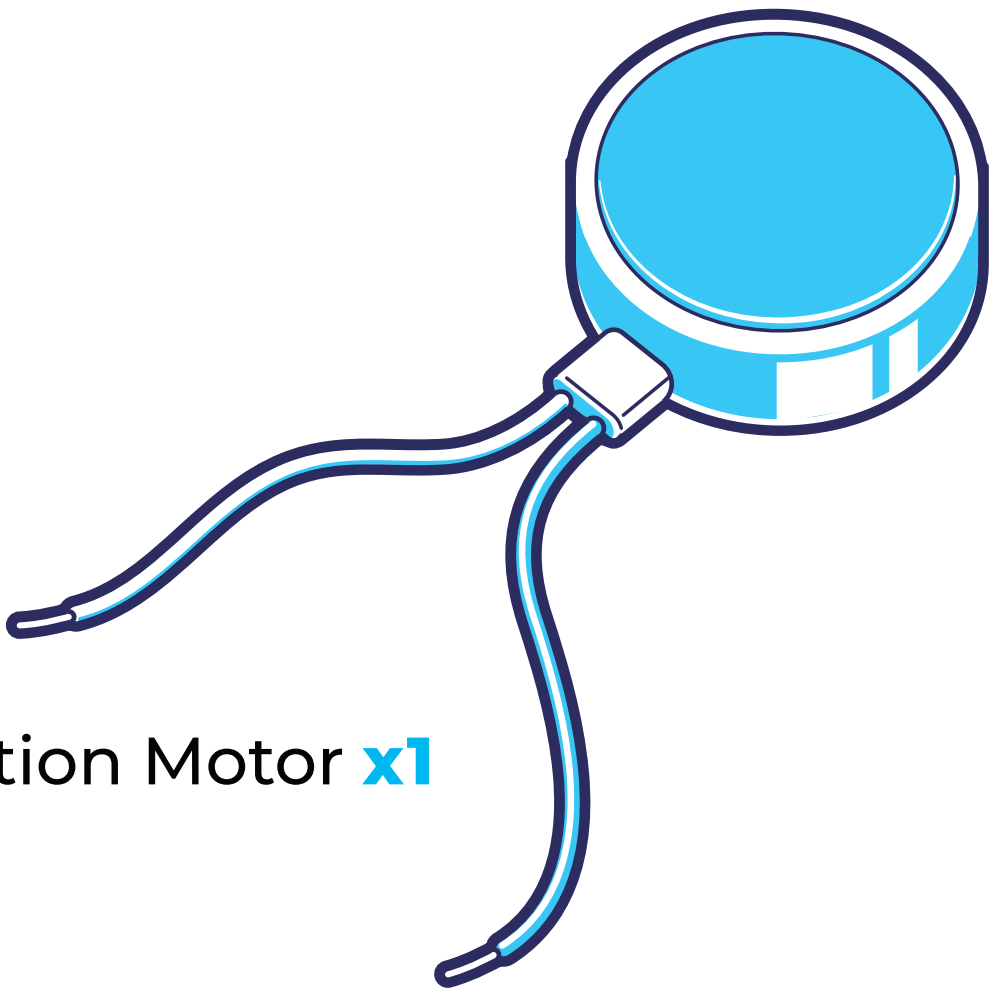
Jitterbug PCB **x1**



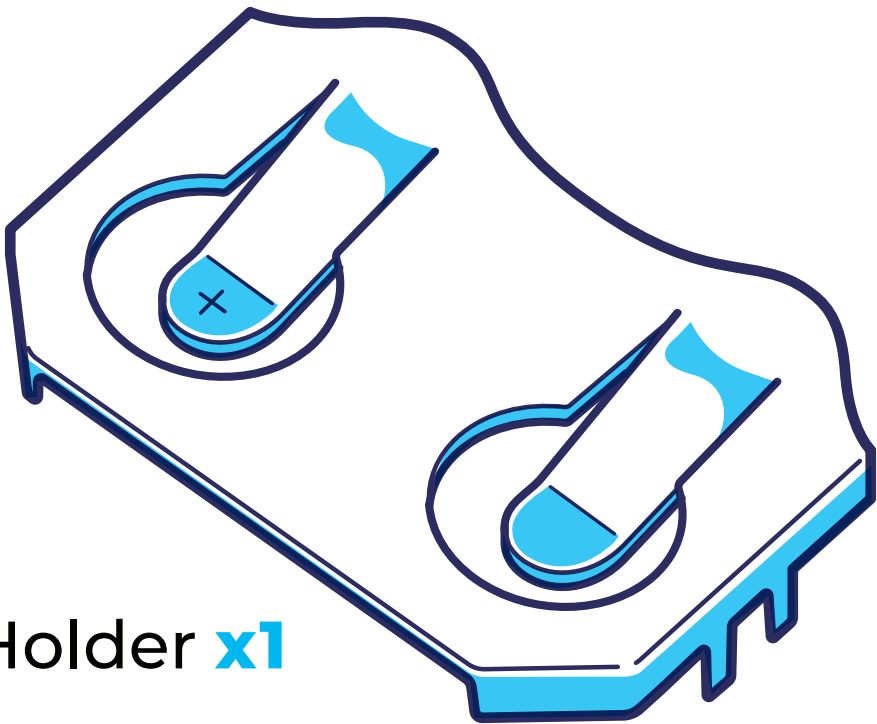
On/Off Switch **x1**



LEDs **x2**



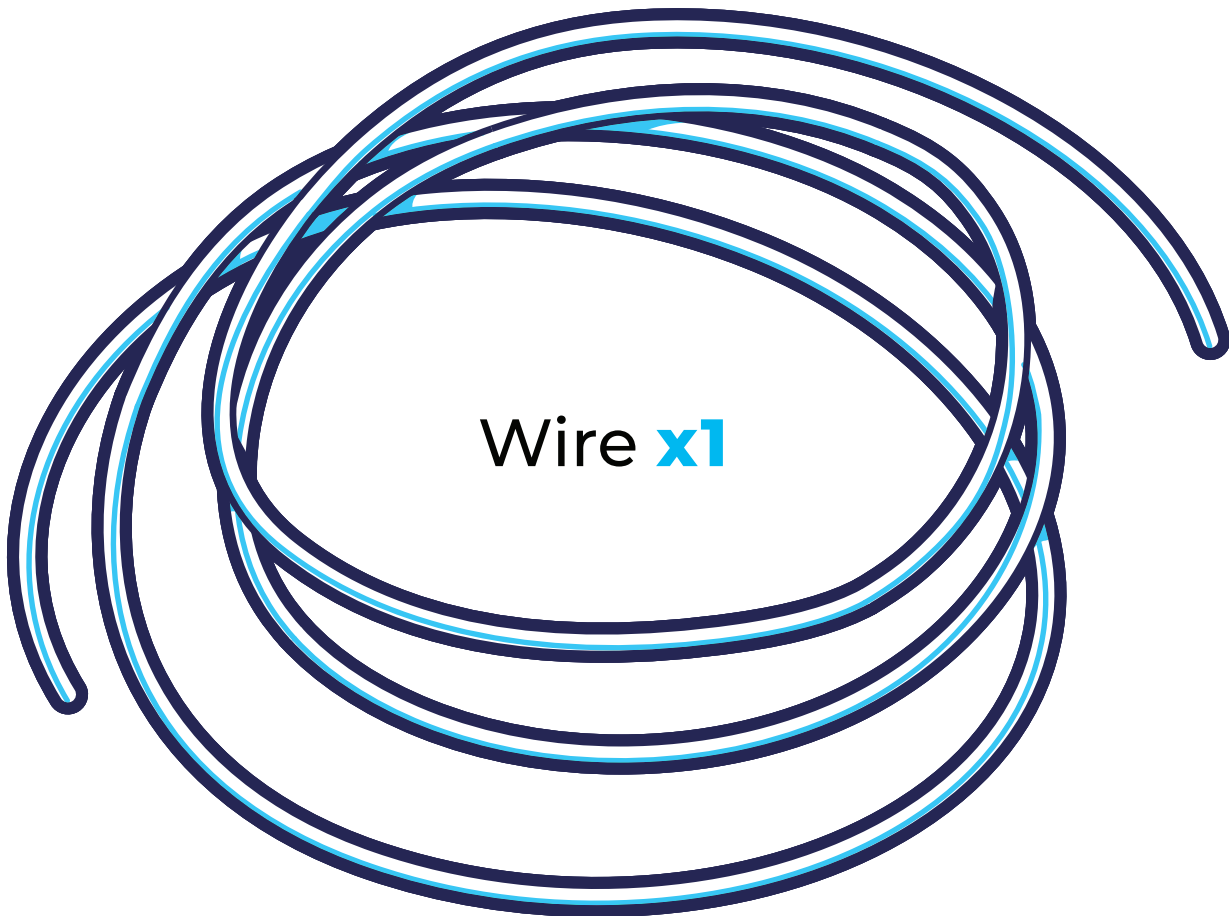
Vibration Motor **x1**



Battery Holder **x1**



3V Coin Cell Battery **x1**



Wire **x1**

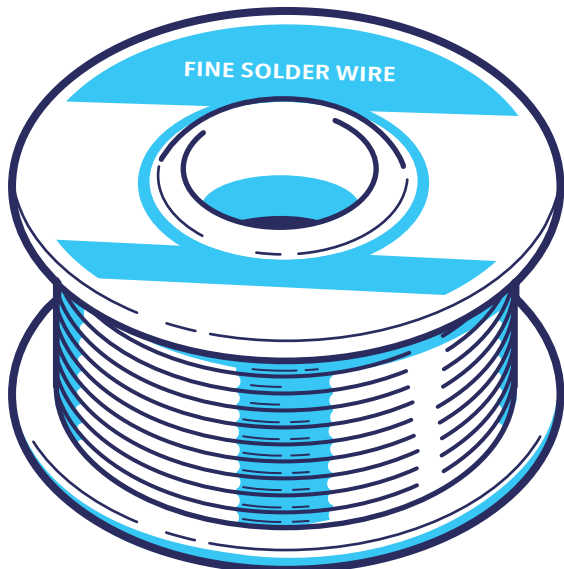
# 02. Tools

## RECOMENDED

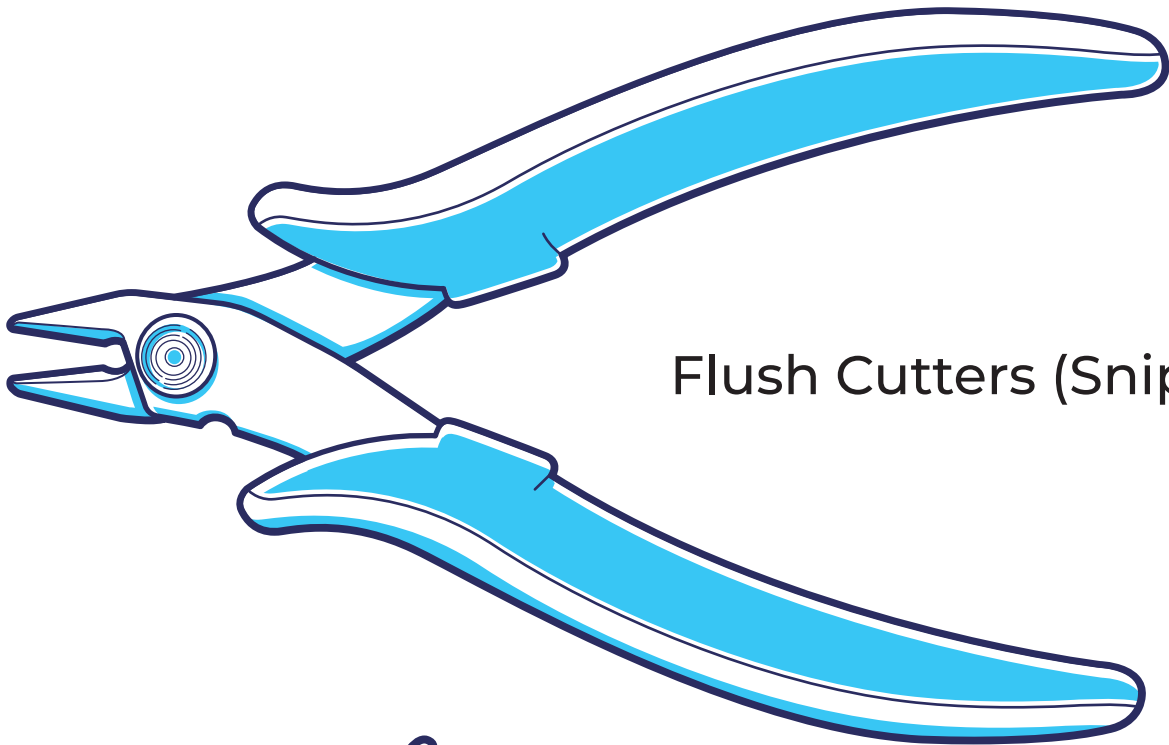
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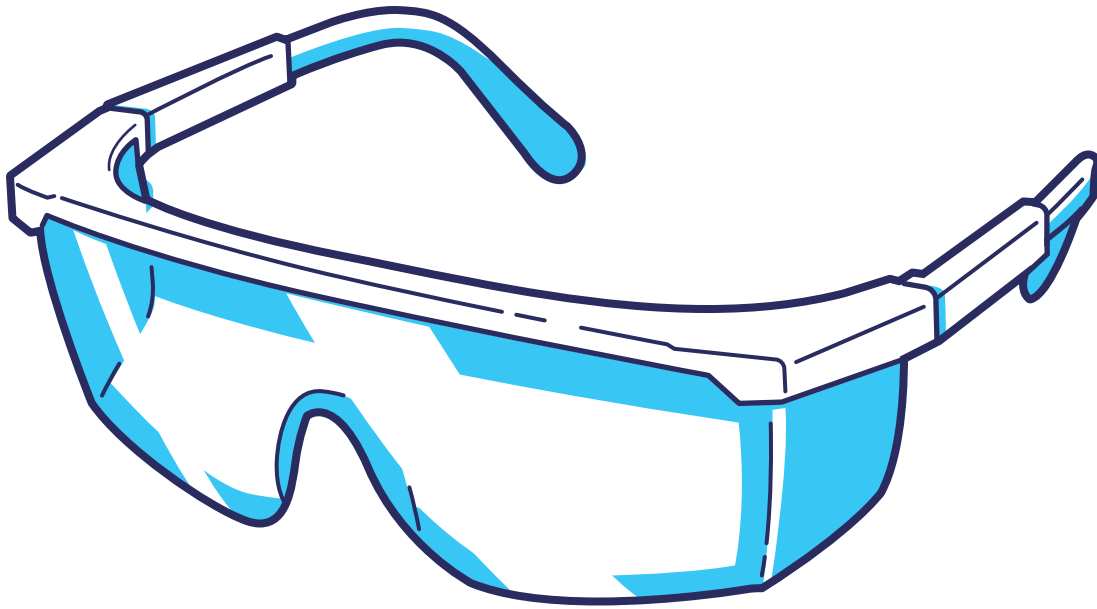
Soldering Iron



Solder



Flush Cutters (Snips)



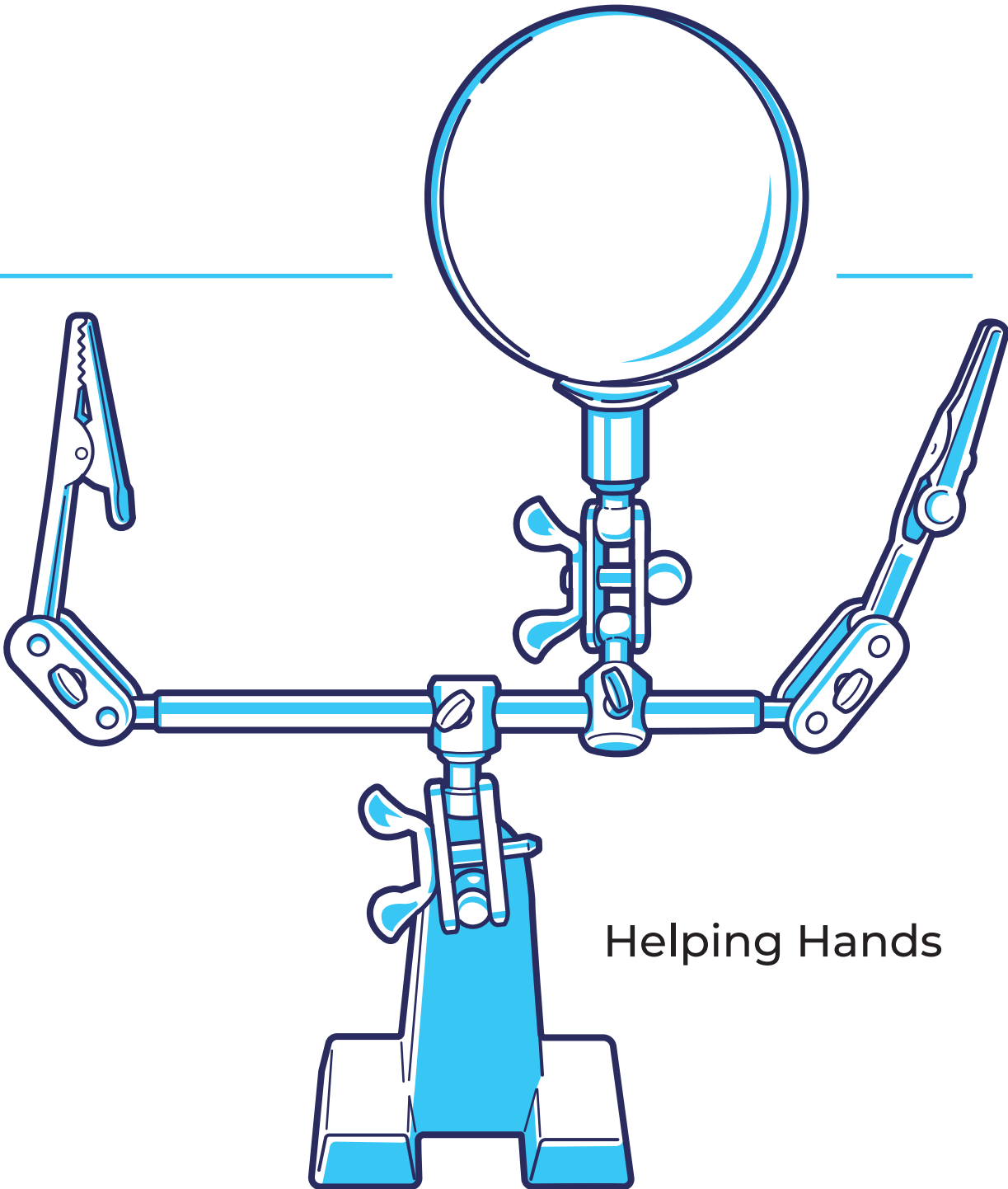
Safety Glasses

## OPTIONAL

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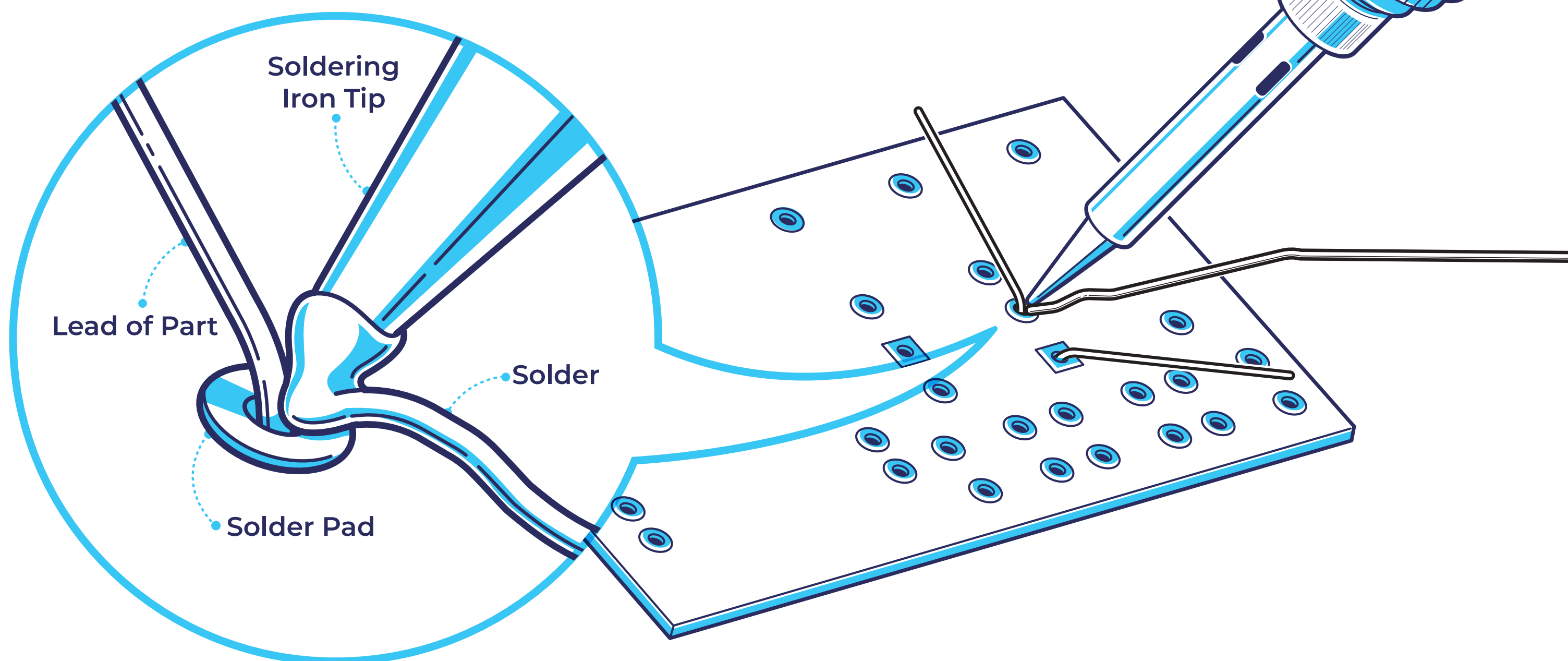
Solder Sucker



Helping Hands



## 03. Technique

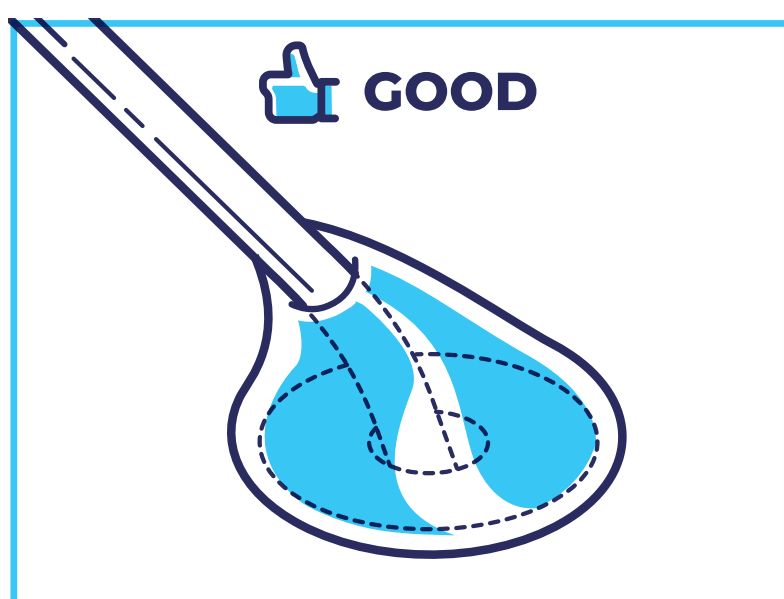


Above is the correct setup for creating a strong solder joint. Your goal is to heat both the lead of the part being solder and the solder pad. Then introduce the solder itself. By heating the lead and pad correctly the solder will flow around them to create a strong joint.

Your soldering iron should be set to at least 450F and less than 700F. If your solder iron does not have a temperature dial no problem! Just plug it in a go. Hold the tip of the iron to the lead and pad for about three seconds before introducing the solder. Don't worry if you heat up the board a bit, it is designed to withstand hot temperatures.

Hold the solder between your forefinger and thumb about four to six inches from the end. The solder is going to melt really quickly so you don't want your finger to be too close to the end. Touch the solder to the solder pad. It should liquify almost instantly and flow into the joint. Move the solder around a bit to cover the entire solder pad. You don't need very much to create a clean solder joint. It should only take a few seconds.

Pull the solder away first and then the soldering iron. Viola! You have just created your first soldering joint! Your solder joint should look something like the image below.



A little metal mountain resembling a hershey kiss. Fully covered solder pad, you should see no more gold.



A blobby solder joint that is more spherical. You can use less solder next time. The electronics should still work!



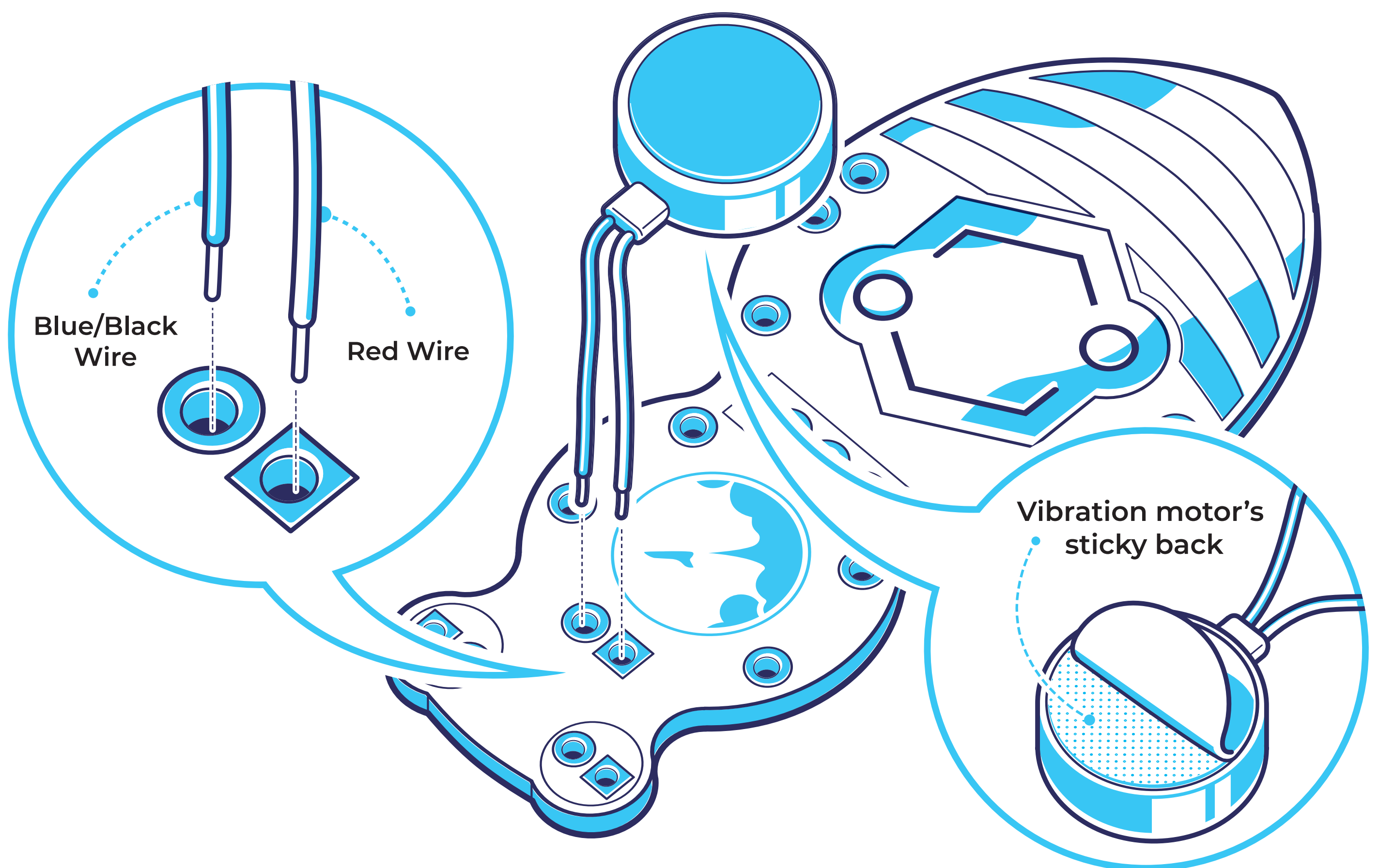
The solder is not fully on the solder pad. You still see some gold visible. Give it a another try. Just reheat the solder joint and add a little more solder.

# 04. Step-By-Step Assembly Instructions

## STEP 1: VIBRATION MOTOR

IT IS IMPORTANT THAT VIBRATION MOTOR IS PLACED CORRECTLY OR YOUR BUG WILL NOT TURN ON.

1.



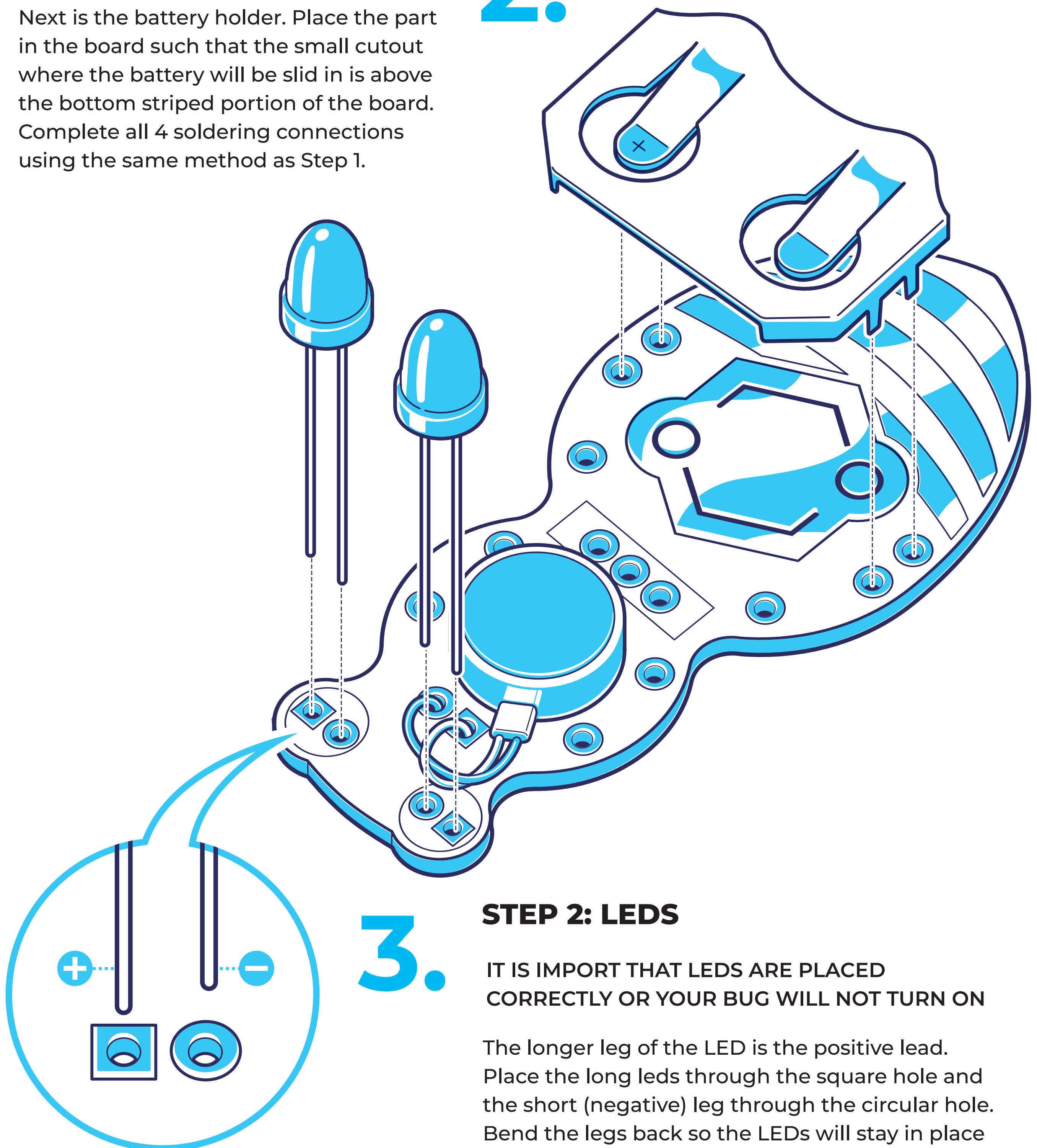
Place the red wire through hole marked with a square gold pad. Place the blue/black wire through the circle hole. Red indicates positive and the other wire is negative. Give yourself a length of solder, 4 to 6 inches. Then, holding the solder in one hand and your soldering iron in the other, use the tip of your iron to heat up

both the exposed wire of the vibration motor and the gold ring around the hole. Slowly feed in your solder into this joint until you've made a solid connection. Viola! One solder joint complete! Use the sticky back of the vibration motor to stick it to the board.

## STEP 2: BATTERY HOLDER

Next is the battery holder. Place the part in the board such that the small cutout where the battery will be slid in is above the bottom striped portion of the board. Complete all 4 soldering connections using the same method as Step 1.

# 2.



## STEP 2: LEDS

IT IS IMPORTANT THAT LEDS ARE PLACED CORRECTLY OR YOUR BUG WILL NOT TURN ON

The longer leg of the LED is the positive lead. Place the long led through the square hole and the short (negative) leg through the circular hole. Bend the legs back so the LEDs will stay in place during soldering. Solder each connection. Be careful to create four unique solder joints. If the solder between the two joints connects you have a “short”. Don’t worry if you make a mistake. You can use a solder sucker to remove the additional solder and redo the joints.

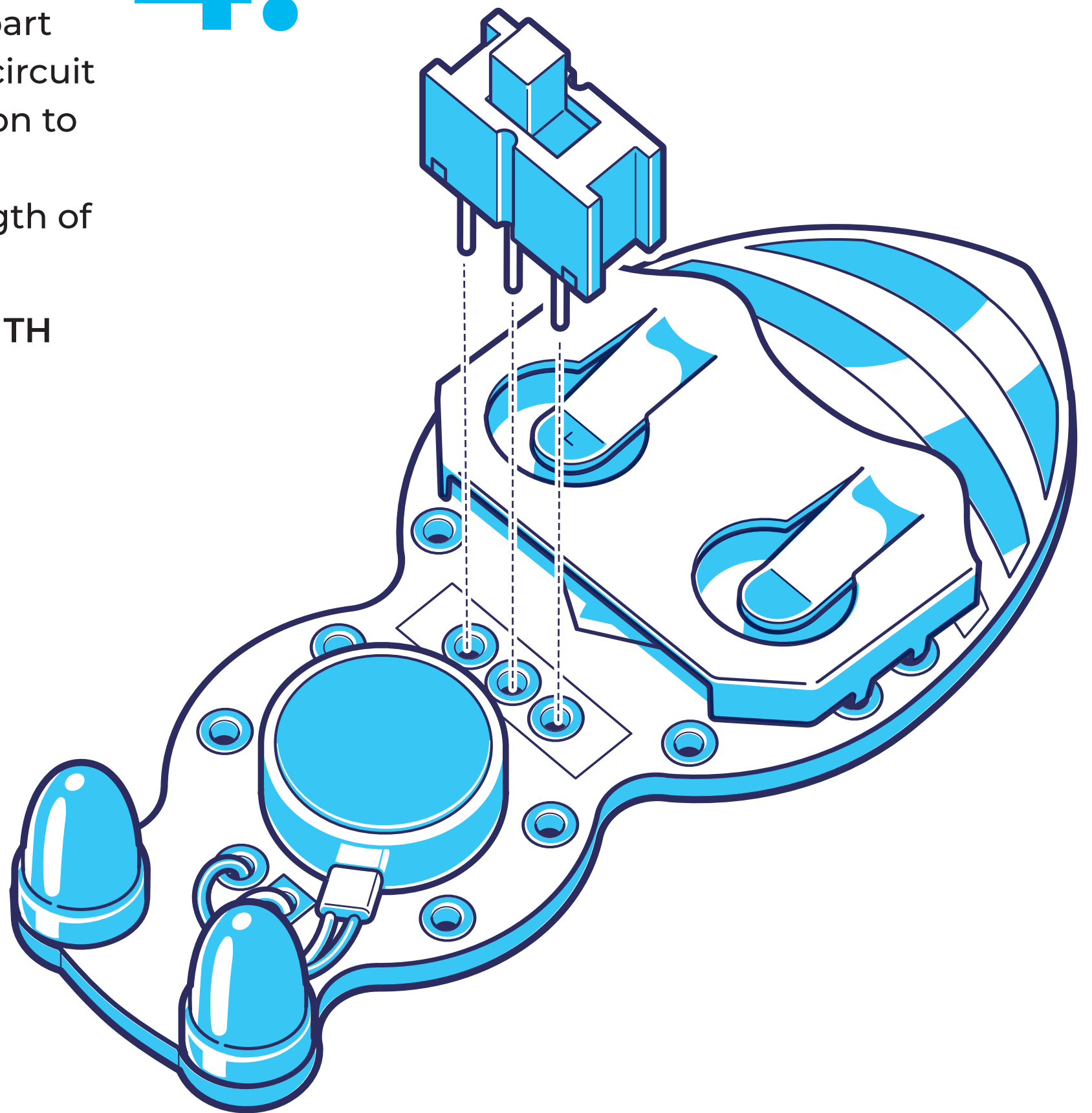


## STEP 4: ON/OFF SWITCH

Next comes the On/Off Switch. This part can be placed in either way, it is the circuit board that makes the logic connection to the bug on and off. Solder all three connections. Then snip the extra length of the switch.

**BE CAREFUL! COVER THE BOARD WITH YOUR HAND SO THE BITS DON'T GO FLYING AND MAKE SURE YOU'RE WEARING YOUR SAFETY GLASSES.**

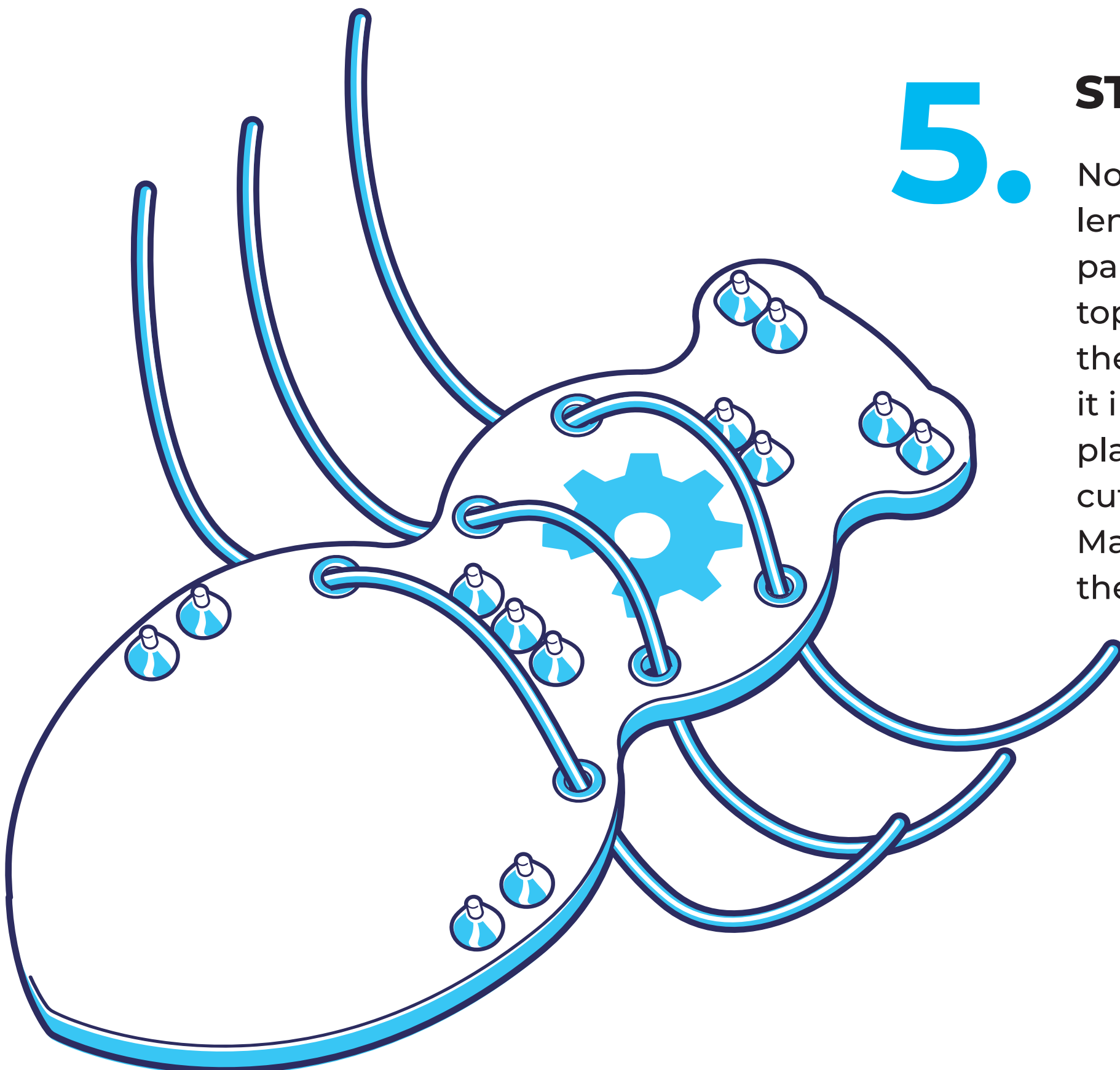
# 4.



# 5.

## STEP 5: LEGS

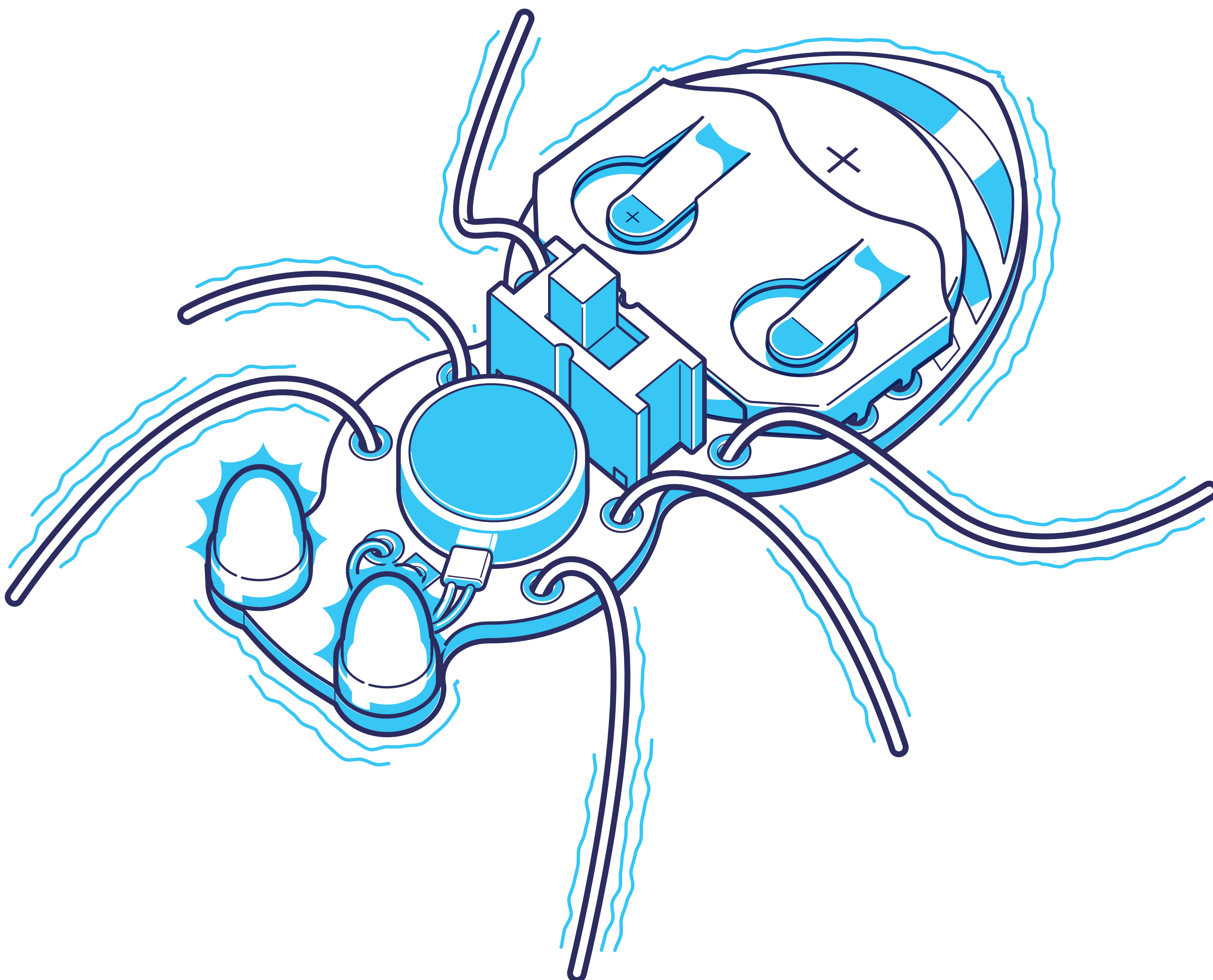
Now time for the legs! Unroll the length of wire and cut it into three parts. Thread each one through the top, under the bottom, and back out the top. It takes a little wiggling to get it into place. Once you have the wire placed solder each connection. Then cut the legs to your desired length. Make sure all legs make contact with the table surface when flipped over.



## STEP 4: ENJOY!

# 6.

Turn it on! Slide the battery into place with the positive (+) side up. Flip the switch and watch it skitter around. Try different surfaces. The bug will be the most active on flat, hard surfaces.



## QUESTIONS? COMMENTS?

Contact Rocket Department at [ideas@rocketdept.com](mailto:ideas@rocketdept.com)