

I Can Solder Badge kit

Assembly Instructions

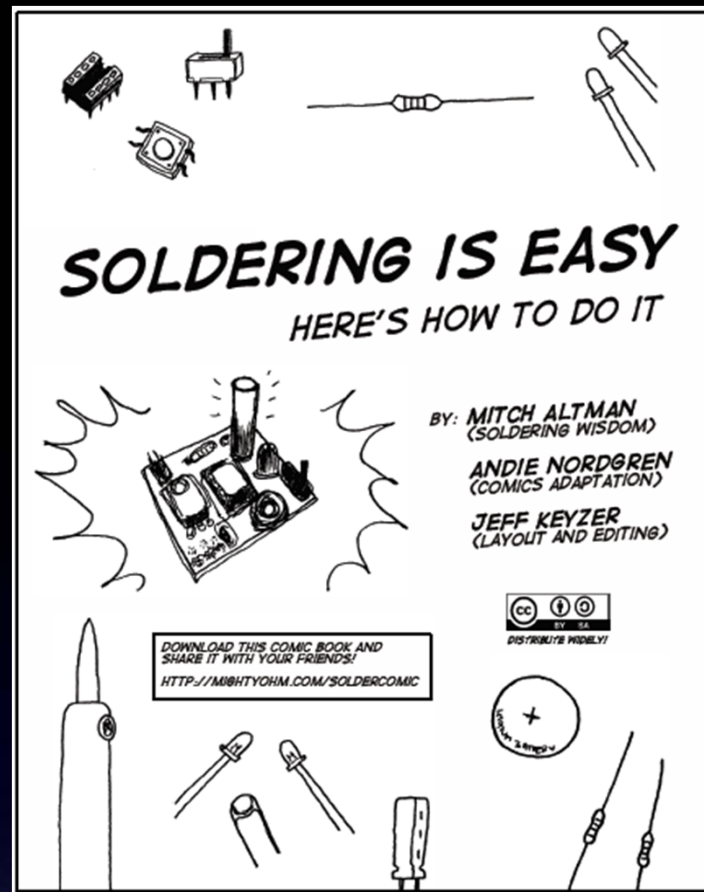


CORNFIELD ELECTRONICS

Blinky light and White flashlight

7-Jun-2023

Learn To Solder



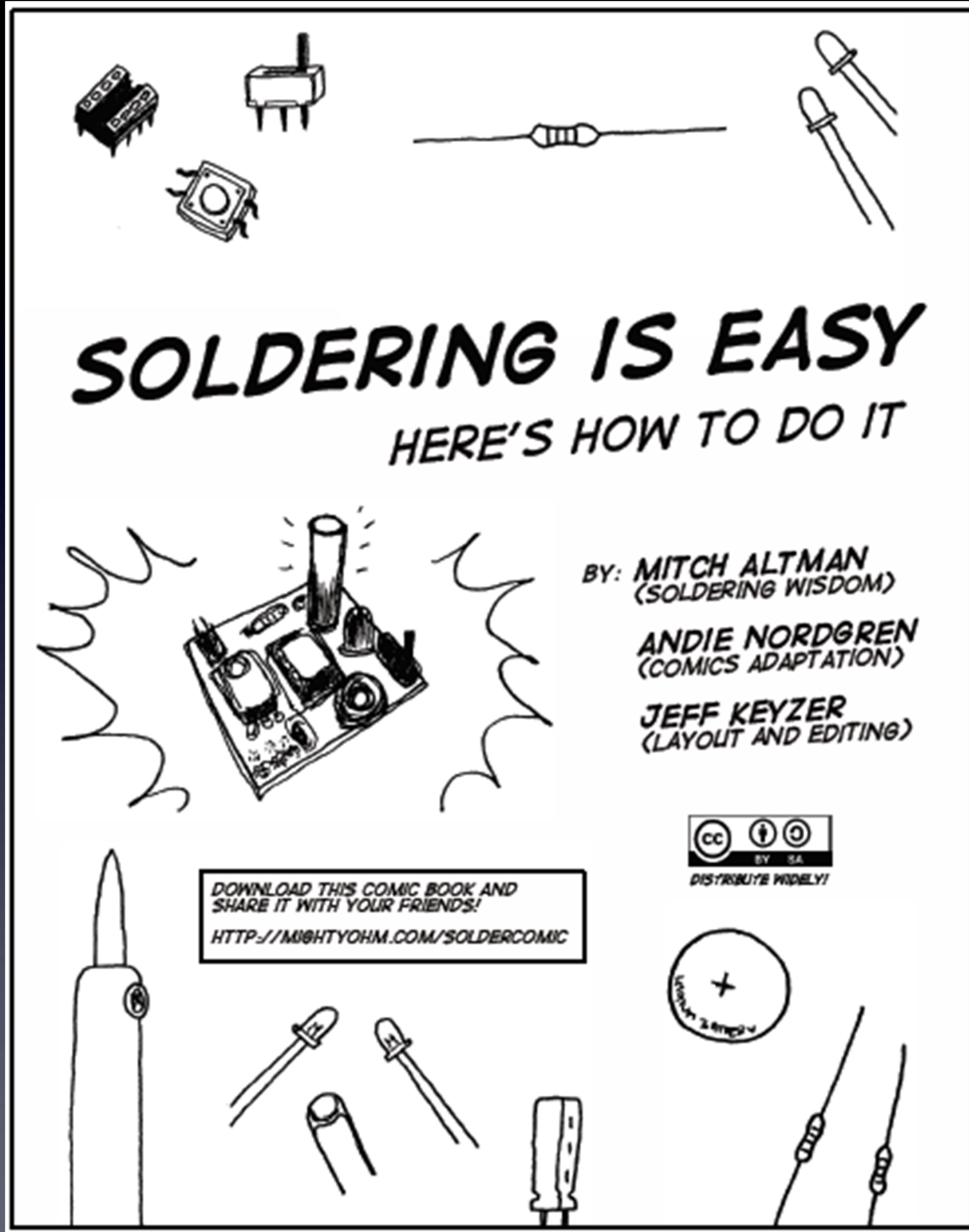
The following photos will show you how to solder.

But feel free to download the “Soldering Is Easy” comic book for free!

(In many different languages.)

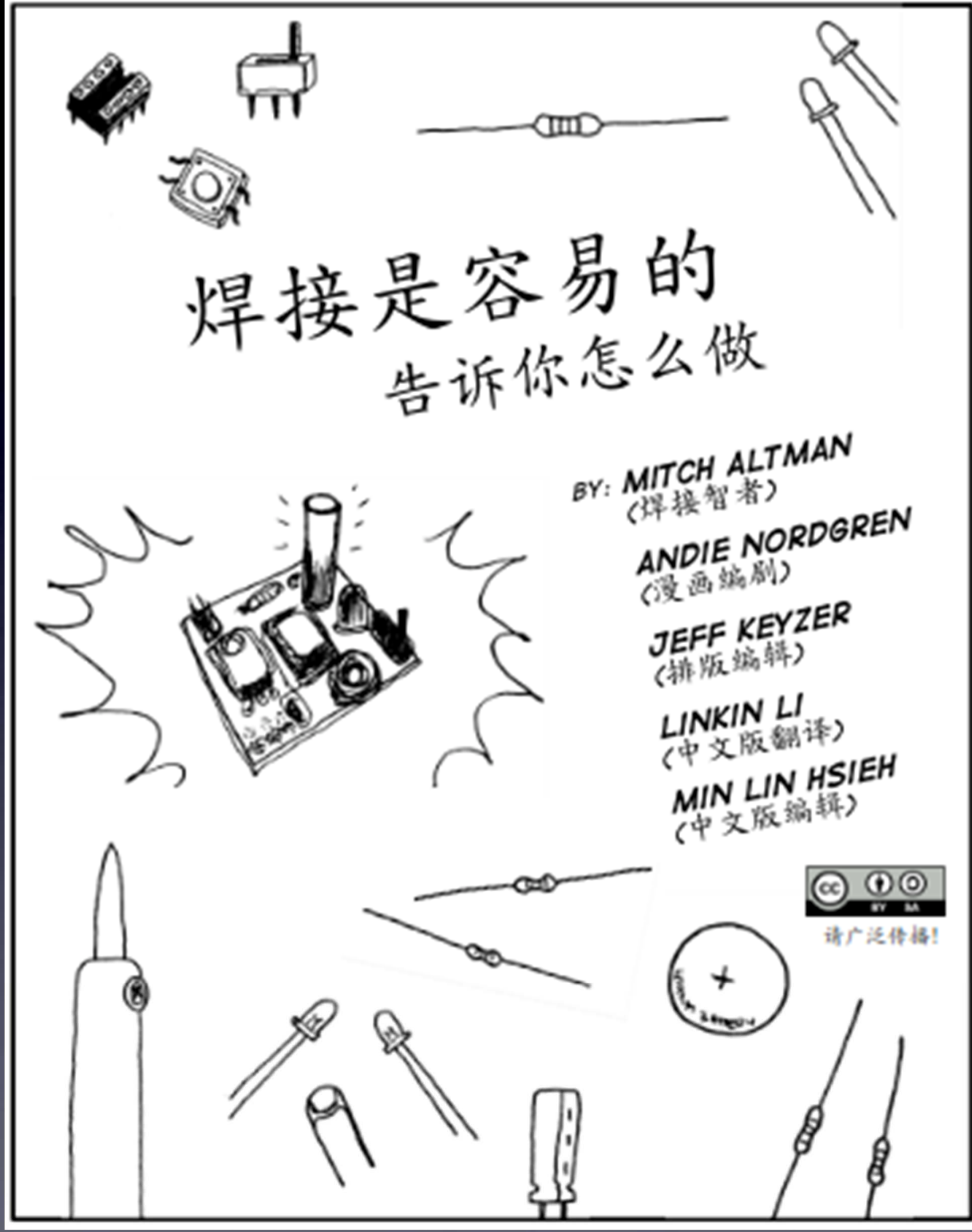
download for free at:
<http://mightyohm.com/soldercomic>

Learn To Solder



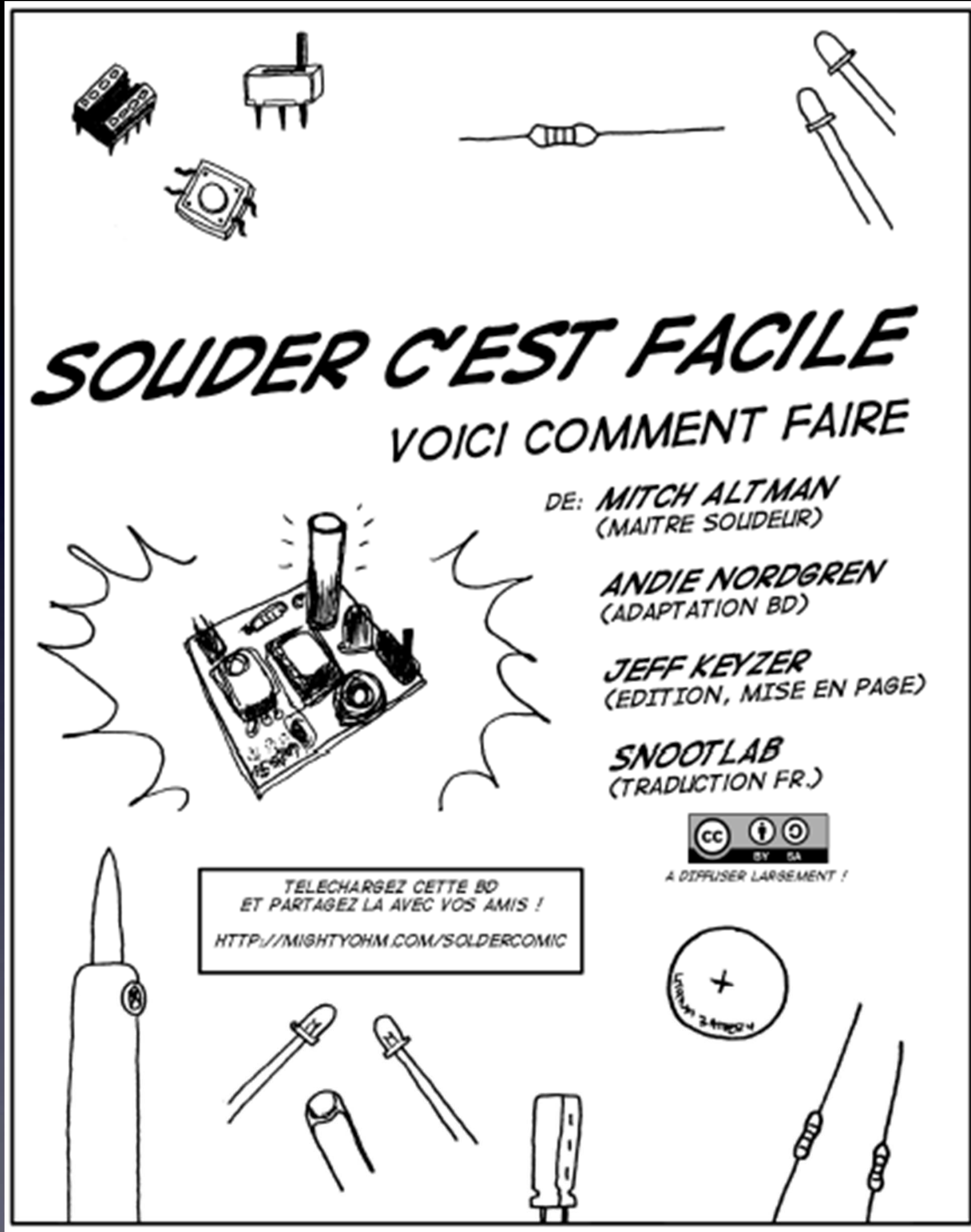
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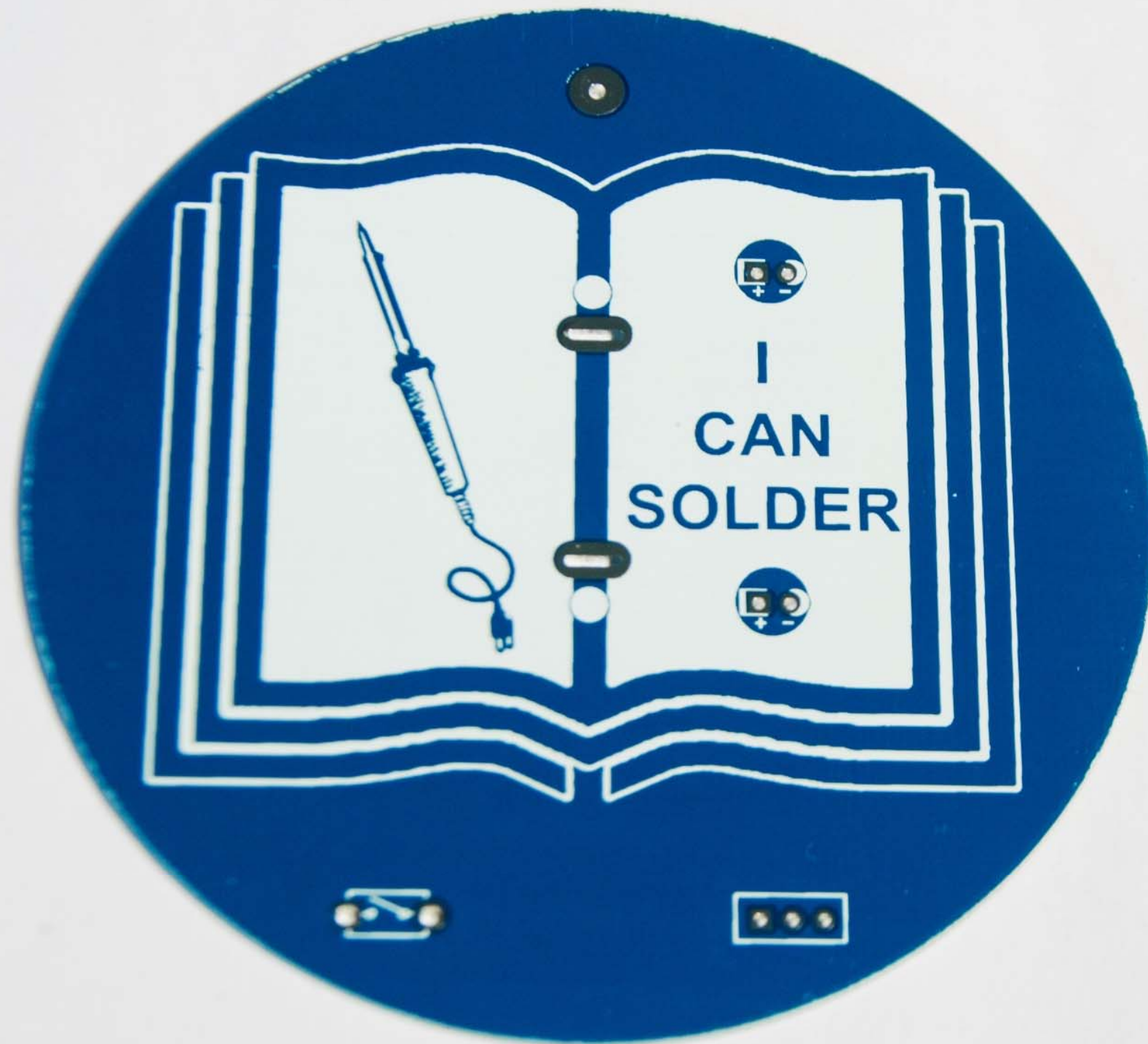


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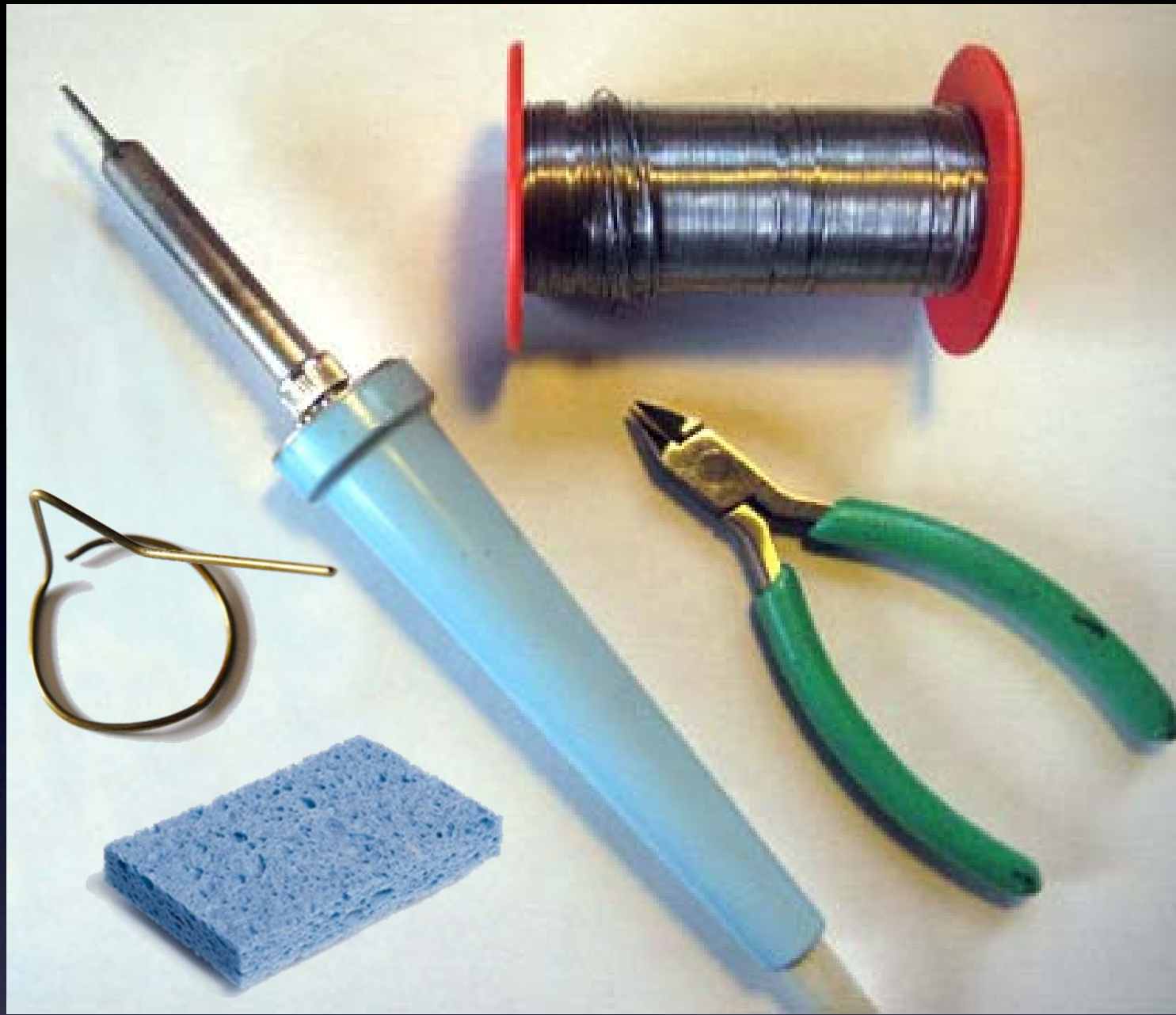
All of the parts



The board we'll solder the parts to (front)



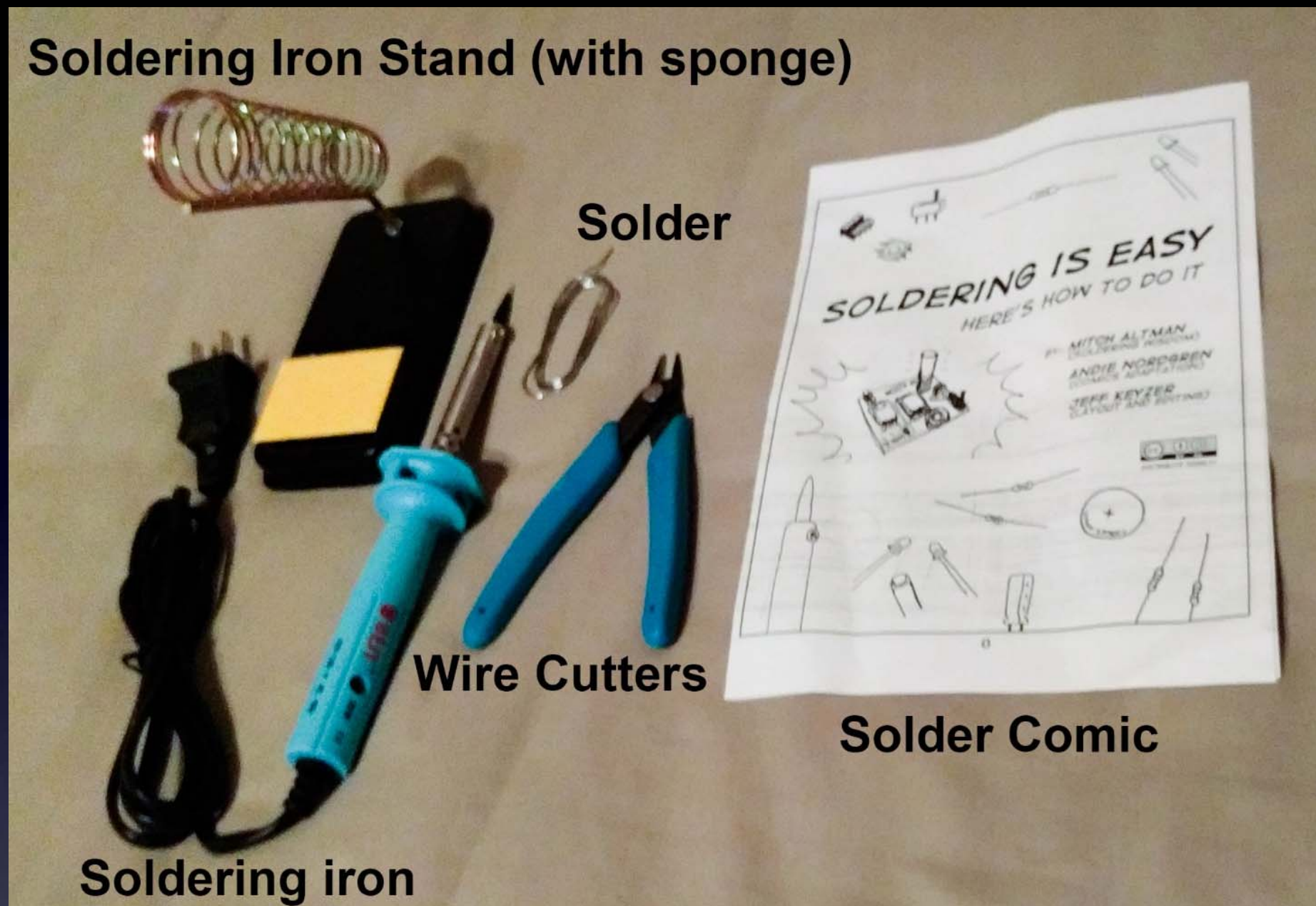
The board we'll solder the parts to (back)



Important:
Use solder WITH lead (Pb) !!
Unleaded solder
has very poisonous fumes!

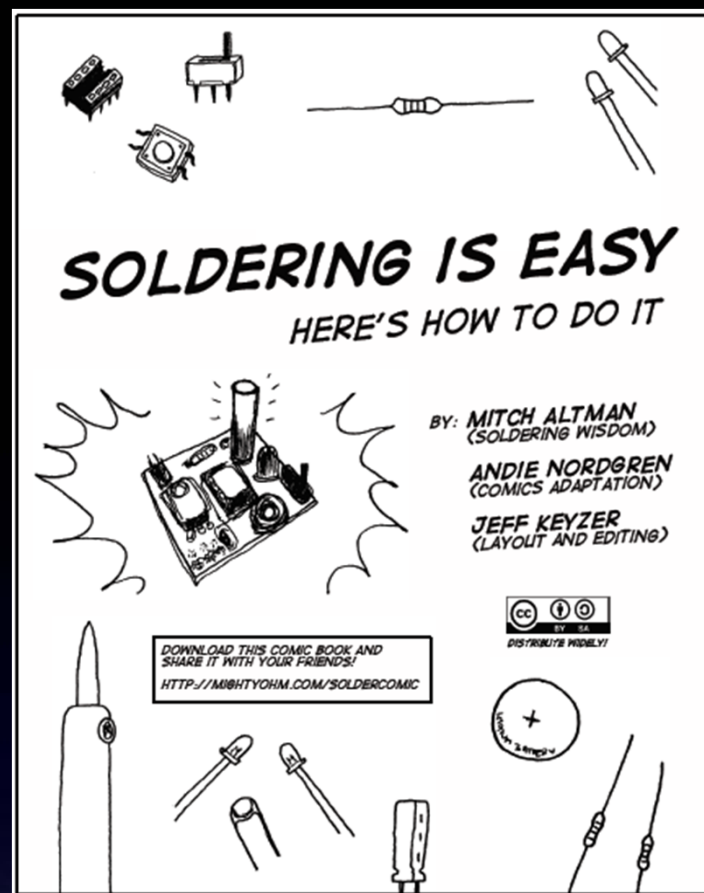
The tools you'll need:

- soldering Iron (35W or less) (0.7mm)
- solder (60/40 Sn/Pb, rosin core, 0.031" diameter or less) (63/37 is also good)
- soldering iron stand
- cellulose kitchen sponge (*not plastic!*)
- *small* wire cutter



These are available at:
<https://CornfieldElectronics.com>

Learn To Solder



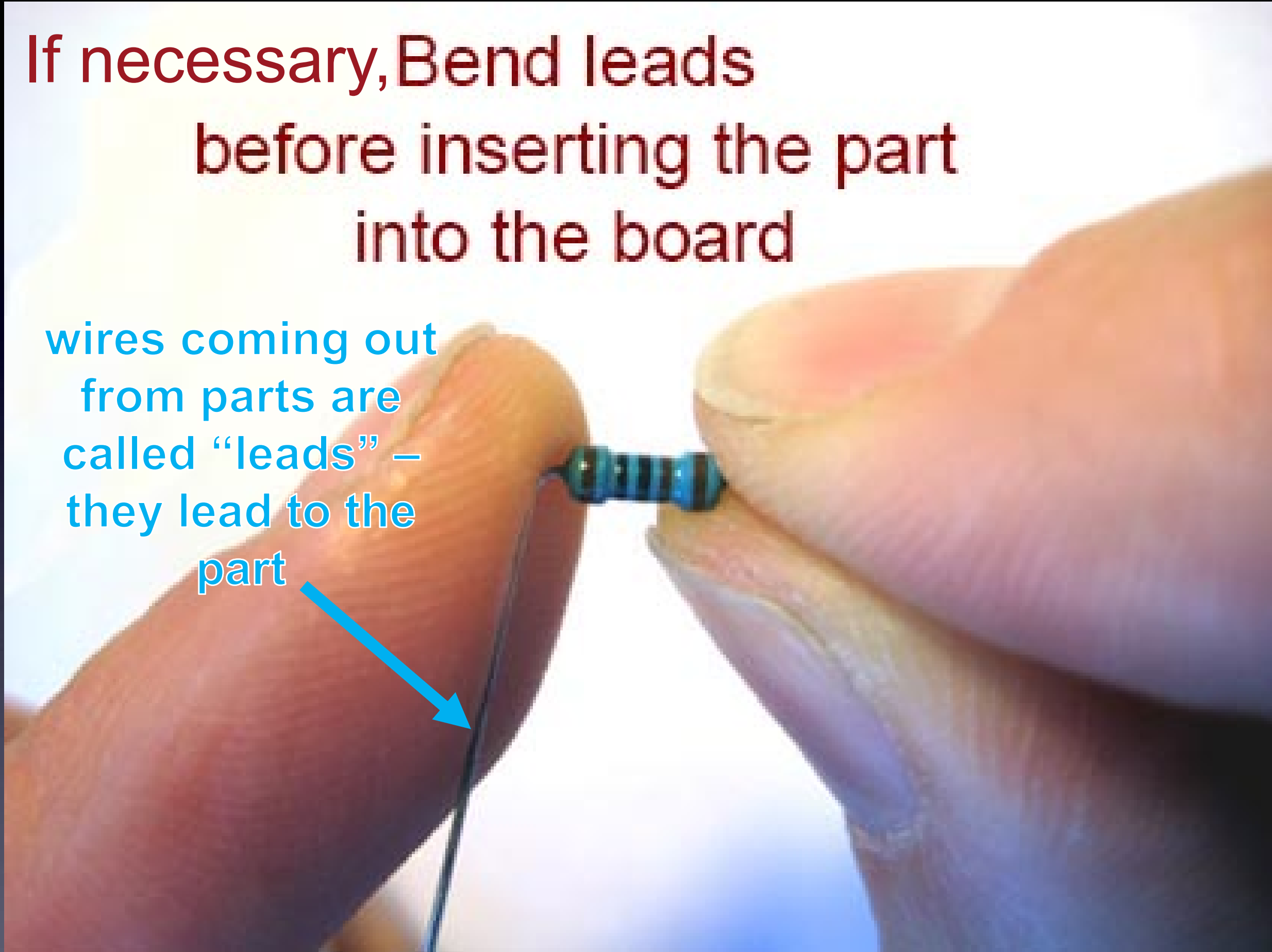
The following photos will show you how to solder a resistor.

There is no resistor in this kit. But the soldering procedure is the same for all of the parts in this kit.

The “I Can Solder Badge” kit has no resistors

If necessary, Bend leads
before inserting the part
into the board

wires coming out
from parts are
called “leads” –
they lead to the
part



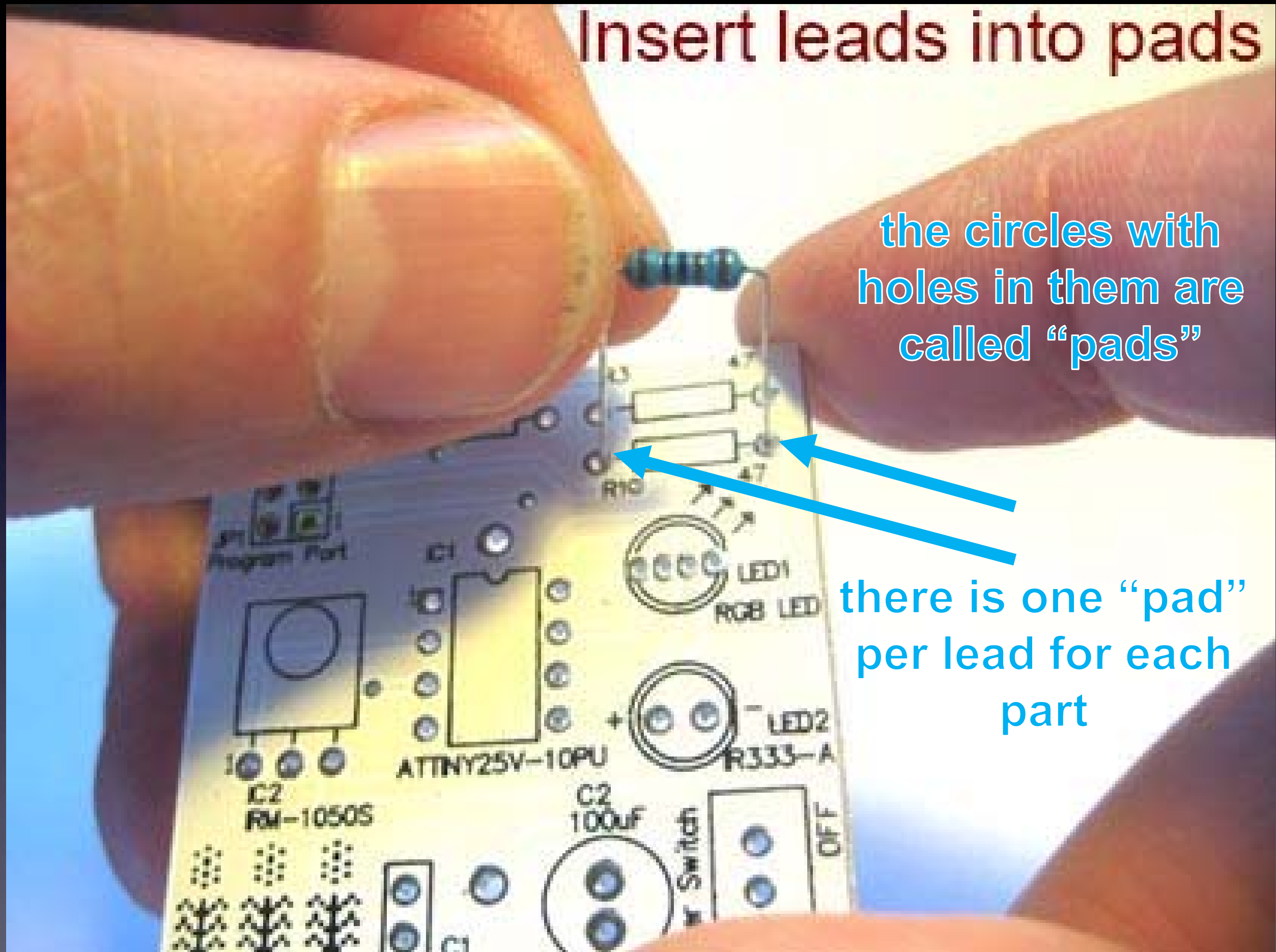
(but, the parts in this kit are soldered the same way)

The “I Can Solder Badge” kit has no resistors

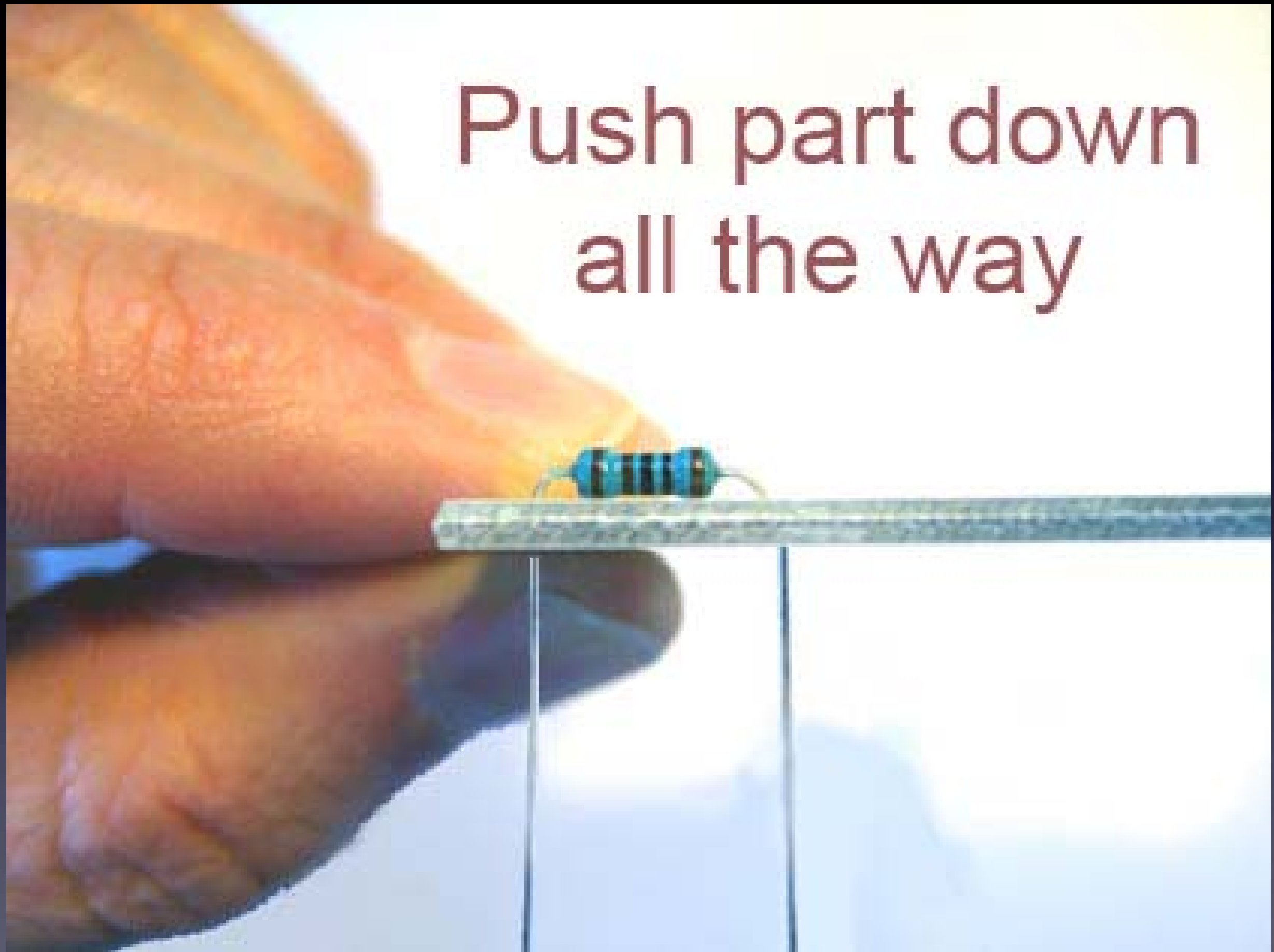


**this is how a resistor will look *before*
inserting it into the board**

LEDs for this kit go into the board like this resistor



Push part down
all the way





Upside down

Wires bent
half way
out (only half way)
like a “V”

so that the part won't fall out while soldering it



How to hold a soldering iron

(Like a pencil – held from underneath)

Important

The perfect kind of solder for
electronics:

60/40 rosin core,
0.031" (0.7mm) diameter (or smaller)

(63/37 is also good)

Important:

Use solder WITH lead (Pb) !!
lead-free solder
has very poisonous fumes!

3 Safety Tips...

Safety Tip #1:

Hot !!

(When you touch the tip,
you will let go quickly every time!)

Safety Tip #2:

Lead (Pb) is toxic

But it easily washes off your hands
with soap and water

Safety Tip #3:

(coming soon)

2 secrets
to good soldering...

Secret #1:

Clean the tip!

(before every solder connection)

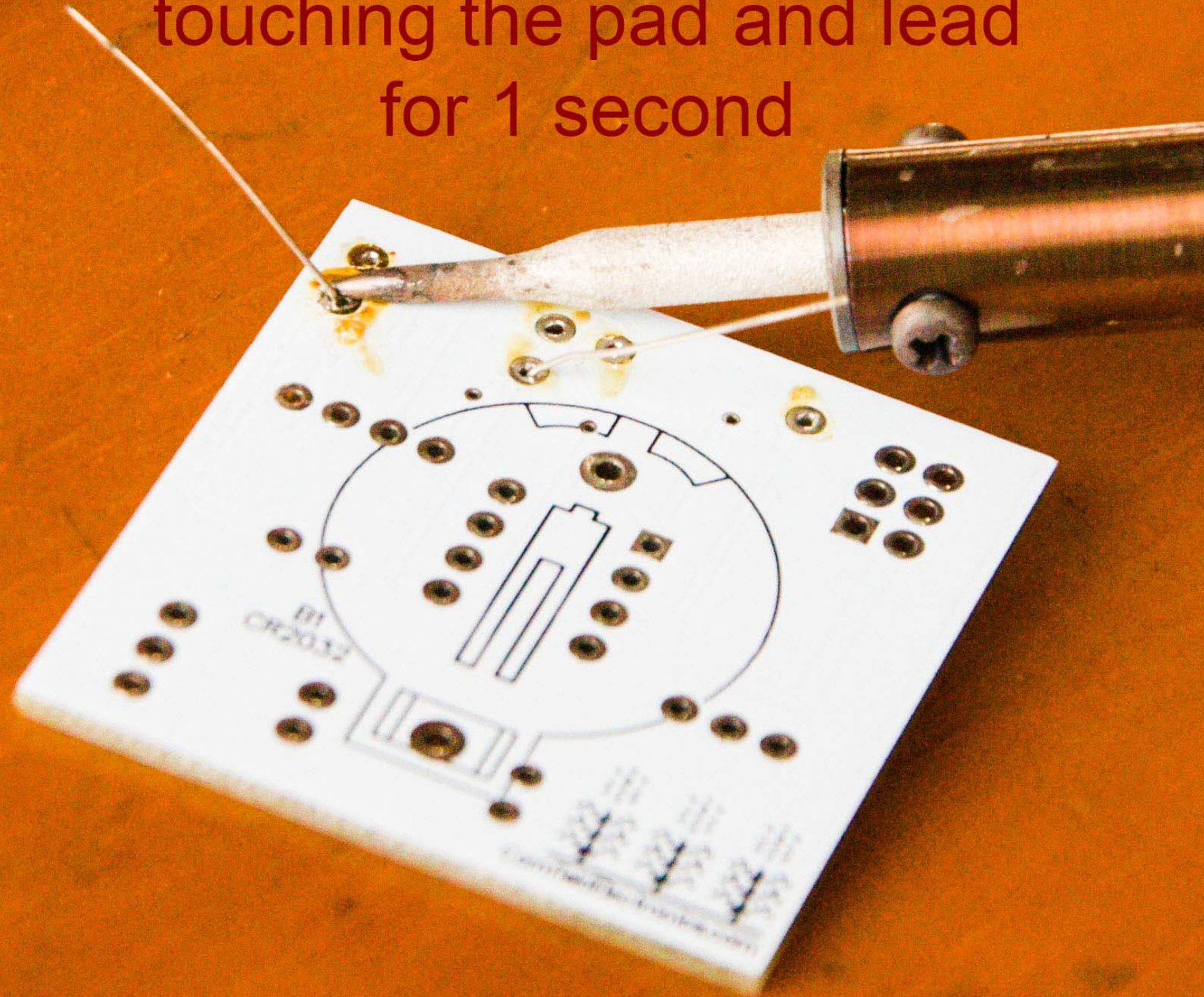
Bang (lightly) 3 times,

Swipe, Rotate, Swipe (on the sponge):

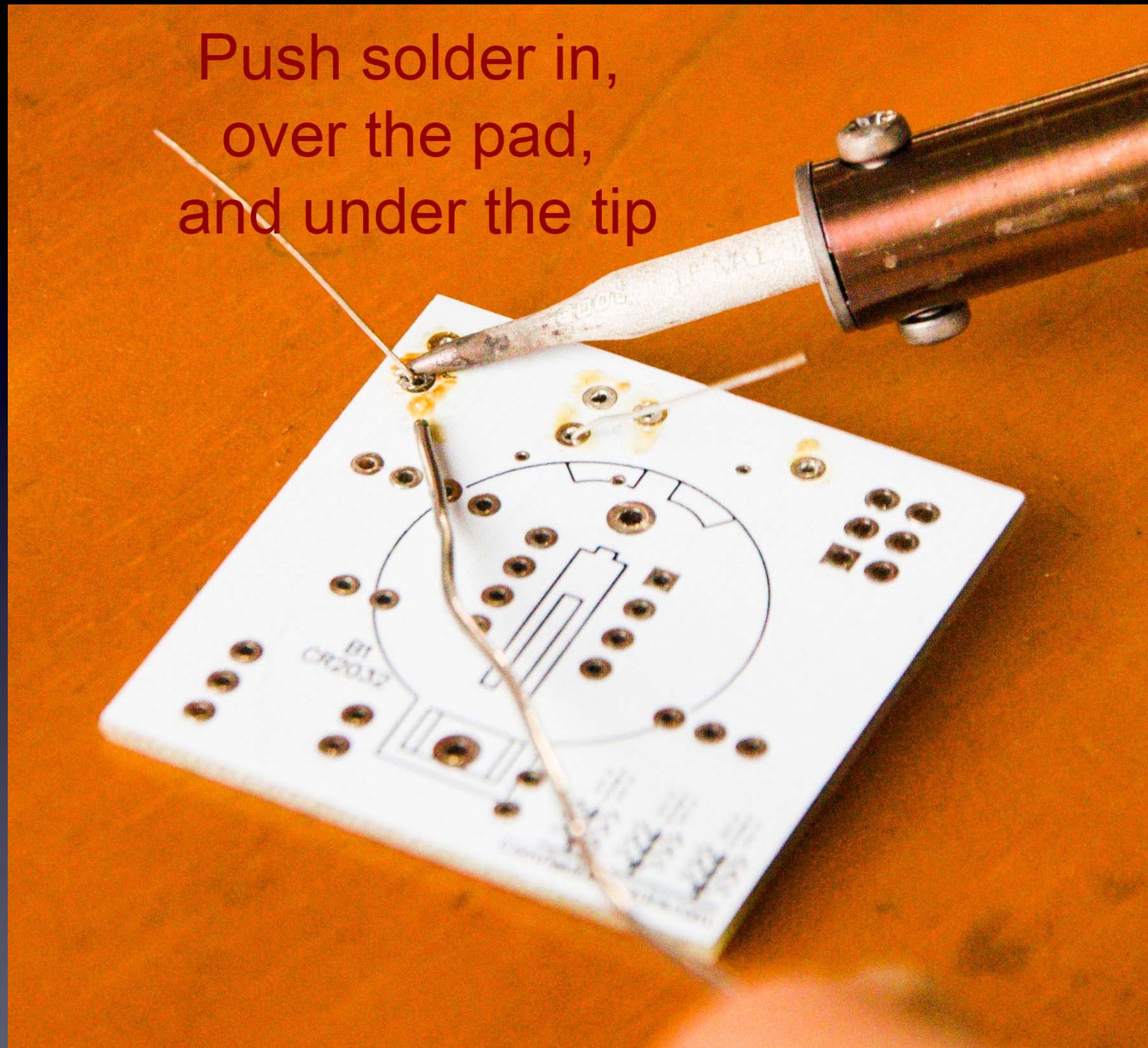
Keep the tip shiny silver!

knock solder off the tip

Lay clean tip across half of the pad,
touching the pad and lead
for 1 second

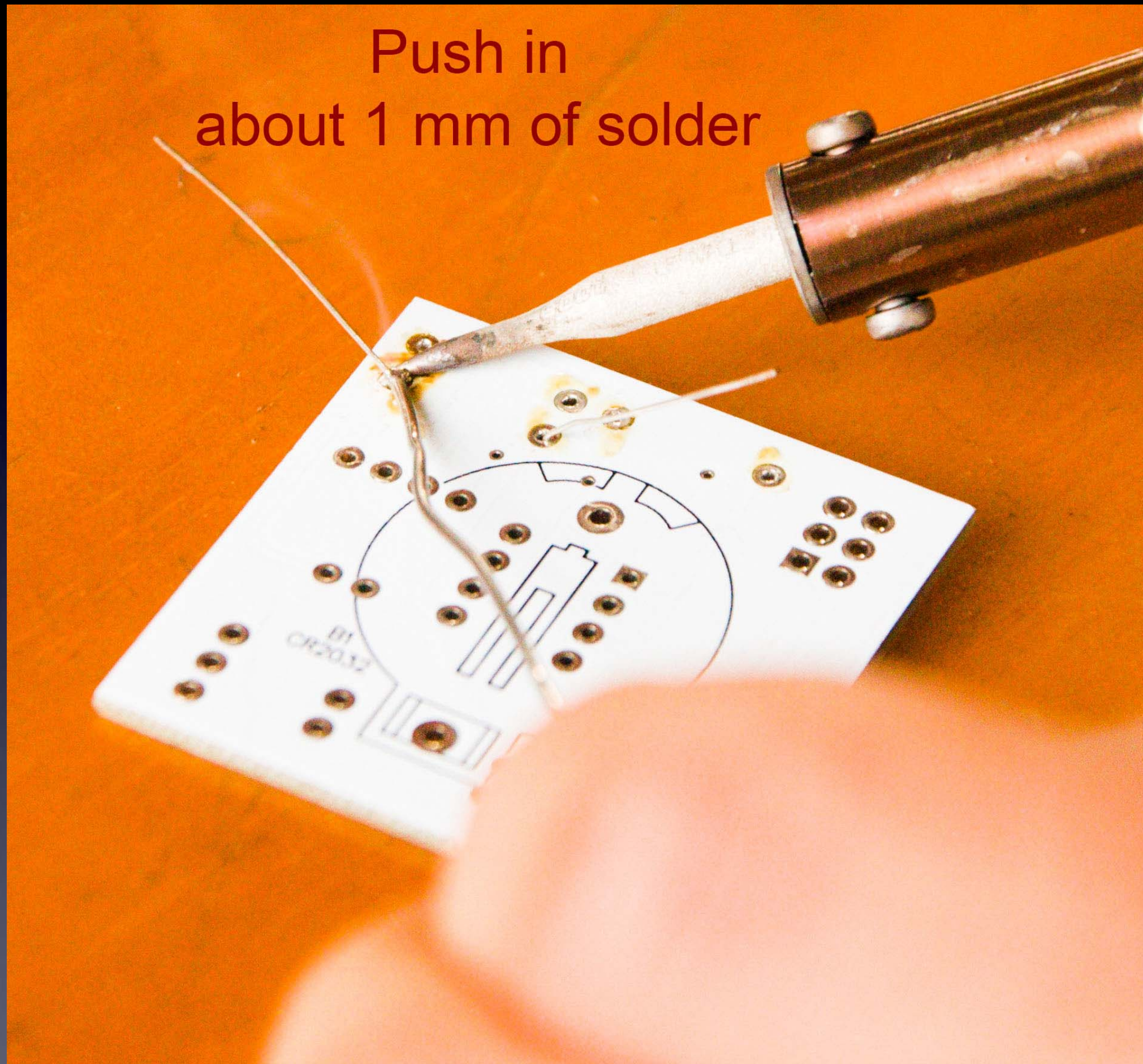


Do this quickly (slowly doesn't work well) – solder in & out in about 1 second



Make sure solder melts on the underside of the soldering iron tip
(not the side or top of the soldering iron tip)!

Do this quickly (slowly doesn't work well) – solder in & out in about 1 second



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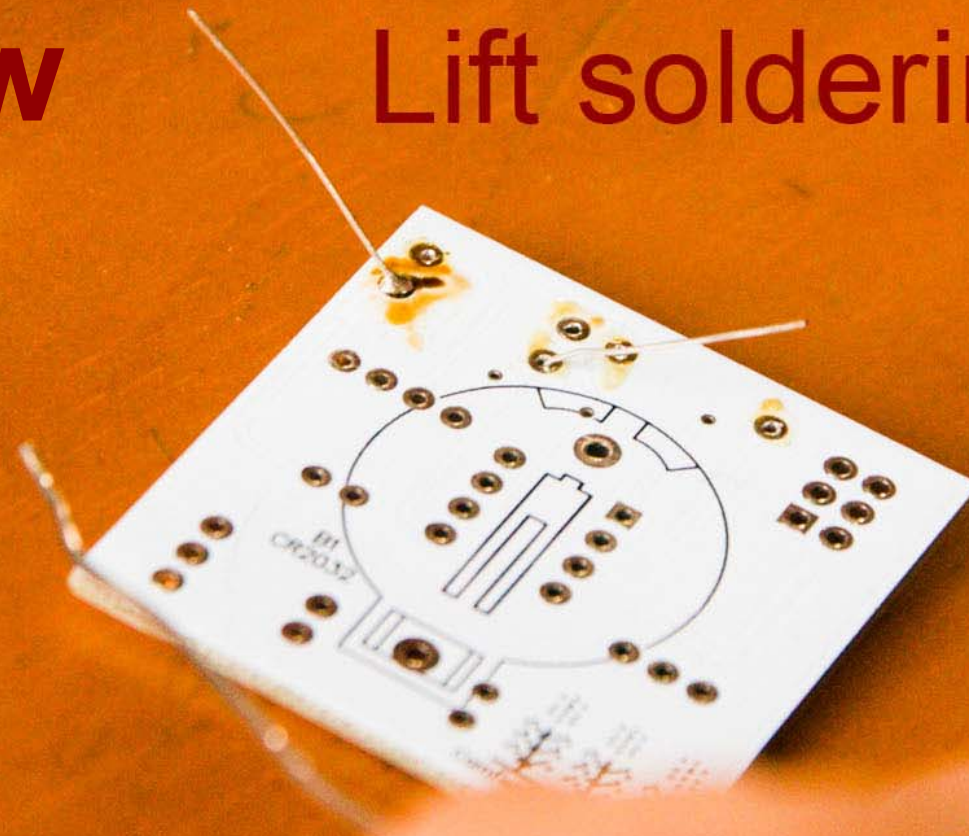
Pull solder away,
But keep holding soldering iron down
for 1 more second

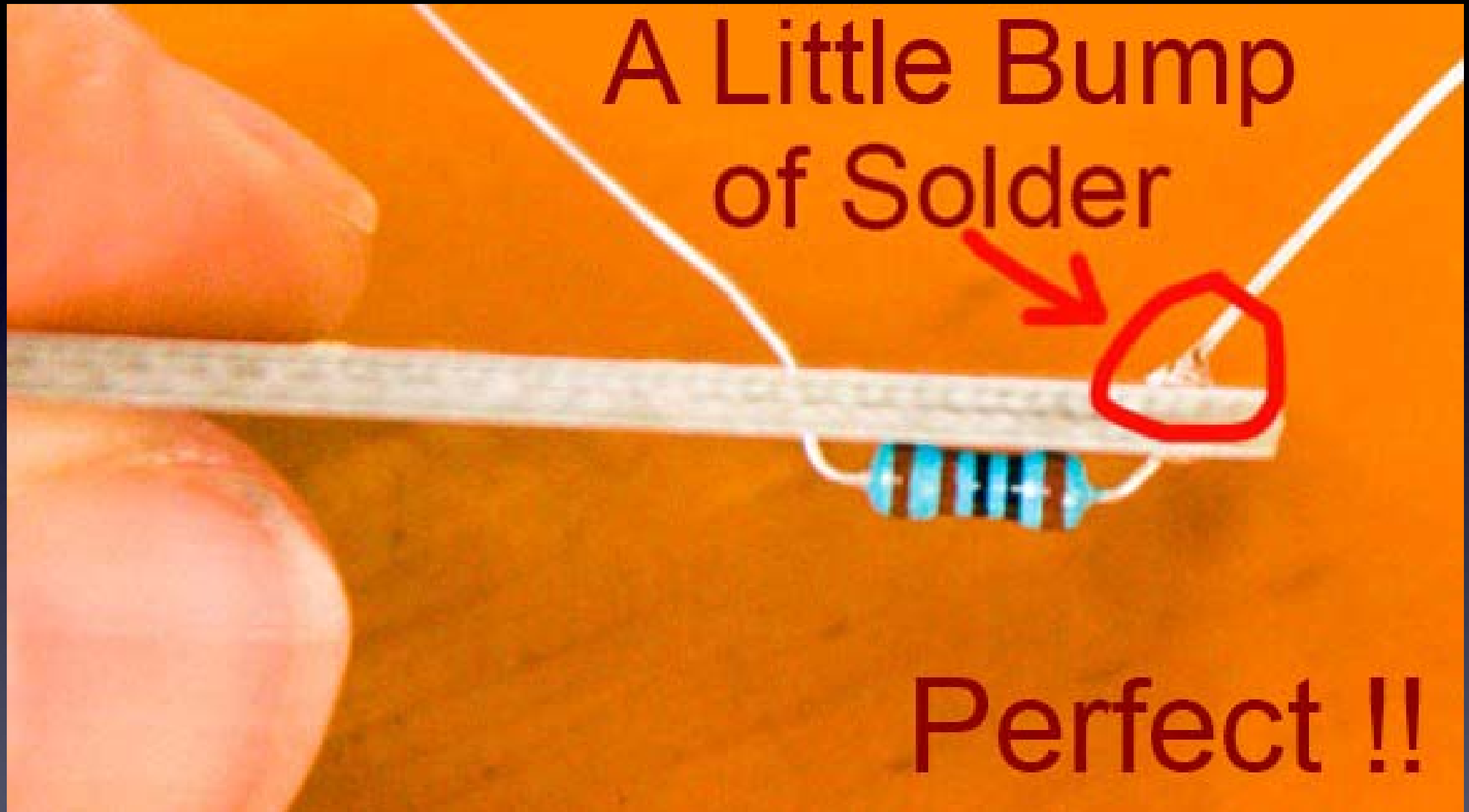
Secret #2:

Keep hot tip down
1 second
for solder to flow !!

Now

Lift soldering iron





If you can see any of the pad, or the hole, you need more solder
– so, just do all the steps again to make it perfect.

The Rhythm !



The Rhythm !
and speed

Clean the tip



The Rhythm ! and speed

Tip Down



The Rhythm !

and speed



Solder In

The Rhythm !

and speed



Solder Out

The Rhythm ! and speed



WAIT !

The Rhythm !

and speed



Lift Tip

The Rhythm !



The Rhythm !
and speed

Clean the tip



The Rhythm ! and speed

Tip Down



The Rhythm !

and speed



Solder In

The Rhythm !

and speed



Solder Out

The Rhythm !

and speed



WAIT !

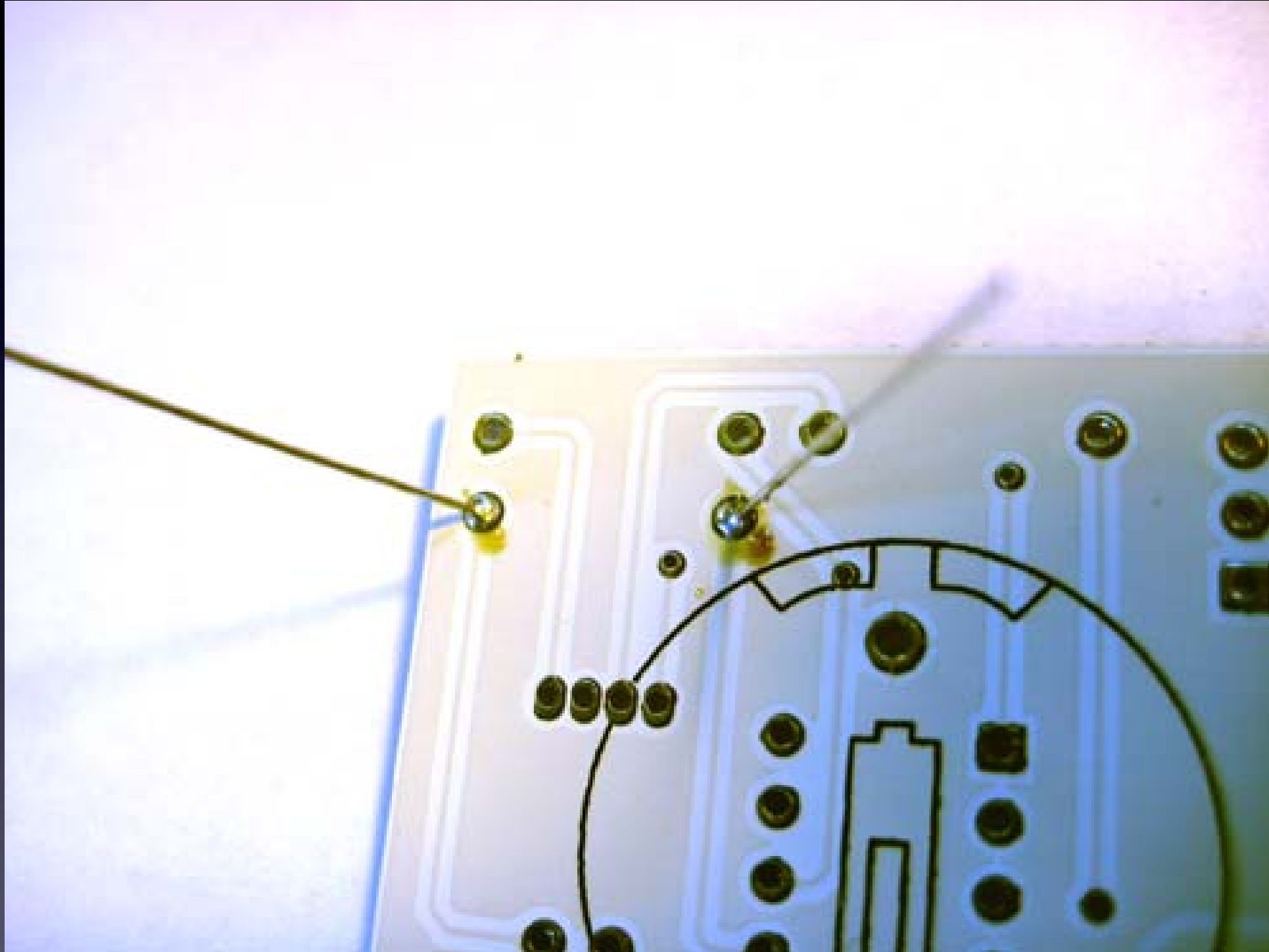
The Rhythm !

and speed



Lift Tip

Solder all of the leads of the part to the board

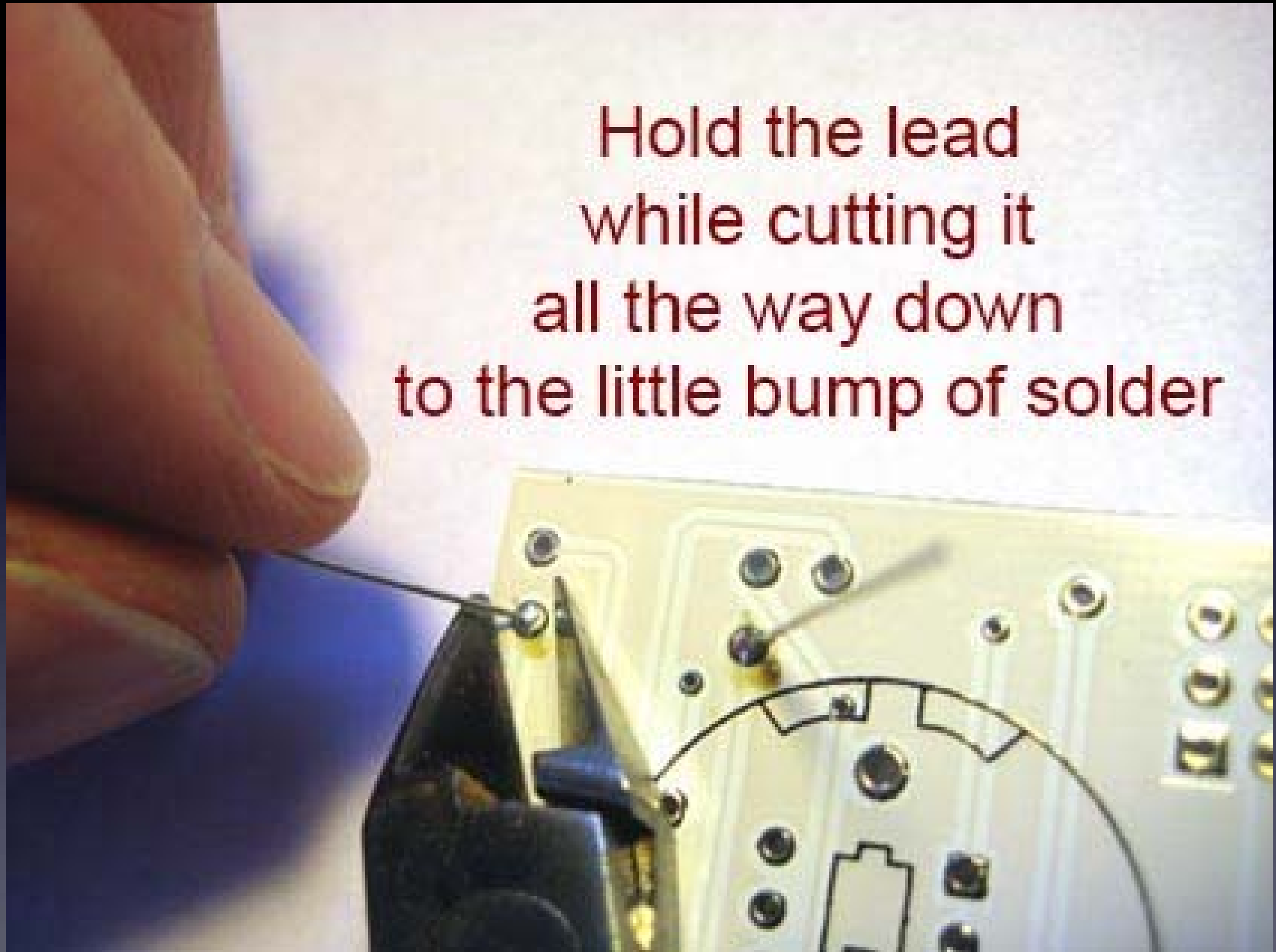


For this part, there are two leads

Here you can see two good solder connections

Now cut the leads short

Hold the lead
while cutting it
all the way down
to the little bump of solder



Cutting with the tip of the wire cutter gives you more control

Safety Tip #3:

Hold or cover the lead !

(or it will fly into your eye!)

(They like doing that – so please hold or cover the lead when you cut.)



All done !

No wires sticking out

One part at a time

Till all the parts are soldered

Then put in the batteries,

Turn it on,

And it works!

(Or you start debugging.)



And it will look like this when you're done.

Let's start!

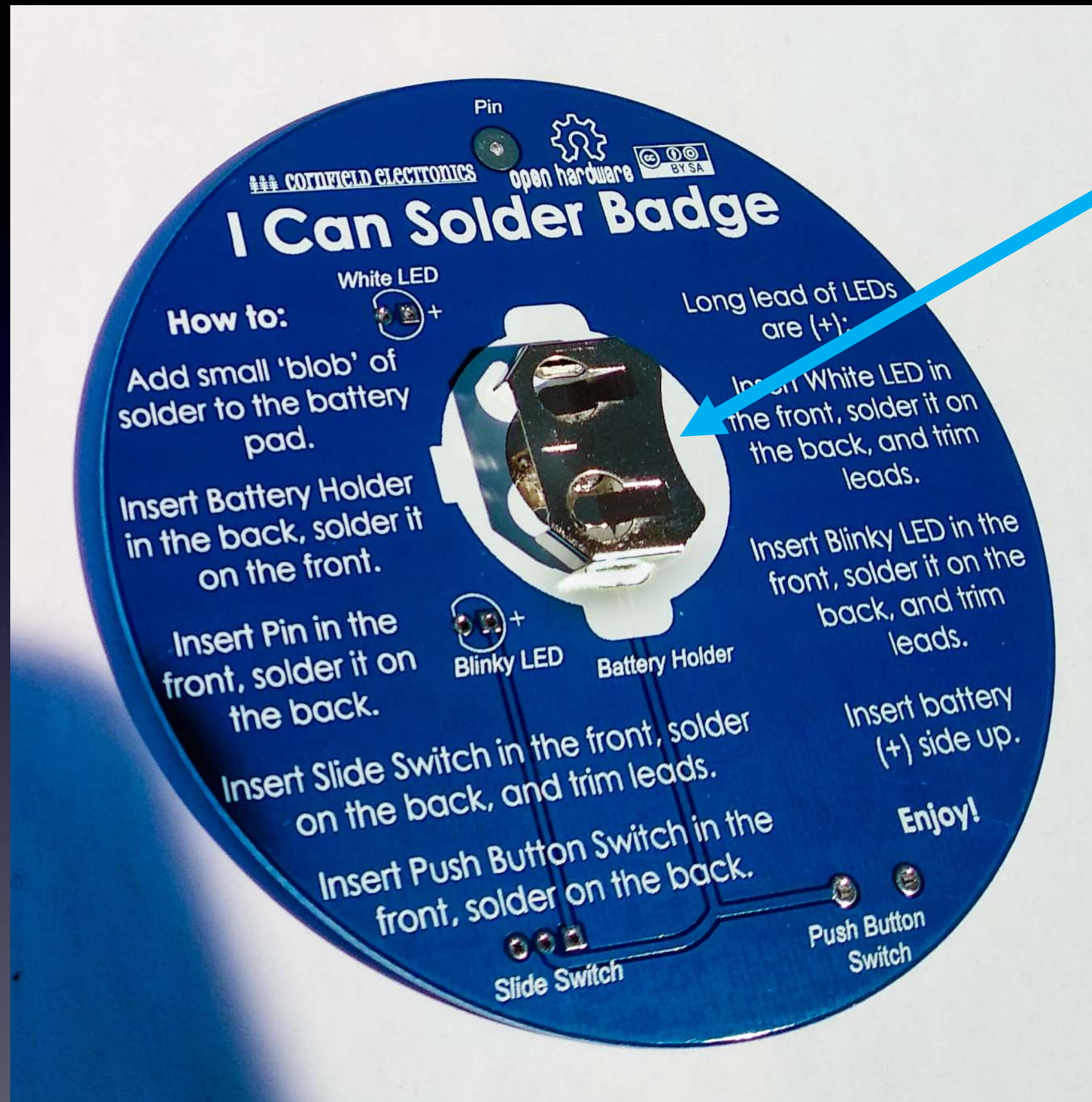
Add small 'blob' of solder to the battery pad



Small 'blob' of solder on the battery pad

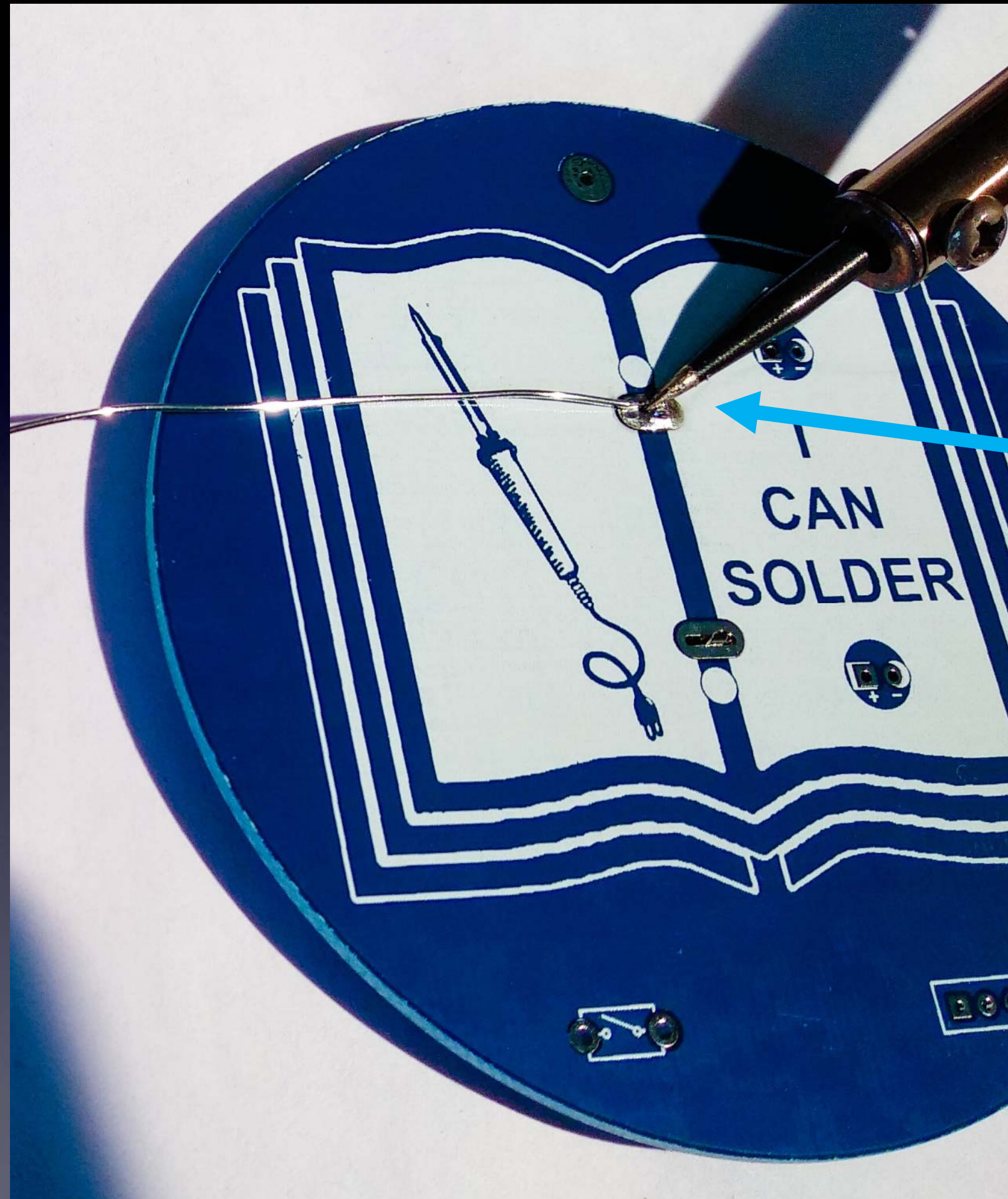


Insert Battery Holder in the back



The correct orientation of the battery holder is like this photo

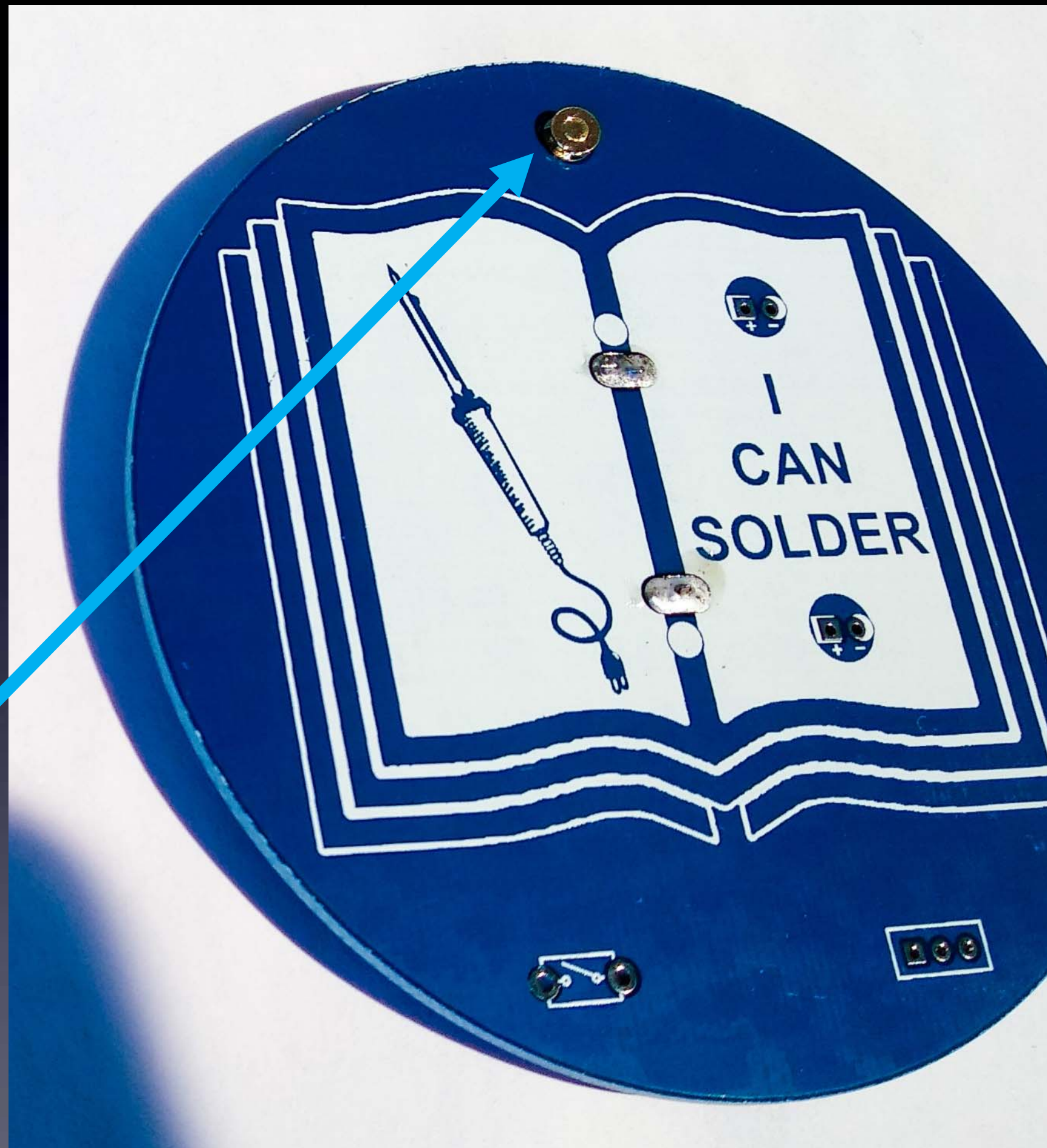
Solder Battery Holder on the front (1st pad)



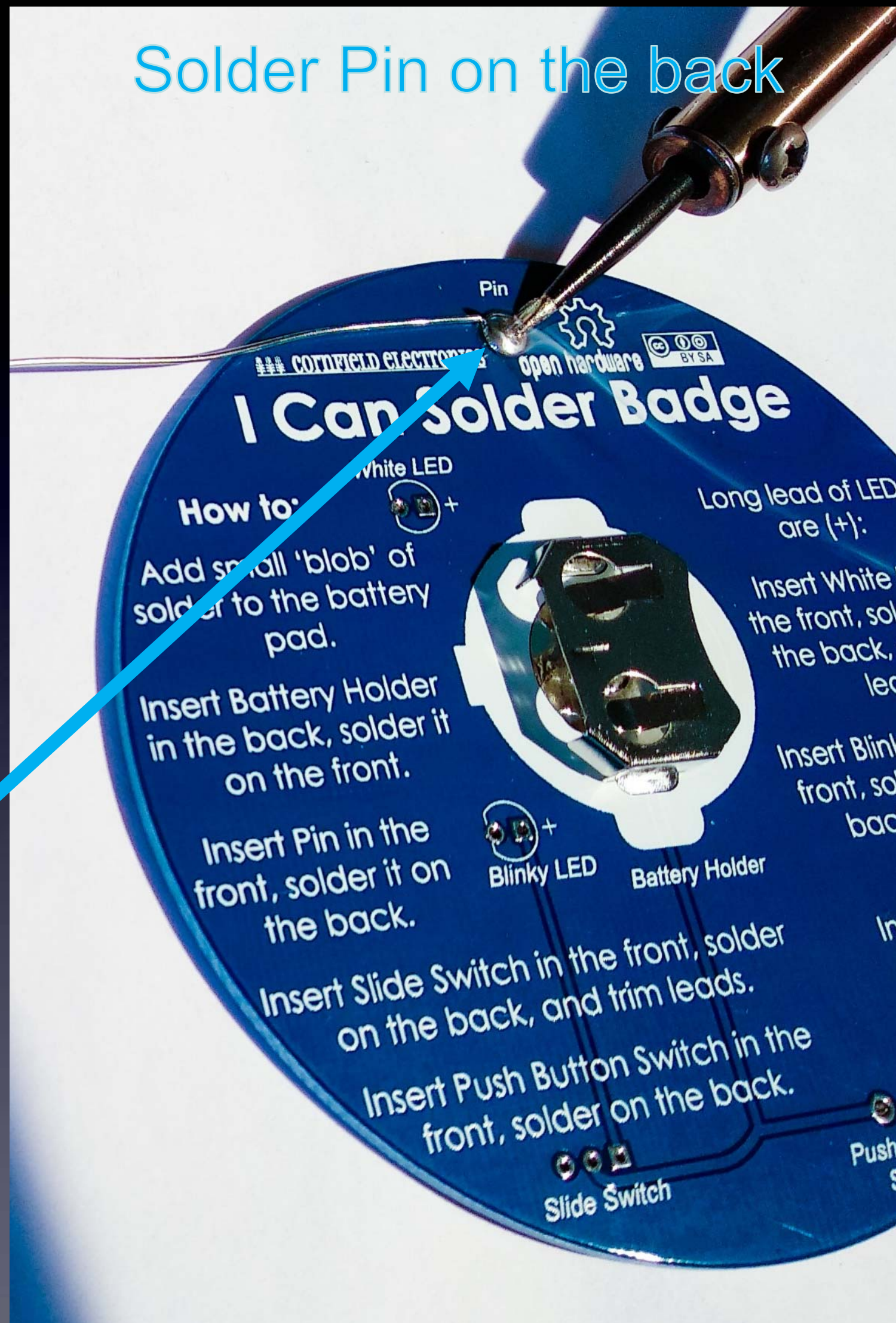
Solder Battery Holder on the front (2nd pad)



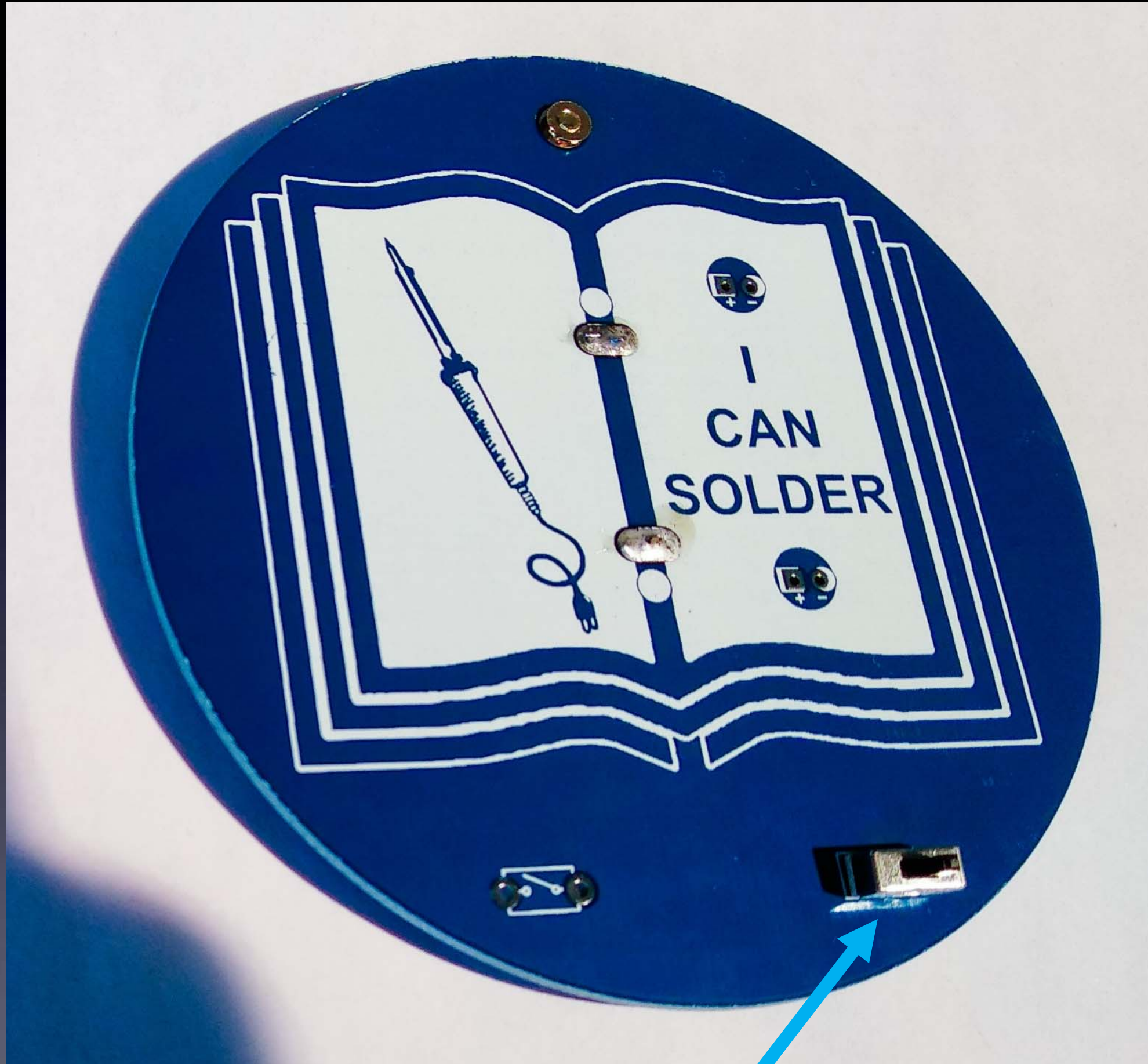
Insert Pin in the front



Solder Pin on the back



Insert Slide Switch in the front



Orientation does not matter

Solder Slide Switch on the back (1st pad)



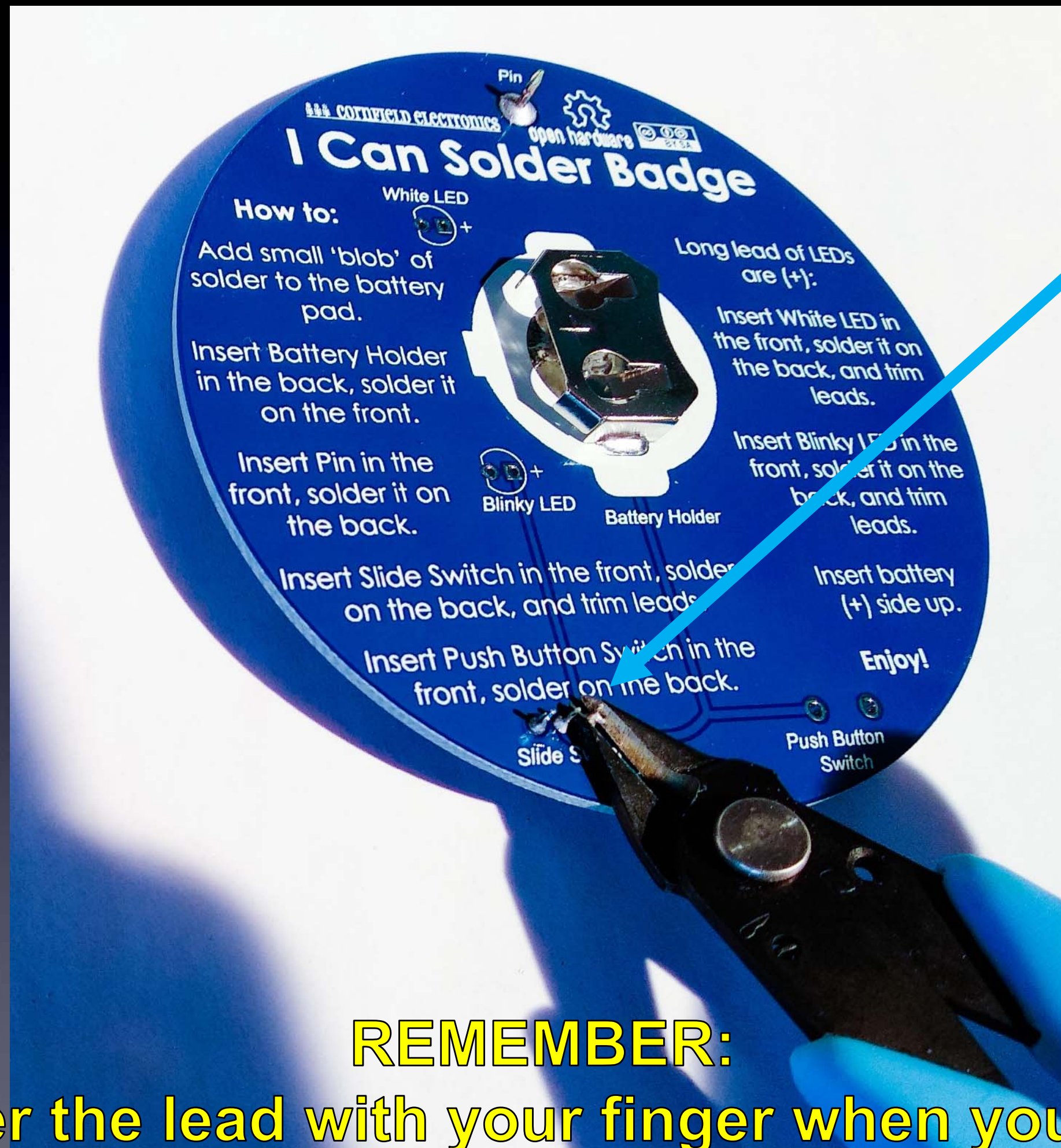
Solder Slide Switch on the back (2nd pad)



Solder Slide Switch on the back (3rd pad)



Trim Slide Switch leads (1st lead)



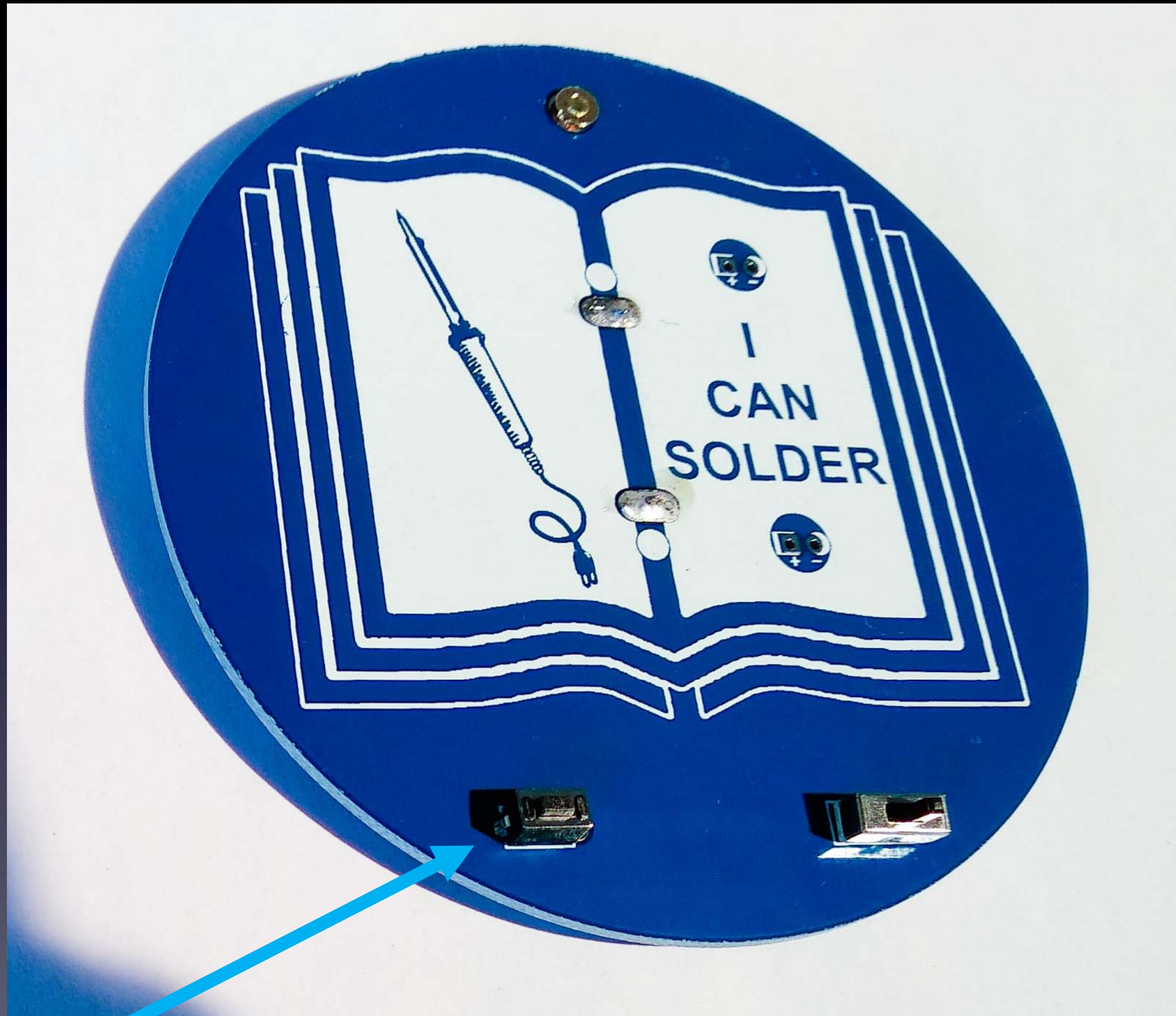
Trim Slide Switch leads (2nd lead)



Trim Slide Switch leads (3rd lead)



Insert Push Button Switch in the front



Orientation does not matter

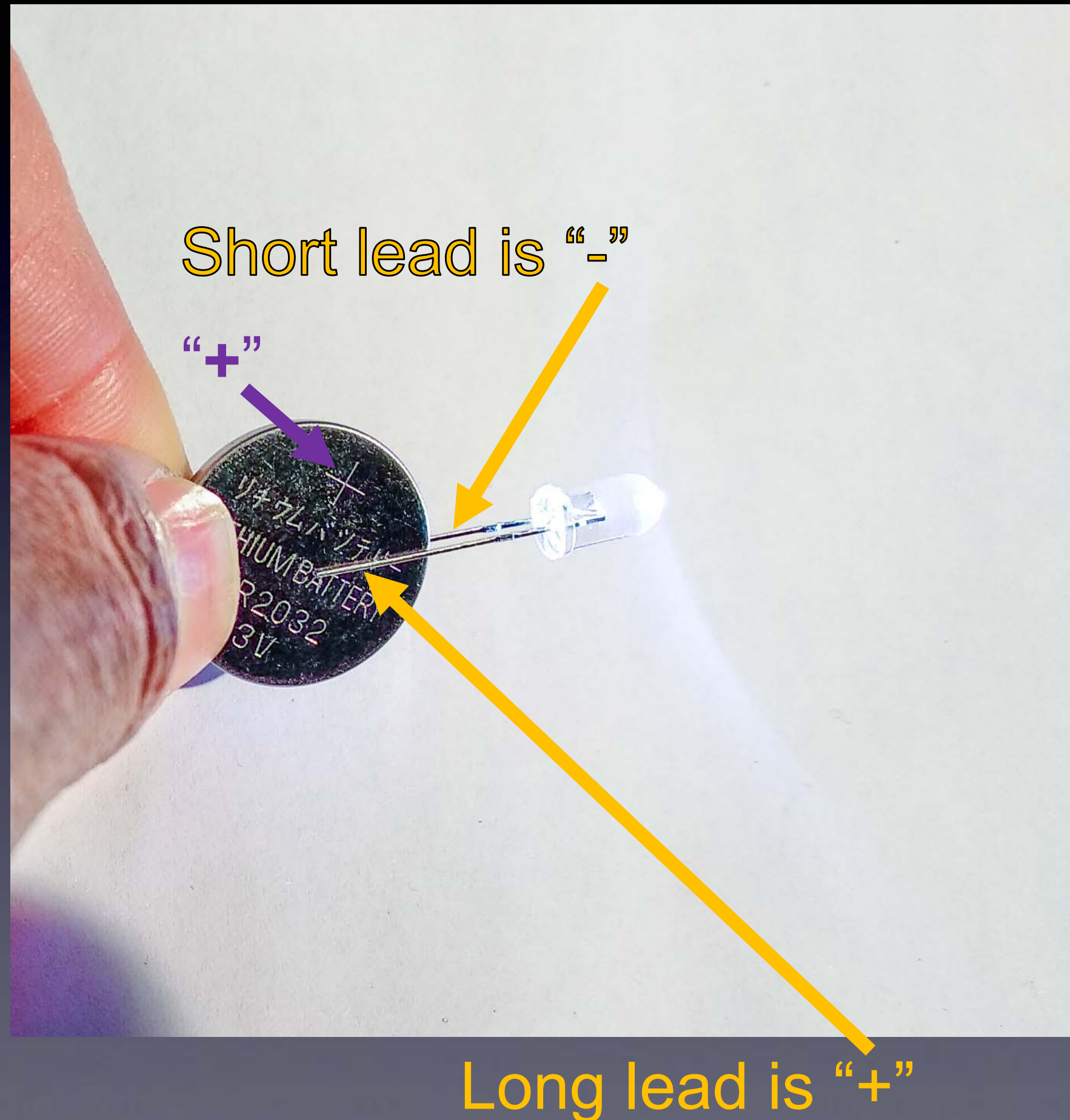
Solder Push Button Switch on the back (1st pad)



Solder Push Button Switch on the back (2nd pad)

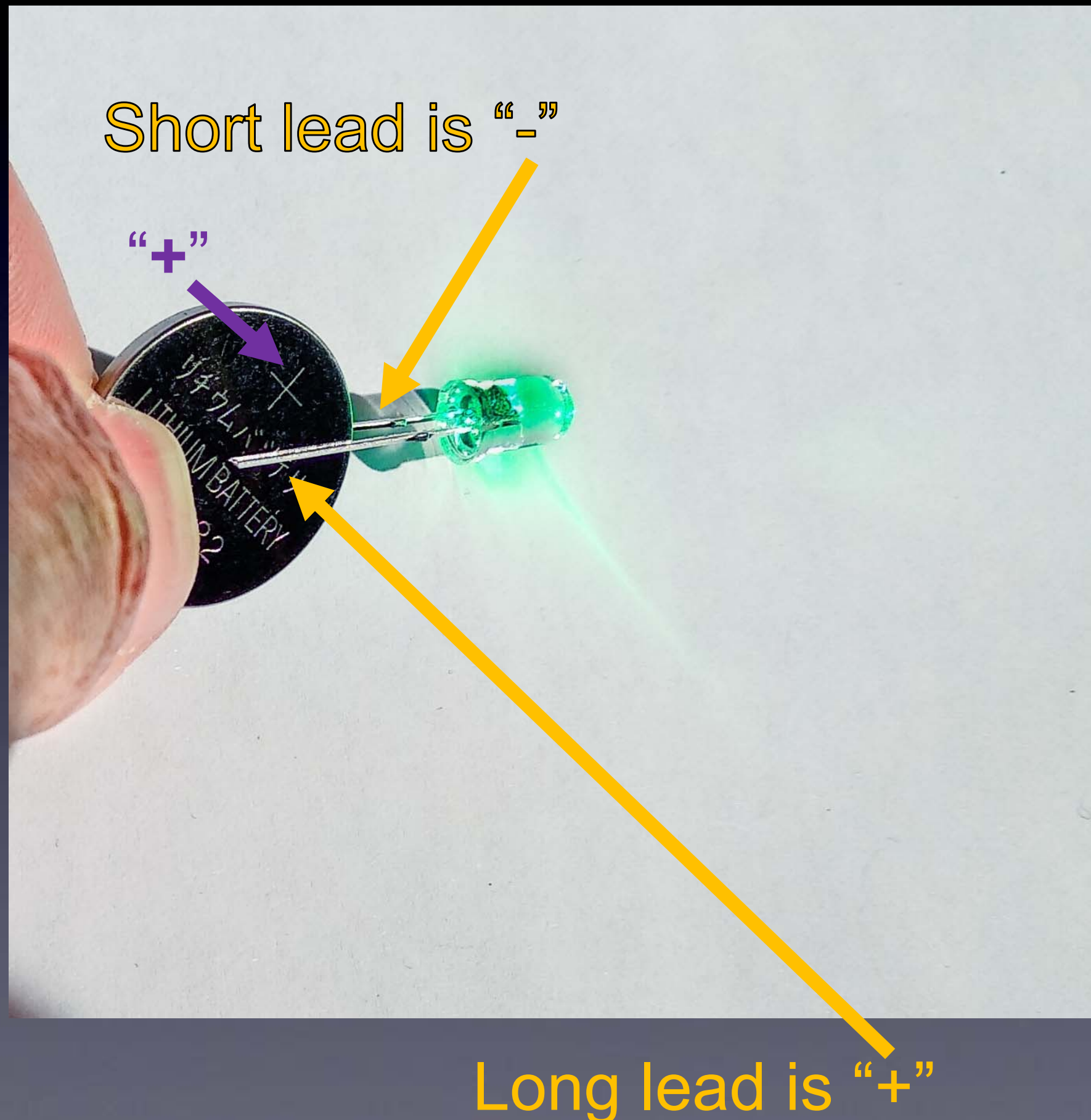


Test each LED to see
which is the White LED and which is the Blinky LED



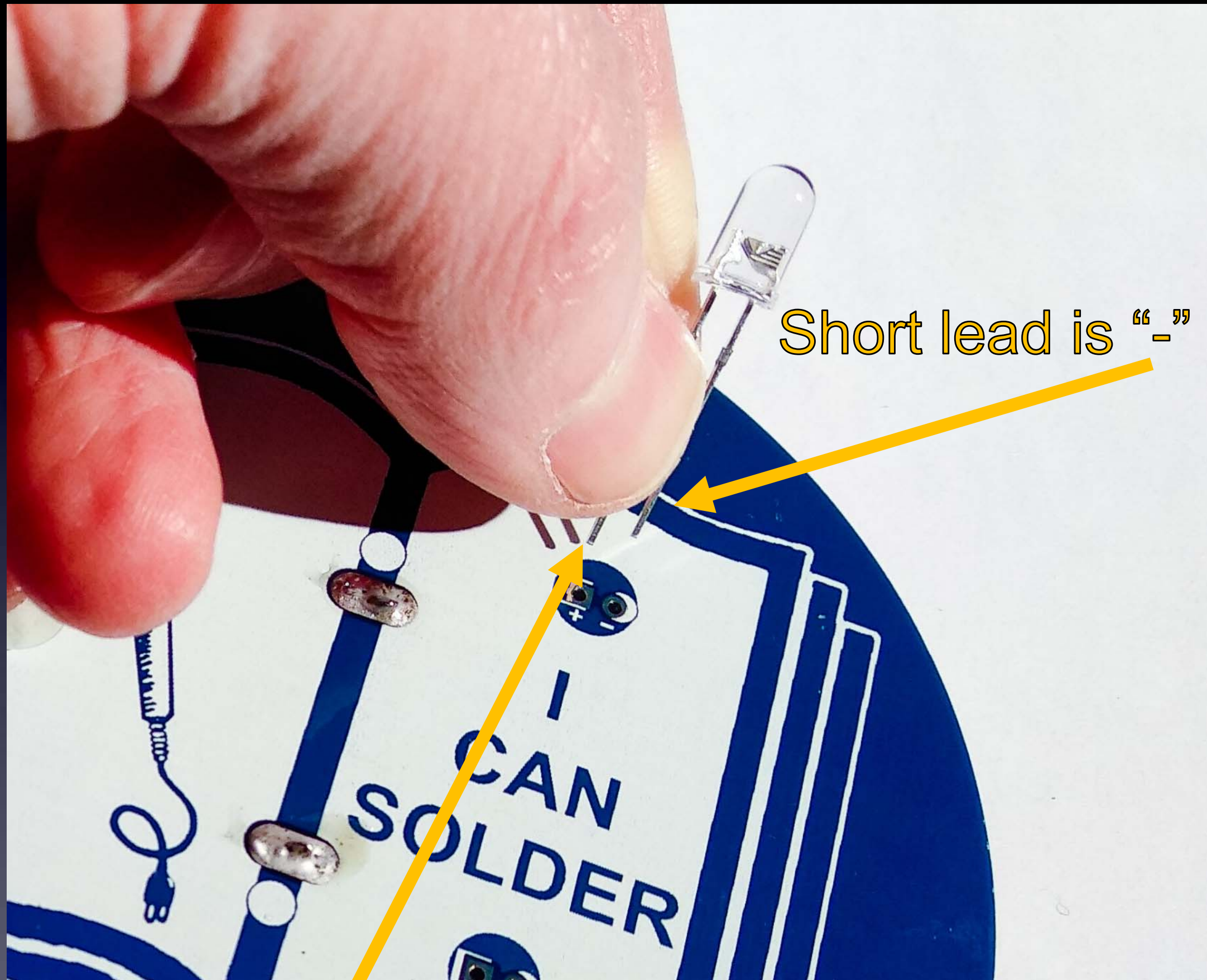
White LED

Test each LED to see
which is the White LED and which is the Blinky LED



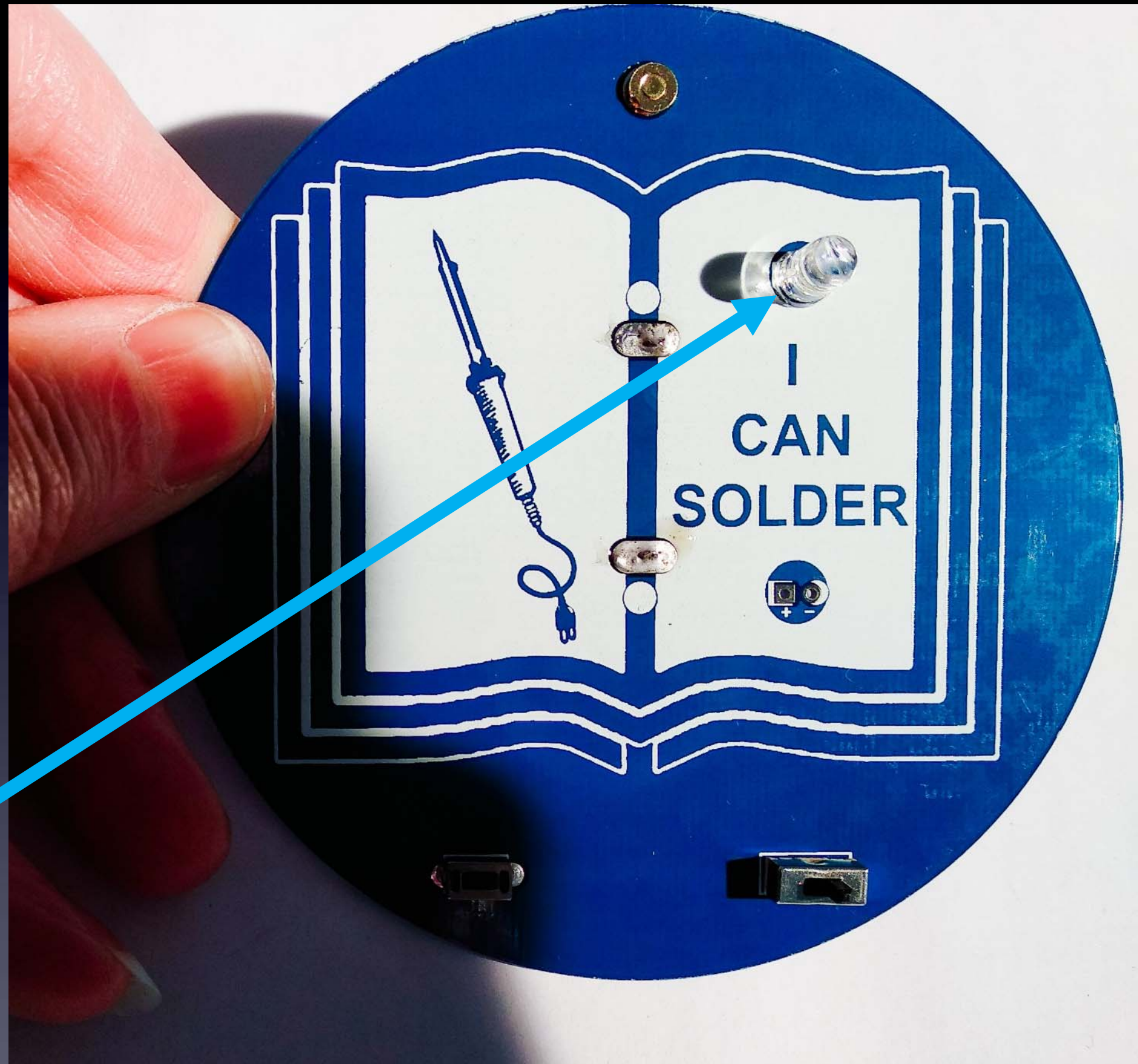
Blinky LED

Insert White LED in the front

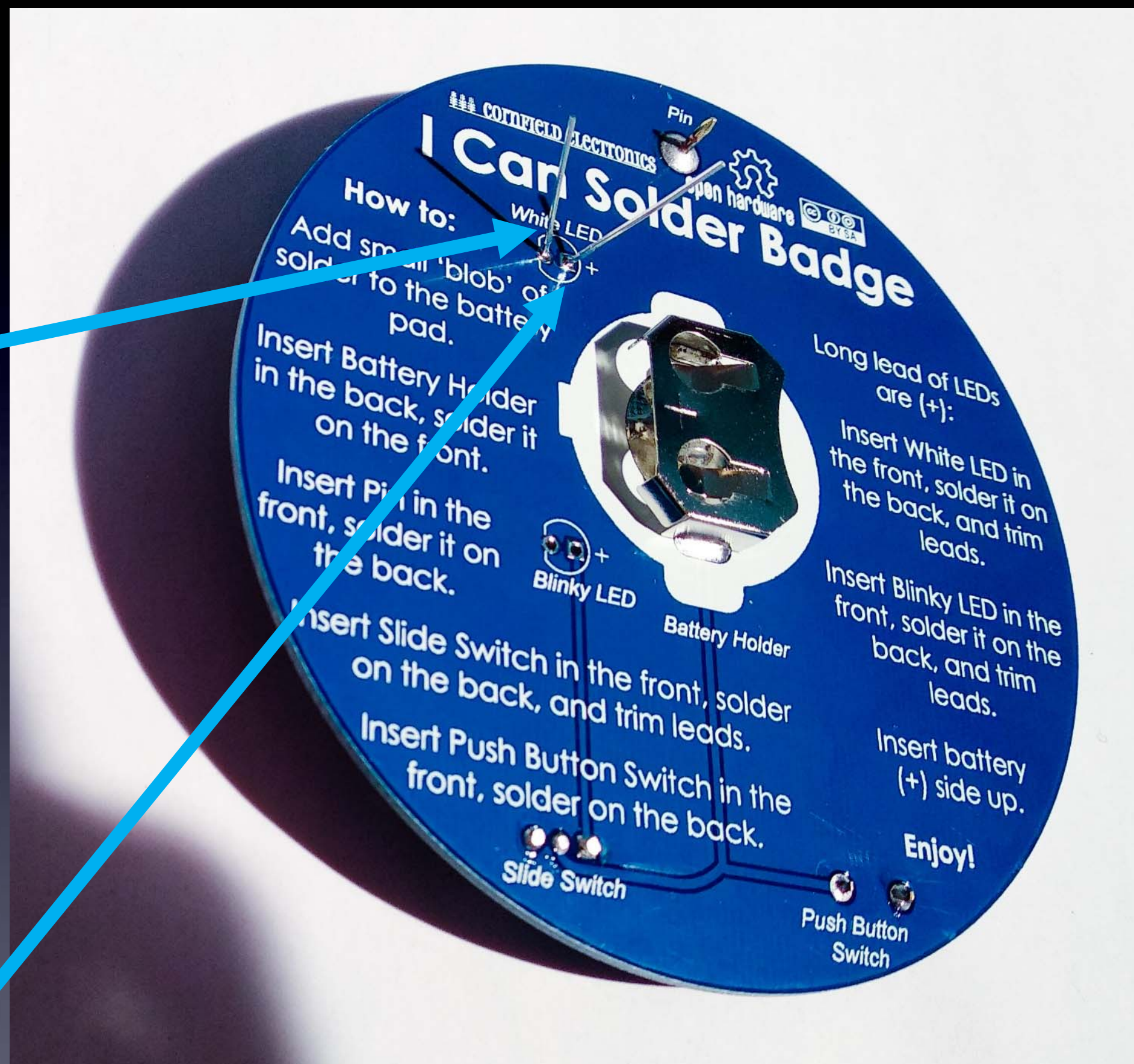


Long lead is \"+\"

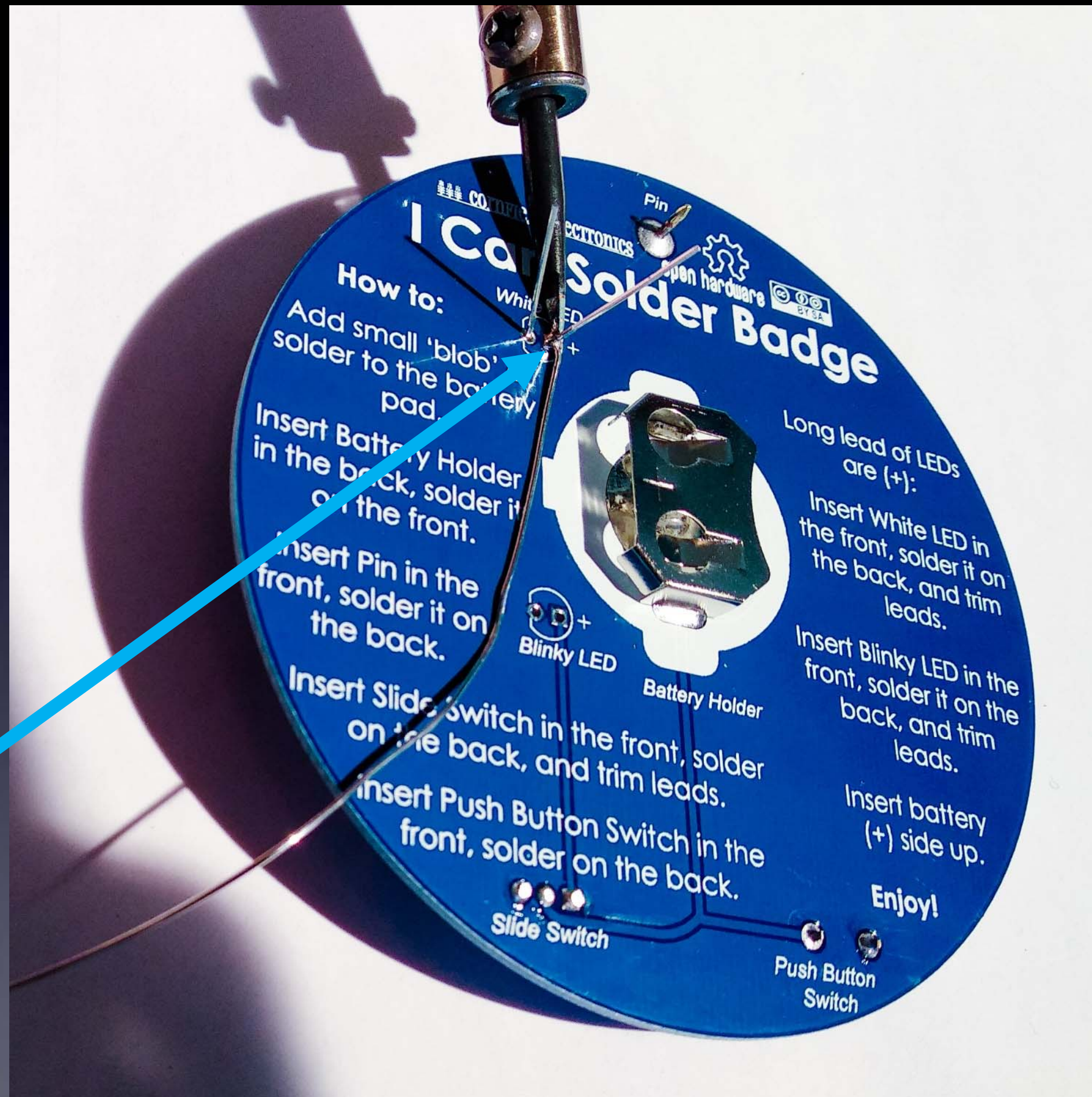
Insert White LED in the front



Leads of White LED bent like a “V”



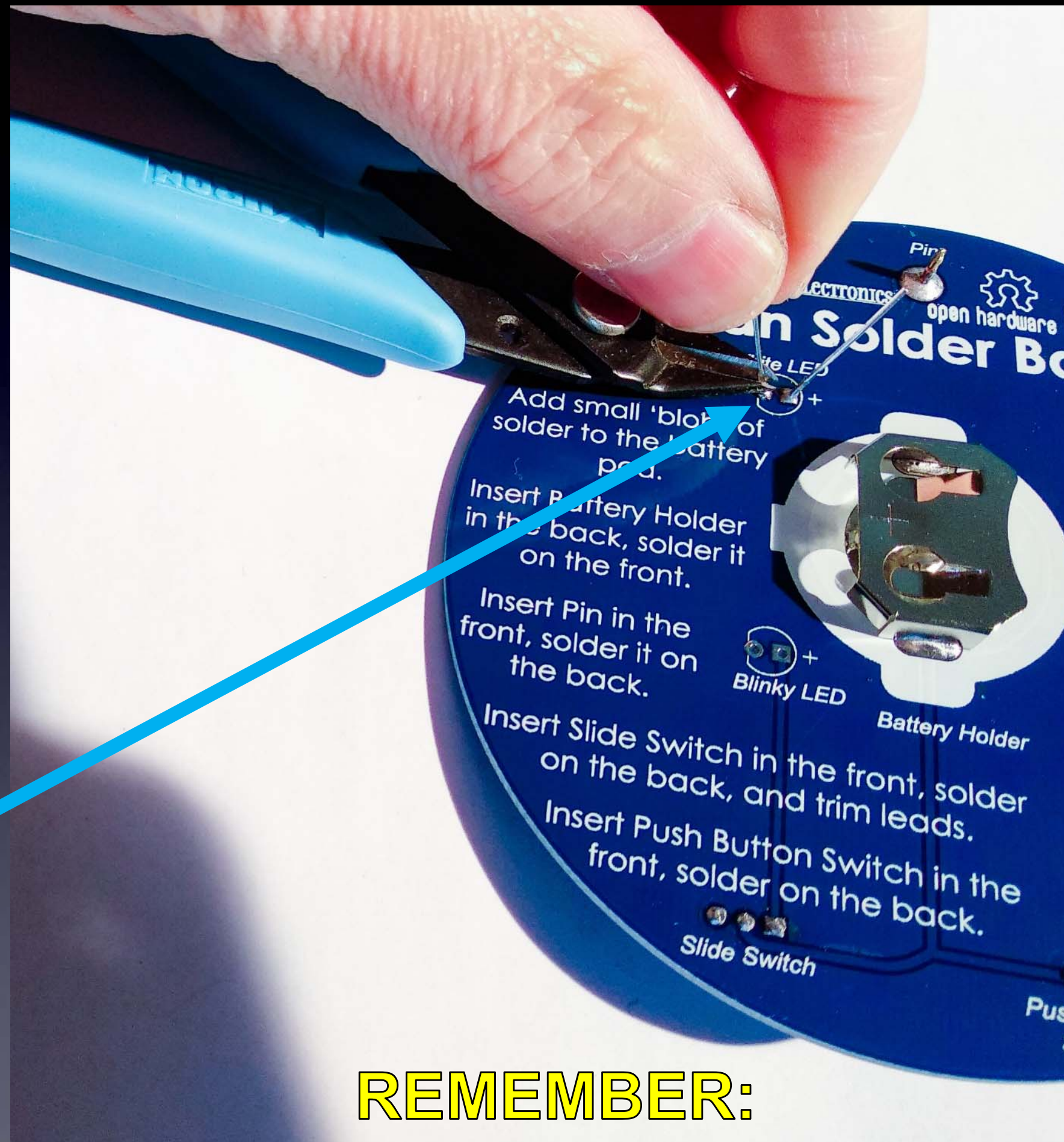
Solder White LED on the back (1st pad)



Solder White LED on the back (2nd pad)



Trim White LED leads (1st lead)



REMEMBER:

Hold the lead when you cut !

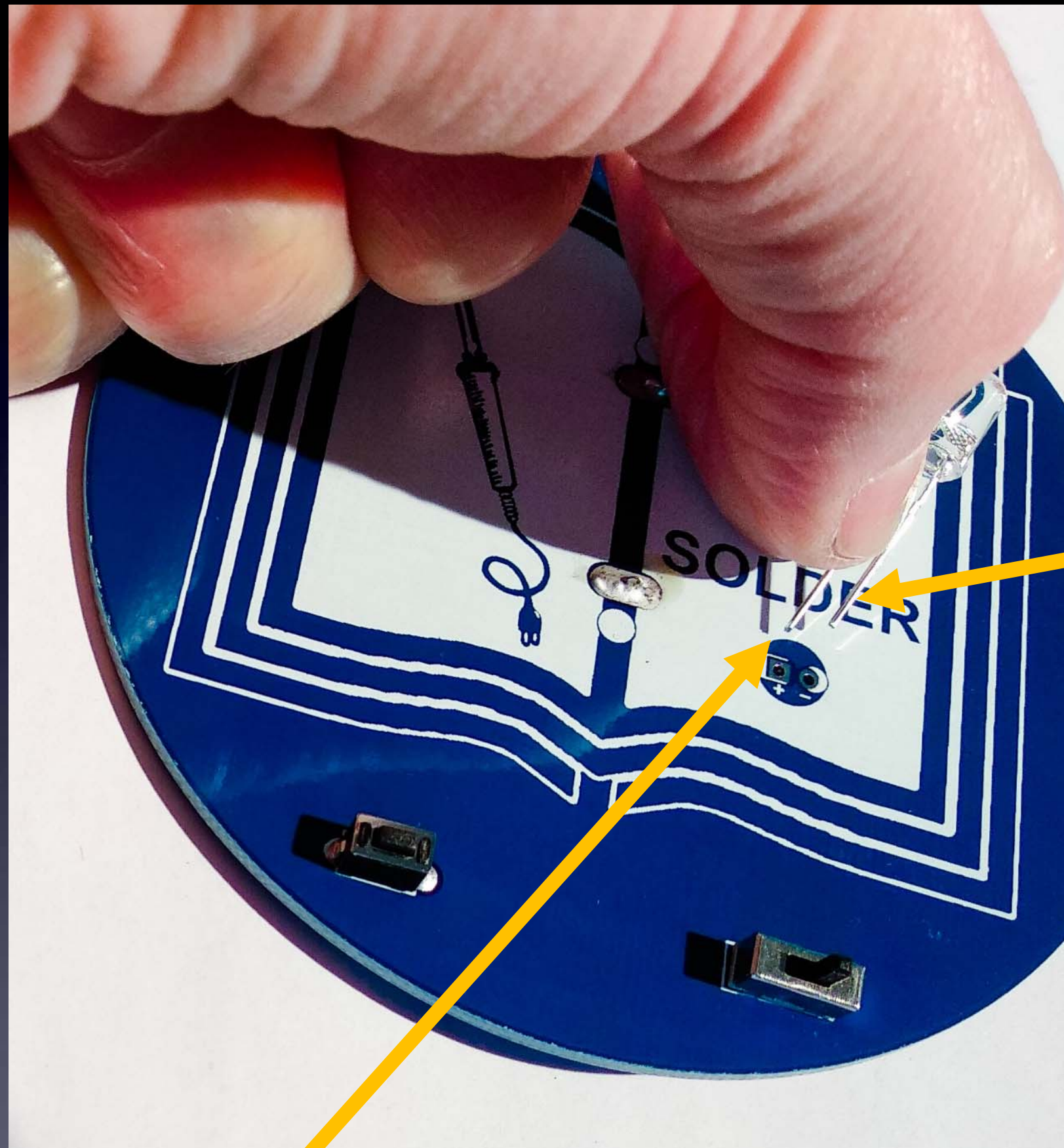
Trim White LED leads (2nd lead)



REMEMBER:

Hold the lead when you cut !

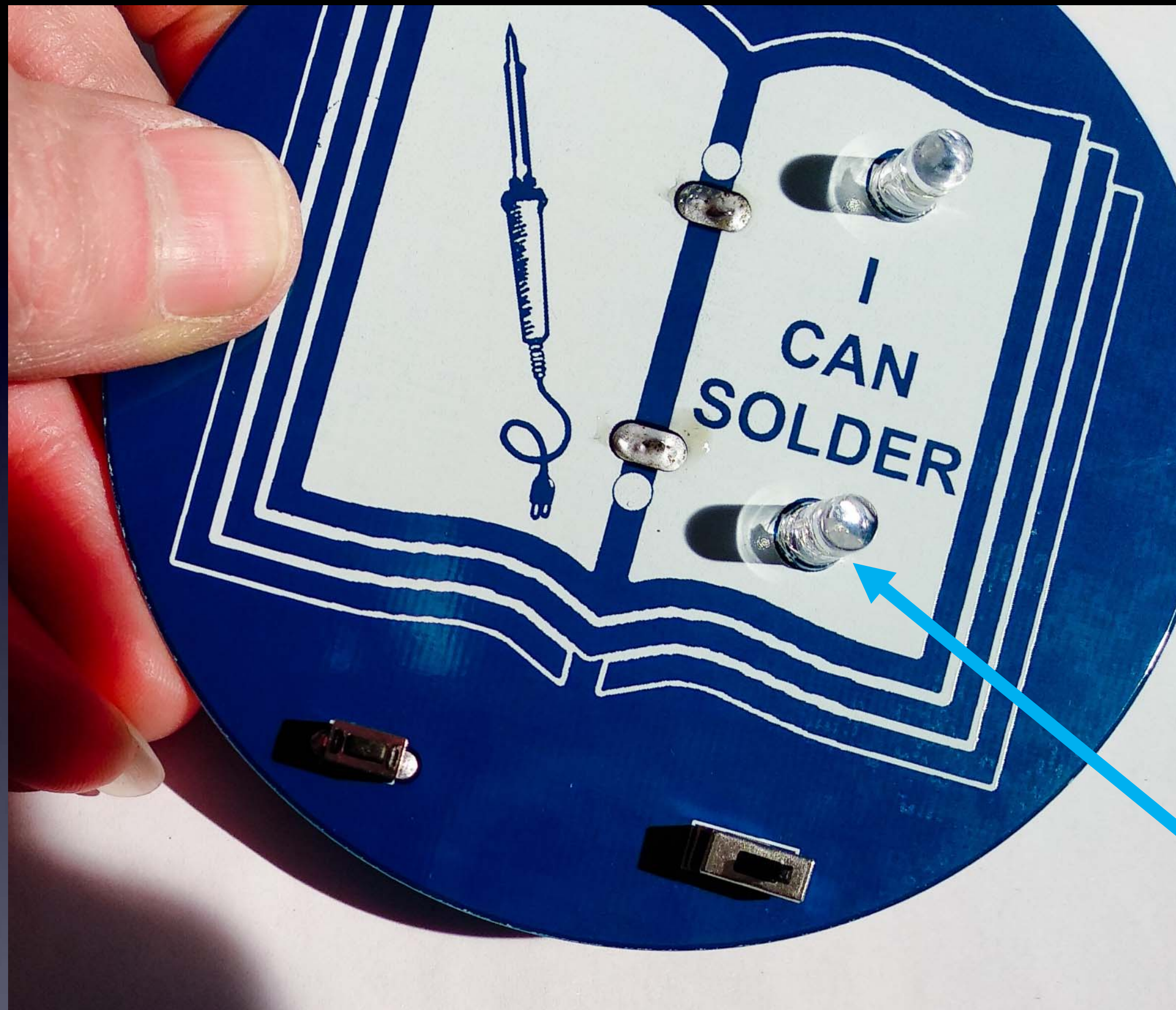
Insert Blinky LED in the front



Short lead is "-"

Long lead is "+"

Insert Blinky LED in the front



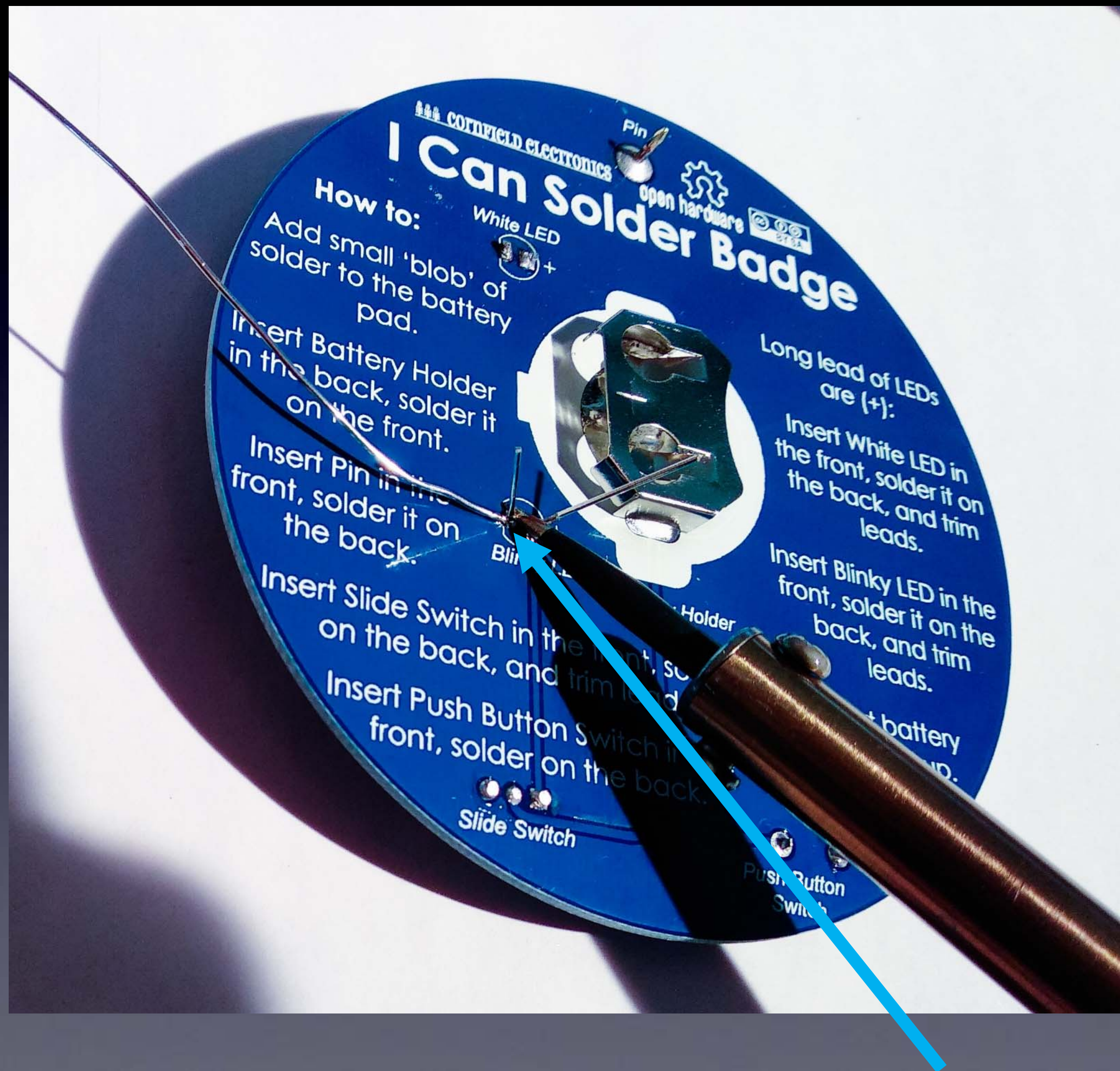
Leads of Blinky LED bent like a “V”



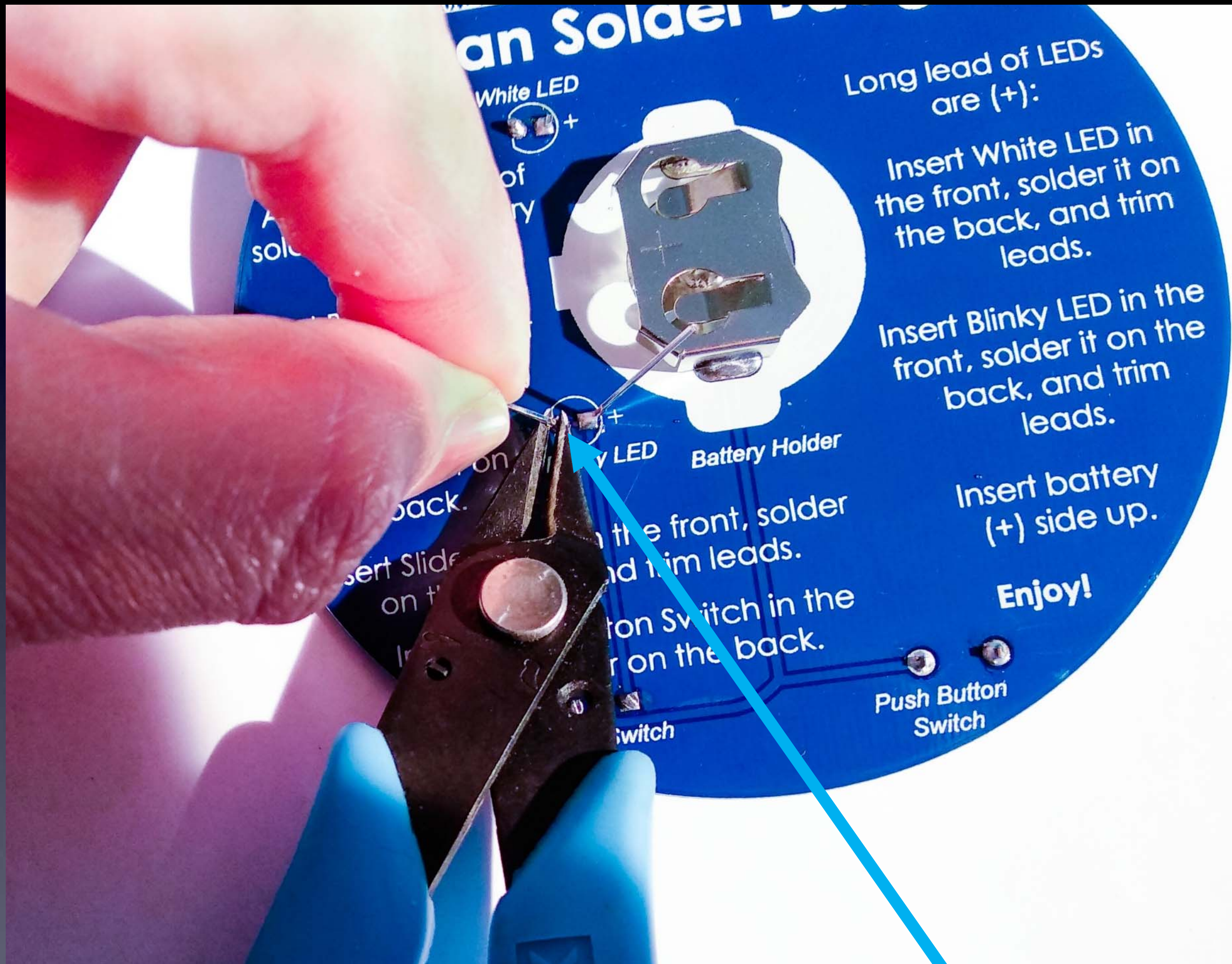
Solder Blinky LED on the back (1st pad)



Solder Blinky LED on the back (2nd pad)



Trim Blinky LED leads (1st lead)



Trim Blinky LED leads (2nd lead)

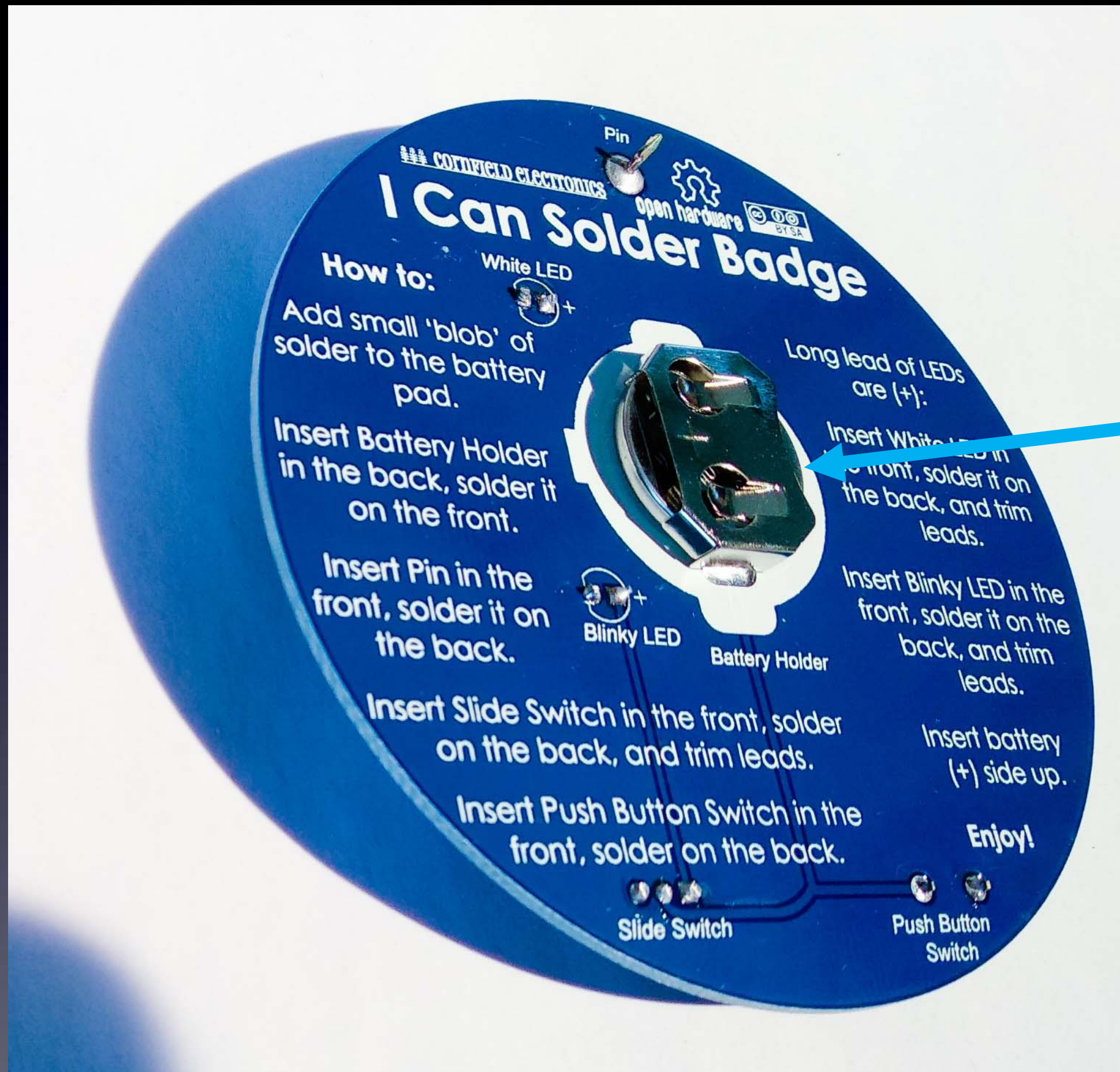


Insert Battery (+) side up



“+”

Insert Battery (+) side up



All done!



Turn on Blinky LED !



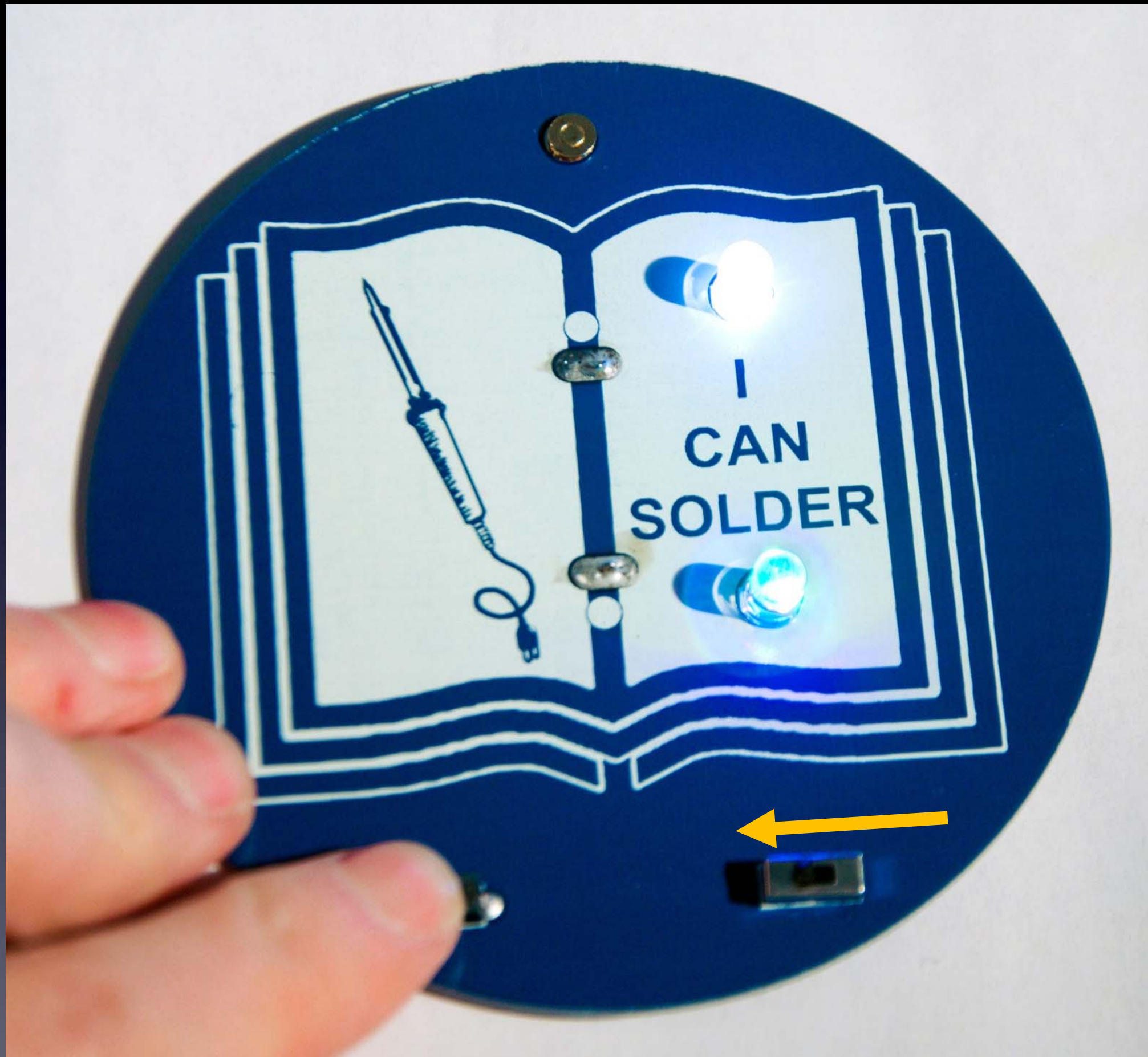
Move Slide Switch to the left to turn on the Blinky LED

Turn on White LED !



Press Push Button Switch to turn on the White LED

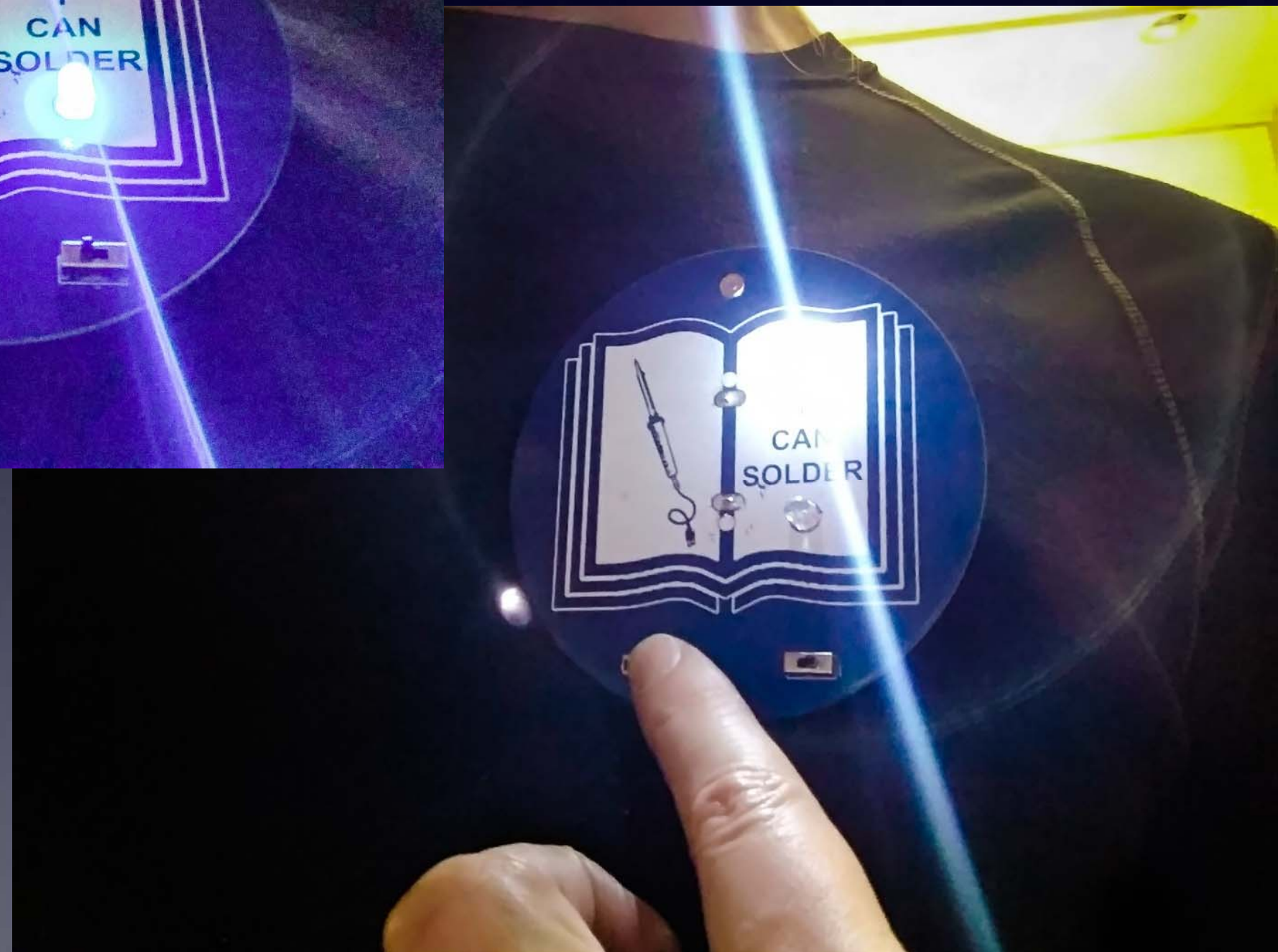
Turn on both White and Blinky LED !



Wear it !



Use the clasp



Please Remember:

to

Wash your hands

after soldering

I Can Solder Badge kit

Assembly Instructions



CORNFIELD ELECTRONICS

Blinky light and White flashlight

7-Jun-2023