SOLDERING

20–60W ✔	✗
✔	✗
Chisel Tip ✔	Pointed Tip ✗

SOLDERING

1. Heat Part and Pad 2–3 sec.
2. Add Solder
3. Continue Heating 1–2 sec.
4. Let Cool Don't Blow!

At start, and every few connections: clean tip on damp sponge, apply a thin layer of solder.

Perfect! | Too Much Solder | Not Enough Solder | Cold Joint | Too Much Heat | Short

Functionally: Meant to establish a rigid electrical connection between two points for long time.

Emotionally: Soldering wires is a fundamental. It's satisfying and fun to melt metal, however often the thing I am soldering is serving a greater purpose for others, so there is a responsibility component involved

0 Gather:

a) Clear clutter out of workspace

b) Get soldering iron, plug in and turn on, set to desired soldering temperature

c) Gather workpiece(s), wire, solder, filtering fan, tip cleaner, soldering iron, flush cutter, wire strippers, helping hands, work mat

1 Prep:

a) Determine wire length(s) and to which pins they run

b) Cut wire(s) with wire strippers and solder

c) Strip wire about 5-7mm with wire strippers, holding at around 60° angle as to ensure good shearing of insulation but not of wire strands

d) Brush stripped wire insulation to the side

e) Secure PCB/Workpiece using helping hands or tape, or let it free float

2 Solder

a) Turn on filtering fan

b) Grab solder iron with right hand and clean hot solder tip in brass tip cleaner by rotating in between fingers and pressing up and down

c) Push stripped wire though pinhole on workpiece with left hand, angle it such that it stays in place

d) Grab solder with left hand, and pin exposed with between solder and solder iron until solder melts and thoroughly dopes the wire and pin

e) Repeat b-d for all wires and pins required

f) Clip extra wire length

3 Clean up

a) Clean soldering iron tip in tip cleaner

b) Turn off fan and soldering iron and unplug

c) Put away everything as fast as possible

d) Any detritus remaining swept away and thrown out

Problems

1c isn't always consistent depending on insulation

1e is often never strong enough and it makes me nervous

2b-d is oftentimes not rigid and there isn't enough support

2d doesn't pool that great
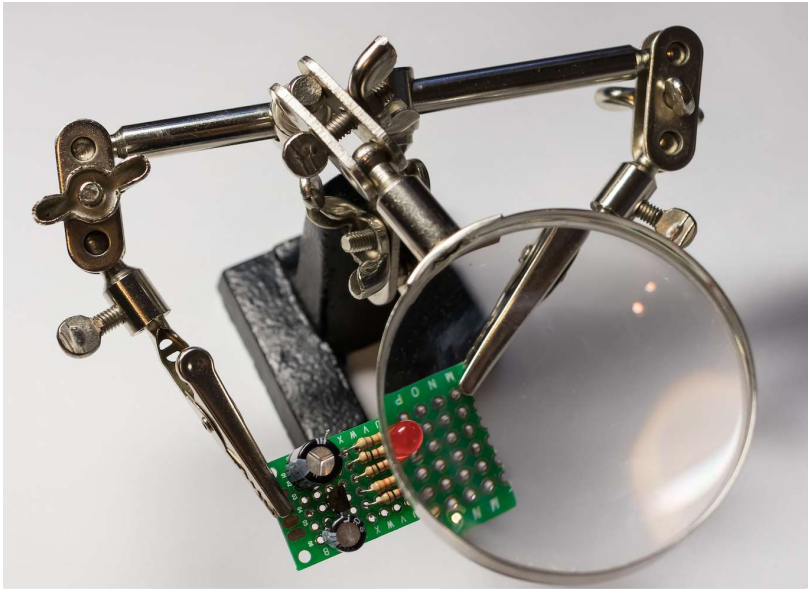
In general, you need like 4 hands

2, you can only solder 1 wire at a time, often times I do 10+ in one sitting

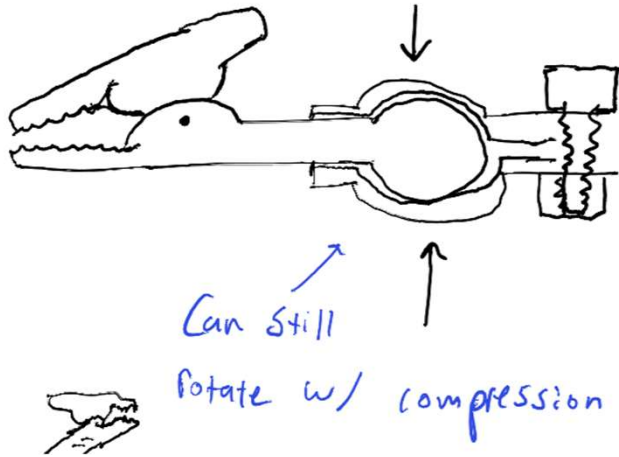2, often time the soldering tip oxidizes during soldering and can ruin the bead
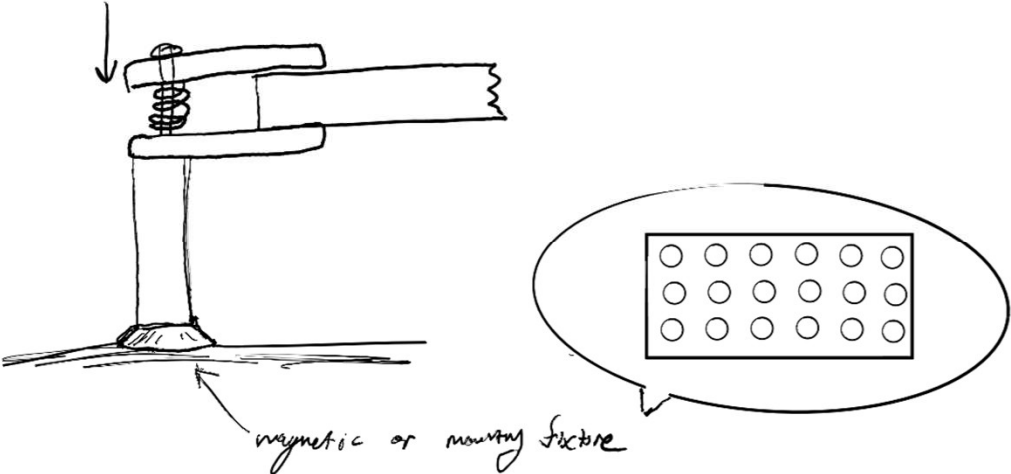
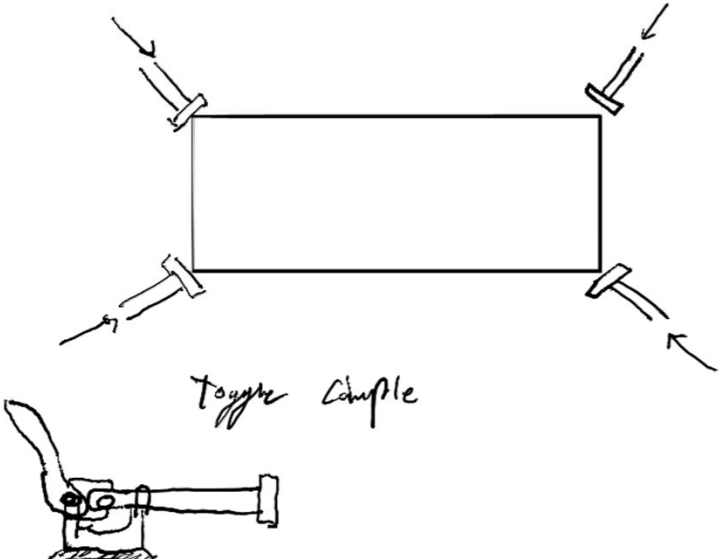**Components**

Problem 1, securing the board

Problem 1: Securing the work, the board

Can still
rotate w/ compression

Solution 1:

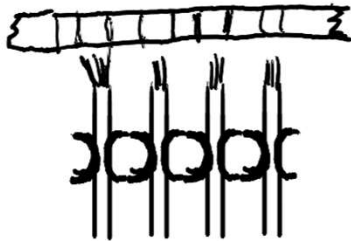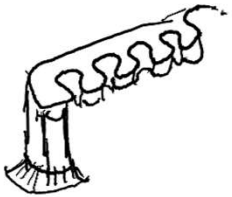magnetic or mounting fixture
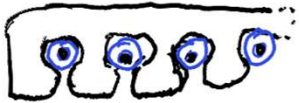
Solution 2:

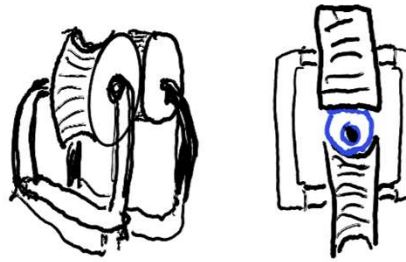Toggle clamp

Problem 2, multiple wires at once

Problem 2:

Soldering one at a time, its very disrupting to have to go back
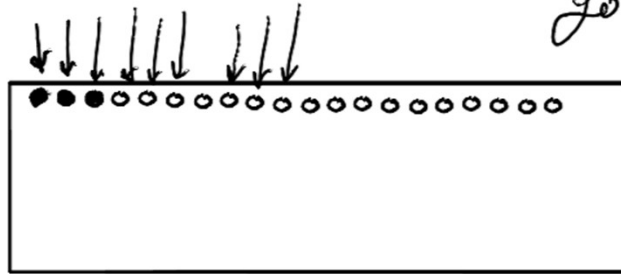
Solution 1: comb holder

Solution 2: Single cable roller/pinch think 3d printer extruder

mimicks fingers

magnetic base again