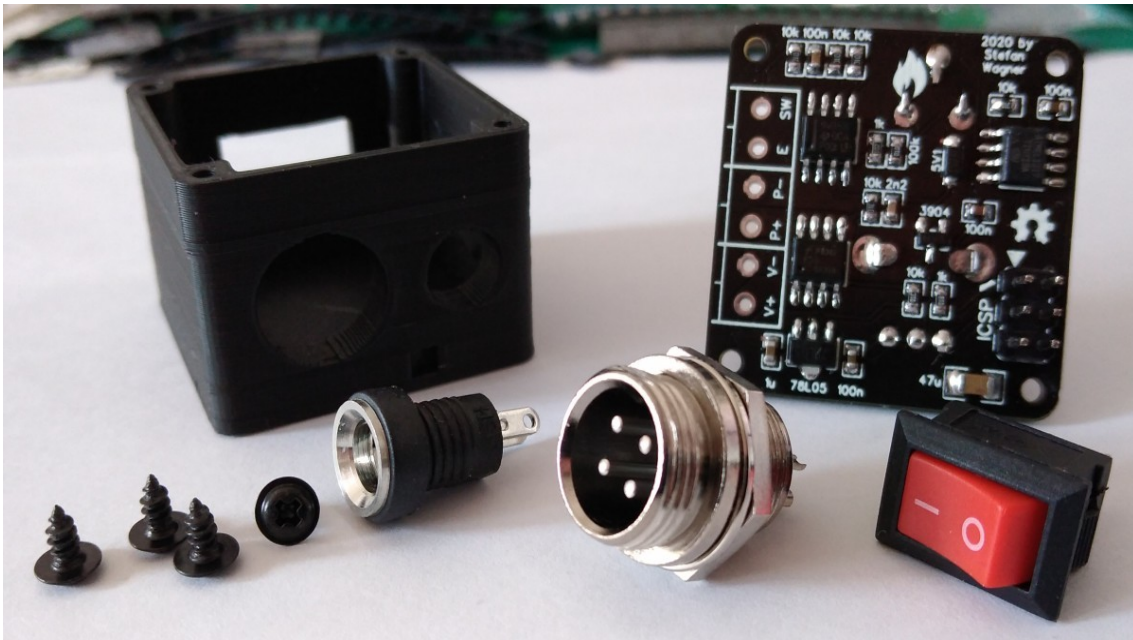


How to build the Tiny T12 SolderingStation

Step 1: Gather all required components

In addition to the components for the PCB you will need the following:

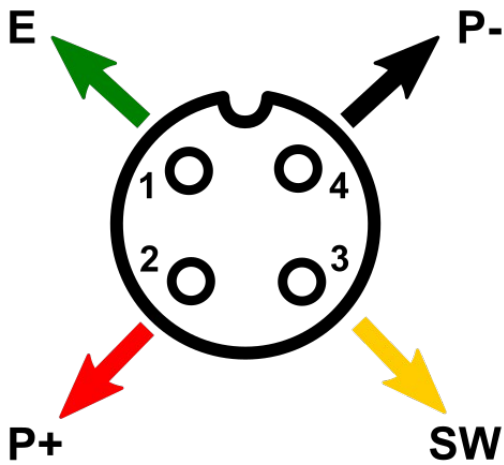
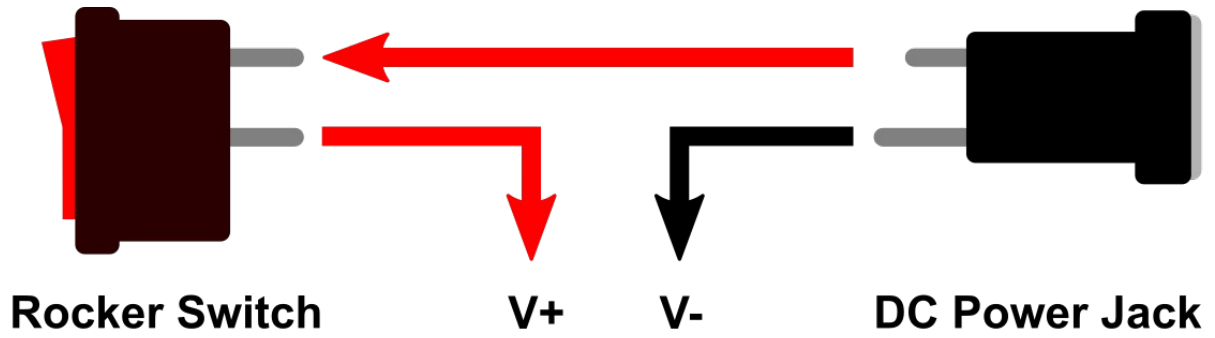
- 3D-printed case
- Aviator Plug (4- or 5-pin depending on your iron handle)
- DC Power Jack (5.5 * 2.1 mm)
- Rocker Switch (KCD1 15 * 10 mm)
- Some wires
- 4 Self-tapping screws (2.3 * 5 mm)



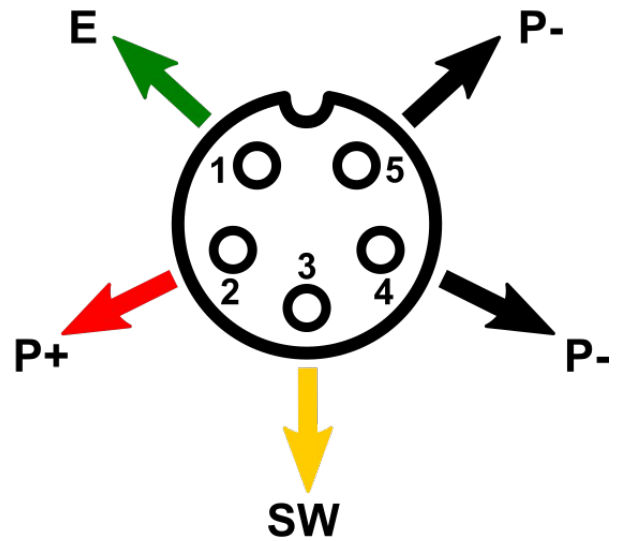
Step 2: Make sure that all parts fit nicely into the case



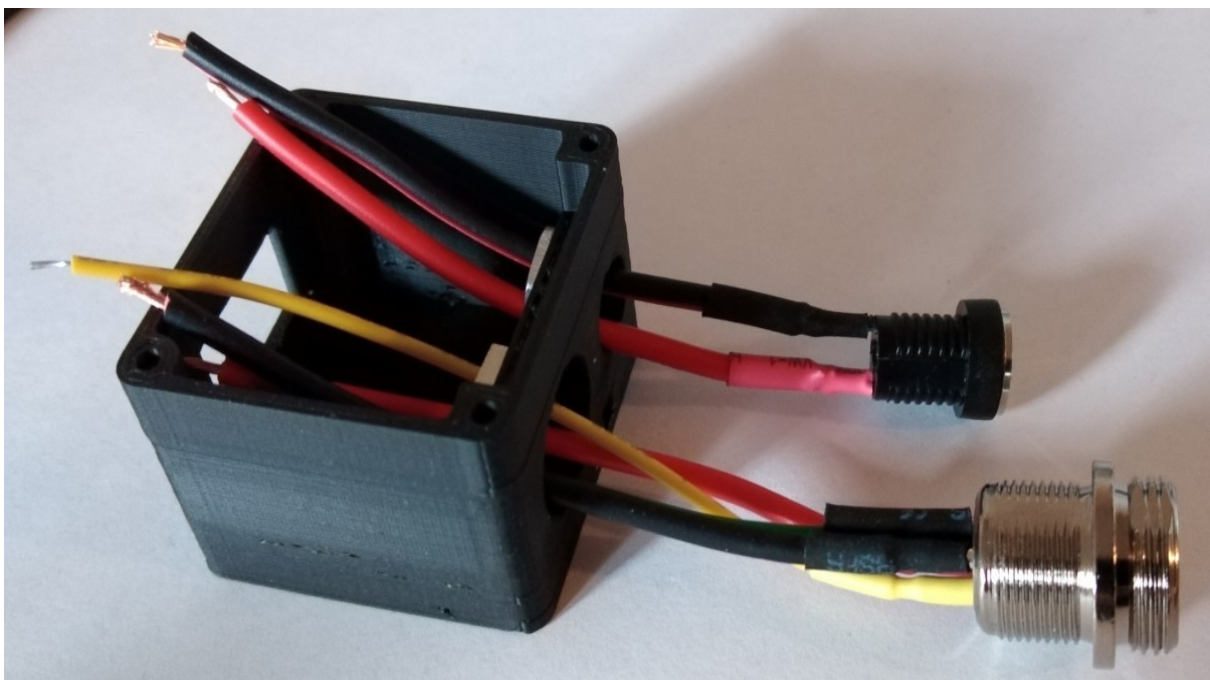
Step 3: Solder the wires and protect them with heat shrinks



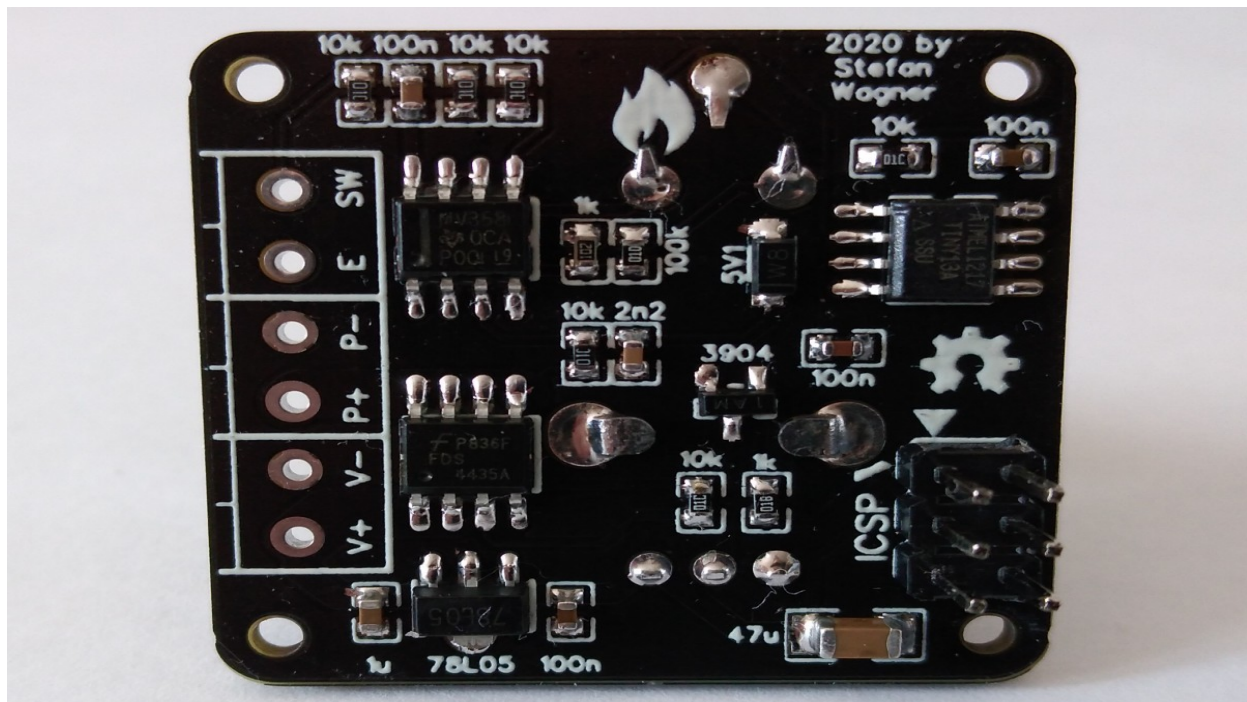
4-Pin Aviator Socket (Male)
Back View (Solder Pins)



5-Pin Aviator Socket (Male)
Back View (Solder Pins)

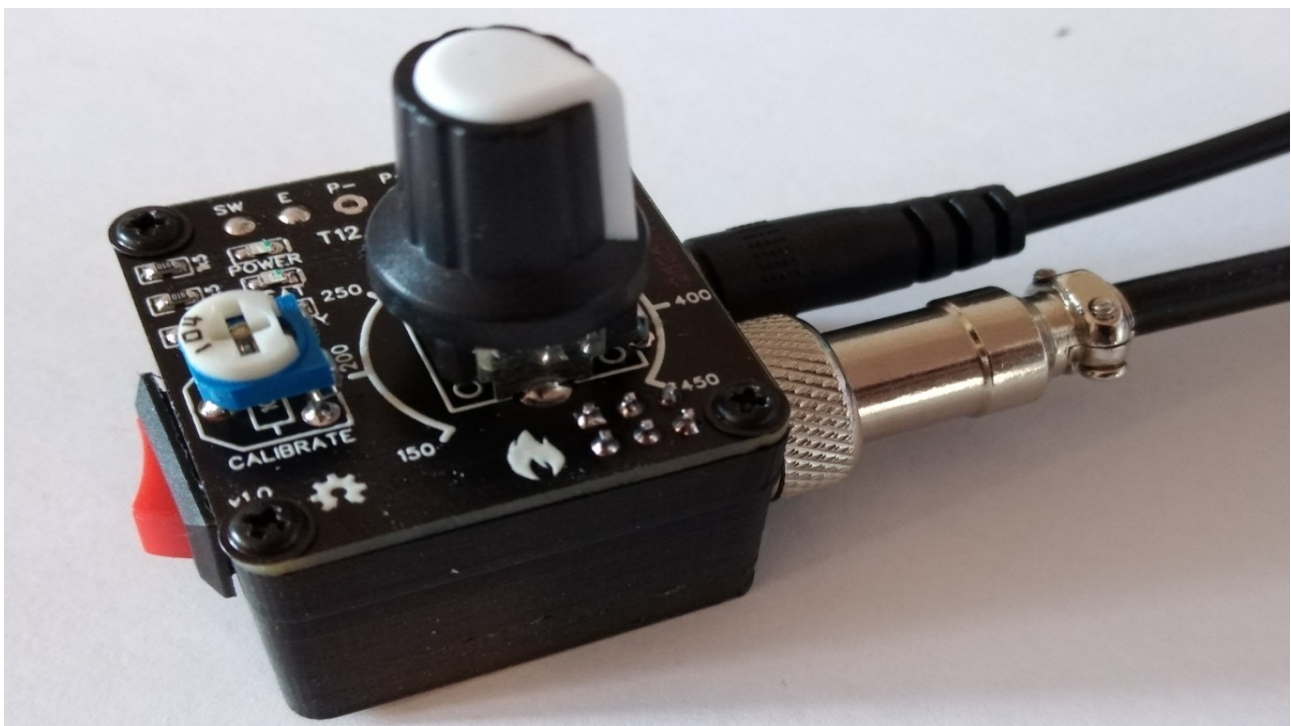


Step 4: Solder all components to the PCB except the screw terminals



Upload the firmware and solder the wires directly to the pads.

Step 5: Screw the PCB on top of the case



You can purchase all parts as well as T12 handles and tips cheaply at aliexpress.

Choose a power supply with an output voltage between 16V and 24V which can provide an output current according to the table below. The power supply must be well stabilized. The current and power is determined by the resistance ($R = 8 \text{ Ohm}$) of the heater.

Voltage (U)	Current (I) = U / R	Power (P) = U^2 / R
16 V	2.00 A	32 W
17 V	2.13 A	36 W
18 V	2.25 A	41 W
19 V	2.38 A	45 W
20 V	2.50 A	50 W
21 V	2.63 A	55 W
22 V	2.75 A	61 W
23 V	2.88 A	66 W
24 V	3.00 A	72 W

A 19V supply works best in terms of both, speed and stable temperature readings. Heat-up time to 320°C will be around 12 seconds with a 19V, 8 seconds with a 24V power supply.



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