

This toolkit contains an **adjustable temperature soldering iron** which is different from the soldering iron illustrated in the 2021 Build Manual.

Benefits of new soldering iron:

- The new soldering iron heats up quicker (ready to use within 2 minutes of plugging in).
- Adjustable temperature provides the optimal temperature for different soldering tasks.
- Comes with different size tips which assures better soldering joints for different soldering tasks.

Review *the Tool Usage, Skills, and Safety* section beginning on Page Two of the manual for general safety, usage, and maintenance tips about using a soldering iron and soldering.

Additional usage information specific to this particular soldering iron is outlined below.

The soldering iron heats up quickly and should be ready to use in less than two minutes.

Do not touch or grip the soldering iron anywhere in the hot zone (Figure 1). Even the plastic shell under the rubber insulated grip gets very hot.

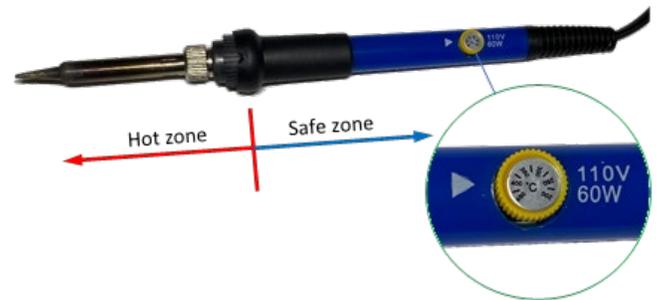


Figure 1

Do not use this soldering iron with a tube type stand (Figure 2). The soldering iron can overheat and be damaged due to heat trapped in the tube. Use only a spring type stand (Figure 3).



Figure 2



Figure 3

This soldering iron comes with five additional tips. Figure 4 shows the extra tips and describes the tasks for which they are best suited.

The tip that comes installed on the soldering iron is best for soldering the controller components (Section One of the Build Manual) and motor wires (Section Two of the Build Manual).

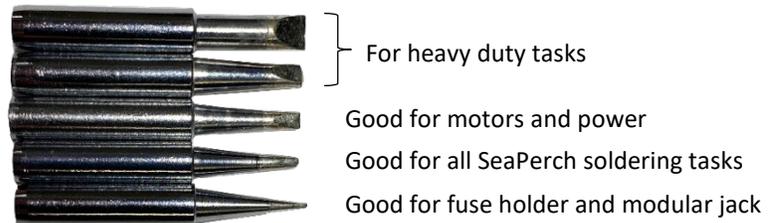


Figure 4

Changing the soldering iron tip (Figure 5):

- **Make sure the iron is unplugged and completely cooled.**
- Unscrew the retaining nut and remove the tip barrel.
- Set the nut and tip aside.
- Place the new tip over the heating element and slide the tip barrel over the tip and heating element.
- Thread the retaining nut on the threaded post and tighten using pliers, being careful not to overtighten.



Figure 5

The temperature may need to be adjusted for different soldering tasks.

Start with the knob set just under 400° C, and test soldering.

The temperature is **too high** if the printed circuit board (PCB) becomes discolored or shows other sign of heat damage.

The temperature is **too low** if:

- the solder is not melting,
- the solder melts on the soldering iron tip but does not adhere to the components,
- the solder appears dull in color after cooling.