

Metcal MX 5200

The soldering station that can be found at most of the workbenches at Omega Verksted.

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It employs an RF heating system, meaning that the tips have internal regulation of temperature. This is essentially a "Curie point thermostat". A ferromagnetic material is heated by induction heating until it hits a specific temperature known as the *Curie point*, at which it loses its ferromagnetism. Once it drops below the curie point the material becomes ferromagnetic again, reenabling the heating.

The main benefit of this is that it gives variable power but a semi-constant tip temperature. Different tips give different temperatures, and Omega Verksted stocks tips optimized for lead-free solder. This is also the type of solder stocked by Omega Verksted.

Usage

Turn on the station and remove the soldering iron from its stand to activate the iron. Make sure the correct port on the station is selected. Press the button on the front to cycle between left, right and both ports. The heating takes about 5-8 seconds.

You may get an error message if there is an electrical fault in the tip, so, try removing and reinserting the tip. If that doesn't work, please notify a board member and use a different tip.

Temperature regulation

You may have noticed that the stations don't have a temperature adjustment feature. This is because of the curie point regulation (see above). All of the tips at OV are in the lead-free temperature series, which yields an appropriate tip temperature for lead-free solder (412°C) and is also pretty much at the top of the range of tip temperatures used in electronics soldering. Thus, if you feel like you aren't getting enough power/heat, the problem is almost certainly one of the following:

- The tip is too small (bigger tips give more effective power due to contact surface area)
- The tip has an inappropriate geometry for your job (think contact surface area)
- The tip is too oxidized (try wiping it on the brass wool)
- The tip is broken (may give an error message)

Documents



Metcal_5200_MX_datasheet.pdf



Metcal-Tip-Care-Poster-2017.pdf