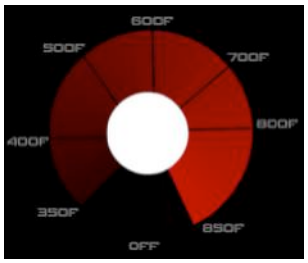
Therm-O-Trac + Soldering Stations

Therm-O-Trac + Soldering Stations are the best available for high reliability applications. They exceed all industry standards and MIL specs including the performance requirements of MIL-STD-2000A and ANSI/J-STD001; the ESD requirements of MIL-STD-1686; and the EMI and RFI emission criteria of MIL-STD-461A/462A. With outstanding performance, Therm-O-Trac + is also the leading station for commercial applications requiring high reliability and accurate temperature control.

FEATURES:

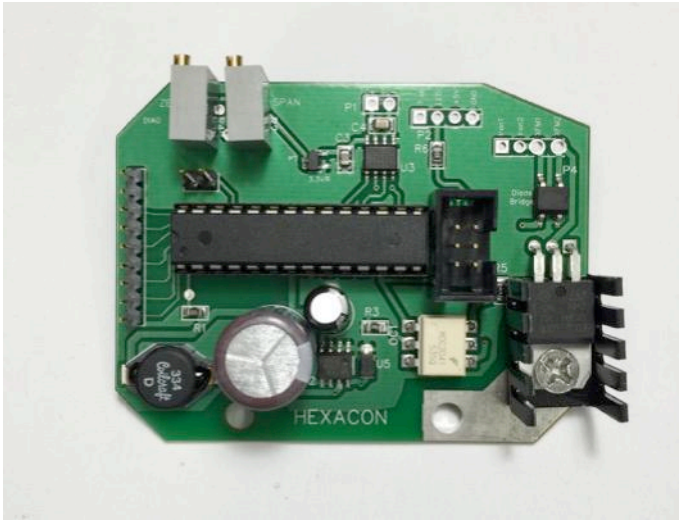
- **Temperature Control**
  Therm-O-Trac + is designed to give the industry's most stable temperature control during the work cycle and less than ±1% variance at idle temperature. Temperature is controlled by a thermocouple positioned at the working end of the tip. It continually senses temperature and corrects for temperature variations immediately by adjusting the power through a closed loop, zero voltage switching circuit.



- **Temperature Range**
  Variable temperature models (350°F to 850°F) can be set for any temperature in range. All units can be easily calibrated in the field without any special components or tools to ensure certification compliance with industry standards and MIL Specs.
- **Practice Safe Soldering**
  Therm-O-Trac + does not produce levels of EMI, RFI, ESD, electrical or any other energy forms detrimental to sensitive devices during soldering. The station design and construction eliminates any possibility of ESD damage.
- **Made to Survive the Harshest Soldering Environments**
  Therm-O-Trac + Stations are durable and built to last with independently replaceable component parts and tips. All models are available in either 120V, 60 HZ or 240V, 50 HZ.

Therm-O-Trac 1002+

The Therm-O-Trac 1002 is continuously adjustable from 350°F to 850°F and is the most popular station in the Therm-O-Trac family.



Specs:

- 36VAC
- Available in 120V/240V
- Digital Circuitry
- Temperature Range of 350-850F
- Closed Loop Feedback
- Optimal Sensor location
- Accuracy of +-1% of set point
- ESD Safe

Therm-O-Trac + Theory of Operation

Power

Line voltage (~120VAC) is brought into the station and dropped down to 36VAC though a step down transformer. The power travels through a triac to heat and control the element. The rest of the board is controlled by 5v (through a voltage regulator) to power all of the low voltage components, with the exception of the 3.3v Thermocouple Chip, which runs through an additional voltage regulator.

Operation

The unit features a programmable Integrated Circuit micro-controller which operates by reading the digital K-Type Thermocouple sensor located inside the tip. The IC then converts the Thermocouple voltage, along with the calibration potentiometers, to a Fahrenheit reading. This is then compared to the desired temperature set by the user. The micro-controller calculates a response and delivers power to the element to match and maintain the set temperature within +-1%.
There is a failsafe in this loop that prevents temperature overshoot during heavy use or slow temperature change.

The Therm-O-Trac + also utilizes an optocoupler which isolates the control circuit from the power circuit and only allows triac switching at zero voltage. The optocoupler, or opto-isolater, prevents the high voltage of the heating element from spilling over into the low voltage components by using LEDs.

Select-O-Trac 1006 +

Select-O-Trac Model 1006+ has three discreet selectable settings. Select-O-Trac + is the only soldering station that can be calibrated exactly at each set point: low, intermediate and high. Default set points for TOT-1006+ are: 600, 700, 800 degrees F. Other customer defined set points are available which makes the TOT-1006+ customizable. TOT-1006+ uses J tips. Same +/- 1% variance off set point as other TOT models. Same 350-850 F temperature range as other TOT stations.

Magnum 2300 +

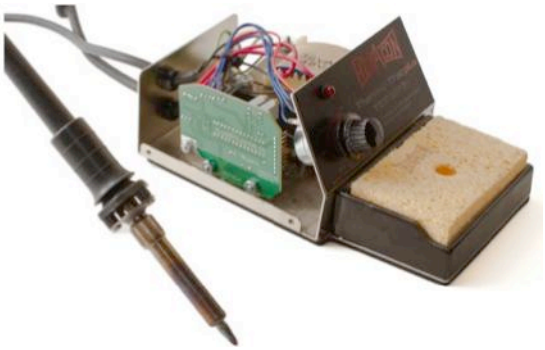
Therm-O-Trac 2300 + may be adjusted for any soldering temperature between 350°F and 850°F and is designed for heavy thermal tasks. Anyone can produce a soldering station for light duty task. TOT stations have great thermal mass and are designed to hold temperature and recover from heavy thermal loads quickly. Heat up time maybe slightly longer but when the thermal reserve and heat capacity is waiting for you the few seconds extra to preheat is most definitely worth it.

Using the largest element and tips in the Therm-O-Trac + family, Magnum has the highest heat capacity of any temperature-controlled soldering station. The hand tool includes a heavy duty element and a larger diameter case to accommodate heavier longer tips. Magnum tips are approximately 22 grams compared with 3.5 grams for a typical standard Therm-O-Trac+ tip. This means that the a Magnum tip provides over 6 times the thermal mass enabling it to solder extra heavy loads in less than five seconds.

All Therm-O-Trac + stations are also available in 240V, 50 Hz.

Hexacon also offers a Retrofit program

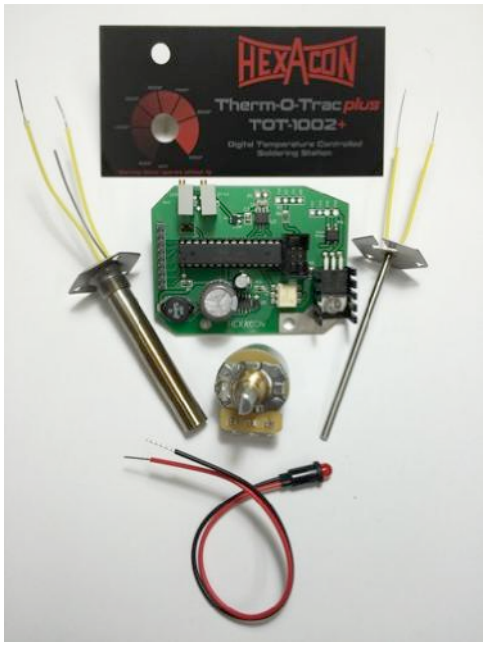
Send us your TOT-1002 station to have it Retrofit with all the TOT-1002 + parts.



BEFORE **AFTER**

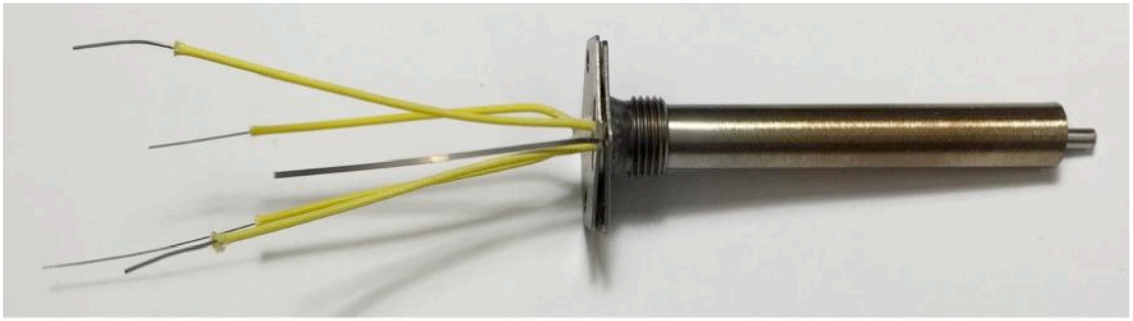
Therm-O-Trac + Repair

All Therm-O-Trac + Station Models have independently replaceable parts.



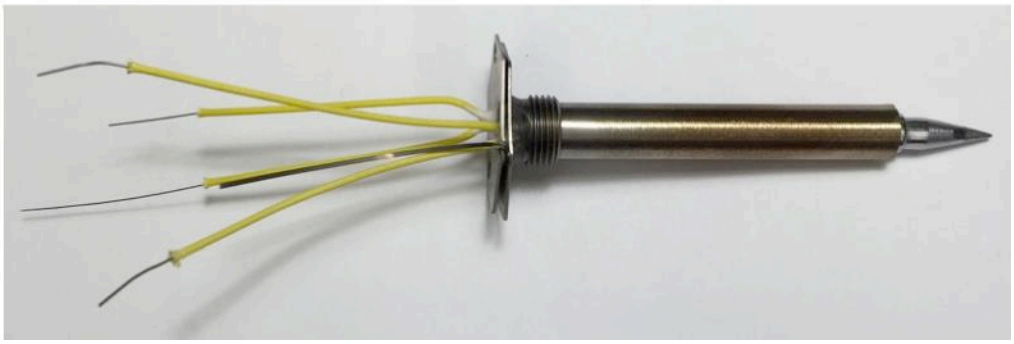
Therm-O-Trac + Soldering Tips

A wide variety of Xtradur Long Life iron plated J Series tips are available for Therm-O-Trac Soldering Stations. Each J-Tip has a heavy iron plating over copper alloy. All J-Tips are tinned and immunized with nickel and chrome and then tinned with 100% tin.



The sensing device for Therm-O-Trac + stations is **critically positioned** near the end of the tip for maximum sensitivity and response time.

The close tolerances, including hole depth, are essential for proper tool performance. Use of tips other than Hexacon J-Tips will void the warranty and cause unnecessary maintenance problems. Daily removal of the J tip is recommended to prevent scale build-up.



MODEL/TIP SPECIFICATIONS:

Part ID	Wattage	Standard Tip	Tip Point Size & Reach
TOT-1002+	Variable	J202X	3/32" x 5/8"
TOT-1006+	Variable	J202X	3/32” x 5/8”
TOT-2300+	Variable	J802X	1/4" x 1/2"