

# Cartridge Heater Installation & Operation Guide

## Installation:

- ▶ Installation should only be performed by people trained in electrical hookup.
- ▶ Do not attempt to form the part.
- ▶ Do not hold onto the heater with a set screw or other clamping method that can deform the case.
- ▶ Only use non-electrically conductive sprays and pastes for installation.
- ▶ Heaters should be installed with a holding device. Heat up and cool down cycles can cause the heater to move within its bore, causing a fire if contact is made with flammable materials. Also, in cases where wattage distribution is installed, the movement will change the heat profile of the tool.
- ▶ For a surface load up to 160 W/in<sup>2</sup> the bore hole needs to be held to nominal  $\varnothing -0+.001$ . For over 160 W/in<sup>2</sup> we recommend a split bore press fit.
- ▶ In consideration of removal it is easier if the bore hole is made as a through hole.

## Temperature controllers:

- ▶ Temperature Controllers have to be matched to the heaters amp load with an appropriate thermocouple sensor input.
- ▶ Only use controllers that include a "Soft Start" function. This will allow the heater to burn off any moisture inside before applying full voltage.

## Connections:

- ▶ Installation must protect lead connection areas from liquids and gasses to avoid short circuits.
- ▶ If using a separate thermocouple be sure that the TC is not electrically grounded to the heater casing which could cause a feedback to the controller inputs.

- ▶ Watch sharp edges along the lead wire path.
- ▶ Be mindful of the maximum temperature of the lead wires during planning to avoid melting during operation.
- ▶ In cases where the heater is using the casing as the second power lead, the tool temperature must stay below the corrosion point.
- ▶ Voltage differences have a dramatic effect on wattage output and heater life. Be sure the voltage is correct for the heater design. You will find the designed voltage stamped onto the heater.
- ▶ If using the internal thermocouple please be sure to follow the standard wiring polarity. If the temperature reading drops after power is applied the most common cause is the thermocouple is wired backwards.

## Operation:

- ▶ All installations must be electrically grounded. Do not touch the heating element while in use – they get very hot.
- ▶ Please mount the heater so that there is no chance of fire from flammable material.

## Storage:

- ▶ Store at room temperature in a dry location.

## General Information:

- ▶ Please be sure to check over the order confirmation for any other information concerning operation or special applications.
- ▶ If the lead wires are supplied without insulation or with removable sleeves the customer must take care to insure their protection from electricity.