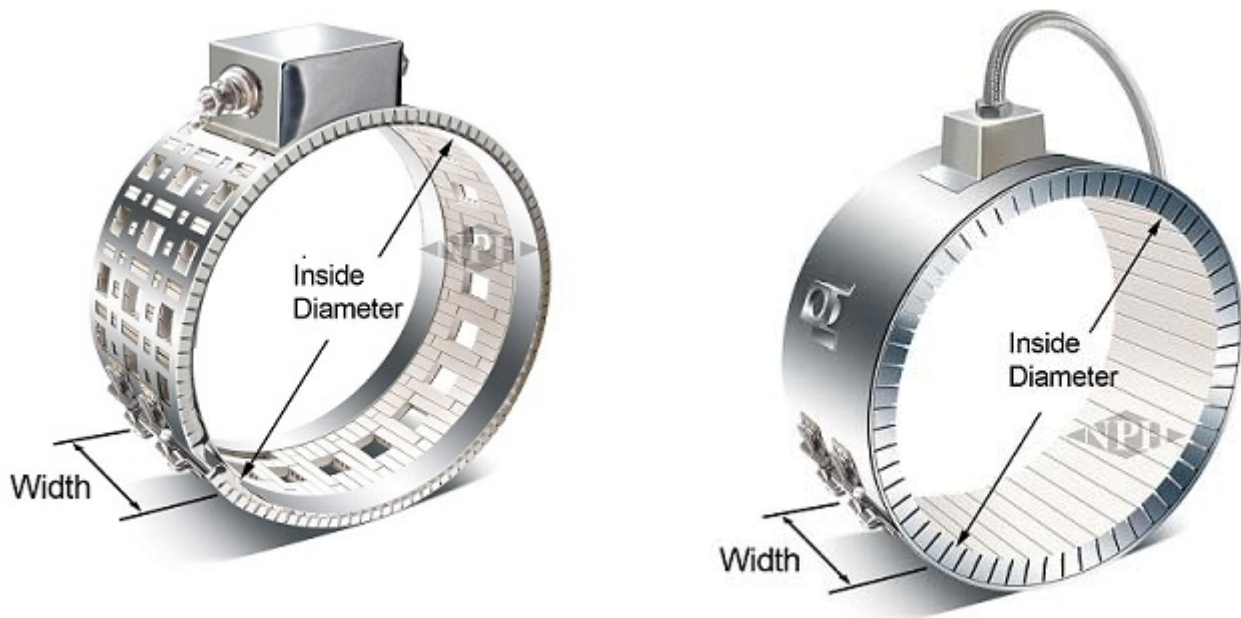




Installation Recommendations-Ceramic Insulated Band Heaters, Knuckle Band Heaters

Installation, Operation, and Maintenance Instructions



Disconnect electric power to the machine and/or ceramic knuckle heaters prior to installing or replacing heaters.

Do not install ceramic band heaters in areas where combustible gas, vapor or dust is present. Doing so can be hazardous, create shorts, cause premature heater, temperature control, machine and ultimately product failure.

Reduce the number of narrow or two-piece knuckle heater bands used on the barrel. Ceramic heaters bands are very flexible and can be made in large widths and one-piece construction for easy installation. This eliminates heat losses between narrow bands and sharply reduces costly installation labor.

Using ceramic band heaters that closely matches the wattage requirements will decrease the frequency of cycling and temperature over-shoot, thereby increasing the life of the heater.

When replacing any other type of non-insulated band heater with NPH ceramic band heaters, you can decrease your total operating wattage by approximately 15 to 20 percent.

To prevent overheating and knuckle band heater failure, adequate temperature controls should be installed. The thermocouples must be kept free of contaminants and checked for good response to

temperature changes. A faulty thermocouple can cause the destruction of an entire heating zone due to overheating. NPH offers a wide variety of temperature controls and thermocouples from stock for immediate delivery. Contact NPH below for immediate service.

Make certain that all barrel surfaces are clean and free of contaminants. During operation, the ceramic insulated band heaters and cylinder surface must be kept free of all contaminants that might liquefy under heat and find their way into the heater windings, carbonizing and becoming conductive. The smallest amount of contamination can cause electrical shorts, resulting in heater failure.

Install and position ceramic knuckle band heaters on the barrel.

Take up all the slack by tightening the low thermal expansion outer housing until the serrated edges come firmly in direct contact with the cylinder. A rawhide mallet can be used to lightly tap the outer edges – only to get uniform contact as you tighten the clamping screws. Do not over tighten to the point where the serrated edges begin to collapse and thrust outward. At this point you are compressing the ceramic insulation and decreasing its insulating value. Unlike all other types of band heaters, ceramic bands heat by radiation as well as conduction and they do not require the same clamping force that is essential with all other types of band heaters.

For knuckle band heaters with screw terminals, remove the top nut and flat washers from the power screw terminals. Do not remove or loosen the bottom nut on the power screw terminals.

All electrical wiring of ceramic heater bands should be done by a qualified electrician.

Use only lead wire with high temperature insulation and proper gauge size for ceramic heaters installation.

When connecting power leads to screw terminals make certain that barrels of terminal lugs are not facing down toward the heater case, which will create a short circuit.

Make sure the voltage input to the ceramic heater bands does not exceed the voltage rating that is stamped on the heater band.

It is recommended that an amperage reading is taken for each heater to verify proper wiring. Use Ohms Law Calculator: http://www.nphheaters.com/tool_box/ohms_law_calculator.htm

Insulate all live electrical connections per applicable safety standards.

Install shrouds around the machine to meet applicable safety requirements.

Once installed, check surroundings to make sure that contaminants won't get on the heater while the unit is in operation. Accumulation of contaminants on heaters can cause premature heater failure.

It is imperative that upon start-up of new machines at customer facilities, all of the aforementioned parameters are double checked by qualified field service personnel.



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