Coil Heaters-Frequently Asked Questions-FAQ's:

Q. What is the difference between a coil heater and a cable heater?
While coil heaters and cable heaters look much the same on the outside, there are important performance differences on the inside. The "Coil" in coil heater refers to a spiraled resistance wire inside the coil heater, compared to a straight resistance wire on a cable heater. The spiraled wire allows a higher watt density to be carried on the surface of the heater. In most nozzle heating applications, performance improvement is obtained by removing heat from the center and compensating for heat loss at the head and tip of the nozzle. By carrying more watt density, a coil heater allows engineers to focus more heat where there is heat loss and reduce the rise in temperature in the center. This reduces cycle time, improves quality and extends the range of plastics that can be run on a hot runner system.

Q. Why are NPH "Pressed in Brass" Coil Heaters better than Cast in Brass Coil heaters?
Cast in Brass heaters have long been the standard for higher temperature nozzle heating applications. Pressed in Brass heaters have the benefits of Cast in Brass Heaters and eliminate profile and durability issues that can result from the casting process. NPH Pressed in Brass heaters utilize a machined brass body with a precisely defined heater path. We press the heater in from the same position at the tip, creating a highly repeatable path from heater to heater. Cast in Brass coil heaters are wound first, positioned in a mold and then have molten brass poured on them. Heater windings have been known to shift in the direction of the pour-which creates variability from heater to heater. Further, in some cases, molten brass temperatures can cause a galvanic reaction at the thermocouple junction-shortening heater life.

NPH and its manufacturing partners developed the "Pressed in Brass" heater specifically to address thermocouple life. Our customers have also found that pressed in brass heaters heat up about 8% faster due to reduced air pockets in the machined brass. When OEM programs are in place, "Pressed in Brass" coil heater lead times are often 50-70% shorter than cast in brass heaters.

Q. Can I buy a straight coil heater and wind it around the tool myself?
It can be done, but we do not recommend this for several reasons. First, the coil heater should actually be undersized or smaller diameter than the tool. Then it should be twisted on to remain very tight. Finally, when we wind the coil heaters to the required diameter they are pressed to that to help eliminate some of the spring effect.

Q. What is the difference between a "pressed" on sheath and a "pushed" on sheath?
A pressed on sheath is brazed to the heater and sized to a slip fit tolerance. A pushed on sheath is essentially a slip on cover for the coil heater. NPH recommends a pressed on sheath for best performance, thermal transfer and energy efficiency.

Q. Why are there so many different coil heater profiles? What is the advantage of one versus the other?
The range of profiles can be confusing at times. The options of height for coil heaters is important to ensure sufficient clearance of the net OD of the heater compared to the bore ID for nozzle performance. As a rule the wider a heater, the more watt density can be applied per linear inch. Narrower widths allow for higher precision of distributing wattage across the nozzle body. As manifold designs increasingly call for closer drops, the mini coil has emerged as a “small space claim” alternative to help designers meet objectives. Round coil heaters, the original nozzle heaters, are now primarily used for form in groove applications.

Q. What is the maximum length that you can get a coil heater?
Mini coil heaters have a maximum straight length of 112.2", coil heaters have a maximum straight length of 86.6".

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