



# National Plastic Heater

Call Toll Free 1.877.674.9744

## HIGHWAT<sup>™</sup> COIL/CABLE HIGH PERFORMANCE HEATERS

**HIGHWAT** coil and cable heaters are reliable, high performance small diameter heaters used whenever a large amount of heat is required in a confined space. These heaters are fully annealed and can be formed into various shapes and forms. Coil and cable heaters can accommodate thermocouple sensors, and their cross-section could be made square or rectangular to improve heat transfer. **HIGHWAT** coil heaters are successfully used as powerful heating cells in plastic injection molding hot-runner nozzles.



- [Overview](#)
- [Termination styles](#)

# HIGHWAT COIL/CABLE HIGH PERFORMANCE HEATERS

- **Hot runner nozzles**
- **Cutting & sealing bars**
- **Medical equipment**
- **Rod, pipe & tube heating**
- **Heat tracing**
- **Semiconductor manufacturing**

Coil Heater Cross sections	
Round	0.125"
Square	0.130" x 0.130"
Rectangular	0.090" x 0.145"
Cable Heater Cross sections	
Round	0.040"
Round	0.062"
Round	0.094"
Round	0.125"
Round	0.150"
Round	0.188"
Square	0.130" x 0.130"
Rectangular	0.100" x 0.175"



## Construction and features

- High performance
- Rapid response
- Fully annealed
- Miniature sizes
- CSA and CE certified\*

Coil and cable heaters are made by placing a pair of tiny coils or two lines of straight resistance wire inside a very dense MgO medium. This core is then inserted into a stainless steel shell. These high-performance heating cells can acquire temperatures of up to 1500° F. A coil heater in its unformed straight stage can have a maximum length of 6ft and its cross-section can be square or rectangular, while a cable heater can be 300ft long and is available in round cross sections. Thermocouple sensors could be installed internally at the tip or the middle of a heater. Power terminals, as well as ground and thermocouple wires are attached to the internal wires inside a transition adapter, which has a larger diameter than the actual heater's cross-sectional diameter. Although **HIGHWAT** coil and cable heaters are fully annealed and can acquire any shape, they should be formed to a final shape in a single attempt. Forming and bending operations harden the outside stainless shell of a heater, and re-annealing might become necessary if changing the form is required. The wattage in a coiled heater could be distributed, with higher wattage at the two ends, simply by stretching and distancing apart the middle loops.

\*Coil and cable heaters that have a clearance between the resistance wire and the outside shell of more than 0.4mm.

# HIGHWAT COIL/CABLE HIGH PERFORMANCE HEATERS

## Electrical terminations



### Plain leads with high temperature sleeving

High temperature Teflon leads (480° F) with a fiberglass jacket exiting from a transition bracket. This bracket is sealed with high temperature cement.



### Stainless steel braid

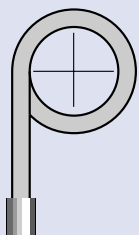
The stainless steel braid, which is crimped to the transition bracket, provides abrasion resistance and maintains high flexibility.



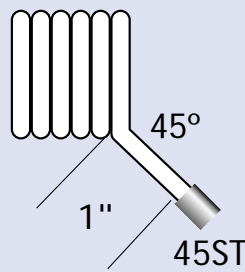
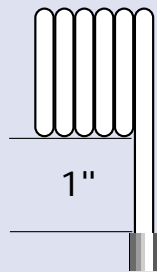
### Stainless steel armor

Stainless steel armor is less flexible than stainless steel braid. It provides protection from contamination and abrasion. This style is standard on **HIGHWAT** heaters.

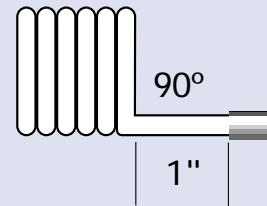
## Termination orientation



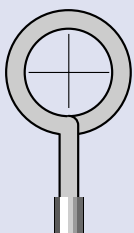
ST



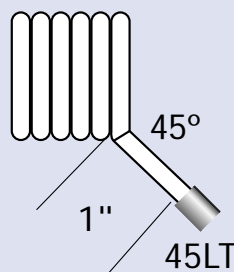
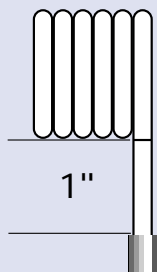
45ST



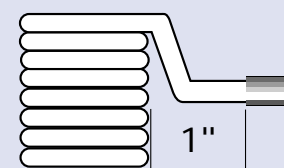
90ST



LT



45LT



SPT

# HIGHWAT COIL/CABLE HIGH PERFORMANCE HEATERS

## Installation tips for coil heaters

- The inside diameter of a coil heater is 0.020" smaller than the nominal diameter of a nozzle. This is done intentionally to secure a positive grip at all times. During installation, a coil heater should be screwed to its proper position. Pushing forcefully, or slightly opening the coil to facilitate installation could permanently damage the heater.
- During installation, only the straight cold section could be slightly bent. This should be done in a single attempt. The bending radius shouldn't be less than 0.5". It is always recommended to contact our factory when modifications of form are required.
- The straight cold section can withstand temperatures of up to 1500° F. However, to protect the lead wires, the temperature of the section beyond the transition adapter should be maintained below 480° F.
- Usually the sensing tip of a thermocouple is located at the end of the last loop of a coil heater. Care should be taken to insure that the last loop is properly gripping the nozzle.

## Available coil heaters from stock

PART#	OEM EQ #	I. D.	LENGTH	WATTS	VOLTS	LEAD LGTH TYPE	GROUND YES/NO	COLD LEAD	TYPE J T/C	PROFILED HEAT
BK51492	SSTC-62-90	0.5	1.45	250	240	36"FLX HOSE	Y	2	Y	Y
BK51992	SSTC-72-90	0.5	1.95	250	240	36"FLX HOSE	Y	2	Y	Y
BK52502	SSTC-42	0.5	2.5	450	240	48"FLX HOSE	Y	1/1	N	N
BK52592	SSTC-42-90	0.5	2.5	450	240	48"FLX HOSE	Y	2	N	N
BK54601	SSTC-31	0.5	4.62	300	120	48"FLX HOSE	Y	1/1	Y	Y
BK54691	SSTC-31-90	0.5	4.62	300	120	48"FLX HOSE	Y	2	Y	Y
BK54602	SSTC-32	0.5	4.62	300	240	48"FLX HOSE	Y	1/1	Y	Y
BK54692	SSTC-32-90	0.5	4.62	300	240	48"FLX HOSE	Y	2	Y	Y
BK60902	SCH0003	0.625	0.975	225	240	42"SS BRAID	Y	2	Y	Y
BK62002	SCH0081	0.625	2	300	240	36"SS BRAID	Y	2	Y	Y
BK62502	SCH0082	0.625	2.5	350	240	36"SS BRAID	Y	2	Y	Y
BK63002	SCH0083	0.625	3	400	240	36"SS BRAID	Y	2	Y	Y
BK63502	SCH0084	0.625	3.5	425	240	36"SS BRAID	Y	2	Y	Y
BK64002	SCH0085	0.625	4	500	240	36"SS BRAID	Y	2	Y	Y
BK65002	SCH0086	0.625	5	500	240	36"SS BRAID	Y	2	Y	Y
BK66002	SCH0087	0.625	6	500	240	36"SS BRAID	Y	2	Y	Y
BK71402	SCH0060	0.75	1.44	250	240	36"SS BRAID	Y	2	Y	Y
BK71702	SCH3142	0.75	1.75	315	240	42"SS BRAID	Y	2	Y	Y
BK71902	SCH0061	0.75	1.94	300	240	36"SS BRAID	Y	2	Y	Y
BK72402	SCH3242	0.75	2.44	315	240	42"SS BRAID	Y	2	Y	Y
BK72432	SCH0062	0.75	2.44	350	240	36"SS BRAID	Y	2	Y	Y
BK72902	SCH0063	0.75	2.94	400	240	36"SS BRAID	Y	2	Y	Y
BK73402	SCH0064	0.75	3.44	425	240	36"SS BRAID	Y	2	Y	Y
BK74402	SCH0065	0.75	4.44	500	240	36"SS BRAID	Y	2	Y	Y
BK75402	SCH0066	0.75	5.44	500	240	36"SS BRAID	Y	2	Y	Y
BK82102	SCH0088	0.875	2.13	400	240	36"SS BRAID	Y	2	Y	Y
BK82602	SCH0089	0.875	2.63	450	240	36"SS BRAID	Y	2	Y	Y
BK83102	SCH0090	0.875	3.13	550	240	36"SS BRAID	Y	2	Y	Y
BK83602	SCH0091	0.875	3.63	700	240	36"SS BRAID	Y	2	Y	Y
BK86102	SCH0094	0.875	6.13	1000	240	36"SS BRAID	Y	2	Y	Y
BK84102	SCH0092	0.875	4.13	800	240	36"SS BRAID	Y	2	Y	Y
BK85102	SCH0093	0.875	5.13	900	240	36"SS BRAID	Y	2	Y	Y



**National Plastic Heater Sensor & Control Co.**

phone: 416.491.8436 toll free: 1.877.674.9744 fax: 416.491.2433

Toronto, Ontario Canada e-mail: sales@nphheaters.com website www.nphheaters.com