

 NPH

National Plastic Heater

Call Toll Free 1.877.674.9744

HIGHWAT® 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.



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- [Termination styles](#)

HIGHWAT COIL/CABLE HIGH PERFORMANCE HEATERS

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

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.

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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

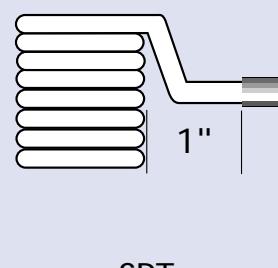
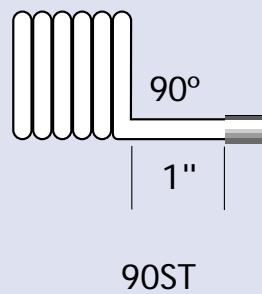
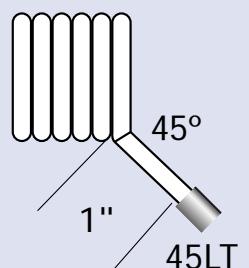
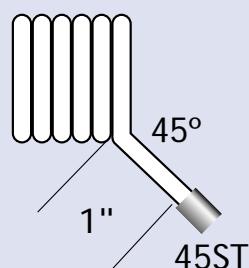
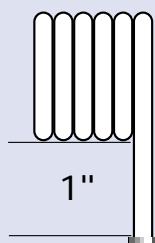
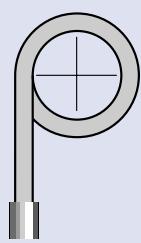
The stainless steel braid, which is crimped to the transition bracket, provides abrasion resistance and maintains high flexibility.



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



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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	YY
BK54691	SSTC-31-90	0.5	4.62	300	120	48"FLX HOSE	Y	2	Y	YY
BK54602	SSTC-32	0.5	4.62	300	240	48"FLX HOSE	Y	1/1	Y	YY
BK54692	SSTC-32-90	0.5	4.62	300	240	48"FLX HOSE	Y	2	Y	YY
BK60902	SCH0003	0.625	0.975	225	240	42"SS BRAID	Y	2	Y	YY
BK62002	SCH0081	0.625	2	300	240	36"SS BRAID	Y	2	Y	YY
BK62502	SCH0082	0.625	2.5	350	240	36"SS BRAID	Y	2	Y	YY
BK63002	SCH0083	0.625	3	400	240	36"SS BRAID	Y	2	Y	YY
BK63502	SCH0084	0.625	3.5	425	240	36"SS BRAID	Y	2	Y	YY
BK64002	SCH0085	0.625	4	500	240	36"SS BRAID	Y	2	Y	YY
BK65002	SCH0086	0.625	5	500	240	36"SS BRAID	Y	2	Y	YY
BK66002	SCH0087	0.625	6	500	240	36"SS BRAID	Y	2	Y	YY
BK71402	SCH0060	0.75	1.44	250	240	36"SS BRAID	Y	2	Y	YY
BK71702	SCH3142	0.75	1.75	315	240	42"SS BRAID	Y	2	Y	YY
BK71902	SCH0061	0.75	1.94	300	240	36"SS BRAID	Y	2	Y	YY
BK72402	SCH3242	0.75	2.44	315	240	42"SS BRAID	Y	2	Y	YY
BK72432	SCH0062	0.75	2.44	350	240	36"SS BRAID	Y	2	Y	YY
BK72902	SCH0063	0.75	2.94	400	240	36"SS BRAID	Y	2	Y	YY
BK73402	SCH0064	0.75	3.44	425	240	36"SS BRAID	Y	2	Y	YY
BK74402	SCH0065	0.75	4.44	500	240	36"SS BRAID	Y	2	Y	YY
BK75402	SCH0066	0.75	5.44	500	240	36"SS BRAID	Y	2	Y	YY
BK82102	SCH0088	0.875	2.13	400	240	36"SS BRAID	Y	2	Y	YY
BK82602	SCH0089	0.875	2.63	450	240	36"SS BRAID	Y	2	Y	YY
BK83102	SCH0090	0.875	3.13	550	240	36"SS BRAID	Y	2	Y	YY
BK83602	SCH0091	0.875	3.63	700	240	36"SS BRAID	Y	2	Y	YY
BK86102	SCH0094	0.875	6.13	1000	240	36"SS BRAID	Y	2	Y	YY
BK84102	SCH0092	0.875	4.13	800	240	36"SS BRAID	Y	2	Y	YY
BK85102	SCH0093	0.875	5.13	900	240	36"SS BRAID	Y	2	Y	YY



National Plastic Heater Sensor & Control Co.

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