

**FIRECOIL COIL/CABLE HIGH PERFORMANCE**

**FIRECOIL** 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.

**FIRECOIL** coil heaters are successfully used as powerful heating cells in plastic injection molding hot-runner nozzles.



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.

- **Overview**
- **Termination styles**

## FIRECOIL COIL/CABLE HIGH PERFORMANCE

- **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 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"

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 **FIRECOIL** 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**

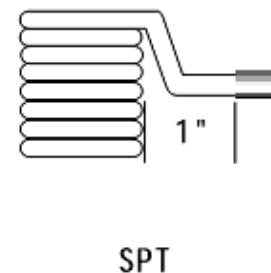
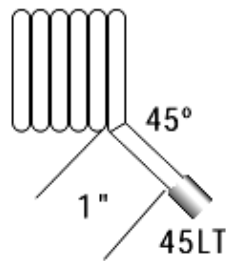
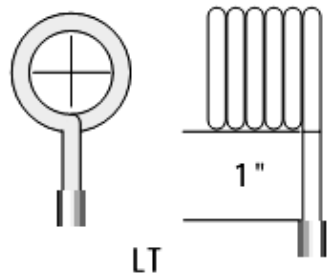
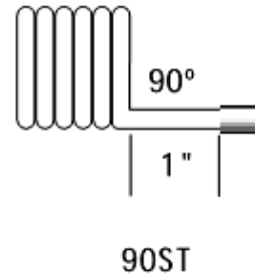
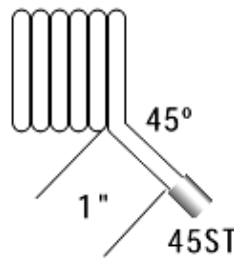
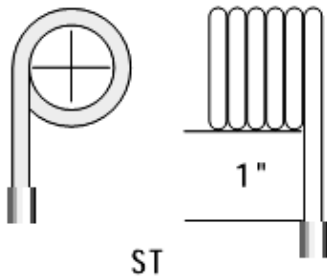
The stainless steel braid, which is crimped to the transition bracket, provides abrasion resistance and maintains high flexibility.



**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 **FIRECOIL** 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
51492	SSTC-62-90	0.5	1.45	250	240	36"FLX HOSE	Y	2	Y	Y
51992	SSTC-72-90	0.5	1.95	250	240	36"FLX HOSE	Y	2	Y	Y
52502	SSTC-42	0.5	2.5	450	240	48"FLX HOSE	Y	1/1	N	N
52592	SSTC-42-90	0.5	2.5	450	240	48"FLX HOSE	Y	2	N	N
54601	SSTC-31	0.5	4.62	300	120	48"FLX HOSE	Y	1/1	Y	Y
54691	SSTC-31-90	0.5	4.62	300	120	48"FLX HOSE	Y	2	Y	Y
54602	SSTC-32	0.5	4.62	300	240	48"FLX HOSE	Y	1/1	Y	Y
54692	SSTC-32-90	0.5	4.62	300	240	48"FLX HOSE	Y	2	Y	Y
60902	SCH0003	0.625	0.975	225	240	42"SS BRAID	Y	2	Y	Y
62002	SCH0081	0.625	2	300	240	36"SS BRAID	Y	2	Y	Y
62502	SCH0082	0.625	2.5	350	240	36"SS BRAID	Y	2	Y	Y
63002	SCH0083	0.625	3	400	240	36"SS BRAID	Y	2	Y	Y
63502	SCH0084	0.625	3.5	425	240	36"SS BRAID	Y	2	Y	Y
64002	SCH0085	0.625	4	500	240	36"SS BRAID	Y	2	Y	Y
65002	SCH0086	0.625	5	500	240	36"SS BRAID	Y	2	Y	Y
66002	SCH0087	0.625	6	500	240	36"SS BRAID	Y	2	Y	Y
71402	SCH0060	0.75	1.44	250	240	36"SS BRAID	Y	2	Y	Y
71702	SCH3142	0.75	1.75	315	240	42"SS BRAID	Y	2	Y	Y
71902	SCH0061	0.75	1.94	300	240	36"SS BRAID	Y	2	Y	Y
72402	SCH3242	0.75	2.44	315	240	42"SS BRAID	Y	2	Y	Y
72432	SCH0062	0.75	2.44	350	240	36"SS BRAID	Y	2	Y	Y
72902	SCH0063	0.75	2.94	400	240	36"SS BRAID	Y	2	Y	Y
73402	SCH0064	0.75	3.44	425	240	36"SS BRAID	Y	2	Y	Y
74402	SCH0065	0.75	4.44	500	240	36"SS BRAID	Y	2	Y	Y
75402	SCH0066	0.75	5.44	500	240	36"SS BRAID	Y	2	Y	Y
82102	SCH0088	0.875	2.13	400	240	36"SS BRAID	Y	2	Y	Y
82602	SCH0089	0.875	2.63	450	240	36"SS BRAID	Y	2	Y	Y
83102	SCH0090	0.875	3.13	550	240	36"SS BRAID	Y	2	Y	Y
83602	SCH0091	0.875	3.63	700	240	36"SS BRAID	Y	2	Y	Y
86102	SCH0094	0.875	6.13	1000	240	36"SS BRAID	Y	2	Y	Y
84102	SCH0092	0.875	4.13	800	240	36"SS BRAID	Y	2	Y	Y
85102	SCH0093	0.875	5.13	900	240	36"SS BRAID	Y	2	Y	Y