

## COIL & CABLE HEATERS



### Typical Heating Applications:

- *Hot Runner Nozzles*
- *Cutting & Sealing Bars*
- *Medical Equipment*
- *Rod, Pipe & Tube Heating*
- *Heat Tracing*
- *Semiconductor Manufacturing*
- *Forming Dies*
- *Printing & Laminating Presses*

**Cable heaters** are highly versatile, high performance mini-tubular heaters that are used in applications where a large amount of heat is required in a confined space.

These heaters are fully annealed and can be bent into various shapes and configurations. Their standard cross-section is round but can be formed into a square or a rectangle to improve heat transfer.

The sheath material is stainless steel 304, which provides adequate resistance against temperature oxidation and corrosion.

The heating core type depends on the electrical and thermal characteristics of the heater. The core is made by embedding either Nickel-Chrome mini-coils or straight, solid resistive wires inside a highly compacted Magnesium Oxide insulating medium. The connection between the main power leads and the internal fine wires is done inside transition adaptors. These adaptors, which remain relatively cold and protect the power leads during operation, have larger diameters than the heater cross-section.

Cable heaters can have up to 35w/in<sup>2</sup> watt-density and can operate at temperatures as high as 1200°F in a continuous mode (1500°F intermittent).

Coil & Cable Heater Cross-sections

Round	0.094"
Round	0.125"
Round	0.150"
Round	0.188"
Round	0.25"
Square	0.13" x 0.13"
Rectangular	0.09" x 0.145"
Rectangular	0.10" x 0.175"

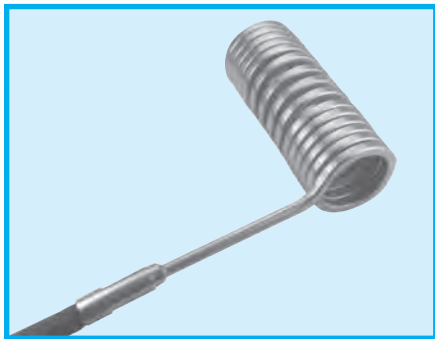
# BUCAN COIL & CABLE HEATERS

**Coil heaters** are special cable heaters that have been shaped into a coil. These heaters are successfully used as powerful heating cells in plastic injection molding hot-runner nozzles.

Coil and cable heaters can accommodate "J" or "K" type thermocouple sensors which are positioned internally at the tip or in the middle of the heater. Moreover, coil and cable heaters can have a profiled or a distributed-wattage configuration.

It should be noted that although cable heaters are malleable and can acquire any shape, they should be formed into a final shape in a single attempt. Forming and bending operations harden the outside stainless-steel shell, and additional annealing might become necessary if re-changing the form is required.

## Electrical terminations



### Plain leads with high temperature sleeving

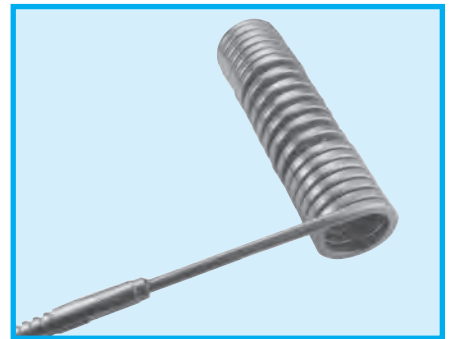
High temperature Teflon leads (480° F) with a fiberglass jacket exiting from a transition bracket.

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.

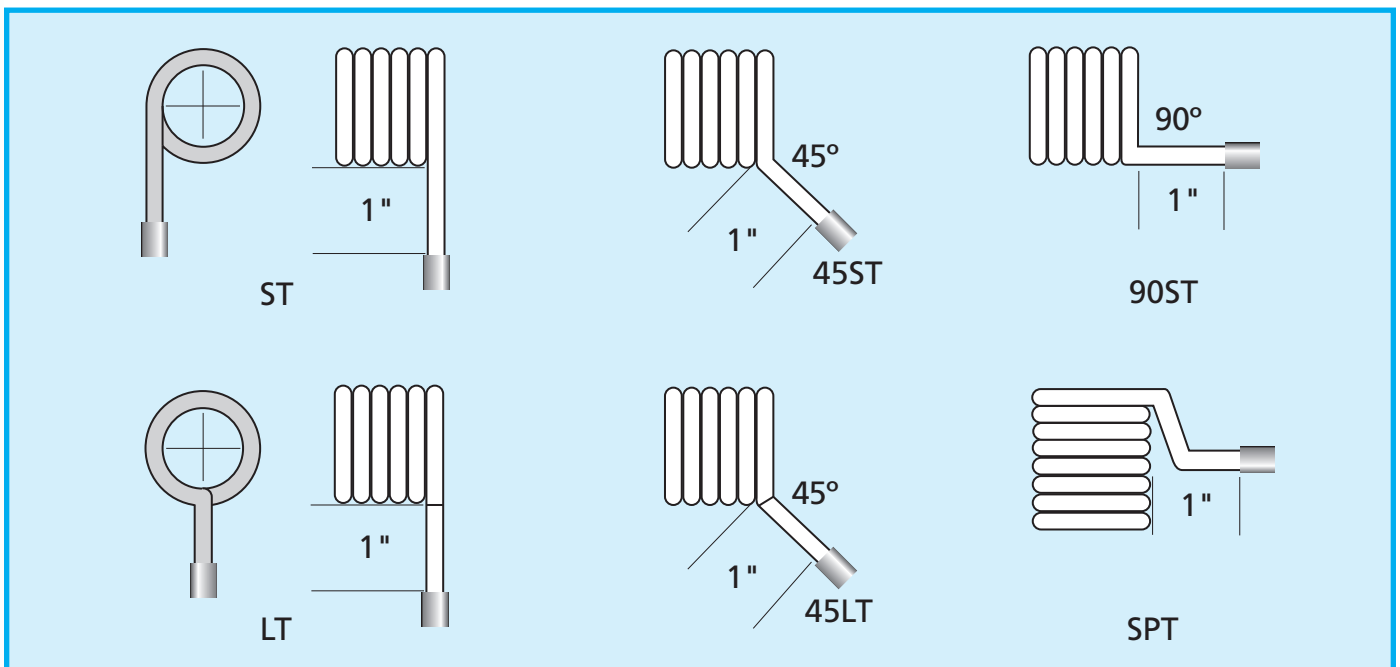


### Stainless steel armor

Stainless steel armor is less flexible than stainless steel braid. It provides protection from contamination and abrasion.

This style is standard on heaters.

## Terminations orientation



# BUKAN COIL & CABLE HEATERS

## 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	PROFIED 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

### 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.