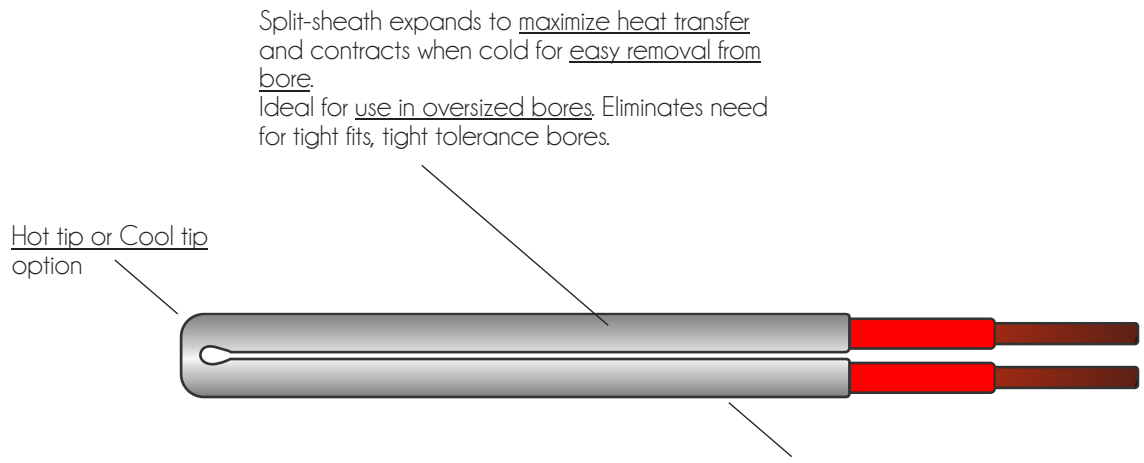
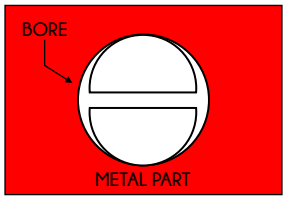
SPLIT SHEATH, HIGH WATT DENSITY, CARTRIDGE HEATER



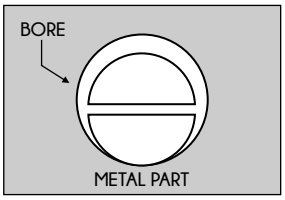
Maximized Heat Transfer

The unique split-sheath design of Dalton Cartridge Heater allows the independent, bilateral expansion of each half of the heater of the outward against the walls of the surrounding bore. Maximized metal-to-metal contact results in greatly improved heat transfer under normal fit conditions of 0.005" to .007". The split-sheath expansion of Dalton heaters assures superior heat transfer, uniform process heat, greater efficiency, and reduced consumption of electricity.



Heater Energized

The unique bi-lateral expansion of an energized cartridge heater produces superior metal-to-metal contact with the surrounding bore, thereby maximizing heat transfer.

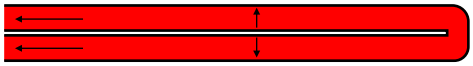


Heater De-energized

When de-energized, the cartridge heater contracts for easy removal from bore.

Use in Oversized Bores

The fit of a cartridge heater is measured as the difference between the inside diameter (ID) of the bore and the outside diameter (OD) of the heater.
For example, the ideal bore diameter for a 1/2" diameter heater would be 0.502" or 0.050". At the maximum tolerance dimension of the heater and the minimum bore diameter, the heater would have 0.005" fit, allowing ease of insertion and removal. Generally, smaller diameter heaters benefit from a bit tighter fit and fit can be slightly loosened for larger diameters.
The expanding action of Dalton heater eliminates the need for tight fits. This makes split cartridge heater ideal for use in oversized bores.



Heater Halves Expand Independently

Easy removal from bore

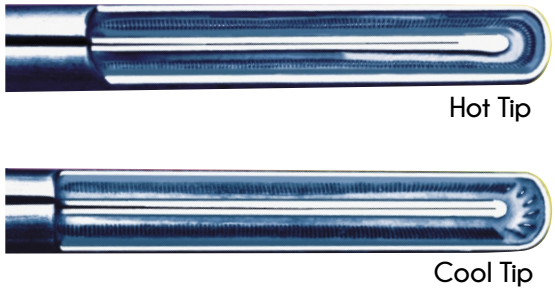
The patented split sheath design of Dalton cartridge heater reduces your heater change-out cost by preventing bore seizure. With split-sheath design, each half of the heater expands and contracts independently.
When energized, the heater expands to make intimate content with the bore wall. When de-energized the sheath contracts for ease of removal.

SPLIT SHEATH, HIGH WATT DENSITY, CARTRIDGE HEATER

Hot Tip Option

Cartridge heaters use a continuous coil construction that can be designed to deliver either full or reduced power at the tip to suit your process heating application.

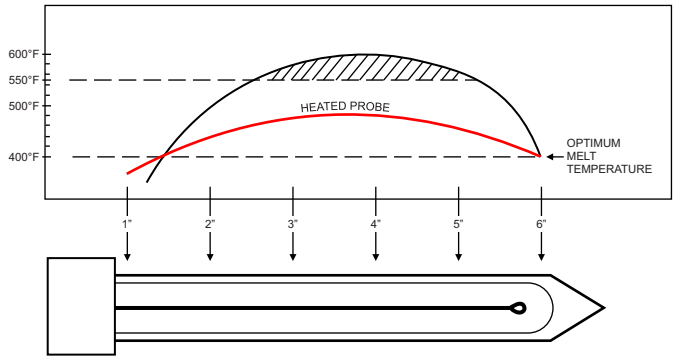
Used in injection molding heat probes, for example, hot tip option can minimize undesirable gate freeze-off.



Uniform Temperature Profile

Split-sheath cartridge heaters have a continuous heating coil for a more uniform temperature profile. Continuous coil construction eliminates the cold spots which can occur at core junctions in ceramic core heaters. There are no independent sections to burn out. Therefore, split heaters are either totally on or totally off. Uniform sheath temperature is vital when molding heat-sensitive plastics where the temperature window between gate freeze-off and material degradation is very narrow.

By varying watt-density, the temperature profile may be custom-matched to specific requirements. For example, certain applications, such as those requiring temperatures higher at the tip of a molding probe than along the sheath.



Higher Watt Densities and Temperatures

Dalton Split Cartridge Heater is essentially a tubular heater bent back on itself and swaged into a cylindrical format. It has no ceramic core which can crack during swagging, therefore they can be compacted to a much greater density. This process increases both heat transfer ability and insulative value of the dielectric.

The greater the insulation value accommodates significantly higher watt-densities. In fact, it can produce up to 50% higher watt densities and can operate higher temperatures.

External Thermocouple Option

Split-sheath cartridge heater can be manufactured with a groove along the exterior of the cartridge to accommodate a needle-type thermocouple for more accurate temperature sensing and control. It measures the temperature at the point of heat transfer from the heater to the host metal.

Temperature can be monitored at any point along the heater, unlike internal thermocouples with fixed positions. Heater design allows for independent replacement of the heater or the thermocouple.

Split-sheath cartridge heater with external thermocouple can:

Measure temperature at the precise point of heat transfer.
External thermocouples measure more precisely at the point where heat transfers to the host metal.

Monitor temperature at any point along the heater.
Split-sheath cartridge heaters give you the flexibility to monitor heat at any point along the heater, instead of pre-defined fixed points with internal monitors in conventional heaters.

Replace heater or thermocouple independently.
With external thermocouple you can replace either the heater or the thermocouple independently, without having to replace an operational component.

SPLIT SHEATH, HIGH WATT DENSITY, CARTRIDGE HEATER

Standard Heater Dimension

AVAILABLE DIAMETERS	NOMINAL DIAMETERS[1]	STANDARD COLD SECTION AT	MINIMUM - MAXIMUM[2] LENGTHS TERMINAL END
1/4"	0.245"	5/16"	1 1/4" - 22"
3/8"	0.370"	3/8"	1 1/2" - 36"
1/2"	0.495"	5/8"	2" - 50"
5/8"	0.620"	5/8"	2 1/2" - 70"
11/16"	0.683"	5/8"	3 1/2" - 64"
3/4"	0.745"	5/8"	3 1/2" - 90"
1"	0.9925"	1"	8" - 60"
8.0 mm	7.875 mm	8.000 mm	38 mm - 660 mm
10.0 mm	9.875 mm	9.500 mm	38 mm -915 mm
12.0 mm	11.875 mm	15.875 mm	50 mm - 1140 mm
12.5 mm	12.375 mm	15.875 mm	50 mm - 1140 mm
15.0 mm	14.875 mm	15.875 mm	65 mm - 1250 mm
16.0 mm	15.875 mm	15.875 mm	65 mm -1775 mm
19.0 mm	18.875 mm	15.875 mm	90 mm - 2285 mm
20.0 mm	19.875 mm	15.875 mm	100 mm - 1525 mm
25.0 mm	24.800 mm	25.400 mm	200 mm - 1500 mm

1) Tolerance: ± 0.002" (1/4" - 3/4"); ± 0.0025" (1")
± 0.05 mm (8 mm - 20 mm)

2) Tolerance: ± 3% with 3/32" minimum
± 2% above 20" (500 mm)