

Strip & Ring Heaters

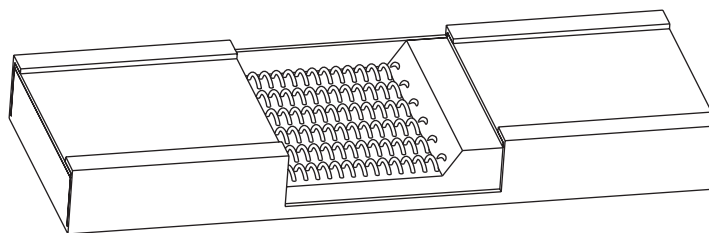
Applications & Features



- Up to 72" Lengths
- Up to 3,000 Watts
- 120 - 480 Volt
- Up to 38 W/in²
- Maximum Sheath Temp.
 - Rust-Resisting Iron 750°F
 - MONEL® 900°F
 - Chrome Steel 1200°F
 - INCOLOY® 1500°F
- Accessory Clamping Devices, Optional

High Quality, Coiled Alloy Resistor Wire is uniformly spaced over the width and length of the strip heater to assure even heat distribution.

Resistor Wire is Embedded in specially formulated, high-grade refractory material which both insulates the resistor and transfers heat rapidly to the sheath.



Refractory is then Compressed to Rock-Hardness and high density under tremendous hydraulic pressure to maximize heat transfer from coil to sheath. Elements are oven cured at high temperatures to semi-vitrify and mature the refractory.

Maximum Heat Transfer, from the instant the element is first energized, is provided by the high emissivity black oxide finish. Elements with shiny surfaces do not transfer heat as well.

Applications

Chromalox strip heaters are used principally for convection-type air heating and clamp-on installations. When selecting strip heaters for either, two important factors must be considered:

1. The proper sheath material for resisting any rusting and oxidizing inherent in the process or environment and for withstanding the sheath temperature required. Standard sheath materials are rust-resisting iron, chrome steel and INCOLOY® (type NS only). Stainless Steel and MONEL® sheaths are available.
2. The watt density of the element, or watts per square inch of heated area, should be low for heating asphalt, molasses and other thick substances with low heat transferability. It can be higher for heating air, metals and other heat-conducting materials. (See Technical section for determining allowable watt densities.)

When high operating temperatures are needed, watt density must be limited in order not to exceed the maximum sheath temperature. Watt density is given in the table for each strip heater.

In general, a viscous material with low thermal conductivity requires a low watt density. High watt densities can be used with thinner liquids and with materials of high thermal conductivity. Premature loss of the element due to excessive temperature may result if the material's heat-take-away ability is low. Also, the material may be charred, carbonized or its chemical makeup altered by overheating.

Features

Choice of Sheath Materials capable of operating up to 1500°F sheath temperature to heat various processes economically. These include rust-resisting iron (750°F), chrome steel (1200°F), Monel® (900°F), and INCOLOY® (1500°F).

Refractory Insulated Construction exclusively. By far the most rugged and best for long, dependable service.

More Types and Ratings — More precise matching to your power service and work load requirements. Special ratings and sizes can be manufactured readily.

More Stocked Models — Hundreds of models in stock and available for immediate shipment.

Lengthwise and Cross Section Curving

— Available only on made-to-order products for efficient heat transfer. Strip and ring heaters can be factory formed to fit the shape of the surface to be heated.

Easy Installation — Chromalox clamping devices and mounting tabs speed installation.

More Choices of Strip Heater Terminal Locations — To simplify wiring layout between elements and power lines.

Many Additional Features — Available to adapt heaters to suit special applications — made-to-order.

Installations — Minimum maintenance costs.

Controls are Part of the Total Chromalox Package for your heating job, regardless of its type or the temperature precision you need. Refer to the Controls section.



Strip & Ring Heaters

Selection & Installation Guidelines

- Utility Clamps
- Milled Plates
- Clamping Bands
- Oven Mounting

Installation Guidelines

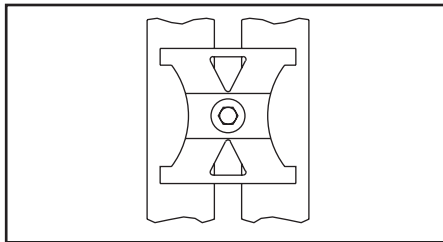
Chromalox strip elements, in most cases, can be applied with standard hardware. However, for firm contact and best heat transfer, stocked Chromalox clamps are recommended.

Note — Heat insulating material should not be placed against the sheath of the heating element

Utility Clamps

Utility Clamps secure strip elements to flat surfaces or surfaces with large radii such as large tanks. Threaded studs are welded to surface, heaters are positioned, then clamps are bolted down. Where more than one clamp is used, tighten nuts and then back off 1/2 turn to allow for expansion.

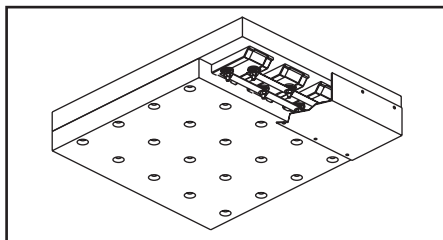
Utility Clamps



Milled Plates

Milled Plates allow heaters to be held in position in platens and similar objects with a steel plate recessed to heaters width, thickness and positions, then screwed to the working plate or surface.

Milled Plates

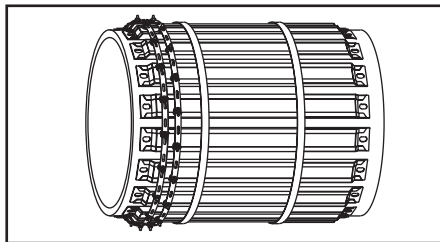


Clamping Bands

Clamping Bands can be used to firmly fasten strips longitudinally to large diameter cylindrical surfaces.

Connecting Lead Wires — Should be nickel-plated copper, nickel or alloy. Copper will oxidize and loosen connections. Do not use copper terminal lugs. See Accessories in this section.

Clamping Bands

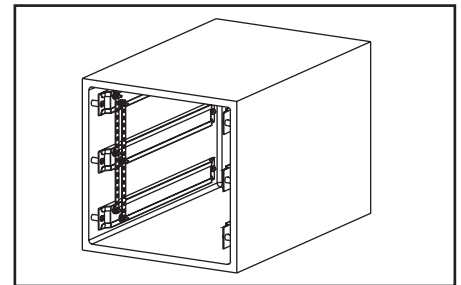


Selection Guidelines

Oven Mounting

Oven Mounting — Application of strip elements to ovens may be made simply with the use of welded-on studs and secondary insulation bushings. Mounting holes in tabs are slotted to allow for expansion. Refer to Modifications in this section.

Oven Mounting



Product to be Heated	Temperature Desired for Products	Sheath Material	Product Temp. (°F)	Allowable Watt Density (W/In ²)		
Solids						
Molds, Platens, Dies, Pipes, Tanks	Up to 1400°F Clamp-On Applications	Rust-Resisting Iron	560	3		
			150	8		
			Chrome Steel	850	7	
					700	10
					400	15
		INCOLOY® ¹	200	28		
			750	20		
			1100	8		
			1350	3		
			1400	2.5		
Air & Gases						
Free Air Velocity- 1 ft/sec.	Up to 1400°F Bracket Mounted	Rust-Resisting Iron	500	3		
			100	8		
			Chrome Steel	950	7	
					800	10
					500	15
		INCOLOY® ¹	1400	3		
			400	34		
			Free Air Velocity- 4 ft/sec.	Up to 1400°F Bracket Mounted	Rust-Resisting Iron	500
						250
Chrome Steel	1000	7				
			850		10	
			550		15	
INCOLOY® ¹	1400	5				
	600	34				

Note: ¹CSA Only