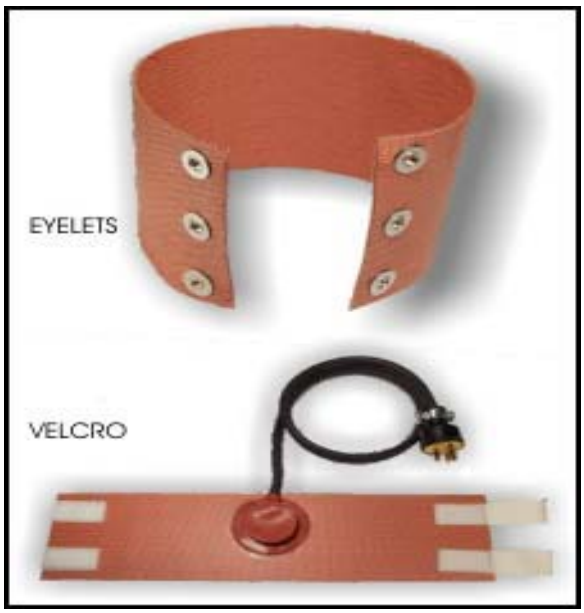
Silicone Rubber Heaters-Attachment Methods

Silicone Rubber Heaters Attachment Methods

Silicone Heaters-Eyelets and Lacing Cords

Silicone Heaters-Hooks and Spring

Silicone Rubber Heaters-Adhesive Back



Silicone Heaters-Eyelets and Velcro Options

Flexible Heaters-D Rings and Straps

Silicone Rubber Heaters-Factory Vulcanization

Silicone Flexible Heaters-Magnetic Back

Heaters-RTV Adhesive


High Temp. Aluminum Tape


Fiberglass Tape

SILICONE RUBBER HEATERS –ATTACHMENT METHODS:

When **flexible heaters** must be detachable on cylindrical parts, various methods are used. Various techniques routinely used with leather goods can be used on flexible surface heaters. These would include: Boot Hooks, Grommets, Snap Fasteners, Boot Hooks and Lacing Cord, Velcro - Hooks and Loops, Boot Hooks and Springs, D-Rings and Straps.

Flexible Heater with Pressure Sensitive Adhesive Back (PSA):

For ease of attachment specify PSA. Installation is simple: just peel off the protective liner and apply. It will adhere to most clean smooth surfaces. Care must be taken when installing to attain a smooth, consistent, uniform bond to achieve maximum results.
Maximum Temperature: Continuous – 300°F (149°C) Intermittent – 500°F (260°C)
Recommended Watt Density: Under 5 W/in2 (0.78 W/cm2) **PSA Plus** A layer of aluminum foil is vulcanized to the back of the heater for added heat dissipation prior to the application of PSA.
Note: To obtain the expected life of **Silicone Rubber** heaters, care must be taken to mount correctly**.** Regardless of the mounting technique used, do not trap any air under the heater; this can cause hot spots and possible premature heater failure. Use a rubber roller over the heater surface to assure good adhesion

Silicone Rubber Heaters-Factory Vulcanizing:

Flexible heaters can be factory vulcanized to plain or black anodized aluminum, Stainless Steel and other metal surfaces for permanent attachment and excellent heat transfer. The uncured silicone rubber heater is placed on the metal part and placed in the vacuum oven where the heater vulcanizes and adheres to the part in one operation. This procedure forms an extremely strong permanent bond with most metals due to the fact that the silicone rubber flows into and fills the micro structure in the surface of the metal. The metal part can be manufactured by NPH or supplied by the customer. Consult NPH for other materials including granite

Aluminum or Fiberglass Adhesive Tape for Silicone Rubber flexible Heaters:

High Temp. Aluminum Tape High Temp. F/G Adhesive Tape

Two Types - 350*F & 550*F Good to 350*F

2” Wide x 180 ft. long , ½” & ¾” Wide x 108 ft. long

Silicone Rubber Heaters Magnetic Mounting:

A flexible magnetic material can be attached to the back of a silicone rubber flexible heater. Will adhere to many varieties of steel. Ideal for those situations were you need to “Slap On” some heat! Specify when requesting a quote.
Maximum Temperature: 200°F / 93°C **Maximum Watt Density:** 1 W/in2 (0.16 W/cm2) **Maximum Width:** 24" (610 mm)

Field Applied Adhesive:

For a field applied permanent bond, a room temperature and ambient humidity curing silicone rubber adhesive is recommended. NPH offers two types: Both RTV106 and RTV116 will retain physical and electrical properties up to 500°F (260°C). When using RTV adhesive, cover the heater completely with a thin layer of RTV, position the heater in place, and use a small roller to remove air bubbles, which could cause hot spots and lead to premature failure of the heater.

Silicone Flexible Heaters-Inside and Outside Diameter Mounting:

NPH has developed the techniques necessary to permanently mount silicone rubber heaters to the inside and outside diameters of pipes and medium size vessels. This technique is particularly useful for heated drums and air or gas heating.
Inside Diameter (ID) Mounting **Outside Diameter (OD) Mounting**

Silicone Rubber Heaters-Mechanical Fasteners:

When flexible heaters must be detachable on cylindrical parts, various methods are used. Various techniques routinely used with leather goods can be used on flexible surface heaters.

These would include:
Boot Hooks, Grommets, Snap Fasteners, Boot Hooks and Lacing Cord, Velcro - Hooks and Loops, Boot Hooks and Springs, D-Rings and Straps

PreFormed 3-D Heaters:

Dimensional silicone rubber heaters can be vulcanized to fit a shaped outline. This technique is particularly useful for wrapping silicone heaters around pipes or small vessels. Custom tooling or special forms may be required.

Flexible Heaters-Clamping:

Flexible heaters may be applied by clamping or compression between two rigid materials. The plate surfaces must be ground reasonably smooth.
Care must be taken not to damage the heater or pierce the insulation. Mill out an area or cutout in the top plate for the added thickness of the lead exit area. Recommended Maximum Pressure: 40 Psi

Note: For added durability, mill out the space for the heater to mount in the same thickness as the heater.

www.kapton-silicone-flexible-heaters.com

Toll Free: 1-877-674-9744 (Canada & USA)

SILICONE RUBBER FLEXIBLE HEATERS - APPLICATIONS:

- Heating of Electronic Components- ATM's and Photocopiers
- Heating of Aerospace Instrumentation-Satellites and Spacecraft
- Heating of Electrical Panels and Mechanical Enclosures
- Semiconductor Wafer Processing
- Autoclaves, Incubators and Sterilizers
- Vacuum Chambers
- Medical Imaging, Medical Diagnostic Instruments and Analyzers
- Applications requiring a flexible shape or design

National Plastic Heater supplies **silicone rubber heaters** for many other applications such as industrial catering, battery warming, environmental control or electronics (particularly telecommunications), laboratory equipment and anti-condensation. The uses for polyimide heaters are infinite as they can suit any application requiring surface heating up to 200°C. Their suitability for arduous conditions has been proven in applications from polar expedition to space exploration. We are the final frontier in polyimide heaters!

National Plastic Heater,
Sensor and Control Inc.

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Toll Free: 1-877-674-9744 (Canada and USA)

www.kapton-silicone-flexible-heaters.com

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