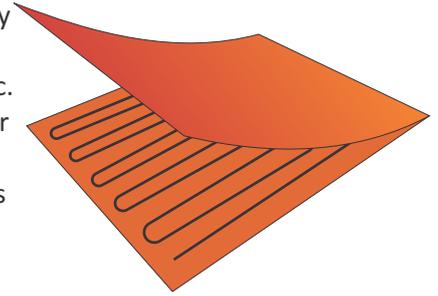


Wire Wound Silicone Rubber Heaters

Marathon Heater flexible heaters provide outstanding performance in applications up to 250°C under a variety of operating conditions. Properly applied silicone rubber heater life routinely exceeds 10 years. Silicone rubber has a high dielectric strength and is flame retardant and non-toxic. Design versatility permits special heat profiles allowing zones of higher or lower heat concentration as needed. Their flexible construction makes them very easy to install on a variety of surfaces. Silicone Rubber Heaters can be mounted to flat or curved surfaces. They are not affected by vibration, flexing or repeated mechanical shock.

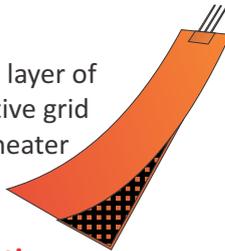


Design Options

Marathon Heater offers several design options to meet various application requirements.

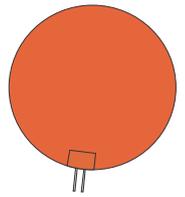
Ground Mesh.

For grounding purposes a second layer of insulating material and a conductive grid can be added to the heater. The heater comes with a ground wire.



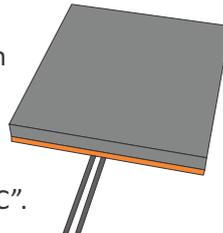
Round Heaters.

Round shapes are also available. Round heaters are best attached to tooling with PSA.



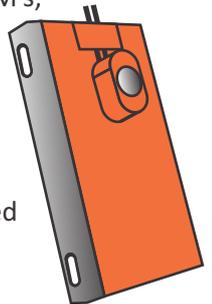
Silicone Rubber Sponge Insulation.

To improve heater efficiency, 1/16", 1/8", 1/4", 3/8" or 1/2" insulation can be bonded to the outside of the heater. Closed cell silicone sponge is extremely flexible and has a Temperature range of "-75°C to 250°C".



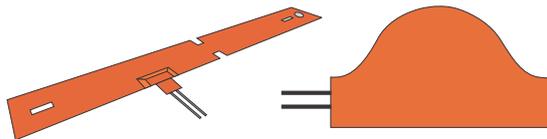
Silicone Rubber Enclosure Heaters

Enclosure heaters are used to maintain temperature in any type of electrical box. Typical applications include ATM's, control boxes, traffic signals, utility boxes, cabinets and switch gear. Enclosure heaters are excellent for controlling humidity or moisture within an electrical box. Silicone rubber heaters are typically mounted to an aluminum plate and have an ambient sensing thermostat.



Various Shapes for Various Applications.

Odd shapes are available to fit those hard to heat devices. Holes and cutouts help fit those irregular shaped tools.



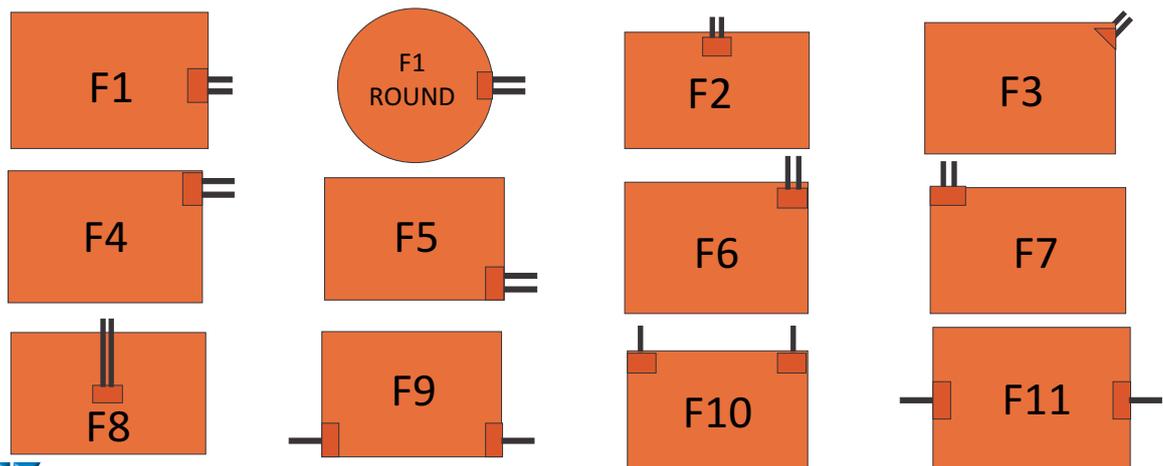
Other Design Options

- Dual Voltage
- Three Phase
- Distributed Wattage
- Thermocouples
- Thermostats
- Temperature cut-off
- Pull tabs

FLEXIBLE HEATER LEAD TERMINATION OPTIONS

Marathon Flexible Heaters come standard with 10" of 22 ga. Teflon leads. Other gauge leads available upon request. The leads are soldered at the lap connection then covered with a vulcanized lead cap.

FLEXIBLE HEATER LEAD LOCATION OPTIONS



Mounting Methods

Pressure Sensitive Adhesive.

There are several options for installation or mounting Silicone Rubber Heaters. An easy mounting method is to peel and stick. PSA is attached directly to one side of the heater. Just peel away the protective liner and attach the heater to the desired tool. PSA is rated to a continuous temperature of 300 F and a maximum intermittent temperature of 400 F. It is not recommended for curved surfaces. The heater should be installed within 6 months of manufacture.

Factory Vulcanizing

Another method of installation is to send your tool to the Marathon Heater factory. The tool is placed in a vacuum able and the SRH is vulcanized directly to the tool. This is the strongest bond available.

Field applied adhesive

SRH may also be attached with field applied adhesive, Marathon Heater will supply the required RTV to adhere the heater to the desired surface. We offer a room temperature curing adhesive. Apply a thin film of RTV on the entire bottom of the heater. After positioning the heater on the part, use a roller to remove all air trapped between the heater and the part. The RTV should be allowed to cure for 24 hours.

Temperature Controls For Silicone Rubber Heaters

Marathon Silicone Rubber heaters can accommodate pre-set or adjustable thermostats, thermal cut-offs, RTDs and Type J thermocouples. Each has a specific temperature range and maximum amperage capability. Please contact the factory for availability.



The most common type of temperature control are pre-set and adjustable thermostats. They can be mounted to sense the temperature of the surrounding atmosphere or to sense the part temperature. Not recommended for low voltage applications.

Thermocouples & RTDs are small and are easily embedded anywhere on the heater. Almost any type of Thermocouple can be used. Type J is the most common.

Drum Heaters

Marathon drum Heaters are an easy way to heat up drum contents. Various sizes and lengths allow you to heat up practically any drum, pail or barrel. Uniform heat prevents scorching or degradation of the contents. The silicone rubber band heater is placed below the level of the fluid. The easy spring lock-up provides movement of the band when content levels fluctuate. The band style drum heater can be used on plastic, alloy or just about any material.



Mounting Methods

Springs and Grommets

Each end of the spring is attached to a grommet, securing the heater to the tool. Grommets are spaced approximately 2" apart.



Velcro

1" wide Velcro straps secure the heater to the tool. Temperature rating -35°C to 200°C



Band Style Drum Heater applications include:

- Freeze protection
- Viscosity control
- Speeding up the flow of liquids
- Maintaining product consistency

Features

- Easy installation with spring loaded fastener.
- 3 conductor cord set.
- Internally grounded.
- Can be wrapped around any object
- Options thermocouples, RTD's, holes and cut-outs.