

## **Silicone Rubber Heating Blankets**

PRTM, PRTP, SRL, SRP, SRMU, SRX,  
& Custom Series

## Instruction Manual



Read and understand this manual before operating or servicing this heater. Failure to understand how to safely operate these heaters could result in an accident causing serious injury or death. Only qualified personnel should operate or service heater.

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**INTRODUCTION**

Thank you for purchasing a Silicone Rubber Heating Blanket. Your heater is designed to provide a long and efficient service life with function, reliability, and safety in mind. For additional information concerning this product, please contact us at 615-834-4044.



**SAFETY ALERT SYMBOL**

The symbol above is used to call your attention to instructions concerning your personal safety. It points out important safety precautions. It means **“ATTENTION! Become Alert! Your Personal Safety is involved!”** Read the message that follows and be alert to the possibility of personal injury or death.



Immediate hazards which **WILL** result in severe personal injury or death



Hazards or unsafe practices that **COULD** result in severe personal injury or death



Hazards or unsafe practices that **COULD** result in minor personal injury or property damage

**SAVE THESE INSTRUCTIONS!**

Additional copies of this manual are available upon request.

## IMPORTANT SAFETY INSTRUCTIONS

### **⚠ DANGER**

A person who has not read and understood all operating instructions is not qualified to operate this product.

### **⚠ DANGER**

- Do not immerse heater in liquid.
- Keep volatile or combustible material away from heater when in use.
- Use heater only in approved locations.
- Keep sharp metal objects away from heater.
- All SRX blankets have T ratings described in Article 501 of the NEC code. The blankets should not be used in an area with a lower T rating than the blanket. The T rating is stated in marking on the blanket.

Failure to observe these warnings may result in electric shock, risk of fire, and personal injury.

### **⚠ WARNING**

#### End User Must Comply to the Following:

- Only qualified personnel are allowed to connect electrical wiring.
- Disconnect all supply power at the source before making any power connections.
- All electrical wiring must follow local electrical codes and highly recommend following NEC Article 427.
- Final installation / wiring is to be inspected by the authority who has jurisdiction in the area that the heater is installed.
- The end-user is responsible for providing a suitable disconnecting device.
- The end-user is responsible for providing suitable electrical protection device. It is highly recommended that a ground fault circuit breaker is used.
- SRX series: A NRTL (National Recognized Testing Laboratory) listed temperature controller must be used to control the surface temperature of the blankets. The controller must be approved for the area where it is located.
- SRX series: Heaters provide surface heating, consult proper authorities for information for safe heating of materials/ contents of any vessel heated by SRX heaters.

Failure to observe these warnings may result in personal injury or damage to the heater.

### Agency Approvals

#### SRL/SRP Series

**UL**  
Up to 358°F (181°C)



#### SRX Series



**APPROVED**

Hazardous Locations  
Class I, Division 2, Groups A, B, C, & D  
Class II, Division 2, Groups F & G

#### SRMU Series and Custom Silicone Rubber Heating Blankets



**Approvals valid only when** installed in accordance with all applicable instructions, codes, and regulations.

### **⚠ CAUTION**

- Inspect all components before use.
- Never handle the heater while it is in operation; always disconnect the heater from the power source and allow cooling prior to handling.
- Designed for use of metal surfaces. Do not use on plastic surfaces.
- Do not wrap the heater over itself.
- If spillage of foreign matter onto heater occurs, disconnect from power source and clean after heater is allowed to cool.
- Never operate a heater without an appropriate heat sink (device being heated is considered a heat sink).
- Do not operate heater above rated temperature value.
- Fasten heater to device using approved methods only.
- Do not use control and heating system if any component is damaged.
- Do not repair damaged or faulty control and heating systems.
- Do not crush or apply severe physical stress on any component of system, including cord assembly.
- Unplug control and heating system when not in use.

Failure to observe these warnings may result in personal injury or damage to the heater.

**⚠ WARNING**

Read and understand this entire manual before operating this electric heater.

**PRIOR TO INSTALLATION**

1. Check for suspected damage to the heating blanket like rips, punctures, etc.
2. Verify surface to be heated is free from all sharp edges, weld splatter, rust, oil, etc. Surface must be clean prior to installing heater.
3. Check that the desired placement of the blanket will not cause damage to the blanket through impact shock, vibration, ambient temperature, or by neighboring moving parts.
4. Confirm voltage / wattage rating of heater is appropriate for power supply device or temperature controller. The heater is designed to work at a specific voltage to heat properly.
5. Confirm blanket maximum exposure temperature rating is suitable for environment. The temperature of the internal heating element may run up to 25% higher than the external surface of the blanket. Use extreme caution for applications that require a process temperature near the maximum exposure temperature ratings of the blanket.
  - All Silicone rubber heating blanket except SRX exposure temperature range: -60°F to 450°F (-51°C to 232°C)
  - SRX exposure temperature range: -60°F to 400°F (-51°C to 204°C)

T3: 292°F (145°C) high limit thermostat  
T4A: 158°F (70°C) high limit thermostat
6. Confirm all necessary installation hardware and tools are readily available. Depending on the application, this may include:

**Tools:**

Wire strippers

Cleaning / prep supplies (varies based on what is being cleaned)

Medium to hard roller

**Hardware:**

- Junction Box
- Wire Ties
- Mounting Hardware
- Temperature controller and sensor
- Silicone RTV
- Insulating material
- High-temperature adhesive tape (part # AA2180)
- Plug if connecting heater to a receptacle rather than hard wiring to a temperature controller or junction box

## MOUNTING YOUR HEATING BLANKET

Your silicone rubber heating blanket can be mounted on both flat and curved surfaces. However, do not allow your heater to exceed the maximum “bend radius”. The typical bend radius is approximately 2” (51mm). To determine the bend radius, slowly bend the heater until it begins to crease or fold. The point prior to creasing is the bend radius. Your heater may be more flexible in one direction than the other, however, **the heater should be installed with the wires exiting the bottom if in an outdoor application.**

Your heater can be attached to the surface using:

- Factory applied PSA (pressure sensitive adhesive)
- Factory supplied mechanical fasteners
- Factory supplied or recommended mechanical clamping devices
- High-temperature adhesive tape that will not damage the heater
- Thin layer of RTV

**For all installations, regardless of adhesion method:**

1. For proper temperature control, place the thermocouple, RTD, or other sensing device, so that it touches the edge of the heating blanket.

- Sensor must be in close proximity to the heater to prevent overheating.
- If heating blanket is installed on a vertical surface, place sensor directly on lower edge of heating blanket since heat naturally rises.
- Sensor should be connected in accordance with instructions provided with temperature controller.
- Secure with one strip of aluminum adhesive tape.

2. Ensure heater is in contact with the surface to be heated. If air gaps are present, heat transfer will decrease and there is a potential to overheat the heating blanket. Use a medium to hard roller to eliminate trapped pockets of air.

**⚠ CAUTION** Do not wrap the heater over itself or allow it to contact a second heater.

**Installation of heater using factory supplied Pressure Sensitive Adhesive (PSA):**

3. Peel off the release film [Figure A] and then press the heater onto the surface of the item being heated using a medium to hard rubber roller [Figure B]. Ensure blanket is making intimate contact with the surface to be heated.

- The pressure sensitive adhesive will cure when the blanket is energized and heat is generated. PSA generally cures in twenty minutes at 200°F (93°C) in a 68°F (20°C) ambient environment. The cure time will vary with temperature of the blanket and surrounding ambient conditions. The higher the ambient temperature and set-point of the blanket, the faster the cure time.
- The blanket may require a temporary method of attachment to secure the heater until the PSA cures. Use a high-temperature adhesive tape (BriskHeat® Part # AAT2180) to secure the heater.
- For larger heaters, press the heater onto the surface as the film is removed.

*NOTE: ProTherm does not recommend allowing pressure sensitive adhesive to cure at temperatures below 40°F (4°C).*

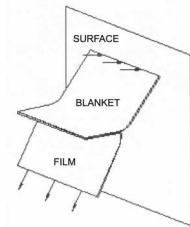


Figure A:  
Removing Film

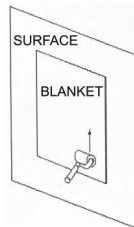


Figure B:  
Rolling the Blanket

**CONNECTING YOUR HEATING BLANKET TO A POWER SOURCE**

1. If your heating blanket does not have its own internal temperature control device, it **must** be connected to an external control device. The heater must not be operated without some form of temperature control.

**⚠ WARNING**

- Your heater is designed to operate at a specific voltage  $\pm 10\%$ . Refer to the label on the heater for proper operating voltage and wattage information. Failure to operate the heater at the specified rating could result in overheating of the heating blanket, the surface being heated, or personal injury. Also note lower-than-rated voltage will result in under-heating.
- All electrical connections must be made by qualified personnel and in accordance with all applicable codes and regulations.
- SRX series: A NRTL (National Recognized Testing Laboratory) listed temperature controller must be used to control the surface temperature of the blankets. The controller must be approved for the area where it is located.

2. Most heating blankets are available with an optional high-limit safety thermostat to protect both the heater and the product being heated from damage if the main controlling device fails. This option is especially recommended for surfaces that are high risk for heat damage (e.g. plastic). *Contact factory for more details.*
3. Ensure heater is protected by a properly rated circuit breaker or fuse.
4. Use of a ground fault circuit interrupter (GFCI) is highly recommended and may be required according to local electric code.
5. Power lead wires should be connected to the power source (or temperature control device) directly, through a junction box, or to a connector that is mated to a receptacle connected to the power source. BriskHeat® Heating Blankets are non-polarized, allowing either power lead wire to be connected to the neutral or hot. The third wire (if applicable), designated by the color green (or a green stripe), should be connected to ground. For three phase installation, contact the factory.
6. SRX series: The conduit connection is 3/4" hub.

## TROUBLESHOOTING GUIDE

Please read this guide prior to contacting ProTherm. This guide is designed to answer the most commonly asked questions. If you are unable to identify the problem or need additional assistance, please contact us at **615-834-4044**.

PROBLEM	SOLUTION(S)
Heater does not warm up	<p>Verify heater is connected to proper voltage.</p> <p>Check to see if there is a resistance reading (not an open circuit) in heater using an ohm meter.</p>
Pressure sensitive adhesive is not adhering	<p>Verify date of manufacture. PSA has a shelf life of 6 months.</p> <p>Ensure there are no air gaps and heater is making intimate contact with surface being heated. Use a medium to hard rubber roller.</p>
Circuit breaker is tripping	<p>Validate that the circuit breaker is capable of handling the amp requirement of heater. The identification label located on the power cord displays the heater's amperage requirement.</p> <p>Examine heater and cord for any damage.</p> <p>Check to see if there is a resistance reading between power leads and the ground lead.</p>

## **WARRANTY INFORMATION**

ProTherm warrants to the original purchaser of this product for the period of eighteen (18) months from date of shipment or twelve (12) months from date of installation, whichever comes first. ProTherm's obligation and the exclusive remedy under this warranty shall be limited to the repair or replacement, at ProTherm's option, of any parts of the product which may prove defective under prescribed use and service following ProTherm's examination, is determined by ProTherm to be defective.