

# Drum Heating Oven



**PAULISTA HEATERS**  
ELECTRIC HEATING SYSTEM

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# Oven for Heating Drums

## 1- Product Specifications

- ✓ Voltage: 110V, 220V, 380V, 440V or other.
- ✓ Operating temperature: up to 200°C in metal drums and up to 90°C in plastic containers.
- ✓ It works for both metal drums and plastic containers.
- ✓ We manufacture systems to heat 2, 3, or 4 200-liter drums simultaneously. We also manufacture systems for drums of other sizes.
- ✓ Power: 6000W (2 x Drums), 9000W (3 x Drums) or 12000W (4 x Drums).
- ✓ It has a thermal insulation cover.
- ✓ Controller type: pedestal-mounted digital panel.
- ✓ We have options for classified EX areas.



We work with three lines of ovens for heating drums:

<p><b>I- Heating Blanket Type Oven for 2 x Drums</b></p> <p>It has 6000W and is made with 3 heating zones (bottom, center and top) controlled by a digital panel mounted on a pedestal.</p>	
<p><b>II- Heating Blanket Type Oven for 3 x Drums</b></p> <p>It has 9000W and is made with 3 heating zones (bottom, center and top) controlled by a digital panel mounted on a pedestal.</p>	
<p><b>I- Heating Blanket Type Oven for 4 x Drums</b></p> <p>It has 12000W and is made with 3 heating zones (bottom, center and top) controlled by a digital panel mounted on a pedestal.</p>	

For other drum sizes, the heating blanket is custom-made according to the customer's needs.

## 2- General description of the product structure

Description	Technical Details
<p>The drum heating oven consists of silicone straps reinforced with fiberglass fabric, resistive wire, a fastening system with hooks, springs and Velcro, with internal and external wiring according to the electrical current, temperature control, male plug, containing a thermal insulation cover sewn in Cordura fabric, with internal insulation in ceramic fiber fabric and external in Nomex fabric .</p>	<p>Operating temperature: From -40°C (-104°F) to +200°C (+392°F) (withstands peaks of -90°C (-194°F) and +230°C (+446°F) for short periods of time)</p>
	<p>Weight capacity: 1kg/cm<sup>2</sup></p>
	<p>Electrical insulation: 20KV</p>
	<p>Hardness: Standard 30 + 5 Shore , other hardness levels may apply according to customer requirements.</p>
	<p>The fastening system consists of stainless steel springs and hooks for the straps and Velcro for the insulation cover. The springs have a 100mm body and stretch up to 150mm. The silicone straps are glued to the insulation fabric.</p>
	<p>Internal Teflon wiring – withstands temperatures up to 260°C (500°F) – Voltage: up to 600V</p>
	<p>*Internal electrical connection cables are used to connect the heating element to the controller.</p> <p>External silicone cable – withstands up to 200°C (392°F) – Voltage: up to 500V</p> <p>External PP cabling – withstands up to 90°C (194°F) – Voltage: up to 500V</p> <p>*Cables for external electrical connection do not have direct contact with the heating element; they are used to connect the temperature controller to the power outlet.</p>
<p>Direct or alternating current power supply</p>	

### Power plug:

We offer plug sockets according to the current and voltage specifications of the design, as well as the model that the customer needs for their process. The two product line options are:



Brazilian standard 3-pin power plug  
10A or 20A for 110V or 220V



Industrial power plug 16A, 32A, 63A,  
and 125A for 110V, 220V, 380V, or  
440V.

### Fastening system:

The fastening is done using hooks and springs designed for securing the thermal straps, and Velcro for closing the thermal insulation cover.



## Temperature controller:

### Digital Panel

Recommended for high-power heating blankets (above  $0.7W/cm^2$ ) and heating systems requiring precise temperature control, as it has a PID function. It comes with a sensor (PT100, J, K, NI120, PTC or other) for belt temperature control. More than one controller can be coupled to control the product temperature. Controller used: NOVUS 1030 or NOVUS 1050 (for ramp-plateau heating, ideal for processes that need to follow a heating cycle where the temperature varies over time). The panel comes mounted on a pedestal (interconnected to the belt via a multi-pole socket). Made according to NR10 (can be customized according to customer needs to meet the specifications of their process). We also manufacture panels for classified EX areas.



Digital controllers have several quality certifications, such as: ISO 9001, REACH Compliance , RoHS , CE, RU, EX, among others, which ensure operational excellence and reliability for your process.

### Insulation layer:

This is the outer covering that serves both to protect the belt and to insulate it, ensuring that the belt does not lose heat to the environment, also protecting the operator from the risk of burns. The cover is made of Cordura fabric , Nomex , and insulating material, which offers high mechanical resistance and withstands high temperatures. Furthermore, it provides safety in use because it does not propagate flames. And, being waterproof, it allows for use in outdoor environments. The Velcro fasteners positioned at the ends allow for modular assembly, enabling the expansion of the heating area as needed. Cleaning is simple, as it is done dry using a cloth and alcohol since the fabric does not attract dirt. It also has a removable cover (without heating).

### **3- Instruction manual:**

#### How to use

1. Position the drums side by side.
2. Install the heating blanket around the drums, positioning the silicone side (red) towards the container to be heated and the cordura fabric side towards the outside.
3. Secure the part using the springs and hooks on the strap. Pull the springs only in the horizontal direction (lying down).
4. Close the horizontal and vertical Velcro fasteners.
5. Place the lid on the drums.
6. Connect the cable to the multi-pole socket on the panel (the connection socket is located on the underside of the panel).
7. Check the voltage of the electrical network where the drum heating pad will be connected. If connected to a lower voltage, it will heat up little, and if connected to a higher voltage, it will burn out.
8. Connect the drum heating blanket to the electrical outlet.
9. In the case of a digital panel, especially during first use, do not change the temperature on the controller; wait for the controller to complete its learning period. At the end, the TUNE light will turn off and the green lights will flash; this is normal for the product. Only after the learning process is complete, set the temperature up to 100°C, and if necessary, increase it by 20°C every 20 minutes to allow for proper heating.
10. Adjust to the desired temperature. If using a digital controller, check the supplier's instructions to program it according to your process.

11. Wait for the drum heating pad to heat up to the desired temperature.
12. Allow to heat until the product stored in the drum reaches the appropriate temperature. Heating time varies depending on the specific heat of the product being heated, the power of your heating mantle, and the volume of your container.
13. Next, unplug the drum heating pad and wait 1 minute for it to cool down.
14. Remove the drum heater blanket and store it properly.

Recommendations:

- Do not use the drum heater above its design temperature. It can operate continuously up to 200°C with peaks of 230°C.
- Metal drums or tanks can withstand high temperatures, but plastic drums or containers can only withstand a maximum of 90°C (if placed above that, they will puncture).
- Use the drum heating pad only when the container is full of product (at least above the level of the heater).
- Store and transport the drum heating pad correctly, holding it by the fabric and avoiding folding, stretching, kicking, or throwing it, as these can damage the resistive elements and internal components of the controllers.
- Use rubber gloves to avoid static electricity shock; this shock does not pose a danger to humans, only a discomfort.
- Do not move the drum heating mantle while it is heated or heating up, as this may damage the resistive elements.

- Do not puncture, cut, or immerse the drum heating mantle in liquid; risk of short circuit.
- The drum heating mantle may release gases from its internal components during the initial heating cycles (especially at high temperatures, above 150°C).
- Cleaning should only be done with the drum heating pad de-energized, using a clean cloth and alcohol.
- If there is damage to the heating blanket or the panel, discontinue use and notify Resistências Paulista to verify if it is safe to continue using the product, as there may be a risk of electric shock in this case.
- Do not make any modifications to the drum heating mantle without prior notification and authorization from Resistências Paulista, as failure to inform or approve this will violate the product's legal warranty.
- Store the drum heating blanket by folding the end straps over the middle strap and then rolling it up . Do not fold or crease it under weight, as this may damage the internal heating element.

#### Safety Items:

- ✓ The thermal tape is fully electrically insulating, resistant to fungi and chemicals.
- ✓ The thermal insulation cover provides approximately 70% insulation, allowing the operator to work close to the container being heated.
- ✓ The insulation cover is waterproof, made with flame-retardant fabrics that are resistant to cutting and high temperatures.
- ✓ The thermal belt or cover should be cleaned dry, using a cloth and alcohol.

- ✓ Both the strap and the cover do not easily attract dirt.
- ✓ The digital panel can be made in accordance with NR10.
- ✓ The drum heating mantle poses no risk for use in EX-classified areas, as the resistive element is completely sealed.
- ✓ For use in EX-classified areas, we work with certified panels and appropriate cabling (please inform us of your classification so that our technical department can analyze it).
- ✓ When the drum heating blanket comes with a pedestal-mounted panel, the pedestal is grounded. However, grounding the equipment to be heated is the customer's responsibility.
- ✓ Low or medium dissipation drum heating pads (up to 0.7 W/cm<sup>2</sup>) will not burn out if switched on without heat exchange at temperatures up to 150°C. However, high dissipation heating pads cannot be switched on without proper heat exchange, as there is a risk of burning out.
- ✓ Do not use the drum heating pad if it is blistered, punctured, cut, has an exposed heating element, or is burnt, as there is a risk of electric shock.
- ✓ The drum heating blanket does not come into contact with the product being heated.
- ✓ It provides a safe heating process for operators, with minimal risk of workplace accidents.

#### 4- Application :

The drum heating oven is ideal for heating products stored in:

#### Metal drums or plastic containers



#### Ideal for use in areas such as:

- ✓ Pharmaceutical industry,
- ✓ Food industry,
- ✓ Chemical industry,
- ✓ Metallurgical industry,
- ✓ Auto repair shop,
- ✓ Laboratory.

**We offer our products throughout Brazil and abroad. We manufacture customized, tailor-made products to best meet your needs. Contact us for a quote!**

# Registration Data

## Company Name

Paulista Resistance Ltd.

## Trade Name

Paulista Resistance

## CNPJ

44.493.049/0001-07

## State Registration

125,354,590,111

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