

Silicone Drum Heater

Instruction Manual (Version 2.0)

I. Product Overview

The silicone drum heater is a heating device specifically designed for oil drums, mainly consisting of silicone rubber heating elements, insulation layers, thermal insulation layers, and control devices. It effectively prevents oil inside the drum from solidifying or thickening due to low temperatures, ensuring proper fluid mobility. It is widely used in industries such as petroleum, chemical engineering, and metallurgy.



II. Technical Parameters

Rated Voltage	220V
Rated Power	3000 W (typically 50–200 W/m)
Operating Temperature Range	-60°C – 250°C
Insulation Resistance	≥ 3000 MΩ
Dielectric Strength	1500V/min

III. Product Structure

- **Heating Element:** Typically made of nickel-chromium alloy wire, featuring excellent high-temperature resistance and oxidation resistance, which quickly converts electrical energy into thermal energy.
- **Silicone Rubber Insulation Layer:** Wrapped around the heating element for electrical insulation and thermal conduction, possessing high flexibility, corrosion resistance, and aging resistance.
- **Thermal Insulation Layer:** Usually made of fiberglass or other insulating materials to reduce heat loss and improve heating efficiency.
- **Control Device:** Includes temperature controllers, timers, etc., allowing users to set and manage heating temperature and operational duration as needed.

IV. Installation Method

1. Prior to installation, ensure the drum surface is clean, dry, and free of oil stains or debris.
2. Choose a heater belt of suitable length and width according to the drum's size and shape. Wrap the belt evenly around the drum, taking care to avoid overlapping or excessive gaps. For larger drums, multiple belts can be wrapped in sections.
3. Route the power cord to a convenient position for operation and power connection, ensuring it is not crushed, pinched, or worn.
4. Secure the heating belt onto the drum using fixing tape or zip ties. The spacing between fixings should not be too large to prevent the belt from loosening during operation.
5. Install the temperature sensor at a suitable position on the drum—typically near the bottom or key temperature-monitoring areas—to ensure accurate temperature measurement of the oil. Ensure the sensor is properly connected to the control device.

V. Operating Method

1. Before connecting to power, verify that the connections between the belt and control device are correct and that temperature settings meet requirements. Set the oil temperature within a suitable range to maintain fluidity while avoiding safety hazards caused by excessive heat.
2. Once powered on, the heating belt starts operating, and the temperature controller automatically regulates heating power based on the target temperature. When the target temperature is reached, power is automatically reduced or paused; when the temperature drops below the set value, heating resumes automatically.
3. For timed heating, set the operational duration via the timer. The belt will operate according to the set time and temperature, stopping automatically once time elapses.
4. Regularly monitor the displayed temperature during operation to ensure the oil remains within normal ranges. Check for abnormal heating, odor, or noise; if any abnormality occurs, cut off power immediately for inspection.

VI. Safety Precautions

Warning: Strictly follow all safety guidelines to prevent electrical hazard, fire, or burns.

1. Do **NOT** cover the surface of the heating belt with flammable or explosive materials to prevent fire or explosion risks.
2. Operate the heating belt strictly within its rated voltage and power parameters; do not operate under over-voltage or over-power conditions to prevent damage or safety accidents.
3. Avoid excessive bending, stretching, or squeezing during installation and use to protect internal heating elements and insulation layers.
4. Regularly inspect power cords, plugs, and sockets for damage or loose connections, replacing or repairing them promptly to ensure electrical safety.
5. Clean off any oil stains or moisture on the drum surface in a timely manner to maintain proper heat dissipation and insulation performance.
6. Do **NOT** touch the surface of the heating belt while it is operating to avoid burns.
7. When not in use for extended periods, disconnect power and store the device in a dry, well-ventilated area to prevent moisture accumulation and damage.

VII. Maintenance & Upkeep

1. Clean dust and debris off the heating belt surface regularly to maintain optimal heat dissipation.
2. Check fixing tape or ties for looseness and re-tighten if necessary to ensure close contact between the belt and drum.
3. Perform a comprehensive annual inspection, including insulation resistance testing and heating element resistance measurements. Replace the belt if insulation resistance drops or heating elements are damaged.
4. Regularly check control devices (such as temperature controllers and timers) for proper functionality, repairing or replacing faulty components promptly.

VIII. Troubleshooting

1. The heating belt does not heat up

- Check if the power supply is connected properly, the plug is inserted firmly, and the fuse is intact.
- Check if the temperature controller settings are correct and not in an off or protection state.
 - Check power cords for open or short circuits and replace if necessary.
 - Inspect internal heating elements; measure resistance using a multimeter and replace the belt if resistance values are abnormal.

2. Inaccurate Temperature Control

- Check if the temperature sensor is installed correctly and making good contact with the drum surface. Re-install if loose or contacting poorly.
- Check if controller parameter settings are correct or require calibration. Perform calibration according to the controller manual if needed.
- Verify whether heating power is normal or insufficient/excessive due to aging or damaged heating elements. Replace the heating belt if power is abnormal.

IX. Product Warranty

This product includes warranty coverage for [Warranty Period] starting from the date of purchase. Faults or damage caused by manufacturing quality issues within the warranty period will be repaired or replaced free of charge. Damage resulting from improper user operation, intentional damage, or force majeure events is excluded from warranty coverage.

Please read this instruction manual carefully before use and keep it properly for future reference. If you have any questions or need assistance, please feel free to contact our customer service team.