

# How to Install Flanged and Circulation Heaters

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A crucial factor for the efficient operation of flanged and circulation heaters are proper installation after taking all the necessary precautions. See Figure 1 for three important steps for efficient and safe operation.

## ***Installing Flanged Heaters***

1. Before starting the installation, ensure:
  - a. The pressure and temperature of the flange does not exceed the specified standards, especially when installing in an enclosure space.
  - b. The wattage and capacity of the heater meet the heating requirements.
  - c. You are using the most appropriate sheath material depending on the chemical composition of the solution.
  - d. The sheath is not corroded. This could cause a ground fault that may result in a fire or explosion.
  - e. You have installed a sufficient number of safety devices and backup controls.
  - f. The equipment is not damaged during shipment. If the equipment is damaged, contact your supplier at once. Do not use damaged equipment.
  - g. The line voltage meets the heater's requirements, and the surface of the gasket is clean and dry. The capacity of the power supply should be at least 25% more than the required amperage of the heater.
  - h. There isn't any sludge or other deposit at the bottom of the tank.
  - i. There is sufficient space to remove the heater for cleaning and replacement.
2. Once the above precautions have been taken, disconnect power to the heater before starting the installation.
3. Important: The heater must be installed by a qualified technician.
4. Make sure the heater is properly grounded and that the wiring is in accordance with Local and/or National Electrical Codes.
5. When installing, place the heater as low as possible in the tank. The heating element should always be submerged (with at least 2" of liquid above it) or else the heater will overheat. This could result in fire or an explosion.

6. If the heater has a thermostat, do not bend the capillary tube too much as this will de-calibrate the thermostat and it will not work properly.
7. Do not allow the capillary tube to touch the thermostat contacts as this could cause a short circuit.
8. If installing the flanged heater in a horizontal position, place the entire unit at an elevation to enable ample air circulation around the heater.
9. If installing the flanged heater vertically, use a drip loop to prevent condensation from entering the terminal enclosure. If the heater uses a thermo well to control temperatures and prevent overheating, make sure it is installed in a way that no moisture collects in the thermo well. This may damage the heater. Fill the thermo wells with silicone fluid, if installing the heater with the terminal enclosure pointing upwards.
10. While installing, ensure the heater is not in contact with any inflammable or combustible materials.
11. Finally, before switching on the heater, ensure the gasket is in place and the flange is securely bolted to the tank. Look for and tighten all loose connections.

### ***Installing Circulation Heaters***

1. Before starting the installation, ensure:
  - a. The wattage and capacity of the heater meet the heating requirements.
  - b. The equipment is not damaged during shipment. If the equipment is damaged, contact your supplier at once. Do not use damaged equipment.
  - c. The capacity of the power supply is at least 25% more than the required amperage of the heater. Adapt according to the ambient operating temperature.
  - d. The tank in which you are installing the heater is thermally insulated to retain the heat of the liquid.
2. If the circulation heater requires an inline pump, affix the pump at the inlet end of the heater.
3. If installing horizontally, install the heater with the inlet and outlet facing upwards. This prevents air pockets from forming inside the tank. Ensure all air is removed from the closed tank prior to installation.
4. If installing vertically, use the lower pipe for the inlet and the upper pipe for the outlet.
5. Make sure the heater is properly grounded and that the wiring is in accordance with Local and/or National Electrical Codes.
6. Use a magnetic contactor if the source power is 480V or is three-phased (by a licensed technician).

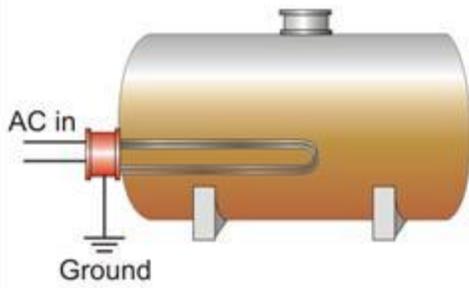
Three important installation steps:

Engage a qualified technician

Proper grounding and electrical connection

Follow all safety instructions

Flange heater



Circulation heater

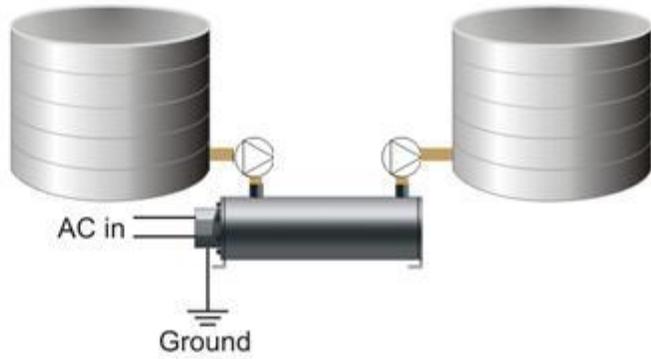


Figure 1