HEATEC TEC-NOTE

Publication 1-10-222 Revised 7-12-12

Installation

Heatec heaters—industrial series

Some useful tips are presented here for installation of your Heatec heater. The information included is based on the most common concerns. *It does not cover all aspects and details of installation*.

Make sure that you comply with all local and national codes and standards that apply to installation of heaters. Heatec is not in a position to advise you on local codes and standards. Instead, we recommend that you contact local agencies and/or inspectors if you have questions. If you engage a local contractor to install your heater make sure they are prepared to deal with local codes and standards. Regulations pertaining to electrical safety, venting of gas trains and fluid discharge from relief valves are areas of special concern.

Follow all the instructions provided by Heatec when installing the heater:

- Piping and instrumentation diagrams
- General arrangement drawings
- Electrical drawings
- Foundation specifications

Set the heater on a concrete slab or concrete foundation or supporting structure. This provides a stable base for the heater.

When installing a vertical heater, make sure that its supporting structure is level. Otherwise you will need to shim its base to make the heater perfectly level. Use anchor bolts to secure the heater base to the supporting structure. Make sure you comply with local regulations for foundation design, especially in areas prone to windstorms and earthquakes.

Install the heater in a location where there is at least 3 feet of space around the heater for easy access to all sides of the heater. Leave enough space in front of electrical enclosures or panels to allow the doors to open fully. Consider the need for space to remove the helical coil if that ever becomes necessary. Don't place anything in that space that would be unduly difficult to clear.

Make sure that the exhaust stack is well supported. Some stacks are designed to be mounted on the heater without extra support, while some require additional support. When additional supports are used they should allow for expansion and contraction. If you have questions, please contact Heatec engineering.

Install provisions to ensure an adequate supply of air for combustion, ventilation and dilution of flue gases. Such provisions for gas-fired heaters should be in accordance with NFPA 54, National Fuel Gas Code, paragraph 5.3. Such provisions for oil-fired heaters should be in accordance with NFPA 31, Standard for the Installation of Oil-Burning Equipment, Chapters 5 and 6.*

Make sure that the fuel supply for the

heater conforms to requirements for pressure, flow, and pipe size as shown on the P&ID drawings furnished. Otherwise, please contact Heatec engineering for advice before you connect the fuel supply to the heater.*

When a gas-fired heater is installed in a hazardous location or inside a building, install venting provisions for all gas pressure regulators and relief valves. Such provisions should be in accordance with NFPA 54, National Fuel Gas Code,
paragraph 2.7.*

Make sure that there is a suitable relief valve in the thermal fluid piping. Some heaters are furnished with relief valves installed. If not, install one or more as needed in the piping near the outlet of the coil and upstream of shutoff valves.

Install vent piping for the thermal fluid relief valves. The piping can empty into a container at a safe, remote location.

Install insulation or shields as needed to prevent personnel from getting burned by contact with hot surfaces.

Install padding on hard surfaces of obstructions that are at heights or locations that are apt to cause head injuries.

When installing the thermal fluid piping system and making connections to the heater, use welded connections as much as possible. Welded connections are less prone to leakage than threaded pipe and flanged connections. Follow applicable welding codes and procedures.

Install suitable expansion loops in thermal fluid piping to minimize stress on piping and pumps caused by expansion and contraction due to variations in temperature.

Install valves that can be used to isolate pumps and tanks in the thermal fluid piping system.

Install 1/2-inch bleeder lines at all high points in the thermal fluid system to facilitate expelling trapped air and other gases such as water vapor. Make sure they are turned in a safe direction and do not accumulate water.

Install 1/2-inch drain lines at all low points in the thermal fluid system to facilitate expelling trapped water.

Leak test all fuel and media piping before filling systems.

All electrical installation should comply with NFPA 70, NEC (National Electric Code). Use only qualified electricians to install electrical service to the heater. All electrical wiring and components should be specified by a qualified engineer or electrician. Ampere loading information is shown on electrical drawings furnished with the heater.*

Make sure all controls on the control panel of the heater are in the "OFF" position before connecting and energizing the electrical service.

Run electrical power wiring to the control panel on the heater and connect the wires to its main disconnect breaker. Heatec heaters are normally intended for connection to a power source of 460 volts, three phase, 60 hertz. Voltage variations should be no lower than 440 volts or higher than 480 volts. Heaters are available for other power sources when specified at time of order. Verify that your power source matches the power requirements specified on the electrical drawings.

NOTICE

Before operating this heater for the first time make sure the drive shaft of each hot oil pump is properly aligned with its motor drive shaft. Do this after the heater is installed in a fixed location and not subject to additional handling. Alignment instructions are contained in applicable documents published by the pump manufacturer.

Heatec includes a copy of these documents with each new heater. If you do not have a copy, please contact Heatec to obtain a free copy.

Check alignment again immediately after initial operation of the heater, before the system has cooled down. Thereafter, follow maintenance instructions covered in the documents.

Misalignment can damage the pump and motor. Repairing damaged pumps and motors can incur significant costs for which the owner is fully responsible. Setting alignment is an exacting task and should be done only by a qualified technician.

***NOTE: Heaters installed outside the U.S. should meet applicable codes for the location.**