

ELECTRIC STORAGE TANK HEATERS

UST SERIES

SPECIFICATIONS

- 5' to 20' immersion lengths
- 10 to 330 Kw
- 1 to 12 watts per square inch of heat flux
- Remote or integral control panel
- 120 to 600 volts operation



DESCRIPTION

The UST (Unitary Storage Tank) heater is a completely packaged tank heating unit. The UST utilizes a flexible open coil heating element. The open coil heater consists of nickel chromium resistance coils supported in high temperature ceramic insulators on a flexible stainless steel strap. Each element is housed in an individual heater tube constructed from a 3" sch. 40 pipe, capped on one end and seal welded through the tank adapter on the other end. The heater tubes terminate inside the control panel allowing heater replacement without draining the tank. The NEMA 4 control panel is furnished as a complete, prewired, assembly ready for operation.

FEATURES

- No need to drain tank to replace heater elements
- Low watt density, ideal for viscous fluid heating
- Wide range of packaging and installation options
- Minimal installation cost on new or existing tanks
- Explosion resistant designs available
- Remote control panel available
- Flexible elements require only 3 feet clearance for removal
- Available in stainless steel construction
- Long life- 2 year warranty on open coil heaters



HEAT EXCHANGE AND TRANSFER, INC.

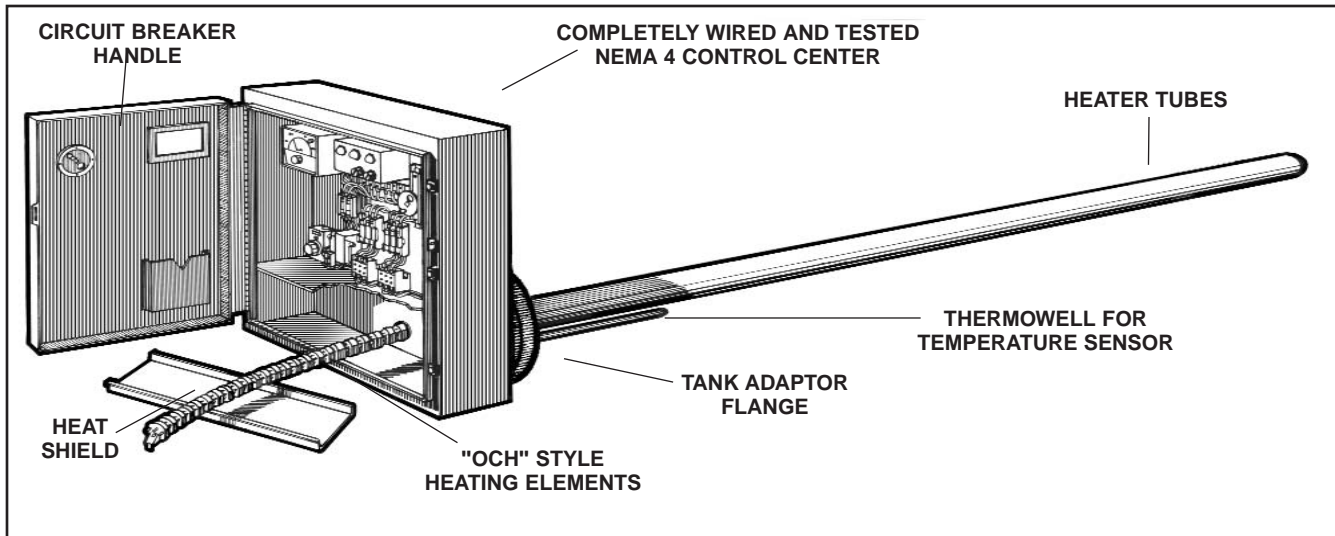
500 Superior Street • Carnegie, PA 15106

Phone 412-276-3388 • Fax 412-276-3397

E-mail: sales@heat-inc.com • Web: www.heat-inc.com

UST STORAGE TANK HEATERS

CONSTRUCTION FEATURES



HEATER TUBES

The heater tube is constructed from a 3" sch. 40 carbon steel pipe. Each tube is capped on the internal end and seal welded through the tank adapter flange on the external end to form an individual, closed well for each OCH heating element. The heater tube extends through the tank adapter and terminates directly into the control enclosure. Multiple tubes are utilized for larger heat loads. Standard designs utilize a 150# ANSI flanged adapter for installation through a standard tank nozzle. Alternate adapter designs, such as custom plate flanges to match existing man way ports, or custom adapter boxes for field welding the unit through a slot in the tank wall, are also available.

HEATING ELEMENTS

Flexible open coil heating elements are utilized in UST tank heaters. The open coil heater can be designed to produce from 1 to 12 watts per square inch to meet various tank designs and heating applications. A key feature

of the UST heater is that elements may be inspected or replaced without draining the contents from the tank. Also, unlike most other immersion heaters which require an external clearance equal to its immersion length, the flexible design of the open coil element permits the removal of even the longest elements with as little as 3' of external clearance. (see bulletin OCH-92)

CONTROL CENTER

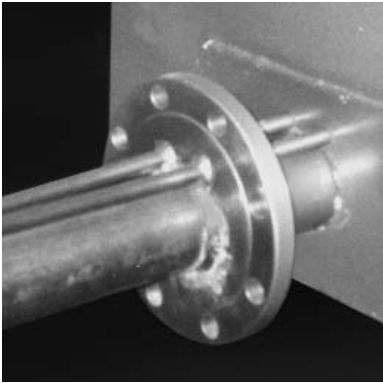
The power control center is usually mounted directly on the heater assembly, but can be furnished as a remote mounting unit if required. The control center is furnished as a complete unit, wired, tested, and ready for operation. The control center consists of a weathertight NEMA 4 enclosure with the following major equipment: main disconnect switch, load carrying contractors, main and branch circuit fusing, control circuit transformer, control relays, heat selector switches, indicating lights, indicating temperature controller, and over temperature controller.

APPLICATIONS

- ASPHALT
- PITCH
- WAX
- CREOSOTE
- WATER STORAGE
- FUEL OIL
- CAUSTIC SODA
- THERMAL FLUIDS

UST STORAGE TANK HEATERS

TANK INSTALLATION OPTIONS

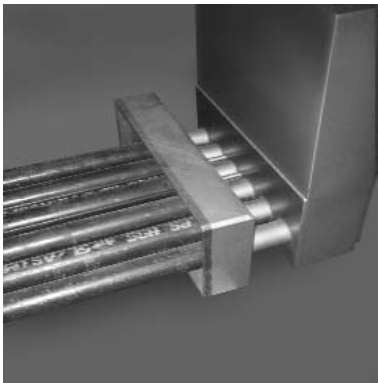


FLANGED ADAPTER

For applications which require removability, or those that do not have the capacity for field welding, the use of a standard ANSI flange provides a convenient mounting method through a standard flanged tank nozzle.

PLATE ADAPTER

Custom plate flanges can be fabricated for applications that require an unusual mounting method. For example, many customers prefer to have a custom flange designed to be installed through an existing man way port.



WELD BOX ADAPTER

The fabricated weld box adapter allows for easy field welding of the tube assembly through dished heads on horizontal tanks or curved side walls of vertical tanks.

CUSTOM HEATER CONFIGURATIONS

TANK HEATERS BUILT TO ORDER

UST heaters are custom fabricated to meet the requirements of each customer's particular application. The configuration of each UST is based on the tank design, the fluid to be heated, and any customer preferences. Once the heat load has been determined, the following information will be taken into consideration in the design of the UST heater:

HEAT FLUX

The heat flux (or watt density) is based on the heat input limitations of the fluid to be heated in the storage tank. For example, water can take a very high rate of heat input and would, therefore, use the highest watt density available at 12 watts per square inch of surface area. On the other hand, materials such as asphalt, tar, and pitch are much more heat sensitive and require a heat flux of 5 watts per square inch or lower.

HEATER TUBE CONFIGURATION

The number of heater tubes and their immersion length is based on the working length of the tank, the required watt density, and, very often, a customer preference. For example, a 10'-6" diameter by 15'-6" long storage tank requiring 20 Kw at 5 watts per square inch. A vertically oriented tank would require 3 tubes with a 10' immersion length, while a horizontally oriented tank would require 2 tubes with 15' immersion length.

GENERAL SPECIFICATIONS

Once the basic configuration has been determined, the customer must provide the general specifications of the unit, such as: available power supply, choice of tank adapter, NEMA rating required, carbon or stainless construction, and any special control requirements.

