



INSTALLATION INSTRUCTIONS



Class I, Div 2, Groups B, C & D

Class II, Div 2

Class III, Div 2

Retested and reapproved to current IEEE and NEC Standards in 2003

Previously known as the Cooperheat EGL heating panel, the EGLX Tank Heating Panel now incorporates recent design improvements and safety features to fully comply with the latest edition of the National Electric Code. The installers of this and other forms of electric heat tracing equipment should familiarize themselves with the relevant section of the National Electrical Code before commencing any work.

EGLX Tank Heating Panels are suitable for applications on metal tanks up to 200° F and on fiberglass (FRP) tanks up to 150°F.

Two types of EGLX Tank Heating Panel are available. The EGLX 500 heating panel, with a power rating of 0.58 w/sq.in

is recommended for most applications. The EGLX 400 heating panel, with a reduced power rating of 0.37 w/sq.in. is available for very heat-sensitive applications. Before installing any EGLX Tank Heating Panel, it is important to compare the application requirements with the appropriate Product Data Sheet to ensure that the correct equipment selection has been made. Alternatively, contact HTD to discuss the installation before proceeding.

EGLX Tank Heating Panels are easily installed on either horizontal, vertical, flat or cylindrical tanks. Do not attempt to install EGLX panels on cylindrical tanks smaller than 36 inches diameter. Attempting to install EGLX Tank Heating Panels on a cylindrical tank less

than 36 inches diameter or on the dish, domed or conical base of tanks where the heating panel must be flexed over varying curvatures in order to maintain surface contact, can lead to heating panel damage, unsafe operation, overheating and/or thermal destruction of the heater.

If the installer or End User has any questions or concerns about the correct usage of this product, please contact us at the following address



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GENERAL INFORMATION

EGLX Tank Heating panels are most commonly installed in one of four orientations. The illustrations on the right show the two orientations that may be used on both horizontal and vertical tanks.

Heating panels may be installed in either the horizontal or vertical plane. When installed in the horizontal plane, the heating panel termination box and cold leads may be at either end. In the vertical plane, the heating panel termination box may be at the top or the bottom.

The selected orientation of the heating panel and the location of the heating panel termination box and cold leads should always be predetermined by the location of the system control / junction box.

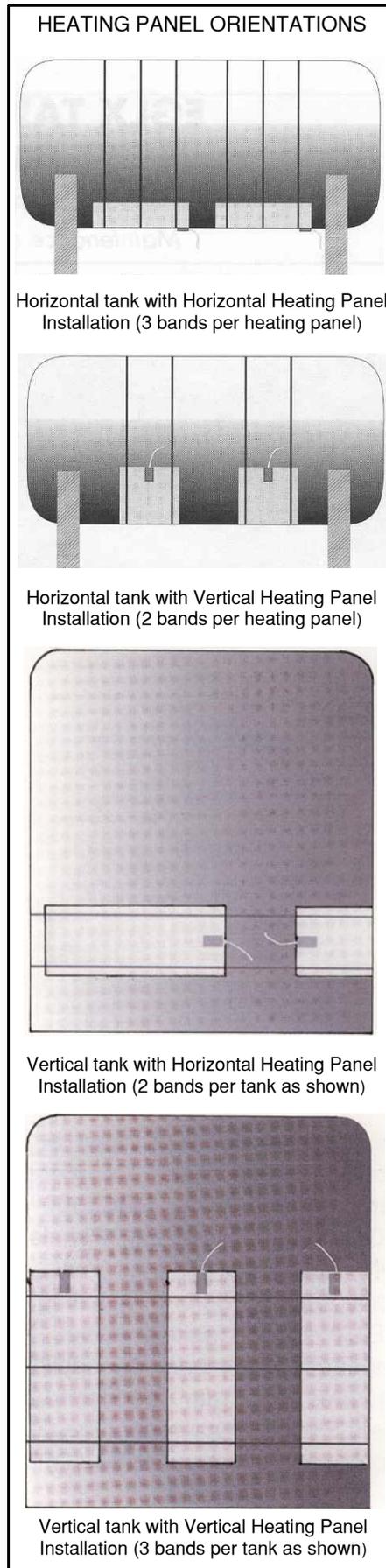
When using type "CL" heating panels, the position and orientation of each heater must be made such that the heater cold leads can be run around the tank surface to the control / junction box. Standard cold lead lengths on the "CL" panel are 10 feet. Custom length cold leads can be ordered if required.

When the "PC" type panel is being used heating panel and termination box orientation is determined by where the installer wants the elbow fitting and cold lead to exit the thermal insulation.

The effectiveness of the heating system is enhanced by an even distribution of heating panels around the tank's circumference. EGLX Tank Heating Panels should be installed with equal spacing between each heater. Mark the location of each heating panel on the tank surface prior to installation.

TOOLS AND EQUIPMENT

- 3/4" wide metal bands, banding tool and retention clips. Use Stainless Steel bands on all tanks greater than 8 ft. dia.
- Type IAAT3 adhesive backed aluminum sealing tape (consult HTD)
- Pliers
- A piece of strong rope, cord or strapping that is long enough to wrap around the circumference of the tank.



STEP 1

Determine the location of the Control / Junction Box on the tank surface.

Mark the location of each heating panel on the tank surface, relative to the Control / Junction Box location. When using "CL" type panels, heating panel locations must allow for the cold leads to run across the tank surface to the Control / Junction Box.

Run a length of strong rope, cord or strapping around the circumference of the tank and tie or clamp the ends together to form a tight band. (**Fig 1**). Horizontal heating panel installations may require two such bands.

STEP 2

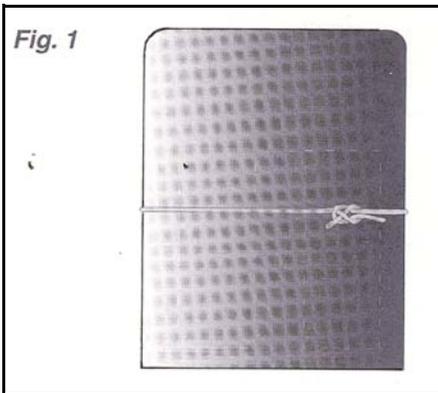
Slide the EGLX Tank Heating Panel between the band and the tank at each premarked location. (**Fig 2**). All EGLX Tank Heating Panels should be provisionally located during this Step and the installer may adjust the distance between panels to gain optimum spacing. Each heating panel must have unobstructed and direct contact with the tank surface. Heating panels cannot be installed over tank fittings, nozzels, tank outlets, flanges etc. One EGLX Tank Heating Panel may be installed slightly higher than the other heating panels in the system. (see *Dual Sensor Installations* and **Fig 10**)

STEP 3

Return to each EGLX Tank Heating Panel, adjust the position to the exact location desired and apply two 30" long strips of IAAT3 sealing tape as shown in **Fig 3**. When all panels are taped into position, the rope, cord or strapping can be removed.

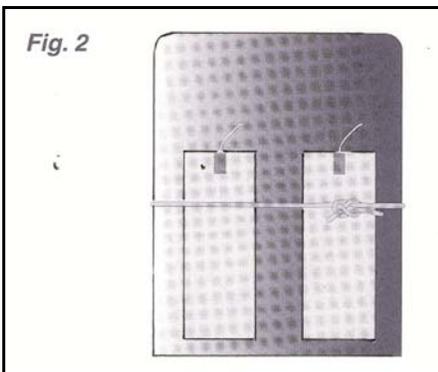
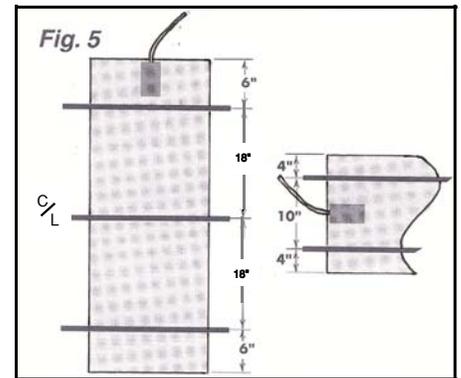
STEP 4

Using strips of IAAT3 sealing tape, seal the edges of each EGLX Tank Heating Panel as shown in **Fig 4**. This step will prevent thermal insulation and debris from migrating between the heating panel and tank surface. Thermal insulation or debris between the heating panel and tank may lead to unsafe operating conditions and overheating. **This is a critical and essential step on all installations that will involve the use of any type of thermal insulation that is sprayed or foamed into position.**



STEP 5

Run the steel bands around the tank and over the back of the EGLX Tank Heating Panels, as shown in **Fig 5**. Tighten the bands and use a retention clip on each band to provide a secure, permanent attachment of the heating panels to the tank surface. Vertically installed heating panels require a minimum of three bands and horizontally installed heating panels require at least two bands (**Fig 5**).

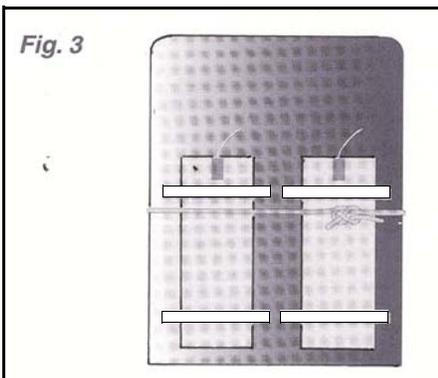


STEP 6

Use an Ohm Meter to check the resistance of each heating panel. The readings taken should be within $\pm 10\%$ of the values shown in **Fig 6**. These values should be recorded in the Maintenance Log Record (supplied with the EGLX Maintenance and Operation Guide). Use a 500 vdc Megger to measure the Insulation Resistance (IR) value of each heating panel. Readings in excess of $20M\Omega$ are acceptable. Any heating panel with an unacceptable resistance or IR reading should be removed and replaced.

Fig. 6

Nominal Resistance Values		
	EGLX 500	EGLX400
120 V	29 Ω	36 Ω
240 V	115 Ω	144 Ω

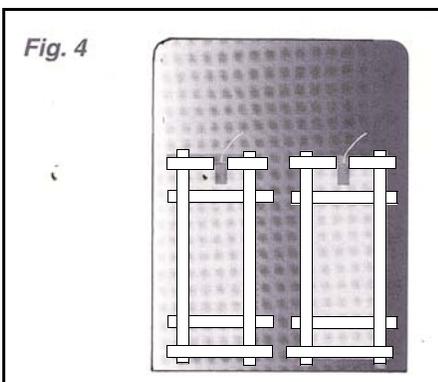
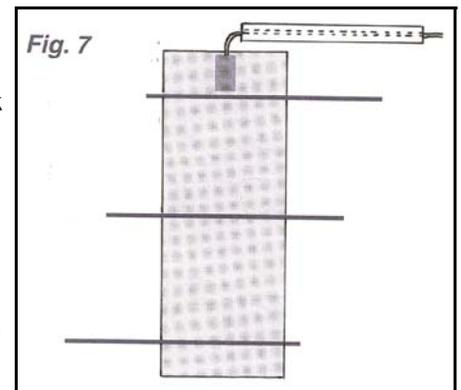


STEP 7

For EGLX type "CL" heating panels in unclassified areas the cold lead cable, as supplied, may be run across the tank surface and routed directly into the Control / Junction box.

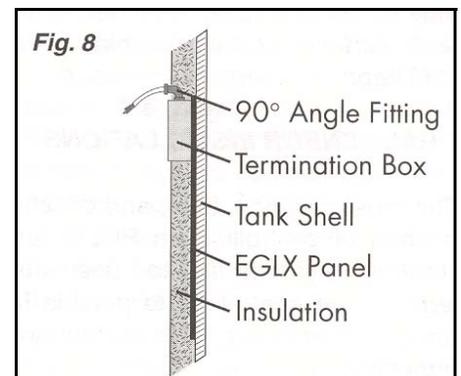
In hazardous area locations, the cold lead cable should be run in flexible conduit in all areas where the cable is on the outside of the thermal insulation.

Cold lead cables should be taped to the tank surface using IAAT3 sealing tape as shown in **Fig 7**.



STEP 8

The EGLX type "PC" heating panel is fitted with a 90° elbow that routes a short length of cold lead cable safely through the tank insulation (**Fig 8**). This design allows the installer to hook up the heating panels with conventional electrical wiring and conduit around the outside of the tank insulation to the Control / Junction Box. Interconnecting wiring and conduit should meet the requirements of the NEC for the type of installation being undertaken.



TEMPERATURE CONTROL

Some form of temperature control device must be used with all EGLX Tank Heating Panels and Systems.

The most common type of temperature controllers used are either thermostats or electronic type instruments, each of which uses a sensor to measure temperature by physical contact with the outside surface of the tank. These devices may be a bulb & capillary, RTD, or thermocouple.

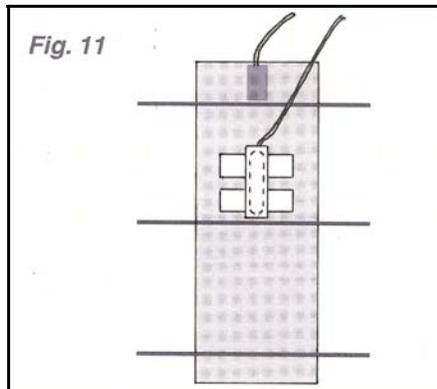
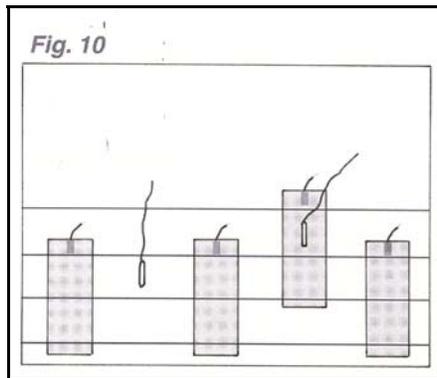
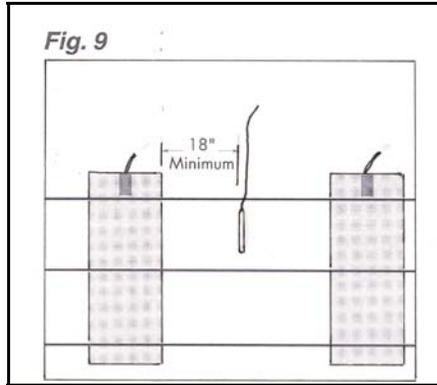
Several standard temperature controllers and systems specifically designed for use with the EGLX Tank Heating Panels are available from HTD Heat Trace, Inc. If the installer and/or end user is considering using any form of temperature control that is not being supplied by HTD, please contact us before purchasing the device(s) and commencing the installation to ensure compliance and compatibility with the requirements and approvals for the EGLX Tank Heating Panel and System.

SINGLE SENSOR FOR PROCESS CONTROL

The use of one temperature controller and sensor to monitor and control the process temperature of the tank is limited to unclassified area applications only. This type of control system is also limited to applications that involve metal tanks (without linings) and tanks that do not contain heat-sensitive materials. Typical examples of such applications are metal tanks that require simple freeze protection.

For these type of applications, the single temperature sensor should be located directly on the outside surface of the tank, approximately 12 to 24 inches above the base of the tank and at least 18 inches away from the nearest heating panel, as shown in **Fig 9**. The sensor may be mechanically fixed to the surface of the tank or taped in position with IAAT3 sealing tape.

For protection and security, thermostat capillaries, RTD or thermocouple leads are best routed to the controller across the tank surface and under the thermal insulation. Capillaries or leads can be held in position on the tank surface with strategically placed 6 inch long strips of IAAT3 sealing tape.



HTD Heat Trace, Inc offers a very cost effective range of modular NEMA 4X and NEMA 7 control packages to provide accurate process temperature control, over-temperature protection, alarm and monitoring options for the EGLX Tank Heating Panels and System

Please contact us if we can assist you with these important design and equipment considerations.



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DUAL SENSORS FOR PROCESS CONTROL AND OVER-TEMPERATURE PROTECTION.

The most common, safe, efficient and effective method of controlling EGLX Tank Heating Systems is the use of a Dual Thermostat Controller to provide process temperature control and over-temperature protection of the system.

This approach is mandatory for all hazardous area installations, irrespective of the type of tank being used or the nature of the materials being stored within the tank.

The dual thermostat control approach is also strongly recommended for all applications that involve fiberglass (FRP) tanks, other types of non-metallic tanks, tanks with non-metallic linings and tanks that will contain heat-sensitive products.

When using a Dual Thermostat Controller, the sensor that is connected to the Process Control Thermostat should be located exactly as described in the previous section titled "Single Sensor for Process Control" and **Fig 9**.

The second sensor, which is connected to the Overtemperature Thermostat should be located directly on the back of one EGLX Tank Heating Panel. As shown in **Fig 10**, the specific heating panel being used to monitor potential over-temperature is physically located approximately 18 inches higher on the tank surface than all of the other heating panels within the system. This simple installation method ensures that falling liquid levels within the tank, which may result in increased heating panel operating temperatures, are immediately detected and the heating panel system operation is automatically controlled at a temperature that is safe for the tank, tank contents and/or the environment surrounding the installation.

The Over-Temperature Sensor should be located directly on the vertical center line of the selected EGLX Tank Heating Panel, as shown in **Fig 10**. The sensor should be attached to the back of the EGLX heating panel using three strips of IAAT3 sealing tape, as shown in **Fig 11**. Secure all capillaries or sensor leads to the tank surface with 6 inch long strips of IAAT3 sealing tape.