

OVER-THE-SIDE IMMERSION HEATERS

PRODUCT DESCRIPTION

Over-the side immersion heaters are designed for vessels where through the side immersion heaters cannot be conveniently installed. These heaters are installed through the top of the vessel with the heated portion of the unit along the side or at the bottom of the tank. Natural circulation of the fluid inside the vessel allows for even distribution. Terminal houses or lead wires are provided for power connection.

CONSTRUCTION FEATURES

TL and KTL Series. Tubular heating elements are brazed into a junction box, steel and stainless steel sheath heaters have all wetted parts of the same material. Copper sheath heaters have a Monel junction box and a copper riser. The heated element portion is straight (TL Series) or circular (KTL Series). Riser heights are 36" or 48" as specified. Sludge legs (to keep heated portion of unit off the bottom of the tank) are standard. Moisture resistant terminal box is steel with heat and acid resistant paint, epoxy seal in the riser is provided to prevent moisture from entering element connections. A thermowell for a thermostat bulb is standard (thermostat kit ordered separately).

KBL Series. Low watt density heating elements at 11 W/in², steel or stainless sheath and riser, 36" standard riser height, moisture resistant terminal box is steel with heat and acid resistant paint, integral thermostat is standard with thermowell.

CT Series. Vertical loop heater with six different sheath materials ranging from 17 to 44 W/in², tubular elements formed into spiral loops, vapor tight terminal enclosures, cast alloy terminal covers with removable lid (CT series heaters have plastic cover terminal house with 3' lead wires in liquid tight flexible conduit).

PTH Series. Stainless steel sheath elements (316 type passivated), low profile type, vapor tight terminal enclosure with 3 foot long vinyl covered flexible conduit, stainless steel mounting bracket provided.

TEF Series. Teflon® coated heating elements, polypropylene guard over heating elements, plastic covered terminal box, 24" long flexible conduit provided.

CIT Series. Steel sheath tubular elements cast-in iron, straight (through the side) or sloped shapes for inserting in tanks, cast-iron terminal box for power connections.

APPLICATIONS

Shown below is a list of typical fluids heated with over-the side immersion heaters these examples are shown as a guide only and the user should make the ultimate choice of sheath material and watt density based on knowledge of the chemical composition of the solution and the required temperature.

Copper sheath heaters — TLC, KTLC and CTC Series. Clean water (pH 6 to 8).

Steel sheath heaters — TLO, KTLO, KBLC and CTS Series. Medium weight oils, alkali, soaking cleaners, degreasing solutions, caustics, solvent type oils, heat transfer fluids. Low watt density heater (KBLC) for heavy oils, paraffin and wax.

Stainless steel heaters, 304 — TLS, KTLS, KBLs and CTSS Series. Alkaline cleaners (electrified), alkaline soaking cleaners, copper sulfate, electroless copper, electro cleaners, mild acid baths, wash tanks, dip tanks containing alkali, oakite, caustic soda, detergent and other aqueous solution.

Stainless steel heaters, 316 — PTH Series. Demineralized and deionized water, plating tanks and other aqueous solutions.

Teflon® coated heaters — TEF Series. Acid solutions including hydrofluoric, alkaline solutions, ammonium bifluoride, electroless copper, fluoborate, hydrochloric acid and sulfuric acid solutions.

Cast-iron heaters — CIT Series. Suitable for metals such as solder, tin, stereotype metal and babitt where the top working temperature

is less than 950°F.

Titanium sheath heaters — CTT Series. Corrosive solutions such as nitric, chromic and gold acid, sulfamate nickel, chrome, gold and silver plating.

Lead sheath heaters — CTLC Series. For electro-plating baths and pickling solutions, recommended for nickel and copper plating baths and sulfuric acid solutions with not higher than 10 percent concentration.

SPECIAL FEATURES AVAILABLE

The following special features are available on over-the-side immersion heaters. Contact OMEGALUX® for details.

- Different voltages and wattages
- Explosion resistant terminal housings on TL and KYTL Series
- Passivation on stainless steel units (standard on PTH)
- Various control options
- Optional sheath materials (Incoloy, Inconel and more)

OMEGALUX CORROSION POLICY

OMEGALUX cannot warrant any electric immersion heater against failure by sheath corrosion if such failure is the result of operating conditions beyond the control of the heater manufacturer. It is the responsibility of the purchaser to make the ultimate choice of sheath material based on this knowledge of the chemical composition of the corrosive solution, character of materials entering the solution, and controls which he maintains on the process.

Note: Mount heater in tank so the liquid level will always be above the heated portion of the heater. If heater is not properly submerged, it may overheat and damage the heating elements and the tank.

INTRODUCTION TO OVER-THE SIDE IMMERSION HEATERS

APPLICATIONS

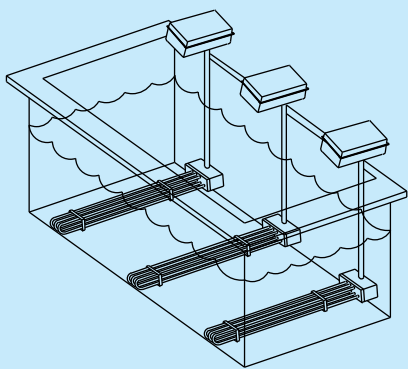
The large variation in heating element material and shapes of over-the-side immersion heaters offers a wide selection in the application of these units. Water, oils, solvent, plating baths, salts and acids are some of the many liquids and viscous materials commonly heated with immersion heaters. Over-the-side types permit portability, easy removal for cleaning of tanks and heaters, and ample working area within the tank when installed.

DESCRIPTION

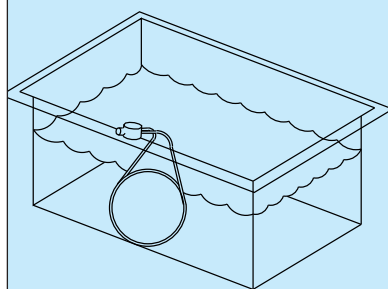
Over-the-side immersion heaters are designed for installing in the top of a tank with the heated portion directly immersed along the side or at the bottom. This provides easy removal of the heater and ample working space inside the tank. These heaters are available with heating elements made of copper, steel, stainless steel, cast iron, Incoloy, titanium, and Teflon® coated. A wide selection of kilowatt ratings, shapes and mounting methods are available to suit many different types of applications.



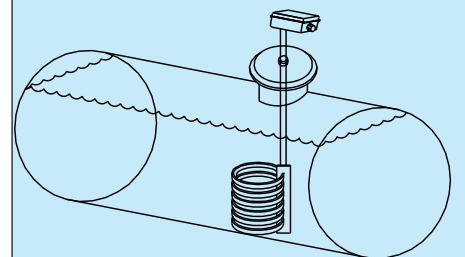
L-Shaped Installation



Side-Mount Installation





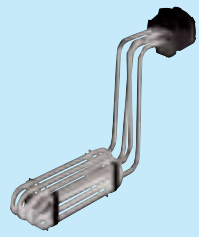
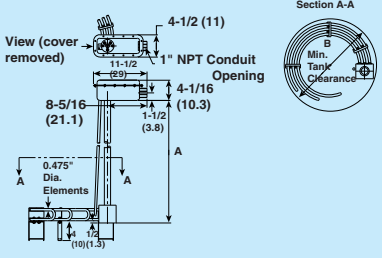
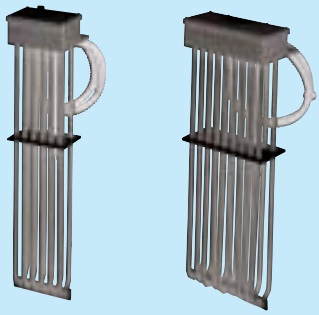
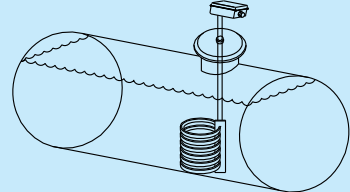
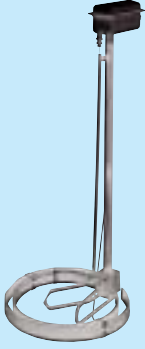
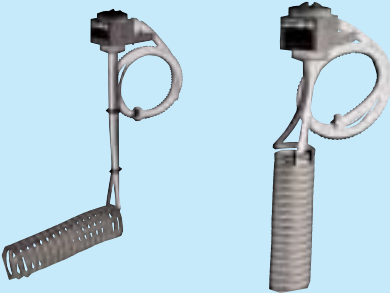
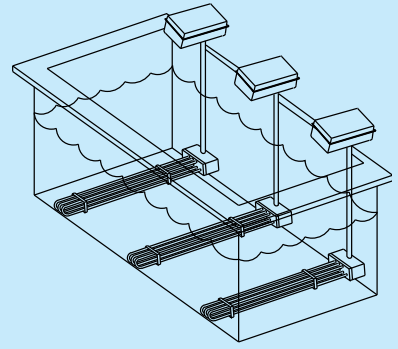
Deep Tank Installation



INDUSTRIAL LIQUID HEATERS

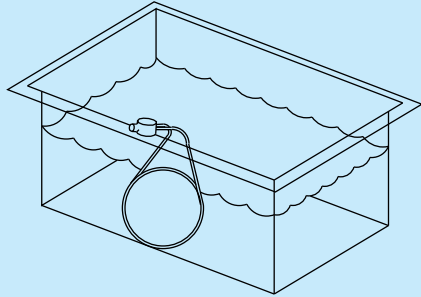
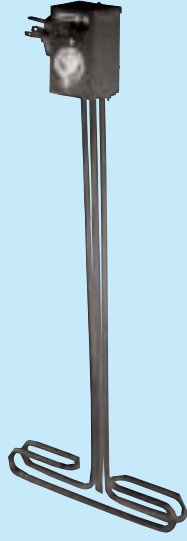
Selection Guide

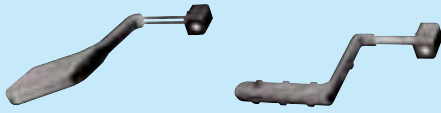
Selection a heater type, sheath materials and watt density from the table below. Refer to Section Z of this catalog for the proper selection of sheath material and watt density.

Heater Type	Sheath Material	Watt Density	Model	Pg.	Heater Type	Sheath Material	Watt Density	Model	Pg.	Heater Type	Sheath Material	Watt Density	Model	Pg.
TL Series	Steel Stainless Copper Incoloy.	20 40 40 40	TLO TLS TLC TLI	F-77 F-75 F-74 F-76	PTH Series	Stainless	21-34	PTH	F-79	TBL Series	Steel Incoloy	20 20	TBL TBL	F-84 F-84
														
KTL Series	Steel Stainless Copper Incoloy	20 40 40 40	KTLO KTLS KTLC KTLI	F-77 F-75 F-74 F-76	GTF Series Teflon®	Teflon®	10	GTF6 GTF9 GTFN GTFNLF-79B	F-79A F-79A F-79B F-79B	BLC Series Deep Tank	Steel	12-18	BLCS BLCK	F-84 F-84
														
KBL Series Portable	Steel Stainless	11 11	KBLC KBLS	F-83 F-83	GTF Series Teflon®	Teflon®	10	GTF	F-80	L-Shaped Installation				
														

F

Heater Type	Sheath Material	Watt Density	Model	Pg.	Heater Type	Sheath Material	Watt Density	Model	Pg.
CT Series	Steel	25-40	CTS		CH-OTS Portable Tank Heater	Nickel Plated Copper	60	CH-OTS	
	Copper	25-40	CTC						
	Stainless	25-40	CTSS						
	Titanium	44	CTT						
	Carp. Stainless	25-40	CTAC						
CIT Series	Cast	20	CIT Soft Metallron						



Material to be heated	Heater Series	Sheath Material	Typical Watt Density	Page
Clean water pH 6 to 8	CTC	Copper	25	
	TLC/KTLC	Copper	40	
	CTC	Copper	40	
	CH-OTS	Copper	60	
Medium weight oils, alkali, soaking cleaners	KBLC	Steel	11	
	TLO/KTLO	Steel	20	
	CTS	Steel	25	
	CTS	Steel	40	
Alkaline soaking and cleaning copper sulphate, electro cleaners, mild acid baths, wash and dip tanks containing alkali, oakite, caustic soda, detergents and aqueous solutions	KBLS	SS	11	
	CTAC	SS	25	
	CTSS	SS	25	
	PTH	SS	30	
	TLS/KTLS	SS	40	
	TLI/KTLI	Incoloy	40	
	CTSS	SS	40	
CTAC	SS	40		
Solder, tin, babbitt	CIT	Cast Iron	20	
Salt bath	TBL	Steel	20	
	TBL-A	Incoloy	20	
Deep tank oil	BLC	Steel	18-20	
Electroplating bath and pickling solutions	CTLC	Lead	17	
Corrosive solutions, nitric, chromic and gold acid	CTT	Titanium	44	
Acid solutions	GTF6	Teflon®	10	
	GTF	Teflon®	10	



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