

# Immersion

## Over-the-Side Immersion Heaters

### Overview

#### 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, Fluoropolymer coated, and Quartz. A wide selection of kW ratings, shapes and mounting methods are available to suit many different types of applications.



OVER-THE-SIDE

#### Over-the-Side Immersion Heaters — Selection Guidelines

Configuration	Model	Sheath Material	Typ. Watt Density	Phase	See Note
<b>L-Shaped</b> This type of heater puts the heat at the bottom of the tank. The vertical riser is unheated so lower liquid levels are acceptable. Many types of heating element materials are available along with various riser heights and element configurations. Legs are provided at the bottom of most heaters to prevent direct contact of the heating elements with the bottom of the tank.	KBLS	304SS	11	1	1
	TLS, KTLS	304SS	40	1 or 3	1
	GSL	316SS	20 and 40	1	2
	GSL3, GSV3	316SS	20 and 40	3	2
	CIT	Cast Iron	20	1	—
	TLC, KTLC	Copper	40	1 or 3	1
	TBL	INCOLOY®	20	1	—
	TLI	INCOLOY®	40	1 or 3	1
	KTLI	INCOLOY®	40	1	1
	KBLC	Steel	11	1	1
	TBL	Steel	20	1	—
	TLO, KTLO	Steel	20	1 or 3	1
	BLCK-MH	Steel	12 and 18	1 or 3	1
	B LCS	Steel	12 and 18	1 or 3	—
	GTFL, GXFL	Fluoropolymer	10	1	2
	GTFNL3	Fluoropolymer	10	3	2
GTL	Titanium	20 and 40	1	2	
GTL3, GTV3	Titanium	20 and 40	3	2	
<b>Side Mount/Top Mount</b> This heater is placed on the side of the tank with mounting brackets for easy installation. A cold section is provided at the top of the heater for various levels of liquid in the tank (consult heater specification tables for the specific length of the cold section). Low profile side mounted heaters provide more working space in the heated tank.	PTHF	304SS	20	3	2
	CTSS	304SS	25 and 40	1	—
	PTH	316SS	30	1	—
	GS	316SS	20 and 40	1	2
	GS3	316SS	20 and 40	1 or 3	2
	CTAC	Carp 20 SS	25 and 40	1	—
	CS	Ceramic-SiAlON	70	1 - 3	—
	CH-OTS	Copper	60	1	3
	CTC	Copper	25 and 40	1	—
	QM	Quartz	25	1	2
	QM3	Quartz	25	1 or 3	2
	GTF, GXF	Fluoropolymer	10	1	2
	GTF6, GTF9	Fluoropolymer	10	3	2
	TPR	Fluoropolymer	20	1	2
	TPF	Fluoropolymer	20	3	2
	PTH	Titanium	20	1	—
CTT	Titanium	44	1	—	
GT	Titanium	20 and 40	1	2	
<b>Heat/Cool Exchangers</b> Side mounted metal or fluoropolymer coils provide heat or cooling of tanks from remote mounted heating or cooling sources.	GT3	Titanium	20 and 40	1 or 3	2
	GHTF	Fluoropolymer	N/A	N/A	—
	GRS	316SS	N/A	N/A	—
	GRT	Titanium	N/A	N/A	—
	US	316SS	N/A	N/A	—
	UT	Titanium	N/A	N/A	—

1. Optional Integral Thermostat - requires wiring to remote relay (not included).
2. Integral Overheat Thermal Protection - requires wiring to remote relay (not included).
3. Integral Thermostat and Cutout.

**More Information is Available Online on Tank Heating.**

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## Over-the-Side Immersion Heaters

### L-Shaped Metal Sheath Heaters

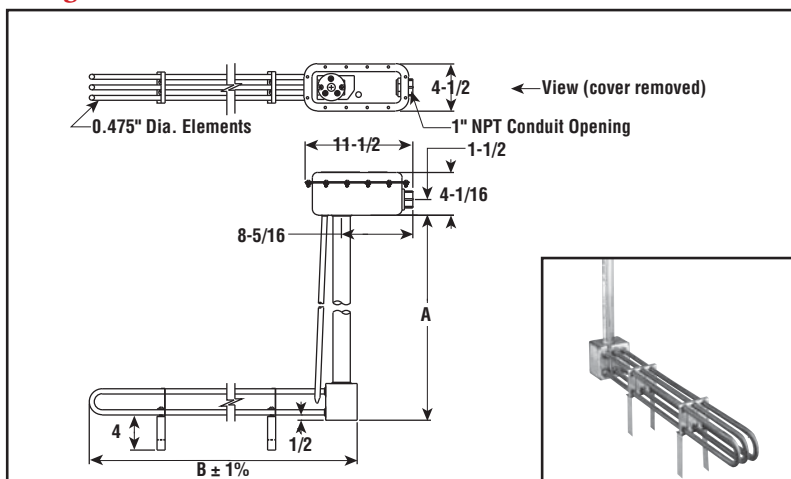


OVER-THE-SIDE

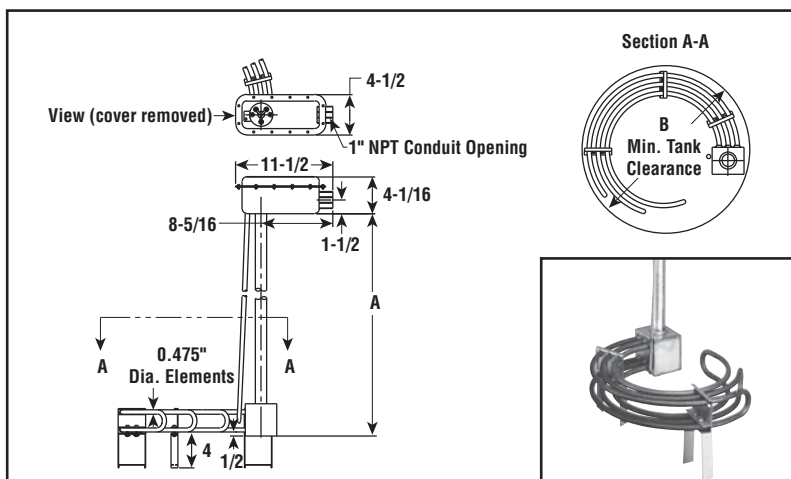
TLC, KTLC, TLO, KTLO, TLS, KTLS, TLI, KTLI

- Copper, Steel, Stainless Steel, INCOLOY® Sheath Elements
- 20 and 40 W/In<sup>2</sup>
- 2 - 18 kW
- 120, 240 and 480 Volt, 1 & 3 Phase
- Moisture Resistant Terminal Enclosure
- Optional Integral Thermostat

#### Straight Elements — Dimensions (Inches)



#### Circular Elements — Dimensions (Inches)



#### Description

Light weight, portable, easy to install L-shape construction, puts the heat at the bottom of the tank and the terminal enclosure at the top of the tank. Capacities, dimensions and heater sheaths fit a wide range of heating applications. Easy to install and remove for cleaning with straight or circular element designs to fit many tank configurations.

#### Features

- Copper Sheath and Riser (40 W/In<sup>2</sup>)
- Steel Sheath and Riser (20 W/In<sup>2</sup>)
- Stainless Steel Sheath and Riser (40 W/In<sup>2</sup>)
- INCOLOY® Sheath and Stainless Steel Riser (40 W/In<sup>2</sup>)
- 36 and 48" Riser Heights
- Moisture Resistant Terminal Enclosure
- Thermowell (standard on S and AS heaters)
- 4" Sludge Legs (standard on S and AS heaters). Increases A dimension 3-1/2". Keeps heated section off bottom of tank.

#### Optional Features

- Integral Thermostat Kit DPST "AR" type rated 30 Amp at 120 - 277V (field installed)
  - 60 - 250°F (AR-219 Kit, PCN 277819)
  - 200 - 550°F (AR-519 Kit, PCN 277827)<sup>1</sup>
  - 0 - 100°F (AR-115 Kit, PCN 277835)
- Factory Installed Thermostat (specify range above)
- Explosion Resistant Terminal Enclosure (CSA/NRTLTC Certified)
- Longer Riser and Sludge Leg Heights
- INCOLOY® Riser
- Process and Overtemperature Protection Thermocouples
- Increase Number of Elements (horizontally and/or vertically) for larger kW ratings
- Lower Watt Densities for heating Viscous Materials
- Manhole Construction for Covered Tanks

#### Note —

1. Not UL Listed or CSA Certified with 200 - 550°F Thermostat Kit

# Quality

## Differences Among Screw Plug Immersion Heaters

Screw Plug Immersion Heaters include one, two or three hair-pin bent tubular element(s) joined to a threaded hex plug. Screwed into tank walls, this UL Listed / CSA Certified direct contact heat source heats liquids, viscous fluids, forced air and gases with maximum energy efficiency. In addition, elements can be bent into many configurations to suit a variety of applications. Most screw plug heaters come with a thermowell (for temperature control sensor) and a completely wired terminal enclosure for electrical connection. Certain models available with a patented 360° rotatable screw plug housing to facilitate easy conduit connections. Select from a variety of sheath materials, element lengths, plug sizes and ratings from 0.5 kW and up, for 120 to 600 volts.

On first impression, various manufacturers of screw plug immersion heaters appear to be all alike; but when you take a closer look at screw plug immersion heaters, it becomes evident that considerable differences exist. The following information will help to explain the differences in construction of Chromalox screw plug immersion heaters compared to other manufacturers. It will also describe Chromalox's third party listing program, quality testing, and delivery capabilities.

Before buying a screw plug heater, you should ask the manufacturer questions to insure you are getting a quality heater that will last in your application. Below, you will find a list of some of these important questions.



- 1 How is your resistance wire sized?
- 2 What grade of magnesium oxide is being used?
- 3 How is your cold pin attached to your resistance wire?
- 4 What is your standard element diameter?
- 5 Do you passivate stainless steel heaters?
- 6 Do you repress U-bends when required?
- 7 Do you use terminal sealant as a standard?
- 8 How are your elements fixed to the screw plug?
- 9 Are screw plug hex and threads to industry standards?
- 10 Do you provide a standard thermowell?
- 11 Is the terminal housing rotatable?
- 12 Do you have a standard grounding lug?
- 13 Are your heaters UL listed and CSA certified?
- 14 What quality assurance testing is done on your finished products?
- 15 Can you ship out of stock in 24 hours and provide assembly stock products in 5 days?
- 16 Can you provide me expert technical assistance when needed?

# Chromalox®





Chromalox®  
Large-Tank Heating Systems

Large-Tank Heating Systems



RSTO

LTFX

Description

Chromalox offers four uniquely designed electric heating systems for large storage tanks. The systems can be installed in above or below-ground tanks made of steel, concrete, or fiberglass.

Complete with Chromalox® controls, these large-tank heating systems can be operated with little or no manual attention. Heat can be applied by using strategically located sensors to monitor tank temperatures and energize the heaters. The heating operation may be fully automated by using timers and controllers to program the start and stop of both off-peak and daytime heating functions.

In addition to operating convenience, Chromalox® large-tank electric heating systems require very little upkeep and are practically maintenance-free. The result is substantially reduced operating costs over alternative heating methods.



FXTH



OCE



**Chromalox®**  
ANSI Flange and Circulation Heater Design

**ANSI Flange and Circulation Heater Design**

**The Next Generation of Heater Design**

Chromalox is the first name in electric heaters. Being in existence for over 90 years did not happen by chance. Throughout the years, Chromalox has stayed committed to continued innovation and reinvention of its products.

The evolution of the ANSI flange and circulation heater line best represents that commitment. By combining international design requirements with innovative features, Chromalox is able to provide a superior product for the marketplace.

There are considerable advantages to purchasing a Chromalox® ANSI flange or circulation heater. The following information will help to explain the premium standards used in the construction of each unit. It will also describe the Chromalox global third-party certifications, quality testing, and delivery capabilities.

Purchasing a premium heater will ensure years of life in your application. Chromalox is proud to give you that option.

