

## Over-the-Side Immersion Heaters

### Application & Selection Guidelines

#### 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, solvents, 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.

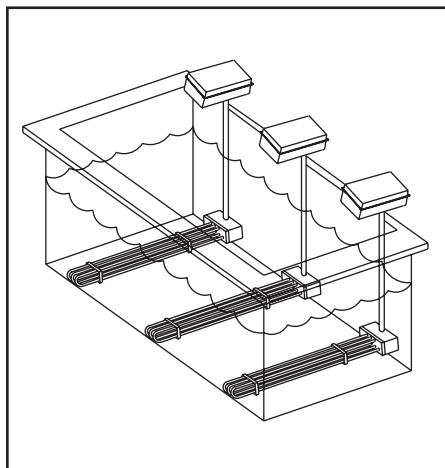
**Important** — When selecting a tank heater design, the user should make sure the sheath material is suitable for the solution being heated at the maximum temperature expected, with proper safety factor.

#### Sheath Material — Selection Guidelines<sup>1</sup>

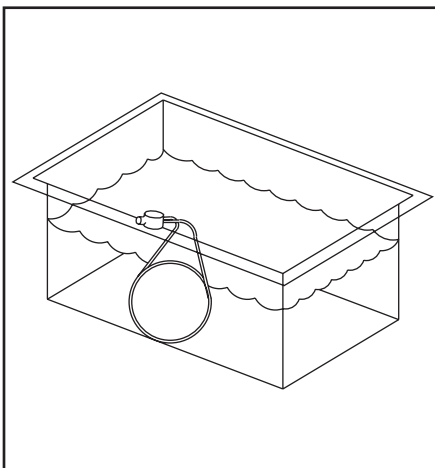
Material Being Heated	Typical Sheath Material
Clean Water (pH6 to pH8)	Copper
Demineralized or De-ionized Water	Stainless Steel (passivated) INCOLOY® Fluoropolymer
Medium Weight Oil, Alkaline Cleaning (low concentration) Mild Soaking Cleaners	Steel
Mild to Medium Corrosive Solutions, Many Oxidizing Acids, Organic Chemicals, Mild Aqueous Solutions	Stainless Steel INCOLOY®
Chromic Acid (10%), Nitric Acid (to 65%) Salt Brine, Many Plating Solutions (i.e. Nickel, Silver, Zinc, Gold)	Titanium
Soft Metal Melting	Cast Iron
Molten Metal, High Corrosive	Ceramic
Most Acids, Plating Solutions, Pickling Solutions	Fluoropolymer Quartz <sup>2</sup>

1. Consult Corrosion Guide in the Technical section for specific material recommendations.
2. Not for use in hydrofluoric acid and alkaline solutions.

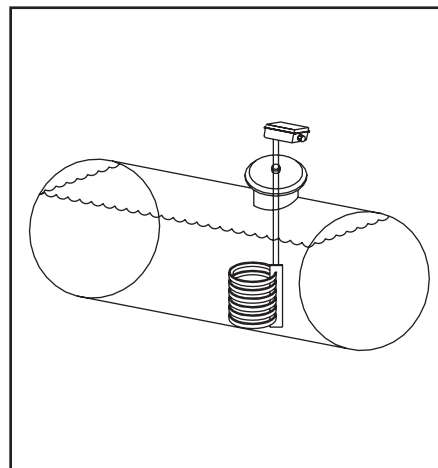
#### L-Shaped Installation



#### Side Mount Installation



#### Deep Tank Installation



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

Heater	Model	Page
L-Shaped Metal Sheath	TLC & KTLC	B-118
	TLO & KTLO	B-119
	TLS & KTLS	B-120
	TLI & KTLI	B-121
Side Mount Metal Tube	GS & GT	B-122
	GS3 & GT3	B-123
L-Shaped Metal Tube	GSL & GTL	B-124
	GSL3 & GTL3	B-125
	GSV3 & GTV3	B-126
Side Mount Quartz Tube	QM & QM3	B-127
Side Mount Metal Sheath	PTH & PHTH	B-128
	PTHF	B-129
	CT	B-130
Side Mount	TPR & TPF	B-131
Fluoropolymer Coated	GTF & GTFL	B-132
	GXF & GXFL	B-133
	GTF6 & GTF9	B-135

Heater	Model	Page
L-Shaped Fluoropolymer Coated	GTFL3	B-136
Drum Heater	KBLC & KBLS	B-137
Salt Bath Heater	TBL & TBL-A	B-138
Deep Tank Heater	BLCK-MH & BLCS	B-139
Portable Tank Heater	CH-OTS	B-140
Soft Metal Melting Heater	CIT	B-141
Ceramic Sheath	CS	B-142
Side Mount Heat Exchanger	GRT & GRS	B-144
	US & UT	B-146
	GHTF	B-147
Terminal Enclosure Dimensions		B-148
Optional Accessories		B-150