

VERSOL STORAGE SOLUTIONS - VERSOTHERM



## VERSOL CALORIFIERS AND STORAGE TANKS VERSOTHERM RANGE

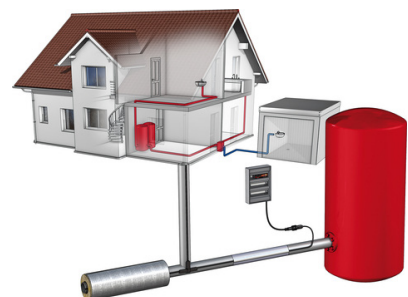
The Veracious VERSOTHERM range of Storage Tanks and Calorifiers offers an ideal solution when domestic hot water is required in volume. Water is heated indirectly by a primary medium via an internal u-tube battery or immersion heater or can be stored directly. The size of Storage Tanks and Calorifiers depends on the Building Hot Water Demand and the Recovery Time requirement. VERSOTHERM Calorifiers can be designed and manufactured to suit any hot water application.

### Benefits

- Cost: Storage calorifiers are economical heating solutions
- Low Primary Power Requirement: The stored water meets peak demand and therefore primary heating source size can be reduced
- Economical Temperature Control: Simple on/off temperature control can be used
- Reliability: Storage calorifiers are robust and uncomplicated, giving excellent reliability and availability
- Low Heat Loss: Correct insulation of the calorifier results in low heat loss.

### Design & Manufacturing Standards

VERSOL manufacture and supply calorifiers with design codes and materials of construction to suit each project requirement. Our commercial design code is based on BS853 and takes account of many years of design and operational experience. We offer 3 party design and manufacturing appraisal where required, and construction material certification can be supplied (terms apply). All our calorifiers supplied comply fully with the European Pressure Equipment Directive (97/23/EC). CE marked or UL Listed calorifiers can be provided upon request for some models.





## VERSOTHERM Storage Tanks and Calorifiers

VERSOTHERM range of storage tanks and calorifiers can be used as basic storage/buffer units (**STD Range**) or they can be equipped with indirect of heating sources (**STI Range**).

VERSOL manufactures calorifiers with two types of heating elements: U-TUBE Immersion Heat Exchangers (**STI-UT Range**) and Electric Immersion Heaters (**STI-EC Range**).

Multiple Heat Exchangers can be installed depending on the application. For example U-Tube Heat Exchanger can be used as a primary Heater and Electric heater as backup or to satisfy peak load (**STI-UT-EC Range**). Calorifiers with Immersion U-Tube Heat Exchangers and Electric Heaters can be delivered as complete packaged solutions that include Control Valves, Thermostats and Control Panels.



▲  
STD Storage Tank



▲  
STI Range  
STI-UT - Calorifier with U-Tube HEX  
STI-EC - Calorifier with Electric Heater  
STI-UT-EC - Combined U-tube and Electric Heaters



▲  
STII-SPIRA Range  
STI-SPIRA- Calorifiers with Spiral Tube Heat Exchanger and Electric Back Up



### Electric Calorifiers(STI-EC Series)

VERSOTHERM **STI-EC Series** Electric Calorifiers are with factory assembled Electric Calorifiers and Control Panels. The Electrical Calorifiers are supplied with VERSOL Electric immersion Heaters which are manufactured with high quality Incolloy to ensure life longevity. Heaters can also be with Incolloy 825, Incolloy 800, Stainless Steel and Copper. Control Can be supplied loose or fixed Calorifiers body wired to Electrical Heaters. Standard Calorifiers are supplied with loose Control Panel which will ease the clearance to the plant room and placing the panel to utilize the plant room area.

### Indirect Heated Storage Calorifiers (STI-UT Series)

VERSOTHERM **STI-UT Series** Storage Calorifiers with Heat Exchangers for Steam Heating or Hot Water Heating are available in different range depends on the requirement. Range of capacities are available to meet most of the customer requirements which will make sure to meet any peak demand. STI-UT series Calorifiers are with removable type U tube heat exchangers. Heat Exchanger can be of Stainless Steel or Copper depending on the requirement. VERSOTHERM STI-UT range Calorifiers can be offered with Primary Control Valve, Steam Trap etc upon request.

### Multiple Heated Calorifiers (STI-UT-EC Series)

VERSOTHERM **STI-UT-EC Series** Storage Calorifiers are with U tube Heat Exchangers and Electric Immersion Heaters. The U- tube Heat Exchangers can to use with Steam or Hot Water and the Electric Immersion Heaters to cover peak demand or as Back Up. This series Storage Calorifiers can be designed to use with Steam or Hot Water Boilers, Heat Pump or Solar System.

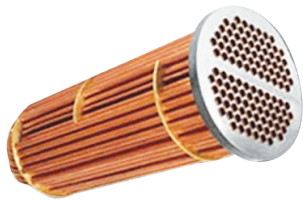
### Spiral Tube Storage Calorifiers(STI-SPIRA Series)

VERSOTHERM **STI-SPIRA Series** Storage Calorifiers are with Spiral Tube Heat Exchangers for the primary Heating. This Series always will be with Electrical Immersion heaters as back up. STI-SPIRA Series is suitable to use with Small or Medium size Heating circuits like Solar Water Heating or Heat Pump Systems where the heating load will be reasonably less. **STI-SPIRA Series** can be up to 5000L capacity with heating load of 100kW and the Electrical Heaters can be Threaded type or Flanged type. STI-SPIRA range will be available only with Stainless Steel or Glass Lined Calorifiers Tanks.

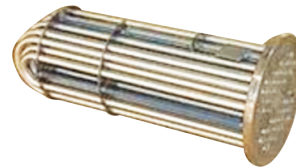
## U-Tube Bundle Immersion Heaters (UT Range)

Preferred Heat Exchangers in Storage Calorifiers are U-Tube Bundle (UT Range) because they can be removed for maintenance and cleaning. This option offers a very efficient performance throughout a life time. Heat Exchanger Tubes can be made of Copper or Stainless Steel, depending on the Calorifiers material and project requirement.

UT Immersion heat exchangers can be used for various fluids such as: Steam, LPHW, MPH. We offer bespoke design for any application.



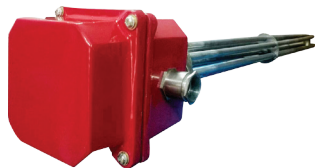
Copper Tube Heat Exchangers



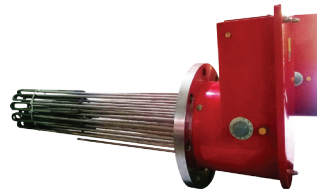
Stainless Steel Tube Heat Exchangers

## Electric Immersion Heaters (EC Range)

The Electrical Calorifiers are supplied with VERSOL Electric Immersion Heaters (EC Range). EC Heaters are manufactured with high quality materials and design standards to ensure life longevity. Heaters can be made of Incolloy 825, Incolloy 800, Stainless Steel and Copper depends on the requirement.



Threaded Type Immersion Heater



Flanged Type Immersion Heaters

Although electricity is associated with high running costs, it is also a very efficient means of heating domestic hot water due to all the power used being converted into heat. Primary LTHW & steam boilers can be as inefficient as 85% of the power used to heat the medium. Utilizing electricity also negates the need for extra space within the plant room to cover the duty boilers that need to be installed for heating applications can be smaller, thus freeing space for other applications.

## Spiral Tube Heat Exchangers (Spira Range)

Spiral Tube Heat Exchangers are offered normally with Small Capacity Storage Calorifiers in Hot Water Heating application. Heat Exchanger can be of Stainless Steel or Copper depending on the requirement. Normally the maximum heating load can be upto 200 kw. Tube diameter & No. of tubes designed based on heating requirement.





## Material of Construction

VERSOTHERM Calorifiers can be manufactured with different type of materials depends on the customer requirement or project specification. Material needs to be chosen depending on the application and medium used. Apart from the selection of MOC, due to the specified welding technology and the tools, VERSOTHERM Calorifiers guarantee the life longevity.

### Solid Copper

Solid Copper Shells as per BS 2871-C106 is a proven reliable product by being virtually impervious to attack by aggressive water. Due to low material design strengths, solid copper may become uneconomical to use on cylinders with larger diameters and high pressures and thus, we would offer a copper-lined steel option for larger tank sizes. It is to be noted that copper shells should not be used in conjunction with galvanized steel pipe work or fittings due to incompatibility of the 2 materials.

### Copper Lined Steel

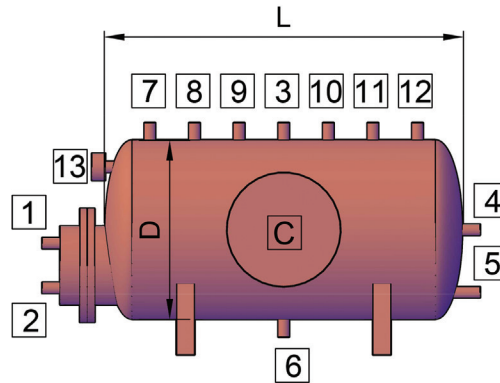
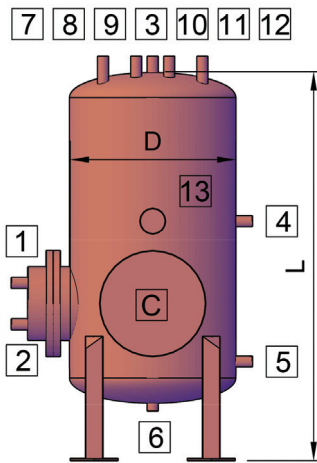
Where having a solid copper shell is impractical due to high pressures, we would offer a copper-lined steel shell Calorifiers. This type of manufacture combines the high strength of carbon steel with the corrosion resistance of copper. The process involves manufacturing a carbon steel outer shell and then lining internally with copper sheets which is welded together to form a waterproof surface with all wetted parts within the Calorifiers being manufactured from copper. Anti-vacuum valves are fitted as standard to copper-lined cylinders to avoid the vessel collapsing under vacuum conditions when draining down without a suitable vent.

### Stainless Steel

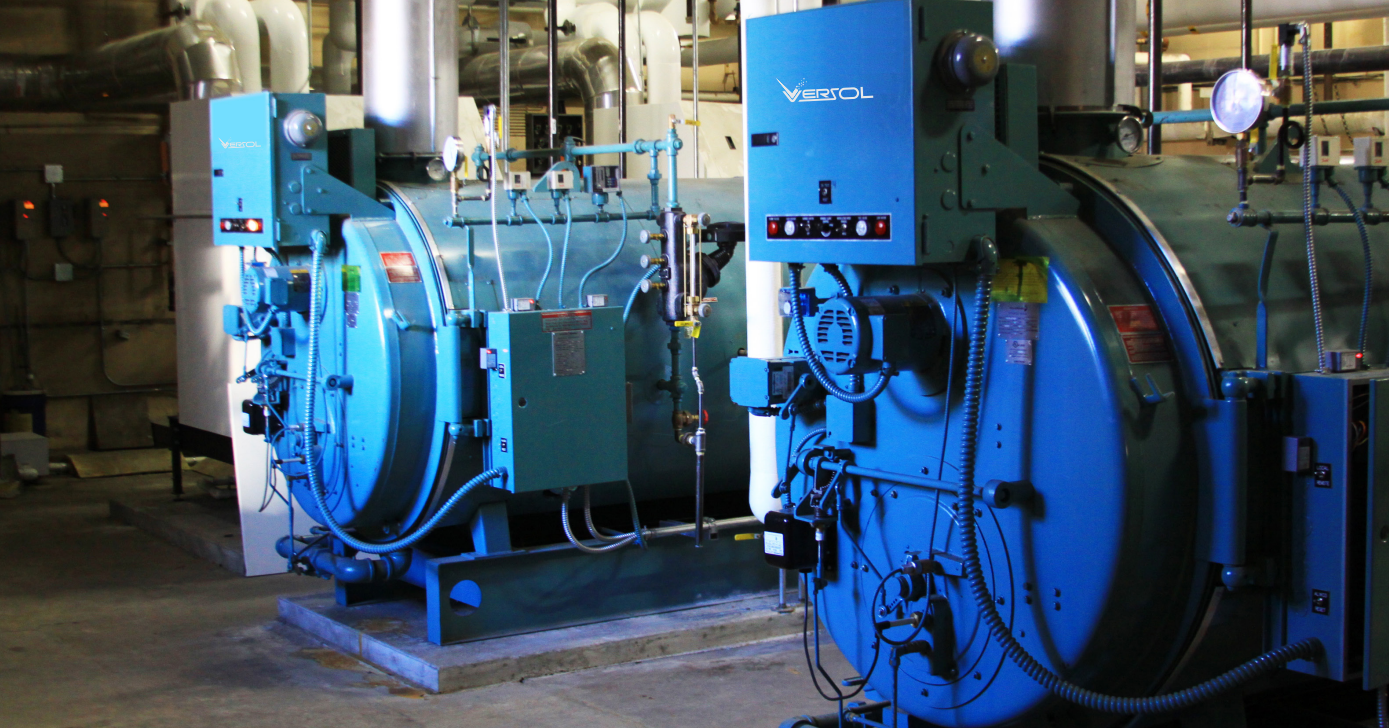
Stainless steel Calorifiers are becoming more common for domestic hot water heating due to high material strengths and potable water compatibility. Calorifiers with stainless steel shells installed in systems with high chloride content may be unsuitable as the chlorides can attack the welds. VERSOTHERM Calorifiers are normally with Stainless Steel 316L, but the lower grade SS304L also available depends on the requirement.

### Glass Lined Steel

As economical option Internally Glass Lined or Enamel Lined Carbon Steel option is also available in VERSOTHERM range Calorifiers. The internal lining is hygienic and Corrosion resistive and hence can be used on domestic applications and can offer better life time. Glass Lined/Enamel Lined Calorifiers are always preferred to use with anodic protection. VERSOTHERM internal lined Calorifiers offered with non-sacrificial electric anode protection.



REF	DESCRIPTION	CAPACITY LITRES	D mm	L mm	C mm	MAIN CONNECTIONS					
						3	4	5	6	11	12
1	PRIMARY INLET	230	500	1270	250	1.25	1	1.25	0.75	1	0.75
2	PRIMARY OUTLET	270	500	1470	250	1.25	1	1.25	0.75	1	0.75
3	SECONDARY FLOW	360	600	1370	250	1.25	1	1.25	0.75	1	0.75
4	SECONDARY RETURN	450	600	1740	250	1.5	1	1.25	0.75	1	0.75
5	COLD FEED	500	675	1470	250	1.5	1	1.25	0.75	1	0.75
6	DRAIN	550	675	1720	250	1.5	1	1.25	0.75	1	0.75
7	THERMOSTAT	600	750	1450	250	1.5	1	1.25	0.75	1	0.75
8	SAFETY VALVE	700	750	1680	250	1.5	1	1.25	0.75	1	0.75
9	PRESSURE GAUGE	800	750	1930	250	1.5	1	1.25	0.75	1	0.75
10	TEMP GAUGE	900	750	2150	300	1.5	1	1.25	0.75	1	0.75
11	VENT	1000	900	1750	300	2	1.5	2	1	1.25	1
12	ANTI-VACUUM	1200	900	2050	300	2	1.5	2	1	1.25	1
13	ELECTRIC HEATER	1500	1050	1950	450	2	1.5	2	1	1.25	1
		1750	1050	2175	450	2	1.5	2	1	1.25	1
		2000	1050	2400	450	2	1.5	2	1	1.25	1
		2250	1200	2200	450	65	2	65	1.5	1.5	1.25
		2500	1200	2400	450	65	2	65	1.5	1.5	1.25
		3000	1200	2850	450	80	2	80	1.5	1.5	1.5
		3500	1350	2700	450	80	2	80	1.5	1.5	1.5
		4000	1350	3000	450	80	2	80	1.5	1.5	1.5
		4500	1500	2770	450	80	2	80	1.5	1.5	1.5
		5000	1500	3050	450	80	2	80	2	2	1.5
		5500	1500	3350	450	100	65	100	2	2	2
		6000	1600	3250	450	100	65	100	2	65	2
		7000	1600	3750	450	100	65	100	2	65	2
		8000	1800	3450	450	125	65	125	2	65	2X2
		9000	2000	3200	450	125	65	125	2	65	2X2
		10000	2000	3500	450	125	65	125	2	65	2X2



Identifying VERSOTHERM range:

STI-EC/4000/-/50/10/VICL STI-UT/4000/100/-/10/VISS STI-UT-EC/4000/100/50/6/VICL STI-SPIR/4000/100/25/6/VISS STD/4000/6/VICL						
Series	Storage Volume	Heating Duty (Primary-HEX)	Heating Duty (Secondary-ELECTRIC)	Working Pressure	Orientation	Calorifiers Material
STI-EC-Electric Calorifiers  STI-UT - Storage Calorifiers with U tube HEX  STI-UT -EC -Storage Calorifiers with U Tube HEX and Electric Heater  STI-SPIRA - Storage Calorifiers with Spiral Tube HEX and Electric Back Up Heater  STD- Storage / Buffer Vessels	4000	100	50	6 10 16	V- Vertical H- Horizontal	CL- Copper Lined C- Copper SS- Stainless Steel GL- Glass Lined CS- Cement Lined Steel





## VERSOTHERM SPECIALITIES

Versotherm Calorifiers can be supplied with all needed accessories to be used with for the better performance of the Calorifiers and System. All accessories are complying universal standards and ensuring better performance.

### Insulation

All Versotherm Calorifiers are supplied with Insulation and cladding unless otherwise specified for. Standard insulation is with 50mm thick Mineral Wool insulation or 50mm thick Polyurethane insulation. Insulation will supported with Cladding. Standard Cladding for Stainless Steel Calorifiers are Stainless Steel. Also other cladding is available with Aluminum or Galvanized Steel Sheet.

### Lifting Points

Lifting points will be provided with the Calorifiers to suit Loading unloading and site clearance. If the Unit is transported horizontally, lifting points will be provided in both horizontal and vertical sides.

### Support Legs

Support legs are provided with Steel or Stainless Steel. Supports are designed to meet the requirements of transportation and operational weight.

### Temperature-Pressure Relief Valve

All Calorifiers need to provided with Temperature Pressure relief valve, to ensure the Calorifiers Shell will not be operated at beyond the designed limit. All VERSOTHERM Calorifiers are with provision for the TP Safety Valve and can be included in our scope of supply

### Anti-Vacuum Valve

Anti-vacuum Valve is recommended with all Calorifiers to ensure the shell will not get affected by vacuum due to the sudden drain or any negative pressure in the Shell. All VERSOTHERM Copper lined Calorifiers are supplied with Anti Vacuum Valve and in other Calorifiers provision shall be provided.

### Temperature & Pressure Gauge

Gauges need to be provided with the Calorifiers for the monitoring of the parameters. Provision are provided and all standard Calorifiers and can be supplied with unit upon request.

VERSOL can offer skid assembled solutions of versotherm calorifiers with circulation set, controls which will make easier site work & ready to start solutions.





**“Water Heating & Cooling Solutions”**

**Solar Water Heaters**

**Heat Pumps**

**Storage Calorifiers**

**Heat Exchangers**

**Hot Water Boilers**

**Gas Fired Calorifiers**

**Electric Calorifiers**

**Steam Boilers**



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