



We have a variety of shell and tube heat exchangers for solar pool heating systems or boiler pool heating systems. To promote longevity of all the system components, instead of placing chlorine or salt pool water directly through the solar panels, utilize an external swimming pool heat exchanger for a more versatile, robust solar design.

Our swimming pool heat exchangers are designed by our special innovative tube designs, spiral twisted corrugation on the tubing surface, which were engineered to maximize the use of solar or boiler energy; thus increasing the overall thermal efficiency of the system.

With a wide range of sizes, and a selection of different materials to suit the specific requirements, these popular swimming pool models are the perfect solution for any pool, spa, and hot tub application.

Swimming pool Heat Exchanger is fully constructed with pressurized shell and spiral corrugated inner tube. This ensures high velocities inside the unit making swimming pool heat exchanger a very reliable, efficient and cost effective way to transfer heat indirectly between any hot water circuit, steam circuit and any pool or spa circuit, besides other application.

We have a large range of heat exchangers well suited from small spas up to Olympic size pools, our units are rated from 55,000 to up to 6,000,000 BTU/H

Features:

With high heat transferring efficient heat exchanger tubes and smooth shell, it ensures high velocities inside of the unit making the heat exchanger a very reliable, efficient and cost effective way to transfer heat indirectly between any boiler or solar heating circuit and any pool or spa circuit, besides other applications.

Advantages:

- High efficiency, coefficient up to 10000 $W/m^2 \cdot ^\circ C$, Heat exchanging capacity 3-7

Linan Beta Mechanical & Electrical Co., Ltd.

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times traditional equipments.

- Compact configure, occupy small area, one tenth as the traditional equipments.█
- Stainless steel and/or titanium material, endure high temperature, pressure and corrosion.
- Helix screw thread elasticity heat exchange bundle, eliminate the stress.
- Design flux speed is 5.5m/s, less dirt.
- ASME standard VIII-1
- Big flow volume
- Compactable
- Easy installation and durable.

Design Parameters	TUBES	SHELL
TEMPERATURE	406°F (208°C)	406°F (208°C)
PRESSURE	190 PSI (1.31MPa)	190 PSI (1.31MPa)

Standard Materials	SS Series		T Series
Shell	SS316L	SS304	Titanium
Tubes	SS316L	SS304	Titanium
Connections	SS304	SS304	Titanium

Note:

Please check your working temperature and chlorine concentration for material type used.

Swimming Pool Heat Exchangers Nominal Performance

Model	Normal Capacity		Shell (pool) side	Tube (Hot) side	Swimming Pool Capacity	
	kW	kBtu/Hr			m3	USGAL
SP-55	16	55	1"	3/4"	15	3960
SP-85	25	85	1"	3/4"	22	6600
SP-155	45	155	1 1/2"	1"	40	11900
SP-210	60	210	1 1/2"	1 1/2"	65	17200
SP-300	88	300	1 1/2"	1 1/2"	90	23800
SP-360	105	360	2"	1 1/2"	110	29000
SP-600	175	600	2 1/2"	2"	180	47500
SP-1200	352	1200	2 1/2"	2"	360	95100
SP-2400	704	2400	4"	2"	720	190200
SP-3000	880	3000	4"	2 1/2"	900	237700
SP-3600	1056	3600	4"	2 1/2"	1080	285300
SP-4500	1310	4500	4"	2 1/2"	1350	356600
SP-5000	1460	5000	4"	2 1/2"	1500	396200
SP-6000	1760	6000	4"	2 1/2"	1800	475500

Note:

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1. For occasional (holidays & weekends) use pools we recommend a 2 x output multiplier to obtain a 2°F/hr heat up rate;
2. Nominal values are based on 60°C temperature between incoming heating and heated water.
3. Other Fluids Correction Factors;

Fluid	Factor
Water	100%
Ethylene Glycol 30%	92%
Ethylene Glycol 50%	85%
Propylene Glycol 30%	94%
Propylene Glycol 50%	89%
Oil SAE10	50%
Oil ISO VG22	45%

Stainless Steel and Titanium Corrosion Resistance Table

Chlorine Concentration	Working Temperature			
	60°C	80°C	120°C	130°C
equal 10ppm	304	304	304	316L
equal 25ppm	304	304	316L	316L
equal 50ppm	304	316L	316L	Ti
equal 80ppm	316L	316L	316L	Ti
equal 150ppm	316L	316L	Ti	Ti
equal 300ppm	316L	Ti	Ti	Ti
300ppm more	Ti	Ti	Ti	Ti

Typical residential application:

- In-floor heating
- Swimming pools, spas heating
- Domestic hot water heating
- Solar Hot Water Heating
- Outdoor Wood Furnances
- Hot tube heating
- Driveway snowmelts

Typical industrial application:

- Oil cooler or heating
- Steam condenser
- District/central heating
- Transmission and engine cooler
- Boiler sample cooler
- Waste water heat recovery
- Industry process

Titanium Shell & Tube Heat Exchanger

Titanium Shell and Tube Heat Exchangers are suited for a vast range of chemical environments and conditions, due to a thin, invisible, but extremely protective, surface oxide film (primarily TiO₂). Titanium is especially known for its elevated resistance to localized attack and stress corrosion in aqueous chlorides (e.g., brines, seawater) and other halides and wet halogens (e.g., wet Cl₂ or Cl₂- sat, brines), and to hot, highly-oxidizing, acidic solutions (e.g., FeCl₃ and nitric acid solutions). Titanium is also recognized for its superior resistance to erosion, erosion-corrosion, cavitations, and impingement in flowing, turbulent fluids.

Titanium Shell and Tube Heat Exchanger is fully constructed with pressurized shell and spiral corrugated or smooth inner tube. This ensures high velocities inside the unit making titanium shell and tube heat exchanger a very reliable, efficient and cost effective way on the heating, cooling, condensing or evaporation and so on

Features:

With high heat transferring efficient heat exchanger tubes and smooth shell, it ensures high velocities inside of the unit making the heat exchanger a very reliable, efficient and cost effective way to transfer heat indirectly between hot circuit and cold circuit.

Titanium Shell and Tube Heat exchangers are fully welded construction. It can endure high working pressure. It avoids the replacement for gasket and saved more time and cost on maintain or clean.

Advantages:

1. High efficiency,coefficient up to 10000 W/m²•°C,Heat exchanging capacity 3-7 times traditional equipments.
2. Compact configure, occupy small area, one tenth as the traditional equipments
3. Titanium material, endure high temperature, pressure and corruption.
4. Helix screw thread elasticity heat exchange bundle, eliminate the stress
5. Design flux speed is 5.5m/s, less dirt.
6. ASME standard VIII-1
7. Easy clean and maintain
8. Big flow volume
9. Compactable
10. Easy installation and durable.



Design Parameters	TUBES	SHELL
TEMPERATURE	406°F (208°C)	406°F (208°C)
PRESSURE 1	650 PSI (4.50MPa)	190 PSI (1.5MPa)
PRESSURE 2	650 PSI (4.50MPa)	500 PSI (2.0MPa)
PRESSURE 3	190 PSI (1.31MPa)	87 PSI (1.31 MPa)



Titanium Shell and Tube Heat Exchangers Nominal Performance for Pool Heating

Model	Normal Capacity		Pool Capacity	
	kW	kBtu/Hr	Gallons@1°F/hr	M3@1°C/hr
SP-55Kti	16	55	4700	32
SP-85Kti	25	85	7300	49.7
SP-155Kti	45	155	13300	90.6
SP-210Kti	60	210	18000	122.6
SP-300Kti	88	300	25800	175.8
SP-360Kti	105	360	31500	214.6
SP-600Kti	175	600	52500	357.7
SP-1200Kti	352	1200	105600	719
SP-2400Kti	704	2400	211200	1438
SP-3000Kti	880	3000	264000	1797.5
SP-3600Kti	1056	3600	316800	2157
SP-4500Kti	1310	4500	396000	2700
SP-5000Kti	1460	5000	439000	3000
SP-6000Kti	1760	6000	526800	3600

Note:

1. For occasional (holidays & weekends) use pools we recommend a 2x output multiplier to obtain a 2°F/hr heat up rate;
2. Nominal values are based on 60°C temperature between incoming heating and heated water.

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