

HEAT SIPHON[®]

WWW.HEATSIPHON.COM



Model 3.25HP Heat Siphon
for Most Residential Pools



Twelve Heat Siphons Installed on
Cranberry Twp., PA Community Pool

Swimming Pool Heat Pumps

THE MOST EFFICIENT POOL HEATER MADE!!



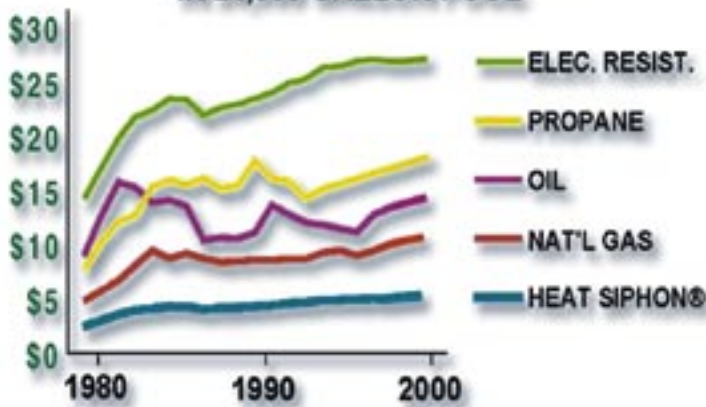
**No pH or Chlorine Limits
Lifetime Guaranteed Electrically Isolated**

Titanium

Heat Exchanger

HEAT SIPHON® Warm Water at the Lowest Cost

**COST TO PRODUCE 5° F RISE
IN 24,000 GALLON POOL**



SOURCE: BUREAU LABOR STATISTICS

Based on US Dept. of Labor Statistics for US City average fuel costs.

Since 1975 Heat Siphon technology has been the lowest cost method of heating swimming pools in the United States (rain or shine) and United States ThermoAmp, Inc. maintains that eventually it will be virtually the only method used. Why? The reasons (fuel costs) are graphically shown at the left.

HEAT SIPHON Produces Heat at:
1/2 the cost of Natural Gas
1/3 the cost of Oil or Propane
1/5 the cost of Electric Resistance



Cheap Oil and Natural Gas are scarce and industry, Government and University studies have all projected steady price increases while the fuels used to generate 3/4 of the Nation's electricity (coal, nuclear & hydroelectric) are either ABUNDANT OR INEXHAUSTIBLE.

SAFE DEPENDABLE TECHNOLOGY NOT MAGIC

Heat Siphon will always be 1/4 to 1/5 the cost of straight electric resistance heat. Why? For every unit of electricity Heat Siphon uses, it produces 4 to 5 units of heat. Sound like magic? Hardly. With the same technology a central air conditioner removes 2.5 to 3 units of heat from your house for every unit of electricity it consumes. Water coolers, refrigerators, dehumidifiers and freezers all use this established DEPENDABLE Heat Siphon technology.



Heat Siphon has been tested by an independent laboratory and approved as meeting nationally recognized UL and CSA safety standards - AND EVERY HEAT SIPHON® IS TESTED BEFORE, DURING AND AFTER FINAL ASSEMBLY FOR HEAT OUTPUT, WATER AND REFRIGERANT SEALS AS WELL AS SAFETY COMPLIANCE.



FREE Pool Heating Cost Analysis / Performance Certified

Available by EMAIL or FAX the same day. JUST ASK YOUR DEALER!!

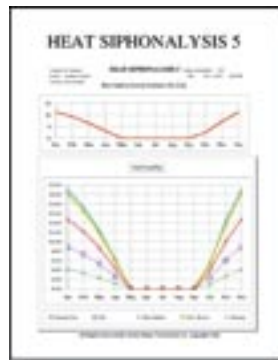
The cost of heating a swimming pool depends on a number of factors including climate, pool cover use, wind, shade, type of heater, fuel costs and more. Calculating this cost accurately is a complex task. That's why U. S. ThermoAmp, Inc. developed a computer program to calculate pool heating costs USING YOUR LOCAL FUEL COSTS and CLIMATE DATA to pick the proper size Heat Siphon for your pool. We certify our sizing with a money back guarantee *

This four page computer print out compares gas, oil, electric resistance and Heat Siphon operating costs. It shows you Heat Siphon runtime, unheated pool temperature, monthly heating cost for all types of heaters requested, and much more including a payback analysis to show you how quickly Heat Siphon will PAY FOR ITSELF.

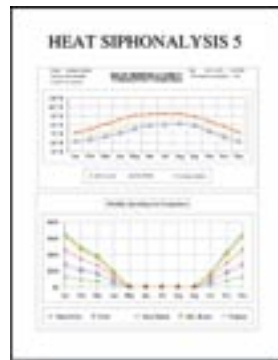
HEATSIPHONALYSIS Pool Heating Cost Analysis



Climate & Input Data Sizing & Cost Output



Runtime Hrs. /Day & Monthly Cost Comparison



Unheated Pool Temp & Daily Cost Comparison



Payback Analysis

*Accuracy of this analysis is based on the accuracy of the data input. Variations in weather and actual conditions (hrs. covered, pump hrs/day etc) will affect guaranteed performance.

HEAT SIPHON[®] Adds Warmth to Your Pool

Heat Siphon[®] is
a WISE INVESTMENT

POOLS AREN'T CHEAP, But . . .
in a few hours and for a fraction of your original investment, you can install a Heat Siphon & enjoy your heated pool anytime rain or shine. While your neighbor's unheated pool goes unused, you and your family and friends swim in warm water for 3 to 5 months longer every year AT THE LOWEST COST POSSIBLE. No children with blue lips, no excuses for having a pool party, just warm water fun when you want it.

Just think of the added family fun, the comfort of warm water for the youngest to the oldest, early morning laps or a late evening dip

THE WATER'S ALWAYS FINE !! SO . . .



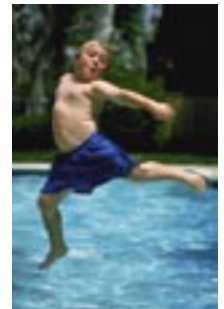
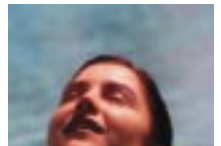
NO MORE BLUE LIPS!!



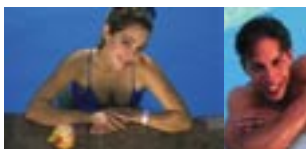
WARM NIGHT SWIMS!!



JUMP RIGHT IN ANYTIME!!



WARM!!



HEAT SIPHON[®] SX Series Saves Even More

SCROLL COMPRESSOR - The SX3.25HP and SX5HP Heat Siphons are available with the SCROLL compressor, manufactured by Copeland. Unlike all conventional heat pump compressors which use a piston and two check valves to compress refrigerant to make heat, the SCROLL compressor has two scrolls that rotate around each other to continuously compress refrigerant WITH NO VALVES.

Advantages: SCROLL Heat Siphons will have a higher heat output at low air temperatures, where piston compressors heat output falls off. ABOUT 12% MORE HEAT FOR YOUR POOL WHEN YOU NEED IT!! A Fixed Scroll and an Orbiting Scroll are all that's required to compress freon gas. This replaces approximately 15 parts in a piston compressor. LESS WEAR PARTS MEANS MORE RELIABILITY. A continuous squeeze of gas by two scrolls replaces piston compression and valves opening and slamming shut. SCROLL COMPRESSORS ARE ACTUALLY QUIETER THAN THE FAN ON THE HEAT SIPHON!!



HEAT SIPHON® Reliability

HEAT SIPHON® Outlives Gas Heaters

NO CORROSION

Almost all gas pool heaters have a sheet metal cabinet and a copper heat exchanger with cast iron water connections. Usually they are assembled with galvanized steel screws. Cost is a major factor. Since gas heaters are so expensive to run, the gas heater manufacturers all try to keep the cost of the heater as low as possible. But metal cabinets rust and copper heat exchangers corrode.

Heat Siphon®'s electrically isolated Pure Titanium Heat Exchanger, PVC cabinet and stainless steel hardware, make it corrosion proof with typically two to three times the life of a gas heater. Heat Siphon®'s sealed refrigeration system, weather-proof PVC control box and totally enclosed fan motor are all designed for trouble free service years longer than even most central air conditioners.

NO FLAMES

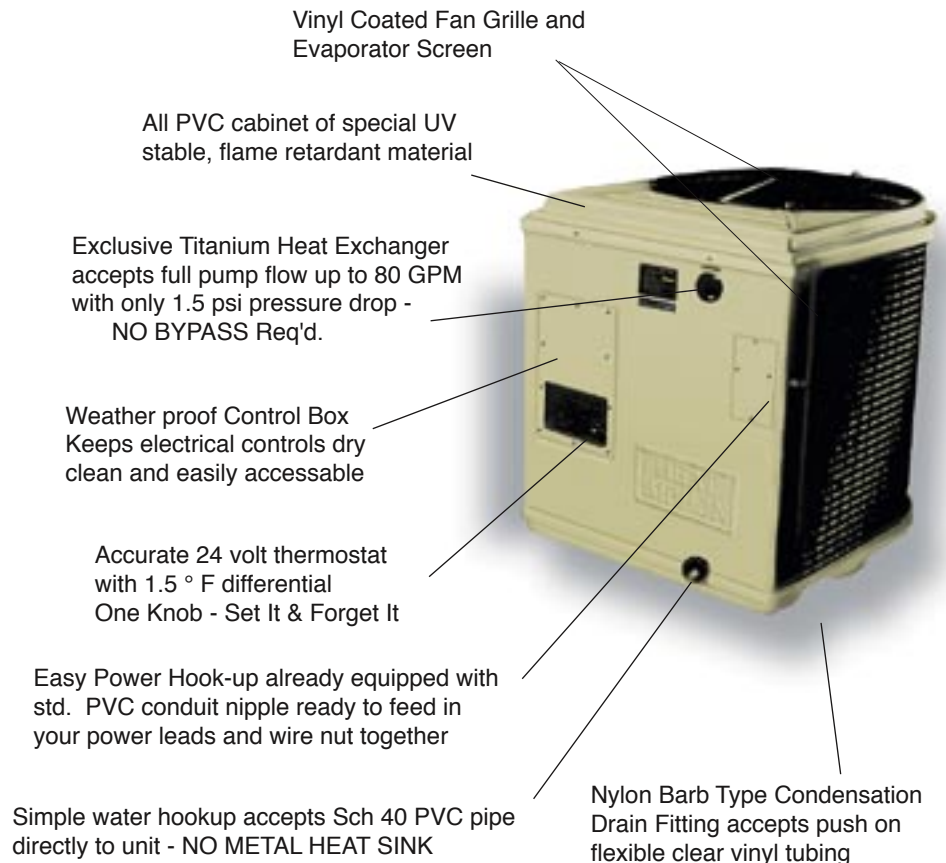
Another shortcoming of gas heaters is heat exchanger scaling or soot deposits. The pool water flows through small flow channels in a gas heater and the hot combustion gas heats the outer tube surface. The flow rate of the pool water is critical since too low water flow will cause boiling inside the tubes and eventually a hard scaling deposit will block the tube and overheat it. On the other hand, very high water flow over-cools the tube and can cause sweating or condensation on the outside which can lead to combustion chamber rusting or soot deposits which drastically cut down heat transfer efficiency.

Since Heat Siphon® uses no flame the tubes never reach flame temperatures. Heat Siphon's hot freon gas is lower by almost 2000°F in temperature than combustion gas and the pool water flows on the OUTSIDE of the Titanium tubes. so heat exchanger scaling and blockage are eliminated.

With Heat Siphon® there's no pilot light to blow out or soot up, no flue gases, no dangerous hot surfaces, no scaling, no gas piping to run, no unsightly gas tanks and no high fuel cost.

IN FACT, ONE Heat Siphon® could easily last longer than three gas pool heaters!!

HEAT SIPHON® Quality Features



Installation usually takes a few hours and requires just a 220 volt circuit and standard 1.5" PVC pipe. Your pool could be warm and cozy in 48 hrs. and at a price you can live with every month!!

THERE'S ONLY ONE KNOB - SET IT AND FORGET IT.



Heat Siphon Thermostat Knob

- Heat Siphon will automatically maintain the pool temperature within 1.5 F. The water thermostat and water flow switch constantly monitor pool temperature and pump operation, and turn on Heat Siphon only when needed only while your circulating pump is running.
- Inside Heat Siphon uses a thermostatic expansion device to operate the heat pump system at maximum efficiency regardless of air or water temperatures.
- And it shuts down if your pool filter clogs or fresh air supply to the unit is stopped, or if in danger of icing.

“We Perform To Keep You Warm!!”

Titanium

Why Your Pool Heater Can't Live Without It:

HEAT SIPHON® Electrically Isolated Titanium Heat Exchanger Guaranteed Corrosion Free For LIFE!!

Today's gas & oil pool heaters still use copper heat exchangers. In pool water, copper slowly turns to powdery green copper chloride. Heat, chlorine and acid all make copper corrode faster. A number of pool dealers have reported that "normally" 10% of all fossil fuel heaters corrode and leak within 2-5 years, and a new heat exchanger costs about \$350.00

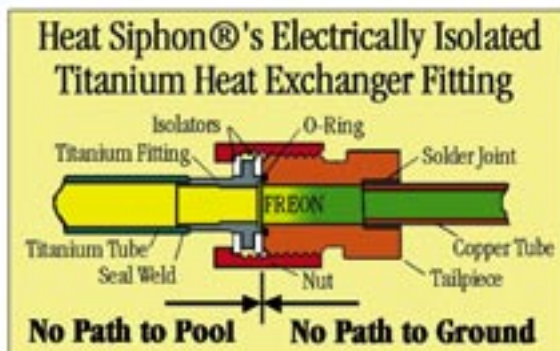
Planned Obsolescence? - Maybe.
GAMBLING? - Definitely.

Although Pool Heat Pump's offer up to 80% savings in fuel cost and are generally much more reliable and safer than gas pool heaters, if a water heat exchanger gets a hole in it (usually due to corrosion) and pool water enters the sealed refrigeration system, THE ENTIRE HEAT PUMP IS RUINED!!

Heat Siphon is designed and built with a special heat exchanger to totally eliminate corrosion. The pure titanium heat exchanger tube material was selected based on corrosion tests at 100 F with a pH of 4.75 and chlorine levels 5000 parts per million (1000 times greater than normal pool water) Although this is a severe test, it simulates realistic possible conditions such as chlorine tablets in skimmers and out of balance pool water. Cupronickel, 304 & 316 stainless steels, and other alloys were tested including Titanium. After 48 hours cupronickel lost 9% of its original weight and 304 & 316 stainless steels corroded even more severely. ONLY PURE TITANIUM SHOWED VIRTUALLY NO MEASURABLE CORROSION!!

What About Electrolytic Corrosion?

Although titanium eliminates chemical corrosion in even the harshest pool water, a small number of heat exchanger failures occur in pool heaters found to have stray low voltage traveling to or from the pool water through the heat exchanger, which would cause corrosion no matter what metal was used.



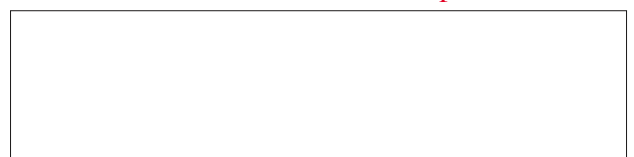
Heat Siphon®'s Exclusive Pure Titanium Tube Coil

With the aid of sensitive digital volt meters, field servicemen can actually measure the stray voltage between the heat exchanger and the power supply ground wire or local earth grounding rods required for pool equipment bonding. Floating grounds on power supplies, electronator chlorinators and even underwater pool lights can leak harmless low voltage electricity, less than 3 volts, into the pool which force electrolytic corrosion of the heat exchanger in a matter of weeks.

Heat Siphon's Solution: Still striving to eliminate ALL failures, in mid-1991 United States ThermoAmp Inc. developed the first electrically isolated heat exchanger for pool heat pumps by designing a special Titanium fitting that insulates the pure titanium heat exchanger from the rest of the Heat Siphon. By breaking the path of this stray voltage so no electrical current can travel to or from the heat exchanger, this voltage cannot force corrosion of the tube.

Since January 1, 1992, all HEAT SIPHON tube surfaces in contact with pool water have been made from commercially pure titanium & are electrically isolated. United States ThermoAmp Inc. Guarantees this Heat Exchanger CORROSION FREE to the original owner for LIFE!!

Call or Visit Your Local Heat Siphon Dealer:

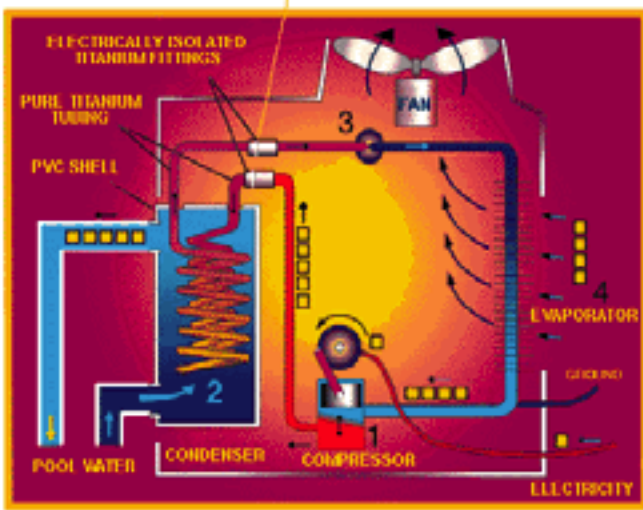


Visit our web site:

www.heatsiphon.com

How HEAT SIPHON® Works: (Buy 1 BTU and Get 4 Free)

Heat Siphon is a heat pump designed specifically for recreational water heating. If you have an air conditioner, dehumidifier, water cooler or a refrigerator, you already own a heat pump. All these appliances use the same dependable refrigeration technology to move heat from one place to another by evaporating and condensing freon in a sealed tubing system. Here's how Heat Siphon works:



A unit of electrical energy (you pay for) goes into the compressor motor (1). The compressor turns this into mechanical energy and sucks cool gas from a gas-liquid freon mixture in the evaporator tubes. As the freon evaporates it absorbs four units of "free" heat from the warmer air the fan pulls over the outside of the tubes. The compressor squeezes this gas causing its temperature to climb above 200° F and adds the electrical/mechanical energy as another unit of heat. This hot high pressure gas then enters the condenser coil (2) and passes this heat to the colder (80° F) pool water being circulated over the outside of the coils. The freon gas condenses back to a liquid at high pressure and flows thru a valve (3) back to the lower evaporating pressure. This rapid pressure drop super cools the liquid freon which as it enters the evaporator (4) where it repeats the cycle. SO YOU PAY FOR ONE UNIT OF HEAT AND GET FOUR FREE!! . . . And with the Scroll models you get FIVE units FREE!!

HEAT SIPHON® SPECIFICATIONS

For the Latest Heat Siphon® Technical Information and a FREE Pool Heating Analysis visit: WWW.HEATSIPHON.COM

There are three (3) basic sizes of Heat Siphon, all based on compressor horsepower - 2.25hp, 3.25hp and 5hp

Shipping Information	Size	Boxed Dimension	Weight
	2.25hp	34W x 39D x 36H	190Lbs
	3.25hp	34W x 39D x 46H	250Lbs
	5hp	34W x 39D x 46H	300Lbs

General - All Models

- Air Flow5000 CFM - Discharge Vertical Up
- Water Flow25 GPM min. - 80 GPM max.
(pressure Drop less than 2 psi)
- Cabinet.....UV Stabilized Flame Retardant PVC
- Hardware.....All 18-8 Stainless Steel
- Full Flow CondenserGR2 Comm. Pure Titanium in PVC Housing
- Control Circuit.....24 volt AC 40VA current limiting transformer
- Low Pressure Switchauto-reset (CO 48/CI 44 psig) 42-48°F Air
- High Pressure Switch.....auto-reset (CO 355/CI 255 psig) 118-98°F H2O
- Expansion DeviceThermostatic Expansion Valve
- Water ThermostatElectromechanical 1.5°F Diff - 106°F Max
- Anti Cycle Time Delay.....Solid State 5 minute delay on break

ALL RATINGS AT 80°F water/80°F air and 80%RH.

NOTICE: THE FACTORY SIZING COMPUTER PROGRAM USES ACTUAL PERFORMANCE DATA BASED ON YOUR LOCAL WEATHER DATA AND THE POOL CONDITIONS YOU SPECIFY. CONTACT THE FACTORY FOR A FREE ANALYSIS TO ENSURE PROPER SIZING.

All specifications subject to change without notice.

Technical Specifications by Heat Siphon® Model

MODEL	Compressor	Power Req'd Voltage	Hz	PH	Breaker Amps	@60 Hz BTUH	COP	@50 Hz BTUH	COP	
220 Volt Single Phase Piston Models (60/50 Hz):										
220v Single Phase	2.25HP	Piston	208/230	60/50	1	30	60,000	6.4	52,000	6.8
	3.25HP	Piston	208/230	60/50	1	40	83,000	5.9	72,000	6.2
	5.0HP	Piston	208/230	60/50	1	50	122,000	6.2	104,000	6.6
220 Volt Single Phase Scroll Models (60 Hz ONLY):										
220v Single Phase	SX3.25HP	Scroll	208/230	60	1	40	80,000	7.0	N/A	N/A
	SX5.0HP	Scroll	208/230	60	1	50	109,000	7.6	N/A	N/A
220 Volt Single Phase Scroll Models (50 Hz ONLY):										
220v Three Phase	SX3.25HP50	Scroll	220/240	50	1	40	N/A	N/A	67,000	7.3
	SX5.0HP50	Scroll	220/240	50	1	50	N/A	N/A	103,000	6.9
220 Volt Three Phase Piston Models (60/50 Hz):										
220v Three Phase	3.25HP3	Piston	200/230	60/50	3	30	83,000	5.9	62,000	6.5
	5.0HP3	Piston	200/230	60/50	3	30	120,000	6.3	104,000	6.6
220 Volt Three Phase Scroll Models (60/50 Hz):										
440v Three Phase	SX3.25HP3	Scroll	200/230	60/50	3	30	80,000	7.0	62,500	6.5
	SX5.0HP3	Scroll	200/230	60/50	3	30	109,000	7.6	84,500	7.2
440/380 Volt Three Phase Piston Models (60/50 Hz):										
440v Three Phase	2.25HPX	Piston	380/460	50/60	3	10	71,000	6.2	62,000	6.5
	3.25HPX	Piston	380/460	50/60	3	15	90,000	5.8	78,500	6.1
	5.0HPX	Piston	380/460	50/60	3	20	122,000	6.2	104,000	6.6
440/380 Volt Three Phase Scroll Models (60/50 Hz):										
440v Three Phase	SX3.25HPX	Scroll	380/460	50/60	3	20	80,000	7.0	67,000	7.3
	SX5.0HPX	Scroll	380/460	50/60	3	20	109,000	7.6	93,000	7.8
Special Heat / Cooling Models:										
Heating	SX3.25HC	Scroll	208/230	60/50	1	40	80,000	7.0	N/A	N/A
Cooling	SX3.25HCX	Scroll	380/460	50/60	3	40	80,000	7.0	67,000	7.3



“We Perform To Keep You Warm!!”