

Heat Pumps

Why choose a HEAT PUMP?

Simply because it's inexpensive - to buy - to run - to install



Realistically, in this country, all swimming pools whether above or inground, need heating to obtain the maximum use from the summer season.

Having a pool in your garden may be aesthetically pleasing to the eye but unless the pool feels warm and inviting, the pool will not be used to its full potential. By investing in a Heat Pump, this can change.

Generally, the main heating systems available for swimming pools are Gas (LPG or Propane), Electric or Oil heaters. Some of these heaters can be beneficial from a cost point of view but tend to lose their appeal when it comes to installation costs.

What the other heating systems cannot offer you is both the heat efficiency and low running cost!



Heat pumps can be used for both!

See back for efficiency chart.



From
£1975

'In fact, Competition is so confident that their heat exchanger can withstand any amount of chemical abuse that they offer a 5 year warranty regardless of water chemical balance'



Benefits at a glance

- Suitable for Above and Inground pools
- COP = 5.25 (At 15°C ambient air temperature)
- Operates down to 0.C deg
- Famous brand compressor - energy efficient and quiet
- Corrosion free ABS housing
- Titanium Heat Exchanger
- Self diagnosis control panel monitors heat pump operations
- Isolated internal electrical compartment
- Reverse cycle defrost operation
- 5 Year warranty (regardless of chemical water balance!)
- Available for immediate shipment
- National support and helpline available

Competition

Competition

15kw 23kw 30kw

- Scroll Compressor
- ABS Plastic Case
- Titanium Heat Exchanger

Model Number	Competition - CA 15KW	Competition - CA 23KW	Competition CA 30KW
Heating Capacity (Btu/h)	50000	80000	100000
Cooling Capacity (Btu/h)	N/A	N/A	N/A
Cooling	N/A	N/A	N/A
COP for Heating (w/w) (At 15 °C ambient air temperature - Competition)	5.25	4.9	5.6
Refrigerant	R407C	R407C	R407C
Power Supply			
Volt/Phase/Hz	230/1/50	230/1/50	230/1/50
Operating amperage (average) (A)	10.9	15.8	19.4
Cooling	N/A	N/A	N/A
Maximum current surge protection (A)	26.4	47.1	57.2
Minimum Flow Rate m3/h (imp.gls)	6 (1320 gls)	6 (1320 gls)	6 (1320 gls)
Maximum Flow Rate m3/h (imp.gls)	15 (3300 gls)	15 (3300 gls)	15 (3300 gls)
Noise Level (whole unit) at 1m	61	65	66
System			
Heat Exchanger	TITANIUM	TITANIUM	TITANIUM
Compressor type	SCROLL	SCROLL	SCROLL
Electric expansion valve	Y	Y	Y
Features			
Control Panel - Digital Display	Y	Y	Y
Reverse Cycle Defrost	Y	Y	Y
Thermostatic Expansion Valve	Y	Y	Y
Compatible with Salt Chlorinator	Y	Y	Y
Temperature Indicator(°C)	16-35	16-35	16-35
Dimensions WxHxD (mm)	724x872x812	724x1049x812	724x1049x812
Net Weight (Kg)	93	116	121
Packing Dim. WxHxD (mm)	762x1107x838	762x1284x838	762x1284x838
Gross Weight (Kg)	102	125	125

Heat Exchanger - Stainless Steel or Titanium?

COMPETITION heat pumps have a Titanium heat exchanger as standard. The Titanium heat exchanger has a life expectancy which is much longer (up to three times) than the standard copper exchanger. The Titanium exchanger is specifically designed for the customers who want additional protection from Chlorine, Bromine and all other common pool chemicals.

Many heat pump suppliers are promoting the benefit of Titanium Heat Exchangers (coil in which the pool water passes).

ALTO heat pumps have a S. Steel/copper exchanger coated with magnesium installed as standard which will give good service of up to 15 years providing the correct water chemistry balance is maintained.

The chemicals in pool water, including chlorine, bromine and muriatic acid, can be extremely corrosive. Especially when pools are shocked and very high levels of chlorine exist, if the owner lets the pool chemistry get out of balance or if chlorine tablets are put in the skimmer. In the case of heat pumps, 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.

A Titanium heat exchanger virtually eliminates all the chemical corrosion. The Titanium exchanger is bulletproof to chlorine, bromine and all other common pool chemicals.

In fact, Competition is so confident that their heat exchanger can withstand any amount chemical abuse that they offer a 5 year warranty regardless of water chemical balance!

5 YEAR WARRANTY REGARDLESS
OF WATER BALANCE

ALL PARTS

Alto

12kw

- Rotary Compressor
- Powder Coated Steel
- Stainless Steel Heat Exchanger

Model No.	AS-H40Y 12kW
Heating Capacity (Btu/h)	40000
Cooling Capacity (Btu/h)	35000
Cooling	2465
COP for Heating (Btu/w) (at 20 °C ambient air temperature - Alto)	4.25
Refrigerant	R407C
Power Supply	
Volt/Phase/Hz	230/1/50
Operating amperage (average) (A)	11.3
Cooling	10.9
Maximum current surge protection (A)	26
Minimum Flow Rate m3/h (imp.gls)	2.5 (550 gls)
Maximum Flow Rate m3/h (imp.gls)	10.0 (2200 gls)
Noise Level (whole unit) at 3m	<52
System	
Heat Exchanger	STAINLESS STEEL
Compressor type	ROTARY
Electric expansion valve	Y
Features	
Control Panel - Digital Display	Y
Reverse Cycle Defrost	Y
Thermostatic Expansion Valve	Y
Compatible with Salt Chlorinator	N
Temperature Indicator(°C)	15~45
Dimensions WxHxD (mm)	480x755x515
Net Weight (Kg)	65
Packing Dim. WxHxD (mm)	540x835x540
Gross Weight (Kg)	70



All heat pumps have the following warranty on all models:-

Pool Size	Gallons	ALTO COMPETITION (Both CA & RA Models)
S.Steel/Copper Exchanger	3 years	N/A
Titanium Exchanger	N/A	5 years (Regardless of water chemical balance)
Compressor	3 years	5 years
Electrical Components	1 year	5 years

Longevity of the standard heat pumps should be approximately 15-20 years with very little maintenance (a gas heater has a life expectancy of approximately 8-10 years!). However, like any electrical appliance faults can arise for whatever reason, be it component failure or lack of service etc. Up to now, your pool dealer has been reliant on either their own engineer or to outsource a refrigerant expert to service the heat pump (not easy to book in the middle of summer!).

Paramount pool products have secured an agreement with Regal Environmental Systems Ltd (UK) who will be able to service your heat pump (directly with you) in the future or in an event of a warranty failure. Regal, an established refrigeration company since 1995, and with clients such as Shell UK, B&Q and Barclays plc have a taskforce of 15 qualified engineers servicing the country nationally. A helpline is available in the event that you have a technical query or would like to book a service call. All service calls will be attended within 7 working days (summer or winter!).

1 YEARS WARRANTY



Only
£1320

Benefits at a glance

- Suitable for Above and Inground pools
- COP = 4.25 (At 20°C ambient air temperature)
- Operates down to 5.C
- Famous brand compressor - energy efficient and quiet
- Triple thermostats offer precise temperature control
- Stainless steel Heat Exchangers
- Self-diagnosis control panel monitors heat pump operations
- Isolated internal electrical compartment
- Reverse cycle defrost operation
- 3 Year warranty
- Available for immediate shipment
- National support and helpline available

What Model? What Price?

What model you choose is very much dependant on the size of your pool and your budget.

Alto (HY40 - 12 kW) Outdoor Installation Only. This heat pump is great for the smaller pool construction and ideally suited for the above ground swimming pools. Realistically priced, it offers great value for money.

Competition CA Range 15kW, 23kW & 30kW) Outdoor Installation Only. Costing half the price of other leading manufactures (without compromising on quality) the CA range offers a Titanium Heat Exchanger, Scroll Compressor as standard ensuring that you receive many years of reliable service. Using such high quality parts enables Competition to offer exceptional warranty terms that we believe are unmatched within the industry!

Competition RA Range 9kW, 15kW Outdoor / Indoor Installation. The RA model consists of the same integral parts but has the circulation fan mounted on the side, therefore extracting and exhausting the air from the sides. Where an outdoor installation is not possible the RA model can be adapted and installed in an indoor environment.

The RA model can only be installed in indoors providing that adequate ventilation is available. Heat pumps are designed to be in an outdoor environment so there may be a chance that you will loose a small percentage of efficiency. All RA models have a steel coated housing.



Alto

Code	Output	BTU	Price	Delivery
1206-N	12KW	40,000	£1320.00	£75.00



CA Range

Code	Output	BTU	Price	Delivery
1217-N	15KW	50,000	£1975.00	£75.00
1218-N	23KW	80,000	£2975.00	£75.00
1219-N	30KW	100,000	£3435.00	£75.00



RA Range

Code	Output	BTU	Price	Delivery
1220-N	9KW	30,000	£1275.00	£75.00
1221-N	15KW	50,000	£1975.00	£75.00

Above prices include VAT @ 17.5%

Frequently Asked Questions

When I use a heat pump, should I use a pool cover or solar blanket as well?

Any reduction in pool heat loss directly translates into savings. 82% of all losses are due to evaporation. Using a pool cover just at night will save about 40% of the annual heating cost. A pool cover or solar blanket can cut total pool heat loss by 50% to 95%. The use of a solar blanket will also help extend your pool season.

What is the minimum ambient operating temperature?

Both heat pumps will actually operate down to an ambient air temperature of 0°C. but with minimal heat output. Therefore we recommend that the minimum operating temperature should be 15°C. Other conditions such as wind, shade and physical location will affect the shut-off temperature of the unit.

Will the heat pump ever need more Freon (refrigerant gas)?

Unless the heat pump has a leak in the sealed refrigeration system, the factory charge of Freon should last for the life of the unit. Freon is very stable and should not degrade or breakdown even under severe operating conditions. If your unit needs Freon, then it has a leak, and adding Freon will not solve the problem. The leak must be located and repaired. Fortunately, Freon leaks are very uncommon and usually are due to shipping damage.

How Close To Your Pool?

Normally, the pool pump and Heat Pump are installed close together and within 25 feet of the pool. The longer the distance from the pool, the more heat loss from the piping. Since normally most of the piping is buried, the heat loss is minimal for runs of up to 50 feet (50 feet to and from the pump = 100 feet total) unless the ground is wet or the water table is high. A very rough estimate of heat loss per 100 foot is 2500 BTU/hr for every 10° F difference in temperature between the pool water and ground surrounding the pipe, which translates to about 3% to 5% increase in run time.

How does it work?

Heat pumps are a super efficient way to heat the swimming pool. It makes full use of the advanced refrigeration technology to capture the heat in the outside air and transfer it to the pool water.

Environmental refrigerant gas absorbs and transfers the heat energy through the refrigeration circulation system. The fan circulates air through the outer Evaporator Air Coil that acts as a heat collector. The liquid refrigerant in the air coil absorbs the available heat in the air transforming it to a gas. The refrigerant gas is then pumped by the Compressor. When this warmed gas is compressed, it intensifies or concentrates the heat. This intensely hot gas is then pumped into the Heat Exchanger Condenser where the actual heat exchange takes place. As the pool water passes through the Heat Exchanger, the hot gas gives up its heat to the cooler pool water. The refrigerant returns to a liquid state and is pumped through the Expansion Valve and then into the Evaporator Air Coil to start the process over again.

A heat pump does not generate heat, it simply captures it and moves it from air to water thus, providing an efficient and environmentally friendly system for heating your swimming pool!



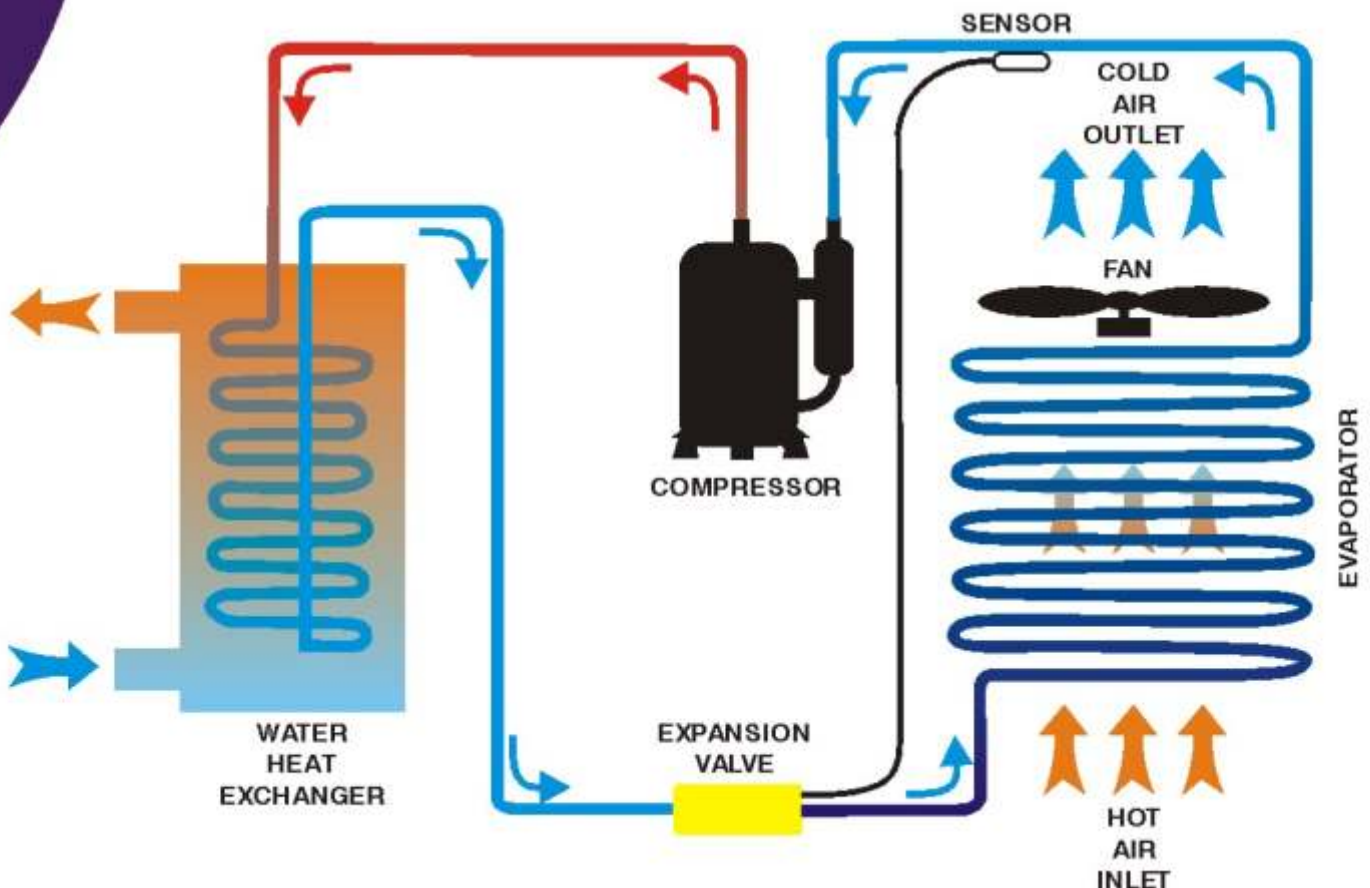
Above

Heat pumps can be used for both!



Inground

Technical Theory Layout



Efficiency Comparison Chart

This chart shows what percentage of your £1 will be used to produce heat in your pool

For Every
£1
Spent

How much of your £1 gets transferred to the water



Above example is approximate guide only

Heat pumps don't have a simple efficiency number to work with.

Their efficiency is measured by Coefficient of Performance (COP). Water heat pump's COP ranges from 4.2-5, which means that for every unit of electricity that you put in to run the compressor, you get 4.2-5 units of heat out of the heat pump. Water heat pumps can radically improve the energy efficiency and environmental value of any heating system that is driven by primary energy resources such as fuel or power.

It is important to know that these heat pumps are for use during the summer period typically May - September.

What Size?

Selecting the right heat pump size is important. Please see the adjacent chart for a guide. To heat your pool adequately, you will have to run your filtration for a minimum of 12 hours per day throughout the season. The chart (below) assumes there is no high water table and the use of a solar heat retention cover.

Normally, heat pumps are sold for use in the summer season only. Although, manufacturers (including Alto & Competition) state that heat pumps will work in ambient temperatures from 0-5 deg they will only have minimal heat output, and realistically, at these temperatures you will be unlikely to want to be swimming. Ideally, a heat pump should not be switched on until the ambient air temperature has reached 15-20 deg.C

Heat pumps are ideally suited for heating your pool in the summer season only (May - September). However, with various climate changes that we have been experiencing in recent years, we have had reports from our customers that they have been running their heat pumps from April to late October!

Inground

Pool Size	Gallons	ALTO	COMPETITION
24' x 12'	8000	12 kw	15 kw
28' x 14'	11,000	12 kw	15 kw
30' x 15'	13,000	15 kw	15/23 kw
32' x 16'	15,000	15 kw	23 kw
36' x 18'	19,000	18 kw	30 kw
40' x 20'	24,000	24 kw	30 kw



Above Ground

Pool Size	Gallons	ALTO	COMPETITION
15' dia	4400	12 kw	9/15 kw
18' dia	6350	12 kw	9/15 kw
19' x 12'	4900	12 kw	9/15 kw
23' x 12'	6122	12 kw	15 kw
30' x 15'	10,410	15 kw	15 kw
33' x 18'	13,100	18 kw	15/23 kw



Dealer

