



# heat pumps

## Why choose a heat pump?

**SIMPLY  
BECAUSE**

it's inexpensive  
to buy  
to run  
to install.

**RA deluxe**



### Heat Pumps Explained

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!

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

make your pool warm  
and inviting



**Paramount**  
POOL PRODUCTS

over 30 years service to the industry



## How does a heat pump work?

Environmental refrigerant gas absorbs and transfers the great 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.

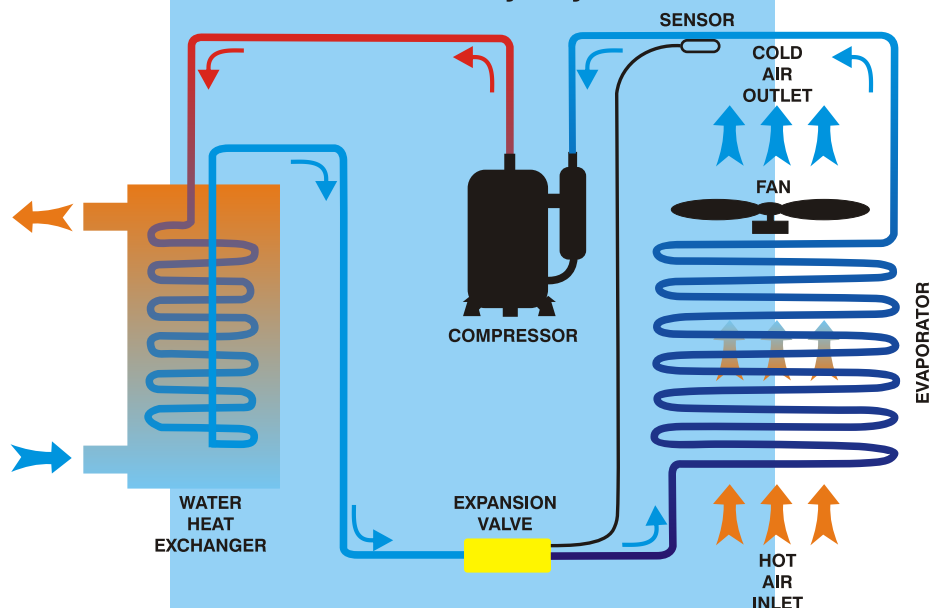


Inground Pools



Above Ground

## Technical Theory Layout



## Efficiency Comparison Chart

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

How much of your £1 gets transferred to the water



Above example is approximate guide only

For Every  
**£1**  
Spent

## How efficient is a Water Heat Pump?

Heat pumps don't have a simple efficiency number to work with. Their efficiency is measured by Coefficient of Performance (COP). DPL's COP averages at 5.25 across the range. This means that for every unit of electricity that you put in to run the compressor, you get approximately 5.25 units of heat out of the heat pump.

\*COP is dependant on a number of factors ie water temperature, air temperature and relative humidity.





# The RA Heat Pump

## great value

suited for small inground and above ground pools



### RA 9kW

A heat pump that offers great value for money and is ideally suited for small inground and above ground pools.

The RA can also be installed indoors (see details below).

- ❑ Automated controls
- ❑ Titanium heat exchanger
- ❑ Powerful heat transfer
- ❑ ROTARY Compressor
- ❑ Galvanised steel housing
- ❑ Environmentally friendly refrigerant R407#
- ❑ Indoor / Outdoor Installation
- ❑ 1 year labour warranty
- ❑ 3 Year parts warranty
- ❑ Lifetime titanium heat exchanger warranty

### Installation

Installing the RA (including deluxe) Indoors has the added benefit of:

- Minimal noise output - as the circulating fan is housed indoors it is ideal for situations where noise issues may be a problem e.g. adjoining neighbours or close proximity to houses or bathing areas.
- Extra heat can be extracted from inside the housing i.e. shed, green house, garage etc and transferred to the pool water!
- Heater is unseen
- No corrosion issues
- No need to cover in winter as debris cannot enter heat pump



# heat pumps

## RA Deluxe 14kW & 29kW

Using the most up to date refrigerant 410A.

New features incorporate a softer looking housing made from corrosion free ABS, plumbing connections that can be made either side, high and low visible pressure gauges.

- Automated controls
- Titanium heat exchanger
- Powerful heat transfer
- Scroll Compressor
- ABS Corrosion free housing
- Environmentally friendly reffridgerant 410A
- Indoor / Outdoor Installation
- 1 year labour warranty
- 3 year parts warranty
- Lifetime titanium heat exchanger warranty

When you purchase a DPL heat pump you will have peace of mind that all models have a Titanium heat exchanger fitted as standard. A Titanium exchanger is resistant to chlorine, bromine and all other common pool chemicals.

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



**NEW**  
410A  
refrigerant

Front



Digital Control

High & Low Refrigerant  
gauges



Plumbing can be  
connected either side



Back



# Specifications

	RA 9kW 30,000	RA 14kW 50,000	RA 29kW 100 000
Heating Capacity (Btu/h)			
<b>Features</b>			
Temperature Control	Digital Display	Digital Display	Digital Display
Adjustable temperature (°C)	16-35	16-35	16-35
Adjustable temperature (°F)	61-95	61-95	61-95
Heat Exchanger	Titanium	Titanium	Titanium
Refrigerant	R407C	R410C	R410C
Refrigerant charge	1.6kg	1.8kg	3.2kg
Automatic restart function	Yes	Yes	Yes
Compatible with salt water systems	Yes	Yes	Yes
Defrost function - reverse cycle	Yes	Yes	Yes
Cabinet	Galvanised Steel	Plastic	Plastic
Compressor type	Rotary	Rotary	Scroll
Thermal Expansion Valve	Yes	Yes	Yes
Crankcase Heater	No	Yes	Yes
<b>Performance Ratings</b>			
COP AT 20°C ambient air temp	5.3	5	5
Noise level Db(a)	52	55	61
Minimum Flow Rate m3/h (imp.gls)	5m - 1103 gls	5m - 1103 gls	5m - 1103 gls
Maximum Flow Rate m3/h (imp.gls)	15m - 3310 gls	15m - 3310 gls	15m - 3310 gls
<b>Dimensions</b>			
Dimensions WxHxD (mm)	800 x 1015 x 300	1254 x 934 x 435	1254 x 1333 x 435
Net Weight (Kg)	85	96	145
Packing Dim. WxHxD (mm)	915x1040x480	1270x950x460	1270x1350x460
Unit Weight (Kg)	85	96	145
Shipping Weight	92	105	157
<b>Electrical Ratings</b>			
Volt/Phase/Hz	230/1/50	230/1/50	230/1/50
Power Consumed kW	1.7	2.4	5.5
Operating Amperage (average) (A)	7.4	10.8	19.1
Maximum current surge input	13.6	15	32.4
Machine type breaker {C}	20	20	40

## IMPORTANT

It is recommended that all electrical supplies and connections are carried out by a qualified electrician, in accordance with I.E.E standards or local codes of practice as applicable. All heat pumps must be protected by incorporating the correct motor type circuit breaker (Type C) to specified rating. Failure to do so may invalidate your warranty. An earth leakage trip (R.C.D) of the current operating type (30mA) is recommended to be fitted to all pool electric's.

## Service

Like any electrical appliance, faults can arise for whatever reason, be it a 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 (Sole UK Importer) have over 50 independent heat pump engineers located nationally, who will be able to service your heat pump (directly with you) in the future or in an event of a warranty failure.

To date, 96% of our service requests are attended within 3-7 working days (summer or winter).

## Warranty & Service

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

Titanium Exchanger  
Lifetime - regardless of water chemical balance.

Compressor  
3 Years

Electrical Components  
3 Years

Labour  
1 Year



Which Size, Which Mode, What Price?

Normally, heat pumps are sold for use in the summer season only. Most manufacturers including DPL state that their heaters will work in ambient temperatures from 0-5 deg. However, they are only going to produce minimal heat output and realistically, at these temperatures you will most likely not 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 early April to late October!

Unfortunately, sizing the heater for your swimming pool is not an exact science due to so many variables such as the thermal value of the pool structure, wind speed, water velocity, water table, if a heat retention cover has been applied, etc.

Therefore, DPL base their calculations on the amount of heat (kW) your pool is likely to lose on an hourly basis. You will see that on some pool sizes we recommend two sizes of heater. If your budget allows, it is always desirable to buy the larger size, due to it being more cost effective and efficient thus resulting in a quicker heat up time

The sizing chart below assumes the following:

- 15-20 deg C ambient air temperature (realistic for start of the season)
- Average wind speed 2.5 metres per second
- Desired water temperature 30 deg C 86F
- Average pool depth 1.5m 5ft
- Relative humidity 62%
- No water table surrounding pool structure
- Minimum running time 10 hours per day

HEAT PUMP SIZING CHART

Length ft	Width ft	Approx Gallons	Length M	Width M	Approx Litres	Minimum Size Heater kW	Optimum Size Heater kW
24	12	8550	7.32	3.66	38868	9	14
26	13	10034	7.92	3.96	45616	9	14
28	14	11638	8.53	4.27	52904	14	14
30	15	13359	9.14	4.57	60732	14	30
32	16	15200	9.75	4.88	69099	30	30
36	18	19238	10.97	5.49	87454	30	30
40	20	23750	12.19	6.10	107968	30	30

Note: For Vinyl type above ground pools we recommend that the 'optimum' size is purchased.

Please don't be misguided by high COP claims from other manufacturers. Many of these claims are based on ambient air temperatures of 25-30 deg C / 77F which we feel are unrealistic at the beginning of the season.



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Dealer Stamp