

Heat Pump Maxitemp Digital type 35 and 51

Item.no 14991035, 14991051

The Pahlén heat pump is intended to heat swimming pools and whirlpools. Before installing the heat pump, read the instructions carefully to avoid possible future breakdowns.

The reported capacity depends on the water flow, the temperature of the air and the pool water. On cold days the heat pump may run longer before the pool reaches the right temperature than on hot days. It is always economical to cover the pool when it is not in use, especially at night. About 60-70% of the heat is lost from the surface of the water in the pool. Covering the pool also shortens the operating time of the heat pump.

The heat pump must always be installed outdoors, since it draws energy from the surrounding air. It must be well ventilated and must not be enclosed or screened in such a way that circulation of the air is obstructed. The distance between the heat pump (the fan exhaust) and a wall, fence, bushes etc must not be less than one metre. The distance between the air intake of the heat pump and a wall, fence or bushes, must not be less than half a metre. Efficiency will be reduced if exhaust air can reach the air intake. Avoid installing the heat pump close to sensitive walls, such as a bedroom wall.

Pahlén Maxitemp heat pump can be installed higher or lower than the surface of the water in the pool, but not by more than two metres either way.

When the heat pump has been put in place, install the pool water pipes as follows:

- The water pipe from the pool filter must be connected to "IN" (in. 1½") on the heat exchanger of the heat pump.
- The return pipe to the pool inlet must be connected to "OUT" (in. 1½") on the heat exchanger of the heat pump.

The union couplings with o-ring connecting to the heat exchanger must be tightened by hand.

The heat pump needs a certain amount of resistance in the heat exchanger to work properly. The heat pump starts when the pressure in the heat exchanger exceeds 0.2 bar (2 H(m)). In rare cases it may be necessary to close the valve slightly on the outgoing return pipe, to increase the resistance in the heat exchanger.

Heat pump type 35 is designed for a flow rate of about 230 l/min and type 51 for a flow rate of 300 l/min. In installations with a flow rate higher than that of the particular model, only a partial flow must pass the heat pump.

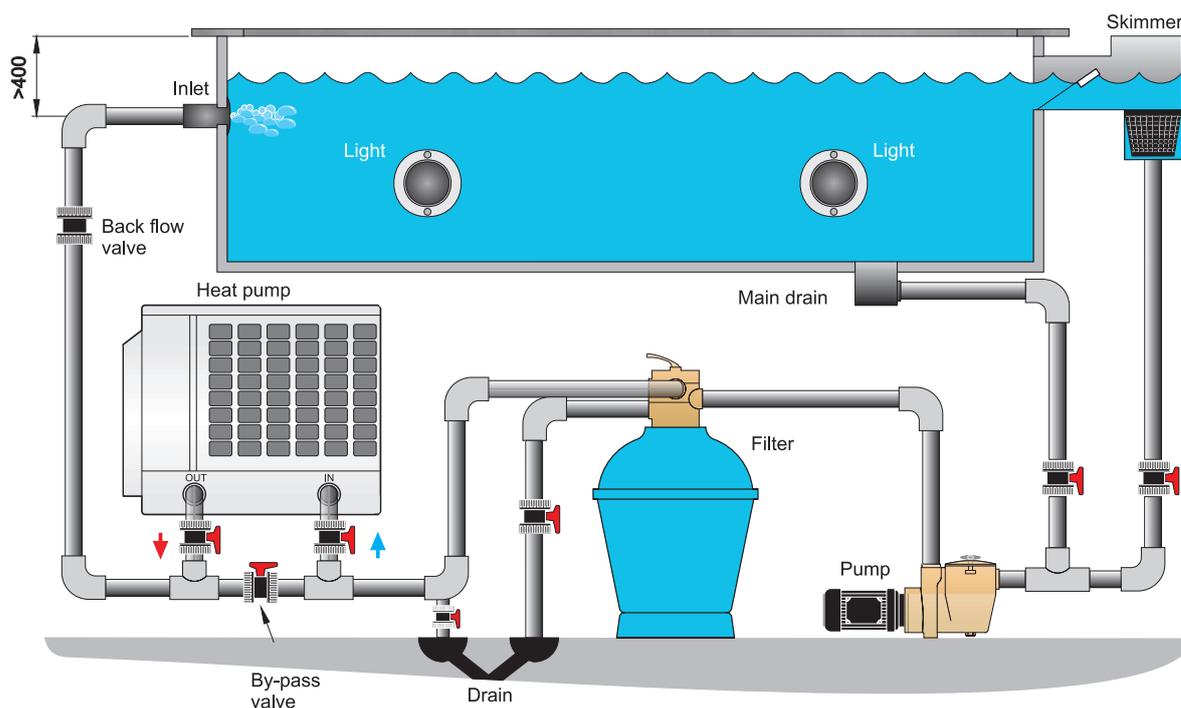
Dosing of chlorine, acid, etc., must be done **after** the heat pump, to avoid corrosion in the heat exchanger.

To protect the heat pump, construct a roof which overhangs the heat pump by 300 mm all round. The roof should be 150 mm above the heat pump. This will protect the heat pump from rain and snow.

Very important!

Engage a qualified electrician for permanent electrical installation of the heat pump to the electricity supply. Short-circuit protection for type 35: 10A and for type 51: 16A. Single-phase 230V.

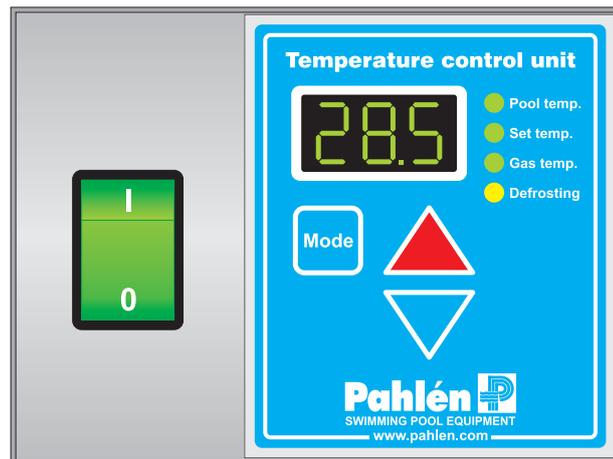
Pahlén Maxitemp heat pump must be installed with an on-off switch and an earth fault relay. Only an accredited refrigeration company may carry out work on the refrigeration circuit.



Operation of Maxitemp Digital type 35 and 51

For the heat pump to work, the pool filter system must be running.

- When the pool water is circulating, switch on the power to the heat pump.
- Temperature control:
 - In order to change the temperature, press "Mode" until "Set temp" is lit. Change temperature by pressing the arrow pointing up or down. After a few seconds you can read the actual pool temperature.
- If the pool water is very cold when starting up, the heat pump will operate for a long time before the pool water reaches the right temperature. Then the heat pump stops automatically and starts again when it is needed.
- During the summer, the evaporator at the heat pump fan will need cleaning. A vacuum cleaner may be used.
- **Switch off the heat pump when backwashing or if the filter pump is off.**



Winter and the risk of frost

Before winter and when there is a risk of frost, all water must be drained from the heat exchanger. If there is any water left in the heat exchanger it may suffer frost damage.

- Switch off the power to the heat pump and disconnect the two union couplings on the heat exchanger.
- Tilt the unit carefully to remove any water that may still be in the heat exchanger under the heat pump.
- Cover the heat pump with the protective cover during the winter to protect it from rain and snow, but ensure that there is good ventilation to prevent the formation of condensation. The heat pump can withstand the cold if there is no water left in it.
- Before the summer, and before starting the heat pump, remove from the air intake any leaves, pine needles and other dirt which may obstruct circulation and so reduce the efficiency of the heat pump.
- Clean the outside of the heat pump with soapy water.

Built-in safety functions in the heat pump

Condensation

When the heat pump is running, condensation runs from the drain hole on the side of the heat pump; this is normal. Check that the condensation can drain off freely.

Frost

When the air temperature falls below +10 °C, ice may form on the heat pump evaporator. This will start an automatic defrosting cycle. After the defrosting cycle, the heat pump starts its normal program automatically and continues to heat the pool.

When the temperature falls below +5 °C the heat pump stops automatically. It starts again when the outside temperature increases.

Time delay

Pahlén Maxitemp heat pump has several safety functions to prevent short running times and frequent starts. A three-minute delay between switching on and the compressor starting is therefore normal.

Pressure switch

The heat pump also has a pressure switch which switches it off if the water pressure in the heat exchanger is lower than 0,2 bar.

Overheating limit control

The heat pump compressor has an overheating limit control. If the heat pump stops because of a too high compressor temperature, the power to the heat pump must be switched off to allow the overheating limit control to reset automatically.

NOTE: Very important!

The warranty is void if the heat pump is used incorrectly or is not installed properly. Hoses connected to the heat exchanger in the heat pump shall be tightened only by hand.

The pool water properties must be as follows:

pH: 7.2-7.8

Chlorine content: max 3 mg/l (ppm)

Chloride content: below 0.5%

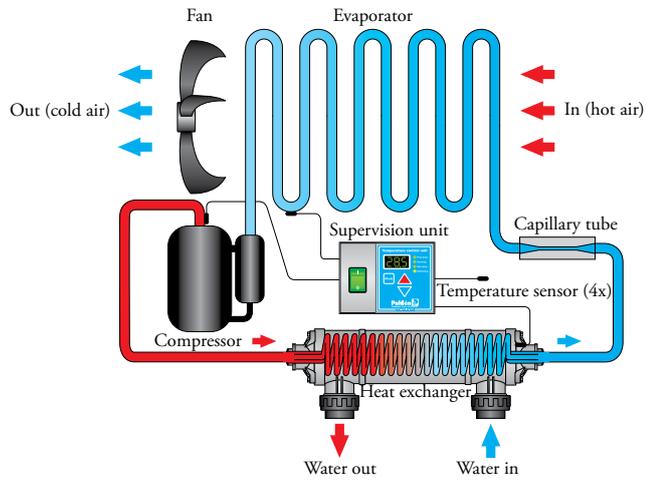
Calcium hardness: 100-1000 mg/l (ppm)

Note that if the properties of the water are not correct, the heat pump may be damaged and bathers may suffer from irritation of the eyes and mucous membranes. In such cases the warranty is void.

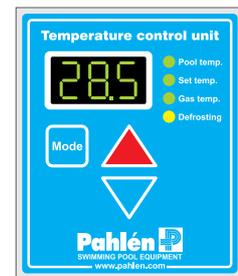
Heat pump Maxitemp 35 and 51

Pahlén heat pump makes use of energy from the air, is efficient and economical with energy, easy to install and occupies only a small space by the pool. It is equipped with a silent rotation compressor for optimum efficiency, minimal vibration and long life. The digital control has many functions and makes it easy to set the pool temperature.

The casing is made of stainless steel and the condenser, the heat exchanger of the pool, is made of titanium. The heat pump is installed outdoors, and is connected directly on the return pipe of the pool.



The actual pool temperature and the temperature of the refrigerant are shown in an LED display. The control unit has also a signal lamp for defrosting and is equipped with error codes.

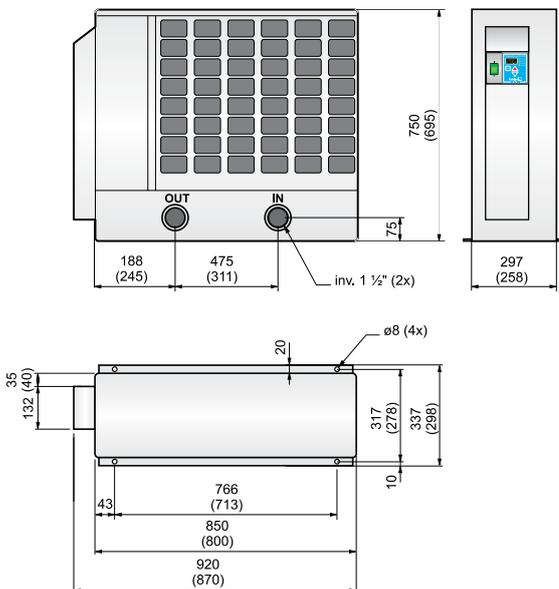


Technical data

Item no.	Model	Voltage	Input (kW)	Output (kW)	kBtu/h	Coefficient of performance (COP)
14991035	MT 35	220-240V	1,5kW	5,4kW	18,4	3,6
14991051	MT 51	220-240V	1,9kW	8,4kW	28,7	4,4

Minimum working temperature +5°C.

The figures stated are for pool temperature 25°C and air temperature 15-20 °C.



Dimensions for Maxitemp 35 are within brackets.

