

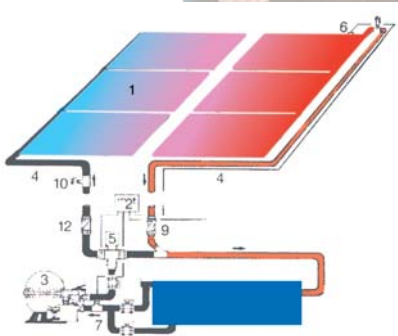
OKU solar heaters for swimming pools

in direct circulation:

- ➔ economical
- ➔ ecological
- ➔ rapid installation

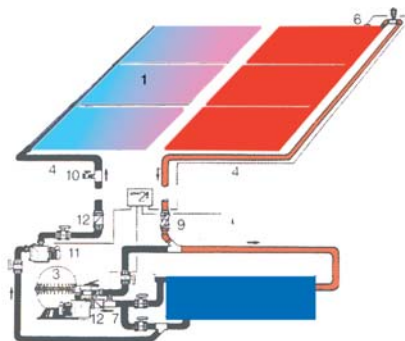
OKU solar swimming pool systems generally operate using direct circulation. The swimming pool water is pumped directly through the absorbers. It is not necessary to connect a heat exchanger.

Connection possibilities for OKU solar heaters for swimming pools



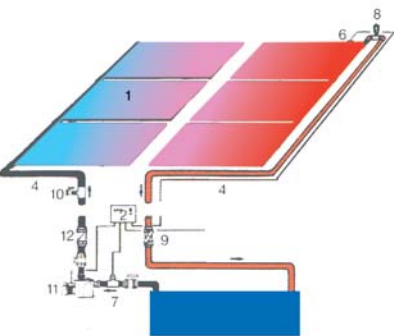
A) Operation with filter pump via three-way ball valve with differential temperature control

In general, this type of connection is always viable, as long as the absorbers are not mounted more than 6 m above the water level. The three-way valve (A3) is installed in the blower pipe. Using the differential temperature control the three-way ball valve will switch when the absorber temperature is greater than the water temperature in the swimming pool. The filtered flow is then pumped through the absorbers. The heated water will return via the T to the filtering circuit.



B) It operates with its own pump and differential temperature control integrated in the filtering circuit.

On occasions it may be a good idea and even necessary to install a separate pump for the solar heating. E.g. when the elevation height from the water level to the absorber field is over 6 m. The water is branched out via a T before the filter and is pumped with the additional pump via the absorbers. This pump operates via orders from the differential temperature control, in such a way that it guarantees the pump only works when an energy gain actually exists. The filter pump and the solar pump are regulated separately. In most cases it is usually advisable to install non-return valves in the solar and filtering circuits



C) It operates with its own pump and pipe interconnection of the differential temperature control independent from the filtering circuit.

This version is chosen when access to the filtering pipes is difficult. The swimming pool water is absorbed through an immersion pipe, and is pumped through the absorbers and returned to the hot water in the swimming pool. As a result of the differential temperature control, in this case, it also guarantees the pump only works when an energy gain exists. Likewise, it may be a advisable to install a non-return valve. The swimming pool water can go through the OKU absorbers in any direction. The installation can be carried out lengthways or widthways. Connection of each of the absorber areas according to the Tichelmann system (same channels for each row). It is recommended not to connect more than 10 absorbers consecutively.

- | | |
|------------------------------------|-------------------------------------|
| 1) OKU absorber | 7) Swimming pool temperature sensor |
| 2) Differential temp. control | 8) Fan |
| 3) Filter | 9) Ball valve |
| 4) Solar circuit supply and return | 10) Emptying valve |
| 5) Three-way ball valve | 11) Solar circuit pump |
| 6) Absorber temperature sensor | 12) Non-return valve |

OKU solar swimming pool heating systems

Design with synthetic absorber:

Recommended surface for the absorber in % of the swimming pool's surface for open-air swimming pools with cover and indoor swimming pools (beginning of May to end of September). Increase in temperature 4 to 7°C compared to unheated pools

Tilt angle	Direction				
	EAST	SOUTHEAST	SOUTH	SOUTHWEST	WEST
90°	90	80	70	75	85
60°	80	65	55	60	70
45°	70	60	50	55	65
15°	55	50	50	50	55
0°	50	50	50	50	50

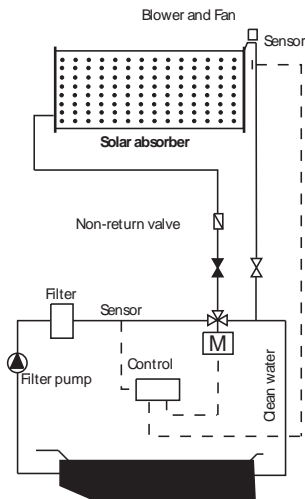
Absorber surface in % of the swimming pool's surface

TIP:

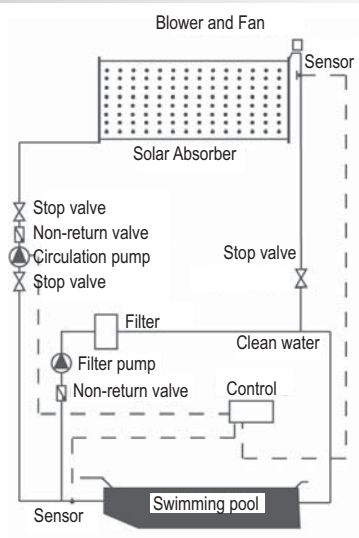
If the pool is not covered, the absorber surface should be 50% greater than the value calculated. Regional differences in the number of hours of sunlight can be met by increasing or reducing the absorber surface by up to 20%.

Pumping power: The flow must be from 150 to 250 l/m²h
The elevation height is calculated from the difference in height between the water level and the absorber field by adding approx. an extra 5 m.

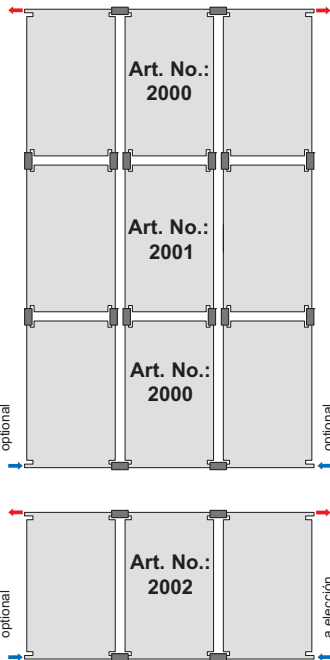
Ball valve schematic



Solar pump schematic



OKU solar swimming pool heating systems



Absorber for heating swimming pools

Material: Polyethylene; weight 6 kg/m², anti-freeze, modular system,
Efficiency: up to approx. 85%, loss of low pressure.
Flow: 150 to 250 l/m²h
Empirical rule: 0.5 x swimming pool surface (covered) = absorber surface
For the design: Indicate the width x height of useful surface area of the cover and the extraction height!

- Art. No.: 2000** Absorber with collector pipe: Ø 40 mm and two connecting points Ø 25 mm on the narrow sides
 L x B = 1360 mm x 820 mm ca. 1.08 m²
- Art. No.: 2001** Absorber with 4 connecting points: Ø 25 mm on the narrow sides
 L x B = 1280 mm x 820 mm approx. 1.05 m²
- Art. No.: 2002** Absorber with 2 collector pipes: Ø 40 mm on the narrow sides
 L x Width = 1360 mm x 820 mm approx. 1.12 m²



Self-suction solar pump

Art. No.: 2020
 up to approx. 30 m² absorber surface
Power: 450 W / 230 V
Flow: 6000 l/h for an elevation height of 8 m
Connection: seal with adhesive Ø = 50 mm
L/Width/Height: 475 / 212 / 312 mm
Weight: 6.4 kg

Self-suction solar pump

Art. No.: 2022
 up to approx. 50 m² absorber surface
Power: 700 W / 230 V
Flow: 10,00 l/h for an elevation height of 8 m
Connection: tightening seal Ø = 50 mm
L/Width/Height: 475 / 212 / 312 mm
Weight: 8.4 kg



Three-way ball valve

Art. No. 2025
 For sufficiently high pump power.
 With 230 V servomotor, Connections: Ø = 50 mm / DN40