

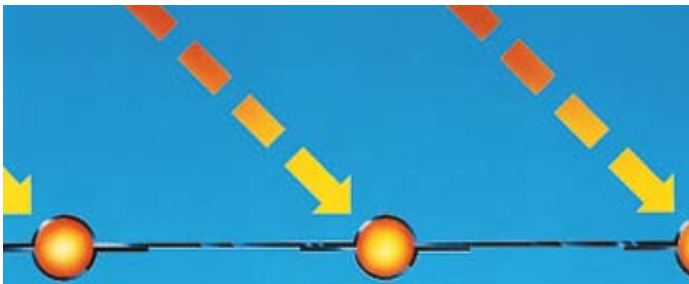
SOLAHART USES SOLAR ENERGY MORE EFFICIENTLY

The strategy of Solahart's design engineers is to constantly improve on the conversion of solar energy into heating water. Solar water heaters have been in use for over a century. Improvements in performance, both economically and environmentally, have come from the incorporation of sophisticated technologies, and better design engineering.



- Smarter Absorber Design
- Smarter Absorber Technology
- Solahart's Black Chrome

Smarter Absorber Design

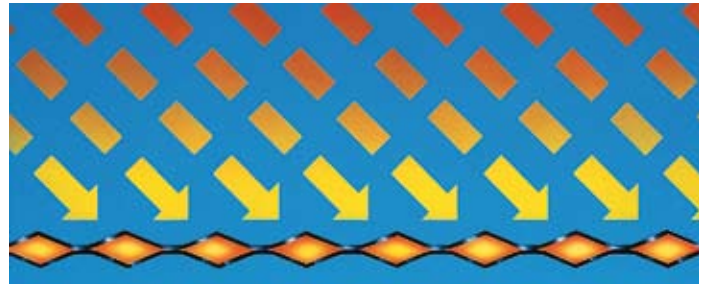


Standard fin and tube collector

As the solar water heater has evolved, the efficiency of converting solar energy into hot water has improved. The traditional design of a solar absorber panel has been a series of copper tubes interconnected with flat plate aluminum commonly referred to as the 'fin and tube absorber'. Solahart use this style of absorber in their L Series.

The water is heated primarily in the 6 risers, and heat absorbed by the fins is conducted sideways to the risers. Solahart make this style of absorber because they work well in hotter climates with good water quality, but as the amount of solar energy diminishes in cooler climates, and freezing can occur, the design needs to be different. Traditional fin and tube absorbers are not suitable for hard water or frost prone areas.

To increase installation coverage, Solahart's designers developed a fully flooded absorber panel, which allows more people to benefit from having their hot water heated by the sun's radiation. Known as the J and Kf Series, these Multiflow® absorber panels are used in close circuit systems (Ref Fact File 01).

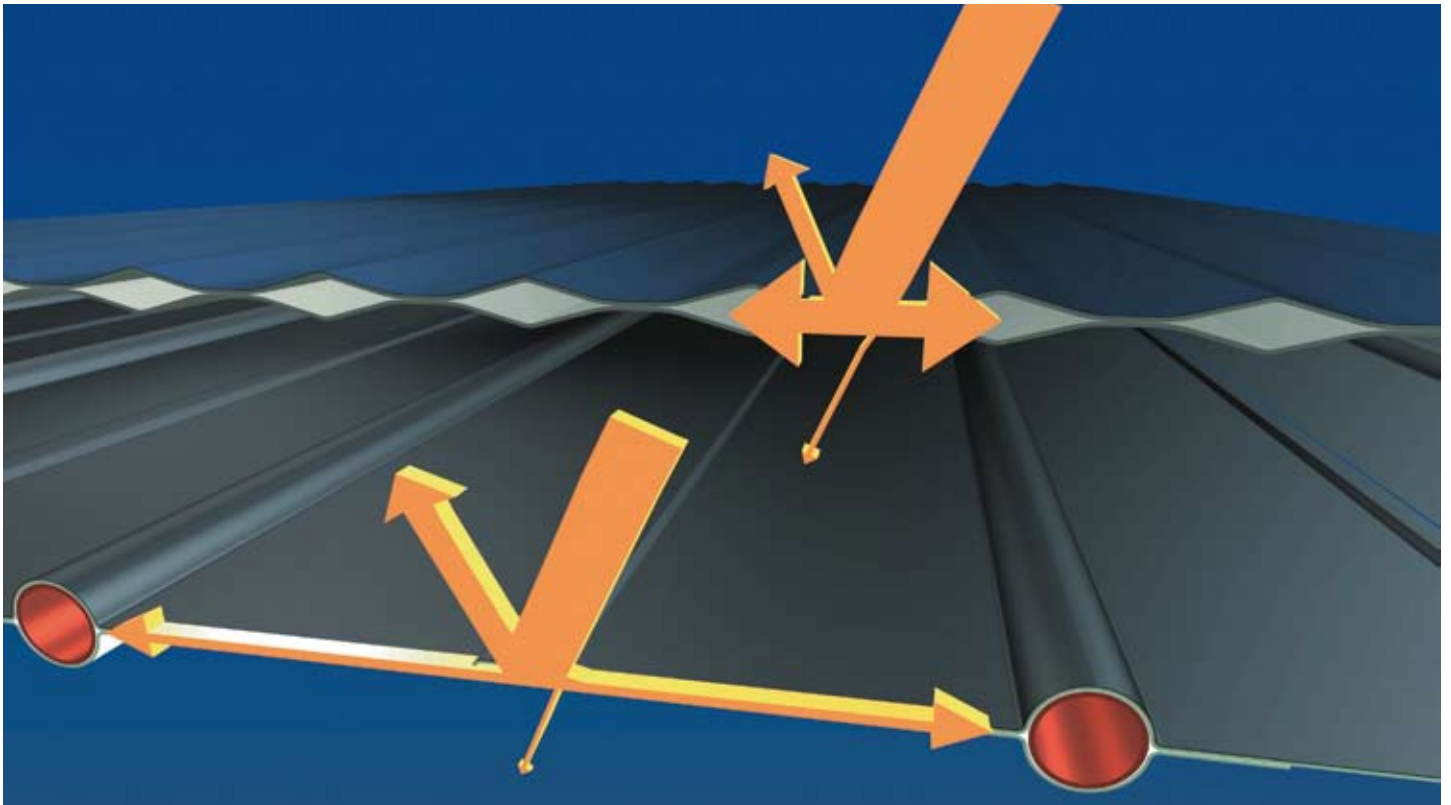


Solahart's Multiflow® collector

As the solar water heater has evolved, the efficiency of turning solar energy into hot water has improved. Solahart has led the way with innovation, and has an absorber panel suitable for any conditions.

The advantage of the J and Kf absorbers is their resistance to frost and hard water when connected to a closed circuit system.

The risers are diamond shaped allowing more Hartgard® heat exchange fluid to be exposed to the incoming radiation. Energy is more readily absorbed and Hartgard® flow is enhanced increasing the collectors efficiency. The J and Kf models have thirty five riser tubes per absorber.



Heat loss comparison between Black Chrome and black painted surface

Smarter Collector Technology

If you place a black object in the sun, it absorbs heat and gets hot. Heat has been absorbed, and water can be heated using this simple phenomena. The fact that the object also feels hot to the touch means that some water is being lost.

Solahart employ two ways of finishing solar absorbers, enabling two different efficiencies to be offered according to customer needs. A black polyester powder coat and a Black Chrome (Chromonyx®) plated finish. The choice of finish is determined by climate, water quality and water usage.

All Solahart absorber panels have a special 'low iron' glass cover. This glass ensures that there is maximum transmission of solar radiation through the glass and minimum reflection.

Heat losses can be further minimised by the usage of materials known as 'selective surfaces'. Black Chrome plate is an example. It is hard to see the difference between black powder coat and Black Chrome, but the Black Chrome surfaces are more efficient because less heat is being re-radiated. Further efficiencies are achieved by side and rear insulation to prevent heat loss.

Solahart's Black Chrome

Solahart uses two electroplating processes. The steel absorber panel is plated with nickel, and then with chrome, much like any other standard metal plating process. The nickel plating provides a corrosion proof finish after which a Black Chrome surface is electroplated to the surface for high efficiency energy absorption.



The Black Chrome Absorber - Solahart use a universally accepted method for absorber finishes - electroplating