

High Performance

Solar Water Heater

Aguasol Unibody

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Performance Enhanced Design

The Climatecover

Better overall performance

No heat loss at night + No thermal bridges + Protection against wind chill = Better overall performance

About Aguasol Unibody

Aguasol Unibody converts sun light into hot bathing water and store it in a 190L highly insulated tank until you need the water.

A Solar Water Heater of this type is typically used in permanent residences or holiday homes, and can provide a family of four with free hot water.

Aguasol Unibody is a self-circulating thermal Solar Water Heater, that does not require the installation of pumps and large water tank inside the house.

Our goal has been to develop a Solar Water Heater of highest quality, performance and design, at the same time the design hides the tank and other unattractive plumbing components.

Aguasol Unibody is constructed of a weatherproof insulated surface, which we call - "The Climatecover".

This injection molded insulation encloses and protects all the technical components against rust and corrosion, while it helps to improve performance significantly.

Why Aguasol Unibody

- * Aguasol Unibody is developed to ensure warm water in the cold seasons and winter time.
- * Aguasol Unibody is easy to install. All technical components are assembled and tested at the factory.
- * Minimal maintenance. Up to 5 years warranty.
- * Aguasol Unibody can be mounted directly on the roof or on a specially designed rack for flat surfaces.
- * Aguasol Unibody has a very effective corrosion protection. All metal parts are 100% covered by our "Climatecover".
- * Aguasol Unibody covers all your hot water consumption in summer, and approx. up to 85% in winter - for free!
- * Aguasol Unibody is Danish Design.
- * The "Climatecover" protects against heat loss at night, wind chill and eliminate all thermal bridges.
- * Aguasol Unibody has been tested and approved by the Solar Key Mark.



Aguasol Unibody

Basic use of Aguasol Unibody

The daily use

When your Aguasol Unibody is installed it works completely automatically. The sun heats up the water in the tank. Just open the water tap and you'll have warm water as usual.

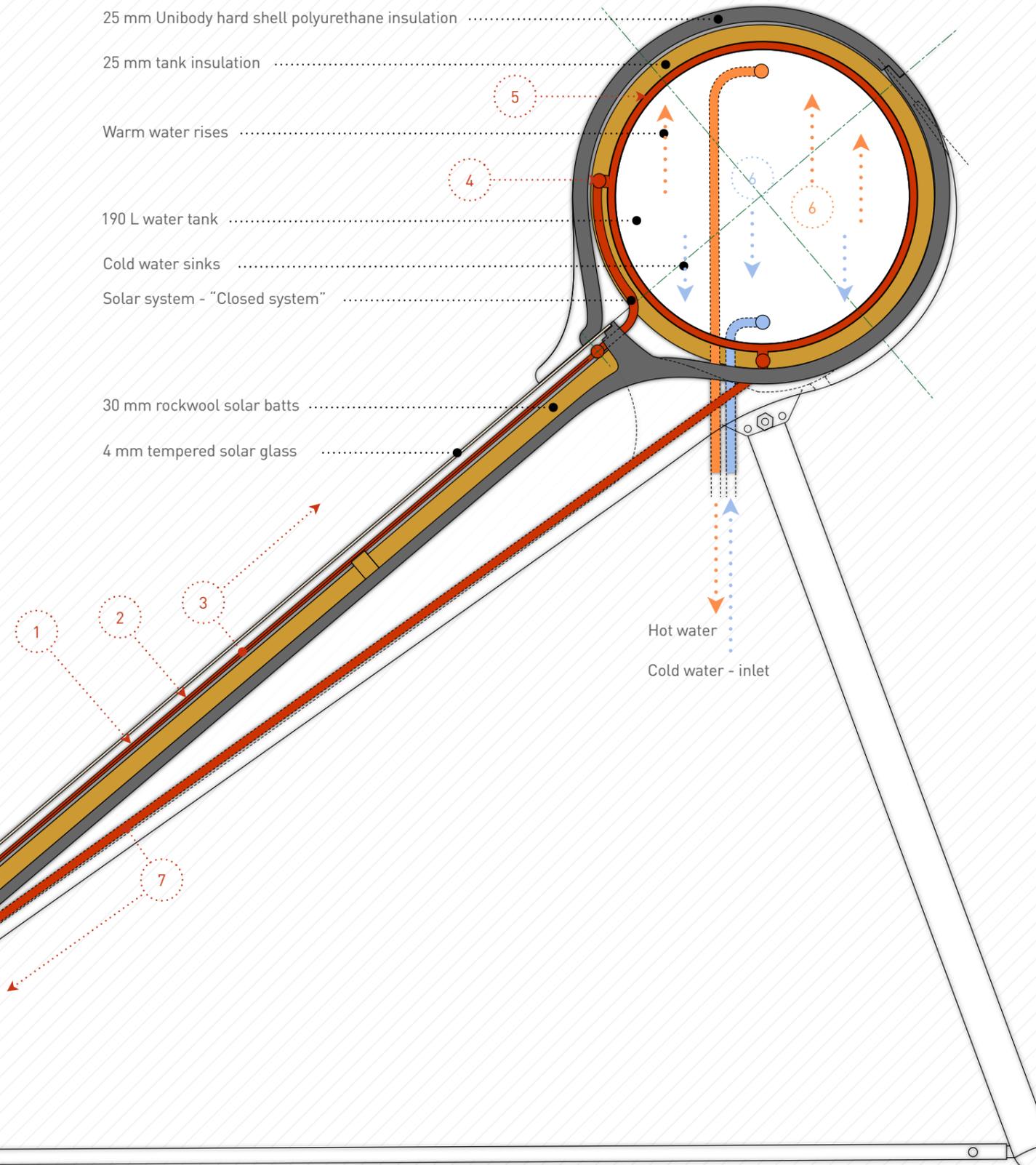
When you are using hot water, the hot water will be tapped from the top of the tank where the water is warmest. The built-in scald protection will ensure you that the hot water is mixed with cold water and prevent you from being scalded.

The 190 liter hot water tank is dimensioned to match a family of four.

Although some days are totally overcast, and the sun is not warm enough to produce any hot water, you still have 190 liters of hot water in reserve. After a few days you may have used all the hot water. If its still overcast, then you can turn on the built-in heating element, or set it to turn on automatically when the temperature drops below eg. 45 degrees celsius.

Using Aguasol Unibody in countries in the southern europe, usually there will be enough hot water all year round. During periods with overcast in the winter, there may be lack of sufficient solar heat. In theory this happens for 5 to 10 percent of the year.

In Northern Europe, you will be able to get all the hot water from the sun from approx. april to september, both months inclusive. During the rest of the year, the supply is very unreliable, and therefore solar heat should primarily be considered as a cost reduction contribution to water heating.



Technical explanation

Aguasol Unibody is a self-circulating solar water heater, that does not use pumps to circulate the water. The system is a "closed system". This means that the system is divided into two separate systems, - one with antifreeze (red), and one with hot water (190L tank).

1. The sun's energy passes through the glass and hits the selective surface of the absorber which quickly becomes heated.
2. The sun's energy is transferred from the absorber plate to the risers, which then transfer the heat to the antifreeze in the "closed system" (red).
3. Because hot antifreeze fluid is lighter than cold, the heated antifreeze rises upwards in the absorber. This is the beginning of the natural thermal process that generates self-circulation.
4. The antifreeze fluid will flow in to the mantle reservoir that encloses the hot water tank, and gradually transfer the heat to 190 liter tank.
5. The heated antifreeze is distributed around the tank, so that the warmest fluid moves toward the top, and the colder water sinks to the bottom of the mantle reservoir.
6. Inside the 190-liter tank is a layering of the water. The warmest water is distributed at the top of the tank, and the coldest water sinks to the bottom.
7. Because there are relatively colder water in the bottom of the tank, the self-circulating effect is reinforced, causing the colder water to move down towards the bottom of the absorber.
8. The antifreeze fluid in the closed system is now back in the absorber, and the heating will now be further enhanced.

The process continues until the temperature difference between the systems are the same or the sun disappears.

Technical data

The Climatecover incorporate all components

Aguasol Unibody is a self-circulating solar water heater, suitable for a family of four.

Weights & dimensions

| | |
|--|---------------|
| Aguasol Unibody | 2,8x1,5x0,7 m |
| Polyurethane (Unibody) all over insulation | 25 mm |
| Empty tank with insulation and fittings | 120 kg |
| Aguasol Unibody, ex. tank and lid | 60 kg |
| Unibody, empty weight - all included | 160 kg |
| Unibody - all included + water | 385 kg |

Collector & related components

| | |
|---|---------------------------|
| Absorber surface | 2,4 m ² |
| Absorber material | Alu. selective sputtering |
| Risers material | copper |
| Risers | 9 pieces |
| Antifreeze fluid - Mantle + risers | 15 liter |
| Max. operating pressure - Solar circuit | 3 bar |
| Drain / fill valve | 1 |
| Extra collector insulation | 30 mm Rockwool |
| Solar Glass - tempered | 4 mm Solar Glass |

Unibody

| | |
|---------------|------------------------------|
| Unibody + lid | 18+7= 25 kg |
| Colors | Black & desert brown |
| Polyurethane | Hard surface UV protected |

Tank & fittings

| | |
|---|------------|
| Storage enamel steel tank | 190 L |
| Mantle steel tank | 12 L |
| Tank insulation | 30 mm |
| Thermostatic mixer | built-in |
| Safety Valves (Safty components) | 4 |
| Anode | magnesium |
| Electrical heating element | |
| Operating pressure | Max 10 bar |
| Cold/hot water connection pipe | 1,5 m |
| Expansion vessel - closed system (optional) | 12 L |

Safety components

| | |
|-------------------------------|---------|
| Safety Valve - Domestic water | 8 bar |
| Safety Valve (Solar circuit) | 3 bar |
| Scalding protection | 50 ° C |
| One Way Valve | 1 piece |

Other

| | |
|----------------|-------------|
| Solar Key Mark | 2011 / 2012 |
|----------------|-------------|



2,80 m

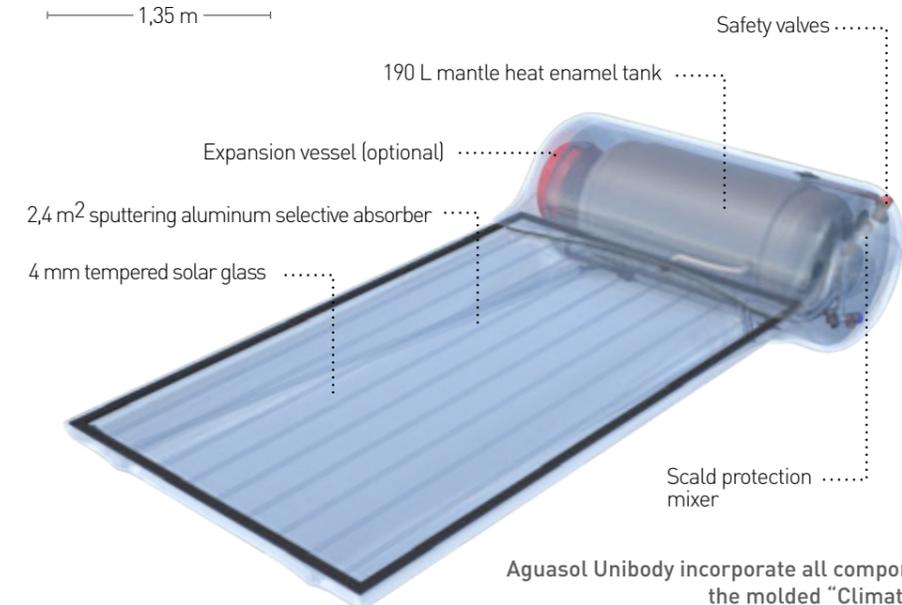
1,35 m



1,98 m

2,39 m

Unibody



190 L mantle heat enamel tank

Expansion vessel (optional)

2,4 m² sputtering aluminum selective absorber

4 mm tempered solar glass

Safety valves

Scald protection mixer

Aguasol Unibody incorporate all components in the molded "Climatecover"

Facts about Aguasol

Warm Water - Naturally

- * Aguasol is a Danish cleantech company founded in 2009.
- * Aguasol produces Solar Water Heaters that provide hot water using sunlight.
- * Aguasol Unibody is the result of four years of development and testing.
- * Aguasol is in development of several other solar products.
- * Up to 5 years warranty.
- * Patented and trademark protected.
- * Solar Key Mark certification.
- * Winner of the CleanTech Entrepreneur 2009 award.

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