

# Solar Tanks

for Domestic Hot Water and Heating



## Our Range of Energy Tanks

- Solar storage tanks
- Industrial water tanks up to 200,000 l
- Buffer tanks
- Cold water tanks
- Tanks for district heating
- Tanks for heat recovery

## Swiss Solartank®

- The original!
- Quality product made in Switzerland
- Clean design down to the last detail
- Optimum temperature stratification
- Over 35 years of experience
- Durable
- Installed by local partners

Your Partner for Solar Heating



**Jenni Energietechnik**

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## The Swiss Solartank® as Standard or Custom-Made Tank

For large and small solar systems – for new buildings, renovations and prefabricated houses



Visit [www.jenni.ch](http://www.jenni.ch) for reference objects and more information on "heating with the sun"



# Small and Large Tanks

Whether a standard or mass tank – you will benefit fully from our know-how.





# Swiss Solartank® – The Original from Jenni Energietechnik AG

Leading the solar industry

The tank is the central element of any solar energy system. The performance of the entire system depends largely on the tank and its management.

Jenni Energietechnik AG produces highly engineered solar tanks with storage capacities between 600 – 200,000 liters. Whether it is a standard or custom-made tank – our tanks are tailored to your needs. Thanks to constant innovation for over 30 years, the principle of the Swiss Solartank® is the benchmark for solar heating and storage water heaters with built-in heat exchangers and boilers. The principles of the system are:

- Consistent consideration of the physical principles and specially designed connectors ensure optimum temperature stratification.
- Multiple temperature zones ensure maximum solar gain and professional energy management.
- Integrated water heaters and solar heat exchangers result in a simple hydraulic system with the best energy properties.

Pressure-resistant, cylindrical **tank** made of steel S235JR with an anti-rust primer. The normal operating pressure is 3 bar and the test pressure 4.5 bar (higher pressures on request).

Possible tank diameters: between 600 and 5000 mm (10 cm special sizes and gradations: 650, 750, 790, 850, 870, 950, 970 mm)

Possible tank heights: between 1.5 and 24 m selectable

The internal **heat exchanger** enables connecting the solar collectors (one or more stages for more solar power and faster response). The tube heat exchangers give off heat exactly where it belongs and are unsusceptible to contamination. Thus they guarantee long-term high and constant performance.



## Internal boiler:

- Made of high-grade chrome-nickel-molybdenum steel V4A
- Pickled in acid bath
- High hot water performance thanks to the heater-principle with reserve readiness
- Hygienically perfect
- External pressure resistant up to 3 bar
- High solar gain through a low cold-water inlet
- Durable
- Large surface area allows high hot water performance and little calcification
- SVGW approved

Standard sockets or individually placement of the ports depending on the type of the system

Option: electric immersion (hot water loading)

 SWISS MADE

## The Difference lies in the Detail

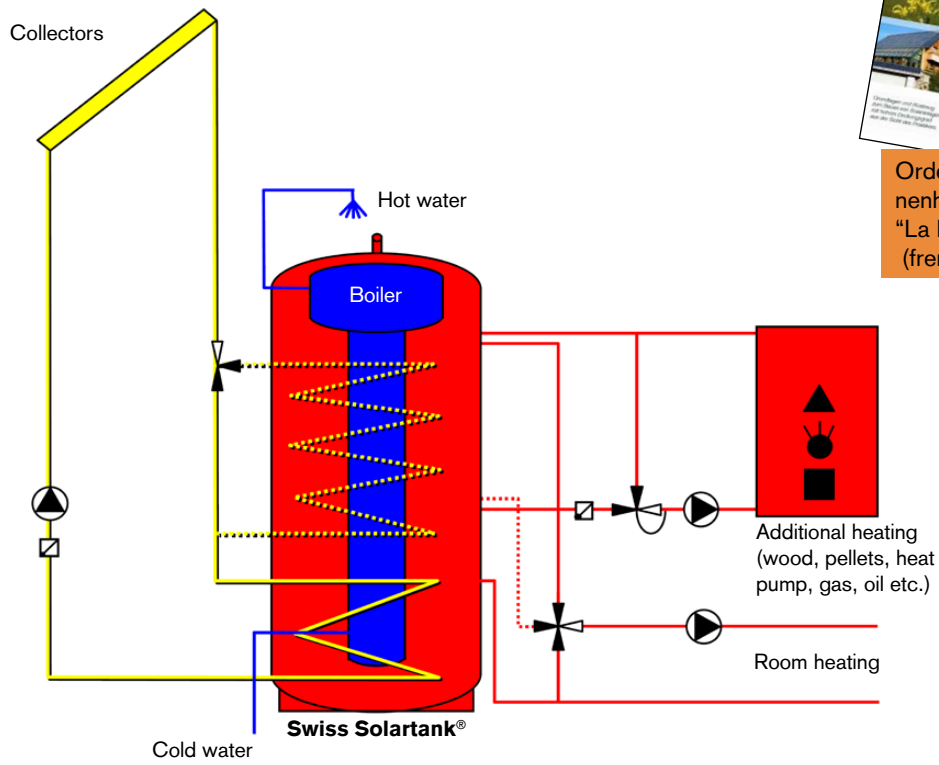


Connections with internal oblique flow brakes optimize temperature stratification and minimize energy losses



No welding on parts of the boiler which are in direct contact with the drinking water. This ensures complete rust protection

## Basic Principle of Solarsystem JENNI



Order our book "Das Sonnenhaus" (german) or "La Maison Solaire" (french) on [www.jenni.ch](http://www.jenni.ch)

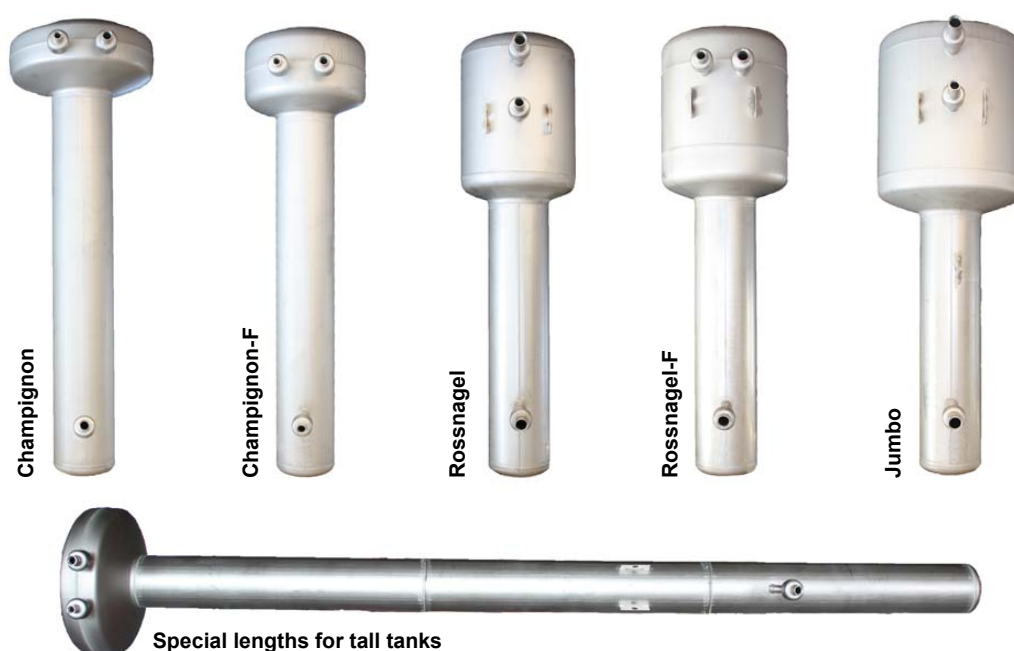


## Boilers for each Function

### Water Heater – Boiler

The solution with integrated boiler allows reliable, simple and affordable solar energy systems. Relatively little hot water is kept intentionally in the boiler, ensuring hygienic hot water (boilers are SVGW approved). Thanks to the combination of heaters and the storage principle, very high hot water performances will be achieved. Depending on the demand for hot water the appropriate boiler will be chosen or at even greater demand multiple boilers will be installed.

Thanks to the smooth heat transfer, lime is hardly deposited in the boilers. Our experience shows that a boiler built in the tank cannot be compared with a boiler with internal heat exchanger or an electric immersion.



We also offer tanks with fresh water stations on request.

Type	Capacity (Litres)	Surface (m <sup>2</sup> )	Thermal time constant for charging at 60°C (Minutes)	First output within 10 minutes 55°C (Litres/10 Min.)	First output within 60 minutes 55°C (Litres/1.h)	Continuous hot water output 55°C (Litres/h)	Apartments (Number)
<b>Champignon</b>	135	2.0	12.5	180	370	220	1
<b>Champignon-F</b>	135	2.0	12.5	180	370	220	1
<b>Rossnagel</b>	170	2.1	13.5	220	420	240	1-2
<b>Rossnagel-F</b>	190	2.3	14	250	470	260	1-3
<b>Jumbo</b>	260	2.7	15	330	570	290	2-5
<b>Special lengths</b>	Larger (taller) storage water heaters of the type Champignon, Rossnagel and Jumbo with an adjusted length of the neck are available.						
Chrome-nickel-molybdenum steel V4A, operating pressure 6 bar, test pressure 12 bar, external pressure resistance 3 bar, SVGW approved. Detailed data sheets about hot water performance of the boiler are available.							

The boiler determines the lifetime of a solar tank. Saving is out of place: Our boilers are made of high-quality chrome-nickel-molybdenum steel V4A, pickled in an acid bath, with a comfortable thickness of the material and without any subsequent welds at the drinking water sector. In addition, the boilers are external pressure resistant up to 3 bar!



## Heat Exchanger

The heat exchanger is designed to deliver the heat from the solar circuit (which is filled with a mixture of water and antifreeze) to the tank water. It is important that this happens with as little loss as possible ( $\Delta T$  max. 5-10°C). For this purpose the integrated flat tube heat exchangers in the tank have proved to be the best solution. Devices and machines specially designed by us allow the efficient production of heat exchangers.



Integrated in the tank and correctly arranged heat exchangers find automatically the optimal operating point and deliver the heat to where it belongs. This prevents a radical recirculation in the tank. Integrated flat tube heat exchangers are also characterized by lower susceptibility to impurity and thus a long-term, consistent performance.

## Special Features for Various Applications



For large quantities of water we offer special ports with baffles, which are superior to regular installations due to consistent implementation of physical principles, while causing lower costs.

Hot water-bell for optimal energy usage in the boiler area (from 1.7 m tank diameter).



The gravity switch is an automatic valve which is connected to the return pipe of the pre-existing heating system.



Tanks for heat recovery from refrigerating machines require capacitors adjusted to the power, which we produce on demand.



Large tanks and those with increased operating pressure will be fitted with reinforcing rings to ensure optimum stability.

Other fixtures on demand: manhole, pipe for rain water preheating, special heat exchangers, water distribution systems, special baffles, arc tubes, perforated plates etc.

## Comfort and Safety for your Heating



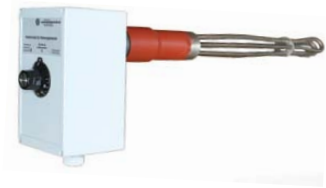
### Safety unit

In combination with our safety assembly, we offer a 5-year tank warranty (instead of 2 years).



### Thermometers

At Swiss Solartanks® 3 thermometers with a sealed pocket Ø 8 x 68 mm are included in the price.



### Electric heating element

For the heating of domestic water or as emergency heating (for example in combination with a wood firing), one or more electric heating elements are provided (available in various power categories).

## Insulation

### Storing heat means insulating heat

The insulation (130 – 300 mm) can be delivered separately for the self-installation or be installed by our employees in place. Especially large tanks are increasingly being insulated in the factory and delivered along with a weather-protective film.

The insulation with glass wool and plastic cover offers a high level of mechanical protection and is easy to clean. It has to be installed before the tank piping. The variation with aluminium-coated glass wool mats and mesh grid is the best priced and the most environmentally friendly insulation type. It can be applied before or possibly after the tank installation. The esthetically nicest variation is the foam insulation. This version also requires the least workload for the installation, but it is more expensive.



Aluminum-coated glass wool mats with mesh grid



Glass wool or foam (fire classification III or V) with plastic shell



Special insulations (e.g. aluminium-coated or for cold storage)



For solar houses with high solar coverage ratio, where the heat has to be stored over a longer period of time, we provide highly insulated tanks (200 to 300 mm). A balloon material is integrated into the tank insulation, thus achieving vertical and horizontal chambering. Furthermore the siphon ports on the tank are of high importance. All these measures contribute to an improved stratification.

# Our Services are your Success

## Armature groups and factory pre-assembly

For a simplified and safe process, we offer armature groups (solar, heating, ventilation etc.) separate as well as pre-mounted on our tanks. The mounted and wired control system completes the energy centre. Complete offers from one source are less expensive. In addition, our armatures are serviceable and extremely longlasting due to the omission of pre-formed parts.



**Heating group two-stage**  
(optional with integrated heating control)



**Heating group one-stage**



**Wooden heater group two-stage**  
(optional with integrated return flow increase in the valve output)



**Wooden and oil heater group**



**Solar group**



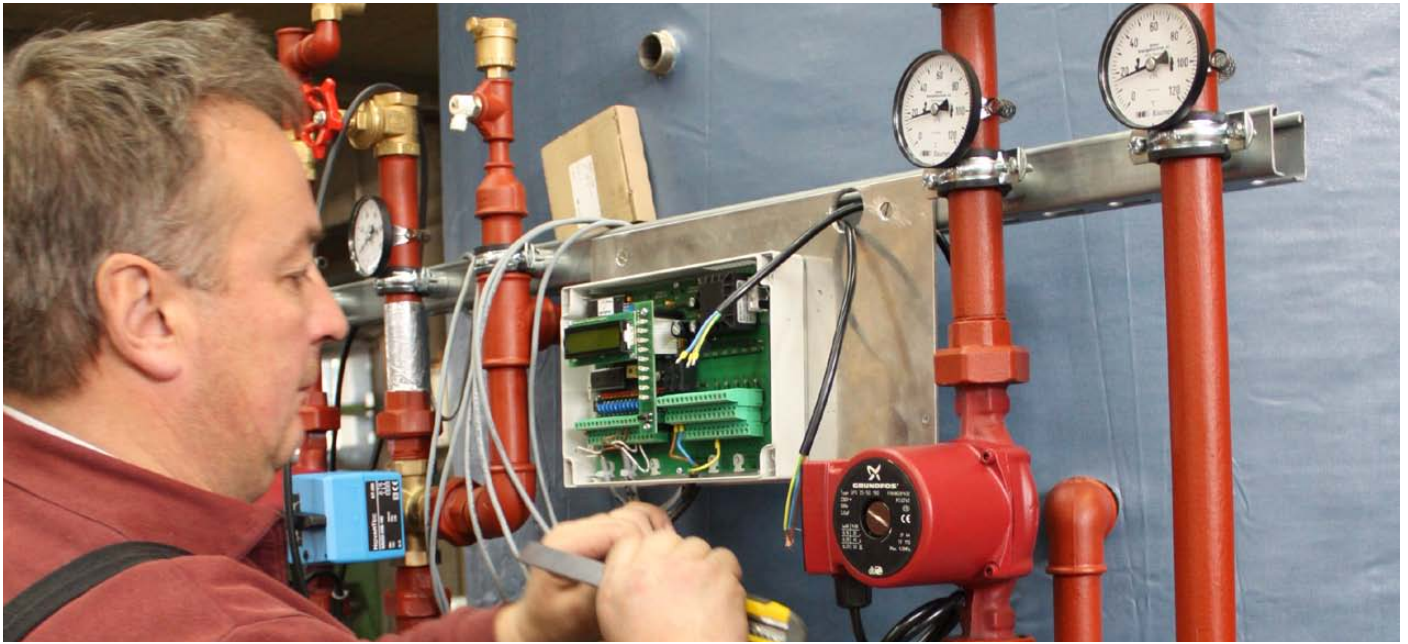
Work in progress: solar tank with welded piping

Pre-piped tanks allow saving in cost. They lead to a clean and manageable installation, eliminate sources of error, reduce the planning and installation effort and help quite significantly to achieve efficient and well-functioning solar energy systems.

### On request (in the factory or on-site):

- Mounting of the armature groups to the tank (pre-piping)
- Welded piping
- Mounting of the sensors and control to the tank
- Installation of the isolation





We are expanding our production capacity to meet the greatly increased demand. New factory in Burgdorf (Switzerland) opening 2013.

## More Tanks

Large tanks, buffer tanks, cold storage, local/district heat storage, heat recovery storage.



District heating station



Universal energy storage



Heat recovery storage for commercial/  
industrial waste heat



Cold storage



Buffer tank for industry and service  
buildings

## Place Welding (only in Switzerland)

It is often not possible at pre-existing houses or if the tank is too large to bring in the tank in one piece. In such cases, our place welding experts are employed. The Swiss Solartank® tanks are delivered disassembled into multiple parts and are welded together on-site. Place-welded tanks are tested on-site similar to the test at the factory and they are absolutely equal to a factory manufactured tank.



**Swiss Solartank®**

Very affordable thanks to efficient production – with constantly high quality.



At the beginning, a CAD draft is created



Starting from the 16-ton-steel coil, tanks are produced in series or individually



The ports are cut out of the unrolled plate by a modern plasma cutter



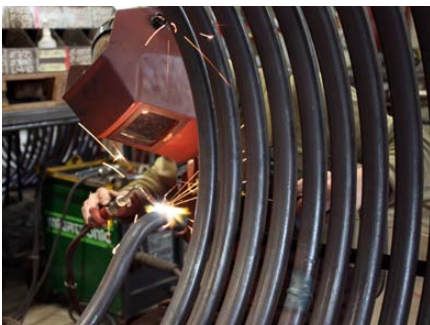
The tank shell is rounded



The lengthwise weld is performed automatically



In the case of a tank without internals, lids and bases are welded at the same time



Meanwhile, the matching heat exchangers are produced on the upper floor



Heat exchanger, boiler and connections are welded



Each tank is filled with water and subjected to a strict quality control (pressure test)



Attaching the anti-rust primer



The finished tanks are delivered



On request: assistance in bringing in and insulating the tank on-site

Most tanks are constructed for solar energy systems. Our Swiss Solartanks® are well known for their stratification and quality throughout Europe. They are considered a benchmark as far as constructing solar energy systems for heating and hot water goes. Our experience flows continuously into the development and product improvement.

# The Complete Offer for your Tank



## Innovation, know-how and consultation

We will advise you personally and professionally about the correct use of tanks (tank size, integration of the tank into the system, interpretation of the boiler, choice and placement of the tank ports, reasonable insulation etc.). Our experience is based on construction and application of more than 15,000 tanks and numerous pioneering projects and laboratory measurements for tanks, boilers, heat exchangers, tank ports and insulation.



## Short delivery deadlines

Standard tanks 1 – 3 weeks, customized products depending on each situation minimum 2 weeks, large tanks minimum 4 weeks. The delivery deadlines may vary depending on the season.



## Transport – bring in – pick up

In Switzerland, the tanks are delivered by truck or railway carriage-paid on-site. On request, we can assist you in bringing in the tank with special aids. Should you choose to pick up your tank directly at our plant, you will profit from a pick-up discount. On this occasion, we gladly invite you to a short plant visit. For foreign deliveries we can organise the whole transport with our logistic partners.

## Warranty

At correct handling 2 years (5 years on hidden defects).  
By using our safety unit, the warranty duration is 5 years.

Swiss Solartanks® are produced according to Swiss laws and standards.  
Specifications subject to change without notice.

# Jenni Energietechnik AG – your professional partner



Jenni Energietechnik Inc. started in 1976 with the former sole proprietorship “Jenni-solar energy controllers“ in the parental garage of Josef Jenni in the Bernese Bremgarten. There the newly qualified electrical engineer had developed the first controls for solar energy systems and made a name for himself as a solar pioneer. Over the years he made the production of solar tanks (Swiss Solartanks®) the core business. In the field of solar heating Jenni Energietechnik AG is one of the leaders in Europe. The product portfolio was supplemented continuously in the areas of wood energy (piece of wood, wood chips and pellets heating), solar electricity, district heating and heat recovery. The installation of solar heating systems is done by local installers. We will gladly provide you with the addresses of our partners.

Jenni Energietechnik AG has been awarded among others:

EUROPEAN SOLAR PRIZE

SWISS SOLAR PRIZE

Gewinner des

**Watt d'Or**

Die Auszeichnung für Bestleistungen im Energiebereich unter dem Patronat des Bundesamts für Energie



Jenni Energietechnik AG is a member of:



This brochure was presented by:



Your Partner for Solar Heating

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