

Energy Storage technology

Thermal Store Energy Bank



With model S-PD through an optional pre-heat exchanger
up to 15% more Solar Energy input is possible.

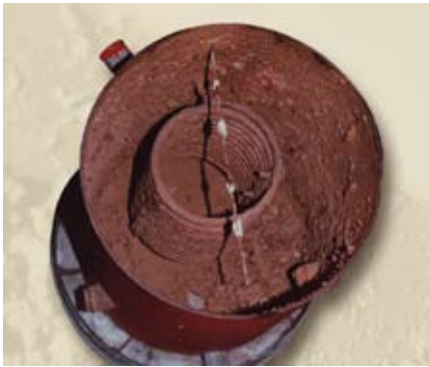
The result is up to 15% more hot water!

EVINOX
H E A T I N G

Thermal Store Energy Bank

Fresh hot and cold water provided when required

Bacteria build-up



12 years old

The illustration shows a conventional boiler. In accordance with Water Standards & Regulations, water is classified as food. Investigations made in the DVGW Scientific Engler-Bunte-Institute, Germany, have revealed that already after 24 hours the quality of stored water has considerably deteriorated.

Quote from paragraph 4 of the updated regulations on Drinking Water Quality 01.01.2003:

“Water for daily use must be clean and fresh and free of bacteria!”

In conventional boilers where water is not completely exchanged with fresh water on a daily basis, the above aspects are not guaranteed. For example, there could be a risk when showering that bacteria could be inhaled causing health problems.



- REFRESHING
- CLEAN
- SAFE



Freshly heated water can be a wonderful experience!

Specially designed heat exchanger

- outer skin made from copper giving best thermal conductivity
- inner skin, tin-coated to avoid the build-up of bacteria

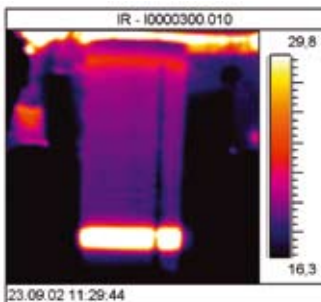


Thermal Store Energy Bank

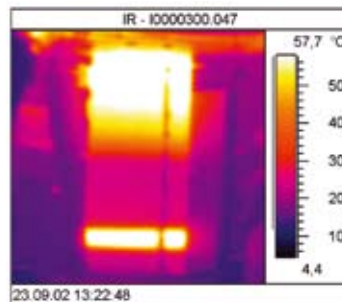
Optimal use of solar energy with the powerful heat transfer technology of Capito



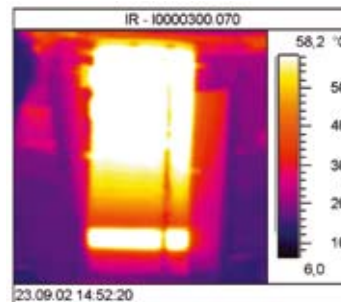
Infrared illustration showing the controlled heat transfer into a Capito S-PD 1500 (Buffer storage =1500 Ltr.)



The beginning of heating transfer.



After only 2 hours of sun on Solar collectors hot water is available for use.



The final phase of the heat transfer process allows any excess heat to be used for heating purposes.

The innovative patented efficient heat transfer technology transfers the solar energy generated in the roof collector via the solar heat exchanger into the S-PD buffer storage.

After only a short period of time transformation of solar energy takes effect, resulting in a steady increase in water temperature. Rising through a pipe at the top of the storage tank, the hot water produced can be used throughout the home.

Through continuous processing of the solar energy the buffer storage is continually filled from the top to the bottom.

Through the Capito developed heat transfer technology the generated energy is piled in layers, which makes the fast use of the hot water possible.

The produced surplus solar energy can be used to heat radiators in the home.

The heat transfer process is carried out using the principle of gravity. Any other equipment e.g. circulating pumps are not necessary.



Advantages of the Capito heat transfer technology:

1. Already after short exposure to the sun there is sufficient energy generated to heat water, while the water at the core of the tank is cold.
2. Even when only a limited amount of hot water is available, due to this individual technology, in only a short space of time the tank is fully charged and to the required temperature.
3. Through the principle of gravity working from top to bottom, an optimised use of solar energy is guaranteed. Excess energy can be used for heating purposes.
4. The Capito heat transfer technology does not require any circulating pumps, control systems or additional heat exchangers, therefore making it a cost effective system.
5. Using the storage tank for heating water reduces environmental pollution.

Thermal Store Energy Bank



Storage tank solar application PD



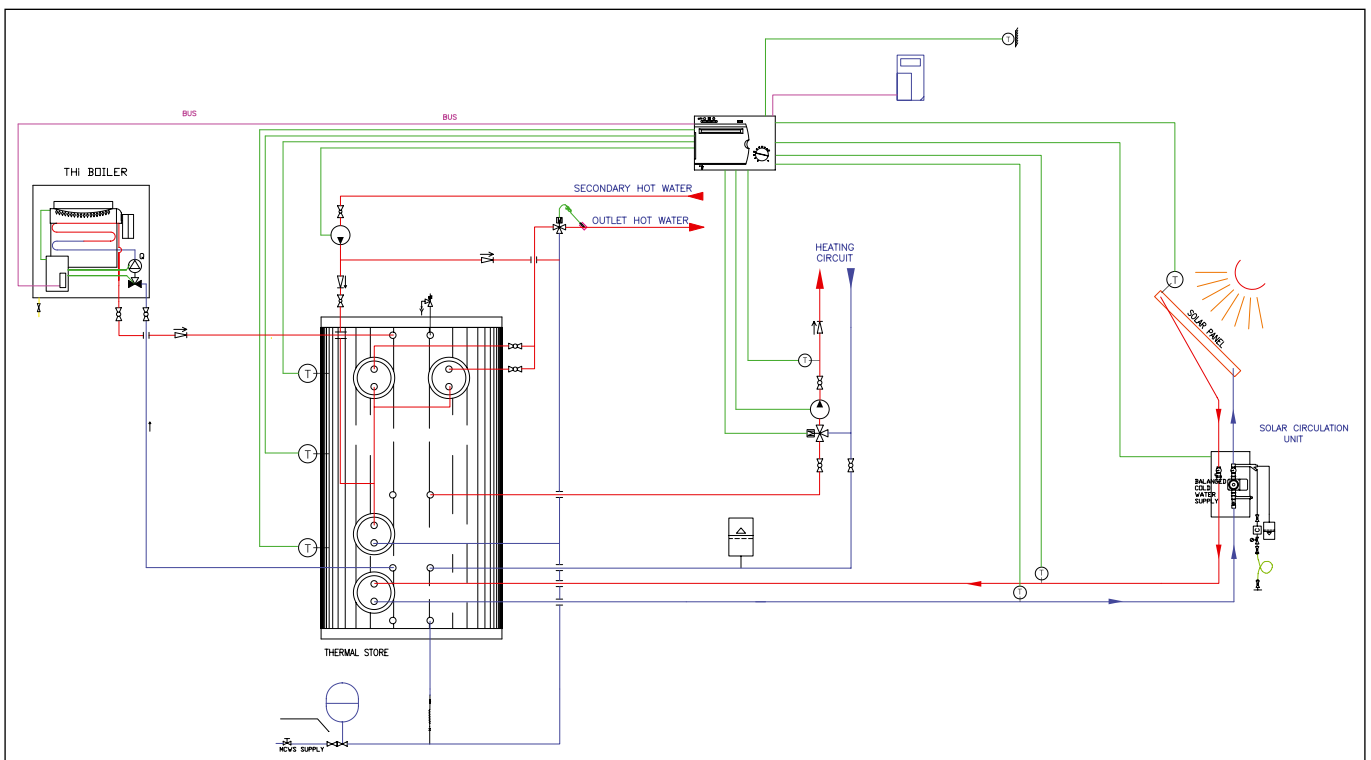
Due to the individual specification of the Capito patented multi buffer storage system, optimal use of solar technology is guaranteed. (For further details see inside cover.)

Should you wish to supplement your standard heating system with a solar system at a later date the store can be provided and equipped for the future addition of the solar coil for simple conversion on site.

- optimal incorporation of alternative energy sources e.g. Solid fuel, Electricity, use of ambient temperature via heat pumps
- warm water in drinking water quality through an efficient heat exchanger
- the size and type of heat exchanger determines the variation in capacity
- low thermal loss through a 120mm thick complete insulation made from CFC-free foam
- strong, silver-grey plastic outer skin

With models M-PD and S-PD through an optional pre-heat exchanger up to 15% more Solar Energy input is possible. The result is up to 15% more hot water!

Thermal Store, Solar and Boiler



Thermal Store Energy Bank

Type	Hot water tank Ltr.	Available Hot water* Ltr.	Measurements/mm				Weight kg	Tilting height mm
			with insulation		without insulation			
			height	Ø	height	Ø		
S-PD 350	350	150 - 275	1575	850	1450	600	148	1575
S-PD 450	450	200 - 350	1895	850	1770	600	159	1875
S-PD 600	600	250 - 450	1875	950	1750	700	196	1890
S-PD 750	750	320 - 625	1855	1040	1730	790	224	1910
S-PD 900	900	400 - 750	2175	1040	2050	790	249	2205
S-PD 1000	1000	420 - 830	2305	1040	2180	790	266	2320
S-PD 1250	1250	500 - 1000	2075	1250	1950	1000	362	2200
S-PD 1500	1500	600 - 1200	2355	1250	2230	1000	406	2450
S-PD 1750	1750	700 - 1400	2105	1450	1980	1200	456	2335
S-PD 2000	2000	800 - 1600	2375	1450	2250	1200	496	2555
S-PD 2500	2500	1000 - 2000	2375	1550	2250	1300	557	2610
S-PD 3000	3000	1200 - 2400	2375	1650	2250	1400	619	2665



* storage temp. 65°C, cold water temp. 10°C and an average warm water temp. 40°C



Store and coil sizing chart

ENERGY BANK STORAGE TANK	DIAMETER	MAXIMUM SOLAR PANEL AREA	WT 2.3 Solar from 600mm diameter	WT 3.2 Solar from 790mm diameter	WT 4.1 Solar from 1000mm diameter
S-PD 350	600	15	1	-	-
S-PD 450	600	15	1	-	-
S-PD 600	700	15	1	-	-
S-PD 750	790	15	1	-	-
		30	-	1	-
S-PD 900	790	15	1	-	-
		30	-	1	-
S-PD 1000	790	15	1	-	-
		30	-	1	-
S-PD 1250	1000	15	1	-	-
		30	-	1	-
		40	-	-	1
S-PD 1500	1000	15	1	-	-
		30	-	1	-
		40	-	-	1
		55	-	2	-
S-PD 1750	1000	15	1	-	-
		30	-	1	-
		40	-	-	1
		55	-	2	-
		70	-	-	2
S-PD 2000	1200	15	1	-	-
		30	-	1	-
		40	-	-	1
		55	-	2	-
		70	-	-	2
S-PD 2500	1300	15	1	-	-
		30	-	1	-
		40	-	-	1
		55	-	2	-
		70	-	-	2
S-PD 3000	1400	15	1	-	-
		30	-	1	-
		40	-	-	1
		55	-	2	-
		70	-	-	2

1. For 40 l/min use 2 of WT 50 Cu heat exchangers + 1 WT 36 Cu pre-heat exchanger
2. For 60 l/min use 4 of WT 40 Cu heat exchangers + 2 WT 36 Cu pre-heat exchanger
3. Size the energy storage bank according to the table showing the capacity of Thermal Storage Bank according to the solar panel area.

Thermal Store Energy Bank

Storage tank for heat pump application PD

When a heat pump is used as a main power source in the system, our hot water transfer technology guarantees a longer working life for the heat pump. The reverse running of water through the heat pump has always the lowest temperature in the tank. Therefore the heat pump operates at maximum performance characteristics at a low cost level. All these factors result in high acceptance by the customer.

- optimal and efficient operation of the heating pump
- warm water in drinking water quality through efficient heat exchanger
- the size and type of heat exchanger determines the variation in capacity
- low thermal loss through a 120mm thick complete insulation made from CFC-free foam
- strong, silver grey-plastic outer skin



S-WP-PD 750

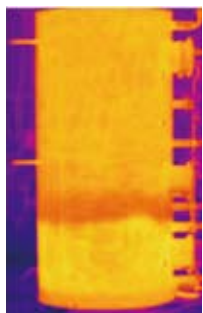
Type	Hot water tank	Available Hot water*	Measurements/mm				Weight	Tilting height
			with insulation		without insulation			
	Ltr.	Ltr.	height	Ø	height	Ø	kg	mm
S-WP-PD 750	750	1951 ¹ - 2952 ²	1855	1040	1730	790	246	1920
S-WP-PD 900	900	2451 ¹ - 3702 ²	2175	1040	2050	790	271	2205
S-WP-PD 1250	1250	3351 ¹ - 5202 ²	2075	1250	1950	1000	376	2200
S-WP-PD 1500	1500	3901 ¹ - 6202 ²	2355	1250	2230	1000	416	2450

*: Based on a water usage/ 20 Ltr./min.1:

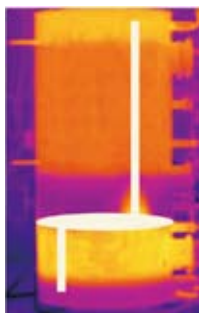
¹: 48°C storage tank temp.

²: 53°C storage tank temp., 40°C average water temp.

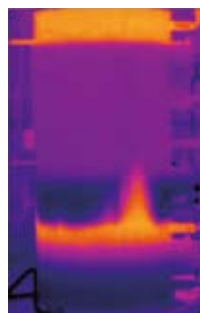
Infrared illustrations show changes in conditions when drawing water in a heat pump application PD



Beginning of water drawing process (via pre- and intermediate heat exchanger)



Creation of 2 cold storage zones which then enter into the reverse heat pump flow

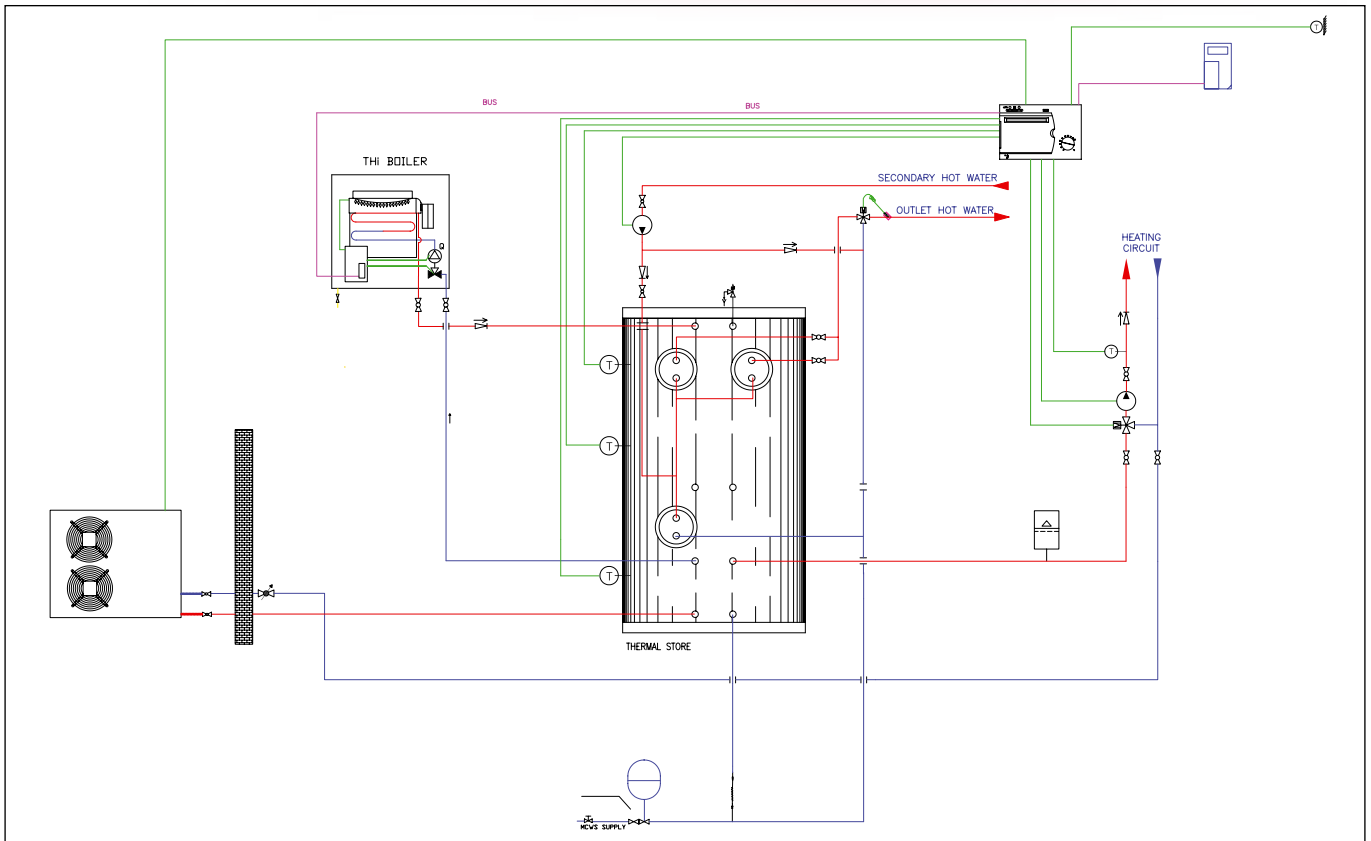


High hot water efficiency through transformation of energy from bottom to top



Thermal Store Energy Bank

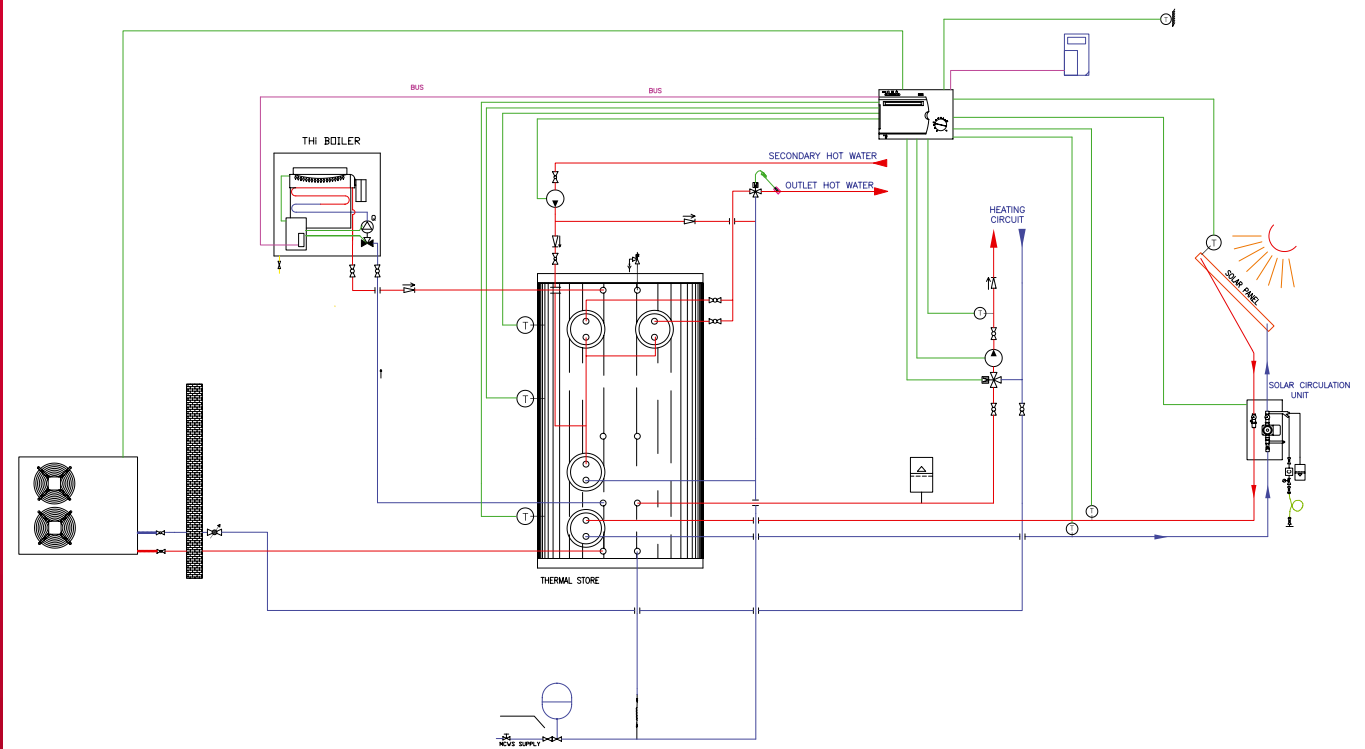
Thermal Store, Air Source Heat Pump and Boiler



Thermal Store chart

PART NUMBER	DESCRIPTION
Part number	
S-PD 350	350 L SOLAR STORE
S-PD 450	450 L SOLAR STORE
S-PD 600	600 L SOLAR STORE
S-PD 750	750 L SOLAR STORE
S-PD 900	900 L SOLAR STORE
S-PD 1000	1000 L SOLAR STORE
S-PD 1250	1250 L SOLAR STORE
S-PD 1500	1500 L SOLAR STORE
S-PD 1750	1750 L SOLAR STORE
S-PD 2000	2000 L SOLAR STORE
S-PD 2500	2500 L SOLAR STORE
S-PD 3000	3000 L SOLAR STORE
Part number	
S-WP-PD 750	750 L HEAT PUMP STORE
S-WP-PD 900	900 L HEAT PUMP STORE
S-WP-PD 1250	1250 L HEAT PUMP STORE
S-WP-PD 1500	1500 L HEAT PUMP STORE
Standard Heat exchanger	
Part number of coils	Characteristics
WT 30 CU WITHOUT CIRCULATION	(10 L/MIN), R3/4 CONNECTION FOR HOT WATER GENERATION
WT 40 CU WITHOUT CIRCULATION	(15 L/MIN), R3/4 CONNECTION FOR HOT WATER GENERATION
WT 50 CU WITHOUT CIRCULATION	(20 L/MIN), R3/4 CONNECTION FOR HOT WATER GENERATION
Specific Heat exchanger	
Part number of coils	Characteristics
WT 36 CU WITHOUT CIRCULATION	3.5 m2 HEATING SURFACE, R1 CONNECTION USE AS PRE HEATER
WT 30 CU (COOLING EXCHANGER)	2.5 m2 HEATING SURFACE, 22 mm (ext dia) TO RECLAIM HEAT FROM CHILLER
WT 30 CuNi (WITHOUT CIRCULATION FOR POOL)	2.5 m2 HEATING SURFACE, R3/4 CONNECTION FOR POOL HEATING
WT 2.3 Solar	2.3 m2 HEATING SURFACE, R3/4 CONNECTION 1.4L WATER CAPACITY
WT 3.2 Solar	3.2 m2 HEATING SURFACE, R3/4 CONNECTION, 1.9 L WATER CAPACITY (from 750L store)
WT 4.1 Solar	4.1 m2 HEATING SURFACE, R3/4 CONNECTION, 2.5L WATER CAPACITY (from 1250L store)

Thermal Store, Solar, Air Source Heat Pump and Boiler



Evinox Limited · Blenheim House · 1 Blenheim Road · Epsom · Surrey KT19 9AP T · +44 (0)1372 722277 F · +44 (0)1372 744477
 E · info@evinox.co.uk · sales@evinox.co.uk · technical@evinox.co.uk www.evinox.co.uk