

# Wood log boiler HVS

Heating energy from regional wood Your comfortable wood log boiler



System technology made in Bavaria

## Wood log boiler

- HVS E [Economic]
- HVS LC [LambdaControl]

Ecological heating with highest comfort

*High boiler efficiency!  
Pretty low emission!*



**Solarbayer®**

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## Solarbayer wood log boiler – ecological heating with highest comfort

### Little effort from refuelling to cleaning

Just fill in logs, ignite them and everything else is working just by itself. The large fuel chamber provides a long combustion period. The integrated fan guarantees an unproblematic start. The fuel chamber door and its bolt do not give way for smoke emission. Moreover, the combustion is stabilized throughout the whole combustion period by the fan and enables an unproblematic operation

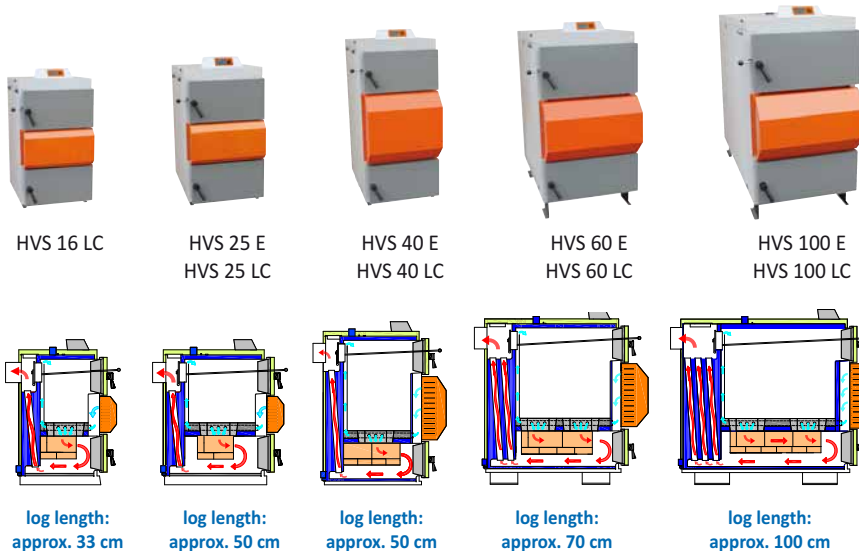
Our „Little one“, the HVS 16 LC is perfectly suitable for low-energy houses. Even the boiler size with 25kW can comfortably be filled with 0,5m logs through the large fuel chamber door. An overlength of the logs is, at least to some extent, no problem due to the depth of the fuel chamber. Long refueling intervals are the result of the large filling capacity. An increase in performance and very good exhaust gas values are achieved by a „hot air duct“ inside the tank.



### The following types are available:

**HVS E [without lambda control]: 25 kW to 100 kW**

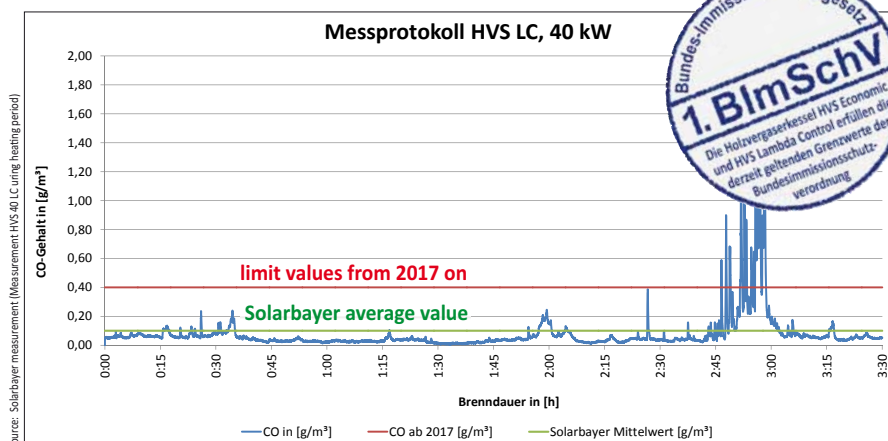
**HVS LC [with lambda control]: 16 kW to 100 kW**



### Brief description

- ✓ Gasifying wood log boiler with downward combustion and upward wood gasification
- ✓ solid boiler construction and robot manufacturing guarantee a long service life
- ✓ solid construction of the fuel chamber
- ✓ all fire-swept parts are made of special 6mm boiler steel
- ✓ new designed fuel chamber geometry
- ✓ consistent and certified boiler technology with innovational developments
- ✓ exhaust gas turbulators for more performance and lower exhaust gas temperatures
- ✓ easy handling and cleaning
- ✓ up to 30% more effective combustible utilization than with standard wood log boilers
- ✓ modulation combustion, exhaust gas control as well as an optional lambda control (*option HVS Lambda Control*) take care of the observation of the momentary valid limit value of the German BImSch regulation

### Perfect combustion – low emission:



- ✓ boiler size from 16 kW to 100 kW
- ✓ log length from 33 cm to 100 cm



## HVS E [ECONOMIC]

### Performance optimized and exhaust gas managed control unit

The HVS Economic achieves very clean emission values even without lambda control.

Due to the use of latest control technology a product was created that under-runs the already determined exhaust gas requirements. You can make the best possible use of the combustible with this boiler series and you also respect the environment.

Each model is equipped with the electronic combustion control. The permanent observation of the exhaust gas and boiler temperature means perfect comfort for you and a steady and even combustion for your logs. The physics of the combustion process has been adopted from nature and integrated into our boilers in an excellent way.

The logical cooperation of exhaust gas and boiler temperature in certain intervals is used to add the combustion air in an optimized way.

**The boilers are available with:  
25, 40, 60 and 100 kW nominal boiler output**

## HVS LC [LAMBDA CONTROL]

### Combustion optimized performance and firing control unit due to permanent lambda control

The outstanding concept of the HVS boiler which has been further developed by permanent innovations, has now reached the next generation.

The permanently increasing environmental impact by dust and CO<sub>2</sub> urges the industry on new developments and more modern technology in all areas. A modern and modular control concept of our wood log boiler series HVS LC ensures more performance and a low, environmentally friendly pollutant emission due to the serially integrated lambda sensor which observes permanently the exhaust gas values.

With the help of the integrated boiler and exhaust gas logic the intelligent control recognizes the requirements of energy. Due to the modulating air supply the boiler is able to react to a possible power reserve and can therefore ensure an almost perfect exploitation of combustibles. This means the highest possible comfort for you and a steady and even combustion for your wood.

You can only achieve an optimal efficiency factor with a perfectly aligned system. Therefore, we generally recommend our high quality stratification tanks SPS with integrated, patented, stratification system. The produced heat of the wood log boiler can be perfectly stored in this kind of tank. The stored thermal energy is relieved into the heating system when needed. This keeps your fuel consumption as low as possible and even preserves the environment.

**The boilers are available with:  
16, 25, 40, 60 and 100 kW nominal boiler output**

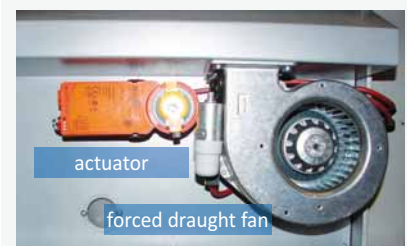
## Umweltfreundlich Heizen

With regional wood, a modern heating system and an appropriate application you contribute to the fact that your wood log boiler provides cozy warmth and does not harm the climate.



### HVS LambdaControl:

*Permanent combustion optimization due to exhaust gas analysis via lambda sensor and adjustable exhaust gas temperature*



### HVS LambdaControl:

*The actuator guarantees a perfect adjustment of the air quantity*

Dimensions and weight			HVS 16 LC	HVS 25 E HVS 25 LC	HVS 40 E HVS 40 LC	HVS 60 E HVS 60 LC	HVS 100 E HVS 100 LC
height	A	mm	1135	1135	1370	1420	1420
width	B	mm	590	590	590	760	760
width including slider	C	mm	645	645	645	785	785
depth	D	mm	840	1070	1070	1260	1650
height flow line	E	mm	1075	1075	1310	1400	1400
height exhaust pipe (middle)	F	mm	890	890	1110	1170	1170
height return line	G	mm	115	115	125	215	215
height draining	H	mm	55	55	70	135	135
flue spigot	Ø	mm	Ø 159	Ø 159	Ø 196	Ø 196	Ø 196
boiler flow line/boiler return line	Ø	–			DN50 (2" IG)		
safety heat exchanger	Ø	–			DN20 (¾")		
sensor pocket for safety heat exchanger	Ø	–			DN15 (½")		
draining	Ø	–		DN15 (½")		DN20 (¾")	
boiler weight		kg	400	430	460	760	950

Technical facts			HVS 16 LC	HVS 25 E HVS 25 LC	HVS 40 E HVS 40 LC	HVS 60 E HVS 60 LC	HVS 100 E HVS 100 LC
nominal output in kW	kW		16	25	40	60	100
boiler output with	%				88 – 92 %		
efficiency factor	l		60	75	93	180	215
water capacity	bar		3	3	3	3	3
max. operating pressure	mbar		9,35	9,75	10,48	12,77	11,5
pressure loss at nominal load (Δt 10 K)	mbar		1,00	1,05	2,55	3,19	2,82
pressure loss at nominal load (Δt 20 K)	bar				min. 1 to max. 4		
permissible pressure range safety valve	°C				4 to 15 °C		
water inlet temperature safety valve	°C				at 95 °C		
opening temperature safety valve	dB		45,0	45,5	47,7	51,4	54,2

Fuel chamber/fuel consumption			HVS 16 LC	HVS 25 E HVS 25 LC	HVS 40 E HVS 40 LC	HVS 60 E HVS 60 LC	HVS 100 E HVS 100 LC
admissible fuel			untreated, split wood log with a residual moisture of < 20%				
max. wood log length	mm		350	550	550	700	1000
fuel chamber depth	mm		370	560	560	750	1085
fuel chamber height	mm		490	490	750	730	730
fuel chamber width	mm		440	440	440	575	575
dimension of the filling hole w/h	mm		435/255	435/255	435/255	575/318	575/318
fuel chamber capacity, volume liter approx.	Liter		80	116	180	310	455
max. filling weight (beech) approx	kg		20	30	48	80	120
fuel consumption at nominal load (beech) approx.	kg/Std.		4,5	7,1	11,2	17	25
combustion period at nominal load (beech) approx.	Std.		4,4	4,2	4,3	4,5	4,5

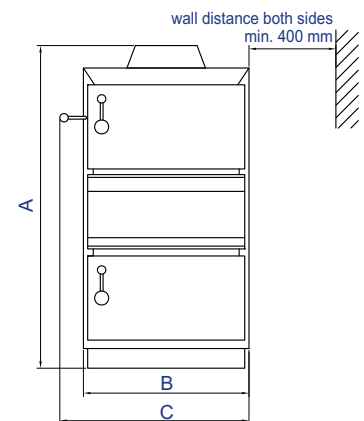
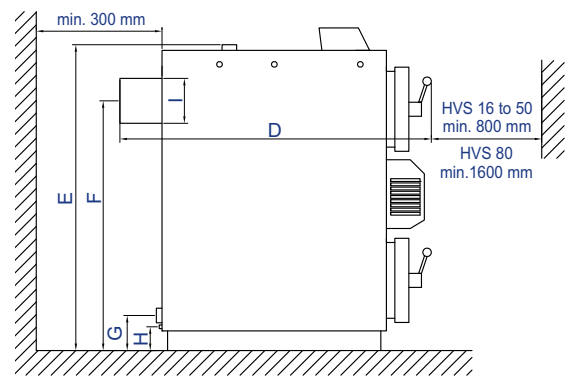
Exhaust gas routing			HVS 16 LC	HVS 25 E HVS 25 LC	HVS 40 E HVS 40 LC	HVS 60 E HVS 60 LC	HVS 100 E HVS 100 LC
recommended min. chimney cross section Ø	mm		140	150	180	180	200
draft requirements	Pa		15-20	15-20	15-25	15-25	15-25
effective minimum chimney height	m		approx. 7 meter				
exhaust gas mass flow (Bezug 13% CO <sub>2</sub> )	g/s		10	16	25	38	64
modulating exhaust gas temperature	°C		approx. 180 (±30)				
recommended exhaust gas routing to the chimney	m		effective length < 1,5 meter (max. 2 elbow bends)				
barometric damper			recommended				

Electrical data			HVS 16 LC	HVS 25 E HVS 25 LC	HVS 40 E HVS 40 LC	HVS 60 E HVS 60 LC	HVS 100 E HVS 100 LC
mains voltage/frequency	V/Hz		230/50				
power consumption – standby (AK4000D/AK4000S)	W		1,22				
power consumption – standby (AK4000D/AK4000SL)	W		1,67				
power consumption – operation [HVS E / HVS LC]	W		55	40 / 55	40 / 55	80 / 95	80 / 95

Hydraulic			HVS 16 LC	HVS 25 E HVS 25 LC	HVS 40 E HVS 40 LC	HVS 60 E HVS 60 LC	HVS 100 E HVS 100 LC
recommended min. buffer tank volume <sup>1</sup>	l		1000	1500	2200	3300	5500
manufacturer's recommendation <sup>1</sup>	l		1500	2000	3000	5000	6000
min. tube dimension (CU-/steel precision tube) <sup>2</sup>	mm		Ø 28	Ø 28	Ø 35	Ø 42	Ø 54
min. tube dimension (steel tube) <sup>2</sup>	–		DN25/1"	DN25/1"	DN32/1¼"	DN40/1½"	DN50/2"
recommended boiler return line temperature	°C		70 °C				

<sup>1</sup>Regulatory framework and government grants should be paid attention to.

<sup>2</sup>Depending on tube length, number of elbows installed, mixing valves, changeover valves, etc., you might need a bigger dimension. The above mentioned tube dimensions are only a recommendation and do not replace professional technical planning.



## Werkzertifikat

Hiermit wird auf unsere eigene Verantwortung erklärt, dass das nachstehend beschriebene Produkt den derzeit geltenden europäischen Richtlinien und Vorschriften entspricht.

<b>Typbezeichnung:</b>	<b>Holzvergaserkessel HVS 40 LC</b>
<b>Nennwärmeleistung:</b>	40 kW
<b>Bauart:</b>	Stahlkessel nach DIN EN 303-5:1999-06 mit Verbrennungsluftgebläse und Lambda-Sonde
<b>Brennstoffe:</b>	naturbelassenes Scheitholz
<b>Beschichtungstechnik:</b>	Handbeschichtung
<b>Kesselhersteller:</b>	Solarbayer GmbH Frenth, Am Dörrerhof 22 D-85333 Pollenfeld
<b>Prüfbericht Nr.:</b>	10300021/2

**Prüfergebnisse bezüglich der heizungstechnischen Anforderungen:**

HVS 40 LC	Prüfgebnisse (Emissionen bezogen auf 22 MJ/N <sub>2</sub> , s)	Prüfgebnisse (Emissionen bezogen auf 13 MJ/N <sub>2</sub> , s)
Flußtemperatur	–	naturbelassenes Scheitholz/Buche
Gasauerlassgrad	%	85,0
Abgasatemperatur	°C	230
CO-Emissionen	mg/m <sup>3</sup>	71
CO <sub>2</sub> -Emissionen (DMS)	mg/m <sup>3</sup>	27
NO <sub>x</sub> -Emissionen	mg/m <sup>3</sup>	17
NO <sub>2</sub> -Emissionen	mg/m <sup>3</sup>	13

Pollenfeld, 16.02.2012

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Klaus-Martin  
Geschäftsführer Solarbayer GmbH

Wood is burnt environmentally compliant and with highest efficiency with Solarbayer wood log boilers. The values determined during approval can be found in our certificates. Those are available for download on our homepage [www.solarbayer.de](http://www.solarbayer.de)

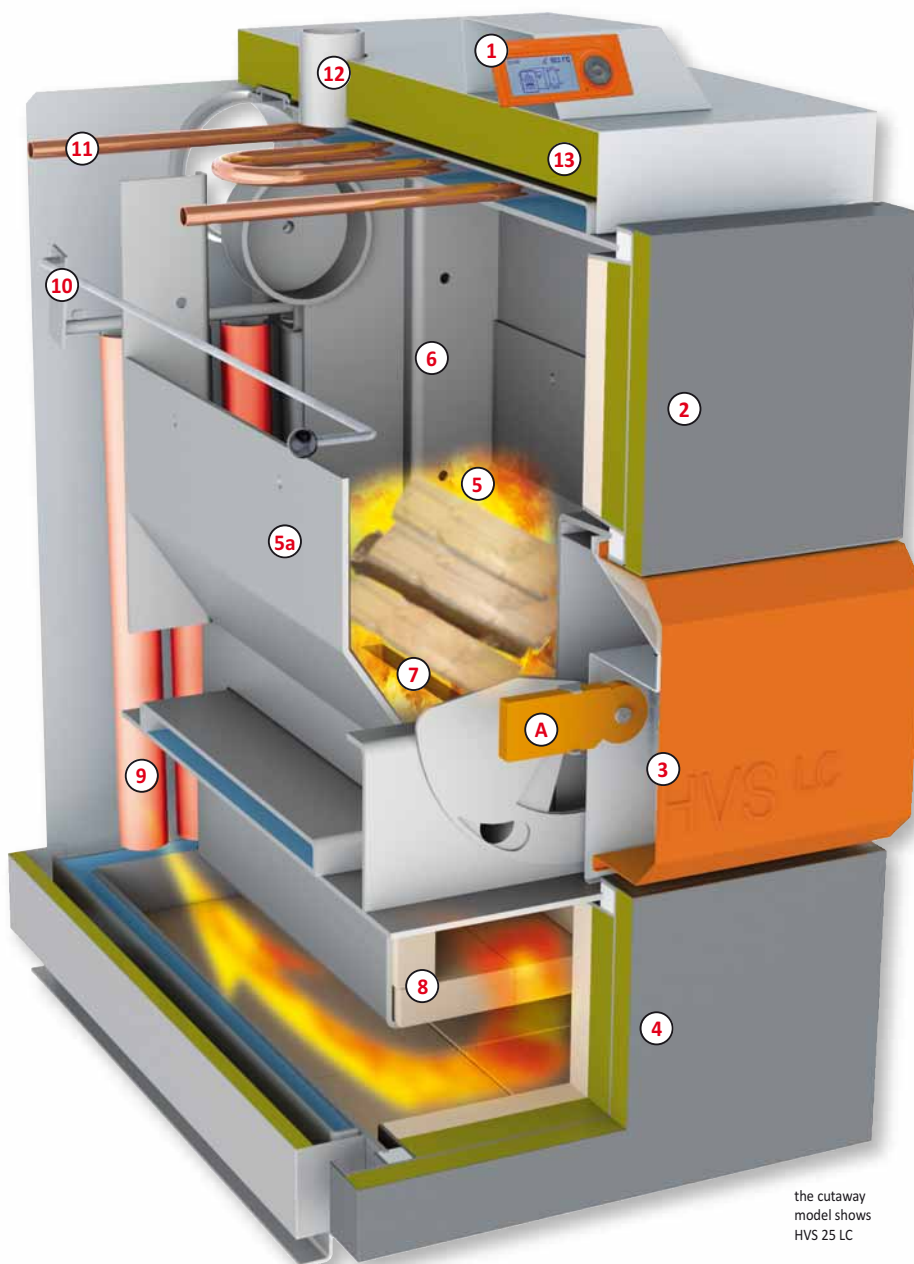


Graphic display with pre-defined Solarbayer hydraulic scheme. Exhaust gas temperature, boiler temperature and buffer tank temperature control. With the „HVS Lambda Control“ boiler the function „lambda control“ is activated.

An excellent energy efficiency is guaranteed with the further developed control electronics. Lowest power consumption during operation and in stand-by mode. The control of the new pump class „A“ is possible without problems.



complete combustion of the wood gases in the lower combustion chamber



the cutaway model shows HVS 25 LC

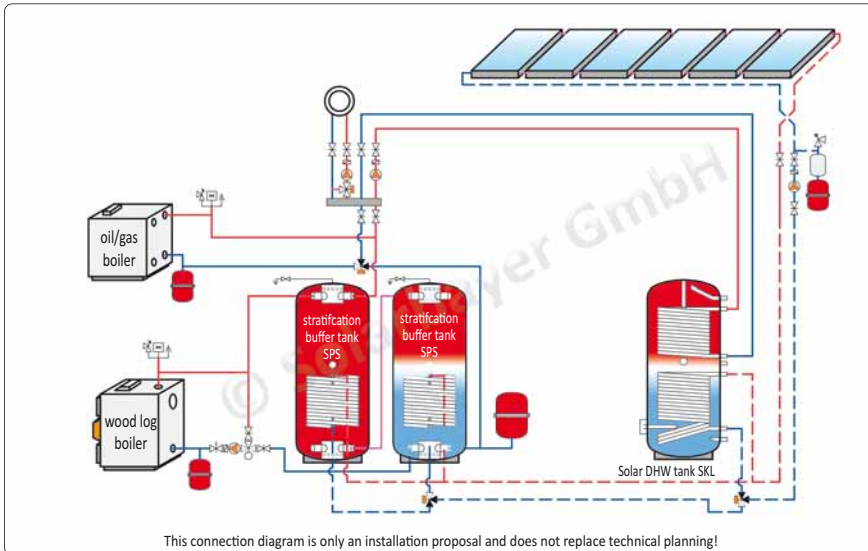
## successful detail solution

- 1 control unit**  
graphic display with permanent presentation of the system's operating status
- 2 fuel chamber door**  
large-size fuel chamber door
- 3 forced draft fan**  
the quantity of air, necessary for a perfect combustion is supplied by the infinitely variable forced draft fan, equipped as standard
- 4 bottom door**  
cleaning door for the removal of ash
- 5 fuel chamber**  
large fuel chamber (0,5 up to 1 meter logs depending on boiler size)
- 5a conical fuel chamber walls**  
for a steady inlet of embers to the ceramic nozzle
- 6 primary air duct**  
pre-heated primary air is lead into the fuel chamber by the rear air duct
- 7 ceramic nozzle with secondary air duct**  
creates the perfect gas mixture and guarantees a clean downward wood gas flame
- 8 slide-in combustion chamber**  
with high temperature resistant fire-clay bricks for a complete burnout of the wood gases with a minimum of ash
- 9 exhaust gas heat exchanger with turbulators**  
for best possible hand-over of exhaust gas heat to the heating water
- 10 start-up flap with draft-bar**  
prevents outlet of flue gas when refueling the boiler
- 11 safety heat exchanger**  
for cooling down in case of overheating
- 12 boiler flow-line**
- 13 high quality insulation**

**A Lambda actuator (only series HVS Lambda Control)**  
The secondary air is adjusted by the lambda sensor via a servo motor, depending on the emission values. With the boiler series HVS E (without lambda control) the secondary air is adjusted via regulating screws.

\*only with HVS 16-40

## Important system components – integration into the heating system



Hydraulic example: retrofitting an existing oil or gas boiler system with a wood log boiler and solar system

### A buffer tank volume of at least 55 Liter per kW nominal boiler output has to be installed.

In order to achieve a perfect efficiency factor we recommend the installation of a buffer tank volume of 70 to 100 liter per kW, depending on space conditions. The best possible tank for this is our stratification buffer tank with integrated stratification system SLS®.

The characteristic aspects of these systems are the long refueling intervals as well as the high efficiency factor.

In combination with a solar system you will achieve perfect system efficiency.

### Important system components

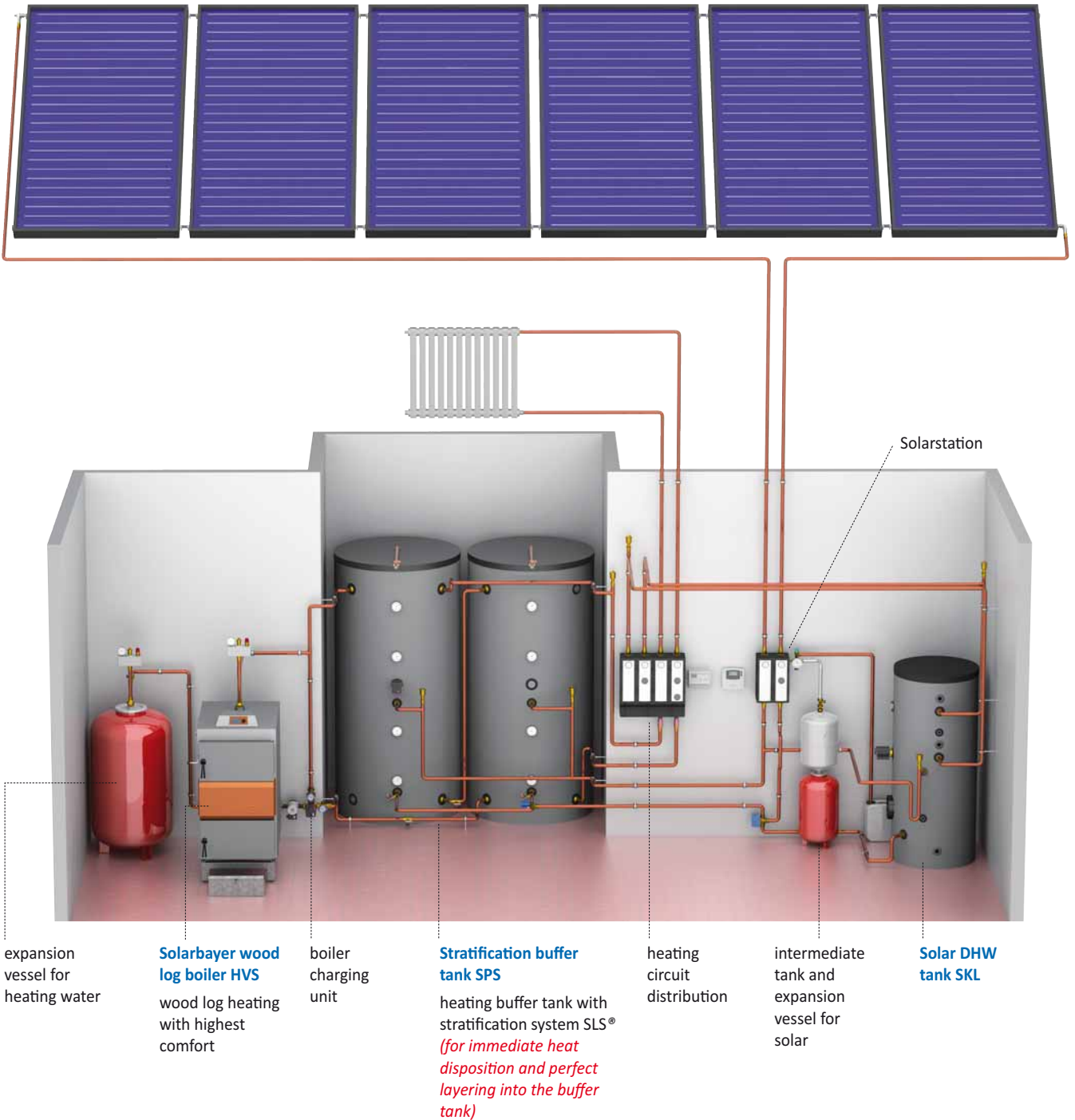
#### You need the following equipment for a safe and perfect operation:

- boiler charging unit
- thermal discharge safety valve (to prevent overheating)
- stratification buffer tank SPS with insulation, for perfect heat utilization
- hot water expansion vessel (approx. 10% of the system capacity)
- barometric damper
- Bei schwierigen Kaminzugverhältnissen ist die Nachrüstung mit einem Saugzuggebläse für ein komfortables Nachlegen des Brennstoffs möglich

The here mentioned components are available as easy to assemble sets

Suitable wood log boiler and solar sets can be found in our pricelist and on our homepage [www.solarbayer.de](http://www.solarbayer.de)

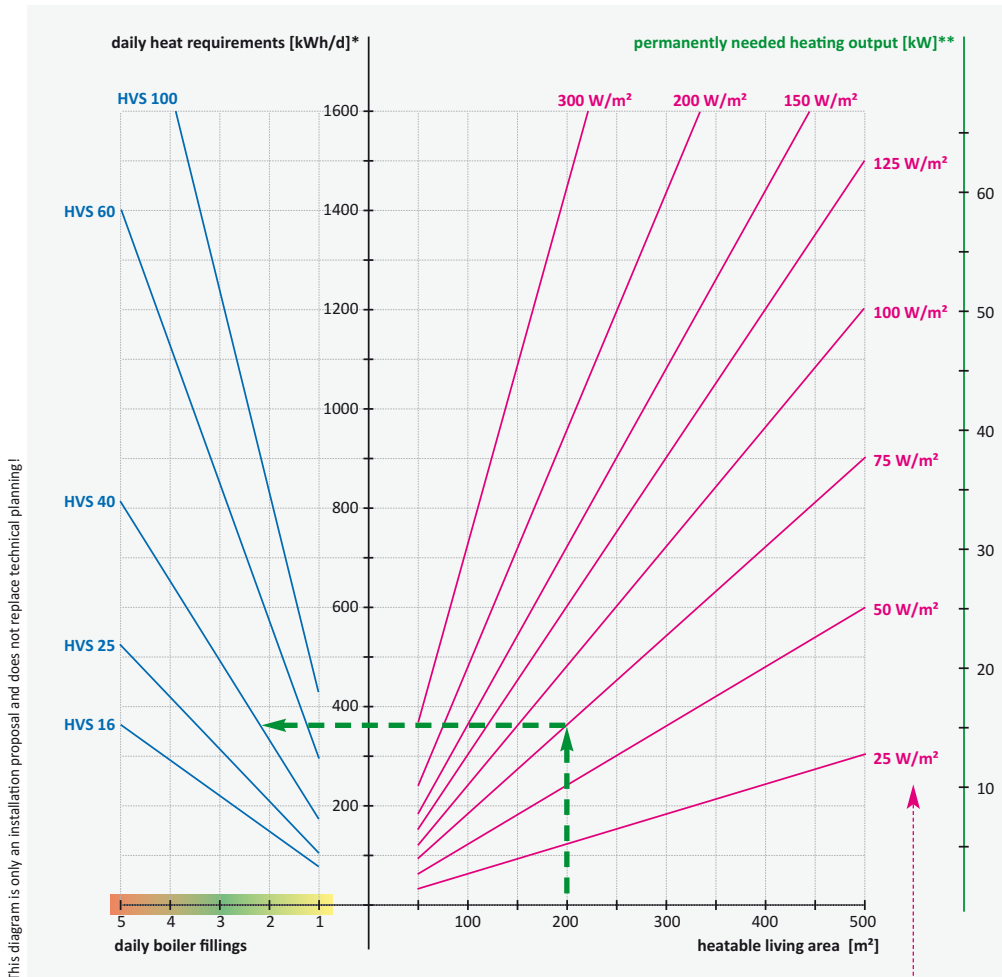
## Your „Comfort heating system” – wood log boiler in combination with a solar system



Our wood log boiler sets are always equipped with our **stratification buffer tank SPS**.  
This guarantees a comfortable heating system and a fast and efficient heat conduct into your building.

***Our patented stratification buffer tanks SPS with patented stratification system SLS® make the difference!***

## Example for calculating the boiler size



**Dimensioning diagram for calculating the boiler size with the following operating conditions:**

- outside temperature: approx. -16 °C (coldest day)
- room temperature: approx. 20 °C
- persons: approx. 4
- type of building: SFD
- heat coverage by wood log boiler: 100%
- daily fillings with wood (at -16 °C): approx. 3 times

Differing operating conditions may increase or decrease the heat requirements. Estimate in particular cases and keep reserves.

**Estimation of the building's heat requirement according to building class:**

Building class	Heating load on the coldest day (-16°C)
Existing building until 1977	120 to >160 W/m <sup>2</sup>
Thermal Insulation Ordinance since 1977	80 to 120 W/m <sup>2</sup>
Thermal Insulation Ordinance since 1984	60 to 80 W/m <sup>2</sup>
Thermal Insulation Ordinance since 1994	40 to 60 W/m <sup>2</sup>
EnEV 2002	20 to 45 W/m <sup>2</sup>
EnEV 2009	15 to 30 W/m <sup>2</sup>

source: Book of Tables SHK

Please note that with solid fuel boilers the specified output is guaranteed under full load only. You heat up the boiler and it will take about 30 minutes until the boiler will operate with its maximum output. The stated output will last for approximately 2,5 hrs. Now the burn-off period begins for about an hour with decreased performance. The firebed remaining in the combustion chamber will post-heat for about an hour. Afterwards the combustible is completely used up. For an easier calculation we presume a burning period of approximately 4 hrs (at nominal output).

**Attention:** This is imperative for the rating of the boiler to avoid that the boiler output is rated too weak

**Example:**

assumed heat load: 75 W/m<sup>2</sup>  
 heatable living area: 200 m<sup>2</sup>  
 [75 W/m<sup>2</sup> x 200 m<sup>2</sup> x 24 hrs = 360 kWh daily]

**Result:**

boiler size: **40 kW**  
 boiler fillings with firewood: **2-3**  
 (on the coldest day at -16 °C)

**\*daily heat requirement [kWh/d]:**

The daily heat requirement of the building in kWh (at an outside temperature of -16°C), when known. This value can be inquired with the architect of the building.

If you don't know the exact value it might roughly be estimated. Thus, you take the heat load of the corresponding building class in the adjacent chart and then the equivalent line in the diagram in order to calculate the heat load for your living area.

**\*\*permanently needed heating output [kW]:**

The permanently required heating output is for example the nominal heat output of an ordinary oil/gas boiler that produces thermal heat for 24 hrs.



# Solarbayer wood log boiler sets – easy to assemble and highly efficient



Solarbayer wood log boiler sets generally contain stratification buffer tanks SPS. Thus, a fast and efficient heat duct into your building is achieved.

*A buffer tank volume of at least 55 Liter per kW nominal boiler output has to be installed. The best possible tank for this is our stratification buffer tank with integrated stratification system SLS®.*

*In order to achieve a perfect efficiency factor we recommend the installation of a buffer tank volume of 70 to 100 liter per kW, depending on space conditions.*

*The characteristic aspects of these systems are the long refueling intervals as well as the high efficiency factor.*

*Thus, you will achieve perfect system efficiency.*

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The single components in each set can be changed according to your needs.  
Our technicians will be glad to advise you.

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### Set components

We have compiled easy to assemble wood log boiler sets that could be integrated in almost every building.

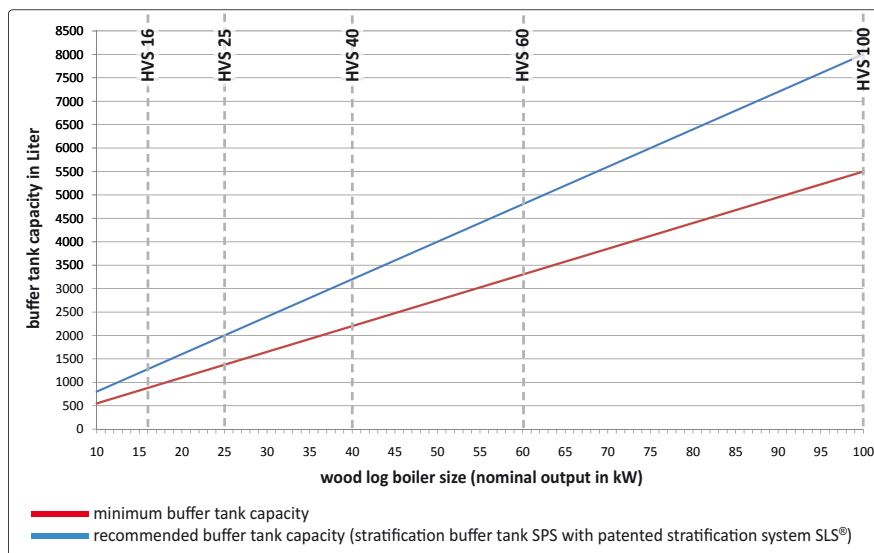
Those sets contain the following components:

- **Solarbayer wood log boiler**  
available in the following versions:
  - HVS Economic [without lambda control]
  - HVS Lambda Control [with lambda control]
- **boiler charging unit**  
with boiler charging unit and shut-off device
- **thermal discharge safety valve** (¾" IG)  
with sensor and sensor socket
- **patented stratification buffer tank SPS**  
with integrated stratification system SLS®  
(one of the most powerful systems on the market)
- **fire protection insulation ISO B1®**  
difficult to ignite
- **membrane expansion vessel**  
aligned to the particular buffer tank size
- **cap valve for expansion vessel**  
with shut-off device, connection and draining
- **boiler safety unit**  
with de-aeration, manometer and safety valve
- **air separator for heating**  
air separator for closed hot water heating systems
- **detailed instruction manual**

Suitable wood log boiler and solar sets can be found in our pricelist and on our homepage  
[www.solarbayer.de](http://www.solarbayer.de)

# Optimaler und komfortabler Betrieb der Holzheizung mit ausreichend dimensionierten Schichtleit-Pufferspeichern

## Calculating the buffer tank size for wood log boilers

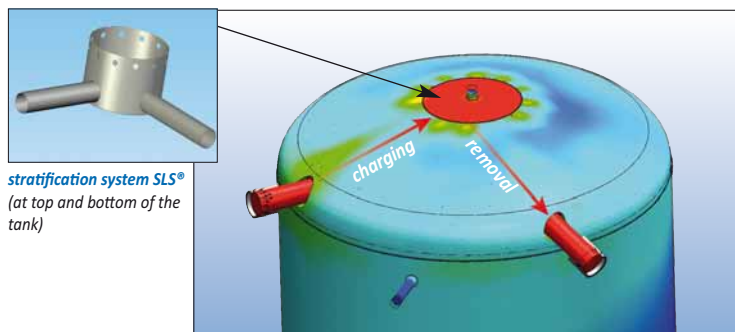


### Rule of thumb for calculating the buffer tank capacity for wood log boiler systems:

- a minimum of 55 liter per kW nominal boiler output\*
- even better: 80 liter per kW nominal boiler output
- with standard buffer tanks you should not use more than 100 liter per kW nominal boiler output unlike the high performance Solarbayer buffer tanks because of the exact heat layering you can apply tanks with an even larger capacity

The buffer tank capacity should also perfectly match the application of other renewable energy sources. In practice a total tank capacity of 50-70 liter per m<sup>2</sup> collector surface area has proven as useful. If a bigger tank capacity should be necessary due to wood log boiler size (see top) as for the calculated optimal dimension of the solar system, than you have to take care that the hydraulic integration of the solar system in order to load the tank has to take place in row, e.g. SPS with 2 heat exchangers resp. several buffer in a row. It is important that idleness is guaranteed when applying the collector and system technology.

## Operating mode of our stratification buffer tanks SPS with stratification system SLS®



The charging of the Solarbayer stratification tank is lead into the stratification pot via the charging pipe. The thermal extraction starts as soon as heat is needed, through the discharge pipe into the heating system.

*The heat needed is only taken out of the stratification pot and is therefore immediately ready for extraction.*

*The surplus of energy provided by the heat transfer medium is going to be stored in the buffer tank, perfectly layered, via the boreholes in the stratification system SLS® (as show in the pictures on the right).*

## Wood log boiler systems

**Stratification buffer tanks make the application of solid fuel heating systems almost as easy and comfortable as oil and gas boilers.**

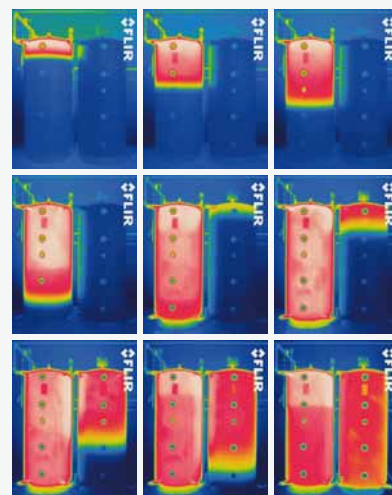
Our wood log boilers produce significantly more energy with one boiler filling during the burn-off period than the heating system needs at that moment. The surplus of energy provided by the heat generator is stored in the buffer tank. After the fire in the wood log boiler is burned down the heat of the buffer tank is at the building's and maybe at the hot water generation's disposal.

The system can be fed with heat without permanently fueling the boiler. When dimensioning the wood log boiler system it is one's goal to generally heat up the wood log boiler only once or twice per day in order to supply the building with heat twenty-four-seven. At the same time the heating comfort is increased by that.








The size of the buffer tank should be chosen in such a way that the amount of energy resulting from one boiler filling can be stored completely in the buffer tank.

For an excellent operation of the system it is necessary to use a stratification buffer tank with smart layering and efficient energy utilization.

The displayed time-lapse clearly demonstrates the steady allocation and stratification of thermal energy while the stratification buffer tank is charged



## Intended purpose and specific application areas of the different types of storage tanks

Type of storage tank	Heating buffer tank	Stratification system SLS®	Heat exchanger (1 HE, bottom)	Heat exchanger (2 HE, bottom + top)	DHW preparation	Intended purpose	Advantages
 <p>Stratification buffer tank <b>SPS</b> (without heat exchanger)</p>	●	●	○	○	○	<ul style="list-style-type: none"> <li>● 500 to 5.000 Liter, special sizes on request</li> <li>● heating buffer tank for space heating</li> </ul>	<ul style="list-style-type: none"> <li>● perfect heat layering when loading and unloading (SLS® system)</li> <li>● recommended for the integration of biomass boilers, heat pumps, etc.</li> </ul>
 <p>Stratification buffer tank <b>SPS-S</b> (1 solar heat exchanger, bottom)</p>	●	●	●	○	○	<ul style="list-style-type: none"> <li>● 500 to 5.000 Liter, special sizes on request</li> <li>● heating buffer tank for space heating</li> <li>● one integrated heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>● perfect heat layering when loading and unloading (SLS® system)</li> <li>● recommended for the integration of biomass boilers, heat pumps, etc.</li> <li>● integration of a solar system is possible</li> </ul>
 <p>Stratification buffer tank <b>SPS-S 2 WT</b> (2 solar heat exchanger, bottom and top)</p>	●	●	●	●	○	<ul style="list-style-type: none"> <li>● 500 to 5.000 Liter, special sizes on request</li> <li>● heating buffer tank for space heating</li> <li>● two integrated heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>● perfect heat layering when loading and unloading (SLS® system)</li> <li>● recommended for the integration of biomass boilers, heat pumps, etc.</li> <li>● perfect integration of a solar system is possible (2 zone arrangement)</li> <li>● perfect for fresh water stations</li> </ul>
 <p>Heat pump storage tank <b>WP</b> (enameled)</p>	○	○	●	●	●	<ul style="list-style-type: none"> <li>● 350 and 500 Liter</li> <li>● Hot water tank for the preparation of DHW</li> <li>● two integrated heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>● recommended for the integration of a heat pump or solar system</li> <li>● especially suitable for high hot water output due to the huge double wound heat exchanger</li> </ul>
 <p>Solar DHW storage tank <b>SKL</b> (enameled)</p>	○	○	●	●	●	<ul style="list-style-type: none"> <li>● 350 and 500 Liter</li> <li>● Hot water tank for the preparation of DHW</li> <li>● two integrated heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>● integration of a solar system is possible</li> </ul>
 <p>Hygienic stratification storage tank <b>HSK-ÖKO</b> (stainless steel DHW exchanger)</p>	●	○	●	●	●	<ul style="list-style-type: none"> <li>● 700 and 1.000 Liter</li> <li>● heating buffer tank for space heating as well as hygienic hot water preparation inside the integrated stainless steel heat exchanger</li> <li>● two integrated heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>● perfect integration of a solar system is possible (2 zone arrangement)</li> <li>● hot water preparation via integrated stainless steel heat exchanger (ø 32 mm), hygienic DHW at all times</li> <li>● cost-optimized alternative</li> </ul>
 <p>Hygienic stratification buffer tank <b>HSK-SLS</b> (stainless steel DHW exchanger)</p>	●	●	●	●	●	<ul style="list-style-type: none"> <li>● 500 to 2.200 Liter, special sizes on request</li> <li>● heating buffer tank for space heating as well as hygienic hot water preparation inside the integrated stainless steel heat exchanger</li> <li>● two integrated heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>● perfect heat layering when loading and unloading (SLS® system)</li> <li>● perfect integration of a solar system is possible (2 zone arrangement)</li> <li>● hot water preparation via integrated stainless steel heat exchanger (ø 48 mm), hygienic DHW at all times</li> <li>● high hot water output</li> </ul>

