

## Technical Data

Part No. and prices: see Price List



File in:  
Vitotec 1 Manual, Index 16

### Vitocell-B 100

#### Type CVB

**Vertical** domestic hot water cylinder **with indirect coils**,  
constructed from steel with Ceraprotect enamel finish

With **two indirect coils** for dual domestic hot water applications.

Electrical immersion heater available as an option.



Certificated in accordance with DIN ISO 9001  
Certificate Reg. No. 12 100 5581

### VITOCELL-B 100

The floor-standing solution for a cost-efficient domestic hot water supply in conjunction with solar collectors and boilers. The Vitocell-B 100 is available with storage capacities of 300 and 500 litres.

#### The benefits at a glance

- Corrosion-protected steel cylinder shell with Ceraprotect enamel finish. Magnesium anode provides additional cathodic protection. External current anode available as an accessory.
- Indirect coil extends right to the bottom of the cylinder, thereby heating the entire water content.
- Extremely convenient domestic hot water supply assured through fast, uniform heating via generously sized indirect coils.
- Heat losses minimized by highly effective wrap-around insulation (CFC-free).
- For dual domestic hot water applications in conjunction with solar collectors and boilers. The heat from the solar collectors is transferred to the domestic hot water via the bottom indirect coil. The two indirect coils are connected in series for mono domestic hot water heating with a heat pump.
- If required, an electrical immersion heater can also be supplied or retrofitted.

Extremely effective wrap-around  
insulation (CFC-free)

Top indirect coil – domestic hot  
water is re-heated by the boiler

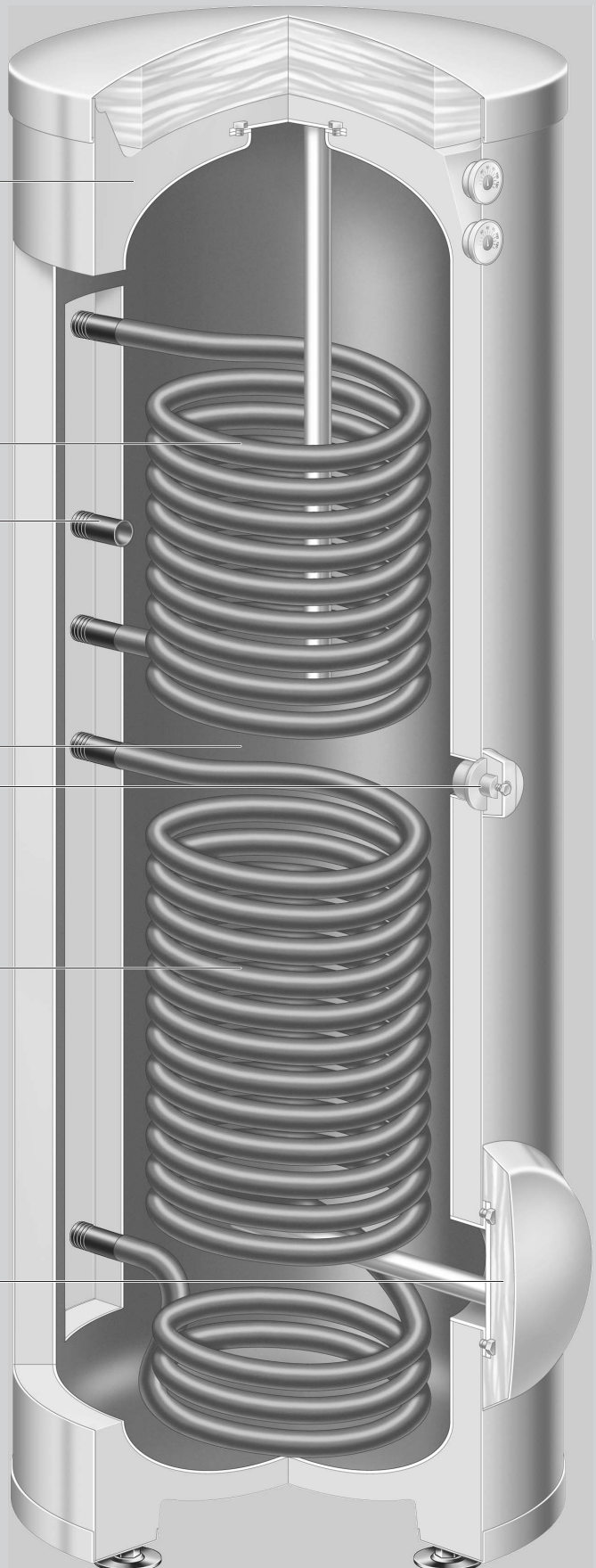
Pressure and temperature relief valve

Steel cylinder shell with  
Ceraprotect enamel finish

Connection for EHO electrical immersion heater

Bottom indirect coil –  
connection for solar collectors

Inspection port/clean-out opening



## Technical data

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DIN-Reg. No. 0242/01-13 MC/E

**For domestic hot water applications**  
in conjunction with boilers and solar collectors

Suitable for heating systems with  
 ■ heating water flow temperature up to **160 °C**  
 ■ solar flow temperature up to **160 °C**  
 ■ domestic hot water temperature up to **95 °C**  
 ■ operating pressure (**primary** and **secondary circuit**) up to **10 bar**  
 ■ operating pressure (**solar circuit**) up to **10 bar**

Storage capacity		litr		300		500			
Indirect coil		top*2		bottom*3		top*2		bottom*3	
<b>Recovery capability*1</b> with a temperature rise of the domestic hot water from <b>10 to 45 °C</b> and <b>heating water</b> flow temperature of ..... at the heating water flow rate stated below	90 °C	kW	31	53	47	70			
		ltr/h	761	1302	1154	1720			
	80 °C	kW	26	44	40	58			
		ltr/h	638	1081	982	1425			
	70 °C	kW	20	33	30	45			
	ltr/h	491	811	737	1106				
	60 °C	kW	15	23	22	32			
	ltr/h	368	565	540	786				
	50 °C	kW	11	18	16	24			
	ltr/h	270	442	393	589				
<b>Recovery capability*1</b> with a temperature rise of the domestic hot water from <b>10 to 60 °C</b> and <b>heating water</b> flow temperature of ..... at the heating water flow rate stated below	90 °C	kW	23	45	36	53			
		ltr/h	395	774	619	911			
	80 °C	kW	20	34	30	44			
	ltr/h	344	584	516	756				
	70 °C	kW	15	23	22	33			
	ltr/h	258	395	378	567				
<b>Heating water flow rate</b> for the recovery capabilities stated		m <sup>3</sup> /h		3.0		3.0			
<b>Max. connectable absorber surface area</b>									
– Vitosol 100		m <sup>2</sup>		10		12			
– Vitosol 200		m <sup>2</sup>		4		6			
– Vitosol 300		m <sup>2</sup>		4		6			
<b>Max. heat pump capacity</b> to be connected at 55 °C heating water flow and 45 °C hot water temperature at the stated heating water flow rate*4 with the two indirect coils connected in series		kW		8		10			
<b>Standby energy loss*5</b>		kWh/24 h		2.5		3.2			
<b>Dimensions</b>									
Length (dia.)		mm		633		748			
Overall width		mm		705		827			
Height		mm		1748		1911			
Height with cylinder tilted		mm		1792		1984			
<b>Weight</b> complete with insulation and indirect coils		kg		160		230			
<b>Heating water content</b>		litr	6	10	9	13			
<b>Heat exchange surface area</b>		m <sup>2</sup>	0.9	1.5	1.4	1.9			
<b>Connections</b>									
Heating water flow and return		Ø" (male thread)		1		1			
Cold water, hot water		Ø" (male thread)		1		1¼			
Pressure and temperature relief valve		Ø" (male thread)		1		1			
Electrical immersion heater		Ø" (fem. thread)		1½		1½			

\*1When planning for the recovery capability as stated or calculated, allow for the corresponding circulation pump. The stated recovery capability is only achieved when the rated output of the boiler is equal to or greater than the recovery capability.

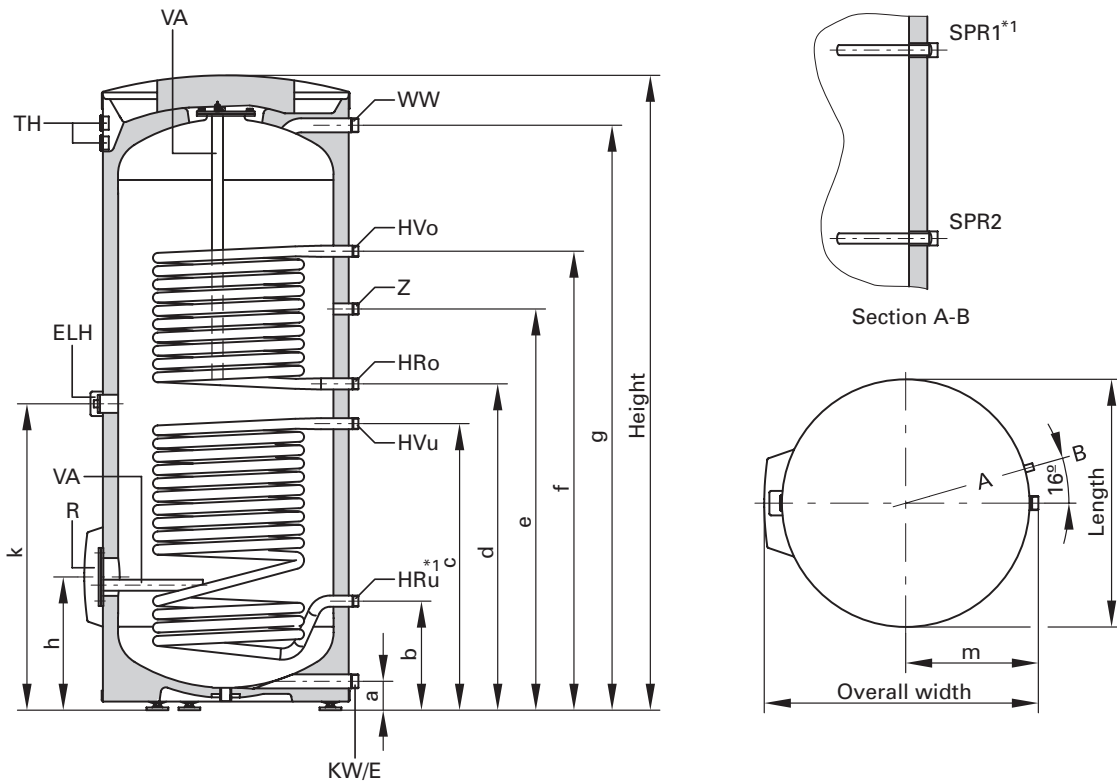
\*2The top coil is intended for connection to a boiler.

\*3The bottom coil is intended for connection to solar collectors.

\*4See technical data sheet for the heat pump.

\*5Measured values to DIN 4753-8. The values are based on a room temperature of +20 °C and a domestic hot water temperature of 65 °C and can vary by 5 %.

► See separate data sheets for technical data on Viessmann modular system components.



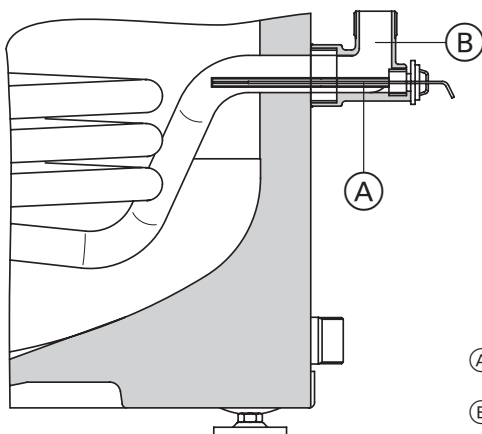
**Dimensions**

Storage capacity	litres	300	500
a	mm	78	83
b	mm	262	325
c	mm	877	860
d	mm	997	980
e	mm	1117	1206
f	mm	1357	1380
g	mm	1602	1759
h	mm	325	398
k	mm	937	920
m	mm	343	400

**Legend**

- E Drain
- ELH Connection for electrical immersion heater
- H<sub>Ro</sub> Heating water return (top coil)
- H<sub>Ru</sub> Heating water return (bottom coil)
- H<sub>Vo</sub> Heating water flow (top coil)
- H<sub>Vu</sub> Heating water flow (bottom coil)
- KW Cold water
- R Inspection port/clean-out opening with flange cover
- SPR1\*1 Sensor well for cylinder control unit at same height as H<sub>Vo</sub>
- SPR2 Sensor well for bottom thermometer at same height as H<sub>Vu</sub>
- TH Thermometer
- VA Magnesium sacrificial anode
- WW Hot water to mains supply
- Z Pressure and temperature relief valve tapping

**Recommended arrangement of the cylinder temperature sensor for solar operation**



- (A) Cylinder temperature sensor (solar control)
- (B) Screw-in elbow with sensor well

5822 162 GB

\*1For solar operation: Recommended arrangement of the cylinder temperature sensor in the heating return pipe; use the screw-in elbow with sensor well (supplied as part of the standard delivery).

## Technical data

### Performance factor $N_L$ to DIN 4708

#### Top coil

Cylinder storage temperature<sup>\*1</sup> =  
cold water inlet temperature +50 K  $\frac{+5K}{-0K}$

Capacity per cylinder	ltr	300	500
Heating water flow temperature		Performance factor $N_L$ <sup>*1, *2</sup>	
90 °C		1.6	2.7
80 °C		1.5	2.5
70 °C		1.4	2.3

### Short-time recovery capability (10 minutes)

Based on performance factor  $N_L$   
Domestic hot water rise from 10 to 45 °C

Capacity per cylinder	ltr	300	500
Heating water flow temperature		Short-time recovery capability (ltr/10 min) <sup>*2</sup>	
90 °C		173	219
80 °C		168	210
70 °C		164	203

### Max. domestic hot water drawing rate (over 10-minute period)

Based on performance factor  $N_L$   
With reheating  
Domestic hot water rise from 10 to 45 °C

Capacity per cylinder	ltr	300	500
Heating water flow temperature		Max. drawing rate (ltr/min) <sup>*2</sup>	
90 °C		17	22
80 °C		17	21
70 °C		16	20

### Domestic hot water drawing capability

Storage cylinder contents heated to 60 °C  
Without reheating

Capacity per cylinder	ltr	300	500
Domestic hot water drawing rate	ltr/min	15	15
Domestic hot water drawing capability	ltr	110	220
Water with $t = 60$ °C (constant)			

### Heating time

The stated heating times are achieved when the maximum recovery capability of the domestic hot water cylinder is made available at the respective flow temperature and with a domestic hot water rise from 10 to 60 °C.

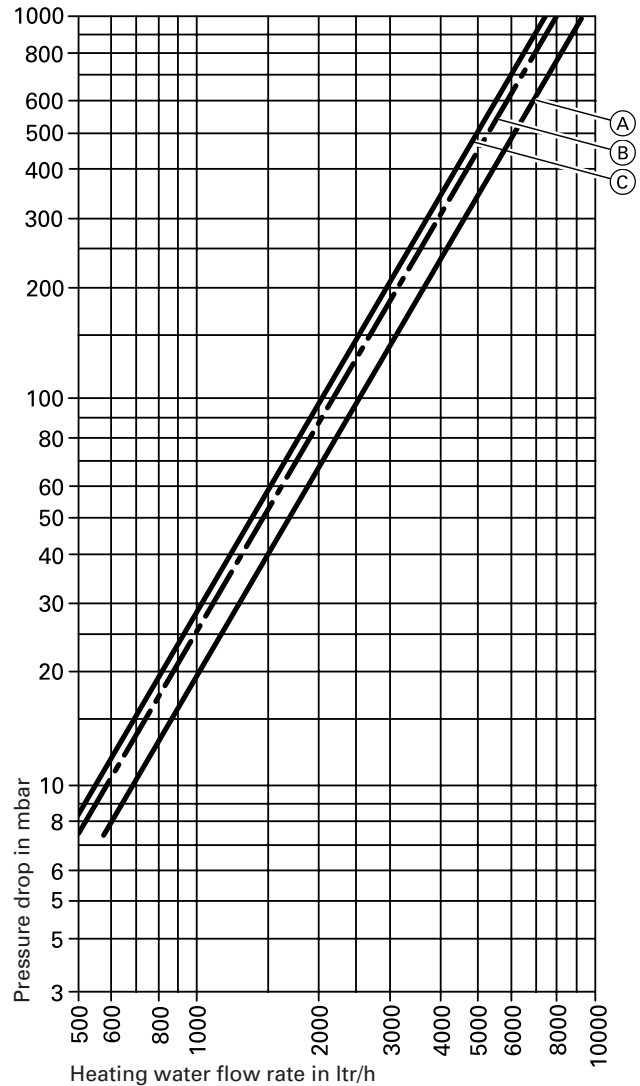
Capacity per cylinder	ltr	300	500
Heating water flow temperature		Heating time (minutes)	
90 °C		16	19
80 °C		22	22
70 °C		30	30

<sup>\*1</sup>The performance factor  $N_L$  varies according to the cylinder temperature  $T_{dhw}$ .

Guide values:  $T_{dhw} = 60$  °C  $\rightarrow 1.0 \times N_L$   
 $T_{dhw} = 55$  °C  $\rightarrow 0.75 \times N_L$   
 $T_{dhw} = 50$  °C  $\rightarrow 0.55 \times N_L$   
 $T_{dhw} = 45$  °C  $\rightarrow 0.3 \times N_L$ .

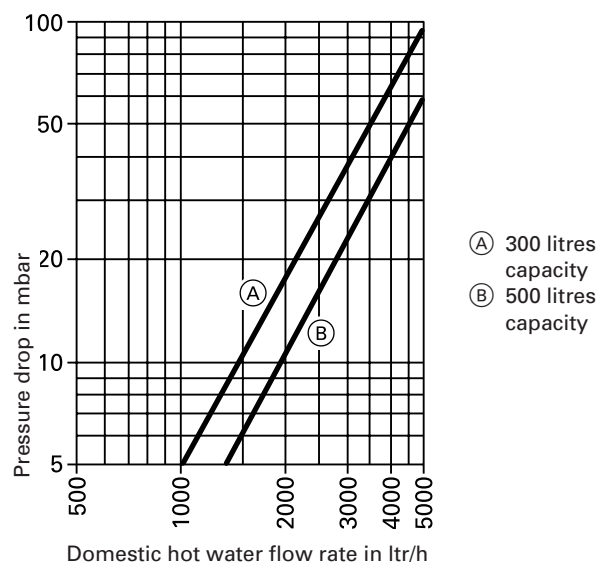
<sup>\*2</sup>For multi-cylinder batteries, the performance factor  $N_L$ , the short-term recovery capability and the max. domestic hot water drawing rate **cannot** be calculated by multiplying the performance factor  $N_L$ , the short-term recovery capability and the max. domestic hot water drawing rate of the individual cylinder by the number of cylinders.

### Pressure drop (primary circuit)



- (A) Top coil, 300 litres capacity
- (B) Top and bottom coil, 500 litres capacity
- (C) Bottom coil, 300 litres capacity

### Pressure drop (secondary circuit)



- (A) 300 litres capacity
- (B) 500 litres capacity

## EHO electrical immersion heater Circulation pump for heating the cylinder

### EHO electrical immersion heater (accessory) for installation in the Vitocell-B 100

Only suitable for use with soft to medium-hard drinking water up to 14 °dH (grade 2 hardness)

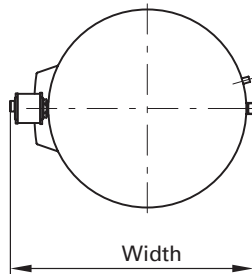
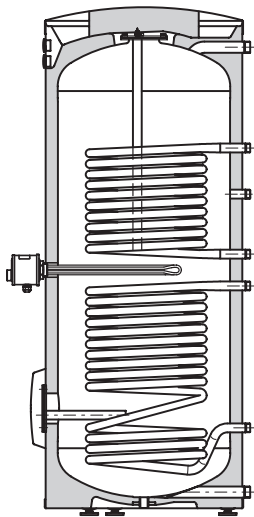
#### Current type and rated voltage 3/N/400 V/50 Hz

Degree of protection: IP 43

Rated consumption, normal/rapid heating	kW	2	4	6
Rated current	A	8.7	8.7	8.7
Heat-up time from 10 to 60 °C	300 ltr	h	3.8	1.9
	500 ltr	h	7.3	3.7

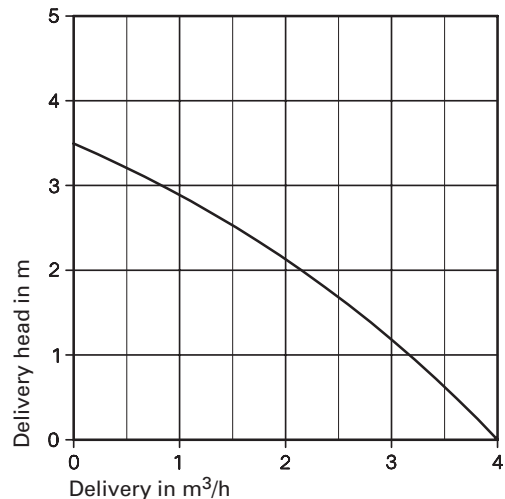
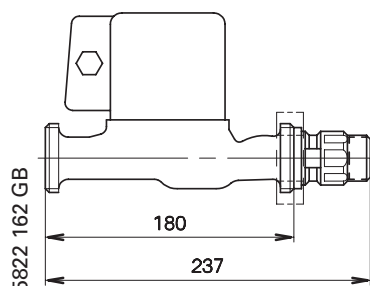
### Vitocell-B 100

Cylinder capacity	ltr	300	500
Volume heatable with immersion heater	ltr	130	250
<b>Dimensions</b>			
Width including electrical immersion heater	mm	797	916
Minimum wall clearance for installing the EHO electrical immersion heater	mm	650	650
<b>Weight</b>			
Vitocell-B 100	kg	160	230
EHO electrical immersion heater	kg	5	5
Total weight when in operation	kg	465	735



### Circulation pump for heating the cylinder

Part No.	7339 467
Pump type	UP 25-40
Voltage	V~ 230
Rated current	A 0.3
Capacitor	µF 2.5
Power consumption	W 55-65
Connection	Ø" (fem. thread) 1
Connecting cable	m 4.7



# Standard delivery

## Notes on planning

### Standard delivery

Domestic hot water cylinder constructed from steel with Ceraprotect enamel finish and fitted insulation comprising rigid expanded polyurethane foam with

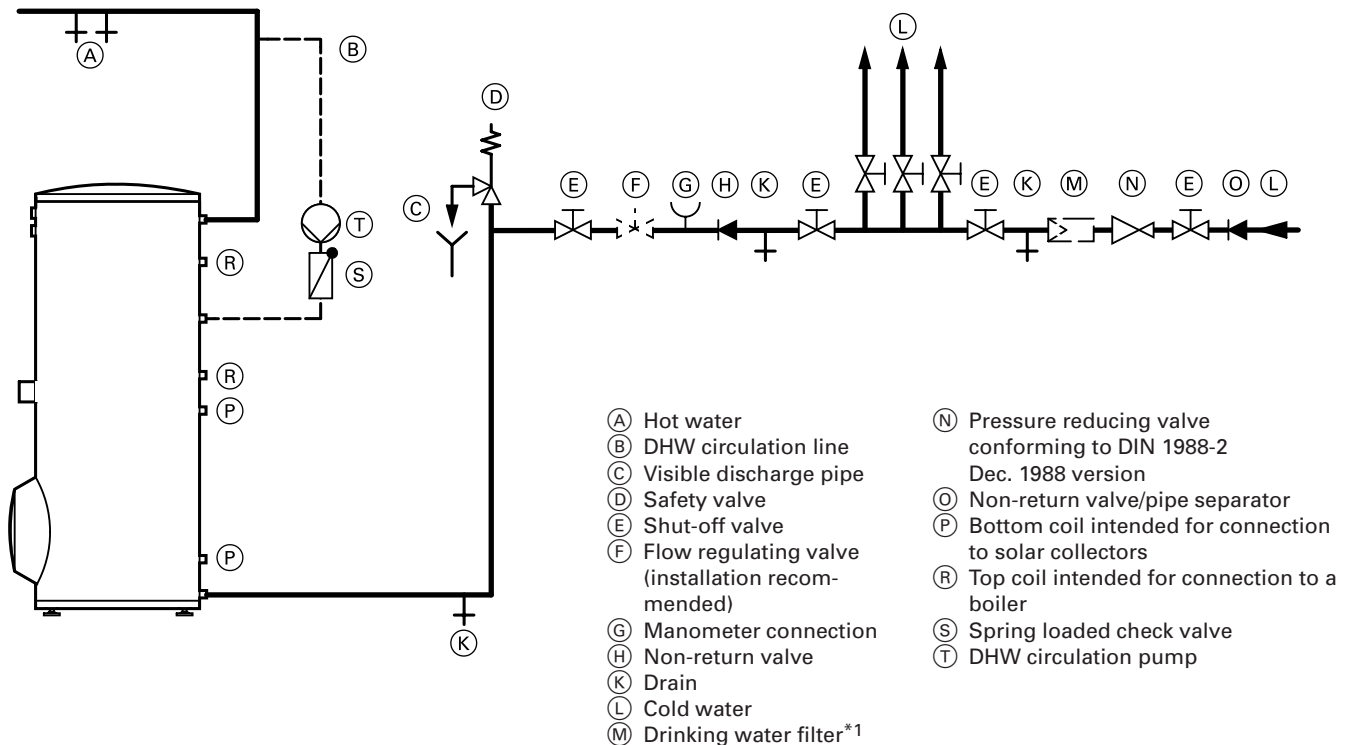
- 2 sensor wells welded in for cylinder temperature sensor or temperature regulator
- screw-in elbow with sensor well for cylinder temperature sensor with solar operation
- 2 built-in magnesium sacrificial anodes
- 1½" dia. coupling for connecting an EHO electrical immersion heater and 1½" dia. stopper
- 2 built-in thermometers and
- adjustable feet.

Epoxy resin coated sheet steel casing in a Vitosilver finish.

DHW cylinder with 300 litres capacity also available in a white finish.

### Notes on planning

#### Domestic hot water connections (connection to DIN 1988)



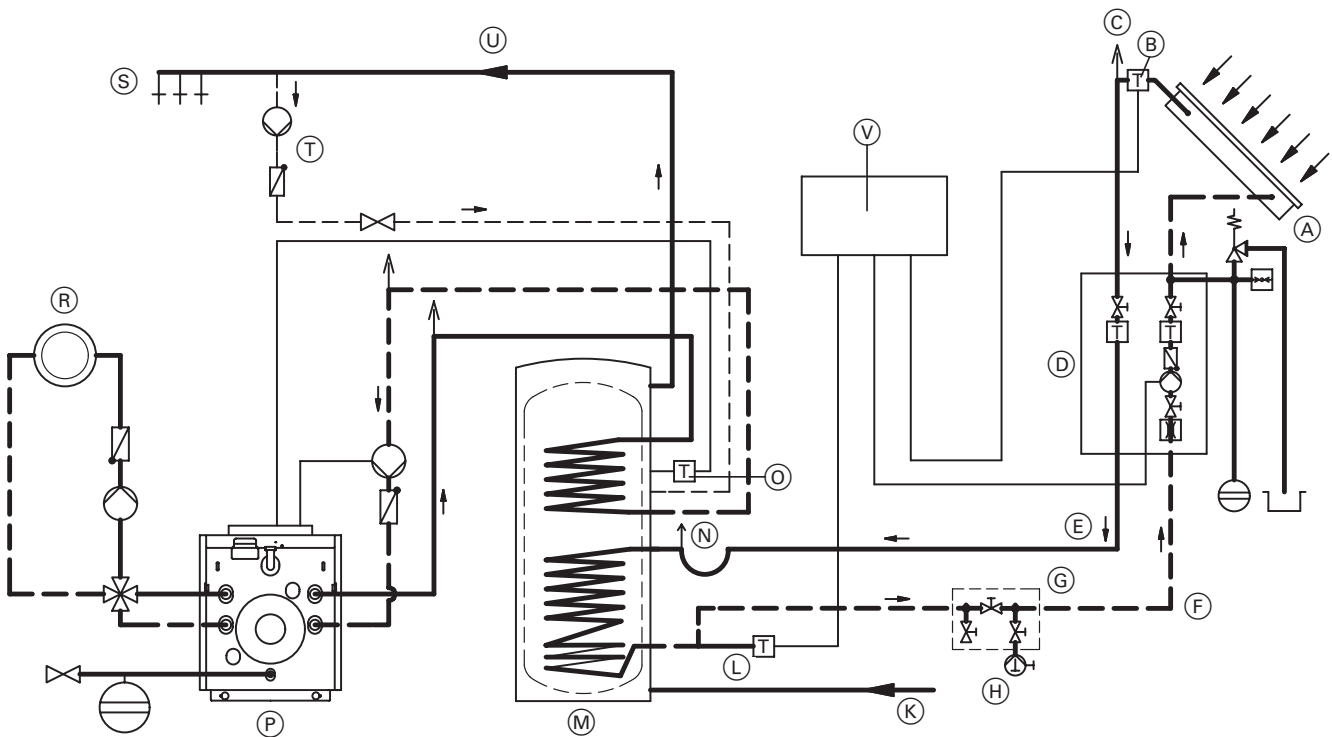
#### The safety valve must be installed.

**Recommendation:** Install the safety valve above the top edge of the cylinder to protect it from dirt, limescale and high temperatures. Furthermore, the cylinder does not need to be drained before work can be carried out on the safety valve.

\*1According to current regulations, a drinking water filter must be installed in systems with metal piping. We recommend that a drinking water filter should also be installed in systems with plastic piping to prevent dirt from being introduced into the domestic hot water system.



Circuit diagram



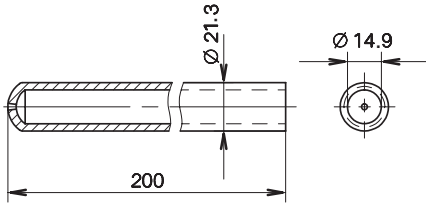
- |                                  |   |   |
|----------------------------------|---|---|
| (A) Solar collector              | (K) Cold water  | (P) Oil/gas boiler                        |
| (B) Collector temperature sensor | (L) Cylinder temperature sensor (solar circuit)         | (R) Heating circuit                       |
| (C) Air vent valve*1             | (M) Vitocell-B 100                                      | (S) DHW take-off                          |
| (D) Solar Divicon (pump station) | (N) Air separator*2                                     | (T) Pressure and temperature relief valve |
| (E) Flow (solar circuit)         | (O) Cylinder temperature sensor (heating water circuit) | (U) Hot water                             |
| (F) Return (solar circuit)       |   | (V) Solartrol                             |
| (G) Filling valve                |   |   |
| (H) Solar manual filling pump    |   |   |

\*1At the top of the system, mount at least one air vent valve (quick-acting air vent valve or manual air vent valve).  
 \*2Place the air separator in the flow pipe so that it is easily accessible.

## Notes on planning

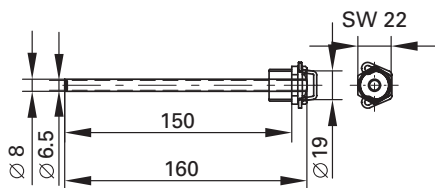
### Sensor wells

The sensor wells are welded in the domestic hot water cylinder.



### Sensor well for solar operation

For solar operation, we recommend that the cylinder temperature sensor is installed in the heating return (see page 5). The standard delivery of the Vitocell-B 100 includes a screw-in elbow with sensor well for this purpose.



### Warranty

Our warranty for domestic hot water cylinders states that the water heated should be of drinking water quality and that any water treatment equipment in use functions correctly.

### Heat exchange surfaces

The corrosion-resistant, protected heat exchange surfaces (domestic hot water/heat transfer medium) correspond to Type C in accordance with DIN 1988-2.

### Electrical immersion heater

Screw-in immersion heaters of other makes must have an unheated length of at least 100 mm and must be suitable for use in enamelled domestic hot water cylinders.

Subject to technical modifications!

Viessmann Werke GmbH & Co  
D-35107 Allendorf  
Tel: (06452) 70-0  
Fax: (06452) 70-2780  
Internet: [www.viessmann.de](http://www.viessmann.de)

Viessmann Limited  
Hortonwood 32  
Telford, Shropshire TF1 4EU  
Tel.: (01952) 670261  
Fax: (01952) 670103