

Datasheet

Part numbers and prices: see pricelist



VITOCELL 100-V Type CVA

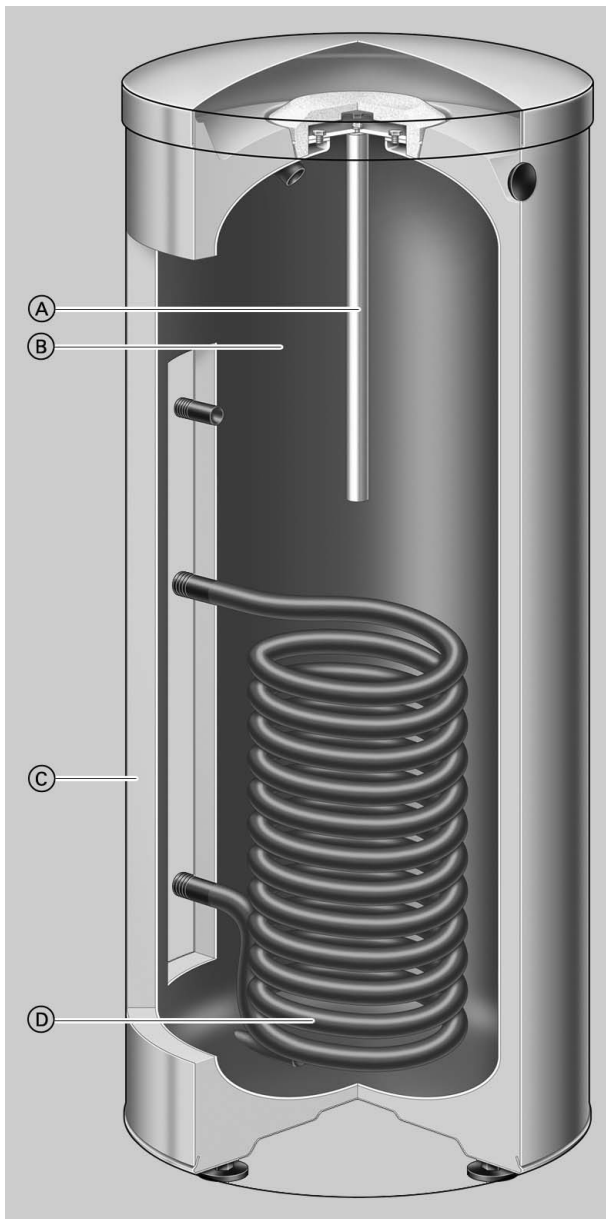
Vertical DHW cylinder
made from steel with Ceraprotect enamel coating

Product information

The "freestanding" solution for cost-effective DHW heating. The Vitocell 100-V is available as a vertical version with up to 1000 litre capacity.

Benefits at a glance

- Corrosion-resistant cylinder made from steel with Ceraprotect enamel coating. Additional cathodic protection via a magnesium anode; impressed current anode available as an accessory.
- Heating up the total water content through indirect coils stretching right to the cylinder floor.
- High DHW convenience through rapid, even heat-up via generously sized indirect coils.
- Low heat losses through highly effective all-round thermal insulation; for 160, 200 and 300 litre capacity made from rigid PU foam (CFC-free) or, for 500, 750 and 1000 litre capacity made from flexible PUR foam.
- Universal application – larger demands can be accommodated by combining several Vitocell 100-V DHW cylinders into cylinder banks using headers.
- An electric immersion heater is available as option and can be retrofitted (300 to 1000 litre capacity).
- The Vitocell 100-V from 500 litres is fitted with removable flexible PUR foam insulation (supplied separately) for easier handling.
- DHW cylinders with 160, 200 and 300 litre capacity are also available in white.



- Ⓐ Magnesium and impressed current anode
- Ⓑ Steel cylinder with Ceraprotect enamel coating
- Ⓒ Highly effective all-round CFC-free thermal insulation made from rigid polyurethane foam
- Ⓓ Indirect coils right down to the cylinder floor heat the entire water content

Specification Vitocell 100-V – single cylinder

For DHW heating in conjunction with boilers and district heating systems, as option with electric heater as accessory for DHW cylinders with 300 and 500 l capacity.

Suitable for the following systems:

- DHW temperatures up to **95 °C**
- Heating water flow temperature up to **160 °C**

- Operating pressure on the **heating water side** up to **25 bar**
- Operating pressure on the **DHW side** up to **10 bar**

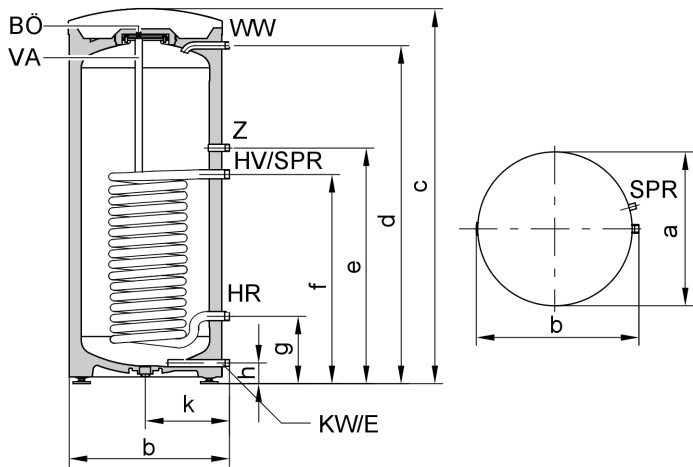
Capacity	l	160	200	300	500	750	1000	
DIN reg. no.		0241/06–13 MC/E						
Continuous output for DHW heating from 10 to 45 °C and a heating water flow tem- perature of ... at the heating water throughput stated below	90 °C	kW	40	40	53	70	123	136
		l/h	982	982	1302	1720	3022	3341
	80 °C	kW	32	32	44	58	99	111
		l/h	786	786	1081	1425	2432	2725
	70 °C	kW	25	25	33	45	75	86
		l/h	614	614	811	1106	1843	2113
60 °C	kW	17	17	23	32	53	59	
	l/h	417	417	565	786	1302	1450	
50 °C	kW	9	9	18	24	28	33	
	l/h	221	221	442	589	688	810	
Continuous output for DHW heating from 10 to 60 °C and a heating water flow tem- perature of ... at the heating water throughput stated below	90 °C	kW	36	36	45	53	102	121
		l/h	619	619	774	911	1754	2081
	80 °C	kW	28	28	34	44	77	91
		l/h	482	482	584	756	1324	1565
	70 °C	kW	19	19	23	33	53	61
		l/h	327	327	395	567	912	1050
Heating water flow rate for the stated con- tinuous outputs	m ³ /h	3.0	3.0	3.0	3.0	5.0	5.0	
Standby heat loss q_{BS} at a temp. differential of 45 K (actual value acc. to DIN 4753-8. 500 l: Standard parameter to DIN V 18599)	kWh/ 24 h	1.50	1.70	2.20	3.20	3.70	4.30	
Thermal insulation		Rigid PUR foam			Flexible polyurethane foam			
Dimensions								
Length (∅)								
– incl. thermal insulation	a	mm	581	581	633	850	960	1060
		mm	—	—	—	650	750	850
Width								
– incl. thermal insulation	b	mm	608	608	705	898	1046	1144
		mm	—	—	—	837	947	1047
Height								
– incl. thermal insulation	c	mm	1189	1409	1746	1955	2100	2160
		mm	—	—	—	1844	2005	2060
Height of unit when tilted								
– incl. thermal insulation		mm	1260	1460	1792	—	—	—
		mm	—	—	—	1860	2050	2100
Installation height			—	—	—	2045	2190	2250
Weight including thermal insulation	kg	86	97	151	181	295	367	
Heating water content	l	5.5	5.5	10.0	12.5	24.5	26.8	
Heating surface	m ²	1.0	1.0	1.5	1.9	3.7	4.0	
Connections								
Heating water flow and return	R	1"	1"	1"	1"	1¼"	1¼"	
Cold water, DHW	R	¾"	¾"	1"	1¼"	1¼"	1¼"	
DHW circulation	R	¾"	¾"	1"	1"	1¼"	1¼"	

Information regarding continuous output

When designing the system for continuous output as stated or calculated, allow for the corresponding circulation pump. The stated continuous output is only achieved when the rated boiler output ≥ continuous output.

Specification Vitocell 100-V – single cylinder (cont.)

160 and 200 litre capacity

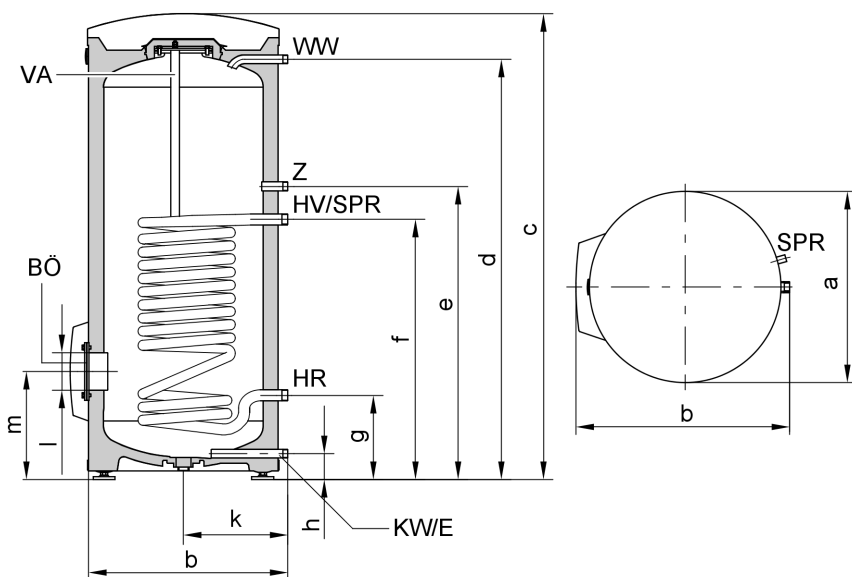


BÖ Inspection and cleaning aperture
 E Drain
 HR Heating water return
 HV Heating water flow
 KW Cold water

SPR Cylinder temperature sensor of the cylinder temperature control or the control thermostat
 VA Protective magnesium anode
 WW DHW
 Z DHW circulation

Capacity			160	200
Length (∅)	a	mm	581	581
Width	b	mm	608	608
Height	c	mm	1189	1409
	d	mm	1050	1270
	e	mm	884	884
	f	mm	634	634
	g	mm	249	249
	h	mm	72	72
	k	mm	317	317

300 litre capacity



BÖ Inspection and cleaning aperture
 E Drain
 HR Heating water return
 HV Heating water flow

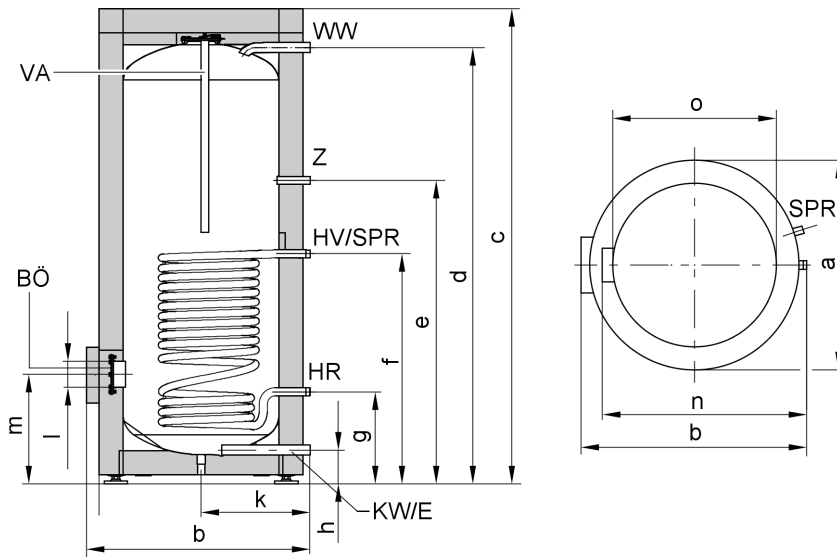
KW Cold water
 SPR Cylinder temperature sensor of the cylinder temperature control or the control thermostat
 VA Protective magnesium anode

Specification Vitocell 100-V – single cylinder (cont.)

WW DHW
Z DHW circulation

Capacity		l	300
Length (∅)	a	mm	633
Width	b	mm	705
Height	c	mm	1746
	d	mm	1600
	e	mm	1115
	f	mm	875
	g	mm	260
	h	mm	76
	k	mm	343
	l	mm	∅ 100
	m	mm	333

500 litre capacity



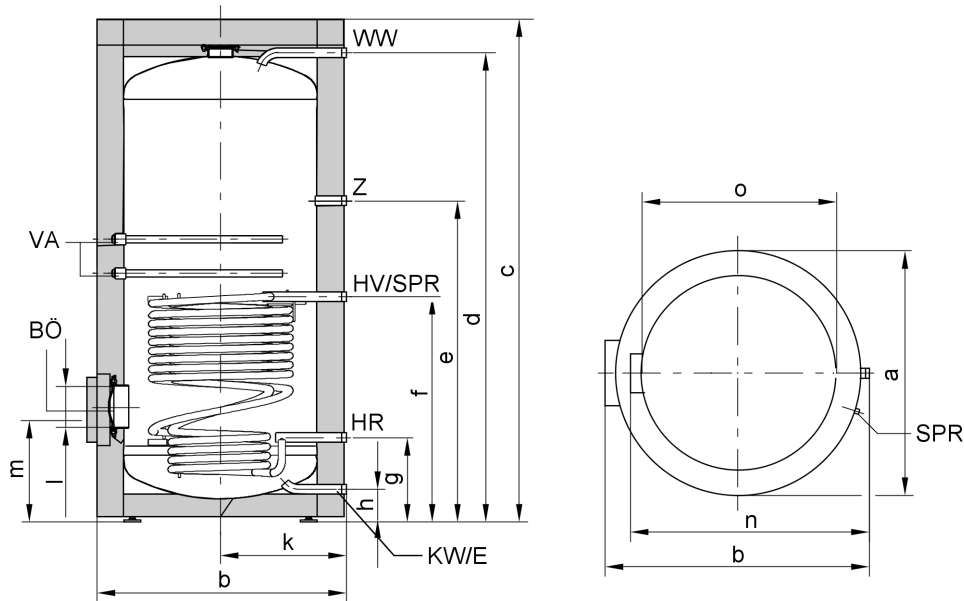
BÖ Inspection and cleaning aperture
E Drain
HR Heating water return
HV Heating water flow
KW Cold water

SPR Cylinder temperature sensor of the cylinder temperature control or the control thermostat
VA Protective magnesium anode
WW DHW
Z DHW circulation

Capacity		l	500
Length (∅)	a	mm	850
Width	b	mm	898
Height	c	mm	1955
	d	mm	1784
	e	mm	1230
	f	mm	924
	g	mm	349
	h	mm	107
	k	mm	455
	l	mm	∅ 100
	m	mm	422
	n	mm	837
excl. thermal insulation	o	mm	∅ 650

Specification Vitocell 100-V – single cylinder (cont.)

750 and 1000 litre capacity



BÖ Inspection and cleaning aperture
 E Drain
 HR Heating water return
 HV Heating water flow
 KW Cold water

SPR Cylinder temperature sensor of the cylinder temperature control or the control thermostat
 VA Protective magnesium anode
 WW DHW
 Z DHW circulation

Capacity		l	750	1000
Length (∅)	a	mm	960	1060
Width	b	mm	1046	1144
Height	c	mm	2100	2160
	d	mm	1923	2025
	e	mm	1327	1373
	f	mm	901	952
	g	mm	321	332
	h	mm	104	104
	k	mm	505	555
	l	mm	∅ 180	∅ 180
	m	mm	457	468
	n	mm	947	1047
excl. thermal insulation	o	mm	∅ 750	∅ 850

Performance factor N_L

To DIN 4708.

Cylinder storage temperature T_{cyl} = cold water inlet temperature + 50 K ^{+5 K/-0 K}

Capacity	l	160	200	300	500	750	1000
Performance factor N_L at a heating water flow temperature of							
90 °C		2.5	4.0	9.7	21.0	40.0	45.0
80 °C		2.4	3.7	9.3	19.0	34.0	43.0
70 °C		2.2	3.5	8.7	16.5	26.5	40.0

Performance factor N_L

The performance factor N_L varies according to the cylinder storage temperature T_{cyl} .

Standard values for

- $T_{cyl} = 60\text{ °C} \rightarrow 1.0 \times N_L$
- $T_{cyl} = 55\text{ °C} \rightarrow 0.75 \times N_L$
- $T_{cyl} = 50\text{ °C} \rightarrow 0.55 \times N_L$
- $T_{cyl} = 45\text{ °C} \rightarrow 0.3 \times N_L$

Specification Vitocell 100-V – single cylinder (cont.)

Peak output (during 10 minutes)

Relative to the performance factor N_L .
DHW heating from 10 to 45 °C.

Capacity	l	160	200	300	500	750	1000
Peak output (l/10 min) at a heating water flow temperature of							
90 °C		210	262	407	618	898	962
80 °C		207	252	399	583	814	939
70 °C		199	246	385	540	704	898

Max. draw-off rate (over 10 minutes)

Relative to the performance factor N_L .
With booster heating.
DHW heating from 10 to 45 °C.

Capacity	l	160	200	300	500	750	1000
Max. draw-off rate (l/min) at a heating water flow temperature of							
90 °C		21	26	41	62	90	96
80 °C		21	25	40	58	81	94
70 °C		20	25	39	54	70	90

Available water volume

Cylinder content heated to 60 °C.
Without booster heating.

Capacity	l	160	200	300	500	750	1000
Draw-off rate	l/min	10	10	15	15	20	20
Available water volume	l	120	145	240	420	615	835
water at $t = 60$ °C (continuous)							

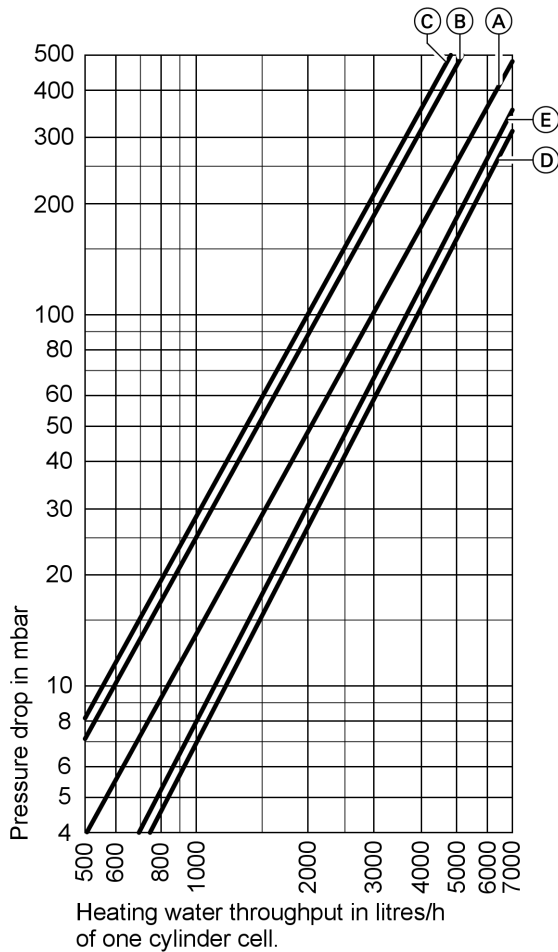
Heat-up time

The heat-up times will be achieved, if the max. continuous output of the DHW cylinder is made available at the respective heating water flow temperature and when heating DHW from 10 to 60 °C.

Capacity	l	160	200	300	500	750	1000
Heat-up time (min.) at a heating water flow temperature of							
90 °C		19	19	23	28	24	36
80 °C		24	24	31	36	33	46
70 °C		34	37	45	50	47	71

Specification Vitocell 100-V – single cylinder (cont.)

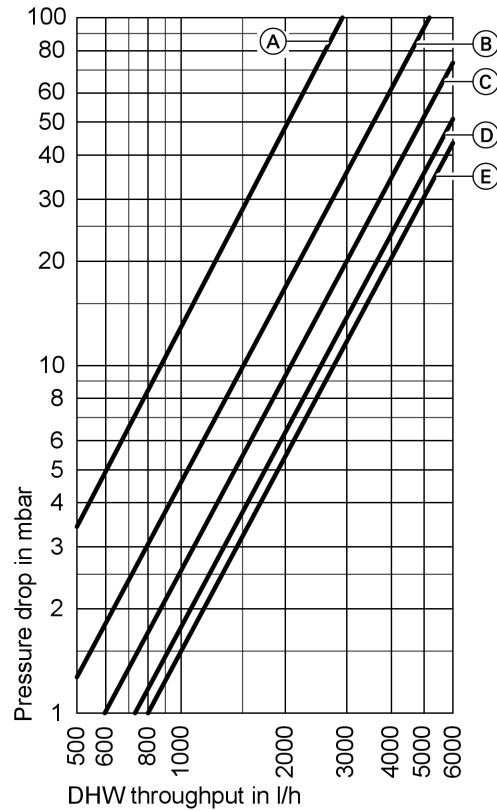
Pressure drop



Pressure drop on the heating water side

- (A) Cylinder capacity 160 and 200 l
- (B) Capacity 300 l
- (C) Capacity 500 l

- (D) Capacity 750 l
- (E) Capacity 1000 l



Pressure drop on the DHW side

- (A) Cylinder capacity 160 and 200 l
- (B) Capacity 300 l
- (C) Capacity 500 l
- (D) Capacity 750 l
- (E) Capacity 1000 l

Specification Vitocell 100-V – cylinder bank

Specification (300 and 500 litre capacity)

The DHW cylinders can be combined into cylinder banks with up to 2 cylinders (300 litres) and up to 3 cylinders (500 litres). The heating water and DHW headers are available ex works and must be ordered separately.

Cylinder banks consisting of more than 3 cylinders can be assembled from several cylinder banks of up to 3 cylinders each. The connection of these cylinder banks on the heating water and DHW side forms part of the installation work for which the customer is responsible.

For DHW heating in conjunction with boilers, district heating and low temperature heating systems, optionally with electric immersion heater.

Suitable for the following systems:

- Heating water flow temperature / **primary** operating pressure up to **120 °C/ 18 bar, 160 °C/ 16 bar**
- Operating pressure on the **DHW side** up to **10 bar**

Specification Vitocell 100-V – cylinder bank (cont.)

Capacity		l	300	1000	500	
Total cylinder bank capacity		l	600	1000	1500	
Number of cylinders			2	2	3	
Arrangement in series (see page 10)			●●	●●	●●●	
Continuous output for DHW heating from 10 to 45 °C and a heating water flow temperature of ... at the heating water throughput stated below	90 °C	kW	106	140	210	
		l/h	2604	3440	5160	
	80 °C	kW	88	116	174	
		l/h	2162	2850	4275	
	70 °C	kW	66	90	135	
		l/h	1622	2212	3318	
	60 °C	kW	46	64	96	
		l/h	1130	1572	2358	
	50 °C	kW	36	48	72	
		l/h	884	1178	1767	
	Continuous output for DHW heating from 10 to 60 °C and a heating water flow temperature of ... at the heating water throughput stated below	90 °C	kW	90	106	159
			l/h	1548	1822	2733
80 °C		kW	68	88	132	
		l/h	1168	1512	2268	
70 °C		kW	46	66	99	
		l/h	790	1134	1701	
Heating water flow rate for the stated continuous outputs		m ³ /h	6	6	9	
Dimensions incl. thermal insulation						
Length	a	mm	1461	1838	2826	
Width	b	mm	1109	1218	1218	
Height	c	mm	1748	1955	1955	
Weight DHW cylinders with thermal insulation and headers		kg	334	423	639	
Heating water content including headers		l	25	32	50	
Heating surface		m ²	3.0	3.9	5.8	
Connections						
Heating water flow and return		DN	50	50	50	
Cold water, DHW		R	1¼"	1¼"	1½"	
DHW circulation		R	¾"	1"	1"	

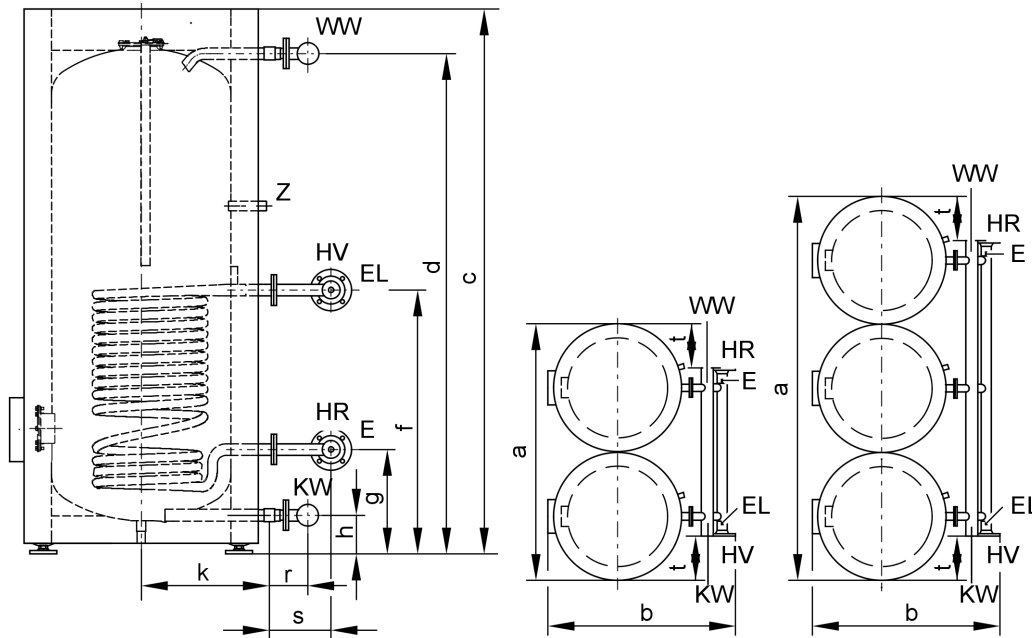
Information regarding continuous output

When designing the system for continuous output as stated or calculated, allow for the corresponding circulation pump. The stated continuous output is only achieved when the rated boiler output \geq continuous output.

Specification Vitocell 100-V – cylinder bank (cont.)

Example:

500 litre capacity



Side view and plan view

E	Drain on the primary side (female thread R ½")	HV	Heating water flow
EL	Air vent valve (female thread R ½")	KW/E	Cold water and drain on the DHW side
HR	Heating water return	WW	DHW
		Z	DHW circulation

Dimensions

Capacity			300		500
Total cylinder bank capacity		l	600	1000	1500
Number of cylinders			2	2	3
Arranged in series			●●	●●	●●●
Length	a	mm	1461	1838	2826
Width	b	mm	1109	1218	1218
Height	c	mm	1748	1955	1955
	d	mm	1600	1784	1784
	f	mm	875	924	924
	g	mm	260	349	349
	h	mm	76	107	107
	k	mm	343	455	455
	r	mm	127	130	135
	s	mm	237	237	237
	t	mm	206	315	315

Specification (750 and 1000 litre capacity)

The DHW cylinders can be combined into cylinder banks with up to 2 cylinders (750 litres) and up to 3 cylinders (1000 litres). Provide the headers for the DHW and the heating water side on site. Cylinder banks consisting of more than 3 cylinders can be assembled from several cylinder banks of up to 3 cylinders each. The connection of these cylinder banks on the heating water and DHW side forms part of the installation work for which the customer is responsible.

For DHW heating in conjunction with boilers, district heating and low temperature heating systems, optionally with electric immersion heater.

Specification Vitocell 100-V – cylinder bank (cont.)

Capacity	l	750	1000
Total cylinder bank capacity	l	1500	2000
Number of cylinders		2	3
Arranged in series		●●	●●●
Continuous output for DHW heating from 10 to 45 °C and a heating water flow temperature of ... at the heating water throughput stated below	90 °C	kW 246	272
		l/h 6044	6682
	80 °C	kW 198	222
		l/h 4864	5450
	70 °C	kW 150	172
		l/h 3686	4226
Continuous output for DHW heating from 10 to 60 °C and a heating water flow temperature of ... at the heating water throughput stated below	60 °C	kW 106	118
		l/h 2604	2900
	50 °C	kW 56	66
	l/h 1376	1620	
Heating water flow rate for the stated continuous outputs	90 °C	kW 204	242
		l/h 3508	4162
	80 °C	kW 154	182
	l/h 2648	3130	
Heating water content without headers	70 °C	kW 106	122
		l/h 1824	2100
Heating surface	m ²	7.4	8.0

Information regarding continuous output

When designing the system for continuous output as stated or calculated, allow for the corresponding circulation pump. The stated continuous output is only achieved when the rated boiler output ≥ continuous output.

Output details for cylinder bank (600 to 3000 litres total capacity)

Performance factor N_L to DIN 4708

Cylinder storage temperature = cold water inlet temperature + 50 K ^{+5 K/-0 K}

Capacity	l	300	500	750	1000
Total cylinder bank capacity	l	600	1000	1500	2000
Number of cylinders		2	2	3	3
Performance factor N_L at heating water flow temperature					
90 °C		30	60	101	108
80 °C		29	55	93	90
70 °C		28	49	82	74

Peak output (during a 10 minute period)

Based on performance factor N_L
DHW heating from 10 to 45 °C

Capacity	l	300	500	750	1000
Total cylinder bank capacity	l	600	1000	1500	2000
Number of cylinders		2	2	3	3
Peak output (l/10 min.) at heating water flow temperature					
90 °C		759	1150	1610	1680
80 °C		745	1088	1520	1485
70 °C		728	1016	1400	1310

Specification Vitocell 100-V – cylinder bank (cont.)

Maximum draw-off rate (over a 10 minute period)

Based on performance factor N_L
 With booster heating
 DHW heating from 10 to 45 °C

Capacity	l	300	500		750	1000	
Total cylinder bank capacity	l	600	1000	1500	1500	2000	3000
Number of cylinders		2	2	3	2	2	3
Maximum draw-off rate (l/min) at heating water flow temperature							
90 °C		76	115	161	168	179	244
80 °C		74	109	152	149	175	240
70 °C		73	102	140	131	168	230

Available water volume

Cylinder volume heated to 60 °C
 Without booster heating

Capacity	l	300	500		750	1000	
Total cylinder bank capacity	l	600	1000	1500	1500	2000	3000
Number of cylinders		2	2	3	2	2	3
Draw-off rate	l/min	30	30	30	40	40	60
Available water volume	l	480	840	1260	1230	1670	2505
Water with $t = 60$ °C (constant)							

Delivered condition

Vitocell 100-V, type CVA

160, 200 and 300 litre capacity

DHW cylinder made from steel with Ceraprotect enamel coating for DHW heating.

- Welded-in sensor well for cylinder temperature sensor or thermostat
 - Adjustable feet
 - Protective magnesium anode
 - Fitted thermal insulation made from rigid PU foam
- Colour of the epoxy-coated sheet steel casing: Vitosilver.
 DHW cylinders with 160, 200 and 300 litre capacity are also available in white.

Vitocell 100-V, type CVA

500 litre capacity

DHW cylinder made from steel with Ceraprotect enamel coating for DHW heating.

- Welded-in sensor well for cylinder temperature sensor or thermostat
 - Adjustable feet
 - Protective magnesium anode
- Packed separately:
- Flexible PUR foam thermal insulation; colour of the plastic-coated thermal insulation: Vitosilver

Vitocell 100-V, type CVA

750 and 1000 litre capacity

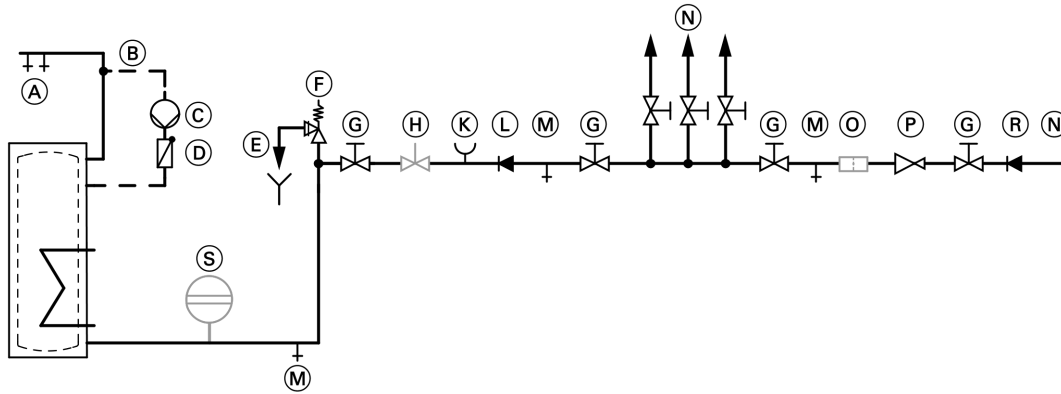
DHW cylinder made from steel with Ceraprotect enamel coating for DHW heating.

- Thermometer
 - Welded-in sensor well for cylinder temperature sensor or thermostat
 - Adjustable feet
 - 2 protective magnesium anodes
- Packed separately:
- Flexible PUR foam thermal insulation; colour of the plastic-coated thermal insulation: Vitosilver

Design information

DHW connection

Connection to DIN 1988



- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| (A) DHW | (K) Pressure gauge connection |
| (B) DHW circulation line | (L) Non-return valve |
| (C) DHW circulation pump | (M) Drain |
| (D) Spring-loaded check valve | (N) Cold water |
| (E) Blow-off line with a visible outlet | (O) Drinking water filter*1 |
| (F) Safety valve | (P) Pressure reducer to DIN 1988-2 issue Dec.1988 |
| (G) Shut-off valve | (R) Non-return valve/pipe separator |
| (H) Flow regulating valve
(Recommendation: We recommend the installation of this valve and adjustment of the max. water flow rate in accordance with the 10 minute draw-off capacity of the DHW cylinder.) | (S) Diaphragm expansion vessel, suitable for drinking water |

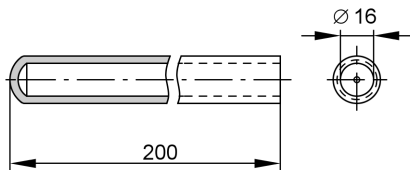
The safety valve must be installed.

Recommendation: Install the safety valve above the top edge of the cylinder to protect it from contamination, scaling and excessively high temperatures. The DHW cylinder must then not be drained when working on the safety valve.

Sensor wells

Vitocell 100-V (160 to 1000 litre capacity)

The sensor well is welded into the DHW cylinder.



Heating water flow temperatures in excess of 110 °C

For these operating conditions, DIN 4753 recommends the installation of a type-tested high limit safety cut-out into the cylinder, which limits the temperature to 95 °C.

*1 According to DIN 1988-2, a drinking water filter should be installed in systems with metal pipework. Viessmann and DIN 1988 also recommend the installation of a drinking water filter when using plastic pipes to prevent contamination entering the DHW system.

Design information (cont.)

Warranty

Our warranty for DHW cylinders requires that the water to be heated meets the DHW quality in accordance with current potable water regulations and that existing water treatment systems work properly.

Heat transfer surface

The corrosion-resistant, protected heat transfer surface (DHW/process medium) correspond to type C to DIN 1988-2.

Immersion heater

When using a third party immersion heater, the threaded element must provide an unheated length of at least 100 mm, and must be suitable for use in enamelled DHW cylinders.

Technical guide

For further information regarding engineering and sizing, see the "technical guide central DHW heating with Vitocell DHW cylinders".

Accessories

Electric immersion heater EHE for installation in the Vitocell 100-V (300 to 1000 litre capacity)

Only for use with soft to medium hard drinking water up to 2.5 mol/m³ (hardness level 2)

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

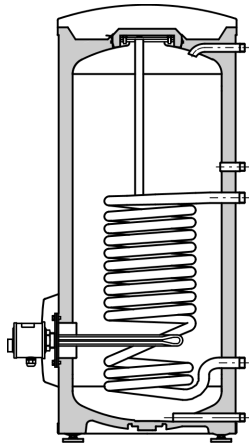
Protection: IP 54

Power range	max. 6 kW			max. 12 kW			
Rated power consumption in standard operation/during quick heat-up	kW	2	4	6	4	8	12
Rated current	A	8.7	8.7	8.7	17.4	17.4	17.4
Heat-up time from 10 to 60 °C	300 l	h	7.4	3.7	2.5	—	—
	500 l	h	11.9	5.9	4.0	—	—
	750 l	h	17.4	8.7	5.8	8.7	4.3
	1000 l	h	23.1	11.6	7.7	11.6	5.8

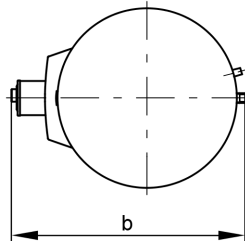
DHW cylinder with an EHE electric immersion heater

Capacity	l	300	500	750	1000		
Available capacity to be heated with an immersion heater	l	254	408	598	795		
Dimensions							
Width b (with electric immersion heater EHE)	mm	850	1025	1135	1235		
Minimum wall clearance for the installation of an electric immersion heater EHE	2/4/6 kW	mm	650	650	650	650	
	4/8/12 kW	mm	—	—	950	950	
Weight	Vitocell 100-V	kg	151	181	295	367	
	Electric immersion heater EHE	2/4/6 kW	kg	2	2	2	2
		4/8/12 kW	kg	—	—	3	3

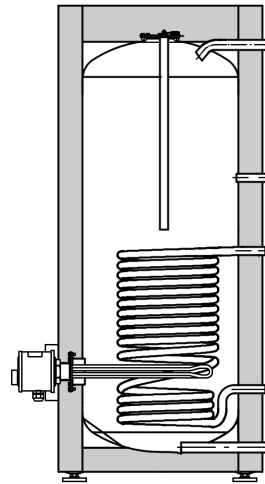
Accessories (cont.)



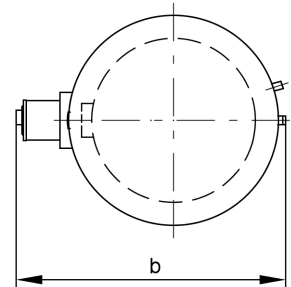
300 litre capacity



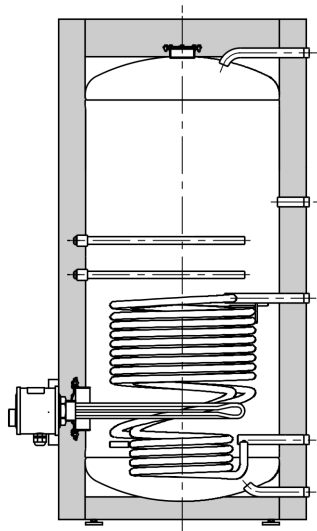
Dimension b: 850 mm (width incl. electric immersion heater EHE)



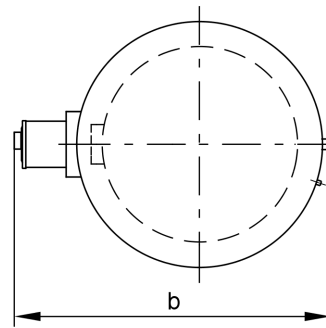
500 litre capacity



Dimension b: 1025 mm (width incl. electric immersion heater EHE)



750/1000 litre capacity

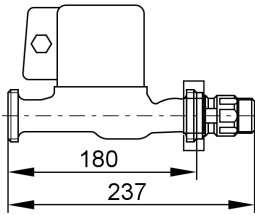


Dimension b: 1135/1235 mm (width incl. electric immersion heater EHE)

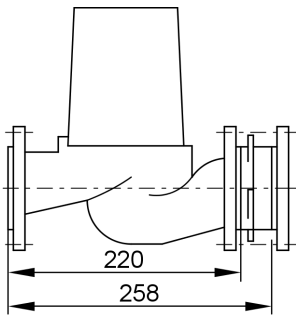
Cylinder primary pump

Part no.		7339 467	7339 468	7339 469
Type of pump		UP 25-40	VIRS 30/6-1	VI TOP-S 40/4
Voltage	V~	230	230	230
Power consumption	W	55-65	110-140	155-195
Connection	R	1"	1¼"	–
	DN	–	–	40
Connecting cable for the boiler	m	4.7	4.7	4.7
		up to 40 kW	from 40 to 70 kW	from 70 kW

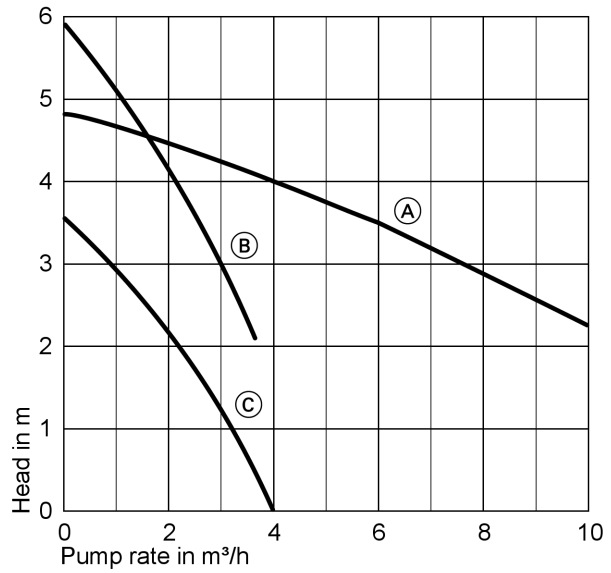
Accessories (cont.)



Part no. 7339 467 and 7339 468

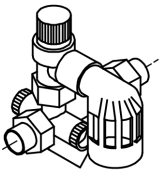


Part no. 7339 469



- Ⓐ Part no. 7339 469
- Ⓑ Part no. 7339 468
- Ⓒ Part no. 7339 467

Safety assembly to DIN 1988



Safety assembly, comprising:

- Shut-off valve
- Non-return valve and test connector
- Pressure gauge connector
- Diaphragm safety valve

For DHW cylinder:

- Up to 200 litre capacity: DN 15/R ¾"
 - maximum heating load 75 kW
 - 10 bar: Part no. 7219 722
- From 300 to 1000 litre capacity: DN 20/R 1"
 - maximum heating load 150 kW
 - 10 bar: Part no. 7180 662

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