

Technical Data Manual

Model Nos. and pricing: see Price List

VIESSMANN

Vitocell 300-W, EVIA

Single coil, indirect-fired domestic hot water storage tank
42 USG (160 L) capacity

Vitocell 300-V, EVIA

Single coil, indirect-fired domestic hot water storage tank
53 USG (200 L) capacity

Vitocell 300-V, EVIA

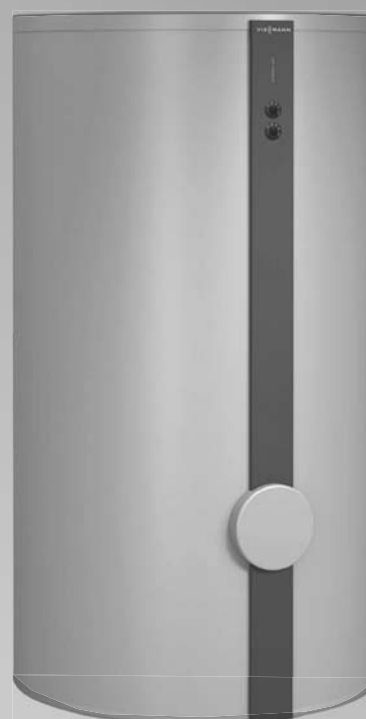
Single coil, indirect-fired domestic hot water storage tank
79 USG (300 L) capacity

Vitocell 300-V, EVIB

Single coil, indirect-fired domestic hot water storage tank
119 USG (450 L) capacity



VITOCCELL® 300-W, 300-V



Product may not be exactly as shown

Vertical indirect-fired domestic hot water storage tank
of high-grade stainless steel with one coil.



CAUTION

This tank version is not suitable for steam heating
applications.

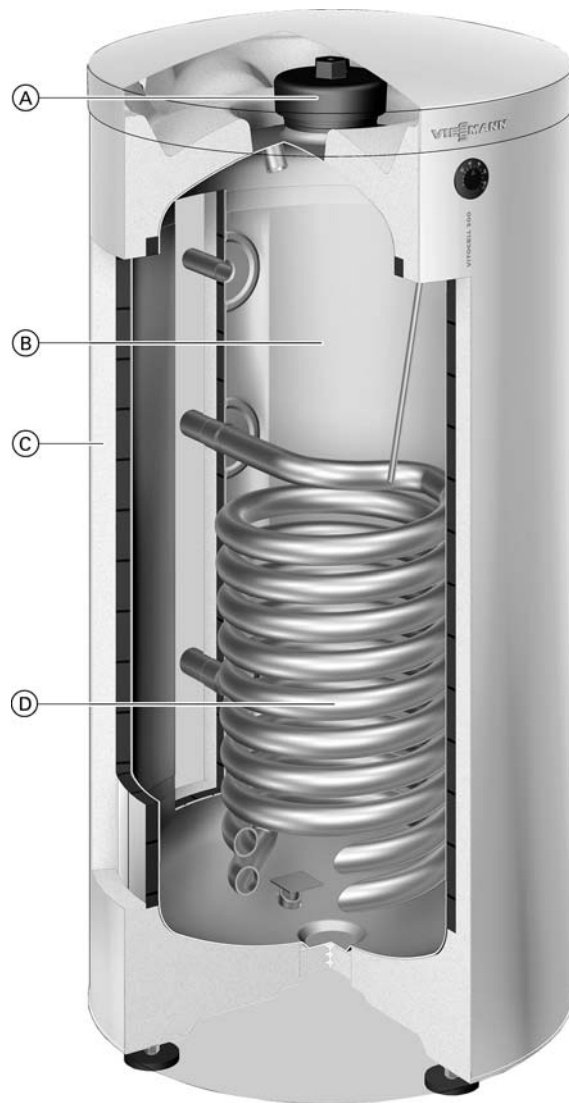
Benefits

Hygienic, convenient and economical DHW heating with DHW tanks made from stainless steel – vertical version

Benefits at a glance:

- Corrosion-resistant tank of high-grade stainless steel offers a long service life.
 - Fully hygienic due to high quality homogeneous stainless steel surfaces.
 - The high-alloy material is immune to cracking or peeling. The tank stays hygienic and requires only minimum service.
 - Does not require a consumable anode for corrosion protection.
 - The entire water content is heated by a 1 3/8 in. (35 mm) pipe diameter (OD) stainless steel heat exchanger surface which extends to the bottom of the tank.
 - The positioning of the tubular heat exchanger coil further ensures that 82 to 97% of the tank volume can be drawn at constant water temperature.
 - The stainless steel heat exchanger coil is self-venting towards the top and self-draining towards the bottom, therefore not susceptible to reduced heat transfer due to air lock or deposits.
 - Universally suitable – for applications requiring larger quantities of hot water, multiple vertical tanks can be combined via headers to form tank batteries.
 - Standby losses minimized by highly effective foam up to 2 5/8 in. (68 mm) thick.
- 119 USG (450 L) version comes equipped with removable soft PET insulation for easier handling.
- Easy transport into mechanical room due to low weight and compact construction.
 - Certified to CSA Low Lead Content Certification Program; including US Safe Drinking Water Act, NSF/ANSI 372 as well as other applicable US State requirements.

Cross Section



Legend

- Ⓐ Inspection and cleaning opening
- Ⓑ Stainless steel cylinder
- Ⓒ Highly effective all-round thermal insulation
- Ⓓ Indirect coil made from stainless steel

Technical Data

For domestic hot water heating applications which utilize modulating and low temperature hot water heating boilers.

Suitable for heating systems with:

- max. working pressure on heat exchanger side up to 220 psig at 392°F (200°C)
- max. working pressure on DHW water side of up to 150 psig at 210°F (99°C)

Model		300-W EVIA	300-V EVIA	300-V EVIA	300-V EVIB
Storage capacity	USG (L)	42 (160)	53 (200)	79 (300)	119 (450)
Recovery rates*1 with a DHW temperature rise of the domestic hot water from 50 to 140°F (10 to 60°C) and heating water supply temperature of..... at the supply flow rate stated below	194°F (90°C) MBH (kW)	133 (39)	133 (39)	177 (52)	204 (60)
	GPH (L/h)	176 (668)	176 (668)	236 (894)	275 (1041)
	176°F (80°C) MBH (kW)	105 (31)	105 (31)	139 (41)	163 (48)
	GPH (L/h)	139 (527)	139 (527)	186 (706)	216 (820)
	158°F (70°C) MBH (kW)	75 (22)	75 (22)	98 (29)	116 (34)
	GPH (L/h)	98 (372)	98 (372)	132 (501)	152 (579)
Supply flow rate for the recovery rates stated	GPM (m ³ /h)	13.2 (3.0)	13.2 (3.0)	13.2 (3.0)	22 (5.0)
Insulation		PUR Foam			Soft PET
Standby heat loss*2	BTU/h (°F/h)	127 (0.7)	129 (0.6)	151 (0.5)	287 (0.3)
Dimensions*3					
Tank length without insulation	in. (mm)	--	--	--	23.9 (609.5)
Overall length with insulation	in. (mm)	23 (581)	23 (581)	26¼ (667)	32¾ (832)
Tank width without insulation	in. (mm)	--	--	--	32 (811)
Overall width with insulation	in. (mm)	24 (605)	24 (605)	29¼ (744)	35 (888)
Tank height without insulation	in. (mm)	--	--	--	74½ (1895)
Overall height with insulation*4	in. (mm)	47 (1191)	55½ (1409)	68¼ (1734)	77 (1960)
Tilt height without insulation	in. (mm)	--	--	--	78 (1978)
Tilt height with insulation	in. (mm)	50 (1260)	57½ (1460)	72 (1825)	--
Weight					
Tank with insulation	lbs (kg)	132 (60)	154 (70)	231 (105)	187 (85)
Heating water content (heat exchanger pipe coil)	USG (L)	1.95 (7.4)	1.95 (7.4)	2.91 (11)	3.43 (13)
Heat exchanger surface area	ft. ² (m ²)	11 (1.0)	11 (1.0)	16 (1.5)	18.3 (1.7)
Connections					
Heating water supply/return	in. (male NPT thread)	1	1	1	1
Domestic cold/hot water	in. (male NPT thread)	¾	¾	1	1¼
Temp. and press. relief valve	in. (male NPT thread)	¾	¾	1	1
Recirculation	in. (male NPT thread)	¾	¾	1	1

*1 When planning for the recovery rate as stated or calculated, allow for the corresponding circulation pump.

The stated recovery rate is only achieved when the rated output of the boiler is equal to or greater than that stated under "Recovery rates".

*2 Tested to AHRI Indirect-Fired water Heater Testing Standard IWH-TS-1.

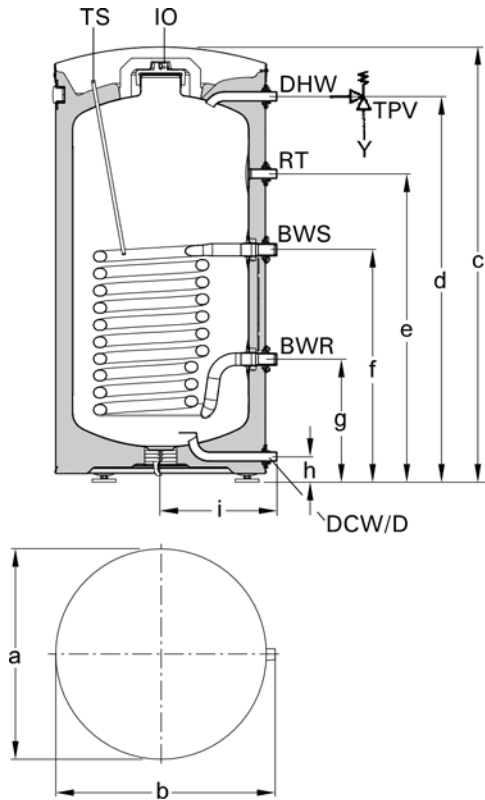
*3 For other dimensions, see illustrations and table on page 5.

*4 Adjustable feet can be adjusted up to 2 in. (50 mm).

For information regarding other Viessmann System Technology componentry, please reference documentation of the respective product.

Tank Dimensions

42 USG (160 L) and 53 USG (200 L) Tanks

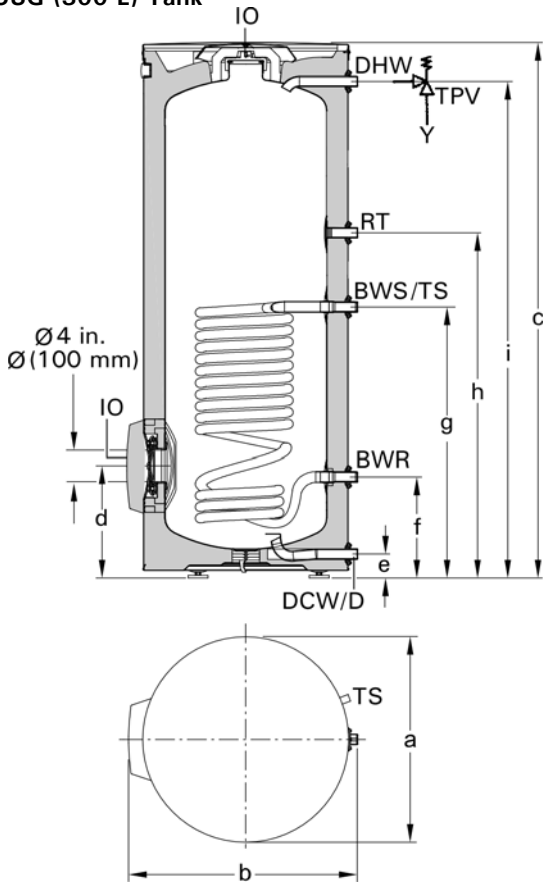


Dimensions			
Model		300-W, EVIA	300-V, EVIA
Storage capacity	USG (L)	42 (160)	53 (200)
a	in. (mm)	23 (581)	23 (581)
b	in. (mm)	24 (605)	24 (605)
c	in. (mm)	47 (1189)	55½ (1409)
d	in. (mm)	41½ (1055)	50 (1275)
e	in. (mm)	33 (843)	35 (885)
f	in. (mm)	25 (635)	25 (635)
g	in. (mm)	13 (335)	13 (335)
h	in. (mm)	2¾ (70)	2¾ (70)
i	in. (mm)	12½ (317)	12½ (317)

Legend

BWR Boiler Water Return
 BWS Boiler Water Supply
 D Drain
 DCW Domestic Cold Water
 DHW Domestic Hot Water
 IO Inspection Opening
 RT DHW Recirculation Tapping
 TPV Temperature and Pressure relief Valve
 TS Sensor well for tank Temperature Sensor or temperature controller, internal diameter ¼ in. (7 mm)

79 USG (300 L) Tank



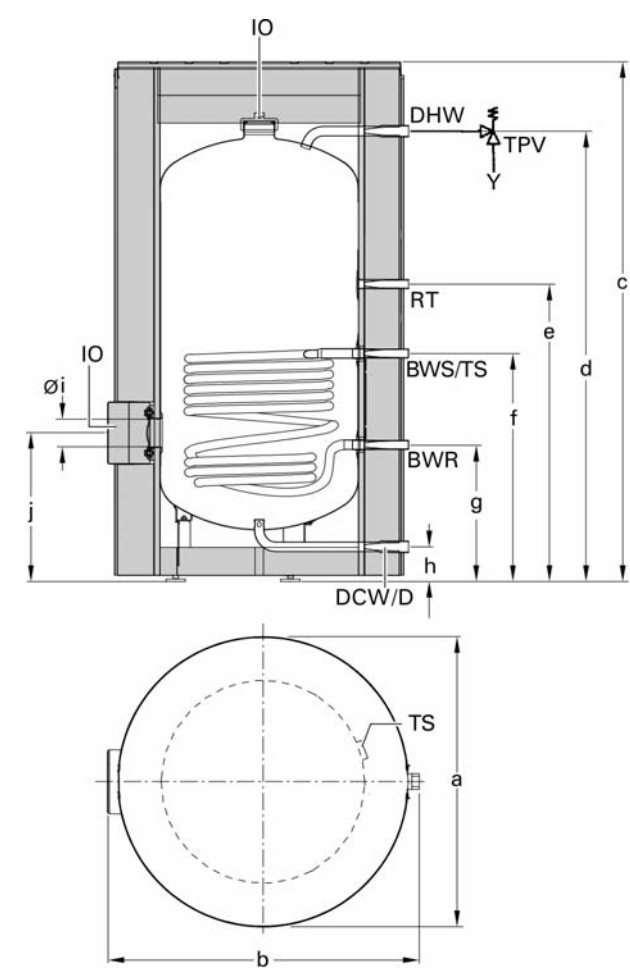
Dimensions			
Model		300-V, EVIA	
Storage capacity	USG (L)	79 (300)	
a	in. (mm)	26¼ (667)	
b	in. (mm)	29¼ (744)	
c	in. (mm)	68¼ (1734)	
d	in. (mm)	14¼ (362)	
e	in. (mm)	3 (77)	
f	in. (mm)	13 (327)	
g	in. (mm)	34½ (876)	
h	in. (mm)	44 (1116)	
i	in. (mm)	63¼ (1607)	

Legend

DHW Domestic Hot Water
 BWR Boiler Water Return
 IO Inspection/cleanout Opening
 BWS Boiler Water Supply
 TPV Temperature and Pressure relief Valve
 D Drain
 RT DHW Recirculation Tapping
 DCW Domestic Cold Water
 TS Sensor well for tank Temperature Sensor or temperature controller, internal diameter ⅝ in. (17 mm)

Tank Dimensions

119 USG (450 L) Tank

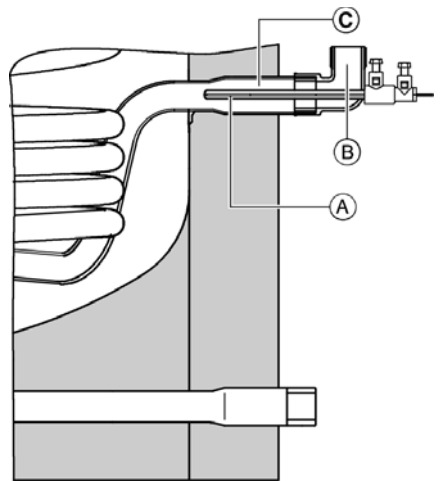


Dimensions		
Model		300-V, EVIB
Storage capacity	USG (L)	119 (450)
a	in. (mm)	Ø32¾ (832)
b	in. (mm)	35 (888)
c	in. (mm)	77 (1960)
d	in. (mm)	71½ (1821)
e	in. (mm)	46 (1168)
f	in. (mm)	36 (916)
g	in. (mm)	17¼ (441)
h	in. (mm)	3¾ (98)
i	in. (mm)	4 (100)
j	in. (mm)	19 (484)

- Legend**
- IO Inspection and clean-out Opening
 - D Drain
 - BWR Boiler Water Return
 - BWS Boiler Water Supply
 - DCW Domestic Cold Water
 - DHW Domestic Hot Water
 - RT DHW Recirculation Tapping
 - TPV Temperature and Pressure relief Valve
 - TS Clamping system for fastening Temperature Sensors to the tank shell. Fastening channels for three temperature sensors per clamping system.

*1 For solar heating systems Viessmann recommends placement of the DHW tank temperature sensor in the heating water return (BWR). This requires a brass elbow with sensor well (see price list, Vitocell 300 accessory).

DHW tank temperature sensor in solar heating applications 119 USG (450 L).



- Legend**
- Ⓐ DHW tank temperature sensor for solar application (included with solar control unit)
 - Ⓑ Brass elbow with sensor well
 - Ⓒ Solar collector return connection.

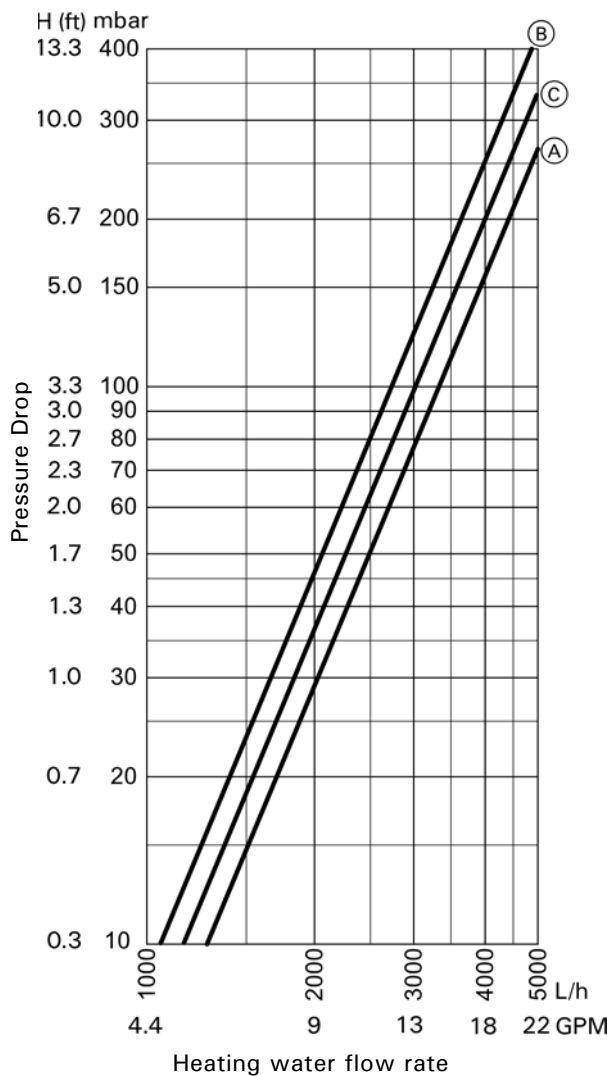
Water Flow

Domestic hot water draw rate

Storage tank contents heated to 140°F (60°C), boiler not reheating.

Model		300-W EVIA	300-V EVIA	300-V EVIA	300-V EVIB
Storage capacity	USG (L)	42 (160)	53 (200)	79 (300)	119 (450)
Domestic hot water draw rate	GPM (L/min)	2.6 (10)	2.6 (10)	4.0 (15)	4.0 (15)
Domestic hot water draw water with t = 140°F (60°C)(constant)	USG (L)	35 (133)	41 (155)	63 (240)	103 (390)
tank volume	%	83	77.5	80	87

Pressure drop on the heating water side



Legend

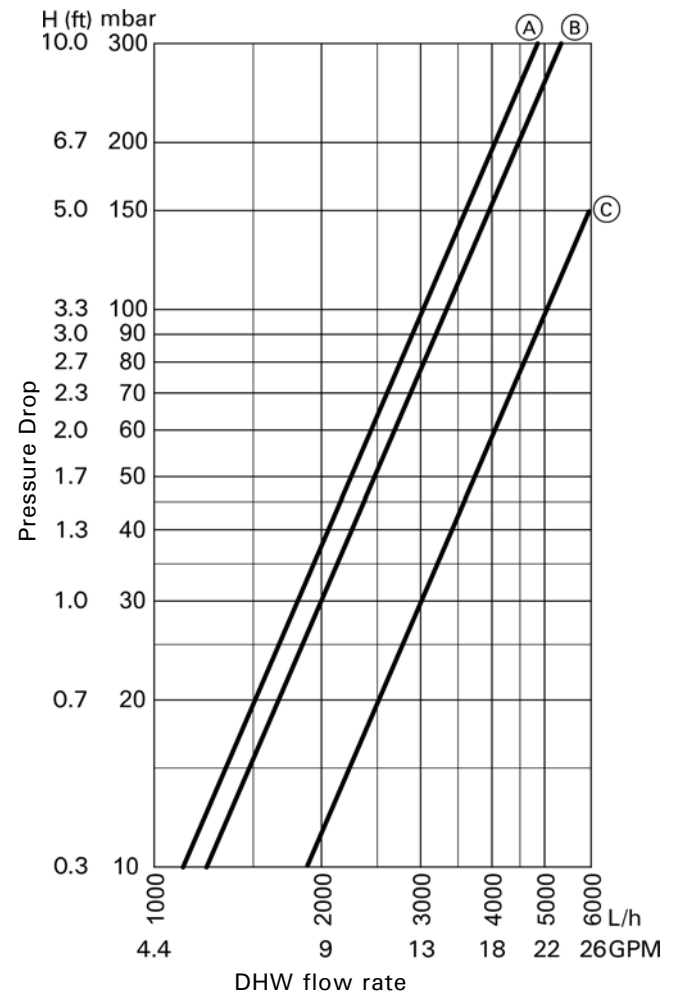
- Ⓐ 42 and 53 USG (160 and 200 L) capacity
- Ⓑ 79 USG (300 L) capacity
- Ⓒ 119 USG (450 L) capacity

Heat-up time

The stated heating times are achieved when the maximum recovery rate of the domestic hot water tank is made available at the respective supply temperature and with a domestic hot water rise from 50 to 140°F (10 to 60°C).

Model	300-W EVIA	300-V EVIA	300-V EVIA	300-V EVIB
Storage capacity USG (L)	42 (160)	53 (200)	79 (300)	119 (450)
Heating water supply temperature	Heat-up time (minutes)			
194°F (90°C)	17	19	21	25
176°F (80°C)	20	24	30	33
158°F (70°C)	30	37	40	46

Pressure drop on the DHW side



Legend

- Ⓐ 42 and 53 USG (160 and 200 L) capacity
- Ⓑ 79 USG (300 L) capacity
- Ⓒ 119 USG (450 L) capacity

Performance Rating

Tested to AHRI Indirect-Fired water Heater Testing Standard IWH-TS-1

Storage	First draw test USG (L)	Continuous draw rating USG/hr (L/hr)	First hour rating USG (L)
42 USG (160 L)	35 (132)	171 (649)	206 (781)
53 USG (200 L)	44 (167)	179 (676)	223 (843)
79 USG (300 L)	71 (269)	234 (885)	305 (1154)
119 USG (450 L)	106 (402)	270 (1019)	376 (1420)

Standard Equipment

Vitocell 300-W, EVIA 42 USG (160 L) capacity

DHW tank made from stainless steel.

- Integral welded sensor well for tank temperature sensor/temperature controller (internal diameter 7 mm)
 - Temperature and pressure relief valve
 - Installation fittings
 - Technical literature set
 - Thermometer
 - Adjustable feet
 - Fitted thermal insulation
- Color of the epoxy-coated sheet steel casing: white.

Vitocell 300-V, EVIA 53 USG (200 L) capacity

DHW tank made from stainless steel.

- Integral welded sensor well for tank temperature sensor/temperature controller (internal diameter 7 mm)
 - Temperature and pressure relief valve
 - Installation fittings
 - Technical literature set
 - Thermometer
 - Adjustable feet
 - Fitted thermal insulation
- Color of the epoxy-coated sheet steel casing: Vitosilver.
- Threaded elbow with solar sensor well (optional) [well internal dia. 1/4 in. (6.5 mm)]

Vitocell 300-V, EVIA 79 USG (300 L) capacity

DHW tank made from stainless steel.

- Integral welded sensor well for tank temperature sensor/temperature controller (internal diameter 17 mm)
 - Temperature and pressure relief valve
 - Installation fittings
 - Technical literature set
 - Thermometer
 - Adjustable feet
 - Fitted thermal insulation
- Color of the epoxy-coated sheet steel casing: Vitosilver.
- Threaded elbow with solar sensor well (optional) [well internal dia. 1/4 in. (6.5 mm)]

Vitocell 300-V, EVIB 119 USG (450 L) capacity

DHW tank made from stainless steel.

- One clamping system with three fastening channels for attaching temperature sensors to the tank shell.
 - Temperature and pressure relief valve
 - Installation fittings
 - Technical literature set
 - Thermometer
 - Adjustable feet
 - Separate carton with removable thermal insulation
- Color of the plastic-coated thermal insulation: Vitosilver
- Threaded elbow with solar sensor well (optional) [well internal dia. 1/4 in. (6.5 mm)]

Multiple Tank Installation

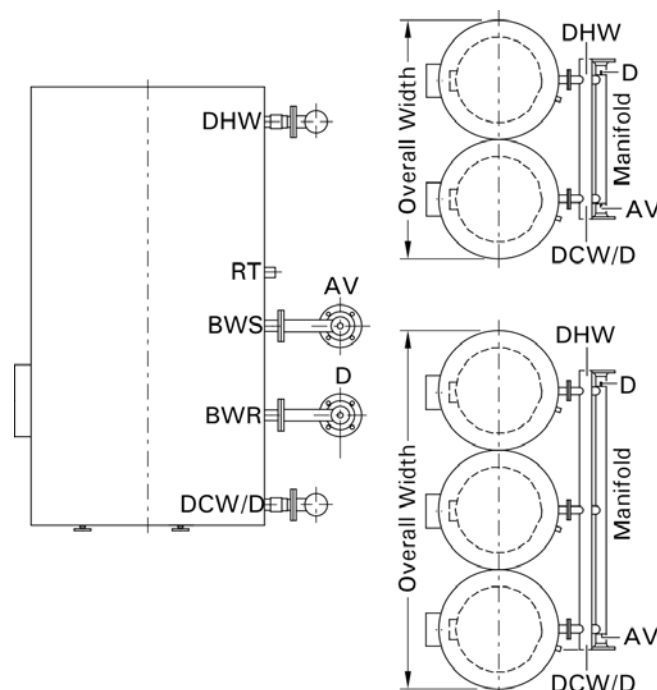
Technical data

The DHW tanks may be combined into batteries consisting of 2 tanks [79 USG (300 L)] tanks or 3 [119 USG (450 L)] tanks. Tank batteries consisting of more than 3 tanks can be installed by creating up to 4 batteries, each consisting of 2 tanks. The heating contractor is responsible to ensure proper piping on both the primary and secondary circuits.

Model		300-V, EVIA	300-V, EVIB	
Tank storage capacity	USG (L)	79 (300)	119 (450)	
Total capacity of tank battery	USG (L)	158 (600)	238 (900)	357 (1350)
Number of storage tanks		2	2	3
Recovery rates *1 with a temperature rise of the domestic hot water from 50 to 140°F (10 to 60°C) and heating water supply temperature of... at the supply flow rate stated below	194°F (90°C)	MBH (kW)	354 (104)	409 (120)
		GPH (L/h)	472 (1788)	550 (2082)
	176°F (80°C)	MBH (kW)	279 (82)	327 (96)
		GPH (L/h)	373 (1412)	433 (1640)
	158°F (70°C)	MBH (kW)	197 (58)	232 (68)
		GPH (L/h)	264 (1002)	305 (115)
Supply flow rate for the recovery rates stated	GPM (m ³ /h)	26.4 (6)	44.0 (10)	66.0 (15)
Standby heat loss *2	BTU/h (°F/h)	302 (0.5)	574 (0.3)	861 (0.3)
Heat exchanger surface area	ft. ² (m ²)	32 (3.0)	36.6 (3.4)	54.9 (5.1)

***1** When planning for the recovery rate as stated or calculated, allow for the corresponding circulation pump. The stated recovery rate is only achieved when the rated output of the boiler is equal to or greater than that stated under "Recovery rates".

***2** Measured values are based on a room temperature of 68°F (20°C) and a domestic hot water temperature of 149°F (65°C) and can vary by ± 5%.



For domestic hot water heating applications which utilize modulating and low temperature hot water heating boilers

Examples of multiple tank installations (shown). All fittings including manifolds are field supplied.

Model	300-V EVIA	300-V EVIB	
Storage tank capacity	79 USG (300 L)	119 USG (450 L)	
# of storage tanks	2	2	3
Common header size boiler supply / return	in. (mm)	2 (51)	2 (51)
Common header size domestic hot / cold water	in. (mm)	1¼ (32)	1½ (38)
Dimensions with insulation	in. (mm)	59 (1495)	74¾ (1900)
Overall width *1			116¾ (2968)

***1** Overall width includes 2" clearance space between the tanks.

Legend

D Drain on the heating water side
 AV Air Vent valve
 BWR Heating Water Return
 BWS Heating Water Supply
 DCW/D Domestic Cold Water and Drain on the DHW side
 DHW Domestic Hot Water
 RT DHW Recirculation Tapping

Multiple Tank Installation *(continued)***Domestic hot water draw rate**

Storage tank content heated to 140°F (60°C),
boiler not reheating

Model	300-V, EVIA	300-V, EVIB	
Storage tank capacity	79 USG (300 L)	119 USG (450 L)	
Number of storage tanks	2	2	3
Battery storage capacity USG (L)	158 (600)	238 (900)	357 (1350)
DHW draw rate GPM (L/min)	7.9 (30)	7.9 (30)	11.9 (45)
Domestic hot water draw USG (L) Water with t = 140°F (60°C) (constant)	126.8 (480)	206 (780)	309 (1170)
% of battery volume	93	93	93

Quick recovery (over 10-minute period)

Domestic hot water rise from 50 to 113°F (10 to 45°C)

Model	300-V, EVIA	300-V, EVIB	
Storage tank capacity	79 USG (300 L)	119 USG (450 L)	
Number of storage tanks	2	2	3
Battery storage capacity USG (L)	158 (600)	238 (900)	357 (1350)
Heating water supply temperature			
194°F (90°C) USG/10 min (L/10 min)	186 (704)	292 (1104)	438 (1656)
176°F (80°C) USG/10 min (L/10 min)	172 (649)	283 (1072)	425 (1608)
158°F (70°C) USG/10 min (L/10 min)	164 (620)	274 (1038)	411 (1557)

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

Domestic hot water rise from 50 to 113°F (10 to 45°C)

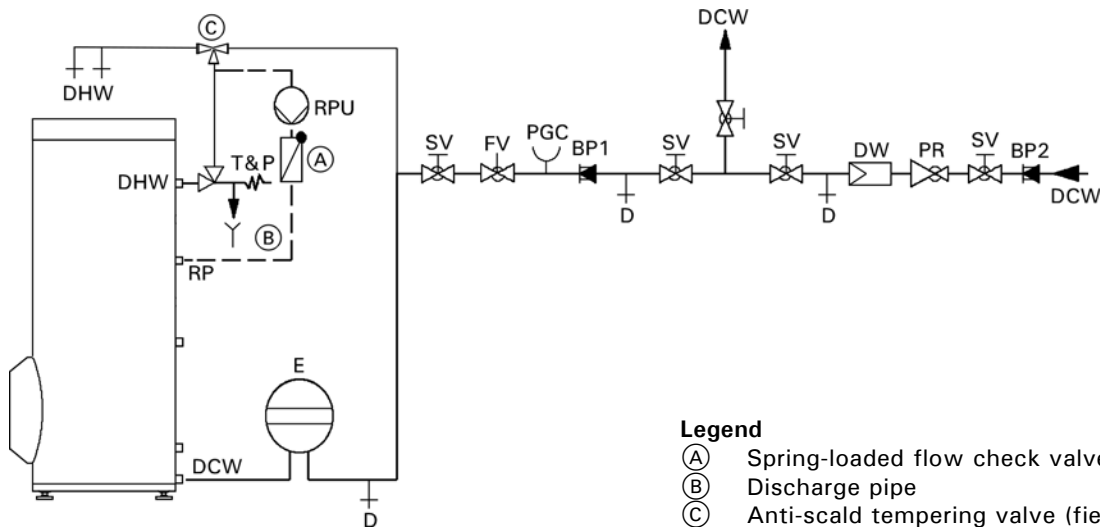
Model	300-V, EVIA	300-V, EVIB	
Storage tank capacity	79 USG (300 L)	119 USG (450 L)	
Number of storage tanks	2	2	3
Battery storage capacity USG (L)	158 (600)	238 (900)	357 (1350)
Heating water supply temperature			
194°F (90°C) GPM (L/min)	18.6 (70.4)	19.1 (110.4)	43.7 (165.6)
176°F (80°C) GPM (L/min)	17.0 (64.9)	28.3 (107.2)	42.4 (160.8)
158°F (70°C) GPM (L/min)	16.3 (62.0)	27.4 (103.8)	41.1 (155.7)

System Design Guidelines

IMPORTANT

This is a simplified conceptual drawing only!
Piping and necessary componentry must be field verified. Proper installation and functionality in the field is the responsibility of the heating contractor.

Domestic hot water connections




Legend

- (A) Spring-loaded flow check valve
- (B) Discharge pipe
- (C) Anti-scald tempering valve (field supplied)
- SV Shut-off Valve
- FV Flow check Valve
- PR Pressure Reducing valve
- D Drain
- DCW Domestic Cold Water supply
- PGC Pressure Gauge Connection
- E Precharged Expansion tank (required where backflow preventer is installed; check local plumbing codes and requirements)
- BP1 Backflow Preventer
- BP2 Backflow Preventer
- T&P Temperature and Pressure relief valve
- DHW Domestic Hot Water supply
- DW Water filter
- RP Recirculation Pipe
- RPU Recirculation Pump

System Design Guidelines (continued)

Sensor wells for 42 USG (160 L) to 79 USG (300 L) tanks

The installed sensor wells are to be used for control sensors to ensure maximum operational safety. For solar heating systems, Viessmann recommends placement of the DHW tank temperature sensor in the solar collector return. This requires a brass elbow with the sensor well (see page 8).

**WARNING**

To ensure optimum, safe operation, the stainless steel well must be used. The well diameter is large enough to accommodate a wide variety of sensing bulbs. Always use spring clip to ensure proper contact of capillary bulb against the stainless steel well for proper sensing/heat transfer!

Sensor clamps for 119 USG (450 L) tank

Sensor clamps are supplied with the tank.

Heating water supply temperature over 230°F (110°C)

For these operating conditions, an approved high limit must be installed to limit the domestic hot water temperature to 203°F (95°C) in the tank.

Recirculation tapping

The recirculation tapping is on a separate tapping (see page 5). Cap this opening if the tank is not installed with recirculation.


Backflow preventers

Where backflow preventers are required, a domestic water expansion tank installation is recommended in the cold water inlet piping before the cold water enters the Vitocell. For the backflow device, observe local plumbing codes and regulations.

Tempering valve

Ensure that temperature tempering valve(s) is installed if the domestic hot water storage tank temperature exceeds 140°F (60°C) to protect from scalding. Consult plumbing codes and authorities for local requirements.

Installation of additional aquastat(s)

**WARNING**

In a multiple-tank installation, it is recommended that an additional high limit temperature device be installed in the common domestic hot water supply header to the system. This safety device should be wired in series to the operating control of the tank battery. The setting on this additional high limit temperature device should be approximately 9°F (5°C) higher than the operating high limit.

Temperature and pressure relief valve

A 150 psi temperature and pressure relief valve (T&P relief valve) is supplied with the tank. The heating contractor must install the valve on each tank in a method meeting code requirements. If local codes require a different relief valve, substitute the manufacturer's supplied valve. Maximum operating pressure is 150 psig.

The T&P relief valve supplied with the tank is tested under ANSI Z21.22 Code for Relief Valves and Automatic Gas Shut-off Devices for Hot Water Supply Systems.

T&P Valve	150 psig
ASME pressure steam rating	see ratings marked on T&P valve
CSA temperature steam rating	205 MBH*
Relief temperature	210°F (99°C)
Inlet thread	3/4" male
Outlet thread	3/4" female

* 105 MBH for 42 USG (160 L)

Warranty consideration

Viessmann DHW tanks require that the water heated should be of drinking water quality and that any water treatment equipment in use must function correctly.

If the product has been improperly installed or misapplied by the installer, contractor or final user, Viessmann accepts no responsibility for damage howsoever caused and reserves the right to withdraw the product warranty. In order to qualify for product warranty, strict adherence to the installation and service manuals must be observed.

In the event that components not approved by Viessmann are utilized, Viessmann reserves the right to withdraw all expressed or implied warranties without written notice.

The water to be heated with the Vitocell must be drinking (potable) water quality. If the tank is used to heat other media, the warranty will be null and void. Damage resulting from excessive pressure or temperature is clearly not the responsibility of Viessmann.

The amount of chloride and sulfate acceptable to the tank is limited. In areas where high concentrations of chloride and sulfate are present in drinking water, please consult Viessmann for directions.

For full warranty details, please read the product warranty sheet.

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Technical information subject to change without notice.

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