Technical Data Manual

Model Nos. and pricing: see Price List

Vitocell 300-W EVIA

Indirect-fired domestic hot water storage tank
42 USG (160 L) capacity

Product may not be exactly as shown

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

CAUTION

This tank version is not suitable for steam heating applications.

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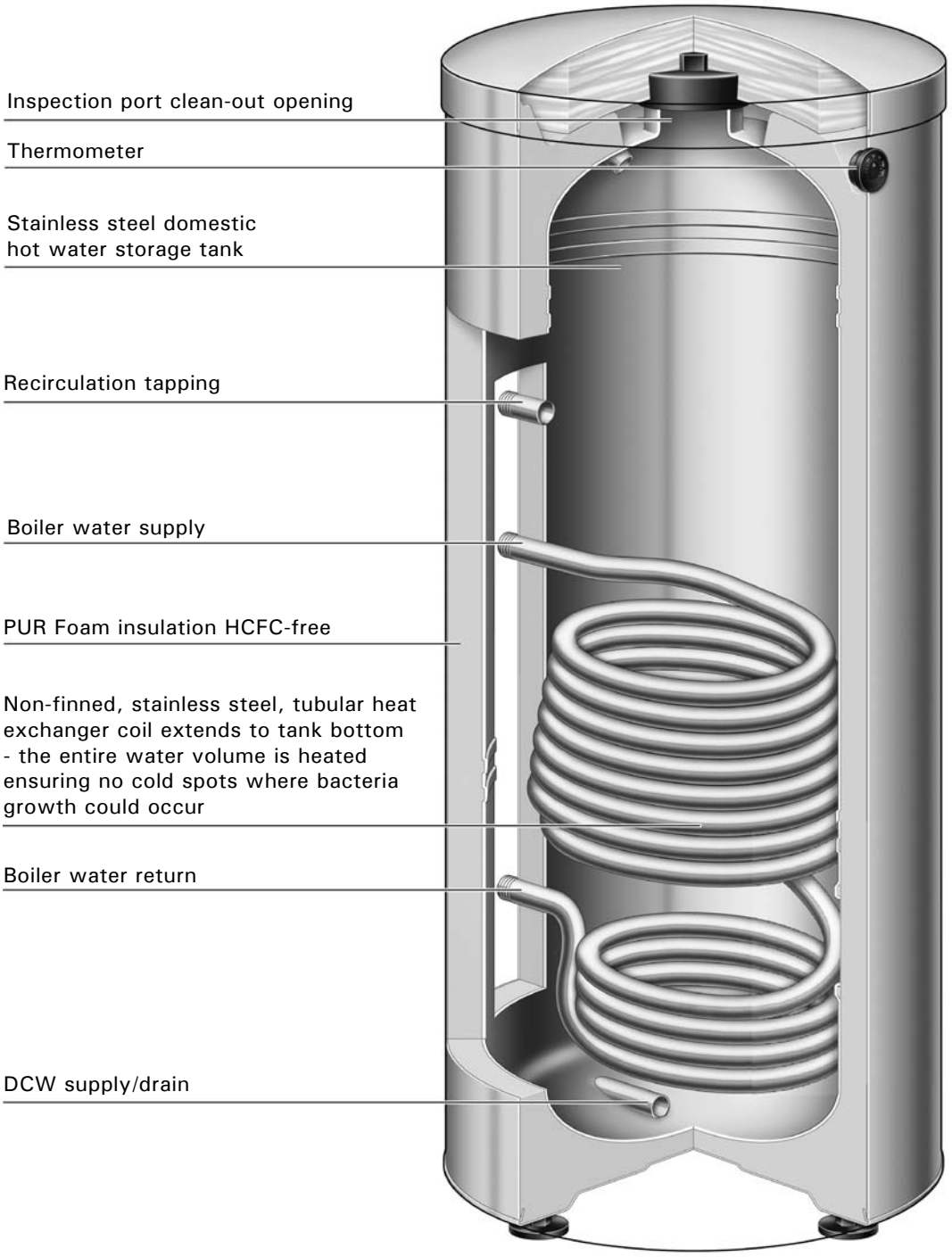
Benefits

Fully hygienic, efficient and economical domestic hot water production with DHW tanks of high-grade 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 1⅜ in. (35 mm) diameter 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.
- Standby losses minimized by $1^{7}/_{8}$ in. (45 mm) highly effective, foamed-in-place.
- Easy transport into mechanical room due to low weight and compact construction.

Cross Section



Product may not be exactly as shown

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)

Storage capacity		USG (L)	42 (160)
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) GPH (L/h)	148 (43) 197 (747)
	176°F (80°C)	MBH (kW) GPH (L/h)	116 (34) 155 (587)
	158°F (70°C)	MBH (kW) GPH (L/h)	82 (24) 109 (413)
Supply flow rate for the recovery rates stated		GPM (m^3/h)	22.0 (5.0)
Insulation			PUR Foam
Standby losses*2		MBH/24 h	4.6
Dimensions*3			
Overall length		in. (mm)	23 (581)
Overall width		in. (mm)	23¾ (604)
Overall height *4		in. (mm)	47 (1191)
Tilt height		in. (mm)	50 (1260)
Weight			
Tank with insulation		lbs (kg)	141 (64)
Heating water content (heat exchanger pipe coil)		USG (L)	1.85 (7)
Heat exchanger surface area		ft^2 (m^2)	11 (1.0)
Connections			
Heating water supply/return		in. (male NPT thread)	1
Domestic cold/hot water		in. (male NPT thread)	¾
Temp. and press. relief valve		in. (male NPT thread)	¾
Recirculation		in. (male NPT thread)	¾

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”.

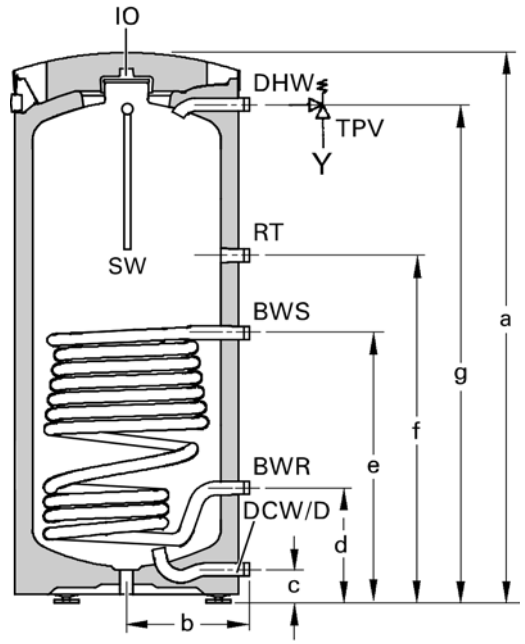
2 Measured values are based on a room temperature of 68°F (20°C) and a domestic hot water temperature of 149°F (65°C) and can vary by ± 5%.

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.

42 USG (160 L) Tank Dimensions



Dimensions		
Storage capacity	**USG (L)**	**42 (160)**
a	in. (mm)	47 (1191)
b	in. (mm)	12½ (317)
c	in. (mm)	3½ (87)
d	in. (mm)	13 (333)
e	in. (mm)	25 (633)
f	in. (mm)	33 1/16 (843)
g	in. (mm)	40¾ (1034)

Legend

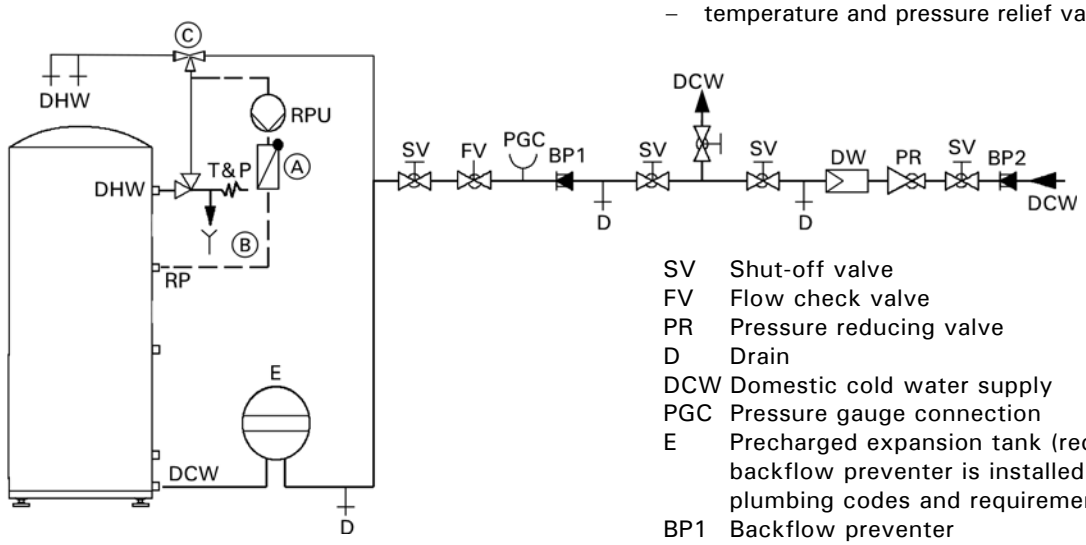
BWR Boiler water return
BWS Boiler water supply
D Drain
DCW Domestic cold water
DHW Domestic hot water
IO Inspection and clean-out opening
RT Recirculation tapping
TPV Temperature and pressure relief valve
SW Sensor well

Standard Equipment

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

Ⓐ Spring-loaded flow check valve
Ⓑ Discharge pipe (for temperature and pressure relief valve)
Ⓒ Anti-scald tempering valve (field supplied)

42 USG (160 L) capacity

Domestic hot water tank of high-grade stainless steel with PUR Foam insulation with:
- thermometer and
- adjustable leveling bolts
- integrated NPT nipples

The following is packaged and attached to the crate:
– installation fittings: with the necessary hardware
– temperature and pressure relief valve.

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

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Water Flow

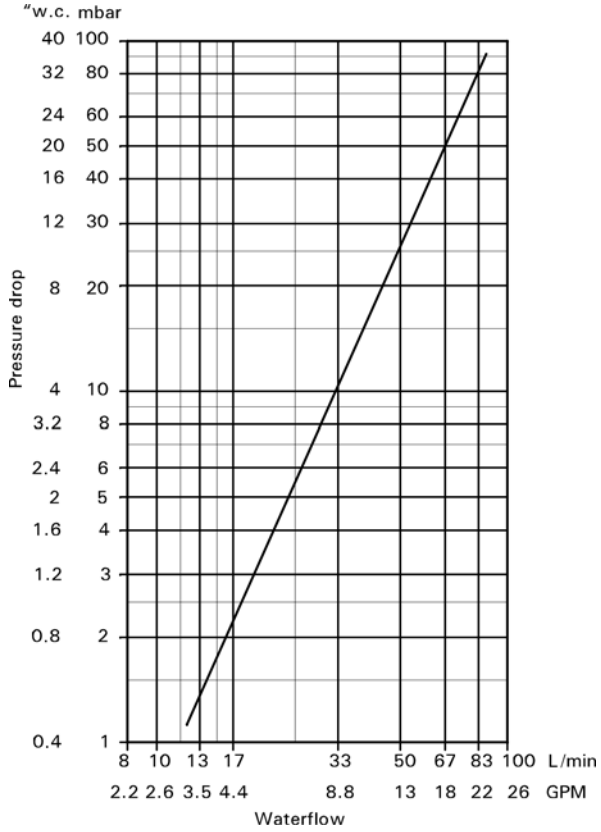
Domestic hot water draw rate
Storage tank contents heated to 140°F (60°C), boiler not reheating.

Storage capacity	USG (L)	42 (160)
Domestic hot water draw rate	GPM (L/min)	3.25 12.3
Domestic hot water draw water with t = 140°F (60°C) (constant)	USG (L)	37.5 142

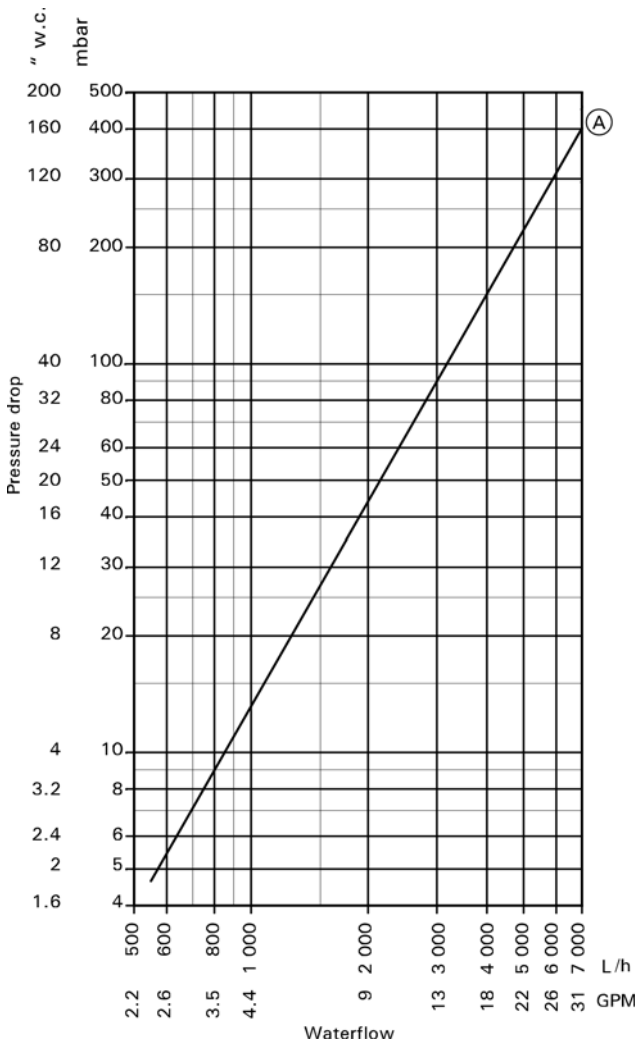
Heat-up time
The stated heating times are achieved when the maximum recovery rate of the domestic hot water tank is made available at the respective supply temperature and with a domestic hot water rise from 50 to 140°F (10 to 60°C) at boiler flow rate of 14 FPM (3180 L/h).

Storage capacity USG (L)	42 (160)
Heating water supply temperature	Heat-up time (minutes)
194°F (90°C)	13
176°F (80°C)	15
158°F (70°C)	23

Pressure drop on domestic hot water side (secondary circuit)



Pressure drop on heating water side (primary circuit)



Legend
Ⓐ 42 USG (160 L) storage capacity

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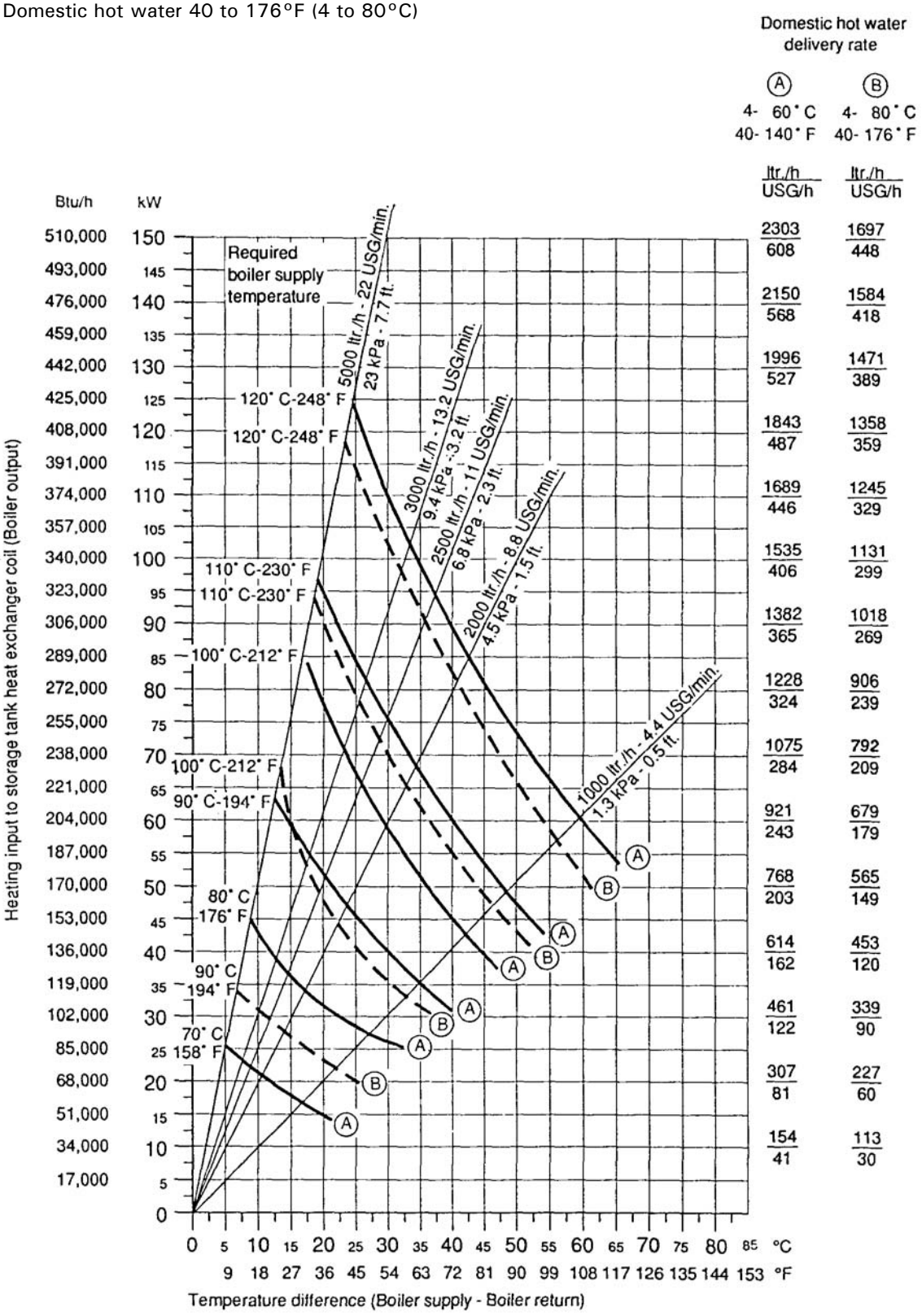
Water Flow *continued*

Continuous Flow Capacity Chart for 42 USG (160 L)

Curve Ⓐ Domestic hot water 40 to 140°F (4 to 60°C)
Curve Ⓑ Domestic hot water 40 to 176°F (4 to 80°C)



System Design Guidelines

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.

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	105 MBH
Relief temperature	210°F (99°C)
Inlet thread	¾" male
Outlet thread	¾" female

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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