

Technical Data Manual

Model Nos. and pricing: see Price List



53 and 79 USG /
200 and 300 liter capacity



120 USG / 450 liter
capacity

Vitocell-V 300

EVI Series

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



*This tank version is not suitable
for steam heating applications.*

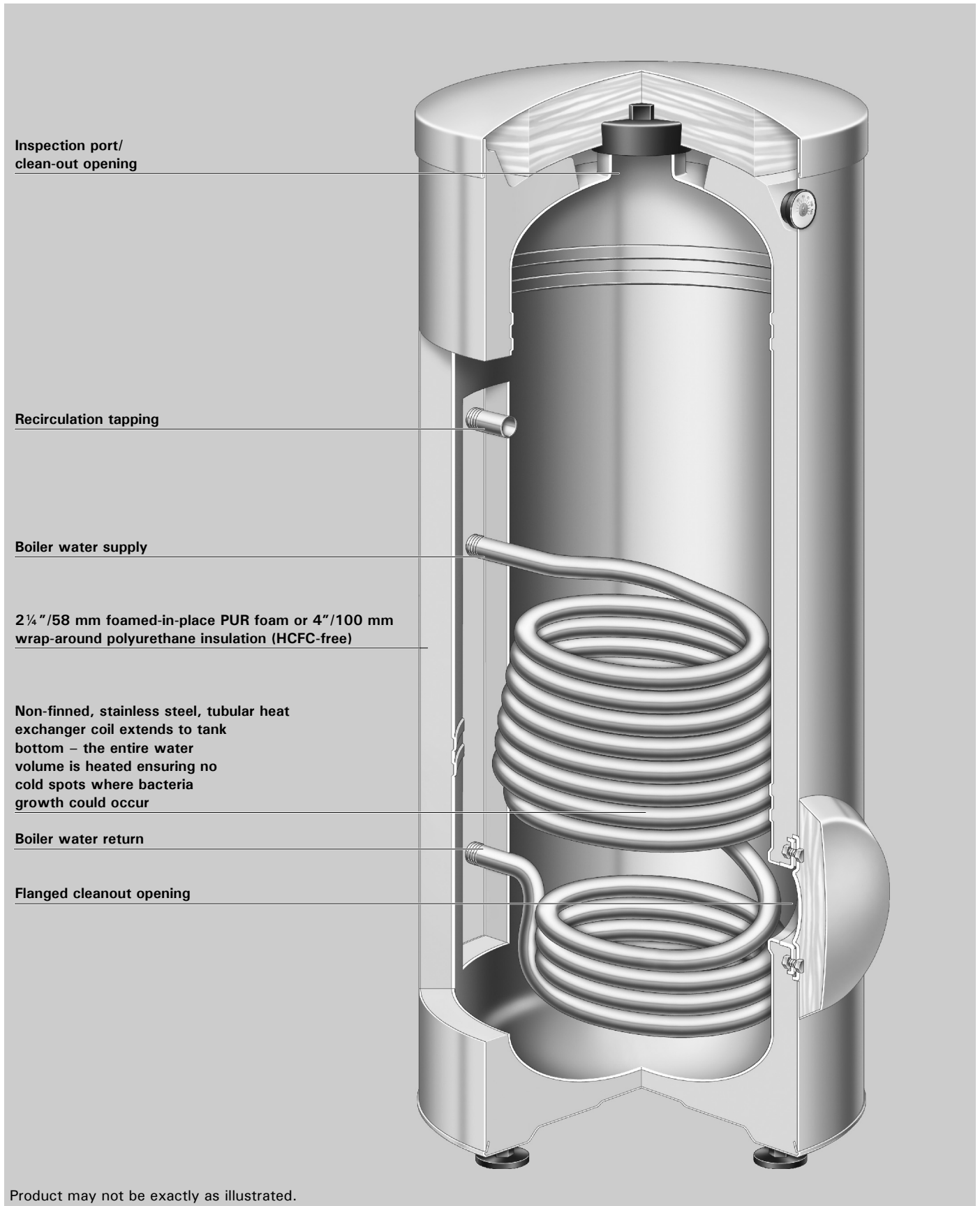


Vitocell-V 300

Fully hygienic, efficient and economical domestic hot water production with DHW tanks of high-grade stainless steel – vertical version.

The benefits at a glance:

- Corrosion-resistant tank of **high-grade SA 240-316 Ti 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 ¼" / 32 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, multiple vertical tanks can be combined via headers to form tank batteries.
- **Standby losses minimized** by 2 ¼" / 58 mm highly effective, foamed-in-place or 4" / 100 mm wrap-around HCFC-free insulation.
- **Easy transport** into mechanical room due to low weight and compact construction.



Inspection port/
clean-out opening

Recirculation tapping

Boiler water supply

2 1/4" / 58 mm foamed-in-place PUR foam or 4" / 100 mm
wrap-around polyurethane insulation (HCFC-free)

Non-finned, stainless steel, tubular heat
exchanger coil extends to tank
bottom – the entire water
volume is heated ensuring no
cold spots where bacteria
growth could occur

Boiler water return

Flanged cleanout opening

5167 410 v2.2

Product may not be exactly as illustrated.

Technical Data

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		53	79	120
	ltr		200	300	450
Recovery rates *1					
with a temperature rise of the domestic hot water from	194 °F	MBH	215	280	276
	90 °C	GPM	4.7	6.2	6.1
		ltr/h	1084	1410	1393
50 to 140 °F / 10 to 60 °C					
and heating water supply temperature of	176 °F	MBH	164	201	212
	80 °C	GPM	3.6	4.5	4.7
		ltr/h	826	1014	1066
at the supply flow rate stated below	158 °F	MBH	99	140	147
	70 °C	GPM	2.1	3.1	3.3
		ltr/h	499	705	739
Supply flow rate for the recovery rates stated	GPM		22.0	22.0	28.6
	m ³ /h		5.0	5.0	6.5
Standby losses *2	MBH/24 h		5.5	6.8	9.2
Overall dimensions with insulation *3					
Overall width	inches		22 ⁷ / ₈	25	36 ¹ / ₃
	mm		581	633	923
Overall depth	inches		25 ¹ / ₂	27 ³ / ₈	38 ³ / ₈
	mm		649	704	974
Overall height	inches		56	70	69 ¹ / ₂
	mm		1420	1779	1767
Tilt height	inches		58	71 ³ / ₄	66 ¹ / ₂
	mm		1471	1821	1690
Weight	lbs		168	220	245
Tank with insulation	kg		76	100	111
Heating water content (heat exchanger pipe coil)	USG		2.64	2.91	4.0
	ltr		10	11	15.0
Heat exchanger surface area	ft ²		14	16	20.5
	m ²		1.3	1.5	1.9
Connections					
Heating water supply/return	Ø" (male thread)		1	1	1 ¹ / ₄
Domestic cold/hot water	Ø" (male thread)		1	1	1 ¹ / ₄
Temp. and press. relief valve	Ø" (male thread)		1	1	1 ¹ / ₄
Recirculation	Ø" (male thread)		1	1	1 ¹ / ₄

*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".

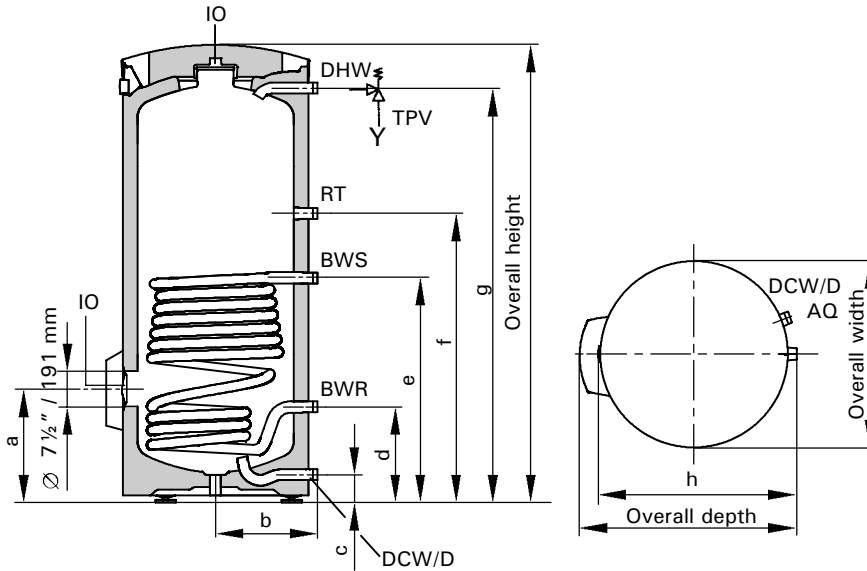
Please also refer to the corresponding sizing chart at the end of this manual.

*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 illustration and table on page 5.

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

**Vitocell-V 300, 53 and 79 USG / 200 and 300 ltr
with PUR Foam insulation**



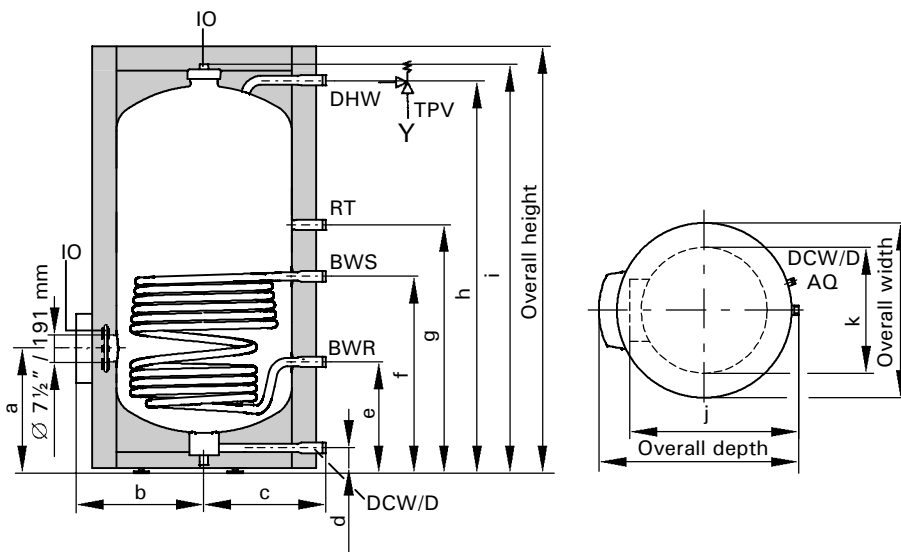
Dimensions

Storage capacity	USG	53	79
		200	300
a	inches	13 3/4	14 1/2
	mm	353	357
b	inches	12 1/2	13 1/2
	mm	317	343
c	inches	3 1/2	3 1/2
	mm	87	87
d	inches	11 3/4	11 3/4
	mm	297	301
e	inches	27 1/2	29 1/2
	mm	697	751
f	inches	35 1/3	37 1/2
	mm	897	951
g	inches	50 2/3	64 1/2
	mm	1286	1640
h	inches	24 1/4	26 1/4
	mm	614	665

Legend

- AQ Aquastat well
- 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

**Vitocell-V 300, 120 USG / 450 ltr
with wrap-around foam insulation**



Dimensions

Storage capacity	USG	120
		450
a	inches	20
	mm	508
b	inches	18 3/4
	mm	476
c	inches	19 2/3
	mm	498
d	inches	4
	mm	102
e	inches	17 7/8
	mm	453
f	inches	31 1/2
	mm	802
g	inches	39 7/8
	mm	1012
h	inches	63
	mm	1601
i	inches	65 2/3
	mm	1667
j	inches	36
	mm	914
k *1	inches	28
	mm	715

*1 Without insulation jacket.

5167 410 v2.2

Legend

- AQ Aquastat well
- BWR Boiler water return
- BWS Boiler water supply
- D Drain
- DCW Domestic cold water
- DHW Domestic hot water
- IO Inspection and cleanout opening
- TPV Temperature and pressure relief valve
- RT Recirculation tapping

Domestic hot water draw rate

Storage tank contents heated to 140°F / 60°C, boiler not reheating

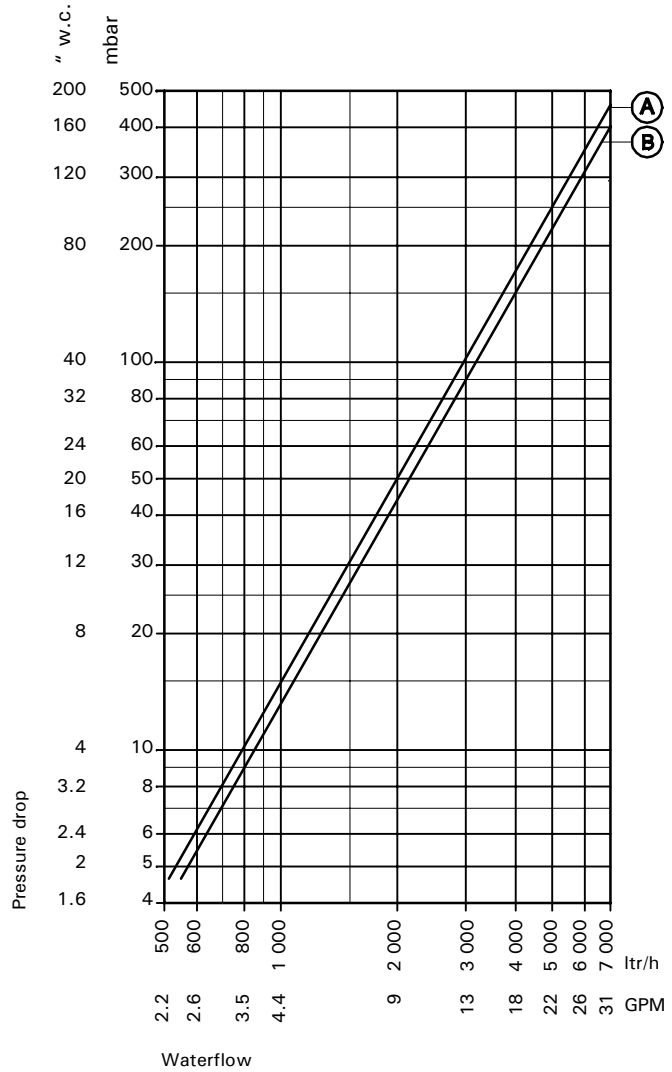
Storage capacity	USG	53	79	120
	ltr	200	300	450
Domestic hot water draw rate	GPM	2.6	4.0	4.0
	ltr/min	10	15	15
Domestic hot water draw	USG	37	72	122
	ltr	139	272	440
Water with t = 140°F/60°C (constant)				
Percentage tank volume		70%	91%	97%

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.

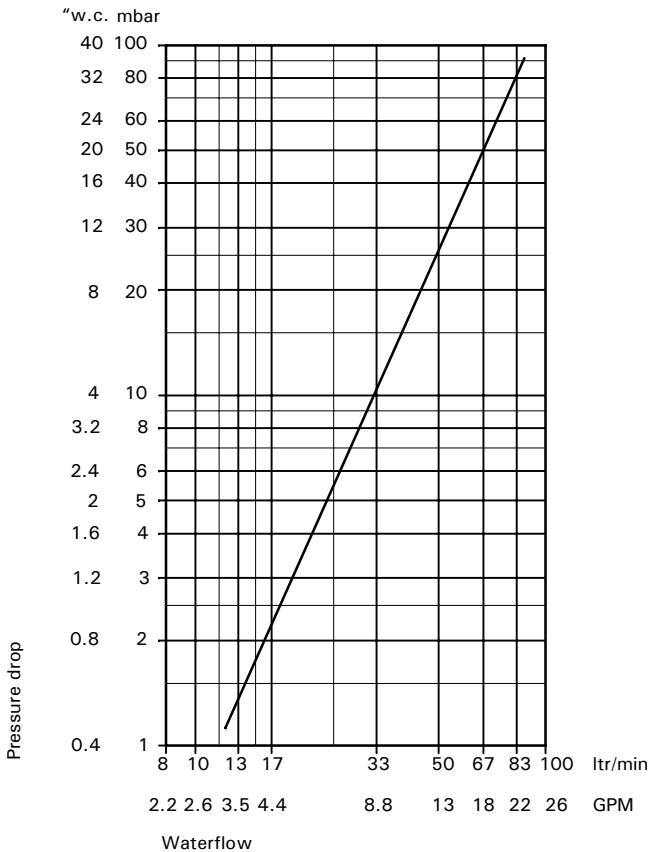
Storage capacity	USG	53	79	120
	ltr	200	300	450
Heating water supply temperature	Heat-up time (minutes)			
	194°F / 90°C	11.4	15.5	20
	176°F / 80°C	15	21.5	24
	158°F / 70°C	23.5	32.5	35

Pressure drop on heating water side (primary circuit)



- Ⓐ 79 USG / 300 ltr and 120 USG / 450 ltr storage capacity
- Ⓑ 53 USG / 200 ltr storage capacity

Pressure drop on domestic hot water side (secondary circuit)



Technical data

The 79 and 120 USG / 300 and 450 ltr tank sizes may be combined into a battery consisting of between 2 and 4 tanks. Tank batteries consisting of more than 4 tanks can be installed by creating up to 4 batteries, each consisting of 4 tanks. The heating contractor is responsible to ensure proper piping on both the primary and secondary circuits.

Tank storage capacity		USG	79	120		
		ltr	300	450		
Total capacity of tank battery		USG	158	240	480	
		ltr	600	900	1800	
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	560 12.4 2820	553 12.3 2786	829 18.4 4179	1105 24.5 5572
		176°F 80°C	403 8.9 2028	423 9.4 2132	635 14.1 3198	846 18.8 4264
		158°F 70°C	280 6.2 1410	293 6.5 1479	440 9.8 2217	587 13.0 2956
Supply flow rate		GPM	44	57	86	114
		m ³ /h	10	13	19.5	26
for the recovery rates stated						
Standby losses* ²		MBH/24 h	13.6	18.4	27.6	36.9
Overall dimensions with insulation						
Overall width	inches		57½	75¾	114¾	153½
	mm		1461	1926	2914	3902
Overall depth	inches		43 ⁵ / ₈	50¼	50¼	51
	mm		1109	1278	1278	1298
Overall height	inches		70	69½	69½	69½
	mm		1779	1767	1767	1767
Heat exchanger surface area		ft ²	30.1	38.8	58.1	77.5
		m ²	2.8	3.6	5.4	7.2

*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 %.

Installation of additional aquastat(s)

WARNING

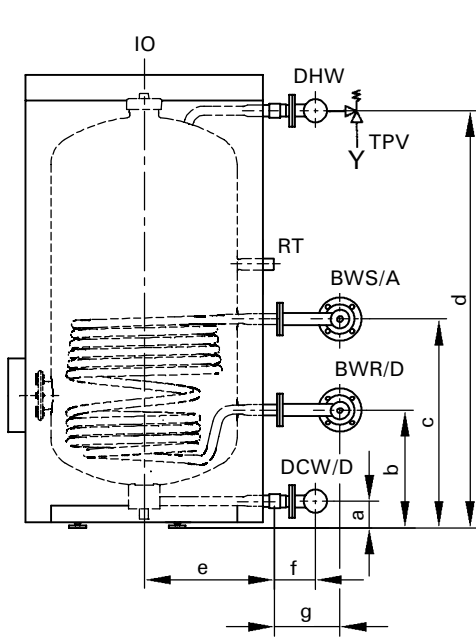
In a multiple-tank installation, it is recommended that an additional high limit aquastat be installed in the common domestic hot water supply header to the system. This aquastat should be wired in series to the operating aquastat on the tank battery. The setting on this additional high limit aquastat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

Ensure that temperature tempering valve(s) is/are 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.

Vitocell-V 300 in a Multiple-Tank Installation

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

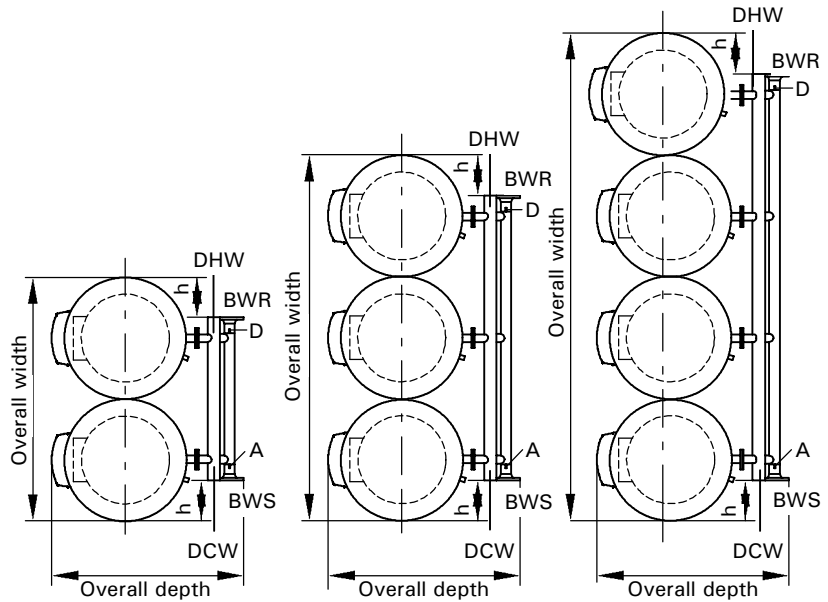


Side view

Qty 2

Qty 3

Qty 4



Top view

Legend

- A Air vent
- AQ Aquastat well
- BWR Boiler water return
- BWS Boiler water supply
- D Drain
- DCW Domestic cold water
- DHW Domestic hot water
- IO Inspection and cleanout opening
- RT Recirculation tapping
- TPV Temperature and pressure relief valve

Storage tank capacity		79 USG / 300 ltr		120 USG / 450 ltr	
Total capacity of tank battery	USG	158	240	360	480
	ltr	600	900	1350	1800
Number of storage tanks		2	2	3	4
a	inches	3 ³ / ₈	4	4	4
	mm	87	102	102	102
b	inches	11 ⁷ / ₈	17 ⁷ / ₈	17 ⁷ / ₈	17 ⁷ / ₈
	mm	301	453	453	453
c	inches	29 ¹ / ₂	31 ¹ / ₂	31 ¹ / ₂	31 ¹ / ₂
	mm	751	802	802	802
d	inches	64 ¹ / ₂	63	63	63
	mm	1640	1601	1601	1601
e	inches	13 ¹ / ₂	19 ¹ / ₂	19 ¹ / ₂	19 ¹ / ₂
	mm	343	498	498	498
f	inches	5	5	5 ¹ / ₂	5 ¹ / ₂
	mm	127	130	135	139
g	inches	9 ³ / ₈	8 ¹ / ₂	8 ¹ / ₂	9
	mm	237	217	217	226
h	inches	8 ¹ / ₈	14 ¹ / ₄	14 ¹ / ₄	14 ¹ / ₄
	mm	206	359	359	359
Common header size boiler supply / return	inches	2	2	2	2 ¹ / ₂
	mm	51	51	51	64
Common header size domestic hot / cold water	inches	1 ¹ / ₄	1 ¹ / ₄	1 ¹ / ₂	2
	mm	32	32	38	51

5167 410 v2.2

Domestic hot water draw rate

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

Storage capacity	USG	79	120		
	ltr	300	450		
Battery storage capacity	USG	158	240	360	480
	ltr	600	900	1350	1800
No. of tanks		2	2	3	4
DHW draw rate	GPM	7.9	7.9	11.9	15.9
	ltr/min	30	30	45	60
Domestic hot water draw	USG	143.7	243	365	486
	ltr	544	920	1380	1840
Water with t = 140°F / 60 °C (constant)					
Percentage of battery volume		93%	92%	92%	92%

Quick recovery (over 10-minute period)

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

Storage capacity	USG	79	120		
	ltr	300	450		
Battery storage capacity	USG	158	240	360	480
	ltr	600	900	1350	1800
No. of tanks		2	2	3	4
Heating water supply temperature		Quick DHW recovery (over 10-minute period)			
194°F / 90°C	USG/10 min	237	314	422	528
	ltr/10 min	898	1190	1600	2000
176°F / 80°C	USG/10 min	229	314	422	528
	ltr/10 min	870	1190	1600	2000
158°F / 70°C	USG/10 min	184	277	388	475
	ltr/10 min	698	1050	1470	1800

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

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

Storage capacity	USG	79	120		
	ltr	300	450		
Battery storage capacity	USG	158	240	360	480
	ltr	600	900	1350	1800
No. of tanks		2	2	3	4
Heating water supply temperature		Max. DHW draw rate (over 10-minute period)			
194°F / 90°C	GPM	23.5	32	42.3	52.8
	ltr/min	90	120	160	200
176°F / 80°C	GPM	23	32	42.3	52.8
	ltr/min	87	120	160	200
158°F / 70°C	GPM	18.5	26.6	39	47.5
	ltr/min	70	101	148	180

Standard Equipment Product Installation

Standard Equipment

**Vitocell-V 300,
53 and 79 USG / 200 and 300 ltr
capacity**

Domestic hot water tank of high-grade stainless steel with PUR Foam insulation with
 – thermometer and
 – adjustable leveling bolts.

The following is packed separately and attached to the crate:
 – installation fittings package: with the necessary brass adaptors, other necessary hardware, and Loctite 55
 – sensor well with insulation
 – temperature and pressure relief valve.

Electrostatically powder coated sheet metal enclosure panel in a Vitosilver finish.

**Vitocell-V 300,
120 USG / 450 ltr
capacity**

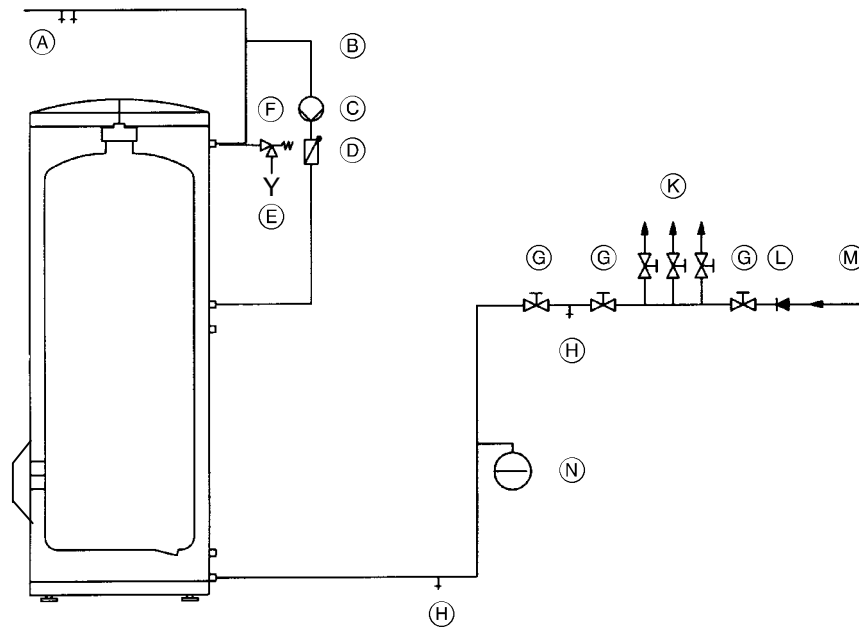
Domestic hot water tank of high-grade stainless steel with wrap-around foam insulation with
 – thermometer and
 – adjustable leveling bolts.

The following is packed separately and attached to the crate:
 – installation fittings package: with the necessary brass adaptors, other necessary hardware, and hemp
 – sensor well with insulation
 – temperature and pressure relief valve.

Synthetic wrap-around enclosure panel in a Vitosilver finish.

Product Installation

Domestic hot water connections



- Ⓐ Domestic hot water supply
- Ⓑ DHW recirculation line
- Ⓒ DHW recirculation pump
- Ⓓ Spring-loaded flow check valve
- Ⓔ Discharge pipe
- Ⓕ Temperature and pressure relief valve

- Ⓖ Shut-off valve
- Ⓗ Drain
- Ⓚ Domestic cold water supply lines
- Ⓛ Backflow preventer
- Ⓜ Domestic cold water inlet

- Ⓝ Precharged expansion tank (required where backflow preventer is installed; check local plumbing codes and requirements)

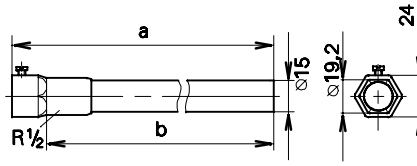
IMPORTANT

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.

Sensor Well

Vitocell-V 300,
53 to 120 USG / 200 to 450 ltr
capacity

Storage Capacity	USG	53	79	120
a	inches	8 3/4	8 3/4	13
	mm	220	220	330
b	inches	7 3/4	7 3/4	12 1/4
	mm	200	200	310



⚠ WARNING

To ensure optimum, safe operation, the supplied stainless steel well must be installed. 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!

Heating water supply temperatures over 230°F / 110°C

For these operating conditions, an approved high limit safety aquastat 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.

Temperature and pressure relief valve

A 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. The tank is approved for 100 psig where a CRN is required. Maximum operating pressure is 150 psig.

The T&P relief valve supplied with the tank is manufactured by Watts Industries (Model 40XL-8), set to 100 psig for Canadian installations and set to 150 psig for US installations (where applicable). The valve is ASME pressure steam rated for 998 MBH and CSA temperature steam rated for 200 MBH. It is tested under ANSI Z21.22 code for Relief Valves and Automatic Gas Shut-off Devices for Hot Water Supply Systems. The relief temperature is set at 210°F / 99°C. The valve has a male threaded inlet and female threaded outlet, both 3/4" sizes.

Warranty excerpt

Our warranty for domestic hot water tanks states 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 card.

Vitocell-V 300 Sizing Continuous Flow Capacity Chart

Vitocell-V 300, 53 USG / 200 ltr capacity

Curve (A)
Domestic hot water 40 to 140°F / 4 to 60°C

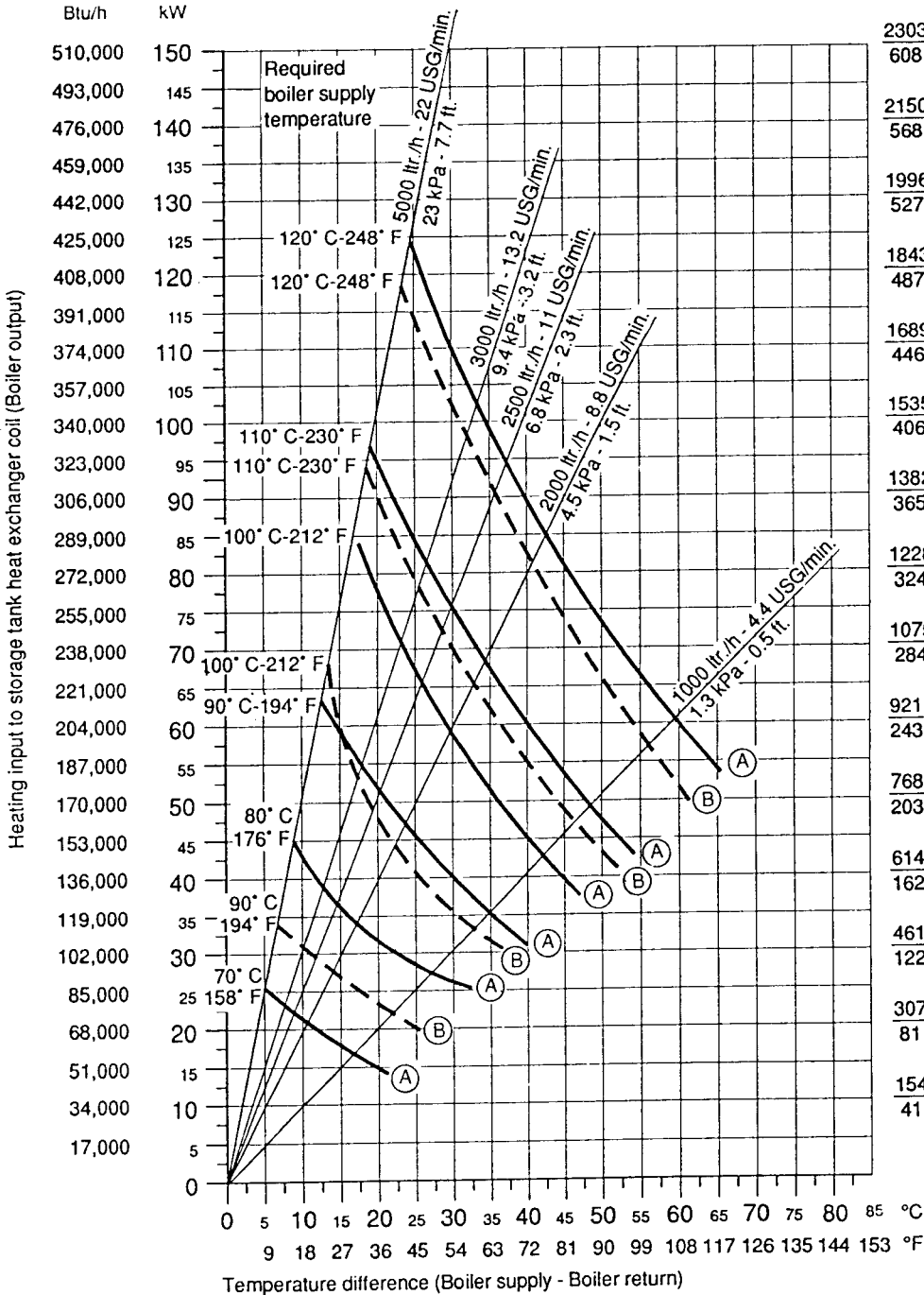
Curve (B)
Domestic hot water 40 to 176°F / 4 to 80°C

Domestic hot water
delivery rate

(A)	(B)
4- 60°C	4- 80°C
40- 140°F	40- 176°F

ltr/h	ltr/h
USG/h	USG/h

2303	1697
608	448
2150	1584
568	418
1996	1471
527	389
1843	1358
487	359
1689	1245
446	329
1535	1131
406	299
1382	1018
365	269
1228	906
324	239
1075	792
284	209
921	679
243	179
768	565
203	149
614	453
162	120
461	339
122	90
307	227
81	60
154	113
41	30



**Vitocell-V 300,
79 USG / 300 ltr capacity**

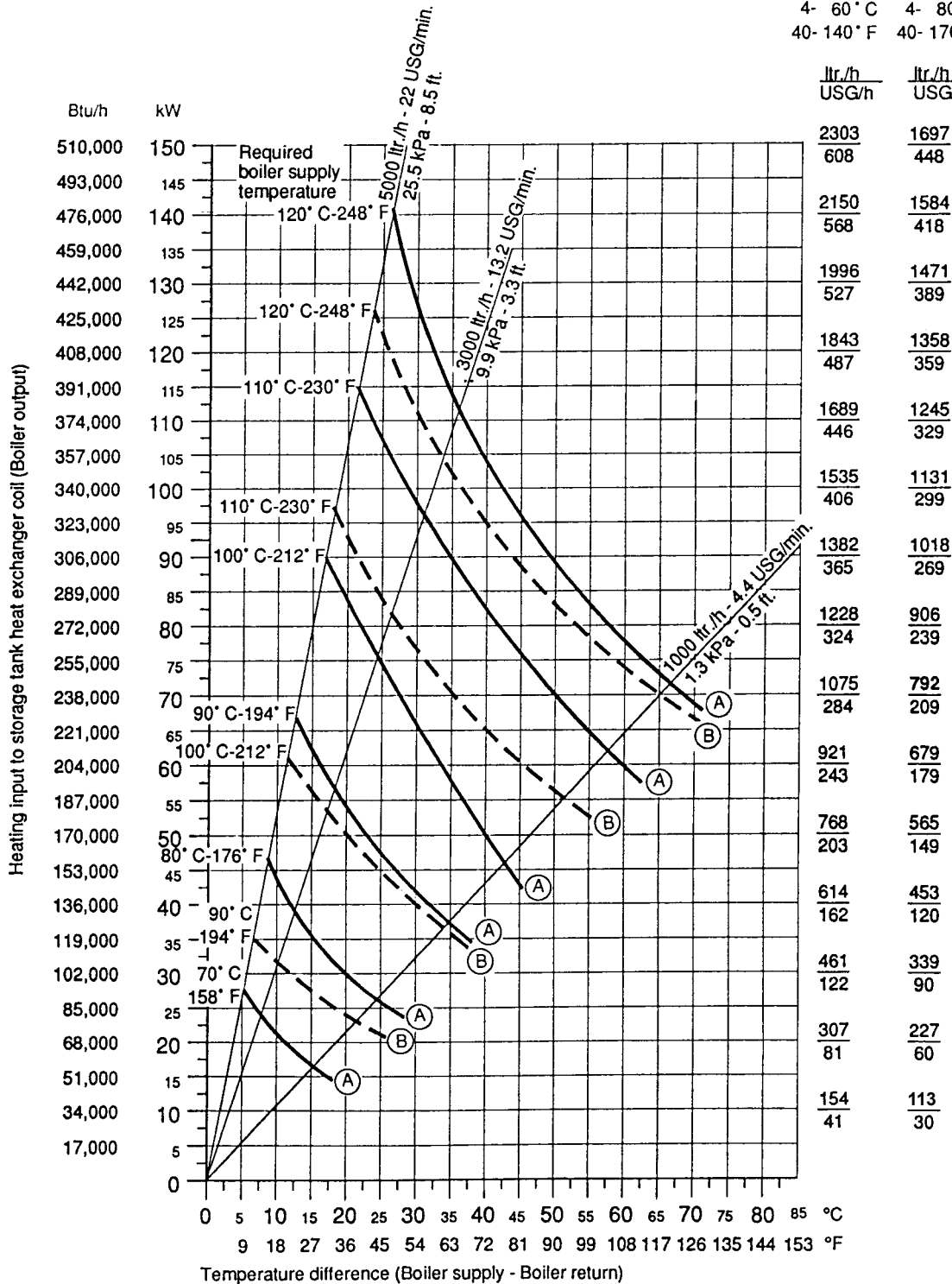
Curve (A)
Domestic hot water 40 to 140°F / 4 to 60°C

Curve (B)
Domestic hot water 40 to 176°F / 4 to 80°C

Domestic hot water
delivery rate

(A)	(B)
4- 60° C	4- 80° C
40- 140° F	40- 176° F

ltr./h USG/h	ltr./h USG/h
-----------------	-----------------



5167 410 v2.2

Vitocell-V 300 Sizing Continuous Flow Capacity Chart

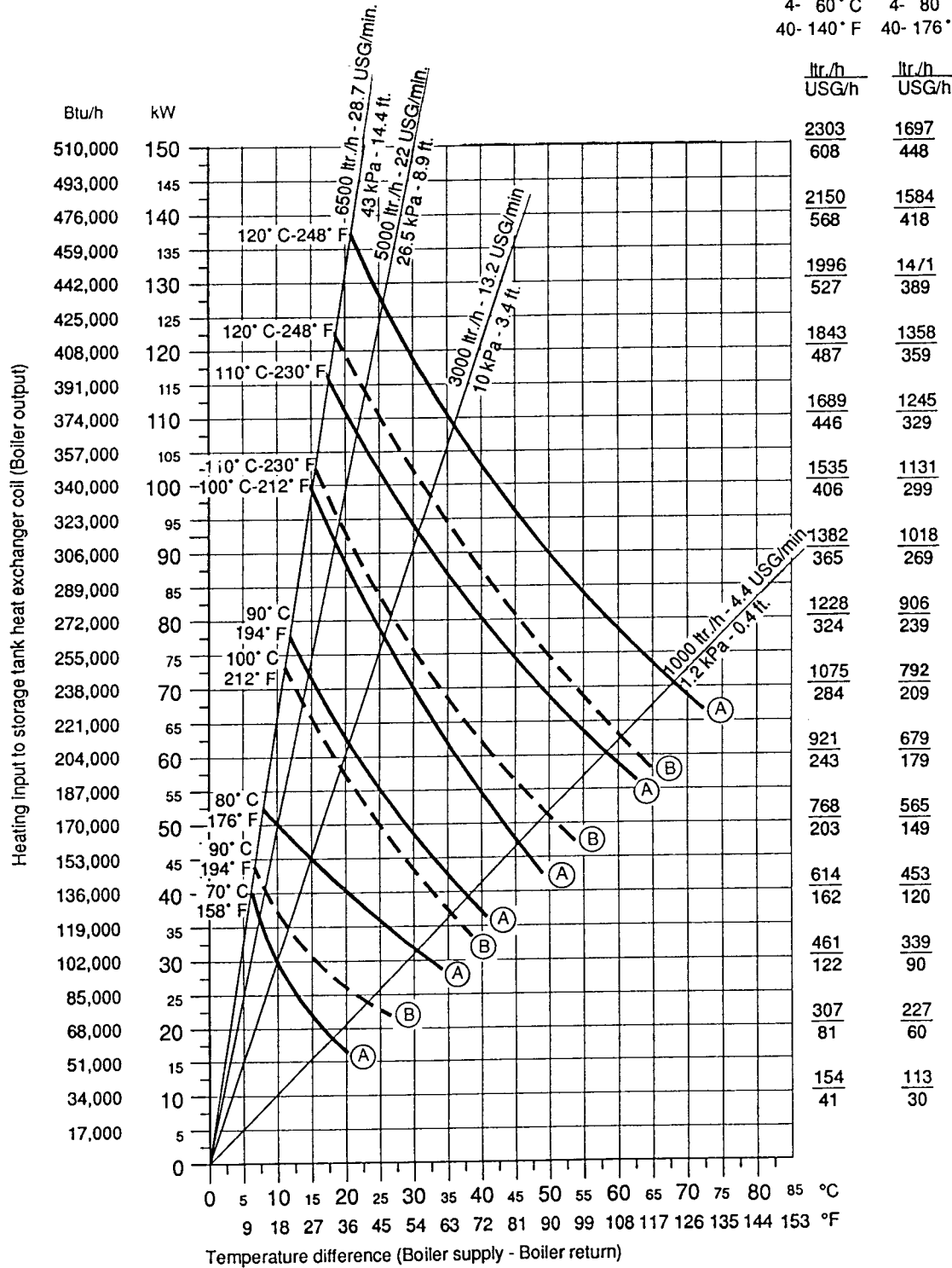
Vitocell-V 300, 120 USG / 450 ltr capacity

Curve (A)
Domestic hot water 40 to 140°F / 4 to 60°C

Curve (B)
Domestic hot water 40 to 176°F / 4 to 80°C

Domestic hot water
delivery rate

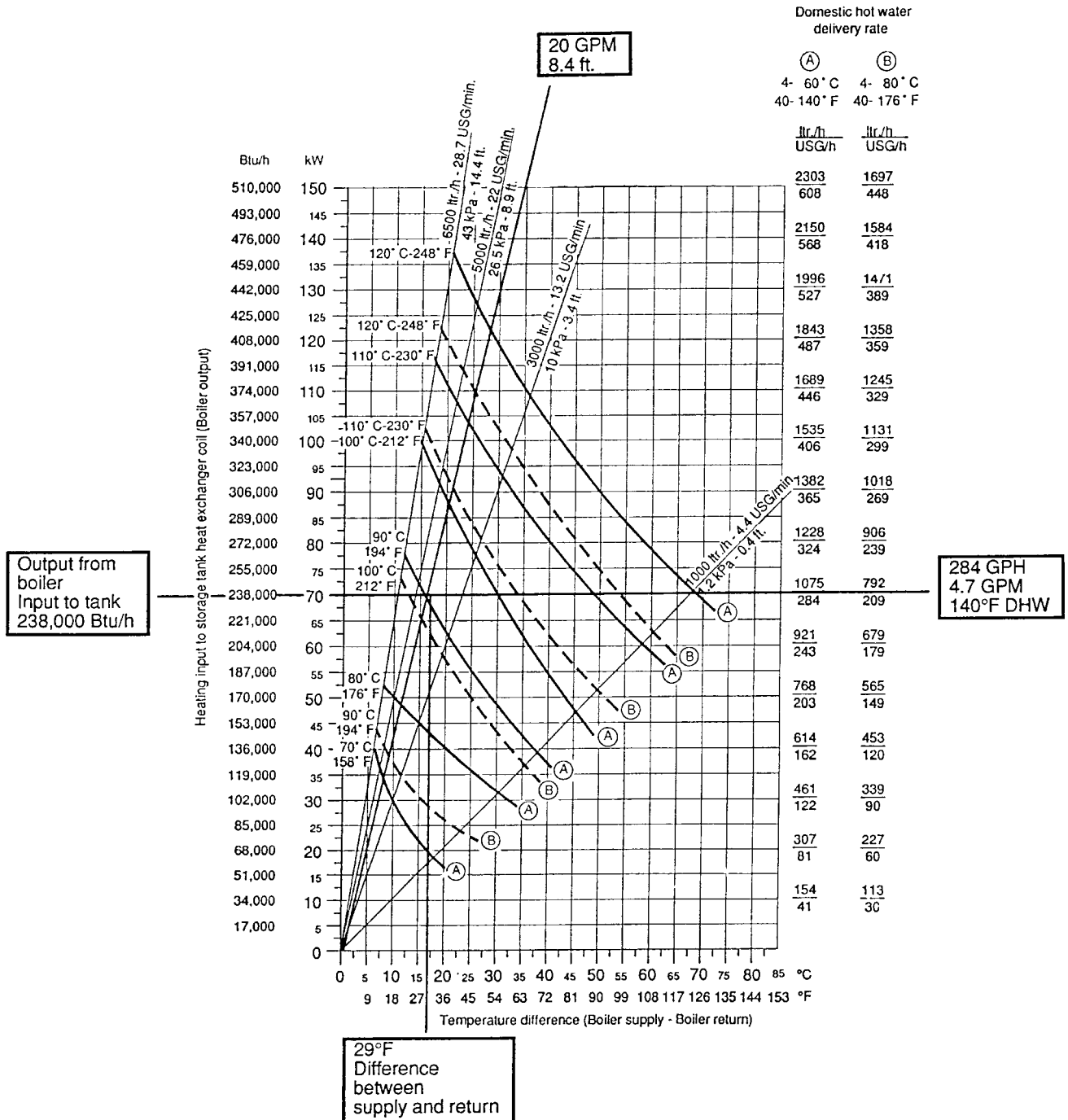
(A)	(B)
4- 60°C	4- 80°C
40- 140°F	40- 176°F



Vitocell-V 300 Sizing Continuous Flow Capacity Chart

Example: Vitocell-V 300, 120 USG / 450 ltr capacity

Assume boiler output to tank is 238 MBH. Enter chart at left and draw horizontal line across to recovery rate of 284 GPH / 4.7 GPM for 140°F / 60°C domestic hot water under column A. Where the horizontal line intersects the 194°F / 90°C curve is the point of intersection for the diagonal line used to size the pump. The diagonal line begins at the origin and goes through the point of intersection extending up to the top of the chart. Read between the reference diagonal lines to get a pump specification of 20 GPM at 8.4 ft. To summarize: For a Vitocell-V 300 with 120 USG / 450 ltr capacity and 238 MBH input, the boiler water temperature is 194°F / 90°C, difference between boiler return and supply water temperature is 29°F / 16°C, recovery rate is 4.7 GPM of 140°F / 60°C DHW, and the pump required is 20 GPM, 8.4 ft. plus pressure drop in piping and boiler. If a multiple-tank application is required, i.e. 4 tanks at 238 MBH input each, then the pump selection would be (4 x 20 GPM) 80 GPM at 8.4 ft. plus piping pressure drop.



5167 410 v2.2

Viessmann Manufacturing Company (U.S.) Inc.
45 Access Road
Warwick, Rhode Island • 02886 • USA
Tel. (401) 732-0667 • Fax (401) 732-0590
www.viessmann-us.com • info@viessmann-us.com

Viessmann Manufacturing Company Inc.
750 McMurray Road
Waterloo, Ontario • N2V 2G5 • Canada
Tel. (519) 885-6300 • Fax (519) 885-0887
www.viessmann.ca • info@viessmann.ca

5167 410 v2.2

Technical information subject to change without notice.



Printed on environmentally friendly
(recycled and recyclable) paper.