

Job or Customer :	
Location :	
Engineer :	
☐ Complies with Spec ☐ Alternate	Notes :
Contractor :	
HeatLink Rep :	
Submitted By :	Date :
Approved By :	Date :
P.O. Number :	Date :

Description

The V100 series panels are designed to work with Vitodens 100-W boilers from Viessmann (see below for boiler model compatibility), and feature 3 or 4 Grundfos 15-58 pumps, primary piping that matches up to the boiler supply and return, and a white powder-coated enclosure cover that matches the Vitodens 100-W.

Qty	Stk. #	Boiler Model Compatibility	Nominal Panel Output	Primary Flow	Secondary Flow
	V101	100-W B1HA-26 100-W B1HA-35	80,000 Btu/hr	4.2 US gpm @12 feet of head	6.0 US gpm @12 feet of head
	V102		100,000 Btu/hr	4.2 US gpm @11.5 feet of head	2 × 5.0 US gpm @12 feet of head
	V103	100-W B1KA-35	100,000 Btu/hr	n/a	3 × 5.0 US gpm @ 12 feet of head

Technical Data

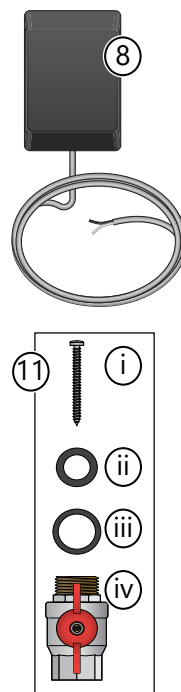
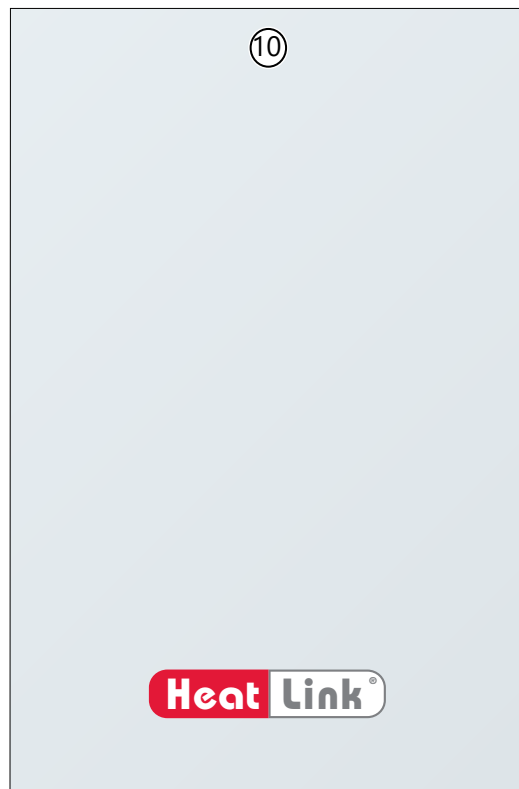
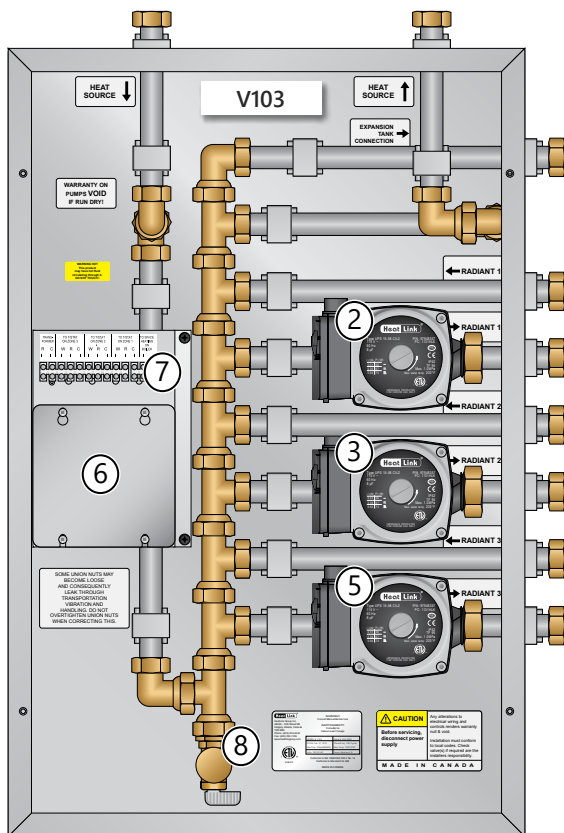
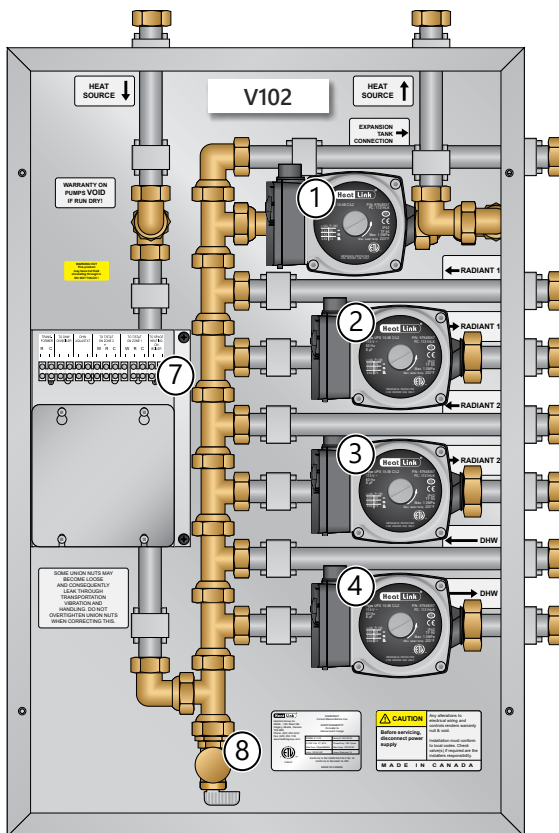
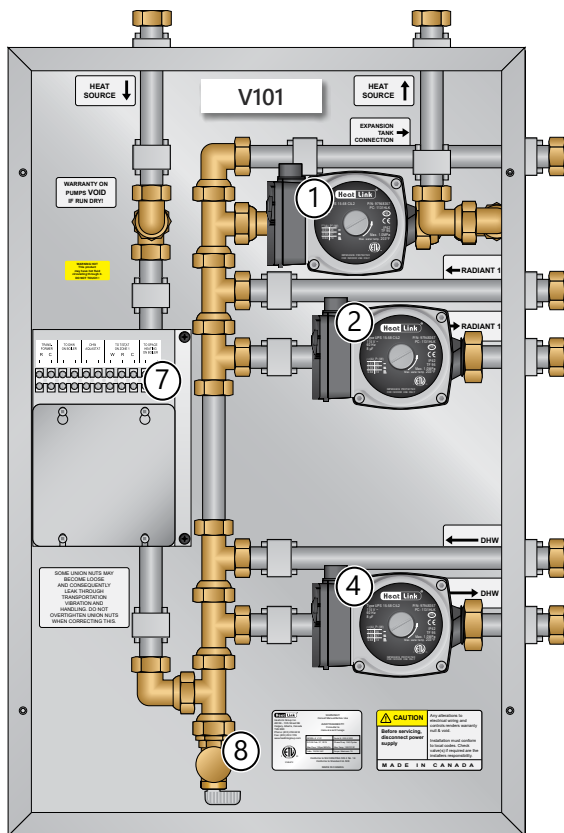
		Model Number		
		V101	V102	V103
Specifications				
Max ambient temperature	120°F (49°C)	•	•	•
Min operating temperature	40°F (4°C)	•	•	•
Max operating temperature	200°F (93°C)	•	•	•
Max operating pressure	125 psi (862 kPa)	•	•	•
Power supply	120/24 V(ac)	•	•	•
Primary Pump		•	•	
DHW pump		•	•	
Radiant 1 pump	Grundfos UPS15-58	•	•	•
Radiant 2 pump			•	•
Radiant 3 pump				•
Auxiliary terminal	2 dry contacts, max load 1.5A	•	•	•
Piping	¾" 304SS Tubing	•	•	•
Piping connections	¾" and 1" FNPT	•	•	•
Material - backplate	16 Gauge galvanized steel	•	•	•
Material - enclosure	Powder coated steel	•	•	•

Standards / Listings

CAN/CSA-C22 No.14, UL508
cETLus

For Viessmann Technical Data reference see pages 6 & 7 of this submittal.

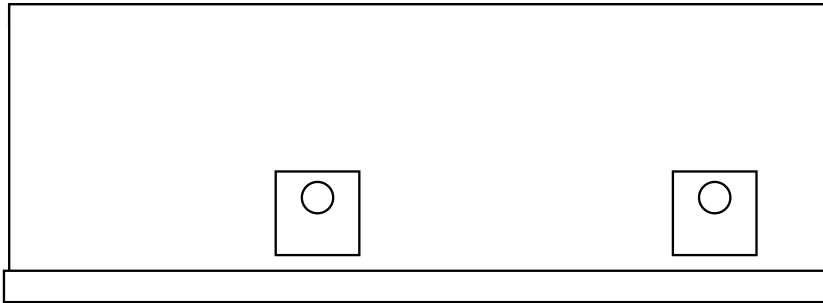
Panel Configurations



Panel Components

#	Components	Component Description	Part Number (Qty.)		
			V101	V102	V103
1	Primary pump	Controlled by boiler, activated by call for heat	PUMP1558		n/a
2	Radiant pump 1	Controlled by thermostat 1.		PUMP1558	
3	Radiant pump 2	Controlled by thermostat 2.	n/a	PUMP1558	
4	DHW pump	Controlled by third party aquastat	PUMP1558		n/a
5	Radiant pump 3	Controlled by thermostat 3.	n/a	n/a	PUMP1558
6	Electrical box	Houses panel wiring		Electrical box	
7	Terminal strip	Connection block for aquastat, 24V transformer, thermostats, etc		Terminal strip	
8	24V(ac) plug-in transformer	Provides power to the panel electronics		PLINTR20VA	
9	Fill Valve	Used during fill and purge, or to drain panel for servicing.		Fill valve	
10	Cover	White, powder-coated		(x1)	
11	Accessory pack	Panel installation accessories	ACCV101	ACCV102	ACCV103
	i	Mounting screw	(x4)	(x4)	(x4)
	ii	¾" Nitrile washer	NTRWSH34 (x10)	NTRWSH34 (x12)	NTRWSH34 (x10)
	iii	1" Nitrile washer	NTRWSH1 (x2)	NTRWSH1 (x2)	NTRWSH1 (x2)
	iv	¾" Isolation valve	(x7)	(x9)	(x9)

Dimensions



Panel designs

FLOW AND HEAD LOSS CONSIDERATIONS:

From Vitodens 100 WB1B-26 technical manual (see relevant sections on pages 6 & 7 of this submittal):

Page 11. Recommended primary pump: Grundfos UPS15-58 3speed

Page 11. Boiler flow requirements and PD: 4.2usgpm at 8ft.hd

Page 22. Flowrates for WB1B-26: 4.2usgpm at 40F delta T

From Grundfos technical manual:

UPS15-58 pump curve shows 4.2usgpm at 16ft.hd

In V102 panel equivalent pipe lengths:

3/4in (0.715in ID) stainless tube 4ft

6 x 90deg short elbow 14ft

Subtotal 18ft equivalent length of pipe in panel at 4.2usgpm for 3/4in stainless tube at 7ft.hd per 100FT = 1.26ft.hd total

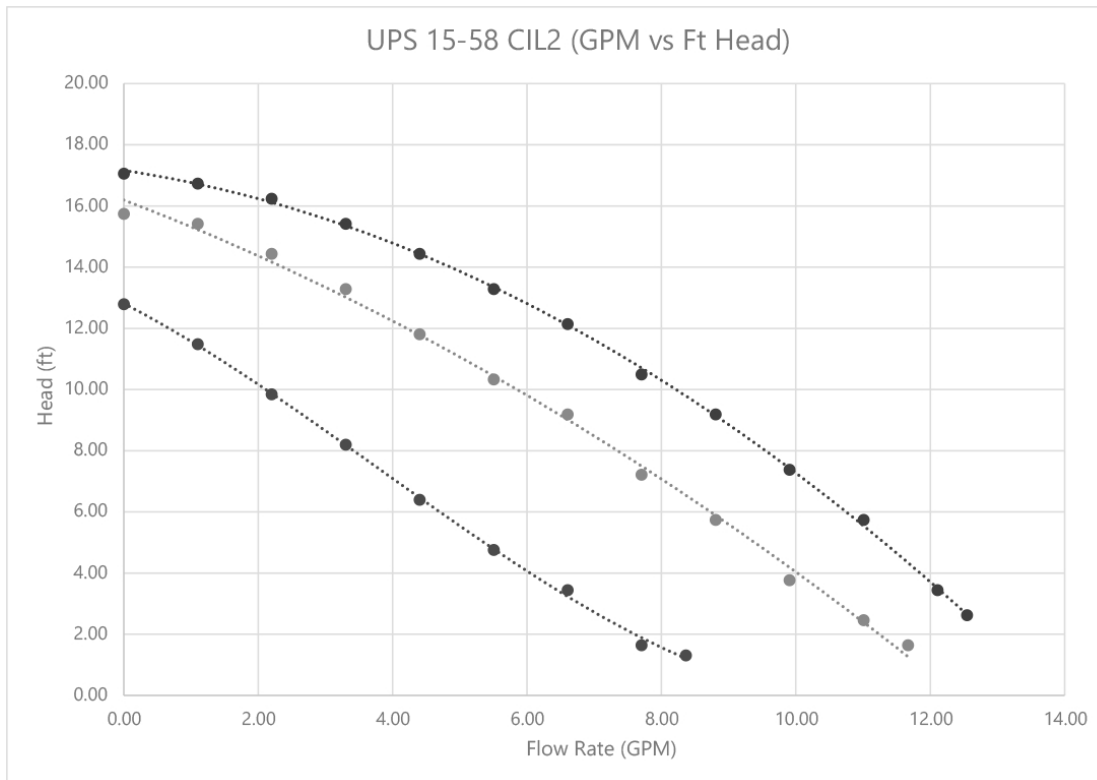
6 x straight tee (0.6in ID) 8ft

2 x 90deg tee (0.6in ID) 8ft

Subtotal 16ft equivalent length of pipe in panel at 4.2usgpm for 0.6in tube at 20ft.hd per 100FT = 3.2ft.hd total

Total equivalent length of pipe in panel at 4.2usgpm: 1.26ft.hd + 3.2ft.hd = 4.46ft.hd

Hence 16ft.hd - 4.46ft.hd = 11.5ft.hd at 4.2usgpm for primary side of V102 panel.

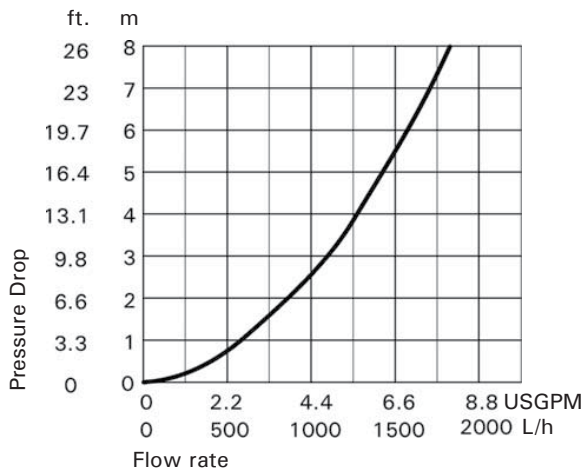


Heating Circuit Pumps

Waterside Flow (boiler circuit)

The Vitodens 100-W is designed only for closed loop, forced circulation hot water heating systems.

Pressure drop (primary circuit) of Vitodens 100-W



A low-loss header **must** be used when the **system** flow rate exceeds the maximum (or minimum) flow rate of the Vitodens 100-W boiler. An alternative method may be used, such as primary secondary piping using closely spaced tees.

A low-loss header offers additional benefits not provided by a pair of closely spaced tees. Viessmann strongly recommends and prefers the use of a low-loss header over closely spaced tees. Please see page 18 for details.

Use standard friction loss method for pipe sizing. Observe boiler maximum and minimum flow rate limitations. If system flow rate exceeds boiler maximum flow rate (as stated on page 18) or if system flow rate is unknown, Viessmann strongly recommends the installation of a low-loss header. See page 18 for low-loss header information or refer to the Vitodens Venting System Installation Instructions.

Heating circuit pumps (field supplied)

Recommended heating pumps with Vitodens 100-W, WB1B 26, 35 (without an optional CombiPLUS).

- Grundfos 15-58 (3-speed)
- Taco 00R or equivalent

Refer to the graph for the proper waterside boiler friction loss calculations.

IMPORTANT

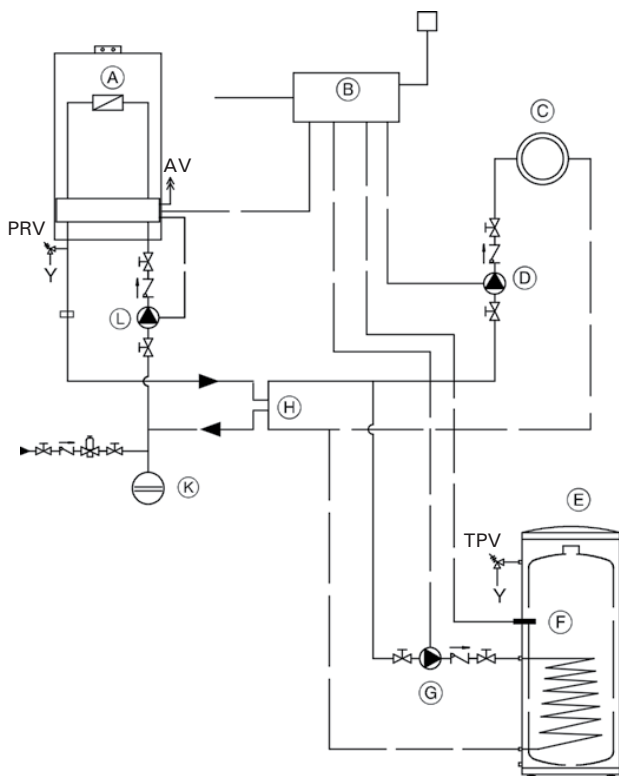
Pump selection must be based on accurate system flow and pressure drop calculations (including DHW sizing).

Installation Page 22

Vitodens 100-W, WB1B Technical Data

System Layout 3

Vitodens 100-W, WB1B 10-26, 10-35 with DHW storage tank and one heating circuit



Legend

- AV Air vent
- PRV Pressure relief valve
- TPV Temperature and pressure relief valve
- (A) Vitodens 100-W gas-fired condensing boiler
- (B) External boiler/DHW controller (field supplied)
- (C) Heating circuit
- (D) Heating circuit pump (field supplied)
- (E) DHW storage tank
- (F) DHW tank temperature aquastat or sensor
- (G) DHW circulating pump (field supplied)
- (H) Closely spaced tees, 4x pipe Ø or 12" (305 mm)*
- (K) Expansion tank
- (L) Primary pump (boiler circuit, field supplied) with low-loss header only

* A low-loss header offers additional benefits not provided by a pair of closely spaced tees. Viessmann strongly recommends and prefers the use of a low-loss header over closely spaced tees.

See page 18 for details.

IMPORTANT

Primary pump must pump into the boiler (as illustrated).

Note: The use of a low-loss header is recommended if the water flow rate is less than 1.7 GPM (400 L/h) or more than 6.2 GPM (1400 L/h). The low-loss header is available as an accessory part.

Maximum Flow Rates

Model WB1B	26	35
Δ t		
Output Btu/h	83,000	108,000
30° F rise (GPM)	5.5	---
35° F rise (GPM)	4.7	6.2
40° F rise (GPM)	4.2	5.4

IMPORTANT

DHW supply and return piping between boiler DHW connections and the Viessmann DHW tank connections, shall be a minimum of 1" nominal pipe diameter (irrespective of the 3/4" DHW connection outlet sizes provided on the boiler and the DHW tank).

This ensures that the head of the pump is fully utilized to overcome the resistance of the DHW heat exchanger coil and to provide sufficient water flow to the boiler heat exchanger.

In non-Viessmann DHW tank applications, perform, in addition to the above, accurate calculations for DHW tank coil pressure drop versus boiler pump head to ensure sufficient water flow to the boiler heat exchanger.

Failure to heed the above instructions may cause boiler short-cycling and inadequate DHW supply.