V18 Dynamically Variable Backup Heater

A patent-pending backup heat technology for air to water heat pumps, the V18 communicates with the Chiltrix CX34 to target a precise BTU shortfall. The V18 output is modulated in real time from 0-18,760 BTU (0-5.5 kW) in .5% increments to avoid overshoot and maximize the percentage of total heat provided by the higher COP heating source (the compressor). Integrated and automatic, the V18 provides the industry-leading backup heating solution for air-to-water (hydronic) heat pump systems.

Height: 18.8”
Width: 6.5” (Including Access Cover)
Weight: 7.3 Lbs. (dry)
Pressure Drop:
@ 7 GPM = 0.000427775 ft.
@ 14 GPM= 0.001438843 ft.
Thermal Over-Limit switch: 40A, UL Listed
Relay: Solid State (SSR), 40A,, UL Listed
Element: Incoloy, 5500W /240v/ 23a, UL Listed
LV Controller: AVR 16 MHz Microcontroller,
Controller Power Supply: 9v, UL Listed
MODBUS: Slave or Master
Internal Volume: .19 Gallons

Designed for use with Chiltrix CX-Series Air To Water Heat Pumps

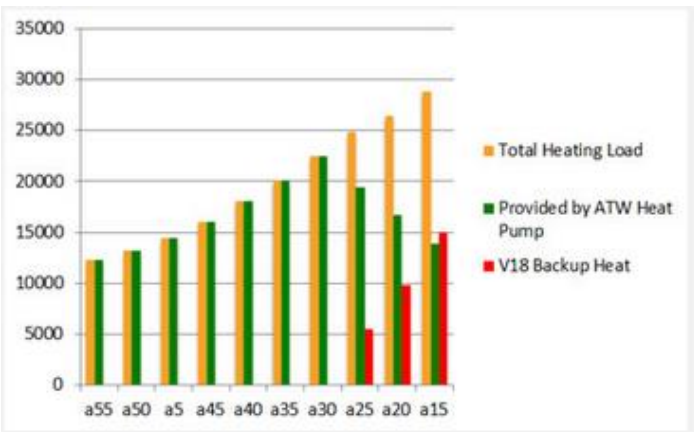
Up to three V18s may be used per LV controller

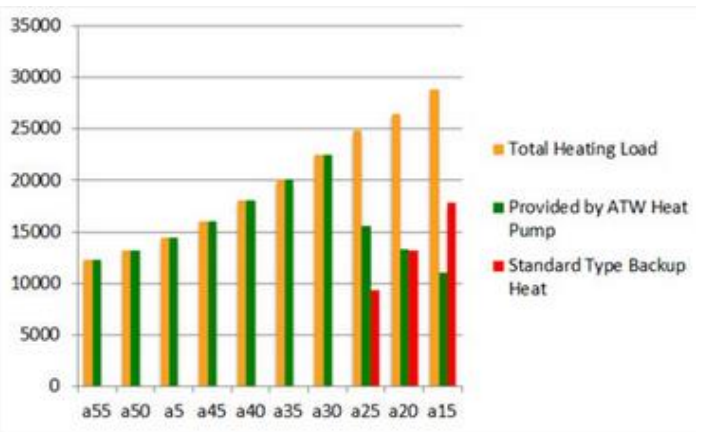
All-Stainless Steel w/ Replaceable Element

Install in upright position only

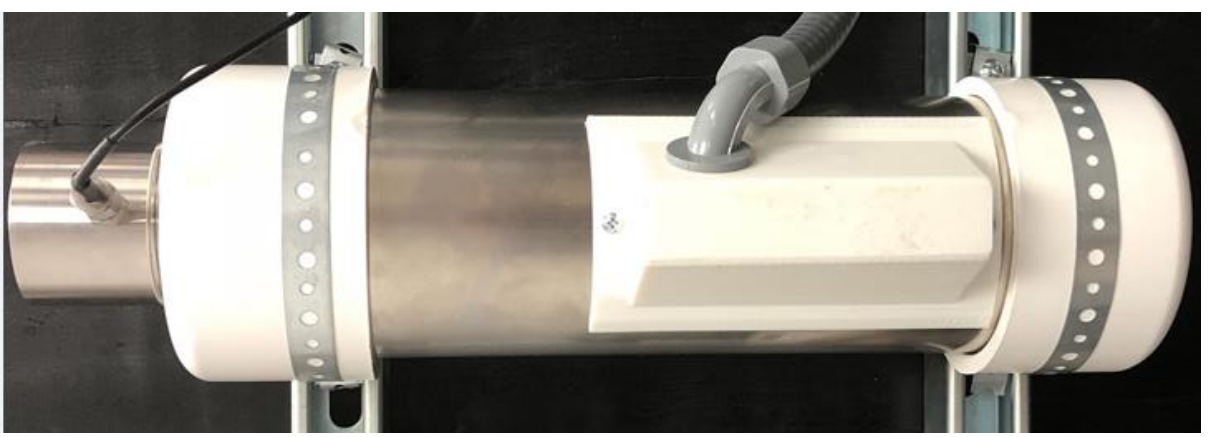
Each V18 requires a 30a GFCI 220v circuit

Provided as a kit, requires assembly and installation by a licensed electrician





Shown above left, the V18 targets a precise match to the BTU shortfall based on real time information from the CX34. Right side chart shows a standard thermostat controlled backup heater. The V18 allows the compressor to provide a higher percentage of the total heat, improving the average COP of the system. Shown with optional sensor adapter, not generally needed.



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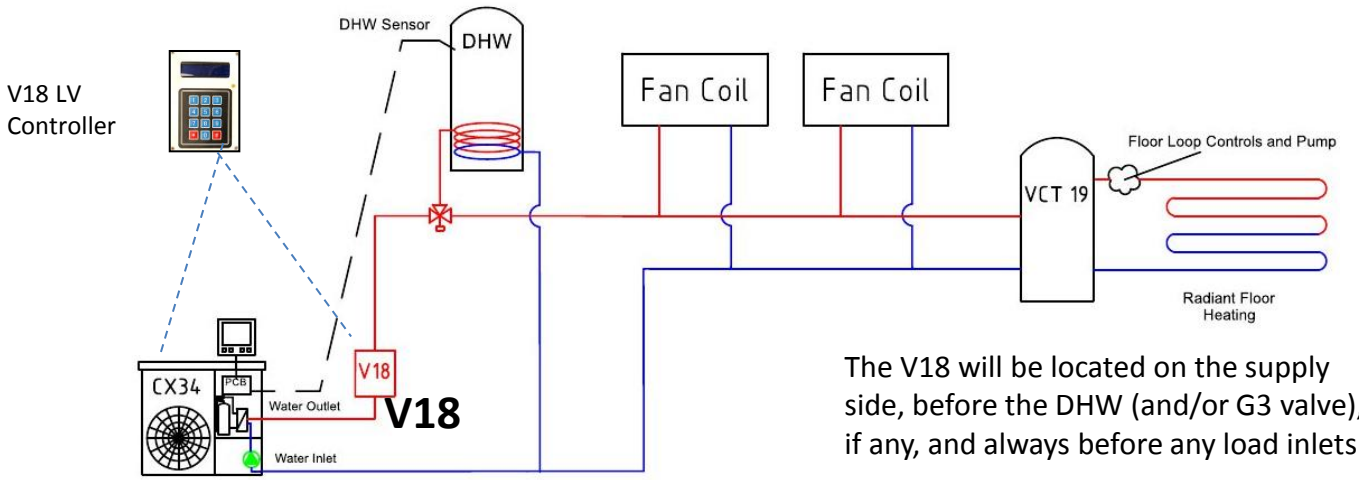
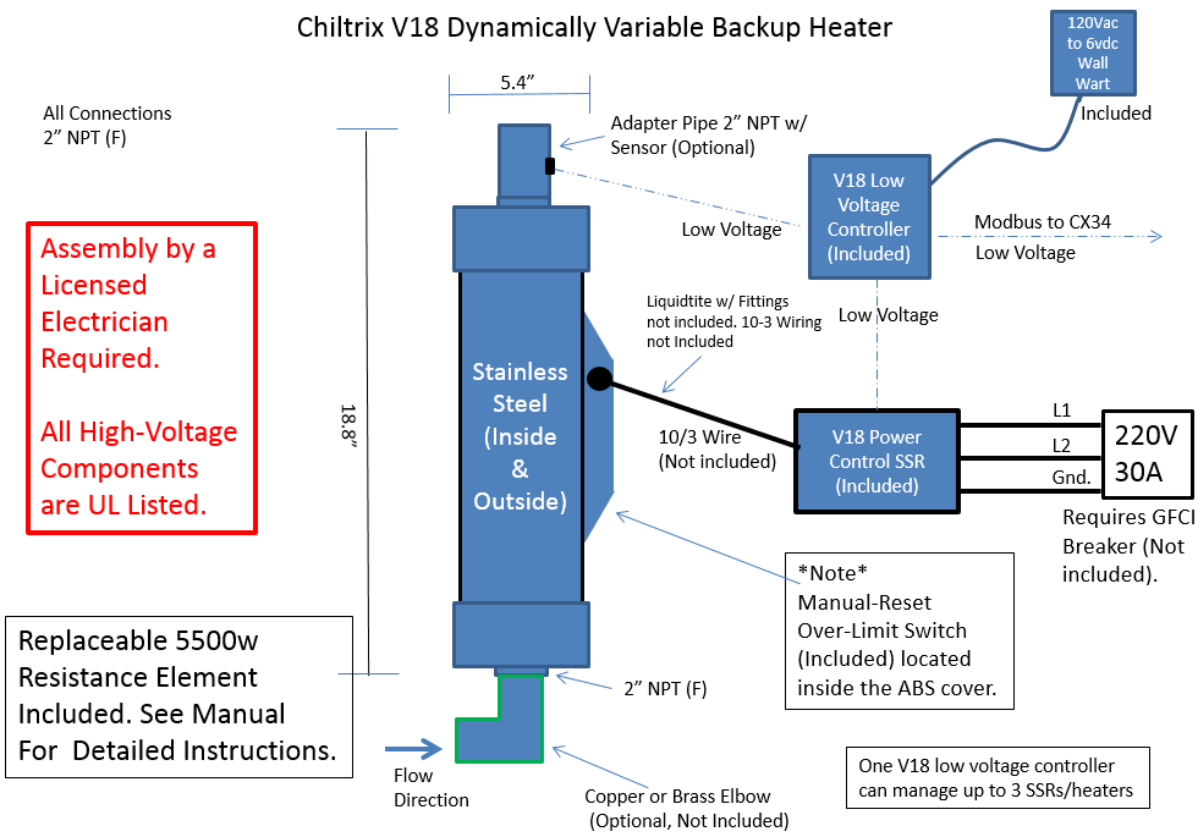
Example system shows DHW (Domestic Hot Water), Fan Coil Units, and Radiant Heating with V18.



The V18 will be located on the supply side, before the DHW (and/or G3 valve), if any, and always before any load inlets.

Prior to the introduction of the V18, Chiltrix provided backup heat in the same manner as all other leading brands, using an inline water heater (tank or tankless). However, these conventional approaches use a thermostat to target a water temperature resulting in temperature overshoot about 50% of the operating time.

The Chiltrix V18 unit instead targets a BTU load based on shortfall information from the CX34, with variable output dynamically adjusted to match the shortfall. This avoids overshoot and allows the compressor to provide the highest possible percentage of the needed heat, resulting in a much higher level of overall system efficiency.



Must Be Mounted in Vertical Orientation

Patent-Pending