

CCH Series



Condensing Companion Heater

The perfect solution for producing domestic hot water when using a Hydronic Condensing Boiler.



The Cemline Condensing Companion Heater package comes standard with a storage vessel, a brazed plate heat exchanger, Cem-Trol®II controller, and domestic water pump. The boiler's controller monitors the domestic hot water temperature in the tank turning on and off the pump to maintain the desired domestic water temperature. Optionally, a boiler water pump or control valve (2 or 3-way) can be supplied by Cemline. The Condensing Companion Heater (CCH) is completely packaged and ready to install.

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Cemline® Condensing Companion Heater

The Cemline Condensing Companion Heater (CCH) is a perfect solution for producing domestic hot water when using a Hydronic Condensing Boiler.

CCH Series Features

- A.S.M.E. Pressure Vessel** A.S.M.E. Code Stamping and Registration offer the assurance of quality controlled construction.
- STONESTEEL® Tank** Prevents rust and corrosion.
- Brazed Plate Heat Exchanger** Highly efficient allowing for optimal heat transfer between the boiler water and the domestic hot water.
- Intratank Circulating Pump** Constant flow through heat exchanger maintaining a constant domestic water temperature.
- Jacket and Insulation** 20 gauge steel jacket protects the insulation and provides a neat finished appearance with hammertone enamel painted exterior. Insulation prevents heat loss and meets ASHRAE standards.
- Cem-Trol®II Control Panel** Interfaces with condensing boiler's controller to turn boiler water pump on/off controlling temperature of the water heater. Includes On/Off Switch, power on light, PID control and Building Automation Interface.
- A.S.M.E. Relief Valve** Temperature and Pressure Relief Valve sized to relieve in the event of over temperature or pressure situations.
- Gauges** Thermometer and Pressure Gauge indicating vessel temperature and pressure.
- Well for Boiler Controller Temperature Sensor** Condensing Boiler monitors domestic hot water temperature as required.

Optional Equipment

- Stainless Steel Vessel** Type 316-L provides long life with corrosion resistance.
- Boiler Water Pump** Turns on from boiler's control to maintain desired set point in the tank.
- Boiler Water Control Valve** 2 position, 2-way or 3-way valves to maintain tank temperature control.
- 3-Way Automatic Tempering Valve** Provides safe tempered water to the potable hot water system. Cemline DTV Series (Digital Tempering Valve)
- Automatic Balance Valve in Boiler Water Line** Utilized to provide perfectly balanced constant hot water flow on the HVAC "hot" side.

Cemline Condensing Companion Heater

Control and Sizing

The Cemline CCH Series is a very versatile water heater offering four (4) control options for making hot water using boiler water, rejection hot water, condensate, or other hot water source.

Control Options

1. Cem-Trol®II turns on/off domestic water pump to maintain set point (standard).
2. Cem-Trol®II turns on/off domestic water and boiler water pumps to maintain set point. This option is recommended for units that are in close proximity to the boiler plant.
3. Cem-Trol®II turns on/off domestic water pump and closes 2-Way (2 position) or 3-way (3 position) valve on the boiler water side to maintain set point.
4. Tempering Valve System – The Tempering Valve provided to tightly control the leaving water temperature of the tank to comply with local codes, which typically require 120° F distribution temperatures. Standard setpoints for storage are 140° F or above. This option integrates the Tempering Valve into the pre-piped assembly.

Note: This application is not intended to be used as an emergency drench showers, eyewash stations, or emergency eye/face wash stations water heater unless used with an appropriate ANSI Z358-1.2014 approved thermostatic valve which would be properly designed by a plumbing engineer with addition parts supplied by others and installed in the field by others.

Sizing Chart

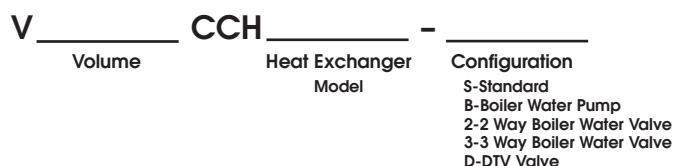
Available with Single or Double Wall Brazed Plate Heat Exchangers.

Model	Gallon Capacity	BTU/Hr Input	GPH Recovery at Degree Rise	
			80° F	100° F
			40° to 120°	40° to 140°
V120CCH100	120	100,000	150	120
V120CCH250	120	250,000	375	300
V120CCH500	120	500,000	750	600
V120CCH750	120	750,000	1,125	900
V120CCH1000	120	1,000,000	1,500	1,200
V200CCH250	200	250,000	375	300
V200CCH500	200	500,000	750	600
V200CCH750	200	750,000	1,125	900
V200CCH1000	200	1,000,000	1,500	1,200
V200CCH2000	200	1,200,000	1,800	1,440
V300CCH750	300	750,000	1,125	900
V300CCH1000	300	1,000,000	1,500	1,200
V300CCH1200	300	1,200,000	1,800	1,440
V300CCH1500	300	1,500,000	2,250	1,800
V300CCH2000	300	2,000,000	3,000	2,400
V500CCH1000	500	1,000,000	1,500	1,200
V500CCH1200	500	1,200,000	1,800	1,440
V500CCH1500	500	1,500,000	2,250	1,800
V500CCH2000	500	2,000,000	3,000	2,400
V500CCH2500	500	2,500,000	3,750	3,000

Model	Gallon Capacity	BTU/Hr Input	GPH Recovery at Degree Rise	
			80° F	100° F
			40° to 120°	40° to 140°
V680CCH1000	680	1,000,000	1,500	1,200
V680CCH1200	680	1,200,000	1,800	1,440
V680CCH1500	680	1,500,000	2,250	1,800
V680CCH2000	680	2,000,000	3,000	2,400
V680CCH2500	680	2,500,000	3,750	3,000
V680CCH3000	680	3,000,000	4,500	3,600
V800CCH1000	800	1,000,000	1,500	1,200
V800CCH1200	800	1,200,000	1,800	1,440
V800CCH1500	800	1,500,000	2,250	1,800
V800CCH2000	800	2,000,000	1,500	1,200
V800CCH2500	800	2,500,000	3,750	3,000
V800CCH3000	800	3,000,000	4,500	3,600
V1000CCH1000	1000	1,000,000	1,500	1,200
V1000CCH1200	1000	1,200,000	1,800	1,440
V1000CCH1500	1000	1,500,000	2,250	1,800
V1000CCH2000	1000	2,000,000	3,000	2,400
V1000CCH2500	1000	2,500,000	3,750	3,000
V1000CCH3000	1000	3,000,000	4,500	3,600

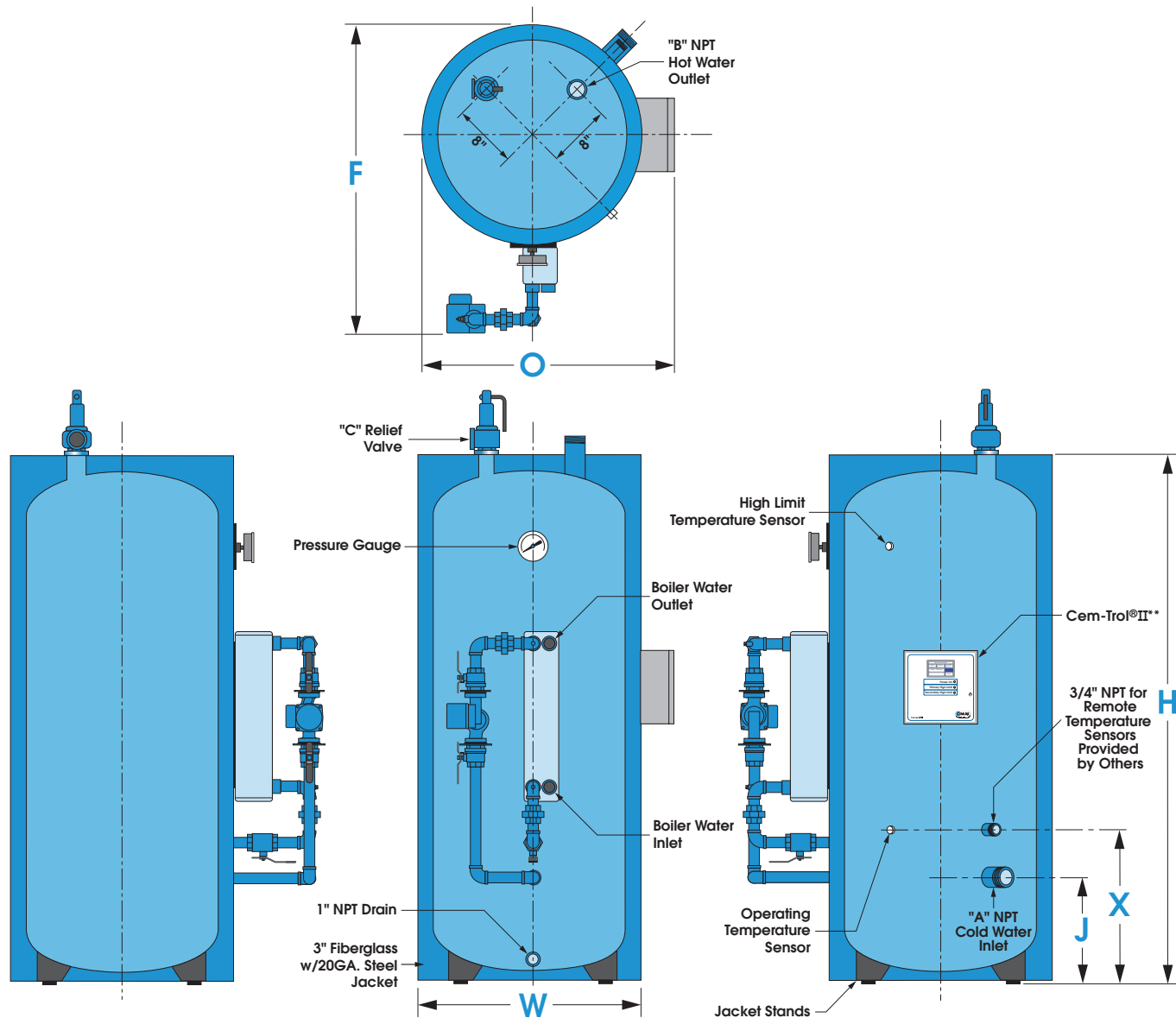
Energy Source: Boiler Water, typically 180, 160, 150, or 140 of with a 30 - 40° F Delta T. (140° F boiler water can not be used to produce 140° F of domestic water.)

Number Code CCH Series Model



Dimensional Data — Standard Unit

Temperature control in the Standard Unit is provided by the Cem-Trol®II turning on/off the domestic water pump to maintain set point.



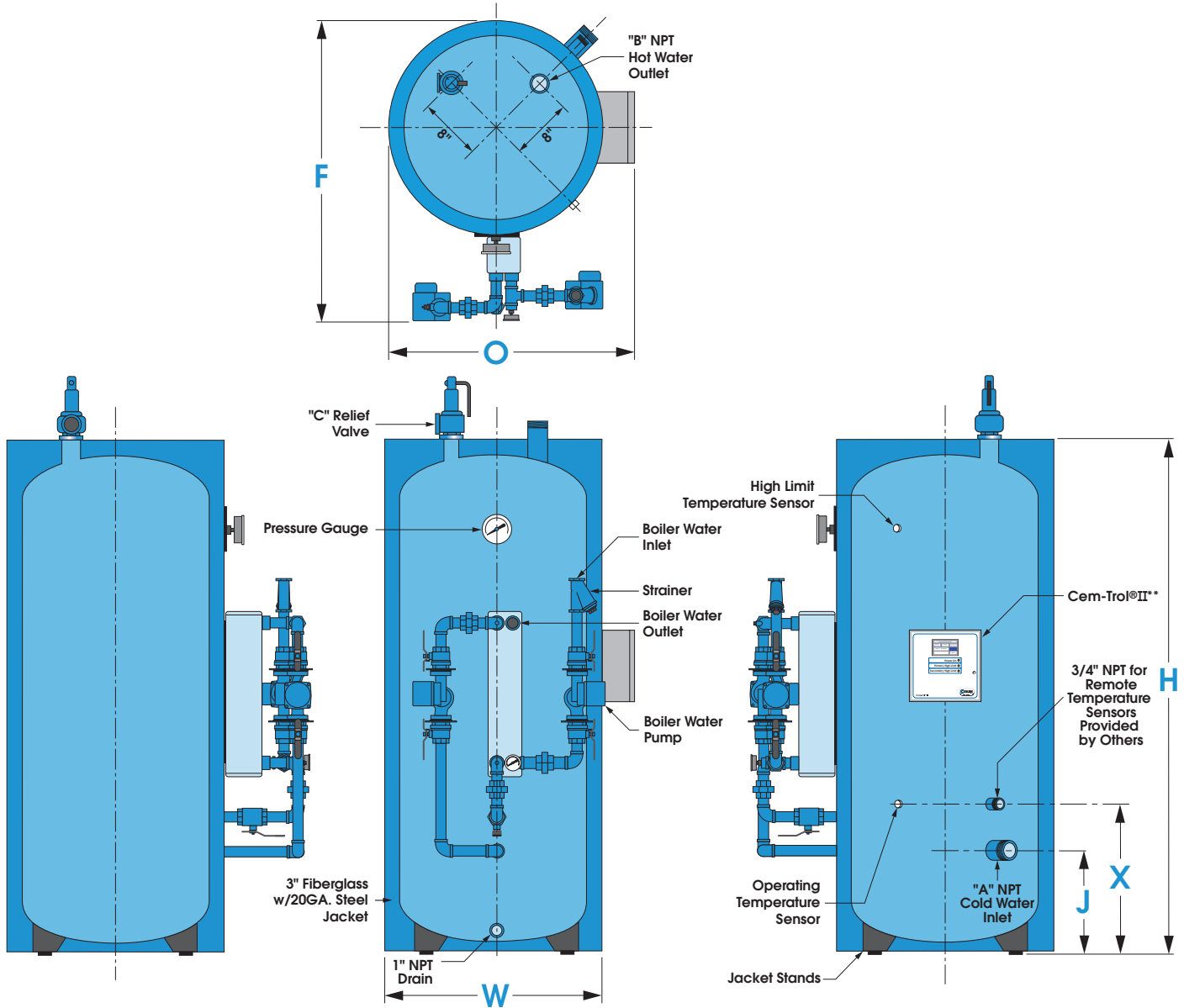
MODEL NUMBER	GALLON CAPACITY	TANK SIZE D x L	W	H	J	X	F	O	A	B	C	No. of Jacket Stands
V120CCH	120	24" x 63"	28"	66"	14"	21"	40"	40"	2"	2"	3/4"	3
V200CCH	200	30" x 76"	34"	80"	16"	25"	46"	46"	2"	2"	1"	3
V300CCH	300	36" x 80"	40"	84"	17"	30"	52"	52"	2"	2"	1"	3
V500CCH*	500	42" x 90"	46"	94"	20"	30"	66"	58"	2"	2"	1"	4
V680CCH*	680	48" x 96"	52"	100"	19"	30"	72"	64"	2"	2"	1 1/2"	4
V800CCH*	800	54" x 96"	58"	100"	19"	30"	84"	70"	2"	2"	1 1/2"	4
V1000CCH*	1000	60" x 96"	64"	100"	23"	30"	90"	76"	2"	2"	1 1/2"	4

* Models with a diameter of 42" and above will be supplied with 12" x 16" manhole.

** Cem-Trol®II mounting location can be relocated to accommodate rigging, doorways and installation locations.

Dimensional Data — Boiler Water Pump

Temperature control in the Boiler Water Unit is provided by the Cem-Trol®II turning on/off the domestic and boiler water pumps to maintain set point.



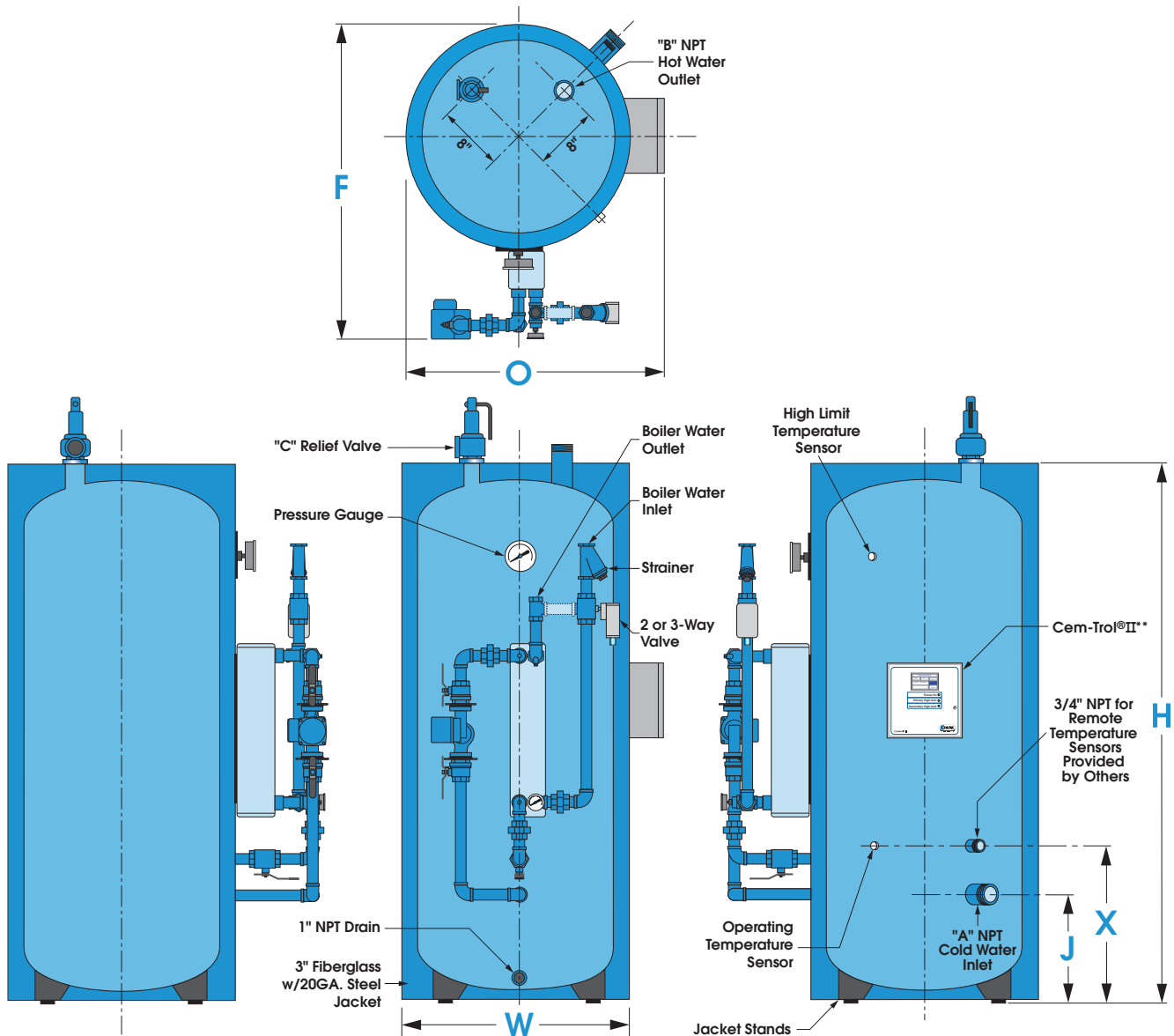
MODEL NUMBER	GALLON CAPACITY	TANK SIZE D x L	W	H	J	X	F	O	A	B	C	No. of Jacket Stands
V120CCH	120	24" x 63"	28"	66"	14"	21"	40"	40"	2"	2"	3/4"	3
V200CCH	200	30" x 76"	34"	80"	16"	25"	46"	46"	2"	2"	1"	3
V300CCH	300	36" x 80"	40"	84"	17"	30"	52"	52"	2"	2"	1"	3
V500CCH*	500	42" x 90"	46"	94"	20"	30"	66"	58"	2"	2"	1"	4
V680CCH*	680	48" x 96"	52"	100"	19"	30"	72"	64"	2"	2"	1 1/2"	4
V800CCH*	800	54" x 96"	58"	100"	19"	30"	84"	70"	2"	2"	1 1/2"	4
V1000CCH*	1000	60" x 96"	64"	100"	23"	30"	90"	76"	2"	2"	1 1/2"	4

* Models with a diameter of 42" and above will be supplied with 12" x 16" manhole.

** Cem-Trol®II mounting location can be relocated to accommodate rigging, doorways and installation locations.

Dimensional Data — 2-Way or 3-Way Valve

Temperature control in the 2-Way or 3-Way Unit is provided by the Cem-Trol®II turning on/off the domestic and boiler water pump on opening/closing the 2 or 3-Way valve to maintain set point.



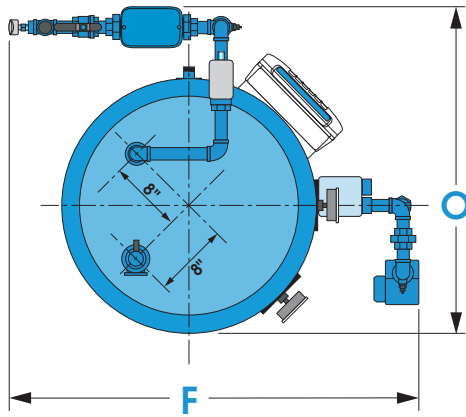
MODEL NUMBER	GALLON CAPACITY	TANK SIZE D x L	W	H	J	X	F	O	A	B	C	No. of Jacket Stands
V120CCH	120	24" x 63"	28"	66"	14"	21"	40"	40"	2"	2"	3/4"	3
V200CCH	200	30" x 76"	34"	80"	16"	25"	46"	46"	2"	2"	1"	3
V300CCH	300	36" x 80"	40"	84"	17"	30"	52"	52"	2"	2"	1"	3
V500CCH*	500	42" x 90"	46"	94"	20"	30"	66"	58"	2"	2"	1"	4
V680CCH*	680	48" x 96"	52"	100"	19"	30"	72"	64"	2"	2"	1 1/2"	4
V800CCH*	800	54" x 96"	58"	100"	19"	30"	84"	70"	2"	2"	1 1/2"	4
V1000CCH*	1000	60" x 96"	64"	100"	23"	30"	90"	76"	2"	2"	1 1/2"	4

* Models with a diameter of 42" and above will be supplied with 12" x 16" manhole.

* Cem-Trol®II mounting location can be relocated to accommodate rigging, doorways and installation locations.

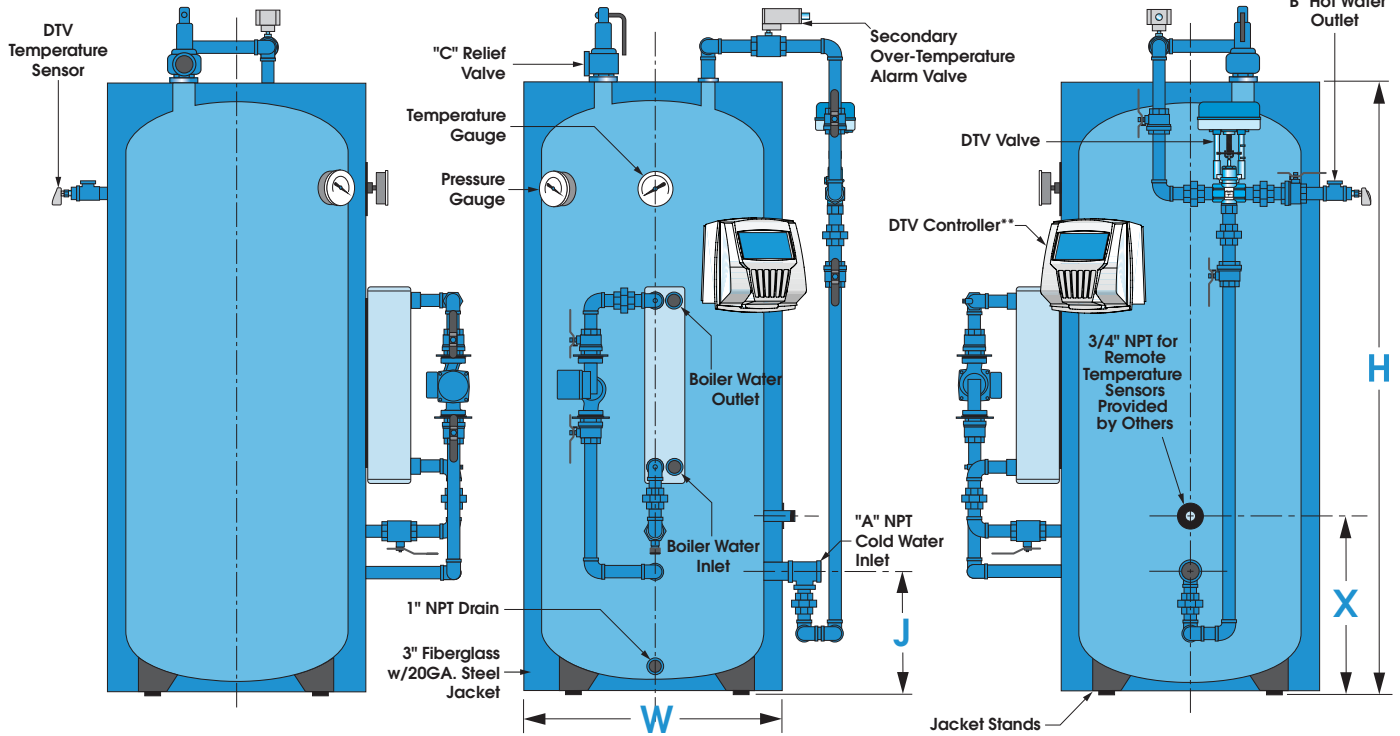
Dimensional Data — DTV Valve

Temperature control of the DTV Valve Unit is through the Digital Tempering Valve controller to maintain set point.



PRESSURE DROP	DTV VALVE SIZE						
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
Cv	5	7	12	18	29	46	73
3	8	12	20	32	50	80	126
4	9	15	23	37	58	93	145
5	10	16	26	41	64	103	162
6	12	18	28	45	71	113	178
7	13	20	31	50	78	125	192
8	14	21	33	53	83	132	205
9	15	22	35	56	88	140	218
10	16	23	36	58	91	145	230
11	17	24	38	62	97	154	241
12	18	25	40	64	100	160	252
BUILDING RECIRCULATE	GALLONS PER MINUTE						
	5 GPM		10 GPM			15 GPM	

The minimum building recirculation flow rate shown is based on valve sized and a flow velocity of 4 ft/sec.



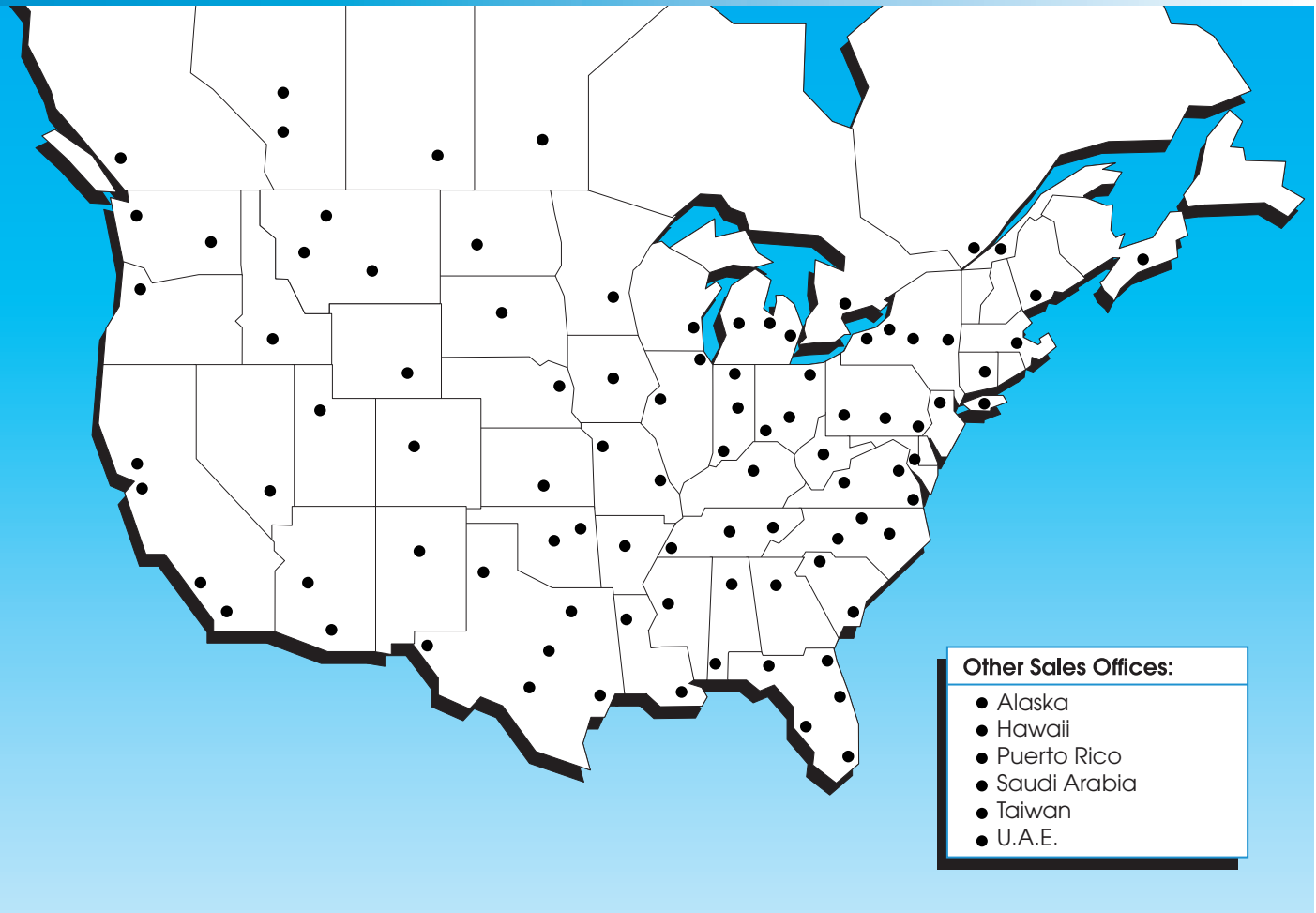
MODEL NUMBER	GALLON CAPACITY	TANK SIZE D x L	W	H	J	X	F	O	A	B	C	No. of Jacket Stands
V120CCH	120	24" x 63"	28"	66"	14"	21"	46"	42"	2"	2"	3/4"	3
V200CCH	200	30" x 76"	34"	80"	16"	25"	52"	48"	2"	2"	1"	3
V300CCH	300	36" x 80"	40"	84"	17"	30"	58"	54"	2"	2"	1"	3
V500CCH*	500	42" x 90"	46"	94"	20"	30"	64"	60"	2"	2"	1"	4
V680CCH*	680	48" x 96"	52"	100"	19"	30"	72"	66"	2"	2"	1 1/2"	4
V800CCH*	800	54" x 96"	58"	100"	19"	30"	84"	72"	2"	2"	1 1/2"	4
V1000CCH*	1000	60" x 96"	64"	100"	23"	30"	90"	80"	2"	2"	1 1/2"	4

* Models with a diameter of 42" and above will be supplied with 12" x 16" manhole.

** DTV Controller mounting location can be relocated to accommodate rigging, doorways and installation locations.

Please see the Cemline DTV Brochure for further information on the mixing valve. Cemline recommends sizing the stainless steel valve with a design flow as close as possible to 5 PSI pressure drop. Match safety valve to DTV hot port size.

Sales Offices



Other Sales Offices:

- Alaska
- Hawaii
- Puerto Rico
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*Cemline is represented in all major cities.
Please contact your local representative or call Cemline Corporation.*

