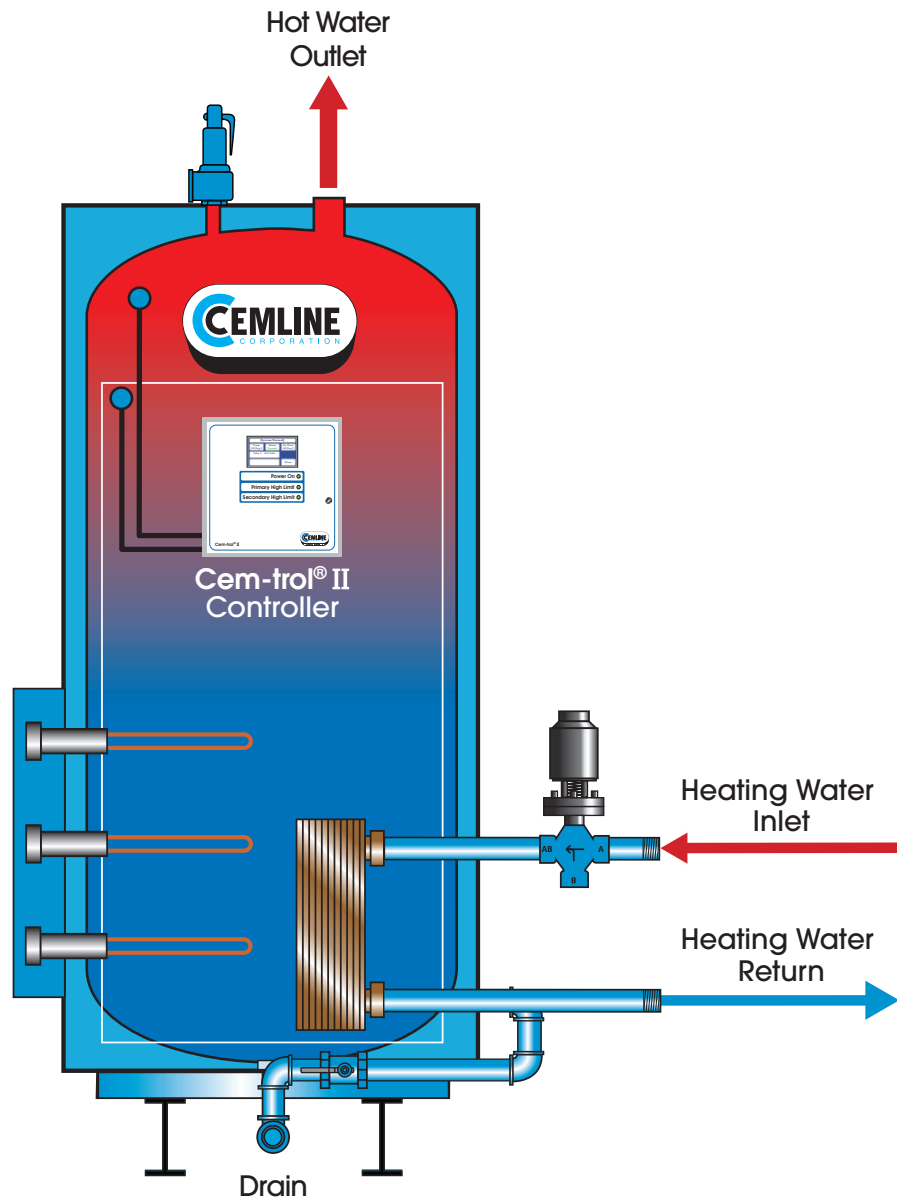


# CTB Series



## Combination Water Heaters Dual Energy Source



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# Cemline® Combination Water Heaters Dual Source Water Heaters

As facilities attempt to minimize their energy foot print the approach of using multiple energy sources can be a solution for producing domestic hot water efficiently. The Cemline Combination Water Heaters (CTB Series) are designed to use multiple energy sources to provide domestic hot water. These dual source water heaters use a combination of electric, boiler water, or steam as the energy source.

The CTB Water Heater controls both energy sources electric/boiler water or electric/steam. The electric can be used either

during summer months when the steam/boiler water systems are shut down, during the night when electric prices can be lower, or as a booster to increase water temperature if rejection hot water is used to preheat water.

The operation of the water heater controls allow for the dual source energy to work together to produce hot water. The electric control open/closes contactors to turn on/off element to maintain proper temperature control. Electric uses incoloy immersion electric elements (208, 220, or 480 VAC). The boiler water/steam side

the control system modulates an electronic control valve to allow boiler water/steam to enter the heat exchanger and heat the tank. Boiler Water (or rejection hot water) use either a plate heat exchanger or a submerged U-Bend coil. Steam applications use a submerged U-Bend coil.

## Basic Package Includes:

A.S.M.E. CODE Constructed National Board Registered storage tank

STONESTEEL® lining

316-L Stainless Steel threaded connections

3" Fiberglass insulation

20 gauge steel jacket with hammertone enamel paint

Structural steel base

A.S.M.E. relief valve-pressure and temperature

Electronic temperature gauge

Water pressure gauge

Drain valve

Boiler Water: Brazed Plate or U-Bend Heat Exchanger

Steam: U-Bend

Heat Exchanger

Electric: Electric Immersion Elements

Integral bronze circulator

Single safety system with electronic limit control

Electric, Air, Pilot Control Valve  
- Boiler Water: 2 or 3-way  
- Steam: 2-way

Boiler water temperature gauge or steam pressure gauge

Cem-Trol® II control module

Water diverting valve

Steam:

- Strainer
- Main trap
- Drip trap
- Vacuum breakers

## Optional:

316-L stainless steel vessel

Double walled heat exchanger

Boiler water pump

Over temperature dump valve

Openings for external water heater

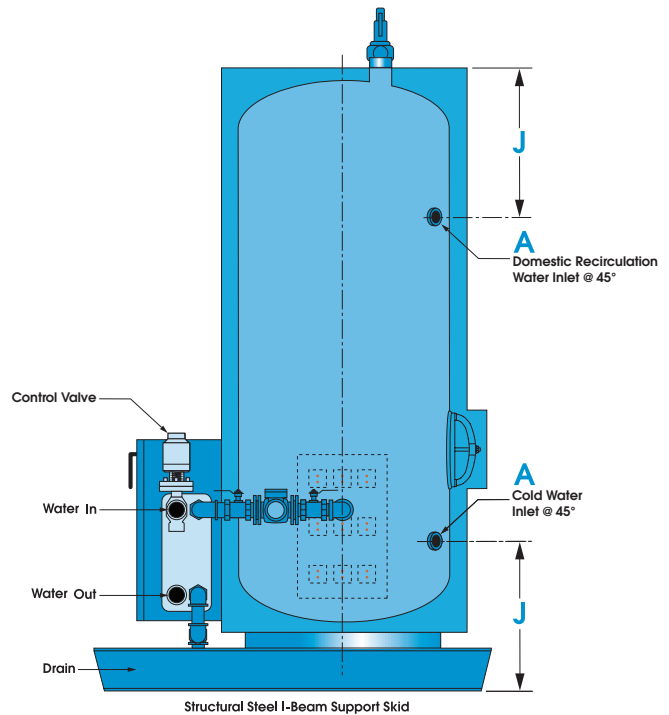
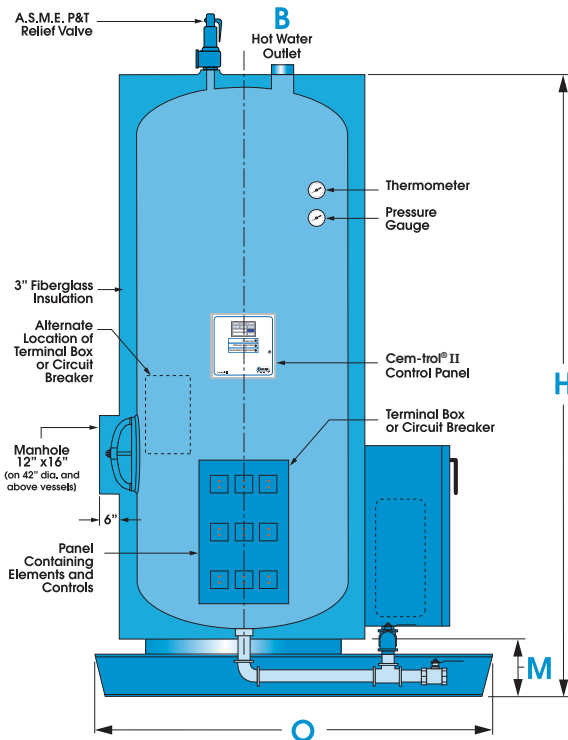
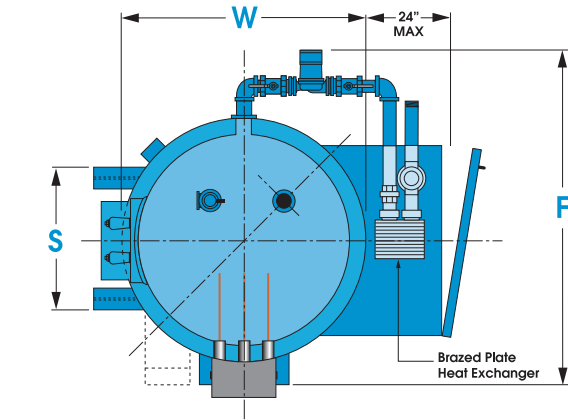


# Electric/Boiler Water-Brazed Plate Water Heaters

## Dimensional Data

*Cemline Electric/Boiler Water-Brazed Plate Water Heaters can be supplied with either single wall or double wall heat exchangers. These vertical packaged heaters are normally piped as shown below.*

### Electric/Water-Brazed Plate



GALLON CAPACITY	MODEL NUMBER	TANK SIZE D x L	W	H	O	J	F	M	S	A & B*
120	V120CTB-P	24" x 63"	28"	77"	48"	24"	52"	10"	20"	1 1/2"
200	V200CTB-P	30" x 76"	34"	90"	54"	28"	58"	10"	24"	1 1/2"
300	V300CTB-P	36" x 80"	40"	94"	60"	28"	64"	10"	25"	1 1/2"
500	V500CTB-P	42" x 90"	46"	104"	66"	30"	70"	10"	32"	1 1/2"
680	V680CTB-P	48" x 96"	52"	110"	72"	30"	76"	12"	42"	2"
1000	V1000CTB-P	60" x 96"	64"	110"	84"	40"	88"	12"	46"	2"

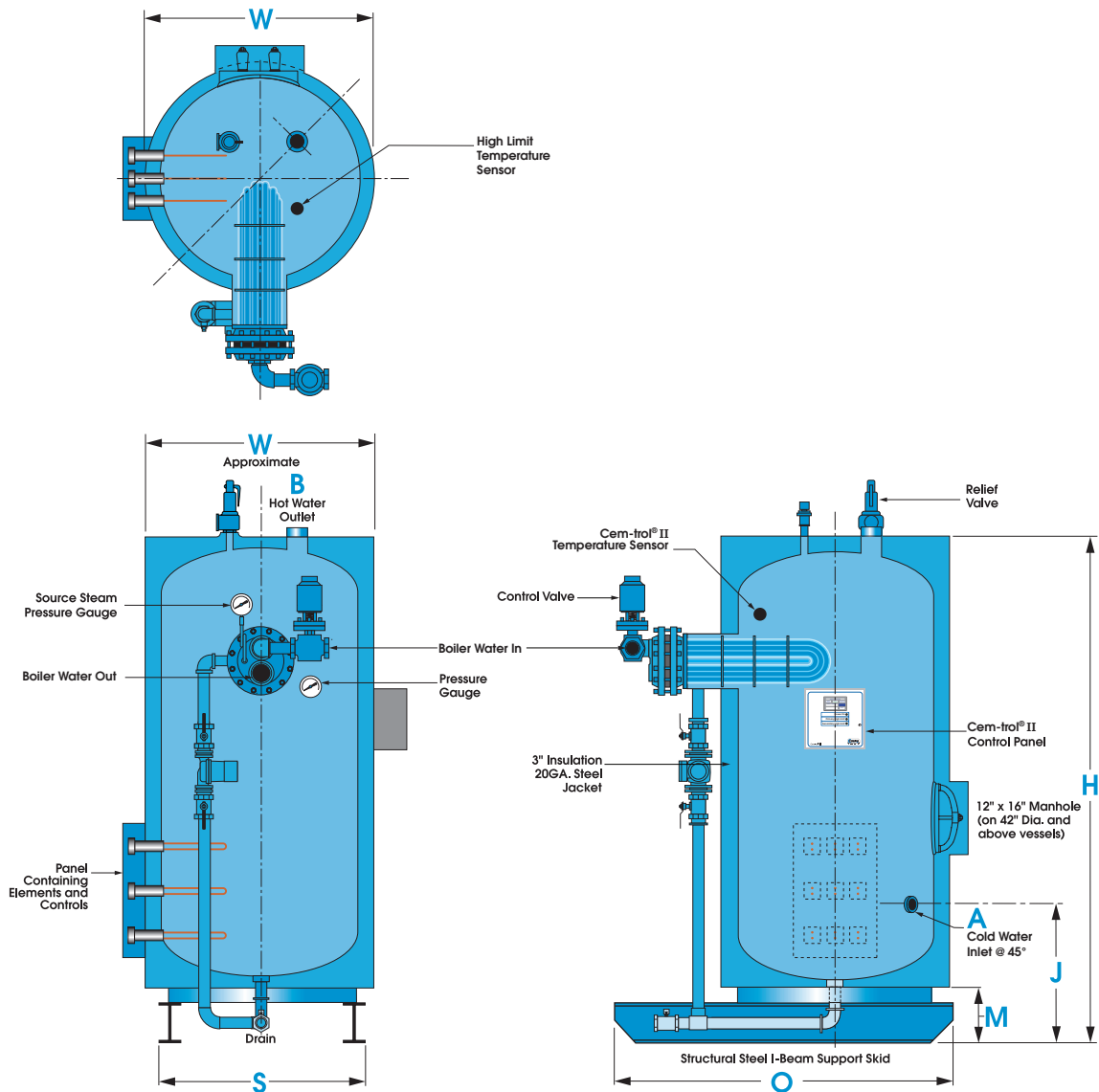
\*Inlet and outlet dimensions listed are standard size. Please verify maximum flow rate. Larger sizes or sizes not shown contact local representative.

# Electric/Boiler Water-Coil Water Heaters

## Dimensional Data

Cemline Electric/Boiler Water-Coil Water Heaters can be supplied with either single or double wall brazed plate heat exchangers. These vertical packaged heaters are normally piped as shown below.

### Electric/Boiler Water-Coil



GALLON CAPACITY	MODEL NUMBER	TANK SIZE D x L	W	H	O	J	F	M	S	A & B*
120	V120CTB-C	24" x 63"	28"	77"	48"	24"	52"	10"	20"	1 1/2"
200	V200CTB-C	30" x 76"	34"	90"	54"	28"	58"	10"	24"	1 1/2"
300	V300CTB-C	36" x 80"	40"	94"	60"	28"	64"	10"	25"	1 1/2"
500	V500CTB-C	42" x 90"	46"	104"	66"	30"	70"	10"	32"	1 1/2"
680	V680CTB-C	48" X 96"	52"	110"	72"	30"	76"	12"	42"	2"
1000	V1000CTB-C	60" X 96"	64"	110"	84"	40"	88"	12"	46"	2"

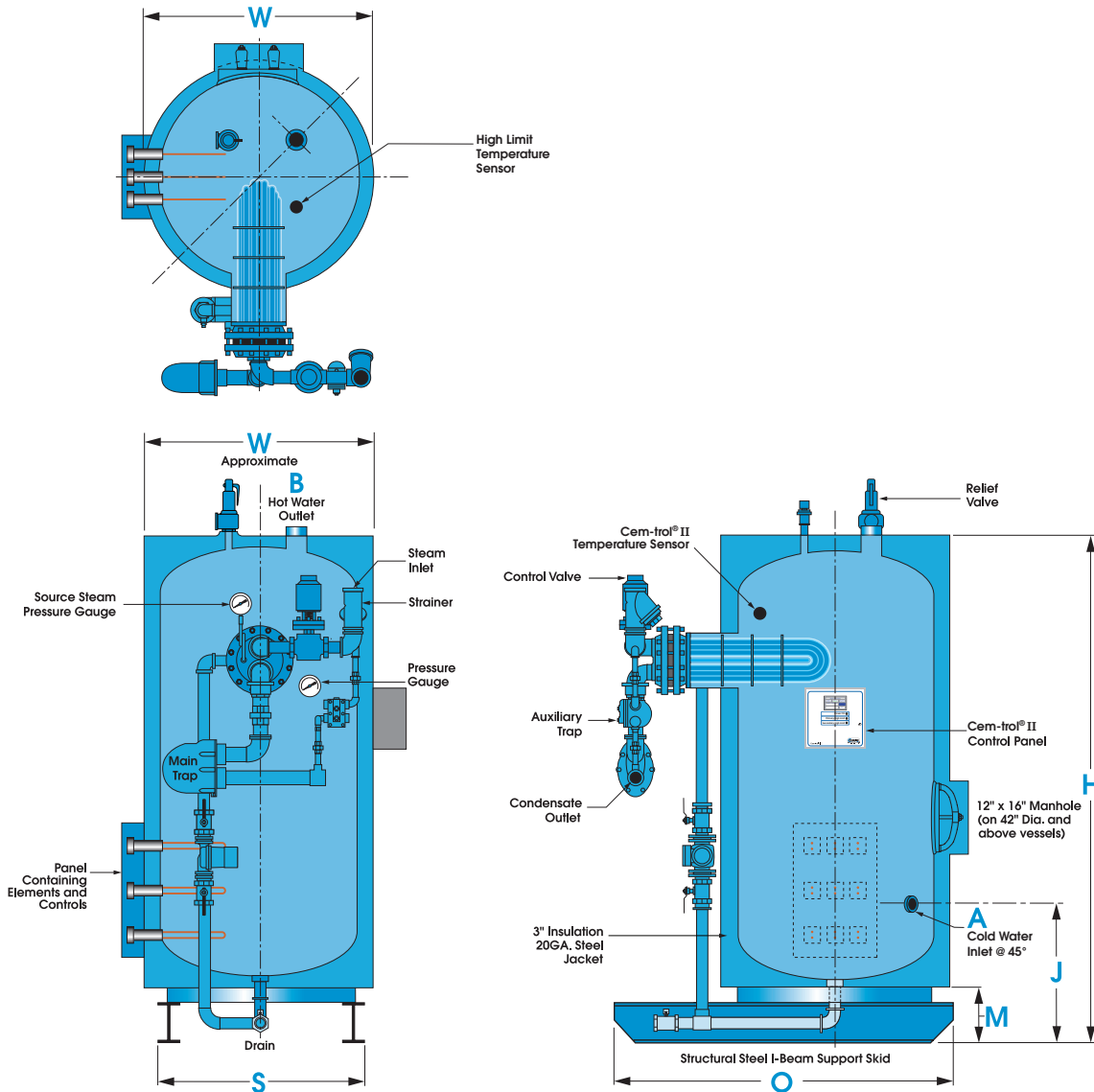
\*Inlet and outlet dimensions listed are standard size. Please verify maximum flow rate.

# Electric/Steam-Coil Water Heaters

## Dimensional Data

Cemline Electric/Steam Water Heaters can be supplied with either single or double wall brazed plate heat exchangers. These vertical packaged heaters are normally piped as shown below.

### Electric/Steam-Coil



GALLON CAPACITY	MODEL NUMBER	TANK SIZE D x L	W	H	O	J	F	M	S	A & B*
120	V120CTB-C	24" x 63"	28"	77"	48"	24"	52"	10"	20"	1 1/2"
200	V200CTB-C	30" x 76"	34"	90"	54"	28"	58"	10"	24"	1 1/2"
300	V300CTB-C	36" x 80"	40"	94"	60"	28"	64"	10"	25"	1 1/2"
500	V500CTB-C	42" x 90"	46"	104"	66"	30"	70"	10"	32"	1 1/2"
680	V680CTB-C	48" X 96"	52"	110"	72"	30"	76"	12"	42"	2"
1000	V1000CTB-C	60" X 96"	64"	110"	84"	40"	88"	12"	46"	2"

\*Inlet and outlet dimensions listed are standard size. Please verify maximum flow rate.



# Dual Source Water Heaters- Sample Specifications

*For specifying Cemline Dual Source Water Heaters, select model from charts and use specification below. Please contact Cemline or your local representative for sizing or go to [www.cemline.com](http://www.cemline.com) to access on-line.*

## Dual Source Water Heaters

Dual Source Water Heater shall be Cemline Series CTB; factory assembled and packaged. Water heater shall be constructed in accordance with A.S.M.E. Code for a working pressure of 125 psig. The packaged water heater shall be constructed with a vertical steel tank, cement lined (or 316-L stainless steel) with 316-L stainless threaded openings.

Heater shall be mounted on a steel support skid and shall have concealed lifting lugs. Heater shall be insulated with 3" Fiberglass protected by an enameled metal jacket, 20 gauge minimum thickness.

**Electric heater** elements shall be individually flange mounted. Total KW shall be \_\_\_\_\_. Elements shall be designed to operate on \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ cycle.

Elements shall be controlled by immersion thermostats and electrically held contactors. Elements and thermostats shall be arranged to bring load on in \_\_\_\_\_ steps. All element circuits shall be fused with Class J fuses.

Control circuit shall operate on 120 volts supplied by an integral transformer for the control circuit. Both high voltage and low voltage side of transformer shall be fused and the low voltage side grounded to the heater and jacket in accordance with A.S.M.E. Code.

Control circuit shall include one manual reset and one automatic reset high temperature thermostats with bulb located near top of tank and one electronic low water cut-off.

Elements, thermostats, contactors, transformers, low water cut-off, and high limit thermostats shall be factory wired to terminal strip.

**Boiler water heater** shall be factory assembled and piped including electronic operated 2 or 3-way temperature regulating valve. Heat exchanger shall be single wall copper brazed 316L Stainless Steel Plate Type (or double wall brazed, or single or double wall u-bend heat exchanger with 3/4" O.D. copper tube, copper wrapper baffles) and shall have an integral valved circulator to circulate domestic water through the heat exchanger into the bottom of the tank.

**Steam heater** shall be factory assembled and piped including incoming steam strainer, electronic, air, pilot temperature regulator, main and auxiliary float and thermostatic steam traps, and condensate strainer. 3/4" O.D. copper tubes, copper lined tube sheet, and steel or cast iron coil head. Coil shall have copper wrapper, shall be baffled and shall have an integral valved circulator to circulate the water across the coil into the bottom of the tank.

Heater shall be provided with a field programmable digital electronic limit control with LCD readout and digital thermometer.

Heater shall be furnished with a water pressure gauge and an A.S.M.E. pressure-temperature relief valve of sufficient size to relieve total BTU input of the coil.

Manufacturer shall assume responsibility for correct sizing of components to assure performance designated in design criteria.

Heater shall be Cemline Corporation Model V \_\_\_\_\_ CTB \_\_\_\_\_. Tank dimensions \_\_\_\_\_" dia. x \_\_\_\_\_" long. Storage gallon capacity \_\_\_\_\_.

**Electric heater shall be \_\_\_\_\_ KW. Elements designed to operate on \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ cycle.**

**Boiler water heat exchanger to heat \_\_\_\_\_ GPH from \_\_\_\_\_°F to \_\_\_\_\_°F with \_\_\_\_\_ GPM of \_\_\_\_\_°F inlet- \_\_\_\_\_°F outlet**

**Steam heat exchanger to heat \_\_\_\_\_ GPH from \_\_\_\_\_°F to \_\_\_\_\_°F with \_\_\_\_\_ PSIG steam to the control valve**

## Sales Offices



### Other Sales Offices:

- Alaska
- Hawaii
- Puerto Rico
- Saudi Arabia
- Taiwan
- U.A.E.

## Available Cemline Brochures



- [www.cemline.com](http://www.cemline.com)
- Product Sizing Programs
  - Brochures
  - I.O.M. Manuals
  - Drawings & Specifications
  - Agent Locator
  - Plant Tour

- STONESTEEL®
  - Water Storage Tanks
  - Jacketed Storage Tanks
  - Commercial Electric and Packaged Copper Coil Water Heaters
- Submerged Heating Coils
- Replacement Tube Bundles
- Steel Tanks
- Chilled Water Buffer Tanks
- System Efficiency Buffer Tanks
- Electric Boilers
- Stainless Compact Packaged Copper Coil Water Heaters - Semi-instantaneous, Instantaneous
- Unfired Steam Generators
- Condensed Catalog

*Cemline is represented in all major cities.  
Please contact your local representative or call Cemline Corporation.*

