FAQs

COLD WEATHER TECHNOLOGIES HEATERS BY TECVALCO

01 How does the CWT compare with conventional technology in terms of efficiency?

The 70-385 models of the CWT line heater have a thermal efficiency of between 75-80%, where the 770 model and above have thermal efficiency of 65-70%. A conventional line heater typically has a thermal efficiency of 35 tp 50%. This means that in most applications the CWT will use less than half the fuel for the same load as a conventional heater.

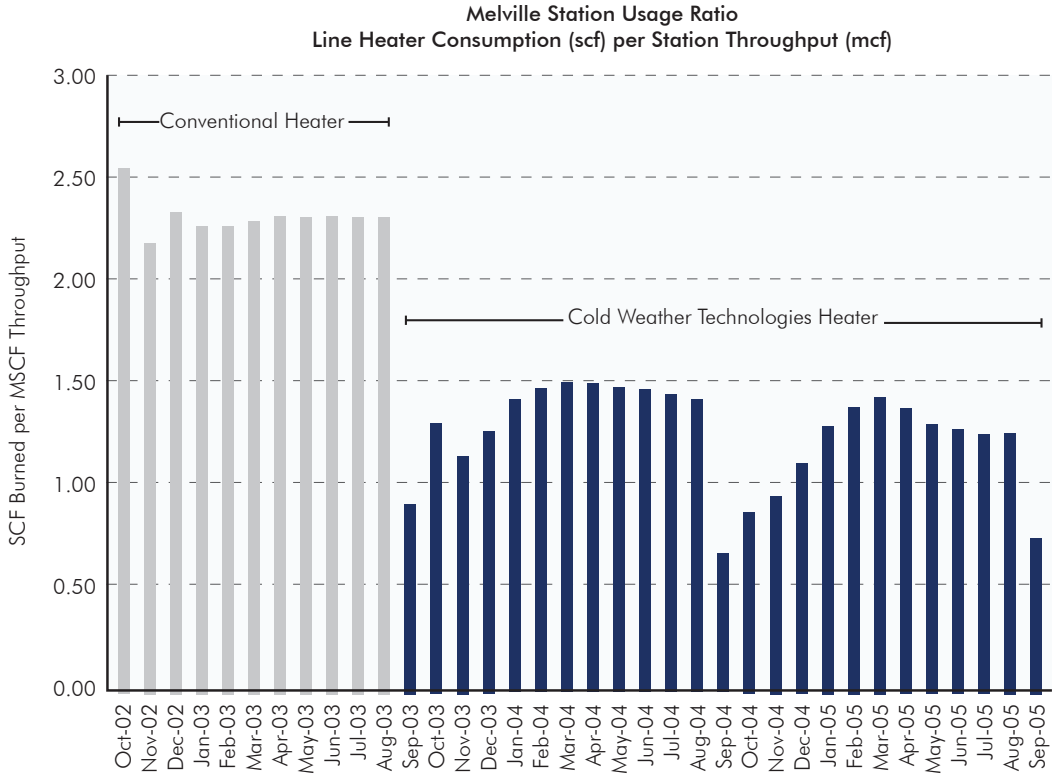
For example, if we have a 500,000 btu/hr CWT heater it will do the work of 1.0 mmbtu/hr conventional heater. If we assume that both are running 75% of the time, the conventional heater would consume 3,285 mmbtu/year more than the CWT. Using a gas price of $7.00 per mmbtu, the extra fuel cost is in the order of $23,000 annually.

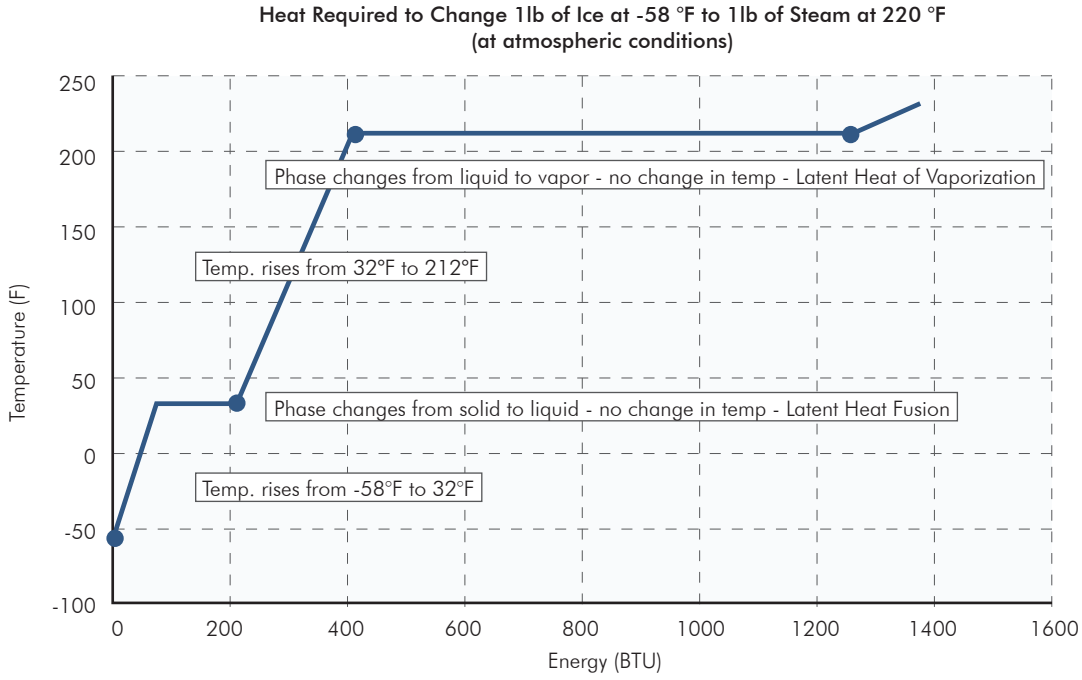
The system uses the latent heat of vaporization for the heat transfer. Note in the chart there's a large amount of energy required to turn water into steam. When you condense that water, that energy is released to heat the gas.

Using steam for the heat transfer results in very high efficiency. As the system operates at less than 14.7 psi and 250°F, it is not a pressure boiler and does not need ticketed operators nor does it have to be registered in most cases.

02 What kind of fuel does the CWT use and at what pressure?

The CWT can operate on natural gas or propane and can be modified to operate on liquid fuels as well. Gas needs to be delivered to the heater at 5.0 psig.





COLD WEATHER TECHNOLOGIES

TECVALCO USA

03 The CWT operates on a vacuum. Why?

The CWT boils water in a vacuum to make steam for the heat exchange process. There are a number of reasons. First and foremost, the boiling point of the water is reduced significantly under a vacuum. Water at atmospheric pressure boils at 212°F. In the CWT the water boils at about 110°F. Using the latent heat of the steam to heat the process fluid makes us very efficient. The vacuum also reduces corrosion as there is no air in the system.

04 Does the CWT require utility power?

No utility power is required for the CWT. The unit operates with internally generated power. A high quality furnace power-pile system creates a 700 mV current from the standing pilot. This is sufficient to provide the power required to operate and control the system.

As a result the unit is impervious to power failure; the only utility required is natural gas.

There is no need to provide expensive utility power nor is an electrician required for installation or maintenance.

05 What maintenance is required on a CWT?

On an annual basis the flame arrestor should be blown out with compressed air to insure enough air can pass to support combustion. The safeties and shut downs should be function tested and a glycol analysis done.

The pressure coil should be inspected every 15 years or so to monitor for corrosion, while the primary heat exchanger should be blown out once a year at a minimum.

06 How much fluid is required and do I need secondary containment?

The CWT uses a 50/50 water glycol mixture for the heat exchange. The standard glycol is propylene based and is non-toxic. The volume is significantly less than a conventional indirect heater. Secondary containment is not required in most jurisdictions.

The device is a sealed unit and all required fluids are supplied with the purchase. In larger units this is a significant advantage in both capital and operating cost impacts. A large conventional line heater will often hold barrels of glycol while the CWT requires gallons.

On an ongoing basis, fluid is added to a conventional glycol bath type heater as it is evaporated away – the CWT has a sealed system and does not require additional glycol over time.

There is no need to monitor the mixture or to add fluid to the CWT.

07 What do I need to do to install the CWT?

The CWT needs to be set on a solid, level foundation or pile. The system is an all weather appliance and operates better outside, so no building is required or recommended. Installation consists of 1) hooking up the fuel supply, 2) connecting the process lines in and out, and 3) installing the operating temperature control in the process stream.

08 What sizes are available?

The CWT comes in a number of standard sizes and can be scaled to as large an application as is required. The system can be turned down and tuned to best match the application and further increase efficiency.

09 How noisy is the heater?

The CWT is completely silent while operating and has been tested at 57 decibles at 3 feet. It is suitable for urban and semi-urban areas.

10 What about emissions?

The CWT burns significantly less fuel than conventional systems and burns it more efficiently. Emission reductions in the order of 50% from conventional technology can be expected.

11 How long have the CWT's been in service and how many are in the field?

The first CWT heaters were in the field in 2001 in heavy oil heating applications. The first natural gas heaters were installed in 2003. There are over 1000 natural gas line heaters in service across North America.

12 How can we ensure I get good service and support?

CWT offers 24 hour telephone support and troubleshooting. The CWT is very simple to service and the components are standard furnace parts. Our representatives in your area will be able to handle most service concerns and provide support.

13 What assurances can I have that the heater will perform as promised?

CWT can provide you with a list of references from companies that have CWT units in service.