

Maxi-therm, the leaders in heat transfer technology

At Maxi-therm, we are at the forefront of innovation, developing _____ industry-leading heat transfer technology that is more cost-effective, _____ more energy and space-efficient, and greener than conventional _____ heat exchange systems.

The Maxi-therm concept

We developed our patented, award-winning Vertical Flooded Heat _____ Exchanger based on a proven system used in Europe for over 25 years – but we innovated to enhance its performance.

Like the European design, our Vertical Flooded Heat Exchanger features an oversized vertical shell & tube heat exchanger that uses latent & sensible heat of steam to heat _____ a liquid by controlling the condensate outlet, instead of controlling or modulating the steam inlet side, as it is the case with a conventional method.

Because it is oversized, the heat exchanger becomes flooded with condensate that _____ is evacuated at a preset subcooled temperature (usually 200°F), making it possible _____ to optimize use of the sensible heat of steam and eliminate the occurrence of flash steam. In fact, the subcooled condensate will never flash in the return line – even under pressure. _____ A condensate control valve varies the level of condensate in the heat exchanger according to the process load, resulting in a 5.4% to 20% energy saving.

Maxi-therm's patented innovations

When developing our system, we identified two major issues with the European system:

1. The steam pressure must always be lower than the liquid pressure.
2. There is no guarantee of stability of the heated liquid outlet set point temperature, which results in a high level of wasted energy, thereby compromising cost-effectiveness.

With Maxi-therm's patented design, however, we resolved these issues:

1. No pressure reducing station on the steam side and no safety relief valve(s) to the roof are required. In fact, we recommend using high-pressure steam _____ (even over 170 psig) and we always size the heat exchanger to subcool _____ condensate to 200°F. Plus, our heat exchanger uses more sensible heat, _____ for greater performance and efficiency. Simply, our technology always uses ± 1000 btu/lb of total heat of steam, either at 10 psig or 125 psig steam pressure.
2. We have achieved stability of heated liquid outlet set point temperature for building heat. In fact, we are the first to guarantee $\pm 2^\circ\text{F}$ of set point temperature, even when variable speed drives are used on the circulating pumps.

More Maxi-therm advantages

- Smaller steam supply pipes to the heat exchanger.
- Smaller condensate lines, even on high-pressure steam. We always subcool to 200°F.

- Less corrosive return line since no vacuum breaker is required. Official testing _____ in a hospital setting using corrosion coupons demonstrated that Maxi-therm's concept results in very low corrosion level, compared to conventional systems. Therefore, _____ Maxi-therm technology is not subject to carbonic acid oxygen pitting.
- No condensate pumping substation needed to lift condensate or to return condensate _____ through a pressurized return line, since our system modulates on the condensate side _____ with a positive differential pressure to lift condensate.
- Fail-safe condensate control valve.
- Lower installation costs (usually 40%).
- Smaller footprint in mechanical room thanks to its vertical design. • Condensate mixer enables high-pressure steam traps to discharge directly in the flooded return line without creating any water hammer.

Bigger cost savings, smaller carbon footprint

Maxi-therm's Vertical Flooded Heat Exchanger offers impressive _____ energy savings of 5.4% at 10 psig up to 20% at 125 psig steam _____ pressure, thanks to its intelligent use of sensible heat of steam _____ and the elimination of flash steam in the return line. This substantial energy savings means substantial cost savings – and an equally substantial reduction in greenhouse gases, which we believe is a shared responsibility for _____ a sustainable future.

Our award-winning achievements

Maxi-Therm's patented Vertical Flooded Heat Exchanger _____ is industry-recognized, receiving honourable mention _____ at the ASHRAE, AHR EXPO 2005, Orlando, Florida.

Over the past 7 years, we have designed and built over 250 of our patented Vertical Flooded Heat Exchangers in hospital, institutional, pharmaceutical and also co-generation _____ complexes, offering our clients an efficient, cost-effective heat transfer solution.

Our world-class facilities

Headquartered in Montreal, Canada, Maxi-Therm boasts a leading-edge R&D laboratory _____ that is unique in the world. Equipped with 1,000,000 BTU capacity and steam at 100 psig, this is where we test and demonstrate the performance and stability of set point temperature and invite our customers to a full 2 day technical seminar in regards to our innovating _____ products such as vertical flooded concept, clean steam generators for humidification _____ and sterilization.

