



HANWEST 'S' & 'CN'- LTLC-FS LOW TEMPERATURE LIQUID CHILLING EVAPORATORS

INSTALLATION INSTRUCTIONS

DESCRIPTION

The Hanwest 'S' & 'CN'-LTLC liquid chilling evaporators are designed for installations where water is required to be chilled close to freezing temperature for process applications. These Hanwest liquid chilling evaporators can be supplied to chill fresh water in an insulated storage tank to 0.5°C or sea water in tanks on fishing vessels to -1.5°C.

The Hanwest liquid chilling evaporators use a patented dual, co-axial tube in shell design with unique tube geometry. The water tubes have both internal and external surface enhancement that provides a very high heat exchange efficiency. The internal water passage has no low velocity areas and the continuous water turbulence and even water velocity over the inner tube surface reduces the water film factor contributing to the heat exchange efficiency and inhibits the formation of ice. The unique tubing geometry with the raised fins on the refrigerant side provides a controlled refrigerant path resulting in the highly effective heat transfer between the fluid in the tubes and the refrigerant to provide a close approach between the leaving water and the evaporating temperature.

INSTALLATION

It is important to select the condensing unit to match the evaporator for the required duty and the following points should be carefully considered.

Installation Requirements:

1. Install the evaporator upright.
2. Select and install a correctly sized Balanced Port TX Valve.
3. Check that the water pipe sizing to the evaporator is correct.
4. Check that the water pump will provide the water flow rate as specified by the chiller supplier.
5. Ensure that the design of the water circuit will provide the correct flow through the evaporator.
6. Do not oversize the condensing unit.
7. Do not operate the evaporator without the flow switch module(s) installed and correctly connected.
8. Do NOT use a pump down system of refrigerant control as this will result in a water tube freeze up and rupture
- 9. Tube rupture caused by freeze up is not covered by warranty.**

CHILLER START UP

1. Start the fluid circulating pump.
2. Check that the direction of the fluid is correct.
3. Loosen each flow switch to purge all air from the fluid tubes.
4. After purging air from the tubes ensure the flow switch direction is correct when tightening the knurled nut on the flow switches. A directional arrow on the flow switch cable housing indicates direction of flow.
5. Before starting the refrigeration system, liquid charge the system with the estimated refrigerant charge.
6. DO NOT start the chiller before the flow switches are connected and the compressor stop operation tested. DO NOT by pass the flow switches for any reason. If the flow switches stop the compressor there is a fluid flow problem.

When the chiller is approaching the final water temperature the compressor(s) may stop due to a reduction in water flow as a result of ice forming in a water tube(s). The chiller is equipped with a mini flow switch on every water tube in the chiller. A flow switch module is supplied to monitor the water flow through each tube and when the water flow through any tube is reduced to approximately 50% of the design water flow rate, the compressor(s) are switched off by the flow switch module to allow the water tube(s) to de-ice. The flow switch module has LED's that will switch off to indicate which flow switch(s) have opened. During normal operation all the LED's are illuminated. The flow switches have identification labels to identify which switch has opened. The initial de-ice process generally takes from 30 sec to 1 minute, but the flow switch timer (FST) will delay the compressor restart for 5 minutes to ensure that all ice has been cleared from the water tubes, then the compressor(s) will restart and continue the cooling process.