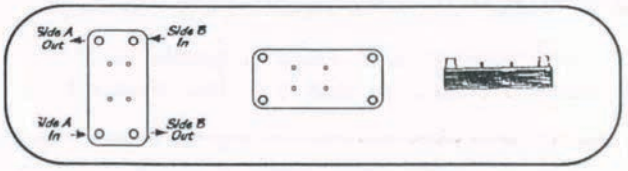
INSTRUCTION
27 NOVEMBRE 1996
10-X-E25

INSTALLATION AND MAINTENANCE MANUAL
BRAZED PLATE HEAT EXCHANGER

With extensive experience in hydronic heat exchanger systems, FLO FAB recommends a few key application tips when applying "Brazed Plate" heat exchanger to boiler water, glycol chilling, water-cooled oil coolers, steam and other applications.

LIQUID TO LIQUID HYDRONIC APPLICATIONS

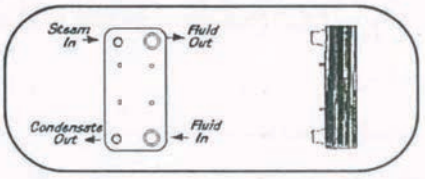
Installation: Heat Exchanger may be installed in a vertical or horizontal position, piped in couterflow.



STEAM HEATED APPLICATION

Installation: : Heat Exchanger must be installed in a vertical position.

Steam circuit must enter the Heat Exchanger top connection, with condensate leaving the Heat Exchanger through the bottom connection. Any vertical condensate line extension must insure that a minimum steam pressure of 1.0. psig per 2 feet of elevation is available. Condensate line must be trapped.



WATER STRAINER

A water strainer must be installed in the water inlet circuit to protect the heat exchanger from restricted flow rate and/or blockage (16-20 mesh minimum, 20-40 mesh best choice)

When boiler water is utilized as the hot water circuit a strainer may not be required on the inlet side of the FLO FAB heat exchanger provided a water is incorporated as an integral part of the boiler system.

SWEAT CONNECTIONS

Use 45% silver solder with Harris, "staysilv" white brazing flux, or equivalent. Use wet rag around base of connection. Do not overheat, purge with nitrogen optional. Do not braze with the unit horizontal or sitting flat, since braze material may fall into the tube, clogging the holes, Braze a complete joint to seal the tube to fitting joint.

THREADED CONNECTIONS

Use Mylar Tape or other sealant on male threaded part of connection to prevent leakage. Always use two wrenches when installing pipping connection to FLO FAB heat Exchanger connection to prevent over-torque stress and damage to connection when tightening.

WATER QUALITY

Water quality should be maintained at a PH of 7.4, and not less than 6.0 for proper heat exchanger life. Chlorinated water, and pool water is not acceptable and may cause heat exchanger failure. Contact the factory for alternative models.

Ground water with high sulphur content or sulphuric acid, and low OH, may cause gradual copper erosion and failure of the heat exchanger after years service. Contact the factory for alternate nickel brazed models.

FLO FAB INC
LAKE WORTH,
FLORIDA, USA

INSTALLATION AND MAINTENANCE MANUAL

BRAZED PLATE HEAT EXCHANGER (Continuation...)

LIQUID CHILLERS - DIRECT EXPANSION

Installation: Unit must be installed in a VERTICAL position, DX inlet on lower position.

FLOW SWITCH

A pressure differential switch MUST be installed to prevent possible freeze up. Due to the fast reaction time of plate exchanger a low pressure cutout or leaving temperature sensor is not adequate response time.

INTERNAL DISTRIBUTOR

Model CH4, CH5-1, CH10B, CH12B, CH15B, thru CH60 have a built-in DX distributor tube with orifices which improve unit performance. The DX distribution tube is designed to distribute the DX gas evenly into the plates to provide maximum heat transfer capacity and stable operation.

Note: The DX distribution induces a 40 psi pressure drop at the DX inlet, therefore expansion valve may need a slight adjustment to obtain proper operation, with 6 Deg F to 10 Deg F Superheat.

Models: CH 1/2A thru CH3 1/2A; thru CH7 1/2 do not have, or require internal distributors.

SEALING PLATE

ALL FLO FAB models have a sealing plate as standard feature to prevent moisture and frost freezing (unlike other brands). Frost build-up will not damage the unit. Recommended 1/2" to 3/4" insulation.

CLEANING

FLO FAB heat exchanger may be subjected to extreme high temperature and/or hard water conditions which could result in accelerated scaling and corrosion rates which will penalize the heat transfer rate and performance of the heat exchanger.

Because of these factors it is recommended that a regular cleaning schedule be implemented and adhered to.

It is recommended that a chemically cleaning process be used for cleaning purposes. With FLO FAB design this is a very simple expedient method. This will extend the normal life of the heat exchanger. Proper cleaning solutions can be purchased from your local wholesaler. Make sure the solution is applicable for stainless steel and copper and that you follow the directions recommended.

Units should be back-flushed with a flow rate of 1-1/2 times the design flow rate.

The use of acid containing chloride or fluorides must be used cold, properly inhibited and immediately rinsed with fresh water to get rid of all acid. A 5% acid solution should be sufficient.

A typical cleaning system consist of a small tank, pump and inner connecting lines in and out of the heat exchanger, with shut-off valves on both lines and drain valve.