DHX

DISPOSABLE HEAT EXCHANGER

STERILE, EFFICIENT AND MODULAR

The DHX from ASI is a modular heat exchanger that employs a plate and frame concept, using a single-use bag as the sterile fluid path. The bags fit tightly between five dimpled, stainless steel plates efficiently transferring heat in a counter-current flow path. The system provides efficient, sterile heat transfer that easily integrates into any new and existing process.

*The DHX from ASI is Patent-Pending

THE DHX HEAT EXCHANGER

FEATURES AND BENEFITS

- Completely Isolated Flow Paths for Process and Heat Transfer Fluid
- Counter-Current, Serpentine Flow Patterns
- Dimpled Jacketing on the Plates Provide Turbulent Flow
- Bags Fill in Place with no Operator Interaction
- Modular Design and Small Overall Footprint Allows for Changing Process Needs
- Reduced Infrastructure Requirements
- Reduced Processing Time
- Improved Product Consistency

STERILE FLUID PATH FOR PROCESS FLUID

Each single-use bag fits tightly between the DHX stainless steel plate assembly. In a completely isolated flow path, the process fluid flows through the single-use bags counter-currently to the heating/cooling fluid within the plates. Once the bags are loaded in place, no further operator intervention is required.

DHX SINGLE-USE BAG ASSEMBLY

- Single-Use Bag Material of Construction: Low Density Polyethylene PL-01026 / PL-01077
- Interconnecting Tubing: C-Flex
- Pressure / Temperature Rating *(Installed in DHX Plate System):* 20 PSIG at 122°F (50°C)
- Connections: GE ReadyMate™ DAC 500
- Flow Rate Capacity: Up to 15 Liters per Minute *(LPM)*
- *Custom Tubing and Connections Available Upon Request*

EQUIPMENT

TECHNICAL SPECIFICATIONS

- Effective Heat Transfer Area: Up to 27 Sq. Ft.
- Overall Dimensions: 20″ W x 29″ D x 27″ H
- Number of Plates: 5
- Number of Bags: Up to 4
- Dry Weight: 150 Kg
- Full Weight: 190 Kg
  (Includes 4 Single-Use Bag Assemblies)

DHX PLATE SYSTEM

- Material of Construction: 304 L Stainless Steel
  (316 L Stainless Steel can be Specified)
- Pressure / Temperature Rating: FV/150 PSIG at 150°F
  (Each Individual Plate is Pressure Rated)
- Plate Insulation: Chloride Free
- Boiler and Pressure Vessel Code: ASME U-1
  (TÜV Codes can be Specified)
- Connections: 1/2″ Compression
  (Other Connections Available Upon Request)

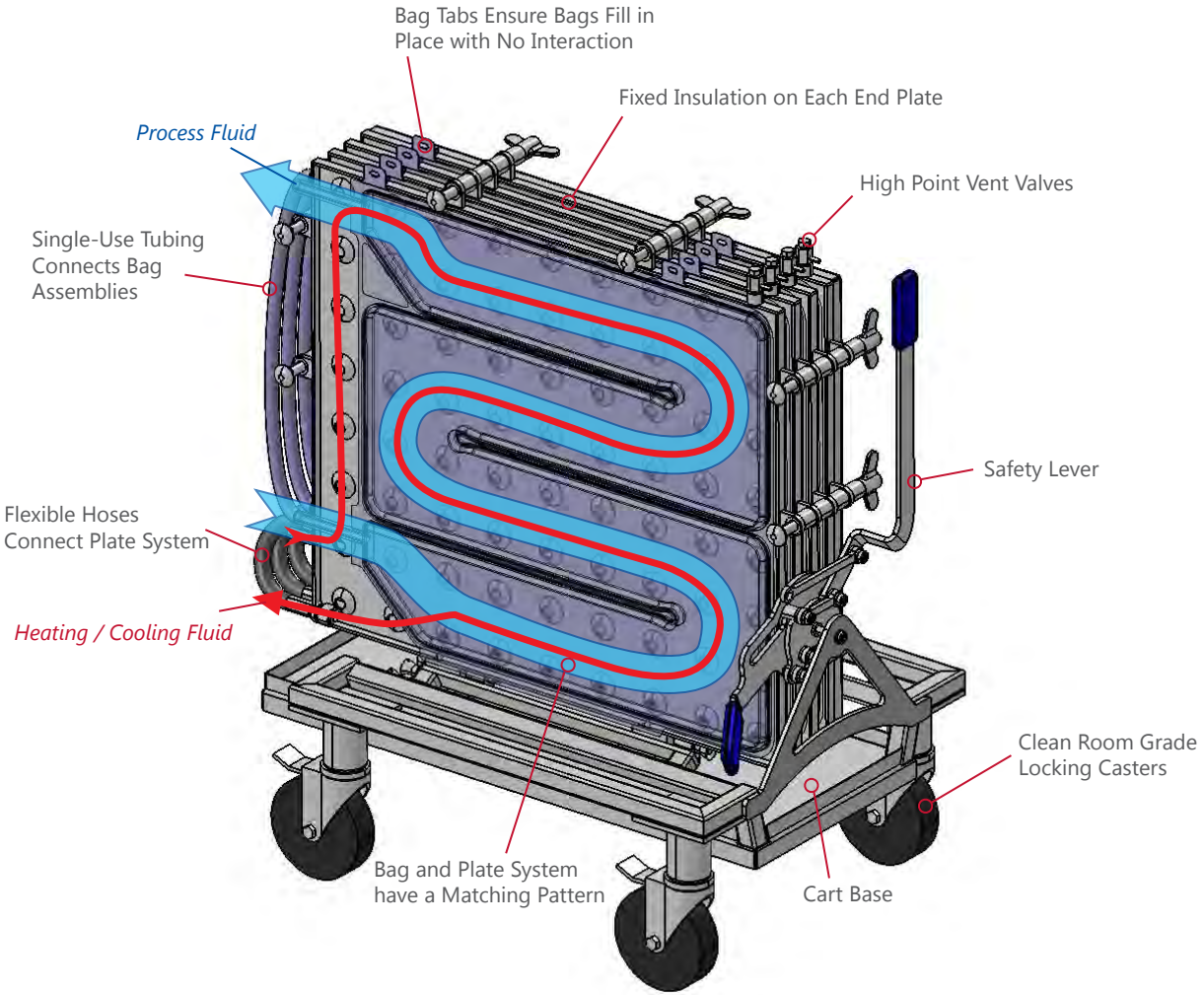
PROCESS FLOW

The single-use bags are manifolded together with C-Flex tubing and disposable aseptic connectors.

HOW IT WORKS

EFFICIENT HEAT TRANSFER

The bag and the plates each have a matching serpentine pattern. The heat transfer fluid flows through the plate system while the bags provide the sterile fluid path for the process fluid, each flowing counter-currently to the other. The temperature differential of the heat transfer fluid provides efficient heat transfer to the process fluid.

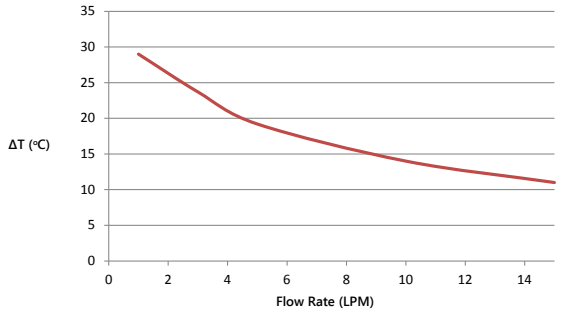


HEAT TRANSFER EFFICIENCIES FOR TYPICAL APPLICATIONS - SINGLE PASS

DHX COOLING EFFICIENCIES

Cooling from 37°C – Single Pass

- Process Fluid: Water at 37°C
- Heat Transfer Fluid: 30% Propylene Glycol at 2°C
- Heat Transfer Flow Rate: 15 LPM
- Number of Bags: 4

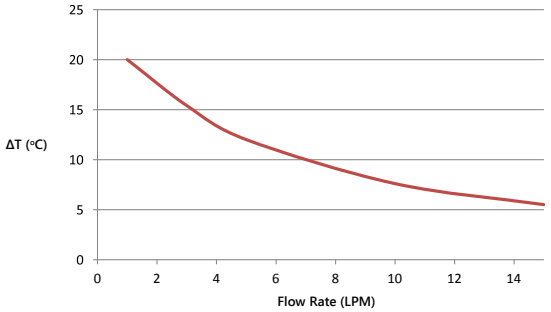


The ΔT and Flow Rate (LPM) Efficiencies of DHX for Cooling

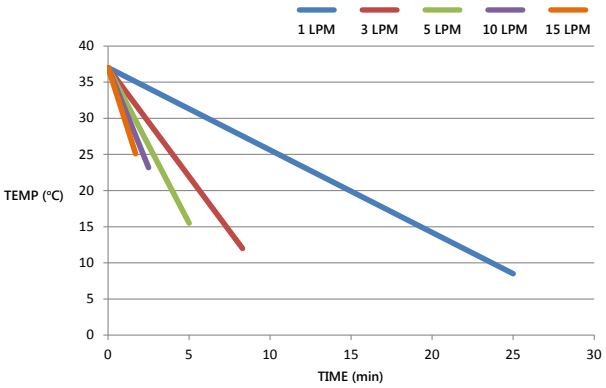
DHX HEATING EFFICIENCIES

Heating from Ambient Temperature – Single Pass

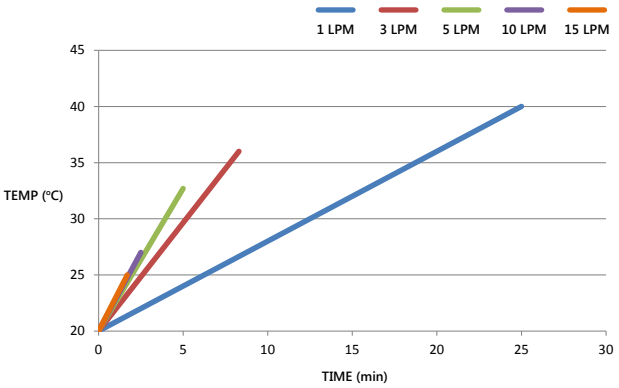
- Process Fluid: Water at 20°C
- Heat Transfer Fluid: 30% Propylene Glycol at 42°C
- Heat Transfer Flow Rate: 15 LPM
- Number of Bags: 4



The ΔT and Flow Rate (LPM) Efficiencies of DHX for Heating



DHX Cooling Efficiencies Measured by Temperature vs. Time



DHX Heating Efficiencies Measured by Temperature vs. Time

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ASI is an FDA Registered, ISO 13485:2003 Certified Manufacturer

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