

### Description:

The transfer of heat energy between fluids is a very common industrial operation. The Heat Exchanger Trainer apparatus consists of six heat exchangers with associated fluid temperature indicators and flow indicating controllers. The exchangers are of equal surface area with each one having unique features. Trainees are able to learn the impact of: construction material, flow pattern or direction, turbulent or laminar flow, and exchanger design.

### Process Highlights:

- Continuously variable water flow
- Typical approach temperature difference 20°C to 50°C



Model Series: HE-400

Process (hot) water	0 to 6 USGPM	0 to 23 l/m
Chilled water	0 to 6 USGPM	0 to 23 l/m

### Equipment Specification Highlights:

- Water flow rates controlled with flow meters; PID controllers and pneumatically actuated control valves
- Temperature measurement of inlet and discharge waters
- A valve is provided to reverse the tube-side flow direction
- Six common industrial type heat exchangers
- Copper "U" tube exchanger in a Plexiglas shell - with and without baffles
- Single pass shell and tube exchanger - brass and stainless steel
- Four pass shell and tube exchanger - brass
- Brazed Plate exchanger with stainless steel plates

- Includes integrally mounted control cabinet with power switch, fuses, controllers and indicators
- Approximate overall dimensions - 160cm x 160cm x 164cm high (63" x 63" x 65") subject of final design
- Available in all world voltages / frequencies (customer to specify electrical power available on-site)

### Closed Loop:

- Heat pump to create both process (hot) water and chilled water
- Integral heat pump temperature controller
- Circulation pump for each water stream