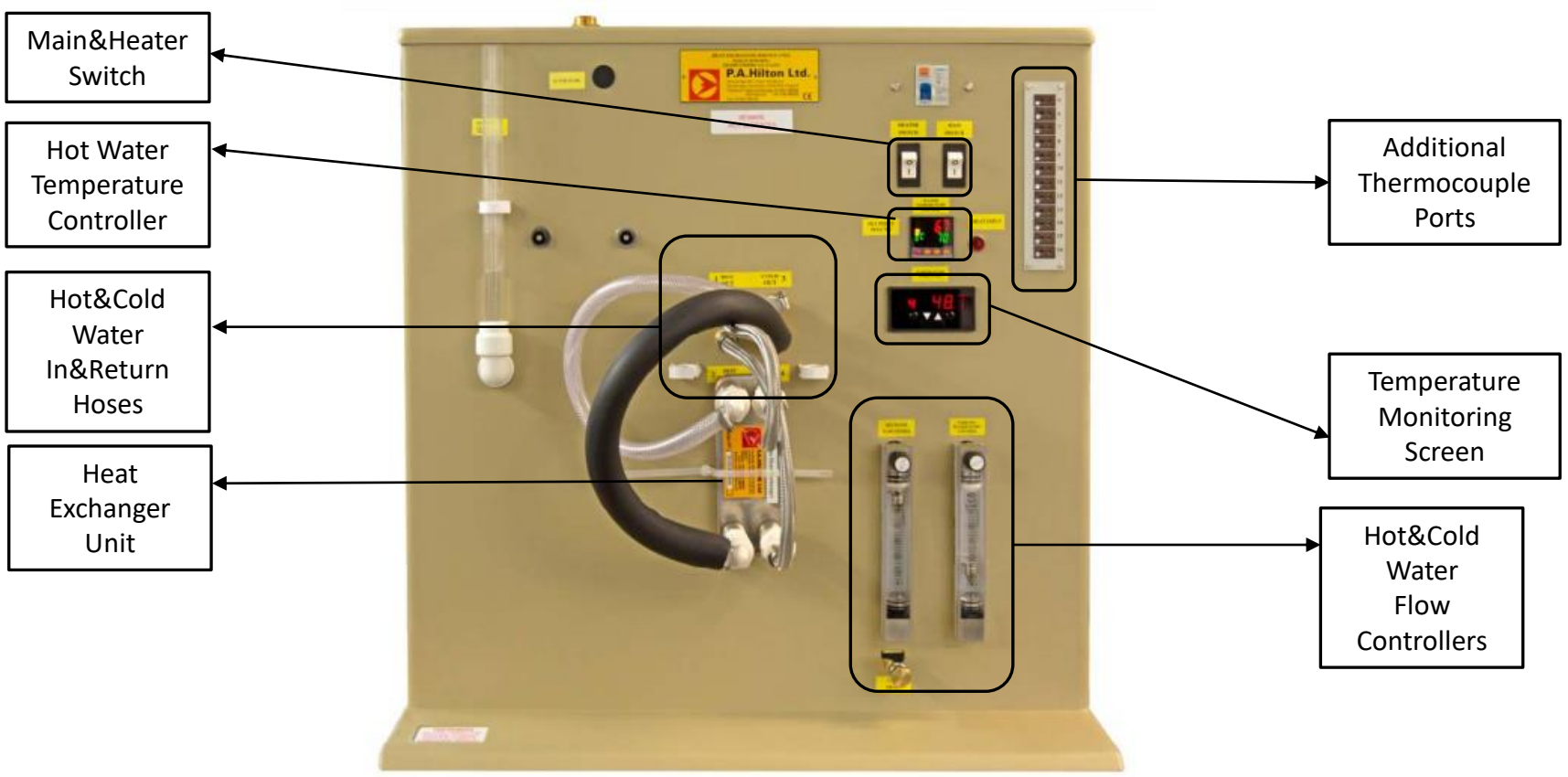
ENE 411
HEAT EXCHANGER EXPERIMENT

EXPERIMENTAL SETUP



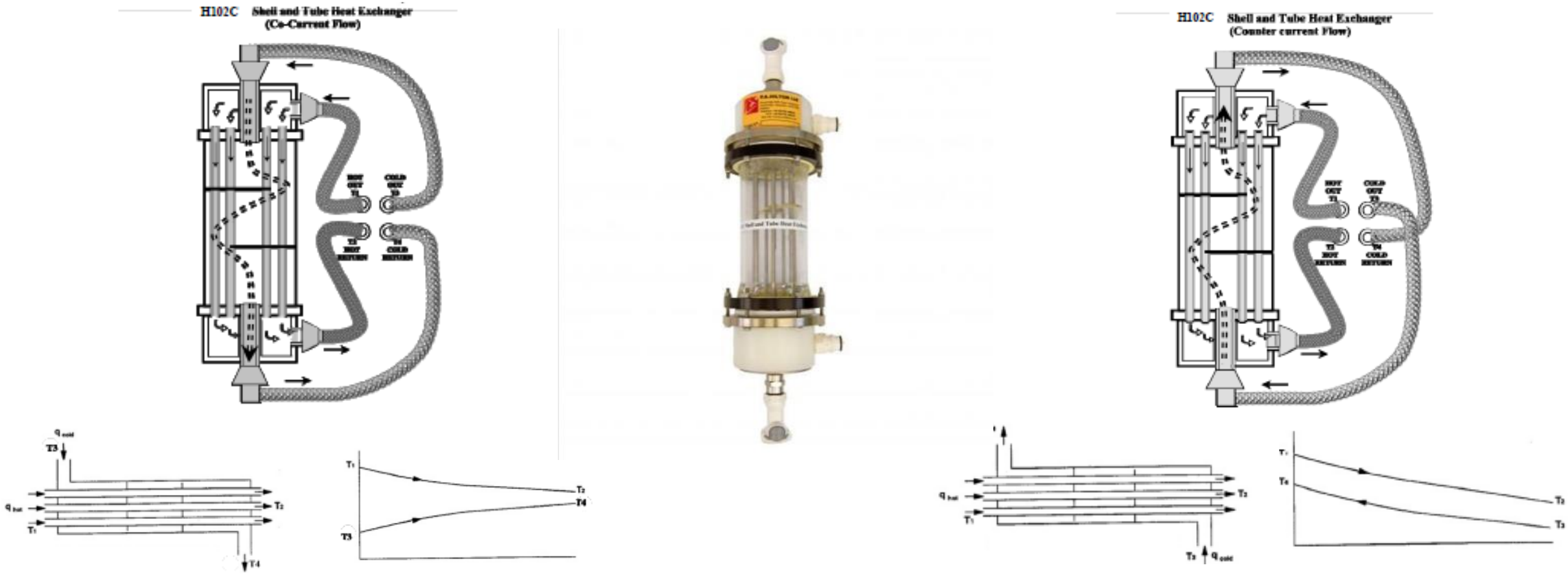
Heat Exchanger Main Unit

EXPERIMENTAL SETUP

Heat Exchanger Types

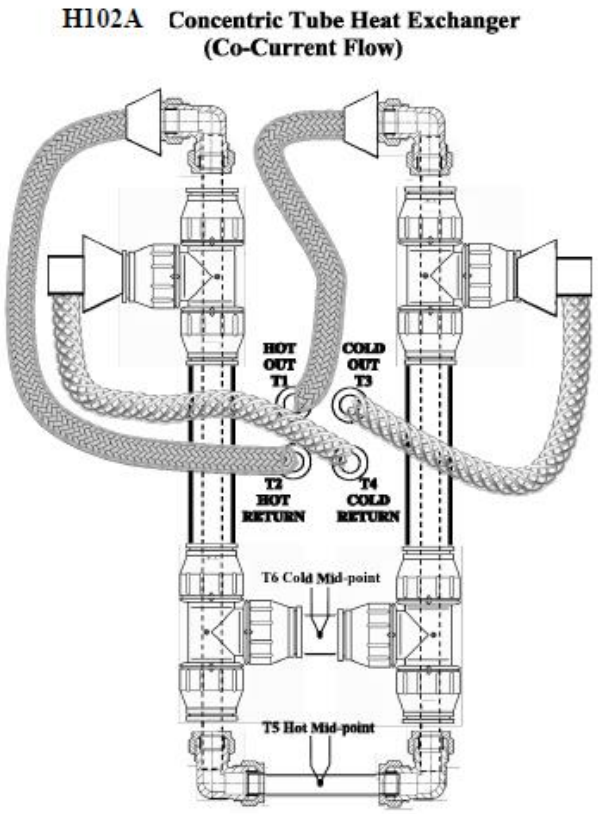
1- Plate 2-Concentric 3-Shell&Tube

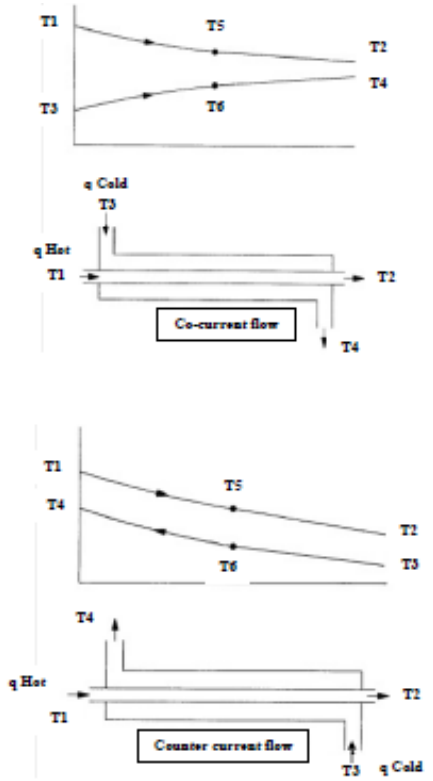
EXPERIMENTAL SETUP



Parallel (Co-Current) and Counter Flow Configurations of Shell and Tube Heat Exchanger

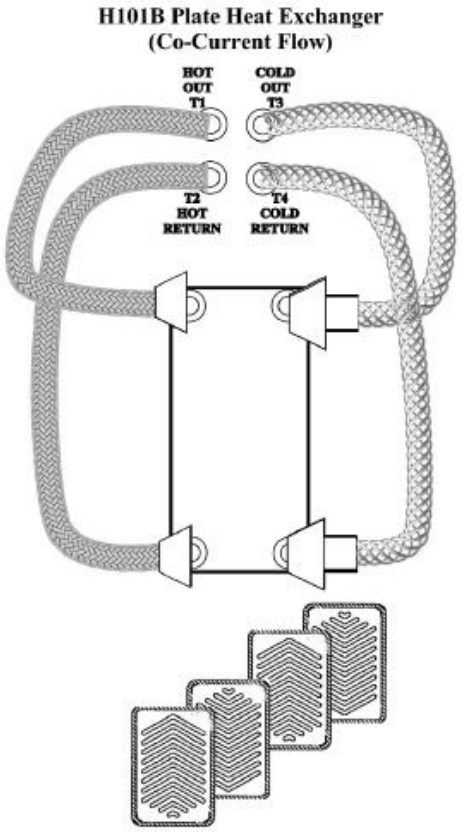
EXPERIMENTAL SETUP

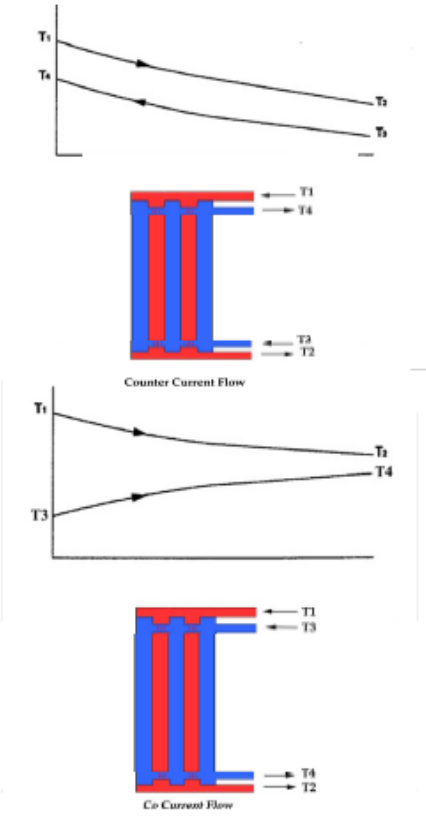




Parallel (Co-Current) Flow Configuration of Concentric Heat Exchanger

EXPERIMENTAL SETUP





Parallel (Co-Current) Flow Configuration of Plate Heat Exchanger

EXPERIMENTAL PROCEDURE

1. Adjust the flow configuration of heat exchanger. (Parallel or Counter)
2. Press the Main Switch for starting water circulation.
3. Press the Heater Switch to give heat input to the hot water side of heat exchanger.
4. Adjust the hot water inlet temperature.
5. Adjust the flow rates of hot and cold water streams.
6. Take temperature datas when the system reach steady regime.

REPORT DETAILS

1. You should start with giving information about heat exchangers like types and usages etc.
2. In your reports you should calculate the temperature difference both hot and cold side, thermal efficiencies of each side and mean thermal efficiency of HEx, heat transfer rate of both sides, logarithmic mean temperature difference of HEx and overall heat transfer coefficient.
3. You should show temperature profile basicly in a graph. (Inlet and outlet values of both sides)