



Features

- Compact, comprehensive, sturdy design
- Smooth and silent operation
- Total instrumentation for complete heat balance
- One or many of Shell and tube, concentric pipe and plate type heat exchangers can be studied.

Tesca Shell & Tube Heat Exchanger Trainer is an invaluable aid in the effective understanding of heat exchangers. The hot water unit comprises of a tank fitted with electrical immersion heaters. It has a facility to circulate hot and cold water through flow meters. Shell and tube heat exchanger and/or a concentric pipe heat exchanger and/or plate type heat exchanger is provided to conduct the experiment. Other type of heat exchangers can be provided, on request. The system facilitates to study the parallel and counter flow as well.

The shell and tube heat exchanger consists of parallel tubes fitted in a shell containing baffles along its length. The whole unit is insulated. The baffles ensure turbulent water conditions thus provide good

Note: Specifications are subject to change.

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heat transfer. Flow rates and temperatures can be varied independently and the heat transfer coefficients derived.

Brief List Of Experiments

- To study and compare the heat exchanged in shell and tube type and concentric type heat exchanger.*
- Determination of mean temperature difference under parallel and counter flow
- Determination of overall heat transfer coefficient.
- To determine the heat exchanger capacity.
- * Only if more than one heat exchanger is ordered.

Components

- Shell; Material: S.S 304 grade
 - Insulation: Asbestos rope
 - Length X Diameter: 500 mm (Approx.) X 200 mm(Approx)
 - 25 % cut baffles at 100 mm distance.
- Tube: Material: copper (24 grade) ID 13 mm OD 16 mm length of tubes 500mm.
- Digital Temperature Indicator Range 0- 200°C. With selector switch.
- Temperature sensor: RTD (Pt100) 5 Nos.
- Sump Tank. S.S – MATERIAL 40 Liter (Approx.)
- Steam Generator
- Centrifugal Pump
- Energy meter: 0-5 A.
- Rota meters for cold and hot water
- Stand
- All necessary Piping & wiring.

Optional Additions

- Computerised data acquisition software for heat transfer.
- An advanced personal computer based model. This system has facility of data acquisition, plotting on-line and historical trends. It carries out complete calculations to determine performance. A comprehensive HELP menu makes the system user friendly.
- Glass Tube Heat Exchanger

Note: Details of attachments can be made available on request.

Instruction Manual

- Self -explanatory a) Installation Manuals; b) Teaching & Experiment Manuals & c) Operating manuals are provided with each system. Detailed theory as well as practical exercises are included in the manual

Services Required

- Water supply and drainage arrangement
- Electric supply