HEAT TRANSFER IN CONCENTRIC TUBES

The system can show the working of a concentric tube exchanger.

The principle of the basic operation of any heat exchanger is the exchange of heat between two fluids, either because it is necessary to cool or heat some of them.

Therefore, in the exchanger there is always a hot fluid that decreases its temperature along with the same, transmitting that heat in favor of the other cold fluid in which it increases.

DL DKC071

TRAINING OBJECTIVES

- Energy balance in the exchanger
- Determination of the heat loss that occurs towards the outside.
- Calculation of the mean temperature logarithmic difference.
- Determination of the overall coefficient of experimental heat transfer.
- Determination of the theoretical global heat transfer coefficient.
- Calculation of effectiveness
- Heat transfer in concentric tubes: parallel flow
- Heat transfer in concentric tubes: countercurrent flow

Requirements:
- Power supply: 230V/50 Hz.
- Tap water inlet
- Drain

TECHNICAL DESCRIPTION

The trainer is composed of :

- Electric hot water pump
- Hot and cold sensors
- Touch screen computer
- Hot and cold water regulation valve
- Hot and cold flow meter
- Drain outlet

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THERMOTRONICS

TECHNICAL DATA

- Pump power: 55W
- Max flow .: 300 L / h
- Lifting height: 4.5m
- Power of the resistance: 3000W
- Thermostat: 30 ... 90ºC
- Hot water tank: 20.5 l

HOT WATER CIRCUIT

- Outside diameter tube 15 mm.
- Diameter inside tube 12.4 mm.
- Tube length - heat exchange: 2 x 740mm

COLD WATER CIRCUIT

- External diameter tube 22 mm.
- Diameter inside tube 20 mm.
- Tube length - heat exchange: 2 x 740mm

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