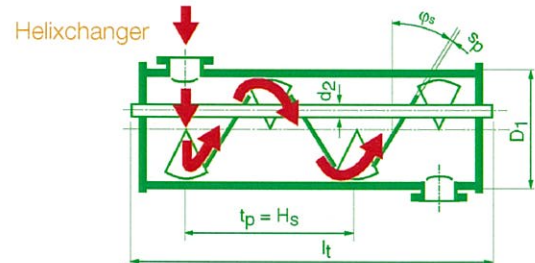
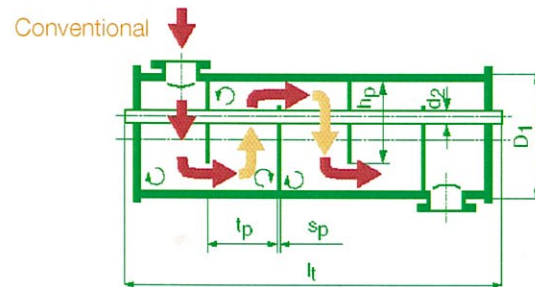


Since the founding of the Lummus Heat Transfer Division in 1934, the development of heat exchangers has commanded undivided attention within our company. The latest improvement in shell & tube heat exchangers, the advantageous helical baffle arrangement, is brought to the market by ABB Lummus Heat Transfer.

**THE CONCEPT** *Helixchangers* are a helically baffled shell and tube heat exchanger. Each baffle occupies about one quadrant of the cross section and has a certain inclination with the center-



line of the exchanger. Successive baffles are arranged in such a way as to create continuous helical and near



plug-flow conditions on the shell side.

Compared to the conventional perpendicular segmentally baffled

**ADVANTAGES** shell and tube heat exchangers, *Helixchangers* offer the following potential advantages:

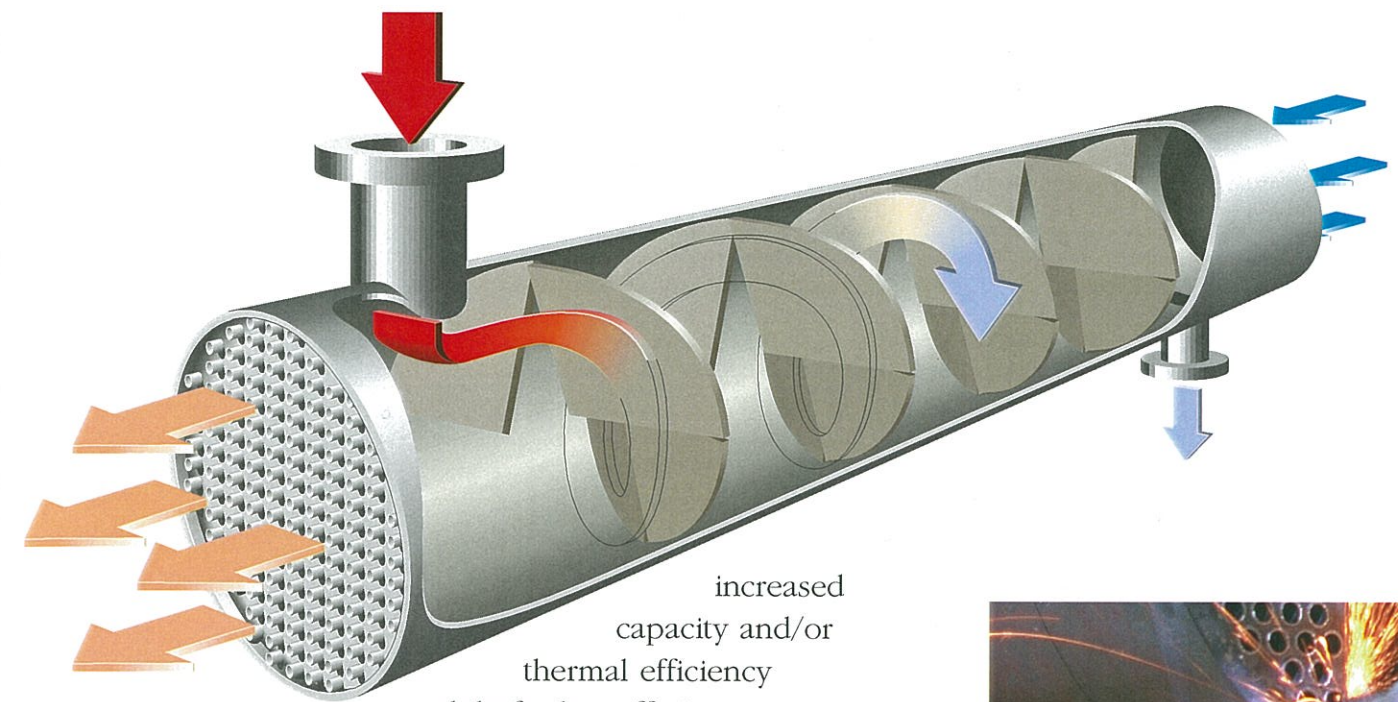
- Increased heat transfer rates/pressure drop ratio.
- Optional reduced investment costs.
- Reduced fouling.
- Reduced vibration hazards.
- Reduced maintenance costs.
- Long run length

**APPLICATIONS** *Helixchangers* are best suited for services in which the shell side heat transfer coefficient plays a determining role and/or shell side pressure drop or fouling reduction has an incentive. Shell side media may range from hydrogen-rich gas to water or viscous fluids with high fouling tendencies, in single or two-phase flow.

*Helixchangers* can be designed with TEMA E, J or special multi-pass shells with multi-pass tube bundles. Applications are in the refinery, petrochemical industry and power industry as well as in the offshore, paper and pulp and food business sectors. Some examples are:

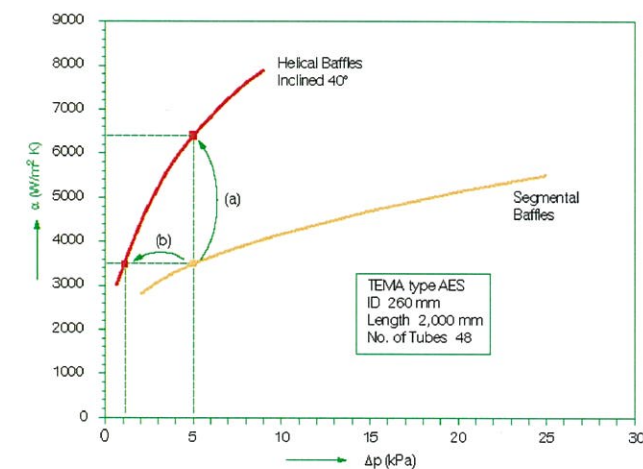
- Oil-oil heat exchangers.
- Gas-gas heat exchangers.
- Water-water coolers.
- Compressor aftercoolers.
- Gas-liquid heat exchanger.
- Reactor feed-effluent exchangers.
- Condensers.
- Reboilers.

*Helixchanger* can be attractive for new projects as well as revamps of existing units. New designs will be optimized with respect to possible reduced area or reduced energy cost, reduced pressure drop and related investment. A comparison will be made with conventional HTRI/HTFS designs if required. For revamps existing shells can be used with only tube bundle replacement, yielding



The possible advantages of the HELIXCHANGER with respect to shell side performance in water-water service are plotted below:

- (a) Increase in heat transfer, approx. 1.8 times
- (b) Decrease in pressure drop, approx. 4.5 times



**CUSTOMER SERVICE** ABB Lummus Heat Transfer and its *Helixchanger* licensees offer you engineering and manufacturing services on a worldwide basis. Please contact our nearest office and we will arrange a presentation or quotation or direct you to a licensed *Helixchanger* fabricator.

