

# HELIXCHANGER® Heat Exchanger

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The HELIXCHANGER® heat exchanger uses Lummus Technology's industry proven, enhanced heat transfer technology to provide solutions for common issues such as shell-side fouling, high pressure drop and vibration. It is a particularly efficient choice for expansions or plant upgrades with lean budgets and limited plot space.

Lummus Technology experience and know-how comes from more than 3,000 HELIXCHANGER heat exchanger installations in refining, power and petrochemical facilities worldwide. Whether the need is to extend the operating period between cleaning for a crude preheat unit, reduce capital cost in a petrochemical plant or improve energy efficiency for a feed-effluent tower, Lummus Technology's advanced heat exchanger technology can supply the solution.

## Reduces life cycle costs

An optimally designed HELIXCHANGER heat exchanger can be smaller and less expensive than a conventional segmental shell and tube heat exchanger, providing significant savings in capital costs, piping/structural costs and plot space. HELIXCHANGER technology also provides substantial savings in maintenance and operating costs for new plants and revamps of existing units. For feed-effluent applications, a HELITOWER ("Texas tower" with HELIXCHANGER bundle) can be designed at lower cost and better performance than a conventional "no tubes in window" design.

HELIXCHANGER heat exchangers are well suited for plant revamps where reuse of existing shells and piping results in significant savings in investment costs. Upgrading from conventional segmental baffles to HELIXCHANGER baffles provides increased plant capacity, while avoiding vibration problems. When vibration risk is severe, our "double helix" design is available to provide extra tube support without compromising performance.



## Key Features and Benefits

- **Helical flow pattern**
  - Eliminates dead zones and recirculating areas
  - Improves thermal effectiveness
- **Enhanced heat transfer**
  - Lowers capital costs
  - Improves energy recovery
- **Higher velocity**
  - Lowers fouling and extends run-length
  - Increases process capacity within existing layout
- **Better tube support**
  - Reduces vibration hazards
  - Lowers maintenance and total life cycle costs
- **Shell and tube design**
  - Can be used within existing shell
  - Available through a network of licensed fabricators





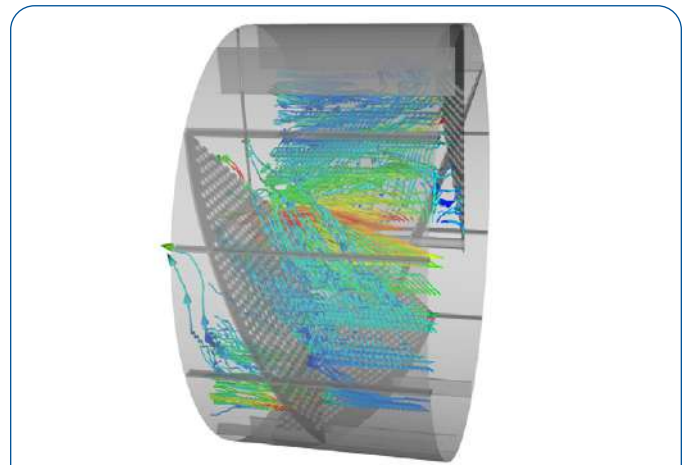
## Extends run-lengths between cleaning

While conventional, single segmental baffles are typically limited to low shell-side velocities, HELIXCHANGER baffles allow velocities up to 3 m/s without vibration damage and within the allowable pressure drop. Additionally, the advanced helical flow pattern limits “dead zones” and provides higher shear stress on the tube surface. The combination of higher velocity, increased shear stress and reduced dead zones significantly limits fouling deposit buildup, enabling run times to be extended by 2 to 4 times between cleaning.

## Offers flexible, worldwide supply

Lummus Technology’s network of qualified fabricators can deliver HELIXCHANGER heat exchangers to customers across the globe. To ensure consistent standards, all designs are reviewed by Lummus Technology, and backed up by laboratory and field data, including state-of-the-art computational fluid dynamics simulations. Our system offers the best of both worlds: advanced technology and competitive supply.

If you are considering a revamp of an existing unit or planning a grassroots plant, contact Lummus Technology to learn how our heat exchanger technology can benefit your next project.



*The patented HELIXCHANGER baffle construction is backed up by laboratory test data, state of the art computational fluid dynamics (CFD) and extensive field data.*

With a heritage spanning more than 110 years and a focus on innovation that has resulted in approximately 130 technologies and 3,400 patents, Lummus Technology is the global leader in developing and implementing process technologies. We are a Master Licensor of petrochemical, refining, gasification and gas processing technologies, and a supplier of catalysts, proprietary equipment and related services to customers worldwide.

For more information, visit [www.lummustechnology.com](http://www.lummustechnology.com)

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