The heat exchanger specialist

INNOVATING SINCE 1981

45 YEARS OF EXCELLENCE

A Member of HTRI

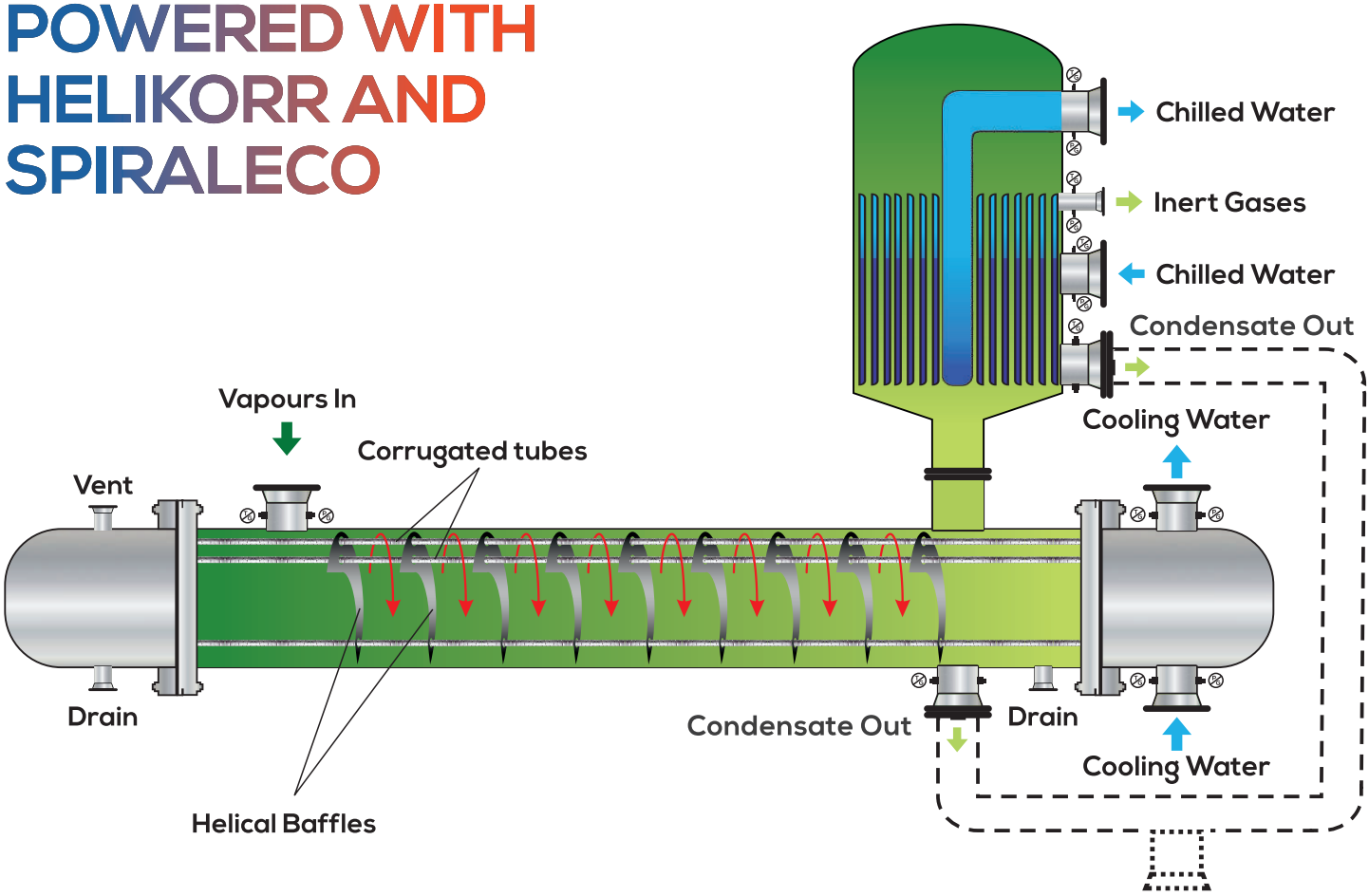
# REPLACE YOUR PRIMARY AND SECONDARY CONDENSERS WITH KCS*

## Introducing

# KCS™

## Condensing System

## POWERED WITH HELIKORR AND SPIRALECO



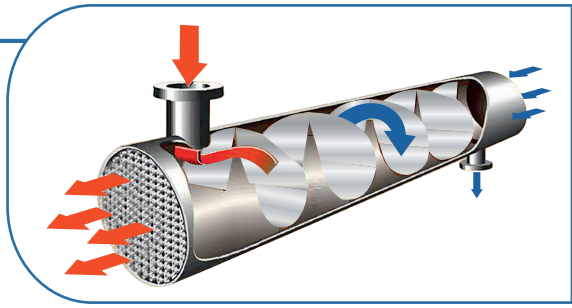

With thermal design and process guarantee

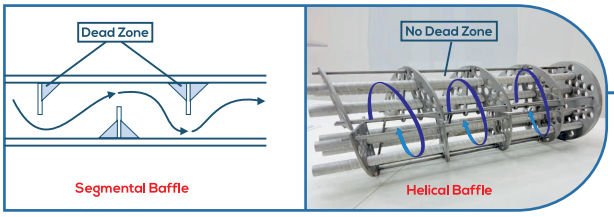
*Patent Applied

# Advantages

## 1 Higher Shell side Heat Transfer Coefficient

The Helical Baffle in the primary condenser promotes swirling movement of vapor on the shell side thereby generating higher turbulence which leads to a higher heat transfer coefficient, resulting in a compact heat exchanger.



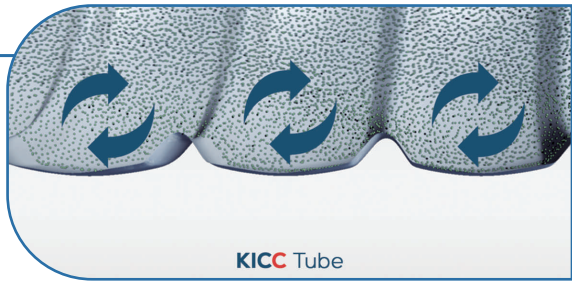


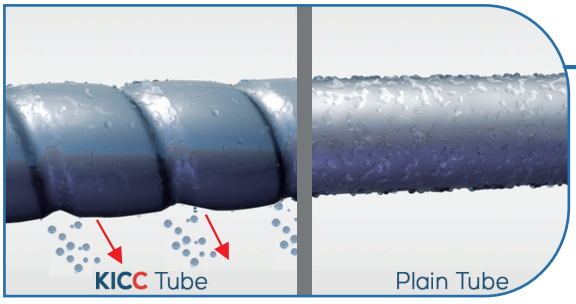

## 2 No Dead zones

Due to the unique swirling motion of vapor on the shell side, the vapor is forced to move through the dead zones which generally occur due to segmental baffles, eliminating the dead zones, resulting in a higher heat transfer coefficient.

## 3 Higher Tube side Heat Transfer Coefficient

The KICC Corrugated Tube enhances the tube side coefficient by generating turbulence inside as well as outside the tube resulting in a higher heat transfer coefficient.



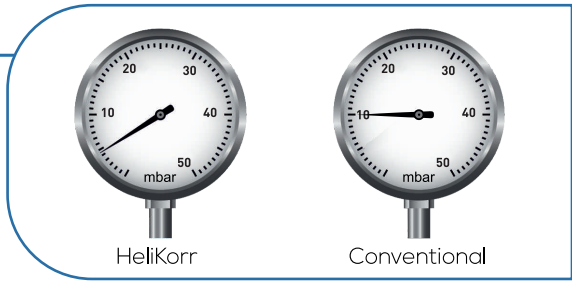




## 4 Enhanced Dropwise Condensation

Due to the inclined baffle, flow is directed over the tube surface at an angle which also helps to remove any condensate film attached to the tube surface. This enhances the heat transfer coefficient.

## 5 Low Pressure Drop in HeliKorr

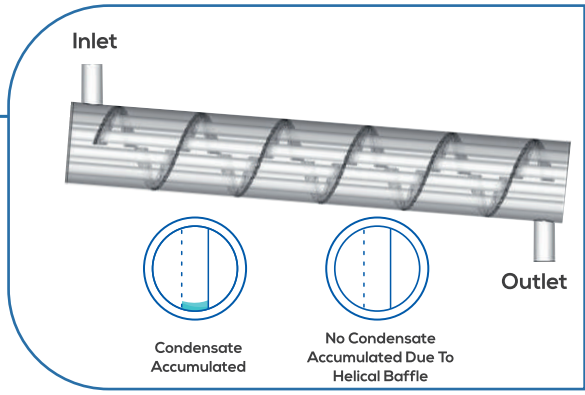
Helical baffle heat exchanger has low pressure drop on shell side when compared with segmental baffles. Due to the inclination in baffles less resistance is faced to the flow of the fluid resulting in the low pressure drop.

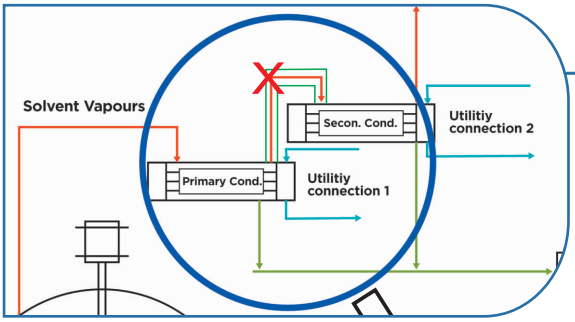


# Advantages

## 6 Better Drainability

Due to the helical baffle, the condensate does not get accumulated in the exchanger, providing excellent drainability.



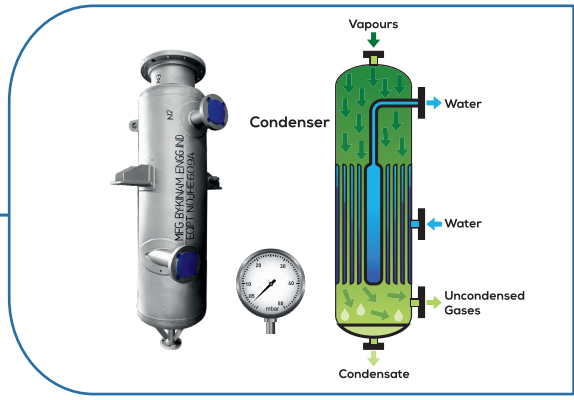



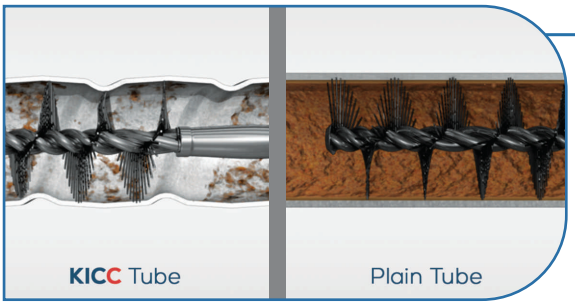

## 7 Elimination of Piping

Complete piping cost between the primary and vent condenser is avoided in Kinam's condensing system which leads to a smaller footprint and economical system.

## 8 Low Pressure Drop in Spiraleco

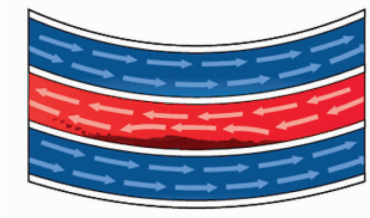
The Spiraleco has insignificant obstruction to the flow of vapor, resulting in negligible pressure drop, facilitating use in full vacuum conditions.




## 9 Reduced Fouling & Self-cleaning effect

The continuous curving flow channel in the Spiraleco causes a self-cleaning effect that prevents depositionfouling. Also the higher periphery turbulence in the Corrugated Tube does not allow the suspended solid particle in the tubes to settle thus giving a self-cleaning effect which results in reduced fouling.

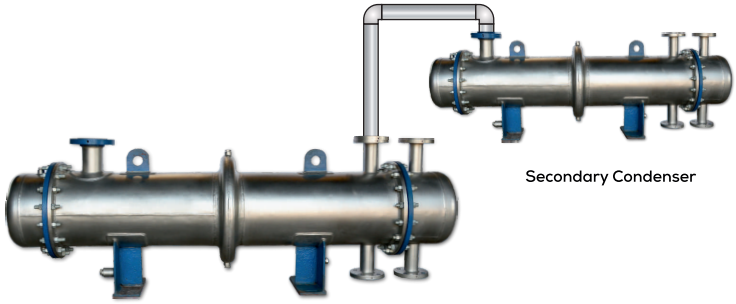


Self Cleaning Effect

## 10 Lower Operating Cost

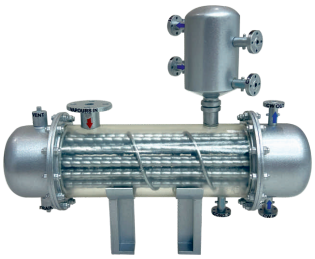
Lower operating cost: Reduced Maintenance & overall lifecycle costs along with Low Utility Cost

# KCS condensing system is specifically designed for the needs of the pharmaceutical industry



Secondary Condenser

Primary Condenser



| | Other Heat Exchangers | | Kinam's Condensing System (KCS) | |
|---|---|---|---|---|
| Heat Transfer Coefficient | Low | – | Very High | ++ |
| Size | Huge | – | Compact | ++ |
| Temperature Distribution | Non Uniform | – | Uniform | + |
| Solvent Recovery | Low | – | Very High | ++ |
| Fouling | High | – | Low | + |
| Pressure Drop | High | – | Low | + |
| Capex | High | – | Low | + |
| Drainability | Partial | – | Full | + |
| Operating Cost | High | – | Low | + |
| Piping | Required | – | Not Required | + |

**#EfficiencyMatters**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