

# Heat Exchanger



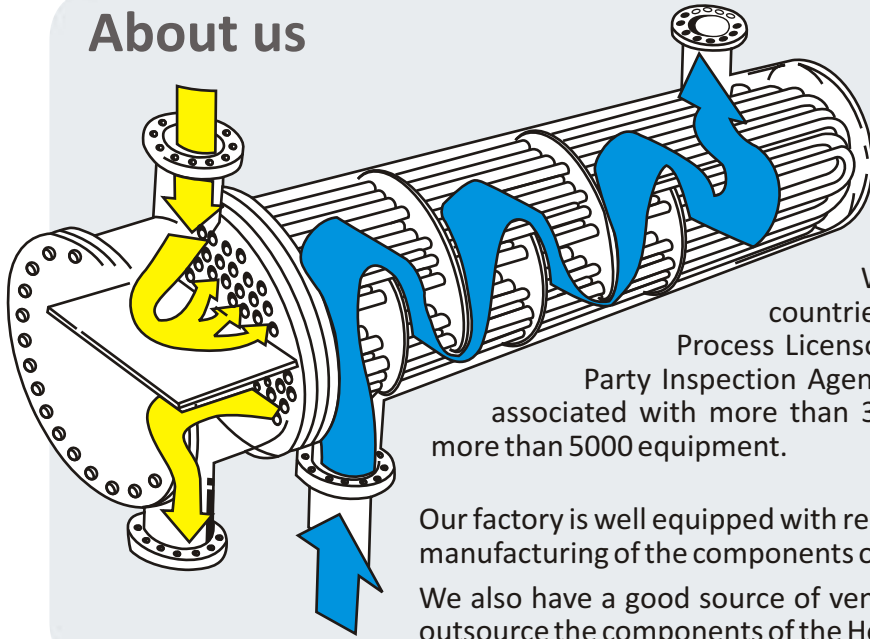
**Corrugated Tube Heat Exchanger**



**Shell & Tube Heat Exchanger**



## About us



Kinam, at its inception in 1981, had a humble start, catering to the needs of the clients, building equipment to the specifications laid down by the client. Soon, it was well known because of Quality and Timely delivery, a reputation we still hold and are proud of.

We now export our products to a number of countries, have worked with many Consultants, Process Licensors and Corporates, with or without Third Party Inspection Agencies. We have a huge client base and are associated with more than 300 reputed business houses, having sold more than 5000 equipment.

Our factory is well equipped with required machinery for material handling and manufacturing of the components of the Heat Exchanger.

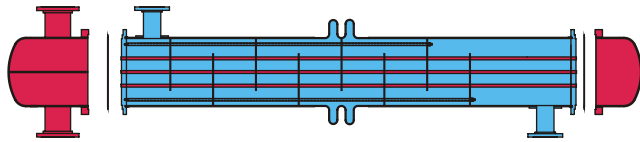
We also have a good source of vendors who support us in case we decide to outsource the components of the Heat Exchanger.

## Shell & Tube Heat Exchangers

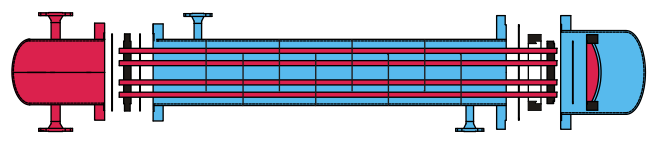
We have grown to become a leading specialist in the field of Heat Transfer. The largest Heat Exchanger we manufactured weighs 52 Tonnes and is 2200 m<sup>2</sup> in size. The operating temperature is 900°C.

Our typical manufacturing range includes:

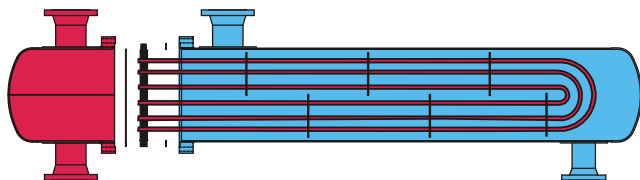
### Fixed Tubesheet



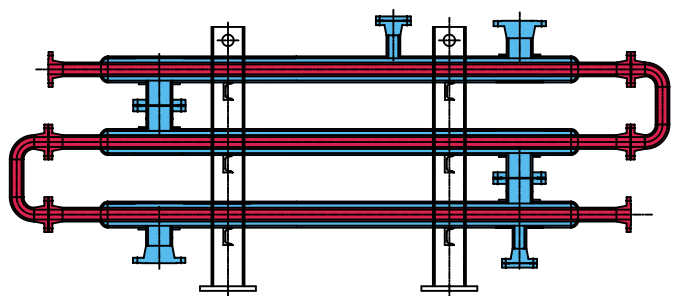
### Floating Head



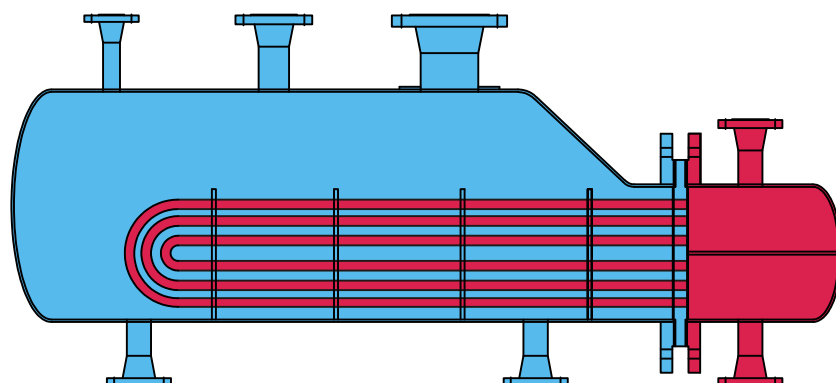
### 'U' Tube



### Hair Pin / Double Pipe



### Kettle Reboilers



## ✕Tube® Corrugated Tube Heat Exchangers :

- Compact Size
- Higher Heat Transfer Co-efficient
- Reduced Fouling
- Heat Transfer Area Reduced by 30 - 50%
- Cost reduction by 25 - 50%

In 2010 we have brought advanced technology in Heat Transfer, the ✕Tube® Corrugated Tube Heat Exchangers in collaboration with XLG Heat Transfer SL Spain. We have Designed, Manufactured and Supplied more than 600 ✕Tube® Corrugated Tube Heat Exchangers for various applications in almost all the industrial sectors.

### Technology & Advantages

Corrugations are produced by indenting the tube along the length in a helical pattern with the use of Special Machine designed for corrugation of the tube without thinning of wall or development of stresses in the tube.

The helical pattern of the corrugations and the optimal depth of the indentation causes a two regime flow in the fluid inside the tube, spiral at core and eddies at the periphery creating turbulence even at lower velocity of fluid. On the outer side of the tube, the fluid on the shell also experiences turbulence and the net resultant is higher Heat Transfer Coefficient.

In many cases, the heat transfer co-efficient is more than double.

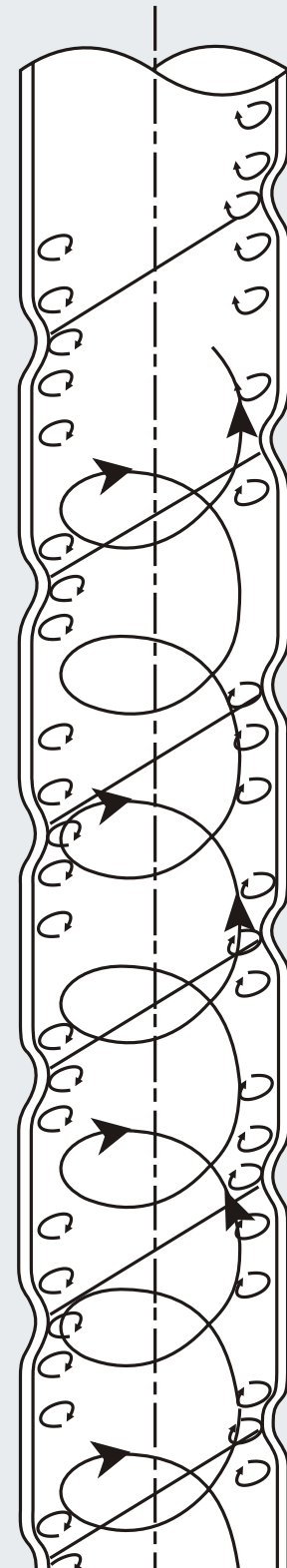
Higher Heat Transfer Coefficient means lower Heat Transfer Areas. The Heat Transfer Area required for ✕Tube® Corrugated Tube Heat Exchanger is lesser by 30% to 50%, sometimes as much as 60%.

Reduced Heat Transfer Area means a **Compact** heat exchanger which requires lesser space and has a Smaller footprint in your plant. It is also **Economical**. The cost of Corrugated Tube Heat Exchanger can be 25% To 50% less than the cost of a plain tube heat exchanger.

**Higher Peripheral turbulence** due to corrugation gives a self-cleaning effect which results in **Reduced Fouling** which means **Longer running times** without stopping for cleaning. The response to CIP cleaning / chemical cleaning is better in comparison to a plain tube heat exchanger. The turbulence also ensures that the fluid inside the tube is at a **Homogenous Temperature** across the cross section of the tube

**The Capital Cost, Operating Cost and the Maintenance is always lesser in a ✕Tube® Corrugated tube Heat Exchanger.**

✕Tube® Corrugated Tube Heat Exchanger can be manufactured to all the TEMA configurations (fixed tubesheets, removable tube bundle, floating head, U tube, etc. and the design can conform to ASME, TEMA, IS, PED, etc.



# Range of Heat Exchanger

## B TYPE



- Industrial applications
- All TEMA configurations in R, C or B execution
- Range: 1 m<sup>2</sup> to 4000 m<sup>2</sup>

## PHARMAGRADE



- Specially Built for Pharmaceutical and Biotech Industry.
- Surface Finish Mirror / Matt
- Manufactured as per GMP
- Option of Double Tube sheet execution available

## EXOTIC GRADE



- Explosion Bonded Tube sheet execution available.
- Necessary Welding Procedures and Technologies implemented for a faultless manufacturing.

## DOUBLE TUBE



- Tube in Tube Heat Exchanger
- A solution where counter current flow is essential
- Good for low flow rates
- Good for low LMTD applications

- All our Heat Exchangers are tailor made.
- Some configurations are also available as our Standard Heat Exchangers designed for faster delivery, conforming to ASME and TEMA standards.
- Our supply is complete with product dossier which includes all the documents and records as per the Quality Assurance Plan (ITP).
- Witness of the manufacturing at various stages / final stage is welcome. You may also appoint Third Party Inspection Agency for the same.

### Process Applications:

- Heating
- Cooling
- Heat regeneration
- Condensation
- Re-melting
- Evaporation
- Reboiler
- Flue gas recovery
- Pasteurizer & food grade application

### Material of Construction :

- Austenitic stainless steel (SS 304L / SS 316L / SS 321 / SS 316Ti / SS 904L etc.)
- Hastelloy
- Monel
- Inconel
- Titanium
- Cu-Ni Alloys
- Duplex Steel

To know more, contact ...



**The heat exchanger specialist**

### Kinam Engineering Industries

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