

**XTube**<sup>®</sup>

## Corrugated Tube Heat Exchanger



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

In Technical Collaboration with  
**XLG** Garpey Ingenieria SL., Spain.



The Next Generation Heat Exchanger

## About us

Kinam, established in 1981, is one of the leading designers & manufacturers of Heat Exchangers, Pressure Vessels & allied custom built process equipments.

Specializing mainly in Heat Exchangers, Kinam has supplied over **2600** various types of Heat Exchangers to clients ranging from Chemical, Petrochemical, Fertilizers, Refineries, Power plants, Pharmaceutical, Biotech, Cosmetics & Textile Industries.

Kinam has two well equipped manufacturing units - one located at Kurla (Central Mumbai) & another at Dapode (Mumbai - Nashik Highway) which is 10kms from Thane.

The manufacturing unit is approved by major consultants & the equipments undergo third party inspection from various TPI agencies/consultants like UHDE (India) Pvt. Ltd., Kvaerner Powergas (I) Ltd., Jacobs H & G Pvt. Ltd., Shroff & Associates, Dalal MottMacdonald Ltd., Chemtex Engineering Pvt. Ltd., TUV, Toyo Engg (I) Ltd., Chempro Inspection Pvt Ltd., Bureau Veritas, LRIS, SGS, etc.

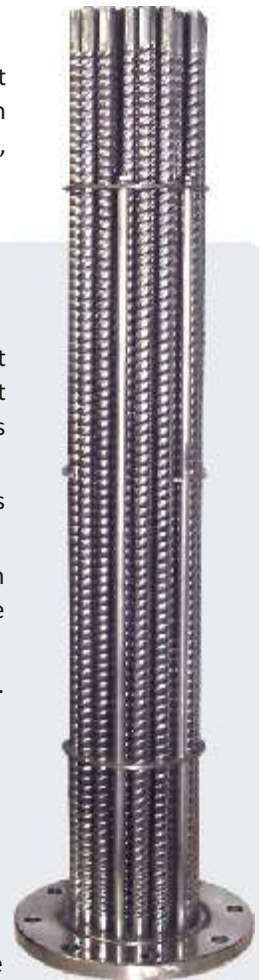


## Technology

Kinam has brought the expertise of manufacturing the **XTube®** range of Corrugated Tube Heat Exchanger in technical collaboration with **M/s. XLG Garpey Ingenieria SL., Spain** who specialize in Corrugated Tube Heat Exchanger and have worldwide presence in countries like Europe, Australia, America, Russia, Thailand, Malaysia, Singapore, Indonesia etc.

## Why corrugated tubes?

- **Higher heat transfer co-efficient:** XTube® Corrugated tubes increase the turbulence in the flow that enables a more effective mixing and agitation that generates a higher heat transfer coefficient compared to smooth tubes at the same conditions. In many cases, the heat transfer co-efficient is almost doubled.
- **Compact** heat exchanger. The heat transfer area of corrugated tube heat exchanger is 30% to 50% less than plain tube heat exchanger (% depends on case to case design)
- **Economical:** The cost of Corrugated tube heat exchanger is 25% To 50% less than the cost of a plain tube heat exchanger for the same duty. When exotic materials are used significant savings can be made on the overall cost of the unit.
- **Reduced Fouling:** Corrugation carries a self cleaning effect that reduces fouling on the tube surface. Less fouling means smaller heat exchanger and longer production cycles.
- **Low maintenance & operating cost.**
- **Small product and service hold up volumes** due to the compact size of the Heat Exchanger.
- **Longer running times** without stopping for cleaning. Higher response to CIP cleaning.
- **Homogenous Thermal treatment** due to the mixing capacity.
- **Smaller footprint** due to CTHE's smaller sizes.
- **Food products processed by CTHE's retain most of their natural properties & vitamins** because the heat transfer process is faster and so the product is subject to heat for less time.
- **Efficient:** In condensing applications, CTHE's are more efficient than the plain tube heat exchanger. The thin film formed over the tube by the condensing vapors breaks off due to the corrugation there by exposing fresh surface of the tube for heat transfer, hence making them more efficient.
- **Versatile:** CTHE's are versatile since they are able to process different products in the same installation.
- **Wide range of Material of Construction.**



# ×Tube® range of Corrugated Tube Heat Exchanger

## ×Tube® B TYPE



- These are fixed shell & tube type heat exchanger having multiple corrugated tubes.
- Application in Chemical industry, Petrochemical industry, Refineries, Paints, Oil, Soaps & Various industrial applications.
- Removable 'U' Bundle design is also possible.

## ×Tube® PHARMAGRADE



- Designed for use in pharmaceutical or biotech applications.
- All contact parts have a surface roughness  $Ra < 0.4 \mu m$ .
- Manufactured as per GMP standards.

## ×Tube® EXOTIC



- These are multitube CTHE made from exotic materials like Titanium, Hastelloy, Monel, Inconel & even Duplex steels.
- Welding done in special dedicated closed clean room area.
- Offers significant savings compared to plain tube heat exchanger or plate heat exchanger.

## ×Tube® MONOTUBE



- These are corrugated tube heat exchanger formed by two concentric tubes.
- The fluid to be treated is normally passed through the corrugated inner tube and the service fluid, providing the source of cooling or heating, passes through the annulus formed by the two tubes.

## ×Tube® FOODGRADE



- Design for use in sanitary application in the Food & Dairy Industry.
- Triplet tube and Multitube configuration.
- All contact parts have surface roughness of  $Ra < 0.8 \mu m$ .
- Application includes process such as pasteurisation, high temperature sterilisation, thermal treatment for aseptic packaging etc.

### ×Tube® Corrugated Tube Heat Exchanger can be used in following process:

- Heating
- Cooling
- Heat regeneration
- Condensation of Vapour & Gases
- Re-melting
- Evaporation
- Reboiler
- Pasteurizer

### RE-TUBING WITH CORRUGATED TUBES:

Increase the thermal efficiency of your existing old plain tube heat exchanger by re-tubing with corrugated tubes.

✕Tube® Corrugated Tube Heat Exchanger can be offered in following Material of Construction :

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

**Go Green** by opting for ✕Tube CTHE

**Save your Energy cost & Project cost substantially**

## Multisector Applications:



Chemical Industry -  
Organic & Inorganic



Pharmaceuticals  
& Biotech



Petrochemicals  
& Refineries



Power & Energy



Textile Industry



Environmental  
Control



Soap, Perfumes  
& Cosmetics



Fats & Oils



Food & Beverages



Automotive Paints

[www.kinam.in](http://www.kinam.in)

Call "The Heat Exchanger Specialist" to know more about ✕Tube® CTHE



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