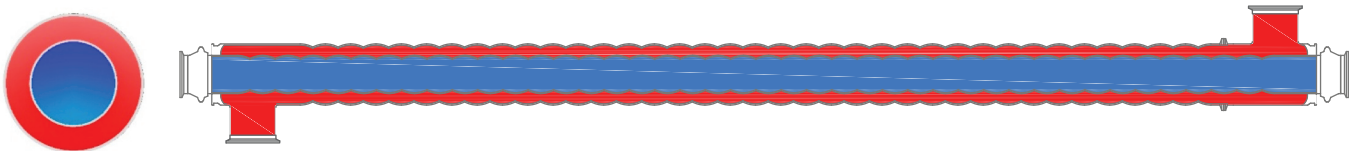


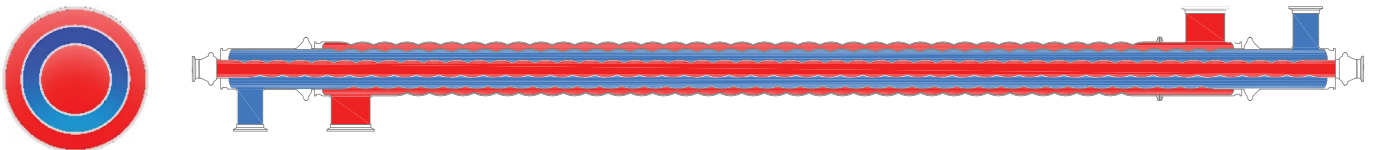
Sanitary Corrugated Tubular Heat Exchangers

Tubular heat exchangers heat and/or cool products via convection and conduction using a heating or cooling media. Tubular heat exchangers are mostly unobstructed internally making them a superior choice for processing fluids with particulates, fibers, chunks, and pulp.

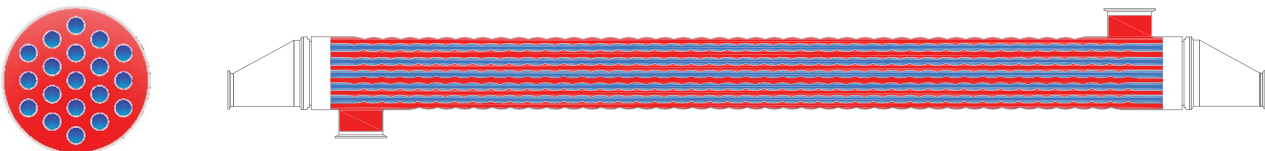
Thermaline's Floating Series Heat Exchangers consist of three styles:



Double Tube: Process moderate to low viscosity products with large particulates, pulp or fibers. (Salsa's, soups with chunks, blanch water with debris etc.)



Triple Tube: Process moderate to high viscosity products with medium to small particulates, pulp or fibers. (Concentrates, Purees, Smoothies, Condiments, Pulp, Baby Foods, Mash etc.)



Multi Tube: Process low to moderate viscosity products with small particulates. (Pulpy juices, Dairy Products, Slurries etc.)

For more information, call 800.767.6720 or visit our website

www.Thermaline.com

Engineering Your Tubular Heat Exchanger

Process Design Considerations:

Understanding your product is critical to a successful design.

Please fill out the following planning sheet as thoroughly as possible. If you are unable to answer any of the questions below, leave them open. You may be asked to send us a sample of your product and our lab technicians will confidentially develop a profile for your product. *This service is free.*

Company Name: _____ **Contact Person:** _____

Contact Phone: _____ **Contact Email:** _____

What product(s) will you be processing? (Describe in detail) _____

Product properties. (If you don't have accurate data, we may request a sample so we can derive the properties)

Viscosity @ Temp 1 _____ Temp 2 _____ Temp 3 _____

Thermal Conductivity _____ Specific Heat _____ Specific Gravity _____

What is your process? (Brief Description i.e. Heating, Cooling, Pasteurizing, Recirculating, Batch etc.)

What is the temperature profile of the product? F° C°

Entering Temperature into HX: _____

Exiting Temperature from HX: _____

Pasteurizer/Heat Treat Temp? (Leave blank if you are only heating or cooling): _____

What is the flow rate of the product?

Continuous Flow: GPM LPM LBS/HR _____

Batch Size: Gallons Liters: _____ Time to heat/cool: _____

What is the profile of the available Media? Note: If your plant has heating or cooling media circuits available, please describe also state any flow and/or pressure loss concerns.

Thermaline does not recommend nor offer direct ammonia cooling in process heat exchangers. We do offer and recommend an indirect loop. If no media available, please write "advise" in any media box and Thermaline will recommend optimal.

Description (i.e. tons of refrigeration, HP of chiller, header size, hot water source, are there other processes drawing from the same source?)

What is the media used to heat or cool? (i.e. Water, glycol, oil etc.) _____

What is the available temperature of the media? _____

(Optional) What is the media used to heat or cool circuit 2? (i.e. Water, glycol, oil etc.) _____

(Optional) What is the temperature of circuit 2 media? _____

Mechanical Design Considerations:

Our Application engineers will need the following information to provide you with a timely, accurate design and proposal for your project.

Caution: Removal of tubes for maintenance and cleaning requires clear space equal to the length of heat exchanger.

Height & Width: Height and width of the assembled heat exchanger varies with the amount of tubes.

Check one	Tube Lengths Nominal	Actual Overall Length	Height & Width
<input type="checkbox"/>	10'	12'	TBD Based on Process Requirements
<input type="checkbox"/>	20' (Standard)	22'	TBD Based on Process Requirements
<input type="checkbox"/>	30'	32'	TBD Based on Process Requirements

Custom Lengths: Custom lengths are also available to fit your space requirements. *Note: Custom lengths are cut from nominal size tubing often leaving wasted material.*

Surface Finish: 32Ra unless otherwise specified here. Other surface finish: _____

Important: Please Read and Understand. Measuring the space you have available to install the Thermaline tubular heat exchanger is critical.

Where will the heat exchanger be installed? (Brief Description i.e. outside, in processing room, on mezzanine)

Notes: Will the finished heat exchanger fit through your doors? In addition, be sure to calculate space for removal of tubes for maintenance and cleaning. This will require clear space equal to the length of heat exchanger.

Room length where the heat exchanger will be installed: _____

Room height where the heat exchanger will be installed (reference door opening): _____

Corrosion Considerations. Different fluids are compatible with different materials used in heat exchanger construction. Thermaline manufactures heat exchangers in many different alloys including, but not limited to (select alloy to be quoted):

304 SS 316 SS AL6XN/SMO 254 Hastelloy C22/C276

Other _____

Note: Thermaline manufactures heat exchangers and does not produce the raw material, steel mills do. Corrosion is a result of material incompatibility to the fluids processed. We can help identify a material best fit for processing your product, but MATERIAL SELECTION IS ULTIMATELY THE CUSTOMERS RESPONSIBILITY! Thermaline is not liable for a corrosion attack.

Describe your corrosion concerns (e.g., Do you currently experience corrosion in your piping or equipment?)

Need Assistance?

Check this box if you would like a quote for a 3rd party metallurgical evaluation

Other Options and Considerations:

Customizing the Thermaline Floating Series Tubular Heat Exchanger is easy.

- Turnover Package quote includes PMI (Positive Material Identification), MTRs (Material Test Reports), Layout Design, Surface Finish Certificate, and QC Certificate
- Passivation with passivation certificate

Frame Options *(check one)*

- Pad feet with mounting holes for bolting to structures or anchoring to concrete floors *(Figure 1)*
- Adjustable freestanding sanitary ball feet *(Figure 2)*
- Casters for mobility throughout your plant *(Figure 3)*
- Wall mount *(Figure 4)*



Fig. 1. Padded Feet



Fig. 2. Sanitary Ball Feet



Fig. 3. Casters

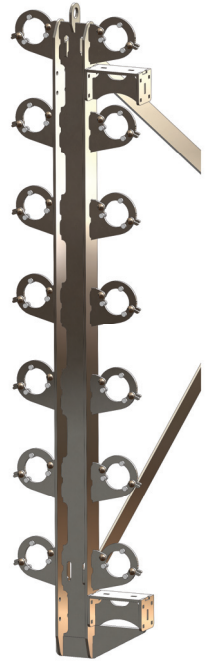


Fig. 4. Wall Mount

Insulation Option

- Individual tubes insulated with 1-1/2" thick Polyisocyanurate insulation with PVC jacket.



Cross Contamination Tester (CCT)

- Periodic testing for internal leaks



Once you've completed this questionnaire push button below to submit.

SUBMIT