



THERMALINE

INNOVATIVE HEAT TRANSFER SOLUTIONS

Floating Series Corrugated Tubular Heat Exchangers

DuoFloat Heat Exchanger
TriFloat Heat Exchanger
MultiFloat Heat Exchanger

Salsas



Juices



Condiments



Purees



Baby Foods





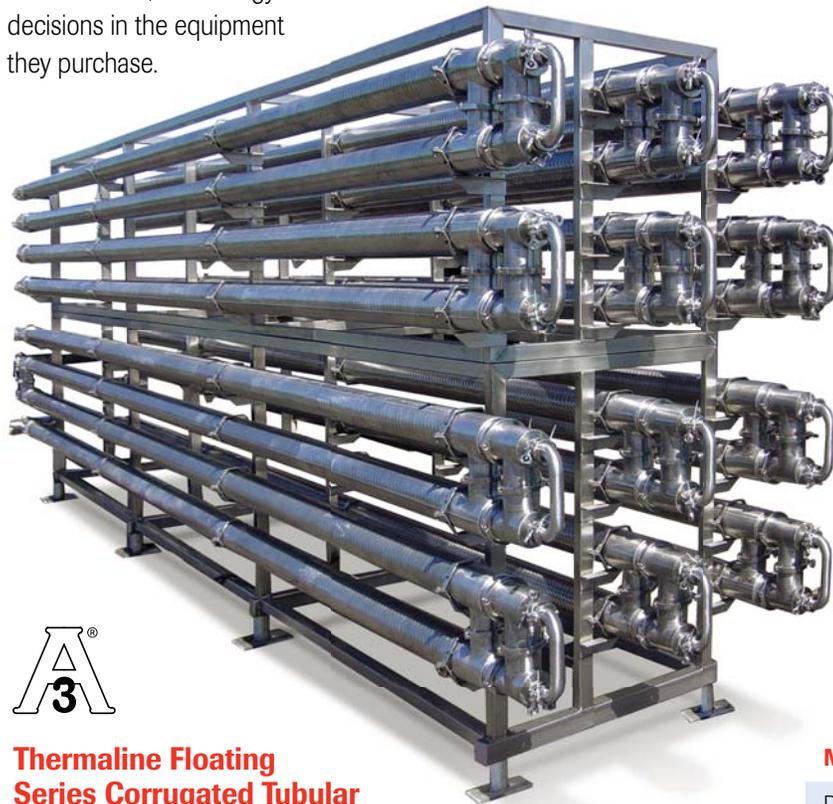
THERMALINE

Thermaline Floats into the Future

INNOVATIVE HEAT TRANSFER SOLUTIONS

Thermaline Inc. is an innovative heat transfer solution provider for the food, beverage, and pharmaceutical industries. Processors worldwide have come to depend upon Thermaline's quality product line, solid customer support, and practical industry knowledge to meet all of their heat transfer needs.

Thermaline's relentless pursuit of operational excellence is evident in every piece of equipment we manufacture. Our passion for this achievement ultimately gives our customers the competitive edge in their industry by providing intelligent, well-informed, and energy-conscious decisions in the equipment they purchase.



Thermaline Floating Series Corrugated Tubular Heat Exchangers

Floating: The innovative design allows the tubes to freely expand and contract independently which diminishes material fatigue and failure. Thermaline's Floating Series completely eliminates failure-prone expansion bellows and rigid welds on all models.

Operational Simplicity: The product flow and heating/cooling media flow are separated in concentric lengths of sanitary tubing. The unit has no moving parts, is easy to clean, easy to inspect, and easy to maintain. Tube ends, with their sanitary clamp design, can be easily removed for QC inspections and maintenance.

Go Green: Tubes can be arranged in either direct or indirect regeneration. Direct product regeneration can yield more than 80% in energy savings. Indirect product regeneration can recover energy from thermal waste streams in other areas of your facility, reducing thermal pollution and increasing energy savings.



Corrugation: The heat exchanger surface is shaped into turbulence-inducing, alternating parallel grooves and ridges to increase heat transfer efficiency. Inducing turbulent flow results in less total surface area required to achieve the desired thermal results. Turbulent flow promotes thorough mixing of the product and even thermal disbursement without compromising product integrity.

Sanitary: Thermaline's Floating Series tubular heat exchangers meet or exceed 3-A tubular heat exchanger design requirements.

Safe: The strategically-positioned elastomers eliminate the possibility of product intermixing. If a leak were to develop from an elastomer failure, the fluid would be vented to the atmosphere so it can be quickly identified and repaired. The Floating Series eliminates blind, internally-positioned elastomers that can lead to cross contamination.

Model Specifications

Model	Tube	Size	Pressure
Double Tube	Inner	1 to 4 inches 25.4 to 101.6 mm	1100 to 525 psi 75 to 35.7 Bar
	Outer	1.5 to 6 inches 38.1 to 152.5 mm	850 to 180 psi 57.8 to 12.2 Bar
Triple Tube	Inner	1 to 3 inches 25.4 to 76.2 mm	1100 to 550 psi 75 to 37.4 Bar
	Middle	2 to 4 inches 50.8 to 101.6 mm	830 to 185 psi 56.5 to 12.6 Bar
	Outer	2.5 to 5 inches 63.5 to 127 mm	320 to 180 psi 21.8 to 12.2 Bar
Multi Tube	Inner	0.5 to 1 inches 12.7 to 25.4 mm	830 to 515 psi 56.6 to 35.1 Bar
	Outer	2.5 to 6 inches 63.5 to 152.5 mm	250 to 125 psi 17 to 8.5 Bar

Tube Materials: 304, 316, AL6XN, other materials available upon request
Elastomers: NBR, EPDM, Viton **Lengths:** 10' - 20' - 30'



DuoFloat

Sanitary corrugated floating double-tube heat exchanger. Simplistic by design, two concentric tubes of varying size are positioned one inside the other.

- Excels at processing fluids of moderate viscosity with medium to large particulates
- Proficient for direct product regeneration
- Tubes float independently of each other, greatly increasing equipment life
- Superior product identity



TriFloat

Sanitary corrugated floating triple-tube heat exchanger. Three concentric tubes of varying size are positioned so the media flows inside and outside of a product zone.

- Ideal for higher viscosity fluids with medium to small particulates and fluids with large viscosity changes
- Proficient for direct or indirect product regeneration
- Tubes float independently of each other, greatly increasing equipment life



MultiFloat

Sanitary corrugated floating multi-tube heat exchanger. Multiple product tubes within a common media tube.

- Ultimate solution for thin fluid processing
- Large heat transfer area in a smaller space
- Tube bundle floats independently of the shell
- Tube bundle can be easily removed for inspection and maintenance



SteriFloat

UHT aseptic processing requires sterile, ultra-sanitary conditions to process food products for extended non-refrigerated shelf life. Aseptic processing is the optimal environment to retain vital nutrients and flavor without using preservatives. Thermaline SteriFloat is engineered for today's aseptic processors, with all the benefits of the Thermaline Floating Series corrugated tubular heat exchangers.

- Aseptic steam purge and leak detect on floating connections.
- External elastomers eliminates the possibility of cross contamination.
- Aseptic transition joints that are easily removable for inspection.
- Available in all models.

Versatility

Adding the Duofloat inline mixer to your double-tube heat exchanger enables you to tune your processing needs to a variety of products. When processing fluids with large particulates, remove the DuoFloat inline mixer to maintain product integrity and then easily reinstall the mixers to ensure thorough heat transfer on your other viscous products.



MultiSafe

When product integrity is an absolute necessity, Thermaline offers a Sanitary corrugated floating multi-tube heat exchanger with additional safety features. The product tube face is separated from the media tube face, eliminating the possibility of product cross contamination. Includes all of the benefits of a Multifloat plus the following:

- Media and product leaks are vented to atmosphere
- High performance plastic baffles extend tube life

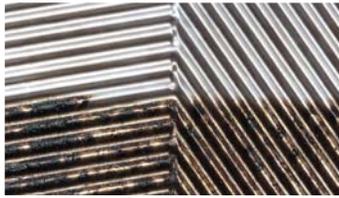


Additional Thermaline Products

Thermaline Sanitary Plate Heat Exchangers

Thermaline offers a comprehensive plate heat exchanger line that will accommodate today's most demanding processing requirements. Thermoclip plates range from fractional surface area plates for micro flow rates to plates with excess of 6 ft² and 6" ports for high volume production. With multiple plate patterns, corrugations, draw depths, and materials, we can optimize each unit to operate at peak efficiency, lowering the cost of ownership, but more importantly providing long-term energy savings.

- 3-A and FDA compliant
- Adhesiveless clip gasket system
- Multi-section capable
- Tie-bolt and automated frames



Thermaline Reconditioning Service

Thermaline can clean, inspect, and re-gasket your plates like new. Our reconditioning facility runs 24 hours a day to keep your plant up and running smoothly.

- Factory-certified plate reconditioning
- Using only high quality OEM replacement gaskets
- Proactive preventative maintenance programs
- Comprehensive on-site heat exchanger service and repair
- Servicing all makes and models

Real World Testing Facilities

Application of our products to our customer's specific needs often requires practical testing using real world parameters. Our experienced staff of application engineers and their extensive testing facilities stand ready to help. Test process concepts by means of a thorough theoretical study, using computer analysis and in-depth knowledge of process technologies.



Hot Water Sets

- Full range of models from 25 gpm to 750 gpm
- Turns steam into clean hot water for product or process heating
- Full controls package available or integrate with your process controls



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