

Spiral Fin Tube Welding System

Thermatool Spiral Fin Tube HF Welding System

Reduce costs and assure availability through vertical integration

As cogeneration, combined cycle and other heat recovery systems (HRS) accelerate the long-term demand for spiral fin tubing, boiler manufacturers and other suppliers of HRS equipment can achieve significant cost savings and shorter shipment cycles through vertical integration – installing or expanding their existing fin tube production capacity. Many companies have selected Thermatool, the world leader in welded spiral fin tube production technology and equipment, to attain these benefits.

Your best source for welded spiral fin tube systems

Thermatool has supplied equipment for 40 spiral fin tube mills worldwide.

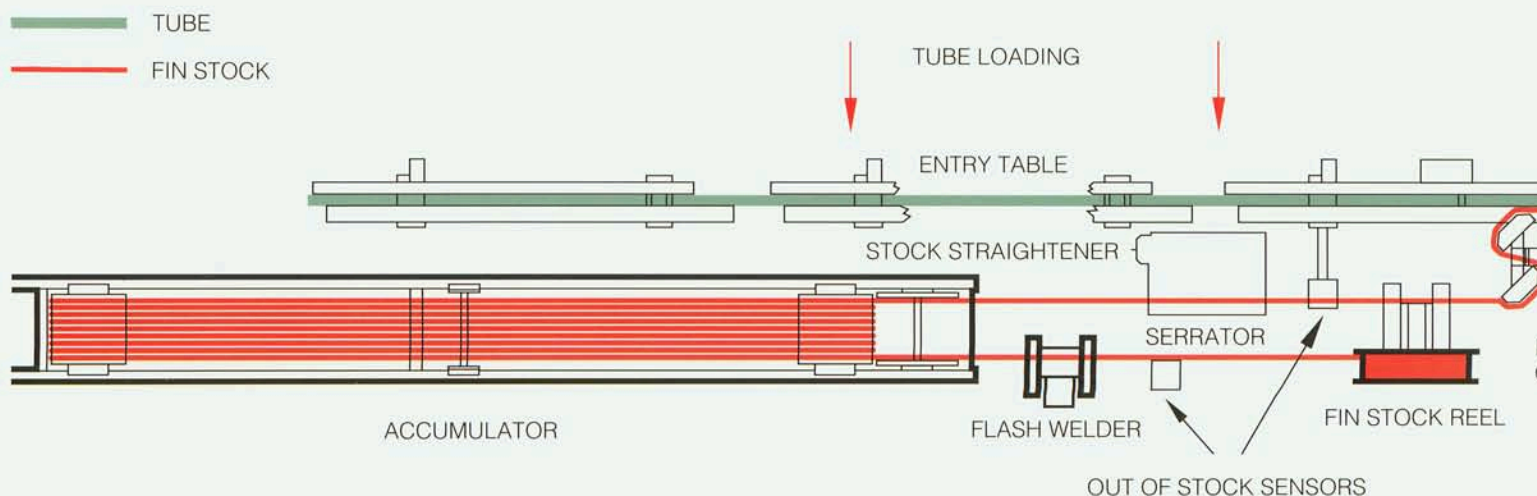
Thermatool's spiral fin tube production system offers several significant advantages to producers

- High-speed output
- High-quality forge weld
- Minimum operator involvement
- Production flexibility
- Uniform product
- Minimum setup and changeover times
- Comprehensive technical support

Highest-quality tube finning

The key to quality in high-performance spiral fin tube production is welding – an area where Thermatool experience and expertise are unmatched. Thermatool's HF contact welders ensure precise, durable welds on a variety of metals including carbon, alloy and stainless steel – at the industry's highest output rate.

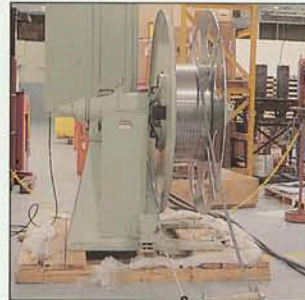
A computer integrated, high-quality, high-throughput welded spiral fin tube production system



System components:

Thermatool TMC Contact Welding Unit

Thermatool's ThermaMax contact welding unit consists of a solid-state HV power supply, high-frequency oscillator, and heat exchanger.



Fin Stock Reel

A single stock reel capable of accommodating up to 2,000 pounds (900 KG) of coiled stock is provided on lines without an accumulator. The reel stops via an automatic brake when the mill is halted. (A variable speed drive and larger size reels are also available upon request).

Flash Welder

This manual flash welder is mounted on tracks and is capable of: shearing the fin strip ends squarely, flash welding the ends together, annealing the weld to ensure weld area ductility, and grinding the weld area to remove excess flash.



Fin Stock Straightener

An unpowered straightener minimizes any irregularity or coil set in the fin strip as it exits from the payoff reel. The rolls for the straightener are adjustable to accommodate the full range of fin strip sizes.



Thermatool MillTrack: Computer-Based Control Station

The console contains a man machine interface (MMI) system consisting of an industrial personal computer (PC) with a color monitor, keyboard, and programmable message display (PMD). MillTrack provides central system diagnostics. Computer input allows quick product changeover.

Fin Compensator

The pneumatically controlled compensator controls the tension in the fin strip when starting the mill.

Tube Entry Table

The entry conveyor, sized to the customer's needs, receives individual tubes from the customer-supplied tube loading rack and indexes, feeds, and supports the tube as it is being finned.

Weld Area Fixture (shown on front cover)

This unit restrains the tube in the weld area during the finning operation, orients the fin strip at the proper helix angle, applies forging pressure to the fin strip, and supports the weld head leads and weld contact assembly.

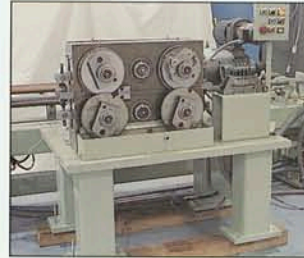
Carriage Assembly and Outlet Table

The D.C. motor driven carriage clamps and pulls the tube through the weld fixture. The outlet table supports the welded tube during the finning operation and discharges the welded finned tube onto the customer-supplied storage or conveyor equipment.



Operator Pendant Station

A pendant station with the necessary operator push-buttons, indicator lamps and PMD is located adjacent to the weld fixture.



Fin Serrator (Optional)

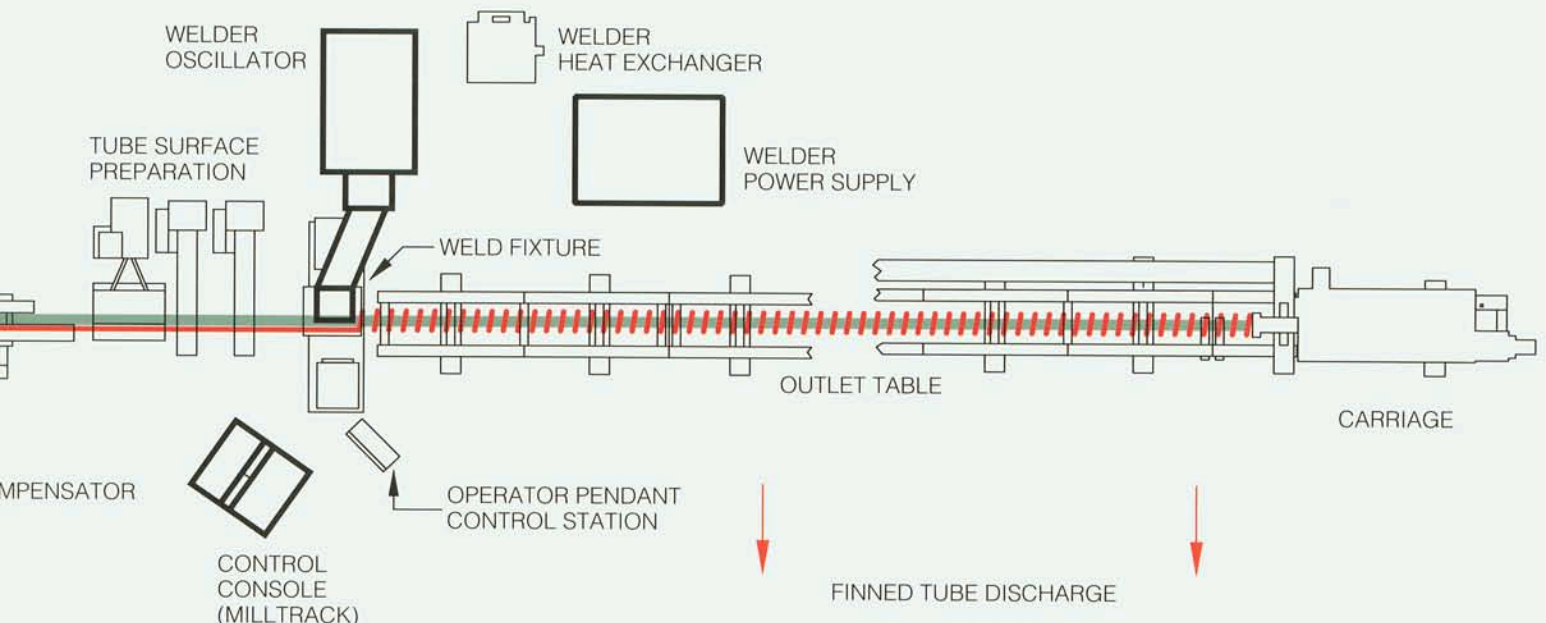
Required when product specifications stipulate serrated fin. The serrator slits the fin two thirds of its total width enabling the fin stock to open as it is wound around the tube at the weld point.

Tube Surface Preparation (Optional)

This equipment permits high weld quality and product throughput when the tube feed stock has excessive rust, coatings, and surface pitting.

Accumulator (Optional)

The accumulator has a minimum strip storage capacity of 400 M (1,320 ft.). The payout speed is a maximum of 100 M (330 ft.) per minute with replenishing speeds of up to 200 M (660 ft.) per minute. The accumulator is required to achieve weld rates of 600 RPM.



General Specifications

(These sizes are general. Other size measurements can be engineered and manufactured to customer requirements).

Tube diameters: 1.0" to 4.5" (25.4 MM to 114.3 MM)

Tube wall thickness: .070" to .375" (1.8 MM to 9.5 MM)

Fin thickness: .036" to .100" (0.9 MM to 2.5 MM)

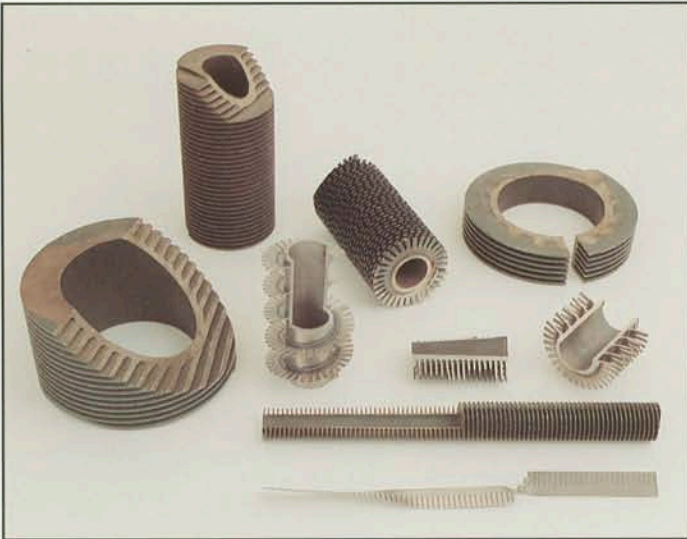
Fin height (as welded): .5" to 1.00" (12.7 MM to 25.4 MM)

*Fins per inch: 1-7 fins per inch (25.4 MM)

Length of finished
finned tube: 10' - 60' (3 - 18 meters)

Material: Boiler pipe, carbon steel,
alloy steels, stainless steel 409,
fin-carbon steel 409

*Increasing fins/inch is due to decreasing fin thickness.



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