

DELTA-FIN™ TF

Under Bench Fin Tube

The DELTA-FIN™ TF aluminum under bench heating system heats the greenhouse using water temperatures up to 230°F.

This system works by heating

the air around the fin tube and distributing heat through natural convection and radiation through the plants.

The versatility of the materials allows the grower to place the heat where it is needed, at the plant level. By placing high grade aluminum under or around the crop to be heated, the tubing, warm from the water running through it, radiates heat to the soil, roots and foliage of the crop.

Because of the superior transfer capabilities of the DELTA-FIN™ TF, even temperatures are maintained throughout the system and the growing media. The end result is an envelope of warmth around the entire crop, which you control.

Two sizes allow for various design considerations:

- TF1 Two fin aluminum material with 3/8" fins is ideal for climates that have low heat requirements or need closer temperature control like plug production.
- TF2 Two fin aluminum material with 1" fins has the added surface area for more heat transfer for higher heat requirements.

External coupling design enables unrestricted water flow through the system allowing for longer runs and more even heat. No low flow high flow conditions inherent of an internal coupler.



DELTA-FIN™ TF advantages are:

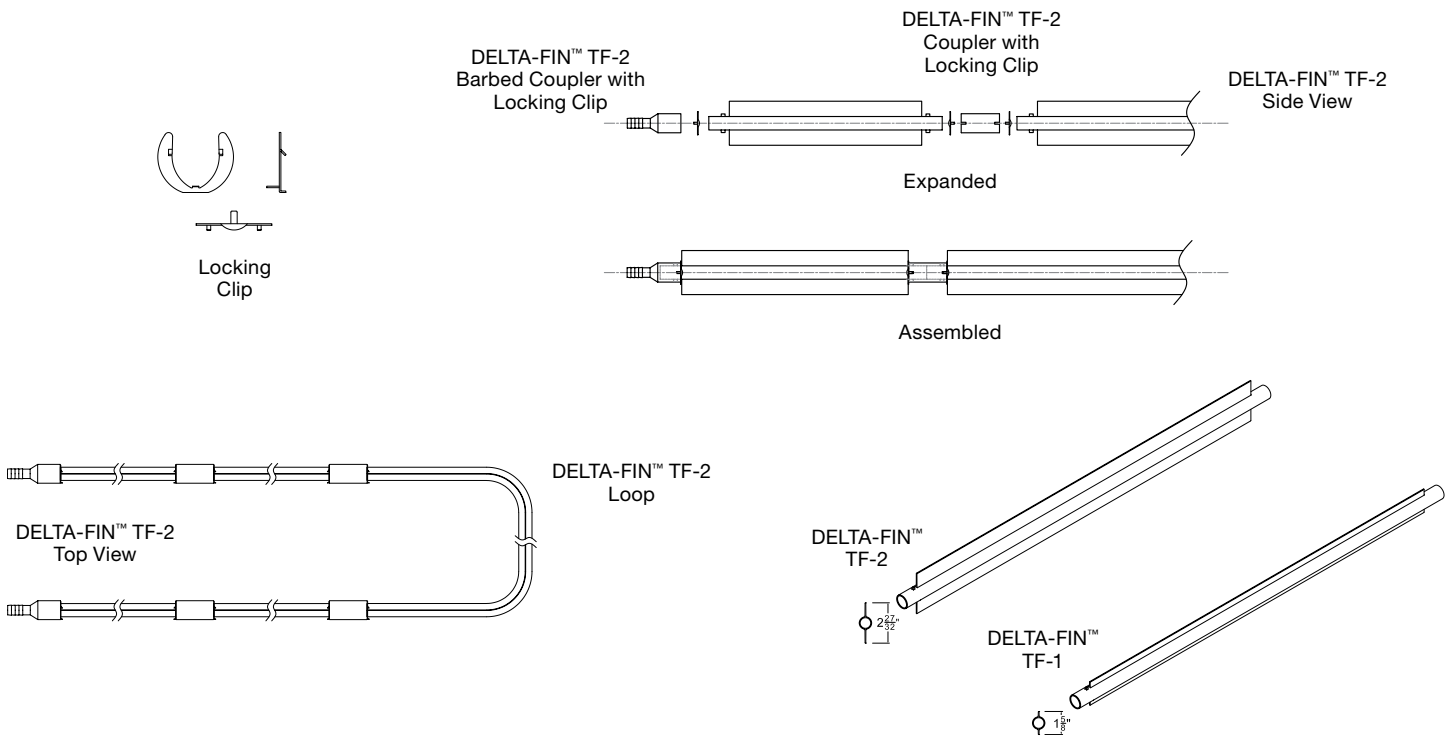
- Lightweight aluminum construction allows for hanging material from benches without special support.
- Rugged construction can be supported on 12-foot OC Hangers.
- External coupling technology for easy installation.
- Requires NO special tools for installation.
- Does not restrict flows like internal couplers.
- Does NOT require Tek screws to hold material together.
- All aluminum return loops make installation ridged. No rubber hose required for loops.
- Special barb connection to mainlines using a minimal hose connection.
- Low water volume allows for quick response time.

Delta T Solutions can provide a performance engineered heating system that can meet the needs of any grower. Performance packages include: Heating system components (heat source, controls, radiation), performance engineered drawings (pipe layouts and electrical diagrams), installation supervision and installation (as required).

Specifications:

The radiating material shall be the following components manufactured by Delta T Solutions, Inc:

- The DELTA-FIN™ TF1 (3/8" fin) and TF2 (1" fin) are 7/8" OD aluminum tube with two integral fins that run parallel to the tube. Each fin tube length has each end prepared to accept the DeltaTwist™ coupler provided.
- Each return loop are DELTA-FIN™ TF1 or TF2 bent to size based on required spacing.
- Connection to the main lines is a special barb connection made of the 7/8" TF1 material (special bends and lengths are available).
- Coupling is a external slip on compression style with two high temperature "O" rings rated for -60°F to 230°F. (Maximum pressure rating -100PSI at 230°F) — coupler patent pending.
- Material is supported from a bench frame using stainless steel jack chain.



DELTA-FIN™ TF Ratings

Tube Size & Material	TF - BTU/HR/FT Output (Average Water temperature)											
	130°F	140°F	150°F	160°F	170°F	180°F	190°F	200°F	210°F	220°F	230°F	240°F
DELTA-FIN™ TF1	50	60	75	85	95	105	115	125	140	155	—	—
DELTA-FIN™ TF2	75	85	105	120	135	150	165	180	200	220	—	—

Maximum water velocity 4.0 ft/sec. Maximum water pressure - 100 PSI at 230°F. Maximum water ph - 9.0.

All material is shipped in 20-foot lengths with each end ready for coupling. Special lengths available upon request.

Contact your local Delta T Solutions Representative for additional details.

