

# DELTA T SOLUTIONS

## DELTA-TUBE™ SD EPDM Rubber Tube In Ground Heating

The **DELTA-TUBE™ EPDM** rubber tube heating system heats the greenhouse starting at the soil level. Heat rising from the bench warms the soil and plant roots. By controlling the soil temperature both rooting and plant growth can be accelerated.

Tubing spaced 2 to 3 inches apart provides even temperatures to the soil and provides the optimum growing environment for propagators.



Seed germinators and plug producers have found that by heating the soil they achieve a higher germination rate and quicker production time. Growers have found a reduction in rooting cuts by heating the soil directly.

This system has proven to provide at least 20% or more fuel savings over conventional forced air heating.

DELTA-TUBE™ EPDM rubber tubing is ideal for use in a hot water heating system due to its resistance to temperature and chemicals and its superior heat transfer capabilities.

Small tube design reduces water volume and enables the system to respond quickly and efficiently.

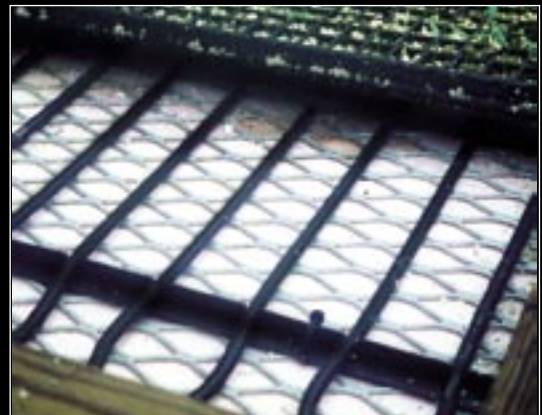
The Delta Tube manifolds use a unique plastic fitting that is pressed into the PVC pipe creating a water tight fit that is guaranteed not to leak. Each fitting is pressed into the top of the manifold so that the tubing is easily installed. Each manifold is custom manufactured for each system.

The exclusive tubing spacers secure the Delta T tubing at the optimum design spacing. They are cut to the bench width for ease of installation.

### Specifications:

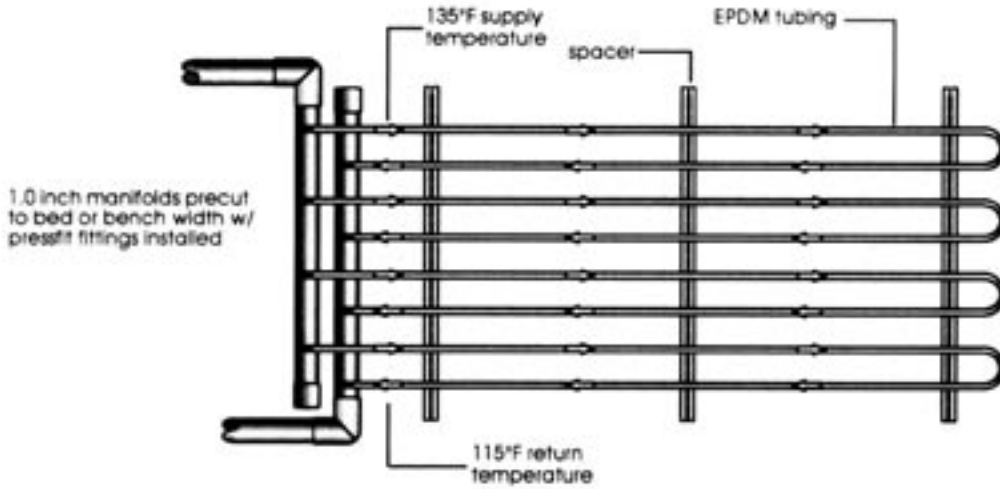
The hydronic heating system is the DELTA-TUBE™ SD EPDM rubber tube system using 135°F water temperature, and will consist of the following components:

- One inch manifolds with plastic adapters pressed fit into SCH 80 PVC pipe cut to the bench width. All fittings shall be installed on top of manifold for easy connection of tubing.
- Ridged plastic spacers with spaces every one inch to hold EPDM tube in place and space tube on 6 foot spacing. Spacers shall be cut to bench width up to 8 foot long.
- High quality EPDM rubber tubing 0.177" ID x .30" OD shall be on \_\_\_\_\_ inch centers. Tubing shall be able to resist ozone, chemicals, fertilizers, and temperatures up to 230°F. Tubing shall be provided on 1000 foot spools for easy handling.



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## Delta TUBE SD



### Some of the many advantages of the DELTA-TUBE™ SD systems are:

- Direct contact from tubing to root zone for maximum soil and plant temperature control.
- Even temperatures are maintained throughout the system resulting in even crop growth.
- Compatible with any type of hot water heat source.
- Different temperature zones for flexible growing.
- One inch plastic manifolds make it easy to install with plastic mainlines.
- Special pressed barb fittings installed on top of manifold make installation of tubing neat and quick.
- Long ridged spacers can easily be installed onto bench top without having to install more than two or three fasteners.

- High quality tubing withstands UV light, fertilizers, and high temperatures.
- Flexible tubing is easily installed and comes in 1000 foot rolls.

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, installation (as required). Contact your local Delta T Solutions Representative for additional details.

### Delta Tube™ SD Ratings

Tube Spacing	BTU/SQ FT output (average water temp.)								Volume
	100°F	110°F	120°F	130°F	140°F	150°F	160°F	170°F	
2"	45	56	68	79	90	102	113	124	.77 gal.
3"	30	37	45	53	60	68	75	83	.51 gal.

Maximum water temperature 140°F (when using PVC manifolds)  
 Maximum water pressure 30PSI (higher pressures available)  
 Elbows and caps available upon request.

Any temperature over 140°F supply water will require high temperature manifolds

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