

# DILMUN HILL MOVABLE HIGH TUNNEL TRACK ASSEMBLY GUIDELINES

The Dilmun Hill Movable High Tunnel was designed specifically for small and medium-sized growers in the Northeast. The tunnel is mounted with rollers on a steel track, allowing it to roll between two adjacent sites, maximizing growing and economic efficiency while simultaneously prioritizing organic management practices that promote soil health: a crop being grown for market can always be housed within the tunnel, while the unused site can be cover-cropped, allowing the tunnel to constantly generate revenue for the grower.

## 1. Track assembly:

- 1.1. Two rows of 6" diameter posts are driven into the ground.
  - 1.1.1. Rows are spaced 20' apart (width of the tunnel)
  - 1.1.2. Posts within a row are spaced 12' center to center, to sit directly beneath each vertical sidewall beam with a wheel. Take care to ensure that 12' spacing is accurate.
- 1.2. After driving posts into the ground (below the frost line), cut the posts to a level line. The accuracy of this level line will greatly affect the ease with which the tunnel can be rolled.
- 1.3. 2" x 8" boards are used to connect the posts, forming a vertical "T-bar". Make sure that the top edges of these boards are flush with the tops of the posts (Figure 1)
  - 1.3.1. NOTE: since some posts will inevitably fall to the left or right of a straight track line, use notching to make corrections: if the desired line runs to the side of a post, notch the post side, or add additional pieces of wood account for error. Otherwise, cut a flat edge on the end of a post and secure the beam with a rafter joist (Figure 1).

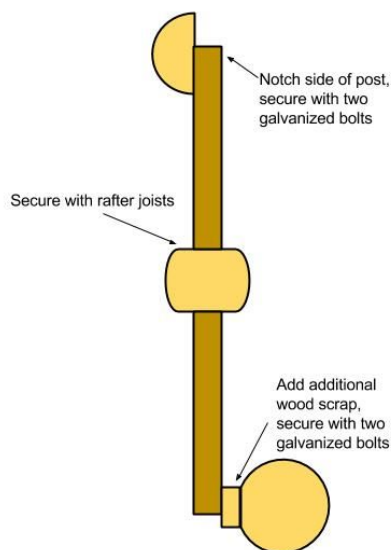


Figure 1: Various methods of mounting "T-bar" to posts depending on desired track line and error.

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- 1.4. 2" x 6" boards are then secured along the tops of the posts, forming the "T-hat" (Figure 2).
- 1.5. 5/8" galvanized steel pipe is then fastened to the top of the "T-hat" (Figure 2)

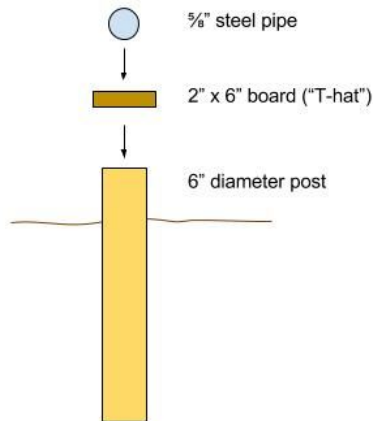


Figure 2: Front-view of full track assembly ("T-bar" not shown)

### 2. Mounting the tunnel (rollers):

- 2.1. A 5/8" galvanized steel pipe gate roller is attached to the outside of the bottom of every third vertical sidewall beam (resulting in 12' roller spacing).
- 2.2. Each sidewall module can then be placed onto the track, supported by these wheels.
- 2.3. While two opposing sidewalls are being upright held on the track, top arches can be secured to complete the module frame.
- 2.4. Endwalls are mounted last.

### 3. Anchoring the tunnel:

***Immediate and proper anchoring of the tunnel after changing sites is critical to the safety of the high tunnel design. Without proper anchoring the tunnel is prone to being blown off of track and/or damaged during high winds.***

- 3.1. A steel collar (post collar with hook) is secured to each post with four galvanized screws (Figure 3).
- 3.2. A flat steel hook is then hung from the horizontal beam on the sidewall.
- 3.3. The steel hook is then connected to the collar through the use of a large galvanized turnbuckle, thus anchoring the tunnel.

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*Figure 3: High tunnel anchoring system. Flat steel belt and collar were welded and bent to fit their respective components.*

***Thank you to the following local businesses for your willingness to accommodate our designs:***

***Whitmore Fence Co. (Dryden, NY) - pipe gate rollers, steel track***

***Howard Hoover (Penn Yann, NY) - high tunnel custom build***

***HEP Sales (Ithaca, NY) - hardware***