GA-011 Panel tomato ladder support

Guide one upright tomato stem along a replaceable twine ladder on a narrow free-standing panel.

Controlling dimensions: US inches and feet. Metric equivalents are references. Original editorial design; no physical build, animal trial or load certification is claimed.

Before marking and cutting

Measure the stated stock sections before cutting. Use the cut-list geometry, not scale measurements from the drawing.

US inch dimensions control; millimeter values are rounded conversions. Ordinary cut target ±1/16 in (1.6 mm); fit commercial accessories before boring attachment holes.

Use limits

Original bounded garden component, not an occupied structure.

No human standing, sitting, climbing, lifting or fall protection use. No stated safe working load.

Geometry and fastener quantities are editorially checked; no prototype build, wind test or crop trial is claimed.

Materials and finished cuts

Part	Qty	Size to cut	Material and detail
P01 Uprights	2	72 × 1 1/2 × 1 1/2 in 1828.8 × 38.1 × 38.1 mm	2 × 2 in board sound untreated wood
P02 Crossrails	4	24 × 1 1/2 × 3/4 in 609.6 × 38.1 × 19.05 mm	1 × 2 in board sound untreated cedar or other durable untreated wood; no unknown salvage

Hardware and consumables

8 #10 × 2-1/2 in exterior screws, 1 per rail end

18 ft (5.49 m) soft garden twine

2 separately selected ground anchors and 2 ties; site-specific, no wind rating

Tools

Tape measure and steel rule; Pencil, square and clamps; Saw suited to the stated stock; eye and hearing protection; Drill/driver, countersink and bits matched to fasteners; Sandpaper and edge file; gloves when handling cut mesh

Primary context and design record

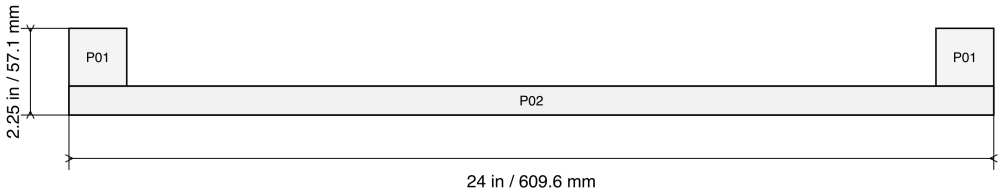
Context references; not design endorsements or certifications.

E04 · Trellises and cages to support garden vegetables · University of Minnesota Extension · https://extension.umn.edu/garden-and-home/yard-and-garden/gardening-in-minnesota/trellises-and-cages

Assembly and first checks

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PLAN — looking down; rear at top; controlling dimensions in inches



Part IDs refer to the finished cut list. Shapes are not load-rated. Read assembly before cutting.
Notches, holes, fittings and operating angles: see numbered steps and geometric annotations.
Original editorial draft • B/W vector • not physically built or tested • no implied Extension endorsement

01 Plan the panel tomato ladder support for this result: Guide one upright tomato stem along a replaceable twine ladder on a narrow free-standing panel. Confirm the design reference before cutting: Rails level and panel square within 1/8 in diagonal difference. In the drawings x runs left to right, y runs front to rear and z runs upward.

02 Verify the required stock before laying out these parts: 1 × 2 in board: actual 0.75 × 1.5 in (19.05 × 38.1 mm); 2 × 2 in board: actual 1.5 × 1.5 in (38.1 × 38.1 mm). Reject split or twisted wood and unknown salvage; thinner stock requires recalculating the joints, not simply using the listed lengths.

03 Cut and label the finished parts: 2 Uprights 72 × 1.5 × 1.5 in (1828.8 × 38.1 × 38.1 mm), mark P01; 4 Crossrails 24 × 1.5 × 0.75 in (609.6 × 38.1 × 19.05 mm), mark P02. Keep saw kerf outside each finished line. Rip only where the finished width is narrower than the actual stock; use a suitable guide and target ±1/16 in (1.6 mm) for ordinary cuts. Dowel triples mean length × diameter × diameter, not square dowel stock.

04 Lay the uprights parallel with outside faces 24 in (609.6 mm) apart. Mark crossrail lower edges at 18, 36, 54 and 70-1/2 in above the post bottoms.

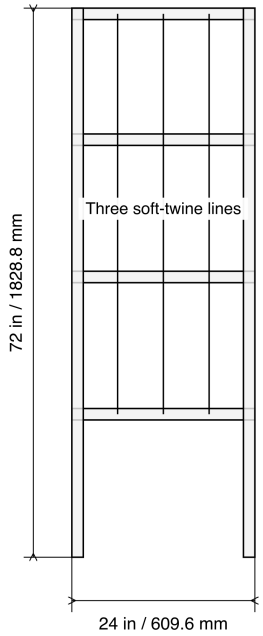
05 Clamp crossrails to the front faces of both posts. Keep their 24 in ends flush with the outside post faces.

06 At each rail/post overlap drill one centered pilot; install one 2-1/2 in screw at each end, eight total. Avoid splitting the 1-1/2 in rail width.

Complete the assembly

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FRONT — transparent assembly projection from y = 0; controlling dimensions in inches



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07 Square the panel by measuring both outer diagonals before final tightening. Do not force a bent rail into position.

08 Mark twine attachment positions 6, 12 and 18 in from the left rail end. Drill smooth 3/16 in holes through each crossrail at these marks.

09 Thread three vertical twine runs through the rails and tie them snugly; do not use tight loops around growing stems.

10 Install separate ground anchors in soil appropriate to the site and tie both uprights to them. The drawing does not specify universal embedment or resistance to wind.

11 Plant and train according to the chosen tomato variety. Tie stems loosely with soft ties, inspect after storms, and remove the panel if it cannot remain stable.

12 Complete the acceptance checks below before putting the assembly into service. Record any changed stock thickness, fastener or equipment fit on the project sheet. The published geometry has not been physically built or load-tested.

Acceptance and intermediate checks

Rails level and panel square within 1/8 in diagonal difference.

No sharp twine holes; actual anchor system restrains the panel before plants are tied.

Operation

Not a person-supporting ladder; avoid large unsupported fruit loads and public walkways.

Cleaning and maintenance

Replace twine and inspect posts each growing season; remove dead vines.