GA-063 Compost aeration-tube drilling cradle

Keep one small open ventilation tube from rolling while marking and drilling a repeatable perforation pattern.

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 Base	1	30 × 3 1/2 × 3/4 in 762 × 88.9 × 19.05 mm	1 × 4 in board sound untreated cedar or other durable untreated wood
P02 Locating rails	2	30 × 1 1/2 × 3/4 in 762 × 38.1 × 19.05 mm	1 × 2 in board sound untreated cedar or other durable untreated wood; no unknown salvage
P03 End stop	1	2 × 1 1/2 × 3/4 in 50.8 × 38.1 × 19.05 mm	1 × 2 in board sound untreated cedar or other durable untreated wood; no unknown salvage

Hardware and consumables

12 #8 × 1-1/4 in screws for rails, 6 each

2 #8 × 1-1/4 in screws for end stop

2 padded tube clamps and 2 bench clamps

1/4 in drill bit and depth control appropriate to tube wall; no hands used as clamps

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.

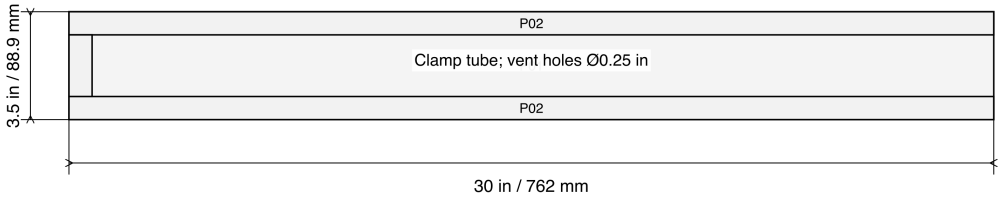
E05 · Managing and composting horse manure · University of Minnesota Extension · https://extension.umn.edu/agriculture/animals-and-livestock/livestock-operations/managing-and-composting-horse-manure

E11 · Do the rot thing — choosing and using a composting system · Oregon State University Extension Service · https://extension.oregonstate.edu/catalog/em-9475-do-rot-thing-choosing-using-composting-system

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 compost aeration-tube drilling cradle for this result: Keep one small open ventilation tube from rolling while marking and drilling a repeatable perforation pattern. Confirm the design reference before cutting: Tube cannot roll while drilling; stop and clamps firm. 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); 1 × 4 in board: actual 0.75 × 3.5 in (19.05 × 88.9 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: 1 Base 30 × 3.5 × 0.75 in (762 × 88.9 × 19.05 mm), mark P01; 2 Locating rails 30 × 1.5 × 0.75 in (762 × 38.1 × 19.05 mm), mark P02; 1 End stop 2 × 1.5 × 0.75 in (50.8 × 38.1 × 19.05 mm), mark P03. 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 Attach two 30 in rails upright with 2 in clear space between them, using six underside screws per rail.

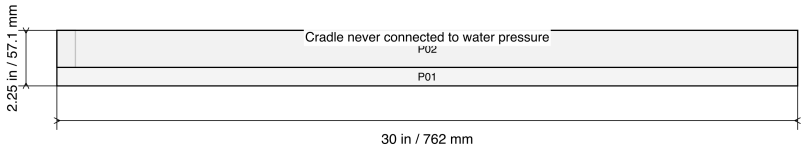
05 Fit the end stop between rails at x = 0, flush with the left base edge. Fasten from beneath with two screws.

06 Clamp the cradle to a bench and place one disconnected dry 1/2 in Schedule 40 tube in the channel, against the end stop.

Complete the assembly

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



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07 Use padded clamps on both sides of the intended drilling location; the rails locate the tube but do not clamp its round wall by themselves.

08 Mark hole centers along the tube at 3, 6, 9, 12, 15, 18, 21 and 24 in from its left end. These are the example ventilation pattern, not a water-emitter layout.

09 Drill one wall at a time with a 1/4 in bit and a stop/technique that does not suddenly strike the opposite wall. Deburr and remove all chips.

10 Rotate the tube 180 degrees and mark a second row between the first-row centers, at 4-1/2, 7-1/2 through 22-1/2 in. Reclamp before each drilling group.

11 Release, inspect and rinse out the tube away from food areas. It is now an open compost ventilation part only; never connect a perforated tube to water pressure or drinking-water plumbing.

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

Tube cannot roll while drilling; stop and clamps firm.

Perforations deburred and no chips remain; tube permanently marked VENT ONLY.

Operation

The pattern makes a ventilation component; it does not establish compost oxygen concentration or process temperature.

Cleaning and maintenance

Remove chips from jig and inspect clamp pads before the next tube.