GA-064 Removable open compost aeration cross

Form a small open passive air path beneath a loose garden-compost pile using removable perforated tubes resting on the ground.

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 Long ventilation arms	2	24 × 21/25 × 21/25 in 609.6 × 21.34 × 21.34 mm	1/2 in Schedule 40 PVC, used only for open compost ventilation new unpressurized open-ended ventilation tube; no potable or pressure use in this project
P02 Short ventilation arms	2	12 × 21/25 × 21/25 in 304.8 × 21.34 × 21.34 mm	1/2 in Schedule 40 PVC, used only for open compost ventilation new unpressurized open-ended ventilation tube; no potable or pressure use in this project

Hardware and consumables

1 unpressurized compatible 1/2 in slip cross fitting; actual socket allowance verified before final cutting

4 removable coarse synthetic mesh end guards and ties

No solvent cement, cap, fan or pressure connection

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

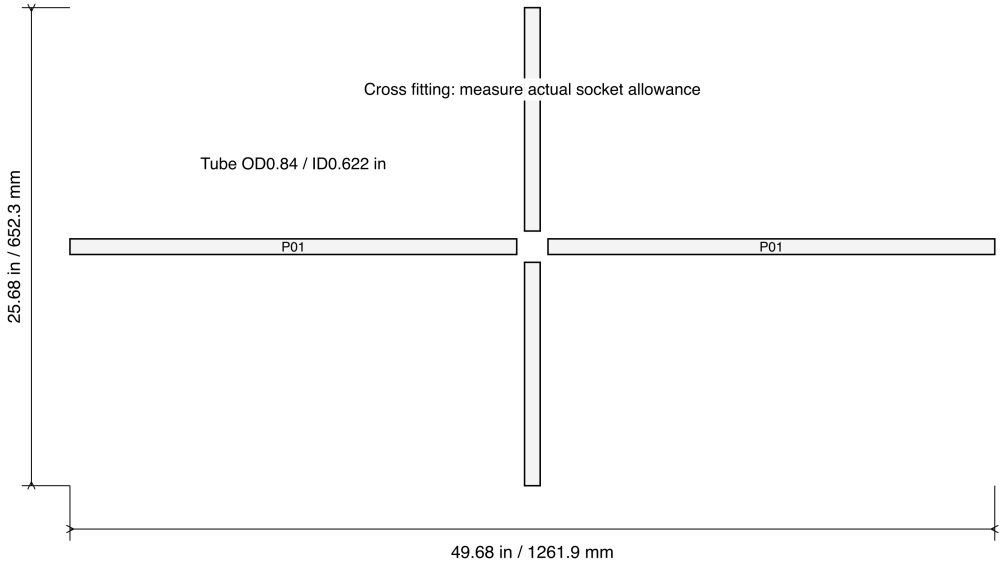
E11 · Do the rot thing — choosing and using a composting system · Oregon State University Extension Service · https://extension.oregonstate.edu/catalog/em-9475-do-rot-thing-choosing-using-composting-system

E12 · Agricultural composting and water quality · Oregon State University Extension Service · https://extension.oregonstate.edu/catalog/em-9053-agricultural-composting-water-quality?reference=catalog

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 removable open compost aeration cross for this result: Form a small open passive air path beneath a loose garden-compost pile using removable perforated tubes resting on the ground. Confirm the design reference before cutting: All four ends open and removable; actual fitting insertion depth recorded. 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 Schedule 40 PVC, used only for open compost ventilation: measured diameter 0.84 in. 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 Long ventilation arms 24 × 0.84 × 0.84 in (609.6 × 21.34 × 21.34 mm), mark P01; 2 Short ventilation arms 12 × 0.84 × 0.84 in (304.8 × 21.34 × 21.34 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 Select a slip cross whose actual socket geometry matches the new 1/2 in tube. Record socket insertion depth; the diagram shows tube arms separately around a reference 1.68 in central allowance.

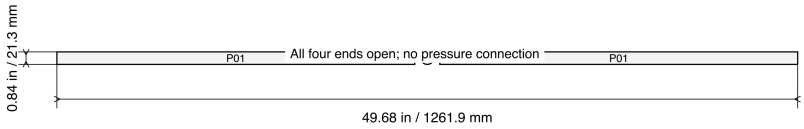
05 Cut two 24 in and two 12 in tubes, square and deburred. Mark every arm OPEN COMPOST VENT ONLY.

06 On each long arm mark 1/4 in perforations at 3 in spacing, keeping at least 2 in clear at its fitting end. On short arms use three holes at 3, 6 and 9 in.

Complete the assembly

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



Part IDs refer to the finished cut list. Shapes are not load-rated. Read assembly before cutting.
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07 Drill and deburr each tube using a clamped cradle, remove all chips and confirm holes remain open. Avoid unsupported freehand drilling.

08 Dry-fit the arms into the cross without glue. Measure the real assembled envelope and revise the schematic central allowance to the selected fitting before placing the assembly.

09 Fit coarse removable guards over the four open ends to keep large leaves out while preserving airflow. The guards are not insect-proof or wildlife-proof.

10 Lay directly on a suitable compost site with end openings accessible outside loose garden material; do not bury outlets in soil or obstruct runoff.

11 Lift and clear the assembly during turning. Airflow is passive and variable; keep normal mixing/moisture management and do not claim a composting-time, pathogen-kill or oxygen guarantee.

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

All four ends open and removable; actual fitting insertion depth recorded.

No glue/caps/pressure source; perforations and ends clear after placement.

Operation

Unpressurized ventilation component only; the schematic fitting envelope is an equipment input, not invented product dimensions.

Cleaning and maintenance

Remove before turning with a fork, wash out debris and inspect brittle tubing.