

Backyard Composting

Wood and Wire Three-Bin Turning Unit



A wood and wire three-bin turning unit can be used to compost large amounts of yard, garden and kitchen wastes in a short time. Although relatively expensive to build, it is sturdy, attractive and should last a long time. Construction requires basic carpentry skills and tools.

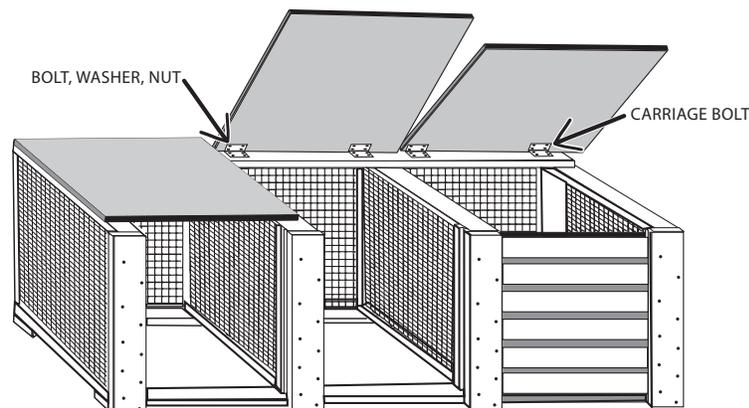
What You Need

Materials

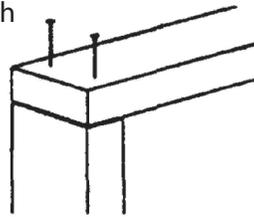
- four 12-foot (or eight 6-foot) lengths of pressure-treated 2 x 4 lumber
- two 6-foot lengths of pressure-treated 2 x 4 lumber
- one 16-foot length of 2 x 6 lumber
- six 8-foot lengths of 1 x 6 lumber
- one 4- x 8-foot sheet of 1/2-inch exterior plywood
- 22 feet of 36-inch-wide 1/2-inch hardware cloth
- 2 pounds of 16d galvanized nails
- 250 poultry wire staples (or a power stapler with 1-inch galvanized staples)
- 12 1/2-inch carriage bolts 4 inches long
- 12 washers and 12 nuts for the bolts
- six 3-inch zinc-plated hinges
- 24 washers and 24 nuts for the hinges
- 1 quart wood preservative or stain

Tools

- tape measure
- handsaw or circular power saw
- hammer
- tin snips
- carpenter's square
- optional: power stapler with 1-inch galvanized staples
- drill with 1/2-inch bit
- screwdriver
- 3/4-inch socket or open-ended wrench
- pencil
- safety glasses
- ear protection
- dust mask
- work gloves



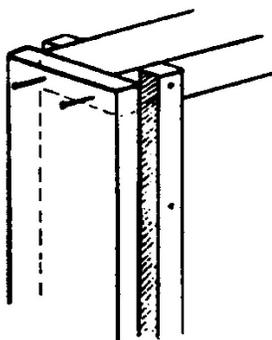
Building a Wood and Wire Three-Bin System

1. Cut two 31 1/2-inch and two 36-inch pieces from a 12-foot length of pressure-treated 2 x 4 lumber. Butt joint and nail the four pieces into a 35-inch x 36-inch "square." Repeat, building three more frames with the remaining 12-foot lengths of 2 x 4 lumber.
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2. Cut four 37-inch lengths of hardware cloth. Fold back the edges of the wire 1 inch. Stretch the hardware cloth across each frame. Make sure the corners of each frame are square before stapling the screen tightly into place every 4 inches around the edge. The wood and wire frames will be dividers in the compost.
 3. Set two dividers on end 9 feet apart and parallel to one another. Position the other two dividers parallel to and evenly spaced between the end dividers. The 36-inch edges should be on the ground. Measure the position of the centers of the two inside dividers along each 9-foot edge.

Wastes to Resources



4. Cut a 9-foot piece from each 10-foot length of pressure-treated 2 x 4 lumber. Place the two treated boards across the top of the dividers flush against the outer edges. Measure and mark each inside divider on the 9-foot boards.
5. Line up the marks and, through each board and divider junction, drill a 1/2-inch hole centred 1 inch in from the edge. Secure the boards with carriage bolts, but do not tighten them yet. Turn the unit so the treated boards are on the bottom.
6. Cut one 9-foot piece from the 10-foot length of construction grade 2 x 4 lumber. Attach the board to the back of the top by repeating the process used to attach the baseboards. Using the carpenter's square or measuring between opposing corners, make sure each bin is square. Tighten all bolts securely.
7. Fasten a 9-foot length of hardware cloth to the back side of the bin with staples every 4 inches around the frame.
8. Cut four 36-inch pieces from the 16-foot length of 2 x 6 lumber for front runners. (Save the remaining 4-foot length.) Rip cut two of these boards to two 4 3/4-inch-wide strips. (Save the two remaining strips.)
9. Nail the 4 3/4-inch-wide strips to the front of the outside dividers and baseboard so they are flush on the top and the outside edges. Center the two remaining 6-inch-wide boards on the front of the inside dividers flush with the top edge, and nail securely.
10. Cut the remaining 4-foot length, 2 x 6 lumber into a 34-inch-long piece and rip cut this piece into four equal strips. Trim the two strips. Trim the two strips saved from step 8 to 34 inches. Nail each 34-inch strip to the insides of the dividers parallel to and 1 inch away from the boards attached to the front. This creates a 1-inch vertical slot on the inside of each divider.



11. Cut the six 8-foot lengths of 1 x 6 lumber into 18 slats, each 31 1/4 inches long. Insert the horizontal slats, 6 per bin, between the dividers into the vertical slots.
12. Cut the 4- x 8-foot sheet of exterior plywood into two 3- x 3-foot pieces. Cut the 4 x 4-foot sheet of exterior plywood into one 3 x 3-foot piece on one of the three bins and attach each to the back top board with two hinges.
13. Stain all untreated wood.

Adding Wastes

Add wastes as they become available. Collect enough to fill one of the three bins at one time. Woody as well as non-wood wastes can be collected. Add thin layers of organic materials or mix the wastes together. Before adding new wastes to an empty bin, collect enough to fill the entire bin.

Maintaining Your Compost

Measure the temperature of your pile every day. After a few days, the temperature should reach between 130° and 140°F (54° to 60°C). If your pile gets very hot, turn it before the temperature gets above 155°F (68°C). In a few days, the temperature will start to drop. When the temperature starts going down, turn your compost pile into the next bin with a pitchfork. The temperature of your compost pile will increase again and then, in about four to seven days, start to drop. Turn your compost pile into the third bin. The total time for composting should be two to three months.

Adapted from Cornell Cooperative Extension GPAE90712

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