

Build a Chimney Cupboard CD Cabinet

Project Level: Advanced

Store your CD's in style with this beautiful chimney cabinet. The cabinet's tall, thin design and sleek lines are sure to compliment almost any décor. This project is a great way to show off both your good taste and woodworking skills at the same time.



Combine the beauty of the past with functionality of today for an elegant storage solution.

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Tools

- Table saw 
- Router  and bits
- Combination square 
- Drill press  with mortising attachment or drill/driver  and doweling jig and bits
- Palm sander 
- Chisel 
- Wooden mallet
- Square
- Clamps 
- Tape measure 
- Dust mask
- Goggles
- Hearing Protection

Materials

- 1x4x8' = 7
- 1/4x4x8 faced plywood = 1 sheet
- Wood glue 
- Screws
- Brads
- Hinges
- Door catch
- Sandpaper 

See the Cut List.

Getting Started

Before beginning this project, please familiarize yourself with the following techniques and concepts:

Making a Mortise and Tenon Joint

Make the Side Frames

1. Cut four frame stiles to size.
2. Cut six side frame rails to size. Cut $\frac{3}{4}$ " long tenons in each end of each side frame rail. Rout or cut a $\frac{1}{4}$ " wide by $\frac{3}{8}$ " deep groove in one edge of four side frame rails. These will serve as the top and bottom side frame rails. Rout or cut a $\frac{1}{4}$ " wide by $\frac{3}{8}$ " deep groove in both edges of the other two side frame rails. These will serve as the median (middle) side frame rails.
3. Create two side frame sets consisting of two stiles, one top side frame rail, one bottom side frame rail and one median side frame rail.
4. Lay out the side rails on the stiles so that:
 - The lower edge of the bottom side rail is flush with the bottom ends of the stiles.
 - The outside edge of the top side rail is flush with the ends of the stiles.
 - The median side rail is evenly spaced between the top and bottom rails.

5. Mark the stiles for mortises. Cut mortises in each stile where indicated. Rout or cut a $\frac{1}{4}$ " wide by $\frac{3}{8}$ " deep groove in the inside edge of each frame stile. The groove in each stile should run from the top of the bottom mortise to the bottom of the top mortise.



Good idea: Make the mortises about $\frac{1}{16}$ " deeper than the length of your tenons to keep the tenons from bottoming out in the mortises.

6. Dry fit the side frames and check each one for square. While you have the frames assembled, determine the panel size for each opening. Measure the distance between the inside edges of opposing stiles and rails in each opening and add $\frac{1}{2}$ " to each measurement. Adding $\frac{1}{2}$ " ensures that the panel can't move enough to leave any gaps, but still has enough room to expand and contract without distorting the frame.



Accurate measurements ensure accurate panels.

7. Cut out the panels from your $\frac{1}{4}$ " stock. Remove one of the stiles from each dry-fit. Slide the panels in their respective openings and reinstall the stiles. Check the assemblies for fit and square. Make any necessary adjustments and glue the assemblies together.

Join the Side Frames

1. Cut four frame connector rails to size. Cut 1/2" long tenons in each end of each rail.
2. Lay out the rails on the side frames so that:
 - The lower edges of the bottom rails are flush with the bottom ends of the side frames.
 - The outside edges of the top rails are flush with the top ends of the side frames.
3. Mark the stiles for 1/2" deep mortises. Cut mortises in the stiles, dry-fit the assembly and check for square. Make any necessary adjustments and glue the assembly.

4. Rout a 3/8" by 3/8" rabbet all the way around the inside edges of the opening in the back of the assembly. These rabbets will hold the back panel when the project is complete. Do not install the back panel at this time. Leaving the back panel open makes installing the drawer slides much easier.



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Measure for and Make the Door Frame

1. Cut four door rails to size. Cut 3/4" long tenons in each end of each door rail. Rout or cut a 1/4" wide by 3/8" deep groove in one edge of two door rails. These will serve as the top and bottom door rails. Rout or cut a 1/4" wide by 3/8" deep groove in both edges of the other two door rails. These will serve as the median door rails.
2. Cut the door stiles to size.
3. Lay out and mark the door rails on the stiles so that:
 - The bottom edge of the bottom door rail is flush with the bottom ends of the stiles.
 - The top edge of the top door rail is flush with the top ends of the stiles.
 - The median side rails are evenly spaced between the top and bottom.
4. Cut mortises in each stile where indicated. Rout or cut a 1/4" wide by 3/8" deep groove in the inside edge of each door stile. The groove in each stile should run from the top of the bottom mortise to the bottom of the top mortise.
5. Dry-fit the door and check it for square. While you have the door assembled, determine the panel size for each opening. Measure the distance between the inside edges of opposing stiles and rails in each opening and add 1/2" to each measurement.

6. Cut out the panels from your 1/4" stock. Remove one of the stiles. Slide the panels in their respective openings and reinstall the stile. Check the door for fit and square. Make any necessary adjustments and glue the assembly together.

7. Test fit the door in place with clamps.

8. Mark and trim the door as needed. Use a piloted core box bit to rout a finger groove in the door's edge opposite the edge you plan to hinge.

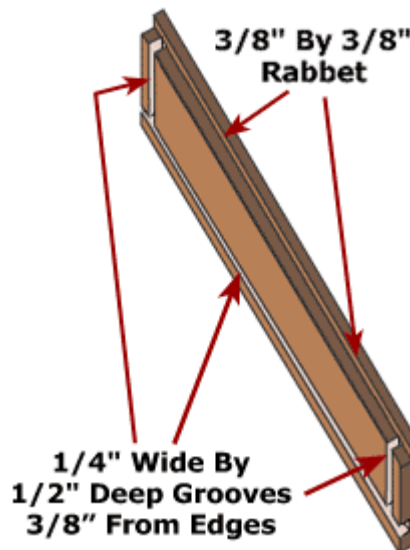
Make the Drawers

1. Rout or cut a 3/8" by 3/8" rabbet in the back face of the top edge of each drawer front.

2. Rout or cut two 1/4" wide by 1/2" deep grooves in the back face of the each drawer front. The grooves should be 3/8" in from and parallel with each end of each drawer front.

3. Rout or cut a 1/4" wide by 1/2" deep groove in the back face of the each drawer front. The groove should be 3/8" in from and parallel with the bottom edge of each drawer front.

Back Face of Drawer Front



4. Glue the drawer bottom and sides in the grooves. Glue the drawer back in place so its rear face is flush with the rear ends of the sides. Clamp the drawer and allow the glue to dry.



The drawer bottom should extend approximately 3/8" beyond the drawer sides on each side.

Make and Install the Drawer Slides

1. Cut the pieces from the scrap left from making the drawer fronts. Rout or cut a 1/4" wide by 3/8" deep groove in one face of each slide. The grooves of each slide should face each other when the slides are installed.

2. Install the first pair of slides so their top edges are 7 1/2" down from the top of each side frame and their front ends are 1 3/4" in from the front edge of each door frame. Secure the slides with glue and brads.

3. Install the rest of the slides so that the top edge of each pair is 5 3/4" below the bottom of the slides above.



4. Test fit the drawers in place. Make any necessary adjustments.

Add the Back Panel

1. Measure and cut 1/4" plywood to fit in the opening in the back panel.
2. Secure the back panel with brads.

Mill and Install the Top

1. Glue and clamp the pieces for the top. Allow the glue to dry.
2. Cut the top so it is 2" wider and 1 3/4" deeper than the cabinet. Rout a decorative edge into the front and both sides of the top.
3. Screw two cleats each to the the top, front and back connector rails. The top edges of the cleats should be flush with the top edges of the rails. Align the top so it overhangs the side frames evenly and its rear edge is flush with the rear face of the back connector rail.
4. Screw through the cleats into the top.

Install the Floor

1. Cut the 1/4" plywood for the floor to fit inside the bottom of the cabinet assembly.
2. Screw two cleats each to the bottom, front and back connector rails. The top edges of the cleats should be 5/16" below the top edges of the rails.
3. Glue the floor in place and nail through the floor into the cleats.

Make and Attach the Base

1. Secure a cleat to each end of each base side piece with glue and screws. One face of each cleat should be flush with one end of each side piece.
2. Attach the side pieces to the base front and back pieces so the ends of the side pieces are hidden by the front and back pieces.
3. Glue the base to the cabinet. Align the cabinet on top of the base so that the face of the cabinet back rail is flush with the face of the base back rail and there is about 3/8" of reveal on each side of the cabinet.

Attach the Door

1. Clamp the door in place and secure the hinges.
2. Install a magnetic catch on the door.



If you only want to store cassette tapes, you can gain one drawer by changing the drawer slid spacing. Install the top pair of slides 6 1/2" down from the top of the side frames and the rest of the slides 4 3/4" below the bottom of the slides above.

Sand and Finish the Cabinet

Sand the cabinet as needed. You can finish the cabinet in any manner you choose, using paint, stain and a clear topcoat or with an oil finish.

Cut List				
Part	Material	Size	Quantity	Notes
Side Frames & Connector Rails				
Frame Stiles	1x4x8' (2 pcs)	45"x2 3/4 "	4	
Side Frame Rails	1x4x8' (1 pc)	9 1/8"x1 5/8"	6	Rip the 1x4 into two pieces 1 5/8"x96" and cut the rails to length. Mill 1/4" wide by 3/4" long tenons into each end of each rail.

Frame Connector Rails	1x4x8' (See Note)	11 1/8"x1 5/8"	4	Cut connector rails from the scrap left from making the side frame rails. Mill 1/4" wide by 1/2" long tenons into each end of each rail.
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Side Frame Panels	1/4" faced plywood	Cut to fit	4	
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Back Panel	1/4" faced plywood	Cut to fit	1	
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Door

Door Stiles	1x4x8' (1 pc)	45"x1 3/4"	2	Rip the 1x4x8' pieces to 1 3/4" width. Save the cut off pieces to make the drawer backs
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Door Rails	1x4x8' (See Note)	9 5/8"x1 5/8"	4	Cut door rails from the scrap left from making the side frame rails. Mill 1/4" wide by 3/4" long tenons into each end of each rail.
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Door Panels	1/4" faced plywood	Cut to fit	3	
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Drawers

Drawer Sides	1/4" plywood	11 5/8"x2 1/2"	10	
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Drawer backs	1x4x8' (See Note)	8 3/8"x1 3/8"	5	Cut the drawer backs from the cut off of the door stiles.
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Drawer Bottoms	1/4" plywood	11 1/2"x9 1/2"	5	
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Drawer Fronts	1x4x8' (1 pc)	3 1/4"x10"	5	
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Drawer Slides	1x4x8' (See Note)	3/4"x3/4"x10"	10	Cut the pieces from the scrap left from
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				making the drawer fronts. Rout or cut a 1/4" wide by 3/8" deep groove in one face of each slide.
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Top, Bottom and Base

Front and Back Base Pieces	1x4x8' (1 pc)	12 3/8"x3"	2	
Side Base Pieces	1x4x8' (See Note)	12 3/8"x3"	2	Cut the pieces from the scrap left from making the front and back base pieces.
Top Panel	1x4x8' (1 pc)	13 1/2"x15 1/4"	1	Cut five pieces of 1x4x8' to 14" and glue them up to make the top.
Cleats	Cut from scrap	3/4"x3/4"x1"	As needed	Use the cleats for securing the top, bottom and base to the frame.
Cabinet Bottom	1/4" faced plywood	Cut to fit	1	