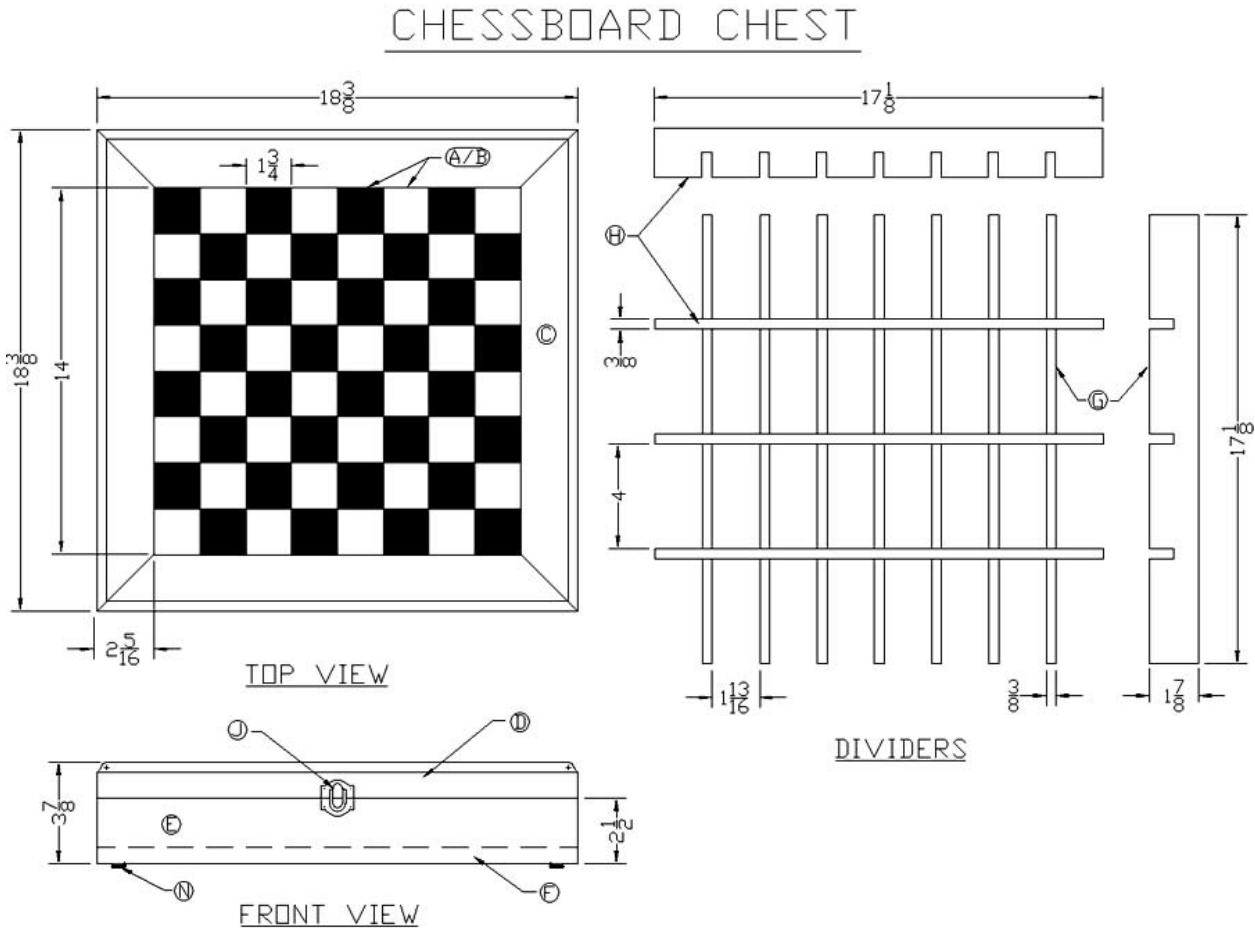


How to Build a Chessboard Chest

This attractive and professional looking chessboard chest is designed to serve as a chessboard as well as a convenient place to store the chess pieces. The felt-lined dividers were designed for flexibility. They can also be removed or disassembled and placed to one side in the chest to provide greater storage for additional board game materials. When not in use, the chest can be easily stored in a cabinet or be displayed on a coffee table, or anywhere else to add to the interest and beauty of the room.





Technical Information for Building a Chessboard Chest

A. Materials List:

QUANTITY	LETTER	NAME	SIZE	MATERIAL
4	A	Chessboard	3/4" x 1 3/4" x 14"	Teak
4	B	Chessboard	3/4" x 1 3/4" x 14"	Maple
4	C	Chessboard Border	3/4" x 2 3/16" x 18 3/8"	Teak
4	D	Upper Cabinet Frame	5/8" x 5/8" x 18 3/8"	Teak
4	E	Lower Cabinet Frame	5/8" x 2 1/2" x 18 3/8"	Teak
1	F	Bottom	5/8" x 17 1/8" x 17 1/8"	Teak
7	G	Vertical Dividers	3/8" x 1 7/8" x 17 1/8"	Maple
3	H	Horizontal Dividers	3/8" x 1 7/8" x 17 1/8"	Maple
1	I	Piano Hinge	1 1/16" x 17"	Brass
1	J	Latch	1 1/4" x 1 3/4"	Brass
2	K	Friction Lid Supports		Brass

4	L	Splines	1 / 8 " x 3/4" x 2 1/4"	Maple
1	M	Spacer Board	9/16" x 17 1/8" x 17 1/8"	Pine
4	N	Adhesive Surface Savers	1/2" Diameter	Felt
1	O	Felt		
1	P	Flathead Screws	#10 x 2 1/4"	

WOOD SPECIES

		
Sugar Maple	Teak	

B. Cutting Procedure:

1. Use a jointer to joint one edge of 1" thick Teak lumber for the chessboard.
2. Use a table saw to rip each Teak chessboard strip (A) slightly wider than 1 3/4" and then joint each edge until the strips are exactly 1 3/4" wide.
3. Repeat procedures #1 & #2 for each 1" maple lumber chessboard strip (B).
4. Place the Teak and maple strips alternately in three bar clamps. Leave clamps approximately 1/2" wider than the width of the strips to be glued.

5. Place a bead of wood glue on both edges of each strip except for the two outer strips which will require glue only on the inner edges. Use your finger to spread the glue so that all edges are liberally covered.
6. Tighten the bar clamps. Be sure that the strips are flat and the ends are flush. Clean up excess glue with paper towels and water. Allow glue to dry for 24 hours.
7. When the glue has dried, remove the bar clamps and clamp the glued strips to a flat surface with hand screw clamps. Use a belt sander to sand one side until smooth.
8. Place glued strips in a planer with the sanded side down and plane the opposite side smooth. Turn the glued strips over and plane the other side. Plane only as much as needed, so that the boards are left as thick as possible.
9. Use a radial arm saw to trim one end flush.
10. Set the table saw to cut exactly $1\frac{3}{4}$ ". Place the trimmed edge flush with the fence and cut the strips cross grain. Be sure there are eight strips exactly $1\frac{3}{4}$ " wide. The strips will alternately have Teak and maple squares.
11. Set the three bar clamps similar to the procedure in step #4, except this time place a 1" board next to the clamps on each end and then place the strips to be glued alternately between the boards. Be sure that the strips form a chess board pattern. The two boards will help provide uniform pressure on all areas of the strips to help eliminate breakage.
12. Again place a liberal amount of glue on the edges and spread the glue with your finger to cover all areas of the wood. Tighten the clamps securely. Again make sure the strips are flat and that ends are perfectly flush on each end. Use hand screw clamps to keep the strips flat if necessary. Clean up excess glue and allow to dry for 24 hours.
13. Remove clamps and belt sand one side smooth, similar to step #7.

14. Cut a piece of 3/4" plywood slightly larger than the chess board and place the sanded side down on the plywood. Place the wood in the planer and make a trim cut. Turn the chess board over and continue to take trim cuts until the chess board is 3/4" thick.
15. Trim all four edges to be sure they are smooth and flush. Use a t-square to make sure the chess board is perfectly square. Use a tape measure to make sure the chess board is 17 1/8" in each direction.
16. Use a table saw to rip a Teak board 2 3/8" wide. Joint the edges until the board is 2 3/16" wide. Plane the board 3/4" thick. Set a power miter saw to cut 45 degree angles and cut the four chessboard borders (C) 18 3/8" long. It is recommended that you cut each border slightly longer first, and then cut them to fit perfectly.
17. Place glue on opposite edges of the chessboard (A/B) and the inside edges of two chessboard borders (C) and place them in two bar clamps. Temporarily leave the clamps loose. Use two more bar clamps in the opposite direction and place glue on the other edges of the chessboard (A/B) and the inside edges of the other two borders (C). Adjust all bar clamps until snug in each direction. Remove excess glue on each side. Use a hand screw clamp in each corner to clamp the borders flush with the chessboard. Adjust the bar clamps until tight. Remove all excess glue with a damp paper towel or rag and allow to dry for 24 hours.
18. Use a table saw to rip a Teak board 3 1/4" wide for the upper and lower cabinet frames (D) and (E). Joint the edges until the board is 3 3/16" wide. Plane the board 5/8" thick. Tilt the power miter saw blade to 45 degrees, lay the boards flat, and miter each end of the boards. All four boards should be 18 3/8" long.

19. Cut a blind spline for the lower cabinet frame (E) by tilting the table saw blade 45 degrees and adjusting the fence flush with the blade. Place a cabinet frame board on the table saw with the widest side up and adjust the table saw blade to cut 3/8" deep into the mitered edge. Clamp a board-stop on the bed of table saw so the spline cut will be 2 1/4" long. Make cuts for the splines in both ends of each board.
20. Glue a spline (L) in the end of each cabinet frame.
21. Place glue on the mitered end of each cabinet frame and exposed spline and clamp them together using a belt clamp. Use a t-square to make certain that the cabinet frame is clamped square. Allow to dry 24 hours.
22. On the band saw clamp a fence 2 1/2" from the blade.
23. Place the cabinet frame on its side and using the fence as a guide cut through the cabinet frame. You should have two parts to the cabinet frame; one 5/8" high and the other 2 1/2" high. These two parts are referred to on the materials list as upper cabinet frame (D) and lower cabinet frame (E).
24. To make the bottom (F) glue and clamp two Teak boards 8 5/8" x 17 1/4" together edge to edge using two bar clamps. Clean up excess glue and allow to dry 24 hours.
25. Plane the bottom (F) to 5/8" and using the table saw and the radial arm saw trim the bottom to fit inside the base of the lower cabinet frame (E).
26. Glue the bottom (F) inside the base of the lower cabinet frame (E) so that the wood grain of the bottom is horizontal and flush with the bottom of the lower cabinet frame when looking from the front of the cabinet.
27. Cut ten dividers (G) and (H) 3/8" x 1 7/8" x 17 1/8" from any hardwood.
28. Cut seven vertical dividers (G) with three 3/8" x 15/16" notches spaced 4" apart. Cut three horizontal (H) with seven 3/8" x 15/16" notches spaced 1 13/16" apart.

29. Route top outer edge of border (C) using a portable hand router and a 3/4" Roman-Ogee Bit. A shaper could be used in place of a hand router.
30. To make the spacer board (M) glue and clamp two pine boards 8 5/8" x 17 1/4" together and allow to dry for 24 hours. Plane the board 9/16" thick. Use a table and a radial arm saw to trim to fit inside the upper cabinet frame during the assembly procedure.

C. Sanding Procedure:

1. Rough sand all parts with 80 grit sandpaper.
2. Intermediate sand all parts with 120 grit sandpaper.
3. Finish sand all parts with 220 grit sandpaper.
4. Slightly round all exposed edges and corners with 220 grit sandpaper.

D. Assembly Procedure:

1. Glue the upper cabinet frame (D) to the under side of the chessboard and secure with 7/8" finish nails. Be sure upper cabinet frame is flush with the outer edges of the chessboard border (C). Set the nails below the surface with a nail set and a hammer. A nail gun is preferable if available.
2. Align the lower cabinet frame (E) with the upper cabinet frame (D) and install the piano hinge (I) in the rear interior with flathead screws. The hinge will not be seen from the exterior.
3. Open the chessboard top and install the two friction lid supports (K) on each side in the interior with flathead screws.
4. Trim the spacer board (M) approximately 17 1/16" square. Spray one side and all four edges with adhesive (P) and attach felt (O). Apply glue to the opposite side of spacer board (M) and attach to the under side of the chessboard. Use wooden hand screw clamps to hold it in place until the glue has dried.

5. Spray bottom (F) and inner sides of lower cabinet frame (E) with adhesive and attach felt.
6. Spray vertical and horizontal dividers (G) & (H) with adhesive (P) and apply felt. When adhesive is dry use a razor blade or utility knife to cut out the felt in the notched areas.
7. Assemble the vertical and horizontal dividers (G) & (H) by aligning the notches and pressing them together. Place the assembly in the lower cabinet frame (E).
8. Attach latch (J) with flathead screws to the front center of the upper and lower cabinet frames (D) & (E).

Notes:

1. Use professional wood glue.
2. Fill all cracks and nail holes with Teak wood dough.

E. Finish Procedure:

1. Sand all wood dough flush with wood surfaces.
2. Finish sand edges and sides as needed so that all parts fit flush.
3. With a bristle brush, apply a clear finish coat such as Varathane, Polyurethane, Lacquer, etc. to all exposed wood areas. Allow to dry for 12 hours.
4. Lightly hand sand using a 220 grit sandpaper.
5. Apply second coat of clear finish.
6. Allow to dry for 24 hours.
7. Attach adhesive Surface Savers (N) under bottom corners of lower cabinet frame to prevent marring surfaces.

Note:

1. Use a tack rag after each sanding procedure to remove the dust.

***Congratulations, your chessboard chest is finished and ready to use!**

