

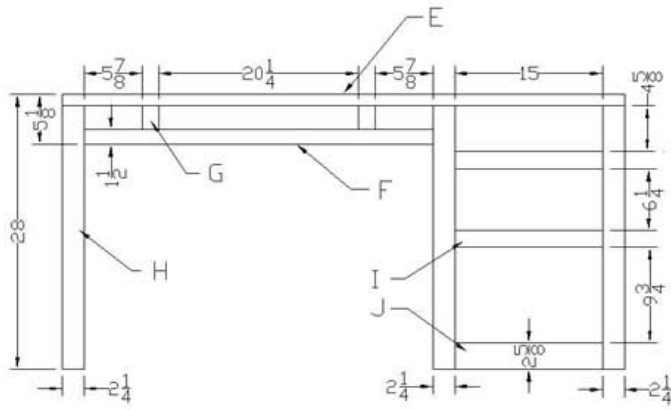
## How to Build a Wood Desk

This attractive desk is an excellent place to study, pay bills, etc. It has three large storage drawers on the right side, and three smaller top drawers for office supplies.

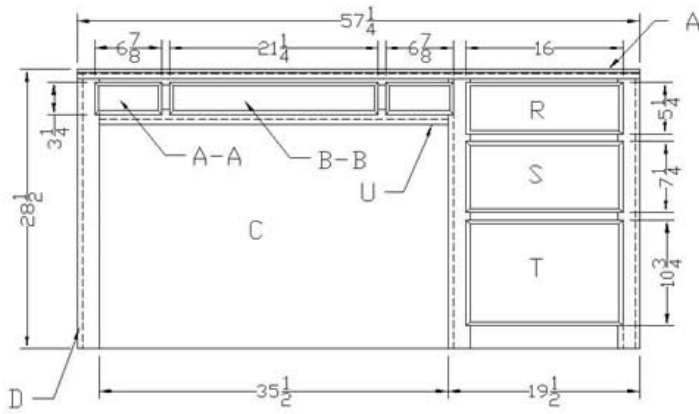
It is easy to build and can fit in any alcove in your residence. Built-in furniture will also add beauty as well as value to your home.



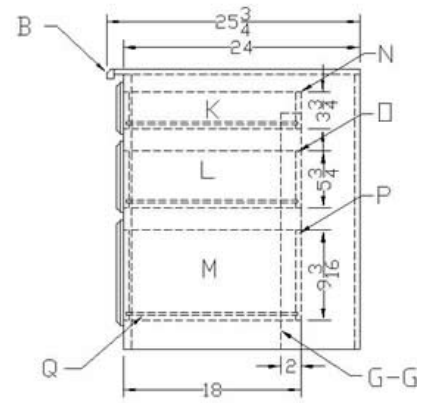
# BUILT-IN DESK



FRAME VIEW



FRONT VIEW



SIDE VIEW

## Technical Information for Building a Building a Wood Desk

### A. Materials List:

QUANTITY	LETTER	NAME	SIZE	MATERIAL
1	A	Cabinet Top	1/2" x 25" x 57 1/4"	Oak Plywood
1	B	Top Front Molding	3/4" x 1" x 57 1/4"	Oak
1	C	Rear Wall Panel	1/2" x 57 1/2" x 28"	Oak Plywood
3	D	Cabinet Side Panels	1/2" x 23 x 27 3/4"	Oak Plywood
1	E	Horiz. Frame	3/4" x 1 1/4" x 57 1/4"	Oak
1	F	Horiz. Frame	3/4" x 1 1/2" x 35 1/2"	Oak
2	G	Vert. Frames	3/4" x 1 3/4" x 2 1/2"	Oak
3	H	Vert. Frames	3/4" x 2 1/4" x 27 1/2"	Oak
2	I	Horiz. Drawer Frames	3/4" x 1 3/4" x 15"	Oak
1	J	Horiz. Drawer	3/4" x 2 5/8" x	Oak

		Frame	15	
2	K	Top Drawer Sides	1/2" x 3 3/4" x 18"	Oak Plywood
2	L	Middle Drawer Sides	1/2" x 5 3/4" x 18"	Oak Plywood
2	M	Bottom Drawer Sides	1/2" x 9 1/4" x 18"	Oak Plywood
2	N	F & B Top Drawer	1/2" 3 3/4" x 13"	Oak Plywood
2	O	F & B Middle Drawer	1/2" x 5 3/4" x 13"	Oak Plywood
2	P	F & B Bottom Drawer	1/2" x 9 1/4" x 13"	Oak Plywood
3	Q	Side Drawer Bottoms	1/4" x 13 1/2" x 17 3/4"	Oak Plywood
1	R	Top Drawer Face	3/4" x 5 1/4" x 16"	Oak
1	S	Middle Drawer Face	3/4" x 7 1/4" x 16"	Oak
1	T	Bottom Drawer Face	3/4" x 10 3/4" x 16"	Oak
1	U	Cabinet Bottom	1/2" x 24" x 37	Oak

			1/2"	Plywood
6	V	Top Drawer Sides	1/2" x 2" x 18"	Oak Plywood
4	W	F & B Top Drawers	1/2" x 2" x 4 5/8"	Oak Plywood
2	X	F & B Top Drawer	1/2" x 2" x 19"	Oak Plywood
2	Y	Top Drawer Bottoms	1/4" x 5 1/8" x 17 1/2"	Oak Plywood
1	Z	Cabinet Bottom	1/4" x 19 1/2" x 17 1/2"	Oak Plywood
2	A-A	Top Drawer Faces	3/4" x 3 1/4" x 6 7/8"	Oak
1	B-B	Top Drawer Face	3/4" x 3 1/4" x 21 1/4"	Oak
2	C-C	Top Drawer Dividers	1/4" x 1 1/2" x 4 5/8"	Oak
1	D-D	Top Drawer Divider	1/4" x 1 1/2" x 19"	Oak
3	E-E	Top Drawer Guides	18"	Metal
6	F-F	Side Drawer Guides	18"	Metal
2	G-G	Side Drw. Guide	1 3/4" x 2" 24"	Fir

		Supports		
1	H-H	Cabinet Bottom Support	1/2" x 1 1/2" x 37"	Oak
<b>WOOD SPECIES</b>				
				
Red Oak	Douglas Fir			

## B. Cutting Procedures:

1. Use a panel saw to cut rear panel (C) and the three cabinet side panels (D).
2. Use a table saw and a radial arm saw to cut the cabinet frame material (E), (F), (G), (H), (I), & (J) to proper sizes. The lumber should be previously planed to 3/4" thickness.
3. Thinly joint the edges of the cabinet frame material to remove saw marks if necessary.
4. Rip and cut to length the side drawer sides (K), (L), & (M), and the side drawer fronts and backs (N), (O), & (P). These should be cut from 1/2" oak plywood.
5. Cut the side drawer bottoms (Q) from 1/4" oak plywood.
6. From 3/4" oak lumber, cut side drawer faces (R), (S), & (T) to proper sizes.
7. Cut the three top drawer sides (V), and the top drawer fronts and backs (W) & (X) from 1/2" oak plywood. These are the three drawers above the seating area.

8. Cut the cabinet bottom (U) to proper size from 1/2" plywood. This is the panel below the three top drawers.
9. Cut the three top drawer bottoms (Y) & (Z) from 1/4" oak plywood.
10. Cut the three top drawer faces (A-A) & (B-B) from 3/4" lumber.
11. Cut the top drawer dividers (C-C) & (D-D) from 1/4" lumber. Use a planer to plane the dividers to the proper thickness.
12. Use a 1/4" dado blade with the table saw to cut 1/4" deep grooves in the inside of the side drawer sides (K), (L), & (M) and the top drawer sides (V). The grooves for the drawer sides should be 1/2" from the drawer bottoms.
13. Repeat the procedure in step #12 for the dado cuts in the side drawer fronts and backs (N), (O), & (P) and the top drawer fronts and backs (W) & (X), using the 1/4" dado blade with the radial arm saw instead of the table saw.
14. Use a panel saw or a table saw to cut the cabinet top (A) and the cabinet bottom (U) to proper sizes from 1/2" oak plywood.
15. Use a table saw and a radial arm saw to cut the top-front molding (B) to proper size using 3/4" lumber. Use a jointer to remove any saw marks if necessary.
16. Use a router with a 3/4" Roman-Ogee Bit to shape the edges of the side drawer faces (R), (S), & (T) and the top drawer faces (A-A) & (B-B). Also route the front edge of the top-front molding (B).
17. Cut a 1 1/4" x 1/2" notch in the bottom-center of each top drawer back (W) & (X), to accommodate the top drawer guides (E-E).
18. Cut two 1 3/4" x 2" x 24" side drawer guide supports (G-G) from any type lumber available.
19. Cut the cabinet bottom back support (H-H) from oak lumber.

### **C. Wooden Desk Sanding Procedures:**

1. Rough sand all parts with an orbital sander and 80 grit sandpaper.
2. Intermediate sand all parts with an orbital sander and 120 grit sandpaper.
3. Finish sand all parts with an orbital sander and 220 grit sandpaper after the assembly procedure.
4. Hand sand all edges, details, with 220 grit sandpaper.

#### **D. Assembly Procedures:**

1. Use a nail gun with 1 3/4" nails to attach the rear wall panel (C) to the wall studs. Use a stud finder to locate the studs.
2. Repeat Step #1 to attach the left and right cabinet side panels (D) to the walls.
3. Build the cabinet frame according to the dimensions shown on the drawing and the lumber sizes indicated in the materials list. Each frame piece should be attached using two 3/8" x 2" dowel pins. Use a 3/8" drill bit with a dowel jig or a horizontal boring machine to drill the holes necessary for the dowels. The holes should be drilled 1 1/16" deep. Place a few drops of wood glue in the dowel holes and tap the dowel pins in using a mallet. Place glue on the exposed dowel pins and assemble the frame. Use bar clamps and hand screw clamps to secure the cabinet frame. Use a framing square to assure that the frame is perfectly square. Allow the glue to dry over night.
4. Place glue on the outside edges of the cabinet side panels (D) which are attached to the walls. Position the cabinet frame in place and use a nail gun with 1 1/2" nails to secure it to the panels.
5. Place glue on the outside edge of the additional cabinet side panel (D) and position it flush with the left vertical frame (H). Nail it into position as indicated in step #4.
6. Position the cabinet bottom (Z) horizontally into place, flush with the bottom of the horizontal frame (F) and secure with glue and nails. Position the cabinet bottom support (H-H) underneath the

cabinet bottom, and nail it to the rear wall panel (C). Use a level to assure that the cabinet bottom is perfectly horizontal before nailing.

7. Glue and nail the side drawer guide supports (G-G) to the inside of the cabinet side panels (D). The supports should be positioned vertically inside the side drawer cavity 17" from the front.
8. Build the top-side drawer by gluing and nailing the top drawer sides (K) onto the back (N), and then slip the top drawer bottom (Q) into the grooves. Next glue and nail the drawer front (N) into position.
9. Repeat the procedure in step #7 to make the middle drawer, using pieces (L), (O), & (Q).
10. Repeat the procedure in step #7 to make the bottom drawer, using pieces (M), (P), & (Q).
11. Repeat the procedure in step #7 to make the two small top drawers, using pieces (V), (W), & (Y).
12. Repeat the procedure in step #7 to make the large top drawer, using (V), (X), & (Z).
13. Center the top drawer face (R) horizontally onto the drawer front (N), and position the drawer face 1/2" below the bottom of the drawer front. Clamp the pieces together and mark for the screw placements on the inside surface of the drawer front. The screws should be placed 3" in from each side and 1 1/2" down from the top. Drill the two holes using a #8 x 1" screw pilot. Secure the face onto the drawer using #8 x 1" flathead wood screws.
14. Repeat the procedure in step #12 to attach the middle drawer face (S) onto the middle drawer front (O). The only exception, is the screws should be 2" down from the top.
15. Repeat the procedure in step #12 to attach the bottom drawer face (T) onto the bottom drawer front (P). The screws should be 3" down from the top.

16. Repeat the procedure in step #12 to attach the top drawer faces (A-A) onto the top drawer front (W). The screws should be 1" down from the top.
17. Repeat the procedure in step #12 to attach the top drawer face (B-B) onto the top drawer front (X). The screws should be 1" down from the top.
18. Place glue on the bottom and the ends of the top drawer dividers (C-C) and nail them into position, 2" from the front of each drawer.
19. Repeat the procedure in step #18 to install the top drawer divider (D-D) into place.
20. Nail the metal top drawer guides (E-E) to the bottom assembly of each top drawer and to the top of the cabinet bottom (U). Be sure the guide tracks are centered on the cabinet bottom.
21. Nail the roller portion of the metal side drawer guides (F-F) to the bottom of the drawer sides (K), (L), & (M). Also, nail the track portion of the drawer guides to the insides of the vertical frames (H) and to the cabinet drawer guide supports (G-G). Make sure each drawer guide track is level.
22. Glue and nail the cabinet top (A) to the top of the cabinet assembly.
23. Glue and nail the top-front molding (B) to the horizontal frame (E). The molding should be positioned flush with the top edge of the cabinet top (A).

### **E. Finish Procedures:**

1. Use plastic wood dough to fill all nail holes, cracks and imperfections.
2. Use an orbital hand sander and 220 grit sandpaper to finish sand the entire project.
3. Hand sand all edges with 220 grit sandpaper.

4. If stain is desired, apply with a brush and allow to penetrate for 5-10 minutes, and then remove with a clean rag.
5. Allow stain to dry 6 hours and then repeat with a second coat.
6. Apply a clear finish coat such as Varathane, Polyurethane, lacquer, etc. using a pure-bristle brush. Allow to dry 12 hours.
7. Lightly sand with 220 grit sandpaper.
8. Apply second coat of clear finish.
9. If additional finish coats are desired, repeat steps #6 & 7.
10. Allow to dry 24 hours before using built-in desk.

**NOTE:**

1. Be sure to match the color of the wood dough to the stain color.
2. Use a tack rag after each sanding procedure to remove the dust.

**NOTE:** This built-in desk was designed to fit a 57 1/4" wide opening. If your available space is different, you will have to adjust the widths accordingly.

**Congratulations, your wood desk is finished and ready to use.**