

Workshop Chest of Drawers (For Tools and Small Parts)

This is a chest for storing screws, nails, nuts, bolts, small tools, parts, etc. It has nine levels of drawers, 15 drawers in all. The drawers are nominally 9", 6", and 3.5" deep. The overall dimensions are 30W x 60 H x 12 5/8" D (plus the thickness of the applied back). Inside dimensions 27 1/2 x 57 x 11 7/8. The width of the sides, 11 7/8, is to yield four cuts across a sheet of plywood.

It is made of 3/4" hardwood plywood (Sandply) using carcass construction with a solid poplar face frame. There are horizontal dividers at about 27" and 45" above the bottom of the case. Both horizontal dividers support vertical dividers. That is, the horizontal dividers extend across the width of the case. It was a prototype for a bedroom chest, that never got built.

The corners are joined with a hardwood (poplar) tongue and groove joint. This is very strong and conceals the ends of the plywood. The interior dividers are dadoed into each other.

The top three rows of drawers have no horizontal face frame. The bottom six rows of drawers have horizontal face frame elements, mainly to catch a drawer stop. These horizontal face frames were an afterthought and are attached to the wooden drawer guides using wedged dowels. While these are probably quite strong enough, an improvement might be to mortise the frames for the drawers into the drawer guides (the drawer guides would have to be 12 5/8" to extend from the back to the front of the face frame).

The chest does not have separate drawer kickers to keep the drawers from tilting too much when opened. This function is provided by the top, the drawer guides above the drawer, or a horizontal divider.

The back can be 1/4" plywood, masonite, etc. It is just screwed to the back of the case, so that it can be removed to access the top drawers..



The case has simple bracket feet to hold it off the floor, so that moisture cannot seep into the bottom of the case.

The drawers are made of $\frac{1}{2}$ " sandeply with false fronts. The false fronts are $\frac{3}{4}$ " sandeply with $\frac{1}{2}$ " thick poplar edge banding. The top three drawers have guides made of $\frac{1}{2}$ " x $\frac{3}{4}$ " oak, dadoed into the sides. The bottom six drawer guides are $\frac{3}{4}$ " square oak screwed and glued to the sides.

The 3 $\frac{1}{2}$ " deep drawers (top three) were constructed with lock miter joints cut with a router bit.

The other drawers were constructed with box joints cut on a table saw .

The finish is amber shellac.

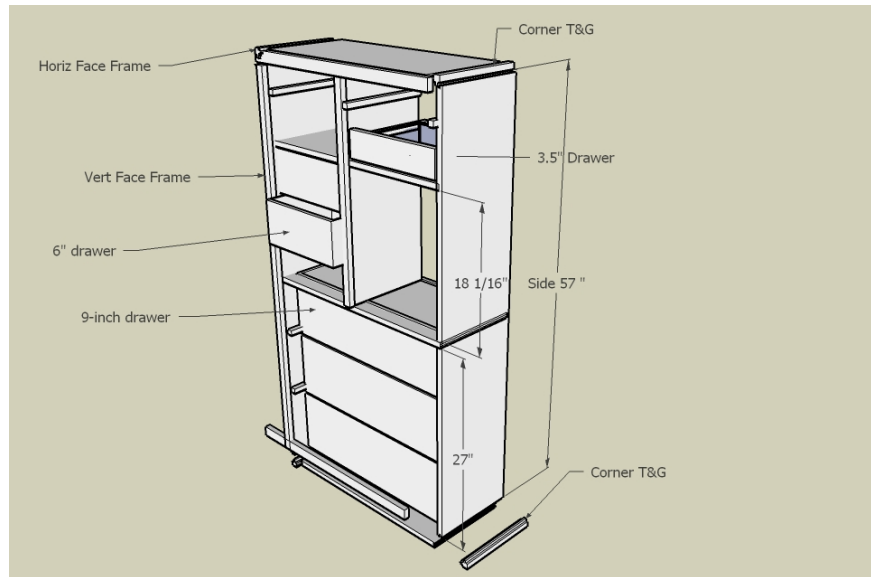


Figure 2 Sketch Showing Construction, Interior dividers (some drawer guides, etc are omitted or not to scale.)

Carcase Procedure (Outline)

1. Cut out carcase plywood and hardwood. (You could cut the interior pieces, e.g., dividers, a bit ($\frac{1}{16}$ ") oversize and trim to fit after dry assembly, but I don't think it is really necessary if you recheck the sizes by arithmetic.

2. Mill plywood and corner T & G pieces.

3. Assemble feet. Glue mitered end pieces around central block, clamp & let dry.

4. Mark location of drawer guides on sides and vertical dividers. (Use a story stick. Don't forget to use a consistent reference surface such as the top. Don't forget to allow for the dadoes in the top and horizontal dividers– use a piece of scrap as a spacer.)

5. Attach drawer guides. The top guides should be glued in place. To allow adjustment, it is best not to glue the other guides and to drill the holes in the guides a bit over sized.

6. Glue and screw feet to case bottom.

7. Assemble carcase.

8. Trim corner T&G to suit

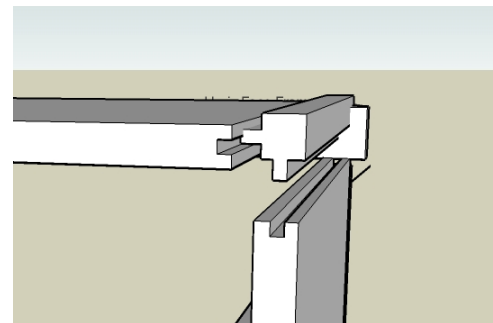


Figure 3 Corner Detail

9. Cut and apply face frames.

A. I used butt joints at the corners. They look OK. You could miter the top corners of the FF for a more finished look.

B. It is more important to make the FF straight and square to the inside, so that the drawers can be fitted more easily. It's easier to trim the outside of the FF to fit.

C. A slight bevel or roundover on the outside corners of the face frame may improve the appearance.

Drawer Procedure (Outline)

1. Measure and record each actual drawer opening (inside of face frame).

2. Decide on –

A. The fit of the drawers: inset recessed, inset flush, or surface. This may affect how deep you make the drawers.

B. The construction of the drawers. A lock miter joint can be cut into the actual drawer front, allowing for a 1/2" longer drawer, if desired. . Box joints will show at the front of the box and usually require a false front.

C. The actual dimension of the drawers. You want a tight fit, so that the drawer will work smoothly, without racking in the guides and sticking. It is difficult, however, to trim very much off of a plywood drawer side. I tend to cut them just a bit undersized, so that I will not have to trim them, and then add hardwood rub strips on the sides of the guides.

(The following assumes false fronts on all drawers. Small (3 1/2") drawers are made with lock miter joints. Larger drawers are made with box joints.)

See Chapter 39, Boxes and Drawers in *Notes and Reflections While Shaving Wood*

Cut List

Note: Some of these dimensions may have changed in the shop but not on this paper. Check everything before cutting.

Carcase Plywood (3/4")				
1.	Top & Bottom	28 ½ x 11 ⁷ / ₈	2	3/8" D x ¼" W groove at ends, ¾" W x 3/8" D dado in center for vertical divider
2.	Sides	57 x 11 ⁷ / ₈	2	½" x ¼" groove at ends, ¾" W x 3/8" D dados at 27" and 45 ¾" from bottom end. ¼" dado at 22 ¼ & 25 ¾
3.	Horiz Divider (Shelf)	29 ¼ x 11 ⁷ / ₈	2	¾" W x 3/16" D dado @ centerline. Midle divider has dado on both sides, bottom divider has dado on top side only.
4.	Upper Vert Divider	11 1/16" x 11 7/8	1	
5.	Lower Vert Divider	18 3/8 x 11 7/8	1	

Carcase Hardwoods				
1	Foot Pieces	1 ½ x 1 ½ x ¾	8	Miter ends and glue to foot block
2	Foot blocks	¾ x ¾ x ¾	4	
3.	Corner T&G	12 x 1 ¼ x 1 ¼	4	Mill ½" D x ¼" W" tongue on two adjacent sides. (See diagram)
	Corner T&G Blank	24 x 1 ¼ x ¾	8	Face-glue two together and trim to 1 ¼" thick
4.	Vertical Face Frame	1 ¼ x 58 ½ x ¾	2	1 ¼" width allows for ½" drawer guides
5.	Middle Vert Face Frame	1 ¾ x 31 ½ x ¾	1	1 ¾" width allows for ½" drawer guides
6.	Horizontal Face Frame	13/16 x 27 ½ x ¾	2	Butt to verticals
7.	Middle Horiz. Face Frame	13/16 x 12 7/8 x ¾	4	Butt to verticals
8	Drawer Guides	11 7/8 x ¾ x ¾	12	

9	Drawer guides	11 ⁷ / ₈ x 1/4 x 1 ¹ / ₂	8	
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Drawers – boxes, nominal height minus 1/4" . False fronts, nominal height. Boxes are 1/2" plywood. False fronts 3/4" (thickness of face frames) Dimensions assume box joints.				
Bottom Drawers		11 1/2 x 28 1/4 x 8 3/4 H nominal	Measure to fit	
B1	Front/Back		6	1/2" W x 1/4" D groove 1/4" from bottom
B2	Sides		6	1/2" W x 1/4" D groove 1/4" from bottom
B3	Bottom		3	1/2" plywood
B4	False Front	To fit openings	3	Ply (add 1/2" x 3/4 edge banding)
Middle Drawers		11 1/2" x 13 1/2 x 6 nominal		
M1	Front/Back		12	1/4" W x 1/4" D groove 1/4" from bottom
M2	Sides		12	1/4" W x 1/4" D groove 1/4" from bottom
M3	Bottom		12	1/4" Masonite
M4	False Front	To fit openings	6	Ply (add 1/2" x 3/4 edge banding)
Top Drawers		11 1/2 x 13 1/2 x 3 3/4 nominal		
T1	Front/Back		12	1/4" W x 1/4" D groove 1/4" from bottom
T2	Sides		12	1/4" W x 1/4" D groove 1/4" from bottom
T3	False Front	To fit openings	6	Ply (add 1/2" x 3/4 edge banding)
Drawer Hardwood		1/2" x 3/4" edgebanding		
		about 37 ' needed for 15 drawers		