

Vital Statistics: Sheet Goods Cart

Overall size: 53H x 72L x 24W at base

Material: CDX plywood

Joinery: Dadoes, screwed butt joints

Construction details:

- Cart side that stores full sheets angled back 5° to keep sheets from tipping over
- Shelves between tall sides secured with dadoes and screws
- Storage bins separated by angled dividers
- Cart bottom reinforced with blocking to provide solid base for mounting casters
- Built-in clamp rack constructed from scrap CDX

Tools you'll use

- Table saw
- Circular saw
- Drill/driver
- Sliding power miter saw (optional)
- Router and 3/4-in. straight bit
- Jig saw
- Clamps
- Sockets

SHOPPING LIST

(4) 3/4 in. x 4 ft. x 8 ft. CDX plywood

(16) 3/8 x 2-in. carriage bolts, nuts & washers

(2) 4-in. straight casters

(2) 4-in. swiveling casters with brakes

#8 flathead wood screws (1-1/4-, 1-1/2-, 2-1/4-in.)

Wood glue

CUTTING LIST

Part	No.	Size	Material
A. Base	1	3/4 x 22-1/2 x 72 in.	CDX plywood
B. Blocking (long)	2	3/4 x 4 x 72 in.	"
C. Blocking (short)	2	3/4 x 4 x 14-1/4 in.	"
D. Short edge	1	3/4 x 4 x 72 in.	"
E. Tall edge	1	3/4 x 18 x 72 in.	"
F. Vertical side	1	3/4 x 46-1/2 x 72 in.	"
G. Angled side	1	3/4 x 46-3/4 x 72 in.	"
H. End	1	3/4 x 9-3/4 x 46-1/2 in.	"
I. Divider	6	3/4 x 6 x 22-1/2 in.	"
J. Top shelf	1	3/4 x 6-3/16 x 71-1/4 in.	"
K. Shelf	1	3/4 x 7-3/16 x 71-1/4 in.	"
L. Shelf	1	3/4 x 8-1/8 x 71-1/4 in.	"
M. Shelf	1	3/4 x 9-1/8 x 71-1/4 in.	"
N. Clamp holder	2	3/4 x 3 x 7 in.	"
O. Clamp holder	2	3/4 x 3 x 13-3/4 in.	"

Build the base

1 Cut to size the base, bottom blocking and short and tall edge pieces from 3/4-in. plywood. Use a circular saw and a straightedge guide for making the initial cuts to reduce full sheets to a more manageable size. (Remember to account for the offset between the blade and the saw foot as you line up the straightedge guide for your cuts.)

2 Lay the base on a flat worksurface and attach the short and long blocking to it. The ends of the short blocking pieces fit in between the longer blocking. Use glue and 1-1/4-in. flathead wood screws to fasten the parts (See Photo A). Mark two reference lines along the length of the base on the blocking side to serve as centerlines for attaching the tall side pieces later. Draw a line for the angled side 5-5/8 in. from one edge, and draw another line for the vertical side 6-3/8 in. from the other edge.

3 Attach the short and tall edges to the base assembly using glue and 1-1/2-in. flathead wood screws. Flip the base assembly over before attaching the edge pieces so the blocking faces down. Align the ends of the parts and make sure the bottoms of the edge pieces are flush with the bottoms of the blocking. Drill pilot holes first, spacing the screws about every 8 in. Alternate the screws between the base and blocking to increase the joint strength. Mark centerlines on the outside of the tall edge for fastening the dividers. See Front View (Divided Side), for locating the dividers. Position the outermost divider lines 3/8 in. from the ends of the tall edge.

Install the dividers

4 Cut the six dividers to size. Follow the measurements given on the Divider diagram to mark the angled ends. We used a power miter saw to cut the dividers (See Photo B), but you could also use a circular saw, table saw or hand saw to make these cuts.

5 Attach the dividers to the tall edge piece. The outer dividers are attached to the tall edge using glue and 1-1/2-in. screws. Keep the outside faces of the outer dividers flush with the ends of the tall edge. Cut two scrap-plywood spacers, 8 and 12 in. wide, and insert a spacer between each pair of dividers as you attach the dividers with glue and screws (See Photo C). Use the centerlines you drew on the outside of the tall edge for lining up the screws. Then, extend the divider centerlines down around the bottom blocking, and drive two 2-1/4-in. screws up through the cart base and into the bottom of each divider.

Assemble the center section

6 Rip and crosscut the angled side and the four shelves to size. For each of these parts, tilt the saw blade 5° to create a bevel along one long edge. Mark the beveled edges on the parts to keep the orientation clear later.

7 Cut the vertical side to size and rout the shelf dadoes into one face. The dadoes are 3/4 in. wide and 1/4 in. deep. Mark a set of long reference lines for each of the four dadoes using the Side Section View, to place the dadoes. Then, extend dado centerlines to the other face of the vertical side to serve as screw guide lines. Cut the dadoes with a

router and a 3/4-in. straight bit (See Photo D). Clamp a straightedge on the vertical side to guide the router. To line up the guide, measure the distance from the edge of the router bit to the outer edge of the router base. This is the distance the straightedge must be offset from the closest marked dado line of each cut. Reset the straightedge for cutting each dado.

8 Attach the vertical side. Spread glue onto the edges of the dividers and clamp the vertical side in place so the dadoes face away from the dividers. Drive 1-1/2-in. flathead wood screws through the vertical side into pilot holes in the two end dividers. Then, using your 8- and 12-in. spacers between the dividers as alignment aids, screw the vertical side to the inside dividers. Tip the cart assembly onto the face of the tall edge and drive 1-1/2-in. screws along the vertical side reference line to attach the vertical side to the base.

9 Attach the shelves to the vertical side (See Photo E). Cut eight 10-3/8-in.-long scrap spacers to support the ends of the shelves during assembly. Spread glue in the bottom dado and insert the square edge of the bottom shelf into the dado. With the divider side of the cart facing you, keep the end of the shelf flush with the left end of the vertical side. The dado joint for this bottom shelf will be fastened with glue only. Install this shelf so the beveled edge faces up (See Detail: Shelf dado) and clamp the shelf. Then, install the rest of the shelves into the dadoes with 1-1/2-in. wood screws and glue. Arrange each shelf so the beveled edge faces up, and support the shelves

with spacers. Make sure the left shelf ends are flush with the end of the vertical side.

10 Set the angled side against the shelves and clamp it in place temporarily. Draw shelf centerlines across the face of the angled side, then remove the shelf spacers. Glue and fasten the angled side to the shelves with 1-1/2-in. screws (See Photo F). Screw the cart base to the angled side, following the angled side reference line you drew in Step 2.

11 Lay out and cut the end piece to size, using the measurements given in Drilling Pattern: End. Mark the screw locations on the end piece. Set the end piece into position on the end of the cart where the shelves are set back from the ends of the side panels. Attach the end piece to the ends of the shelves with glue and 1-1/2-in. wood screws. Fasten the end piece with 2-1/4-in. screws driven up through the base and blocking.

Install the casters

12 Tip the cart on its side and install the four casters. Lay the base of each caster in place on the blocking pieces and use the caster base holes to mark locations for carriage bolts. Position the casters so that all four corners of each caster rest firmly on the bottom blocking. Also, be sure the caster holes will not interfere with screws attaching the bottom blocking or dividers. Drill 3/8-in. pilot holes for each caster. Install the two straight casters on one end and swiveling casters on the other end, with the washers and nuts facing the caster wheels (See Photo G).

Finishing touches

Expand the storage possibilities of your cart by adding clamp holders to one end. We made ours out of scrap CDX left over from the project. The holder configuration you choose will depend on the number, style and length of clamps you have. We've designed the storage cart tall enough to hang several 4-ft.-long pipe or bar clamps without the clamps dragging on the floor. The bottom holder has additional cutouts for shorter clamps.

13 Make the clamp holders. Each clamp holder is composed of two parts that form an "L" when the parts are assembled. Mark cutouts on the top member of each holder and cut them out with a jig saw (See Photo H). For standard pipe clamps, 1-in.-wide cutouts 2 in. deep will hold each clamp securely. Assemble the holders with glue and 1-1/2-in. screws. Then attach the holders to the closed end of the cart using glue and 1-1/2-in. screws (See Photo I). Make sure to keep the top and bottom clamp holders aligned when fastening them to the cart so long clamps will hang straight.

14 Break all exposed sharp edges with sandpaper to minimize splinters. We chose not to apply any finish to our sheet goods cart, but you may prefer to dress yours up with a couple coats of enamel paint. If you plan to store veneered plywood sheets with finished faces on your cart, you may want to add strips of carpet to the face of the angled side to protect the veneer from scratches.



A Attach the long and short blocking pieces to the bottom panel, flush around the perimeter, with glue and 1-1/4-in. flathead wood screws. Drill pilot holes for the screws first.



D Cut shelf dados in the vertical side with a router and straightedge guide. Pull the router toward you as you make each cut, being careful to hold the router base tight against the straightedge as you work.



G Attach the casters. Mark bolt hole locations on the corners of the cart bottom, positioning the casters so they sit squarely on the bottom blocking. Drill the holes and bolt the casters in place, with the washers and nuts facing the cart bottom.



B Cut the angled ends of the dividers. A power miter saw makes this task quick and easy, once you've established the cutting angle. You can also make these cuts with a jig saw, table saw or circular saw.



E Fasten the shelves to the vertical side with glue and screws. Support the shelves with scrap-wood spacers. Insert the square edge of the shelves into the dados, and keep the beveled edges facing up.



H Lay out the clamp holders and cut them to size. Notches 1 in. wide and 2 in. deep are a good size for holding standard pipe clamps. The bottom clamp holder can be made longer than the top, spanning across the end piece and the end divider.



C Glue and screw the dividers to the tall edge with 1-1/2-in. wood screws. Use scrap-wood spacers inserted between the dividers to establish divider spacing.



F Draw centerlines for the shelves on the angled side, then fasten the angled side to the shelves with glue and screws. Screw up through the bottom to attach the angled side from below.



I Fasten the clamp holders to scrap blocking, and screw the blocking to the end of the cart with 1-1/2-in. wood screws. Keep the slots aligned between the holders so the clamps will hang straight.