
2x4 Flip Top Workbench Cart Plan



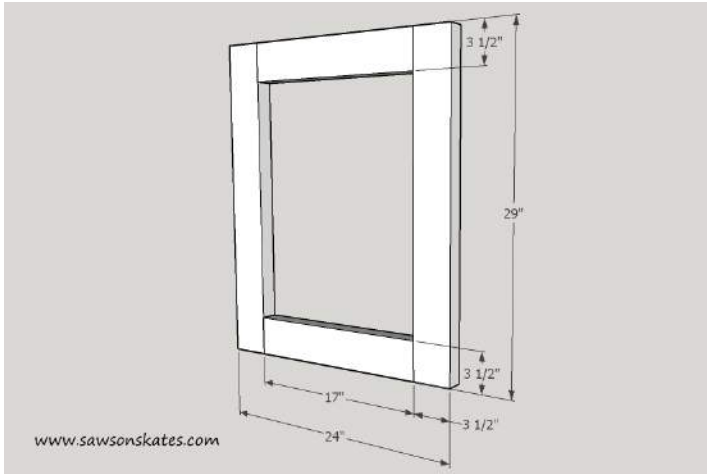
Supplies

- (4) 2x4x8
- (2) 1x3x8
- (2) 1x2x8
- (2) 1/2" 2x4 plywood
- (4) 3" locking casters
- (4) 2" barrel bolts
- #8 3" wood screws
- #8 1-1/4" wood screws
- #8 1" wood screws
- 1-1/4" pocket screws
- 2-1/2" pocket screws
- (2) 3/8" 4" carriage bolts
- (2) 3/8" nylon lock nuts
- (6) washers
- (4) 1/2" x .385 x 1" nylon spacer

Tools

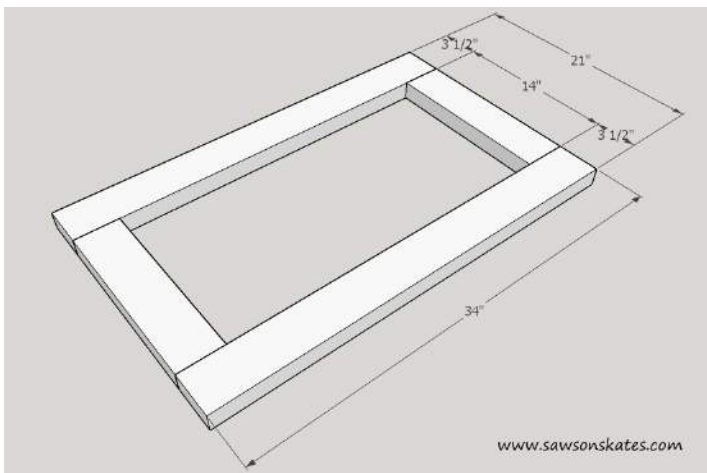
- Miter saw
- Kreg jig
- Drill
- Circular Saw or Jig Saw
- Circular Saw jig
- Countersink drill bits
- 1/2" Forstner Bit

Step 1. Assemble sides. Cut 4 pieces of 2x4 to 29" and 4 pieces to 17". Drill pocket holes (be sure to set your jig to drill in 1-1/2" material) in the ends of the 17" pieces. Apply glue to 2 of the 17" pieces, clamp to 2 of the 29" pieces, check for square and attach using 2-1/2" pocket screws. Repeat for the other side.



Step 2. Cut side rails and bottom pieces. Cut 4 pieces of 2x4 to 34" (2 of these pieces will be used as the side rails and 2 will be used for the bottom). Cut 2 pieces of 2x4 to 14".

Before assembling the bottom, check the measurement of the side and be sure the rails plus the bottom section are the same measurement.



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The rails plus the bottom section must be same the same measurement as the side. Adjust the bottom short sides (14") if necessary. Drill pocket holes in the ends of all of the pieces. Pocket holes in the short sides will be used to join to the long bottom pieces. Pocket holes in the long side pieces and rails will be used later to attach to the sides. Side rails will be used in Step 4.



Step 3. Assemble bottom. With the pocket holes drilled in the short bottom pieces from Step 2, apply glue, clamp to bottom long pieces, check for square and attach using 2-1/2" pocket screws.



Step 4. Attach Side Rails. Set all pieces in position and check for proper fitment. Apply glue ONLY to the ends of the side rails, clamp and attach ONLY the upper screw (2-1/2" pocket screw) of the side rail.



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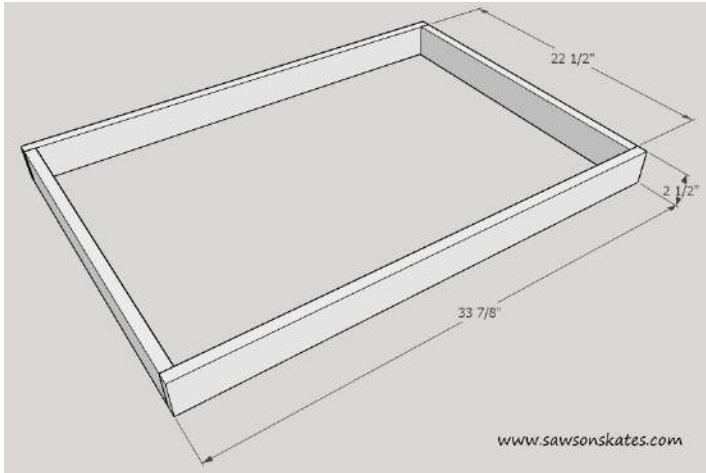
Gently remove the bottom and attach the lower screws of the side rail.



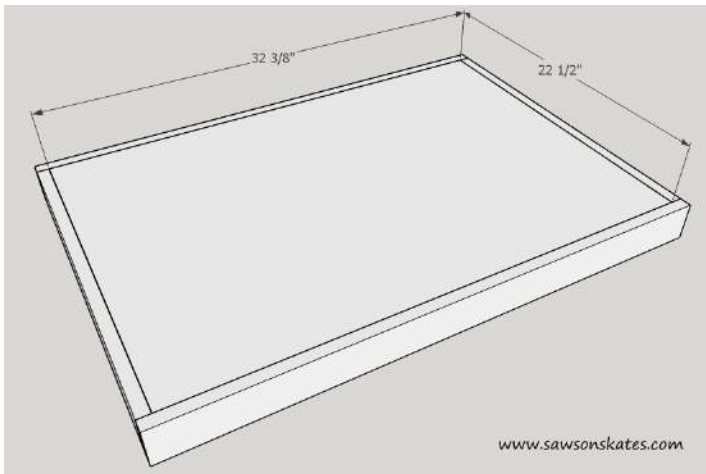
Step 5. Attach Bottom. Apply glue to the sides of the bottom and replace. Be sure bottom is flush with the bottom of the sides and side rail and clamp. Pre-drill countersink holes in the sides and side rails. Attach using 3" wood screws. Flip over and attach bottom long side pieces to the sides using 2-1/2" pocket screws.



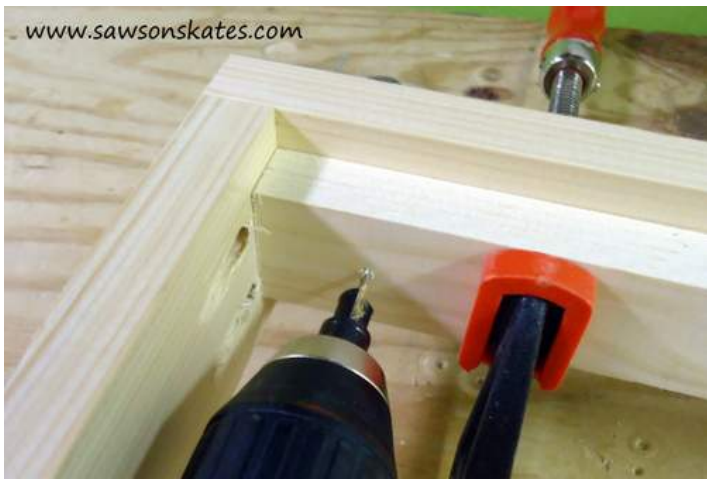
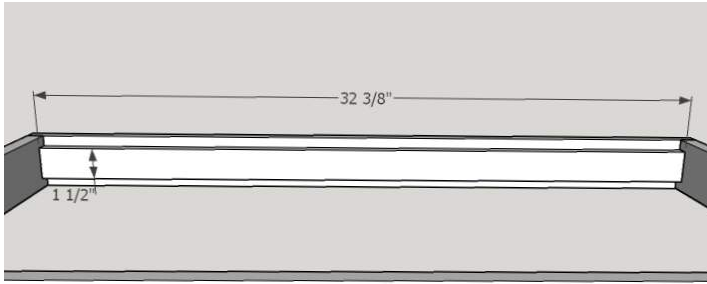
Step 6. Assemble Table Frame. Cut 2 pieces of 1×3 to 33-7/8". Cut 2 pieces of 1×3 to 22-1/2" and drill pocket holes in each end, apply glue, clamp to long pieces, check for square and attach using 1-1/4" pocket screws.



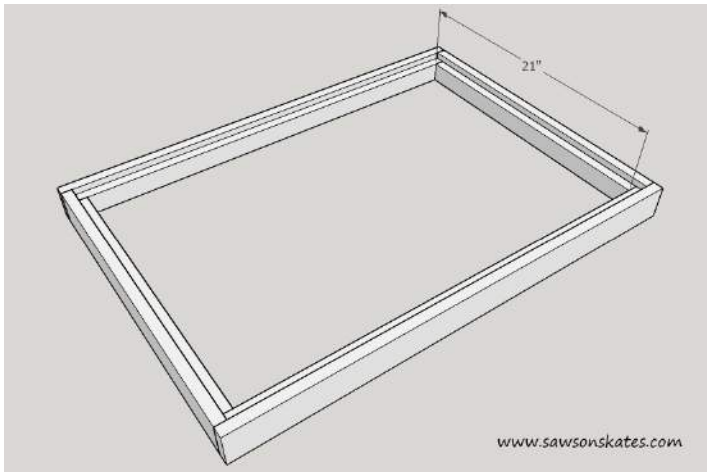
Step 7. Cut Table Top and Bottom. Cut 2 pieces of plywood to 32-3/8" x 22-1/2". Check the inside dimensions of the Table Frame and adjust if necessary. Need an easy way to cut plywood? Check out my Circular Saw Crosscut Jig plan that can easily be used for cross cuts and made longer for rip cuts.



Step 8. Table Interior Frame – Long Sides. Place one of the plywood pieces inside the table frame. Cut 2 pieces of 1×2 to 32-3/8", apply glue and clamp to frame. Flip frame and adjust the interior frame pieces, so the plywood is flush with the edges of the Table Frame and tighten clamps. Remove plywood, drill countersink holes in interior frame pieces and attach using 1-1/4" wood screws.



Step 9. Table Interior Frame – Short Sides. Cut 2 pieces of 1×2 to 21", apply glue and clamp to frame, drill countersink holes in interior frame pieces and attach using 1-1/4" wood screws.



Step 10. Attach Top. Apply glue to edge of the interior frame, place plywood, clamp, drill countersink holes around the edge and attach using 1" wood screws.



Step 11. Attach Interior Center Rails. Cut 2 pieces of 2x4 to 21" and drill pocket holes in each end. I centered these rails to correspond with the mounting holes in the tool I was planning to install on the cart. I would recommend you do the same, so you have a strong point to attach your tool. Once you select your location, apply glue, clamp and attach using 2-1/2" pocket screws.



Step 12. Connect Table to Sides. First, clamp scrap pieces of 1×3 on the inside of each side and flush with the top of the side. Directly below the scrap, clamp an additional piece of scrap and then remove the top pieces of scrap. This will serve as a temporary ledge to install the top and barrel bolts in Step 13.



Center a mark side to side on the top and measure down 1-1/4". Using a 1/2" Forstner bit, drill through the side and through the table top. Repeat on the other side.



Remove the clamps holding the top to the sides and remove the top. Insert the nylon spacers in the sides and the top. Insert a lag bolt into the side until it protrudes enough to insert a washer, replace the top and push the lag bolt through the top, add two more washers and attach with lock nut. Repeat on the other side.



Step 13. Attach Barrel Bolts. With the temporary ledge still in place, attach the barrel bolts to all four corners of the top and then remove the ledge.



Step 14. Mount tool. Center the base of the tool, drill holes and attach using bolts.



Step 15. Install Plywood Workbench. Using the second piece of plywood you cut in Step 6, install using 1" wood screws. Note: do not glue the plywood in the event you want to swap out the tool or need to tighten the bolts.

