

AI-01581 Drawer Design Dimensions

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Drawer Design Dimensions

With the following information, calculate the dimensions of each drawer and provide a cut list (table format) and then provide an assembly instructions

Width of the cabinet-600mm

Height of cabinet-560mm

Depth of cabinet-520mm

Individual drawer height -100mm

Drawer slide allowance-25.4mm (both sides total)

Thickness of plywood-18mm

Clearance between drawer -1mm

Cabinet #1 with 600mm width

Absolutely! Let's break down this drawer design step-by-step.

1. Calculating the Number of Drawers:

- Cabinet height: 560mm
- Individual drawer height: 100mm
- Number of drawers: $560\text{mm} / 100\text{mm} = 5.6$
- Since we can't have a fraction of a drawer, we'll fit 5 drawers, and have unused space.

2. Calculating Drawer Width:

- Cabinet width: 600mm
- Drawer slide allowance: 25.4mm
- Total slide allowance (both sides): 25.4mm
- Raw Drawer Width: $600\text{mm} - 25.4\text{mm} = 574.6\text{mm}$
- Drawer box outer width = Raw Drawer Width.
- Drawer box inner width = Raw Drawer Width - $(18\text{mm} * 2) = 574.6\text{mm} - 36\text{mm} = 538.6\text{mm}$

3. Calculating Drawer Depth:

- Cabinet depth: 520mm
- We will reduce the depth by 18mm to allow for the drawer front.
- Drawer box outer depth = $520\text{mm} - 18\text{mm} = 502\text{mm}$.
- Drawer box inner depth = Drawer box outer depth - 18mm = $502\text{mm} - 18\text{mm} = 484\text{mm}$.

4. Calculating Drawer Height:

- Individual drawer height: 100mm
- Drawer box outer height = 100mm
- Drawer box inner height = Drawer box outer height - 18mm = $100\text{mm} - 18\text{mm} = 82\text{mm}$.

5. Cut List (Table Format):

Part	Dimensions (Width x Depth x Height)	Quantity	Material
Drawer Sides	502mm x 82mm x 18mm	10	Plywood
Drawer Front/Back	538.6mm x 82mm x 18mm	10	Plywood
Drawer Bottom	538.6mm x 484mm x 6mm (or similar)	5	Plywood
Drawer Fronts	574.6mm x 100mm x 18mm	5	Plywood

Notes on the cut list:

- The drawer bottom thickness can be adjusted, but 6mm is a common choice.
- The drawer fronts are the full outer width of the drawer.
- The 1mm clearance between drawers is accounted for in the overall cabinet height, and the 5 drawers fit within the 560mm height.

6. Assembly Instructions:

1. Prepare the Plywood:

- Cut all plywood pieces according to the cut list.
- Ensure all edges are clean and square.

2. Assemble the Drawer Boxes:

- For each drawer, attach the drawer sides to the drawer front and back pieces using your preferred method (screws, dowels, or joinery). Make sure the box is square.
- Attach the drawer bottom to the assembled box. You can use glue and brads or screws.

3. Install the Drawer Slides:

- Attach the drawer slides to the inside of the cabinet, ensuring they are level and aligned.
- Attach the corresponding slides to the sides of each drawer box.

4. Attach the Drawer Fronts:

- Position the drawer fronts on the assembled drawer boxes, ensuring they are flush with the edges.
- Attach the drawer fronts from the inside of the drawer box using screws.

5. Install the Drawers:

- Slide each drawer into the installed drawer slides.
- Test the drawers for smooth operation.

6. Finishing:

- Sand all exposed edges.
- Apply your desired finish to the drawers and cabinet.

Important Considerations:

- **Joinery:** Choose a suitable joinery method for assembling the drawer boxes. Common methods include butt joints with screws, dadoes, rabbets, or dowels.
- **Drawer Bottom:** The drawer bottom should be recessed into the drawer box for added strength.
- **Drawer Front Alignment:** Pay close attention to the alignment of the drawer fronts to ensure a clean and professional look.
- **Safety:** Always wear appropriate safety gear when working with power tools.
- **Adjustments:** It is always a good idea to perform a test fit of the drawers before final assembly to ensure proper fit and alignment.
- **Drawer slide type:** there are many types of drawer slides, ensure that the chosen slide is rated for the weight you intend to place in the drawers.

Let me know if you have any other questions or need further clarification!

Cabinet #2 with 490mm width

Got it! Let's work through the drawer design with the new cabinet dimensions.

1. Calculating the Number of Drawers:

- Cabinet height: 560mm
- Individual drawer height: 100mm
- Number of drawers: $560\text{mm} / 100\text{mm} = 5.6$
- Again, we'll fit 5 drawers with some unused space.

2. Calculating Drawer Width:

- Cabinet width: 490mm
- Drawer slide allowance: 25.4mm

- Raw Drawer Width: $490\text{mm} - 25.4\text{mm} = 464.6\text{mm}$
- Drawer box outer width = Raw Drawer Width.
- Drawer box inner width = Raw Drawer Width - $(18\text{mm} * 2) = 464.6\text{mm} - 36\text{mm} = 428.6\text{mm}$

3. Calculating Drawer Depth:

- Cabinet depth: 520mm
- Drawer box outer depth = $520\text{mm} - 18\text{mm} = 502\text{mm}$
- Drawer box inner depth = Drawer box outer depth - $18\text{mm} = 502\text{mm} - 18\text{mm} = 484\text{mm}$

4. Calculating Drawer Height:

- Individual drawer height: 100mm
- Drawer box outer height = 100mm
- Drawer box inner height = Drawer box outer height - $18\text{mm} = 100\text{mm} - 18\text{mm} = 82\text{mm}$

5. Cut List (Table Format):

Part	Dimensions (Width x Depth x Height)	Quantity	Material
Drawer Sides	502mm x 82mm x 18mm	10	Plywood
Drawer Front/Back	428.6mm x 82mm x 18mm	10	Plywood
Drawer Bottom	428.6mm x 484mm x 6mm (or similar)	5	Plywood
Drawer Fronts	464.6mm x 100mm x 18mm	5	Plywood

6. Assembly Instructions:

The assembly instructions are the same as in the previous response:

1. Prepare the Plywood:

- Cut all plywood pieces according to the cut list.
- Ensure all edges are clean and square.

2. Assemble the Drawer Boxes:

- For each drawer, attach the drawer sides to the drawer front and back pieces using your preferred method (screws, dowels, or joinery). Make sure the box is square.
- Attach the drawer bottom to the assembled box. You can use glue and brads or screws.

3. Install the Drawer Slides:

- Attach the drawer slides to the inside of the cabinet, ensuring they are level and aligned.
- Attach the corresponding slides to the sides of each drawer box.

4. Attach the Drawer Fronts:

- Position the drawer fronts on the assembled drawer boxes, ensuring they are flush with the edges.
- Attach the drawer fronts from the inside of the drawer box using screws.

5. Install the Drawers:

- Slide each drawer into the installed drawer slides.
- Test the drawers for smooth operation.

6. Finishing:

- Sand all exposed edges.
- Apply your desired finish to the drawers and cabinet.

Important Considerations:

- As before, the clearance between drawers is accounted for in the overall cabinet height.
- ensure that the drawer slides are installed perfectly parallel, or the drawers will bind.
- The drawer bottom thickness can be adjusted, but 6mm is a common choice.
- The drawer fronts are the full outer width of the drawer.

- The 1mm clearance between drawers is accounted for in the overall cabinet height, and the 5 drawers fit within the 560mm height.
- Always double check all measurements before cutting any wood.

Summary:

Cabinet #1 with 600mm width

Part	Dimensions (Width x Depth x Height)	Quantity	Material
Drawer Sides	502mm x 82mm x 18mm	10	Plywood
Drawer Front/Back	538.6mm x 82mm x 18mm	10	Plywood
Drawer Bottom	538.6mm x 484mm x 6mm (or similar)	5	Plywood
Drawer Fronts	574.6mm x 100mm x 18mm	5	Plywood

Cabinet #2 490mm

Part	Dimensions (Width x Depth x Height)	Quantity	Material
Drawer Sides	502mm x 82mm x 18mm	10	Plywood
Drawer Front/Back	428.6mm x 82mm x 18mm	10	Plywood
Drawer Bottom	428.6mm x 484mm x 6mm (or similar)	5	Plywood
Drawer Fronts	464.6mm x 100mm x 18mm	5	Plywood