Build a Paper Drawer Box Without Special Tools

A two-part miniature tray and sliding sleeve with printable measured nets

These are original printable digital plans for adult paper crafts. Dimensions are calculated; every finished size is nominal. Paper thickness, printer scaling, adhesive, cutting accuracy and folding technique can change the fit. There has been no physical printing, cutting, folding, gluing, fit test or durability test. Work at a clear table, keep sharp edges and wet adhesive away from children, and use only materials and adhesives that are suitable for the intended craft according to their labels. Keep food, flame, heat and electrical loads away from these objects.

What the finished drawer does

This project makes a miniature paper drawer for a small, flat, light craft item such as a note, paper scraps or decorative tags. It has two parts: an open-top tray and a sleeve around that tray. The tray's bottom is nominally 100 x 65 mm, and its four walls are nominally 20 mm high. It is a decorative light-duty paper craft, not secure storage, a jewellery box for heavy contents or a protective enclosure for fragile valuables.

You can make both parts using a ruler, scissors, a blunt scoring tool, cardstock and label-appropriate paper adhesive. The original tray diagram is 140 x 105 mm overall, including its 20 mm walls; four corner tabs allow the walls to be attached. The sleeve is drawn from a 260 x 65 mm strip, including a 12 mm seam tab. The 65 mm strip width runs along the open sliding direction of the sleeve, not around the tray cross-section. These measurements describe the flat patterns. The interior and actual clearance depend on paper thickness and folding accuracy.

The sleeve cross-section is intentionally slightly larger than the tray in the design, but there has been no physical fit test. Before final glue, slide the lightly folded tray into the unglued sleeve blank. Do not force a tight join. If the sleeve will not move freely, adjust its cut and score dimensions and record the change rather than claiming that this reference shape fits every card.

Materials and print planning

Use two sheets of cardstock around 160-220 g/m2 as a starting point; keep both sheets the same kind if possible. You also need millimetre ruler, pencil, ordinary scissors, blunt tool for scoring, a small piece of scrap and labelled paper-safe craft glue or narrow double-sided tape. Save more paper than the bare net sizes because you will need to handle and measure the blank while cutting.

The tray template prints portrait on A4 or Letter, while the 260 mm sleeve strip prints on a landscape sheet. Print at Actual Size / 100% rather than Fit to page, then measure the 50 mm calibration bar on each page. The sleeve is close to the printable width of some US Letter printers: its 260 mm length leaves only about 9.7 mm from each side of a 279.4 mm-wide Letter sheet to the paper edge. The printer’s own unprintable margins may consume some or all of that space. If its outer edge is clipped, do not guess the missing line. Use the numeric length table to draft it on longer paper or access a printer with sufficient printable area.

Score before cutting when practical, work slowly around small corner tabs, and keep fingers outside the cutting path. This design never requires knives, rotary cutters, heated tools or powered equipment. Allow any adhesive to dry fully according to the pack instructions before trying the mechanism.

Tray pattern: exact 100 x 65 mm base

The tray outer net is a 140 x 105 mm bounding rectangle. Its central bottom panel is x = 20..120 mm and y = 20..85 mm, giving 100 x 65 mm. The top and bottom walls extend 20 mm beyond the centre along y, while the side walls extend 20 mm beyond the centre along x. Small 20 x 20 mm square corner tabs remain attached to the top and bottom walls at the four corners; the tabs are folded against the inside of the two side walls.

On the template, solid black lines are cuts, including the short separation slits between the corner tabs and the left/right wall ends. Dashed green lines indicate scores: the four centre-panel boundaries and the four tab hinges. Do not cut the main panel fold lines. There is no need for diagonal slits that would remove the corner tabs or weaken the square footprint.

Make a dry fold first. Fold up top and bottom walls from the central base, then rotate their corner tabs 90 degrees around the vertical tab hinges so the tabs face the adjacent side walls. Fold the two side walls up last and check that the tabs lie against their inside faces. A small amount of adhesive on each tab should hold the paper geometry after drying. Keep the inside base free of glue and avoid gaps where the wall edges meet.

Sleeve pattern: length and fold arithmetic

The sleeve begins as one strip 260 x 65 mm. Across the 260 mm length, measure sequential sections 102, 22, 102, 22 and 12 mm. The first four sections will be the faces of a rectangular tube; the final 12 mm is a joining tab. Scores fall at 102, 124, 226 and 248 mm from the left cut edge. The sum is 102 + 22 + 102 + 22 + 12 = 260 mm.

The two nominal 102 mm portions face the tray's 100 mm sides; the 22 mm portions bridge its 20 mm walls. Those are calculated differences only, not verified operating clearances. The sleeve’s 65 mm axial length matches the tray’s 65 mm base width, but its two axial ends remain open; sliding clearance depends on the 102 x 22 mm wrapped cross-section and real material thickness. Wrapped card layers, seams and a too-tight glued tab can easily reduce the opening. A reader should allow a little more room if needed after testing the folded dry parts.

The strip must become a four-sided open-ended sleeve. Bring the 12 mm tab inside the first 102 mm face, align the long edges, bond the overlap only, and allow it to dry in the desired square-sided shape. Keep the tube opening clear of glue. Do not attach the tray to the sleeve or the drawer cannot slide out.

Build the two components

1. Print the tray and sleeve diagrams separately, using the correct portrait or landscape orientation. Measure the 50 mm reference on each sheet. If either is scaled or clipped, reprint or draft the tabulated measurements manually before cutting.

2. On the tray card, mark a 140 x 105 mm overall net and the centre panel 100 x 65 mm. Trace all solid perimeter edges and the four short separating cuts. The little corner squares are tabs, not pieces to discard.

3. Score the four long edges of the centre panel and the four edges where corner tabs meet the top and bottom walls. Your tool should create a crease guide, not slice the sheet.

4. Cut along the outer tray outline and four marked short slits. Check again that four tabs remain attached to the 20 mm walls at the upper and lower ends. Do not cut away all four corners.

5. Gently fold the tray walls upward. Rotate each corner tab inward along its scored tab hinge so it will lie against the inside face of its neighbouring side wall; do not fold the tab down onto the tray base. Confirm the wall edges can meet without warping the bottom panel.

6. Make a dry tray assembly. If a corner cannot close without tearing or twisting, check the tab cuts and score positions before using adhesive.

7. Apply a small amount of labelled paper glue to each corner tab, press it against the adjacent side wall inside the tray and let it set as directed. Avoid excess glue on the tray base.

8. Mark the sleeve strip exactly 260 x 65 mm from the pattern or the dimension table. The section widths in order are 102, 22, 102, 22 and 12 mm; write them onto the back so you do not confuse the tab with a face.

9. Score across the strip height at 102, 124, 226 and 248 mm. Fold gently along each line and bring the last 12 mm under the first face to form a rectangle. Hold it dry and check the edges align.

10. Before sealing the sleeve, compare its proposed interior with the tray by gently positioning the tray inside the dry folded sleeve. Do not bend the tray or force it through; note whether thickness and the corner joints require another millimetre or more of clearance.

11. If the dry fit is reasonable, bond the 12 mm tab to the inside of the first 102 mm face, keeping the long opening clear. Wait for the adhesive to dry fully without collapsing the sleeve flat.

12. With clean dry hands, slide the empty tray into the finished sleeve. If it rubs, binds or buckles, stop and revise the sleeve with a slightly larger allowance instead of tugging harder. If it slips freely, keep the tray largely inside the sleeve for display.

13. If you want a pulling aid, add a small paper tab to the tray's accessible end after confirming it does not scrape the sleeve. Avoid sharp metal fasteners and protruding hooks.

14. Record both net sizes, paper choice, calibration readings, any sleeve adjustment and the outcome of your own dry-fit on the printable build record. Digital dimensions alone do not certify actual tolerance.

Troubleshooting and safe use

If the sleeve sticks, compare the wall height, tab placement and adhesive seam against the dimension table. The 102 x 22 mm rectangle describes a nominal inside profile only if the card is perfectly thin; real thickness subtracts space. If the tray base bows, a tab may have pulled its adjacent wall inward. Rebuild the offending piece with a clean score rather than forcing it to shape after the glue has dried.

Paper catches moisture easily. Do not store liquids, food, batteries, hot materials or sharp items in this drawer. Avoid hanging it by a handle, loading it heavily or treating it as child-safe storage. Place it on a stable dry surface where a

falling tray cannot cause a problem.

A pattern printed at 96% would shrink the 260 mm sleeve to 249.6 mm; that is not an interchangeable fit with a correctly printed tray. Verify both full-size calibration bars separately. This calculated example illustrates why setting Actual Size matters; it does not represent a tested printer error.

Possible personalisation

Decorate the sleeve face rather than the tray contact surfaces to avoid adding friction. A printed label on the broad 102 mm face makes the item easy to identify without an added metal pull. If the paper is light coloured, consider a simple one-colour line pattern drawn before assembly.

To change tray length or width, derive a new centre panel first, retain consistent wall height, and recalculate all four sleeve segments with a specific clearance allowance. Label any revised version clearly as your own variation. Do not infer a full-size production template from an altered print percentage without recalculating its mating pieces.

References, rights and disclosure

Adobe Acrobat Help for paper/page size and scaling: https://helpx.adobe.com/acrobat/desktop/print-documents/set-up-and-print-pdfs/page-size.html . Its instructions support checking Actual Size versus Fit, not this craft's mechanical tolerance.

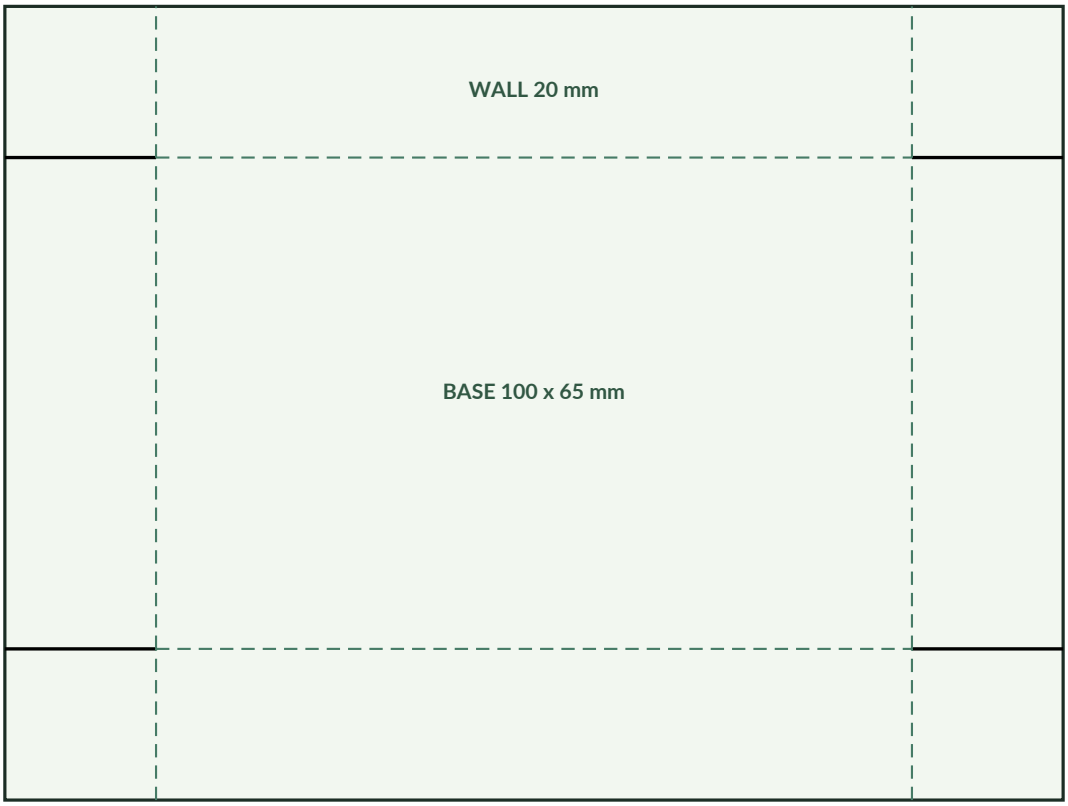
Library of Congress care guidance for works on paper: https://www.loc.gov/preservation/care/paper.html . Referenced only for sensible handling context; this tutorial does not recommend adhering tabs to valuable paper artefacts.

All text, nets, worksheet and cover artwork are newly created Steadleaf Press digital teaching assets. No external pattern was reproduced. No physical trial, cutter test, adhesive test, fit test, load test, safety certification or retail product testing has occurred.

Printable diagrams and build record follow on the next pages.

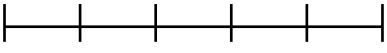
STP-MAKE-F029 / FULL-SIZE TRAY NET

Solid black = cuts; green dashed = score. Four 20 mm square tabs remain attached.



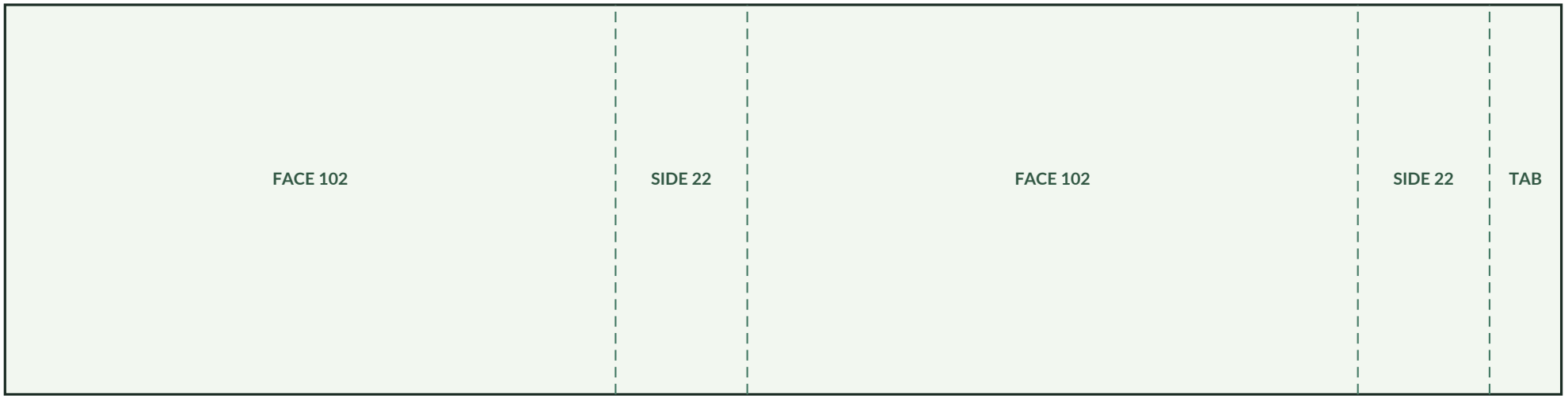
Flat tray net: 140 x 105 mm. Cut four side slits at y20 and y85 from x0..20 and x120..140. Fold four corner tabs inward.

50 mm SCALE CHECK - measure with a ruler; must equal 50 mm



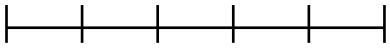
STP-MAKE-F029 / FULL-SIZE SLEEVE STRIP

Landscape page. Solid = cuts; green dashed = scores. Requires printable width of 260 mm.



Original sleeve lengths: 102 + 22 + 102 + 22 + 12 = 260 mm. Score at 102, 124, 226, 248 mm. If clipped, draft on longer paper.

50 mm SCALE CHECK - measure with a ruler; must equal 50 mm



STP-MAKE-F029 / MAKER RECORD / PAGE 1

Write your own readings and decisions; no physical trial was performed by Steadleaf Press.

Cardstock and approximate weight

Tray cut dimensions / scored base check

Sleeve segment widths and score sequence

Print 50 mm ruler reading - tray

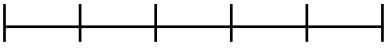
Print 50 mm ruler reading - sleeve

Dry-fit and sliding behaviour observed by reader

Adjustments and version number

Record an actual observation only if you perform it yourself.

50 mm SCALE CHECK - measure with a ruler; must equal 50 mm



STP-MAKE-F029 / MAKER RECORD / PAGE 2

Write your own readings and decisions; no physical trial was performed by Steadleaf Press.

What changed from the full-size original?

How was each score/cut location measured?

Where did the paper bind, crack, wrinkle or slip?

What would you change for the next copy?

Date, version and initials

Safety or handling concern noticed by reader

Record an actual observation only if you perform it yourself.

50 mm SCALE CHECK - measure with a ruler; must equal 50 mm

