

Eccij

Dev Intarsia

Sample - Purchased version includes STL, DXF, SVG, and PDF files.





***This project contains small parts and is not suitable for children.
Always use appropriate protective gear (e.g. safety glasses, dust mask, etc.)
when using power tools or when generating dust.***

Intarsia is a style of woodworking that uses multiple colors, grain patterns, or types of wood, cut into different shapes and assembled to create an image.

To make your Dev Intarsia look like the one on the cover page, use the following wood species:

- Hat: **Purple Heart**
- Propeller, Spindle: **Sycamore**
- Eye Whites, Eye Shine: **Maple**
- Body: **Red Oak**
- Feet: **Black Walnut**
- Backer: **Wenge**

As some of the hardwoods above can be expensive, a lower cost option for this project is to use softer woods like pine or birch, and then use wood stains to add different colors to the parts.

Your Dev Intarsia can be completed using one of four methods. Each method has a color assigned to it below. For the method you'd like to use, see the page with that color:

1. 3D cut from wood via CNC machining, with STL files.
2. 2D cut from wood via CNC machining, with PDF, DXF, or SVG files.
3. 2D cut from wood by hand via scroll saw, with printable PDF patterns.
4. 3D printed, with STL files.

Note that “left” and “right” in the Dev Intarsia part names are from Dev’s anatomical perspective. For example, “Foot Left” is Dev’s left foot, although it appears on the right side of the model from the viewer’s perspective.

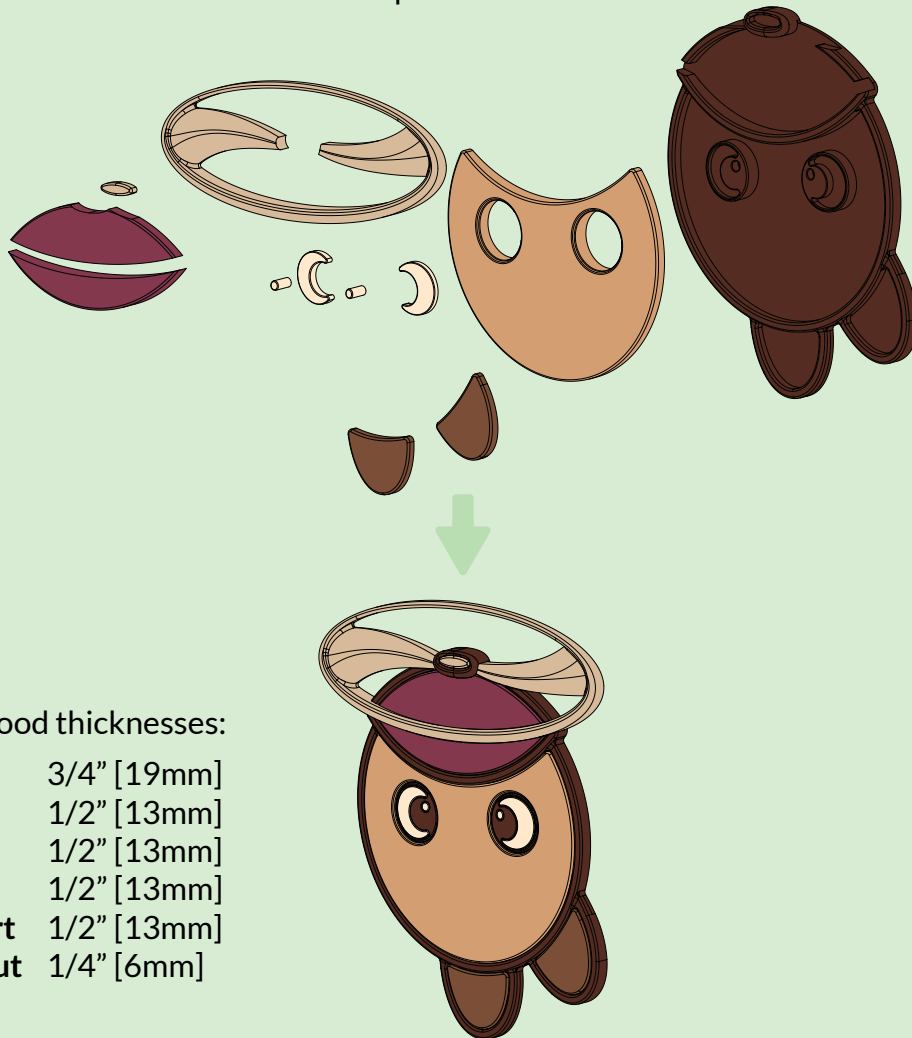
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3D Cutting via CNC

1. Generate CNC toolpaths using the provided STL files. For best results:
 - A. See the table below for minimum starting wood thicknesses.
 - B. Orient each part such that the desired wood grain direction is achieved.
See *Dev Intarsia 2D - Printable Patterns.pdf* for recommended grain directions.
 - C. Mill the parts using a 1/8" [3mm] or smaller ball or flat end mill.
 - D. Use a flat end mill to cut the Backer part to ensure sharp inner edges.
 - E. Mill parallel paths, perpendicular to the wood grain to minimize splintering.
 - F. For smooth surfacing, set the stepover distance to 0.010" [0.25mm] or less.
2. Cut each part with your CNC machine.
3. Sand the cut parts using 220 grit or finer sandpaper until all tool marks are removed.
4. If all parts are the same type of wood (i.e. not the recommended hardwood species listed in the table below), stain each part a desired color.
5. Apply a thin layer of whitewash stain to the Eye White and Eye Shine parts to ensure they do not yellow when finish is applied.
6. Finish each part with polyurethane or your wood finish of choice.
7. Buff the parts with an ultra fine Scotch Brite pad to remove any finishing imperfections.
8. Glue the parts together, as shown below. Use the glue sparingly to ensure it does not flow into visible areas between and around parts.



Minimum wood thicknesses:

Wenge	3/4" [19mm]
Red Oak	1/2" [13mm]
Sycamore	1/2" [13mm]
Maple	1/2" [13mm]
Purple Heart	1/2" [13mm]
Black Walnut	1/4" [6mm]

2D Cutting via CNC

1. Generate CNC toolpaths using the provided PDF, SVG or DXF files. For best results:
 - A. Use 1/4" [6mm] thick wood for all parts.
 - B. Orient each part such that the desired wood grain direction is achieved.
See *Dev Intarsia 2D - Printable Patterns.pdf* for recommended grain directions.
 - C. Mill using a 1/8" [3mm] or smaller flat end mill.
2. Cut each part with your CNC machine.
3. Sand the cut parts as desired.
4. If all parts are the same type of wood (i.e. not the recommended hardwood species listed on the first page), stain each part a desired color.
5. Apply a thin layer of whitewash stain to the Eye White and Eye Shine parts to ensure they do not yellow when finish is applied.
6. Finish each part with polyurethane or your wood finish of choice.
7. Buff the parts with an ultra fine Scotch Brite pad to remove any finishing imperfections.
8. Glue the parts together, as shown below. Use the glue sparingly to ensure it does not flow into visible areas between and around parts.



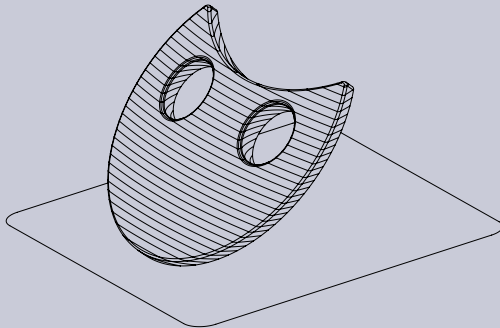
2D Cutting by hand via Scroll Saw

1. Print the *Dev Intarsia 2D - Printable Patterns.pdf* file at 100% (1:1) scale. Do not use the “fit to page” or “scale to fit page” options.
2. Use a light duty spray adhesive to attach the patterns to 1/4” [6mm] thick wood. Use the adhesive sparingly, as you’ll need to remove the paper patterns from the wood once the parts are cut.
3. Cut the parts using a scroll saw and/or bandsaw.
4. Remove the paper patterns from the cut parts and sand the parts to smooth out any rough edges and to remove any residual spray adhesive.
5. If all parts are the same type of wood (i.e. not the recommended hardwood species listed on the first page), stain each part a desired color, ensuring all spray adhesive is completely removed before doing so.
6. Apply a thin layer of whitewash stain to the Eye Whites and Pupils to ensure they do not yellow when finish is applied.
7. Finish each part with polyurethane or your wood finish of choice.
8. Buff the parts with an ultra fine Scotch Brite pad to remove any finishing imperfections.
9. Glue the parts together, as shown below. Use the glue sparingly to ensure it does not flow into visible areas between and around parts.

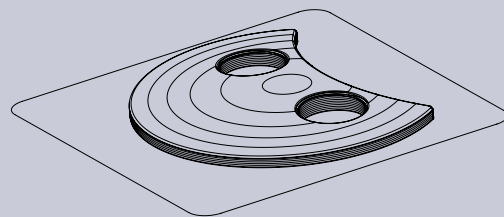


3D Printing

1. Use the provided STL files to print each part. Printing the parts at a 45° angle is recommended for more consistent build lines across the parts. As these parts have subtle surface contours, lying them flat to print will result in obvious build steps (see comparison images below).
2. Sand and paint the parts if desired.
3. Glue the parts together, as shown below. Use the glue sparingly to ensure it does not flow into visible areas between and around parts.



*Recommended:
Build parts at a 45° angle.*



*Not Recommended:
Build parts lying flat.*

