

Adobe Illustrator Crash Course

Advanced: Tips and Tricks

Overview

- ▶ You have read the Superbasics, Basics & Moderate tutorials and have comfortable proficiency in using Illustrator
- ▶ We will now go over a few techniques to speed up your workflow

Tips and Tricks (Advanced)

- ▶ Time-Saving Websites
- ▶ Front/Rear Place
- ▶ Isolation Mode
- ▶ Magic Wand for color grouping
- ▶ Shapebuilder as a speed-enhancing tool

Time-Saving Websites

- ▶ Box Designer (<http://boxdesigner.connectionlab.org/>): creates 2D files to assemble a rectangular prism of given dimensions
- ▶ Gear Generator (<http://geargenerator.com>): creates 2D files of gears with given specifications
- ▶ Thingiverse (<https://www.thingiverse.com/>): repository for open-source lasercut CAD files

Box Designer

- ▶ This is a website that automatically generates boxes given a specific set of parameters - extremely useful when trying to make 3D structures
 - ▶ Your final product doesn't even have to be a perfect prism: you can edit individual panels of the box file generated

Box Designer

Give us dimensions and we'll generate a PDF you can use to cut a notched box on a laser-cutter. Check out this [example box design](#). People have used this website to design more than 150,000 boxes!

Use this box designer a lot? Consider chipping in some money to support our hosting and bug fixes!

[Donate](#)

email: [rahul \[at \] connectionlab \[dot \] org](mailto:rahul@connectionlab.org)
a Connection Lab project
twitter: [@rahulbot](https://twitter.com/rahulbot)
version 2.1.0

Add your picture to the flickr pool!

UNITS: inches

DIMENSIONS: 4 x 5 x 6

MATERIAL THICKNESS: 0.1875

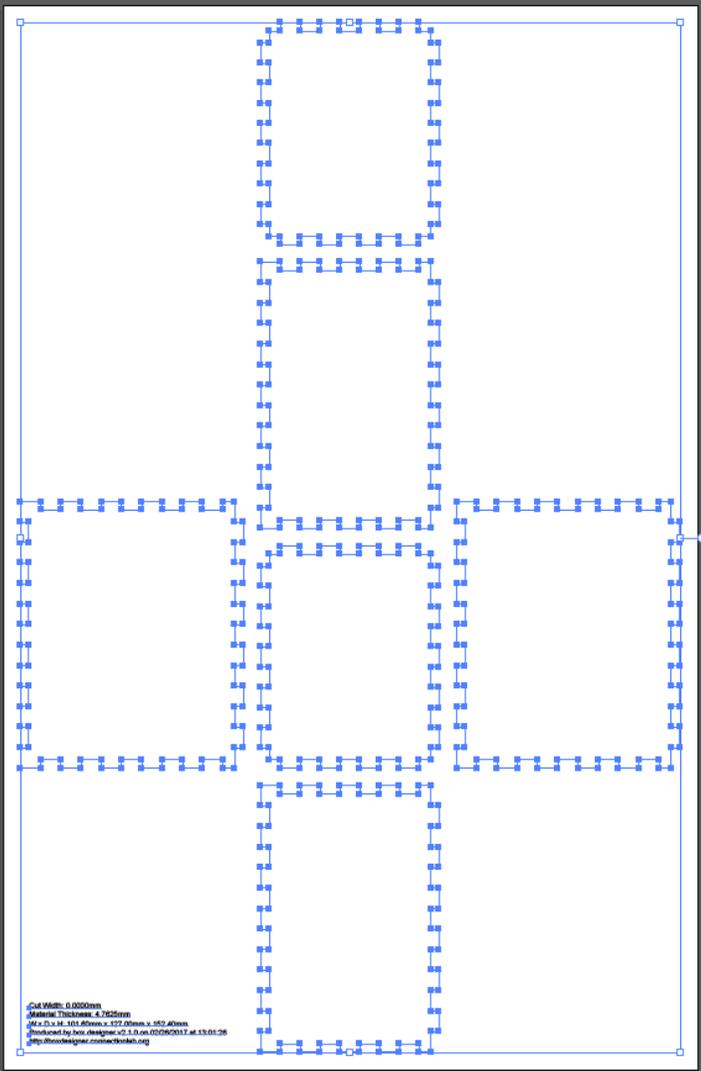
[ADVANCED OPTIONS]

Design It!

box-20170226_130126_990827.pdf @ 50% (RGB/GPU Preview)

Boxmaker

You can open the .pdf file generated directly in Illustrator. It should look mostly like this.



Cut Mark: 0.000mm
Stroke Thickness: 0.7625mm
Max D.x: 101.40mm x 227.00mm x 102.40mm
Downloaded by: designer-cs1.0 on 02/09/2017 at 13:01:26
http://www.designerconnect.com.au

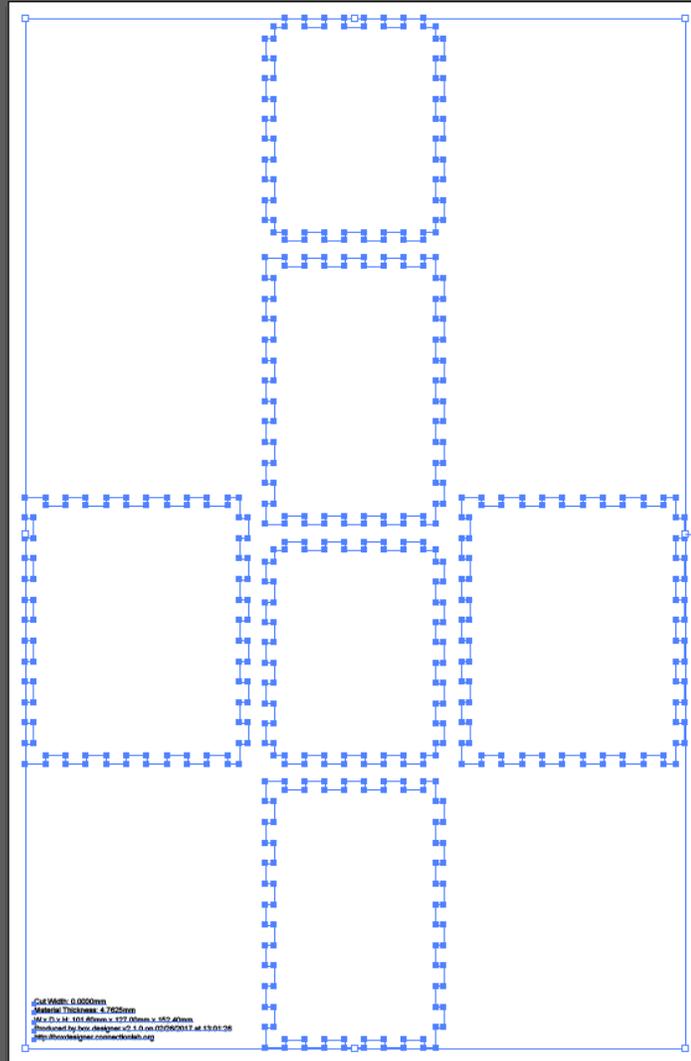
Layers Artboards

Layer 1

1 Layer

Boxmaker

Use the Shapebuilder tool (Shift + M) to make each box panel a shape



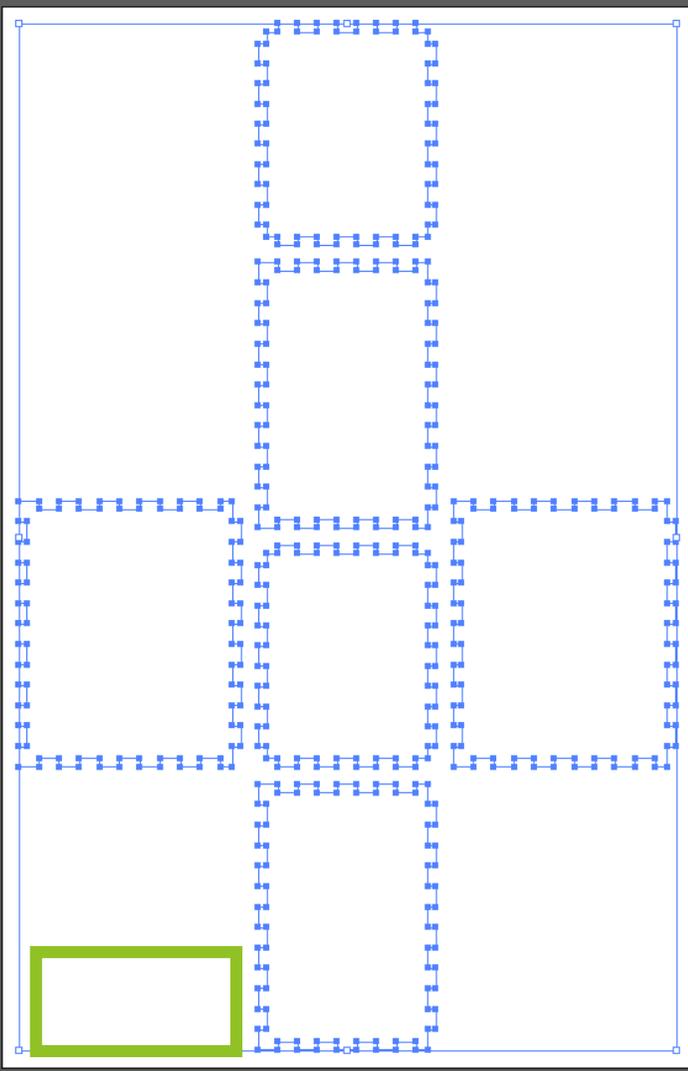
Layers Artboards

Layer 1

1 Layer

Boxmaker

Remove the text in the bottom left



Layers Artboards

Layer 1

1 Layer

Gear Generator

- ▶ This is a website that automatically generates spur gears to a specific set of parameters - much more useful than trying to design and create a gearchain yourself

GEAR GENERATOR

Animation:

Speed (RPM)*:

* Shift + Enter: Set RPM of the selected gear

Gears:

#0 - ratio: 1:1 - RPM: 6

#1 - ratio: 2:1 - RPM: 3

#2 - ratio: 2:1 - RPM: 3

#3 - ratio: 10:1 - RPM: 0.6

Connection properties

Parent gear #:

Axle connection:

Connection angle:

Gear properties

Number of teeth* (N):

Pitch diameter* (D):

Diametral pitch (P):

Pressure Angle (PA):

* Shift + Enter: modify

Gear vector image:

Display

Scale (Pixel per Unit):

Grid:

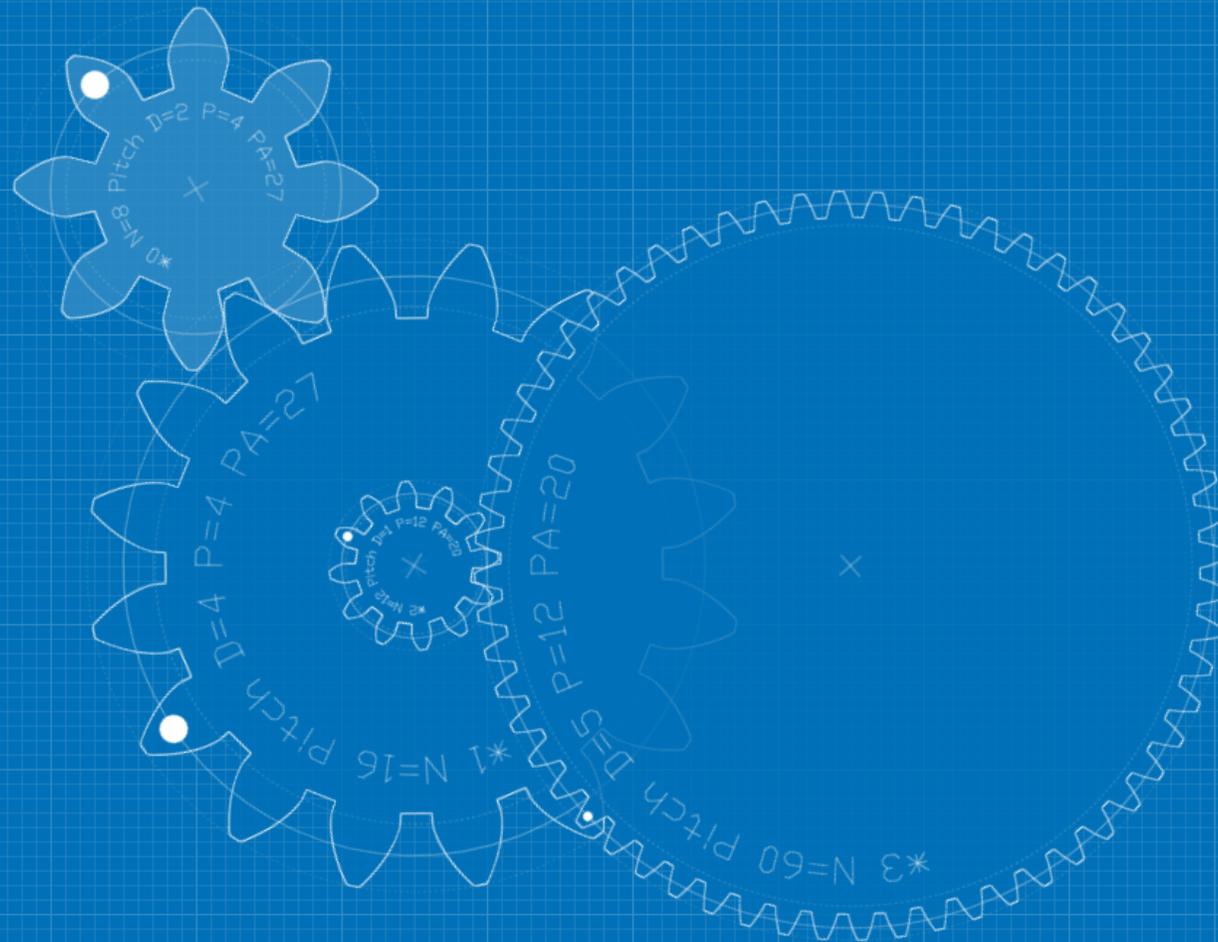
Gear guides:

Gear label:

Color theme:

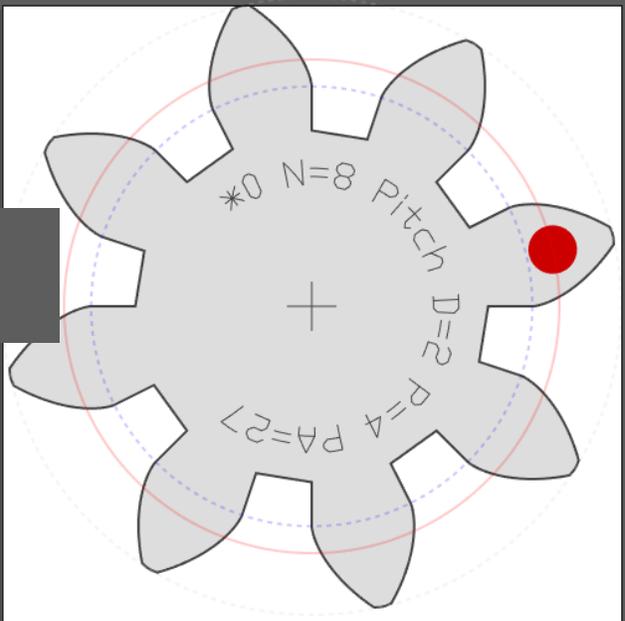
About

Gear Generator is a tool for creating *involute spur gears* and download them in SVG format. In addition it let you compose full gear layouts with connected gears to design multiple gears system with control of the input/output ratio and rotation speed. Gears can be



Gear Generator

Again, you can read the file (.svg) directly into illustrator

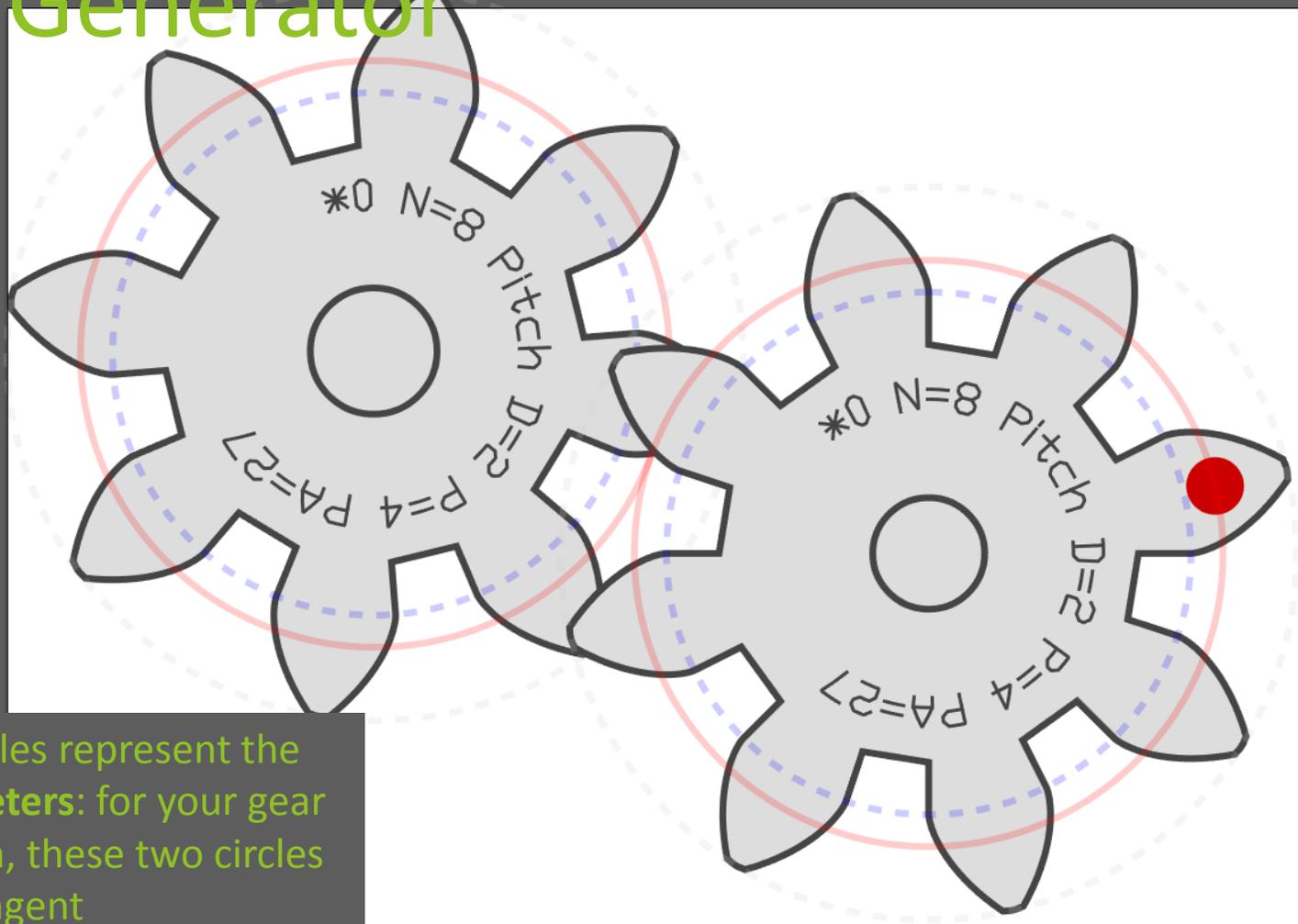


Layers Artboards

Layer 1

1 Layer

Gear Generator



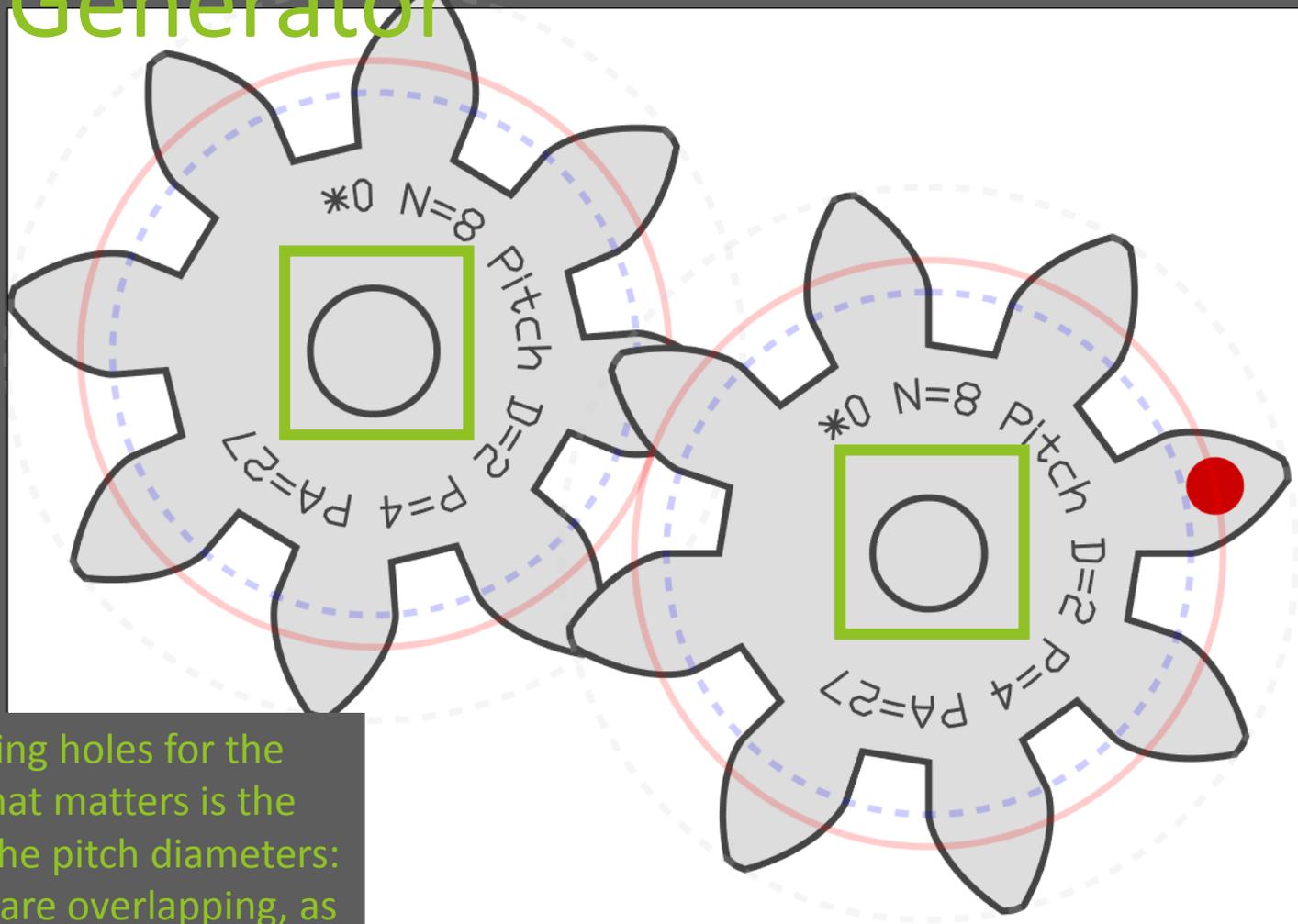
The red circles represent the **pitch diameters**: for your gear train to spin, these two circles must be tangent

Layers Artboards

Layer 1

1 Layer

Gear Generator

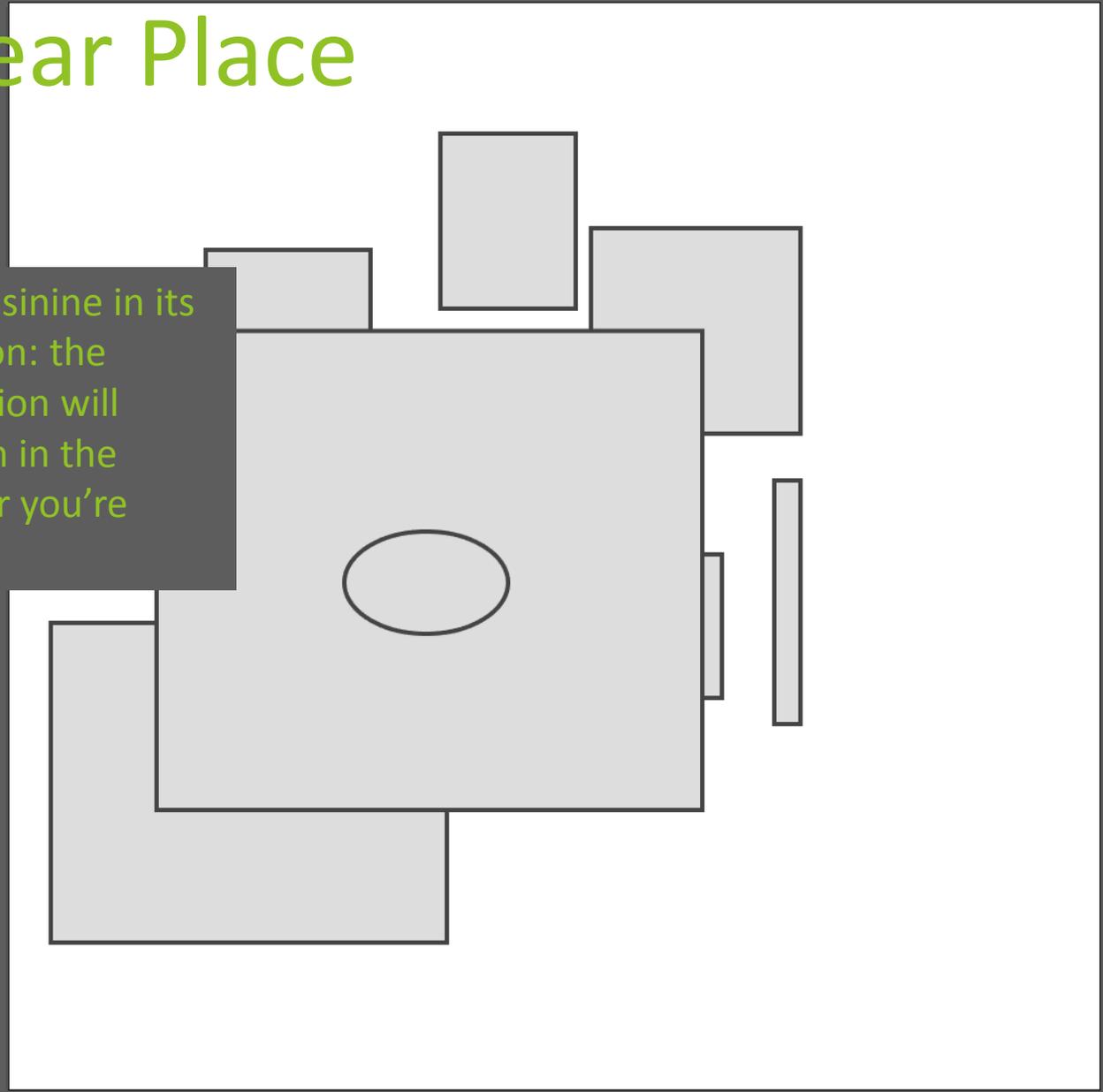


(When placing holes for the shafts, all that matters is the spacing of the pitch diameters: if the gears are overlapping, as shown in the picture here, that's fine – they can rotate into place)

Layers Artboards
Layer 1
1 Layer

Front/Rear Place

Illustrator is a bit asinine in its copy/paste function: the **paste/CTRL+V** option will paste the selection in the center of whatever you're looking at.



Layers Artboards

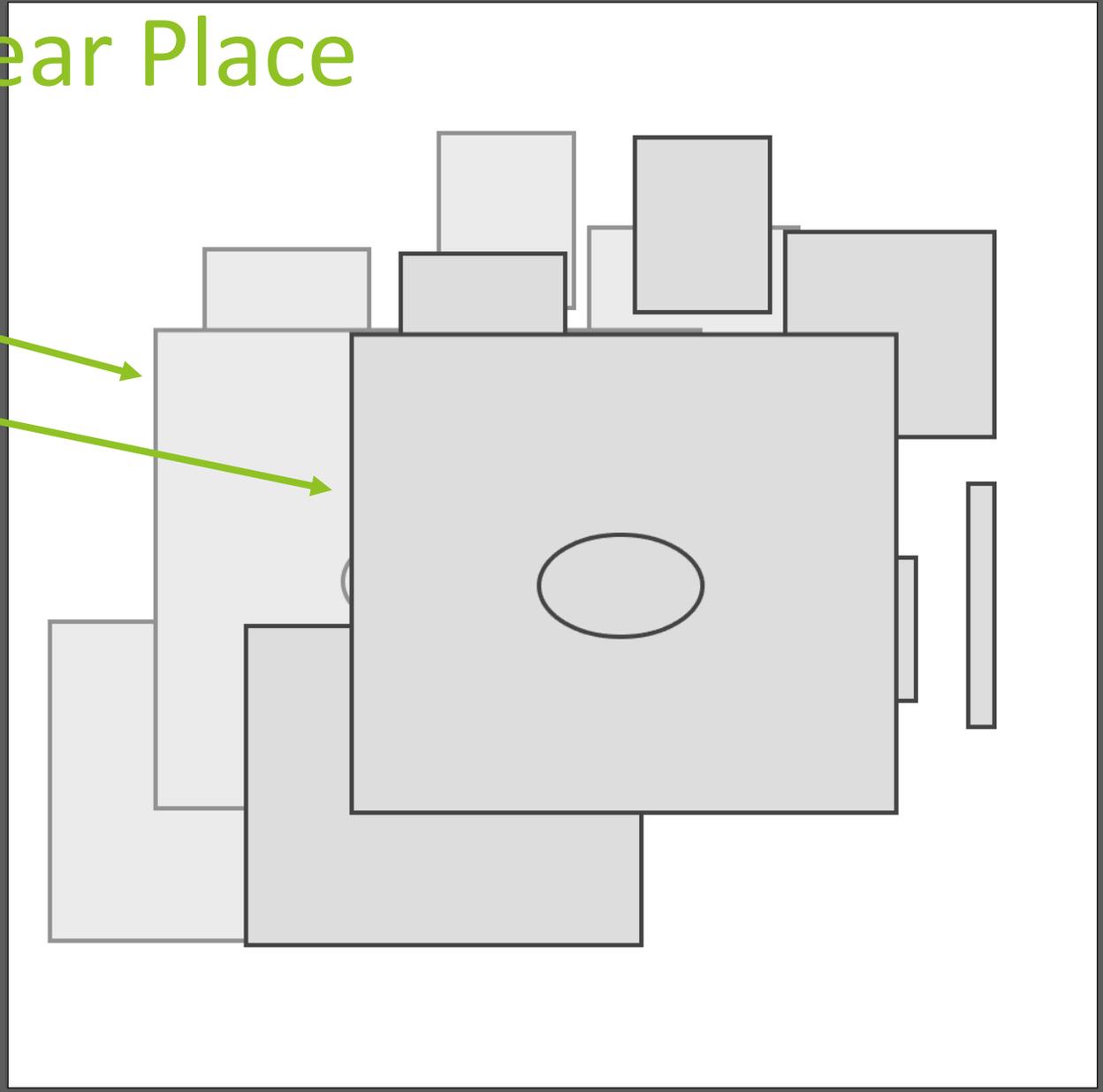
- Layer 1

1 Layer

Front/Rear Place

Original

Pasted version,
in the center of
your field of
view



Layers Artboards

Layer 2	○
Layer 1	○

2 Layers

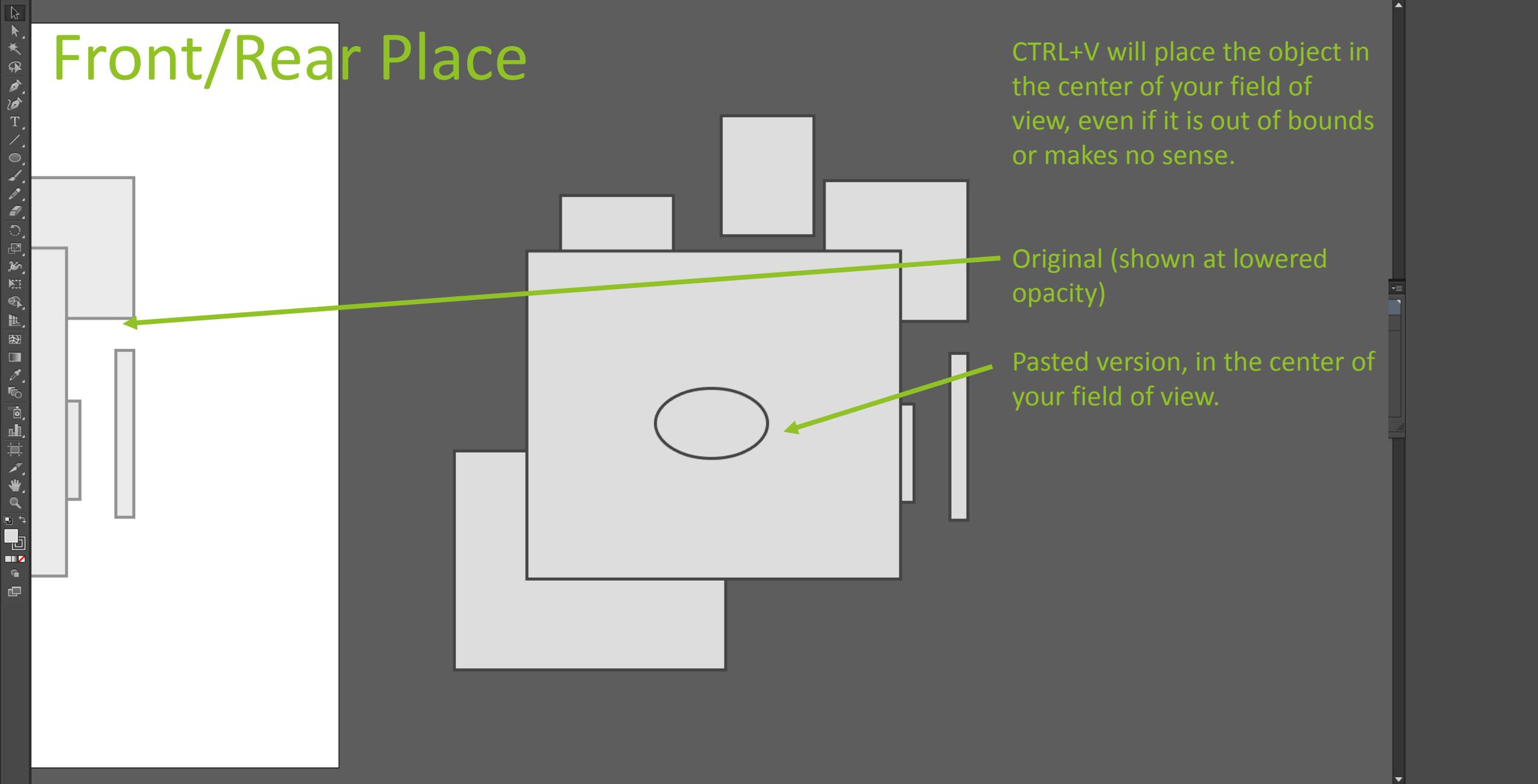


Front/Rear Place

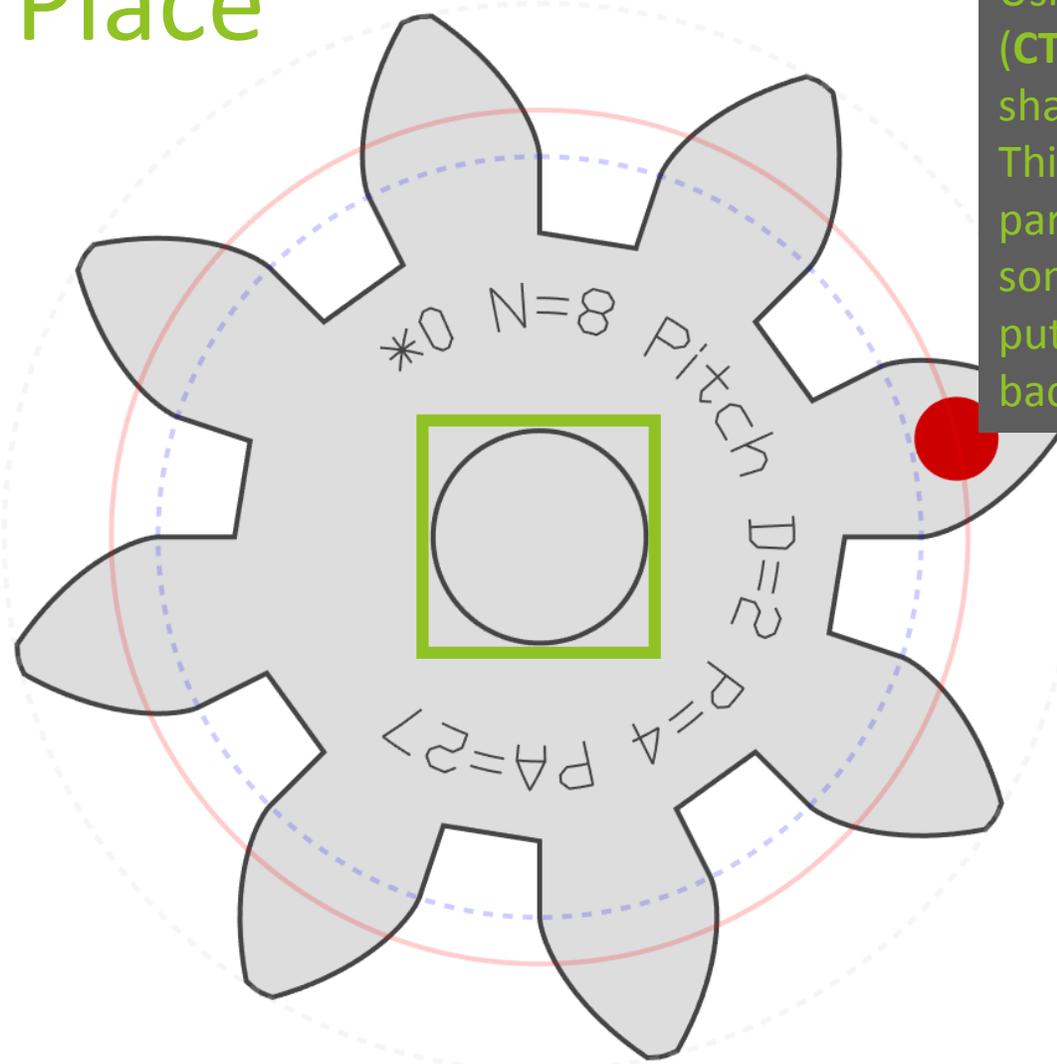
CTRL+V will place the object in the center of your field of view, even if it is out of bounds or makes no sense.

Original (shown at lowered opacity)

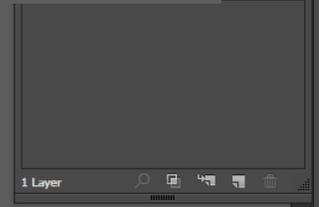
Pasted version, in the center of your field of view.



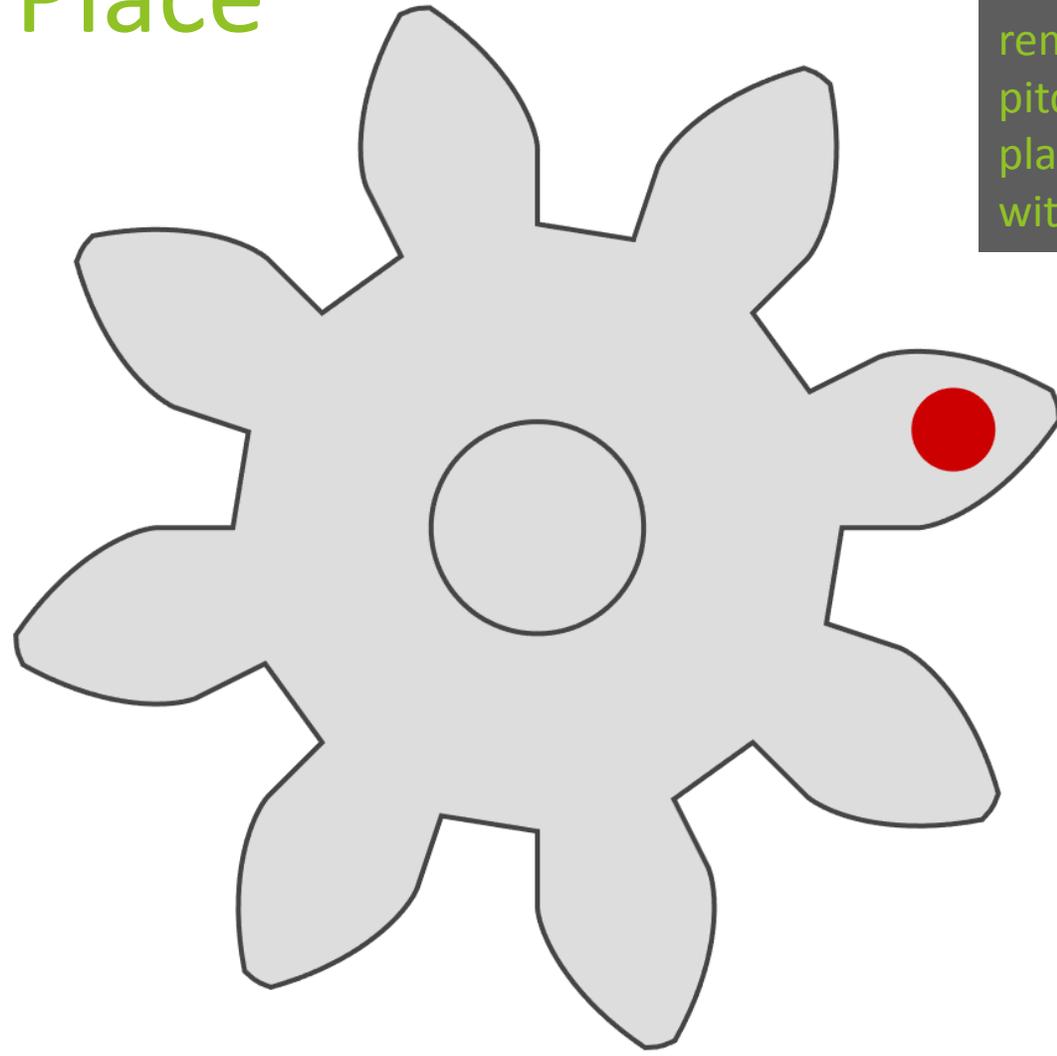
Front/Rear Place



Using Paste in Front/Back (CTRL+F or CTRL+B) puts the shape directly where it was. This is useful for removing parts of your drawing, editing some components, and putting the removed parts back where they belong.



Front/Rear Place



While the center hole is removed, we can delete the pitch diameter lines, and then place the center hole back with CTRL+F.

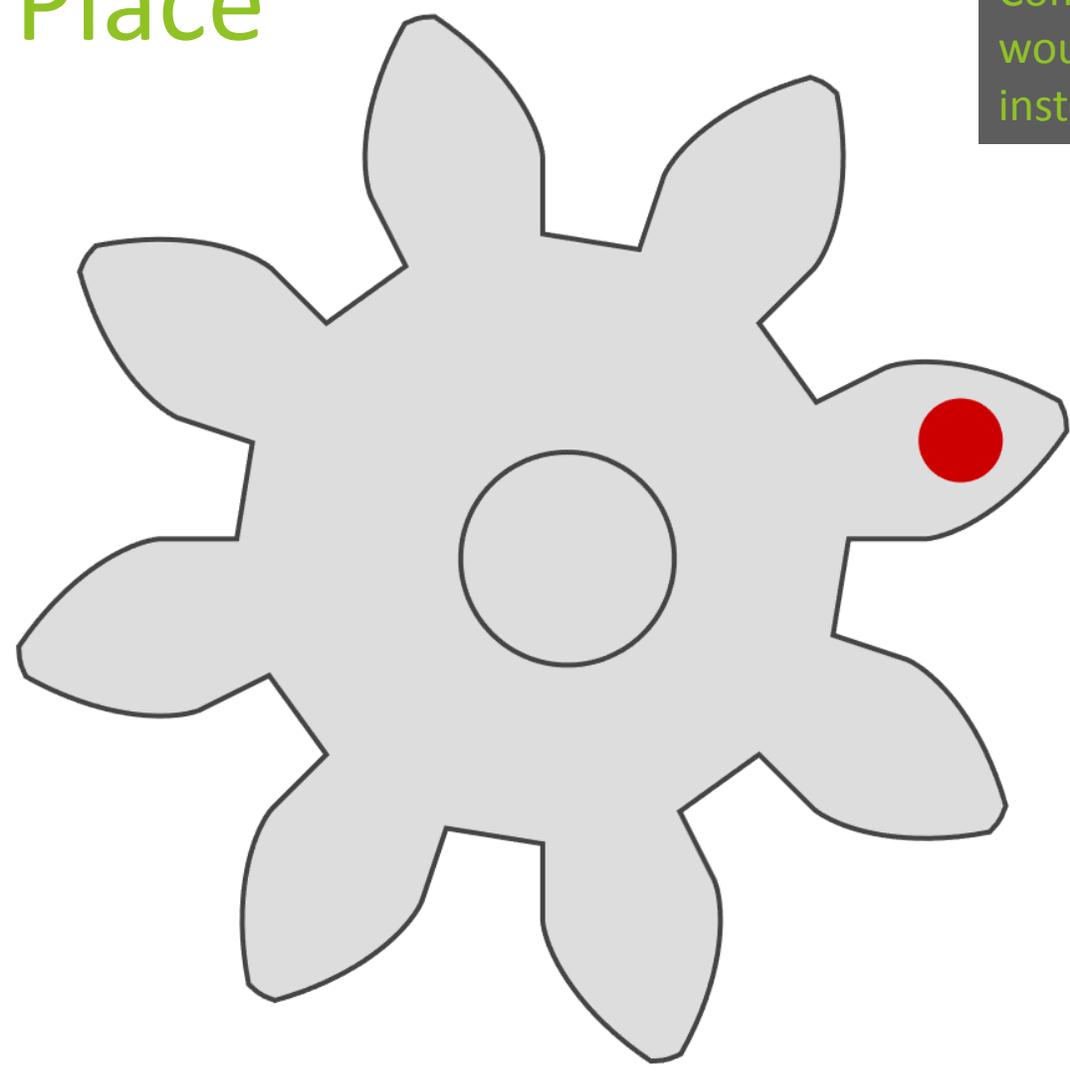
Layers Artboards

Layer 1

1 Layer

Front/Rear Place

Compared to CTRL+V, which would put your circle here instead.

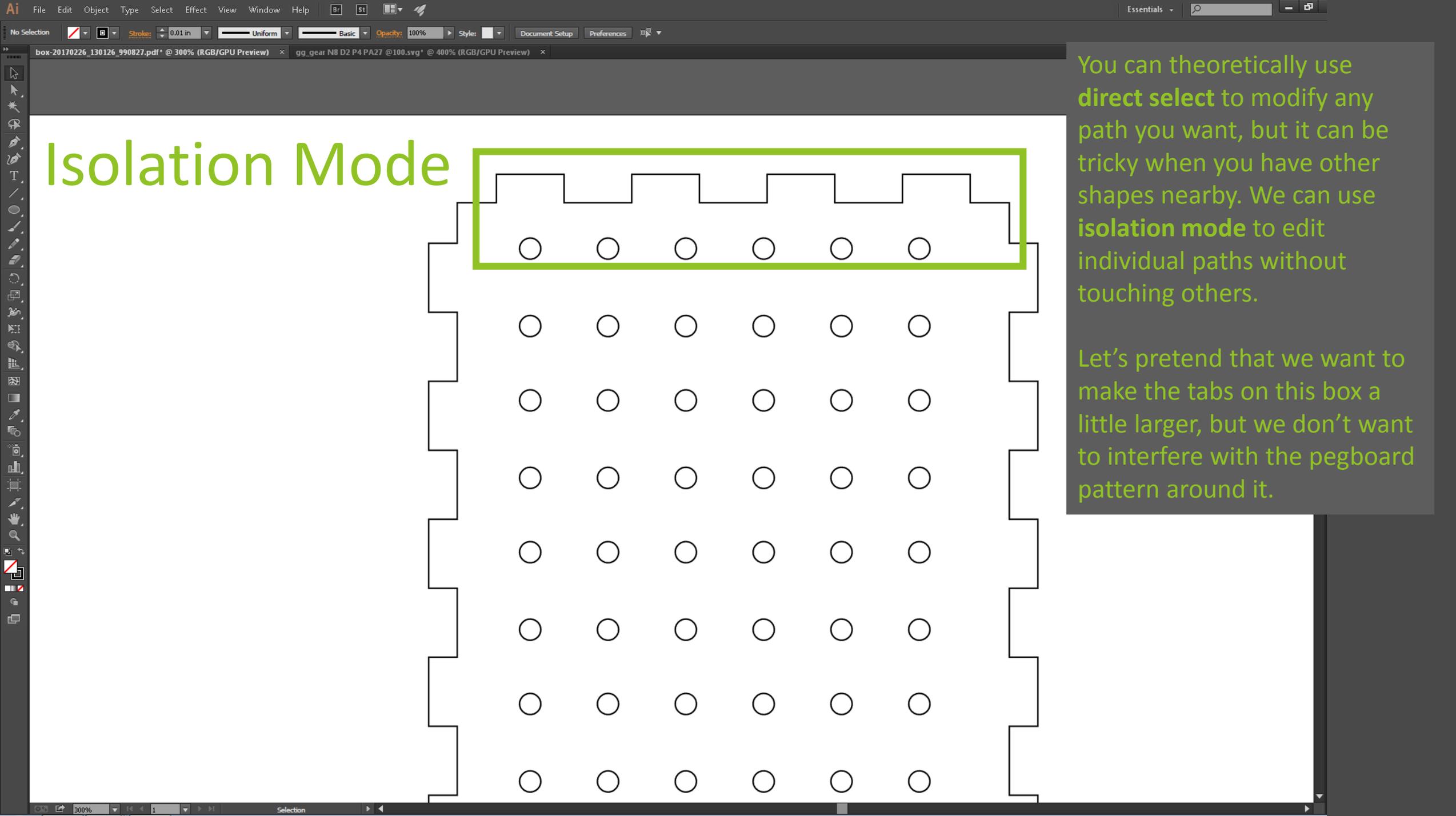


Layers Artboards [Icons]

[Eye icon]	[Play icon]	[Layer 1]	[Circle icon]
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1 Layer [Icons]



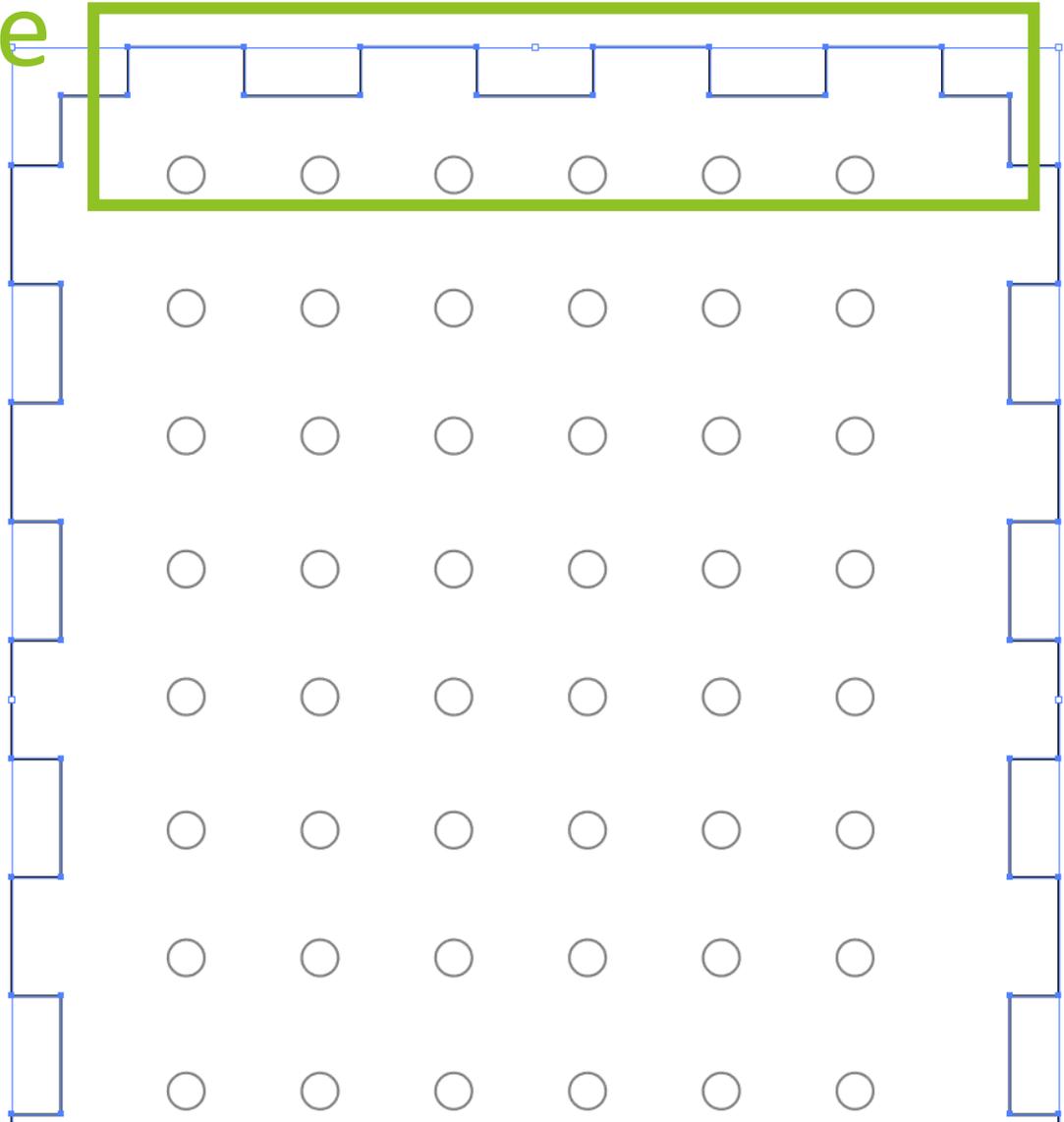


Isolation Mode

You can theoretically use **direct select** to modify any path you want, but it can be tricky when you have other shapes nearby. We can use **isolation mode** to edit individual paths without touching others.

Let's pretend that we want to make the tabs on this box a little larger, but we don't want to interfere with the pegboard pattern around it.

Isolation Mode

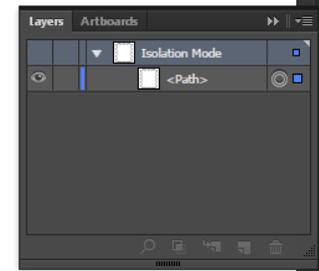
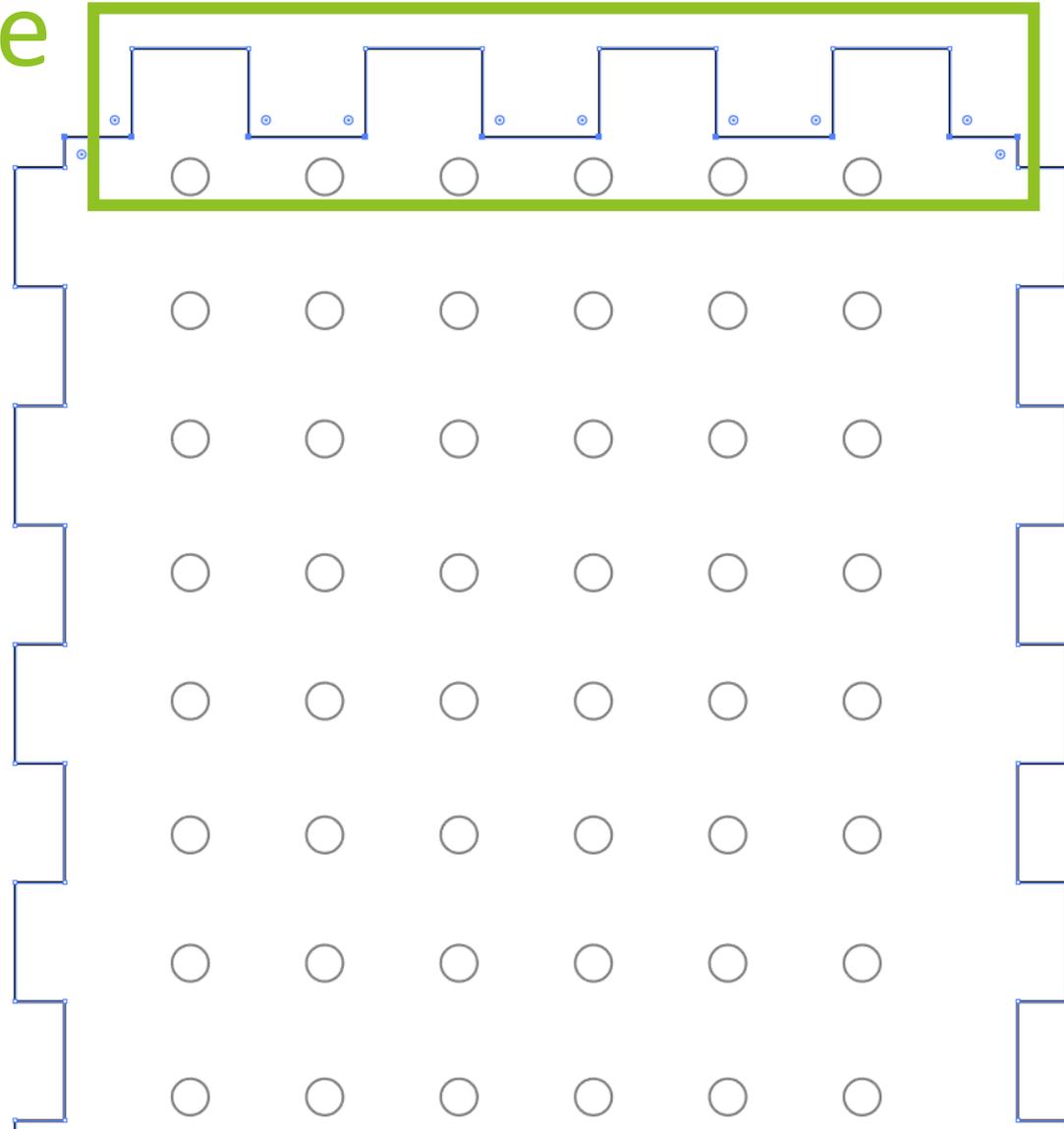


Double-clicking the path puts you in **isolation mode**: you can edit the part here and select whatever you want without changing any of the paths nearby.

Note how the other paths are greyed out, indicating that you cannot edit them.

We can now use **direct select** on the top tabs to move them wherever we want

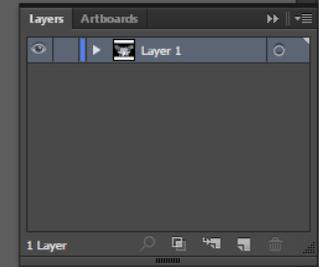
Isolation Mode



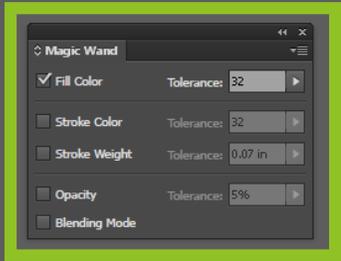
Magic Wand



The **Magic Wand (Y)** tool is incredibly useful when working with groups of colors – it will select all colors of approximately the same shade as the one you click.

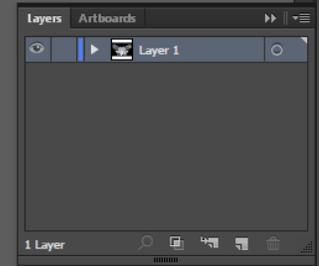


Magic Wand



You can adjust the tolerance of the color selection here (double click the magic wand tool). For a vector image like this, keep the tolerance fairly low (0 – 32) to guarantee that you'll get your color and only your color.

Note that this image is already made of vectors – you'll need to image trace first.



Magic Wand

Magic Wand

- Fill Color Tolerance: 32
- Stroke Color Tolerance: 32
- Stroke Weight Tolerance: 0.07 in
- Opacity Tolerance: 5%
- Blending Mode



We first want to get rid of the black rectangle. To do so, we can turn on the magic wand tool and click any portion of the image that is black.

Layers Artboards

- Layer 1

1 Layer

Magic Wand



This tool is specifically useful for working with files you want to raster.

Magic Wand

- Fill Color Tolerances: 32
- Stroke Color Tolerances: 32
- Stroke Weight Tolerances: 0.07 in
- Opacity Tolerances: 5%
- Blending Mode

Layers Artboards

Layer 1

1 Layer

Shapebuilder: why is my cut taking so long?



You may find that the lasercutter is bouncing back and forth on a file like this and cutting teeth out of order, rather than in one individual move.

Layers Artboards [Icons]

Layer 1 [Eye Icon] [Move Icon] [Delete Icon]

1 Layer [Search Icon] [Grid Icon] [Align Icon] [Lock Icon]

Shapebuilder: why is my cut taking so long?

Your file may actually look like this – the lasercutter will cut these lines in order of their height (front -> back), rather than what you perceive as a continuous shape.



Color Color Guide Color Them # FF0000





Shapebuilder: why is my cut taking so long?



Combining these with shapebuilder will make your cuts go much faster.

