LEONARDO®
DESIGN STUDIO

TABLE OF CONTENTS

English Language Edition

WELCOME

Thank you for purchasing *Leonardo* Design Studio. Please refer to this manual to install, setup, activate and to use the software.

ABOUT *LEONARDO* DESIGN STUDIO

Leonardo Design Studio is standalone graphic design software that is for producing artwork to be sent to a *Siser* cutter.

LEARNING RESOURCES

Leonardo Design Studio has several resources for you to learn how to use the software.

HOW TO USE THIS MANUAL

The manual is accessed from the *Leonardo* Design Studio Help (menu) / Help Topics and opens with Acrobat Reader® which can be downloaded free from the *Adobe* website.

HOW TO LOCATE/FIND TOPICS

There are several ways to locate a help topic in the manual, as follows:

1. **Table of Contents:** At the beginning of the manual click on the page number of the topic and you will be taken to that topic's location in the manual.
2. **Navigation Pane:** In Acrobat reader click the View (menu) / Show/Hide / Navigation Panes / Bookmarks and click the Bookmarks (see above) to be taken to the selected topic.
3. **Search:** Click the Edit (menu) / Find and type in a keyword or phrase to find any topic that contains that word or phrase.
4. **Index:** See the end of the manual for an index of important terms.

FREQUENTLY ASKED QUESTIONS

Many setup and how-to questions have already been answered online:
https://www.*Siser*na.com/*Leonardo*-design-studio/

VIDEO LESSONS AND TUTORIALS

There are several videos online that will help you get started and then teach you how to use the software to its full capability. Please see the Tutorials Tab in the Software.

GETTING STARTED LESSONS

If you have an Internet connection, click on each lesson below to bring it up to watch in your web browser.

Unboxing and Quick Start Guide

Exploring the Cutter User Interface

Setup a Cutter

Making Your First Cut

Cutter Marker Adapter

Print & Cut

INSTALL AND ACTIVATE (UNLOCK) *LEONARDO* DESIGN STUDIO

OVERVIEW

Leonardo Design Studio can be installed without being activated. However, to use the software without restriction it must be activated which is subject to the following conditions.

Note: You must have purchased a valid subscription to unlock the Pro edition.

SYSTEM REQUIREMENTS

To operate *Leonardo* Design Studio the following computer configuration are below:

Minimum Computer Configuration

- 64-Bit Intel/AMD PC or 64-Bit Intel/M1 Mac
- 100Gb of available hard disk drive space.
- 8Gb of RAM.
- SVGA color monitor set to a min 1024x768 pixels.
- 512Mb SVGA video/graphics card.
- 2 button Mouse.
  Microsoft Windows 8.1, or MacOS 10.15 (with properly configured antivirus).

Ideal Computer Configuration

- Intel i9, AMD Ryzen 9, or Apple M1 CPU
- 100Gb+ of available hard disk drive space.
- 32Gb+ of RAM.
- Flat panel color monitor (1920 pixels).
- 4Gb+ video/graphics card.
- 2 button scrolling wheel Mouse.
- Microsoft Windows 11 Pro, MacOS 13 (with properly configured antivirus).

Note: Not having all the ideal computer configurations does not restrict you from using the software, as it can still function with minimum system requirements.

HOW TO INSTALL *LEONARDO* DESIGN STUDIO

Leonardo Design Studio is provided as a download. To install the software:

1. The User account in Windows must have Administrator privileges (rights).
2. The user must register using a valid email address and confirm their email address using a confirmation code sent via email.
3. Use must agree to the software license agreement to install the software, see: https://fcl.software/legal/eula/

DOWNLOAD

Click on, or type in the download link provided into an Internet browser and save the file to a known location. Note: The file may have to be set as safe with your antivirus software (search how to do this online) or it may have to be unblocked to run (right-click on the file and click Properties / Unblock). Once the file is downloaded open the file and follow the instructions for the software to install onto the computer.

ANTIVIRUS SOFTWARE

Your antivirus software must be configured to permit *Leonardo* Design Studio to operate without restriction. To do this, mark or set this folder and its subfolders and files as safe and/or quarantined from your antivirus software.

ACTIVATE (UNLOCK) *LEONARDO* DESIGN STUDIO

To use *Leonardo* Design Studio without restriction the software must be activated (unlocked) via the Internet.

HOW TO ACTIVATE

The user must enter a valid email address and register their account to use the software. The user must validate their email address using a confirmation code sent via email. You may also have to provide your cutter's Serial Number which is usually found on the back or underside of the cutter.

Note: You must have purchased a valid subscription to unlock the Pro edition.

If you have a **Pro Trial** edition, the program will include Trial in the Window Title, it will also include details on the expiry date of the trial, e.g., Trial – until XX/XX/XXXX).

DOWNLOAD, INSTALLATION AND ACTIVATION PROBLEMS/ERRORS

For *Leonardo* Design Studio to function correctly, Windows, all other programs and antivirus, drivers and networks must be properly configured and functioning without error.

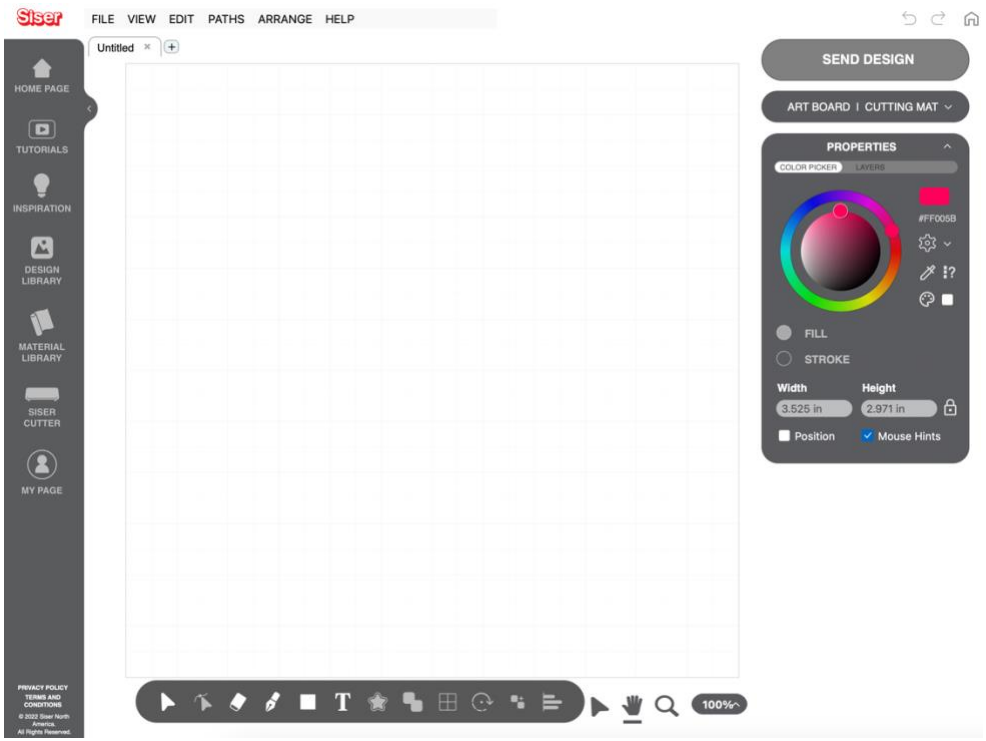
Windows/MacOS provides trouble shooting utilities and an online diagnostic (search online for: windows or MacOS fix it). There are answers to most setup and how to questions online:

https://www.*Siser*na.com/*Leonardo*-design-studio/

Please use these resources before contacting support which is only for *Leonardo* Design Studio faults and problems and is not for setup or training. If a problem persists, please visit: https://future.support

LEONARDO DESIGN STUDIO WORKSPACE

Leonardo Design Studio uses menus, toolbars and tool panels as shown in this diagram:



The flyout tools within the tool bar in the bottom left will automatically be able to be selected depending on what object or objects are selected in the designing area.

From the Home Page or any of the tabs on the left menu you can select File menu to open recently saved files, a new page, go to page setup or open preferences etc.

The My Pages menu on the left set of menus allows you to login/logout, edit account information and view recent files.

HOME PAGE

The Home Page tab features inspiration recommendations, quick access to useful videos and vinyl colors for you to access.

TUTORIALS

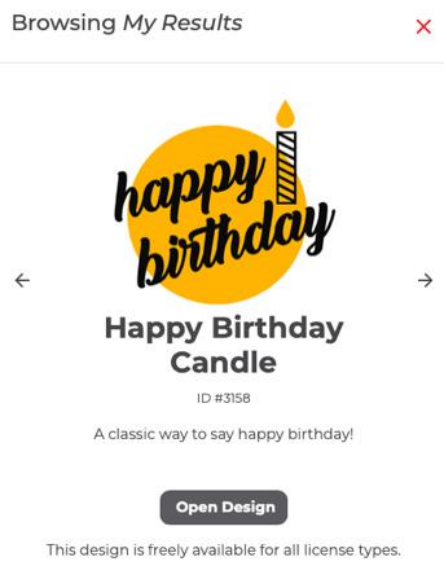
The Tutorials tab features a knowledge base of available tutorials. Click the Featured Tutorials drop down to expand available tutorial options including setting up the *Siser* cutter and vinyl basics. To the right you can locate the search function in which you can type in key words to navigate to a particular topic of concern.

INSPIRATION

The Inspiration tab highlights a variety of sample ideas and designs with instructions and required tools on how to complete the example projects. These are included at your disposal to assist with the design process and provide you with a foundation to enhance your creativity.

DESIGN LIBRARY

The design library tab is organized by category (click the drop down to select a category) and can be filtered and sorted by different specifications. You can also use the search function to discover potential designs for you to include in your projects. To use a sample design, click your selection and then press Open Design.



You can use the arrows to scroll through the available options.

MATERIAL LIBRARY

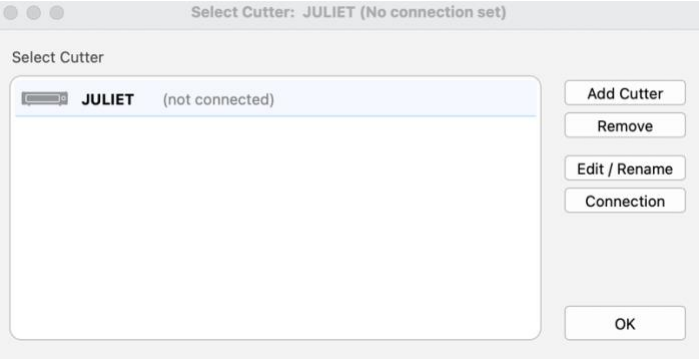
The material library tab is comprised with a drop-down list of available products that can be used for different purposes. Click on a product to expand information on the materials details, recommended uses and instructions for use.

SISER CUTTER

The *Siser* Cutter tab allows you to register a machine and keep your software and firmware up to date, check on this page to ensure you never miss an update.

MANAGE CUTTERS

Click on File menu / Manage Cutters and the window to view Manage Cutters will open.



From this window you can view your available cutters in list form.

Add Cutter

Add a new or remove an existing cutter.

Edit/Rename

Select the model type and add a name to your cutter, to easily identify the cutter.

Connection

Details such as the connection type (Wi-Fi or USB), the IP address and the port is available.

You can also connect to a new and/or existing cutter via this setting.

MY PAGE

The My Page tab allows you to edit your account information and view your recent files.

DESIGN

The Design tab allows you to quickly navigate to the design space/Art Board/Cutting Mat and will keep your design saved if you navigate to a different menu.

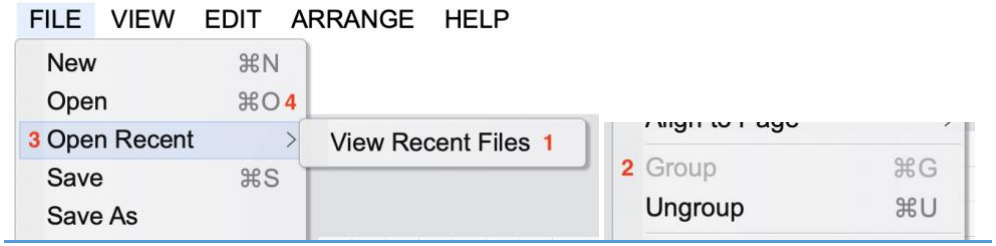
LEONARDO DESIGN STUDIO TOOLS

Each section (area) of *Leonardo* Design Studio tools are outlined, as follows.

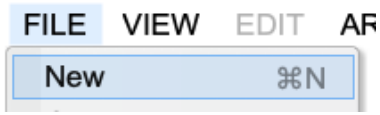
① MENUS

Leonardo Design Studio menus are commands grouped by the types of operations they perform and include most of the software's tools and features. The menu's functionality shown in the diagram below indicates:

1. A submenu will reveal (display) when clicked.
2. The command is not currently available.
3. The currently selected command (click to perform).
4. The keyboard shortcut for the command.



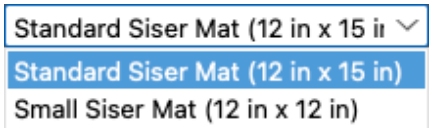
② COMMANDS



A command is performed by clicking on its button.

Note: Buttons may also be hidden in a dropdown or fly out as explained below.

DROPDOWN COMMANDS



Click the dropdown boxes to reveal more buttons and settings.

③ FLY OUT TOOLBARS

Click and hover over the fly out buttons to reveal more buttons.

④PAN/EDIT MODE & /ZOOM

You can use panning mode either by holding down shift + the left mouse button and dragging, or by selecting the pan tool. To exit pan mode, click escape or select the pan button again to turn it off.

Short Cut: Shift + Left Mouse Button (drag)

You can zoom in by selecting the magnifying glass and clicking the page to zoom in. To reset the page, zoom back to 100%, select the 100% button.

Short Cut: In zoom mode, Shift + click left mouse button to Zoom Out
Short Cut: Zoom Mode: F2
Short Cut: Zoom In: F3
Short Cut: Zoom Out: F4
Short Cut: Zoom to All: F5

⑤ DESIGN CENTER

The Design Center is a repository of *Leonardo* Design Studio's major tools and features. The Design Center allows you to switch between Cutting Mat or Material Roll and includes the Properties relating to the objects on the page.

Tip: Expand/hide the Properties settings by clicking the arrow in the top right.

PROPERTIES

The properties section includes several features to manage and edit your objects/designs.

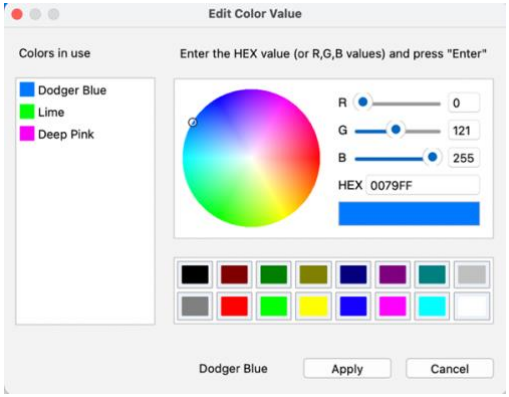
①*Color picker*

The color picker allows you to select the desired colors apply to objects, the outside ring allows you to select the color whilst the inside circle allows you to select the perfect shade.

Applying HEX Values

Note: Click the small circles and drag to change the applied color, the HEX value will change as you do this, indicating the current shade selected.

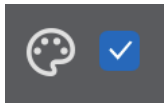
By clicking on the color shade displayed a new window will open where you can adjust the HEX value by typing in the designated value and pressing ‘enter’/’return’ on your keyboard.



Shown directly below is also a list of standard colors for your convenience.

Fixed Color

Selecting the Fixed Color button allows you to snap between a reduced range of colors for an easy selection.



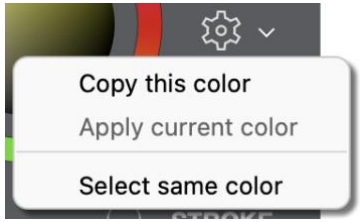
Fill Color

Selecting FILL will fill the color of the objects within the enclosed boundary.

Stroke Color

Selecting STROKE will set the color of the outline of an object.

Copying a Color



To copy a color, use the cog next to the color wheel. Click the drop-down with an object selected to ‘Copy Color’, then select the new object, click the same drop-down and instead choose to ‘Apply Color’.

Note: To select all items of the same color, click ‘Select Same Color’ from the dropdown (does not work when objects are grouped). From here, you can change all those shapes to a different color (simultaneously).

Colors in Use

To apply a color that is already in use, click the color picker and on the left column a list of the colors in use is displayed and can be used to quickly apply colors already used in the workspace.

Eye Dropper

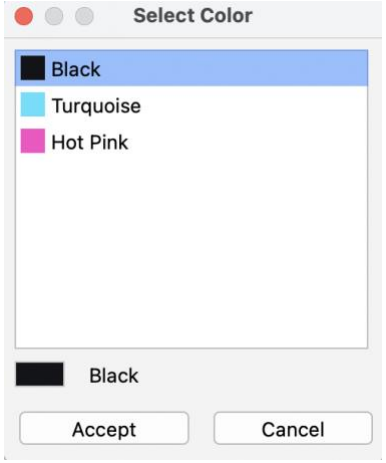
When selected, this tool will change selected colors to the color you click on.

Short Cut: 'Shift' will select all shapes of the color you click on.

Select by Color

To select all shapes of the same color, click on the icon shown below.

A window will appear allowing you to choose which color you want to filter the shapes being selected by.



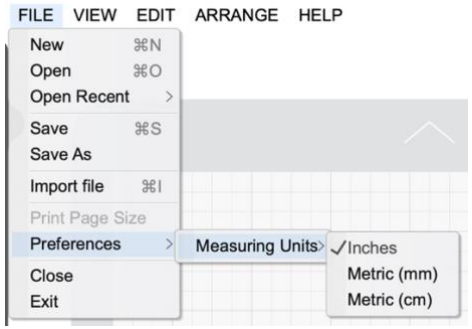
Click Accept to perform the action and Cancel to exit.

② *Size specifications*

Alter the width and height of an object by typing in your desired measurements. By default, the selected object will resize proportionally, to disable this setting and edit each the width and height individually, deselect the lock icon so that the lock is open.

Measuring Units

Alter your Measuring Unit Preferences by clicking File menu / Preferences / Measuring Units / Select your desired option from the available list.



DOCUMENTS & PAGES

Leonardo Design Studio works with multiple-page documents and each page can be the same or a different size.

DOCUMENTS

TO OPEN A DOCUMENT

Click on the File menu / Open and the select file to open window will open. Next, navigate to where the File you wish to open is located, select the file and click open.

TO OPEN A RECENT DOCUMENT

Click on open recent or click on the File menu / Open Recent and the option to view recent files as thumbnails will open.

TO SAVE A DOCUMENT

With a document open, click on Save or on the File menu / Save and the save window will open. Navigate to where you wish to save the file on your computer and enter a name for the file under file name and click Save.

TO SAVE AS

With a document open, click on Save As or on the File menu / Save As and the save as window will open. Navigate to where you wish to save the file on your computer and enter a name for the file under file name and click Save.

FILE FORMATS AND EXTENSIONS

Leonardo Design Studio opens and saves in the following native file formats:

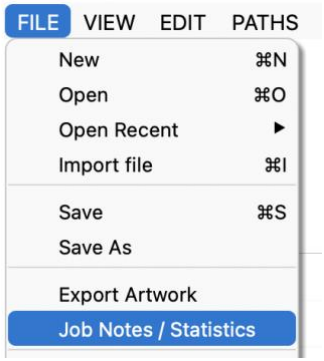
.LDS *Leonardo* Design Studio Document
Includes all the elements of a document (objects, text, images, curves, symbols, pages etc.).

JOB NOTES/STATISTICS

*Only available in *Leonardo* Design Studio PRO.

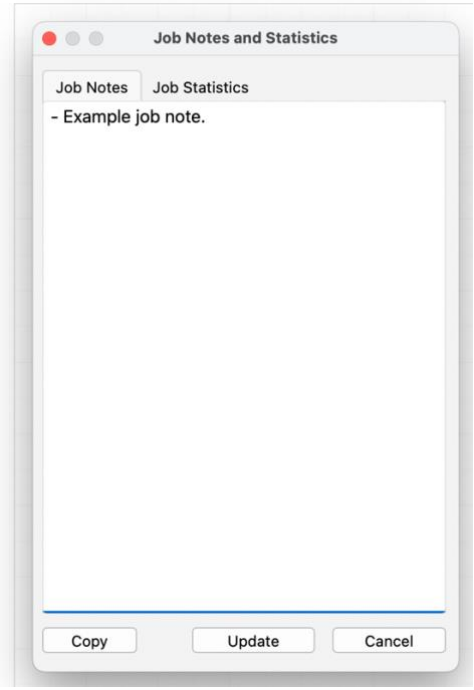
Job Notes

Click on File menu / Jobs Notes/Statistics and the option to view the Job Notes and Statistics will open.



Job notes allow users to document and store essential information related to a specific job or task, serving as a convenient reference or reminder system to track important details, progress, and instructions throughout the work process.

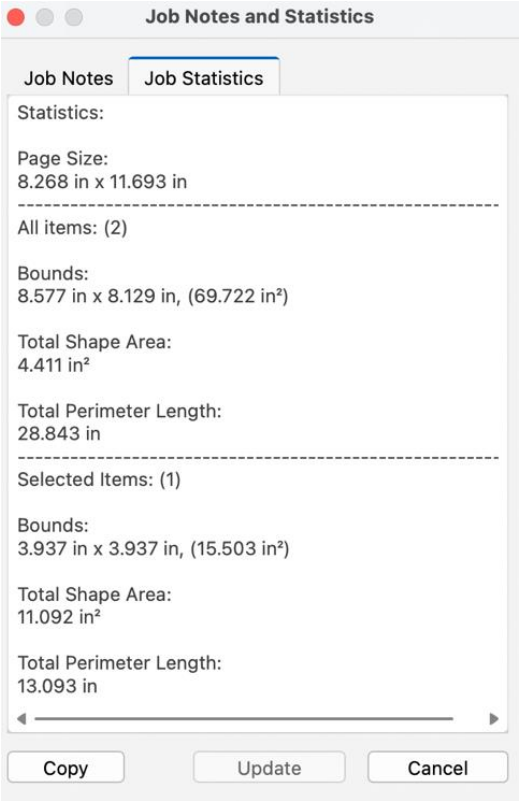
To add a job note, just begin typing in the text area.



Note: Make sure to select Update once complete. Your job notes can be seen to the left of the toolbar. Hover over it to see a quick overview of the job note.

Job Statistics

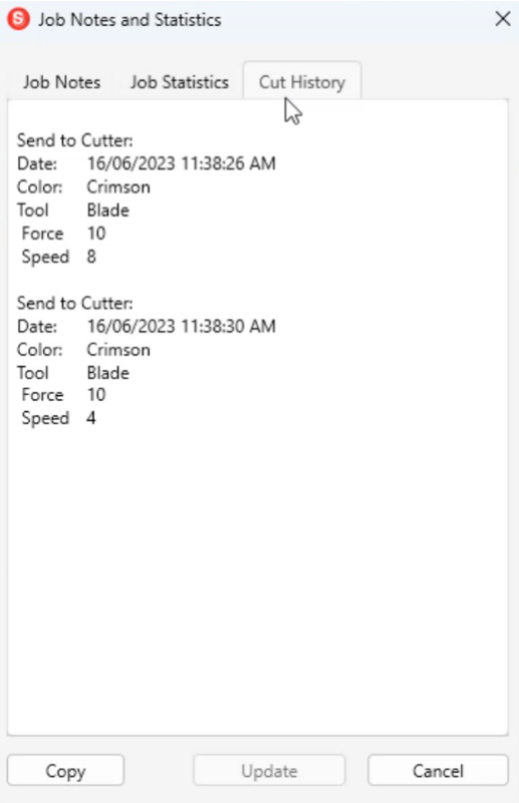
Job statistics provide an overview of the statistics relating to all the objects within a document. It includes a section dedicated to the statistics on any selected objects. The types of statistics provided include the size, shapes, square coverage, total cutting length, total perimeter, etc.



Note: This is useful when charging customers for jobs as the user can easily identify the total materials used.

Cut History

Once you have cut a job, you can review the cut history within Job Notes and Statistics to identify the previous times the job has been cut, the settings applied and in what color etc., as shown below.

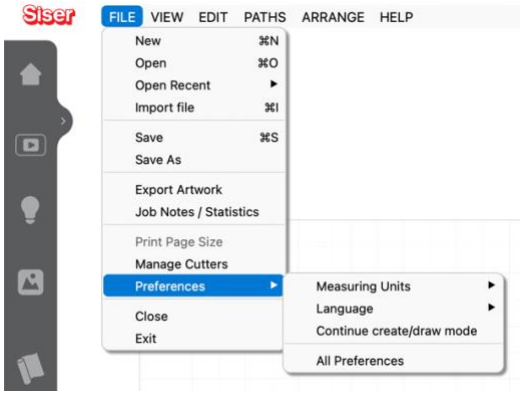


Note: This helps to identify whether you have cut out a particular piece of a job if you are unable to recall.

PREFERENCES AND SETTINGS

Click on File menu / Preferences and the option to view preferences will appear.

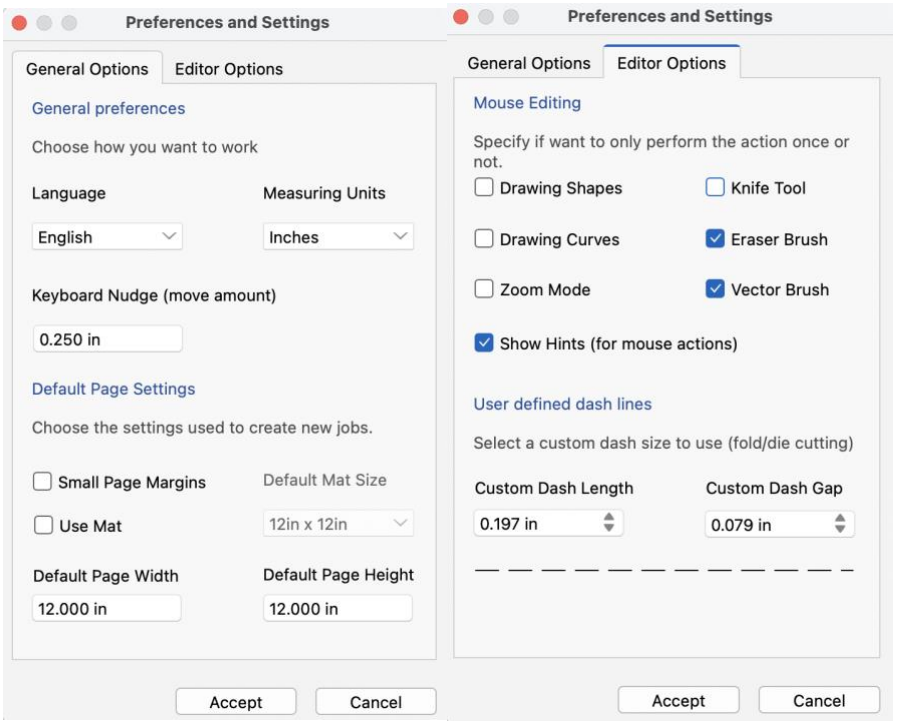
Tip: You can quickly edit the Measuring Unit and Language preferences from within the Menu, as shown below:



Click on File menu / Preferences / All Preferences and the option to view Preferences & Settings will open.

You will see two available windows, General Options and Editor Options.

Once your chosen settings have been selected, click Accept to save the changes.



General Options: General Preferences

Language

Set the language that you would like to view the program in.

Measuring Units

Set the unit of measurement, i.e., inches, millimeters, centimeters.

Keyboard Nudge

The amount/distance an object will move when using the arrow keys on the keyboard.

General Options: Default Page Settings

Small Page Margins

Allows the user to print very close to the edge.

Note: This should be done at your own risk.

Use Mat

Select whether to create new jobs using a mat and set the default mat size.

Dimensions

Set the default page width and height to be used when creating new jobs.

Editor Options: Mouse Editing

Select tools that you want to perform only once when used, i.e., once the action is performed, the tool mode is exited and reverted to the Select tool.

Editor Options: Dash Lines

Select the custom dash size to be used in fold/die cutting jobs.

PAGE SETUP

Leonardo Design Studio comes with a selection of page sizes including all the most popular standard sizes.

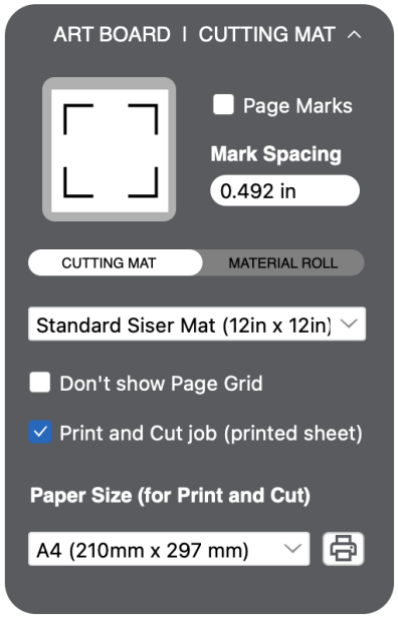
ART BOARD | CUTTING MAT

Tip: Expand/hide the settings for the Art Board or Cutting Mat by clicking the arrow in the top right.

To open Page Setup

With nothing selected in the document, click the File menu / Page Setup.

Page Size

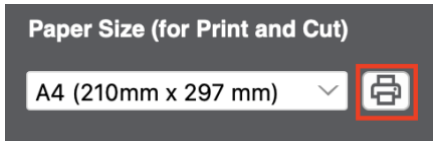


Leonardo Design Studio allows you to design either Cutting Mat mode or Material Roll mode.

The Art Board/Cutting Mat dimensions can be set to the standard *Siser* cutting mat options.

The Material Roll allows editing of the height/width however, this cannot be set to larger than the cutter to ensure accuracy when cutting.

The Print Size can be selected using the Paper Size drop down. However, the option you want may be unavailable. As such, the dimensions can also be set using Paper Size which can be retrieved from the current printer in use by pressing the Printer button:



Once clicked, it will expand the options for the paper sizes dependent on the currently connected printer, to change the paper size to that of another printer, select the desired printer from the drop-down box.

MEASURMENT & LAYOUT

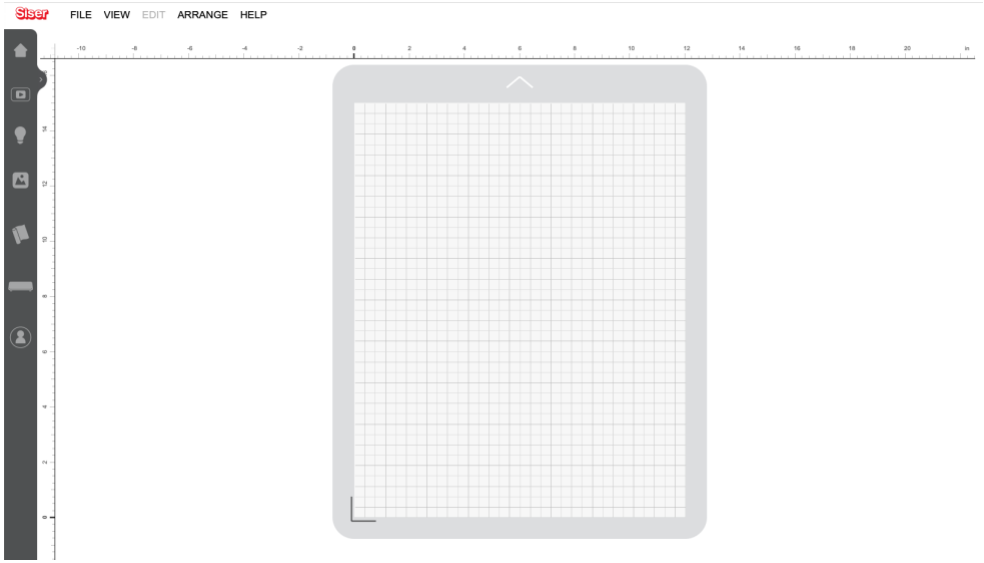
Leonardo Design Studio provides you with measurement and layout tools to assist you in drawing, aligning, and positioning objects, curves and text in the Drawing area.

WORKING WITH A GRID

The Grid is a series of intersecting lines that are set equidistant apart that you can use to precisely create, align, and position objects, text, or curves to in the Drawing area using the Snap to feature.

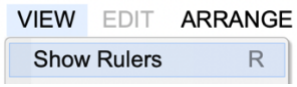
WORKING WITH RULERS/WIREFRAME

The Rulers are provided to accurately draw out, size, and align objects. The Rulers are intuitive as they automatically rescale as you zoom in and out and update with the current measurement units.



Using Rulers

Display or Hide the Rulers



You can Display or Hide Rulers from the View menu / Show Rulers.

Using Wireframe

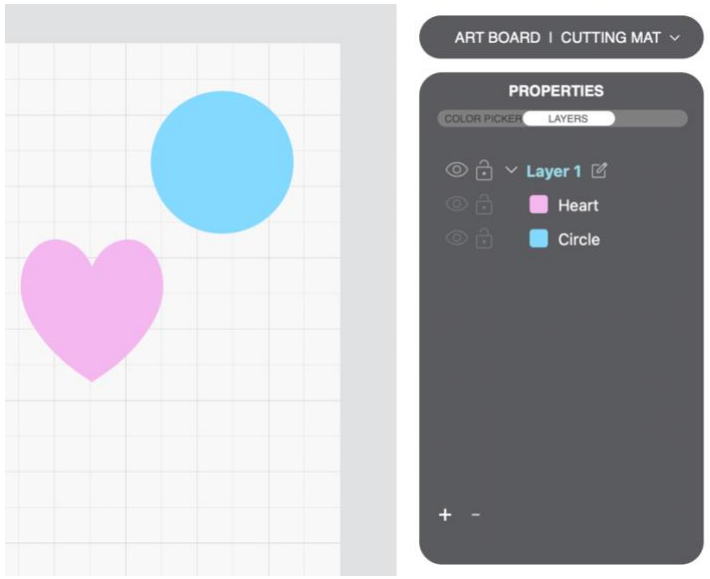
Display or Hide Wireframe

You can Display or Hide Wireframe from the View menu / Show Wireframe.

Short Cut: 'W'

WORKING WITH LAYERS

Layers are different levels on which you can place objects like vector lines, shapes, and other elements. They are used to separate parts of an image or drawing, allowing you to edit and manipulate individual elements of your artwork separately.



Using Layer Panels

Add or Delete a Layer

Use the plus and minus button on the bottom left side of the panel to remove or add a layer.

Rename a Layer

To rename a layer, double click on the text and a text box will be displayed, allowing you to edit the name for the layer.

Note: This also works for the names of shapes/objects within in a layer.

Lock a Layer

To lock an entire layer, click the lock icon next to the Layer you wish to lock.

Note: This also works for individual shapes/objects within a layer.

Tip: Locking a layer is useful to prevent accidentally moving or clicking on a layer that you do not want to edit at a specific point in time.

Tip: When using layers, turn on Page Marks and lock them to prevent accidentally moving the Page Marks when working on a job.

Hide a Layer

To hide an entire layer, click the eye icon next to the Layer you wish to lock.

Note: This also works for individual shapes/objects within a layer.

Tip: Hiding a layer is useful when you only want to send one of the layers to cut. i.e., if you are working with layers to be sent to cut in separate batches, hiding a layer ensures that when you select to send the design/send to cut, that the hidden layer will not be included.

Arranging Layers

Clicking a layer name and moving it above or below another layer has the same functionality as send to front/back.

Tip: Rearrange the order of layers by clicking and dragging above or below.

Note: This also works for shapes/objects within a layer.

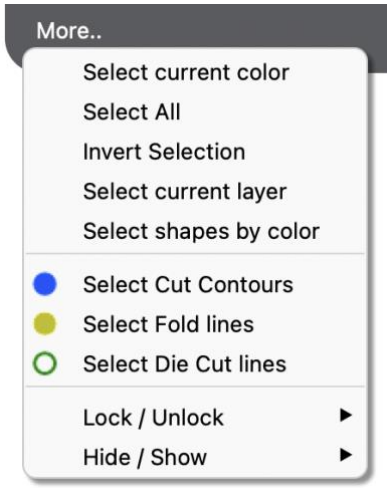
To move one object from one layer to another, expand both layers, click on the object in the layer panel and drag it into the layer you wish to include it in.

Short Cut: 'Control'/'Command' + Left Mouse Button to select objects within a layer, **or** to select multiple layers.

Short Cut: Shift + Left Mouse Button to capture all objects **or** layers includes within the area from the first selected object or layer.

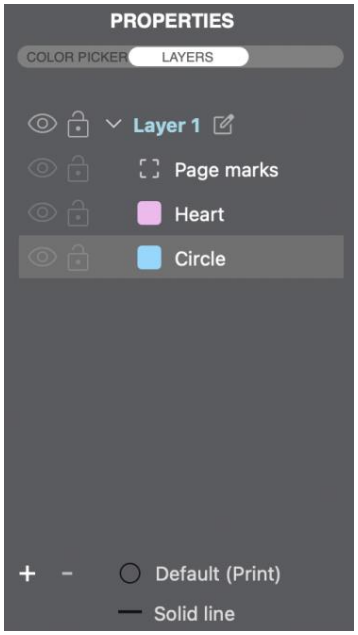
Selecting Layers

Click on More on the layers panel to expand a list of options that are useful to choose from when working with layers, as shown below.



Print, Cut & Fold

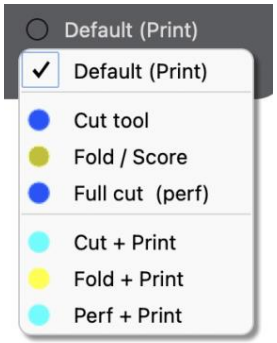
Inside the layers panel, when clicking on a specific object within a layer, the options for print and cut will become available, as shown below.



The default option is to print.

To change the option, click on the button and a drop-down box will appear with the options. Select the appropriate option for each object within your job.

Print & Cut



Tip: You may wish to import an image in which you wish to cut only a portion of that image in a particular shape.

To do this, import an image as a background image (Import > Import File > Background Image) and click on the image within the layer.

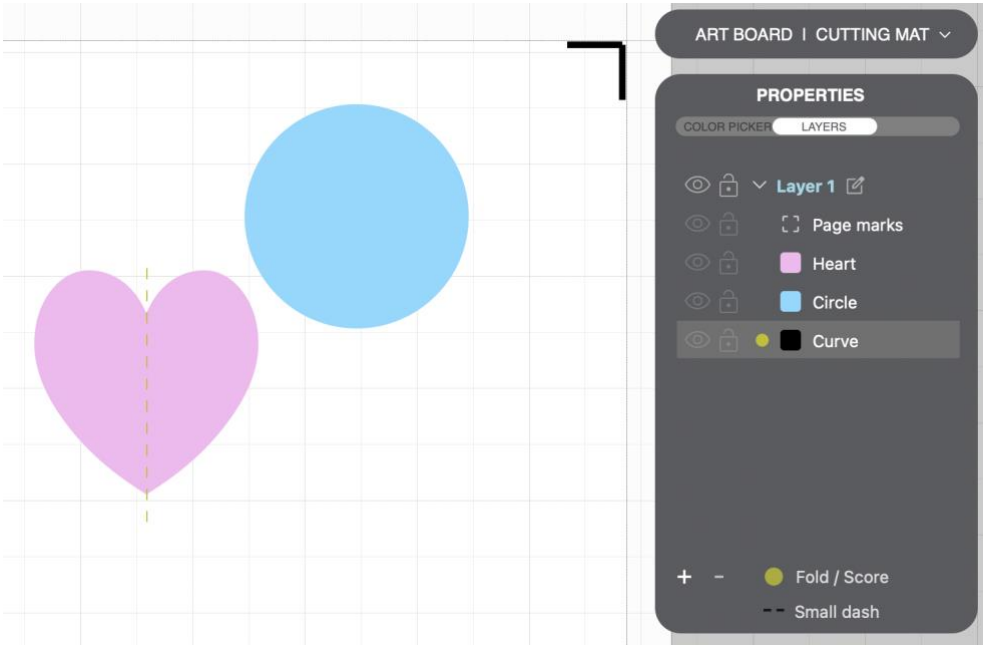
Next, select the image as Print and then place the shape over the top of the image, and select Cut Tool. By doing this, the section of the image within the shape over the top of the image will be cut.

Note: These tools are also available from the Color Picker Properties menu (when an object is selected).

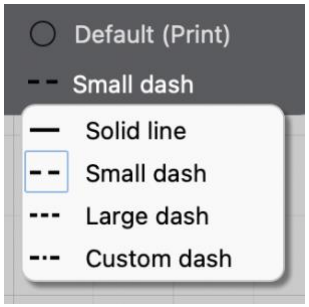
Fold Lines

You may wish to create a fold line using a different force of the same blade within a print and cut job.

To do so, draw a line/curve (which can be identified in the layers) and position it in the location you wish to create a fold line.



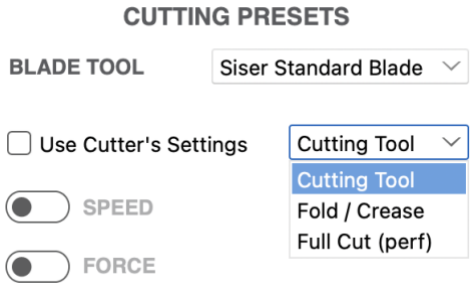
Next, click Default (Print) to expand the drop-down and change the line to a Fold/Score – this will adjust the force of the line and prevent it from cutting through the media.



Tip: Select whether you wish to use a solid line or a dashed line.

Note: You can manually edit the force settings by Tool type, i.e., Cutting, Fold/Crease.

Click Send Design and uncheck 'Use Cutter's Settings' and you can manually adjust the force and speed for each tool.



IMPORTING

Leonardo Design Studio comes with Importing modules, which are used to insert into (open) 3rd party files directly into the current document.

IMPORTING FILES

Import any File Format

To import a file, click File menu / Import and the Import window will open (as shown above).

Next, navigate to where the file is located and click on the required File to highlight it, then click on the Import button. The Import Window will then disappear, and your import will complete.

Short Cut: 'Control'/'Command' + I

Drag & Drop

You can also drag an Image file from a Windows Explorer or Mac Finder window directly into *Leonardo* Design Studio.

INSERT IMAGE (BITMAP)

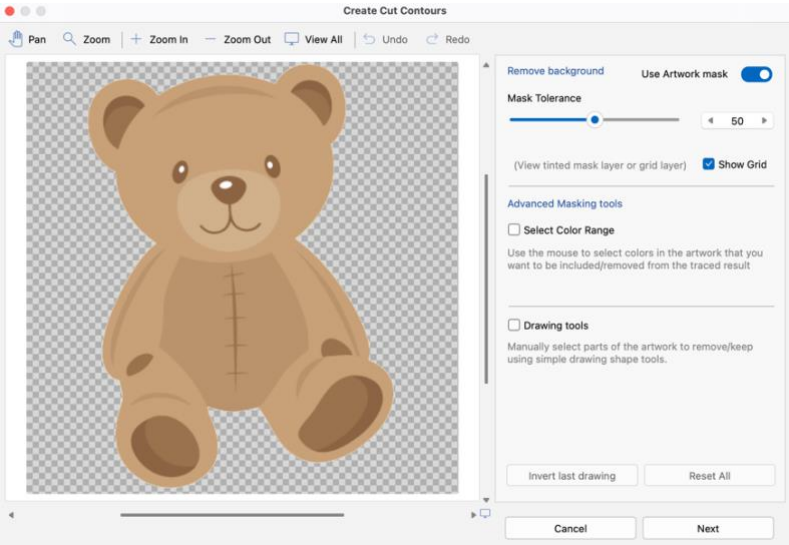
Drag & Drop

You can also drag an Image (.SVG) file from a Windows Explorer/Mac Finder window directly into *Leonardo* Design Studio.

Note: When importing an image, by default, it will create a print and cut job automatically.

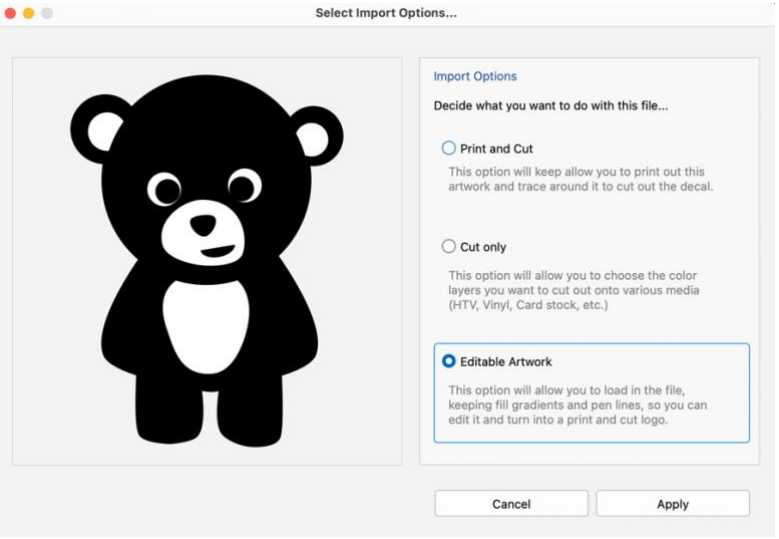
IMPORTING IMAGES – IMPORT OPTIONS

When importing an image, depending on the file type you will be given various options.



Importing images with file extension .PNG, .TIF, .JPG will take you straight to the Contour Cutting module.

Editable Artwork

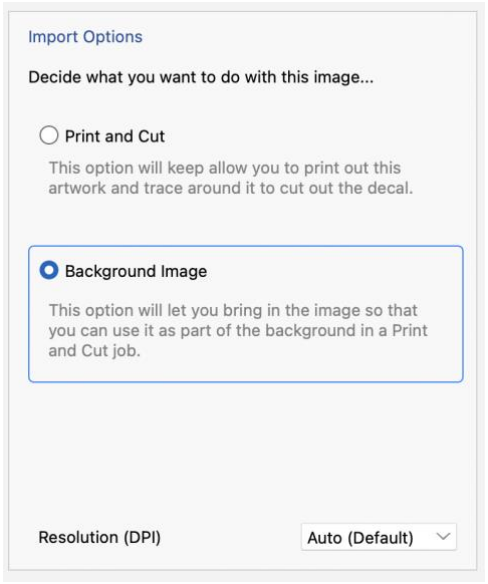


Importing images with the file extension .SVG will allow you to choose between Print and Cut, Cut only or import the image as Editable Artwork. This is because SVG means scalable vector graphic, meaning the image is made up of geometric shapes that can be recognized in the software.

If an image is imported as editable artwork, hovering over the image with the select tool will highlight each shape (as the mouse moves over it) that is contained within the group of shapes forming the image as shown below.

Import a Background Image

To import an image as a background image, select File > Import File and select 'Background Image' as shown below.



Tip: This automatically sets the job as a Print & Cut job.

SUPPORTED FILES

Import

The following is a list of the file formats *Leonardo* Design Studio imports:

*.PNG *.TIF *.JPG *.SVG

EXPORTING

*Only available in *Leonardo* Design Studio PRO.

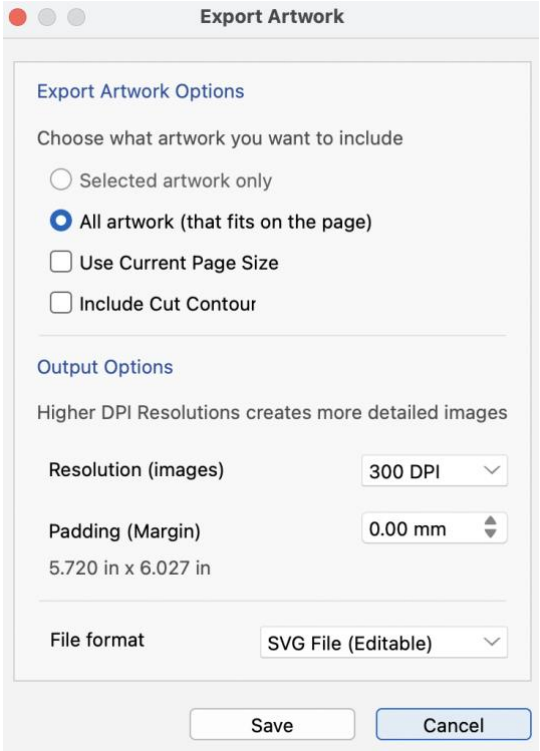
Leonardo Design Studio comes with an Exporting module, which can be used to export artwork, meaning to download and save a file into an alternate format for use in a different program.

EXPORTING FILES

*Only available in *Leonardo* Design Studio PRO.

Export Artwork Options

To export a file, click File menu / Export Artwork and the Export window will open.



When selecting to export artwork, a range of options will be available.

You can choose whether to export all the artwork, or only the selected artwork if you have selected objects.

Click Save and the program will prompt you to select a file location.

Note: You can select to use the Current Page size, otherwise the export will be at the size of the current objects.

Tip: If you have contour cut lines, you can select whether you would like to include them.

Output Options

You can select the DPI that the export renders an image to.

Note: This may be used when a distortion has been applied.

Tip: Add padding to create a border around an image.

SUPPORTED FILES

Export

The following is a list of the file formats *Leonardo* Design Studio exports:

*.PNG *.TIF *.JPG *.SVG *.PDF

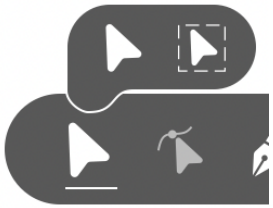
Tip: .PNG and .TIF have transparent backgrounds whereas .JPG has an opaque or white background.

WORKING WITH OBJECTS

*Some tools only available in *Leonardo* Design Studio PRO.

Begin designing in *Leonardo* Design Studio using the toolbar at the bottom left of the screen.

SELECT TOOL



This tool is used to select objects on your cutting mat/art board.

The select tool by default is touch select and is shown as the left option in the fly-out menu. This means that if you hold down the left mouse button and touch any object, it will select the object.

However, the second option in the fly-out menu is the select tool with the bound select mode applied. This means that if you hold down the left mouse button and select an option, the object will become selected only once inside the boundary marks drawn using the select tool. This is useful for when you only want to select certain things.

Create a Copy

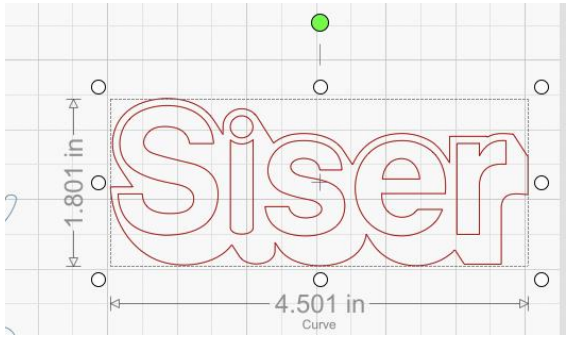
Once an object is selected, you can create a copy by pressing 'Alt'/'Option' on your keyboard whilst holding down the left mouse and dragging the duplicated object to anywhere on your artboard or cutting mat.

Note: Let go of the left mouse button whilst still holding 'Alt'/'Option' to ensure a successful duplication of the object.

Delete an Object

An object can be deleted by clicking Edit menu / Delete.

RESIZE, MEASURE & ROTATE



Resize

When an object is selected, the outline will show circles around the perimeter of the object.

Use the corner circles by clicking the left mouse button over the circle to resize in the direction of the relevant corner, proportionally, meaning the object will maintain its shape when resized.

Short Cut: If you hold down 'Alt'/'Option' when resizing from a corner circle (holding down the left mouse button), it will allow you to resize non-proportionally in any direction you move your mouse.

Use the center circles on either the x or y axes by clicking the left mouse button over the circle to resize the object in the direction of the selected circle, non-proportionally, meaning the object will not maintain its shape and it will stretch in the direction that you drag the mouse.

Short Cut: If you hold down 'Shift' when resizing, the object will resize from the center.

Short Cut: If you hold down 'Control'/'Command' when resizing, the object will snap to an even multiple of the size (you can continue to drag to create a larger multiple).

Short Cut: If you hold down 'Control'/'Command' + 'Shift' when resizing, you can simultaneously mirror the image.

> Note: Mirroring an image is useful for creating iron on t-shirt piece that needs to be pressed on backwards to show properly.

Measure

Whenever you select an object, the measurements along its 'x' and 'y' axes will appear, showing you the dimensions of the object that you are working with. As you resize the object, the measurements will change, if the measurement changing becomes blue, then you are resizing the object non-proportionally, meaning you are altering only the width or the height.

Rotate

The green circle adjacent to the object is used for rotating, as you rotate an object you will see the degrees in which it has been rotated.

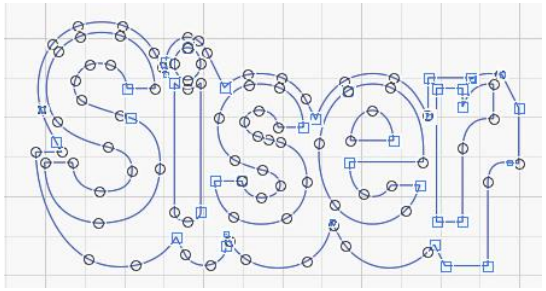
To rotate an object, click the left mouse button and drag the mouse in the direction you wish to rotate the object.

Note: If you rotate near the center of the object, the rotation will snap to 15 degrees, if you rotate from further outside the center of the object, you can smoothly rotate to any angle.

Short Cut: 'Command'/ 'Control' + R

NODE EDIT TOOL

By selecting the node edit tool, the software will highlight all the nodes on the selected object as shown below.



Round Corner

Right click on a corner to bring up the option to round a corner of a node, you can drag it out at the same time to edit it.

Add/Delete a Node

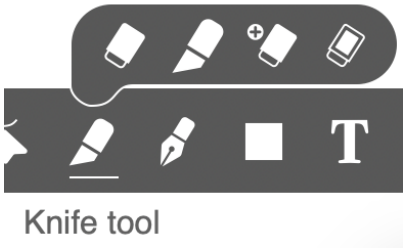
Double click on a node to delete it and double click on an area without a node to insert one.

KNIFE TOOL

*Only available in *Leonardo* Design Studio PRO.

The knife tool enables precise and controlled cutting or splitting of digital objects or shapes, simulating the action of a physical knife for efficient editing and manipulation in design or modeling workflows.

Note: The knife tool is in the eraser pop up.



To use the knife tool, select the knife tool and then click and drag in the direction you want to split the object, release to complete the process.

Note: If one object is selected, the knife will only cut through the selected object. If nothing is selected, the knife will cut through all objects included in the area that the tool is used across.

Note: If a layer is locked, it cannot be cut/sliced using the knife tool.

Short Cut: 'Shift' to disable snapping.

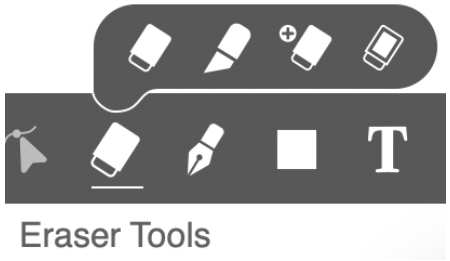
Short Cut: 'Escape' to cancel.

ERASER BRUSH TOOL

*Only available in *Leonardo* Design Studio PRO.

The eraser brush tool allows users to selectively remove or erase specific portions of digital content, mimicking the functionality of a physical eraser, for precise editing and refining of digital images or artwork.

To use the eraser brush, select the eraser and click the left mouse button, dragging across the area you would like erased.



Note: If one object is selected, the eraser brush will only function on the selected object. If nothing is selected, the eraser brush will function on all objects included in the area that the tool is used across.

When the eraser brush is selected, a pop up will appear above the design area allowing you to select the shape and thickness of the eraser.

Note: Selecting the line option will convert the eraser to erase as a line (snapping horizontally or vertically).

Short Cut: 'Shift' held down allows you to resize the eraser brush.

Note: The eraser tool is especially useful for stenciling to quickly erase out areas in text to avoid holes from falling out during the cutting process.

Hole Eraser

Especially common in contour cutting, you might want to remove a hole, or part of a hole.

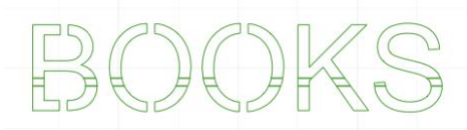
Note: Instead of removing parts of shapes, this tool will only remove/erase the insides of holes.

Slice Brush

The slice brush creates a copy from where you have applied the slice brush tool.

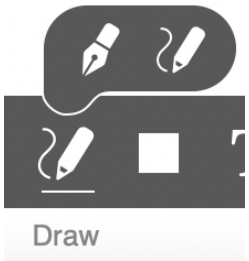
When using the Slice Brush, try working in Wireframe.

Short Cut: 'W'



In the above example, a line has been drawn across the word books, using the slice brush, its effect is visible in wireframe.

PEN TOOL



The pen tool is the first option of the 2 of the drawing tools.

The pen tool can be used to draw lines.

Lines

To produce straight lines, click the left muse button and then move the mouse towards the desired length/direction and then click again to create a new node.

Note: If you are working with curves, you can right click on a node to change it 'To Line'.

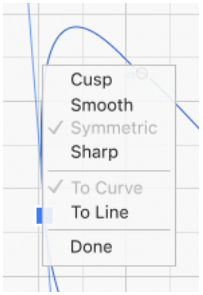
Curves

To produce curves, click the left mouse button and then move the mouse towards the desired length/direction and then instead of simply clicking again to create a new node, hold down the left mouse button and drag the mouse in any direction/angle and the pen tool will create a curve at the relevant node.

Note: Whilst creating the curve/line, you can click onto each node to edit it. Once you have clicked a node, arrows pointing in opposite directions will allow you to change the direction/angle of the node by clicking the arrow and dragging in the desired direction.

By right clicking on the selected node, you can select the type of curve type to be used, changing the curves will affect the lengths and angles of the curve.

i.e., A smooth curve means each side of the arrows that appear when editing the node are the same angle, but they can be different lengths, whereas a symmetrical curve means that the arrows are the same length, but you lose control over the angle.



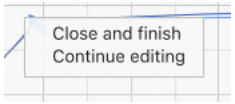
Working with Nodes

There are a few things to note when working with lines/curves and producing nodes.

If you want to delete a node, you can double click it.

If you want to finish a line/curve, right click on the node and it will give you the option 'Done' which will produce the shape as a final object, or 'Closed' which will join the final node to the original node.

Note: If you are drawing lines/curves and come close to/overlap the start/end point, the software will prompt you to close and finish, or continue editing.

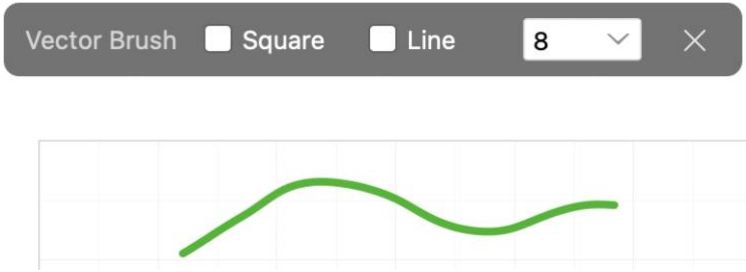


Once you finish a shape, you can select whether to leave the object as a stroke, or to fill the object (if enclosed).

Vector Brush

*Only available in *Leonardo* Design Studio PRO.

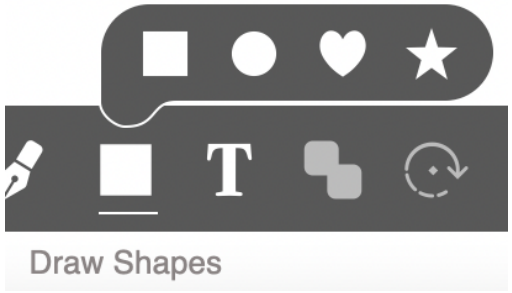
The vector brush draws a vector path. To use the vector brush, select the vector brush tool and click the left mouse button, dragging to draw the vector path.



When the vector brush is selected, a pop up will appear above the design area allowing you to select the shape and thickness of the vector path.

Note: Selecting the line option will convert the vector brush to draw as a line (snapping horizontally or vertically).

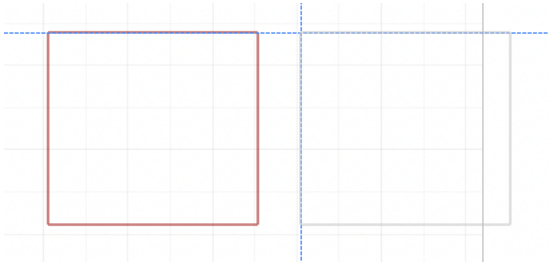
SHAPE TOOL



Select the shapes flyout and click on a shape to select that option.

To draw the shape, click anywhere in the drawing area, hold down the mouse button and drag out the shape, when satisfied with the shape let go of the mouse button.

Note: Once you have made your shape, the software automatically stores the shape/size and allows you to create duplicates simply by clicking the left mouse button anywhere in the drawing area to produce your shape in that position.



This is an efficient way to produce multiple copies!

Copy/Delete an Object

To add a copy, select Edit menu / Add a Copy

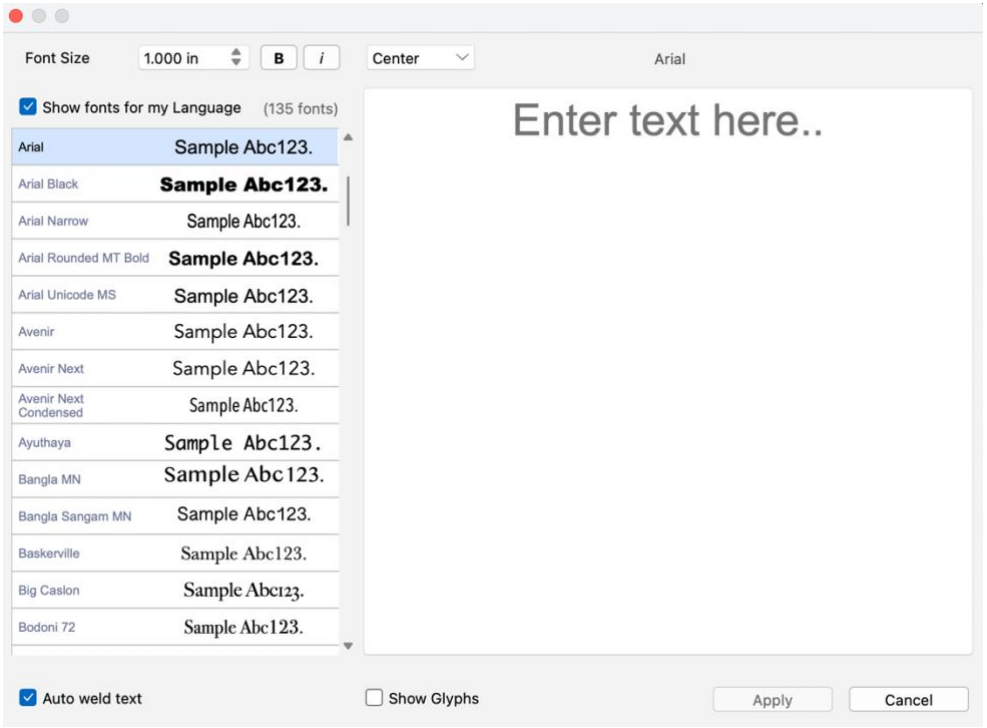
To delete a shape, select Edit menu / Delete

Short Cut: Hold down shift after drawing a shape to create a proportional version of recently created object. Click the left mouse button and release to position the new shape in the position of the cursor.

Short Cut: Delete an object by pressing 'Escape'.

TEXT TOOL

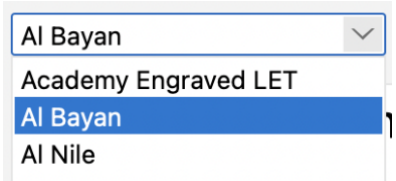
The text tool allows you to create and edit text as shown below.



Type text simply by clicking in the text editing area.

To change the font, scroll through the options on the left and select the desired font.

Note: Quickly change through fonts by highlighting the selected font and using the up/down arrow keys on your keyboard to change fonts whilst applying it to your written text.

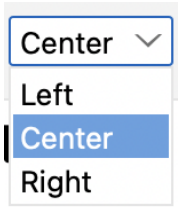


Tip: You can filter by fonts that are available in your chosen language (the language you have installed the program in).

The text can also be made Bold or Italicized using these buttons:

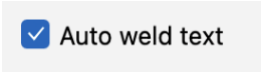
Short Cut: Select Text + 'Control'/'Command' + B to Bold a font.

Short Cut: Select Text + 'Control'/'Command' + I to italicize a font.

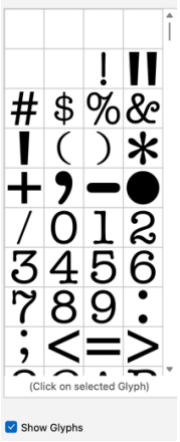


To change the text's justification, select using the drop-down box.

The text's size can be edited using the arrows, or by typing in the size into the box.



The text tool also includes the option to Auto Weld Text so that text with overlaps removes the gaps which will allow the text to be sent to cut (objects with gaps cannot be sent to cut).



The text tool also includes the option to Show Glyphs so that you can identify all the glyphs/characters available in the selected font.

Note: To edit text that has been created, double click the text and the text editing window will appear, allowing you to revise the font, size, justification etc.

Arc Text

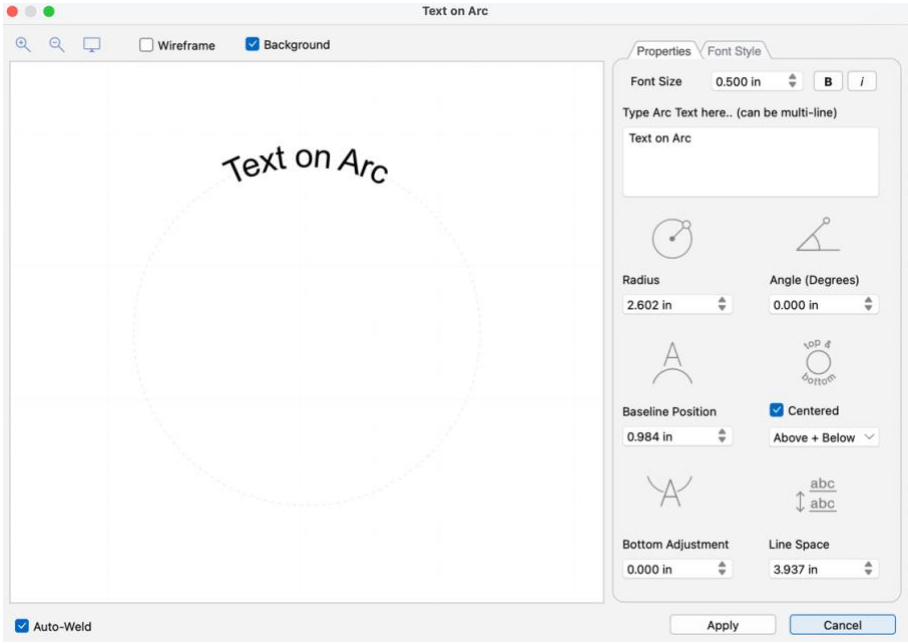
*Only available in *Leonardo* Design Studio PRO.

Arc text allows users to create text that follows a curved or circular path, enabling the placement of text along arcs, circles, or other custom shapes, enhancing design flexibility, and enabling creative typography effects in various graphic design or layout applications.

To add arc text, expand the text fly-out and select Arc Text.

A window will appear that displays all the available arc text settings.

Click in the text box to type text.



Once the desired selections have been made, select Apply to update the changes.

Background

Select whether to display the background.

Font Size

Edit the size of the text.

Font Style

Select the desired font and whether to apply bold or italics settings.

Radius

Edit the size of the radius from where the arc text is positioned.

Angle

Adjust the angle on the arc from where the arc text is positioned.

Baseline Position

Adjust the distance from the baseline of the arc from where the arc text is positioned.

Justification

Select whether to center the arc text on the arc.

For multiline text, select whether to display the text above, below, or above and below the arc.

Bottom Adjustment

Controls the vertical positioning of the text along the arc.

Line Space

For multiline text, adjust the spacing between lines.

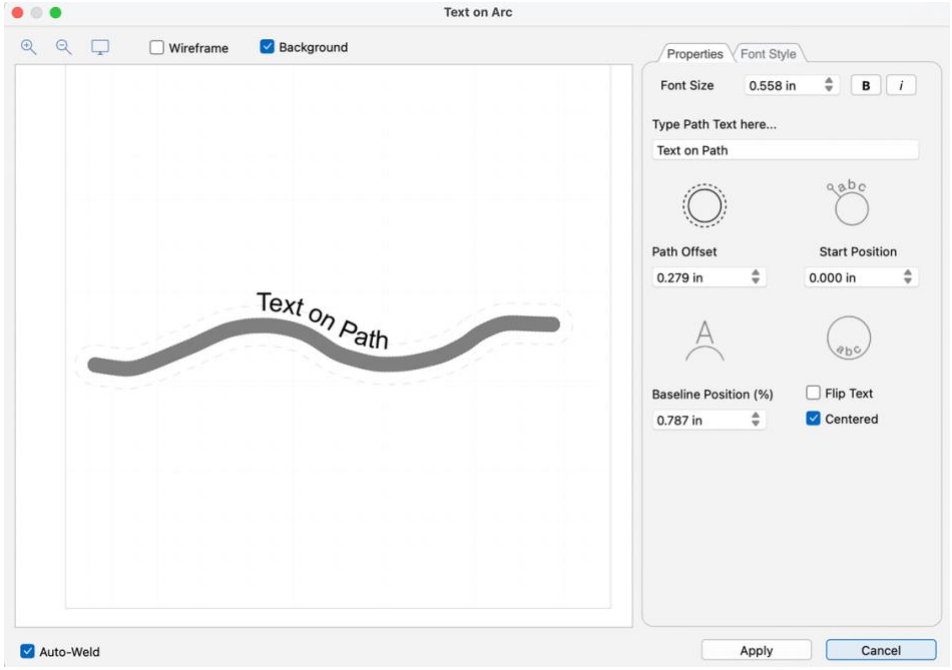
Text on Path

*Only available in *Leonardo* Design Studio PRO.

To add text on path, first create a path using the vector brush.

Next, expand the text fly-out and select Text on Path.

Click in the text box to type text.



Path Offset

Adjust the offset from the path from which the text is positioned on.

Start Position

Adjust the starting position along the path that the text begins.

Baseline Position

Adjust the distance from the baseline of the path from where the text on path is positioned.

Flip Text

Select whether to mirror the text.

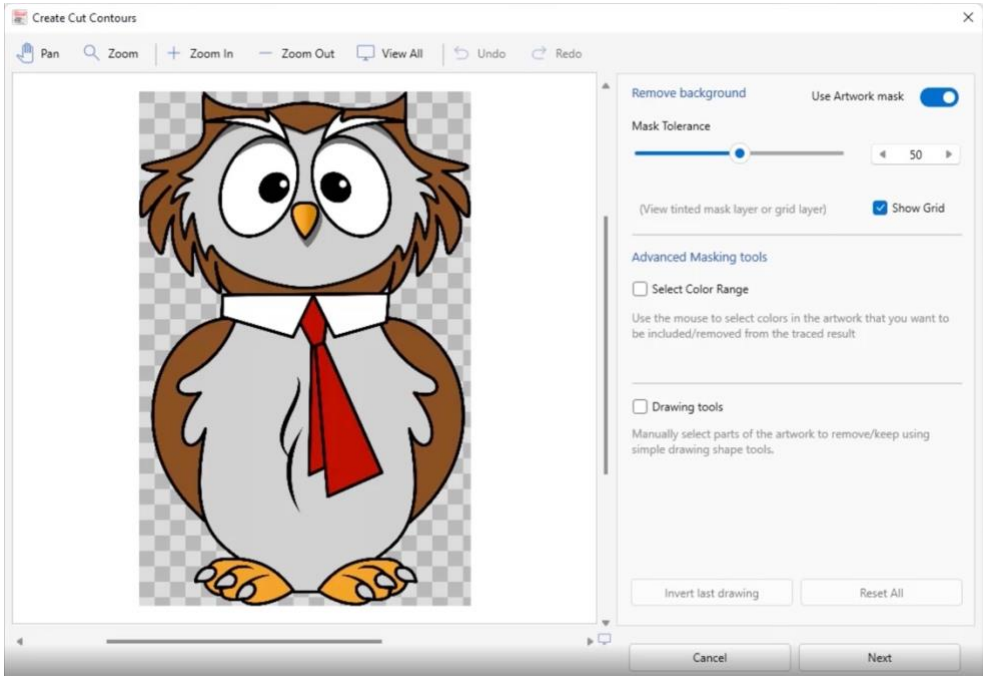
CONTOUR CUTTING TOOL

Leonardo Design Studio comes with a dedicated Cut-Contour module which automatically outlines selected Objects using a system color.

To use the contour cutting tool, select an object and click the Cut-Contour module button, or import an image to open the contour cutting module.

WHAT IS CONTOUR CUTTING

A Contour Cutting Line or Outline is a special purpose curve that can be identified by a printer/cutter to print then cut out your artwork from a single file.



What is Contour Cutting?

A Contour Cutting Line or Outline is a special purpose curve that can be identified by a printer/cutter to print then cut out your artwork from a single file.

Note: ARMS (Automatic Registration Mark Sensing) is a generic term used for vinyl cutters that use an automated system to identify the location of printed marks for great contour cutting accuracy. Some manufacturers use different terms for this system which can be used interchangeable with the term: ARMS.

Contour Cutting involves placing an outline around an Object or Objects in *Leonardo* Design Studio. The Object(s) but not the Outline are printed onto media such as white vinyl, later the Outline is cut out using special Registration Marks (ARMS) or a Laser Pointer and a Vinyl Cutter, which then creates a decal or sticker. The Outline can be set at any distance from the edge of the Object or Objects and cut out from a separate vinyl cutter or on a Printer-Cutter. An example of Contour Cutting is shown above.

Print, Laminate & Cut

Another application of Contour Cutting is to create a Cutline around an artwork's perimeter. The artwork (not the Cutline) is then printed and later laminated, and the Cutline then cut out to create the finished artwork.

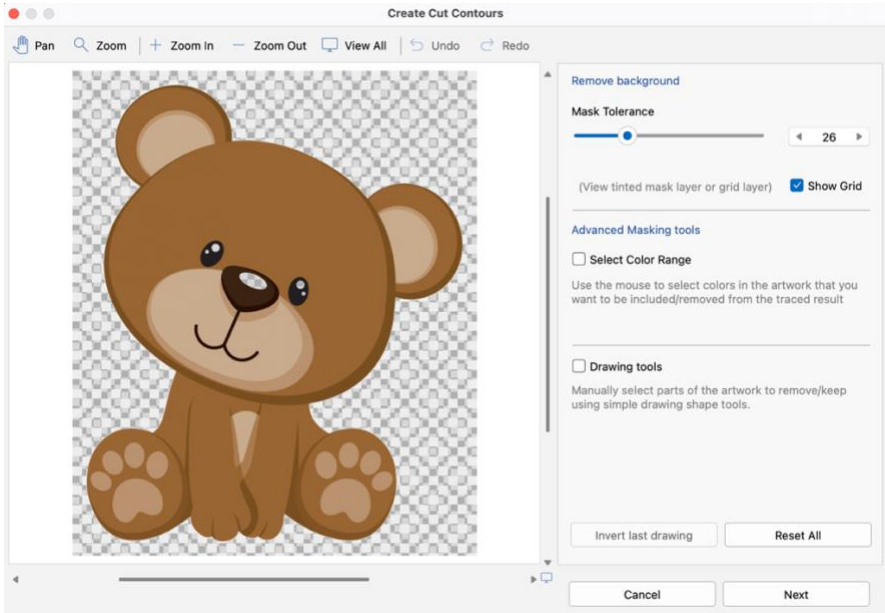
THE MASK EDITOR

The Mask Editor is a specialist utility used to remove the background from images (transparent) and/or to create special effects by using transparencies within the image.

Masks are introduced as an Alpha Channel with an imported Image (bitmap).

Vectorizing, otherwise known as Tracing takes an Image (Bitmap) and traces around its pixels to create an editable and perfectly rescale able curve (path) that can either cut out using a plotter (vinyl cutter), printed and/or exported.

A mask can be understood as an area over an image that makes it transparent (see through).



To trace an image and apply a mask, import an image, and set the following sections as required.

Adjusting the Tracing Level/Remove Background

The mask tolerance will adjust which colors show up when importing the image.

You can switch off the grid by unchecking Show Grid to identify which colors are being imported in a different view as shown below (adjust preview opacity to further clarify which colors are included in the import).

Use the sliding bar or the arrows to control the mask tolerance (amount/level of colors to be incorporated in the import).

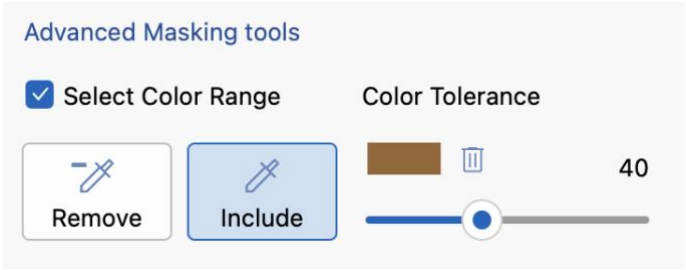
Advanced Masking Tools/Selecting the Trace Areas

The Advanced Masking tools provide a more in-depth method to adding/removing colors that will be included for the final import.

SELECT COLOR RANGE

Check Select Color Range to remove/include specific colors selected using the color matching tool by hovering and clicking over the chosen color on the image.

The preview of the color will show up next to the mouse button for your convenience when completing this step.

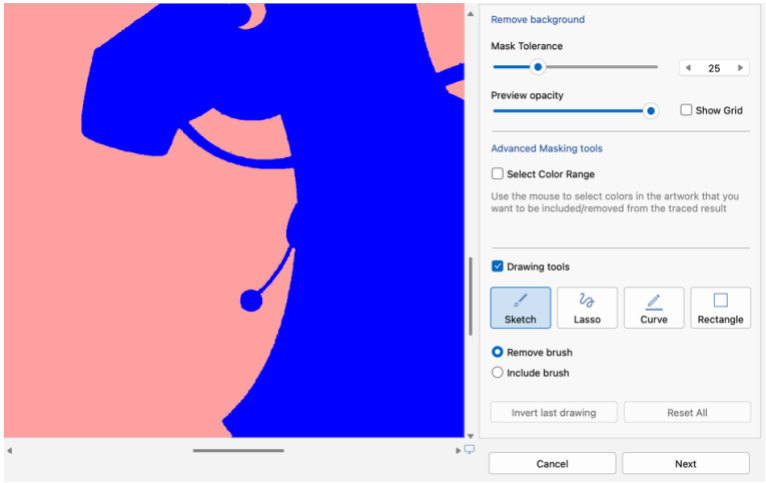


DRAWING TOOLS

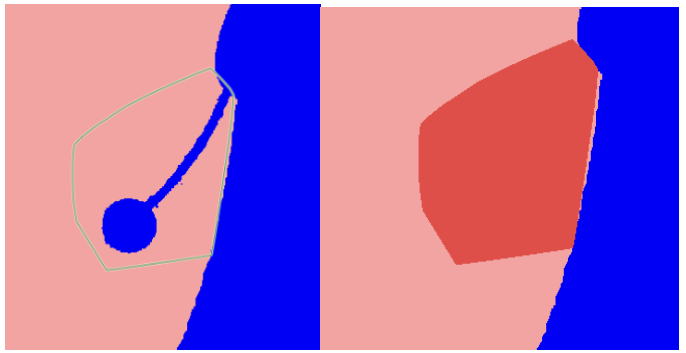
There are a variety of drawing tools that can be used to remove elements in the image. Refer to the following steps to remove part of the image that is not to be included in the cut job (this is useful when elements of an image are too small/difficult to cut).

The image above shows a horse with a collar that creates an outline that may not be wanted in the final cut job. To remove it, select Drawing Tools under the Advanced Masking Tools and use whichever drawing tool is appropriate to remove the element.

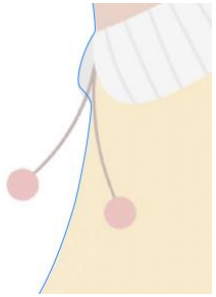
In this instance, the curve tool was used to draw over the unwanted area.



Below is a side-by-side comparison of the area prior to and after removal. Once the area has been drawn over, click Enter on the keyboard to apply the changes.

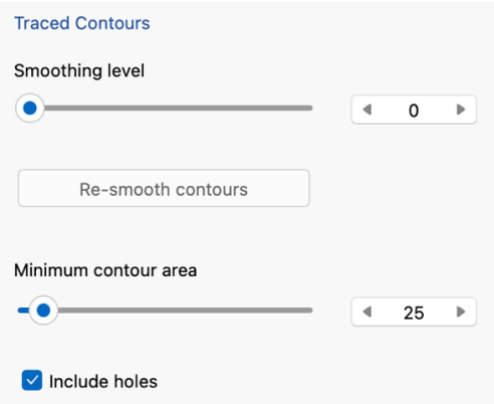


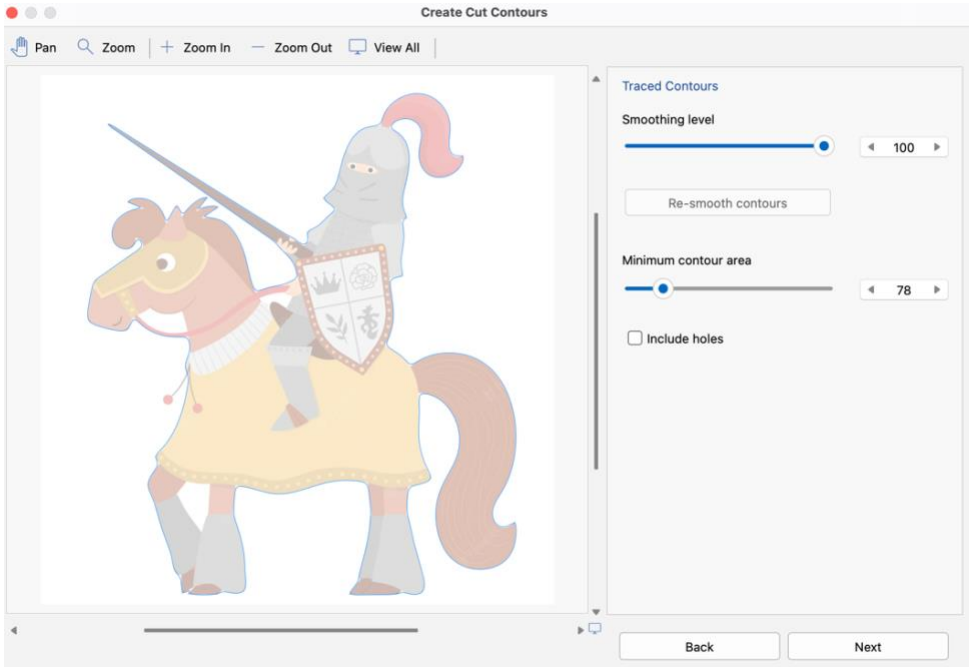
Below shows the contour line, depicting the removed element.



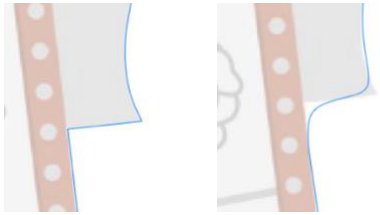
Traced Contours

Smoothing Level





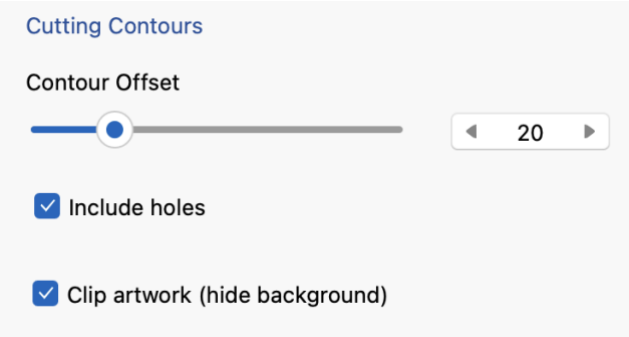
The smoothing level can be edited as shown above to alter the accuracy to which the image is traced around, see below for a smoothing level of 0 compared to 100.



CUTTING CONTOURS

Contour Offset

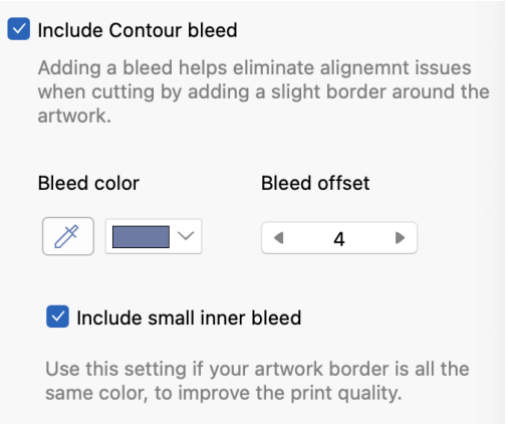
Apply the desired contour offset which is the space/border added around the image. From here, you can decide whether to include holes and to clip the artwork (hide background), adding transparent areas instead of keeping unnecessary backgrounds.



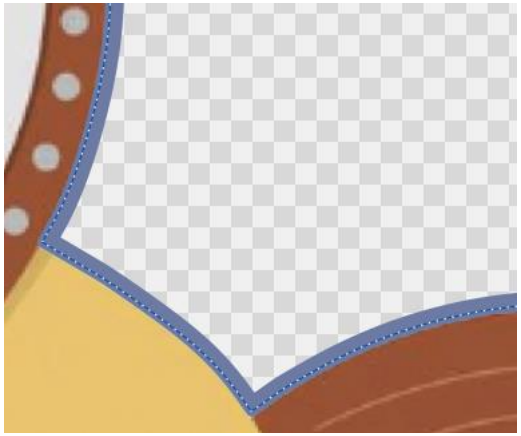
Contour Bleed

After you trace your image and it is ready to import, you can select whether to Include Contour Bleed, this will prevent alignment issues when cutting as the tool adds a slight border around the artwork.

You can control the bleed color and the bleed offset (thickness of the bleed) – do so by using the arrows or by typing in the desired bleed level.



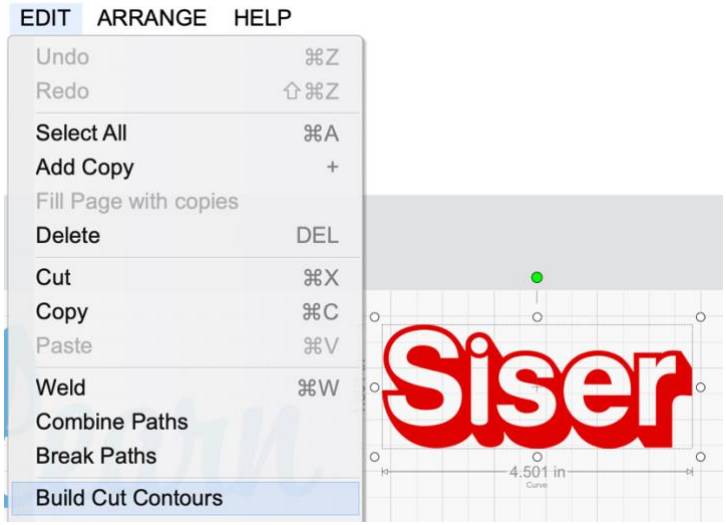
To identify the bleed applied, try zooming in using the Zoom tools.



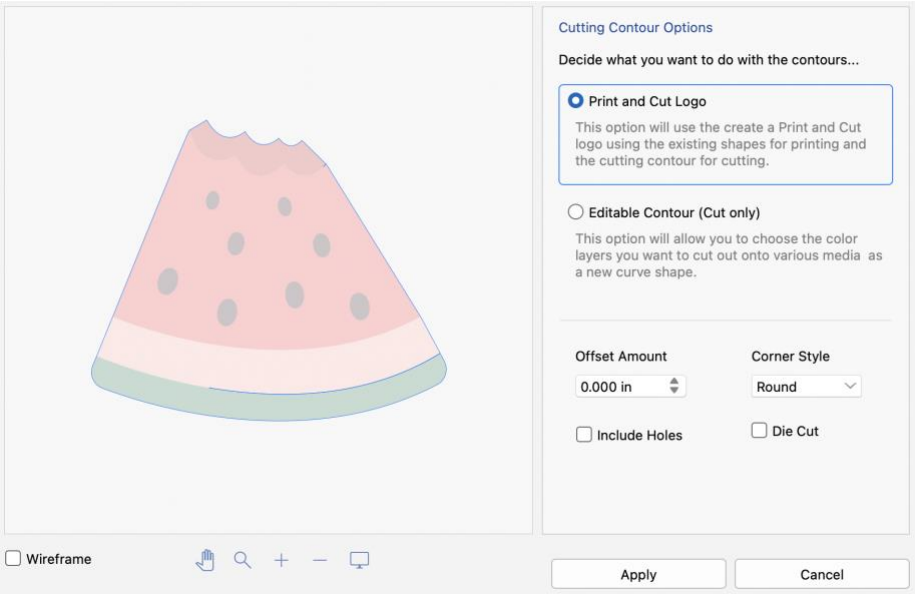
There is also an option to include a small inner bleed which can be applied if the artwork border is one color and is used to improve print quality.

WORKING WITH CONTOUR CUT

To build a contour cut, select the object, and click Edit menu / Build Cut Contour, or import an image and you will be prompted to complete the same steps.



The following module will appear:



By default, when importing an image, the Print and Cut option will be selected.

Note: You can also access Build Contours from the Contour Cutting tool.

You can select from 2 options:

1) Print and Cut Logo
2) Editable Contour (cut only)

Offset Amount

Adjusts the offset of the contour around the image.

Tip: You can edit the offset after applying it simply by using the build contours tool and changing the amount.

Note: To individually edit/remove a cut-contour, use ungroup paths to separate the image from its contour.

Corner Style

Determines whether a round or sharp corner style is applied to corners of the contour.

Include Holes

Select whether to include or remove holes within the contour.

Die Cut

Select whether the contour is to be used for die cutting.

Print & Cut Logo

Print and cut logo will allow you to apply contours for cutting and work with the image to be printed.

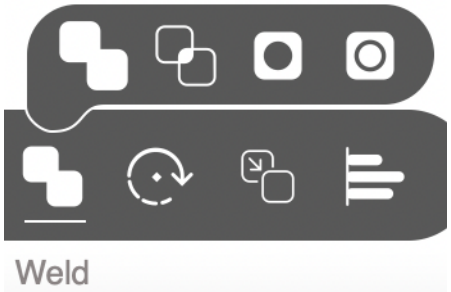
Editable Contour (Cut Only)

Editable contours will allow you to apply contours for cutting.

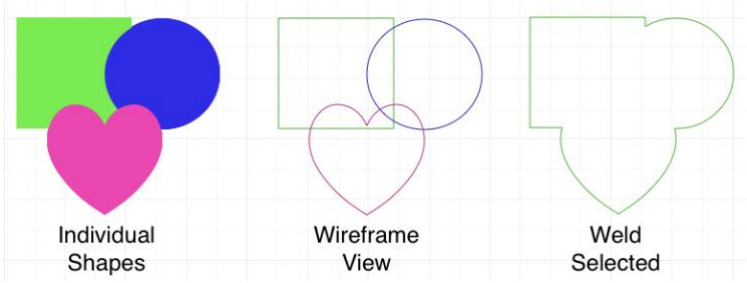
Note: Applying contours to an image/shape/object that was originally a print job, will convert it to a cut job as well.

WELDING TOOL

Welding is a method of joining and combining shapes, curves and text including any effects to each other to create new curve objects, that can also have effects applied to them and again be welded, as shown, and explained below:



Welding is used because you cannot have overlapping spaces when sending an object to the cutter.

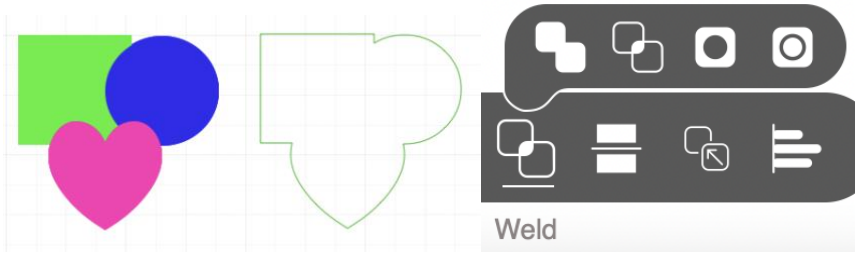


When two or more objects are selected, welding and shaping tools will become available in the tool bar at the bottom left.

Short Cut: 'Control'/'Command' + 'W'

Note: Weld operations also operate on stroke lines.

Weld Selected



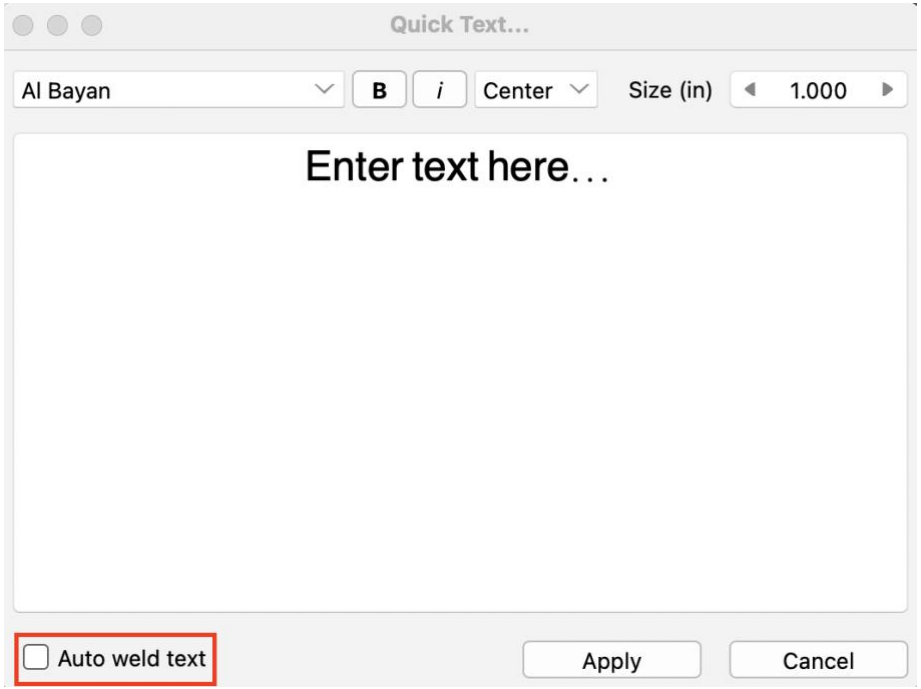
To weld objects together, use the select tool (bound select) to select all the objects that will be welded together. Next, click on the welding tool flyout in the toolbar and click weld. All will be converted into a Single Object with the color based on the item most below in the Z-Order (as shown in the example directly above).

When Welding Objects, try working in Wireframe.

Short Cut: 'W'

Note: Welding can be used on cursive texts that originally have overlap, to remove these overlaps to allow the text to be sent to cut, as shown below.

The text tool also does include the option to ‘auto weld text’, check the box as shown below when creating text.

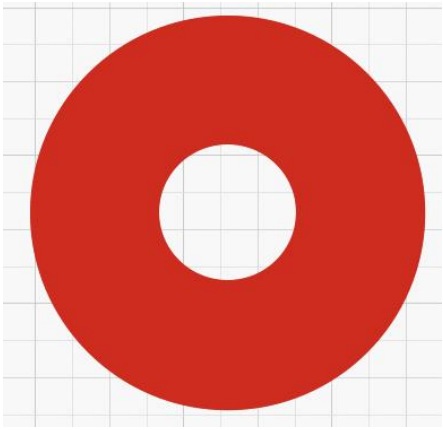


Weld Selected (keep overlaps)

This tool is used to ensure that some shapes do maintain applied overlaps, for example in the section below (make compound), there will be projects in which shapes will require negative space such as holes.

Weld selected whilst keeping overlaps ensures that these new shapes that have been created with negative space, will be maintained with negative space when welding to other objects.

To weld selected (keep overlaps), select a shape with overlaps present as shown below.



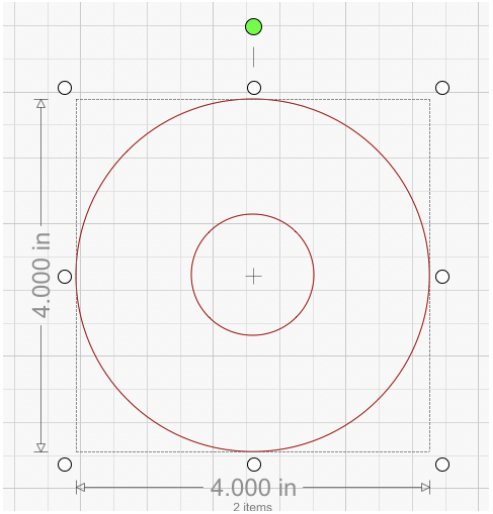
Then, expand the welding flyout and select ‘Weld (keeps overlaps)’.

Make Compound

The welding tool can be used to create negative spaces inside other objects, for example, if you want to create a hole inside of a circle, the ‘Make Compound’ tool can be utilized.

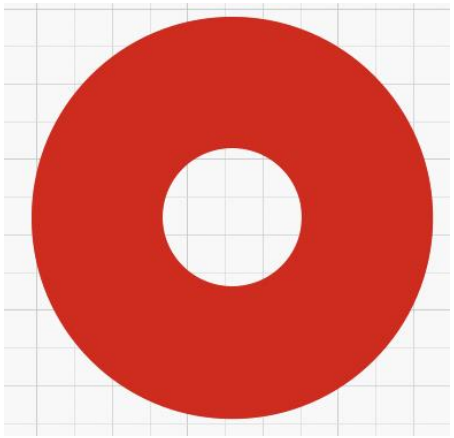
First, create a circle and then create a smaller circle inside that circle (work in wireframe).

Next, use the select tool to select both items as shown below.



Next, select the weld tool to expand the welding flyout, and select the Make Compound tool.

Once you turn off wireframe, you will notice a hole inside the circle.



Note: To maintain the circle with the hole inside it when welding to other objects, make sure to first weld (keep overlaps) this new shape after setting it to make compound.

Short Cut: Right Click > Paths > Combine Paths.

Release Compound

To release the compound and allow the shapes to be edited individually separated, click 'Release Compound'.

Short Cut: Right Click > Paths > Break Paths.

Short Cut: Right Click > Paths > Ungroup Paths (keep holes inside shapes).

Punch Out

*Only available in *Leonardo* Design Studio PRO.

Individual Shapes Punch Out

To punch out from a group of objects, arrange the objects in the desired position.

Next, ensure the objects you wish to shape are selected and then select Punch Out.

Note: The object above will Punch Out (remove) from the selected objects below, as shown in the example above.

Tip: Learn how to set Z Order (above and below).

Note: If nothing is selected, everything will be punched out. If a group or a singular object is selected, only the singular or group of objects that are selected will be punched out.

Stamp

*Only available in *Leonardo* Design Studio PRO.

Stamp operates the same as Punch Out, but it also keeps the top layer/shape/object instead of completely removing it.

To stamp (to punch out and keep the shape), arrange the objects in the desired position.

Next, ensure the objects you wish to shape are selected and then select Stamp.

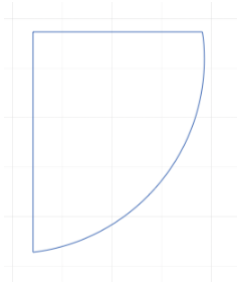
Note: The object above will Stamp.

Tip: Learn how to set Z Order (above and below).

Note: If nothing is selected, everything will be stamped. If a group or a singular object is selected, only the singular or group of objects that are selected will be stamped.

Intersect

*Only available in *Leonardo* Design Studio PRO.



Intersect keeps the part of the object intersected by the selected shapes.

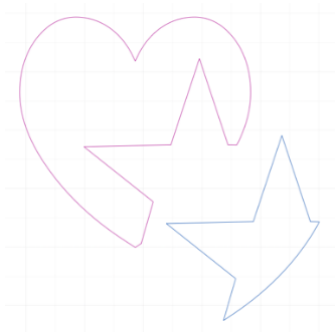
To intersect, arrange the objects in the desired position.

Next, ensure the objects you wish to shape are selected and then select Intersect.

Note: All the selected items are intersected with the top clipping shape (the punch out shape).

Slice Intersect

*Only available in *Leonardo* Design Studio PRO.



Like the Slice Brush, when applying slice intersect, along the border that the shapes are intersected, the Slice Intersect tool will split the shape into two separate parts.

To slice intersect, arrange the objects in the desired position.

Next, ensure the objects you wish to shape are selected and then select Slice Intersect.

Color Layer Weld

Color layer weld splits objects so that there is no overlapping of the shapes.

Note: This is useful when working with objects of the same color to avoid wastage during the cutting process (and you do not want overlap).

To color layer weld, arrange the objects in the desired position.

Next, ensure the objects you wish to shape are selected and then select Color Layer Weld.

The example above illustrates the product of color layer weld, where the objects of the same color are welded into one shape and any objects of a different color are split apart.

Base Layer Weld

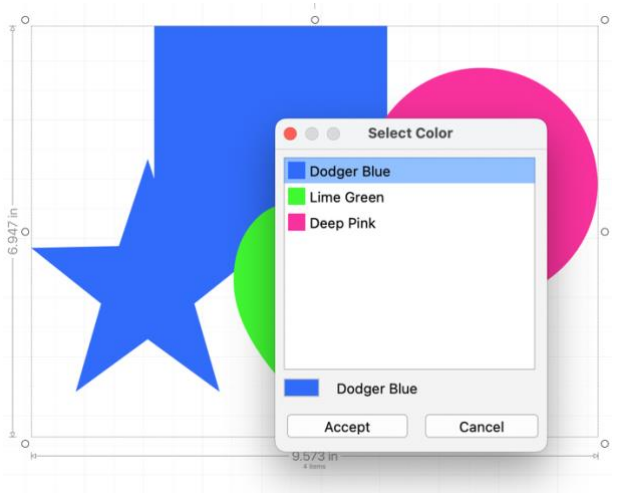
*Only available in *Leonardo* Design Studio PRO.

In some instances, you might want all the shapes on top of one background.

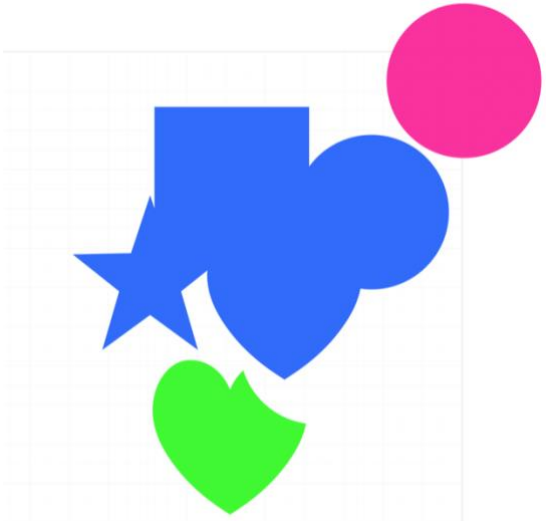
To base layer weld, arrange the objects in the desired position.

Next, ensure the objects you wish to shape are selected and then select Base Layer Weld.

When working with base layer weld, you will be prompted to select the base layer color on a pop-up screen as shown below:

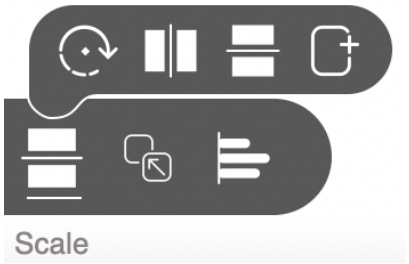


Select your chosen color and the output should look as follows (every other shape is on top of the selected layer):



Note: This significantly simplifies the process when assembling a job, such as sticker jobs.

SCALE TOOL



The scale tool features 4 tools: rotate, mirror (horizontally), mirror (vertically) and duplicate.

Note: The scale tools can also be used from Arrange menu.

Rotate

To rotate an object by 90 degrees in a clockwise direction, use the rotate tool which is the first option in the scale flyout menu.

Short Cut: 'Command'/'Control' + R

Mirror

The mirroring tool can be found in the scale flyout and can be selected either horizontally or vertically. Mirroring objects is especially useful for projects relating to iron on transfers, where the object must be mirrored in its application to a t shirt or similar.

Horizontally

Select an object using the select tool and then select the mirror horizontally tool from the scale flyout menu to mirror an object from its center along the x axes.

Vertically

Select an object using the select tool and then select the mirror horizontally tool from the scale flyout menu to mirror an object from its center along the y axes.

Duplicate

Select an object using the select tool and then select the duplicate tool to create quick copies of the object.

Short Cut: 'Control'/'Command' + C to copy and then Control'/'Command' + V to paste the duplicate.

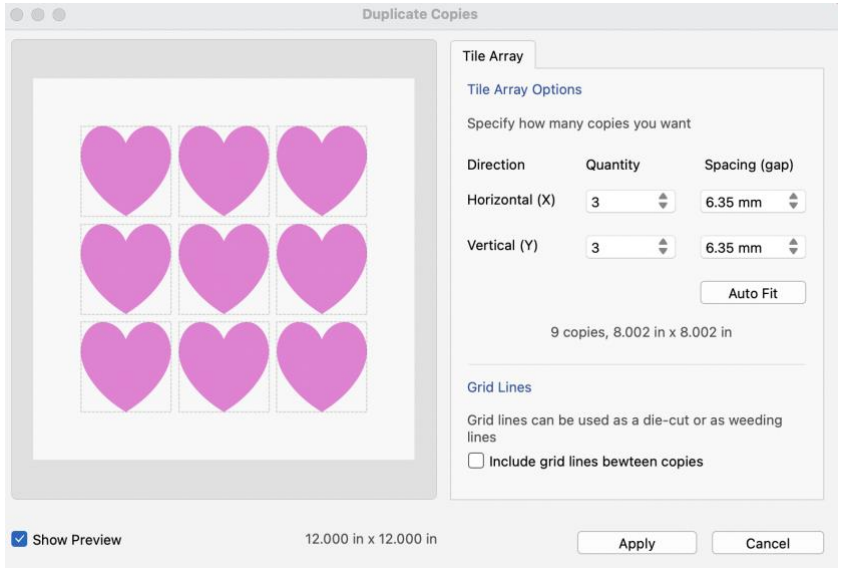
The shortcut for Duplicate is the Plus (+) from the keyboard.

Note: The duplicate will need to be moved off the original by clicking the left mouse button and dragging to the desired location.

How to Cut, Copy, Paste

Tile Array

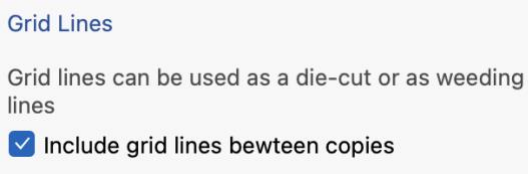
*Only available in *Leonardo* Design Studio PRO.



Select an object using the select tool and then select the Tile Array tool to create quick copies of the object in the desired formation (horizontal and vertical quantities).

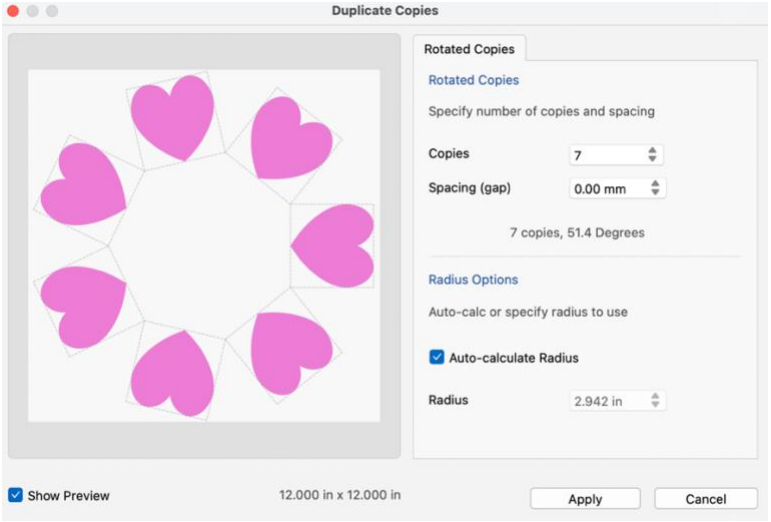
Tip: Set the horizontal/vertical space to your desired gaps. To fit the page with as many quantities as possible in the cuttable area, select Auto Fit.

Note: Grid lines are useful when weeding or die-cutting (making each object detach as separate squares).



Rotated Array

*Only available in *Leonardo* Design Studio PRO.



Select an object using the select tool and then select the Rotated Array tool to create quick copies of the object around a circle.

Tip: Set spacing to your desired gap.

Note: Deselecting auto-calculate radius allows you to keep a set quantity of shapes and set the radius larger or smaller.

CUT

To remove a selected object from the document and place it on the Clipboard, select the object and click Cut.

Cut is also available from the Edit and Right-click menu.

Short Cut: 'Control'/'Command' + X

COPY

To copy a selected Object and place it on the Clipboard click on Copy.

Copy is also available from the Edit and Right-click menu.

Short Cut: 'Control'/'Command' + C

PASTE

To insert an Object (in its original position) from the Clipboard and place it in the Document click on Paste or click the Dropdown to select an object from the previously copied objects.

Paste is also available from the Edit and Right-click menu.

Short Cut: 'Control'/'Command' + V

WARPING/DISTORTIONS TOOL

*Only available in *Leonardo* Design Studio PRO.

Warping refers to the manipulation of visual or audio content by applying various transformations that alter its shape, position, or characteristics, often used for creative or experimental purposes.

Note: To edit a shape in distortion mode, you can also use the Edit Curves menu option to display the editable nodes.

Note: Distortions can be compounded together, meaning you can fit a distortion around another distortion and so on.

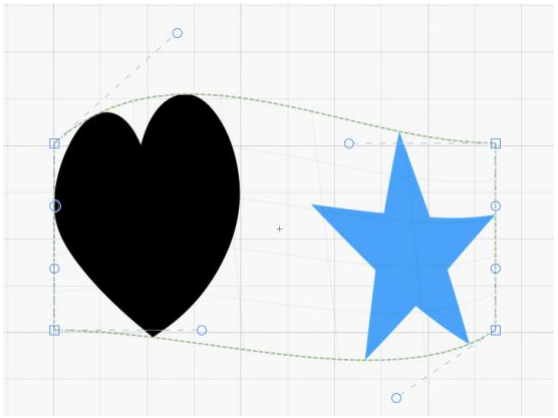
Short Cut: 'Shift' + Corners > Both control points will follow.

Short Cut: Right Click > Returns to object mode.

Mesh Warp

*Only available in *Leonardo* Design Studio PRO.

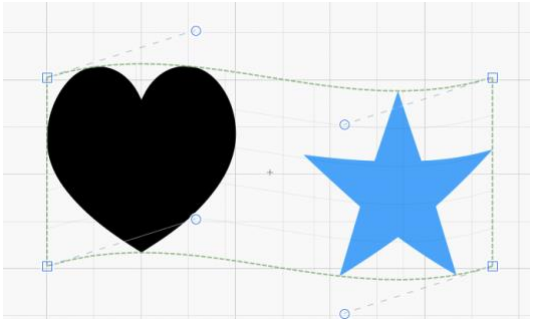
Mesh warp allows you to distort an object as if it were on a piece of rubber.



Flag Warp

*Only available in *Leonardo* Design Studio PRO.

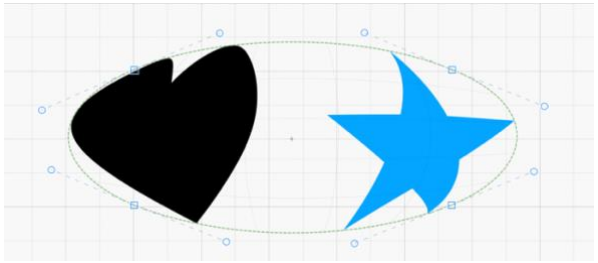
Flag warp allows you to distort an object as if it were on a flag.



Globe Warp

*Only available in *Leonardo* Design Studio PRO.

Globe warp allows you to distort an object as if it were on a globe.

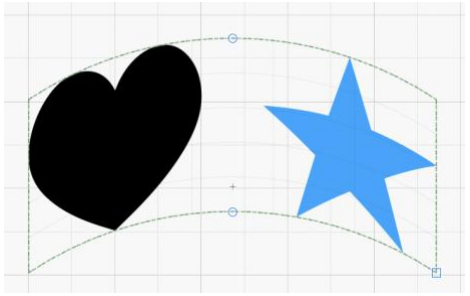


Note: To create a circle, resize the globe until it becomes circular.

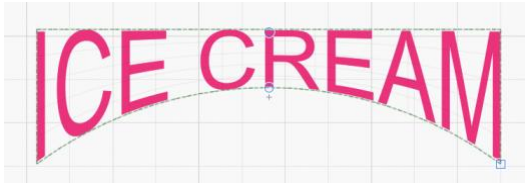
Tube Warp

*Only available in *Leonardo* Design Studio PRO.

Tube warp allows you to distort an object as if it were on a tube or cylinder.



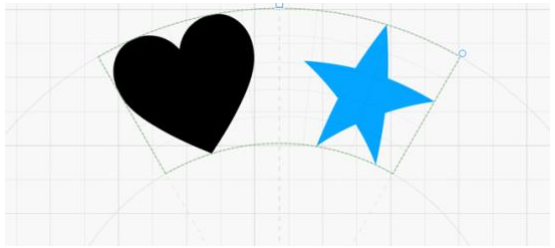
Note: Tube warp is often used when warping text, the top node is often moved to be flat in the horizontal direction, creating an effect as shown below.



Arc Warp

*Only available in *Leonardo* Design Studio PRO.

Arc warp allows you to distort an object as if it were on a circle.



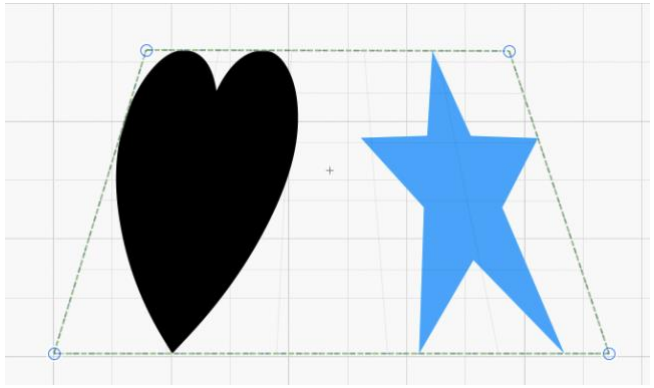
Note: You have control over the center position, inner radius, outer radius, the spread of the object, and angle within the circle.

Short Cut: Hold down 'Shift' to prevent from snapping to 90°.

3D Warp

*Only available in *Leonardo* Design Studio PRO.

3D warp allows you to distort an object as if there were a perspective vanishing point.

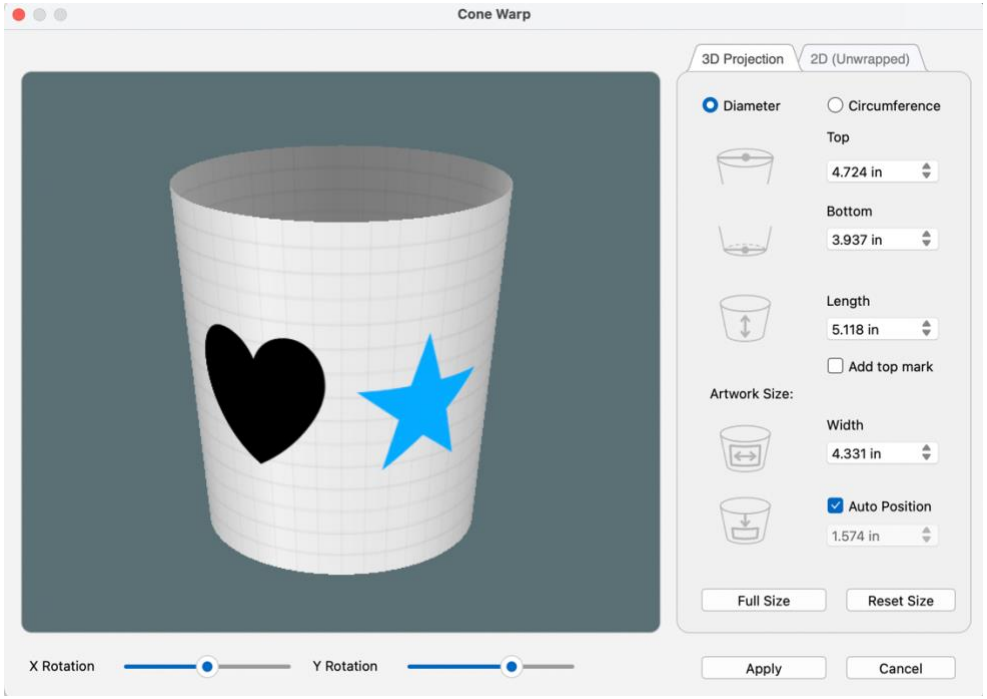


Note: Use 3D warp on text to create a shadow that appears as though it is being cast, as shown below.

Cone Warp

*Only available in *Leonardo* Design Studio PRO.

Cone warp allows you to distort an object as if it were on a cup.

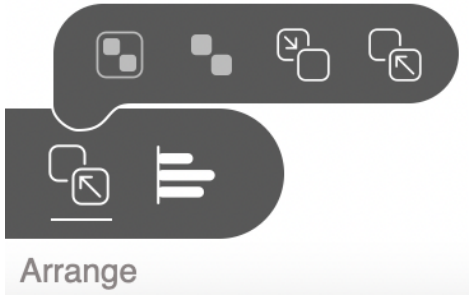


Tip: Set the Top Mark selection so that you can easily identify how far the design is from the top of the cup (represented by an indicator in the design page).

Note: There are several settings allowing you full control over the size, shape, and position of the cup.

ARRANGE TOOL

Note: The arrange tools can also be used from Arrange menu



When two or more Objects are grouped together, they are treated as a single Object but retain their individual attributes and remain individually editable. Grouping Objects lets you apply the same formatting, properties, and other changes to all the Objects within the group at the same time. You can also group a selection of existing groups (Nested Groups) to preserve the spatial relationships (relative positioning) between each set or unit of Objects, as shown in the examples below:

Group Objects

Grouping greatly assists in maintaining the relative positioning Objects and formatting large numbers of Objects.

To group together different objects on your artboard/cutting mat, use the select tool to select all objects that are to be grouped.

Next, expand the arrange fly-out and select Group.

This will allow you to work with selected objects as one object, meaning it can be moved around as one object whilst maintaining the spatial relationship between the objects which allows you to do things such as resize the objects simultaneously.

Short Cut: 'Control'/'Command' + G

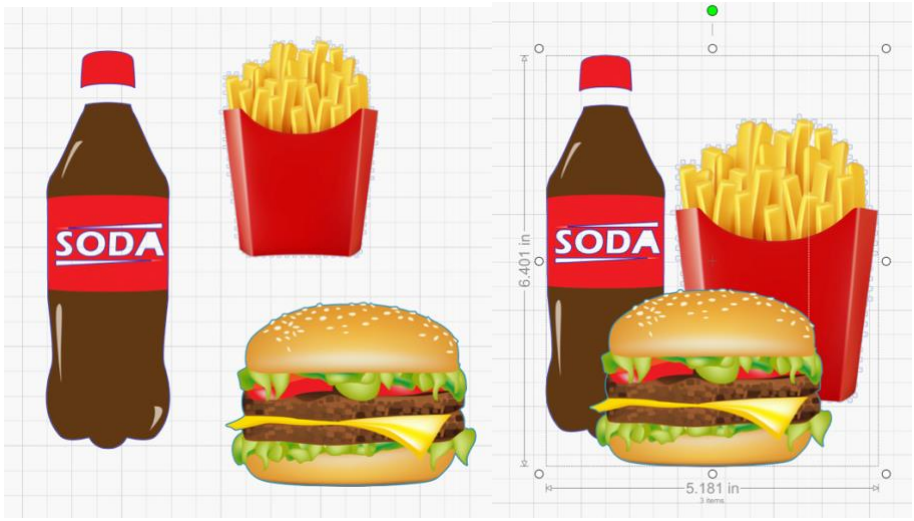
Ungroup Objects

To ungroup together different objects on your artboard/cutting mat, use the select tool to select all objects that are to be ungrouped.

Next, expand the arrange fly-out and select Ungroup.

Ungroup does not ungroup Nested Groups (Groups within Groups) i.e., it only Ungroups to the first level of Groups, see Ungroup All below.

Short Cut: 'Control'/'Command' + U



Ungroup Paths

Ungrouping paths refers to the action of separating or breaking apart a grouped set of paths or objects into their individual components.

Paths are used to define shapes, lines, and curves. Grouping paths allows you to treat multiple paths as a single unit, making it easier to manipulate and manage them collectively. However, there are times when you may want to edit or modify individual paths within a group, which is where the ungrouping paths feature becomes useful.

By ungrouping paths, you can access and manipulate each path independently, enabling you to make specific adjustments or apply different styles, colors, or transformations to individual components. It allows for greater control and precision when working with complex illustrations, logos, or another vector-based artwork.

To ungroup all objects, use the select tool to select all the grouped objects.

Next, expand the arrange fly-out and select Ungroup Paths.

Short Cut: 'Shift' + 'Control' + U

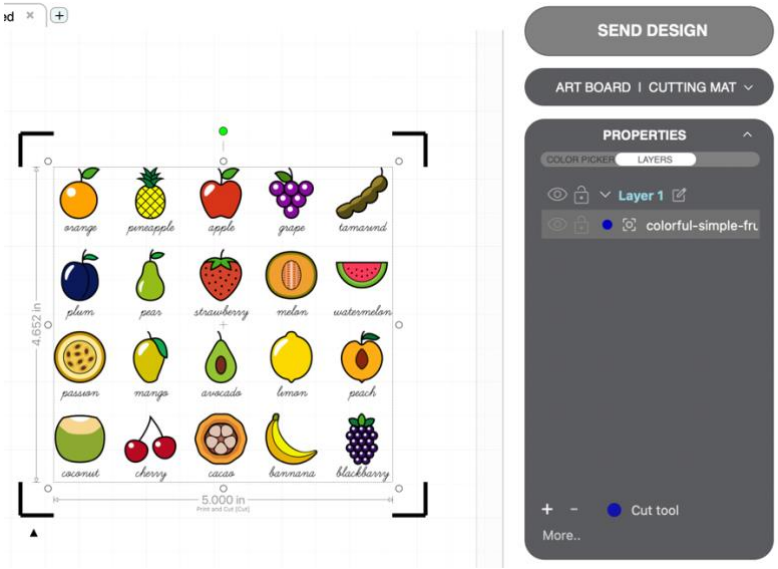
Now, all paths will be individually editable.

In the example above, you will notice in the layers tab all the different components to the originally grouped shape.

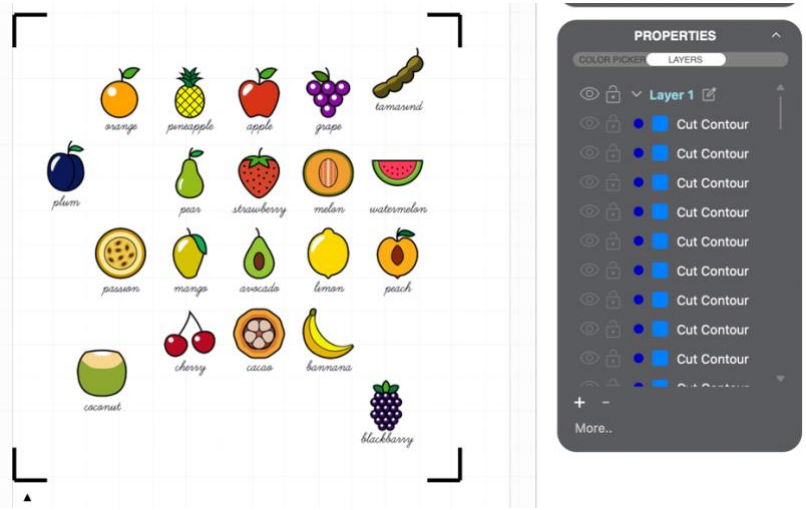
Tip: Ungrouping paths is different to breaking paths such that in ungrouping paths the holes that might be required, i.e., in text, are kept. Ungroup paths allows you to keep the holes inside each shape, whilst still splitting up the actual curve.

Note: This is useful when working with text/objects that are designed to have holes.

Ungroup paths also allows you to import an image with multiple elements and it will automatically detect these, so that you can split them into their own shapes, as shown in the example below.



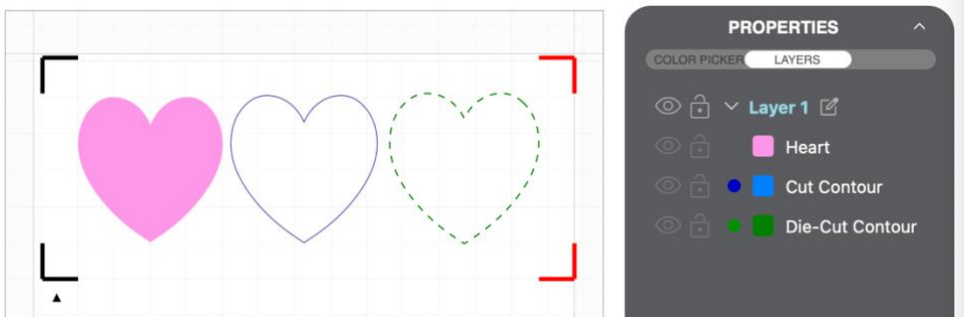
The artwork is originally imported and identified as one layer. By ungrouping paths, each part becomes its own shape, as illustrated below.



Ungrouping Cut Contours

Ungrouping paths can be used when working with objects that that have had cut contours applied, e.g., a cut contour and a die cut contour in addition to the image itself.

Ungrouping paths allows you to individually edit and work with each path.



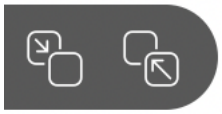
In the example above, a heart shape has had a cut contour and a die-cut contour applied. They have been moved side by side for demonstration purposes.

Tip: To individually edit cut contours or the object itself on an object that has had these applied, simply ungroup paths and lock the layers that you do not want to edit.

Tip: To delete and replace a cut-contour, ungroup the paths and simply delete it from the layers panel. You can then create a new cut-contour using the Contour Cutting tool.

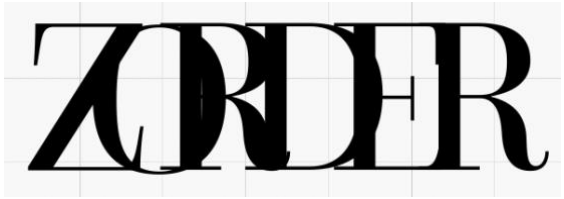
Z-ORDER (ABOVE AND BELOW)

Leonardo Design Studio provides Z-order tools for all objects including curves, images, shapes, and text plus all the effects which can be applied to these objects within a Document. The Z-order tools can be found in the scale fly-out, from the toolbar at the bottom left.



Z-order relates to sending objects 'to front' or 'to back', i.e., sending one object in front of, or behind another object.

Set Z Order (drop down)



Select the Object that you wish to adjust and click on the scale fly-out and click on the required Z-order Position (send to front or send to back).

The Z-order tools are also available from the Arrange and Right-click menus.

Short Cut: Send to Front/Send to Back as below.

Send to Front: 'Control'/'Command' + Page Up

Send to Back: 'Control'/'Command' + Page Down

SPACE TOOL (ALIGNMENT)

Leonardo Design Studio comes with a large suite of Alignment, Distribute and Space Apart tools and features to assist you in laying out your work accurately and to save your time. Note: These tools and features are limited in *Leonardo* Design Studio Basic.

Note: The space tools can also be used from Arrange menu.

ALIGNMENT TOOLS

Leonardo Design Studio comes with a large suite of alignment tools to assist you in laying out your work accurately and to save your time. The alignment tools are designed to work on (a) the objects themselves, or (b) the page the objects are associated with, or (c) the active object which is simply the last selected object in the alignment group. This system provides for comprehensive alignment of all your objects when working with the program.

Default Shortcuts

The following are the default Align Keyboard Shortcuts when one or more objects are selected in Object-mode (unless changed by the user):

Align Left	L
Align Right	R
Align Top	T
Align Bottom	B
Align Centers Horizontally	E
Align Centers Vertically	C

Open the Alignment Tools

To align objects, click on Space Objects fly-out menu to expand the alignment tools.

The Align tab provides you with several alignment combinations.

Note: You can access the alignment options from Arrange menu / Align to Page which includes for the functions Align Objects **and** Align to Page.

Align Objects to Each Other

When multiple objects have been selected, then the alignment tools will apply the alignment to each other.

Align Objects to Page Center

When a singular object is selected, the alignment tools will automatically apply the alignment to page center.

Align Object(s) as a Group to Page Center

To align several objects as a group to page center, select all the objects and then click Arrange menu / Align to Page and the select which page alignment the objects should be sent to.

Space Apart Tools

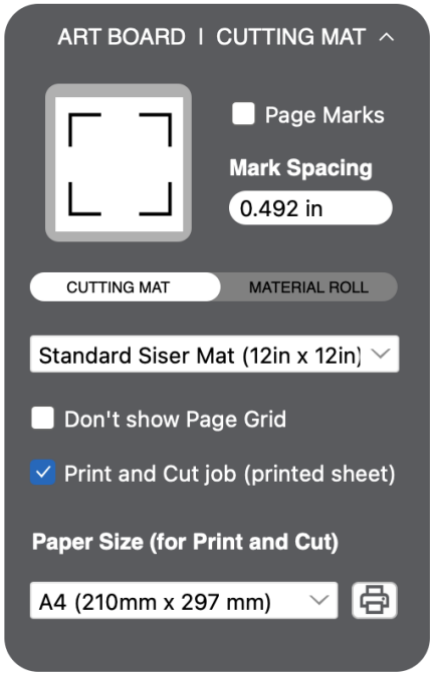
The final option in the Space Objects flyout is Space Objects Apart. This tool can be used to evenly distribute the objects on the design area apart from each other.

PRINT & CUT

WORKING WITH PRINTING & CUTTING

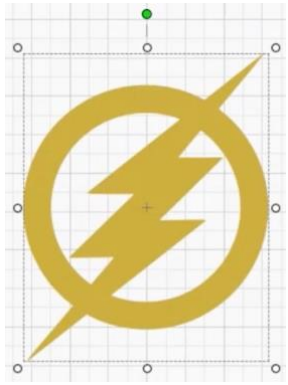
Once you are satisfied with the image import including applied mask, contour offset and contour bleed, you can proceed with the print and cut job.

Ensure you are working in Art Board/Cutting Mat mode (not designing mode), as shown below.



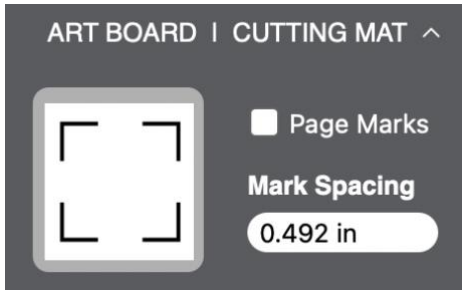
In your Art Board/Cutting Mat settings, check Print and Cut Job to send items to print and items to cut.

Note: If you only want to cut an object/artwork, uncheck Print and Cut Job and the artwork will only be treated as a Cut Job, and as such will be converted to a flat color, as shown below.



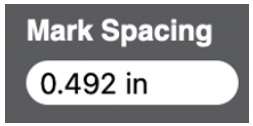
Mark Spacing

When working with a Print and Cut job, you can adjust the Mark Spacing, which are the marks at each corner surrounding the shape of the object/artwork. To adjust the mark spacing, make sure to check 'Print and Cut Job', and the tools will become available.



You can set to use Page Marks which will set the marks at the boarder of the selected page size, indicating the space that your object occupies within the page.

Or you can set the Mark Spacing to a custom amount by changing it in the typing space.

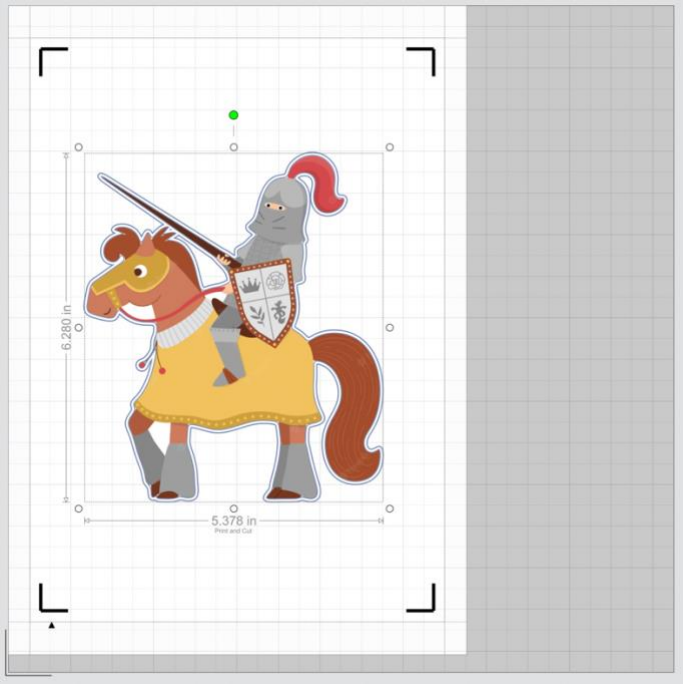


Note: If your marks highlight red, this is because they are set too far at the boundary of the selected page size. If you position your objects too far apart and the mark space is set too high, the marks will show up red to indicate that there is not enough space to work

with. To rectify, you can use the Page Marks button to adjust the Park Marks to anywhere within the ‘safe’ area on the page, around the edge.

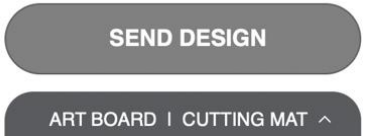
This is designed to make sure the cutter can scan the marks and the printer does not compromise the marks when printing.

See below the marks in which the design for the job will be included within. This is where you can see a final preview of your artwork.

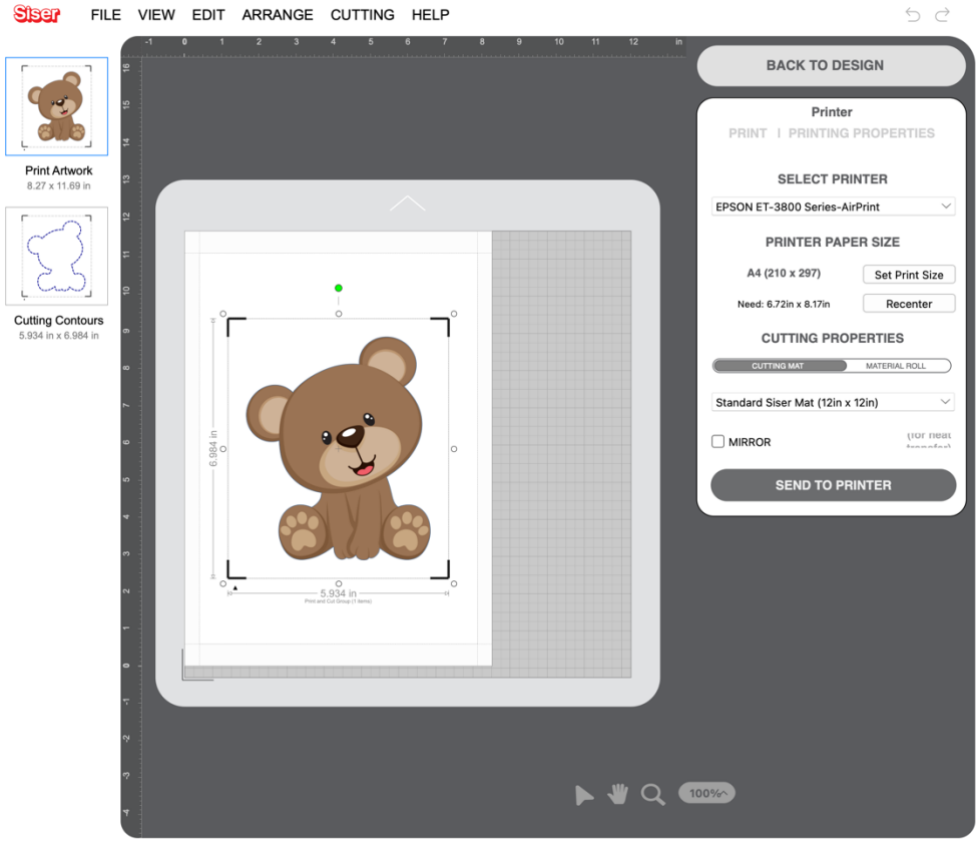


Switch back to the Design tab by clicking Back to Design to make any further changes.

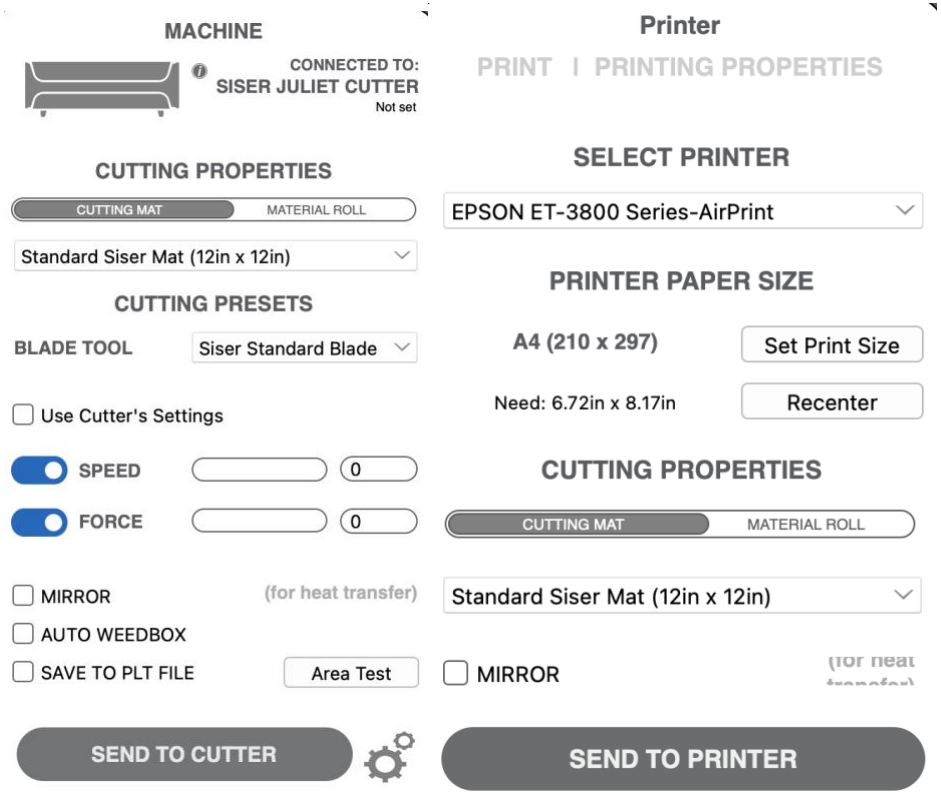
When the design is ready for output, click Send Design



Shown below depicts the printable artwork and cuttable artwork, and as such the image to be sent to the printer, as well as potential cutting contours which is simply an outline surrounding the image that can be used to be cut out by a cutter.

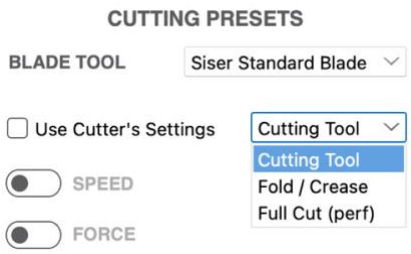


The Machine’s Properties will appear on the top right of your document.



There are a variety of Cutter and Printer properties that can be applied/edited to ensure the artwork is produced to the highest quality and that the process is easy for the user, these will be discussed in the relevant section below.

Tip: You can manually edit the force settings by Tool type, i.e., Cutting, Fold/Crease.

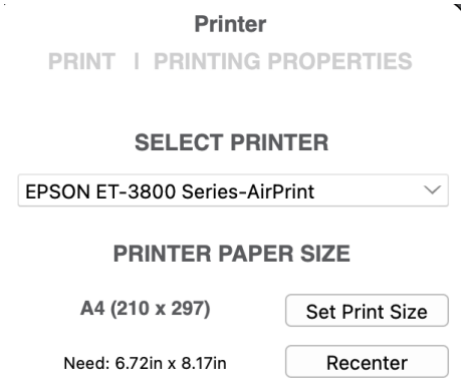


PRINTING

Leonardo Design Studio simplifies the cutting process by allowing the user control over the cutting settings and ensuring the options they need are at their disposal.

MACHINE

Once you have selected to send a design to print, the user will be shown which machine is connected along with the properties to print.



Connecting to a Machine

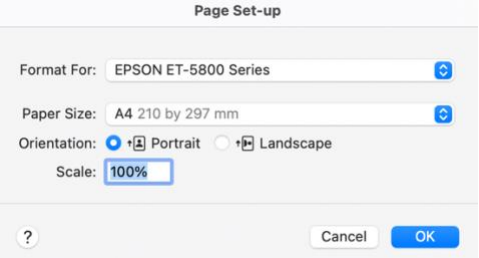
Select a printer from the drop-down box (the software will recognize the printers that have been saved to or used by the computer being used).

PRINTING PROPERTIES

Page Setup

To bring up printer properties, click Set Page Printing Size

This will bring up a setup menu with the following options shown below.



Format For

Select the printer from the drop-down box.

Paper Size

Select a standard paper size or set custom dimensions.

Orientation

Select from Portrait (vertical) or Landscape (horizontal).

Scale

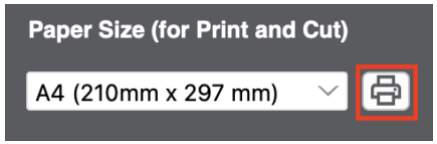
Set the print scale. Reduce or enlarge the printout by entering a percentage.

If you're printing a document to a paper size that's different from the size the document was formatted for, select the "Scale to fit paper size" option in the Print dialogue.

Print Size

If the print size appears red, as shown below, this indicates that it is too large for the current print job, Set Print Size using the button to match the print size to the job size.

The Print Size can be selected using the Paper Size drop down. However, the option you want may be unavailable. As such, the dimensions can also be set using Paper Size which can be retrieved from the current printer in use by pressing the Printer button:



Once clicked, it will expand the options for the paper sizes dependent on the currently connected printer, to change the paper size to that of another printer, select the desired printer from the drop-down box.

Recenter

The recenter button simply allows you to recenter the artwork if you have moved it too far in one direction and cannot locate the best position to place the artwork.

CUTTING

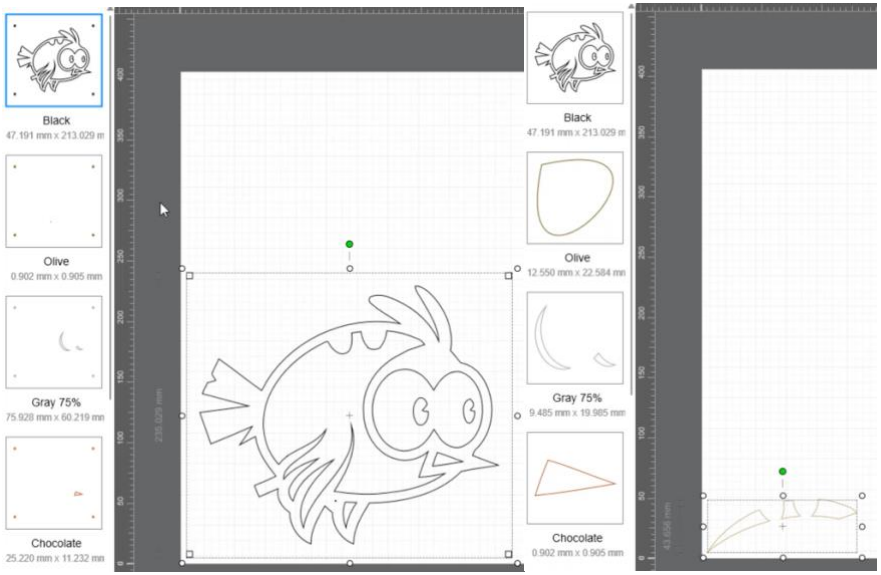
Leonardo Design Studio simplifies the cutting process by allowing the user control over the cutting settings and ensuring the options they need are at their disposal.

Layer Marks

A useful tool that supports the cutting process is the Layer Marks option.

This tool, when applied, ensures that all elements (within one design/artwork), are sent to a position relative to each other on the cutting mat/material roll that is displayed when sent to cutter.

For example, each element that is sent to cut when Layer Marks is not selected, will be set to cut from the Cut Origin (bottom left of the media). However, for elements that need to be cut on the same media, in their relative position, require the application of the tool Layer Marks.



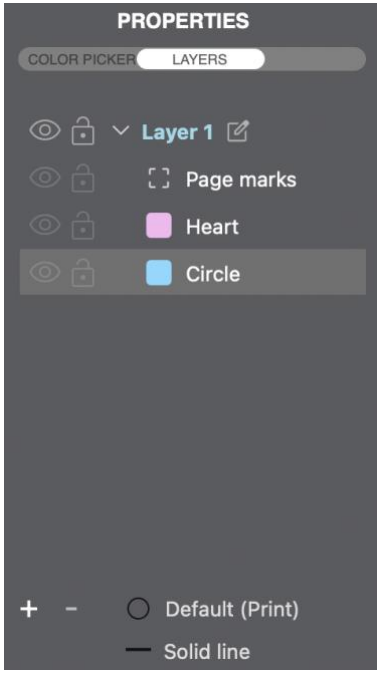
The left picture above shows Layer Marks selected; the right picture above shows when Layer Marks are not selected. You can see the difference in cutting origins for each element of the cut job.

Note: The Arrange menu / Move to Cut Origin allows you to reset the position of the object/artwork to be cut, to the Cut Origin.

Note: Make sure Print & Cut job is turned off to allow the Layer Marks tool to be used.

Print, Cut & Fold

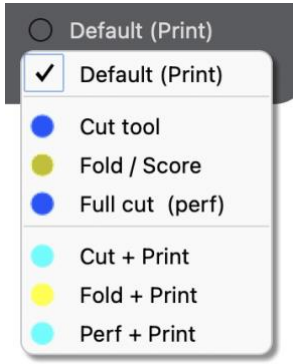
When an object has been selected, the default option for print and cut will become available inside the layers panel and the color picker, as shown below.



The default option will depend on the type of object selected.

To change the option, click on the button and a drop-down box will appear with the options. Select the appropriate option for each object within your job.

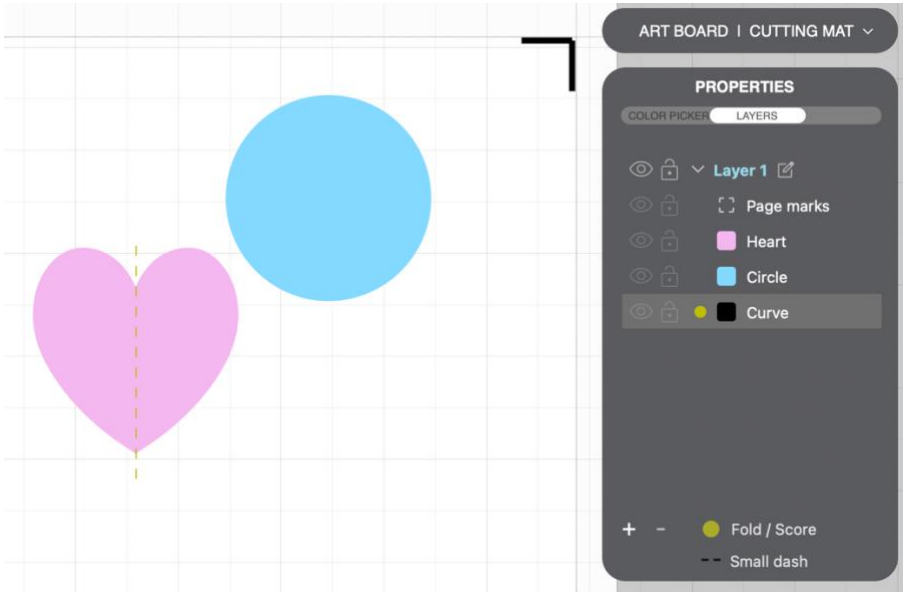
Print & Cut



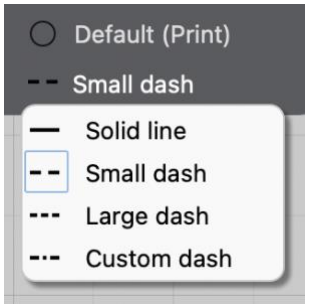
Fold Lines

You may wish to create a fold line using a different force of the same blade within a print and cut job.

To do so, draw a line/curve (which can be identified in the layers) and position it in the location you wish to create a fold line.



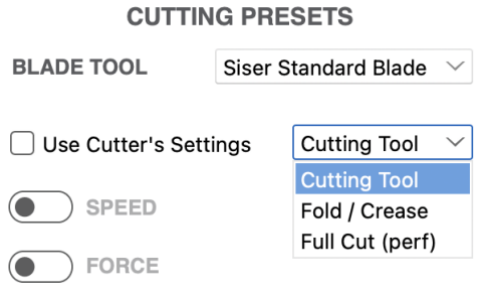
Next, click Default (Print) to expand the drop-down and change the line to a Fold/Score – this will adjust the force of the line and prevent it from cutting through the media.



Tip: Select whether you wish to use a solid line or a dashed line.

Note: You can manually edit the force settings by Tool type, i.e., Cutting, Fold/Crease.

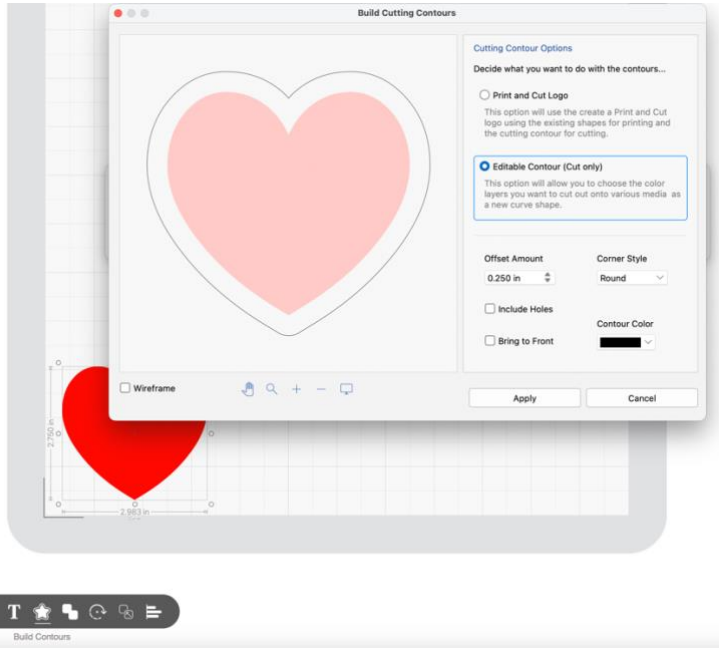
Click Send Design and uncheck 'Use Cutter's Settings' and you can manually adjust the force and speed for each tool.



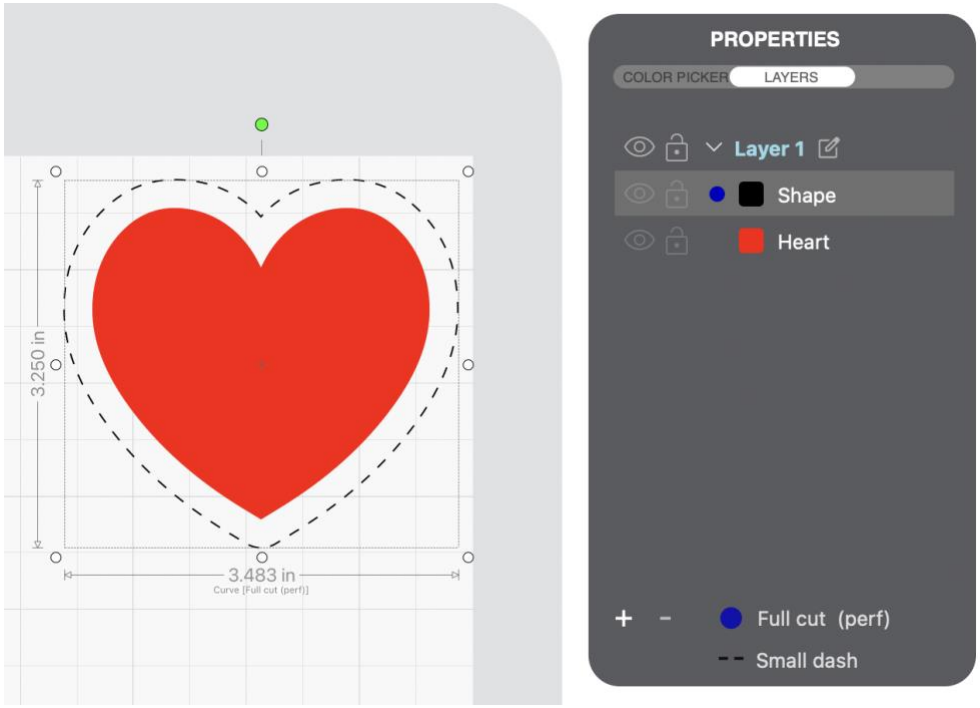
Note: The software will automatically complete the fold lines first, and then proceed to the cut lines when sending a job to the cutter.

Perforation Cut

A perforation cut, or full cut, is used for jobs such as stickers.



To perform a perforation cut, select your shape, and then select the Build Contours from the Menu. Select Editable Contour and add an offset to the current shape, this will create a new shape which can then be set to perforation cut (choose between the desired line type), as shown below.



Tip: Set the force of the perforation cut to higher than that of the regular cut – allowing the cut tool to cut through the material of the sticker itself, and the perforation cut to cut through the backing for the sticker.

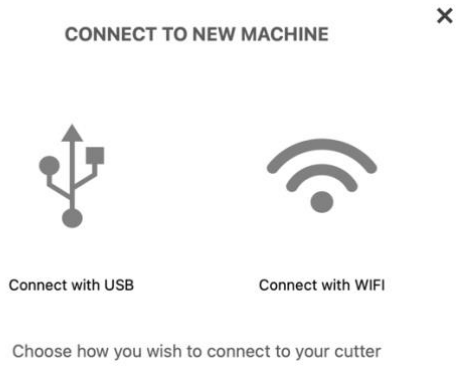
Note: The software will automatically complete the fold lines first, and then proceed to the cut lines when sending a job to the cutter (using the applied settings for each type of cut, respectively).

CUTTING MACHINE

Once you have selected to send a design to cut, the user will be shown which machine is connected.

Connecting to a Machine

To connect to a device, click Cutting menu / Set Device Connection, or by clicking the settings (cogs) symbol on the bottom right of the Machine Properties. From this step the user will be prompted to connect to a device either using USB connection, or WIFI connection as shown below.



Select the applicable option and follow through the onscreen instructions to connect to your cutter.

Note: *Leonardo* Design Studio is only compatible with *Siser* cutters.

Once the cutter connection has been established, the user can proceed to setup cutting properties.

Switching Devices/Managing Cutters

To bring up the window outlining the details on the connected cutter and to switch between cutters, click on the cutter name.

Note: You can also access this window from Cutting menu / Select Cutter.

Tip: If you have multiple cutters and have named them in the Manage Cutters menu, try hovering over the selected cutter from the cut page to quickly identify you have the correct cutter selected.

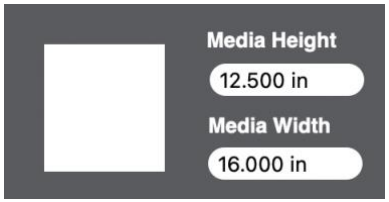
CUTTING PROPERTIES

Cutting Mat vs Material Roll

The cutting mat size can be selected from the available drop-down box and allows the user to accurately visualize the amount of space the design/artwork will take up on an actual cutting mat.

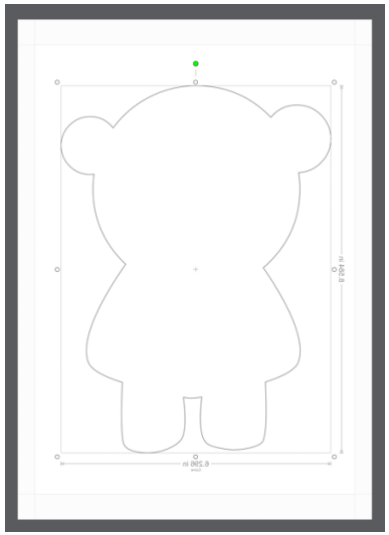
The material roll alters the size of the area where the design is located, applying the dimensions of the media to be used, so that the user can accurately visualize the amount of space the artwork will take up on the vinyl itself.

The media dimensions can be edited as shown below.

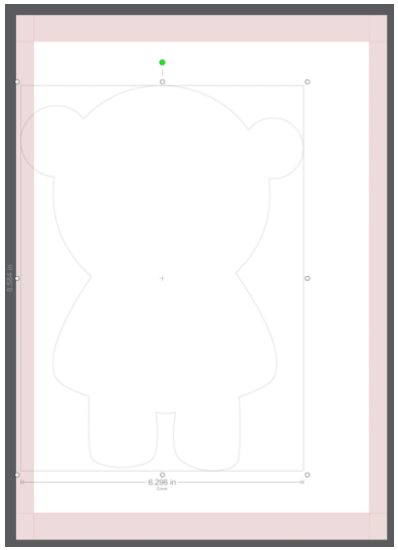


Note: This is only available in Cut only mode, not Print and Cut (uncheck Print and Cut Job).

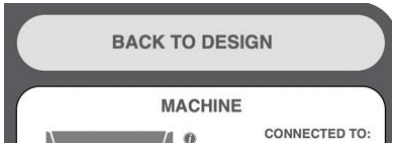
Below depicts the artwork within custom media dimensions.



If the artwork is too close to the edge, the edges will appear red, indicating that the designs position needs to be changed to ensure no elements will be compromised which would waste media and likely frustrate the user.



Note: To navigate out of this page and continue editing your design, click Back to Design.



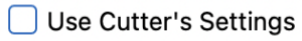
Cutting Presets

Blade Tool

The user can select from a drop down to apply the standard blade which will mean they do not need to edit the settings, apply a pen tool which is used for drawing, or apply custom settings, allowing the user to edit the Blade Offset and Calibrate the cutter.

Speed/Force

The user can select to Use Cutter's Settings by checking the box as shown below.



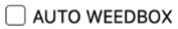
Unchecking this box will allow the user to edit the speed and force of the cutter by typing in the level of speed/force in the applicable box. The bar in the center depicts the percentage in which the speed/force applied is, relative to the cutters highest level of speed/force.

Mirror

The mirror option can be checked for projects such as heat transfers, where adhesive side of the material is facing the blade and the artwork must be cut mirrored.

Auto Weed box

The auto weed box can be checked to apply a Weed-Box (a cutline around the perimeter of the artwork) to each object.



Save to PLT File

The PLT file format is **a vector-based plotter file**. Plotting details require accuracy and precision in production, and usage of PLT file guarantee this as all images are printed using lines instead of dots. You can save to PLT File from Cutting menu / Transmit PLT File.

Saving as a PLT file means the artwork can be opened again whilst maintaining all the vector information, so it would be ready to cut at a later time.

Area Test

The user can send a test cut to the cutter to ensure it is working as expected. You can also access Area Test from Cutting menu / Area Test

Area test sends the blade to each of the 4 corners in the cutting area to ensure that it will cut successfully.

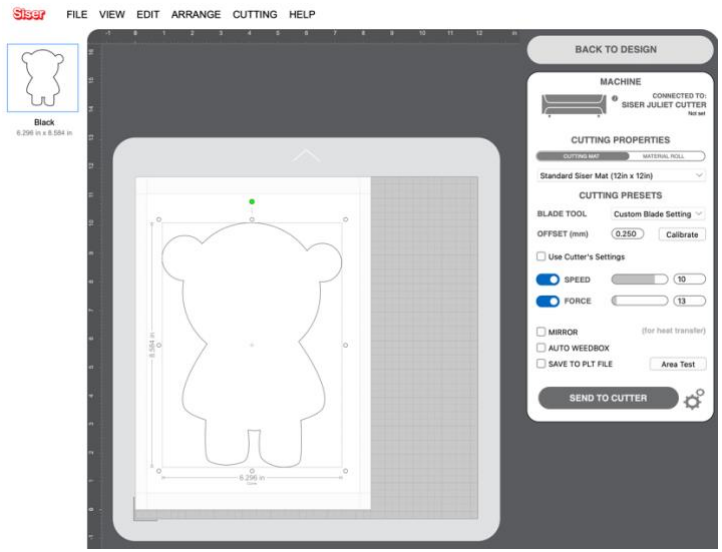
SEND TO CUTTER

Shown below depicts the cuttable artwork and as such the cutting contours (outline) to be sent to cut.

To bring up the window outlining the details on the connected cutter and to switch between cutters, click on the cutter name.

Note: You can also access this window from Cutting menu / Select Cutter.

Tip: If you have multiple cutters and have named them in the Manage Cutters menu, try hovering over the selected cutter from the cut page to quickly identify you have the correct cutter selected.



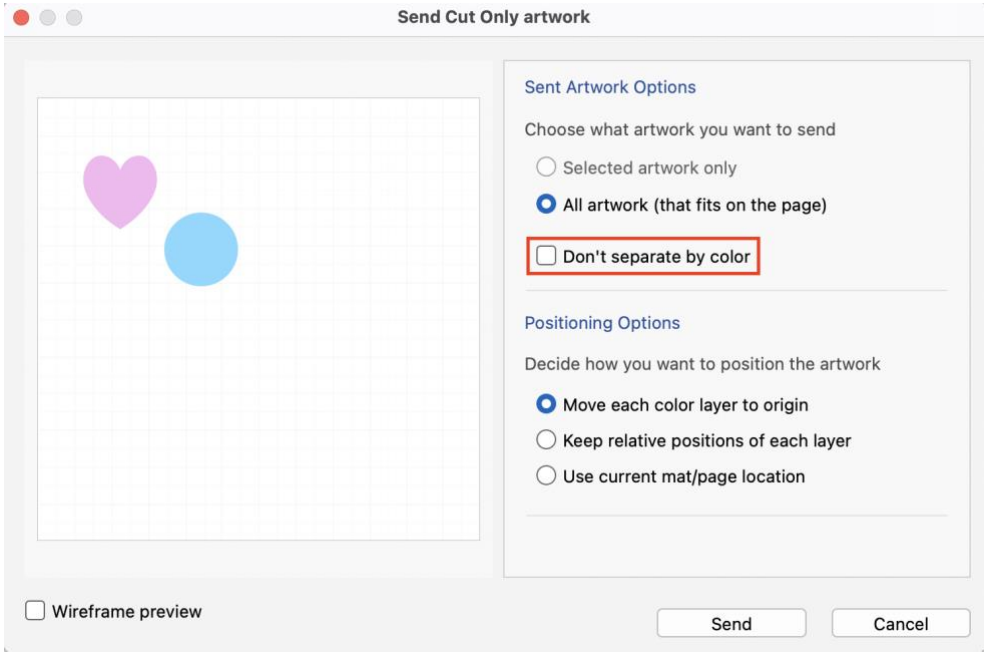
Once the settings have been selected and the artwork is ready to cut, select the objects/artwork you want to send to cut, and then click Send to Cutter and follow the onscreen instructions.

Note: Send to cut will only send what has been selected. If nothing is selected, all of the objects get sent to cut (grouped by color).

Tip: Arrange your objects in the send to cut section closely together to save media!

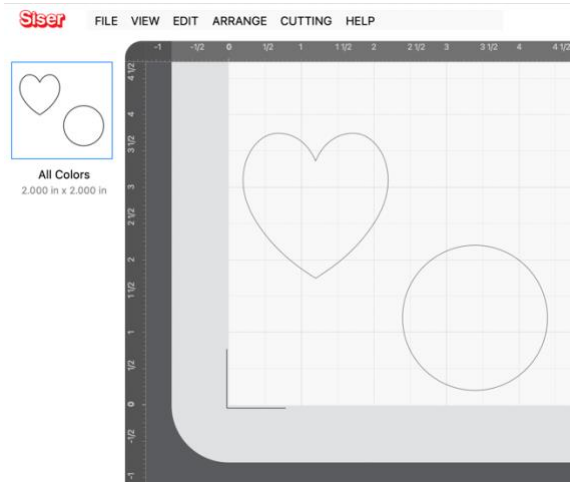
Note: To navigate out of this page and continue editing your design, click Back to Design.

Separate by Color



By default, the artwork will be separated by color so that you can load your vinyl by each color and proceed to cut.

Tip: If for some reason you do not need to separate the artwork by color, after pressing Send to Cutter/Send Design, check 'Don't separate by color' to see the cut job inclusive of All Colors (treating all colors as the same cutting path), as shown below.



CUTTING

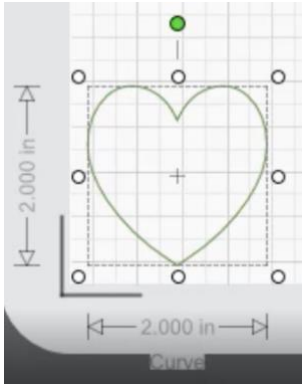
Once you have clicked Send to Cutter, you will be prompted to confirm the applied settings.

Click Yes to proceed or click No to change the settings.

Note: Check that you haven't sent the force too high.

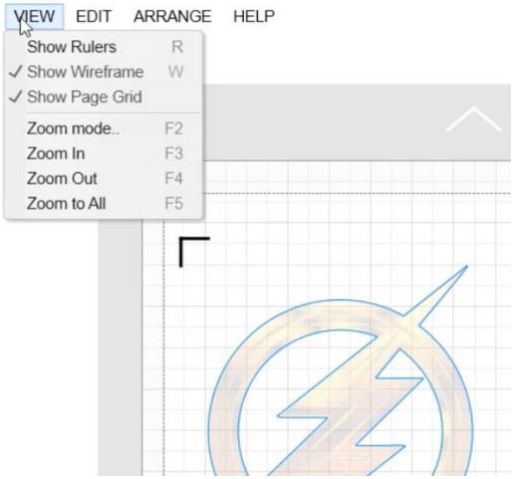
Cutting in Process

Once you have sent something to cut, the object outline will convert to green to indicate that is being processed, as shown below.



Wireframe Mode for Objects to Cut

If you switch back to the design center and turn on wireframe mode, you can detect what is being sent to cut as the outline will be converted to blue, as shown below.



SHORTCUTS

Add a copy after drawing a shape: Shift + Click and Release Left Mouse Button

Add Copy: +

Bold Font: Select Text + 'Control'/'Command' + B to Bold a font.

Bring to Front: Page Up↑

Copy: 'Command'/ 'Control' + C

Cut: 'Command'/ 'Control' + X

Delete: DEL

Delete: Escape

Group: 'Command'/ 'Control' + G

Import: 'Command'/ 'Control' + I

Italicize Font: Select Text + 'Control'/'Command' + I to italicize a font.

Mirror whilst resizing: 'Control'/'Command + Shift + Left Mouse button when resizing

New Page: 'Command'/ 'Control' + N

Open Page: 'Command'/ 'Control' + O

Pan Mode: Shift + Left Mouse Button

Paste: 'Command'/ 'Control' + V

Redo: Page Up 'Command'/ 'Control' + Z

Resize from center: Shift + Left Mouse Button when resizing

Resize in even multiples: 'Control'/'Command' + Left Mouse button when resizing

Resize non-proportionally: Alt/Option + Left Mouse Button when resizing

Rotate: 'Command'/ 'Control' + R

Save: 'Command'/ 'Control' + S

Select All: 'Command'/ 'Control' + A

Send to Back: Page Down↓

Show Rulers: R

Show Wireframe: W

Undo: 'Command'/ 'Control' + Z

Ungroup: 'Command'/ 'Control' + U

Weld: 'Command'/ 'Control' + W

Zoom In: F3

Zoom Mode: F2

Zoom Out: F4

Zoom to All: F5.

REFERENCE

TERMINOLOGY LINKS

Before you get started with *Leonardo* Design Studio, you should become familiar with our terms which you will find throughout this manual, as follows:

GLOSSARY

A - B - C - D - E - F - G - H - I - J - K - L - M - N - O - P - Q - R - S - T - U - V - W - X - Y - Z

A

Accent: A modifying mark on a character. For example, the accent marks in Latin script (acute, tilde, and ogonek) and the tone marks in Thai. Synonymous with diacritic.

Agent: Interactive assistants which form part of the Super Tutor training program.

Aliasing: A technique usually used for displaying bitmap files.

Alpha-blending: A convex combination of two colors allowing for transparency effects. The value of alpha in the color code ranges from 0.0 to 1.0, where 0.0 represents a fully transparent color, and 1.0 represents a fully opaque color.

Alpha Channel: A portion of each pixel's data that is reserved for transparency information. The alpha channel is an 8-bit channel, which means it has 256 levels of gray from 0 (black) to 255 (white). White acts as the visible area; black acts as the transparent area.

Animated GIF: Animation saved as a graphic interchange format file i.e. a graphic image that moves.

Animation: Movement created by combining images.

Anti-alias: The blending of pixel colors on the perimeter of hard-edged shapes, like text, to smooth undesirable edges

Antivirus software: A computer program that attempts to identify, neutralize or eliminate a wide range of threats to a computer or device, including but not limited to (i) malware, (ii) worms, (iii) phishing attacks, (iv) rootkits, and (v) Trojan horses or any other type of similar, related or malicious software.

Apple computer: A computer or device manufactured, supplied and/or sold by Apple Computer Inc. or its Authorized or Licensed Dealers.

Arabic numerals: The characters 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0. Contrast with Chinese numerals, Hindi numerals, and Roman numerals.

Arabic script: A cursive script used in Arabic countries. Other writing systems such as Latin and Japanese also have a cursive handwritten form, but usually are typeset or printed in discrete letter form. Arabic script has only the cursive form, and is also used for Urdu, (which is spoken in Pakistan, Bangladesh, and India), Farsi or Persian (which is spoken in Iran, Iraq, and Afghanistan).

ARMS (Automatic Registration Mark Sensing) is a generic term used for vinyl cutters that use an automated system to identify the location of printed marks for great contour cutting accuracy. Some manufacturers use different terms for this system which can be used interchangeable with the term: ARMS.

ASCII: "American Standard Code for Information Interchange." A standard 7-bit character set used for information interchange. ASCII encodes the basic Latin alphabet and punctuation used in American English but does not encode the accented characters used in many European languages.

Ascende: Any part of a lower-case character which extends above the X-height.

ASP: Active Server Pages (ASP). Tool or computer application that is used to create dynamic and interactive web pages.

Top of Page

B

Banner: (1) Header or title of magazine or periodical publication and a Web page. Graphical advertisements are placed in banners on web sites, or (2) A flexible substrate (e.g., canvas) used to make a sign usually on a temporary basis.

Baseline: A conceptual line with respect to which successive characters are aligned.

Bevel: (1) A process of giving a raised appearance by using highlighting colors and shadows, or (2) A mathematical process of outlining and mitering a vector object to give a raised appearance.

Beta software/version: A version of Software that is in its final development and/or testing stage that may contain bugs, errors and other glitches or problems.

Bidirectional (1): A communication standard between a computer and a device to send and receive packets of data.

Bidirectional (2): Languages such as Arabic, Hebrew, and Yiddish whose general flow of text proceeds horizontally from right to left, but numbers, English, and other left-to-right language text are written from left to right.

Bitmap image or graphic: A graphic image stored as specific pattern of dots to form a picture when viewed from a distance.

Bit-mapped (mode): The Paint graphics mode describes an image made of pixels where the pixel is either on (black) or off (white).

Bleed: Extending the colors, background, or objects outside (beyond) the defined page border or graphic by a set distance which is printed (usually on over-sized media/paper). The additional area that has been printed is then trimmed to the original or final page size.

Browser: Software for accessing, viewing and managing web pages e.g., Explorer, Mozilla, Firefox.

Black (font): A font that has more weight than the bold version of a typeface.

Blackletter (font): A Gothic (middle-ages) font style.

Block quote: A long quotation - four or more lines - within body text, that is set apart to clearly distinguish the author's words from the words that the author is quoting.

Block shadow: A mathematical process of giving an extruded appearance in 3D to a vector object.

Body type: Roman - normal, plain, or book - type used for long passages of text, such a story in a newsletter, magazine, or chapters in a book. Generally sized from 9 point to 14 point.

Byline: In newsletter/magazine layout, a credit line for the author of an article.

Top of Page

C

Cap height: In typography, the distance from the baseline to the top of the capital letters.

Caption: An identification (title) for an illustration, usually a brief phrase. The caption should also support other content.

Cast Shadow: A mathematical process of giving the appearance of a naturally cast shadow in 3D from a single light source (usually the Sun) to a vector object.

Character: Any letter, figure, punctuation, symbol, or space (whether visible or not).

Character set: A collection of characters in which a numeric code is assigned to each character so that it can be represented on a computer.

Chinese numerals: Chinese characters that represent numbers. For example, the Chinese characters for 1, 2, and 3 are written with one, two, and three horizontal brush strokes, respectively.

Code page: A synonym for character set.

Collation: Text comparison using language-sensitive rules as opposed to bitwise comparison of numeric character codes.

Cursive script: A script whose adjacent characters touch or are connected to each other. For example, Arabic script is cursive.

Clipart: Raster or Vector based objects that form graphic art.

Color spacing: Achieving a pleasing appearance after the line has been set normally.

Component: A separate and identifiable part of our Software that may be obtained separately for a fee or at no charge as described in the Software's documentation that

seamlessly integrates with the Software and is typically referred to as a plug-in, snap-in or module.

Computer Related typeface: A structured typeface that does meet standard typography conventions such as serif or sans serif which has a computer-based aspect.

Cookie: Cookies are the form of temporary files stored on the user's computer. They identify web site users/visitors.

Crop marks: On a mechanical, horizontal, and vertical lines that indicate the edge of the printed piece.

Cropping: For artwork, cutting out the extraneous parts of an image, usually a photograph.

Top of Page

D

Decorative typeface: A structured typeface that does meet standard typography conventions such as serif or sans serif.

Descender: In typography, the part of the letterform that dips below the baseline; usually refers to lowercase letters and some punctuation, but some typefaces have uppercase letters with descenders.

Diacritic: A modifying mark on a character. For example, the accent marks in Latin script (acute, tilde, and ogonek) and the tone marks in Thai. Synonymous with accent.

Dingbat typeface: A typeface made up of non-alphabetic marker characters, such as arrows, asterisks, encircled numbers.

Discretionary hyphen: a hyphen that will occur only if the word appears at the end of a line, not if the word appears in the middle of a line.

Display type: Large and/or decorative type used for headlines and as graphic elements in display pieces. Common sizes are 14, 18, 24, 30, 36, 48, 60, and 72 point.

Dither: For digital halftones, the creation of a flat bitmap by simply running dots on or off. All dots are the same size there are simply more of them in dark areas and fewer of them in light areas - as opposed to deep bitmaps used in gray-scale images.

Dongle: A piece of hardware that physically attaches to a computer or Device (typically through its Parallel, Serial or USB communications port) that is interrogated by the Software to determine its authenticity and a user's right to fully access the Software.

Double-byte Character Set (DBCS): A set of characters in which each character is represented by 2 bytes. Scripts such as Japanese, Chinese, and Korean contain more characters than can be represented by 256 code points, thus requiring two bytes to uniquely represent each character. The term DBCS is often used to mean MBCS (multibyte character set).

DPI (dots per inch): The unit of measurement used to describe the resolution of printed output. The most common desktop laser printers' output at 300 dpi. Medium-resolution printers' output at 600 dpi and up to 1200 dpi. Large Format Printers typically output at 50-2880 dpi and Image setters' output at 1270-2540 dpi.

Drop shadow: Drop shadows are those shadows dropping below text or images which gives the illusion of shadows from lighting and gives a 3D effect to the object.

Duotone: A halftone image printed with two colors, one dark and the other light. The same photograph is half-toned twice, using the same screen at two different angles; combining the two improves the detail and contrast.

Top of Page

E

Egyptian type: Originally, from 1815 on, bold face with heavy slabs or square serifs.

Em space: A space as wide as the point size of the types. This measurement is relative; in 12-point type an em space is 12 points wide, but in 24-point type an em space is 24 points wide.

Emboss: Embossing a graphic image adds dimension to it by making the image appear as if it were carved as a projection from a flat background.

Encoding Scheme: A set of specific definitions that describe the philosophy used to represent character data. Examples of specifications in such a definition are the number of bits, the number of bytes, the allowable ranges of bytes, maximum number of characters, and meanings assigned to some generic and specific bit patterns.

En space: A space half as wide as the type is high (half an em space)

Export: Exporting allows the user to save the file in another format to be opened in other programs.

Expanded (font): A font in which the set widths of the characters are wider than in the standard typeface. (Note: not the inter character space - that is accomplished through letter spacing - but the characters themselves).

Extended type: Typefaces that are abnormally wide horizontally.

Top of Page

F

Feather: A process of applying a blur to an image. This process gradually dissolves the area of the image on which the feather is applied.

Flash: Vector graphic animation software developed by *Adobe* (formerly) Macromedia that creates browser-independent graphics (graphics that look the same across all browsers). An advantage of Flash animation is that the download time is relatively fast.

Flight/Pre-Check: Program used to identify missing fonts, embedded graphics, bad traps, and many other possible problems.

Folio: A page number, often set with running headers or footers.

Font: A set of graphic characters that have a characteristic design, or a font designer's concept of how the graphic characters should appear. The characteristic design specifies the characteristics of its graphic characters. Examples of characteristics are shape, graphic pattern, style, size, weight, and increment.

Four-color process: The printing process that reproduces colors by combining, cyan, magenta, yellow and black (CMYK). Six color is usually the addition of light cyan and magenta to improve color tones and enhance definition.

Forms: Source of collecting information from the viewer or user.

Top of Page

G

Galleys: In traditional publishing, the type set in long columns, not laid out on a page. In desktop publishing, galleys can be printed out using a page-assembly program, for proofreading and copy fitting purposes.

GIF: (Graphic Interchange format) GIF images display up to 256 colors. GIF images generally have very small file sizes and are the most widely used graphic format on the web. The low quality resulting from compression makes them unsuitable for professional printing or vectorizing (tracing).

Glyph: The actual shape (bit pattern, outline) of a character image. For example, an italic "A" and a roman "A" are two different glyphs representing the same underlying character. Strictly speaking, any two images that differ in shape constitute different glyphs. In this usage, glyph is a synonym for character image, or simply image.

GMT: Greenwich mean time. In the 1840s the standard time kept by the Royal Greenwich Observatory located at Greenwich, England was established for all of England, Scotland, and Wales, replacing many local times in use in those days. Subsequently GMT became the official time reference for the world until 1972 when it was subsumed by the atomic clock-based coordinated universal time (UTC). GMT is also known as universal time.

Gradient: A function in our graphic software that allows the user to fill an object/image with a smooth transition of colors, for example a dark blue, gradually becoming lighter or green, gradually becoming red, then orange.

Greeked text: In page-assembly programs, text that appears as gray bars approximating the lines of type rather than actual characters. These speeds up the amount of time it takes to draw images on the screen (rarely used anymore due to the advent of faster computers).

Graphic design: Visual representation of an idea or concept. The term is used as a collective name for all activities relating to visual design, including web design, logo design etc.

Greyscale: A color mode in which Black and White colors and in combination.

Gutter: In double-sided documents, the combination of the inside margins of facing pages; the gutter should be wide enough to accommodate binding.

GUI: Graphic User Interface allows user to use graphics, picture, and icons instead of text. *Leonardo* Design Studio uses an advanced GUI interface.

Top of Page

H

Halftone: A tone that is halfway between highlight and dark shadow. The tones are broken up by fine screen into different sizes of dots.

Handwritten typeface: A typeface that does meet standard typography conventions such as serif or sans serif.

Hangul: The Korean alphabet that consists of fourteen consonants and ten vowels. Hangul was created by a team of scholars in the 15th century at the behest of King Sejong.

Head: Line on the top of the body of content which is in big and bold fonts.

Hexadecimal: A number system used for web colors. The first six numbers used in these 16 based numbering systems are 0-9 and the next 5 are A-F.

Hiragana: A Japanese phonetic syllabary. The symbols are cursive or curvilinear in style.

Hue: the actual color of an object. Hue is measured as a location on a color wheel, expressed in degrees. Hue is also understood as the names of specific colors, such as blue, red, yellow, etc.

Top of Page

I

Ideographic language: A written language in which each character (ideogram) represents a thing or an idea (but not necessarily a particular word or phrase). An example of such a language is written Chinese (MultiMult).

Interlace: A technique of retrieving images in different stages, with rough image appearing first and gradually getting more refined.

Italic: Fonts with a tilt to the right. (Italic)

Top of Page

J

Jamo: A set of consonants and vowels used in Korean Hangul. The word jamo is derived from ja, which means consonant, and mo, which means vowel.

JPG/JPEG: Joint Photographic Experts Group, file format to store and retrieve images.

Top of Page

K

Kanji: Chinese characters or ideograms used in Japanese writing. The characters may have different meanings from their Chinese counterparts.

Katakana: A Japanese phonetic syllabary used primarily for foreign names and place names and words of foreign origin. The symbols are angular, while those of Hiragana are cursive. Katakana is written left to right, or top to bottom.

Kern: To bring together characters, for a better fit of strokes and white space. In display type, characters often need to be kerned because the white space between characters at large sizes is more noticeable

Kicker: A brief phrase or sentence lead-in to a story or chapter; usually set smaller than the headline or chapter title, but larger than text type.

Knockout: In printing, when one color is to be printed immediately adjacent to another color; actually, they are printed with a slight overlap.

Top of Page

L

Landscape: Width wise orientation of document. In this style document width is more than its height.

Language: With respect to Engravers, Vinyl Cutters, Plotters, Printers, and related Devices is the software codes used to communicate between *Leonardo* Design Studio and the Device. Also knows as the Emulation. Typical examples are CSR, DMPL, HPGL and RTL.

Lap register: Used with knockouts, images of different colors are slightly overlapped, to avoid the appearance of a white line between the two inks.

Leader: A line of dots or dashes to lead the eye across the page to separated copy.

Leading: (pronounced "led-ding") the space between lines of type, traditionally measured baseline-to-baseline, in points.

Legacy: Any version of software that has been subsequently superseded by a newer version.

Letterforms: In typography, the shapes of the characters.

License Management Regime: The system employed by Future Corporation and the Software to manage the Software's Licensing on a computer.

License Remaining: The contiguous time remaining (usually reported in days) before the License expires on a computer.

License Status: The current state of the Software License on a computer.

License Type: The method of payment for the Software License.

Logotype: A symbol, mark, or identifying name. Commonly known as a logo, is the graphic element of a trademark or brand, which is set in a special typeface/font, or arranged in a, but legible, way. The shape, color, typeface, etc. should be distinctly different from others in a similar market.

Lowercase: The small alphabetic characters, whether accented or not, as distinguished from the capital alphabetic characters. The concept of case applies to alphabets such as Latin, Cyrillic, and Greek, but not to Arabic, Hebrew, Thai, Japanese, Chinese, Korean, and many other scripts.

Top of Page

M

MBCS: Multibyte Character Set. A set of characters in which each character is represented by 1 or more bytes.

Mezzotint: For a halftone, a special screen that produces connected, dusty-looking dots.

Multilingual: An application such as *Leonardo* Design Studio that can simultaneously display and manipulate text in multiple languages.

Multimedia: Combination of video, music, lighting, CD/DVD-ROM and the internet for learning, work or teaching.

Top of Page

N

Negative space: In design, the space where the target in artwork isn't, often the background; in a publication, the parts of the page not occupied by type or graphics.

Nested stories: In newsletter/magazine layout, stories run in multiple columns at different column depths.

Novelty typeface: A typeface that does meet standard typography conventions such as serif or sans serif.

Top of Page

O

OEM: A variation of the Software that is exclusively included (bundled) and licensed by Future Corporation with a piece of third-party equipment or hardware (machines and devices) including but not limited to: CNC, engraving, laser, plotting, printing, routing and vinyl cutting machines and devices by the manufacturer and/or their agents and dealers to end-users

Objected-oriented (mode): Draw graphics mode. A set of algorithms describe graphic form in abstract geometrical terms, as object primitives.

Outline: The outer edge of text or graphic.

Top of Page

P

Pantone matching system: The Pantone matching system is used for specifying and blending match colors. It provides designers with swatches of over 700 colors and gives printers the recipes for making those colors.

Pica: A measurement used in typography for column widths and other space specifications in a page layout. There are 12 points in a pica, and approximately 6 picas to an inch.

Pinyin: A system to phonetically render Chinese ideograms in a Latin alphabet.

Pixel (picture element): The smallest unit that a device can address. Most often refers to display monitors, a pixel being the smallest spot of phosphor that can be lit up on the screen.

PNG: Portable Network Graphics. Bitmapped image format that employs lossless data compression. The PNG format displays images without jagged edges while keeping file sizes relatively small, making them popular on the web.

Point: A measurement used in typography for type size, leading, and other space specifications in a page layout.

PPI: Stands for pixels per inch. PPI specifies the resolution of an input device, such as a scanner, digital camera, or monitor. Web page resolution ranges from 72-96 pixels per inch.

Posterization: For a halftone, the reduction of the number of gray scales to produce a high-contrast image.

Printer font: High-resolution bitmaps or font outline masters used for the actual laying down of the characters on the printed page, as opposed to display on the screen.

Process color separation: In commercial printing, used for reproduction of color photographs. The various hues are created by superimposition of halftone dots of the process colors: cyan (a greenish blue), magenta (a purplish red), yellow, and black.

Product Life: The period from where a version of the Software is released for licensing to the public (the current version) and remains current up until such time as a subsequent or replacement version (Upgrade) is released for licensing to the public.

Product Serial Number or PSN: The unique and identifying number for each Future Corporation Software product.

Top of Page

Q

Quick Time Video: Video streaming technology developed by Apple.

Top of Page

R

Resolution: The crispness of detail or fineness of grain in an image. Screen resolution is measured in dots by lines (for example, 1280 x 1024); printer resolution is measured in dpi (for example, 300 dpi).

Reverse: A method used in printing where background color is generally black color or where background becomes inked, and the image and lettering appear in the color of the paper.

Reverse Fill: A solid shape in an off-white color so that it may be viewed over and above any other shapes that are of the same color behind it, making it otherwise impossible to see.

RGB: An additive color model in which red, green, and blue light are added together in various ways to reproduce a broad array of colors.

Run-around: Type that is set to fit the contour of an illustration, photo, ornament or initial.

Run-in heading: A heading set on the same line as the text, usually in bold or italic type.

Running heads/feet: Titles (often accompanied by page numbers) set at the top/bottom of text pages of a multi-paged publication.

Top of Page

S

Sans Serif Typeface: A typeface that does not have the small features called "serifs" at the end of strokes. The term comes from the Latin word "sine", via the French word sans, meaning "without".

Saturation: Intensity of color. It refers to the degree of difference from gray. High saturation will appear to be bright and low saturation will appear dull.

Script: A set of characters used to write a particular set of languages. For example, the Latin (or Roman) script is used to write English, French, Spanish, and most other European languages; the Cyrillic script is used to write Russian and Serbian.

Security-1 or S1: An extension, variation, or modification of the Software that (i) is for use within a secured or protected internal network, and/or (ii) provides for restricted user levels and access, and/or (iii) has built-in mechanisms to track all access and use of the Software, and/or (iv) implements strong encryption to protect Output and Export files.

Serif: A typeface has semi-structural details on the ends of some of the strokes that make up letters and symbols. A typeface that has serifs is called a serif typeface (or serifed typeface).

Solarization: Over exposure that results in reversal of a photographic image.

Spot Color: Refers to the use of solid color usually defined as a Lab color or a separate and printable ink channel.

Strong Encryption: A method of data encryption that is less susceptible to having its key discovered by a third party through what is commonly referred to as brute force attack, hacking or cracking.

Top of Page

T

Tags: A set of characters used in the markup language for providing formatting information of a document.

Template: A document that can be changed or customized and saved with a new name without affecting the original document.

Text wrap: A feature that sets paragraph text to physically wrap around the perimeter of another object with or without an offset.

TIFF (Tagged Image File Format): For digital gray-scale halftones, a device-independent graphics file format. TIFF files can be used on IBM/compatible or Macintosh computers and may be output to PostScript printers.

Type alignment: The distribution of white space in a line of type where the characters at their normal set width do not fill the entire line length exactly. Type maybe aligned left, right, centered, or right justified.

Typeface: The set of characters created by a type of designer, including uppercase and lowercase alphabetical characters, numbers, punctuation, and special characters. A single typeface contains many fonts, at different sizes and styles.

Type families: A group of typefaces of the same basic design but with different weights and proportions.

Top of Page

U

Update: A separate component of Software designed to update, modify, repair, remove or fix problems identified by Future Corporation with the Software that includes fixing bugs, replacing or removing tools and/or features and improving the usability or performance of the Software (e.g. V1.0 of the Software may be replaced with V1.1 of the Software, with V1.1 an update from V1.0, with V1.1 potentially followed by V1.2 and so on and so forth).

Upgrade: The complete replacement of the Software with a newer version of the same branded Software, that may include but is not limited to: error corrections, modifications, removal/replacement of tools and features, compatibility improvements, new tools and features, additions and/or enhancements to the Software (e.g. V1.0 of the Software will be replaced with V2.0 of the Software, with V2.0 an upgrade from V1.0, with V2.0 subsequently followed by V3.0 and so on and so forth).

Top of Page

V

Vector: A scalable shape generated from mathematical descriptions that determine its position, length and direction(s).

Volume License: Either (i) a Site License granted in single licenses, or (ii) a License Pack usually granted in multiples of five (5) five licenses, or (iii) License Seats usually granted in multiples of one hundred (100) licenses.

Top of Page

W

Weight: denotes the thickness of a letter stroke, light, extra-light, "regular," medium, demi-bold, bold, extra bold, and ultra-bold.

White space: in designing publication, the areas where there is no text or graphics - essentially, the negative space of the page design.

Widow: in a page layout, short last lines of paragraphs - usually unacceptable when separated from the rest of the paragraph by a column break, and always unacceptable when separated by a page break.

Top of Page

X

X: One of the three CIE tristimulus values; the red primary.

x-height: The height of the lowercase "s." Sometimes referred to as "body height." More generally, the height of the lowercase letters.

Top of Page

Y

Y: One of the three CIE tristimulus values; equal to the luminous reflectance or transmittance; the green primary

Top of Page

Z

Z: One of the three CIE tristimulus values; the blue primary.

Z-Order: The relative stacking order of objects between each other (above and below).

INDEX