ARTWORK FOR VINYL CUTTING

ART CREATION FOR EASY CUTTING AND WEEDING

FOR VINYL CUTTING & PRINTING/CUTTING

CorelDRAW & PHOTO-PAINT 2018 USERS

DANE CLEMENT

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Great Dane Graphics

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I'd like to thank you for purchasing this book and trusting me to convey to you the knowledge I've gained over the years. I hope you get out of this book at least as much as I've put into it. It has been a welcome challenge that I've enjoyed putting together. What you'll find in these pages is how my team and I do it – our techniques for creating artwork that looks good and is easy to produce. I wish you all the success and profitability you desire, and hope this book inspires and helps you achieve that success quicker and easier.

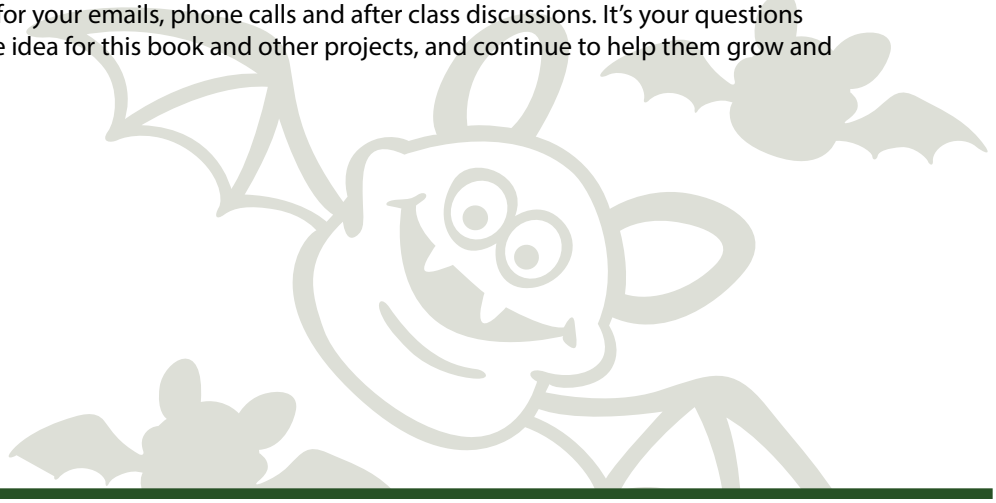
I want to thank my wife Maritza for putting up with me for as long as she has. My day job keeps me away from home a fair amount of time and when you decide to take on writing a book, even when you are home you're still "away" working on it. When I decided to write my first book, T-Shirt Artwork Simplified for Adobe and Corel, ten years ago, it took many nights and weekends. Seems like nothing has changed on that end, and I want to thank her for her dedication and perseverance in sticking by me through the seemingly endless stream of traveling and projects.

I can honestly say that this book would not have happened without the tireless work and dedication of my Senior Art Director, Missy Marino, and Art Director, Joe Costello. They were instrumental in making this book happen. They've been instrumental in making most things happen at Great Dane Graphics over the years. I cannot thank them enough for that!

I'd like to thank the rest of my team at Great Dane Graphics – Mario Web and Ken Bourgeois – for keeping up the good fight, and giving their input and ideas to everything we do. That's what makes all of this possible.

Thanks to Debra Romalia and the Stahls' marketing and copyrighting teams for answering all of my endless questions, and for taking my "Cajun" English and fine tuning it to make it suitable for you to read.

A special thanks to you, my readers and seminar attendees. You are the reason this book came together. Thank you for your emails, phone calls and after class discussions. It's your questions that helped spark the idea for this book and other projects, and continue to help them grow and flourish.



ABOUT THE AUTHOR

Dane Clement has come a long way from doodling in his notebook in second grade. Now he's the president of Great Dane Graphics, the only stock art supplier in the decorated apparel industry to offer full-color, high-resolution files for multiple garment decorating processes. It was the artistic ability, creativity and knowledge that he used with Great Dane that caught the eyes and ears of GroupeSTAHL which also led him to become the Vice-President of Art and Creative Process for GroupeSTAHL.

Clement, who has been active in the industry for over 25 years, was a pioneer in his approach to stock art by specifically creating artwork for the decorated apparel industry. He started Great Dane Graphics in 1991 out of his house while also running his first art business with a partner he met at one of his first jobs out of school. His focus at that time was on custom work for screen printing and offset printing. Over time screen printing began to win out. As such, Great Dane Graphics began to grow, leading Dane to decide to make it his primary business, and thus strike out on his own. He eventually obtained office space in order to allow the company to continue to flourish.

The company continued to grow as the go-to place for custom artwork for screen printers. Not only was Dane becoming known in the industry for his artistic ability and knowledge of computer graphics, but also for his knowledge of creating simulated process color separations. As he started to realize the need that customers had for affordable art, the idea for stock art that was pre-separated for screen printers was born.

While continuing to create custom artwork, he began to develop a line of stock art geared specifically for screen printers which continued until 2005, when everything was turned upside down. Hurricane Katrina struck and nothing was as it was. While the company may have been down for a while, it was not out. The dedication, commitment, and perseverance that Dane had always embodied was about to be put to the test.

At that time Dane had to re-evaluate the direction of Great Dane Graphics, and this became the turning point for which the company is now known. He realized in order to get the company back on its feet, focusing on the stock art line was the way to go. At the same time Dane also made the decision to move to Minnesota and take a position at SPSI to help ease the transition back from the devastation. It was here that Dane was able to increase his knowledge in a somewhat new and upcoming garment decorating process - Direct-to-Garment.

After a few years, Dane decided it was time to move back to his roots. He moved back to Louisiana, and not only continued with the stock art line, but he also decided to supplement this with training

ABOUT THE AUTHOR

materials. After many years of giving seminars at trade shows, he wanted to share the questions and concerns that he had gotten from customers, and authored the book T-Shirt Artwork Simplified for both Adobe and Corel users as well as created the training DVD Learning Photoshop CS3.

In 2010, Dane was approached by GroupSTAHL to help create a line of in-house stock art. The relationship between GroupSTAHL and Great Dane Graphics continued to grow until in 2011 when Great Dane became a part of the STAHLS' family. As Vice-President of Art and Creative Process for GroupeSTAHL, Dane aids STAHLS' with new and innovative ideas for artwork usage and creation. With all the garment decorating processes that the STAHLS' companies have to offer, Dane's knowledge in the garment decorating industry expanded yet again to include vinyl cutting for heat printing. Because of this, he has improved and evolved his stock art line which now has a solid reputation for high-quality, full-color graphics that are press ready for textile screen printing, digital direct-to-garment printing, dye-sublimation printing, and large-format graphics printing as well as cuttable graphics for vinyl cutting and printing/cutting.

Clement is a well-known industry educator who has been conducting seminars at various industry trade shows including Imprinted Sportswear Shows, DAX shows and SGIA. He also is a regular columnist for Impressions magazine, and has written articles for Printwear Magazine, Wearables Magazine, and the SGIA Journal. He has taken his knowledge around the world as an international consultant helping art departments work smoothly and efficiently.

Valued for his artwork experience and expertise, Clement has been invited to judge the Impressions Awards and the SGIA Golden Image Awards for many years.

It's the knowledge he's gained over the years that he wishes to share with you so that you can start creating your own unique designs to help expand your business.

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INTRODUCTION

Having the ability to create your own artwork can be very beneficial, even if you use clip art as a starting point but customize it to suit your needs. With that in mind this book was created to not only show you ways to create artwork for vinyl cutting but more importantly to show you how to create it properly so that it will cut smoother, quicker and will be weed-friendly to reduce production time. The more time you save in production, the more profitable you will be!

The first part of the book discusses information that pertains to vinyl cutting in general, whether it's a single color vinyl cut design or a print/cut image. It will explain the difference between vector artwork and raster artwork, and how it applies to vinyl cutting. It will talk about how using traditional clip art isn't always the best choice for vinyl cutting. How does producing large quantities of vinyl cut images versus cutting and weeding just a few affect how detailed your image can be? You'll find out about all of this and more.

The additional sections of the book are set up as step-by-step lessons to demonstrate various specifications, techniques and ways to create artwork for vinyl cutting. One section focuses specifically on vinyl cutting using individual vinyl materials, and the other section focuses on printing/cutting. While printing/cutting is a slightly different process from creating a vinyl cut design, they use some of the same techniques.

The lessons in this book deal primarily with CorelDRAW. However, because of the full-color nature of printing/cutting, Corel PHOTO-PAINT is introduced. The lesson on Adding a Bleed to a Raster Art Image is explained not only using PHOTO-PAINT, but also Adobe Photoshop. We recommend using Photoshop for this process if it is available to you. PHOTO-PAINT and Photoshop logos are included in the lesson introductions for easy recongition. While you don't need to be an expert in these programs to follow along with the lessons, a basic knowledge is suggested to help you navigate through them easier.

The lessons discuss individual techniques or processes. They demonstrate skills using basic designs. However to create a complete vinyl cut image or layout, different functions will be used in conjunction with each other to complete a design. For this reason, it is recommended to read the lessons in order, as later lessons may reference an earlier technique that was outlined in more detail in an earlier lesson. As you start using these processes and understanding how they work, and how to use them in conjunction with one another, it will be easier to create more intricate designs.

The directions offered in this book are ways that we have found that work. Keep in mind there's always more than one way to get to the same end result. You may know a different key stroke or command or process to achieve the same outcome. Feel free to use what you are familiar with to get where you need to be. Once you get the big picture of how and why the art is created the way it is, and how certain functions work together, you can use whatever tools and techniques you are familiar with to complete your design.

CHAPTER 1

VINYL CUTTING ART BASICS

No matter what decorating process you use, it all starts with the artwork. The quality of the job and the speed at which it can be completed often depend on having artwork that has been properly created and prepared for that decorating process. Vinyl cutting is no exception. Regardless of whether you are using a simple vinyl cutter, or an inkjet printer/cutter which combines an inkjet printer with a cutter to print full color designs on white printable media and then contour cuts it, you need artwork that has been properly created to make cutting and weeding this type of artwork run smoother, quicker and easier.

Both types of cutters require you to have a vector-based software graphics program such as CorelDRAW, since cut lines can be created only in a vector format. Regardless of the program used, great results are determined more by the user than the software itself. Knowing how to weld and knock out elements with the proper line thicknesses and spacing is essential for creating and setting up vinyl cut designs properly.

There are tons of vector clip art available, but when it comes to vinyl cutting, this isn't always the answer. Not only is standard clip art not set up for cutting, but what if you have an original idea or you want to modify an existing piece that you already have? Where do you start? How do you properly create it and set it up for printing and/or cutting? This book is geared to teach you just that so you can create vinyl cut designs that will cut smoother and quicker and make weeding your design easier helping to reduce your production time. The quicker and easier you are able to cut and weed a design, the less time you spend on production, meaning more money in your pocket!

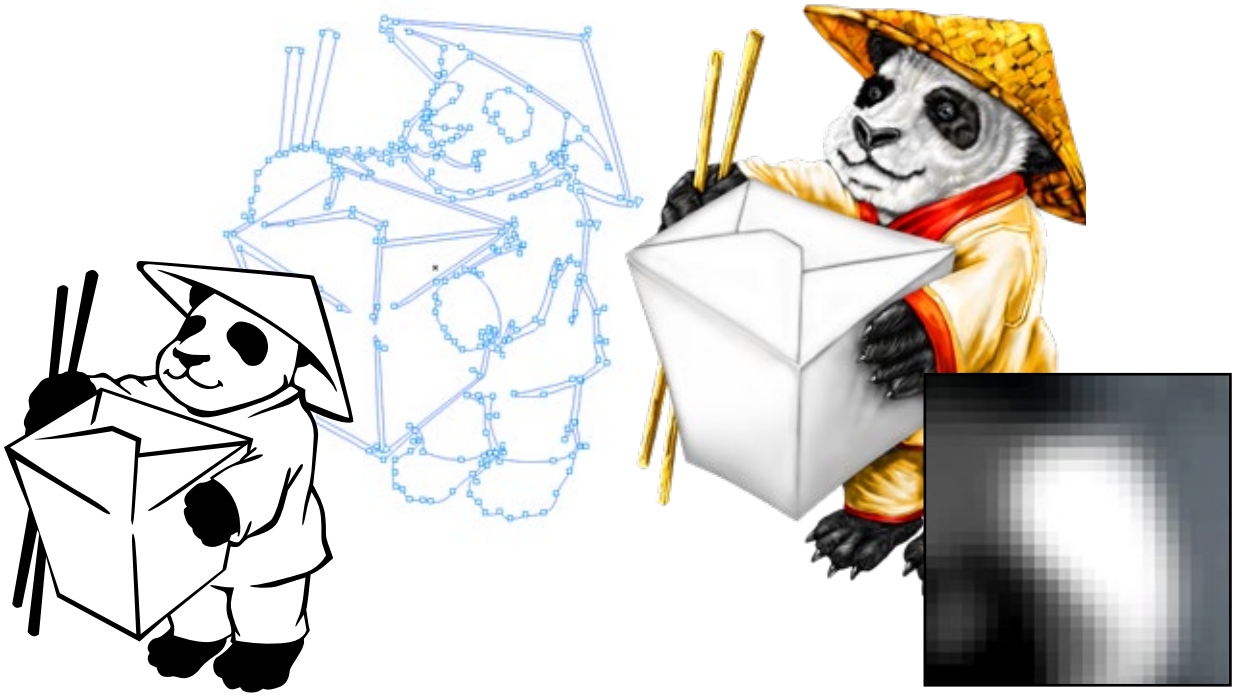
VECTOR ARTWORK VERSUS RASTER ARTWORK

One of the main concepts to understand when it comes to creating any type of artwork is the difference between vector artwork and raster artwork. Vector artwork is created using a series of curves and nodes to create lines or closed shapes. The creation and placement of these various shapes is what forms your design or layout. Each shape can be selected individually and filled or outlined with a specific color.

Raster artwork on the other hand is a tonal image created by a continuous pattern of small dots or pixels. The entire image is one continuous series of pixels so you cannot select individual shapes like you can with vector artwork.

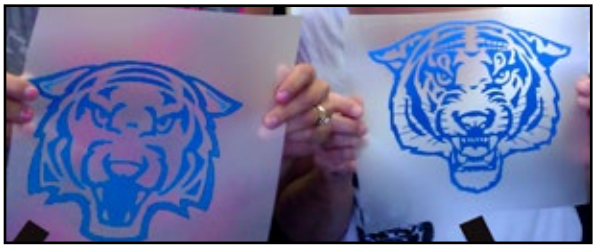
Vector artwork is required for vinyl cut designs. Print/cut artwork however can be created as either vector or raster, but the cut line that is needed to cut around your design will need to be vector. Cutters read the curves and nodes of the vector cut line or outline of your image in order to know how and where to cut.

VECTOR VS. RASTER ARTWORK



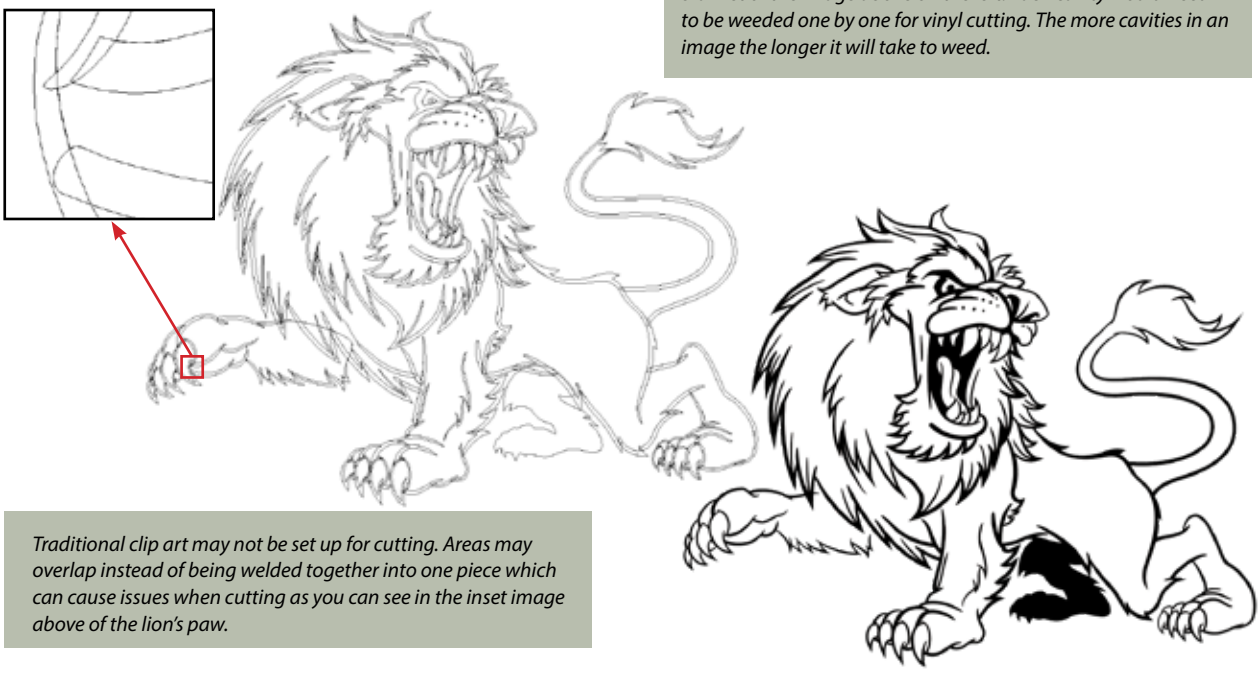
USING TRADITIONAL CLIP ART

When it comes to traditional clip art, it's not that you can't use it, but you might find that you will run into more headaches than it's worth. A simple clip art design may not be an issue, but the more detailed an image is the more difficult and time consuming it will be to cut and weed, if it's even possible.



Using traditional artwork instead of cuttable clip art for vinyl cutting can cost you time and money. The image on the left is a simplified cuttable image that took 1 minute and 18 seconds to weed. The image on the right is a traditional clip art image. It took 6 minutes and 12 seconds to weed. If you need to weed 25 of these images that's just over 30 minutes versus 2 hours and 30 minutes. Do the math. Less time means more money!

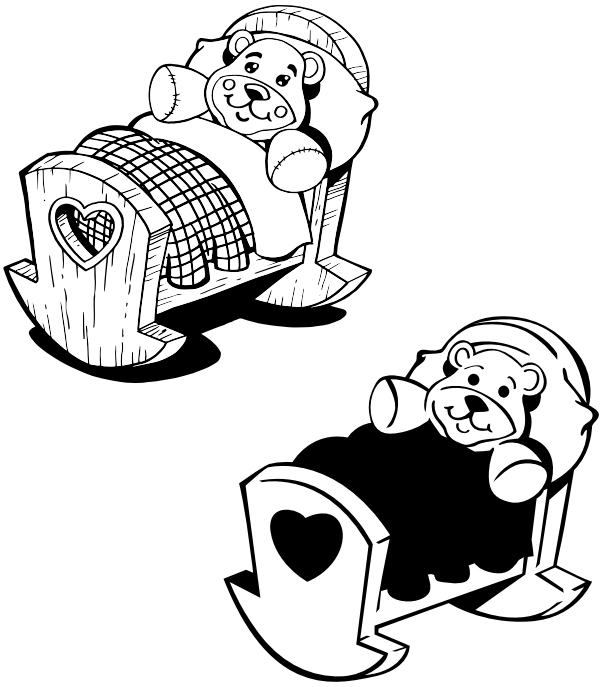
Traditional clip art isn't set up with cutting in mind. The image may be created by several individual closed shapes which may overlap. You may not notice this just by looking at the design in Normal Mode on your computer, but if you switch to Wireframe Mode, you'll suddenly notice the "spaghetti mess" of outlines crisscrossing everywhere and realize it won't even work. This is why when creating cuttable clip art, welding and knocking out shapes becomes a must and will be discussed in lessons later in the book.



Traditional clip art may not be set up for cutting. Areas may overlap instead of being welded together into one piece which can cause issues when cutting as you can see in the inset image above of the lion's paw.

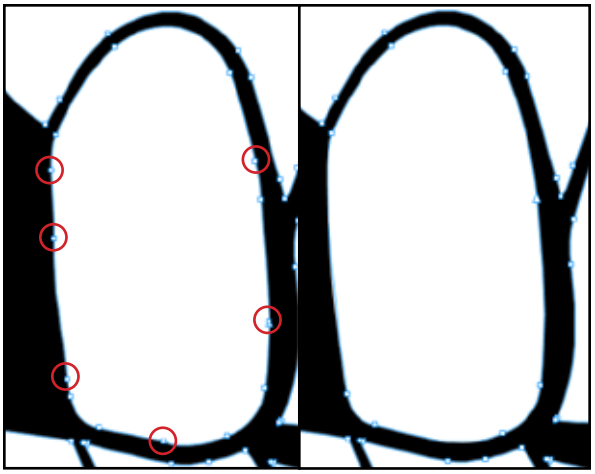
Line and space thicknesses aren't taken into consideration either and may be too thin to cut. When you weed an area that's too thin the vinyl can break when weeding or peel up and curl if it's a piece that comes to a long thin point for example.

Traditional clip art doesn't need to worry about how many cavities or open spaces are in the design. However with vinyl cutting, the more cavities your design has, the longer it will take you to weed since you have to pick out each cavity one at a time. This could become an issue especially if you have an order with a large number of pieces that need to be produced. The time you spend weeding may end up costing you money in the long run.



Traditional clip art doesn't take into consideration the number of cavities or white areas. An example is all the small squares in the blanket of the image above on the left. Each cavity would need to be weeded one by one for vinyl cutting. The more cavities in an image the longer it will take to weed.

Another thing to consider is that traditional clip art doesn't take into consideration the number of nodes used to create a shape, especially if it's an image that may have been created using automatic tracing software. Cutters read the nodes in an image in order to know how to cut the design. The more nodes an image has, the more times the cutter has to stop and think about how to cut the design. No, the cutter doesn't literally stop at each node, but it is calculating things along the way and less nodes mean a faster cut.



Cutters read the nodes along a curve in order to know how and where to cut the shapes. The more nodes there are for the cutter to interpret, the longer it will take to cut. Traditional clip art doesn't consider the number of nodes on a curve, but when creating artwork for cutting it's better to use fewer nodes to help speed up cut time, plus it also creates a smoother, cleaner cut line.

TRADITIONAL CLIP ART VS. CUTTABLE CLIP ART

Traditional clip art is not recommended for vinyl cutting. It isn't set up with cutting in mind. It is usually more detailed with too many cavities, which would take an excessive amount of time to cut and weed, and line and spacing thicknesses may even be too thin to cut.

CREATING VINYL CUT DESIGNS

CUT LINES

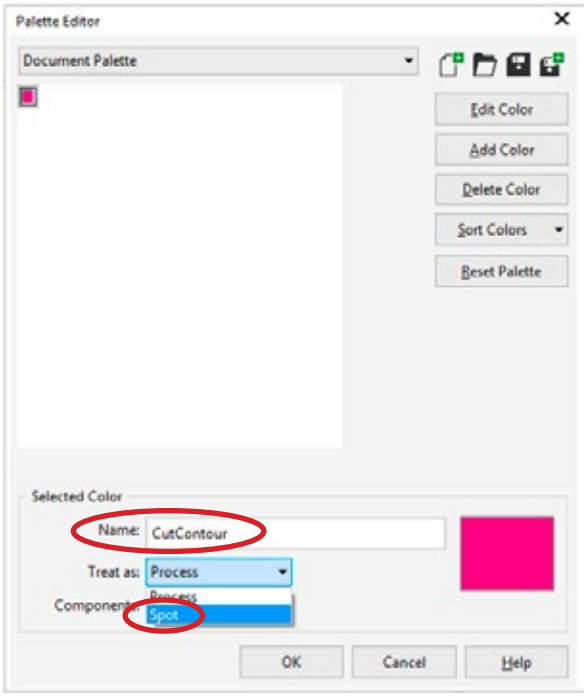
When a vinyl cut design is created, an extra specific contour cut line is not required. Your cutter will automatically read and cut along any vector curve that is shown in your layout. This is why it's important not to have overlapping shapes. Your cutter will cut along all the outlines of any visible curve and if they cross over one another, you will end up with several individual cut pieces in an area that should have been one solid piece.

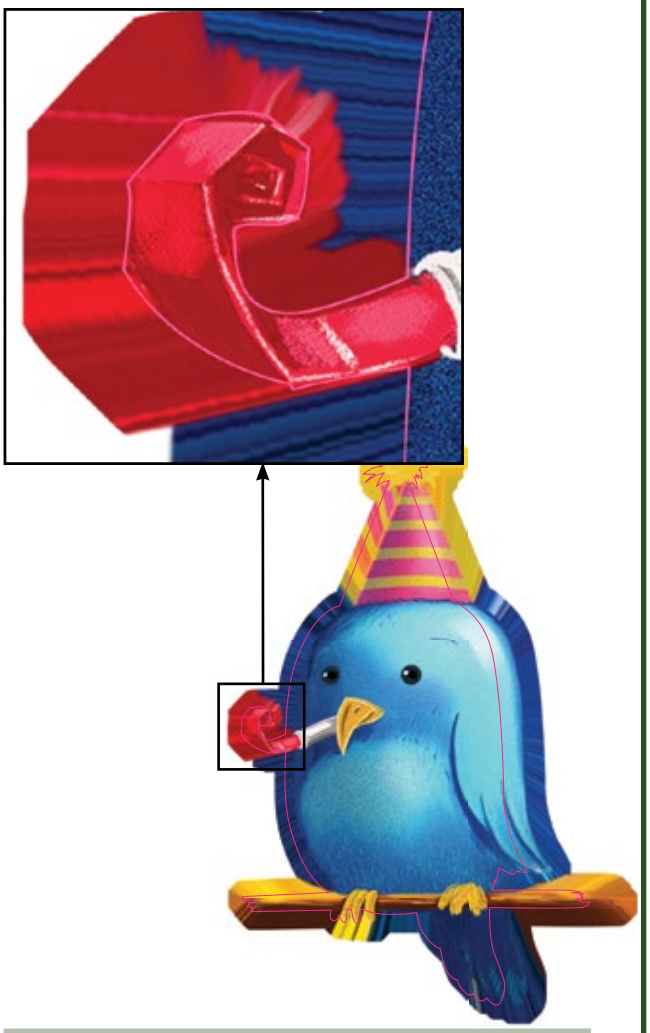
In the case of a print/cut design, whether you create a color vector image in CorelDRAW or create a full-color raster image in another program such as Corel PHOTO-PAINT and import it into CorelDRAW, you will need to create a separate vector cut line and set it up using the specifications required by your particular printer/cutter in order for it to be able to read it and know where to cut. For example, some printer/cutters require you to colorize the outline of the cut line with a spot color and give the color swatch the specific name "CutContour" in order for your printer to recognize it. In this case, it's not the curve itself that the cutter is recognizing, as it does with a vinyl cut image, rather it's the spot color name that registers and then the cutter is able to follow the vector cut line that you've created with that spot color name assigned to it.

THE WEEDING PROCESS

Designs created for both standard vinyl cutters and printer/cutters have to be weeded. This process is the removing of the excess material around the cut edges of a design. The weeding process can be the most time consuming part of the production process. If your cut design has a lot of cavities, which are holes or open areas in a design, each hole must be weeded individually. The more cavities, the longer it will take to weed. So if you want to be profitable, the number one goal when creating artwork is to design it so that it will weed as fast and easy as possible, which would include limiting the number of cavities in a design.

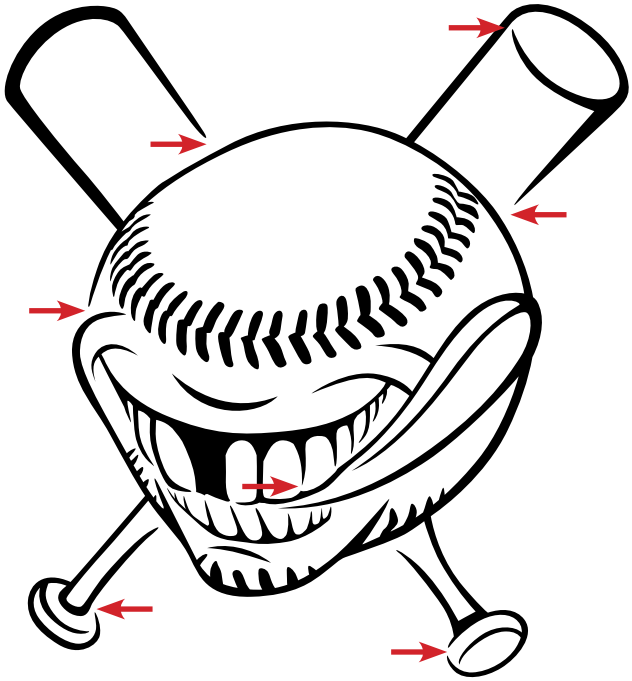
The weedability of a design is where quantity comes into play. If you are producing only a few designs, and it takes a little longer to weed and your markup is there, it's not as much of a concern. However, if you have to weed several images of a single design then you really want the weeding process to be fast and easy.





Extra specific cut lines aren't required for vinyl cut designs, but print/cut designs require a specific vector cut line set up with certain requirements such as a specific color name in order for the printer/cutter to recognize it and know where to cut.

One trick to help with the weeding process is to link as many cavities as possible. If you have two open areas next to one another but have a solid line between the two of them, create a small opening or gap in the line to let the two open areas flow from one to the other. Now instead of two separate pulls, you have one. In some cases, if this is done right, it's possible to weed a design in one continuous piece. So you start at one edge and gently pull up the entire area at one time versus having to go back several times to pick out multiple sections. This can be a huge time saver.

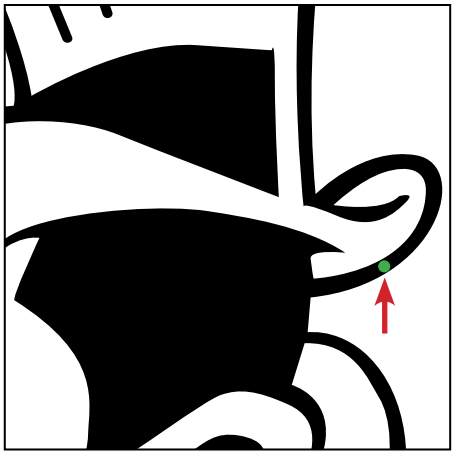


Creating openings in your design between cavities will help speed up the weeding process. Instead of having to pick each cavity one by one, you can pick one section and weed multiple areas in one pull as it flows from one cavity to another.

LINE AND SPACING THICKNESS

When creating your design, line thickness and spacing are probably the most important things to consider. As a general rule, all lines should be at least 1/16" (.06), however, there are several variables that can affect this number. One of the main factors is the material being used. Thicker materials will require a larger line or space thickness. If you will be subbing your designs out for production, it's good to check with the producer to see if they have any specific line and spacing requirements.

One way to monitor your line and spacing thicknesses as you create your design is to create a small circle with the diameter of the recommended thickness. Color it with a bright contrasting color so it's easy to find as you move it around your page. As you complete an area, place your circle over your lines and in your spaces, and if they are smaller than the circle then you know you need to adjust accordingly.

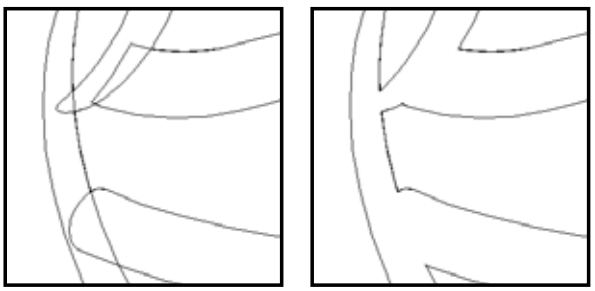


When creating vinyl cut designs, make a small circle with the diameter of the suggested minimum line and spacing thickness. Fill it with a bright color so that it is noticeable. Move it around the design to check and adjust the thickness of the lines and spacing.

WELDING SHAPES

As mentioned previously when creating your designs for cutting, one big thing to look out for is overlapping shapes. You can't have two shapes that overlap. The cutter will read the outlines of all the shapes in your design and if two separate shapes overlap, the cutter will follow the outline of each and will end up cutting one shape across the other. When you go to weed your design, instead of having one continuous piece of vinyl, you will have separate divided pieces. Welding, or merging the shapes that overlap each other, join the overlapping pieces together resulting in one solid shape. You'll find that this function is used very often when creating cuttable designs.

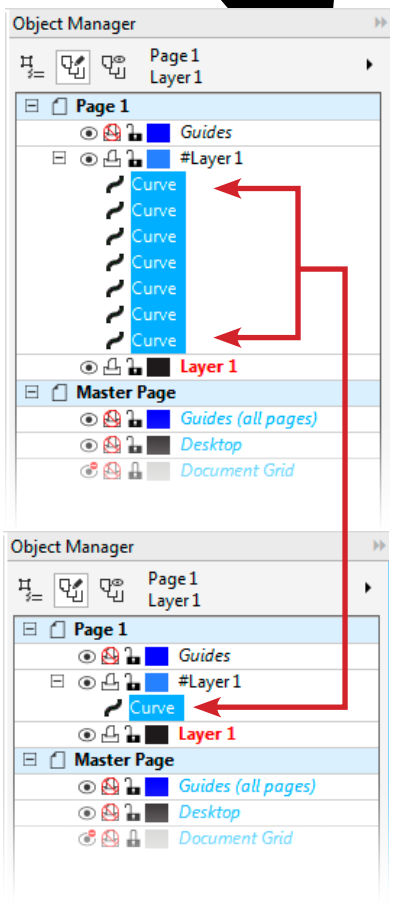
When you are viewing your image in Normal Mode and the shapes are filled with solid color, you can't tell by looking at it if elements are overlapping or are merged together. For this reason it's a good idea to view your image in Wireframe Mode periodically. This will allow you to notice if you have any overlapping areas that need to be welded.



Overlapping shapes need to be welded or merged together so they become one solid piece. If not, the cutter will follow the outline of each individual shape and you will end up with several separate pieces where the outlines crossed over one another. Viewing your image in Wireframe Mode makes it easier to see overlapping shapes.

When saving your final vinyl cut design, multiple curves can be welded together to create a single unified curve. While it's not always necessary to do this, your cutter can still read the outlines of your design whether they have been welded or not, it can be a useful function for organizing the multiple curves in your design. Instead of having many, unmanageable curves, you can select all the outlines used to create a particular element in a design and weld them into one single curve. For example, the ram pictured here was created with multiple curves. Each shape was created independently of the others. When done, all the curves are were welded together into one.

Once you have your layout complete, select all the components in your layout and weld them to make one single curve. This will make a concise, cuttable file. The cutter will just have one curve to recognize and follow. This is particularly helpful for print/cut images that have minimal curves. The cut line for a print/cut image is made up of the outline of the entire layout, so select the curves on the outer edge of each element in your design and then weld them to create a single curve cut line.



Welding multiple curves into a single curve can help organize and simplify layers in a design.

Image with Bleed

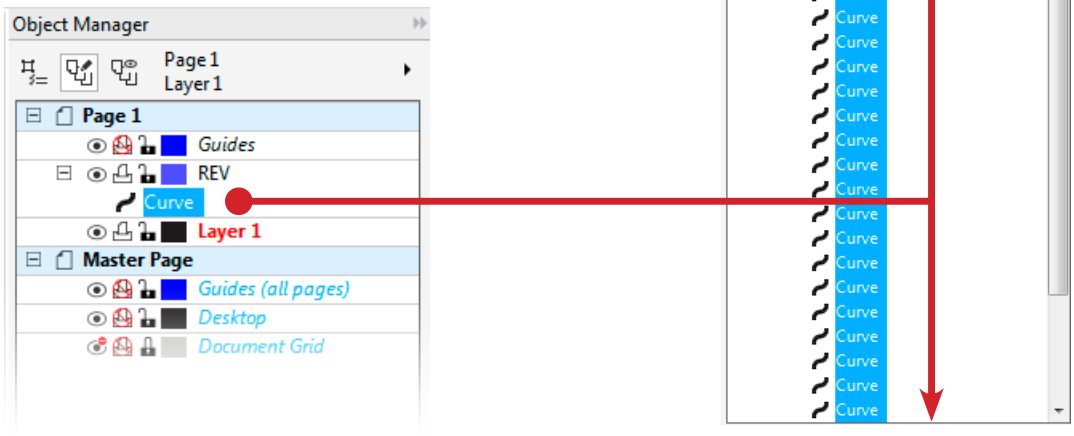
After Cutting & Weeding

Welding curves into a single curve is useful for print/cut designs since you only need the outer edge to create the cut line.

When welding or knocking out shapes in a design, it's a good idea to keep a working layered file before you begin those processes. If you need to make changes, it may be easier to go back to the layered file to make adjustments. If you need to make a change to a design that has been welded into a single curve, it's harder to grab individual elements, and if you break apart the curve, it will separate the design making every shape its own curve, probably resulting in more curves than you had originally. Overlapping areas that have been welded together can't be broken apart without cutting the two pieces apart. This process can be tedious, and it may be easier to go back to the working layered file to make any revisions.

The more you start creating your own designs and seeing how these functions work, you'll be able to determine what works best for you.

Single curve broken apart

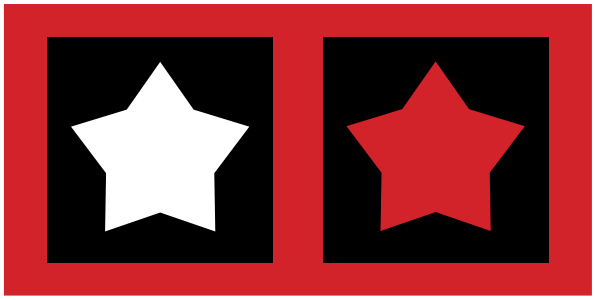


It's always a good idea to keep a working layered file of your design when creating welding or knocking out elements in a design. If you need to make revisions, depending on the complexity of the changes, it may be quicker and easier to go back to the layered file. When you break apart a curve, each little shape of an element will be placed on its own layer as shown in the Object Manager images above, and can become very tedious when trying to manipulate the curves and make your changes. If you've merged overlapping shapes, such as the letter N and the side of the lion's leg in the layout above, you'll need to cut them apart and reconstruct the areas that overlapped before you can make any adjustments to your layout.

KNOCKING OUT SHAPES

Another process that is common in creating cuttable designs is knocking out shapes. Think of the letter "O." The center of the O is knocked out of the outer shape of the O. If you were to place the O over a colored area, the color would show through the center. If it wasn't knocked out, the background color would not show through. You would see whatever color the center was filled with.

As long as the top shape fits within the bottom shape, it isn't necessary to knock out the shape. The cutter will read any outline and cut both shapes. If you are creating a design element that has a hole, it's good to knock it out so that the two shapes become one and you aren't having to deal with two separate pieces. This comes in handy when you are moving elements around in your image. If the center shape has been knocked out, you can select the one element and move it. You don't have to select both pieces and take the chance of accidentally moving one element without the other.



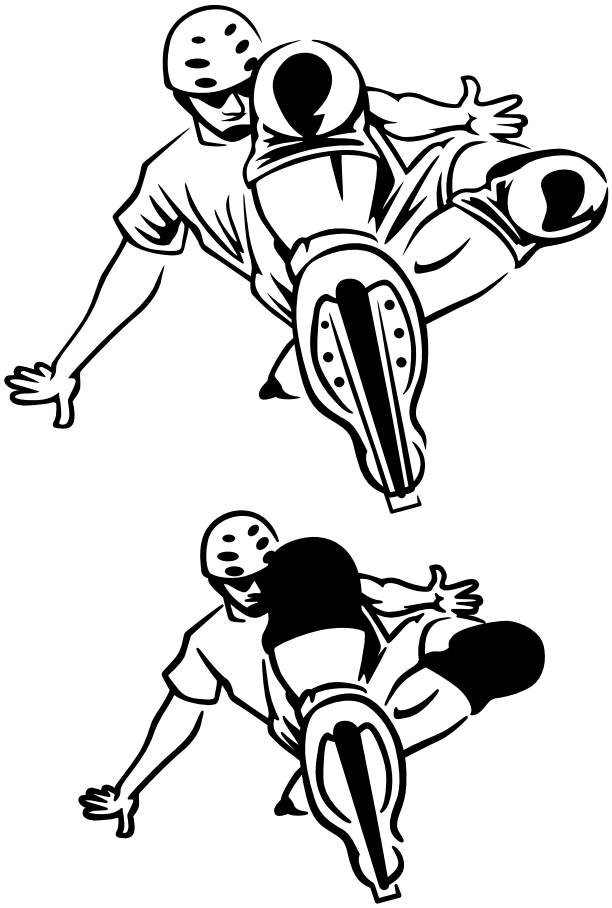
Knocking out a shape uses one element to create a hole or punch out an area of an underlying shape. In the example above the white start is knocked out of the black square. When this is done, the white star is eliminated leaving an opening in the square with the same shape.

This process can come in handy if you are trying to create some gaps in your lines to link two cavities together to help with weeding. You can create a shape that is slightly larger than the area you want to knock out and place it where you want to create the gap. When you knock the top shape out of the shape below you'll see the opening that is created.

The process of knocking out shapes can be useful when trying to create an opening in an area of your image to link two cavities together to make weeding easier.

IMAGE SIZE

Image size also plays a vital part when creating artwork. The smaller the image, the less detailed it can be. A small 3-inch left chest doesn't have the same area for detail as a larger 10" layout. You'll notice this if you have a large design that you have to resize for a smaller application. If you created a design originally at 10 inches using your recommended 1/16" (.06) line and spacing thickness, when you reduce it to 4", your line thickness and spacing is now less than .03". The design needs to be modified, and details need to be eliminated in order to be able to cut and weed.



When shrinking images, adjustments need to be made to enlarge line and space thickness, and to simplify detail. Adjustments such as eliminating elements, silhouetting areas, and adjusting curves would need to be done to make a reduced design cuttable.

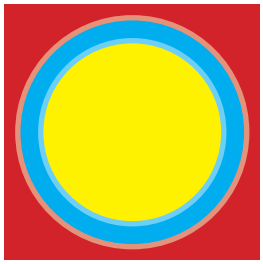
MULTICOLOR DESIGNS

With a vinyl cutter, you can only cut single colors one at a time. The time it takes to cut a multicolor vinyl cut design is multiplied by the of number colors in your design. Not only do you have to take the time to cut each color individually, but you have to switch out the vinyl each time between colors, weed each color, and press each color. Because of this, when creating a multiple color vinyl cut design, you may need to limit the number of color in your design.

While not all vinyl materials are layerable, if you are using a layerable vinyl and your design has multiple colors layered on top of one another this adds thickness and gives the image a heavy feel on the garment. Therefore you will want to limit the number of vinyl colors that overlap. You can set up your design to have a top color knock out of the color below so that you don't end up with multiple layers of vinyl on top of one another. However, keep in mind the possibility of the garment shrinking slightly once the heat is applied creating thin gaps between vinyl colors. If you find this is occurring, you may want to expand the shape of one color a little in order to create a slight trap or overlap. Then if the shirt shrinks you won't see any gaps between vinyl colors. Due to the fact that each color adds thickness to a design, as well as time and labor, most designers limit vinyl cut graphics to three colors or less.

Solid Pieces of Overlapping Vinyl Create a Heavy Feel

Knocking Out Colors Will Create A Single Layer Eliminating Bulk



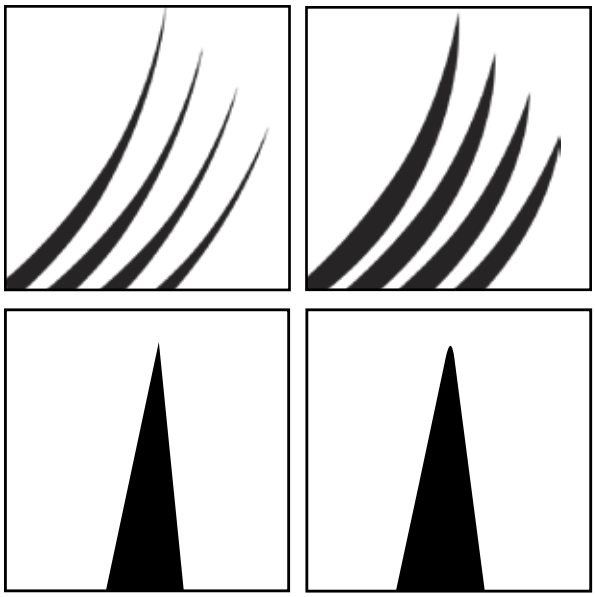
Expanding one vinyl color slightly will help fill in any gaps that may occur if the shirt shrinks when placed on the heat press.

With a printer/cutter, there is no limit to the number of colors because you are printing a full-color, inkjet image on a single layer of white vinyl. You don't have the build up of multiple layers of vinyl creating a heavy feel on a garment, nor do you have the issue of lengthy production times.

MORE TIPS

Another tip to use when creating a design is to avoid shapes that come to long, thin points. The longer and thinner the line, the more likely it will curl up when weeding and become a nightmare to apply.

When a design does have points, it's recommended to round off the tips. When the cutter comes to a sharp point, it has to take the time to stop at the node and change direction. If the point is slightly rounded, the blade is able to create one continuous cut without stopping. This helps the cutting process run smoother and reduces cut time.



Long skinny points are not recommended as they are harder to cut and can curl up when weeding. Sharp points should be rounded out to help cutting go quicker and smoother.

POINTS TO PONDER BEFORE STARTING YOUR DESIGN

While there are some general rules of thumb and specifications to be considered when creating your vinyl cut design, there are some items to take into consideration which can help to guide how strictly you need to follow those rules and specifications.

WHAT TYPE OF MATERIAL WILL YOU BE USING?

Some materials are thicker than others. For example, a glitter flake vinyl will be more difficult to cut than a standard heat transfer vinyl. So when creating a design for a thicker or more difficult material you'll want to pay attention to the details and specifications. A design with thicker lines, larger spacing, and less detail will be much easier to cut and weed.

If time and budget allow, you can adjust the speed of your knife. If you are able to slow down your cutting speed, you can get a better cut, so you can add more detail in a design being used with a thicker, more difficult material.

It's a matter of experience with the different materials and finding the right balance of what your time and budget will allow, as to how detailed your image can be for the material being used for a particular project. If you're just starting out, you can use the specifications that we provide on the next page as a starting point and adjust from there.

WHAT PRODUCT WILL THE DESIGN BE APPLIED TO?

When creating a design for a shirt, the more vinyl that's applied, the heavier the feel on the shirt. Too much weight can make a garment uncomfortable to wear. With that in mind, create a design that utilizes more open areas in the layout. If you are creating something to be applied to an item that won't be worn, then eliminating vinyl in the layout isn't necessary.

One exception to this rule is if you are using a vinyl with a texture or effect that you want to show off, like a holographic vinyl or foil. If your design is made up of outlines without any larger solid areas, then the effect of the vinyl will not be noticed and becomes pointless. Including some solid areas in a case like this becomes beneficial because the material makes the design more intriguing.

HOW MANY PIECES WILL YOU BE CUTTING?

Are you a hobbyist or a crafter who may only be cutting a handful of images at a time? Or are you a professional business that needs to produce dozens of images at a time? This will definitely affect the intricacy of your design. As we've been discussing, the more detailed a design, the longer it will take to cut and weed an image. If it takes you 30 minutes to cut and weed a single image and you have 100 to produce, that's 50 hours production time which just isn't feasible. But if you are a crafter, and you only have one or two, then spending the 30 minutes to an hour may not be an issue.

SAMPLE MATERIAL GUIDELINES FOR CUSTOM CUTTING

STANDARD HEAT TRANSFER VINYL	*Cut Line/Stem Thickness*	*Cavities*	*Thickness*
Thin, Soft Hand - Standard Colors	.07 in	.45 in	.088 mm
Thin, Soft Hand - Electric Colors	.07 in	.45 in	.095 mm
Glow-in-the-Dark	.07 in	.45 in	.1 mm
TEXTURED HEAT TRANSFER VINYL			
Reflective	.085 in	.55 in	.142 mm
Neon	.085 in	.55 in	.31 mm
Flock	.085 in	.55 in	.384 mm
Hologram	.085 in	.55 in	.1 - .115 mm
Textured Glitter	.085 in	.55 in	.325 mm
TWILL MATERIALS			
Tackle Twill Fabric	.18 in	.09 in	---
Pressure Sensitive Acrylic Felt	.18 in	.09 in	---
Pressure Sensitive Chino Twill	.18 in	.09 in	---
Uncoated Chino Twill	.18 in	.09 in	---

This chart gives a sampling of various types of cuttable materials. The thickness of the vinyl is provided when available to give you an idea of how this can affect the size of your lines and cavities. Cut lines and cavity sizes are dependent on the thickness of the material, the carrier type, and your willingness to weed detailed designs. Vinyl materials from different manufacturers may have different thicknesses but use this as a reference for what measurements to use. These guidelines are a good starting point and are recommended for optimal results. As you become more familiar with the different materials, and how your cutter works with these materials, these measurements can be adjusted to suit your needs. If you are creating a design that you will be sending out to have cut, you may want to check with the company producing it to see if they have specifications that they require. If you will be cutting this yourself, you have the flexibility to use thinner lines, smaller cavities, or more detail depending on time and budget.

CHAPTER 2

CREATING ART FOR VINYL CUTTING

CREATING ART FOR VINYL CUTTING

While vinyl cutting can be a general term referencing all production processes involving a cutter that produces an image cut out of vinyl material including printing/cutting, this chapter focuses specifically on cutting a vector image out of single-colored material whether it be an adhesive vinyl or a heat transfer vinyl in foil, glitter flake, felt or any other numerous options.

When creating vinyl cut designs you're main objective is to create something that will cut and weed quickly and efficiently to meet your time frame and budget. Someone who is a crafter or hobbyist may be willing to spend more time on an image or job as opposed to a company that needs to produce multiple images for a customer. They don't have the time to sit and weed a hundred little cavities, or deal with a design that isn't set up to cut properly. If you're working on a design that you will be subbing out to have produced, you'll want to make sure that the design is created correctly and to the producer's specifications so that there are no issues causing a delay for you.

The process of creating the art and what to consider to make sure it's cuttable and weedable is the same regardless of what type of cutter you'll be using. In order for the cutter to read the outline of the design to cut it, you may need to save the design as a certain file type or with certain specifications. It's always best to consult your cutter's manufacturer to know how to properly save your file so it will be easily recognizable by your cutter.

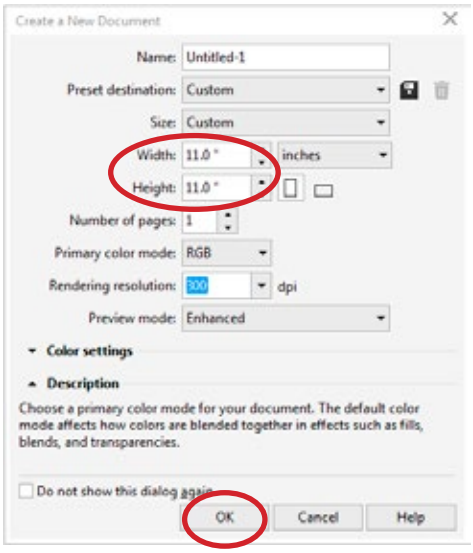
CREATING A SIMPLE TEXT LAYOUT

One of the easiest ways to create a vinyl cut design is to create a type layout. When using text as your design, choose fonts that aren't too intricate or that have thins lines or serifs which will make it harder to cut and weed. Fonts that are bolder are good to use with specialty vinyls like glitter. The thicker font gives more area to show off the special effect of the vinyl, and since a type layout by itself is pretty basic, using a specialty vinyl will help dress up the overall design.

1

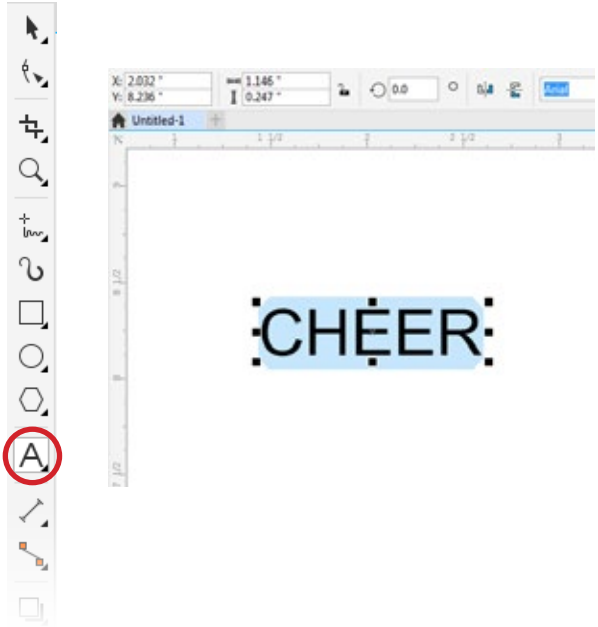
Go to FILE MENU > NEW to start a new document. Enter the dimensions that you want your page to be. Click OK.

For vinyl cut images it's recommended to keep your designs at approximately 10" x 10" in order to reduce the amount of vinyl going on a shirt.



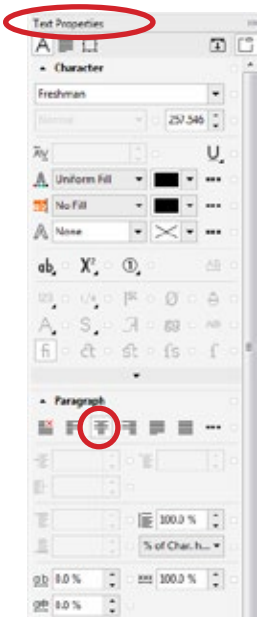
2

Select your Type Tool, then click on your page to create a text box. With the text highlighted, type what you want your design to say. If the type is not highlighted, simply move your cursor to the beginning of the text line, and click and drag over the remaining text.



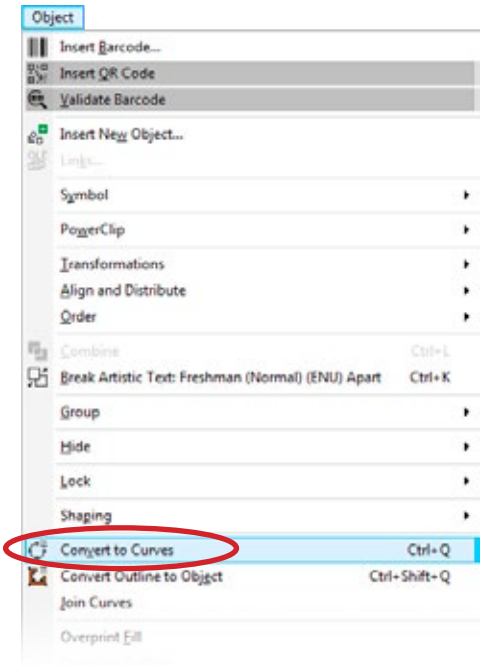
3

Highlight the text again and go to your Text Properties Docker (WINDOW MENU > DOCKERS > TEXT > TEXT PROPERTIES). Adjust the font, type size and other type attributes that you want to adjust until the text is laid out the way you want. In this case, Freshman was the chosen font. Adjust the alignment of your text if needed. In this case the alignment was set to Align Center.



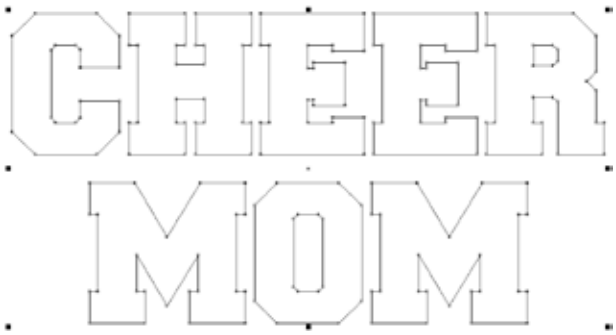
4

Once you have your text laid out, you'll need to convert it to curves. Your cutter reads these curves in order to know where to make a cut. Select your text and go to OBJECT MENU > CONVERT TO CURVES.



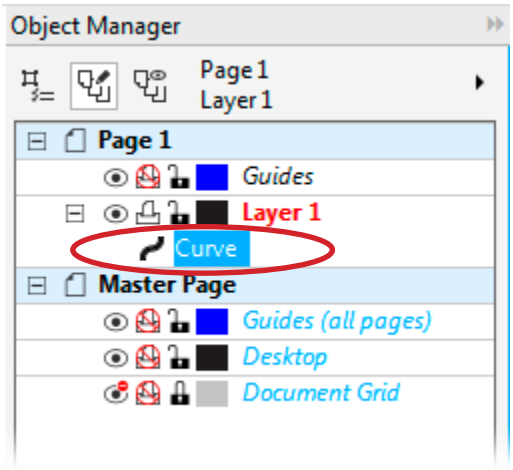
5

You'll notice your text has now changed to a series of curves and nodes. If you view your layout in Wireframe mode (VIEW MENU > WIREFRAME) when you make this change, you'll see how the letters transform from text to curves. To go back to the Normal mode, go to VIEW MENU > NORMAL.



6

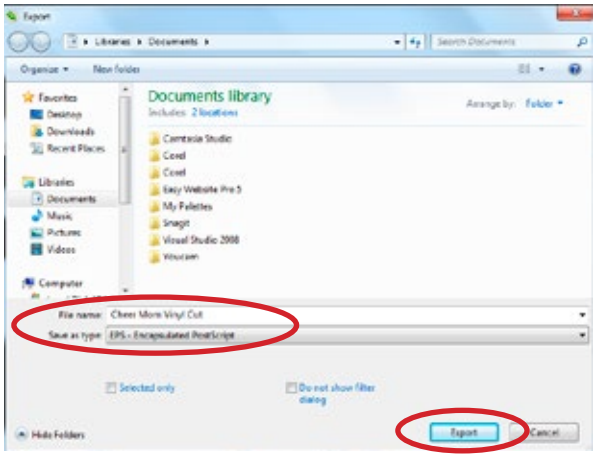
If you open the Object Manager Docker (WINDOWS MENU > DOCKERS > OBJECT MANAGER) you'll see how your text is now a single Curve layer.



7

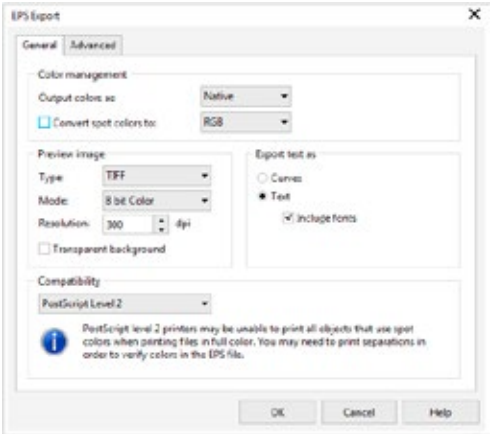
Now you can save your file. In this case the file is saved as in EPS. Go to FILE MENU > EXPORT. Enter your file name, choose the location where you want to save the file, and select EPS - Encapsulate Post-Script for the Save as type: option. Click Export.

Depending on the cutting software that you are using, you may need to save the file in a different format. Consult your cutting software manual or manufacturer to find out what format you will need in order to open the file properly in your program for cutting.



8

When the EPS Options window pops up, click OK, and you are done. You can now open or import your file into your cutting program.



WELDING OVERLAPPING SHAPES

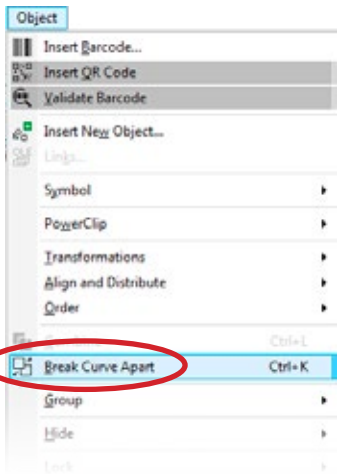
Welding overlapping elements in a vinyl cut layout is very important. Your cutter reads the outlines of shapes and if two elements overlap without being welded together, the knife will cut into each shape where the two crossover one another. Welding elements merges them together into one shape with one continuous outline curve. See how to weld overlapping elements into one continuous shape in this lesson.

1

Create a new document, set up your text, and convert your text to curves as described in steps 1-6 in the previous lesson on pages 23-25. In this case, the font used was Decotura.

2

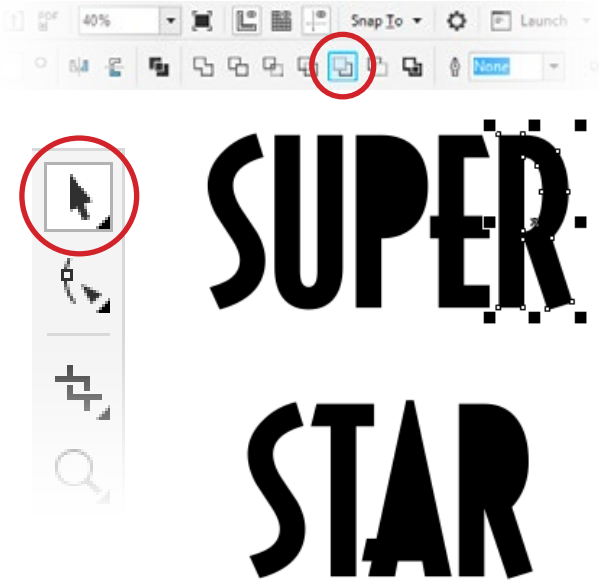
To manipulate the individual letters you will need to go to OBJECT MENU > BREAK CURVE APART. You will notice that once the letters are broken apart they will look like solid shapes. However the curves for the center holes of the letters are still there.



3

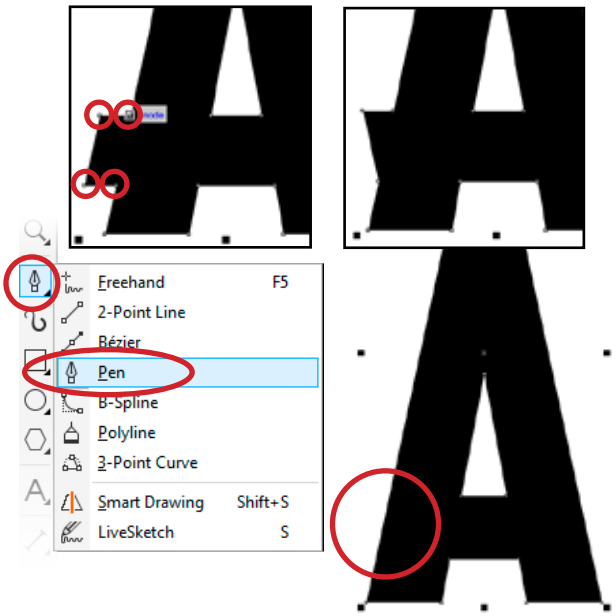
To fix those letters you will need to knock the center hole shape out of the larger shape for each letter. To do that, select both shapes that make up one letter using the Pick Tool. Since the center hole shape layer lands beneath the outer shape when you break the curves apart, click the Front Minus Back option in the Tool Bar at the top of your window. You'll see how the hole is now knocked out of the center. Repeat this for all the necessary letters.

You can then manually select letters individually to move and further adjust their placement if needed to get the type layout positioned the way you want.



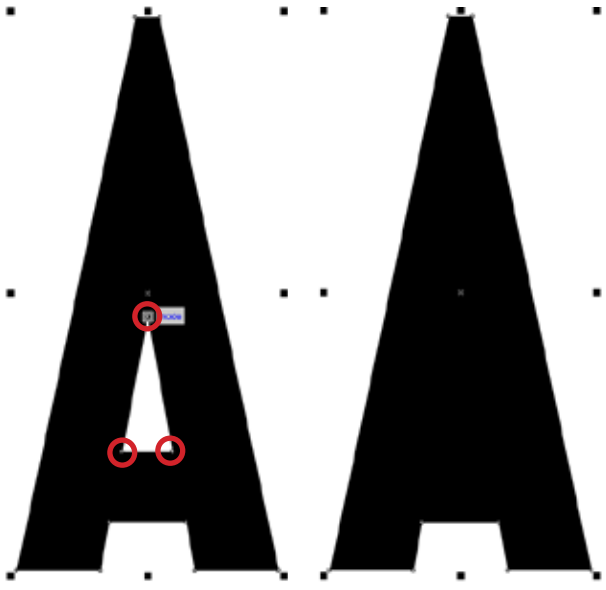
4

You can use the Pen Tool to eliminate any unwanted nodes to make adjustments to your shapes. In this case nodes are eliminated to adjust the crossbar on the letter A so that we can replace it with a star. Select the Pen Tool. Move the Pen Tool over a node and click on the node to delete it.



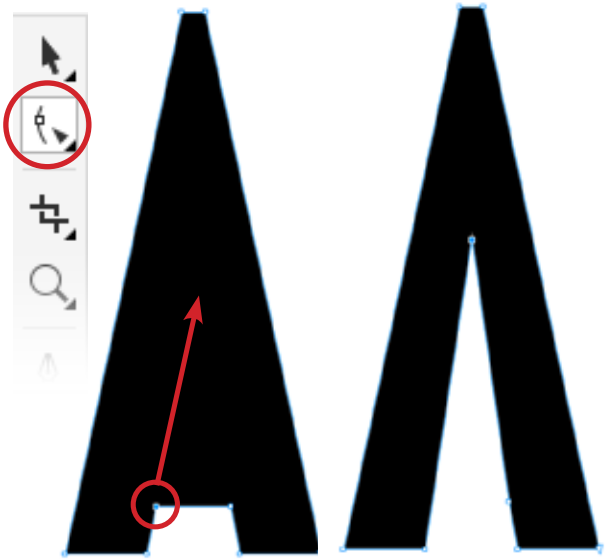
5

Continue using the Pen Tool to delete the nodes in the center of the A.



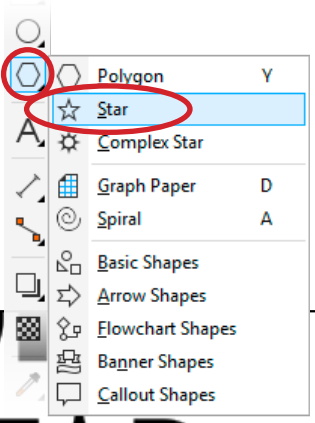
6

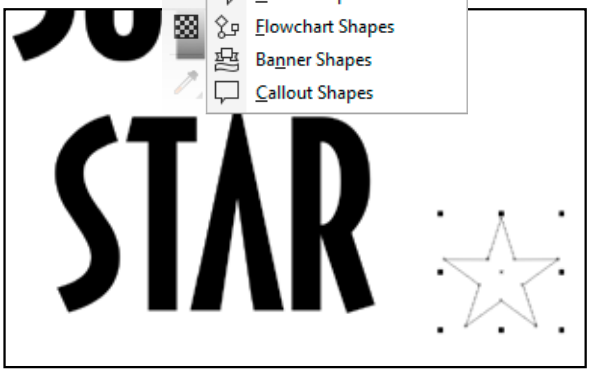
Use the Shape Tool to grab one of the nodes of the bottom half of the cross bar. Move it up and to the center to recreate the pointed center area of the A.



7

Go to the Star Tool. Click and drag on your page to create a star shape. Hold down the Control Key as you resize the star to keep the proportions restricted.

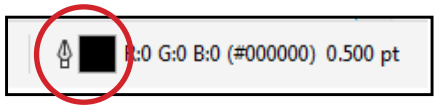


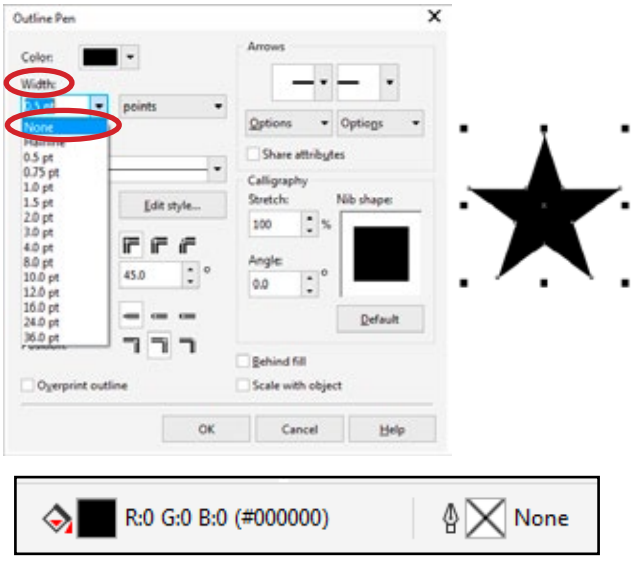


8

When you create the star shape, you'll notice it is outlined in black. You'll need to eliminate the outline color and fill it with black. Double click on the Outline Swatch in the bottom right corner of your main window. This will open the Outline Pen Window. Go to Width, click the drop down arrow, and select None. Click OK.

Then click on the black Fill Swatch at the bottom of your window to fill the star with black.



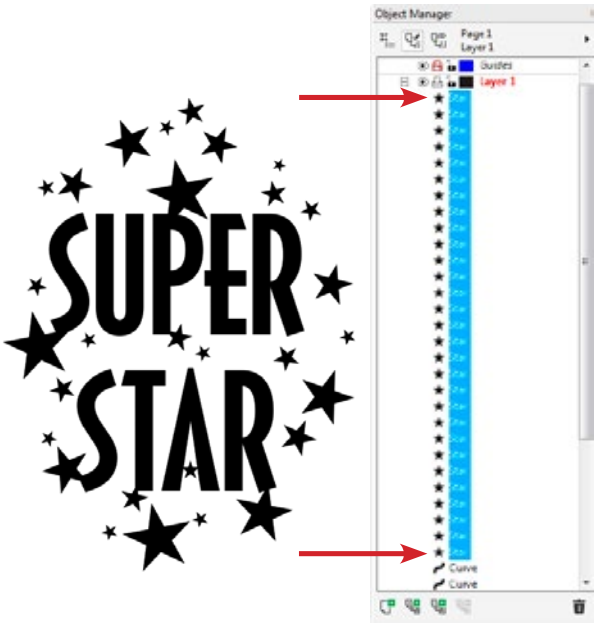


9

With the star still selected, go to EDIT MENU > COPY, then EDIT MENU > PASTE to add more stars. Select each star one by one to adjust the size, rotation and placement until you get the layout you want. Let some stars overlap your text.

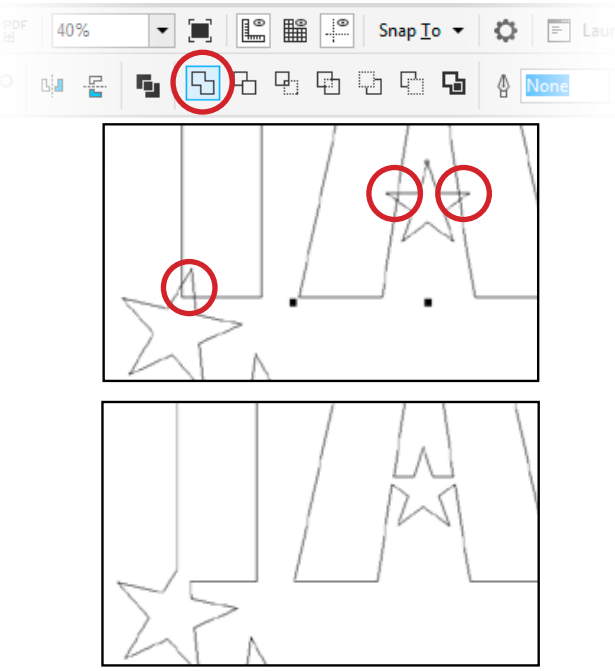
In the Object Manager (WINDOWS MENU > DOCKERS > OBJECT MANAGER), select the top star in the list, hold the shift key down, and select the bottom star in the list. This will allow you to select all the stars with just two clicks instead of having to click on each one. Go to OBJECT MENU > CONVERT TO CURVES to change the star shapes to curves.

At this point save your file in its current state in case you have to make any revisions later.



10

If you go to VIEW MENU > WIREFRAME, it will make it easier to see what shapes overlap and need to be welded together. Select two overlapping shapes and click the Weld button at the top of your window to merge the two shapes together into one continuous unit. Repeat this for all overlapping shapes.



11

Once you've welded all the overlapping shapes together, select all the curves listed in your Object Manager by selecting the first curve in the list, hold the shift key, and select the last curve in the list. Click the Weld button like you did in the previous step to weld all the shapes together into one single curve.

You can now save your new cuttable file as explained on page 25 in Steps 7-8 in the lesson on Creating a Simple Text layout.

KNOCKING OUT SHAPES

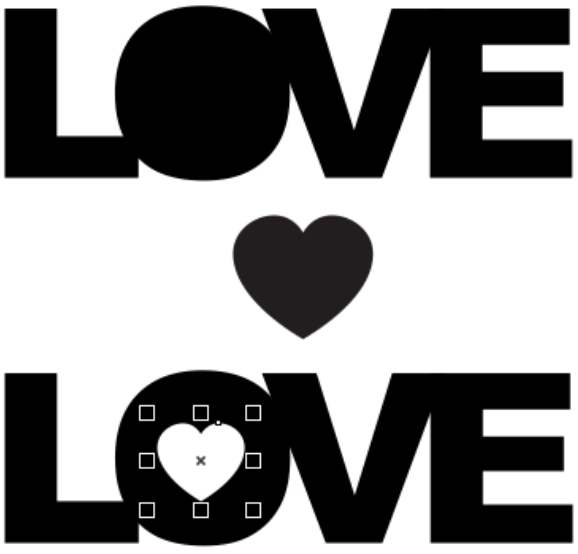
When you are creating vector artwork for vinyl cutting, you may have a shape on top of another shape that you want to knock out or create a hole in the shape below. This lesson will explain how to do this using the Back Minus Front feature to create a simple text layout.

1

Create a new document, set up your text, and convert your text to curves as described in steps 1-6 on pages 23-25 in the first lesson Creating a Simple Text Layout. For this layout, we used the font Ariel Black. Once the word LOVE is typed and converted to curves, go to OBJECT MENU > BREAK CURVE APART. It will separate each of the letters and make the center of the O its own shape. Select the center shape and delete it. Now you can select the individual letters and move them closer so that they overlap. When moving the letters, hold down the shift key to lock the movement of the letter along the horizontal axis so the letters only move from left to right and remain on the same baseline.

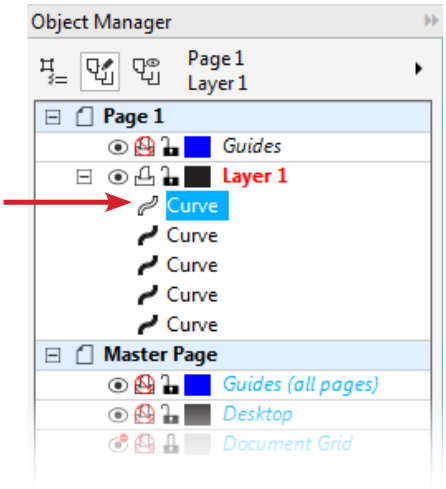
2

Use a vector clip art heart that you already have or download one from the internet. Open and copy (EDIT MENU > COPY) the heart from its original file and paste (EDIT MENU > PASTE) it into your new working file. Use the Fill Swatch at the bottom of your window to fill the heart with white and position it in the center of the "O".



3

Check your Object Manager Docker to make sure your heart shape curve is above the "O" curve. If it isn't, click and drag the heart curve above the "O" curve.



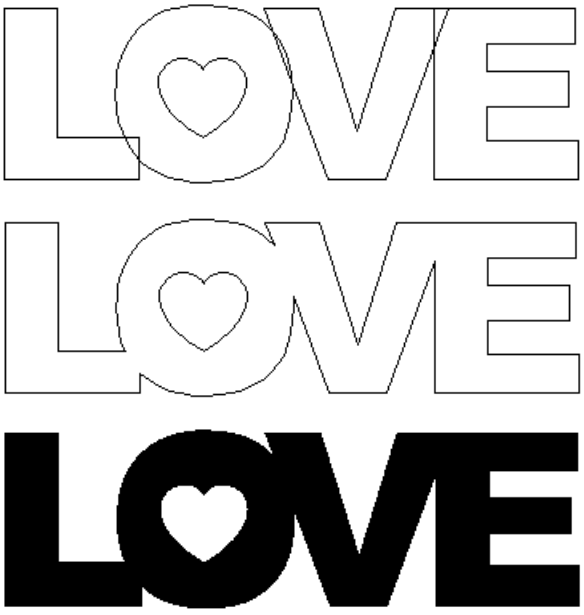
4

Use the Pick Tool to select the heart and the "O" shapes. Since the heart shape that you want to knock out is above the letter "O", click the Back Minus Front option in your tool bar at the top of your window. The two shapes will be merged into one with the heart knocking out of the "O" creating an opening in the shape of the heart.

5

Select all the letters using the Pick Tool, and click the Weld option at the top of your window to merge all the overlapping letters into one unified curve.

You can now save your file as explained on page 25 in Steps 7-8 in the lesson on Creating a Simple Text layout.



CREATING A VINYL CUT DESIGN FROM A SKETCH

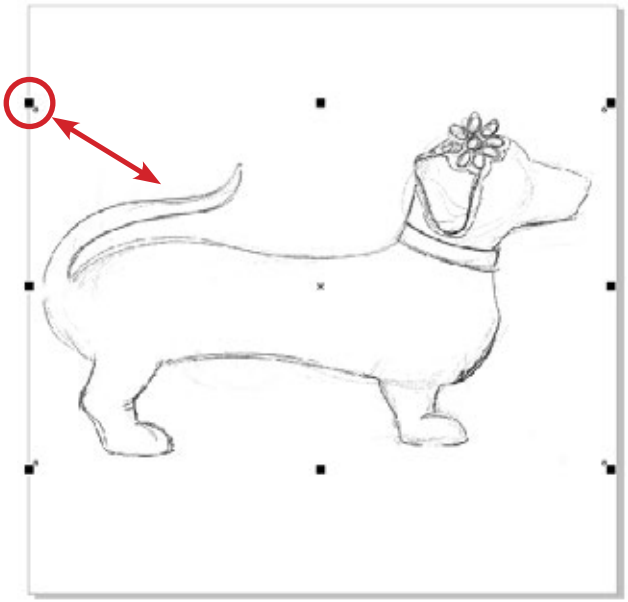
Can't find what you're looking for in clip art? Create your own vinyl cut designs from scratch using the Bezier Tool. Scan or take a photo of a sketch you created and load it onto your computer. Use the Bezier Tool to trace it, add some text and Viola! You've got your own original design.

1

Go to FILE MENU > NEW to start a new document. Go to FILE MENU > IMPORT. In the Import Window, select the file of the sketch that you want to trace. Click Import.

2

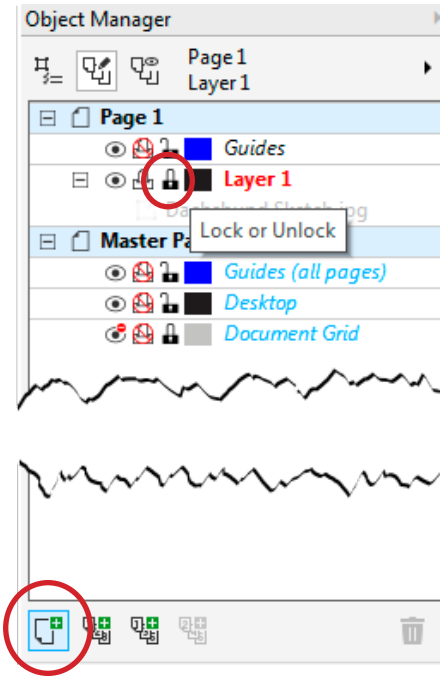
Click and drag until the image fits across your page . You can resize the image as needed by grabbing the corner handles. Hold the shift key down to resize the image proportionately as you move the handles in and out.



3

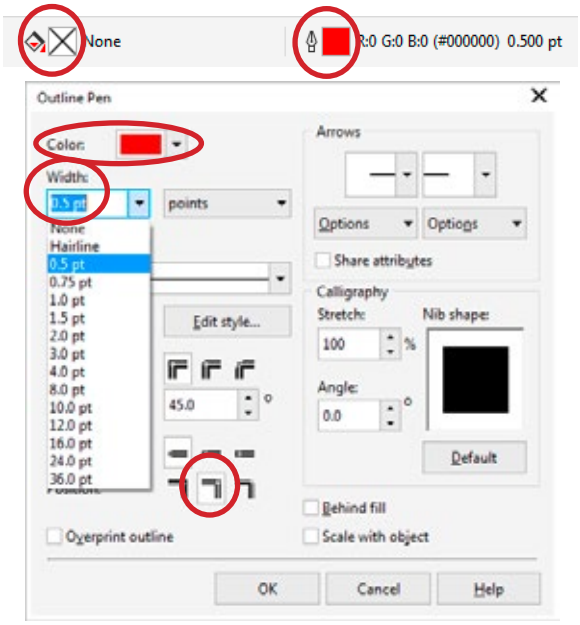
In the Object Manager Docker (WINDOWS MENU > DOCKERS > OBJECT MANAGER), click the Lock on the layer of the image you just imported . This will prevent you from accidentally clicking on the image and moving it while you are tracing it.

Click on the New Layer icon at the bottom of the Object Manager Docker to create a new layer. You'll use this layer for tracing your image and creating your layout.



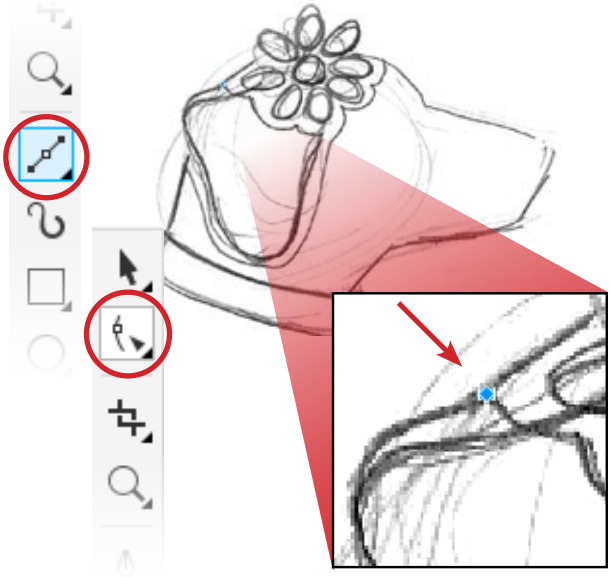
4

Once you have your sketch in place and locked, you can start tracing. In order to see your outline as you trace your sketch, use the Fill and Outline Swatches at the bottom right of your window to apply an outline color to your curve and to set the Fill color to None. Choose a color that will stand out against your sketch to make it easy to see. Set your Outline Width around .5 point so that it's thick enough to see but not too thick to prevent you from seeing the sketch underneath. Align the stroke to the center.



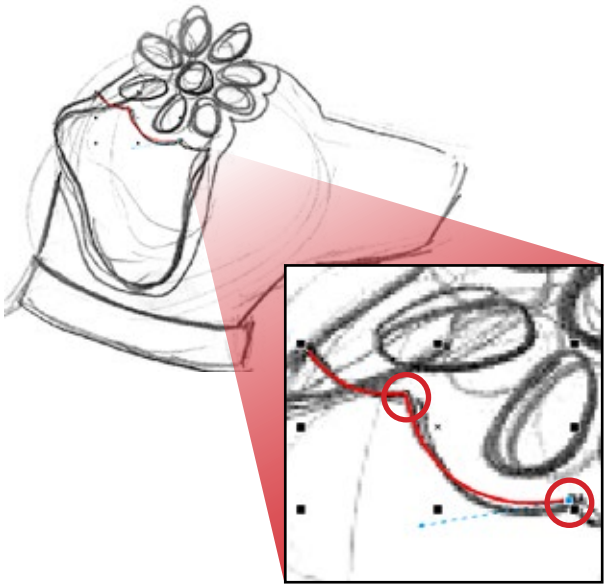
5

Select the Bezier Tool and click anywhere along one of the lines of your sketch to place your first node. Click again further down along the pencil line and place your next node. When the Bezier Handles pop out use the Shape Tool to grab the handles and move them in and out and up down to adjust the shape of the curve.



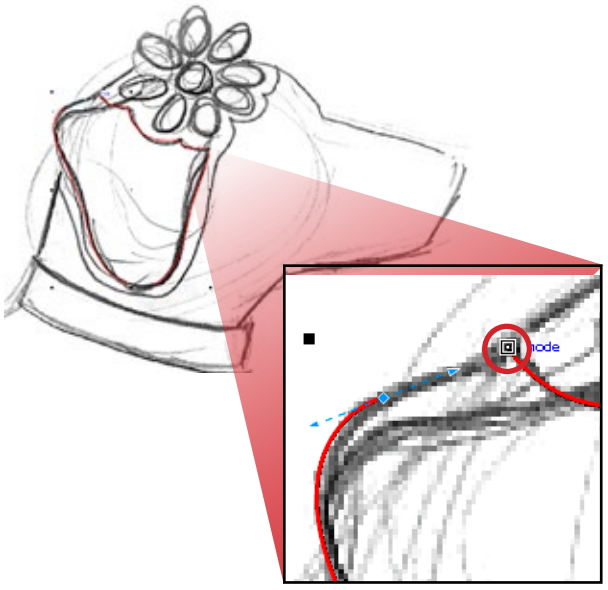
6

Continue clicking around your image and forming your curves to create your image. If you come to a corner point where you do not need a curve or need to change direction, click to position the node and then go back and double click that node again to retract the Bezier Handles.



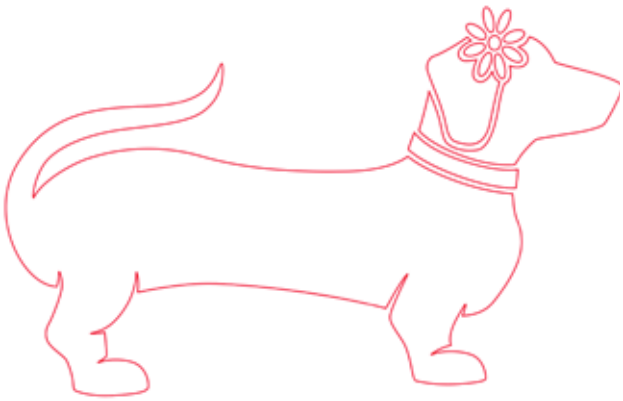
7

Continue tracing your sketch until you come back to your starting point. Click on the starting node to complete the path and form a closed shape. Once the shape is complete if you need to make any adjustments, use your Shape Tool to click on individual nodes or Bezier handles and make your adjustments.



8

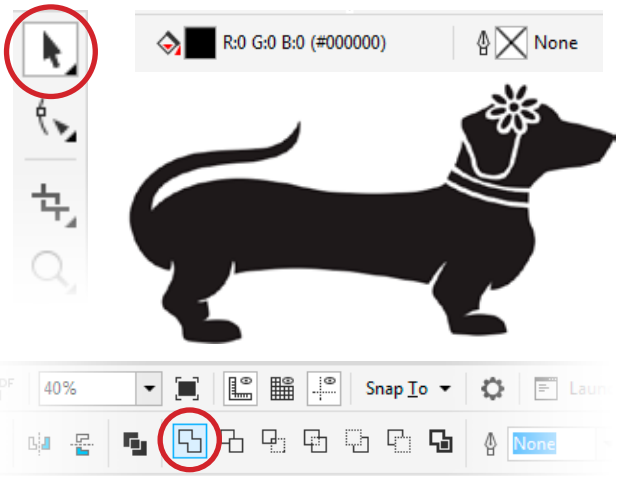
Repeat these steps until you have outlined all the shapes in your image. You can now click on the lock icon to unlock your sketch layer and delete it by selecting the layer and clicking on the small trash can icon at the bottom right of the Object Manager Docker.



9

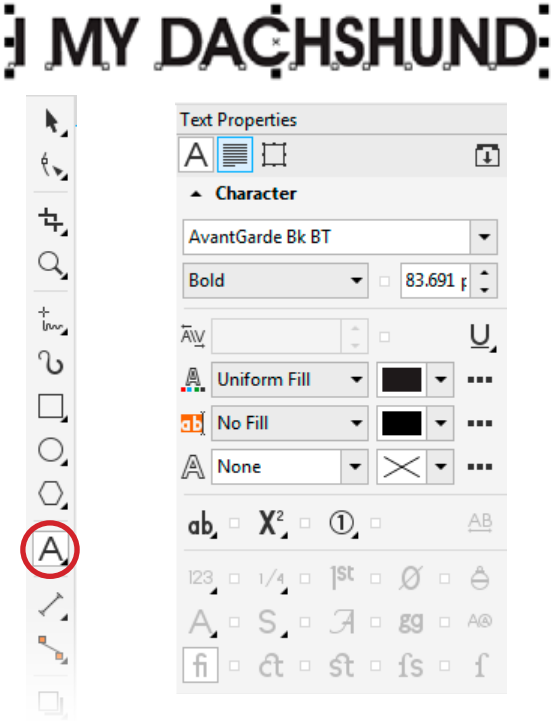
Use the Pick Tool to select all of your shapes. Double click the Outline Swatch and make the Width None. Click the Fill Swatch and make it black.

With all the shapes still selected, click on the Weld button to combine all the curves that you created into one unified curve.



10

When your image is done, you can add some type to the design to create a complete layout. Use your Type Tool and click on the page to begin typing your copy. Use the Text Properties Docker (WINDOW MENU > DOCKERS > TEXT > TEXT PROPERTIES) to choose your font, letter size and make any other adjustments that you would like. The font used in this layout is Avant Garde Bold.



11

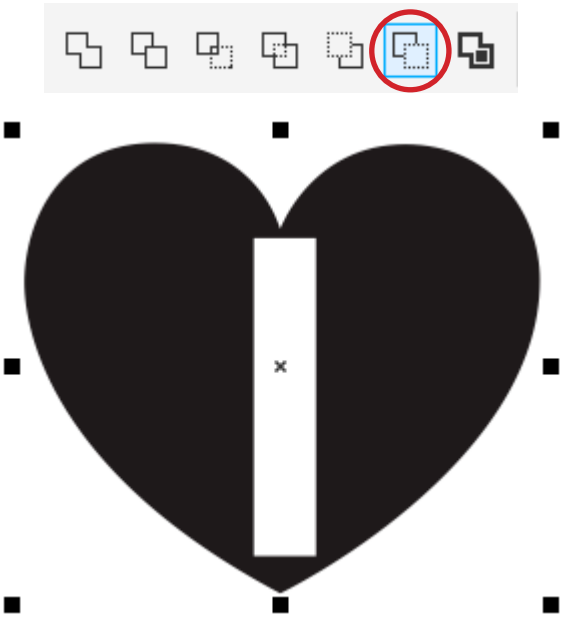
Once you have your type the way you want, you need to convert it to curves. Go to OBJECT MENU > CONVERT TO CURVES. To manipulate the letters individually, go to OBJECT MENU > BREAK CURVE APART. Use the Pick Tool to select the two shapes that make up any letters that contain holes such as the letter D in this example. Click the Front Minus Back option to knock out the center of the letter. Repeat this for all the letters with holes. Now you can manually adjust the letters if needed. When moving the letters, hold down the shift key to lock the movement of the letter along the horizontal axis so all the letters only move from left to right and remain on the same baseline.

12

In this particular layout, the letter "I" was knocked out of a heart shape. To do this, use a vector clip art image that you already have or download one from the internet. Open the clip art file, select the heart, copy it (EDIT MENU > COPY) and then paste it into your new file (EDIT MENU > PASTE).

13

Use the corner handles and hold down the shift key to resize your heart proportionately. Position it over the letter "I." Once you have your heart in place, make sure that the heart curve is below the letter "I" curve in your Object Manager Docker. Select your letter "I" and fill it with white so that it's easier to see where it is located. You may need to move the letter "I" over to the left to make room for the heart. Once you have the heart and the "I" in position, select them both using the Pick Tool and click on the Back Minus Front option. This will create a hole in the center of the heart in the shape of the "I".



14

Now select your image and all of your text elements. Click the Weld option to unite all of your individual curves into one single curve like you did previously in Step 9.

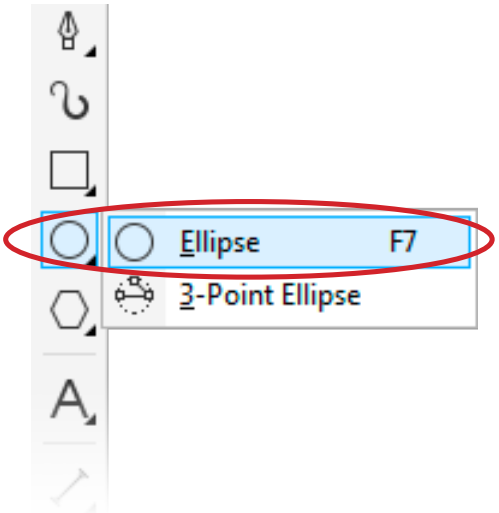
Save your document as outlined in Steps 7 and 8 on page 25 in the lesson on Creating a Simple Text Layout.

CHECKING LINE THICKNESS AND SPACING

In order to cut your designs quickly and efficiently, proper line thickness and spacing should be used. Sizing can vary depending on material being cut, quantity of images being produced, size of the design, and detail of design. Here's a way to help you check your line thicknesses and spacing and make adjustments if needed.

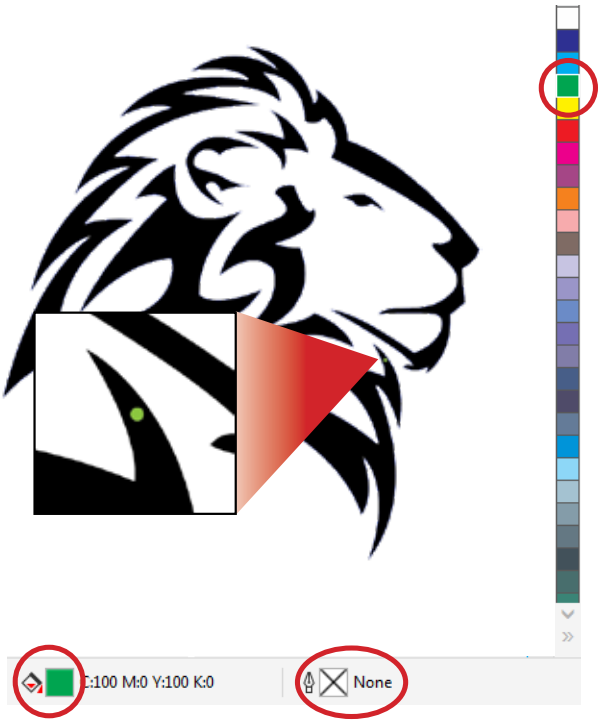
1

Once you have your layout completed, use the Ellipse Tool to create a small circle. Hold down the Control Key while creating your circle to constrain the proportions and make it a perfect circle. We normally use 1/16" or .06". This is a good starting point. You can make it smaller or larger depending on your needs, material you are using, or how fast you want to be able to cut and weed your designs.



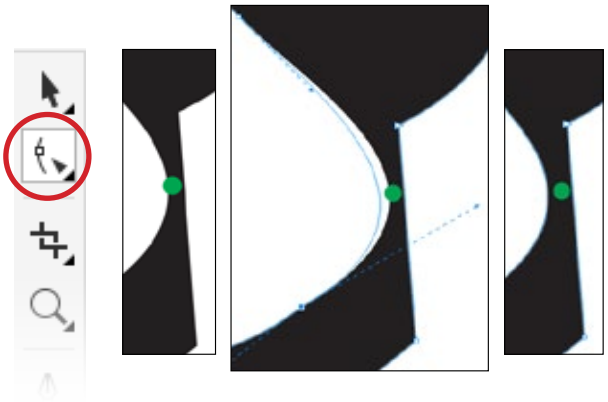
2

Fill the dot with a bright, contrasting color to make it easier to see as you move it around your design. Set the Outline color to None. Move the dot all around your image over lines and in spaces to check to make sure that they are at least the same thickness of the dot if not more.



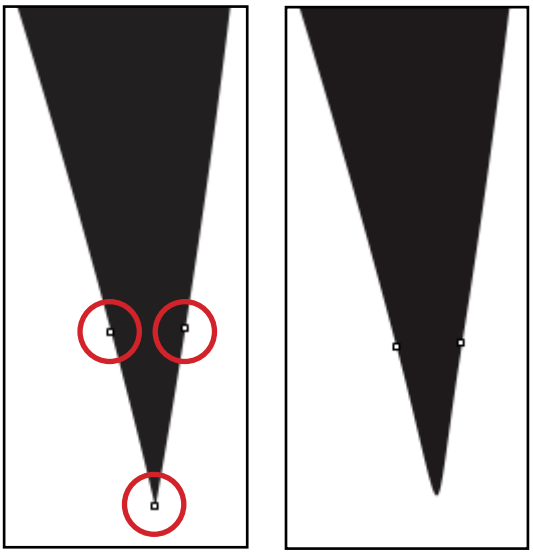
3

If you come across an area that is smaller, use your Shape Tool to select and move the nodes and/or Bezier Handles along the curve to adjust the curve until the line thicknesses and spacing are corrected.



4

Make sure your tips are rounded instead of a single exact point. This will help the knife move smoother around points, making the cutting process quicker. To round out a point, use the Pen Tool and click along the curve on both sides of the point. Then click on the node at the tip to delete it. By adding the extra nodes on the sides, the Bezier handles that result help to round out the tip once that node is deleted. Use the Shape Tool to select the Bezier handles to adjust the roundness of the tip until you get the shape you want.



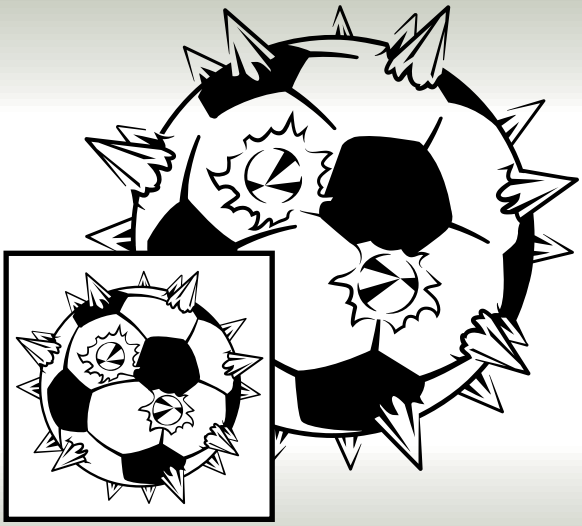
5

If you have an area that comes to a point, it will obviously become smaller than your dot as it reduces in size toward the tip of the point. In this case, you want to make sure that your points are not too long and skinny, as the material can curl up during weeding.

Using these tips to make adjustments to your designs will help the cutting and weeding processes go a lot smoother which will help you save time in your production process.

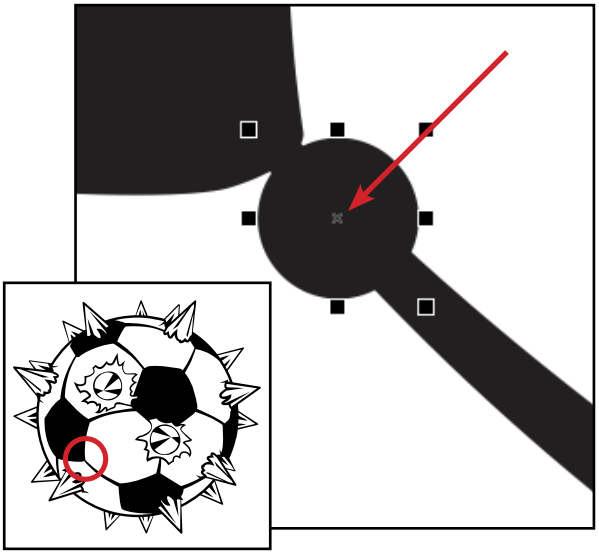
REDUCING THE AMOUNT OF CAVITIES

To aid in speeding up the weeding process, creating artwork with the fewest amount of cavities is beneficial. Each cavity will need to be pulled individually. The smaller the number of pulls, the quicker you will be able to weed an image. You may be able to reduce the number of individual cavities by creating an opening between two cavities that are next to one another, turning it into one pull. This lesson explains some ways to do that.



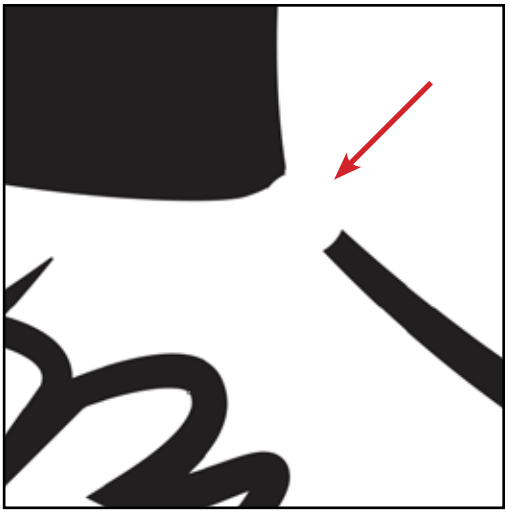
1

If you have an image that was welded into a single curve, one way to create an opening in a line is to create another small shape on top of your design where you want the opening to be. Place a small square, circle, or other shape over the area that you want to knock out.



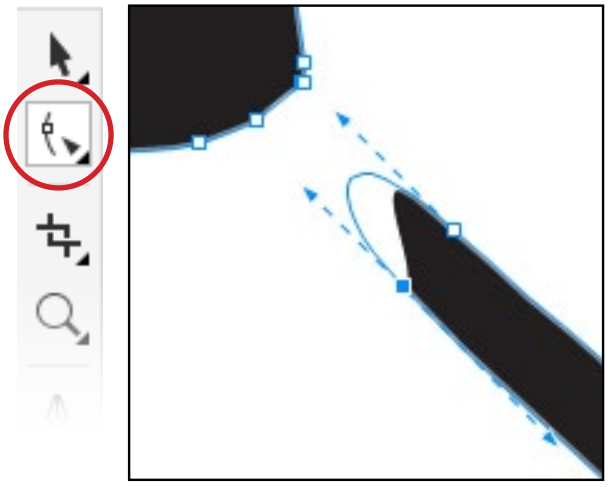
2

Check your Object Manager Docker and make sure the layer of your new shape is on top of the original artwork curve. Select both the new shape and the image using the Pick Tool. Click on the Back Minus Front option at the top of your window. The new shape will disappear, but an opening will be knocked out of the image below in the same shape.



3

Now you can use the Shape Tool and click on the individual nodes and Bezier handles to move and make any additional modifications to the shape.

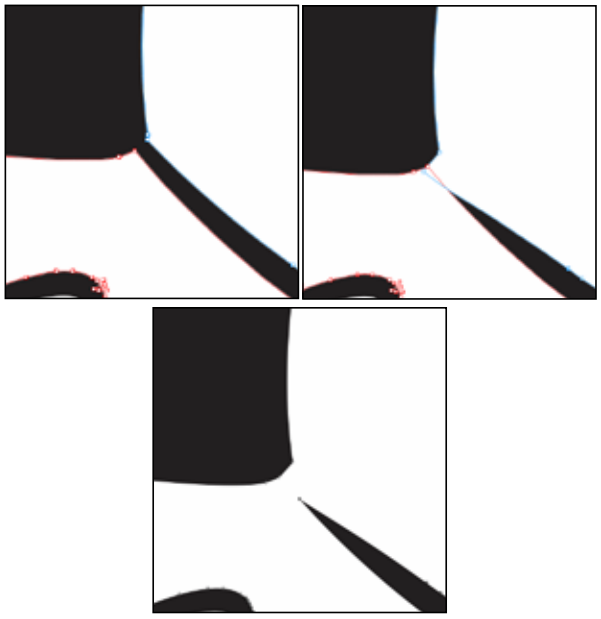


4

If your initial file is not saved as a single curve, but is still in multiple layers, here is how you can manipulate the curves of two cavities that are next to each other to create one.

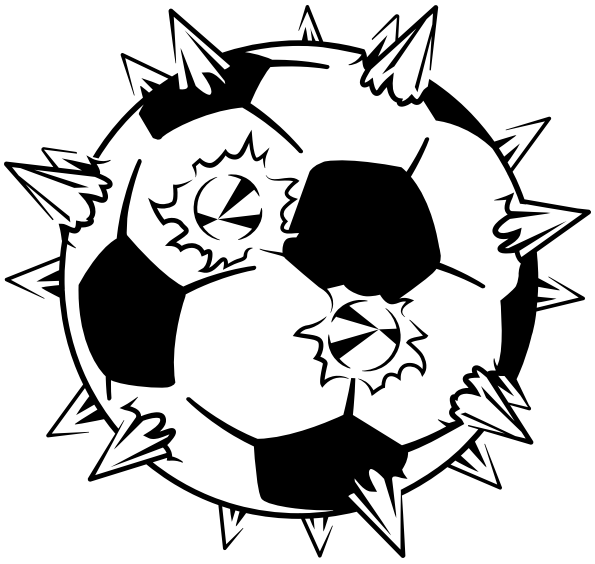
Use the Shape Tool to select nodes and adjust the curves so that sections of the two shapes overlap.

Use the Pick Tool to select both shapes. Then using the Weld option at the top of the page, weld the two shapes together into one to create a single cavity. If needed you can use your Shape Tool to adjust the nodes and Bezier Handles to fine tune the shape of the new opening you created.



5

By making slight modifications to your images, you can reduce the number of cavities in the image to make it quicker to weed, reducing production time without losing the integrity of the design.



OVERLAPPING TEXT

When you add text to a vinyl cut image that is saved as a single curve and choose to overlap the two, you may need to make adjustments. Certain parts of the type may stick out or cover up areas of the image. You can manually make modifications to the shape of your type in order for it to work with the image. This lesson will give you an example of how to do this.

1

Go to FILE MENU > OPEN and choose the file of the image that you want to work with.

2

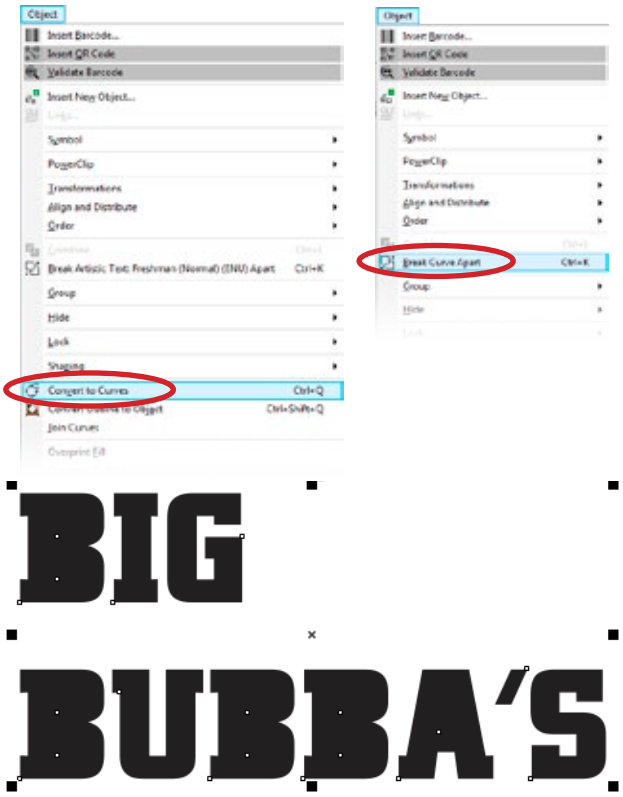
Using the Type Tool, click anywhere on your page and type in your copy. Use the Text Properties Docker (WINDOW MENU > DOCKERS > TEXT > TEXT PROPERTIES) to choose your font, point size and other text attributes. The font used in this layout is called CityDBold.

3

Using the Pick Tool, you can select, rotate and resize your type in regards to your image. In this case the type was rotated to fit with the image. Select the type and use the corner and side handles to resize your type if needed. Click on your type again to activate the rotate option so that you can turn and position your type to work with your layout.

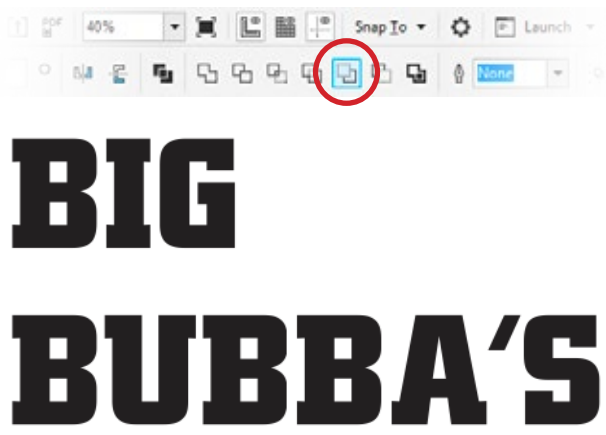
4

In order to be able to manipulate your type later in this lesson, go to OBJECT MENU > CONVERT TO CURVES, then go to OBJECT MENU > BREAK CURVE APART. When this is done, the holes in letters such as the "A" and "B's" in this layout become their own shape so the letters look solid.



5

Use the Pick Tool to select the center hole shape and the outer shape of a letter, and click on the Front Minus Back option at the top of your window to knock out the hole in the letter again. Repeat this for each letter that contains a hole.

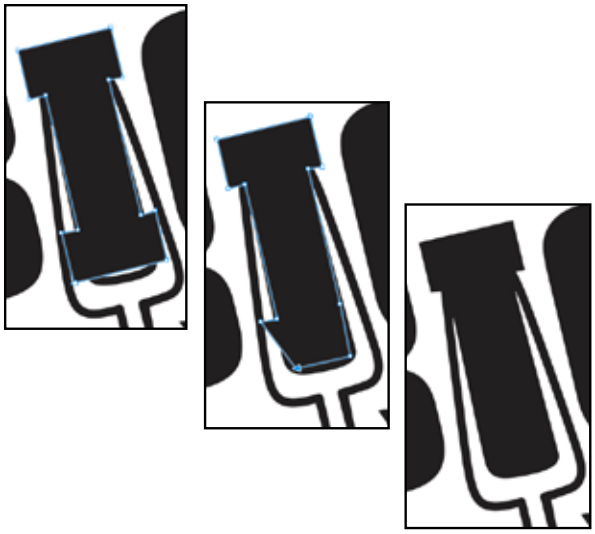


6

Use the Pick Tool to select and move letters into position. Hold the shift key down to select more than one letter at a time such as B-I-G. Position them where you want them. If you need to rotate the word some more, click again on the selection.

7

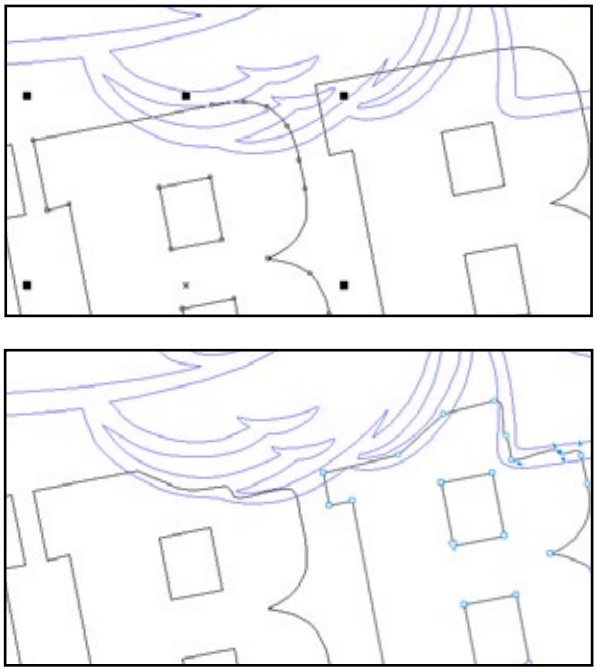
With the type in position, you'll be able to see the areas that need to be adjusted. Use the Pen Tool to click on any unwanted nodes to delete them. Use the Shape Tool to select and move nodes to adjust the curve of the letter so that it follows the shape of your image. As you can see in this example once the curve of the letter "I" is adjusted, it looks like it is stuck in the fork.



8

When adjusting overlapping areas, sometimes it may be easier to see where to make the adjustments by viewing it in Wireframe mode (VIEW MENU > WIREFRAME). You can use your Pen Tool to add nodes along the curve of your letters. This can help to "anchor" a certain area of the curve so that you can then use your Shape Tool to move and adjust any additional nodes to form the proper shape.

As you can see in this example, the nodes on the curves of the "B's" are moved so that they follow the outline of the pig's hand.



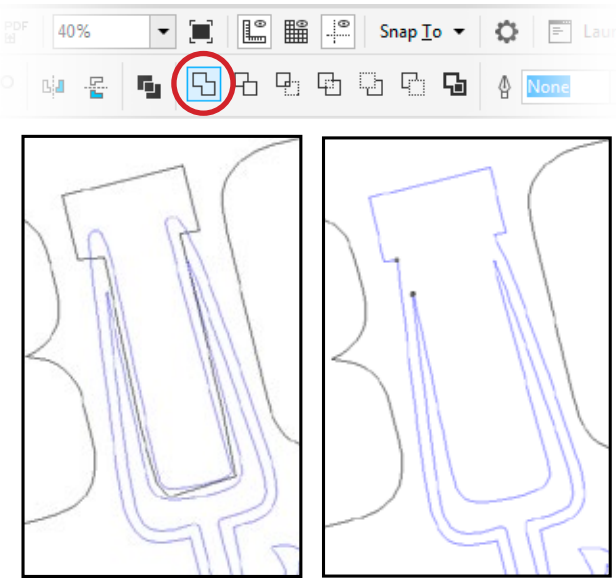
9

Once all the adjustments are made, go back to Normal Mode (VIEW MENU > NORMAL), and you'll see how the type looks like it's behind the pig's hand and arm. For artwork set up for other production methods, you wouldn't have to do this. You could simply place the type behind the image. The negative areas aren't knocked out like they are for a vinyl cut image so you can't see the area of the type the falls behind the image. For vinyl cut images that are set up as a single curve, the negative space is knocked out and if you place the type behind the image, it would still show through. For this reason you need to manipulate the paths in the manner explained here.

10

Once you have all of your adjustments made, save your file as it is with all the layers in case you need to come back later to make any adjustments.

Use the Pick Tool to select all the elements in the layout and click on the Weld option at the top of your window to merge all the curve layers into one single united curve layer.



11

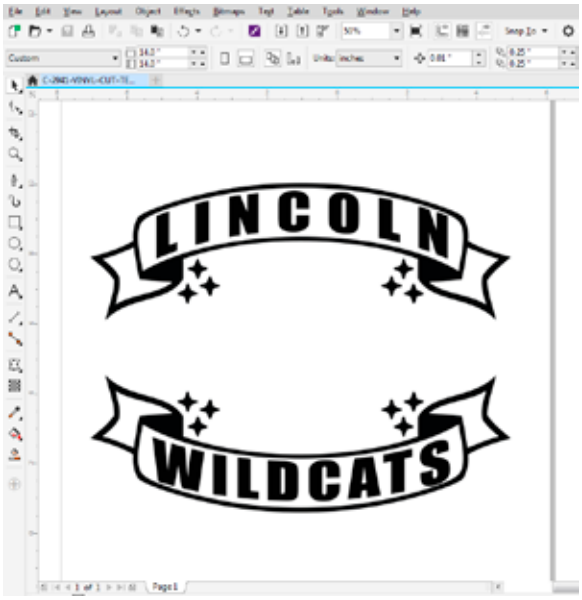
Now you can save your final cuttable image as explained in steps 7-8 on page 25 in the lesson on Creating a Simple Text Layout.

USING TEMPLATES

A quick way to create a complete layout is to use stock vinyl cutting templates. However when combining elements with templates there may be some adjusting that needs to be done for the layout to look correct and for the image to cut properly. Nodes may need to be moved, or areas may need to be knocked out or welded. In this lesson we'll show how to add an image to a stock vinyl cutting template and make adjustments to complete the layout.

1

Start by going to FILE MENU > OPEN and opening the template file that you want to use. Size the image to the dimensions that you desire.

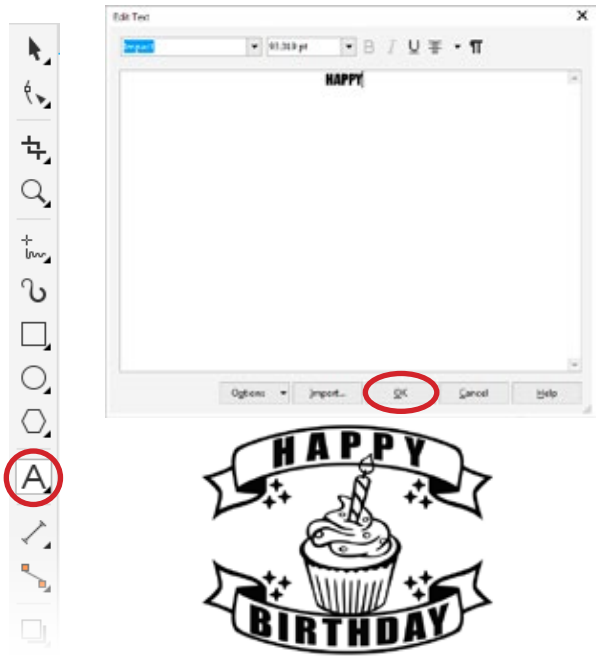


2

Next, open the file of the image that you plan to use with your template. Select the image and go to EDIT MENU > COPY. Go back to your opened template layout file and go to EDIT MENU > PASTE to place your image on the same page as your template. Hold the shift key down and grab the corner handles to adjust the size of the image until you get it to fit in the area of the template the way you want.

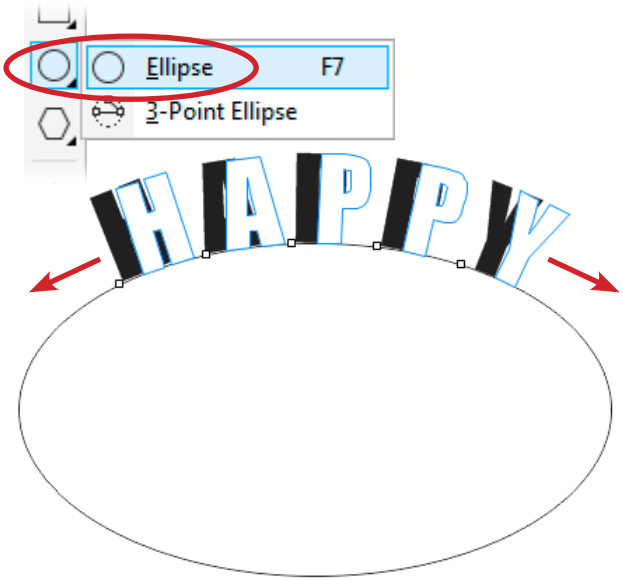
3

If your template has editable text, use your Type Tool and click on the type that you want to change. In the Edit Text Window, enter your new text. Click OK.



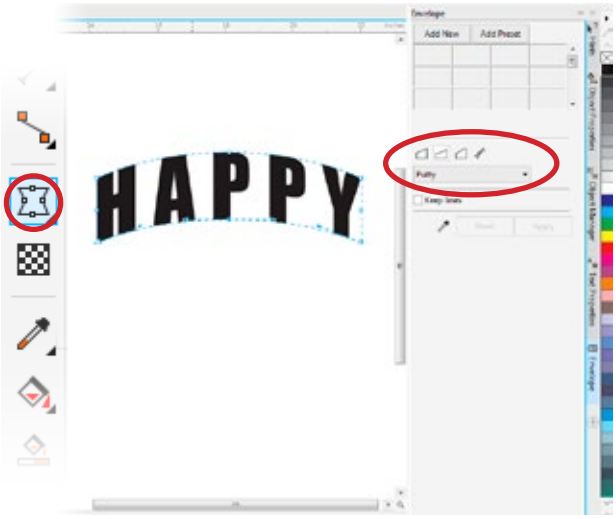
4

If your template doesn't contain editable text or you want to add additional text to your layout, you can follow Steps 2-4 on pages 23-24 in the lesson on Creating a Simple Text Layout. If you would like to add type on a curve, create an oval shape using your Ellipse Tool. Select the Type Tool, click on the oval shape and begin typing your text. To move the type, click on the type and move it back and forth until it's positioned on the curve where you want it.



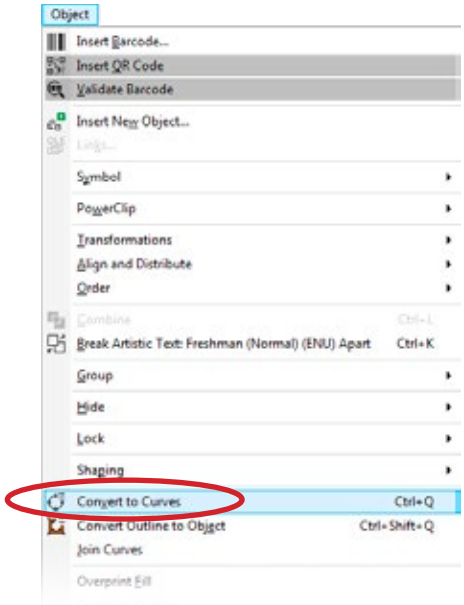
5

Another way of creating type is to use the Envelope Tool. This is how the type was created in this template. Use the Type Tool to create your line of text. With the text selected click on the Envelope Tool to apply the outline which you will use to grab nodes and adjust the shape and position of the type. Open your Envelope Docker (WINDOWS MENU > DOCKERS > EFFECTS > ENVELOPE). In the Envelope Docker you can select different options to help create different text shapes. Grab the nodes along the dotted outline around the text to adjust the shape of the type layout. Click off the type once you have the desired shape.



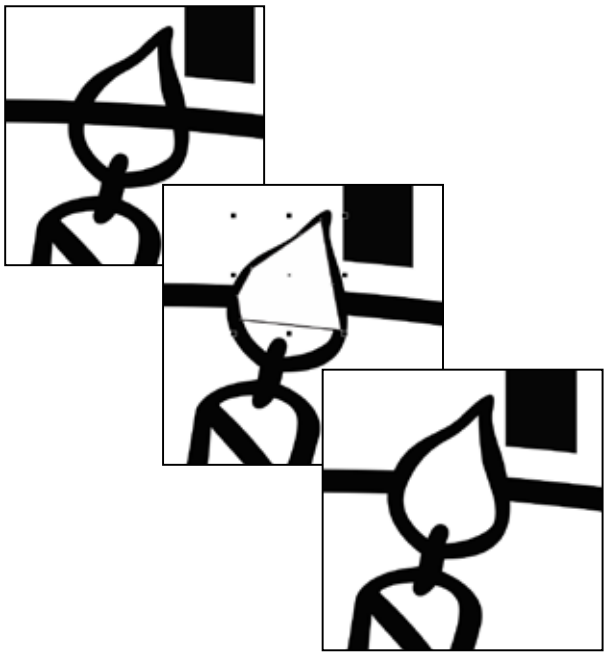
6

Once you have all of your type in position, you'll need to convert it all to curves. However you may want to save your file in it's current state with your live text in case you ever need to come back and make a change in the future. Select the type and go to OBJECT MENU > CONVERT TO CURVES.



7

Now that you've got your image and text in place, you're ready to make any adjustments to overlapping areas. You can use the Pen Tool to delete any unnecessary nodes. You can use the Shape Tool to select and move nodes as was discussed in Steps 7-8 on page 43 in the previous lesson. You may need to knock out areas that crossover one another like the bottom line of the banner and the flame in this example. Use the Bezier Tool to create a shape by clicking around the area where you want the knock out to be. In this case, the flame area. Use the Pick Tool to select the new shape, and the element that needs to be knocked out — the banner. Click the Back Minus Front option at the top of your window and you'll see the piece of the banner that crossed over the flame is now eliminated so it looks like the flame is on top of the banner.



8

Use the Pick Tool to select all the elements in your design, and click the Weld option at the top of your window to merge all the individual curves into one.

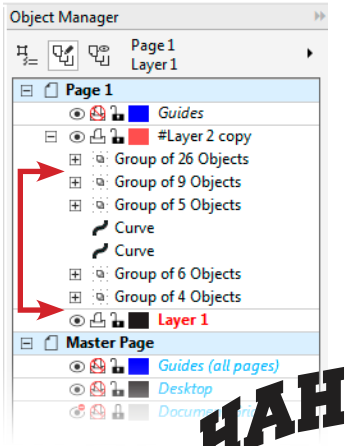
Now you can save your final image as explained in steps 7-8 on page 25 of the lesson on Creating a Simple Text Layout so that you can bring that file into your cutting software to cut your image.

CREATING A TWO-COLOR LAYOUT

When creating a two-color vinyl cut design where colors do not overlap, you'll follow the same rules and tips explained in the previous lessons. In this case however, you'll weld elements of the same color into separate single curves. This will allow you to cut each color independently of the other.

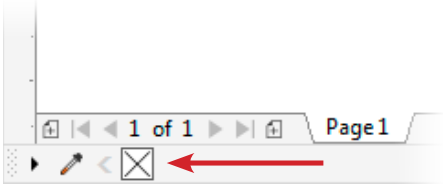
1

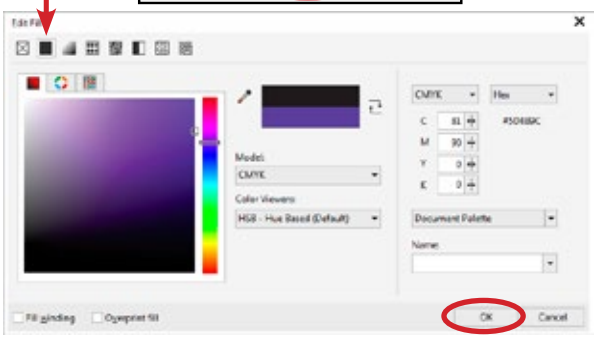
Create your layout using the methods discussed in the previous lessons but keep each main element as its own curve or group of curves.



2

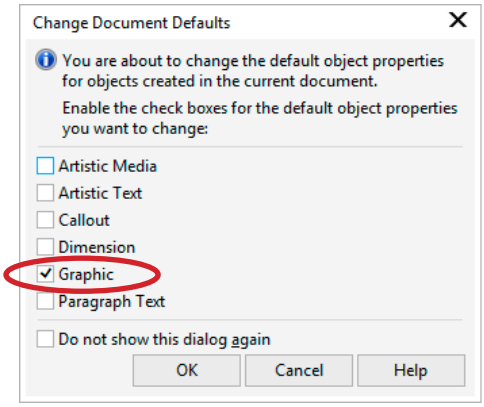
In the Documents Color Palette located in the bottom left corner of your window, you'll see there are no colors listed. You can use the preloaded color palette options available on the right side of your window, but in this case we are going to create two new colors. Double click on the empty Fill Swatch at the bottom right of your window. When the Edit Fill Window opens, click the Uniform Fill option, select a color from the Color Picker area and click OK.

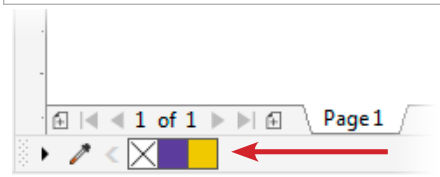




3

When the Change Document Defaults Window opens, make sure there is a check in front of "Graphic." Click OK. You'll see the new color added at the bottom left in the Documents Color Palette. Repeat Steps 2-3 for each new color you want to add.



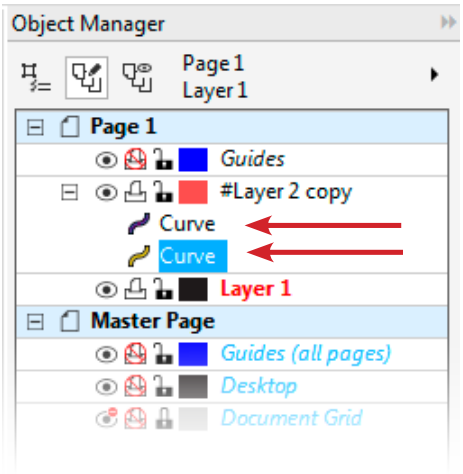


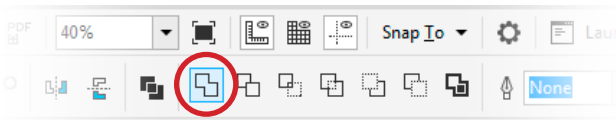
4

Use the Pick Tool to select elements in your design and fill them with the appropriate color from the Documents Color Palette. Just click on the approriate color swatch and the shape will automatically fill with the color.

5

Once you have the color applied to your entire layout you can begin combining curves of like color. In the end you will only have two curves - one for each color. Use the Pick Tool and select all of your purple curves. Click on the Weld Tool at the top of your window to combine all the curves into one, single curve. Repeat this for all the yellow curves. When you look in the Object Manager Docker, you should see one curve for each color listed that can now be cut independently from each other by your cutter.





Save your file as explained in Steps 7 & 8 on page 25 and then open your file in your cutting software to set up to cut one color at a time.

CREATING A MULTICOLOR VINYL CUT DESIGN WITH OVERLAPPING COLORS

When it comes to creating a multicolor vinyl cut design, the number of colors, types of vinyl being used and the construction of the layout need to be taken into consideration. Not only can some vinyl materials not be overlapped, the more overlapping colors there are, the heavier the design will feel on a garment. This is one reason, the number of colors is normally limited. However you can knock out colors to eliminate the build up allowing you to use more colors without creating a heavy, uncomfortable design on a garment.

1

Create your design in the fashion of your choice. In this design, the type was sketched by hand and then traced using the Bezier Tool. The trees and camper were created using the Bezier Tool and various other shape tools. Use the preloaded color palettes or create your own colors as mentioned in Steps 2-3 on pages 48-49 in the previous lesson to colorize your design in order to be able to visualize how it will look in the different colored vinyls. Once your layout is complete save a copy of the layered file. That way you'll have a copy with all the components in their current state in case you need to make any revisions in the future.

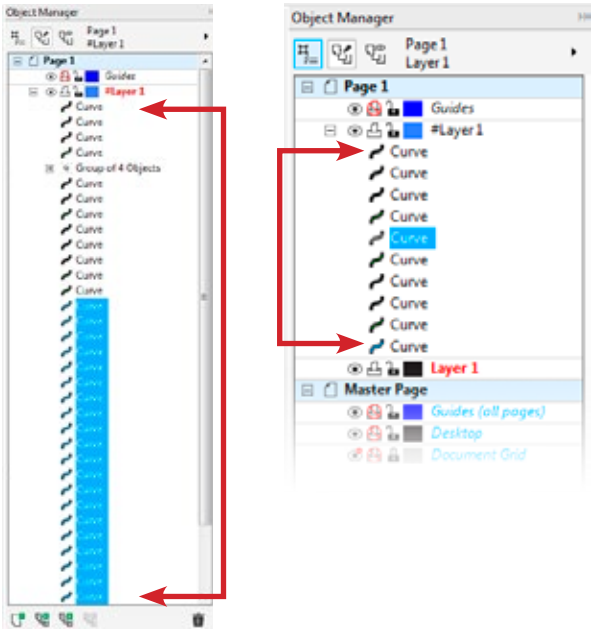
2

What you are working towards is welding and knocking out curves of the same color until you have one curve for each color with no areas of different colored vinyl overlapping.

Using the Pick Tool, start by selecting elements of like color that are layered on top of each other in your Object Manager Docker such as all the blue curves that make up the type in this layout. Any elements of like color that are layered on top of one another can be welded together. You can try to weld elements of the same color that may not be layered directly on top of one another, just notice if it effects the look of the design. An area may end up being covered up as a curve moves in the layer order when it is welded with others. So you may need to wait and weld the additional colors later as you begin to knock out areas.

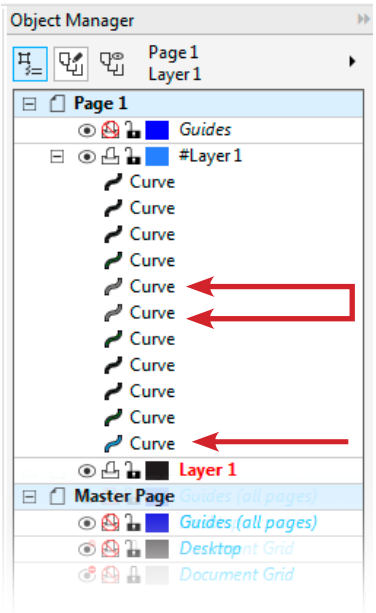
3

Continue welding elements of like color without effecting the look of the design until you have the fewest amount of curves as possible at this point.



4

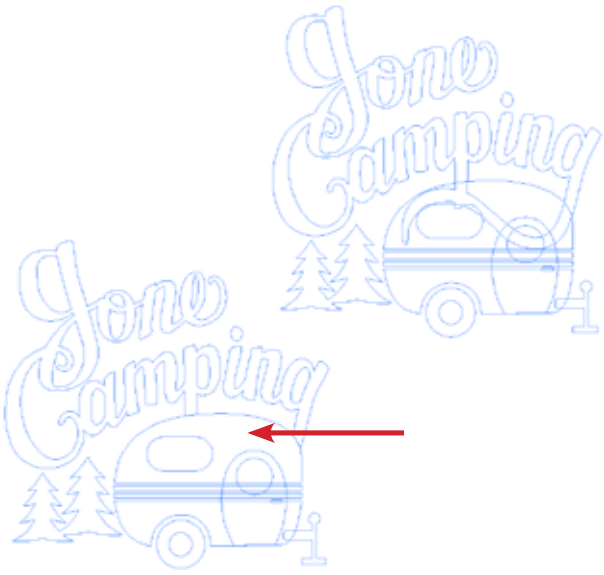
Now you can begin to knock out areas that overlap. Start with the bottom curve listed in the Object Manager Docker and see if there are any curves above that over lap it. In this example the silver trailer overlaps the blue type. Use the Pick Tool to select the curve of the silver trailer. Duplicate that curve by going to EDIT MENU > COPY, then EDIT MENU > PASTE. You need to duplicate the curve that you will be knocking out, because it will disappear once it is knocked out and you want to retain a copy of the original shape.



5

Use the Pick Tool to select one of the duplicate shapes and the element you will be knocking it out of, in this case the type. Click the Back Minus Front option at the top of your window and you'll notice that the area of the type that overlapped the trailer is now gone.

Repeat this process for any two curves that overlap. If you have curves of like color that could not be welded together earlier because of items overlapping, you can try to weld them now as you knock out areas.



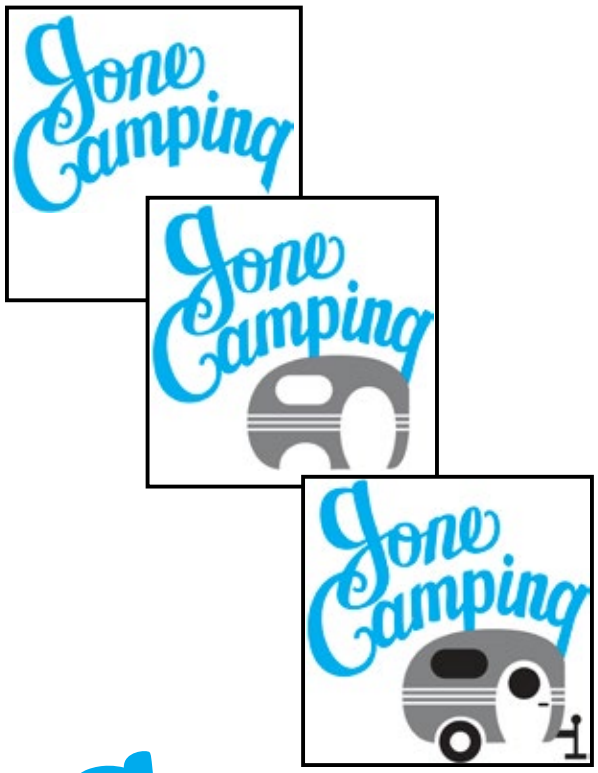
6

It's a matter of taking it a curve at a time, adjusting the layering of the curves appropriately and welding and knocking out layers as necessary. There will be some trial and error and a lot of undoing as you get used to the process, but the more practice you get and the better understanding of how these functions work, the quicker and easier it will be for you to set up your multicolor designs for cutting.

In the end, you should be left with a single curve for each color.

7

The layer order of your curves will give you an idea of how it will look as you press it on your shirt with the bottom curve being first and so on upward. You can rearrange the layer order of your curves if you'd like to see a different production order. Rearranging the order or viewing the image in Wireframe Mode will allow you to notice if there are any areas that still overlap that you may have missed which you can knock out now.



8

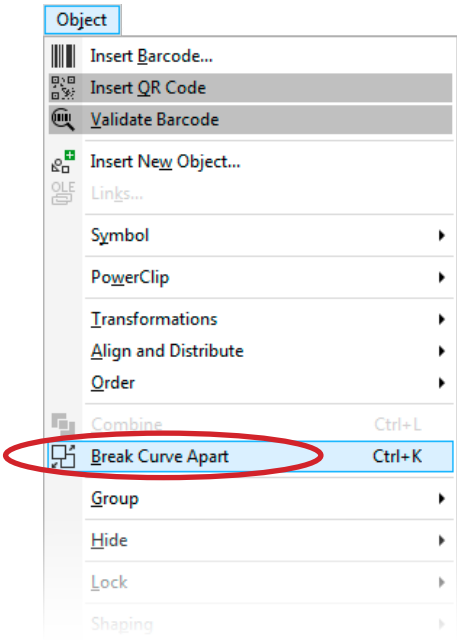
Once you've double checked everything you can save your final cut file as explained in Steps 7-8 in the first lesson of this chapter on Creating a Simple Text Layout (Page 25).

BREAKING APART A SINGLE CURVE IMAGE TO CREATE A MULTICOLOR DESIGN

What if you have a single color vinyl cut design that was saved as a single curve and now you want to turn it into a multicolor design? As a welded, single curve you can't select individual shapes any longer, so you'll need to break apart the curve in order to be able to select and color different areas individually. In this lesson you'll see how to break apart a curve and reconstruct the image into a color design.

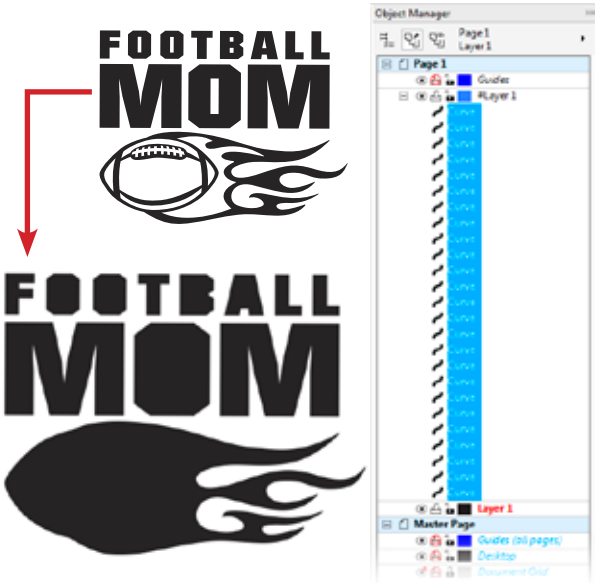
1

Open your design and select your single curve image using the Pick Tool. Go to OBJECT MENU > BREAK CURVE APART.



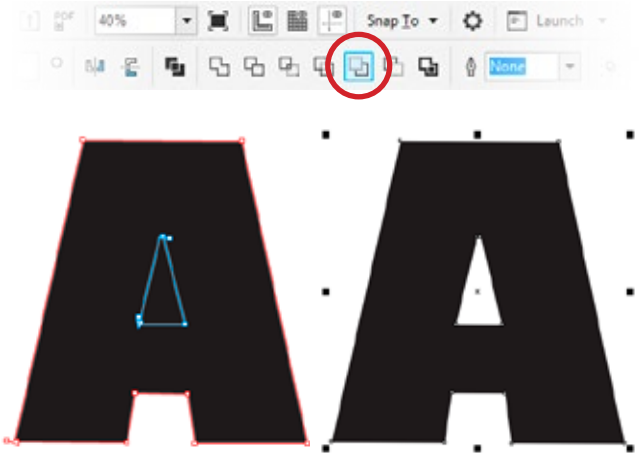
2

You'll notice when the curve is broken apart, all the individual shapes in the design will become its own separate curve filled with black.



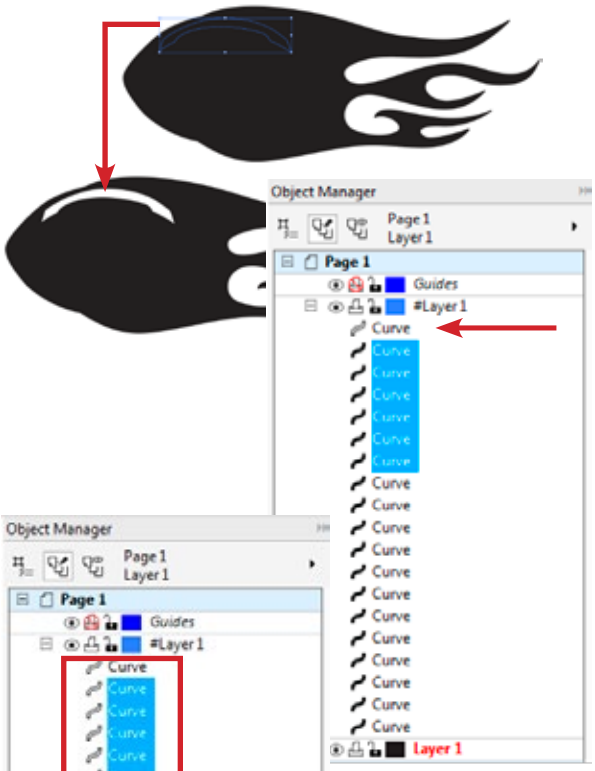
3

Letters that have holes in them will need to be rejoined. Use the Pick Tool to select both curves that make up the letter and click on the Front Minus Back option at the top of your window. Repeat this for all letters or other objects that should have an opening in them. Make sure the opening curve is underneath the curve of the outer shape.



4

Because everything is now colored black and split apart on separate layers, you'll have to go down the list in the Object Manager Docker and reconstruct the layout in black and white before you can add your color.

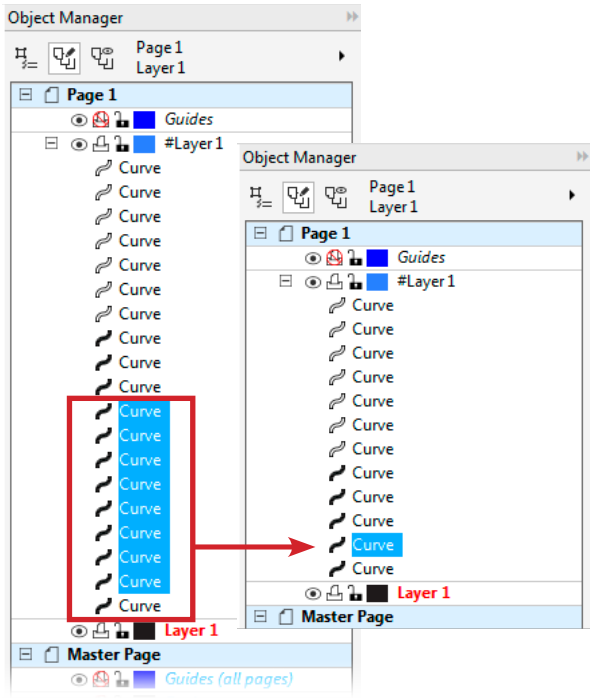


5

Continue filling in curves with white. As you progress further down the list, you'll start to see the layout take shape again. Depending on the complexity of the design, you may find curves which need to alternate white fill and black fill to recreate the design correctly. If you select a curve and are unsure of what color it should be, try filling with both black and white until you can determine the correct color to use. You may also find that the order of some of the curves need to be moved to properly recreate the image. Viewing the image in Wireframe Mode periodically can also help you determine which color a shape may need to be filled with.

6

Use the Pick Tool and select like elements such as all the letters in a line of type and weld them together to help reduce the number of layers and make it easier to manipulate.



7

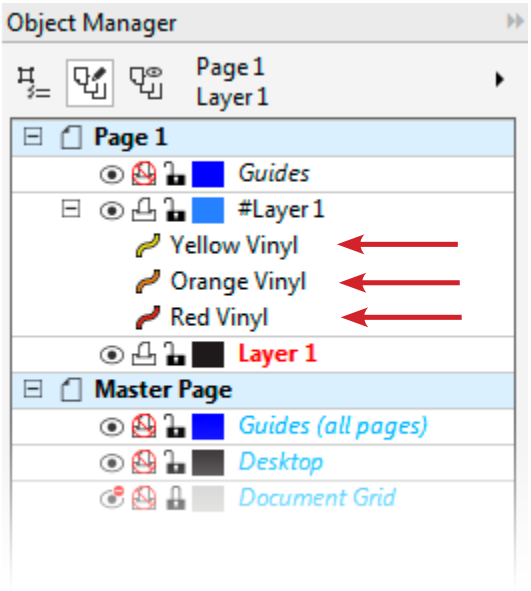
Once you have your layout completed in black and white, you can begin to create the color version by selecting the shapes and filling them with the colors of your choice. You can use colors from the Preloaded Color Palette or create your own as outlined in Steps 2-3 on pages 48-49.

When done, save a copy of this layered version in case you need to come back to it in the future.

8

Refer to the previous lesson on Creating a Multicolor Vinyl Cut Design with Overlapping Colors on pages 50-52 to weld and knock out layers until you're left with a single layer for each color as its own curve. Rename each curve to make it easier to identify what curve corresponds to what vinyl color. To do this, right-click on the curve in the Object Manager and then select Rename to change the name.

Save your final vinyl cut file as explained in Steps 7 & 8 on page 25.

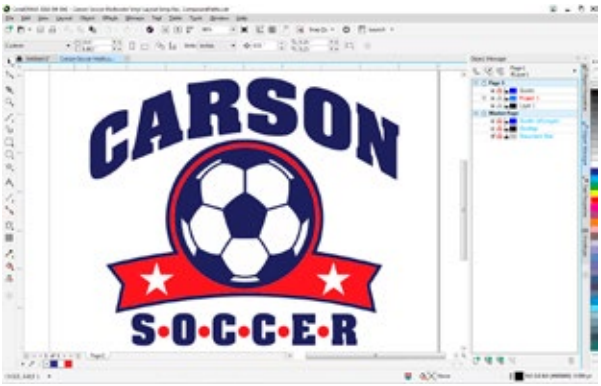


EXPANDING SHAPES TO CREATE A TRAP

When creating a multicolor vinyl cut design that has the colors knocked out of each other, you may see gaps showing between two adjacent colors if the shirt shrinks due to the heat from the press each time you apply a color. You can try to reduce the press time for each color, but if that doesn't solve the problem another possible solution could be to create a trap. A trap is the slight overlapping of one color over another to help fill in any visible gaps. To do this, you'll need to expand the shapes slightly as explained here.

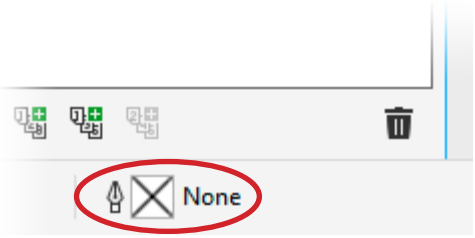
1

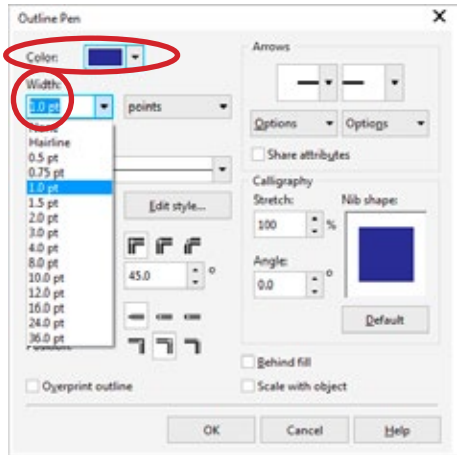
Open a design that you may have run into issues with already, or create a new multicolor design as explained in the lesson Creating a Multicolor Vinyl Cut Design with Overlapping Colors on pages 50-52.



2

To create a trap between two colors such as the red and blue in this image, select one of the elements and add a .5 - 1 point outline in the same color. To do this, double click the Outline Swatch at the bottom right of your window to open the Outline Pen Window. Select the color, and set the width of the outline. Click OK.

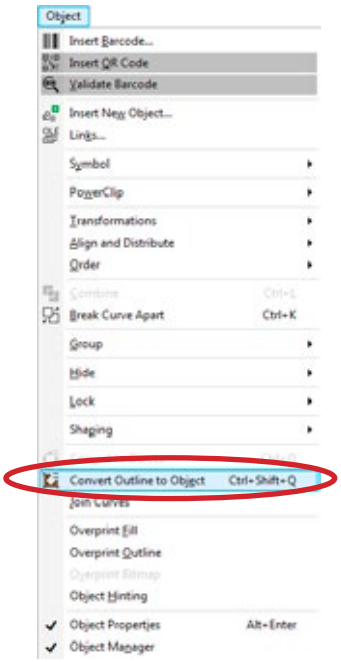




Something to keep in mind is that your outline is aligned to the center of your curve. So one half of your selected Width Size will fall on each side of your curve. If you set your Width Size to 1 point, the trap size will be .5 point. If you set it to .5 point, the trap will be .25 point.

3

Go to OBJECT MENU > CONVERT OUTLINE TO OBJECT. This function transforms your outline into it's own curve.

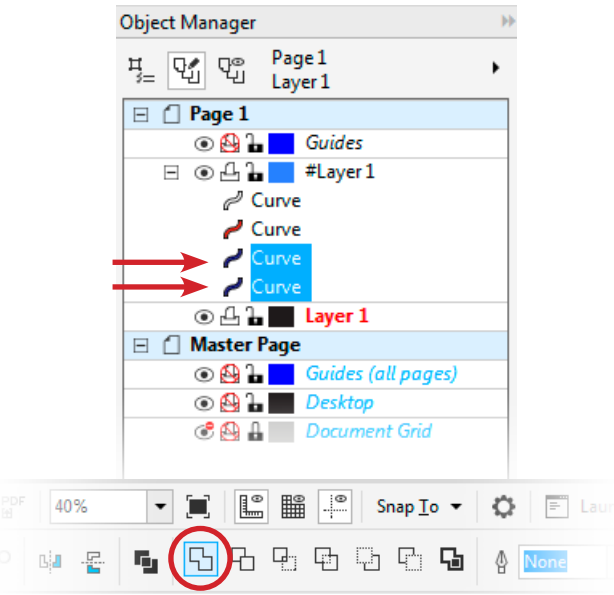


4

Using the Pick Tool, select the outline curve that you just created, and the artwork curve. Click the Weld option at the top of your window to merge the two together.

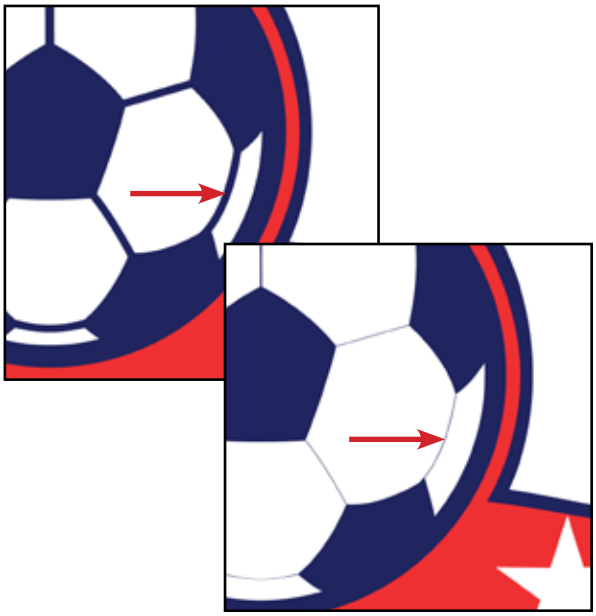
When you weld the two curves together they become one solid unit and the cut line will now follow along the outer edge of the outline that you had created.

Repeat steps 2-4 for any additional colors that you want to trap.



5

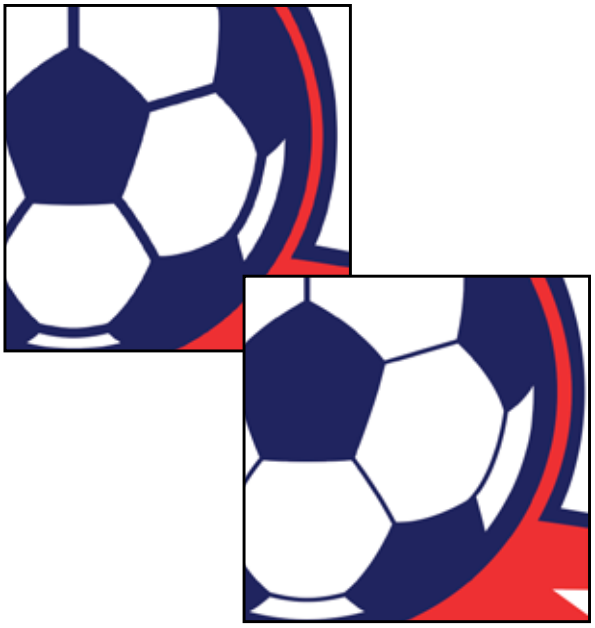
The amount that you expand and whether you should only expand certain colors or all colors, depends on your design and how big of a gap is created. You can start with approximately .5 - 1 point and adjust accordingly depending on if you need more or less. You may find if your design is too intricate or has a lot of thin lines and spaces, it may not be possible to expand the shape, because spaces may fill in and shapes may bleed into one another, merging into single elements. If this happens you can try to expand only one color instead of both or reducing the expansion size. It's a matter of trial and error to see what works. It's a good idea to arrange your curves in the order that you plan to apply them with the first color to be applied at the bottom of the list, the second color on top of that curve, and so on upward. That way you can see if any areas are filling in or being covered and make any adjustments if needed.



6

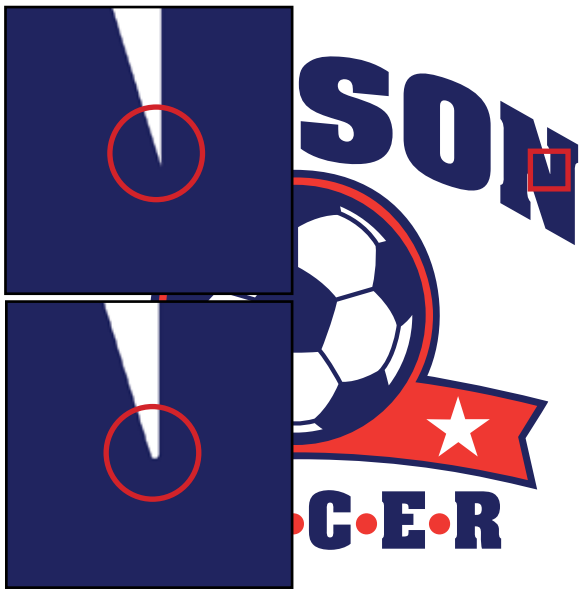
If you decide to only expand certain colors, something to consider when you are choosing which layers to expand, is to try expanding the colors that will be applied first. That way when the top color(s), which have not been expanded are applied, the trapped edge of the underlaying color will be covered and the outline of the design will retain its original look.

In this example the white was expanded. If you press it after the blue, the trap of the white will cover the blue and the blue lines will be thinner. If you press it before the blue, then the blue will cover the white and the blue lines will retain their original thickness.



7

After you've expanded all the necessary layers, zoom in and scan your design to see if any small shapes may have been created after expansion that you may need to delete, or if any areas may need to be cleaned or adjusted to produce a smoother, cleaner cut line.



8

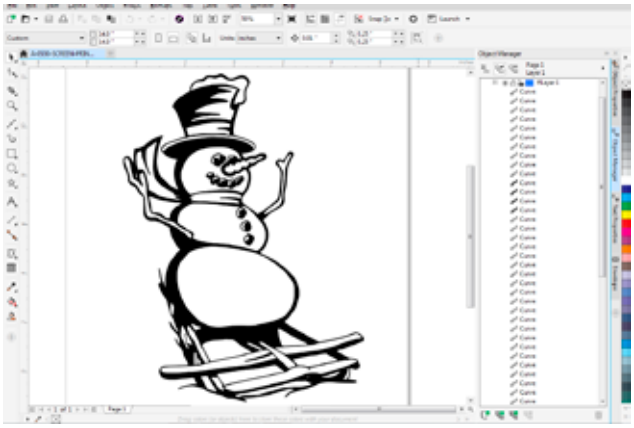
Always save your original layout before you do any expanding in case you need to adjust it using a different outline width. Save your new expanded file using the specifications as explained in Steps 7-8 on page 25.

HOW TO MAKE STANDARD CLIP ART CUTTABLE

Using clip art is meant to be a time saver, but using it for vinyl cutting can be more trouble than it's worth. Standard clip art isn't created with cutting in mind. The layers may not be set up properly. The image may be too detailed. The line thicknesses and spaces may be too thin to cut and weed. It would probably be quicker to create your own design. However, if you have a simple, basic clip art design, you can make adjustments to set it up for cutting that would probably be quicker than starting from scratch.

1

Open the original clip art file in CorelDRAW and size your image to the dimensions you require.



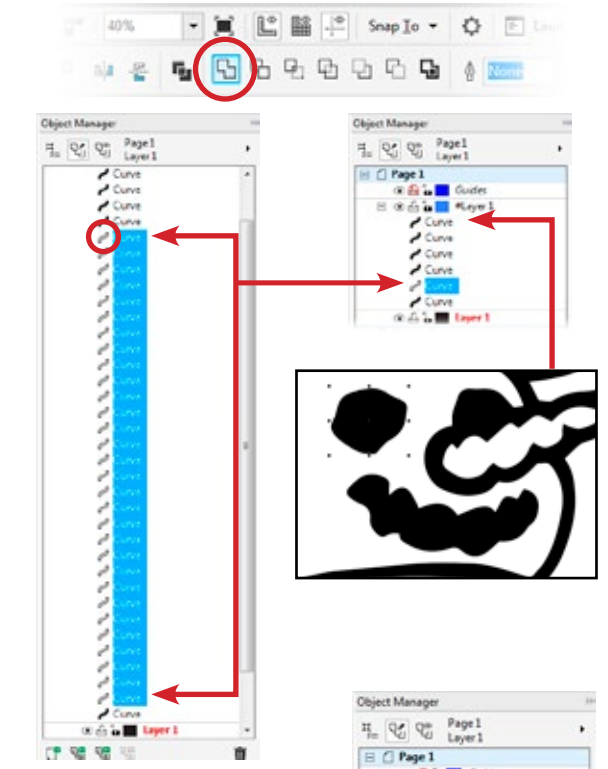
2

Open the Object Manager Docker (WINDOWS MENU > DOCKERS > OBJECT MANAGER). Either go down the list of curves in the Object Manager, or use the Pick Tool to start selecting small shapes that you do not need and delete them. If you delete a shape, and the same shape still remains, click and delete it again. Sometimes depending on how the image was created, some areas may have duplicate curves and both will need to be deleted. By deleting any unwanted shapes first, you'll help reduce the number of curves you have to work with in the upcoming steps.

3

When you look at the curves listed in the Object Manager, you'll notice a small, squiggly line next to the word "Curve". The color inside that icon denotes what color the actual shape is filled with. Select all the curves filled with white. Click the Weld option at the top of your window, to join all of these individual curves into one. This curve will later be used to knock out of the black shape.

You'll notice you may have some stray curves remaining. Those are additional black shapes that make up other areas such as the eyes in the snowman. Those will be welded to the main image in upcoming steps.



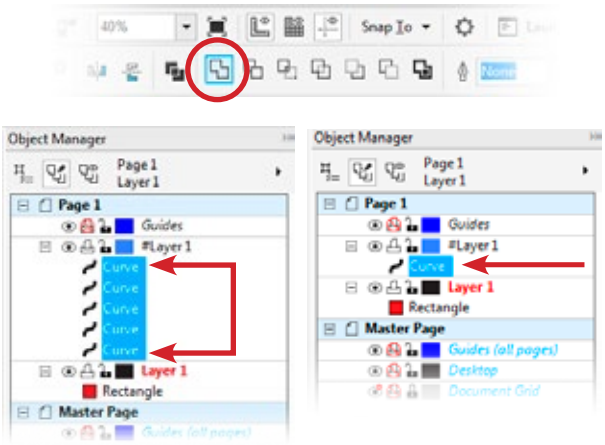
4

Knock out the white curve that you just welded together out of the main black shape at the bottom of the list of curves. Use the Pick Tool to select the white curve and the black curve at the bottom of the list. Click on the Back Minus Front option at the top of your window to knock the white out of the black.

If you make a square and fill it with a color and place it at the bottom of the list of curves it will be easier to see how the white areas are knocked out of the black. It will also help you see if you missed any white areas that may need to be knocked out as well.

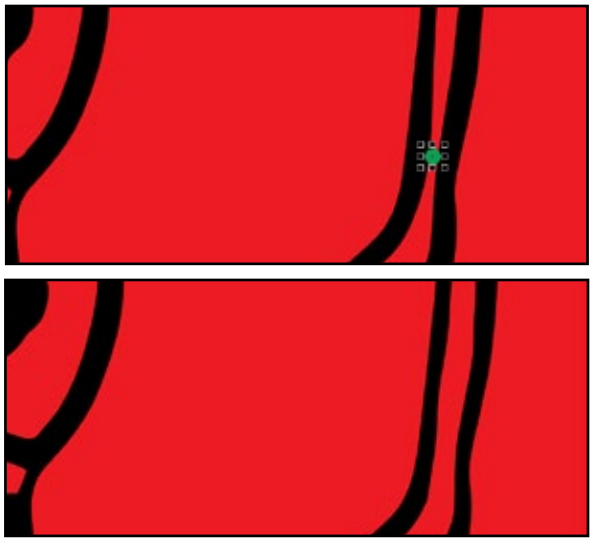
5

Now you can use the Pick Tool to select all of the remaining black curves and use the Weld option to create one single curve.



6

Once you have gotten down to your single curve, you can start making adjustments to the image to make it cuttable. Zoom in and create your dot as explained in the earlier lesson on Checking Line Thickness and Spacing (Page 37-38). Go around your image and make adjustments to the thickness of lines and spaces.



7

Use the Shape Tool to add or delete nodes as needed to make any adjustments. To delete a node, click on it and left click. Select Delete. To add a node, click on the curve, left click, and select Add. This can help in rounding out corners, adjusting line or space thickness, or any other adjustments you may need to do.

Reduce the number of cavities by creating gaps in the lines between openings as explained in the earlier lesson on Reducing the Amount of Cavities (Page 39-40).

8

Once you've made all your adjustments, you can delete the colored background.

Save your file using the specifications outlined in Steps 7 and 8 on page 25.

CHAPTER 3

CREATING ART FOR PRINTING/CUTTING

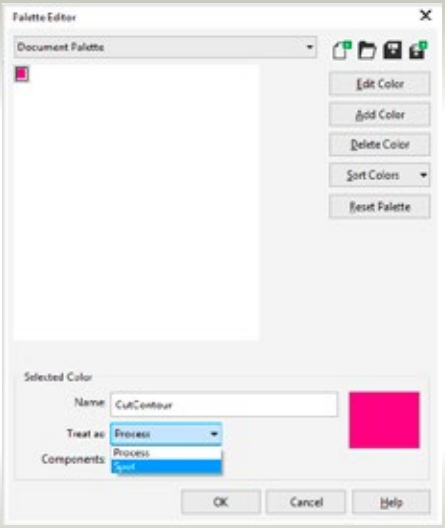
CREATING ART FOR PRINTING/CUTTING

Unlike a vinyl cut design that is made up of vector shapes cut out of vinyl, a print/cut design is as its name suggests: a design that is printed on white vinyl and cut out by a cutter along the outer edge of the design. Since the prints are created using an inkjet printer, they can be in full-color and created as either a vector image or a raster image. Either way, you will need to set up a specific curve around the perimeter of the design, which is a vector outline that the cutter will recognize and follow along to cut your image. Unlike vinyl cutting however, it isn't the curve itself that the cutter will initially recognize to know where to cut. The cut line needs to be outlined with a spot color with a specific name the cutter recognizes. This triggers the cutter to know what curve to follow for cutting.

When setting up a print/cut image, a feature that is unique to this process is the addition of a bleed or a white outline. If you were to cut along the edge of your design without using one of these options, if the blade registration is off, unsightly white areas could appear around the edge of your design. To prevent this, set up a bleed which is an extended area of color around the design using the colors from the edge of the image. So if the cut is slightly off the area will still contain color instead of showing white. Another popular option is to expand your cut line instead of cutting exactly along the edge of your design. That way a white edge of equal distance will be visible along the perimeter of the design. This option is used more for creating stickers as opposed to garment decoration.

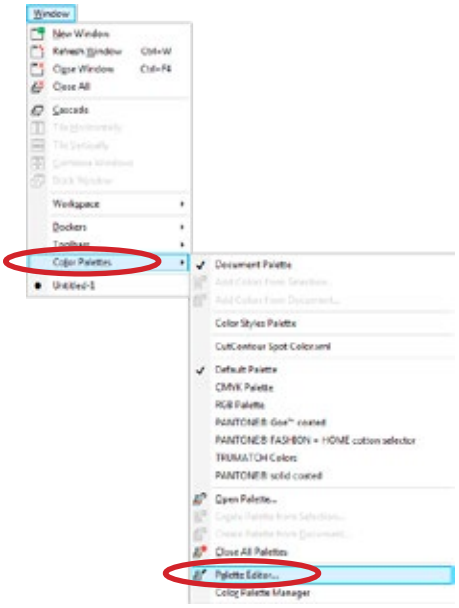
CREATING A CutContour COLOR

When creating a print/cut image, a separate vector cut line is required for the printer/cutter to know where the outline of the design is. Just creating a curve around the outside of the design won't work. Printer/cutters require a spot color with a specific name to be applied to the outline as well as other outline specifications for it to be recognized by the cutter. This lesson will give one example. Consult your printer/cutter manufacturer for their specific requirements.



1

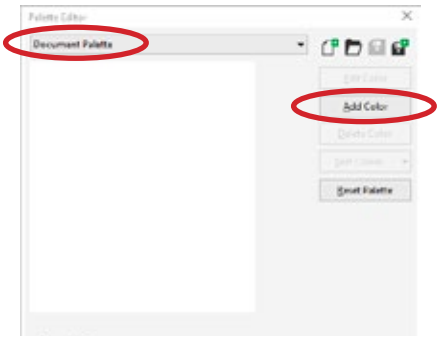
Once you've created your cut line, as will be explained later in this chapter, you need to make sure it's set up with the specifications required by your printer/cutter for it to recognize the cut line. Your printer may require a specific color name. To do this, go to WINDOW MENU > COLOR PALETTE > PALETTE EDITOR.

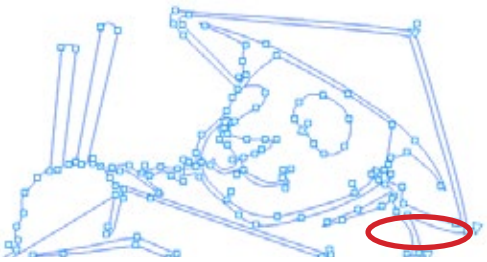


2

In the Palette Editor make sure Document Palette is selected from the drop down menu. Click Add Color.

In the Select Color Window, choose your color. Click OK. It's suggested to choose a bright color so that it's easy to see your cut line on top of your artwork.



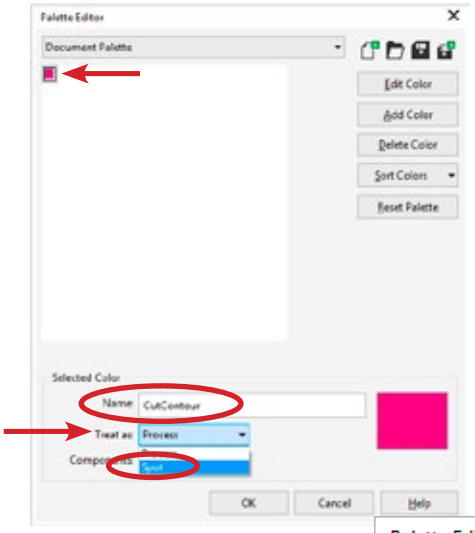


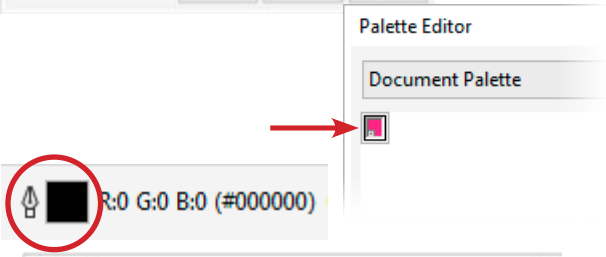
3

While still in the Palette Editor window, change the name to CutContour and make it a Spot Color from the Treat As: drop down menu. Make sure to spell the name of the color exactly as specified. Otherwise the cutter will not recognize it and it will not cut your image.

Click OK.

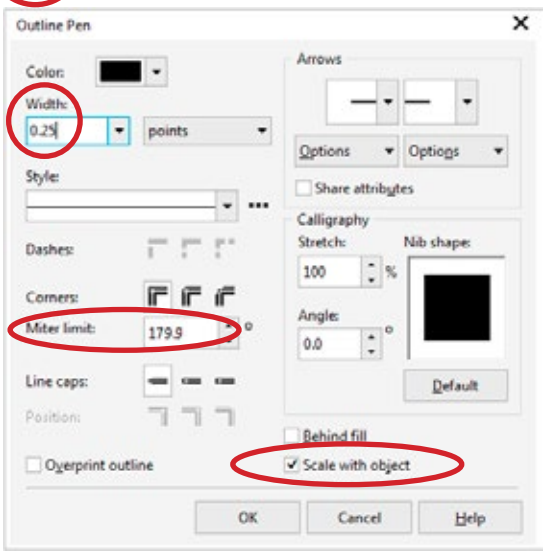
You'll notice when you change it to a spot color, a small white square will appear in the lower left corner of the swatch. This is the notation that a color is set up as a spot color.





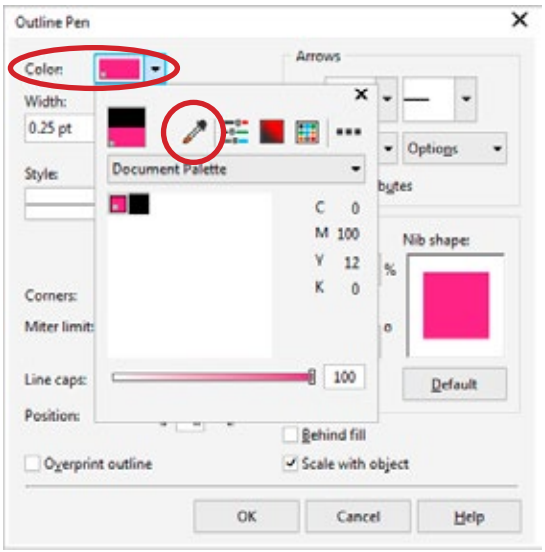
4

Next you'll need to set up your cut line with the appropriate stroke requirements for your printer/cutter. With your cut line selected, double click the Outline Swatch at the bottom right of your window. Set the Width to 0.25, the Miter Limit to179.9, and make sure the Scale with Object option is checked.



5

Click the Color: drop down menu. Select the Eyedroper Tool and click on the new swatch you created earlier in this lesson. Click OK. Your cut line should now be set up with the appropriate color and outline specifications needed for your cutter to recognize it and be able to cut out your image.

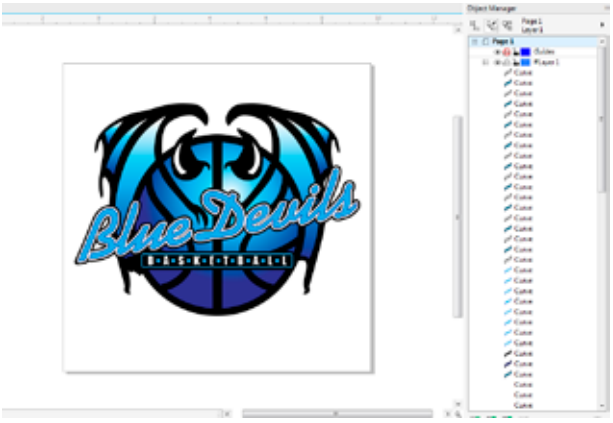


CREATING A CUT LINE FOR A VECTOR PRINT/CUT IMAGE

Just because printer/cutters can print full-color designs, it doesn't mean the design has to be a raster image. They can also print/cut vector files that may have too many colors to produce as a vinyl cut design. With vector print/cut designs, the curves that are used to create the artwork can also be used to create your cut line. Unlike vinyl cut designs, even though the artwork is vector, you need to create a separate, specific curve that will be designated as the cut line.

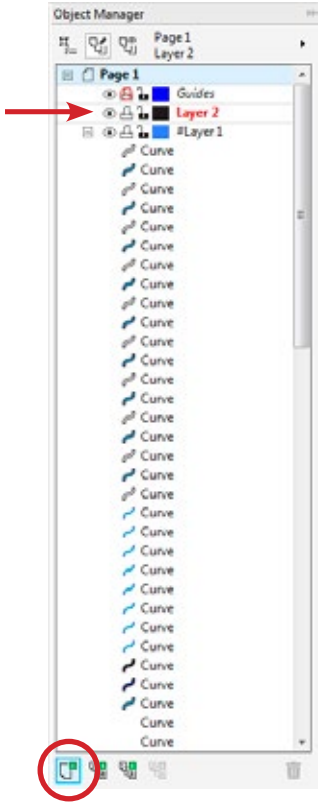
1

Open the vector design that you want to set up as a print/cut file in CorelDRAW. If you open your Object Manager Docker (WINDOWS MENU > DOCKERS > OBJECT MANAGER) you'll notice that you will have several curves that make up your design.



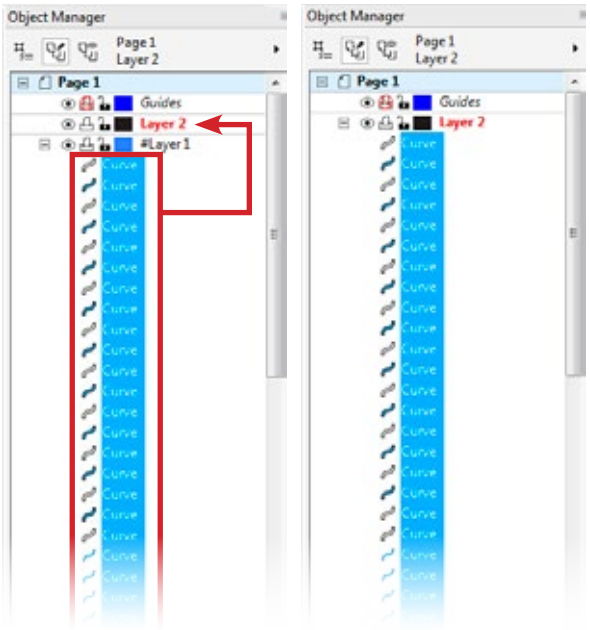
2

In the Object Manager create a new layer by clicking on the New Layer icon at the bottom left corner of the Object Manager Docker.



3

Select all the curves in Layer 1 by clicking on the top curve in the list. Hold down the Shift Key and click the last curve in the list. Go to EDIT MENU > COPY. Click on Layer 2 and go to EDIT MENU > PASTE.

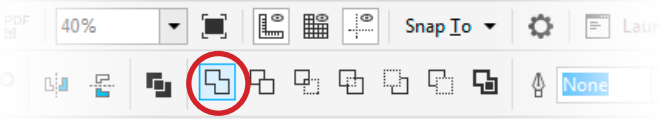


4

With all the curves in Layer 2 still selected, click the black color swatch to fill everything with black. You can select any colored areas and delete them so that everything is black.

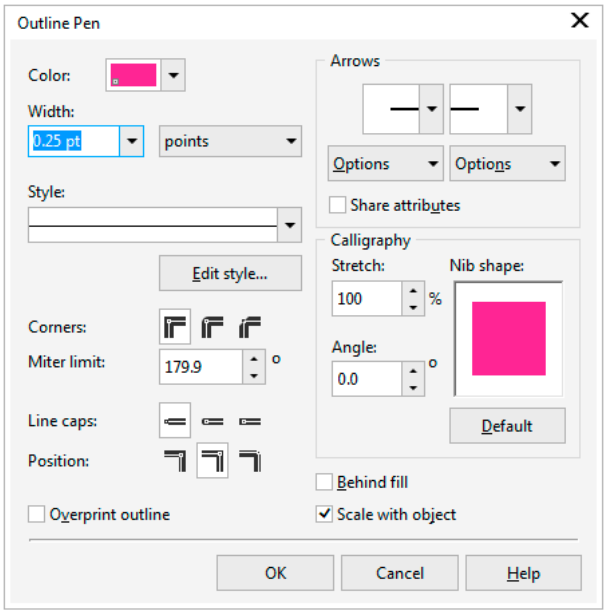
5

Using the Pick Tool, select all the remaining curves in Layer 2. Click the Weld option at the top of your window to weld all the curves into one single curve.



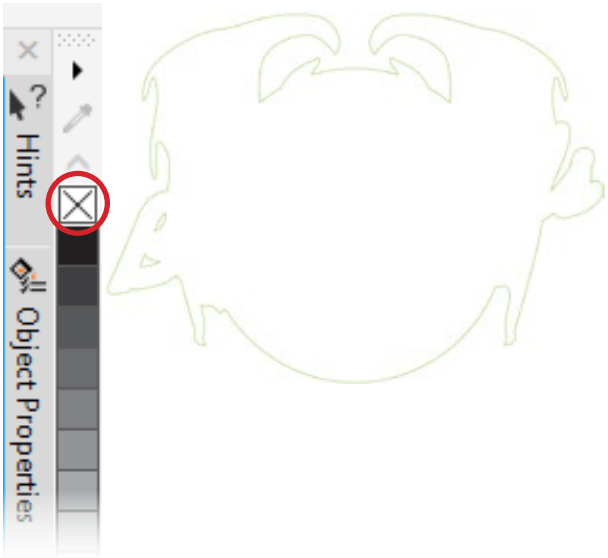
6

With your welded curve selected, double click on the Outline Swatch and in the Outline Pen window enter all the proper specifications for the CutContour color as explained in the Creating a CutContour Color lesson on pages 65-66.



7

Then click on the "None" fill option in the default swatch list to remove any color so that you are only left with the CutContour outline color.



8

To make it easier to differentiate your curves in the Object Manager, you can rename them by right clicking on the appropriate curve in the list and selecting Rename. Give it a new name such as CutContour.

When you view the artwork with the CutContour visible, you'll see how the cut line follows along the perimeter of the image.

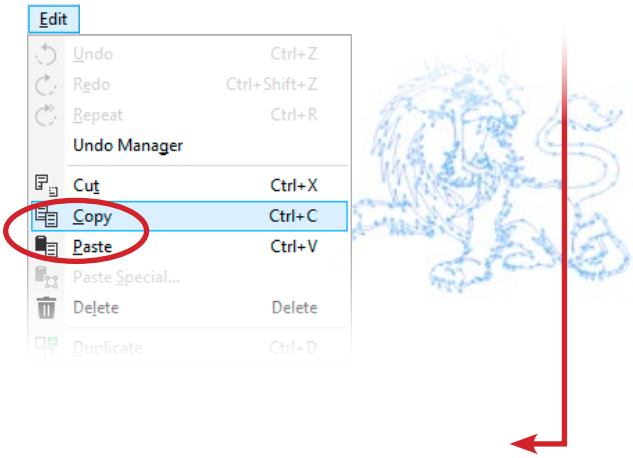
You can now save your current file as a working file. Then proceed to set up your final print/cut file with either a bleed or a white outline as discussed in the following lessons.

CREATING A VECTOR PRINT/CUT FILE WITH WHITE OUTLINE

It's common for print/cut files to be cut with a white outline. This is more commonly used for stickers or vinyl decals. It can be beneficial for decals made to apply to car windows to help the image stand out against the darkness of the window. In this lesson you'll see how to take the outline that was created in the previous lesson and expand it to create a white outline.

1

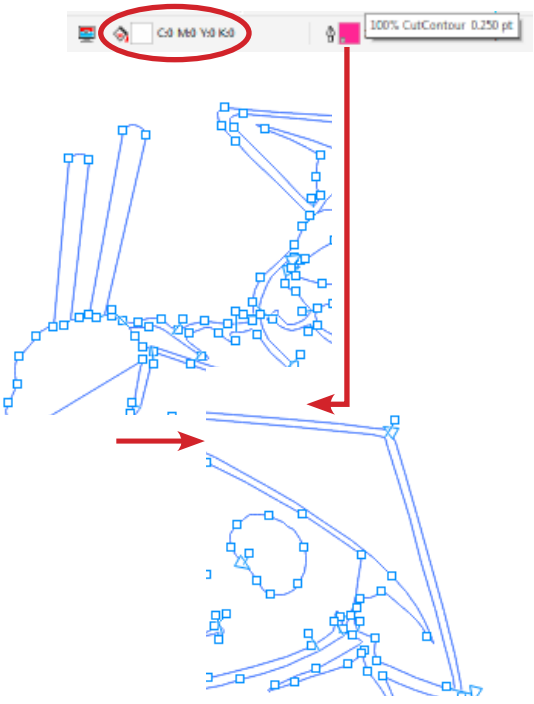
To create the white outline, use the Pick Tool to select the cut line you created in the previous lesson on Pages 67-69. In the Object Manager Docker, drag it to the bottom of the list so it is below all the other curves.



2

Fill the curve with white.

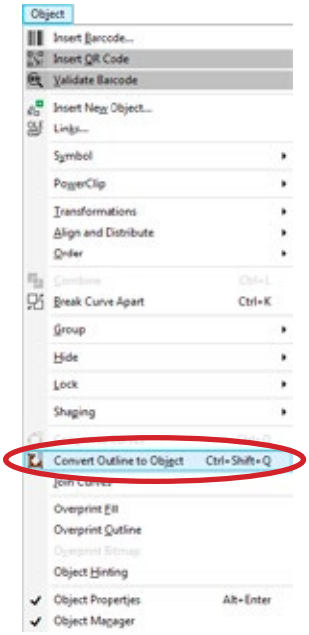
Double click on the Outline Swatch at the bottom right of your window to open the Outline Pen window. Change the color to white and set the thickness of the line to the desired thickness that you want the white outline to be around your image. If the outline is aligned center make sure you double the amount that you want the size to be. If you want an outline of 12 points, make it 24. This is because half of the amount falls on both sides of the outline, so only half will be visible.



3

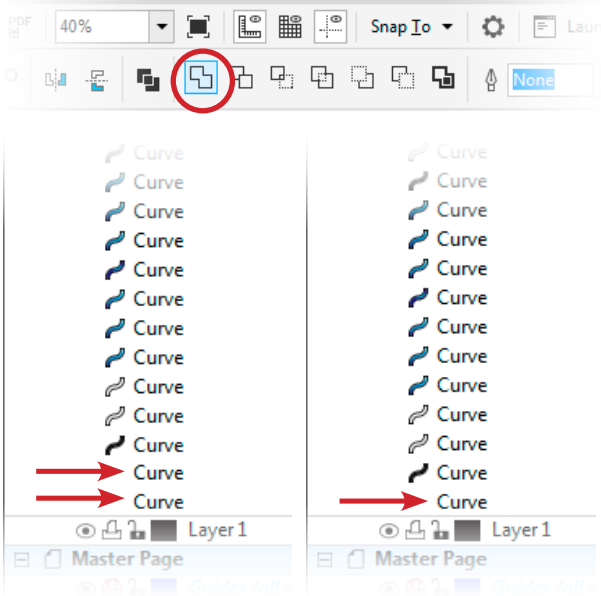
With it still selected, copy and paste it to duplicate it. With the duplicate curve selected, go to OBJECT MENU > CONVERT OUTLINE TO OBJECT.

When you convert the outline to object, it transforms the outline into its own curve with its own outlines.



4

Select the original curve again, and change the width of the outline to None. Hold the Shift Key down and select the converted outline curve as well, then weld the two together.



5

With the welded curve still selected, duplicate it again. Select the top duplicated curve and fill it with None. Double click the Outline Swatch and set up your CutContour color as explained on pages 65-66. Move this new cut line curve back to the top of the curve list.

Use the Shape Tool to select nodes of cavities that you want to delete, or to make any adjustments to any points.

Now you can save your print/cut file as explained in the later lesson in this Chapter on Saving a Print/Cut File (Page 85).

ADDING A BLEED TO A VECTOR PRINT/CUT IMAGE

If you don't want a white outline around your print/cut file, then it's recommended to add a bleed around your image. If you were to cut your image without adding a bleed, white gaps could appear if the registration is off when cutting. The bleed helps add some extra color past the cut line of the image, so that if the registration is off, it isn't noticeable.

1

Unlike the previous lesson on Creating a Print/Cut File with a White Outline, you do not need to adjust the placement of your cut line to follow the edge of the white outline. In this case once you have your cut line created along the edge of your design, it will remain in that location. Start by opening a file with a cut line that you've already created, or create your cut line as explained in the previous lesson on Creating a Cut Line for a Vector Print/Cut Image on page 67-69.

2

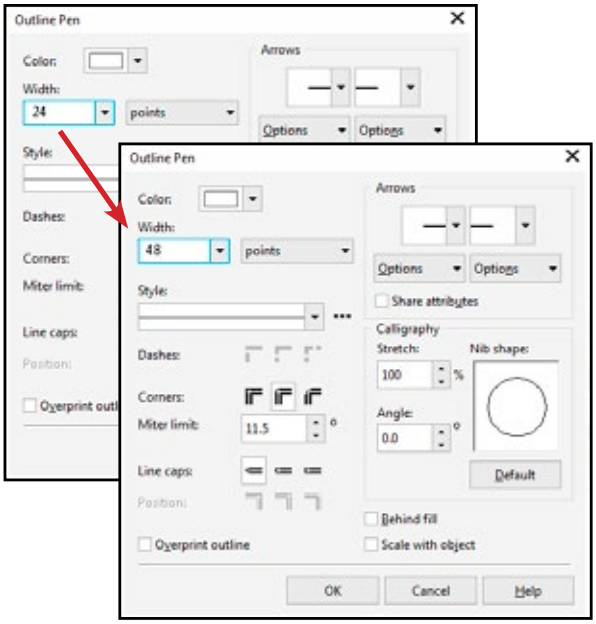
You'll utilize your artwork curves and add outlines to get color beyond the cut line. In particular, you'll be selecting the curves that create the outer edges in your design. In this example it is the black outline of the type, and the black outline of the image.

If you have a curve that doesn't have an outline applied to it already, add an outline aligned to the outside of the path to create the bleed. Color the outline with the same color as the edge of the shape and set the size to 12 points or what best suits your needs. It doesn't need to be overly thick, but you want it thick enough to compensate for any offset in registration that could occur.

3

If you select a curve that has an outline applied to it, you can increase the size of the outline to create the bleed area.

In this example, the black outline on the Blue Devil type was created with a center aligned stroke applied to it. To increase the size of the outline to add a bleed, the weight of the stroke was increased by 24 points. This is because when a stroke is center-aligned, half of the weight falls on each side of the curve. So if we only added 12 points, the size of the bleed would have been 6 points.



4

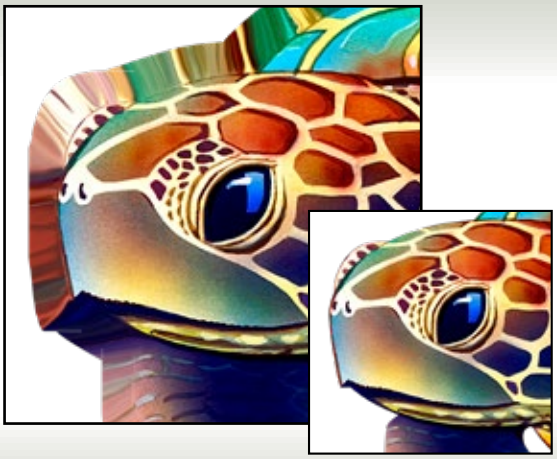
If the outline covers another area of the design try moving the curve below the object it is covering. If this doesn't work, move the curve back to its original location, duplicate it and move it to the bottom of the curves list. Now add the outline to this layer. This should do the trick.

5

Once you've applied your bleed to all the necessary elements, double-check your curve layers to make sure nothing is overlapping incorrectly. Double-check your cut line to make sure the color and stroke specifications are still set up correctly.

Now you can save your final print-cut file as explained in the lesson later in this chapter, Saving a Print/Cut File on page 92.

ADDING A BLEED TO A RASTER ART IMAGE USING PHOTO-PAINT



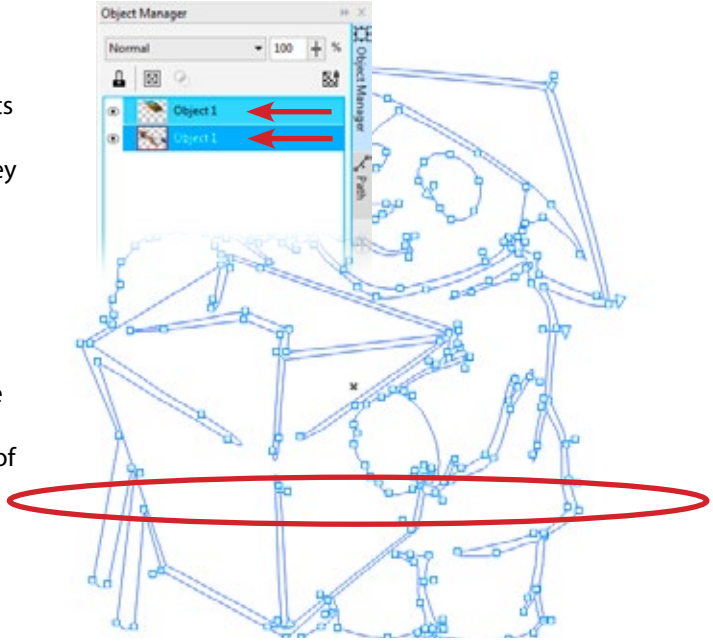
When producing a print/cut image, if you prefer not to have a white edge around your image, you'll need to add a bleed. In this lesson you'll see how to expand the color of a raster image around the edges to create a bleed so that you won't have the "sticker look." This lesson will show you how to prevent white gaps from showing if you cut your image without a bleed and the registration is off.

1

Launch PHOTO-PAINT, go to FILE MENU > OPEN and select the full-color raster artwork file that you want to work with. Resize your image now if needed by going to IMAGE MENU > RESAMPLE. If the design is going on a garment, we recommend a size of approximately 10". The larger the design, the more vinyl going onto the garment. This can create an unpleasant, heavier feel, so adjust your size according to your needs.

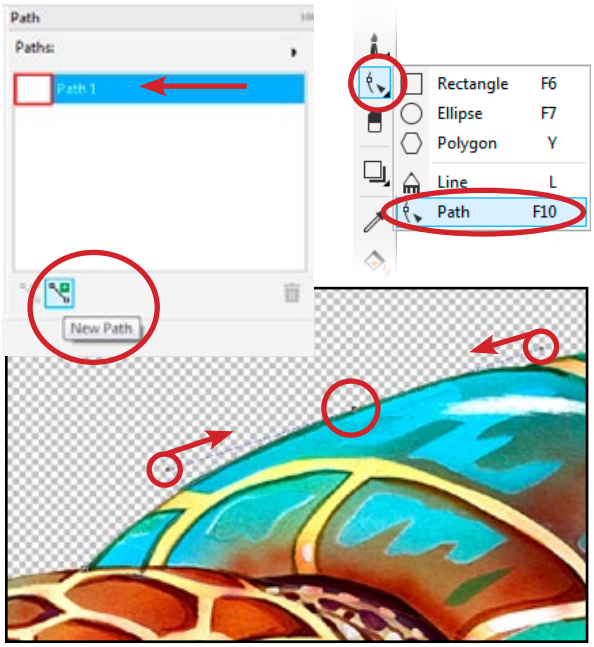
2

If you have a PHOTO-PAINT file with multiple objects in the Object Manager Docker (WINDOWS MENU > DOCKERS > OBJECT MANAGER) , hold the Shift Key to select all the object layers in order to combine them. Right click and go to COMBINE > COMBINE OBJECTS TOGETHER. If you have a background color layer, make sure it is not selected so that your artwork doesn't end up being merged to the background color. You want the artwork set up as one single object on a transparent layer. If you have a separate background color layer, delete it now, or wait until later if it is easier for you to see the edge of your design for creating your outline.



3

Open the Paths Docker (WINDOW MENU > DOCKERS > PATH) then click the New Path icon at the bottom left of the Paths Docker. Click on the Shape Tool and hold it down to expand the drop down menu and select the Path Tool. Click anywhere along the edge of your image to begin creating your outline path.

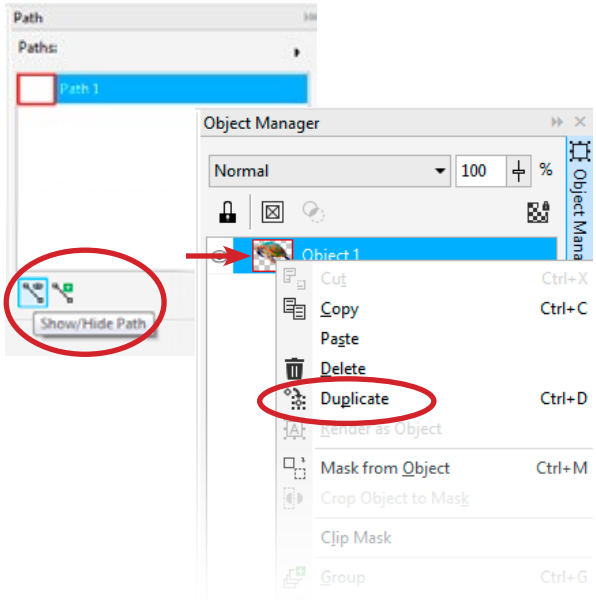


4

Continue clicking and adding nodes around the edge of your image to create your outline. When you get back to the starting point, click on it to make it a closed path. Use the Path Tool to pull the Bezier Handles in and out to adjust the shape of the path as you go around.

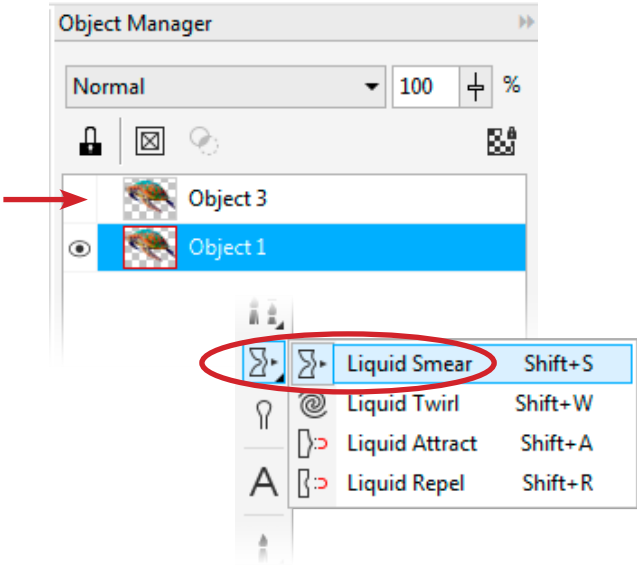
5

Once the path is complete, turn it off for now by clicking the Show/Hide Path button at the bottom of the Path Docker. Go back to the Object Manager, select the Object, right click on it and select Duplicate.



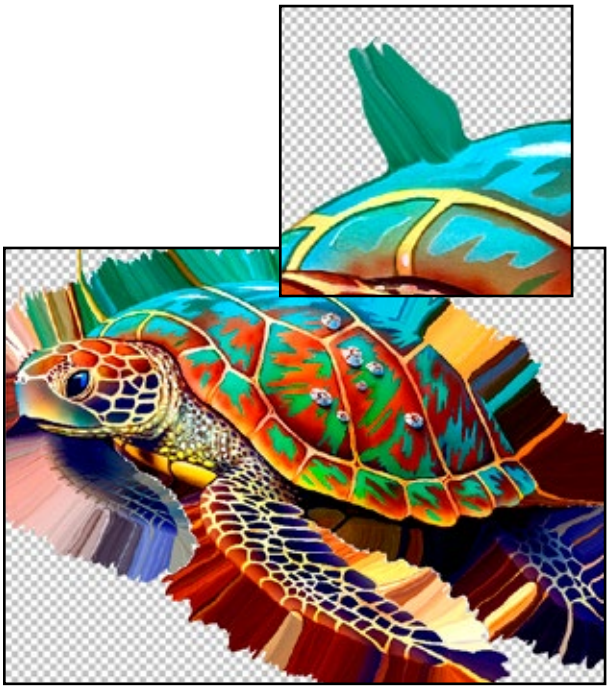
6

Turn the eyeball off on the top object and click on the bottom object. The bottom object is the one you will be working with to add your bleed. Select the Liquid Smear Tool.



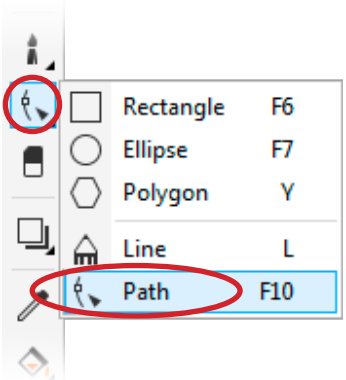
7

Using the Liquid Smear brush start going around the image clicking on the edge and pulling outward to draw out the color. Pull the color out enough to give yourself a decent amount of bleed area. You want the color that you pull out to match the edge color in the particular area that you are working on as much as possible. That way when the image is cut, if the registration is off, the color that shows is similar to the image color in that area. You can push color back inwards if needed. It doesn't need to be exact. Once you go all around your image, you will be turning the top object back on so it will cover the smudged edges. Click on the eyeball of the top object when completed.



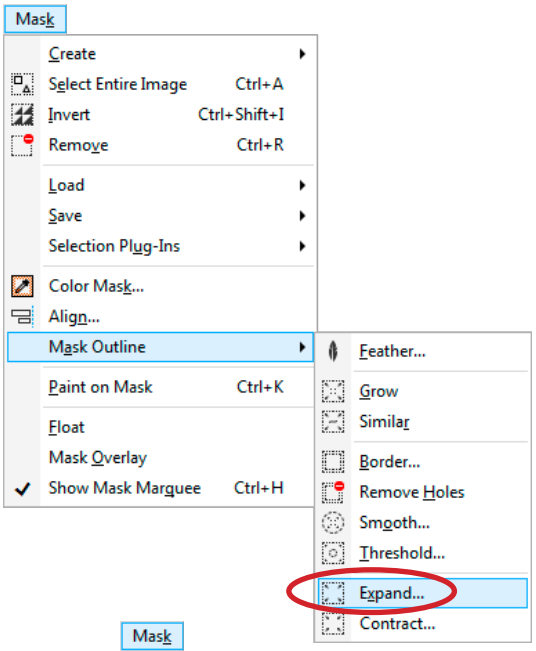
8

Go back to the Path Docker, select the Path and click the Show/Hide Path button again to turn the path back on. Select the Path Tool. At the top of your window click on the Mask From Path option to make a selection using the path that was created.



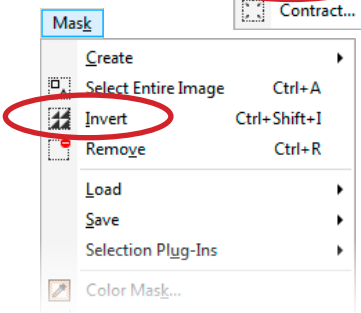
9

Click the Show/Hide Path button to hide your path again. Go to MASK MENU > MASK OUTLINE > EXPAND. In the Expand Window, enter 54 and click OK.



10

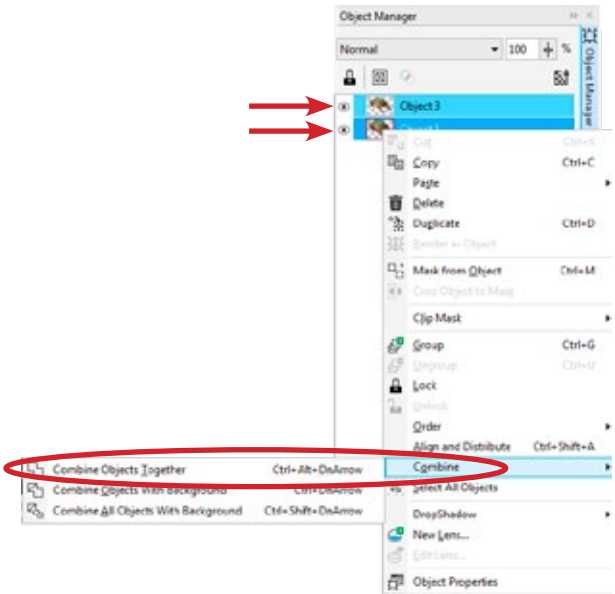
Go to MASK MENU > INVERT, to invert the selection. Make sure the bottom object is selected in the Object Manager, and go to EDIT MENU > CUT to delete any excess color and create a uniform sized bleed all around the image.



11

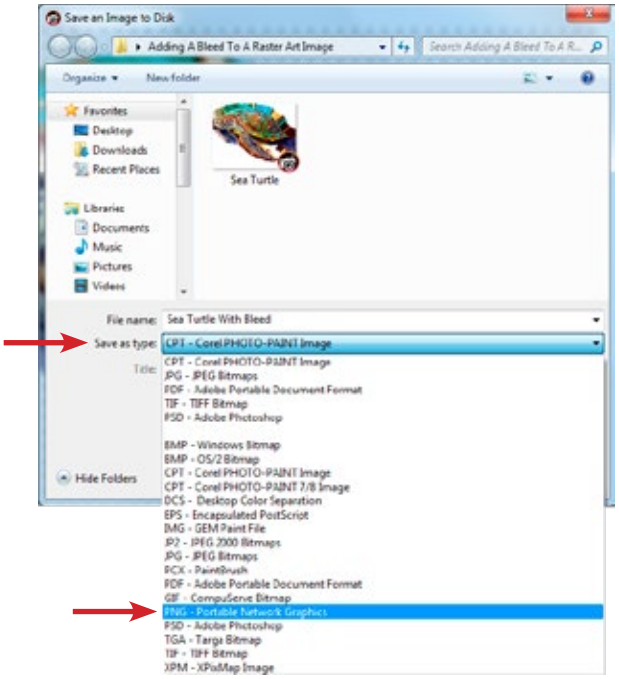
Select both objects in the Object Manager, right click and go to COMBINE > COMBINE OBJECTS TOGETHER to merge them back into one layer.

If you still have a background object layer, you can delete it now.



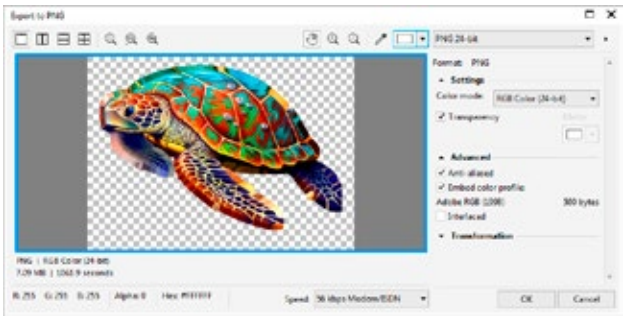
12

Go to FILE MENU > SAVE AS. From the Save As Type: drop down menu, select PNG - Portable Network Graphics.



13

When the Export to PNG window pops up, click OK.

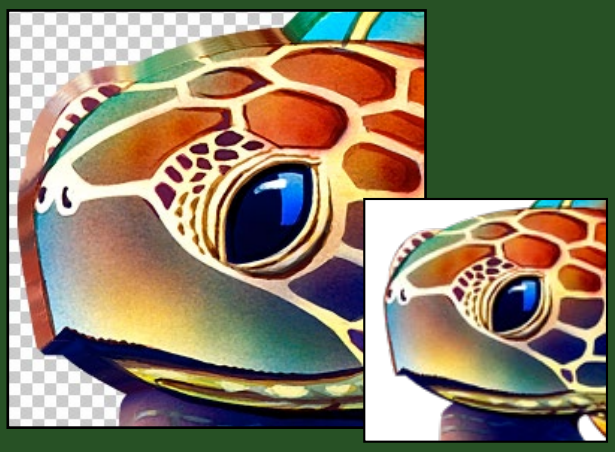


14

You can now close your files and prepare to create your print/cut file with your cut line.

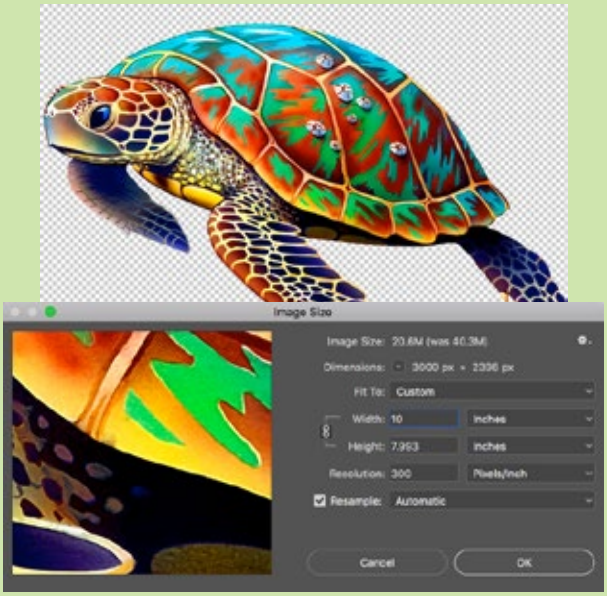
ADDING A BLEED TO A RASTER ART IMAGE USING PHOTOSHOP

As explained in the previous lesson, you can add a bleed to a raster image using Corel PHOTO-PAINT. However the process of creating the bleed itself is not as smooth as it is in Adobe Photoshop. For that reason we recommend using Photoshop if possible. The steps in this lesson explain what was discussed previously using PHOTO-PAINT, but this time using Photoshop.



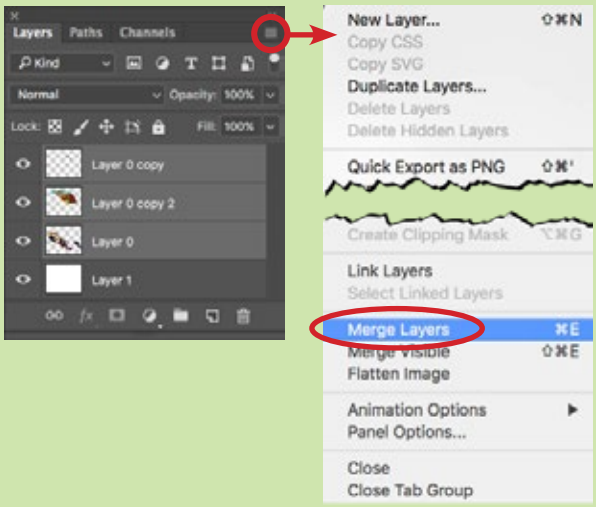
1

Launch Photoshop and go to FILE MENU > OPEN and select the full-color raster artwork file that you want to work with. Resize your image now if needed by going to IMAGE MENU > IMAGE SIZE. If the design is going on a garment, we recommend a size of approximately 10". The larger the design, the more vinyl going onto the garment. This can create an unpleasant, heavier feel, so adjust your size according to your needs.



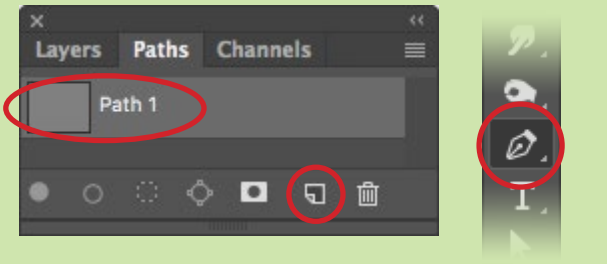
2

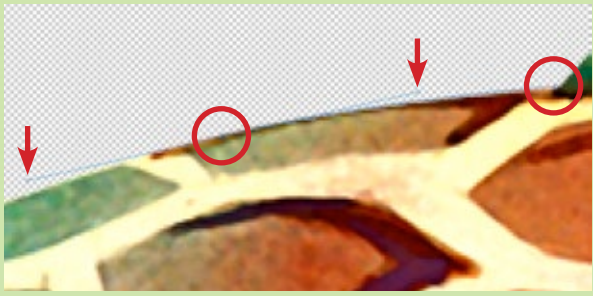
If you have a layered Photoshop file, hold the Shift Key and select all the artwork layers and merge them together. Go to the drop-down menu in the upper right corner of the Layers Palette and select Merge Layers. If you have a background color layer, make sure it is not selected so that your artwork doesn't end up being merged to the background color. You want the artwork on one single, transparent layer. If you have a separate background color layer, delete it now, or wait until later if it is easier for you to see the edge of your design.



3 Ps

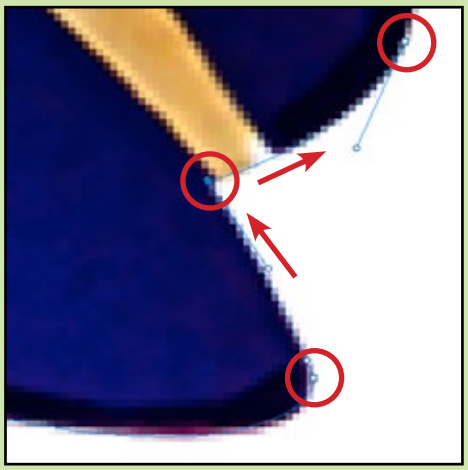
Open the Paths Palette (WINDOW MENU > PATHS) and click the New Path icon at the bottom of the Paths Palette. Select the Pen Tool and start to create a path around the edge of your image. Click anywhere along the image to create a starting point. Click again further along the edge of the design. If you are following a curved edge, when you click, hold and drag your mouse which will pull out the Bezier Handles which will allow you to adjust the shape of your path and create curved lines.





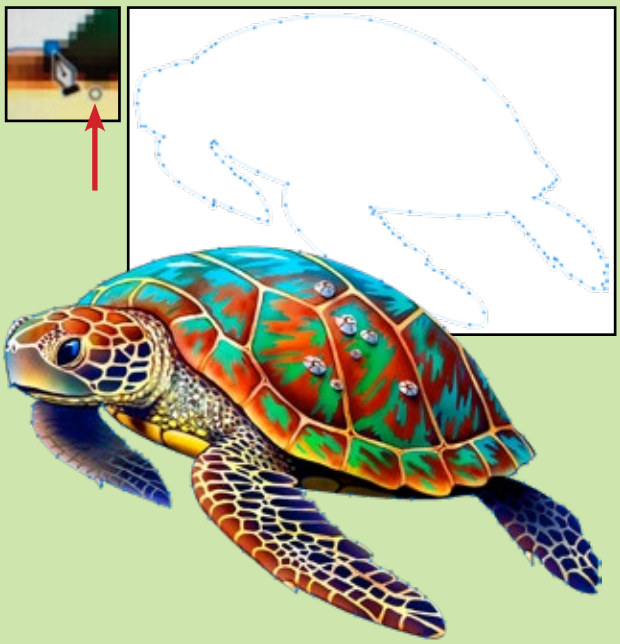
4 Ps

If you hold the Command Key, your cursor will temporarily change to the Direct Selection Tool so that you can grab any individual points or handles to adjust the shape of your path as needed as you move along your design. If you need to change the direction of your path, you can click on your next point without dragging, or if your point has handles, you can grab one of the handles and pull it back to the center of the point. Then when you create your next point, your path will shift direction. You can retract both Bezier Curve handles of a point at the same time by holding down the Option Key and clicking on a point.



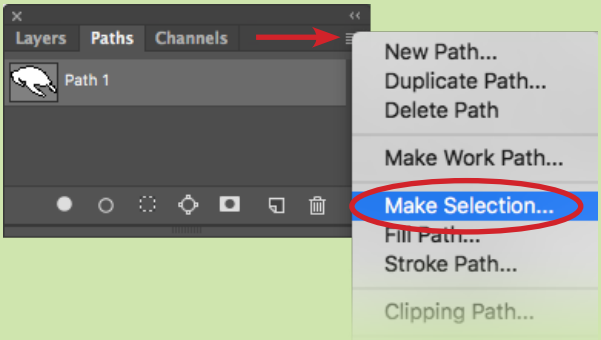
5 Ps

Continue all the way around your image until you reach your original starting point. Hover your cursor over the starting point, and when you see a small circle appear by the cursor click on your starting point. This circle denotes that you are over your starting point and by clicking on it, you are creating a closed path. If your path is not closed, the cut will not be complete and will cause issues when you weed your design.



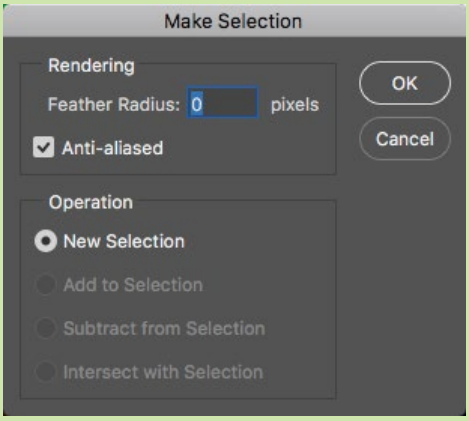
6 Ps

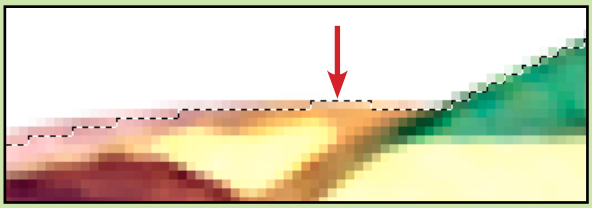
Once your path is complete, make sure the path is selected in your Paths Palette. Click on the pop down menu in the upper right corner of the Paths Palette and choose the Make Selection option.



7 Ps

In the Make Selection window, choose New Selection and click OK. You should then see the dotted line or "marching ants" moving around the edge of your image.

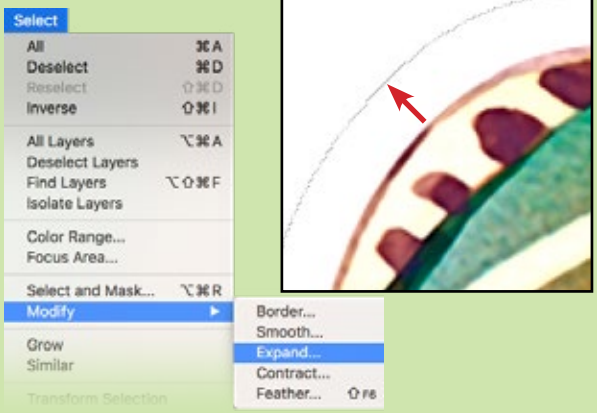




8 Ps

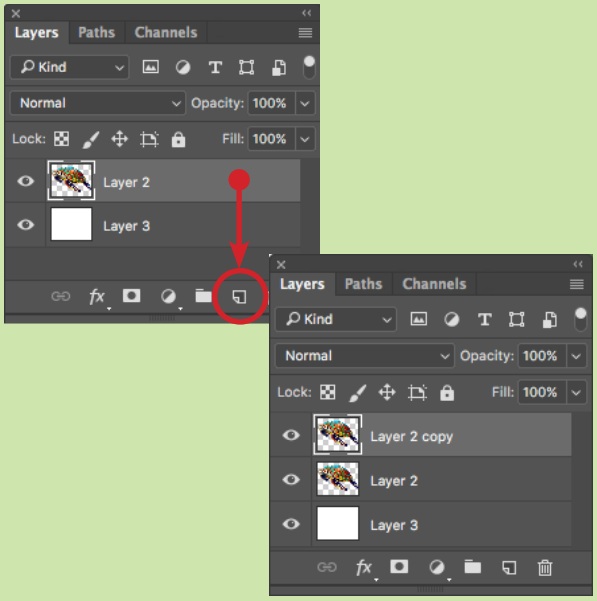
Go to SELECT MENU > MODIFY > EXPAND. If your image is set up to the exact size that you need, you can enter 20 pixels and click OK. You'll notice how the "marching ants" move outward, creating a space between the selection and the edge of the design.

If there is a chance that you may need to reduce your design in the future, expand your selection further so that when you reduce your image your bleed will not be too thin. As you become more familiar with the process, you'll be able to adjust the thickness of the bleed to what works best for you.



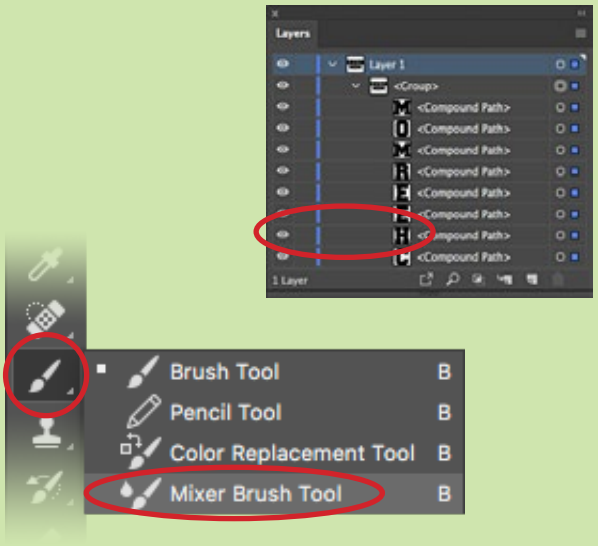
9 Ps

Duplicate your artwork layer by clicking on it and dragging it to the New Layer icon at the bottom of the Layers Palette.



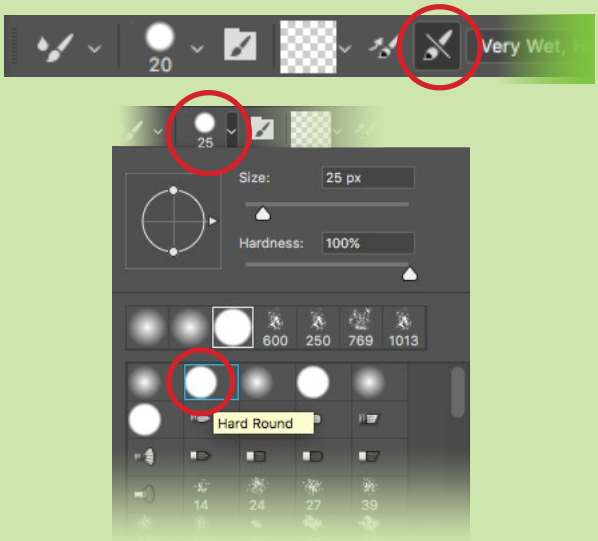
10 Ps

With your marching ants still showing, select the bottom artwork layer. Click and hold down the Paint Brush Tool and select the Mixer Brush Tool from the drop down menu.



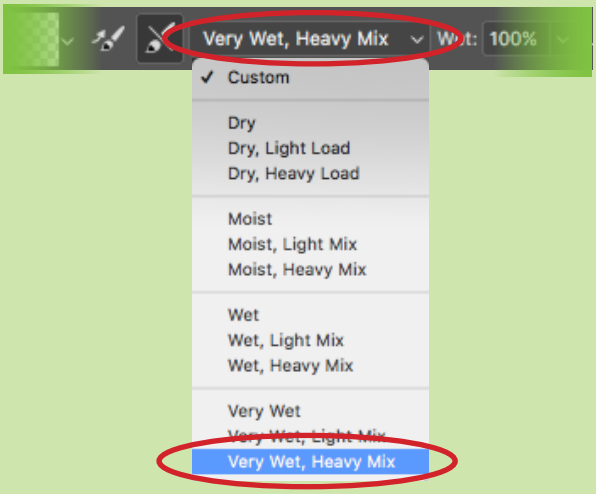
11 Ps

For the brush settings, choose a regular round hard brush. Make sure the "Clean Brush After Every Stroke" option is selected in the options at the top of your window.



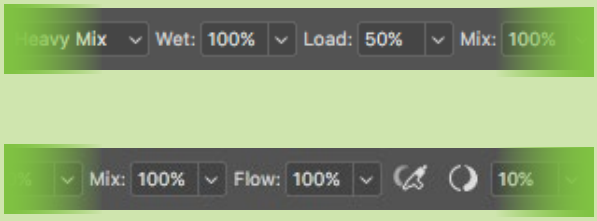
12 Ps

From the Custom drop down menu, select the "Very Wet, Heavy Mix" option.



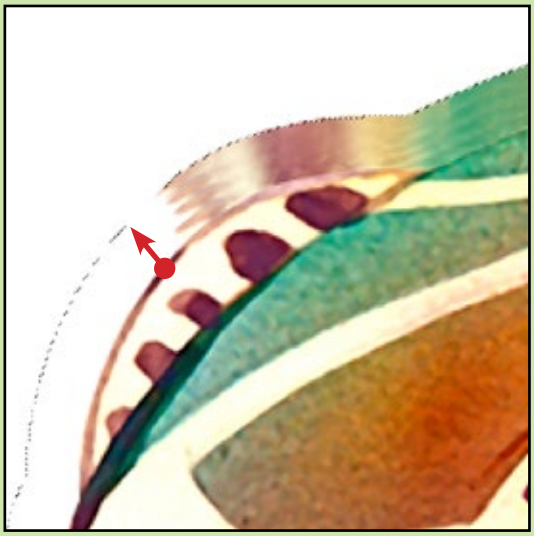
13 Ps

The Wet, Load, Mix, and Flow options should be set to 100%. The Load option should be at 50%.



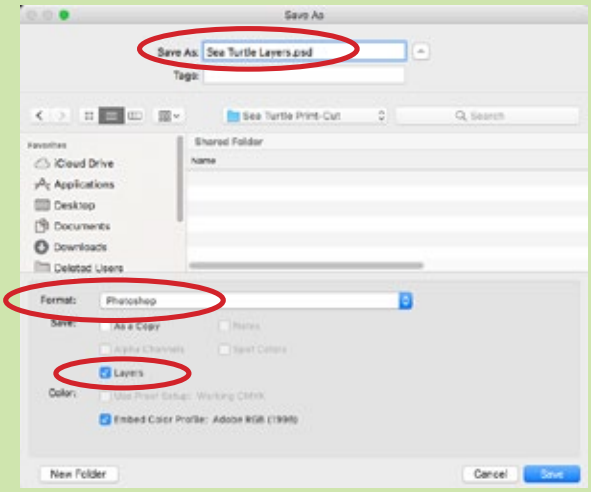
14 Ps

Place your cursor anywhere along the edge of your design. Click and drag it towards the marching ants. You'll see the color from the edge of the design pull out and begin to fill in the expanded area. If you move the brush in a small circular or back-and-forth motion as you pull the color out, it will create a smoother, blended bleed. Continue to do this all around your image. Keep in mind that where you click is where the primary color will come from, so the closer you are to the color along the very edge of your design, the more the bleed color will match the edge color.



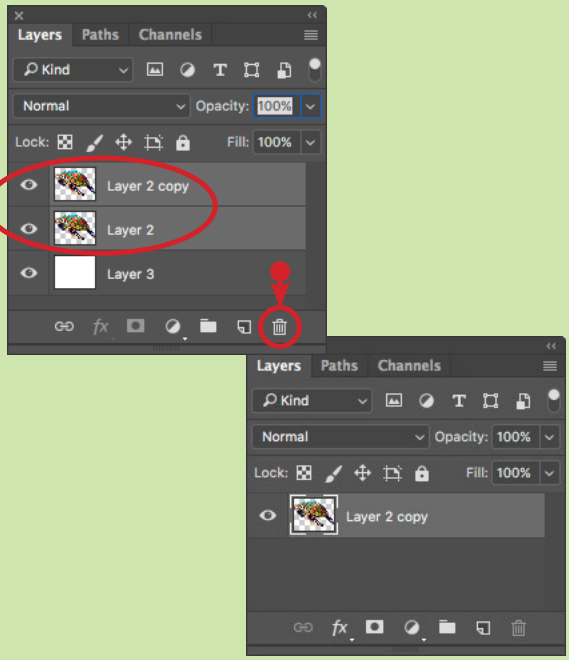
15 Ps

Once you've gone around your entire image creating your bleed area, save your file as a Photoshop file with all your layers and your path. To do this, go to FILE MENU > SAVE AS. Name your file, select the location you want to save the file, select the Photoshop Format option at the bottom left of the window, and make sure that the Layers option is checked. Click Save. If the Photoshop Format Options window pops up, just click OK.



16 Ps

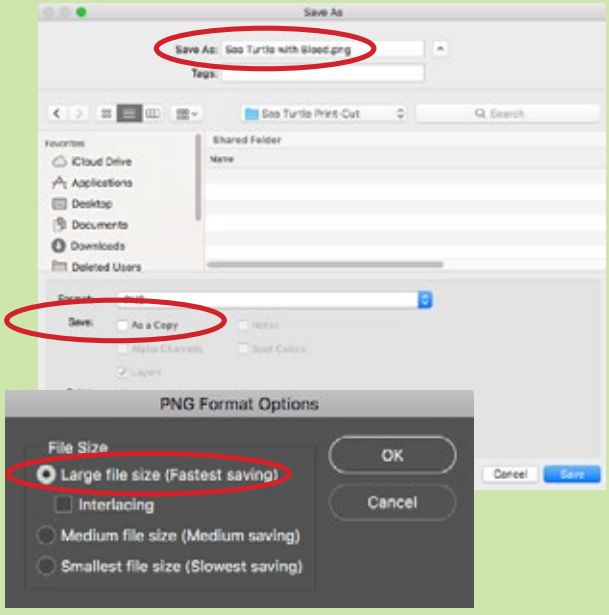
Select both your original artwork layer and your new bleed layer and merge the two together like you did in Step 2. If you still have your background color layer, you can delete it now by selecting it and clicking on the Trash Can Icon at the bottom of the Layers Palette.



17 Ps

Save your final file with the bleed as a PNG file by going to FILE MENU > SAVE AS and choosing the PNG format option at the bottom of the Save As window. Give the file a name, select the save location and click Save. When the PNG Format Options window appears, select the Large File Size option and click OK.

You can now close your files and prepare to create your print/cut file with your cut line.

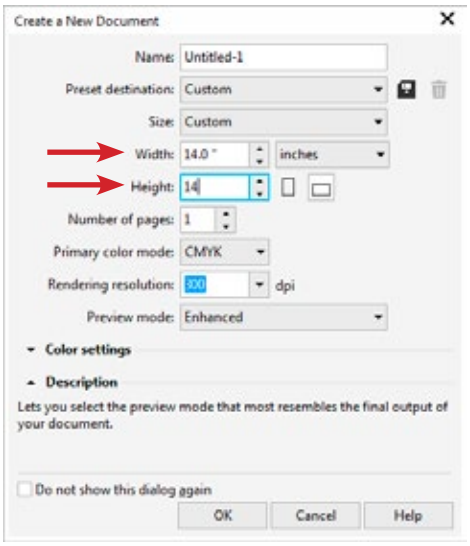


ADDING A CUT LINE TO A RASTER IMAGE WITH A BLEED

In this lesson you'll learn how to add a cut line to a full-color, raster image with a bleed, to set up your print/cut file.

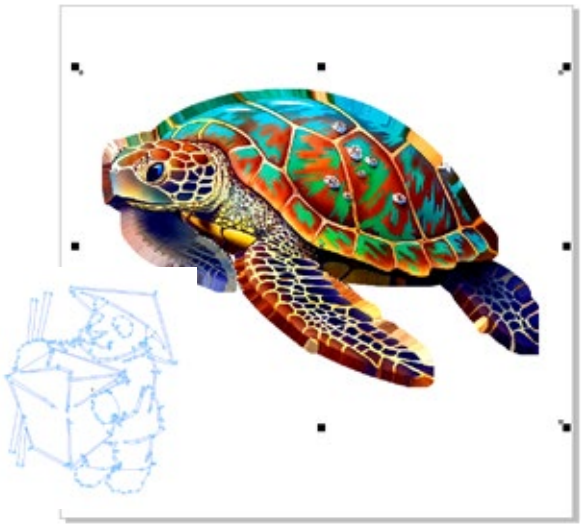
1

Go to FILE MENU > OPEN to create a new document. Enter your desired dimensions and click OK.



2

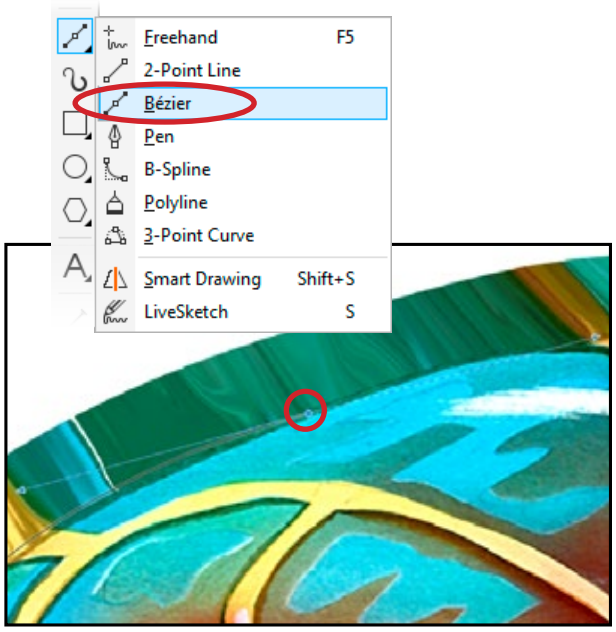
Import (FILE MENU > IMPORT) the image with the bleed that you saved from the previous lesson. Click and drag your cursor from the upper left corner of your page to the bottom right to import your image.



3

Using the Bezier Tool, you will need to recreate the outline around your image like you did in the previous lesson when you added the bleed. Click anywhere along the outline of the image area, not the edge of the bleed, to place your first node. Click again further down to place the next node. When the Bezier Handles pop out, use the Shape Tool to grab the handles and move them in and out to adjust the shape of the outline.

If you come to a corner point where you do not need a curve or need to change direction, click to position the node and then go back and double click that node again to retract the Bezier Handles.



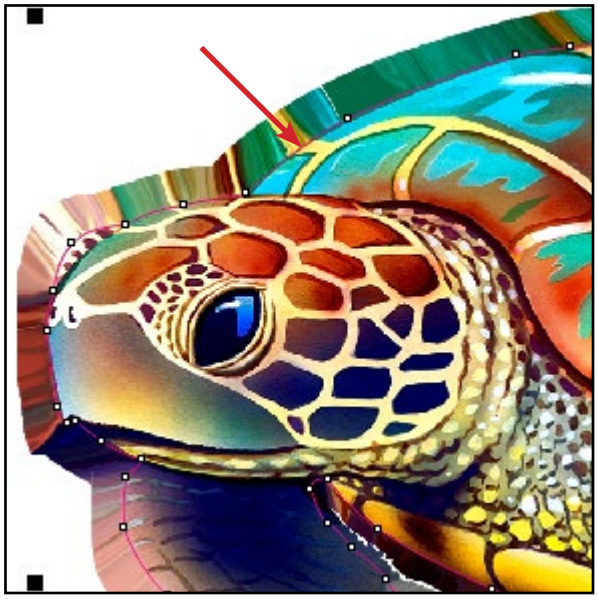
4

Continue tracing your image until you come back to your starting point. Click on the starting point to complete the curve and form a closed shape. The shape needs to be closed. If it isn't, it will not cut properly. Once the shape is complete, if you need to make any changes, use your Shape Tool to click on individual nodes or Bezier handles and make your adjustments.

5

With the outline selected, create the CutContour color as explained in the previous lesson on pages 65-66 and apply it to the outline.

You can now save your file as explained in the Saving a Print/Cut File lesson on page 92.



CREATING A RASTER PRINT/CUT FILE WITH A WHITE OUTLINE

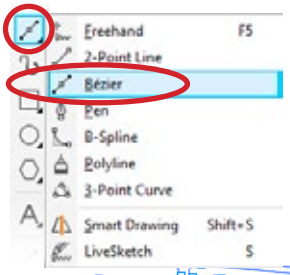
If you want to create a print/cut file with a white outline using a raster image, the process is different than with a bleed. You'll create your curve first, then use it to create the white outline. Unlike a vector print/cut file with a white outline, you can't use the vector curves of your artwork to help create your cut line you'll need to manually trace it. This lesson will explain how.

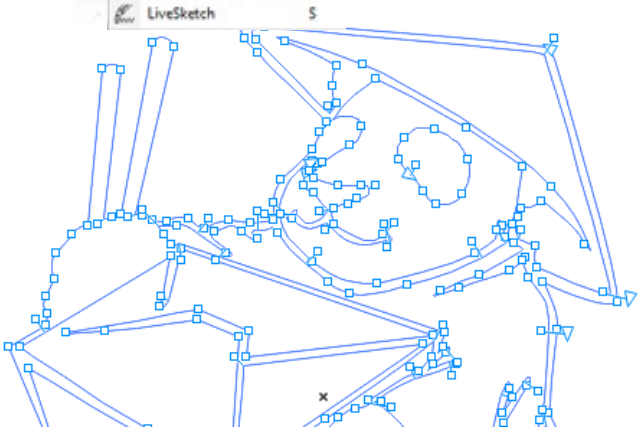
1

Launch CorelDRAW and create a new document at the size necessary for your job (FILE MENU > NEW). Go to FILE MENU > IMPORT to bring in the raster image that you will be working with.

2

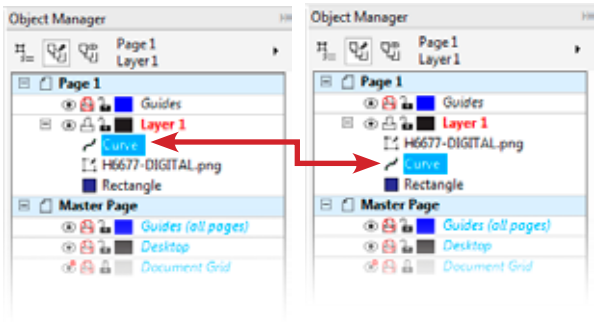
Select the Bezier Tool and trace around the edge of your image as explained in Steps 3-4 of the previous lesson on Page 87.





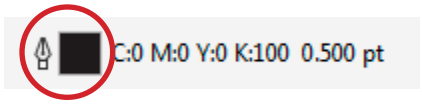
3

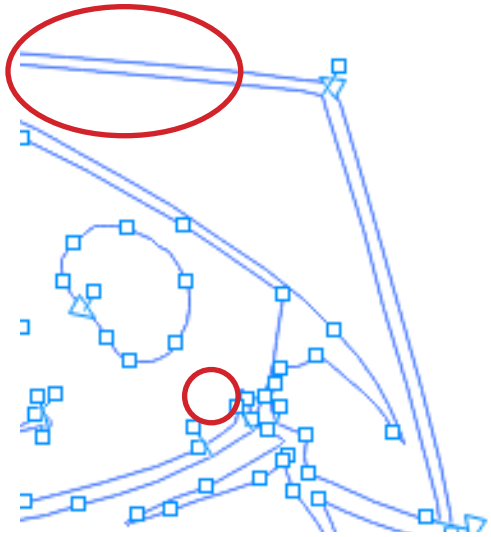
In the Object Manager (WINDOWS MENU > DOCKERS > OBJECT MANAGER) click and drag the curve below the raster image.



4

With the curve selected, double click on the Outline Swatch at the bottom of your window to pull up the Outline Pen window. Change the color to white, and increase the Width to the size that you want the outline to be. If the outline is aligned center make sure you double the amount that you want the size to be. If you want an outline of 12 points, make it 24. This is because half of the amount falls on both sides of the outline, so only half will be visible.



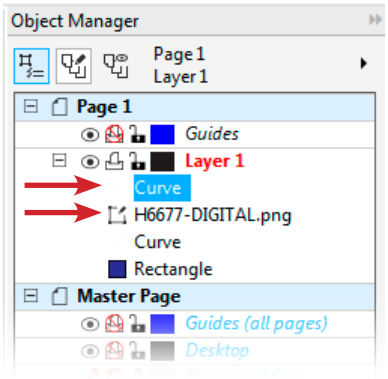


5

Once the white outline is created, it will be used to create the cut line that will follow along the outer edge of the white.

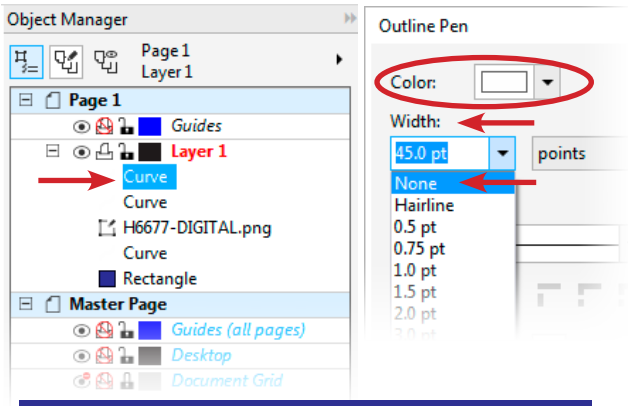
6

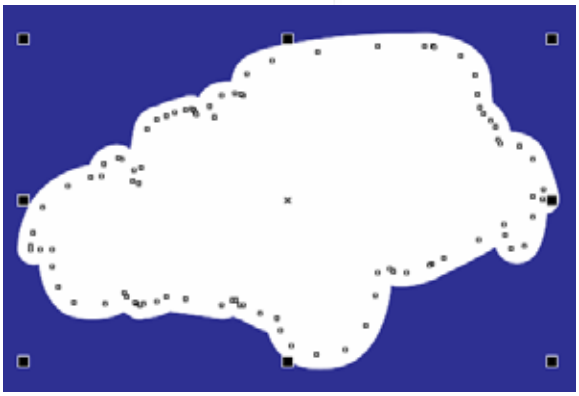
Select the curve of the white outline and go to EDIT MENU > COPY, then EDIT MENU > PASTE to duplicate the curve. In the Object Manager, move this new duplicated curve above the raster image.



7

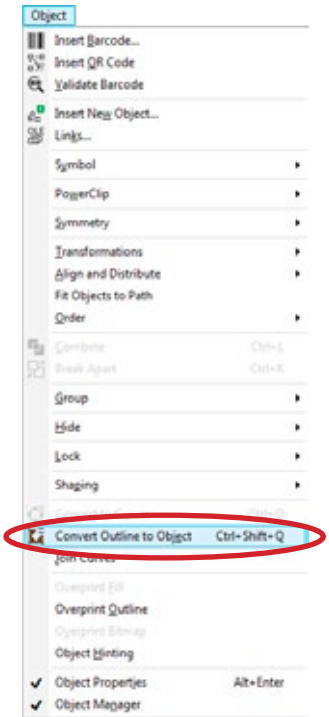
Duplicate that curve again so that you will have two curves above the raster image. Select the top curve and double click on the Outline Swatch to open the Outline Pen window again. Change the Width to None and click OK. Click the Fill Swatch at the bottom of the window and fill the curve with white.





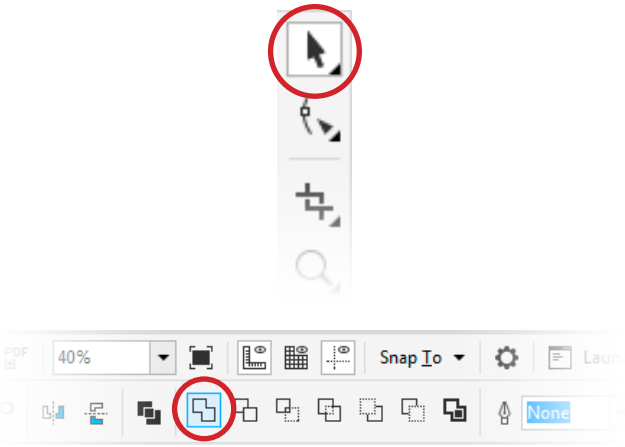
8

Select the curve underneath and go to OBJECT MENU > CONVERT OUTLINE TO OBJECT.



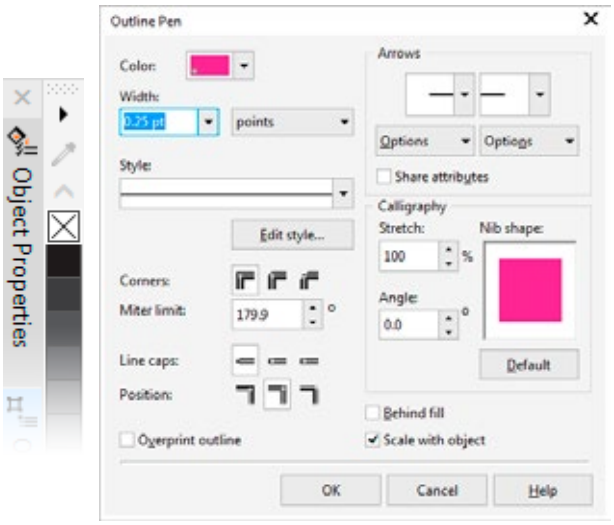
9

Using the Pick Tool, select both curves above the raster image and weld them together using the Weld option at the top of your window.



10

Now that the two curves are welded into one, click the X box in the preloaded color swatches to fill the curve with None. Then set up your outline with the CutContour specifications as explained in the previous lesson on pages 65-66.

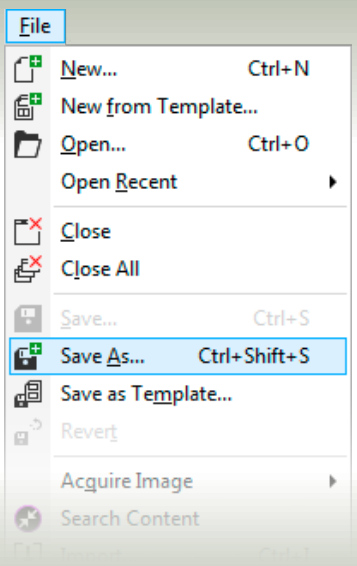


11

Now that you have your white outline with the cut line in place you can save your final print/cut file as in the following lesson on page 92.

SAVING A PRINT/CUT FILE

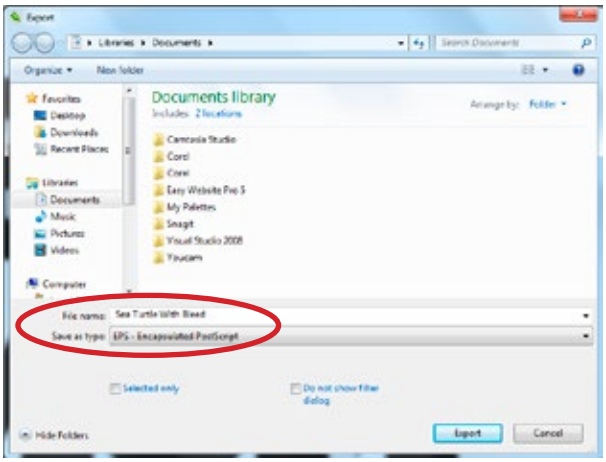
Once you have the image completed with or without a bleed and your cut line in place, you'll need to save your file in the appropriate file format with the appropriate settings as outlined by your manufacturer. The steps listed here are how we save our print/cut files, but check with your manufacturer to verify what is necessary to save your files so that your printer/cutter will recognize your file.



1

In this case the file is saved as in EPS. Go to FILE MENU > EXPORT. Enter your file name, choose the location where you want to save the file, and select EPS - Encapsulate PostScript for the Save as type: option. Click Export.

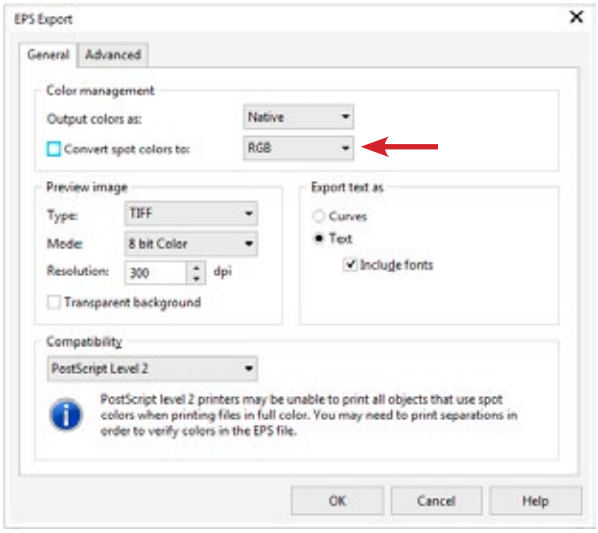
Depending on the cutting software that you are using, you may need to save the file in a different format. Consult your cutting software manual or manufacturer to find out what format you will need in order to open the file properly in your program for cutting.



2

In the EPS Option window, if your layout uses a raster image, make sure to select RGB or CMYK to match the file. Click OK.

Now you should be able to open the file in your print/cut program to send it to the printer/cutter.



HOW TO CHANGE THE COLOR IN A RASTER PRINT/CUT IMAGE

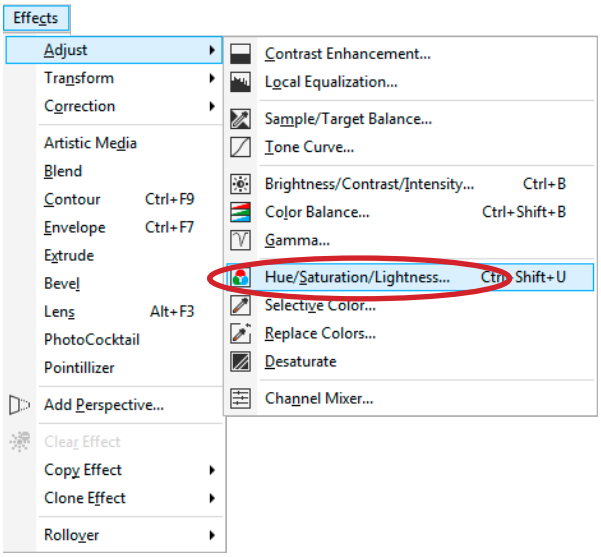
If you are using a stock art print/cut file such as the Great Dane Graphics' Pouncing Cartoon Panther Mascot used in this lesson, or you created a print/cut file yourself, but now you need to change the color, how do you do that? This lesson will explain how.

1

Open the print/cut file in CorelDRAW (FILE MENU > OPEN) that you would like to adjust.

2

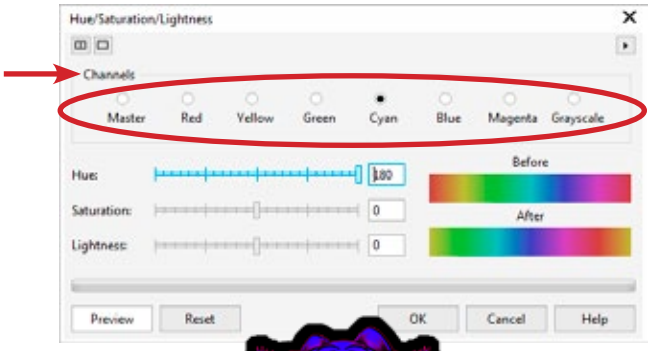
There are two options that can be used to change color in CorelDRAW. For the first option, in your Object Manager make sure your raster image is selected. Go to EFFECTS MENU > ADJUST > HUE/SATURATION/LIGHTNESS.



3

Select the color you want to adjust in the Channels area and move the Hue Slider to change the color. Sometimes you may need to select more than one color such as in this case the panther has both blue and cyan so you would want to click on both of those color options and adjust the Hue Slider for both options.

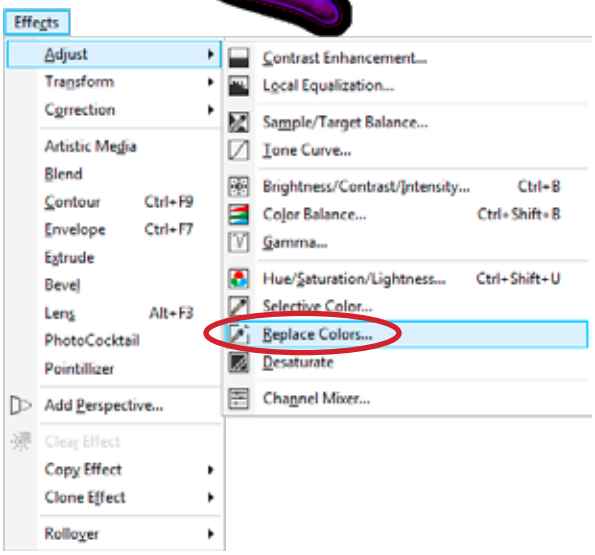
The Saturation and Lightness sliders can also be adjusted to help change the shade and brightness of a color. Click OK once you get the desired look. You may find that you will need open and close the Hue/Saturation/Lightness window a few times and make adjustments to the color each time to get the end result you want.



4

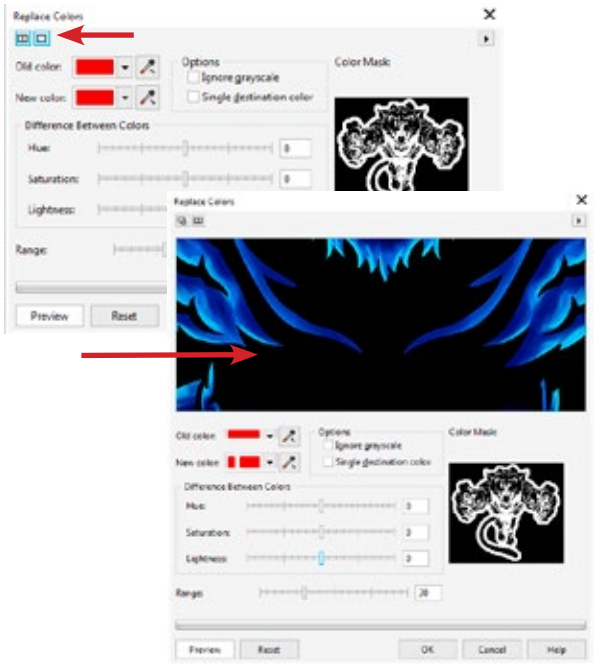
The Hue/Saturation/Lightness is good when you want to change an image with basic colors in it, but for an image such as this with two shades of blue, the second option is a better choice.

With the raster image selected, go to EFFECTS MENU > ADJUST > REPLACE COLORS.



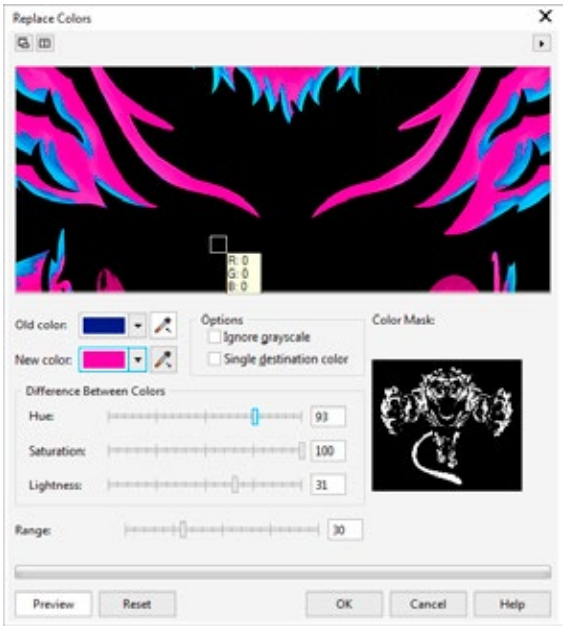
5

When the Replace Colors window opens, it usually doesn't have a "zoom in" window showing. To open that window, click the right button in the upper left corner.



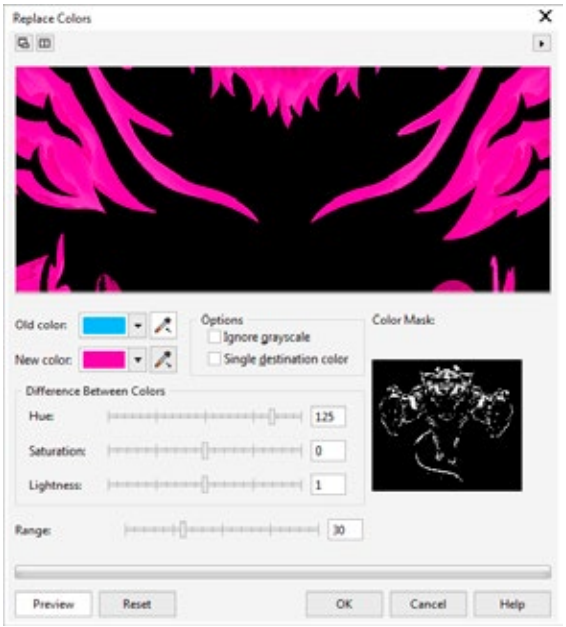
6

Use the Eyedropper next to the Old Color: field and click on a color in the image such as the dark blue. In the New Color: area, click on the swatch or click the drop down menu to select the color that you want to change the blue to. Click OK.



7

Repeat this process for each color you want to replace, in this case the cyan was replaced as well. Click OK.



8

Now you can save your new print/cut file with the adjusted colors as outlined in the previous lesson on Page 92. Make sure to give it a new name so that it doesn't save on top of your original file.

ADDING TYPE TO A RASTER PRINT/CUT IMAGE

Once you've added your bleed to your raster image, imported it into CorelDRAW, and set up your cut line for the it, you can add some type or other vector elements. Once your layout is done, you'll need to add a bleed and cut line to the new elements and weld the cut lines from both your image and your additional elements. In this lesson, you'll see how to add elements that do not touch or overlap the image, and set it up as a print/cut file.

1

Either open a raster print/cut file that you already set up with a bleed and cut line, or create a new one as explained in the previous lessons on Adding a Bleed to a Raster Art Image (Page 74-85)and Adding a Cut Line to a Raster Image with Bleed (Page 86-87). Set up your page to the dimensions that you will need for your design. Keep in mind extra space needed for the elements that you will be adding. Resize your image if needed by selecting both the cut line curve and the image so that they will resize together proportionately.

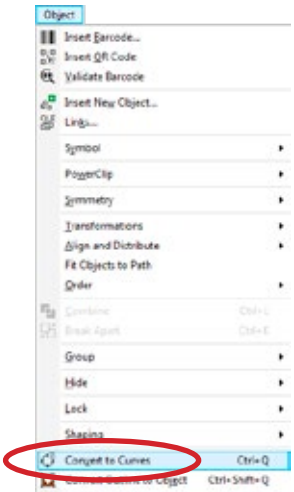
2

Use various shape tools and the type tool to add any vector elements and text to your image to create a complete layout.

You can also use the Envelope Tool to set your type in predetermined positions such as the skewed type here. Refer to Steps 5-6 on Pages 46-47 on how to work with the Envelopes Tool to layout your type.

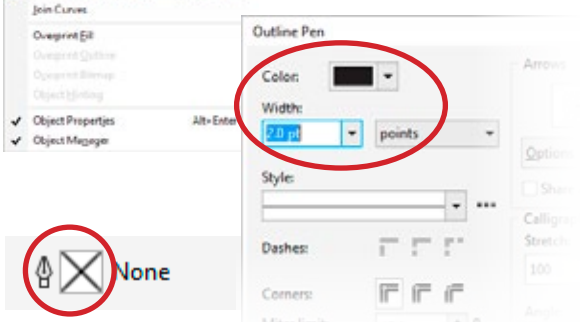
3

Before we can add the multicolor outlines around the type, we need to convert it to curves. Go to OBJECT MENU > CONVERT TO CURVES.



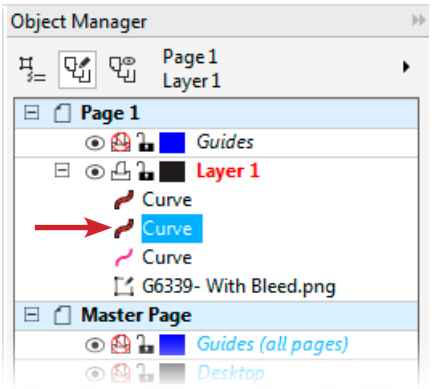
4

Double click the Outline Swatch at the bottom of your window to open the Outline Pen window. To add the black outline like this example, change the color to black and enter your desired width.



5

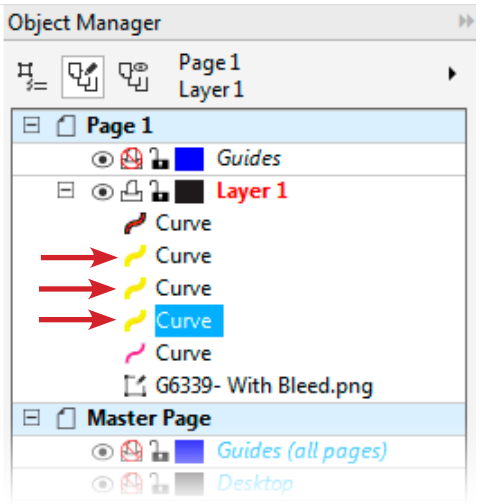
With the type still selected go to EDIT MENU > COPY, then EDIT MENU > PASTE to duplicate it to create a second outline color. In the Object Manager (OBJECT MENU > DOCKERS > OBJECT MANAGER) select the bottom duplicate curve. Double click on the Outline Swatch again to pull up the Outline Pen window. Change the color to yellow as in the example here and increase the Width to your desired thickness. Click on the Fill Swatch and fill the curve with the same color.



6

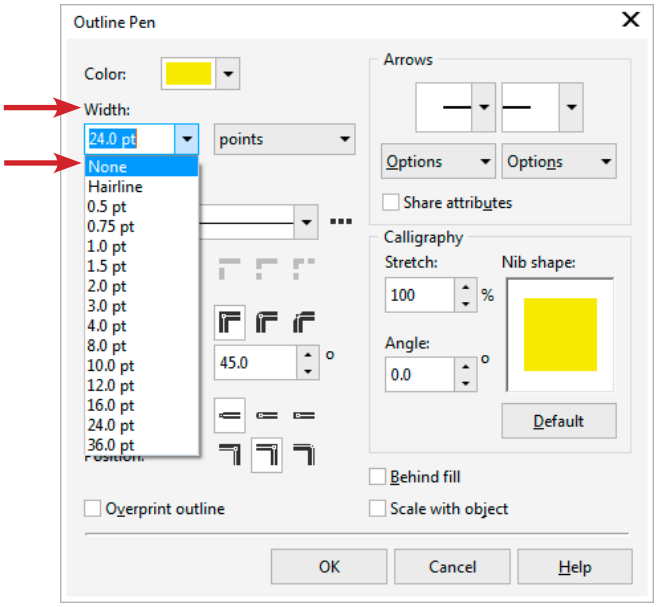
Once you have all your extra vector elements added, and your layout is complete, you're ready to add the bleed and create the cut line for the additional elements.

Go to EDIT MENU > COPY, then EDIT MENU > PASTE to duplicate the curve of the outer most color, in this case the yellow outline. Duplicate it again so that you end up with three copies of the yellow outline curve.



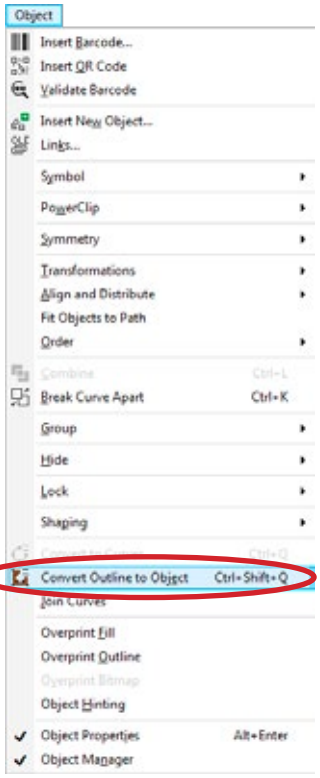
7

Select the bottom copy and double click the Outline Swatch at the bottom of your window to open the Outline Pen window. Set the line width to None. Click OK.



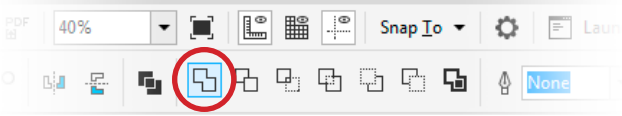
8

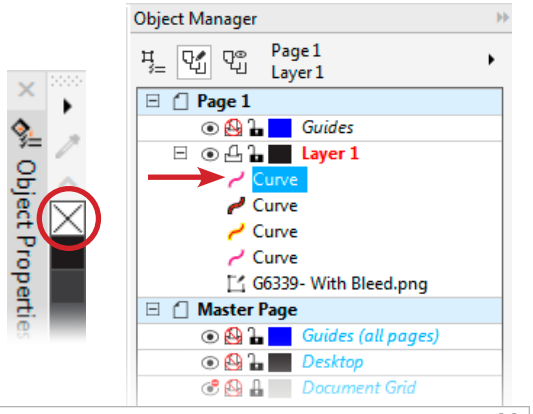
Select the next duplicate curve on the list that is above the curve you were just working with. Go to OBJECT MENU > CONVERT OUTLINE TO OBJECT.



9

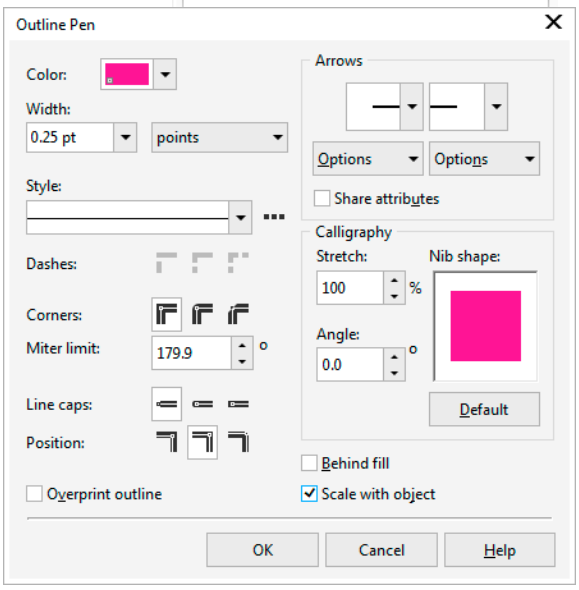
Using the Pick Tool, select both curves from Steps 7 and 8. Click the Weld option at the top of your window to merge both curves into one.





10

With your welded curve still selected, click the None fill option from the Preloaded Color Swatches, and then set up your outline with the CutContour specifications as explained in the previous lesson on pages 65-66.



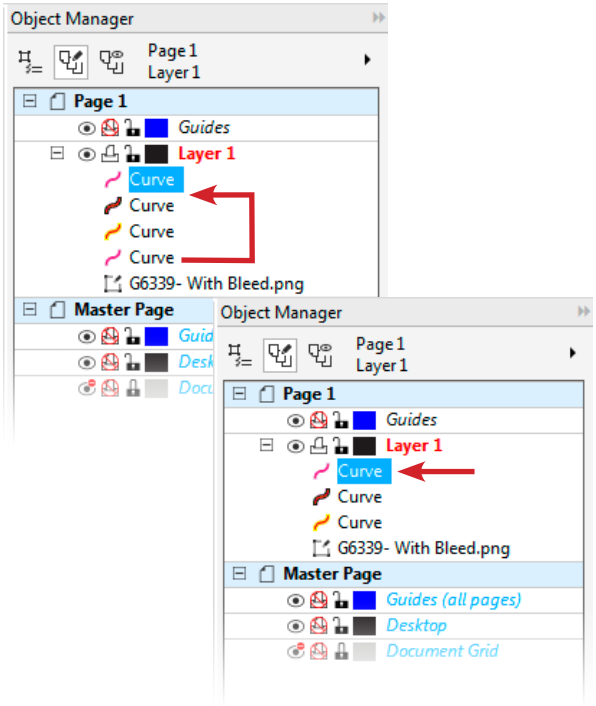
11

To add the bleed area, select the curve with the yellow outline. Double click the Outline Swatch to open The Outline Pen window and increase the Width of your outline so that the color extends past your cutline.

12

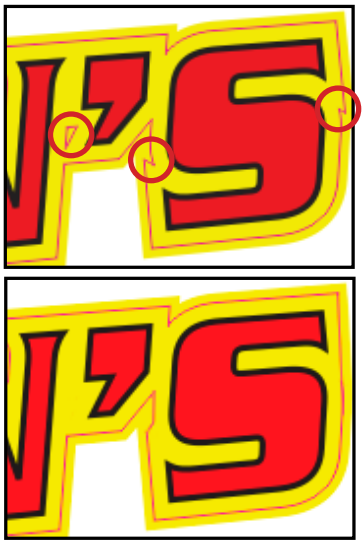
Click and drag the image cut line curve and move it up to the top of the list under the cut line curve for the type.

Select both curves and click the Weld option at the top of your window to create a single cut line that is positioned above all the art curves.



13

Once you've welded the cut lines together, go around the image and use the Shape Tool and/or Pen tool to round out corners, delete any small cavities, or make any adjustments to the cut line to help make cutting run quicker and smoother.



14

Double check your ContourCut line to make sure the color and specifications are still set up correctly and then you can save your final print/cut file as explained on Page 92.

ADDING TYPE IN FRONT OF A RASTER PRINT/CUT IMAGE

The issue that comes into play when adding type on top of a raster print/cut image is adding the bleed. You can't simply add a colored stroke to the outline of the outer most shape of an area. If you do, the bleed would cover the image as well. So how do you handle this? This lesson will show you how.

1

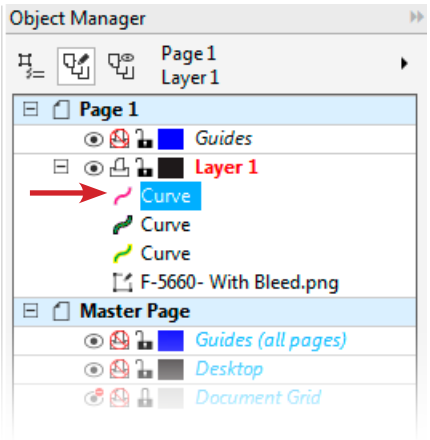
Open a previously saved print/cut file that has a bleed and cut line. Set up your page at the dimensions needed for your design. Keep in mind the extra space needed for any elements you will be adding. If you need to resize your image, make sure to select both the image and the cut line so they will be resized together and will still line up.

2

Set up any extra vector graphics or text that you want to add to your print/cut image to create your layout. You can outline your text like the image here by adding outlines as explained in Steps 3-5 on page 97 in the lesson Adding Type to a Raster Print/Cut Image.

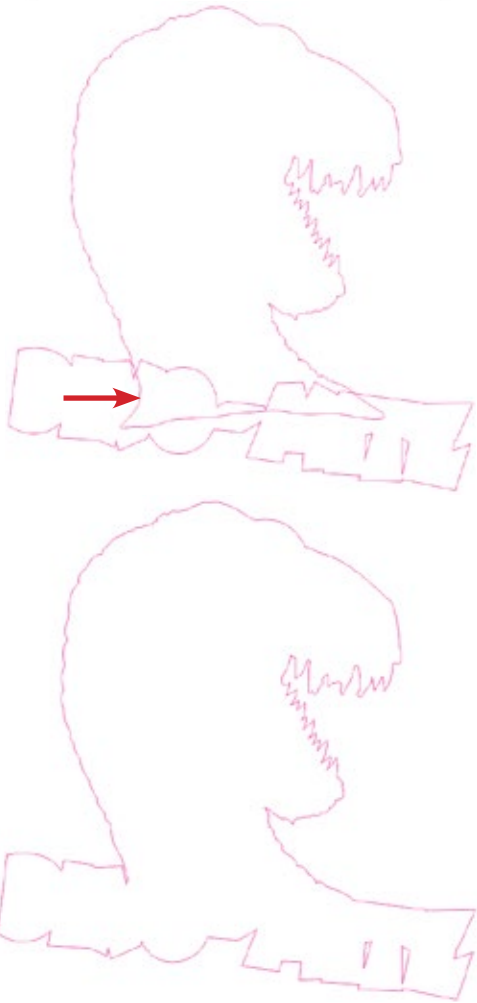
3

In the Object Manager (OBJECT MENU > DOCKERS > OBJECT MANAGER), select the cut line curve for the image and move it to the top of the list.



4

Refer to Steps 6-10 of the previous lesson on Pages 98-99 to set up the cut line for the vector elements in your design. When done, use the Pick Tool to select the image cut line and the new cut line that you just created. Click the Weld option at the top of your window to merge the two into a single cut line.



5

Now you are ready to add the bleed to the vector elements. Select the curve of the outermost outline color. Go to EDIT MENU > COPY, then EDIT MENU > PASTE to duplicate it. Select the bottom duplicate curve, double click on the Outline Swatch at the bottom of your window and when the Outline Pen window pops up increase the width of your outline to add color beyond the cut line to create the bleed.

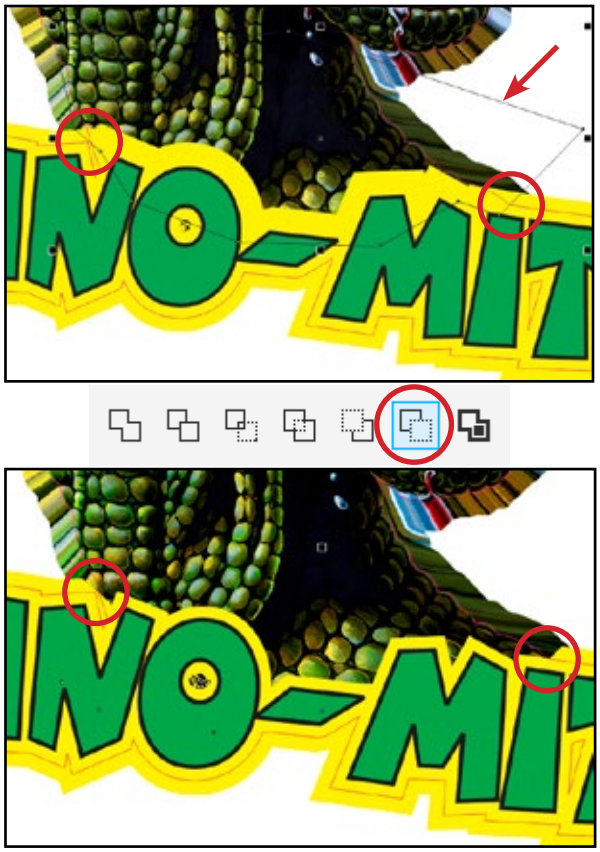
Repeat Steps 6-9 on Pages 98-99 so that the outline of the bleed area will shift to follow along the outer edge of the color. This is necessary in order to be able to manipulate the bleed and eliminate the area that covers the image as explained in the next few steps.

6

In order to eliminate the bleed area that covers the image, use the Bezier Tool to create a free form shape around the area to be removed. In areas where the image bleed and the vector element bleed meet, angle your outline at approximately a 45° angle to the corner where the two bleeds will intersect.

When the shape is complete, select the free form shape and the bleed curve. Click on the Back Minus Front option at the top of the window to knock the free form shape out of the bleed area.

Now the outline of the type is the proper width where it crosses over the image.



7

Exam your cutline for any small cavities that should be deleted, any sharp points that should be rounded out, or any nodes that should be deleted to create a smoother cut line.

8

Now you can save your final print/cut file as explained on Page 92.

ADDING TYPE BEHIND A RASTER PRINT/CUT IMAGE

When adding type behind a raster print/cut image, the layering is slightly different than when adding type in front of a raster print/cut image. See how it's handled here.

1

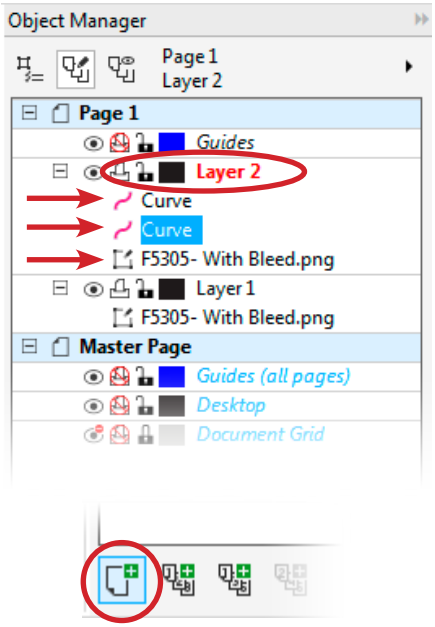
Open a print/cut file that already has a bleed and cut line. Set up your page with the dimensions needed for your design. Make sure to include additional space for the extra elements you will be adding. If you need to resize your image, make sure to select both the image and the cut line so they will be re-sized together and will still line up.

2

Select the image and duplicate it by going to EDIT MENU > CUT, then EDIT MENU > PASTE. Do the same for the cut line. Now you should have two copies of the image as well as the cut line showing in your Object Manager Docker.

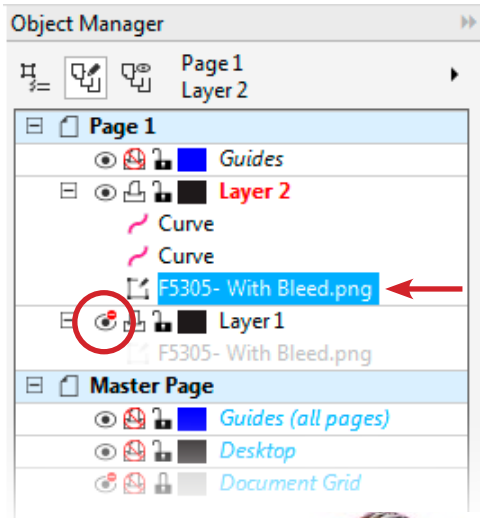
Click on the New Layer button at the bottom of the Object Manager to create a new layer.

Move both of the cut line curves into the new layer as well as one of the raster images.



3

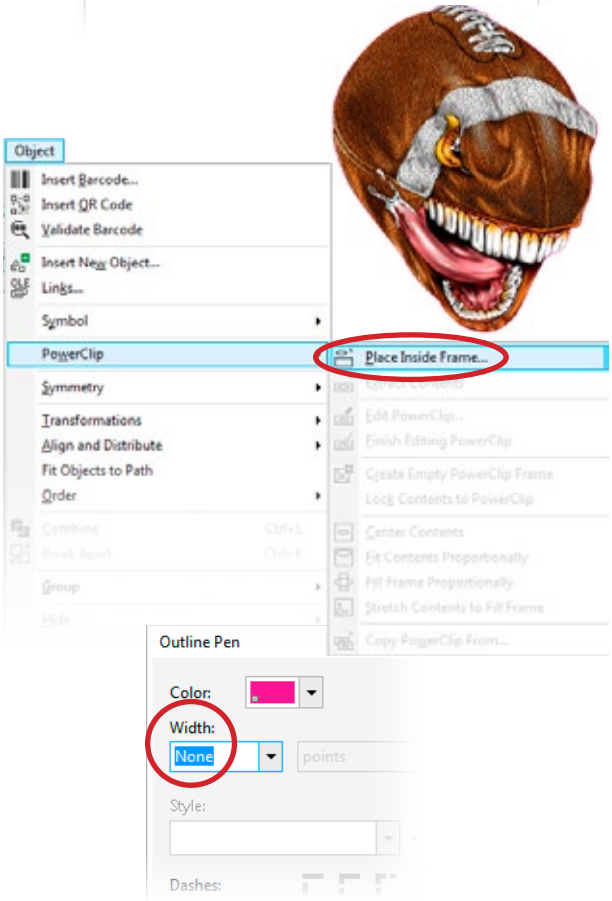
Turn the eyeball off on the bottom raster image layer so that it is no longer visible. Select the image in the top layer.



4

Go to OBJECT MENU > POWER CLIP > PLACE INSIDE FRAME. Click on the cut line curve above the image and you'll notice the bleed is no longer visible. It has been masked.

Double click the Outline Swatch at the bottom of your window to open the Outline Pen window. Set the outline width to None so the outline color won't be visible around your masked image.



5

Now you can add your vector elements. To add multi-color outlines as in this example, refer to Steps 3-5 on page 97 in the lesson Adding Type to a Raster Print/Cut Image.

Make sure your masked image is positioned above your vector elements in the Object Manager Docker.

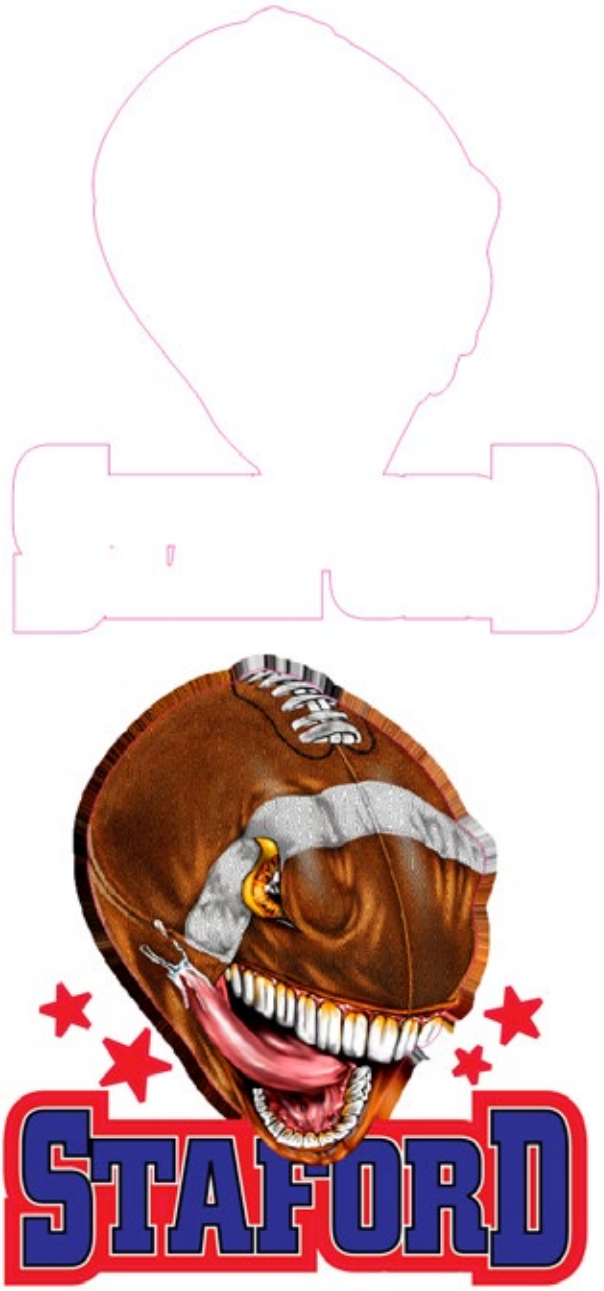
As you can see here, the reason for creating the mask in the previous lesson is so the vector elements can be placed behind the image and the bleed won't cover anything where they overlap. It helps to create some dimension in the image making it look like the football is coming out over the type.

6

Now you can set up the cut lines for the extra elements and weld them with the cut line for the image. Refer to Steps 6-10 of the previous lesson on pages 98-99 to set up the cut line for the type portion of the design.

For single shaped elements like the stars in this layout, select each star and duplicate it by going to EDIT MENU > COPY, then EDIT MENU > PASTE. Do this for all the extra shapes in your design that do not have an outline applied to them. Select each duplicate curve, and apply the CutContour color and specifications to each outline.

Using the Pick Tool, select the cut lines you created for all the vector elements as well as the image cutline. Click the Weld option at the top of your window to merge all the curves into one and your cutline is complete. Make sure it is at the top of the list in the Object Manager Docker.



7

For simple shapes that do not overlap, such as the stars in this layout, to add the bleed you can simply select the appropriate curve, and double click the Outline Swatch to pull up the Outline Pen window. Set the color to match the color of the element, and increase the width to expand past the cut line to create the bleed area.

For areas such as the type, follow Steps 6-9 on Pages 98-99 so that the outline of the bleed area will shift to follow along the outer edge of the color.

8

Once your cut line and bleed are completed, make any final adjustments such as deleting any small, unwanted cavities, rounding out sharp points, adjusting or deleting nodes to help make the cutting process run quicker and smoother.

To adjust the corners where elements overlap and the bleeds intersect create a free form shape that you will use to knock out the unwanted area from the bleed. Refer to Step 6 on page 103 for more detail.

Now you can save your final print/cut file as explained on Page 92.

GLOSSARY & INDEX

GLOSSARY

BEZIER HANDLES - Handles that can be pulled out when a node is added along a curve to help create curved shapes and form the image.

BLEED - Extra color extended beyond the cut line of a print/cut image to prevent white areas from showing if the registration is off when cutting.

CAVITIES - The holes or openings in a vinyl cut or print/cut design that need to be pulled out when weeding to remove excess vinyl.

CURVE - The vector outline of a shape.

CUT LINE - The vector curve that a cutter follows. In vinyl cutting, any vector curve will be seen by the cutter and will be followed to cut the design. In printing/cutting a specific cut line must be created and have an outline color applied to it with a certain color name and outline specifications in order for the printer/cutter to recognize the curve and know where to cut.

CutContour - A specific name given to a color which is used to outline the cut line of a print/cut image. The proper case and spelling is required in order for the cutter to properly recognize the name and know where to cut. Different cutters may require different terms so it's recommended to consult your printer's requirements in order to set up your cut line properly.

KNOCK OUT - The process of using once shape to punch a hole or to eliminate an area of another underlying shape.

NODES - The dot along a vector curve allowing you to form the overall shape of the curve by using Bezier handles.

OUTLINE - The color applied to the curve of a shape. In printing/cutting an outline is applied to the cut line of the image with a color that is given a specific name in order for the printer/cutter to be able to recognize the curve for cutting.

PIXEL - A single dot in a raster image. A raster image is created by a series of pixels which create continuous tonal values in the image.

PRINT/CUT - The vinyl cutting process by which an image is digitally printed on white vinyl and is then cut by a cutter around the perimeter of the design.

GLOSSARY

RASTER - The type of artwork created by a continuous series of pixels resulting in a tonal image. It can not be selected and manipulated in the same manner as a vector design.

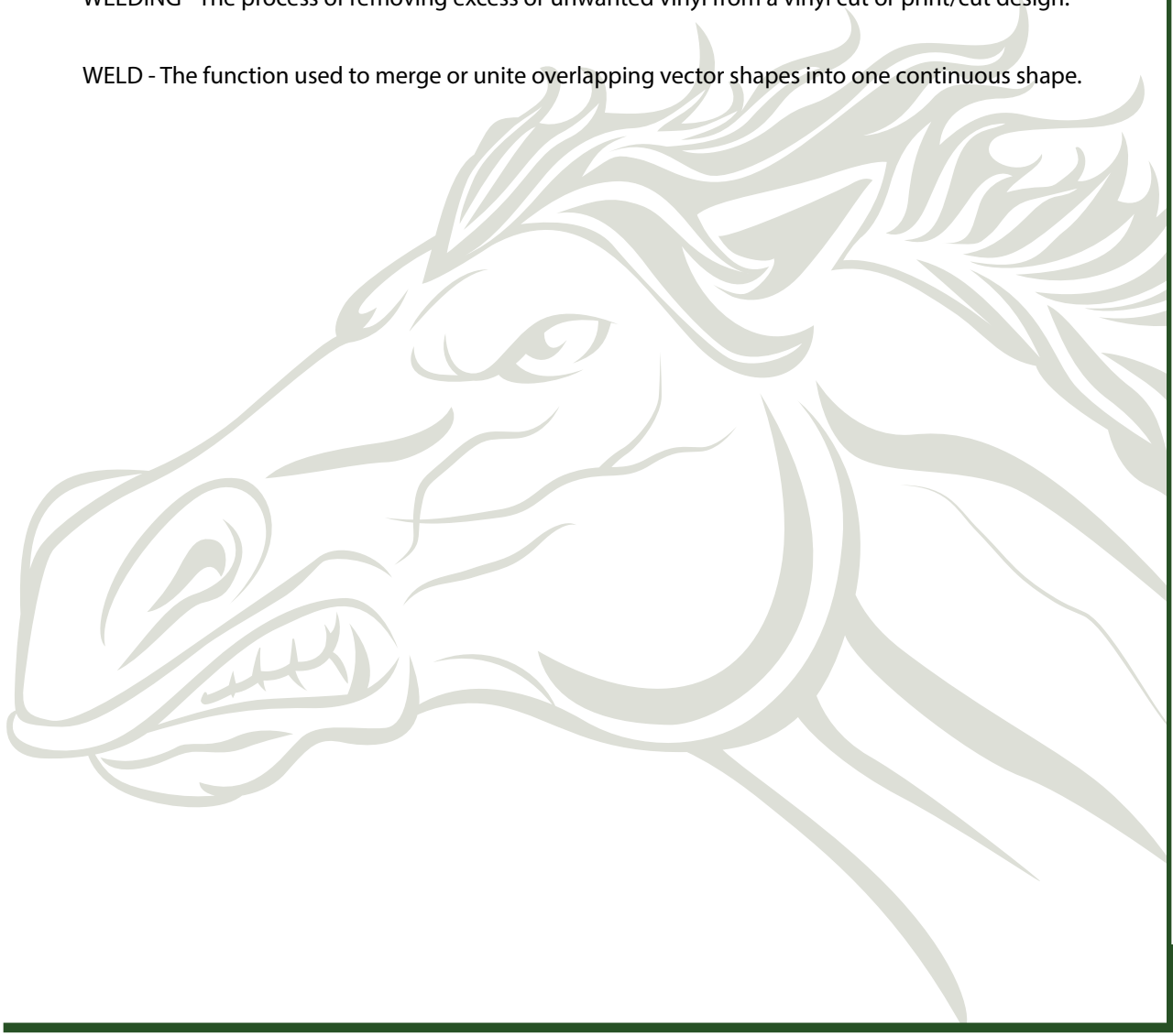
TRAP - The slight overlapping of vinyl material when applying multiple colors to prevent any small gaps from showing if a shirt shrinks due to the heat from a heat press.

VECTOR - The type of art created by a series of curves and nodes which can be selected and manipulated to create an image.

VINYL CUTTING - The general term referring to any process by which a cutter is used to cut a design out of vinyl material, whether it be a single, colored vinyl or a print/cut image digitally printed on white vinyl; The specific term referring to the process of using vector artwork to cut out images using individual heat transfer materials.

WEEDING - The process of removing excess or unwanted vinyl from a vinyl cut or print/cut design.

WELD - The function used to merge or unite overlapping vector shapes into one continuous shape.



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FOR CorelDRAW & PHOTO-PAINT 2018 USERS

CREATE YOUR OWN DESIGNS FOR VINYL CUTTING & PRINTING/CUTTING

You can use clip art to create your vinyl cut designs, but what if you can't find what you need or you want to create your own design? Where do you start? What things do you need to take into consideration so that your cutter will cut your designs quicker and smoother and produce images that will weed just as fast and easy? Artwork for Vinyl Cutting is here to help you with just that.

Standard clip art isn't always the answer to your vinyl cutting artwork needs. It's not set up with cutting in mind and therefore can become more of a headache than a help. Learn what to look for when using clip art to see if it will work for cutting or if you should start from scratch with your own idea.

Learn about the different specifications and attributes to consider when creating your designs to determine how detailed you can get while still keeping the design production-friendly for your own timeline and budget.

Artwork for Vinyl Cutting not only discusses single color vinyl cut designs but also multicolor vinyl designs and full-color designs for producing with print/cut systems. Learn how to add a bleed and cut line to your full-color designs to eliminate the white "sticker" outline or to prevent any white gaps from showing if the registration is off when cutting.

Get ready to start creating your own original designs that cut and weed properly, quickly and easily to help you speed up your production time so that you can put more money in your pocket!

Dane Clement, president of Great Dane Graphics, is well-known for his expertise in computer graphics and color separations. He has authored "T-Shirt Artwork Simplified" books for Adobe and Corel users, and is now Vice-President of Art and Creative Process for GroupeSTAHL. Dane conducts seminars at the Imprinted Sportswear Shows, SGIA Show, DAX Show and PPAI Shows and is a regular contributor to Impressions Magazine. He has consulted worldwide helping art departments work smoothly and efficiently, and also judges for Impressions Magazine Impressions Awards and the SGIA Golden Image Awards.

After joining the Stahls' team he expanded his knowledge in the garment decoration industry particularly in the area of vinyl cutting. It's this knowledge that he's acquired over the years, learning how to properly create and set up artwork for vinyl cutting, that he shares in this book so that others can start creating their own vinyl cut designs.

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