MORPHIUSDISC MANUFACTURING TUTORIAL

Welcome to the MorphiusDisc Mfg tutorial, which should help you get started on the right foot preparing your project for manufacturing. This tutorial is designed to help you avoid costly errors and production snags that could delay your projects completion, and it should help to ensure that your finished products are of the highest possible quality.

1 HOW TO SUBMIT YOUR ARTWORK

If you are not a designer and/or have little familiarity with creating artwork on a computer, it may be vastly more simple for you to allow us to create your artwork at Morphius from your supplied text and pictures. While this will add cost to your project price, you can rest assured that the work will be done promptly and professionally, and that your finished product will capture the look and feel that you are searching for. Many people who call themselves designers are unfamiliar with the process of creating artwork for CDs or cassettes or vinyl records, and enlisting them to help you can sometimes cause delays and less-than-optimum results.

If you do have familiarity with computer software for desktop publishing and image creation/manipulation—and a little patience—then this tutorial can help you to submit effective artwork to us on your own.

2. PLATFORMS & PROGRAMS

PC OR MAC
We accept artwork submitted in both the PC and MAC platforms, though we prefer MAC if you have the option of using either one. Several software packages for the PC platform have troublesome idiosyncrasies (Coreldraw, certain versions of Pagemaker, older versions of Illustrator, etc.), so please call us prior to beginning a layout design using the PC platform with any programs other than Quark/Photoshop. Any PC layout work which is submitted must be accompanied by a reference proof of some type which shows the final form of the text.

SOFTWARE WE ACCEPT
If you do not have access to a layout program that we can accept, or if you prefer to let us worry about making sure the layout looks good, you are welcome to submit your text using word processing software such as Microsoft Word, Word Perfect, Simpletext, ClarisWorks, Appleworks, or using another program that can save using text format. You are also welcome to send us an email text message that includes all the type that you want.

Combined with sending us photos or scans of images that you want to use, this art submission method can be a fastest and most cost-effective way to get the job done with a minimum of hassle.

If you are considering or have started using Microsoft Publisher or a similar Executive Presentation software package to create your artwork, please stop right away….While these programs may be great for printing reports on laser printers and for preparing slide presentations, they will not work for this purpose, and we cannot currently convert them to something that will work (We have yet to hear about anyone who can).

If you are setting up the layouts yourself, you will get the best results if you use either QuarkXpress or Adobe Pagemaker. They are considered the industry standards, and they are the most reliable and versatile programs to use. Furthermore, any necessary corrections to lay-

outs created with either of these will be easy and quick to complete—as well as inexpensive if we are completing them for you. If neither of those is available, Adobe Illustrator or Aldus Freehand are also effective, but require slightly more expertise.

Other programs such as Adobe Indesign or CorelDraw may also be used, however they are not specifically addressed in this tutorial. Although we do not accept files submitted in the native versions of these programs, Indesign allows a variety of saving options that we can accept, and Coreldraw layouts can easily be saved as Illustrator files (the .ai format). Earlier versions of Coreldraw are not recommended, because of a variety of limitations and problems with unreliability.

Adobe Photoshop is a very important program to use for your image creation and manipulation, but it can also be used for layout work if there are no other available options. If none of the above programs are available, we recommend that you submit your images ready-to-use in Photoshop, and then submit your text to us separately, using Microsoft Word, Word Perfect, ClarisWorks, Appleworks, Simpletext, or just typed into an e-mail message. We can then use a hard copy mockup of how you want your finished product to look to finish the typesetting for you in QuarkXpress/Pagemaker. Using this method will add minor charges to your job cost, but ensures that the resolution of your text will be crisp and not be compromised by the image resolution of your pictures. Many of our clients use Photoshop to complete their layouts for cost efficiency, but this method causes text to be somewhat pixilated or stepped and is not recommended for achieving best results.

3. CREATING AND SAVING YOUR IMAGES AND PICTURES

PHOTOSHOP
Adobe Photoshop is virtually the world standard for image creation, manipulation and export to page layout documents. It is extremely effective for anyone attempting to create their own artwork. By using Adobe Photoshop and following these guidelines you can ensure that your images are ready to be imported by a page layout program or used by us to complete your design work. If you are scanning the images yourself, you need to make sure that you are using a suitable resolution for offset and screen printing.

RESOLUTION/DOTS PER INCH
For any images that are going to be offset printed (i.e. your booklets, tray cards, folders, catalogs, brochures, stickers, offset print posters, or high resolution on CUD printing, we recommend that you use images of 350 dpi (300 minimum), at actual size. What this means is that if you are scanning something that will be used at twice the size of the original picture, you need to scan at 200% of actual size and 350 dpi. Some scanners do not allow you to change the percentage of actual size when you are scanning, so if this is the case you should simply increase the dpi of the scan (i.e. 700 dpi if you want to print the image at twice its original size)

For images that are going to be printed using a silkscreen process (i.e. normal printing on your CDs or CD-Rs, the image resolution requirements are slightly lower. 240 dpi is recommended, though resolutions as low as 170 dpi will also be acceptable. These dpi recommendations also

apply to the printing of T-shirts or if you have chosen to print spot-color posters with us using a silkscreen process (though most of our customers order offset printing for their posters because it is significantly more high resolution).

Once you have scanned your images or gotten someone else to scan them for you, you need to prepare them to be imported into one of the page layout programs mentioned above. To do so, first open the images with Photoshop.

COLOR MODE

Most image scanners use RGB mode, since that is the method by which monitors display color, but RGB color mode cannot be used for either offset or silkscreen printing and must be converted. To convert your images, select MODE from the IMAGE menu and convert each image to either GRAYSCALE (for B&W printing) or CMYK (for full color printing). When converting to CMYK it is likely you will see a slight shift in color or even a significant one, since the way that your monitor displays colors is very different from the way colors are printed onto paper. After converting the color mode to CMYK, you may want to adjust the color appearance of your images. Photoshop provides a wide variety of methods for doing so, but these are not covered in this tutorial.

NOTE: if you are using a program other than Photoshop for your image creation/preparation, it may not give you the option of converting to CMYK or Grayscale. If this is the case, you should contact us about how to proceed in the most effective way possible. It is likely that we will be able to convert your images effectively for you, but there may be charges involved to do so. Many programs that do not allow the CMYK or Grayscale mode are also limited in their ability to set image resolutions appropriately, so be aware before proceeding that mixed results may occur. Always ask us if in doubt….

IMAGE SIZE

Once you have set the color MODE correctly, you should verify that your scanner or whoever provided the image to you has sized it correctly. To do so, select IMAGE SIZE under Photoshop's IMAGE menu, which will show you the current size of the image. You should see the current size and resolution listed. If the size is too low, it means your image is not really suitable to use for offset printing. There are several ways to correct this. The first and best way is to rescan the image, either by setting the resolution or sizing higher, or finding a scanner that can. Most scanners will allow you to set a custom resolution and size, so if yours cannot, the quality may be insufficient for these purposes.

In other situations it may not be possible to rescan the image. Don't worry about it too much, there are ways to make the image look pretty good anyway. The easiest way is for you to send it to us and have us do it, although there are limitations to how good a picture can be made to look if the dpi starts out too low.

If your source for this picture is the internet (since images posted as jpgs or gifs on the net are usually at 72 dpi, which is 4 to 5 times lower resolution than what is recommended for printing), then you might be in trouble. Although we can work wonders here, there is a limit to what can be done with most images that come to us at 72 dpi.

If you are an experienced Photoshop user, you are welcome to try to fix the image by resizing it to an appropriate image resolution by changing the setting in IMAGE SIZE. If the image resolution is too high, check the box that says RESAMPLE IMAGE SIZE and just decrease the resolution to 350. Your results will usually be quite good. Or if the picture size is too big but the image resolution is not high enough, uncheck the RESAMPLE IMAGE SIZE box and type 350 in the box that says Resolution. The sizing will change automatically to show you at what size the image can be displayed using 350 dpi, and this will not affect the quality of the image.

If, on the other hand, the image resolution is too low, check the RESAMPLE IMAGE SIZE box and try increasing it to 350. Photoshop will guess what the pixels that it adds should be, and often the results will be quite good. When using this method, you can experiment using other Photoshop features such as UNSHARP MASK and GAUSSIAN BLUR, and then finishing by changing CONTRAST/BRIGHTNESS or re-SHARPENING your image. Good luck with your results.

4. CHECKING IMAGE QUALITY, SPOTTING MOIRÉ, SAVING AS TIF

IMAGE QUALITY
When your image seems ready to use, or after significant work that you want to test the results of, you should examine the picture using the view option which says ACTUAL PIXELS. What this will show you is a magnification of the image to the point that the monitor can show you the level of detail that the image actually has. If you've done the previous steps properly, when you click onto ACTUAL PIXELS, the image should be displaying at 400% of actual size or higher.

When you are viewing the image at this magnification, you will probably notice some inconsistencies in its appearance unless your scan is of extremely high quality, but the image should still look relatively good. If it does not, then whatever you did before may not have worked...

SPOTTING A MOIRÉ PATTERN
If you notice crisscross patterns or checkerboarding or circular dot patterns of discoloration in the image at this view, it probably indicates the presence of something called moiré, which can occur when scanning an image that was previously printed using the offset process (i.e. a picture from a book or magazine or newspaper). While these problems will not be likely to show up in printouts made at home using an ink jet printer (or even most laser printers), they are causes for concern, because they will almost certainly show up when we offset print your image. If you do notice moiré patterns in your images, you can either have us correct them as much as is possible here, or you can attempt to use some of the techniques above (UNSHARP MASK or GAUSSIAN BLUR, etc.). Moiré problems do not usually occur using scans of actual photographs, but beware of them if you are taking images that have been printed before using other methods like offset or silkscreen.

SAVING TIFF FILES
When you have verified that your Photoshop images are OK, save them as TIFs. Do not check the LZW compression box, as it may cause output problems.

5. TEXT IN PHOTOSHOP

Text in Photoshop, while often of reasonable quality for silkscreen process printing, is not recommended for use in offset printing, as it often will not appear as crisp on your final product. If you must create your text in Photoshop, try to stick to large font sizes and fonts that are relatively clear, and consider increasing your image resolution to 450 dpi or higher, as this will preserve some of the smooth vector curves that the font would normally have.

If you can afford some minor extra charges, you may want to just submit your images without text and submit the text separately, either as a separate Photoshop file saved as an EPS at 600 to 800 dpi, along with a copy of the fonts you are using. Or you can just save the text in a word processing program that you are comfortable with, and send it along with instructions or a mockup of how you want it to look.

If you have other questions about the best way to submit text or use special fonts without having access to a page layout program, please contact us by phone. Both Illustrator and Freehand can be used to create picture-perfect and customizable text if QuarkXpress or Pagemaker is not available.

6. IMPORTING IMAGES INTO YOUR PAGE LAYOUT

THIS STEP IS RELATIVELY EASY, AS LONG AS YOU KEEP A FEW SIMPLE RULES IN MIND.

FIRST, always keep all the final images that you have created in a single folder, and name them so you know which is for what section of your artwork. that way, when it comes time to save everything onto a disc, it should be relatively easy and you can make sure that all the images are there.

SECOND, you must use accurate templates for your sizing, which you can obtain from the section labeled templates. Using these should make it easy to prepare your finished layout. our site has easy-to-use templates that can be downloaded for QuarkXpress or Pagemaker. Included with these templates is a blank Photoshop document for sizing of your CUD booklet and tray card, as well as one for the image size of the CUD. There are also templates that can be imported into Illustrator, Freehand, CorelDraw, or other programs.

THIRD, any font that you use to create text using a layout program must be submitted along with your artwork. If you are using TrueType fonts (.ttf) it is easy. Just search through the directories where your fonts are stored until you find the .ttf font, and then copy the font to a folder called FONTS and put it in the folder where you are storing the artwork for the project. Once you are finished preparing the layout, you will be able to copy the entire folder along with your layout and images to a disc. If you are using Postscript fonts, the process is the same, but each font will have TWO files that you need to submit. One of these is called the screen version and the other is called the postscript version.

So with all that in mind, you can begin importing your images into the document with the layout program you are using. Depending on which program you are using, this will be either called GET PICTURE, IMPORT, or PLACE FILE. Simply select the image that you wish to use (in certain programs you will have to create a picture box to import it into), and move and size it accordingly.

CMYK COLORS
When creating colors in the layout program, it is important that you select the right mode for the color. Accomplishing this task is different with each program, and some decision making is involved as well. Depending on which type of printing you have chosen, you can determine how to set up the color in your layout program accordingly, as follows.

For full color text, the creation of background colors, or colorizing Grayscale images, you will use CMYK or process color mode. By using only process separation colors, your layout will properly separate into only Cyan, Magenta, Yellow, & Black (CMYK).

If you have chosen 4/1 printing for your booklet and/or tray card, that means that the front of your booklet and tray card can be printed in full color (CMYK) and that the back of the booklet (also called the inside of the booklet) can only be printed in using black (what is called "K only"). If you are using a clear tray jewel case and printing on the area that appears under the CUD, that can only be printed in black as well.

On the other hand, if you have chosen 4/4 printing, it means that the front and back of your booklet and tray card can all be printed in full color (CMYK).

SPOT COLORS
If you have chosen to print using custom Pantone or PMS colors (including metallics and fluorescents), then you must set up any custom color being used to print as a spot color, so that it will appear on another piece of film when it is separated. Note that using PMS colors will cost additional money for both the printing and the film charges. With the exception of that situation, all other colors must be set up to separate.

USING THE COLOR BLACK
The color black should be used with very careful attention. In most full color images, the color black will consist of a mixture of K plus each of the other colors. Standard Photoshop black is created using the following color percentages: CYAN=65%, MAGENTA=53%, YELLOW=51%, and BLACK=100%. In the printing industry this color build is called Rich Black. You can check whether your Photoshop images use these proportions, because sometimes the black color in certain images will vary somewhat, depending on the density of the color.

Usually, it is desirable to use a color black in your layout program which will exactly match the black of your images. Otherwise, the black created will look lighter in color and not match correctly the tone used in the image. To accomplish this in your layout program, create a new color called Full Color Black, using the color amounts above, or whatever will match appropriately with the black color in your images. This color should be set to separate as a process color. Then assign everything that you want to match the black color or your images to be this same color.

Note that you will still use the normal K-only black for anything that you want to match with grayscale images and anything that is printing on pages that are being printed as black only.

CHECKING COLORS
When you are finished you can check your layout colors setup to make sure that any custom colors you have created have been specified as Process colors, or set up as spot colors if you are printing additional custom colors with your job.

As long as you remember to check the color mode of your images and your color setup in your layout, include all your fonts and images on the disc, not to accidentally move your cut & fold mark guides, and make sure you've included enough bleed area for your images, and check to make sure that your images are of sufficient resolution, you should be all set.

BLEEDS AND SAFE AREAS
Whenever an image is printed, folded and cut, there is some degree of inaccuracy in the cutting process. Even sophisticated machinery is not perfect, so sometimes one side of an image gets cut a little close or a little far. for this reason, printers require something called a bleed to ensure that the final printed product will still look good, regardless of whether a slight variation occurs during the printing process. Otherwise, if the cut line shifts to be outside the picture edge, there will be a thin white line on that edge of the final printed product.

But don't worry, creating bleeds is quite easy. It just means that you have to extend the pictures that you are using or the backgrounds you create past the place where the image is supposed to be cut. The recommended amount of bleed to use is 1/8th of an inch, and a bleed should go all the way around the cut lines.

Because the cut can also shift to be inside the edge, there should be what is called a safe area inside the image. That safe area should also be one eighth of an inch—but inside the cut edges—and in this safe area there should be no text that might get cut off if there is a shift in cutting.

NOTE: Because the area on each side of a tray card where the spine text appears is only about one quarter inch wide, there is very little room for error (and also very little room for the text which needs to go there) so the cutting process is somewhat more precise. Accordingly, for the left and right sides of the tray card you only need to keep the text one sixteenth of an inch away from the edge.

7. OTHER ISSUES TO BE AWARE OF

BAR CODES & TOP SPINES
Many stores and distributors prefer that the merchandise items that they carry utilize bar coding. For CD products, this bar code is normally placed on one corner of the tray card (or on the back of a CD sleeve or digipak). MorphiusDisc Mfg can create a bar code for you and add it to your artwork, whether or not you have your own UPC manufacturer number. Please leave a white box wherever you want us to place the bar code. This box can be a variety of sizes, so we

recommend that you look at some CDs in your collection and pick a size that you like from one of them. If you have your own manufacturer number but need us to create the bar code tif for you, simply give us the number when you send in your order.

Some companies also like to use what is called a top spine label on their CDs. This is a sticker that is applied to the top edge of the jewel case which allows people browsing through the shelves of a record store to see the name of the artist without having to pick the CD up. It also gives store clerks the ability to see the bar code information as well.

MOCKUP BOOKLETS
Mockup booklets are required for all printing jobs that involve multiple folding or on print jobs of stapled booklets that have multiple pages. They don't have to be pretty, but we need to see how the layout is supposed to be paginated. Remember when setting up a larger booklet that the pages are set up like a book (i.e., from left to right page 8 then 1; page 2 then 7; page 6 then 3; page 4 then 5). If you are using our templates, you'll notice that the page numbers are noted just above the area where the panels should go, so as to decrease the chance of an error being made. Please leave the page numbering there, unless you decide to change the page ordering.

8. PRINTING ON THE CD ITSELF

SET UP
Setting up the design for on your CDs is significantly different than creating the design for your booklets and traycards. For starters, unlike the booklets, there is no requirement for the creation of bleeds. Because the image is normally silkscreened onto the CD (except if you are paying for high definition offset printing), the image resolution requirements are different. The image area is of course round, and toward the inside of the CD, there are several factors to be aware of. moving from the outside edge toward the center of the CD, the surface of the CD changes from the coated aluminum to the mirror band area. Then there is a section where the CD can have no printing at all called the stacking ring, and after that there is another section where the surface is transparent--but can be printed on if desired. As such, it is usually a good idea to print a solid background color (or white) before printing the rest of the image on a CD, because it gives the image on the disc a more consistent look as it crosses into each of these regions. For an easier to understand diagram of this, take a look at our printable CD template.

If you want a background color (white or otherwise, and also called a flood coat just ask. As long as you have used one of our standard template sizes, you will not be charged for film output for this color. A flood coat does count as one of the two colors that come included with our standard CD packages.

Some people prefer to use white as one of their colors in the design, not as a flood. Because white does not normally print on paper, it is hard to display it as a color. Our suggestion is that you create a new color called PRINT AS WHITE, which you might want to set up as being one of the Pantone cool gray colors. On screen it will look grey, but it will get printed white, and the film to produce the white color will say PRINT AS WHITE right on it for clarity.

Please note that while we are happy to use other colors as flood coats, they will often mix with the colors being printed on top of them and alter the appearance of those colors.

If your design uses a monotone, duotone, or tritone image, it is important that you inform us so that the appropriate screen angles can be specified for film output. Note that duotones and tritones often look very different on screen, so we recommend that you output a test separation of your duotone colors onto paper and then use common sense about color mixing to determine if the result will create the effect you are looking for.

COLOR MODE FOR ON THE CD

Normally for the printing of 3 or less spot colors on a CD, the PANTONE MATCHING SYSTEM colors are used (PMS). Any color can be selected from Pantone's CUSTOM system of colors. You will find that the variety is extensive, allowing for selection of most of the possible colors that process printing can generate, without having to create a process color build.

On the other hand, if you wish to print a full color image, or lots of different colors that would be costly to print as spot colors because of the number of films required, you can also use CMYK printing, just like on the booklets and traycards.

One must be aware though, that the resolution is not as high as when printing on paper, and the accuracy of colors is especially variable when printing on the silver surface of the CD. Using a white flood (i.e. a fifth color) is strongly recommended for all on-CD printing to be done using CMYK process.

If you are using gradients or halftoning for the on-CD printing, you must use our silkscreening compensation chart in order to achieve accurate color representation (see chart). If you do not feel comfortable executing these changes to your images yourself, we recommend that you let us take care of it for you for best results.

If you are attempting to use Photoshop to create colors for the design on your CD, please be aware that your colors must be set up to separate properly as either CMYK or PANTONE CUSTOM colors. Otherwise, additional charges will apply for us to fix the images. This can be accomplished in photoshop by clicking on the color palette and then selecting CUSTOM to choose the color you are using from the PANTONE CUSTOM guide. You can also take a color picture and convert it to grayscale and then change it into a duotone from there and select colors that way.