SPIN

DIGITAL MEDIA CORP.

DISC MANUFACTURING GUIDE

And So It Begins...

Creating your own CD is a great step in getting your music heard. If it's done well, it can help in opening a lot of doors. If it's done poorly, you now own a lot of great drink coasters. The goal of this guide is help you understand the processes involved in the manufacturing of CDs so that you get the results you want with no nasty surprises. This is not meant to be the bible of CD manufacturing but rather a guide written in layman's terms that we hope will help you to achieve a better result.

"I just want CDs. Why should I read all this stuff?" - You don't need to, but if you choose not to, then at least pass this booklet on to whomever is going to do the design work for you. Time spent now can save $$$ later.

Our reason for putting this information guide together is so that it might help raise the overall standard of quality of CDs for independent musicians and at the same time, help you save money by getting it right the first time.

The Elements

A complete CD package will involve dealing with seven different areas:

1. Audio preparation and disc manufacturing
2. Graphic Design
3. Film (color separations) and proofing
4. Printing (Paper)
5. Printing (on disc)
6. Packaging
7. Shipping

In this guide we'll look at each element in some detail.

1. AUDIO PREPARATION AND DISC MANUFACTURING

For best results, consider audio mastering. Most of the time, when you or an engineer records your music, a great deal of time and care is put into making sure that every part of a song is recorded in tune, in time and sounds right. Usually however, this is done on a song by song basis. In mastering, the engineer takes a broader view of the project and thinks of it in terms of a complete record. A good mastering engineer will be sure to have a consistent volume throughout the record as well as even equalization, compression, spacing between tracks and other techniques that may be required to help achieve a polished, professional sounding CD.

Next, your finished mixes (which can be in a number of formats such as D.A.T., 1/4" analog, Sony PCM 1630, or 8mm exabyte) are transferrd to a CD premaster (a CDR). Digital audio tapes do not have the necessary PQ subcode information and are therefore transferred to another format that can provide it. (If you choose to submit a D.A.T. for transferring or mastering to a CD Premaster, be sure that it is properly labeled and recorded with a sampling frequency of 44.1khz and 16 bit).

Not all CDRs are created equal. Some CDRs done on older or less expensive stand-alone CD burners or non-compliant software do not write audio CDs in what's referred to as a red book standard and would need to be transferred to another disc that is coded correctly. Some of the more common computer programs that write correctly prepared CDRs are by companies such as Digidesign (Masterlist), Soundforge, Adaptec (Toast, Jam) etc. This is by no means a complete list. If you have questions about your program or hardware, contact the manufacturer or consult your manual.

The last step in the preparation process is the creation of a glass master - a piece of glass that has been etched with the information that will eventually be used to create a stamper for plastic injection and molding process.

2. GRAPHIC DESIGN

"It's O.K. I have a friend that has a computer and he (she) is going to design the graphics." - This is one of the most common phrases we hear on a daily basis and it's one that makes us uncertain what to expect as an end result. Most of the mistakes in the process of CD manufacturing come from this one area and often the mistakes are costly.

DESIGNING YOUR OWN GRAPHICS? - IMPORTANT INFORMATION!

While we at Spin Digital would be glad to help design your project, and our graphic designers are as good as any in the business, we realize that you might prefer to design your CD project yourself, or have another designer handle the creative task.

In order to offer the lowest prices possible, Spin Digital requires that all design and graphics files from external sources be "press-ready". This means that the files can be sent directly to press, without any errors - no bad fonts, improper colours, missing images, etc

We recognise that perfection is sometimes hard to achieve (though we try), and we will fix errant files as needed (see www.spindigitalmedia.com for rates).

The majority of our pre-press is done in Quark, which we prefer - if your designer has options in the software they choose to work with, please ask them to use Quark, for best results. These are the software packages that we support:

Quark Express

Adobe Pagemaker

Adobe Illustrator

Designs done in other softwares, such as Photoshop or Corel Draw, will need to be converted into the proper Quark template for output to film, and will incur extra charges.

Visit our web site, www.spindigitalmedia.com for our current rates for fixing graphic design errors.

LET US DO THE HARD STUFF!

In addition to our CD/DVD manufacturing and audio mastering services, we also offer complete graphic design services. Our in-house artists can create any or all of the imagery for your CD project.

We can work from your concepts, using your supplied photos or graphics, or we can create a complete package from scratch. At any stage in the design process, Spin Digital is ready to help make your project the best it can be.

Extraordinary service is every day, at Spin Digital Media.

In all our designs, our primary goal is to create a look that suits you, the client - we will sit down with you and determine how best we can help. Call today to discuss your project, and find out how Spin Digital Media can help make your CD sound great, look good, and be a success!

Call today! 1-800-662-4033

Requirements for Good Design

HIRE A PROFESSIONAL

While computers have made graphic design easier, it still takes a great deal of practice to do it well. Designing for print requires a clear understanding of the printing process and its technical requirements, as well as its inherent limitations - to insure best results, make sure your designer has experience in this area. The design of your CD has an enormous impact on its appeal and sales potential- while you "can't tell a book by it's cover", you certainly can sell one. You take your music seriously - shouldn't you take your CD packaging as seriously?

USE QUALITY SOFTWARE

Professional level design requires professional level software. We prefer Quark Xpress (Mac/PC). Other titles we accept include Pagemaker & Illustrator. Designs done in other softwares, such as Photoshop or Corel Draw, will need to be converted into the proper Quark template for output to film, and will incur extra charges.

CHOOSE PROPER FONTS

Fonts are the single greatest source of problems when designing for print - ask any designer. To avoid delays and expensive redesign, avoid using a large number of fonts, don't mix types of fonts (Truetype, Type 1, Postscript,etc). Mac users - use postscript fonts that include both screen and printer fonts. PC users, use Truetype only. Be ready to accept changes in your font choice - many fonts look fine onscreen, but will not print. INCLUDE ALL FONTS USED WITH YOUR PROJECT FILES!

USE CORRECT COLOUR MODEL (RGB vs CMYK)

Full colour artwork is usually printed in 4 colour process (CMYK), so all source files and images must be compatible. If using bitmap images (pictures), use TIF file format, 300-350 dpi, CMYK/grayscale only - **No RGB images!** This is perhaps the most overlooked and misunderstood area of graphic design. RGB stands for **R**ED, **G**REEN, **B**LUE. This is how computers divide the color spectrum to allow us to see the variety of colors we see on a computer monitor. A printing press however, breaks down the color spectrum in another way. In order for a press to be able to print a full color image, it divides the spectrum into four colors. **C**YAN, **M**AGENTA, **Y**ELLOW and BLAC**K**. To have someone do the prepress work on your file (in other words, create the film and color proofs), all of your color files must be converted from RGB to CMYK. If you fail to do this, your colour images may default to black and white. This can be a nasty and expensive surprise. BEWARE!

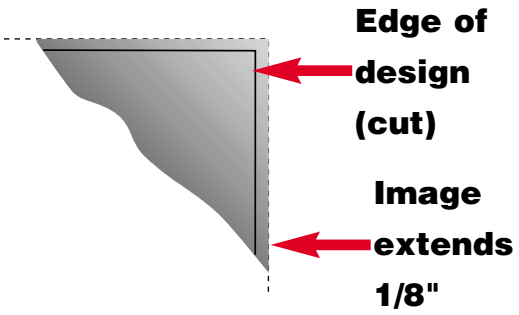
* A word about CMYK and colour gamut. Simply explained, colour gamut refers to width of the spectrum of colours available. RGB has a wider colour gamut than does CMYK. In other words RGB may give you richer blues, reds and greens than are possible in CMYK. We have seen a number of files with rich and vibrant colours that go quite dull when converted to CMYK. This can lead to some disappointment if you're not expecting it so it pays to bear this in mind early on in the design process and perhaps work in CMYK mode early on. Please remember that this information applies to any coloured text used in the design as well.

CREATE IMAGES WITH SUFFICIENT RESOLUTION

When an image file is scanned or created in a program such as Adobe Photoshop it becomes a bitmap image (an image made up of a series of dots) and has a defined resolution. The higher the resolution, the greater the number of dots per inch (dpi) that make up the image. For images that are used on the internet or onscreen, the image has a resolution of 72 dpi. For print, however, the file needs to be much

higher in resolution - we recommend a resolution that is double the line screen. In other words if the line screen that's to be used in printing is 150, then the the resolution of the file should be 300 DPI (dots per inch). If the line screen of the printing on the CD face is 100, then a 200 DPI image is sufficient. An image resolution more than double the line screen is unecessary. An image that is less than double the line screen may result in an image that appears pixillated when printed. The current standard Specification for film for printing inserts is film negative133 or 150 line screen, right reading, emulsion down. CD Face film is 85 or 100 line screen.

ALLOW SUFFICIENT "BLEED" ON ARTWORK

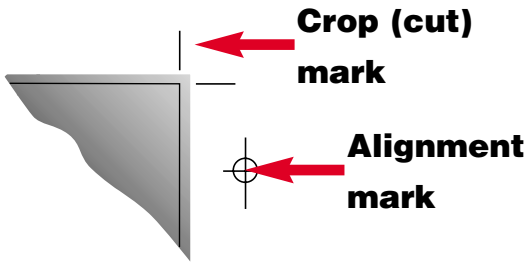


Since all print jobs are cut down from larger sheets, any artwork that goes to the edge of the design must extend past the edge - this is called “bleed”. Allow 1/8” (0.125”) on all sides.

USE THE PROPER DIMENSIONS

All our standard package dimensions are available, either direct from us or on our website. We also offer free templates. Do not use templates from other manufacturers, as there may be slight but important differences.

CROP MARKS AND ALIGNMENT MARKS



Crop marks are the horizontal and vertical lines that are applied to a design to show precisely where the printed pages should be cut. Keeping in mind that the outer edges of your design are oversized by 1/8", it makes it clear where you intend the outer edges to be. Most high end graphics programs have a function that will apply crop and alignment marks automatically to the outer edges of the page. if you've designed your page to be the exact size of your graphic (plus the bleed of course) then it would be O.K. to expect the program to do it automatically. If however you've designed it on an oversized page (8.5x11, 11x17 etc.) then crop marks must be applied manually.

KEEP TRACK OF INK COLOURS

Paper printing - avoid the temptation to specify new colours as Pantone colours, unless you actually intend to pay for extra inks. Only CD faces are printed with spot colours - all paper is printed CMYK process. If you want to specify new colours, set them up as CMYK process colours, and name them accordingly.

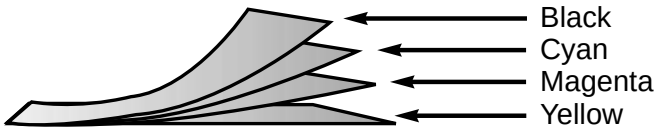
Printing on the CD face - printing on the face of the CD is achieved by an completely different process than printing on paper. The ink on a CD is applied by creating silk screens and ink is squeezed through the screen on to the disc. The CMYK process does not apply here unless you have opted to pay extra to achieve a full colour result. Instead, one two or three colours are chosen from a list of Pantone colours (coated stock colours). Numbers are defined as PMS followed by a "c" eg. Pantone PMS 032c. If this still sounds like an alien language to you, please call us and speak with a graphic designer for guidance regarding your specific file.

COLLECT ALL FILES FOR OUTPUT

When the design is ready to go, collect all the images, files, and fonts under one folder, so that nothing is missed (even better, have a folder for each type of file - files, images and fonts). Try to avoid sending multiple versions that may cause confusion. If you want to include other files (such as original images or scans), place these in a separate folder. **Be neat and organized.**

3. FILM (COLOUR SEPARATION) AND PROOFING

As we mentioned earlier, once a graphic design is completed, the computer files are then used to create film that is then used to create printing plates. During the process of creating film, the colours are separated into the four colours used during the process of printing to paper and the Pantone colours used for silk screening on the CD face. The film used is essentially the same as negatives used to create black and white photos, but it is much larger. The image on the film is the same size as the image that prints to paper. One piece of film is created for each CMYK or Pantone colour.



Standard home desktop printers do not create a true colour accurate representation of what will be offset printed or silk-screened onto the CD - if absolute colour accuracy is important to your project, it's advisable to have a proper colour proof created before the project goes to press. For pre-film proofs, Spin Digital can offer a high-quality print from our in-house “Rip”, a (very expensive) Epson proof-quality printer. However, proofs from our laser printer or onscreen digital files (PDFs) are often good enough.

If you submit finished artwork, we also require that you submit a quality proof of the finished design.

4. PRINTING ON PAPER

Most of the details regarding the preparation of files for paper printing have been discussed earlier, however there are a few other things to keep in mind. Our printer and most other professionals who print CD inserts use a 100lb weight of paper stock such as Luna gloss or similar type. Once the paper is printed, the inserts are scored and folded and the spines of the the tray liners are perforated. If you are sending us preprinted materials, they must be prepared precisely in this manner if they are to be packaged into jewel boxes by us. The machines used in the insertion and packaging process have a very low tolerance for mis-sized,

ADDITIONAL DESIGN ELEMENTS

MADE IN CANADA NOTICE - MANDATORY!

If your CDs are to be sold or shipped outside Canada, **MADE IN CANADA must appear on the outside of the product.** It does not need to be in large letters or in an obtrusive location.

CATALOGUE NUMBER

PNCD-1837

When major record labels release a CD, a catalogue number is assigned so that it becomes easier to track. The catalogue number is applied to the spine of the tray liner and (sometimes) to the CD face.

BAR CODE

Most large record store chains insist that all product they sell have a bar code (UPC code). This usually appears in one of the four corners of the tray liner or on one spine of the tray liner. Call us for more information.

COMPACT DISC LOGO

Used to differentiate Audio CDs from other types of CDs on the market such as compact disc digital data or compact disc interactive etc.

COPYRIGHT & PUBLISHING

These symbols designate you as the legal owner of the copyright and acknowledges the name that follows designates ownership of the phonograph recording.

MAPL LOGO

(Canadians only) This symbol is recognized by Canadian radio stations and helps them in choosing music that will fulfil the CRTC's Canadian content regulations. It acknowledges that the Music, the Artist, the Publishing and the Label as being Canadian. The letters would appear as white on a black background. The reverse in any of the quadrants indicates that that portion of the project is not Canadian.

These symbols usually appears on the disc face and/or the back of the tray liner.

incorrectly folded or perforated components. Materials that are incorrectly prepared would require hand packing and this is very expensive. So if you're doing your own printing, do your home work!

*note custom printing and packaging methods are becoming more common and we offer them. Items such as cardboard sleeves, Digi-packs (folding cardboard sleeves with a plastic tray) and others. The details for manufacturing are too specialized to deal with within the scope of this guide so if you require more information, please contact us directly.

5. PRINTING ON CD FACE

We offer one, two, three, four and five colour printing on the CD face. One and two colour printing are offered at no additional cost. Three colour printing is done as an additional pantone colour. Four colour printing becomes a process job requiring colours to be separated into the four process colours (CMYK). Five colour printing is most often the four process colours and a white base that's applied to the disc before the process inks. *note Please remember that on a CD face, white is a colour. If you want something within your design to appear as white on the disc, it must be assigned as a colour otherwise, anything that shows up as white within your design will actually appear as silver. A reminder. It is not acceptable to have any part of your design appearing outside of the print area (see CD face template). On the paper insert design, this is O.K., on the CD face design, it's a no no.

6. PACKAGING

The standard two panel (one fold) insert printed four colours on the outside and black on the inside is the most common and one of the least expensive ways of printing and packaging your CD, but it's not the only option. This section will list and describe some other methods that may be used.

Slimline Jewel Case - This works well as a less expensive way of packaging because there is no additional tray (it's built in to the jewel box) and it only requires one piece of paper printing. This method is often used for CD singles and demos but not exclusively. It also looks great.

Cardboard sleeves - There are two main types of cardboard sleeves commonly used. Unprinted and custom printed. Unprinted cardboard sleeves are most often used for simple demos because no printing is required and they work well for mailing (they're thinner and they don't get mangled during delivery) because there is no printing, there is a faster turnaround time for manufacturing. They're also more environmentally practical.

Vinyl sleeves - This is another way of eliminating the need for printed material in your package as well as speeding up turnaround time. Like cardboard sleeves, they work great as demo mailers. If an attractive CD face is designed, this method can look very good.

Tyvek Envelopes - Tyvek is a tough fibrous material, usually white, that's an inexpensive solution. It's most commonly used for packaging CD ROM. If you've ever bought a computer program on CD ROM, it was likely packaged in a paper or tyvek sleeve.

Digipak - A digipak is similar to a cardboard sleeve in that it's made of cardboard. It has two or three panels with a soft plastic tray on one panel. It can have pouches cut into the other panel(s) so that a booklet can be attached. It's definitely one of the more expensive ways of packaging and is only available for quantities of 2500 or more CDs. If you want your CD to stand out from the rest, this is a good way to achieve it.

Other methods may include no packaging at all (bulk CDs) or having your CDs cut into different shapes such as animals or designs like maybe a square disc (yes a square CD). If this sounds interesting or if you have other ideas that are not listed here, contact us and we'll see if it's possible (if you've seen it somewhere, we can do it).

7. SHIPPING

If you're sending your materials to us from the U.S., we recommend using an overnight courier if possible Federal Express or UPS. Both deliver to us next-day. We recommend also that you value the contents of the package at a price no greater than the actual contents and not its value to you. One Dat = $8.00 a zip cartridge might be $12.00 etc. A package with a suspiciously high insurance value may cause it to be delayed at customs. It's always a good policy to have a back-up copy of everything you send.

Return shipping - All CDs are considered F.O.B. Vancouver or Toronto, Canada (depending on your location) and are therefore subject to shipping charges. We use the most economical method of shipping possible. It's not necessarily the fastest. If speed of delivery is crucial to you, arrangements can be made prior to the shipping date and preferably at the time of placing your order. Average time of delivery anywhere in North America: five working days.

And in conclusion... A personal note

At Spin, we have helped literally thousands of musicians of all styles and abilities take this step toward fulfilling their dreams of being part of the music business in North America (and beyond). Some have gone on to become household names and some are still working toward that goal. One of the things we can honestly say makes a big difference in career development and how well their CD sells, is the quality of the packaging. In our experience, the ones who try to do it as cheaply as possible by not bothering with printing or cases, or just use a snapshot for their cover that Aunt Martha took at the last family reunion, well, they're less likely to succeed. Our suggestion to you is, if you don't have the money to do it right, then wait until you do. Don't rush it. Plan it well and it will pay off.

We wish you well on your project and if you require our assistance,

we'd be happy to serve you.

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