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Mediatec/RTI CD-Media Printing Specifications

ELECTRONIC ARTWORK SPECIFICATIONS

As a full-service e-Media manufacturing facility, our printer can accept a variety of electronic input formats for screen print and label artwork. There are three levels of artwork manipulation that we offer. For all levels, 1/2 hour of manipulation is included in the quoted price. Artwork, depending on complexity, may migrate between the levels as the project progresses. We make every effort to maintain job scheduling. However, artwork that requires extensive manipulation may cause adjustments in scheduling. They can also assess logo and copyright requirements for many popular software development packages.

Level 1.

Artwork is provided in complete form. This artwork requires minimal manipulation and conforms to both file format specifications, gamut and dimensional requirements. Customer provided films fall under this category.

Level 2.

Artwork provided in generally complete form. This artwork conforms to most of the specifications as laid out in this document, but requires significant manipulation on gamut or dimension fronts. Manipulation at this level carries a charge of \$75.00 per hour after the initial 1/2 hour, which is included at no charge.

Level 3.

Artwork does not exist, or is in such a state that is it not suitable for screen press use or label printing use in current form. Manipulation at this level carries a 1 hour minimum charge of \$75.00, and is billed at \$75.00 per hour thereafter.

1. Electronic Artwork in CMYK, Pantone® or Duotone gamut
 - a. Formats. Electronic artwork can be accepted in the following formats. Raster artwork will be provided in 32 bit color depth. Preferred development applications are indicated with an asterisk (*):
 - i. *Adobe Illustrator (native and EPS formats) v9.0 and below
 - ii. *Macromedia Freehand (native and EPS formats) v9.0 and below
 - iii. *Adobe Photoshop (native and all subsequent image formats that allow CMYK gamut) v5.5 and below
 - iv. Corel Draw v8.0 and below
 - v. Quark Xpress v4.0 and below
 - vi. Adobe PageMaker v6.5.2 and below
 - vii. *General EPS
 - viii. *TIFF
 - ix. WMF (Windows Metafile)
 - x. PDF (Portable Document Format) This format could require extensive manipulation and is not recommended.

2. Electronic Artwork in RGB gamut

- a. Conversion. RGB gamut images will be converted to CMYK. Every effort will be made to preserve color accuracy, but inconsistencies are inherent in the conversion process. Conversion before delivery is highly recommended.
- b. Formats. Electronic artwork can be accepted in the following formats. Raster artwork will be provided in 32 bit color depth. Preferred development applications are indicated with an asterisk (*):
 - i. *Adobe Illustrator (native and EPS formats) v9.0 and below
 - ii. *Macromedia Freehand (native and EPS formats) v9.0 and below
 - iii. *Adobe Photoshop (native and all subsequent image formats that do not utilize “lossy” compression, such as JPEG) v5.5 and below
 - iv. Corel Draw v8.0 and below
 - v. Quark Xpress v4.0 and below
 - vi. Adobe PageMaker v6.5.2 and below
 - vii. *General EPS
 - viii. *TIFF
 - ix. WMF (Windows Metafile)
 - x. PDF (Portable Document Format) This format could require extensive manipulation and is not recommended.
 - xi. BMP
 - xii. PICT
 - xiii. IFF

3. Delivery and design preferences for electronic artwork.

- a. All artwork shall be in the CMYK gamut whenever possible. RGB gamut artwork may require level 2 manipulation.
- b. **Vector based artwork is preferred.** If vector based artwork is not available, 300 DPI shall be the minimum resolution of all raster artwork. No artwork that has been scanned from a previously printed source can be accepted.
- c. Vector artwork that includes raster images as placed or embedded files shall be supplied with the original raster art as well as the vector art.
- d. When masking vector or raster art, it is not necessary to completely exclude non-printing areas (ie; create compound paths). These areas need only be specified as white.
- e. Do not bleed artwork past the maximum dimension of the printable disc area as defined in your selected printable area specification.
- f. White flood “donuts” must be provided separately from the main artwork if they are to be used. “Donuts” must comply with dimensional specifications for both size and trapping as set forth later in this document.
- g. Minimum text size is 6 point for positive text, and 7 point for reverse. Small reverse text sizes in four color process are not recommended.
- h. Fonts shall be converted to paths whenever possible. If this is not possible or practical, fonts shall be included in the artwork submission.
- i. Minimum line size is .15 mm (.43 pt) for positive, .20 mm (.57 pt) for reverse.
- j. A color hardcopy proof should be provided with the artwork. If Pantone® colors are being used, indicate their numbers.
- k. Artwork that arrives formatted for a program other than those listed will be delayed.

4. Media for the submission of electronic artwork.
 - a. E-mail. Files can be e-mailed to graphics@mediatecinc.com. Stuffit! or ZIP compression may be used. Please indicate the file and application type, as well as version number. Please append file extensions where appropriate.
 - b. ZIP disk. Files may be submitted on ZIP disks of either Macintosh or PC format.
 - c. CD Media. Files may be submitted on CD Media in ISO-9660, HFS, or Hybrid formats. Please indicate the format on the disc's surface.
 - d. A hardcopy color proof should be submitted as well, via courier, US mail, or other method. If you cannot generate one, our CD printer can do so for you, and will work to achieve color matching to that proof.

5. Available press colors. Our screen press can accommodate any combination of up to 5 colors. Please bear in mind that when screen printing on CD media, white is always a spot color, and without a white flood under process ink, colors will appear different than on paper. The full gamut of colors included in the Pantone[®] Color Formulator Guide 1000 and Pantone[®] Metallic Color Guide, Overprint Clear, and Matte Black are available. In addition, fluorescent colors are available, but are not recommended due to their high potential for fade. Be advised that although every effort will be made to make an exact color match, the nature of printing on the surface of CD media will cause slight variations. For example, Pantone[®] and other process tints that are less than 15% are unlikely to screen properly. Tints less than 10% will not screen print. Please notify us of the need for this correction should it be necessary.

DIMENSIONAL SPECIFICATIONS

Different types of CD Media print differently. The dimensions of the printable area on CD Media are not constant, and vary according to media used, and Customer request. The following specifications have been developed to accommodate most jobs. All measurements are provided in RADII from the center of the CD.

1. **Specification "A" (Up to mirror band)**
 - a. Prints from disc edge up to mirror band. Does NOT print over the mirror band of the CD Media. Different media has different mirror band sizes. For flood coats, printable area includes radius 22 mm to radius 58 mm. For text and other art WITHOUT underlying flood coat, printable area includes radius 23.25 mm to radius 58 mm.

2. **Specification "B" (Over mirror band)**
 - a. Prints from disc edge up to stacking ring. Prints over the mirror band of the CD Media. Printable area includes radius 19 mm to radius 58 mm. Be advised that color shifting will occur when printing over the mirror band without an underlying flood.

3. **Specification “C” (Over mirror band, skip stacking ring, up to center hole)**
 - a. Prints from disc edge up to stacking ring. Prints over the mirror band of the CD Media. Prints past the stacking ring up to the center hole of the CD Media. Printable areas (beginning with center) include radius 10 mm to radius 16.25 mm, and radius 19 mm to radius 58 mm. NO PRINT ZONE is radius 16.25 mm to radius 19 mm. (Printing cannot be done on the stacking ring itself.) Be advised that color shifting will occur when printing over the mirror band and clear central area of the disc without an underlying flood on these areas.

4. **Specification “D” (Mini-Round, 80mm diameter media)**
 - a. Prints from disc edge up to stacking ring. Prints over the mirror band of the CD Media. Prints past the stacking ring up to the center hole of the CD Media. Printable areas (beginning with center) include radius 10 mm to radius 16.25 mm, and radius 19 mm to radius 38.5 mm. NO PRINT ZONE is radius 16.25 mm to radius 19 mm. (Printing cannot be done on the stacking ring itself.)

5. **Specification “E” (Business Card Media – 61 mm)**
 - a. Prints from disc edge up to stacking ring. Prints over the mirror band of the CD Media. Prints past the stacking ring up to the center hole of the CD Media. Printable areas (beginning with center) include radius 10 mm to radius 16.25 mm, radius 19 mm to radius 38.5 mm on the wide dimension, and radius 19 mm to radius 29 mm on the narrow dimension. NO PRINT ZONE is radius 16.25 mm to radius 19 mm. (Printing cannot be done on the stacking ring itself.)

6. **PerfectPrint Thermal Printing Technology Specification**
 - a. Choose a specification above, and apply a tick mark (standard line) of 100% black ink that is 1 mm in width, and 3 mm in length, running from radius 22 mm to radius 25 mm at any angular orientation around the disc’s center. If the angle is not an increment of 90°, it MUST be specified. The tick mark must be alone in the area produced by radius 22 mm to radius 25 mm; no other artwork can occupy this space.

7. **Trap Specifications**
 - a. Our screen press has incredibly precise registration. However, situations do arise in which trapping of flood colors is necessary, particularly with artwork that falls out of the above specifications. For such cases:
 - b. White flood edge trapping WITHOUT overlying color flood
 - i. When a white flood is used as a background for artwork that does not contain an overlying flood or color block that reaches the edge of the printable area, the artwork should be kept radius .25 mm from the edge of the flood.
 - c. White flood edge trapping WITH overlying color flood
 - i. When a white flood is used as an underlay for an overlying color flood, the dimensions of the white flood should be radius .25 mm less than the overlying color. Example: 12 mm diameter circle of

PMS® 1375 over white flood. Dimensions: PMS® 1375 circle, radius 6 mm, underlying white flood circle, radius 5.75 mm.

8. Specification Exceptions

- a. Exceptions to the above specifications can be made under special circumstance. In some cases, this may involve extra cost, due to materials expended during the screen printing process. Exceptions may also cause the time table of your job to be extended. Your Representative can help you determine which specification is right for you, and what exceptions may or may not be appropriate.
- b. Due to the nature of screen printing, variations can occur that might not ordinarily be accounted for in normal artwork preparation. To ensure your job looks its best, the Graphics department and/or your Representative may recommend a change to the artwork that may increase the overall cost of the job. No changes will be made, however, without approval from the Customer and Representative.

FILM SPECIFICATIONS

Our CD Printer will also accept films as an input format. The specifications for incoming film are as follows:

1. One film positive (right reading, emulsion side up) is required for each color.
2. Each film is required to have aligning registration marks that align with all other films related to a specific job.
3. Centerline (i.e. 3, 6, 9, and 12 o'clock) registration marks should be placed at least .75" beyond the printable area on each piece of film.
4. Each film should be labeled outside the print area with the desired color using the Pantone® Matching System (including flood coat films) as well as the version number and job number, where applicable.
5. Underlying flood coat films which are being overprinted must be "cut back" radius .25 mm under the top color dimensions. Due to slight dimensional variations that occur between jobs, it is strongly recommended that flood coat films be checked to the exclusive films of each job for this dimensional "cut back".
6. Whenever possible, do not overprint large areas of black (or other dark PMS® colors) over white. Instead, the white should be "knocked out" so the dark color prints directly on the disc.
7. Films should have a 4.0 density minimum.
8. Due to limited tolerances of the screen printing process a minimum of 1/2 point trap is required for all overlapping images.
9. Text and line art specs:
 - a. Minimum positive text size must be 5 point for sans serif and 6 point for serif. Minimum reverse text size must be 6 point for sans serif and 7 point for serif.
 - b. Line art should be .15mm (.006") for positive print and .2mm (.008") for reverse print.
10. A composite, color laser is required for all jobs.
11. For mid-tone printing, a slow transition is recommended (i.e. 40-45-50-55-60%).
12. For spot color halftones:
 - a. 100 lpi max (preferred is 85 lpi)
 - b. Tonal range – 10-85%
 - c. Elliptical dot (with hard edge)
13. For 4-color process jobs:
 - a. 133 lpi max
 - b. Tonal range – 15-80%
 - c. Elliptical dot (with hard edge)

- d. Film angle - the 3 most dominate colors should be offset 30 degrees from one another and the least dominate (usually yellow) should be dropped in between 2 of the 3 dominate colors.
- e. Color Proof or Color Overlay made with the actual films for each job.
- f. Text must be 6 point for positive text and 7 point for reverse text (although reverse text is not recommended in 4 color process). Line art must be .25mm (.010")