

Building: Customization

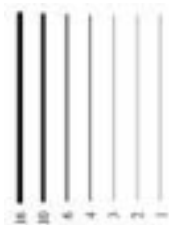
Customizing minifigures is not only creating new heads and bodies, but making decals to add armor and clothing.

Here, Jared Burks of Kaminoan's Fine Clonier Decals and the Minifig Customization Network gives an overview to designing and making decals.

Article and Art by Jared Burks



Raster Image: This is a simple representation of a raster image, a desktop icon which is presented at 32 by 32 pixels.



This is a simple representation of line weights, thinner lines are used for fine details, thicker lines for bold details.

Minifig Customization 101: Minifig Decal Design

Ok, the easy answer is to read the forum at FBTB (<http://www.fbtb.net/>) or Minifig Customization Network (www.MinifigCustomizationNetwork.com) and talk someone else into making the design for you. Actually you can find many designs at FBTB, MCN, and Classic Castle (<http://www.classic-castle.com/>); there are many great artists out there who cover all genres at these various sites. There are also a few sites where you can purchase decals and skip the design part all together. My site, Kaminoan's Fine Clonier (www.FineClonier.com), and Red Bean Studio's (www.redbeanstudio.net) are two that offer high quality printing featuring white, metallic gold, and metallic silver inks. But if you have decided to make your own, here are the basics.

The Basics: Raster vs. Vector

There are two types of graphics programs, raster and vector. Raster image formats are made of tiny squares of color called pixels; these are primarily used in digital photography. The main graphic formats of the web, Gif and Jpg, are examples of raster image formats. When you zoom in, these images become blocky (or pixilated). Think of a puzzle where you can see the picture as well as the puzzle pieces. This type of image will always have limitations as it has a defined smallest point based on a square shape.

Vector formats are not based on a square but mathematics, as such if you zoom in or out you will never have pixilation because all points have a mathematical distance from the other points. EPS, to some extent PNG and native formats like AI (Adobe Illustrator) or CDR (Corel Draw) are vector formats. When you zoom in on vector art, it stays sharp and clean because the same math applies at whatever the magnification. Think of looking down railroad tracks, they never seem to meet. Even from a long distance they don't meet no matter how far you look down the tracks with binoculars, you maintain resolution despite the magnification. Vector graphics are used in illustration and design (Commercial Artwork), most home users, doing simple web graphics, drawing pictures, or photo editing don't have a need for these formats. However, for the best results it is important that you create your designs in a vector art program. If you don't have a vector program, consider a trial version of the aforementioned programs or Freeware Draw Plus 4 (<http://www.freerissoftware.com/software/DrawPlus/default.asp>). If you don't want to use a vector art program, raster programs like adobe photoshop can be used, just remember to set your dpi (dots per inch) as high as possible. This value is the resolution of your image, which is tied to its print quality.

After selection of your art program and familiarization with that program you can begin creating designs with templates for the torso and legs found here: Minifig Blank: <http://www.brickshelf.com/cgi-bin/gallery.cgi?f=132284>

Decal sizes:

Many other templates can be found at MCN (www.MinifigCustomizationNetwork.com).

Torso:



1.422 cm Wide
1.201 cm Tall

Legs:



1.4 cm Wide
1.1 cm Tall

Belt:



1.4 cm Wide
0.2 cm Tall

Line Weights:

If I need a highlight or a really fine fold then I will go down to 0.3. I do this for several reasons: 1, I draw designs for many people and want them to have good results when printing (Various printers/color copier types); 2, I convert to jpg format (a lower resolution format for compression into a smaller file size for easy up and download from the

web), this means I lose some details, and thus my details need to be bigger; and 3, I try to stay in a similar design scheme as the Lego.

Important Point – Remember your printer

When creating art for use in the creation of decals it is important to remember the limitation of your printer. Most printers have difficulty in printing a line with a weight of less than 0.3 points (Line weight refers to line thickness, think of a line drawn by a #2 pencil compared to a mechanical pencil). Just because you can see the difference in your vector program doesn't mean you can print it, so test prints are important (You can draw details beyond the abilities of your printer due to the nature of vector art). A good point size range for details is 0.5-1.0.

Color – What Color is That?

Draw and color your design as you would like, remember you can use the same color palette as Lego, which can be found here:

Official Lego Color Values <http://www.peeron.com/cgi-bin/invcgis/colorguide.cgi>

Peeron Color Chart: <http://www.peeron.com/inv/colors>

One of the nice things about using Lego's palette is the consistency of color on your finished figure, but by all means use any color in your designs you want.

How you color your design depends upon the media that you are going to print. Options include waterslide decal film, overhead transparencies, clear self-adhesive stickers, and paper. These different products can be found at many office supply stores, hobby stores, and even Wal-mart. If you are printing on a clear media keep in mind that the torso color is going to show through and contribute to your design. I actually design my work to take this into account.



A



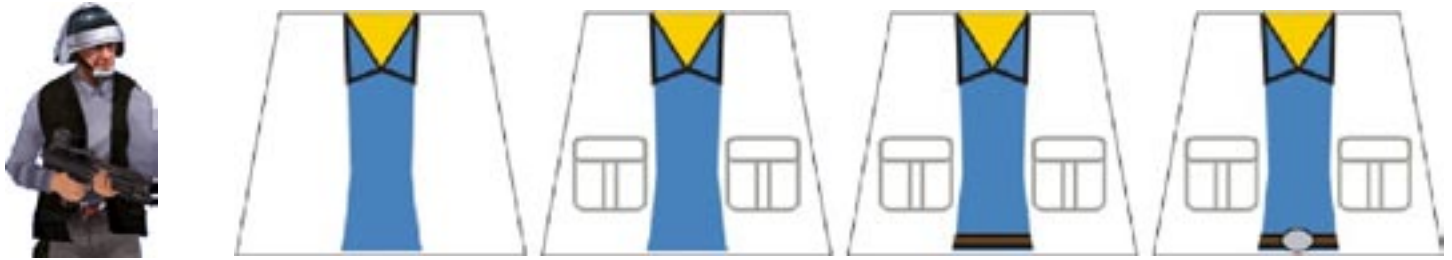
B

Clear Sticker Paper vs Water Slide Film: The figure in panel A was created with clear sticker paper and the figure in panel B was created with water slide film. Notice the differences in clarity between the two figures. (Figure design and comparison by Red Bean of MCN)

Choose a subject matter, what do you like? Search the web for images to use as reference. Decide what part of each of these images makes this character recognizable and try to capture this in your design.

Subject Matter

Choose a subject matter, what do you like? Search the web for images to use as reference. Decide what part of each of these images makes this character recognizable and try to capture this in your design. Here is a simple example, a space soldier.



The design process: Find a reference image, in this case a space soldier. The vest and a few features make the design. So we start with the shirt and go from there adding the pockets to the vest and a belt with a buckle. Remember the vest color will be added by the torso. Flesh tones or yellow could be added for the neck color, so you get to choose.

For the space soldier the belt, vest, and a few other small details makes him recognizable. Therefore, these are crucial as the torso color is going to have a big impact on the design. The white areas in the design will be clear when printed on clear media allowing this design to be applied to a black torso.

Printing

Before printing on any expensive media always print a test page. Print your designs out on a piece of scrap material or paper. Confirm your color choices, colors on your screen will not exactly match printed colors. Confirm your details, you have been working on something very small in a vector art program, are your details too fine to print?

I prefer the results from waterslide decal film as it looks as if it was printed on the figure giving you the best results. Waterslide film is available from hobby stores or online. I recommend Micromark (www.micromark.com); they have a sample pack of clear and white film. Clear film will work well on any of the lighter colored Lego elements; however dark elements create a problem which require you to use a special printer or use white decal film. This is because the darker Lego element will show through the printed regions darkening them and in many cases completely concealing your hard work. If you use white film this gives your design the ability to keep the vivid colors on dark elements, however you will now have to print the torso color or closely trim your decal. If you print the torso color it requires a close color matching, use the references above (These color values are close but not always exact for all printers, as such they require a bit of experimentation).

As most people have access to inkjet printers or color copiers (Kinko's, etc.) the instructions will follow to create decals using these types of devices. You will need waterslide label paper, again I recommend Micromark (www.micromark.com). If using an inkjet printer you need to order media specific for that device, however if you are printing your designs on a color copier or color laser printer, you will need waterslide paper for a laser printer. Print your designs using the highest resolution possible for your printer (just like you did when performing your test print). Once printed be very careful not to handle the sheet of decals until the ink dries. After you have printed using an inkjet or color copier, you must apply an overcoat to the decals with clear spray paint, available at any home improvement store. Apply several thin coats and allow them to dry between applications (2-3 applications normally does the trick). This will protect the ink from the water used in the application of the decal. Even if you have waterproof ink in your inkjet printer, this is critical! Once printed cut the decals from the page and follow the manufactures instructions for application of your decals. For tips and tricks see the next article in the series.

The finished figure: Now that you have your decal, apply it and add a few touches and you have a nice custom figure. (Face design by Bertramtalespinner of FBTB, Helmet by miniMitch, & Gun by The Little Armory)



Coming Next Issue:
Minifig Customization 101 – Minifig Decal Application