Cross Stitch - the plugin

Cross Stitch is a Photoshop plugin that prints indexed color images as cross stitch patterns.

1: Get an image.
The image should be in RGB mode. Adjust the color, brightness, and cropping untill you are happy with it on your monitor.

2: Resize it.
Resize the image so that each pixel represents one stitch. For example, if you are making a cross stitch that is 5 inches across, at a density of 20 stitches/inch, resize it to 5 x 20 = 100 pixels across.

3: Save it.
Save a copy of the image like this. You may want to get back to this stage sometime later.

4: Convert to Indexed Color
Convert the image to Indexed Color by selecting "Indexed Color" from the mode menu.
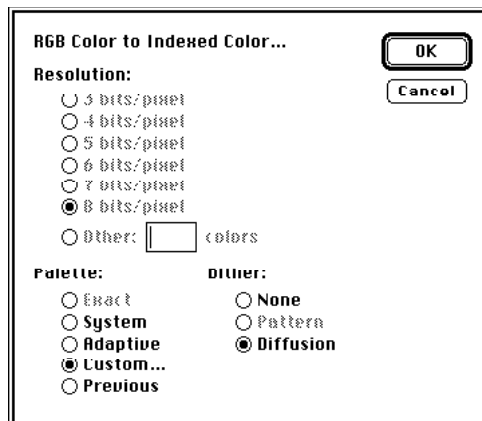
You will need to decide how many different thread colors you want to use for the Cross Stitch, and generate a palette with those colors.

How do you do this? How do you know how many colors are appropriate and what colors they should be? There are two main solutions to this question.

A: Guess.
Look at the image and decide for yourself what and how many colors you need. Convert to Indexed Color using the "Custom…" palette option. You will be presented with a dialog where you can select the palette colors. Start by filling the palette with black. (click on the upper left square, and drag down to the lower right square. You will be presented with a color picker twice in a row. Select black both times.) Beginning in the upper left corner and working left to right and top to bottom, pick thread colors by clicking on individual squares, and selecting a color for that square. You may want to hold thread samples up to the screen to be sure you have accurately chosen their colors. When you feel like you have enough thread colors, click "OK".

B: Have Photoshop show you.
Depending on the image, you may want to have an adaptive palette chosen for you with as few as 8 colors, or as many as 32. Take a guess at how many colors you want, and enter that number as the resolution of the palette, and make sure "Adaptive" palette selection is chosen. After the conversion, select "Edit Table" from the Mode menu, and examine the table that was chosen. With this method, you will need to find thread colors that match the palette entries, or use this as a general suggestion, and go back to method A above.

In either case, you want to convert the image to Indexed Color with a palette that represents the thread colors you want to use. The more accurately the palette colors represent the actual thread colors, the better your results will be. Unused colors should be black in the palette.

I think that probably the best results will be achieved by mixing the two techniques. Start with method B, look at the palette that Photoshop generates, and find thread colors that match the palette colors as closely as possible. (consider the palette that Photoshop chooses as "advice") Revert the image back to RGB, and redo the indexed color conversion using method A, exactly matching the thread colors you were able to find.

5: Print the Cross Stitch
Select "Cross Stitch…" from the Export submenu of the File menu. You will be presented with Page Setup and Print dialogs for the currently selected printer. (use the Chooser to select a different printer) In a few minutes, the Cross Stitch pattern will emerge from the printer. It will look something like this:
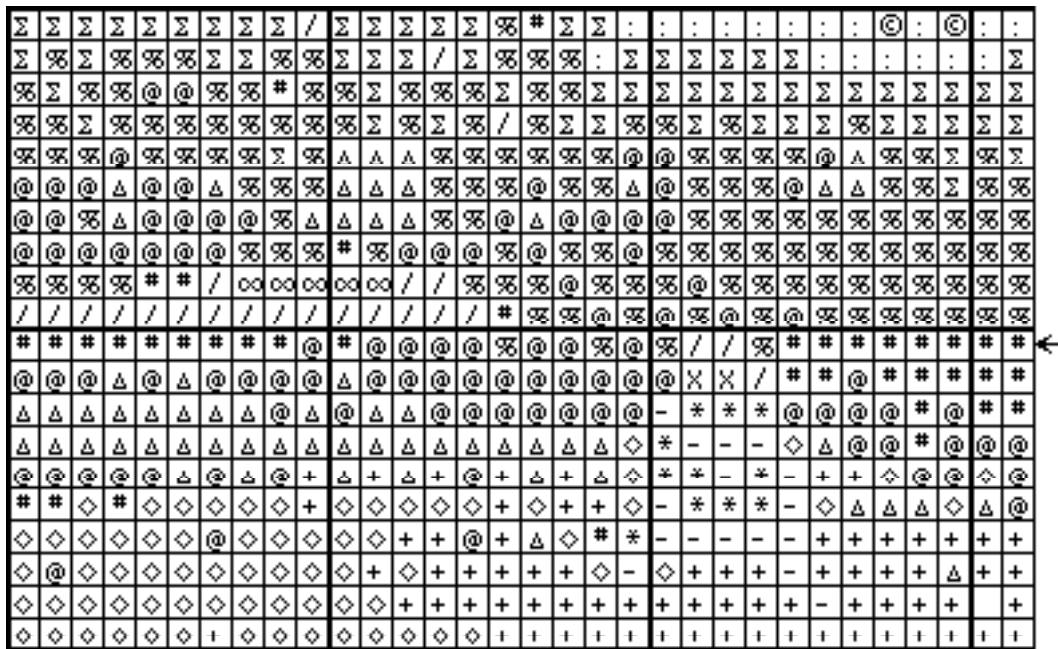
Symbol key :

=	1	+ =	5	Δ=	9	/ =	13
●=	2	✳=	6	#=	10	©=	14
✗=	3	◇=	7	℀=	11	Σ =	15
− =	4	∝=	8	@=	12	: =	16

Go to the Edit Table dialog and refer to the palette colors to fill in the symbol key.

Color Table...

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

OK
Cancel
Load...
Save...
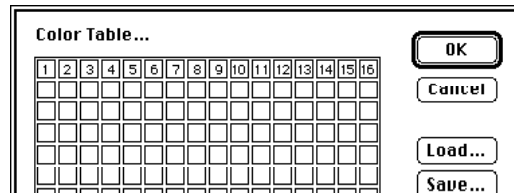
General notes:

This plugin works pretty well on LaserWriters, and may work on other kinds of printer, but I haven't tested them. It is pretty much a necessity to have a 300 dpi printer, since high resolution will be needed to print the symbols clearly even when there are a lot of cells.

Turn off "graphics smoothing". It does not improve the quality of the print, and takes longer to print. Turning on "larger print area" in the LaserWriter options dialog will help make the cells as large as possible.

If you need to print a cross stitch bigger than this plugin will allow, you can divide the image up into a number of tiles, and print them separately, then cut and paste the prints.
Since the bolder grid lines are drawn every 10 stitches, you should make your tiles an even multiple of 10 pixels high and wide. Because the grid is adaptively sized to be as big on the paper as possible, make all of the tiles the same size, and (of course) index them with the same palette!