

Using the “PropCalc” Portion Calculator desk accessory

Introduction

As an illustrator/designer, I wrote “PropCalc” proportion calculator to serve as a replacement for the familiar graphic artist’s proportion wheel. It’s geared primarily to aid in ordering halftones or color separations, but can also be used for scaling line art or illustrations.

Don’t let all the buttons and menus scare you: PropCalc is easy to use. Just set your options, fill in the blanks and press the Return key! This will figure your percentage or dimensions. You can then manipulate the information in a number of ways. You don’t need to use any of the options.

Before You Use PropCalc...

PropCalc creates two files in your system folder. One is named “PropCalc File” and contains information you’ve saved on photos you’ve cropped. The other is named “PropCalc Prefs” and contains information such as the DA’s screen position and settings used when the DA was last closed. If, by some weird chance, there are already files by these names in your system folder, they’ll be overwritten!

Using PropCalc—the Basics

First, tell PropCalc know what it is you want to know. Usually, this will be the Scale, or camera setting.

1. **Calculate:** ☐ Original

Use the “Calculate” radio buttons to select whether you want to calculate the original size, scale (camera setting) or reproduction size. Calculated fields will appear in a grey box and cannot be edited.

2. **Original:** **wide x** **high**

In the editable text boxes, enter the measurements or percentages you’re starting with. In this example, the scale is being calculated and you need to enter the original and reproduction size.

3. **Recalc**

Press the Enter or Return key and the calculated values will be displayed in the greyed boxes.

PropCalc’s Options

PropCalc gives you a number of options in the way it displays or calculates information, as well as a few shortcuts to common operations.

Measurement: ☐ Picas/Points
☒ PS Picas/Points
☐ Inches
☐ Millimeters

Use the “Measurement” radio buttons to select whether you want the measurements displayed in traditional

printer's picas/points, PostScript picas/points (usually used in desktop publishing), inches or millimeters.

While the measurements can be displayed in any of these 4 formats, they may optionally be entered with measurement unit identifiers such as:

- ["], [in] or [i] for inches
- [mm] for millimeters
- [cm] for centimeters
- [pt] or no identifiers for points
- [p], [pi] or [+] for picas (PostScript, unless the "Measurement" radio button is set for printer's picas/points)

Measurements may be entered as fractions. For example, "1p6" and "1 1/2p" are equivalent. When working in picas, it's very convenient to enter figures with the keypad because the "+" can be used to separate picas and points.



This set of three Scale Mode buttons controls whether the vertical or horizontal dimension is dominant in calculations, or whether to calculate vertical and horizontal ratios independently. If, for example, you've selected the Scale-by-Width button (you've probably guessed that this is the one on the left with the horizontal arrows), then any calculation you make will first calculate the width, then copy that proportion to the height.

The Scale-by-Both button in the middle allows independent calculation of height and width, and is usually the most useful. This mode will give different scales for the height and width. Once you've decided which scale will work best, you can quickly copy the horizontal scale to the vertical by pressing Command-[Cursor Right], or the vertical to the horizontal by pressing Command-[Cursor Left], then press Return or Enter to recalculate.



Click the Rotate button to swap the original's horizontal and vertical dimensions to, in effect, rotate it 90 degrees. If you hold down the Option key as you click the button, the Scale and Repro dimensions will also be transposed.



Click the Clipboard button to copy to the clipboard a PICT image the size of the reproduction dimensions, along with descriptive text information. This can then be pasted into a page makeup program as a keyline, or placeholder.

Name:

Note:

All the information you enter regarding a photo or piece of artwork you crop can be saved and referred to later. To identify each of these records, you may fill in a name (such as a code to identify it for the stripping department) and a note with any other useful information (there's a limit of 254 characters).

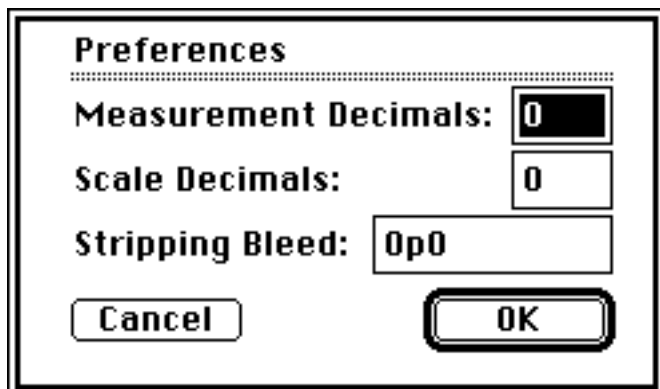
Help

Much of the information in this document is also available by pressing this button.

Bleed:

If you're figuring sizes for films, you may enter an appropriate value in the "Bleed" edit box. This measurement will be added to all four sides of the specified reproduction size. If, for example, you specify a 6-pt. bleed at 100%, the reproduction dimensions will be calculated 12 points less than the original. Similarly, if you calculate the scale with identical original and repro dimensions, the scale will be a slight enlargement to allow for the additional film. Many graphic artists will prefer to leave the bleed value at zero and simply allow for some bleed when measuring the dimensions of the original.

Preferences



The Preferences dialog box is a rectangular window with a title bar. It contains three input fields: 'Measurement Decimals' with a value of 0, 'Scale Decimals' with a value of 0, and 'Stripping Bleed' with a value of 0p0. At the bottom, there are two buttons: 'Cancel' and 'OK'.

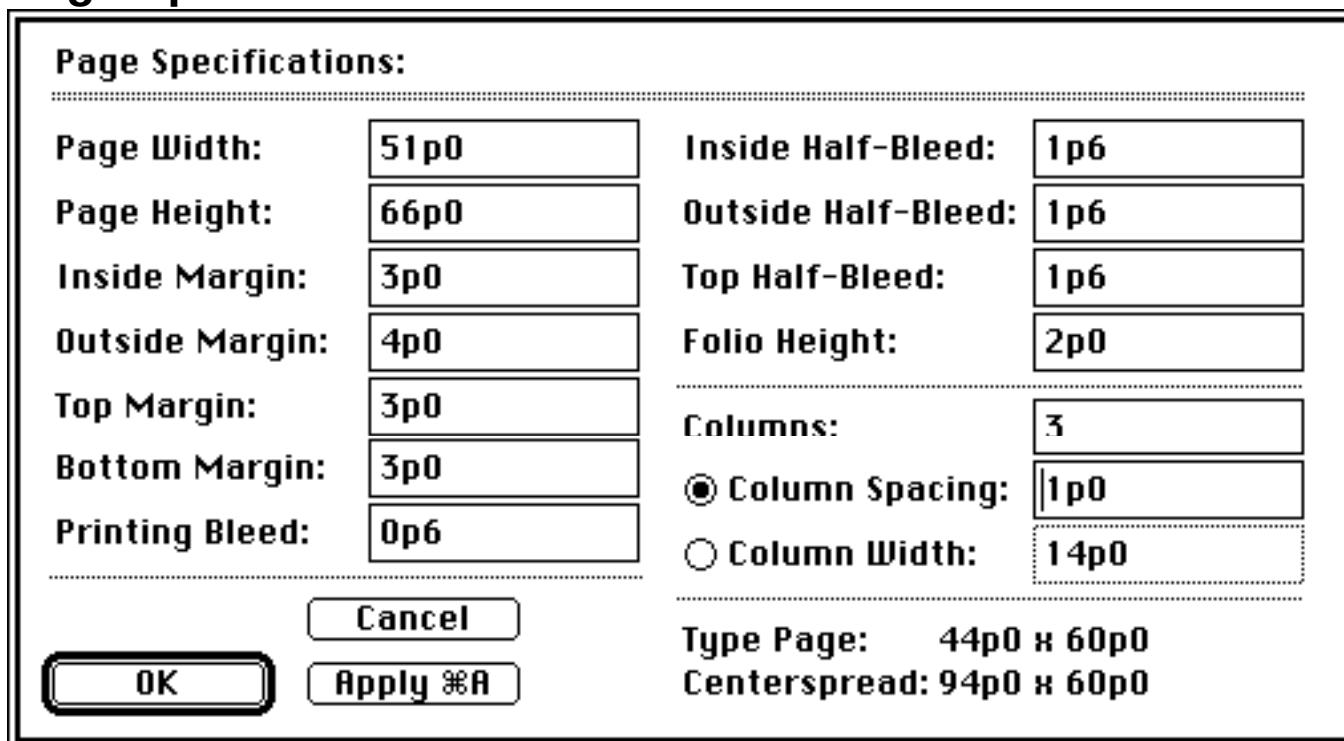
Preferences	
Measurement Decimals:	0
Scale Decimals:	0
Stripping Bleed:	0p0
<input type="button" value="Cancel"/> <input type="button" value="OK"/>	

The “Preferences” dialog box is called from the PropCalc menu on the menu bar, or by typing Command-F.

Use the “Preferences” dialog box to set the number of decimal places to calculate to. The default number of decimal places for the display is 0 for picas, 2 for inches or 1 for millimeters. Use the “Measurement Decimals” edit box to enter any additional decimal places you'd like to add. In the same way, you can add additional precision to the default scale (camera setting) display of whole percentage points. Some accuracy in measurements may be compromised during calculation because—and this is important to keep in mind—all values are converted to the output units you choose and calculated (or rounded off) to the decimal precision you specify in the “Preferences” dialog box.

The stripping bleed is the difference between the size of the final films and the keyline it has to fit into (excess film, not shortage!). This value will be automatically entered into new records you create, but you can change it in the main window at any time.

Page Specifications



The Page Specifications dialog box is a rectangular window with a title bar. It contains two columns of input fields. The left column includes 'Page Width' (51p0), 'Page Height' (66p0), 'Inside Margin' (3p0), 'Outside Margin' (4p0), 'Top Margin' (3p0), 'Bottom Margin' (3p0), and 'Printing Bleed' (0p6). The right column includes 'Inside Half-Bleed' (1p6), 'Outside Half-Bleed' (1p6), 'Top Half-Bleed' (1p6), 'Folio Height' (2p0), 'Columns' (3), 'Column Spacing' (1p0), and 'Column Width' (14p0). At the bottom, there are three buttons: 'Cancel', 'OK', and 'Apply ⌘A'. To the right of the buttons, the 'Type Page' is 44p0 x 60p0 and the 'Centerspread' is 94p0 x 60p0.

Page Specifications:			
Page Width:	51p0	Inside Half-Bleed:	1p6
Page Height:	66p0	Outside Half-Bleed:	1p6
Inside Margin:	3p0	Top Half-Bleed:	1p6
Outside Margin:	4p0	Folio Height:	2p0
Top Margin:	3p0	Columns:	3
Bottom Margin:	3p0	<input checked="" type="radio"/> Column Spacing:	1p0
Printing Bleed:	0p6	<input type="radio"/> Column Width:	14p0
<input type="button" value="Cancel"/> <input type="button" value="OK"/> <input type="button" value="Apply ⌘A"/>		Type Page:	44p0 x 60p0
		Centerspread:	94p0 x 60p0

Choose “Page Specs” from the PropCalc menu to define your standard page grid. These settings affect the values automatically entered when you choose items from the “Reproduction Sizes” menu. Definitions for the less than obvious terms in the Page Specifications dialog box and Repro Sizes menu are:

- Printing Bleed: The printed area trimmed from the printed page. Please don't confuse this with Stripping Bleed, which refers to the “margin of error” given by scaling artwork slightly oversize.
- Half-Bleed: A margin beyond the type column to which graphics may optionally extend. PropCalc's Page

Specifications dialog box asks for this measurement from the edge of the paper, not from the type column.

- Folio Height: The distance from the bottom of the page number to the bottom edge of the page.
- Column Spacing: The distance between columns of text.
- Gutter: Used in different ways by different people, so it's not used at all here.
- Type Page: An area bounding all type columns on a page. On a single-column page, the type column is also the type page.
- Centerspread: Technically, a centerspread is twice the page size, but that's easy enough for you to figure out yourself, so the Page Specifications dialog box displays the live area of the two combined type pages.
- Full Bleed: The area including the entire page plus top, bottom and outside printing bleeds.
- Double Full Bleed: The area including two full pages plus top, bottom and outside printing bleeds.
- Foldout Full Bleed: The area of a three-page foldout, plus printing bleeds, minus 9 points (1/8") allowance for the second page to clear the trim and for the third page to clear the fold.
- Half Page: A half-height type page, included only as a starting point for scaling large graphics, such as lead photos.

Other Menu Items

- The values under "Original Sizes" are pre-set to standard photograph sizes. Choose this menu to quickly enter dimensions for your original artwork.
- "Set Repro with Mouse" will display a cross-shaped cursor. You can then drag a rectangle anywhere on the screen to trace an area in a page layout program (in a 100% view) to quickly enter a reproduction size. When using MultiFinder, hold down the Option key when selecting PropCalc from the Apple menu, otherwise MultiFinder will switch applications on you when you click outside the DA's window! Using this method, you'll still be able to drag a rectangle only in a window of the application serving as the DA's host.
- "Get Record" displays a list of all defined records, identified by the text in the record's "Name" field. "Insert Record" creates a new blank record and adds it to the end of the list. "Clear Record" simply sets the current record to the default values. "Delete Record" deletes it and removes it from the "Get Record" menu. "Delete All Records" starts over with just one blank record. Your work will be saved in a file named "PropCalc File" located in your system folder, and retrieved the next time you start the desk accessory.
- The "Save Summary" menu selection shows a list of all records with the name, original size, scale, reproduction size and note, if any. You then have the option to save the information to the clipboard or to a tab-delimited text file, which can then be placed into a word processor or spreadsheet for further analysis or printing.
- Adjust Original sets both Scale values to the larger of the two, then recalculates the original size. This, in effect, recrops the original to fit the shape of the repro. The keyboard shortcut is Command-[Cursor Up].
- Adjust Repro is similar to Adjust Original, except that it sets the scales to the smaller of the two and recalculates the repro to show the largest area in the shape of the original that will fit within the repro dimensions. The keyboard shortcut is Command-[Cursor Down].

Keyboard shortcuts:

- [Home]: Go to First Record
- [End]: Go to Last Record
- [Page Up]: Go to Previous Record
- [Page Down]: Go to Next Record
- Command-R: Rotate Dimensions
- Command-I: Insert Picture in Clipboard
- Command-H or Command-[Cursor Left]: Copy Scale from Height

- Command-W or Command-[Cursor Right]: Copy Scale from Width
- Command-A: Add Record
- Command-B: Clear (Blank) Record
- Command-K: Delete (Kill) all Records
- Command-P: Page Setup
- Command-M: Define Repro Size with Mouse
- Command-S: Summary of Records
- Command-F: Preferences
- Command-[Cursor Up]: Adjust Original Size
- Command-[Cursor Down]: Adjust Repro Size
- Hold down the option key when selecting an original size from the menu for a portrait orientation. The default orientation is landscape.
- Hold down the option key when clicking the Rotate button to swap both original and repro dimensions, otherwise only the original will be rotated.
- The Escape key can be used to close PropCalc's dialog boxes.

Tutorial

Say we're laying out a magazine article that includes a 1-column vertical photo from a 35mm slide. This is how we might approach the photo cropping and sizing.

- Type Command-A to create a new record.
- Check that you're calculating horizontal and vertical percentages independently (the second square button is selected).
- Check your stripping bleed value. In our example, we'll use 3 points. You can use any measurement units you'd like, but in our example let's use PostScript points/picas.

PropCalc Proportion Calculator

Original:	5p8	wide x	8p4	high
Scale:	256	%	228	%
Repro:	14p0	wide x	18p6	high

Calculate:

☐ Original

☒ Scale

☐ Repro

Measurement:

☐ Picas/Points

☒ PS Picas/Points

☐ Inches

☐ Millimeters

Record 1 of 1

Name: Bleed:

Note:

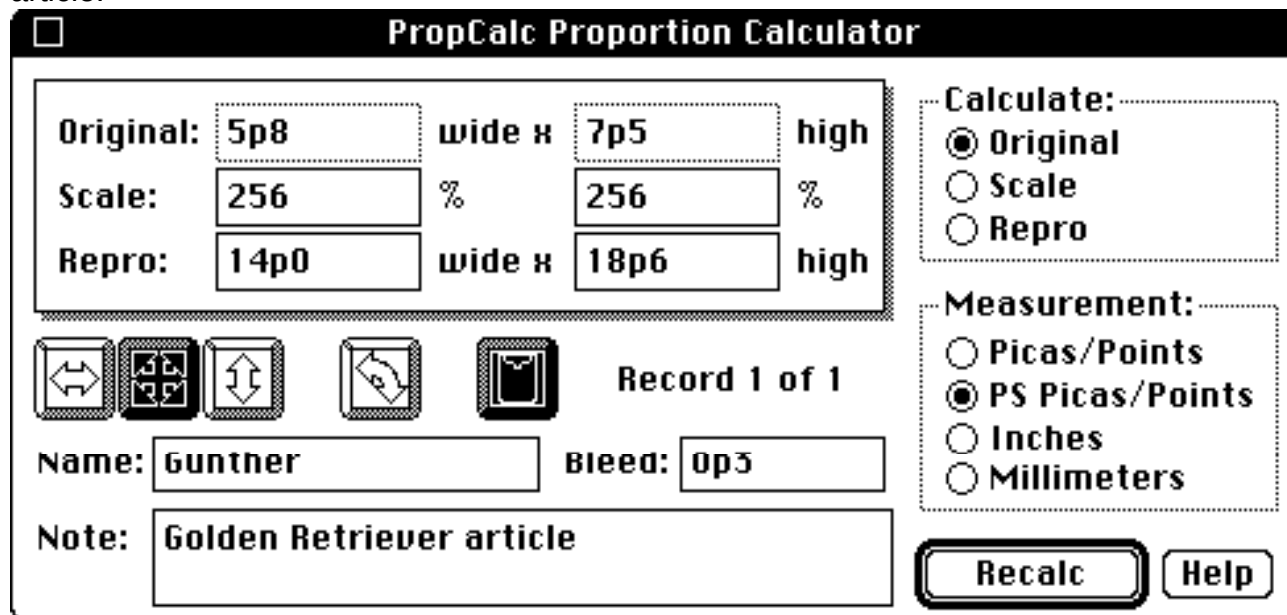
Recalc **Help**

- Enter your original and repro dimensions.

In our first example, we're starting with a 35mm slide. In real life you'd probably want to carefully measure the image area you actually want, but let's say we want as much of the slide as possible, so select "35mm Slide" from the "Original Sizes" hierarchical menu. Since the original photo is vertically oriented, hold down the Option key as you select it. "5p8" and "7p5" will appear in the original dimensions. Using the default page setup PropCalc comes with, we have 14-pica wide columns, so select "1 Column" from the "Reproduction Sizes" hierarchical menu. "14p0" will appear in the reproduction width box. Say our layout specifies 18 1/2 picas for the photo height, so type 18p6 (or "18 1/2p") in the reproduction height box. Make sure that the Scale radio button is selected and press Enter or Return to calculate.

Note that the two scales are different. This tells us that the original and reproduction are of different shapes. To get as much of the original image as possible into the size and shape of the reproduction size, select “Adjust Original” from the menu (or press Command-[Up Arrow]). What we have now is an original size slightly smaller in the vertical dimension. Normally, at this point you’d check the original to see that cropping it at this size won’t cut off any important subject matter.

- Check the title and note fields, to ensure that they contain descriptive information that will help the stripping department identify the photo. In this case, we can put in the lead-in from the caption and the name of the article.



The screenshot shows the 'PropCalc Proportion Calculator' window. It has a title bar with a standard window icon and the text 'PropCalc Proportion Calculator'. The main area is divided into several sections. On the left, there are input fields for 'Original' (5p8 wide x 7p5 high), 'Scale' (256 %), and 'Repro' (14p0 wide x 18p6 high). To the right of these is a 'Calculate:' section with three radio buttons: 'Original' (selected), 'Scale', and 'Repro'. Below that is a 'Measurement:' section with four radio buttons: 'Picas/Points', 'PS Picas/Points' (selected), 'Inches', and 'Millimeters'. In the center, there are five icons for different functions: a double-headed arrow, a crop icon, a vertical double-headed arrow, a hand cursor, and a document icon. To the right of these icons is the text 'Record 1 of 1'. Below the icons are two input fields: 'Name: Gunther' and 'Bleed: 0p3'. At the bottom left is a large text area labeled 'Note:' containing the text 'Golden Retriever article'. At the bottom right are two buttons: 'Recalc' and 'Help'.

- Copy a picture to the clipboard by pressing the clipboard button.

Gunther
14p0 x 18p6
256%
0p03 Bleed
Golden Retriever article

- Now switch to your page layout program and paste in the placeholder.
- Double-check your figures before ordering 4/c separations!

Revision History:

Version 1.01: With measurement preferences set to millimeters, numbers entered without “mm” were interpreted incorrectly.

=== IMPORTANT ===

This software is not infallible! Save your work before calling this DA, and question any bogus-looking results. I don't require payment for this DA (see below), but neither do I guarantee flawless performance.

If you find this DA useful and dependable, and it proves to be an asset to your productivity and profitability, I'd really appreciate a contribution of \$10, or whatever you think is fair. If you have any suggestions for improvements to the DA or its user interface, please let me know.

Special thanks to Dick Skover (the world's coolest Mac illustrator), to Michael J. Conrad for his “DA Skeleton,” upon which this DA was built, and to Jon Wind for his encouragement and guidance. Your comments, suggestions, and—especially—bug reports are always welcome.