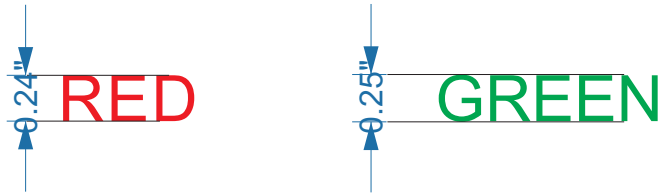


# Font point size vs dimensional height

**This document explores the relationship and differences between point size and dimensional sizes for fonts.**

It is very common to see dimension drawings that specify text as a dimensional height and do not reference a specific font. This practice causes issues for engravers. The images below demonstrate why this is problematic.

Below are the words "GREEN" and "RED" using 24pt Arial font.



The reason they are two different dimensional heights is due to the fact that fonts are built with different size characters to please the eye. If a rounded character like the G is the same height as the R then it will appear smaller to the eye. For this reason type setting has used point size to indicate the size of the text. This point size refers to the cell height of the font.

Trying to force different lines of text to be the same dimensional height provides poor results. In the example below we force the word RED and the word GREEN to be .25" in height.

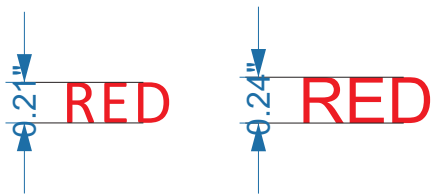
RED GREEN

When we lay one over the other we see the problem with this approach.

GREEN

The green R and E are smaller than the red R and D. This can cause issues that are very noticeable to the eye.

When specifying a point size it is important to note the specific font as well. Not all fonts are created to be the same size.



Both of these are 24pt. The Calibri font is smaller than the Arial font.

# Font point size vs dimensional height

A google search will provide varying and contradicting ways to deal with this issue. In short as usual the internet is full of incorrect information.

From what we have found researching there is only one true standard for using literal height and that is x-height. This means if you specify .25" x-height then the lower case x will be .25" tall making upper case characters much taller.

There is a specification called Cap height, but there is no character like the capital letter X specified, it instead only refers to "flat" capital characters. Many fonts don't even have "flat" capital letters the same size so this is still arbitrary.

I suggest that a hybrid approach to the x-height and Cap height be used, making the upper case X the standard for Cap height. If a letter height of .25" is specified, make a capital letter X in the font to be used and size it to .25". Next, note the point size of that X and use that point size going forward for that font at .25"

Example: .25" Arial font would translate to 25.139 point.