

SUPERIOR FIGURES

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1. BRIEFLY

The default behavior of footnote and endnote markers in \LaTeX is to print the number as if it were a mathematical superscript. In most cases, this means the size is about 70% of the normal lining figure and the top is somewhat above the tops of capital letters. In many cases, the superscript figure is simply reduced in all dimensions by about 70%, making them appear rather slight, though overly tall. (The *libertine* package used for preparing this document has a custom footnote illustrated below.)

As an alternative, one may use superior figures—small figures, usually 50% to 60% of the height of lining figures, like ¹²³⁴⁵⁶⁷⁸⁹⁰. Commonly, they are designed so that the tops of the numbers are aligned with the tops of the capital letters in the font, though sometimes a little higher, corresponding to the ascender height. PostScript fonts have for a long time mostly contained just a small subset {1, 2, 3} of the possible superior digits, and most OpenType fonts in the Adobe portfolio, other than the most popular and the most recent, contain the same small subset. Moreover, the TS1 encoding includes slots for only those three superior figures. Even the recent STIX collection contains just the basic three.

This package allows you to add a full set of superior figures to a font family that lacks one. It uses two predefined collections—the default is *ntxsups*, a collection matching Times, derived from the STIX fonts (digits 1..8 were taken from the vulgar fraction glyphs, and the digits 0, 9 were constructed to match them using FontForge) while the second, *libertinesups*, is taken from Libertine-Legacy. (The standard *libertine* package provides no access to these glyphs other than through footnote markers.) In addition, you may specify any \TeX tfm whose figure slots contain superior figures. The package also allows you to scale the size of the imported figures, to take into account your general font scaling, and to specify an amount by which to raise the imported, rescaled figures. You may also specify a spacing to apply before the footnote marker, using the parameter *supspaced*. The package should be loaded after your Roman text font package¹.

SAMPLE INVOCATIONS:

- Times-like, no rescaling or raising, but with .04em space before footnote markers:

```
\usepackage[supspaced=.04em]{superiors}
```

- Libertine superiors scaled up by 20%, then lowered:

```
\usepackage{libertine}
\usepackage[supstfm=libertinesups,%
  supscaled=1.2,%
  raised=-.13em]% match XHeight of libertine
{superiors}
```

- Use MinionPro² superiors at default size, lowered a bit:

```
\usepackage[supstfm=T1-Minion2Pro-Regular-sups-kern-liga,%
  raised=-.05em]%
{superiors}
```

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¹The *newtxtext* package uses the *ntxsups* superiors contained in the *newtx* package by default for footnote markers.

²Assumes you have installed MinionPro according to the directions in the *minion2newtx* package.

It is best to specify a relative unit for the `raised` and `supspaced` parameters so that they change with the font size. (Recall that for a 10pt font, 1em is usually 10pt, but the actual size of 1em is defined relative to font size.)

The following example compares `libertine` with its default footnote markers against `libertine` with the `superiors` package as described in the second example above:

This is a short Libertine test document¹. This is a short Libertine test document¹.

¹default footnote style

¹superiors footnote style

There is another parameter named `scaled` that should be used only if you loaded your text font with a `scale` parameter different from 1.0, and in this case, you should use the same `scale` parameter. For example:

```
\usepackage[lining,scaled=1.05]{bembo}
\usepackage[scaled=1.05,%
  supstfm=libertinesups,% libertine
  supscaled=1.2,%
  raised=-.13em]%
{superiors}
```

2. ISSUES WITH SUPERIOR FIGURES

If a number of figure styles are available, many packages make use of `nfssect` (or its further extension `nfssect-cfr`) to access those special forms. For superior figures, two macros are defined by `nfssect`: `\sustyle` and `\textsu`, the first of which changes the text font to a font with superior figures (and is usually called with action confined to a group), while the second is a macro called like `\textsu{123}` which applies `\sustyle` to just its argument. In packages generated by `otfinst`, if superior figures are available (even if only three of them), it redefines `\@makefnmark`:

```
\def\@makefnmark{\hbox{\sustyle\@thefnmark}}
```

so that it uses figures in `\sustyle`. That leads to problems if you use footnote markers greater than three. For example, in Stempel Garamond, where there are only three superior figures available, the first graphic shows the default footnote markers provided by `otfinst`, the second shows the document processed with `libertine` footnote markers using

```
\usepackage[supstfm=libertinesups,%
  supscaled=1.2,%
  raised=-.04em
]{superiors}
```

This is a short¹ Stempel² Garamond³ test document⁴.

This is a short¹ Stempel² Garamond³ test document⁴.

¹Very short.

²Pronounced Schtempel

³The original Garamond!

⁴default footnote markers

¹Very short.

²Pronounced Schtempel

³The original Garamond!

⁴libertine footnote markers

This package redefines these macros so that `\sustyle` changes the font and applies the scaling changes, while changes due to the raised parameter are applied only within `\textsu`. For this reason, we have to modify the definition of `\@makefnmark` as follows:

```
\def\@makefnmark{\hbox{\textsu{\hspace*{superiors@spaced}}\@thefnmark}}}
```

Relatively few OpenType text font families have a complete set of superior figures that can be accessed after running `otfinst`. Other than those listed above, the following are known to me to have a complete set of superior figures:

- Adobe Bembo Std
- Adobe Caslon Pro
- Adobe Warnock Pro
- Monotype Dante Std
- Monotype Bell Std
- Monotype Perpetua Std
- Adobe Garamond Premier Pro
- Adobe Briosio Pro
- Adobe Arno Pro
- Adobe Kinesis Std
- Adobe Jenson Pro
- Adobe Kepler Std