# The vmargin Package*

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**Abstract**

LaTeX package which introduces paper sizes and provides macros for setting document margins. It still works with LaTeX 2.09. This package supersedes package vpage.

This package file can be made part of a format by typing `\input vmargin.sty` before dumping the format.

## Contents



## 1 License



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## 2 History

This is the first package I ever wrote, to save a lot of typing when dealing with TeX's 1in/1in margin offset, proper margin alignment for doublesided printing, and page layout parameters I always used. As there wasn't anything similar on CTAN I submitted the

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package, then called Vpage. I never heard back, and wasn't looking for it in the right place, so I thought it hadn't been accepted and never thought any more of it.

In the meantime I realised its general-purpose potential and took the page layout code out, renaming it to Vmargin. First time I heard it was on CTAN was when I read the list of 3rd-party packages in the LaTeX Companion and it had vpage in it (CTAN doesn't deal in uppercase letters). So sorry for any confusion the name change caused...

Further development essentially ceased because I didn't see much scope for improvements. vmargin was doing its job. I could have gone overboard with package options, but didn't because I was more interested in a short efficient tool which doesn't load half of the tools and/or graphics bundle. It still works under both LaTeX 2.09 and LaTeX $2_\varepsilon$.

# 3 User manual

## 3.1 Page Size

These macros make it easy to set page margins for a chosen paper size. Actual dimensions of the most common paper sizes are stored and need not be remembered.

Two sided printing is supported, meaning that if on odd pages the left margin is, say, 30mm and the right margin is 20mm, it will be vice versa on even pages. This gives equal margins on the outer and equal margins on the inner edge of the paper, as expected e.g. for a book.

vmargin is designed to be reasonably restricted in both memory usage and processing time, so that the common task of setting margins is not too distracting. If you are looking for something fancier try the geometry package.

The basic procedure of using vmargin is to first set a paper size, and then to set the margins. The margin setting functions depend on the paper size. Setting the paper size and margins are two independent operations, i.e. setting the paper size does not directly affect the margins but will affect the following margin setting command.

`\setpapersize` The size of the paper can be set with

`\setpapersize{`⟨*size*⟩`}`

⟨*size*⟩ can be A0, A1, ..., A9, B0, B1, ..., B9, C0, ..., C9, USletter, USlegal, and USexecutive. The metric paper sizes are not stored but calculated. `\setpapersize` by default sets the orientation to portrait.

Landscape format is selected by using the optional argument

`\setpapersize[landscape]{`⟨*size*⟩`}`

which swaps the width and height dimensions of the paper.

`\setpapersize[portrait]{`⟨*size*⟩`}`

is allowed but is the default.

If you have a size which is not pre-defined use

`\setpapersize{custom}{`⟨*width*⟩`}{`⟨*height*⟩`}`

For ⟨*width*⟩ and ⟨*height*⟩ insert the respective dimensions of your paper.

`\PaperWidth` `\PaperHeight` `\setpapersize` stores the actual dimensions of the paper in the length variables

`\PaperWidth`
`\PaperHeight`

`\ifLandscape` which can be used further, if desired.

`\ifLandscape`

yields true if a landscape format is selected. Do not write to `\PaperWidth`, `\PaperHeight`, or call `\Landscapetrue` or `\Landscapefalse`, it will not work!!

vmargin detects when it runs under pdflatex, and in that case also sets the pdf page size (variables `\pdfpagewidth` and `\pdfpageheight`).

Default for the paper size is A4 portrait.

## 3.2 Margins

`\setmargins` Once the paper size is selected, margins can be set with

```
\setmargins{⟨leftmargin⟩}{⟨topmargin⟩}{⟨textwidth⟩}{⟨textheight⟩}%
  {⟨headheight⟩}{⟨headsep⟩}{⟨footheight⟩}{⟨footskip⟩}
```

or with

```
\setmarginsrb{⟨leftmargin⟩}{⟨topmargin⟩}{⟨rightmargin⟩}{⟨bottommargin⟩}%
  {⟨headheight⟩}{⟨headsep⟩}{⟨footheight⟩}{⟨footskip⟩}
```

\setmarginsrb In the latter case \textwidth and \textheight are calculated using the width and height of the selected paper such as to effectively result in ⟨*rightmargin*⟩ and ⟨*bottommargin*⟩. The first four parameters of the above two commands are used to set \oddsidemargin, \evensidemargin, \textwidth, \topmargin, and \textheight.

\setmargnohf \setmargnohfrb \setmargnohfrb provide a page with no header and footer. They work the same as \setmargins, \setmarginsrb except that they only need the first 4 parameters. The last 4 parameters are set to 0pt. These 2 commands set the pagestyle to empty (\pagestyle{empty}) as there is no space for headers or footers.

```
\setmargnohf{⟨leftmargin⟩}{⟨topmargin⟩}{⟨textwidth⟩}{⟨textheight⟩}%
\setmargnohfrb{⟨leftmargin⟩}{⟨topmargin⟩}{⟨rightmargin⟩}{⟨bottommargin⟩}%
```

\setmarg \setmargrb \setmarg, \setmargrb are the same as \setmargnohf, \setmargnohfrb except that ⟨*headheight*⟩, ⟨*headsep*⟩, ⟨*footheight*⟩, and ⟨*footskip*⟩ are unchanged instead of being set to 0pt.

```
\setmarg{⟨leftmargin⟩}{⟨topmargin⟩}{⟨textwidth⟩}{⟨textheight⟩}%
\setmargrb{⟨leftmargin⟩}{⟨topmargin⟩}{⟨rightmargin⟩}{⟨bottommargin⟩}%
```

Example:

A4 paper, left margin 30mm, top, right, and bottom margin 20mm each, no headers or footers:

```
\setpapersize{A4}
\setmarginsrb{30mm}{20mm}{20mm}{20mm}{0pt}{0mm}{0pt}{0mm}
\pagestyle{empty}
```

The same settings would result with:

```
\setpapersize{A4}
\setmargnohfrb{30mm}{20mm}{20mm}{20mm}
```

Defaults are

```
\setmarginsrb{35mm}{20mm}{25mm}{15mm}{12pt}{11mm}{0pt}{11mm}
```

or with package option nohf

```
\setmargnohfrb{35mm}{20mm}{25mm}{15mm}
```

## 3.3 Dealing with TEX's Margin Offset

\margin@offset \hoffset \voffset The default top and left margins of TeX are +1in. \setmargXXX call \margin@offset which initialises \hoffset, \voffset to -1truein and \oddsidemargin, \evensidemargin, \topmargin to 0in. \setmargXXX then add the given dimensions to \topmargin, \oddsidemargin, \evensidemargin. In some cases it might be desired to use \XXXmargin instead of \Xoffset for compensation. This can be achieved by telling \margin@offset to initialise \Xoffset to 0in and \XXXmargin to -1truein. This is what \shiftmargins does.

If \margin@offset is already defined at the time vmargin is loaded it is *not* redefined! Therefore if \margin@offset is defined before vmargin is loaded the above mentioned compensation can be replaced by a different mechanism. In any case \setmargXXX call \margin@offset and then expect that \XXXmargin are set to useful values. \Xoffset are not touched by \setmargXXX. \margin@offset should be defined in a separate file which is included *before* vmargin, i.e. appears in the list of document-substyles of the \documentstyle command before vmargin. Any better way of doing this? (grumble)

Example:

```
\documentclass[...]{...}
\usepackage{...,margins,vmargin,...}
```

if \margin@offset is defined in a file called margins.sty.

or with LATEX 2.09:

```
\documentstyle[...,margins,vmargin,...]{...}
```

### 3.4 LaTeX 2ε

This package now uses some of the new LaTeX2e features for package programming. It will still work with LaTeX 2.09 (in which case the new features are not used).

LaTeX2e (unless in compatibility mode) does not know `\footheight` any more. vmargin does not set this variable if it does not exist, and sets it if it does. As `\footheight` was not used by LaTeX 2.09 all this has little significance.

LaTeX 2ε now has the dimensions `\paperwidth`, `\paperheight` which hold the size of the paper. `\PaperWidth`, `\PaperHeight` are copied into `\paperwidth`, `\paperheight` if the latter exist. This makes vmargin work correctly with anything that expects `\paperwidth`, `\paperheight` to be set properly. The names `\PaperWidth`, `\PaperHeight` had been chosen in the first place to avoid clashes with style files that also use these names (namely pageframe.sty).

The following package options are available with LaTeX 2ε:

shiftmargins

**shiftmargins** Same as `\shiftmargins`.

portrait

**portrait** Keep the default of a portrait page layout.

landscape

**landscape** Change the default page orientation to landscape. Note: using `\setpapersize` after `\usepackage` causes package option landscape to be ignored.

A4

**A4, etc** Same as using `\setpapersize[...]{...}`. Note: `\setpapersize` always sets the orientation to portrait unless landscape is given as an optional argument to `\setpapersize`.

nohf

**nohf** Do not make space for header and footer lines; this also sets the pagestyle to `empty`.

All unknown options are treated as a paper size, if necessary generating an error that the requested paper size is not defined.

### 3.5 Inclusion in TeX formats

This file may be loaded in initex before dumping the format, by typing

```
\makeatletter
\input vmargin.sty
\makeatother
```

Be aware that this generates a non-standard format. It is really only useful for slow computers. This feature has not been tested with LaTeX 2ε.

### 3.6 Hints for using pageframe.sty

vmargin.sty and pageframe.sty can be used together if the following points are considered:

vmargin uses `\hoffset` and `\voffset` and writes negative values into it, pageframe expects them to be zero to give a 1in space on the left and the top where it prints additional information. Initially, set both to 0mm (in the preamble of your text) and adjust them later on.

pageframe needs to know the trimmed height of the paper (= the height of the "page frame"). Unless the trimmed(!) size of the paper is equivalent to one of the standard paper sizes (unlikely...) the size should be specified with

`\setpapersize{custom}{`⟨*width*⟩`}{`⟨*height*⟩`}`

The correct height of the trimmed page can then be given to pageframe using

`\paperheight{\PaperHeight}`

and the margins of the final product (inside the page frame) can be specified using `\setmargXXX`.

Warning: if `\setmargXXXrb` is used the 3rd parameter (right margin) is ignored. Instead, the dimension of the right margin has to be assigned to `\evensidemargin`.

This is because pageframe re-defines the meaning of `\evensidemargin` to be the right margin of your text, on all pages.

Remember: all these assignments and macro calls have to be in the preamble of the document.

### 3.7 Bugs and To Do

I have not tested this with older versions of LaTeX 2$_\varepsilon$ because I don't have any. If there are any problems please let me know and I'll do something about it.

The way the metric paper sizes are stored takes up a lot of space. A metric size could be computed by `\setpapersize`.

If you have any comments (positive or negative) please let me know!

### 3.8 Summary

```
new lengths:
  \PaperWidth     (read-only)
  \PaperHeight    (read-only)

new ifs:
  \ifLandscape    (read-only)

new macros:
  \setpapersize[<orientation>]{<size>},
  \setpapersize[<orientation>]{custom}{<width>}{<height>}
      <orientation> (optional) = landscape or portrait (default)
      <size> = A4, B5, ...
      <width>, <height> = actual dimensions of the paper
  \setmargins{leftmargin}{topmargin}{textwidth}{textheight}%
          {headheight}{headsep}{footheight}{footskip}
  \setmarginsrb{leftmargin}{topmargin}{rightmargin}{bottommargin}%
          {headheight}{headsep}{footheight}{footskip}
  \setmargnohf{leftmargin}{topmargin}{textwidth}{textheight}
  \setmargnohfrb{leftmargin}{topmargin}{rightmargin}{bottommargin}
  \setmarg{leftmargin}{topmargin}{textwidth}{textheight}
  \setmargrb{leftmargin}{topmargin}{rightmargin}{bottommargin}

  \margin@offset
  \shiftmargins

LaTeX2e package options:
  shiftmargins
  portrait
  landscape
  nohf
  all other options are treated as paper sizes
```

## 4 Implementation

1 ⟨*package⟩

We use macros for the version info here.

```
2 %\def\filename{Vmargin}
3 \def\filename{vmargin}
4 \def\fileversion{V2.5}
5 \def\filedate{2004/07/15}
```

Allow vmargin to be `input` more than once. Important for embedding in formats.

```
6 \@ifundefined{Vmargin}{}{\endinput}
```

Make use of LaTeX2e commands, but only if we are actually running with it.

```
7 \@ifundefined{documentclass}{
8   \edef\Vmargin{Style `\filename', \fileversion, \filedate}
```

```
  \expandafter\everyjob\expandafter{\the\everyjob\typeout{\Vmargin}}
  \typeout{\Vmargin}
}{
  \NeedsTeXFormat{LaTeX2e}[1994/06/01]
  \edef\Vmargin{\filedate\space\fileversion\space set document margins (VK)}
  \ProvidesPackage{\filename}[\Vmargin]
  \edef\Vmargin{Package: \filename\space\Vmargin}
  \expandafter\everyjob\expandafter{\the\everyjob\typeout{\Vmargin}}
  \typeout{\Vmargin}
}
```

`\PaperWidth` `\PaperHeight` `\ifLandscape`

New lengths for paper width and height, and a new if, as flag for using landscape orientation.

```
\newdimen\PaperWidth
\newdimen\PaperHeight
\newif\ifLandscape
```

`\setpapersize`

Setting a paper size. Kind of a data base lookup. Well, it looks up whether the control sequence is defined...

When running pdflatex we also set the pdf page size (`\pdfpagewidth` and `\pdfpageheight`).

```
\def\setpapersize{\@ifnextchar[{\@@setps}{\@@setps[portrait]}}
\def\@@setps[#1]{%
  \@ifundefined{po@#1}{\@name@err{#1}}{\@nameuse{po@#1}}%
  \@@@setps}
\def\@@@setps#1{%
  \@ifundefined{paper@#1}{\@name@err{#1}}{}%
  \csname paper@#1\endcsname}
        % \usename{paper@#1} inside arg to \@ifundefined does not work
        % with papersize "custom".
\def\po@portrait{\Landscapefalse}
\def\po@landscape{\Landscapetrue}
\def\@po@{\ifLandscape
  \dimen0\PaperWidth\PaperWidth\PaperHeight\PaperHeight\dimen0
  \fi
  \@ifundefined{paperwidth}{}{\paperwidth\PaperWidth}%
  \@ifundefined{paperheight}{}{\paperheight\PaperHeight}%
  \@ifundefined{pdfpagewidth}{}{\pdfpagewidth\PaperWidth}%
  \@ifundefined{pdfpageheight}{}{\pdfpageheight\PaperHeight}%
  }
\@ifundefined{PackageError}{
  \def\@name@err#1{%
    \typeout{*****> \string\setpapersize: illegal parameter: #1}}
}{
 \def\@name@err#1{\PackageError{\filename}%
                     {Paper size or orientation unknown: #1}{}}
}
```

`\@defmetricpaper`

Calculate smaller sizes from largest one.

```
\def\@defmetricpaper#1#2#3{%
  \begingroup
  \count0=0
  \def\w{\dimen1 }\def\h{\dimen2 }\def\s{\dimen3 }%
  \w#2\h#3
  \def\l{11}
  \loop
    \begingroup
    \def\t{\the\count0}
    \catcode`\t=11 % letter
    \expandafter\xdef\csname paper@#1\the\count0\endcsname{%
      \PaperWidth\the\w\PaperHeight\the\h\noexpand\@po@}
    \endgroup
    \s\w\w.5\h\h\s
  \ifnum\the\count0<9
```

```
    \advance\count0 by 1
  \repeat
  \endgroup
}
```

Pre-defined paper/envelope sizes:
A0, A1, A2, ..., A9, B0, B1, ..., B9, C0, C1, ..., C9

```
\@defmetricpaper{A}{840.9mm}{1189.2mm}
\@defmetricpaper{B}{1000mm}{1414mm}
\@defmetricpaper{C}{917mm}{1297mm}
```

delete definition to save memory

```
\let\@defmetricpaper=\relax
```

USletter, USlegal, USexecutive

```
\def\paper@USletter{\PaperWidth 8.5in \PaperHeight 11in \@po@}
\def\paper@USlegal{\PaperWidth 8.5in \PaperHeight 14in \@po@}
\def\paper@USexecutive{\PaperWidth 7.25in\PaperHeight 10.5in \@po@}
```

custom

```
\def\paper@custom#1#2{\PaperWidth#1\PaperHeight#2\@po@}
```

`\margin@offset` Initialise left margins (odd and even) and `\hoffset`, `\voffset`. Compensates for the +1in/+1in top/left corner used by TEX by either reducing the margins or `\hoffset`, `\voffset` by 1truein. This macro is only defined here if it is not already defined! Define this macro before loading vmargin to use your own definition.

```
\@ifundefined{margin@offset}{%
\def\margin@offset{%
  \if@shiftmargins
    \oddsidemargin -1truein\evensidemargin\oddsidemargin\topmargin\oddsidemargin
    \hoffset\z@\voffset\z@
  \else
    \oddsidemargin\z@\evensidemargin\z@\topmargin\z@
    \hoffset -1truein\voffset\hoffset
  \fi
}}{}
```

`\shiftmargins` A new if, as flag for when to use margins instead of `\hoffset`/`\voffset` to compensate, and a user-command to set the flag.

```
\newif\if@shiftmargins
\@shiftmarginsfalse % this MUST be default (pageframe.sty)
\def\shiftmargins{\@shiftmarginstrue}
```

Setting margins

`\setmargins` `\setmargins{leftmargin}{topmargin}{textwidth}{textheight}%`
`{headheight}{headsep}{footheight}{footskip}`

```
\newcommand\setmargins[8]{%
\margin@offset
\advance\oddsidemargin #1
\advance\evensidemargin \PaperWidth % = paperwidth - left - width
\advance\evensidemargin -#1
\advance\evensidemargin -#3
\advance\topmargin #2
\textwidth #3
\textheight #4
\headheight #5
\headsep #6
\@ifundefined{footheight}{}{\footheight=#7}%
\footskip #8
\chk@dimen{#1}{#2}{#3}{#4}%
}
```

\setmarginsrb `\setmarginsrb{leftmargin}{topmargin}{rightmargin}{bottommargin}%`
`{headheight}{headsep}{footheight}{footskip}`

```
\newcommand\setmarginsrb[8]{%
\margin@offset
\textwidth \PaperWidth % = paperwidth
\advance\textwidth -#1 %  - left - right
\advance\textwidth -#3
\textheight \PaperHeight % = paperheight - top
\advance\textheight -#2 %  - headheight
\advance\textheight -#5 %  - headsep
\advance\textheight -#6 %  - footskip - bottom
\advance\textheight -#8
\advance\textheight -#4
\advance\oddsidemargin #1
\advance\evensidemargin \PaperWidth % = paperwidth - left - width
\advance\evensidemargin -#1
\advance\evensidemargin -\textwidth
\advance\topmargin #2
\headheight #5
\headsep #6
\@ifundefined{footheight}{}{\footheight=#7}%
\footskip #8
\chk@dimen{#1}{#2}{#3}{#4}%
}
```

\setmargnohf `\setmargnohf{leftmargin}{topmargin}{textwidth}{textheight}`
headheight, headsep, footheight, footskip set to 0pt

```
\newcommand\setmargnohf[4]{%
\setmargins{#1}{#2}{#3}{#4}\z@\z@\z@\z@
\pagestyle{empty}}
```

\setmargnohfrb `\setmargnohfrb{leftmargin}{topmargin}{rightmargin}{bottommargin}`
headheight, headsep, footheight, footskip set to 0pt

```
\newcommand\setmargnohfrb[4]{%
\setmarginsrb{#1}{#2}{#3}{#4}\z@\z@\z@\z@
\pagestyle{empty}}
```

\setmarg `\setmarg{leftmargin}{topmargin}{textwidth}{textheight}`
headheight, headsep, footheight, footskip unchanged

```
\newcommand\setmarg[4]{%
\setmargins{#1}{#2}{#3}{#4}%
            \headheight\headsep\footheight\footskip}
```

\setmargrb `\setmargrb{leftmargin}{topmargin}{rightmargin}{bottommargin}`
headheight, headsep, footheight, footskip unchanged

```
\newcommand\setmargrb[4]{%
\setmarginsrb{#1}{#2}{#3}{#4}%
            \headheight\headsep\footheight\footskip}
```

\chk@dimen A brief plausability check.
h-warning:
if [leftmarg + textwidth > paperwidth] resp.
if [leftmarg + rightmarg > paperwidth].
v-warning:
if [topmarg + textheight > paperheight] resp.
if [topmarg + bottommarg > paperheight].

```
\def\chk@dimen#1#2#3#4{%
\dimen0= #1
\advance\dimen0 by#3
\advance\dimen0 -\PaperWidth
\dimen1= #2
\advance\dimen1 by#4
```

```
\advance\dimen1 \headheight
\advance\dimen1 \headsep
\advance\dimen1 \footskip
\advance\dimen1 -\PaperHeight
\chk@dimen@err
}
```

`\chk@dimen@err` Make this work with both LaTeX 2.09 and LaTeX $2_\varepsilon$.

```
\@ifundefined{PackageError}{
  \def\chk@dimen@err{%
    \ifnum\dimen0>\z@\typeout{vmargin Warning: Horizontal dimensions
      exceed paper width by \the\dimen0}\fi
    \ifnum\dimen1>\z@\typeout{vmargin Warning: Vertical dimensions
      exceed paper height by \the\dimen1}\fi
  }
}{
  \def\chk@dimen@err{%
    \ifnum\dimen0>\z@\PackageError{\filename}{%
      Horizontal dimensions exceed paper width by \the\dimen0}{}\fi
    \ifnum\dimen1>\z@\PackageError{\filename}{%
      Vertical dimensions exceed paper height by \the\dimen1}{}\fi
  }
}
```

Defaults, and LaTeX $2_\varepsilon$ package options (ignored for 2.09).

```
\setpapersize{A4}
\def\@hf@dflt{}
\@ifundefined{DeclareOption}{
}{
  \DeclareOption{shiftmargins}{\shiftmargins}
  \DeclareOption{portrait}{\Landscapefalse}
  \DeclareOption{landscape}{\Landscapetrue}
  \DeclareOption{nohf}{\def\@hf@dflt{y}}
  \DeclareOption*{\@@@setps{\CurrentOption}}
  \ProcessOptions\relax  % process options in order of declaration!
}
\if y\@hf@dflt
  \setmargnohfrb{35mm}{20mm}{25mm}{15mm}%
\else
  \setmarginsrb{35mm}{20mm}{25mm}{15mm}{12pt}{11mm}{0pt}{11mm}%
\fi
```

⟨/package⟩

# Change History

# Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.