

# The centernot package

Heiko Oberdiek  
<oberdiek@uni-freiburg.de>

2007/05/31 v1.1

## Abstract

This package provides `\centernot` that prints the symbol `\not` on the following argument. Unlike `\not` the symbol is horizontally centered.

## Contents

<b>1</b>	<b>User interface</b>	<b>1</b>
<b>2</b>	<b>Implementation</b>	<b>2</b>
<b>3</b>	<b>Installation</b>	<b>2</b>
3.1	Download . . . . .	2
3.2	Bundle installation . . . . .	3
3.3	Package installation . . . . .	3
3.4	Refresh file name databases . . . . .	3
3.5	Some details for the interested . . . . .	3
<b>4</b>	<b>History</b>	<b>4</b>
	[2006/12/02 v1.0] . . . . .	4
	[2007/05/31 v1.1] . . . . .	4
<b>5</b>	<b>Index</b>	<b>4</b>

## 1 User interface

If a negotiated relational symbol is not available, `\not` can be used to create the negotiated variant of the relational symbol. The disadvantage of `\not` is that it is put at a fixed location regardless of the width of the relational symbol. Therefore `\centernot` takes an argument and measures its width to achieve a better placement of the symbol `\not`. Examples:

symbol	<code>\not</code>	<code>\centernot</code>	
<code>=</code>	$\neq$	$\neq$	(definition)
<code>\parallel</code>	$\nparallel$	$\nparallel$	
<code>\longrightarrow</code>	$\nrightarrow$	$\nrightarrow$	

But do not forget that most negated symbols are already available, e.g.:

case	package	code	result
<code>\parallel:</code>	centernot	<code>\$A \centernot\parallel B\$</code>	$A \nparallel B$
	amssymb	<code>\$A \nparallel B\$</code>	$A \nparallel B$
<code>\mid:</code>	centernot	<code>\$A \centernot\mid B\$</code>	$A \nmid B$
	amssymb	<code>\$A \nmid B\$</code>	$A \nmid B$
	mathabx	<code>\$A \notdivides B\$</code>	$A \nmid B$
<code>\rightarrow:</code>	centernot	<code>\$A \centernot\rightarrow B\$</code>	$A \nrightarrow B$
	amssymb	<code>\$A \nrightarrow B\$</code>	$A \nrightarrow B$
	mathabx	<code>\$A \nrightarrow B\$</code>	$A \nrightarrow B$

## 2 Implementation

```

1 <*package>
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{centernot}
4 [2007/05/31 v1.1 Centers the not symbol horizontally (H0)]%

```

`\not` is a `\mathrel` atom with zero width. It prints itself outside its character box, similar to `\rlap`. The next `\mathrel` symbol is then print on top of it. `TeX` does not add space between two `\mathrel` atoms. The following implementation assumes that the math font is designed in such a way that the position of `\not` fits well on the equal symbol.

The blue boxes marks the character bounding boxes seen by `TeX`:

`\not`      =      `\not=`  


`\centernot` `\centernot` is not a symbol but a macro that takes one argument. It measures the width of the argument and places `\not` horizontally centered on that argument. The result is a `\mathrel` atom.

```

5 \newcommand*{\centernot}{%
6   \mathpalette\@centernot
7 }
8 \def\@centernot#1#2{%
9   \mathrel{%
10    \rlap{%
11      \settowidth\dimen@{${\m@th#1}{#2}$}%
12      \kern.5\dimen@
13      \settowidth\dimen@{${\m@th#1}=${}%
14      \kern-.5\dimen@
15      ${\m@th#1}\not${}%
16    }%
17    {#2}%
18  }%
19 }
20 \makeatother
21 </package>

```

## 3 Installation

### 3.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

[CTAN:macros/latex/contrib/oberdiek/centernot.dtx](http://ctan.org/macros/latex/contrib/oberdiek/centernot.dtx) The source file.

[CTAN:macros/latex/contrib/oberdiek/centernot.pdf](http://ctan.org/macros/latex/contrib/oberdiek/centernot.pdf) Documentation.

**Bundle.** All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](http://ctan.org/install/macros/latex/contrib/oberdiek.tds.zip)

*TDS* refers to the standard “A Directory Structure for `TeX` Files” ([CTAN:tds/tds.pdf](http://ctan.org/tds/tds.pdf)). Directories with `texmf` in their name are usually organized this way.

<sup>1</sup>[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)

### 3.2 Bundle installation

**Unpacking.** Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

**Script installation.** Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package `attachfile2` comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

### 3.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain-`TeX`:

```
tex centernot.dtx
```

**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
centernot.sty → tex/latex/oberdiek/centernot.sty
centernot.pdf → doc/latex/oberdiek/centernot.pdf
centernot.dtx → source/latex/oberdiek/centernot.dtx
```

If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

### 3.4 Refresh file name databases

If your `TeX` distribution (`teTeX`, `mikTeX`, ...) relies on file name databases, you must refresh these. For example, `teTeX` users run `texhash` or `mktexlsr`.

### 3.5 Some details for the interested

**Attached source.** The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk centernot.pdf unpack_files output .
```

**Unpacking with  $\LaTeX$ .** The `.dtx` chooses its action depending on the format:

**plain-`TeX`:** Run `docstrip` and extract the files.

**$\LaTeX$ :** Generate the documentation.

If you insist on using  $\LaTeX$  for `docstrip` (really, `docstrip` does not need  $\LaTeX$ ), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{centernot.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

**Generating the documentation.** You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL<sup>A</sup>T<sub>E</sub>X:

```
pdflatex centernot.dtx
makeindex -s gind.ist centernot.idx
pdflatex centernot.dtx
makeindex -s gind.ist centernot.idx
pdflatex centernot.dtx
```

## 4 History

[2006/12/02 v1.0]

- First version.

[2007/05/31 v1.1]

- Real symbols added in documentation part.

## 5 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.

	<b>Symbols</b>		<code>\mathrel</code> . . . . .	9
<code>\@centernot</code> . . . . .	6, 8			
	<b>C</b>		<b>N</b>	
<code>\centernot</code> . . . . .	<u>5</u>		<code>\NeedsTeXFormat</code> . . . . .	2
	<b>D</b>		<code>\newcommand</code> . . . . .	5
<code>\dimen@</code> . . . . .	11, 12, 13, 14		<code>\not</code> . . . . .	15
	<b>K</b>		<b>P</b>	
<code>\kern</code> . . . . .	12, 14		<code>\ProvidesPackage</code> . . . . .	3
	<b>M</b>		<b>R</b>	
<code>\m@th</code> . . . . .	11, 13, 15		<code>\rlap</code> . . . . .	10
<code>\makeatother</code> . . . . .	20		<b>S</b>	
<code>\mathpalette</code> . . . . .	6		<code>\settowidth</code> . . . . .	11, 13