

# The centernot package

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## 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:macros/latex/contrib/oberdiek/oberdiek-tds.zip](http://ctan.org/macros/latex/contrib/oberdiek/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 `mktextlsr`.

### 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 |