

The **blowup** package*

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Abstract

This package only defines the user-level macro `\blowup`, which can be used to upscale or downscale all pages of a document. It is similar to the \TeX primitive `\magnification` but more accurate and user-friendly. `\blowup` may be useful for the creation of posters from a normal-sized document and for many kinds of fine adjustments of a ready typesetted document (e.g., minor changes of scaling and position of the pages).

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1 Usage

Load the package after other packages that affect the paper size. Then call the macro `\blowup` before `\begin{document}` to scale the document.

```
\usepackage{blowup}  
\blowup{<key=value>}
```

key	value
paper	The final paper size: letter, legal, executive or a paper size from the ISO/DIN paper series A, B, C, D (e.g., a8, c7,..., b1, a0) or a pair of dimensions in curly brackets (e.g., paper={925mm,1225mm}) or the letter 'x' followed by a scal- ing factor (e.g., paper=x1.414213).

*This document corresponds to `blowup v0.1i`, dated 2008/06/06.

landscape	Exchanges paperwidth and paperheight: true (the same as no value) or false .
noscale	No scaling of the original paper size: true (the same as no value) or false .
pos	Position of the page on the paper: left or right , inside or outside , top or bottom (only the first letter is significant; default is centering), or a pair of dimensions in curly brackets which means the offset from the lower left or lower outside corner of the final paper. Only meaningful for noscale=true and up-scaled paper size.
onepage	Suppresses the second page and all following pages: true (the same as no value) or false . Useful for creating a one-side paper like a poster.

See also the example documents `blowup-test?.tex`.

2 Required Packages

The blowup package requires the following packages: `everyshi`, `graphics`, `keyval`, and `typearea`.

3 Implementation

```

1 <*package>
Load some packages for utility macros.
2 \RequirePackage{everyshi,graphics,keyval}
3 \ifpackageloaded{typearea}{}%
4   \newcommand*{BL@save@dimen}[1]{%
5     \ifundefined{BL@#1}{%
6       \expandafter\newlength\csname BL@#1\endcsname}{}%
7     \csname BL@#1\endcsname\csname #1\endcsname
8     \g@addto@macro{BL@restore@dimens}{%
9       \csname #1\endcsname\csname BL@#1\endcsname}%
10    }%
11   \newcommand*{BL@restore@dimens}{%
Some dimensions changed by typearea must be saved and restored.
12   \BL@save@dimen{textwidth}%
13   \BL@save@dimen{textheight}%
14   \BL@save@dimen{evensidemargin}%
15   \BL@save@dimen{oddsidemargin}%
16   \BL@save@dimen{topmargin}%
17   \BL@save@dimen{headheight}%
18   \BL@save@dimen{headsep}%

```

```

19 \BL@save@dimen{topskip}%
20 \BL@save@dimen{footskip}%
21 \BL@save@dimen{baselineskip}%
22 \RequirePackage{typearea}%
23 \BL@restore@dimens
24 \let\BL@save@dimen=\relax
25 \let\BL@restore@dimens=\relax
26 }
27 \providecommand*{\vb@xt@{\vbox to}

\sPaperWidth The size of the scaled pages.
\sPaperHeight 28 \newlength\sPaperWidth \sPaperWidth=\paperwidth
29 \newlength\sPaperHeight \sPaperHeight=\paperheight

30 \newcommand*\BL@@resize{}

\BL@scalePage Scales the output box to the dimension of the new paper size.
31 \newcommand*\BL@scalePage{%
32 \setbox\@cclv=\vbox{\vskip1in\unvbox\@cclv}%
33 \setbox\@cclv=\vbox{\moveright1in\box\@cclv}%
34 \setbox\@cclv=\hb@xt@\paperwidth{\box\@cclv\hss}%
35 \setbox\@cclv=\vb@xt@\paperheight{\box\@cclv\vss}%
36 \let\BL@@resize=\@firstofone
37 \ifBL@noscale\else
38 \def\BL@@resize##1{\resizebox{\sPaperWidth}{!}{##1}}%
39 \setbox\@tempboxa=\hbox{\set@typeset@protect
40 \BL@@resize{\copy\@cclv}}%
41 \ifdim\ht\@tempboxa>\sPaperHeight
42 \def\BL@@resize##1{\resizebox{!}{\sPaperHeight}{##1}}%
43 \fi
44 \fi
45 \setbox\@tempboxa=\vb@xt@\sPaperHeight{\set@typeset@protect
46 \kern\z@\BL@t
47 \hb@xt@\sPaperWidth{\BL@l\BL@@resize{\box\@cclv}\BL@r}%
48 \BL@b\kern\z@
49 }%
50 \setbox\@cclv=\vbox{\box\@tempboxa}%
51 \setbox\@cclv=\vbox{\vskip-1in\unvbox\@cclv}%
52 \setbox\@cclv=\vbox{\moveright-1in\box\@cclv}%
53 }

54 \newcommand\BL@tempa{}
55 \newcommand\BL@tempb{}
56 \newcommand*\BL@strip@comma{}
57 \def\BL@strip@comma#1,{#1}

\BL@if@dimen@pair The parameter two will be executed if the first parameter is a comma-separated
pair of two dimensions. If not the parameter three will be executed.
58 \newcommand*\BL@if@dimen@pair[1]{%
59 \expandafter\BL@if@dimen@pair#1,\@nil

```

```

60 }
61 \newcommand*{BL@if@dimen@pair{}}
62 \def\BL@if@dimen@pair#1,#2\@nil{%
63   \edef\BL@tempa{#1}\edef\BL@tempb{#2}%
64   \@tempswafalse
65   \ifx\BL@tempb\@empty\else
66     \edef\BL@tempb{\expandafter\BL@strip@comma\BL@tempb}%
67     \ifdimen{\BL@tempa}{\@tempswatrue}{}%
68     \if@tempswa
69       \ifdimen{\BL@tempb}{\@tempswafalse}%
70       \fi
71     \fi
72     \if@tempswa
73       \expandafter\@firstoftwo
74     \else
75       \expandafter\@secondoftwo
76     \fi
77 }

78 \newcommand*{BL@strip@x{}}
79 \def\BL@strip@x#1x{#1}

```

\BL@if@factor The parameter two will be executed if the first parameter is the small letter x ('times') immediately followed by a number. If not the parameter three will be executed.

```

80 \newcommand*{BL@if@factor[1]}{%
81   \expandafter\BL@if@factor#1x\@nil
82 }
83 \newcommand*{BL@if@factor{}}
84 \def\BL@if@factor#1x#2\@nil{%
85   \edef\BL@tempa{#2}%
86   \ifx\BL@tempa\@empty
87     \expandafter\@secondoftwo
88   \else
89     \edef\BL@tempa{\expandafter\BL@strip@x\BL@tempa}%
90     \expandafter\@firstoftwo
91   \fi
92 }

```

The key-value definitions for \blowup

```

93 \define@key{BL@}{paper}{%
94   \BL@if@dimen@pair{#1}{%
95     \global\sPaperWidth=\BL@tempa\relax
96     \global\sPaperHeight=\BL@tempb\relax
97   }{%
98     \BL@if@factor{#1}{%
99       \global\sPaperWidth=\BL@tempa\paperwidth
100       \global\sPaperHeight=\BL@tempa\paperheight
101     }{%
102       \begingroup

```

Get the paper size. Reset the landscape mode because one of the KOMA-SCRIPT classes may be loaded in landscape mode too.

```

103      \KOMAoptions{paper=portrait,paper=#1}%
104      \global\sPaperWidth=\paperwidth
105      \global\sPaperHeight=\paperheight
106      \endgroup
107  }%
108 }%
109 }%
110 \newif\ifBL@noscale \BL@noscalefalse
111 \define@key{BL@}{noscale}[true]{%
112   \csname BL@noscale#1\endcsname
113 }
114 \newcommand*{\BL@l}{\hss}
115 \newcommand*{\BL@r}{\hss}
116 \newcommand*{\BL@i}{ }
117 \newcommand*{\BL@o}{ }
118 \newcommand*{\BL@t}{\vss}
119 \newcommand*{\BL@b}{\vss}

```

\BL@setPos Modify the macros \BL@l, \BL@r (\BL@i, \BL@o), \BL@t, and \BL@b for positioning the page on the paper.

```

120 \newcommand\BL@setPos[1]{%
121   \def\BL@l{\hss}\def\BL@r{\hss}%
122   \def\BL@t{\vss}\def\BL@b{\vss}%
123   \def\BL@i{} \def\BL@o{}%
124   \BL@if@dimen@pair{#1}{%
125     \edef\BL@b{\vskip\BL@tempb}%
126     \if@twoside
127       \edef\BL@l{\noexpand\ifodd\value{page}%
128         \hskip\BL@tempa\noexpand\else\hss\noexpand\fi}%
129       \edef\BL@r{\noexpand\ifodd\value{page}%
130         \hss\noexpand\else\hskip\BL@tempa\noexpand\fi}%
131     \else
132       \edef\BL@l{\hskip\BL@tempa}%
133     \if
134   }{%
135     \@for\BL@tempa:=#1\do{%
136       \edef\BL@tempb{\expandafter\@car\BL@tempa\@nil}%
137       \expandafter\let\csname BL@\BL@tempb \endcsname\relax
138       \if@twoside
139         \ifx\BL@i\relax
140           \def\BL@r{\ifodd\value{page}\hss\else\relax\fi}%
141           \def\BL@l{\ifodd\value{page}\relax\else\hss\fi}%
142         \fi
143         \ifx\BL@o\relax
144           \def\BL@l{\ifodd\value{page}\hss\else\relax\fi}%
145           \def\BL@r{\ifodd\value{page}\relax\else\hss\fi}%

```

Extract the first letter.

```

146         \fi
147     \fi
148 }%
149 }%
150 }

151 \define@key{BL@}{pos}{%
152   \BL@setPos{#1}%
153 }
154 \newif\ifBL@landscape \BL@landscapefalse
155 \define@key{BL@}{landscape}[true]{%
156   \csname BL@landscape#1\endcsname
157 }
158 \newcommand*\BL@pageInit{
159 \define@key{BL@}{onepage}[true]{%
160   \csname if#1\endcsname
161   \def\BL@pageInit{\gdef\shipout{\setbox\@tempboxa=}}%
162   \fi
163 }

```

`\blowUp` The only user-level macro.

```

164 \newcommand*\blowUp[1]{%
165   \setkeys{BL@}{#1}%
166   \ifBL@landscape
167     \@tempdima=\sPaperWidth
168     \global\sPaperWidth=\sPaperHeight
169     \global\sPaperHeight=\@tempdima
170   \fi
171   \EveryShipout{\BL@scalePage}%
172   \gdef\blowUp##1{%
173     \PackageWarning{blowup}{%
174       Only the first call of ‘\string\blowUp’ \MessageBreak is effective}}%
175 }

```

```

176 \EveryShipout{\BL@pageInit}
177 \@onlypreamble\blowUp
178 \AtBeginDocument{%

```

The package geometry must not write (wrong) pagesize informations to the output file.

```

179   \let\Gm@checkdrivers=\relax
180   \BL@pagesize@specials{\sPaperWidth}{\sPaperHeight}%
181 }

```

`\BL@pagesize@specials` Write pagesize informations to the output file. Depends on T_EX compiler or driver.

```

182 \newcommand*\BL@pagesize@specials[2]{
183 \@ifundefined{Gin@driver}{}{%
184   \ifx\Gin@driver\@empty\else
185     \filename@parse{\Gin@driver}\@tempwafalse
186     \def\reserved@a{dvips}%

```

```

187 \ifx\filename@base\reserved@a\@tempswatrue\fi
188 \def\reserved@a{dvipdfm}%
189 \ifx\filename@base\reserved@a\@tempswatrue\fi
190 \if@tempswa
191 \PackageInfo{blowup}{Generating code for dvips}%
192 \def\BL@pagesize@specials#1#2{%
193 \@tempdima=#1\@tempdimb=#2%
194 \AtBeginDvi{\special{papersize=\the\@tempdima,\the\@tempdimb}}}%
195 \fi
196 \def\reserved@a{pdfTeX}%
197 \ifx\filename@base\reserved@a
198 \PackageInfo{blowup}{Generating code for pdfTeX}%
199 \def\BL@pagesize@specials#1#2{%
200 \pdfpagewidth=#1\relax\pdfpageheight=#2\relax}%
201 \fi
202 \def\reserved@a{VTeX}%
203 \ifx\filename@base\reserved@a
204 \PackageInfo{blowup}{Generating code for VTeX}%
205 \def\BL@pagesize@specials#1#2{%
206 \mediawidth=#1\relax\mediaheight=#2\relax}%
207 \fi
208 \fi
209 }
210 </package>

```