

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 (e.g., `geometry` and `hyperref`). Then call the macro `\blowUp` before `\begin{document}` to scale the document.

```
\usepackage{blowup}  
\blowUp{key=value}
```

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

*This document corresponds to `blowup 0.1j`, dated 2008/11/14.

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>
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}%
Prevent an error if \l@addto@macro is already defined.
22 \let\l@addto@macro=\relax
23 \RequirePackage{typearea}%
24 \BL@restore@dimens
25 \let\BL@save@dimen=\relax
26 \let\BL@restore@dimens=\relax
27 }
28 \providecommand*\vb@xt@{\vbox to}

\sPaperWidth The size of the scaled pages.
\sPaperHeight 29 \newlength\sPaperWidth \sPaperWidth=\paperwidth
30 \newlength\sPaperHeight \sPaperHeight=\paperheight
31 \newcommand*\BL@@resize{}

\BL@scalePage Scales the output box to the dimension of the new paper size.
32 \newcommand*\BL@scalePage{%
33 \setbox\@cclv=\vbox{\vskip1in\unvbox\@cclv}%
34 \setbox\@cclv=\vbox{\moveright1in\box\@cclv}%
35 \setbox\@cclv=\hb@xt@\paperwidth{\box\@cclv\hss}%
36 \setbox\@cclv=\vb@xt@\paperheight{\box\@cclv\vss}%
37 \let\BL@@resize=\@firstofone
38 \ifBL@noscale\else
39 \def\BL@@resize##1{\resizebox{\sPaperWidth}{!}{##1}}%
40 \setbox\@tempboxa=\hbox{\set@typeset@protect
41 \BL@@resize{\copy\@cclv}}%
42 \ifdim\ht\@tempboxa>\sPaperHeight
43 \def\BL@@resize##1{\resizebox{!}{\sPaperHeight}{##1}}%
44 \fi
45 \fi
46 \setbox\@tempboxa=\vb@xt@\sPaperHeight{\set@typeset@protect
47 \kern\z@\BL@t
48 \hb@xt@\sPaperWidth{\BL@l\BL@@resize{\box\@cclv}\BL@r}}%
49 \BL@b\kern\z@
50 }%
51 \setbox\@cclv=\vbox{\box\@tempboxa}%
52 \setbox\@cclv=\vbox{\vskip-1in\unvbox\@cclv}%
53 \setbox\@cclv=\vbox{\moveright-1in\box\@cclv}%
54 }

55 \newcommand\BL@tempa{}
56 \newcommand\BL@tempb{}
57 \newcommand*\BL@strip@comma{}
58 \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.

```

```

59 \newcommand*\BL@if@dimen@pair[1]{%
60   \expandafter\BL@@if@dimen@pair#1,\@nil
61 }
62 \newcommand*\BL@@if@dimen@pair{}
63 \def\BL@@if@dimen@pair#1,#2\@nil{%
64   \edef\BL@tempa{#1}\edef\BL@tempb{#2}%
65   \@tempswafalse
66   \ifx\BL@tempb\@empty\else
67     \edef\BL@tempb{\expandafter\BL@strip@comma\BL@tempb}%
68     \ifdimen{\BL@tempa}{\@tempswatrue}{}%
69     \if@tempswa
70       \ifdimen{\BL@tempb}{-}{\@tempswafalse}%
71     \fi
72   \fi
73   \if@tempswa
74     \expandafter\@firstoftwo
75   \else
76     \expandafter\@secondoftwo
77   \fi
78 }

79 \newcommand*\BL@strip@x{}
80 \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.

```

81 \newcommand*\BL@if@factor[1]{%
82   \expandafter\BL@@if@factor#1x\@nil
83 }
84 \newcommand*\BL@@if@factor{}
85 \def\BL@@if@factor#1x#2\@nil{%
86   \edef\BL@tempa{#2}%
87   \ifx\BL@tempa\@empty
88     \expandafter\@secondoftwo
89   \else
90     \edef\BL@tempa{\expandafter\BL@strip@x\BL@tempa}%
91     \expandafter\@firstoftwo
92   \fi
93 }

```

The key-value definitions for `\blowUp`

```

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

```

```

102   }{%
103   \begingroup
      Get the paper size. Reset the landscape mode because one of the KOMA-SCRIPT
      classes may be loaded in landscape mode too.
104       \KOMAoptions{paper=portrait,paper=#1}%
105       \global\sPaperWidth=\paperwidth
106       \global\sPaperHeight=\paperheight
107   \endgroup
108   }%
109 }%
110 }%
111 \newif\ifBL@noscale \BL@noscalefalse
112 \define@key{BL@}{noscale}[true]{%
113   \csname BL@noscale#1\endcsname
114 }
115 \newcommand* \BL@l{\hss}
116 \newcommand* \BL@r{\hss}
117 \newcommand* \BL@i{}
118 \newcommand* \BL@o{}
119 \newcommand* \BL@t{\vss}
120 \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.

```

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

```

```

144     \ifx\BL@o\relax
145         \def\BL@l{\ifodd\value{page}\hss\else\relax\fi}%
146         \def\BL@r{\ifodd\value{page}\relax\else\hss\fi}%
147     \fi
148     \fi
149 }%
150 }%
151 }

152 \define@key{BL@}{pos}{%
153     \BL@setPos{#1}%
154 }
155 \newif\ifBL@landscape \BL@landscapefalse
156 \define@key{BL@}{landscape}[true]{%
157     \csname BL@landscape#1\endcsname
158 }
159 \newcommand*\BL@pageInit{}
160 \define@key{BL@}{onepage}[true]{%
161     \csname if#1\endcsname
162     \def\BL@pageInit{\gdef\shipout{\setbox\@tempboxa=}}%
163     \fi
164 }

```

`\blowUp` The only user-level macro.

```

165 \newcommand*\blowUp[1]{%
166     \setkeys{BL@}{#1}%
167     \ifBL@landscape
168         \@tempdima=\sPaperWidth
169         \global\sPaperWidth=\sPaperHeight
170         \global\sPaperHeight=\@tempdima
171     \fi
172     \EveryShipout{\BL@scalePage}%
173     \gdef\blowUp##1{%
174         \PackageWarning{blowup}{%
175             Only the first call of ‘\string\blowUp’ \MessageBreak is effective}}%
176 }

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

```

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

```

180     \let\Gm@checkdrivers=\relax
181     \BL@pagesize@specials{\sPaperWidth}{\sPaperHeight}%
182 }

```

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

```

183 \newcommand*\BL@pagesize@specials[2]{}
184 \@ifundefined{Gin@driver}{}{}

```

```

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

```