

# The postage package<sup>\*</sup>

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## 1 Introduction

The postage package is used for franking letters with »Deutsche Post«'s online postage service »Internetmarke«.

## 2 Usage

### 2.1 Requirements

Note that in order to print valid stamps the `{<file>}` argument of any of this package's commands must point to a valid PDF of »Deutsche Post«'s »Ausdruck 4-spaltig (DIN A4)« format.<sup>1</sup>

### 2.2 Commands

`\includestamp` The `\includestamp[<options>]{<file>}` command loads a single stamp from the

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<sup>\*</sup>This document describes version v1.0, last revised 2018/05/29.

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<sup>1</sup>See also section 4.

file specified in its mandatory `{<file>}` argument and draws it on the page. The additional `[<options>]` can be used to specify the stamps position in the `{<file>}` and the stamp's appearance.

## Options [`<options>`]

<code>style=(normal compact)</code>	The stamp's appearance; may either be <code>normal</code> or <code>compact</code> .
<code>normal</code>	Set the stamp's appearance to <code>normal</code> . Same as <code>style=normal</code> .
<code>compact</code>	Set the stamp's appearance to <code>compact</code> . Same as <code>style=compact</code> .
<code>page=&lt;1...&gt;</code>	The stamp's page from which to copy the stamp from the stamps PDF file. Pages count from 1.
<code>row=&lt;1...8&gt;</code>	The stamp's row on the page. Rows count from 1 to 8.
<code>column=&lt;1...4&gt;</code>	The stamp's column on the page. Rows count from 1 to 4.

## Example

The following code generates figure 1:

```
1\includestamp{sample-stamps}
```

or

```
1\includestamp[page=1,row=1,column=1,normal]{sample-stamps}
```

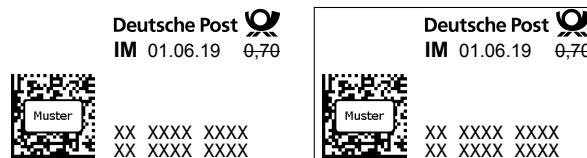


Figure 1: A normal-sized stamp (taken from »Deutsche Post«'s sample PDF).

The following code generates figure 2:

```
1\includestamp[compact]{sample-stamps}
```

or

```
1\includestamp[row=1,column=1,style=normal]{sample-stamps}
```



Figure 2: The same stamp in its compact representation.

## 3 Implementation

### 3.1 Initialization

#### 3.1.1 Options

Define the stamp's display styles, the default display style and the according command options `style`, `compact` and `normal`.

```
1\def\postage@stamp@style@normal{normal}
2\def\postage@stamp@style@compact{compact}
```

```

3 \let\postage@current@stamp@style\postage@stamp@style@normal
4 \define@key{postage}{style}{%
5     \def\postage@current@stamp@style{#1}%
6 }
7 \define@key{postage}{compact}[true]{%
8     \let\postage@current@stamp@style\postage@stamp@style@compact%
9 }
10 \define@key{postage}{normal}[true]{%
11     \let\postage@current@stamp@style\postage@stamp@style@compact%
12 }

```

Define the stamp's page, row and column on the »Internetmarke« PDF, their defaults and the according command options page, row and column.

```

13 \def\postage@current@stamp@page{1}
14 \def\postage@current@stamp@row{1}
15 \def\postage@current@stamp@column{1}
16 \define@key{postage}{page}{%
17     \def\postage@current@stamp@page{#1}%
18 }
19 \define@key{postage}{row}{%
20     \def\postage@current@stamp@row{#1}%
21 }
22 \define@key{postage}{column}{%
23     \def\postage@current@stamp@column{#1}%
24 }

```

### 3.1.2 Lengths

Create the lengths describing the stamp's position, height and width on the PDF page as well as each stamp's parts relative to the stamp's position.

```

25 \newlength{\postage@page@width}
26 \newlength{\postage@page@height}
27 \newlength{\postage@grid@width}
28 \newlength{\postage@grid@height}
29 \newlength{\postage@grid@x}
30 \newlength{\postage@grid@y}
31 \newlength{\postage@stamp@content@width}
32 \newlength{\postage@stamp@content@height}
33 \newlength{\postage@stamp@content@x}
34 \newlength{\postage@stamp@content@y}
35 \newlength{\postage@stamp@barcode@width}
36 \newlength{\postage@stamp@barcode@height}
37 \newlength{\postage@stamp@barcode@x}
38 \newlength{\postage@stamp@barcode@y}
39 \newlength{\postage@stamp@im@width}
40 \newlength{\postage@stamp@im@height}
41 \newlength{\postage@stamp@im@x}
42 \newlength{\postage@stamp@im@y}
43 \newlength{\postage@stamp@codetop@width}
44 \newlength{\postage@stamp@codetop@height}
45 \newlength{\postage@stamp@codetop@x}
46 \newlength{\postage@stamp@codetop@y}
47 \newlength{\postage@stamp@codebottom@width}
48 \newlength{\postage@stamp@codebottom@height}
49 \newlength{\postage@stamp@codebottom@x}
50 \newlength{\postage@stamp@codebottom@y}
51 \newlength{\postage@stamp@logo@width}
52 \newlength{\postage@stamp@logo@height}
53 \newlength{\postage@stamp@logo@x}
54 \newlength{\postage@stamp@logo@y}

```

Save the lengths describing »Deutsche Post«'s »Internetmarke« in its »Ausdruck 4-spaltig (DIN A4)« format. All measurements below have been taken from »Deutsche Post«'s official sample PDF using the Inkscape vector editor with a precision of  $\pm 0.0005\text{mm}$

```

55 \setlength{\postage@page@width}{209.99979mm}
56 \setlength{\postage@page@height}{296.99973mm}
57 \setlength{\postage@grid@width}{40mm}
58 \setlength{\postage@grid@height}{32.999mm}
59 \setlength{\postage@grid@x}{22.5mm}
60 \setlength{\postage@grid@y}{14.05473mm}
61 \setlength{\postage@stamp@content@width}{36.0mm}
62 \setlength{\postage@stamp@content@height}{20.000mm}
63 \setlength{\postage@stamp@content@x}{1.750mm}
64 \setlength{\postage@stamp@content@y}{0.250mm}
65 \setlength{\postage@stamp@barcode@width}{12mm}
66 \setlength{\postage@stamp@barcode@height}{\postage@stamp@barcode@width}
67 \setlength{\postage@stamp@barcode@x}{\postage@stamp@content@x}
68 \setlength{\postage@stamp@barcode@y}{\postage@stamp@content@height-
\postage@stamp@barcode@height+\postage@stamp@content@y}
69 \setlength{\postage@stamp@logo@width}{23mm}
70 \setlength{\postage@stamp@logo@height}{4mm}
71 \setlength{\postage@stamp@logo@x}{\postage@stamp@content@width-\postage@stamp@logo@width}
72 \setlength{\postage@stamp@logo@y}{\postage@stamp@content@y}
73 \setlength{\postage@stamp@im@width}{\postage@stamp@logo@width}
74 \setlength{\postage@stamp@im@height}{3.2mm}
75 \setlength{\postage@stamp@im@x}{\postage@stamp@content@width-\postage@stamp@im@width}
76 \setlength{\postage@stamp@im@y}{\postage@stamp@logo@height+\postage@stamp@content@y}
77 \setlength{\postage@stamp@codebottom@width}{19mm}
78 \setlength{\postage@stamp@codebottom@height}{2.35mm}
79 \setlength{\postage@stamp@codebottom@x}{13mm+\postage@stamp@content@x}
80 \setlength{\postage@stamp@codebottom@y}{\postage@stamp@content@height-
\postage@stamp@codebottom@height+\postage@stamp@content@y}
81 \setlength{\postage@stamp@codetop@width}{\postage@stamp@codebottom@width}
82 \setlength{\postage@stamp@codetop@height}{\postage@stamp@codebottom@height}
83 \setlength{\postage@stamp@codetop@x}{\postage@stamp@codebottom@x}
84 \setlength{\postage@stamp@codetop@y}{\postage@stamp@content@height-
\postage@stamp@codebottom@height-\postage@stamp@codetop@height+\postage@stamp@content@y}
85
86

```

Create temporary lengths that are calculated individually for each stamp.

```

87 \newlength{\postage@current@stamp@x}
88 \newlength{\postage@current@stamp@y}
89 \newlength{\postage@current@stamp@trim@left}
90 \newlength{\postage@current@stamp@trim@bottom}
91 \newlength{\postage@current@stamp@trim@right}
92 \newlength{\postage@current@stamp@trim@top}

```

## 3.2 Calculating position

Calculate the current stamp's position on the page based on its row and column options.

```

93 \newcommand{\postage@calculate@current@stamp@position}{
94   \setlength{\postage@current@stamp@x}{
95     \postage@grid@x +
96     \postage@grid@width *
97     (\postage@current@stamp@column - 1)
98   }%
99   \setlength{\postage@current@stamp@y}{
100     \postage@grid@y +

```

```

101         \postage@grid@height *
102         (\postage@current@stamp@row - 1)
103     }%
104 }

```

### 3.3 Drawing

`\draw@current@stamp@part` Draw a part of the current stamp whose trim offsets were previously calculated using `\postage@calculate@current@stamp@position`.

```

105 \newcommand{\postage@draw@current@stamp@part}[1][\]{%
106     \includegraphics[page=\postage@current@stamp@page, trim={
107         {1\postage@current@stamp@trim@left}
108         {1\postage@current@stamp@trim@bottom}
109         {1\postage@current@stamp@trim@right}
110         {1\postage@current@stamp@trim@top}
111     }, clip, #1]{\postage@current@stamp@file}%
112 }

```

`\draw@current@stamp@content` Draw the current stamp's whole content trimming whitespace around it.

```

113 \newcommand{\postage@draw@current@stamp@content}{%
114     \setlength{\postage@current@stamp@trim@top}{%
115         \postage@current@stamp@y +
116         \postage@stamp@content@y
117     }%
118     \setlength{\postage@current@stamp@trim@left}{%
119         \postage@current@stamp@x +
120         \postage@stamp@content@x
121     }%
122     \setlength{\postage@current@stamp@trim@bottom}{%
123         \postage@page@height -
124         \postage@current@stamp@trim@top -
125         \postage@stamp@content@height
126     }%
127     \setlength{\postage@current@stamp@trim@right}{%
128         \postage@page@width -
129         \postage@current@stamp@trim@left -
130         \postage@stamp@content@width
131     }%
132     \postage@draw@current@stamp@part%
133 }

```

`\draw@current@stamp@barcode` Draw only the current stamp's barcode.

```

134 \newcommand{\postage@draw@current@stamp@barcode}{%
135     \setlength{\postage@current@stamp@trim@top}{%
136         \postage@current@stamp@y +
137         \postage@stamp@barcode@y
138     }%
139     \setlength{\postage@current@stamp@trim@left}{%
140         \postage@current@stamp@x +
141         \postage@stamp@barcode@x
142     }%
143     \setlength{\postage@current@stamp@trim@bottom}{%
144         \postage@page@height -
145         \postage@current@stamp@trim@top -
146         \postage@stamp@barcode@height
147     }%
148     \setlength{\postage@current@stamp@trim@right}{%
149         \postage@page@width -
150         \postage@current@stamp@trim@left -
151         \postage@stamp@barcode@width

```

```

152 }%
153 \postage@draw@current@stamp@part%
154 }

e@draw@current@stamp@logo Draw only the current stamp's »Deutsche Post« logo.
155 \newcommand{\postage@draw@current@stamp@logo}{%
156 \setlength{\postage@current@stamp@trim@top}{
157 \postage@current@stamp@y +
158 \postage@stamp@logo@y
159 }%
160 \setlength{\postage@current@stamp@trim@left}{
161 \postage@current@stamp@x +
162 \postage@stamp@logo@x
163 }%
164 \setlength{\postage@current@stamp@trim@bottom}{
165 \postage@page@height -
166 \postage@current@stamp@trim@top -
167 \postage@stamp@logo@height
168 }%
169 \setlength{\postage@current@stamp@trim@right}{
170 \postage@page@width -
171 \postage@current@stamp@trim@left -
172 \postage@stamp@logo@width
173 }%
174 \postage@draw@current@stamp@part%
175 }

age@draw@current@stamp@im Draw only the current stamp's »Internetmarke« date and price.
176 \newcommand{\postage@draw@current@stamp@im}{%
177 \setlength{\postage@current@stamp@trim@top}{
178 \postage@current@stamp@y +
179 \postage@stamp@im@y
180 }%
181 \setlength{\postage@current@stamp@trim@left}{
182 \postage@current@stamp@x +
183 \postage@stamp@im@x
184 }%
185 \setlength{\postage@current@stamp@trim@bottom}{
186 \postage@page@height -
187 \postage@current@stamp@trim@top -
188 \postage@stamp@im@height
189 }%
190 \setlength{\postage@current@stamp@trim@right}{
191 \postage@page@width -
192 \postage@current@stamp@trim@left -
193 \postage@stamp@im@width
194 }%
195 \postage@draw@current@stamp@part%
196 }

aw@current@stamp@codetop Draw only the current stamp's barcode's top line.
197 \newcommand{\postage@draw@current@stamp@codetop}{%
198 \setlength{\postage@current@stamp@trim@top}{
199 \postage@current@stamp@y +
200 \postage@stamp@codetop@y
201 }%
202 \setlength{\postage@current@stamp@trim@left}{
203 \postage@current@stamp@x +
204 \postage@stamp@codetop@x
205 }%
206 \setlength{\postage@current@stamp@trim@bottom}{

```

```

207 \postage@page@height -
208 \postage@current@stamp@trim@top -
209 \postage@stamp@codetop@height
210 }%
211 \setlength{\postage@current@stamp@trim@right}{
212 \postage@page@width -
213 \postage@current@stamp@trim@left -
214 \postage@stamp@codetop@width
215 }%
216 \postage@draw@current@stamp@part%
217 }

```

`@current@stamp@codebottom` Draw only the current stamp's barcode's bottom line.

```

218 \newcommand{\postage@draw@current@stamp@codebottom}{%
219 \setlength{\postage@current@stamp@trim@top}{
220 \postage@current@stamp@y +
221 \postage@stamp@codebottom@y
222 }%
223 \setlength{\postage@current@stamp@trim@left}{
224 \postage@current@stamp@x +
225 \postage@stamp@codebottom@x
226 }%
227 \setlength{\postage@current@stamp@trim@bottom}{
228 \postage@page@height -
229 \postage@current@stamp@trim@top -
230 \postage@stamp@codebottom@height
231 }%
232 \setlength{\postage@current@stamp@trim@right}{
233 \postage@page@width -
234 \postage@current@stamp@trim@left -
235 \postage@stamp@codebottom@width
236 }%
237 \postage@draw@current@stamp@part%
238 }

```

`@current@stamp@style@compact` Draw the current stamp's compact representation. This will print a rearranged version of the stamps content.

```

239 \newcommand{\postage@draw@current@stamp@style@compact}{%
240   \begin{tikzpicture}
241     \node[anchor=north east, inner sep=0] at (0,0)
242     {\postage@draw@current@stamp@barcode};
243     \node[anchor=north east, inner sep=0] at (0-\postage@stamp@barcode@width-
244       2mm,0)
245       {\postage@draw@current@stamp@logo};
246     \node[anchor=north east, inner sep=0] at (0-\postage@stamp@barcode@width-
247       2.5mm-\postage@stamp@logo@width-1mm,\postage@stamp@im@height-\postage@stamp@logo@h
248       {\postage@draw@current@stamp@im};
249     \node[anchor=north east, inner sep=0] at (0-\postage@stamp@barcode@width-
250       2.5mm-\postage@stamp@logo@width-1mm-\postage@stamp@im@width+\postage@stamp@codetop
251     {\postage@draw@current@stamp@codetop};
252   \end{tikzpicture}%

```

`@current@stamp@style@normal` Draw the current stamp's whole content including the big »Deutsche Post« logo and »Internetmarke« URL, yet trimming whitespace around it.

```

253 \newcommand{\postage@draw@current@stamp@style@normal}{%
254 \postage@draw@current@stamp@content%
255 }%

```

`\includestamp` See the usage documentation.

```
256 \newcommand{\includestamp}[2][\]{%
257   \setkeys{postage}{#1}%
258   \def\postage@current@stamp@file{#2}%
259   \postage@calculate@current@stamp@position%
260   %
261   \ifx\postage@current@stamp@style\postage@stamp@style@compact%
262   \postage@draw@current@stamp@style@compact%
263   \else%
264   \postage@draw@current@stamp@style@normal%
265   \fi%
266 }
```

## 4 Outlook

In future this library may be extended to other postage service (potentially outside Germany). Then a `service` option could be set up to decide which format to use. Speaking of formats one could also think about implementing »Deutsche Post«'s »Ausdruck 3-spaltig (DIN A4)« format to support more stamp types such as enrolls and/or mail tracking, which at the time of writing this package aren't supported in the »Deutsche Post«'s »Internetmarke« in »Ausdruck 4-spaltig (DIN A4)« format.