

# A L<sup>A</sup>T<sub>E</sub>X Package for Typesetting Paper CD Cases\*

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## Abstract

`papercdcase.dtx` provides a package to typeset paper CD cases. The paper CD cases are origami-style CD cases which, when properly folded, provided a simple, inexpensive, and readily reproducible CD protection. This package creates the proper folding lines on one hand, but on the other hand also provides a means of putting material like CD titles, CD track lists, and so on into the proper places so that it will come out just right when printed and folded.

The package is based with friendly permission on the work of Thomas Hull (<http://web.merrimack.edu/~thull>) as well as the project of the folks at <http://www.papercdcase.com>.

Any comments, corrections and so on are greatly appreciated.

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## 1 About Paper CD Cases

Paper CD cases are a very convenient way to protect your CDs. While they are not as sturdy as plastic cases, they are inexpensive, simple, easily reproducible, yet astonishingly sturdy.

The idea is based on origami, the Japanese art of paper folding, and has been developed by Thomas Hull (<http://web.merrimack.edu/~thull>) and further elaborated on by the folks at <http://www.papercdcase.com>. Many thanks to them all for their kind permission to use their work in this package.

Obviously, the way a paper CD case needs to be folded is somewhat dependent on the actual physical size of the sheet of paper it is printed on. In general, there are two standard paper size sizes that lend themselves for this purpose: A4 and letter.

The problem is that for a paper CD case, the difference in paper height between a sheet of A4 paper (296.9 mm) and a sheet of letter paper (11") is actually significant. While it is possible to use the folding scheme designed for letter paper on an A4 sheet of paper, this does have some drawbacks: It is necessary to fold over a thin strip of paper just 17.5 mm or about  $\frac{11}{16}$ " wide, which turn out to be a bit difficult to fold. Furthermore, paper CD cases based on this folding scheme are a bit less sturdy than they could be.

On the other hand, a folding scheme that makes optimal use of an entire A4 sheet of paper cannot be used on letter paper, because letter paper is too short.

For these reasons, two folding schemes are provided: A universal scheme that fits both on letter and on A4 paper, if somewhat imperfectly on the latter, and a specialized folding scheme that perfectly fits on A4 paper.

The general paper CD cases that are produced are carefully sized so that they fit on a (hypothetical) piece of paper 210 mm wide (A4 width) and 11" tall (letter height). In other words, the smaller edges of both paper sizes have been used to target the size of the paper case. This means that on either paper, there will be some excess space along one of the axes.

## 2 What the Package Provides

In creating paper CD cases, there are three things of interest:

1. the folding scheme (the paper case itself, if you will),
2. textual information that may or may not be desired on the finished case, and
3. the placement of both of the above elements on the physical piece of paper.

This package provides means to generate the proper folding scheme as well as provisions for some useful text boxes that are placed correctly within the folding layout so that their contents appear in the proper places when the paper case is folded.

This package does *not* provide an automatism to place the folding scheme and the text boxes on the physical page. While the text boxes *are* placed properly by the package, this placement is merely relative to the folding scheme. It is up to the user to decide on what paper she wants to actually print the paper case. This means in particular that the user is responsible for centering the paper case on

the sheet if this is desired, and that things like page numbers and so on must be dealt with by the user.

However, this offers some flexibility that is worth the minor overhead nuisance of centering a box on a page.

## 2.1 The Folding Scheme

`\papercdcase` Typesetting the folding scheme itself is fairly straightforward: Simply issue the proper command:

```
\papercdcase
```

This command will produce the folding scheme, consisting of

- solid lines,
- dashed lines, and
- numbers.

The numbers define the *sequence* in which the folding steps should be carried out, while the types of lines specify *how* the paper should be folded. More details on the folding procedure can be found in section 3.

`\papercdcase[]` The folding scheme is conveniently sized so that the finished paper case will hold a standard 120 mm CD. However, there are also smaller 80 mm so-called Maxi CDs. In order to create a folding scheme that is scaled so that the folded case will hold a small, 80 mm CD, just add a parameter to the command above, specifying that you would like a folding scheme for an 80 mm CD case by use of the optional size parameter:

```
\papercdcase[80]
```

In fact, you can scale the folding scheme to any size you want, measured in whole millimeters, by replacing the 80 in the call above by the desired design size in millimeters.

`\papercdcase*` As mentioned in the introduction, there are two kinds of folding schemes: One that is designed to fit both A4 and letter sheets of paper, and one that is designed to fit A4 paper perfectly. The commands above all produce the general version. If you are using A4 paper and would like to use the A4-optimized folding scheme, use the starred version of the command instead:

```
\papercdcase*  
\papercdcase*[80]
```

## 2.2 The Text Boxes

This package offers four boxes that are put into predefined places:

- A spine matter box,
- a latch matter box,

- a back matter box, and
- a pouch matter box.

The spine matter box is centered horizontally and vertically on the spine of the CD case. Typically, this box holds the CD title and the artist for an audio CD.

The latch matter box is printed in the top left-hand corner of the CD case latch. Again, this box typically contains the CD title.

The back matter box is printed in the top left-hand corner of the back of the CD case. A typical use for this box is the track list of an audio CD.

Finally, the pouch matter box is printed in the top left-hand corner of the CD case pouch, just below the latch. This box is typically unused, but may be useful for some additional information.

`\setcdlatchmatter`      In order to fill the boxes, use these commands:

- `\setcdpouchmatter`
- `\setcdbackmatter`
- `\setcdspinematter`
- `\setcdlatchmatter`
- `\setcdpouchmatter`
- `\setcdbackmatter`
- `\setcdspinematter`

As an example, a typical use of the above commands might look like this:

```
\setcdlatchmatter{\textbf{\LARGE Jean Michel Jarre\}[0.25\baselineskip]
                    In Concert: Houston--Lyon}}

\setcdpouchmatter{Live recordings from the legendary concerts in
                   Houston and Lyon 1986}

\setcdbackmatter{\textbf{\LARGE Jean Michel Jarre\}[0.25\baselineskip]
                  In Concert: Houston--Lyon}

\begin{enumerate}
\item Oxygene V
\item Ethnicolor
\item Magnetic Fields I
\item Souvenir (Of China)
\item Equinoxe V
\item Rendez-Vous III (Laser Harp)
\item Rendez-Vous II
\item Ron's Piece
\item Rendez-Vous IV
\end{enumerate}}

\setcdspinematter{\textbf{\Large Jean Michel Jarre/In Concert:
                        Houston--Lyon}}
```

Be aware that the text boxes must be filled with the above commands *before* the folding scheme is typeset with the `\papercdcase` command.

## 2.3 The Placement on Physical Paper

As mentioned before, there is no automatic procedure provided by the package that automatically places the folding scheme and the boxes on a physical sheet of paper. This is a conscious design decision with the aim to maintain a maximum of flexibility.

Actually positioning the folding scheme on paper is very easy, though. If you are using either A4 or letter paper, which is probably the case is more than 99% of all cases, there are three things to worry about:

- All margins should be set to zero size,
- headlines and footlines should be empty, and
- the folding scheme should be centered horizontally. Vertical alignment is not as important, because the universal folding scheme fills up an entire letter-sized page, while the A4 folding scheme fills up an entire A4 page. Thus, no vertical adjustments need to be done in these cases.

If the general folding scheme is used on A4 paper, then obviously, the page is not entirely filled. However, even in this case, I recommend *not* to do any vertical adjustments, but rather to leave the top of the folding scheme aligned with the page edge. This saves one folding operation. (One might put a `\vspace*{\fill}` or so at the beginning of the page, of course, so the bottom of the folding scheme is flush with the paper edge instead of the top, but this does not really make a difference in practice.)

All of the above points are addressed in this little document, for instance. This example serves well if letter-sized paper is used.

```
\documentclass{article}
\usepackage[margin=0pt]{geometry}
\usepackage{papercdcase}
\pagestyle{empty}
\begin{document}
\setcdlatchmatter{Latch}
\setcdspinematter{Spine}
\setcdpouchmatter{Pouch}
\setcdbackmatter{Back}
\centering\papercdcase
\end{document}
```

For A4 paper, the above code also works, but it is necessary to tell L<sup>A</sup>T<sub>E</sub>X to use A4 paper, of course. This may be done by changing `\usepackage[margin=0pt]{geometry}` to `\usepackage[a4paper, margin=0pt]{geometry}`, for example. Also, it might be desirable to use `\papercdcase*` instead of `\papercdcase`.

## 3 Folding the Paper CD Case

Folding the printed paper CD case is quite simple, but requires a bit of practice. In principle, all necessary information is provided on the printout.

In general, the numbers next to the lines specify the sequence in which the folding should take place. If a number is next to a *solid* line, fold *along* the line

so that the crease runs along and over the line. If a number is next to a *dashed* line, however, turn the sheet so that the number is the right way up, then fold the sheet so that the paper edge closest to you ends up aligned with the dashed line. Think of the dashed line as a folding “target”.

Be aware that the first few folds might be unnecessary. This is the case whenever a folding line is aligned with a paper edge already. This will happen every time the folding scheme fills out the entire sheet, in other words, whenever the universal folding scheme is printed on letter paper or the A4 folding scheme is printed on A4 paper. However, even if the universal folding scheme is printed on A4 paper, one edge of the scheme may well already be aligned with the corresponding paper edge. This is no problem, but it means that neither the folding line(s) nor the corresponding sequence number(s) will be there, so you might have to start the folding sequence with step number 2 or 3 or even start with step number 1 and skip step number 2!

Generally, start with the lowest number found on the printout and work your way up the numbers that are present.

The tricky folds are steps number 8 and 9 as well as numbers 10 and 11. You will need to fold little triangular ears towards you so the pouch is formed and stabilized. I am afraid that accurately describing exactly how the folding works in an appropriate amount of words is beyond me, so please refer to <http://web.merrimack.edu/~thull> and/or <http://www.papercdcase.com> for more detailed, excellent instruction on how to fold a paper CD case. In particular, a PDF with graphical instructions can be found at <http://kahuna.merrimack.edu/~thull/CDcase/cd>.

## 4 Example Files

I have included some example files with this package that hopefully give an insight into how this package may be used. In particular, I included a minimal example showing just the very basics in this documentation, a little interactive example that lets you create CD cases on the fly, and a more elaborate example which is pretty much what I am using right now for my own purposes. Maybe some of the included files will provide clues on how to use this package.

## 5 The Implementation

The folding scheme is basically implemented with the  $\LaTeX$  picture environment. This gives us enough flexibility and provides an high enough abstraction such that we do not have to fiddle around with to many low level details.

Additional functionality is required for rotating the label boxes; thus, the `graphicx` package is included.

### 5.1 Basic Definitions and Parameters

First we identify this package and make sure we are talking  $\LaTeX$ 2e. Furthermore, we load the `graphicx` and `calc` packages and make the `@` character available for internal command definitions.

```
1 \ProvidesPackage{papercdcase}[\filedate v.\fileversion{} Paper CD Case Style (TD)]
2 \NeedsTeXFormat{LaTeX2e}
3
4 \RequirePackage{graphicx}
5 \RequirePackage{calc}
6
7 \makeatletter
8
```

### 5.2 User Interface Functions

The actual text boxes that are typeset on the latch, on the spine, on the back and on the pouch of the CD case are kept in internal macros.

```
9 \newcommand{\@PCDC@Latch@Matter}{}
10 \newcommand{\@PCDC@Pouch@Matter}{}
11 \newcommand{\@PCDC@Back@Matter}{}
12 \newcommand{\@PCDC@Spine@Matter}{}
13
```

Four functions which basically put their argument into the appropriate internal box definition.

`\setcdlatchmatter` Interface function for the latch matter:  
14 `\newcommand{\setcdlatchmatter}[1]{\renewcommand{\@PCDC@Latch@Matter}{#1}}`

`\setcdpouchmatter` Interface function for the pouch matter:  
15 `\newcommand{\setcdpouchmatter}[1]{\renewcommand{\@PCDC@Pouch@Matter}{#1}}`

`\setcdpouchmatter` Interface function for the back matter:  
16 `\newcommand{\setcdbackmatter}[1]{\renewcommand{\@PCDC@Back@Matter}{#1}}`

`\setcdpouchmatter` Interface function for the spine matter:  
17 `\newcommand{\setcdspinematter}[1]{\renewcommand{\@PCDC@Spine@Matter}{#1}}`  
18

`\papercdcase` The macro `\papercdcase` is the main command provided by the package. The macro typesets the actual folding scheme, complete with all specified text boxes. It is defined so that if its starred version `\papercdcase*` is invoked, the folding scheme is adjusted for A4 paper; otherwise, letter paper is designed for. (The

adjustments of the folding scheme are done by resetting the relevant counters, (@PCDC@Design@Height and @PCDC@Pouch@Height.)

```
19 % Main user macro; actually typesets the paper CD case.
20 \DeclareRobustCommand{\papercdcase}{%
21 \@ifstar%
22 {\setcounter{@PCDC@Design@Height}{297}\setcounter{@PCDC@Pouch@Height}{75}\@PCDC@Typeset@Scheme
23 {\setcounter{@PCDC@Design@Height}{279}\setcounter{@PCDC@Pouch@Height}{64}\@PCDC@Typeset@Scheme
24
```

### 5.3 Counters

Throughout the package, counters are used to compute the correct locations of the various folding marks, boxes and so on. Some of these counters control the exact layout of the folding scheme, while all the others depend on the values of the control counters. Consequently, all counters can be defined right away, but most of the counters cannot sensibly be set at this point.

For readability and conciseness of the code, several abbreviations are used with the counter names:

- The letters A through M are used to designate the fold numbers 1 through 13.
- Btm is used for Bottom.
- Lft and Rgt are used for Left and Right, respectively.
- Upr and Lwr are used for Upper and Lower, respectively.

These abbreviations make the code easier to read, IMHO, because they allow many sequences of commands to be aligned horizontally, making structures much easier to recognize.

#### 5.3.1 Control Counters

There are eight counters that control the design of the folding scheme. These eight counters are defined first.

```
25 %% Control counters.
26 %% Overall height of the folding scheme.
27 \newcounter{@PCDC@Design@Height}
28 %% Height of the CD pouch.
29 \newcounter{@PCDC@Pouch@Height}
30 %% Height (and width) of the folded paper CD case.
31 \newcounter{@PCDC@Back@Height}
32 %% Height of the CD case spine.
33 \newcounter{@PCDC@Spine@Height}
34 %% Margin between the text boxes and the edge of the CD case.
35 \newcounter{@PCDC@Text@Margin}
36 %% Length of regular fold marks.
37 \newcounter{@PCDC@Fold@Length}
38 %% Length of short fold marks.
39 \newcounter{@PCDC@Fold@Short@Length}
40 %% Space between fold marks and their labels.
41 \newcounter{@PCDC@Label@Sep}
42
```

We also set these counters to some sensible values right away.

```
43 \setcounter{@PCDC@Design@Height}{279}
44 \setcounter{@PCDC@Pouch@Height}{64}
45 \setcounter{@PCDC@Back@Height}{125}
46 \setcounter{@PCDC@Spine@Height}{8}
47 \setcounter{@PCDC@Text@Margin}{5}
48 \setcounter{@PCDC@Fold@Length}{25}
49 \setcounter{@PCDC@Fold@Short@Length}{20}
50 \setcounter{@PCDC@Label@Sep}{1}
51
```

### 5.3.2 General Coordinate Counters

Some of the other counters are used to hold coordinates that are shared by many fold marks so that it seems worth while to keep them in their own counters.

```
52 %% Common counters.
53 \newcounter{@PCDC@Design@width}
54 \newcounter{@PCDC@Top@Lft@Fold}
55 \newcounter{@PCDC@Top@Rgt@Fold}
56 \newcounter{@PCDC@Bot@Lft@Fold}
57 \newcounter{@PCDC@Bot@Rgt@Fold}
58 \newcounter{@PCDC@Lwr@Top@Fold}
59 \newcounter{@PCDC@Upr@Top@Fold}
60 \newcounter{@PCDC@Bot@Fold}
61 \newcounter{@PCDC@Text@width}
62 \newcounter{@PCDC@Fold@Dash@Number}
63
```

### 5.3.3 Folding Mark Coordinate Counters

In this section, we define the counters for the actual coordinates of the folding marks.

```
64 %% Counters with the actual coordinates of the folding marks.
65 \newcounter{@PCDC@Fold@A@Lft@X}
66 \newcounter{@PCDC@Fold@A@Lft@Y}
67 \newcounter{@PCDC@Fold@A@Rgt@X}
68 \newcounter{@PCDC@Fold@A@Rgt@Y}
69 \newcounter{@PCDC@Fold@B@Lft@X}
70 \newcounter{@PCDC@Fold@B@Lft@Y}
71 \newcounter{@PCDC@Fold@B@Rgt@X}
72 \newcounter{@PCDC@Fold@B@Rgt@Y}
73 \newcounter{@PCDC@Fold@C@Top@X}
74 \newcounter{@PCDC@Fold@C@Top@Y}
75 \newcounter{@PCDC@Fold@C@Bot@X}
76 \newcounter{@PCDC@Fold@C@Bot@Y}
77 \newcounter{@PCDC@Fold@D@Top@X}
78 \newcounter{@PCDC@Fold@D@Top@Y}
79 \newcounter{@PCDC@Fold@D@Bot@X}
80 \newcounter{@PCDC@Fold@D@Bot@Y}
81 \newcounter{@PCDC@Fold@E@Lft@X}
82 \newcounter{@PCDC@Fold@E@Lft@Y}
83 \newcounter{@PCDC@Fold@E@Rgt@X}
84 \newcounter{@PCDC@Fold@E@Rgt@Y}
```

```

85 \newcounter{@PCDC@Fold@F@Lft@X}
86 \newcounter{@PCDC@Fold@F@Lft@Y}
87 \newcounter{@PCDC@Fold@F@Rgt@X}
88 \newcounter{@PCDC@Fold@F@Rgt@Y}
89 \newcounter{@PCDC@Fold@G@Lft@X}
90 \newcounter{@PCDC@Fold@G@Lft@Y}
91 \newcounter{@PCDC@Fold@G@Rgt@X}
92 \newcounter{@PCDC@Fold@G@Rgt@Y}
93 \newcounter{@PCDC@Fold@H@X}
94 \newcounter{@PCDC@Fold@H@Y}
95 \newcounter{@PCDC@Fold@I@X}
96 \newcounter{@PCDC@Fold@I@Y}
97 \newcounter{@PCDC@Fold@J@X}
98 \newcounter{@PCDC@Fold@J@Y}
99 \newcounter{@PCDC@Fold@K@X}
100 \newcounter{@PCDC@Fold@K@Y}
101 \newcounter{@PCDC@Fold@L@X}
102 \newcounter{@PCDC@Fold@L@Y}
103 \newcounter{@PCDC@Fold@M@X}
104 \newcounter{@PCDC@Fold@M@Y}
105

```

### 5.3.4 Folding Mark Label Coordinate Counters

We now define the counters for the actual coordinates of the folding mark labels.

```

106 %% Counters with the actual coordinates of the text boxes.
107 \newcounter{@PCDC@Fold@A@Lft@Label@X}
108 \newcounter{@PCDC@Fold@A@Lft@Label@Y}
109 \newcounter{@PCDC@Fold@A@Rgt@Label@X}
110 \newcounter{@PCDC@Fold@A@Rgt@Label@Y}
111 \newcounter{@PCDC@Fold@B@Lft@Label@X}
112 \newcounter{@PCDC@Fold@B@Lft@Label@Y}
113 \newcounter{@PCDC@Fold@B@Rgt@Label@X}
114 \newcounter{@PCDC@Fold@B@Rgt@Label@Y}
115 \newcounter{@PCDC@Fold@C@Top@Label@X}
116 \newcounter{@PCDC@Fold@C@Top@Label@Y}
117 \newcounter{@PCDC@Fold@C@Bot@Label@X}
118 \newcounter{@PCDC@Fold@C@Bot@Label@Y}
119 \newcounter{@PCDC@Fold@D@Top@Label@X}
120 \newcounter{@PCDC@Fold@D@Top@Label@Y}
121 \newcounter{@PCDC@Fold@D@Bot@Label@X}
122 \newcounter{@PCDC@Fold@D@Bot@Label@Y}
123 \newcounter{@PCDC@Fold@E@Lft@Label@X}
124 \newcounter{@PCDC@Fold@E@Lft@Label@Y}
125 \newcounter{@PCDC@Fold@E@Rgt@Label@X}
126 \newcounter{@PCDC@Fold@E@Rgt@Label@Y}
127 \newcounter{@PCDC@Fold@F@Lft@Label@X}
128 \newcounter{@PCDC@Fold@F@Lft@Label@Y}
129 \newcounter{@PCDC@Fold@F@Rgt@Label@X}
130 \newcounter{@PCDC@Fold@F@Rgt@Label@Y}
131 \newcounter{@PCDC@Fold@G@Lft@Label@X}
132 \newcounter{@PCDC@Fold@G@Lft@Label@Y}
133 \newcounter{@PCDC@Fold@G@Rgt@Label@X}
134 \newcounter{@PCDC@Fold@G@Rgt@Label@Y}

```

```

135 \newcounter{@PCDC@Fold@H@Label@X}
136 \newcounter{@PCDC@Fold@H@Label@Y}
137 \newcounter{@PCDC@Fold@I@Label@X}
138 \newcounter{@PCDC@Fold@I@Label@Y}
139 \newcounter{@PCDC@Fold@J@Label@X}
140 \newcounter{@PCDC@Fold@J@Label@Y}
141 \newcounter{@PCDC@Fold@K@Label@X}
142 \newcounter{@PCDC@Fold@K@Label@Y}
143 \newcounter{@PCDC@Fold@L@Label@X}
144 \newcounter{@PCDC@Fold@L@Label@Y}
145 \newcounter{@PCDC@Fold@M@Label@X}
146 \newcounter{@PCDC@Fold@M@Label@Y}
147

```

### 5.3.5 Text Box Coordinate Counters

As the last counters to be defined, here come the coordinate counters for the text boxes provided to the user.

```

148 %% Counters with the actual coordinates of the text boxes.
149 \newcounter{@PCDC@Pouch@Matter@X}
150 \newcounter{@PCDC@Pouch@Matter@Y}
151 \newcounter{@PCDC@Back@Matter@X}
152 \newcounter{@PCDC@Back@Matter@Y}
153 \newcounter{@PCDC@Spine@Matter@X}
154 \newcounter{@PCDC@Spine@Matter@Y}
155 \newcounter{@PCDC@Latch@Matter@X}
156 \newcounter{@PCDC@Latch@Matter@Y}
157

```

## 5.4 Folding Scheme Implementation

We now turn to the implementation of the actual folding scheme typesetting macro. The macro takes an optional parameter that allows for scaling. The parameter is supposed to contain the diameter in millimeters of the CD that the CD case is to be printed for. Therefore, the default value is set to 120, which is the diameter in millimeters of a normal CD. Another common CD size is 80 millimeters, which is a maxi CD.

The macro can broadly be broken into three parts:

1. The entire scheme is scaled according to the optional CD size parameter.
2. The actual coordinates are computed and stored in the proper counters.
3. The folding scheme is typeset and output is generated.

```

158 %% The actual output function.
159 \newcommand{@PCDC@Typeset@Scheme}[1][120]{%
160 %% Scale the output.
161 \setlength{\unitlength}{1mm}
162 \multiply\unitlength by #1
163 \divide\unitlength by 120
164 %%
165 %% Compute the actual coordinates.
166 %% Common coordinates.

```

```

167 \setcounter{@PCDC@Design@width}{\value{@PCDC@Back@Height}+2*\value{@PCDC@Fold@Length}}
168 \setcounter{@PCDC@Top@Lft@Fold}{\value{@PCDC@Fold@Length}+1}
169 \setcounter{@PCDC@Top@Rgt@Fold}{\value{@PCDC@Fold@Length}+\value{@PCDC@Back@Height}}
170 \setcounter{@PCDC@Bot@Lft@Fold}{\value{@PCDC@Fold@Length}+1}
171 \setcounter{@PCDC@Bot@Rgt@Fold}{\value{@PCDC@Fold@Length}+\value{@PCDC@Back@Height}}
172 \setcounter{@PCDC@Lwr@Top@Fold}{2*\value{@PCDC@Pouch@Height}+2*\value{@PCDC@Back@Height}-\value{@PCDC@Design@Height}}
173 \setcounter{@PCDC@Upr@Top@Fold}{\value{@PCDC@Lwr@Top@Fold}+2*\value{@PCDC@Spine@Height}}
174 \setcounter{@PCDC@Bot@Fold}{2*\value{@PCDC@Pouch@Height}}
175 \setcounter{@PCDC@Text@width}{\value{@PCDC@Back@Height}-2*\value{@PCDC@Text@Margin}}
176 \setcounter{@PCDC@Fold@Dash@Number}{\value{@PCDC@Fold@Length}/2}
177 %%
178 %% Fold mark coordinates.
179 \setcounter{@PCDC@Fold@A@Lft@X}{\value{@PCDC@Top@Lft@Fold}}
180 \setcounter{@PCDC@Fold@A@Lft@Y}{\value{@PCDC@Design@Height}}
181 \setcounter{@PCDC@Fold@A@Rgt@X}{\value{@PCDC@Top@Rgt@Fold}}
182 \setcounter{@PCDC@Fold@A@Rgt@Y}{\value{@PCDC@Design@Height}}
183 \setcounter{@PCDC@Fold@B@Lft@X}{\value{@PCDC@Bot@Lft@Fold}}
184 \setcounter{@PCDC@Fold@B@Lft@Y}{0}
185 \setcounter{@PCDC@Fold@B@Rgt@X}{\value{@PCDC@Bot@Rgt@Fold}}
186 \setcounter{@PCDC@Fold@B@Rgt@Y}{0}
187 \setcounter{@PCDC@Fold@C@Top@X}{\value{@PCDC@Top@Rgt@Fold}}
188 \setcounter{@PCDC@Fold@C@Top@Y}{\value{@PCDC@Design@Height}}
189 \setcounter{@PCDC@Fold@C@Bot@X}{\value{@PCDC@Bot@Rgt@Fold}}
190 \setcounter{@PCDC@Fold@C@Bot@Y}{0}
191 \setcounter{@PCDC@Fold@D@Top@X}{\value{@PCDC@Top@Lft@Fold}}
192 \setcounter{@PCDC@Fold@D@Top@Y}{\value{@PCDC@Design@Height}}
193 \setcounter{@PCDC@Fold@D@Bot@X}{\value{@PCDC@Bot@Lft@Fold}}
194 \setcounter{@PCDC@Fold@D@Bot@Y}{0}
195 \setcounter{@PCDC@Fold@E@Lft@X}{\value{@PCDC@Bot@Lft@Fold}}
196 \setcounter{@PCDC@Fold@E@Lft@Y}{\value{@PCDC@Bot@Fold}}
197 \setcounter{@PCDC@Fold@E@Rgt@X}{\value{@PCDC@Bot@Rgt@Fold}}
198 \setcounter{@PCDC@Fold@E@Rgt@Y}{\value{@PCDC@Bot@Fold}}
199 \setcounter{@PCDC@Fold@F@Lft@X}{\value{@PCDC@Bot@Lft@Fold}}
200 \setcounter{@PCDC@Fold@F@Lft@Y}{\value{@PCDC@Lwr@Top@Fold}}
201 \setcounter{@PCDC@Fold@F@Rgt@X}{\value{@PCDC@Bot@Rgt@Fold}}
202 \setcounter{@PCDC@Fold@F@Rgt@Y}{\value{@PCDC@Lwr@Top@Fold}}
203 \setcounter{@PCDC@Fold@G@Lft@X}{\value{@PCDC@Bot@Lft@Fold}}
204 \setcounter{@PCDC@Fold@G@Lft@Y}{\value{@PCDC@Upr@Top@Fold}}
205 \setcounter{@PCDC@Fold@G@Rgt@X}{\value{@PCDC@Bot@Rgt@Fold}}
206 \setcounter{@PCDC@Fold@G@Rgt@Y}{\value{@PCDC@Upr@Top@Fold}}
207 \setcounter{@PCDC@Fold@H@X}{\value{@PCDC@Bot@Rgt@Fold}}
208 \setcounter{@PCDC@Fold@H@Y}{\value{@PCDC@Pouch@Height}}
209 \setcounter{@PCDC@Fold@I@X}{\value{@PCDC@Bot@Rgt@Fold}}
210 \setcounter{@PCDC@Fold@I@Y}{\value{@PCDC@Pouch@Height}}
211 \setcounter{@PCDC@Fold@J@X}{\value{@PCDC@Bot@Lft@Fold}}
212 \setcounter{@PCDC@Fold@J@Y}{\value{@PCDC@Pouch@Height}}
213 \setcounter{@PCDC@Fold@K@X}{\value{@PCDC@Bot@Lft@Fold}}
214 \setcounter{@PCDC@Fold@K@Y}{\value{@PCDC@Pouch@Height}}
215 \setcounter{@PCDC@Fold@L@X}{\value{@PCDC@Top@Rgt@Fold}}
216 \setcounter{@PCDC@Fold@L@Y}{\value{@PCDC@Design@Height}-\value{@PCDC@Fold@Short@Length}}
217 \setcounter{@PCDC@Fold@M@X}{\value{@PCDC@Top@Lft@Fold}}
218 \setcounter{@PCDC@Fold@M@Y}{\value{@PCDC@Design@Height}-\value{@PCDC@Fold@Short@Length}}
219 %%
220 %% Fold mark label coordinates.

```

```

221 \setcounter{@PCDC@Fold@A@Lft@Label@X}{\value{@PCDC@Fold@A@Lft@X}-\value{@PCDC@Label@Sep}}
222 \setcounter{@PCDC@Fold@A@Lft@Label@Y}{\value{@PCDC@Fold@A@Lft@Y}+\value{@PCDC@Label@Sep}}
223 \setcounter{@PCDC@Fold@A@Rgt@Label@X}{\value{@PCDC@Fold@A@Rgt@X}+\value{@PCDC@Label@Sep}}
224 \setcounter{@PCDC@Fold@A@Rgt@Label@Y}{\value{@PCDC@Fold@A@Rgt@Y}+\value{@PCDC@Label@Sep}}
225 \setcounter{@PCDC@Fold@B@Lft@Label@X}{\value{@PCDC@Fold@B@Lft@X}-\value{@PCDC@Label@Sep}}
226 \setcounter{@PCDC@Fold@B@Lft@Label@Y}{\value{@PCDC@Fold@B@Lft@Y}-\value{@PCDC@Label@Sep}}
227 \setcounter{@PCDC@Fold@B@Rgt@Label@X}{\value{@PCDC@Fold@B@Rgt@X}+\value{@PCDC@Label@Sep}}
228 \setcounter{@PCDC@Fold@B@Rgt@Label@Y}{\value{@PCDC@Fold@B@Rgt@Y}-\value{@PCDC@Label@Sep}}
229 \setcounter{@PCDC@Fold@C@Top@Label@X}{\value{@PCDC@Fold@C@Top@X}+\value{@PCDC@Label@Sep}}
230 \setcounter{@PCDC@Fold@C@Top@Label@Y}{\value{@PCDC@Fold@C@Top@Y}-\value{@PCDC@Fold@Length}+\value{@PCDC@Label@Sep}}
231 \setcounter{@PCDC@Fold@C@Bot@Label@X}{\value{@PCDC@Fold@C@Bot@X}+\value{@PCDC@Label@Sep}}
232 \setcounter{@PCDC@Fold@C@Bot@Label@Y}{\value{@PCDC@Fold@C@Bot@Y}+\value{@PCDC@Fold@Length}-\value{@PCDC@Label@Sep}}
233 \setcounter{@PCDC@Fold@D@Top@Label@X}{\value{@PCDC@Fold@D@Top@X}-\value{@PCDC@Label@Sep}}
234 \setcounter{@PCDC@Fold@D@Top@Label@Y}{\value{@PCDC@Fold@D@Top@Y}-\value{@PCDC@Fold@Length}+\value{@PCDC@Label@Sep}}
235 \setcounter{@PCDC@Fold@D@Bot@Label@X}{\value{@PCDC@Fold@D@Bot@X}-\value{@PCDC@Label@Sep}}
236 \setcounter{@PCDC@Fold@D@Bot@Label@Y}{\value{@PCDC@Fold@D@Bot@Y}+\value{@PCDC@Fold@Length}-\value{@PCDC@Label@Sep}}
237 \setcounter{@PCDC@Fold@E@Lft@Label@X}{\value{@PCDC@Fold@E@Lft@X}-\value{@PCDC@Label@Sep}}
238 \setcounter{@PCDC@Fold@E@Lft@Label@Y}{\value{@PCDC@Fold@E@Lft@Y}-\value{@PCDC@Label@Sep}}
239 \setcounter{@PCDC@Fold@E@Rgt@Label@X}{\value{@PCDC@Fold@E@Rgt@X}+\value{@PCDC@Label@Sep}}
240 \setcounter{@PCDC@Fold@E@Rgt@Label@Y}{\value{@PCDC@Fold@E@Rgt@Y}-\value{@PCDC@Label@Sep}}
241 \setcounter{@PCDC@Fold@F@Lft@Label@X}{\value{@PCDC@Fold@F@Lft@X}-\value{@PCDC@Label@Sep}}
242 \setcounter{@PCDC@Fold@F@Lft@Label@Y}{\value{@PCDC@Fold@F@Lft@Y}+\value{@PCDC@Label@Sep}}
243 \setcounter{@PCDC@Fold@F@Rgt@Label@X}{\value{@PCDC@Fold@F@Rgt@X}+\value{@PCDC@Label@Sep}}
244 \setcounter{@PCDC@Fold@F@Rgt@Label@Y}{\value{@PCDC@Fold@F@Rgt@Y}+\value{@PCDC@Label@Sep}}
245 \setcounter{@PCDC@Fold@G@Lft@Label@X}{\value{@PCDC@Fold@G@Lft@X}-\value{@PCDC@Label@Sep}}
246 \setcounter{@PCDC@Fold@G@Lft@Label@Y}{\value{@PCDC@Fold@G@Lft@Y}+\value{@PCDC@Label@Sep}}
247 \setcounter{@PCDC@Fold@G@Rgt@Label@X}{\value{@PCDC@Fold@G@Rgt@X}+\value{@PCDC@Label@Sep}}
248 \setcounter{@PCDC@Fold@G@Rgt@Label@Y}{\value{@PCDC@Fold@G@Rgt@Y}+\value{@PCDC@Label@Sep}}
249 \setcounter{@PCDC@Fold@H@Label@X}{\value{@PCDC@Fold@H@X}+5*\value{@PCDC@Label@Sep}}
250 \setcounter{@PCDC@Fold@H@Label@Y}{\value{@PCDC@Fold@H@Y}+4*\value{@PCDC@Label@Sep}}
251 \setcounter{@PCDC@Fold@I@Label@X}{\value{@PCDC@Fold@I@X}+5*\value{@PCDC@Label@Sep}}
252 \setcounter{@PCDC@Fold@I@Label@Y}{\value{@PCDC@Fold@I@Y}-6*\value{@PCDC@Label@Sep}}
253 \setcounter{@PCDC@Fold@J@Label@X}{\value{@PCDC@Fold@J@X}-5*\value{@PCDC@Label@Sep}}
254 \setcounter{@PCDC@Fold@J@Label@Y}{\value{@PCDC@Fold@J@Y}+4*\value{@PCDC@Label@Sep}}
255 \setcounter{@PCDC@Fold@K@Label@X}{\value{@PCDC@Fold@K@X}-5*\value{@PCDC@Label@Sep}}
256 \setcounter{@PCDC@Fold@K@Label@Y}{\value{@PCDC@Fold@K@Y}-6*\value{@PCDC@Label@Sep}}
257 \setcounter{@PCDC@Fold@L@Label@X}{\value{@PCDC@Fold@L@X}+5*\value{@PCDC@Label@Sep}}
258 \setcounter{@PCDC@Fold@L@Label@Y}{\value{@PCDC@Fold@L@Y}+4*\value{@PCDC@Label@Sep}}
259 \setcounter{@PCDC@Fold@M@Label@X}{\value{@PCDC@Fold@M@X}-5*\value{@PCDC@Label@Sep}}
260 \setcounter{@PCDC@Fold@M@Label@Y}{\value{@PCDC@Fold@M@Y}+4*\value{@PCDC@Label@Sep}}
261 %%
262 %% Text box coordinates.
263 \setcounter{@PCDC@Pouch@Matter@X}{\value{@PCDC@Fold@Length}+\value{@PCDC@Text@Margin}}
264 \setcounter{@PCDC@Pouch@Matter@Y}{\value{@PCDC@Text@Margin}}
265 \setcounter{@PCDC@Back@Matter@X}{\value{@PCDC@Fold@Length}+\value{@PCDC@Text@Margin}}
266 \setcounter{@PCDC@Back@Matter@Y}{\value{@PCDC@Pouch@Height}+\value{@PCDC@Back@Height}-\value{@PCDC@Text@Margin}}
267 \setcounter{@PCDC@Spine@Matter@X}{\value{@PCDC@Fold@Length}+\value{@PCDC@Back@Height}/2}
268 \setcounter{@PCDC@Spine@Matter@Y}{\value{@PCDC@Back@Matter@Y}+\value{@PCDC@Spine@Height}/2+\value{@PCDC@Text@Margin}}
269 \setcounter{@PCDC@Latch@Matter@X}{\value{@PCDC@Fold@Length}+\value{@PCDC@Text@Margin}}
270 \setcounter{@PCDC@Latch@Matter@Y}{\value{@PCDC@Spine@Matter@Y}+\value{@PCDC@Spine@Height}/2+\value{@PCDC@Text@Margin}}
271 %%
272 %% Typeset the folding scheme
273 \begin{picture}(\value{@PCDC@Design@width}, \value{@PCDC@Design@Height})
274 %% Fold mark 1, left

```

```

275 \put(\value{PCDC@Fold@A@Lft@X}, \value{PCDC@Fold@A@Lft@Y}){\line(-1, 0){\value{PCDC@Fold@L
276 \put(\value{PCDC@Fold@A@Lft@Label@X}, \value{PCDC@Fold@A@Lft@Label@Y}){\makebox(0, 0)[br]{\v
277 %%
278 %% Fold mark 1, right
279 \put(\value{PCDC@Fold@A@Rgt@X}, \value{PCDC@Fold@A@Rgt@Y}){\line(1, 0){\value{PCDC@Fold@Ler
280 \put(\value{PCDC@Fold@A@Rgt@Label@X}, \value{PCDC@Fold@A@Rgt@Label@Y}){\makebox(0, 0)[bl]{\v
281 %%
282 %% Fold mark 2, left
283 \put(\value{PCDC@Fold@B@Lft@X}, \value{PCDC@Fold@B@Lft@Y}){\line(-1, 0){\value{PCDC@Fold@L
284 \put(\value{PCDC@Fold@B@Lft@Label@X}, \value{PCDC@Fold@B@Lft@Label@Y}){\makebox(0, 0)[tr]{2
285 %%
286 %% Fold mark 2, right
287 \put(\value{PCDC@Fold@B@Rgt@X}, \value{PCDC@Fold@B@Rgt@Y}){\line(1, 0){\value{PCDC@Fold@Ler
288 \put(\value{PCDC@Fold@B@Rgt@Label@X}, \value{PCDC@Fold@B@Rgt@Label@Y}){\makebox(0, 0)[t1]{2
289 %%
290 %% Fold mark 3, top
291 \put(\value{PCDC@Fold@C@Top@X}, \value{PCDC@Fold@C@Top@Y}){\line(0, -1){\value{PCDC@Fold@L
292 \put(\value{PCDC@Fold@C@Top@Label@X}, \value{PCDC@Fold@C@Top@Label@Y}){\makebox(0, 0)[bl]{\v
293 %%
294 %% Fold mark 3, bottom
295 \put(\value{PCDC@Fold@C@Bot@X}, \value{PCDC@Fold@C@Bot@Y}){\line(0, 1){\value{PCDC@Fold@Ler
296 \put(\value{PCDC@Fold@C@Bot@Label@X}, \value{PCDC@Fold@C@Bot@Label@Y}){\makebox(0, 0)[t1]{\v
297 %%
298 %% Fold mark 4, top
299 \put(\value{PCDC@Fold@D@Top@X}, \value{PCDC@Fold@D@Top@Y}){\line(0, -1){\value{PCDC@Fold@L
300 \put(\value{PCDC@Fold@D@Top@Label@X}, \value{PCDC@Fold@D@Top@Label@Y}){\makebox(0, 0)[br]{\v
301 %%
302 %% Fold mark 4, bottom
303 \put(\value{PCDC@Fold@D@Bot@X}, \value{PCDC@Fold@D@Bot@Y}){\line(0, 1){\value{PCDC@Fold@Ler
304 \put(\value{PCDC@Fold@D@Bot@Label@X}, \value{PCDC@Fold@D@Bot@Label@Y}){\makebox(0, 0)[tr]{\v
305 %%
306 %% Fold mark 5, left
307 \multiput(\value{PCDC@Fold@E@Lft@X}, \value{PCDC@Fold@E@Lft@Y})(-2, 0){\value{PCDC@Fold@Das
308 \put(\value{PCDC@Fold@E@Lft@Label@X}, \value{PCDC@Fold@E@Lft@Label@Y}){\makebox(0, 0)[tr]{5
309 %%
310 %% Fold mark 5, right
311 \multiput(\value{PCDC@Fold@E@Rgt@X}, \value{PCDC@Fold@E@Rgt@Y})(2, 0){\value{PCDC@Fold@Dash
312 \put(\value{PCDC@Fold@E@Rgt@Label@X}, \value{PCDC@Fold@E@Rgt@Label@Y}){\makebox(0, 0)[t1]{5
313 %%
314 %% Fold mark 6, left
315 \multiput(\value{PCDC@Fold@F@Lft@X}, \value{PCDC@Fold@F@Lft@Y})(-2, 0){\value{PCDC@Fold@Das
316 \put(\value{PCDC@Fold@F@Lft@Label@X}, \value{PCDC@Fold@F@Lft@Label@Y}){\makebox(0, 0)[br]{\v
317 %%
318 %% Fold mark 6, right
319 \multiput(\value{PCDC@Fold@F@Rgt@X}, \value{PCDC@Fold@F@Rgt@Y})(2, 0){\value{PCDC@Fold@Dash
320 \put(\value{PCDC@Fold@F@Rgt@Label@X}, \value{PCDC@Fold@F@Rgt@Label@Y}){\makebox(0, 0)[bl]{\v
321 %%
322 %% Fold mark 7, left
323 \multiput(\value{PCDC@Fold@G@Lft@X}, \value{PCDC@Fold@G@Lft@Y})(-2, 0){\value{PCDC@Fold@Das
324 \put(\value{PCDC@Fold@G@Lft@Label@X}, \value{PCDC@Fold@G@Lft@Label@Y}){\makebox(0, 0)[br]{\v
325 %%
326 %% Fold mark 7, right
327 \multiput(\value{PCDC@Fold@G@Rgt@X}, \value{PCDC@Fold@G@Rgt@Y})(2, 0){\value{PCDC@Fold@Dash
328 \put(\value{PCDC@Fold@G@Rgt@Label@X}, \value{PCDC@Fold@G@Rgt@Label@Y}){\makebox(0, 0)[bl]{\v

```

```

329 %%
330 %% Fold mark 8
331 \put(\value{@PCDC@Fold@H@X}, \value{@PCDC@Fold@H@Y}){\line(1, 1){\value{@PCDC@Fold@Length}}}
332 \put(\value{@PCDC@Fold@H@Label@X}, \value{@PCDC@Fold@H@Label@Y}){\makebox(0, 0)[t1]{\rotatebox{45}{\value{@PCDC@Fold@H@Label}}}}
333 %%
334 %% Fold mark 9
335 \put(\value{@PCDC@Fold@I@X}, \value{@PCDC@Fold@I@Y}){\line(1, -1){\value{@PCDC@Fold@Length}}}
336 \put(\value{@PCDC@Fold@I@Label@X}, \value{@PCDC@Fold@I@Label@Y}){\makebox(0, 0)[tr]{\rotatebox{45}{\value{@PCDC@Fold@I@Label}}}}
337 %%
338 %% Fold mark 10
339 \put(\value{@PCDC@Fold@J@X}, \value{@PCDC@Fold@J@Y}){\line(-1, 1){\value{@PCDC@Fold@Length}}}
340 \put(\value{@PCDC@Fold@J@Label@X}, \value{@PCDC@Fold@J@Label@Y}){\makebox(0, 0)[tr]{\rotatebox{45}{\value{@PCDC@Fold@J@Label}}}}
341 %%
342 %% Fold mark 11
343 \put(\value{@PCDC@Fold@K@X}, \value{@PCDC@Fold@K@Y}){\line(-1, -1){\value{@PCDC@Fold@Length}}}
344 \put(\value{@PCDC@Fold@K@Label@X}, \value{@PCDC@Fold@K@Label@Y}){\makebox(0, 0)[t1]{\rotatebox{45}{\value{@PCDC@Fold@K@Label}}}}
345 %%
346 %% Fold mark 12
347 \put(\value{@PCDC@Fold@L@X}, \value{@PCDC@Fold@L@Y}){\line(1, 1){\value{@PCDC@Fold@Short@Length}}}
348 \put(\value{@PCDC@Fold@L@Label@X}, \value{@PCDC@Fold@L@Label@Y}){\makebox(0, 0)[t1]{\rotatebox{45}{\value{@PCDC@Fold@L@Label}}}}
349 %%
350 %% Fold mark 13
351 \put(\value{@PCDC@Fold@M@X}, \value{@PCDC@Fold@M@Y}){\line(-1, 1){\value{@PCDC@Fold@Short@Length}}}
352 \put(\value{@PCDC@Fold@M@Label@X}, \value{@PCDC@Fold@M@Label@Y}){\makebox(0, 0)[tr]{\rotatebox{45}{\value{@PCDC@Fold@M@Label}}}}
353 %%
354 %% Latch matter
355 \put(\value{@PCDC@Latch@Matter@X}, \value{@PCDC@Latch@Matter@Y}){\makebox(0, 0)[b1]{\rotatebox{90}{\value{@PCDC@Latch@Matter}}}}
356 %%
357 %% Spine matter
358 \put(\value{@PCDC@Spine@Matter@X}, \value{@PCDC@Spine@Matter@Y}){\makebox(0, 0)[cc]{\@PCDC@Spine@Matter}}
359 %%
360 %% Back matter
361 \put(\value{@PCDC@Back@Matter@X}, \value{@PCDC@Back@Matter@Y}){\makebox(0, 0)[t1]{\parbox{\value{@PCDC@Back@Matter}}{\value{@PCDC@Back@Matter}}}}
362 %%
363 %% Pouch matter
364 \put(\value{@PCDC@Pouch@Matter@X}, \value{@PCDC@Pouch@Matter@Y}){\makebox(0, 0)[b1]{\rotatebox{90}{\value{@PCDC@Pouch@Matter}}}}
365 \end{picture}}
366

```

## 5.5 Clean Up

And finally, we do some housekeeping.

```
367 \makeatother
```

That's all.