

The **thumbs** package

H.-Martin Münch
<Martin.Muench at Uni-Bonn.de>

2025-12-04 v1.1c

Abstract

This \LaTeX package allows to create one or more customizable thumb index(es), providing a quick and easy reference method for large documents. It must be loaded after the page size has been set, when printing the document no “shrink to page” should be used, and a printer capable of printing up to the border of the sheet of paper is needed (or afterwards cutting the paper, cf. the **crop** package).

Disclaimer for web links: The author is not responsible for any contents referred to in this work unless having full knowledge of illegal contents. If any damage occurs by the use of information presented there, only the author of the respective pages might be liable, not the one who has referred to those pages.

Contents

1	Introduction	4
2	Usage	5
2.1	Loading	5
2.2	Options	5
2.2.1	linefill	5
2.2.2	thumblink	5
2.2.3	minheight	6
2.2.4	height	6
2.2.5	width	6
2.2.6	distance	6
2.2.7	topthumbmargin	6
2.2.8	bottomthumbmargin	6
2.2.9	eventxtindent	7
2.2.10	oddtxtexdent	7
2.2.11	evenmarkindent	7
2.2.12	oddmarkexdent	7
2.2.13	evenprintvoffset	7
2.2.14	leftindexruleplus	7
2.2.15	frame	8
2.2.16	frameinnercolor	8
2.2.17	txtcentered	8
2.2.18	ignorehoffset, ignorevoffset	8
2.2.19	nophantomsection	8
2.2.20	plainthumbsoverview	8
2.2.21	verbose, silent	9
2.2.22	draft, final	9
2.2.23	hidethumbs	9
2.2.24	righttoleft	9
2.2.25	pagecolor	9
2.2.26	evenindent	9
2.2.27	oddexdent	9
2.3	Commands to be used in the document	10
2.3.1	\addthumb	10
2.3.2	\addtitlethumb	10
2.3.3	\stopthumb and \continuethumb	10
2.3.4	\thumbsoverview/back/verso/double	10
2.3.5	\thumbnewcolumn	11
2.3.6	\addthumbsoverviewtocontents	11
2.3.7	\thumbsnophantom	11
2.4	Changing thumb colour and text	11

2.5	crop	12
3	Alternatives	13
4	Example	14
5	The implementation	26
6	Installation	71
6.1	Downloads	71
6.2	Package, unpacking TDS	72
6.3	Refresh file name databases	73
6.4	Some details for the interested	73
6.5	Compiling the example	74
7	Acknowledgements	74
8	History	75
	[2010/04/01 v0.01 – 2011/05/13 v0.46]	75
	[2011/05/14 v1.0a]	75
	[2011/05/18 v1.0b]	75
	[2011/05/20 v1.0c]	75
	[2011/05/26 v1.0d]	76
	[2011/06/02 v1.0e]	76
	[2011/06/08 v1.0f]	76
	[2011/06/24 v1.0g]	76
	[2011/08/08 v1.0h]	77
	[2011/08/22 v1.0i]	77
	[2011/10/19 v1.0j]	77
	[2012/01/01 v1.0k]	77
	[2012/01/07 v1.0l]	77
	[2012/02/23 v1.0m]	78
	[2012/02/25 v1.0n]	78
	[2013/08/22 v1.0o]	78
	[2013/09/17 v1.0p]	79
	[2014/03/09 v1.0q]	79
	[2015/05/25 v1.0r]	79
	[2025-08-01 v1.1a]	80
	[2025-08-11 v1.1b]	81
	[2025-12-04 v1.1c]	81
9	Index	82

1 Introduction

This L^AT_EX package puts running, customizable thumb marks into the outer margin, moving downward as the chapter number (or whatever shall be marked by the thumb marks) increases. Additionally an overview page/table of thumb marks can be added automatically, which gives the respective names of the thumb objects, the page where the object/thumb mark first appears, and the thumb mark itself at the respective position. The thumb marks are probably useful for documents, where a quick and easy way to find e. g. a chapter is needed, for example in reference guides, anthologies, or quite large documents.

`thumbs` must be loaded after the page size has been set, when printing the document no “shrink to page” should be used, a printer capable of printing up to the border of the sheet of paper is needed (or afterwards cutting the paper, cf. the `crop` package).

Usage with `\usepackage[landscape]{geometry}`, `\documentclass[landscape]{...}`, `\usepackage[landscape]{geometry}`, `\usepackage{lscape}`, or `\usepackage{pdfscape}` is possible.

A note on terms and definitions:

Thumb index:

A thumb index, also called a cut-in index or an index notch, is a round cut-out in the pages of dictionaries, encyclopedias, Bibles and other large religious books, and various sectioned, often alphabetic, reference works, used to locate entries starting at a particular letter or section. The individual notches are called thumb cuts and enable the reader to turn to any section they want.

(https://en.wikipedia.org/w/index.php?title=Thumb_index&oldid=1297058528;

see also <https://de.wikipedia.org/wiki/Daumenregister>)

The `thumbs` package does not auto-magically produce cuts in the paper, while the produced marks could be used to determine where to cut (and leaving one mark at the bottom of each cut). Therefore, strictly speaking, `thumbs` is the wrong term.

Edge index:

An edge index is a form of index that consists of marks on the edges of the pages of a printed work. These marks are step-like printed and usually contain order words, letters, or numbers, (e. g., A to Z in a dictionary or telephone book). Usually, they are colored and help to find desired points, especially in reference works. They are created by printing to the edge of the sheet so that they are visible on the closed books’ edge. Advantageously, edge indexing is part of the printing process, permits nearly unlimited headings, and does not add to the cost of binding. These are offset by the disadvantage of being unable to know what a mark refers to without opening the book. ...

When each edge index mark labels one chapter, the desired one can be found by counting the marks. When the edge index marks label first letters in a dictionary or telephone book, some can be identified by their “thickness”, i. e. in English there are only few words beginning with “Q” but a lot beginning with “S”. ...

An edge index is distinct from a thumb index, but the terms thumb index or chapter thumbs have been applied to edge indices.

(https://en.wikipedia.org/w/index.php?title=Edge_index&oldid=1303541874;

see also <https://de.wikipedia.org/wiki/Handmarke> and

http://de.wikipedia.org/wiki/Datei:Farbschnitt_und_Register.jpg Book with blue cut decoration and edge index

<http://de.wikipedia.org/wiki/Datei:HandmarkeKopfschnitt.jpg> Edge index at the top cut

<http://de.wikipedia.org/wiki/Datei:SeitennummerierungEck.JPG> Page number at the top cut edge)

The correct terms therefore are edge index and edge index marks.

When looking at the section about alternatives to this package (p. 13), “thumb (mark)” obviously is the term which is colloquially used for it. (A search for “edge” at ctan.org on 31. July 2023 returned no relevant result.) Thus the colloquial term has been kept for this package while here providing the information about the formal one.

2 Usage

2.1 Loading

Load the package placing

```
\usepackage[<options>]{thumbs}
```

into the preamble of your L^AT_EX 2_ε source file.

The `thumbs` package takes the dimensions of the page `\AddToHook{begindocument}[start]` and does not react to changes afterwards. Therefore this package must be loaded *after* the page dimensions have been set, e. g. with package `geometry` (<https://www.ctan.org/pkg/geometry>). Of course it is also OK to just keep the default page/paper settings, but when anything is changed, it must be done before `thumbs` executes its `\AddToHook{begindocument}[start]` code.

The format of the paper, where the document shall be printed upon, should also be used for creating the document. Then the document can be printed without adapting the size, like e. g. “shrink to page”. That would add a white border around the document and by moving the thumb marks from the edge of the paper they no longer appear at the side of the stack of paper. It is also necessary to use a printer capable of printing up to the border of the sheet of paper. Alternatively it is possible after the printing to cut the paper to the right size. (The `crop` package is very useful for this.) While performing the cutting manually is probably quite cumbersome, printing houses use paper, which is larger than the desired format, and afterwards cut it to format.

Some faulty outdated version of a pdf-viewer added a white line at the bottom and right side of the document when presenting it. This did not change the printed version. To test for this problem, a doublepage of the example file has been completely coloured. (Probably better exclude those two pages from printing...)

When using the thumb marks overview page (edge index), it is necessary to `\protect` entries like `\pi` (same as with entries in tables of contents, figures, tables,...).

2.2 Options

`options` The `thumbs` package takes the following options:

2.2.1 linefill

`linefill` Option `linefill` wants to know how the line between object (e. g. chapter name) and page number shall be filled at the overview page. Empty option will result in a blank line, `line` will fill the distance with a line, `dots` will fill the distance with dots.

2.2.2 thumblink

`thumblink` Option `thumblink` determines, what is hyperlinked at the thumb marks overview page (when the `hyperref` package is used):

- `none` creates *none* hyperlinks
- `title` hyperlinks the *titles* of the thumb marks
- `page` hyperlinks the *page* numbers of the thumb marks
- `titleandpage` hyperlinks the *title and page* numbers of the thumb marks

- `line` hyperlinks the whole *line*, i.e. title, dots (or line or whatsoever) and page numbers of the thumb marks
- `rule` hyperlinks the whole *rule*.

2.2.3 minheight

`minheight` Option `minheight` wants to know the minimal vertical extension of each thumb mark. This is only useful in combination with option `height=auto` (see below). When the height is automatically calculated and smaller than the `minheight` value, the height is set equal to the given `minheight` value and a new column/page of thumb marks is used. The default value is 47pt ($\approx 16.5\text{ mm} \approx 0.65\text{ in}$).

2.2.4 height

`height` Option `height` wants to know the vertical extension of each thumb mark. The default value “`auto`” calculates an appropriate value automatically decreasing with increasing number of thumb marks (but fixed for each document). When the height is smaller than `minheight`, this package deems this as too small and instead uses a new column/page of thumb marks. If smaller thumb marks are really wanted, choose a smaller `minheight` (e.g. 0pt).

2.2.5 width

`width` Option `width` wants to know the horizontal extension of each thumb mark. The default option-value “`auto`” calculates a width-value automatically: (`\paperwidth` minus `\textwidth`), which is the total width of inner and outer margin, divided by 4. Instead of this, any positive width given by the user is accepted. (Try `width={\paperwidth}` in the example!) Option `width={autoauto}` leads to thumb marks, which are just wide enough to fit the widest thumb mark text.

2.2.6 distance

`distance` Option `distance` wants to know the vertical spacing between two thumb marks. The default value is 2mm.

2.2.7 topthumbmargin

`topthumbmargin` Option `topthumbmargin` wants to know the vertical spacing between the upper page (paper) border and top thumb mark. The default (`auto`) is 1inch plus `\th@bmsvoffset` plus `\topmargin`. Dimensions (e.g. 1cm) are also accepted.

2.2.8 bottomthumbmargin

`bottomthumbmargin` Option `bottomthumbmargin` wants to know the vertical spacing between the lower page (paper) border and last thumb mark. The default (`auto`) for the position of the last thumb is

$$1\text{in} + \text{\topmargin} - \text{\th@bmsdistance} + \text{\th@mbheighty} + \text{\headheight} + \text{\headsep} + \text{\textheight} + \text{\footskip} - \text{\th@bmsdistance} - \text{\th@mbheighty}.$$
Dimensions (e.g. 1cm) are also accepted.

2.2.9 eventxtindent

eventxtindent Option **eventxtindent** expects a dimension (default value: 5 pt, negative values are possible, of course), by which the text inside of thumb marks on even pages is moved away from the page edge, i.e. to the right. Probably using the same or at least a similar value as for option **oddtxtexdent** makes sense.

2.2.10 oddtxtexdent

oddtxtexdent Option **oddtxtexdent** expects a dimension (default value: 5 pt, negative values are possible, of course), by which the text inside of thumb marks on odd pages is moved away from the page edge, i.e. to the left. Probably using the same or at least a similar value as for option **eventxtindent** makes sense.

2.2.11 evenmarkindent

evenmarkindent Option **evenmarkindent** expects a dimension (default value: 0 pt, negative values are possible, of course), by which the thumb marks (background and text) on even pages are moved away from the page edge, i.e. to the right. This might be useful when the paper, onto which the document is printed, is later cut to another format. Probably using the same or at least a similar value as for option **oddmarkexdent** makes sense.

2.2.12 oddmarkexdent

oddmarkexdent Option **oddmarkexdent** expects a dimension (default value: 0 pt, negative values are possible, of course), by which the thumb marks (background and text) on odd pages are moved away from the page edge, i.e. to the left. This might be useful when the paper, onto which the document is printed, is later cut to another format. Probably using the same or at least a similar value as for option **oddmarkexdent** makes sense.

2.2.13 evenprintvoffset

evenprintvoffset Option **evenprintvoffset** expects a dimension (default value: 0 pt, negative values are possible, of course), by which the thumb marks (background and text) on even pages are moved downwards. This might be useful when a duplex printer shifts recto and verso pages against each other by some small amount, e.g. a millimeter or two, which is not uncommon. Please do not use this option with another value than 0 pt for files which you submit to other persons. Their printer probably shifts the pages by another amount, which might even lead to increased mismatch if both printers shift in opposite directions. Ideally the pdf viewer would correct the shift depending on printer (or at least give some option similar to “shift verso pages by x mm”).

2.2.14 leftindexruleplus

leftindexruleplus Option **leftindexruleplus** expects a dimension (default value: 0 pt, negative values are possible, of course), by which the rules of the thumb mark entries in the thumb mark overview (edge index) on left pages are made longer (or shorter, if negative value is given). Sometimes those rules end a bit too early. While I did not determine yet why they are behaving like this, option **leftindexruleplus** allows to add e.g. `\evensidemargin` (or 20 pt or another length) to the rules.

2.2.15 `frame`

`frame` Option `frame` is `\empty` by default. BJORN VICTOR suggested to use thumb marks consisting only of frames instead of filled rectangles. This can be accomplished by giving a length to the option `frame`, for example `frame={2pt}`. The thumb mark is still filled, but with `\thepagecolor`, which makes it appear as empty.

2.2.16 `frameinnercolor`

`frameinnercolor` If option `frame` is used with some length value (i. e. line thickness), the frame is filled with `\thepagecolor` by default. When another filling is wished for, the option `frameinnercolor` accepts colours, for example `frameinnercolor={yellow}`.

2.2.17 `txtcentered`

`txtcentered` The thumb's text is placed using either `\raggedright` or `\raggedleft` (depending on left or right page for double sided documents). With option `txtcentered=true` the thumb's text is centered instead.

2.2.18 `ignorehoffset`, `ignorevoffset`

`ignorehoffset` Usually `\hoffset` and `\voffset` should be regarded, but moving the thumb marks away from the paper edge probably makes them
`ignorevoffset` useless. Therefore `\hoffset` and `\voffset` are ignored by default, or when option `ignorehoffset` or `ignorehoffset=true` is used (and `ignorevoffset` or `ignorevoffset=true`, respectively). But in case that the user wants to print at one sort of paper but later trim it to another one, regarding the offsets would be necessary (for example when using the `crop` package). Therefore `ignorehoffset=false` and `ignorevoffset=false` can be used to regard these offsets. (Combinations `ignorehoffset=true`, `ignorevoffset=false` and `ignorehoffset=false`, `ignorevoffset=true` are also possible.)

2.2.19 `nophantomsection`

`nophantomsection` Option `nophantomsection` globally disables the automatic placement of a `\phantomsection` before the thumb marks. Generally it is desirable to have a hyperlink from the thumbs overview page to lead to the thumb mark and not to some earlier place. Therefore automatically a `\phantomsection` is placed before each thumb mark. But for example when using the thumb mark after a `\chapter{...}` command, it is probably nicer to have the link point at the top of that chapter's title (instead of the line below it). When automatic placing of the `\phantomsections` has been globally disabled, nevertheless manual use of `\phantomsection` is still possible. The other way round: When automatic placing of the `\phantomsections` has *not* been globally disabled, it can be disabled just for the following thumb mark by the command `\thumbsnophantom`.

2.2.20 `plainthumbsoverview`

`plainthumbsoverview` Option `plainthumbsoverview` (`false` by default, but `true` if used) removes the coloured rules behind the entries on the overview pages and prints the text in the current colour (usually black). (Feature requested by BPLASA.)

2.2.21 verbose, silent

verbose, silent Option `verbose=false` (the default) suppresses some messages, which otherwise are presented at the screen and written into the log file. Look for
***** THUMB dimensions *****
in the log file for height and width of the thumb marks as well as top and bottom thumb marks margins. – Instead of `verbose=false` also `silent=true` and instead of `verbose=true` also `silent=false` can be used.

2.2.22 draft, final

draft, final Option `draft` (*not* the default) sets the thumb mark width to 2pt, thumb mark text colour to black and thumb mark background colour to grey (`gray`). Either do not use this option with the `thumbs` package at all, or use `draft=false`, or `final`, or `final=true` to get the original appearance of the thumb marks.

2.2.23 hidethumbs

hidethumbs Option `hidethumbs` (*not* the default) prevents `thumbs` to create thumb marks (or thumb marks overview pages). This could be useful when thumb marks were placed, but for some reason no thumb marks (and overview pages) shall be placed. Removing `\usepackage[...]{thumbs}` would not work but create errors for unknown commands (e.g. `\addthumb`, `\addtitlethumb`, `\thumbnewcolumn`, `\stopthumb`, `\continuethumb`, `\addthumbsoverviewtocontents`, `\thumbsoverview`, `\thumbsoverviewback`, `\thumbsoverviewverso`, and `\thumbsoverviewdouble`). (A `\jobname.tmb` file is created nevertheless.) – Either do not use this option with the `thumbs` package at all, or use `hidethumbs=false` to get the original appearance of the thumb marks.

2.2.24 righttoleft

righttoleft Option `righttoleft` (*not* the default) tells the `thumbs` package that right-to-left writing is used (e.g. Arabic) and the thumb marks need to be placed on the other edge of the paper. When using this option, also options like `eventxtindent` and `oddtxtexdent` need to be adapted, and you must expect to need to use `even` when you want to change `odd` and to use negative dimensions when you want to use positive ones – everything is mirrored, but naming and such is not changed automatically.

2.2.25 pagecolor (obsolete)

pagecolor Option `pagecolor` is obsolete. Instead the `pagecolor` package is used. Use `\pagecolor{...}` *after* `\usepackage[...]{thumbs}` and *before* `\begin{document}` to define a background colour of the pages.

2.2.26 evenindent (obsolete)

evenindent Option `evenindent` is obsolete and was replaced by option `eventxtindent`.

2.2.27 oddexdent (obsolete)

oddexdent Option `oddexdent` is obsolete and was replaced by option `oddtxtexdent`.

2.3 Commands to be used in the document

2.3.1 `\addthumb`

`\addthumb` To add a thumb mark, use the `\addthumb` command, which has these four parameters:

1. a title for the thumb mark (for the thumb marks overview page, e.g. the chapter title),
2. the text to be displayed in the thumb mark (for example the chapter number: `\thechapter`),
3. the colour of the text in the thumb mark,
4. and the background colour of the thumb mark

(parameters in this order) at the page where you want this thumb mark placed (for the first time).

2.3.2 `\addtitlethumb`

`\addtitlethumb` When a thumb mark shall not or cannot be placed on a page, e.g. at the title page or when using `\includepdf` from `pdfpages` package, but the reference in the thumb marks overview nevertheless shall name that page number and hyperlink to that page, `\addtitlethumb` can be used at the following page. It has five arguments. The arguments one to four are identical to the ones of `\addthumb` (see above), and the fifth argument consists of the label of the page, where the hyperlink at the thumb marks overview page shall link to. The `thumbs` package does *not* create that label! If manually no label can be placed on the first page, the label `pagesLTS.0` from the `pageslts` package (needs to be loaded explicitly!) can be used.

2.3.3 `\stopthumb` and `\continuethumb`

`\stopthumb` When a page (or pages) shall have no thumb marks, use the `\stopthumb` command (without parameters). Placing another thumb mark
`\continuethumb` with `\addthumb` or `\addtitlethumb` or using the command `\continuethumb` continues the thumb marks.

2.3.4 `\thumbsoverview/back/verso/double`

`\thumbsoverview` The commands `\thumbsoverview`, `\thumbsoverviewback`, `\thumbsoverviewverso`, and/or `\thumbsoverviewdouble` is/are used to
`\thumbsoverviewback` place the overview page(s) for the thumb marks (edge index). Their single parameter is used to mark this page/these pages (e.g. in the
`\thumbsoverviewverso` page header). If these marks are not wished, `\thumbsoverview...{}{} will generate empty marks in the page header(s). \thumbsoverview
\thumbsoverviewdouble can be used more than once (for example at the beginning and at the end of the document, or \thumbsoverview at the beginning and
\thumbsoverviewback at the end). The overviews have labels TableOfThumbs1, TableOfThumbs2, and so on, which can be referred to
with e.g. \pageref{TableOfThumbs1}. The reference TableOfThumbs (without number) aims at the last used Table of Thumbs (for
compatibility with older versions of this package). When using option righttoleft, the marks are placed at the other edge of the page
than listed here.`

- `\thumbsoverview` prints the thumb marks at the right side and (in `twoside` mode) skips left sides (useful e.g. at the beginning of a document).
- `\thumbsoverviewback` prints the thumb marks at the left side and (in `twoside` mode) skips right sides (useful e.g. at the end of a document).

- `\thumbsoverviewerso` prints the thumb marks at the right side and (in `twoside` mode) repeats them at the next left side and so on (useful anywhere in the document and when one wants to prevent empty pages).
- `\thumbsoverviewdouble` prints the thumb marks at the left side and (in `twoside` mode) repeats them at the next right side and so on (useful anywhere in the document and when one wants to prevent empty pages).

2.3.5 `\thumbnewcolumn`

`\thumbnewcolumn` With the command `\thumbnewcolumn` a new column can be started, even if the current one was not filled. This could be useful e.g. for a dictionary, which uses one column for translations from language A to language B, and the second column for translations from language B to language A. But in that case one probably should increase the size of the thumb marks, so that 26 thumb marks (in case of the Latin alphabet) fill one thumb column. Do not use `\thumbnewcolumn` on a page where `\addthumb` was already used, but use `\addthumb` immediately after `\thumbnewcolumn`.

2.3.6 `\addthumbsoverviewtocontents`

`\addthumbsoverviewtocontents` `\addthumbsoverviewtocontents` with two arguments is a replacement for `\addcontentsline{toc}{<level>}{<text>}`, where the first argument of `\addthumbsoverviewtocontents` is for `<level>` and the second for `<text>`. If an entry of the thumbs mark overview shall be placed in the table of contents, `\addthumbsoverviewtocontents` with its arguments should be used immediately before `\thumbsoverview`.

2.3.7 `\thumbsnophantom`

`\thumbsnophantom` When automatic placing of the `\phantomsections` has *not* been globally disabled by using option `nophantomsection` (see subsection 2.2.19), it can be disabled just for the following thumb mark by the command `\thumbsnophantom`.

2.4 Changing thumb colour and text

`Changing thumb colour and text` It is possible to change the colour and text of an existing thumb mark. To accomplish this, in the preamble two new colours must be defined, for example:

```
\xdef\thetextchangingcolour{red}%
\colorlet{textchangingcolour}{\thetextchangingcolour}%
```

```
\xdef\themarkchangingcolour{green}%
\colorlet{markchangingcolour}{\themarkchangingcolour}%
```

and two commands for the text, for example:

```
\DeclareRobustCommand{\thethumbchangingtextE}{\Huge{\textbf{E}}}
\DeclareRobustCommand{\thethumbchangingtexte}{\Huge{\textbf{e}}}
```

```
\gdef\thumbchangingtext{\thethumbchangingtexte}
```

Now a thumb mark added with `\addthumb{Name}{\protect\thumbchangingtext}{textchangingcolour}{markchangingcolour}` appears as red text “E” on green background, but really it is not red but `textchangingcolour` (which was defined as red) and not green but `markchangingcolour` (which was defined as green) and not “E” but `\thumbchangingtext`, which currently just happens (well, on purpose) to be “E”.

Some pages(s) later:

```
\xdef\thetextchangingcolour{blue}%
\colorlet{textchangingcolour}{\thetextchangingcolour}%

\xdef\themarkchangingcolour{yellow}%
\colorlet{markchangingcolour}{\themarkchangingcolour}%

\gdef\thumbchangingtext{\thethumbchangingtexte}%
```

Here the thumb mark still uses `textchangingcolour`, `markchangingcolour`, and `\thumbchangingtext`, but instead of red, green, and “E” those have been redefined to blue, yellow, and “e”. Instead of `\thumbchangingtext` also some variable like `\thepage` can be used. For the thumb marks overview page(s) it must be decided which colours and text to use and the according definitions have to be made before that page/those pages! Otherwise inconsistencies or even “undefined”-errors would result. (This feature was requested by SU MEI GOH.)

2.5 crop

crop To make the thumb marks “bleed ” (i.e. really appear at the edge), they must really extend to the edge of the paper. To accomplish this, either a really-to-the-edge-printer is needed or after printing cutting the paper right through a part of the thumb marks. (Printing houses use paper, which is larger than the desired format, and afterwards cut it to format.) If you do not want to be left with a smaller paper format, you can start with a larger physical page (without changing the page layout!). The **crop** package is very useful for this. For testing that package, you can use A4 paper layout and print on A3 paper; for real production probably “frame ” would be removed from the crop options:

```
\usepackage[cross,cam,frame,width=297truemm,height=420truemm,center,axes]{crop}[2017/11/19]% v1.10 Crop marks (MF)
```

In contrast to the “normal ” example the offsets must be regarded for use with the crop package, i.e. options `ignorehoffset=false` and `ignorevoffset=false` should be given to the **thumbs** package. The example file has been prepared accordingly but **crop** and the options have been commented out.

3 Alternatives

- chapterthumb, 2005/03/10, v0.1, by MARKUS KOHM, available at <https://mirror.ctan.org/info/examples/KOMA-Script-3/Anhang-B/source/chapterthumb.sty>; unfortunately without documentation, which is probably available in the book:
KOHM, M., & MORAWSKI, J.-U. (2012): KOMA-Script – Die Anleitung. Eine Sammlung von Klassen und Paketen für L^AT_EX2e, 4., überarbeitete und erweiterte Auflage, Lehmanns, Berlin, ISBN: 978-3-86541-459-5, <https://www.lehmanns.de/shop/mathematik-informatik/22551854-9783865414595-koma-script-die-anleitung>; in German.
- eso-pic: While version v2.0c 2010/10/06 had issues, v3.0c 2023-05-03 might work. It is available at <https://ctan.org/pkg/eso-pic>.
- fancytabs is available at <https://ctan.org/pkg/fancytabs>; does requires TikZ from the pgf bundle.
- thumb, 2001, without file version, by INGO KLÖCKEL, was available at <ftp://ftp.dante.de/pub/tex/info/examples/ltt/thumb.sty>, unfortunately without documentation, which is probably available in the book:
KLÖCKEL, I. (2001): L^AT_EX2e. Tips und Tricks, Dpunkt.Verlag GmbH, ISBN: 978-3-93258-837-2; in German.
- thumb (a completely different one), 1997/12/24, v1.0, by CHRISTIAN HOLM, available at <https://ctan.org/pkg/thumb>.
- thumbindex, 2009/12/13, without file version, by HISASHI MORITA, available at <https://hisashim.org/2009/12/13/thumbindex.html>.
- Thumb-indexes, from the fancyhdr package, available as source code in the documentation of the fancyhdr package, <https://ctan.org/pkg/fancyhdr>.
- thumbpdf, 2018-09-07, v3.17, by HEIKO OBERDIEK, is for creating thumbnails in a pdf document, not thumb marks (and therefore *no* alternative); available at <https://ctan.org/pkg/thumbpdf>.
- thumby, 2010/01/14, v0.1, by SERGEY GOLDGABER, “is designed to work with the memoir class, and also requires PerlT_EX and tikz” (<https://ctan.org/pkg/thumby>), available at <https://ctan.org/pkg/thumby>.

Newer versions might be available (and better suited). You programmed or found another alternative, which is available at [CTAN.org](https://ctan.org)? OK, send an e-mail to me with the name, location at [CTAN.org](https://ctan.org), and a short notice, and I will probably include it in the list above.

4 Example

```
1 \example
2 \documentclass[a4paper,twoside,british]{article}[2025/01/22]% v1.4n Standard LaTeX document class
3 \usepackage{lipsum}[2021-09-20]% v2.7 150 paragraphs of Lorem Ipsum dummy text
4 \usepackage{eurosym}[1998/08/06]% v1.1 European currency symbol ''Euro''
5 \usepackage[extension=pdf,%
6 pdfpagelayout=TwoPageRight,pdfpagemode=UseThumbs,%
7 plainpages=false,pdfpagelabels=true,%
8 hyperindex=false,%
9 pdflang={en},%
10 pdftitle={thumbs package example},%
11 pdfauthor={H.-Martin Muench},%
12 pdfsubject={Example for the thumbs package},%
13 pdfkeywords={LaTeX, thumbs, thumb marks},%
14 pdfview=Fit,pdfstartview=Fit,%
15 linktoc=all]{hyperref}[2025-07-12]% v7.01o Hypertext links for LaTeX
16 \usepackage[a4paper]{geometry}[2020/01/02]% v5.9 Page Geometry
17 % % For testing with package crop,
18 % % you can use a4 paper layout and print on a3 paper;
19 % % for real production probably "frame" would be removed from the crop options:
20 % \usepackage[cross,cam,frame,width=297truemm,height=420truemm,center,axes]{crop}[2017/11/19]% v1.10 Crop marks (MF)
21 \IfPackageLoadedTF{crop}{%
22   % In contrast to the "normal" example the offsets must be regarded for use with the crop package:
23   \PassOptionsToPackage{ignorehoffset=false,ignorevoffset=false}{thumbs}% crop
24 }{\PassOptionsToPackage{ignorehoffset=true,ignorevoffset=true}{thumbs}% no crop
25 }
26 \usepackage[linefill=dots,thumbblink=rule,minheight={47pt},height={auto},width={auto},%
27             distance={2mm},topthumbmargin={auto},bottomthumbmargin={auto},%
28             eventxtindent={5pt},oddtxtexdent={5pt},%
29             evenmarkindent={0pt},oddmarkexdent={0pt},evenprintvoffset={0pt},%
30             leftindextruleplus={1em},%
31             % unused options: frame, frameinnercolor
32             txtcentered=false,%
33             nopantomsection=false,plainthumbsoverview=false,%
34             verbose=true,final=true, hidethumbs=false,%
35             % unused, obsolete options:
36             % pagecolor: instead the pagecolor package is used.
37             % evenindent: was replaced by eventxtindent.
38             % oddexdent: was replaced by oddtxtexdent.
39             ]{thumbs}[2025-12-04]% v1.1c Thumb marks and overview page(s) (HMM)
40 \nopagecolor% use \pagecolor{white} if \nopagecolor does not work
41 \IfPackageLoadedF{hyperref}{\usepackage{url}[2013/09/16]% v3.4 Verb mode for urls etc.
42 }
43
```

```

44 \DeclareMathAlphabet{\mathup}{OT1}{\familydefault}{m}{n}
45 \DeclareRobustCommand{\unit}[1]{\ensuremath{\mathord{\thinspace\mathup{#1}}}}
46
47 \xdef\thetextchangingcolour{red}
48 \colorlet{textchangingcolour}{\thetextchangingcolour}
49
50 \xdef\themarkchangingcolour{green}
51 \colorlet{markchangingcolour}{\themarkchangingcolour}
52
53 \DeclareRobustCommand{\thethumbchangingtextE}{\Huge{\textbf{E}}}
54 \DeclareRobustCommand{\thethumbchangingtexte}{\Huge{\textbf{e}}}
55 \gdef\thumbchangingtext{\thethumbchangingtextE}
56
57 \listfiles
58 \begin{document}
59 \pagenumbering{arabic}
60 \label{FirstPage}
61 \section*{Example for thumbs}
62 \addcontentsline{toc}{section}{Example for thumbs}
63 \markboth{Example for thumbs}{Example for thumbs}
64
65 This example demonstrates the most common uses of package \textsf{thumbs}, v1.1c as of 2025-12-04.
66 The used options were\newline
67 \texttt{linefill=dots}, \texttt{thumblink=rule}, \texttt{minheight=\{47pt\}},
68 \texttt{height=auto}, \texttt{width={auto}}, \newline
69 \texttt{distance=\{2mm\}}, \texttt{topthumbmargin=\{auto\}}, \texttt{bottomthumbmargin=\{auto\}}, \newline
70 \texttt{eventxtindent=\{5pt\}}, \texttt{oddtxtexdent=\{5pt\}},
71 \texttt{evenmarkindent=\{0pt\}}, \texttt{oddmarkexdent=\{0pt\}}, \newline
72 \texttt{evenprintvoffset=\{0pt\}},
73 \texttt{leftindexruleplus=\{1em\}},
74 \texttt{txtcentered=false}, \newline
75 \texttt{nophantomsection=false},
76 \texttt{plainthumbsoverview=false},
77 \texttt{verbose=true}, \texttt{final=true}, and \newline
78 \texttt{hidethumbs=false}. \newline
79
80 These are the default options, except
81 \texttt{leftindexruleplus=\{1em\}} (default: \texttt{0pt}) and \newline
82 \texttt{verbose=true}. \newline
83
84 If package \textsf{crop} was loaded, options
85 \texttt{ignorehoffset=true} and \texttt{ignorevoffset=true} were passed to the \textsf{thumbs} package,
86 otherwise \texttt{ignorehoffset=false} and \texttt{ignorevoffset=false}. \newline
87
88 Options \texttt{frame} and \texttt{frameinnercolor} were not used. \newline
89

```

90 The obsolete options `\texttt{pagecolor}` (instead the `\texttt{pagecolor}` package is used),
91 `\texttt{evenindent}` (was replaced by `\texttt{eventxtindent}`), and
92 `\texttt{odddexdent}` (was replaced by `\texttt{oddtxtexdent}`) were not used. `\newline`
93
94 For more details please see the documentation!`\bigskip`
95
96 `\textbf{Hyperlinks or not:}` If the `\textsf{hyperref}` package is loaded,
97 the references in the overview page for the thumb marks are also hyperlinked
98 (except when option `\texttt{thumblink=none}` is used).`\bigskip`
99
100 `\noindent\textbf{For testing purpose pages \pageref{greenpage}f. have been completely coloured!}``\newline`
101 `\textbf{Better exclude those two pages from printing\ldots}``\bigskip`
102
103 Some thumb mark texts are too large for the thumb mark by intention
104 (especially when the paper size and therefore also the thumb mark size
105 is decreased). When option `\texttt{width=\{autoauto\}}` would be used,
106 the thumb mark width would be automatically increased.
107 Please see page`\pageref{HugeText}` for details!`\bigskip`
108
109 For printing this example to another format of paper (e.\,g.`\sim A4`) it is necessary to add the according
110 option (e.\,g.`\verb|a4paper|`) to the document class and recompile it! (In that case the
111 thumb marks column change will occur at another point, of course.)
112 With paper format equal to document format the document can be printed without adapting the size,
113 like e.\,g.`\textquotedblleft shrink to page\textquotedblright` . That would add a white border around
114 the document and by moving the thumb marks from the edge of the paper they no longer appear
115 at the side of the stack of paper. It is also necessary to use a printer capable of printing up to the
116 border of the sheet of paper. Alternatively it is possible after the printing to cut the paper to the
117 right size. While performing this manually is probably quite cumbersome, printing houses use paper,
118 which is slightly larger than the desired format, and afterwards cut it to format.
119 `\newpage`
120
121 `\addtitlethumb{Frontmatter}{0}{white}{gray}{FirstPage}`
122
123 At the first page no thumb mark was used, but we want to begin with thumb marks
124 at the first page, therefore a
125 `\begin{verbatim}`
126 `\addtitlethumb{Frontmatter}{0}{white}{gray}{FirstPage}`
127 `\end{verbatim}`
128 was used at the beginning of this page. This does not place a thumb mark at that page,
129 but the `pagenumber` and `link{-}target` in the Table of Thumbs point to the first page.
130 The label `\verb|FirstPage|` needs to be placed manually on the first page, of course!
131 If manually no label can be placed on the first page, the label `\texttt{pagesLTS.0}`
132 from the `\textsf{pageslts}` package (needs to be loaded explicitly!) can be used.
133 `\newpage`
134 `\tableofcontents`
135 `\newpage`


```

136
137 To include an overview page for the thumb marks,
138 \begin{verbatim}
139 \addthumbsoverviewtocontents{section}{Thumb marks overview}%
140 \thumbsoverview{Table of Thumbs}%
141 \end{verbatim}
142 is used, where \verb|\addthumbsoverviewtocontents| adds the thumb marks overview page to the table of contents.
143 (\textquotedblleft Edge index\textquotedblright{} would be the correct/{formal term, see the Introduction in the manual.)
144 \smallskip
145
146 Generally it is desirable to have a hyperlink from the thumbs overview page to lead to the thumb mark
147 and not to some earlier place. Therefore automatically a~\verb|\phantomsection| is placed before each thumb mark.
148 But for example when using the thumb mark after a~\verb|\chapter{...}| command, it is probably nicer to have
149 the link point at the top of that chapter's title (instead of the line below it). The automatic placing of the
150 \verb|\phantomsection| can be disabled either globally by using option \texttt{nophantomsection},
151 or locally for the next thumb mark by the command \verb|\thumbsnophantom|. (When disabled globally,
152 still manual use of \verb|\phantomsection| is possible.)
153
154 \addthumbsoverviewtocontents{section}{Thumb marks overview}%
155 \thumbsoverview{Table of Thumbs}%
156
157 \noindent Those were the overview pages for the thumb marks.
158 \newpage
159
160 \section{The first section}
161 \addthumb{First section}{%
162 \space\Huge{\textbf{$1\textsuperscript{st}$}}}{yellow}{green}
163
164 \begin{verbatim}
165 \addthumb{First section}{%
166 \space\Huge{\textbf{$1\textsuperscript{st}$}}}{yellow}{green}
167 \end{verbatim}
168
169 A thumb mark is added for this section. The parameters are: title for the thumb mark,
170 the text to be displayed in the thumb mark (choose your own format),
171 the colour of the text in the thumb mark,
172 and the background colour of the thumb mark (parameters in this order).\newline
173
174 Now for some pages of \textquotedblleft content\textquotedblright\ldots
175
176 \newpage
177 \lipsum[1]
178 \newpage
179 \lipsum[1]
180 \newpage
181 \lipsum[1]

```

```

182 \newpage
183
184 \section{The second section}
185 \addthumb{Second section}{\Huge{\textbf{\arabic{section}}}}{green}{yellow}
186
187 For this section, the text to be displayed in the thumb mark was set to
188 \begin{verbatim}
189 \Huge{\textbf{\arabic{section}}}
190 \end{verbatim}
191 i.\,e. the number of the section will be displayed (huge & bold).\newline
192
193 Let us change the thumb mark on a page with an even number:
194 \newpage
195
196 \section{The third section}
197 \addthumb{Third section}{\Huge{\textbf{\arabic{section}}}}{blue}{red}
198
199 No problem!
200
201 And you do not need to have a section to add a thumb:
202 \newpage
203
204 \addthumb{Still third section}{\Huge{\textbf{\arabic{section}b}}}{red}{blue}
205
206 This is still the third section, but there is a new thumb mark.
207
208 On the other hand, you can even get rid of the thumb marks for some page(s):
209 \newpage
210
211 \stopthumb
212
213 \noindent The command
214 \begin{verbatim}
215 \stopthumb
216 \end{verbatim}
217 was used here. Until another \verb|\addthumb| (with parameters) or
218 \begin{verbatim}
219 \continuethumb
220 \end{verbatim}
221 is used, there will be no more thumb marks.
222 \newpage
223 Still no thumb marks.\newpage
224 Still no thumb marks.\newpage
225 Still no thumb marks.\newpage
226

```

227 \continuethumb
 228
 229 Thumb mark continued (unchanged).\newpage
 230 Thumb mark continued (unchanged).\newpage
 231
 232 Time for another thumb,
 233
 234 \addthumb{Another heading}{Small text}{white}{black}
 235
 236 and another.\bigskip
 237
 238 \addthumb{Huge Text paragraph}{\Huge{Huge\newline Text}}{yellow}{green}
 239
 240 \textquotedblleft {\Huge{Huge Text}}\textquotedblright\ is too wide for the thumb mark. When option
 241 \texttt{width=\{autoauto\}} would be used, the thumb mark width would be automatically increased.
 242 Now the text is either split over two lines (try \verb|Huge\newline Text| for another format)
 243 or (in case \verb|Huge~Text| is used) is written over the border of the thumb mark. When the text is
 244 too wide for the thumb mark and cannot be split, \LaTeX{} might nevertheless place the text into the
 245 next line. By this the text is placed too low. Adding a
 246 \hbox{\verb|\protect\vspace*{-| some length \verb|}|} to the text could help, for example\newline
 247 \verb|\addthumb{Huge Text}{\protect\vspace*{-3pt}\Huge{Huge~Text}}...|. \label{HugeText}\bigskip
 248
 249 \addthumb{Huge Text}{\Huge{Huge~Text}}{red}{blue}
 250 \addthumb{Huge Bold Text}{\Huge{\textbf{HBT}}}{black}{yellow}
 251
 252 \noindent When there is more than one thumb mark at one page, this is also no problem.\newpage
 253 Some text\newpage
 254 Some text\newpage
 255 Some text\newpage
 256
 257 \section{xcolor}
 258 \addthumb{xcolor}{\Huge{\textbf{xcolor}}}{magenta}{cyan}
 259
 260 It is probably a good idea to have a look at the \textsf{xcolor} package and use other colours than used
 261 in this example.\newline
 262 (About automatically increasing the thumb mark width to the thumb mark text width please see the note
 263 at page~\pageref{HugeText}.)
 264 \newpage
 265
 266 \addthumb{A mark}{\Huge{\textbf{A}}}{lime}{darkgray}
 267
 268 I just need to add further thumb marks to get them reaching the bottom of the page.\newline
 269 Generally the vertical size of the thumb marks is set to the value given in the height option.
 270 If it is \texttt{auto}, the size of the thumb marks is decreased, so that they fit all on one page.
 271 But when they get smaller than \texttt{minheight}, instead of decreasing their size further,
 272 a~new thumbs column is started (which will happen here).

```

273 \newpage
274
275 \addthumb{B mark}{\Huge{\textbf{B}}}{brown}{pink}
276
277 Another thumb mark.\newpage
278
279 \addthumb{C mark}{\Huge{\textbf{C}}}{brown}{pink}
280
281 There! A new thumb column was started automatically!
282
283 On the one hand you can, of course, keep the colour for more than one thumb mark.
284 On the other hand you can change the colour of an existing thumb mark,
285 shown at page~\pageref{E mark}f.\newpage
286
287 \addthumb{$1/1.\,955\,83$, EUR}{\Huge{\textbf{D}}}{orange}{violet}
288
289 \noindent I am just adding further thumb marks.
290
291 \noindent If you are curious why the thumb mark between
292 \textquotedblleft C mark\textquotedblright\ and \textquotedblleft E mark\textquotedblright\ has
293 not been named \textquotedblleft D mark\textquotedblright\ but
294 \textquotedblleft $1/1.\,955\,83$, EUR\textquotedblright\ :
295
296 $1\unit{DM}=1\unit{D\ Mark}=1\unit{Deutsche\ Mark}$%
297 =\frac{1}{1.\,955\,83}\,$\euro$,=1/1.\,955\,83\unit{Euro}=1/1.\,955\,83\unit{EUR}$.
298 \newpage
299 Just a page.
300 \newpage
301
302 \xdef\thetextchangingcolour{red}%
303 \colorlet{textchangingcolour}{\thetextchangingcolour}%
304
305 \xdef\themarkchangingcolour{green}%
306 \colorlet{markchangingcolour}{\themarkchangingcolour}%
307
308 %% In the preamble:
309 %%\DeclareRobustCommand{\thethumbchangingtextE}{\Huge{\textbf{E}}}
310 %%\DeclareRobustCommand{\thethumbchangingtexte}{\Huge{\textbf{e}}}
311 %%\gdef\thumbchangingtext{\thethumbchangingtextE}
312
313 \gdef\thumbchangingtext{\thethumbchangingtextE}%
314
315 \addthumb{E mark}{\protect\thumbchangingtext}{textchangingcolour}{markchangingcolour}
316 \label{E mark}
317

```

```

318 As announced above, it is not only possible to keep the colour for more than one thumb mark,
319 but also to change the colour(s) and the text of an existing thumb mark. Here a thumb mark added with
320 \begin{verbatim}
321 \addthumb{Name}{\protect\thumbchangingtext}{textchangingcolour}{%
322 markchangingcolour}
323 \end{verbatim}
324 appears as red text \textquotedblleft E\textquotedblright{} on green background,
325 but really it is not \texttt{red} but \texttt{textchangingcolour} (which was defined as \texttt{red})
326 and not \texttt{green} but\newline
327 \texttt{markchangingcolour} (which was defined as \texttt{green}). Also the text of a thumb mark
328 can be changed. Here \verb|thumbchangingtext| was used as text, which was defined as
329 \verb|thethumbchangingtextE|, which was predefined in the preamble:
330 \begin{verbatim}
331 \DeclareRobustCommand{\thethumbchangingtextE}{\Huge{\textbf{E}}}
332 \end{verbatim}
333 \newpage
334
335 \noindent Some pages(s) later:
336
337 \begin{verbatim}
338 \xdef\thetextchangingcolour{blue}%
339 \colorlet{textchangingcolour}{\thetextchangingcolour}%
340
341 \xdef\themarkchangingcolour{yellow}%
342 \colorlet{markchangingcolour}{\themarkchangingcolour}%
343
344 \gdef\thumbchangingtext{\thethumbchangingtexte}%
345 \end{verbatim}
346
347 \xdef\thetextchangingcolour{blue}%
348 \colorlet{textchangingcolour}{\thetextchangingcolour}%
349
350 \xdef\themarkchangingcolour{yellow}%
351 \colorlet{markchangingcolour}{\themarkchangingcolour}%
352
353 \gdef\thumbchangingtext{\thethumbchangingtexte}%
354
355 And here the thumb mark still uses \texttt{textchangingcolour} and\newline
356 \texttt{markchangingcolour}, but instead of \texttt{red} and \texttt{green}
357 those have been redefined to \texttt{blue} and \texttt{yellow}.
358 \verb|thumbchangingtext| was still used as text, but redefined as \verb|thethumbchangingtexte|,
359 which was predefined in the preamble:
360 \begin{verbatim}
361 \DeclareRobustCommand{\thethumbchangingtexte}{\Huge{\textbf{e}}}
362 \end{verbatim}

```

```

363 Instead of \verb|\thumbchangingtext| also some variable like \verb|\thepage| can be used.\newline
364 For the thumb marks overview page(s) it must be decided which colour(s) and text
365 to use and the according definitions have to be made before that page{}/those pages!
366 Otherwise inconsistencies or even \textquotedblleft\texttt{undefined}\textquotedblright{-}errors
367 would result.
368 \newpage
369 (This page was intentionally left blank.)
370 \newpage
371
372 To prevent inconsistencies between the different thumb mark overviews,
373 we redefine \texttt{textchangingcolour} to \texttt{red},
374 \texttt{markchangingcolour} to \texttt{green}, and
375 \verb|\thumbchangingtext| to \verb|\thethumbchangingtextE| again here.
376
377 \xdef\thetextchangingcolour{red}%
378 \colorlet{textchangingcolour}{\thetextchangingcolour}%
379
380 \xdef\themarkchangingcolour{green}%
381 \colorlet{markchangingcolour}{\themarkchangingcolour}%
382
383 \gdef\thumbchangingtext{\thethumbchangingtextE}%
384
385 \newpage
386
387 \makeatletter%
388 \ifx\thumbs@frame\thumbs@empty\relax%
389   \gdef\thumbs@frame{2pt}%
390   \gdef\th@mbs@fr@meinnercolor{\thepagecolor}% could also be another colour
391   \gdef\thumbs@checkforexample{0}%
392 \else% somebody changed the example to use the frame option:
393   \gdef\thumbs@checkforexample{1}%
394   \PackageInfo{thumbs}{The frame option is already used,\MessageBreak%
395                                   not changing here anything!}%
396 \fi%
397 \makeatother%
398
399 \textsc{Bjorn Victor} suggested to use thumb marks consisting only of frames
400 instead of filled rectangles. Options \texttt{frame} and \texttt{frameinnercolor} were introduced
401 to accomplish this. While these options have not been used in this example, it is possible to trick
402 \LaTeX{} into believing that they had been used. (Do not use this for a regular document!)
403 This is just for demonstrating how a thumb mark consisting just of a frame with
404  $\$2\text{unit}\{\text{pt}\}$  thick lines would look like\newpage
405 \noindent on left and right pages.\newpage
406
407 Now let us restore the filled thumb marks again
408

```

```

409 \makeatletter%
410 \ifx\thumbs@checkforexample\thumbs@zero\relax%
411   \gdef\thumbs@frame{\empty}%
412   \gdef\th@mb@fr@meinnercolor{\thepagecolor}%
413 %\else Somebody changed the example to use the frame option!
414 \fi%
415 \makeatother%
416
417 and then have a look at \verb|\thumbsoverviewverso|:
418
419 \addthumbsoverviewtocontents{section}{Table of Thumbs, verso mode}%
420 \thumbsoverviewverso{Table of Thumbs, verso mode}
421
422 \newpage
423
424 And, of course, also at \verb|\thumbsoverviewdouble|:
425
426 \addthumbsoverviewtocontents{section}{Table of Thumbs, double mode}%
427 \thumbsoverviewdouble{Table of Thumbs, double mode}
428
429 \newpage
430
431 \addthumb{F mark}{\Huge{\textbf{F}}}{lightgray}{black}
432
433 I am just adding further thumb marks.
434 \newpage
435
436 \addthumb{G mark}{\Huge{\textbf{G}}}{magenta}{black}
437
438 Some text.
439
440 \newpage
441 \thumbnewcolumn
442 \addthumb{New thumb marks column}{\Huge{\textit{NC}}}{magenta}{black}
443
444 There! A new thumb column was started manually!
445
446 \newpage
447 Some text.
448 \newpage
449
450 \addthumb{H mark}{\Huge{\textbf{H}}}{orange}{violet}
451
452 I just added another thumb mark.
453 \newpage
454 The following two pages are completely coloured in green.

```

```

455 \newpage
456 \pagecolor{green}
457
458 \IfPackageLoadedT{hyperref}{\phantomsection}
459 \label{greenpage}
460
461 Some faulty, outdated version of a pdf-viewer sometimes (for the same document!)
462 added a white line at the bottom and right side of the document when presenting it. This did
463 not change the printed version. To test for this problem, this doublepage has been completely coloured.
464 (Probably better exclude these two pages from printing!)\newline
465
466 \textsc{Heiko Oberdiek} wrote at Tue, 26 Apr 2011 14:13:29 +0200 in the \newline
467 comp.text.tex newsgroup (see e.\,g.\newline
468 \url{https://groups.google.com/g/de.comp.text.tex/c/4GacL6qlTZ8/m/NzccDqakrrMJ}): \newline
469 \textquotedblleft Der Ursprung ist 0 0, da gibt es nicht viel zu runden; bei den anderen
470 Seiten werden pt als bp in die PDF-Datei geschrieben, d.h.~der Balken ist um 72.27/72 zu
471 gro\ss{} , das sollte auch Rundungsfehler abdecken.\textquotedblright \newline
472
473 (The origin is 0 0, there is not much to be rounded; for the other sides the $\unit{pt}$
474 are written as $\unit{bp}$ into the pdf-file, i.\,e.~the rule is too large by $72.27/72$,
475 which should cover also rounding errors.) \newline
476
477 The thumb marks are also too wide -- on purpose! This has been done to assure,
478 that they cover the page up to its (paper) border, therefore they are placed
479 a little bit over the paper margin. \newline
480
481 Now I red somewhere in the net (should have remembered to note the url),
482 that white margins are presented, whenever there is some object outside of the page.
483 Thus, it is a feature, not a bug?!
484 What I do not understand: The same document sometimes is presented
485 with white lines and sometimes without (same viewer, same PC). \newline
486 But at least it does not influence the printed version.
487 \newpage
488 Another green page.
489 \newpage
490 \pagecolor{white}
491
492 It is possible to use the Table of Thumbs more than once (for example at the beginning and
493 at the end of the document) and to refer to them via e.\,g.~\verb|\pageref{TableOfThumbs1}|, \linebreak
494 \verb|\pageref{TableOfThumbs2}|, \ldots , here: page~\pageref{TableOfThumbs1},
495 page~\pageref{TableOfThumbs2}, and via e.\,g.~\verb|\pageref{TableOfThumbs}|
496 it is referred to the last used Table of Thumbs (for compatibility with older package versions).
497 If there is only one Table of Thumbs, this one is also the last one, of course.
498 Here it is at page~\pageref{TableOfThumbs}. \newline
499

```



```
500 Now let us have a look at \verb|\thumbsoverviewback|:
501
502 \addthumbsoverviewtocontents{section}{Table of Thumbs, back mode}%
503 \thumbsoverviewback{Table of Thumbs, back mode}%
504 \newpage
505
506 Text can be placed after any of the Tables of Thumbs, of course.
507 \end{document}
508 \example
```

5 The implementation

We start off by checking that we are loading into L^AT_EX 2_ε and announcing the name and version of this package.

```
509 \*package)
510 \NeedsTeXFormat{LaTeX2e}[2025/06/01]
511 \@ifl@t@r\fmtversion{2025/06/01}{% would have understood
512 % \IfFormatAtLeastTF{2025-06-01}{<true code>}{<false code>}
513 }{\PackageError{thumbs}{Newer LaTeX format needed or older thumbs package}{%
514     Needed LaTeX format version: 2025-06-01 or newer.\MessageBreak%
515     Found\space\space LaTeX format version: \fmtversion.\MessageBreak%
516     Either update your TeX distribution\MessageBreak%
517     or use an archived version of thumbs\MessageBreak%
518     (see section History in the documentation).}
519 }
520 \ProvidesPackage{thumbs}[2025-12-04 v1.1c Thumb marks and overview page(s) (HMM)]
521
```

A short description of the thumbs package:

```
522 %% This package allows to create a customizable thumb index (edge index),
523 %% providing a quick and easy reference method for large documents,
524 %% as well as one or several overview page(s).
525
```

Several packages are needed (see subsection 6.1):

```
526 \RequirePackage{xcolor}[2024/09/29]%      v3.02 LaTeX color extensions (UK)
527 \RequirePackage{picture}[2020-04-22]%      v1.6  Dimens for picture macros (HO)
528 \RequirePackage{alphalph}[2019/12/09]%     v2.6  Convert numbers to letters (HO)
529 \RequirePackage{rerunfilecheck}[2025-06-21]% v1.11 Rerun checks for auxiliary files (HO)
530 \RequirePackage{pagecolor}[2025-01-28]%     v1.2d Provides thepagecolor (HMM)
531 \RequirePackage{undolabl}[2025-01-28]%      v1.0o Overriding labels (HMM)
```

The undolabl package is needed for `\overridelabel`.

The options are introduced:

```
532
533 \RequirePackage{kvoptions}[2022-06-15]%      v3.15 Key value format for package options (HO)
534 \SetupKeyvalOptions{family=thumbs,prefix=thumbs@}
535 \DeclareStringOption{linefill}[dots]% \thumbs@linefill
536 \DeclareStringOption[rule]{thumbblink}[rule]
537 \DeclareStringOption[47pt]{minheight}[47pt]
538 \DeclareStringOption{height}[auto]
539 \DeclareStringOption{width}[auto]
540 \DeclareStringOption{distance}[2mm]
541 \DeclareStringOption{topthumbmargin}[auto]
542 \DeclareStringOption{bottomthumbmargin}[auto]
543 \DeclareStringOption[5pt]{eventxtindent}[5pt]
544 \DeclareStringOption[5pt]{oddtxtindent}[5pt]
```

```

545 \DeclareStringOption[Opt]{evenmarkindent}[Opt]
546 \DeclareStringOption[Opt]{oddmarkexdent}[Opt]
547 \DeclareStringOption[Opt]{evenprintvoffset}[Opt]
548 \DeclareStringOption[Opt]{leftindexruleplus}[Opt]
549 \DeclareStringOption[\empty]{frame}[\empty]
550 \DeclareStringOption[\thepagecolor]{frameinnercolor}[\thepagecolor]
551 \DeclareBoolOption[false]{txtcentered}
552 \DeclareBoolOption[true]{ignorehoffset}
553 \DeclareBoolOption[true]{ignorevoffset}
554 \DeclareBoolOption{nophantomsection}% false by default, but true if used
555 \DeclareBoolOption{plainthumbsoverview}% false by default, but true if used
556 \DeclareBoolOption[true]{verbose}
557 \DeclareComplementaryOption{silent}{verbose}
558 \DeclareBoolOption{draft}
559 \DeclareComplementaryOption{final}{draft}
560 \DeclareBoolOption[false]{hidethumbs}
561 \DeclareBoolOption[false]{righttoleft}

```

obsolete options The options `pagecolor`, `evenindent`, and `odddexdent` are obsolete now, but for compatibility with older documents they are still provided at the time being (will be removed in some future version).

```

562 %% Obsolete options:
563 \DeclareStringOption{pagecolor}
564 \DeclareStringOption{evenindent}
565 \DeclareStringOption{odddexdent}
566
567 \ProcessKeyvalOptions*
568

```

For determining on which page we are, we use the counter `ThumbsPage`:

```

569 \newcounter{ThumbsPage}
570 \setcounter{ThumbsPage}{1}
571 \AddToHook{shipout/foreground}{\addtocounter{ThumbsPage}{1}}
572

```

The (background) page colour is set to `\thepagecolor` (from the `pagecolor` package), because the `xcolour` package needs a defined colour here (it can be changed later).

```

573 \ifx\thumbs@pagecolor\empty\relax
574   \pagecolor{\thepagecolor}
575 \else
576   \PackageError{thumbs}{Option pagecolor is obsolete}{%
577     Instead the pagecolor package is used.\MessageBreak%
578     Use \string\pagecolor{...}\space after \string\usepackage{...}{thumbs}\space and \MessageBreak%
579     before \string\begin{document}\space to define a background colour \MessageBreak%
580     of the pages.}
581   \pagecolor{\thumbs@pagecolor}
582 \fi

```

```

583
584 \ifx\thumbs@evenindent\empty\relax
585 \else
586   \PackageError{thumbs}{Option evenindent is obsolete}{%
587     Option "evenindent" was renamed to "eventxtindent",\MessageBreak%
588     the obsolete "evenindent" is no longer regarded.\MessageBreak%
589     Please change your document accordingly.}
590 \fi
591
592 \ifx\thumbs@odddexdent\empty\relax
593 \else
594   \PackageError{thumbs}{Option odddexdent is obsolete}{%
595     Option "odddexdent" was renamed to "oddtxtexdent",\MessageBreak%
596     the obsolete "odddexdent" is no longer regarded.\MessageBreak%
597     Please change your document accordingly.}
598 \fi
599

```

`ignorehoffset` Usually `\hoffset` and `\voffset` should be regarded, but moving the thumb marks away from the paper edge probably makes `ignorevoffset` them useless. Therefore `\hoffset` and `\voffset` are ignored by default, or when option `ignorehoffset` or `ignorehoffset=true` is used (and `ignorevoffset` or `ignorevoffset=true`, respectively). But in case that the user wants to print at one sort of paper but later trim it to another one, regarding the offsets would be necessary. This is the case especially when using the `crop` package. Therefore `ignorehoffset=false` and `ignorevoffset=false` can be used to regard these offsets. (Combinations `ignorehoffset=true`, `ignorevoffset=false` and `ignorehoffset=false`, `ignorevoffset=true` are also possible.)

```

600 \ifthumbs@ignorehoffset
601   \PackageInfo{thumbs}{%
602     Option ignorehoffset NOT =false:\MessageBreak%
603     hoffset will be ignored.\MessageBreak%
604     To make thumbs regard hoffset\MessageBreak%
605     (for example when using the crop package)\MessageBreak%
606     use option ignorehoffset=false\@gobble}
607   \gdef\th@bmshoffset{0sp}
608 \else
609   \PackageInfo{thumbs}{%
610     Option ignorehoffset=false:\MessageBreak%
611     hoffset will be regarded.\MessageBreak%
612     This might move the thumb marks\MessageBreak%
613     horizontally away from the physical paper edge\MessageBreak%
614     (which should be done e.g. when using the crop package)\@gobble}
615   \gdef\th@bmshoffset{\hoffset}
616 \fi
617

```

```

618 \ifthumbs@ignorevoffset
619   \PackageInfo{thumbs}{%
620     Option ignorevoffset NOT =false:\MessageBreak%
621     voffset will be ignored.\MessageBreak%
622     To make thumbs regard voffset\MessageBreak%
623     (for example when using the crop package)\MessageBreak%
624     use option ignorevoffset=false\@gobble}
625   \gdef\th@bmsvoffset{0sp}
626 \else
627   \PackageInfo{thumbs}{%
628     Option ignorevoffset=false:\MessageBreak%
629     voffset will be regarded.\MessageBreak%
630     This might move the thumb marks\MessageBreak%
631     vertically away from the physical paper edge\MessageBreak%
632     (which should be done e.g. when using the crop package)\@gobble}
633   \gdef\th@bmsvoffset{\voffset}
634 \fi
635

```

frameinnercolor \thumbs@empty is later needed for comparisons. – The **frameinnercolor** option gives the colour to fill the frame with, if the thumb marks are not to be drawn filled but only as frame. The “colour” is usually **\thepagecolor** or **white**, but flexibility is given to the user. The colour to be used is initialised as **\thepagecolor**, because nothing shall be drawn when no thumb mark is requested (but really an empty thumb mark is drawn, thus it must be made “invisible”).

```

636 \gdef\thumbs@empty{\empty}
637 \gdef\th@mbs@fr@meinnercolor{\thepagecolor}
638

```

linefill We process the **linefill** option value:

```

639 \ifx\thumbs@linefill\empty%
640   \gdef\th@mbs@linefill{\hspace*{\fill}}
641 \else
642   \def\th@mbstest{line}
643   \ifx\thumbs@linefill\th@mbstest%
644     \gdef\th@mbs@linefill{\hrulefill}
645   \else
646     \def\th@mbstest{dots}
647     \ifx\thumbs@linefill\th@mbstest%
648       \gdef\th@mbs@linefill{\dotfill}
649     \else
650       \PackageError{thumbs}{Option linefill with invalid value}{%
651         Option linefill has value "\thumbs@linefill ".\MessageBreak%
652         Valid values are "" (empty), "line", or "dots".\MessageBreak%
653         "" (empty) will be used now.}
654       \gdef\th@mbs@linefill{\hspace*{\fill}}
655     \fi
656 \fi

```

```
657 \fi
658
```

We introduce new dimensions for width, height, position of and vertical distance between the thumb marks and some helper dimensions.

```
659 \newdimen\th@mbwidthx
660
661 \newdimen\th@mbheighty% Thumb height y
662 \setlength{\th@mbheighty}{\z@}
663
664 \newdimen\th@mbposx
665 \newdimen\th@mbposy
666 \newdimen\th@mbposyA
667 \newdimen\th@mbposyB
668 \newdimen\th@mbposytop
669 \newdimen\th@mbposybottom
670 \newdimen\th@mbwidthxtoc
671 \newdimen\th@mbwidthtmp
672 \newdimen\th@mbposytcy
673 \newdimen\th@mbposytcyy
674 \newdimen\th@mbirulex
675 \newdimen\th@mbiruley
676
```

Horizontal indentation of thumb marks text on odd/even pages according to the chosen options:

```
677 \newdimen\th@mbHitO
678 \setlength{\th@mbHitO}{\thumbs@oddtxtexdent}
679 \newdimen\th@mbHitE
680 \setlength{\th@mbHitE}{\thumbs@eventxtindent}
681
```

Horizontal indentation of whole thumb marks on odd/even pages according to the chosen options:

```
682 \newdimen\th@mbHimO
683 \setlength{\th@mbHimO}{\thumbs@oddmarkexdent}
684 \newdimen\th@mbHimE
685 \setlength{\th@mbHimE}{\thumbs@evenmarkindent}
686
```

Vertical distance between thumb marks on odd/even pages according to the chosen option:

```
687 \newdimen\th@mbdistance
688 \ifx\thumbs@distance\empty%
689   \setlength{\th@mbdistance}{1mm}
690 \else
691   \setlength{\th@mbdistance}{\thumbs@distance}
692 \fi
693
```

Handling of option `leftindextruleplus`, see page 7:

```
694 \newdimen\th@mbslirplus
695 \ifx\thumbs@leftindextruleplus\empty%
696   \setlength{\th@mbslirplus}{\z@}
697 \else
698   \setlength{\th@mbslirplus}{\thumbs@leftindextruleplus}
699 \fi
700
```

Option `verbose` (or complementary option `silent`):

```
701 \ifthumbs@verbose\else
702   \PackageInfo{thumbs}{%
703     Option verbose=false (or silent=true) found:\MessageBreak%
704     You will lose some information in the log file\@gobble}
705 \fi
706
```

We create a new Box for the thumbs and make some global definitions.

```
707 \newbox\ThumbsBox
708
709 \gdef\th@mbs{0}
710 \gdef\th@mbsmax{0}
711 \gdef\th@umbsperspage{0}% will be set via .aux file
712 \gdef\th@umbsperspagecount{0}
713
714 \gdef\th@mbtitle{}
715 \gdef\th@mbtext{}
716 \gdef\th@mbtextcolour{\thepagecolor}
717 \gdef\th@mbackgroundcolour{\thepagecolor}
718 \gdef\th@mbcolumn{0}
719
720 \gdef\th@mbtextA{}
721 \gdef\th@mbtextcolourA{\thepagecolor}
722 \gdef\th@mbackgroundcolourA{\thepagecolor}
723
724 \gdef\th@mbprinting{1}
725 \gdef\th@mbtoprint{0}
726 \gdef\th@mbonpage{0}
727 \gdef\th@mbonpagemax{0}
728
729 \gdef\th@mbcolumnnew{0}
730
731 \gdef\th@mbs@toc@level{}
732 \gdef\th@mbs@toc@text{}
733
734 \gdef\th@mbmaxwidth{\z@}
```

```

735
736 \gdef\th@mb@titlelabel{}
737
738 \gdef\th@mbstable{0}% number of thumb marks overview tables (edge indexes)
739

```

For comparisons, zero, one, and two are defined (`\z@`, `\@one` and so on do not work for this):

```

740 \def\thumbs@zero{0}
741 \def\thumbs@one{1}
742 \def\thumbs@two{2}
743

```

`\th@mbpofffix` is short for “page number offset fix” (see page 70):

```

744 \xdef\th@mbpofffix{-1}% page number offset fix
745

```

If the `crop` package is used to print (with unchanged layout) on a larger format of paper, `crop` must be loaded before `thumbs`. (When testing, even the inverse order worked, but better not rely on it.)

```

746 \IfPackageLoadedTF{crop}{\gdef\th@mbcrop{1}}{\gdef\th@mbcrop{0}}
747 \AddToHook{enddocument/info}[kernel/warnings]{%
748   \IfPackageLoadedT{crop}{\ifx\th@mbcrop\thumbs@zero\relax%
749     \PackageError{thumbs}{Package crop loaded *after* package thumbs}{%
750       When package crop shall be used,\MessageBreak%
751       it must be loaded *before* package thumbs,\MessageBreak%
752       but it was loaded *afterwards*!}%
753   \fi}%
754 }
755

```

After issues with `\@tempcnta`, and because the ε -TeX extensions are available since 1999 and ε -TeX is included in all modern distributions, I decided to give two new counters to the `thumbs` package.

```

756 \newcounter{Th@mbTmpA}
757 \newcounter{Th@mbTmpB}
758

```

We define a new length `\th@mbcomprulewidth` and set it to the sum of `\th@mbwidthx` and `\th@mbruleoutside`.

```

759 \newdimen\th@mbcomprulewidth
760 \newdimen\th@mbruleoutside
761 \setlength{\th@mbruleoutside}{6cm}
762 \setlength{\th@mbcomprulewidth}{\dimexpr\th@mbwidthx+\th@mbruleoutside\relax}
763

```


It is checked whether writing to thumbs.tmb is allowed.

```
764 \if@files\else
765   \PackageWarningNoLine{thumbs}{No auxiliary files allowed!\MessageBreak%
766     It was not allowed to write to files.\MessageBreak%
767     A lot of packages do not work without access to files\MessageBreak%
768     like the .aux one. The thumbs package needs to write\MessageBreak%
769     to the \jobname.tmb file. To exit press\MessageBreak%
770     Ctrl+Z\MessageBreak%
771     .\MessageBreak}
772 \fi
773
```

`\th@mb@txtBox` `\th@mb@txtBox` writes its second argument (most likely `\th@mb@tmp@text`) in normal text size. Sometimes another text size could “leak” from the respective page, `\normalsize` prevents this. If another text size is wished for, it can always be changed inside `\th@mb@tmp@text`. The colour given in the first argument (most likely `\th@mb@tmp@textcolour`) is used and either `centered` (depending on the `txtcentered` option) or `\raggedleft` or `\raggedright` (depending on the third argument). The forth argument determines the width of the `\parbox`. Centering is a little bit difficult:

```
774 \newcommand{\th@mb@txtBox}[4]{%
775   \setlength{\th@mbwidthtmp}{#4}%
776   \ifthumbs@txtcentered%
777     \addtolength{\th@mbwidthtmp}{3pt}%
778     \ifodd\c@Th@mbTmpA\relax%
779       \hspace*{+\th@mbHit0}%
780     \else%
781       \if@twoside%
782         \hspace*{-\th@mbHitE}%
783       \else%
784         \hspace*{+\th@mbHit0}%
785       \fi%
786     \fi%
787 \fi%
788 \parbox[c][\th@mbheighty][c]{\th@mbwidthtmp}{%
789   \settowidth{\th@mbwidthtmp}{\normalsize{#2}}%
790   \addtolength{\th@mbwidthtmp}{-#4}%
791   \ifthumbs@txtcentered%
792     {\begingroup{\begin{center}}{\color{#1}\normalsize{#2}}\end{center}}\endgroup}%
793   \else%
```

```

794 \def\th@mbstest{#3}%
795 \def\th@mbstestb{r}%
796 \ifx\th@mbstest\th@mbstestb%
797 \ifdim\th@mbwidthtmp >0sp\relax\hspace*{-\th@mbwidthtmp}\fi%
798 {\raggedleft\leftskip 0sp minus \textwidth{\hfill\color{#1}\normalsize{#2}}}%
799 \else% \th@mbstest = 1
800 {\raggedright{\color{#1}\normalsize{\hspace*{1pt}\space{#2}}}}%
801 \fi%
802 \fi%
803 }%
804 }
805

```

`\setth@mbheight` In `\setth@mbheight` the height of a thumb mark (for automatic thumb heights) is computed as “((Thumbs extension) / (Number of Thumbs)) - (2 × distance between Thumbs)”.

```

806 \newcommand{\setth@mbheight}{%
807 \setlength{\th@mbheighty}{\z@}%
808 \addtolength{\th@mbheighty}{\headheight}%
809 \addtolength{\th@mbheighty}{\headsep}%
810 \addtolength{\th@mbheighty}{\textheight}%
811 \addtolength{\th@mbheighty}{\footskip}%
812 \setcounter{Th@mbTmpA}{\th@mbsmx}%
813 \ifnum\c@Th@mbTmpA>1\relax%
814 \divide\th@mbheighty\th@mbsmx%
815 \fi%
816 \addtolength{\th@mbheighty}{-\th@mbdistance}%
817 \addtolength{\th@mbheighty}{-\th@mbdistance}%
818 }
819

```

At the beginning of the document the hook `begindocument` is executed. `\th@bmshoffset` and `\th@bmsvoffset` are set again, because `\hoffset` and `\voffset` could have been changed.

```

820 \AddToHook{begindocument}[start]{%
821 \ifthumbs@ignorehoffset%
822 \gdef\th@bmshoffset{0sp}%
823 \else%
824 \gdef\th@bmshoffset{\hoffset}%
825 \fi%
826 \ifthumbs@ignorevoffset%
827 \gdef\th@bmsvoffset{0sp}%
828 \else%
829 \gdef\th@bmsvoffset{\voffset}%
830 \fi%
831 \xdef\th@mbpaperwidth{\the\paperwidth}%
832 \setlength{\@tempdima}{1pt}%

```

```

833 \ifdim \thumbs@minheight < \@tempdima% too small
834 \setlength{\thumbs@minheight}{1pt}%
835 \else%
836 \ifdim \thumbs@minheight = \@tempdima% small, but ok
837 \else%
838 \ifdim \thumbs@minheight > \@tempdima% ok
839 \else%
840 \PackageError{thumbs}{Option minheight has invalid value}{%
841 As value for option minheight please use\MessageBreak%
842 a number and a length unit (e.g. mm, cm, pt)\MessageBreak%
843 and no space between them\MessageBreak%
844 and include this value+unit combination in curly brackets\MessageBreak%
845 (please see the thumbs-example.tex file).\MessageBreak%
846 When pressing Return, minheight will now be set to 47pt.}%
847 \setlength{\thumbs@minheight}{47pt}%
848 \fi%
849 \fi%
850 \fi%
851 \setlength{\@tempdima}{\thumbs@minheight}%

```

Thumb height `\th@mbheighty` is treated. If the value is empty, it is set to `\@tempdima`, which was just defined to be 47 pt (by default), or to the value chosen by the user with package option `minheight={...}`:

```

852 \ifx\thumbs@height\empty%
853 \setlength{\th@mbheighty}{\@tempdima}%
854 \else%
855 \def\th@mbstest{auto}%
856 \ifx\thumbs@height\th@mbstest%

```

If it is not empty but `auto`(matic), the value is computed via `\setth@mbheight` (see above).

```

857 \setth@mbheight%

```

When the height is smaller than `\thumbs@minheight` (default: 47 pt), this is too small, and instead a new column/page of thumb marks is used.

```

858 \ifdim \th@mbheighty < \thumbs@minheight%
859 \PackageWarningNoLine{thumbs}{Thumbs not high enough:\MessageBreak%
860 Option height has value "auto". For \th@mbmax\space thumbs per page\MessageBreak%
861 this results in a thumb height of \the\th@mbheighty.\MessageBreak%
862 This is lower than the minimal thumb height, \thumbs@minheight,\MessageBreak%
863 therefore another thumbs column will be opened.\MessageBreak%
864 If you do not want this, choose a smaller value\MessageBreak%
865 for option "minheight"%
866 }
867 \setlength{\th@mbheighty}{\z@}%
868 \addtolength{\th@mbheighty}{\@tempdima}% = \thumbs@minheight
869 \fi%
870 \else%

```

When a value has been given for the thumb marks' height, this fixed value is used.

```

871 \ifthumbs@verbose%
872 \edef\thumbsinfo{\the\th@mbheighty}%
873 \PackageInfo{thumbs}{Now setting thumbs' height to \thumbsinfo}%
874 \fi%
875 \setlength{\th@mbheighty}{\thumbs@height}%
876 \fi%
877 \fi%

```

Read in the \jobname.tmb-file:

```

878 \newread\@instreamthumb%

```

Inform the users about the dimensions of the thumb marks (look in the log file):

```

879 \ifthumbs@verbose%
880 \message{^^J}%
881 \edef\thumbsinfo{\the\th@mbheighty}%
882 \PackageInfo{thumbs}{***** THUMB dimensions *****\@gobbletwo}%
883 \PackageInfo{thumbs}{The height of the thumb marks is \thumbsinfo\@gobble}%
884 \fi%

```

Setting the thumb mark width (\th@mbwidthx):

```

885 \ifthumbs@draft%
886 \setlength{\th@mbwidthx}{2pt}%
887 \else%
888 \setlength{\th@mbwidthx}{\paperwidth}%
889 \addtolength{\th@mbwidthx}{-\textwidth}%
890 \divide\th@mbwidthx by 4%
891 \setlength{\@tempdima}{0sp}%
892 \ifx\thumbs@width\empty%
893 \else%
894 \def\th@mbstest{auto}%
895 \ifx\thumbs@width\th@mbstest%
896 \else%
897 \def\th@mbstest{autoauto}%
898 \ifx\thumbs@width\th@mbstest%
899 \@ifundefined{th@mbmaxwidtha}{%
900 \if@files%
901 \gdef\th@mbmaxwidtha{0sp}%
902 \setlength{\th@mbwidthx}{\th@mbmaxwidtha}%
903 \AddToHook{enddocument/info}{kernel/warnings}{%
904 \PackageWarningNoLine{thumbs}{%
905 \string\th@mbmaxwidtha\space undefined.\MessageBreak%
906 Rerun to get the thumb marks width right%
907 }%
908 }%
909 \else%

```

```

910         \PackageError{thumbs}{You cannot use option autoauto without \jobname.aux file}{%
911             Recompilation should create the .aux file,\MessageBreak%
912             otherwise do not use the autoauto option.}%
913     \fi%
914 }{\%else
915     \setlength{\th@mbwidthx}{\th@mbmaxwidtha}%
916 }{\fi
917 \else%
918     \ifdim \thumbs@width > \@tempdima% OK
919     \setlength{\th@mbwidthx}{\thumbs@width}%
920 \else%
921     \PackageError{thumbs}{Thumbs not wide enough}{%
922         Option width has value "\thumbs@width".\MessageBreak%
923         This is not a valid dimension larger than zero.\MessageBreak%
924         Width will be set automatically.}%
925     \fi%
926 \fi%
927 \fi%
928 \fi%
929 \fi%
930 \ifthumbs@verbose%
931     \edef\thumbsinfo{\the\th@mbwidthx}%
932     \PackageInfo{thumbs}{The width of the thumb marks on the paper is \thumbsinfo\@gobble}%
933     \ifthumbs@draft%
934         \PackageInfo{thumbs}{because thumbs package is in draft mode\@gobble}%
935     \fi%
936 \fi%

```

Setting the position of the first/top thumb mark. Vertical (y) position is a little bit complicated, because option `\thumbs@topthumbmargin` must be handled:

```

937 % Thumb position x \th@mbposx
938 \setlength{\th@mbposx}{\paperwidth}%
939 \addtolength{\th@mbposx}{-\th@mbwidthx}%
940 \ifthumbs@ignorehoffset%
941     \addtolength{\th@mbposx}{-\hoffset}%
942 \fi%
943 \addtolength{\th@mbposx}{1pt}%
944 % Thumb position y \th@mbposy
945 \ifx\thumbs@topthumbmargin\empty%
946     \def\thumbs@topthumbmargin{auto}%
947 \fi%

```

```

948 \def\thumbstest{auto}%
949 \ifx\thumbs@topthumbmargin\thumbstest%
950   \setlength{\thumbposy}{1in}%
951   \addtolength{\thumbposy}{+\topmargin}%
952   \addtolength{\thumbposy}{-\th@bbsdistance}%
953   \addtolength{\thumbposy}{+\thumbheighty}%
954 \else%
955   \setlength{\@tempdima}{-1pt}%
956   \ifdim\thumbs@topthumbmargin > \@tempdima\relax%
957   \else%
958     \PackageWarning{thumbs}{Thumbs column starting too high.\MessageBreak%
959       Option topthumbmargin has value "\thumbs@topthumbmargin ".\MessageBreak%
960       topthumbmargin will be set to -1pt.\MessageBreak%
961     }%
962     \gdef\thumbs@topthumbmargin{-1pt}%
963   \fi%
964   \setlength{\thumbposy}{\thumbs@topthumbmargin}%
965   \addtolength{\thumbposy}{-\th@bbsdistance}%
966   \addtolength{\thumbposy}{+\thumbheighty}%
967 \fi%
968 \setlength{\thumbposytop}{\thumbposy}%
969 \ifthumbs@verbose%
970   \setlength{\@tempdimc}{\thumbposytop}%
971   \addtolength{\@tempdimc}{-\thumbheighty}%
972   \addtolength{\@tempdimc}{+\th@bbsdistance}%
973   \edef\thumbsinfo{\the\@tempdimc}%
974   \PackageInfo{thumbs}{The top thumb margin is \thumbsinfo\@gobble}%
975 \fi%

```

Setting the lowest position of a thumb mark, according to option \thumbs@bottomthumbmargin:

```

976 % Max. thumb position y \thumbposybottom
977 \ifx\thumbs@bottomthumbmargin\empty%
978   \gdef\thumbs@bottomthumbmargin{auto}%
979 \fi%
980 \def\thumbstest{auto}%
981 \ifx\thumbs@bottomthumbmargin\thumbstest%
982   \setlength{\thumbposybottom}{1in}%
983   \addtolength{\thumbposybottom}{+\th@bbsvoffset}%
984   \addtolength{\thumbposybottom}{+\topmargin}%
985   \addtolength{\thumbposybottom}{-\th@bbsdistance}%
986   \addtolength{\thumbposybottom}{+\thumbheighty}%
987   \addtolength{\thumbposybottom}{+\headheight}%
988   \addtolength{\thumbposybottom}{+\headsep}%
989   \addtolength{\thumbposybottom}{+\textheight}%
990   \addtolength{\thumbposybottom}{+\footskip}%
991   \addtolength{\thumbposybottom}{-\th@bbsdistance}%
992   \addtolength{\thumbposybottom}{-\thumbheighty}%

```

```

993 \IfPackageLoadedT{crop}{\addtolength{\th@mbposybottom}{-\th@bmsvoffset}}%
994 \else%
995 \setlength{\@tempdima}{\paperheight}%
996 \addtolength{\@tempdima}{-\th@thumbs@bottomthumbmargin}%
997 \addtolength{\@tempdima}{-\th@mbposytop}%
998 \addtolength{\@tempdima}{-\th@mbdistance}%
999 \addtolength{\@tempdima}{-\th@mbheighty}%
1000 \addtolength{\@tempdima}{-\th@mbdistance}%
1001 \IfPackageLoadedT{crop}{\addtolength{\@tempdima}{-\th@bmsvoffset}}%
1002 \ifdim \@tempdima > 0sp\relax%
1003 \else%
1004 \setlength{\@tempdima}{\paperheight}%
1005 \addtolength{\@tempdima}{-\th@mbposytop}%
1006 \addtolength{\@tempdima}{-\th@mbdistance}%
1007 \addtolength{\@tempdima}{-\th@mbheighty}%
1008 \addtolength{\@tempdima}{-\th@mbdistance}%
1009 \addtolength{\@tempdima}{-1pt}%
1010 \IfPackageLoadedT{crop}{\addtolength{\@tempdima}{-\th@bmsvoffset}}%
1011 \PackageWarning{thumbs}{Thumbs column ending too high.\MessageBreak%
1012 Option bottomthumbmargin has value "\thumbs@bottomthumbmargin ".\MessageBreak%
1013 bottomthumbmargin will be set to "\the\@tempdima".\MessageBreak%
1014 }%
1015 \xdef\thumbs@bottomthumbmargin{\the\@tempdima}%
1016 \fi%
1017 \setlength{\@tempdima}{\thumbs@bottomthumbmargin}%
1018 \setlength{\@tempdimc}{-1pt}%
1019 \ifdim \@tempdima < \@tempdimc%
1020 \PackageWarning{thumbs}{Thumbs column ending too low.\MessageBreak%
1021 Option bottomthumbmargin has value "\thumbs@bottomthumbmargin ".\MessageBreak%
1022 bottomthumbmargin will be set to -1pt.\MessageBreak%
1023 }%
1024 \gdef\thumbs@bottomthumbmargin{-1pt}%
1025 \fi%
1026 \setlength{\th@mbposybottom}{\paperheight}%
1027 \addtolength{\th@mbposybottom}{-\thumbs@bottomthumbmargin}%
1028 \fi%
1029 \ifthumbs@verbose%
1030 \setlength{\@tempdimc}{\paperheight}%
1031 \addtolength{\@tempdimc}{-\th@mbposybottom}%
1032 \edef\thumbsinfo{\the\@tempdimc}%
1033 \PackageInfo{thumbs}{The bottom thumb margin is \thumbsinfo\@gobble}%
1034 \PackageInfo{thumbs}{*****\@gobbletwo}%
1035 \message{^^J}%
1036 \fi%

```

`\th@mbposyA` is set to the top-most vertical thumb position (y). Because it will be increased (i.e. the thumb positions will move downwards on the page), `\th@mbsposytcyy` is used to remember this position unchanged.

```

1037 \addtolength{\th@mbposy}{-\th@mbheighty}% because it will be advanced also for the first thumb.
1038 \setlength{\th@mbposyA}{\th@mbposy}% \th@mbposyA will change.
1039 \setlength{\th@mbsposytcyy}{\th@mbposy}% \th@mbsposytcyy shall not be changed.
1040 }
1041

```

`\th@mb@dadvance` The internal command `\th@mb@dadvance` is used to advance the position of the current thumb by `\th@mbheighty` and `\th@mbsdistance`. If the resulting position of the thumb is lower than the `\th@mbposybottom` position (i.e. `\th@mbposy` *higher* than `\th@mbposybottom`), a new thumb column will be started by the next `\addthumb`, otherwise a blank thumb is created and `\th@mb@dadvance` is calling itself again. This loop continues until a new thumb column is ready to be started.

```

1042 \newcommand{\th@mb@dadvance}{%
1043 \addtolength{\th@mbposy}{+\th@mbheighty}%
1044 \addtolength{\th@mbposy}{+\th@mbsdistance}%
1045 \ifdim\th@mbposy>\th@mbposybottom\relax%
1046 \addtolength{\th@mbposy}{-\th@mbheighty}%
1047 \addtolength{\th@mbposy}{-\th@mbsdistance}%
1048 \else%
1049 \addtolength{\th@mbposy}{-\th@mbheighty}%
1050 \addtolength{\th@mbposy}{-\th@mbsdistance}%
1051 \thumborigaddthumb{}{}{\string\thepagecolor}{\string\thepagecolor}%
1052 \th@mb@dadvance%
1053 \fi%
1054 }
1055

```

`\thumbnewcolumn` With the command `\thumbnewcolumn` a new column can be started, even if the current one was not filled. This could be useful e.g. for a dictionary, which uses one column for translations from language A to language B, and the second column for translations from language B to language A. But in that case one probably should increase the size of the thumb marks, so that 26 thumb marks (in case of the Latin alphabet) fill one thumb column. Do not use `\thumbnewcolumn` on a page where `\addthumb` was already used, but use `\addthumb` immediately after `\thumbnewcolumn`.

```

1056 \newcommand{\thumbnewcolumn}{%
1057 \ifx\th@mbtoprint\thumbs@one\relax%
1058 \PackageError{thumbs}{\string\thumbnewcolumn\space after \string\addthumb }{%
1059 On page \thepage\space (approx.) \string\addthumb\space was used and *afterwards* %
1060 \string\thumbnewcolumn .\MessageBreak%
1061 When you want to use \string\thumbnewcolumn , do not use an \string\addthumb\space %
1062 on the same\MessageBreak%
1063 page before \string\thumbnewcolumn . Thus, either remove the \string\addthumb , %
1064 or use a\MessageBreak%
1065 \string\pagebreak , \string\newpage\space etc. before \string\thumbnewcolumn .\MessageBreak%
1066 (And remember to use an \string\addthumb\space*after* \string\thumbnewcolumn .)\MessageBreak%
1067 Your command \string\thumbnewcolumn\space will be ignored now.%
1068 }%

```



```

1069 \else%
1070 \PackageWarning{thumbs}{%
1071 Starting of another column requested by command\MessageBreak%
1072 \string\thumbnewcolumn.\space Only use this command directly\MessageBreak%
1073 before an \string\addthumb\space - did you?!\MessageBreak%
1074 Code}%
1075 \gdef\th@mbcolumnnew{1}%
1076 \th@mb@dvance%
1077 \gdef\th@mbprinting{0}%
1078 \gdef\th@mbcolumnnew{2}%
1079 \fi%
1080 }
1081

```

\addtitlethumb When a thumb mark shall not or cannot be placed on a page, e. g. at the title page or when using `\includepdf` from `pdfpages` package, but the reference in the thumb marks overview nevertheless shall name that page number and hyperlink to that page, `\addtitlethumb` can be used at the following page. It has five arguments. The arguments one to four are identical to the ones of `\addthumb` (see below), and the fifth argument consists of the label of the page, where the hyperlink at the thumb marks overview page shall link to. If manually no label can be placed on the first page, the label `pagesLTS.0` from the `pageslts` package (needs to be loaded explicitly!) can be used.

```

1082 \newcommand{\addtitlethumb}[5]{%
1083 \xdef\th@mb@titlelabel{#5}%
1084 \addthumb{#1}{#2}{#3}{#4}%
1085 \xdef\th@mb@titlelabel{}}%
1086 }
1087

```

\thumbsnophantom To locally disable the setting of a `\phantomsection` before a thumb mark, the command `\thumbsnophantom` is provided. (But at first it is not disabled.)

```

1088 \gdef\th@mbsphantom{1}
1089
1090 \newcommand{\thumbsnophantom}{\gdef\th@mbsphantom{0}}
1091

```

\addthumb Now the `\addthumb` command is defined, which is used to add a new thumb mark to the document. `\th@mbs@fr@meinnercolor` was `\thepagecolor` instead of `\thumbs@frameinnercolor`, if no thumb mark was issued.

```

1092 \newcommand{\addthumb}[4]{%
1093 \gdef\th@mbs@fr@meinnercolor{\thumbs@frameinnercolor}%
1094 \gdef\th@mbprinting{1}%
1095 \addtolength{\th@mbposy}{\th@mbheighty}%
1096 \addtolength{\th@mbposy}{\th@mbsdistance}%
1097 \ifdim\th@mbposy>\th@mbposybottom%
1098 \PackageInfo{thumbs}{Thumbs column full, starting another column\MessageBreak}%
1099 \setlength{\th@mbposy}{\th@mbposytop}%
1100 \addtolength{\th@mbposy}{\th@mbsdistance}%

```

```

1101 \ifx\th@mbcolumn\thumbs@zero\relax%
1102 \xdef\th@umbsperpagecount{\th@mbs}%
1103 \gdef\th@mbcolumn{1}%
1104 \fi%
1105 \fi%
1106 \setcounter{Th@mbTmpA}{\th@mbs}%
1107 \addtocounter{Th@mbTmpA}{1}%
1108 \xdef\th@mbs{\the\c@Th@mbTmpA}%

```

The `\addthumb` command has four parameters:

1. a title for the thumb mark (for the thumb marks overview page, e. g. the chapter title),
2. the text to be displayed in the thumb mark (for example a chapter number),
3. the colour of the text in the thumb mark,
4. and the background colour of the thumb mark

(parameters in this order).

```

1109 \gdef\th@mbtitle{#1}%
1110 \gdef\th@mbtext{#2}%
1111 \gdef\th@mbtextcolour{#3}%
1112 \gdef\th@mbackgroundcolour{#4}%

```

The width of the thumb mark text is determined and compared to the width of the thumb mark (rule). When the text is wider than the rule, this has to be changed (either automatically with option `width={autoauto}` in the next compilation run or manually by changing `width={...}` by the user). It could be acceptable to have a thumb mark text consisting of more than one line, of course, in which case nothing needs to be changed. Possible horizontal movement (`\th@mbHitO`, `\th@mbHitE`) has to be taken into account.

```

1113 \settowidth{\@tempdima}{\th@mbtext}%
1114 \ifdim\th@mbHitO>\th@mbHitE\relax%
1115 \addtolength{\@tempdima}{\th@mbHitO}%
1116 \else%
1117 \addtolength{\@tempdima}{\th@mbHitE}%
1118 \fi%
1119 \ifdim\@tempdima>\th@mbmaxwidth%
1120 \xdef\th@mbmaxwidth{\the\@tempdima}%
1121 \fi%
1122 \ifdim\@tempdima>\th@mbwidthx%
1123 \ifthumbs@draft% \relax
1124 \else%
1125 \edef\thumbsinfoa{\the\th@mbwidthx}
1126 \edef\thumbsinfob{\the\@tempdima}
1127 \PackageWarning{thumbs}{%
1128 Thumb mark on paper too small (width: \thumbsinfoa )\MessageBreak%
1129 or its text too wide (width:%
1130 \space\space\space\space\space\space\space\space\space\space%

```

```

1131      \thumbsinfob )\MessageBreak%
1132    }%
1133    \fi%
1134  \fi%

```

Into the `\jobname.tmb` file a `\thumbcontents` entry is written. If `hyperref` is found, a `\phantomsection` is placed (except when globally disabled by option `nophantomsection` or locally by `\thumbsnophantom`), a label for the thumb mark created, and the `\thumbcontents` entry will be hyperlinked to that label (except when `\addtitlethumb` was used, then the label reported from the user is used – the `thumbs` package does *not* create that label!).

```

1135  \IfPackageLoadedT{hyperref}{%
1136    \ifthumbs@nophantomsection%
1137    \else%
1138      \ifx\th@mb@phantom\thumbs@one\relax%
1139        \phantomsection%
1140      \else%
1141        \gdef\th@mb@phantom{1}%
1142      \fi%
1143    \fi%
1144  }%
1145  \label{thumbs.\th@mb}%
1146  \if@filesw%
1147    \ifx\th@mb@titlelabel\empty%
1148      \addtocontents{tmb}{\string\thumbcontents{#1}{#2}{#3}{#4}{\thepage}{thumbs.\th@mb}{\th@mbcolumnnew}\protected@file@percent}%
1149    \else%
1150      \addtocounter{page}{-1}%
1151      \edef\th@mb@page{\thepage}%
1152      \addtocontents{tmb}{\string\thumbcontents{#1}{#2}{#3}{#4}{\th@mb@page}{\th@mb@titlelabel}{\th@mbcolumnnew}\protected@file@percent}%
1153      \addtocounter{page}{+1}%
1154    \fi%
1155  %\else there is a problem, but the according warning message was already given earlier.
1156  \fi%

```

Maybe there is a rare case, where more than one thumb mark will be placed at one page. Probably a `\pagebreak`, `\newpage` or something similar would be advisable, but nevertheless we should prepare for this case. We save the properties of the thumb mark(s).

```

1157  \ifx\th@mbcolumnnew\thumbs@one\relax%
1158  \else%
1159    \setcounter{Th@mbTmpA}{\th@mbonpage}%
1160    \addtocounter{Th@mbTmpA}{1}%
1161    \xdef\th@mbonpage{\the\c@Th@mbTmpA}%
1162  \fi%
1163  \ifx\th@mbtoprint\thumbs@zero\relax%
1164  \else%
1165    \ifx\th@mbcolumnnew\thumbs@zero\relax%
1166      \PackageWarning{thumbs}{More than 1 thumb at 1 page:\MessageBreak%
1167        You placed more than 1 thumb mark (at least \th@mbonpage )\MessageBreak%
1168        on page \thepage\space (page is approximately).\MessageBreak%

```

```

1169      Maybe you want to insert a page break here?\MessageBreak%
1170      Thumb added}%
1171    \fi%
1172  \fi%
1173  \ifnum\th@mbonpage=1%
1174    \ifnum\th@mbonpagemax>0% \relax
1175    \else \gdef\th@mbonpagemax{1}%
1176    \fi%
1177    \gdef\th@mbtextA{#2}%
1178    \gdef\th@mbtextcolourA{#3}%
1179    \gdef\th@mbackgroundcolourA{#4}%
1180    \setlength{\th@mbposyA}{\th@mbposy}%
1181  \else%
1182    \ifx\th@mbcolumnnew\thumbs@zero\relax%
1183      \setcounter{Th@mbTmpA}{\the\c@Th@mbTmpA}%
1184      \@tempcnta=1\relax%
1185      \edef\th@mbonpagetest{\the\@tempcnta}%
1186      \@whilenum\th@mbonpagetest<\th@mbonpage\do{%
1187        \advance\@tempcnta by 1%
1188        \xdef\th@mbonpagetest{\the\@tempcnta}%
1189        \ifnum\th@mbonpage=\th@mbonpagetest%
1190          \ifnum\th@mbonpagemax<\th@mbonpage%
1191            \xdef\th@mbonpagemax{\th@mbonpage}%
1192          \fi%
1193          \edef\th@mbtmpdef{\csname th@mbtext\Alpha\Alph{\the\@tempcnta}\endcsname}%
1194          \expandafter\gdef\th@mbtmpdef{#2}%
1195          \edef\th@mbtmpdef{\csname th@mbtextcolour\Alpha\Alph{\the\@tempcnta}\endcsname}%
1196          \expandafter\gdef\th@mbtmpdef{#3}%
1197          \edef\th@mbtmpdef{\csname th@mbackgroundcolour\Alpha\Alph{\the\@tempcnta}\endcsname}%
1198          \expandafter\gdef\th@mbtmpdef{#4}%
1199        \fi%
1200      }%
1201      \@tempcnta=\the\c@Th@mbTmpA\relax%
1202    \else%
1203      \ifnum\th@mbonpagemax<\th@mbonpage%
1204        \xdef\th@mbonpagemax{\th@mbonpage}%
1205      \fi%
1206    \fi%
1207  \fi%
1208  \ifx\th@mbcolumnnew\thumbs@two\relax%
1209    \gdef\th@mbcolumnnew{0}%
1210  \fi%
1211  \gdef\th@mbtoprint{1}%
1212 }
1213

```

`\stopthumb` When a page (or pages) shall have no thumb marks, `\stopthumb` stops the issuing of thumb marks (until another thumb mark is placed or `\continuethumb` is used).

```
1214 \newcommand{\stopthumb}{\gdef\th@mbprinting{0}}
1215
```

`\continuethumb` `\continuethumb` continues the issuing of thumb marks (equal to the one before this was stopped by `\stopthumb`).

```
1216 \newcommand{\continuethumb}{\gdef\th@mbprinting{1}}
1217
```

`\th@mbtabrule` `\th@mbtabrule` prints the background rules in the thumb mark index page. If frames instead of filled marks are used, a second (smaller) rule in colour `\thumbs@frameinnercolor` needs to be printed over the first rule.

```
1218 \newcommand{\th@mbtabrule}{%
1219   \rule{\dimexpr\th@mbwidthxtoc+\th@mbruleoutside\relax}{\th@mbheighty}%
1220   \ifx\thumbs@frame\thumbs@empty\relax%
1221   \else%
1222     \hspace*{-\th@mbwidthxtoc}%
1223     \hspace*{\thumbs@frame}%
1224     \setlength{\th@mbwidthtmp}{\th@mbwidthxtoc}%
1225     \addtolength{\th@mbwidthtmp}{-\thumbs@frame}%
1226     \addtolength{\th@mbwidthtmp}{-\thumbs@frame}%
1227     \xdef\th@mbfrw{\the\th@mbwidthtmp}%
1228     \setlength{\th@mbwidthtmp}{\th@mbheighty}%
1229     \addtolength{\th@mbwidthtmp}{-\thumbs@frame}%
1230     \addtolength{\th@mbwidthtmp}{-\thumbs@frame}%
1231     {\color{\thumbs@frameinnercolor}%
1232     \rule[\thumbs@frame]{\th@mbfrw}{\th@mbwidthtmp}%
1233     }%
1234     \hspace*{\thumbs@frame}%
1235   \fi%
1236 }
1237
```

`\thumbcontents` The **internal** command `\thumbcontents` (which will be read in from the `\jobname.tmb` file) creates a thumb mark entry on the overview page(s). Its seven parameters are

1. the title for the thumb mark,
2. the text to be displayed in the thumb mark,
3. the colour of the text in the thumb mark,
4. the background colour of the thumb mark,
5. the first page of this thumb mark,
6. the label where it should hyperlink to,

7. and an indicator, whether `\thumbnewcolumn` is just issuing blank thumbs to fill a column

(parameters in this order). Without `hyperref` the 6th parameter is just ignored.

```

1238 \newcommand{\thumbcontents}[7]{%
1239   \addtolength{\th@mbposy}{\th@mbheighty}%
1240   \addtolength{\th@mbposy}{\th@mbdistance}%
1241   \ifdim\th@mbposy>\th@mbposybottom%
1242     \setlength{\th@mbposy}{\th@mbposytop}%
1243     \addtolength{\th@mbposy}{\th@mbdistance}%
1244   \fi%
1245   \def\th@mb@tmp@title{#1}%
1246   \def\th@mb@tmp@text{#2}%
1247   \def\th@mb@tmp@textcolour{#3}%
1248   \def\th@mb@tmp@backgroundcolour{#4}%
1249   \def\th@mb@tmp@page{#5}%
1250   \def\th@mb@tmp@label{#6}%
1251   \def\th@mb@tmp@column{#7}%
1252   \ifx\th@mb@tmp@column\thumbs@two\relax%
1253     \def\th@mb@tmp@column{0}%
1254   \fi%
1255   \setlength{\th@mbwidthxtoc}{\paperwidth}%
1256   \addtolength{\th@mbwidthxtoc}{-1in}%

```

Depending on which side the thumb marks should be placed the according dimensions have to be adapted.

```

1257   \def\th@mbstest{r}%
1258   \ifx\th@mbstest\th@mb@sprintpage% right page
1259     \addtolength{\th@mbwidthxtoc}{-\th@mbHim0}%
1260     \addtolength{\th@mbwidthxtoc}{-\oddsidemargin}%
1261     \setlength{\@tempdimc}{1in}%
1262     \addtolength{\@tempdimc}{+\oddsidemargin}%
1263   \else% left page
1264     \addtolength{\th@mbwidthxtoc}{-\th@mbHimE}%
1265     \addtolength{\th@mbwidthxtoc}{-\evensidemargin}%
1266     \setlength{\@tempdimc}{\th@bmsoffset}%
1267     \addtolength{\@tempdimc}{-\hoffset}%
1268   \fi%
1269   \setlength{\th@mbposyB}{-\th@mbposy}%
1270   \if@twoside%
1271     \setcounter{Th@mbTmpA}{\the\c@ThumbsPage}%
1272     \addtocounter{Th@mbTmpA}{\th@mbpofffix}%
1273     \ifodd\c@Th@mbTmpA\relax%
1274     \else%
1275       \addtolength{\th@mbposyB}{-\thumbs@evenprintvoffset}%
1276     \fi%
1277   \fi%

```

```

1278 \def\th@mbstest{1}%
1279 \ifx\th@mbstest\th@msprintpage% left page
1280 \addtolength{\@tempdimc}{+\th@mbHimE}%

```

Thumb rules on right pages shall start 1 em before the text:

```

1281 \setlength{\@tempdimb}{0em}%
1282 \else% right page
1283 \setlength{\@tempdimb}{1em}%
1284 \fi%
1285 \addtolength{\@tempdimc}{-\@tempdimb}%
1286 \addtolength{\th@mbwidthxtoc}{\@tempdimb}%
1287 \put(\@tempdimc,\th@mbposyB){%
1288 \ifx\th@mbstest\th@msprintpage% left page

```

Increase \th@mbwidthxtoc by the absolute value of \evensidemargin.

With the bigintcalc package it would also be possible to use:

```

\setlength{\@tempdimb}{\evensidemargin}%
\@settopoint\@tempdimb%
\advance\th@mbwidthxtoc+\bigintcalcSgn{\expandafter\strip@pt \@tempdimb}\evensidemargin%

```

Also the length given by option leftindextruleplus must be added to the thumb width \th@mbwidthxtoc. - For right-to-left writing 2\evensidemargins need to be added.

```

1289 \ifdim\evensidemargin <0sp\relax%
1290 \addtolength{\th@mbwidthxtoc}{-\evensidemargin}%
1291 \ifthumbs@righttoleft\addtolength{\th@mbwidthxtoc}{-\evensidemargin}\fi%
1292 \else% >=0sp
1293 \addtolength{\th@mbwidthxtoc}{+\evensidemargin}%
1294 \ifthumbs@righttoleft\addtolength{\th@mbwidthxtoc}{+\evensidemargin}\fi%
1295 \fi%
1296 \addtolength{\th@mbwidthxtoc}{\th@mbslirplus}%
1297 \fi%
1298 \begin{picture}(\@tempdimb,0)%

```

Correcting for \th@mbruleoutside (only needed on left sides).

```

1299 \ifx\th@mbstest\th@msprintpage% left page
1300 \def\th@mbruleoutsiddecor{\th@mbruleoutside}%
1301 \hspace*{-\th@mbruleoutsiddecor}%
1302 \else% right page
1303 \def\th@mbruleoutsiddecor{0sp}%

```

Here also \hspace*{-\th@mbruleoutsiddecor}, but \th@mbruleoutsiddecor is 0sp, so we can skip this.

```

1304 \fi%

```

The whole entry in the overview page (edge index) is made into a coloured rule. When the option `plainthumbsoverview=true` is chosen, the rule gets `\thepagecolor`, thereby becoming “invisible”.

```

1305     \ifthumbs@plainthumbsoverview\relax%
1306     \def\th@mb@tmp@backgroundcolour{\thepagecolor}%
1307     \fi%

```

When the option `thumblink=rule` was chosen, the whole rule is made into a hyperlink. Otherwise the rule is created without hyperlink (here).

```

1308     \def\th@mbstest{rule}%
1309     \ifx\thumbs@thumblink\th@mbstest%
1310     \ifx\th@mb@tmp@column\thumbs@zero\relax%
1311     {\color{\th@mb@tmp@backgroundcolour}%

```

Print the `\rule`, on left pages move the hyperlink to the right, onto the page, make the hyperlink.

```

1312         \rlap{\th@mbtabrule}%
1313         \hspace*{\th@mbruleoutsidecor}%
1314         \hyperref[\th@mb@tmp@label]{\phantom{\rule{\th@mbwidthxtoc}{\th@mbheighty}}}%
1315     }%
1316     \else%

```

When `\th@mb@tmp@column` is not zero, then this is a blank thumb mark from `thumbnewcolumn`.

```

1317         \phantom{{\color{\th@mb@tmp@backgroundcolour}\th@mbtabrule}}}%
1318     \fi%
1319     \else%
1320     {\color{\th@mb@tmp@backgroundcolour}\th@mbtabrule}%
1321     \fi%
1322 \end{picture}%

```

When `\th@mb@sprintpage` is 1, before the picture `\th@mbwidthxtoc` was changed, which must be reverted now.

```

1323 \ifx\th@mbstest\th@mb@sprintpage% 1
1324 \ifdim\evensidemargin <0sp\relax%
1325 \addtolength{\th@mbwidthxtoc}{+\evensidemargin}%
1326 \else% >=0sp
1327 \addtolength{\th@mbwidthxtoc}{-\evensidemargin}%
1328 \fi%
1329 \fi%

```

When `\th@mb@tmp@column` is zero, then this is **not** a blank thumb mark from `thumbnewcolumn`, and we need to fill it with some content. If it is not zero, it is a blank thumb mark, and nothing needs to be done here.

```

1330 \ifx\th@mb@tmp@column\thumbs@zero\relax%
1331 \setlength{\th@mbwidthxtoc}{\paperwidth}%
1332 \addtolength{\th@mbwidthxtoc}{-1in}%
1333 \IfPackageLoadedF{crop}{\addtolength{\th@mbwidthxtoc}{-\hoffset}}%
1334 \ifx\th@mbstest\th@mb@sprintpage% 1
1335 \addtolength{\th@mbwidthxtoc}{-\evensidemargin}%
1336 \else%

```



```

1337 \addtolength{\th@mbwidthxtoc}{-\oddsidemargin}%
1338 \fi%

```

When the text is wider than its mark (warning given earlier, see 42), we need to use the text width instead of the mark width.

```

1339 \setlength{\@tempdima}{\th@mbwidthx}%
1340 \setlength{\@tempdimc}{\th@mbmaxwidtha}%
1341 \ifdim\@tempdima>\@tempdimc\relax%
1342 \addtolength{\th@mbwidthxtoc}{-\th@mbwidthx}%
1343 \else%
1344 \addtolength{\th@mbwidthxtoc}{-\th@mbmaxwidtha}%
1345 \fi%
1346 \addtolength{\th@mbwidthxtoc}{-1em}%
1347 \addtolength{\th@mbwidthxtoc}{-20pt}%
1348 \ifdim\th@mbwidthxtoc>\textwidth%
1349 \setlength{\th@mbwidthxtoc}{\textwidth}%
1350 \fi%

```

If option `plainthumbsoverview` was set, the coloured background must be removed. (Well, removing is not possible, but printing over it in `\thepagecolour`.)

```

1351 \ifx\th@mbstest\th@mbsprintpage% left page
1352 \ifthumbs@plainthumbsoverview\relax%
1353 \begin{picture}(0,0)%
1354 {\color{\th@mb@tmp@backgroundcolour}\rule{\th@mbwidthx}{\th@mbheighty}}%
1355 \end{picture}%
1356 \fi%

```

Depending on which side the thumb marks should be placed the according dimensions have to be adapted here, too.

```

1357 \begin{picture}(-\th@mbHimE,0)(-6pt,-0.5\th@mbheighty+384930sp)%
1358 \bgroup%
1359 \setlength{\parindent}{0sp}%
1360 \setlength{\@tempdimc}{\th@mbwidthx}%
1361 \addtolength{\@tempdimc}{-\th@mbHit0}%
1362 \setlength{\@tempdimb}{\th@mbwidthx}%
1363 \addtolength{\@tempdimb}{-\th@mbHitE}%
1364 \setcounter{Th@mbTmpA}{\c@ThumbsPage}%
1365 \addtocounter{Th@mbTmpA}{\th@mbpofffix}%
1366 \ifodd\c@Th@mbTmpA\relax%
1367 \hspace*{-\th@mbHit0}%
1368 \th@mb@txtBox{\th@mb@tmp@textcolour}{\protect\th@mb@tmp@text}{r}{\@tempdimc}%
1369 \else%
1370 \if@twoside%
1371 \hspace*{+\th@mbHitE}%
1372 \th@mb@txtBox{\th@mb@tmp@textcolour}{\protect\th@mb@tmp@text}{l}{\@tempdimb}%
1373 \else%
1374 \hspace*{-\th@mbHit0}%
1375 \th@mb@txtBox{\th@mb@tmp@textcolour}{\protect\th@mb@tmp@text}{r}{\@tempdimc}%

```

```

1376         \fi%
1377     \fi%
1378     \egroup%
1379     \end{picture}%
1380     \setlength{\@tempdimc}{-1in}%
1381     \addtolength{\@tempdimc}{-\evensidemargin}%
1382 \else% right page
1383     \setlength{\@tempdimc}{0sp}%
1384 \fi%
1385 \begin{picture}(0,0)(\@tempdimc,-0.5\th@mbheighty+384930sp)%
1386     \bgroup%

```

With option `plainthumbsoverview` `\th@mb@tmp@textcolour` must be defined (current colour).

```

1387     \ifthumbs@plainthumbsoverview\relax%
1388     \def\th@mb@tmp@textcolour{.}%
1389     \fi%
1390     \setlength{\parindent}{0sp}%
1391     \vbox%
1392     {\hsize=\th@mbwidthxtoc {%

```

Depending on the value of option `thumblink`, parts of the text are made into hyperlinks:

- `none` creates *none* hyperlink

```

1393         \def\th@mbstest{none}%
1394     \ifx\thumbs@thumblink\th@mbstest%
1395         {\color{\th@mb@tmp@textcolour}\noindent \th@mb@tmp@title%
1396         \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}%
1397         }%
1398     \else%

```

- `title` hyperlinks the *titles* of the thumb marks

```

1399         \def\th@mbstest{title}%
1400     \ifx\thumbs@thumblink\th@mbstest%
1401         {\color{\th@mb@tmp@textcolour}\noindent%
1402         \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title}%
1403         \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}%
1404         }%
1405     \else%

```

- `page` hyperlinks the *page* numbers of the thumb marks

```

1406         \def\th@mbstest{page}%
1407     \ifx\thumbs@thumblink\th@mbstest%
1408         {\color{\th@mb@tmp@textcolour}\noindent%
1409         \th@mb@tmp@title%
1410         \leaders\box \ThumbsBox {\th@mb@linefill \pageref{\th@mb@tmp@label}}}%

```

```

1411             }%
1412         \else%

- titleandpage hyperlinks the title and page numbers of the thumb marks

1413         \def\th@mbstest{titleandpage}%
1414         \ifx\thumbs@thumblink\th@mbstest%
1415             {\color{\th@mb@tmp@textcolour}\noindent%
1416             \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title}%
1417             \leaders\box \ThumbsBox {\th@mb@linefill \pageref{\th@mb@tmp@label}}}%
1418         }%
1419     \else%

```

- **line** hyperlinks the whole *line*, i. e. title, dots (or line or whatsoever) and page numbers of the thumb marks

```

1420         \def\th@mbstest{line}%
1421         \ifx\thumbs@thumblink\th@mbstest%
1422             {\color{\th@mb@tmp@textcolour}\noindent%
1423             \hyperref[\th@mb@tmp@label]{\th@mb@tmp@title%
1424             \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}}}%
1425         }%
1426     \else%

```

- **rule** hyperlinks the whole *rule*, but that was already done above, so here no linking is done

```

1427         \def\th@mbstest{rule}%
1428         \ifx\thumbs@thumblink\th@mbstest%
1429             {\color{\th@mb@tmp@textcolour}\noindent%
1430             \th@mb@tmp@title%
1431             \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}%
1432         }%
1433     \else%

```

Another value for `\thumbs@thumblink` should never be encountered here.

```

1434         \PackageError{thumbs}{\string\thumbs@thumblink\space invalid}{%
1435         \string\thumbs@thumblink\space has an invalid value,\MessageBreak%
1436         although it did not have an invalid value before,\MessageBreak%
1437         and the thumbs package did not change it.\MessageBreak%
1438         Therefore some other package (or the user)\MessageBreak%
1439         manipulated it.\MessageBreak%
1440         Now setting it to "none" as last resort.%
1441         }%
1442     \gdef\thumbs@thumblink{none}%
1443     {\color{\th@mb@tmp@textcolour}\noindent%
1444     \th@mb@tmp@title%
1445     \leaders\box \ThumbsBox {\th@mb@linefill \th@mb@tmp@page}%
1446     }%

```

```

1447         \fi%
1448     \fi%
1449     \fi%
1450 \fi%
1451 \fi%
1452 \fi%
1453 }%
1454 }%
1455 \egroup%
1456 \end{picture}%

```

The thumb mark (with text) as set in the document outside of the thumb marks overview page(s) is also presented here, except when we are printing at the left side. For option `plainthumbsoverview` again the coloured background is removed.

```

1457 \ifx\th@mbstest\th@mbsprintpage% left page: relax.
1458 \else% right page
1459 \ifthumbs@plainthumbsoverview\relax%
1460 \begin{picture}(0,0)(1in+\oddsidemargin-\th@mbxpos,0)%
1461 {\color{\th@mb@tmp@backgroundcolour}\rule{\dimexpr\th@mbwidthx+10pt\relax}{\th@mbheighty}}%
1462 \end{picture}%
1463 \fi%
1464 \begin{picture}(0,0)(1in+\oddsidemargin-\th@mbxpos,-0.5\th@mbheighty+384930sp)%
1465 \bgroup%
1466 \setlength{\parindent}{0sp}%
1467 \setlength{\@tempdimc}{\th@mbwidthx}%
1468 \addtolength{\@tempdimc}{-\th@mbHit0}%
1469 \setlength{\@tempdimb}{\th@mbwidthx}%
1470 \addtolength{\@tempdimb}{-\th@mbHitE}%
1471 \setcounter{Th@mbTmpA}{\c@ThumbsPage}%
1472 \addtocounter{Th@mbTmpA}{\th@mbpoffix}%
1473 \ifodd\c@Th@mbTmpA\relax%
1474 \hspace*{-\th@mbHit0}%
1475 \th@mb@txtBox{\th@mb@tmp@textcolour}{\protect\th@mb@tmp@text}{r}{\@tempdimc}%
1476 \else%
1477 \if@twoside%
1478 \hspace*{+\th@mbHitE}%
1479 \th@mb@txtBox{\th@mb@tmp@textcolour}{\protect\th@mb@tmp@text}{l}{\@tempdimb}%
1480 \else%
1481 \hspace*{-\th@mbHit0}%
1482 \th@mb@txtBox{\th@mb@tmp@textcolour}{\protect\th@mb@tmp@text}{r}{\@tempdimc}%
1483 \fi%
1484 \fi%
1485 \egroup%
1486 \end{picture}%
1487 \fi%
1488 \fi%
1489 }%

```

```
1490 }
1491
```

`\thumb@yA` `\thumb@yA` sets the y-position to be used in `\thumbprint`.

```
1492 \newcommand{\thumb@yA}{%
1493   \addtolength{\thumbposyA}{\thumbheighty}%
1494   \addtolength{\thumbposyA}{\thumbdistance}%
1495   \ifdim\thumbposyA>\thumbposybottom%
1496     \PackageWarning{thumbs}{You are not only using more than one thumb mark at one\MessageBreak%
1497       single page, but also thumb marks from different thumb\MessageBreak%
1498       columns. May I suggest the use of a \string\pagebreak\space or\MessageBreak%
1499       \string\newpage ?%
1500   }%
1501   \setlength{\thumbposyA}{\thumbposytop}%
1502 \fi%
1503 }
1504
```

`\thumbprint` `\thumbprint` places pictures containing the thumb mark on the page. First computing some dimensions/positions. To be really safe, `\thumbwidthx` is increased by 10pt outside of the layout page (which is reverted afterwards). The picture with the background of the thumb mark is placed.

```
1505 \newcommand{\thumbprint}[3]{%
1506   \setlength{\thumbposyB}{-\thumbposyA}%
1507   \addtolength{\thumbwidthx}{+10pt}%
1508   \if@twoside%
1509     \setcounter{ThumbTmpA}{\c@ThumbsPage}%
1510     \addtocounter{ThumbTmpA}{\thumbpoffset}%
1511     \ifodd\c@ThumbTmpA\relax% right page
1512       \put(\thumbxpos,\thumbposyB){%
1513         \begin{picture}(0,0)%
1514           {\color{#3}\rule{\thumbcomprulewidth}{\thumbheighty}}%
1515         \end{picture}%
1516       }%
1517     \else% left page
1518       \setlength{\@tempdimc}{-\thumbposyA}%
1519       \addtolength{\@tempdimc}{-\thumbs@evenprintvoffset}%
1520       \setlength{\thumbposyB}{\@tempdimc}%
1521       \put(\thumbxpos-10pt-\thumbruleoutside+\thumbwidthx,\thumbposyB){%
1522         \begin{picture}(0,0)%
1523           {\color{#3}\rule{\thumbcomprulewidth}{\thumbheighty}}%
1524         \end{picture}%
1525       }%
1526     \fi%

```

```

1527 \else% one-sided, right page
1528 \put(\th@mbxpos,\th@mbposyB){%
1529 \begin{picture}(0,0)%
1530 {\color{#3}\rule{\th@mbcomprulewidth}{\th@mbheighty}}%
1531 \end{picture}%
1532 }%
1533 \fi%
1534 \addtolength{\th@mbwidthx}{-10pt}%

```

`\thumbs@frame` is used when the thumb marks shall only be frames and not filled. In this case a second, smaller `picture` is placed over the first one:

```

1535 \ifx\thumbs@frame\thumbs@empty\relax%
1536 \else%

```

- height minus two times the thickness of the line of the frame:

```

1537 \setlength{\th@mbiruley}{\th@mbheighty}%
1538 \addtolength{\th@mbiruley}{-\thumbs@frame}%
1539 \addtolength{\th@mbiruley}{-\thumbs@frame}%

```

- width minus two times the thickness of the line of the frame:

```

1540 \setlength{\th@mbirulex}{\th@mbwidthx}%
1541 \addtolength{\th@mbirulex}{-\thumbs@frame}%
1542 \addtolength{\th@mbirulex}{-\thumbs@frame}%

```

- horizontal position:

```

1543 \setlength{\th@mbwidthtmp}{\thumbs@frame}%
1544 \ifdim \th@mbxpos > 0sp\relax%
1545 \addtolength{\th@mbwidthtmp}{+\th@mbxpos}%

```

+ right page: decreased by the length of the thumb mark going over the page's right border

```

1546 \addtolength{\th@mbirulex}{+\paperwidth}%
1547 \addtolength{\th@mbirulex}{-\th@mbxpos}%
1548 \addtolength{\th@mbirulex}{-\th@mbwidthx}%
1549 \else%

```

+ left page: decreased by the length of the thumb mark going over the page's left border

```

1550 \addtolength{\th@mbwidthtmp}{-\th@mbxpos}%
1551 \addtolength{\th@mbirulex}{+\th@mbxpos}%

```

(`+\th@mbxpos`, because the value of `\th@mbxpos` is already negative or zero)

```

1552 \fi%

```

```

1553      \addtolength{\th@mbirulex}{-1pt}%
1554      \put(\th@mbwidthtmp,\th@mbposyB+\thumbs@frame){%
1555          \begin{picture}(0,0)%
1556              {\color{\th@mbcolor}\rule{\th@mbirulex}{\th@mbiruley}}%
1557          \end{picture}%
1558      }%
1559  \fi%

```

The third picture finally contains the text:

```

1560  \put(\th@mbxpos,\th@mbposyB){%
1561      \begin{picture}(0,0)(0,-0.5\th@mbheighty+384930sp)%
1562          \bgroup%
1563              \setlength{\parindent}{0sp}%
1564              \setlength{\@tempdimc}{\th@mbwidthx}%
1565              \addtolength{\@tempdimc}{-\th@mbHitO}%
1566              \setlength{\@tempdimb}{\th@mbwidthx}%
1567              \addtolength{\@tempdimb}{-\th@mbHitE}%
1568              \setcounter{Th@mbTmpA}{\c@ThumbsPage}%
1569              \addtocounter{Th@mbTmpA}{\th@mbpoffix}%
1570              \ifodd\c@Th@mbTmpA\relax%
1571                  \hspace*{-\th@mbHitO}%
1572                  \th@mb@txtBox{#2}{#1}{r}{\@tempdimc}%
1573              \else%
1574                  \if@twoside%
1575                      \hspace*{+\th@mbHitE}%
1576                      \th@mb@txtBox{#2}{#1}{l}{\@tempdimb}%
1577                  \else%
1578                      \hspace*{-\th@mbHitO}%
1579                      \th@mb@txtBox{#2}{#1}{r}{\@tempdimc}%
1580                  \fi%
1581              \fi%
1582          \egroup%
1583      \end{picture}%
1584  }%
1585  }
1586

```

`\AddToHook{shipout/before}` `\@expl@@@shipout@add@background@picture@@@n` (formerly `\AtBeginShipoutUpperLeft`) calls the `\th@mbprint` macro for each thumb mark which shall be placed on that page. When `\stopthumb` was used, the thumb mark is omitted.

```

1587 \AddToHook{shipout/before}{%
1588     \ifx\th@mbcolumnnew\thumbs@zero\relax% OK
1589     \else%
1590         \PackageError{thumbs}{Missing \string\addthumb\space after \string\thumbnewcolumn }{%
1591             Command \string\thumbnewcolumn\space was used, but no new thumb placed with \string\addthumb\MessageBreak%
1592             (at least not at the same page). After \string\thumbnewcolumn\space please always use an\MessageBreak%
1593             \string\addthumb . Until the next \string\addthumb , there will be no thumb marks on the\MessageBreak%

```

```

1594     pages. Starting a new column of thumb marks and not putting a thumb mark into\MessageBreak%
1595     that column does not make sense. If you just want to get rid of column marks,\MessageBreak%
1596     do not abuse \string\thumbnewcolumn\space but use \string\stopthumb.\MessageBreak%
1597     (This error message will be repeated at all following pages,\MessageBreak%
1598     \space until \string\addthumb\space is used.)%
1599     }%
1600 \fi%
1601 \setcounter{Th@mbTmpA}{\c@ThumbsPage}%
1602 \addtocounter{Th@mbTmpA}{\th@mbpofffix}%

```

Changing the paper size mid-document will probably cause some problems. But if it works, we try to cope with it. (When the change is performed without changing \paperwidth, we cannot detect it. Sorry.)

```

1603 \edef\th@mbstmpwidth{\the\paperwidth}%
1604 \ifdim\th@mbpaperwidth=\th@mbstmpwidth% OK
1605 \else%
1606   \PackageWarningNoLine{thumbs}{Paperwidth has changed. Thumb mark positions become now adapted}%
1607   \setlength{\th@mbposx}{\paperwidth}%
1608   \addtolength{\th@mbposx}{-\th@mbwidthx}%
1609   \ifthumbs@ignorehoffset%
1610     \addtolength{\th@mbposx}{-\hoffset}%
1611   \fi%
1612   \addtolength{\th@mbposx}{+1pt}%
1613   \xdef\th@mbpaperwidth{\the\paperwidth}%
1614 \fi%

```

Determining the correct \th@mbxpos:

```

1615 \edef\th@mbxpos{\the\th@mbposx}%
1616 \ifodd\c@Th@mbTmpA\relax%
1617 \else%
1618   \if@twoside%
1619     \ifthumbs@ignorehoffset%
1620       \setlength{\@tempdimc}{-\hoffset}%
1621       \addtolength{\@tempdimc}{-1pt}%
1622       \edef\th@mbxpos{\the\@tempdimc}%
1623     \else%
1624       \def\th@mbxpos{-1pt}%
1625     \fi%
1626   \else \relax%
1627   \fi%
1628   \setlength{\@tempdimc}{\th@mbxpos}%
1629   \if@twoside%
1630     \ifodd\c@Th@mbTmpA\relax%
1631       \addtolength{\@tempdimc}{-\th@mbHimO}%
1632     \else \addtolength{\@tempdimc}{+\th@mbHimE}%
1633     \fi%

```



```

1634 \else \addtolength{\@tempdimc}{-\th@mbHimO}%
1635 \fi%
1636 \edef\th@mbxpos{\the\@tempdimc}%
1637 \@@expl@@@shipout@add@foreground@picture@@n{%
1638   \ifx\th@mbprinting\thumbs@one\relax%
1639     \th@mbprint{\th@mbtextA}{\th@mbtextcolourA}{\th@mbbackgroundcolourA}%
1640     \setcounter{Th@mbTmpB}{1}%
1641     \edef\th@mbonpagetest{\the\c@Th@mbTmpB}%
1642     \@whilenum\th@mbonpagetest<\th@mbonpage\do{%
1643       \addtocounter{Th@mbTmpB}{1}%
1644       \edef\th@mbonpagetest{\the\c@Th@mbTmpB}%
1645       \th@mb@yA%
1646       \def\Th@mbTmpdeftext{\csname th@mbtext\AlphAlph{\the\c@Th@mbTmpB}\endcsname}%
1647       \def\Th@mbTmpdefcolour{\csname th@mbtextcolour\AlphAlph{\the\c@Th@mbTmpB}\endcsname}%
1648       \def\Th@mbTmpdefbackgroundcolour{\csname th@mbbackgroundcolour\AlphAlph{\the\c@Th@mbTmpB}\endcsname}%
1649       \th@mbprint{\Th@mbTmpdeftext}{\Th@mbTmpdefcolour}{\Th@mbTmpdefbackgroundcolour}%
1650     }%
1651 \fi%

```

When more than one thumb mark was placed at that page, on the following pages only the last issued thumb mark shall appear.

```

1652 \setcounter{Th@mbTmpB}{\th@mbonpage}%
1653 \ifnum\c@Th@mbTmpB<2\relax%
1654 \else%
1655   \gdef\th@mbtextA{\th@mbtext}%
1656   \gdef\th@mbtextcolourA{\th@mbtextcolour}%
1657   \gdef\th@mbbackgroundcolourA{\th@mbbackgroundcolour}%
1658   \gdef\th@mbposyA{\th@mbposy}%
1659 \fi%
1660 \gdef\th@mbonpage{0}%
1661 \gdef\th@mbtoprint{0}%
1662 }%
1663 }
1664

```

Hook \AddToHook{enddocument/afterlastpage} (formerly \AfterLastShipout) is executed after the last page has been shipped out. It

enddocument/afterlastpage is still possible to e.g. write to the aux file at this time.

```

1665 \AddToHook{enddocument/afterlastpage}{%
1666   \ifx\th@mbcolumnnew\thumbs@zero\relax% OK
1667   \else%
1668     \PackageWarningNoLine{thumbs}{%
1669       Still missing \string\addthumb\space after \string\thumbnewcolumn\space after\MessageBreak%
1670       last ship-out: Command \string\thumbnewcolumn\space was used,\MessageBreak%
1671       but no new thumb placed with \string\addthumb\space anywhere in the\MessageBreak%
1672       rest of the document. Starting a new column of thumb\MessageBreak%
1673       marks and not putting a thumb mark into that column\MessageBreak%
1674       does not make sense. If you just want to get rid of\MessageBreak%
1675       thumb marks, do not abuse \string\thumbnewcolumn\space but use\MessageBreak%

```

```

1676     \string\stopthumb %
1677   }%
1678 \fi%

```

After the last shipout the number of thumb marks per overview page, the total number of thumb marks, and the maximal thumb mark text width are determined and saved for the next L^AT_EX run via the .aux file.

```

1679 \ifx\th@mbcolumn\thumbs@zero\relax% if there is only one column of thumbs
1680   \xdef\th@umbsperpagecount{\th@umbs}%
1681   \gdef\th@mbcolumn{1}%
1682 \fi%
1683 \ifx\th@umbsperpagecount\thumbs@zero\relax%
1684   \gdef\th@umbsperpagecount{\th@umbs}% \th@umbs was increased with each \addthumb
1685 \fi%
1686 \ifdim\th@mbmaxwidth>\th@mbwidthx%
1687   \ifthumbs@draft% \relax
1688   \else%
1689     \def\th@mbstest{autoauto}%
1690     \ifx\thumbs@width\th@mbstest%
1691       \AddToHook{enddocument/info}{%
1692         \PackageWarningNoLine{thumbs}{Rerun to get the thumb marks width right}%
1693       }%
1694     \else%
1695       \AddToHook{enddocument/info}{%
1696         \edef\thumbsinfoa{\th@mbmaxwidth}%
1697         \edef\thumbsinfob{\the\th@mbwidthx}%
1698         \PackageWarningNoLine{thumbs}{%
1699           Thumb mark too small or its text too wide:\MessageBreak%
1700           The widest thumb mark text is \thumbsinfoa\space wide,\MessageBreak%
1701           but the thumb marks are only \space\thumbsinfob\space wide.\MessageBreak%
1702           Either shorten or scale down the text,\MessageBreak%
1703           or increase the thumb mark width,\MessageBreak%
1704           or use option width=autoauto%
1705         }%
1706       }%
1707     \fi%
1708   \fi%
1709 \fi%
1710 \if@files%
1711   \immediate\write\@auxout{\string\gdef\string\th@mbmaxwidtha{\th@mbmaxwidth}}%
1712   \immediate\write\@auxout{\string\gdef\string\th@umbsperpage{\th@umbsperpagecount}}%
1713   \immediate\write\@auxout{\string\gdef\string\th@mbsmx{\th@umbs}}%
1714   \expandafter\newwrite\csname tf@tmb\endcsname%

```

And a rerun check is performed: Did the \jobname.tmb file change?

```

1715 \RerunFileCheck{\jobname.tmb}{\immediate\closeout \csname tf@tmb\endcsname}{%
1716   Warning: Rerun to get list of thumbs right!}%
1717 \immediate\openout \csname tf@tmb\endcsname = \jobname.tmb\relax%
1718 %\else there is a problem, but the according warning message was already given earlier.
1719 \fi%
1720 }
1721

```

`\addthumbsoverviewtocontents` with two arguments is a replacement for `\addcontentsline{toc}{<level>}{<text>}`, where the first argument of `\addthumbsoverviewtocontents` is for <level> and the second for <text>. If an entry of the thumbs mark overview shall be placed in the table of contents, `\addthumbsoverviewtocontents` with its arguments should be used immediately before `\thumbsoverview`.

```

1722 \newcommand{\addthumbsoverviewtocontents}[2]{%
1723   \gdef\th@mbs@toc@level{#1}%
1724   \gdef\th@mbs@toc@text{#2}%
1725 }
1726

```

`\clearotherdoublepage` We need a command to clear a double page, thus that the following text is *left* instead of *right* as accomplished with the usual `\cleardoublepage`. For this we take the original `\cleardoublepage` code and revert the `\ifodd\c@page\else` (i.e. if even `\c@page`) condition.

```

1727 \newcommand{\clearotherdoublepage}{%
1728 \clearpage\if@twoside\ifodd\c@page% removed "\else" from \cleardoublepage
1729 \hbox{}\newpage\if@twocolumn\hbox{}\newpage\fi\fi\fi%
1730 }
1731

```

`\th@mbs@stablabeling` When the `hyperref` package is used, one might like to refer to the thumb overview page(s) (edge index/indices), therefore `\th@mbs@stablabeling` command is defined (and used later). First a `\phantomsection` is added. With or without `hyperref` a label `TableOfThumbs1` (or `TableOfThumbs2` or...) is placed here. For compatibility with older versions of this package also the label `TableOfThumbs` is created. Equal to older versions it aims at the last used Table of Thumbs, but since version 1.0g **without** **Error: Label TableOfThumbs multiply defined** – thanks to `\overridelabel` from the `undolabl` package. When `\addthumbsoverviewtocontents` was used, the entry is placed into the table of contents.

```

1732 \newcommand{\th@mbs@stablabeling}{%
1733   \IfPackageLoadedT{hyperref}{\phantomsection}%
1734   \let\label\thumbsoriglabel%
1735   \ifx\th@mbs@table\thumbs@one\relax%
1736     \label{TableOfThumbs}%
1737     \label{TableOfThumbs1}%
1738   \else%
1739     \overridelabel{TableOfThumbs}%
1740     \label{TableOfThumbs\th@mbs@table}%
1741   \fi%

```

```

1742 \let\label\@gobble%
1743 \ifx\th@mbs@toc@level\empty%\relax
1744 \else \addcontentsline{toc}{\th@mbs@toc@level}{\th@mbs@toc@text}%
1745 \fi%
1746 }
1747

```

`\thumbsoverview` For compatibility with documents created using older versions of this package `\thumbsoverview` did not get a second argument, but `\thumbsoverviewback` it is renamed to `\thumbsoverviewprint` and additional to `\thumbsoverview` new commands are introduced. It is of course also possible `\thumbsoverviewverso` to use `\thumbsoverviewprint` with its two arguments directly, therefore its name does not include any `@` (saving the users the use of `\thumbsoverviewdouble` `\makeatother` and `\makeatletter`).

- `\thumbsoverview` prints the thumb marks at the right side and (in `twoside` mode) skips left sides (useful e.g. at the beginning of a document)
- `\thumbsoverviewback` prints the thumb marks at the left side and (in `twoside` mode) skips right sides (useful e.g. at the end of a document)
- `\thumbsoverviewverso` prints the thumb marks at the right side and (in `twoside` mode) repeats them at the next left side and so on (useful anywhere in the document and when one wants to prevent empty pages)
- `\thumbsoverviewdouble` prints the thumb marks at the left side and (in `twoside` mode) repeats them at the next right side and so on (useful anywhere in the document and when one wants to prevent empty pages)

The `\thumbsoverview...` commands are used to place the overview page(s) (edge index/indices) for the thumb marks. Their parameter is used to mark this page/these pages (e.g. in the page header). If these marks are not wished, `\thumbsoverview...{}` will generate empty marks in the page header(s). `\thumbsoverview...` can be used more than once (for example at the beginning and at the end of the document). The overviews have labels `TableOfThumbs1`, `TableOfThumbs2` and so on, which can be referred to with e.g. `\pageref{TableOfThumbs1}`. The reference `TableOfThumbs` (without number) aims at the last used Table of Thumbs (for compatibility with older versions of this package).

For right-to-left writing the thumb marks must be put at the other edge of the page.

`\thumbsoverview`

```

1748 \newcommand{\thumbsoverview}[1]{%
1749 \ifthumbs@righttoleft\thumbsoverviewprint{#1}{l}%
1750 \else\thumbsoverviewprint{#1}{r}%
1751 \fi%
1752 }
1753

```

\thumbsoverviewback

```
1754 \newcommand{\thumbsoverviewback}[1]{%
1755   \if@twoside%
1756   \else%
1757     \PackageWarning{thumbs}{\string\thumbsoverviewback\space%
1758       used in a one-sided document.\MessageBreak%
1759       Maybe you want to use \string\thumbsoverview\space instead?\MessageBreak%
1760       Code}%
1761   \fi%
1762   \ifthumbs@righttoleft\thumbsoverviewprint{#1}{r}%
1763   \else\thumbsoverviewprint{#1}{l}%
1764   \fi%
1765 }
1766
```

\thumbsoverviewverso

```
1767 \newcommand{\thumbsoverviewverso}[1]{%
1768   \if@twoside%
1769   \else%
1770     \PackageWarning{thumbs}{\string\thumbsoverviewverso\space%
1771       used in a one-sided document.\MessageBreak%
1772       Maybe you want to use \string\thumbsoverview\space instead?\MessageBreak%
1773       Code}%
1774   \fi%
1775   \ifthumbs@righttoleft\thumbsoverviewprint{#1}{d}%
1776   \else\thumbsoverviewprint{#1}{v}%
1777   \fi%
1778 }
1779
```

\thumbsoverviewdouble

```
1780 \newcommand{\thumbsoverviewdouble}[1]{%
1781   \if@twoside%
1782   \else%
1783     \PackageWarning{thumbs}{\string\thumbsoverviewdouble\space%
1784       used in a one-sided document.\MessageBreak%
1785       Maybe you want to use \string\thumbsoverview\space instead?\MessageBreak%
1786       Code}%
1787   \fi%
1788   \ifthumbs@righttoleft\thumbsoverviewprint{#1}{v}%
1789   \else\thumbsoverviewprint{#1}{d}%
1790   \fi%
1791 }
1792
```

`\thumbsoverviewprint` `\thumbsoverviewprint` works by calling the internal command `\th@mbsoverview` (see below), repeating this until all thumb marks have been processed.

```
1793 \newcommand{\thumbsoverviewprint}[2]{%
```

It would be possible to just `\edef\th@mbsoverviewprintpage{#2}`, but `\thumbsoverviewprint` might be called manually and without valid second argument.

```
1794   \edef\th@mbstest{#2}%
1795   \def\th@mbstestb{r}%
1796   \ifx\th@mbstest\th@mbstestb% right
1797     \gdef\th@mbsoverviewprintpage{r}%
1798   \else%
1799     \def\th@mbstestb{l}%
1800     \ifx\th@mbstest\th@mbstestb% left
1801       \gdef\th@mbsoverviewprintpage{l}%
1802     \else%
1803       \def\th@mbstestb{v}%
1804       \ifx\th@mbstest\th@mbstestb% verso
1805         \gdef\th@mbsoverviewprintpage{v}%
1806       \else%
1807         \def\th@mbstestb{d}%
1808         \ifx\th@mbstest\th@mbstestb% double
1809           \gdef\th@mbsoverviewprintpage{d}%
1810         \else%
1811           \PackageError{thumbs}{Invalid second parameter of \string\thumbsoverviewprint }{%
1812             The second argument of command \string\thumbsoverviewprint\space must be\MessageBreak%
1813             either "r" or "l" or "v" or "d" but it is neither.\MessageBreak%
1814             Now "r" is chosen instead ("l" for right-to-left writing).}%
1815           \ifthumbs@righttoleft\gdef\th@mbsoverviewprintpage{l}%
1816           \else\gdef\th@mbsoverviewprintpage{r}%
1817         \fi%
1818       \fi%
1819     \fi%
1820   \fi%
1821 \fi%
```

Option `\thumbs@thumblink` is checked for a valid and reasonable value here.

```
1822   \def\th@mbstest{none}%
1823   \ifx\thumbs@thumblink\th@mbstest% OK
1824   \else%
1825     \IfPackageLoadedTF{hyperref}{% hyperref loaded
1826       \def\th@mbstest{title}%
1827       \ifx\thumbs@thumblink\th@mbstest% OK
1828     \else%
1829       \def\th@mbstest{page}%
1830       \ifx\thumbs@thumblink\th@mbstest% OK
1831     \else%
```

```

1832 \def\th@mbstest{titleandpage}%
1833 \ifx\thumbs@thumblink\th@mbstest% OK
1834 \else%
1835 \def\th@mbstest{line}%
1836 \ifx\thumbs@thumblink\th@mbstest% OK
1837 \else%
1838 \def\th@mbstest{rule}%
1839 \ifx\thumbs@thumblink\th@mbstest% OK
1840 \else%
1841 \PackageError{thumbs}{Option thumblink with invalid value}{%
1842 Option thumblink has invalid value "\thumbs@thumblink ".\MessageBreak%
1843 Valid values are "none", "title", "page",\MessageBreak%
1844 "titleandpage", "line", or "rule".\MessageBreak%
1845 "rule" will be used now.}%
1846 \gdef\thumbs@thumblink{rule}%
1847 \fi%
1848 \fi%
1849 \fi%
1850 \fi%
1851 \fi%
1852 }{% hyperref not loaded
1853 \PackageError{thumbs}{Option thumblink not "none", but hyperref not loaded}{%
1854 The option thumblink of the thumbs package was not set to "none",\MessageBreak%
1855 but to some kind of hyperlinks, without using package hyperref.\MessageBreak%
1856 Either choose option "thumblink=none", or load package hyperref.\MessageBreak%
1857 When pressing Return, "thumblink=none" will be set now.}%
1858 \gdef\thumbs@thumblink{none}%
1859 }%
1860 \fi%

```

When the thumb overview is printed and there is already a thumb mark set, for example for the front-matter (e.g. title page, bibliographic information, acknowledgements, dedication, preface, abstract, tables of content, tables, and figures, lists of symbols and abbreviations, and the thumbs overview (edge index) itself, of course) or when the overview is placed near the end of the document, the current y-position of the thumb mark must be remembered (and later restored) and the printing of that thumb mark must be stopped (and later continued).

```

1861 \edef\th@mbprintingovertoc{\th@mbprinting}%
1862 \ifnum \th@bsmax > \thumbs@zero\relax%
1863 \if@twoside%
1864 \def\th@mbstest{r}% right
1865 \ifx\th@mbstest\th@bsprintpage%
1866 \ifthumbs@righttoleft\clearotherdoublepage%
1867 \else\cleardoublepage%
1868 \fi%
1869 \else%
1870 \def\th@mbstest{v}% verso
1871 \ifx\th@mbstest\th@bsprintpage%

```

```

1872         \ifthumbs@righttoleft\clearotherdoublepage%
1873         \else\cleardoublepage%
1874         \fi%
1875     \else% l(eft) or d(ouble)
1876         \ifthumbs@righttoleft\cleardoublepage%
1877         \else\clearotherdoublepage%
1878         \fi%
1879     \fi%
1880 \fi%
1881 \else\clearpage%
1882 \fi%
1883 \stopthumb%
1884 \PackageInfo{thumbs}{If you get an error "Runaway argument? \string\MakeUppercases"\MessageBreak%
1885     you probably forgot the argument for a\MessageBreak%
1886     \string\thumbsoverview/back/verso/double\space command}%
1887 \markboth{\MakeUppercase{#1}}{\MakeUppercase{#1}}%
1888 \fi%
1889 \setlength{\th@mbposytocy}{\th@mbposy}%
1890 \setlength{\th@mbposy}{\th@mbposytocyy}%
1891 \ifx\th@mbstable\thumbs@zero\relax%
1892     \newcounter{th@mblinea}%
1893     \newcounter{th@mblineb}%
1894     \newcounter{FileLine}%
1895     \newcounter{thumbsstop}%
1896 \fi%
1897 \setcounter{th@mblinea}{\th@mbstable}%
1898 \addtocounter{th@mblinea}{+1}%
1899 \xdef\th@mbstable{\number\value{th@mblinea}}%
1900 \setcounter{th@mblinea}{1}%
1901 \setcounter{th@mblineb}{\th@umbsperpage}%
1902 \setcounter{FileLine}{1}%
1903 \setcounter{thumbsstop}{1}%
1904 \addtocounter{thumbsstop}{\th@bmax}%

```

We do not want any labels or index or glossary entries confusing the table of thumb marks entries, but the commands must work outside of it:

```

\thumbsoriglabel
1905 \let\thumbsoriglabel\label%

\thumbsorigindex
1906 \let\thumbsorigindex\index%

\thumbsorigglossary
1907 \let\thumbsorigglossary\glossary%

```



```

1908 \let\label\@gobble%
1909 \let\index\@gobble%
1910 \let\glossary\@gobble%

```

Some preparation in case of double printing the overview page(s):

```

1911 \def\th@mbstest{v}% right left right ...
1912 \ifx\th@mbstest\th@mbstestpage%
1913   \def\th@mbstestpage{1}% because it will be changed to r(ight)
1914   \def\th@mbdoublepage{1}%
1915 \else%
1916   \def\th@mbstest{d}% left right left ...
1917   \ifx\th@mbstest\th@mbstestpage%
1918     \def\th@mbstestpage{r}% because it will be changed to l(ef)
1919     \def\th@mbdoublepage{1}%
1920   \else%
1921     \def\th@mbdoublepage{0}%
1922   \fi%
1923 \fi%
1924 \def\th@mb@resetdoublepage{0}%
1925 \@whilenum\value{FileLine}<\value{thumbsstop}\do%

```

For double printing the overview page(s) (edge index) we just change between printing left and right, and we need to reset the line number of the \jobname.tmb file which is read, because we need to read things twice.

```

1926 {\ifx\th@mbdoublepage\thumbs@one\relax%
1927   \def\th@mbstest{r}% right
1928   \ifx\th@mbstestpage\th@mbstest%
1929     \def\th@mbstestpage{1}% left
1930   \else% \th@mbstestpage is l(ef)
1931     \def\th@mbstestpage{r}% right
1932   \fi%
1933   \clearpage%
1934   \ifx\th@mb@resetdoublepage\thumbs@one\relax%
1935     \setcounter{th@mblinea}{\theth@mblinea}%
1936     \setcounter{th@mblineb}{\theth@mblineb}%
1937     \def\th@mb@resetdoublepage{0}%
1938   \else%
1939     \edef\theth@mblinea{\number\value{th@mblinea}}%
1940     \edef\theth@mblineb{\number\value{th@mblineb}}%
1941     \def\th@mb@resetdoublepage{1}%
1942   \fi%
1943 \else%
1944   \if@twoside%
1945     \def\th@mbstest{r}% right
1946     \ifx\th@mbstest\th@mbstestpage%
1947       \ifthumbs@righttoleft\clearotherdoublepage%
1948     \else\cleardoublepage%

```

```

1949      \fi%
1950      \else% l(eft)
1951      \ifthumbs@righttoleft\cleardoublepage%
1952      \else\clearotherdoublepage%
1953      \fi%
1954      \fi%
1955      \else\clearpage%
1956      \fi%
1957      \fi%

```

When the very first page of a thumb marks overview is generated, the label is set (with the `\th@mbstablabeling` command).

```

1958      \ifnum\value{FileLine}=1\relax%
1959      \ifx\th@mbdoublepage\thumbs@one\relax%
1960      \ifx\th@mb@resetdoublepage\thumbs@one\relax%
1961      \th@mbstablabeling%
1962      \fi%
1963      \else%
1964      \th@mbstablabeling%
1965      \fi%
1966      \fi%
1967      \null%
1968      \th@mbs@verview%
1969      \pagebreak%
1970      \ifthumbs@verbose%
1971      \message{THUMBS: Fileline: \number\value{FileLine}, a: \number\value{th@mblinea}, %
1972      b: \number\value{th@mblineb}, per page: \th@umbsperspage, max: \th@mbsmax.^~J}%
1973      \fi%

```

When double page mode is active and `\th@mb@resetdoublepage` is one, the last page of the thumbs mark overview must be repeated, but

`\@whilenum\value{FileLine}<\value{thumbs@stop}\do` would prevent this, because `FileLine` is already too large and would only be reset *inside* the loop, but the loop would not be executed again.

```

1974      \ifx\th@mb@resetdoublepage\thumbs@one\relax%
1975      \setcounter{FileLine}{\theth@mblinea}%
1976      \fi%
1977      }%

```

After the overview, the current thumb mark (if there is any) is restored,

```

1978      \setlength{\th@mbposy}{\th@mbsposytocy}%
1979      \ifx\th@mbprintingovertoc\thumbs@one\relax%
1980      \continuethumb%
1981      \fi%

```

as well as the \label, \index, and \glossary commands:

```
1982 \let\label\thumbsoriglabel%
1983 \let\index\thumbsorigindex%
1984 \let\glossary\thumbsorigglossary%
```

and \th@mb@toc@level and \th@mb@toc@text need to be emptied, otherwise for each following Table of Thumb Marks/Edge Index the same entry in the table of contents would be added, if no new \addthumbsoverviewtocontents would be given. (But when no \addthumbsoverviewtocontents is given, it can be assumed that no thumbsoverview-entry shall be added to contents.)

```
1985 \addthumbsoverviewtocontents{}{}%
1986 }
1987
```

\th@mb@verview

```
1988 \newcommand{\th@mb@verview}{%
```

The internal command \th@mb@verview reads a line from file \jobname.tmb and executes the content of that line – if that line has not been processed yet, in which case it is just ignored (see \@unused).

Here was \AddToHookNext{shipout/before}{\AtBeginShipoutUpperLeftForeground{...}}.

If it was \AddToHook{shipout/before}{\AtBeginShipoutUpperLeftForeground{...}}, it could be replaced by \AddToHook{shipout/foreground}{...}, but because of “Next” it cannot.

```
1989 \AddToHookNext{shipout/before}{%
1990   \@expl@@@shipout@add@foreground@picture@@@n{%
1991     \IfFileExists{\jobname.tmb}{% then
1992       \ifthumbs@verbose%
1993         \message{^^JPackage thumbs Info: Processing line \number\value{th@mb@linea} to \number\value{th@mb@lineb} of \jobname.tmb.^^J}%
1994       \fi%
1995       \setcounter{FileLine}{1}%
1996       \openin\@instreamthumb=\jobname.tmb%
1997       \@whilenum\value{FileLine}<\value{th@mb@lineb}\do%
1998       {\ifthumbs@verbose%
1999         \message{THUMBS: Processing \jobname.tmb line \number\value{FileLine}.}%
2000       \fi%
2001       \ifnum \value{FileLine}<\value{th@mb@linea}\relax%
2002         \read\@instreamthumb to \@unused%
2003         \ifthumbs@verbose\message{Can be skipped.^^J}\fi%
2004         % NIRVANA: ignore the line by not executing it, i.e. not executing \@unused.
2005         % % \@unused
2006       \else%
2007         \ifnum \value{FileLine}=\value{th@mb@linea}\relax%
2008         \read\@instreamthumb to \@thumbsout% execute the code of this line
2009         \ifthumbs@verbose%
2010         \message{Executing \jobname.tmb line \number\value{FileLine}.^^J}%
2011         \fi%
2012         \@thumbsout%
2013       \else%
2014         \ifnum \value{FileLine}>\value{th@mb@linea}\relax%
```

```

2015         \read\@instreamthumb to \@thumbsout% execute the code of this line
2016         \ifthumbs@verbose%
2017             \message{Executing \jobname.tmb line \number\value{FileLine}.^^J}%
2018         \fi%
2019         \@thumbsout%
2020     \else% THIS SHOULD NEVER HAPPEN!
2021         \PackageError{thumbs}{Unexpected error! (Really!)}{%
2022             ! You are in trouble here.\MessageBreak%
2023             ! Type\space \space X \string<Return\string>\space to quit.\MessageBreak%
2024             ! Delete temporary auxiliary files\MessageBreak%
2025             ! (like \jobname.aux, \jobname.tmb, \jobname.out)\MessageBreak%
2026             ! and retry the compilation.\MessageBreak%
2027             ! If the error persists, cross your fingers\MessageBreak%
2028             ! and try typing\space \space \string<Return\string>\space to proceed.\MessageBreak%
2029             ! If that does not work,\MessageBreak%
2030             ! please contact the maintainer of the thumbs package.\MessageBreak%
2031         }%
2032     \fi%
2033 \fi%
2034 \fi%
2035 \stepcounter{FileLine}%
2036 }%
2037 \ifnum \value{FileLine}=\value{th@mblineb}\relax%
2038     \ifthumbs@verbose%
2039         \message{THUMBS: Processing \jobname.tmb line \number\value{FileLine}.}%
2040     \fi%
2041     \read\@instreamthumb to \@thumbsout% Execute the code of that line.
2042     \ifthumbs@verbose%
2043         \message{Executing \jobname.tmb line \number\value{FileLine}.^^J}%
2044     \fi%
2045     \@thumbsout%
2046     \stepcounter{FileLine}%
2047 \fi%
2048 \closein\@instreamthumb%

```

And on to the next overview page of thumb marks (if there are so many thumb marks):

```

2049     \addtocounter{th@mblinea}{\th@umbsperpage}%
2050     \addtocounter{th@mblineb}{\th@umbsperpage}%
2051     \setcounter{Th@mbTmpA}{\th@ombsmax}%
2052     \ifnum\value{th@mblineb}>\c@Th@mbTmpA\relax%
2053         \setcounter{th@mblineb}{\c@Th@mbTmpA}%
2054     \fi%
2055 }{% else

```

When `\jobname.tmb` was not found, we cannot read from that file, therefore the `FileLine` is set to `thumbsstop`, stopping the calling of `\th@mb@verview` in `\thumbsoverview`. (And we issue a warning, of course.)

```

2056     \setcounter{FileLine}{\number\value{thumbsstop}}}%
2057     \AddToHook{enddocument/info}{kernel/warnings}{%
2058       \PackageWarningNoLine{thumbs}{%
2059         File \jobname.tmb not found.\MessageBreak%
2060         Rerun to get thumbs overview page(s) right.%
2061       }%
2062     }%
2063   }%
2064 }%
2065 }%
2066 }
2067

```

`\thumborigaddthumb` When we are in `draft` mode, the thumb marks are “de-coloured”, their width is reduced, and a warning is given.

```

2068 \let\thumborigaddthumb\addthumb%
2069
2070 \ifthumbs@draft
2071   \setlength{\th@mbwidthx}{2pt}
2072   \renewcommand{\addthumb}[4]{\thumborigaddthumb{#1}{#2}{black}{gray}}
2073   \PackageWarningNoLine{thumbs}{thumbs package in draft mode:\MessageBreak%
2074     Thumb mark width is set to 2pt,\MessageBreak%
2075     thumb mark text colour to black, and\MessageBreak%
2076     thumb mark background colour to gray.\MessageBreak%
2077     Use package option final to get the original values.\MessageBreak%
2078   }
2079 \fi
2080

```

When we are in `hidethumbs` mode, there are no thumb marks and therefore neither any thumb mark overview page. A warning is given.

```

2081 \ifthumbs@hidethumbs
2082   \renewcommand{\addthumb}[4]{\relax}
2083   \PackageWarningNoLine{thumbs}{thumbs package in hide mode:\MessageBreak%
2084     Thumb marks are hidden.\MessageBreak%
2085     Set package option "hidethumbs=false" to get thumb marks%
2086   }
2087   \renewcommand{\thumbnewcolumn}{\relax}
2088 \fi
2089

```

To determine whether to place the thumb marks at the left or right side of a two-sided paper, `thumbs` must determine whether the page number is odd or even. Because `\thepage` can be set to some value, the `ThumbsPage` counter is used instead. When the current page number is determined in hook `{shipout/before}`, it is usually already the number of the next page to be put out. But depending on loading of several packages and depending on the order they are loaded in, it is not the next page number but the current one. In earlier versions of the `thumbs` package, it was checked which packages had been loaded in what order. When it turned out that it depended on even more packages than those checked for at that time, a new procedure was introduced. `\AtBeginDvi`, i.e. when the first page is shipped out, it is checked whether the `\c@ThumbsPage` current page number is odd (i.e. 1) or even (i.e. 2 or 0) and the corresponding `\th@mbpofffix` is defined. For one-sided printing all pages are right ones (respectively left ones for right-to-left writing). Now the information about the necessary `\th@mbpofffix` is needed already earlier, thus it is written to the `aux` file. At the next compilation of the document the `aux` file will be read before beginning the first page, thus the information will be available.

```

2090 \AddToHook{begindocument}[start]{%
2091   \AtBeginDvi{%
2092     \if@twoside%
2093       \ifodd\c@ThumbsPage\relax%
2094         \xdef\th@mbpofffix{0}%
2095       \else%
2096         \xdef\th@mbpofffix{1}%
2097       \fi%
2098     \else%

```

For one sided printing all pages are right pages (for left-to-right writing), therefore `\th@mbpofffix` does not even matter, but it needs to be defined anyway.

```

2099       \xdef\th@mbpofffix{0}%
2100     \fi%

```

For right-to-left writing we need to put the marks on the other edge of the page:

```

2101   \ifthumbs@righttoleft%
2102     \setcounter{Th@mbTmpA}{\numexpr\th@mbpofffix+1\relax}%
2103     \xdef\th@mbpofffix{\number\value{Th@mbTmpA}}%
2104   \fi%
2105   \if@files%
2106     \immediate\write\@auxout{\string\xdef\string\th@mbpofffix{\th@mbpofffix}}%
2107   \fi%
2108 }%
2109 }
2110 \end{package}

```

6 Installation

6.1 Downloads

Everything is available at <https://www.ctan.org>, but may need additional packages themselves.

`thumbs.dtx` For unpacking the `thumbs.dtx` file and constructing the documentation it is required:

- T_EXFormat L^AT_EX 2_ε: <https://www.CTAN.org>
- document class ltxdoc, 2024/02/08, v2.1j, Standard LaTeX documentation class, <https://www.ctan.org/pkg/ltxdoc>
- package geometry, 2020/01/02, v5.9, Page Geometry, <https://www.ctan.org/pkg/geometry>
- package holtxdoc, 2019/12/09, v0.30, Private additional ltxdoc support (HO), <https://www.ctan.org/pkg/holtxdoc>

`thumbs.sty` The `thumbs.sty` for L^AT_EX 2_ε (i. e. each document using the `thumbs` package) requires:

- T_EX Format L^AT_EX 2_ε, <https://www.CTAN.org>
- package xcolor, 2024/09/29, v3.02, LaTeX color extensions (UK), <https://www.ctan.org/pkg/xcolor>
- package picture, 2020-04-22, v1.6, Dimens for picture macros (HO), <https://www.ctan.org/pkg/picture>
- package alphalph, 2019/12/09, v2.6, Convert numbers to letters (HO), <http://www.ctan.org/pkg/alphalph>
- package rerunfilecheck, 2025-06-21, v1.11, Rerun checks for auxiliary files (HO), <https://www.ctan.org/pkg/rerunfilecheck>
- package pagecolor, 2025-01-28, v1.2d, Provides thepagecolor (HMM), <https://www.ctan.org/pkg/pagecolor>
- package undolabl, 2025-01-28, v1.0o, Overriding labels (HMM), <https://www.ctan.org/pkg/undolabl>
- package kvoptions, 2022-06-15, v3.15, Key value format for package options (HO), <https://www.ctan.org/pkg/kvoptions>

`thumb-example.tex` The `thumb-example.tex` requires the same file as all documents using the `thumbs` package, i. e.

- package thumbs, 2025-12-04, v1.1c, <https://www.ctan.org/pkg/thumbs>
(Well, it is the example file for this package, and because you are reading the documentation for the `thumbs` package, it can be assumed that you already have some version of it – is it the current one?)

and additionally:

- package eurosym, 1998/08/06, v1.1, European currency symbol “Euro”, <https://www.ctan.org/pkg/eurosym>
- package lipsum, 2021-09-20, v2.7, 150 paragraphs of Lorem Ipsum dummy text, <https://www.ctan.org/pkg/lipsum>
- package hyperref, 2025-07-12, v7.01o, Hypertext links for L^AT_EX, <https://www.ctan.org/pkg/hyperref>
- package geometry, 2020/01/02, v5.9, Page Geometry, <https://www.ctan.org/pkg/geometry>

If the printing of unchanged layout on larger physical paper shall be tested, also the `crop` package is needed (or another package providing the same functions):

- package `crop`, 2017/11/19, v1.10, Crop marks (MF), <https://www.ctan.org/pkg/crop>

Alternatives As possible alternatives in section 3, Alternatives, there are listed (newer versions might be available):

- package `chapterthumb`, 2005/03/10, v0.1,
<https://mirror.ctan.org/info/examples/KOMA-Script-3/Anhang-B/source/chapterthumb.sty>
- package `eso-pic`, 2023-05-03, v3.0c, <https://www.ctan.org/pkg/eso-pic>
- package `fancytabs`, 2016/03/29, v1.9, <https://www.ctan.org/pkg/fancytabs>
- package `thumb`, 2001, without file version, by INGO KLÖCKEL, which was available at
<ftp://ftp.dante.de/pub/tex/info/examples/ltt/thumb.sty>.
- package `thumb` (a completely different one), 1997/12/24, v1.0, <https://www.ctan.org/pkg/thumb>
- package `thumbindex`, 2009/12/13, without file version, <https://hisashim.org/2009/12/13/thumbindex.html>
- `thumb-indexes`, from the `fancyhdr` package, available as source code in the documentation of the `fancyhdr` package,
<https://ctan.org/pkg/fancyhdr>.
- package `thumbpdf`, 2018-09-07, v3.17, <https://www.ctan.org/pkg/thumbpdf>
- package `thumby`, 2010/01/14, v0.1, <https://www.ctan.org/pkg/thumby>

Münch A hyperlinked list of my (other) packages can be found at <https://www.ctan.org/author/muench-hm>.

6.2 Package, unpacking TDS

Package. This package is available on <https://www.CTAN.org>.

<https://mirror.ctan.org/macros/latex/contrib/thumbs/thumbs.dtx>

The source file.

<https://mirror.ctan.org/macros/latex/contrib/thumbs/thumbs.pdf>

The documentation.

<https://mirror.ctan.org/macros/latex/contrib/thumbs/thumbs-example.pdf>

The compiled example file, as it should look like.

<https://mirror.ctan.org/macros/latex/contrib/thumbs/README>

The README file.

There is also a `thumbs.tds.zip` available:

<https://mirror.ctan.org/install/macros/latex/contrib/thumbs.tds.zip>

Everything in TDS compliant, compiled format.

which additionally contains

thumbs.ins	The <code>install</code> file.
thumbs.drv	The <code>driver</code> to generate the documentation.
thumbs.sty	The <code>style</code> file.
thumbs-example.tex	The <code>example</code> file.

For required other packages please see the preceding subsection.

Unpacking. The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain `TEX`:

```
tex thumbs.dtx
```

About generating the documentation see paragraph 6.4 below.

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

thumbs.sty	→ tex/latex/thumbs/thumbs.sty
thumbs.pdf	→ doc/latex/thumbs/thumbs.pdf
thumbs-example.tex	→ doc/latex/thumbs/thumbs-example.tex
thumbs-example.pdf	→ doc/latex/thumbs/thumbs-example.pdf
thumbs.dtx	→ source/latex/thumbs/thumbs.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`.

6.3 Refresh file name databases

If your `TEX` distribution (`TEX Live`, `MiKTEX`, ...) relies on file name databases, you must refresh these. For example, `TEX Live` users run `texhash` or `mktexlsr`.

6.4 Some details for the interested

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{thumbs.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 a configuration file `ltxdoc.cfg`. For instance, put the following 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^AT_EX:

```
pdflatex thumbs.dtx
makeindex -s gind.ist thumbs.idx
pdflatex thumbs.dtx
makeindex -s gind.ist thumbs.idx
pdflatex thumbs.dtx
```

6.5 Compiling the example

The example file, `thumbs-example.tex`, can be compiled via

```
latex thumbs-example.tex
```

or (recommended)

```
pdflatex thumbs-example.tex
```

and will need probably at least four (!) compiler runs to get everything right.

7 Acknowledgements

I would like to thank HEIKO OBERDIEK for providing the `hyperref` as well as a lot (!) of other useful packages (from which I also got everything I know about creating a file in `.dtx` format, OK, say it: copying), and everybody at <https://tex.stackexchange.com/> for their help in all things T_EX (especially DAVID CARLISLE for <https://tex.stackexchange.com/a/45654>, although it is no longer used in this package). Thanks for bug reports go to VERONICA BRANDT, MARTIN BAUTE (even two bug reports), SU MEI GOH, MICHAEL DORNER, and YANNICK MÜRTZ. For the suggestion of new features I give thanks to MARTIN BAUTE, STEPHANIE HEIN, BJORN VICTOR, HEINI GEIRING, BPLASA, and SU MEI GOH.

8 History

[2010/04/01 v0.01 – 2011/05/13 v0.46]

- Diverse β -versions during the creation of this package.

[2011/05/14 v1.0a]

- Upload to <https://www.ctan.org/pkg/thumbs>.

[2011/05/18 v1.0b]

- When more than one thumb mark is places at one single page, the variables containing the values (text, colour, backgroundcolour) of those thumb marks are now created dynamically. Theoretically, one can now have 2 147 483 647 thumb marks at one page instead of six thumb marks (as with `thumbs` version 1.0a), but I am quite sure that some other limit will be reached before the 2 147 483 647th thumb mark.
- Bug fix: When a document using the `thumbs` package was compiled, and the `.aux` and `.tmb` files were created, and the `.tmb` file was deleted (or renamed or moved), while the `.aux` file was not deleted (or renamed or moved), and the document was compiled again, and the `.aux` file was reused, then reading from the then empty `.tmb` file resulted in an endless loop. Fixed.

[2011/05/20 v1.0c]

- The thumb mark width is written to the `log` file (in `verbose` mode only). The knowledge of the value could be helpful for the user, when option `width={auto}` was used, and one wants the thumb marks to be half as big, or with double width, or a little wider, or a little smaller... Also thumb marks' height, top thumb margin and bottom thumb margin are given. Look for
***** THUMB dimensions *****
in the `log` file.
- Bug fix: There was a
 `\advance\th@mbheighty-\th@mbdistance,`
where
 `\advance\th@mbheighty-\th@mbdistance`
 `\advance\th@mbheighty-\th@mbdistance`
should have been, causing wrong thumb marks' height, thereby wrong number of thumb marks per column, and thereby another endless loop. Fixed.
- The `ifthen` package is no longer required for the `thumbs` package, removed from its `\RequirePackage` entries.
- The `infwarerr` package is used for its `\@PackageInfoNoLine` command.
- The `warning` package is no longer used by the `thumbs` package, removed from its `\RequirePackage` entries. Instead, the `atveryend` package is used, because it is loaded anyway when the `hyperref` package is used.

[2011/05/26 v1.0d]

- Bug fix: labels or index or glossary entries were gobbled for the thumb marks overview page, but gobbling leaked to the rest of the document; fixed.
- New option `silent`, complementary to old option `verbose`.
- New option `draft` (and complementary option `final`), which “de-coloures” the thumb marks and reduces their width to 2pt.

[2011/06/02 v1.0e]

- Gobbling of labels or index or glossary entries improved.
- Dimension `\thumbsinfodimen` no longer needed, removed.
- Internal command `\thumbs@info` no longer needed, removed.
- New value `autoauto` (not default!) for option `width`, setting the thumb marks width to fit the widest thumb mark text.
- When `width={autoauto}` is not used, a warning is issued, when the thumb marks width is smaller than the thumb mark text.
- Bug fix: Since version v1.0b as of 2011/05/18 the number of thumb marks at one single page was no longer limited to six, but the example still stated this. Fixed.

[2011/06/08 v1.0f]

- Bug fix: `\th@mb@titlelabel` should be defined `\empty` at the beginning of the package: fixed. (Bug reported by VERONICA BRANDT. Thanks!)
- Bug fix: `\thumbs@distance` versus `\th@mb@distance`: There should be only two times `\thumbs@distance`, the value of option `distance`, otherwise it should be the length `\th@mb@distance`: fixed. (Also this bug reported by VERONICA BRANDT. Thanks!)
- `\hoffset` and `\voffset` are now ignored by default, but can be regarded using the options `ignorehoffset=false` and `ignorevoffset=false`. (Pointed out again by VERONICA BRANDT. Thanks!)
- Added to documentation: The package takes the dimensions `\AtBeginDocument` [now:], thus later the page dimensions should not be changed. Now explicitly stated this in the documentation. `\paperwidth` changes are probably possible.

[2011/06/24 v1.0g]

- Bug fix: When `hyperref` was *not* used, then some labels were not set at all – fixed.
- Bug fix: When more than one Table of Tumbs (edge indices) were created with the `\thumbsoverview` command, there were some `counter ... already defined-errors` – fixed.
- Bug fix: When more than one Table of Tumbs were created with the `\thumbsoverview` command, there was a `Label TableofTumbs multiply defined-error` and it was not possible to refer to any but the last Table of Tumbs. Fixed with labels `TableofTumbs1`, `TableofTumbs2`,... (`TableofTumbs` still aims at the last used Table of Tumbs for compatibility.)
- Bug fix: Sometimes the thumb marks were stopped one page too early before the Table of Tumbs – fixed.

[2011/08/08 v1.0h]

- Replaced `\global\edef` by `\xdef`.
- Now using the `pagecolor` package. Empty thumb marks now inherit their colour from the pages's background. Option `pagecolor` is therefore obsolete.
- The `pagesLTS` package has been replaced by the `pageslts` package.
- New kinds of thumb mark overview pages introduced additionally to `\thumbsoverview`: `\thumbsoverviewback`, `\thumbsoverviewverso`, and `\thumbsoverviewdouble`.
- New option `hidethumbs=true` to hide thumb marks (and their overview page(s)).
- Option `ignorehoffset` did not work for the thumb marks overview page(s) – neither `true` nor `false`; fixed.

[2011/08/22 v1.0i]

- Hot fix: T_EX 2011/06/27 has changed `\enddocument` and thus broken the `\AtVeryVeryEnd` command/hooks of `atveryend` package as of 2011/04/23, v1.7. Version 2011/06/30, v1.8, fixed it, but this version was not available at CTAN.org yet. Until then `\AtEndAfterFileList` was used.

[2011/10/19 v1.0j]

- Changed some Warnings into Infos (as suggested by MARTIN BAUTE).
- The SW(P)-warning is now only given `\IfFileExists{tcilatex.tex}`, otherwise just a message is given. (Warning questioned by MARTIN BAUTE.)
- New option `nophantomsection` to *globally* disable the automatic placement of a `\phantomsection` before *all* thumb marks.
- New command `\thumbsnophantom` to *locally* disable the automatic placement of a `\phantomsection` before the *next* thumb mark.

[2012/01/01 v1.0k]

- Bugfix: Wrong installation path given in the documentation, fixed.
- No longer uses the `th@mps@tmpA` counter but uses `\@tempcnta` instead.
- No longer abuses the `\th@mbposyA` dimension but `\@tempdima`.

[2012/01/07 v1.0l]

- Bugfix: Used a `\@tempcnta` where a `\@tempdima` should have been.

[2012/02/23 v1.0m]

- Bugfix: Replaced `\newcommand{\QT0}[2]{#2}` (for SWP) by `\providecommand{\QT0}[2]{#2}`.
- Bugfix: When the `tikz` package was loaded before `thumbs`, in `twoside`-mode the thumb marks were printed at the wrong side of the page. (Bug reported by MARTIN BAUTE.) With `hyperref` it really depends on the loading order of the three packages.
- Now using `\ltx@ifpackageloaded` from the `ltxcmds` package to check (after `\begin{document}`) whether the `hyperref` package was loaded.
- For the thumb marks `\parboxes` instead of `\makeboxes` are used (just in case somebody wants to place two lines into a thumb mark, e.g.
Sch
St
in a phone book, where the other `Ses` are placed in another chapter).

[2012/02/25 v1.0n]

- Check for loading order of `tikz` and `hyperref` replaced by robust method. (Thanks to DAVID CARLISLE, <https://tex.stackexchange.com/a/45654!>)
(This was replaced in version 1.0r by a completely different method, which does not test for the loading order of packages but for the page number directly.)
- Fixed `url`-handling in the example in case the `hyperref` package was not loaded.
- In the index the line-numbers of definitions were not underlined; fixed.
- In the `thumbs-example` there are now a few words about “paragraph-thumbs” (i.e. text which is too long for the width of a thumb mark).

[2013/08/22 v1.0o]

- *This version was not released to the general public!*
- STEPHANIE HEIN requested the feature to be able to increase the horizontal space between page edge and the text inside of the thumb mark. Therefore options `evenindent` and `odddent` were implemented (later renamed to `eventxtindent` and `oddtxtindent`).
- BJORN VICTOR reported the same problem and also the one, that two marks are not printed at the exact same vertical position on recto and verso pages. Because this can be seen with a lot of duplex printers, the new option `evenprintvoffset` allows to vertically shift the marks on even pages by any length.

[2013/09/17 v1.0p]

- *This version was not released to the general public!*
- The thumb mark text is now set in `\parboxes` everywhere.
- HEINI GEIRING requested the feature to be able to horizontally move the marks away from the page edge, because this is useful when using brochure printing where after the printing the physical page edge is changed by cutting the paper. Therefore the options `evenmarkindent` and `oddmarkexdent` were introduced and the options `evenindent` and `oddexdent` were renamed to `eventxtindent` and `oddtxtexdent`.

[2014/03/09 v1.0q]

- New version of the `atveryend` package is now available at CTAN.org (see entry in this history for `thumbs` version [2011/08/22 v1.0i]).
- Support for SW(P) drastically reduced; no more testing is performed.
- New option `txtcentered`: If it is set to `true`, the thumb's text is centered, otherwise either `\raggedright` or `\raggedleft` (depending on left or right page for double sided documents).
- `\normalsize` added to prevent “font size leakage” from the respective page.
- Handling of obsolete options (mainly from version 2013/08/22 v1.0o) added.
- This version has been archived at <https://web.archive.org/web/20250808184843/https://ctan.math.illinois.edu/install/macros/latex/contrib/thumbs.tds.zip>.

[2015/05/25 v1.0r]

- *This version was, by mistake, not released to the general public!*
- Replaced code suggestion for possible compatibility with SW(P) by simple warning of possible incompatibility.
- BPLASA requested the possibility to remove the coloured rules behind the entries on the overview pages and to print the text there in the current colour (usually black). For this the option `plainthumbsoverview` (`false` by default, but `true` if used) was introduced (and a spuriouse `+20pt` removed). (see p. 8)
- BJORN VICTOR suggested to use thumb marks consisting only of frames instead of filled rectangles. Options `frame` and `frameinnercolor` were introduced to accomplish this. (see p. 8)
- SU MEI GOH requested the feature to be able to change the colour of a thumb mark (text and background). Explanation added to the documentation and included in the example. Not requested but also explained is now the possibility to change the thumb mark text. (see p. 11)
- Bugfix: One temporary counter for two different things screwed things up; fixed and replaced the two temporary counters by two `\newcounters`.

- Bugfix: SU MEI GOH reported this bug: the order, in which the packages `atbegshi` and `pageslts` were loaded, could have caused thumb marks to be placed at the wrong edge of a page (details on p. 70). Fixed this by replacing the detection, which packages had been loaded and in what order, by checking `\c@CurrentPage` `\AtBeginShipoutFirst`.
- Bugfix: In the thumb marks overview page (edge index) on right pages the rules started immediately at the text. Now they start 1 em *before* the text.
- Bugfix: `\MakeUppercase` missed `{` and `}`; fixed.
- Bug circumvention: In the thumb marks overview page (edge index) on left pages the rules sometimes end a bit too early. While I did not determine yet why they are behaving like this, option `leftindexruleplus` allows to add e.g. `\evensidemargin` (or 20 pt or another length) to the rules (see p. 7).
- Bugfix: Option `txtcentered` was broken; fixed.
- Bugfix: Some `\voffset` were off; fixed.
- Blank entries on the overview pages now use `\phantom` instead of `\thepagecolor`, thus overwriting of e.g. a page number or other footer material is prevented.
- Explanation about thumb index and edge index added to the introduction (p. 4).
- Explanations about `crop` package added (for example at p. 12).

[2025-08-01 v1.1a]

- *This version was intentionally not released to the general public!*
- Requires T_EX-Format L^AT_EX2e 2025-06-01.
- Removed code related to now obsolete SW(P).
- `\AtBeginShipoutUpperLeft` needed to be replaced by `\AtBeginShipoutUpperLeftForeground` (and that by `\@expl@@@shipout@add@foreground@picture@@n`) to work with new versions of `crop` package and kernel.
- Updated to current kernel and packages; now using hooks where available.
- Package `morefloats`, <https://www.ctan.org/pkg/morefloats>, is no longer used.
- Package `hypdoc`, <https://www.ctan.org/pkg/hypdoc>, is no longer used.
- Package `atbegshi`, <https://www.ctan.org/pkg/atbegshi>, is no longer used.
- Package `atveryend`, <https://www.ctan.org/pkg/atveryend>, is no longer used.
- Package `infwarerr`, <https://www.ctan.org/pkg/infwarerr>, is no longer used but `hyperref` does use it anyway.
- Package `ltxcmds`, <https://www.ctan.org/pkg/ltxcmds>, is no longer used. but current `hyperref` does use it anyway.

[2025-08-11 v1.1b]

- *This version was intentionally not released to the general public!*
- New option `righttoleft` for documents using right-to-left writing, placing the thumb marks at the opposite edge of the page. The `thumbs` package now should be compatible with `polyglossia` and `Arabic` (and \LaTeX).
- Package `pageslts`, <https://www.ctan.org/pkg/pageslts>, is no longer required and therefore not loaded by `thumbs` – if wanted, load it explicitly in your document!
- Changed (hopefully improved) really a lot of details in the code.
- Updates to really a lot of details in the documentation (manual & README).

[2025-12-04 v1.1c]

- Minimal change in output to `log`.
- Finally uploaded to CTAN.

When you find a mistake or have a suggestion for an improvement of this package, please send an e-mail to the maintainer, thanks! (Please see BUG REPORTS in the README.)

Note: Q, X and Y are not missing in the following index, but no command *beginning* with any of these letters has been used in this `thumbs` package.

9 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; plain numbers refer to the code lines where the entry is used.

Symbols	
<code>\@auxout</code>	1711, 1712, 1713, 2106
<code>\@expl@@@shipout@add@foreground@picture@@n</code>	1637, 1990
<code>\@gobbletwo</code>	882, 1034
<code>\@ifundefined</code>	899
<code>\@instreamthumb</code>	878, 1996, 2002, 2008, 2015, 2041, 2048
<code>\@tempcnta</code>	1184, 1185, 1187, 1188, 1193, 1195, 1197, 1201
<code>\@tempdima</code>	832, 833, 836, 838, 851, 853, 868, 891, 918, 955, 956, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1013, 1015, 1017, 1019, 1113, 1115, 1117, 1119, 1120, 1122, 1126, 1339, 1341
<code>\@tempdimb</code>	1281, 1283, 1285, 1286, 1298, 1362, 1363, 1372, 1469, 1470, 1479, 1566, 1567, 1576
<code>\@tempdimc</code>	970, 971, 972, 973, 1018, 1019, 1030, 1031, 1032, 1261, 1262, 1266, 1267, 1280, 1285, 1287, 1340, 1341, 1360, 1361, 1368, 1375, 1380, 1381, 1383, 1385, 1467, 1468, 1475, 1482, 1518, 1519, 1520, 1564, 1565, 1572, 1579, 1620, 1621, 1622, 1628, 1631, 1632, 1634, 1636
<code>\@thumbsout</code>	2008, 2012, 2015, 2019, 2041, 2045
<code>\@unused</code>	2002, 2004, 2005
<code>\@whilenum</code>	1186, 1642, 1925, 1997
A	
<code>\addcontentsline</code>	62, 1744
<code>\addthumb</code>	10, 161, 165, 185, 197, 204, 217, 234, 238, 247, 249, 250, 258, 266, 275, 279, 287, 315, 321, 431, 436, 442, 450, 1058, 1059, 1061, 1063, 1066, 1073, 1084, 1092, 1590, 1591, 1593, 1598, 1669, 1671, 1684, 2068, 2072, 2082
<code>\addthumbsoverviewtocontents</code>	11, 139, 142, 154, 419, 426, 502, 1722, 1985
<code>\addtitlethumb</code>	10, 121, 126, 1082
<code>\addtocontents</code>	1148, 1152
<code>\AddToHook</code>	571, 747, 820, 903, 1587, 1665, 1691, 1695, 2057, 2090
<code>\AddToHookNext</code>	1989
<code>\AddToHookshipout/before</code>	55
<code>\AlphaAlph</code>	1193, 1195, 1197, 1646, 1647, 1648
Alternatives	13
<code>\Alternatives</code>	72
<code>\AtBeginDvi</code>	2091
B	
<code>\bottomthumbmargin</code>	6
<code>\box</code>	1396, 1403, 1410, 1417, 1424, 1431, 1445
C	
<code>\c@page</code>	1728
<code>\c@Th@mbTmpA</code>	778, 813, 1108, 1161, 1183, 1201, 1273, 1366, 1473, 1511, 1570, 1616, 1630, 2052, 2053
<code>\c@Th@mbTmpB</code>	1641, 1644, 1646, 1647, 1648, 1653
<code>\c@ThumbsPage</code>	1271, 1364, 1471, 1509, 1568, 1601, 2093
Changing thumb colour and text	11
<code>\Changing_Thumb_Colour_and_Text</code>	11
<code>\cleardoublepage</code>	1728, 1867, 1873, 1876, 1948, 1951
<code>\clearotherdoublepage</code>	1727, 1866, 1872, 1877, 1947, 1952
<code>\clearpage</code>	1728, 1881, 1933, 1955
<code>\closein</code>	2048
<code>\closeout</code>	1715
<code>\colorlet</code>	48, 51, 303, 306, 339, 342, 348, 351, 378, 381
<code>\continuethumb</code>	10, 219, 227, 1216, 1980
<code>crop</code>	5, 8, 12, 28, 32, 72
<code>\crop</code>	12
D	
<code>\DeclareBoolOption</code>	551, 552, 553, 554, 555, 556, 558, 560, 561
<code>\DeclareComplementaryOption</code>	557, 559
<code>\DeclareMathAlphabet</code>	44
<code>\DeclareRobustCommand</code>	45, 53, 54, 309, 310, 331, 361
<code>\DeclareStringOption</code>	535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 563, 564, 565
<code>\dimexpr</code>	762, 1219, 1461
<code>\distance</code>	6
<code>\dotfill</code>	648
<code>\draft,final</code>	9
E	
<code>\ensuremath</code>	45
<code>\euro</code>	297
<code>\evenindent</code>	9
<code>\evenmarkindent</code>	7
<code>\evenprintvoffset</code>	7
<code>\evensidemargin</code>	1265, 1289, 1290, 1291, 1293, 1294, 1324, 1325, 1327, 1335, 1381
<code>\eventxtindent</code>	7

F		I	
\familydefault	44	\if@filesw	764, 900, 1146, 1710, 2105
\fill	640, 654	\if@twocolumn	1729
\fmtversion	511, 515	\if@twoside	781, 1270, 1370, 1477, 1508, 1574, 1618, 1629, 1728, 1755, 1768, 1781, 1863, 1944, 2092
\footskip	811, 990	\ifdim	797, 833, 836, 838, 858, 918, 956, 1002, 1019, 1045, 1097, 1114, 1119, 1122, 1241, 1289, 1324, 1341, 1348, 1495, 1544, 1604, 1686
\frame	8	\IfFileExists	1991
\frameinnercolor	8, 29	\IfFormatAtLeastTF	512
G		\ifodd	778, 1273, 1366, 1473, 1511, 1570, 1616, 1630, 1728, 2093
\glossary	1907, 1910, 1984	\IfPackageLoadedF	41, 1333
H		\IfPackageLoadedT	458, 748, 993, 1001, 1010, 1135, 1733
\hbox	246, 1729	\IfPackageLoadedTF	21, 746, 1825
\headheight	808, 987	\ifthumbs@draft	885, 933, 1123, 1687, 2070
\headsep	809, 988	\ifthumbs@hidethumbs	2081
\height	6	\ifthumbs@ignorehoffset	600, 821, 940, 1609, 1619
\hfill	798	\ifthumbs@ignorevoffset	618, 826
\hidethumbs	9	\ifthumbs@nophantomsection	1136
\hoffset	615, 824, 941, 1267, 1333, 1610, 1620	\ifthumbs@plainthumbsoverview	1305, 1352, 1387, 1459
\Hook_enddocument/afterlastpage	57	\ifthumbs@righttoleft	1291, 1294, 1749, 1762, 1775, 1788, 1815, 1866, 1872, 1876, 1947, 1951, 2101
\hrulefill	644	\ifthumbs@txtcentered	776, 791
\hsize	1392	J	
\hyperref	1314, 1402, 1416, 1423	\jobname	769, 910, 1715, 1717, 1991, 1993, 1996, 1999, 2010, 2017, 2025, 2039, 2043, 2059
I		L	
\if@filesw	764, 900, 1146, 1710, 2105	\label	60, 247, 316, 459, 1145, 1734, 1736, 1737, 1740, 1742, 1905, 1908, 1982
\if@twocolumn	1729	\leaders	1396, 1403, 1410, 1417, 1424, 1431, 1445
\if@twoside	781, 1270, 1370, 1477, 1508, 1574, 1618, 1629, 1728, 1755, 1768, 1781, 1863, 1944, 2092	\leftindexruleplus	7
\ifdim	797, 833, 836, 838, 858, 918, 956, 1002, 1019, 1045, 1097, 1114, 1119, 1122, 1241, 1289, 1324, 1341, 1348, 1495, 1544, 1604, 1686	\leftskip	798
\IfFileExists	1991	\linefill	5, 29
\IfFormatAtLeastTF	512	\lipsum	177, 179, 181
\ifodd	778, 1273, 1366, 1473, 1511, 1570, 1616, 1630, 1728, 2093	M	
\IfPackageLoadedF	41, 1333	\makeatletter	387, 409
\IfPackageLoadedT	458, 748, 993, 1001, 1010, 1135, 1733	\makeatother	397, 415
\IfPackageLoadedTF	21, 746, 1825	\MakeUppercase	1887
\ifthumbs@draft	885, 933, 1123, 1687, 2070	\MakeUppercases	1884
\ifthumbs@hidethumbs	2081	\markboth	63, 1887
\ifthumbs@ignorehoffset	600, 821, 940, 1609, 1619	\mathup	44, 45
\ifthumbs@ignorevoffset	618, 826	\message	880, 1035, 1971, 1993, 1999, 2003, 2010, 2017, 2039, 2043
\ifthumbs@nophantomsection	1136	\minheight	6
\ifthumbs@plainthumbsoverview	1305, 1352, 1387, 1459	\Münch	72
\ifthumbs@righttoleft	1291, 1294, 1749, 1762, 1775, 1788, 1815, 1866, 1872, 1876, 1947, 1951, 2101	N	
\ifthumbs@txtcentered	776, 791	\newbox	707
F		\newcommand	774, 806, 1042, 1056, 1082, 1090, 1092, 1214, 1216, 1218, 1238, 1492, 1505, 1722, 1727, 1732, 1748, 1754, 1767, 1780, 1793, 1988
\familydefault	44	\newcounter	569, 756, 757, 1892, 1893, 1894, 1895
\fill	640, 654	\newdimen	659, 661, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 677, 679, 682, 684, 687, 694, 759, 760
\fmtversion	511, 515	\newread	878
\footskip	811, 990	\newwrite	1714
\frame	8	\nopagecolor	40
\frameinnercolor	8, 29	\nophantomsection	8
G		\normalsize	789, 792, 798, 800
\glossary	1907, 1910, 1984	\number	1899, 1939, 1940, 1971, 1972, 1993, 1999, 2010, 2017, 2039, 2043, 2056, 2103
H		\numexpr	2102
\hbox	246, 1729	J	
\headheight	808, 987	\jobname	769, 910, 1715, 1717, 1991, 1993, 1996, 1999, 2010, 2017, 2025, 2039, 2043, 2059
\headsep	809, 988	L	
\height	6	\label	60, 247, 316, 459, 1145, 1734, 1736, 1737, 1740, 1742, 1905, 1908, 1982
\hfill	798	\leaders	1396, 1403, 1410, 1417, 1424, 1431, 1445
\hidethumbs	9	\leftindexruleplus	7
\hoffset	615, 824, 941, 1267, 1333, 1610, 1620	\leftskip	798
\Hook_enddocument/afterlastpage	57	\linefill	5, 29
\hrulefill	644	\lipsum	177, 179, 181
\hsize	1392	M	
\hyperref	1314, 1402, 1416, 1423	\makeatletter	387, 409
I		\makeatother	397, 415
\if@filesw	764, 900, 1146, 1710, 2105	\MakeUppercase	1887
\if@twocolumn	1729	\MakeUppercases	1884
\if@twoside	781, 1270, 1370, 1477, 1508, 1574, 1618, 1629, 1728, 1755, 1768, 1781, 1863, 1944, 2092	\markboth	63, 1887
\ifdim	797, 833, 836, 838, 858, 918, 956, 1002, 1019, 1045, 1097, 1114, 1119, 1122, 1241, 1289, 1324, 1341, 1348, 1495, 1544, 1604, 1686	\mathup	44, 45
\IfFileExists	1991	\message	880, 1035, 1971, 1993, 1999, 2003, 2010, 2017, 2039, 2043
\IfFormatAtLeastTF	512	\minheight	6
\ifodd	778, 1273, 1366, 1473, 1511, 1570, 1616, 1630, 1728, 2093	\Münch	72
\IfPackageLoadedF	41, 1333	N	
\IfPackageLoadedT	458, 748, 993, 1001, 1010, 1135, 1733	\newbox	707
\IfPackageLoadedTF	21, 746, 1825	\newcommand	774, 806, 1042, 1056, 1082, 1090, 1092, 1214, 1216, 1218, 1238, 1492, 1505, 1722, 1727, 1732, 1748, 1754, 1767, 1780, 1793, 1988
\ifthumbs@draft	885, 933, 1123, 1687, 2070	\newcounter	569, 756, 757, 1892, 1893, 1894, 1895
\ifthumbs@hidethumbs	2081	\newdimen	659, 661, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 677, 679, 682, 684, 687, 694, 759, 760
\ifthumbs@ignorehoffset	600, 821, 940, 1609, 1619	\newread	878
\ifthumbs@ignorevoffset	618, 826	\newwrite	1714
\ifthumbs@nophantomsection	1136	\nopagecolor	40
\ifthumbs@plainthumbsoverview	1305, 1352, 1387, 1459	\nophantomsection	8
\ifthumbs@righttoleft	1291, 1294, 1749, 1762, 1775, 1788, 1815, 1866, 1872, 1876, 1947, 1951, 2101	\normalsize	789, 792, 798, 800
\ifthumbs@txtcentered	776, 791	\number	1899, 1939, 1940, 1971, 1972, 1993, 1999, 2010, 2017, 2039, 2043, 2056, 2103
F		\numexpr	2102
\familydefault	44	J	
\fill	640, 654	\jobname	769, 910, 1715, 1717, 1991, 1993, 1996, 1999, 2010, 2017, 2025, 2039, 2043, 2059
\fmtversion	511, 515	L	
\footskip	811, 990	\label	60, 247, 316, 459, 1145, 1734, 1736, 1737, 1740, 1742, 1905, 1908, 1982
\frame	8	\leaders	1396, 1403, 1410, 1417, 1424, 1431, 1445
\frameinnercolor	8, 29	\leftindexruleplus	7
G		\leftskip	798
\glossary	1907, 1910, 1984	\linefill	5, 29
H		\lipsum	177, 179, 181
\hbox	246, 1729	M	
\headheight	808, 987	\makeatletter	387, 409
\headsep	809, 988	\makeatother	397, 415
\height	6	\MakeUppercase	1887
\hfill	798	\MakeUppercases	1884
\hidethumbs	9	\markboth	63, 1887
\hoffset	615, 824, 941, 1267, 1333, 1610, 1620	\mathup	44, 45
\Hook_enddocument/afterlastpage	57	\message	880, 1035, 1971, 1993, 1999, 2003, 2010, 2017, 2039, 2043
\hrulefill	644	\minheight	6
\hsize	1392	\Münch	72
\hyperref	1314, 1402, 1416, 1423	N	
I		\newbox	707
\if@filesw	764, 900, 1146, 1710, 2105	\newcommand	774, 806, 1042, 1056, 1082, 1090, 1092, 1214, 1216, 1218, 1238, 1492, 1505, 1722, 1727, 1732, 1748, 1754, 1767, 1780, 1793, 1988
\if@twocolumn	1729	\newcounter	569, 756, 757, 1892, 1893, 1894, 1895
\if@twoside	781, 1270, 1370, 1477, 1508, 1574, 1618, 1629, 1728, 1755, 1768, 1781, 1863, 1944, 2092	\newdimen	659, 661, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 677, 679, 682, 684, 687, 694, 759, 760
\ifdim	797, 833, 836, 838, 858, 918, 956, 1002, 1019, 1045, 1097, 1114, 1119, 1122, 1241, 1289, 1324, 1341, 1348, 1495, 1544, 1604, 1686	\newread	878
\IfFileExists	1991	\newwrite	1714
\IfFormatAtLeastTF	512	\nopagecolor	40
\ifodd	778, 1273, 1366, 1473, 1511, 1570, 1616, 1630, 1728, 2093	\nophantomsection	8
\IfPackageLoadedF	41, 1333	\normalsize	789, 792, 798, 800
\IfPackageLoadedT	458, 748, 993, 1001, 1010, 1135, 1733	\number	1899, 1939, 1940, 1971, 1972, 1993, 1999, 2010, 2017, 2039, 2043, 2056, 2103
\IfPackageLoadedTF	21, 746, 1825	\numexpr	2102
\ifthumbs@draft	885, 933, 1123, 1687, 2070	J	
\ifthumbs@hidethumbs	2081	\jobname	769, 910, 1715, 1717, 1991, 1993, 1996, 1999, 2010, 2017, 2025, 2039, 2043, 2059
\ifthumbs@ignorehoffset	600, 821, 940, 1609, 1619	L	
\ifthumbs@ignorevoffset	618, 826	\label	60, 247, 316, 459, 1145, 1734, 1736, 1737, 1740, 1742, 1905, 1908, 1982
\ifthumbs@nophantomsection	1136	\leaders	1396, 1403, 1410, 1417, 1424, 1431, 1445
\ifthumbs@plainthumbsoverview	1305, 1352, 1387, 1459	\leftindexruleplus	7
\ifthumbs@righttoleft	1291, 1294, 1749, 1762, 1775, 1788, 1815, 1866, 1872, 1876, 1947, 1951, 2101	\leftskip	798
\ifthumbs@txtcentered	776, 791	\linefill	5, 29
F		\lipsum	177, 179, 181
\familydefault	44	M	
\fill	640, 654	\makeatletter	387, 409
\fmtversion	511, 515	\makeatother	397, 415
\footskip	811, 990	\MakeUppercase	1887
\frame	8	\MakeUppercases	1884
\frameinnercolor	8, 29	\markboth	63, 1887
G		\mathup	44, 45
\glossary	1907, 1910, 1984	\message	880, 1035, 1971, 1993, 1999, 2003, 2010, 2017, 2039, 2043
H		\minheight	6
\hbox	246, 1729	\Münch	72
\headheight	808, 987	N	
\headsep	809, 988	\newbox	707
\height	6	\newcommand	774, 806, 1042, 1056, 1082, 1090, 1092, 1214, 1216, 1218, 1238, 1492, 1505, 1722, 1727, 1732, 1748, 1754, 1767, 1780, 1793, 1988
\hfill	798	\newcounter	569, 756, 757, 1892, 1893, 1894, 1895
\hidethumbs	9	\newdimen	659, 661, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 677, 679, 682, 684, 687, 694, 759, 760
\hoffset	615, 824, 941, 1267, 1333, 1610, 1620	\newread	878
\Hook_enddocument/afterlastpage	57	\newwrite	1714
\hrulefill	644	\nopagecolor	40
\hsize	1392	\nophantomsection	8
\hyperref	1314, 1402, 1416, 1423	\normalsize	789, 792, 798, 800
I		\number	1899, 1939, 1940, 1971, 1972, 1993, 1999, 2010, 2017, 2039, 2043, 2056, 2103
\if@filesw	764, 900, 1146, 1710, 2105	\numexpr	2102
\if@twocolumn	1729	J	
\if@twoside	781, 1270, 1370, 1477, 1508, 1574, 1618, 1629, 1728, 1755, 1768, 1781, 1863, 1944, 2092	\jobname	769, 910, 1715, 1717, 1991, 1993, 1996, 1999, 2010, 2017, 2025, 2039, 2043, 2059
\ifdim	797, 833, 836, 838, 858, 918, 956, 1002, 1019, 1045, 1097, 1114, 1119, 1122, 1241, 1289, 1324, 1341, 1348, 1495, 1544, 1604, 1686	L	
\IfFileExists	1991	\label	60, 247, 316, 459, 1145, 1734, 1736, 1737, 1740, 1742, 1905, 1908, 1982
\IfFormatAtLeastTF	512	\leaders	1396, 1403, 1410, 1417, 1424, 1431, 1445
\ifodd	778, 1273, 1366, 1473, 1511, 1570, 1616, 1630, 1728, 2093	\leftindexruleplus	7
\IfPackageLoadedF	41, 1333	\leftskip	798
\IfPackageLoadedT	458, 748, 993, 1001, 1010, 1135, 1733	\linefill	5, 29
\IfPackageLoadedTF	21, 746, 1825	\lipsum	177, 179, 181
\ifthumbs@draft	885, 933, 1123, 1687, 2070	M	
\ifthumbs@hidethumbs	2081	\makeatletter	387, 409
\ifthumbs@ignorehoffset	600, 821, 940, 1609, 1619	\makeatother	397, 415
\ifthumbs@ignorevoffset	618, 826	\MakeUppercase	1887
\ifthumbs@nophantomsection	1136	\MakeUppercases	1884
\ifthumbs@plainthumbsoverview	1305, 1352, 1387, 1459	\markboth	63, 1887
\ifthumbs@righttoleft	1291, 1294, 1749, 1762, 1775, 1788, 1815, 1866, 1872, 1876, 1947, 1951, 2101	\mathup	44, 45
\ifthumbs@txtcentered	776, 791	\message	880, 1035, 1971, 1993, 1999, 2003, 2010, 2017, 2039, 2043
F		\minheight	6
\familydefault	44	\Münch	72
\fill	640, 654	N	
\fmtversion	511, 515	\newbox	707
\footskip	811, 990	\newcommand	774, 806, 1042, 1056, 1082, 1090, 1092, 1214, 1216,

O		S	
\obsoleteoptions	27	\setth@mbheight	806, 857
\oddxindent	9	\settowidth	789, 1113
\oddmarkexdent	7	\stepcounter	2035, 2046
\oddsidemargin	1260, 1262, 1337, 1460, 1464	\stopthumb	10, 211, 215, <u>1214</u> , 1596, 1676, 1883
\oddtxtexdent	7		
\openin	1996	T	
\openout	1717	\tableofcontents	134
\options	5	\textheight	810, 989
\overridelabel	1739	\textwidth	798, 889, 1348, 1349
P		\th@bmshoffset	607, 615, 822, 824, 1266
\PackageError	513, 576, 586, 594, 650, 749, 840, 910, 921, 1058, 1434, 1590, 1811, 1841, 1853, 2021	\th@bmsvoffset	625, 633, 827, 829, 983, 993, 1001, 1010
\PackageInfo	394, 601, 609, 619, 627, 702, 873, 882, 883, 932, 934, 974, 1033, 1034, 1098, 1884	\th@mb@dadvance	<u>1042</u> , 1076
\PackageWarning	958, 1011, 1020, 1070, 1127, 1166, 1496, 1757, 1770, 1783	\th@mb@page	1151, 1152
\PackageWarningNoLine	765, 859, 904, 1606, 1668, 1692, 1698, 2058, 2073, 2083	\th@mb@resetdoublepage	1924, 1934, 1937, 1941, 1960, 1974
\pagecolor	9, 40, 456, 490, 574, 578, 581	\th@mb@titlelabel	736, 1083, 1085, 1147, 1152
\pagenumbering	59	\th@mb@tmp@backgroundcolour	1248, 1306, 1311, 1317, 1320, 1354, 1461
\pageref	100, 107, 263, 285, 493, 494, 495, 498, 1410, 1417	\th@mb@tmp@column	1251, 1252, 1253, 1310, 1330
\paperheight	995, 1004, 1026, 1030	\th@mb@tmp@label	1250, 1314, 1402, 1410, 1416, 1417, 1423
\paperwidth	831, 888, 938, 1255, 1331, 1546, 1603, 1607, 1613	\th@mb@tmp@page	1249, 1396, 1403, 1424, 1431, 1445
\parbox	788	\th@mb@tmp@text	1246, 1368, 1372, 1375, 1475, 1479, 1482
\parindent	1359, 1390, 1466, 1563	\th@mb@tmp@textcolour	1247, 1368, 1372, 1375, 1388, 1395, 1401, 1408, 1415, 1422, 1429, 1443, 1475, 1479, 1482
\PassOptionsToPackage	23, 24	\th@mb@tmp@title	1245, 1395, 1402, 1409, 1416, 1423, 1430, 1444
\phantom	1314, 1317	\th@mb@txtBox	<u>774</u> , 1368, 1372, 1375, 1475, 1479, 1482, 1572, 1576, 1579
\phantomsection	147, 150, 152, 458, 1139, 1733	\th@mb@yA	<u>1492</u> , 1645
\plainthumboverview	8	\th@mbbackgroundcolour	717, 1112, 1657
\protect	246, 247, 315, 321, 1368, 1372, 1375, 1475, 1479, 1482	\th@mbbackgroundcolourA	722, 1179, 1639, 1657
\protected@file@percent	1148, 1152	\th@mbcolumn	718, 1101, 1103, 1679, 1681
\put	1287, 1512, 1521, 1528, 1554, 1560	\th@mbcolumnnew	729, 1075, 1078, 1148, 1152, 1157, 1165, 1182, 1208, 1209, 1588, 1666
R		\th@mbcomprulewidth	759, 762, 1514, 1523, 1530
\raggedleft	798	\th@mbcrop	746, 748
\raggedright	800	\th@mbdoublepage	1914, 1919, 1921, 1926, 1959
\read	2002, 2008, 2015, 2041	\th@mbfrw	1227, 1232
\renewcommand	2072, 2082, 2087	\th@mbheighty	661, 662, 788, 807, 808, 809, 810, 811, 814, 816, 817, 853, 858, 861, 867, 868, 872, 875, 881, 953, 966, 971, 986, 992, 999, 1007, 1037, 1043, 1046, 1049, 1095, 1219, 1228, 1239, 1314, 1354, 1357, 1385, 1461, 1464, 1493, 1514, 1523, 1530, 1537, 1561
\RequirePackage	526, 527, 528, 529, 530, 531, 533	\th@mbHimE	684, 685, 1264, 1280, 1357, 1632
\RerunFileCheck	1715	\th@mbHimO	682, 683, 1259, 1631, 1634
\righttoleft	9	\th@mbHitE	679, 680, 782, 1114, 1117, 1363, 1371, 1470, 1478, 1567, 1575
\rlap	1312	\th@mbHitO	677, 678, 779, 784, 1114, 1115, 1361, 1367, 1374, 1468, 1474, 1481, 1565, 1571, 1578
\rule	1219, 1232, 1314, 1354, 1461, 1514, 1523, 1530, 1556	\th@mbirulex	674, 1540, 1541, 1542, 1546, 1547, 1548, 1551, 1553, 1556

\th@mbiruley	675, 1537, 1538, 1539, 1556	\th@mbstest	642, 643, 646, 647, 794, 796, 799, 855, 856,
\th@mbmaxwidth	734, 1119, 1120, 1686, 1696, 1711		894, 895, 897, 898, 948, 949, 980, 981, 1257, 1258, 1278, 1279,
\th@mbmaxwidtha	901, 902, 905, 915, 1340, 1344, 1711		1288, 1299, 1308, 1309, 1323, 1334, 1351, 1393, 1394, 1399,
\th@mbonpage	726, 1159, 1161,		1400, 1406, 1407, 1413, 1414, 1420, 1421, 1427, 1428, 1457,
	1167, 1173, 1186, 1189, 1190, 1191, 1203, 1204, 1642, 1652, 1660		1689, 1690, 1794, 1796, 1800, 1804, 1808, 1822, 1823, 1826,
\th@mbonpagemax	727, 1174, 1175, 1190, 1191, 1203, 1204		1827, 1829, 1830, 1832, 1833, 1835, 1836, 1838, 1839, 1864,
\th@mbonpagetest	1185, 1186, 1188, 1189, 1641, 1642, 1644		1865, 1870, 1871, 1911, 1912, 1916, 1917, 1927, 1928, 1945, 1946
\th@mbpaperwidth	831, 1604, 1613	\th@mbstestb	795, 796, 1795, 1796, 1799, 1800, 1803, 1804, 1807, 1808
\th@mbpofffix	744, 1272,	\th@mbstmpwidth	1603, 1604
	1365, 1472, 1510, 1569, 1602, 2094, 2096, 2099, 2102, 2103, 2106	\th@mbtabrule	1218, 1312, 1317, 1320
\th@mbposx	664, 937, 938, 939, 941, 943, 1607, 1608, 1610, 1612, 1615	\th@mbtext	715, 1110, 1113, 1655
\th@mbposy	665, 944, 950, 951,	\th@mbtextA	720, 1177, 1639, 1655
	952, 953, 964, 965, 966, 968, 1037, 1038, 1039, 1043, 1044,	\th@mbtextcolour	716, 1111, 1656
	1045, 1046, 1047, 1049, 1050, 1095, 1096, 1097, 1099, 1100,	\th@mbtextcolourA	721, 1178, 1639, 1656
	1180, 1239, 1240, 1241, 1242, 1243, 1269, 1658, 1889, 1890, 1978	\th@mbtitle	714, 1109
\th@mbposyA	666, 1038, 1180, 1493, 1494, 1495, 1501, 1506, 1518, 1658	\th@mbtmpdef	1193, 1194, 1195, 1196, 1197, 1198
\th@mbposyB	667,	\Th@mbTmpdefbackgroundcolour	1648, 1649
	1269, 1275, 1287, 1506, 1512, 1520, 1521, 1528, 1554, 1560	\Th@mbTmpdefcolour	1647, 1649
\th@mbposybottom	669, 976, 982, 983, 984, 985, 986, 987, 988,	\Th@mbTmpdeftext	1646, 1649
	989, 990, 991, 992, 993, 1026, 1027, 1031, 1045, 1097, 1241, 1495	\th@mbtoprint	725, 1057, 1163, 1211, 1661
\th@mbposytop	668, 968, 970, 997, 1005, 1099, 1242, 1501	\th@mbwidthtmp	671, 775, 777, 788, 789, 790, 797, 1224,
\th@mbprint	1505, 1639, 1649		1225, 1226, 1227, 1228, 1229, 1230, 1232, 1543, 1545, 1550, 1554
\th@mbprinting	724, 1077, 1094, 1214, 1216, 1638, 1861	\th@mbwidthx	659, 762, 886, 888, 889, 890, 902, 915, 919, 931, 939,
\th@mbprintingovertoc	1861, 1979		1122, 1125, 1339, 1342, 1354, 1360, 1362, 1461, 1467, 1469,
\th@mbruleoutside	760, 761, 762, 1219, 1300, 1521		1507, 1521, 1534, 1540, 1548, 1564, 1566, 1608, 1686, 1697, 2071
\th@mbruleoutsidecor	1300, 1301, 1303, 1313	\th@mbwidthxtoc	670,
\th@mb	709, 1102, 1106, 1108, 1145, 1148, 1680, 1684, 1713		1219, 1222, 1224, 1255, 1256, 1259, 1260, 1264, 1265, 1286,
\th@mb\$fr@meinnercolor	390, 412, 637, 1093, 1556		1290, 1291, 1293, 1294, 1296, 1314, 1325, 1327, 1331, 1332,
\th@mb\$linefill			1333, 1335, 1337, 1342, 1344, 1346, 1347, 1348, 1349, 1392
	640, 644, 648, 654, 1396, 1403, 1410, 1417, 1424, 1431, 1445	\th@mbxpos	1460, 1464, 1512, 1521, 1528,
\th@mb\$toc@level	731, 1723, 1743, 1744		1544, 1545, 1547, 1550, 1551, 1560, 1615, 1622, 1624, 1628, 1636
\th@mb\$toc@text	732, 1724, 1744	\th@mb\$perpage	711, 1712, 1901, 1972, 2049, 2050
\th@mb\$overview	1968, 1988	\th@mb\$perpagecount	712, 1102, 1680, 1683, 1684, 1712
\th@mb\$distance	687,	\themarkchangingcolour	50, 51, 305, 306, 341, 342, 350, 351, 380, 381
	689, 691, 816, 817, 952, 965, 972, 985, 991, 998, 1000,	\thepagecolor	390, 412, 550, 574, 637, 716, 717, 721, 722, 1051, 1306
	1006, 1008, 1044, 1047, 1050, 1096, 1100, 1240, 1243, 1494	\thetextchangingcolour	47, 48, 302, 303, 338, 339, 347, 348, 377, 378
\th@mb\$lrplus	694, 696, 698, 1296	\theth@mblinea	1935, 1939, 1975
\th@mb\$max	710, 812, 814, 860, 1713, 1862, 1904, 1972, 2051	\theth@mblineb	1936, 1940
\th@mb\$phantom	1088, 1090, 1138, 1141	\thethumbchangingtextE	53, 55, 309, 311, 313, 331, 375, 383
\th@mb\$posytcy	672, 1889, 1978	\thethumbchangingtexte	54, 310, 344, 353, 358, 361
\th@mb\$posytcyy	673, 1039, 1890	\thumb-example.tex	71
\th@mb\$printpage	1258, 1279, 1288, 1299,	\thumbchangingtext	55, 311, 313, 315, 321, 344, 353, 358, 363, 375, 383
	1323, 1334, 1351, 1457, 1797, 1801, 1805, 1809, 1815, 1816,	\thumbcontents	1148, 1152, 1238
	1865, 1871, 1912, 1913, 1917, 1918, 1928, 1929, 1930, 1931, 1946	\thumbblink	5
\th@mb\$stablaling	1732, 1961, 1964	\thumbnewcolumn	
\th@mb\$stable	738, 1735, 1740, 1891, 1897, 1899		11, 441, 1056, 1590, 1591, 1592, 1596, 1669, 1670, 1675, 2087

