

# KKsymbols Package Documentation

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# 1 まず使ってみる / Quick start

KKsymbols は、文字を丸・四角・菱形・括弧で囲む LuaLaTeX 専用のパッケージです。数字だけでなく、現在のフォントの文字や文字列も囲めます。横組みと縦組みに対応します。

**English.** Build enclosed characters from the current font in LuaLaTeX. Start with an unstarred command; single lowercase ASCII letters are detected automatically.

Input 最小の文書 / Minimal document

```
1 \documentclass{jlrq}
2 \usepackage{KKsymbols}
3 \begin{document}
4 \maru{1}\quad\seihou{A}\quad\hishi{あ}\quad\kakko{12}
5 \end{document}
```

Output

① A ◇ 12

## 1.1 目的から選ぶ / Choose a command

| 形 / Shape | コマンド / Command                     | 出力例 / Example |
|-----------|------------------------------------|---------------|
| 丸         | <code>\maru / \kuromaru</code>     | ① ❶           |
| 楕円        | <code>\jegg</code>                 | ② ❷           |
| 四角        | <code>\seihou / \kuroseihou</code> | A A           |
| 菱形        | <code>\hishi / \maruhishi</code>   | ◇ ◇           |
| 括弧        | <code>\kakko / \kakukakko</code>   | (1) [1]       |

### 最初に覚える三つの指定 / Three useful rules

1. 通常は `\maru{a}` のようにスターなしで使います。展開後が英小文字 1 字なら自動調整されます。
2. 複数文字を安全に枠内へ収めたい場合は `\maru*{abc}`。ただし `\jegg*` のスターは網掛けの指定です。
3. 小文字ローマ数字を揃える場合は、`\kksref{\Rrnum*{6}}` をグループの先頭に置きます。5 節を参照してください。

## 1.2 読み込みと設定 / Loading and options

TeX の検索対象ディレクトリへ `KKsymbols.sty` と `KKsymbols.lua` を配置します。文書と同じフォルダでも使えます。コンパイルには LuaLaTeX を使用してください。**English.** Install both files on the TeX search path and compile with LuaLaTeX.

| 設定 / Option                   | 既定値 / Default | 用途 / Purpose               |
|-------------------------------|---------------|----------------------------|
| <code>autolowercase</code>    | 1             | 英小文字 1 字の自動調整。0 で手動指定。     |
| <code>linewidth</code>        | auto          | TikZ で描く枠線の共通の太さ。          |
| <code>marulinewidth</code> など | auto          | 各囲みの線幅。共通設定より優先。           |
| <code>tsumesuji</code>        | 1             | 対象コマンドで、1 を含む複数桁の数字の字幅を調整。 |

Input

線を太くする / Set frame widths

```
\usepackage[linewidth=.6pt,marulinewidth=.8pt]{KKsymbols}
```

個別設定・対象範囲・互換性の詳細は付録 A、全形状の見本は付録 D にまとめています。

## 2 丸・楕円 / Circles and ellipses

`\maru{文字}` で丸囲み、`\kuromaru{文字}` で黒丸囲みを作ります。`\nmaru` も同じ構文です。楕円には `\jegg` を使います。

通常はスターなしで使えます。英小文字 1 字は自動調整されます。`\textbf{m}` のように書式を含む引数や複数文字には、必要に応じて `\maru*{...}` を指定します。縦横比を保って縮小し、設定した線幅に応じて枠内に収めます。

楕円のスターは別の意味です。`\jegg*` は背景を灰色にします。小文字の調整は `autolowercase=1` のときに自動で行われ、`autolowercase=0` ではスターで小文字用の調整を選ぶことはできません。

**English.** Circle commands take one mandatory argument. Single lowercase ASCII letters are detected automatically. Use an explicit star for formatted or multi-letter material to shrink it uniformly inside the outline. For `\jegg`, the star only selects a gray background; lowercase fitting requires `autolowercase=1`. The examples below compare lowercase and uppercase letters.

© ©    ™ ™    ® ®    Ⓘ Ⓙ    ● ● ● ●

Input

Automatic lowercase sizing

```

1 % Normal Characters
2 \maru{A}\maru{あ}\maru{QED.}
3
4 % Lowercase ASCII is detected automatically.
5 \maru{a}\maru{j}\maru{z}
6
7 % The star remains available as an explicit override.
8 \maru*{a}
```



They are used as follows.

表 1: maru series

| argument | \maru | \kuromaru | \nmaru | \jegg | \jegg* |
|----------|-------|-----------|--------|-------|--------|
| l        | ①     | ①         | ①      | ①     | ①      |
| 97       | ㊿     | ㊿         | ㊿      | ㊿     | ㊿      |
| だ        | ㊿     | ㊿         | ㊿      | ㊿     | ㊿      |
| ばばば      | ㊿     | ㊿         | ㊿      | ㊿     | ㊿      |
| m        | ㊿     | ㊿         | ㊿      | ㊿     | ㊿      |
| Qjg      | ㊿     | ㊿         | ㊿      | ㊿     | ㊿      |

They behave as if they were single kanji or hiragana characters:

あいう㊿あいう①②③あいうえお

The spacing between \maru and other characters is adjusted using \ltjghostbeforejachar and \ltjghostafterjachar so that it behaves like hiragana or kanji.

When changing the font size using commands such as \Large, each command is scaled proportionally according to the font size change:



You can also change the current font:



### 3 四角・菱形 / Squares and diamonds

四角は\seihou、角丸四角は\seimaru、菱形は\hishi を使います。黒地にするコマンドと角丸菱形も、下表から選べます。英小文字 1 字は自動調整されます。明示スターでは、複数文字も縦横比を保って枠内へ縮小します。

**English.** The commands below share automatic single-letter lowercase fitting and an explicit star for uniformly shrinking arbitrary material into the frame.

表 2: seihou series

| argument | \seihou | \kuroseihou | \seimaru | \kuroseimaru |
|----------|---------|-------------|----------|--------------|
| l        |         |             |          |              |
| 97       |         |             |          |              |
| だ        |         |             |          |              |
| ばばば      |         |             |          |              |
| m        |         |             |          |              |
| Qjg      |         |             |          |              |

表 3: hishi series

| argument | \hishi | \kurohishi | \maruhishi | \kuromaruhishi |
|----------|--------|------------|------------|----------------|
| l        |        |            |            |                |
| 97       |        |            |            |                |
| だ        |        |            |            |                |
| ばばば      |        |            |            |                |
| m        |        |            |            |                |
| Qjg      |        |            |            |                |

Input

Automatic lowercase sizing

```

1 % Normal Characters
2 \seihou{A}\seihou{あ}\seihou{QED.}
3
4 % Lowercase ASCII is detected automatically.
5 \seihou{a}\seihou{j}\seihou{z}

```

Output

## 4 括弧・全角幅 / Brackets and full-width boxes

括弧の形は下表から選び、`\kakko{内容}`のように指定します。英小文字 1 字は自動調整され、明示スターでは複数文字も縦横比を保って縮小します。括弧はフォントの文字を使うため、`linewidth` の対象外です。

**English.** Choose a bracket shape from the tables below. Automatic lowercase sizing and explicit-star shrinking also apply to `\ichimoji`. `\zenkakuhabafixer` does not take a star.

表 4: kakko series ①

| argument | \kakko | \sumikakko | \kakukakko | \kikakko | \yakko |
|----------|--------|------------|------------|----------|--------|
| 1        | (1)    | 【1】        | [1]        | ⟦1⟧      | ⟨1⟩    |
| 97       | ⟨97⟩   | 【97】       | [97]       | ⟦97⟧     | ⟨97⟩   |
| だ        | ⟨だ⟩    | 【だ】        | [だ]        | ⟦だ⟧      | ⟨だ⟩    |
| ばばば      | ⟨ばばば⟩  | 【ばばば】      | [ばばば]      | ⟦ばばば⟧    | ⟨ばばば⟩  |
| m        | ⟨m⟩    | 【m】        | [m]        | ⟦m⟧      | ⟨m⟩    |
| Qjg      | ⟨Qjg⟩  | 【Qjg】      | [Qjg]      | ⟦Qjg⟧    | ⟨Qjg⟩  |

表 5: kakko series ②

| argument | \nykakko | \namikakko | \kagikakko | \nkagikakko | \ichimoji | \zenkakuhabafixer |
|----------|----------|------------|------------|-------------|-----------|-------------------|
| 1        | ⟨1⟩      | {1}        | 「1」        | 『1』         | Ⓘ         | 1                 |
| 97       | ⟨97⟩     | {97}       | 「97」       | 『97』        | 97        | 97                |
| だ        | ⟨だ⟩      | {だ}        | 「だ」        | 『だ』         | だ         | だ                 |
| ばばば      | ⟨ばばば⟩    | {ばばば}      | 「ばばば」      | 『ばばば』       | ばばば       | ばばば               |
| m        | ⟨m⟩      | {m}        | 「m」        | 『m』         | m         | m                 |
| Qjg      | ⟨Qjg⟩    | {Qjg}      | 「Qjg」      | 『Qjg』       | Qjg       | Qjg               |

| Input                                                                                                                                              | Automatic lowercase sizing |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <pre> 1 % Normal Characters 2 \kakko{A}\kakko{あ}\kakko{QED.} 3 4 % Lowercase ASCII is detected automatically. 5 \kakko{a}\kakko{j}\kakko{z} </pre> |                            |
| Output                                                                                                                                             |                            |
| <pre> (A)(あ)(QED) (a)(j)(z) </pre>                                                                                                                 |                            |

#### 4.1 Additional Description: \ichimoji and \zenkakuhabafixer

The major difference of \ichimoji and \zenkakuhabafixer is that the former changes the vertical scale to force its total height to \zw, but the latter doesn't. You can see the difference as follows:

\ichimoji    𐀀𐀁

\zenkakuhabafixer    𐀀𐀁

## 5 ローマ数字を揃える / Roman numerals

**Japanese** KKsymbols 自体はローマ数字を生成しません。ローマ数字の生成には、通常 KKran パッケージが提供する `\Rrnum` を使います。`\Rrnum*{8}` は小文字ローマ数字、`\Rrnum{8}` は大文字ローマ数字を出します。

大文字ローマ数字は大文字アルファベットと同じ扱いで、通常は非スター版の囲みコマンドに入れます。たとえば `\kakko{\Rrnum{8}}` や `\maru{\Rrnum{8}}` のように書きます。

小文字ローマ数字は注意が必要です。小文字の `i`、`v`、`x` は字ごとに高さが違うため、単に `\kakko{\Rrnum*{1}}` から `\kakko{\Rrnum*{10}}` までを並べると、囲み内部での縦方向の見え方が完全には揃わないことがあります。これはバグではなく、引数の実際の高さが異なるためです。

そのため小文字ローマ数字については、**明示スターを使わない非スター版のコマンドに、グループ内で一括指定した `\kksref{\Rrnum*{6}}` を組み合わせる書き方を推奨**します。`\kksref` は各囲みコマンドの内部に `\vphantom{\Rrnum*{6}}` 相当の基準を加えるためのフックで、グループ内のすべての囲みに同じ基準を与えます。理由と検証結果は次の二つの小節にまとめます。

**English** KKsymbols itself does not generate roman numerals. In ordinary use, roman numerals are supplied by the KKran package through `\Rrnum`. `\Rrnum*{8}` gives a lowercase roman numeral, while `\Rrnum{8}` gives an uppercase roman numeral.

Uppercase roman numerals behave like uppercase Latin letters. They should normally be used with the non-starred enclosure commands, for example `\kakko{\Rrnum{8}}` or `\maru{\Rrnum{8}}`.

Lowercase roman numerals require more care. The letters `i`, `v`, and `x` have different heights, so a sequence from `\kakko{\Rrnum*{1}}` to `\kakko{\Rrnum*{10}}` may not look vertically identical inside the enclosures. This is not a bug; it follows from the actual glyph metrics of the arguments.

For lowercase roman numerals, therefore, the **recommended** way to write a sequence is to use the **non-starred** enclosure commands together with a **single group-wide `\kksref{\Rrnum*{6}}`**. `\kksref` is a hook that adds a reference equivalent to `\vphantom{\Rrnum*{6}}` inside each enclosure command, so every enclosure in that group is built against the same reference. The reasons and the verification results are given in the two subsections below.

Input

Roman numerals

```
1 % Uppercase roman numerals: use the non-starred enclosure command.
2 \kakko{\Rrnum{1}}\kakko{\Rrnum{2}}\kakko{\Rrnum{3}}
3
4 % Lowercase roman numerals: automatic reference only.
5 \kakko{\Rrnum*{1}}\kakko{\Rrnum*{5}}
6
7 % Lowercase roman numerals: force a common reference.
8 {\kksref{\Rrnum*{6}}%
```

```
9 \kakko{\Rrnum*{1}}\kakko{\Rrnum*{2}}\kakko{\Rrnum*{3}}\kakko{\Rrnum*{6}}
```

Output

(I)(II)(III) (i)(v) (i)(ii)(iii)(vi)

## 5.1 同じ高さの基準で揃える / Use a shared reference

既定の自動基準はフォントの x ハイト（小文字 x の高さ）です。i を含む数字と v・x では高さが異なるため、同じグループに `\kksref{\Rrnum*{6}}` を一度指定します。囲みコマンドにはスターを付けません。囲み側のスターは縮小の指定であり、高さを揃える指定ではありません。

1・d を含む範囲（50、500 など）では、`\kksref{\Rrnum*{50}}` を使います。フォント・サイズ・縦組みごとの実測例は付録 C を参照してください。

**English.** Use one group-wide reference and unstarred enclosure commands. Use 50 as the reference when numerals contain 1 or d. The enclosure star selects safe shrinking; it does not align a sequence.

Input

Recommended

```
1 % Recommended: non-starred commands + one \kksref for the whole group.
2 {\kksref{\Rrnum*{6}}}%
3 \maru{\Rrnum*{1}}\maru{\Rrnum*{2}}\maru{\Rrnum*{3}}\maru{\Rrnum*{4}}\maru{\Rrnum*{5}}}%
4 \maru{\Rrnum*{6}}\maru{\Rrnum*{7}}\maru{\Rrnum*{8}}\maru{\Rrnum*{9}}\maru{\Rrnum*{10}}
5
6 % Not recommended: the automatic reference alone.
7 \maru{\Rrnum*{1}}\maru{\Rrnum*{2}}...\maru{\Rrnum*{10}}
8
9 % Not recommended: an explicit star does not align the sequence.
10 \maru*{\Rrnum*{1}}\maru*{\Rrnum*{2}}...\maru*{\Rrnum*{10}}
```

Output

Recommended: (i)(ii)(iii)(iv)(v)(vi)(vii)(viii)(ix)(x)

Automatic reference only: (i)(ii)(iii)(iv)(v)(vi)(vii)(viii)(ix)(x)

Explicit star: (i)(ii)(iii)(iv)(v)(vi)(vii)(viii)(ix)(x)

## 6 位置と高さの調整 / Reference boxes

**Japanese** v2.2.0 以降、各囲みコマンドは既定で「現在フォントの参照高さ」、具体的には x-height 相当を基準として中身のサイズと中央位置を決めます。これは短い文字や深さのない文字を、引数自身のバウンディングボックスだけで処理したときのばらつきを抑えるためです。

ただし、既定の自動基準は `\vphantom{\Rrnum*{6}}` と同一ではありません。小文字ローマ数字については自動基準が実質的に働かないため、前節の推奨のとおり、非スター版のコマンドに `\kksref{\Rrnum*{6}}` をグループ内で一括指定してください。

漢字・かな・大文字・数字など、既定基準より背の高い内容は、引数自身の寸法が優先されます。このため、通常の文書では既存の出力が大きく変わらないようになっています。

**English** Since v2.2.0, each enclosure command uses the current font's reference height, roughly its x-height, as the default reference for sizing and vertical centering. This reduces variation when short glyphs or glyphs with no depth would otherwise be measured only by their own bounding boxes.

However, the automatic reference is not identical to `\vphantom{\Rrnum*{6}}`. For lowercase roman numerals it has essentially no effect, so follow the recommendation of the previous section: use the non-starred commands with one group-wide `\kksref{\Rrnum*{6}}`.

For content taller than the default reference, such as kanji, kana, uppercase letters, or digits, the argument's own metrics still dominate. This keeps ordinary documents close to their existing appearance.

### 6.1 Overriding the reference

`\kksref{<material>}` **Japanese:** <material> の高さ・深さを、既定の自動基準の代わりに使います。効果は `\RotYoko` と同じくスコープ依存なので、通常はグループで囲みます。

**English:** Use the height and depth of <material> as the reference instead of the automatic one. The effect is scoped like `\RotYoko`, so enclose it in a group.

Input

```
1 {\kksref{\Rrnum*{6}}}%
2 \maru{\Rrnum*{1}}\maru{\Rrnum*{4}}\maru{\Rrnum*{8}}}
```

`\kksreff` **Japanese:** 参照ボックスを無効化し、v2.2.0 以前のように引数自身の寸法を使います。

**English:** Disable the reference box and fall back to the argument's own metrics, which is the behavior before v2.2.0.

`\kksrefauto` **Japanese:** 既定の自動基準に戻します。`\kksrefreset` は別名です。

**English:** Restore the automatic reference. `\kksrefreset` is an alias.

## 7 縦組みと回転 / Vertical writing and rotation

### 7.1 Commands

This package provides `\RotTate` and `\RotYoko`. The differences are as follows:

**In horizontal mode** You should use `\RotYoko`. The default value is 0. Therefore, if you use `\RotYoko` with no arguments, this is equal to `\RotYoko[0]`

**In vertical mode** You should use `\RotTate`. The default value is 90. Therefore, if you use `\RotTate` with no arguments, this is equal to `\RotTate[90]`

From a technical perspective: Commands like `\maru` provided by this package automatically rotate their arguments based on the “current typesetting direction”. Specifically, the package applies a 0-degree rotation for horizontal writing (yoko-gaki) and a 90-degree rotation for vertical writing (tate-gaki).

The commands `\RotYoko` and `\RotTate` redefine this “automatic rotation angle” to the value specified in their arguments. Consequently, the effect is persistent unless localized (similar to how font-size commands like `\small` behave). Therefore, please ensure you use appropriate scoping, such as enclosing the command within curly braces `{...}`, when applying these settings.

Input

```
1 % In horizontal mode
2 {\RotYoko[45]\kakko{あ}\kakko{い}\kakko{う}}\par
3 {\RotYoko[60]\kakko{1}\kakko{2}\kakko{3}}
4
5 % In vertical mode
6 \parbox<t>{5\zw}{% <t> option requires lltjtext package.
7   {\RotTate[45]\kakko{あ}\kakko{い}\kakko{う}}\par
8   {\RotTate[60]\kakko{1}\kakko{2}\kakko{3}}
9 }
```

Output

(あ)(い)(う)

(あ)(い)(う)

(あ)(い)(う)

(あ)(い)(う)

## 7.2 Vertical mode

When you want to typeset ㊦, for instance, in vertical mode, you should use `\RotTate` command.

As described in the previous subsection, the effect of `\RotTate` lasts, when localized, in a certain group. So when you typeset hiragana or kanji, use it like this:

Input

```
1 % In vertical mode
2 \parbox<t>{5\zw}{%
3   {\RotTate[0]\kakko{あ}\kakko{い}\kakko{う}}\par
4   \kakko{1}\kakko{1}\kakko{3}
5 }
```

Output

```
(1) (あ)
(1) (い)
(3) (う)
```

## 8 困ったときは / Troubleshooting

**小文字が大きい / Lowercase appears too large** 自動判定は英小文字 1 字だけです。複数文字には必要に応じて明示スターを使います。 `autolowercase=0` も確認してください。

**ローマ数字の高さが揃わない / Roman numerals do not align** `\Rrnum{n}` は大文字、`\Rrnum*{n}` は小文字です。小文字は共通の `\kksref` を指定します。

**読み込みでエラーになる / Loading fails** LuaLaTeX を使い、`.sty` と `.lua` の両方を配置してください。KKran との併用時は両パッケージを更新します。

## A 設定の詳細 / Option reference

Place `KKsymbols.sty` and `KKsymbols.lua` in a directory where LaTeX can find it, e.g., your local `texmf` tree or alongside your document.

### A.1 Dependencies

This package depends on the following packages.

- `LuaLaTeX-jā`
- `tikz`
- `calc`
- `luacode`
- `kvoptions`

### A.2 Loading and Options

Load the package: `\usepackage[<options>]{KKsymbols}`

The following package options are provided.

**tsumesuji** To specify whether or not to “shrink” the box width occupied by “1”. By default, `tsumesuji=1` is specified, and the effect is activated. If you deactivate it, `tsumesuji=0` will do.

To clarify, this option is applied when the argument of a command subject to the `tsumesuji` option—after expansion—is a numeric string of two or more digits and contains the digit “1”. The difference is present in the following example:

| Input  |                                     |
|--------|-------------------------------------|
| 1      | <code>% NOT APPLIED</code>          |
| 2      | <code>\kakko{\vphantom{X}12}</code> |
| 3      |                                     |
| 4      | <code>% APLIED</code>               |
| 5      | <code>\kakko{12}</code>             |
| Output |                                     |
|        | (12)                                |
|        | (12)                                |

**autolowercase** Enables automatic lowercase sizing. The default is `autolowercase=1`. If the fully expanded argument is exactly one lowercase ASCII letter (`a--z`), a non-starred enclosure

command automatically uses the same sizing path as its starred form. This also recognizes one-letter results produced by `\Kran`, such as `\alphabetaarray{2}` (which expands to `b`) and `\Rrnum*{1}` (which expands to `i`). Multi-letter results such as `\Rrnum*{8}` (`viii`), as well as digits, uppercase letters, Japanese text, and mixed strings, keep the normal sizing path. An explicit star remains available for multi-letter material.

`\jegg` is included in the same option. Its star continues to select the gray background; automatic lowercase sizing is applied independently to both `\jegg{...}` and `\jegg*{...}` while `autolowercase=1`. Set `autolowercase=0` to disable automatic selection. Because `\jegg*` selects the gray background rather than a sizing path, `\jegg` has no manual lowercase-sizing star when the option is off.

For lowercase roman numerals produced by `\Rrnum*{n}`, note that `\Rrnum*{1}`, `\Rrnum*{5}` and `\Rrnum*{10}` expand to a single letter and therefore take the lowercase path, while `\Rrnum*{2}` and `\Rrnum*{8}` do not. Do not try to even this out with explicit stars: keep `autolowercase=1`, use the non-starred commands, and add one group-wide `\kksref{\Rrnum*{6}}`. See the “Roman numerals” section for the recommended usage and the verified corner cases.

Because its outline is an ellipse rather than a square, `\jegg` sizes lowercase letters by a rule of its own. The glyph is scaled uniformly, so `\jegg{c}` keeps a visibly lowercase x-height beside `\jegg{C}` instead of being stretched to cap height, and wide letters such as `\jegg{m}` and `\jegg{w}` are reduced only as far as the ellipse requires. The height is measured with the depth included, so ascenders and descenders such as `\jegg{f}` and `\jegg{g}` stay inside the outline as well. This rule applies to the egg alone; the other enclosures are unchanged, and the gray background of `\jegg*` is not affected by it.

`\jegg` の囲みは正方形ではなく楕円のため、小文字の大きさは専用の規則で決めています。縦横比を保ったまま縮小するので、`\jegg{c}` は `\jegg{C}` の隣でも小文字らしい高さを保ち、`\jegg{m}` や `\jegg{w}` のような幅の広い字も楕円に収まる範囲でのみ小さくなります。高さは深さ込みで測るため、`\jegg{f}` や `\jegg{g}` の上下のはみ出しも防がれます。この規則は `\jegg` のみに適用され、他の囲みコマンドの挙動は変わりません。`\jegg*` の網掛けにも影響しません。

**linewidth and command-specific line widths** The thickness of every TikZ-drawn enclosure can be set with `linewidth=<dimension>`. A command-specific option takes precedence over this common value:

| Option                               | Command                     |
|--------------------------------------|-----------------------------|
| <code>marulinewidth</code>           | <code>\maru</code>          |
| <code>kuromarulinewidth</code>       | <code>\kuromaru</code>      |
| <code>nmarulinewidth</code>          | <code>\nmaru</code>         |
| <code>jegglinewidth</code>           | <code>\jegg</code>          |
| <code>seihoulinewidth</code>         | <code>\seihou</code>        |
| <code>kuroseihoulinewidth</code>     | <code>\kuroseihou</code>    |
| <code>seimarulinewidth</code>        | <code>\seimaru</code>       |
| <code>kuroseimarulinewidth</code>    | <code>\kuroseimaru</code>   |
| <code>hishilinelwidth</code>         | <code>\hishi</code>         |
| <code>kurohishilinelwidth</code>     | <code>\kurohishi</code>     |
| <code>maruhishilinelwidth</code>     | <code>\maruhishi</code>     |
| <code>kuromaruhishilinelwidth</code> | <code>\kuromaruhishi</code> |

All of these options default to `auto`. The effective order is the command-specific value, then `linewidth`, then that command's historical default. Values other than `auto` must be TeX dimensions, for example `.6pt` or `.04\zw`. Explicit values are parsed when the package loads. Absolute dimensions such as `.6pt` do not follow later font-size changes; use a relative value such as `.04\zw` when proportional scaling is wanted. A malformed value produces a TeX dimension error while the package is loading. For `\nmaru`, the distance between its double rules remains `.03\zw`, so very large line widths can close that gap.

For `\jegg`, the interior its lowercase sizing aims at follows the effective line width. The stroke is centred on the same ellipse path whatever its width, so a thicker egg outline eats into the interior and lowercase letters are reduced a little further to stay clear of it. A line width wide enough to leave no interior at all draws a solid egg; the lowercase glyph then keeps its plain size rather than being scaled against a shape that no longer has an inside.

`\jegg` の小文字サイズが基準とする内側の領域は、実際に描画される線幅に追従します。線幅によらず線は楕円の経路の中心に描かれるため、線が太いほど内側は狭くなり、小文字はその分だけ小さくなります。内側が残らないほど太い線幅を指定した場合は塗り潰した楕円になり、そのときは縮小せず通常の小文字サイズを保ちます。

Input

```

1 \usepackage[
2   linewidth=.6pt,
3   marulinewidth=.3pt,
4   hishilinelwidth=1pt
5 ]{KKsymbols}
```

The bracket commands such as `\kakko` use font glyphs rather than TikZ frame paths, so these options do not affect them. The commands `\ichimoji` and `\zenkakuhabafixer` do not draw frames and are likewise unaffected.

枠線の太さは `linewidth=<寸法>` で一括指定できます。上表の個別オプションを指定したコマンドでは、その値が一括指定より優先されます。すべて `auto` の場合は従来の太さを維持します。括弧グリフを使うコマンドと、枠線を描画しないコマンドは対象外です。

**Compatibility notices** A pre-existing interface miswiring made `\maruhishi` call the filled `\kurohishi` implementation. This has been corrected, so `\maruhishi` now draws its intended unfilled rounded diamond and its output intentionally changes. Explicit stars whose public meaning is safe sizing now accept arbitrary material and use one common horizontal/vertical scale factor to keep it inside the outline actually drawn. This applies throughout the `maru`, `seihou`, `hishi`, `bracket`, and `\ichimoji` families, and follows each TikZ enclosure’s configured line width. The `\jegg` star is the exception: it keeps selecting a gray background only. A separate pre-existing state leak made one-digit `\jegg*` sizing depend on the preceding enclosure command. That leak is also fixed; because this is an unconditional correctness fix, `autolowercase=0` disables automatic lowercase selection but does not recreate the old context-dependent bug.

従来の `\maruhishi` は誤って `\kurohishi` の実装へ接続されていました。この接続を修正したため、出力は本来の白抜き角丸菱形へ変わります。また、安全サイズを意味する明示スターは任意の内容を受け取り、縦横共通の倍率で縮小して実際に描かれる枠内へ収めます。これは `maru`・`seihou`・`hishi`・括弧・`\ichimoji` の各系列に適用され、TikZ で描く枠では指定線幅にも追従します。例外として、`\jegg` のスターは従来どおり網掛けだけを選びます。1 桁数字の `\jegg*` の大きさが直前の囲みコマンドに依存する不具合も修正しています。この修正は `autolowercase=0` でも有効です。

## B Comparison with `luatexja-otf`

**Japanese** `luatexja-otf` は Adobe-Japan1 のグリフを直接呼び出すための強力なパッケージです。代表的なコマンドには、`\ajMaru`、`\ajKuroMaru`、`\ajKaku`、`\ajKakko`、`\ajRoman`、`\ajroman`、`\ajKakkoroman`、`\ajKakkoRoman` などがあります。これらは既存グリフをそのまま使うため、印刷品質は非常に高く、処理も軽量です。

一方で、`luatexja-otf` の囲み文字は「存在するグリフを選ぶ」方式です。たとえば `\ajMaru{1}` は丸数字のグリフを出しますが、`\ajMaru{ABC}` のような任意文字列を丸で囲む用途ではありません。対応範囲は Adobe-Japan1 側に存在するグリフと、`luatexja-ajmacros` が定義している番号範囲・合字名に依存します。

`KKsymbols` は反対に、「囲みの形」と「中身」をその場で組み合わせる方式です。そのため `\maru{ABC}`、`\kakko{QED.}`、`\seihou{長い文字列}` のように、数字以外の文字列や現在フォントの文字も同じ命令で処理できます。代償として、既存の完成グリフを呼び出す `luatexja-otf` よりも内部処

理は重く、極端な引数では縮小や中央寄せの調整が見た目に出ることがあります。

**English** `luatexja-otf` is a powerful package for accessing Adobe-Japan1 glyphs directly. Typical commands include `\ajMaru`, `\ajKuroMaru`, `\ajKaku`, `\ajKakko`, `\ajRoman`, `\ajroman`, `\ajKakkoroman`, and `\ajKakkoRoman`. Since these commands use pre-designed glyphs, the output quality is excellent and the processing cost is low.

The important limitation is that `luatexja-otf` selects existing glyphs. For example, `\ajMaru{1}` outputs a circled-number glyph, but `\ajMaru{ABC}` is not a general command for enclosing an arbitrary string. Its coverage depends on the glyphs available in Adobe-Japan1 and on the numeric ranges and ligature names defined by `luatexja-ajmacros`.

KKsymbols takes the opposite approach: it composes the enclosure and the content at typesetting time. Therefore commands such as `\maru{ABC}`, `\kakko{QED.}`, and `\seihou{long text}` work with non-numeric strings and with the current font. The tradeoff is that Kksymbols does more internal work than `luatexja-otf`, and very long or unusual arguments may visibly depend on the package's scaling and centering rules.

## B.1 Command-by-command examples

**Japanese** 次の表は、同じような用途に見えるコマンドの比較です。左側の `luatexja-otf` は既存グリフ、右側の Kksymbols は現在フォントから組み立てた結果です。

**English** The following table compares commands that look similar in ordinary use. The `luatexja-otf` examples on the left are existing glyphs, while the Kksymbols examples on the right are composed from the current font.

表 6: Comparison with `luatexja-otf`

| Purpose              | <code>luatexja-otf</code>            | KKsymbols                              |
|----------------------|--------------------------------------|----------------------------------------|
| circled number       | <code>\ajMaru{8}</code> ⑧            | <code>\maru{8}</code> ⑧                |
| black circled number | <code>\ajKuroMaru{8}</code> ⓪        | <code>\kuromaru{8}</code> ⓪            |
| square number        | <code>\ajKaku{8}</code> [8]          | <code>\seihou{8}</code> [8]            |
| parenthesized number | <code>\ajKakko{8}</code> (8)         | <code>\kakko{8}</code> (8)             |
| uppercase roman      | <code>\ajRoman{8}</code> VIII        | <code>\kakko{\Rrnum{8}}</code> (VIII)  |
| lowercase roman      | <code>\ajroman{8}</code> viii        | <code>\kakko{\Rrnum*{8}}</code> (viii) |
| parenthesized roman  | <code>\ajKakkoroman{8}</code> (viii) | <code>\kakko{\Rrnum*{8}}</code> (viii) |

## B.2 Practical selection guide

**Japanese** 完成済みの標準グリフが必要な場合、たとえば丸数字・括弧付き数字・ローマ数字が Adobe-Japan1 の範囲に収まる場合は、`luatexja-otf` が最も安定します。フォントベンダが設計した字形なので、紙面上の完成度も高くなります。

任意の文字列、現在の欧文・和文フォント、太字、色付き文字、長いラベル、独自の囲み形状が必要な場合は Kksymbols が向いています。Kksymbols は「グリフを探す」必要がなく、`\maru{任意}` や `\kakko{ABC}` のように直接書けます。

**English** Use `luatexja-otf` when you need standard pre-designed glyphs, such as circled numbers, parenthesized numbers, or roman numerals that are covered by Adobe-Japan1. Since these glyphs are designed by the font vendor, they usually give the most polished printed result.

Use `KKsymbols` when you need arbitrary strings, the current Latin or Japanese font, bold or colored content, long labels, or custom enclosure styles. `KKsymbols` does not require you to look up a glyph; you can write commands such as `\maru{任意}` or `\kakko{ABC}` directly.

## C ローマ数字の検証例 / Roman-numeral checks

**Japanese** 以下は、推奨の書き方（非スター版のコマンド + グループ内で一括指定した `\kksref{\Rrnum*{6}}`）を、条件を変えて確かめたものです。表の数値は、コンパイル時に実測した基準ボックスの高さの差です。各囲みコマンドについて、`\Rrnum*{1}` から `\Rrnum*{10}` まで（C2 では各集合内）の最大値から最小値を引いています。0 なら、その集合のすべてが同じ基準で組まれていることを意味します。各記号を囲む細い枠は `\fbox` (0.1 pt) で、記号の一部ではなく出力ボックスの実寸を示します。

**English** The following sheet checks the recommended style—non-starred commands with one group-wide `\kksref{\Rrnum*{6}}`—under varying conditions. Every figure in the tables is measured by this document at compile time: it is the difference between the largest and the smallest height of the reference box that the enclosure commands build internally, taken over `\Rrnum*{1}` to `\Rrnum*{10}` (or over each set in C2). Zero means that every member of the set is built against the same reference. The thin frame around each symbol is an `\fbox` (0.1 pt) showing the real size of the output box, not part of the symbol.

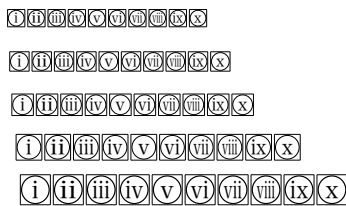
### C1. Font size / フォントサイズ

本文フォント（このドキュメントは 8pt 基準）でサイズを変えたときの差。最下行だけは 10pt を明示指定しており、これが前小節の本文で挙げた値です。

The spread at each size of the running font (this document is set at 8pt), plus one row at an explicit 10pt, which is the value quoted in the previous subsection.

| size                           | auto      | <code>\kksref{\Rrnum*{6}}</code> | <code>\kksreff</code> |
|--------------------------------|-----------|----------------------------------|-----------------------|
| <code>\tiny</code>             | 0.89201pt | 0.0pt                            | 0.89201pt             |
| <code>\scriptsize</code>       | 1.24881pt | 0.0pt                            | 1.24881pt             |
| <code>\footnotesize</code>     | 1.42722pt | 0.0pt                            | 1.42722pt             |
| <code>\small</code>            | 1.60558pt | 0.0pt                            | 1.60558pt             |
| <code>\normalsize</code>       | 1.784pt   | 0.0pt                            | 1.784pt               |
| <code>\large</code>            | 2.1408pt  | 0.0pt                            | 2.1408pt              |
| <code>\Large</code>            | 2.49759pt | 0.0pt                            | 2.49759pt             |
| <code>\LARGE</code>            | 3.0328pt  | 0.0pt                            | 3.0328pt              |
| <code>\huge</code>             | 3.568pt   | 0.0pt                            | 3.568pt               |
| <code>\Huge</code>             | 4.46pt    | 0.0pt                            | 4.46pt                |
| <code>\fontsize{10}{12}</code> | 2.23pt    | 0.0pt                            | 2.23pt                |

見た目 (`\kksref{\Rrnum*{6}}`、`\maru`、`i~x`) :



## C2. Range of the argument / 引数の範囲

1 と d は vi よりわずかに背が高く、基準より高い内容は引数自身の寸法が優先されるため、それらを含む集合だけは`\kksref{\Rrnum*{6}}`でも差が残ります。`\kksref{\Rrnum*{50}}` (1) を基準にすれば 0 になります。

1 and d are slightly taller than vi, and material taller than the reference keeps its own metrics, so sets containing them keep a small spread under `\kksref{\Rrnum*{6}}`. Using `\kksref{\Rrnum*{50}}` (1) as the reference brings them to 0 as well.

| set                 | values                                       | auto    | <code>\Rrnum*{6}</code> | <code>\Rrnum*{50}</code> |
|---------------------|----------------------------------------------|---------|-------------------------|--------------------------|
| xi~xx               | 11~20                                        | 1.784pt | 0.0pt                   | 0.0pt                    |
| i, v, x, l, c, d, m | 1, 5, 10, 50, 100, 500, 1000                 | 1.824pt | 0.04001pt               | 0.0pt                    |
| iv~mmmdccclxxxviii  | 4, 9, 40, 49, 90, 400, 900, 1000, 1888, 3888 | 1.712pt | 0.04001pt               | 0.0pt                    |

xi~xx (11~20)

`\maru --- auto`



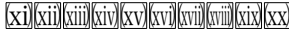
`\maru --- \kksref{\Rrnum*{6}}`



`\kakko --- auto`



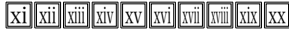
`\kakko --- \kksref{\Rrnum*{6}}`



`\seihou --- auto`



`\seihou --- \kksref{\Rrnum*{6}}`



`\hishi --- auto`



`\hishi --- \kksref{\Rrnum*{6}}`



xi xii xiii xiv xv xvi xvii xviii xix xx

xi xii xiii xiv xv xvi xvii xviii xix xx

**xi xii xiii xiv xv xvi xvii xviii xix xx**

xi xii xiii xiv XV xvi xvii xviii xix XX

i v x l c d m

i v x l c d m

i v x l c d m

ivxlcdm

ivxldm

i v x l c d m

i v x l c d m

i v x l c d m

ivxldm

i v x l c d m

ivxlcdm

ivxlcdm

iv, ix, xl, xlix, xc, cd, cm, m, mdccclxxxviii, mmmdccclxxxviii

\maru --- auto

iv ix xl xlix xc cd cm m

\maru --- \kksref{\Rrnum\*{6}}

iv ix xl xlix xc cd cm m

\kakko --- auto

iv ix xl xlix xc cd cm m

\kakko --- \kksref{\Rrnum\*{6}}

iv ix xl xlix xc cd cm m

\seihou --- auto

iv ix xl xlix xc cd cm m

\seihou --- \kksref{\Rrnum\*{6}}

iv ix xl xlix xc cd cm m

\hishi --- auto

iv ix xl xlix xc cd cm m

\hishi --- \kksref{\Rrnum\*{6}}

iv ix xl xlix xc cd cm m

\jegg --- auto

iv ix xl xlix xc cd cm m

\jegg --- \kksref{\Rrnum\*{6}}

iv ix xl xlix xc cd cm m

\ichimoji --- auto

iv ix xl xlix xc cd cm m

\ichimoji --- \kksref{\Rrnum\*{6}}

iv ix xl xlix xc cd cm m

### C3. With an explicit star / 明示スターとの併用

同じ内容を、スターなし／明示スターの両方で。スターでも基準は効きますが、全体が一段小さくなります。

The same material with and without an explicit star. The reference still applies under the star, but the whole sequence becomes one step smaller.

\maru --- auto, no star

i ii iii iv v vi vii viii ix x

\maru --- auto, star

i ii iii iv v vi vii viii ix x

\maru --- \kksref, no star

i ii iii iv v vi vii viii ix x

\maru --- \kksref, star

i ii iii iv v vi vii viii ix x

\kakko --- auto, no star

i ii iii iv v vi vii viii ix x

\kakko --- auto, star

i ii iii iv v vi vii viii ix x

\kakko --- \kksref, no star

i ii iii iv v vi vii viii ix x

\kakko --- \kksref, star

i ii iii iv v vi vii viii ix x

\seihou --- auto, no star

i ii iii iv v vi vii viii ix x

\seihou --- auto, star

i ii iii iv v vi vii viii ix x

\seihou --- \kksref, no star

i ii iii iv v vi vii viii ix x

\seihou --- \kksref, star

i ii iii iv v vi vii viii ix x

\hishi --- auto, no star

i ii iii iv v vi vii viii ix x

\hishi --- auto, star

i ii iii iv v vi vii viii ix x

\hishi --- \kksref, no star

i ii iii iv v vi vii viii ix x

\hishi --- \kksref, star

i ii iii iv v vi vii viii ix x

\jegg --- auto, no star

i ii iii iv v vi vii viii ix x

\jegg --- auto, star

i ii iii iv v vi vii viii ix x

\jegg --- \kksref, no star

i ii iii iv v vi vii viii ix x

\jegg --- \kksref, star

i ii iii iv v vi vii viii ix x

`\ichimoji --- auto, no star`

i ii iii iv v vi vii viii ix X

`\ichimoji --- auto, star`

i ii iii iv v vi vii viii ix X

`\ichimoji --- \kksref, no star`

i ii iii iv v vi vii viii ix X

`\ichimoji --- \kksref, star`

i ii iii iv v vi vii viii ix X

## C4. Scope / スコープ

左=グループ前（既定）、中=グループ内、右=グループ後。`\kksref` の効果はグループを出ると元に戻ります。

Before the group, inside it, and after it. The effect of `\kksref` reverts on leaving the group.

v x v x v x

実測 (`\Rrnum*{5}` の基準高さ) / measured reference height of `\Rrnum*{5}`: before 4.304pt  
inside 6.088pt after 4.304pt

`\kksreffoff` のあと `\kksrefauto` で復帰: default 4.304pt off 4.304pt auto 4.304pt

## C5. Typeface / 書体

upright

i ii iii iv v vi vii viii ix X

bold

i ii iii iv v vi vii viii ix X

italic

i ii iii iv v vi vii viii ix X

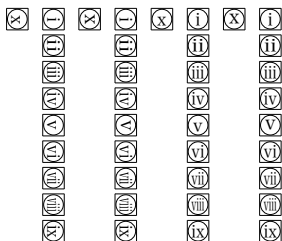
gothic

i ii iii iv v vi vii viii ix X

## C6. Vertical writing / 縦組み

縦組みでも同じように効きます。左から、`auto`、`\kksref`、`\RotTate[0]` 併用の `auto`、`\RotTate[0]` 併用の `\kksref`。

The hook works in vertical mode as well. From the right-hand side: `auto`, `\kksref`, then the same two with `\RotTate[0]`.



縦組みの中で実測した基準高さ／reference heights measured inside the vertical box above: `\Rrnum*{5}` default 1.272pt, with `\kksref{\Rrnum*{6}}` 3.056pt; `\Rrnum*{6}` default 3.056pt. 指定後の `\Rrnum*{5}` が `\Rrnum*{6}` の値に一致します。

## C7. Material taller than the reference / 基準より背の高い内容

漢字・かな・欧文大文字は基準より背が高く、`\kksref{\Rrnum*{6}}` を掛けても出力は変わりません。数字と大文字ローマ数字については、このフォントでは `i` のドットが大文字の高さをごくわずかに上回るため、基準高さが 0.06 pt 程度上がることがあります（下の実測を参照）。紙面上は判別できない差ですが、ローマ数字用に `\kksref` を掛けたグループへ他の内容を混ぜる場合は、この点だけ意識してください。

Kanji, kana and uppercase Latin letters are taller than the reference, so `\kksref{\Rrnum*{6}}` leaves their output unchanged. For digits and uppercase roman numerals the reference height can rise by about 0.06 pt, because in this font the dot of `i` sits marginally above cap height; see the measurements below. The difference is not visible on the page, but it is worth knowing if you mix other material into a group whose `\kksref` was set for roman numerals.

uppercase --- auto



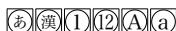
uppercase --- `\kksref`



kana, kanji, digits, latin --- auto



kana, kanji, digits, latin --- `\kksref`



実測／measured: `\Rrnum{8}` auto 6.064pt, `kksref` 6.088pt    あ auto 7.04pt, `kksref` 7.04pt    1 auto 6.032pt, `kksref` 6.088pt    A auto 6.12pt, `kksref` 6.12pt

## C8. Package options / パッケージオプション

**Japanese** パッケージオプションは読み込み時に決まるため、この一枚では切り替えられません。次の三点は、オプションを変えた別のビルドで確認した結果です。

**tsumesuji** ローマ数字には無関係です。このオプションは 2 桁以上の数字列だけを対象とするため、`tsumesuji=0` と `tsumesuji=1` で本節の出力は完全に一致します。

**autolowercase** `autolowercase=1` (既定) では、展開結果が l 字になる英小文字 (i・v・x・l・c・d・m) が小文字経路に入り、ii や viii などは通常経路のままになります。`\kksref` はどちらの経路にも効きますが、最も揃うのは `autolowercase=1` + 非スター + 一括 `phantom` の組み合わせです。  
**linewidth 系** 枠線を太くしても内容は内側に収まります。基準の効き方は線幅によって変わりません。

**English** Package options are fixed when the package is loaded, so they cannot be switched inside this sheet. The following three points were checked with separate builds.

**tsumesuji** Unrelated to roman numerals. The option applies only to digit strings of two or more digits, so the output of this section is identical under `tsumesuji=0` and `tsumesuji=1`.

**autolowercase** With `autolowercase=1` (the default), the one-letter results i, v, x, l, c, d and m take the lowercase path while ii, viii and the like keep the normal one. `\kksref` applies to both paths, but the most uniform combination is `autolowercase=1` with the non-starred commands and a group-wide `phantom`.

**linewidth keys** A heavier outline still keeps the material inside, and the reference behaves the same at any line width.

# D 囲み文字の一覧 / Symbol gallery

数字・英字を各コマンドで囲んだ一覧です。細い外枠は出力ボックスの確認用です。  
あ あ (あ) あ あ

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ | ⑭ | ⑮ | ⑯ | ⑰ | ⑱ | ⑲ | ⑳ | ㉑ | ㉒ | ㉓ | ㉔ | ㉕ | ㉖ |
| a | ① | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ | ⑭ | ⑮ | ⑯ | ⑰ | ⑱ | ⑲ | ⑳ | ㉑ | ㉒ | ㉓ | ㉔ | ㉕ | ㉖ |
| a | ① | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
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| ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ | ◊ |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ | ⑫ | ⑬ | ⑭ | ⑮ | ⑯ | ⑰ | ⑱ | ⑲ | ⑳ | ㉑ | ㉒ | ㉓ | ㉔ | ㉕ | ㉖ |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u | v | w | x | y | z |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |

# E Version History

- v1.0.0 (2025/10/03) — Initial public release.
- v1.0.1–1.0.4 — Added \ichimoji; fixed various bugs.

- **v1.1.0 (2025/10/28)** — Unified all commands to zenkaku (full-width).
- **v1.1.1 (2025/11/10)** — Refined `\ichimoji` scaling logic.
- **v2.0.0 (2025/12/23)** — Overhauled scaling to match OTF character quality.
- **v2.0.1 (2026/01/08)** — With the update to `luatexja` version 20260107.0, the commands provided by the `KKsymbols` package now behave identically to native Japanese characters. This improvement is due to the bug fixes in `\ltjghostbeforejachar` and `\ltjghostafterjachar`. Previously, when multiple commands from this package were used consecutively, proper glue was not inserted between them; however, this issue has been resolved in this update.
- **v2.0.2 (2026/01/20)** — This update fixes a critical bug where arguments of the `\kakko` command could overflow when using specific fonts (for example, Hiragino fonts with weights W4 and above).
- **v2.1.0 (2026/02/16)** — In this update, the following points are changed.
  - `\period` command was deleted. It have never been used since the significance of existence had been absolutely questionable. I finally decided to delete it.
  - New package option `tsumesuji` was added.
  - New command `\zenkakuhabafixer` was added.
- **v2.1.1 (2026/02/17)** — An emergency update to fix a bug where the arguments of `\kakko`, `\maru` etc. caused expansion errors.
- **v2.1.2 (2026/02/19)** — The effects are applied when the argument of a command subject to the `tsumesuji` option—after expansion—is a numeric string of two or more digits and contains the digit “1”.
- **v2.1.4 (2026/04/17)** — When the arguments provided by this package contain only one-digit-number, the internal resize algorithm is nullified.
- **v2.2.0 (2026/06/21)** — Automatic vertical alignment was introduced. By default, the content of each enclosure is sized and centered against the current font’s reference height (x-height) instead of relying only on the glyph’s own metrics. The new commands `\kksref`, `\kksrefoff`, and `\kksrefauto` (alias `\kksrefreset`) control this behavior. For strict lowercase roman-numeral alignment, use `\kksref{\Rrnum*{6}}` explicitly.
- **v2.2.1 (2026/06/21)** — Bug fix: font-size commands inside arguments no longer cause an infinite loop in the internal one-digit/`tsumesuji` check. The visible output size is unaffected.
- **v2.2.2 (2026/06/26)** — Documentation update. The documentation now describes uppercase `\Rrnum{n}` and lowercase `\Rrnum*{n}` usage, clarifies when `\kksref{\Rrnum*{6}}` is needed, and adds a Japanese/English comparison with `luatexja-otf`.
- **v2.3.0 (2026/08/20)** — Added automatic lowercase sizing (`autolowercase`), configurable frame line widths (`linewidth` and the per-command keys such as `marulinenewidth`), and the compatibility fixes described above, including the corrected `\maruhishi` wiring.

The safe-sizing route of the circle enclosures (`\maru`, `\kuromaru`, `\nmaru`) keeps the historical rule that the material’s total height stays within the square inscribed in the circle. Fitting the material’s box to the circle itself, which the rewritten routine did at first, is geometrically

correct but leaves a tall narrow letter such as `j` with no clearance where its ink actually reaches: the dot and the descender sit at the horizontal centre, that is at the circle’s poles, while the box touches the outline at its corners. A second historical rule is kept as well: material wider than the inner box settles for a slightly smaller base, which is what keeps a wide letter such as `m` or `w` clear of the frame at the sides. Material of a single glyph is judged there on its widest and tallest points rather than at its box corners, since a lone glyph’s ink does not reach the corners of its own box; this is the same test the package’s ink guard applies. A string of glyphs, whose width nothing bounds, keeps the corner test. Every rule here is an upper bound, so each can only make a fit smaller than the geometry already allows, and a heavier `linewidth` tightens all of them in step with the outline. The result is that in the circle enclosures every single lowercase letter renders at exactly the size it had in v2.2.2, while multi-character material keeps the containment the rewritten routine introduced.

Specification change (documentation): the recommended way to typeset lowercase roman numerals is now the non-starred enclosure commands combined with a single group-wide `\kksref{\Rrnum*{6}}`. Until this version the documentation presented `\kksref{\Rrnum*{6}}` as an optional measure for strict alignment, and left the automatic reference as the ordinary route. Measurement shows that the automatic reference is the x-height of the current font and therefore has essentially no effect on lowercase roman numerals, leaving a 2.23 pt spread at 10 pt, and that an explicit star only makes the whole sequence smaller without aligning it. The `\kksref{\Rrnum*{6}}` route brings the spread to 0 at every font size. The “Roman numerals” section now carries a “Recommended usage” subsection and a “Corner-case test sheet” whose figures this document measures at compile time, including the note that `\kksref{\Rrnum*{50}}` is needed when the range includes numerals containing `1` or `d`. No package code was changed by this item.

- **v2.3.1 (2026/09/30)** — Correct the internal KKran Roman-numeral classifier to match KKran 1.2.0 and later: `\Rrnum{n}` is uppercase and `\Rrnum*{n}` is lowercase. Correct the corresponding examples and reference-box instructions.

## F License

Released under the MIT License.

## G Acknowledgements / Credit

In developing this package, I made extensive use of the advice I received from Mr. Yusuke Terada.

I recommend you to refer to his article when you develop new-type symbols on  $\LaTeX$ .

<https://doratex.hatenablog.jp/entry/20211205/1638697391>