`KKsymbols` Package Documentation

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Version 2.1.2 (2026/02/19)

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1 Outline

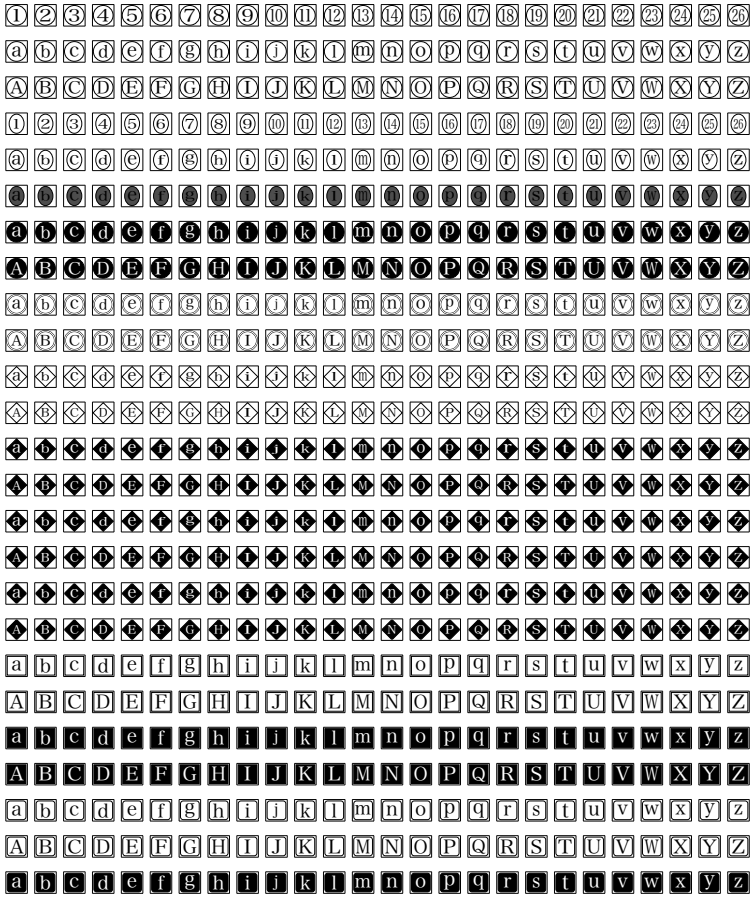
Japanese: このパッケージは、既存の otf フォントに頼ることなく、「任意のフォント、任意の引数で」丸数字などの特殊記号を再現する目的で作成されています。

luatexja-otf における`\ajMaru` などは、その設計上いたしかなないデメリットとして、早見表がないと使い物にならないというものがありました。しかし、本パッケージでは、一から特殊文字を設計し直すというという取り組みを行なっているため、そのようなデメリットが解消されています。

English: This package is designed to reproduce special characters, such as circled numbers, using arbitrary fonts and parameters without relying on existing otf font sets.

A known disadvantage of commands like `\ajMaru` in luatexja-otf is that they are practically unusable without a reference chart. In contrast, this package addresses this issue by re-engineering special characters from the ground up, eliminating the need for complex lookup tables.

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] [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]

2 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

3 Installation

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

3.1 Dependencies

This package depends on the following packages.

- `LuaLaTeX-ja`
- `tikz`
- `clac`
- `luacode`
- `kvoptions`

3.2 Loading and Options

Load the package: `\usepackage[<options>]{KKsymbols}`
Currently, the following package option is 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 differnce is present in the following example:

Input

```
% NOT APPLIED
\kakko{\vphantom{X}12}
```

```
3
4   % APLIED
5   \kakko{12}
```

Output

(12)
(12)

4 Caution

Since this package internally calls `\ltjghostbeforejachar` and `\ltjghostafterjachar`, it can be used **only in a LuaLaTeX environment.**

5 Commands

5.1 The maru series

This package provides `\maru`, `\kuromaru`, and `\nmaru`. Each of them takes one mandatory argument and no optional arguments. You can pass strings of any length and in any font as arguments.

In most cases, `\maru{argument}` will meet your demands. However, only when you take lowercase alphabet in these commands, you must use star-command just like `\maru*{m}`[1)].

Input — Mind the star option!

```
1   % Normal Characters
2   \maru{A}\maru{あ}\maru{QED.}
3
4   % Lowercase Alphabetic Characters
5   \maru*{a}\maru*{j}\maru*{z}
```

Output

Ⓐ㋐㍾
ⓐⓙⓩ

They are used as follows.

1) `\jegg` is an exception of this rule. When you use `\jegg`, you don't have to put the star option no matter the argument is lowercase or not. If you do it, the background color of the `\jegg` changes into gray. Only in this case, the effect of the option is different.

表 1: maru series

argument	\maru	\kuromaru	\nmaru	\jegg	\jegg*
l	①	❶	①	①	❶
97	㊼	㊼	㊼	㊼	㊼
だ	㋛	㋛	㋛	㋛	㋛
ばばば	㍿	㍿	㍿	㍿	㍿
m	ⓜ	ⓜ	ⓜ	ⓜ	ⓜ
Qjg	㋿	㋿	㋿	㋿	㋿

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

あいう㊨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:

6 Rotation

6.1 Commands

This package provides `\RotTate` and `\RotYoko`. The differnces 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

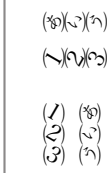
font-size commands like `\small` behave). Therefore, please ensure you use appropriate scoping, such as enclosing the command within curly braces `{...}`, when applying these settings.

Input

```
% In horizontal mode
{\RotYoko[45]\kakko{あ}\kakko{い}\kakko{う}}\par
{\RotYoko[60]\kakko{1}\kakko{2}\kakko{3}}

% In vertical mode
\parbox<t>{5\zw}{% <t> option requires lltjext package.
  {\RotTate[45]\kakko{あ}\kakko{い}\kakko{う}}\par
  {\RotTate[60]\kakko{1}\kakko{2}\kakko{3}}
}
```

Output



6.2 Vertical mode

When you want to typeset ㋐, 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

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

Output

(1) (あ)
(1) (い)
(3) (う)

7 The seihou series

The commands introduced below are used in exactly the same way as the maru series. In most cases, `\seihou{argument}` will meet your demands. However, only when you take lowercase alphabet in these commands, you must use star-command just like `\seihou*{m}`.

表 2: seihou series

argument	\seihou	\kuroseihou	\seimaru	\kuroseimaru
1	🄁	🅁	🄁	🅁
97	🄗	🅗	🄗	🅗
だ	🄓	🅓	🄓	🅓
ばばば	🄔	🅔	🄔	🅔
m	🄜	🅜	🄜	🅜
Qjg	🄠	🅠	🄠	🅠

表 3: hishi series

argument	\hishi	\kurohishi	\maruhishi	\kuromaruhishi
1	🔷	🔶	🔶	🔶
97	🔷	🔶	🔶	🔶
だ	🔷	🔶	🔶	🔶
ばばば	🔷	🔶	🔶	🔶
m	🔷	🔶	🔶	🔶
Qjg	🔷	🔶	🔶	🔶

Input — Mind the star option!

```
% Normal Characters
\seihou{A}\seihou{あ}\seihou{QED.}

% Lowercase Alphabetic Characters
\seihou*{a}\seihou*{j}\seihou*{z}
```

Output

🄰🄐🄫

🄰🄙🅉

8 The kakko series

The commands introduced below are used in exactly the same way as the maru series.

In most cases, `\kakko{argument}` will meet your demands. However, only when you take lowercase alphabet in these commands, you must use star-command just like `\kakko*{m}`[2].

表 4: kakko series ①

argument	`\kakko`	`\sumikakko`	`\kakukakko`	`\kikakko`	`\ykakko`
1	⑴	【1】	［1］	〔1〕	〈1〉
97	⑼⑺	【97】	［97］	〔97〕	〈97〉
だ	�using	【だ】	［だ］	〔だ〕	〈だ〉
ばばば	㈱㈱㈱	【ばばば】	［ばばば］	〔ばばば〕	〈ばばば〉
m	ⓜ	【m】	［m］	〔m〕	〈m〉
Qjg	ⓠⓙⓖ	【Qjg】	［Qjg］	〔Qjg〕	〈Qjg〉

表 5: kakko series ②

argument	`\nykakko`	`\namikakko`	`\kagikakko`	`\nkagikakko`	`\ichimoji`	`\zenkakuhabafixer`
1	⟨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 — Mind the star option!

```
% Normal Characters
\kakko{A}\kakko{あ}\kakko{QED.}

% Lowercase Alphabetic Characters
\kakko*{a}\kakko*{j}\kakko*{z}
```

2) `\zenkakuhabafixer` is an exception of this rule. It does not take a star option.

Output

㈠㈱㈹
(a)(j)(z)

8.1 Additional Description: `\ichimoji` and `\zenkakuhabafixer`

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

`\ichimoji` 🈔
`\zenkakuhabafixer` 🈔

9 License

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10 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”.