

# The mahjong-tiles Package

## Typesetting Riichi Mahjong Hands and Discard Rivers

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Version 2.2.0, 2026-07-01

### Abstract

`mahjong-tiles` typesets Japanese/Riichi Mahjong tiles from compact MPSZ notation. It provides a document command, `\mahjong`, for hands and melds, and `\mahjongriver` for discard rivers. It supports red fives, face-down and blank tiles, rotated and stacked tiles, concealed-kong shorthand, local and global size options, and recolouring of tile backs.

## 1 Loading the package

A minimal document looks like this.

If you are working from the CTAN source archive, generate the runtime package file first:

```
latex mahjong-tiles.ins
```

The distributed user manual lives in `doc/mahjong-tiles-doc.pdf`;

Its source is `doc/mahjong-tiles-doc.tex`;

The package implementation source is `mahjong-tiles.dtx`;

And `mahjong-tiles.ins` extracts `mahjong-tiles.sty`.

```
\documentclass{article}
\usepackage{mahjong-tiles}
\begin{document}
\mahjong{111m456s111p11122z}
\end{document}
```

The package expects the PDF artwork in the `tiles/` directory. With the default setting, `mahjong-tiles.sty` and `tiles/` should be installed in the same TeX-searchable package directory.

## 2 Package options

Options can be supplied when loading the package or changed later with `\mahjongtilessetup`.

```
\usepackage[
  height=1.5\baselineskip,
  scale=0.75,
  color=blue!70!black,
  no-aka=0
]{mahjong-tiles}

\mahjongtilessetup{height=1.5\baselineskip,scale=0.75,color=teal!65!black}
```

Option	Default	Description
height	\baselineskip	Height of one upright tile.
scale	0.75	Scale factor for the tile symbol relative to the tile face.
tile-dir	tiles	Directory containing the tile PDF files.
color	none	Recolour the tile back. Use any xcolor colour expression, or <b>none</b> for the embedded artwork.
no-aka	0	Replace red fives 0m, 0p, and 0s with regular fives when set to 1.
river-cols	6	Number of tiles per discard-river row.
river-row-gap	0pt	Vertical gap between discard-river rows.

### 3 The \mahjong command




```
\mahjong{<tiles>}
\mahjong[<height>][<scale>][<back-colour>][<local-keys>]{<tiles>}
\mahjong[<local-keys>]{<tiles>}
```

The first optional argument also accepts a key-value list. This allows compact local overrides such as:




```
\mahjong[height=1.5\baselineskip,scale=0.75,color=teal!65!black,no-aka=1]{x 0m0p0s}
```

### 4 MPSZ notation

A tile is written as one or more digits followed by a suit letter. The suits are **m** for manzu, **p** for pinzu, **s** for souzu, and **z** for honors.

Input	Output
111m456s111p11122z	
1112345678999p	
19m19s19p1234567z	

#### 4.1 Special tokens

Token	Meaning
0m, 0p, 0s	Red fives: 
x	Face-down tile: 
?	Unknown blank tile: 
-	Full visual gap between groups.
N-	Proportional gap of N/7 of one tile width, for example 2-.

#### 4.2 Rotated and stacked tiles

The marker **\*** or an apostrophe rotates the preceding tile sideways. The marker **+** or a double quote stacks two sideways copies of the preceding tile, which is useful for kan notation.

Input	Output
-------	--------

111m111s111p22z2-3\*333z



123m-xx?4p'5p"0s



### 4.3 Red fives and the no-aka option

Red fives are enabled by default.

Input	Output
0m0p0s55555m	
\mahjong	
[no-aka=1]{0m0p0s55555p}	

### 4.4 Concealed kongs

Five identical consecutive digits followed by a suit are rendered as a concealed kan: a face-down tile, two visible tiles, and a face-down tile. For suited fives, the visible pair contains a red five and a regular five unless `no-aka=1` is active.

Input	Output
55555p	
33333z	
\mahjong [no-aka=1]{55555s}	

## 5 Tile-back recolouring

The tile-back colour can be set globally or locally. The colour value is passed to `xcolor`. The special value `none` restores the embedded back tile.

```
\mahjongtilessetup{color=purple!70!black}
\mahjong{x x x}
```

```
\mahjong[color=teal!65!black]{x x x}
\mahjong[color=none]{x x x}
```



## 6 Discard rivers

The `\mahjongriver` command uses the same notation as `\mahjong`, but it breaks tiles into rows. The row length is controlled by `river-cols`.

```
\mahjongriver{1m9m2z5z3s6s1s1m8p4z87m}
\mahjongriver[river-cols=6]{1m9m2z5z3s6s1s*1m8p4z87m}
```



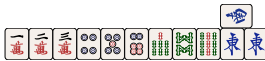



## 7 Overlay Notes

The `\mahjong` command supports text annotations. Use `[]` in `\mahjong` to attach a note above the previous tile.

Annotations may contain ordinary TeX material. Mahjong tiles inside an annotation are rendered only when they are explicitly wrapped in `\mj`. For example, `[waiting \mj3m]` prints the text "waiting" followed by a small mahjong tile in the annotation. The `\mj` command is parsed only one level deep inside annotations.

The `\mj` command may also be used directly inside `\mahjong`. In that case, its argument must contain exactly one tile. The tile is typeset as a normal-size rotated tile above the hand, which is useful for showing a drawn tile.

Input	Output
<code>111m111s111p2z2-3*333z7-2z[waiting]</code>	 A Mahjong hand consisting of 13 tiles: three red dragons, three green dragons, three white dragons, two red winds, two green winds, two white winds, and two red dragons. The last tile is annotated with "waiting" above it.
<code>111m113s111p2z2-3*333z7-2z[discard \mj {3s},\ waiting \mj {1s2-2z}]</code>	 A Mahjong hand consisting of 13 tiles: three red dragons, three green dragons, three white dragons, two red winds, two green winds, two white winds, and two red dragons. The last tile is annotated with "discard" above it, and the second tile is annotated with "waiting" above it.
<code>123m456p789s\mj {2z}11z</code>	 A Mahjong hand consisting of 13 tiles: three red dragons, three green dragons, three white dragons, two red winds, two green winds, two white winds, and two red dragons. The last tile is annotated with "concealed kong" above it.
<code>3333z[concealed kong]</code>	 A Mahjong hand consisting of four red dragons. The last tile is annotated with "concealed kong" above it.

When a note is added to the fifth tile of a concealed kong shorthand, a warning `Overlay text '<overlay text>'` is attached to the final back tile of a concealed kong. will be triggered. Since a concealed kong is rendered as four tiles, the note is moved to the fourth rendered tile, namely the final back tile.

## 8 Expl3 interface

For package authors who prefer an expl3-style interface, mahjong-tiles also exposes:

```
\ExplSyntaxOn
\mahjongtiles_typeset_hand:n {111m456s111p11122z}
\mahjongtilesriver:n {111m456s111p11122z}
\ExplSyntaxOff
```

## 9 Attribution and licence

The LaTeX package code is distributed under the MIT Licence. Portions are based on Daniel Schmitz's mahjong package, copyright 2021 Daniel Schmitz, also under the MIT Licence.

The tile artwork in `tiles/` is derived from FluffyStuff's riichi-mahjong-tiles project. The upstream licence file places that work in the public domain/CC0. Attribution is retained here and in the README.