

# The experimental tikzmusic package

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## 1 Acknowledgements

First of all, I would like to thank the following people who have greatly helped me in writing this package:

- Till Tantau and every developer of the TikZ-PGF package. Obviously, without the powerful PGF and its easy-to-use front-end TikZ, this package, along with many others, would not be possible.
- The development team of all packages used by this package.
- Every member of the [Duck Overflow](#) chat room and the [TopTeX](#) community, most notably (but not limited to) marmot, samcarter and Skillmon, for their great help in writing this package. My knowledge in T<sub>E</sub>X and friends would not be the same without these people.
- Christian Feuersänger for the pgfmanual documentation style, most notably the automatic hyperlink in the documentation. The style was adopted in the documentation of this package.
- The [Inkscape](#) project and the [svg2tikz](#) project. I have used these two tools heavily to generate code for the musical notations from existing SVG files. Although the files in tex/latex/tikzmusic/src/tm-paths are not automatically generated, most parts of them are generated by these tools.
- The [MuseScore](#) project. Although I had known some about music notations, that was too little for the package. I have used MuseScore heavily for some ideas about music writing and music notations.

## 2 Initialization

### 2.1 Loading the package

This package currently only supports  $\text{\LaTeX 2}_{\epsilon}$ .

```
\usepackage{tikzmusic}
```

Loading the tikzmusic package. There are no package options.

This package will automatically load the packages `spath3` and `TikZ`, as well as `TikZ` standard libraries `calc`, `intersection`, `decorations.pathreplacing`. You don't need to load these packages and libraries again in your document.

### 2.2 Processing options

The tikzmusic package uses the pgfkeys package to handle options. Every option defined in the package is in the same family, `/tm`, e.g. `color`.

```
\tmset{<options>}
```

Process `<options>`. where the default path is set to `/tm`.

If you know about `TikZ` and its key system, you can think `\tmset` works just like `\tikzset`, only the default path is different. You can now skip to the next section.

If you are not familiar with `pgfkeys` or `\pgfkeys` or `\tikzset`, `<options>` is a list of `<key>=<value>` pairs, separated by commas. The command will then separate each pair and process them.

- If the key is with `<value>`, option `<key>` is processed, with its value being `<value>`.
- Otherwise, the command will check whether `<key>` is a defined key. If it is defined, option `<key>` is processed. Otherwise, it will be processed as the value for both `line color` and `color` (see section 8.1).

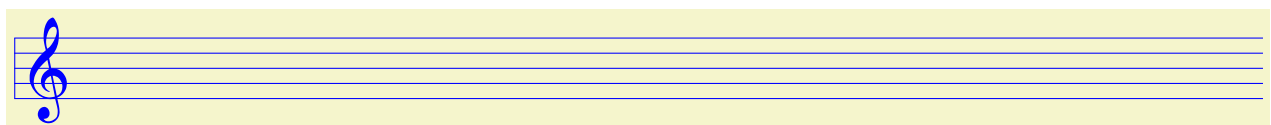
If you want to learn deeper about this, you can read section 88 of the PGF manual (you can read it via `texdoc pgf`).

### 2.3 Environments for music lines

Each music line will be drawn separately, by using the following environment:

```
\begin{tmline}[<options>]  
  <environment contents>  
\end{tmline}
```

Add a music line (consisting of one or many staves).



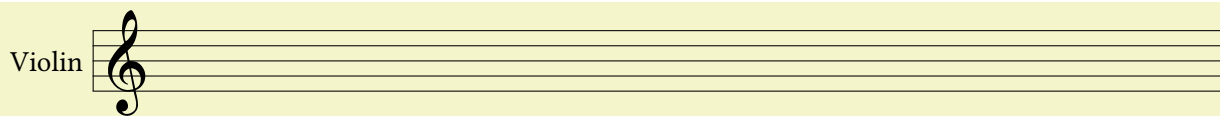
```
\begin{tmline}[blue]  
\begin{tmstaff}{g}{ }\end{tmstaff}  
\end{tmline}
```

If a line consists of more than one staff, you may need to indent the staves a little bit to make room for instrument names and braces/brackets. You can do so by using the following key:

**/tm/staff offset**= $\langle length \rangle$

(no default, initially 0pt)

Indent all staves in a line by  $\langle length \rangle$ .



```
\begin{tmline}[staff offset=1.5cm]
\begin{tmstaff}{g}{a}
  \path[overlay] (a-start) node[left] {Violin};%
\end{tmstaff}
\end{tmline}%
```

## 2.4 Creating a staff

A staff can be created using one of the following environments:

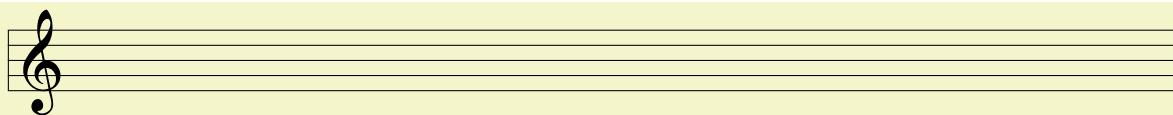
```
\begin{tmstaff}[ $\langle options \rangle$ ]{ $\langle clef name \rangle$ }{ $\langle staff name \rangle$ }
   $\langle environment contents \rangle$ 
\end{tmstaff}
```

Create a staff, with the starting clef is  $\langle clef name \rangle$ .

$\langle clef name \rangle$  can have three values: g, f and c, which stands for the treble (G) clef, the bass (F) clef and the alto (C) clef, respectively.

$\langle staff name \rangle$  will be used to make cross-staff barlines or braces, so you should only left it empty if you are sure you will not refer to it later.

$\langle options \rangle$  will be executed at the beginning of the environment.

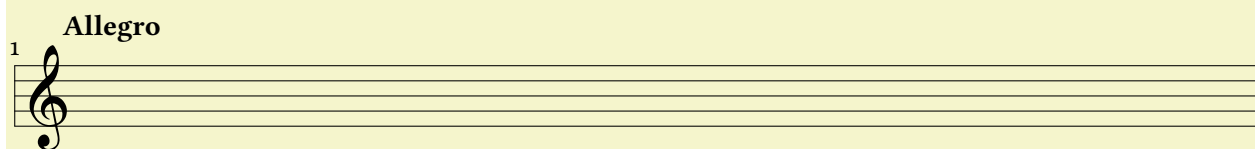


```
\begin{tmline}[staff offset=1cm]
\begin{tmstaff}{g}{}\end{tmstaff}
\end{tmline}
```

```
\begin{tmstaff*}[ $\langle options \rangle$ ]{ $\langle staff name \rangle$ }
   $\langle environment contents \rangle$ 
\end{tmstaff*}
```

Work like {tmstaff}, but no clefs will be drawn.

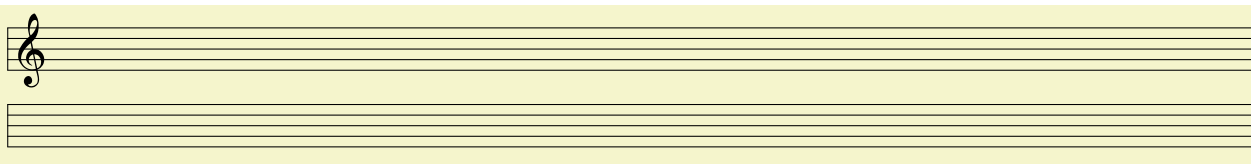
Essentially, {tmstaff} and {tmstaff\*} are extensions of the {tikzpicture} environment, where the origin of the canva is the leftmost point of the middle line. That origin is marked as TikZ remembered coordinate ( $\langle staff name \rangle$ -start). There are also two other remembered coordinates: the leftmost points of the top line and the bottom line are marked as TikZ coordinates ( $\langle staff name \rangle$ -nw) and ( $\langle staff name \rangle$ -sw) respectively.



```
\begin{tmline}
\begin{tmstaff}{g}{my-staff}
  \path (my-staff-nw) node[above,overlay] {1} ++ (.5,.5) node[right] {\bfseries Allegro};
\end{tmstaff}
\end{tmline}
```

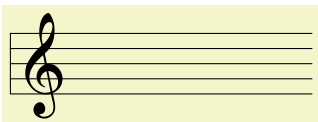
By default, the staff lines will be separated by 2mm. You can scale this to a different value by using

**/tm/scale=***<number>* (no default, initially 1)  
 Scale the staff (if applied to `{tmstaff}` or `{tmstaff*}`), or scale the whole line (if applied to `{tmline}`), by *<number>*.



```
\begin{tmline}[scale=0.7]
\begin{tmstaff}{g}{}\end{tmstaff}%
\begin{tmstaff*}{}\end{tmstaff*}%
\end{tmline}%
```

The lines will always span over the full line width, so to get a staff having some particular length, you can put them inside a `{minipage}`:



```
\begin{minipage}{4cm}
\begin{tmline}
\begin{tmstaff}{g}{}\end{tmstaff}
\end{tmline}
\end{minipage}
```

### 3 Multiple-staff operations

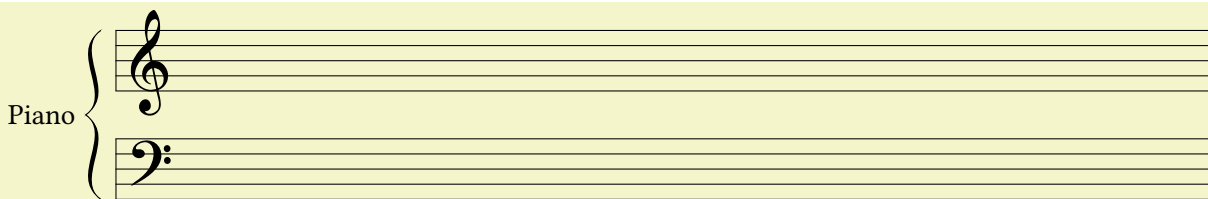
Because the following commands are multiple-staff commands, they should be used outside `{tmstaff}` and `{tmstaff*}` (*except* `\tmbarlineinline`, `\tmdoublebarlineinline`, ...).

#### 3.1 Ensembling staves

Braces that groups some staves inside a `{tmline}` can be drawn using the following command:

**\tmbrace***[<options>]*{*<staff 1>*}{*<staff 2>*}{*<text>*}

Draw a brace spanning from *<staff 1>* to *<staff 2>*. *<text>* is displayed at the middle of the brace. If you don't want any text to be displayed, you can leave this option empty.

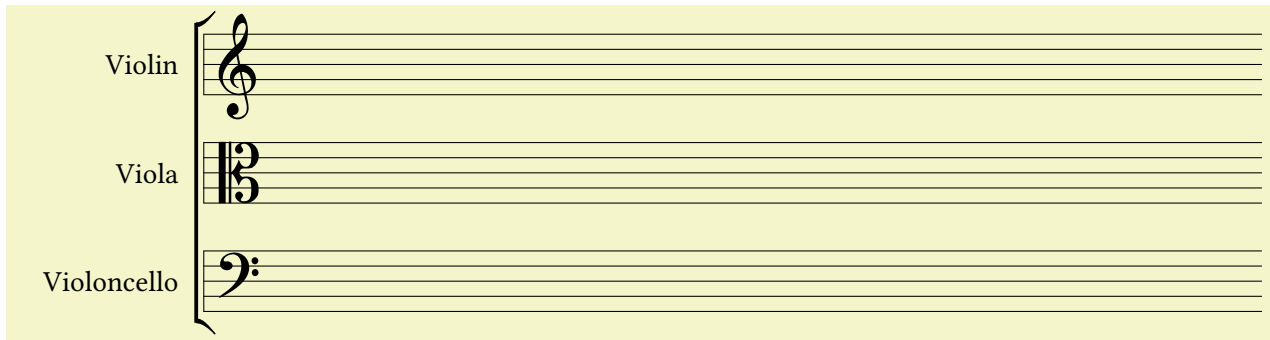


```
\begin{tmline}[staff offset=2cm]%
\begin{tmstaff}{g}{piano-1}\end{tmstaff}%
\begin{tmstaff}{f}{piano-2}\end{tmstaff}%
\tmbrace{piano-1}{piano-2}{Piano}%
\end{tmline}
```

Similarly, brackets can also be drawn:

**\tmbracket**[*<options>*]{*<staff 1>*}{*<staff 2>*}

Draw a bracket spanning from *<staff 1>* to *<staff 2>*. Unlike `\tmbrace`, no text will be displayed.



```
\begin{tmline}[staff offset=2.5cm]%
\begin{tmstaff}{g}{Violin}\end{tmstaff}%
\begin{tmstaff}{c}{Viola}\end{tmstaff}%
\begin{tmstaff}{f}{Violoncello}\end{tmstaff}%
\begin{tikzpicture}[remember picture,overlay]
  \foreach \i in {Violin,Viola,Violoncello}\path (\i-start) node[left=2mm] {\i};
\end{tikzpicture}%
\tmbracket{Violin}{Violoncello}%
\end{tmline}
```

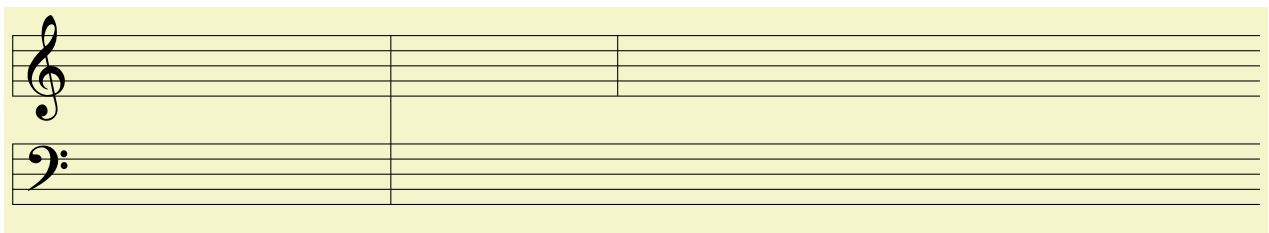
## 3.2 Barlines

The `tikzmusic` package supports many different types of barlines.

### 3.2.1 Normal barlines

**\tmbarline**[*<options>*]{*<x-pos>*}{*<staff 1>*}{*<staff 2>*}

Draw a normal barline spanning from *<staff 1>* to *<staff 2>*, at *x-position <x-pos>* in relative to the origin (*<staff name>-start*) of either staff.

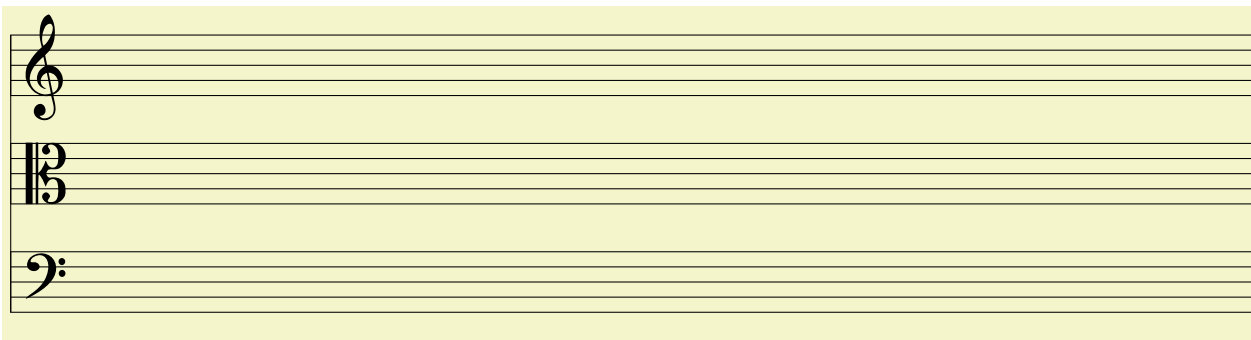


```
\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}\end{tmstaff}%
\tmbarline{5}{staff-1}{staff-2}\tmbarline{8}{staff-1}{staff-1}%
\end{tmline}
```

A special case of `\tmbarline` is implemented in the following command:

**\tmbarlineendline**[*<options>*]{*<staff 1>*}{*<staff 2>*}

Draw a normal barline spanning from *<staff 1>* to *<staff 2>* at the end of the line.

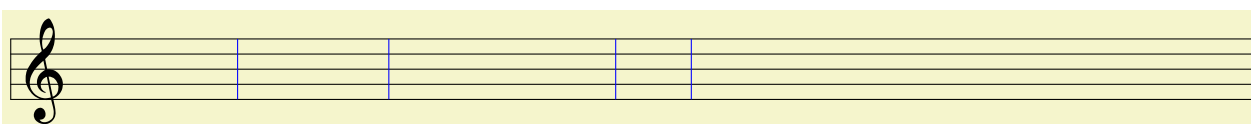


```
\begin{tmline}
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{c}{staff-2}\end{tmstaff}%
\begin{tmstaff}{f}{staff-3}\end{tmstaff}%
\tmbarline{0}{staff-1}{staff-3}%
\tmbarlineendline[blue]{staff-1}{staff-3}%
\end{tmline}
```

If you want to draw the barline inside `{tmstaff}` or `{tmstaff*}`, you can use

**`\tmbarlineinline`**`[<options>]{<list of x-pos>}`

Draw a normal barline at each *x*-position specified in *<list of x-pos>*.



```
\begin{tmline}%
\begin{tmstaff}{g}{}
\tmbarlineinline[blue]{3,5,8,9}
\end{tmstaff}%
\end{tmline}
```

### 3.2.2 Double barlines

Like when drawing normal barlines as described in section 3.2.1, we also have four commands for double barlines.

**`\tmdoublebarline`**`[<options>]{<x-pos>}{<staff 1>}{<staff 2>}`

Draw a double barline spanning from *<staff 1>* to *<staff 2>*, at *x*-position *<x-pos>* in relative to the origin (*<staff name>*-start) of either staff.

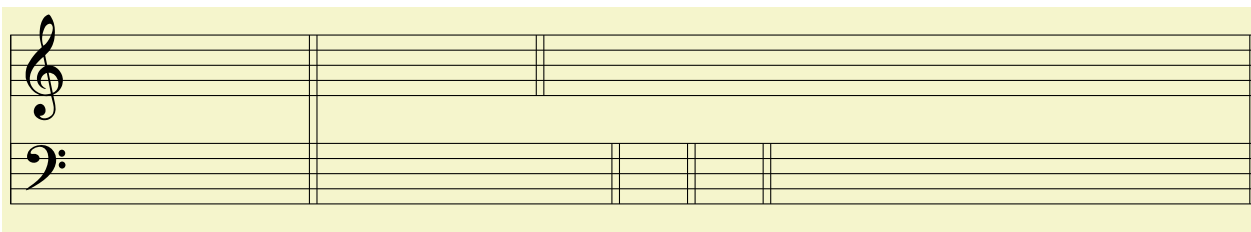
**`\tmdoublebarlineendline`**`[<options>]{<staff 1>}{<staff 2>}`

Draw a double barline spanning from *<staff 1>* to *<staff 2>* at the end of the line.

**`\tmdoublebarlineinline`**`[<options>]{<list of x-pos>}`

Draw a double barline at each *x*-position specified in *<list of x-pos>*.

Example use of all four commands described in this section:



```
\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}
  \tmdoublebarlineinline{8,9,10}
\end{tmstaff}%
\tmbarline{0}{staff-1}{staff-2}%
\tmdoublebarline{4}{staff-1}{staff-2}%
\tmdoublebarline{7}{staff-1}{staff-1}%
\tmdoublebarlineendline{staff-1}{staff-2}%
\end{tmline}
```

### 3.2.3 Dotted barlines

Now you can see the patterns :).

**\tmdottedbarline**[*options*]{*x-pos*}{*staff 1*}{*staff 2*}

Draw a dotted barline spanning from *staff 1* to *staff 2*, at *x-position* *x-pos* in relative to the origin (*staff name*–start) of either staff.

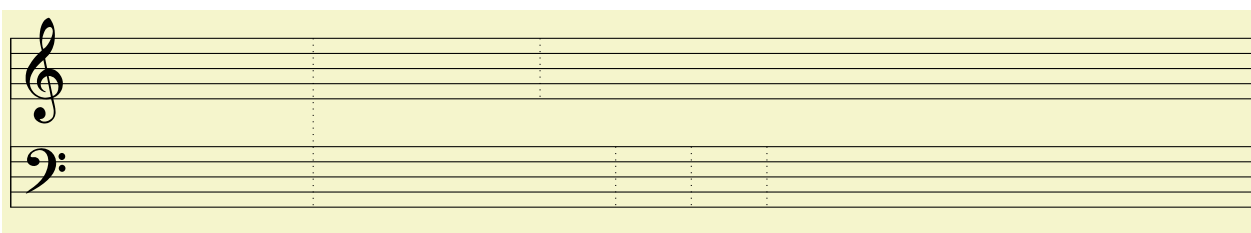
**\tmdottedbarlineendline**[*options*]{*staff 1*}{*staff 2*}

Draw a dotted barline spanning from *staff 1* to *staff 2* at the end of the line.

**\tmdottedbarlineinline**[*options*]{*list of x-pos*}

Draw a double barline at each *x-position* specified in *list of x-pos*.

The commands in use:



```
\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}
  \tmdottedbarlineinline{8,9,10}
\end{tmstaff}%
\tmbarline{0}{staff-1}{staff-2}%
\tmdottedbarline{4}{staff-1}{staff-2}%
\tmdottedbarline{7}{staff-1}{staff-1}%
\tmdottedbarlineendline{staff-1}{staff-2}%
\end{tmline}
```

### 3.2.4 Final barlines

**\tmfinalbarline**[*options*]{*x-pos*}{*staff 1*}{*staff 2*}



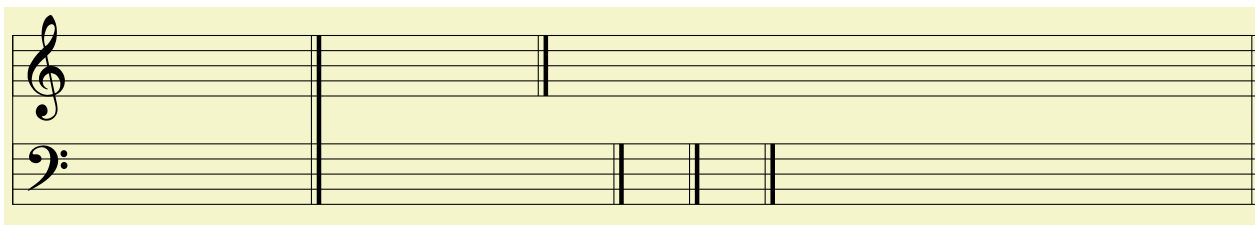
Draw a final barline spanning from  $\langle staff\ 1 \rangle$  to  $\langle staff\ 2 \rangle$ , at  $x$ -position  $\langle x-pos \rangle$  in relative to the origin ( $\langle staff\ name \rangle$ -start) of either staff.

**$\backslash\text{tmfinalbarlineendline}$**  $[\langle options \rangle]\{\langle staff\ 1 \rangle\}\{\langle staff\ 2 \rangle\}$

Draw a final barline spanning from  $\langle staff\ 1 \rangle$  to  $\langle staff\ 2 \rangle$  at the end of the line.

**$\backslash\text{tmfinalbarlineinline}$**  $[\langle options \rangle]\{\langle list\ of\ x-pos \rangle\}$

Draw a final barline at each  $x$ -position specified in  $\{\langle list\ of\ x-pos \rangle\}$ .



```
\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}
  \tmfinalbarlineinline{8,9,10}
\end{tmstaff}%
\tmbarline{0}{staff-1}{staff-2}%
\tmfinalbarline{4}{staff-1}{staff-2}%
\tmfinalbarline{7}{staff-1}{staff-1}%
\tmfinalbarlineendline{staff-1}{staff-2}%
\end{tmline}
```

### 3.2.5 Start repeat barlines

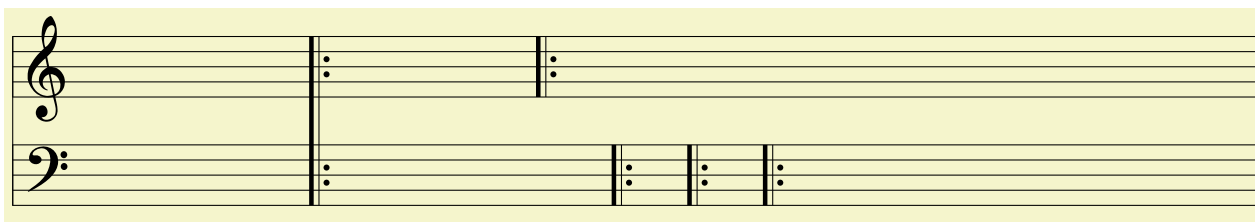
**$\backslash\text{tmstartrepeatbarline}$**  $[\langle options \rangle]\{\langle x-pos \rangle\}\{\langle staff\ 1 \rangle\}\{\langle staff\ 2 \rangle\}\{\langle list\ of\ staff\ names \rangle\}$

Draw a start repeat barline spanning from  $\langle staff\ 1 \rangle$  to  $\langle staff\ 2 \rangle$ , at  $x$ -position  $\langle x-pos \rangle$  in relative to the origin ( $\langle staff\ name \rangle$ -start) of either staff.

Because of some internal problems, you need to specify a full list of the names of the staff that the barline spans over in  $\langle list\ of\ staff\ names \rangle$  with a comma-separated list.

**$\backslash\text{tmstartrepeatbarlineinline}$**  $[\langle options \rangle]\{\langle list\ of\ x-pos \rangle\}$

Draw a start repeat barline at each  $x$ -position specified in  $\{\langle list\ of\ x-pos \rangle\}$ .



```
\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}
  \tmstartrepeatbarlineinline{8,9,10}
\end{tmstaff}%
\tmbarline{0}{staff-1}{staff-2}%
\tmstartrepeatbarline{4}{staff-1}{staff-2}{staff-1,staff-2}%
\tmstartrepeatbarline{7}{staff-1}{staff-1}{staff-1}%
\end{tmline}
```

Note that there is no `\tmstartrepeatbarlineendline`, because I am sure you will never put a start repeat barline to the end of a line.

### 3.2.6 End repeat barlines

**`\tmendrepeatbarline`***[`<options>`]**{`<x-pos>`}**{`<staff 1>`}**{`<staff 2>`}**{`<list of staff names>`}*

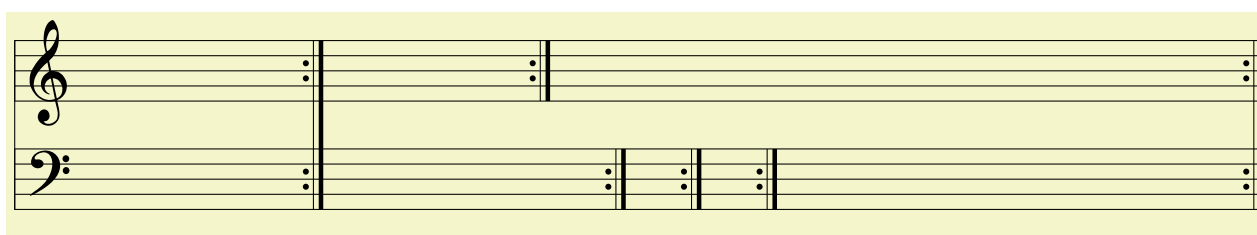
Draw an end repeat barline spanning from `<staff 1>` to `<staff 2>`, at `x-position <x-pos>` in relative to the origin (`<staff name>-start`) of either staff.

**`\tmendrepeatbarlineendline`***[`<options>`]**{`<staff 1>`}**{`<staff 2>`}**{`<list of staff names>`}*

Draw an end repeat barline spanning from `<staff 1>` to `<staff 2>` at the end of the line.

**`\tmendrepeatbarlineinline`***[`<options>`]**{`<list of x-pos>`}*

Draw a end repeat barline at each `x-position` specified in `{<list of x-pos>}`.



```
\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}
  \tmendrepeatbarlineinline{8,9,10}
\end{tmstaff}%
\tmbarline{0}{staff-1}{staff-2}%
\tmendrepeatbarline{4}{staff-1}{staff-2}{staff-1,staff-2}%
\tmendrepeatbarline{7}{staff-1}{staff-1}{staff-1}%
\tmendrepeatbarlineendline{staff-1}{staff-2}{staff-1,staff-2}%
\end{tmline}
```

### 3.2.7 End-start repeat barlines

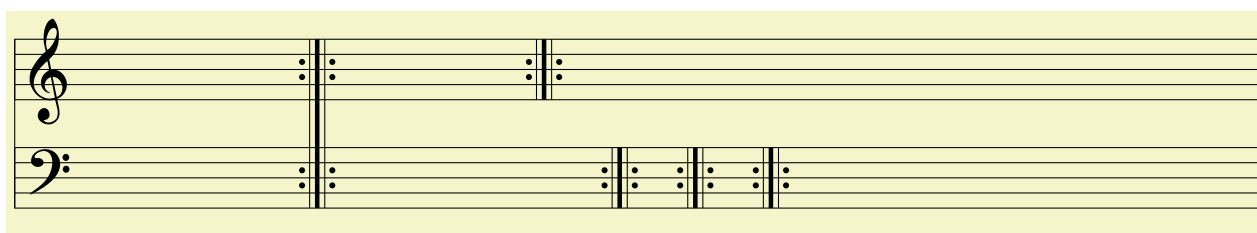
Sometimes, you want a barline to be a start repeat barline and an end repeat barline at the same time. You should not use `\tmstartrepeatbarline` (and similar commands) and `\tmendrepeatbarline` (and similar commands) at the same place, because it will look very bad. In those cases, use the following commands:

**`\tmendstartrepeatbarline`***[`<options>`]**{`<x-pos>`}**{`<staff 1>`}**{`<staff 2>`}**{`<list of staff names>`}*

Draw an ‘end-start’ repeat barline spanning from `<staff 1>` to `<staff 2>`, at `x-position <x-pos>` in relative to the origin (`<staff name>-start`) of either staff.

**`\tmendstartrepeatbarlineinline`***[`<options>`]**{`<list of x-pos>`}*

Draw a end repeat barline at each `x-position` specified in `{<list of x-pos>}`.



```

\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}
  \tmendstartrepeatbarlineinline{8,9,10}
\end{tmstaff}%
\tmbarline{0}{staff-1}{staff-2}%
\tmendstartrepeatbarline{4}{staff-1}{staff-2}{staff-1,staff-2}%
\tmendstartrepeatbarline{7}{staff-1}{staff-1}{staff-1}%
\end{tmline}

```

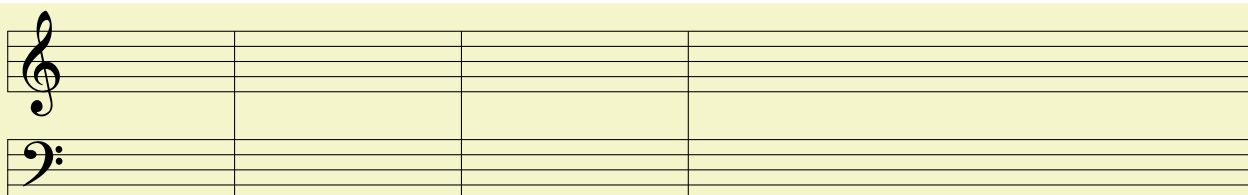
Note that there is no `\tmendstartrepeatbarlineendline`.

### 3.2.8 Normal barlines loops

Normally there are many barlines in your line, so using `\tmbarline` for each of them is obviously not convenient. You can use the following commands to make drawing barlines easier and more concise.

**`\tmbarline`****`loop`***[`<options>`]**{`<list of x-pos>`}**{`<staff 1>`}**{`<staff 2>`}*

Draw a normal barline at each *x*-position in *<list of x-pos>*, spanning from *<staff 1>* to *<staff 2>*.



```

\begin{tmline}%
\begin{tmstaff}{g}{staff-1}\end{tmstaff}%
\begin{tmstaff}{f}{staff-2}\end{tmstaff}%
\tmbarline{3,6,9}{staff-1}{staff-2}%
\end{tmline}

```

## 4 Key signatures and time signatures

### 4.1 Key signatures

Key signatures are added by the following command:

**`\tmkeysignature`***[`<options>`]**{`<x-pos>`}**{`<type>`}**{`<number>`}*

Add a key signature at *x*-position *<x-pos>*. The key signature has type *<type>* and the number of sharps/flats *<number>*.

*<type>* can be either sharp, flat, nsharp or nflat. sharp and flat will produce a sharp or flat key signature as usual. nsharp and nflat will produce a ‘natural’ key signature that has the format of sharp and flat, respectively.

*<number>* can be any number from 1 to 7.

The key signature will be added as in a treble clef. You can use shifting options, e.g. `line shift` (see more in section 8.4) to shift the key signature so that it fits other clefs.



```

\begin{tmline}
\begin{tmstaff}{g}{}
  \tmkeysignature{3}{sharp}{5}
  \tmkeysignature{5}{nsharp}{5}
  \tmkeysignature{7}{flat}{5}
  \tmkeysignature{9}{nflat}{5}
\end{tmstaff}
\end{tmline}

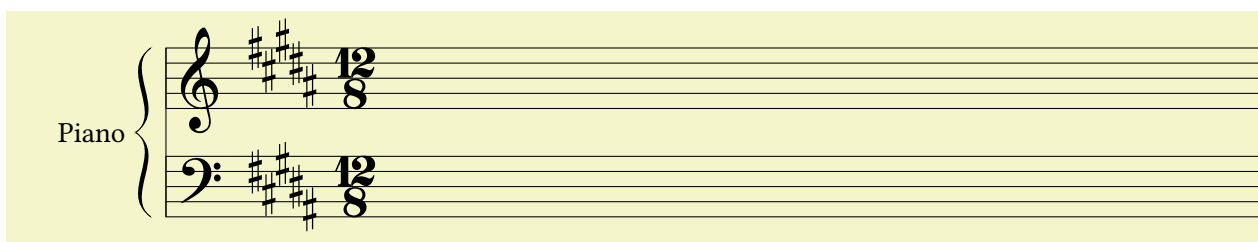
```

## 4.2 Time signatures

Normal time signatures can be added using the following command

**\tmtimesignature** [*options*] {*x-pos*} {*upper*} {*lower*}

Add a time signature to *x*-position *x-pos*. The upper part and the lower part of the time signature are *upper* and *lower* respectively.



```

\begin{tmline}[staff offset=2cm]%
\begin{tmstaff}{g}{piano-1}
  \tmkeysignature{1}{sharp}{5}\tmtimesignature{2.5}{12}{8}
\end{tmstaff}%
\begin{tmstaff}{f}{piano-2}
  \tmkeysignature[line shift=-2]{1}{sharp}{5}\tmtimesignature{2.5}{12}{8}
\end{tmstaff}%
\tmbrace{piano-1}{piano-2}{Piano}%
\tmbarline{0}{piano-1}{piano-2}\tmbarlineendline{piano-1}{piano-2}%
\end{tmline}

```

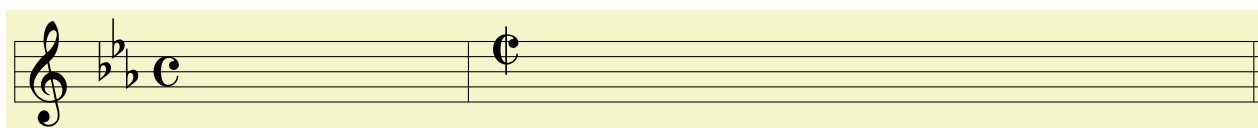
Special time signatures have their own commands:

**\tmtimesignaturecommon** [*options*] {*x-pos*}

Add the common time signature (C) to *x*-position *x-pos*.

**\tmtimesignatureallabreve** [*options*] {*x-pos*}

Add the alla breve time signature (C) to *x*-position *x-pos*.



```

\begin{tmline}%
\begin{tmstaff}{g}{helloworld}
  \tmkeysignature{1}{flat}{3}
  \tmtimesignaturecommon{2}
  \tmtimesignatureallabreve[yshift=3mm]{6.5}
\end{tmstaff}%
\tmbarline{6}{helloworld}{helloworld}\tmfinalbarlineendline{helloworld}{helloworld}%
\end{tmline}

```

Figure 1: Note value – the letter part

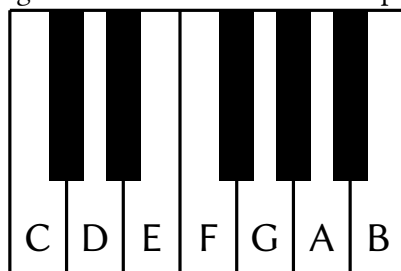
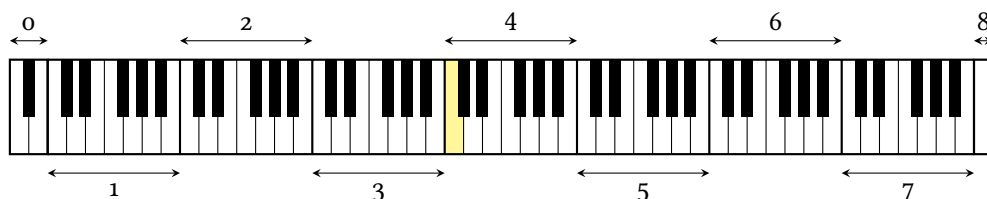


Figure 2: Note value – the number part



## 5 Adding notes

### 5.1 Commands for notes

#### 5.1.1 Note values

Every white note is assigned to a ‘value’, which is the *scientific pitch notation* of that note. These values have two parts: the letter part and the number part:

- The letter part can have seven values: A, B, C, ..., G, indicating the name of the note (*do, re, mi, ...*). (See figure 1).
- The number part is a whole number between 0 to 8, indicating which octave the note is in. (See figure 2).

For example, *Für Elise* by Beethoven starts with an E5 (a *mi* at the 5th octave).

We will only work with these values. To have black notes in your score, you can use `\tmappendaccidental` to add the accidentals.

The package will automatically detect which staff you are using, when you use these values.

#### 5.1.2 Note names

It is very possible that a note will be referred to later in the staff (to add notations to it, etc.). In this package, to refer to notes, we will use note *names*. Just like TikZ node names, etc. – you can leave the name empty if you want, but you will not be able to communicate with that unnamed note any time later in the document.

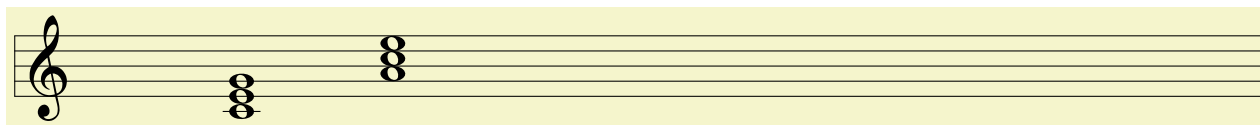
#### 5.1.3 Whole notes

`\tmwhole` [*options*] {*x-pos*} {*note value list*} {*name*}

Add a set of whole notes at *x*-position *x-pos*. Each value in the comma-separated list *note value list* corresponds to a note. Note that if you want to pass options to some notes, you can prefix [*options*] to the beginning of the note name, e.g. `\tmwhole{4}{[red]C4,E4}{a}`.

*name* can be left empty, but as in the staff naming, I strongly advise you to find some name for each note set.

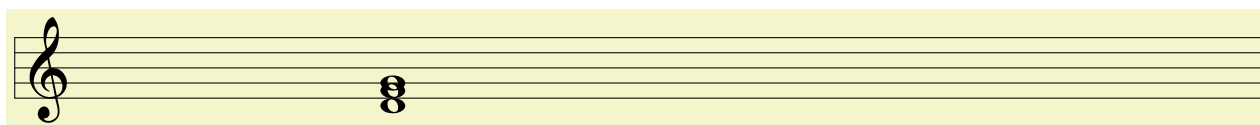
The center of note with note value  $x$  will be marked as coordinate  $(\langle name \rangle - x)$ . For example, note F5 will be marked as  $(\langle name \rangle - F5)$ . Also, the point on the middle line of the staff which is at  $\langle x-pos \rangle$  will be marked as  $(\langle name \rangle - center)$ .



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmwhole{3}{C4, E4, G4}{c-major}\tmwhole{5}{A4, C5, E5}{a-minor}
\end{tmstaff}
\end{tmline}
```

#### 5.1.4 Relative positioning

Consider the following example:

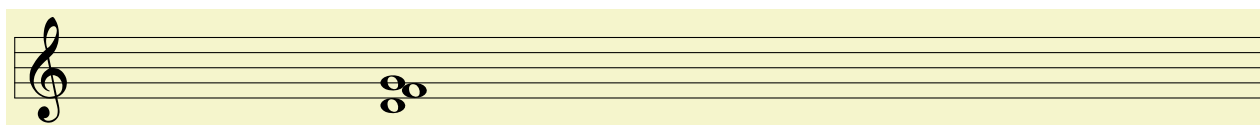


```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmwhole{5}{D4, F4, G4}{}% G7
\end{tmstaff}
\end{tmline}
```

It looks very bad, doesn't it? Note G4 should be shifted a bit to the right. You can achieve this by using the following key:

**/tm/relative=** $\langle relative\ position \rangle$  (no default, initially center)

Apply relative position to the note.  $\langle relative\ position \rangle$  can be either center, left or right.



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmwhole{5}{D4, [relative=right] F4, G4}{}
\end{tmstaff}
\end{tmline}
```

#### 5.1.5 Half notes

**\tmhalf** $[\langle options \rangle]$  $\{\langle x-pos \rangle\}$  $\{\langle note\ value\ list \rangle\}$  $\{\langle name \rangle\}$

Add a half note at position  $\langle x-pos \rangle$ . The stem direction will be automatically determined.

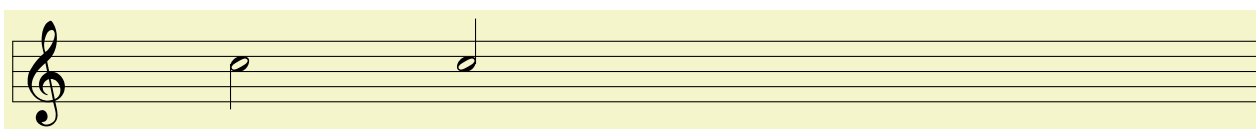
The end of the stem is marked as coordinate  $(\langle name \rangle - tail)$ . (This also applies to `\tmquarter`, `\tmeighth` and `\tmmorethaneighth`.)



```
\begin{tmline}%
\begin{tmstaff}{g}{}
  \tmhalf{2}{E4}{} \tmhalf{3}{F5}{} \tmhalf{4}{E4, F5}{} \tmhalf{5}{B4}{}
  \tmhalf[reversed]{6}{E4}{} \tmhalf[reversed]{7}{F5}{}
  \tmhalf[reversed]{8}{E4, F5}{} \tmhalf[reversed]{9}{B4}{}
  \tmhalf{11}{[relative=left]F4, B4, G4, [relative=right]C5}{}
\end{tmstaff}%
\end{tmline}
```

### 5.1.6 Stem direction

You can change the default direction of the stem by using `reversed`, see the following example and section 8.3.

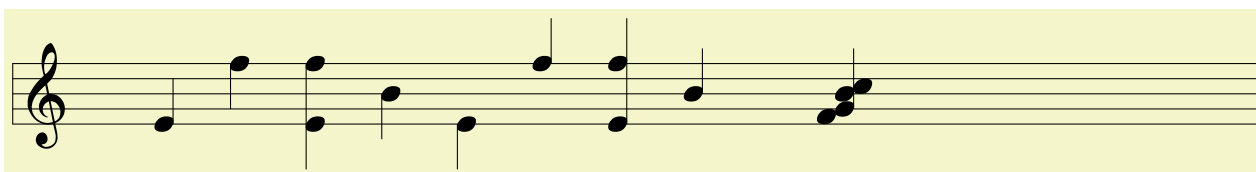


```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmhalf{3}{C5}{} \tmhalf[reversed]{6}{C5}{}
\end{tmstaff}
\end{tmline}
```

### 5.1.7 Quarter notes

**`\tmquarter`**`[<options>]``{<x-pos>}{<note value list>}{<name>}`

Similar to `\tmhalf`.



```
\begin{tmline}%
\begin{tmstaff}{g}{}
  \tmquarter{2}{E4}{} \tmquarter{3}{F5}{} \tmquarter{4}{E4, F5}{} \tmquarter{5}{B4}{}
  \tmquarter[reversed]{6}{E4}{} \tmquarter[reversed]{7}{F5}{}
  \tmquarter[reversed]{8}{E4, F5}{} \tmquarter[reversed]{9}{B4}{}
  \tmquarter{11}{[relative=left]F4, B4, G4, [relative=right]C5}{}
\end{tmstaff}%
\end{tmline}
```

### 5.1.8 Eighth notes

**`\tmeighth`**`[<options>]``{<x-pos>}{<note value list>}{<name>}`

Similar to `\tmhalf`.



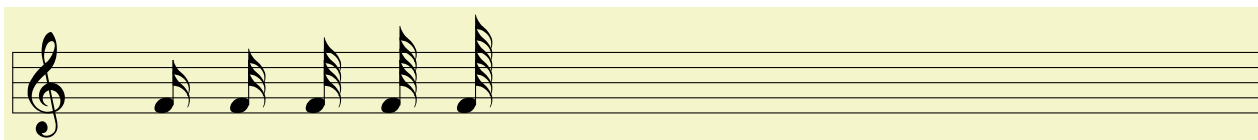
```
\begin{tmline}%
\begin{tmstaff}{g}{}
  \tmeighth{2}{E4}{}\tmeighth{3}{F5}{}\tmeighth{4}{E4,F5}{}\tmeighth{5}{B4}{}
  \tmeighth[reversed]{6}{E4}{}      \tmeighth[reversed]{7}{F5}{}
  \tmeighth[reversed]{8}{E4,F5}{}   \tmeighth[reversed]{9}{B4}{}
  \tmeighth{11}{[relative=left]F4,B4,G4,[relative=right]C5}{}
\end{tmstaff}%
\end{tmline}
```

### 5.1.9 More than eighth notes

The commands described in this section applies to every notes below the eighth notes, including the sixteenth note (semiquaver), the thirty-second note (demisemiquaver), etc.

**\tmmorethaneighth** [*options*] {*x-pos*} {*note value list*} {*number of flags*} {*name*}

Similar to \tmhalf.



```
\begin{tmline}%
\begin{tmstaff}{g}{}
  \tmmorethaneighth{2}{F4}{2}{note-2}
  \tmmorethaneighth{3}{F4}{3}{note-3}
  \tmmorethaneighth{4}{F4}{4}{note-4}
  \tmmorethaneighth{5}{F4}{5}{note-5}
  \tmmorethaneighth{6}{F4}{6}{note-6}
\end{tmstaff}%
\end{tmline}
```

## 5.2 Beaming

```
\begin{tmbeam} [options]
  environment contents
\end{tmbeam}
```

Add a beaming note series. All notes inside this environment are ‘beamed’ together, and all stems point **upwards**.

```
\begin{tmbeam*} [options]
  environment contents
\end{tmbeam*}
```

Identical to {tmbeam}, only all stems point **downwards**.

All notes to be beamed inside these environments need to be added using the following command (\tmeighth, ... will simply not work):



$$\backslash\mathrm{tbeamnote}[\langle\textit{options}\rangle]\{\langle x\text{-pos}\rangle\}\{\langle\textit{note value}\rangle\}\{\langle\textit{number of flags}\rangle\}\{\langle\textit{name}\rangle\}$$

Add a note to the beaming series. If  $\langle number\ of\ flags \rangle$  is 1, it is an eighth note, if  $\langle number\ of\ flags \rangle$  is 2, it is a sixteenth note, and so on.

**Important note:** Because of the algorithm working behind the scene, you *must* give a separate name to each `\tmbeamnote` inside `{tmbeam}` or `{tmbeam*}`. Doing otherwise will result in weird output.



```

\begin{tmline}%
\begin{tmstaff}{g}{p1}
  \tmtimesignature{1}{3}{8}
  \begin{tmbeam*}
    \tmbeamnote{1.75}{E5}{2}{}\tmbeamnote{2.5}{D5}{2}{a}
    \tmappendaccidental{a}{D5}{sharp}
  \end{tmbeam*}
  \tmbarlineinline{2.8}
  \begin{tmbeam*}
    \tmbeamnote{3.25}{E5}{2}{a}\tmbeamnote{4}{D5}{2}{b}\tmbeamnote{4.5}{E5}{2}{c}
    \tmbeamnote{5}{B4}{2}{d}\tmbeamnote{5.5}{D5}{2}{e}\tmbeamnote{6}{C5}{2}{f}
    \tmappendaccidental{b}{D5}{sharp}\tmappendaccidental{e}{D5}{natural}
  \end{tmbeam*}
  \tmbarlineinline{6.3}\tmeighth{6.75}{A4}{a}\tmaddot{a}{1}
  \begin{tmbeam}
    \tmbeamnote{8}{C4}{2}{a}\tmbeamnote{8.5}{E4}{2}{b}\tmbeamnote{9}{A4}{2}{c}
  \end{tmbeam}
  \tmbarlineinline{9.3}\tmeighth{9.75}{B4}{a}\tmaddot{a}{1}
  \begin{tmbeam}
    \tmbeamnote{10.75}{E4}{2}{a}\tmbeamnote{11.5}{G4}{2}{b}\tmbeamnote{12}{B4}{2}{c}
    \tmappendaccidental{b}{G4}{sharp}
  \end{tmbeam}
  \tmbarlineinline{12.3}\tmquarter{12.75}{C5}{a}\tmaddot{a}{1}
\end{tmstaff}%
\tmbarlineendline{p1}{p1}%
\end{tmline}

```

### 5.3 Commands for rests

This package currently provides support for the following rests:

`\tmwlorest` [*options*] {*x-pos*}

Add a whole rest at  $x$ -position  $\langle x\text{-pos} \rangle$ .

**\tmhalfrest** [*<options>*] {*<x-pos>*}

Add a half rest at  $x$ -position  $\langle x\text{-pos} \rangle$ .

`\tmquarterrest`[*<options>*]{*<x-pos>*}

Add a quarter rest at  $x$ -position  $\langle x\text{-pos} \rangle$ .

`\tmbelowquarterrest` [*options*] {*x-pos*} {*number*}

Add a rest at  $x$ -position  $\langle x-pos \rangle$ , whose value is below a quarter rest. The rest has  $\langle number \rangle$  ‘flags’: if  $\langle number \rangle$  is 1, it is an eighth rest, if  $\langle number \rangle$  is 2, it is a sixteenth rest, and so on... Currently  $\langle number \rangle$  must be an integer between 1 and 4.

**\tmeighthrest** [*options*] {*x-pos*}

Identical to \tmbelowquarterrest where *number* is 1.

**\tmsixteenthrest** [*options*] {*x-pos*}

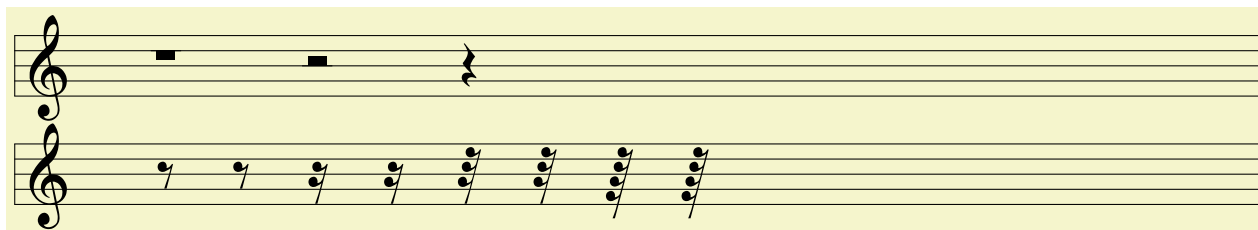
Identical to \tmbelowquarterrest where *number* is 2.

**\tmthirtysecondrest** [*options*] {*x-pos*}

Identical to \tmbelowquarterrest where *number* is 3.

**\tmsixtyfourthrest** [*options*] {*x-pos*}

Identical to \tmbelowquarterrest where *number* is 4.



```
\begin{tmline}%
\begin{tmstaff}{g}{}
\tmwholereast{2}\tmhalfrest{4}\tmquarterrest{6}
\end{tmstaff}%
\begin{tmstaff}{g}{}
\tmbelowquarterrest{2}{1}\tmeighthrest{3}
\tmbelowquarterrest{4}{2}\tmsixteenthrest{5}
\tmbelowquarterrest{6}{3}\tmthirtysecondrest{7}
\tmbelowquarterrest{8}{4}\tmsixtyfourthrest{9}
\end{tmstaff}%
\end{tmline}
```

## 5.4 Miscellaneous

### 5.4.1 Accidentals

**\tmappendaccidental** [*options*] {*note name*} {*note value*} {*type*}

Add accidental *type* to note of value *note value* in *note name*. *type* can have five values: sharp, flat, double-sharp, double-flat and natural.



```

\begin{tmline}%
\begin{tmstaff}{g}{}
  \tmquarter{2}{B4}{a}\tmquarter{3}{B4}{b}\tmquarter{4}{B4}{c}
  \tmquarter{5}{B4}{d}\tmquarter{6}{B4}{e}\tmquarter{9}{E4,G4,B4}{f}
  \tmappendaccidental{a}{B4}{sharp}
  \tmappendaccidental{b}{B4}{double-sharp}
  \tmappendaccidental{c}{B4}{flat}
  \tmappendaccidental{d}{B4}{double-flat}
  \tmappendaccidental{e}{B4}{natural}
  \tmappendaccidental{f}{E4}{sharp}
  \tmappendaccidental[xshift=-2mm]{f}{G4}{sharp}
  \tmappendaccidental[xshift=-4mm]{f}{B4}{sharp}
\end{tmstaff}%
\end{tmline}

```

### 5.4.2 Dots

**\tmaddot**[*<options>*]{*<note name>*}{*<number of dots>*}

Add *<number of dots>* dot to note in *<note name>*.



```

\begin{tmline}%
\begin{tmstaff}{g}{}
  \tmquarter{4}{F4,A4}{a}\tmquarter{6}{G4,B4}{b}\tmquarter{8}{A4,C5}{c}
  \tmaddot{a}{1}\tmaddot{b}{1}\tmaddot{c}{10}
\end{tmstaff}%
\end{tmline}

```

### 5.4.3 Articulations

**\tmstaccato**[*<options>*]{*<note name>*}

Add *staccato* to note *<note name>*.

**\tmtenuto**[*<options>*]{*<note name>*}

Add *tenuto* to note *<note name>*.

**\tmaccentabove**[*<options>*]{*<note name>*}

Add an accent to note *<note name>* (one form of *marcato*).

**\tmstaccatissimo**[*<options>*]{*<note name>*}

Add *staccatissimo* to note *<note name>*.

**\tmmarcato**[*<options>*]{*<note name>*}

Add *marcato* to note *<note name>*.



```

\begin{tmline}
\begin{tmstaff}{g}{}
  \tmquarter{2}{B4}{x}\tmstaccato{x}
  \tmquarter{3}{B4}{x}\tmstaccato[line shift=2]{x}
  \tmquarter{4}{B4}{x}\tmtenuto{x}
  \tmquarter{5}{B4}{x}\tmtenuto[line shift=2]{x}
  \tmquarter{6}{B4}{x}\tmaccentabove{x}
  \tmquarter{7}{B4}{x}\tmaccentabove[line shift=1]{x}
  \tmquarter{8}{B4}{x}\tmstaccatissimo{x}
  \tmquarter{9}{B4}{x}\tmstaccatissimo[line shift=1]{x}
  \tmquarter{10}{B4}{x}\tmmarcato{x}
  \tmquarter{11}{B4}{x}\tmmarcato[line shift=1]{x}
\end{tmstaff}
\end{tmline}

```

For fermatas we have the following two commands:

**\tmfermataabove** [*options*] {*note name*}

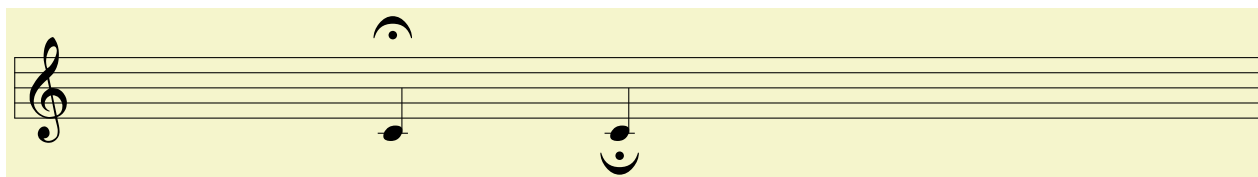
Add an ‘above-fermata’ to *note name*.

**\tmfermata** [*options*] {*note name*}

Alias of \tmfermataabove.

**\tmfermatabelow** [*options*] {*note name*}

Add a ‘below-fermata’ to *note name*.



```

\begin{tmline}
\begin{tmstaff}{g}{}
  \tmquarter{5}{C4}{x}\tmfermataabove{x}
  \tmquarter{8}{C4}{x}\tmfermatabelow{x}
\end{tmstaff}
\end{tmline}

```

#### 5.4.4 Ornaments

**\tmtrill** [*options*] {*note name*}

Add a trill to note *note name*.

**\tmturn** [*options*] {*note name*}

Add a turn to note *note name*.

**\tmuppermordent** [*options*] {*note name*}

Add a ‘upper’ mordent to note *note name*.

**\tmlowermordent** [*options*] {*note name*}

Add an ‘lower’ mordent to note *note name*.

**\tmmordent** [*options*] {*note name*}

Alias of \tmuppermordent.



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{2}{C5}{a}\tmquarter{4}{C5}{b}\tmquarter{6}{C5}{c}\tmquarter{8}{C5}{d}
\tmtrill{a}\tmturn{b}\tmuppermordent{c}\tmlowermordent{d}
\end{tmstaff}
\end{tmline}
```

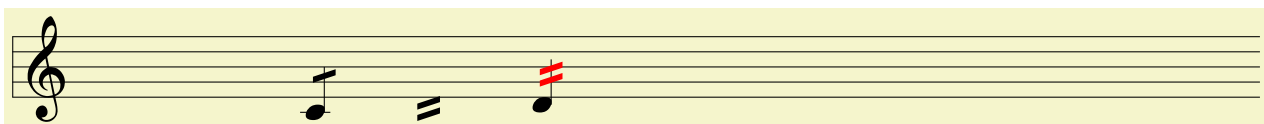
## 5.4.5 Tremolo

**\tmtremolo**[*<options>*]{*<note>*}{*<number>*}

Add a tremolo to note *<note>*.

**\tmtremolocoordinate**[*<options>*]{*<coordinate>*}{*<number>*}

Add a tremolo to coordinate *<coordinate>*.



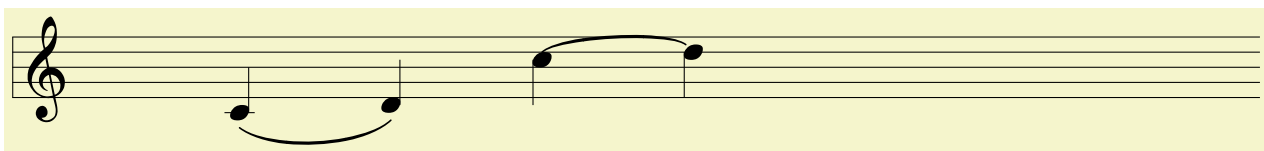
```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{4}{C4}{a}\tmtremolo{a}{1}\tmquarter{7}{D4}{b}\tmtremolo[red]{b}{2}
\tmtremolocoordinate{5.5,-.55}{2}
\end{tmstaff}
\end{tmline}
```

## 6 Lines

### 6.1 Slur

**\tmslur**[*<options>*]{*<note 1>*}[*<shift 2>*]{*<note 2>*}

Draw a slur joining *<note 1>* and *<note 2>*. The slur will join the *lowest* notes of the two note set, i.e. it will go down and then go up.<sup>1</sup> You can change this direction using *reversed*.



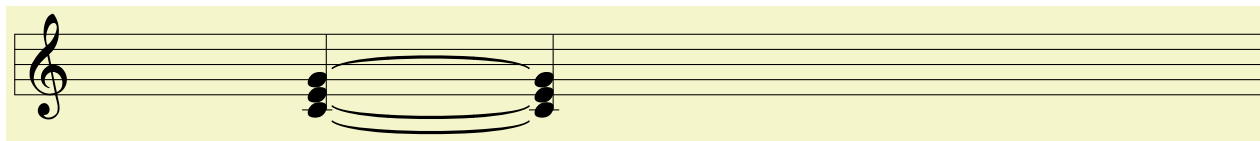
```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{3}{C4}{a}\tmquarter{5}{D4}{b}\tmslur{a}{b}
\tmquarter{7}{C5}{a}\tmquarter{9}{D5}{b}
\tmslur[reversed,amplitude=1.5mm,start yshift=-1mm,end shift={(-1mm,-1mm)}]{a}{b}
\end{tmstaff}
\end{tmline}
```

<sup>1</sup>Not being a native speaker, I can't find an appropriate English word for this :).

**\tmslurcoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}

Draw a slur from *<coordinate 1>* to *<coordinate 2>*. The slur will go down and then go up.

You can use this command to tie two notes as follows. It is how `\tmtie` is currently working.

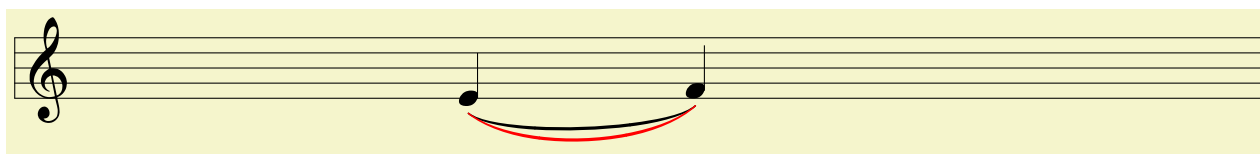


```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{4}{C4,E4,G4}{a}\tmquarter{7}{C4,E4,G4}{b}
\tmslurcoordinate[amplitude=1.5mm,start shift={(2mm,-1.5mm)},end shift={(-2mm,-1.5mm)}]{a-C4}{b-C4}
\tmslurcoordinate[amplitude=1.5mm,start shift={(2mm,-1.5mm)},end shift={(-2mm,-1.5mm)}]{a-E4}{b-E4}
\tmslurcoordinate[reversed,amplitude=1.5mm,start shift={(2mm,1.5mm)},end shift={(-2mm,1.5mm)}]{a-G4}{b-G4}
\end{tmstaff}
\end{tmline}
```

Essentially, the slur is drawn using the calligraphic curved parenthesis decoration, offered by the `spath3` package. You can control the amplitude of this decoration, a.k.a. the height of the slur, by the following key:

**/tm/amplitude**=*<length>* (no default, initially 2.5mm)

Control the amplitude of the slurs.

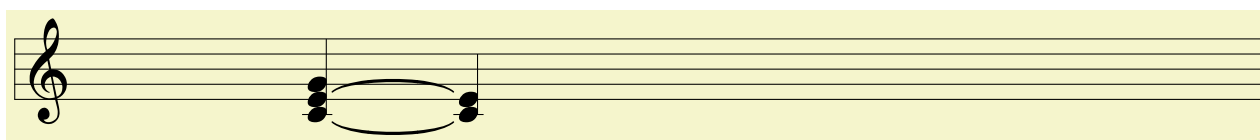


```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{6}{E4}{a}\tmquarter{9}{F4}{b}
\tmslur{a}{b}\tmslur[red,amplitude=4mm]{a}{b}
\end{tmstaff}
\end{tmline}
```

## 6.2 Tying notes

**\tmtie**[*<options>*]{*<note 1>*}{*<note 2>*}

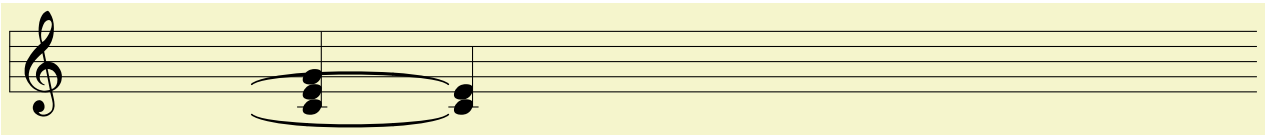
Add a tie between *<note 1>* and *<note 2>*.



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{4}{C4,E4,G4}{a}\tmquarter{6}{C4,E4}{b}\tmtie{b}{a}
%\tmtie{a}{b}: Error
\end{tmstaff}
\end{tmline}
```

**Important note:**

- `\tmtie` is intended to be used with note sets having more than one notes. Of course, with note sets having just one note it still works, but expected behaviour is not guaranteed. In those cases, use `\tmslur` and friends, documented in section 6.1, instead.
- The number of notes in  $\langle \text{note } 1 \rangle$  *must not* be more than that in  $\langle \text{note } 2 \rangle$ . So, the order matters – in the example above, you can't use `\tmtie{a}{b}` because that will result in error. Of course, if  $\langle \text{note } 1 \rangle$  and  $\langle \text{note } 2 \rangle$  have the same number of notes, which is very usually the case, you can use any order as you want.
- Note that the starting coordinate is always the one having the less  $x$ -coordinate, no matter how the notes are ordered in `\tmtie`. In the example above, the starting coordinate is a, although it comes after b. So start `xshift` (say) will be applied to a, not b.



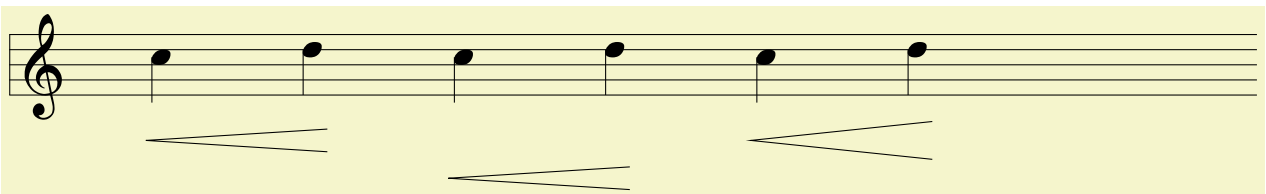
```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmquarter{4}{C4,E4,G4}{a}\tmquarter{6}{C4,E4}{b}\tmtie[start xshift=-1cm]{b}{a}
\end{tmstaff}
\end{tmline}
```

## 6.3 Crescendo and diminuendo

### 6.3.1 Crescendo

`\tmcrescendohairpin` [ $\langle \text{options} \rangle$ ] { $\langle \text{note } 1 \rangle$ } { $\langle \text{note } 2 \rangle$ }

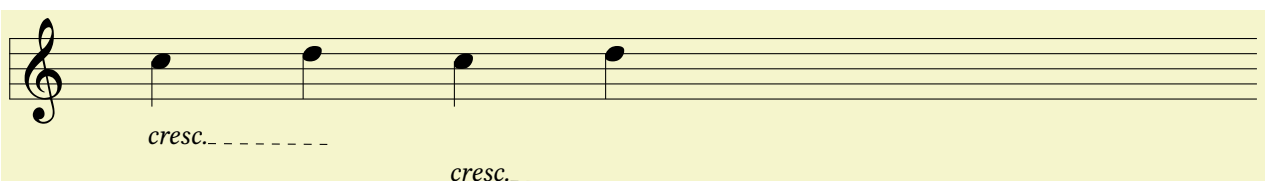
Draw a crescendo hairpin between  $\langle \text{note } 1 \rangle$  and  $\langle \text{note } 2 \rangle$ .



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmquarter{2}{C5}{a} \tmquarter{4}{D5}{b} \tmcrescendohairpin{a}{b}
  \tmquarter{6}{C5}{a} \tmquarter{8}{D5}{b} \tmcrescendohairpin[yshift=-5mm]{a}{b}
  \tmquarter{10}{C5}{a} \tmquarter{12}{D5}{b} \tmcrescendohairpin[cresc dim sep=5mm]{a}{b}
\end{tmstaff}
\end{tmline}
```

`\tmcrescendoline` [ $\langle \text{options} \rangle$ ] { $\langle \text{note } 1 \rangle$ } { $\langle \text{note } 2 \rangle$ }

Draw a crescendo line between  $\langle \text{note } 1 \rangle$  and  $\langle \text{note } 2 \rangle$ .



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{2}{C5}{a}\tmquarter{4}{D5}{b}\tmcrescendoline{a}{b}
\tmquarter{6}{C5}{a}\tmquarter{8}{D5}{b}\tmcrescendoline[yshift=-5mm]{a}{b}
\end{tmstaff}
\end{tmline}
```

**\tmcrescendo**[*<options>*]{*<note 1>*}{*<note 2>*}

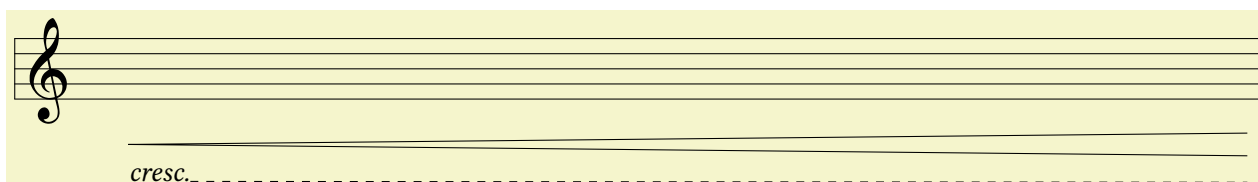
Alias of \tmcrescendohairpin.

**\tmcrescendohairpincoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}

Draw a crescendo hairpin between *<coordinate 1>* and *<coordinate 2>*. The coordinates do *not* include parentheses.

**\tmcrescendolinecoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}

Draw a crescendo line between *<coordinate 1>* and *<coordinate 2>*.



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmcrescendohairpincoordinate{1.5,-1}{\linewidth-2mm,-1}
\tmcrescendolinecoordinate{1.5,-1.5}{\linewidth-2mm,-1.5}
\end{tmstaff}
\end{tmline}
```

**\tmcrescendocoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}

Alias of \tmcrescendohairpincoordinate.

### 6.3.2 Diminuendo

All commands are just like in crescendo (section 6.3.1).

**\tmdiminuendohairpin**[*<options>*]{*<note 1>*}{*<note 2>*}

Add a diminuendo hairpin between *<note 1>* and *<note 2>*.

**\tmdiminuendoline**[*<options>*]{*<note 1>*}{*<note 2>*}

Add a diminuendo line between *<note 1>* and *<note 2>*.

**\tmdiminuendo**[*<options>*]{*<note 1>*}{*<note 2>*}

Alias of \tmdiminuendohairpin.

**\tmdiminuendohairpincoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}

Add a diminuendo hairpin between *<coordinate 1>* and *<coordinate 2>*.

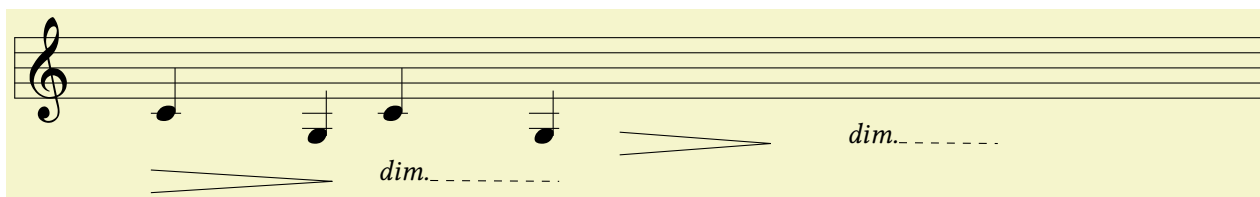
**\tmdiminuendolinecoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}

Add a diminuendo line between *<coordinate 1>* and *<coordinate 2>*.



**\tmdiminuendocoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}

Alias of \tmdiminuendohairpincoordinate.



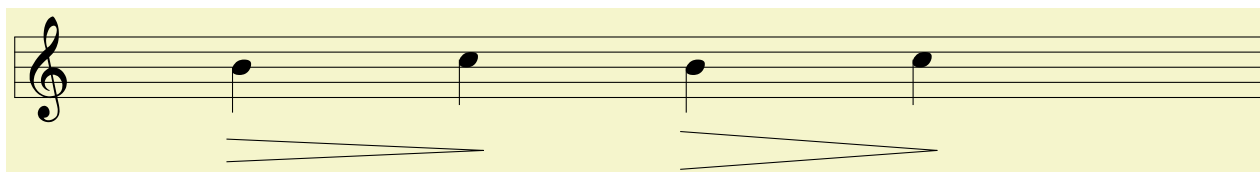
```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{2}{C4}{a}\tmquarter{4}{G3}{b}\tmdiminuendo{a}{b}
\tmquarter{5}{C4}{a}\tmquarter{7}{G3}{b}\tmdiminuendoline{a}{b}
\tmdiminuendocoordinate{8,-1}{10,-1}\tmdiminuendolinecoordinate{11,-1}{13,-1}
\end{tmstaff}
\end{tmline}
```

### 6.3.3 Customization

You can change the head-width of the crescendo/diminuendo hairpins using the following key:

**/tm/cresc dim sep**=*<length>* (no default, initially 3mm)

Set the width of the head of the crescendo/diminuendo hairpins.



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{3}{B4}{a}\tmquarter{6}{C5}{b}\tmdiminuendo{a}{b}
\tmquarter{9}{B4}{a}\tmquarter{12}{C5}{b}\tmdiminuendo[cresc dim sep=5mm]{a}{b}
\end{tmstaff}
\end{tmline}
```

## 6.4 Volta

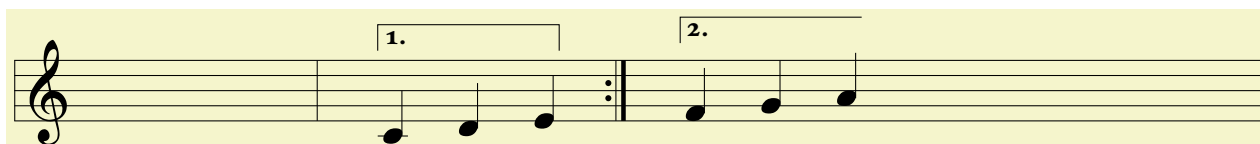
**\tmvolta**[*<options>*]{*<note 1>*}{*<note 2>*}{*<number>*}

Draw a volta line between *<note 1>* and *<note 2>*.

By default, volta lines are closed. You can ‘unclose’ it by using

**/tm/volta unclosed**=*<true or false>* (default true)

If set to true, the volta will be unclosed.



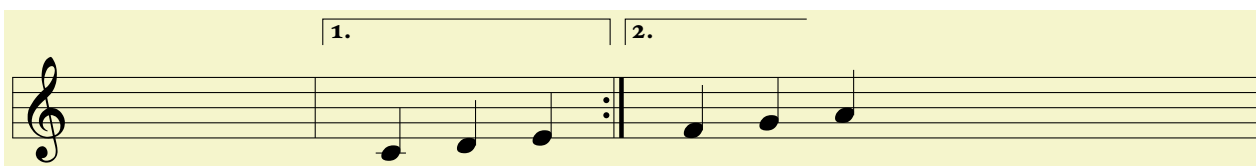
```

\begin{tmline}
\begin{tmstaff}{g}{}
\tmbarlineinline{4}
\tmquarter{5}{C4}{a}\tmquarter{6}{D4}{}\tmquarter{7}{E4}{b}
\tmendrepeatbarlineinline{8}
\tmquarter{9}{F4}{c}\tmquarter{10}{G4}{}\tmquarter{11}{A4}{d}
\tmvolta{a}{b}{1}\tmvolta[volta unclosed]{c}{d}{2}
\end{tmstaff}
\end{tmline}

```

**\tmvoltacoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}{*<number>*}

Draw a volta line between *<coordinate 1>* and *<coordinate 2>*.



```

\begin{tmline}
\begin{tmstaff}{g}{}
\tmbarlineinline{4}
\tmquarter{5}{C4}{}\tmquarter{6}{D4}{}\tmquarter{7}{E4}{}
\tmendrepeatbarlineinline{8}
\tmquarter{9}{F4}{}\tmquarter{10}{G4}{}\tmquarter{11}{A4}{}
\tmvoltacoordinate{4.1,1}{7.9,1}{1}\tmvoltacoordinate[volta unclosed]{8.1,1}{10.5,1}{2}
\end{tmstaff}
\end{tmline}

```

## 6.5 Octave lines

**\tmoctave**[*<options>*]{*<note 1>*}{*<note 2>*}{*<type>*}

Draw an octave line between *<note 1>* and *<note 2>*. *<type>* can be one of the following values: 8va, 8vb, 15ma, 15mb.



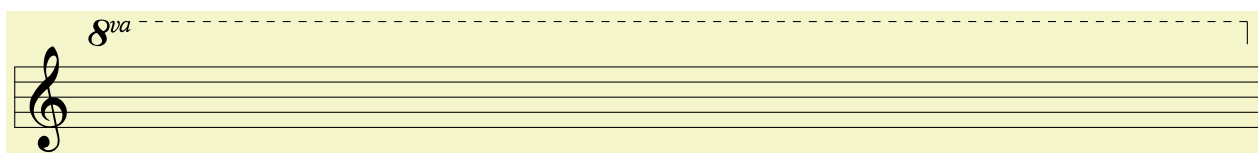
```

\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{4}{C4}{a} \tmquarter{5}{D4}{b} \tmoctave{a}{b}{8va}
\tmquarter{6}{E4}{a} \tmquarter{7}{F4}{b} \tmoctave{a}{b}{8vb}
\tmquarter{8}{G4}{a} \tmquarter{9}{A4}{b} \tmoctave{a}{b}{15ma}
\tmquarter{10}{B4}{a} \tmquarter{11}{C5}{b} \tmoctave{a}{b}{15mb}
\end{tmstaff}
\end{tmline}

```

**\tmoctavecoordinate**[*<options>*]{*<coordinate 1>*}{*<coordinate 2>*}{*<type>*}

Draw an octave line between *<coordinate 1>* and *<coordinate 2>*.



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmoctavecoordinate{1,1}{\linewidth-2mm,1}{8va}
\end{tmstaff}
\end{tmline}
```

## 6.6 Pedal lines

**\tmpedal** [*options*] {*note 1*} {*note 2*}

Draw a pedal line not ended with a star (\*) between *note 1* and *note 2*.

**\tmpedalstar** [*options*] {*note 1*} {*note 2*}

Draw a pedal line ended with a star between *note 1* and *note 2*.



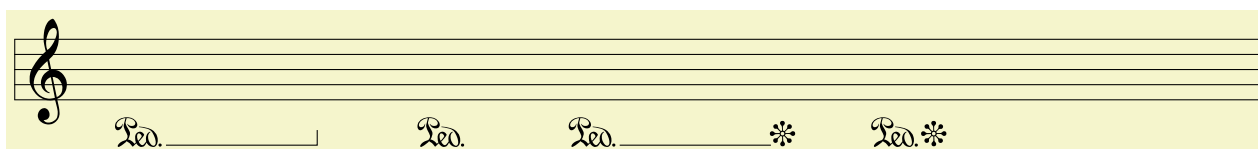
```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmquarter{2}{C4}{a}\tmquarter{4}{D4}{b}\tmpedal{a}{b}
  \tmquarter{6}{E4}{a}\tmpedal{a}{a}
  \tmquarter{8}{C4}{a}\tmquarter{10}{D4}{b}\tmpedalstar{a}{b}
  \tmquarter{12}{E4}{a}\tmpedalstar{a}{a}
\end{tmstaff}
\end{tmline}
```

**\tmpedalcoordinate** [*options*] {*coordinate 1*} {*coordinate 2*}

Draw a pedal line not ended with a star between *coordinate 1* and *coordinate 2*.

**\tmpedalstarcoordinate** [*options*] {*coordinate 1*} {*coordinate 2*}

Draw a pedal line ended with a star between *coordinate 1* and *coordinate 2*.

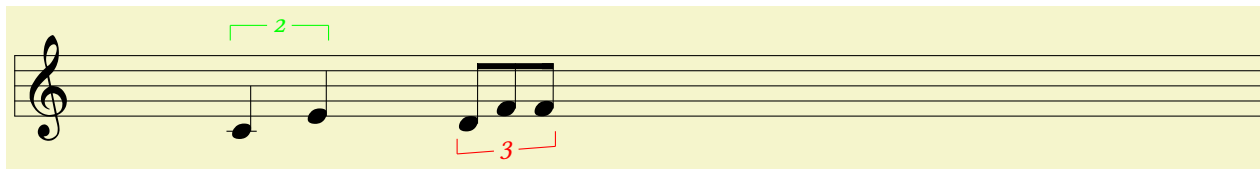


```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmpedalcoordinate{2,-1}{4,-1}\tmpedalcoordinate{6,-1}{6,-1}
  \tmpedalstarcoordinate{8,-1}{10,-1}\tmpedalstarcoordinate{12,-1}{12,-1}
\end{tmstaff}
\end{tmline}
```

## 6.7 Tuplets

**\tmtuplets** [*options*] {<note 1>}{<note 2>}{<number>}

Draw a <number>-th tuplet between <note 1> and <note 2>. By default it will be drawn above the notes, but you can use *reversed* to draw them below the notes.



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{3}{C4}{a}\tmquarter{4}{E4}{b}
\begin{tmbeam}
\tmbeamnote{6}{D4}{1}{c}\tmbeamnote{6.5}{F4}{1}{d}\tmbeamnote{7}{F4}{1}{d}
\end{tmbeam}
\tmtuplets[green]{a}{b}{2}\tmtuplets[reversed,red]{c}{d}{3}
\end{tmstaff}
\end{tmline}
```

## 7 Other in-line stuffs

### 7.1 Clefs

You can add a clef in-line using the following commands:

**\tmgclef** [*options*] {<x-pos>}

Add a treble clef at position <x-pos>. The clef will be scaled down a bit as per standards. <shift> works like in `\tmkeysigature`.

**\tmcclef** [*options*] {<x-pos>}

Work like `\tmgclef`, but the clef is the alto clef.

**\tmfclef** [*options*] {<x-pos>}

Work like `\tmgclef`, but the clef is the bass clef.



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{3}{C4}{a}
\tmfclef{4}\tmquarter{5}{C4}{a}
\tmcclef{6}\tmquarter{7}{C4}{a}
\tmgclef{8}\tmquarter{9}{C4}{a}
\tmcclef[line shift=2]{10}\tmquarter{11}{C4}{a}
\end{tmstaff}
\end{tmline}
```

However, sometimes you don't want these clefs to be scaled. In those cases, you can use the following key:

**/tm/unscaled**=*<true or false>*

(default true)

Unscale the staves drawn by `\tmgclef` and friends.



```
\begin{tmline}
\begin{tmstaff}[unscaled]{g}{}
  \tmfclef{4}\tmcclef{6}\tmgclef{8}\tmcclef[line shift=2]{10}
\end{tmstaff}%
\end{tmline}
```

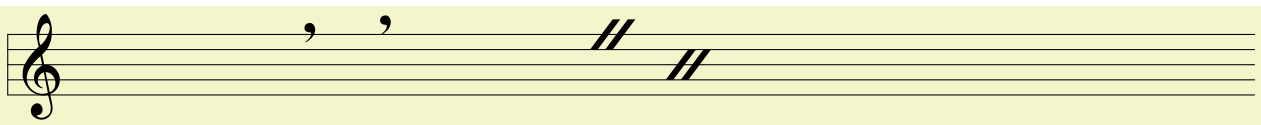
## 7.2 Breaths

**\tmbreath***[<options>]*{*<x-pos>*}

Add a breath mark (a comma) to position *<x-pos>*.

**\tmcaesura***[<options>]*{*<x-pos>*}

Add a caesura to position *<x-pos>*.

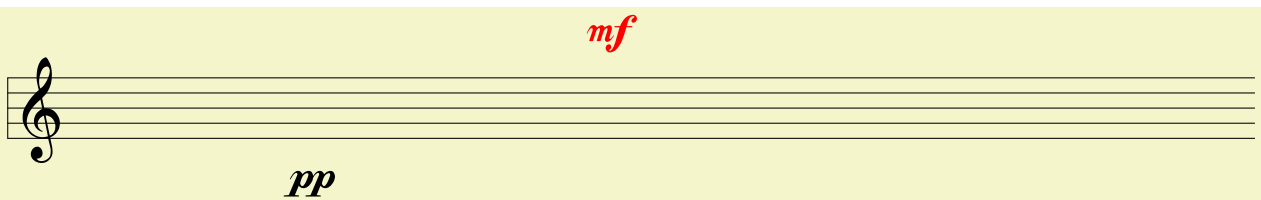


```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmbreath{4}\tmbreath[line shift=1]{5}\tmcaesura{8}\tmcaesura[line shift=-4]{9}
\end{tmstaff}
\end{tmline}
```

## 7.3 Dynamics

**\tmdynamics***[<options>]*{*<coordinate>*}{*<type>*}

Add a dynamics notation to *<coordinate>*. *<type>* can be one of the following values: mp, p, pp, ppp, mf, f, ff, fff and fp.



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmdynamics{4,-1}{pp}\tmdynamics[red]{8,1}{mf}
\end{tmstaff}
\end{tmline}
```

## 8 Customization

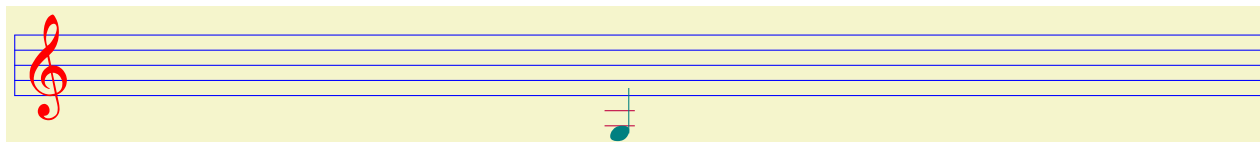
### 8.1 Color

**/tm/line color**= $\langle color \rangle$  (no default, initially black)

Set the color of the lines, including the five main lines in each staff and the additional lines in the notes.

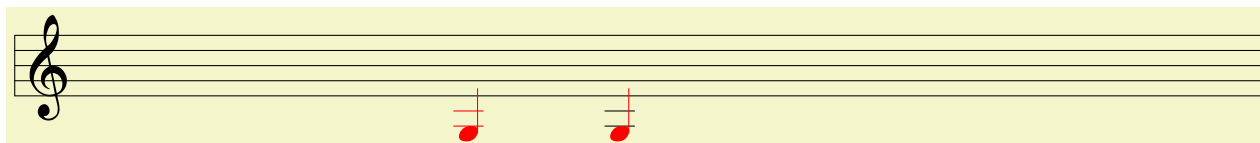
**/tm/color**= $\langle color \rangle$  (no default, initially black)

Set the color of everything except the lines, whose color has been handled using `line color`.



```
\begin{tmline}
\begin{tmstaff}[color=red,line color=blue]{g}{}
\tmquarter[color=teal,line color=purple]{8}{G3}{}
\end{tmstaff}
\end{tmline}
```

You can specify colors in a more compact way. If you want to set `color` and `line color` to the same color  $\langle color \rangle$ , you can use  $\langle color \rangle$  as an option. This works pretty much like the way you use colors in TikZ. However, keep in mind that *both* `line color` and `color` are affected by specifying this way.

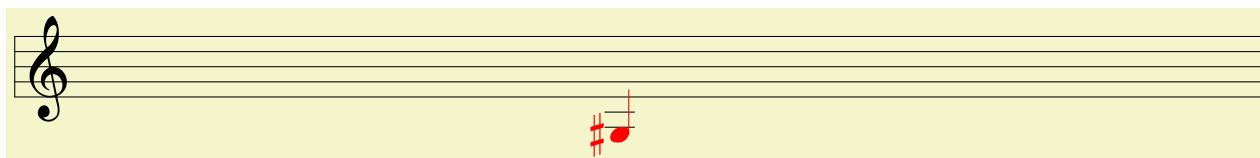


```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter[red]{6}{G3}{}
\tmquarter[color=red]{8}{G3}{}
\end{tmstaff}
\end{tmline}
```

When adding notations to a note, e.g. when you use `\tmappendaccidental` to a note, you might want to set the color of the additional notation to be the same as the color of that note. You can do so using the following key:

**/tm/use note color**= $\langle true or false \rangle$  (default true)

If this key is set to `true`, the color of the additional notation is set to the color of its ‘parent’ note.



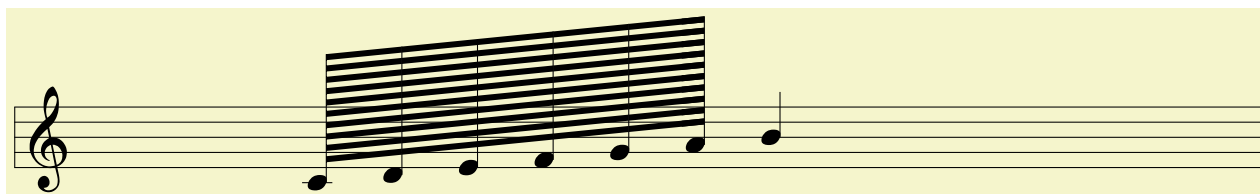
```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter[color=red]{8}{G3}{a}\tmappendaccidental[use note color]{a}{G3}{sharp}
\end{tmstaff}
\end{tmline}
```

## 8.2 Note length

**/tm/note length**= $\langle length \rangle$

(no default, initially 6mm)

Reset the stem length of notes.



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \begin{tmbeam}[note length=1.7cm]
    \tmbeamnote{4}{C4}{10}{a}\tmbeamnote{5}{D4}{10}{b}\tmbeamnote{6}{E4}{10}{c}
    \tmbeamnote{7}{F4}{10}{d}\tmbeamnote{8}{G4}{10}{e}\tmbeamnote{9}{A4}{10}{f}
  \end{tmbeam}
  \tmquarter[reversed]{10}{B4}{}
\end{tmstaff}
\end{tmline}
```

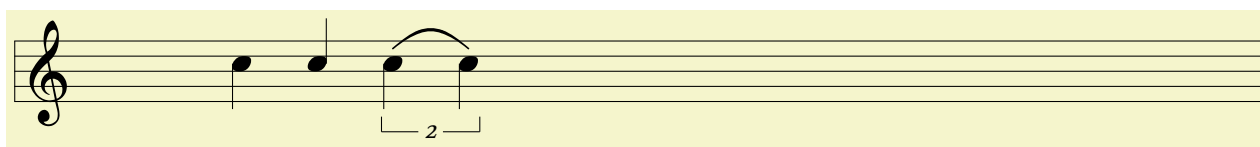
## 8.3 Reversing

**/tm/reverse**= $\langle true \text{ or } false \rangle$

(default true)

This key can alter the way some notations look:

- If this is applied to `\tmhalf`, `\tmquarter` and friends, this will change the direction of the stem. Note that this key does nothing when being applied to a beamed environment (see more in section 5.1).
- If this key is applied to `\tmslur`, the direction of the slur will be reversed (see more in section 6.1).
- If this key is applied to `\tmtuplets`, it will change the position of the triplet in relative to the notes (see more in section 6.7).



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmquarter{3}{C5}{a}\tmquarter[reversed]{4}{C5}{b}
  \tmquarter{5}{C5}{c}\tmquarter{6}{C5}{d}\tmslur[reversed]{c}{d}\tmtuplets[reversed]{c}{d}{2}
\end{tmstaff}
\end{tmline}
```

## 8.4 Transformations

### 8.4.1 Shifting for lines

These applies to the lines command, see section 6 and `\tmbrace` and `\tmbracket`.

**/tm/start xshift**= $\langle length \rangle$

(no default, initially 0pt)

Shift the starting point of the line by  $\langle length \rangle$  in the horizontal direction.



```
\begin{tmline}
\begin{tmstaff}{g}{}
  \tmquarter{5}{C4}{a}\tmquarter{8}{C5}{b}
  \tmoctave[red,start xshift=-5mm]{a}{b}{8va}
  \tmoctave{a}{b}{8va} % For comparison
\end{tmstaff}
\end{tmline}
```

**/tm/start yshift=** $\langle length \rangle$  (no default, initially 0pt)

Shift the starting point of the line by  $\langle length \rangle$  in the vertical direction.

**/tm/start shift=** $\langle coordinate \rangle$  (no default)

Shift the starting point of the line by  $\langle coordinate \rangle$ .

**/tm/end xshift=** $\langle length \rangle$  (no default, initially 0pt)

Shift the ending point of the line by  $\langle length \rangle$  in the horizontal direction.

**/tm/end yshift=** $\langle length \rangle$  (no default, initially 0pt)

Shift the ending point of the line by  $\langle length \rangle$  in the vertical direction.

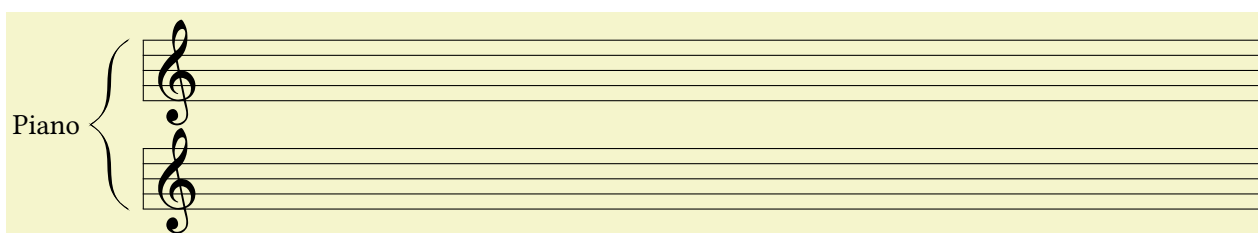
**/tm/end shift=** $\langle coordinate \rangle$  (no default)

Shift the ending point of the line by  $\langle coordinate \rangle$ .

#### 8.4.2 Brace-specific shifting

**/tm/brace middle xshift=** $\langle length \rangle$  (no default, initially 0pt)

Shift the middle point of the brace by  $\langle length \rangle$  in the horizontal direction.



```
\begin{tmline}[staff offset=1.7cm]
\begin{tmstaff}{g}{a}\end{tmstaff}%
\begin{tmstaff}{g}{b}\end{tmstaff}%
\tmbrace[brace middle xshift=-3mm]{a}{b}{Piano}%
\end{tmline}
```

**/tm/brace middle yshift=** $\langle length \rangle$  (no default, initially 0pt)

Shift the middle point of the brace by  $\langle length \rangle$  in the vertical direction.

**/tm/brace middle shift=** $\langle coordinate \rangle$  (no default)

Shift the middle point of the brace by  $\langle coordinate \rangle$ .

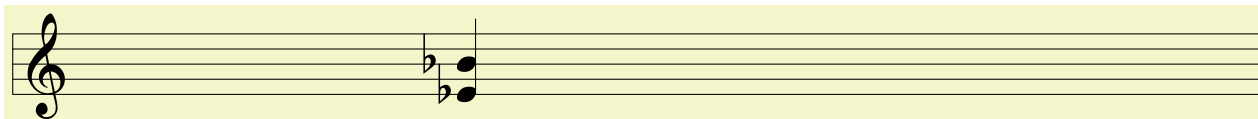


### 8.4.3 Shifting for others

Keep in mind that shifting only works with some commands, like the articulations or the accidentals. Things whose coordinates are already specified, e.g. `\tmwhole`, may or may not be affected by these keys.

**/tm/xshift**= $\langle length \rangle$  (no default, initially 0pt)

Shift the object by  $\langle length \rangle$  in the horizontal direction. In the lines this is a shorthand for `start xshift` and `end xshift`.



```
\begin{tmline}
\begin{tmstaff}{g}{}
\tmquarter{6}{E4,B4}{a}
\tmappendaccidental{a}{E4}{flat}\tmappendaccidental[xshift=-2mm]{a}{B4}{flat}
\end{tmstaff}
\end{tmline}
```

**/tm/yshift**= $\langle length \rangle$  (no default, initially 0pt)

Shift the object by  $\langle length \rangle$  in the horizontal direction. In the lines this is a shorthand for `start yshift` and `end yshift`

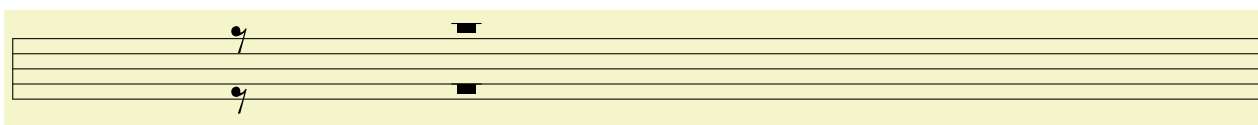
**/tm/shift**= $\langle coordinate \rangle$  (no default)

Shift the object by  $\langle coordinate \rangle$  in the horizontal direction. In the lines this is a shorthand for `start shift` and `end shift`.

**/tm/line shift**= $\langle number \rangle$  (no default, initially 0)

Shift the object by  $\langle number \rangle$  ‘note’ lines. For example, if an accidental is displayed for a D4 note, `line shift=1` will make it being displayed for a (possibly imaginary) E4 (not F4!) note at that position. This is effectively `yshift` where  $\langle length \rangle$  is set to  $\langle number \rangle \times \langle half\ of\ line\ sep \rangle$ .

See the following example for more information about how `line shift` works:



```
\begin{tmline}
\begin{tmstaff*}{}
\tmeighthrest[line shift=4]{3}\tmeighthrest[line shift=-4]{3}
\tmwholorest[line shift=4]{6} \tmwholorest[line shift=-4]{6}
\end{tmstaff*}
\end{tmline}
```

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