

The Flip Selected Notes plugin and flipping Note Stems in Sibelius (including beamed note groups)

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Like many objects in a Sibelius score, notes can be flipped from stem up to stem down by selecting one or more notes and chords and typing **X**. For unbeamed notes, this works fine, and the result is pretty much always what you would expect.

Selecting one of more notes in a beamed group of notes and then typing **X** will often not flip the notes, and **Flip Selected Notes** was written to fix that.

The Flip Selected Notes plugin

Flip Selected Notes will always be able to change note stem direction for beamed or unbeamed notes, except for cross-staff notes, which will never flip, and for grace notes, which the plugin skips.

With this plugin you can select any one or more notes in a beam group, or make a passage selection of beamed notes, and the plugin will correctly flip the beam group.

It also lets you make a selected group of notes all point up, or all point down. It will flip both beamed and unbeamed notes.

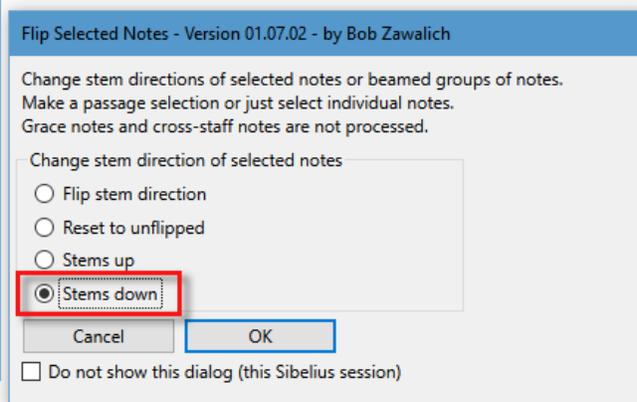
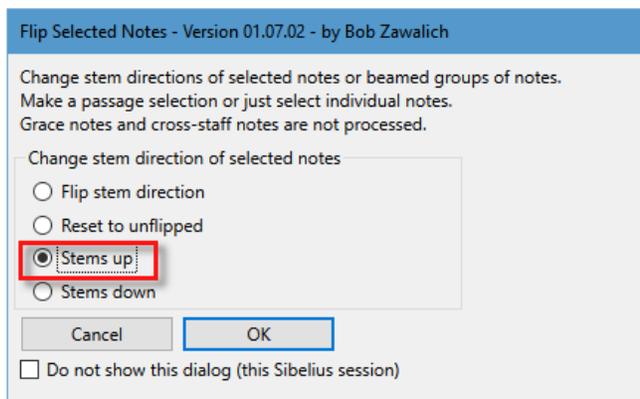
To use it as a replacement for typing **X** in a beamed note group, you can set it up to **Flip Stem Direction** (the default), and the first time you run it in a session, check the **Do not show this dialog (this Sibelius session)** checkbox.

If you want to be able to see the plugin again during the same Sibelius session, run the plugin with nothing selected.

Here are some examples of the plugin in use. The green notes indicate notes that would flip the beam group if you selected one and typed **X**. Flipping the black notes would not flip the beamed notes. This is explained later in this document.

The image shows a screenshot of the Sibelius interface with a dialog box titled "Flip Selected Notes - Version 01.07.02 - by Bob Zawalich". The dialog box contains the following text: "Change stem directions of selected notes or beamed groups of notes. Make a passage selection or just select individual notes. Grace notes and cross-staff notes are not processed." Below this, there is a section "Change stem direction of selected notes" with four radio button options: "Flip stem direction" (which is selected and highlighted with a red box), "Reset to unflipped", "Stems up", and "Stems down". At the bottom of the dialog are "Cancel" and "OK" buttons, and a checkbox labeled "Do not show this dialog (this Sibelius session)".

Below the dialog box, a musical score is shown. A red speech bubble labeled "Before" points to a group of notes on a staff. Some notes in this group are green, and some are black. A second red speech bubble labeled "After" points to the same group of notes after the plugin has been applied. The green notes now have stems pointing down, while the black notes have stems pointing up. The entire score area is highlighted with a light blue background.

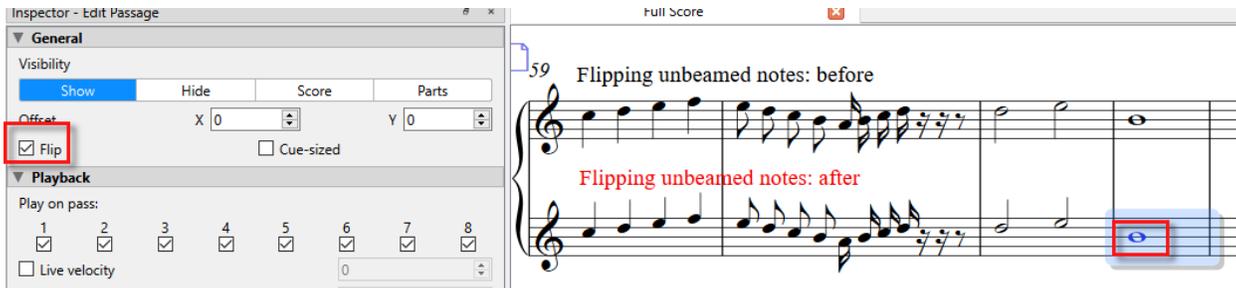


Flip Selected Notes may be downloaded directly through Sibelius 7 and higher at **File > Plug-ins > Install Plug-ins > Text**. Users may also install it manually in Sibelius 6 or higher by visiting the [plug-in download page](#) and following the [usual manual installation procedure](#), or by using the [Install New Plug-in plug-in](#).

How this stuff works

Flipping unbeamed notes

For unbeamed notes, selecting notes and typing **X** works fine and the result is pretty much always what you would expect.



Notes and chords have a property named **StemFlipped**, and flipping a note or chord reverses the setting of **StemFlipped**. If you select that note or chord and look in the **General** pane of the **Inspector**, (or the Property Window in Sibelius 6), you will see that the **Flip** checkbox is flipped. Even a stemless note, such as a whole note or a note with a stemless notehead maintains a sense of whether it has been flipped.

You can reset the **StemFlipped** state of notes and chords to off by selecting the notes you want to change and clicking on the Inspector **Flip** checkbox until it is totally unset (white). You can also use **Reset Design** or **Reset Stems and Beam Positions** to turn off the **StemFlipped** setting for a group of notes, so they will all be unflipped, but these commands may cause additional undesired formatting changes.

You can select notes and type **X** to toggle the **StemFlipped** setting of each note on or off. If you have a mix of unbeamed flipped and unflipped notes, each note will flip independently.

Cross staff beamed notes and grace notes

You can try to flip the notes in a cross-staff beam group, but they will not change direction. Each note or chord retains its **StemFlipped** state, though, so if you remove cross staff beaming, the stem directions will be affected by the **StemFlipped** settings.

In Sibelius itself, if you have a passage selection of notes that include both grace notes and regular notes, only the regular notes can be flipped. If you select only grace notes, these notes can then be flipped. Grace notes are not counted into the stem direction calculation for normal notes. Flipping a group of grace notes does not flip the associated normal notes, and flipping a group of normal notes will not affect the stem direction of grace notes.

The plugin **Flip Selected Notes** cannot detect cross-staff beamed notes, so it will try to flip them, and the notes will not change direction. It always skips over grace notes, so if you want to flip grace notes you will need to do that by hand.

Flipping groups of beamed notes.

When you have a beamed group of notes, you can often flip it by selecting the first or last note in the group and flipping it. Here is what to do when that does not work.

If you have a beamed group of notes that are all unflipped, flipping an individual note will cause the group to flip only if that note, when unbeamed, points in the same direction as the beam group when the notes are beamed.

How to determine that is not remotely obvious, unless you remove all the beams temporarily.

Here are some examples showing which notes in a group are flippable. The notes in the bottom staff are the same as those in the top staff, but unbeamed. Flippable notes are colored green. If you try to flip any of the black notes, the beam group will not flip.

If the stem lengths in the beam group vary, and no notes in the group are flipped, the note with the longest stem (the note furthest from the beam) will always be flippable, though it may not be the only flippable note in the group.

This assumes that no note in the beam group has already been flipped.

In these tests, flip only one note at a time in a group.

Musical notation in 4/4 time, two staves. The top staff has a beam group of six eighth notes: G4, A4, B4, C5, B4, A4. The bottom staff has the same notes but ungrouped. Green highlights are on G4, A4, and B4 in both staves. A blue square icon with a right-pointing arrow is in the top right corner.

Only the colored notes are flippable.
With chords, the "furthest from the beam"
refers to the highest or lowest chord tone.
Such chords are always flippable.

Musical notation in 4/4 time, two staves. The top staff has a beam group of six eighth notes: G4, A4, B4, C5, B4, A4. The bottom staff has the same notes but ungrouped. Green highlights are on G4, A4, and B4 in both staves. A blue square icon with a right-pointing arrow is in the top right corner. A blue square icon with a right-pointing arrow and the number 5 is in the top left corner.

Flipping beamed groups when some notes are already flipped.

If some of the notes in a beam group are already flipped, there is really no way to know whether flipping any one note will flip the beam group unless you know the unbeamed stem direction and the flipped state of each note in the group.

To find the flip state of a selected note, look in the **General** pane of the **Inspector** or **Properties Window**.

Appendix 1: How to always flip a beamed group of notes

You can always flip a beamed group of notes if you keep trying each note in the group. It is not pretty, but it works. Here is what the **Flip Selected Notes** plugin does to flip a beamed group.

1. Select all the notes in the beamed group and unflip them. (click the Inspector **Flip** checkbox until it is totally unset (white) or use **Reset Design** or **Reset Stems and Beam Positions**). The Inspector **Flip** checkbox will now be unchecked.
2. Starting from the leftmost note in the group, flip it, and see if the beam group flips. If it flips, stop.
3. If it does not flip, reflip the note so it is unflipped, and try the second note. Continue until the beam group flips (it always will). With this procedure, when the beam group flips, exactly one note in the group will be flipped.

Appendix 2: Why you can always flip a beamed group of unflipped notes eventually

As mentioned previously, a note in an **unflipped** beamed group is flippable (so that flipping it will cause the group to flip) only if that note, when unbeamed, points in the same direction as the beam group when the notes are beamed.

In an unflipped beamed group (except for cross-staff beamed notes), all notes in the group point the same direction.

In the first example below, the first group of 4 has 4 flippable notes., and if you start with all the notes unflipped, you can flip any of these notes to flip the group.

The second group of 4 looks similar, but when unbeamed we see that the last 2 notes point down when unbeamed, so they are forced to point up when the notes are beamed together. Selecting either of the last 2 black notes will not flip the beamed group.

Whether an unbeamed note stem goes up or down depends on its position in the staff, though the presence of multiple voices or certain staff settings can affect that.

If you start with all the notes in a beamed group unflipped, it will always be possible to flip the beamed group. This is because there are only 3 possible states for the notes in an unflipped beamed group: all up, all down, or mixed stem directions. In the examples below, the green notes point in the same direction as the beamed group, and so they are flippable. In the first 2 groups all notes are up or all are down, and the beamed group will have the same direction. Flipping any note will flip the group.

In the 3rd group, the beamed group has forced all notes to be in the same direction, forcing some of the unbeamed notes to change direction. Those notes will be unflippable, but since there is a mix of directions, at least 1 note will be flippable if no other note in the group is flipped. The trick is to find the flippable notes, without having to unbeam the notes and determine their flipped state. The procedure in [Appendix 1](#) is one way to accomplish this.

The image shows two staves of music. The top staff has a treble clef and a brace on the left. It contains three groups of notes: 1. 'All up': four notes with upward stems, all highlighted in green. 2. 'all down': four notes with downward stems, all highlighted in green. 3. 'Mixed stem direction': four notes with mixed stem directions (two up, two down), with the two up notes highlighted in green. The bottom staff has a treble clef and contains three groups of notes: 1. 'All up': four notes with upward stems, all highlighted in green. 2. 'all down': four notes with downward stems, all highlighted in green. 3. 'Mixed stem direction': four notes with mixed stem directions (two up, two down), with the two up notes highlighted in green.

Appendix 3: Stemweight and how stem direction is determined

(From the **ManuScript Language Reference** for plugins, describing the **Stemweight** property of a **NoteRest** (note or chord) object. For what it is worth, as of April 2020, the **StemweightCross** property does not work, so plugins cannot recognize or set stemweights for cross-staff notes.)

Stemweight

Returns the stem weight of a note, taking beams into account (read only). For an unbeamed note, this is the sum of the stave positions of all the notes in the NoteRest, where **the stave position of the middle line is zero** and the position increases as you move up the stave and decreases as you move downwards. For a beamed note, it is the sum of all the stem weights of the NoteRests under the beam (treated as though they were unbeamed).

There are some special cases.

If a note has its stem direction forced due to voicing, then the stem weight will be one of the global constants **StemweightUp** or **StemweightDown**. If a note has its stem direction forced due to the “flip” flag being set, the stem weight will be either **StemweightFlipUp** or **StemweightFlipDown**.

Finally, cross-staff notes have stem weight equal to **StemweightCross**.

If the stem weight is less than zero, the stem will point up, otherwise it will point down.

Here is an example calculation. On a treble clef, a B has stemweight 0, and each letter name up adds one, each letter name down subtracts 1 from 0. Middle C (C4) is -6, C5 is 1, F3 is -10, B3 is -7, E5 is 7. The total is -19, which is negative, so the beam group stems go up.

If the total stemweight is negative, the beam group points up (-19)

The diagram illustrates the calculation of stem weight for a beam group on a treble clef staff. The staff has five lines, with the middle line (line 3) as the zero point. The notes in the beam group are: B3 (line 1), C4 (line 2), C5 (line 3), F3 (line 1), and E5 (line 5). The stem weights are: B3 (-7), C4 (-6), C5 (1), F3 (-10), and E5 (7). The total stem weight is -19, which is negative, so the beam group stems point up.

$$-6 + 1 + (-10 + -7) + 3 = -19$$