

# The Position Dynamics plugin

*Bob Zawalich April 14, 2012*

This plugin changes the horizontal position of dynamics text included in a selection, aligning the text with notes, based on the width of the notehead and the dynamics used. The specific positioning data is user-configurable, and is stored in positioning data files. Typically, an expert user will choose useful positioning settings and publish them as data files, and the plugin ships with a set of such data files for common music fonts.

*Position Dynamics* assumes the default layout for Expression text, namely left aligned to a note. The positioning values in the table are horizontal offsets, in units of spaces, from the left edge of a note at the same location as the dynamics text.

The horizontal offsets produced by this plugin will be discarded if you use Reset Positions, so this plugin should only be run after most other layout has been done.

This plugin will only run in Sibelius 6 or later.

*Important Sibelius 6 note:* The option to position based on the stem direction of notes is only available in Sibelius 7 or later. In Sibelius 6 you can use either the stems up or stems down option, but the plugin cannot determine the stem direction.

## Data files for positioning

The data that determines the positioning of dynamics is stored in text files. These are by default in a subfolder called "Position Dynamics" of the folder containing the plugin PositionDynamics.plg.

So, for example, if the plugin is stored in

C:\Users\Bob\AppData\Roaming\Avid\Sibelius 7\Plugins\-aaTest\,

the text files will be in

C:\Users\Bob\AppData\Roaming\Avid\Sibelius 7\Plugins\-aaTest\Position Dynamics\.

If the data file folder does not exist or is empty, the plugin will ask you to choose an existing folder that contains data files (you might have one already for a different Sibelius version and want to share files). If there is no existing folder, it will create a folder and create a series of positioning data files that should be appropriate for fonts used for Expression Text.

## Sharing data files between different Sibelius versions

If you have both Sibelius 6 and 7 on the same machine and want to share the data files, run the plugin in one version to set up the data file folder. Then when you run the plugin in the other Sibelius version, it will ask you where you want to get your data files. This time browse to the folder you used for the other version.

If you have already run both versions of the plugins and set up separate data file folders, you can delete (or maybe better, rename) one of the data folders, run the plugin again, and tell it to use the other data folder.

## Data File Details

The following explanation can safely be ignored if you are not planning to create positioning text files yourself with a text editor. If you edit with the dialog's editor or just use the shipped positioning files you do not really need to understand the structure of these data files.

These files contains values for positioning, and might look like this:

```
ppp,-1.66,-2.38,-1.59,-1.16
pp,-.97,-1.47,-.75,-.34
p,-.47,-.91,-.22,.12
mp,-1.19,-1.59,-.88,-.41
mf,-1.19,-1.59,-.88,-.41
f,-.5,-1,-.31,.28
ff,-1.06,-1.53,-.75,-.38
fff,-1.69,-1.78,-1.47,-.94
```

The data file can have an arbitrary number of lines, and each line is of the form:

<dynamics text>,[pos for stems up],[pos for stems down],[pos for whole notes],[pos for breves]

*Pos for stems up* is applied to notes smaller than whole notes whose stems point up.

*Pos for stems down* is applied to notes smaller than whole notes whose stems point down.

*Pos for whole notes* is applied to whole notes.

*Pos for breves* is applied to double whole notes (breves).

The positions are in units of spaces. Blanks are allowed in the lines and will be ignored. Positions can be omitted, in which case notes that match the category will be unchanged. The line:

```
mp,-1.19, ,-.88,-.41
```

has no entry for stems down, and so any notes smaller than a whole note with stems down will be unchanged. Each line must contain 4 commas, though, even if the last entry is omitted

```
f,-.5,-1,-.31,
```

The plugin can determine the direction of stemmed notes only in Sibelius 7 or later. In Sibelius 6, you will have to choose to use either the up or down stem settings.

You can edit and create the data files by using the Edit Position Set button in the plugin dialog, or you can open and edit the files in a text editor that can save text files.

A file can have as many dynamics entries as you wish, in any order. You can choose any position values you wish, and as many different files as you wish. On loading the text file, the plugin will validate each line to ensure that the position values are either numeric or empty, after blanks are discarded. It will reject files that are not properly formatted.

Totally blank lines in the data file will be discarded, but the file will be accepted.

You can transfer the entire folder to another user by installing it in the correct location. The last used data file, the hide dialog state, and other options are stored for each user; these are not transferable.

Positioning values are likely to vary with different fonts. The default files are named according to the Music Text fonts they were intended for.

The default properties file will be *Opus.txt* if the user has not previously chosen another file. The plugin does not attempt to match a data file to the Music Text font of a score, so be sure to check that the score and data file are in sync.

## **Using the Plugin**

Typically a dialog will come up when the plugin is run, though you can prevent that. The dialog has a list showing the contents of the current position data file, and a list of the available data files. If you select a new data file name, the contents of the main list box will be updated.

Here is an example of the main dialog.

**Position Dynamics**

This plugin adjusts the horizontal position of dynamics text, based on the position values stored in a data file for each piece of text and the duration and stem direction of a note associated with the dynamics text string. For more details see the document "Position Dynamics plugin.pdf". Typically, an expert user will choose useful positioning settings and publish them, but any user can edit the text files that contain positioning data and customize them.

Varying position by stem direction is only available in Sibelius 7 or later.

**Position set (offsets for dynamics)**

- ppp, -1.66, -2.38, -1.59, -1.16
- pp, -.97, -1.47, -.75, -.34
- p, -.47, -.91, -.22, .12
- mp, -1.19, -1.59, -.88, -.41
- mf, -1.19, -1.59, -.88, -.41
- f, -.5, -1, -.31, .28
- ff, -1.06, -1.53, -.75, -.38
- fff, -1.69, -1.78, -1.47, -.94
- sfz, -1.09, -1.72, -.91, -.59
- fp, -.5, -1, -.31, .28
- ffp, -1.06, -1.53, -.75, -.38

**Edit the currently selected position set**

Edit position set...

Delete position set and data file

**Stem direction options**

Vary position by stem direction

☒ If text above staff, use stems-up setting for stemmed notes

**Trace location or add comments to dynamics text**

<b>Unprocessed</b>	<b>Processed</b>
<input type="checkbox"/> Trace	<input type="checkbox"/> Trace
<input checked="" type="checkbox"/> Comment	<input checked="" type="checkbox"/> Comment

Hide dialog options - shows on no selection

Show dialog always

Opus

☐ Process dynamics that match exact note position only

☐ Process dynamics with default horizontal position only

☒ Leave only changed dynamics selected

by Bob Zawalich      Version 01.40.00

position sets by Matthew Maslanka and Jeremy Hughes

Cancel      OK

You can delete a position set and its associated data file (be sure you really want to do that!) in this dialog. You can edit entries in the currently selected data file and create new lists/data files by using the Edit position set... button, which brings up the editing dialog:

**Edit Position Dynamics**

Click on a list entry and edit values in the edit boxes. When you are finished editing an entry, choose "Update/Add Entry" or "OK", otherwise changes typed in will not be made.

To edit an existing list entry, just change the numbers. To add a new entry to the list, change the Text value.

To create a new position set, change any entry settings, then change the position set name on the bottom left, and the new set will be created when you choose OK.

	Text	Up stems	Down stems	Whole	Double Whole
ppp, -1.66, -2.38, -1.59, -1.16	ppp	-1.66	-2.38	-1.59	-1.16
pp, -.97, -1.47, -.75, -.34					
p, -.47, -.91, -.22, .12					
mp, -1.19, -1.59, -.88, -.41					
mf, -1.19, -1.59, -.88, -.41					
f, -.5, -1, -.31, .28					
ff, -1.06, -1.53, -.75, -.38					
fff, -1.69, -1.78, -1.47, -.94					
rfz, -1.69, -1.78, -1.47, -.94					
poco ff, -1.06, -1.53, -.75, -.38					
subito p, -.47, -.91, -.22, .12					

Update/Add Entry

Delete selected list entry

Position set name:  
Default\_Default

Cancel OK

In this dialog you edit the position set that was selected in the main dialog. Select an entry in the large list box, and its contents will be placed in the row of edit boxes. Change any edit boxes, and choose Update/Add Entry to replace an existing entry, if the text is unchanged, or add a new entry at the end of the list, if the text was not previously in the list box.

If the edit boxes are changed and you hit OK, any changes made will be reflected in the list. If edit boxes are changed and you then change the selection in the list box without updating first, the changes in the edit boxes will not be saved.

To create a new position set and corresponding text file, type a new position set name in the edit box in the dialog's lower left. When you choose OK, the new position set will be created.

## What the plugin does

Once the data file has been selected, the plugin searches the score for dynamics text, which the plugin defines as any Expression text whose text object matches a positioning table entry. The plugin will see if the full text of the text object matches a table entry, and if so will process it. If that fails, and the text has more than one word (separated by spaces), the plugin will look to see if the first word matches a table entry. If it does, the full text will be adjusted as if it only consisted of the first word. So it will pick up "p" for "**p** dolce" but not "f" for "subito **f**". (Though if you have a full entry for "subito f", it will find that).

Once it finds such text, it looks to see if the text matches the text of an entry in the data file, and if so, it attempts to find a note or chord at the same location, or failing that, within an 8<sup>th</sup> note before or after the position of the text.

You will probably have better results when the dynamics and notes are at the same rhythmic position in the file. Enter dynamics onto a selected note rather than clicking with a mouse, and do not drag dynamics, and you will be more likely to have clean matching between the text and the note.

If the dynamic text is not marked "all voices", the plugin will only match for a note in the same voice as the text. For "all voices", it will match the first note it finds in any voice that matches the other criteria.

Dynamics text with no matching note is ignored. Grace notes and rests are ignored.

If it finds a match, it finds the position values for the text (such as "ppp"). It looks at the duration of the note, and for notes smaller than whole notes, at the stem direction (Sib 7 or later). It then adds the position to any horizontal adjustment of the associated note and makes it the horizontal offset of the text, as displayed in the Inspector.

## Matching notes and dynamics text

The hardest thing the plugin does is match a note and a piece of dynamics text. If there is only one piece of text and it is in exactly the same rhythmic position as a note in the same voice, the match is easy.

If there are multiple pieces of text at the same position as a note, the plugin chooses the text closest to the note (or first encountered in case of a tie), and the other are not repositioned.

If no note matches a note's position exactly, the plugin looks up to an 8<sup>th</sup> note/quaver away from the note, and chooses the text whose rhythmic position is closest to the note. Any horizontal offset in the note and the text is disregarded. In some cases, the visually closest note will not be chosen. You may want to choose the option "Process dynamics that match exact note position only" to avoid possible misalignments.

Dynamics are matched to notes by voice, so if you mistakenly put a note and dynamic in different voices, it may not move where you expect it to go.

## Tracing and commenting

The plugin can write out the locations of dynamics that it either repositions or intentionally skips. It can also add Comments near any moved text. The comments will include the reason that a dynamic was not processed. After reviewing, you can filter for comments and delete them.

## Notes at the start of a bar and crowded bars

This plugin works best when there is a lot of room in a bar so it can handle the adjustment of text, which typically moves to the left.

Dynamics attached to notes at the start of a bar can be problematic. This is true especially when the bar is not the first bar in a system (with space for clefs and key signatures), or when there are many bars in a system, so the bars are narrow, or when there are a lot of notes and a lot of dynamics, so there is not much room.

One problem is that if the adjustment places the dynamic too close to the barline, Magnetic Layout can force it into the previous bar.



The easiest fix is to not run the plugin on this text. Other than that, you can widen the bars by putting fewer bars on a system, or even by making a crowded bar the first in a system, which is admittedly a bit extreme.

Sometimes you can change the selection to exclude the first dynamic. But in the above example, even omitting the first *f* from the selection will still cause the other dynamics to move and force the *f* to the left, (the *fff* is shoving the *ff* over as well), so even if there were an option in the plugin to avoid dynamics at the start of a bar, there would still be problems.

The plugin will handle non-passage selections, so if you want to not process the first dynamic, you can try excluding it from the selection.

*If you have already run the plugin*, and it causes collisions, undo it if you can. If it is too late for that, select the affected dynamics (or more likely, the entire bar in which those dynamics appear) and use Appearance > Reset Position to remove the effect of the plugin. Note that, as in the example above, shifting one dynamics may cause others to move, and so you may have to reset more than just the text where the collision appears.