

## Transposition and Key Changes in PMX 2.622

Certain PMX features have been upgraded in version 2.622 to allow a user to deal with most transposition and key-change issues, and at the same time permit generation of a proper MIDI file. Two fundamentally different situations are accommodated: (1) (“Transposing” instruments) Some of the instruments require a part printed in a different key and at a different pitch level than it sounds; (2) (Full-score transposition) A score that has been entered in one key is to be completely transposed to a different key and pitch level, usually to force the range to fit different instruments than original.

Transposition and key signatures in the printed score and parts are controlled by a combination of the key signature specified in the setup data (referred to as concert key or concert pitch), and the **K** command either at the beginning of the first input block (for a full-score transposition) or at the beginning of any later block (for key changes with or without transposition). In addition, if a MIDI file is to be produced, *and* if transposing instruments are involved, the transposing option in the **I** command must also be used as will be described below.

The general features of the **K** command have not changed, and are reviewed here and in the next paragraph. The **K** command has two modes, full-score or instrument-wise. To transpose an entire score from the key specified in the setup data, at the beginning of the first block enter **K** followed by two explicitly signed digits. The first is the distance to transpose (in \internotes); the second is the new key signature. When transposing, you should always use relative accidentals, activated by the separate command **Ar** at the start of the first input block. For example, to transpose a piece that was entered in C major to E major, you would enter **Ar K+2+4** at the beginning of the first block. To transpose by a half step to a key with the same letter name, use **K-0+[n]**. (Using **-0** instead of **+0** eliminates confusion with a simple key change.) A full-score key change without transposition can be entered in the first voice at the start of any block after the first, by using the command **K** with **+0** as the first argument and the new key signature as the second.

For instrument-wise transposition or key changes, use **Ki[instrument #][+/-][transposition amount][+/-][new key]**. To transpose or change key of more than one instrument, immediately repeat everything after **K**. This must come either at the start of a score (right after setup), or if later, *must* be preceded by normal (full score) key change command **K+0[+/-][new concert key]**. Entering the part in concert key and setting the transposition parameter with the **Ki** command, is but one of two possible ways to do instrument-wise transposition. Parts may also be *entered* in their respective transposed keys, provided you issue **Ki[instrument #]0[+/-][transposed key]** before the first input block.

Four different examples will now be discussed in detail. They are summarized in the table below:

Case	PMX source entry	Printed score	MIDI pitch	Sample file	Initial commands	Commands for later key change
1.	All B flat concert, later key change to B flat minor	All transposed up 2 steps, to D major, later to D minor	transposed	<b>tta.pmx</b>	<b>K+2+2</b> <b>I</b>	<b>K+0-5</b>
2.	All B flat concert, later key change to B flat minor	Trombone (1) concert; alto sax (2) transposed up 5 to G, later G minor, clarinet (3) transposed up 1 to C, later C minor.	concert	<b>cts.pmx</b>	<b>Ki2+5+1i3+1+0</b> <b>IT+0-5-1</b>	<b>K+0-5</b> <b>Ki2+5-2i3+1-3</b>
3.	Trombone (1) concert; alto sax (2) transposed up 5 to G, later G minor, clarinet (3) transposed up 1 to C, later C minor.	Trombone (1) concert; alto sax (2) transposed up 5 to G, later G minor, clarinet (3) transposed up 1 to C, later C minor.	concert	<b>tts.pmx</b>	<b>Ki2+0+1i3+0+0</b> <b>IT+0-5-1</b>	<b>K+0-5</b> <b>Ki2+0-2i3+0-3</b>
4.	All B flat concert, later key change to B flat minor	All B flat concert, later key change to B flat minor (but parts to be printed transposed)	concert	<b>ccs.pmx</b>	<b>%2K+5+1</b> <b>%3K+1+0</b>	<b>K+0-5</b>

### Case 1. Full score transposition.

Here the entire score is to be transposed. In the setup data the signature is set to **-2**. Then the command **K+2+2** says to transpose up 2 steps from the initial key of B flat to D, and put 2 sharps in the key signature. No special attention is needed for the MIDI; it will come out in the transposed key. A later (full-score) key change requires another **K** command, but now the transposition parameter is set to **0** and the new key is the *concert* key (I guarantee people will be confused by this). In the example the command for the signature change is **K+0-5**, making the new concert key B flat minor with 5 flats, and, considering the initial transposition, causing the score and MIDI to come out in D minor with 2 flats.

### Case 2. Parts all entered in concert key, but some transposed in the printed score.

This is one of two methods for scoring transposing instruments. Here, to produce the printed score, parts are all entered in concert key, but instrument-wise transposition is used for the transposed instruments. In the example the alto sax part is entered in B flat but will be transposed up 5 steps in the score, to G major. This is brought about with **Ki2+5+1**. Similar logic applies to the clarinet part, while the trombone part is not transposed. If a MIDI file is desired, it will come out in concert key, but only after using the transpose option in the MIDI command to *undo* the transpositions caused by the **K** command. In the example the command **IT+0-5-1** does this, “de”-transposing each of the three instruments by the necessary number of steps. For a later key change, first the full-score **K** command changes the concert key, then the instrument-wise **K** command, with the same transpositions as the initial one, sets the new key

signatures for the transposing instruments. Here the signatures to be entered are the *transposed* signatures, i.e., the ones that will be printed.

#### Case 3. Parts entered in respective transposed keys, and printed in those keys in the score.

In this second method of scoring transposing instruments, parts are transposed before entering them, then entered exactly as they will appear in the score. So to produce the printed score this way, the pitch does not have to be changed, but the key signatures must be set separately for each transposing instrument using the **Ki** command. In the example, the alto sax is entered in the key of G so the instrument-wise option for it is **Ki2+0+1**. Note that +0 means no further transposition is needed before printing, because the part was transposed on entry. Once again, if a MIDI file is desired, it will come out in concert key, but just as in the previous case, you must use the transpose option in the MIDI command **IT** to *undo* the transpositions caused by the **K** command. For a later key change, the same full-score **K** command as in the previous case is used to change the concert key. Then the instrument-wise **K** command, now with +0 for the transpositions, sets the new key signatures for the transposing instruments, again using the *transposed* signatures.

#### Case 4. Parts entered in concert key, printed in score in concert key, but transposed in separate printed parts

This is the easiest case of all. Nothing special needs to be done for the score, but part-only, full-score transposition commands %[instrument #]**K**... should be entered in the score. Then **scor2prt** will generate a transposed part. Of course if a MIDI is made from the score it will come out at concert pitch. For example, to transpose the alto sax part up 5 steps, initially to G major, near the top of the score file enter **%2K+5+1**. Later, where the concert key changes to B flat minor and the alto sax to G minor, enter simply **K+0-5**, making the new concert key B flat minor with 5 flats. When **scor2prt** is invoked to make separate parts, this will be transferred verbatim into all parts, and then PMX will internally adjust the signature for each transposed part as required.

#### Making separate parts

Just as in Case 4, if the patterns of commands in Table 1 are followed, then in all of the other cases as well, separate parts can be made as usual using **scor2prt**. They will automatically come out transposed as desired.

#### Appendix: Texts of the sample files

##### Case 1. tta.pmx

```
3 2 4 4 4 4 0 -2
1 1 20 .13
Trombone II+III
Trombone I
bbb
.\
Tt
TTA
Apr
I
K+2+2
```

b42 d f b t b t gf df b /  
b42 d f b t b t gf df b /  
b42 d f b t b t gf df b /  
K+0-5  
b42 c d e f gs as b /  
b42 c d e f gs as b /  
b42 c d e f gs as b /

Case 2. cts.pmx

3 3 4 4 4 4 0 -2  
1 1 20 .1  
Trombone  
Alto Sax  
Clarinet  
btt  
.\  
Tt  
CTS  
Apr  
Ki2+5+1i3+1+0  
IT+0-5-1  
b42 d f b t b t gf df b /  
b43 d f b t b t gf df b /  
b44 d f b t b t gf df b /  
K+0-5  
Ki2+5-2i3+1-3  
b42 c d e f gs as b /  
b43 c d e f gs as b /  
b44 c d e f gs as b /

Case 3. tts.pmx

3 3 4 4 4 4 0 -2  
1 1 20 .1  
Trombone  
Alto Sax  
Clarinet  
btt  
.\br/>Tt  
TTS  
Apr  
Ki2+0+1i3+0+0  
IT+0-5-1  
b42 d f b t b t gf df b /  
g44 b d g t g t ef bf g /  
c45 e g c t c t af ef c /  
K+0-5

Ki2+0-2i3+0-3

b42 c d e f gs as b /

g44 a b c d es fs g /

c45 d e f g as bs c /

Case4. ccs.pmx

3 3 4 4 4 4 0 -2

1 1 20 .1

Trombone

Alto Sax

Clarinet

btt

.\

Tt

CCS

Apr

%2K+5+1

%3K+1+0

I

b42 d f b t b t gf df b /

b43 d f b t b t gf df b /

b44 d f b t b t gf df b /

K+0-5

b42 c d e f gs as b /

b43 c d e f gs as b /

b44 c d e f gs as b /