



# Chromatic Harmonicas In Alternate Tunings – Why? Part 1

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Players are always looking for a better way to arrange the blow notes and draw notes in the holes of a harmonica to make it easier to play certain chords, melodies, ornaments, bends, or special effects. As a result, harmonica note layouts continue to evolve, and the chromatic is no exception. Many an inventor has patented one or more note layout, or tuning, and some tunings have been patented several times over. Nobody has ever gotten rich by coming up with a special tuning, and no one seems to have struck on that one ideal tuning that will fulfill every dream, yet the changes keep coming. Some of them are really worth your consideration. If you want to know more about them, please read on.

## The Madness Begins

According to one story, it all got started in 1829, when Friedrich Buschmann produced an early harmonica by lashing together a series of pitch pipes to produce a chromatic scale. This one-semitone-per-hole approach was logical but not easy to play—It tends to produce discordant tone clusters if you play more than one hole at a time and it's hard to avoid the notes you don't want and find the ones you do. With cunning and energy, you can make this tuning do some interesting things, and during the 20<sup>th</sup> Century Hohner produced several models under the names Polyphonia and Chromatic; the Chromatica 263 model remains available.

Some other early harmonicas followed a very different approach, with notes arranged so that by blowing the holes from left to right, you could play a specific melody. If you wanted another tune, you couldn't just download it into the harmonica—you needed a special harmonica for each tune you wanted to play, so it wasn't very versatile.

Over time, however, a standard tuning emerged for the diatonic harmonica—the same one we use today, which appears to have been borrowed from the one-row diatonic accordion. (This tuning is commonly referred to as Richter tuning even though there is no evidence that it originated with anyone named Richter, and even though Richter is actually a construction design for a harmonica and not, properly speaking, a tuning. I'll simply call it standard diatonic tuning.)

While standard diatonic tuning could play a wide variety of music, it did have some problems. All three octave were laid out differently—the bottom octave omitted two notes from the scale in order to provide solid chords (note the missing F and A in the first three holes), while the draw notes in the top octave were shifted one hole to the right (compare Hole 4 with Hole 7, and Hole 8 with Hole 5), as shown in Figure 1.

**Figure 1: Standard Diatonic Tuning**

	1	2	3	4	5	6	7	8	9	10
Draw	D	G	B	D	F	A	B	D	F	A
Blow	C	E	G	C	E	G	C	E	G	C

To correct these problems, in the late nineteenth century someone came up with *Solo Tuning*, so called because it allowed a soloist to play all the notes of the major scale throughout the entire range of the instrument, dispensing with the accompaniment chords built into the first three holes.

*Solo Tuning* simply took the middle octave of standard diatonic tuning and repeated it over three octaves. This gave all the notes of the C major scale in every octave, and gave a C major chord in the blow notes, with the remaining notes assigned to the draw notes, as shown in Figure 2.

**Figure 2: Solo Tuning**

	1	2	3	4	5	6	7	8	9	10	11	12
Draw	D	F	A	B	D	F	A	B	D	F	A	B
Blow	C	E	G	C	C	E	G	C	C	E	G	C

However, *Solo Tuning* has its own set of problems. Among them, it shares one oddity with diatonic tuning, and adds another of its own.

The shared oddity is its inconsistent breath pattern. Starting on C, you blow, then draw in each hole, then move one hole to the right, where you repeat the blow-draw sequence. That works for C-D, then E-F, and then G-A. But after that, the pattern breaks down. In the following hole, instead of playing blow-draw, you reverse the breathing and play draw-blow. So, from A to B you have two draw notes in a row. (If you try the blow-draw pattern in this hole, you get C and then B—the scale jumps up past the next note [B] then goes down instead of up when you inhale.) This was done so that C is always a blow note. To stick to the blow-draw sequence and still ascend the scale in an orderly sequence, you'd need to resort to a spiral tuning.

The other oddity is the two C blow notes side by side, one paired with Draw B and other with Draw D. If you didn't repeat the C, the draw notes would drift out of alignment the way they do on the diatonic. The extra C helps keep the tuning uniform from octave to octave, but it causes some confusion—how does the player know which C s/he is playing and whether they'll get a B or a D when they inhale?

## The First Slide Tuning

The earliest slide harmonicas used the same tuning as a standard diatonic, and simply added a second bank of reeds tuned the same way, but one semitone higher—press the slide in, and the note goes up a semitone, as shown in Figure 3. This tuning has remained in production for the better part of a century in the Koch 980 model from Hohner, and has been recently emulated by other manufacturers as well.

**Figure 3: Slide Diatonic Tuning**

<i>Chordomonica I</i>	1	2	3	4	5	6	7	8	9	10
Draw Slide-in	D#	G#	C	D#	F#	A#	C	D#	F#	A#
Draw	D	G	B	D	F	A	B	D	F	A
Blow Slide-in	C#	F	G#	C#	F	G#	C#	F	G#	C#
Blow	C	E	G	C	E	G	C	E	G	C

However, it's not a true chromatic harmonica. Even with a slide, notes are still missing from the chromatic scale. Yet this retro design finds favor among some second-position diatonic players because it retains the chordal tuning and wailing bends of the standard diatonic, while allowing the addition of notes otherwise available only by overbending, and gives some of the characteristic slide action sound and note patterns of the chromatic.

### The First True Slide Chromatic

Soon after introducing the first slide harmonica, Hohner adapted the slide setup to *Solo Tuning*, thereby creating an instrument with a full chromatic scale in all three octaves, as shown below.

**Figure 4: Chromatic Solo Tuning**

	1	2	3	4	5	6	7	8	9	10	11	12
Draw Slide-in	D#	F#	A#	C	D#	F#	A#	C	D#	F#	A#	D
Draw	D	F	A	B	D	F	A	B	D	F	A	B
Blow Slide-in	C#	F	G#	C#	C#	F	G#	C#	C#	F	G#	C#
Blow	C	E	G	C	C	E	G	C	C	E	G	C

Slide or not, *Solo Tuning* still presents the challenge of an inconsistent breathing pattern and the fun of figuring out which C you're playing.

Dissatisfaction with *Solo Tuning* is only one of the reasons to come up with an alternate tuning, and almost from the beginning harmonica players have been building and even patenting new ways of arranging the blow and draw—and on chromatic the slide-in—notes on the harmonica, and not just because of the problems outlined above.

### Good Reasons for Creating Alternate Tunings

There are several good reasons for alternate tunings on chromatic, and many of them conflict—a gain for one purpose is a loss for another. This fact alone guarantees that there is no such thing as the perfect or ideal alternate tuning. Here are some of the main reasons for creating alternate tunings, and the tunings that facilitate them.

#### Consistency of Blow-Draw Sequences

It's nice if you can play a scale that has a consistently repeating pattern of actions—breath changes, holes changes, and slide changes, in various combinations. Even playing the C major scale on a C chromatic has an inconsistent sequence of actions, and so do all the others.

Tunings that attempt to create consistent action patterns for scales include *Bebop Tuning* and *Spiral Tuning*.

## Useful Note Duplications

Having the same note appear more than once in the same octave—typically as blow instead of draw, and/or in a different slide position—means that the note will be available in additional same-breath melodic combinations and in different chords. Most tunings offer two or more such duplications—*Augmented Tuning* is one of the few that do not.

## Same-Breath Note Sequences – Scales and Ornaments

*Solo Tuning* offers a number of different scale fragments that can be played on a single blow breath or a single draw breath, often in combination with moving the slide. Same-breath sequences tend to sound smoother because the breath direction is not disrupted, and often can be played faster for the same reason. Same-breath combinations tend to be facilitated both by note duplications and by notes in adjacent holes that are tuned three or fewer semitones apart. Tunings that offer rich same-breath combinations include *Diminished*, *Whole Tone*, *Bebop*, *C6*, *J-Chro* and “*True Chromatic*.”

Ornaments are quick actions involving two or more neighboring notes in a scale played in unmeasured time, usually as fast as possible. Both for speed and for smoothness of execution, ornaments usually work best if all the notes involved can be played in the same breath direction, as breath changes during the ornament can slow it down and make it sound choppy. All tunings make certain scale fragments available as same-breath combinations. At least one type of tuning, Brendan Power’s slide diatonic, is designed specifically to facilitate ornaments as played in Irish traditional music.

## Extensions to Range

By eliminating duplicated notes, you can fit more notes into fewer holes. For instance, *Spiral Tuning* fits slightly more than three octaves into 12 holes, and *Augmented Tuning* fits three octaves into only 10 holes instead of 12, and four octaves into 12 holes instead of 16.

However, there are practical limits to what you can achieve by retuning a standard harmonica, as the farther you extend a compressed tuning the farther you have to retune the reeds. Five semitones is probably a practical limit for changing the pitch of a reed.

## Reduced Number of Scale Patterns

In *Solo Tuning*, every scale in every key requires its own sequence of breaths, hole changes, and slide changes. Some tunings, including *Diminished*, *Augmented*, *Wholetone*, *J-Chro*, and “*True Chromatic*” are among the tunings that result in a reduced number of scale patterns by making two or more scales use identical action patterns.

## Easier Play for Specific Scales or Melodies

Breath changes and leaps to distant holes, and sometimes slide changes in combination with the other two, can make some scales and melodies awkward to play. Some tunings will facilitate certain note combinations by reducing the number of leaps and breath changes required to play a scale or melody. Every tuning has its own set of advantages and disadvantages in this regard.

## Chords and Harmonic Intervals

Most slide harmonica tunings offer various chords and chord fragments almost as a byproduct. *Solo Tuning*, for instance, originated in the need to have all the notes of the scale available, and thereby reduced the emphasis on chords. But the “harmony” part of “harmonica” won’t be denied, and many alternate tunings aim to change or add chords or harmonic intervals to the tuning. That said, even the most basic four types of chords in all 12 keys add up to 48, and the

standard chromatic harmonica just won't accommodate all those chords. But players have come up with a number of ingenious ways to at least add to the harmonic possibilities of the chromatic. Sometimes just altering one note in the tuning will open up some nice possibilities for harmonies and chords, such as changing the first of the two side-by-side Cs to Bb (*Bebop Tuning*) or A (*C6 Tuning*), or raising F to F#.

*Spiral Tuning* was designed to create a consistent breathing pattern for playing a scale, but as a byproduct it delivers all of the basic chords of the main key of the harp, along with several extensions. Symmetrical tunings like *Augmented* and *Diminished* give you an all-chordal layout, but with a single type of chord that has severely limited usefulness.

Some slide harmonicas focus on creating chord combinations that are useful in one or more styles of music. Chords are the primary reason for *Chordomonica* tunings and *Boogie Tuning*. Properly speaking, these are not true chromatic harmonicas. They're really chord harmonicas built into slide harmonica bodies.

### **Next Issue...**

We'll dig into some of the more common, or at least the most commonly discussed, alternate tunings for the chromatic harmonica.

### **Recommended Book—Basic Blues Chromatic**

<http://harmonicamasterclass.com/bc.htm>

### **Notation Key**

Please visit <http://www.harmonicassessions.com/feb05/ChromaticTab.pdf> for a notation key.