Playing All Major Scales with Three Four-Note Patterns (and One Alternate)

The point of this article is to simplify the playing of all the Major scales on the Diminished Chromatic Harmonica (the "Dimi") by defining a primary fingering for each of the scales.

One of the significant advantages of a symmetrical tone layout such as the Dimi is that all keys of music can be played equally well. This is rare among the various harmonica layouts, and while there is still certainly a place for traditional instruments in certain musical styles, the evenly balanced layout of the Dimi suggests a modern chromatic instrument more so than a key-oriented folk instrument.

Defining terms

The term "fingering" on harmonica suggests the combination of breath direction (blow or draw), slide position, and hole number needed to obtain a particular note.

The fingering of a scale would suggest the set of "fingerings" needed to obtain all the notes in the scale.

The term "pattern" suggests a combination of fingerings, which amounts to a series of physical (note producing) movements that will always be the same, and will always produce the same series of intervals, regardless of the pitch or hole the pattern starts on.

Why four-note patterns to play Major scales?

Why break up the Major scales into four-note patterns? Why think in patterns at all? If we know the notes of each scale, and we know where the notes are on the instrument, then the only issue left is to practice until it sounds good, right?

The challenge is that there are so many fingerings possible for each scale that we need a strategy for finding the best choice. I developed the four-note pattern approach to address this issue.

One of the powerful features of the Dimi is the presence of four enharmonic notes spaced evenly throughout the octave. Enharmonics are notes that have the same pitch but are played with different fingerings.

Here are where the enharmonics are found on the C Dimi.

Hole	1	2	3	4	5	6	7	8	9	10	11	12
Draw/s	E♭	G♭	A	C	E♭	G♭	A	C	E♭	G♭	A	C
Draw												
Blow/s												
Blow	C	E♭	G♭	A	C	E♭	G♭	A	C	E♭	G♭	A

The challenge is that, having four enharmonics creates multiple possible fingerings for each Major scale.

If we count only SEVEN notes for each Major scale, for example [C D E F G A B], then:

8 Major scales have 4 possible fingerings.
4 Major scales have 8 possible fingerings.

If we count EIGHT notes per Major scale, for example [C D E F G A B C], then:

8 Major scales have 8 possible fingerings.
4 Major scales have 4 possible fingerings.

A Dilemma

Given so many fingering choices, if we spontaneously choose our enharmonics while practicing scales, fingerings can easily vary from one playing of the scale to the next. Ascending and descending forms of the scale are likely to end up with different fingerings as well. With multiple enharmonics present, sections of a scale can be played very smoothly with a single breath direction, with other sections of the scale sounding choppy by contrast. In short, having so many choices can be confusing, and spontaneous fingerings do not always produce the best results. It is much better to choose a fingering beforehand.

A Solution

To get control over our scale fingerings, we will split the eight-note scales into two halves: the first four notes and the second four notes.

We can more easily see all the possible fingerings for a four-note grouping than we can for an eight-note grouping, and once fingerings are chosen, the four-note groups can be reassembled into eight-note scales.

It has been my experience, in the course of teaching the Dimi to others, that having a set fingering for a scale is helpful to the player new to the Dimi. Each major scale is mastered more quickly because we have reduced choices and confusion. Later, once the pattern is internalized, alternate fingerings of the enharmonic notes in each key can be highlighted and practiced. This systematic approach can lead to a much quicker comprehension of the Dimi layout.

The Fingerings

The fingerings I have chosen for each four-note grouping (which we will refer to as a tetrachord from now on) are ones that maximize breath changes. This keeps the articulation sounding even, as almost every note change is a breath change. Same-breath-direction phrasing can be worked on later as a valuable contrast.

Three Sets of Fingerings (and one alternate)

As we know, due to the symmetrical nature of the Diminished layout, there are only three sets of patterns to learn to play any scale or phrase in every key. In other words, the first three keys each lay in a unique pattern on the Dimi, but after that, each new key is a pattern repeat of one of the first three.

With regard to playing all major scales, we could conclude that three sets of seven-note patterns will allow us to play all the major scales. This is true, but it turns out that the eight-note major scale can be simplified further into two identical four-note patterns, or tetrachords. This means we can play all the major scales with three sets of tetrachords. In this case, they happen to be “Ionian” tetrachords, also called “Major” tetrachords.

These three sets of fingerings can be categorized into “Types” based on the fingering we start with.

Type	**Starts on**
Type I	Blow note
Type II	Blow/slide note
Type III	Draw Note
Type IV or Alternate Type I	Draw/slide note

The term “Type IV” can be used, but it is most useful to think of the tetrachord starting on a draw-slide note as an alternate fingering for a Type I tetrachord.

Type I Ionian Tetrachord

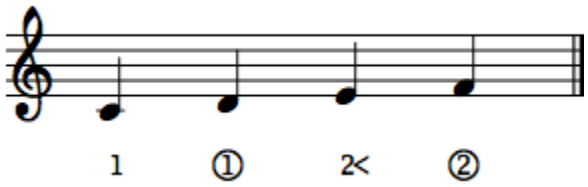
Let us say we are working with a C Major scale [C D E F G A B C]. The Major scale has seven unique notes, but we will repeat the root note, C, at the top of the scale, giving us eight notes total.

Cut the scale in half and take the first four notes [C D E F]. This set of four notes is called a “tetrachord”, with “tetra” meaning four. Since it is the first half of the Major scale it is sometimes called a Major tetrachord. The Major scale is also known as the Ionian mode, so the tetrachord is also sometimes called the Ionian tetrachord. For our purposes, the names are interchangeable.

Here is the fingering for the Type I Ionian tetrachord. It is one of two possible fingerings for this tetrachord, but we will choose the one that maximizes breath changes.

This tetrachord starts on a blow note, so we will call it a Type I tetrachord.

Type I C Ionian Tetrachord



The intervallic structure of this tetrachord is as follows:

The notes C and D form a whole step (W).
D and E form another whole step (W).
E and F form a half step (H).

We can say that the Ionian tetrachord is characterized by this sequence of intervals:

[W W H]

All Ionian tetrachords will have this sequence of intervals, no matter what note they start on.

Type II Ionian Tetrachord

Look at the second four notes of the C Major scale:

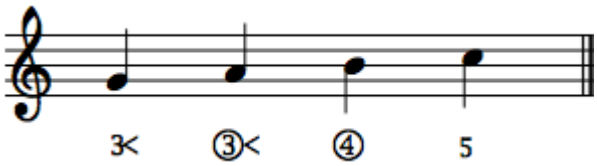
[G A B C]

This is also an Ionian tetrachord. We know this because the sequence of notes has the correct intervallic structure: [W W H].

Here is a fingering for the G Ionian tetrachord that maximizes breath changes. It is one of four possible fingerings for the G Ionian tetrachord.

We will call this a Type II tetrachord because it starts on a blow-slide note.

Type II G Ionian Tetrachord



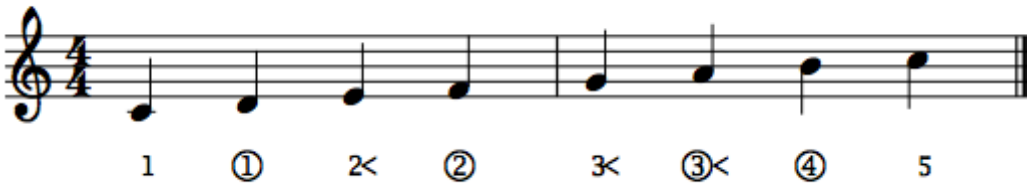
The note A in the G Ionian tetrachord can use either the draw-slide or the blow version of the note and still effectively maximize breath changes. I call this a “Hybrid” note. Nevertheless, I follow the above fingering as the default. As an aside, the choice of this fingering for the A means that the breath changes are the same as they are on the Solo tuning (although the slide movement is different).

Putting the Tetrachords Together: Type I Major Scale

Once we learn these two tetrachords, and master these fingerings, we can simply put the two together and play a C Major scale fluently.

We will call this a Type I Major scale because it starts on a blow note, C.

Type I C Major scale



Our second tetrachord, built on G, starts a whole step above F, the last note of the first tetrachord. This gives us a pattern of two tetrachords, with a whole step interval in between. [WWH] + W + [WWH].

We can say that a Type I Major scale = Type I Ionian tetrachord + W + Type II Ionian tetrachord.

(It may also help to see that the second tetrachord starts on the note that is a 5th above the first note of the scale. In this case, G is a 5th above C).

Type III Ionian Tetrachord

Now look at the G major scale [G A B C D E F♯ G].

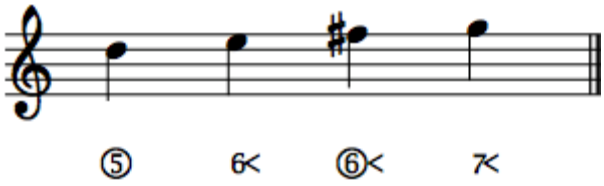
We already know the first tetrachord [G A B C].

The second half of the scale is [D E F♯ G]. Notice that it follows the correct pattern of intervals to form an Ionian tetrachord, [W W H].

This is called a Type III tetrachord because it starts on a draw note, D.

Here is the fingering for a Type III Ionian tetrachord that maximizes breath changes. It is one out of two possible fingerings:

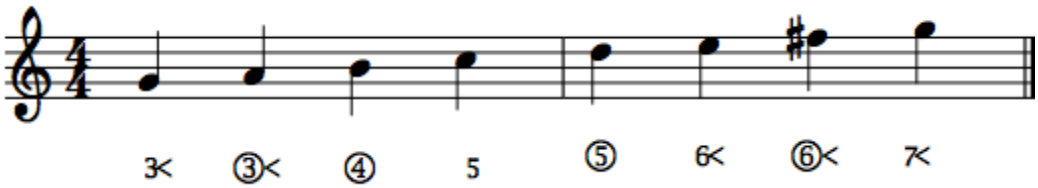
Type III D Ionian Tetrachord



Putting the Tetrachords Together: Type II Major Scale

Next, the two tetrachords are put back together to form the G Major scale. We can say that a Type II major scale (G Major starting on a blow-slide note) = Type II Ionian tetrachord + W + Type III Ionian tetrachord.

Type II G Major Scale



Return to the Type I Ionian Tetrachord

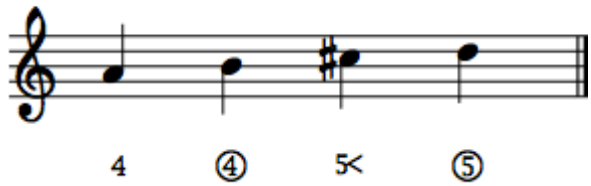
Let us look at a Type III Major Scale, D Major: [D E F♯ G A B C♯ D]. It is called a Type III major scale because it starts on a draw note, D.

We are already familiar with the Type III D Ionian tetrachord [D E F♯ G].

Now look at the second four notes, the A Ionian tetrachord [A B C♯ D].

The A Ionian tetrachord is a Type I Ionian tetrachord, as it starts on a blow note. It has the same series of blow, draw, and slide patterns that the C Ionian tetrachord has. Due to the symmetrical nature of the Dimi layout, any Ionian tetrachord that starts on a blow note can use the same pattern we used on the C tetrachord.

Type I A Ionian Tetrachord

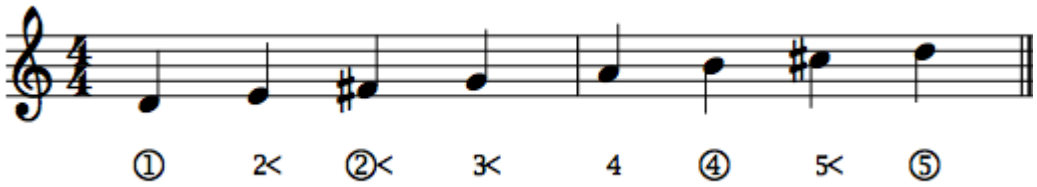


Notice that the A can also be played as hole 3 draw slide-in. The draw slide-in note is the fourth type of fingering available for a single note, and can be labeled Type IV, but when we use it in the context of a tetrachord or a scale, it simply becomes an alternate fingering for the Type I tetrachord. It is not a new type of tetrachord.

Putting the Tetrachords Together: Type III Major Scale

Put a Type III Ionian tetrachord together with a Type I Ionian tetrachord to form a Type III Major scale. (Notice that the D tetrachord has been moved down an octave in this example. The hole numbers will be different, but the pattern is the same).

Type III D Major Scale

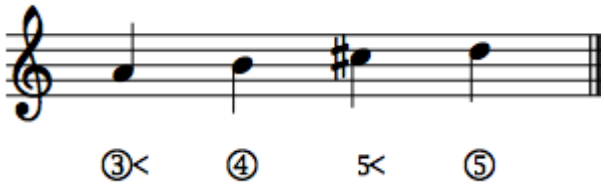


Exception to the Rule: Type I Ionian (Alternate) Fingering

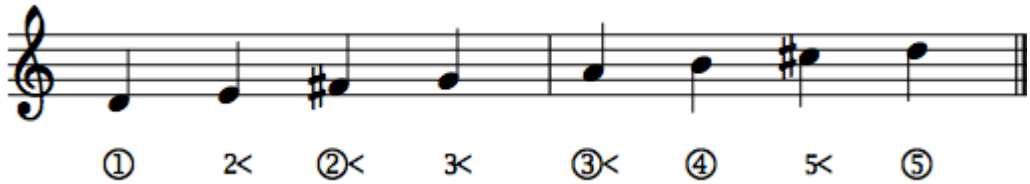
I introduce an alternate Type I Ionian tetrachord fingering at this point, because it will ultimately make learning easier. In the process of examining many diatonic Type III melodies, it became apparent that the 3rd degree of the scale and the 5th degree of the scale (the enharmonic notes) most often work best when they are both either blow notes or draw-slide notes.

The F# must use the draw-slide fingering to conform to the maximum breath change principle. Therefore, we choose the draw-slide fingering for the A to match the breath direction of the F#. I recommend that we use this alternate fingering for the Type I Ionian tetrachord when it is used as the top four notes of a Type III Major scale. Using the draw-slide fingering of the A will also make sense when playing the other modes of the D major scale.

The Type I Ionian Tetrachord (Alternate) fingering:



The D major scale would therefore have a fingering as follows:

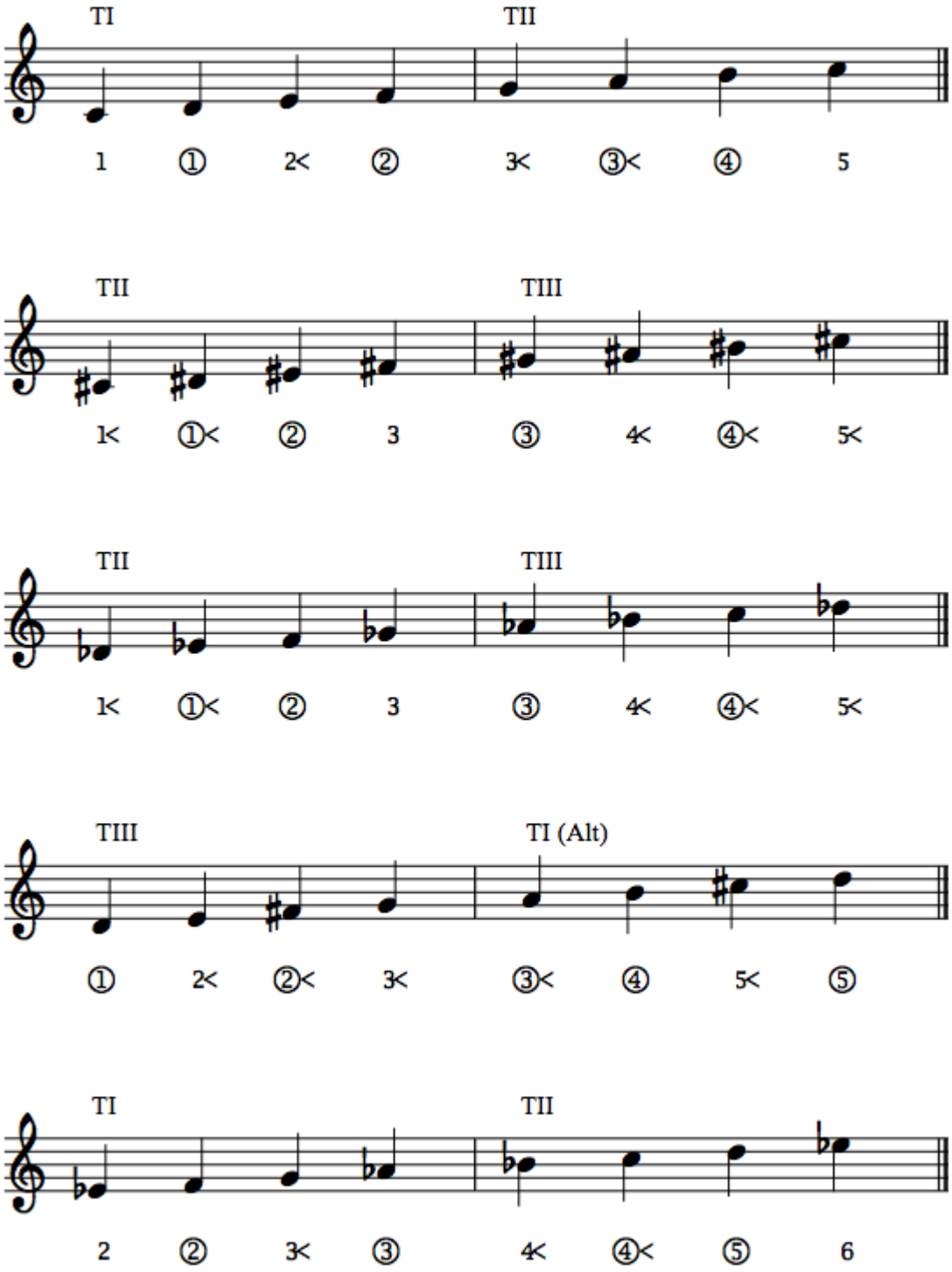


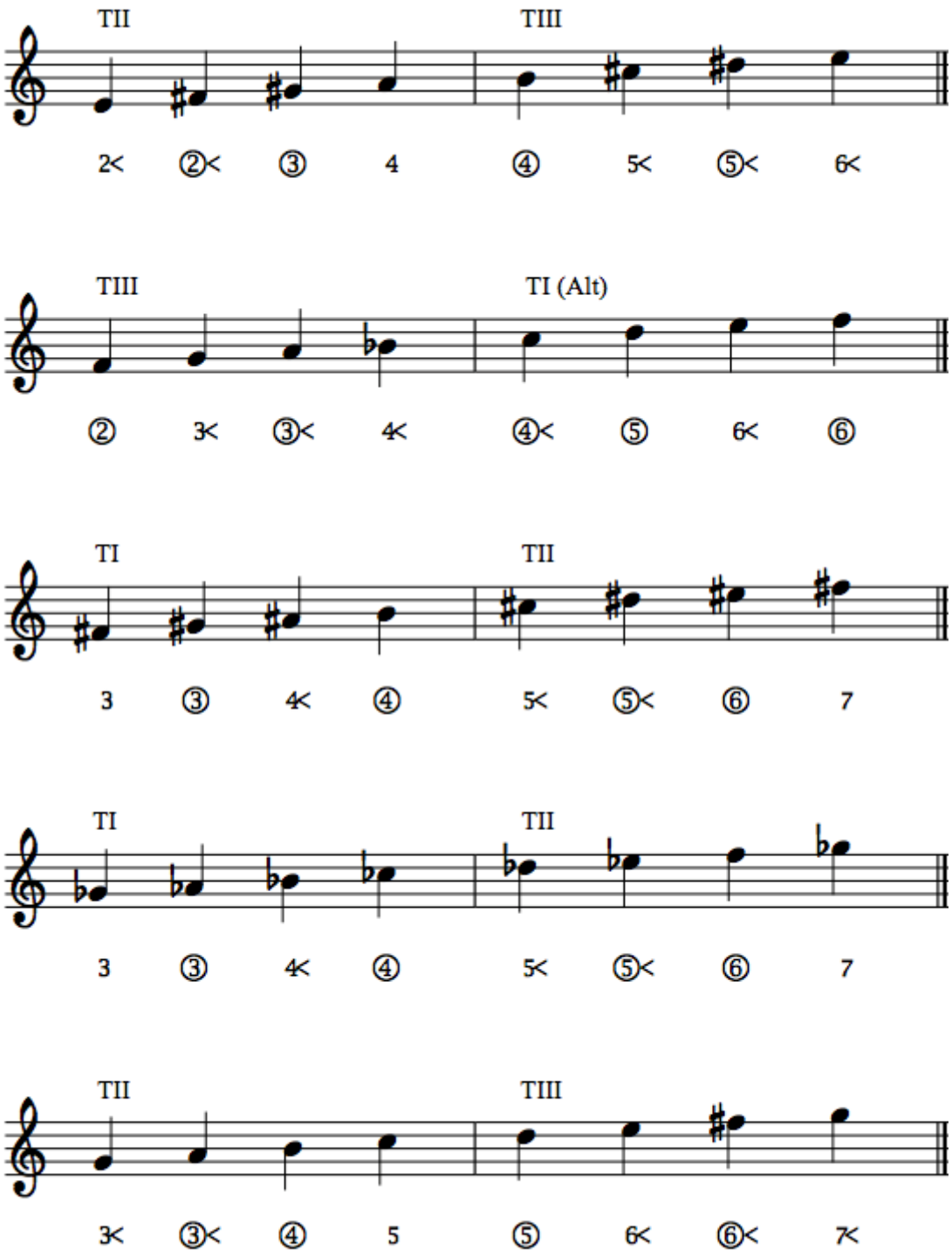
Playing Major Scales in Every Key

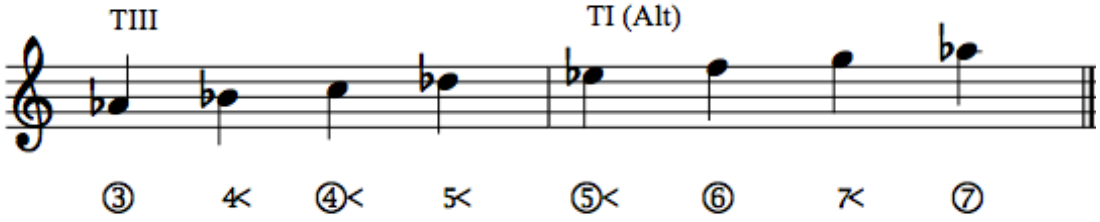
With the patterns we have learned for these three tetrachords, we have all that we need to play Major scales in every key.

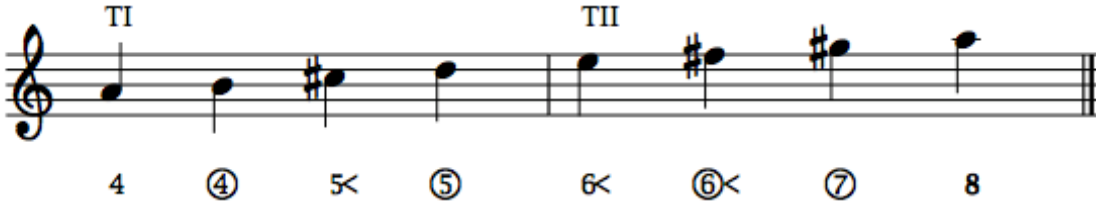
Type I Major scale = Type I Ionian tetrachord + W + Type II Ionian tetrachord
Type II Major scale = Type II Ionian tetrachord + W + Type III Ionian tetrachord
Type III Major scale = Type III Ionian tetrachord + W + Type I Ionian tetrachord (Alternate)

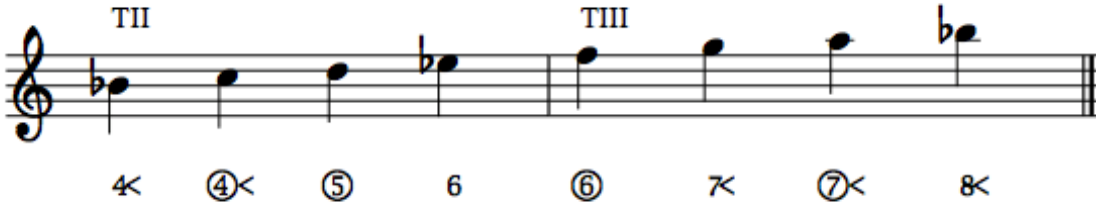
Below are listed the fingerings for all Major scales, including some enharmonic keys (here, the term enharmonic has the traditional meaning, which refers to notes with the same sound but having different names).

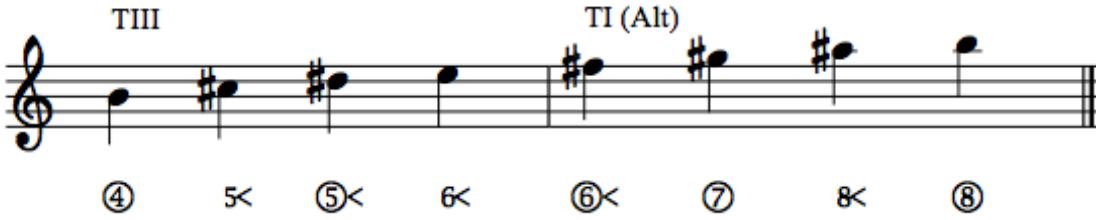

TI
TII
1 ① 2< ② 3< ③< ④ 5
TII
TIII
1< ①< ② 3 ③ 4< ④< 5<
TII
TIII
1< ①< ② 3 ③ 4< ④< 5<
TIII
TI (Alt)
① 2< ②< 3< ③< ④ 5< ⑤
TI
TII
2 ② 3< ③ 4< ④< ⑤ 6

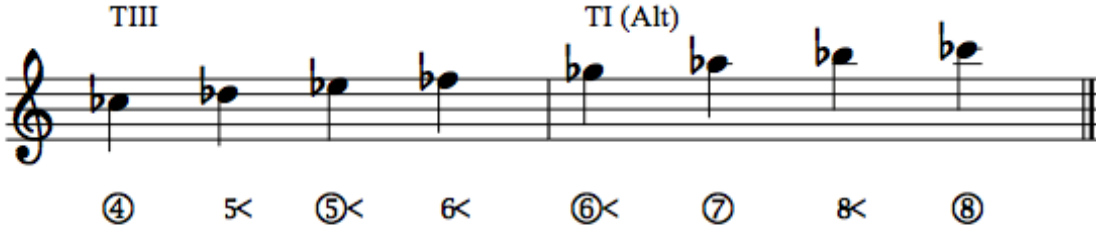

TII
TIII
2< ②< ③ 4 ④ 5< ⑤< 6<
TIII
TI (Alt)
② 3< ③< 4< ④< ⑤ 6< ⑥
TI
TII
3 ③ 4< ④ 5< ⑤< ⑥ 7
TI
TII
3 ③ 4< ④ 5< ⑤< ⑥ 7
TII
TIII
3< ③< ④ 5 ⑤ 6< ⑥< 7<


TIII
TI (Alt)
③ 4< ④< 5< ⑤< ⑥ 7< ⑦


TI
TII
4 ④ 5< ⑤ 6< ⑥< ⑦ 8


TII
TIII
4< ④< ⑤ 6 ⑥ 7< ⑦< 8<

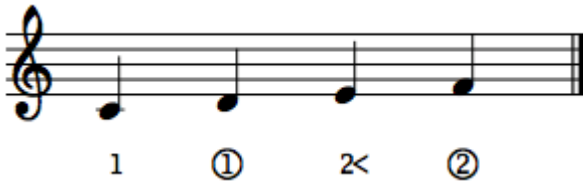

TIII
TI (Alt)
④ 5< ⑤< 6< ⑥< ⑦ 8< ⑧


TIII
TI (Alt)
④ 5< ⑤< 6< ⑥< ⑦ 8< ⑧

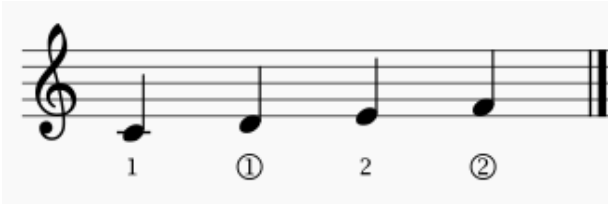
Similarities to Tetrachords on Solo Layout

For those of you already familiar with the traditional Solo layout chromatic harmonica, it may be interesting to note the similarities in breathing between the tetrachord fingerings on the Dimi and on the Solo.

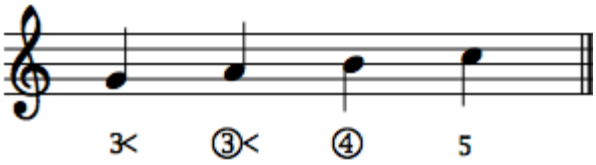
Dimi – Type I



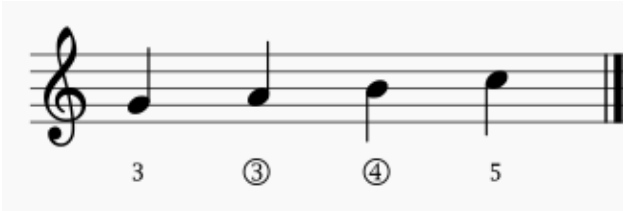
Solo



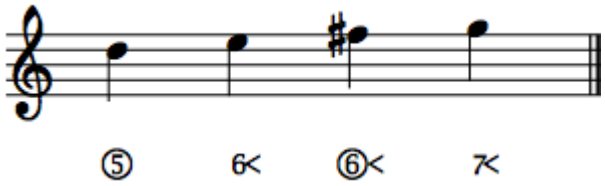
Dimi – Type II



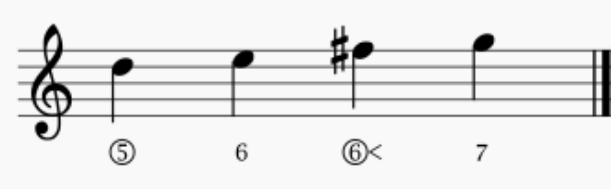
Solo



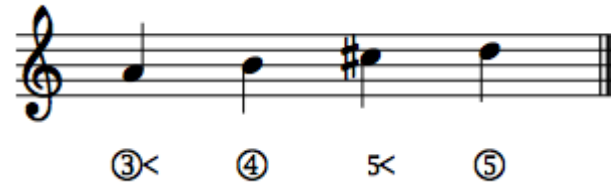
Dimi – Type III



Solo



Dimi – Alternate Type I



Solo