

# Chapter Four

## Diatonic Chords in Major and Minor Keys

### Introduction

Now that we have presented the four triad types and the five common seventh-chord types, we can begin to look at how they are used in tonal music, which is really what most of this book is about. Most chords in tonal music are made up only of notes from the scale on which the passage is based. That is, if a passage is in G major, most of the chords contain only notes found in the G major scale. Chords of this kind are called **diatonic** chords. All other chords—those using notes not in the scale—are called **altered** or **chromatic** chords. We will get to them later. At this point we are not going to worry about how you might *compose* music using diatonic chords, although that will come up soon. For now, we are going to concentrate on spelling and recognizing diatonic chords in various keys.

### The Minor Scale

Before we can begin talking about diatonic chords, we have to return to the problem of the minor scale. Because instrumentalists are taught to practice natural, harmonic, and melodic minor scales, we sometimes assume that the tonal composer had three independent minor scale forms from which to choose, but this is not at all how the minor mode works in tonal music.

We can make the following generalization about the three minor scales: there is, in a sense, one minor scale that has two scale steps,  $\hat{6}$  and  $\hat{7}$ , that are variable. That is, there are two versions of  $\hat{6}$  and  $\hat{7}$ , and both versions will usually appear in a piece in the minor mode. All the notes in Example 4-1 are diatonic to e minor. Notice the use of  $\uparrow\hat{6}$  and  $\uparrow\hat{7}$  to mean raised  $\hat{6}$  and  $\hat{7}$  and  $\downarrow\hat{6}$  and  $\downarrow\hat{7}$  to mean unaltered  $\hat{6}$  and  $\hat{7}$ .

#### Example 4-1

The musical notation shows the e minor scale on a treble clef staff. The notes are e, f, g, a, b, c, d, e. Above the notes are scale degrees:  $\hat{1}$ ,  $\hat{2}$ ,  $\hat{3}$ ,  $\hat{4}$ ,  $\hat{5}$ ,  $\hat{6}$ ,  $\hat{7}$ ,  $\hat{1}$ . Below the notes are diatonic chords:  $\downarrow\hat{6}$  (under c),  $\uparrow\hat{6}$  (under d),  $\downarrow\hat{7}$  (under e), and  $\uparrow\hat{7}$  (under f). Brackets connect the  $\hat{6}$  and  $\hat{7}$  notes to their respective chords.

How do composers decide which version of  $\hat{6}$  and  $\hat{7}$  to use? Melodically, the most graceful thing for  $\uparrow \hat{6}$  and  $\uparrow \hat{7}$  to do is to ascend by step, whereas  $\downarrow \hat{6}$  and  $\downarrow \hat{7}$  tend naturally to descend by step; these tendencies conform to the melodic minor scale. Example 4-2 provides a good illustration of the use of the minor scale. If you look closely at Bach's treatment of  $\hat{6}$  and  $\hat{7}$  (circled notes), you will see that all the motion is stepwise, with two exceptions. The first leap involving  $\hat{6}$  or  $\hat{7}$  is from the  $G\flat 4$  in m. 2. Here the eventual goal is F, not A, so the  $\downarrow \hat{6}$  form is used. The other leap occurs in the bass in m. 4. Here the goal of the line is  $B\flat$ , not  $G\flat$ , so the  $\uparrow \hat{7}$  form is used.



### Example 4-2

Bach, Well-Tempered Clavier, Book II, Prelude 22

If a  $\hat{6}$  or  $\hat{7}$  is left by leap instead of by step, there will generally be an *eventual* stepwise goal for that scale degree, and the  $\hat{6}$  and  $\hat{7}$  will probably be raised or left unaltered according to the direction of that goal, as in Example 4-2. In the next excerpt, Example 4-3, the  $A\flat 4$  in m. 1 ( $\downarrow \hat{6}$ ) is left by leap to the C5, but the eventual stepwise goal of the  $A\flat 4$  is the G4 in the next measure, so the descending form of the melodic minor is used. Still, the use of the melodic minor is just a guideline, not a rule. It is not difficult to find passages in minor where  $\uparrow \hat{6}$  and  $\uparrow \hat{7}$  lead downward, as in m. 3.



### Example 4-3

Bach, Well-Tempered Clavier, Book I, Fugue 2

And, in some cases,  $\downarrow \hat{6}$  and  $\downarrow \hat{7}$  lead upward (Ex. 4-4).



### Example 4-4

*Bach, Well-Tempered Clavier, Book I, Prelude 10*

In other instances,  $\uparrow \hat{7}$  and  $\downarrow \hat{6}$  appear next to each other, forming a harmonic minor scale (Ex. 4-5).



### Example 4-5

*Beethoven, Sonata Op. 2, No. 2, III, Trio*

The reasons for such exceptions to the typical tendencies of  $\hat{6}$  and  $\hat{7}$  are usually harmonic. As we shall see later in this chapter, most of the underlying harmonies in minor conform to the harmonic minor scale.

## CHECKPOINT

1. What is the term for chords that contain no notes outside of the scale? What about chords that do contain such notes?
2. Individual lines in tonal music tend to conform most closely to which of the three traditional minor scales?
3. Name the five common seventh-chord types.



## Diatonic Triads In Major

Triads may be constructed using any degree of the major scale as the root. (You might need to review scale degree names, which were introduced on p. 16, because they will be used more frequently from this point on.) Diatonic triads, as we have mentioned, will consist only of notes belonging to the scale. To distinguish the triads built on the various scale degrees from the scale degrees themselves, we use roman numerals instead of arabic numerals (for example, V instead of 5). The triad type is indicated by the form of the roman numeral itself.

Triad type	Roman numeral	Example
Major	Uppercase	V
Minor	Lowercase	vi
Diminished	Lowercase with a °	vii°
Augmented	Uppercase with a +	III+

Taking C major as an example, we can discover the types of diatonic triads that occur on each degree of the major scale.

### Example 4-6

Scale degree  
of the root

1̂ 2̂ 3̂ 4̂ 5̂ 6̂ 7̂

Roman numeral I ii iii IV V vi vii°

You should memorize the following table.

#### DIATONIC TRIAD TYPES IN MAJOR

Major	I, IV, and V
Minor	ii, iii, and vi
Diminished	vii°
Augmented	none

## Diatonic Triads in Minor

The construction of triads is somewhat more involved in the minor mode than in major. Because 6̂ and 7̂ are variable, and because nearly all triads contain 6̂ or 7̂, more diatonic triads are possible in minor. Nonetheless, there are seven triads in minor (one for each scale degree) that occur more frequently than the others, and these are the ones we will use in our exercises for now. The roman numerals of the more common diatonic triads are circled in Example 4-7.



8 9 10 11 12 13 14 15

b $\flat$ : \_\_\_\_\_ G: \_\_\_\_\_ d $\sharp$ : \_\_\_\_\_ C: \_\_\_\_\_ A: \_\_\_\_\_ c $\sharp$ : \_\_\_\_\_ B $\flat$ : \_\_\_\_\_ g: \_\_\_\_\_

B. In the exercises below you are given the name of a key and a scale degree number. *Without using key signatures*, notate the triad on that scale degree in root position and provide the roman numeral. In minor keys be sure to use the triad types circled in Example 4-7.

ex. 1 2 3 4 5 6 7

g:  $\text{vii}^\circ$  (7) B: (3) c $\sharp$ : (6) B $\flat$ : (4) E $\flat$ : (5) d $\sharp$ : (4) E: (5) d: (3)

8 9 10 11 12 13 14 15

a $\sharp$ : (4) B: (7) A: (4) d: (7) E $\flat$ : (5) b: (5) G $\flat$ : (6) D: (2)

C. Analysis. Write roman numerals in the spaces provided, making sure each roman numeral is of the correct type and includes an inversion symbol if needed. The tenor line sounds an octave lower than notated.



Brahms, "Ach lieber Herre Jesu Christ"

In anmutiger Bewegung

*p molto dolce*

Soprano

1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

Alto

1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

Tenor

1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

Bass

1. Ach lie - ber Her - re Je - su Christ, weil du ein Kind ge -

D: 1 2 3 4 5 6 7 8 9 10 11 12 13



we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

we - sen bist, so gib auch die - sem Kin - de - lein dein Gnad und auch den

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.

Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.

Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.

Se - gen dein; ach Je - sus, Her - re mein, be - hüt dies Kin - de - lein.

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

## Diatonic Seventh Chords In Major

In the next chapter we will begin simple composition exercises using triads, but seventh chords will not be used compositionally until later. Nevertheless, we will continue to work with seventh chords in spelling exercises and in analysis to build a solid foundation for those later chapters.

The chords on each scale degree in major can include a 7th above the root. The roman numeral system for seventh chords is similar to that for triads, as you will see in the following table.

Seventh-chord type	Roman numeral	Example
Major seventh	Uppercase with M7	I <sup>M7</sup>
Major-minor seventh	Uppercase with a 7	V <sup>7</sup>
Minor seventh	Lowercase with a 7	vi <sup>7</sup>
Half-diminished seventh	Lowercase with <sup>ø</sup> 7	ii <sup>ø7</sup>
Diminished seventh	Lowercase with <sup>o</sup> 7	vii <sup>o7</sup>

Four of the five seventh-chord types occur as diatonic seventh chords in major keys.

### Example 4-8

C: I<sup>M7</sup> ii<sup>7</sup> iii<sup>7</sup> IV<sup>M7</sup> V<sup>7</sup> vi<sup>7</sup> vii<sup>ø7</sup>

You should learn the following table, which summarizes major-key seventh chords.

#### DIATONIC SEVENTH CHORDS IN MAJOR

M7	I <sup>M7</sup> and IV <sup>M7</sup>
Mm7	V <sup>7</sup>
m7	ii <sup>7</sup> , iii <sup>7</sup> , and vi <sup>7</sup>
<sup>ø</sup> 7	vii <sup>ø7</sup>
<sup>o</sup> 7	none

## Diatonic Seventh Chords In Minor

Because of the variability of  $\hat{6}$  and  $\hat{7}$ , there are sixteen possible diatonic seventh chords in minor. Example 4-9 shows only the most commonly used seventh chords on each scale degree. The others will be discussed in later chapters. Notice that most of the notes in Example 4-9 belong to the harmonic minor scale.



**Example 4-9**

c: i<sup>7</sup> ii<sup>ø7</sup> III<sup>M7</sup> iv<sup>7</sup> V<sup>7</sup> VI<sup>M7</sup> vii<sup>ø7</sup>

Here is the last chord table to learn.

**COMMON DIATONIC SEVENTH CHORDS IN MINOR**

M7	III <sup>M7</sup> and VI <sup>M7</sup>
Mm7	V <sup>7</sup>
m7	i <sup>7</sup> and iv <sup>7</sup>
ø <sup>7</sup>	ii <sup>ø7</sup>
° <sup>7</sup>	vii <sup>ø7</sup>

Remember that the inversion symbols for seventh chords are  $\frac{6}{5}$ ,  $\frac{4}{3}$ , and  $\frac{4}{2}$ . This means that the V<sup>7</sup> in first inversion is symbolized as V<sub>5</sub><sup>6</sup>, *not* as V<sub>6</sub><sup>7</sup>. Also, remember that the symbol for a minor seventh chord does not include a lowercase "m." For instance, use ii<sup>7</sup>, not ii<sup>m7</sup>.

**CHECKPOINT**

1. Most of the five common seventh-chord types appear diatonically in both major and minor. Which one type does not?
2. Does the m7 chord occur on more scale steps in minor than in major?
3. The seventh chords on most scale steps are different qualities in major and minor. Which scale step is the exception to this?

**Self-Test 4-2**

(Answers begin on page 572.)

A. Given the key and the seventh chord, supply the roman numeral. Be sure your roman numeral is the correct type and includes inversion if applicable.

ex. 1 2 3 4 5 6 7

C: iv<sup>M7</sup> g: \_\_\_\_\_ E: \_\_\_\_\_ Ab: \_\_\_\_\_ f: \_\_\_\_\_ e: \_\_\_\_\_ A: \_\_\_\_\_ Eb: \_\_\_\_\_

8 9 10 11 12 13 14 15

f#: \_\_\_\_\_ d: \_\_\_\_\_ G: \_\_\_\_\_ F: \_\_\_\_\_ a: \_\_\_\_\_ b: \_\_\_\_\_ D: \_\_\_\_\_ Bb: \_\_\_\_\_

B. In the exercises below you are given the name of a key and a scale degree number. Without using key signatures, notate the seventh chord on that scale degree in root position and provide the roman numeral. In minor keys be sure to use the chord types shown in Example 4-9.

ex. 1 2 3 4 5 6 7

E:  $i^{M7}$  (4)    b: (1) —    Eb: (5) —    f#: (4) —    A: (5) —    f: (7) —    D: (1) —    G: (7) —

8 9 10 11 12 13 14 15

a: (6) —    F: (3) —    d: (1) —    Bb: (2) —    c#: (3) —    Ab: (4) —    g: (2) —    E: (6) —

C. Analysis. Put roman numerals in the spaces provided, making sure each roman numeral is of the correct type and includes an inversion symbol if needed.



1. Bach, "Nun lob', mein' Seel', den Herren"

A: 1 2 3 4 5 6 7 8 9 10



2. Schumann, *Chorale*, Op. 68, No. 4

G: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Exercise 4-2 See Workbook.

## Summary

Minor scale usage in tonal music is not really based on the natural, harmonic, and melodic minor scales, the three traditional minor scale forms presented in Chapter 1. In actual practice, scale steps  $\hat{6}$  and  $\hat{7}$  are variable. Although ascending and descending lines usually follow the conventions of the melodic minor scale, this is by no means always true. Both melodic and harmonic considerations must be taken into account.

We analyze the triads and seventh chords used in tonal music by means of *roman numerals* indicating the scale degree that is the root of the chord and the quality, or sound, of the chord. Although the issue of the minor scale is somewhat complicated, we can say that as a rule the following triad types are found on the various degrees of the major and minor scales:

Major	I	ii	iii	IV	V	vi	vii <sup>o</sup>
Minor	i	ii <sup>o</sup>	III	iv	V	VI	vii <sup>o</sup>

Similarly, we can generalize about the types of seventh chords:

Major	I <sup>M7</sup>	ii <sup>7</sup>	iii <sup>7</sup>	IV <sup>M7</sup>	V <sup>7</sup>	vi <sup>7</sup>	vii <sup>o7</sup>
Minor	i <sup>7</sup>	ii <sup>o7</sup>	III <sup>M7</sup>	iv <sup>7</sup>	V <sup>7</sup>	VI <sup>M7</sup>	vii <sup>o7</sup>

The roots of the triads and seventh chords in the minor mode portions of these tables all conform to the harmonic minor scale, but this is not necessarily true of the other notes in each chord.

In this chapter we have been concerned only with how diatonic triads and seventh-chords are spelled in tonal music. The more interesting and more complex topic of how they actually function in relation to each other will be the subject of later chapters.

## Variations



For additional review and practice, please see Chapter 4 on our web site at [www.mhhe.com/tonalharmony5](http://www.mhhe.com/tonalharmony5).