MD-981 MIDI Keyboard

RadioShack®
www.radioshack.com℠

Owner's Manual

Please read before using this equipment.

❏ *Contents*

❑ *Features*
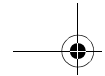
Your RadioShack MIDI Keyboard is a state-of-the-art keyboard with many exciting features. You can set the keyboard to sound like 100 different musical instruments or sound effects. To accompany your music, the keyboard has 100 rhythms, as well as auto accompaniments and percussion sounds.

Your keyboard also includes a MIDI (Musical Instrument Digital Interface) feature, which lets you connect it to other MIDI-equipped musical instruments or devices — even your personal computer.

This versatile keyboard can provide hours of fun and is ideal for anyone who wants to make music, from the beginner to the experienced musician.

Note: The keyboard conforms to most, but not all, General MIDI specifications. Because of this, you might experience some incompatibility when using the keyboard with another General MIDI device. For more information, see "Using MIDI" on Page 21.

Your keyboard's features include:

61 Full-Sized Keys — provide the feel of a fine musical instrument.

LCD Music Information Display — shows you a 'staff' with the notes and chords as you play them, along with the fingering, current tone, rhythm, volume, melody, and tempo. The display also shows a metronome icon to indicate the beat.

100 Tones — you can set your keyboard to sound like anything from a harpsichord to a honky-tonk piano.

100 Auto-Rhythms — give you a steady beat for many styles of music, from rhumba to slow rock.

100 Prerecorded Tunes — let you hear a sample of what you and the keyboard can do. You can play the tunes either one at a time or consecutively, and you can turn off the melody or accompaniment portion so you can play along with the tunes.

12-Note Polyphonic Sound — lets you play and hear up to 12 notes at the same time so you can play or create almost any type of music.

MIDI In/Out Jacks — let you connect the keyboard to another MIDI-equipped device.

Sustain Jack — lets you connect a sustain pedal (not supplied) to the keyboard so you can sustain your keyboard's sound.

Headphones/Output Jack — lets you connect headphones so you can play without disturbing others, or an external amplifier so you can play for a crowd.

Tune Control — lets you adjust the pitch of your keyboard so you can play in tune with other instruments.

Transpose Function — lets you instantly change the key of the music, even while you are playing.

Tempo Control — lets you speed up or slow down the tempo of any selected music pattern.

Chord Book — lets you easily see which keys to press and which fingers to use to form a chord, as well as a chord's name.

Three Power Options — let you power the keyboard from internal batteries (not supplied), standard AC power (with an optional adapter), or your vehicle's ciga-rette-lighter socket (with an optional adapter) so you can make music almost anywhere.

Notes:

• You can use an optional keyboard stand (available at your local RadioShack store) to mount the keyboard.

• This Owner's Manual explains how to use this electronic keyboard. It does not teach music.

THE FCC WANTS YOU TO KNOW

This equipment complies with the limits for a Class B digital device as specified in Part 15 of *FCC Rules*. These limits provide reasonable protection against radio and TV interference in a residential area. However, your equipment might cause TV or radio interference even when it is operating properly. To elimi-nate interference, you can try one or more of the following corrective mea-sures:

• reorient or relocate the receiving antenna

• increase the distance between the equipment and the radio or TV

• use outlets on different electrical cir-cuits for the keyboard and the radio or TV.

Consult your local RadioShack store if the problem still exists.

You must use shielded interface cables with this equipment.

☐ *Preparation*

Note: To connect a MIDI device to your keyboard, see "Making the MIDI Connec-tions" on Page 21.

CONNECTING POWER

You can power your keyboard in any of these ways:

• internal batteries

• standard AC power using an optional AC adapter

• a vehicle's cigarette-lighter socket using an optional DC adapter

Notes:

• Connecting an AC or DC adapter automatically disconnects any inter-nal batteries.

• Always disconnect the AC or DC adapter when you finish using the keyboard.

Preparation 5

Using Batteries

Your keyboard can use six AA batteries (not supplied) for power. For the best performance and longest life, we recommend RadioShack alkaline batteries.

Cautions:

- Use only fresh batteries of the required size and recommended type.

- Do not mix old and new batteries, different types of batteries (standard, alkaline, or rechargeable), or rechargeable batteries of different capacities.

Follow these steps to install batteries.

1. Slide **POWER/MODE** to **OFF**.

2. While pressing the tab on the battery compartment cover on the bottom of the keyboard, pull up the cover to remove it.

3. Place the batteries in the compartment as indicated by the polarity symbols (+ and –) marked below the compartment.

4. Replace the cover.

When the keyboard stops operating properly, replace the batteries.

Warning: Dispose of old batteries promptly and properly. Do not burn or bury them.

Caution: If you do not plan to use the keyboard with batteries for a week or more, remove the batteries. Batteries can leak chemicals that can destroy electronic parts.

Using AC Power

You can power the keyboard using a 9V, 800-mA AC adapter and a size M Adaptaplug™ adapter (neither supplied). Both are available at your local RadioShack store.

Cautions:

⚠ You must use a Class 2 power source that supplies 9V DC and delivers at least 800 mA. Its center tip must be set to negative and its plug must fit the keyboard's **DC 9V** jack. Using an adapter that does not meet these specifications could damage the keyboard or the adapter.

- Always connect the AC adapter to the keyboard before you connect it to AC power. When you finish, disconnect the adapter from AC power before you disconnect it from the keyboard.

Follow these steps to connect an AC adapter to the keyboard.

1. Slide **POWER/MODE** to **OFF**.

2. Set the DC adapter's voltage switch to 9V.

3. Insert the Adaptaplug adapter into the adapter's cord so it reads – TIP.

4. Connect the AC adapter's barrel plug to the **DC 9V** jack on the back of the keyboard.

5. Plug the AC adapter's other end into a standard AC outlet.

Using Vehicle Battery Power

You can power the keyboard from a vehicle's 12V power source (such as a cigarette-lighter socket) using a 9V, 800-mA AC adapter and a size M Adapta-plug adapter (neither supplied). Both are available at your local RadioShack store.

Cautions:

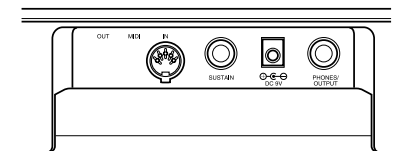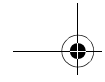⚠ You must use a power source that supplies 9V DC and delivers at least 800 mA. Its center tip must be set to negative and its plug must fit the keyboard's **DC 9V** jack. Using an adapter that does not meet these specifications could damage the keyboard or the adapter.

• Always connect the DC adapter to the keyboard before you connect it to the power source. When you finish, disconnect the adapter from the power source before you disconnect it from the keyboard.

Follow these steps to connect a DC adapter to the keyboard.

1. Slide **POWER/MODE** to **OFF**.

2. Plug the DC adapter's barrel plug into the cable so it reads – TIP.

3. Set the DC adapter's voltage switch to 9 volts.

4. Connect the DC adapter's barrel plug to the **DC 9V** jack on the back of the keyboard.

5. Plug the DC adapter's other end into your vehicle's cigarette-lighter socket.

CONNECTING HEADPHONES

To listen to your keyboard without disturbing others, you can connect an optional pair of stereo headphones with a $1/4$-inch (6.4-mm) plug. Your local RadioShack store sells a wide selection of headphones.

Insert the headphones' plug into the **PHONES/OUTPUT** jack on the back of the keyboard.

Note: Connecting headphones disconnects the keyboard's built-in speakers.

Listening Safely

To protect your hearing, follow these guidelines when you use headphones.

• Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.

• Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.

• Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

CONNECTING AN EXTERNAL AMPLIFIER

To amplify your keyboard's sound, you can connect it to an optional external amplifier using an audio cable with a $1/4$-inch (6.4-mm) plug (not supplied).

To connect an external amplifier to your keyboard, insert the cable's plug into the **PHONES/OUTPUT** jack on the back of the keyboard, and connect the cable's other end to the amplifier's input jack(s) (such as AUX IN or TAPE IN).

Your local RadioShack store sells a full line of amplifiers, speakers, and connection cables.

USING THE SHEET MUSICI STA12(as)NIER

❏ *Operation*

BASIC OPERATION

1. To turn on the keyboard, set **POWER/MODE** to **NORMAL**. The POWER/MODE indicator lights.

   Note: To save power when operating on batteries, the keyboard automatically turns off after about 6 minutes if you do not press a key. To turn on the keyboard again, set **POWER/MODE** to **OFF** then back to **NORMAL**.

2. To hear a sample of the keyboard's many sounds, play a prerecorded tune (see "Playing the Prerecorded Tunes"). To make your own music, simply begin playing the keyboard.

   Notes:

   • The keyboard automatically selects the tone PIANO 1 (No. 00) when you turn the power on. To select a different tone, see "Selecting/Playing a Preset Tone" on Page 12.

   • To select an auto-rhythm, see "Using the Preset Auto-Rhythms" on Page 14.

   • To play auto accompaniment, see "Using Auto Accompaniment" on Page 15.

3. Repeatedly press **MAIN VOLUME ▲** or **▼** to increase or decrease the volume. The current setting appears.

Notes:

• The keyboard's volume ranges from 0 (no sound) to 9 (maximum). Each time you turn on the keyboard, the volume is set to 7.

• To quickly change the volume setting, hold down **MAIN VOLUME ▲** or **▼**.

• To quickly return to the default volume setting of 7, press both **MAIN VOLUME** buttons at the same time.

• The volume level differs depending on the tone, accompaniment, or song you selected.

4. To turn off the keyboard, set **POWER/MODE** to **OFF**. The POWER/MODE indicator turns off.

Cancelling Auto Power Off

The keyboard automatically turns itself off when you use batteries to power it. To have the keyboard not automatically turn off during a session, turn on the keyboard while holding down **TONE**.

The next time you turn the keyboard off then back on again, it will automatically turn off after about 6 minutes.

PLAYING THE PRERECORDED TUNES

You can sit back and listen to the 100 tunes that come prerecorded in the key-

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Operation 9
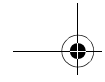
board, or you can turn off a tune's melody or accompaniment and play along on the keyboard.

Playing Back a Prerecorded Tune

1. Press **SONG**. An indicator appears next to **SONG** and the number of the current tune appears.

   Note: The keyboard always selects the tune "A Whole New World" (No. 00) the first time you press **SONG** after turning the power on.

2. Choose a tune from the 100 SONGS list and enter its two-digit number on the keypad.

   Or, you can press **–** or **+** to move to the next higher or lower numbered tune.

   Notes:

   • Precede a single-digit number with a 0. For example, to select 07 ("O Christmas Tree"), press **0 7**.

   • If you enter an incorrect first digit, press **SONG** to clear your entry, then enter the correct digit.

3. Press **PLAY/PAUSE** or **START/STOP** to start playing the tune.

   You can change the tune by repeating Step 2 even while a tune is playing. The new tune immediately begins to play.

   As a tune plays, the display shows:

• a "score" to show you the notes that are playing (right side of the display)

• a "keyboard" to show you the fingering and which keys are pressed (bottom of the display)

• a "metronome" to show you the selected tempo — the metronome's bar swings along with the tempo you selected, and the black dots above the metronome show the beat count in the measure

• the chord name (except for tunes 80 to 99, center right of the display)

• "hands" that show the fingering to play the tune and chords

Note: Each tune plays a different preset tone for the melody, but you can change to another tone even while the tune is playing. Follow the steps under "Selecting/Playing a Preset Tone" on Page 12 to select a different tone.

4. Use **MAIN VOLUME** to adjust the overall volume as desired.

   To adjust only the accompaniment volume (except tunes 80 to 99), press **ACCOMP VOLUME** then enter

the desired volume level using the number keys (between **0** and **9**) or press **+** or **–** within 5 seconds.

5. To move to a particular section of a tune, hold down **REW** or **FF** during play. When you think you have reached the section you want, release **REW** or **FF** to resume normal play.

6. To change the tempo, press **TEMPO** ▼ or ▲. The current tempo setting appears.

   Notes:

   • To quickly slow down or speed up the tempo, hold down **TEMPO** ▼ or ▲.

   • To reset the tempo to its default (original) speed, press **TEMPO** ▲ and ▼ at the same time.

   • Tunes 80 to 99 are arranged so the tempo changes during play. However, if you select a tempo other than the default tempo, those tunes play in the newest tempo.

7. To temporarily stop playing the tune, press **PLAY/PAUSE** again. To stop the tune completely, press **STOP**.

Playing Along with a Prerecorded Tune

Follow these steps to have the keyboard not play the melody of a prerecorded tune, so you can!

Note: You can find the scores for most of the prerecorded tunes in the *Play Guide for the Prerecorded Tunes*, supplied with your keyboard.

1. Select and enter the tune you want to play.

2. Press **ON/OFF RIGHT** to turn off the melody. **R** disappears from the "hands," indicating that the keyboard is not playing the right-hand portion of the music.

   Press **ON/OFF LEFT** to turn off the accompaniment. **L** disappears from the "hands."

   Notes:

   • Tunes 80 to 99 are solo tunes. You can turn off either the right-hand or left-hand portion, but not both.

   • If you select tunes 00 through 79 and turn off both the melody and accompaniment, the keyboard plays an obligato accompaniment (a simple background accompaniment).

3. Press **PLAY/PAUSE** to start play.

4. Adjust the tempo and volume as desired.

5. Play along with the tune on the keyboard.

   Note: You can turn the melody on or off by repeating Step 2 even while the current tune is playing.

6. To temporarily stop playing the tune, press **PLAY/PAUSE** again. To stop the tune completely, press **STOP**.

Turning Applause Off/On

When you turn off either the melody
accompaniment and then play a tu
applause automatically sounds at
end of the tune. To turn off the appla
hold down **STOP** and press eithe
OFF LEFT or **ON/OFF RIGHT**. `Apls`
appears. To turn the applause o
press the same buttons. `Apls`
pears.

Consecutively Playing
the Tunes

Normally, the tune you
continuously until you p
play all 100 prerecorded
tively, press either **TC**
then press **PLAY/PAU**
plays the tunes in se
Tune 00.

To stop consecu   press
STOP or **START/S**

USING THE   T
TONES

Your keyboa   nd like 100 differ-
ent musica   nts or sound ef-
fects. The   d two-digit number
for each   e is listed on the 100
TONES l   e keyboard's top panel.

Notes:

• T   yboard has 12-note (maxi-
         polyphonic sound. This
         ns that you can play up to 12
         erent notes at the same time with
         ost of the keyboard's preset tones.
         Some of the keyboard's preset
         tones, however, are capable of only
         6-note polyphony.

keyboard have
processed using
d digital sampling.
n level of tonal qual-
are taken in the low,
n ranges and are then
o sound amazingly close
iginals. You might notice
ght differences in volume or
quality for some tones when
lay them at different positions
the keyboard. This is an unavoid-
le result of multiple sampling and
s not a malfunction.

• Some sound effect tones, such as
PERCUSSION (No. 99), do not fol-
low the musical scale when played,
but change effect as you play them
in different octaves on the keyboard.

Selecting/Playing a Preset
Tone

1. Press **TONE**. An indicator appears
next to TONE and the current tone's
number appears.

   Note: Each time you turn the key-
board on, it automatically selects the
tone PIANO 1 (No. 00).

2. To play a different tone, choose a
preset tone from the 100 TONES list
and enter its two-digit number on
the keypad. As you press the keys,
the selected digits appear.

   Or, you can use **+** or **−** to move to
the next higher or lower numbered
tone.

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Notes:

• Precede a single-digit number with a 0. For example, to select ELEC PIANO 1 (No. 04), press **0 4**.

• If you enter an incorrect first digit, press **TONE** to clear your entry, then enter the correct digit.

3. Play the keyboard to hear the selected tone and adjust **MAIN VOLUME** to the desired level.

4. To select a different tone, repeat Steps 1 and 2.

Keyboard Split Tones

The preset tones numbered 90 through 96 on your keyboard let you automatically play two different musical instruments or sound effects independently on opposite sides of the keyboard.

The instrument listed first in the tone's name plays on the left half of the keyboard (below middle C). The instrument listed next plays on the right half of the keyboard (above middle C). For example, BS/PNO (No. 90) plays a bass tone on the left half of the keyboard and a piano tone on the right.

Layered Tones

The preset tones numbered 80 through 89 on your keyboard let you automatically play two different layered tones at the same time when you press one key. For example, STR PNO (No. 80) plays string and piano tones when you press a key.

Percussion Sounds

PERCUSSION (No. 99) lets you play the 35 different percussion sounds shown here. The symbol for each sound appears above the corresponding key on the keyboard.

	Bass Drum		Cowbell
	Side Stick		Crash Cymbal 2
	Acoustic Snare		Claves
	Hand Clap		Ride Cymbal 2
	Electric Snare		High Bongo
	Low Floor Tom		Low Bongo
	Closed Hi-Hat		Mute High Conga
	High Floor Tom		Open High Conga
	Pedal Hi-Hat		Low Conga
	Low Tom		High Timbale
	Open Hi-Hat		Low Timbale
	Low-Mid Tom		High Agogo
	High-Mid Tom		Low Agogo
	Crash Cymbal 1		Cabasa
	High Tom		Maracas
	Ride Cymbal 1		Voice Bass Drum
	Chinese Cymbal		Voice Snare
	Ride Bell		Voice Closed Hi-Hat
	Tambourine		Voice Open Hi-Hat
	Splash Cymbal		

Note: When you select the Fingered or Concert Chord mode, the keys in the lower 1½ octaves become the accom-

paniment keys and do not produce per-cussion sounds. See "Using Auto Accompaniment" on Page 15.
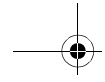
USING THE PRESET AUTO-RHYTHMS

Your keyboard has 100 preset auto-rhythms that provide a steady beat for your music. The name and two-digit number of each preset auto-rhythm is listed on the keyboard's top panel.

You can play a preset auto-rhythm on the keyboard in any of the following ways:

- select and play a rhythm (see "Selecting/Playing an Auto-Rhythm")

- synchronize the start of a rhythm with your music (see "Using SYN-CHRO" on Page 15)

- briefly vary the pattern of a rhythm (see "Using FILL-IN" on Page 15)

Selecting/Playing an Auto-Rhythm

1. Press **RHYTHM**. An indicator appears to the right of **RHYTHM** and the number of the current auto-rhythm appears.

   Note: Each time you turn on the keyboard, it automatically selects the rhythm Club Pop (No. 00).

2. To select a different rhythm, choose an auto-rhythm from the 100 RHYTHMS list and enter its two-digit number on the keypad. Or, repeatedly press **+** or **−** to move to the next higher or lower numbered rhythm.

   Notes:

   - Precede a single-digit number with a 0. For example, press **0 5** to select POP BALLAD (No. 05).

   - If you incorrectly enter the first digit of the rhythm, press **RHYTHM** to clear the entry and return to the last selected auto-rhythm.

3. Press **START/STOP** to start the selected auto-rhythm.

4. Adjust **MAIN VOLUME** and **ACCOMP VOLUME** to the desired level (see "Adjusting the Accompaniment Volume" on Page 15).

5. To change the auto-rhythm speed, press **TEMPO ▼** or **▲**. The current tempo setting appears.

   Notes:

   - You can adjust the tempo to play an auto-rhythm from 20 to 255 beats per minute.

   - To quickly slow down or speed up the tempo, hold down **TEMPO ▼** or **▲**.

   - To reset the tempo to its default (original) speed, press **TEMPO ▲** and **▼** at the same time.

6. Play the keyboard along with the auto-rhythm.

7. To select a different rhythm, repeat Steps 1 and 2.

8. To stop the auto-rhythm, press **START/STOP** again.

Using SYNCHRO

This feature lets you synchronize the start of an auto-rhythm with the beginning of your music.

After you select and enter an auto-rhythm, press **SYNCHRO/FILL-IN**. The bars of the metronome flash to show the keyboard is in a standby mode.

Begin playing the keyboard. The keyboard automatically begins to play the rhythm when you press any key within the first $1^1/_2$ octaves of the lower end of the keyboard (the first 18 keys from the left side of the keyboard).

Using FILL-IN

This feature lets you insert a short (1- to 2-measure) variation in the beat pattern of a selected auto-rhythm.

Simply press and release **SYNCHRO/ FILL-IN** while the auto-rhythm is playing. The keyboard inserts a 1- to 2-measure variation, then the original rhythm automatically resumes at the end of the current measure.

USING AUTO ACCOMPANIMENT

The 18 keys on the left side of the keyboard with note labels above them are called *accompaniment keys.*

Accompaniment Keyboard   Melody Keyboard
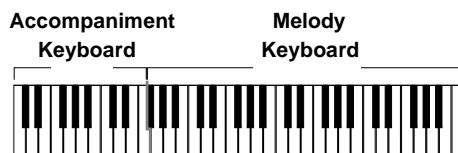
You can set the keyboard to play two different types of auto accompaniment using the accompaniment keys.

- *Concert Chord* — lets you play chords on the accompaniment keys using chord formations of from one to four notes. The number of keys you press determines the type of chord that plays (see "Concert Chord" on Page 16).

- *Standard Fingering* — lets you play chords on the accompaniment keys using standard chord formations of three or four notes (see "Standard Fingering" on Page 17).

Notes:

- You can use the keyboard's rhythm controls (**FILL-IN** and **SYNCHRO**) with both types of auto accompaniment.

- After you press the auto accompaniment keys, the keyboard plays the same chord until you press other keys to play a different chord or press **START/STOP**.

Adjusting the Accompaniment Volume

The keyboard lets you adjust the volume of your accompaniment separately from the overall volume of the keyboard.

1. Press **ACCOMP VOLUME**. The current accompaniment volume setting appears next to `Acomp Vol`.

2. Within 5 seconds, enter a number from **0** (no sound) to **9** (loudest) on the keypad. The number appears as you press the key.

Or, press **–** or **+** to select the next lowest or highest accompaniment volume setting.

To reset the accompaniment volume to its default value of 7, press **–** and **+** at the same time.

Note: You can adjust the accompaniment volume separately for your keyboard play and prerecorded tune playback.

Concert Chord

The concert chord method lets beginning keyboard players easily select and play a chord.

The number of accompaniment keys you press determines the type of chor[illegible] that plays. This chart shows the cho[illegible] type that plays when you press o[illegible] two, three, or four accompaniment [illegible] at the same time.

Number of Keys Pressed	Ch[illegible]pe
	Major
	Minor (m)
	Dominant Seventh (7)
	Minor Seventh (m7)

The lowest note you pla[illegible] the key of the chord. For ex[illegible] lowest note is C, the ke[illegible] s a C chord.

Note: You can pr[illegible] led note(s) to the right of [illegible] note in the chord to prod[illegible] r, a dominant seventh, or m[illegible] th chord.

Follow the[illegible] start concert chord auto acc[illegible] nt.

1. Se[illegible] **R/MODE** to **CONCERT C[illegible]**
2. [illegible] two-digit auto-rhythm num- [illegible]
3. [illegible] start the auto-rhythm before the auto accompaniment, press **START/STOP**.

   Or, to synchronize the start of the selected auto-rhythm with your accompaniment, press **SYNCHRO/FILL-IN**.
4. Begin the accompaniment at the desired interval by pressing the desired accompaniment key(s).

   To play a melody along with the accompaniment, press any key(s) to the right of the accompaniment keys.
5. Adjust the tempo, **MAIN VOLUME**, and **ACCOMP VOLUME** to the desired levels.
6. To change chords without interrupting the rhythm, simply press the auto accompaniment key(s) required to form the new chord.
7. To stop auto accompaniment and the auto-rhythm, press **START/STOP**.

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Standard Fingering

The standard fingering method uses standard formations of three or four notes, and lets the experienced musician play a wider variety of accompaniment chords.

This chart shows the 15 chord types you can play on your keyboard by using standard fingering.
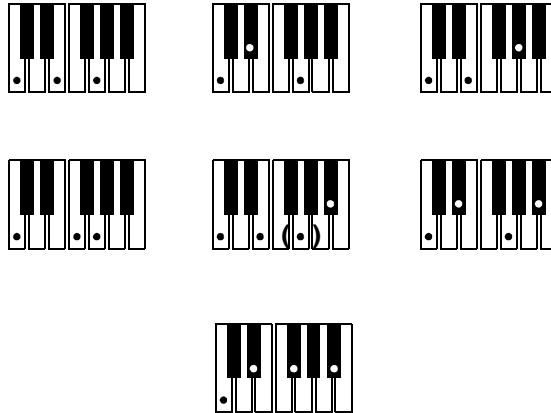
Notes:

* You do not have to press the key marked with parentheses on the keyboard in the preceding chart to produce a 7, m7, M7, mM7, 9, or m9 chord.

* This chart shows only one possible fingering position for each chord. It is possible to play a chord using several different positions. For example, the following three fingering positions produce the same C chord.

• When you play an aug, 7⁻5, or dim7 chord, the lowest note you play determines the root of the chord. Be sure that your fingering correctly defines the root you want.

Note: See "Standard Fingering Chord Charts" on Page 26 for a list of all the chords you can play on your keyboard using standard fingering accompaniment.

Follow these steps to start standard fingering auto accompaniment.

1. Set **POWER/MODE** to **FINGERED**.

2. Select and enter an auto-rhythm.

3. To start the auto-rhythm before your auto accompaniment, press **START/ STOP**.

   Or, to synchronize the start of the selected auto-rhythm with your accompaniment, press **SYNCHRO/ FILL-IN**.

4. Begin the accompaniment at the desired interval by pressing at least three accompaniment keys to play the desired chord.

   To play a melody along with the accompaniment, press any key(s) to the right of the accompaniment keys.

5. Adjust the tempo, **MAIN VOLUME**, and **ACCOMP VOLUME** to the desired levels.

6. To change chords without interrupting the rhythm, simply press the auto accompaniment keys required to form the new chord.

7. To stop auto accompaniment and the auto-rhythm, press **START/STOP**.

USING THE CHORD BOOK

You can use your keyboard's chord book display feature to see which keys to press and which fingers to use to form a chord. You can also display the name of a chord you play.

Follow these steps to use the chord book feature.

1. Set **POWER/MODE** to **NORMAL** or **CONCERT CHORD**, then press **CHORD BOOK**.

2. Press **CLEAR** (**0**) to clear any previous chord entry.

3. If you want to see information about a major chord while you play it, skip to Step 4. Otherwise (if the desired chord name is a minor chord), enter the chord's name using that chord's keys on the numeric keypad.

   For example, to enter a minor 7⁻5 chord, press **m** (**8**) **7** (**9**) **–5** (**2**). Or, to enter 7sus4, press **7** (**9**) and **sus4** (**1**).

4. Press the root key on the accompaniment keyboard to play the chord.

   As the chord plays, the display shows the chord you entered, the keys to press to form the chord (on the bottom "keyboard"), the fingers you need to use to play the chord (on the center "hands"), and the notes that make up the chord (on the staff display).

---

18   *Operation*

5. Use **–** or **+** to scroll through the chords associated with the root chord you entered in Step 3. Or, press a different root key to see the chords based on that key.

   Notes:

   • If the chord is not recognized by the keyboard, only a dash appears.

   • Since the keyboard automatically changes some chords so you can play them on the accompaniment keyboard, the keyboard might display some chords in inverted form.

   • The keyboard does not display some chords because the chords cannot be played within the accompaniment keyboard's range. See "Standard Fingering Chord Charts" on Page 26 for more information.

6. Using the center "hands" as a guide, play the displayed chord on the keyboard.

7. You can also display the name of the chord you play on the accompaniment keyboard. Press **CHORD BOOK**, press **CLEAR** to erase any previous entry, then play the chord on the accompaniment keyboard. The name of the chord appears.

8. When you have finished, press **CHORD BOOK** to turn off chord book.

❑ *Special Features*

CHANGING KEYS

The keyboard automatically selects the key of middle C each time you turn it on.

For added flexibility as you play, the keyboard lets you change (transpose) the musical key in which it plays.

Note: You cannot change the key while a prerecorded tune is selected or playing.

1. Repeatedly press **TRANSPOSE/ TUNE/MIDI** until **Trans** and the current key setting appear.

   Note: The number on the display is the number of "semitones" to which the keyboard is set, compared to its default key. A semitone is a measurement that represents the acoustical interval between the tones of any two keys on the keyboard. For example, the difference between C and C♯ or B and B♭ is one semitone. You can transpose the key down 6 semitones (to an F♯) and up 5 semitones (to an F) — a full octave.

2. Within 5 seconds, press **–** or **+** to lower or raise the key. Each time you press **–** or **+**, the number decreases or increases by 1 (semitone).

   As you raise the key, **1** is C♯, **2** is D, and so on. As you lower the key, **–1** is B, **–2** is B♭, **–3** is A, and so on.

Notes:

- You can also use the number keypad to quickly raise the key. Simply press the semitone change value (1 to 5).

- The keyboard automatically resets the key to the default value of 0 (middle C) each time you play a pre-recorded tune.

- Each preset tone plays within a specified range. If a key change causes a note to exceed its range, the same note sounds in the nearest octave.

- When you select preset tones 90 through 96 after changing the key, the keyboard split point changes accordingly (see "Keyboard Split Tones" on Page 13).

- Changing the key does not affect the PERCUSSION (No. 99) preset tone.

TUNING THE KEYBOARD

Although your keyboard never goes out of tune, it does let you adjust its pitch to match other instruments or musical recordings.

Note: You cannot tune the keyboard while a prerecorded tune is displayed or playing.

Follow these steps to tune the keyboard.

1. Repeatedly press **TRANSPOSE/ TUNE/MIDI** until the display shows **Tune** and the current pitch setting.

   Note: The number on the display is the number of "cents" to which the keyboard is currently tuned, compared to its default pitch. A cent is the measurement that represents the acoustical interval between two tones. 1200 cents equal 1 octave. You can tune the keyboard to within 50 cents (101 levels) of its default pitch.

2. Within 5 seconds, repeatedly press **–** or **+** to lower or raise the keyboard's pitch. Each time you press the key, the number decreases or increases by 1 (cent).

Notes:

- You can use the number keypad to raise the pitch by entering the cent change value.

- The keyboard automatically resets the tuning pitch to the default value of 00 (cents) each time you turn off the keyboard or play the pre-recorded tunes.

USING A SUSTAIN PEDAL

For added flexibility and control as you make music, you can connect an optional sustain pedal (available through your local RadioShack store). A sustain pedal lets you sustain the keyboard's sound.

To connect a sustain pedal to your keyboard, insert the plug on the pedal's cord into **SUSTAIN** on the back of the keyboard.

❑ *Using MIDI*

Your keyboard includes a feature called MIDI (Musical Instrument Digital Interface). MIDI is the universal standard for sending and receiving performance data between all types of electronic musical instruments, regardless of the manufacturer.

Using MIDI, you can play music on your keyboard and another instrument at the same time while pressing the keys on only one, record your music to a sequencer, acquire a wider selection of preset tones from a sound module, and much more.

ABOUT MIDI

Every MIDI-equipped instrument has MIDI OUT and IN terminals, and some also have a MIDI THRU terminal. Each of these terminals serves a different purpose.

MIDI OUT sends MIDI data to ("talks to") the other MIDI instrument(s).

MIDI IN receives ("listens to") MIDI data sent by the other MIDI instrument(s).

MIDI THRU lets you connect ("network") additional MIDI instruments, and sends along to other MIDI devices a copy of all data it receives through its MIDI IN terminal.

Your keyboard has **MIDI OUT** and **MIDI IN** terminals.

The cable that connects MIDI devices does not actually carry sound between them, like a speaker wire carries sound from a receiver to a speaker. Instead,

MIDI-equipped devices communicate with each other using digital codes (instructions). One MIDI device sends digital instructions representing exactly what is being played on it. The other MIDI device receives and translates those instructions, then produces (or records) the sound exactly as it was played on the first device.

Note: Connecting your keyboard to another MIDI device requires a MIDI cable (not supplied). See "Making the MIDI Connections."

MAKING THE MIDI CONNECTIONS

To connect your keyboard to another MIDI-equipped device, you must use a MIDI cable (available at your local RadioShack store).

Cautions:

• Always turn off power to your keyboard and the other MIDI device before you connect or disconnect MIDI cables.

• As you make the cable connections, be sure to align the MIDI cable pins with the matching holes on your keyboard's **MIDI OUT** and **MIDI IN** terminals. If you have trouble plugging in the cable, do not force it! You might damage the plug or the instrument.

To send MIDI data from your keyboard, use a MIDI cable to connect the keyboard's **MIDI OUT** terminal to the other device's MIDI IN terminal.

To receive MIDI data on your keyboard, use a MIDI cable to connect the keyboard's **MIDI IN** terminal to the other device's MIDI OUT terminal.

Note: You do not need to make both connections if you are only either sending or receiving.

MIDI DATA

Your keyboard can send and receive several different types of MIDI data. The keyboard's tones, rhythms, and other types of MIDI data are sent automatically as you play.

Notes:

- The keyboard's prerecorded tunes cannot be sent as MIDI data.

- For detailed specifications of the MIDI function, see the "MIDI Implementation Chart" on Page 31.

Note On/Off — specifies which keys are pressed (Note On) or released (Note Off). Also includes how loud a note is played as a value from 0 to 127.

Notes:

- The pitch of a note depends on the tone that is being used, as shown in the "Note Table" on Page 29.

- If the keyboard receives a "request" to play notes outside of its range (higher or lower), it automatically selects the same note in the nearest octave.

Program Change — specifies the tone. The keyboard sends program change data in the range of 0 to 99, corresponding to tone numbers. It receives data

within the same range if GM tone mapping is set to N, or in the range of 0 to 127 if GM tone mapping is set to G. In the latter case, tones in the range of 100 to 127 are translated to the closest tone that the keyboard has.

Pitch Bend — supplies pitch bend information. The keyboard's pitch changes as it receives a Pitch Bend message through the **MIDI IN** terminal.

Control Change — adds effects such as vibrato and volume changes applied during keyboard play. The message includes a control number (the effect type) and a control value (the on/off and depth of the effect).

Here is the data that can be received with this keyboard and the corresponding control number.

Effect	Control Number
Modulation	1
Volume	7
Pan	10
Hold1 (Sustain)	64

The keyboard can send Hold1 Control Change data only when you connect a sustain pedal and press it.

CHANGING MIDI SETTINGS

The keyboard lets you change two MIDI parameters, Tone Map and Keyboard Channel.

Keyboard Channel — sets the channel for sending MIDI data to an external device (Default: 01). The keyboard receives
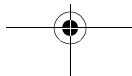
MIDI data on channels 1 through 4 and 10 only. The data received on other channels are ignored. For transmission of MIDI data, you can use any of 16 channels.

1. Repeatedly press **TRANSPOSE/TUNE/MIDI** until `Keybd Ch` appears.

2. Within 5 seconds, press **–** or **+** to select the channel you want.

Tone Map —sets the range of program change values received/recognized by this keyboard.

1. Repeatedly press **TRANSPOSE/TUNE/MIDI** until `TonMap=N` appears.

2. Within 5 seconds, press **–** or **+** to select the setting you want.

`N`: Normal Tone Map. This setting allows receipt of 0 to 99 program changes. Each program change corresponds to one of the keyboard's prerecorded tones.

`G`: General MIDI Tone Map. This setting allows receipt of all 0 to 127 program changes. Any data over 100 are translated to the closest tone the keyboard has. See "Note Table" on Page 29 for details.

Select `G` when you listen to General MIDI data from an external device.

NOTES ABOUT THE MIDI IMPLEMENTATION CHART

The "MIDI Implementation Chart" on Page 31 illustrates the details of the keyboard's MIDI function. An **O** in the chart means that the keyboard has this feature; **X** means it does not have this feature. The following notes explain what the keyboard can do.

Basic Channel — MIDI uses up to 16 channels to exchange data. As in a TV broadcast, different channels send different data. The keyboard can send data in any of 16 channels, but receives data only on channels 1 through 4 or 10.

Mode — The chart shows that Mode 3 is OMNI OFF, POLY. This means the keyboard sends and receives polyphonic data on only one channel at a time.

Note Number — This number represents each key of the keyboard. The lowest number (0) is five octaves below middle C. Since the keyboard's lowest note is two octaves below middle C and the highest is three octaves above middle C, your keyboard can send note numbers between 36 and 96 and receive note numbers from 0 through 127. The keyboard automatically assigns any key outside its range to a key within its key range.

Velocity — This number shows how fast the key was pressed, or how loud the note should sound. Pianissimo (1) is the lowest velocity, Fortissimo (127) is the loudest. A zero (0) means the key is released. Your keyboard can send volume level 75 or 100, and receive all volume levels from 0 through 127.

9n — This means that the Note On message is 9 hexadecimal, and n is the channel number.

Pitch Bender — The keyboard receives (but cannot send) pitch bending signals.

Control Change — This feature sends data on various controllers, each having its own number. For the details of each parameter, see "MIDI Data" on Page 22.

Program Change — This feature changes the preset sounds. Each sound number corresponds to a program number between 0 and 127. For more information, see "MIDI Data" on Page 22.

☐ *Troubleshooting*

If your keyboard is not performing as it should, these suggestions might help. If you still cannot solve the problem, take the keyboard to your local RadioShack store for assistance.

Trouble	Possible Cause	Remedy
No sound, even if keys are pressed.	The keyboard has turned off automatically.	Set **POWER/MODE** to **OFF** then **ON** again.
	Volume is turned down.	Repeatedly press **MAIN VOLUME ▲** to increase the volume.
	Headphones are connected.	Disconnect headphones.
	Power supply problem.	Check the power supply. Are battery symbols (+/–) facing correctly? Are the batteries fresh? Is the AC or DC adapter connected properly?
	You are pressing too few accompaniment keys while **POWER/MODE** is set to **FINGERED**.	Set **POWER/MODE** to **NORMAL** or **CONCERT CHORD**.
		Press 3 or 4 keys to form a chord while **POWER/MODE** is set to **FINGERED**.
No sound when connected to an external amplifier.	Volume is turned down.	Repeatedly press **MAIN VOLUME ▲** to increase the volume.
	Defective connection cord.	Replace the connection cord.
The key or tuning does not match when playing along with another MIDI instrument.	The tuning or transpose parameter is set to a value other than **0** or **00**.	Set the tuning or transpose to **0** or **00.**

Trouble	Possible Cause	Remedy
No sound when receiving and playing MIDI data.	MIDI cables are not connected properly.	Check the connection.
Bass notes in General MIDI data are sent out one octave lower.	Tone map parameter is set to **N**.	Set the tone map parameter to **G** (see "Changing MIDI Settings" on Page 22).
Sounds sent to another MIDI device by the keyboard do not sound correct.	The other device's MIDI THRU function is turned on.	Turn off the MIDI THRU function on the other device.
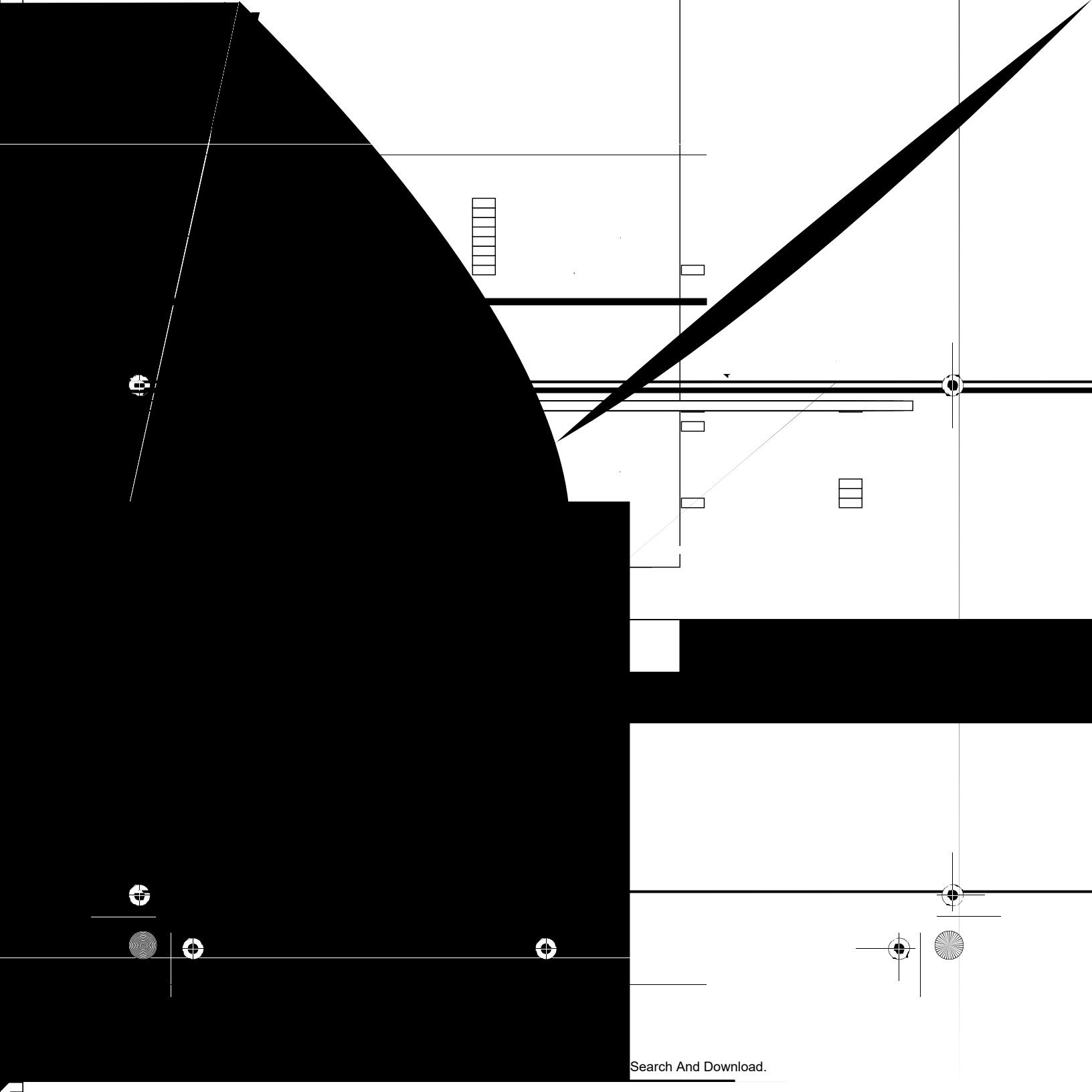
Root \ Chord Type	M7	m7-5	dim	aug	sus4
C	[5, 3, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
C# (Db)	[5, 3, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
D	[5, 3, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
Eb (D#)	[5, 3, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
E	[5, 3, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
F	[5, 3, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
F# (Gb)	[5, 3, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
G	[5, 4, 2, 1]	[5, 3, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
Ab (G#)	[5, 4, 2, 1]	[5, 4, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
A	[5, 4, 2, 1]	[5, 4, 2, 1]	[5, 3, 2]	[5, 3, 1]	[5, 2, 1]
Bb (A#)	[5, 4, 2, 1]	[5, 4, 2, 1]	[5, 3, 2]	*	[5, 2, 1]
B	[5, 3, 2, 1]	[5, 4, 2, 1]	[5, 3, 2]	*	[5, 2, 1]

Standard Fingering Chord Charts 27

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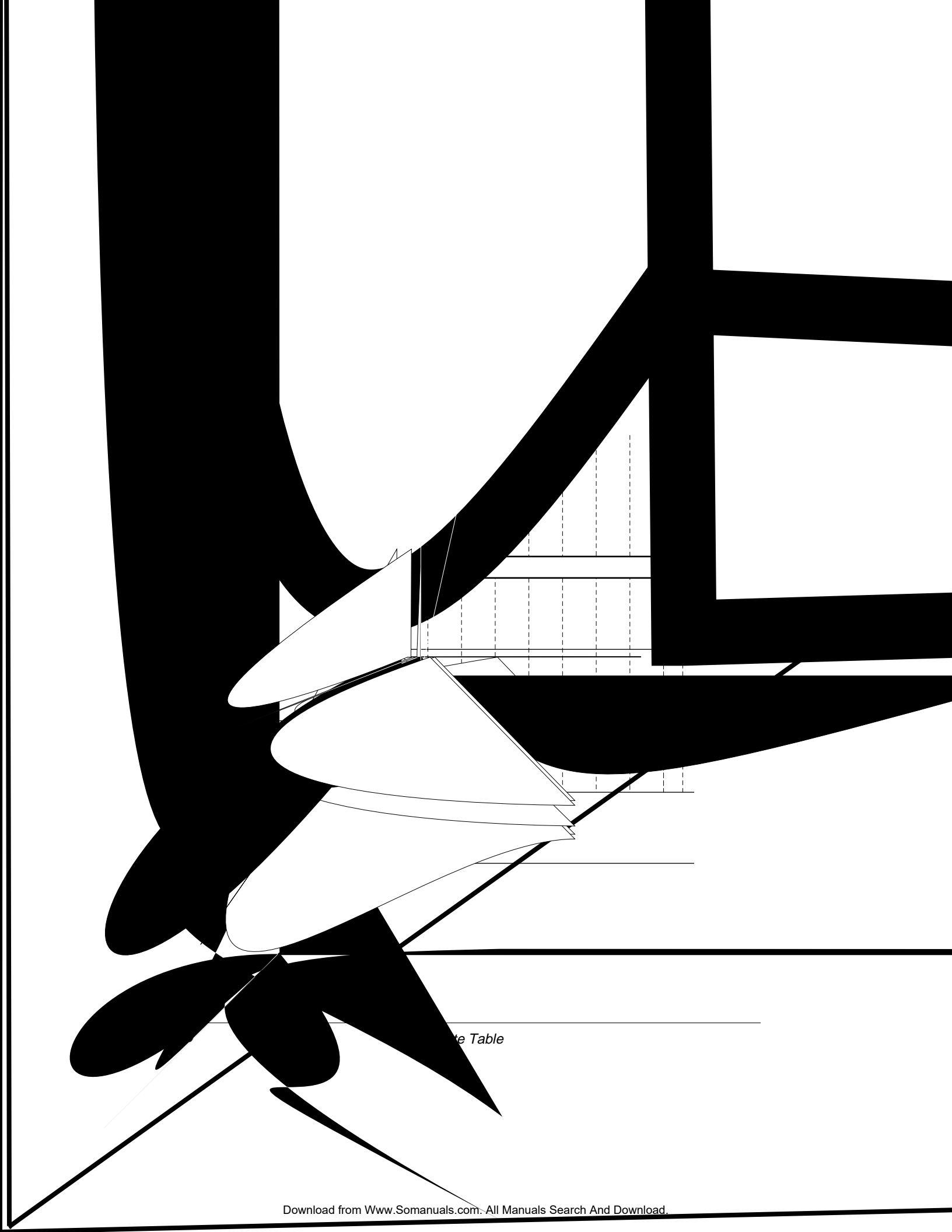
te Table

❒ *MIDI Implementation Chart*

FUNCTION		TRANSMITTED	RECOGNIZED	REMARKS
Basic Channel	Default Changed	1 1–16	1–4, 10 1–4, 10	
Mode	Default Messages Altered	Mode 3 X ********************	Mode 3 X ********************	
Note Number:	True voice	36–96 ********************	0–127 36–96 [*1]	[*1] Depends on tone
Velocity	Note ON Note OFF	O 9nH v=75,100[*2] X 9nH v=0	O 9nH v=1–127 X 9nH v=0, 8nH v=[*3]	[*2]: V(Velocity)=100 when note on date when the main volume value of this unit is 9 to 2, and V=75 when the main volume value is 1 or 0. [*3] no relation
After Touch	Keys Channels	X X	X X	
Pitch Bender		X	O	
Control Change	1 6, 38 7 10 11 64 100, 101 120 121	X X X X X O X X X	O X O O X O X X X	Modulation Data entry Volume Pan Expression Hold1 RPN LSB, MSB All sound off Reset all controller
Program Change:	True #	O 0–99 ********************	O 0–127[*4] ********************	[*4]: Depends on GM Tone Map setting When set to N, only the 100 normal list tones from 0 to 99 are received. When set to G, tone numbers 0 to 127 are received. Those that most closely match the 100 prerecorded tones of this keyboard are mapped to the applicable tone numbers (0 to 99)

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rk improperly.

Care and Maintenance

Use only fresh batteries of the required size and recommended type. Batteries can leak chemicals that damage your keyboard's electronic parts.

Wipe the keyboard with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the keyboard.

Modifying or tampering with the keyboard's internal components can cause a malfunction and might invalidate its warranty and void your FCC authorization to operate it. If your keyboard is not performing as it should, take it to your local RadioShack store for assistance.

☐ *Specifications*

Number of Keys 61

Polyphonic Sound .... 12-note (Max.)

Preset Tones 100

Auto-Rhythms 100

    Tempo .... Adjustable (20–255 Beats Per Minute)

    Other .... Fill-in and Synchro Start

Accompaniments .... Concert Chord, Fingered

Prerecorded Tunes .... 100 Tunes

Transpose .... (F♯~C~F: half-notes)

Tuning .... Adjustable A4 = 440 Hz ±50 cents

Built-In Speakers .... $4^3/_4$ Inch (12 cm) × 2 (Output 2W + 2W)

Terminals:

    Power Supply .... **DC 9V** Jack

    PHONES/OUTPUT Jack .... Output Impedance: 78 Ohms
                                                       Output Voltage: 4V (RMS) MAX
                                                               MIDI IN, OUT
                                             SUSTAIN $1/_4$-Inch Standard Jack

Power Sources .... DC: 6 AA batteries
                                                     AC: 120V, 60Hz, with AC adapter
                                      Vehicle Battery: 9V with DC adapter

Power Consumption .... 7.7 W

Dimensions (HWD) .... $4^1/_4 \times 36^{17}/_{32} \times 12^{15}/_{16}$ Inches
$(108 \times 929 \times 329$ mm)

Weight (Without Batteries) .... 8 lb 14 oz
(4 kg)

Included Accessories .... Sheet Music Stand
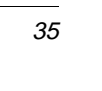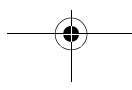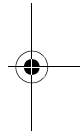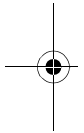*Play Guide for the Prerecorded Tunes*

Specifications are typical; individual units might vary. Specifications are subject to change and improvement without notice.
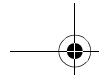
❏ *Notes*

Limited One-Year Warranty

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other than those provided by a RadioShack Authorized Service Facility; (c) consumables such as
fuses or batteries; (d) cosmetic damage; (e) transportation, shipping or insurance costs; or (f) costs
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