KURZWEIL™

Music Systems

Mark 3
Digital Piano

OWNER'S MANUAL

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KURZWEIL MUSIC SYSTEMS
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CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER NO USER SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

EXPLANATION OF GRAPHIC SYMBOLS

The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY AND INSTALLATION INSTRUCTIONS

INSTRUCTIONS PERTAINING TO THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

WARNING—When using electric products, basic precautions should always be followed, including the following:

1. Read all of the Safety and Installation Instructions and Explanation of Graphic Symbols before using the product.
2. Do not use this product near water—for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
4. The product should be located so that its location or position does not interfere with its proper ventilation.
5. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
6. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
7. This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
8. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power supply cord, do not pull on the cord, but grasp it by the plug.
9. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
10. The products should be serviced by qualified service personnel when:
    A. The power supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled, into the product; or
    C. The product has been exposed to rain; or
    D. The product does not appear to be operating normally or exhibits a marked change in performance; or
    E. The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond that described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.
12. **WARNING**—Do not place objects on the product's power supply cord, or place the product in a position where anyone could trip over, walk on, or roll anything over cords of any type. Do not allow the product to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

SAVE THESE INSTRUCTIONS

ASSEMBLY INSTRUCTIONS

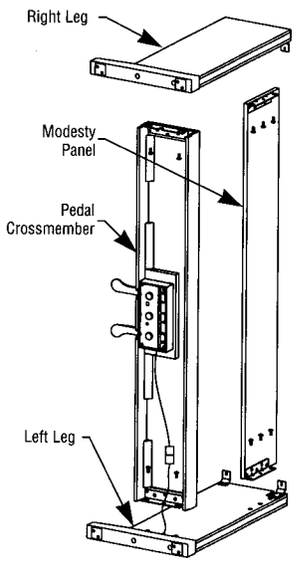

Figure 1

Step 1

a) Place the Left Leg on a carpeted floor. b) Place the Pedal Crossmember on end as shown in Figure 1. Align the two holes in the mounting bracket with the holes in the leg. c) Take the cable that is at the base of the Left Leg and run it through the slot in the bracket, as shown. d) Using a Phillips screwdriver, attach the Pedal Crossmember to the leg using two short screws. e) Plug the Left Leg's cable into the Pedal Crossmember's cable.

Step 2

a) Place the Modesty Panel on end as shown in Figure 1. Align the three holes in the mounting bracket with the holes in the leg. b) Using a Phillips screwdriver, attach the Modesty Panel to the Left Leg using three short screws.

Step 3

a) Place the Right Leg on top of the Pedal Crossmember and Modesty Panel. Align all of the holes in the leg with the holes in the mounting brackets. b) Using a Phillips screwdriver, attach the Right Leg with the five remaining short screws. c) Place the assembled stand so that both feet are on the floor, as shown in Figure 2.

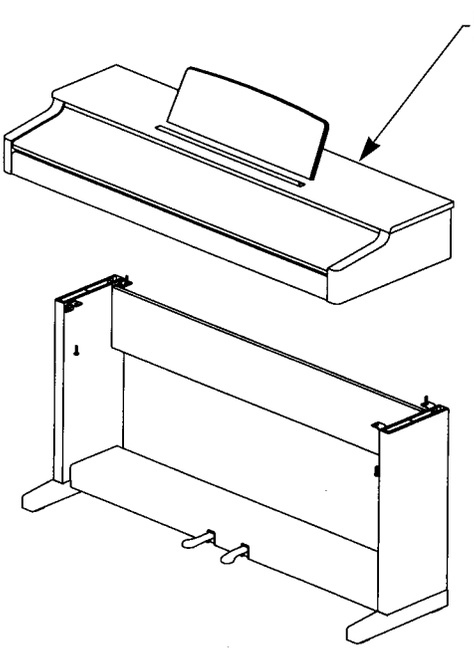

Figure 2

Step 4

IMPORTANT: This step of the assembly requires two people. Do not attempt to proceed alone.

a) Place the Body Assembly onto the legs. Be sure to align the wooden pins at the back of the legs with the holes in the bottom of the side arms.

WARNING: The Body Assembly WILL NOT safely sit unsupported on the legs until all of the screws are in place. Have someone hold the Body Assembly while the screws are being secured.

b) Secure the Body Assembly to the brackets on the legs from underneath the unit using the four long screws.

KURZWEIL™

Music Systems

Mark 3
Digital Piano

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Kurzweil is a product line of Young Chang Akki Co., Ltd., Seoul, Korea

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P/N 910315, Rev. A

About The Mark 3

Introduction

Welcome to the Kurzweil Mark 3! The Mark 3 gives you simple, affordable access to Kurzweil's high-quality sound technology. The authentic digital representations of musical instrument sounds in the Mark 3 reproduce the finest details of the original sounds—from bass to treble and from soft to loud.

This manual serves as both a guided tour of the Mark 3 for the new owner and a reference for later use. The features of the instrument are discussed one at a time, and the songs included give you an opportunity to play the Mark 3 right away.

Care of Your Instrument

Dust the Mark 3 with a soft dry cloth; DO NOT use aerosol sprays on or near it. Clean the keys with a soft damp (NOT wet) cloth, dampened in a solution of dish soap and water if necessary. NEVER use solvents such as alcohol or benzene.

NOTE: To avoid possible injury or electrocution, do not open up the Mark 3. There are no user-serviceable parts inside.

Power

The Mark 3 operates on DC power; a DC power adaptor is included with the instrument to connect it to an AC outlet. If you should move to another country, or if you should have any doubts about AC voltages, see your local Kurzweil dealer.

WARNING: Be sure the DC power adaptor is labeled "PD150-25". Use of any other DC power adaptor, including the power adaptor for the Mark 3, may damage your instrument or result in seriously degraded performance.

Before connecting the power supply, make sure the Power switch, underneath the keyboard on the left side, is OFF. One end of the power supply plugs into the Power In jack on the rear panel of the Mark 3; the other end plugs into an AC outlet. Connect it to the instrument first, then the AC outlet; then turn the Power switch ON. The Mark 3 is now ready to play. To make sure that you can hear the instrument, move the Master Volume slider to approximately the position shown:  This should provide a comfortable volume, which you can adjust if you wish.

Demo

The Mark 3 contains a built-in demonstration to acquaint you with the sounds and capabilities it possesses. To access this demonstration, first press the Select button in the Function section, at the right end of the front-panel controls; the light above this button will illuminate. Then press the Metronome button, in the Recorder section, which has the word "Demo" printed beneath it. The light above this button, as well as the light above the Play button, will also illuminate, and the demonstration will begin playing.

The demonstration will stop automatically when it is finished. To stop it before it is finished, press the Play (Stop) button in the Recorder section. In either case, the lights above the Metronome (Demo) and Play buttons will go out and the Mark 3 returns to normal playing mode.

The Keyboard

The keyboard of the Mark 3 consists of 88 weighted keys, with an action designed to simulate the feel of an acoustic piano. Just as with an acoustic piano, the harder you press the keys of the Mark 3 (more precisely, the faster you strike them), the louder and brighter the resulting sound is. In technical terms, this is called "velocity sensitivity." It makes the Mark 3 a truly expressive musical instrument. See page 12 for information on adjusting the velocity sensitivity to suit your preference. (NOTE: The Harpsichord and Pipe Organ sounds purposely aren't velocity-sensitive, because real harpsichords and pipe organs aren't velocity-sensitive.)

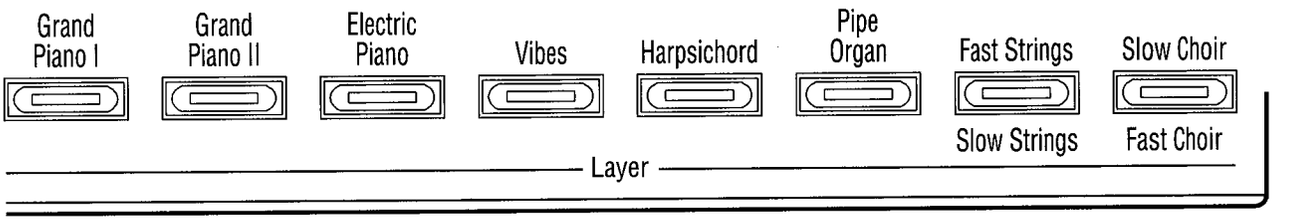
The Pedals

In addition to the expressiveness offered by the keyboard, there are two pedals that provide you with further control over the sounds of the Mark 3. These pedals have the same functions as those on a grand piano:

- SUSTAIN. Pressing the right pedal causes notes to sustain even when you lift your fingers from the keys.
- SOFT. Pressing the left pedal generally causes notes to sound softer and more muted when they are played. For three of the sounds, however, it produces different effects:
  - For Vibes, pressing the left pedal causes the tremolo to speed up; releasing the pedal causes the tremolo to slow down again.
  - For Harpsichord, which normally plays notes doubled at the octave, pressing the left pedal removes the octave doubling.
  - For Pipe Organ, pressing the left pedal causes the sound to become softer gradually (decrescendo); releasing the pedal causes the sound to crescendo back to its original loudness.

Sound Select

The Sound Select portion of the front panel contains buttons used for selecting from among the eight different sounds available on the Mark 3. You select a sound by pressing the corresponding button. Any notes still sounding at the time you select a new sound will complete playing the original sound. For example, select Choir and play a chord; while holding the notes (either by holding the keys down or by pressing and holding the sustain pedal), select Grand Piano I; now play some notes with the piano sound while the choir notes sustain.



Sound Select

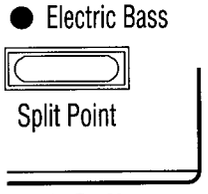
NOTE: While in Function mode, you can layer any two sounds from the Sound Select section. That is, you can play two sounds simultaneously with each key you strike. For example, select Grand Piano I, press the Function Select button, then select Choir. Now the two sounds are layered together. See pages 9 and 10 for more information.

When you turn the Power switch ON, the Grand Piano I sound is automatically active (with no additional layered sound) and ready to play.

Left Split

The Left Split button lets you "split" the keyboard into two parts. The right-hand part of the keyboard plays whatever sound (or layer of two sounds) is currently selected in the Sound Select section; the left-hand part plays a bass sound.

Press the Left Split button repeatedly to "cycle" among the Left Split options. You can choose Acoustic Bass or Electric Bass (the corresponding light illuminates), or no split (no light). With no split selected, the entire keyboard plays the sound[s] selected from the Sound Select section.



Left Split

The Electric Bass sound responds to your playing dynamics in the following way: when you strike the keys softly, you hear a plucked bass sound; when you strike the keys hard, you hear a "slap" bass sound, useful for playing contemporary dance and R&B music.

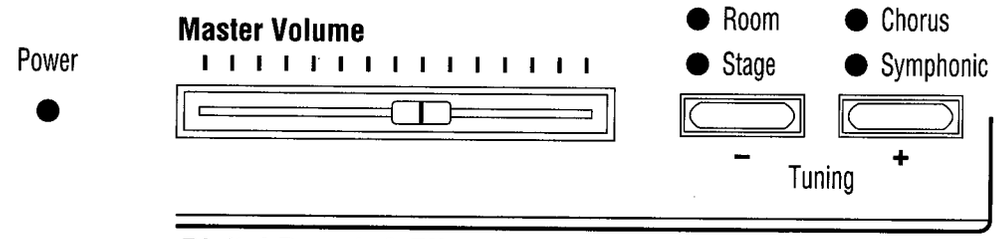
Splits are an easy way to make one performer sound like two. When you play the keyboard, your left hand plays one sound and your right hand plays another.

The sustain pedal does not affect the left split sound. This allows you to play moving bass lines without the notes blurring together.

Press a different Sound Select button while a split is active to change the right sound but not the left one. Press the Left Split button to change the left sound but not the right one, or to turn the split off.

You can set the split point—the place on the keyboard where the left and right sounds meet — in Function mode (see page 11). The Mark 3 remembers the split point when you turn the power off.

When you turn on the Mark 3, the Left Split is OFF.



Digital Reverb & Effects

Digital Reverb & Effects

The Digital Reverb & Effects section of the panel contains controls that affect the sound of the Mark 3.

Master Volume

The Master Volume slider controls the overall volume (loudness) of the Mark 3. Move it to the right to increase the volume, and to the left to decrease the volume; when moved all the way to the left, it silences the instrument.

Master Volume affects not only the volume produced by the internal sound system, but also the volume produced by equipment connected to the Headphone or Audio Out jacks (see page 13). CAUTION: Turn the Master Volume down before connecting headphones or using the Audio Out jacks.

WARNING: Master Volume does not affect the signal that comes in through the Audio In jacks; this signal will play at full volume! If you wish to be able to control the level of the external device connected to these inputs, the device must have a volume control of its own.

Reverb and Effects

For a heightened sense of sonic realism, the Mark 3 provides you with two independent types of digital signal processing: Reverb and Effects. Each is controlled by its own button—Reverb on the left and Effects on the right. Pressing a button lets you select one of the two "flavors" available for that type, as indicated by the lights above the button, or to turn it off (when neither of the lights is lit).

Reverb, or reverberation, occurs naturally when sound undergoes multiple reflections off the walls of an enclosed space. These reflections blend together into a "wash" of sound that adds warmth and presence to music. The reverb button provides you with reverberation that represents two different room sizes:

- Room—The intimacy of a chamber-music room.
- Stage—The ambience of a performance stage.

The effects are as follows:

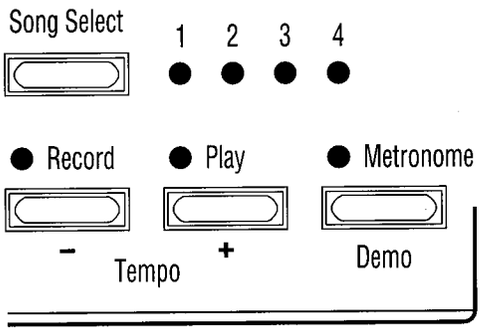
- Chorus—The effect of many instruments playing together instead of one.
- Symphonic—A unique combination of chorus and many echoes.

When Symphonic is used with Room or Stage Reverb, it increases the reverb that is already present. In other words, it makes the size of the room or stage appear to be larger.

When you turn the Mark 3 on, Reverb is set to Room, and Effects are OFF.

The Reverb and Effects affect all sounds from the Mark 3, but not sounds coming from the Audio In jacks.

Recorder



Recorder

The Recorder lets you record and play back your performances on the Mark 3. You can store up to four different performances in the Mark 3 memory at a time.

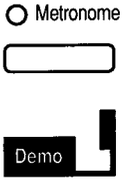
Press the Song Select button to select one of the four songs (memory locations) into which you wish to record. The four numbered lights tell you which is the current song. Press Record; the red Record light illuminates. The Recorder waits for you to start playing before it starts recording. It records notes, pedals, and button presses (except the Function Select button). (HINT: To play back your recording with a specific sound select, reverb, or effect, select the sound or effect after you press Record.) To stop recording, press Record again; the Record light goes out. If you reach the capacity of the Recorder (about 6,000 notes), recording stops automatically and the Record light goes out.

Press Play to play back your recording; the green Play light illuminates and playback begins. You can play along with the recording. You can also use the pedals as well as change sounds and effects. (This will change the sound of the playback.) Playback stops automatically, and the Play light goes out, when you reach the end of the recording. If you wish to stop playback before the end, press Play again; playback stops and the Play light goes out.

NOTE: You can change the tempo of playback in Function mode (see page 11).

Whenever the power supply of the Mark 3 is plugged into the instrument and an AC outlet, your songs remain saved in the internal memory of the Mark 3. If the power supply is ever unplugged from the instrument or the wall, your songs will be erased in two to four days. While the power supply is connected, a recording remains in memory until you press Record again for that song number.

Metronome



You'll find the Metronome button in the Recorder section. Press this button to hear the Metronome click; the Metronome light flashes in time with the click. Press the button again to turn the Metronome off.

You can use the Metronome while recording, to help you keep a steady beat. You can also use it as a stand-alone practice aid.

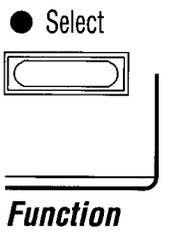
You do not have to use or follow the Metronome when you record; the Metronome will not follow you. But if the Metronome is on, it restarts its click when the Record or Play button is pressed.

Although you can turn the Metronome on and off during recording or playback, the Metronome clicks will not be recorded. If you recorded in sync with the Metronome and wish to play back your recording in sync with the Metronome, start the Metronome first and listen to the beat, then press Play.

NOTE: You can change the Metronome tempo in Function mode (see page 11). You can also change the Metronome volume in Function mode (see page 12).

When you turn the Mark 3 on, the Metronome is off.

Function



The Mark 3 has a special Function mode, from which you can do the following:

- listen to the built-in demonstration;
- layer two sounds;
- select the left split point;
- change the Recorder and Metronome tempo;
- tune the instrument;
- change the Metronome volume;
- transpose the keyboard;
- adjust the velocity sensitivity of the keyboard;
- select the MIDI channel on which MIDI messages are transmitted and received;
- turn the Local Control switch on or off;
- switch from Stereo to Monaural;
- reset all Function parameters back to their factory defaults.

Some of these functions are accessed from the keyboard. Others are indicated on the control panel by labels beneath buttons, color-coded red—the same color as the label over the Function Select button. The Function Select button works something like the shift key on a typewriter—giving the buttons a second set of uses.

Press the Function Select button to enter Function mode; the light above the button illuminates.

Selecting a layered sound, split point, transposition, velocity sensitivity, Metronome volume, MIDI channel, local control, stereo/monaural, or parameter reset will cause the Mark 3 to exit Function mode automatically. To exit Function mode after listening to the demo, tuning the instrument, or setting the tempo, press the Function Select button again; the light above the button goes out and the Mark 3 is returned to normal play mode.

Following is a description of the operations in Function mode.

Demo

While in Function mode, press the Metronome (Demo) button, in the Recorder section, to hear the built-in demonstration of the Mark 3; the Metronome and Play lights will illuminate. The demo stops automatically when it is finished. To stop it before it is finished, press Play (Stop) in the Recorder section. In either case, the Metronome and Play lights go out and the Mark 3 returns to normal playing mode.

Layer

For added variety and richness of sound, you can layer two sounds across the keyboard—that is, each key will play two sounds at the same time. The result is similar to when two different sections of an orchestra play the same notes.

To layer two sounds, first (before entering Function mode) select one of the sounds in the Sound Select section. Then press the Function Select button to enter Function mode, and select the second sound. The Mark 3 automatically returns to normal play mode, and the keyboard now plays both sounds together. If a Left Split is active, only the right-hand portion of the keyboard will play the layered sounds.

When layering two sounds, it doesn't matter which sound is selected first. That is, selecting Grand Piano I and layering Strings with it will produce the same result as selecting Strings and layering Grand Piano I with it.

For Electric Piano, Vibes, Harpsichord, and Pipe Organ, layering the sound with itself will result in just the normal single sound. For Grand Piano I, Grand Piano II, Strings, and Choir, layering the sound with itself will result in a special version of the sound, as described on page 10.

When you turn the Mark 3 on, the sound is always set to Grand Piano I (with no additional layered sound).

Intelligent Layering

The Mark 3 employs a special intelligent layering feature for the best possible layered sounds. When layering sounds, specially tailored versions of the sounds are used. For example:

- Grand Piano I layered with Strings uses a special mellow Strings sound.
- Electric Piano with Choir uses a specially tailored Choir sound.
- Grand Piano I with Grand Piano II yields a big sound, ideal for ballads.
- Choir with Strings produces a dreamy effect.
- Grand Piano II with Vibes transposes Vibes up an octave for a lively sound.
- Pipe Organ with Strings uses special versions of both sounds.

Special Tunings for Grand Piano I & II

The Grand Piano I and Grand Piano II are tuned differently than other sounds on the Mark 3; they use what is known as "stretch tuning." In this tuning, which is employed on acoustic pianos, octaves are slightly wider than theoretically pure, so that the notes on the keyboard line up more precisely with each other's overtones. (The overtones are farther apart than theoretically pure because of the stiffness of piano strings.) This makes for a more agreeable sound, especially for solo playing.

But when you layer Grand Piano I or Grand Piano II with another sound, the Mark 3 substitutes a special version of the piano sound that is not stretch-tuned, so that it is in tune with the other layered sound.

When you select Grand Piano I, then Function Select, and then Grand Piano I again, the result is not the normal stretch-tuned piano sound: it is the special non-stretch-tuned version of the piano sound. This also applies to Grand Piano II. This may be useful if, for example, you are playing with other musicians.

Special Strings and Choir Sounds

When you select Strings, then Function Select, and then Strings again, the result is not the normal Strings sound: it is a special version of the sound more appropriate for slow playing. This also applies to the Choir sound.

MIDI Program Change Numbers

Below is a chart showing the MIDI program change numbers for the sounds on the Mark 3. (For more information about MIDI, see page 14.)

Sound Select / Layered Sound	[none]	Grand Piano I	Grand Piano II	Electric Piano	Vibes	Harpsichord	Pipe Organ	Strings	Choir
Grand Piano I	0	8	16	24	32	40	48	56	64
Grand Piano II	1	9	17	25	33	41	49	57	65
Electric Piano	2	10	18	26	34	42	50	58	66
Vibes	3	11	19	27	35	43	51	59	67
Harpsichord	4	12	20	28	36	44	52	60	68
Pipe Organ	5	13	21	29	37	45	53	61	69
Strings	6	14	22	30	38	46	54	62	70
Choir	7	15	23	31	39	47	55	63	71
Acoustic Bass (Left Split)	72								
Electric Bass (Left Split)	73								
Metronome	74								

MIDI Program Number

= duplicates a sound available with a lower program number

Split Point

While in Function mode, press the Left Split (Split Point) button and strike a key on the keyboard to set the split point—the top key to be played by the Left Split sound. The keystrike does not sound, and the Mark 3 automatically returns to normal playing mode. (Remember that in order to hear a Left Split sound, you must select one in normal playing mode.)

The most recent split point is stored in memory, even when you turn the Mark 3 off. (The default split point set at the factory is G below middle C.)

When you turn the Mark 3 on, the Left Split is turned off.

Tempo

You can change the tempo (speed) of the Metronome and the currently selected song in the Recorder, which is useful for practicing, because it lets you start slowly and gradually increase speed as you become more proficient. It also lets you record a song at one speed and then play it back at a faster or slower speed.

While in Function mode, press the Record (Tempo –) or Play (Tempo +) button to slow the tempo down or speed it up, respectively. Each press of one of these buttons changes the tempo of the Metronome by one beat per minute, down to a minimum of 40 beats per minute or up to a maximum of 240 beats per minute. The tempo of the currently selected song will change proportionately.

Each of the four songs can have its own independent tempo, which is stored in memory with the song, even when the Mark 3 is turned off. The Metronome always plays at the tempo of the currently selected song.

Once you have reached the desired tempo, press the Function Select button to exit Function mode.

The factory default tempo is 120 beats per minute for all four song locations.

Tuning

The Mark 3 will never go out of tune. However, when playing with recordings or other musical instruments, you may desire to shift the tuning so that everything is playing at the same pitch. You can do so by as much as a quarter tone (half a half step) down or a quarter tone up.

While in Function mode, press the Reverb (Tuning –) or Effects (Tuning +) button to shift the tuning down or up, respectively. The first button press causes the Function Select light to flash and the tuning to reset to standard concert pitch (A 440). Each subsequent button press lowers (–) or raises (+) the pitch by one cent—a hundredth of a half step—up to a maximum of 50 cents below or 50 cents above A 440.

While you are tuning, you can play the keyboard to hear the effect of the tuning change.

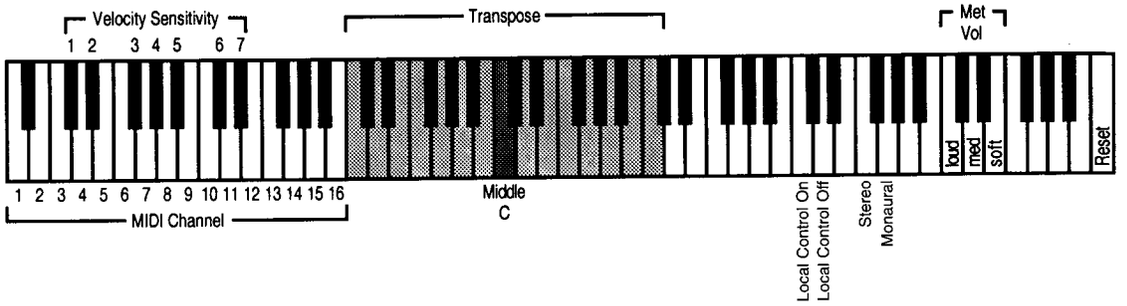
Once you have reached the desired tuning, press the Function Select button to exit Function mode.

To return to A 440 pitch, press the Function Select button (to re-enter Function mode) and press either one of the Tuning buttons once.

When you turn the Mark 3 on, the tuning is always reset to A 440.

KEYBOARD OPERATIONS

(see below)



METRONOME VOLUME

You can adjust the Metronome volume (loudness) in Function mode by striking one of the three keys that govern this setting. This keystrike (which does not sound a note), in addition to setting the Metronome volume, causes the Mark 3 to exit Function mode. The Function Select light goes out, and the instrument is returned to normal play mode.

You can select a loud, medium, or soft volume. Your setting is stored in memory, even when the Mark 3 is turned off. The default Metronome volume set at the factory is medium.

TRANSPOSE

Transpose lets you play in one key and have the notes sound in another. This is useful when accompanying singers for whom the written music is too high or low, or when playing music written for a transposing instrument, such as a clarinet.

To change the transposition while in Function mode, strike a key on the keyboard within the octave above or the octave below Middle C. This keystrike (which does not sound a note) transposes the keyboard so that the Middle C key will now sound the note you selected, and the instrument will be transposed by the interval between Middle C and that note. (For example, to transpose up a fifth, strike G above Middle C.) The keystrike also causes the Mark 3 to exit Function mode. The Function Select light goes out, and the instrument is returned to normal play mode.

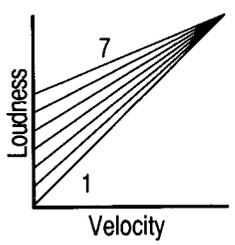
When the Mark 3 is transposed, the transposition affects not only the sounds played from the keyboard, but also the note messages recorded into the Recorder or sent to another instrument or sequencer via the MIDI Out port.

NOTE: The sounds in the Mark 3 are designed to play over the full 88-note range of the keyboard. When the Mark 3 is transposed, some keys at one end of the keyboard may be silent.

To return the Mark 3 to no transposition, press the Function Select button (to re-enter Function Mode) and strike Middle C.

The Mark 3 is reset to have no transposition when power is turned on.

VELOCITY SENSITIVITY



You can adjust the velocity sensitivity of the keyboard (how the dynamics of the sounds respond to key velocity) in Function mode by striking one of the seven keys that govern this setting. This keystrike (which does not sound a note), in addition to setting the velocity sensitivity of the keyboard, causes the Mark 3 to exit Function mode. The Function Select light goes out, and the instrument is returned to normal play mode.

A setting of 1 has the narrowest dynamic range, but makes it easiest to play moderately loudly; a setting of 7 has the greatest range, but requires high velocities to obtain loud notes (see the graph). For example, a child beginning piano lessons may benefit from a low setting, while an experienced player may prefer a higher setting.

Your setting is stored in memory, even when the Mark 3 is turned off. The default velocity sensitivity set at the factory is 4.

MIDI Channel

While the Mark 3 is in Function mode, you can select the MIDI channel on which information is transmitted and received by striking one of the 16 keys that govern this setting. (See page 14 for more information about MIDI channels.)

The number of the key in the illustration corresponds to the number of the MIDI channel seleted when that key is struck. This keystrike (which does not sound a note), in addition to setting the MIDI channel, causes the Mark 3 to exit Function mode. The Function Select light goes out, and the instrument is returned to normal play mode.

The MIDI channel is reset to 1 every time the Mark 3 is turned on.

Local Control

Local Control is the connection between the keyboard of the Mark 3 and the internal sound-producing circuitry of the instrument. When you turn the Mark 3 on, it automatically sets Local Control to On, so that you can play the keyboard and hear the Mark 3's sounds.

Sometimes, you need to set Local Control to Off — especially when MIDI connections bring the output of the Mark 3 back to the instrument's MIDI In port. For example, you might be using an external sequencer whose MIDI Out port works as both a MIDI Out and a MIDI Thru; this is called "soft thru." If you connect the Mark 3 to a sequencer like this and Local Control is On, playing the keyboard sends notes to both the internal circuitry and to the Mark 3's MIDI In port. The result is that every note that you play will sound "doubled." To fix this, enter Function mode and press the D6 key (2 octaves plus 1 whole step above Middle C). This sets Local Control to Off, so that the Mark 3 will only play notes that it receives at its MIDI In port.

To turn Local Control back On, enter Function mode and press the C6 key (2 octaves above Middle C). Turning the Mark 3 off and back on again also resets Local Control to On.

Stereo/ Monaural

When you turn the Mark 3 on, the audio outputs are in Stereo; the sound is split between the Left and Right outputs for a wider, more natural sound. This works well if you connect each audio output to a separate speaker, or if you use just the internal speakers. However, if the Mark 3 is in Stereo and you connect just one audio output to an external speaker, you won't hear as full a sound. You can set the Mark 3 to Monaural, so that both outputs send out the same audio signal. To do this, enter Function mode and press the G6 key (2 octaves plus 1 fifth above Middle C). Now you can use either output, and still hear all of the sound.

To set the Mark 3 back to Stereo, enter Function mode and press the F6 key (2 octaves plus 1 fourth above Middle C). Turning the Mark 3 off and back on again also resets the Mark 3 to stereo.

Reset Parameters

You can reset all the parameters back to their factory default values while in Function mode by striking the top key on the keyboard. (This keystrike will not sound a note.) Then turn the Mark 3 off and then on again to complete the procedure.

Resetting the parameters is an easy way to erase all the songs in the Recorder.

Additional Information

This section of the manual discusses three main areas: 1) Connections to the Mark 3; 2) Service; and 3) Specifications.

Headphone Jack

A 1/4" stereo headphone jack is located underneath the keyboard on the left side, next to the power switch; providing you with a means to play or practice at the Mark 3 in privacy. Inserting a plug into the jack disables the internal speakers (although it does not disconnect the signal sent through the Audio Out jacks — see below).

Rear Panel

The rear panel of the Mark 3 is the location of connectors for such things as the DC power adaptor, audio outputs and inputs, and MIDI.

Power In

On the DC power adaptor is a plug that fits in the Power In receptacle on the rear panel; the other end of the adaptor plugs into a standard AC wall outlet.

Audio Out

Two RCA jacks provide audio output to external equipment, such as a home stereo, a PA system, or a tape recorder. They consist of a Left and a Right output for a complete stereo signal. They provide line-level signals.

Audio In

Two RCA jacks accept line-level audio signals from external equipment, such as a tone module, a CD player, or a tape recorder. These inputs are directed to the Left and Right channels of the internal audio system, as well as the external Audio Out jacks.

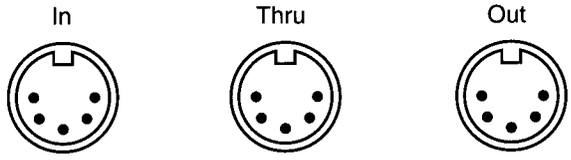
These inputs are inserted after the digital reverb and effects; that is, the internal effects will not be applied to the signal from an external source.

WARNING: The signal that comes in through these jacks will play at full volume! These inputs are not affected by the Master Volume control of the Mark 3. If you wish to be able to control the level of the external device connected to these inputs, the device must have a volume control of its own.

MIDI

"MIDI" stands for "Musical Instrument Digital Interface." It is an international specification that allows electronic musical instruments to communicate with each other, using a simple cable connection. It ensures that the Mark 3 will remain compatible with the instruments of today and tomorrow.

On the rear panel of the Mark 3 are three five-pin MIDI ports:



- In receives MIDI information from other equipment.
- Thru duplicates the information received by In and passes it to other equipment.
- Out sends MIDI information to other equipment.

Standard MIDI cables provide the connections between the MIDI ports of one piece of equipment and those of another.

The simplest use of MIDI is to play two instruments at a time from the keyboard of one of them. Use a MIDI cable to connect the MIDI Out port of the instrument whose keyboard you'll play (called the "master") to the MIDI In port of the other instrument (the "slave"). You probably will want to use the Mark 3 as your master keyboard.

If the slave doesn't have built-in amplification and speakers, you can connect its audio outputs to the Audio In jacks on the Mark 3.

It is important to explain that what is sent over the MIDI cable is information (data), not sound. Each connected instrument produces its own sounds; this "layering" of different sounds is one of the benefits of MIDI. For the Mark 3, the information transmitted and received falls into three categories:

- Playing notes. This involves MIDI Note On and Note Off messages.
- Selecting sounds. This makes use of MIDI Program Change messages (see page 10 for a chart showing program change numbers for the Mark 3).
- Operating the pedals, changing the Reverb and Effects settings, and layering or splitting sounds. All of these utilize MIDI Controller messages.

Another application of MIDI is in using an external sequencer to record and play back your performances. The sequencer can be a special hardware unit designed for that purpose, or it can be a personal computer running special sequencing software. In either case, the MIDI connections are the same—Out to In and In to Out.

A MIDI sequencer can control several instruments, each playing a different part, at the same time. To do this, it relies on MIDI channels. MIDI channels are like TV channels: an instrument has to be "tuned" to the correct one or it won't receive what is being transmitted. There are 16 channels available, numbered 1–16; the Mark 3 can be set to any one of them. (Information on setting the MIDI channel of the Mark 3 can be found on page 13.) The channel is set to 1 when the Mark 3 is turned on.

Page 32 shows the complete MIDI Implementation Chart for the Mark 3.

SERVICE

The Mark 3 contains no user-serviceable parts. In the event that you should experience a problem with the operation of the instrument, see your local Young Chang/Kurzweil dealer.

SPECIFICATIONS

Following are physical, audio, and power supply specifications for the Mark 3.

Physical

- Height: 32.6" (83.0 cm)
- Depth: 19.6" (50.0 cm)
- Length: 55.1" (140.0 cm)
- Weight:

Body	84.25 lbs. (38.3 kg)
Stand	37.75 lbs. (17.2 kg)
TOTAL	122.0 lbs. (55.5 kg)

Audio

- 24-Watt Amplification: 2 x 12 Watts
- 4 Speakers: 2 x 5.25" (130 mm) woofer/midrange
  2 x 0.50" (12 mm) dome tweeter

Power Supply

- AC Adaptor: 15 Volts DC, 2.5 Amps
- Power Consumption: 1.2 Amps nominal

WARNING: Be sure the DC power adaptor is labeled "PD150-25." Use of any other DC power adaptor may damage your instrument or result in seriously degraded performance.

MIDI Implementation Chart

Model: Kurzweil Mark 3

Manufacturer:

Young Chang **Date: Feb. 98**

Digital Piano **Version: 2.0**

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	
	Changed	1–16	1–16	
Mode	Default	X	X	always in mode 3
	Messages	X	X	
	Altered	X	X	
Note Number		0–127	0–127	key range:
	True Voice	12–108	12–108	C0-C8
Velocity	Note ON	O	O	
	Note OFF	X	X	
After Touch	Keys	X	X	
	Channel	X	X	
Pitch Bender		X	X	
Control Change	7	X	O	volume
	64	O	O	sustain pedal
	66	X	O	sostenuto pedal
	67	O	O	soft pedal
	80	O	O	left split point
	81	O	O	left split program
	83	O	O*	effect select
Program Change		O	O	0–75
	True #	0–75	0–75	
System Exclusive		X	X	
System Real Time	Song Pos	X	X	
	Song Sel	X	X	
	Tune	X	X	
System Real Time	Clock	X	X	
	Messages	X	X	
Aux Messages	Local Control	X	O	
	All Notes Off	O	O	
	Active Sense	X	X	
	Reset	X	X	

Notes	*0–8	0 = none	3 = chorus	6 = symphonic
		1 = room	4 = room, chorus	7 = room, symphonic
		2 = stage	5 = stage, chorus	8 = stage, symphonic

Mode 1: OMNI ON, POLY
Mode 2: OMNI ON, MONO
Mode 3: OMNI OFF, POLY
Mode 4: OMNI OFF, MONO

O = yes
X = no