INTRODUCTION TO THE

KURZWEIL™

Ensemble Grande
MARK IV

OWNER'S MANUAL

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KURZWEIL MUSIC SYSTEMS
AND Music Corp
9501 Lakewood Drive, SW Ste. D
Lakewood, Washington 98499
(253)589-3200

INTRODUCTION TO THE
KURZWEIL™

Ensemble Grande
MARK IV
Table of Contents

ABOUT THE ENSEMBLE GRANDE MARK IV
INTRODUCTION

Welcome to the world of the Kurzweil Ensemble Grande MARK IV!

The Ensemble Grande MARK IV represents a simple, affordable way to bring the quality of Kurzweil sound technology to your home. In these pages we'll guide you through the use of your Ensemble Grande MARK IV. In just a short time you'll be enjoying a level of musical realism you may not have thought possible from electronic musical instruments.

The Ensemble Grande MARK IV is specifically designed to create authentic simulations of musical instrument sounds. This is accomplished through an exclusive Kurzweil process called "Contoured Sound Modeling." We take electronic "pictures" — tens of thousands per second — of real acoustic instrument sounds, and store them in computer memory. The Ensemble Grande MARK IV reproduces every detail of the original sounds, including the way they change over time. You'll hear differences in tone as you play from bass to treble and from soft to loud. Our Contoured Sound Modeling process is a unique feature which provides expressive, realistic sound using a minimum of computer memory.

The instrument is also multitimbral, meaning that you can play different sounds at the same time. Up to 24 notes can be played at one time*, with unsurpassed fidelity.

POWER

The Kurzweil Ensemble Grande MARK IV operates on 100-120 Volts AC. A power cord is included with the instrument to connect it to an AC outlet.

Before connecting the power cord, make sure the POWER switch, found at the left end of the control panel, is off.
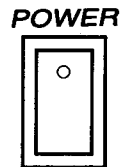
POWER

Connect the female end of the cord to the power connector on the back of the Ensemble Grande MARK IV. Connect the male end to an AC outlet.

NOTE: To avoid possible injury or electrocution, do not remove any screws or panels. There are no user-serviceable parts inside your Ensemble Grande MARK IV.

Once connected, you can turn the POWER switch on. The following should appear in the liquid-crystal display (LCD):

| G | r | a | n | d | | | | P | i | a | n | o | | | |
| O | f | f | | | | O | f | f | | | | O | f | f | |
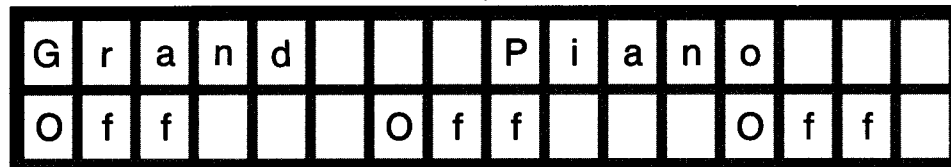
The instrument is now ready to play. If you don't see anything in the LCD, check to see that the POWER switch is actually on; that the power cord is connected firmly to the instrument and to an AC outlet; and that the outlet itself is working. If, after making sure that these things are done, the instrument still doesn't function, call your Kurzweil dealer for assistance.

* Although the maximum number of *notes* is always 24, the maximum number of *keys* that will sound at one time may be less, for sometimes each press of a key actually produces more than one note. This is the case with "layered" sounds (such as PIANO & SLOW STRINGS), in which more than one instrument plays on each key, and when the CHORUS effect is On.

KEYBOARD AND PEDALS

The keyboard of the Ensemble Grande MARK IV 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 Ensemble Grande MARK IV (more precisely, the faster you press them), the louder and brighter the resulting sound is. In technical terms, this is called "velocity sensitivity." It makes the Ensemble Grande MARK IV a truly expressive instrument.

To complement the piano-like look and feel of the instrument, when you first turn the Ensemble Grande MARK IV on, the GRAND PIANO Program is automatically active and ready to play.

In addition to the expressiveness offered by the keyboard, there are two pedals that provide you with further control over the sounds of the Ensemble Grande MARK IV. The right pedal is a sustain pedal, just like that on an acoustic piano. Pressing it down causes notes to sustain even when you lift your fingers from the keys. The use of this pedal will be covered in greater detail in the section of this book on "Playing the Ensemble Grande MARK IV" in the discussion of playing the PIANOS Programs.

The left pedal operates as a *sostenuto* pedal. Again, this functions exactly like the sostenuto pedal on an acoustic piano: Keys that are held down when this pedal is pressed will sustain, while any keys played after the pedal is pressed will not sustain. This pedal can also be set to operate as a *soft* pedal (explained in the section on EDIT MODE, pages 14-16). Just as with the soft pedal on a piano, pressing this pedal reduces the volume of the sound.

VOLUME, TRANSPOSE, TUNE
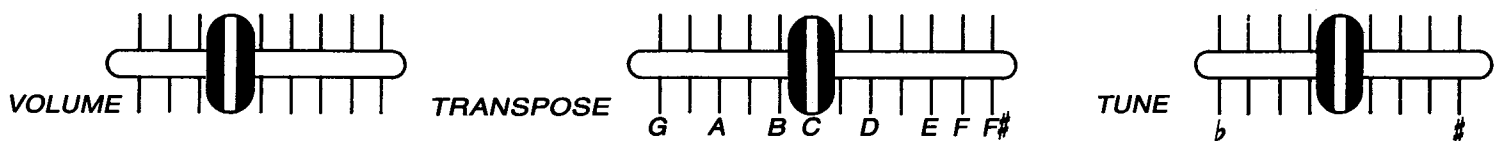
The VOLUME slider controls the overall volume (loudness) of the instrument. Move it to the right to increase volume, and to the left to decrease volume; when moved all the way to the left, it silences the instrument.

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 7).

TRANSPOSE allows you to play the keyboard in one key and have the notes sound in another. This is useful when accompanying singing, in which the key of the written music may be too high or too low for the voice, or when playing music written for a transposing instrument, such as the clarinet.

You can transpose the pitch up by as many as six half steps, by moving the slider to the right of the normal pitch (C). Or you can transpose down by as many as five half steps, by moving the slider to the left of normal pitch.

The TUNE control allows you to raise or lower the pitch of the Ensemble Grande MARK IV slightly. This is valuable in playing along with recordings, or with other instruments that cannot be tuned easily. Moving the slider to the right (♯) raises the pitch; moving it to the left (♭) lowers the pitch. In its center position, the slider tunes the instrument to normal "A-440" pitch. By the way, one of the many advantages of the Ensemble Grande MARK IV over an acoustic piano is that it never goes out of tune!

SOUNDS

As mentioned earlier, when you first turn on the Ensemble Grande MARK IV, the LCD looks like this:

G	r	a	n	d				P	i	a	n	o			
O	f	f				O	f	f				O	f	f	
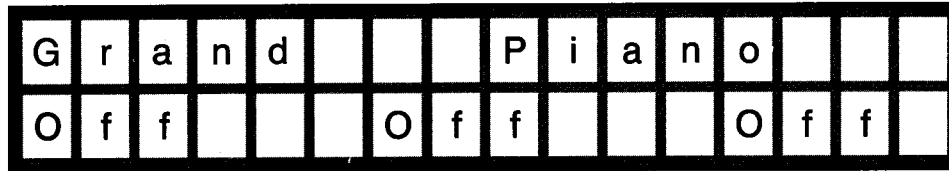
This tells you that the GRAND PIANO sound, or "Program," is currently selected, and all of the Effects are turned Off. A discussion of the Effects follows this section; for now, let's take a closer look at the sounds the instrument has to offer.

The Ensemble Grande MARK IV provides ten families of sounds, identified by the top row of ten buttons to the right of the LCD.

PIANOS   STRINGS   CHOIRS   VIBES   BASSES   BRASS   WOODWINDS   ORGANS   SYNTHS   DRUMS

Each of these families consists of ten variations of that sound. That's a total of 100 sounds at your fingertips!

To select from the sounds in a certain family, simply press the appropriate button in the top row of ten buttons. To select a sound within that family, press one of the buttons in the lower row of ten buttons.

The chart on the following page lists the Programs available on the EG IV. Descriptions of these Programs are found in the section of this book entitled PLAYING THE ENSEMBLE GRANDE MARK IV.

Below is a list of abbreviations that appear in the names of the Programs, and their meanings.

/	Split Program
&	Layered Program
%	Crossfade Layers
A	Acoustic
Br	Bright
Brt	Bright
Cl	Clarinet
Dr	Drums
Dyn	Dynamic
E	Electric
Flt	Flute
Pno	Piano
Rvs	Reverse
Str	Strings
Strg	Strings
Syn	Synth
w/	with

Crossfade Layers are Layers which overlap, and fade into each other as you move up or down the keyboard. Try it with one of the Programs containing the symbol "%" in its name.

Pianos

1 Grand Piano
2 Dynamic Grand
3 Classical Piano
4 Studio Piano
5 Ragtime Piano
6 Mellow Piano
7 Electric Piano
8 Fluid E Piano
9 Piano & E Piano
10 Digital E Piano

Strings

1 Reverb Strings
2 Hall Slow Strings
3 Fast Strings
4 Dynamic Strings
5 Slow Strings
6 Piano & Fast Strings
7 Piano & Slow Strings
8 Fluid E Pno & Str
9 Synth Strings
10 Banjo

Choirs

1 Reverb Choir
2 Cathedral Choir
3 Choir
4 Mellow Choir
5 SloString & Choir
6 Choir & Str/Organ
7 Choir % Flute
8 Choir & Bellchoir
9 Choir & Horns
10 Choir & Piano

Vibes

1 Reverb Vibes
2 Fluid Vibes
3 Vibes
4 Bright Vibes
5 Vibes & Piano
6 Vibes % Piano
7 Vibes & Slo Strg
8 Vibes/Trumpet
9 Vibes/Clarinet
10 Slow Vibes

Basses

1 Acoustic Bass/Pno
2 Bright Bass/Pno
3 A. Bass % Piano
4 Brt Bass % Piano
5 E. Bass/Rock Piano
6 Dual Bass/Dig Piano
7 Brt E Bass % E Pno
8 Monster Bass/E Pno
9 Ostinato Bass
10 A Bass & Fuzz Piano

Brass

1 Reverb Trumpet
2 Space Trumpet
3 Trumpet
4 Trumpet & Strings
5 Analog Trumpets
6 Reverb Baritone
7 Horn & Strings
8 Chamber Band
9 Orchestral Brass
10 Syn Brass & Strings

Woodwinds

1 Reverb Clarinet
2 Fluid Clarinet
3 Clarinet
4 Bass/Clarinet
5 Reverb Flute
6 Orchestral Flute
7 Dyn Piano/Flute
8 Str & Pno % Cl & Flt
9 Str & Horn % Cl & Flt
10 Dynamic Orchestra

Organs

1 Electric Organ
2 Rock Organ
3 Jazz Organ
4 Dyn Electric Organ
5 Dyn Rock Organ
6 Clav Organ
7 Organ & Strings
8 Pipe Organ 1
9 Pipe Organ 2
10 Accordion

Synths

1 New Age Piano
2 Canyon Horns
3 Plucked Flute
4 Power Flute
5 Power Synth
6 Klavinet
7 Harpsichord
8 Synth Kalimba
9 Synth Orchestra
10 Analog Reed

Drums

1 A. Bass/Dr/Perc
2 E. Bass/Dr/Perc
3 Clean Kit 1
4 Kit w/Rvs Cymbal
5 Monster Rock Kit
6 Echo Rock Kit
7 Congas & Percs
8 A Bass & Ride % Piano
9 A Bass & Ride % Vibes
10 A Bass & Ride % Flute

EFFECTS

CHORUS   TREMOLO   VIBRATO

⊂▭⊃   ⊂▭⊃   ⊂▭⊃

The three buttons under the LCD select the available Effects. Simply press the button correspond-ing to the Effect you wish to hear. Press the button again to turn the Effect off. Effects are not altered when you change Sounds. That is, if an Effect is on, it will remain on if you change Sounds.

Chorus adds dimension to the Sound by adding a duplicate layer of the Sound and detuning it slightly, giving you the impression of several sound sources playing in unison.

Tremolo gives expression to your Sound with variation in amplitude (loudness) of the Sound.

Vibrato causes slight variation in the pitch of the Sound.

PITCH BEND, MODULATION
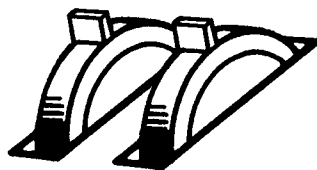
The two wheels to the left of the keyboard provide expressive control over your music. The left wheel is a pitch bender, which will raise or lower the pitch of the currently selected Sound as much as three half-steps. (The pitch bend range is programmable. See page 15.) The pitch bend wheel is spring loaded, with a center detent. In other words, the pitch bend wheel's Zero point is at the center.

The right wheel is the modulation wheel (sometimes called the "mod" wheel). This wheel pro-vides an alternative to using the TREMOLO and VIBRATO buttons, with an additional degree of control over these effects. Pulling the wheel down adds Tremolo; pushing up adds Vibrato. By varying the position of the wheel, you vary the intensity of the effect. This wheel also has a center detent, but is not spring-loaded. This means that you can select a degree of modula-tion that you like, and maintain that setting when you release the mod wheel.

When you turn the Ensemble Grande MARK IV on, the instrument performs an automatic self-calibration of the wheels: wherever a wheel is set when the instrument is turned on, that position becomes the "zero" point for as long as the instrument remains on. This affects the modula-tion wheel more than the spring-loaded pitch bend wheel. Therefore, if you hear a modulation effect even if you have the modulation wheel at the center detent, try turning your instrument off, then turning it on again with the modulation wheel centered.

JACKS

HEADPHONE JACK

There is a headphone jack on the front of the Ensemble Grande MARK IV, just below the pitch bend and modulation wheels. Plugging a pair of headphones into this jack allows you to play or practice in privacy; it disables the internal speakers of the instrument (though it does not disconnect the signal sent out the AUDIO OUT jacks — see below).

AUDIO IN

AUDIO IN

L   R

◎   ◎
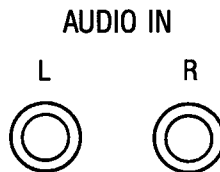
The AUDIO IN jacks, located on the rear panel of the Ensemble Grande MARK IV, allow you to connect a tape player, electronic musical instrument, or other line-level sound source to the instrument and play it through the built-in sound system.

AUDIO OUT

AUDIO OUT

L   R

◎   ◎
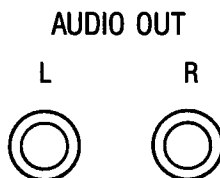
The AUDIO OUT jacks, also located on the rear panel, allow you to connect the Ensemble Grande MARK IV to an external amplification system, a tape recorder, or other device that accepts a line-level sound source.

Signals connected to the AUDIO IN jacks are not passed along to the AUDIO OUT jacks; only the sound of the Ensemble Grande MARK IV itself is put out.

One application that combines the use of the AUDIO OUT and AUDIO IN jacks is to connect a reverb unit or a digital signal processor to the Ensemble Grande MARK IV. This allows you to add echo, delay, or other effects to the sound.

AUDIO   AUDIO   LINE   LINE
IN   OUT   IN   OUT

ENSEMBLE GRANDE MARK IV   EFFECTS UNIT
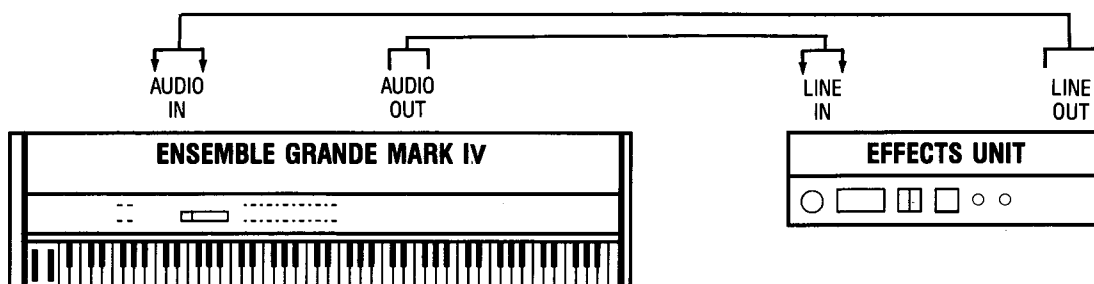
MIDI

MIDI stands for Musical Instrument Digital Interface. It is an international standard that allows electronic musical instruments and other equipment to "communicate" with one another, using a simple cable connection. It ensures that your Ensemble Grande MARK IV will remain compatible with the instruments of today and tomorrow.

MIDI CONNECTIONS

On the rear panel of the Ensemble Grande MARK IV are three five-pin MIDI jacks: IN, THRU, and OUT.
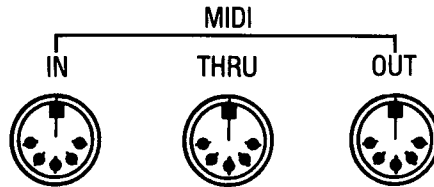
IN receives MIDI information from other equipment.

THRU provides a duplicate of the information received by IN, to be passed along to other equipment.

OUT sends MIDI information from the Ensemble Grande MARK IV to other equipment.

The simplest use of MIDI is to play two instruments at a time from the keyboard of one of them. This is known as a "master-slave" connection. Use a MIDI cable to connect the MIDI OUT jack of the "master" (the one whose keyboard you'll play) to the MIDI IN jack of the "slave."
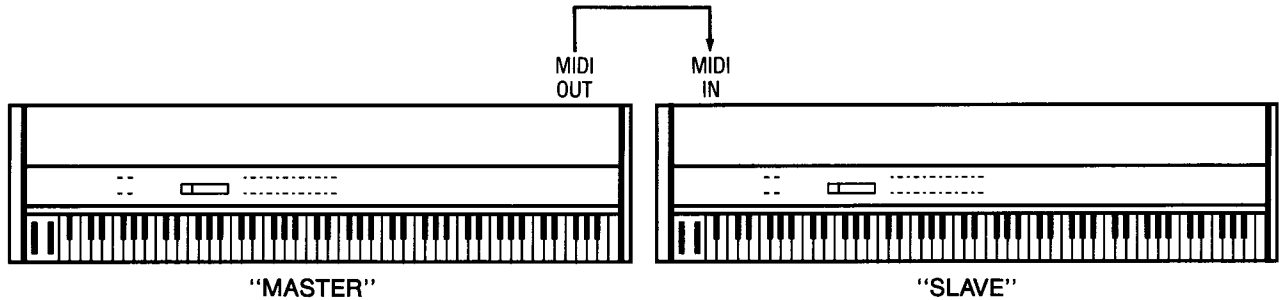
If you connect IN to OUT, rather than OUT to IN, the other instrument becomes the master. If you use two cables, connecting IN to OUT and OUT to IN, you can use either instrument as the master.
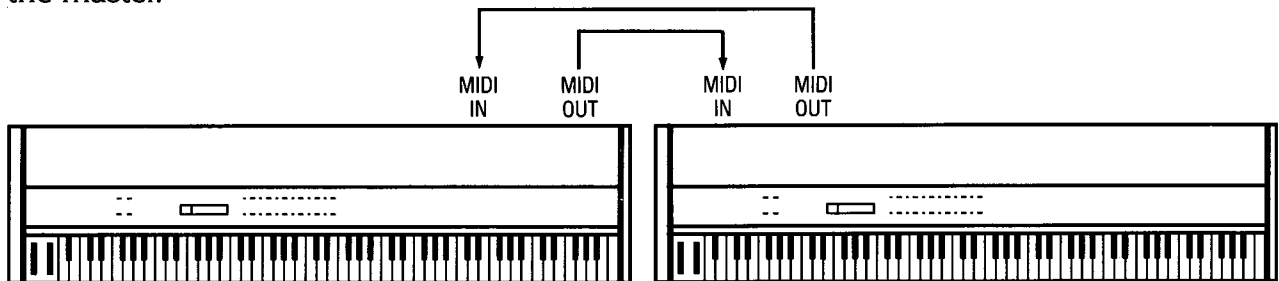
You probably will want to use the Ensemble Grande MARK IV as your master keyboard.

It is important to emphasize that what is sent over the MIDI cable is **information (data),** not sound. In fact, the usefulness of this kind of setup lies in having each instrument produce a different sound, resulting in a true instrumental ensemble.

The slave instrument can be a MIDI organ, portable keyboard, synthesizer, or tone module. If the slave doesn't have built-in amplification and speakers, you can connect its audio outputs to the AUDIO IN jacks on the Ensemble Grande MARK IV.

Another use of MIDI is in using a *sequencer* to record and play back your performances. The sequencer can be a hardware unit designed for that purpose, or it can be a general-purpose microcomputer running special sequencing software. In either case, the MIDI connections are the same:
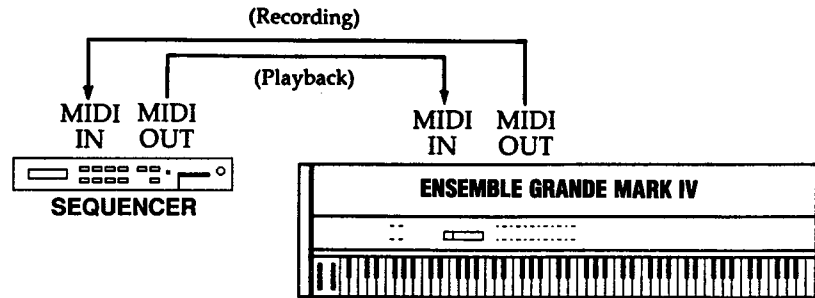
The MIDI THRU port on the Ensemble Grande MARK IV allows you to form a "chain" of instruments, so that a sequencer can control not only the master instrument, but a slave as well:
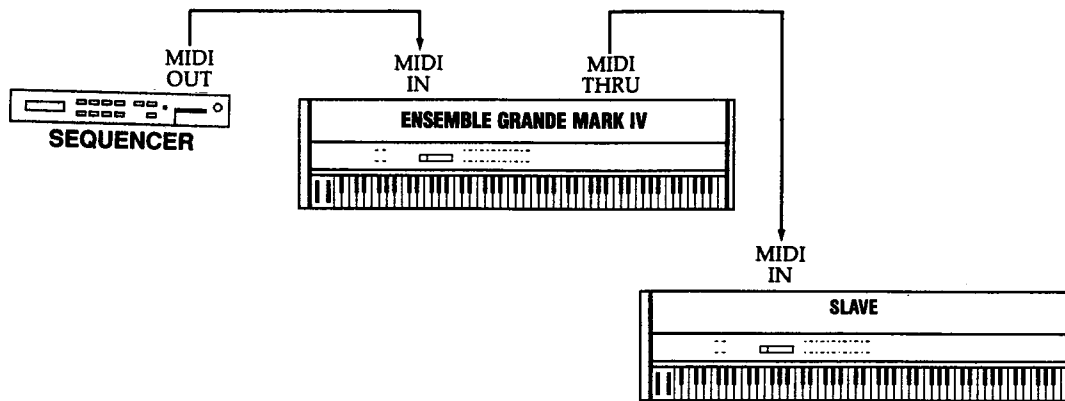
When the sequencer plays back, the information is sent not only to the master, but also — via the THRU port — to the slave. If the slave, in turn, has a THRU port, another slave could be added to the end of this chain, and so on. Practically speaking, though, three or four instruments in a chain are as many as you'd want. Beyond that, transmission becomes unreliable.

The solution to the problem of too long a chain lies in using a sequencer with multiple MIDI OUTs, or (what amounts to the same thing) using a *MIDI THRU box,* which produces several parallel THRU signals from one IN:
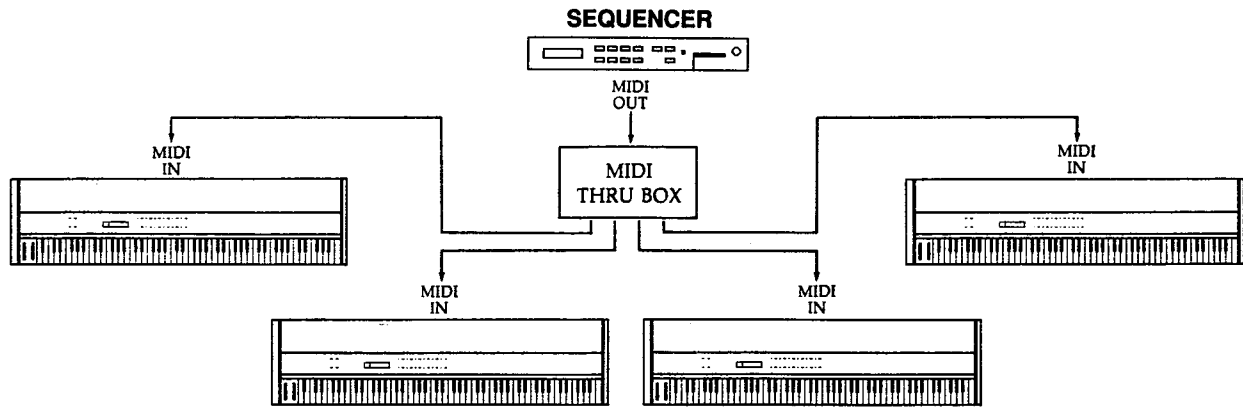
It should be mentioned that MIDI slave instruments can be not only keyboards and tone modules, but also drum machines, effects devices, and more.

MIDI CHANNELS

In order for MIDI to control several instruments, each playing a different part, at the same time, it relies on different *channels.*

MIDI channels can be compared to 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, and each one can transmit any number of notes to any number of instruments, over the same MIDI cable.

On the Ensemble Grande MARK IV, the Base Channel (the channel on which the instrument transmits and receives) can be set to any one of the 16 MIDI channels, 1-16. And as far as receiving is concerned there are three MIDI *modes* available that alter how the Ensemble Grande MARK IV responds to different MIDI channels:

1. Omni On mode. In this mode, the Ensemble Grande MARK IV responds to all 16 MIDI channels, regardless of what its Base Channel is. When you first turn the instrument on, it is in this mode.

2. Omni Off mode. In this mode, the Ensemble Grande MARK IV responds on only the Base Channel to which it is set.

3. Multi mode. In this mode, the Ensemble Grande MARK IV responds to parts on different MIDI channels independently, with different sounds if you wish. This mode takes advantage of the multitimbral capabilities of the instrument (the ability to play several different sounds at the same time), in effect making it the equivalent of 16 MIDI slaves in a single package. The only limit is the number of notes that can sound at one time, the maximum of which is 24.

Information on setting the Base Channel and MIDI Mode of the Ensemble Grande MARK IV, as well as other settings, can be found in the section on EDIT MODE.

WHAT MIDI TRANSMITS

We've been talking about transmitting and receiving information, but so far we haven't said a lot about exactly what that information is. For this instrument, it falls into three categories:

1. **NOTE ON and NOTE OFF.** When you press a key on the Ensemble Grande MARK IV it sends a MIDI message that says a note has begun, what MIDI channel it's on (the Base Channel), what note it is, and the velocity with which the key was pressed. When you release a key, a similar message is sent saying that a note has ended, on which channel, what the note is, and the velocity with which the key was released (most MIDI instruments ignore release velocity). If you were to play your Ensemble Grande MARK IV while a MIDI sequencer recorded your performance, you could play it back and the instrument would respond as if the keys themselves were being played again.

2. **CONTROLLERS.** Any changes in the positions of the sustain and sostenuto pedals, or of the pitch bend and modulation wheels, results in special MIDI controller messages being sent.

3. **PROGRAM CHANGE.** Selecting a sound results in a "program change" message that corresponds to the number of the sound selected. The sounds on the Ensemble Grande MARK IV are numbered from 1 to 100, with the PIANOS sounds being 1-10, the STRINGS sounds being 11-20, and so on through the DRUMS sounds, which are 91-100. (NOTE: Transmission and reception of program change commands can be disabled. See page 16.)

Page 13 shows the complete MIDI Implementation Chart for the Ensemble Grande MARK IV.

MIDISCOPE™

MIDIScope is an exclusive Kurzweil feature that allows you to see what MIDI messages are being received by your EG IV. These messages are shown in the LCD. MIDI messages transmitted by the EG IV are also displayed, as long as Keyboard Control is Enabled (see page 16).

To enter MIDIScope, press buttons 1, 3, and 4 simultaneously. To exit, press any button.

NOTES ON SEQUENCING

More and more musicians are using MIDI sequencers as "tapeless recording studios." The advantages over tape recording include the abilities to change individual notes, alter tempo, and substitute different sounds on playback.

The following notes will help you get the most from the MIDI capabilities of the Ensemble Grande MARK IV.

- Set the instrument to Multi mode. (See section on EDIT MODE for instructions.) This allows you to play back sequences using different sounds on different MIDI channels.

- Set the Base Channel for the part you wish to record. (See the section on EDIT MODE for instructions.) Each part that uses a different sound should be recorded on a different channel. Think of the channels as different sections of an orchestra. Note, however, that if you wish to record several parts that call for the same sound (such as four string lines), you can record them on the same MIDI channel.

- Select the voice for the part *after* you have started recording. Give yourself an empty measure or two before the music starts in which to do this. This ensures that every time you play the sequence back, it will call up the right sounds, even if you have since changed some of the sounds assigned to some of the MIDI channels (as described in the section on EDIT MODE).

  On the other hand, if you wish to experiment with using different sounds on playback, don't press any sound buttons during recording; then no program change messages will be recorded. You can then freely assign different sounds to different MIDI channels, as explained in the section on EDIT MODE. If you choose this option, however, it is up to you to either keep a record of the sounds you finally decide upon, or (if your sequencer permits) add the appropriate program change messages to the recorded sequence after the fact.

NOTE: If you are using your EG IV with a Kurzweil MS-1 Micro Sequencer, follow the setup and recording instructions given in the MS-1 Musician's Guide.

MIDI Implementation Chart

Manufacturer
KURZWEIL

Digital Keyboards

Model: Ensemble Grande Mark IV

Date: 06 30 88
Version 1.0

FUNCTION		TRANSMITTED	RECOGNIZED	REMARKS
BASIC CHANNEL	Default	1	1	memorized
	Changed	1-16	1-16	
MODE	Default	Mode 3	Mode 1*	
	Messages	X	Mode 1 & 3	memorized
	Altered		Mode 1, 3, 4	memorized
NOTE NUMBER		0-127	0-127	key range: C0-C8
	True Voice	12-120	12-120	
VELOCITY	Note ON	○	○	
	Note OFF	○	○	
AFTER TOUCH	Keys	X	○	
	Channels	X	○	
PITCH BENDER		○	○	
CONTROL CHANGE			○ 1-31	
			33-63	
			64-95	
		mod wheel up (MIDI 01)		
		mod wheel down (MIDI 02)		
		chorus on/off (MIDI 80)		
		tremolo on/off (MIDI 81)		
		vibrato on/off (MIDI 82)		
		sustain (MIDI 64)		
		sostenuto (MIDI 66)		transpose slider affects
		soft pedal (MIDI 67)		MIDI output
PROGRAM CHANGE		○** 0-127	○ 0-127	
	True #	1-128	1-128	
SYSTEM EXCLUSIVE		X	○***	
SYSTEM COMMON	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	X	
	All Notes Off	X	○**	
	Active Sense	X	X	
	Reset	X	X	

NOTES

*Use MULTI Mode to assign different Programs to each MIDI Channel
**Can be disabled in EDIT mode
***MIDI Mode change messages only

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

○ = yes
X = no

EDIT MODE

The Ensemble Grande MARK IV is designed to give you maximum playing enjoyment with minimal effort. Most of what you need for making music with it is accessible as soon as you turn it on. But there are a few more important features that the instrument offers. These features make the Ensemble Grande MARK IV more versatile musically, and provide greater flexibility in using it as part of a MIDI system.

When you turn on your Ensemble Grande MARK IV, it always starts up in what we call PLAY Mode. This is the Mode you will use most often. In PLAY Mode, the instrument lets you change Sounds both from the front panel, and via MIDI if you are using your Ensemble Grande Mark IV in a MIDI system that includes a controller that can send Program Change commands via MIDI.

EDIT Mode is the place where the double functions of the lower row of ten buttons take effect. In PLAY Mode, these buttons select the variation of the Basic Sound you have chosen. In EDIT Mode, buttons 1 through 6 take on special editing functions.
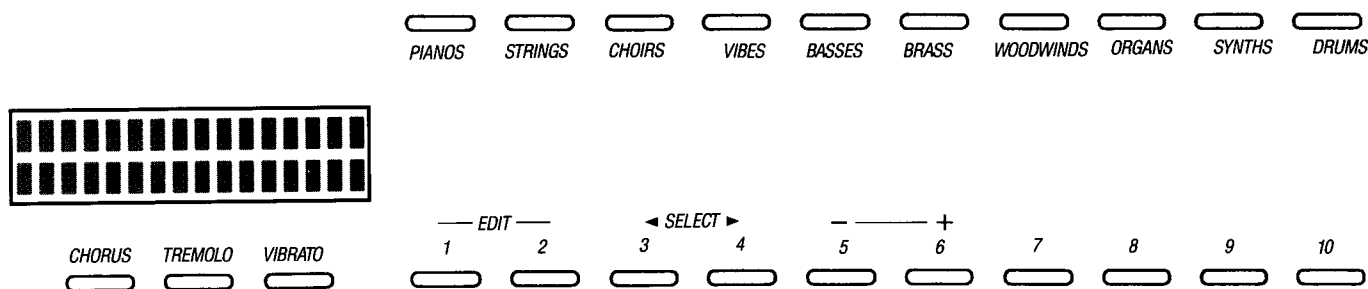
Buttons 1 and 2 have the word "EDIT" written above them. These are the buttons you will use to get into and out of EDIT Mode. The bracket above the buttons indicates that you should press them both **simultaneously** to enter EDIT Mode. Try it. You may press either one to exit EDIT Mode and return to PLAY Mode. You **do not** have to press both to exit EDIT Mode.

EDIT Mode enables you to change some of the features of the instrument. Here's a list of features you'll be able to modify:

PARAMETER	VALUE
Master Transpose	± 60 Semitones
Audio Outputs	Stereophonic/Monophonic
Pitch Bend Range	± 3 Semitones
Left Pedal	Sostenuto/Soft
Keyboard Sensitivity	Hardest-Easiest
Keyboard Control	Enabled/Disabled
Lowest Note	C0-C8
Highest Note	C0-C8
MIDI Transmit Program Change	Enabled/Disabled
MIDI Receive Program Change	Enabled/Disabled
MIDI Volume	Enabled/Disabled
MIDI All Notes Off	Allow/Ignore
MIDI Mode	Omni On/Omni Off/Multi
MIDI Base Channel	1-16
MIDI Channel Assignments 1-16	No PRG Assigned/Any Sound
MIDI Memory	Disabled/Enabled

The programming features in the left-hand column are called Parameters. Each of these Parameters may be assigned a Value represented by the options in the right-hand column. When in EDIT Mode, selecting a Parameter and assigning a Value to it will change the way the Ensemble Grande MARK IV operates. We'll take a look at each Parameter individually.

When you enter EDIT Mode, the display will look like this:

```
┌─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┬─┐
│M│a│s│t│e│r│ │T│r│a│n│s│p│o│s│e│
├─┼─┼─┼─┼─┼─┼─┼─┼─┼─┼─┼─┼─┼─┼─┤
│0│ │s│e│m│i│t│o│n│e│s│ │ │ │ │ │
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
```
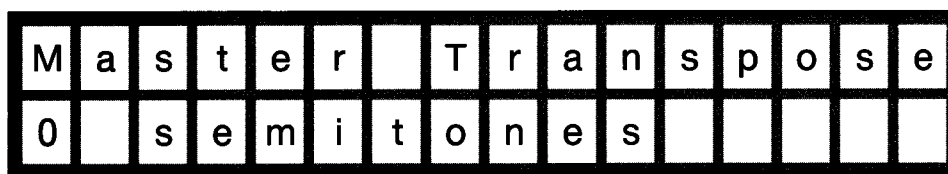
Master Transpose is the first Parameter on the list. Buttons 3 and 4 have the word "SELECT" written above them. These are the buttons you will use to scroll through the list of Parameters. Button 4 will move you ahead through the list; button 3 will move you backward. The list is circular—that is, if you move far enough in either direction, the list will "wrap" around to the beginning again. It's impossible to get lost. If you press **both** PARAMETER buttons simultaneously, you will move directly to the MIDI Mode Parameter.

Buttons 5 and 6 have a "−" and a "+" written above them, respectively. These are the buttons you will use to change the Value of the Parameter you have selected with buttons 3 and 4. For Parameters with numerical Values, button 5 **decreases** the Value of the currently selected Parameter, and button 6 **increases** the Value. For non-numerical Values, button 5 moves you backward through the list of Values, and button 6 moves you forward. If you press and **hold** either button 5 or 6, the Value will decrease (move backward) or increase (move forward) rapidly as long as you hold the button. Values for Transpose will stop changing when they reach their maximum or minimum. Pressing buttons 5 and 6 simultaneously has additional effects for some Parameters. These will be explained below.

Now that you know the functions of all the buttons in EDIT Mode, we'll take you through each of the programming Parameters and explain how to make them work for you.

Master Transpose allows you to change the pitch of the Ensemble Grande MARK IV in increments of one semitone (ST). Master Transpose permits you to change the key you're playing. If you know a song in F major, for example, and you want to play it in A Flat major, you can simply adjust the Master Transpose Parameter up three semitones. Play the piece as you normally would in the key of F, and you'll hear it in A Flat. You may also use Master Transpose to change the normal ranges of the SOUNDS you're playing. With Master Transpose, you can shift the Ensemble Grande MARK IV's pitch as much as five octaves (60 semitones) up or down. A dual press of the Value buttons will increase the Value of the Parameter by one octave (12 semitones), and will wrap from +60 ST to −60 ST.

Audio Outputs lets you choose whether the audio signal of the instrument is Stereo or Mono. If you select Mono, the output is identical at the Left and Right Output jacks. This is useful if you have a Monophonic amplifier (such as guitar amplifier), or if you wish to listen to your Ensemble Grande MARK IV through mono headphones. If you select Stereo, the output may differ at each of the Audio Outputs, depending on the Sound you have selected. Try running your fingers up and down the keyboard with the GRAND PIANO sound, for example, and listen for the difference as you switch between Stereo and Mono settings for the Audio Outputs Parameter.

Pitch Bend Range enables you to set the depth of the bend effect from the left wheel. It also allows you to choose the **direction** of pitch bend. Set the Value for this Parameter with buttons 5 and 6. The maximum bend range is 3 semitones. If you select a positive Value for this Parameter, the Pitch will bend **up** (sharp) when you push the pitch wheel up. With a negative Value, the pitch will bend **down** (flat) when you push the pitch wheel up.

Left Pedal lets you use the left pedal as either a sostenuto pedal or a soft pedal.

Keyboard Sensitivity sets the way the keyboard of the Ensemble Grande MARK IV responds to your touch. Easiest is the most sensitive, while Hardest is the least (requiring higher velocities to obtain louder notes). There are seven different sensitivity settings available. Pressing buttons 5 and 6 at the same time selects the Hardest setting.

Keyboard Control determines whether the keyboard of the Ensemble Grande MARK IV is connected to the sound-producing circuitry. The usual setting for this is Enabled, since when you play the keyboard, you expect it to make the instrument sound.

Why would you wish to change the setting to Disabled? Consider the following situation: You have a MIDI system that consists of a sequencer and a tone module, in addition to your Ensemble Grande MARK IV. You have recorded a multitimbral sequence that you wish to play back using the Ensemble Grande MARK IV but at the same time you would like to play the tone module as a slave from the Ensemble Grande keyboard. The way to do this would be to set Keyboard Control to Disabled, and connect the instruments as follows:

"MASTER"
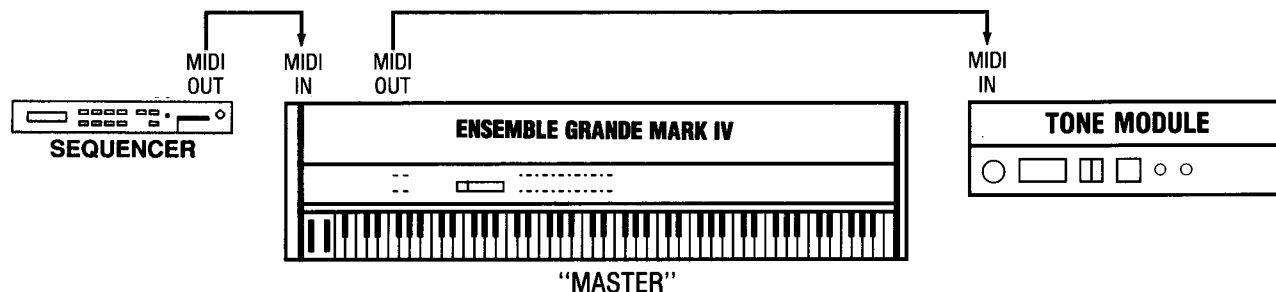
The sequencer will now play the sounds of the Ensemble Grande MARK IV, and the keyboard of the Ensemble Grande MARK IV will play the sounds of the tone module, assuming all MIDI channels are properly assigned.

Lowest Note and **Highest Note** are also useful in MIDI setups. They limit the range over which the Ensemble Grande MARK IV will sound (whether played from the keyboard or via MIDI IN), but do not affect the MIDI output produced by playing the keyboard. This is particularly useful when the Ensemble Grande MARK IV acts as a master keyboard, controlling a slave device: It allows you to create sounds in which the Ensemble Grande MARK IV and the slave are "layered" over a certain range, but outside of that range the Ensemble Grande MARK IV keyboard causes only the slave to sound.

Pressing buttons 5 and 6 at the same time causes the key limit to jump to the next highest C, and from C8 to C0.

MIDI Transmit Program Change lets you decide whether, when you change sounds on the Ensemble Grande MARK IV, you want the instrument to send program change commands to other MIDI equipment. Enabled means the commands are sent; Disabled means they aren't.

MIDI Receive Program Change determines whether the Ensemble Grande MARK IV responds to MIDI program change commands — by changing sounds (Enabled) — or does not respond (Disabled).

MIDI Volume, when Enabled, allows the Ensemble Grande MARK IV to change volume in response to MIDI messages designed for that purpose. This can be valuable when using a MIDI sequencer.

MIDI All Notes Off is a Parameter with just two Values: Ignore and Allow. This is an important Parameter for making your Ensemble Grande MARK IV compatible with your MIDI master controller, if you are using one. Some MIDI controllers will send an occasional signal telling all Slaves to stop any notes they are currently playing. These "All Notes Off" messages are intended to prevent notes from lingering if the MIDI controller sends an improper signal. All Notes Off messages will stop **every** note currently sounding, which you may not find acceptable. The MIDI All Notes Off Parameter allows you to choose whether your Ensemble Grande MARK IV will respond to All Notes Off messages. If you select a Value of **Allow,** then the Ensemble Grande MARK IV will cancel **all** currently sounding notes when the message is received. Select a Value of **Ignore,** and the Ensemble Grande MARK IV will not respond to any All Notes Off Messages. The Ensemble Grande MARK IV has a default Value of Ignore for this Parameter. That is, it is programmed at the factory to ignore All Notes Off messages. You will not need to change this Parameter's Value unless you are using the Ensemble Grande MARK IV as a MIDI Slave, and you want it to respond to "All Notes Off" commands.

MIDI Mode enables you to specify how the Ensemble Grande MARK IV will respond to your MIDI controller's signals. There are three MIDI Modes available: Omni On, Omni Off, and Multi. If you are not using your Ensemble Grande MARK IV as part of a MIDI system, this Parameter will not be important. The MIDI Mode Parameter relates to the manner in which the Ensemble Grande MARK IV **receives** MIDI information from an external source.

In Omni On Mode, the Ensemble Grande MARK IV responds to all 16 MIDI channels, and will select sounds according to any Program Change messages sent by the MIDI controller. When you turn the Ensemble Grande MARK IV on, it starts in Omni On Mode, so it will produce sound regardless of the MIDI channel over which your MIDI controller transmits.

Omni Off Mode restricts the Ensemble Grande MARK IV to receiving on only **one** MIDI channel. The channel on which the Ensemble Grande MARK IV will receive in Omni Off Mode is called the Base Channel, which you assign with the Base Channel Parameter. In Omni Off Mode, the Base Channel assignment of the Ensemble Grande MARK IV must match the transmitting Channel of your MIDI controller. Otherwise, you will not be able to trigger sounds in the Ensemble Grande MARK IV.

Multi Mode gives you the greatest flexibility of the three MIDI modes. In Multi Mode, you may assign a different sound to each of the 16 MIDI Channels. If your MIDI controller can transmit on more than one MIDI Channel at a time, you can use it to trigger any combination of Sounds that you program into the Ensemble Grande MARK IV.

MIDI Base Ch (Base Channel) lets you set the Base Channel over which the Ensemble Grande MARK IV will receive MIDI information. If you set the Ensemble Grande MARK IV to Omni Off Mode, this will be the **only** Channel over which it will receive. The Base Channel is also the channel over which the Ensemble Grande MARK IV **transmits** MIDI information. Pressing buttons 5 and 6 at the same time sets the Base Channel to 1.

MIDI Channel 1 enables you to set the Sound you want to play on MIDI Channel 1. Pressing button 5 or 6 will move you through the list of all Sounds. Pressing **both** buttons 5 and 6 will select the next Basic Sound in the list.

MIDI Channels 2—16 operate the same as for MIDI Channel 1. These Parameters allow you to set the Sound you will hear on each of the remaining MIDI Channels.

The Parameters for assigning Sounds to MIDI Channels are significant only when you are using the Ensemble Grande MARK IV as a MIDI Slave in Multi Mode, and only if your MIDI controller can transmit different Program information on different MIDI channels. If your MIDI controller can transmit on only one MIDI channel, then you will not need to program any of the MIDI Channel Parameters.

MIDI Memory, when enabled, allows the Ensemble Grande MARK IV to "remember" your MIDI settings, even when the instrument is turned off. This means you won't have to go into Edit Mode to restore your favorite settings every time you turn the instrument on.

SPECIFICATIONS

AUDIO

- 100-watt "Quad-stereo" amplification system
- Four 6.5" bass/mid-range speakers in a tuned bass reflex enclosure with active electronic crossovers
- Two high-frequency transducers
- Two audio inputs (line level)
- Two audio outputs (line level)

PHYSICAL

Height:	31 1/8 inches
Width:	56 inches
Depth:	20 1/2 inches
Weight:	175 pounds
Power consumption:	40 watts

FEATURES

- 88-note velocity-sensitive lead-weighted keyboard with programmable sensitivity.
- 24-note polyphony
- Kurzweil 250® quality sounds
- Button-selectable chorus, tremolo, and vibrato effects
- Pitch bend wheel (range = ±3 semitones)
- Modulation wheel (up for vibrato, down for tremolo)
- Master Transpose function (±60 semitones)
- Master Tune function (±100 cents)
- Audio outputs assignable to Stereo or Mono
- MIDI In, Thru, and Out ports for connection to other MIDI devices
- MIDISCOPE™— Kurzweil's proprietary MIDI data analyzer
- Built-in self-diagnostic software
- 1/4" Stereo headphone jack
- Built-in sustain and sostenuto pedals
- Easy-to-use front panel with 32-character backlit LCD, 20 Program selection buttons, 3 effects selection buttons, transpose and volume sliders.

MIDI

- Fully multitimbral (a different Program may be assigned to each MIDI channel)
- Programmable receive mode (Omni On, Omni Off, Multi)
- Programmable MIDI basic channel
- User-selectable Local Control Off for use as MIDI controller

PLAYING THE
ENSEMBLE GRANDE MARK IV

By now you're at least somewhat familiar with the many realistic sounds that your Ensemble Grande MARK IV has to offer. But when it comes to realism, the sounds themselves are only one half of the equation. The other half is that those sounds be played in a realistic way. That's what this part of the book addresses.

This section begins with a discussion of playing techniques, taking the ten families of sounds in the order they appear on the control panel. Then there is an overview of using split and layered sounds, and how to adapt standard sheet music to the Ensemble Grande MARK IV.

After that, there is a selection of music designed to demonstrate some of these ideas.

PIANOS

The piano is the most logical place to begin discussing playing the Ensemble Grande MARK IV, for it is the piano that the instrument most resembles.

The keyboard of the Ensemble Grande MARK IV has been designed to simulate that of the piano; the GRAND PIANO voice likewise simulates the sound of a piano. Musically, what all of this means is that, when playing piano music on the Ensemble Grande MARK IV, you should take advantage of the expressiveness — the variations of loudness and softness — that it offers.

Another important aspect of piano playing is the use of the sustain pedal. A couple of guidelines are in order here:

- Use the pedal sparingly. If used too much, the result is an indistinct wash of sound.

- Use syncopated pedaling. What this means is that, instead of putting the pedal down at the same time you play a note, you put it down just after the note. And when you play the next note, the pedal comes up as the key goes down, and then the pedal immediately goes down again. This ensures a smooth sound that doesn't stray into either choppiness or blurriness.

The sostenuto pedal is used less frequently than the sustain pedal, and when it is used, the composer usually calls for it explicitly in the written music. Setting the left pedal to act as a soft pedal (see page 16) can give you added expressive control over your music.

Different variations of the piano sound are appropriate to different musical styles. STUDIO PIANO is a good choice for pop or rock music; RAGTIME PIANO is made to order for Scott Joplin.

The bell-like sound of the ELECTRIC PIANO calls for an emphasis on sustained notes; too much movement results in a blurred sound.

STRINGS

In most of the sounds in the Ensemble Grande MARK IV, it is the attack — the beginning of a note — that tells you "this is a piano" or "this is a string ensemble." It's the attack that makes the sound seem real. If you play long, sustained notes with some sounds, they begin to seem artificial.

This is especially true for sounds of orchestral instruments that sustain for as long as you hold a key down: BRASS, WOODWINDS, and STRINGS. If you observe players of the real instruments, you'll notice that they can't hold a note forever; brass and wind players need to breathe, and string players need to change the direction of the bow.

For the most realistic sound with the STRINGS, then, play "aggressive" music — music that emphasizes repeated attacks or moving lines.

If you must play exposed long notes, try adding VIBRATO, or perhaps CHORUS, to give the sound more warmth. CHORUS tends to give strings a more electronic sound, but this can be useful in pop music.

Notice that, since each note you play with the strings gives you the sound of several instruments playing together, you don't have to play many notes to achieve a full sound.

When strings play chords, the sound is more natural than when they play long single notes. Open spacings of chords sound better than dense, close chords.

SLOW STRINGS usually play a background accompaniment part. HALL SLOW STRINGS combine a slow attack with lots of reverberation, for a "concert hall" sound.

CHOIRS

Just about anything sounds good when playing the CHOIRS sounds: solo lines, tight clusters of notes, normal "one-handed" three-note chords, widely spaced chords...There are a couple of things to observe, however:

- Range. The CHOIR sounds best within the normal range for a real choir:

- Speed. Fast repeated notes tend to sound unrealistic (though fast moving lines pose no problem). The CHOIRS sounds have an air of dignity about them that suits some styles of music better than others.

The native music of the CHOIRS is the church hymn. Even when playing other kinds of music, it's a good idea to use the kind of flowing four-part harmony found in hymns.
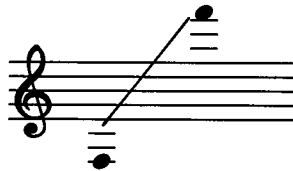
VIBES

The vibes (vibraphone) are played by striking metal bars with mallets. The player sometimes has one mallet in each hand — with which he or she can play either melodies or two-note chords — and sometimes two in each hand, for a total of four notes that can be played at one time.

For a characteristic vibes sound, observe this limitation when playing the Vibes on the Ensemble Grande MARK IV, keeping in mind that too many notes can sound muddy, due to the bell-like sound of the instrument. Two guidelines to follow in this regard are:

- Play as few notes as possible at one time.

- Wide spacings between notes sound best, especially in the low range. (Dissonant jazz chords are most characteristic.)

To sound most authentic, play within the range of real vibes:

There is a sustain pedal on the real vibes, so you may use it on the Ensemble Grande MARK IV as well; it is usually used in building up large chords by adding one note at a time.

Real vibes can be played with or without tremolo, so that effect is appropriate on the Ensemble Grande MARK IV. It is used most frequently in ballads and other slow, expressive music.

BASSES

The natural range of both the acoustic bass and the electric bass is as follows:

8va⌐
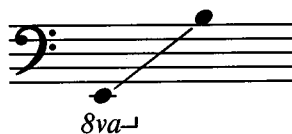
The most prominent use of the acoustic bass is in jazz, to provide a "walking" bass line that propels the music with its quarter-note pulse. This kind of bass line moves primarily by steps and half steps.

In slow ballads, which usually have two main beats per bar rather than four, the acoustic bass plays a simpler part, usually alternating between the root and the fifth of the current chord.

For the electric bass, there are many different styles of playing, varying in complexity. One of the simplest is a dotted-quarter-and-eighth-note pattern that often duplicates the rhythm of the kick drum. Another is repeated eighth notes, or eighth-note alternating octaves.

Slap bass is a technique of playing the electric bass in order to achieve a bright, percussive sound. It is used to accent notes. The DUAL BASS/DIG PIANO Program allows you to change between normal and slap bass sounds the way a bass player does: by chossing which notes you accent (play harder).

BRASS

When playing the BRASS Programs on the EG IV, remember that real brass players need to breathe. Think in phrases, and lift your fingers from the keyboard for "breaths." Don't use the sustain pedal.

The ranges of the trumpet and baritone horn are as follows:
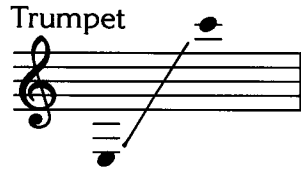
Bugle calls, such as "Taps" and "Reveille," all use the same four notes:

Similarly, horns often play in harmony, with a phenomenon known as "horn fifths" occurring between them:

A little VIBRATO, added using the modulation wheel, often makes sustained tones more realistic. This is especially true of the trumpet.

WOODWINDS

Although clarinets and flutes sometimes play in ensembles, they are most often heard as solo instruments. Because of this, when playing woodwind lines, be sure the notes don't "overlap"; release one note before playing the next.

Woodwinds are agile and expressive instruments, used in all styles of music. They excel at playing trills, grace notes, and other embellishments.

The clarinet has a wide range, with an especially powerful low register:

The flute concentrates on the high register; its low notes are soft and warm:

ORGANS

The capability of organ sounds to sustain indefinitely means that when trying to play the Ensemble Grande MARK IV like an organ, you can rely on held notes to a greater extent than when playing piano music.

Real organ keyboards are not velocity-sensitive — that is, the volume doesn't change when you play the keys harder or softer. Some of the ORGANS sounds in the Ensemble Grande MARK IV mimic this characteristic. Others (the DYNAMIC ORGAN sounds, especially) allow you to exploit the velocity sensitivity of the Ensemble Grande MARK IV.

ELECTRIC ORGAN and ROCK ORGAN are best suited to rock and pop music. They are used to play everything from sustained chords to rhythmic chords to high solo lines. Either VIBRATO or TREMOLO can be used effectively with these sounds. The former simulates the sound of the portable organs used in garage bands in the 1960s; the latter mimics the rotating speakers used with larger organs, right down to the acceleration and deceleration when it is turned on and off!

JAZZ ORGAN calls for a sparse, dissonant style. One technique that is often employed is the *glissando*, in which the fingers slide rapidly up or down the keys.

PIPE ORGAN 1 and PIPE ORGAN 2 are most at home with the music of the church. CHORUS adds a lower octave to PIPE ORGAN 2.

SYNTHS

The Programs in this category cover a variety of families. Many of them emphasize electronic-sounding timbres, rather than acoustic ones.

NEW AGE PIANO, KLAVINET, and HARPSICHORD are keyboard sounds, so much of the advice given for the PIANOS applies. In general, however, the sustain pedal is not used as much with these sounds.

CANYON HORNS and SYNTH ORCHESTRA are excellent choices for playing chords, either in a sequenced arrangement or played by themselves.

PLUCKED FLUTE, POWER FLUTE, POWER SYNTH, and ANALOG REED lend themselves to solo lines, showing off the pitch bend wheel.

SYNTH KALIMBA represents the African "thumb piano," a percussive sound that is effectively used in accompaniments. For best results, confine parts to a narrow range, with plenty of rhythmic repetitions and alternations of notes.

DRUMS

The DRUMS Programs can be played either by recording parts into a sequencer or by playing the keyboard live. Each drum sound has a different role:

- Kick: plays the main beats (1 and 3 in 4/4).
- Snare: plays the "backbeats" (2 and 4 in 4/4).
- Hi-hat: in rock and pop, provides a steady rhythm. The closed hi-hat plays on every quarter, eighth, or sixteenth note, with the open and closing hi-hats providing variety.
- Ride Cymbal: used in swing similarly to the hi-hat in pop. The three A BASS & RIDE Programs (8, 9, and 10) use the ride cymbal to double the acoustic bass, which is especially effective with walking bass lines.

- Toms: used for "drum fills" during the final measure of a phrase.
- Crash Cymbal: an accent, especially at the end of a section or a song.
- Congas: play intricate or syncopated rhythms to add texture. Although primarily associated with Latin music, they are used in all styles.
- Woodblock, Cowbell, Handclap, Finger Snap, Toot, Cabasa, Click: either occasional accentuation or a running counterpoint to the fundamental Kick-and-Snare beat.
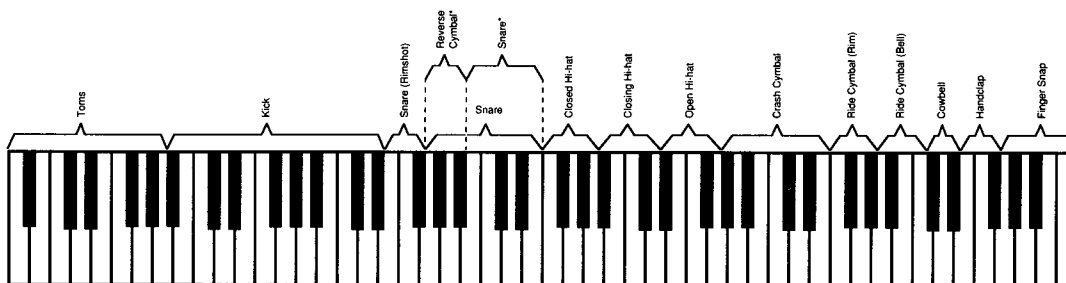
The following diagrams show how the drums are placed on the keyboard for all but the A BASS & RIDE Programs.

A. BASS/DR/PERC and E. BASS/DR/PERC:

The Kick and Snare (and obviously the Bass) sounds differ between these two Programs; otherwise all sounds are the same.
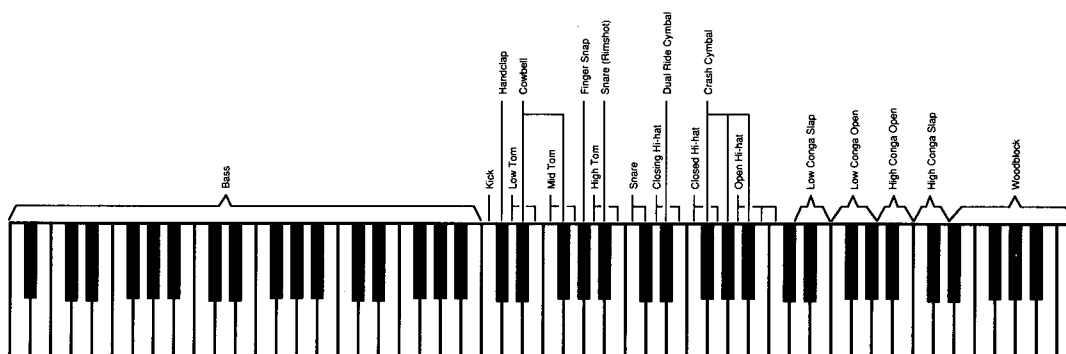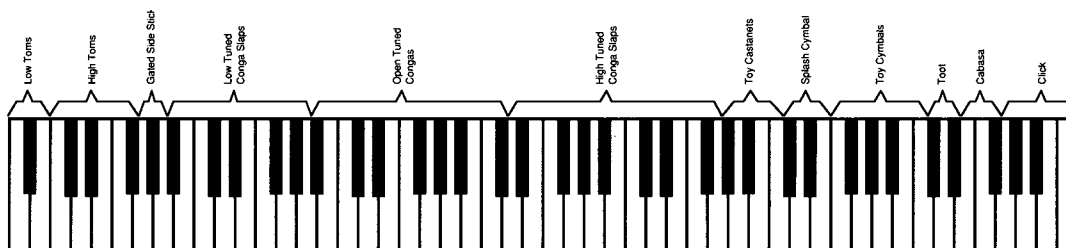

CLEAN KIT 1, KIT W/RVS CYMBAL, MONSTER ROCK KIT, and ECHO ROCK KIT:

*Only in the Program KIT W/RVS CYMBAL.

CONGAS & PERCS:

24

LAYERED SOUNDS

The easiest way to achieve a "full" sonority on the Ensemble Grande MARK IV is to use layered sounds — those in which two or more individual sounds are combined, such as CHOIR & HORNS.

PIANO & SLOW STRINGS is an excellent example of a layered sound, for the two components complement each other perfectly: one has a fast attack, the other a slow attack; one decays, the other sustains.

Layered combinations of orchestral instruments (TRUMPET & STRINGS, HORN & STRINGS, etc.) are excellent choices when you wish to achieve the sound of a full instrumental ensemble.

SPLIT SOUNDS

Another approach to an ensemble sound is the "split" sound, in which different instruments play in different parts of the keyboard.

The classic example of the split sound is ACOUSTIC BASS/PIANO, but there are many other combinations from which to choose on the Ensemble Grande MARK IV.

In addition to using a split sound for solo performance, playing one sound with each hand, an excellent use of splits lies in playing duets. The sounds that include piano (ACOUSTIC BASS/PIANO, DYNAMIC PIANO/FLUTE, etc.) suggest this approach most readily, but the other splits can also be used this way to good effect.

The song "The Rain In Spain," on pages 46-48, is an example of a duet for the Ensemble Grande MARK IV.

ADAPTING SHEET MUSIC

Almost all sheet music consists of three parts: melody, chords, and bass. This simple fact makes it easy to adapt popular sheet music to the Ensemble Grande MARK IV.

If you are playing a single sound, you can play the piano part pretty much as is, depending on the specific sound you are using. If you are using the GRAND PIANO sound, you needn't change anything. On the other hand, if you wish to use the REVERB CHOIR sound, you may have to change some pianistic parts to something better suited to a vocal sound.

If you are using a split sound, whether for a solo performance or for a duet, you can distribute melody and chords to one part, and bass to the other; or melody to one part, and chords and bass to the other. The deciding factor will be whether the left-hand part of the split is a bass, or a "harmonic" sound such as piano, vibes, or strings.

Since duets divide the responsibility between two players, each part can be more elaborate than would be possible in a solo.