INTRODUCTION TO THE

KURZWEIL™

Music Systems

Mark 150/Mark 10
Ensemble Grand

YOUNG ⓒ CHANG

DG 150
Digital Grand

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Kurzweil Mark 150/10

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Radio And Television Interference

Warning: Changes or modifications to this instrument not expressly approved by Young Chang could void your authority to operate the instrument.

Important: When connecting this product to accessories and/or other equipment use only high quality shielded cables.

Note: This instrument has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This instrument generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this instrument does cause harmful interference to radio or television reception, which can be determined by turning the instrument off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the instrument and the receiver.

- Connect the instrument into an outlet on a circuit different from the one to which the receiver is connected.

- If necessary consult your dealer or an experienced radio/television technician for additional suggestions.

NOTICE

This apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

AVIS

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la class B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

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ABOUT THE MARK 150, MARK 10, AND DG 150

Congratulations and thank you for purchasing the Kurzweil Mark 150 or Mark 10 Ensemble Grand or the Young Chang DG 150 Digital Grand. The Mark 150, Mark 10, and DG 150 have the same features, so this manual serves for all of them. The differences between them are in the cabinet—grand-piano style for the Mark 150 and DG 150, console style for the Mark 10—and the sound system—larger for the Mark 150 and DG 150 than for the Mark 10. Where there are actual differences between the Mark 150 or DG 150 and the Mark 10, these are indicated in the manual. All references to the Mark 150 also apply to the DG 150.

Introduction

Welcome to the world of the Kurzweil Mark 150 and Mark 10 Ensemble Grands and the Young Chang DG 150 Digital Grand!

The Mark 150, Mark 10, and DG 150 give you easy, affordable access to Kurzweil/Young Chang's high-quality sound technology. Authentic digital representations of musical instrument sounds are the starting point. The Mark 150, Mark 10, and DG 150 reproduce the finest details of the original sounds; you'll even hear differences in tone as you play from bass to treble and from soft to loud—just as in the originals.

These instruments are also *multitimbral*, meaning that you can play different sounds at the same time. This capability is especially significant as you use the built-in recorder, which allows you to create your own tapeless multitrack recordings.

The Mark 150, Mark 10, and DG 150 have auto accompaniment featuring 32 different musical styles; digital reverb and effects to tailor your sound; a built-in disk drive to store your music and to load in new songs, styles, and even new sounds; and much more.

About This Manual

This manual serves as both a guided tour for the new owner and a reference for later use. The different features of the instrument are discussed one at a time in a logical order. Throughout the manual you will find two special kinds of "sidebars"—sections that supplement the main explanation of the features:

TRY IT

The "Try It" sidebar gives you an opportunity to try a particular feature for yourself, so that you can better understand how it works.

NOTE: Occasionally, while pressing certain combinations of buttons, you may see lights appear in another section of the front panel. This is normal behavior and will not affect the operation of the instrument.

The "MIDI" sidebar explains the aspects of a feature that have to do with MIDI (MIDI is explained at the end of this manual). These details, which are for advanced users, become important when you connect the Mark 150, Mark 10, or DG 150 to other MIDI equipment.

The manual is divided into three main sections: ABOUT THE MARK 150, MARK 10, AND DG 150; MUSIC; and MIDI.

THE DRUM TEMPLATE AND DEMO DISK

Included with this manual is a template to be used in conjunction with the Drums sounds on the Mark 150/10. Use of this template is described on page 11.

Also included is a disk, which contains the following data:

- The six songs printed in the MUSIC section of the manual, which you can load into the Recorder of the Mark 150/10 (see page 36). You can then play back, play along, change the tempo, silence parts, and more (see page 29). The songs, and the file names that appear in the Tempo display of the Mark 150/10, are as follows:

SONG	File Name
And I Love Her	001
Can You Read My Mind?	002
Can't Help Falling In Love	003
Edelweiss	004
Star Wars	005
When I'm Sixty-Four	006

- Four disk styles, which you can load into the Mark 150/10 (see page 39) and select from the Style Select section, to play automatic accompaniment patterns (see page 21). The disk styles, and the file names that appear in the Tempo display of the Mark 150/10, are as follows:

DISK STYLE	File Name
Mambo	001
Country 2	002
Funk 2	003
Charleston	004

- Three SoundBytes™, which you can load into the Mark 150/10 (see page 37) and select from the Sound Select Section for playing (see page 15). The SoundBytes, and the file names that appear in the Tempo display of the Mark 150/10, are as follows:

SOUNDBYTE	File Name
Applause (Variation: Thunder)	Sb1
Plucked Harp (Variation: Double Plucked Harp)	Sb2
Vocal Percussion	Sb3

- One song that serves as a demo of the Vocal Percussion SoundByte. You can load this demo into the Recorder of the Mark 150/10 (see page 36) for playback. NOTE: In order for this demo to play properly, you must also load the Vocal Percussion SoundByte (see above). The Vocal Percussion Demo song has the file name 010.

- One set of nine Panel Memories. These duplicate the Panel Memories programmed into the instrument at the factory (see page 42). If you program your own Panel Memories into the Mark 150/10, you can restore the original factory Panel Memories by loading them from this disk (see page 38). The Panel Memories file has the file name 020.

Setting Up The Instrument

See the "Important Safety And Installation Instructions," on the inside front cover of this manual, for information regarding installing the Mark 150/10. For the best sound, you should position the instrument 6 to 8 inches from a wall, and 2 feet or more from a corner. If this is not possible, you can use the Treble and Bass controls to compensate for the location and restore tonal balance to the sound. (These controls are discussed on page 19.) NOTE: For best overall sound, make sure nothing obstructs the tweeters (the speakers on the top of the instrument); don't cover them with anything.

SLIDING KEY COVER AND MUSIC RACK (MARK 10)

The sliding key cover helps to keep dust and dirt off of the keyboard and the front panel when the instrument is not in use. Use two hands to open and close it. The music rack consists of two parts: the back plate (which the music leans up against) and the base. The base, which rests on the top of the cabinet of the Mark 10, has a large slot that runs its entire length. Fit the back plate firmly into this slot with both hands. Don't put too much weight on the music rack.

CARE OF YOUR INSTRUMENT

To dust the Mark 150/10 Ensemble Grand, use a soft dry cloth. DO NOT use aerosol sprays on or near the instrument. If the keys should need cleaning, a soft damp (NOT wet) cloth will usually suffice. If necessary, dampen the cloth in a solution of dish soap and water. NEVER use solvents such as alcohol or benzene.

IMPORTANT: Before shipping the Mark 150/10 anywhere, see page 41.

POWER

The Mark 150/10 operates on AC power, and has been manufactured specifically for the main supply voltages used in your area. A power cord 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 voltages, see your local Kurzweil dealer.

Before connecting the power cord, make sure the Power switch, located on the bottom panel of the Mark 150 and to the right of the keyboard of the Mark 10, is OFF. The power cord is made so that one end of it plugs into the power socket on the bottom panel of the Mark 150 (the rear panel of the Mark 10), and the other end plugs into an AC outlet. Connect the cord to the instrument first, then the AC outlet. Once the power cord is connected, you can turn the Power switch ON. (NOTE: Make sure you do not step on any of the pedals when you power-up the Mark 150/10; if you do, that pedal will operate in reverse. To correct this, turn the instrument off, then back on.) After a brief self-check on power-up, the instrument is ready to play.

NOTE: The first time the Mark 150/10 is turned on, it should be left on for one hour, to charge the internal battery, which enables the memory to retain its contents (songs recorded or loaded from disk into the Recorder, styles loaded in from disk, Panel Memories, and settings in MIDI Edit Mode). When the battery is fully charged, the Mark 150/10 will retain the contents of the memory for about one week after the power is turned off. If you do not use the Mark 150/10 for a week, you can extend the memory of your data and settings by turning the power on for one hour and then off again. Otherwise, after a week or so, your Recorder, Style, and Panel Memory data will be forgotten and your settings will be restored to the factory defaults. To avoid losing data, you can save them to a disk.

To make sure that you can hear the instrument, move the Master Volume slider (on the left end of the front-panel controls) to the middle of its range. This should provide a reasonably comfortable level of volume, which you can adjust if you wish the sound to be louder or softer.

WARNING: To avoid possible injury or electrocution, do not remove any screws or panels. There are no user-serviceable parts inside the Mark 150/10.
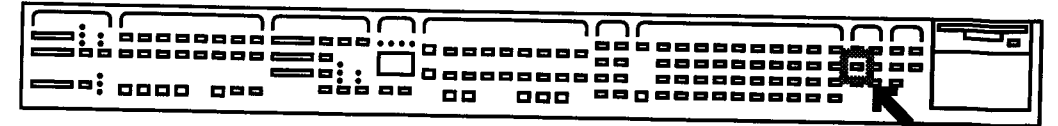
Demo

The Mark 150/10 Ensemble Grand contains a number of built-in demonstrations to acquaint you with the sounds and capabilities it possesses.

To access these demonstrations, press the Demo button, which is located near the right end of the front-panel controls, in the Options section. The button lights up to show that the Mark 150/10 is in the demonstration mode.

In this mode, buttons on the front panel blink. Press a blinking button in the Sound Select or Left Split section to hear a demonstration of the sound. Press a blinking button in the Style Select section to hear a demonstration of the style. Press a blinking button in the Recorder section to hear a complete demonstration song.

After a demonstration is finished playing, the buttons blink once again. To stop a demonstration before it finishes playing, press any button.

While in the "buttons blinking" mode, pressing the Variation button in the Sound Select section will play all of the Sound Select demos, followed by all of the Left Split demos, one after the other, in a continuous loop. Pressing Start/Stop in the Style Select section will play all of the style demos in a continuous loop. Pressing the Play/Pause button in the Recorder section will play all of the song demos in a continuous loop.

Press the Demo button a second time to exit demonstration mode.

TRY IT ☞

- Press the Demo button to enter the demonstration mode.

- Press one of the blinking Sound Select buttons to hear a demo for that sound.

- Press the Demo button again to exit the demonstration mode.

The keyboard of the Mark 150/10 Ensemble Grand 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 150/10 Ensemble Grand (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 150/10 Ensemble Grand a truly expressive instrument. See page 45 for information on adjusting the velocity sensitivity to suit your preference. (NOTE: The organ and harpsichord sounds purposely *aren't* velocity-sensitive, in order to be more realistic; real organs and harpsichords aren't velocity-sensitive.)

When you turn the Power switch ON, the Grand Piano sound is automatically active and ready to play.

Soft   Sostenuto   Sustain
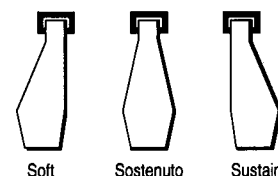
In addition to the expressiveness offered by the keyboard, there are three pedals that provide you with further control over the sounds of the Mark 150/10 Ensemble Grand. These pedals generally have the same functions as those on a grand piano. Those functions are as follows, from right to left:

- SUSTAIN. Pressing this pedal causes notes to sustain even when you lift your fingers from the keys.

- SOSTENUTO. Keys that are already held down at the time this pedal is pressed will sustain, while any keys played after the pedal is down will not sustain.

- SOFT. Notes played while this pedal is down will sound softer and more muted than those played when the pedal is up.

NOTE: The left and middle pedals have different functions for some sounds. For example, with the Electric Organ sound, the left pedal controls a rotating-speaker effect. Try these pedals with the different sounds to hear what effect they have, if any.
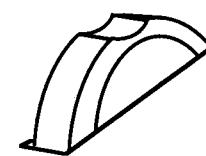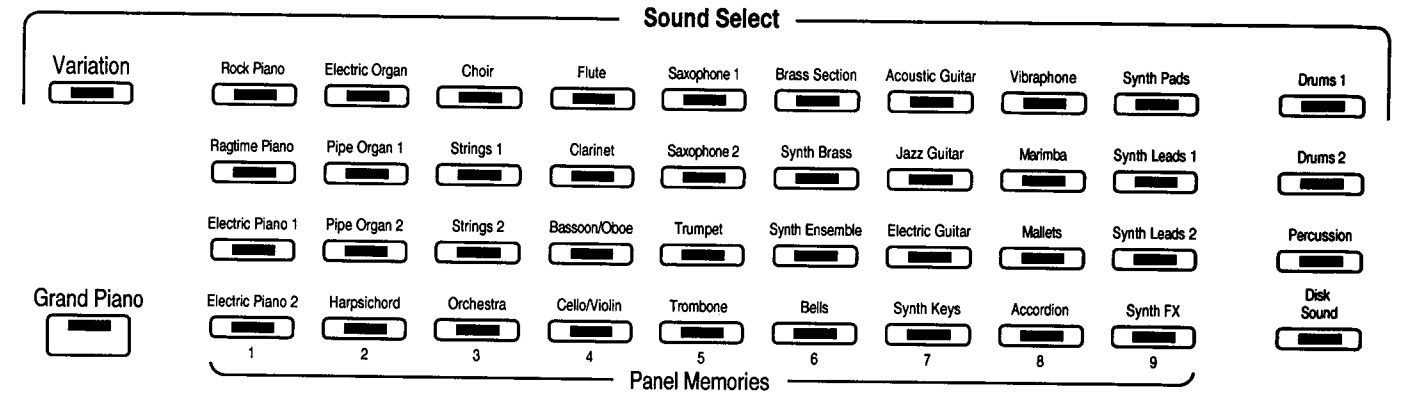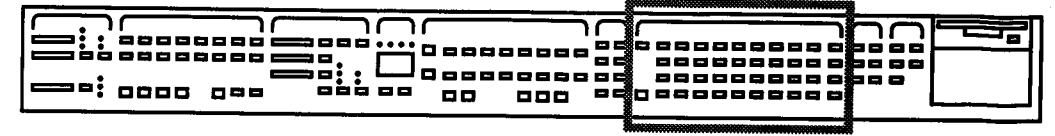

To the left of the keyboard is the pitch bend wheel. As its name indicates, it allows you to bend the pitch of any notes being played.

At rest, the wheel is centered, representing normal pitch. Moving the wheel away from you bends the pitch up; moving it toward you bends the pitch down. The wheel is spring-loaded, so when you release it, it returns to center. The indentation in the wheel allows you to use your thumb or index finger to control it easily. The range of the pitch bend wheel usually is a whole step in each direction.

The pedals transmit MIDI controller messages #64 (sustain), #66 (sostenuto), and #67 (soft). The pitch bend wheel transmits MIDI pitch bend messages.

The Keyboard And Pedals

The Pitch Bend Wheel

Sound Select

Sound Select

Variation	Rock Piano	Electric Organ	Choir	Flute	Saxophone 1	Brass Section	Acoustic Guitar	Vibraphone	Synth Pads	Drums 1
	Ragtime Piano	Pipe Organ 1	Strings 1	Clarinet	Saxophone 2	Synth Brass	Jazz Guitar	Marimba	Synth Leads 1	Drums 2
	Electric Piano 1	Pipe Organ 2	Strings 2	Bassoon/Oboe	Trumpet	Synth Ensemble	Electric Guitar	Mallets	Synth Leads 2	Percussion
Grand Piano	Electric Piano 2	Harpsichord	Orchestra	Cello/Violin	Trombone	Bells	Synth Keys	Accordion	Synth FX	Disk Sound
	1	2	3	4	5	6	7	8	9	

Panel Memories

The Sound Select portion of the front panel contains buttons used for selecting the individual sounds available on the Mark 150/10 Ensemble Grand. You select a sound by pressing the corresponding button; the light in the button illuminates to show you which sound is selected.

There are 41 Sound Select buttons. On power-up, the Grand Piano is selected.

VARIATION

Each sound button actually can select two different sounds. To access the second sound, press Variation; the light in the Variation button will illuminate, indicating that now the second sound for the active sound button is selected.

Pressing Variation again will select the original sound.

Each of the Sound Select buttons "remembers" whether or not Variation was ON the last time that sound was selected; so if you select the variation for a particular sound, then select a different sound button, then return to the first sound, the variation will automatically be selected again. (This variation memory is reset when the power to the Mark 150/10 is turned on.)

TRY IT ☞

- Press the Pipe Organ 1 button. Play a few notes on the keyboard.
- Press the Variation button. Notice that the button illuminates. Play a few notes again to hear the difference in the sound.
- Press the Electric Organ button. Notice that the Variation button is no longer illuminated. Play a few notes.
- Press the Pipe Organ 1 button again. Notice that the Variation button re-illuminates. Play a few notes to hear the sound.

The following page lists the preset sounds and their variations.

Sound	Variation	Sound	Variation
Grand Piano	Bright Piano	Brass Section	Brass Section 2
Rock Piano	Rock Piano 2	Synth Brass	Synth Brass Pad
Ragtime Piano	Tack Piano	Synth Ensemble	Pizzicato Strings
Electric Piano 1	Stereo Tremolo E Pno	Bells	Bells & Strings
Electric Piano 2	Soft Electric Piano	Acoustic Guitar	12 String Guitar
Electric Organ (Jazz)	Rock Organ	Jazz Guitar	Chorused Jazz Guitar
Pipe Organ 1 (Full)	Full Pipes w/ Reeds	Electric Guitar	Muted Electric Guitar
Pipe Organ 2 (Fluty)	Soft Hollow Pipes	Synth Keys	Space Synth
Harpsichord	Forte Harpsichord	Vibraphone	Bright Vibes
Choir	Cathedral Voices	Marimba	Xylophone
Strings 1 (Fast)	Fast Strings 2	Mallets (Steel Drums)	Conga Marimba
Strings 2 (Slow)	Panning Slow Strings	Accordion	Harmonica
Orchestra	Slow Attack Orchestra	Synth Pads	Glass Chiff
Flute	Mellow Flute	Synth Leads 1 (Flute)	Square-Wave Lead
Clarinet	Vibrato Clarinet	Synth Leads 2 (Distorted)	Tingle Lead
Bassoon/Oboe	Bassoon/Oboe 2	Synth FX	Slow Stereo FX
Cello/Violin	Cello/Violin 2 (Fiddle)	Drums 1 (Clean)	Ambient Drums
Saxophone 1 (Dual)	Baritone Sax	Drums 2 (Elec)	General MIDI Drums
Saxophone 2 (Alto)	Sax Section	Percussion (Ethnic)	Orchestral Perc
Trumpet	Trumpet Section	Disk Sound (SoundByte™)	
Trombone	Tuba/French Horn		SoundByte™ Var

LIST OF PRESET SOUNDS AND THEIR VARIATIONS

Included with this manual is a printed template showing how the drum sounds are assigned to the various keys across the keyboard. Take this template out, unfold it, and place it right side up at the back of the keyboard, standing it up behind the black keys. Line up the ends of the template with the ends of the keyboard, so that the pictures representing the drum sounds line up with the correct keys.

One side of the template, identified by "KURZWEIL Drums 1" printed at the left end, shows the Kurzweil drum assignments, used by the Drums 1, Drums 1 Variation, and Drums 2 sounds. The flip side of the template, identified by "General MIDI Drums 2, Variation" printed at the left end, shows the drum assignments for Drums 2 Variation, which corresponds to the General MIDI specification. (General MIDI is explained on pages 49 and 69.)

In addition to being shown on the keyboard template, the drum sounds are listed on the following page.

DRUM KEY ASSIGNMENTS

Drum Kits

Drums 1 (Clean)	Drums 1 Variation (Ambient)	Drums 2 (Electronic)	Drums 2 Variation (General MIDI)
Kick Drum	Ambient Kick Drum	Synth Kick Drum	Snare
Kick Drum	Ambient Kick Drum	Synth Kick Drum	Snare
Kick Drum	Ambient Kick Drum	Synth Kick Drum	Snare
Kick Drum	Ambient Kick Drum	Synth Kick Drum	Snare
Sidestick	Sidestick	Sidestick	Snare
Floor Tom	Ambient Floor Tom	Synth Floor Tom	Snare
Floor Tom	Ambient Floor Tom	Synth Floor Tom	Snare
Floor Tom	Ambient Floor Tom	Synth Floor Tom	Snare
Lo Tom	Ambient Lo Tom	Synth Lo Tom	Snare
Lo Tom	Ambient Lo Tom	Synth Lo Tom	Kick Drum
Mid Tom	Ambient Mid Tom	Synth Mid Tom	Kick Drum
Mid Tom	Ambient Mid Tom	Synth Mid Tom	Kick Drum
Hi Tom	Ambient Hi Tom	Synth Hi Tom	Kick Drum
Hi Tom	Ambient Hi Tom	Synth Hi Tom	Kick Drum
Dual Snare	Ambient Snare	Synth Snare	Kick Drum
Dual Snare	Ambient Snare	Synth Snare	Kick Drum
Dual Snare	Ambient Snare	Synth Snare	Sidestick
Closed Hi Hat	Closed Hi Hat	Closed Hi Hat	Snare
Closed Hi Hat	Closed Hi Hat	Closed Hi Hat	Hand Claps
Closed Hi Hat	Closed Hi Hat	Closed Hi Hat	Electronic Snare
Slightly Open Hi Hat	Slightly Open Hi Hat	Slightly Open Hi Hat	Lo Floor Tom
Slightly Open Hi Hat	Slightly Open Hi Hat	Slightly Open Hi Hat	Closed Hi Hat
Slightly Open Hi Hat	Slightly Open Hi Hat	Slightly Open Hi Hat	Hi Floor Tom
Open Hi Hat	Open Hi Hat	Open Hi Hat	Pedal Hi Hat
Open Hi Hat	Open Hi Hat	Open Hi Hat	Lo Tom Tom
Fully Open Hi Hat	Fully Open Hi Hat	Fully Open Hi Hat	Fully Open Hi Hat
Fully Open Hi Hat	Fully Open Hi Hat	Fully Open Hi Hat	Lo Mid Tom
Pedal Hi Hat	Pedal Hi Hat	Pedal Hi Hat	Hi Mid Tom
Crash Cymbal	Crash Cymbal	Crash Cymbal	Crash Cymbal
Crash Cymbal	Crash Cymbal	Crash Cymbal	Hi Tom
Crash Cymbal	Crash Cymbal	Crash Cymbal	Ride Cymbal
Crash Cymbal	Crash Cymbal	Crash Cymbal	Crash Cymbal
Crash Cymbal	Crash Cymbal	Crash Cymbal	Ride Bell
Crash Cymbal	Crash Cymbal	Crash Cymbal	Tambourine
Dual Ride (Rim>Bell)	Dual Ride (Rim>Bell)	Dual Ride (Rim>Bell)	Splash Cymbal
Ride Rim	Ride Rim	Ride Rim	Cowbell
Dual Ride	Dual Ride	Dual Ride	Crash 2
Ride Bell	Ride Bell	Ride Bell	Vibraslap
Lo Conga Tone	Lo Conga Tone	Lo Conga Tone	Ride 2
Mid Conga Tone	Mid Conga Tone	Mid Conga Tone	Hi Bongo
Conga Buba Stroke	Conga Buba Stroke	Conga Buba Stroke	Lo Bongo
Conga Tone	Conga Tone	Conga Tone	Mute Hi Conga
Conga Tone	Conga Tone	Conga Tone	Open Hi Conga
Conga Tap (Tap>Howl Tone)	Conga Tap (Tap>Howl Tone)	Conga Tap (Tap>Howl Tone)	Lo Conga
Conga Slap	Conga Slap	Conga Slap	Hi Timbale
Cabasa	Cabasa	Cabasa	Lo Timbale
Cabasa	Cabasa	Cabasa	Hi Agogo
Shaker	Shaker	Shaker	Lo Agogo
Shaker	Shaker	Shaker	Cabasa
Claves	Claves	Claves	Maracas
Lo Timbale	Lo Timbale	Lo Timbale	Hi Samba Whistle
Lo Timbale	Lo Timbale	Lo Timbale	Lo Samba Whistle
Hi Timbale	Hi Timbale	Hi Timbale	Short Guiro
Hi Timbale	Hi Timbale	Hi Timbale	Long Guiro
Lo Cowbell	Lo Cowbell	House Cowbell	Claves
Lo Agogo	Lo Agogo	Lo Agogo	Hi Woodblock
Lo Agogo Muted	Lo Agogo Muted	Lo Agogo Muted	Lo Woodblock
Mid Agogo	Mid Agogo	Mid Agogo	Hi Cuica
Mid Agogo Muted	Mid Agogo Muted	Mid Agogo Muted	Lo Cuica
Hi Agogo	Hi Agogo	Hi Agogo	Mute Triangle
Hi Agogo Muted	Hi Agogo Muted	Hi Agogo Muted	Open Triangle
Long Guiro	Long Guiro	Long Guiro	Woodblock
Long Guiro	Long Guiro	Long Guiro	Bell
Short Guiro	Short Guiro	Short Guiro	Gated Kick 1
Tambourine	Tambourine	Tambourine	Gated Kick 2
Tambourine	Tambourine	Tambourine	Room Gate Snare
Triangle	Triangle	Triangle	Gunshot
Triangle	Triangle	Triangle	Ambient Snare
Triangle Muted	Triangle Muted	Triangle Muted	Lo Tom
Lo Woodblock	Lo Woodblock	Lo Woodblock	Open Hi Hat
Hi Woodblock	Hi Woodblock	Hi Woodblock	Mid Tom
Lo Samba Whistle	Lo Samba Whistle	Lo Samba Whistle	Crash Cymbal
Mid Samba Whistle	Mid Samba Whistle	Mid Samba Whistle	Hi Tom
Hi Samba Whistle	Hi Samba Whistle	Hi Samba Whistle	Ride Cymbal
House Kick	House Kick	House Chirp	House Kick
House Stick Click	House Stick Click	House Chirp	House Snare
Hi House Snare	Hi House Snare	Click	House Click
Hi House Snare	Hi House Snare	Agogo	House Chirp
Lo House Snare	Lo House Snare	Agogo	House Chirp
Lo House Snare	Lo House Snare	Synth FX	Lo Metal Clank
Hi Hand Claps	Hi Hand Claps	Synth FX	Hi Metal Clank
Lo Hand Claps	Lo Hand Claps	Lo Hand Claps	Lo House Cowbell
Hi Hand Claps	Hi Hand Claps	Hi Hand Claps	Hi House Cowbell
House Cowbell	House Cowbell	House Cowbell	Glass Break
House Cowbell	House Cowbell	House Cowbell	Glass Break
Metal Clank	Metal Clank	Metal Clank	Glass Break
Vibraslap	Vibraslap	Vibraslap	Glass Break
Glass Break	Glass Break	Glass Break	Glass Break

Middle C

The Percussion button gives you access to a variety of Ethnic Percussion sounds—a combination of cowbells, congas, and shakers—uniquely designed to allow you to play authentic Latin, Cuban, and African rhythms using simple scales. You can also easily create your own authentic sounding rhythms using this same technique. The scales on the following page, when played correctly, will sound the traditional rhythms indicated just above them. You need only be sure to play them in the octave indicated and use an even eighth-note rhythm throughout. The rest is taken care of for you!

You may notice that some keys are silent; this is to allow for the natural silences in the rhythms being used. You should still play these keys with an equal eighth-note duration.

If you're recording using the internal Recorder of the Mark 150/10 or an external MIDI sequencer and can't play these rhythms as quickly as you'd like, record them at a slower tempo and increase the tempo on playback (see page 34).

African Durah Bah (first note = lowest key on keyboard)

African Bricambo

Three-Against-Two Rhythm

Latin Tumbao

or
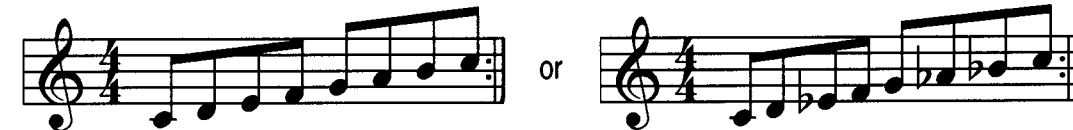
Cuban Cha Cha

Cuban Mambo
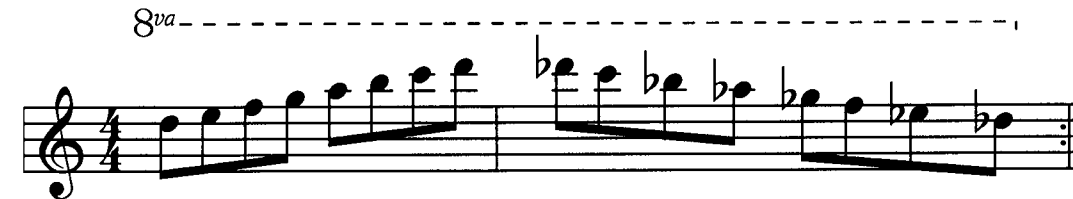
To make up your own rhythms, simply play an even eighth-note scale of your own liking anywhere on the keyboard. You can also try playing a different scale down than you play up, or even try playing arpeggios. Have fun!

Orchestral Percussion

With Variation ON, Percussion provides an array of Orchestral Percussion sounds.

Notice that many of these sounds are duplicated on adjacent keys, to make it easy to play patterns such as rolls (fast repeated drumstrokes) and flams (fast double strokes), simply by playing trills and grace notes.

For example, to play this typical march pattern:

Field Drum

Bass Drum

play the following on the keyboard:

For a triangle roll, play:

For a tambourine roll, play:

DISK SOUND

The Disk Sound button allows you to select sounds that you have loaded into the Mark 150/10 from the disk drive. This allows you to expand the sonic palette of the Mark 150/10 with sounds from the Kurzweil SoundByte™ Library. See your local Young Chang/Kurzweil dealer for more information on the SoundByte Library; see pages 37 and 38 for information on loading and saving Disk Sounds.

PANEL MEMORIES

Panel Memories 1–9, which are labeled beneath the bottom row of Sound Select buttons, allow you to save your own custom panel setups; they are discussed on pages 42 and 43.

LAYERING SOUNDS

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

To select the two sounds that you wish to layer, press and hold one Sound Select button and then press another. The buttons for both sounds will illuminate. If a sound variation was remembered for either of the sounds, it will be used in the layer. If the variation was enabled for the first sound selected, the Variation button will be lit.

Layering is reset to OFF when the power to the Mark 150/10 is turned on.

Adjusting The Balance In A Layer

You can adjust the balance between the two sounds in a layer, while creating the layer, by making the second sound softer. To do this, press and hold the button for the first sound, and press the button for the second sound repeatedly; each press of the second button will lower the volume of that sound by a small amount.

For example, if you layer Grand Piano and Electric Organ (in that order), you can make the organ softer in relation to the piano. If you wish the organ to be *louder* in relation to the piano, then select the organ first, and lower the volume of the piano.

Strings And Choir

Two favorite sounds for use in layered combinations are strings and choir. In combinations like piano and strings, guitar and strings, and organ and choir, they provide what's known as a "pad" sound—a soft cushion on which the music rests.

Because these two sounds are so important in this context, Kurzweil has designed specially optimized versions of them for use in layered combinations. Say, for example, that you layer piano and strings, by pressing and holding the Grand Piano button and pressing Strings 2. The string sound you'll hear will not be the normal Strings 2, but a special strings sound tailored for layering. You can think of it as the "and Strings" sound, as in "Piano and Strings," "Harpsichord and Strings," etc. There is also a similar "and Choir" sound. (NOTE: These special layer sounds are available only when layering Strings 2 or Choir with Variation OFF.)

These special sounds have been adjusted so that the attacks are neither too fast nor too slow, and so that they fade out realistically as you approach the top of the keyboard, so that high notes are not strident.

To use the "original" Strings 2 or Choir in a layered combination, press and hold that button *first*, then press the button for whatever other sound you wish to layer with it.

TRY IT ☞

Grand Piano

The Grand Piano and Grand Piano Variation are tuned differently than other sounds on the Mark 150/10; 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.

But when you layer Grand Piano or Grand Piano Variation with another sound, the Mark 150/10 substitutes a special version of the piano sound that is *not* stretch-tuned, so that it is in tune with the other sound in the layer.

POLYPHONY

The Mark 150/10 Ensemble Grand has a maximum *polyphony* of 32 notes. That means that it can play as many as 32 notes at one time. This allows you to play from the keyboard and use the sustain pedal freely with little worry about running out of notes, or to use the Recorder to create songs with lots of parts.

You should know, however, that when two sounds are layered, each key you press actually plays two notes. Furthermore, some of the individual sounds themselves are already made up of two layers; layering these sounds with others will further reduce polyphony.

The Mark 150/10 employs a sophisticated method of "note allocation," so that your playing will sound natural even if more than 32 notes are played at one time.
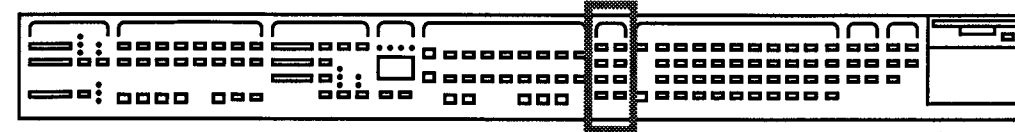
Selecting a sound also causes the Mark 150/10 Ensemble Grand to transmit a MIDI program change message, unless transmission of program change messages has been disabled in MIDI Edit Mode. (For more about MIDI, see pages 66–72. For information about MIDI Edit Mode, see pages 44–49.)
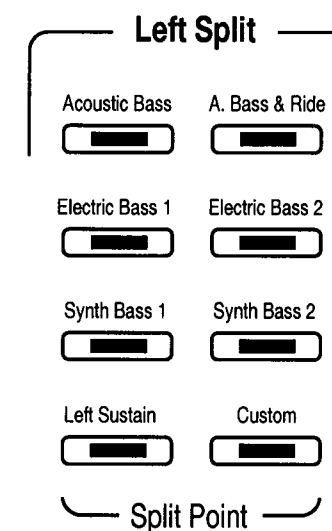
Variation sounds have their own MIDI program change numbers, which differ from the program change numbers of the basic sounds. (See page 70 for more information.)

Creating a layer transmits a program change message for only the first sound selected; the number of the second sound is transmitted as the value for MIDI controller #82. (For more information about this, see page 72.)

Adjusting the volume of the second sound in a layer transmits a MIDI controller #79 message.

Left Split

Acoustic Bass   A. Bass & Ride

Electric Bass 1   Electric Bass 2

Synth Bass 1   Synth Bass 2

Left Sustain   Custom

Split Point

The buttons in the Left Split section of the panel allow you to "split" the keyboard into two parts. Splits are an easy way to make one performer sound like two. When you play the keyboard, your right hand plays one sound and your left hand plays another. The right-hand part of the keyboard plays whatever sound is currently selected in the Sound Select section; the left-hand part plays a bass or a Custom sound, selected by pressing one of the Left Split buttons. The buttons illuminate to indicate what is active.

Press a different Sound Select button while a split is active to change the right sound but not the left one. Press a different Left Split button while a split is active to change the left sound but not the right one. Press the active Left Split button a second time to cancel a split.

The left split is reset to OFF when power to the Mark 150/10 is turned on.

SPLIT POINT

The *split point* is the point on the keyboard where the left sound and right sound meet. The split point is also used by the Auto Accompaniment section. The default split point set at the factory is E below middle C.

To change the split point, press the two buttons with the label Split Point printed beneath them at the same time; the lights in the buttons will blink. Then press the key you wish to be the split point. (The key you press will be the top key of the left sound.) This split point is now used for all Left Split sounds and for the Auto Accompaniment, until you change it or turn off the Mark 150/10; the Split Point is reset to E below middle C when power to the Mark 150/10 is turned on.

To cancel selecting the split point while the two Split Point lights are blinking, press any button on the control panel.

NOTE: It is possible to set a split point higher than some left sounds will play. If you do this, those keys to the left of the split point that are above the range of the left sound won't play any sound.

TRY IT ☞

- Press the Grand Piano button.
- Press the A. Bass & Ride button. Play some notes up and down the keyboard, noticing the Grand Piano in the right part of the keyboard and the A. Bass & Ride in the left part.
- Press the two Split Point buttons. Their lights begin flashing.
- Press middle C. The lights will stop flashing. Play the keyboard again, noticing that the A. Bass & Ride now plays up through middle C.
- Press A. Bass & Ride again to remove the left split.

LEFT SUSTAIN

When using the Left Split sounds, most music and playing styles require the sustain pedal to be ignored for the left half of the split. Should you wish to have the sustain pedal affect the left sound (for example, in a Custom split), you can do so by pressing the Left Sustain button; the button lights up to show that Left Sustain is ON. Press the button again to turn Left Sustain OFF.

Left Sustain is reset to OFF every time the power to the Mark 150/10 is turned on.

CUSTOM

You can optionally select any available sound to be the left sound. You accomplish this by pressing and holding the Custom button, pressing the desired Sound Select button, and releasing the Custom button. The selected sound will become the left split sound. This sound is "remembered," and if the Custom button is selected later, the same sound will be used. (The Custom sound is reset to Grand Piano when the power to the Mark 150/10 is turned on.)

The Custom button will also remember a Variation of a sound.

TRY IT ☞

- Press the Choir button.
- Press and hold the Custom button.
- While holding the Custom button, press the Harpsichord button.
- Release the Custom button.
- Play the keyboard. Notice that Harpsichord is the left sound and Choir is the right sound.
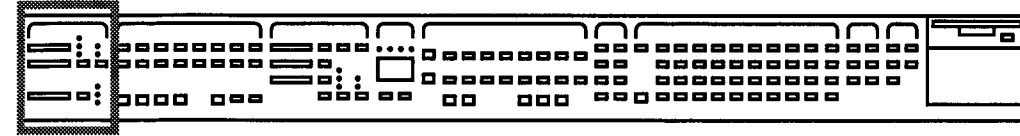
OCTAVE SHIFT

In setting up a left split, you may wish to make the right or left sound higher or lower—especially if you use a Custom left split to play duets at the keyboard (e.g., piano on the left and strings on the right). The Mark 150/10 Ensemble Grand gives you the ability to shift the octave in which each part sounds. See page 49 for details on how to use the Left Octave Shift and Right Octave Shift functions.
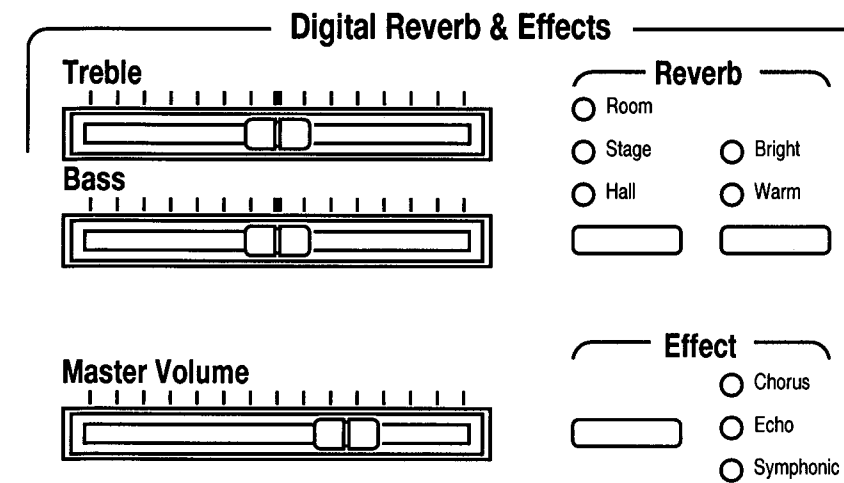
Selecting a Left Split sound transmits two MIDI controller messages (see page 49 for more information on transmitting split data): #81 contains the split program number, and #80 contains the split point.

Setting the split point transmits a MIDI controller message #80, the value of which is the key number of the split point.

Changing the Left Sustain setting transmits a MIDI controller message #78.

Digital Reverb & Effects

Treble

Bass

Master Volume

Reverb
- ○ Room
- ○ Stage   ○ Bright
- ○ Hall   ○ Warm

Effect
- ○ Chorus
- ○ Echo
- ○ Symphonic

The Digital Reverb & Effects section of the panel contains controls that affect the sound of the instrument as a whole.

MASTER VOLUME

The Master Volume slider controls the overall volume (loudness) of the Mark 150/10 Ensemble Grand. 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. As in most home stereos and televisions, it is possible to adjust the volume and tone controls such that the resulting sound does not suit some personal tastes.

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 pages 50 and 51).

CAUTION: Turn the Master Volume down before connecting headphones or using the Audio Out jacks.

CAUTION: Master Volume does NOT affect the volume of the sound coming in from the Audio In jacks.

TREBLE AND BASS

The Treble and Bass sliders are tone controls, allowing you to adjust the tonal balance of the overall sound to your liking. Treble controls high frequencies, and Bass controls low frequencies.

When the controls are centered, they have no effect on the sound. (The center position is identified by both a heavy line and a detent that catches the slider.) Moving the Treble slider to the *right* boosts treble frequencies; moving it to the *left* cuts treble frequencies. The Bass slider operates in the same way on bass frequencies.

The Treble and Bass sliders affect the sound produced by the internal speakers, the Headphone jack, and the Audio Out jacks. They do NOT affect the sound coming in from the Audio In jacks.

REVERB AND EFFECT

For a heightened sense of sonic realism, the Mark 150/10 Ensemble Grand provides you with two independent types of digital signal processing: reverb and effects.

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 ambience to music.

There are two Reverb buttons. Press the left button to turn reverb off (no light illuminated) or to cycle among different room sizes (indicated by the lights above the button):

- Room—The intimacy of a chamber-music room.

- Stage—The ambience of a performance stage.

- Hall—The spacious atmosphere of a concert hall.

If a room size is selected, you can press the right Reverb button to cycle among three different "qualities" of reverb: Normal (no light illuminated), Bright, or Warm.

The effects, which you select by pressing the Effect button, are as follows:

- Chorus—The effect of many instruments playing together instead of one.

- Echo—A repetition of the sound, as if it were bouncing off a wall.

- Symphonic—When used by itself, a unique combination of Chorus and Echo. When used in combination with Room, Stage, or Hall Reverb, it slightly increases the level of the reverb that is already present.

Each of the Sound Select buttons can remember its own reverb and effect settings, just as it can remember the status of the Variation button. So you can give each sound a different combination of reverb and effect, which will be recalled whenever you press that Sound Select button. These settings are reset to factory defaults when the power is turned on.
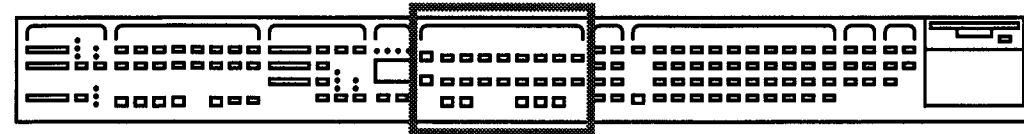
TRY IT 🖙

- Press the Electric Piano 1 button.
- Press the Reverb room size button until none of the lights above it is lit.
- Do the same with the Effect button.
- Play the keyboard, paying close attention to the sound.
- Press the Reverb room size button twice, to select Stage.
- Press the Effect button once, to select Chorus.
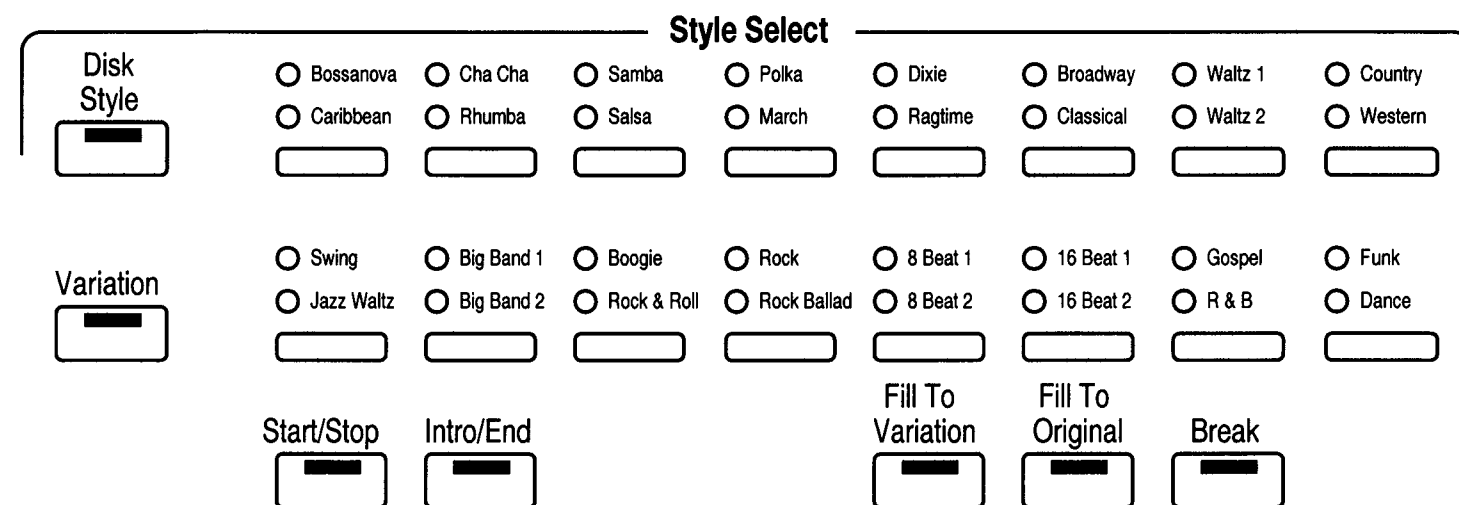- Play the keyboard again, noticing the difference in the sound.

Moving the Master Volume slider does not transmit volume messages over MIDI.

Selecting a reverb or effect type causes the Mark 150/10 Ensemble Grand to transmit a MIDI controller #83 message. Selecting the Symphonic effect transmits a MIDI controller #68 ON message. Selecting an effect other than Symphonic transmits a MIDI controller #68 OFF message.

Style Select

Disk Style	○ Bossanova	○ Cha Cha	○ Samba	○ Polka	○ Dixie	○ Broadway	○ Waltz 1	○ Country
	○ Caribbean	○ Rhumba	○ Salsa	○ March	○ Ragtime	○ Classical	○ Waltz 2	○ Western

Variation	○ Swing	○ Big Band 1	○ Boogie	○ Rock	○ 8 Beat 1	○ 16 Beat 1	○ Gospel	○ Funk
	○ Jazz Waltz	○ Big Band 2	○ Rock & Roll	○ Rock Ballad	○ 8 Beat 2	○ 16 Beat 2	○ R & B	○ Dance

Start/Stop   Intro/End   Fill To Variation   Fill To Original   Break

The Style Select section contains 16 buttons used for selecting accompaniment styles. Each button can select between two styles, which are indicated by the names printed above each button. Pressing a button repeatedly will cycle back and forth between these two styles, as indicated by the lights next to the style names.

The default style when power to the Mark 150/10 is turned on is Bossanova.

When the Mark 150/10 is powered up, it is automatically in Auto Setup mode. In this mode, selecting a style causes the instrument to choose an appropriate right-hand sound and reverb setting. See page 45 for more information.

You can load alternate styles into the Mark 150/10 from the disk drive. (See page 39 for instructions on loading styles from a disk into the Mark 150/10.)

DISK STYLE

Once you have loaded the disk styles, you access them by pressing the Disk Style button in the Style Select section. The Disk Style button lights up, and the top lights above all the style select buttons that contain a disk style begin to blink. Press one of these buttons to select the disk style it contains. (Note that the names on the Style Select buttons have nothing to do with the disk styles that are loaded into the Mark 150/10, since any disk style can be loaded into any Style Select button.)

Press the Disk Style button again to exit the disk style select mode. NOTE: The current disk style is still active until you select another style.

STYLE CONTROLS

In addition to the 16 style select buttons are buttons that control the playing of the accompaniment styles.

Start/Stop

Pressing the Start/Stop button will start the currently selected style if it is not playing, and stop it if it is playing.

Intro/End

Pressing Intro/End while a style is not playing causes the button to blink, and then the next time a style is started, an introduction will play before the main style arrangement. (Pressing Intro/End a second time before a style is started will cancel the introduction.)

Pressing Intro/End while a style is playing will cause the style to play an ending arrangement, beginning at the next measure, and then stop.

Variation

Each of the 32 styles has a variation (embellished) style available, which you select by pressing the Variation button in the Style Select section. This variation style often works well for the second section, or for the chorus, of a song. The button lights up when the variation is active, showing that the variation for the current style is selected. Pressing the Variation button again returns you to the original style.

Each of the styles "remembers" whether or not Variation was ON the last time that style was selected; so if you select the variation for a particular style, then select a different style, then return to the first style, the variation will automatically be selected again.

Variation is reset to OFF for all styles when power to the Mark 150/10 is turned on.

Fill To Variation

Pressing Fill To Variation while a style is playing will cause the style to play a fill-in arrangement until the end of the measure, and then continue with the variation of the style.

Pressing Fill To Variation while a style is not playing causes the button to blink, and then the next time a style is started, a fill-in will play, followed by the variation of the style. (Pressing Fill To Variation a second time before a style is started will cancel the fill-in.)

Fill To Original

Pressing Fill To Original while a style is playing will cause the style to play a fill-in arrangement until the end of the measure, and then continue with the original style.

Pressing Fill To Original while a style is not playing causes the button to blink, and then the next time a style is started, a fill-in will play, followed by the original style—i.e., not the variation. (Pressing Fill To Original a second time before a style is started will cancel the fill-in.)

Break

Pressing this button while a style is playing will insert a blank fill-in until the end of the measure, and then continue with the current style (original or variation).

- Press the Samba/Salsa button, to select the Samba style.

- Press Start/Stop to start the style. (NOTE: You will hear drums only. Auto Accompaniment, discussed on pages 26–28, lets you add instrumental parts to the styles.)

- Press the Samba/Salsa button again to select Salsa. Notice that the style changes at the first new measure after you select it, and plays in the same tempo as the previous style.

- Press Start/Stop. The style stops.

- Press the Big Band 1/Big Band 2 button twice to select Big Band 2.

- Press Intro/End. Notice that the button blinks.

- Press Start/Stop. The style plays an introduction, followed by the main arrangement.

- Press Fill To Variation. (HINT: For complete fills and breaks, press the button on the first beat of the measure, as indicated by the Beat lights above the Tempo display.) The style plays a fill, followed by the variation arrangement.

- Press Fill To Original. The style plays a different fill, followed by the original arrangement.

- Press Break. The style is silent until the next measure.

- Press Intro/End. The style plays an ending and then stops.

Selecting a style causes the Mark 150/10 to transmit a MIDI controller #85 message whose value is the style number: internal styles are 1–32, and disk styles are 33–49.

Changing a Style control causes the Mark 150/10 to transmit a MIDI controller #86 message. The values are listed in the following table. The Mark 150/10 responds differently to controller #86 than to other controllers, in that a new value doesn't override previous values. For example, if the Mark 150/10 received a controller #77 message with a value of 40 (Left Octave shift: down two octaves), it would override a previous controller #77 message with a value of 64 (Left Octave shift: normal pitch). But a controller #86 message with a value of 40 (Background C ON) would not override a previous controller #86 message with a value of 64 (Chord recognition OFF).

VALUE	Meaning	VALUE	Meaning
1	Start from original arrangement	33	Drum part OFF
2	Start from variation	34	Bass part ON
3	Start from intro	35	Bass part OFF
4	Start from fill to original	36	Background A ON
5	Start from fill to variation	37	Background A OFF
16	Select original (variation OFF)	38	Background B ON
17	Select variation (original OFF)	39	Background B OFF
18	Select intro ON	40	Background C ON
19	Select intro OFF	41	Background C OFF
20	Select fill to original ON	48	Chord hold ON
21	Select fill to original OFF	49	Chord hold OFF
22	Select fill to variation ON	50	Full keyboard mode ON
23	Select fill to variation OFF	51	Full keyboard mode OFF
24	Select break ON	52	Key/pedal start OFF
25	Select break OFF	53	Key start ON
26	Select ending ON	54	Pedal start ON
27	Select ending OFF	64	Chord recognition OFF
28	Start from current state	65	Basic chord recognition ON
29	Stop style	66	Advanced chord recognition ON
32	Drum part ON	67	Chord inversion recognition ON

Tempo

```
●    ○    ○    ○
```

8.8.8.

Down   Up
▼   ▲
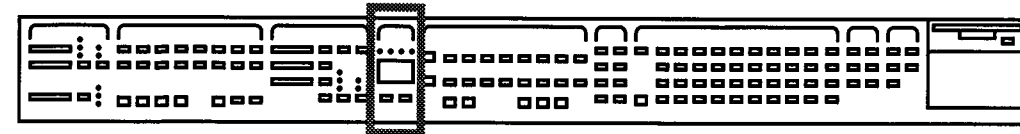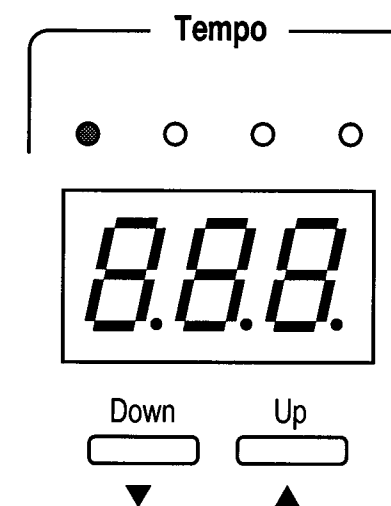
The Tempo display shows the tempo of the current style or song, or of the metronome in the Recorder section. It also displays values and messages during certain operations.

When the Mark 150/10 is powered up, the Tempo display shows the default tempo of the Bossanova style, which is selected automatically.

Each style has its own preset tempo, which is automatically chosen when the style is selected—if no style is currently playing. If a style is playing, selecting a new style will not change the tempo.

Above the Tempo display are four lights, which show the beats while styles, songs, or the metronome play. The leftmost light, which is red, shows the downbeat of each measure.

Below the Tempo display are two buttons, Down and Up. Pressing Down slows down the tempo; pressing Up speeds it up. Pressing both simultaneously resets the preset tempo for the current style, or the original tempo for the current song. You'll also use these buttons in entering values during certain operations.

TRY IT 🖝

- Select the Broadway style.

- Press Start/Stop to start the style. (NOTE: You will hear drums only. Auto Accompaniment, discussed on pages 26–28, lets you add instrumental parts to the styles.)

- Press the Tempo Down button repeatedly, listening to the style slow down and watching as the display of the tempo changes.

- Press and hold the Up button. Watch the display and listen to the style as the tempo speeds up.

- Press the Down and Up buttons at the same time. Notice that the style returns to its default tempo.

- Press Start/Stop to stop the style.

Auto Accompaniment

Auto Accompaniment

Background

Background A   Background B   Background C

Bass

Bass

Drums

Drums   ○ Basic

○ Advanced   ○ Key Start

Chord Hold   ○ Chord/Inv   ○ Pedal Start
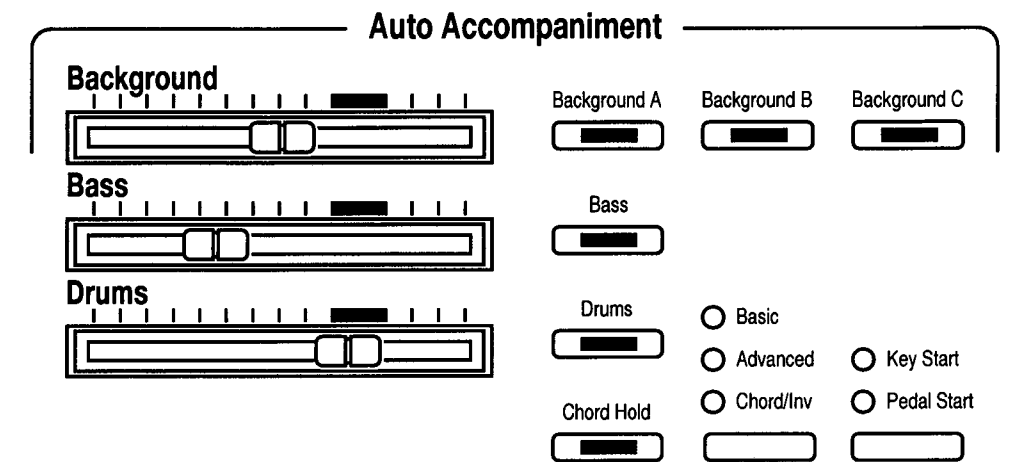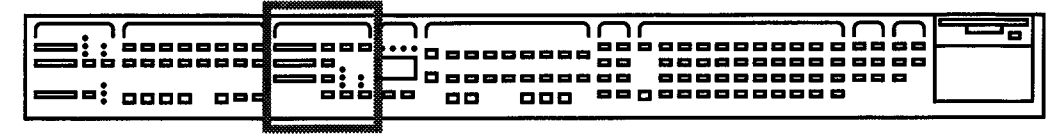
The Auto Accompaniment section works in conjunction with the Style Select section to provide you with fully orchestrated accompaniments when you play simple chords on the keyboard. The Style Select section lets you choose which accompaniment style will be played, while the Auto Accompaniment section gives you additional control over *how* it will be played.

Most often, you will trigger the auto accompaniment by playing chords to the left of the split point. (For more about the split point, see page 17.) The exception to this is if you set the Mark 150/10 to Full Keyboard mode (see page 45 for more details).

CHORD RECOGNITION

The center button in the bottom row determines what kinds of chords the auto accompaniment recognizes. Pressing this button cycles among the following choices:

- None (no light illuminated). When you use the styles, you hear only the drum patterns. In this mode you can use the accompaniment as a "beat box" or a fancy metronome.

- Basic. You can trigger the auto accompaniment by playing "Single finger" chords. Pressing one key (for example, C) plays a major chord with that key for its root (C major). Pressing the root key plus a white key below it (C and B) plays a seventh chord (C seventh). Pressing the root key and a black key below it (C and B-flat) plays a minor chord (C minor). Pressing the root key plus both a white key and a black key below it (C, B, and B-flat) plays a minor seventh chord (C minor seventh).

• Advanced. You can trigger the auto accompaniment with standard "fingered" chords of three or more notes (for example, pressing C, E, and G to play a C major chord). In this mode, the Mark 150/10 recognizes the following chord types:

CHORD TYPE	Symbol
major	C
minor	Cm
augmented	C+, Caug
diminished	Cdim
suspended fourth	Csus4
no third	C(no 3)
major with flat fifth	C($\flat$5)
seventh	C7
major seventh	Cmaj7
minor seventh	Cm7
seventh with suspended fourth	C7sus4
major seventh with flat fifth	Cmaj7$\flat$5
minor seventh with flat fifth	Cm7$\flat$5
seventh with flat fifth	C7$\flat$5
seventh with sharp fifth	C7$\sharp$5
minor with major seventh	Cm$\sharp$7
major with added ninth	C(add 9), C(add 2)
ninth	C9
seventh with flat ninth	C7$\flat$9

• Chord/Inv. This is similar to Advanced, with the added feature that the lowest note you play will be the primary bass note. (In the parlance of music theory, the auto accompaniment responds to the *inversion* of the chord.) For example, if you play a C major chord as C, E, and G, you will hear the same bass as in the Advanced chord recognition mode (with C, the root of the chord, as the primary bass note); but if you play G, C, and E instead, you will hear G as the primary bass note.

When the Mark 150/10 is powered up, Chord Recognition is automatically set to None. In addition, the Full Keyboard chord recognition mode (see page 45) is set to OFF.

Chord Hold keeps the chordal accompaniment playing when you lift your left hand from the keys, until you strike a new chord, making it easy to move smoothly from one chord to another, and freeing your left hand for tasks such as moving the pitch bend wheel or pressing the Fill and Intro/Ending buttons. Chord Hold is set to ON every time the power to the Mark 150/10 is turned on.

CHORD HOLD

START CONTROL

The rightmost button in the bottom row of the Auto Accompaniment section provides the following choices for starting the auto accompaniment:

- Normal (no light). Pressing the (Style Select) Start/Stop button starts the style.
- Key Start. Striking any key below the split point starts the style.
- Pedal Start. Pressing the left pedal starts the style.

When the Mark 150/10 is powered up, the Start Control is always set to Normal.

PART SLIDERS AND BUTTONS

The three sliders control the volume of the Background, Bass, and Drum parts of the accompaniment. A highlighted area above each slider indicates the recommended volume.

The Background A, B, and C buttons, along with the Bass and Drums buttons, let you control which parts you hear. When a button is not lit, that part is silent. When the Mark 150/10 is powered up, the part buttons are automatically set to the default Auto Setup settings for the Bossanova style. (For more information on Auto Setup, see page 45.)
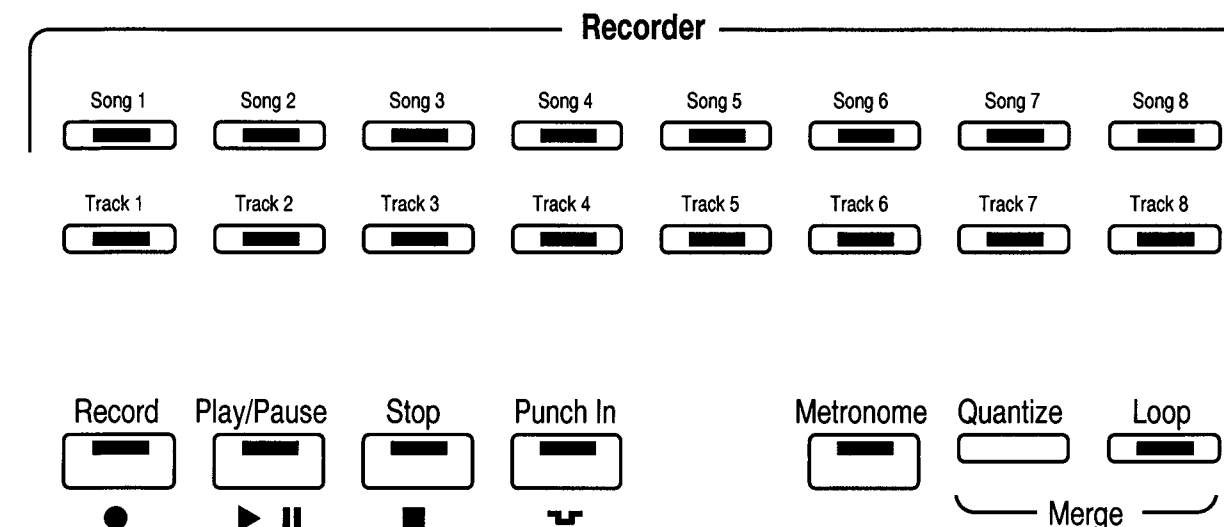
TRY IT 👉

- Select the Gospel style in the Style Select section.
- Set the Chord Recognition to Basic.
- Set the Start Control to Key Start; the Start/Stop button in the Style Select section blinks.
- Play C below middle C. You'll hear the Gospel style play.
- Move the Auto Accompaniment sliders one at a time and listen to the changes in level.
- Turn the Part buttons off and on and listen to the various parts together and individually. (Background A is piano, Background B is organ, and Background C is choir.)
- With Background C on, press Variation in the Style Select section. Notice that the choir changes to a brass ensemble.
- Press Start/Stop to stop the style.
- Return the Chord Recognition to None and Start Control to Normal (no lights on).

The Drums, Bass, and Background sliders control the MIDI volume of the channels for the various parts. They send MIDI controller messages #103 (Drums), 104 (Bass), and 105–107 (Background A–C), respectively.

Recorder

Recorder

Song 1	Song 2	Song 3	Song 4	Song 5	Song 6	Song 7	Song 8
[▬]	[▬]	[▬]	[▬]	[▬]	[▬]	[▬]	[▬]

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8
[▬]	[▬]	[▬]	[▬]	[▬]	[▬]	[▬]	[▬]

Record	Play/Pause	Stop	Punch In		Metronome	Quantize	Loop
[▬]	[▬]	[▬]	[▬]		[▬]	[ ]	[▬]
●	▶ ❚❚	■	⊔				

⎣――― Merge ―――⎦
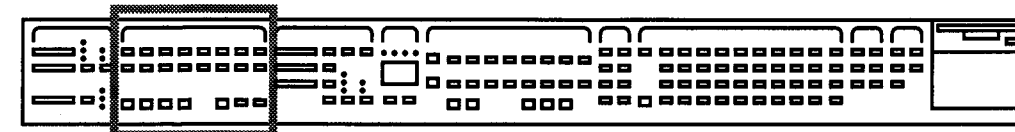
The Recorder records and plays back your musical performances, like a tape recorder, but with several advantages:

- You can change the tempo without affecting the pitch. This lets you record difficult passages slowly, for example, and play them back at the desired speed.

- You can record using one sound and replace it with another (see page 33).

- You can correct minor timing errors by *quantizing*, so that the notes you recorded will be lined up with the beats.

- Using the MIDI Out port, you can connect other MIDI instruments to the Mark 150/10, and play them from the Recorder as well. (To do this, you must set the Mark 150/10 to transmit sequencer data. See page 49 for details.) In addition, using the MIDI In port, you can use the Recorder to record external controllers. (See pages 34 and 66–72 for additional information.)

SONG BUTTONS

Use the eight Song buttons to select a song for recording or playback (only one can be selected at a time). Each song can be as long as 10,000 notes, or as short as you wish, up to the limits of the memory of the Mark 150/10. (Depending on the combined length of the songs, there may not be room for eight songs in memory.)

TRACK BUTTONS

Each song consists of up to eight tracks, which can be selected or silenced using the eight Track buttons. Once a track has been recorded on, the track button illuminates to show that it contains data. When a song is recording, playing, or stopped, use the track buttons to turn playback of the individual tracks off (unlit) or on (lit). When you have pressed the Record button to record a track, but have not yet begun recording, you can press a Track button to determine which track you wish to record (this lets you record over a previous track, for example); if you don't make a selection, the next empty track is automatically selected for you—or track 1, if all tracks have been recorded onto. The track that is being recorded has a blinking button; that track cannot be turned off during recording. When a track is recorded, the sound that was used during recording is remembered with the track. You can change this sound using the Panel Set function (see page 42).

Track 1 can only be turned on or off before playback begins; this track has special properties for recording your auto accompaniment performance (see page 30).

RECORD

Pressing Record while a song is stopped will put the song in record-ready mode; the Record button blinks. Select the track on which to record as described in the discussion of the Track buttons. Press Record again, or Stop, to cancel recording.

NOTE: You can use Key Start or Pedal Start, in the Auto Accompaniment section, as an alternative to pressing the Play/Pause button to start recording or playback; see "Start Control" below.

Once you start recording (by pressing Play/Pause, or by using Key Start or Pedal Start), the Record button stays lit continuously. Press Stop to stop recording.

Erasing A Track

To erase a track on which something is recorded, you simply record "nothing" over it; that is, you select the track for recording, start and stop the Recorder, but don't play any notes or touch any controllers while recording.

Recording Your Auto Accompaniment Performance

You can record your auto accompaniment performance on track 1 only. To do so, set up the Auto Accompaniment section as you wish (Start Select, Part Buttons, etc.), and record on track 1. You can use all of the controls in the Auto Accompaniment section, such as Intro/End, Fills, and Variation; you can even record all slider information—like a digital mixer. When you play back the song, track 1 will control the Auto Accompaniment; manual control of that section will be disabled. The time signature of your performance will match that of the currently selected style.

When recording track 1, you can record your right hand at the same time as the Auto Accompaniment.

PLAY/PAUSE

Press Play/Pause to start playback or recording.

If the Recorder is in Record, Punch In, or Loop mode (one of these buttons was blinking before Play/Pause was pressed), then recording begins on the specified track (the one with the blinking button). All other active tracks play back (those whose buttons are lit).

NOTE: You can use Key Start or Pedal Start, in the Auto Accompaniment section, as an alternative to pressing the Play/Pause button to start recording or playback; see "Start Control" below.

Pressing Play/Pause while recording or playback is going on will pause the recording or playback. The Play/Pause button blinks to show that the song is paused. Pressing Play/Pause again will resume recording or playback.

START CONTROL

The rightmost button in the bottom row of the Auto Accompaniment section lets you choose how to start the Recorder. Pressing this button cycles among the following choices:

- Normal (no light). Press the Play/Pause button to start the song.

- Key Start. After pressing Play/Pause, strike any key on the keyboard to start the song.

- Pedal Start. After pressing Play/Pause, press the left pedal to start the song.

STOP

Pressing Stop will stop recording or playback of a song and reset the location to the beginning of the song (instant rewind). Pressing Stop while Record, Punch In, or Loop is blinking (record-ready mode) will cancel recording.

- Select an empty song (one in which no Track buttons are lit).

- In the Auto Accompaniment section, make sure Chord Hold is on, set the Chord Recognition to Basic, and turn Key Start on.

- In the Style Select section, select the style in which you wish to record. This will give you the correct tempo for recording the style.

- In the Auto Accompaniment section, move the sliders to the highlighted areas. These settings will be recorded.

- In the Recorder, press Record and Play/Pause. The Track 1 button blinks. (Track 1 is the only track into which you can record auto accompaniment.)

- In the Style Select section, press Start/Stop and Intro/End.

- Play the C key an octave below middle C. Recording starts. After the style plays its intro, play some chord and melody keys, and try the Fill and Break buttons.

- Press Intro/End; after the ending, the auto accompaniment stops.

- Press Stop in the Recorder section; recording stops.

- Set the Start Control in the Auto Accompaniment section to Normal (so that neither Key Start nor Pedal Start is on).

- Press Play/Pause in the Recorder to hear your recording play back.

- The Recorder will stop by itself after playback finishes. To stop it sooner, press Stop.

- Press Record; the button blinks, as does the Track 2 button.

- Press the Track 1 button to record over Track 1. The button will blink.

- Press Play/Pause to start recording, and then press Stop to stop recording—without recording anything on the track. The Track 1 button will now be unlit; the track is erased.

PUNCH IN

In recording, to "punch in" is to switch into recording mode while a track is playing back. What is recorded then replaces the part of the track that had been there before. You can then "punch out" after finishing the newly recorded section. It's a way to correct part of a track without having to re-record the entire track. Another use is to erase a section that you don't want—by punching in and not recording anything.

Pressing Punch In while a song is stopped enables punch-in mode; the Punch In button blinks to show this. The Track button for the last track recorded also blinks, showing that this is the track on which recording will take place; press a different Track button to select a different track.

Press Play/Pause to start playback. When you reach the point at which you wish to punch in (record), press Punch In again.

NOTE: If Key Start or Pedal Start is on, the first key you play or the first time you press the left pedal will start playback. The second key or pedal will start the punch-in. (When using Key Start, be careful not to play a chord to start playback, because this will start the punch-in immediately!)

Punch In is not recommended on Track 1 if Track 1 was used to record auto accompaniment.

To punch out (stop recording), press Punch In again; the selected track will return from record mode to playback mode. Another way to punch out is to press Stop. In either case, the newly recorded material will replace what had been on that track between the punch-in and punch-out points. The rest of the old track, before the punch-in point and after the punch-out point, remains. (When you punch out, the Recorder exits punch-in mode; you cannot punch in again unless you re-enter punch-in mode by pressing the Punch In button while the song is stopped.)

To cancel punch-in mode, press Punch In a second time, or Stop, before starting playback.

TRY IT ☞

- Select an empty song (one in which no Track buttons are lit).
- In the Auto Accompaniment section, turn Key Start on.
- In the Recorder, press Record and Play/Pause. The Track 1 button blinks.
- Play something on the keyboard for several seconds—scales, for example. Recording starts as soon as you begin playing.
- Press Stop; recording stops.
- Press Punch In, then Play/Pause. The Track 1 button blinks.
- Strike any key to start playback. Midway through playback, play a few notes on the keyboard; the Recorder will punch in, recording what you play.
- Press Punch In again. The Recorder will punch out. The remainder of your original track, if any, will continue to play back.
- Press Stop; the Recorder stops.
- Press Play/Pause, then strike any key to hear the entire track—with the newly punched-in part—play back.

LOOP

In loop-record mode, you can record in a continuous loop; the track repeats indefinitely, and each time it repeats, what you play on the keyboard is added to what was already there. This is a common way to record drum parts. NOTE: You cannot loop Track 1; this track has special properties for recording your auto accompaniment performance (see page 30).

Press Loop while a song is stopped to enable loop mode; the Loop button blinks to show this. The Track button for the first unused track also blinks (or the Track 2 button, if all tracks have been recorded on), showing that this is the track on which recording will take place; press a different Track button to select a different track.

The Tempo display shows the length of the loop in beats. For example, 4 beats is one measure of 4/4 time. Each track can have its own loop time. Use the Down and Up buttons beneath the display if you wish to change this length. The length can be any number of beats from 1 through 999.

NOTE: Loop recording is easiest when the Metronome is turned on (see page 34).

Press Play/Pause to start recording. (If Key Start is on, recording begins as soon as you press a key on the keyboard; if Pedal Start is set, it begins as soon as you press the left pedal.) Press Stop to stop recording.

To cancel loop mode before recording has begun, press Loop again, or Stop.

Quantizing changes the timing of notes in a track so that they align precisely with the beats or specific fractions of beats.

Press Quantize. The Tempo display shows the note value to which notes will be aligned; use the Down and Up buttons to set this to the value you desire:

NUMBER DISPLAYED	Note Value
1	whole note (o)
2	half note ($\jmath$)
4	quarter note ($\jmath$)
6	quarter-note triplet ($\overline{\jmath^3}$)
8	eighth note ($\jmath$)
12	eighth-note triplet ($\overline{\jmath^3}$)
16	sixteenth note ($\jmath$)
32	thirty-second note ($\jmath$)

The Track buttons will blink for all tracks in which something is recorded. Press the button for the track that you wish to quantize. (You can quantize only one track at a time.) The display will show "Y n"; press the button under "Y" to quantize the selected track, or press the button under "n" to cancel quantization. The longer the track, the longer it takes to quantize.

NOTE: Once a track is quantized, it cannot be unquantized again.

Quantize is not recommended on Track 1 if Track 1 was used to record auto accompaniment.

MERGE

You can merge two or more tracks onto which you have recorded. This frees up additional tracks for further recording. Merged tracks become a single track: they play on a single MIDI channel and use a single sound (with layer or split, if present). The sound used is that of the lowest of the original tracks. NOTE: You cannot merge Track 1; this track has special properties for recording your auto accompaniment performance (see page 30).

Press the Quantize and Loop buttons, under which the label "Merge" appears, simultaneously. All Track buttons in which something is recorded will blink. Press the buttons for the tracks that you do NOT wish to merge, to turn them off. The tracks left blinking are the ones that will be merged. The Tempo display will show "Y n". Press the button under "Y" to merge the tracks (they are merged onto the lowest selected track); press the button under "n" to cancel the merge.

CHANGING TRACK SOUNDS OR VOLUMES

You can change the sound used for a track with the Panel Set feature (see pages 42 and 43). In addition, you can use the Sound Select buttons to change sounds while you are recording a track.

You can change the volume of a track during playback or while playback is stopped. While holding down the button for the track you wish to change, move the Drums slider in the Auto Accompaniment section to raise or lower the volume of that track. The Tempo display will show the volume, ranging from 0 (minimum) to 127 (maximum). The default volume for all tracks is 127. After adjustment, the track will play at the new volume whenever playback is started.

CHANGING TEMPO OR REVERB

Tempo and reverb settings are recorded for each song. But after you have recorded one or more tracks, you may decide to change either or both of these settings. For example, you may decide that a larger or smaller reverb room size sounds better; or you may purposely have recorded a song at a slow tempo for accuracy's sake, but now wish to set the song to a faster tempo for playback. To record the new tempo or reverb setting, make sure there is at least one empty track; if necessary, merge two tracks to obtain an empty one. Set the Start Control in the Auto Accompaniment section to Normal (Key Start and Pedal Start off). Set the tempo or reverb as you want it. Press Record; the button for the lowest available empty track will blink. Press Play/Pause to start recording, then Stop to stop recording. The track button will be unlit—this is the same procedure you use for erasing a track—but in fact, the new tempo or reverb setting is now recorded with the song. NOTE: This empty track is still available for recording after changing the tempo or reverb.

The MIDI Basic Channel for the Mark 150/10 keyboard is set to 1 when the instrument is turned on, and Recorder tracks 1–8 are set to channels 2–9. If you use the Recorder to control an external module that has specific limitations on MIDI channels, you can override the default channel settings of the Mark 150/10 in MIDI Edit Mode (see page 46) by setting the Basic Channel of the Mark 150/10 to the desired channel before recording the track in question. For example, if you want track 1 to transmit on channel 10, record the track with the Basic Channel set to 10. Remember to set the Mark 150/10 back to channel 1 when you are finished. If you wish to record from an external controller, set it to transmit on channel 1; the Mark 150/10 will record it using the default channel for the track onto which it is recorded. If you wish to record it on a different channel, set the Basic Channel of the Mark 150/10 to match the transmit channel of the external controller before recording the track; the track will then be recorded on that channel. Remember to set the Mark 150/10 back to channel 1 when you are finished.

Metronome
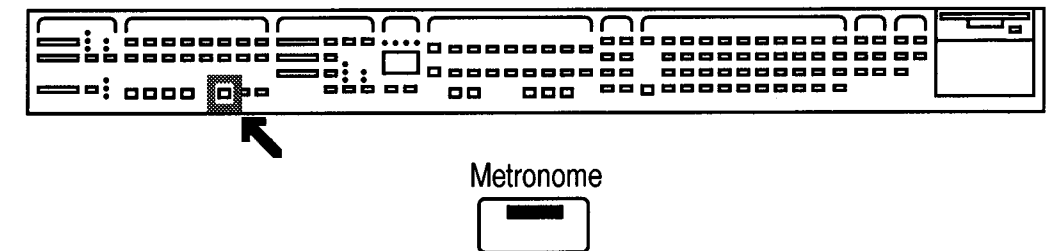
Metronome

You'll find the Metronome button in the Recorder section. Press this button to hear the tempo of a song in the Recorder or an auto accompaniment style. You can also use it as a stand-alone practice aid if no tracks in the Recorder are on. The default Metronome sound is Drums 1, and the default note is the highest C# on the keyboard (Click). You can choose your own sound and note for the Metronome, if you like. To choose the note, hold down the Metronome button and play the note on the keyboard that you wish the Metronome to use; the velocity with which you play the note determines how loud the Metronome will be. To change the sound, use the Panel Set function (see page 43): First select the sound you desire from the Sound Select section, then press the Panel Set button, and finally press the blinking Metronome button. The Mark 150/10 retains the note and sound settings for the Metronome, even when the power is turned off.

The metronome has its own MIDI channel. Hold down the Metronome button; the Tempo display shows the channel. Use the Down and Up buttons to change the channel. The default channel for the Metronome is 16.

```
Disk
Load Styles      Save Styles
⬡              ⬡

Load Songs      Save Songs
⬡              ⬡

Format
⬡
```
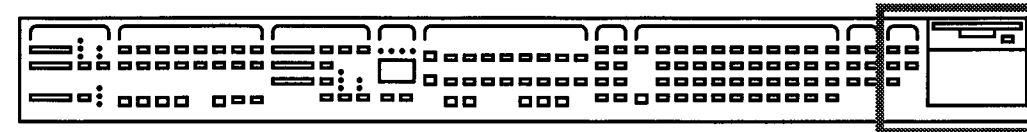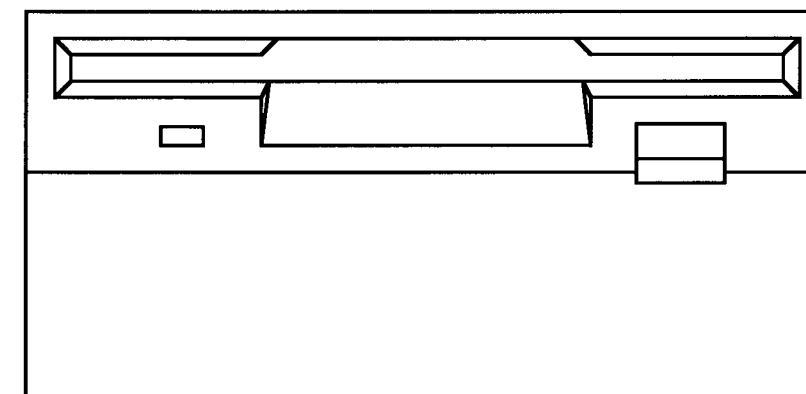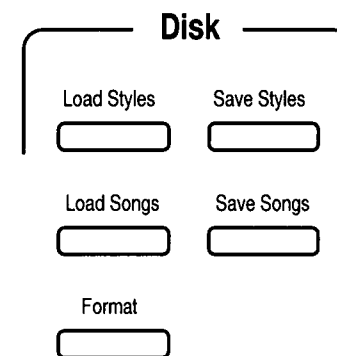
The Mark 150/10 has a built-in high-density disk drive, located at the right end of the front panel. The disk drive allows you to save information onto disks for storage for an indefinite period of time, and to load information from disks into the Mark 150/10. What kind of information? Songs for the Recorder, additional accompaniment styles, SoundBytes™, and Panel Memories.

In addition to its own disk libraries, the Mark 150/10 can load disks from the Yamaha PianoSoft, PianoSoft Plus, and Disk Orchestra libraries, as well as the PianoDisc Music Library.*

If you are unfamiliar with disks, a few basics are in order:

■ The disks used are sometimes called "floppy disks," although they have a hard-shell case.

■ Don't open the sliding shutter of the disk case or touch the actual disk inside.

■ Disks are a magnetic storage medium, like recording tape. If you put them on or near something that produces a strong magnetic field (such as a television set or a loudspeaker), you may lose the information (data) stored on them.

■ Insert a disk into the disk drive with the label side up and the sliding shutter away from you. Push the disk all the way into the drive until it snaps into place.

■ Eject a disk from the drive by pressing the button on the drive so that the edge of the disk pops out; then pull the disk the rest of the way out.

■ The drive holds only one disk at a time.

■ Never eject a disk while the light on the drive is on. This light means the drive is active; ejecting the disk could result in loss of data or damage to the disk.

■ The information on the disk is stored in files. Each file is one packet of information that belongs together. For example, each song is one file.

■ Saving data to the disk is also called storing, or writing. Writing is only possible when the "write/protect" tab in the corner of the disk is in the "write" position—toward the metal shutter. When you want to protect the data on the disk from accidental erasure, move the tab into the "protect" position. HINT: If you can see through the hole in the write/protect window, the disk is write-protected.

■ Loading data from the disk—also called retrieving, or reading—is possible regardless of the position of the write/protect tab.

■ In this drive you can use high-density disks to store up to 1440 kilobytes (kB) of data—the equivalent of about 700 typewritten pages—or double-density disks to store up to 720 kB of data. The drive uses standard MS-DOS* formatting and file storage conventions. For advanced users, this means that Mark 150/10 disks can be read by MS-DOS computers.

■ Label your disks, so that you know what they contain. This is especially important since a single disk can hold several different kinds of files (songs, SoundBytes, etc.).

■ Save an extra copy of any file that you don't want to lose. This is called "backing up" your data. Simply load the file into the Mark 150/10 and then save it onto a different disk.

* PianoSoft is a trademark of Yamaha Corporation. PianoDisc is a trademark of the PianoDisc company. MS-DOS is a registered trademark of Microsoft Corporation. For PianoDisc disks, the Mark 150/10 loads only the piano track.

Several different file types can be stored on a single disk: song files, accompaniment style files, SoundByte files, and panel memory files; in addition, Standard MIDI Files can be loaded from a disk into the Recorder, and played. (NOTE: These file types are differentiated internally by the file extensions [suffixes] .SNG, .STY, .SMP, .MEM, and .MID, respectively. The file extensions are only of concern to advanced users who use Mark 150/10 disks with MS-DOS computers.)

The buttons in the Disk section of the front panel, located immediately to the left of the disk drive itself, allow you to perform several operations:

- Load songs, SoundBytes, panel memories, or styles from disk into the Mark 150/10.

- Save songs, SoundBytes, panel memories, or styles from the Mark 150/10 onto disk.

- Format a disk—prepare it for storage of information.

Pressing one of the Disk buttons presupposes that a disk is in the disk drive. If no disk is in the drive, the Tempo display will show an error message (see Disk Errors, later in this section). Press any button to remove the error message from the display and return the Mark 150/10 to normal operation.

LOAD SONGS

To load a song, press the Load Songs button. The disk will spin briefly and then the Mark 150/10 will display a list of all song files in the Tempo display. (Both Mark 150/10 song files and Standard MIDI Files are shown.) You can "scroll" through this list, displaying items one at a time in the Tempo display, by using the Down and Up buttons beneath the display. The first item in the list is always "ALL", which indicates all song files. Subsequent items in the list are the names of the individual song files (only the first three characters of each name are shown in the display).

Since different kinds of files can be stored on a single disk, and since the Load Songs button is used to load songs, SoundBytes, and Panel Memories, the Mark 150/10 tells you what kind of file is currently shown in the Tempo display by blinking the appropriate kind of button elsewhere on the panel. The Song buttons (in the Recorder) blink if the file is a song file, the Disk Sound button (in the Sound Select section) blinks if the file is a SoundByte file, and the Panel Memory 1 button (in the Sound Select section) blinks if the file is a Panel Memories file.

While the list is shown in the Tempo display, the eight Song buttons in the Recorder section show which songs already have data in them (the Song button is lit continuously) and which are empty (the Song button blinks). Press one of the Song buttons to select a destination for the song currently showing in the Tempo display. If the Song button already had data, it will be overwritten by the song from the disk. If "ALL" was showing, pressing any one of the Song buttons will load the first eight songs on the disk into Songs 1 through 8. If one song name was showing in the display, that song will be loaded into the Song button that you pressed. (If the Mark 150/10 does not have room to load the song, it will display an error message. See Disk Errors, later in this section. To make more room in internal memory, you can delete a song from the Recorder—see page 46.) Press any other button to cancel the load operation.

In addition to Mark 150/10 song files and Standard MIDI Files, the Mark 150/10 can load song files from the Yamaha PianoSoft, PianoSoft Plus, and Disk Orchestra libraries, as well as the PianoDisc Music Library. NOTE: On Yamaha disks, there is one file that you will be unable to load: the directory file, which lists the song files on the disk. If you attempt to load this file, the Mark 150/10 will display an error message (see Disk Errors, later in this section). Press any button to clear the error message and return the Mark 150/10 to normal operation.

Standard MIDI Files, Yamaha files, and PianoDisc files load more slowly than Mark 150/10 song files, but once they are loaded, you can save them back to a Mark 150/10-formatted disk for quicker reloading.

SAVE SONGS

Before you can save a song, you must have a Mark 150/10-formatted disk. See page 40 for information on formatting disks.

To save a song, press the Save Songs button. The disk will spin briefly and then the Mark 150/10 will display a list of all song files in the Tempo display. This list shows the song files to which a song in the Recorder can be saved. You can scroll through this list using the Down and Up buttons beneath the display. If a song file on the disk already has data in it, dots in the Tempo display will light, along with the file number.

All of the Song buttons in the Recorder section that have data in them are blinking. When you reach the file number in the display onto which you wish to save a song, press the desired Song button. If the disk file currently has data in it (the file name in the display had dots), the display will show "Y n", giving you a choice to overwrite the existing file with the new data (by pressing the button under "Y", for "Yes") or to cancel the save (by pressing the button under the "n", for "no"). If the disk file does not currently have data in it, the selected Song is saved to disk without the "Y n" display.

If you press any of the blinking song buttons while the display shows "ALL", the eight songs will be saved into files named xxx.SNG, where xxx is the number of the Song button from which the data came (001–008). Pressing any other button will cancel the save. If any of these disk files currently has data in it, the "Y n" display will appear before saving begins.

If there was a disk error or if there was not enough room on the disk to save the songs, the Tempo display will show the error message (see Disk Errors, later in this section). Press any button to clear the error message and return the Mark 150/10 to normal operation.

If you load Standard MIDI Files or songs in other manufacturers' formats into the Recorder, you can save them onto a Mark 150/10-formatted disk for quicker reloading.

LOAD SOUNDBYTES

You can load Disk Sounds using the Load Songs button. This gives you access to the Kurzweil SoundByte Library of sounds on disk (see your local Young Chang/ Kurzweil dealer for more information). Insert a disk that has SoundBytes saved on it, and press Load Songs. Scroll through the list using the Down and Up buttons beneath the Tempo display until the display shows the file you wish to load. (NOTE: The first item on the list, "ALL", does not apply to sounds—only to songs.)

Since different kinds of files can be stored on a single disk, and since the Load Songs button is used to load songs, SoundBytes, and Panel Memories, the Mark 150/10 tells you what kind of file is currently shown in the Tempo display by blinking the appropriate kind of button elsewhere on the panel—the Song buttons (in the Recorder) blink if the file is a song file, the Disk Sound button (in the Sound Select section) blinks if the file is a SoundByte file, and the Panel Memory 1 button (in the Sound Select section) blinks if the file is a Panel Memories file.

When the Tempo display shows the SoundByte file that you wish to load, press the Disk Sound button. The sounds will load. Once the sounds are loaded, the Disk Sound button is selected, and you can hear the sounds by playing the keyboard.

NOTE: The Mark 150/10 does not retain Disk Sounds when the power is shut off. They must be reloaded.

SAVE SOUNDBYTES

Before you can save SoundBytes, you must have a Mark 150/10-formatted disk. See page 40 for information on formatting disks.

You can save SoundBytes by pressing the Save Songs button. If there are SoundBytes loaded into the Mark 150/10, the Disk Sound button will blink. The disk will spin briefly and the Mark 150/10 will display a list of files in the Tempo display. (NOTE: The first item on the list, "ALL", does not apply to sounds—only to songs.) You can scroll through this list using the Down and Up buttons. If a file on the disk already has data in it, dots in the Tempo display will light.

When you reach the file in the display onto which you wish to save the SoundBytes, press the Disk Sound button. If the file currently has data in it (the file name in the display had dots), the display will show "Y n", giving you a choice to overwrite the existing file with the new data (press the button under "Y", for "Yes") or cancel the save (press the button under the "n", for "no"). If the file does not currently have data in it, the SoundBytes are saved without the "Y n" display.

If there was a disk error or if there was not enough room on the disk to save the sounds, the Tempo display will show the error message (see Disk Errors, later in this section). Press any button to clear the error message and return the Mark 150/10 to normal operation.

LOAD PANEL MEMORIES

Panel Memories store the front panel settings of the Mark 150/10 for/recall at the touch of a button. For more information, see pages 42 and 43.

You can load Panel Memories using the Load Songs button. All nine Panel Memories are loaded from a single file. Insert a disk that has memories saved onto it, and press Load Songs. Scroll through the list using the Down and Up buttons beneath the Tempo display until the display shows the file you wish to load. (NOTE: The first item on the list, "ALL", does not apply to panel memories—only to songs.)

Since different kinds of files can be stored on a single disk, and since the Load Songs button is used to load songs, SoundBytes, and Panel Memories, the Mark 150/10 tells you what kind of file is currently shown in the Tempo display by blinking the appropriate kind of button elsewhere on the panel—the Song buttons (in the Recorder) blink if the file is a song file, the Disk Sound button (in the Sound Select section) blinks if the file is a SoundByte file, and the Panel Memory 1 button (in the Sound Select section) blinks if the file is a Panel Memories file.

When the Tempo display shows the Panel Memories file that you wish to load, press the Panel Memory 1 button. The memories will load. Once the memories are loaded, you can use them by pressing the Panel Recall button as explained on page 43.

SAVE PANEL MEMORIES

Before you can save Panel Memories, you must have a Mark 150/10-formatted disk. See page 40 for information on formatting disks.

You can save Panel Memories by pressing the Save Songs button. The Panel Memory 1 button will blink. The disk will spin briefly and the Mark 150/10 will display a list of all available files in the Tempo display. (NOTE: The first item on the list, "ALL", does not apply to panel memories—only to songs.) You can scroll through this list using the Down and Up buttons beneath the display. If a file on the disk already has data in it, dots in the Tempo display will light.

When you reach the file in the display into which you wish to save the memories, press the Panel Memory 1 button. If the file currently has data in it (the file name in the display had dots), the display will show "Y n", giving you a choice to overwrite the existing file with the new data (by pressing the button under "Y", for "Yes") or to cancel the save (by pressing the button under the "n", for "no). If the disk file does not currently have data in it, the Panel Memories are saved to disk without the "Y n" display. All nine Panel Memories are saved in one file.

If there was a disk error or if there was not enough room on the disk to save the memories, the Tempo display will show the error message (see Disk Errors, later in this section). Press any button to clear the error message and return the Mark 150/10 to normal operation.

LOAD STYLES

To load a Disk Style, press the Load Styles button. The disk will spin briefly and then the Mark 150/10 will display a list of all available styles in the Tempo display. Scroll through this list using the Down and Up buttons beneath the display. The first item in the list is always "ALL", which indicates all style files. Subsequent items in the list are the names of the individual style files (only the first three characters of each name are shown in the display).

While the list is shown in the Tempo display, the lights above the Style Select buttons blink. Press one of the Style Select buttons to select the destination for the style currently showing in the Tempo display. If "ALL" was showing, as many styles as can fit into memory will be loaded into the Style Select buttons. If one style name was showing in the display, that style will be loaded into the Style Select button that you pressed. Press any other button to cancel the load operation.

SAVE STYLES

Before you can save a style, you must have a Mark 150/10-formatted disk. See below for information on formatting disks.

To save a style, press the Save Styles button. The disk will spin briefly and then the Mark 150/10 will display a list of all available styles in the Tempo display. This list shows the style files to which a custom accompaniment style can be saved. You can scroll through this list using the Down and Up buttons beneath the display. If a style file on the disk already has data in it, dots in the Tempo display will light.

All of the Style Select buttons that have custom style data in them are blinking. When you reach the file in the display into which you wish to save a style, press the desired Style Select button. If the disk file currently has data in it (the file name in the display had dots), the display will show "Y n", giving you a choice to overwrite the existing file with the new data (by pressing the button under "Y", for "Yes") or to cancel the save (by pressing the button under the "n", for "no". If the disk file does not currently have data in it, the selected style is saved to disk without the "Y n" display.

If you press any of the blinking style buttons while the display shows "ALL", the styles will be saved into files named xxx.STY, where xxx is the number of the Style button from which the data came. Pressing any other button will cancel the save. If any of these disk files currently has data in it, the "Y n" display will appear before saving is begun.

If there was a disk error or if there was not enough room on the disk to save the styles, the Tempo display will show the error message (see Disk Errors, later in this section). Press any button to clear the error message and return the Mark 150/10 to normal operation.

FORMAT

CAUTION: Formatting a disk erases all information on the disk. Formatting generally is only necessary for new *blank* disks, and then only once: the first time the disk is used, to prepare it for storing data. Disks that already contain Mark 150/10 data—such as the disk that came with this manual—do not need to be formatted; DO NOT format them, or you will erase all the data on them.

If the write/protect tab on a disk is in the protect position (window open), the disk cannot be formatted. This is the best protection against accidental formatting.

To Format a disk, press the Format button. The display will show "Y n". Press the button under "Y" to continue with the formatting procedure; press the button under "n" to cancel. (Pressing any other button will also cancel.)

After you press "Y", the display shows "H L". Press the button beneath "H" to format a high-density disk, or the button beneath "L" to format a low-density (double-density) disk. (If you aren't sure which kind of disk you have, you can eject it from the drive and look at it; high-density disks are usually labeled as such on the sliding metal shutter, and they also have an extra square hole punched out of the case—in the corner across from the write-protect tab—that double-density disks lack. Put the disk back in the drive after making sure what kind it is.) NOTE: Formatting a disk using the wrong density will likely fail.

The Tempo display reads "For" while the Mark 150/10 formats the disk, followed by "vEr" while it verifies (checks) the disk, then "dir" briefly while it creates a directory, before returning to normal. If an error occurs, the display will show the error message (see Disk Errors, below). In this case, press any button to clear the message from the display and the return the Mark 150/10 to normal operation.

If a disk error occurs, an error number appears in the display and all of the periods in the display blink. Press any button to return the Mark 150/10 to normal operation.

Following is a list of error messages and their meanings:

MESSAGE	Meaning
E01	Cannot initialize disk
E02	Cannot open disk
E03	Cannot open file
E04	Cannot read file
E05	Cannot write file
E06	Cannot close file
E07	Cannot close disk
E08	No disk in drive
E09	Disk is write-protected
E10	Cannot format disk
E11	Cannot verify disk
E12	Cannot write disk directory
E13	File not found
E14	Unknown disk type
E15	Insufficient space on disk to save
E16	No songs to save or load
E17	Cannot delete file
E18	Mark 150/10 memory is full
E19	Cannot load directory file

IMPORTANT: The following procedure should be executed whenever the Mark 150 or Mark 10 is to be shipped anywhere. The purpose of this procedure is to park the heads in the disk drive, to prevent damage to the drive in transit. This procedure should be executed at the factory before shipping, and also by the distributor if the unit has been powered up. It should be executed by the dealer if they have applied power to the unit.

Without inserting a disk into the drive, press the Load Songs button. An error message, E08, will appear in the Tempo display. Turn off the power to the Mark 150 or Mark 10. The unit is now prepared for shipping.

Options

Options

Panel Set   Panel Recall

Demo   MIDI

Left Octave   Right Octave

Transpose
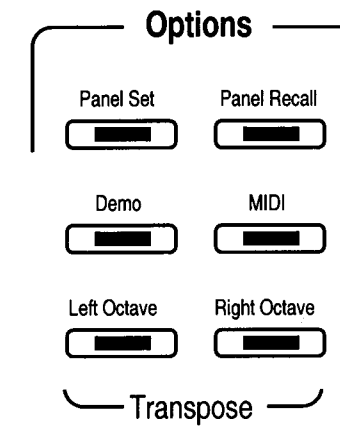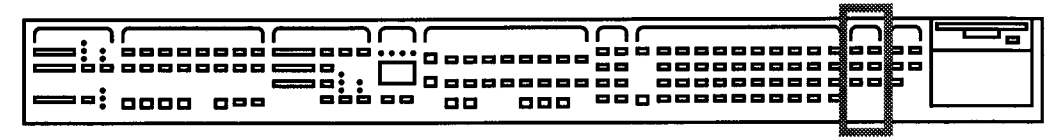
PANEL SET

The Mark 150/10 has nine panel memories, each of which allows you to store the settings of the front panel controls for recall at the touch of a button. This lets you save your favorite combinations of sounds and styles, or settings that you use frequently for playing or recording.

Each of the nine panel memories stores the following settings:

PANEL SECTION	Setting Stored
SOUND SELECT	Main Sound (including Variation)
	Layer Sound (including Variation)
	Layer Volume Adjust
LEFT SPLIT	Left Sound
	Split Point
	Left Sustain
DIGITAL REVERB & EFFECTS	Reverb Room Size
	Reverb Quality
	Effect Type
STYLE SELECT	Style (including Variation)
AUTO ACCOMPANIMENT	Part Buttons
	Chord Hold
	Chord Recognition Type
	Start Control
TEMPO	Tempo
OPTIONS	Left Octave Shift
	Right Octave Shift
	Transpose Setting

The Mark 150/10 comes with nine default panel memories, which are typical examples of useful combinations for playing. When you create your own panel memories, you overwrite the default memories set at the factory. To restore these default memories, either load them from the disk that accompanies this manual (see pages 6 and 38) or use the Reset Parameters function (see page 44).

To set (store) a panel memory, first set the front panel controls as you wish to store them.

Next press the Panel Set button. The button begins blinking, as do the nine buttons in the bottom row of the Sound Select section, labeled Panel Memories. In addition, the Metronome button will blink, and if there is a song selected in the Recorder section, all of the Track buttons in which something has been recorded will also blink.

Pressing one of the Panel Memory buttons stores the current panel settings in that panel memory.

Changing Track Or Metronome Sounds

After initially pressing the Panel Set button, you have the option of pressing one of the blinking Track buttons, or the blinking Metronome button, instead of one of the Panel Memories buttons. Pressing one of the blinking Track buttons changes the initial sound for that track to the sound currently selected on the front panel (including any split or layer sounds). Pressing the blinking Metronome button changes the metronome sound to the sound currently selected in the Sound Select section of the panel.

Pressing the Panel Set button a second time before pressing a blinking Panel Memory, Track, or Metronome button will cancel the set operation.

The Mark 150/10 retains your panel memories, even when the power is turned off.

PANEL RECALL

To change the front panel settings to those stored in one of the panel memories, press the Panel Recall button. The button will blink, as will the nine Panel Memory buttons. Press the desired Panel Memory button to recall the settings stored in it, or press Panel Recall a second time to cancel the recall operation.

If you recall a panel memory while a style is playing, the Mark 150/10 will ignore the style and auto accompaniment settings in the panel memory. This ensures that the current style playing will continue uninterrupted.

TRY IT ☞▌

- In the Style Select section, select the 8 Beat 2 style.
- In the Sound Select section, select Electric Piano 1, and turn Variation on. Then press and hold Electric Piano 1 while selecting Choir.
- In the Digital Reverb & Effects section, select the Stage reverb room size, the Warm reverb quality, and the Chorus effect.
- In the Auto Accompaniment section, turn Background A off, set the Chord Recognition to Basic, and set the Start Control to Key Start.
- Press the Panel Set button.
- Press the Panel Memory 1 button to store the panel setting.
- Select a different Style, to change the panel settings.
- Press Panel Recall, then the Panel Memory 1 button; your previous settings will be restored.

DEMO

The Mark 150/10 contains many built-in demonstrations. See page 8 for instructions on listening to them.

MIDI

The MIDI button gives you entry to MIDI Edit Mode, where you access and alter MIDI settings, as well as other settings that affect the Mark 150/10 as a whole. MIDI itself, and the MIDI connections on the Mark 150/10, are explained on pages 66–72.

Entering MIDI Edit Mode

To enter MIDI Edit Mode, press and hold the MIDI button. The button lights up. Releasing the MIDI button will exit MIDI Edit Mode. While in MIDI Edit Mode (while the MIDI button is held down), you change settings by pressing buttons or keys on the keyboard. The following illustration shows which buttons and keys correspond to each setting:
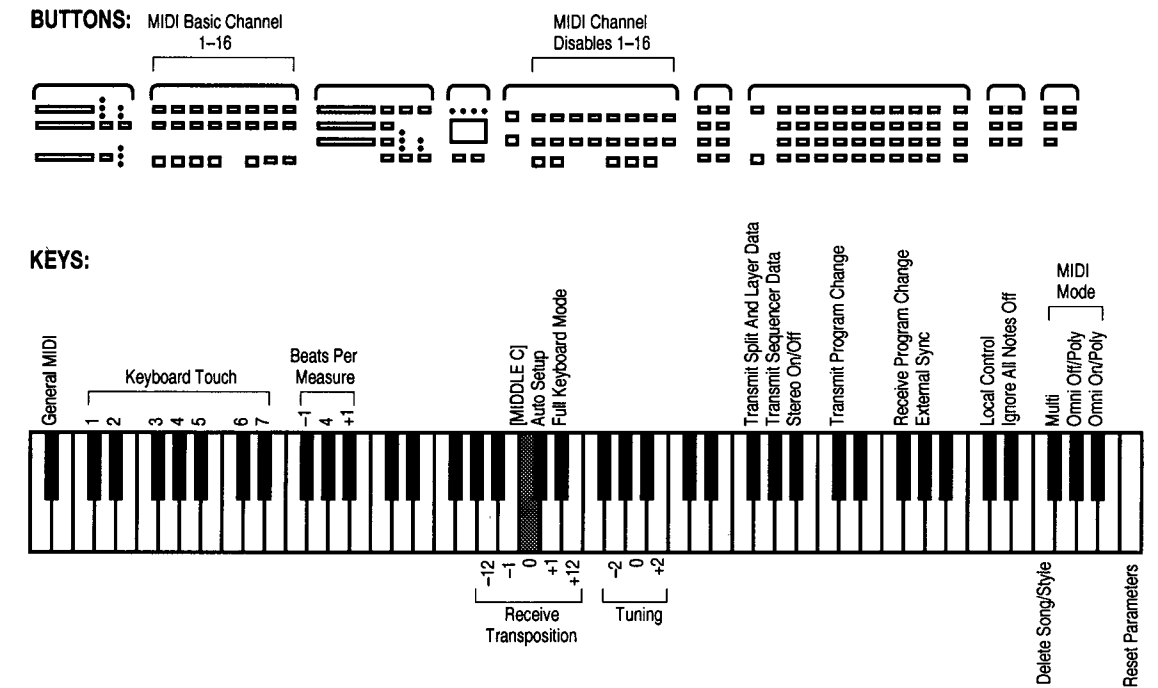
Settings controlled by keys on the keyboard are shown in the Tempo display when the keys are pressed.

The MIDI Basic Channel setting is reflected by the lights in the buttons in question, and also in the Tempo display when one of these buttons is pressed.

The MIDI Channel Disables settings are reflected in the lights above the buttons in question.

All of these settings are explained in the discussion that follows.

NOTE: The Mark 150/10 "remembers" changes to many of these settings, even when you turn the power off. It retains these changes in memory for about one week after the power is turned off. If you do not use the Mark 150/10 for a week, you can turn the power on for one hour and then off again to extend the memory of your settings. If your settings are forgotten, they will be reset to the factory defaults.

Reset Parameters

Pressing the Reset Parameters key while in MIDI Edit Mode will return all of the settings to the factory defaults. It also deletes all user songs, panel memories, SoundBytes, and disk styles.

Full Keyboard Mode

When this function is OFF, the auto accompaniment responds only to chords played to the left of the split point.

When this function is ON, the auto accompaniment responds to chords played anywhere on the keyboard, and the entire keyboard generates sounds normally. Since this is true, melodies can also be played anywhere on the keyboard. Note, however, that all the keys played contribute to the current chord recognized by the auto accompaniment.

Full Keyboard Mode is set to OFF every time the Mark 150/10 is turned on.

Auto Setup

Auto Setup works like preset Panel Memories for the Styles: When it is ON, you select a Style and the Mark 150/10 automatically selects an appropriate sound from the Sound Select section for the melody, as well as selecting appropriate Reverb settings and possibly muting some of the parts in the Auto Accompaniment.

When Auto Setup is OFF, the last sound you selected will remain selected when you change Styles.

Auto Setup is set to ON every time power to the Mark 150/10 is turned on. .

Tuning

The Mark 150/10 will never go out of tune. However, when playing with other instruments, you may want the ability to shift the tuning. You can do so by as much as a quarter tone (half a half step) up or down. Three keys affect tuning while in MIDI Edit Mode. The middle one resets the tuning to standard concert pitch (A 440). The key to the right raises the pitch; the key to the left lowers the pitch. You can change the tuning in increments of two *cents* (two hundredths of a half step) by pressing the appropriate key repeatedly to raise or lower the pitch. The Mark 150/10 retains the Tuning setting, even when the power is turned off.

Keyboard Touch

You can adjust the sensitivity of the keyboard touch (how the dynamics of the sounds respond to key velocity) by pressing one of the seven keys that govern this setting. A setting of 1 has the greatest dynamic range, but requires high key velocities to obtain loud notes; a setting of 7 has a narrower range, but makes it easier to play moderately loud notes (see the graph below). For example, a high setting is suggested for a child beginning piano lessons, while an experienced player may prefer a lower setting. The default setting is 4.
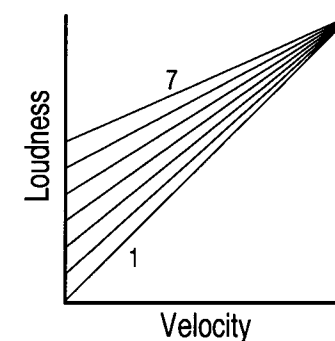
The Mark 150/10 retains the Keyboard Touch setting, even when the power is turned off.

Stereo On/Off

When this function is ON, the audio outputs are stereo. When it is OFF, they are mono.

Stereo On/Off is reset to ON every time the Mark 150/10 is turned on.

Delete Song/Style

Pressing the Delete Song/Style key causes all Song buttons with user data in them, and all Style buttons with disk styles in them, to blink. Press the one that you wish to delete; all of the others will stop blinking. The Tempo display shows "Y n". Press the button under "Y" to delete the song or style, or press the button under "n" to cancel the deletion. NOTE: You cannot delete the factory styles or demo songs; they reside in permanent memory (ROM), and are unaffected by the Delete Song/Style function.

Beats Per Measure

Three keys allow you to set Beats Per Measure. This setting affects only the "wrapping" of the Beat lights above the Tempo display, not the playing of the Styles. To change the Beats Per Measure of the currently selected Song in the Recorder:

- Press the –1 key—repeatedly, if you wish—to lower the Beats Per Measure. (The minimum is 2.)

- Press the +1 key—repeatedly, if you wish—to raise the Beats Per Measure. (The maximum is 7.)

- Press the 4 key to reset to the default of 4.

The Tempo display shows the Beats Per Measure.

The Mark 150/10 retains the Beats Per Measure setting, even when the power is turned off.

MIDI Basic Channel

The MIDI Basic Channel is the channel on which the keyboard transmits MIDI messages. In addition, in Omni Off/Poly mode, it is the channel on which the instrument responds to MIDI messages; all other channels are ignored. (In Omni On/Poly mode, the instrument responds to all channels as if they were the Basic Channel. In Multi mode, the instrument responds to channels independently.)

The Song or Track button in the Recorder that is lit in MIDI Edit Mode shows the Basic Channel. (The top row of buttons indicates channels 1–8, the bottom row channels 9–16.) Press a different Song or Track button to change the channel. When you press one of these buttons, the Tempo display shows that channel number.

The buttons in the Sound Select and Left Split sections show the sound selection for the current Basic Channel. By pressing the MIDI Basic Channel buttons one after another, you can quickly see what sounds are assigned to each channel. There are at least three ways to change the sound selection for a given channel:

- If you are using the Mark 150/10 as a MIDI slave of an external sequencer or another instrument, use the MIDI Basic Channel buttons to select the channel you desire. Then release the MIDI button and select the sound(s) for that channel using the Sound Select and Left Split buttons. Repeat this procedure for each channel whose sounds you wish to set.

- As an alternative to the procedure above, simply send the appropriate program change message to the Mark 150/10 on the channel in question. (See page 70 for a list of sounds and their program numbers.)

- If what you really want to do is change the sound for a track of a song in the Recorder, exit MIDI Edit Mode (release the MIDI button) and use the Panel Set function (see pages 42 and 43).

The Basic Channel is reset to 1 every time the Mark 150/10 is turned on.

MIDI Channel Disables

In Multi mode, you can disable response to any MIDI channel except the Basic Channel by pressing the corresponding Style Select button. (The top row of buttons indicates channels 1–8, the bottom row channels 9–16.) The channel is enabled (ON) if the UPPER light above the button is lit; it is disabled (OFF) if the LOWER light above the button is lit. Disabling a channel causes the Mark 150/10 to ignore incoming MIDI messages on that channel. (Pressing the button again re-enables response on that channel.) This is useful if you have an external MIDI tone generator, and wish to dedicate one or more MIDI channels to the tone generator. NOTE: You can disable playback of tracks from an external sequencer by disabling the appropriate channels.

The Mark 150/10 retains channel disable settings, even when the power is turned off.

MIDI Mode

The three MIDI Modes available on the Mark 150/10 (Omni On/Poly, Omni Off/Poly, and Multi) are explained on page 68. Multi, the default Mode set at the factory, is the Mode to use when recording tracks in the Recorder or sequencing independent parts with an external MIDI sequencer. Press the appropriate key of the three available to select the MIDI Mode you desire.

The Mark 150/10 retains the MIDI Mode, even when the power is turned off.

Ignore All Notes Off

The MIDI All Notes Off message fulfills a useful purpose: to silence notes that have inadvertently gotten "stuck on." Unfortunately, some MIDI devices, such as some Roland* equipment, use this message in a non-standard way: they transmit it every time all the keys on the keyboard are released. In some situations, this can cause notes to be cut off when you don't want them to be. If you hear notes on the Mark 150/10 cutting off abruptly when using it as a MIDI slave or when connected to a sequencer, try turning ON the Ignore All Notes Off setting.

NOTE: Auto accompaniment on the Mark 150/10 uses the MIDI All Notes Off message. Setting Ignore All Notes Off to ON may cause notes to be "stuck on" when using the auto accompaniment.

The Mark 150/10 retains the Ignore All Notes Off setting, even when the power is turned off. (The default setting for this feature is OFF.)

* The name Roland is a trademark of Roland Corporation.

Local Control

Local Control is the connection between the keyboard of the Mark 150/10 and the internal sound-producing circuitry of the instrument. Normally, Local Control is ON; in fact, every time you power-up the Mark 150/10, it is automatically set to Local Control ON, so you can play the keyboard and hear the sounds of the instrument. But there are reasons for setting Local Control to OFF—especially when MIDI connections bring output of the Mark 150/10 back to the instrument's In port. One example of this is when using an external sequencer whose MIDI Out port has been set to function as both a MIDI Out and a MIDI Thru—a function known as "soft thru." (See pages 71 and 72 for more about sequencers and sequencing.) In such a case, you can eliminate the doubling of notes by setting Local Control to OFF. Press the appropriate key on the keyboard in MIDI Edit Mode to do so. To turn Local Control back ON, press the Local Control key again in MIDI Edit Mode.

When Local Control is ON, the MIDI button is lit continuously when it is held down; when Local Control is OFF, the MIDI button blinks when it is held down.

Receive Transposition

Receive Transposition allows incoming MIDI messages to be transposed. Most of the time you should use the Transpose button on the front panel instead (see page 50); this transposes the MIDI messages that are transmitted from the Mark 10, and if these messages are recorded by a sequencer, they will not need to be transposed on reception (during playback).

The middle Receive Transposition key resets the transposition to 0. The keys to the immediate left or right transpose down or up by one half step, respectively. The keys to the left and right of those will transpose down or up by one octave (12 half steps), respectively. You can press the transposition keys more than once to transpose by multiple half steps or multiple octaves.

The Mark 150/10 retains the Receive Transposition setting, even when the power is turned off.

Transmit Program Change

Ordinarily, when you press a program select button, the instrument transmits the corresponding program change message. You can disable this function by pressing the Transmit Program Change key while in MIDI Edit Mode. This can be useful if, for example, you want to change sounds on your master instrument (the Mark 150/10), but not on any slaves that are connected to it. To re-enable transmission of program change messages, press the Transmit Program Change key in MIDI Edit Mode again.

The Mark 150/10 retains the Transmit Program Change setting, even when the power is turned off.

Receive Program Change

The Receive Program Change key functions just as the Transmit Program Change key does, except that it affects whether or not the instrument *receives* program change messages (more accurately, whether it *responds* to program change messages that it receives). This key alternately disables and enables reception of program change messages.

The Mark 150/10 retains the Receive Program Change setting, even when the power is turned off.

External Sync

When External Sync is OFF, the Mark 150/10 transmits MIDI clock messages, and Start, Stop, and Continue messages, when the Recorder or auto accompaniment is started and stopped.

When External Sync is turned ON, the Mark 150/10 waits to receive MIDI clocks, and Start, Stop, and Continue messages, in order to run the Recorder or the auto accompaniment—so the Recorder and auto accompaniment styles will be synchronized with the external MIDI device. Without these messages, the Recorder and auto accompaniment will not run.

To start the Recorder or auto accompaniment when External Sync is turned on, press Play/Pause (for the Recorder) or Start/Stop (for auto accompaniment) and then start your external sequencer.

External Sync is reset to OFF every time power to the Mark 150/10 is turned on.

When Transmit Split And Layer Data is ON, MIDI controller messages are transmitted when you press a Left Split button, select a split point, layer two sounds, adjust the layer volumes, or change the Left Sustain setting. When it is OFF, the Left Split sound and layered sound are transmitted as MIDI program change messages. This can be useful if you record using an external sequencer.

Transmit Split And Layer Data

The Transmit Split And Layer Data setting is reset to ON every time the power to the Mark 150/10 is turned on.

When Transmit Sequencer Data is ON, the data from the Recorder, auto accompaniment, and data sliders are transmitted out the MIDI Out port. When it is OFF, the data are used to play the internal sounds only.

Transmit Sequencer Data

The Transmit Sequencer Data setting is reset to OFF every time the power to the Mark 150/10 is turned on.

General MIDI (GM) allows sequencer data from different sources to be played back with predictable results, by specifying the sounds that Program Change messages select, the channel (10) for drum and percussion sounds, and the "mapping" of those sounds across the keyboard. The Mark 150/10 implements General MIDI, so you can play General MIDI sequences and automatically hear the correct sounds. These sequences can be played from an external sequencer controlling the Mark 150/10 via MIDI, or from disk files that you load into the internal Recorder.

General MIDI

When you set the Mark 150/10 to General MIDI ON, program changes received from the MIDI In port or from the Recorder will select the appropriate internal sounds. In addition, the Mark 150/10 assigns the General MIDI Drum Kit to channel 10 and disables external program changes for that channel. The front panel is not affected. In addition to allowing you to set General MIDI ON in MIDI Edit Mode, the Mark 150/10 will respond to an external system exclusive messages to turn General MIDI ON and OFF.

NOTE: If General MIDI is ON, sounds selected by the auto accompaniment, and by songs recorded with General MIDI OFF, will be incorrect. You should only set the Mark 150/10 to General MIDI ON when playing songs recorded for General MIDI sound mapping.

General MIDI is set to OFF every time power to the Mark 150/10 is turned on.

Use the Left Octave shift setting to change the octave range in which left sound in a split plays. Press Left Octave; the button blinks. The Tempo display shows the current transposition of the left sound; the default when power to the Mark 150/10 is turned on is always 0. Use the Up and Down buttons beneath the display to lower or raise the transposition in increments of an octave (12 half steps); press Up and Down simultaneously to reset the transposition to 0. Press Left Octave a second time to accept the current value. If the left octave value is not 0, the Left Octave button will remain lit.

LEFT OCTAVE

The Right Octave shift works just the same as the Left Octave shift, except that it affects the sounds in the right portion of a split. The Right Octave value is reset to 0 every time the power to the Mark 150/10 is turned on.

RIGHT OCTAVE

TRANSPOSE

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

To change the transposition, press and release the two buttons with the label "Transpose" printed beneath them simultaneously. Both buttons will blink. Play any key on the keyboard. The Middle C key will now sound the note you selected, and the instrument will be transposed by the interval between Middle C and the note you selected. For example, to transpose up a fifth, press G above Middle C.

While the keyboard is transposed, both Transpose buttons will remain lit. To cancel the transposition, press both Transpose buttons simultaneously and then play Middle C.

Transposition is reset to OFF when power to the Mark 150/10 is switched on.

TRY IT 🖝

- Make sure the Transpose buttons are OFF (not illuminated).
- Play middle C. Sing the note to help you remember the pitch.
- Press the Transpose buttons and play the E above middle C.
- Play middle C again. Notice that the pitch is now higher than before.
- Press the Transpose buttons again and play middle C to cancel the transposition.
- Play middle C one more time. Notice that it is back at its original pitch.

Left Octave and Right Octave do not affect the MIDI note messages the Mark 150/10 transmits.

Changing the Left Octave setting transmits a MIDI controller message #77. Changing the Right Octave setting transmits a MIDI controller message #76.

The Transpose setting affects the note messages that the instrument transmits via MIDI as well as the pitch at which the keyboard plays.

Miscellaneous

This section of the manual discusses three main areas: 1) Connections to the Mark 150/10 Ensemble Grand; 2) Service; and 3) Specifications.

HEADPHONE JACKS (MARK 150)

Two stereo headphone jacks are located on the left front of the instrument, providing you with a means to play or practice at the Mark 150 in privacy. Inserting a plug into either jack disables the internal speakers and one pair of audio outputs (Switched Out).

HEADPHONE JACK (MARK 10)

A stereo headphone jack is located on the left front of the instrument, providing you with a means to play or practice at the Mark 10 in privacy. Inserting a plug into the jack disables the internal speakers and one pair of audio outputs (Switched Out).

BOTTOM/REAR PANEL

The bottom panel of the Mark 150 (the rear panel of the Mark 10) is the location of connectors for such things as AC power, audio inputs and outputs, and MIDI.

Options: Transpose; Miscellaneous

One end of the power cord fits in the AC In receptacle on the Mark 150/10; the other end of the cord plugs into a standard AC wall outlet.
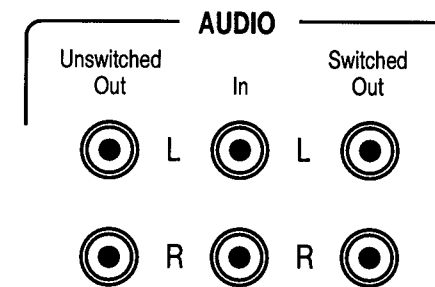
AC In

Next to the AC In receptacle is an accessory power receptacle, which provides power for future options. The Power switch on the Mark 150/10 Ensemble Grand controls the power to this socket.

The functions of the three MIDI ports are discussed on page 66.

MIDI Ports

Depending on the cabinet style of your Mark 150/10 Ensemble Grand, you may see a connector labeled PEDALS. This is reserved for future options.

Pedals

Audio Jacks

```
┌────────── AUDIO ──────────┐
 Unswitched              Switched
    Out        In          Out

  ◎  L      ◎  L        ◎

  ◎  R      ◎  R        ◎
```

Four RCA jacks provide audio output to external equipment, such as a home stereo, a PA system, or a tape recorder. They are configured in two pairs, each pair consisting of a Left and a Right output for a complete stereo signal. All four provide line-level signals.

The outputs labeled Switched Out are switched off when headphones are plugged into the headphone jack, while those marked Unswitched Out are not.

The Switched Outs are ideal when using a dedicated external speaker system, which you would want to be silenced when practicing with headphones. The Unswitched Outs are useful for tape recording with headphones plugged in, or if you wish to mute the internal speaker system (by inserting a "dummy" plug—one that is not connected to anything—into the headphone jack) while using a more powerful external amplifier system. (IMPORTANT: The dummy plug must be a stereo plug. A monaural plug inserted into the headphone jack will not only shut off the speakers, but it will also completely disable the right audio channel.)

There are two RCA jacks available for audio input 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.

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

WARNING: The signal that is input via these jacks will play at full volume! These inputs are not affected by the Master Volume, Treble, and Bass controls of the Mark 150/10 . If you wish to be able to control the level of the external device connected to these inputs, the device must have an output level control of its own.

The Audio In jacks accept line-level signals. (In order to use a microphone, you must boost the signal by passing it through a preamplifier.)

The Mark 150/10 Ensemble Grand 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.

SERVICE

SPECIFICATIONS (150)

Following are physical, audio, electrical, and environmental specifications for the Mark 150 Ensemble Grand.

Physical

- Height: 39.75" (101 cm)
- Width: 58.25" (148 cm)
- Depth: 59" (150 cm)
- Weight: 510 lbs. (232 kg)

Audio

- 200-Watt Quad Amplification: 1 x 80 Watts for subwoofer
  2 x 20 Watts for downfacing widerange
  2 x 20 Watts for upfacing widerange
  2 x 20 Watts for tweeters

- 7 Speakers: 1 x 12" (30 cm) woofer in a ported enclosure
  2 x 6.5" (16.5 cm) downfacing widerange
  2 x 5" (12.5 cm) upfacing widerange
  2 x 1" (2.5 cm) dome tweeters

- Switched Audio Outputs: 0.25 volts RMS for *ff* piano music with Master Volume slider at maximum and Treble and Bass sliders centered. Output impedance = 340 ohms. Excessive loading of these outputs will affect the sound of the internal speakers.

- Unswitched Audio Outputs: 0.25 volts RMS for *ff* piano music with Master Volume slider at maximum and Treble and Bass sliders centered. Output impedance = 500 ohms. Loading of these outputs will not affect the sound of the internal speakers.

- Audio Inputs: 0.5 volts RMS will produce a level equivalent to *ff* piano music. Input impedance = 300K ohms. Master Volume, Treble, and Bass sliders do not affect the signal delivered through these inputs.

- Headphone Outputs: Source impedance = 47 ohms; recommended load impedance = 50 ohms or greater. Level is 0.5 volts RMS = 1 mW at 100 ohms for *ff* piano music with Master Volume slider at maximum and Treble and Bass sliders centered; 8 volts RMS = 280 mW absolute maximum. Plugging headphones into either jack switches off the internal speakers and the Switched Audio Outputs.

Electrical

	120VAC	*240VAC*
- Voltage Range:	100–125 volts RMS	200–250 volts RMS
- Frequency Range:	48–65 Hz	48–65 Hz
- Power Consumption:	2.0 Amps nominal	1.0 Amps nominal
- Accessory Power Receptacle:	3.0 Amps maximum	1.5 Amps maximum

Environmental

- Temperature (Operating):	5 to 40°C	(40 to 104°F)
- Temperature (Storage):	–25 to 85°C	(–13 to 185°F)
- Relative Humidity (Operating and Storage):	5 to 95%, non-condensing	

Miscellaneous

Following are physical, audio, electrical, and environmental specifications for the Mark 10 Ensemble Grand.

Physical

- Height: 31.75" (80.6 cm)
- Width: 56" (142.2 cm)
- Depth: 22.75" (57.8 cm)
- Weight: 176 lbs. (80 kg)

Audio

- 130-Watt Biamplification: 2 x 50 Watts for woofers
  2 x 15 Watts for tweeters

- 4 Speakers: 2 x 6.5" (16.5 cm) woofers in a ported enclosure
  2 x 1" (2.5 cm) dome-type tweeters

- Switched Audio Outputs: 0.25 volts RMS for ff piano music with Master Volume slider at maximum and Treble and Bass sliders centered. Output impedance = 340 ohms. Excessive loading of these outputs will affect the sound of the internal speakers.

- Unswitched Audio Outputs: 0.25 volts RMS for ff piano music with Master Volume slider at maximum and Treble and Bass sliders centered. Output impedance = 500 ohms. Loading of these outputs will not affect the sound of the internal speakers.

- Audio Inputs: 0.5 volts RMS will produce a level equivalent to ff piano music. Input impedance = 300K ohms. Master Volume, Treble, and Bass sliders do not affect the signal delivered through these inputs.

- Headphone Output: Source impedance = 47 ohms; recommended load impedance = 50 ohms or greater. Level is 0.5 volts RMS = 1 mW at 100 ohms for ff piano music with Master Volume slider at maximum and Treble and Bass sliders centered; 8 volts RMS = 280 mW absolute maximum. Plugging in headphones switches off the internal speakers and the Switched Audio Outputs.

Electrical

	120VAC	*240VAC*
Voltage Range:	100–125 volts RMS	200–250 volts RMS
Frequency Range:	48–65 Hz	48–65 Hz
Power Consumption:	1.3 Amps nominal	0.7 Amps nominal
Accessory Power Receptacle:	3.0 Amps maximum	1.5 Amps maximum

Environmental

Temperature (Operating):	5 to 40°C	(40 to 104°F)
Temperature (Storage):	−25 to 85°C	(−13 to 185°F)
Relative Humidity (Operating and Storage):	5 to 95%, non-condensing	

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 150/10 Ensemble Grand will remain compatible with the instruments of today and tomorrow.

MIDI Connections

On the bottom panel (Mark 150) or rear panel (Mark 10) are three MIDI ports:

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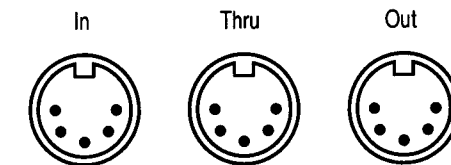
- In receives MIDI information from other equipment.
- Thru duplicates the MIDI information received by In and passes it to other equipment.
- Out sends MIDI information to other equipment.

MIDI cables provide the connections between the MIDI ports of one piece of equipment and those of another. To keep things simple, there are only two valid MIDI connections: Out to In and Thru to In.

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 port of the "master" (the instrument whose keyboard you'll play) to the MIDI In port of the "slave."

MIDI Out

MIDI In

"Master"

"Slave"
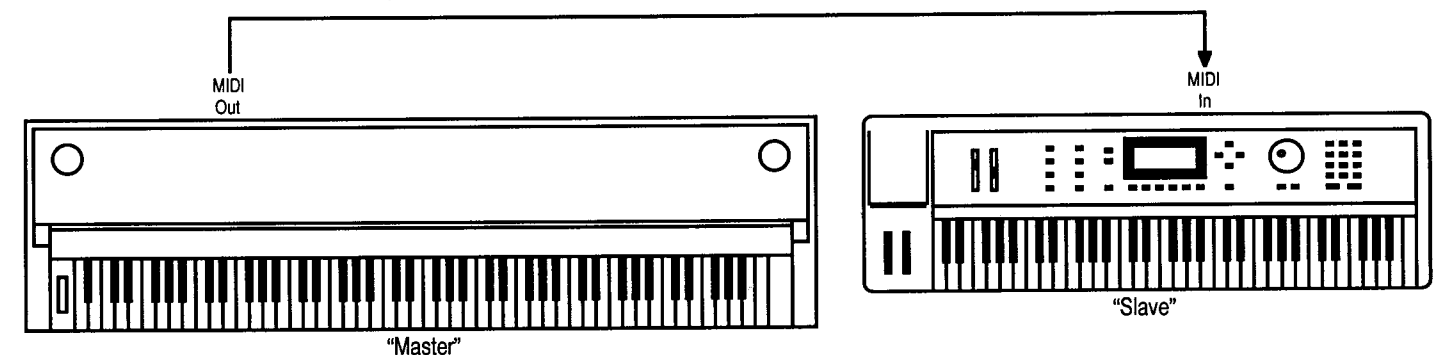
If you connect In to Out, rather than Out to In, the other instrument becomes the master. And if you use two cables, connecting In to Out and Out to In, you can use either instrument as the master.

You probably will want to use the Mark 150/10 Ensemble Grand as your master keyboard.

It is important to explain that what is sent over the MIDI cable is information (data), not sound. In fact, the usefulness of master-slave setups lies in having each instrument produce a different sound, resulting in a layering of sounds that expands on the layering that is possible within the Mark 150/10 itself.

The slave can be a MIDI organ, portable keyboard, synthesizer, tone module, drum machine, or effects device. If it doesn't have built-in amplification and speakers, connect its audio outputs to the Audio In jacks on the Mark 150/10.

Another application of MIDI is in using a *sequencer* to record and play back your performances. The Recorder on the Mark 150/10 is actually a sequencer, but some advanced users may wish to connect an external sequencer as well, to make use of features that go beyond what the built-in Recorder provides. An external sequencer can be a special hardware unit designed for that purpose, or it can be a home computer running special sequencing software. In either case, the MIDI connections are the same—Out to In and In to Out.
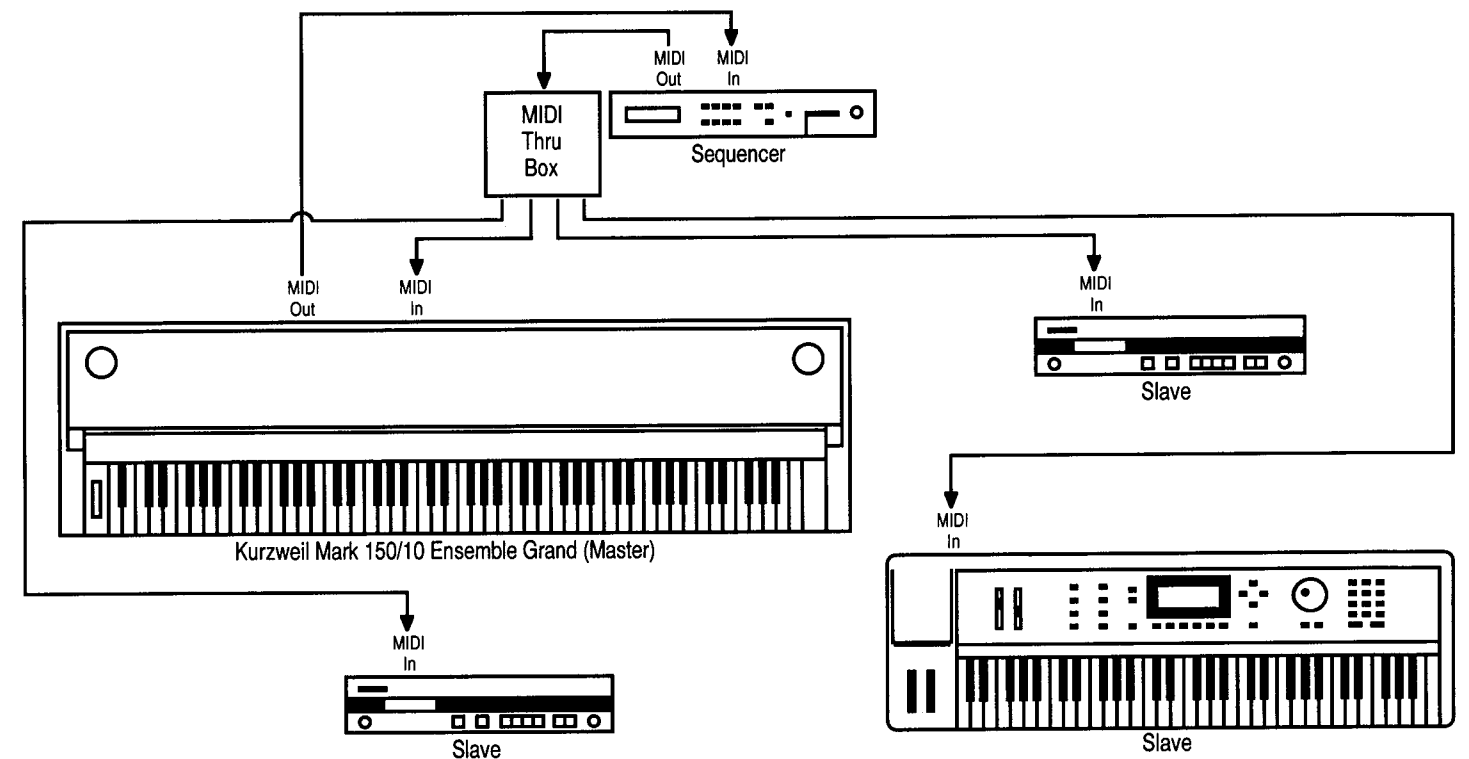

Kurzweil Mark 150/10 Ensemble Grand (Master)
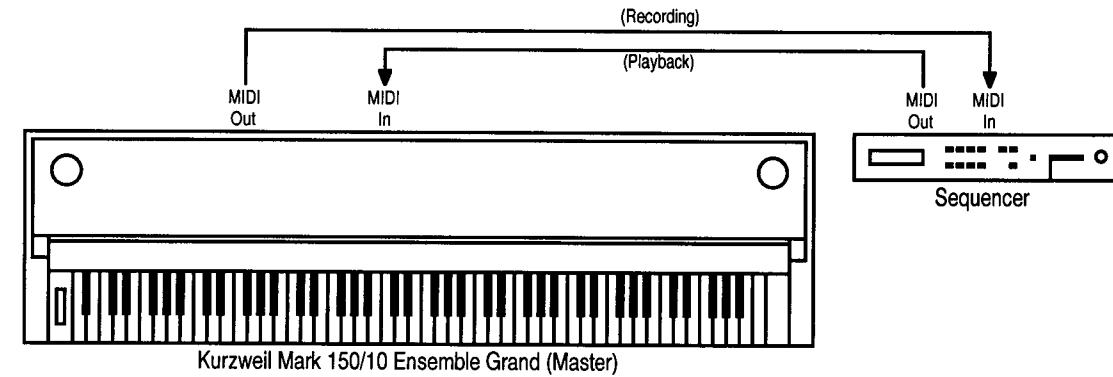
The MIDI Thru port on the Mark 150/10 Ensemble Grand allows you to form a "chain" of instruments, so that a sequencer can control not only the master instrument, but a slave as well.
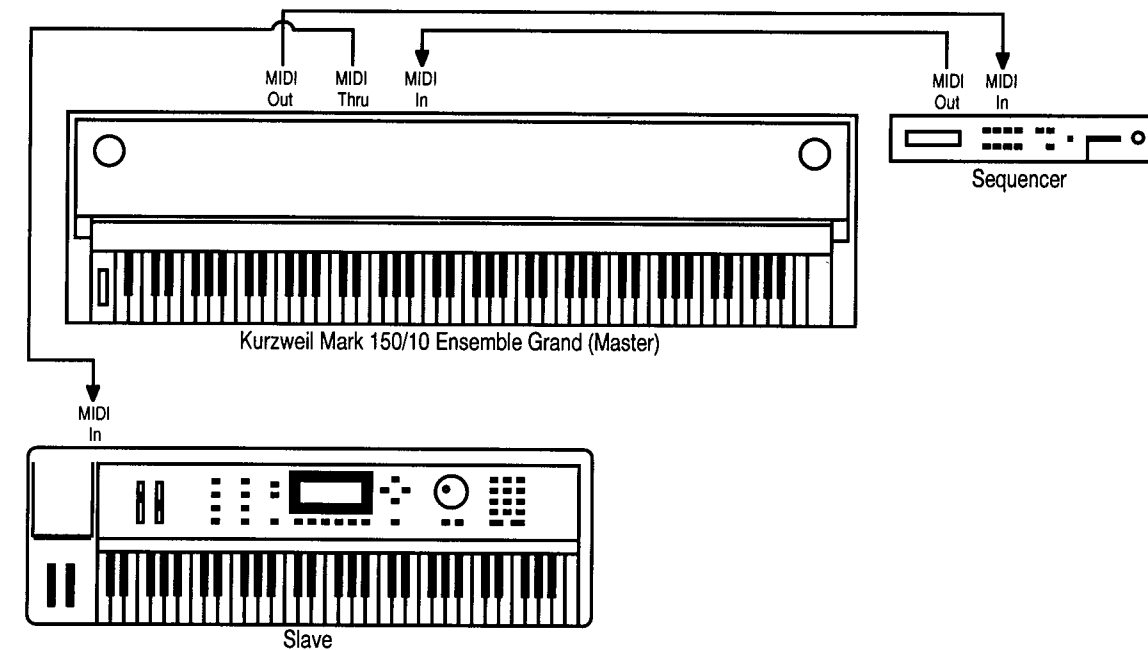
When the sequencer plays back, the information is sent not only to the master, but also—via the Thru port—to the slave. If the slave, in turn, has a Thru port, another slave could be added to the end of this chain, and so on. Practically speaking, though, three or four instruments in a chain are as many as will work effectively; beyond that, transmission becomes unreliable.

The solution to the problem of too long a chain lies in either using a sequencer with multiple MIDI Outs or using a *MIDI Thru box*, which produces several parallel Thru signals from one In (see the illustration on the following page).

MIDI Thru Box

Sequencer

MIDI Out

MIDI In

Slave

Kurzweil Mark 150/10 Ensemble Grand (Master)

MIDI In

Slave

MIDI In

Slave

MIDI Channels And Modes

For MIDI to control several instruments, each playing a different part, at the same time, it relies on different *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, and each one can transmit any number of notes to any number of instruments, over the same MIDI cable.

On the Mark 150/10, the Basic Channel (the one on which the instrument transmits) can be set to any channel, 1–16. For receiving, there are three MIDI *modes* that govern how the instrument responds to different MIDI channels:

- OMNI ON/POLY. In this mode, the Mark 150/10 responds to all 16 MIDI channels, no matter what the Basic Channel is. It plays the sound selected for the Basic Channel.

- OMNI OFF/POLY. In this mode, the Mark 150/10 responds on only the Basic Channel to which it is set.

- MULTI. In this mode, the Mark 150/10 responds to parts on different MIDI channels independently. Each channel can play a different sound (*multitimbral* capability), in effect making the Mark 150/10 the equivalent of 16 MIDI slaves. The only limit is the number of notes that can sound at one time, the maximum of which is 32. Multi is the default mode of the Mark 150/10. The instrument must be in this mode to play back sequenced parts with independent sounds.

Information on setting the Basic Channel and MIDI mode of the Mark 150/10 Ensemble Grand, as well as other settings, can be found on pages 44–49.

A NOTE ON MIDI CHANNELS

The Basic Channel of the Mark 150/10 keyboard is set to 1 when the instrument is turned on; Recorder tracks 1–8 play back on channels 2–9, Auto Accompaniment parts on 11–15, and the Metronome on 16. The Mark 150/10 is designed to work best in this configuration. You may wish to change some aspects of this in certain situations (e.g., if you are using an external MIDI controller or sound modules) but in general it is best to leave the channel settings at their power-up defaults.

The MIDI data that the Mark 150/10 transmits and receives falls into five categories:

- NOTE ON and NOTE OFF. When you press a key on the Mark 150/10, it sends a MIDI message that says a note has begun, what MIDI channel it's on (the Basic 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 note it is, and the velocity with which the key was released.

- CONTROLLERS. When any of the three pedals is pressed or released, a special MIDI controller message is transmitted. Selecting Digital Reverb & Effects or Left Split buttons, turning auto accompaniment on or off, selecting styles, selecting a layered sound, and other operations also transmit controller messages (see the MIDI Implementation Chart for a complete list).

- PITCH BEND. Moving the Pitch Bend wheel transmits pitch bend messages.

- SYNCHRONIZATION. The Mark 150/10 normally transmits MIDI clocks, as well as start and stop messages, so that external equipment such as sequencers or drum machines can be "slaved" to the Mark 150/10, to run in sync with the internal auto accompaniment or Recorder. The Mark 150/10 can also be set so that it does not transmit these synchronization messages (see page 48), in which case it will be the slave, running in sync with an external MIDI device.

- PROGRAM CHANGE. Selecting a sound results in a program change message that corresponds to the number of the sound selected. The sounds on the Mark 150/10 are numbered 1–82 and 91–96, as shown in the table on the following page.

In addition to the specification of basic messages, MIDI also provides for some specifications that govern the way these messages may be used. The two most important of these are Standard MIDI Files and General MIDI.

Standard MIDI Files are a way for songs to be stored so that they can be played back by sequencers of different brands. The Mark 150/10 can read Standard MIDI Files and play them in its built-in Recorder—although it does not save songs as Standard MIDI Files.

When you go looking for disks containing Standard MIDI Files (and there are many available, with more appearing all the time), be sure they're MS-DOS-format disks (most are). It doesn't matter whether they're double-density or high-density; the Mark 150/10 can read both kinds.

You can load Standard MIDI Files with more than 8 tracks into the Recorder of the Mark 150/10, but if you do, you cannot use the Auto Accompaniment while playing the song. The Track 8 button can mute tracks 8–16.

General MIDI specifies what sounds correspond to what program numbers. For example, in General MIDI, program number 1 is always acoustic piano. This design allows songs created for one device to play correctly on many other devices. If your Standard MIDI File conforms to General MIDI, set the Mark 150/10 to General MIDI ON (see page 49) when you play it in the Recorder.

List Of Sounds And Their Program Numbers

SOUND	Prog. #	VARIATION	Prog. #
Grand Piano	1	Bright Piano	2
Rock Piano	3	Rock Piano 2	4
Ragtime Piano	5	Tack Piano	6
Electric Piano 1	7	Stereo Tremolo Electric Piano	8
Electric Piano 2	9	Soft Electric Piano	10
Electric Organ (Jazz)	11	Rock Organ	12
Pipe Organ 1 (Full)	13	Full Pipes With Reeds	14
Pipe Organ 2 (Fluty)	15	Soft Hollow Pipes	16
Harpsichord	17	Forte Harpsichord	18
Choir	19	Cathedral Voices	20
Strings 1 (Fast)	21	Fast Strings 2	22
Strings 2 (Slow)	23	Panning Slow Strings	24
Orchestra	25	Slow Attack Orchestra	26
Flute	27	Mellow Flute	28
Clarinet	29	Vibrato Clarinet	30
Bassoon/Oboe	31	Bassoon/Oboe 2	32
Cello/Violin	33	Cello/Violin 2 (Fiddle)	34
Saxophone 1 (Dual)	35	Baritone Sax	36
Saxophone 2 (Alto)	37	Sax Section	38
Trumpet	39	Trumpet Section	40
Trombone	41	Tuba/French Horn	42
Brass Section	43	Brass Section 2	44
Synth Brass	45	Synth Brass Pad	46
Synth Ensemble	47	Pizzicato Strings	48
Bells	49	Bells & Strings	50
Acoustic Guitar	51	12 String Guitar	52
Jazz Guitar	53	Chorused Jazz Guitar	54
Electric Guitar	55	Muted Electric Guitar	56
Synth Keys	57	Space Synth	58
Vibraphone	59	Bright Vibes	60
Marimba	61	Xylophone	62
Mallets (Steel Drums)	63	Conga Marimba	64
Accordion	65	Harmonica	66
Synth Pads	67	Glass Chiff	68
Synth Leads 1 (Flute)	69	Square-Wave Lead	70
Synth Leads 2 (Distorted)	71	Tingle Lead	72
Synth FX	73	Slow Stereo FX	74
Drums 1 (Clean)	75	Ambient Drums	76
Drums 2 (Electronic)	77	General MIDI Drums	78
Percussion (Ethnic)	79	Orchestral Percussion	80
Disk Sound (SoundByte)	81	SoundByte Variation	82

LEFT SOUND	Prog. #	LEFT SOUND	Prog. #
Acoustic Bass	91	A. Bass & Ride	94
Electric Bass 1	92	Electric Bass 2	95
Synth Bass 1	93	Synth Bass 2	96

To disable transmission and reception of program change messages, see page 48.
See the inside back cover for the MIDI Implementation Chart of the Mark 150/10.

If you're an advanced user, you may choose to augment the capabilities of the internal Recorder with those of an external MIDI sequencer. If you do, the following notes will help you get the most from the Mark 150/10.

- Many people prefer using the "soft thru" capability of their sequencers and setting their master keyboards to Local Control OFF (see page 47).

- Make sure the Mark 150/10 is set to Multi mode (the default MIDI mode; see pages 47 and 68). This allows you to play back sequences using different sounds on different MIDI channels.

- When you use another sequencer in conjunction with the Recorder built into the Mark 150/10, you should set one to External Sync ON (see page 48), to follow the timing of the other. As a rule of thumb, if one device is recording what the other plays back, the one that is recording should be set to External Sync ON.

- To transfer sequences from the built-in Recorder to the external sequencer, you set the external sequencer to record and the built-in Recorder to play. But there are a couple of details to keep in mind:

  Set the Transmit Sequencer Data function on the Mark 150/10 to ON (see page 49).

  Some sequencers offer "multi record," which means that they can record multiple channels at the same time. If your sequencer can do this, then you can transfer all of the tracks in a song from the Mark 150/10 to the sequencer in a single pass. But note whether the sequencer will record the channels onto separate tracks, or all onto the same track; in the latter case, it may be difficult to edit the data for a given channel, in which case you may wish to record the channels individually onto separate tracks.

  To record channels individually, set up the sequencer to record one track, and turn off all the track buttons on the Mark 150/10 except one. Record that track onto the sequencer. Next create a new record track on the sequencer, turn off the previously lit track button on the Mark 150/10, and turn on a new one. Record that track. And so on until all of the tracks have been recorded.

- You can reduce the time it takes to transfer tracks between the Mark 150/10 and the external sequencer by recording at a fast tempo.

- To transfer songs from an external sequencer to the Mark 150/10, there are two options: 1) If the sequencer can save songs as Standard MIDI Files onto MS-DOS-format disks, the Mark 150/10 can read those disks and load the songs into the Recorder. 2) Lacking this capability, you can set up the sequencer to play the tracks one at a time, and the Mark 150/10 to record them one at a time.

- To record performances directly from the keyboard into an external sequencer, set the Basic Channel on the Mark 150/10 for the part you wish to record (see page 46). Each part that uses a different sound should be recorded on a different channel. Many sequencers "rechannelize," making this step unnecessary. If your sequencer does not rechannelize, you must change the Basic Channel before recording each new part.

- Select the sound for the part *after* you have started recording. This sends a Program Change message. 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.

- You can also manually insert these program changes into the sequence after you have recorded.

- If you are using splits and layers, you will need to set MIDI controllers to do the splitting and layering. You can get the correct effect by pressing the front panel buttons and recording them into the sequencer. Alternately, you can send controllers 76–82 at any time, then send a program change message to activate them. The controller message the Mark 150/10 receives will not take effect until the following program change message for the main sound. This affects the order in which you should record messages into your sequencer.

EXAMPLE 1. To set up an Acoustic Bass split with Grand Piano, and Middle C as the split point, send controller #81 (split program) with a value of 91 (Acoustic Bass program #), controller #80 (split point) with a value of 60 (Middle C key #), followed by a program change message for program 1 (Grand Piano). To cancel these parameters, set them to 0 (Controller #80 [split point] is an exception; setting it to 0 will make splits unavailable, so set it to the default value of 52 [E below Middle C].) and send another program change message.

EXAMPLE 2. To set up a layer with Acoustic Guitar and Accordion, with the Accordion reduced in volume, send controller #82 (layer program) with a value of 65 (Accordion layer program #), controller #79 (layer volume adjust) with a value of 4 (number of button presses by which volume is reduced), followed by a program change message for program 51 (Acoustic Guitar).

- If you want your Mark 150/10 to transmit regular program change messages 91–96 when you select Left Split sounds from the front panel, you must turn OFF the Transmit Split And Layer Data parameter in MIDI Edit Mode (see page 49).

CONTROLLERS

To use the Split Program controller (#81) or the Layer Program controller (#82), send the controller message with a value of the program number you wish to split or layer with.

To use the Split Point controller (#80), send the controller message with a value of the MIDI key number that you wish to be the split point. Middle C is 60.

To use the Layer Volume Adjust controller (#79), send the controller message with a value of the number of key presses that would have accomplished the adjust. Larger numbers will reduce the volume of the layer program more.

To use the Right and Left Octave shift controllers (#76 and #77), send the controller message with a value of the number of half steps to transpose up (+) or down (–), plus 64. (For example, to transpose down an octave, the value would be 52.) This allows a range of –64 to +63 half steps.

See page 24 for details regarding the Style controllers (#85 and #86).

To change the global Reverb and Effect setting, send a controller #83 message with a value determined by the following formula:

Reverb Room Size (1=Off, 2=Room, 3=Stage, 4=Hall):	___ x 4	= ___
Reverb Quality* (1=Normal, 2=Bright, 3=Warm):	___ x 16	= ___
Effect (1=Off, 2=Chorus, 3=Echo, 4=Symphonic):	___ x 1	= ___
		+ 44
	Controller Value:	___

* If the Reverb Room Size is Off, the Reverb Quality setting will not produce an audible difference and will not cause the Warm or Bright light to illuminate.

Notes On Using An External Sequencer