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RE-220

Digital Piano
Owner's Manual
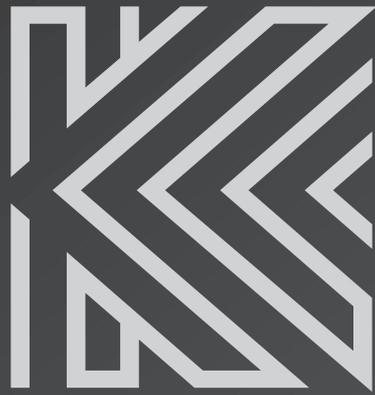
RE-220

Digital Piano
Owner's Manual

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IMPORTANT SAFETY & INSTALLATION INSTRUCTIONS

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

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

1. Read all of the Safety and Installation Instructions and Explanation of Graphic Symbols before using the product.

2. This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a power supply cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet which is properly installed and grounded in accordance with all local codes and ordinances.

   DANGER : Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Do not modify the plug provided with the product-if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use an adaptor which defeats the function of the equipment-grounding conductor. If you are in doubt as to whether the product is properly grounded, check with a qualified serviceman or electrician.

3. Do not use this product near water-for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.

4. This product should only be used with a stand or cart that is recommended by the manufacturer.

5. This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long priod of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

6. The product should be located so that its location or position does not interfere with its proper ventilation.

7. This product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.

8. This product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

9. This product may be equipped with a polarized line plug (one blade wider than be other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.

10. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power supply cord, do not pull on the cord, but grasp it by the plug.

11. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

12. The product should be serviced by qualified service personnel when:
    A. The power supply cord or the plug has been damaged;
    B. Objects have fallen, or liquid has been spilled into the product;
    C. The product has been exposed to rain;
    D. The product does not appear to be operating normally or exhibits a marked change in performance;
    E. The product has been dropped, or the enclosure damaged.

13. Do not attempt to service the product beyond that described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.

14. **WARNING** : Do not place objects on the product's power supply cord, or place the product in a position where anyone could trip over, walk on, or roll anything over cords of any type. Do not allow the product to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

RADIO AND TELEVISION INTERFERENCE

WARNING : Changes or modifications to this instrument not expressly approved by KURZWEIL 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 other than 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.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with dry cloth.

7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments / accessories specified by the manufacturer.

12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart / apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING : To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.

To completely disconnect this equipment from the AC Mains, disconnect the power supply cord plug from the AC receptacle.

To reduce the danger of explosion if the lithium battery is incorrectly replaced, replace only with the same or equivalent type.

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The Front Panel of the RE-220

❶ Digital Reverb & Effects
Tailor the overall sound of the RE-220
See pages 22~25

❷ Recorder
Record and play back multi-track songs
See pages 26~28

❸ Display
View current tempo and settings
See page 29
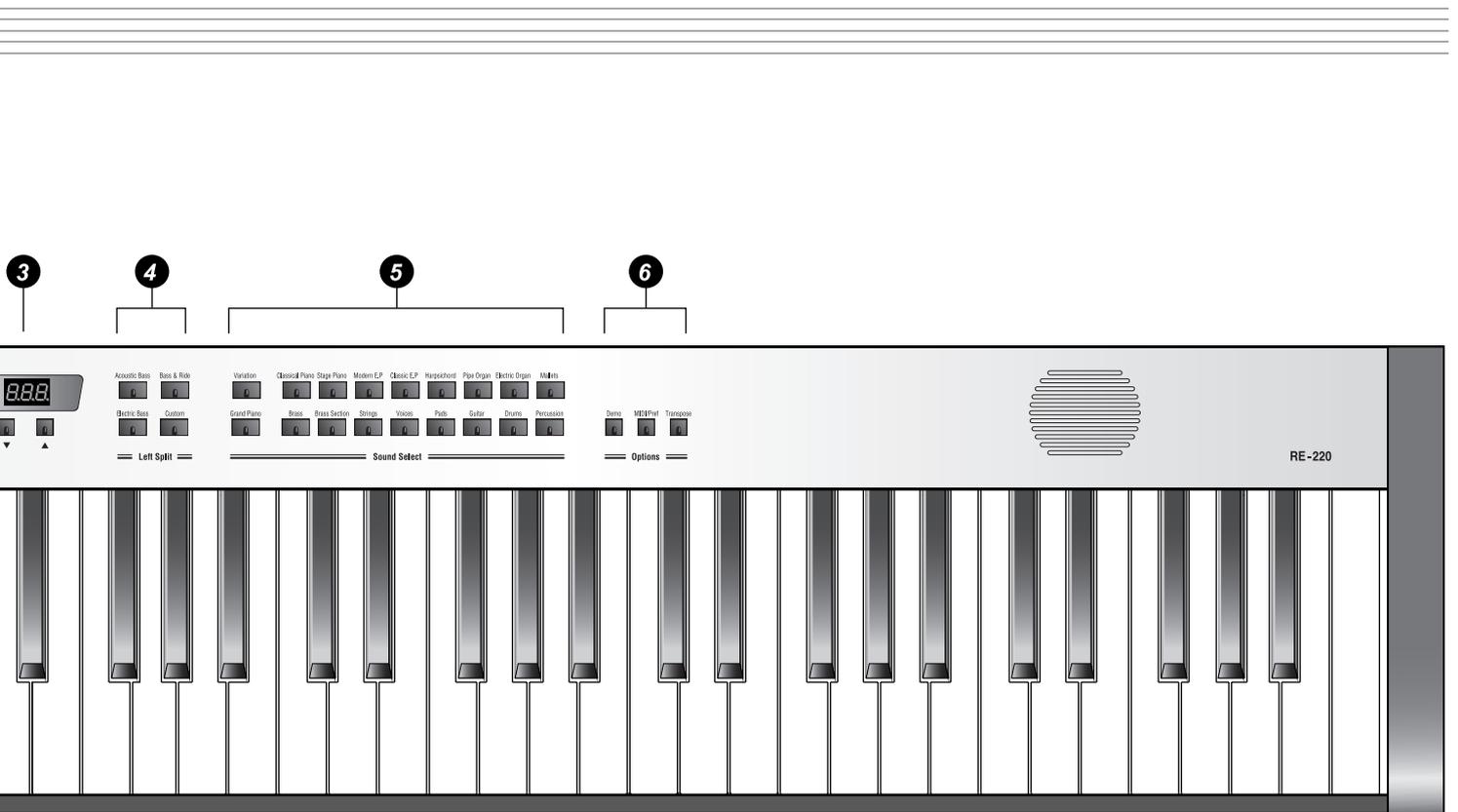
❹ Left Split

Divide the keyboard into two different sounds

See pages 20~21

❺ Sound Select

Enliven your music with stunningly realistic sounds

See pages 15~17

❻ Options

Tailor the response of the instrument, store your favorite panel settings and play Demo songs

See pages 30~38

Introduction

Welcome to the world of the KURZWEIL RE-220 Digital Piano.

The RE-220 gives you easy access to KURZWEIL's high-quality sound technology. Authentic digital representations of musical instrument sounds are the starting points. The RE-220 reproduces the finest details of the original sounds; you'll even hear differences in tone as you play from bass to treble, and from soft and loud, just as in the original instruments.

The Features of the RE-220

- 88 notes, Hammer type keys

- Three Pedals

- 7 different levels of keyboard touch sensitivity

- 37 Preset Sounds (including Triple-Strike Stereo Piano Sample and Take 6 voices)

- Real-time Sound Expression

- Sound Layering with Volume Balance.

- Left Key Split

- Transpose, Detune

- 3 Reverbs and 3 Effects (Chorus 1, 2 and Flanger)

- 60 Watt Sound System with Bass and Treble control

- 3 x 7-Segments Display

- 2 songs, 2 tracks Recorder

- Metronome

- Tap tempo

- 50 Piano Demo Songs

- 20 Preset Demo Songs

- Line In / Out

- MIDI In / Out

- 2 Headphone Jacks

Setting up the Instrument

Check that all of the following items are present.

Item	No.	Item	No.
① Keyboard	1EA	⑧ Screws for Side Panel and Keyborad (Rear)	2EA
② Side Panel (Left)	1EA	⑨ Screws for Side Panel and Keyboard (Front)	2EA
③ Side Panel (Right)	1EA	⑩ Screws for Side Panel and Pedal Box	4EA
④ Pedal Box	1EA	⑪ Screws for Rear Panel and Side Panel	2EA
⑤ Rear Panel	1EA	⑫ Screws for Rear Panel and Pedal Box	4EA
⑥ Support Leg	2EA	⑬ Cable Clamps	1EA
⑦ Headphone Hanger	1EA		
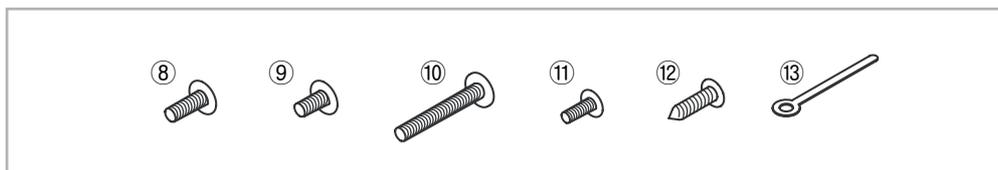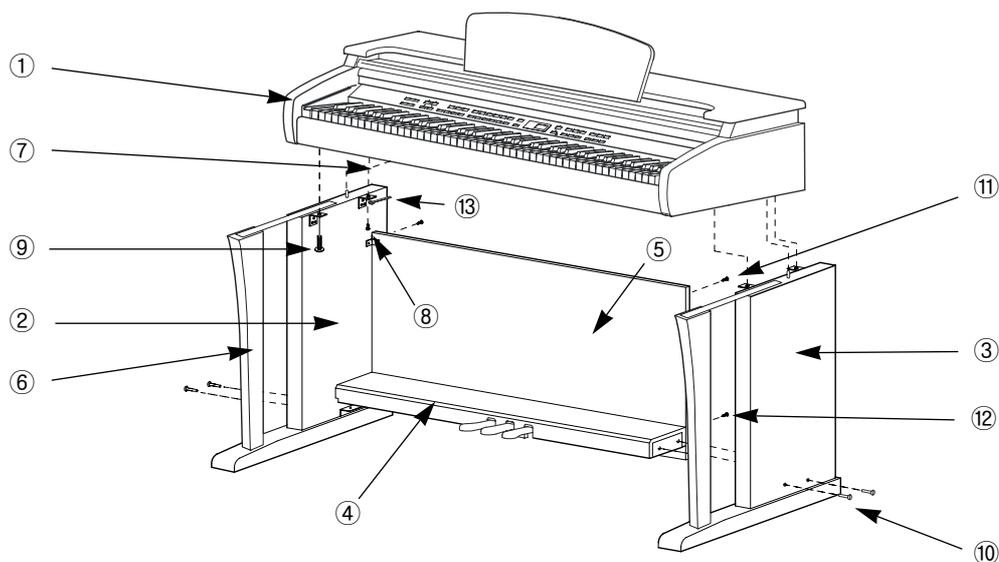
⚠
- We do not recommend attempting to assemble the RE-220 alone. The job can be easily accomplished, however, only two people.
- Use only the screws provided or replacements of exactly the specified size. Using screws of the wrong size can result in damage to the instrument and personal injury.

Side Panel and Pedal Box Assembly
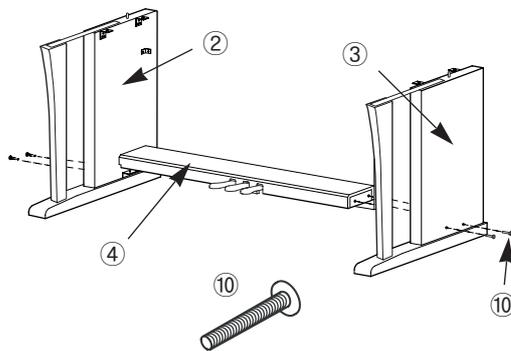
1. Place the the pedal box ④ on the left side panel ② and then use two screws ⑧ to fasten the left side panel.
2. Place the the pedal box ④ on the right side panel ③ and then use two screws ⑧ to fasten the right side panel.
3. You can find the pedal cable in the pedal box ④. Untie and straighten out the cable attached to the bottom of the pedal box.

Rear Panel Assembly
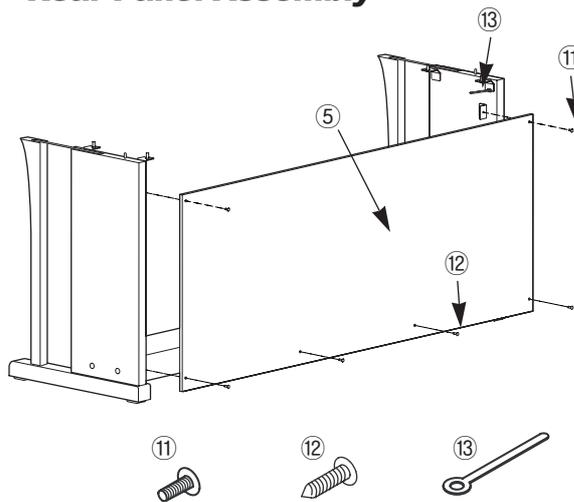
1. Fit the rear panel ⑤ into the holes of the side panel brackets and then use two screws ⑪ to fasten the top of the rear panel.
2. Use four screws ⑫ to fasten the bottom of the rear panel.
3. Use the cable clamp to take up any slack in the pedal cable.

Keyboard Assembly

Headphones jack

Pedal cable jack

Pedal adjuster

Screws ⑧ to fasten the keyboard with side panel

⑧

⑨

Screws ⑨ to fasten the keyboard with side panel & Leg
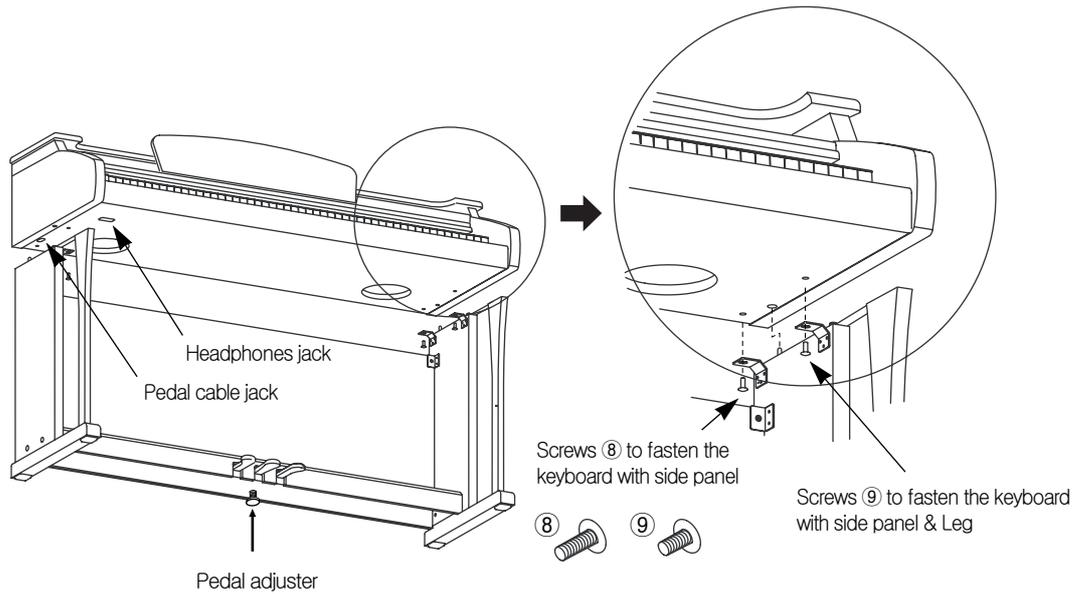
1. Place the keyboard on the stand so that the wood pegs on the top of the side panel are fit into the holes on the bottom of the keyboard.
2. Use two screws ⑧ and two screws ⑨ to fasten the bottom of the keyboard.
3. Insert the pedal cable connector into the pedal jack located on the bottome of the keyboard.
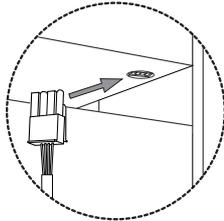
Be sure that the connector is inserted in the correct orientation.
Make sure that the cable clamp fastens to the pedal cable.

4. Rotate the pedal adjuster until it comes in firm contact with the floor surface. If the adjuster is not in firm contact with the floor, the pedal will wobble and cause malfunctions.
5. Install the headphone hanger as shown in the figure below.
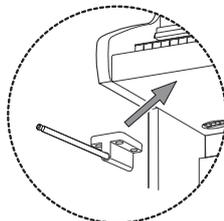
Turning on the Instrument (Power)

The RE-220 operates on AC power. A power cord is included with the instrument to connect it to an AC Outlet. Before connecting the power cord, be sure that the power switch, located under the left-hand end of the keyboard, is off. Then plug the power cord into an AC outlet. Once the power cord is connected, you can turn the power switch on.

After the power switch is turned on, it will take about 2 seconds before the front panel lights up. An additional 3 seconds is needed before it is ready to play.

(Bottom surface)
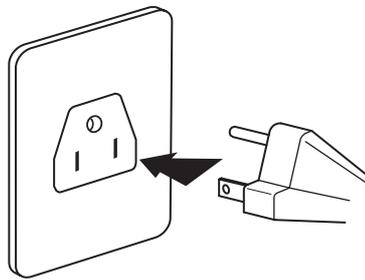
(The shape of plug differs depending on locale).
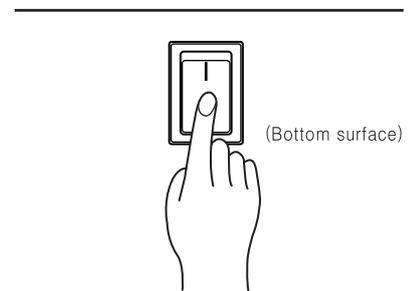
Setting the Volume

To be sure that you can hear the instrument, move the Volume knob (on the left end of the front panel) 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.

The level decreases.   The level increases.

Volume
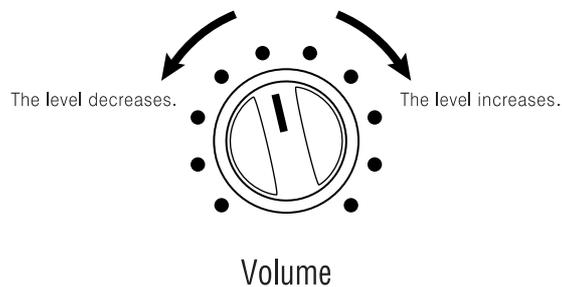
Listen to the Demo Songs
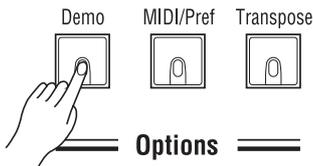
The RE-220 contains a number of built-in demonstrations to acquaint you with the sound and capabilities it possesses. To access these demonstrations, press the **Demo** button, which is located near the right end of the front panel controls, in the Options section. The button lights up to show that the RE-220 is in the demonstration mode.
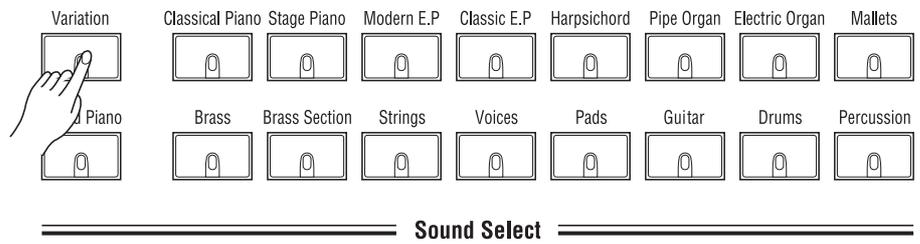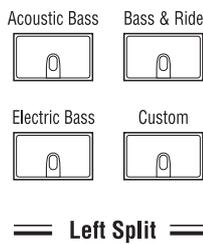
To listen to the demo songs for the preset sounds

Press any button where the light rotates in the Sound Select or Left Split section to hear a demonstration of the sound. The **Variation** button plays all demo songs for preset sounds in a loop. To stop playing a song, press the currently selected button. The button lights resume their blinking pattern.

To listen to the Piano Demo Songs

There are 50 piano demo songs available. The number on the display indicates the current song number, which ranges from 1 to 50. Select a song by pressing the **Up**/**Down** button. Press the **Play/Stop** button to hear the song. The **Recorder** button plays all Piano demo songs in a loop. To stop playing a song, press the **Play/Stop** button. The button lights resume their blinking pattern.

To exit demonstration mode, press the **Demo** button again.
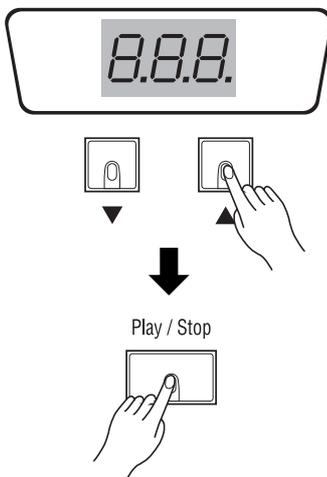
The Keyboard and Pedals

The Keyboard

The keyboard of the RE-220 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 RE-220 (more precisely, the faster you strike them), the louder and brighter the resulting sound is. In technical terms, this is called "Velocity-Sensitive". It makes the RE-220 a truly expressive instrument. See "Keyboard Touch" parameter at page 35 for information on adjusting the velocity-sensitive to suit your preference (NOTE: The organ and harpsichord sounds purposely aren't velocity-sensitive, in order to be more realistic; real organ and harpsichords aren't velocity-sensitive.)

The Pedals

In addition to the expressiveness offered by the keyboard, there are three pedals that provide you with further control over the sounds of the RE-220. These pedals have the same function as those on a grand piano, which are, from left to right:

SOFT   SOSTENUTO   SUSTAIN
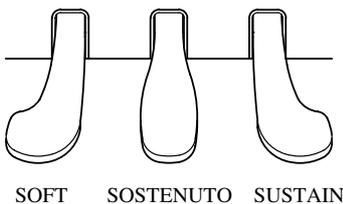
SOFT   The soft pedal reduces the volume while the pedal is pressed. The soft pedal will not affect notes that are already playing when it is pressed.

SOSTENUTO If you play a note on the keyboard and press the sostenuto pedal while the notes are held, those notes will sustain as long as you hold the pedal. But all sebsequently played notes will not be sustained.

SUSTAIN   The sustain pedal (rightmost pedal) functions in the same way as the damper pedal of an acoustic piano. When the sustain pedal is pressed, notes continue to play after their keys have been released. Releasing the pedal will silence the sustained notes.

Sound Select

Variation	Classical Piano	Stage Piano	Modern E.P	Classic E.P	Harpsichord	Pipe Organ	Electric Organ	Mallets

Grand Piano	Brass	Brass Section	Strings	Voices	Pads	Guitar	Drums	Percussion
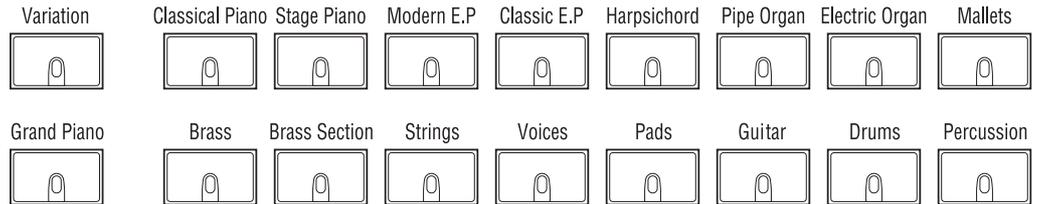
Sound Select

The Sound Select portion of the front panel contains buttons used for selecting the individual sounds available on the RE-220 Digital Piano. You select a sound by pressing the corresponding button; the light in the button illuminates to show you which sound is selected. There are 17 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 the **Variation** button; the light in the Variation button will illuminate, indicating that now the second sound for the active sound button is selected. Pressing the Variation button 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 you execute Hard Reset in the RE-220.)

TRY IT

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

List Of Preset Sounds And Their Variations

Category	Main	Variation
Grand Piano	Stereo Grand	Concert Piano
Classical Piano	Warm Piano	Dynamic Piano
Stage Piano	Hard Rock Piano	Ragtime Piano
Modern E.P.	Digital E Grand	'90's FM E.P.
Classic E.P.	Rhodes E.P.	Wurlitzer E.P.
Harpsichord	Harpsichord	Modern Harpsichord
Pipe Organ	Pipe Organ	Uptown Gospel
Electric Organ	Prog Rocker's B3	Grungy Overdrive
Mallets	Woody Marimba	Vibraphone
Brass	Tenor Saxophone	Trombone/Trumpet
Brass Section	Williams Brass	Split Section
Strings	Slow/Fast Strings	Lyrical Strings
Voices	Scatman	Cathedral Vox
Pads	Rez Aah Pad	Poseidon
Guitar	Acoustic Guitar	Chorus Electric Guitar
Drums	Studio Drum 1+ 2	Electro Kit
Percussion	Virtuoso Percussion	Drum and Bells
Bass (Left Split)	Acoustic Bass	
	Bass & Ride Cymbal	
	Electric Bass	

Drum Key Assignments

Drums Sounds are assigned to various keys across the keyboard. The following page shows pictures that represent several types of drum mapping to keys.

There are three drum maps in the RE-220. With three alternative assignments of drum sound, you can choose any one that is easiest for you to play. Especially, if you're playing sequences that are recorded according to General MIDI (GM) specifications, you can quickly configure the RE-220 to play the correct GM sounds when you play back your sequences.

As a default, drum map is set to **1 Normal**. To change it, refer to page 36.

Drum Sound Maps

Keyboard	Normal	PC2ReMap	GMReMap
A 0			
A# 0			
B 0			
C 1			
C# 1			
D 1			
D# 1			
E 1			
F 1			
F# 1	Hard Snare 1		
G 1	Kick 3		
G# 1	Kick 3		
A 1	Snare 4		Metronome Click
A# 1	Snare 4		
B 1	Crash Cymbal		Kick Drum 2
C 2	Floor Tom		Kick Drum 1
C# 2	Floor Tom		Side Stick
D 2	Lo Mid Tom		Snare Drum 2
D# 2	Lo Mid Tom		Hand Clap
E 2	Mid Tom		Snare Drum 2
F 2	Mid Tom		Lo Tom 2
F# 2	Mid Tom	Floor Tom	Closed Hi-hat
G 2	Hi Tom	Kick 1	Lo Tom 1
G# 2	Hi Tom	Floor Tom	Pedal Hi-hat
A 2	Hi Tom	Crash Cymbal	Mid Tom 2
A# 2	Hi Tom	Low Mid Tom	Open Hi-hat
B 2	Kick 1	Kick 3	Mid Tom 1
C 3	Kick 1	Kick 2	Hi Tom 2
C# 3	Kick 1	Mid Tom	Crash Cyampal 1
D 3	Kick 2	Kick 1	Hi Tom 1
D# 3	Kick 2	Hi Tom	Ride Cymbal 1
E 3	Cross Stick Ambient	Snare 4	
F 3	Cross Stick Ambient	Snare 3	Ride Bell
F# 3	Cross Stick	Lo Mid Tom/Floor Tom	Tambourine
G 3	Snare 3	Snare 2	Splash Cymbal
G# 3	Snare 3	Mid Tom	Cow Bell
A 3	Snare 2	Cross Stick	Crash Cymbal 2
A# 3	Snare 2	Hi Tom	
B 3	Soft Snare 1	Kick 1	Ride Cymbal 2
C 4	Dual Snare 1	Kick 1	Hi Bongo
C# 4	Dual Snare 1	Foot Hi-hat	Lo Bongo
D 4	Closed Hi-hat	Hard Snare 1	Mute Conga
D# 4	Closed Hi-hat	Closed Hi-hat	Hi Conga
E 4	Closed Hi-hat	Dual Snare 1	Lo Conga
F 4	Slightly Open Hi-hat	Lo Tom	Hi Timbale
F# 4	Slightly Open Hi-hat	Closed Hi-hat	Lo Timbale
G 4	Slightly Open Hi-hat	Soft Snare 1	Hi Agogo
G# 4	Open Hi-hat	Slightly Open Hi-hat	Lo Agogo
A 4	Open Hi-hat	Mid Tom	Cabasa
A# 4	Open/Closed Hi-hat	Open Hi-hat	Maracas
B 4	Open/Closed Hi-hat	Soft Snare 1	
C 5	Foot Hi-hat	Hi Tom	
C# 5	Crash Cymbal	Open/Closed Hi-hat	
D 5	Crash Cymbal	Open/Closed Hi-hat	
D# 5	Crash Cymbal	Crash Cymbal	Clave
E 5	Crash Cymbal	Crash Cymbal	
F 5	Crash Cymbal	Crash Cymbal	
F# 5	Crash Cymbal	Ride Cymbal Rim	
G 5	Splash Cymbal	Splash Cymbal	
G# 5	Ride Cymbal	Ride Cymbal Rim/Bell	Triangle Mute
A 5	Ride Cymbal Rim	Ride Cymbal Rim/Bell	Triangle Open
A# 5	Ride Cymbal Rim/Bell	Ride Cymbal Bell	Shaker
B 5	Ride Cymbal Bell	Ride Cymbal Bell	
C 6	Ride Cymbal Bell	Ride Cymbal Bell	
C# 6	Cowbell	Cowbell	
D 6	Hand Clap	Hand Clap	
D# 6	Lo Timbale/Hi Timbale	Lo Timbale/Hi Timbale	
E 6	Timbale Shell	Timbale Shell	
F 6	Conga	Conga	
F# 6	Hi Tumba	Hi Tumba	
G 6	Conga	Conga	
G# 6	Lo Tumba	Lo Tumba	
A 6	Clave	Clave	
A# 6	Shakers	Shakers	
B 6	Tambourine	Tambourine	
C 7	Tambourine	Tambourine	
C# 7	Shakers	Shakers	
D 7	Tambourine	Tambourine	
D# 7	Maracas	Maracas	
E 7	Maracas	Maracas	
F 7	Lo Agogo	Lo Agogo	
F# 7	Hi Agogo	Hi Agogo	
G 7	Lo Bongo	Lo Bongo	
G# 7	Bongo Slap	Bongo Slap	
A 7	Hi Bongo	Hi Bongo	
A# 7	Finger Snap	Finger Snap	
B 7	Muted Triangle	Muted Triangle	
C 8	Open Triangle	Open Triangle	

Sound Expression by Pedals

There are three pedals in the RE-220 which are basically used as soft, sostenuto, and sustain pedals like an acoustic piano. The RE-220 has a variety of preset sounds that are different from an acoustic piano in method of generating sound. They all have their own methods to modulate their sounds.

For example, brass instruments can have vibrato or crescendo controlled by the player's breath, and percussion instruments have different timbre depending on the striking location. These musical expressions are assigned to the three pedals according to characteristics of each instrument.

For example, when you play the Brass sound, pushing the soft pedal adds vibrato. When you play the Electric Organs sound, the rotary effect is activated by the soft pedal. These kinds of expression will help players perform even more realistically.

See page 46 for lists of sound expression assigned to the pedals for all sounds.

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 RE-220 is turned on.

Adjusting The Volume 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 Strings (in that order), you can make the Strings softer in relation to the Grand piano. If you wish the Strings to be louder in relation to the Grand piano, then select the Strings first, and lower the volume of the Grand piano.

Some Examples of Layering Sounds

Two favorite sounds for use in layered combination are Piano and Pads. Other combinations such as Piano and Strings, Guitar and Strings, and Voices and Pads provide rich layered sounds.

TRY IT

1. Press and Hold the Grand Piano button, making sure Variation is OFF.

2. While holding the Grand Piano button, press the Pads button twice. This layers the Grand Piano with Pads, and lowers the volume of the latter slightly.

3. Release both buttons and play some notes or chords to hear both sounds.

Left Split

Acoustic Bass   Bass & Ride

Electric Bass   Custom
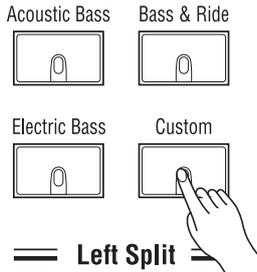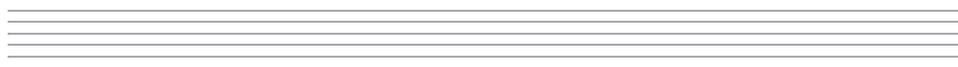
Left Split

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.

Activate Left Split

Just press any button in the Left Split Section, then Split will be active. Now, 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.

Press the active Left Split button a second time to cancel a split. The left split is reset to OFF when power to the RE-220 is turned on.

Split Point

The split point is the point on the keyboard where the left sound and right sound meet.
The default split point set at the factory is F#3.
See page 31 for instructions to change the split point.

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 RE-220 gives you the ability to shift the octave in which each part sounds. The default left and right shift are 1 and -1, respectively.
See page 31 for instructions to change the Left Octave Shift and Right Octave Shift.

Left Sustain

When using the Left Split Sound, most music and playing styles require the sustain pedal to be ignored for the left half of the split. Should you wish to have sustain pedal affect the left sound (for example, in a Custom split), you can turn sustain on.
See page 31 for details on how to change the Left Sustain On/Off.

Custom

You can optionally select any available sound to be the left sound.

To accomplish this, press and hold the **Custom** button. Then, the current custom sound starts to blink. Now press the desired Sound Select button that you wish to play on the left split keys. Once you select a custom split sound, release the **Custom** button. Then, the custom split sound button stop blinking.

The variation button also works for Custom sounds, so that you can select any of the 34 available sounds as a Custom left split sound. The custom sound is saved in the battery-backed memory. If the **Custom** button is selected later, the same variation sound will be used.

TRY IT

1. Press the Brass Section button
2. Press and hold the Custom button. The current Custom sound button starts to blink.
3. Press the Strings button, while continuing to hold the Custom button.
4. Release the Custom button. The current Custom sound button stops blinking.
5. Play the keyboard. Notice that Strings is the left sound and Brass Section is the right sound.

Digital Reverb & Effects

Room   Chorus 1
Stage   Chorus 2
Hall   Flanger

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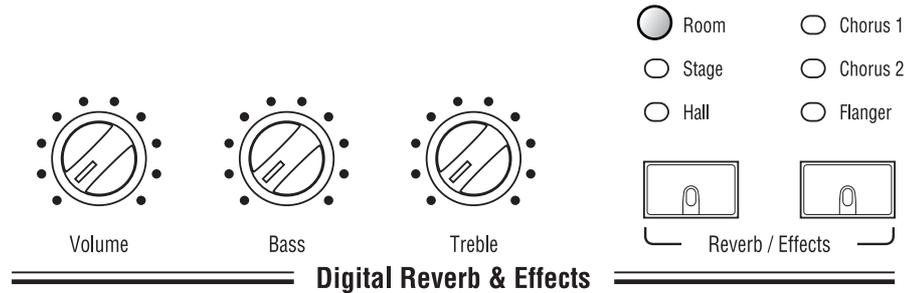
The Digital Reverb & Effects section of the panel contains controls that affect the sound of the instrument as a whole.

Volume

The Volume Knob controls the overall volume (loudness) of the RE-220 Digital Piano. Rotate it to the right to increase the volume, and to the left to decrease the volume; when rotated all the way to the left, it silences the instrument.

The Volume Knob affects not only the volume produced by the internal sound system, but also volume produced by equipment connected to the Headphones and Audio Out Jacks.

> ⚠️ **CAUTION**
> Turn the Volume down before connecting headphones or using the Audio jacks.
> ⚠️ **CAUTION**
> Volume affects the volume of the sound coming in from the Audio In jacks.

Bass and Treble

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

When the controls are centered, they have no effect on the sound. Rotating the Bass knob to the right boosts bass frequencies; rotating it to the left cuts bass frequencies. The Treble knob operates in the same way on treble frequencies.

The Bass and Treble knobs affect the sound produced by the internal speakers, the Headphone jack and both Audio In and Out jacks.

Reverb and Effects

For a heightened sense of sonic realism, the RE-220 Digital Piano provides you with two independent types of digital signal processing: reverb and effects.

Reverb

Reverb, or reverbration, occurs naturally when sound undergoes multiple reflection off the walls of an enclosed space. These reflections blend together into a "wash" of sound that add warmth and ambience to music.

There are three types of Reverb. Pressing the **Reverb** button will cycle among different room sizes, indicated by the lights above the button. If no light illuminates, it means reverb is off.

■ **Room** : The intimacy of a chamber-music room.
■ **Stage** : The ambience of a performance stage.
■ **Hall** : The spacious atmosphere of a concert hall.

Effects

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

■ **Chorus 1** : The effect of many instruments playing together instead of one.
■ **Chorus 2** : The effect of even more instruments than Chorus 1.
■ **Flanger** : The effect that many people refer to as a "whooshing" sound, or a sound similar to a jet plane flying overhead.

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 you execute Hard Reset.

Reverb / Effects Wet / Dry Mix

The amount of reverb or effects for the current sound can be controlled.
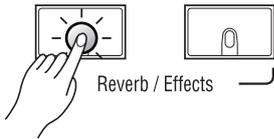
Press and Hold the **Reverb** button for about a second. Then, the **Reverb** Button and current sound button starts to blink. Also the display shows how much the reverb is mixed as a percentage, while changing in the reverb Wet/Dry mix mode.

Press the **Up/Down** button under the display to change the amount of reverb, which ranges from 0 to 100. Higher numbers give the sound more reverb (making it "wetter"). When it set to 0, the sound completely dry.

To exit wet/dry mix mode, just press the **Reverb** button again.

Layer and Split Wet/Dry Mix

If the left split is active or layered sound is enabled, you can separately control the wet/dry mix amount. If wet/Dry mix mode is entered in this case, the main sound button in the Sound Select region blinks first.

Acoustic Bass	Bass & Ride		Variation	Classical Piano	Stage Piano	Modern E.P	Classic E.P	Harpsichord	Pipe Organ	Electric Organ	Mallets
Electric Bass	Custom		Grand Piano	Brass	Brass Section	Strings	Voices	Pads	Guitar	Drums	Percussion

=== Left Split ===   ===== Sound Select =====
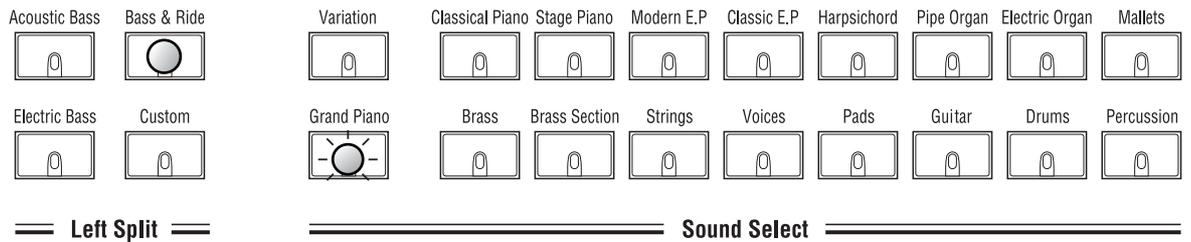
If you press layered sound button or split sound button, the blink switches to the pressed button and the display shows the wet/dry mix amount of the layered or split sound.

Acoustic Bass	Bass & Ride		Variation	Classical Piano	Stage Piano	Modern E.P	Classic E.P	Harpsichord	Pipe Organ	Electric Organ	Mallets
Electric Bass	Custom		Grand Piano	Brass	Brass Section	Strings	Voices	Pads	Guitar	Drums	Percussion

=== Left Split ===   ===== Sound Select =====
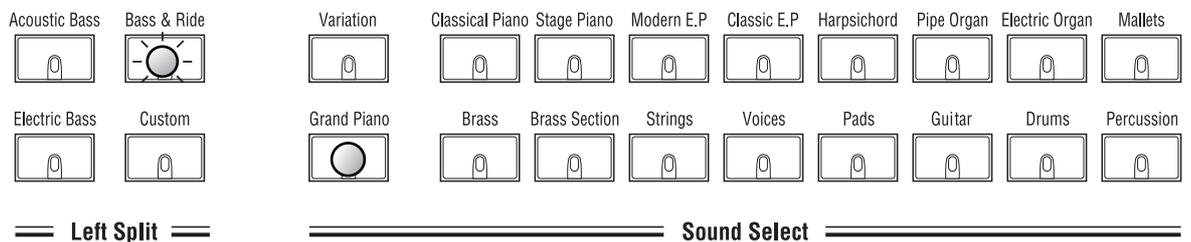
So, you can control the overall sound as desired by mixing individual wet/dry amounts for main, layered, and split sounds.

TRY IT

---

1. Press the Grand Piano button

2. Press the Bass & Ride button to activate left split.

3. To enter wet/dry mix mode, press and hold the Reverb Button for a second. Then the Reverb button and the Grand Piano button will start to blink. Now it's OK to release the Reverb Button.

4. Press the Up or Down button until the display shows 50 (50% wet/dry mix)

5. Press the Bass & Ride button. Then the Bass & Ride button starts to blink and the display shows the current split sound wet/dry mix.

6. Press the Up or Down button until the display shows 8 (8% wet/dry mix)

7. To exit wet/dry mix mode, press the Reverb button.

8. Now you can play a fairly wet piano sound with a relatively dry bass & ride cymbal sound.

Recorder

Record	Song 1	Song 2	Tap / Tempo

Play / Stop	Track 1	Track 2	Metronome

Recorder

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 later replace it with another.

Song

Use the two **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.

Track

Each song consists of up to two tracks, which can be selected or silenced using the two **Track** buttons. Once a track has been recorded on, the track button illuminates to show that it contains data.

Mute / Unmute tracks

When a song is recording, playing, or stopped, use the **Track** buttons to turn playback of individual tracks off (unlit) or on (lit).

Select the recording track

When you press the **Record** button to record a track, the next empty track is automatically selected for you. But, you can press a **Track** button to determine which track you wish to record. This lets you record over a previous track, for example. 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.

Record

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

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

! NOTE
- *If the memory becomes full during recording. "Ful" will appear on the display and recording will automatically stop. (All Recorded data up to that point will be saved.)*

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. This erases the entire track.

Changing Sound on a Track

After a song is recorded with one sound on a track, you can replace it with another. This gives a chance to listen to your playing with different instruments. Select a song with recorded data, and press the **Record** button to enter record-ready mode. Then, a track button blinks with the **Record** button. If it's not the **Track** button which has the sound you want to replace with new sound, press the other **Track** button. Now it's ready to change the sound on a track. Press the button in the Sound Select portion to choose the sound you want, and press the **Record** button again to exit record-ready mode. Be cautious not to press the **Play/Stop** button, which erases the recorded data. Press the **Play/Stop** button to listen to the song played with the new sound.

Changing Tempo on a Song

You can change tempo to play the song that you recorded faster or slower without affecting the pitch. Select a song with recorded data, and press the **Record** button to enter record-ready moode. Now, change tempo by pressing the **Up/Down** button (or tapping the **Tap/Tempo** button). Then, press the Record button again to exit record-ready mode. Be cautious not to press the **Play/Stop** button, which erases the recorded data. Press the **Play/Stop** button to listen to the song played with different tempo.

Play/Stop

Press the **Play/Stop** button to start playback or recording, or to stop it.
If you press the **Play/Stop** button when the Recorder is in Record mode, then recording begins on the specified track (the one with the blinking button), while the other active track plays back (if its button is lit).
Pressing the **Play/Stop** button again while recording or playback is going on will stop the recording or playback.

Start Control

When a song is in record-ready mode for recording, you can start recording by striking any key on the keyboard (Key Start) or pressing the left pedal (Pedal Start). This is a very convenient way to start recording. Especially, 'Key start' can help avoid the case where it's difficult to synchronize the first recorded note with the first beat when one starts recording by pressing the **Play/Stop** button.

Display while playing and recording

Record | Song 1 | Song 2 | Tap / Tempo

Play / Stop | Track 1 | Track 2 | Metronome
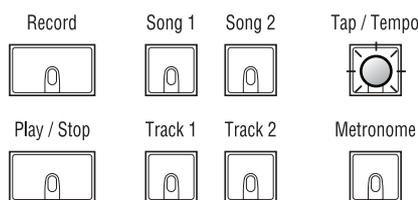
While recording and playing a song, the display shows the current measure of the selected song and the **Tap/Tempo** button blinks at every beat. (At the first beat, the green LED blinks) For example, if the time signature (described in the Metronome section below) is set to 4, the displayed measure increases whenever 4 beats are counted.

═══ Recorder ═══

↓

88.1   *88.2*   *88.3*

TRY IT

Prepare for Recording

1. Select an empty Song by pressing either **Song** button (No track buttons are lit).
2. Before you begin to record, select the sound you want to record in the Sound Select Section. Layered or Split Sounds also can be recorded on the same track. Make any other desired settings (Reverb & Effects, Tempo, etc.) as well.
3. Press the **Record** button to enter Record-ready mode. The **Record** button and the **Track 1** button will blink, and track 1 is automatically selected. If you want to record on track 2, just press the **Track 2** button.

Start Recording

4. Just start playing any key on the keyboard; recording automatically starts (Key Start). Or you can start recording by pressing the **Play/Stop** button or the left pedal (Pedal Start).
5. When you finish playing a song on the track, press the **Play/Stop** button. Then, recording stops.
6. OK. To listen to the recorded song, just press the **Play/Stop** button.

Additional Recording

7. If you want to record additional notes on track 2, press the **Record** button again when the song is stopped. Then the **Track 2** button will be automatically selected and blink. If you press the **Track 1** button, then you can re-record on track 1.
8. Repeat steps 4 - 5. You can record notes on track 2, while listening to the track 1 sounds.
9. Now, you can listen to both tracks by pressing the **Play/Stop** button.
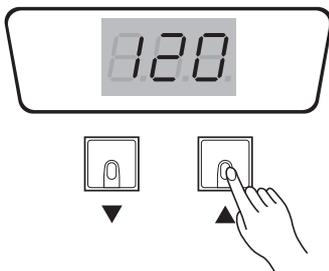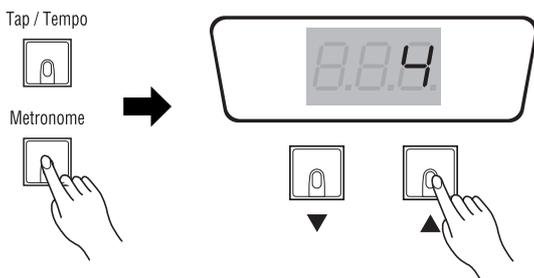
Metronome

Pressing the Metronome button allows you to hear the tempo of a song. It can be used as a stand-alone metronome that is convenient for practicing. When the button is pressed, the light goes on and the metronome starts; press it again to turn it off.

Adjusting Tempo

The tempo of the metronome or song record playback can be set from 20 to 300 beats per minutes by using the **Up/Down** button under the display. The default tempo is 120.

Adjusting the time signature

The time signature (Beat) of metronome or songs can be selected from 2 to 6 beats. Press and Hold the **Metronome** button, which will to blink. You can set the beat to 0, 2, 3, 4, 5 or 6 by pressing the **Up/Down** buttons. When you set beats other than 0, the first beat is distinguished by a triangle sound. '0' beat is internally set to 4 beat but plays the same metronome sound for all beats. The default beat is 0.

After setting the beat, press the **Metronome** button again to exit the time signature select mode.

Tap tempo
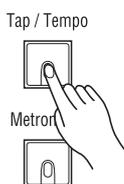
The **Tap/Tempo** button allows entering tempo data by repeatedly pressing the **Tap/Tempo** button. The device will average your tapping speed and the calculated tempo will be set in the metronome and songs. It's convenient to set a tempo that you are thinking of without guessing the tempo.

TRY IT

1. Press the Metronome button to turn it on.
2. Press Up/Down button to adjust the desired tempo.
3. Press and hold the metronome button, then the display shows the current beat.
4. Select any beat you want by pressing the up/down button.
5. Exit by pressing the metronome button again.

Options

Demo

You can listen to the demo songs by pressing this button. Refer to Page 13 for the details on how to listen to demo songs.

MIDI/Preference

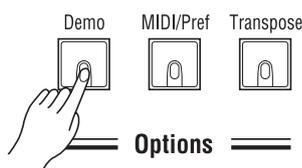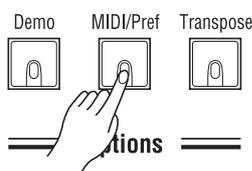This button gives you entry to a mode where you can access and alter MIDI settings, as well as a variety of other settings that affect the RE-220 as a whole.

To enter MIDI/Preference Edit Mode, press the **MIDI/Pref** Button, which will start to blink. To exit MIDI/Preference Edit Mode, press the button again. While in MIDI/Preference Edit Mode, you can change settings by pressing the button to which each specific setting is assigned. The following illustration shows which buttons correspond to each setting:
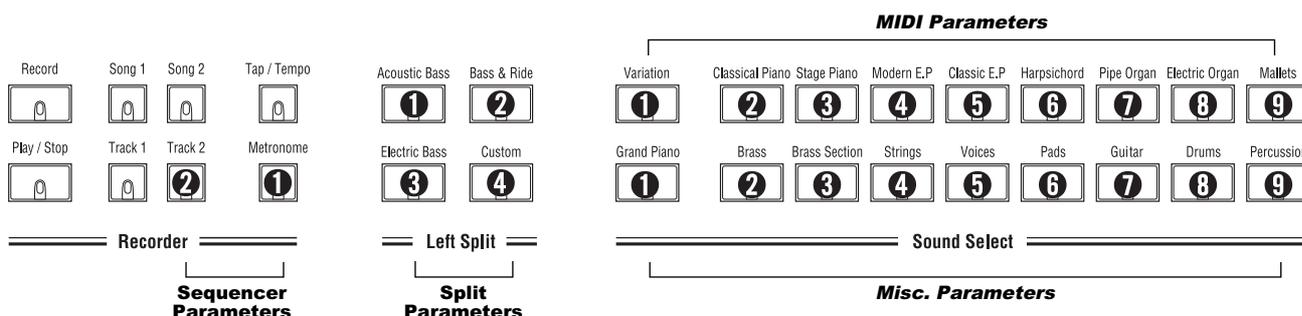
How to change settings

Buttons that have a setting get illuminated. While pressing the button, the name of its setting is shown on the display as an abbreviation, and when it's released, the current value of its setting is shown.

Pressing any illuminated button selects the corresponding setting, then the selected button blinks to indicate that it's the currently selected setting. To change the value of the selected setting, press the **Up/Down** button.

The settings can be categorized into several groups.
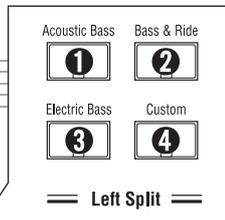
⬛➡ Split Parameters

Acoustic Bass
❶ **Left 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. The RE-220 gives you the ability to shift the octave in which each part sounds. The display shows the current transposition of the left sound; the default value is **1** (octave).

LSt

Bass & Ride
❷ **Right Octave Shift**

The Right Octave Shift works just the same as the Left Octave Shift, except that it affects the sounds in the right position of a split. The default value is **–1** (octave).

rSt

Electric Bass
❸ **Split Point**

The Split point is the point on the keyboard where the left sound and right sound meet. The display shows the current split point range from **A0** to **C8**. To change it, press the **Up**/**Down** button or any key on the keyboard while pressing and holding the Split Point button. The latter would give you a more convenient way to set the split point. The default value is **F#3**.

SPP.

Custom
❹ **Left Sustain**

Left sustain determines if the sustain pedal is ignored or recognized on the left sound. The default value is **OFF**.

L.F.S

➡ MIDI Parameters

Variation

❶ *Layer Sustain*

Layer sustain determines if the sustain pedal is igonred or recognized on the layered sound. The default value is **ON**.

$Lr.5$

Classical Piano

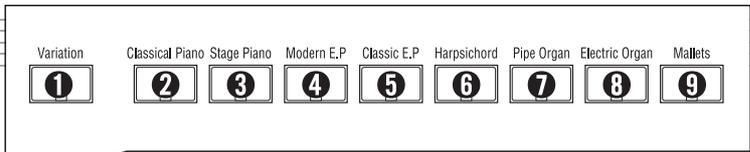**❷ *Local Control***

Local Control is the connection between the keyboard of the RE-220 and the internal sound-producing circuitry of the instrument. Normally, Local Control is **ON**; in fact, every time you power-up the RE-220, it automatically sets 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 Out of the RE-220 is connected to feed back to the instrument's MIDI In port. One example of this is when using an external sequencer whose MIDI In port is connected to MIDI Out of the RE-220, and whose MIDI Out port is connected to MIDI In. In such a case, you can eliminate the doubling of notes by setting Local Control to **OFF**.

Stage Piano

❸ *MIDI Channel Disable*

You can disable response to any MIDI channel that you want. Disabling a channel causes the RE-220 to ignore incoming MIDI information 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.

To disable a MIDI channel, first press the **UP/DOWN** button one or more times to select a channel from 1 to 16. To change ON/OFF status for that channel, press and hold the MIDI Channel Disable button, then press the **UP/DOWN** button. When a channel is disabled (OFF), a small dot appears on the first Letter of the display. The default is ON for allchannels.

Modern E.P

❹ *Transmit MIDI Channel*

This parameter enables you to specify the channel on which the RE-220 transmits MIDI Data. The channel can be set to OFF, and 1 to 16. If it is set to OFF, MIDI messages are not transmitted.
The default transmit MIDI Channel is 1.

⚠ **NOTE**   • *If the transmit MIDI channel is set to values other than OFF or 1, the recorder of RE-220 will not work.*

⑤ *Program Change ON/OFF*

Ordinarily, when you press a Sound Select button, the instrument transmits the corresponding program change message. And, when the instrument receives a program change message from external MIDI devices, it responds to it by changing the sound.

You can disable this function with this setting so that the RE-220 doesn't send or receive program change messages. The default is **ON**.

Harpsichord

⑥ *General MIDI*

General MIDI (GM) allows sequencer (recorder) data from different sources to be played back with predictable results by standardizing the sounds that Program Change messages select, channel (10) for drum and percussion sounds, and the "mapping" of those sounds across the keyboard. The RE-220 partially implements General MIDI by re-mapping the RE-220 program list fit to the GM program list. However, the RE-220 does not include the complete GM sound set. If a sound is selected that does not exist on the RE-220, you will not hear anything.

When you set the RE-220 to General MIDI ON, program changes received from the MIDI In port will select the appropriate internal sounds. In addition, the RE-220 assigns the General MIDI Drum Kit to channel 10 and disables external program changes for that channel. The front panel is not affected. The RE-220 can set General MIDI to ON/OFF by responding to an external system exclusive message to turn General MIDI ON and OFF.
General MIDI is set to **OFF** every time power to the RE-220 is turned on.

Pipe Organ

❼ *System Exclusive Dump (Song Data)*

Both song's data saved in the RE-220 can be transmitted to the MIDI Out port in the form of System Exclusive Data. When this button is pressed and released, 'Y' '?' is shown on the display. If you press the **Up** button, Song Data Dump is executed.
The transmitted Data can be usually saved in software sequencers which support System Exclusive Data Send/Receive. Conversely, the saved song data in the sequencer can be transmitted back and saved into the RE-220.

Electric Organ

❽ *System Exclusive Dump (MIDI/Pref Data, Program Effects Data)*

All data about RE-220 settings, for example, parameters in the MIDI/Pref Menu and Program Effects can be transmitted to MIDI Out port in the form of System Exclusive Data. When this button is pressed and released, 'Y' '?' is shown on the

display. If you press the **Up** button, Song Data Dump is executed.

The transmitted Data can be usually saved in software sequencers to support System Exclusive Data Send/Receive. Conversely, the saved data in the sequencer can be transmitted back and saved into the RE-220. This function will be useful when you want to set aside current settings before executing Hard Reset.

Mallets

⑨ *Panic (All Sound Off, Reset All Controllers)*

When this button is pressed and released, 'Y' '?' is shown on the display. If you press the Up button, the Panic function is executed. The button sends All Sound Off message and Reset All Controllers messages on all MIDI channels - both the RE-220 sound engine and its MIDI Out port.
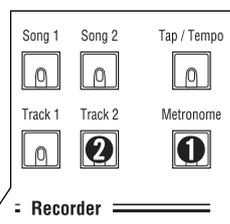
⟩⟩ Sequencer Parameters

Metronome

① *Metronome Volume*

Change this setting to adjust the metronome volume. The range of setting is from 0 to 8. The default value is **6**.

Track 2

② *Transmit Sequencer Data*

When Transmit Sequencer Data is **ON**, the data from the Recorder are transmitted out the MIDI Out port. When it is **OFF**, the data are used to play the internal sound only. The default is **OFF**.

The MIDI channels are used by the sequencer as follows:

Channel	Description
1	Track 1 main sound
2	Track 2 main sound
5	Track 1 layered sound
6	Track 2 layered sound
9	Track 1 split sound
10	Track 2 split sound

➡ *Miscellaneous Parameters*

Grand Piano

❶ *Global Effect*

This parameter determines if the reverb and effects are set by each sound's own settings or by the front panel. When it is **OFF**, the reverb and effect are changed by the selected sound's own reverb and effect settings when the player selects a new sound. In contrast, when it is **ON**, the reverb and effect don't change when a new sound is selected, but they are globally under the control of front panel. That is, the reverb and effect can be changed by pressing the reverb or effect button, as a result, every selected sound have the same reverb and effects. The default value is **OFF**.

Brass

❷ *Keyboard Touch*

You can adjust the touch sensitivity of the entire keyboard - how the dynamics of the sounds respond to key velocity. There are seven possible values:

Touch	Description
1. Linear	The Standard value, Unaltered level of keyboard sensitivity
2. Light 1 **3. Light 2** **4. Light 3**	For players who have a light touch-that is, you can play more lightly and still get the same attack-velocity values. **Light 1** is a bit more sensitive than **Linear**, and **Light 3** is the most sensitive.
5. Hard 1 **6. Hard 2** **7. Hard 3**	For players who have a heavier touch-that is, you can play harder and still get the same attack-velocity values. **Hard 1** is less sensitive that Linear, and **Hard 3** is the least sensitive.

Key touch Table

Brass Section

❸ *Tuning*

You can tune the RE-220 pitch up or down in one-cent increments. This can be useful if you are playing along with a recording, or playing with other instruments that can't be easily retuned. The default value is **0 cents**.

Strings

❹ *Intonation*

Most modern Western music uses what is known as equal temperament. This means that the interval between each semitone of the 12-tone octave is precisely the same as every other interval. Many different intonation systems have evolved over the centuries, however, and the RE-220 supplies you with 6 different intonation tables to choose from.

By changing the value for this parameter, you select from among the intonation tables stored in the RE-220. Each of these tables defines different intervals between each of the semitones in a single octave.

Intonation	Description
1. Equal	No detuning of any interval.
2. Classic Just	Tunings are defined bassed on the ratios of the frequencies in the Major triad (For example, C:E:G). The original tuning of Classical European music.
3. Just b7th	Similar to Classic Just, but with be Dominatant 7th flatted an additional 15 cents.
4. Pythagorean	This scale was designed by Pythagoras, a Greek Mathematician. It's based on the interval of a perfect 5th. The 3rd sounds quite out of tune, but the 4th and 5th are perfectly tuned.
5. Mean Tone	This scale is an improved version of the Phthagorean to make the 3rd in tune.
6. Werkmeister	Named for its inventor, Andreas Werkmeister. It's fairly close to equal temperament, and was developed to enable transposition with less dissonance.

Voices

5   *Intonation Key*

This sets the base note from which the currently selected intonation table calculates its intervals.

This setting is effective for intonations other than the Equal temperament. The available values of the Intonation Key are **C, C#, D, D#, E, F, F#, G, G#, A, A#,** and **B**. The default is **C**.

Pads

6   *Drum Re-Map*

Determines the layout of the instruments in drum programs. There are three possible values. See the page 17 for the drum kit maps.

1. Normal   Default value. No remapping of drum instruments
2. PC2ReMap   Assigns many instruments to different note numbers.
3. GMRemap   Remaps drum instruments according to the General MIDI layout

❼ *Available Memory*

Not editable. Display the amount of memory (RAM) available for storing song MIDI data. The size is approximately **238** Kilobytes for units with no songs saved.

Drums

❽ *SW Version*

Not Editable. Identifies the software installed in the instrument.

Percussion

❾ *Hard Reset*

Not a parameter but a prompt to execute a hard reset. When this button is pressed, 'Y ?' is shown on the display. If you press the **Up** button, a hard reset is executed. Then, all memory (including User songs and MIDI/Preference settings) will be erased, and the original factory setting is restored.

Transpose

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

To change the transposition, press the **Transpose** button. Then the button will blink, and the current transposition value is shown on the display. Press the **Up/Down** button to set a desired transposition while playing the keyboard. To exit transposition setting mode, press the Transpose button again. While the keyboard is transposed, the **Transpose** button will remain lit. The transpose range is **-12** semitones (down one octave) to **+12** semitones (up one octave).
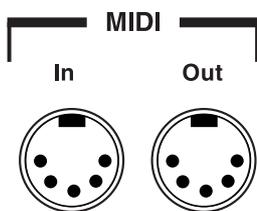
MIDI

"MIDI" stands for "Musical Instrument Digital Interface." It is an international standard that allows electronic musical instruments to communicate with each other, using a simple cable connection. It ensures that the RE-220 will remain compatible with the instruments of today and tomorrow.

MIDI Connection

On the rear panel are two MIDI ports:
- MIDI In receives MIDI messages **from** other equipment.
- MIDI Out sends MIDI messages **to** other equipment.

MIDI cables provide the connection 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, In to Out.

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

KURZWEIL RE-220

SLAVE
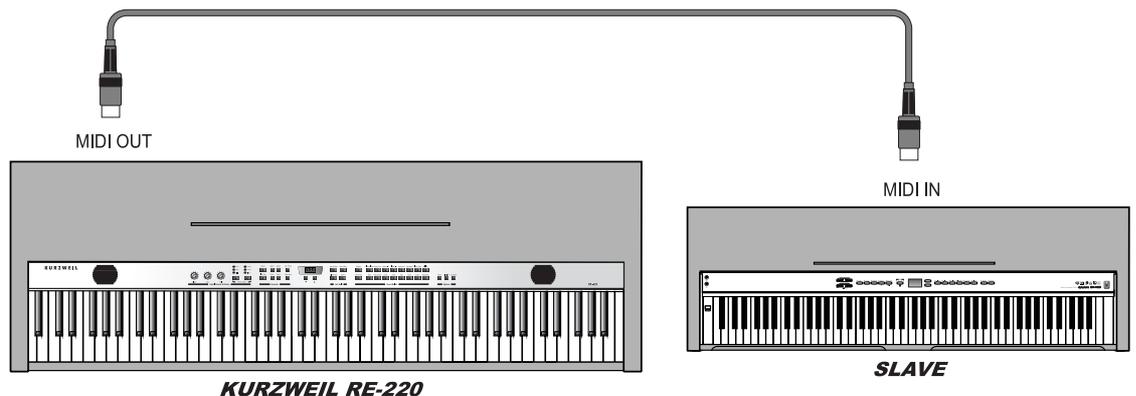
If you connect In to Out, rather than Out to In, the other instrument becomes the Master. And if you use two cables, connecting In to Out, Out to In, you can use either instrument as the Master.

You probably will want to use the RE-220 as your master keyboard. It is important to explain that what is sent over the MIDI cables is information (data), not sound. In fact, the usefulness of master-slave setup lies in having each instrument produce a different sound, resulting in a layering of sounds that expands on the layering that is possible with the RE-220 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 output to the RE-220 Audio In jacks on the RE-220 rear panel.

Another application of MIDI is in using a sequencer to record and play back your performance. The Recorder on the RE-220 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 PC running special sequencing software. In either use, the MIDI connections are the same - Out to In, In to Out.

MIDI OUT   MIDI IN   MIDI OUT   MIDI IN

MIDI INTERFACE

KURZWEIL RE-220   **COMPUTER/SQUENCER**
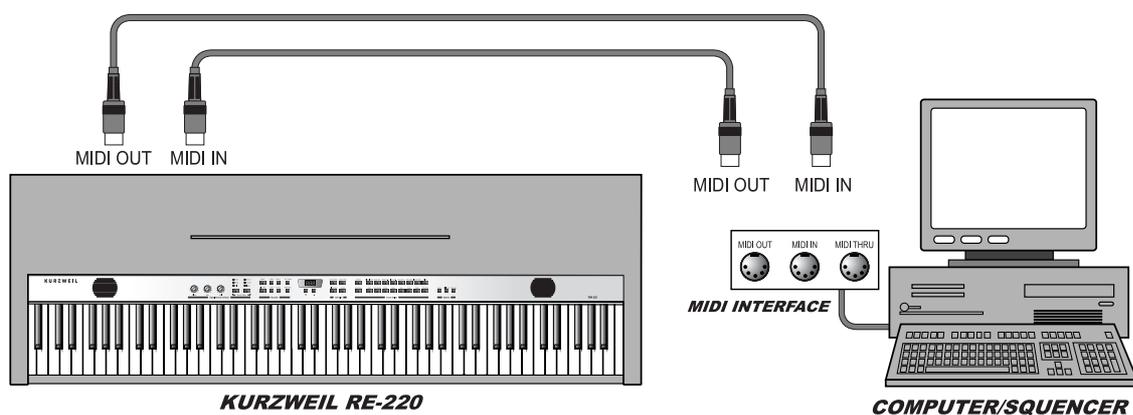
MIDI Channels

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.

The RE-220 can transmit messages on any MIDI channel, which can be set in the MIDI/Pref menu. And, it can receive MIDI message on any MIDI channel between 1 and 16, if the channel is not "Disabled", which can be changed in the MIDI/Pref menu.

MIDI Messages

The MIDI messages that the RE-220 transmits and recognizes fall into several categories, as outlined in the MIDI Implementation Chart on page 48. This section explains those messages and how to use them.

Note On and Note Off

When you play a key on the RE-220, it sends a MIDI message that says a note has begun, what MIDI channel it's on, 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, and the velocity with which the key was released.

Control Change

Control Change is the largest category of MIDI messages. The RE-220 has an extensive controller implementation, to help you alter your performances and sounds flexibly as you play or in your recorded sequences. The following discussion elaborates on each of these messages.

• Mod Wheel (CC# 1, 33)

The RE-220 recognizes Mod Wheel messages, which affect the sound of different programs in different ways. Controller 1 can be used by itself, or if a finer degree of control is desired, controller 33 can be used in the conjunction with it.

• Volume (CC# 7, 39)

The RE-220 recognizes Volume messages, which control the overall volume of the sound on the MIDI channel on which they are sent. Controller 7 can be used by itself, or if a finer degree of control is desired, controller 39 can be used in the conjunction with it.

• Pan (CC# 10, 42)

The RE-220 recognizes Pan messages, which control the location in the stereo field of the sound on the MIDI channel on which they are sent. Controller 10 can be used by itself (a value of 0 is hard left, 64 is centered, and 127 is hard right), or if a finer degree of control is desired, controller 42 can be used in the conjunction with it.

• <u>Expression (CC# 11, 43)</u>

The RE-220 recognizes Expression messages, which also regulate the volume of the sound on the MIDI channel on which they are sent between a minimum of 0 and a maximum of the current Volume setting. Controller 11 can be used by itself, or if a finer degree of control is desired, controller 43 can be used in the conjunction with it.

• <u>Sustain, Sostenuto, and Soft Pedals (CC #64, 66, 67)</u>

The right, center, and left pedals transmit MIDI controller message 64 (Sustain), 66 (Sostenuto), 67 (Soft), respectively. The RE-220 also recognizes these messages. A value of 0 is OFF, and a value of 127 is ON.

Often, these pedals affect timbre or modulation of each internal program (sound) of the RE-220. Refer page 18 for explanation and page 46 for Tables.

• <u>Reverb and Effects (CC #89, #90, #91, #93)</u>

The RE-220 recognizes Reverb and Effects type select. CC #90, CC#89 messages correspond to select reverb and effects type, respectively. Type number of reverb and effect are listed in the table below. CC #91 and CC#93 adjust the amount of reverb or effects wet/dry mix.

Reverb Type	CC #90 Value
No Effect	0
Room	2
Stage	4
Hall	7

Effects Type	CC #89 Value
No Effect	0
Chorus 1	1
Chorus 2	2
Flanger	3

• <u>All Sound Off, Reset All Controllers (CC#120, #121)</u>

The RE-220 recognizes the All Sound Off message (CC #120) which silences the instrument, and the Reset All Controllers message (CC #121) which resets all controllers to their default values. Also, it transmits both All Sound Off and Reset All Controllers when the RE-220 executes the Panic function in the MIDI/Pref Menu (see page 33).

Program Change

Selecting a sound causes the RE-220 to transmit a Program Change message, unless transmission of program messages has been disabled (see Page 33). Similarly, the RE-220 recognizes these messages, unless the reception has been disabled. Refer to page 46 for Program Numbers of the RE-220 sounds.

General MIDI On / Off Message

The RE-220 recognizes the General MIDI On/Off messages received at the MIDI In port, and transmits the messages when GM On/Off parameter in the MIDI/Pref menu is changed. The form of General MIDI On/Off messages is as follows

• **GM On**

F0 7E nn 09 01 F7

nn = device ID (00 - 7F; 7F = Broadcast)

• **GM Off**

F0 7E nn 09 02 F7

nn = device ID (00 - 7F; 7F = Broadcast)

** GM On/Off messages are System Exclusive Messages.

Miscellaneous

Bottom Panel

Headphone Jacks

A headphone jack allows private practice. Plugging in a pair headphones turns off the speakers. You can also insert a "dummy" stereo headphone adapter. This is useful if you want to mute the internal speaker system while using a more powerful external amplification system connected to the Audio Out Jack. There are two identical headphone jacks on the RE-220.

Rear Panel
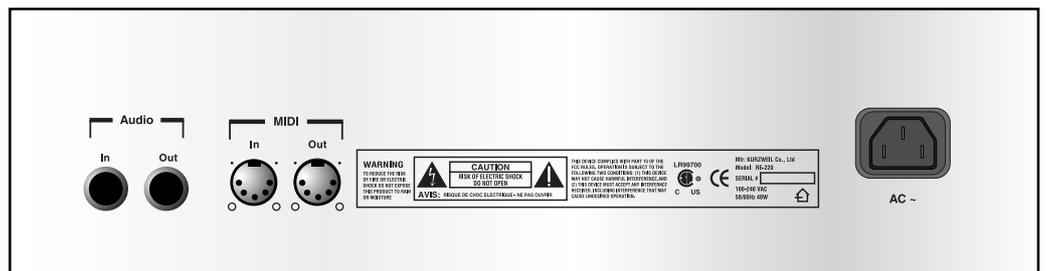
MIDI Ports

The functions of the two MIDI ports are discussed on page 39.

Audio In Jack

The audio input jack allows you to play a tape or CD player, or to have an external MIDI tone module connected to the RE-220 audio system. The connector is a 1/4" stereo TRS (Tip-Ring-Sleeve), with the Left channel connected to Tip and the Right channel connected to Ring. It is best to use a tone module, tape or CD player that has its own output volume control. The RE-220's volume and tone controls also affect the signal coming from the audio in jack, but the reverb and effects settings do not.

Audio Out Jack

The audio output jack is used to boost the sound level coming from the piano by connecting it to external amplifier and speaker systems. It can also be connected to an audio recorder to preserve your performance. The connector is a 1/4" stereo TRS (Tip-Ring-Sleeve), with the Left channel connected to Tip and the Right channel connected to Ring.

Appendix

Specification

Physical

Height	35 inch	89 cm
Depth	19.7 inch	50 cm
Length	54.3 inch	138 cm
Weight	125 lbs.	57 kg

Audio

60 Watt Amplification	2 x 30 Watts RMS Per Channel
4 Speakers	2 x 6.5 inch (16.5 cm) woofer
	2 x 2 inch (5 cm) tweeter
Audio Outputs	Impedance : 100Ω source
	Level : nominal 1.0V RMS
Audio Inputs	Impedance : 10K Load
	Level : nominal 1.0V RMS
Headphone Output	Impedance : 47Ω source
	Level : nominal 1.0V RMS

Electrical

Safe Voltage Range	90 Volts ~ 264 Volts
Safe Frequency Range	47 ~ 63Hz
Power Consumption	25 Watts nominal (Piano sound at normal volume)

Environmental

Operating Temperature	5 to 40℃	(40 to 104 ℉)
Storage Temperature	-25 to +85℃	(-13 to 185 ℉)
Operating Humidity	5 to 95% (non ~ condensing)	
Storage Humidity	5 to 95% (non ~ condensing)	

List of Sounds and Pedal Assignments

Category	Number	Name	Soft Pedal (left)	Sostenuto Pedal (Center)
Grand Piano	0	Stereo Grand	Soft	Sostenuto
	1	Concert Piano	Soft	Sostenuto
Classical Piano	2	Warm Piano	Soft	Sostenuto
	3	Dynamic Piano	Soft	Sostenuto
Stage Piano	4	Hard Rock Piano	Soft	Sostenuto
	5	Ragtime Piano	Soft	Sostenuto
Modern E.P	6	Digital E Grand	Tremolo	Sostenuto
	7	'90's FM E.P.	Timbre	Sostenuto
Classic E.P	8	Rhodes E.P.	Tremolo	Sostenuto
	9	Wurlitzer E.P.	Tremolo	Sostenuto
Harpsichord	10	Harpsichord	Add Octave	Sostenuto
	11	Modern Harpsichord	Brightness	Pitch Detune
Pipe Organ	12	Pipe Organ	None	Sostenuto
	13	Uptown Gospel	Rotary Speaker Effect	Sostenuto
Electric Organ	14	Prog Rocker's B3	Rotary Speaker Effect	Sostenuto
	15	Grungy Overdrive	Rotary Speaker Effect	Sostenuto
Mallets	16	Woody Marimba	Timbre 1	Timbre 2
	17	Vibraphone	Tremolo	Timbre
Brass	18	Tenor Saxophone	Vibrato	Timbre
	19	Trombone/Trumpet	Swell Envelope	Vibrato
Brass Section	20	Williams Brass	Swell Envelope	Vibrato
	21	Split Section (Trombone, Sax/Trumpet)	Swell Envelope	Solo/Ensemble
Strings	22	Slow/Fast Strings	Slow/Fast Switch	Sostenuto
	23	Lyrical Strings	Timbre	Sostenuto
Voices	24	Scatman	Sweel Envelope	Sostenuto
	25	Cathedral Vox	Timbre	Sostenuto
Pads	26	Rez Aah Pad	Timbre	Sostenuto
	27	Poseidon	Timbre	Sostenuto
Guitar	28	Acoustic Guitar	Vibrato	12 Strings Effect
	29	Chorus Electric Guitar	Vibrato	Sostenuto
Drums	30	Studio Drum 1+ 2	Timbre	Brightness
	31	Electro Kit	Timbre	Brightness
Percussion	32	Virtuoso Percussion	Mute Sounds	Sostenuto
	33	Drum and Bells	None	Sostenuto
Bass(Left Split)	34	Acoustic Bass	None	None
	35	Bass & Ride Cymbal	None	None
	36	Electric Bass	None	Slap Bass

Piano Demo Song List

Number	Song Name	Composer
1	Prelude I BWV 846	J. S. Bach
2	Invention NO. 4	J. S. Bach
3	Invention NO. 8	J. S. Bach
4	Prelude II BWV 847	J. S. Bach
5	ARIA Goldenberg-Variationen BWV 988	J. S. Bach
6	Fuga II (A3 VOCI)	J. S. Bach
7	Sonatine Op. 36 No. 4	M. Clementi
8	Klavierstück K. 15v	W. A. Mozart
9	Piano Sonata K. 333 1st mov.	W. A. Mozart
10	Rondo in D-dur K. 485	W. A. Mozart
11	Piano Sonata K. 331 Rondo Turkish March	W. A. Mozart
12	Piano Sonata K. 545 1st mov.	W. A. Mozart
13	Minuett in G	L. V. Beethoven
14	Bagatelle No. 25 Für Elise	L. V. Beethoven
15	Sonatine Op. 55 No. 1	Fr. Kuhlau
16	March Militare Op. 51 No. 1	F. P. Schubert
17	Moments Musicaux 3.	F. P. Schubert
18	Impromptu Op. 90 No. 2	F. P. Schubert
19	Impromptu Op. 90 No. 4	F. P. Schubert
20	La chevaleresque	J. F. Burgmüler
21	Without word song Op. 38 No. 2	J. L. F. Mendelssohn
22	Venetianisches Gondellied	J. L. F. Mendelssohn
23	Sostenuto	F. F. Chopin
24	Valse KK IVb-11	F. F. Chopin
25	5 Mazurkas I Op. 7 No. 1	F. F. Chopin
26	Valse Op. 69. NO. 2	F. F. Chopin
27	Grande Valse Brillante Op. 18	F. F. Chopin
28	Valse Op. 64 No. 2	F. F. Chopin
29	Nocturn Op. 9 No. 2	F. F. Chopin
30	Valse Op. 64 No. 1	F. F. Chopin
31	Preludes in D♭ Major Op. 28 No. 15	F. F. Chopin
32	Fantaisie-Impromptu Op. 68	F. F. Chopin
33	Träumerei	R. Schumann
34	Frölicher Landmann Op. 68-10	R. Schumann
35	Von fremden Ländern und Menschen Op. 15	R. Schumann
36	Liebesträume Nr. 3	F. Liszt
37	Dolly's Dreaming And Awakening	T. Oesten
38	Frühlingsstimmen Op. 410	J. Strauss
39	The Swan	Saint-Seans
40	Blumenlied	G. Lange
41	Valsette	F. Borowski
42	Old French Air	P. I. Tchaikovsky
43	Mazurka	P. I. Tchaikovsky
44	Polka	P. I. Tchaikovsky
45	Barcarolle	P. I. Tchaikovsky
46	Humoreska	A. Dvorak
47	Suit 'Peer Gynt' Op. 46-3 Anitras Tanz	E. Grieg
48	Suite Bergamasque Prelude	C. A. Debussy
49	Reverie	C. A. Debussy
50	Arabesque I	C. A. Debussy

MIDI Implementation Chart

Manufacturer : KURZWEIL
Model : RE-220 Digital Piano

Date : 6/7/2005
Version 1.1

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	
	Changed	1	16	
Mode	Default	Multi *	Multi *	memorized
	Messages	Any	Mode 1 & 3	memorized
	Altered	X		
Note Number	0 - 127	0 - 127	key range	
	True Voice	1 - 128	1 - 128	C 0 - C 8
Velocity	Note ON	O	O	
	Note OFF	O	O	
After Touch	Keys	X	X	
	Channels	X	O	
Pitch Bender		X	O	
Control Change	1	X	O	Mod Wheel
	6	X	O	Data Entry
	7	X	O	Volume
	10	X	O	Pan
	11	X	O	Expression
	64	O	O	Sustain Pedal
	66	O	O	Sostenuto Pedal
	67	O	O	Soft Pedal
	89	O	O	Effects Select
	90	O	O	Reverb Select
	91	O	O	Reverb Wet/Dry
	93	O	O	Effects Wet/Dry
	120	O	O	All Sound Off
	121	O	O	Reset All Controllers
Program Change		O ** 0 - 33	O ** 0 - 33	
		34 - 36	34 - 36	
	True #	O 0 - 33	O 0 - 33	
		34 - 36	34 - 36	
System Exclusive		O	O	
System Common	Song Pos.	X	X	
	Song Sel.	X	X	
	Tune	X	X	
System Real Time	Clock	X	X	
	Messages	O	O	
Aux Messages	Local Control	O	O	
	All Notes Off	O	O	
	Active Sense	X	X	
	Reset	X	X	
Notes		* Use Multi mode to assign different programs to each MIDI channel ** Can be disabled		

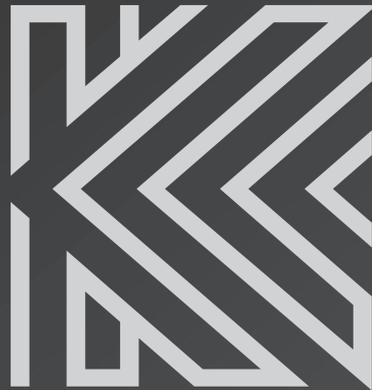Mode 1 : Omni On, Poly   Mode 2 : Omni On, Mono   O = Yes
Mode 3 : Omni Off, Poly   Mode 4 : Omni Off, Mono   X = No

Notes

Notes

KURZWEIL

Music Systems