RODGERS
Classic Keyboards™

C-220

Owner's Manual

RODGERS
INSTRUMENT CORPORATION
The sound choice!

NOTICE TO USERS

RODGERS INSTRUMENT CORPORATION

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Hillsboro OR 97124
(503) 648-4181

Assembly of RODGERS C-220 Classic Keyboard™

1) Remove all the parts listed below from both cartons. If there is a problem, contact your local Rodger's dealer.

> NOTE: Place the parts that have decorative surfaces on a surface such as a carpet or cloth to not damage the organ decorative surfaces. It is suggested that you read these instructions completely through before attempting any assembly in order to be familiar with the complete procedure.

Qty	Description	Qty	Description
1	C-220 Organ Assembly	1	Speaker Base Assembly
1	Music Rack Assembly	1	Bench Pack

2) Remove the black speaker grill frame assembly from the front of the speaker base. It is secured by velcro fasteners. A simple pull toward you should easily remove it. .

3) Find the speaker cable that is located in a black recess approximately in the middle of the speaker base. The cable has a large brown connector on the end of it. Pull the cable out to make it easily accessable. Make note of the orientation of the 3 keying flats on the connector.

4) Carefully lift the front edge of the organ keyboard assembly enough to see underneath, and locate in approximately the middle of the bottom of the organ keyboard assembly a recessed hole that contains a brown socketed connector. Note the orientation of the connector's keying flats.

5) Place the organ keyboard assembly on top of the speaker base.

6) Connect the speaker cable (located in step 3) to the brown socketed connector (located in step 4) in the bottom of the organ keyboard assembly.

> NOTE: The speaker cable connects to the bottom of the organ keyboard assembly to a matching connector that is in a recessed hole in the bottom of the organ keyboard assmbly. The connectors are keyed so you must match the flats of the connectors in order to press them together.

6) Locate the two black shoulder bolts near the left and right rear corners of the speaker base. There are two corresponding key hole type connectors in the bottom of the organ keyboard assembly that lock into the black shoulder bolts.

7) Position the organ keyboard assembly over the shoulder bolts and slide the organ keyboard forward toward the front of the speaker base to lock them together.

8) Turn the 2 thumb screws finger tight. NOTE: Do not overtighten the thumb screws. They should only be firmly tightened not overly tightened.

9) Relace the black speaker grill frame assembly secured by the velcro fasteners).

10) Connect the power cord to the back panel and attach the music standl.

11) Refer to the C-220 Owner's manual on how to run the C-220 demo songs to test the operation of the instrument.

12) Reverse the above procedure to disassemble the C-220 Classic Keyboard when necessary.

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

IMPORTANT SAFETY INSTRUCTIONS

WARNING When using this instrument, always follow basic precautions, including the following:

1) Read all the instructions before using, adjusting, or repairing this instrument.

2) To reduce the risk of injury, supervise children closely when children are around the instrument.

3) Use this instrument only in the manner recommended by Rodgers Instrument Corp.

4) Do not use this instrument near water, for example, near a swimming pool, a damp or wet room.

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

6) Locate the instrument so its position does not interfere with its proper ventilation.

7) Locate the instrument away from heat sources such as radiators, heat registers, or other products that radiate heat directly onto the instrument.

8) Protect the instrument from dust as much as possible.

9) Connect the instrument to a power source only of the type described in the operating instructions or as marked on the instrument. Do NOT attempt to defeat the grounding connection of the three-prong attachment plug. *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) Unplug the power cord of the instrument from the power source when left unused for a long period of time.

11) Do not walk on, or place objects on top of the power cord.

12) Do not pull the cord, rather hold the plug when unplugging the power cord plug from the power source.

13) When setting up with other instruments or peripherals, follow the procedures in accordance with Rodgers' instruction manual.

14) Take care so that objects do not fall or liquids spill into the instrument.

15) Service the instrument with qualified service personnel when:

  a. The power cord or plug has been damaged.

  b. Objects have fallen or liquid has spilled into the instrument.

  c. The instrument has been exposed to rain or other weather damage.

  d. The instrument does not appear to operate normally, or exhibits a marked change in performance.

  e. The instrument has been dropped or the enclosure damaged.

16) Do not attempt to service the instrument beyond that described in the user maintenance or technical service manuals. Refer all other servicing to qualified technical service personnel.

WARNING: THIS INSTRUMENT MUST BE EARTH GROUNDED.

You must GROUND instruments equipped with a TYPE AC, 3 WIRE GROUND PLUG.

SAVE THESE INSTRUCTIONS

Radio and Television Interference

The Rodgers Classic Keyboards™ C-220 uses and generates small amounts of radio-frequency (RF) energy. The instrument complies with the limits set for Class A and Class B computing devices. FCC Rules, Subpart J, Part 15 define the limits for radio and television interference in a residential installation.

Follow the installation and the use instructions in this manual, or the instrument could potentially cause interference with some radio or television reception. In the unlikely event that this occurs, we encourage the user to try the following corrective measures.

- Turn the instrument OFF to see if it is the actual source of the interference.

- Disconnect the peripheral devices and their input/output cables one at a time. If the interference stops, it is caused by the peripheral device or its I/O cable.

- Try coiling and uncoiling the instrument's power cord in different ways.

- Connect the instrument's power cord to a power outlet on a different circuit.

- Move the instrument farther away from the radio or television receiver.

- Turn the radio or television receiver until the interference stops.

- Connect the radio or television receiver to a different power circuit.

- Reorient or move the receiver antenna farther away from the instrument. Consider installing a rooftop antenna with coaxial cable lead-in between the antenna and receiver.

- Consult the nearest Rodgers Classic Keyboards™ dealer for more information if the above corrective measures don't remove the interference.

Table of Contents

Hearing the Demo Songs

Your C-220 is equipped with three demonstration songs which will introduce a few of its sounds. To hear these songs, follow this procedure:

For continuous play:

1) Press the **FUNCTION** tab to light it.

2) Press **ENSEMBLE P** (the three demo songs will play continuously.)

3) Press **FUNCTION** again to stop playback and return to Play Mode.

To play one demo song:

1) Press the **FUNCTION** tab to light it.

2) Press **ENSEMBLE MF** for song #1, **ENSEMBLE F** for song #2 and **ENSEMBLE FF** for song #3.

3) Press **FUNCTION** at any time to return to Play Mode.

Demo Songs

❶

❷

FUNCTION

ENSEMBLE P   ENSEMBLE MF   ENSEMBLE F   ENSEMBLE FF

After pressing
FUNCTION Tab . . . . Press

1	**Allegro** from Water Music Handel
2	**O My Father** (traditional) arranged: Tom Hazleton in memoriam: Alexander Schreiner
3	**Polonaise in A major** Chopin
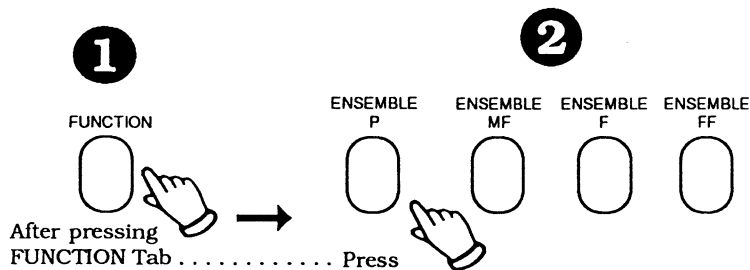
Note: Demo sound level may be set with the expression pedal **before** the demo begins to play.

Factory Reset

To return the C-220 to the factory settings, do this:

1) Turn OFF the C-220.

2) Press and **HOLD** the **FUNCTION** tab.

3) Turn ON the C-220.

Congratulations on your purchase of the Rodgers Classic Keyboards™ C-220. The C-220 is a high quality musical product which will give you many years of enjoyment.

The Classic Keyboards™ C-220 is a single keyboard instrument offering piano, organ, orchestral and contemporary sounds in a fine wood grain cabinet. It features a 2 channel 60 watt audio system (120 watts total) with three speakers per channel, significantly clearer and more powerful than other products in the same price range. You'll enjoy the rich, satisfying stereo sounds built into your C-220.

The RS-PCM (Re-Synthesized Pulse Code Modulation) sounds in your C-220 are unmatched in sound quality. Each sound has been carefully sampled and shaped using the finest instruments available, such as a world-class concert grand for the Acoustic Piano to real wind-blown organ pipes for the Organ Principal, String and Flute sounds.

The velocity sensitive keyboard of the C-220 responds to your touch and varies the attack of selected sounds for greater musical expression and authenticity.

The C-220 also offers an advanced MIDI control system which allows you to access the sounds in the C-220 from other MIDI devices, such as keyboards or sequencers. Your C-220 can also transmit MIDI information on any of the 16 MIDI channels, making it easy to control external MIDI sounds and effects from the C-220 keyboard.

The C-220 panel offers straight-forward control of all the instrument's features, allowing you to get started easily. The control of the C-220's advanced features and MIDI system is also logical, and you will find it easy to quickly master these more advanced features.

We're sure you will want to start making music with your C-220 right away, so here's a quick overview of this owner's manual:

- ◆ **Playing the C-220**
    - ➢ An introduction to the basic features of the C-220

- ◆ **Additional Features**
    - ➢ Explanation and operating procedures for more advanced features

- ◆ **C-220 MIDI**
    - ➢ A basic explanation of what MIDI is and how the C-220 MIDI system works

- ◆ **Performance Suggestions**
    - ➢ Ideas about how to get the most out of your C-220 right away

- ◆ **Care of the C-220**
    - ➢ Care and maintenance information for the C-220, along with information about hooking other equipment to the C-220

Thank you for choosing the Rodgers Classic Keyboards™ C-220.

Playing the C-220

Turning The C-220 On and Off

To turn the C-220 on, press the rocker tab at the far left of the control panel to 1 (up). The Whole Mode, Piano sound, will always come up when the instrument is turned on.

To turn the C-220 off, press the rocker tab to 0 (down).

Selecting Sounds

Press the top of the tilt tab to select the desired sound. It will light, indicating the sound has been selected.
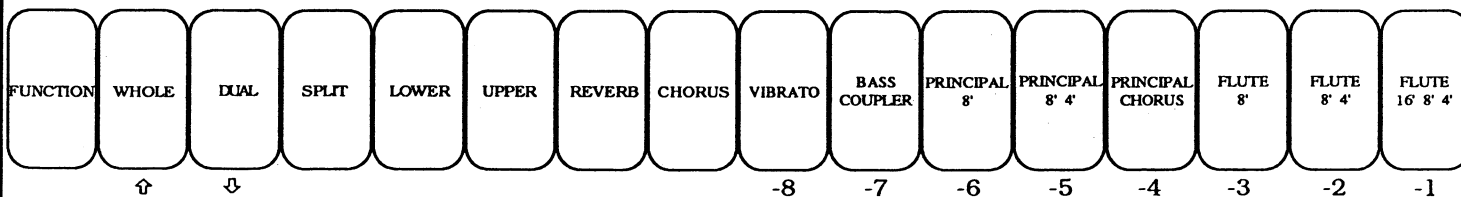
Expression Pedal

The Expression Pedal controls the volume output from the internal speakers, headphone jack, and output jacks. By pressing the Expression Pedal forward, the volume becomes louder. By pressing the pedal back, the volume becomes softer.

Sustain Pedal

By depressing the Sustain Pedal, any sound played will be sustained. When the Sustain Pedal is released, the sustained sounds will no longer be heard.

Whole

Press the Whole tilt tab, and select a sound as explained in Selecting Sounds above. This sound will play over the full range of the keyboard. The Whole tilt tab will remember the selected sound and its Vibrato, and Chorus settings.

FUNCTION	WHOLE	DUAL	SPLIT	LOWER	UPPER	REVERB	CHORUS	VIBRATO	BASS COUPLER	PRINCIPAL 8'	PRINCIPAL 8' 4'	PRINCIPAL CHORUS	FLUTE 8'	FLUTE 8' 4'	FLUTE 16' 8' 4'
	⇧	⇩							-8	-7	-6	-5	-4	-3	-2	-1

Dual

Press the Dual tilt tab, press the Upper tilt tab, and select a sound. Press the Lower tilt tab, and select another sound. Both sounds will play simultaneously as long as the Dual tilt tab is lit. The Dual tilt tab will remember the selected sounds and its Vibrato and Chorus settings until new settings are made. (Note: The Upper Chorus setting is dominant. If the Upper Chorus setting is "OFF", then the Lower Chorus setting becomes dominant.)

As a shortcut, it is possible to select both Upper and Lower sounds in Dual without pressing the Upper or Lower tilt tabs. Press Dual. Press and **hold** the first sound selection. This sound will be assigned to Upper or Lower (whichever tilt tab is lit). While holding the first sound selection, press the second sound selection. This will be assigned to Upper or Lower (whichever tilt tab is not lit).

Note: The C-220 has 30 note polyphony, which means a total of thirty voices will play at one time. Use discrimination when selecting Ensemble combinations in the Dual Mode, since each note played is actually keying up to a maximum of 7 voices. This may cause notes to begin dropping out.

Split

Press the Split tilt tab, press the Upper tilt tab, and select the sound to be played in the upper part of the keyboard. Press the Lower tilt tab, and select the sound to be played in the lower part of the keyboard. Keys above the Split Point will play the Upper sound, and keys below the Split Point will play the lower sound. The Split tilt tab will remember the selected sounds and its Vibrato and Chorus settings until new settings are made. (Note: The Upper Chorus setting is dominant. If the Upper Chorus setting is "OFF", then the Lower Chorus setting becomes dominant.)

The Split Point may be changed by holding the Split tilt tab on and pressing a key on the keyboard. The key pressed will be the lowest note of the Upper sound.

As a shortcut, it is possible to select both Upper and Lower sounds in Split without pressing the Upper or Lower tilt tabs. Press Split. Press and **hold** the first sound selection. This sound will be assigned to Upper or Lower (whichever tilt tab is lit). While holding the first selection, press the second sound selection. This will be assigned to Upper or Lower (whichever tilt tab is not lit).

Brilliance Knob

The Brilliance Knob is located to the right of the power switch. By turning the knob to the right, the selected sounds become brilliant and bright. By turning the knob to the left, the selected sounds become mellow.

Bass Coupler

When this tilt tab is illuminated, the lowest note played below the Split Point will additionally play the selected sound(s) one octave lower.

Function

The C-220 is equipped with a number of controls which allow the sounds to be altered. These controls are accessed by pressing the Function tilt tab, which will illuminate.

With the Function tilt tab on, all of the tilt tabs normally used to select sounds are assigned *different* functions. The settings of these functions can then be changed by pressing the Variation (⇧ ⇩) tilt tabs. With the Function tilt tab on, Dual becomes the Variation Up, and Whole becomes the Variation Down, as the arrows under the tilt tabs indicate.

After the selection(s) from the Function settings have been made, press the Function tilt tab again to return to the normal sound functions.

Note: Specific Function settings will be described in detail below and on the following pages.

ELECTRIC ORGAN	STRING CELESTE 8'	FLUTE CELESTE 8'	ORCH OBOE	ORCH TRUMPET	ORCH STRINGS	ORCH CHIMES	CHOIR	PIANO	HARPSI CHORD	GUITAR	ENSEMBLE CELESTE	ENSEMBLE P	ENSEMBLE MF	ENSEMBLE F	ENSEMBLE FF
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
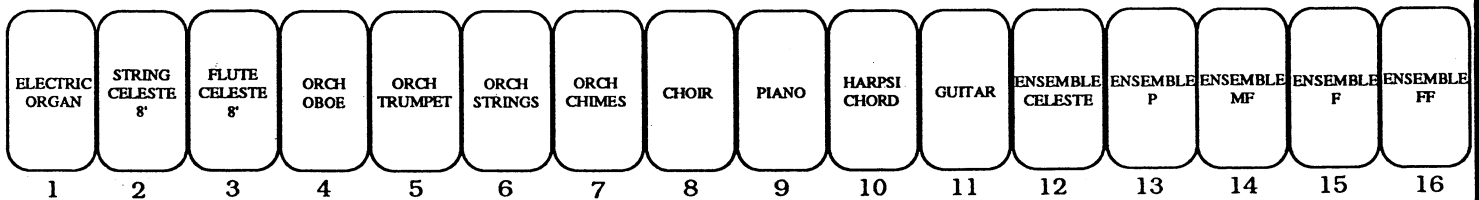
Bar Graph Display

When using the Variation tilt tabs to increase or decrease the setting of a function, an illuminated bar graph is displayed by illuminating several of the sound tilt tabs.

Starting with the 1 (Electric Organ) tilt tab and extending to the right, additional illuminated tilt tabs will continue to light through the 8 (Choir) tilt tab as the Function setting is *increased*. As the Function setting is *decreased*, the tilt tab lights will turn off and extend back to 1 (Electric Organ).

(NOTE: Some Function settings (Vibrato, Reverb, Chorus) will only use a part of the bar graph (1 through 8) and not all numbers from -8 through 16.)

DECREASE ⬅️ ⬜ ➡️ INCREASE

-8 -7 -6 -5 -4 -3 -2 -1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
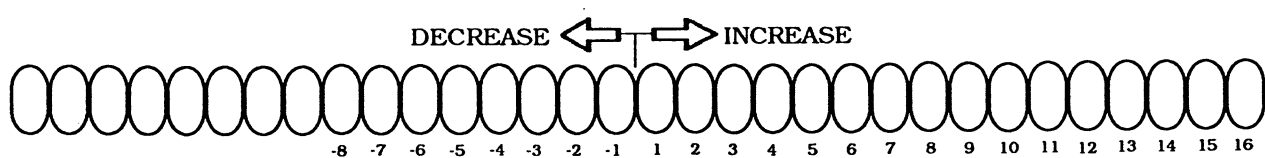
Reverb

Reverb, or reverberation, creates the acoustic ambience of a concert hall or large room.

Press the Function tilt tab. **Hold** the Reverb tilt tab. To *increase* the reverb level, press Variation Up (the Whole tilt tab becomes Variation Up when the Function tilt tab is illuminated, as indicated by the arrow pointing up). The tilt tabs (1 through 8) will act as a bar graph to indicate the reverb level.

To *decrease* the Reverb level, with the Function tilt tab illuminated, **hold** the Reverb tilt tab. Press Variation Down (the Dual tilt tab becomes Variation Down when the Function tilt tab is illuminated, as indicated by the arrow pointing down). The tilt tabs (1 through 8) will act as a bar graph to indicate the Reverb level.

By holding the Reverb tilt tab, the bar graph will indicate the Reverb level setting.

Chorus

Chorus creates a warm, spacious effect to the selected sound(s).

Press the Function tilt tab. **Hold** the Chorus tilt tab. To *increase* the Chorus level, press Variation Up (the Whole tilt tab becomes Variation Up when the Function tilt tab is illuminated, as indicated by the arrow pointing up). The tilt tabs (1 through 8) will act as a bar graph to indicate the Chorus level.

To *decrease* the Chorus level, with the Function tilt tab illuminated, **hold** the Chorus tilt tab. Press Variation Down (the Dual tilt tab becomes Variation Down when the Function tilt tab is illuminated, as indicated by the arrow pointing down). The tilt tabs (1 through 8) will act as a bar graph to indicate the Chorus level.

Chorus may be assigned or unassigned to a selected sound without pressing the Function tilt tab, in which case the Chorus level will be the same as last set for the selected sound.

If Chorus is assigned to a sound, the Chorus tilt tab will light when the sound is selected. Pressing the Chorus tilt tab will turn it off.

By holding the Chorus tilt tab, the bar graph will indicate the Chorus level setting.

Vibrato

Vibrato, also called tremolo, creates a change in pitch (sharp and flat) and in amplitude (volume). The use of vibrato adds warmth to solo or small ensemble combinations and is useful in gospel and romantic music.

Press the Function tilt tab. **Hold** the Vibrato tilt tab. To *increase* the vibrato level, press Variation Up (Whole becomes Variation Up when the Function tilt tab is illuminated, as indicated by the arrow pointing up). The tilt tabs (1 through 8) will act as a bar graph to indicate the vibrato level.

To *decrease* the vibrato level, with the Function tab illuminated, **hold** the Vibrato tilt tab. Press Variation Down (Dual becomes Variation Down when the Function tilt tab is illuminated, as indicated by the arrow pointing down). The tilt tabs (1 through 8) will act as a bar graph to indicate the vibrato level.

Vibrato may be assigned or unassigned to a selected sound without pressing the Function tilt tab, in which case the Vibrato level will be the same as last set for the selected sound. If Vibrato is assigned to a sound, the Vibrato tilt tab will light when the sound is selected. Pressing the Vibrato tilt tab will turn it off. By holding the Vibrato tilt tab, the bar graph will indicate the Vibrato level setting.

Octave Shift

The currently selected sound can be shifted up to three octaves sharp or flat.

Press Function. With the Function tilt tab illuminated, **hold** the -6 (Principal 8') tilt tab. Press Variation Up or Variation Down to shift the pitch of the sound up or down. In Dual or Split mode, the Upper and Lower tabs may be used to select the sound to be shifted. The sound will retain the transposition setting until the procedure is repeated.

Transpose

The currently selected sound can be transposed one to six semitones sharp or flat.

Press Function. With the Function tilt tab illuminated, **hold** the -5 (Principal 8' 4') tilt tab. Press Variation Up or Variation Down to transpose the selected sound up or down. The C-220 will retain the transposition setting until the procedure is repeated.

Sound Level

To change the volume of a selected sound, press Function. With the Function tilt tab illuminated, **hold** the -3 (Flute 8') tilt tab. Press Variation Up or Variation Down to decrease or increase the volume. The Upper and Lower tilt tabs will select the corresponding sound when in either Dual or Split mode.

There are ten levels of volume for each sound, 0 through 9. The default level is 9.

Tuning

The C-220 is tuned to 440.0 hertz, which is standard tuning. The tuning may be changed if, for example, the C-220 is playing with an orchestra (which may require 442.0 Hz) or if playing with another instrument which is slightly out of tune.

To change the tuning flat or sharp from 440.0 Hz, press Function. With the Function tilt tab illuminated, **press** Principal Chorus. Press Variation Up or Variation Down to shift the tuning. The new pitch will be remembered, even after the C-220 is turned off, until the procedure is repeated or the C-220 is reset.

For an example: To tune the C-220 sharp, press the Variation Up tilt tab once. Tilt tab 1 will light, and the tuning will be at 440.1 Hz. Press Variation Up tilt tab nine more times, making the C-220 sharp .1 Hz each time the Variation Up tilt tab is pressed until tilt tab 2 lights. The tuning will be 441.0 Hz. The chart for tuning is listed below:

430.0 Hz	434.0 Hz	438.0 Hz	439.9 Hz		440.0 Hz		440.1 Hz	442.0 Hz	446.0 Hz	450.0 Hz
427.5 Hz	432.0 Hz	436.0 Hz	439.0 Hz				441.0 Hz	444.0 Hz	448.0 Hz	452.9 Hz

```
-8  -7  -6  -5  -4  -3  -2  -1 | 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
              flat        ⟨⟩  ⟨⟩      sharp
```
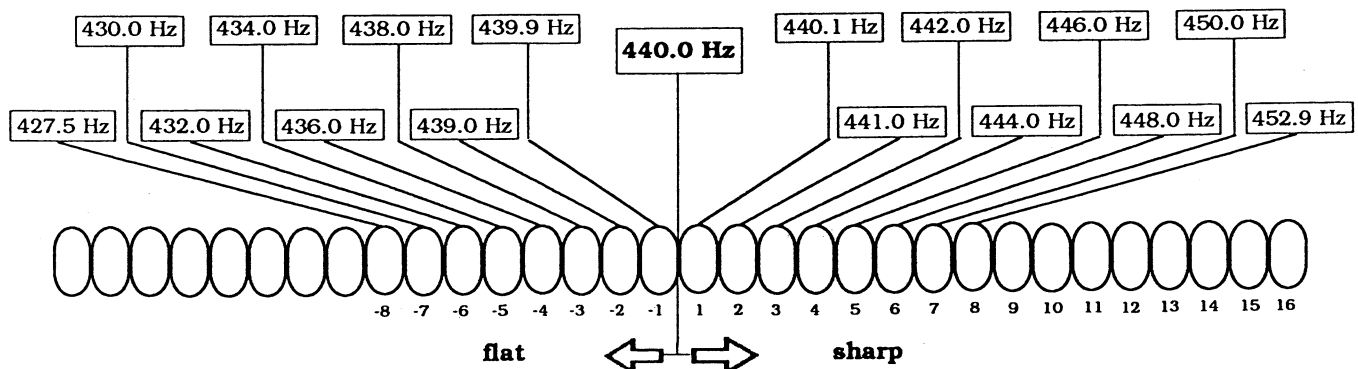
The pitch indicated in the boxes is the pitch at which the lamp **first lights**.

MIDI, or Musical Instrument Digital Interface, is one of the most exciting features of the Rodgers Classic Keyboards™ C-220. MIDI is a powerful, computer-based network which allows musical instruments to communicate with one another.

With the advanced C-220 MIDI control system, other musical instruments and effects can easily be controlled from the C-220 keyboard. Such control allows the musical resources of the C-220 to be combined with those of other MIDI instruments.

The C-220 may be controlled from other devices, such as MIDI keyboards or sequencers. Sounds of the C-220 may be selected and played from another MIDI keyboard such as another Rodgers Classic Keyboard™ or Rodgers Classic Organ™. A sequencer will allow sounds to be pre-recorded and layered for later performance.

MIDI communicates through 16 different channels. Each of these channels can be used to control a different sound or effect. By following easy steps explained on the following pages, the MIDI channel may be set on which the C-220 *sends* information, and on which channels it will *receive* information.

The 16 MIDI channels operate like a 16-line phone system. By setting the C-220 to either *send* or *receive* on a certain MIDI channel, it can communicate with other devices which are also set to *send* or *receive* on the same channel.

In order to control another MIDI device from the C-220, the *send* channel(s) of the C-220 must be the same as the *receive* channel(s) of the device to be controlled. In order to control the C-220 from another MIDI device, the *send* channel(s) of that device must be the same at the *receive* channel(s) of the C-220.

Most often, the information sent down a MIDI channel is note information relating to which notes need to be played and their durations. Other types of information are also sent, including Program Change commands which select sounds, and Control Change commands which specify volume, velocity, vibrato, pitch bend and chorus settings.

The C-220 has three MIDI Modes, titled MIDI Mode 0, 1 and 2. Each time you turn the C-220 on, it defaults to MIDI Mode 0.

In MIDI Mode 0, the C-220 will *send* and *receive* on one channel when WHOLE Mode is activated. When either SPLIT or DUAL is selected, the C-220 will *send* and *receive* on two different channels. The *send* and *receive* channel(s) in MIDI Mode 0 can be set.

MIDI Mode 1 was designed for use with Intelligent System of Music (ISM) software published by the Roland Corporation. Take advantage of this powerful and enjoyable approach to music

education by adding a Rodgers PR-100 sequencer (or Roland MT-100 sequencer or Roland MT-32 Sound Module) to the C-220.

In MIDI Mode 1 (ISM Mode) the C-220 can be set to *send* on any of the 16 MIDI Channels, and *receive* on 1, 11, 12, 13, 14, 15 and 16. These *receive* channel assignments allow the PR-100 to perform on channels 1-7, while permitting control of your C-220 from an external source through MIDI channels 11-16. The PR-100 will use channel 1 to control the C-220 as required by the ISM software. The *receive* channel assignments are not changeable.

MIDI Mode 2 was designed for controlling the C-220 from an external MIDI source such as a sequencer, Rodgers Classic organ, Rodgers Classic keyboard or other MIDI device. It allows the C-220 to *send* on any of the 16 MIDI channels and receive on channels 1, 2, 3, 4, 5 and 6. These *receive* channel assignments are not changeable.

It is also possible to select sounds through MIDI commands called Program Changes. Program Changes are messages (numbered between 1 and 128) sent down the MIDI network that select sounds for each channel.

For instance, the Guitar sound of your C-220 has been assigned Program Change number 17. If you were to *send* Program Change number 17 down MIDI channel 4, the Guitar sound would be assigned to MIDI Channel 4.

Another type of MIDI parameter which the C-220 supports is Control Change information. Control Change information is used to specify the volume, vibrato, and chorus settings of certain sounds or of the instrument in general. The C-220 MIDI system allows you to specify which type of Control Change commands it uses for volume and vibrato control so that the C-220 can operate with a myriad of different MIDI equipment. In addition, Control Change information for volume, vibrato, chorus and reverb settings can be recorded to a sequencer and recreated perfectly during playback.

Of course, powerful controls are of little use if they are difficult to understand or too complex to remember. To keep the MIDI system simple, the C-220 is instructed to *send* Program Change and Control Change information automatically. Because of this, all aspects of a performance can be recorded by a sequencer, including selection of different MIDI voices (through Program Changes) and volume, vibrato, chorus and reverb settings (through Control Changes).

The next few pages lay out the MIDI control system of the C-220. As with anything, these features will take time to learn. Once mastered, however, new avenues of musical expression will open through MIDI.

The MIDI controls of the C-220 operate in much the same manner as the function settings described earlier. To set the MIDI parameters of the C-220, press the Function tilt tab, then the sound selection tilt tab which controls the MIDI function you wish to change. When you are finished, press the Function tilt tab again to return to Play Mode.

Setting The Transmit Channel

This function specifies the MIDI Channel(s) the C-220 will transmit on. One channel may be transmitted on when using the Whole Mode, and two channels may be transmitted on when using the Split or Dual Mode.

Select the Upper or Lower panel mode by pressing the Upper or Lower tilt tab. Press the Function tilt tab (it will light), and hold the Flute 8' 4' tilt tab. Press Variation Up or Variation Down to select the desired transmit channel, 1 to 16. When using the Whole Mode, the channel specified for the Upper sound will be used.

The default channel for the Upper is channel 1, and the default channel for the Lower is channel 2.

In MIDI Mode 1, channels 5 to 10 will not play the local sounds selected by the tilt tabs. In MIDI Mode 2, only channels 1 to 6 will play the sounds selected by the tilt tabs.

Sending a Program Change Message

This function allows you to send a Program Change message from 1 to 88, and from 89 to 128.

To send a Program Change message from 1 to 88, select the Upper or Lower panel mode by pressing the Upper or Lower tilt tab. Press the Function tilt tab (it will light), and **hold** the Electric Organ tilt tab. (it will light). Press key 1 to 88 to send program changes 1 to 88. The tilt tab light will go out when the program change is sent.

To send a Program Change message from 89 to 128, select the Upper or Lower panel mode by pressing the Upper or Lower tilt tab. Press the Function tilt tab (it will light), and **hold** the String Celeste tilt tab (it will light). Press key 89 to 128 to send program changes 89 to 128. The tilt tab will go out when the program change is sent.

Setting the Receive Channel

This function specifies the MIDI Channel(s) the C-220 will receive on. The receive channel is settable in MIDI Mode 0 only. One channel may be received on when using the Whole Mode, and two channels may be received on when using the Split or Dual Mode.

Select the Upper or Lower panel mode by pressing the Upper or Lower tilt tab. Press the Function tilt tab (it will light), and **hold** the Flute 16' 8' 4' tilt tab. Press Variation Up or Variation Down to select the desired receive channel, 1 to 16. When using the Whole Mode, the channel specified for the Upper sound will be used.

The default channel for the Upper is channel 1, and the default channel for the Lower is channel 2. The receive channels cannot be changed on MIDI Modes 1 or 2.

MIDI Mode

The C-220 has three MIDI Modes which determine its receive channels. To select the MIDI Mode, press the Function tilt tab (it will light), hold the Orch Trumpet tilt tab. Press Variation Up or Variation Down to select the desired MIDI Mode. MIDI Modes 1, 2, or 3 will be indicated by one, two, or three tilt tabs illuminated. The default mode is Mode 0.

Mode 0 (Normal Mode)

This is the default mode the C-220 will have when it is first turned on. The transmit and receive channels may be set as explained above.

Multi-timbral Mode 1 (ISM Mode)

In this mode, the C-220 will receive on channels 1, 11, 12, 13, 14, 15 and 16. These channels cannot be reassigned. In order that the Upper and Lower sounds play from the C-220 keyboard, they must be set to transmit on one of these channels (see above). This is the mode to use when using the Roland ISM Software and a separate MT-100 (or MT-32 and PR-100 combination).

Multi-timbral Mode 2

In this mode, the C-220 will receive on channels 1, 2, 3, 4, 5 and 6. These channels cannot be reassigned. In order that the Upper and Lower sounds play from the C-220 keyboard, they must be set to transmit on one of these channels (see above). This is the mode to use when controlling the C-220 from a Rodgers Classic Organ or Rodgers Classic Keyboard.

Automatic Program and Control Change Transmission

The C-220 will automatically send a Program Change when a sound is selected. It will also send Control Change information whenever a Chorus, Vibrato or Reverb level is selected. The Program Changes and Control Changes will be sent on the MIDI channel which is assigned to the selected sound (Upper or Lower).

This feature can be disabled and re-enabled as follows: Press the Function tilt tab (it will light), and hold the 3 (Flute Celeste) tilt tab. Press Variation Down to disable transmission, or press Variation Up to enable transmission. Eight tilt tabs will light in the "ON" condition. The default condition is "ON".

It is useful to be able to disable Program Change transmission when controlling another MIDI instrument from the C-220 keyboard. When disabled, changing the C-220 sound tilt tabs will not cause the sounds on the controlled instrument to change.

For a list of which Program Change message is sent when a sound is selected, see the section *Program Changes*.

Volume Control Message Selection

This control allows the selection of the type of Control Change message used to control the C-220's volume from a separate MIDI device (Note: Not all MIDI devices use the same Control Change message for volume control).

Press the Function tilt tab (it will light), and **hold** the Orch Strings tilt tab. Press Variation Up or Variation Down to select the desired mode. One tilt tab will light for Control Change 11. Two tilt tabs will light for Control Change 7. Three tilt tabs will light for Control Change 2. Four tilt tabs will light for channel pressure.

The default is Control Change 7. This is the selection to use with Rodgers Classic Organs.

Vibrato Control via MIDI

This control allows you to select the type of Control Change message to use when you want to control the C-220's Vibrato setting from a separate MIDI device.

Press the Function tilt tab (it will light), and **hold** the Orch Chimes. Press Variation Up or Variation Down to select the desired mode. One tilt tab will light for "OFF." Two tilt tabs will light for Control Change 1. Three tilt tabs will light for channel pressure.

The default is Control Change 1.

Program Change Reception

This control determines whether a Program Change received from an external device, such as a MIDI keyboard or sequencer, will select a sound or be ignored.

Press the Function tilt tab (it will light), and **hold** the Orch Oboe tilt tab. Press Variation Up to enable reception, or press Variation Down to disable reception. Eight tilt tabs will light in the "ON" condition. The default condition is "ON." (Note: Selecting "OFF" will cause the C-220 to ignore all Program Change messages.)

This feature is often useful when you don't want the C-220 to respond to program changes sent for another MIDI device.

Local Off Selection

Press the Function tilt tab (it will light), and **hold** the Choir tilt tab. Press Variation Up to enable Local Off, or press Variation Down to disable Local Off. Eight tilt tabs will light to indicate Local Off is enabled.

Local Off "OFF" is the default state.

Often, it is desirable to control the C-220 from another MIDI keyboard or device, such as a Rodgers Classic organ, sequencer or computer. Thanks to the powerful, straightforward C-220 MIDI system, this is easily accomplished.

Receive Channels

As stated earlier, MIDI works through 16 different channels. Each of these channels can be used to control a different sound or effect. In order for two MIDI devices to communicate, they must be talking to each other on the same MIDI channel or channels.

For example, imagine the C-220 is controlled from a Rodgers Classic organ. Depending on the type of MIDI system, the organ will be able to send on three or more MIDI channels. These channels are referred to as "MIDI Channel 1", "MIDI Channel 2", etc. In order that the C-220 receives the MIDI information the organ is sending, it must be set to receive the same channels the organ sends.

The C-220 receives certain MIDI channels dependant on which MIDI Mode is selected. In MIDI Mode 0 ("Normal" Mode), the C-220 will receive on any one channel when "Whole" Mode is selected and any two channels when "Dual" or "Split" Mode is selected. The receive channel(s) can be any of the 16 MIDI channels when MIDI Mode 0 is selected. Refer to the section *C-220 MIDI System, Setting the Transmit Channel* and *Setting the Receive Channel*.

In MIDI Mode 1 ("ISM" Mode), the C-220 is designed to take advantage of Roland's Intelligent System of Music software. When MIDI Mode 1 is selected, the C-220 will receive on MIDI channels 1, 11, 12, 13, 14, 15 and 16. Unlike MIDI Mode 0, these receive channel assignments are not changeable. The C-220 can send on any of the 16 MIDI channels.

To make use of the Roland ISM software, hook up an optional Roland MT-100 (or Roland MT-32 and Rodgers PR-100) to the C-220 as described in the ISM instructions, and set the C-220 to MIDI Mode 1. Refer to the section *C-220 MIDI System, MIDI Mode.*

When controlling the C-220 from a Rodgers Classic organ or sequencer, it is best to use MIDI Mode 2 ("Multi-Timbral Mode 2"). In this mode, the C-220 receives on MIDI channels 1, 2, 3, 4, 5 and 6. With the C-220's MIDI Mode 2 selected, the C-220 will receive most or all of the MIDI channels which the organ sends, making it possible to control a different sound or effect from each manual and the pedal. The C-220 is able to send on any of the 16 MIDI channels when MIDI Mode 2 is selected.

To select one of the three MIDI Modes, please refer to the section *C-220 MIDI System, MIDI Mode.*

When in . . .	*The C-220 will . . . .*
MIDI Mode 0	receive on any one or two MIDI channels.
MIDI Mode 1	receive on MIDI channels 1, 11, 12, 13, 14, 15 & 16.
MIDI Mode 2	receive on MIDI channels 1, 2, 3, 4, 5 and 6.

In each of these three modes, the C-220 can send on any of the 16 MIDI channels.

Assigning sounds to MIDI channels

There are two different ways to assign the C-220 sounds to different MIDI channels: 1) through program changes, and 2) manually.

When controlling the C-220 from a Rodgers Classic organ with program change capability, a program change can be sent from the organ keyboard to select a sound. A program change is a number between 1 and 128 which is used to assign sounds to certain MIDI channels (see the owner's manual for further information on sending program changes from the organ keyboard).

Likewise, when controlling the C-220 from a MIDI keyboard which has

program change capability, a program change can be sent to select a sound. A chart showing the available sounds on the C-220 with their corresponding program change numbers has been sent with this manual. This chart has also been cross-referenced to the Rodgers Classic organ Program Change system.

Controlling MIDI Keyboard   C-220

sends program change number 8.....	down MIDI channel 2	**String Celeste** is assigned to MIDI channel 2
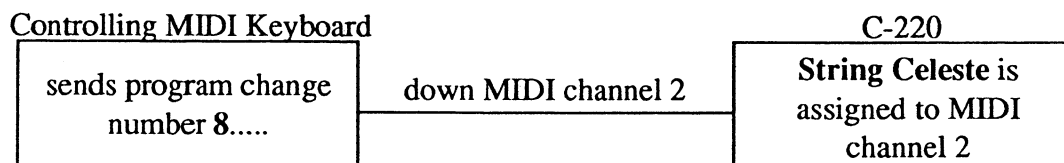
When using a controller which does not have the ability to send Program Changes, sounds for different channels can be selected manually. To do this:

1)   Press **Function** (it will light).

2)   Press **3 (Flute Celeste)** (it will light).

3)   Use **Variation Up** or **Variation Down** to select the MIDI channel. One tilt tab will light, denoting MIDI channel 1, and two tilt tabs will light, denoting MIDI channel 2.

4)   Press **Function** (the light will go out).

5)   Select the desired sound for the MIDI channel specified in step 3.

Remember, sounds can be selected for channels 1, 2, 3, 4, 5 and 6 when in MIDI Mode 2 and 1, 11, 12, 13, 14, 15 and 16 when in MIDI Mode 1.

Sometimes, a Program Change will need to be sent from the C-220 to select a sound or function in another MIDI device, or so that it can be recorded by a sequencer to select the correct sound during playback.

To send a single Program Change from the C-220, follow the directions found in the section *C-220 MIDI System, Automatic Program and Control Change Transmission.* It is also possible to send automatic program changes.

By enabling the Automatic Program Change Transmission feature of the C-220, a program change message may be sent by simply selecting a sound. In this way, a sequencer can record all sound selections and then recreate them during playback. More information on Program Changes is found in the section *Program Changes.*
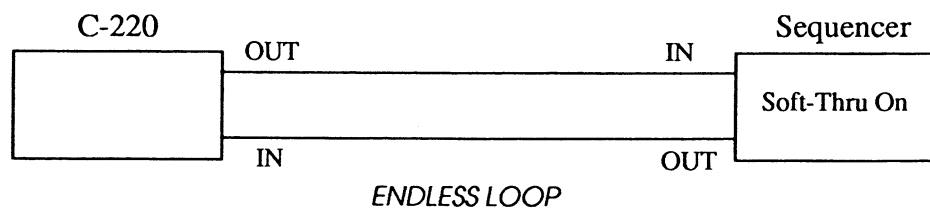
Local Off Selection

In Local On mode, the C-220 operates as normal, with its internal voices sounding whenever notes are played from the C-220 keyboard. In Local Off mode, the C-220's internal voices will **not** sound when keys are depressed, Note information will be transmitted, however, from the MIDI OUT port. This allows the control of another external MIDI device from the C-220 keyboard without the C-220's voices sounding. In addition, the C-220's sounds can be accessed from external MIDI devices through the MIDI IN port when Local Off is selected. Local Off "OFF" is the default.

1)   Press **Function** tilt tab (it will light).

2)   Hold **8 (Choir)** (it will light).

3)   Press **Variation Up** to enable Local Off, or **Variation Down** to disable Local Off. (Eight tilt tabs will light to indicate Local Off is enabled.)

4)   Press **Function** (the light will go out).

Using Soft-Thru

When using a sequencer with the C-220, it is important to avoid an "endless loop", otherwise, the attack of certain voices will be inconsistent. This is due to the fact that every note played is keyed twice in an endless loop, once when the note is played and again when that note message comes back to the C-220. An example of an endless loop would be to have the MIDI signal from the OUT jack of the C-220 going to the IN jack of a sequencer, then echoed back to the C-220 from the OUT jack of the sequencer to the IN jack of the C-220:

```
        C-220                                    Sequencer
    ┌─────────────┐ OUT              IN  ┌──────────────┐
    │             ├──────────────────────┤              │
    │             │                      │ Soft-Thru On │
    │             ├──────────────────────┤              │
    └─────────────┘ IN               OUT └──────────────┘
                        ENDLESS LOOP
```

The are two different ways to correct this situation. The first solution is to set the "Soft-Thru" of the sequencer to "OFF". This will stop the MIDI signal from going through the sequencer and re-playing every note. The second solution is to set the C-220 to **Local Off** (see above) so that only the signal which passes through the sequencer will produce sound.

Program Changes are an effective way to select sounds on a MIDI device such as the C-220. A Program Change message is a number between 1 and 128 which assigns a voice to a MIDI channel.

C-220 sounds can be selected from a separate MIDI keyboard (such as a Rodgers Classic organ) by sending a program change message on a MIDI channel. Refer to the enclosed chart which lists the available C-220 voices and their corresponding Program Change numbers (the list has been cross-referenced for use with the Rodgers Classic organ Program Change system).

The C-220 automatically sends a Program Change message whenever a sound tilt tab is pressed. This feature can be disabled if you do not wish a Program Change message to be sent when a sound tilt tab is selected. It is still possible to send a single Program Change message from the C-220 whether or not this feature is activated.

Here is a chart of program changes transmitted when sounds or variations are selected with the Automatic Program Change Transmission feature enabled:

PRINCIPAL 8'	PRINCIPAL 8' 4'	PRINCIPAL CHORUS	FLUTE 8'	FLUTE 8' 4'	FLUTE 16' 8' 4'	ELECTRIC ORGAN	STRING CELESTE 8'	FLUTE CELESTE 8'	ORCH OBOE	ORCH TRUMPET
1	2	3	4	5	6	7	8	9	10	11

ORCH STRINGS	ORCH CHIMES	CHOIR	PIANO	HARPSI-CHORD	GUITAR	ENSEMBLE CELESTE	ENSEMBLE P	ENSEMBLE MF	ENSEMBLE F	ENSEMBLE FF
12	13	14	15	16	17 / 18 / 19	20	21	22	23	24

Note: Guitar has two variations (bells and harpsichord 8' 4').

CONNECTING THE C-220 TO EXTERNAL AMPLIFICATION

The C-220 is equipped with an excellent internal sound system, however, it may be connected to an external sound system or home stereo for enhancement.

> ***SPECIAL PRECAUTION: Whenever connecting the C-220 to any external equipment it is necessary to turn off the C-220 and the external equipment before making the connections. This will prevent damage to the C-220, the external device, and/or the speakers.***

To connect the C-220 to an external sound system:

1) If using a monaural (mono) amplifier, use only one standard audio cable with a 1/4" phone plug and connect it to the OUTPUT Left (L) MONO jack of the C-220.

2) If using a stereo amplifier, connect a standard audio cable with a 1/4" phone plug into each of the two OUTPUT jacks on the back of the C-220.

3) Plug the opposite end of the cable(s) into the INPUT jack(s) of a mixer, the INPUT jack(s) of a musical instrument amplifier or the AUX input(s) of a stereo amplifier.

NOTE: All outputs are audio line level and meet standard interconnection specifications.

USING THE C-220 AMPLIFICATION SYSTEM FOR OTHER INSTRUMENTS

The external Input Jacks are provided for connecting the outputs of other electronic instruments (rhythm machines, sound modules, musical instruments, microphones, etc.) to the internal amplifier and speakers of the C-220.

1) Before making any connections, always adjust the INPUT LEVEL control on the C-220 rear panel to minimum to avoid damaging the speakers with excessive volume when turning on the C-220. After turning on the C-220, adjust the INPUT LEVEL control to a comfortable setting.

2) **NEVER CONNECT THE OUTPUT OF A POWER AMPLIFIER TO THE INPUT OF THE C-220. SERIOUS DAMAGE WILL RESULT.**

USING HEADPHONES

The headphone jack is located at the lower left on the front of the keyboard. When headphones are connected, the built-in speakers will not sound, allowing the user to listen in privacy.

> Use any high quality stereo headphones with a 1/4" phone plug, such as Roland RH-12, RH-100, or similar. These units are sold separately.

> Before making any connections, always adjust the INPUT LEVEL control to minimum to avoid damaging the speakers with excessive volume when turning on the C-220.

> To avoid possible injury to your ears, reduce the volume level of the C-220 to minimum. Turn on the C-220 before placing the headphones over your ears.
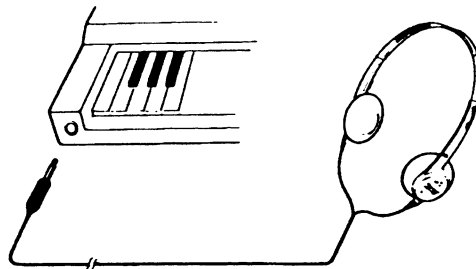
PLACEMENT OF THE C-220

> To avoid hum, do not place the C-220 near power amplifiers or other equipment containing large transformers.

> Avoid operating the C-220 near a television or radio if the C-220 causes interference or static. If this occurs, move the C-220 farther away from the television or radio, or plug it into a different AC outlet.

> The C-220 may be damaged if placed in direct sunlight (such as a closed vehicle in direct sunlight) or if placed in any area of high heat.

PRECAUTIONS

> When making any connections between the C-220 and other devices, always turn off the power to all the equipment first to avoid malfunctions and damage.

> When making audio connections, **never** connect the audio inputs and outputs improperly with an outside device (e. g. home stereo or other sound systems). An example of this would be to connect the audio outputs of the C-220 to the inputs of a tape deck/amplifier and the outputs of the tape deck/amplifier to the inputs of the C-220. This will create an endless audio loop. **This must never be done.**

> Never connect the C-220 to a power source shared by other devices such as motors, light dimmers, etc.

> If the C-220 is plugged into the power source while the power switch is in the ON position, the C-220 may malfunction. If this happens, simply turn off the C-220, wait a few seconds and turn it back on.

> Do not subject the C-220 to any strong impact.

> Do not apply pressure to the display, or strike it in any way.

> Do not drag the C-220 across the floor. Pick it up to move it.

MAINTENANCE

> For routine cleaning, wipe the C-220 with a soft, dry cloth. If desired, dampen the cloth slightly. To remove more stubborn dirt, wipe using a mild, neutral detergent. NEVER ALLOW DROPS OF WATER TO ENTER THE C-220. Wipe with a soft, dry cloth.

> NEVER apply benzene, thinners, alcohol or any petro-chemical solvents. These will damage the finish.

MEMORY BATTERY

The C-220 contains a backup battery to preserve the memory settings when the power is turned off.

Estimated battery life is five years; actual life may be longer or shorter. It is recommended the battery be changed every 5 years.

Please contact your Rodgers dealer or service center for replacement. It is possible the first replacement may become necessary in less than five years after purchase.

REMEMBER: THERE ARE NO USER SERVICEABLE COMPONENTS INSIDE THE C-220. DO NOT ATTEMPT TO REPLACE THE BATTERY YOURSELF.

FACTORY RESET

If the keyboard is silent or the C-220 sounds do not respond as anticipated, it is possible that the information in memory has been lost. To return all data to the factory settings, perform the following steps:

1)   Turn off the C-220.

2)   Press and **hold** the **Function** tilt tab.

3)   Turn on the C-220.

Specification

Keyboard:	88 keys, rotary oil-damped piano action, touch sensitive
Sound Source:	RS-PCM Sound Samples
Polyphony:	30 note
Preset Voices:	Organ (9) Orchestral (10) Ensembles (5) 24 total sounds
Effects:	Digital Reverberation, Vibrato, Chorus
Controls:	Expression Pedal, Damper Pedal, Function (MIDI and Special Functions)
Connectors:	Headphone, MIDI (In/Thru/Out), Input Jacks (Left/Right, Stereo/Mono, Level), Output Jacks (Left/Right, Stereo/Mono)
Speakers:	20.3 cm (8") woofer x 2 6 cm (2.4") tweeter x 4
Output:	60 watts x 2 channels (stereo)
Finish:	Rodgers woodgrain Walnut or Rodgers woodgrain Oak Matching woodgrain bench standard
Dimensions:	90.7 cm (35.7") height x 140.4 cm (55.3") width x 54.6 cm (21.5") depth, without music rack
Weight:	91 kg (200 lbs.) including bench
Options:	Rodgers TM-128 RS-PCM Sound Module Rodgers PR-100 Digital Sequencer

Specification subject to change without notice.

1. RECOGNIZED RECEIVE DATA

■Channel Voice Message

●Note Off

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	OOH

n=MIDI Channel   :OH - FH (0-15)   O=ch. 1   15=ch. 16
kk=Note number   :OOH - 7FH (0-127)
vv=Velocity   :OOH - 7FH (0-127)

*Velocity value is ignored.

●Note on

Status	Second	Third
9nH	kkH	vvH

n=MIDI Channel   :OH - FH (0-15)   O=ch.1   15=ch. 16
kk=Note number   :OOH - 7FH (0-127)
vv=Velocity   :OOH - 7FH (0-127)

*The transpose function does not effect the recognized note numbers.

●Control Change

OModulation depth

Status	Second	Third
BnH	01H	vvH

n=MIDI Channel   :OH - FH (0-15)   O=ch. 1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)

*When the VIBRATO CONTROL is set to 1 (Control Change 1), then this message is recognized as vibrato depth.

OBreath Control

Status	Second	Third
BnH	02H	vvH

n=MIDI Channel   :OH - FH (0-15)   O=ch. 1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)

*When the VOLUME CONTROL is set to 3 (Control Change 2), then this message is recognized as volume.

OMain Volume

Status	Second	Third
BnH	O7H	vvH

n=MIDI Channel   :OH - FH (0-15)   O=ch. 1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)

*When the VOLUME CONTROL is set to 2 (Control Change 7), then this message is recognized as volume.

OPan

Status	Second	Third
BnH	OAH	vvH

n=MIDI Channel   :OH - FH (0-15)   O=ch. 1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)   O=Left, 64=Center, 127=Right

OExpression

Status	Second	Third
BnH	OBH	vvH

n=MIDI Channel   :OH - FH (0-15)   o=ch. 1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)

*When the VOLUME CONTROL is set to 1 (Control Change 11), then this message is recognized as volume.

OHold 1

Status	Second	Third
BnH	40H	vvH

n=MIDI Channel	:OH - FH (0-15)		O=ch. 1	15=ch. 16
vv=Control Value	:OOH - 7FH (0-127)		0-63=OFF	64-127=ON

OSostenuto

Status	Second	Third
BnH	42H	vvH

n=MIDI Channel	:OH - FH (0-15)		O=ch. 1	15=ch. 16
vv=Control Value	:OOH - 7FH (0-127)		0-63=OFF	64-127=ON

OChorus

Status	Second	Third
BnH	5DH	vvH

n=MIDI Channel	:OH - FH (0-15)		O=ch. 1	15=ch. 16
vv=Control Value	:OOH - 7FH (0-127)		0-63=OFF	64-127=ON

OData Entry MSB

Status	Second	Third
BnH	06H	mmH

n=MIDI Channel	:OH - FH (0-15)		o+ch. 1	15=ch. 16
mmH=MSB of the parameter's value specified by RPN				

OData Entry LSB

Status	Second	Third
BnH	26H	11H

n=MIDI Channel	:OH - FH 90-15)		o=ch. 1	15=ch. 16
11=LSB of the parameter's value specified by RPN				

ORPN LSM

Status	Second	Third
BnH	64H	vvH

n=MIDI Channel	:OH - FH (0-15)		O=ch. 1	15=ch. 16
vv=LSB of the parameter number controlled by RPN				

ORPN MSB

Status	Second	Third
BnH	65H	vvH

n=MIDI Channel	:OH - FH (0-15)		O=ch.1	15=ch. 16
vv=MSB of the parameter number controlled by RPN				

*Master Fine Tune is controllable by RPN on the C-220.

RPN		Data Entry		
MSB	LSB	MSB	LSB	Comments
OOH	O1H	mmH	11H	Master Fine Tune
		20H	OOH	-50 cents
		.		
		.		
		40H	OOH	0 cent (A4=440.OHz)
		.		
		.		
		60H	OOH	+50 cents

●Program Change

Status	Second
CnH	ppH

n=MIDI Channel	:OH - FH (0-15)		o=ch. 1	15=ch. 16
pp=Program Change Number :OOH - 7FH (0-127)				

●Channel Pressure

Status	Second
DnH	vvH

n=MIDI Channel	:OH - FH (0-15)	O=ch. 1	15=ch. 16
vv=Pressure Value	:OOH - 7FH (0-127)		

*When the VOLUME CONTROL is set to 4 (Channel pressure), then this message is recognized as volume.
*When the VIBRATO CONTROL is set to 2 (Channel pressure), then this message is recognized as vibrato depth.

■Channel Mode Message

●Reset All Controllers

Status	Second	Third
BnH	79H	OOH

n=MIDI Channel	:OH - FH (0-15)	o=ch. 1	15=ch.16

*When Reset All Controllers is recognized, each of the controllers is set as follows:

Controller	Value	
Modulation	OH (0)	[MIN]
Breath Control	7FH (127)	[MAX]
Volume	7FH (127)	[MAX]
Pan	40H (64)	[center]
Expression	7FH (127)	[MAX]
Hold 1	OH (0)	[OFF]
Sostenuto	OH (0)	[OFF]
Channel Pressure	OH (0)	[MIN]

●Local Control

Status	Second	Third
BnH	7AH	vvH

n=MIDI Channel	:OH - FH (0-15)	0=ch. 1	15=ch. 16
vv=Value	:OH - 7FH (0-127)	0-63=OFF	64-127=ON

●All Notes Off

Status	Second	Third
BnH	7BH	OOH

n=MIDI Channel	:OH - FH (0-15)	0=ch. 1	15=ch. 16

*When the All Notes Off message is recognized, all the notes which have been turned on by note on messages are turned off. However, if the hold-1 on message has been recognized, these notes will not be turned off until the hold-1 off message is received.

●OMNI OFF

Status	Second	Third
BnH	7CH	OOH

n=MIDI Channel	:OH - FH (0-15)	0=ch. 1	15=ch. 16

*The OMNI OFF message is also recognized as All Notes Off. *1

●OMNI ON

Status	Second	Third
BnH	7DH	OOH

n=MIDI Channel	:OH - FH (0-15)	0=ch. 1	15=ch. 16

*The OMNI OFF message is also recognized as All Notes Off. *1

●MONO

Status	Second	Third
BnH	7EH	mmH

n=MIDI Channel	:OH - FH (0-15)	0=ch.1	15=ch. 16

*The OMNI OFF message is also recognized as All Notes Off. *1

●POLY

Status	Second	Third
BnH	7FH	OOH

n=MIDI Channel	:OH - FH (0-15)	0=ch. 1	15=ch. 16

*The OMNI OFF message is also recognized as All Notes Off. *1

Note:
*1 C-220 is always set to MODE 3 (OMNI OFF, POLY)

■System Realtime Messages

●Active Sensing

Status
FEH

*Once this message is received, the C-220 expects to accept status or data in sequence within 300 msec intervals. If the unit fails to receive a message within 300 msec after the previous message, it assumes there is a problem somewhere in the MIDI path, and mutes the current sound, sets each of the controllers as below, and stops 300 msec interval monitoring of incoming signal.

■System Exclusive Message

Status Data Byte	
FOH	iiH,ddh,..........eeH
F7H	

FOH	:System exclusive
ii=ID Number	:41H (65)
dd,......ee=Data	:OOH - 7FH (0-127)
F7H	:Eox (End of System Exclusive common)

*You can set the MIDI Mode, Partial reserve number, etc. by System Exclusive Message
*Refer to "Rodgers Exclusive Message" in section 4.

2. TRANSMITTED DATA

■Channel voice messages

●Note Off

Status	Second	Third
8nH	kkH	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch. 1   15=ch. 16
kk=Note number   :16H-6CH (22-108)
vv=Velocity   :01H - 7FH (1-127)

●Note On

Status	Second	Third
9nH	kkH	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch. 1   15=ch. 16
kk=Note number   :16H - 6CH (22-108)
vv=Velocity   :01H - 7FH (1-127)

*The range may be changed by transposition.
*The transpose value can be set within the range of -6 to +5 by panel operation.

The following chart shows the relation between the transmitted note range and transposed value.

Transpose Value	Transmitted note range
-6	22-97
-5	23-98
-4	24-99
-3	25-100
-2	26-101
-1	27-102
0	28-103
+1	29-104
+2	30-105
+3	31-106
+4	32-107
+5	33-108

●Control Change

OModulation Depth

Status	Second	Third
BnH	01H	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch.1   15=ch. 16
vv=Control Value   :OOH - 60H (0-96)

OPan

Status	Second	Third
BnH	OAH	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch.1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)

OExpression

Status	Second	Third
BnH	OBH	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch. 1   15=ch. 16
vv=Control Value   :OOH - 60H (0-96)

OHold 1

Status	Second	Third
BnH	40H	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch. 1   15=ch. 16
vv-Control Value   :OOH - 7FH (0-127)   0=OFF   127=ON

OSostenuto

Status	Second	Third
BnH	42H	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch. 1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)   0=OFF   127=ON

OChorus

Status	Second	Third
BnH	5DH	vvH

n=MIDI Channel   :OH - FH (0-15)   0=ch. 1   15=ch. 16
vv=Control Value   :OOH - 7FH (0-127)   0=OFF   127=ON

*This Chorus On or Off Message will be transmitted by using the CHORUS button only when the TX PROG. C MODE is set to ON.

●Program Change

Status	Second	Third
CnH	ppH	

n=MIDI Channel   :OH - FH (0-15)   0=ch. 1   15=ch. 16
pp=Program change number   OOH - 7FH (0-127)

*This message can be transmitted by panel operation of SEND PROG C.
*When teh TX PROG. C MODE is set to ON, proram changes can be sent by pressing a Tone Select or variation button.

■System realtime message

●Active sensing

Status
FEH

*Active sensing transmits within a 300 msec interval.

■System exclusive message

Status Data Byte
FOH   iiH,ddh,.........eeH
F7H

FOH   :System exclusive
ii=ID Number   :41H (65)
dd,......,ee=Data   :OOH - 7FH (0-127)
f7H   :EOX (End of Exclusive/System common)

*When the TX PROG> C MODE is set to ON, this message will be transmitted by operation of the panel as shown in section 4's Parameter base address table (except for Partial Reserve).

3. MIDI Mode

The C-220 has three MIDI Modes: Normal Mode, Multi-timbral Mode 1, and Multi-timbral Mode 2. The three key modes (WHOLE< DUAL and SPLIT) function in each of the three MIDI Modes. When in either of the two Multi-timbral modes, the setting of the receive channels for UPPER and LOWER voices is inoperable.

■Normal Mode

Normal mode is the basic MIDI mode.

When the KEY MODE is set to DUAL or SPLIT, then both UPPER and LOWER have different receive channels (and transmit channels). When the WHOLE mode is selected, receive (and transmit) channel will use the UPPER channel.

The following chart shows the relation between the Program Change number and tone.

Program Change number	tone
1	PRINCIPAL 8'
2	PRINCIPAL 8' 4'
3	PRINCIPAL CHORUS
4	FLUTE 8'
5	FLUTE 8' 4'
6	FLUTE 16' 8' 4'
7	ELECTRIC ORGAN
8	STRING CELESTE 8'
9	FLUTE CELESTE 8'
10	ORCH OBOE
11	ORCH TRUMPET
12	ORCH STRINGS
13	ORCH CHIMES
14	CHOIR
15	PIANO
16	HARPSICHORD
17	GUITAR
18	HARPSICHORD 8' 4'
19	BELLS
20	ENSEMBLE CELESTE
21	ENSEMBLE P
22	ENSEMBLE MF
23	ENSEMBLE F
24	ENSEMBLE FF
25	PRINCIPAL 8'
26	PRINCIPAL 8' 4'
27	PRINCIPAL CHORUS
28	FLUTE 8'
29	FLUTE 8' 4'
30	FLUTE 16' 8' 4'
31	ELECTRIC ORGAN
32	STRING CELESTE 8'
33	FLUTE CELESTE 8'
34	ORCH OBOE
35	ORCH TRUMPET
36	ORCH STRINGS
37	ORCH CHIMES
38	CHOIR
39	PIANO
40	HARPSICHORD
41	GUITAR
42	HARPSICHORD 8' 4'
43	BELLS
44	ENSEMBLE CELESTE
45	ENSEMBLE P
46	ENSEMBLE MF
47	ENSEMBLE F
48	ENSEMBLE FF
49	PRINCIPAL 8'
50	PRINCIPAL 8' 4'
51	PRINCIPAL CHORUS

52	FLUTE 8'
53	FLUTE 8' 4'
54	FLUTE 16' 8' 4'
55	ELECTRIC ORGAN
56	STRING CELESTE 8'
57	FLUTE CELESTE 8'
58	ORCH OBOE
59	ORCH TRUMPET
60	ORCH STRINGS
61	ORCH CHIMES
62	CHOIR
63	PIANO

■Multi timbral mode 1

In Multi timbral mode 1, there are 7 parts corresponding to receive channels 1, 11, 12, 13, 14, 15 and 16. These parts have specific tones assigned to them.
If transmit channel is not set to 1, 11, 12, 13, 14, 15 or 16, the C-220's keyboard will not be able to generate sound from the internal voices. Each part's tone can be changed through received Program Change Messages. The relation between the Program Change number and tone are the same as Normal mode. Tone setting of each part is nonvolatile.
Each part's Partial reserve number can change by receiving a System Exclusive Message. The maximum number of total partial reserve count is 30.

■Multi timbral mode 2

In Multi timbral mode 2, there are 7 independent parts corresponding to receive channels 1, 2, 3, 4, 5, 6 and 10. These parts can have specific tones assigned to them.
If transmit channel is not set to 1, 2, 3, 4, 5, 6 or 10, the C-220's keyboard will not be able to generate sound from the internal voices.
Each part's tone can be changed through received Program Change Messages. The relation between the Program Change number and tone are the same as Normal mode. Tone setting of each part is nonvolatile.
Each part's Partial reserve number can change by receiving a System Exclusive Message. The maximum number of total partial reserve count is 30.

>■The following chart shows the relation between the tone and use partial number for all MIDI modes:

Tone	Partial number
Principal 8'	1
Principal 8' 4'	1
Principal Chorus	2
Flute 8'	1
Flute 8' 4'	1
Flute 16' 8' 4'	2
Electric Organ	1
String Celeste 8'	2
Flute Celeste 8'	2
Orch Oboe	1
Orch Trumpet	1
Orch Strings	1
Orch Chimes	1
Choir	1
Piano	2
Harpsichord	1
Guitar	1
Harpsochord 8' 4'	1
Bells	1
Ensemble Celeste	3
Ensemble P	2
Ensemble MF	2
Ensemble F	2
Ensemble FF	2

4. EXCLUSIVE COMMUNICATION

You can set the parameter by the Exclusive Communication.
The Partial Reserve message is recognized only in Multi timbral mode.
The C-220's Model ID is 1AH and Device ID is 1OH.

■One-way transfer procedure

●Data set 1   DT1   (12H)

Byte	Description	
FOH	Exclusive	
41H	Manufacturer ID (Roland)	
10H	Device ID	
>1AH	Model	(C-220)
12H	Command ID	(DT1)
aaH	Address MSB	
bbH	Address LSB	
ddH	Data	
.	.	
.	.	
ddH	Data	
sum	Check Sum	
F7H	EOX	(End of Exclusive)

5. PARAMETER ADDRESS MAP (MODEL ID=1AH)

The address is expressed by a 7 bit hexadecimal number.

Address MSB	LSB	
Binary 0aaa aaaa	0bbb bbbb	
Hexadecimal	AA	BB

>■Parameter Base address

Start address	Description			
00 1E	0000 00dd	MIDI Mode		
		0:		Normal Mode
		1:		Multi-timbral 1
		2:		Multi-timbral 2

00 1F	0000 00dd	PAD Mode
		0: Off
		1: Variation 1
		2: Variation 2
		3: Variation 3
00 20	0000 00dd	Key Mode
		0: Whole Mode
		1: Dual Mode
		2: Split Mode
00 21	0000 000d	Velocity Mode
		0: Normal Mode
		1: Reverse Mode
00 22	0ddd dddd	Split Point
		28-103 (key number) *1
00 25	0000 dddd	Reverb Variation
		0: Off
		1-8: Reverb Variation
00 26	0000 dddd	Chorus Variation
		0: Off
		1-8: Chorus Variation
00 29	0000 0ddd	Volume Control
		0: Off
		1: Control Change 11 (Expression)
		2: Control Change 7 (Volume)
		3: Control Change 2 (Breath)
		4: Channel Pressure
00 2A	0000 00dd	Vibrato Control
		0: Off
		1: Control Change 1 (Modulation)
		2: Channel Pressure
00 2B	0xxx xxxx	Ignored
00 2C	0xxx xxxx	Ignored
00 2D	0xxx xxxx	Ignored
00 2E	0xxx xxxx	Ignored
00 2F	0xxx xxxx	Ignored
00 40	0000 0ddd	Octave Shift for ch. 1
00 41	0000 0ddd	Octave shift for ch. 2
00 42	0000 0ddd	Octave shift for ch. 3
00 43	0000 0ddd	Octave shift for ch. 4
00 44	0000 0ddd	Octave shift for ch. 5
00 45	0000 0ddd	Octave shift for ch. 6
00 46	0000 0ddd	Octave shift for ch. 7
00 47	0000 0ddd	Octave shift for ch. 8
00 48	0000 0ddd	Octave shift for ch. 9
00 49	0000 0ddd	Octave shift for ch. 10
00 4A	0000 0ddd	Octave shift for ch. 11
00 4B	0000 0ddd	Octave shift for ch. 12
00 4C	0000 0ddd	Octave shift for ch. 13
00 4D	0000 0ddd	Octave shift for ch. 14
00 4E	0000 0ddd	Octave shift for ch. 15
00 4F	0000 0ddd	Octave shift for ch. 16
		0: -3
		1: -2
		2: -1
		3: 0
		4: +1
		5: +2
		6: +3
00 50	0000 dddd	Voice Level for ch. 1
00 51	0000 dddd	Voice Level for ch. 2
00 52	0000 dddd	Voice Level for ch. 3
00 53	0000 dddd	Voice Level for ch. 4
00 54	0000 dddd	Voice Level for ch. 5
00 55	0000 dddd	Voice Level for ch. 6
00 56	0000 dddd	Voice Level for ch. 7
00 57	0000 dddd	Voice Level for ch. 8
00 58	0000 dddd	Voice Level for ch. 9
00 59	0000 dddd	Voice Level for ch. 10
00 5A	0000 dddd	Voice Level for ch. 11
00 5B	0000 dddd	Voice Level for ch. 12
00 5C	0000 dddd	Voice Level for ch. 13
00 5D	0000 dddd	Voice Level for ch. 14
00 5E	0000 dddd	Voice Level for ch. 15
00 5F	0000 dddd	Voice Level for ch. 16
		0-9: Voice Level (1-10)
00 60	000d dddd	Partial Reserve for part 1
00 61	000d dddd	Partial Reserve for part 2
00 62	000d dddd	Partial Reserve for part 3
0063	000d dddd	Partial Reserve for part 4
00 64	000d dddd	Partial Reserve for part 5
00 65	000d dddd	Partial Reserve for part 6
00 66	000d dddd	Partial Reserve for part 7
		0-30: Partial Reserve Number *2
00 67	0xxx xxxx	Ignored
00 68	0xxx xxxx	Ignored
00 69	0xxx xxxx	Ignored
00 6A	0xxx xxxx	Ignored
00 6B	0xxx xxxx	Ignored
00 6C	0xxx xxxx	Ignored
00 6E	0xxx xxxx	Ignored
00 6F	0xxx xxxx	Ignored
00 70	0000 dddd	Vibrato Depth for ch. 1
00 71	0000 dddd	Vibrato Depth for ch. 2
00 72	0000 dddd	Vibrato Depth for ch. 3
00 73	0000 dddd	Vibrato Depth for ch. 4
00 74	0000 dddd	Vibrato Depth for ch. 5
00 75	0000 dddd	Vibrato Depth for ch. 6
00 76	0000 dddd	Vibrato Depth for ch. 7
00 77	0000 dddd	Vibrato Depth for ch. 8

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0000 dddd    Vibrato Depth for ch. 9
0000 dddd    Vibrato Depth for ch. 10
0000 dddd    Vibrato Depth for ch. 11
0000 dddd    Vibrato Depth for ch. 12
0000 dddd    Vibrato Depth for ch. 13
0000 dddd    Vibrato Depth for ch. 14
0000 dddd    Vibrato Depth for ch. 15
0000 dddd    Vibrato Depth for ch. 16
             0-8: Vibrato Depth (1-8)
                          (0: Off)
```

The Transpose value does not affect the Split Point.
The Partial Reserve message will be ignored if its total number exceeds 30.

RODGERS CLASSIC KEYBOARDS™ C-220

Model C-220 MIDI Implementation Chart Version 1.10

Dec. 22, 1989

Function		Transmitted	Recognized	Remarks
Basic	Default	1	1	
Channel	Changed	1-16 Note 3	1-16 Note 2	
Mode	Default	Mode 3	Mode 3	
	Messages	OMNI OFF, POLY	Yes	
	Altered	***************		
Note		22-108	0-127	
Number	True voice	***************	0-127	
Velocity	Note ON	Yes	Yes	
	Note OFF	Yes	No	
After	Key's	Yes	Yes	
Touch	Ch's	Yes	Note 1	
Pitch Bender		Note 1	Yes	
Control	1	Note 1	Note 1	Modulation
	2	No	Note 1	Breath
	7	No	Note 1	Volume
	10	Note 1	Yes	Pan
Change	11	Note 1	Note 1	Expression
	64	Note 1	Yes	Hold 1
	66	Note 1	Yes	Sostenuto
	93	Note 1	Yes	Chorus depth
	6,38	No	Yes	Data entry MSB,LSB
	100,101	No	Yes	RPN MSB,LSB
	121	No	Yes	Reset all controllers
Prog		Note 1 (0-127)	Note 1 (0-127)	
Change	True #	***************	0-127	
System Exclusive		Yes	Yes	
System	Song Pos	No	No	
	Song Sel	No	No	
Common	Tune	No	No	
System	Clock	No	No	
Real Time	Commands	No	No	
Aux	Local ON/OFF	No	Yes	
	All Notes OFF	No (123)	Yes (123-127)	
Messages	Reset	No	No	

NOTES	NOTE 1	Able to chose between Yes and No
	NOTE 2	Multi timbre 1: 1,11,12,13,14,15,16
		Multi timbre 2: 1,2,3,4,5,6,10
	NOTE 3	The DUAL and SPLIT mode has two channels

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

Rodgers Classic Keyboards™ Digital Keyboard Limited Warranty

This Rodgers Instrument Corporation Warranty covers defects in materials and workmanship. It is effective beginning on the date the instrument is sold by an authorized Rodgers Classic Keyboards™ dealer.

Warranty Coverages

A. **Parts Warranty.** Rodgers Instrument Corporation—1300 N.E. 25th Avenue, Hillsboro, Oregon 97124—will provide at no charge to the original purchaser the parts and labor necessary to repair or replace any defective parts or replacement circuit boards in your Classic Keyboard for a 90-day period. In addition, Rodgers Instrument Corporation will provide at no charge to the original purchaser the parts necessary to repair or replace defective parts in any electronic circuitry or component for an additional 57-month period (a total of 60 months of warranty coverage). Any repaired or replaced parts will be warranted for the unexpired portion of this Warranty only. All transportation charges shall be paid by the Purchaser.

B. **Labor Warranty.** At the conclusion of the 90-day labor warranty period, labor costs shall become the responsibility of the Purchaser.

Conditions and Limitations

This warranty does not apply to:

A. Defects caused by abuse, misuse, neglect, accident, fire, lightning, flood or any other cause beyond the control of Rodgers Instrument Corporation;

B. An instrument purchased from any source other than an authorized Classic Keyboards dealer;

C. Damage or defects caused by improper parts or service;

D. This warranty does not include revisions to product software. Software updates/revisions will be available from time to time for purchase.

ALL INCIDENTAL, SPECIAL AND CONSEQUENTIAL DAMAGES AS A RESULT OF A DEFECT ARE EXCLUDED. IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Procedure to Obtain Warranty Performance

Almost any problem that could occur to your Rodgers is easily repaired. If a defect covered by this Warranty develops, return the instrument to the selling Rodgers Classic Keyboards dealer. Transportation to the selling dealer, along with a copy of your sales receipt or similar proof of purchase is your responsibility. Or you may contact Rodgers Instrument Corporation, Technical Service Department, 1300 N.E. 25th Avenue, Hillsboro, Oregon 97124 with a copy of your sales receipt or similar proof of purchase and ask for shipment instructions to Rodgers Repair Depot.

Serial Number _____   Purchase Date _____   Authorized Rodgers Classic Keyboards Dealer _____

Owner _____   City/State _____

Address _____   Country _____

Rodgers shall have no obligation to enhance or update any product once manufactured. To receive protection of this limited warranty, you must return the registration card within 30 days of the date of purchase. Rodgers Classic Keyboards is a trademark of Rodgers Instrument Corporation.