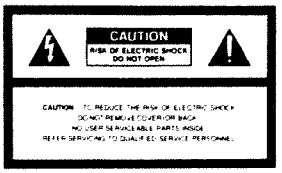
Roland

KR-33

Owner's Manual

DIGITAL KEYBOARD



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

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

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

IMPORTANT SAFETY INSTRUCTIONS

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

1. Read all the instructions before using the product.
2. Do not use this product near water- for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacture.
4. This product, 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 level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
7. The product should avoid using in where it may be effected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
    - A: The power-supply cord or the plug has been damaged; or
    - B: Objects have fallen, or liquid has been spilled into the product; or
    - C: The product has been exposed to rain; or
    - D: The product does not appear to operate normally or exhibits a marked change in performance; or
    - E: The product has been dropped, or the enclosure damaged.
15. 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.

SAVE THESE INSTRUCTIONS

WARNING

THIS APPARATUS MUST BE EARTH GROUNDED.

The three conductors of the mains lead attached to this apparatus are identified with color as shown in the table below, together with the matching terminal on the UK type power plug. When connecting the mains lead to a plug, be sure to connect each conductor to the correct terminal, as indicated.
"This instruction applies to the product for United Kingdom."

MAINS LEADS		PLUG
Conductor	Color	Mark on the matching terminal
Live	Brown	Red or letter L
Neutral	Blue	Black or letter N
Grounding	Green-Yellow	Green, Green-Yellow, letter E or symbol

Bescheinigung des Herstellers /Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND DIGITAL KEYBOARD KR-33

(Gerat, Typ Bezeichnung)

in Ubereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046 / 1984

(Amtsblattverfugung)

funk-entstort ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerates angezeigt und die Berechtigung zur Uberprufung der Serie auf Einhaltung der Bestimmungen eingeraumt.

Roland Corporation Osaka Japan

(Name des Herstellers, Importeurs)

RADIO AND TELEVISION INTERFERENCE

"**Warning** - This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception."

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure.

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

These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures.

- Turn the TV or radio antenna until the interferences stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio-TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

INTRODUCTION

Thank you for purchasing the Roland Digital Keyboard KR-33. The KR-33 utilizes a unique digital signal processing system to reproduce the timbres, dynamics and characteristics of many of the world's most famous acoustic and electronic instruments.

FEATURES

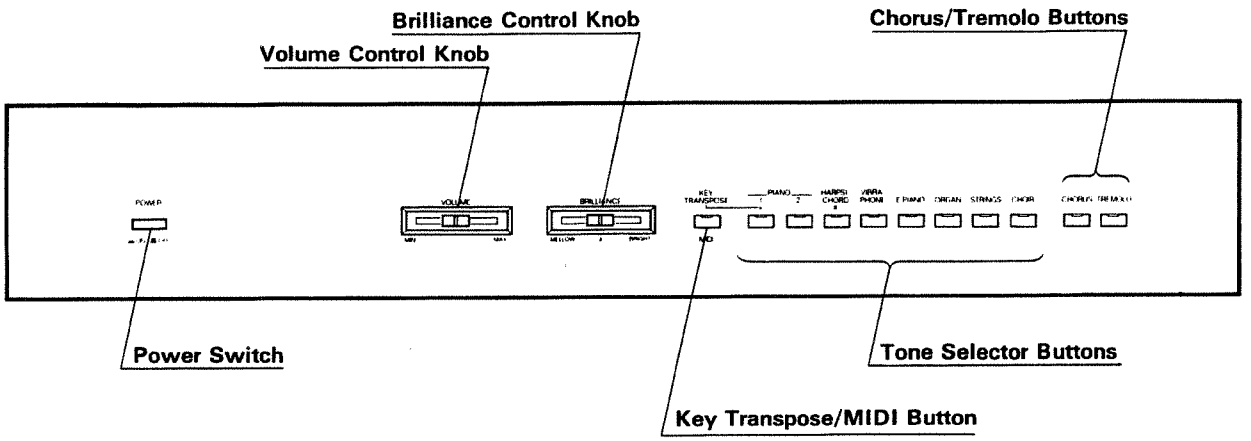
The KR-33 includes eight different instrumental voices; two acoustic grand pianos, harpsichord, vibraphone, electronic piano, organ, strings and choir. Up to two of these voices can be played at the same time.

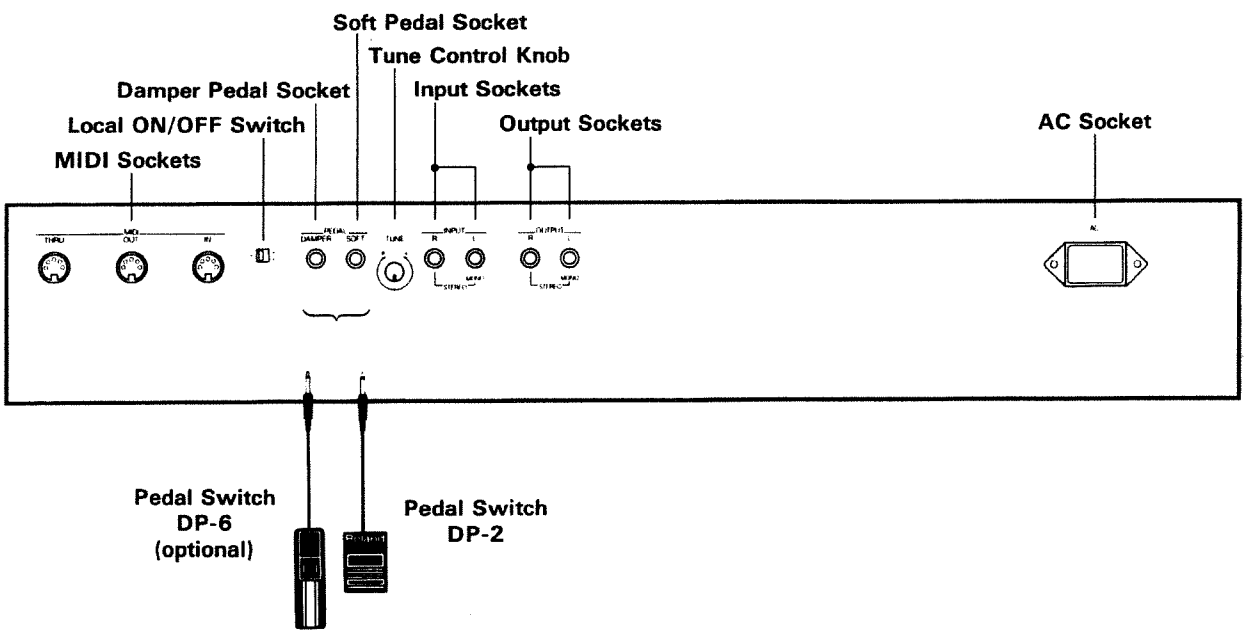
The KR-33 features built-in chorus and tremolo effects.

Each of the timbres of the KR-33 can be controlled by it's own keyboard or through MIDI with full control of touch sensitivity (dynamics).

CONTENTS

PANEL DESCRIPTIONS





IMPORTANT NOTES

Power Supply

Do not use the same socket that is used for any noise generating device, such as a motor or variable lighting system.

This unit might not work properly if the power cable is plugged in with the unit turned on. If this happens, simply turn the unit off, and turn it on again in a few seconds.

The appropriate voltage to be used is shown on the name plate on the rear panel. Be sure that it meets the voltage system in your country.

Power Cord

When disconnecting the power cord from the socket, do not hold the cord but the plug. When the unit is not to be used for a long period, disconnect the power cord.

Location

- Operating this unit near a neon or fluorscent lamp may cause noise interference. If so, change the angle or position of the unit.
- Avoid using this unit in extreme heat or humidity or where it may be affected by dust.

Cleaning

- Use a soft cloth and clean only with a mild detergent.
- Do not use solvents such as paint thinner.

HOW TO SETUP THE KEYBOARD

①Connect the supplied power cord to the AC socket on the rear panel.

②Connect the plug to the wall socket.

*Be sure to take the step 1 then 2. Do not do it the other way round.

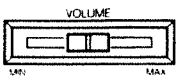
1 OPERATION

1. Basic Procedure

①Switch the KR-33 on.

*For about a second after the KR-33 is switched on, muting circuits function, therefore, no sound is generated.

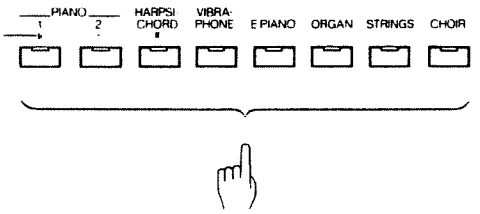
②Adjust the volume with the Volume Control.



2. Tone Selection I

The KR-33 features five piano-type voices (Pianos 1 and 2, Harpsichord, Vibraphone, Electric Piano) and three sustained-type voices (Organ, Strings, Choir).

▶Press the relevant Tone Selector button.



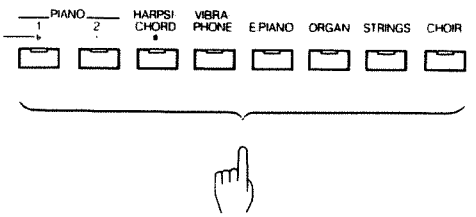
Press on of these buttons

*Normally, when a piano voice is selected, the touch sensitivity function (the volume of sound changes depending how hard the keyboard is played) is engaged.

3. Tone Selection II (Dual Mode)

The Dual mode of the KR-33 allows you to play two voices at the same time.

▶Press two relevant Tone Selector buttons at the same time.



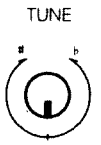
Press two buttons
at the same time

VOICE PRESERVE FUNCTION

The KR-33 features the Voice Preserve function, that is, while you are playing the keyboard or depressing the damper pedal using a certain voice, you can request the voice to be used (the indicator of the selected voice flashes) without the voice acutally changing until you release all keys. To change the voices, lift all keys or turn the damper pedal off.(now the indicator of the new voice is constantly lit.)

4. Tuning

The Tune Control Knob is provided for controlling the overall tuning center of the KR-33. This is especially useful for tuning to other acoustic instruments , synthesizers , and synthesizer sound modules. At its center position, middle A = 442 Hz.



5. Pedal

The Damper (Sustain) Pedal and Soft Pedal sockets are provided to connect the cables from the stand's pedals or the DP-2 or DP-6. The connected pedal functions just like the damper and soft pedal on an acoustic piano.

*The Soft Pedal can also be used as a Sostenuto pedal.

a. Damper Pedal

The Damper Pedal makes a piano-type voice decay slowly and the sustained-type voice keep sounding.

b. Soft Pedal

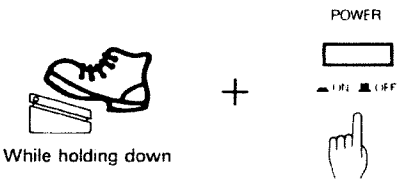
The Soft Pedal serves to make the sound softer.

c. Sostenuto Pedal

How to turn the Soft Pedal to Sostenuto Pedal

①Connect the Pedal to the Soft Pedal socket.

②Switch the KR-33 on while holding the pedal down.



Pressing the Sostenuto Pedal will turn on the Damper of the note currently played, while the following notes will not take on any effect.

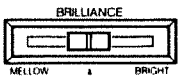
*When the pedal is turned to a Sostenuto function,the Soft function will temporarily case.

To return the pedal to the Soft Pedal function , switch the KR-33 off once, then after a few seconds, switch it on again.

*The KR-33 also allows you to change the damper effect or use the Soft (Sostenuto) Pedal for different functions. See page 13,14 "Changing Performance Controlling Functions /Pedal Functions".

6. Brilliance

As you move the Brilliance Control slider to the right, the sound will be brighter, while moving it to the left makes the sound mellower.



7. Chorus/Tremolo

The KR-33 includes built-in Chorus and Tremolo effects.

a. Chorus

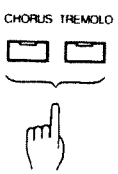
A lush chorus effect can be obtained.

b. Tremolo

The tremolo circuit is stereo and is especially useful when used with the electric piano and vibraphone voices.

Do as follows to activate the chorus or tremolo effect.

▶Press the Chorus or Tremolo button and make sure the corresponding indicator lights up.

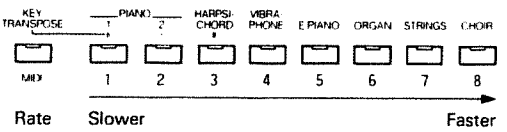


On/Off of the Tremolo and/or Chorus effect can be separately set for each voice and is retained until the KR-33 is switched off.

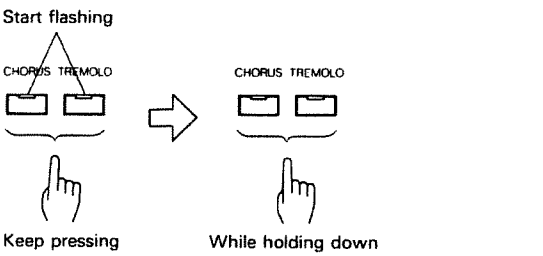
When the KR-33 is switched on, the effects of voices are set as follows :

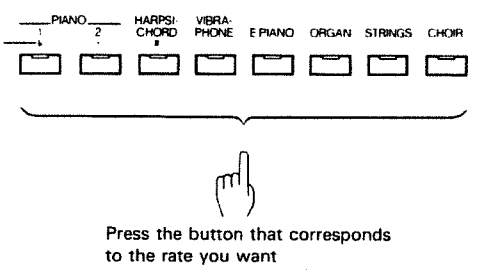
	Chorus	Tremolo
Piano 1	OFF	OFF
Piano 2	OFF	OFF
Harpsichord	OFF	OFF
Vibraphone	OFF	ON
E. Piano	ON	OFF
Organ	OFF	OFF
Strings	ON	OFF
Choir	ON	OFF

The rate of the Chorus or Tremolo effect can be adjusted (8 levels).



▶Hold the Chorus or Tremolo button down, (the flashing indicator on the button becomes constantly lit, and meanwhile, the Tone Selector button which corresponds to the current rate flashes), then press the appropriate Tone Selector button to selecting the desired rate.





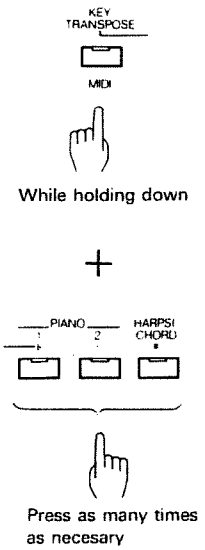
*The rate of Chorus or Tremolo can be set separately for each voice and is retained until the KR-33 is switched off.

*In the Dual Mode (see page 7), the rate set for the left voice will have priority.

8. Key Transpose

The keyboard of your KR-33 can be transposed within a range of a perfect 4th up and a diminished 5th down.

▶While holding the Transpose button down, press either of the following buttons as many times as necessary.



[#] Button (= Harpsichord Button)

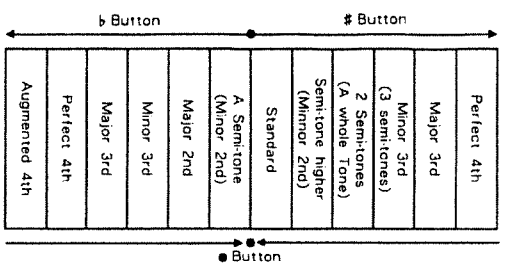
Pressing this button will increase the pitch in semi-tone steps.(This button can be used up to 5 times.)

[♭] Button (= Piano 1 Button)

Pressing this button will decrease the pitch in semi-tone steps.(This button can be used up to 6 times.)

[•] Button (= Piano 2 Button)

This button returns the key to the normal condition.



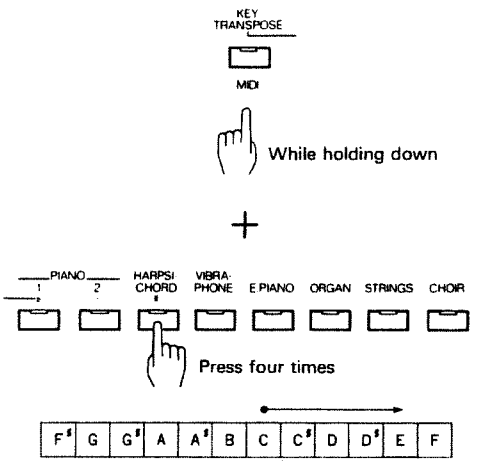
When the transposition is done, the Key Transpose button glows steadily.

Once the key is transposed, the Transpose On or Off can be selected by pressing the Key Transpose button.

*While you are taking the transposing procedure, the KR-33 cannot be played.

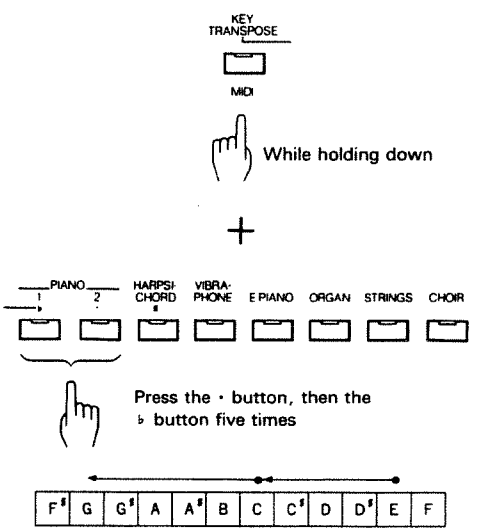
[e.g. 1] Transposing to E

While holding the Key Transpose button down, press the # button four times.



[e.g. 2] Transposing E to G

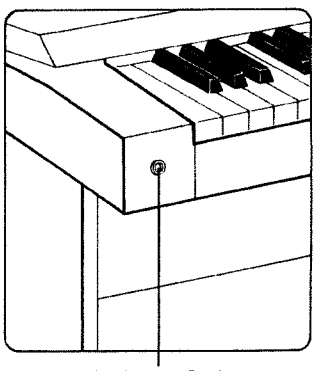
While holding the Key Transpose button down, press the • button once to return to the normal pitch, then press the ♭ button five times (without releasing the Key Transpose button).



9. Headphones

Standard stereo headphones can be used with the KR-33 for private listening and practice.

*Connecting the headphone plug to the Headphone socket will disconnect the internal speakers.



The Volume Control on the front panel will adjust the headphone volume.

2 CHANGING PERFORMANCE CONTROLLING FUNCTIONS

The KR-33 alllows you to change the settings of various performance controlling functions.

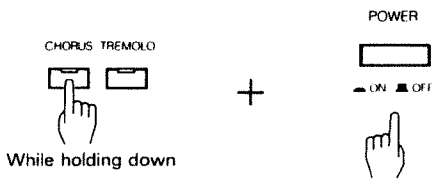
The new setting of a performance controlling function will be retained until the KR-33 is switched off.

1. Touch Sensitivity

a. Volume Change

Dynamics (the volume change caused by different playing manner) can be emphasized.

▶Switch the KR-33 on while holding the Chorus button down.

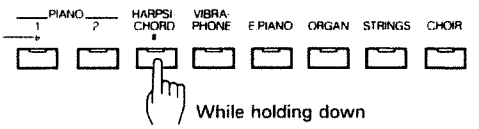


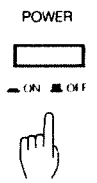
b. On/Off of Touch Sensitivity

The Touch Sensitivity function can be turned on or off.

●The Touch Sensitivity function can be turned off (Touch Sensitivity function does not work) only when a piano-type voice is selected.

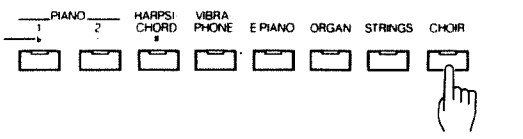
▶Switch the KR-33 on while holding the Harpsichord button (Tone Selector button) down.

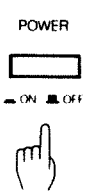




●The Touch Sensitivity function can be turned on (Touch Sensitivity function works) operate only when a sustained-type voice is selected.

▶Switch the KR-33 on while holding the Choir button (Tone Selector button) down.

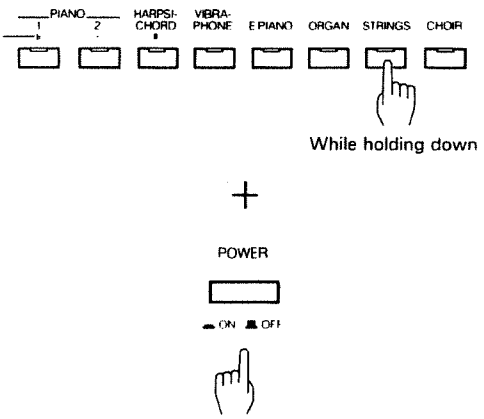




c. Touch Sensitivity Function in the Dual Mode

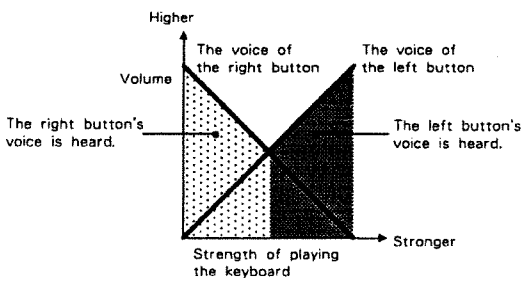
You can set the reversed type Touch Sensitivity effect on either of the two voices used in the Dual Mode.

▶Switch the KR-33 on while holding the Strings button (Tone Selector button) down.



Now, the left voice will sound when you play the KR-33 hard, and the right voice will sound when you play soft.

*In this condition, the Touch Sensitivity function will automatically work even on sustained-type voices.



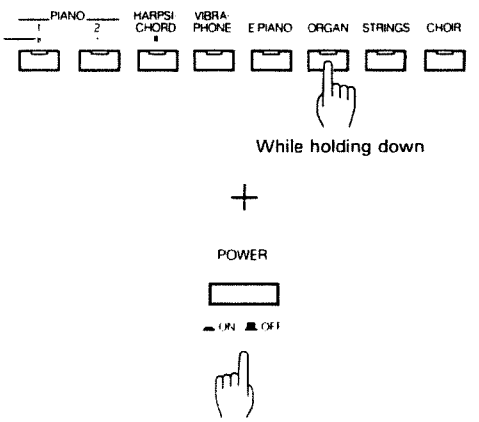
2. Pedal Function

The pedal connected to the Damper or Soft Pedal sockets can be set to function as follows.

a. Damper Pedal Off

You can disengage the Damper pedal function from sustained-type voices.

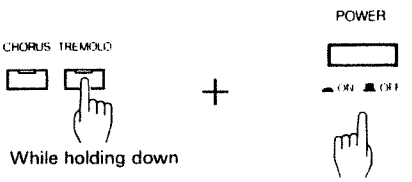
▶Switch the KR-33 on while holding the Organ button (Tone Selector button) down.



b. Voice Selection

By using the pedal connected to the Soft Pedal socket, two voices can be played alternately.

▶**Switch the KR-33 on while holding the Tremolo button down.**



Now, the current voice and the previous voice can be played alternately by pressing the pedal.

*When the pedal is used as above, it cannot be used as a Soft or Sostenuto pedal at the same time.

*The above Pedal Function is available even in the Dual Mode.

[e.g. 1]

If you wish to use Piano 1 and Organ voices alternately by pressing the pedal :

Press the Piano 1 button, then the Organ button.

[e.g. 2]

If you wish to use Piano 1 and Piano 2 + Strings alternately by pressing the pedal :

Press the Piano 1 button, then the Piano 2 and Strings buttons at the same time.

3.Turning Various Functions On Simultaneously

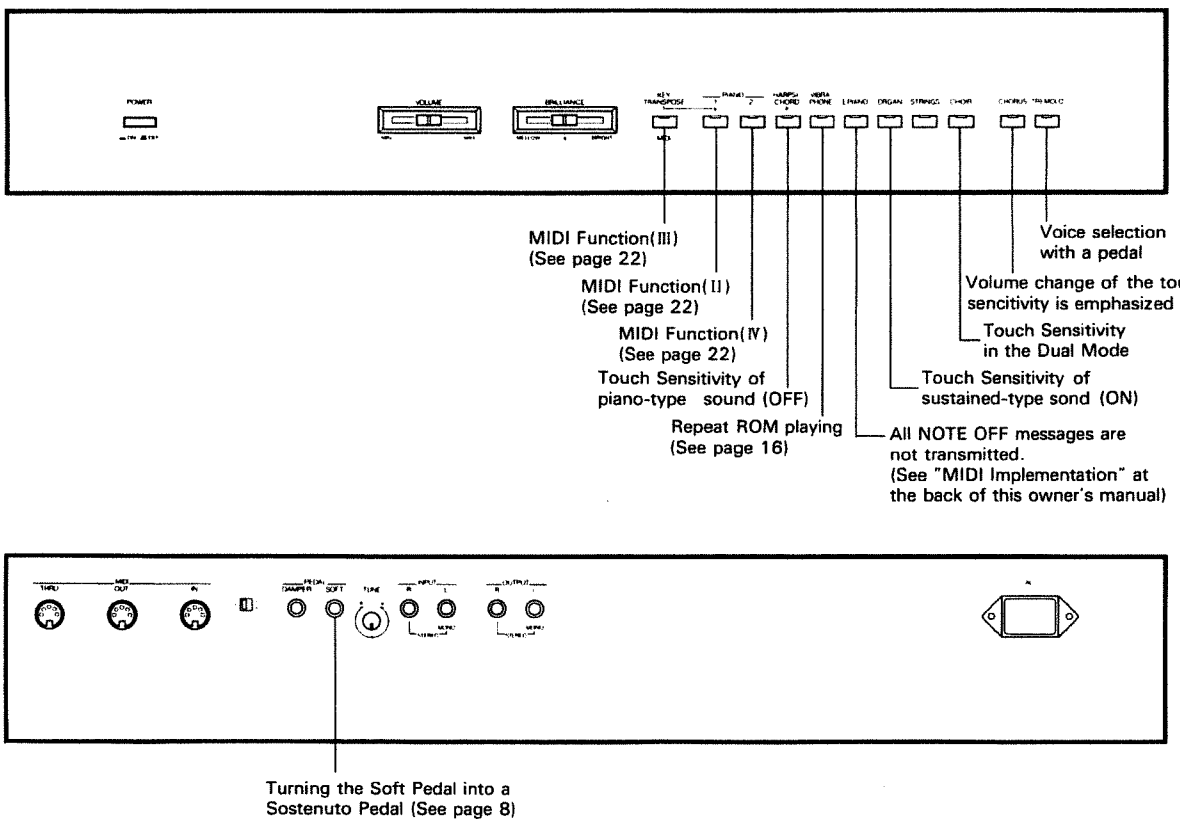
As explained in the previous section, you can change the settings of the following Performance Controlling functions. It is also possible to change the settings of more than one function at the same time.

- **●Volume Change for the Touch Sensitivity (Chorus button)**
- **●On/Off of the Touch Sensitivity (Harpsichord button)**
- **●Touch Sensitivity in the Dual Mode (Strings button)**
- **●Damper Pedal Off (Organ button)**

- **●Voice Selection with a Pedal (Tremolo button)**

If you wish to turn on more than one function at the same time, follow the procedures below:

▶Switch the KR-33 on while holding down any one of the buttons (pedal) you wish to turn on, then press all the buttons (pedal) you wish to turn on in sequence.



*When a button is pressed again, the corresponding function will be turned off.

When the KR-33 is switched on, the indicators of all the relevant buttons are lit and they become brighter when turned on.

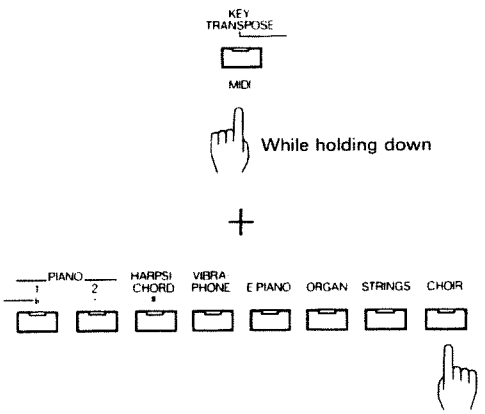
*While taking the above procedure, you cannot change voices.

*The KR-33 does not allow you to select the "Voice Selection with a pedal" and "Sostenuto pedal" functions at the same time.

3 ROM PLAY (Auto Demo)

The KR-33 stores a demonstration song which can be played to experience the excellent qualitly of the instrument voices and the effect of the Multi Timbral mode. (See page 23.) Playing this demonstration song is called ROM Play.

▶While holding the MIDI button down, press the Choir button.



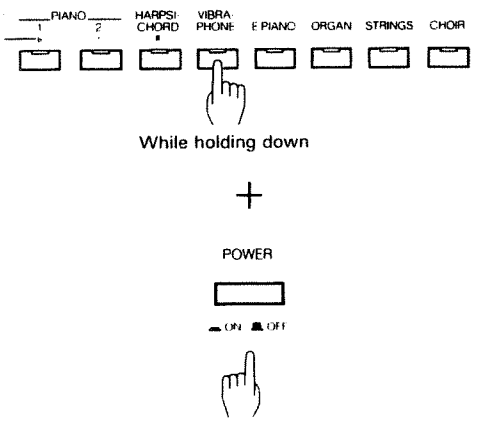
The button of the current voice lights up.

*While the ROM Play is being performed, the KR-33 cannot be played and no MIDI message is received.

*The ROM Play's playing messages cannot be sent through MIDI OUT.

●The demonstration song can be played repeatedly.

▶Turn the KR-33 on while holding the Vibraphone button down.



*If you wish to stop playing, press the MIDI button.

Music by Adrian Scott ©1988 by Adrian Scott

4 SETUP WITH AUXILIARY AUDIO EQUIPMENT

1. Input Sockets

The external input sockets are provided for connecting the outputs of other electronic instrument (e.g. CR-1000, TR-626, MT-32) to the internal speakers and amplifier of the KR-33.

2. Output Sockets

These output sockets are provided for connecting the KR-33 to larger sound systems such as a home stereo system, multi-track recorders, mixer, and/or auxiliary instrument amplifiers.

HOW TO SETUP

①Turn down the volume of the external amplifier connected to the KR-33.

②Connect the Output sockets of the KR-33 to the Line In's (e.g. AUX) of the amplifier.

③Adjust the volume of the amplifier.

*Connecting the headphone plug to the headphones socket will disconnect the internal speakers.

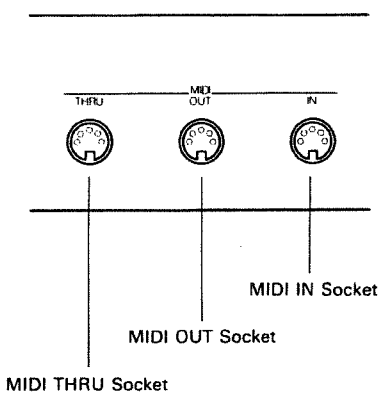
When using the KR-33 on its own, skip this chapter.

5 MIDI

Part of the power of your KR-33 is in the use of the MIDI (Musical Instrument Digital Interface). To learn more about MIDI and the various music systems that can be added to your KR-33, refer to the enclosed booklet " Guide Book For MIDI " and the MIDI implementation chart in the back of this owner' s manual.

1.MIDI Sockets

The KR-33 has MIDI IN, MIDI OUT and MIDI THRU Sockets on the rear panel.



a. MIDI IN Socket

When using the Piano as a MIDI sound module controlled by an external MIDI device such as a sequencer or keyboard, connect the MIDI IN socket to the MIDI OUT or MIDI THRU on the external device.

b. MIDI OUT Socket

When using the KR-33 as a keyboard controller that drives the external device, connect the MIDI OUT socket to the MIDI IN on the external device.

c. MIDI TRHU Socket

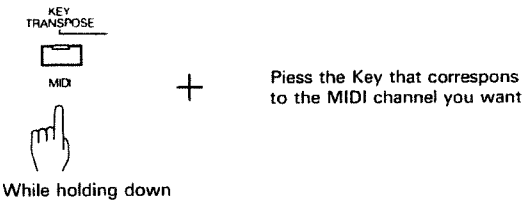
Through this, the exact copy of the signal fed into the MIDI IN is sent out.

2. MIDI Channel Setting

The MIDI channel of the transmitter and receiver should be set to the same number.

Do as follows to set the MIDI channel of the KR-33.

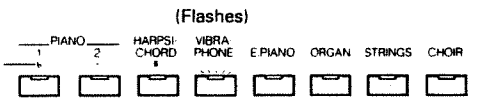
▶While holding the MIDI button down, press the key that corresponds to the MIDI channel number you want.(See page 25.)



You can see the current MIDI channel with the indicator of the corresponding Tone Selector Button.

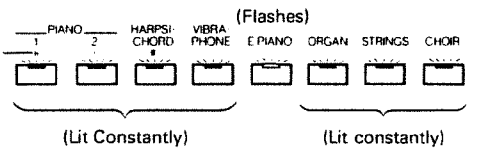
When the MIDI channel currently set is 1 to 8, the corresponding button flashes.

[e.g. 1] When MIDI channel 4 is currently set :



When the MIDI channel currently set is 9 to 16, the corresponding button flashes while all the other buttons are constantly lit.

[e.g.] When MIDI channel 13 is currently set :



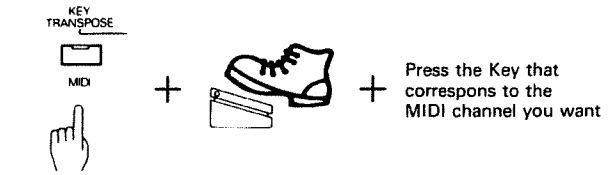
*Normally, the Keyboard is to channel 1 (OMNI OFF/turn-on condition).

The receive and transmit MIDI channels can be set separately.

●Setting the Transmit MIDI Channel

①While holding the MIDI button down, press the pedal connected to the Damper Pedal socket.

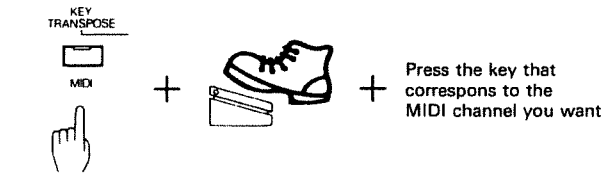
②While still holding both down, press the key that corresponds to the channel you wish.(See page 25.)



●Setting the Receive MIDI Channel

①While holding the MIDI button down, press the pedal connected to the Soft Pedal socket.

②While still holding both down, press the key that corresponds to the channel you wish.(See page 25.)



You can see the MIDI channel you have set with the indicator of the corresponding Tone Selector button.

*If you press a key while depressing the both pedals connected to the Damper and Soft Pedal sockets, the receive and transmit channels are set to the same number.

3. Program Change

Program Change messages are MIDI messages for sound (e.g. Patch, Voice) selection. Program Change numbers are assigned to the sound (e. g. Patch, Voice) numbers on each instrument individually.

a. Transmitting Program Change

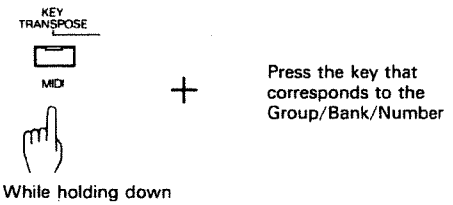
The KR-33 can transmit Program Change numbers (Group, Bank and Number) to an external MIDI device using the keys within the set range (see page 25).

The Group/Bank/Numbers on the Keyboard correspond to the Program Change numbers as shown below.

Program Change Number Table

	NO. / BANK	1	2	3	4	5	6	7	8
A	1	1	2	3	4	5	6	7	8
	2	9	10	11	12	13	14	15	16
	3	17	18	19	20	21	22	23	24
	4	25	26	27	28	29	30	31	32
	5	33	34	35	36	37	38	39	40
	6	41	42	43	44	45	46	47	48
	7	49	50	51	52	53	54	55	56
	8	57	58	59	60	61	62	63	64
B	1	65	66	67	68	69	70	71	72
	2	73	74	75	76	77	78	79	80
	3	81	82	83	84	85	86	87	88
	4	89	90	91	92	93	94	95	96
	5	97	98	99	100	101	102	103	104
	6	105	106	107	108	109	110	111	112
	7	113	114	115	116	117	118	119	120
	8	121	122	123	124	125	126	127	128

▶While holding the MIDI button down, press the keys that correspond to the Group, Bank and Number (see page 25).



Now, the corresponding Program Change Number is transmitted from the MIDI OUT on the KR-33.

b. Receiving Program Change

The voices on the KR-33 can be changed with Program Change messages sent from an external MIDI device to the MIDI IN on the KR-33.

*Some Program Change number may select a pair of voices (in the Dual Mode).

*The Keyboard ignores Program Change numbers 81 to 128.

BANK \ NO		1	2	3	4	5	6	7	8
A	1	(1) Piano 2	(2) Piano 1	(3) Piano 1	(4) Harpsichord	(5) Piano 1	(6) Vibraphone	(7) E. Piano	(8) E. Piano
	2	(9) Organ	(10) Strings	(11) Choir	(12)	(13)	(14)	(15)	(16)
	3	(17) Piano 2	(18) Piano 1	(19) Harpsichord	(20) Vibraphone	(21) E. Piano	(22) Organ	(23) Strings	(24) Choir
			+ Piano 2						
	4	(25) Piano 2	(26) Piano 1	(27) Harpsichord	(28) Vibraphone	(29) E. Piano	(30) Organ	(31) Strings	(32) Choir
		+ Piano 1		+ Piano 1					
	5	(33) Piano 2	(34) Piano 1	(35) Harpsichord	(36) Vibraphone	(37) E. Piano	(38) Organ	(39) Strings	(40) Choir
		+ Harpsichord			+ Harpsichord				
	6	(41) Piano 2	(42) Piano 1	(43) Harpsichord	(44) Vibraphone	(45) E.Piano	(46) Organ	(47) Strings	(48) Choir
		+ Vibraphone				+ Vibraphone			
	7	(49) Piano 2	(50) Piano 1	(51) Harpsichord	(52) Vibraphone	(53) E. Piano	(54) Organ	(55) Strings	(56) Choir
		+ E. Piano					+ E. Piano		
	8	(57) Piano 2	(58) Piano 1	(59) Harpsichord	(60) Vibraphone	(61) E. Piano	(62) Organ	(63) Strings	(64) Choir
		+ Organ						+ Organ	
B	1	(65) Piano 2	(66) Piano 1	(67) Harpsichord	(68) Vibraphone	(69) E. Piano	(70) Organ	(71) Strings	(72) Choir
		+ Strings							+ Strings
	2	(73) Piano 2	(74) Piano 1	(75) Harpsichord	(76) Vibraphone	(77) E. Piano	(78) Organ	(79) Strings	(80) Choir
		+ Choir							

( ) = Program Change Number

4. Chorus/Tremolo On/Off

When the MIDI device connected to the KR-33 features a built-in chorus or tremolo, the effect can be turned on or off as follows :

▶**While holding the MIDI button down, press the Chorus or Tremolo button.**

*This procedure does not affect the on/off control of the KR-33's built-in Chorus or Tremolo.

5. MIDI Functions

The KR-33 can select any of the following four modes that decide how the messages are received and transmitted.

(I) Note On/Off and Pedal messages can be transmitted and received.

(II) Note On/Off and Pedal messages can be transmitted and received. Program Change messages can only be transmitted.

(III) Note On/Off, Pedal and Program Change messages can be transmitted and received.

Program Change messages are also transmitted when a new voice is selected on the KR-33, and meanwhile, Chorus or Tremolo On/Off messages for that voice is transmitted. Chorus / Tremolo On / Off messages are also transmitted when the Chorus or Tremolo is turned on or off.

* This mode may be used when recording data into a MIDI sequencer.

(IV) Performance information (messages) sent from an external MIDI device (e.g. sequencer) can play more than one voice of the KR-33.

* For details, refer to "Multi Timbral Mode" on the following section.

How to select one of the four modes :

(I) Switching the KR-33 on will automatically selects this mode.

(II) Switch the KR-33 on while holding the Piano 1 button down.

(III) Switch the KR-33 on while holding the MIDI button down.

(IV) Switch the KR-33 on while holding the Piano 2 button down.

* It is also possible to select the Mode IV by using the MIDI Exclusive messages. Refer to " MIDI Implementation".

* Two MIDI function modes (I and IV, III and IV) can be simultaneously set by taking a similar procedure as " Turning Various Functions On Simultaneously" on page 15 . This, however, does not apply the II and IV modes. If one of the Piano 1 or 2 Button is pressed, the indicator of the other button will go out. The MIDI function modes I to IV and the Performance Controlling functions can be set at the same time.

[NOTE]

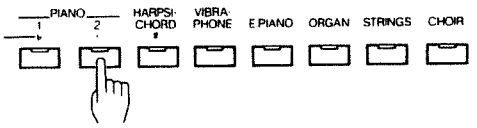
When changing voices using a pedal (see page 14), the voices selected with the Program Change messages may differ. Be sure to use Mode II.

6. Multi Timbral Mode

Three voices (e.g. Piano 1 + Harpsichord + Strings) can be played at the same time by using the performance information (messages) sent from an external MIDI device. This is called Multi Timbral Mode.

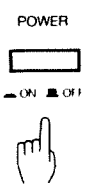
Using this mode, you can play one voice by messages sent from a sequencer while playing a different voice by the KR-33's keyboard.

▶To activate the Multi Timbral mode, switch the KR-33 on while holding the Piano 2 button.



While holding down

+



a. Receive

In the Multi Timbral mode, messages sent from an external MIDI device are received on channel 1, 3 or 4.

*MIDI messages sent on any other channel will be ignored.

b. Voice Selection

When a Program Change number is received on 1, 3 or 4 channel, the corresponding voice on the KR−33 is selected.

*Two voices cannot be received on a channel at the same time.

Vooice	Program Change Number
Piano 1	2, 3 or 5
Piano 2	1
Harpsichord	4
Vibraphone	6
E. Piano	7 or 8
Organ	any of 65 to 72
Strings	any of 49 to 56
Choir	any of 73 to 80

c.Playing the KR-33 using its own keyboard

To play the KR-33 by its own keyboard, set the transmit channel of the keyboard to 1, 3 or 4 which the KR-33 currently uses. (See page 18, 19.) Voices on the Keyboard changes according to the Program Change number sent on the set channel.

*When the transmit channel is set to other than 1, 3 or 4, your performance messages (Note On messages on the keyboard) are not received by the KR-33, and therefore cannot play the KR-33.

*In the Multi Timbral mode, you cannot play your performance in the Dual Mode.

d. Pedal Messages

The KR-33's pedal functions only on the sound created from its own keyboard, and the Pedal messages sent from an external MIDI device works only on the sound created by the MIDI performance messages sent from the external MIDI device.

e. Chorus/Tremolo On/Off Messages

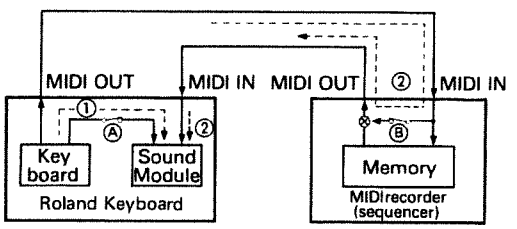
When Chorus / Tremolo On messages are received, the Chorus/Tremolo effect is turned on, while Chorus/Tremolo Off messages turn off the effect. The Chorus/Tremolo On or Off messages are received on channel 1, 3 or 4. The messages received last has priority. Turning the Chorus/Tremolo On or off on the KR-33 will affect all the voices at the same time.

7. Local On/Off

Usually, MIDI devices, including the Roland Keyboard, are not intended to transmit MIDI messages received at MIDI IN to MIDI OUT. However, MIDI sequencers are provided with a SOFT THRU function that enables it to do just like that.

The Soft Thru function can be effective when using a MIDI keyboard and a separate MIDI sound module with a sequencer. That is, to record a keyboard performance from a keyboard controller into a sequencer, and play it using the sound module to the MIDI THRU on the sequencer, play the keyboard controller, then disconnect it from the sequencer to play it back. Such complication can be resolved by the Soft Thru function. Simply turn Soft Thru on, connect the sound module to the MIDI OUT on the sequencer, and you can record and playback without changing condition.

The Soft Thru function, however, must not be turned on when using a sequencer with a Roland Keyboard type keyboard that contains both the keyboard and sound module. If the Soft Thru on the sequencer is set to ON, the Keyboard stutters, or the maximum voices are reduced. This is because the same performance information travels to the sound module section of the Keyboard through the internal connection ① and via sequencer ②. To resolve this problem, the sequencer's Soft Thru should be turned off.



Ⓐ LOCAL SWITCH
Ⓑ SOFT THRU SWITCH

* These switches do not mechanically exist. These are the functions engaged in the software.

Most sequencers default to SOFT THRU OFF, and therfore are free from such troubles. However, if the sequencer cannot be set to SOFT THRU OFF, you can set LOCAL OFF on the Keyboard by setting the Local Switch on the rear panel to the " : " position.

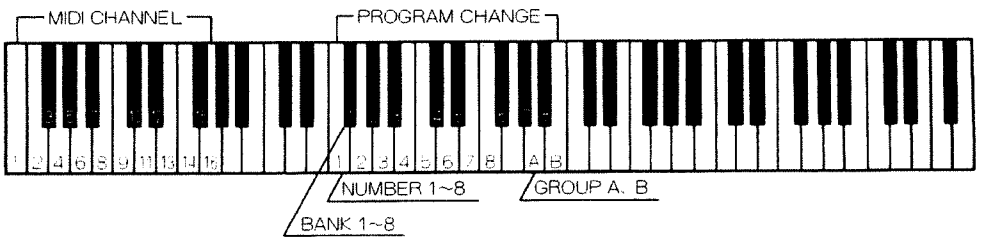
[·] position → LOCAL ON

[:] position → LOCAL OFF

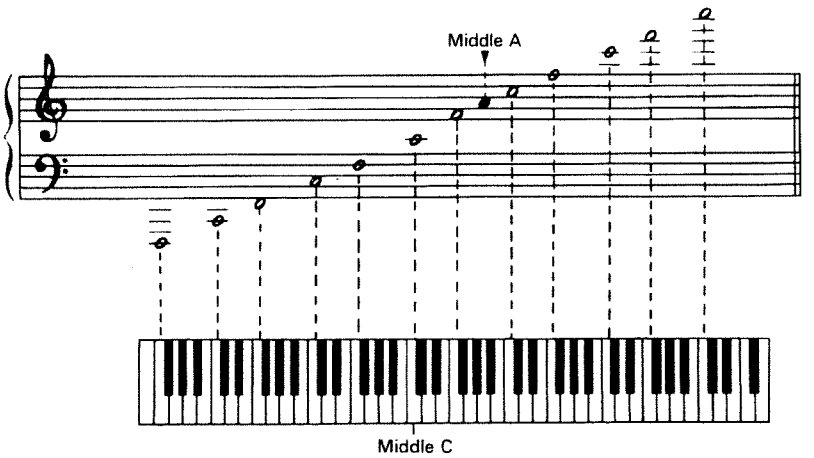
*When the MIDI IN socket is not connected to a MIDI cable, this unit is always set to LOCAL ON no matter where the switch on the near of the unit is set.

■ APPENDIX

MIDI Channel and Program Change correspond to the keyboard as shown below.



Sound Range Diagram



■ SPECIFICATIONS

Keyboard	76Keys
Maximum number of voices	32voice polyphonic
Preset Voices	Piano 1, 2, Harpsichord, Vibraphone, Electric Piano, Organ, Strings, Choir
Effects	Chorus, Tremolo (ON/OFF)
Connectors	Output Sockets (Mono, Stereo) Input Sockets (Mono, Stereo) Damper Pedal Socket Soft Pedal Socket MIDI IN Socket MIDI OUT Socket MIDI THRU Socket
Switchs	Power Switch
Speakers	16cm × 2
Output	8.5W × 2
Finish	Hairline
Dimensions	1158 (W) × 394 (D) × 108 (H) mm 45 – 5/8″ × 15 – 1/2″ × 4 – 1/4″
Weight	16.0Kg/35lb 3oz
Consumption	27W (117V), 47W (220/240V)
Accessories	Music Rest, Power Cord, Pedal Switch (DP-2)
Options	Stand (KS-30/KS-33), Pedal Switch (DP-6)

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV):

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

 # MIDI status : F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version1.0).

 # Manufacturer ID : 41H

The Manufacturer-ID identifies the manufacturer of a MIDI instrument that triggeres an exclusive message. Value 41H represents Roland's Manufacturer-ID.

 # Device-ID : DEV

The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H - 0FH, a value smaller by one than that of a basic channel, but value 00H - 1FH may be used for a device with multiple basic channels.

 # Model-ID : MDL

The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

 # Command-ID : CMD

The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

 # Main data : BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

2. Address-mapped Data Transfer

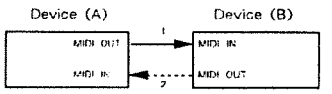
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records--waveform and tone data, switch status, and parameters, for example--to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures : one-way transfer and handshake transfer.

 # One-way transfer procedure (See Section3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

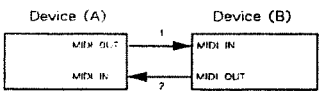


Connectionat point2 is essential for "Request data" procedures. (See Section3.)

 # Handshake-transfer procedure (See Section4 for details.)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connectionat points1 and 2 is essential.

Notes on the above two procedures

- *There are separate Command-IDs for different transfer procedures.
- *DevicesA and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

3. One-way Transfer Procedure

This procedure sends out data all the way until it stops when the messages are so short that answerbacks need not be checked.
For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

 # Request data # 1 : RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.

If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address - dependent order.

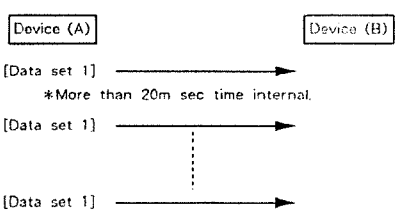
The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

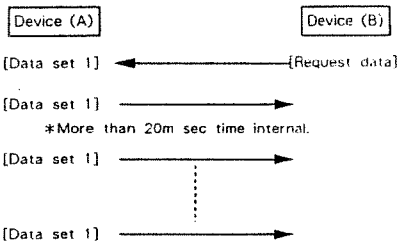
*A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one Model-ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Example of Message Transactions

● Device A sending data to Device B
Transfer of a DT1 message is all that takes place.



● Device B requesting data from Device A
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



4. Handshake-Transfer Procedure

Handshaking is an interactive process where two devices exchange error checking signals before a message transaction takes place, thereby increasing data reliability. Unlike one-way transfer that inserts a pause between message transactions, handshake transfer allows much speedier transactions because data transfer starts once the receiving device returns a ready signal.

When it comes to handling large amounts of data--sampler waveforms and synthesizer tones over the entire range, for example--across a MIDI interface, handshaking transfer is more efficient than one-way transfer.

Types of Messages

Message	Command ID
Want to send data	WSD (40H)
Request data	RQD (41H)
Data set	DAT (42H)
Acknowledge	ACK (43H)
End of data	EOD (45H)
Communication error	ERR (4EH)
Rejection	RJC (4FH)

Want to send data : WSD (40H)

This message is sent out when data must be sent to a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of the data to be sent.

On receiving a WSD message, the remote device checks its memory for the specified data address and size which will satisfy the request. If it finds them and is ready for communication, the device will return an "Acknowledge (ACK)" message.
Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
40H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the data to be sent does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the data should reside.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Request data : RQD (41H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQD message, the remote device checks its memory for the data address and size which satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set (DAT)" message, which contains the requested data. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
41H	Command ID
aaH ⋮	Address MSB ⋮ LSB
ssH ⋮	Size MSB ⋮ LSB
sum	Check sum
F7H	End of exclusive

* The size of the requested data does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the requested data resides.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set : DAT (42H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, the message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

Although the MIDI standards inhibit non-real time messages from interrupting an exclusive one, some devices support a "soft-through" mechanism for such interrupts. To maintaincompatibility with such devices, Roland has limited the DAT to 256bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
42H	Command ID
aaH ⋮	Address MSB ⋮ LSB
ddH ⋮	Data ⋮
sum	Check sum
F7H	End of exclusive

* A DAT message is capable of providing only the valid data among those specified by an RQD or WSD message.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The number of bytes comprising address data varies from one model ID to another.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Acknowledge : ACK (43H)

This message is sent out when no error was detected on reception of a WSD, DAT, "End of data (EOD)", or some other message and a requested setup or action is complete. Unless it receives an ACK message, the device at the other end will not proceed to the next operation.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
43H	Command ID
F7H	End of exclusive

End of data : EOD (45H)

This message is sent out to inform a remote device of the end of a message. Communication, however, will not come to an end unless the remote device returns an ACK message even though an EOD message was transmitted.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
45H	Command ID
F7H	End of exclusive

Communications error : ERR (4EH)

This message warns the remote device of a communications fault encountered during message transmission due, for example, to a checksum error. An ERR message may be replaced with a "Rejection (RJC)" one, which terminates the current message transaction in midstream.

When it receives an ERR message, the sending device may either attempt to send out the last message a second time or terminate communication by sending out an RJC message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4EH	Command ID
F7H	End of exclusive

Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

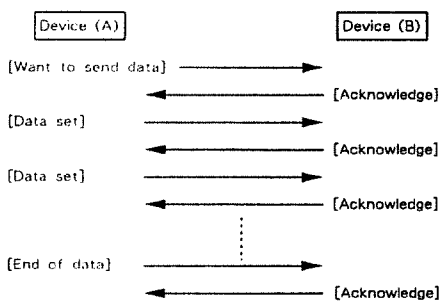
- a WSD or RQD message has specified an illegal data address or size.
- the device is not ready for communication.
- an illegal number of addresses or data has been detected.
- data transfer has been terminated by an operator.
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

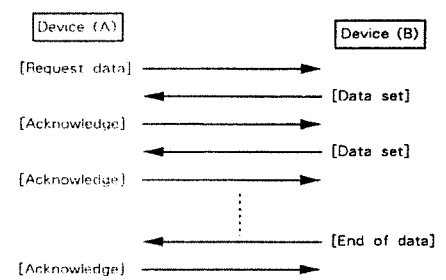
Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

Example of Message Transactions

● Data transfer from device (A) to device (B).

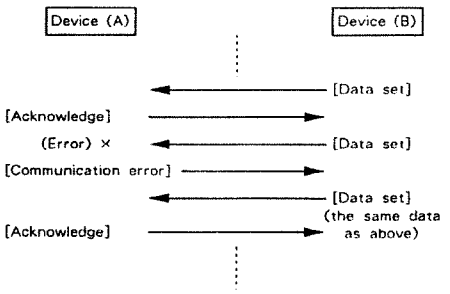


● Device (A) requests and receives data from device (B).

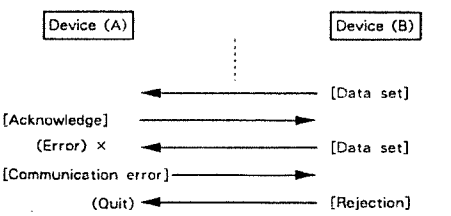


● Error occurs while device (A) is receiving data from device (B).

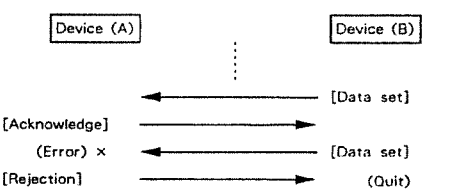
1) Data transfer from device (A) to device (B).



2) Device (B) rejects the data re-transmitted, and quits data transfer.



3) Device (A) immediately quits data transfer.



DIGITAL KEYBOARD
MODEL KR－33

MIDI Implementation

Date : Jul. 18. 1988
Version : 1.00

1. TRANSMITTED DATA

■Note event

● Note off

Status	Second	Third
9nH	kkH	00H

kk = Note number 16H - 6CH (22 - 108)
n = MIDI Channel 0H - 0FH (1 - 16)

● Note on

Status	Second	Third
9nH	kkH	vvH

vv = Velocity 01H - 7FH (1 - 127)

The range may be changed by trasposition.

To transpose the keyboard, hold down the TRANSPOSE/MIDI switch then press the [♭] switch to key down or [#] to key up, once for each semitone.
Pressing the [♭] switch more than 6 times ([#] switch 5 times) does not introduce further effect.
To return the keyboard back to the original key, press the [・].
When the power is first applied, the default transposition is set at 0.

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

Transposed 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

● Hold - 1

Status	Second	Third
Bn	0H	vvH

vv = 00H : Off
vv = 7FH : On

● Sostenuto

Status	Second	Third
BnH	42H	vvH

vv = 00H : Off
vv = 7FH : On

If the power has been applied while the SOFT pedal is being held down, the SOFT pedal will be changed to the SOSTENUTO pedal.

● Soft

Status	Second	Third
BnH	43H	vvH

vv = 00H : Off
vv = 7FH : On

● Tremolo

Status	Second	Third
BnH	5CH	vvH

vv = 00H : Off
vv = 7FH : On

● Chorus

Status	Second	Third
BnH	5DH	vvH

vv = 00H : Off
vv = 7FH : On

When the TREMOLO switch or CHORUS switch is pressed while the TRANSPOSE/MIDI switch is being held down, the function's ON or OFF message sent.
Also, if the power has been applied while the TRANSPOSE/MIDI switch is being held down, the function message can be sent by only pressing the TREMOLO switch or the CHORUS switch.

■Program change

Status	Second
CnH	ppH

pp = Program Change (0 - 27)

The following table shows the GROUP, BANK and NUMBER values related to key position which is set while the TRANSPOSE/MIDI switch is being held down.

Key	GROUP,BANK,NUMBER
A 4	GROUP A
B 4	GROUP B
F# 3	BANK 1
G# 3	BANK 2
A# 3	BANK 3
C# 4	BANK 4
D# 4	BANK 5
F# 4	BANK 6
G# 4	BANK 7
A# 4	BANK 8
F 3	NUMBER 1
G 3	NUMBER 2
A 3	NUMBER 3
B 3	NUMBER 4
C 4	NUMBER 5
D 4	NUMBER 6
E 4	NUMBER 7
F 4	NUMBER 8

When one of the above - mentioned keys is pressed while the TRANSPOSE/MIDI switch is being held down, a PROGRAM CHANGE message will be transmitted.

The transmitted PROGRAM CHANGE numbers are related with the GROUP, BANK and NUMBER values as follows.

GROUP A

BANK \ NUMBER	1	2	3	4	5	6	7	8
1	0	1	2	3	4	5	6	7
2	8	9	10	11	12	13	14	15
3	16	17	18	19	20	21	22	23
4	24	25	26	27	28	29	30	31
5	32	33	34	35	36	37	38	39
6	40	41	42	43	44	45	46	47
7	48	49	50	51	52	53	54	55
8	56	57	58	59	60	61	62	63

GROUP B

BANK \ NUMBER	1	2	3	4	5	6	7	8
1	64	65	66	67	68	69	70	71
2	72	73	74	75	76	77	78	79
3	80	81	82	83	84	85	86	87
4	88	89	90	91	92	93	94	95
5	96	97	98	99	100	101	102	103
6	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119
8	120	121	122	123	124	125	126	127

If the power has been applied while the TRANSPOSE/MIDI switch is being held down, the PROGRAM CHANGE message can be sent by only pressing following switches.

Tone	Program Change Number
Piano 1	1
Piano 2	0
Harpsichord	3
Vibraphone	5
E.Piano	6
Organ	8
Strings	9
Choir	10
Piano 2 + Piano 1	17
Piano 2 + Harpsichord	18
Piano 2 + Vibraphone	19
Piano 2 + E.Piano	20
Piano 2 + Organ	21
Piano 2 + Strings	22
Piano 2 + Choir	23
Piano 1 + Harpsichord	26
Piano 1 + Vibraphone	27
Piano 1 + E.Piano	28
Piano 1 + Organ	29
Piano 1 + Strings	30
Piano 1 + Choir	31
Harpsichord + Vibraphone	35
Harpsichord + E.Piano	36
Harpsichord + Organ	37
Harpsichord + Strings	38
Harpsichord + Choir	39
Vibraphone + E.Piano	44
Vibraphone + Organ	45
Vibraphone + Strings	46
Vibraphone + Choir	47
E.Piano + Organ	53
E.Piano + Strings	54
E.Piano + Choir	55
Organ + Strings	62
Organ + Choir	63
Strings + Choir	71

In MULTI TIMBRE MODE, different program change number to above - mentioned is sent when tone is changed.
Refer to "MULTI TIMBRE MODE".

■Mode message

Status	Second	Third
BnH	mmH	00H

mm = 7BH : ALL NOTE OFF *1
mm = 7CH : OMNI OFF *2
mm = 7FH : POLY *2

*1 When all keys on the keyboard are released, the ALL NOTES OFF (BnH, 7BH, 0) is sent in the Basic Channel.

*2 When the power is first applied or the Basic Channel is changed, OMNI OFF and POLY are sent in the Basic Channel.

■Exclusive

Status
F0H : System Exclusive
F7H : EOX (End of Exclusive)

If the power has been applied while the TRANPOSE/MIDI switch is being held down, these functions can be sent as Exclusive message.

Chorus mode
Tremolo mode

These Excusive message sent by changeing Chorus mode or Tremolo mode.

(1) Chorus mode

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (daa et)
00H Address (msb)
06H Address (lsb) = Chorus mode
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 06H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H : Slow
vv = 10H :
vv = 20H :
vv = 30H :
vv = 40H :
vv = 50H :
vv = 60H :
vv = 70H : Fast

(2) Tremolo mode

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
07H Address (lsb) = Tremolo mode
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 07H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H : Slow
vv = 10H :
vv = 20H :
vv = 30H :
vv = 40H :
vv = 50H :
vv = 60H :
vv = 70H : Fast

■Active sensing

Status
FEH

2. RECOGNIZED RECEIVE DATA

■Note event

● Note off

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

kk = Note number 0H - 7FH (0 - 127)
vv = Velocity ignored
n = MIDI Chnel 0H - 0FH (1 - 16)

● Note on

Status	Second	Third
9nH	kkH	vvH

vv = Velocity 01H - 7FH (1 - 127)

Note numbers outside of the range 22 - 108 are transposed to the nearest octave inside this range.
The transpose function does not affect the recognized note numbers.

■Control change

● Hold - 1

Status	Second	Third
BnH	40H	vvH

vv = 00H - 3FH : Off
vv = 40H - 7FH : On

● Sostenuto

Status	Second	Third
BnH	42H	vvH

vv = 00H - 3FH : Off
vv = 40H - 7FH : On

If the power has been applied while Organ switch is being held down, Hold - 1 and Sostenuto message does not affect sustaining tones.

● Soft

Status	Second	Third
BnH	43H	vvH

vv = 00H - 3FH : Off
vv = 40H - 7FH : On

Received Hold - 1, Sostenuto and Soft messages affect only MIDI note event.

● Tremolo

Status	Second	Third
BnH	5CH	vvH

vv = 00H - 3FH : Off
vv = 40H - 7FH : On

● Chorus

Status	Second	Third
BnH	5DH	vvH

vv = 00H - 3FH : Off
vv = 40H - 7FH : On

If the power has been applied while Piano 1 switch is being held down, Tremolo and Chorus message is ignored.

■ Program change

Status	Second
CnH	ppH

pp = Program change (0 - 79)

If the power has been applied while Piano 1 switch is being held down, this message is ignored.
Received Program change messages are assigned as follows.
The program numbers 11 - 15, 80 - 127 are ignored.

Program Change Number	Tone
0	Piano 2
1	Piano 1
2	Piano 1
3	Harpsichord
4	Piano 1
5	Vibraphone
6	E.Piano
7	E.Piano
8	Organ
9	Strings
10	Choir
16	Piano 2
17	Piano 2 + Piano 1
18	Piano 2 + Harpsichord
19	Piano 2 + Vibraphone
20	Piano 2 + E.Piano
21	Piano 2 + Organ
22	Piano 2 + Strings
23	Piano 2 + Choir
24	Piano 1 + Piano 2
25	Piano 1
26	Piano 1 + Harpsichord
27	Piano 1 + Vibraphone
28	Piano 1 + E.Piano
29	Piano 1 + Organ
30	Piano 1 + Strings
31	Piano 1 + Choir
32	Harpsichord + Piano 2
33	Harpsichord + Piano 1
34	Harpsichord
35	Harpsichord + Vibraphone
36	Harpsichord + E.Piano
37	Harpsichord + Organ
38	Harpsichord + Strings
39	Harpsichord + Choir
40	Vibraphone + Piano 2
41	Vibraphone + Piano 1
42	Vibraphone + Harpsichord
43	Vibraphone
44	Vibraphone + E.Piano
45	Vibraphone + Organ
46	Vibraphone + Strings
47	Vibraphone + Choir
48	E.Piano + Piano 2
49	E.Piano + Piano 1
50	E.Piano + Harpsichord
51	E.Piano + Vibraphone
52	E.Piano
53	E.Piano + Organ
54	E.Piano + Strings
55	E.Piano + Choir
56	Organ + Piano 2
57	Organ + Piano 1
58	Organ + Harpsichord
59	Organ + Vibraphone
60	Organ + E.Piano
61	Organ
62	Organ + Strings
63	Organ + Choir
64	Strings + Piano 2
65	Strings + Piano 1
66	Strings + Harpsichord
67	Strings + Vibraphone
68	Strings + E.Piano
69	Strings + Organ
70	Strings
71	Strings + Choir
72	Choir + Piano 2
73	Choir + Piano 1
74	Choir + Harpsichord
75	Choir + Vibraphone
76	Choir + E.Piano
77	Choir + Organ
78	Choir + Strings
79	Choir

In MULTI TIMBRE MODE, recognized program change numbers are differnt to above - mentioned program change numbers.
Refer to "MULTI TIMBRE MODE".

■Mode message

●Local on/off

Status	Second	Third
BnH	7AH	vvH

vv = 00H - 3FH : Off
vv = 40H - 7FH : On

When the LOCAL OFF is recognized, all the notes which have been turned ON only by internal keyboard ON are turned OFF.

●All note off

Status	Second	Third
BnH	7BH	00H

When the ALL NOTE OFF is recognized, all the notes which have been turned ON only by MIDI IN note ON messages are turned OFF. However, if the HOLD - 1 ON message has been recognized, these ON notes will be not turned OFF until the HOLD - 1 OFF message is received.

●OMNI OFF

Status	Second	Third
BnH	7CH	00H

●OMNI ON

Status	Second	Third
BnH	7DH	00H

●MONO

Status	Second	Third
BnH	7EH	0mH

●POLY

Status	Second	Third
BnH	7FH	00H

These Mode Message (2nd byte = 124 - 127) are also recognized as ALL NOTE OFF. Mode Messages are recognized as follows.

	POLY (127)	MONO ON (126) mmmm = 1	MONO ON (126) mmmm ≠ 1
OMNI OFF (124)	OMNI OFF POLY	OMNI OFF POLY	OMNI ON POLY
OMNI ON (125)	OMNI ON POLY	OMNI ON POLY	OMNI ON POLY

■Exclusive

Status
F0H : System Exclusive
F7H : EOX (End of Exclusive)

These functions are assigned for recognized Exclusive message.

MULTI TIMBRE MODE on/off
Chorus mode
Tremolo mode
Decay tone velocity sensitivity
Sustaining tone velocity sensitivity
Reversed velocity mode on/off
Partial reserve count

(1) MULTI TIMBRE MODE on/off

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
00H Address (lsb) = MULTI TIMBRE MODE
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 00H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H : MULTI TIMBRE MODE off
vv = 01H - 7FH : MULTI TIMBRE MODE on

Refer to "MULTI TIMBRE MODE"

(2) Chorus mode

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
06H Address (lsb) = Chorus mode
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 06H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H - 0FH : Slow
vv = 10H - 1FH : |
vv = 20H - 2FH : |
vv = 30H - 3FH : |
vv = 40H - 4FH : |
vv = 50H - 5FH : |
vv = 60H - 6FH : |
vv = 70H - 7FH : Fast

(3) Tremolo mode

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
07H Address (lsb) = Tremolo mode
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 07H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H - 0FH : Slow
vv = 10H - 1FH : |
vv = 20H - 2FH : |
vv = 30H - 3FH : |
vv = 40H - 4FH : |
vv = 50H - 5FH : |
vv = 60H - 6FH : |
vv = 70H - 7FH : Fast

(4) Decay tone velocity sensitivity

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
08H Address (lsb) = Decay tone velocity sensitivity
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 08H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H : Velocity sensitivity off
vv = 01H - 7FH : Velocity sensitivity on

(5) Sustaining tone velocity sensitivity

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
09H Address (lsb) = Sustaining tone velocity sensitivity
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 09H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H : Velocity sensitivity off
vv = 01H - 7FH : Velocity sensitivity on

(6) Reverse velocity mode on/off

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
0AH Address (lsb) = Reverse Velocity
vvH Data vv = 00H - 7FH
ssH Sum ss : 00H + 00H + vvH + ssH = 0
F7H End of Exclusive

vv = 00H : Revese velocity off
vv = 01H - 7FH : Revese velocity on

(7) Partial reserve count

F0H Status of System Exclusive
41H Roland ID
00H Device ID
1AH Model ID
12H Command ID (data set)
00H Address (msb)
1nH Address (lsb) n = 0, 2, 3 = Partial reserve count
vvH Data vv = 02H - 1CH
ssH Sum ss : 00H + 00H + vvH + ssH = 0
F7H End of Exclusive

n = Part No.
0 : Part 1 (MIDI Channel 1)
2 : Part 2 (MIDI Channel 3)
3 : Part 3 (MIDI Channel 4)
vv = 02H - 1CH

In MULTI TIMBRE MODE, Partial reserve count can be recognized.
When the sum of the partial reserve count exceed 32, this message ignored.
Refer to "MULTI TIMBRE MODE".

■Active sensing

Status
FEH : Active sensing

3. BASIC CHANNEL SETTING

When the power is first applied, the transmit and the receive Channel is normally set to 1, and the receiver is set to Mode 3 (OMNI OFF, POLY).
However, the transmit and the receive channel may be chaned. To change transmit channel, press the TRANSPOSE/MIDI switch and hold down Damper pedal then select the key on keyboard as follow corresponding to the required MIDI channel.
To change receive channel, press the TRANSPOSE/MIDI switch and hold down Soft pedal then select the key on keyboard as follow corresponding to the required MIDI channel.
To change transmit and receive channels at the same, press the TRANSPOSE/MIDI switch only then select the key on keyboard as follow corresponding to the required MIDI channel.
When the highest key (G7) on the keyboard is pressed while the TRANSPOSE/MIDI switch has been held down, the transmit and the recieve channel are set to 1, and the receiver is set to Mode 1 (OMNI ON, POLY).
If the damper pedal is held down and the soft pedal not (changed only transmit channel), the KR-33 can not be set to Mode 1 (OMNI ON, POLY).

Key	Basic Channel	OMNI
Power - on	1	OFF
E 1	1	OFF
F 1	2	OFF
F# 1	3	OFF
G 1	4	OFF
G# 1	5	OFF
A 1	6	OFF
A# 1	7	OFF
B 1	8	OFF
C 2	9	OFF
C# 2	10	OFF
D 2	11	OFF
D# 2	12	OFF
E 2	13	OFF
F 2	14	OFF
F# 2	15	OFF
G 2	16	OFF
G 7	1	ON

In MULTI TIMBRE MODE, the KR-33 can not be set to Mode 1 (OMNI ON, POLY). Refer to "MULTI TIMBRE MODE".

4. MULTI TIMBRE MODE

If the power has been applied while the Piano 2 switch is being held dow, or the System Exclusive Message (Multi timbre ON) has been received, the KR-33 turns to MULTI TIMBRE MODE.
Also, if the power is applied again while no switches or any except Piano 2 are held down, or the System Exclusive Message (MULTI TIMBRE MODE OFF) has been received, the KR-33 returns from this mode.

■Channel and Part

In MULTI TIMBRE MODE, there are 3 parts, corresponding to receive channel 1,3 and 4. These receive channels are fixed (can not be chaned). Transmit MIDI message sent through transmit channel.
If transmit channel not set to 1,3 or 4, the KR-33 can not to be connected to the part.

■Note event

The note event is sent through the Transmit channel.
The note event on the recognized channels can be recognized.
Ignored other channel's note event.

■Control change

Hold - 1, Sostenuto, SoftThese message are sent through the Transmit channel.
These message on the recoginzed channels are indivifually affect
received channel's notes.

● Tremolo, Chorus

These message are sent through the Transmit channel.
These message on the recognized channels will change the effect.

■Program change

The Program change is sent through the Transmit channel.
The Program change on the recognized channels will change the corresponding channel's tone.
Transmitted and received Program change numbers are assigned as follows.

Tone	Program Change Number
Piano 1	1 (2, 4)
Piano 2	0
Harpsichord	3
Vibraphone	5
E.Piano	6 (7)
Organ	64 (65 - 71)
Strings	48 (49 - 55)
Choir	72 (73 - 79)

■Mode message

Can not recognize Mode messages, always in Mode 3 (OMNI OFF POLY).

DIGITAL KEYBOARD
Model KR-33

MIDI Implementation Chart

Date : Jul. 18. 1988
Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	
	Changed	1 - 16	1 - 16	
Mode	Default	3	3	
	Messages	POLY, OMNI OFF	POLY, OMNI ON/OFF	
	Altered	*********	MONO (M≠1) →1, (M=1) →3	
Note Number		22 - 108	0 - 127	
	True Voice	*********	22 - 108	
Velocity	Note ON	○	○	v = 1 - 127
	Note OFF	× (9n, v = 0)	○	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	×	
Control Change	64	○	○	Damper Pedal
	66	○	○	Sostenuto Pedal
	67	○	○	Soft Pedal
	92	○	○	Tremolo
	93	○	○	Chorus
Prog Change		○ (0 - 127)	○ (0 - 79) can be ignored by	
	True #	*********	0 - 79 power - up setting	
System Exclusive		○	○	
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Message	Local ON/OFF	×	○	
	All Notes OFF	○	○ (123 - 127)	
	Active Sense	○	○	
	Reset	×	×	
Notes		When power on, ch - 1 OMNI OFF and POLY are sent. When Basic Channel is changed, Mode is set to 3.		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No

■HOW TO ASSEMBLE THE KS-30 (Optional)

Joint bolt C ×4

Joint nut D ×4

knob bolt E ×4

Assembling Procedure

①Insert the Joint nuts D into the holes on the back panel A, and adjust the joint nuts D with the screwdriver provided as shown in Fig 2.

②Attach the back panel A to the side panels B, and tighten the joint bolts C.

③Place the keyboard on the stand, and fix with the knob bolts E.

④Loosen the cord clamp's screw F with the screwdriver provided, put the power cord into the clamp F, and retighten the screw.(Fig 3)

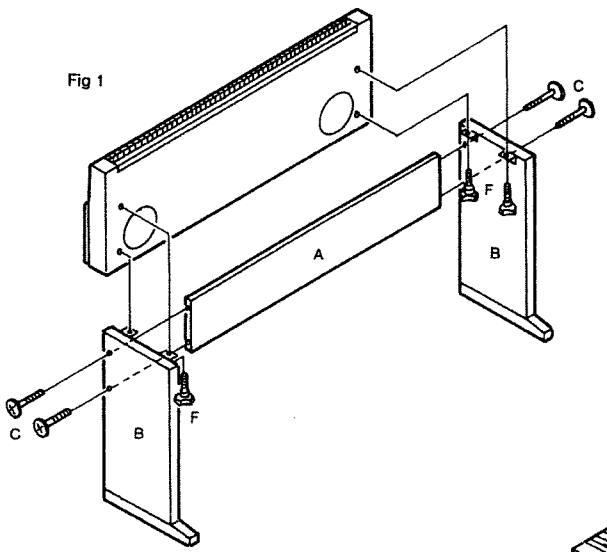


Fig 1

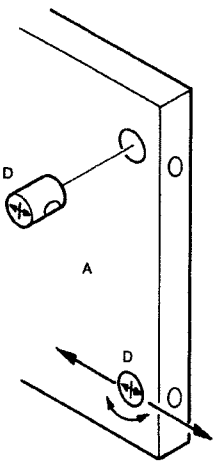


Fig 2

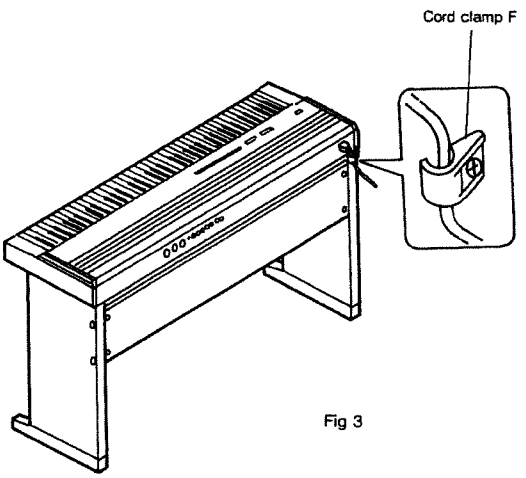
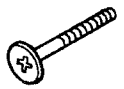


Fig 3

■HOW TO ASSEMBLE THE KS-33 (Optional)

Joint knob D  ×8

Joint nut E  ×4

Knob bolt F  ×4

Assembling Procedure.

①Attach the side panels B to both ends of the pedal unit A with the holders on B facing inside, then tighten the joint bolts D.

②Insert the joint nuts E into the holes on the back panel C, and adjust the joint nuts E with the screwdriver provided as shown in Fig 2.

③Attach the back panel C to the side panels B, and tighten the joint bolts D.

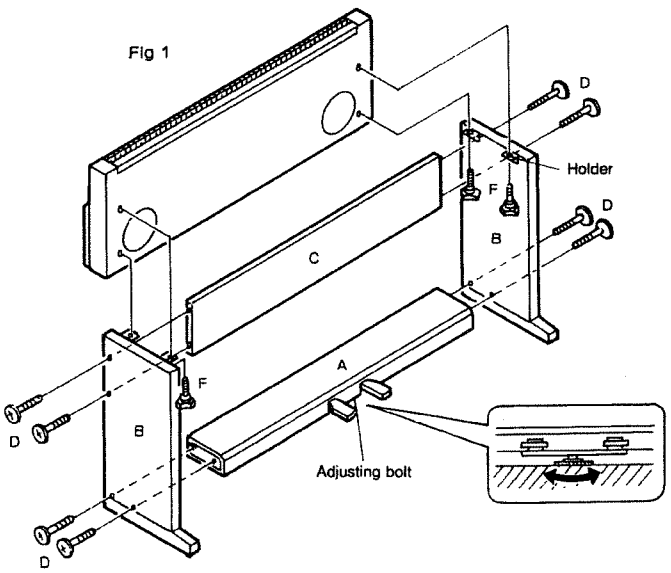
④Place the keyboard on the stand, and fix with the knob bolts F.

⑤Loosen the cord clamp's screw G with the screwdriver provided, put the power cord into the clamp G, and retighten the screw.(Fig 3)

⑥Push the pedal cord into the cord clamp H, then connect it to the jack on the piano.

⑦After installing the assembled stand in place, turn the adjusting bolt to prevent deflection of the pedal unit.

Fig 1



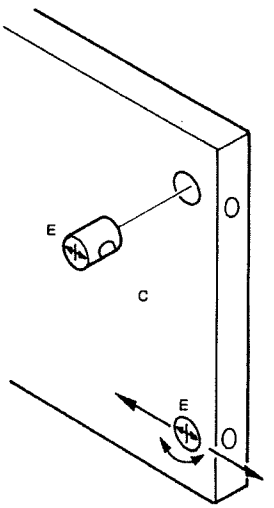


Fig 2

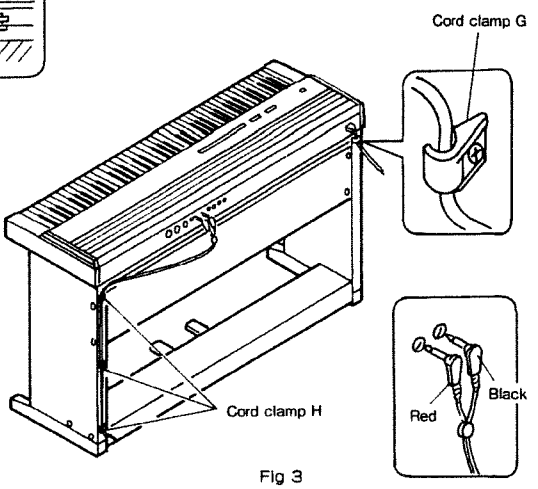


Fig 3

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