

# ACOUSTIC KEYBOARD PICKUP KP-24 OWNER'S MANUAL

## ■ INTRODUCTION

Thank you, and congratulations on your choice of the Roland KP-24 Acoustic Keyboard Pickup. The KP-24 can be installed on an acoustic piano (or many other keyboard instruments not equipped for MIDI) in order to transform it into a MIDI controller that can be used to play automatic accompaniment units, such as Roland's Realtime Arranger. A whole new world of accompaniment for your music can easily be realized by combining the KP-24 with a Realtime Arranger (Roland RA series; available for separate purchase).

To ensure proper operation, and years of trouble-free service, please take the time to read through this Owner's Manual before starting out.

Copyright ©1995 ROLAND Corporation

All rights reserved. No part of this publication may be reproduced in any form without the permission of Roland Corporation.

### About the Realtime Arranger

The Realtime Arranger provides a collection of Roland's unique sounds, and various Music Styles from all over the world. Designed to be combined with an electronic musical instrument such as a Roland Digital Piano, they allow you to enjoy ensemble performances by producing an automatic orchestral accompaniment.

By using the KP-24 together with the Realtime Arranger, you can enjoy ensemble performances with automatic accompaniment using keyboard instruments that do not have MIDI connectors (such as an acoustic piano). Some of the Realtime Arrangers are equipped with only MIDI connectors, while others feature an RRC (Roland Remote Control) IN connector in addition to the MIDI connectors. The KP-24 can be connected with either kind.

## ■ FEATURES

The KP-24 can be connected to a Realtime Arranger equipped with an RRC (Roland Remote Control) IN connector. You will then be able to enjoy automatic accompaniment with the keyboard instrument you have, such as an acoustic piano.

By using the supplied RRC-MIDI Box, you can convert the KP-24's RRC output into MIDI output. This allows you to connect the KP-24 to a Realtime Arranger (or other external MIDI device) that is not equipped with an RRC IN connector.

Equipped with 24 optical sensors that detect key-press information from each key. This allows a full two octaves worth to be constantly monitored. The information it reads is sent out to the Realtime Arranger in the form of note messages (messages describing in detail which key was pressed, for how long, etc.).

You can install it simply by placing it on top of your keyboard instrument. It requires no complicated conversions or adjustments.

## ■ IMPORTANT NOTES

When using an RRC-MIDI Box, use only the specified AC adaptor (BOSS-PSA series: sold separately). Use of any other AC adaptor could result in damage, malfunction or electric shock.

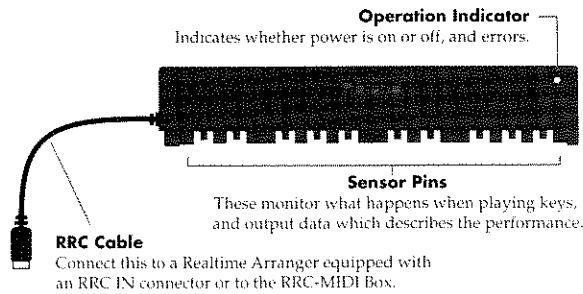
- Do not subject the unit to temperature extremes (eg., direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas, or areas that are subject to high levels of vibration.
- Do not expose the unit to temperature extremes or install it near devices that radiate heat. Direct sunlight in an enclosed vehicle can deform or discolor the unit.
- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.
- To avoid the risk of electric shock, do not open or modify the unit. Once you open the unit, the fine-adjustment for each sensor may be required.
- When disconnecting the AC adaptor from the power outlet, grasp the plug itself; never pull on the cord.
- Make sure you always have this unit placed so it is level and sure to remain stable. Otherwise, if played while tilted, you risk causing damage to the keyboard as a result of the unnatural degree of force that might be applied to certain parts of it.
- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit.
- Should a malfunction occur, or if you suspect there is a problem, discontinue use immediately. Contact qualified service personnel as soon as possible.

### [KP-24's Warranty]

The KP-24's warranty is concerned solely with the overall quality of manufacture and basic operational ability of the KP-24 and the supplied RRC-MIDI Box. We can accept no responsibility whatsoever with regard to any changes in appearance or operational problems that might occur as a result of installation or modification of the KP-24. We also accept no responsibility whatsoever for any damage that might occur to any keyboard instrument onto which the KP-24 has been installed.

## ■ PANEL DESCRIPTIONS

### □ KP-24



### □ RRC-MIDI Box

#### MIDI OUT Connector

This transmits performance information received from the KP-24 to other MIDI devices, such as a Realtime Arranger.

#### RRC Connector

Performance information from the KP-24 is received at this connector.

#### DC IN Jack (DC IN)

Accepts connection of an AC adaptor.

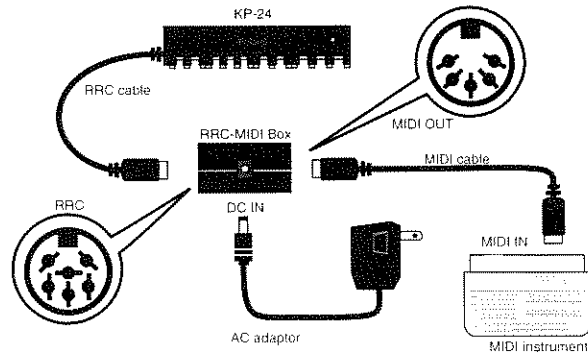
Be sure to use only a specified AC adaptor; either the PSA-110G, 120G, or 220G (optionally available), depending on the type of voltage in your country. Use of any other adaptor can cause malfunction or damage.

The RRC-MIDI Box can only convert information in one direction: what arrives at the RRC Connector is converted and sent out from the MIDI connector. It cannot be used for conversions in the reverse direction.

## ○ Connecting to Realtime Arranger with MIDI Connectors

\* For this type of setup, you will need to obtain an AC Adaptor (PSA-110G, 120G, or 220G; optionally available) and a MIDI cable (sold separately). Be sure to use the appropriate AC adaptor. Please use a separately purchased MIDI cable, or one supplied with the Realtime Arranger.

1. Connect the AC adaptor to the DC IN jack on the RRC-MIDI Box.
2. Connect the RRC cable from the KP-24 to the RRC Connector on the RRC-MIDI Box.
3. Connect the MIDI OUT on the RRC-MIDI Box to the MIDI IN on the Realtime Arranger using the MIDI cable.



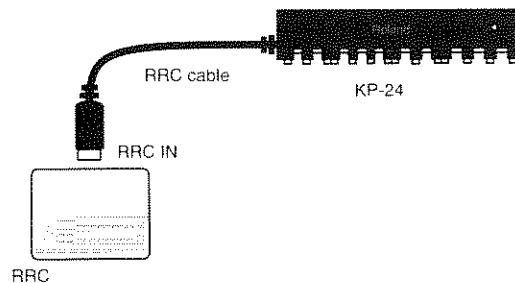
Try to neatly organize all the cables so they will not get in the way while you are playing the instrument (or moving around). Dangling, tangled cables can become a hazard, since someone could trip on them, resulting in personal injury, or damage to your equipment.

## ■ MAKING THE CONNECTIONS

Make sure that all your devices are switched off before making any connections.

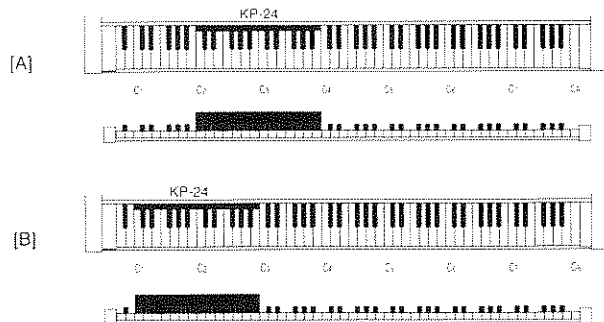
### ○ Connecting to Realtime Arranger with RRC IN Connector

1. Connect the RRC cable from the KP-24 to the RRC IN Connector on the Realtime Arranger.

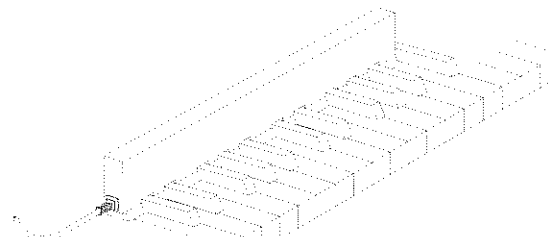


## ■ INSTALLATION

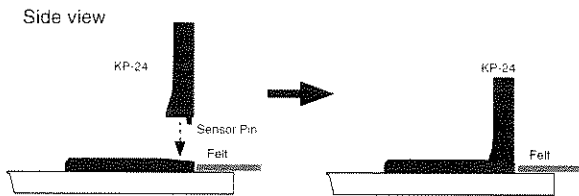
To install the KP-24 onto an acoustic piano, place it at either the "A" or "B" position as shown below:



As shown below, be sure to install the KP-24 so that its sensor pins ride properly over each key, and are all in a level position.



As illustrated below, make sure that the KP-24 doesn't rest on the felt portion of the acoustic piano.



\* If there is any dust or dirt between the keyboard and sensor pins (or at any place where the KP-24 makes contact with the keyboard), the sensor pins may not be able to make the proper contact, which can lead to errors or malfunction. Be sure to clean the area before installing the KP-24.

## ■ TURNING POWER ON

The KP-24 does not have a power switch. It is remotely turned on by the following methods:

**When the KP-24 is connected to a Realtime Arranger by means of its RRC IN Connector:**

Switch on the automatic accompaniment player.

**When the KP-24 is connected to an automatic accompaniment player that has only MIDI connectors, via the RRC-MIDI Box:**

First, switch on the automatic accompaniment player, then connect the plug on the AC adaptor for the RRC-MIDI Box to the wall socket.

When the KP-24 is switched on as above, it will automatically go into its initialization routine. While the KP-24 is thus getting ready for operation, its indicator will flash on and off for several seconds. While it is flashing, do not touch the keyboard. Otherwise, the KP-24 may not function properly.

Once the unit is ready, its indicator stops flashing. It will instead light steadily, showing that the KP-24 is ready to be used.

\* If the indicator continues to flash even after waiting a while, switch off the unit, install the KP-24 correctly, then switch it on again.

## ■ PLAYING THE REALTIME ARRANGER

1. Make sure that the indicator on the KP-24 is lit.
2. Set the automatic accompaniment player in a mode which allows you to use the Arranger function. If it provides a synchronization feature, be sure that its Sync Start is turned ON.
3. With your left hand, play a chord in the keyboard range where the KP-24 is located. Information describing what you played will be sent to the Realtime Arranger, and the automatic accompaniment will start.
4. Play the solo part (melody) along with the automatic accompaniment backing using the right hand. It is best if you play keys higher than the keyboard range where the KP-24 is located.

\* The KP-24 can only send performance information (chord data) for the 2 octaves worth of keys where the sensor pins are located. If any other key is played, no performance information will be sent.

\* The KP-24 will send the performance information for Note Numbers C1 to B2, regardless of whether it is installed in position [A] or [B] (as shown under MAKING THE CONNECTIONS). If you wish to reduce the range of performance information that is transmitted (maybe to suit the music to be played), adjust the automatic accompaniment player so it watches a narrower range on the keyboard when recognizing chords. For details, read the owner's manual for the device you are using for automatic accompaniment.

\* While you are playing, do not move the KP-24. If it is moved or it falls over, the indicator will start flashing, and it will not be able to function normally after that. Should this happen, switch off the unit, once again place it at the correct position, then switch it on again.

## ■ TURNING POWER OFF

**When the KP-24 is connected to a Realtime Arranger equipped with an RRC IN Connector:**

1. Switch off the unit equipped with an RRC Connector.
2. The KP-24 is automatically switched off (its indicator goes out).

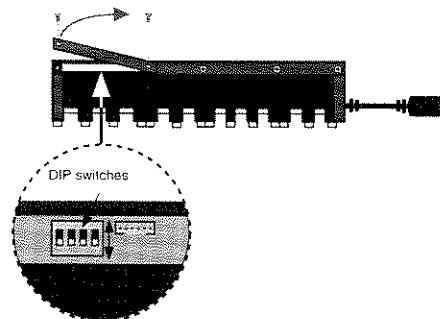
**When the KP-24 is connected to a Realtime Arranger via RRC-MIDI Box:**

1. Disconnect the plug of the AC adaptor from the RRC-MIDI Box.
2. The indicator on the KP-24 goes out and the KP-24 will be switched off.

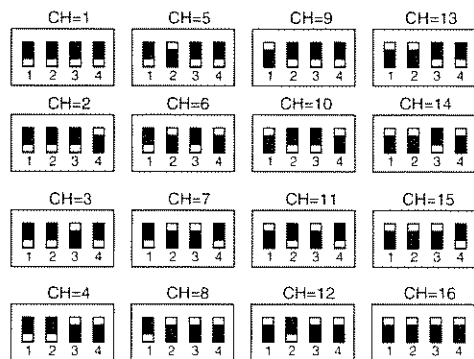
## ■ Changing the Transmit Channel

A Roland Realtime Arranger can be connected to the KP-24 without being concerned about what MIDI channel is used because the channel for chord recognition is set at 1. However, the channel might be set at something other than 1 on some automatic accompaniment players. If so, you must change the KP-24's transmit channel to the same number as the channel used for its chord recognition, using the DIP switches on the rear of the KP-24.

1. Using a Phillips screwdriver, remove the two screws on the DIP switch cover. Take off the cover to access the switches.



2. Change the transmit channels by changing the positions of the DIP switches with tweezers, as shown below:



3. Replace the DIP switch cover, and replace the screws.

## ■ TROUBLESHOOTING

### □ The KP-24 cannot be switched on:

○ When the KP-24 is connected to a Realtime Arranger with an RRC Connector:

- Check if the Realtime Arranger is switched on.
- Check if the KP-24's RRC cable is connected to the RRC IN Connector on the Realtime Arranger correctly and securely.

○ When the KP-24 is connected to a Realtime Arranger via the RRC-MIDI Box:

- Check the connections (wall socket, DC IN jack) of the AC adaptor for the RRC-MIDI Box.
- Check if the KP-24's RRC cable is connected to the RRC IN connector on the RRC-MIDI Box correctly and securely.

### □ The automatic accompaniment player does not start when the keyboard is played:

- Is the indicator on the KP-24 flashing?

Set the KP-24 correctly. (When the KP-24 is correctly in place, the indicator will constantly light.) While the indicator is flashing, do not touch the keyboard.

- Check all the audio cable jacks, and the volume setting on the Realtime Arranger.
- Check that the Arranger's balance setting (on the Realtime Arranger) is not set to zero.
- Make sure the Realtime Arranger is set to the mode that allows you to use its Arranger function.
- Make sure you are pressing keys where the KP-24's sensor pins are positioned. Playing any other key will not transmit any performance information.
- Check if the KP-24 is set to the same channel as the channel used for chord recognition by the Realtime Arranger.
- Check to make sure the channel being used for chord recognition by the Realtime Arranger is set to receive the appropriate range of notes from the keyboard.

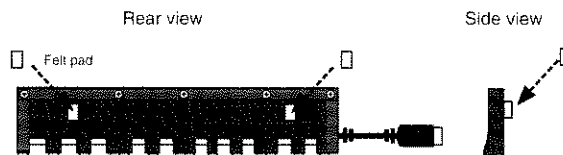
- Check if the Sync Start on the Realtime Arranger is set to ON.

### □ The indicator keeps flashing:

- Switch off the KP-24. Recheck your placement to make sure the KP-24 is correctly installed.

### □ The KP-24 falls over when your fingers bump against it during play:

- Stick the supplied felt stops at a suitable position on the rear of the unit.



## ■ SPECIFICATIONS

KP-24: Acoustic Keyboard Pickup

- Key sensing area: 24 keys (C—B)
- Indicator: Power/Active Indicator
- Cable: RRC cable 1.5 m
- Power Supply: RRC (DC9V)
- Dimensions: RRC-MIDI Box+AC Adaptor (9V)  
360(W)X28(W)X68(H) mm  
14-3/16(W) x 1-1/8(D) x 2-11/16(H) inches
- Weight: 420 g  
15 oz
- Accessories: RRC-MIDI Box, Felt pads X 2
- Options: AC Adaptor for the RRC-MIDI Box (PSA-120G(T), PSA-230G, PSA-240)

## ■ MIDI Implementation

ACOUSTIC KEYBOARD PICKUP Date: Nov. 2, 1994  
MODEL KP-24 MIDI Implementation Version: 1.00

### 1. TRANSMITTED DATA

#### ■ Channel Voice Messages

##### • Note Off

Status	Second	Third
8nh	kkH	40H

n=MIDI channel number : 0H—FH (ch.1—ch.16)  
kk=note number : 18H—2FH (24—47)

##### • Note On

Status	Second	Third
9nh	kkH	64H

n=MIDI channel number : 0H—FH(ch.1—ch.16)  
kk=note number : 18H—2FH(24—47)

#### ■ System Realtime Message

##### • Active Sensing

Status
FFH

Active sensing is transmitted to monitor the integrity of the MIDI connections. This message is always transmitted every 200 milli-seconds.

# MIDI Implementation Chart

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	1 — 16	X	Can be set by internal DIP switches
	Changed	1 — 16	X	
Mode	Default	Mode 3	X	
	Messages Altered	X *****	X	
Note Number :	True Voice	24 — 47 *****	X	
Velocity	Note ON	X 9n v=64H	X	
	Note OFF	X 8n v=40H	X	
After Touch	Key's	X	X	
	Ch's	X	X	
Pitch Bend		X	X	
Control Change	0 — 101	X	X	
Prog Change	: True #	X	X	
		X	X	
System Exclusive		X	X	
System Common	: Song Pos	X	X	
	: Song Sel	X	X	
	: Tune	X	X	
System Real Time	: Clock	X	X	
	: Commands	X	X	
Aux Message	: All Sound OFF	X	X	
	: Reset All Controllers	X	X	
	: Local ON/OFF	X	X	
	: All Notes OFF	X	X	
	: Active Sensing	O	X	
	: Reset	X	X	
Notes				

Mode 1 : OMNI ON, POLY

Mode 2 : OMNI ON, MONO

O : Yes

Mode 3 : OMNI OFF, POLY

Mode 4 : OMNI OFF, MONO

X : No





 Roland®  

---

**70562623**

UPC 70562623



18991

 Roland®