Roland

RD-170
DIGITAL PIANO

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

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturers instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Never use with a cart, stand, tripod, bracket, or table except as specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

─── **For the U.K.** ──

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE: NEUTRAL
BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

Roland

RD-170

DIGITAL PIANO

Owner's Manual

Thank you for choosing a Roland RD-170, the new entry-level stage piano of Roland's acclaimed RD series. The term "entry level" only refers to the RD-170's price tag, by the way, because this is an incredibly powerful instrument with excellent sounds that can double as MIDI master keyboard.

To get the most out of the RD-170 and to ensure many years of trouble-free service, we urge you to read through this Owner's Manual thoroughly.
To avoid confusion, let's agree to use the word "button" for all keys on the front panel, and use "key" only when referring to the RD-170's keyboard.

Before using this instrument, carefully read the sections entitled "Important Safety Instructions" and "Important notes". They provide important information concerning the proper operation of the RD-170. Be sure to keep this manual in a safe place for future reference.

Features

Excellent sounds

You must have read this a thousand times, yet we are pretty confident that you will agree that the RD-170's 64 sounds (including a high-quality stereo grand piano) are truly amazing. This may come as no surprise when you know that most of them are derived from the flagship RD-700 and the SRX-series Wave Expansion Boards, while the Rhodes and other electronic piano waveforms are brand new.

Excellent expressiveness

The RD-170 comes with an 88-note hammer-action keyboard that helps you bring out the best in the 64 sounds (or "Tones" as we call them). It responds to even the subtlest nuances of your playing.

In addition, the RD-170 supports a "half-damper" (i.e. continuous) damper pedal, which means that the duration of sustained notes depends on the pedal's position (this effect can be obtained with the supplied damper pedal). While this is a matter of course on acoustic pianos, other electronic instruments only recognize "on" and "off" positions.

New attractive look

The RD-170 looks and feels like a "real instrument", with an attractive metal housing and stylish wooden side panels. The RD-170's design fits right in with your "heavy-duty" stage rig, while it looks equally good at home, in music schools, or in a studio.

Split, layer, master keyboard

Split and layer functions are available for creating lush sound combinations. Master keyboard functions are also provided, allowing you to control two parts of a multitimbral sound module (or two modules) via two separate sections.

Even though the RD-170 only has a 3-character LED, you'll always get plenty of clues as to what can be set: some of the numerous buttons light up in different colors (Upper= red, Lower= green, Setup= orange), while you can also ask the RD-170 to display the name of the currently selected parameter.

16 programmable setups

All of the RD-170's parameter settings (including the MIDI-related parameters) can be saved to one of the 16 on-board memories. Recalling even complex settings is a matter of pressing just one button.

All settings can be archived via MIDI (Bulk Dump), which is, of course, essential for touring musicians.

2-track recorder

The RD-170 also sports a 2-track recording function, allowing you to record new ideas right away. This function can also be used for educational purposes, of course, e.g. for practising the left- and right-hand parts separately.

Have fun!

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About ⚠ WARNING and ⚠ CAUTION Notices

⚠ **WARNING**	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠ **CAUTION**	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

⚠	The △ symbol alerts the user to important instructions or warnings.The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
⊗	The ⊘ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
●	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

-------------------------------- **ALWAYS OBSERVE THE FOLLOWING** --------------------------------

⚠ WARNING

- Before using this instrument, make sure to read the instructions below, and the Owner's Manual.

- Do not open or perform any internal modifications on the unit.

- Do not attempt to repair the RD-170, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

- Never use or store the RD-170 in places that are:
  - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
  - Damp (e.g., baths, washrooms, on wet floors); or are
  - Humid; or are
  - Exposed to rain; or are
  - Dusty; or are
  - Subject to high levels of vibration.

- This unit should be used only with a rack or stand that is recommended by Roland.

- Make sure you always have the RD-170 placed in such a way that it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.

- The instrument should only be connected to a power supply of the type described in the operating instructions, or as marked on the RD-170.

⚠ WARNING

- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!

- This instrument, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the RD-170, and consult an audiologist.

- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the RD-170.

- In households with small children, an adult should provide supervision until the child is capable of following all rules essential for the safe operation of the RD-170.

- Protect the RD-170 from strong impact. (Do not drop it!)

- Immediately turn the power off, remove the power cord from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page when:
  - The power-supply cord, or the plug has been damaged; or
  - Objects have fallen into, or liquid has been spilled onto the RD-170; or
  - The unit has been exposed to rain (or otherwise has become wet); or
  - The unit does not appear to operate normally or exhibits a marked change in performance.

- Do not force the RD-170's power cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.

⚠ WARNING

- Before using the RD-170 in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

⚠ CAUTION

- The RD-170 should be located so that its location or position does not interfere with its proper ventilation.

- This unit for use only with Roland keyboard stand KS-12. Use with other stands is capable of resulting in instability causing possible injury.

- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet or this unit.

- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed out of the reach of children.

- Never climb on top of, nor place heavy objects on the RD-170.

- Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.

- If you need to move the instrument, take note of the precautions listed below. Make sure to have a firm grip, to protect yourself from injury and the instrument from damage.
  - Disconnect the power cord.
  - Disconnect all cords coming from external devices.
  - Remove the music stand.

- Before cleaning the RD-170, turn off the power and unplug the power cord from the outlet.

- Whenever you suspect the possibility of lightning in your area, disconnect the power cord from the outlet.

- Should you remove screws, make sure to put them in a safe place out of children's reach, so there is no chance of them being swallowed accidentally.

1. Important notes

In addition to the items listed under "Using the unit safely" (p. 3), please read and observe the following:

Power supply

- Do not use this instrument on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- Before connecting the RD-170 to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Do not place the RD-170 near devices that produce a strong magnetic field (e.g., loudspeakers).
- Install the RD-170 on a solid, level surface.
- Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this unit. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate such wireless devices so they are at a greater distance from this unit, or switch them off.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Also, do not allow lighting devices that normally are used while their light source is very close to the unit (such as a piano light), or powerful spotlights to shine upon the same area of the unit for extended periods of time. Excessive heat can deform or discolor the unit.
- To avoid possible breakdown, do not use the unit in a wet area, such as an area exposed to rain or other moisture.
- Do not allow rubber, vinyl, or similar materials to remain on the piano for long periods of time. Such objects can discolor or otherwise harmfully affect the finish.
- Do not put anything that contains water (e.g., flower vases) on the piano. Also, avoid the use of insecticides, perfumes, alcohol, nail polish, spray cans, etc., near the unit. Swiftly wipe away any liquid that spills on the unit using a dry, soft cloth.
- Do not allow objects to remain on top of the keyboard. This can be the cause of malfunction, such as keys ceasing to produce sound.
- Do not paste stickers, decals, or the like to this instrument. Peeling these off, particularly when strong adhesives have been used, can damage the instrument's exterior finish (the stickers provided with this instrument feature a weak adhesive).

Maintenance

- For everyday cleaning wipe the RD-170 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 instrument thoroughly with a soft, dry cloth.
- Never use benzene, thinner, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Repairs and data

- Please be aware that all data contained in the instrument's memory may be lost when it is sent for repairs. In certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data. Roland assumes no liability concerning such loss of data.
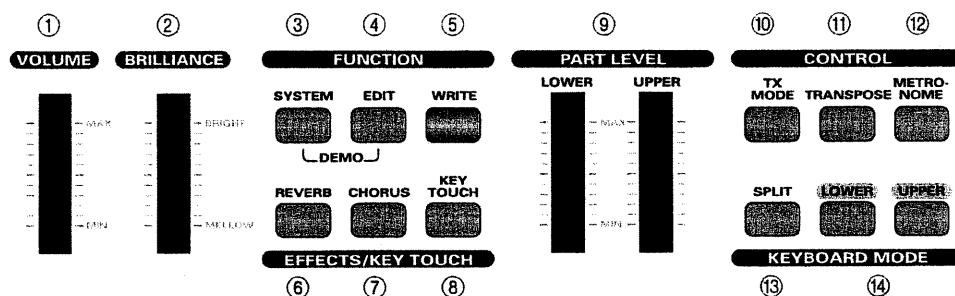
Additional precautions

- Please be aware that the memory contents can be irretrievably lost as a result of a malfunction, or the improper operation of the instrument. Therefore, be sure to archive important settings using the RD-170's Bulk Dump function (page 32).
- Use a reasonable amount of care when using the instrument's buttons, other controls, and jacks/connectors. Rough handling can lead to malfunctions.
- Never strike or apply strong pressure to the display.
- When connecting/disconnecting cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- A small amount of heat will radiate from the instrument during normal operation. This is perfectly normal.
- To avoid disturbing your neighbors, try to keep the instrument's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially late at night).
- When you need to transport the instrument, package it in the box (including padding) that it came in. Otherwise, you will need to use equivalent packaging materials, or a flightcase.
- Use only the specified expression pedal (EV-5, EV-7; sold separately). By connecting any other expression pedals, you risk causing malfunction and/or damage to the RD-170. While a DP-2, DP-6 or BOSS FS-5U can also be used as damper pedals, they only transmit on/off signals.
- Use a cable from Roland to make the connection. If using some other make of connection cable, please note the following precautions.
  Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this unit. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.
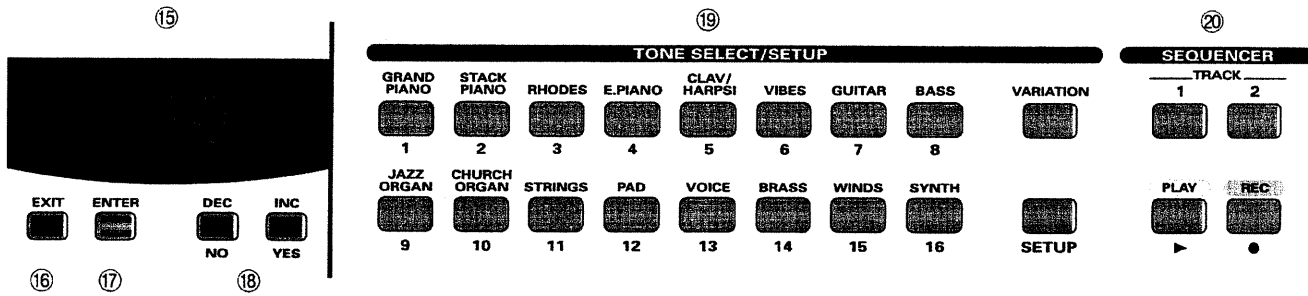
Contents

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2. Panel descriptions

Front panel

① [VOLUME] slider
Use this slider to set the overall output level of your RD-170. The balance between the two available parts (in Split and Layer modes) can be set using the PART LEVEL sliders.
Note: The setting of this slider has no effect on external MIDI instruments that may be connected to the RD-170 (it does not transmit MIDI data).

② [BRILLIANCE] slider
This slider allows you to adjust the brightness of the internal sound(s).
Note: The setting of this slider has no effect on external MIDI instruments that may be connected to the RD-170 (it does not transmit MIDI data).

③ [SYSTEM] button
This button provides access to parameters that apply to the RD-170 as a whole (see p. 29). Use the TONE SELECT/SETUP buttons for selecting the desired parameter.
Press SYSTEM simultaneously with the EDIT button to have access to the RD-170's demo song function.

④ [EDIT] button
Press this button and one of the TONE SELECT/ SETUP buttons to set part-related parameters (damper status, function of a second footswitch, octave setting) and MIDI parameters.
Pressing it simultaneously with the SYSTEM button provides access to the RD-170's demo song function.

⑤ [WRITE] button
Press this button to save the current settings to one of the RD-170's "Setup" memories (S01~S16).

⑥ [REVERB] button
Use this button to switch the digital Reverb effect of the internal sound source on or off. This effect can be switched on or off separately for the two internal parts (in Layer or Split mode). The color of this button (when on) depends on whether the KEYBOARD MODE LOWER (green) or UPPER (red) button lights.

Press it together with CHORUS to have access to the RD-170's Sympathetic Resonance effect (see p. 16).

⑦ [CHORUS] button
Use this button to switch the digital Chorus effect of the internal sound source on or off. This effect can be switched on or off separately for the two internal parts (in Layer or Split mode). The color of this button (when on) depends on whether the KEYBOARD MODE LOWER (green) or UPPER (red) button lights.
Press it together with REVERB to have access to the RD-170's Sympathetic Resonance effect (see p. 16).

⑧ [KEY TOUCH] button
Press this button to switch the keyboard's velocity sensitivity on (button lights) or off (button dark). It also allows you to select a velocity curve or velocity value (see p. 22).

⑨ PART LEVEL [LOWER] & [UPPER] sliders
These two sliders allow you to set the volume balance between the two sounds that are available in Split and Layer modes.
These sliders are also available when only one part (Upper or Lower) is available and thus allow you to avoid unpleasant volume differences when switching from one part to the other. They also transmit CC07 (MIDI volume) messages.

⑩ [TX MODE] button
This is a "master switch" that allows you to enable (button lights) or disable (button off) the transmission of MIDI data (see p. 23).

⑪ [TRANSPOSE] button
This button allows you to shift the keyboard's note assignment in semitone steps (so that pressing "C" key sounds an "E" note, for example). The transposition interval can be set and saved to a Setup memory.

⑫ **[METRONOME] button**
Press this button to switch the RD-170's metro-
nome on (button lights) or off (button dark).
You can also set several metronome parameters
(see p. 19).

⑬ **[SPLIT] button**
Press this button to separate the keyboard into
two halves, in which case the Lower part is
assigned to the left half, while the Upper part
part can be played via the right half.

⑭ **[LOWER] and [UPPER] buttons**
These buttons serve three purposes:
a) you can use them to select parts while play-
ing; b) you can activate both of them to engage
the Layer mode (see p. 13); c) you can use them
to select the part whose parameter settings you
wish to edit.

⑮ ⑲ ⑳

TONE SELECT/SETUP · SEQUENCER

TRACK
1 2

GRAND PIANO	STACK PIANO	RHODES	E.PIANO	CLAV/ HARPSI	VIBES	GUITAR	BASS	VARIATION
1	2	3	4	5	6	7	8	

EXIT ENTER DEC INC

NO YES

JAZZ ORGAN	CHURCH ORGAN	STRINGS	PAD	VOICE	BRASS	WINDS	SYNTH		PLAY	REC
9	10	11	12	13	14	15	16	SETUP	►	●

⑯ ⑰ ⑱

⑮ **Display**
The RD-170's display keeps you posted about
the current settings. There are two parameter
groups: global settings ([SYSTEM]) and part set-
tings ([EDIT]). Use the TONE SELECT/SETUP sec-
tion to specify which parameter you want to
set. When you hold down one of those buttons
in Edit or System mode, the display shows the
name of the assigned parameter.

⑯ **[EXIT] button**
Press this button to leave the Demo, System or
Edit mode (depending on which one is currently
active).

⑰ **[ENTER] button**
This button is used to confirm certain opera-
tions (like saving your settings using the
[WRITE] button).

⑱ **[DEC/NO] and [INC/YES] buttons**
Outside the System and Edit modes, these but-
tons are used to decrease ([DEC/NO]) or
increase ([INC/YES]) the tempo value.

⑲ **TONE SELECT/SETUP buttons**
These buttons can be used for selecting sounds
(TONE SELECT), Setup memories (SETUP) or
parameters (System or Edit mode).
[SETUP] does not allow you you to select
sounds. Instead, it changes the function of the
[1]~[16] buttons, which then select memories.
See page 28 for details.

⑳ **SEQUENCER buttons**
The buttons are used for selecting tracks ([1],
[2]), to start playback ([PLAY►]) or recording
([REC ●]+[PLAY►]).

Rear panel

①   ②   ③   ④   ⑤   ⑥   ⑦
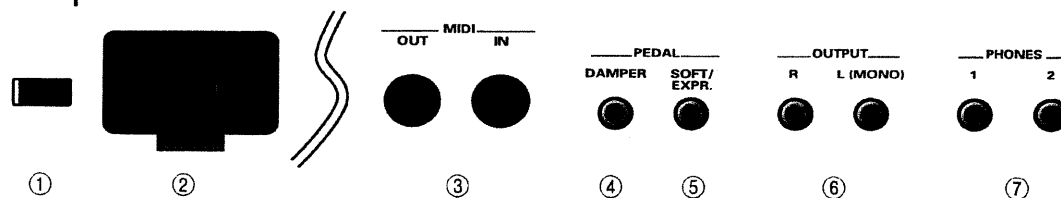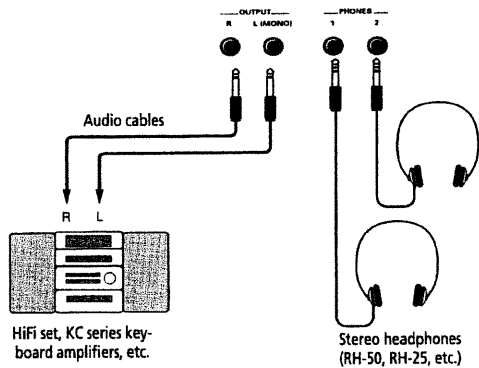
① **POWER button**
Press this button to switch the RD-170 on and off.

② **AC socket**
This is where you need to connect the supplied power cord.

③ **MIDI IN & OUT sockets**
If you wish to control an external instrument from your RD-170, connect its MIDI IN jack to the RD-170 MIDI OUT socket.

To control the RD-170 using an external MIDI instrument (sequencer, synthesizer, etc.), connect its MIDI IN socket to the MIDI OUT socket of the external instrument.

④ **PEDAL DAMPER socket**
This is where you can connect the supplied damper pedal that will function as Hold pedal (and sustain the notes you are playing) with half-pedal functionality.

⑤ **PEDAL SOFT/EXPR. socket**
This is where you can connect either an optional DP-2, DP-6, or BOSS FS-5U footswitch or an optional EV-5 expression pedal. If you connect a footswitch, you can select the Soft or Sostenuto function. If you connect an EV-5 pedal, it will function as expression pedal for swelling effects.

Note: In either case, you can select whether the footswitch/expression affects only one part (Upper or Lower) or both.
Note: Do not connect the supplied damper pedal to this socket.
Note: when you connect a footswitch or expression pedal to the SOFT/EXPR. socket.

⑥ **OUTPUT [R], [L/MONO] sockets**
Connect these sockets to a keyboard amplifier (KC series), your HiFi set, a pair of active speakers (of the Roland MA series), etc. The RD-170 does not contain speakers.

⑦ **PHONES 1 & 2 sockets**
This is where you can connect optional stereo headphones (e.g. of the Roland RH series). Feel free to use either or both jacks simultaneously.

3. Preparations and main functions

Connections

Your RD-170 needs to be connected to a HiFi or keyboard amplifier in order to be audible. If your amplifier is mono, connect the RD-170's L (MONO) output to the amplifier's input. You can also use one or two pairs of headphones (Roland RH series), in which case you do not need an amplifier.

OUTPUT — R L (MONO)   PHONES — 1 2

Audio cables

R   L

HiFi set, KC series key-
board amplifiers, etc.

Stereo headphones
(RH-50, RH-25, etc.)

(1) Switch off both the RD-170 and the device you wish to connect it to (amp, mixer, etc.).

(2) Connect the INPUT jacks of the HiFi or keyboard amplifier to the RD-170's OUTPUT jacks using a pair of audio cables.
If the amplifier is fitted with RCA/phono jacks, consider using a pair of Roland PJ-1M audio cables (option).

(3) Switch on the RD-170 and the external device (in that order).

(4) Adjust the volume of the RD-170 and the external device.

Installing the music stand

Assemble the music stand as shown in the diagram.
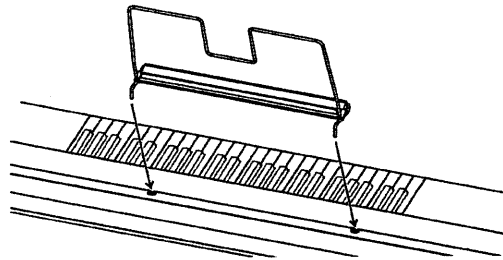
When moving the RD-170, be sure to remove the music stand as a safety precaution.

Turning the power on and off

Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

(1) Insert the included power cable into the AC inlet and then plug it into an electrical outlet.
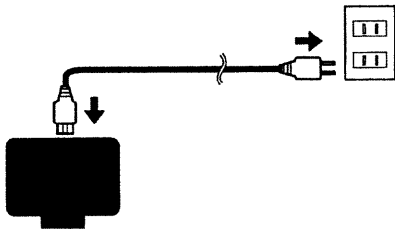
(2) To turn the **power on**, set the [VOLUME] slider to the lowest value and then press the [POWER] switch.
The power comes on and the display lights.

After a few seconds, you will be able to play the keyboard to produce sound.
Use the [VOLUME] slider to adjust the volume.

Note: The RD-170 is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

(3) To turn the **power off**, set the [VOLUME] slider to the lowest value and press the [POWER] switch.
The RD-170's display goes dark and the power is turned off.

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Connecting headphones

The RD-170 has two sockets for connecting headphones. This allows two people to listen through headphones simultaneously, making it very useful for lessons and when performing piano pieces for four hands. Additionally, this allows you to play without having to worry about bothering others around you, even at night.

Plug the headphones into the PHONES 1/2 sockets located on the RD-170's rear panel.

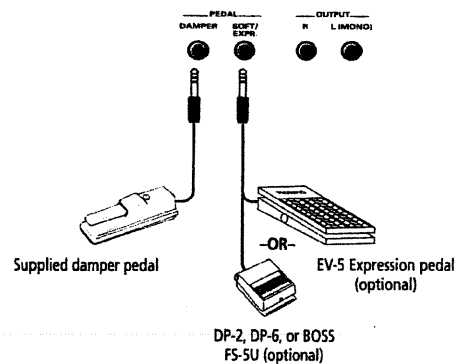The headphone volume is adjusted by the [VOLUME] slider (see p. 12).

Note: Be sure to use stereo headphones (such as the Roland RH-25 or RH-50).

Notes on using headphones
- To prevent damage to the cord, handle the headphones only by the headset or the plug.
- Connecting the headphones when the volume of connected equipment is turned up may result in damage to the headphones. Lower the volume on the RD-170 before plugging in the headphones.
- Listening at excessively high volume levels will not only damage the headphones, but may also cause hearing loss. Use the headphones at a moderate volume level.

Stereo headphones (RH-50, RH-25, etc.)

Connecting footswitches & pedals

The RD-170 provides two Pedal sockets: DAMPER and SOFT/EXPR. Here is how you can use these sockets:

Supplied damper pedal

–OR–

EV-5 Expression pedal (optional)

DP-2, DP-6, or BOSS FS-5U (optional)

DAMPER (Hold function)
By connecting the supplied damper pedal to this socket, you can hold (sustain) the notes you are playing on the RD-170's keyboard.

(1) Set the RD-170's volume to the lowest value.

(2) Switch off the external amplifier.

(3) Connect the supplied damper pedal to the Pedal DAMPER socket.

(4) Switch on the amplifier.

(5) Play a few notes on the keyboard while pressing the supplied damper pedal.
The notes you play will be sustained much longer than without using the pedal.

(6) Release the damper pedal to switch off the sustained notes.
The RD-170 recognizes 127 steps and adapts the duration of the sustain accordingly. This is called the "half damper" effect, as opposed to simple on/off switching on other electronic musical instruments.

The RD-170 provides four playing modes: Whole Upper, Whole Lower, Layer and Split. In Layer and Split modes, you can specify whether the damper footswitch should affect the Upper Tone, the Lower Tone or both. See p. 22 for details.

Using a second footswitch or expression pedal
The Pedal SOFT/EXPR. socket allows you to connect an optional DP-2, DP-6, or BOSS FS-5U footswitch or an EV-5 expression pedal. As only one of these can be used at a time (footswitch or expression pedal), you should first ask yourself which one you will need most often.

●Footswitch functions
If you wish to take advantage of the *Soft* or *Sostenuto* function, you need a DP-2, DP-6, or BOSS FS-5U footswitch. You can then specify whether it should function as Soft or Sostenuto pedal (page 22).

Soft: This function allows you to reduce the volume and brightness of the notes you play by pressing the footswitch.

Sostenuto: Though similar to the Damper function described above, the Sostenuto function only sustains the notes whose keys are pressed while you press the footswitch. Subsequently played notes are not sustained.

Note: In Layer and Split modes, you can decide whether the footswitch should affect only one or both parts (page 22).

●Expression function
An optional EV-5 or EV-7 expression pedal allows you to change the volume in the same way as on an organ. You can thus create swelling effects. This is probably only useful for sound Layers, when working in Split mode or for MIDI control, because it allows you to change the mix of the two Tones you are using.

Note: The RD-170 automatically detects the kind of controller connected to the SOFT/EXPR. socket. But be sure to also read "Pedal detection" (p. 30).

Note: You can also decide whether the expression pedal or optional footswitch should affect only one or both parts (page 22), which may come in handy in Split and Layer modes.

Volume and Brilliance

Use the VOLUME slider to adjust the overall volume.
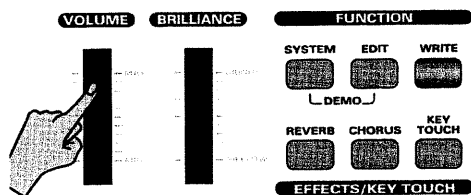
The "MAX" position corresponds to the maximum volume, while the "MIN" position means you won't hear the RD-170's sounds. This slider has no effect on the MIDI data transmitted by the RD-170.

Note: The setting of this slider also determines the volume in the headphones.

Use the BRILLIANCE slider to set the desired brightness (tone color) of the sound.
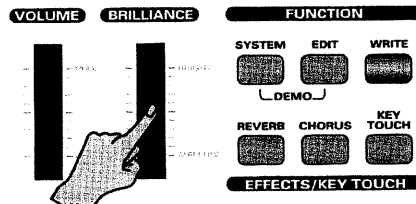
At the "BRIGHT" position, a bright tone is obtained, while a rounder (mellower) tone is obtained by setting the slider to the "MELLOW" position. This slider has no effect on the MIDI data transmitted by the RD-170.

Listening to the demo songs

The RD-170 contains 16 demonstration songs. Here's what you need to do to listen to them:

(1) Hold down the SYSTEM button while pressing EDIT.
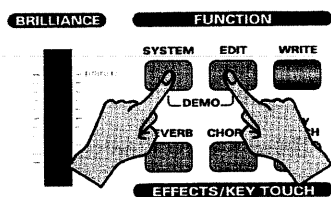
The message dEn appears in the display.

(2) Press the Tone selection button (GRAND PIANO~SYNTH) that corresponds to the demo song you want to listen to. Playback starts as soon as you press a TONE SELECT button. All demo songs are played back in sequence, starting with the song you selected.
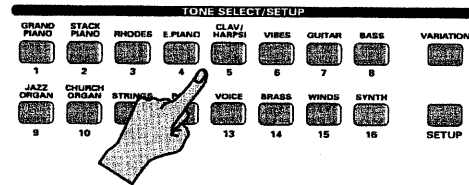
(3) Press EXIT or SYSTEM + EDIT to leave the demo mode.

Note: All demo songs copyright ©2003 by Roland Europe.

Selecting sounds

*Your RD-170 comes with 64 high-quality sounds that you can select straight away using the TONE SELECT and* VARIATION *buttons. See p. 33 for a list of the available sounds.*

(1) To select a "main" Tone, press its button on the front panel (the button lights).

There are 16 TONE SELECT buttons that are used to select "sound families". Each family consists of four sounds: one "Capital" (number 1) and three variations (2, 3, 4).

(2) To select a "Variation" (an alternative for the sound whose button you pressed), press the VARATION button.
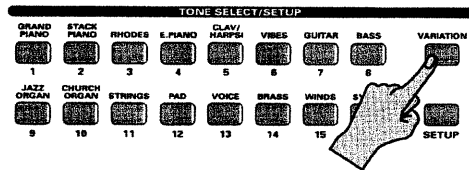
The button lights and the display now shows the number of the Variation you selected (probably "2") for ±2 seconds.

The PAD and VARIATION buttons light and the display shows "2": you have selected Variation "2" (i.e. "Warm Pad")
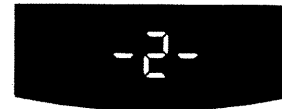
(3) Press VARIATION again to select the next Variation ("3"), then again for Variation "4". If you press it a fourth time, the VARIATION button goes dark and the display briefly shows " 1 " to signal that you have once again selected the Capital Tone.

Note: You can also hold down the TONE SELECT button you pressed and choose a different Variation with the DEC/NO/INC/YES buttons.
Note: It would be a good idea to play a few notes on the keyboard while selecting the Variation Tone.
Note: This setting can be saved to a Setup memory (see p. 28).

Alternating between & using two sounds (Layer, Split)

The RD-170 is an extremely flexible instrument that allows you to switch, add or remove sounds quickly. There are four possible combinations:

The RD-170 provides two "parts": Upper and Lower. The word "part" is used, because you can assign whichever sound you like to these two entities (Upper and Lower), so that "sound" would not be correct.

As you will learn later on, there are also numerous other settings you can make for these two parts (effects, response to pedals, MIDI channels, etc.).

Using one part ("Whole mode")

At power-on, the RD-170 automatically activates the Upper part. The UPPER button therefore lights:

"Whole Upper"
RED

Note that it lights in **red**, which is also the case of the TONE SELECT button that corresponds to the Tone currently assigned to the **Upper** part. Other buttons, like VARIATION, REVERB, etc., also light in **red** as and when necessary.

All selections you make in this state (choosing sounds, switching effects on/off) apply to the Upper part.

To quickly change to a another sound with different effect, etc., settings, you could switch on the LOWER button:

"Whole Lower"
GREEN

When activated, this button lights in **green**, which is also the case of the TONE SELECT button that corresponds to the Tone currently assigned to the **Lower** part. Other buttons, like VARIATION, REVERB, etc., also light in **green**.

To select the Whole Lower mode:

(1) Switch off the SPLIT button if it is on, otherwise skip to the next step.
The UPPER button lights, signalling that you are back in Whole Upper mode.

(2) Press [LOWER] (this button lights along with the [UPPER] button).

(3) Press [UPPER] to switch it off.

[LOWER] and all buttons related to the Lower part (which can now be played in isolation) light up in green. If necessary, select a different Tone.

Note: This setting can be saved to a Setup memory (see p. 28).

## Using the Upper & Lower parts together (Layer)

A third possibility is to use the Upper and Lower parts together, which is called a "Layer". The most popular Layer combination is piano with strings, but feel free to experiment with other layers (piano with a Rhodes sound, for example).


Layer mode

(1) Switch off the [SPLIT] button if it is on, otherwise skip to the next step.
The [UPPER] button lights, signalling that you are back in Whole Upper mode.

(2) Press [LOWER] (this button lights along with the [UPPER] button).
Both buttons light: you are now in Layer mode. The buttons related to the parts (TONE SELECT, [REVERB], etc.) light in **red** to indicate the current settings for the Upper part. The TONE SELECT button of the second Tone lights in green for quick confirmation of both sounds used.
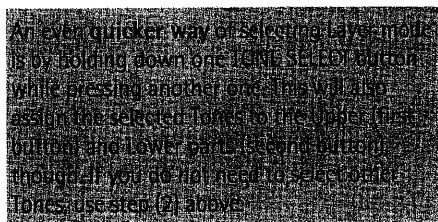
(3) To change the settings of the Lower part, press and hold the [LOWER] button while pressing the required buttons.
The display indicates the Variation number of the selected sound (you could select another Variation with [DEC/NO]/[INC/YES] now). You will also notice that all related and active buttons light in **green**. See p. 13 for how to select Tones and p. 16 for setting the effects.

(4) Adjust the volume balance between the two parts with the PART LEVEL [LOWER] and [UPPER] sliders.
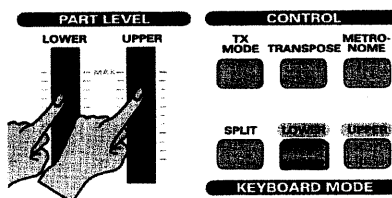
Note: The slider settings are saved to the Setup memories. Therefore, the position of the physical sliders does not always correspond to the actual level settings.
Note: You can also specify which Part(s) should respond to footswitch and/or pedal messages. See p. 22.

(5) To return to Whole Upper or Whole Lower mode, switch off the [UPPER] or [LOWER] button.

Splitting the keyboard

The RD-170 allows you to divide the keyboard into two sections and to play two different Tones with your left and right hands. Dividing the keyboard is called a "Split" and the key where the keyboard is split is the "split point".

Split mode

(1) Press the [SPLIT] button so that it lights.
The [UPPER] and [LOWER] buttons also light.
The buttons related to the parts (TONE SELECT, [REVERB], etc.) light in **red** to indicate the current settings for the Upper part.

(2) To change the settings of the Lower part, press and hold the [LOWER] button while pressing the required buttons.

You will notice that all related and active buttons light in **green**. See p. 13 for how to select Tones and p. 16 for setting the effects.

(3) Adjust the volume balance between the two parts with the PART LEVEL [LOWER] and [UPPER] sliders.
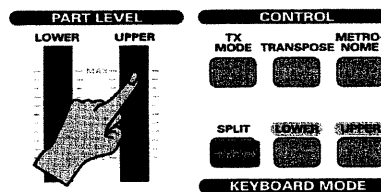
Note: You can also specify which Tone(s) should respond to footswitch and/or pedal messages. See p. 22.

(4) To return to Whole Upper mode, switch off the [SPLIT] button.

●Changing the split point

When you activate the Split mode, the keyboard is split at the "Gb3", i.e. the Gb key more or less in the middle. You can, however, select a different split point and save that setting to a Setup memory:

| Left hand: | Gb3 | Right hand: |
| LOWER | (F#3) | UPPER |
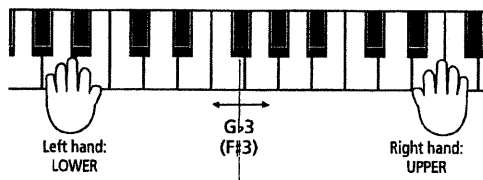
The split point can be set anywhere between the B1 and the B6. There are two ways of changing the split point:

- Press and hold [SPLIT] while setting the desired split point with the [DEC/NO]/[INC/YES] buttons.
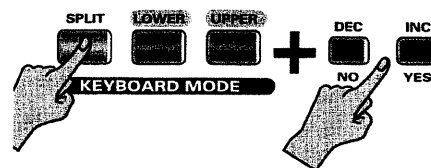
The display briefly shows the name of the note you selected.

–OR–

- Press and hold [SPLIT] while pressing the desired key on the keyboard.

Note: This setting can be saved to a Setup memory (see p. 28).

Using effects

The RD-170 comes with three digital effects: Chorus, Reverb and Sympathetic Resonance. While Chorus and Reverb are available for all Tones, Sympathetic Resonance can only be used with piano Tones.

Adding Reverb

By using the Reverb effect, you can obtain pleasant reverberations like those in a concert hall. The level of the Reverb effect can be set in eight steps.

(1) First decide for which part you wish to switch on the Reverb effect.

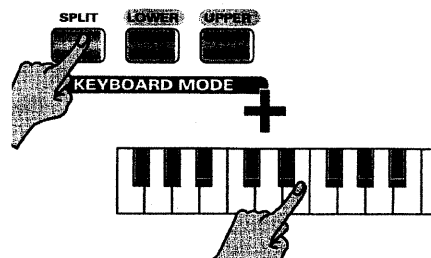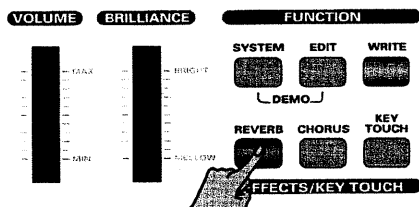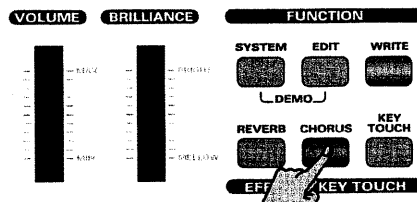In Layer and Split (page 14) modes, you need to press and hold the LOWER button while performing the next step to switch the Reverb for the Lower part.

In Whole Upper or Whole Lower mode, there is only one part, so you can press REVERB right away. Its indicator then lights in red (Upper) or green (Lower).

(2) Press REVERB and confirm that it lights.

(3) If necessary, press the LOWER button and repeat steps (1) and (2).

(4) Set the depth by holding down REVERB while pressing DEC/NO/INC/YES.

The word "depth" refers to the amount of Reverb that is added to the selected part (also called the "Send Level"). The current depth value appears in the display. It applies to both parts.

(5) Press REVERB again to switch the effect off for the selected part.

To switch it off for the Lower part in Layer or Split mode, you must hold down LOWER while pressing REVERB.

Adding Chorus

Chorus is an effect that gives the impression that several instruments are being played at the same time. The level of the Chorus effect can be set in eight steps.

(1) First decide for which part you wish to switch on the Chorus effect.

In Layer and Split (page 14) modes, you need to press and hold the LOWER button while performing the next step to switch the Chorus for the Lower part.

In Whole Upper or Whole Lower mode, there is only one part, so you can press CHORUS right away. Its indicator then lights in red (Upper) or green (Lower).

(2) Press CHORUS and confirm that it lights.

(3) If necessary, press the LOWER button and repeat steps (1) and (2).

(4) Set the depth by holding down CHORUS while pressing DEC/NO/INC/YES.

The current Chorus depth value appears in the display.

(5) Press CHORUS again to switch the Chorus effect off for the selected part.

To switch it off for the Lower part in Layer or Split mode, you must hold down LOWER while pressing CHORUS.

Sympathetic Resonance

On an acoustic piano, pressing the damper pedal makes the notes you play resonate with other strings, adding rich reverberations and thickness to the sound. The RD-170 simulates this effect for the piano Tones (and Variations). The effect, called *Sympathetic Resonance*, is automatically added to these Tones, but you can vary the depth in eight steps.

Note that it is only audible when you use the footswitch connected to the [DAMPER] jack.

Supplied damper pedal.
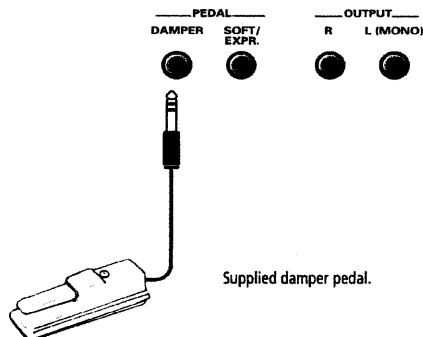
Note: The RD-170 recognizes 127 steps and adapts the duration of the sustain accordingly.

(1) Simultaneously hold down [REVERB] and [CHORUS].
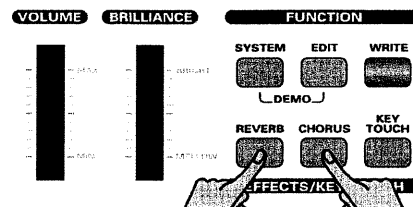
The display now indicates the current Sympathetic Resonance depth.

(2) Keep holding [REVERB] and [CHORUS] while setting the desired depth with [DEC/NO]/[INC/YES].

Note: The setting is at "4" when the RD-170 is switched on. You can, however, save it along with the other panel settings (page 28).

Note: In Layer or Split mode, the depth you set here applies to both Tones.

Transpose

Using the Transpose function, you can shift the pitch of the entire keyboard. This means that the RD-170 will sound in another key than the one you are playing in. Transposition can be used for two purposes: (a) to play a song in an "easy" key while sounding in a "difficult" one; (b) to accommodate the voice of a singer.

Transposition via the keyboard
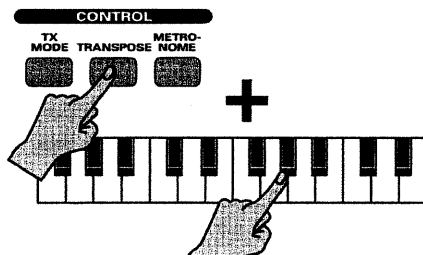
While holding down [TRANSPOSE], press the key that corresponds to the main note ("root") of the pitch you wish to transpose to. The default setting is "0" (no transposition).

The [TRANSPOSE] button lights and you can play in the transposed key. When it is dark, the keyboard returns to its original setting (where pressing a C sounds a C, etc.).

You can alternate between "no transposition" and "transposition" simply by pressing [TRANSPOSE] button. The interval you set will be remembered until you switch off your RD-170.

Note: Transposition always applies to both the Upper and Lower parts. It does not apply to the demo songs or the song you recorded yourself (page 20).

Note: This setting can be saved to a Setup memory (see p. 28).

●Example: playing a piece in E major with the fingering of C major

If you play C E G... ...you hear E G♯ B
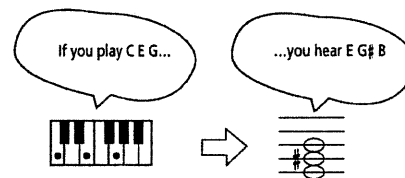
Press the E key while holding down [TRANSPOSE], so that you hear an E every time you play a C.

Transposition via the buttons

Press and hold [TRANSPOSE] while setting the desired semitone interval with [DEC/NO]/[INC/YES].

The setting range is –6~5, which means "up to six semitones down, through five semitones up". Pressing [DEC/NO]/[INC/YES] simultaneously will reset the interval to "0".

●Example: playing a piece in E major with the fingering of C major

If you consider C major as the basic key, there are 4 keys between that note and the "E" to its right. You must therefore select the value "4".

Touch sensitivity (Key Touch)

You can change the keyboard's touch sensitivity. Though this will not change the "weight" of the keys, you will notice that it becomes easier (or harder) to play loud notes (fortissimo). You can also switch off the RD-170's velocity sensitivity altogether.

When you switch on the RD-170, KEY TOUCH lights automatically to signal that the force with which you strike the keys influences the tone color and volume of the selected sound(s).

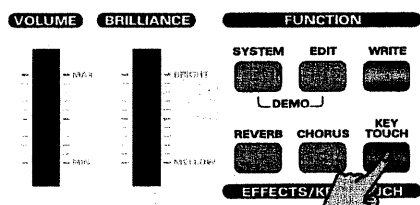(1) Press KEY TOUCH (indicator goes dark) to switch off velocity sensitivity.

All notes you play now have the same volume and timbre (tone color), regardless of the force with which you strike the keys. (The RD-170 uses the MIDI velocity value "64" for all notes. This value can be changed, however; see below.)

If you want the RD-170 to respond dynamically to your playing but think the response is too sensitive (or not sensitive enough), you can select a different velocity curve:

(2) Press KEY TOUCH so that the indicator lights.

(3) Hold down KEY TOUCH.
The GRAND PIANO button lights and STACK PIANO flashes.

(4) Press GRAND PIANO and use DEC/NO/INC/YES to select a velocity curve:

-L- (light): This imparts a lighter feel to the keyboard. Because stronger notes can be produced with less effort, this setting is ideal for children or inexperienced musicians.

-ꓵ- (medium): This corresponds to the default setting, i.e. normal velocity sensitivity.
Note: At power-on the RD-170 is set to "M".

-H- (heavy): This imparts a heavier feel to the keyboard. Because stronger notes can only be produced when played with greater than standard force, this setting provides a wider dynamic range.

(5) Release the KEY TOUCH button.
Note: This setting and the fixed velocity value (see below) can be saved in a Setup memory (page 28).

Setting the fixed velocity value

The following procedure allows you to specify the fixed (uniform) velocity value to be used whenever you switch off the KEY TOUCH button, thus deactivating the RD-170's velocity sensitivity.

(1) Hold down KEY TOUCH.
The GRAND PIANO button lights and STACK PIANO flashes.

(2) Press STACK PIANO and use DEC/NO/INC/YES to set the desired velocity value. The setting range is 1~127 (very soft to very loud). The default value is "64".

(3) Release the KEY TOUCH button.

(4) Press KEY TOUCH so that the indicator goes dark (if necessary).
The fixed velocity value is applied to all notes you play.

Using the metronome

The RD-170 contains a metronome you may want to use for practising. The beat (time signature) and tempo can be changed to your liking. Furthermore, the metronome's volume can be set in 128 steps.

(1) Press [METRONOME] to start the metronome. (Press it again to stop the metronome when you no longer need it.)
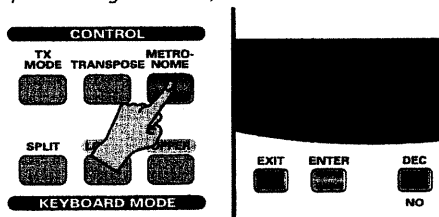
The metronome has three parameters you can set as follows:

(2) Press and hold [METRONOME] until the [GRAND PIANO] button (which is also called ⬜1) lights (and buttons ⬜2 and ⬜3 flash).
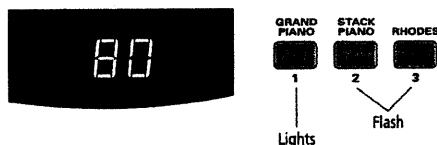
The display shows the current metronome level.

(3) Use the [DEC/NO]/[INC/YES] buttons to set the desired metronome **volume** (0~127). The default value is "90".

(4) Press ⬜2 (it lights, while ⬜1 and ⬜3 flash) to select the **time signature** parameter. The display now shows the currently selected time signature (probably 0-4).

(5) Use the [DEC/NO]/[INC/YES] buttons to set the desired time signature. The possibilities are:

0-4 Only the first beat of each measure is sounded.
2-4 2/4 time signature
3-4 3/4 time signature
4-4 4/4 time signature
5-4 5/4 time signature
6-4 6/8 time signature
3-8 3/8 time signature
6-8 6/8 time signature
9-8 9/8 time signature

(6) Press ⬜3 (it lights, while ⬜1 and ⬜2 flash) to select the **tempo** parameter. The display now shows the current tempo value.

(7) Use [DEC/NO]/[INC/YES] to set the metronome tempo. The setting range is ♩ = 40~210.

(8) Press [EXIT] to leave the metronome parameters. The TONE SELECT buttons return to "normal operation".

Note: These settings can be saved to the System parameter memory (see p. 32).

19

4. Using the sequencer

Recording your own music

The RD-170 comes with a two-track sequencer you can use for recording ideas, new songs or your own versions of existing music.

The RD-170's tracks can be used to record your left and right hand parts separately and then listen to them in isolation. Doing so allows you to play the "missing" part in realtime. This is convenient for piano lessons.

You can also use these tracks for recording two different (i.e. four-hand) parts. You can even play in realtime to the recorded music. Be aware, however, that the parts played in Split or Layer (page 13) mode will be recorded onto different tracks.

(1) Select the sound(s) you want to use for recording, then set the Chorus, Reverb, Sympathetic Resonance, tempo, etc.
You cannot change the tempo or beat while recording.

(2) Press the REC ● button.
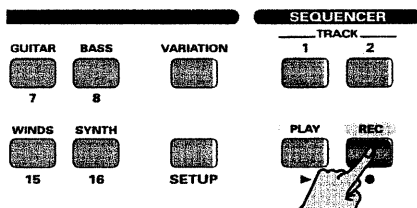
The indicator(s) for the track(s) where no data are recorded start flashing. This is the standby mode.

Note: Press REC ● again if you do not want to record after all.

(3) Press Track ① or ② to cause the corresponding button to flash.

(You can also press ②, if you like.)
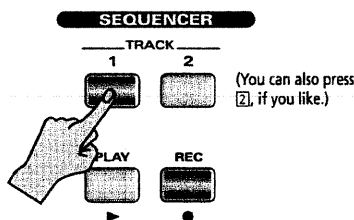
This means that the data of that track (if available) will be erased and new data will be recorded. You cannot restore data that have been erased in this way.

Note: When a track's indicator lights steadily, the data recorded there are played back during recording onto the other track. If you do not want to hear that part, switch off the track by pressing its button before activating REC ●.

(4) Press the METRONOME button if you wan to use the metronome while recording.
See p. 19 for how to set the metronome.

(5) Press PLAY►. The RD-170 starts recording after a two-measure count-in.
If you start playing without pressing PLAY►, the RD-170 starts recording right away, without any count-in.

(6) Press the PLAY► button to stop recording.

(7) Return to step (3) if you wish to record a second part to the other track.

● A note about recording
There is a limit for the number of notes that can be recorded. If a pedal is used, pedal messages are recorded as well, so that the number of notes you can record decreases.
When the memory is almost full during recording, the REC ● indicator starts flashing faster. When no more data can be recorded, the REC ● button goes dark and recording stops automatically.

Playing back your song

(1) Press PLAY► to play back your song.
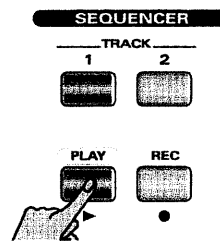
(Press it again to stop playback.)

(2) If necessary, use DEC/NO/INC/YES to change the playback tempo.
Changing the tempo does not affect the pitch.

Listening to a track in isolation

(1) Press the Track button of the part you do not want to hear (confirm that it's dark).
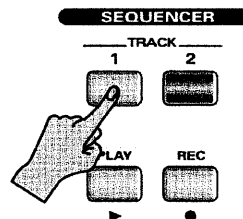
(2) Press the PLAY► button to start playback.

(3) Press it again to stop playback.

Saving your song

If you are happy with your song and wish to play it back at a later stage, you need to save it *before switching the RD-170 off.*

(1) Press the [SYSTEM] button (it lights).
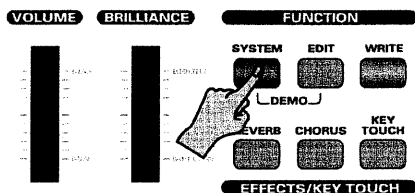
(2) Press TONE SELECT/SETUP [8].

If you hold this button down, the display tells you that this parameter is called **SonG MEM** (memorize the song data). If you release it, **YES** is displayed.

(3) Press [INC/YES] to save your song. Then press [EXIT] to leave the System mode.
Note that you could also press another TONE SELECT/SETUP button to select a different System parameter.

5. Edit parameters and Setup memories

The RD-170 contains three kinds of parameters you can set: **SYSTEM parameters** *(that apply to the RD-170 as a whole),* **internal EDIT** *parameters (for the RD-170's parts) and* **external EDIT** *parameters (for specifying the MIDI behavior of the RD-170's parts).*

The internal and external EDIT parameters are accessed via the same button and belong to the same group. Please bear in mind that **all EDIT parameters can (and need to) be set for the Upper and Lower parts separately.** *The following "internal" parameters are only a fraction of what can be saved to the Setup memories. Almost all functions covered so far (except for the song data) are also saved – and can be accessed via dedicated buttons, which is why you won't find them here.*

Damper on/off
Second pedal
Octave (p. 23)
MIDI channel (p. 24)
MIDI CC00 (p. 24)
MIDI CC32 (p. 24)
MIDI Program Change (p. 24)
MIDI volume (p. 25)
Reverb Send (p. 25)

Local on/off (p. 27)
Reverb/Chorus filter (p. 27)
Damper/Soft/Sost. filter (p. 27)
Volume/Expression filter (p. 27)
Program Change filter (p. 27)
MIDI slider filter (p. 26)
MIDI Soft/Sost./Expr. filter (p. 26)
MIDI Sustain filter (p. 26)
Chorus Send (p. 25)

Note: If you hold down the TONE SELECT/SETUP button of the function you need, the display shows an abbreviated name of the function in question.

Damper on/off → [Internal]/[MIDI]

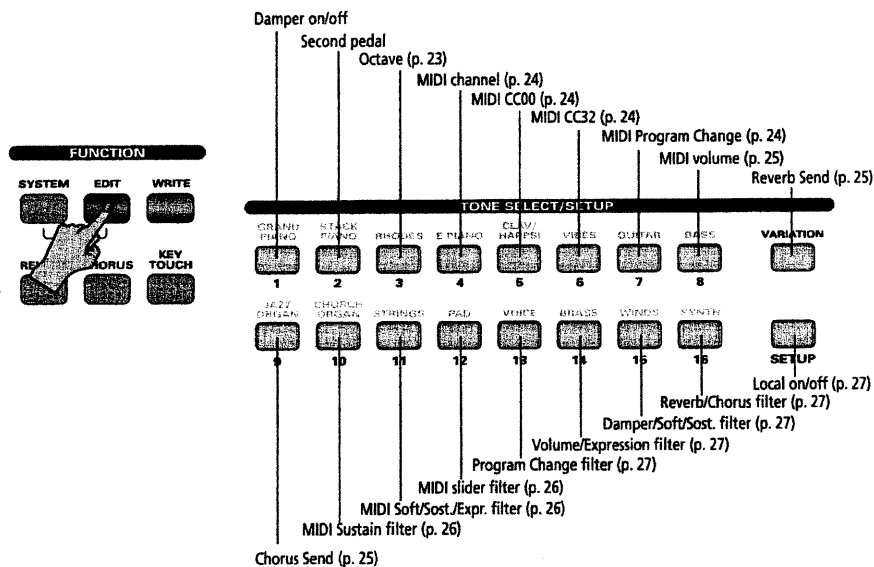The RD-170 provides two sockets, one of which is labeled DAMPER, while the second is called SOFT/EXPR. The DAMPER socket is intended for the supplied damper pedal. Use this parameter to specify whether (On) or not (Off) the selected part (Upper or Lower) should respond to Damper/Hold messages. This setting does not affect the transmission or reception of MIDI Hold messages (use [10] for that).

(1) Press [EDIT] (lights), followed by [1].

On

dAMPEr

Press and hold [1] to find out what the function is called ("Damper").

(2) Press the [UPPER] (red) or [LOWER] (green) button to select the part whose setting you want to change.

(3) Use [DEC/NO]/[INC/YES] to select on (execute Hold messages) or OFF (ignore them).

(4) Press [EXIT] (or [EDIT]) to leave the Edit mode or select the other part and change its setting too.
Note: This setting can be saved (see p. 28).

Second pedal → [Internal]/[MIDI]

The RD-170 automatically detects the kind of controller connected to the SOFT/EXPR. socket. But be sure to also read "Pedal detection" (p. 30).

If you connect an optional footswitch or expression pedal to the SOFT/EXPR. socket, you can decide whether it should act as Soft or Sostenuto pedal or as expression pedal (for setting the volume).

(1) Press [EDIT] (lights), followed by [2].

SoS

2nd PEdAL ASS.9n

Press and hold [2] to display the abbreviated function name.

(2) Press the [UPPER] (red) or [LOWER] (green) button to select the part whose setting you want to change.

(3) Use DEC/NO/INC/YES to select one of the following options.
Depending on the "Pedal detection" (p. 30) setting, this option may not work when you connect the wrong kind of controller to the SOFT/EXPR. socket (an expression pedal after selecting the Sostenuto function, for example).

This setting does not affect the transmission or reception of the corresponding MIDI messages (use 11 for that).

SFt	The selected part generates and responds to Soft messages. "Soft" is a function also to be found on acoustic pianos: the notes you play while pressing the pedal are softer (less loud) than usual.
SoS	The selected part generates and responds to Sostenuto messages. "Sostenuto" is another function found on acoustic pianos: if you press this pedal while holding down one or several keys, those notes are sustained. Subsequently played notes are not sustained, however.
EHP	The selected part generates and responds to expression messages (CC11). These allow you to control the part's volume.
Ein	The selected part generates and responds to expression messages (CC11). These allow you to control the part's volume. This time, however, it works the other way around: maximum volume when the pedal is all the way up (CC11= 0) and minimum volume when the pedal is pressed (CC11= 127). This is interesting for the Layer mode (see p. 13): by assigning EHP to the Upper part and Ein to the Lower part, for example, you can increase the volume of the Upper part and simultaneously decrease that of the Lower part by pressing the pedal down (toe down) – and vice versa. This parameter is not available when Second Pedal is set to "On".
OFF	The selected part does not respond to footswitch or pedal messages.

(4) Press EXIT (or EDIT) to leave the Edit mode or select the other part and change its setting too.
Note: This setting can be saved (see p. 28).

Octave →[Internal]/[MIDI]

This parameter is especially useful in Split mode (see p. 14), when you need to use your left hand for a chord backing whose register is close to the part you play with your right hand. Of course, you can also transpose (or "shift") the Upper part in octave steps, but that is probably only necessary in Layer mode.

The setting range is –2, –1, 0, 1, 2 octaves (down or up). Note that the RD-170's keyboard can also be transposed in semitone steps (see p. 17), but the transposition interval always applies to both parts.

(1) Press EDIT (lights), followed by 3.

OctRUE

Press and hold 3 to display the abbreviated function name.

(2) Press the UPPER (red) or LOWER (green) button to select the part whose setting you want to change.

(3) Use DEC/NO/INC/YES to select -2 (two octaves down), -1 (one octave down), 0 (no change), 1 (one octave up) or 2 (two octaves up).

(4) Press EDIT (or EDIT) to leave the Edit mode or select the other part and change its setting too.
Note: This setting can be saved (see p. 28).

Stopping the transmission of MIDI data

Before delving into the RD-170's MIDI parameters, which are available for the Upper and Lower parts, here's something you may need from time to time:

The RD-170 allows you to stop the transmission of MIDI data by pressing the TX MODE button.
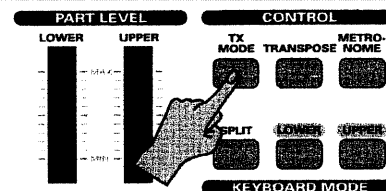
This button usually lights, because the Upper and Lower parts are set to transmit MIDI data. If the button is **dark**, however, your RD-170 becomes a stand-alone stage piano. Though it can still receive MIDI data, it **no longer transmits them**.

If only one of the two parts (Upper or Lower) should no longer transmit MIDI data, set its MIDI channel (see below) to OFF.

MIDI channel →[MIDI]

Important remark: the following parameters only apply to the selected part (Upper or Lower). Be sure to select the part you wish to edit – and do not forget to edit the other part if you're not happy with its current settings.

Another important remark: see page 35 for the basics about MIDI.

This parameter allows you to assign the desired MIDI channel to the Upper or Lower part. That channel is used for transmitting (when you play on the RD-170) and receiving (when the RD-170 is used as tone generator) MIDI data.

Note that you should not assign the same MIDI channel to the Upper and Lower parts. Furthermore, it would be wiser not to select the MIDI channel you define as "basic channel" (see p. 31).

(1) Press [EDIT] (lights), followed by [4].

ChAnnEL tr-rc

Press and hold [4] to display the abbreviated function name.

(2) Press the [UPPER] (red) or [LOWER] (green) button to select the part whose setting you want to change.

(3) Use [DEC/NO]/[INC/YES] to select the channel number (1~16) or OFF (neither transmit, nor receive MIDI data).

(4) Press [EXIT] (or [EDIT]) to leave the Edit mode or select the other part and change its setting too.
Note: This setting can be saved (see p. 28).

Bank Select and Program Change messages →[MIDI]

To take advantage of these and the remaining Edit functions, you need to connect the RD-170 as follows:
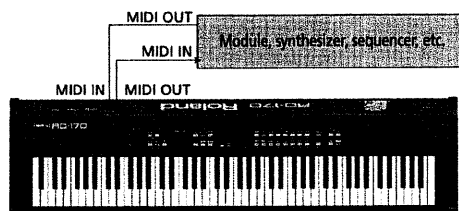
RD-170 MIDI IN: to receive MIDI messages
RD-170 MIDI OUT: to transmit MIDI messages

Nowadays, most MIDI instruments and effects devices contain a lot more than 128 sounds/memories. When the MIDI standard was developed, some 20 years ago, 128 memories seemed a lot, which is why it was decided to use a dedicated message type (Program Change) for selecting memories on an external device.

The entire MIDI standard evolves around the magic number "128". Given that there is no way of expanding that number, so-called Bank Select messages were later added to accommodate the growing number of memories (synthesizers with more than 2,000 sounds are quite common these days).

At the time, neither CC00, nor CC32 had dedicated functions and so these two control change messages were appointed for bank selection.

Two bank addresses ("MSB" and "LSB", a.k.a. CC00 & CC32) with 128 possibilities each, plus 128 Program Change numbers provide 128 x 128 x 128 possibilities – a lot more than you can eat.

On the RD-170, these three messages (CC00, CC32 and Program Change) are always sent as a set. Transmitting only Bank Select messages does nothing at all, while working only with Program Change messages means that you are stuck with 128 memories in the currently active memory bank.

That is why you need to transmit:
• A value for control change CC00 (MSB)
• A value for control number CC32 (LSB)
• A Program Change number
See the manual of the receiving MIDI instrument for the MSB and LSB values it supports.

As soon as you press [ENTER] to confirm the Program Change number (after first entering and confirming the CC00 and CC32 values), the selected part (Upper or Lower) immediately transmits the memory selection cluster. When you save your settings to a Setup memory, these values are also memorized and transmitted each time you select that Setup memory.

As you will notice, this procedure is very user-friendly indeed: after pressing [5] to select CC00tr and entering the desired value for CC00, pressing

ENTER to confirm your setting will immediately take you to 6, where you can enter the value for CC32 tr.

When you confirm that value by pressing ENTER, you can enter the Program Change number. (There is thus no real need to press 6 or 7 to select the CC32 or PrgCh parameters.)

As soon as you confirm the PrgCh value (by pressing ENTER), the memory selection cluster is transmitted.

Use DEC/NO/INC/YES to specify the bank and program change numbers.

Note: While the setting range for CC00 and CC32 is 0~127, that of the PrgCh parameter is 1~128.

Note: You can also select OFF for these three parameters to prevent the part in question from sending that message.

Note: If PrgCh is set to OFF, the CC00 and CC32 values are not transmitted (CC00/CC32 must always be followed by a Program Change number).

Transmitting Volume values

→[MIDI]

This parameter allows you to specify the volume value (CC07) to be transmitted by the Upper and/or Lower part whenever you select the Setup memory that contains this setting. That way, the MIDI instrument you are controlling is automatically set to the desired level.

The setting range is 0~127, Off. Remember that selecting "0" silences the receiving MIDI instrument.

Note: You can also set the volume of external MIDI instruments in realtime – using the PART LEVEL UPPER and LOWER sliders.

(1) Press EDIT (lights), followed by 8.

UoLumE tr

Press and hold 8 to display the abbreviated function name.

(2) Press the UPPER (red) or LOWER (green) button to select the part whose setting you want to change.

(3) Use DEC/NO/INC/YES to set the volume value (0~127). Simultaneously press DEC/NO and INC/YES to select OFF if the selected part should not transmit any CC07 value when you select the Setup memory in question (this is the default setting).

(4) Press EXIT (or EDIT) to leave the Edit mode or select the other part and change its setting too.

Note: This setting can be saved (see p. 28).

Reverb Send level

→[MIDI]

This parameter allows you to specify the Reverb Send Level value (CC91) to be transmitted by the Upper and/or Lower part whenever you select the Setup memory that contains this setting. The setting range is 0~127, Off.

Selecting "0" will set the receiving MIDI instrument to "dry" (no Reverb), while "127" represents the maximum Reverb Send level.

(1) Press EDIT (lights), followed by VARIATION.

rEuErb tr

Press and hold VARIATION to display the abbreviated function name.

(2) Press the UPPER (red) or LOWER (green) button to select the part whose setting you want to change.

(3) Use DEC/NO/INC/YES to set the send level value (0~127). Simultaneously press DEC/NO and INC/YES to select OFF if the selected part should not transmit any CC91 value when you select the Setup memory in question (this is the default setting).

(4) Press EXIT (or EDIT) to leave the Edit mode or select the other part and change its setting too.

Note: This setting can be saved (see p. 28).

Note: If there is no audible change, you may have to check the Reverb effect settings on the receiving MIDI instrument.

Note: Not all MIDI instruments have a Reverb effect and even if they do, they may not support this control change number (this is especially true of older instruments).

Chorus Send level

→[MIDI]

This parameter allows you to specify the Chorus Send Level value (CC93) to be transmitted by the Upper and/or Lower part whenever you select the Setup memory that contains this setting. The setting range is 0~127, Off.

Selecting "0" will set the receiving MIDI instrument to "dry" (no Chorus), while "127" represents the maximum Chorus Send level.

(1) Press EDIT (lights), followed by 9.

choruS tr

Press and hold 9 to display the abbreviated function name.

(2) Press the [UPPER] (red) or [LOWER] (green) button to select the part whose setting you want to change.

(3) Use [DEC/NO]/[INC/YES] to set the send level value (0~127). Simultaneously press [DEC/NO] and [INC/YES] to select OFF if the selected part should not transmit any CC93 value when you select the Setup memory in question (this is the default setting).

(4) Press [EXIT] (or [EDIT]) to leave the Edit mode or select the other part and change its setting too.

Note: This setting can be saved (see p. 28).

Note: If there is no audible change, you may have to check the Chorus effect settings on the receiving MIDI instrument.

Note: Not all MIDI instruments have a Chorus effect and even if they do, they may not support this control change number (this is especially true of older instruments).

Pedal/slider filters (TR)   →[MIDI]

Here are three parameters that allow you to specify whether (On) or not (OFF) the damper pedal, foot-switch (or expression pedal) and/or PART LEVEL sliders should **transmit** (TX) the corresponding MIDI messages:

10	CC64	Footswitch connected to the PEDAL DAMPER socket.
11	CC66	Sostenuto
	CC67	Soft
	CC11	Expression
		Footswitch or pedal connected to the SOFT/EXPR. socket. Its function depends on the setting selected for "Second pedal" (p. 22) and "Pedal detection" (p. 30).
12	CC07	PART LEVEL sliders

(1) Press [EDIT] (lights), followed by [10], [11] or [12].

```
┌────────────────┐
│                │
│      OFF       │
│                │
└────────────────┘
```

SuStAin tr
2nd PEdAL tr
SLidEr tr

Press and hold the numeric button in question to display the abbreviated function name.

(2) Press the [UPPER] (red) or [LOWER] (green) button to select the part whose setting you want to change.

(3) Use [DEC/NO]/[INC/YES] to select On (transmit) or OFF (do not transmit).

(4) Press [EXIT] (or [EDIT]) to leave the Edit mode or select the other part and change its setting too.

Note: This setting can be saved (see p. 28).

Roland

MIDI reception (RC) filters

→[MIDI]

The RD-170 contains four parameters that allow you to specify whether (On) or not (OFF) the following messages should be **received** when the RD-170 is controlled by an external sequencer, computer, etc.

13	PC rc: Refers to program change messages that can be used for assigning internal sounds to the Upper or Lower part.
14	UoL-EHP rc: Refers to the reception of volume (CC07) and expression (CC11) messages.
15	SuS-SoFt-SoSt rc: Refers to the reception of Hold (CC64), Soft (CC67) and Sostenuto (CC66) messages.
16	rEU-cho rc: Refers to the reception of Reverb Send (CC91) and Chorus Send (CC93) messages.

(1) Press [EDIT] (lights), followed by [13], [14], [15] or [16].

OFF

Press and hold the numeric button in question to display the abbreviated function name.

(2) Press the [UPPER] (red) or [LOWER] (green) button to select the part whose setting you want to change.

(3) Use [DEC/NO]/[INC/YES] to select On (receive) or OFF (do not receive).

(4) Press [EXIT] (or [EDIT]) to leave the Edit mode or select the other part and change its setting too.
Note: This setting can be saved (see p. 28).

Local Control

→[MIDI]

The Local Control parameter allows you to establish or remove the connection between the RD-170's keyboard/sequencer and the internal tone generator.

When set to On (default), playing on the RD-170's keyboard causes the corresponding notes to sound. If you select OFF, the corresponding MIDI messages are no longer sent to the internal tone generator – but they are still transmitted to the MIDI OUT port and hence to external MIDI instruments.

This parameter can be used for combinations involving one internal (Upper, for example) and one external sound (Lower).
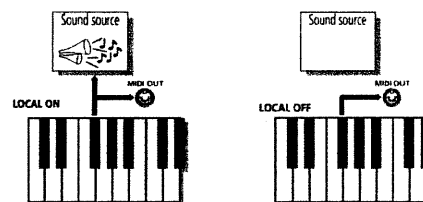
(1) Press [EDIT] (lights), followed by [SETUP].

On

LocAL

Press and hold [SETUP] to display the abbreviated function name.

(2) Press the [UPPER] (red) or [LOWER] (green) button to select the part whose setting you want to change.

(3) Use [DEC/NO]/[INC/YES] to select On (Part connected to the internal tone generator) or OFF (connection broken).

(4) Press [EXIT] (or [EDIT]) to leave the Edit mode or select the other part and change its setting too.
Note: This setting can be saved. See below.

# Setup: saving and recalling your EDIT settings

The RD-170 contains 16 Setup memories where you can save your configurations for quick recall on stage, in the studio, etc. If you are planning to take the RD-170 on the road (or if you need more than 16 Setups), be sure to archive the contents of these memories via MIDI (see p. 32).

Saving your settings

Here's how to save all settings discussed in this chapter along with the remaining part parameters you can set via the front panel (velocity, Reverb status, etc.).

Note that you need to save your settings before switching on [SETUP] or switching off the RD-170. Otherwise, your changes are lost.

(1) Press the [WRITE] button.
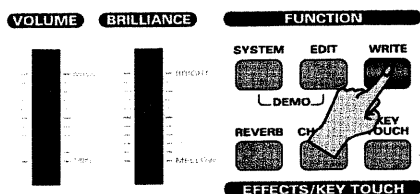
The [SETUP] button as well as all numeric buttons [1]~[16] (except the one that corresponds to the last memory you selected) now flash in orange. The display looks as follows:


("12" refers to the number of the last Setup you selected. This could be any other number between "1" and "16".)

(2) Press the numeric button that corresponds to the memory where you would like to save your settings ([1]~[16]).
The [ENTER] button flashes.

(3) Press the [ENTER] button to confirm your selection.
Press [EXIT] (or [WRITE]) if you do not wish your settings after all. The [WRITE] button goes dark.

Loading Setup memories

Here's how to select one of your 16 Setups. Please note that SETUP is a mode you select. It remains active until you switch off the [SETUP] button or press the [SYSTEM] or [EDIT] button.

(1) Press the [SETUP] button.
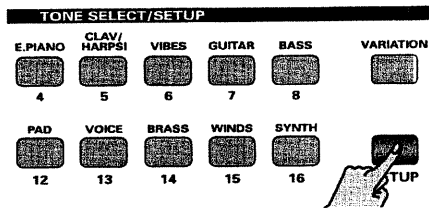
The [SETUP] button lights and one of the numeric buttons (probably [1]) flashes. If this is the first time you've pressed [SETUP] since switching on the RD-170, button [1] lights. Otherwise, the numeric button of the last memory you selected lights.

(2) Press the numeric button [1]~[16] that corresponds to the Setup memory you wish to recall. You can also use [DEC/NO]/[INC/YES] to select the previous/next memory.
That button now lights in orange. If you connected external MIDI instruments to the RD-170, they carry out all changes contained in your Setup memory (volume, Send levels, memory selection, etc.).

Note: If you edit a parameter after recalling a memory, the numeric button corresponding to that memory starts flashing.

(3) Press [SETUP] again (it goes dark) to leave the SETUP mode if you no longer need it.
The RD-170 will go on using the settings of the recalled Setup until you change them.

Note: When you switch on the RD-170, it starts up with a default set outside the SETUP mode. For live performances, do not forget to switch on [SETUP] and to select the appropriate memory.

6. System parameters

System parameters apply to the RD-170 as a whole (and thus also to all Setup memories) and can be saved to a special System memory.
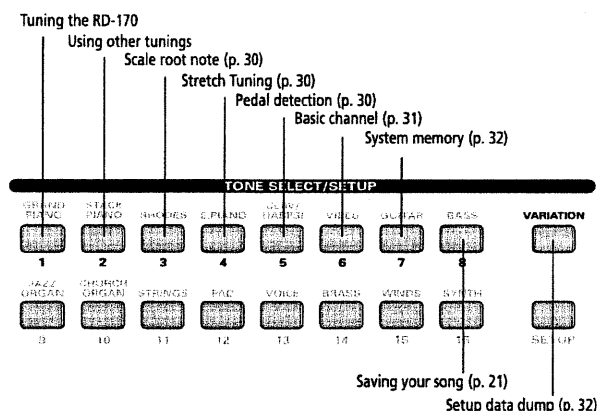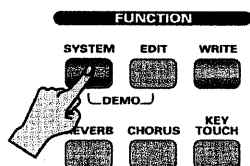
Tuning the RD-170
Using other tunings
Scale root note (p. 30)
Stretch Tuning (p. 30)
Pedal detection (p. 30)
Basic channel (p. 31)
System memory (p. 32)

Saving your song (p. 21)
Setup data dump (p. 32)

Note: If you hold down the TONE SELECT/SETUP button of the function you need, the display shows an abbreviated name of that parameter.

Tuning the RD-170

This function allows you to change the RD-170's standard pitch so that it matches the pitch of other instruments (or a CD player, tape recorder, etc.) you are accompanying.

The RD-170 is a digital instrument, which means that it never goes out of tune and that changing its tuning is a matter of pressing a few buttons rather than tuning a whole bunch of strings.

(1) Press SYSTEM (lights), followed by 1.

ПАSEEr EunE

Press and hold 1 to find out what the function is called ("M. Tune").

(2) Use DEC/NO/INC/YES to select a different frequency for the A4 (and hence the entire instrument).
The setting range is 415.3~466.2Hz. The normal tuning of electronic musical instruments is 440Hz. Note that the first digit ("4") is omitted, so that "440Hz" is actually displayed as "40.0". Similarly, the frequency "415.3" will be displayed as "15.3", etc.
Note: This setting can be saved (see p. 32).

(3) Press EXIT to leave the System mode.

Using other tunings

The RD-170 allows you to play classical music, such as baroque, with the tuning actually used in that period.

Most music today is composed and played based on the assumption that Equal Temperament (the most common tuning method) will be used. However, various other tunings were in existence during the age of classical music. By playing a piece using such an "old" tuning, you should be able to hear the natural sonorities of the chords and appreciate the piece in the way it was originally intended.

(1) Press SYSTEM (lights), followed by 2.

PYE

ScRLE Eunin9.

Press and hold 2 to display the abbreviated function name.

(2) Use DEC/NO/INC/YES to select the desired scale.
Certain scales also require that you set the root note of the key you wish to play in. See below for details.
E9u (Equal): This tuning divides the octave equally into 12 intervals.
PYE (Pythagorean): This method of tuning was invented in ancient Greece. It resolves the ambiguity of the fourths and fifths. Though thirds are somewhat imperfect, melodies sound clearer.

ΠΗ J (Just major): A tuning which resolved the ambiguity of fifths and thirds. Quite beautiful sonorities are produced with chords, but the scale is unbalanced, so it is not well-suited for melodies.

Πιn (Just minor): This is a Just scale for playing pieces in minor keys.

Πnt (Mean Tone): A temperament that adds some compromises to Just temperament and facilitates transposition.

ΙΕr (Werckmeister): A combination of the Mean Tone and Pythagorean temperaments, this tuning allows for playing in any key.

Hιr (Kirnberger): As a result of improvements made to the Mean Tone and Just tempera-ments, it is relatively tolerant towards transpo-sition and can be used to play in all keys.

Skip to step (5) below if you do not need to set the root note.

●**Specifying the root note**

When you play using a tuning other than Equal Temperament, you need to specify the root/fundamental ("C" for major and "A" for minor) according to the key of the song to be played.

(3) Press ⎡SYSTEM⎤ (lights), followed by ③.

rooʇ noʇΕ
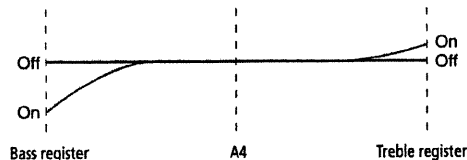
Press and hold ③ to display the abbreviated function name.

(4) Use ⎡DEC/NO⎤/⎡INC/YES⎤ to select the desired root note (C~B).
Note: This setting can be saved (see p. 32).

(5) Press ⎡EXIT⎤ to leave the System mode.

Stretch Tuning

"Stretch Tuning" is a tuning method specific to pianos. The pitch of a piano is generally tuned lower in the bass and higher in the treble compared with equal temperament. This is done because low notes, when tuned right, sound a little sharp, while treble notes sound flat. By changing the tuning curve, the chords will sound subtly different.

(1) Press ⎡SYSTEM⎤ (lights), followed by ④.

SʇrΕʇch ʇuninϑ

Press and hold ④ to display the abbreviated function name.

(2) Use ⎡DEC/NO⎤/⎡INC/YES⎤ to select On or OFF.
OFF refers to the standard tuning curve, which is suitable for playing in Layer mode or with other instruments.

On refers to the tuning curve that stretches the bass and treble. This is suitable for piano solos.
Note: This setting can be saved (see p. 32).

(3) Press ⎡EXIT⎤ to leave the System mode.
Note: Stretch Tuning only applies to "Piano" Tones.

Pedal detection

You can connect either a footswitch (DP-2, etc.) or an expression pedal (EV-7, etc.) to the RD-170's SOFT/EXPR. socket and specify its function for the Upper and Lower parts separately (see p. 22).

The RD-170 is smart enough to recognize whether you are using a footswitch or an expression pedal. (You cannot use both simultaneously, so don't try to solder the cable wires together or using a multi-input connection box.) There may be times when you select a Setup memory (see p. 28) that assigns the Soft function to the Upper part, for example, while an EV-5 expression pedal is connected to the SOFT/EXPR. socket.

If pedal detection is On, the RD-170 behaves smartly: if you connect the "wrong" kind of perfor-mance controller to the SOFT/EXPR. socket (an expression pedal rather than a footswitch, for example), you can control the Upper Part's expres-sion level.

If pedal detection is OFF, the RD-170 becomes downright clever: if Upper is set to respond to Soft messages (on/off), while you connected an expres-

sion pedal (continuous) to the SOFT/EXPR. socket, the RD-170 "translates" the continuous expression messages (values between "0" and "127") into on/off-type signals – and triggers the Soft function just the same. In that case, values 0~64 switch the Soft function off, while values 65~127 (pedal half way~all the way down) switch it on.

Note that this is a System parameter that applies to *all* Setup memories.

(1) Press SYSTEM (lights), followed by 5.

2nd dEtEct
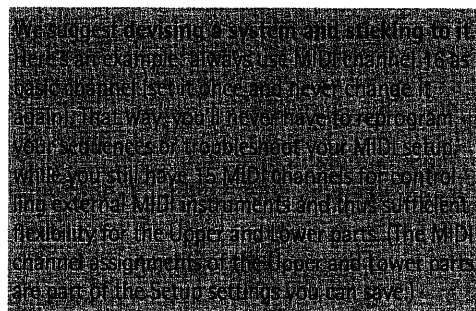
Press and hold 5 to display the abbreviated function name.

(2) Use DEC/NO/INC/YES to select On or OFF.
Note: This setting can be saved (see p. 32).

(3) Press EXIT to leave the System mode.

Basic channel [MIDI]

This parameter allows you to specify the MIDI channel used by the RD-170 for transmitting and receiving program changes related to the selection of Setup memories (see p. 28).

You can indeed select the Setup memories via MIDI (from a sequencer, computer, etc.), so that you do not need to worry about that while playing. (The Setup memories are assigned to MIDI program change numbers 1~16.)

Depending on how you want to work with your RD-170, it would be a good idea to choose a MIDI channel that is neither used by the Upper, nor the Lower part. That way, any other MIDI data (like note messages, for example) contained on the sequencer track used for remotely controlling Setup changes are ignored by the RD-170. An additional advantage of using a separate basic channel is that program change messages the RD-170 may receive during a performance do not assign other internal sounds to the Upper or Lower part.

(1) Press SYSTEM (lights), followed by 6.

bASic chAnnEL

Press and hold 6 to display the abbreviated function name.

(2) Use DEC/NO/INC/YES to select the desired basic channel (1~16). You can also select OFF, which means that program changes for Setup memories are neither transmitted, nor received.
Note: This setting can be saved (see p. 32).

(3) Press EXIT to leave the System mode.

System memory

With the exception of ⑧ SonG ΠEΠ and ⑨ SEtuP duΠP, all System parameters can be saved. **Do not forget** to do so after changing the preceding parameters and before switching off the RD-170. Otherwise, you need to reprogram the System parameters next time you switch on the RD-170.

Please be aware that there is one System memory. This means that your previous settings will be overwritten each time you save new settings. It also means that you do not need to select this memory: the RD-170 does that automatically.

(1) Press SYSTEM (lights), followed by ⑦.

$$YE5$$

### 545tEN ΠEΠ

Press and hold ⑧ to display the abbreviated function name.

(2) Press INC/YES to save your System settings. Then press EXIT to leave the System mode. Press another TONE SELECT/SETUP button to select a different System parameter if you do not want to save the current settings.

(3) Press EXIT to leave the System mode.

Setup data dump   →[MIDI]

This parameter allows you to transmit the contents of the 16 Setup memories (see p. 28) as MIDI Bulk Dump data to an external sequencer, computer or data filer. If you are a performing musician, we strongly advise you to do this at regular intervals. (No musician should go on the road without a backup set of all settings – you never know what may happen...)

Note: The song in the RD-170's internal memory cannot be archived using this function.

Connect the RD-170 as follows. You will need MIDI cables for this.
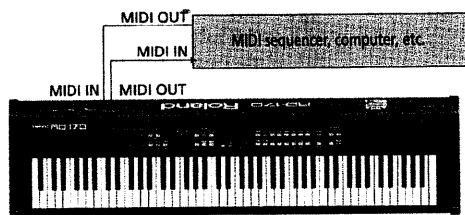
(1) Connect the RD-170's MIDI IN socket to the sequencer's/computer's MIDI OUT socket.
Note: Your computer needs to be equipped with (or connected to) an appropriate MIDI interface.

(2) Connect the RD-170's MIDI OUT socket to the sequencer's/computer's MIDI IN socket.

(3) If you are working with a computer, launch the sequencer program.

(4) Create or select an empty song.

(5) Create (or select) an empty track.
The track's MIDI channel is of no importance here. You need to ensure, however, that the sequencer/program accepts SysEx data. If necessary, switch off the MIDI filter in question (see the manual of your sequencer or software).

(6) Switch off the sequencer's MIDI Echo (or Soft Thru) function.
If that's too tedious, disconnect the MIDI cable from the sequencer's/computer's MIDI OUT socket. This is to ensure that the sequencer doesn't transmit the SysEx data back to the RD-170 right away, which might cause problems.

(7) Activate the record-ready mode of the track you selected/created.
Note: It would be wise not to change the tempo on your sequencer/in the software. Most sequencers/programs use ♩ = 120. Leave it that way (or else do whatever is necessary to ensure that the new tempo value is stored along with the data).

(8) On the RD-170, press SYSTEM (lights), followed by ⑨.

$$YE5$$

SEtuP duΠP

Press and hold ⑨ to display the abbreviated function name.

(9) Start recording on your sequencer/computer. Wait until the count-in (one or two measures) is finished, then...

(10) Press INC/YES on the RD-170 to start the transmission of the Setup bulk data.
Press DEC/NO if you do not want to archive your settings after all. (In that case, you do not need to press EXIT.)

(11) Wait until the dΠP is replaced by YE5, then stop recording on your sequencer.

(12) Name the "song" (it only contains data) and save it to hard or floppy disk.

(13) On the RD-170, press EXIT to leave the System mode.
To transmit the settings back to the RD-170, start playback of the external song.

7. Miscellaneous

Restoring the factory defaults

You can reset the RD-170 to its factory settings, which means that your own Setup memories will be overwritten with the settings the RD-170 contained when you first got it. You may wish to archive your Setup memories before initializing the RD-170 (see p. 32).

Switch on the RD-170 while holding down the [WRITE] button. The display will read Fct as soon as the factory settings have been loaded.

About MIDI

MIDI stands for *Musical Instrument Digital Interface*, an international standard which allows performance information to be communicated among electronic musical instruments and computers.

The RD-170 has two MIDI sockets for transmitting and receiving performance messages to and from an external device.

By connecting an external MIDI device to these sockets, you can play it or change sounds on the external device from the RD-170.

MIDI OUT
This sends out messages describing actions (such as playing the keyboard) to the MIDI IN jack on the external device. The receiving MIDI device will act according to the MIDI messages received and play notes, change Tones, etc.

MIDI IN
This receives the MIDI messages sent by an external MIDI device.

Connecting a MIDI device
Connect the MIDI socket (e.g. "OUT") of the external device to the opposite socket of the RD-170 (e.g. "IN") using a MIDI cable.
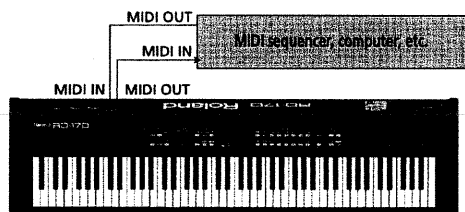
MIDI transmit/receive channels
MIDI provides 16 channels. MIDI messages are communicated between two devices over a MIDI channel. Even if the two devices are connected properly with a MIDI cable, messages cannot be sent or received if the MIDI channels are not set correctly. The RD-170 allows you to set three MIDI channels: one for the Upper part, one for the Lower part and a basic channel.

Local Control
You can connect the RD-170 to a MIDI sequencer and record your performances with that sequencer. It goes without saying that these data can also be played back.

If the sequencer's (Soft) Thru (or MIDI Echo) function is turned on, the notes you record will be retransmitted right away to the RD-170 and thus played a second time. This happens because the keyboard information reaches the sound generator via two different routes (directly from the keyboard and via MIDI). This makes the performance sound strange and greatly reduces the number of available voices. To resolve this, you can disable the connection between the keyboard and the internal tone generator. See page 27 for details.

Program Changes
"Program Changes" are MIDI messages that allow you to remotely control Tone selection on the RD-170 or to select different sounds on an external instrument that is being controlled from the RD-170. The Setup memories can also contain memory addresses that are transmitted each time you select them. See page 24 for details.

Volume & Expression filter
Whenever you change the setting of the PART LEVEL [LOWER] or [UPPER] slider, the RD-170 transmits a Volume control change (CC07) on the MIDI channel assigned to the Lower or Upper part. This message can also be received for remote volume control of the RD-170's Tones.

Another type of (relative) volume message is transmitted when you use an optional expression pedal. The corresponding control change (CC11) can also be received.

Tone List

Here is a list of the internal Tones and their Program Change numbers. These numbers are transmitted whenever you assign a Tone to the Upper or Lower part. If the RD-170 receives these messages via MIDI, it behaves in the same way as when you press the corresponding Tone selection button.

- These messages are transmitted and received on the Lower or Upper MIDI channel. See p. 33 for how to set it.
- Program Change messages are only received if the filter in question is set to On. See p. 33.

GRAND PIANO		CLAV/HARPSI		JAZZ ORGAN		VOICE	
Grand Piano	01	Clavi 1	17	Jazz Organ 1	33	Synth Voice	49
Bright Grand	02	Clavi 2	18	Jazz Organ 2	34	Real Choir	50
Rock Piano	03	Clavi 3	19	Rotary Organ	35	Rich Choir	51
Honkytonk Piano	04	Harpsichord	20	Jazz Organ 3	36	Jazz Scat	52

STACK PIANO		VIBES		CHURCH ORGAN		BRASS	
Piano+Pad	05	Vibes 1	21	Pipe Organ	37	Brass Section	53
Piano+Strings	06	Vibes 2	22	Pipe & Choir	38	Sforzando Brass	54
Piano+Choir	07	Marimba	23	Organ Flute	39	Synth Brass	55
Electric Grand	08	Xylophone	24	Tremolo Organ	40	Warm Brass	56

RHODES		GUITAR		STRINGS		WINDS	
Rhodes 1	09	Acoustic Guitar	25	Stereo Strings	41	Flute	57
Rhodes 2	10	Steel Guitar	26	Attack Strings	42	Oboe	58
Stage Rhodes	11	Nylon Guitar	27	Orchestra Strings	43	Pan Pipes	59
Suitcase	12	Jazz Guitar	28	Synth Strings	44	Clarinet	60

E.PIANO		BASS		PAD		SYNTH	
FM E. Piano 1	13	Acoustic Bass	29	Soft Pad	45	Bell Pad	61
FM E.Piano 2	14	Picked Bass	30	Warm Pad	46	Poly Saws	62
RD-1000	15	Fretless Bass	31	JP-8 Strings	47	Poly Key	63
Wurly	16	AC. Bass+Ride Cymbal	32	JP-8 Hollow	48	Poly Brass	64

Specifications

- Keyboard: 88-key hammer action
- Max. polyphony: 64 voices
- Tones: 64 (16 families x 4 variations)
- Sliders: Master Volume, Brilliance, Part Level Upper & Lower
- Display: 7 segments (3-digit) LED
- Keyboard modes: Split, Layer, Whole Upper, Whole Lower
- Master Tuning: (0.1 Hz steps) 415.3~ 466.2Hz
- Transpose: -6~+5, semitone steps
- Effects: Reverb (8 levels), Chorus (8 levels), Sympathetic Resonance (8 levels)
- Key Touch: 4 types of touch sensitivity
- Tuning: 7 temperaments, adjustable root note
- Pedal sockets: Damper (half-damper recognition), Soft/ Sostenuto (selectable), Expression
- Sequencer: 2 tracks, ±5,000 notes
- Metronome: Beat (0/4, 2/4, 3/4, 4/4, 5/4, 6/4, 3/8, 6/8, 9/8), Volume (128 levels)
- Octave: -2, -1, 0, +1, +2
- Setup: 16 memories

- Demo songs: 16
- Master keyboard functions:
  Zones: 2 independent zones
  MIDI data Tx (Upper/Lower): Program change (CC00, CC32, PC), Volume, Expression, Damper, Soft/ Sostenuto, Reverb, Chorus
- Sockets: Pedal x2, headphones x2 (stereo), MIDI In/Out, Output L/Mono, R
- Power supply: AC mains
- Dimensions: 1370 (W) x 351 (D) x 126 (H) mm
- Weight: 19.5 kg
- Supplied accessories: Owner's Manual, power cable, music rest, damper pedal (with half-pedal recognition), Function overview (sticker)
- Options: EV-5/EV-7 expression pedal, DP-2 foot switch, RH-25/RH-50 headphones, KS-12 keyboard stand, KC-series mixing keyboard amplifiers

Note: In the interest of product improvement, the specifications and/or appearance of this instrument are subject to change without prior notice.

MIDI Implementation Chart

[Digital Piano]
Model: RD-170

Date: March 2003
Version: 1.00

	Function...	Transmitted		Recognized		Remarks
Basic Channel	Default Changed	Upper: 1/Lower: 2 1~16, Off		Upper: 1/Lower: 2 1~16, Off		
Mode	Default Message Altered	Mode 3 x *****		Mode 3 x		
Note Number	True Voice	0~127 *****		0~127 15~113		
Velocity	Note ON Note OFF	O X 8n v= 64		O X		
After Touch	Key's Ch's	X X		X X		
Pitch Bend		X		X		
Control Change	0,32 6, 38 7 11 64 66 67 91 93 100, 101	O O O O O O O O O O	*1 *1 *1 *1 *1 *1 *1 *1 *1	O O O O O O O O (Reverb) O (Chorus) O	*1 *1 *1 *1 *1 *1 *1 *1 *1	Bank Select Data Entry Volume Expression Hold 1 Sostenuto Soft Effect 1 Depth Effect 3 Depth RPN LSB, MSB
Program Change	True #	O (1~128) *1 *****		O (1~64) *1		Program Number 1~128
System Exclusive		O		O		
System Common	Song Position Pointer Song Sel Tune	X X X		X X X		
System Real Time	Clock Commands	X X		X X		
Aux Messages	All Sounds Off Reset All Controllers Local On/Off All Notes Off Active Sense Reset	X X O X O X	*1	X O O O (123-125) O X		
Notes		*1 O X is selectable *2 Affects only MIDI notes				

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

O: Yes
X: No

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