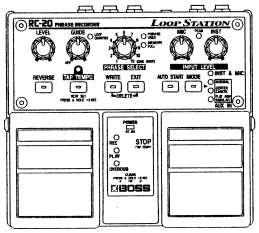
LOOP STATION RC-20

PHRASE RECORDER

Owner's Manual

Before using this unit, carefully read the sections entitled: "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (p. 29–31; p. 32–33).
These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, Owner's manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

* *The "Mini Guide" on the back of the RC-20 provides a simple explanation of use. You can use it as a reminder of operational procedures.*



Main Uses

Here are some ways in which the RC-20 can be used. You can use your own creativity to come up with other ways to enjoy using the RC-20.

■ **"Sound On Sound" performance**
New "sound on sound" possibilities let you combine performances not only of guitar, but also vocals, percussion, and drum pads..... p. 10

■ **Create loop phrases**
You can record phrases from a sampling CD or MD, and overdub guitar or vocals..... p. 12

■ **Switch loops while you perform live**
Multiple R&B or techno phrase loops can be stored, and selected successively while you perform (**Phrase Shift**)..... p. 20

■ **As a phrase trainer**
Play your guitar while playing back phrases recorded from a CD or MD..... p. 16
Practice at a different tempo without changing the pitch..... p. 19
Erase the guitar solo or vocal when recording, to create "minus-one" data for practicing (**Center Cancel**)..... p. 18

■ **As a backing device**
Phrase trainer with a pedal that lets you start/stop or select phrases (One-shot Playback)..... p. 16

■ **Special effects during a live performance**
Reverse-playback of a recorded phrase..... p. 21

BOSS

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Main features

■ Simple and reliable loop play

The new **"loop quantize"** function automatically adjusts the timing of the loop end. This makes it easy for anyone to create looped phrases of an accurate length.

■ Up to 5 minutes 30 seconds of extended phrase recording

Up to ten different loop phrases and one one-shot phrase can be saved for a total of 5 minutes and 30 seconds of recording.

■ Control the phrase tempo in real time

The tempo of a phrase can be controlled in real time without affecting its pitch. A phrase recorded into internal memory can be made to match the tempo of a live performance, opening up new possibilities during a gig.
This feature is also useful when you wish to slow down the tempo of a guitar phrase to learn and practice it.

■ Dedicated mic input for vocalists

Since the INST jack and MIC jack can be used simultaneously, you can create new sound-on-sound performances that combine guitar, vocals, and percussion.

■ Easily record audio signals from a CD or MD

It's easy to record audio signals from a CD or MD connected to the AUX IN jack.
Since the vocal or guitar solo can be erased from the audio signal while it is being recorded, it's also easy to create minus-one data.

■ Pedal design for hands-free operation

You can use the pedals to start/stop the performance, switch phrases, and set the tempo without taking your hands off of your guitar.

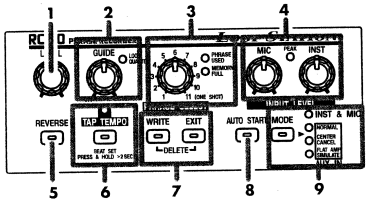
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Panel Descriptions

Front Panel



1

LEVEL Knob
This knob adjusts the play volume of the phrase.

* *This knob does not adjust the input level from the INST/MIC/AUX IN jacks or the volume of the guide tone.*

2

GUIDE Knob
This knob adjusts the volume of the guide tone that sounds according to the tempo while a phrase is being recorded or played.

LOOP QUANTIZE Indicator
This indicator lights when the Loop Quantize function (p. 25) is activated.

3

PHRASE SELECT Knob
This knob selects the phrase track that will be saved or played.

PHRASE USED Indicator
This indicator will light if a phrase has been saved in the selected track.

MEMORY FULL Indicator
The indicator will light when the remaining capacity of internal memory is getting low (p. 27). If the remaining memory runs out while a phase is being saved, this indicator will blink.

4

MIC Knob
This knob adjusts the input level from the MIC jack.

INST Knob
This knob adjusts the input level from the INST jack.

PEAK Indicator
This indicator will light when the level of the input is excessively high.

5

REVERSE Button
Turn this button on (indicator lit) when you want the phrase to play back in reverse (p. 21).

6

TAP TEMPO Button
This button is used to set the tempo or time signature.
The indicator will light to indicate the current tempo and time signature (red on the first beat, green on subsequent beats).

- **Tempo**
  Specify the tempo by the interval at which you press the button (p. 24).
- **Time signature**
  When you press and hold the button for two seconds or longer, it will switch to time signature setting mode. Then press the button

the number of times that is equivalent to the numerator of the desired time signature (p. 25).

7

WRITE Button

- This button is used to save a recorded phrase into internal memory (p. 23).
- You can use the WRITE button and EXIT button to delete the contents of the selected phrase track (p. 23).

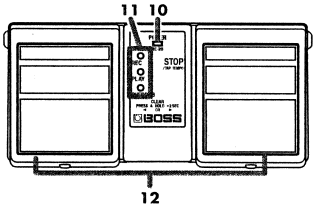
EXIT Button
This button is used to halt a phrase save or delete operation.

8

AUTO START Button
Turn this button on (indicator lit) if you want recording to begin simultaneously when the performance begins.

9

MODE Button
This button selects the recording method.



10

POWER Indicator
This indicator will light when the power is on.

* *When the batteries run down, the POWER indicator will become dim. When this occurs, please replace them with new batteries.*

11

REC Indicator
This indicator will light during recording.

PLAY Indicator
This indicator will light while a phrase is playing.

OVERDUB Indicator
This indicator will light during overdubbing.

12

Left Pedal

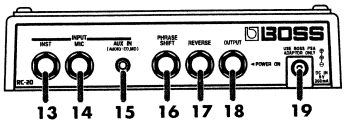
- Provides for switching among phrase recording, playback, and overdubbing.
  A phrase track in which no phrase is recorded: recording → playback → overdubbing
  A phrase track in which a phrase has been recorded: playback → overdubbing
- If you press and hold the pedal for two seconds or longer, the unsaved phrase will be deleted.

Right Pedal

- Provides for switching among phrase recording, playback, and overdubbing.
- You can set the tempo to the timing at which you press the pedal.
- If you press and hold the pedal for two seconds or longer, the unsaved phrase will be deleted (**clear**; p.22).

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Rear Panel



13

INST Jack
A guitar or other instrument can be connected to this jack.

14

MIC Jack
Accepts connection of a microphone.
Used when you wish to record a vocal or instrumental performance via a microphone.

15

AUX IN Jack
Connect to the headphones jack of a CD or MD.

16

PHRASE SHIFT Jack
If you wish to use a pedal to switch the phrase track, connect a pedal switch (sold separately; e.g., FS-5U) to this jack.

17

REVERSE Jack
If you wish to use a pedal to play back the phrase in reverse, connect a pedal switch (sold separately; e.g., FS-5U) to this jack.

18

OUTPUT Jack
Connect a guitar amp or speaker to this jack.

* *If you are using batteries, the power will be turned on when you insert a plug (for connection to an amp or speaker) into the this jack.*

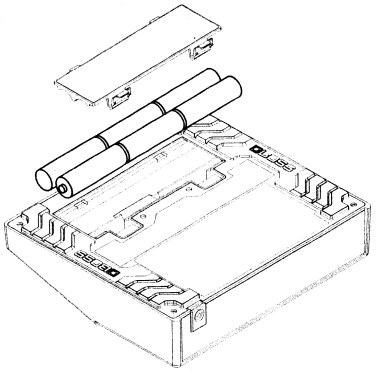
NOTE: Do not connect headphones to this jack. Doing so may damage the headphones.

19

AC Adaptor Jack
Connect an AC adaptor (sold separately) to this jack.

Installing batteries

Insert the included batteries as shown in the diagram, being careful to observe the correct polarity.



NOTE

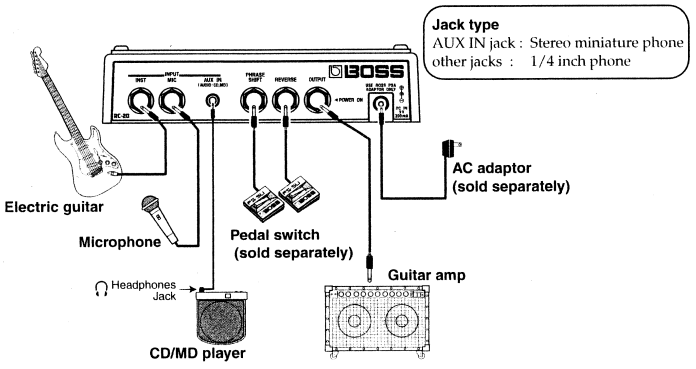
- Be sure to observe the correct + (positive) and – (negative) orientation of the batteries.
- When the batteries run down, the POWER indicator will become dim. When this occurs, please replace them with new batteries.
- If the power is turned off while you are recording or overdubbing, all of the saved data may be lost (p. 9). We recommend that you use an AC adaptor as well, to guard against battery failure.
- When replacing the batteries, use six AA batteries.
- Do not mix new batteries with previously used batteries or batteries of a different type. Doing so may cause battery leakage.
- The running time may be shorter depending on the type of batteries you use.

MEMO

Expected battery life under continuous use:
Carbon: 9 hours
Alkaline: 25 hours
These figures will vary depending on the actual conditions of use.

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Making connections



* *To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.*
* *If there are batteries in the unit while an AC adaptor is being used, normal operation will continue should the line voltage be interrupted (power blackout or power cord disconnection).*
* *If you are using batteries, the power will be turned on when a connector plug for your amp or speaker is inserted into the OUTPUT jack.*
* *For details on installing the batteries, refer to "Installing batteries" (p. 7).*
* *For details on pedal switches that can be connected to the PHRASE SHIFT jack and REVERSE jack, refer to p. 20, 21.*
* *Do not connect headphones to the OUTPUT jack. Doing so may damage the headphones.*
* *Howling could be produced depending on the location of microphones relative to amp. This can be remedied by:*

  1. Changing the orientation of the microphone(s).
  2. Relocating microphone(s) at a greater distance from speakers.
  3. Lowering volume levels.

* *If the amp and microphone are close together, the sound played back from the amp may be picked up by the microphone. If you record or overdub in such a state, the amp playback picked up by the microphone will also be recorded. You should separate the amp and microphone so that the playback from the amp is not picked up by the microphone.*

Turning the power on/off

Once the connections have been completed, 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.
When turning the power on: Turn on the power of the amp or mixer **last**.
When turning the power off: Turn off the power of the amp or mixer **first**.

NOTE

When turning on the power while a recorded track is being selected (the PHRASE USED indicator is lit), the indicators on the front panel flash in a sequential order, and the PHRASE USED indicator blinks for a few seconds.

If you turn off the power while the PHRASE USED indicator is blinking, the saved phrases will be erased.

Do not turn off the power while the PHRASE USED indicator is blinking.

To avoid problems, select an empty phrase track whenever possible, and turn on the power.

* *Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.*
* *If you are using batteries, the indicator will become darker when the batteries run down. Please replace the batteries as soon as possible.*

Important < Caution when turning off the power >

Before you turn off the power, make sure that the following conditions are met. **All saved data may be lost if the power is turned off inappropriately.**

- You must not be playing/recording/overdubbing a phrase
  (The REC, PLAY, and OVERDUB indicator must not be lit)
- The WRITE indicator or EXIT indicator must not be lit
- The PHRASE USED indicator is not blinking

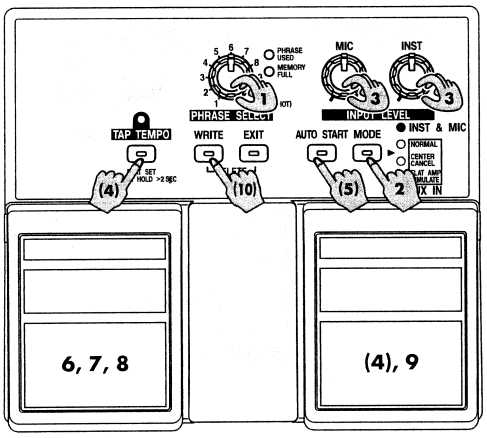
To avoid problems, select an empty phrase track whenever possible, and turn off the power.
If you are using batteries, the power will be turned off automatically when the connector plug to your amp or speaker is unplugged from the OUTPUT jack. Before unplugging this connector, make sure you check for the above states.

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Recording a guitar or vocal performance to create a phrase loop

MEMO On the RC-20, the process of recording an additional performance while a recorded performance plays back is called **overdubbing**.

The performance from an instrument or microphone connected to the INST jack or MIC jack can be recorded to create a phrase loop. This lets you enjoy new types of sound-on-sound playing that combine guitar, percussion, or drum pad performances.



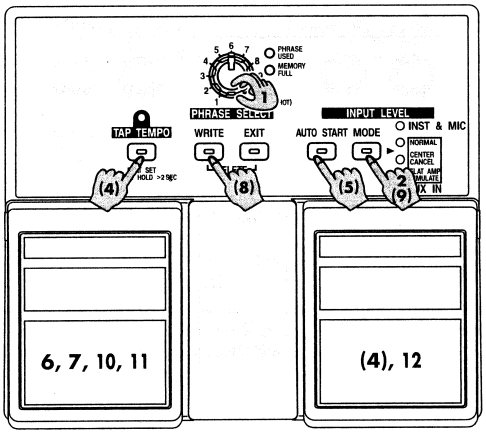
1. **Select an empty phrase track**
2. **Select the recording method**
3. **Adjust the recording level**
4. **(Tempo setting)** → If you are recording to a tempo
5. **(Auto Start setting)** → If you wish to start recording when the performance begins
6. **Start recording**
7. **Stop recording, and start playback**
8. **Start/stop overdubbing**
9. **Stop playback**
10. **(Save the phrase)** → If you wish to save the phrase

1. **Turn the PHRASE SELECT knob to select an empty phrase track 1–10 (PHRASE USED indicator extinguished).**
   If there is no empty phrase track, or if the MEMORY FULL indicator is lit, no further phrases can be recorded. You will need to erase unnecessary phrases (p. 23).
2. **Press the MODE button to get the INST & MIC indicator to light.**
3. **While you produce sound on your microphone or instrument, turn the MIC knob or INST knob to adjust the recording level.**
   Adjust the volume so that the PEAK indicator lights occasionally.
4. **Set the tempo by pressing the TAP TEMPO button or the right pedal several times in time with the tempo of the phrase you wish to record.**
   * *For details on setting the tempo, refer to "Setting the tempo" (p. 24).*
   * *If you are recording a phrase of a time signature other than 4/4, you must also set the time signature (p. 25).*
5. **If you want recording to begin the moment you start playing, turn the AUTO START button on (indicator lit).**
6. **Press the left pedal to begin recording.**
   If Auto Start is on, recording will begin the moment you start playing.
   If you have specified the tempo, recording will begin one measure after you press the left pedal.
   If you have not specified the tempo, recording will begin the moment you press the left pedal.
   * *If the internal memory is used up, recording or overdubbing may stop before you are finished. If this occurs, erase unnecessary phrases (p. 23), and try the operation again.*
7. **Press the left pedal to stop recording.**
   Simultaneously, the recorded phrase will begin playing.
   * *Regardless of the timing at which you press the left pedal, the length of the phrase will be automatically adjusted in units of a measure, so that the loop phrase can be created correctly (Loop Quantize p. 25). This means that a certain amount of time may be required from when you press the left pedal until recording stops.*
   * *If you recorded an extremely short phrase, the length of the phrase will be adjusted automatically, and then recording will stop (p. 27).*
8. **If you wish to overdub onto the phrase, press the left pedal.**
   Each time you press the left pedal, the playback and overdubbing modes will alternate.
9. **When you are finished with playback or overdubbing, press the right pedal.**
10. **Press the WRITE button, getting the indicator to start blinking. To save the data in the same phrase track, press the WRITE button once again.**
    If you wish to save the data to a different phrase track, press the WRITE button (so its indicator is blinking), use the PHRASE SELECT knob to select the desired save destination, then press the WRITE button once again.
    * *For details on saving, refer to "Saving a phrase" (p. 23).*

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Recording a phrase from CD/MD to create a phrase loop

You can create a phrase loop by recording a performance from a CD or MD connected to the AUX IN jack. For example, you can record phrases from a sampling CD and overdub guitar or vocal onto it, or even record an entire song from an audio CD and use it for practicing.



1. **Select an empty phrase track**
2. **Select the recording method**
3. **Adjust the recording level**
4. **(Tempo setting)** → If you are recording to a tempo
5. **(Auto Start setting)** → If you wish to start recording when the performance begins
6. **Start recording**
7. **Stop recording, start playback**
8. **(Save the phrase)** → If you wish to keep the phrase
9. **(Select the overdubbing method)** → If you wish to change the overdubbing method
10. **Start playback**
11. **Start/stop overdubbing**
12. **Stop playback**

1. **Turn the PHRASE SELECT knob to select an empty phrase track 1–10 (PHRASE USED indicator extinguished).**
   No further phrases can be recorded if there is no empty phrase track, or if the MEMORY FULL indicator is lit. In this case, you will have to erase unnecessary phrases (p. 23).

2. **Press the MODE button to select the recording method.**
   - **NORMAL+FLAT AMP SIMULATE**
     Apply the Flat Amp Simulator effect to the sound being recorded.
   - **CENTER CANCEL+FLAT AMP SIMULATE**
     Sounds localized at the center will be erased, and then the Flat Amp Simulator effect will be applied to the sound being recorded.
     * *If an effect such as reverb has been applied to the sounds localized at the center, it may not be possible to erase the sound completely.*
   - **NORMAL**
     The performance from the CD or MD will be recorded as is.
   - **CENTER CANCEL**
     Sounds localized at the center (such as vocals or guitar solo) will be erased from the sound being recorded.

> **The Flat Amp Simulator effect**
>
> Guitar amps are designed with a frequency response that is optimized for guitar playing. For this reason, when a phrase recorded from CD or MD is played back through a guitar amp, the low-frequency and high-frequency ranges will be emphasized in comparison to the mid-range. The Flat Amp Simulator compensates the frequency response during recording, so that the recorded (i.e., non-guitar) performance will sound correct when played through your guitar amp.

3. **While playing back the CD/MD, use the volume control of the CD/MD player to adjust the recording level.**
   Adjust the volume so that the PEAK indicator lights occasionally.
   When you have finished adjusting the volume, stop the CD/MD player for now, and put it in playback-ready mode.

4. **Set the tempo by pressing the TAP TEMPO button or the right pedal several times in time with the tempo of the phrase you wish to record.**
   * *For details on setting the tempo, refer to "Setting the tempo" (p. 24).*
   * *If you are recording a phrase of a time signature other than 4/4, you must also specify the time signature (p. 25).*

5. **If you want recording to begin the moment the performance begins, turn the AUTO START button on (indicator lit).**

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6. Press the left pedal to begin recording.
If the AUTO START button is on, recording will begin the moment the CD/MD begins to play.
If the AUTO START button is off, recording will begin the moment you press the left pedal. Listen to the sound of the CD/MD, and press the left pedal at the appropriate time.

** If the internal memory is used up, recording or overdubbing may stop before you are finished. If this occurs, erase unnecessary phrases (p. 23), and try the operation again.*

7. Press the left pedal to stop recording.
Simultaneously, the recorded phrase will begin playing. The tempo of the phrase will also be set automatically.

** The automatic tempo setting is calculated with a time signature of 4/4. If you are recording a phrase whose time signature is different, you must re-specify the correct tempo after recording (p. 24).*

** If you recorded an extremely short phrase, the length of the phrase will be adjusted automatically, and then recording will stop (p. 27).*

8. Press the WRITE button, getting the indicator to start blinking. When you do so, playback will stop automatically. To save the data in the same phrase track, press the WRITE button once again.
If you wish to save the data in a different phrase track, press the WRITE button (so its indicator is blinking), use the PHRASE SELECT knob to select the desired save destination, and then press the WRITE button once again.

** For details on saving, refer to "Saving a phrase" (p. 23).*



We recommend that you save the phrase at this point. If you are not content with the results of subsequent overdubbing, you can then cancel only the overdubbing.

9. Press the MODE button to select how overdubbing will occur.
As you did in step 2, select the overdubbing method. If you wish to overdub a performance from guitar or mic, select INST & MIC.

10. Press the left pedal to begin playback.

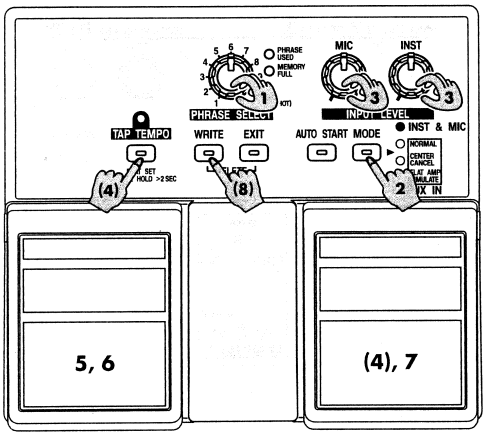
11. When you wish to overdub (p. 10) along with the phrase, press the left pedal.
Each time you press the left pedal, you will switch between playback and overdubbing modes.

12. To stop playback and overdubbing, press the right pedal.

Memo ...

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Playing/overdubbing along with a saved phrase



1. **Select a phrase track**
2. **Select the recording method**
3. **Adjust the recording level**
4. **(Adjust the tempo)**
5. **Start playback**
6. **Start/stop overdubbing**
7. **Stop playback**
8. **(Save the phrase)**

1. **Turn the PHRASE SELECT knob to select the phrase track in which the desired phrase is saved.**
2. **Press the MODE button to get the INST & MIC indicator to light.**
3. **Turn the MIC knob or INST knob to adjust the recording level.**
4. **If necessary, press the TAP TEMPO button several times to set the tempo.**
   You can also set the tempo by pressing the right pedal instead of the TAP TEMPO button.
   * *For details on setting the tempo, refer to "Setting the tempo" (p. 24).*
   * *It is not possible to adjust the tempo beyond a certain limit.*
5. **Press the right pedal to begin playback.**
6. **When you wish to overdub along with the phrase, press the left pedal.**
   Each time you press the left pedal, you will switch between playback and overdubbing modes.
   * *If the internal memory is used up, overdubbing may stop before you are finished. If this occurs, erase unnecessary phrases (p. 23), and try the operation again.*
7. **When you are finished playing or overdubbing, press the right pedal.**
8. **Press the WRITE button, getting the indicator to start blinking. To save the data in the same phrase track, press the WRITE button once again.**
   If you wish to save the data in a different phrase track, press the WRITE button (so its indicator is blinking), use the PHRASE SELECT knob to select the desired save destination, and then press the WRITE button once again.
   * *For details on saving, refer to "Saving a phrase" (p. 23).*
   * *If you continue looping in Overdub mode, unwanted noise will also be recorded repeatedly. You should use Overdub mode only while recording a phrase.*

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Using the RC-20 for practicing—Phrase Trainer

When recording a song from CD or MD, you can erase vocals or guitar solos that locate at the center of the sound field. This function makes it easy to create "minus-one" data for practicing.
You can also adjust the tempo while the phrase plays back. Unlike a multitrack tape recorder, changing the tempo of the song will not affect the pitch. This is convenient when you wish to slow down the tempo for practicing.

Creating minus-one data

1. **Turn the PHRASE SELECT knob to select an empty phrase track 1–10 (PHRASE USED indicator extinguished).**
   If there is no empty phrase track or if the MEMORY FULL indicator is lit, no further phrases can be recorded. You will need to erase unnecessary phrases (p. 23).

2. **Press the MODE button to select the recording method.**
   If you wish to create minus-one data, select "CENTER CANCEL" or "CENTER CANCEL+FLAT AMP SIMULATE" (p. 13).

   * *If an effect such as reverb has been applied to the sounds localized at the center, it may not be possible to erase the sound completely.*

3. **Set the tempo by pressing the TAP TEMPO button or the right pedal several times in time with the tempo of the phrase you wish to record.**

4. **If you want recording to begin at the moment the performance starts, turn the AUTO START button on (indicator lit).**

5. **Press the left pedal to start recording.**

   * *If the internal memory is used up, recording or overdubbing may stop before you are finished. If this occurs, erase unnecessary phrases (p. 23), and try the operation again.*

6. **Press the right pedal to stop recording.**
   When recording ends, the tempo of the phrase will be assigned automatically.

   * *The automatic tempo setting is calculated with a time signature of 4/4. If you are recording a phrase whose time signature is different, you must re-set the correct tempo after recording (p.24).*

7. **Press the WRITE button, getting the indicator to start blinking. To save the data in the same phrase track, press the WRITE button once again.**
   If you wish to save the data in a different phrase track, press the WRITE button (so its indicator is blinking), use the PHRASE SELECT knob to select the desired save destination, and then press the WRITE button once again.

   * *For details on saving, refer to "Saving a phrase" (p. 23).*

Practicing at a different tempo

To change the tempo while the phrase is playing, press the TAP TEMPO button several times at the desired interval.
The tempo of the phrase will change temporarily.

* *For details on changing the tempo, refer to "Setting the tempo" (p. 24).*

* *It is not possible to adjust the tempo beyond a certain limit.*

MEMO If you wish to keep the modified tempo, save the phrase (p. 23).

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Playing back in various ways

Using the pedal to switch phrases (Phrase Shift)

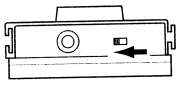
While a phrase is playing, you can press a pedal switch connected to the PHRASE SHIFT jack to switch to the phrase track of the following number.
It is convenient to store the phrases in consecutive phrase tracks according to the order in which you intend to perform them.

MEMO If you prepare Intro, looped phrase, and Ending, you can use the Phrase Shift to play them back as a song.

1. **Connect a pedal switch such as the FS-5U (sold separately) to the PHRASE SHIFT jack (p. 8).**

   * *Pedal switches made by another manufacturer may operate in the opposite way. Such pedal switches cannot be used.*

   * *If you are using the FS-5U, move the polarity switch toward the jack.*



   * *The FS-5L cannot be used.*

2. **Turn the PHRASE SELECT knob to select the phrase that you wish to play first.**

3. **Press the left pedal to begin playing the phrase.**

4. **When you want to switch phrases, press the pedal switch.**
   When the currently playing phrase returns to the loop start, playback will switch to the next number phrase.

   * *Even if you press the pedal several times while the same phrase is playing, only the next number phrase will be selected.*

   * *Once you reach number 10 when switching phrases, further presses of the pedal switch won't switch you to a different phrase.*

5. **Press the right pedal to stop playback.**
   When you start playback again, the phrase selected with the PHRASE SELECT knob will play.

MEMO If, while a phrase is playing back, you turn the PHRASE SELECT knob to select the phrase track that will be played next, the next phrase will begin at the moment that the currently playing phrase returns to the loop start.

Play back a phrase backward (Reverse Playback)

Playing a recorded phrase from the end toward the beginning is called "reverse playback." The result is similar to playing a tape in reverse.
By pressing the REVERSE button, lighting its indicator, you can use reverse playback. To return to normal playback, extinguish the indicator.
Since this can produce unexpected results, it may be useful as a gimmick during a live performance.

* *If you save a phrase with the REVERSE button turned on, the state of the button will also be memorized. If you will always want a certain phrase to play back in reverse, you should save it with the REVERSE button turned on.*

* *If you overdub onto a phrase that plays back in reverse, the sound you've overdubbed is recorded as being for normal playback.*

MEMO You can also control reverse playback by using the pedal switch instead of the REVERSE button.

Connect a pedal switch such as the FS-5U (sold separately) to the REVERSE jack (p. 8).

* *Pedal switches made by some other manufacturer may operate in the opposite way. Such pedal switches cannot be used.*

* *If you are using the FS-5U, move the polarity switch toward the jack.*

* *The FS-5L cannot be used.*

Playing a phrase only once (One-shot Playback)

The phrases saved in phrase tracks 1–10 will continue playing (looping) from the beginning to the end of the phrase until you stop them by pressing the right pedal. In contrast, the phrase saved in phrase track 11 will play back only once from the beginning to the end of the phrase, and will then stop automatically.
You can take advantage of this by using phrase track 11 to store phrases for playing dual guitar solos or sound effects in a live concert.

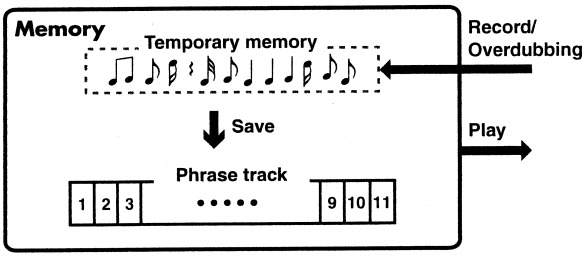
* *The overdubbing operation cannot be performed on phrase track 11. If you press the left pedal during playback, playback will begin once again from the beginning of the phrase. (Overdubbing can be done by copying the data to another phrase track.)*

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Saving or deleting a phrase

About memory

The memory of the RC-20 is divided into two areas: phrase tracks 1–11 and temporary memory.



A phrase that you record or overdub is first stored in temporary memory.
The phrase stored in temporary memory is temporary, and will be erased when the following operations occur. Before you perform any of these operations, make sure to save the phrase in a phrase track if you wish to keep it (p. 23).

- When you turn off the power
- When you select a different phrase track
- When you begin other overdubbing before you save

MEMO If you wish to erase (**clear**) only the phrase in temporary memory, press and hold the left or right pedal for two seconds or longer.

What is a phrase track?

A phrase track is an area of internal memory in which phrases are stored. Phrases that are saved here will not be lost when the power is turned off. Also, phrases that are saved here can be selected at any time by using the PHRASE SELECT knob.
The phrases that can be saved in phrase tracks 1–11 can have a maximum total length of 5 minutes 30 seconds.
Phrase tracks 1–10: contain loop phrases.
Phrase track 11: contains a one-shot phrase.

MEMO **Write Protect mode**
You can temporarily prevent phrases from being saved or erased. To do this, press and hold the WRITE button while you turn on the power. This setting will be cleared when you turn off the power, so the next time power is turned on, you will once again be able to save or erase phrases.

Saving a phrase

When you have finished recording/overdubbing, or after you have edited the tempo or other settings of a phrase, you can save it.

NOTE If you turn off the power, select a different phrase track, or overdub a different phrase before saving a phrase, the unsaved phrase will be lost.

1. **Press the WRITE button, getting the indicator to start blinking.**
The RC-20 will be ready to save.
** To copy the data, select the copy-source phrase track, and press the WRITE button.*

2. **Use the PHRASE SELECT knob to select the unused or empty track.**
** It is not possible to save to a phrase track that already contains a phrase (the PHRASE USED indicator will be lit).*

3. **Press the WRITE button once again to save the phrase.**
While the data is being saved, the indicator will light. When saving is complete, the indicator goes out.
** If you decide not to save, press the EXIT button. However, if you have turned the PHRASE SELECT knob to select another phrase track, the recorded phrase will be lost when you press the EXIT button, and you will switch to the selected phrase.*

NOTE Never turn off the RC-20's power while the WRITE indicator or the EXIT indicator is lit. Doing so will cause all data saved in the phrase tracks to be lost.

Erasing a saved phrase (Delete)

1. **Turn the PHRASE SELECT knob to select the phrase track that you wish to delete.**

2. **Simultaneously press the WRITE button and the EXIT button to get both indicators to blink.**
The RC-20 will be ready to delete the data.

3. **Press the WRITE button and EXIT button once again to delete the data.**
The indicator will be lit while the data is being deleted, and will go out when the deletion is complete.

NOTE Never turn off the RC-20's power while the WRITE indicator or the EXIT indicator is lit. Doing so will cause all data saved in the phrase tracks to be lost.

** If you decide not to delete it, press the EXIT button.*
** It is not possible to delete all phrase tracks in one operation.*

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About the tempo and time signature

The RC-20 allows you to set the tempo and time signature separately for each phrase. These settings also determine how the guide tone will play, and how loop quantization will occur. This means that if the tempo and time signature are correctly set before recording, it will be easy to create a correct loop phrase.

* *The default time signature is 4/4. If you are recording a phrase with a 4/4 time signature, it is not necessary to set the time signature.*

About automatic tempo settings

In the following cases, the tempo of the phrase will be set automatically after it is recorded.

- When you record a performance from a device connected to the AUX IN jack without setting the tempo
- When you record a performance from an instrument or microphone connected to the INST or MIC jacks without setting the tempo

* *The automatic tempo setting is calculated with a time signature of 4/4. If you are recording a phrase whose time signature is different, you must re-set the correct tempo after recording.*

Setting the tempo

If you are recording a performance from an instrument or microphone connected to the INST or MIC jacks, set the tempo before recording.
You can change the tempo for playing back the stored phrase.

* *If you change the playback tempo, then store the phrase, the modified tempo will be stored. If you do not save it, the tempo change will be lost.*

1. **Turn the PHRASE SELECT knob to select the phrase track you wish to use.**
   If you are recording a new phrase, select the track you wish to record.
2. **Press the TAP TEMPO button several times at the desired tempo.**
   The tempo will be set according to the intervals at which you press the button.

* *The tempo can also be set by pressing the right pedal instead of the TAP TEMPO button. However, the right pedal cannot be used while a phrase is playing.*
* *There are limits on how far the tempo can be changed.*
* *If you wish to record a new phrase at the same tempo as the previously-selected phrase, press the TAP TEMPO button / right pedal once.*
* *By starting recording without setting the tempo, you can create a loop phrase without using the Loop Quantize function.*

NOTE It is not possible to set or change the tempo while a phrase is stored in temporary memory. If you are unable to set or change the tempo, delete (clear) the phrase stored in temporary memory, and try the operation again (p. 22).

Setting the time signature

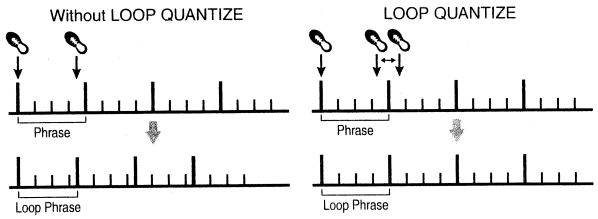
If you are recording a phrase with a time signature of other than 4/4, set the correct time signature before recording.

* *It is not possible to change the time signature after recording.*
* *It is not possible to set a time signature whose denominator is anything other than 4.*

1. **Turn the PHRASE SELECT knob to select the phrase track you wish to record.**
2. **Press and hold the TAP TEMPO button for two seconds or longer.**
   The indicator will blink, then go out, and you will be able to set the time signature.
3. **Press the TAP TEMPO button as many times as the time signature you wish to set.**
4. **When you have finished setting the time signature, the indicator will blink, and you will automatically return to the state in which you can make tempo settings.**

What is Loop Quantize?

The timing at which you stop recording the phrase is very important in order to create an accurately looped phrase. When using devices other than the RC-20, it was necessary to become skilled at operating the pedal, through much practice.
The RC-20, however, has a new Loop Quantize function that automatically corrects the length of the phrase by referring to the information in the Tempo settings so that an accurately looped phrase can be created even if recording is stopped at a slightly inaccurate timing.

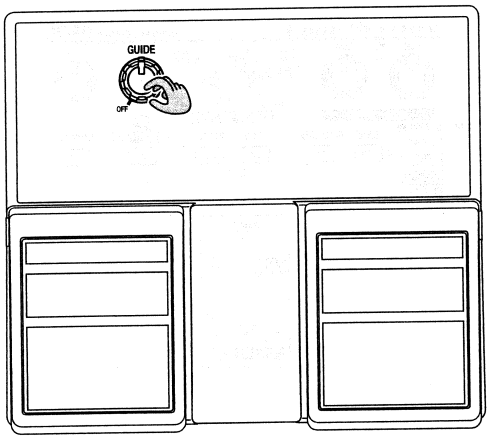


* *Loop Quantize is valid only when you have set the tempo before recording (the LOOP QUANTIZE indicator will be lit). If you have not set the tempo before recording, or during overdubbing, the Loop Quantize function is not active (LOOP QUANTIZE indicator extinguished).*

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About the guide tone

A guide tone will sound while you are playing or recording a phrase.



The volume of the guide tone can be adjusted with the GUIDE knob.
If you do not wish to hear the guide tone, turn the GUIDE knob to the OFF position.
If you wish to change the sound of the guide tone, hold down the EXIT button and press the TAP TEMPO button several times. Each time you press the TAP TEMPO button, the guide tone (four types) will change.

* *When you save a phrase (p. 23), the currently selected guide tone will also be remembered.*

NOTE The guide tone will not be heard when you record a phrase for which no tempo has been set. However, the tempo will be calculated automatically when you have finished recording, and the guide tone will play during playback.

Troubleshooting

Power does not turn on

- **Is an amp or speaker connected to the OUTPUT jack?**
  → If you are using batteries, the power will not turn on unless an amp or speaker is connected to the OUTPUT jack. Check the connections (p. 8).
- **Have the batteries run down?**
  → Install new batteries (p. 7).
- **Is the correct AC adaptor (sold separately) connected?**
  → Check the connections once again (p. 8).

No sound/not loud enough

- **Have the connections to other devices been made correctly?**
  → Check the connections once again (p. 8).
- **Has the volume been turned down on the connected guitar amp or other device?**
  → Check the settings of the connected device.
- **Could you be using a connection cable that contains a resistor?**
  → Use a connection cable that does not contain a resistor.

Recorded/overdubbed sound cannot be heard or is too quiet

→ Use the LEVEL knob to adjust the volume.

Guide tone cannot be heard/is not loud enough

→ Use the GUIDE knob to adjust the volume.
→ The guide tone will sound when:
- you've set the tempo before recording to an empty phrase
- you play back a phrase

Recording/overdubbing ends prematurely

→ You have run out of memory. Delete unneeded phrases (p. 23), and perform the recording/overdubbing once again.

Recording does not end immediately when you press the pedal

→ The length of the phrase will be automatically adjusted when you record using Loop Quantize or when you record an extremely short phrase, meaning that recording may not end immediately when you press the pedal.

Recording begins immediately even though the Auto Start function is on

→ If there is a significant amount of noise (for example due to distortion), that noise may be enough to trigger the beginning of recording. Reduce the noise (for example by lowering the distortion level).

The MEMORY FULL indicator lights even though there should be time remaining for recording

→ In the situations listed below, temporary memory for overdubbing (p. 22) is allocated separately from the phrase. Since any calculation of available recording time must take such temporary memory into account, the MEMORY FULL indicator may light.
- When a phrase is selected
- When the playback tempo is changed
- When the Write operation is executed

Recorded an extremely short phrase, but the length of the phrase has changed

→ The minimum length of time required for a loop phrase is approximately 1.5 seconds. If the phrase you've recorded is shorter than that, the length is automatically multiplied by a factor of two, four, eight, or more until it reaches an acceptable length.

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Specifications

Nominal Input Level
INPUT: -20 dBu (variable)
MIC: -40 dBu (variable)
AUX IN: -10 dBu

Input Impedance
INPUT: 1 M Ω
MIC: 1 k Ω
AUX IN: 47 k Ω

Nominal Output Level
OUTPUT: -20 dBu

Output Impedance
1 k Ω

Recommended Load Impedance
10 k Ω or greater

Internal Memory
Recording Time: 5 min. 30 sec. (max.)
10 loop phrases + 1 one-shot phrase (max.)

Controls
REC/PLAY/OVERDUB Pedal,
STOP/TAP TEMPO Pedal,
INST Knob, MIC Knob,
PHRASE SELECT Knob, GUIDE Knob,
LEVEL Knob, REVERSE Button,
TAP TEMPO Button, WRITE Button,
EXIT Button, AUTO START Button,
MODE Button

Indicators
POWER (serves also as battery check indicator),
REC, PLAY, OVERDUB, PEAK,
PHRASE USED, MEMORY FULL,
LOOP QUANTIZE, TAP TEMPO, REVERSE,
WRITE, EXIT, AUTO START, INST & MIC,
NORMAL, CENTER CANCEL,
FLAT AMP SIMULATE

Connectors
INST Jack, MIC Jack,
AUX IN Jack (Stereo miniature phone type),
PHRASE SHIFT Jack, REVERSE Jack,
OUTPUT Jack

Power
DC 9V: Dry battery (AA type) x 6, AC Adaptor

Power Consumption
85 mA (9 V max.)
* Expected battery life under continuous use:
Carbon: 9 hours
Alkaline: 25 hours
These figures will vary depending on the actual conditions of use.

Dimensions
173 (W) x 158 (D) x 57 (H) mm
6-13/16 (W) x 6-1/4 (D) x 2-1/4 (H) inches

Weight
1.2 kg / 2 lbs 7 oz (including batteries)

Accessories
Owner's Manual
Leaflet ("USING THE UNIT SAFELY," "IMPORTANT NOTES," and "Information")
Dry battery (AA type) x 6
Sound Library for RC-20 (Sample Phrase CD)

Options
AC Adaptor (PSA-series)
Foot Switch (FS-5U)

* 0 dBu = 0.775 Vrms
* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

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 unit, make sure to read the instructions below, and the Owner's Manual.
- Do not open (or modify in any way) the unit or its AC adaptor.
- Do not attempt to repair the unit, 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.

⚠WARNING

- Never use or store the unit 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.
- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.

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⚠WARNING

- Use only the specified AC adaptor, and make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.

- 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 unit, 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 unit, 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 unit.

⚠WARNING

- Immediately turn the power off, remove the AC adaptor 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 AC adaptor or the power-supply cord has been damaged; or
  - Objects have fallen into, or liquid has been spilled onto the unit; 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.

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

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

- Do not force the unit's power-supply 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.

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

⚠WARNING

- Batteries must never be recharged, heated, taken apart, or thrown into fire or water.

⚠CAUTION

- The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.

- Always grasp only the plug or the body of the AC adaptor when plugging into, or unplugging from, an outlet or this unit.

- Whenever the unit is to remain unused for an extended period of time, disconnect the AC adaptor.

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

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

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

- Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.

⚠CAUTION

- Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet (p. 8).

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

- If used improperly, batteries may explode or leak and cause damage or injury. In the interest of safety, please read and observe the following precautions (p. 7).
  - Carefully follow the installation instructions for batteries, and make sure you observe the correct polarity.
  - Avoid using new batteries together with used ones. In addition, avoid mixing different types of batteries.
  - Remove the batteries whenever the unit is to remain unused for an extended period of time.
  - If a battery has leaked, use a soft piece of cloth or paper towel to wipe all remnants of the discharge from the battery compartment. Then install new batteries. To avoid inflammation of the skin, make sure that none of the battery discharge gets onto your hands or skin. Exercise the utmost caution so that none of the discharge gets near your eyes. Immediately rinse the affected area with running water if any of the discharge has entered the eyes.
  - Never keep batteries together with metallic objects such as ballpoint pens, necklaces, hairpins, etc.

- Used batteries must be disposed of in compliance with whatever regulations for their safe disposal that may be observed in the region in which you live.

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IMPORTANT NOTES

In addition to the items listed under "USING THE UNIT SAFELY" on page 29–31, please read and observe the following:

Power Supply: Use of Batteries

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- The AC adaptor will begin to generate heat after long hours of consecutive use. This is normal, and is not a cause for concern.
- The use of an AC adaptor is recommended as the unit's power consumption is relatively high. Should you prefer to use batteries, please use the alkaline type.
- Batteries should always be installed or replaced before connecting any other devices. This way, you can prevent malfunction and/or damage to speakers or other devices.
- Batteries are supplied with the unit. The life of these batteries may be limited, however, since their primary purpose was to enable testing.
- Before connecting this unit 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.
- To avoid possible breakdown, do not use the unit in a wet area, such as an area exposed to rain or other moisture.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Additional Precautions

- Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of loosing important data, we recommend that you periodically save a backup copy of important data you have stored in the unit's memory on an MD and so on.
- Unfortunately, it may be impossible to restore the contents of data that was stored in the unit's memory once it has been lost. Roland Corporation assumes no liability concerning such loss of data.
- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- When connecting / disconnecting all 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.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

Copyright

- Unauthorized recording, distribution, sale, lending, public performance, broadcasting, or the like, in whole or in part, of a work (musical composition, video, broadcast, public performance, or the like) whose copyright is held by a third party is prohibited by law.
- Do not use this unit for purposes that could infringe on a copyright held by a third party. BOSS/Roland assumes no responsibility whatsoever with regard to any infringements of third-party copyrights arising through your use of this unit.

About the included CD

- Use of the Sample Phrase CD "Sound Library for RC-20" supplied with this product for any purpose other than private, personal enjoyment without the permission of the copyright holder is prohibited by law. Additionally, this data must not be copied, nor used in a secondary copyrighted work without the permission of the copyright holder.

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For EU Countries

CE This product complies with the requirements of European Directive 89/336/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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G601729402 Printed in Taiwan 2004-02-B3-3C

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