

# Chapter 17 Using a CD-R Drive

You can connect an optional CD-R drive designated by Roland to the VS-1680's SCSI connector. This chapter explains the procedures for creating your own original audio CD and for backing up song data to CD-R discs. For more detailed information about SCSI, refer to "About SCSI" (Appendices p.5).

## I. Connecting the CD-R Drive

*\* 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.*

1. Make sure both the VS-1680 and the CD-R drive are off. Connect the CD-R drive to the VS-1680 as shown below.

Graphic p 120 left column

2. Turn on the power of the CD-R drive.
3. Turn on the power of the VS-1680.

*\* In order for the VS-1680 to properly recognize the CD-R drive upon boot up, it is very important to turn the CD-R drive on first, and then turn on the VS-1680.*

4. Turn on the power of connected audio equipment.
5. Raise the volume of the audio devices to appropriate levels.

## II. Creating an Audio CD

You can create your own audio CD by choosing audio from two specified tracks in the VS-1680 and writing those to a CD-R disc. The VS-1680 first creates an "image file" of the audio data on its internal IDE drive, then writes that image file to the CD-R disc. **An internal IDE hard drive is necessary** to create audio CDs. The internal IDE hard drive must have enough free space to hold the image file.

*\* Regardless of partitions, all available free space on the internal IDE drive may be accessed by the image file data. After the image file is written to the CD-R disc, the image file is automatically deleted from the internal IDE drive.*

### **A. Items Necessary for Creating an Audio CD**

- VS-1680
- CD-R Drive (designated by Roland)
- Internal IDE hard drive
- Blank CD-R disc (Compact Disc-Recordable)
- Audio equipment to be connected to the MASTER jacks, or stereo headphones

### **B. Creating a Master Stereo Mix**

Only two tracks in the VS-1680 can be written to the CD-R. Before recording an audio CD, it is necessary create a stereo recording of your song in the VS-1680. You can do this easily by bouncing. Or, if you mix your songs to an external stereo recorder, such as a DAT recorder, you can transfer the stereo mixes back into the VS-1680 for CD recording.

Song data that can be written to CD-R discs must satisfy the following conditions.

1. **Sample Rate and recording mode:**  
Only tracks recorded with a sample rate of 44.1 kHz can be written to CD-R discs. Make sure you select the 44.1 kHz sample rate when you create a New Song. You may use any of the recording modes, however it is recommended you use either MTP, MAS, or MT1 for best results.
2. **Levels**  
Audio transferred to the CD will only be the actual audio data as stored on the hard drive. Mixer settings, EQ or effects on these tracks will not transfer to the CD. Thus, any desired level settings, panning, EQ and effects must be recorded as a part of these tracks. Make all EQ, level, pan and other settings during track bouncing. Use Automix (p. xx) during track bouncing for best results.
3. **Effects**  
Audio transferred to the CD will only be the actual audio data as stored on the hard drive. Effects settings made with the Track Mixer on these tracks will not transfer to the CD. Even if reverb or delay is applied to a track, the reverb or delay will not be written to the CD-R disc. **All desired effects must be recorded as a part of these tracks.** Make all effect settings during track bouncing.
4. **Track Bouncing**  
You can select any two tracks (including any V-tracks) to be written to the CD-R disc. One track will become the left channel of the CD-R, the other the right channel. If your song exists in a multi-track format, it must be mixed and bounced down to two tracks before being written to a CD-R. Designate the stereo bounce as the tracks to be written to the CD-R disc.
5. **Track Editing**  
The two tracks designated for writing to the CD-R disc are written from the beginning of the tracks (normally "00h00m00s00") to the end of the tracks. Any blank space or silence on the tracks before and after the actual performance will be written as silence on the CD-R disc. To avoid this, use Track Cut to remove any unwanted silence at the beginning of the tracks and at the end of the tracks.

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### III. Choices for Finalize Setting

Before recording your first CD-R, it is important to understand the different Finalize settings available. The Finalize settings for assembling and recording your CD are as follows.

#### **A. Finalize Off**

This setting allows multi-session recording of audio to the CD. You can gradually write your songs onto the CD. A partially recorded CD cannot be played back in a CD player until it has been "finalized" by writing the Table Of Contents (TOC). However a partially recorded CD can be played back in the CD-R drive. (See section "CD Player Mode"). Once the TOC is written, no additional audio can be added to the CD. This method of recording to a CD-R disc is also known as "Track At Once" recording.

#### **B. Finalize On**

This function records the data from the VS-1680 hard drive, transfers CD Track Numbers and completes the CD by writing the Table Of Contents (TOC). When done, this CD is ready for

playback in any CD player, and no additional audio may be added. This method of recording to a CD-R disc is also known as “Disc At Once” recording.

This setting can be also be used if you're adding songs to a partially recorded CD and you want to finalize it at the same time. In this case, the total number of tracks previously recorded on the CD plus the number of tracks to be added cannot be more than 99. Also, the total time of audio previously recorded on the CD plus the time of the new tracks to be added cannot exceed 74 minutes.

### **C. Finalize Only**

This function finishes a multi-session CD, making it playable in all CD players by writing the Table of Contents (TOC). Once the Finalize function is performed, no additional audio may be added to the CD.

## IV. Assembling Multiple Songs for CD Recording

It is not necessary to own a DAT machine or some other digital stereo recorder in order to create professional quality CD masters. Here's an example of how you would use the VS-1680 for creating Disc At Once CD-Rs:

1. Record each of your multi-track songs, using 44.1 kHz sample rate, and MTP record mode.
2. Adjust EQ, adjust levels, and add effects on each track as desired.
3. Bounce the tracks to a stereo mix.
4. Create a New Song, using 44.1 kHz sample rate, MTP record mode. For example you might name it “My CD Project”.
5. Use Track Import (p. xx) to assemble the stereo bounces of each of your songs into the song “My CD Project”. **The sample rate and record mode of the song “My CD Project” must match the sample rate and record mode of each of the songs.**
6. Use Track Move, Track Cut, and Track Insert to determine the sequence of each of the songs.
7. Place CD Track Markers.
8. Continue with CD Recording as described in “Writing Songs to CD-R Discs” (p. xx).

## V. Copyright Protection

Duplication of a CD is a violation of the rights of manufacturers and of the owners of the recorded work. If you use a part or an entire CD in your compositions with the VS-1680 and write the Song onto a CD-R, obey the copyright notice on the original CD. The VS-1680 and its CD recording function is designed to assist you in reproducing material in which you own the copyright or have obtained permission to copy from the copyright owner. Unless you own the copyright or have permission to copy from the copyright owner, you may be violating copyright law and be subject to payment of damages and other remedies. If you are uncertain about your rights, you should contact your legal advisor.

## VI. CD Track Numbers

When you create a CD-R with Finalize On, it is recommended you place CD Track Markers in the song to designate the position of CD Track Numbers on the CD-R.

The location of a track number on a finished CD-R is determined by the position of CD Track Markers in the VS-1680 Song. A CD Track Marker is placed by holding down

[PLAY(DISPLAY)] and pressing [TAP]. A new Marker number appears in the VS-1680 display. This Marker will have a small “c” following it, to designate it as a CD Track Number.

Before placing CD Track Markers, use Track Cut to remove any unwanted silence from the beginning and end of your song. Cut the silence so that the beginning of actual audio is placed at 00h00m00s15f. Do not place a CD Track marker at this point. The first CD Track Marker should be at the beginning of your second song. Place this CD Track Marker by holding [PLAY(DISPLAY)] and pressing [TAP]. If no other markers are placed in the song, the display will show 000c for this Marker. If you hold [PLAY(DISPLAY)] and press [TAP] at the beginning of the third song, the display will show Marker 001c. Here is what you'll end up with:

Beginning of Song #1	No CD Marker is needed	Becomes CD Track 1
Beginning of Song #2	CD Marker # 000c	Becomes CD Track 2
Beginning of Song #3	CD Marker # 001c	Becomes CD Track 3
Beginning of Song #4	CD Marker # 002c	Becomes CD Track 4
\		
\		
Beginning of Song #99	CD Marker # 098c	Becomes CD Track 99

CD standards require that a CD Track cannot be shorter than 4 seconds. Therefore, you must make sure your CD Track Markers are at least 4 seconds apart.

*\* Due to audio CD standards, songs on a CD must be at least four seconds long. Thus, you cannot set two CD Track Markers within four seconds of each other. If you attempt to do this, “Can’t Set Marker” appears in the display, and the process cannot be carried out. Clear the CD Track Markers so to have an interval greater than four seconds between them.*

The placement of a CD Track Marker in a VS-1680 song sends a command to the CD-R to increment the track number on the CD-R disc by one. It is not possible to create a CD-R with non-sequential track numbers, or to skip track numbers.

Remember, if you place all your CD Track Markers and then use Track Cut or Track Insert, you will need to go back and re-do all your markers.

Do all your editing first. Use Track Cut and Track Insert to create precise transitions between songs. Once you are completely satisfied with the timing and segues between songs, then place your CD Track Markers. Check them by pressing [NEXT] then [PLAY]. If you need to erase a marker press [CLEAR]+[SONG]+[TAP].

If you are only recording one song to the CD-R, it is not necessary to place any CD Track Markers, whether or not Finalize is “On” or “Off”.

#### **CD Track Number Suggestion**

When setting up CD Track Markers for a full length CD-R, it’s easy to get confused by the discontinuity between the CD Track Marker number and the actual CD Track Number created. During the CD-R writing process, regular markers (placed by pressing [TAP]) are ignored by the CD-R. By placing two regular markers during the first song, the subsequent CD Track Markers match the actual CD Track Numbers which they will create.

Before using the CD Write function, place two “dummy” markers somewhere during the first song. It doesn’t matter where the two dummy markers are placed, as they will be ignored by the CD-R. The first two marker numbers are 000 and 001. Place the next marker using [PLAY(DISPLAY)]+[TAP] (to indicate a CD Track number) where you want the second track of the CD to begin. This will be marker 002c.

Beginning of Song #1	No CD Marker is needed	Becomes CD Track 1
Middle of Song #1	Normal Marker #000	(ignored by CD-R)

Middle of Song #1	Normal Marker #001	(ignored by CD-R)
Beginning of Song #2	CD Track Marker # 002c	Becomes CD Track 2
Beginning of Song #3 (etc.)	CD Track Marker # 003c	Becomes CD Track 3

## VII. Writing Songs to CD-R Discs

1. Place a blank CD-R disc in the CD-R drive.
2. Press [PLAY(DISPLAY)].
3. Hold [SHIFT] and press [F1(SONG)]. The Song menu icon appears in the display.
4. Press [PAGE] so "CD Wt" appears in the display above [F3]. Press [F3(CD Wt)].
5. "CD-R Write Ready ?" appears in the display. Press [YES].
6. "Store Current ?" appears in the display. Press [YES]. If you don't want to save any changes made to the current song, press [NO].
7. Wait a moment for the CD-R Writer display to appear. Press [F1(SelTr)].

Graphic p 121 right column

8. Select the left and right tracks from the VS-1680 that you want written to the CD-R. Use [⇐], [⇒], [↑], and [↓] and the TIME / VALUE dial to move the cursor to the V-track you want written as the left channel of the CD-R, and press [F3(Sel L)]. Move the cursor to the V-track you want written as the right channel of the CD-R and press [F4(Sel R)].
9. Press [F1(Back)].
10. Check the available drive space:  
Length (in MByte) must be less than the value for IDE Free.  
Length (in MByte) must be less than the value for disc Free.

graphic p 122 top left column

*\* If the space required for the song being written to the CD-R disc exceeds the total free space available on the IDE hard disc or the free space on the CD-R disc, you cannot write the song to the CD-R disc.*

*\* The capacity of the source tracks is displayed in increments of MB (megabytes). The value is rounded up to the nearest whole MB.*

### **Source Track Length (in Mbyte) compared to Free disc space on CD-R**

The amount of drive space source tracks occupy on the VS-1680 may not be the same amount of disc space it occupies on a CD-R disc. The track size on the VS-1680 varies depending on the number of tracks and recording mode used. You can make a rough estimate of the space required on a CD-R disc for a tracks to be written by using the following calculation:

Source Track Length (in seconds) x 2 (bytes) x 2 (stereo tracks) x 44,100 = SIZE (bytes)

For example, a source track which is 60 minutes long (3,600 seconds) occupies:  
 $3,600 \times 2 \times 2 \times 44,100 = 635,040,000 \text{ bytes} = 635 \text{ MB}$

11. Press [⇐], [⇒], [↑], and [↓] to move the cursor to "Finalize" and use the TIME / VALUE dial choose the setting.

**Finalize**

To make CD-R discs prepared with the VS-1680 playable on ordinary CD players, a TOC (Table Of Contents) must be written. Once the TOC is written, nothing more can be added to the CD-R disc.

### ? TOC (Appendices p.65)

<b>Off:</b>	The song is written without the CD-R being finalized.
<b>On:</b>	The song is written and the CD-R is finalized.
<b>OnlyFin:</b>	Only the finalize procedure is performed, without any new song being written.

12. Press [F4(Exec)].
13. "Audio CD-R Write Sure ?" and "CD Track No. OK?" appears in the display. This message confirms the setting for Finalize, makes sure the CD Track Markers are set. Press [YES]. Or, to cancel the operation, press [NO].
14. A message regarding Copyright appears in the display. Press [YES].
15. A message regarding licensing conditions appears in the display. After reading this message carefully, if you agree to the conditions, press [YES]. To cancel the operation, press [NO].
16. After the CD-R writing is finished, "Write Another ?" appears in the display. If you want to write the same track data to another CD-R disc, place a new disc in the CD-R drive and press [YES]. Press [NO] to return to Step 2.

#### **If "Not 44.1kHz Song !" Appears in the Display**

The sample rate is not 44.1 kHz, so the song cannot be written to the CD-R disc. Press [YES] to return to Step 1. Please refer to "Creating a New Song" (p. xx). Make sure to use 44.1 kHz sample rate for songs to be recorded to the CD-R drive.

#### **If "Please Insert Disc!" Appears in the Display**

This indicates the CD-R drive loading tray is open, that there is no disc loaded, or the CD-R drive is in some other way not ready for use. Insert a CD-R disc, wait a few moments for the CD-R drive to read the disc, and then press [YES].

#### **A. Adding a Song to a Partially Recorded Disc**

You can add new songs to a CD-R disc that has not been finalized. Repeat the procedure described in "Writing Songs to CD-R Discs" (p. xx). Approximately two seconds of silence is inserted between the new song and the song before it. The track number is recorded automatically.

Graphic p 124 left column top

#### **B. Arranging and Recording Multiple Songs to a CD-R Disc**

By sequencing a number of different songs on stereo tracks, you can arrange these songs and write them to a CD-R disc. You can program CD Track Numbers by placing CD Track Markers at song boundaries.

Graphic p 124 left column bottom

#### **C. Placing Track Markers**

1. Locate to the beginning of the second song. Use Scrub, and the Preview functions (p.xx) to find the exact beginning of audio in the song. (See Chapter xx, Editing Tips and Tools).
2. Place a CD Track Marker. Hold [PLAY(DISPLAY)] and press [TAP].

Graphic p 124 right column top

*\* You cannot set CD Track Markers within four seconds of "00h00m00s00".*

*\* Due to audio CD standards, songs on a CD must be at least four seconds long. Thus, you cannot set two CD Track Markers within four seconds of each other. If you attempt to do this, "Can't Set Marker" appears in the display, and the process cannot be carried out. Clear the CD Track Markers to have an interval greater than four seconds between them.*

*\* Audio CD standards all up to 99 songs to be recorded on one disc. The first CD Track Number is automatically set at 00h00m00s00. The CD Track Marker placed to mark the position of Track 2 on the CD will be Marker 000. The last marker to indicate the position of Track 99 on the CD would be Marker 098.*

Graphic p 124 right column middle

3. After setting all the CD Track Markers, hold [PLAY(DISPLAY)] and press [PREVIOUS] to jump to the previous CD Track Marker. Hold [PLAY(DISPLAY)] and press [NEXT] to jump to the next CD Track Marker. Check the position of the CD Track Markers against your songs.

Graphic p 124 right column bottom.

4. Delete a CD Track Number the same way you would delete a regular marker. (p. xx). Move to the marker you want to delete. Hold [CLEAR] and press [TAP].
5. Record the songs to the CD-R disc by following the procedure as described in "Writing Songs to CD-R Discs" (p. xx).

## VIII. CD Player Function

You can use the CD-R drive to play a partially recorded CD-R disc (a disc which has not been finalized), or to listen to commercially recorded CDs. To listen to partially recorded CD-R discs, use the **CD Player** function.

### **? Finalize (Appendices p.63)**

*\* You can listen to the contents of the disc only through the **VS-1680's MASTER output, MONITOR output, or from the PHONES jack**. You cannot output the audio from the CD-R drive's phones jack or AUDIO OUT jacks.*

1. Insert the partially recorded CD-R disc or a pre-recorded commercial CD into the CD-R drive.
2. Press [PLAY(DISPLAY)].
3. Hold [SHIFT] and press [F1(SONG)]. The Song menu icon appears in the display.
4. Press [PAGE] so "CDPl" appears in the display above [F4]. Press [F4(CDPl)].
5. The CD Player screen appears in the display. Information is displayed as shown below.

Graphic p 123 left column bottom

Only the following buttons, knobs, and faders can be used in the CD Player function.

<b>[ZERO]:</b>	Goes to the start of the first song.
<b>[REW]:</b>	Rewinds as long as the button is held down.
<b>[FF]:</b>	Rapidly advances as long as the button is held down.

<b>[STOP]:</b>	Stops the CD.
<b>[PLAY]:</b>	Begins playback from the present location.
<b>[PREVIOUS] or [↶]:</b>	Returns to the beginning of the previous song.
<b>[NEXT] or [↷]:</b>	Advances to the beginning of the next song.
<b>MASTER Fader:</b>	Adjusts the overall volume.
<b>MONITOR Knob:</b>	Adjusts the volume output from the MONITOR jacks.
<b>PHONES Knob:</b>	Adjusts the headphone volume.

*\* During the CD Player function, transport control buttons are used to control the CD Player. They cannot be used to control the VS-1680 song.*

*\* The audio playing from the CD-R drive cannot be recorded back into the VS-1680.*

*\* When listening to a partially recorded CD-R, the last 0.5 seconds (approximate) of the song cannot be played back until the disc is finalized.*

Graphic p 123 right column bottom

- In the CD Player screen, the function buttons perform as described below.

<b>[F3(Eject)]:</b>	Ejects the CD-R tray.
<b>[F5(SeIDr)]:</b>	If more than one CD-R drive is connected to the VS-1680, you can choose another drive to use.
<b>[F6(EXIT)]:</b>	Exits the CD Player screen and returns to the Song Menu icon.

- Use [↑] and [↓] to move the cursor to the CD track you want to hear.
- Press [PLAY] to begin CD playback.
- Press [STOP] when you are finished with the CD Player function.
- Press [PLAY(DISPLAY)] to return to the Playlist display.

#### **If “Please Insert Disc!” Appears in the Display**

This indicates the CD-R drive loading tray is open, that there is no disc loaded, or the CD-R drive is in some other way not ready for use. Insert a CD-R disc, wait a few moments for the CD-R drive to read the disc, and then press [YES].

#### **If “Blank Disc” Appears in the Display**

You are attempting to use the CD Player function with a CD-R disc that has no audio recorded on it. Insert a commercially recorded CD or a CD-R disc on which a recording has been made, and try the operation once more.

## **IX. CD-R Backup and Recover**

You can save song data stored on the VS-1680's hard drive to CD-R discs. This procedure is called **CD-R backup**. The process of loading backed-up song data from a CD-R disc onto the VS-1680 hard drive is referred to as **CD-R recover**. Besides all V-track recordings, backed up data also includes Locators, Markers, Mixer Scenes, Automix data, and Undo Levels.

In CD-R backup, song data is converted into a data format specifically for saving. This means it is not possible to playback song data from the CD-R drive. If you wish to playback data stored to a CD-R disc, it must be recovered onto a VS-1680 hard drive first. When copying a song that will not fit on a single disc, it will be copied across multiple discs based on the available free space on the discs.



- \* **Song data recorded onto Zip disks cannot be backed up onto CD-R discs.**
- \* *Song data cannot be backed up to discs that already have songs recorded on them.*
- \* *You may lose song data by incorrectly performing the CD-R backup procedure. Roland Corporation assumes no liability concerning such loss of data. Furthermore, Roland does not warrant any copied data, regardless of the performance or condition of the CD-R drive.*

#### **Backing Up Songs with Zip Drives and DAT Recorders**

You can back up VS-1680 song data using a Zip drive or DAT recorder. Song data stored on a Zip Disk or DAT tape can be rewritten any number of times. This makes it an appropriate method for backing up data after work at the end of the day, or at other regular intervals. Considering the issues of time required to save data and reliability, the Zip drive is the more convenient method. **Roland recommends backing up data with a Zip Drive, using Song Copy.**

#### **A. Items Necessary for CD-R Backup**

- VS-1680
- CD-R Drive (designated by Roland)
- Internal IDE hard drive
- Blank CD-R disc (Compact Disc-Recordable)

#### **B. CD-R Backup**

1. Select the drive (internal IDE hard drive) containing the source song to be backed up as the current drive.
2. Place a blank CD-R disc in the CD-R drive.
3. Press [PLAY(DISPLAY)].
4. Hold [SHIFT] and press [F6(UTILITY)]. The Utility menu icon appears in the display.
5. Press [PAGE] so "CDRBk" appears in the display above [F2]. Press [F2(CDRBk)].

Graphic p 125 right column bottom

6. Mark the songs you want to back up. Use the TIME / VALUE dial to move the cursor to the song you want to backup, then press [F3(MARK)]. You can choose more than just one song to backup. By pressing [F2(ALL)], all songs will be marked for backup. Press [F1(SelSg)] to display a directory of songs.

Graphic p 126 left column top

7. From the song directory, press [F1(Back)].
8. If several CD-R drives are connected to the VS-1680, you can press [F5(SelDr)] to display a directory of drives. From this screen, use [←], [→], [↑], and [↓] to select the CD-R backup destination drive, then press [F1(Back)].

Graphic p 126 left column bottom

9. Press [F4(Exec)]. "Backup to CD-R (SCSI2) Sure ?" appears in the display.
10. Press [YES]. (Or, press [NO] to cancel the operation.)
11. "Store Current ?" appears in the display. Press [YES] to store changes made to the current song. Or, press [NO] if you don't want to save changes made to the current song. **If the current song is a demo song, press [NO].**
12. If the song or selected songs data will not fit on a single CD-R disc, the first disc is ejected and the message "Insert Disc #" (# indicates the next disc number in the sequence) appears in the display. Insert another blank CD-R disc and press [YES]. Write the disc numbers on the labels using a

- permanent ink soft-tipped pen to keep track of the order in which the discs were inserted into the drive. (When you recover data from this disc set, you will need to insert the discs in the same order.)
13. When copying song data across multiple CD-R discs, the message "Insert Disc #" may appear several times. Continue to insert the discs in the order as instructed and press [YES].
  14. When the CD-R backup procedure is finished, the screen will return to the Playlist display.

### C. CD-R Recover

1. Place a CD-R disc containing song data in the CD-R drive.
2. Press [PLAY(DISPLAY)].
3. Hold [SHIFT] and press [F6(UTILITY)]. The Utility menu icon appears in the display.
4. Press [PAGE] so "CDRRc" appears in the display above [F3]. Press [F3(CDRRc)].

Graphic p 126 right column bottom

### Erase All Songs

When this is set to "On", the destination drive is initialized before the recover procedure is carried out. **This will erase all songs from the destination drive.** If you want to recover a song from CD-R without erasing any songs on the current drive, leave this setting to "Off".

5. Mark the songs you want to recover. Use the TIME / VALUE dial to move the cursor to the song you want to recover, then press [F4(MARK)]. You can choose more than just one song to recover. By pressing [F3(ALL)], all songs will be marked for recovery. Press [F2(SelSg)] to display a directory of songs.

Graphic p 127 left column top

6. From the song directory, press [F1(Back)].
7. Press [F4(Exec)]. "Recover from CD-R (SCSI2) Sure ?" appears in the display.
8. Press [YES]. (Or, press [NO] to cancel the operation.)
9. "Store Current ?" appears in the display. Press [YES] to store changes made to the current song. Or, press [NO] if you don't want to save changes made to the current song. **If the current song is a demo song, press [NO].**
10. The recovery process begins. If song data is spread out across more than one disc, the disc will be ejected and "Insert Disc #" (# indicates the number in the order of insertion) appears in the display. Insert the next disc in the sequence and press [YES].
11. When the CD-R backup procedure is finished, the screen will return to the Playlist display.

## XII. Using a CD/RW Drive

You can connect an optional CD-RW (CD Re-Writable) drive with the VS-1680, as designated by Roland. With the CD-RW disc, you can overwrite the contents repeatedly. Existing contents should be totally erased before the new contents are saved. It is impossible to add additional song data to a CD-RW disc which already contains song data.

With the CD-RW disc, you can record the audio data and create audio CDs. But it is impossible to play back this audio data recorded on a CD-RW disc in common CD players, even if the disc is finalized. (Use a CD-R disc to play back with regular CD players. Audio data in the CD-RW disc can be played back with "CD Player Function" on the VS-1680.)

You can overwrite the audio data in the CD-RW disc repeatedly. This is convenient for making a trial copy before you create a final audio CD with the multiple CD-R discs.

**A. Drive and Disc Operation Compatibility**

Function	Disc	CD-R drive	CD-RW drive	Regular CD Player
CD Writing	CD-R	YES	YES	NO
	CD-RW	NO	YES	NO
CD Playback	CD-R	YES	YES	YES
	CD-RW	NO	YES	NO
CD Backup	CD-R	YES	YES	NO
	CD-RW	NO	YES	NO

**B. To Backup Songs with the VS-1680**

Please add the following steps to the step 5 of "Saving Songs to CD-R Discs (CD-R Backup)" (p.xx).

- 5.1 If a CD-RW disc which contains data is placed in the above step 2, "Erase?" appears in the display.
- 5.2 To erase the existing data, press [YES]. "Erase Disc" appears and all the contents in the CD-RW disc is erased. If you do not wish to erase the data, press [NO], and go back to the step 4.

**C. To create audio CD with the VS-1680**

Please add the following steps to the step 6 of "Writing Songs to CD-R Discs" (p.xx).

- 6.1 If a CD-RW disc which contains data is placed in the above step 1, "Erase?" appears in the display.
- 6.2 If you erase the existing data, press [YES]. "Erase Disc" appears and all the data in the CD-RW disc is erased. If you do not wish to erase the data, press [NO], and go back to the step 3.
- 6.3 When erase is finished, "Can't be played back with Audio CD player" appears in the display. This is to confirm that regular audio CD players cannot play back the audio CD made with a CD-RW disc. Press [YES]. Or press [NO] to go back to the step 3.