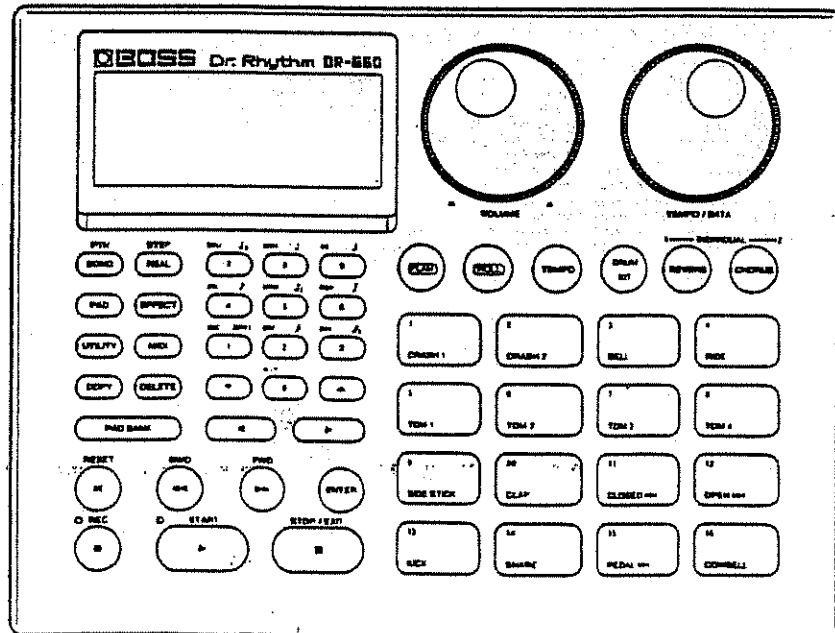


BOSS

DR-660 Dr. Rhythm

Owner's Manual



For Nordic Countries

Apparatus containing Lithium batteries

ADVARSEL!

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udsiddning må kun ske med batteri af samme fabrikat og type.
Lever det brugte batteri tilbage til leverandøren.

VARNING!

Explosionsfare vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!

Lithiumbatteri – Eksplosionsfare.
Med-udsiddning benyttes kun batteri som anbefalt af apparatfabrikanten.
Brug batteri returneres apparatleverandøren.

VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Valitse paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das
BOSS Dr. Rhythm DR-660
(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der
Amtsbl. Vfg 1046/1984
(Amtsblatverfügung)

funk-erstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

RADIO AND TELEVISION INTERFERENCE

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

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

• Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

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

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment further away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission: "How to Identify and Resolve Radio — TV Interference Problems."

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

For Canada

CLASS B

NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B

AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

BOSS **DR-660**


Dr. Rhythm


Thank you for purchasing the BOSS DR-660 Dr. Rhythm. To take full advantage of the DR-660's functions, and to enjoy long and trouble-free use, please read this owner's manual carefully.


■ Front panel buttons in the text

In this manual, each button on the front panel is represented with the name printed on the button or above the button.

[Example]

Chorus Button → 

Start Button → 

Cursor Buttons → 

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■ IMPORTANT NOTES

Be sure to use only the adaptor supplied with the unit. Use of any other power adaptor could result in damage, malfunction, or electric shock.

[Power Supply]

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.
- The power supply required for this unit is shown on its nameplate. Ensure that the line voltage of your installation meets this requirement.
- When disconnecting the AC adaptor from the outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for a long period of time, unplug the power cord.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.

[Placement]

- Do not subject the unit to temperature extremes (eg. direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.
- Do not expose this unit to temperature extremes (eg. direct sunlight in an enclosed vehicle can deform or discolor the unit) or install it near devices that radiate heat.

[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 mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation

[Additional Precautions]

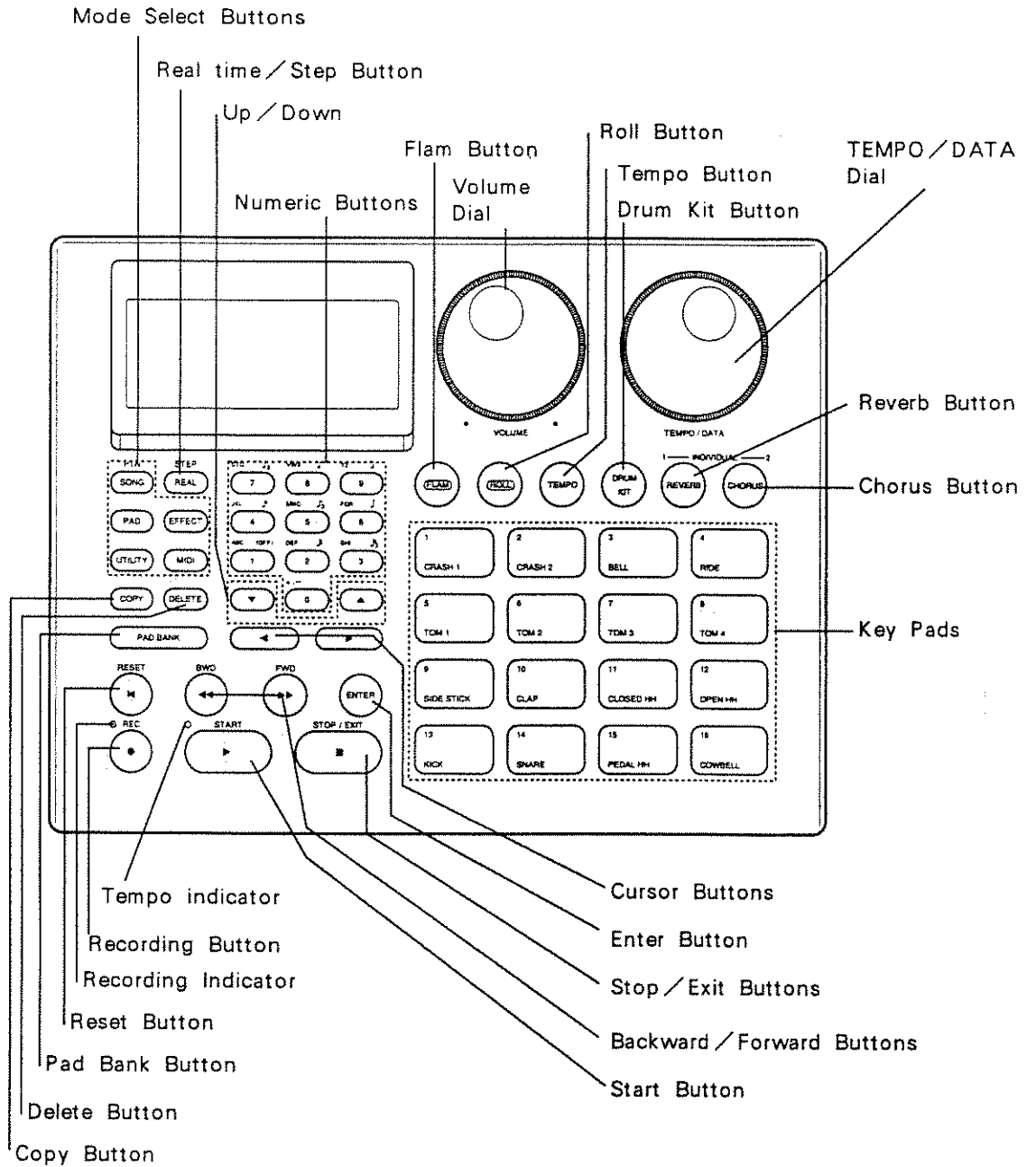
- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Never strike or apply strong pressure to the display.
- A small amount of heat will radiate from the unit, and thus should be considered normal.
- Before using the unit in a foreign country, consult with qualified service personnel.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.
- To prevent the risk of electric shock, do not open the unit or its AC adaptor.

[Memory Backup]

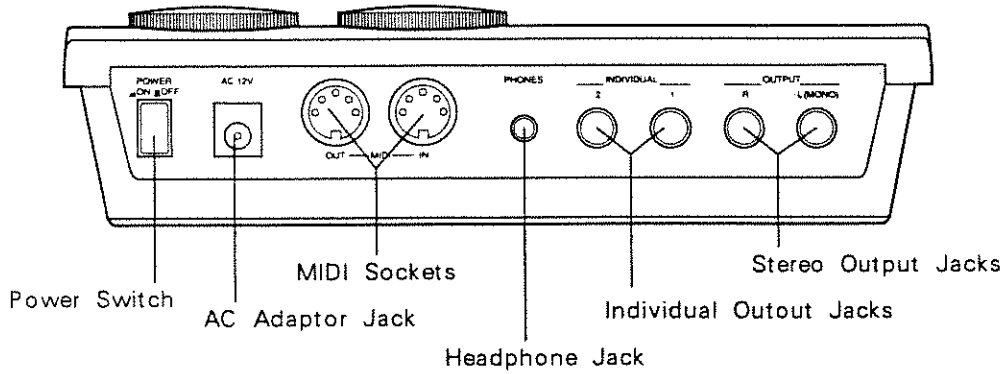
- The unit contains a battery which maintains the contents of memory while the main power is off. The expected life of this battery is 5 years or more. However, to avoid the unexpected loss of memory data, it is strongly recommended that you change the battery every 5 years.
Please be aware that the actual life of the battery will depend on the physical environment (especially temperature) in which the unit is used. When it is time to change the battery, consult with qualified service personnel.
- When the battery becomes weak, the following message will appear in the display: "Battery Low!". Please change the battery as soon as possible to avoid the loss of memory data.
- Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored in another MIDI device (eg. a sequencer), or written down on paper. During repairs, due care is taken to avoid the loss of data. However, in certain cases, (such as when circuitry related to memory itself is out of order) we regret that it may be impossible to restore the data.

PANEL DESCRIPTION

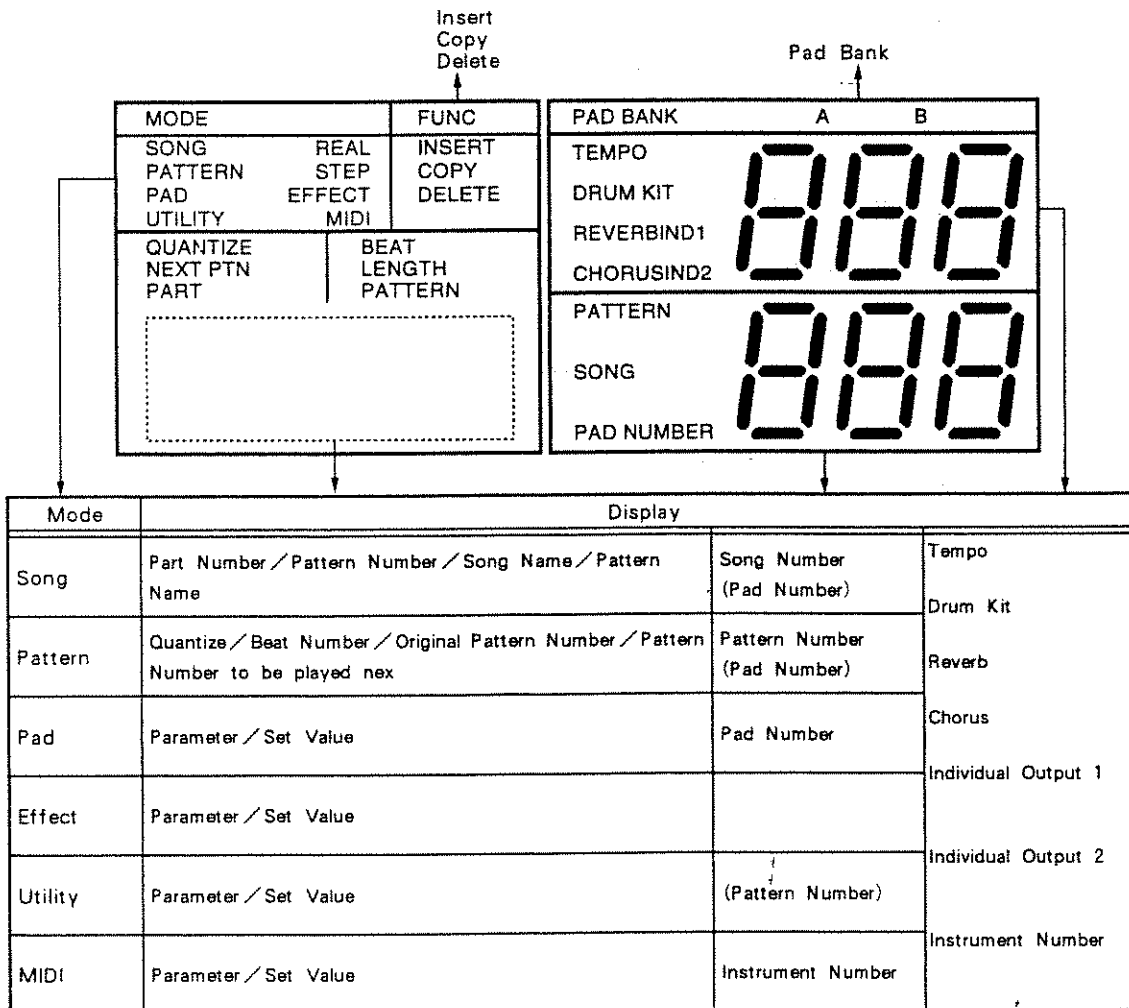
[Front Panel]



[Rear Panel]



[Display]



■ MAIN FEATURES OF THE DR-660

- The DR - 660 contains a 16 bit PCM sound source. The 255 high - quality sounds allow you to play virtually any type of music, from Popular and Rock to Jazz, Latin and Rap.
- The DR - 660 also contains 7 pre - programmed Drum Kits (a collection of percussion sounds) and allows you to create 32 Kits of your own. One Drum Kit consists of 55 sounds. So it can create 1760 (55 × 32) User's sound.
- The unit features 16 'velocity - sensitive' Key Pads which accurately respond to your touch. Each Key Pad also responds to 'aftertouch'. By varying the pressure on a Key Pad after it has been played, you can control the volume of a Roll.
- Two on - board digital effects are available; Reverb and Chorus. The depth of the Reverb and Chorus effects can be set independently for each Key Pad.
- In addition to the 100 Preset Rhythm Patterns found on - board, you can create and store 150 Rhythm Patterns of your own.
- By combining Rhythm Patterns (250 maximum), you can make a Song. A maximum of 100 such Songs can be played, in a predetermined sequence, using the Song Chain function.
- The familiar 'transport controls' (START, STOP, REC, etc.) of the DR - 660 make it as easy to use as a tape recorder.
- Using the Pad Bank Layer function, an even wider variety of sounds is possible. Not only can sounds be layered (combined), Setting the Velocity Sense Curve to Pad Bank A and B in reverse, two different sounds can be played independently from the same Key Pad depending on how hard you strike the Pad.
- Using the Realtime Pattern Change function, you can change Rhythm Patterns during play. This function allows you to use the DR - 660 as a 'preset' rhythm machine.
- MIDI IN / OUT sockets permit synchronization with external sound modules, sequencers, or drum machines, and save the performance data to the sequencers.
- Specified sounds can be assigned to the two INDIVIDUAL outputs - one to each output. These sounds can then be processed and mixed independently of the others.



Chapter 1

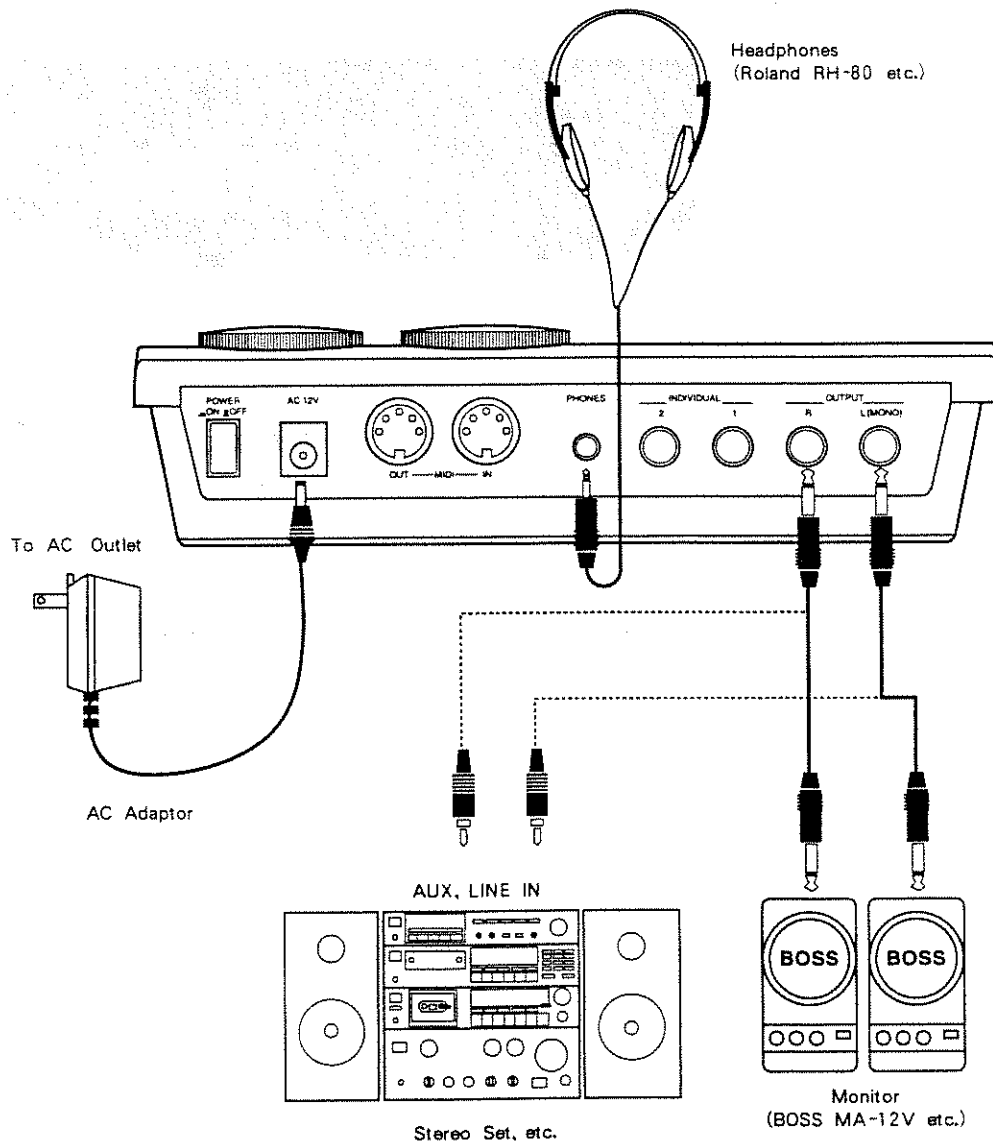
Playing the DR - 660

Now you can listen to the Demonstration Songs in memory or play the Key Pads.

[1] Preparation

1. Connections

Before making any connections, turn all of your equipment off. By doing so you can prevent any damage or malfunction.



To take full advantage of the unit's sound quality, use a stereo output (L/R) whenever possible.

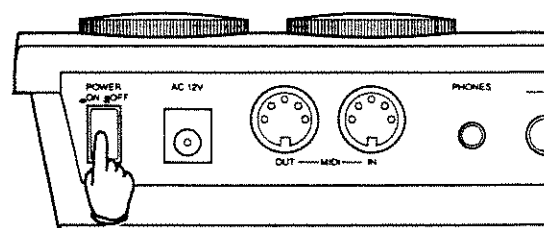
- ※ As a default setting, no sounds have been assigned to the INDIVIDUAL outputs.
- ※ For a detailed explanation about MIDI connections, refer to (P. 90).

2. Power up

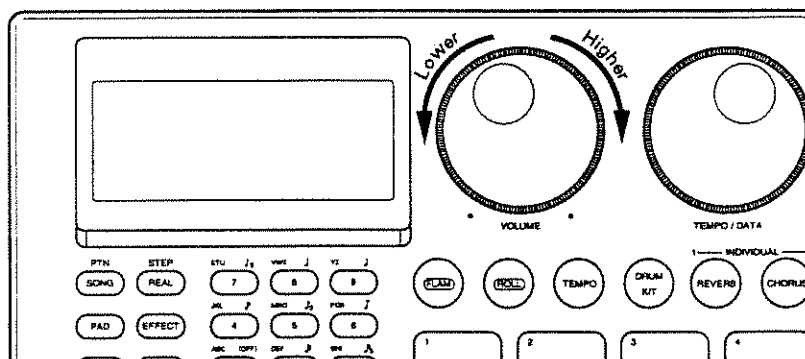
When you have made all the necessary connections, switch on the units in the following order:

- ① Make sure that the DR - 660 and all the other units are correctly and securely connected and switched off.

- ② Switch on the DR - 660 first then the other units such as an amplifier.



- ③ Adjust the volume with the VOLUME dial.



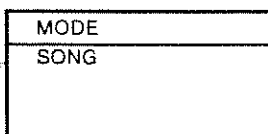
- ④ When powering down, turn off all the external equipment first, and then the DR - 660.

[2] Listening to the Demo Songs

The DR-660 contains one Demo Song which highlight the unit's qualities and capabilities. To hear these demo songs, follow this procedure:

- ① Press **SONG/PTN**.

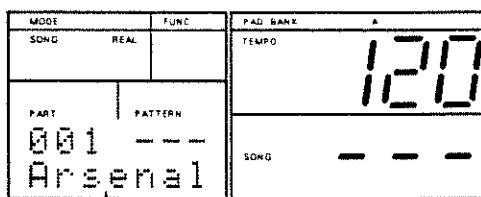
The Display will read "SONG" (Song mode).



- ※ The Song mode is the default setting.

- ② Select the Demo Song you wish to hear using the **TEMPO/DATA** dial.

- ※ The Demo Songs are located after Song Number 99 and are indicated as " --- ".



↑
Song to be played (Song Name)

- ③ Press **START** to hear the selected Demo Song.

The Tempo Indicator flashes with each beat and the Display shows the current status.

- ④ Press **STOP/EXIT** to stop playback of the Demo Song.

If you wish to **START** playback from where it was stopped (Continue Play), press **START** again.

If you wish to hear the Demo Song from the beginning, press **RESET**, then **START**.

Song Title	Biographies of Composers
<p>Arsenal</p> <p>Music by Steven G. Fisher</p> <p>Copyright © 1992, Roland US</p>	<p>Steven G. Fisher</p> <p>Steven G. Fisher is currently the Percussion Product Manager for Roland Corporation US as well as an accomplished drummer and percussionist. Some credits include many TV commercials, film scores, as well as albums and recordings with artists such as Maynard Ferguson, Dizzy Gillespie, T - Lavitz and the Temptations.</p> <p>His contributions to Roland Corporation include the factory preset patches for the R-8M Total Percussion Sound Module, the "90's Dance" Rhythm Style Card for the CR-80 Human Rhythm Player and, numerous clinics and demonstrations.</p>

- ※ All right reserved. Unauthorized use of this material is a violation of applicable laws.

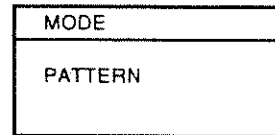
[3] Playing Rhythm Patterns

The DR - 660 contains 100 Preset Rhythm Patterns. You can listen to any Pattern you like:

1. Pattern Play

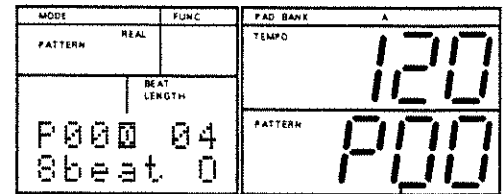
- ① Press **SONG/PTN**.

The Display will read "PATTERN" (Pattern Mode).



- ② Select the Pattern to be played (Numbers 00 — 99) using the **TEMPO/DATA** dial.

※ If you select a Preset Pattern, the letter "P" appears to the left of the Pattern Number.

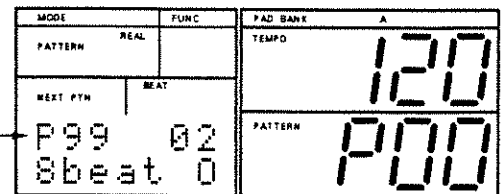
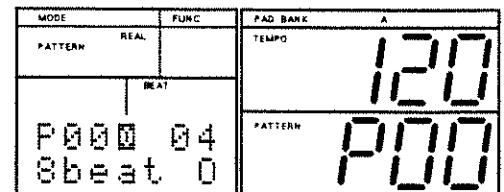


Pattern Number to be played

- ③ Press **START**.

The Tempo Indicator flashes with each beat and the Display shows the current status.

※ If you select the next Rhythm Pattern (with the Numeric Keys) before the current Pattern is complete, the new Rhythm Pattern will be played immediately following the current one.



Pattern Number to be played next

- ④ Press **STOP/EXIT**.

If you wish to **START** playback of the Rhythm Pattern from where it was stopped (Continue Play), press **START** again.

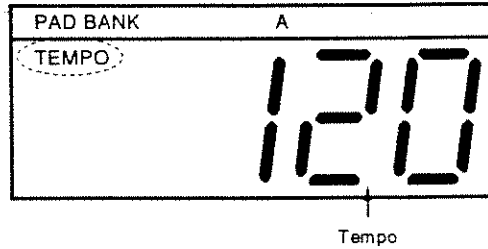
If you wish to play the Rhythm Pattern from the beginning, press **RESET**, then **START**.

※ The list of the Preset Rhythm Patterns is shown in "Chapter 8; [6] Preset Pattern Table" on page 110.

2. Tempo Control

You can set the tempo of a Rhythm Pattern anywhere within the range of 20 — 260 beats per minute (bpm).

- 1 Press **TEMPO**.
"TEMPO" flashes in the Display.

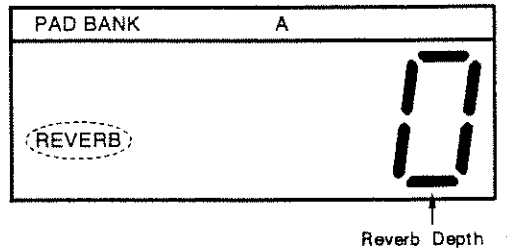


- 2 Adjust the tempo with the **TEMPO/DATA** dial.
- 3 When you have set the desired tempo, press **TEMPO** again.

3. Reverb / Chorus

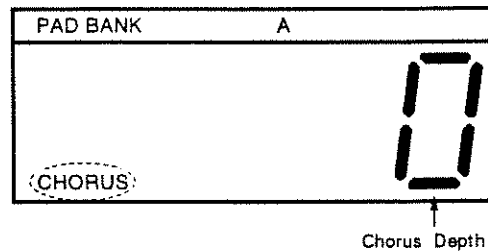
The following explains how to make the settings for the Reverb and Chorus effects.

- 1 Press **REVERB**.
"REVERB" flashes in the Display



- 2 Set the desired Reverb depth by rotating the **TEMPO/DATA** dial.

- 3 Press **CHORUS**.
"CHORUS" flashes in the Display.



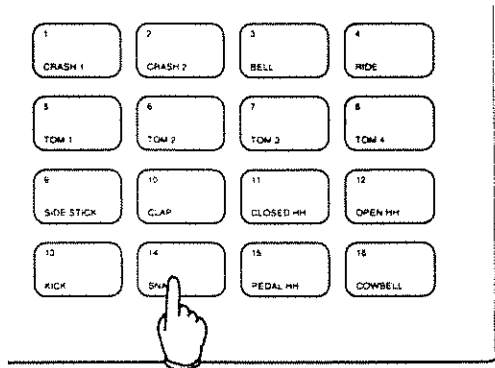
- 4 Set the desired Chorus depth by rotating the **TEMPO/DATA** dial.

For a detailed explanation of Reverb and Chorus, see page 76.

[4] Playing the Key Pads

When you hit a Key Pad, the sound assigned to that Pad will be played.

★ The volume and tone quality will change in response to how hard you play.



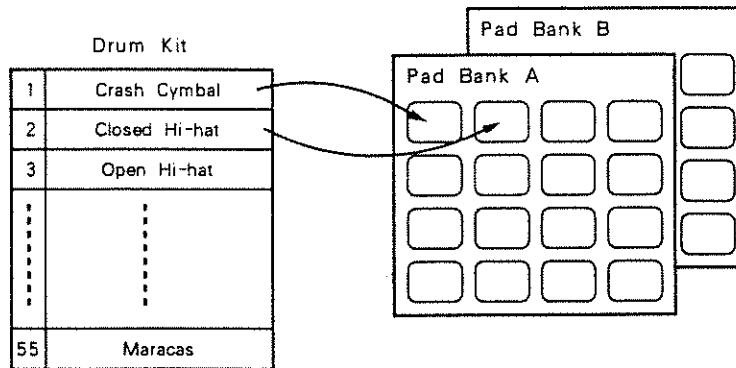
1. Selecting a Drum Kit / Pad Bank

By selecting a different Drum Kit or Pad Bank, a different collection of sounds will be assigned to the Key Pads.

※ For a detailed explanation of the Drum Kits, see "Chapter 2; [1] Outline of the DR-660" (page 22).

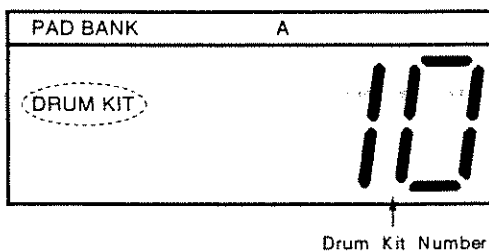
A 'Drum Kit' is a collection, or set, of 55 different sounds (from the 255 available). The DR-660 contains 7 different Preset Drum Kits and can store an additional 32 Drum Kits that you create.

A 'Pad Bank' is an arrangement of 16 sounds (one for each Key Pad) from within a Drum Kit. There are two Pad Banks; A and B.



[Selecting a Drum Kit]

① Press **DRUM KIT**.
"DRUM KIT" flashes in the Display.



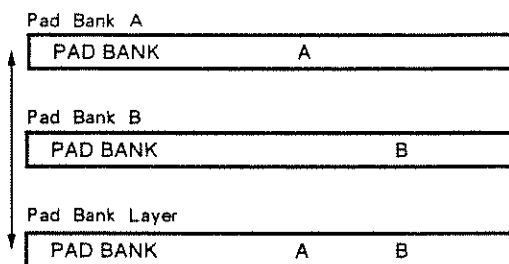
② Select a Drum Kit (Numbers 0 — 38) using the **TEMPO/DATA** dial.

③ When you have selected the desired Drum Kit, press **DRUM KIT** again.

[Selecting a Pad Bank]

Pressing **PAD BANK** repeatedly will select (in order); Pad Bank A, Pad Bank B, both A and B. The Display will change to read; A → B → AB, A → B → AB etc.

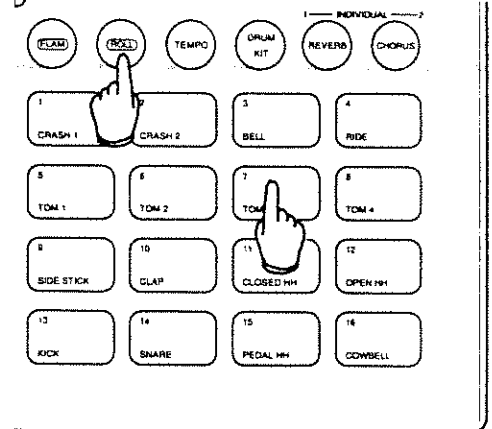
※ When A and B appear at the same time, the Pad Bank Layer function is ON (Page 81).



2. Roll

A 'Roll' is a performance technique in which a single sound is played in rapid succession.

To obtain the Roll effect, press and hold **ROLL**, and then press and hold down the desired Key Pad.

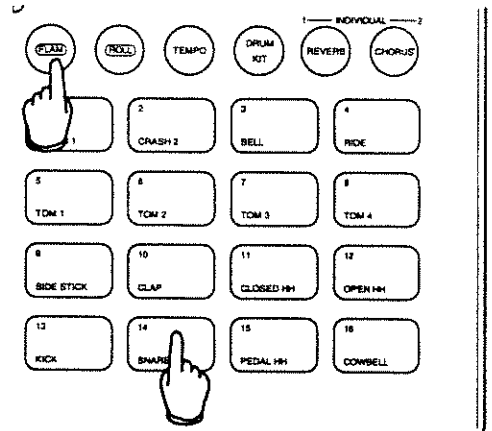


The Roll interval (speed) can be changed by following the procedure on page 38.

3. Flam

A 'Flam' is a drumbeat of two strokes of which the first is a quick 'grace' note.

To obtain the Flam effect, hit a Key Pad while holding **FLAM** down.



The Flam interval and volume balance between strokes can be changed by following the procedure on page 38.



Chapter 2

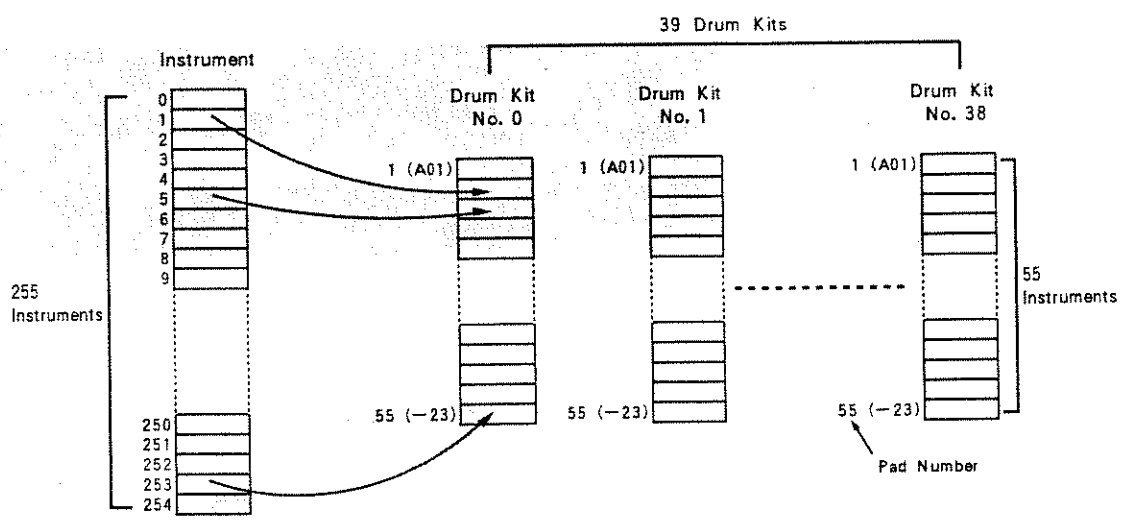
Before Creating Rhythms

The DR-660 contains Preset Rhythm Patterns but also allows you to program your own Patterns and Songs. This chapter quickly explains how to create original Rhythm Patterns and Songs.

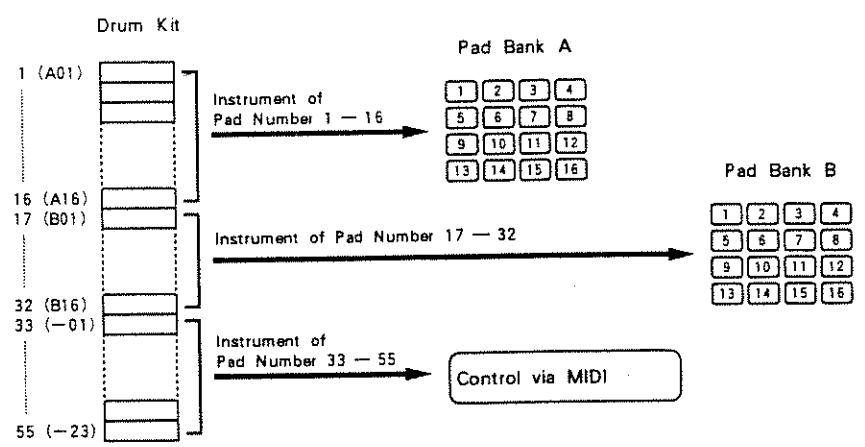
[1] Outline of the DR - 660

1. Drum Kit

A Drum Kit is a collection of 55 sounds (from the 255 available). Those 55 sounds are numbered 1 — 55.



Sounds 1 — 16 are assigned to Key Pads 1 — 16 in Pad Bank A, and sounds 17 — 32 are assigned to Key Pads 1 — 16 in Pad Bank B. While sounds 32 — 55 cannot be played directly by the Key Pads, they can be played via MIDI control (page 83).



- The DR-660 contains 7 Preset Drum Kits (Numbers 0 — 6). It can also store a maximum of 32 'User-Programmable' Drum Kits (Numbers 7 — 38).
The sounds assigned to the User's Drum Kits can be edited (the volume and pitch can be changed), and therefore can be used as new sounds.
- Only the sounds from one Drum Kit can be used at any one time. That is, when creating and using Rhythm Patterns, all the sounds in the Pattern must come from one Drum Kit.
- A Drum Kit is written into a Rhythm Pattern.
In Pattern Write mode, what Drum Kit is used for creating a Rhythm Pattern is written into memory.
- In the Pattern Play mode, changing Rhythm Patterns will automatically change Drum Kits.
After creating a Rhythm Pattern it is possible to select a different Drum Kit. The Rhythm Pattern will then play with the sounds in the new Drum Kit.

If you wish to change the contents of a Drum Kit (sound assignments, tone quality, etc.), refer to page 64.

2. Effects

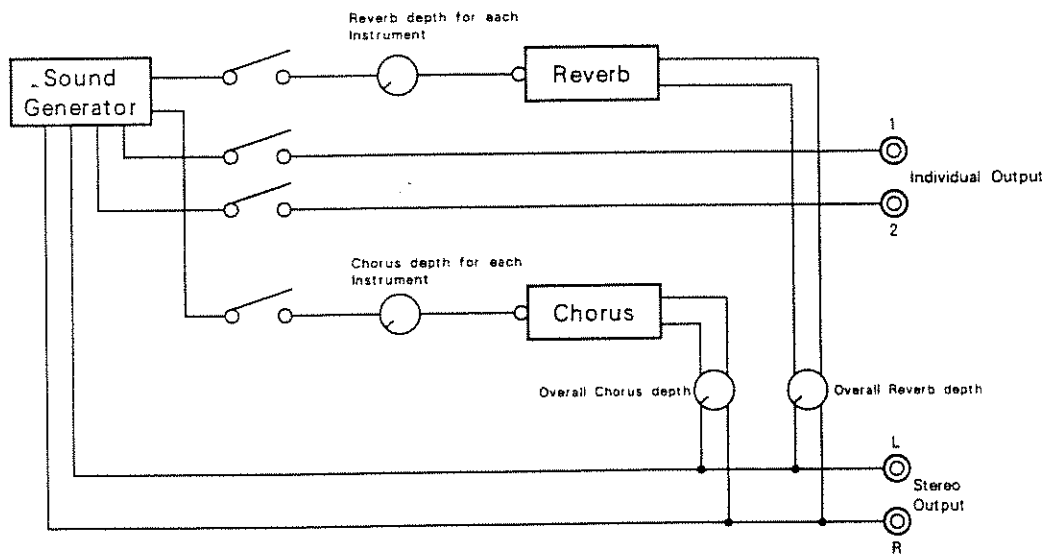
The DR - 660 contains two built-in effects, Reverb and Chorus.

● Reverb

Reverb (reverberation) is a complex echo effect which adds a sense of spaciousness to sounds. By changing the reverb parameters (page 76), you can enhance the realism of the sounds played by the DR - 660.

● Chorus

The chorus effect adds richness and warmth to sounds. By changing the Chorus parameters (page 77), a variety of effects can be obtained.



The depth (amount) of Reverb and Chorus can be set for the entire Drum Kit, or for each sound within the Drum Kit. By changing the Reverb/Chorus parameters, various effects can be created.

- If you wish to change the depth of the Reverb or Chorus effect, see page 74.
- If you wish to change the Reverb or Chorus parameters, see page 76.

3. INDIVIDUAL Outputs

The DR - 660 is equipped with two INDIVIDUAL output jacks (INDIVIDUAL 1/2), as well as a pair of Stereo OUTPUT jacks (OUTPUT L/R).

Through these jacks sound without Reverb/Chorus effects is outputs.

As a factory default, the unit is set to output sounds through the Stereo OUTPUTs (L/R) only. This setting can be changed to include the INDIVIDUAL outputs of each Instrument as required.

- ★ **When using an external mixer, you can gain a higher degree of control over an individual sound by assigning it to an INDIVIDUAL output. You can then EQ or process that sound separately from the others before mixing.**

If you wish to use the INDIVIDUAL output jacks, see page 79.

[2] Creating Rhythms

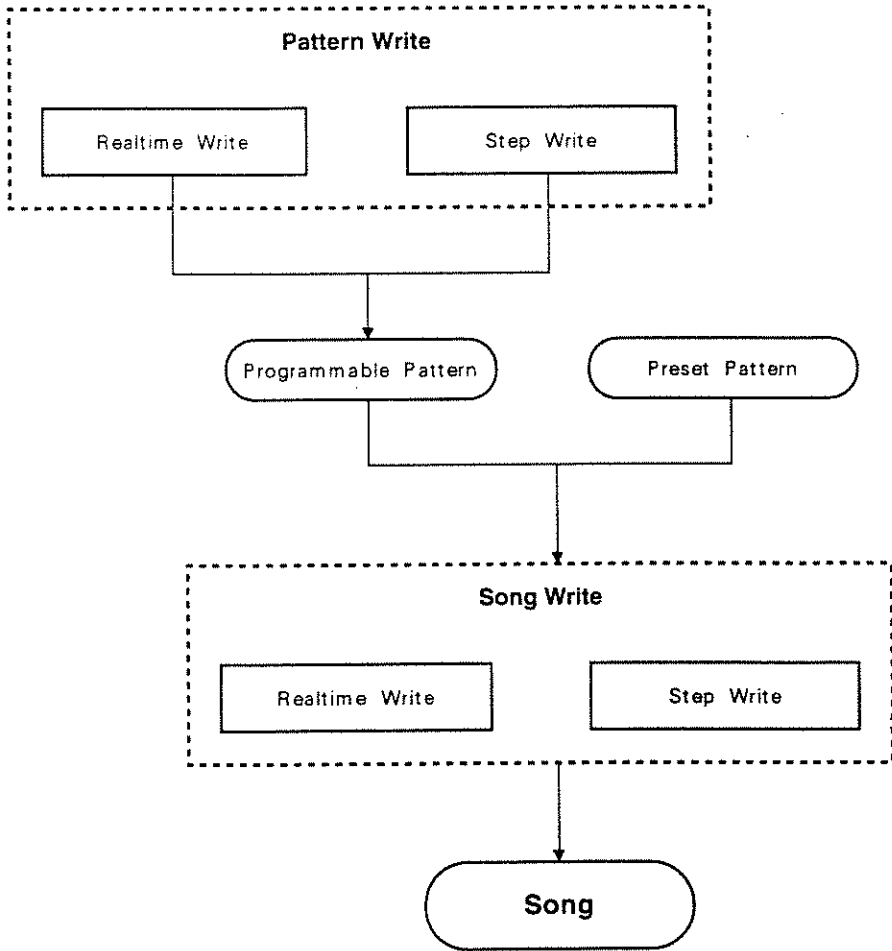
There are two main methods for creating Rhythm Patterns for a Song; Pattern Write and Song Write.

■ Pattern Write (P. 30)

The first step in writing a Song is the creation of the individual Rhythm Patterns that will be used within the Song. There are two methods of Pattern creation: Step Write and Realtime Write. Step Write allows you to create a Pattern one beat (or step) at a time. Realtime Write allows you to create a Pattern by actually playing it on the Key Pads.

■ Song Write (P. 46)

The 100 Preset Rhythm Patterns, and the Rhythm Patterns which you created on your own, can now be combined to produce a Song.



[3] Modes

The DR - 660 provides a full range of writing (Pattern/Song creation) and editing functions. These functions are arranged into 6 Modes:

- **Song Mode**
Provides for Song Play / creation / editing.
- **Pattern Mode**
Provides for Pattern Play / creation / editing.
- **Pad Mode**
Used to assign sounds to the Key Pads.
- **Effects Mode**
Allows for setting of the Reverb and Chorus parameters.
- **Utility Mode**
Provides control over Roll/Flam/Metronome settings, as well as Swing/Timing Shift parameters. This mode is also used when you wish to 'Initialize' the unit (recall all the original factory settings).
- **MIDI Mode**
Used to make MIDI parameter settings or settings related to data transfer when using external devices (sequencers, sound modules etc.).

[Mode Selection]

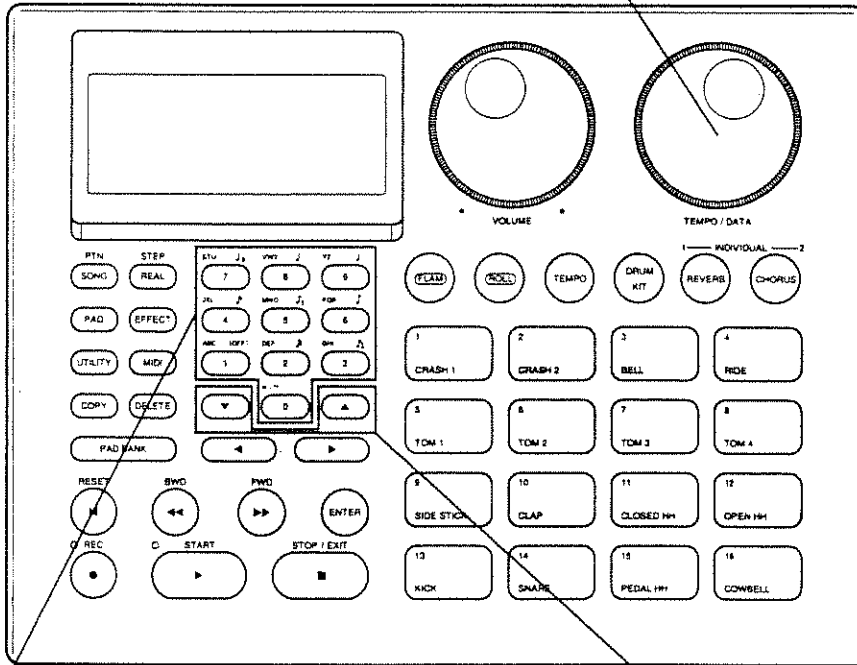
With the DR - 660 stopped (no Pattern playing) : Press the relevant Mode Button (**SONG/PTN** / **PAD** / **EFFECT** / **UTILITY** / **MIDI**).

[4] Changing Parameter Values

To select or set a parameter value (eg., selecting a Rhythm Pattern/Song or setting Chorus/Reverb parameters), use the following controls:

● TEMPO/DATA dial

Use this dial to produce large changes in the parameter value. The faster you rotate the dial, the faster the parameter value will change.



● Numeric Keys

These keys can be used to enter a numeric value directly. Enter the number with the keys and then press **ENTER**.

When you are setting a Quantize value (page 30), you can select any of the note values printed above the Numeric keys.

To enter letters for a Pattern Name (page 31), Song Name (page 46), etc, you can use the alphabets/signs shown at the upper left of the buttons.

The characters will appear in the sequence shown below:

(Example) A → B → C → a → b → c

* → . → -

● ▲/▼ (Up/Down Buttons)

Use these buttons to change the parameter value one unit at a time.

* Holding either button for a moment will cause a continuous change in value. If you hold ▲ (▼) while holding ▼ (▲) down, the value will change more rapidly.

Although the **TEMPO/DATA** dial is usually indicated as the data entry device, you can also use ▲/▼ (Up/Down Buttons) or the Numeric Keys.



Chapter 3

Creating Rhythm Patterns (Pattern Write)

The DR - 660 allows you to create original Rhythm Patterns. This chapter explains how to do just that.

- The DR - 660 contains 100 Preset Patterns and up to 150 User Programmable Patterns (where your original Patterns are stored).
- The Preset Patterns cannot be edited.
- User Programmable Patterns are numbered from 100 — 250, while the Preset Patterns are numbered from 00 — 99. When you select a Preset Pattern, the letter " P " will appear to the left of the Pattern Number in the Display.

[1] Creating a Pattern (Pattern Write)

There are two methods for Pattern creation:

■ Realtime Write

Rhythm Patterns are created by actually playing them on the Key Pads (usually in time with the metronome). If the timing (or 'feel') of your performance isn't quite right, you can use the Quantize function (page 30) to correct it. (It is also possible to enter performance information (Patterns) from an external MIDI device.)

■ Step Write

If you are not comfortable with playing the Key Pads in Realtime, don't worry! Using the Step Write method, you actually create Patterns one beat (or 'step') at a time. This method allows you to take all the time you need to create complex Patterns.

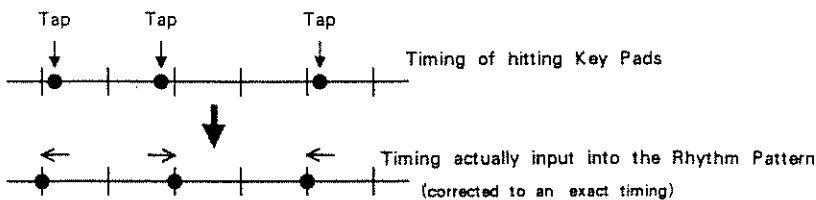
Both methods can be used in the creation of a single Pattern. Step Writing can be used to create the basic Pattern, and additional sounds can then be added using Realtime Writing. Or, a Pattern can be first captured in Realtime, and then edited as necessary using Step Write.

1. Pattern Creation Initial Settings

Before beginning to create a Pattern (with either method), the following settings must be made.

● Quantize

During Realtime Pattern creation (playing the Key Pads), quantization automatically corrects any timing inaccuracies that may occur.



In the Step Write mode, the quantization setting determines the 'resolution' of a single beat. That is, the number of divisions within each beat (4, 8, 16, etc.).

Display	Note	Display	Note	Display	Note
	Half Note		Eighth Note		16th Note Triplet
	Quarter Note		Eighth Note Triplet		32th Note
	Quarter Triplet		16th Note	OFF	J = 96Clocks

● **Beat Number** (1 — 80)

The Beat Number represents the number of quarter notes within each measure. For instance, to make a Rhythm Pattern with a 4/4 time signature (four quarter notes to the bar), you must set the Beat Number to "4". To make a Pattern in 3/4 time, you must set this to "3".

● **Pattern Name**

A Rhythm Pattern can be assigned a name using up to 7 characters. The Pattern Name will be shown in the Display during the Song Write process (page 46), so you can easily identify each Pattern.

● **Realtime Pattern Change**

This function allows you to replace the Rhythm Pattern currently playing with a different one (selected by pressing **START** / **FWD** / **BWD**). Here you can select the next Rhythm Pattern.

※ If you do not wish to use the Realtime Pattern Change function, you do not need to set the above parameter. For a detailed explanation, see "Chapter 5, Realtime Pattern Change" on page 58.

[Procedure]

① Press **SONG/PTN**. The Display should read "PATTERN" (Pattern Mode).

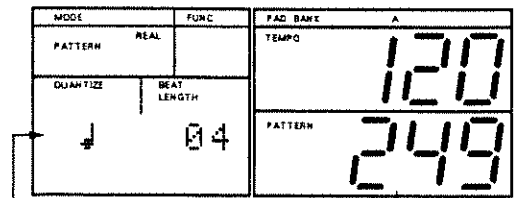
② Using the **TEMPO/DATA** dial, select the Pattern number where you wish to write a Rhythm Pattern.

③ Press **REC**. "QUANTIZE" and "BEAT" will appear in the Display.

④ Set the Quantize value using the **TEMPO/DATA** dial.

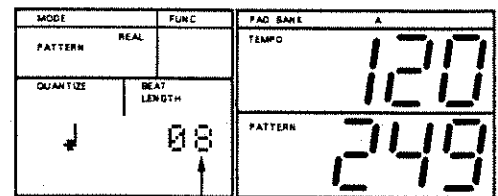
⑤ Press **▶** to move the cursor (the flashing indicator in the Display) to the Beat Number setting position.

⑥ Set the Beat Number with the **TEMPO/DATA** dial.



Quantize

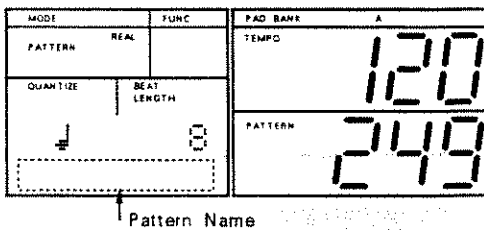
Pattern Number where the Rhythm Pattern is to be written



Beat Number

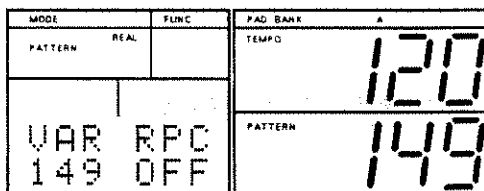
⑦ Press **▶** to move the cursor to the Pattern Name position.

⑧ Move the cursor with **◀/▶**, and enter the name using the **TEMPO/DATA** dial.



⑨ Position the cursor in the lower left corner of the Display with **◀**. Press **◀** three more times to select the Realtime Pattern Change Setting Display.

⑩ Using the **TEMPO/DATA** dial, select the Pattern number where you wish to set the Realtime Pattern Change function.



2. Realtime Write

When you have completed the initial settings (page 31) for Pattern Write, proceed with the following:

※ First select the Drum Kit required by the Rhythm Pattern you are going to write (Page 18).

① Press **REAL/STEP** so the word "REAL" appears in the Display. ("REAL" and "STEP" are selected alternately each time you press the button.)

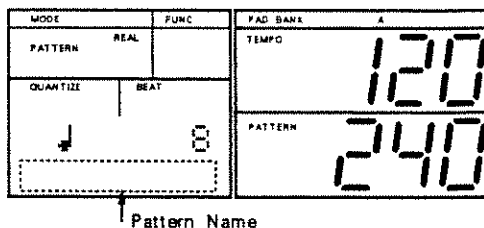
② Press **REC**. (The Recording Indicator will light.)

③ Press **START**. (The Tempo Indicator flashes at the set tempo.)

The metronome sounds according to the Metronome Setting (page 43).

④ Press **TEMPO**. Set the desired tempo (20 — 260 beats per minute) with the **TEMPO/DATA** dial. Listen to the metronome then set the tempo you find easiest for Realtime writing.

Press **TEMPO** again (to return to the Realtime Write mode).



- ⑤ Play the Rhythm Pattern (or part of it) on the Key Pads in time with the metronome. The velocity (volume) of each key stroke will also be recorded. The sounds that you enter will then play repeatedly. Continue to add different sounds until the Pattern is complete.
- ★ To obtain a Roll, press and hold the desired Key Pad while holding **ROLL** down. For a Flam, tap the desired Key Pad while holding **FLAM** down.
- ★ Use **PAD BANK** to change Pad Banks as necessary.
- ★ If the timing (feel) of the Rhythm Pattern is not quite right, change the Quantize value with the **TEMPO/DATA** dial.
- ★ Sounds that have been entered into a Rhythm Pattern can be erased if desired. To erase a particular sound, hold down **DELETE**, and then the Key Pad of the sound you want erased. While playing, sounds will be erased as long as the Key Pad is depressed.
- ★ If you press **REC** while the DR-660 is playing, the Recording Indicator will go out and the sound played by hitting a Key Pad will not be input to the Rhythm pattern. This function is, therefore, can be effectively used for monitoring Key Pad sounds or Practicing.
- ⑥ Press **STOP/EXIT** to exit Realtime Write.

3. Step Write

When you have completed the initial settings (page 31) for Pattern Write, proceed with the following:

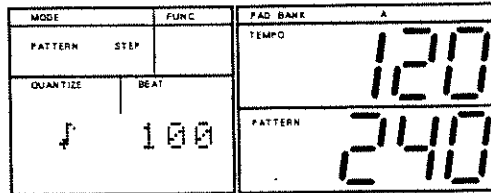
※ First select the Drum Kit required by the Rhythm Pattern you are going to write (Page 18).

① Press **REAL/STEP** so the word "STEP" appears in the Display.
("REAL" and "STEP" are selected alternately each time you press the button.)

② Press **REC**. (The Recording Indicator will light.)

③ Press **START**. (The Tempo Indicator flashes at the set tempo.)

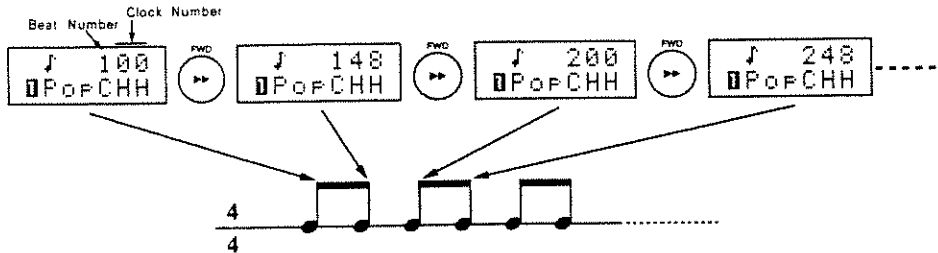
④ Using **FWD** / **BWD**, select the step (beat) you wish to work on (Beat Number, Clock Number).



A quarter note consists of 96 'clocks' (divisions).

The clock number varies depending on the note set with the Quantize function.

(Example) Quantize is set to an 8th note



If you select a step where a sound has already been entered, you can hear that sound.

⑤ Hit the Key Pad for the sound to be entered.
The velocity (volume) of the key strike will also be recorded.

★ To obtain a Roll, press and hold the desired Key Pad while holding **ROLL** down. For a Flam, tap the desired Key Pad while holding **FLAM** down.

★ Use **PAD BANK** to change Pad Banks as necessary.

The position advances by one step (beat). Continue to enter sounds one step at a time.

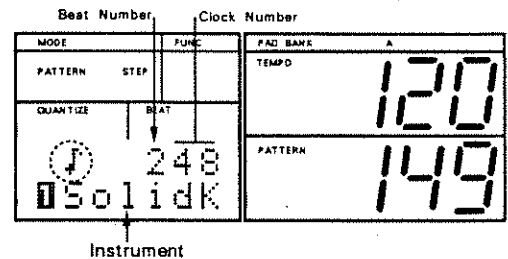
- ★ To hear the Rhythm Pattern you have created, press **START**. To stop, press **STOP/EXIT**.
- ★ To erase a particular sound, position the cursor on the relevant step using **BWD**/**FWD**. Hit the Key Pad that corresponds to the sound to be erased while holding **DELETE** down.
- ⑥ To continue to enter additional sounds, change the Quantize value with the **TEMPO/DATA** dial (if necessary), then repeat steps ④ and ⑤ as many times as necessary.
- ※ A maximum of 9 sounds can be entered on the same step.
- ⑦ With playback of the Pattern stopped, press **STOP/EXIT** to exit Step Write.

A Drum Kit is written in a Rhythm Pattern. That is, if you wish to change to a different Drum Kit after having created a Rhythm pattern, repeat steps ① — ③ in Realtime Write or Step Write then select a new Drum Kit.

■ To change sounds

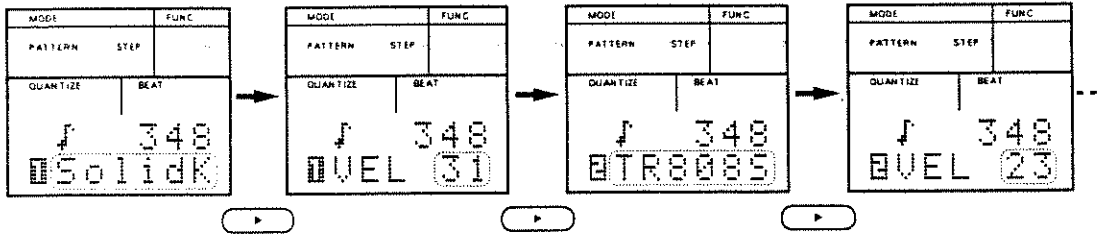
To change sounds after they have been entered into a Rhythm Pattern, follow this procedure:

- ① Press **REAL/STEP** so that the word "STEP" appears in the Display.
(Pressing the button alternately calls REAL and STEP.)
- ② Press **REC**. (The Recording Indicator will light.)
- ③ Press **START**. (The Tempo Indicator will flash at the set tempo.)
- ④ Using **FWD**/**BWD**, select the step on which the sound exchange is to occur.
- ⑤ Press **▶** to position the cursor on the sound name (the sound name flashes).



[1] Creating a Pattern (Pattern Write)

- ⑥ Each time you press **[▶]**, the Display alternately shows all the sounds assigned to the specified step, and the corresponding velocity values (1 — 31) as shown below:



To select a previous Display, press **[◀]**.

Select the sound you wish to change using **[◀]/[▶]**. Select the replacement sound using the **TEMPO/DATA** dial. Then press **[▶]** to select the velocity screen. Set the velocity value with the **TEMPO/DATA** dial.

※ You cannot select a sound that is not assigned to the Drum Kit currently in use.

You cannot assign more than one Instrument in the same pad Number to the same step.

■ Patterns within Patterns

To enter a Rhythm Pattern within a larger Pattern (consisting of 4 measures, for example), follow this procedure:

- ① Press **[REAL/STEP]** so the word "STEP" appears in the Display.
(“REAL” and “STEP” are selected alternately each time you press the button.)
- ② Press **[REC]**. (The Recording Indicator will light.)
- ③ Press **[START]**. (The Tempo indicator flashes at the set tempo.)
- ④ Using **[FWD]/[BWD]**, specify the step on which you wish to begin entering sounds.

A quarter note consists of 96 'clocks' (divisions). The clock number varies depending on the note set with the Quantize function.

- ⑤ Follow steps ⑤ to ⑥ on page 34 to write the Rhythm Pattern.
- ⑥ With playback of the Pattern stopped, press **[STOP/EXIT]** to exit Step Write.

2) Pattern Write Functions

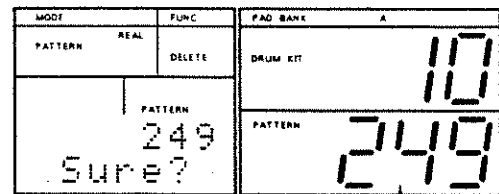
following are useful functions for proceeding Pattern Write.

Deleting a Rhythm Pattern

This function allows you to delete any Rhythm Pattern you have created.

- ① Press **SONG/PTN** so the Display reads "PATTERN" (Pattern Mode).
- ② Stop playback. Select the Pattern Number (100 — 249) to be deleted with the **TEMPO/DATA** dial.
- ※ Preset Patterns (00 — 99) cannot be deleted.

- ③ Press **DELETE**.
The Display responds with "Sure?".
- ④ Press **ENTER** to proceed or **STOP/EXIT** to cancel the operation.

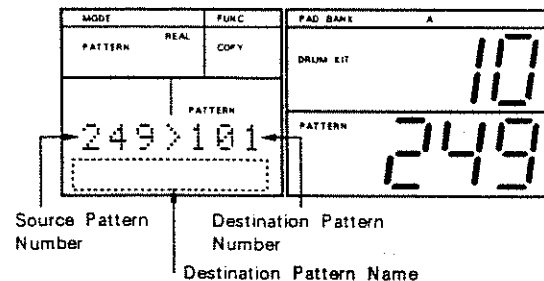


Pattern Number to be deleted

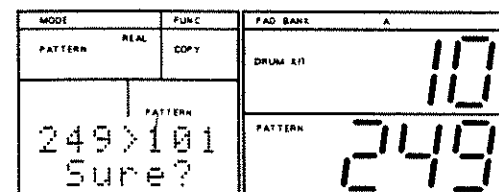
Copying a Rhythm Pattern

Performance data (Quantize/Beat Number/Pattern Name, etc.) of a Rhythm Pattern can be copied to a different Rhythm Pattern Number.

- ① Press **SONG/PTN** so the Display reads "PATTERN" (Pattern Mode).
- ② Stop playback (if necessary). Select the source Pattern Number with the **TEMPO/DATA** dial.
- ③ Press **COPY**. The Display should read "COPY".
- ④ Select a destination Pattern Number with the **TEMPO/DATA** dial.



- ⑤ Press **ENTER**.
The Display responds with "Sure?".
- ⑥ Press **ENTER** to proceed or **STOP/EXIT** to cancel.













- ※ If you copy a Rhythm Pattern to a Pattern Number where a Pattern already exists, the new Pattern will overwrite (erase) the old.

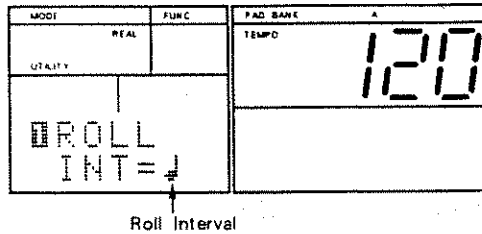
3. Editing the Roll

You can change the interval (speed) of a roll by following this procedure:

Valid Values for Roll

Display	Note	Display	Note	Display	Note
	Half Note		Eighth Note		16th Note Triplet
	Quarter Note		Eighth Note Triplet		32nd Note
	Quarter Triplet		16th Note		

- ① Press **UTILITY**. The Display should read "UTILITY" (Utility Mode).
- ② Select "ROLL" using  / .
- ③ Set the Roll Interval using the **TEMPO/DATA** dial.



4. Editing the Flam

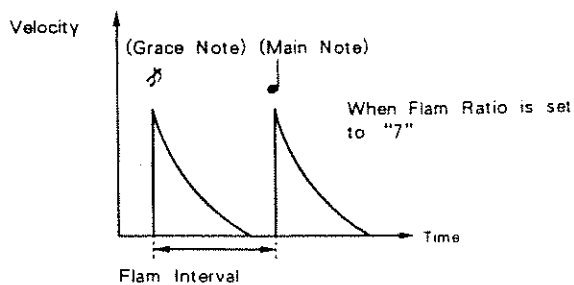
You can change the time interval and the volume difference between the two sounds.

● Flam Interval (0 — 31)

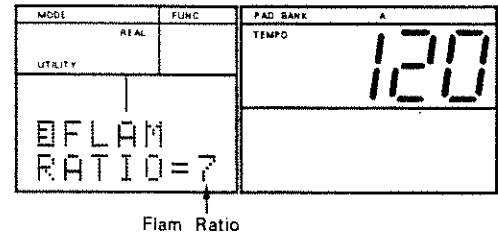
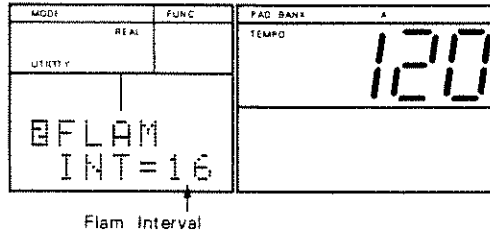
This parameter controls the time interval between the two sounds. At 0, no flam effect is obtained.

● Flam Ratio (0 — 7)

This parameter controls the velocity ratio difference between the two sounds. When this is set to "0", no grace note will be played.



- ① Press **UTILITY**. The Display should read "UTILITY" (Utility Mode).
- ② To change the Flam Interval, select "◻FLAM INT" using ◀/▶. To change the Flam Ratio, select "◻FLAM RATIO".



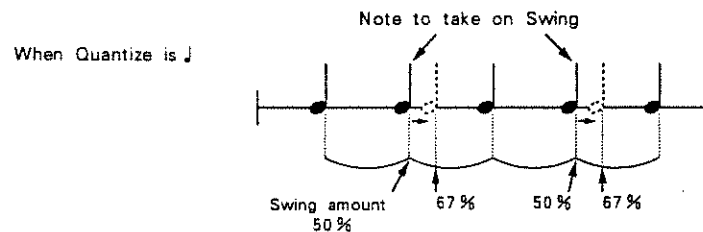
- ③ Set the Flam Interval or Flam Ratio value using the **TEMPO/DATA** dial.

5. Swing

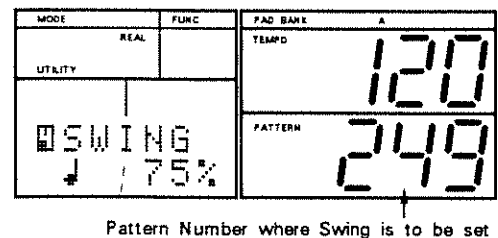
Swing is a term used to describe a particular rhythmic 'feel'; a 'bouncy' feel-often associated with jazz music. This function works by delaying certain portions of a beat, with the amount of delay being variable. Swing is impossible to describe, so we suggest that you do some experimenting to see just what we mean!

● Swing Amount (50%/54%/58%/62%/67%/71%/75%/80%)



The Swing amount (represented as a percentage) determines how much the last part of each beat will be delayed. Increasing the percentage accentuates the swing feel. At 50%, the swing intervals are equal and at 67%, the triplet swing is created.



- ① Press **SONG/PTN**. The Display should read "PATTERN" (Pattern Mode).
- ② Specify the Rhythm Pattern (Pattern Number) to which you wish to add the Swing effect with the **TEMPO/DATA** dial.







- ③ Press **UTILITY**. The Display should read "UTILITY" (Utility Mode).

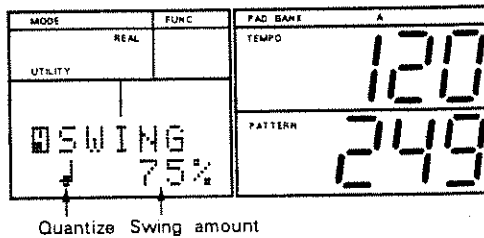
④ Select "SWING" using /.

⑤ Set the Quantize value with the TEMPO/DATA dial.

Valid Values for Quantize

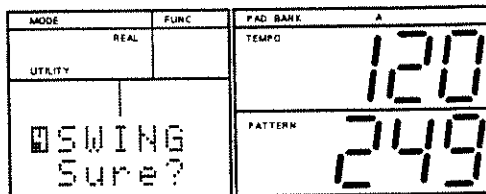
Display	Note
	Quarter Note
	Eighth Note
	16th Note
	32nd Note

⑥ Position the cursor with , then set the Swing Amount with the TEMPO/DATA dial.



⑦ Press **ENTER**.
The Display responds with "Sure?".

⑧ To enter the Swing value you have specified, press **ENTER**. To cancel, press **STOP/EXIT**.



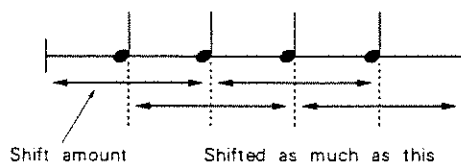
※ Once a Pattern has been modified by the Swing effect, the original cannot be retrieved. If you wish to keep the original Rhythm Pattern, copy it to a different place (Pattern Number) before editing.

6. Timing Shift

The Timing Shift function allows you to move sounds slightly forward or backward to create specific rhythmic feels. Using this function, you can create subtle nuances which will enhance the realism of your Patterns.

● Shift Amount (-96 — +96)

This parameter determines how far a sound will be shifted. A negative number (- value) shifts the sound forward, and a positive number (+ value) shifts a sound backward. (A quarter note = 96 clocks)



① Press **SONG/PTN**. The Display should read "PATTERN" (Pattern Mode).

② Using the **TEMPO/DATA** dial, select the Rhythm Pattern (Pattern Number) you wish to edit.

③ Press **UTILITY**.
The Display should read "UTILITY" (Utility Mode).

④ Using **◀/▶**, select "B SHIFT".

⑤ Hit the relevant Key Pad to select the sound to be shifted.

※ You can change Pad Banks if required, but you cannot use the Pad Bank Layer mode (page 81).

⑥ Set the Shift Amount with the **TEMPO/DATA** dial.

MODE	REAL	FUNC	PAD BANK	A
UTILITY			TEMPO	120
B SHIFT			PATTERN	249
A01		-96		

Pattern Number where Timing Shift is to be set

MODE	REAL	FUNC	PAD BANK	A
UTILITY			TEMPO	120
B SHIFT			PATTERN	249
B09		+96		

Number of Key Pad you hit Shift amount

[2] Pattern Write Functions

⑦ Press **ENTER**.

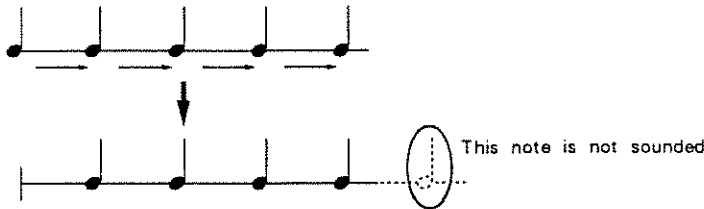
The Display responds with "Sure?".

⑧ Press **ENTER** to proceed or **STOP/EXIT** to cancel.

MODE	REAL	FUNC	PAD BANK	A
UTILITY			TEMPO	120
			PATTERN	249
SHIFT				
SURE?				

※ Once a Pattern has been edited, the original cannot be retrieved. If you wish to save the original, copy it to a different location (Pattern Number) before editing.

※ If a sound is shifted beyond the range of the Timing Shift function, that sound will not be heard. A rest will occur in its place.








※ If a Rhythm Pattern uses a Drum Kit in which the Pad Bank Layer function is ON (page 81), you will not be able to change Pad Banks.

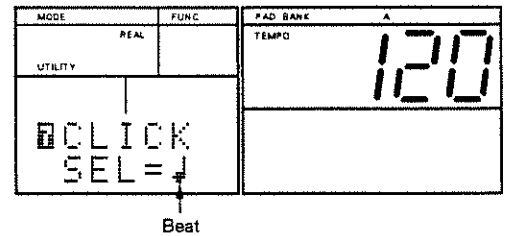
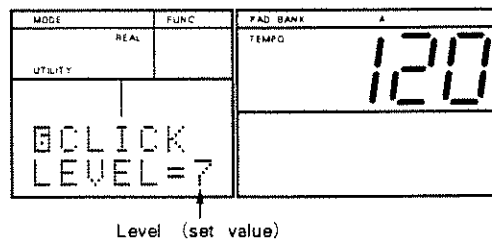
MODE	REAL	FUNC	PAD BANK	A
UTILITY			TEMPO	120
			PATTERN	249
SHIFT				
L10 +96				

7. Changing Metronome Settings

The DR - 660 allows you to edit the volume (0 — 7) and interval of the metronome (used during Realtime Pattern creation).

Display	Note
	A Quarter Note
	Quarter Note Triplet
	Eighth Note
	Eighth Note Triplet
	16th Note

- ① Press **UTILITY**. The Display should read "UTILITY" (Utility Mode).
- ② Using **◀/▶**, select "CLICK LEVEL" to edit the volume, and "CLICK SEL" to edit the interval.



- ③ Set the volume or interval using the **TEMPO/DATA** dial.

Chapter 4

Creating a Song (Song Write)

Rhythm Patterns (Preset or original) can now be combined to create a 'Song'. This is accomplished by placing the Patterns in the desired order.

- The DR-660 can store up to 100 Songs.
- One Song can contain up to 250 Rhythm Patterns. Each Pattern occupies one 'Part' of the Song.
- By using the Song Chain function (page 57), up to 100 Songs can be played successively.

[1] Song Write Procedure

Two methods of Song creation are available:

■ Realtime Write

Using this method, Patterns are recorded in a Song as they are played in Realtime. Composing is easy as all you do is execute Realtime Pattern Changes or select Pattern Numbers with the Numeric Keys.

■ Step Write

This method also allows you to specify the order in which the Rhythm Patterns are to be linked, but you can take as much time to do it as you need. It allows you to compose complex Songs which would be difficult to accomplish in Realtime.

1. Song Write Initial Settings

Before writing a Song, you must first make the initial settings for either Realtime or Step Write.

● Drum Kit Change (ON/OFF)

When you change Rhythm Patterns during Song Play, the Drum Kit Change function (if it is ON) will automatically select the Drum Kit required by the new Rhythm Pattern. (You cannot change Drum Kits manually during Song Play.)

If it is set to "OFF", the Drum Kit will remain unchanged when a new Rhythm Pattern is selected. The Drum Kit selected at the beginning of the process will be used throughout. (You can change Drum Kits manually during Song Play.)

● Song Name

Every Song can be assigned a name of up to 7 characters. The name is shown in the Display during Song Play.

● Song Chain

With this function, up to 100 Songs can be played in succession.

- ※ If you do not wish to use the Song Chain function, you do not need to set the above parameter.
- ※ For a detailed explanation about the Song Chain function, see "Chapter 5; [1] Song Chain" on page.

● Initial Tempo (20 — 260 bpm/OFF)

You can set an Initial Tempo for each Song. If an Initial Tempo has been set, a Song will start with that tempo, regardless of the tempo currently shown in the Display. When the function is OFF, the Song will play with the tempo currently shown in the Display.

[Procedure]

① Press **SONG/PTN**. The Display should read "SONG" (Song Mode).

② Specify the Song Number (0 — 99) with the **TEMPO/ DATA** dial.

③ Press **REC** to select the Drum Kit Change setting Display.

④ Turn the function ON/OFF with the **TEMPO/ DATA** dial.

⑤ Press **▶** to move the cursor to the Song Name position in the Display.

⑥ Move the cursor with **◀/▶** and enter the characters with the **TEMPO/ DATA** dial.

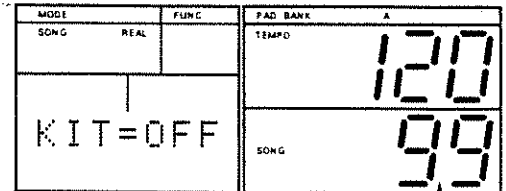
⑦ **◀** Move the cursor to the lower left corner of the Display. Press **◀** twice to select the Initial Tempo setting Display.

⑧ Set the Initial Tempo with the **TEMPO/ DATA** dial.

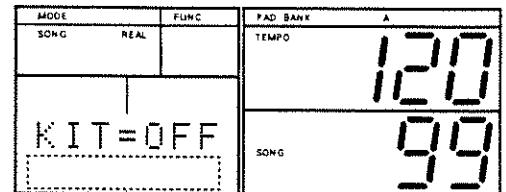
※ If the tempo is above 260 bpm, the Initial Tempo display will be "OFF".

⑨ Press **◀** to select the Song Chain setting Display.

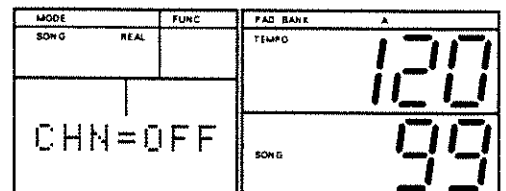
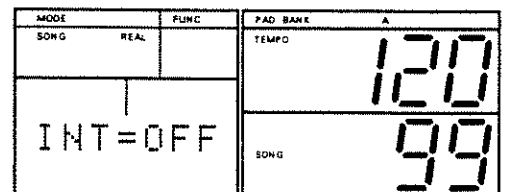
⑩ Using the **TEMPO/ DATA** dial, select the Song Number to be played next.



Song Number to be written



Song Name



2. Realtime Write

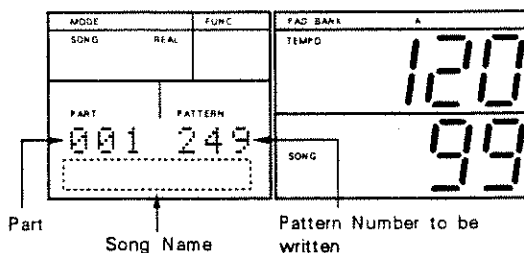
When you have completed the Initial settings on page 47, follow this procedure:

① Press **REAL/STEP**. The Display should read "REAL".
("REAL" and "STEP" are selected alternately each time you press the button.)

② Press **REC**. (The Recording Indicator will light.)

③ Press **START**.
The Rhythm Pattern currently selected starts playing.
The Tempo Indicator flashes at the set tempo.

④ Using the **TEMPO/DATA** dial, select the next Rhythm Pattern (Number) to be played.



If you specify the Pattern number using the Numeric Keys, the selected Rhythm Pattern will be played next and then automatically written into the Song. If you select a Rhythm Pattern where a Realtime Pattern Change (page 58) is set, the change to Fill-in/Variation Pattern is faithfully recorded in the Song.

⑤ Repeat step ④ to select all the Rhythm Patterns to complete the Song.

⑥ Press **STOP/EXIT** when you are finished.

※ When the number of Patterns (Parts) exceeds 250, the recording process ends automatically.

※ You cannot write any new data whatsoever into a Song where any existing Rhythm pattern has been written.

3. Step Write

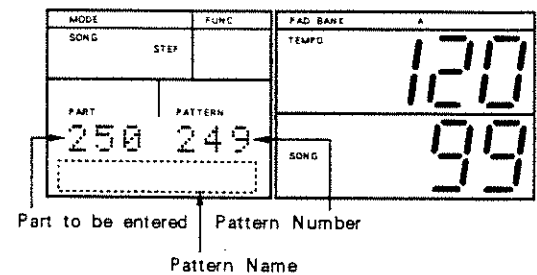
When you have completed the Initial settings on page 47, follow this procedure:

- ① Press **REAL/STEP**. (The Display should read "STEP".)
("REAL" and "STEP" are selected alternately each time you press the button.)

- ② Press **REC**. (The Recording Indicator will light.)

- ③ Press **START**. (The Tempo Indicator will flash at the selected tempo.)

- ④ Using **FWD** / **BWD** specify where within the Song (which Part Number) the Rhythm Pattern is to be entered.



- ⑤ Using the **TEMPO/DATA** dial, specify the Rhythm Pattern Number.

- ⑥ Press **ENTER**.

The selected Pattern Number is written into the selected Part. The Song automatically advances to the next Part (the next portion of the Song).

- ★ Pressing **START** will play the selected Rhythm Pattern.
Pressing **STOP/EXIT** will stop playback.

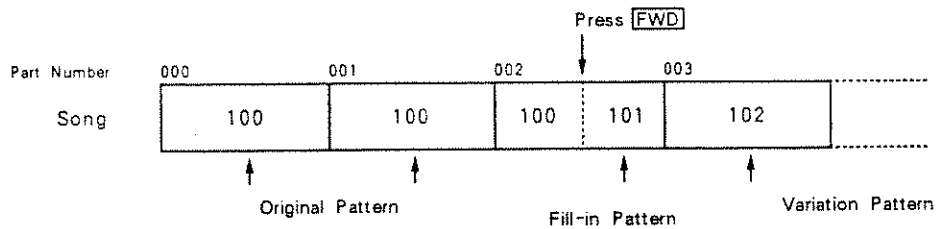
- ※ Step Writing can continue as the Rhythm Pattern plays.

- ⑦ Repeat steps ④ to ⑥ until you have written the entire Song.

- ⑧ With playback of the Pattern stopped, press **STOP/EXIT** to exit Step Write.

If you have written a Fill-in Pattern and Variation Pattern into a Song in Realtime using the Realtime Pattern Change function (page 58), and then later edit the same Song with Step Write, an " * : " will appear in the Display at the Rhythm Pattern (Original Pattern or Variation Pattern) that is turned to the Fill-in Pattern.

Song Realtime Write



Edit with Song Step Write

PART	PATTERN
000	100
001	100
002	* 100
003	102

← Fill-in Pattern 101 is written after Original Pattern 100

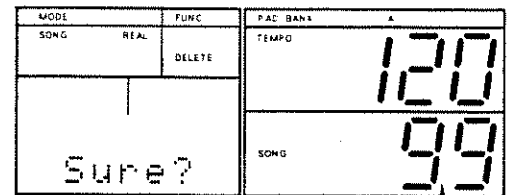
[2] Song Write Functions

The following are useful functions for proceeding Song Write.

1. Deleting Song Data

The Song Delete function allows you to delete entire Songs.

- ① Press **SONG/PTN**. The Display should read "SONG" (Song Mode).
- ② Stop playing, then select the Song (number 0 — 99) to be deleted with the **TEMPO/DATA** dial.
- ③ Press **DELETE**.
The Display responds with "Sure?".
- ④ Press **ENTER** to proceed or **STOP/EXIT** to cancel.

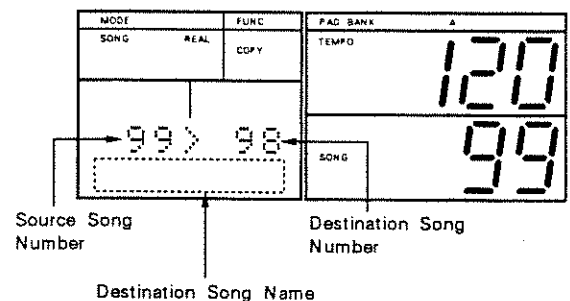


Song Number to be deleted

2. Copying Song Data

The Song Copy function allows you to copy entire Songs to other Song Numbers.

- ① Press **SONG/PTN**. The Display should read "SONG" (Song Mode).
- ② Stop playing, then select the source Song (number) to be copied with the **TEMPO/DATA** dial.
- ③ Press **COPY**. The Display should read "COPY".
- ④ Using the **TEMPO/DATA** dial, select the destination Song Number.



- ※ If the destination Song already contains Rhythm Patterns, the new Song data will overwrite (erase) the old.

- ⑤ Press **ENTER**.

The Display responds with "Sure?".

- ⑥ Press **ENTER** to proceed or **STOP/EXIT** to cancel.

MODE		FUNC	PAD BANK	
SONG	REAL	COPY	TEMPO	120
99 > 98			SONG	99
Sure?				

3. Deleting Pattern Data

The Pattern Delete function erases all the performance data contained in a Rhythm Pattern written into a Song.

- ① Press **SONG/PTN**. The Display should read "SONG" (Song Mode).
- ② Press **REAL/STEP**. (The Display should read "STEP".)
("REAL" and "STEP" are selected alternately each time you press the button.)
- ③ Press **REC** and then **START** to select the Song Write mode.
- ④ Using **FWD** / **BWD**, select the Rhythm Pattern Number to be deleted.

- ⑤ Press **DELETE**.

The Display responds with "Sure?".

- ⑥ Press **ENTER** to proceed or **STOP/EXIT** to cancel.

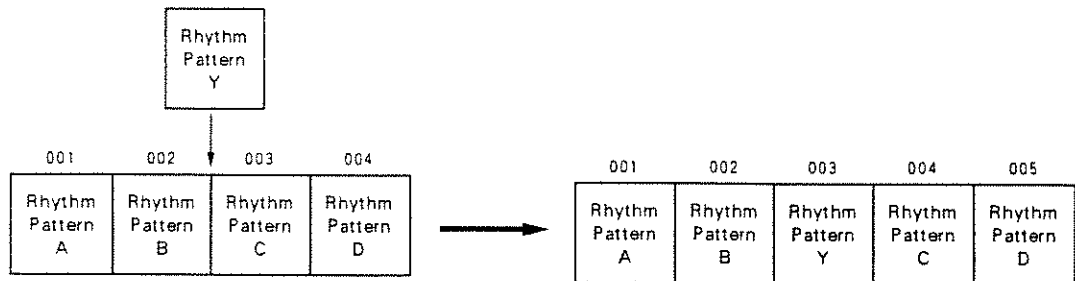
MODE		FUNC	PAD BANK	
SONG	STEP	DELETE	TEMPO	120
249 149			SONG	99
Sure?				

Rhythm Pattern to be deleted

4. Inserting Pattern Data

With the Pattern Insert function you can insert a new Rhythm Pattern into any position (Part) of a Song.

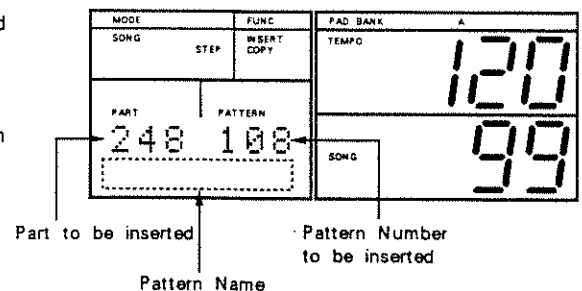
Inserting Rhythm Pattern Y into Part 003



- ① Press **SONG/PTN**. The Display should read "SONG" (Song Mode).
- ② Press **REAL/STEP**. (The Display should read "STEP".)
("REAL" and "STEP" are selected alternately each time you press the button.)
- ③ Press **REC** and then **START** to select the Song Write mode.
- ④ Using **FWD** / **BWD**, select the Part Number where the new Rhythm Pattern will be inserted.

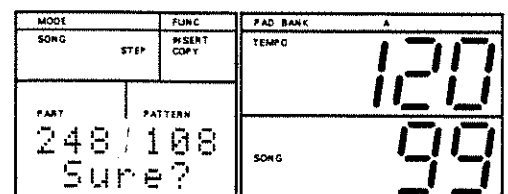
- ⑤ Press **COPY**. The Display should read "COPY" and "INSERT".

- ⑥ Using the **TEMPO/DATA** dial, select the Rhythm Pattern Number to be inserted.



- ⑦ Press **ENTER**.
The Display responds with "Sure?".

- ⑧ Press **ENTER** to proceed or **STOP/EXIT** to cancel.





Chapter 5

Playing Songs and Rhythm Patterns

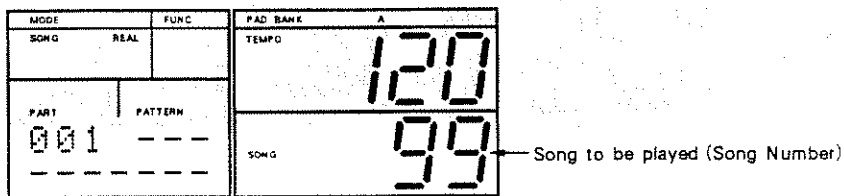
This chapter explains the various functions for playing Songs and Rhythm Patterns.

[1] Song Play

With the DR - 660 stopped:

- ① Press **SONG/PTN**. The Display should read "SONG" (Song Mode).
- ② Using the **TEMPO/DATA** dial, select the Song Number (0 — 99) to be played.

※ If no data exists in the Song you have selected, the Display will respond with:

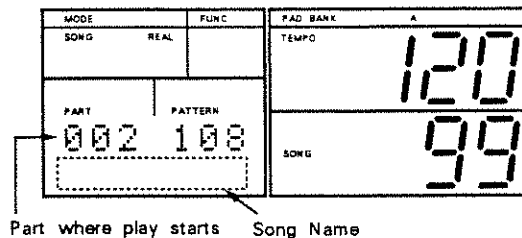


- ③ Press **START**.
 - ④ Press **STOP/EXIT**.
Pressing **START** again will resume playback from where the Song was stopped.
- ★ Pressing **RESET** and then **START** will start playback from the beginning of the Song.

1. Continue Play

Continue Play resumes playback of a Song from the point where it was stopped. You can start playback from any part more than one part in the Song. With playback stopped, follow this procedure:

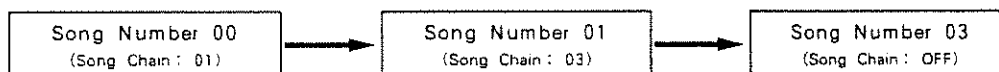
- ① Using **FWD** / **BWD**, specify the Part Number where you wish playback to begin.
- ② Press **START**.
The Song will start from the specified Part.



2. Song Chain

The DR - 660 allows you to play more than one Song continuously. In each Song, you can set a Song Number which should be played next.

Song Chain allows you to play up to 100 Songs consecutively.



[Procedure]

- ① Press **SONG/PTN**. The Display should read "SONG" (Song Mode).
- ② Press **REC**.
- ③ Press **◀** twice.

- ③ Using the **TEMPO/DATA** dial, select the next Song Number to be played.

MODE	REAL	FUNC	PAD BANK	A
SONG			TEMPO	120
CHN=OFF			SONG	99

To play one Song repeatedly, specify the same Song Number as many times as desired.

※ If you do not wish to use the Song Chain function, turn it OFF.

- ④ Press **STOP/EXIT** to return to the previous Display.

[2] Realtime Pattern Change

Realtime Pattern Change allows you to move to various Rhythm Patterns you have selected beforehand. This may be effectively used for automatically inserting Fill-ins. That is, you can use the unit like a preset rhythm machine.

1. Structure

Rhythm Patterns should be handled as follows when Realtime Pattern Change.

- Original Patterns

These are basic Rhythm Patterns.

- Variation Patterns

Should be handled as Variations of the Originals.

- Fill-in-to-Original Patterns

Should be used for Fill-ins before Original Patterns are played.

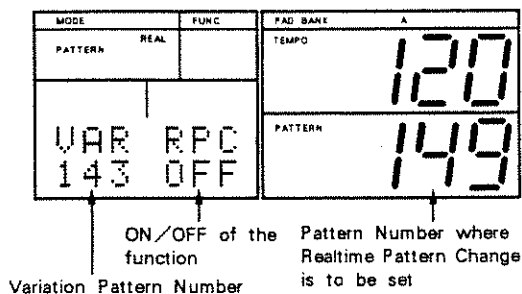
- Fill-in-to-Variation Patterns



Should be used for Fill-ins before Variation Patterns are played.

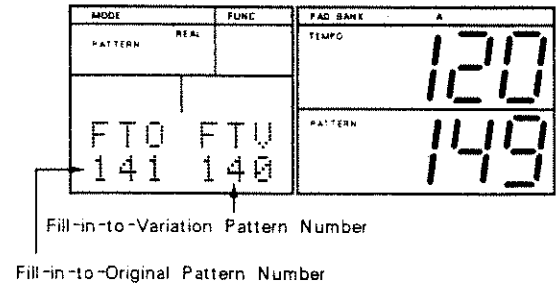
2. Setting Realtime Pattern Changes

In the similar way as initial settings for Pattern Write, you can turn on the Realtime Pattern Change.

- ① Press **SONG/PTN**. The Display should read "PATTERN" (Pattern Mode).
- ② Using the **TEMPO/DATA** dial, specify the Pattern Number where you wish to set a Realtime Pattern Change.
- ③ Press **REC**.
- ④ Press **◀** to select the Realtime Pattern Change setting Display.
- ⑤ **TEMPO/DATA** dial, turn the Realtime Pattern Change function "ON".
- ⑥ Using **◀**, move the cursor to the Rhythm Pattern Number position. Then using the **TEMPO/DATA** dial, select the Rhythm Pattern Number to be used as a Variation Pattern.



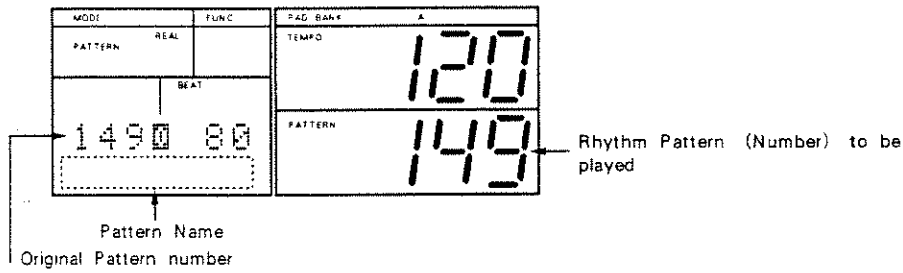
- ⑦ Press , to change screens. Using the **TEMPO/ DATA** dial, select the Rhythm Pattern to be used as a Fill-in-to-Variation Pattern.
- ⑧ Press  to move the cursor, then use the **TEMPO/ DATA** dial to select the Rhythm Pattern to be used as a Fill-in-to-Original Pattern.
- ⑨ When you have completed the settings, press **STOP/EXIT**. The previous Display will return.



3. Playing Realtime Pattern Changes

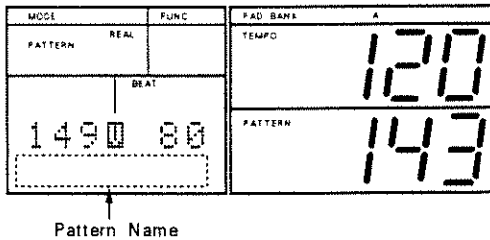
- ① Press **SONG/PTN**. The Display should read "PATTERN" (Pattern Mode).
- ② Using the **TEMPO/DATA** dial, select the Rhythm Pattern to be played.

When you select a Rhythm Pattern in which a Realtime Change has been set, the Original Pattern Number appears in the Display before the Beat Number.

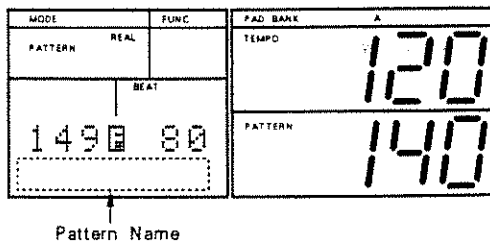


- ③ Press **START** to play the Rhythm Pattern.

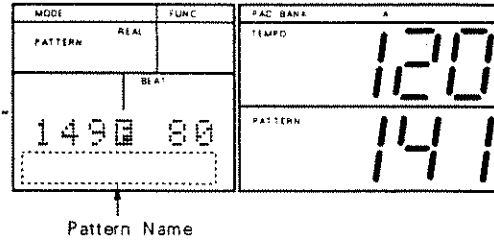
★ If you press **START** while the Rhythm Pattern is being played, the Variation Pattern will automatically play when the current Pattern is complete.



★ If you press **FWD** while the Rhythm Pattern is being played, the Fill-in-to-Variation Pattern will start immediately. The Variation Pattern will then play when the Fill-in Pattern is complete.

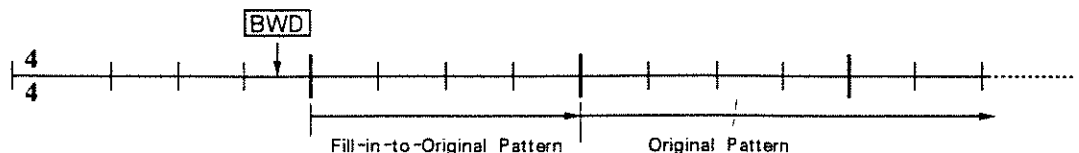
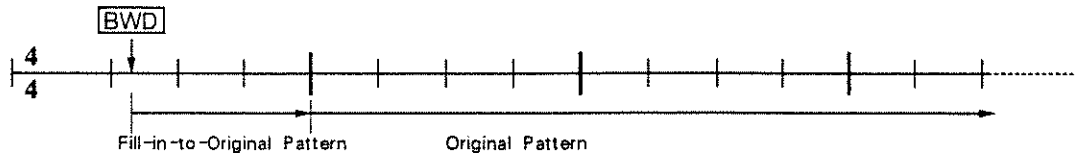
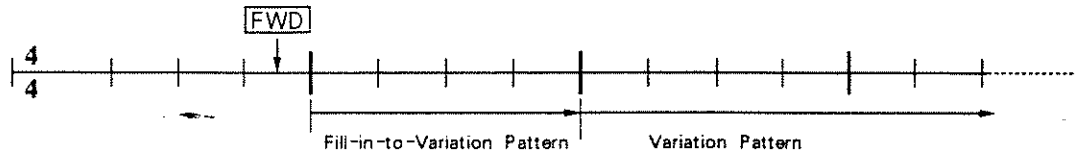
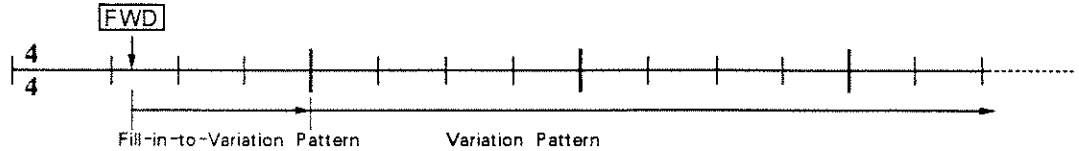


- ★ If you press **BWD** while the Rhythm Pattern is being played, the Fill-in-to-Original Pattern will start immediately. It will then change to the Rhythm Pattern selected in step ② when the current Pattern is complete.



- ★ If you press **FWD** after the last beat of a bar, the Fill-in-to-Variation Pattern will be played immediately (at the beginning of the next bar). It will then change to the Variation Pattern when the current Pattern is complete.
- ★ If you press **BWD** after the last beat of a bar, the Fill-in-to-Original Pattern will start immediately (at the beginning of the next bar). It will then change to the Rhythm Pattern selected in step ② after the current Pattern is complete.
- ★ If you press **STOP** to stop playback while the Variation Pattern/Fill-in Pattern is being played, and then press **RESET**, the Song will return to the beginning of the Rhythm Pattern selected in step ②.

(Example) When the Fill-in Pattern consists of one measure





Chapter 6

Changing Sounds

You may find it necessary at times to change the sounds assigned to the Key Pads. You may also want to edit the timbre (tone color), effects settings and output assignments.

[1] Editing sounds

The sound of each Instrument assigned to a Key Pad can be edited.

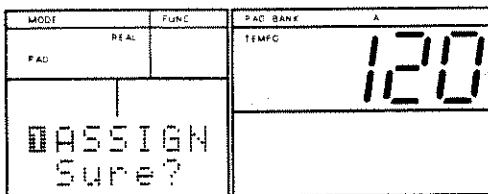
- ※ Each sound is assigned to a Drum Kit. Therefore, edited sounds will be assigned to the same Drum Kit.

1. Sound Parameters

The parameters available for editing the sounds of the Instruments are as follows:

- ※ You can edit all the Sound Parameters (except for the Drum Kit name) or Preset drum kit (0 — 6) in a temporary base (that is the edited data will be returned to the previous when a new drum Kit is selected).

1 ASSIGN: Sound Assign



The DR - 660 allows you to assign any sound to any Key Pad. You can also assign any one sound to all of the Key Pads.

The DR - 660 contains the 255 sounds as shown on the following page.

[The list of Instrument]

No.	Display	Instrument Name	No.	Display	Instrument Name
* 0	Ambo K	ambient kick	* 23	MonDpK	mondo deep kick
* 1	AttakK	attack kick	* 24	PillwK	pillow kick
* 2	BBallK	basket ball kick	* 25	PunchK	punch kick
* 3	BoSldK	boing solid kick	* 26	Rap K	rap kick
* 4	BreatK	breater kick	* 27	Real K	real kick
* 5	BriteK	bright kick	* 28	RevrBk	reverb kick
* 6	DanceK	dance kick	* 29	RoomK1	room kick 1
* 7	Deep K	deep kick	* 30	RoomK2	room kick 2
* 8	DelayK	delay kick	* 31	SharpK	sharp kick
* 9	Door K	door kick	* 32	ShellK	shell kick
* 10	DpVrbK	deep reverb kick	* 33	SmashK	smash kick
* 11	Dry K1	dry kick 1	* 34	Soft K	soft acoustic kick
* 12	Dry K2	dry kick 2	* 35	SolidK	solid kick
* 13	Dull K	dull kick	* 36	StrenK	strength kick
* 14	ElecK1	electronic kick 1	* 37	Syn K	synthesizer kick
* 15	ElecK2	electronic kick 2	* 38	TeknoK	techno kick
* 16	GateK1	gate kick 1	* 39	Thud K	thud kick
* 17	GateK2	gate kick 2	* 40	TightK	tight kick
* 18	Hard K	hard acoustic kick	* 41	Tom K	tomtom kick
* 19	HouseK	house kick	* 42	TR808K	TR - 808 kick
* 20	HybrdK	hybrid kick	* 43	TR909K	TR - 909 kick
* 21	MdVrbK	mondo reverb kick	* 44	VbSldK	reverb solid kick
* 22	MondoK	mondo kick	* 45	VerbyK	verby kick

No.	Display	Instrument Name	No.	Display	Instrument name
* 46	Wood K	wood kick	* 103	RealS2	real snare 2
* 47	808AcK	TR - 808 acoustic kick	* 104	ReggS1	reggae snare 1
* 48	808EIK	TR - 808 electronic kick	* 105	ReggS2	reggae snare 2
* 49	808GtK	TR - 808 gate kick	* 106	Ring S	ring snare
* 50	909HdK	TR - 909 hard kick	* 107	RockS1	rock snare 1
* 51	AttakS	attack snare	* 108	RockS2	rock snare 2
* 52	BgShT S	big shot snare	* 109	SplatS	splatter snare
* 53	BrethS	breath snare	* 110	SprLIS	super light snare
* 54	BriteS	bright snare	* 111	SprWKS	super whack snare
* 55	BrRIS1	brush roll snare 1	* 112	SwingS	swing snare
* 56	BrRIS2	brush roll snare 2	* 113	Thin S	thin snare
* 57	BrSIS1	brush slap snare 1	* 114	TightS	tight snare
* 58	BrSIS2	brush slap snare 2	* 115	Tiny S	tiny snare
* 59	BrSIS3	brush slap snare 3	* 116	TrashS	trash snare
* 60	BrSwiS	brush swish snare	* 117	TR808S	TR - 808 snare
* 61	ChopS1	chop snare 1	* 118	TR909S	TR - 909 snare
* 62	ChopS2	chop snare 2	* 119	Yep S	yep snare
* 63	CrkerS	cracker snare	* 120	90's S	90's snare
* 64	CrudyS	cruddy snare	* 121	909LIS	TR - 909 light snare
* 65	DanceS	dance snare	* 122	909RnS	TR - 909 ring snare
* 66	DelayS	delay snare	123	AmbStk	ambient side stick
* 67	Digi S	digital snare	*** 124	HaiStk	hall side stick
* 68	DiscoS	disco snare	125	MtlStk	metal side stick
* 69	DopinS	dopin' snare	126	Sticks	sticks
* 70	ElecS1	electronic snare 1	127	808Stk	TR - 808 side stick
* 71	ElecS2	electronic snare 2	* 128	AmboT1	ambient tom 1
* 72	Fat S	fat snare	* 129	AmboT2	ambient tom 2
* 73	FX S	FX snare	* 130	AmboT3	ambient tom 3
* 74	GlassS	glass snare	* 131	AmboT4	ambient tom 4
* 75	Grab S	grab snare	* 132	BoosTH	boosh tom high
* 76	Hard S	hard snare	* 133	BoosTL	boosh tom low
* 77	HousS1	house snare 1	* 134	BrshT1	brush slap tom 1
* 78	HousS2	house snare 2	* 135	BrshT2	brush slap tom 2
* 79	HousS3	house snare 3	* 136	BrshT3	brush slap tom 3
* 80	HsDpnS	house dopin' snare	* 137	BrshT4	brush slap tom 4
* 81	Huge S	huge snare	* 138	Dry T1	dry tom 1
* 82	HyperS	hyper snare	* 139	Dry T2	dry tom 2
* 83	LA S	L.A. snare	* 140	Dry T3	dry tom 3
* 84	LAFatS	L.A.fat snare	* 141	Dry T4	dry tom 4
* 85	LiteS1	light snare 1	* 142	ElecT1	electronic tom 1
* 86	LiteS2	light snare 2	* 143	ElecT2	electronic tom 2
* 87	LooseS	loose snare	* 144	ElecT3	electronic tom 3
* 88	NastyS	nasty snare	* 145	ElecT4	electronic tom 4
* 89	NoiseS	noise snare	* 146	LiteT1	light tom 1
* 90	PiccS1	piccolo snare 1	* 147	LiteT2	light tom 2
* 91	PiccS2	piccolo snare 2	* 148	LiteT3	light tom 3
* 92	PiccS3	piccolo snare 3	* 149	LiteT4	light tom 4
* 93	PowerS	power snare	* 150	RealT1	real tom 1
* 94	RadioS	radio snare	* 151	RealT2	real tom 2
* 95	RaspyS	raspy snare	* 152	RealT3	real tom 3
* 96	RckerS	rocker snare	* 153	RealT4	real tom 4
* 97	RckinS	rockin' snare	* 154	Rim T1	rim tom 1
* 98	RckLIS	rock light snare	* 155	Rim T2	rim tom 2
* 99	RckPwS	rock power snare	* 156	Rim T3	rim tom 3
* 100	RckRmS	rock rim shot snare	* 157	Rim T4	rim tom 4
* 101	RckSpS	rock splatter snare	* 158	RockT1	rock tom 1
* 102	RealS1	real snare 1	* 159	RockT2	rock tom 2

No.	Display	Instrument Name	No.	Display	Instrument name
* 160	RockT3	rock tom 3	217	808Clv	TR - 808 claves
* 161	RockT4	rock tom 4	218	808Mrc	TR - 808 maracas
* 162	RoomT1	room tom 1	219	808Clp	TR - 808 hand clap
* 163	RoomT2	room tom 2	220	808Cow	TR - 808 cowbell
* 164	RoomT3	room tom 3	221	Scrch1	scratch 1
* 165	RoomT4	room tom 4	222	Scrch2	scratch 2
* 166	808Tom	TR - 808 tom	223	Scrch3	scratch 3
** 167	PopCHH	pop closed hi - hat	224	Scrch4	scratch 4
** 168	PopOHH	pop open hi - hat	225	HiQ	hi - Q
** 169	RealCH	real closed hi - hat	226	Snaps	snaps
** 170	RealOH	real open hi - hat	227	Hoo!	hoo!
171	RealPH	real pedal closed hi - hat	228	Uut?	uut?
** 172	BrsCHH	brush closed hi - hat	229	FXnoiz	FX noise
** 173	BrsOHH	brush open hi - hat	230	Chink	chink
** 174	808CHH	TR - 808 closed hi - hat	231	DncClp	dance clap
** 175	808OHH	TR - 808 open hi - hat	*** 232	VrbClp	reverb clap
176	78 CHH	CR - 78 closed hi - hat	* 233	VrbSht	reverb shot
177	78 OHH	CR - 78 open hi - hat	* 234	LtShot	light shot
178	CrshC1	crash cymbal 1	* 235	FXShot	FX shot
179	CrshC2	crash cymbal 2	* 236	GlsSht	glass shot
180	SplshC	splash cymbal	* 237	RevKik	reverse kick
181	ChinaC	chinese cymbal	* 238	RevSnr	reverse snare
** 182	Ride C	ride cymbal	* 239	RevTom	reverse tom
** 183	RidBIC	ride bell cymbal	240	RevCym	reverse cymbal
** 184	BrRidC	brush ride cymbal	241	RevCas	reverse castanets
185	Cowbel	cowbell	242	RevBt	reverse metallic beat
186	Tambrn	tambourine	243	RevHiQ	reverse hi - Q
187	SlBell	sleigh bell	*** 244	RevClp	reverse clap
188	Casta	hail castanets	*** 245	RevSht	reverse shot
189	Triang	triangle	*** 246	RevAmb	reverse ambience
190	Wodblk	wood block	*** 247	RevVrb	reverse reverb
* 191	BongoH	bongo high	*** 248	KikAmb	kick ambience
* 192	BongoL	bongo low	*** 249	SnrAmb	snare ambience
* 193	CngHMT	conga high mute	*** 250	TomAmb	tom ambience
* 194	CngSlp	conga high slap	*** 251	LngVrb	long reverb
* 195	CngHOp	conga high open	*** 252	GatVrb	gate reverb
* 196	CngLOp	conga low open	* 253	SlapBs	slap bass
* 197	Timbal	timbale	* 254	Syn Bs	synthesizer bass
198	Claves	claves	255	OFF	
199	Vibslp	vibra - slap			
200	GuiroS	guiro short			
201	GuiroL	guiro long			
202	Marcas	maracas			
203	Shaker	shaker			
204	CabaUp	cabasa up			
205	CabaDn	cabasa down			
206	WhislS	whistle short			
207	WhislL	whistle long			
208	Agogo	agogo			
209	Cuica	cuica			
210	55Clav	DR - 55 claves			
211	78Cow	CR - 78 cowbell			
212	78Beat	CR - 78 metallic beat			
213	78Guir	CR - 78 guiro			
214	78Tamb	CR - 78 tambourine			
215	78Marc	CR - 78 maracas			
* 216	808Cng	TR - 808 conga			

* ⇒ The sound will alter depending on the strength you hit the Key Pads or the Nuance setting (page 68).

** ⇒ The sound will alter depending on the Nuance setting.

*** ⇒ The Pan setting (page 69) will be ignored.

2 LEVEL: 0 — 15

MODE	REAL	FUNC	PAD BANK	A
PAD			TEMPO	120
LEVEL			PAD NUMBER	A 15
15				

This Parameter adjusts the volume of the sound assigned to each Key Pad.

3 PITCH: -2400 — +2400

MODE	REAL	FUNC	PAD BANK	A
PAD			TEMPO	120
PITCH			PAD NUMBER	A 15
-2400				

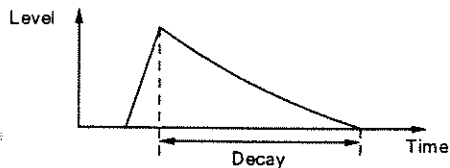
The pitch of a sound can be varied in '10 cent' units (a semitone consists of 100 cents). Higher values increase the pitch.

※ The adjustable pitch range will vary from sound to sound.

4 DECAY: -31 — +31

MODE	REAL	FUNC	PAD BANK	A
PAD			TEMPO	120
DECAY			PAD NUMBER	A 15
15				

The decay time of an Instrument can be set. As the value increases, so does the decay time. Higher values increase the decay time.



※ In some Instruments, the change of the decay time may be fairly smaller when set to a + value.

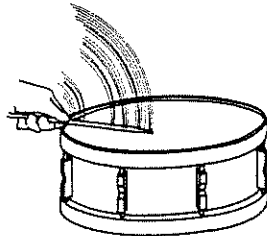
5 NUANCE: -7—+7

MOD	REAL	FUNC	PAD BANK	A
FAD			TEMPO	120
NUANCE			FAD NUMBER	A 16
-7				

The nuance (tone quality) setting can subtly change certain sounds (those indicated by "*" or "**").

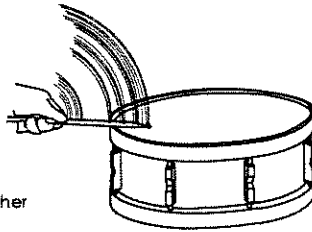
- For sounds indicated by "*" in the table shown on page 64, there will be an increase in the lower frequency content when the value is increased.

When you hit the drum near the center



The value is higher

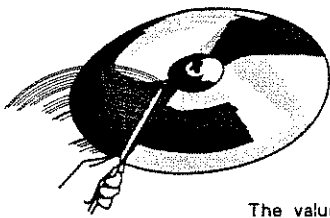
When you hit the drum near the edge



The value is lower

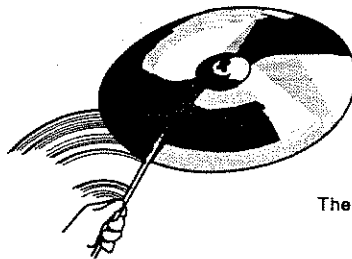
- For sounds indicated by "**", when the value is increased the sound will be as if the cymbal was hit closer to the cup.

When you hit the cymbal near the cup



The value is higher

When you hit the cymbal near the edge



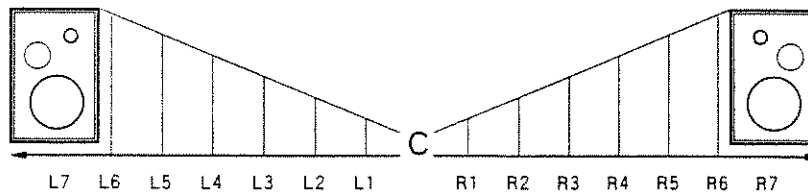
The value is lower

※ When nuance settings cannot be made for a particular sound, "----" will be displayed.

6 PAN: L7 — C — R7/INDIV

MODE	REAL	FUNC	PAD BANK	A
PAD			TEMPO	120
PAN R7			PAD NUMBER	A 16

For a sound assigned to stereo output, this setting determines its 'pan' position (its placement in the stereo (L/R) field).



- ※ Even if a sound is set to "INDIV", it will not be sent through the INDIVIDUAL output unless "IND" is selected as the Individual Output setting (page 79).
- ※ The pan setting will not affect a sound assigned to an Individual Output.

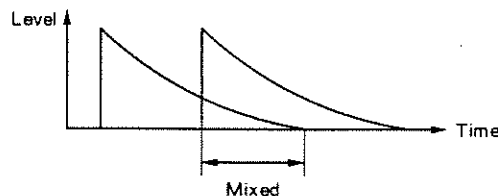
7 A.TYPE: POLY/POLY EXC1 — 7/MONO/MONO EXC1 — 7

MODE	REAL	FUNC	PAD BANK	A
PAD			TEMPO	120
A.TYPE POLY			PAD NUMBER	A 16

These settings determine the way sounds will be produced when one or more sounds are played continuously.

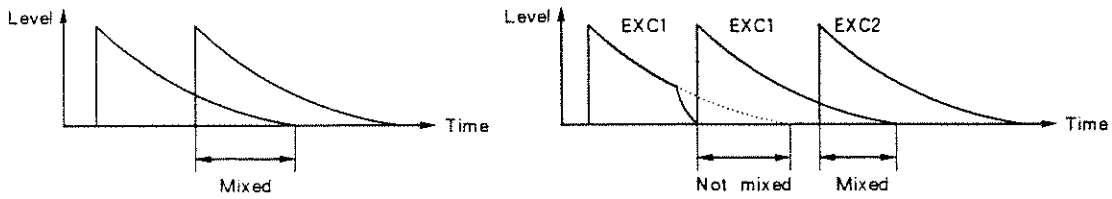
● POLY

This function allows sounds with a long decay to 'overlap' one another. For example, if a ride cymbal pattern is being played, using this setting will permit all the sounds to decay naturally.



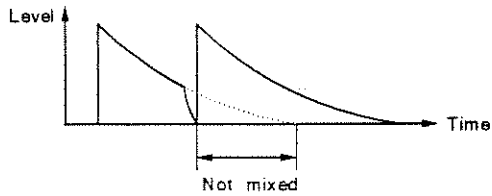
● POLY EXC

When "two sounds which cannot be played at the same time in a normal playing technique but which will be sounded together when either of them is played continuously" such as Open and Closed Hi-hat, they can be set to the same EXC numbers for not being sounded together.



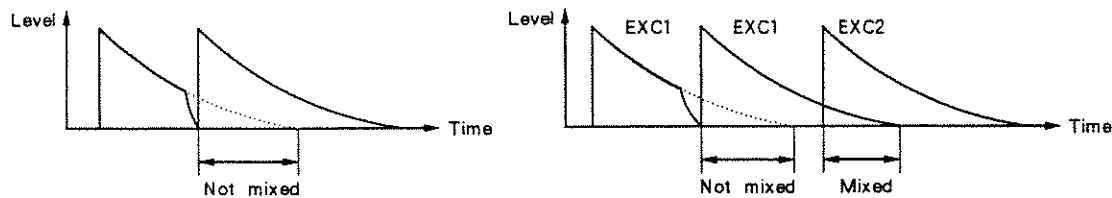
● MONO

When one sound is played repeatedly, each previous sound will be cut off to make room for the next one.

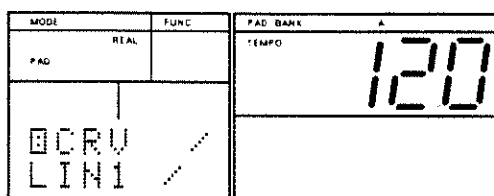


● MONO EXC

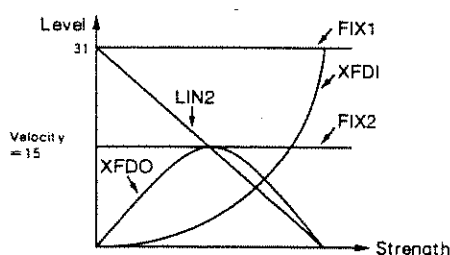
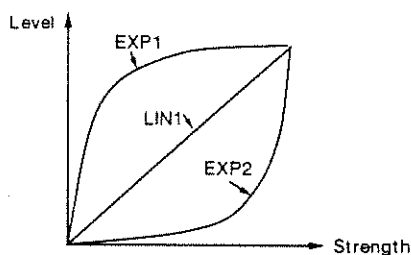
Any sounds having the same EXC number cannot be played together. Also when the same sound is played repeatedly, can not be played together. Sounds such as Guiro Short and Guiro Long, which are not normally heard together, should be set to the same EXC number.



8 CRV: Sensitivity Curve (EXP 1/LIN 1/EXP 2/LIN 2/XFDO/XFD 1/FIX 1/FIX 2)



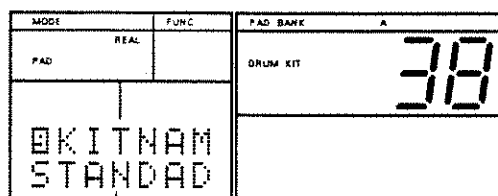
The 8 sensitivity curves determine how the Key Pads will respond to differences in playing velocity (playing strength) to Pad Bank A and B.



※ A Sensitivity Curve cannot be set for each Key Pad.

When it is set to XFDI or XFDO, natural dynamics effect can be obtained by using the Pad Bank Layer mode. (Page 81)

9 KITNAM: Drum Kit Name



Drum Kit Name

Each Drum Kit (7 — 38) can be assigned a name of up to 7 characters.

※ Drum Kits 0 — 6 are Preset; their names cannot be changed.

2. Editing Sound Parameters

① Press **PAD**. The Display should read "PAD" (Pad Mode).

② Using **◀**/**▶**, select the Parameter to be edited.

[When you select **ASSIGN**]

③ The Display responds with "Sure?".

Press **ENTER**.

④ Hit the Key Pad where the sound you wish to replace is assigned.

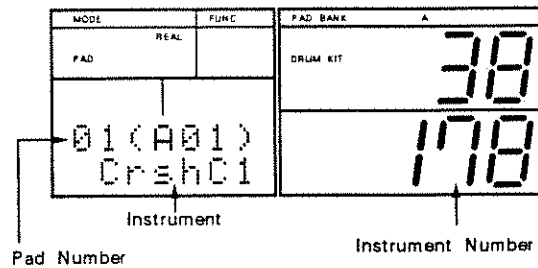
If necessary, change Pad Banks by pressing **PAD BANK**.

★ Use **◀**/**▶** to select a sound assigned to Pad Numbers – 01 to – 23.

⑤ Select the new sound with the **TEMPO/DATA** dial.

★ If you wish to hear the new sound, press **ENTER**.

⑥ Press **STOP/EXIT**. The Parameter setting Display will return.



[When you select **LEVEL — KITNAM**]

- ③ Hit the Key Pad where the sound to be edited is assigned.

If necessary, change Pad Banks using **PAD BANK**.

- ★ To select an instrument assigned to Pad Numbers — 01 to — 23, press **ENTER** then use **◀** / **▶**, instead of the Key Pad.

- ④ Using the **TEMPO/DATA** dial, set the value of the Parameter.

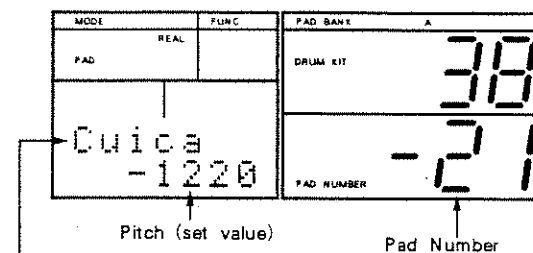
- ★ To change Drum Kit Names, move the cursor with **◀** / **▶**, then enter the characters using the **TEMPO/DATA** dial.

- ★ When you have selected a sound assigned to Pad Numbers — 01 to — 23, pressing **ENTER** will allow you to hear that sound.

- ★ To continue to edit other Parameters, repeat steps ② to ④ as many times as necessary.

When you have selected a sound assigned to Pad Numbers — 01 to — 23, press **STOP/EXIT** first, then proceed with steps ② to ④.

(Example) Pitch setting Display



[2] Editing Effects

You can set the depth of the Reverb and Chorus effects for the entire Drum Kit and individually for each sound.

1. Reverb depth

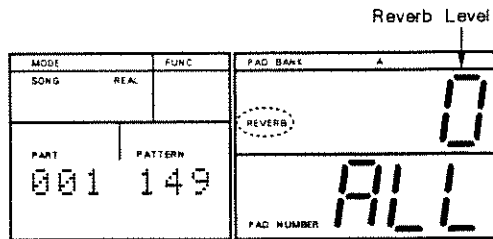
Set the depth of the Reverb. (0 — 9)

This function allows you to set the depth of the Reverb.

※ When INDIVIDUAL output 1 is being used, the Reverb effect cannot be obtained.

① Press **REVERB**.
"REVERB" flashes in the Display.

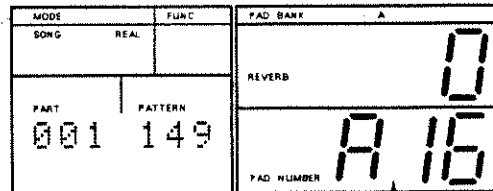
② Using the **TEMPO/DATA** dial, set the overall Reverb level for the Drum Kit.



★ To set the Reverb level for a particular sound, first hit the Key Pad to which the relevant sound is assigned. Set the reverb level with the **TEMPO/DATA** dial.

If necessary, change Pad Banks using **PAD BANK**.

Press **ENTER**, and you can again set the overall Reverb level.

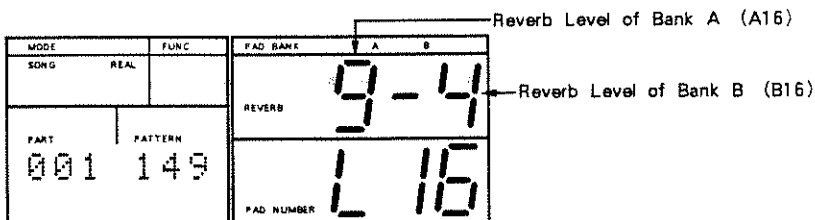


Number of the Key Pad where the Reverb Level should be set

③ Press **REVERB** when the settings are complete.

※ Even if the Reverb level is set for each sound, no Reverb effect will be obtained if the overall Reverb level is 0.

※ If you select both Banks (A and B) using **PAD BANK**, the Reverb level can be set simultaneously for both Banks. This is a useful way of setting the Reverb level for a Drum Kit in which Pad Bank Layer (page B1) is ON.



2. Chorus depth

Set the depth of the Chorus. (0 — 9)

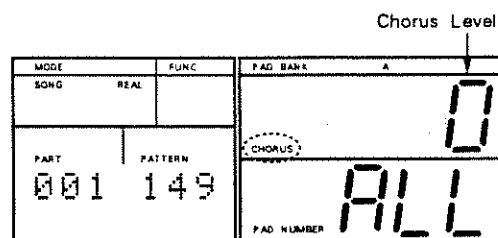
This function allows you to set the depth of the Chorus.

※ When INDIVIDUAL output 2 is being used, the Chorus effect cannot be obtained.

① Press **CHORUS**.

"CHORUS" flashes in the Display.

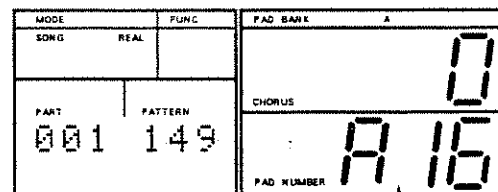
② Using the **TEMPO/DATA** dial, set the overall Chorus level for the Drum Kit.



★ To set the Chorus level for a particular sound, first hit the Key Pad to which the relevant sound is assigned. Set the Chorus level with the **TEMPO/DATA** dial.

If necessary, change Pad Banks using **PAD BANK**.

Press **ENTER**, and you can again set the overall Chorus level.

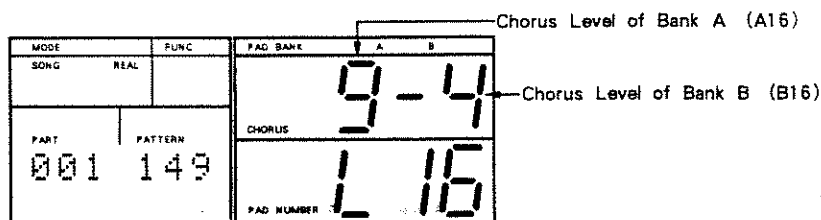


Number of the Key Pad where the Chorus Level should be set

③ Press **CHORUS** when the settings are complete.

※ Even if the Chorus level is set for each sound, no Chorus effect will be obtained if the overall Chorus level is 0.

※ If you select both Banks (A and B) using **PAD BANK**, the Chorus level can be set simultaneously for both Banks. This is a useful way of setting the Chorus level for a Drum Kit in which Pad Bank Layer (page 81) is ON.



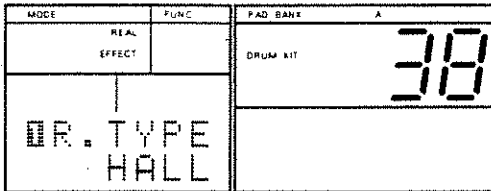
[3] Changing Effects Parameters

By editing Reverb and Chorus Parameters, you can create a variety of effects. The edited settings will be written into the Drum Kit currently selected.

1. Effect Parameters

Parameters related with Reverb/Chorus are as follows:

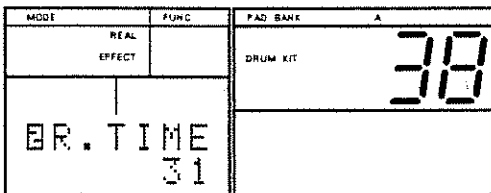
1 R.TYPE: Reverb Type (HALL/ROOM/PLATE/DELAY/PAN-DLY)



This Parameter determines the Reverb Type.

Type	Description
HALL	This simulates reverberation in a concert hall.
ROOM	This simulates reverberation in a normal size room.
PLATE	This simulates plate echo (reverb created by vibration of metallic plate).
DELAY	This is a normal delay effect.
PAN-DLY	This mixes right and left delay sounds which are individually processed from direct sound, creating fat sound orshaking sounds to the right and left.

2 R.TIME: Reverb Time (0 — 31)



This Parameter determines the reverberation time. As the value increases, the reverberation time increases (creating the illusion of a larger space).

3 R.LPF: Reverb Pre LPF (0 — 7)

MODE	REAL	FUNC	PAD BANK	A
	EFFECT		DRUM KIT	38
R.LPF				
7				

This Parameter sets the cutoff frequency which controls the high frequency content of the reverberant sound. As the value is increased, the higher frequencies are cut.

4 D.FDBK: Delay Feedback (0 — 15)

MODE	REAL	FUNC	PAD BANK	A
	EFFECT		DRUM KIT	38
D.FDBK				
15				

When DELAY or PAN-DLY is selected, this Parameter determines the number of repeats.

5 C.TYPE: Chorus Type (CHORUS/FLANGER)

MODE	REAL	FUNC	PAD BANK	A
	EFFECT		DRUM KIT	38
C.TYPE				
CHORUS				

This setting selects either the Chorus or Flanger effect.

6 C.DPTH: Chorus Depth (0 — 15)

MODE	REAL	FUNC	PAD BANK	A
	EFFECT		DRUM KIT	38
C.DPTH				
15				

This setting determines the depth of the Chorus distortion. The higher the value, the more pronounced the distortion.

7 C.RATE: Chorus Rate (0 — 15)

MODE	REAL	FUNC	PAD BANK	A
	EFFECT		DRUM KIT	38
C.RATE				
15				

This setting determines the rate of Chorus distortion. Higher values increase the rate.

8 C.FDBK: Chorus Feedback (0 — 15)

MODE	REAL EFFECT	FUNC	PAD BANK	A
			DRUM KIT	38
C.FDBK 15				

This setting determines the feedback level of the Chorus effect. Higher values produce a more pronounced flanging effect.

9 C.DLY: Chorus Delay (0 — 31)

MODE	REAL EFFECT	FUNC	PAD BANK	A
			DRUM KIT	38
C.DLY 31				

This setting determines the delay time of the Chorus sound. Increasing the value increases the delay time.

2. Editing Effect Parameters

- ① Press **EFFECT**. The Display should read "EFFECT" (Effect Mode).
- ② Select the relevant Parameter with **◀** / **▶**.
- ③ Set the value of the Parameter with the **TEMPO/DATA** dial.

[4] Individual Outputs

The DR - 660 allows you to assign one sound to each of the INDIVIDUAL outputs (1 and 2). The volume (output level) can also be set.

※ A sound assigned to an INDIVIDUAL output will not be heard through the stereo outputs.

● INDIVIDUAL Output 1

When INDIVIDUAL output 1 is being used, the sound sent through the stereo outputs will not take on Reverb effect either.

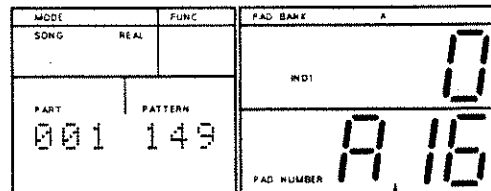
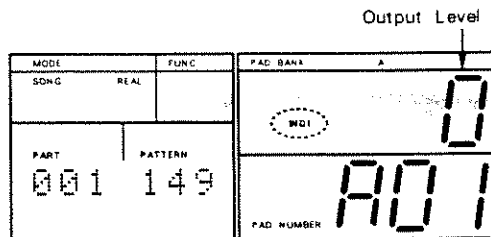
● INDIVIDUAL Output 2

When INDIVIDUAL output 2 is being used, the sound sent through the stereo outputs will not take on Chorus effect either.

- ① Press **REVERB** or **CHORUS**.
- ② Using **◀** / **▶**, select "IND1" or "IND2".
- ③ Press **PAD**. The Display should read "PAD".
- ④ Using **◀** / **▶**, select "SPAN".
- ⑤ Hit the Key Pad to which the sound to be output through the INDIVIDUAL output is assigned.
- ⑥ Using the **TEMPO/DATA** dial, select "INDIV".

[When using INDIVIDUAL Output 1]

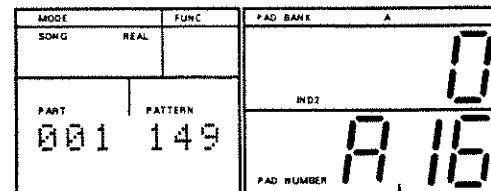
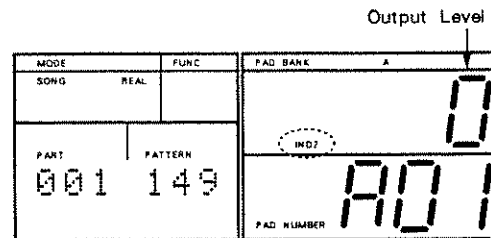
- ⑦ Press **REVERB**.
"IND1" flashes in the Display.
- ⑧ Hit the Key Pad to which the sound to be sent through INDIVIDUAL output 1 is assigned.
- ⑨ Set the Output Level (0 — 9) with the **TEMPO/DATA** dial.
- ⑩ Repeat steps ⑧ and ⑨ as many times as necessary.
- ⑪ Press **REVERB** when all the settings are complete.



Number of the Key Pad where the Output Level should be set

[When using INDIVIDUAL Output 2]

- ⑦ Press **CHORUS**.
"IND2" flashes in the Display.
- ⑧ Hit the Key Pad to which the sound to be sent through INDIVIDUAL output 2 is assigned.
- ⑨ Set the Output Level (0 — 9) with the **TEMPO/DATA** dial.
- ⑩ Repeat steps ⑧ and ⑨ as many times as necessary.
- ⑪ Press **CHORUS** when all the settings are complete.



Number of the Key Pad where the Output Level should be set

[5] Pad Bank Layer

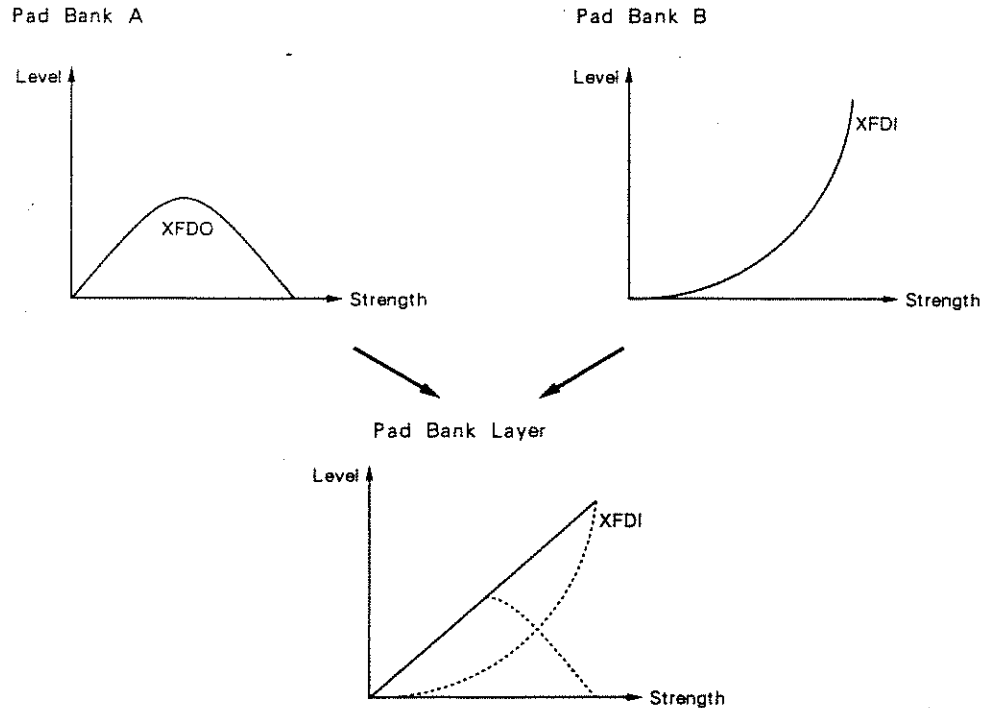
The Pad Bank Layer function allows you to play the sounds of Banks A and B at the same time.

※ The Pad Bank Layer settings you have made are stored in the relevant Drum Kit.

[Using Pad Bank Player]

- By assigning a sound to a specific Key Pad in Pad Bank A, and an edited version of the same sound to the same Key Pad of Bank B, a fat sound can be created when those sounds are played (layered) together.
- By assigning different Velocity Sense Curves to the Key Pads of Pad Banks A and B (page 71), you can play different sounds from the same Key Pad depending on how hard (or soft) you play.

For instance, if you set XFDI at Pad Bank A and XFDO at Pad Bank B, the volume and the ratio for sound mixture of these two sounds will alter in a very natural way according to the strength of hitting the key pads.



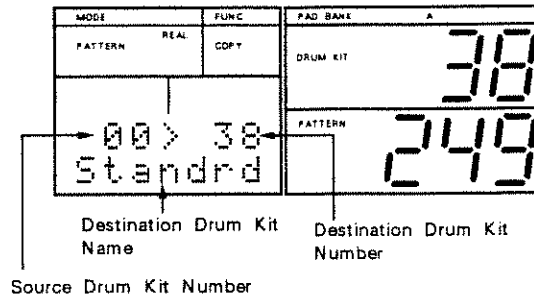
[6] Copying a Drum Kit

The DR - 660 allows you to copy Drum Kit data into any User Programmable Drum Kit (7 — 38).

- ① Press **DRUM KIT**. The Display should read "DRUM KIT".
 - ② Using the **TEMPO/DATA** dial, select the source Drum Kit (Number) to be copied.
 - ③ Press **COPY**.
 - ④ Using the **TEMPO/DATA** dial, specify the destination Drum Kit (Number).
- ※ You cannot select a Preset Drum Kit Number (0 — 6) as a destination.

- ⑤ Press **ENTER**.
The Display responds with "Sure?"

- ⑥ Press **ENTER** to proceed or **STOP/EXIT** to cancel.



● The following data will be copied:

- ◆ Reverb/Chorus levels
(for individual sounds/overall Drum Kit)
- ◆ Pad Parameters
Instrument Assign / Level / Pitch / decay / Nuance / Pan / Assign Type / Sense Curve
- ◆ Effect Parameters
Reverb Type / Reverb Time / Reverb Pre LPF / Delay Feedback / Chorus Type / Chorus Depth / Chorus Rate /
Chorus Feedback / Chorus delay
- ◆ Pad Bank Layer settings
- ◆ Note Number Assignments
- ◆ Drum Kit Name

Chapter 7

Connecting MIDI Devices

The DR-660 is equipped with MIDI IN/OUT sockets which permit connection to a variety of MIDI equipment (sequencers, sound modules, etc.).

[1] About MIDI

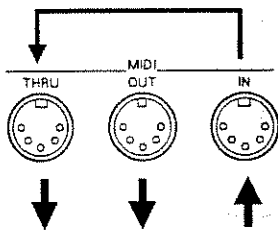
MIDI (pronounced "middy") stands for Musical Instrument Digital Interface. MIDI is a world-wide standard that allows musical instruments and computers to exchange musical data. Most electronic musical instruments sold today are MIDI compatible. MIDI compatible devices have MIDI sockets which are used to physically link instruments (using special cables). Under the MIDI standard, performance events such as playing on a keyboard, or depressing a pedal are handled as MIDI messages.

1. MIDI Messages

The following explains how MIDI messages are transmitted and received.

■ MIDI Sockets

MIDI messages are transmitted and received through three MIDI sockets:



MIDI IN : This socket receives incoming MIDI messages.

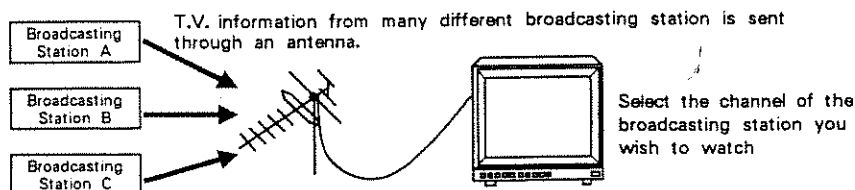
MIDI OUT : This socket transmits outgoing MIDI messages to other devices.

MIDI THRU : MIDI messages received at MIDI IN are re-transmitted by the MIDI THRU socket. (This socket does not transmit messages that originate inside the unit itself.)

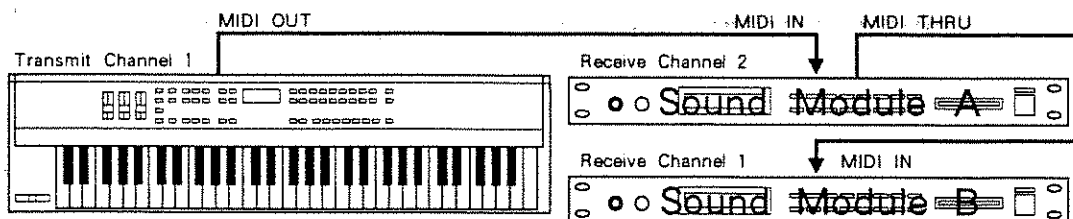
- ※ In theory, any number of MIDI devices can be connected using the MIDI sockets. The practical limit, however, appears to be 4 or 5 devices. Beyond 6 units, the signal quality may begin to deteriorate and become unreliable.
- ※ The DR-660 is equipped with MIDI IN and MIDI OUT sockets. The MIDI IN socket can also be used as a MIDI THRU socket by setting the Soft Thru function ON (Page 92).

■ MIDI Channels

Using MIDI, a variety of information can be transmitted to several MIDI devices using only one MIDI cable. This is made possible by MIDI channels. MIDI channels are easy to understand if we use the analogy of television broadcasting. Many television programs are broadcast from many TV stations and your TV antenna receives them all. By setting your television to a specific channel, you can watch only the desired program. The same idea applies to MIDI channels. The master device is somewhat like the broadcast station, and the slave device is like a television receiver. The MIDI messages carried by the MIDI cable are like the programs that are transmitted from the broadcast stations.



MIDI provides 16 channels (1 — 16). MIDI messages are transmitted when the transmitting device and the receiving device are set to the same channel. When the MIDI channels are set as shown below, only Sound Module B will be heard by playing the keyboard.



However, when the OMNI Mode is set to ON, all the messages are received — regardless of how the MIDI channels are set. And when the OMNI Mode is OFF, messages of only the specified MIDI channel are received.

2. DR - 660: MIDI Messages

The following shows which MIDI message the DR - 660 can transmit and receive. MIDI messages are divided into two main groups: Channel Messages and System Messages. Channel messages are handled by each channel, while the system messages work regardless of the MIDI channel settings.

■ Channel Messages

These messages transmit performance information. Normally, channel messages alone are sufficient to ensure proper MIDI control. How a receiver is controlled by each MIDI message is determined by how the receiver is set.

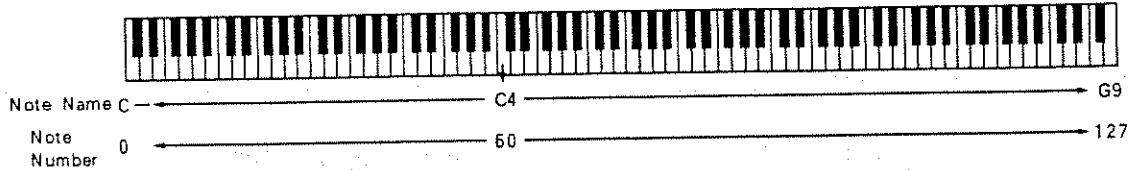
● Note Messages

Note messages transmit drum performance information. Note messages include the following:

- Note Number : Percussion sound (Number that indicates the position of the 'key')
- Note On : Playing of a Key Pad
- Note Off : Releasing of a Key Pad
- Velocity : How hard a Key Pad was struck

Note Numbers are represented by numbers 0 — 127 to indicate the position of notes on a keyboard instrument, with 60 representing middle C (C4). On a rhythm machine, however, a Note Number can be set for each drum sound. That is, drum sounds can be played by the corresponding Note Numbers.

Note Number / Note Name



※ On the DR - 660, a Note Number should be set for each Key Pad.

● Program Change Messages

These messages are for changing sounds. On the DR - 660, Program Change messages select the different Drum Kits.

※ The DR - 660 can transmit and receive Program Change messages.

■ System Messages

System messages include Exclusive messages, synchronization data, system monitoring data, etc.

※ The DR - 660 can receive synchronization information.

● Common Messages

Common messages include Song Selection and Song Position Pointer messages, etc.

※ The DR - 660 can transmit and receive Song Selection and Song Position Pointer messages.

● Realtime Messages

These are messages used in synchronization. Realtime Messages include Clock information for setting tempo, Start/Stop, Continue Start and Active Sensing data (that monitors MIDI connection integrity).

※ The DR - 660 can transmit and receive Clock, Start/Stop and Continue Start messages, and can transmit Active Sensing messages.

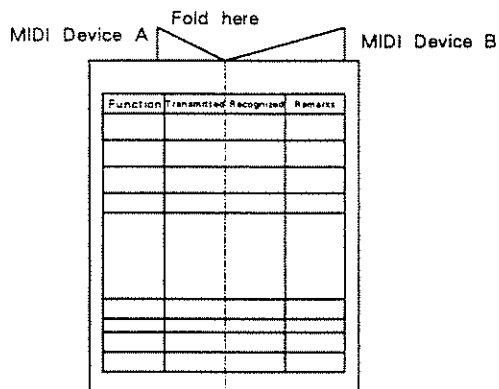
● System Exclusive Messages

These messages are used for transmitting Rhythm Patterns or Setup messages to an external sequencer.

※ The DR - 660 can transmit and receive System Exclusive messages.

[MIDI Implementation Chart]

MIDI has made it possible for a wide variety of devices to exchange information, but it is not always true that all types of MIDI messages can be exchanged between all types of devices. For example, if you use a synthesizer as a master device to control a digital piano, the pitch bender (the lever or wheel that modifies the pitch) of the synthesizer will have no effect on the sound of the piano. The important thing to keep in mind when using MIDI is that the slave (receiving) device must be able to 'understand' what the master (transmitter) is 'saying'. In other words, the MIDI messages must be common to both master and slave. To help you quickly determine what types of MIDI messages can be exchanged between master and slave, the Operation Manual of each MIDI device includes a MIDI Implementation chart. By looking at this chart, you can quickly see what messages the device is able to transmit and receive. The left side of the chart lists the names of a variety of MIDI messages, and the Transmission and Reception columns use "o" and "x" marks to indicate whether or not each of these messages can be transmitted or received. This means that a specific MIDI message can be exchanged only if there is a "o" in both the Transmission column of the master and the Reception column of the slave. MIDI implementation charts are standardized, so you can fold the charts from two manuals together to see at a glance how the two devices will communicate.



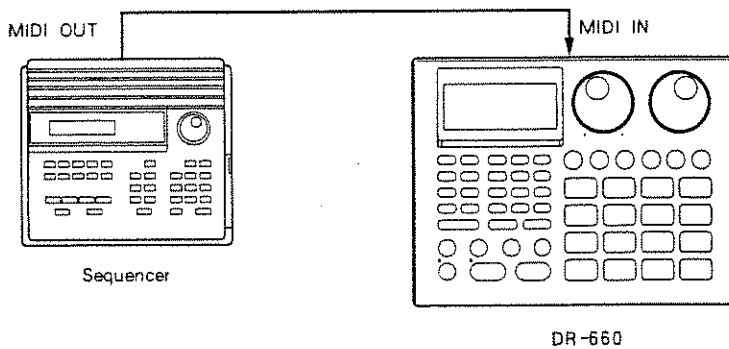
[2] Synchronization

The DR - 660 can be made to synchronize with an external MIDI device (eg., rhythm machine, sequencer, etc.). You can control tempo or start/stop from either the external device or the DR - 660.

If the master (transmitting) device can transmit Song Select or Song Position Pointer messages, the Song Number or position for Song play specified on the master will be automatically set on the DR - 660.

If the slave (receiving) device can receive Song Select or Song Position Pointer messages, the Song Number or position for Song play specified on the DR - 660 will be automatically set on the slave.

1. Connections



2. The Sync Mode

The Sync Mode determines which device, the DR - 660 or an external device, will be the master.

INT An external MIDI device synchronizes in tempo with the DR - 660

MIDI The DR - 660 synchronizes to the MIDI clock signals sent from an external MIDI device.

With the DR - 660 stopped in the Song Play or Pattern Play mode, follow this procedure:

- 1 Press **MIDI**.
The Display should read "MIDI" (MIDI Mode).
- 2 Select "B SYNC" using **◀**/**▶**.
- 3 Using the **TEMPO/DATA** dial, set the Sync Mode to "MIDI".

MODE	FUNC	PAD BANK	A
REAL		TEMPO	120
MIDI			
B SYNC			
MIDI			

3. Tempo Indication

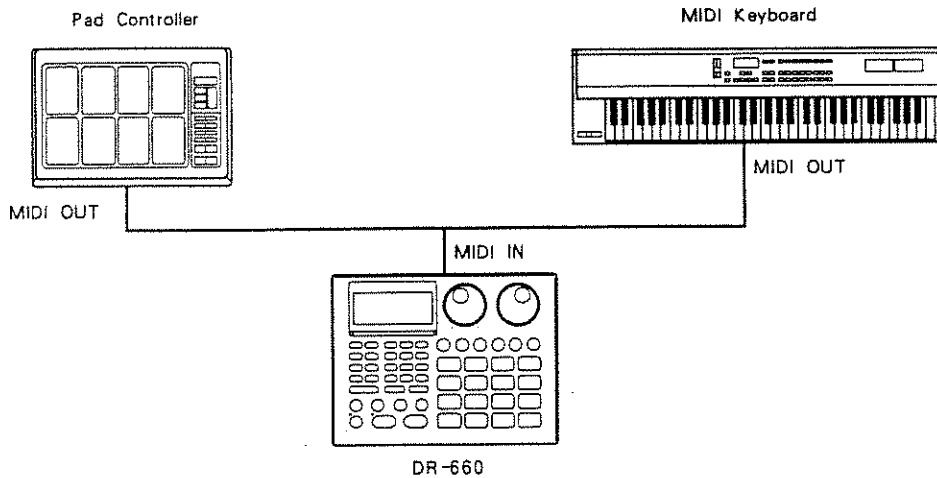
When the Sync Mode is set to MIDI Sync, the tempo will be shown in the Display, and the tempo can no longer be controlled from the DR - 660.

MODE		FUNC		PAC BANK		A	
PATTERN		REAL		TEMPO		0000	
		BEAT		PATTERN		249	
♩		01					

If you press **START** before Timing Clocks are sent from the external device, the Display responds with the Tempo Indication of the playing mode. However, play does not actually start until the DR - 660 receives Timing Clocks.

[3] Slave: Using the DR-660 as a MIDI Sound Module/ Master: Controlling an External MIDI device

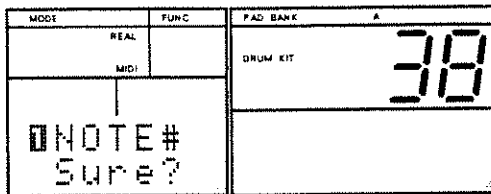
You can play the DR-660 using performance information received from an external MIDI device. The DR-660 can also play (control) an external MIDI instrument.



1. Parameters

To control (play) the DR-660 from an external MIDI device, set the following parameters:

1 NOTE#: Note Number (27 — 81)

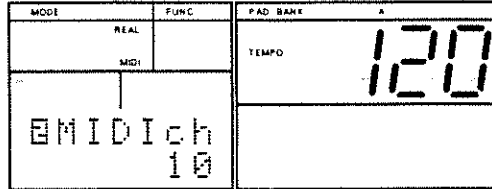


When the DR-660 receives Note On messages (on the proper MIDI channel), the Note Numbers determine which sounds will be played. When the DR-660 transmits Note On messages, the Note Numbers set here will be used to select sounds on the external unit. Sounds which are not assigned to Key Pads cannot be transmitted, however.

Even if you have assigned the same Note Number to more than one Key Pad, only one sound will be played. Pad Bank A has priority and the sound assigned to the Key Pad of the lowest number will be played.

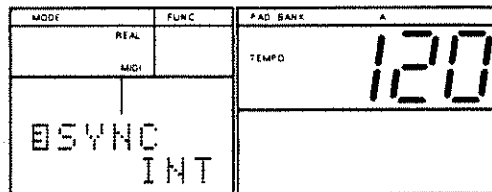
※ Note Number Assignment can be set for each Drum Kit.

2 MIDIch: MIDI Channels (1 — 16)



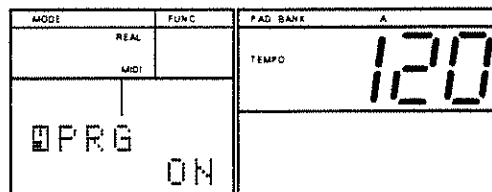
This selects the channel on which the DR-660 receives messages. The DR-660 does not feature an OMNI ON mode and therefore should be set to the same MIDI channel number as the transmitter. To transmit messages, the MIDI channel set here will also be used.

3 SYNC: Sync Mode (INT/MIDI)



This parameter determines whether the DR-660 will be the master (INT) or the slave (MIDI) device.

4 PRG: Program Change Message (ON/OFF)

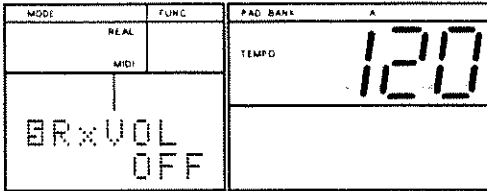


This parameter determines whether or not to transmit or receive Program Change messages. When set to ON, the DR-660 will change Drum Kits upon receiving Program Change messages, and will transmit Program Change messages when Drum Kits are selected by operation of its panel buttons.

Drum Kit/Program Number Table

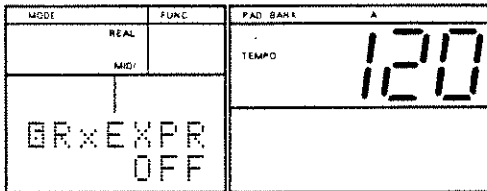
Drum Kit Number	Program Number	Drum Kit Number	Program Number	Drum Kit Number	Program Number
0	1	13	71	26	84
1	9	14	72	27	85
2	17	15	73	28	86
3	25	16	74	29	87
4	26	17	75	30	88
5	33	18	76	31	89
6	41	19	77	32	90
7	65	20	78	33	91
8	66	21	79	34	92
9	67	22	80	35	93
10	68	23	81	36	94
11	69	24	82	37	95
12	70	25	83	38	96

5 RxVOL: Volume Messages (0 — 127/ON/OFF)



This parameter determines whether or not to receive MIDI Volume Messages. When it is ON, the overall volume changes when the DR - 660 receives Volume messages.

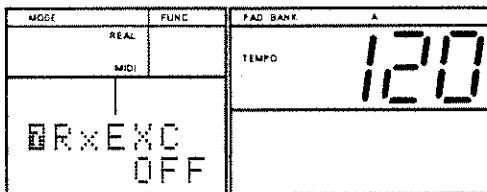
6 RxEXPR: Expression Messages (ON/OFF)



This parameter determines whether or not to receive Expression Messages. When it is ON, the overall volume changes when the DR - 660 receives Expression messages.

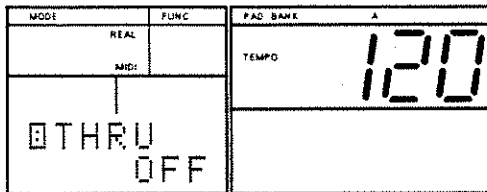
The Expression setting is not stored in memory and default to its maximum value.

7 RxEXC: Exclusive Messages (ON/OFF)



This parameter determines whether or not to receive System Exclusive messages. When it is set to OFF, the DR - 660 does not receive System Exclusive messages.

8 THRU: Soft Thru (ON/OFF)



When this is set to OFF, the messages received through MIDI IN will not be transmitted through MIDI OUT.

When set to ON, the messages received through MIDI IN will be transmitted (unaltered) through MIDI OUT while the performance information in the DR - 660 are not transmitted through MIDI OUT.

※ In Bulk Dump mode, the Soft Thru will be automatically turned OFF.

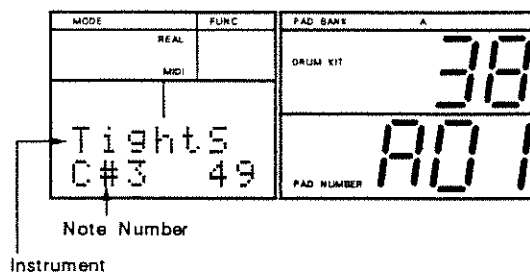
2. Setting Parameters

With the DR - 660 stopped in the Song Play or Pattern Play mode, follow this procedure:

- ① Press **MIDI**. The Display should read "MIDI" (MIDI Mode).
- ② Using **◀** / **▶**, select the desired Parameter.

[When **NOTE#** is selected]

- ③ If you select "**NOTE#**" in step ②, the Display responds with "Sure?". Press **ENTER**.
- ④ Press **DRUM KIT**. The Display should read "DRUM KIT".
- ⑤ Using the **TEMPO/DATA** dial, select a Drum Kit.
- ⑥ Press **DRUM KIT** again.
- ⑦ Press **ENTER**.
- ⑧ Select the sound with **◀** / **▶**, then a Note Number with the **TEMPO/DATA** dial.
- ⑨ Press **STOP/EXIT**. The Parameter selecting Display will return.



[When **MIDI Ch - THRU** is selected]

- ③ Set the value of each Parameter with the **TEMPO/DATA** dial.

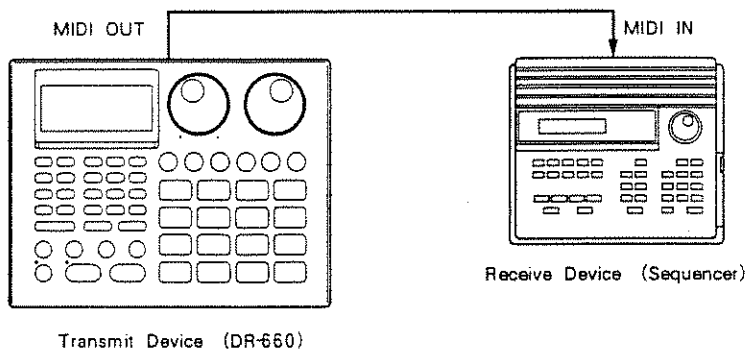
[4] Data Transfer via Exclusive Message

Using MIDI Exclusive messages, you can transfer data stored in the internal memory of the DR - 660 to another DR - 660, or to an external MIDI device that accepts Exclusive messages.

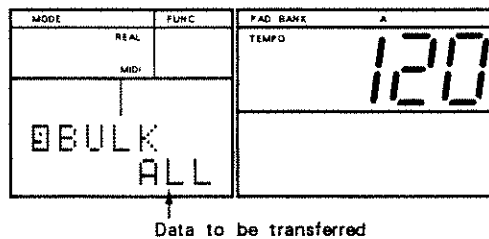
1. Transmit (Bulk Dump)

Data stored in the DR - 660 can be transferred as follows:

[Connection]



- ① Press **MIDI**. The Display should read "MIDI" (MIDI Mode).
- ② Using **◀/▶**, select "BULK".
- ③ Using the **TEMPO/DATA** dial, specify the data to be transferred.

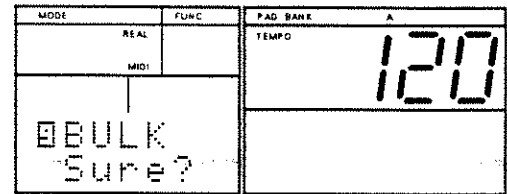


- ALL All data in the DR - 660
- SEQ Rhythm Patterns and Song data
- GLOBAL Roll/Fiam/Metronome/MIDI settings
- DRMKITS All Drum Kits
- 1DRMKIT One specified Drum Kit

- ④ Press **ENTER**.

The Display responds with "Sure?".

- ★ When you select "1 DRMKIT", you must specify the Drum Kit Number to be transferred using the **TEMPO/DATA** dial.

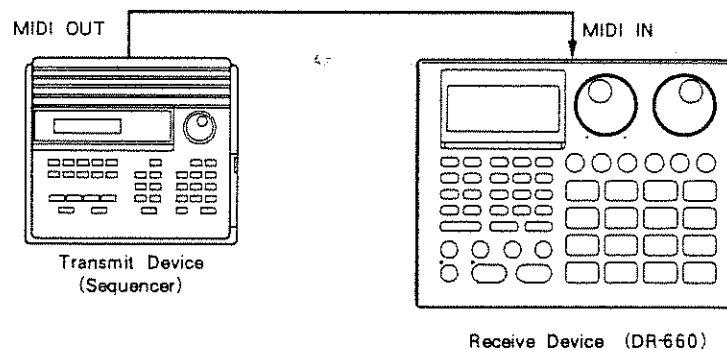


- ⑤ Press **ENTER** to proceed or **STOP/EXIT** to cancel.

2. Receive

The DR - 660 can receive Exclusive messages from another DR - 660 or MIDI device.

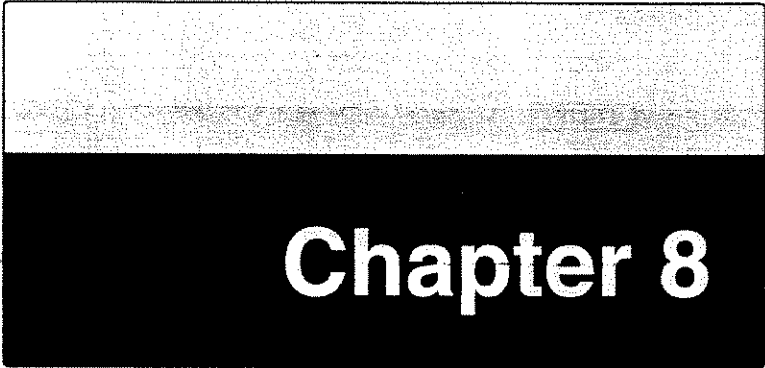
[Connection]



- ★ Switch Exclusive Receive ON (Page 92).

The DR - 660 can receive Exclusive messages only when it is not playing.

- ※ To receive Exclusive data from another DR - 660, set the MIDI channel of two DR - 660's to the same number. To read the DR - 660's data stored in an external unit such as a sequencer, set the MIDI channel to the same channel where the Exclusive messages have been received.



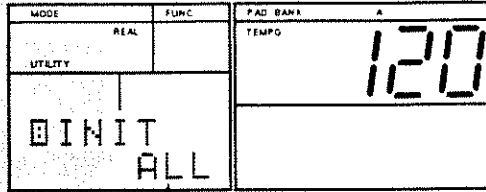
Chapter 8

Reference

[1] Initialization

Initialization is a procedure which restores some or all of the unit's parameters to their original factory settings. To initialize the DR - 660, follow this procedure:

- Press **UTILITY**. The Display should read "UTILITY" (Utility Mode).

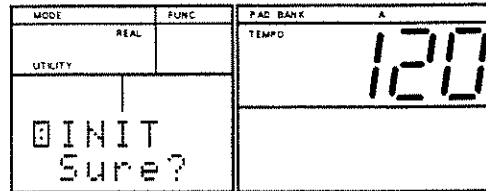


- Using the **TEMPO/DATA** dial, select "INIT", then press **ENTER**.

- Using the **TEMPO/DATA** dial, select the data to be initialized:

- ALL** All the Songs and Rhythm Patterns are erased. (All the other parameters will be returned to their original factory settings.)
- SONG** All the Songs are erased.
- PATTERN** All the Rhythm Patterns are erased. (Drum Kits are returned to their original factory settings.)
- DRUMKIT** All the Drum Kits are returned to their original factory settings.
- EFFECT** Effect Parameters of the Drum kit currently selected are returned to their original factory settings.

- Press **ENTER**. The Display responds with "Sure?"

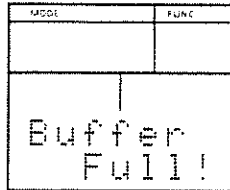


- Press **ENTER** to proceed or **STOP/EXIT** to cancel.

[2] Error Messages

If an operational error occurs, one of the following error messages will be displayed. Refer to this section for information on how to correct the error.

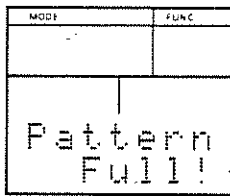
※ When any error message appears in the Display, pressing **STOP/EXIT** will recall the previous screen.



○ The DR - 660 has received an excessive amount of data. Receiving additional data is not possible.

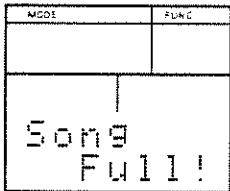
→ If this message appears while the DR - 660 is receiving MIDI data, decrease the amount of data being sent by the transmitter.

→ Set the MIDI mode so that irrelevant MIDI messages will not be transmitted or received (Page 91).



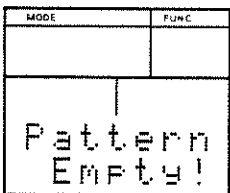
○ The DR - 660 cannot store any additional Rhythm Patterns.

→ To continue with Pattern Write, erase some existing Rhythm Patterns to make sufficient memory space available.



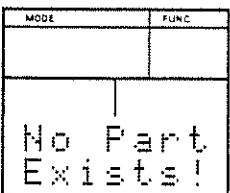
○ The DR - 660 cannot store any additional Songs.

→ To continue with Song Write, erase some existing Songs to make sufficient memory space available.

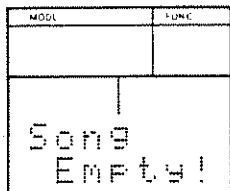


○ No data exists at the source Rhythm Pattern selected for Pattern Copy or Pattern Delete.

→ Select a Rhythm Pattern that contains data.

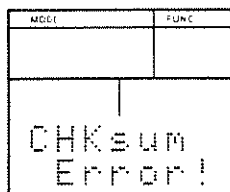


○ No Rhythm Pattern data exists at the source Part selected for Part Insert or Part Delete.



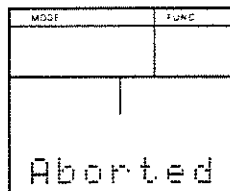
No data exists at the source Song selected for Song Copy or Song Delete.

→ Select a Song that contains data.

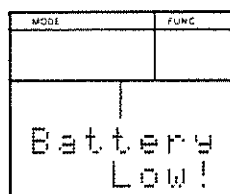


Exclusive messages were not properly received.

→ Be sure that both the transmitter and DR-660 are set properly. Repeat the procedure.

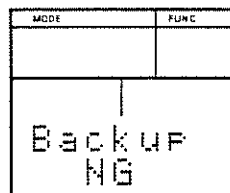


This message appears when you have canceled a procedure or a procedure cannot be performed.



The battery, which supports the memory backup system, is exhausted. (This error message appears when the unit is switched on.)

→ Have the battery replaced by your Roland retailer or at the nearest Roland service center.



This appears in the display when data in memory is damaged. (This error message appears when the unit is switched on.)

→ Press **ENTER** to initialize the memory.

[3] Troubleshooting

▶ No sound is produced.

Possible Causes:

- The Volume is set to minimum (Page 13).
- The level of the Key Pads is set to zero (Page 67)
- The selected Rhythm Pattern or Song contains no data.

▶ Sound breaks.

Possible Causes:

- More than 12 voices are being played simultaneously.
- Assign Type for the Key Pads is not properly set (Page 69).

▶ Sound is strange.

Possible Cause:

- The settings for the Key Pads are inappropriate (Page 67).

▶ The Flam effect is not produced.

Possible Causes:

- The Flam Interval is set to zero.
- The settings for the Flam Ratio are inappropriate.

▶ Playback does not begin when **START** is pressed.

Possible Causes:

- The Sync Mode is set to MIDI Sync (Page 88).
- The selected Rhythm Pattern or Song contains no data.

▶ Modes cannot be changed.

Possible Cause:

- The Sync Mode is set to MIDI Sync and **START** was pressed before MIDI clocks were received (Page 89).

▶ Sounds in a Rhythm Pattern have changed.

Possible Cause:

- The assignment of Key Pads has been changed (Page 64)

▶ Songs automatically play one after another.

Possible Cause:

- The Song Chain function is ON (Page 57).

▶ The tempo changes when a Song starts playing.

Possible Cause:

- An Initial Tempo is being set (Page 46).

● The DR-660 cannot be controlled by an external MIDI device. An external MIDI device cannot be controlled by the DR-660.

Possible Causes:

- The MIDI channels of the DR-660 and the external MIDI device do not match (Page 91).

- Note Numbers of the DR-660 and the external MIDI device do not correspond.

● When the DR-660 is played by performance data from a sequencer, the Song on the DR-660 starts together.

Possible Cause:

- The Sync Mode is set to MIDI Sync (Page 88).

● The metronome does not sound.

Possible Cause:

- The level of the metronome is set to zero (Page 43).

● Program Change messages cannot be transmitted or received.

Possible Cause:

- "**PRG**" in the MIDI Mode is set to OFF (Page 91).

● The volume does not change when MIDI Volume messages are received.

Possible Cause:

- "**RVOL**" in the MIDI mode is set to OFF (Page 91).

● The volume does not change when MIDI Expression messages are received.

Possible Cause:

- "**REXP**" in the MIDI mode is set to OFF (Page 92).

● The DR-660 cannot receive Exclusive messages.

Possible Cause:

- "**REXC**" in the MIDI mode is set to OFF (Page 92).

- MIDI channels are not set to the same number (Page 91).

[4] Factory Setting for the Drum Kits

No. 0, 32

Standard

Pad #	Note #	Instrument
1 (A01)	49	178 CrshC1
2 (A02)	57	179 CrshC2
3 (A03)	53	183 RidBIC
4 (A04)	51	182 Ride C
5 (A05)	50	150 RealT1
6 (A06)	48	151 RealT2
7 (A07)	45	152 RealT3
8 (A08)	41	153 RealT4
9 (A09)	37	123 AmbStk
10 (A10)	39	219 808Cip
11 (A11)	42	167 PopCHH
12 (A12)	46	168 PopOHH
13 (A13)	36	12 Dry K2
14 (A14)	38	84 LAFatS
15 (A15)	44	171 RealPH
16 (A16)	56	185 Cowbel
17 (B01)	69	204 CabaUp
18 (B02)	75	198 Claves
19 (B03)	70	202 Marcas
20 (B04)	58	199 Vibslp
21 (B05)	67	208 Agogo
22 (B06)	68	208 Agogo
23 (B07)	73	200 GuiroS
24 (B08)	74	201 GuiroL
25 (B09)	60	191 BongoH
26 (B10)	61	192 BongoL
27 (B11)	66	197 Timbal
28 (B12)	65	197 Timbal
29 (B13)	54	186 Tambrn
30 (B14)	62	193 CngHMT
31 (B15)	63	195 CngHOP
32 (B16)	64	196 CngLOp
33 (-01)	27	225 HiQ
34 (-02)	28	231 DncClp
35 (-03)	29	221 Scrch1
36 (-04)	30	222 Scrch2
37 (-05)	31	126 Sticks
38 (-06)	32	210 55Clav
39 (-07)	33	212 78Beat
40 (-08)	34	212 78Beat
41 (-09)	35	11 Dry K1
42 (-10)	40	102 RealS1
43 (-11)	43	152 RealT3
44 (-12)	47	151 RealT2
45 (-13)	52	181 ChinaC
46 (-14)	55	180 SplshC
47 (-15)	59	182 Ride C
48 (-16)	71	206 WhisIS
49 (-17)	72	207 WhisIL
50 (-18)	76	190 Wodbik
51 (-19)	77	190 Wodbik
52 (-20)	78	209 Cuica
53 (-21)	79	209 Cuica
54 (-22)	80	189 Triang
55 (-23)	81	189 Triang

No. 1, 33

Room

Note #	Instrument
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	162 RoomT1
48	163 RoomT2
45	164 RoomT3
41	165 RoomT4
37	124 HalStk
39	231 DncClp
42	169 RealCH
46	170 RealOH
36	29 RoomK1
38	107 RockS1
44	171 RealPH
56	185 Cowbel
69	204 CabaUp
75	198 Claves
70	202 Marcas
58	199 Vibslp
67	208 Agogo
68	208 Agogo
73	200 GuiroS
74	201 GuiroL
60	191 BongoH
61	192 BongoL
66	197 Timbal
65	197 Timbal
54	186 Tambrn
62	193 CngHMT
63	195 CngHOP
64	196 CngLOp
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	10 DpVrbK
40	88 NastyS
43	164 RoomT3
47	163 RoomT2
52	181 ChinaC
55	180 SplshC
59	182 Ride C
71	206 WhisIS
72	207 WhisIL
76	190 Wodbik
77	190 Wodbik
78	209 Cuica
79	209 Cuica
80	189 Triang
81	189 Triang

No. 2, 34

Power 1

Note #	Instrument
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	128 AmboT1
48	129 AmboT2
45	130 AmboT3
41	131 AmboT4
37	123 AmbStk
39	232 VrbClp
42	169 RealCH
46	170 RealOH
36	22 MondoK
38	75 Grab S
44	171 RealPH
56	185 Cowbel
69	204 CabaUp
75	198 Claves
70	202 Marcas
58	199 Vibslp
67	208 Agogo
68	208 Agogo
73	200 GuiroS
74	201 GuiroL
60	191 BongoH
61	192 BongoL
66	197 Timbal
65	197 Timbal
54	186 Tambrn
62	193 CngHMT
63	195 CngHOP
64	196 CngLOp
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	33 SmashK
40	64 CrudyS
43	130 AmboT3
47	129 AmboT2
52	181 ChinaC
55	180 SplshC
59	182 Ride C
71	206 WhisIS
72	207 WhisIL
76	190 Wodbik
77	190 Wodbik
78	209 Cuica
79	209 Cuica
80	189 Triang
81	189 Triang

No. 3, 35

Electronic

Note #	Instrument
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	142 ElecT1
48	143 ElecT2
45	144 ElecT3
41	145 ElecT4
37	125 MtlStk
39	235 FXShot
42	169 RealCH
46	170 RealOH
36	14 ElecK1
38	70 ElecS1
44	171 RealPH
56	185 Cowbel
69	204 CabaUp
75	198 Claves
70	202 Marcas
58	199 Vibslp
67	208 Agogo
68	208 Agogo
73	200 GuiroS
74	201 GuiroL
60	191 BongoH
61	192 BongoL
66	197 Timbal
65	197 Timbal
54	186 Tambrn
62	193 CngHMT
63	195 CngHOP
64	196 CngLOp
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	15 ElecK2
40	71 ElecS2
43	144 ElecT3
47	143 ElecT2
52	181 ChinaC
55	180 SplshC
59	182 Ride C
71	206 WhisIS
72	207 WhisIL
76	190 Wodbik
77	190 Wodbik
78	209 Cuica
79	209 Cuica
80	189 Triang
81	189 Triang

No. 4, 36 TR808			No. 5, 37 Jazz 1			No. 6, 38 Brush 1			No. 7 Ambient (Layer)		
Pad #	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument	
1 (A01)	49	178 CrshC1	49	178 CrshC1	49	184 BrRidC	49	178 CrshC1			
2 (A02)	57	179 CrshC2	57	179 CrshC2	57	184 BrRidC	57	179 CrshC2			
3 (A03)	53	183 RidBIC	53	183 RidBIC	53	184 BrRidC	53	183 RidBIC			
4 (A04)	51	182 Ride C	51	182 Ride C	51	184 BrRidC	51	182 Ride C			
5 (A05)	50	166 808Tom	50	138 Dry T1	50	134 BrshT1	50	158 RockT1			
6 (A06)	48	166 808Tom	48	139 Dry T2	48	135 BrshT2	48	159 RockT2			
7 (A07)	45	166 808Tom	45	140 Dry T3	45	136 BrshT3	45	160 RockT3			
8 (A08)	41	166 808Tom	41	141 Dry T4	41	137 BrshT4	41	161 RockT4			
9 (A09)	37	127 808Stk	37	123 AmbStk	37	123 AmbStk	37	123 AmbStk			
10 (A10)	39	219 808Clp	39	219 808Clp	39	57 BrSIS1	40	109 SpiatS			
11 (A11)	42	174 808CHH	42	167 PopCHH	42	172 BrsCHH	42	169 RealCH			
12 (A12)	46	175 808OHH	46	168 PopOHH	46	173 BrsOHH	46	170 RealOH			
13 (A13)	36	42 TR808K	36	27 Real K	36	34 Soft K	36	25 PunchK			
14 (A14)	38	117 TR808S	38	87 LooseS	38	60 BrSwiS	38	51 AttakS			
15 (A15)	44	174 808CHH	44	171 RealPH	44	171 RealPH	44	171 RealPH			
16 (A16)	56	220 808Cow	56	185 Cowbel	56	185 Cowbel	56	185 Cowbel			
17 (B01)	69	204 CabaUp	69	204 CabaUp	69	204 CabaUp	69	255 OFF			
18 (B02)	75	217 808Clv	75	198 Claves	75	198 Claves	75	255 OFF			
19 (B03)	70	218 808Mrc	70	202 Marcas	70	202 Marcas	70	255 OFF			
20 (B04)	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp	58	255 OFF			
21 (B05)	67	208 Agogo	67	208 Agogo	67	208 Agogo	67	250 TomAmb			
22 (B06)	68	208 Agogo	68	208 Agogo	68	208 Agogo	68	250 TomAmb			
23 (B07)	73	213 78Guir	73	200 GuiroS	73	200 GuiroS	73	250 TomAmb			
24 (B08)	74	213 78Guir	74	201 GuiroL	74	201 GuiroL	74	250 TomAmb			
25 (B09)	60	191 BongoH	60	191 BongoH	60	191 BongoH	60	255 OFF			
26 (B10)	61	192 BongoL	61	192 BongoL	61	192 BongoL	61	249 SnrAmb			
27 (B11)	66	197 Timbal	66	197 Timbal	66	197 Timbal	66	255 OFF			
28 (B12)	65	197 Timbal	65	197 Timbal	65	197 Timbal	65	255 OFF			
29 (B13)	54	186 Tambrn	54	186 Tambrn	54	186 Tambrn	54	248 KikAmb			
30 (B14)	62	216 808Cng	62	193 CngHMT	62	193 CngHMT	62	249 SnrAmb			
31 (B15)	63	216 808Cng	63	195 CngHOp	63	195 CngHOp	63	255 OFF			
32 (B16)	64	216 808Cng	64	196 CngLOp	64	196 CngLOp	64	255 OFF			
33 (-01)	27	225 HiQ	27	225 HiQ	27	225 HiQ	27	225 HiQ			
34 (-02)	28	231 DncClp	28	231 DncClp	28	231 DncClp	28	231 DncClp			
35 (-03)	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1			
36 (-04)	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2			
37 (-05)	31	126 Sticks	31	126 Sticks	31	126 Sticks	31	126 Sticks			
38 (-06)	32	210 55Clav	32	210 55Clav	32	210 55Clav	32	210 55Clav			
39 (-07)	33	212 78Beat	33	212 78Beat	33	212 78Beat	33	212 78Beat			
40 (-08)	34	212 78Beat	34	212 78Beat	34	212 78Beat	34	212 78Beat			
41 (-09)	35	48 808EIK	35	34 Soft K	35	27 Real K	35	44 VbStkK			
42 (-10)	40	121 909Lts	40	106 Ring S	40	56 BrRIS2	39	231 DncClp			
43 (-11)	43	166 808Tom	43	140 Dry T3	43	136 BrshT3	43	160 RockT3			
44 (-12)	47	166 808Tom	47	139 Dry T2	47	135 BrshT2	47	159 RockT2			
45 (-13)	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC			
46 (-14)	55	180 SplshC	55	180 SplshC	55	180 SplshC	55	180 SplshC			
47 (-15)	59	182 Ride C	59	182 Ride C	59	184 BrRidC	59	182 Ride C			
48 (-16)	71	206 WhislS	71	206 WhislS	71	206 WhislS	71	206 WhislS			
49 (-17)	72	207 WhislL	72	207 WhislL	72	207 WhislL	72	207 WhislL			
50 (-18)	76	190 Wodbik	76	190 Wodbik	76	190 Wodbik	76	190 Wodbik			
51 (-19)	77	190 Wodbik	77	190 Wodbik	77	190 Wodbik	77	190 Wodbik			
52 (-20)	78	209 Cuica	78	209 Cuica	78	209 Cuica	78	209 Cuica			
53 (-21)	79	209 Cuica	79	209 Cuica	79	209 Cuica	79	209 Cuica			
54 (-22)	80	189 Triang	80	189 Triang	80	189 Triang	80	189 Triang			
55 (-23)	81	189 Triang	81	189 Triang	81	189 Triang	81	189 Triang			

No. 8 BigGym (Layer)			No. 9 Cheap			No. 10 Pop (Layer)			No. 11 Hyper (Layer)		
Pad #	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument			
1 (A01)	49	178 CrshC1	49	177 78 OHH	49	178 CrshC1	49	178 CrshC1			
2 (A02)	57	179 CrshC2	57	177 78 OHH	57	240 RevCym	57	179 CrshC2			
3 (A03)	53	183 RidBIC	53	175 808OHH	53	183 RidBIC	53	183 RidBIC			
4 (A04)	51	182 Ride C	51	175 808OHH	51	182 Ride C	51	182 Ride C			
5 (A05)	50	138 Dry T1	50	229 FXnoiz	50	196 CngLOp	50	154 Rim T1			
6 (A06)	48	139 Dry T2	48	229 FXnoiz	48	196 CngLOp	48	155 Rim T2			
7 (A07)	45	140 Dry T3	45	229 FXnoiz	45	196 CngLOp	45	156 Rim T3			
8 (A08)	41	141 Dry T4	41	229 FXnoiz	41	196 CngLOp	41	157 Rim T4			
9 (A09)	37	124 HaiStk	37	125 MtStk	37	123 AmbStk	37	123 AmbStk			
10 (A10)	40	52 BgShIS	39	226 Snaps	40	111 SprWkS	40	94 RadioS			
11 (A11)	42	169 RealCH	42	176 78 CHH	42	167 PopCHH	42	167 PopCHH			
12 (A12)	46	170 RealOH	46	177 78 OHH	46	168 PopOHH	46	168 PopOHH			
13 (A13)	36	10 RevrbK	36	50 909HdK	36	5 BriteK	36	48 808EIK			
14 (A14)	38	107 RockS1	38	115 Tiny S	38	102 RealS1	38	110 SprLIS			
15 (A15)	44	171 RealPH	44	171 RealPH	44	246 RevAmb	44	171 RealPH			
16 (A16)	56	208 Agogo	56	211 78Cow	56	220 808Cow	56	208 Agogo			
17 (B01)	69	255 OFF	69	218 808Mrc	69	255 OFF	69	255 OFF			
18 (B02)	75	255 OFF	75	210 55Clav	75	255 OFF	75	255 OFF			
19 (B03)	70	255 OFF	70	215 78Marc	70	255 OFF	70	255 OFF			
20 (B04)	58	255 OFF	58	228 Uut?	58	255 OFF	58	255 OFF			
21 (B05)	67	250 TomAmb	67	220 808Cow	67	196 CngLOp	67	249 SnrAmb			
22 (B06)	68	250 TomAmb	68	220 808Cow	68	196 CngLOp	68	249 SnrAmb			
23 (B07)	73	250 TomAmb	73	213 78Guir	73	196 CngLOp	73	249 SnrAmb			
24 (B08)	74	250 TomAmb	74	213 78Guir	74	196 CngLOp	74	249 SnrAmb			
25 (B09)	60	255 OFF	60	191 BongoH	60	188 Casta	60	86 LiteS2			
26 (B10)	61	249 SnrAmb	61	192 BongoL	61	234 LtShot	61	81 Huge S			
27 (B11)	66	255 OFF	66	197 Timbal	66	255 OFF	66	255 OFF			
28 (B12)	65	255 OFF	65	197 Timbal	65	255 OFF	65	255 OFF			
29 (B13)	54	248 KikAmb	54	214 78Tamb	54	229 FXnoiz	62	233 VrbSht			
30 (B14)	62	251 LngVrb	62	216 808Cng	62	186 Tambrn	54	186 Tambrn			
31 (B15)	63	255 OFF	63	216 808Cng	63	255 OFF	63	255 OFF			
32 (B16)	64	255 OFF	64	216 808Cng	64	220 808Cow	64	230 Chink			
33 (-01)	27	225 HiQ	27	225 HiQ	27	225 HiQ	27	225 HiQ			
34 (-02)	28	231 DncClp	28	231 DncClp	28	231 DncClp	28	231 DncClp			
35 (-03)	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1			
36 (-04)	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2			
37 (-05)	31	126 Sticks	31	126 Sticks	31	126 Sticks	31	126 Sticks			
38 (-06)	32	210 55Clav	32	198 Claves	32	210 55Clav	32	210 55Clav			
39 (-07)	33	212 78Beat	33	212 78Beat	33	212 78Beat	33	212 78Beat			
40 (-08)	34	212 78Beat	34	212 78Beat	34	212 78Beat	34	212 78Beat			
41 (-09)	35	23 MonDpK	35	32 ShellK	35	6 DanceK	35	0 Ambo K			
42 (-10)	39	232 VrbClp	40	122 909RnS	39	219 808Cip	39	219 808Cip			
43 (-11)	43	140 Dry T3	43	229 FXnoiz	43	196 CngLOp	43	156 Rim T3			
44 (-12)	47	139 Dry T2	47	229 FXnoiz	47	196 CngLOp	47	155 Rim T2			
45 (-13)	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC			
46 (-14)	55	180 SplshC	55	180 SplshC	55	180 SplshC	55	180 SplshC			
47 (-15)	59	182 Ride C	59	182 Ride C	59	182 Ride C	59	182 Ride C			
48 (-16)	71	206 WhisIS	71	206 WhisIS	71	206 WhisIS	71	206 WhisIS			
49 (-17)	72	207 WhisIL	72	207 WhisIL	72	207 WhisIL	72	207 WhisIL			
50 (-18)	76	190 Wodbik	76	190 Wodbik	76	190 Wodbik	76	190 Wodbik			
51 (-19)	77	190 Wodbik	77	190 Wodbik	77	190 Wodbik	77	190 Wodbik			
52 (-20)	78	209 Cuica	78	209 Cuica	78	209 Cuica	78	209 Cuica			
53 (-21)	79	209 Cuica	79	209 Cuica	79	209 Cuica	79	209 Cuica			
54 (-22)	80	189 Triang	80	189 Triang	80	189 Triang	80	189 Triang			
55 (-23)	81	189 Triang	81	189 Triang	81	189 Triang	81	189 Triang			

No. 12 Dance 1			No. 13 Dance 2			No. 14 Dance 3			No. 15 Power 2		
Pad #	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument	
1 (A01)	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1	
2 (A02)	57	89 NoiseS	57	251 LngVrb	57	240 RevCym	57	179 CrshC2	57	179 CrshC2	
3 (A03)	53	246 RevAmb	53	228 Uul?	53	241 RevCas	53	183 RidBlC	53	183 RidBlC	
4 (A04)	51	225 HiQ	51	220 808Cow	51	230 Chink	51	182 Ride C	51	182 Ride C	
5 (A05)	50	221 Scrch1	50	223 Scrch3	50	154 Rim T1	50	132 BoosTH	50	132 BoosTH	
6 (A06)	48	222 Scrch2	48	224 Scrch4	48	155 Rim T2	48	132 BoosTH	48	132 BoosTH	
7 (A07)	45	236 GlSht	45	231 DncClp	45	156 Rim T3	45	133 BoosTL	45	133 BoosTL	
8 (A08)	41	247 RevVrb	41	234 LtShot	41	157 Rim T4	41	133 BoosTL	41	133 BoosTL	
9 (A09)	37	67 Digi S	37	112 SwingS	37	79 HousS3	39	236 GlSht	39	236 GlSht	
10 (A10)	40	68 DiscoS	40	80 HsDpnS	39	78 HousS2	40	53 BrethS	40	53 BrethS	
11 (A11)	42	167 PopCHH	42	167 PopCHH	42	167 PopCHH	42	169 RealCH	42	169 RealCH	
12 (A12)	46	168 PopOHH	46	168 PopOHH	46	168 PopOHH	46	170 RealOH	46	170 RealOH	
13 (A13)	36	6 DanceK	36	26 Rap K	36	19 HouseK	36	8 DelayK	36	8 DelayK	
14 (A14)	38	65 DanceS	38	69 DopinS	38	77 HousS1	38	116 TrashS	38	116 TrashS	
15 (A15)	44	188 Casta	44	235 FXShot	44	214 78Tamb	44	171 RealPH	44	171 RealPH	
16 (A16)	54	186 Tambrn	54	186 Tambrn	54	186 Tambrn	56	185 Cowbel	56	185 Cowbel	
17 (B01)	69	204 CabaUp	69	204 CabaUp	69	204 CabaUp	69	204 CabaUp	69	204 CabaUp	
18 (B02)	75	198 Claves	75	198 Claves	75	198 Claves	75	198 Claves	75	198 Claves	
19 (B03)	70	202 Marcas	70	202 Marcas	70	202 Marcas	70	202 Marcas	70	202 Marcas	
20 (B04)	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp	
21 (B05)	67	208 Agogo	67	208 Agogo	67	208 Agogo	67	208 Agogo	67	208 Agogo	
22 (B06)	68	208 Agogo	68	208 Agogo	68	208 Agogo	68	208 Agogo	68	208 Agogo	
23 (B07)	73	200 GuiroS	73	200 GuiroS	73	200 GuiroS	73	200 GuiroS	73	200 GuiroS	
24 (B08)	74	201 GuiroL	74	201 GuiroL	74	201 GuiroL	74	201 GuiroL	74	201 GuiroL	
25 (B09)	60	191 BongoH	60	191 BongoH	60	191 BongoH	60	191 BongoH	60	191 BongoH	
26 (B10)	61	192 BongoL	61	192 BongoL	61	192 BongoL	61	192 BongoL	61	192 BongoL	
27 (B11)	66	197 Timbal	66	197 Timbal	66	197 Timbal	66	197 Timbal	66	197 Timbal	
28 (B12)	65	197 Timbal	65	197 Timbal	65	197 Timbal	65	197 Timbal	65	197 Timbal	
29 (B13)	56	185 Cowbel	56	185 Cowbel	56	185 Cowbel	56	185 Cowbel	56	185 Cowbel	
30 (B14)	62	193 CngHMT	62	193 CngHMT	62	193 CngHMT	62	193 CngHMT	62	193 CngHMT	
31 (B15)	63	195 CngHOp	63	195 CngHOp	63	195 CngHOp	63	195 CngHOp	63	195 CngHOp	
32 (B16)	64	196 CngLOp	64	196 CngLOp	64	196 CngLOp	64	196 CngLOp	64	196 CngLOp	
33 (-01)	27	225 HiQ	27	225 HiQ	27	225 HiQ	27	225 HiQ	27	225 HiQ	
34 (-02)	28	231 DncClp	28	231 DncClp	28	231 DncClp	28	231 DncClp	28	231 DncClp	
35 (-03)	29	223 Scrch3	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1	
36 (-04)	30	224 Scrch4	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2	
37 (-05)	31	126 Sticks	31	126 Sticks	31	126 Sticks	31	126 Sticks	31	126 Sticks	
38 (-06)	32	210 55Clav	32	210 55Clav	32	210 55Clav	32	210 55Clav	32	210 55Clav	
39 (-07)	33	212 78Beat	33	212 78Beat	33	212 78Beat	33	212 78Beat	33	212 78Beat	
40 (-08)	34	212 78Beat	34	212 78Beat	34	212 78Beat	34	212 78Beat	34	212 78Beat	
41 (-09)	35	38 TeknoK	35	47 808Ack	35	40 TightK	35	9 Door K	35	9 Door K	
42 (-10)	39	232 VrbClp	39	219 808Cip	40	219 808Cip	37	123 AmbStk	37	123 AmbStk	
43 (-11)	43	130 AmboT3	43	148 LiteT3	43	156 Rim T3	43	133 BoosTL	43	133 BoosTL	
44 (-12)	47	129 AmboT2	47	147 LiteT2	47	155 Rim T2	47	132 BoosTH	47	132 BoosTH	
45 (-13)	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	
46 (-14)	55	180 SpishC	55	180 SpishC	55	180 SpishC	55	180 SpishC	55	180 SpishC	
47 (-15)	59	182 Ride C	59	182 Ride C	59	182 Ride C	59	182 Ride C	59	182 Ride C	
48 (-16)	71	206 WhislS	71	206 WhislS	71	206 WhislS	71	206 WhislS	71	206 WhislS	
49 (-17)	72	207 WhislL	72	207 WhislL	72	207 WhislL	72	207 WhislL	72	207 WhislL	
50 (-18)	76	190 Wodbik	76	190 Wodbik	76	190 Wodbik	76	190 Wodbik	76	190 Wodbik	
51 (-19)	77	190 Wodbik	77	190 Wodbik	77	190 Wodbik	77	190 Wodbik	77	190 Wodbik	
52 (-20)	78	209 Cuica	78	209 Cuica	78	209 Cuica	78	209 Cuica	78	209 Cuica	
53 (-21)	79	209 Cuica	79	209 Cuica	79	209 Cuica	79	209 Cuica	79	209 Cuica	
54 (-22)	80	189 Triang	80	189 Triang	80	189 Triang	80	189 Triang	80	189 Triang	
55 (-23)	81	189 Triang	81	189 Triang	81	189 Triang	81	189 Triang	81	189 Triang	

**No. 16
Power 3**

**No. 17
Perc 1**

**No. 18
Perc 2**

**No. 19
Perc 3**

Pad #	Note #	Instrument
1 (A01)	49	178 CrshC1
2 (A02)	57	179 CrshC2
3 (A03)	53	183 RidBIC
4 (A04)	51	182 Ride C
5 (A05)	50	162 RoomT1
6 (A06)	48	163 RoomT2
7 (A07)	45	164 RoomT3
8 (A08)	41	164 RoomT3
9 (A09)	37	123 AmbStk
10 (A10)	39	111 SprWkS
11 (A11)	42	167 PopCHH
12 (A12)	46	168 PopOHH
13 (A13)	36	30 RoomK2
14 (A14)	38	97 RckinS
15 (A15)	44	171 RealPH
16 (A16)	56	185 Cowbel
17 (B01)	27	204 CabaUp
18 (B02)	75	198 Claves
19 (B03)	70	202 Marcas
20 (B04)	32	199 Vibslp
21 (B05)	54	208 Agogo
22 (B06)	62	208 Agogo
23 (B07)	63	200 GuiroS
24 (B08)	64	201 GuiroL
25 (B09)	29	191 BongoH
26 (B10)	30	192 BongoL
27 (B11)	34	197 Timbal
28 (B12)	33	197 Timbal
29 (B13)	35	186 Tambrn
30 (B14)	40	193 CngHMT
31 (B15)	73	195 CngHOp
32 (B16)	74	196 CngLOp
33 (-01)	28	225 HiQ
34 (-02)	31	231 DncClp
35 (-03)	43	221 Scrch1
36 (-04)	47	222 Scrch2
37 (-05)	52	126 Sticks
38 (-06)	55	210 55Clav
39 (-07)	58	212 78Beat
40 (-08)	59	212 78Beat
41 (-09)	60	10 DpVrbK
42 (-10)	61	219 808Clp
43 (-11)	65	164 RoomT3
44 (-12)	66	163 RoomT2
45 (-13)	67	181 ChinaC
46 (-14)	68	180 SplshC
47 (-15)	69	182 Ride C
48 (-16)	71	206 WhisLS
49 (-17)	72	207 WhisL
50 (-18)	76	190 Wodblk
51 (-19)	77	190 Wodblk
52 (-20)	78	209 Cuica
53 (-21)	79	209 Cuica
54 (-22)	80	189 Triang
55 (-23)	81	189 Triang

Note #	Instrument
69	204 CabaUp
58	205 CabaDn
75	198 Claves
70	202 Marcas
54	186 Tambrn
76	187 SiBell
73	200 GuiroS
74	201 GuiroL
60	191 BongoH
61	192 BongoL
66	197 Timbal
65	197 Timbal
62	193 CngHMT
77	194 CngSlp
63	195 CngHOp
64	196 CngLOp
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	150 RealT1
48	151 RealT2
45	152 RealT3
41	153 RealT4
37	123 AmbStk
39	219 808Clp
42	167 PopCHH
46	168 PopOHH
36	20 HybrdK
38	90 PiccS1
44	171 RealPH
56	185 Cowbel
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	24 PillwK
40	113 Thin S
43	152 RealT3
47	151 RealT2
52	181 ChinaC
55	180 SplshC
59	182 Ride C
67	208 Agogo
68	208 Agogo
71	206 WhisLS
72	207 WhisL
78	209 Cuica
79	209 Cuica
80	189 Triang
81	189 Triang

Note #	Instrument
76	190 Wodblk
77	190 Wodblk
80	189 Triang
81	189 Triang
54	186 Tambrn
75	198 Claves
60	191 BongoH
61	192 BongoL
69	204 CabaUp
70	203 Shaker
71	206 WhisLS
72	207 WhisL
78	209 Cuica
79	209 Cuica
67	208 Agogo
68	208 Agogo
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	162 RoomT1
48	163 RoomT2
45	164 RoomT3
41	165 RoomT4
37	124 HalStk
39	231 DncClp
42	169 RealCH
46	170 RealOH
36	1 AttakK
38	108 RockS2
44	171 RealPH
56	185 Cowbel
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	3 BoSlidK
40	99 RckPwS
43	164 RoomT3
47	163 RoomT2
52	181 ChinaC
55	180 SplshC
58	199 Vibslp
59	182 Ride C
62	193 CngHMT
63	195 CngHOp
64	196 CngLOp
65	197 Timbal
66	197 Timbal
73	200 GuiroS
74	201 GuiroL

Note #	Instrument
27	211 78Cow
75	217 808Civ
70	218 808Mrc
32	210 55Clav
54	214 78Tamb
62	216 808Cng
63	216 808Cng
64	216 808Cng
29	214 78Tamb
30	220 808Cow
34	212 78Beat
33	212 78Beat
35	47 808Ack
40	121 909LIS
73	213 78Guir
74	213 78Guir
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	166 808Tom
48	166 808Tom
45	166 808Tom
41	166 808Tom
37	127 808Stk
39	219 808Clp
42	174 808CHH
46	175 808OHH
36	49 808GtK
38	54 BriteS
44	174 808CHH
56	220 808Cow
28	231 DncClp
31	126 Sticks
43	166 808Tom
47	166 808Tom
52	181 ChinaC
55	180 SplshC
58	199 Vibslp
59	182 Ride C
60	191 BongoH
61	192 BongoL
65	197 Timbal
66	197 Timbal
67	208 Agogo
68	208 Agogo
69	204 CabaUp
71	206 WhisLS
72	207 WhisL
76	190 Wodblk
77	190 Wodblk
78	209 Cuica
79	209 Cuica
80	189 Triang
81	189 Triang

No. 20 Reggae			No. 21 Light			No. 22 FX			No. 23 TR909		
Pad #	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument			
1 (A01)	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1			
2 (A02)	57	179 CrshC2	57	179 CrshC2	57	240 RevCym	57	179 CrshC2			
3 (A03)	53	183 RidBIC	53	183 RidBIC	28	246 RevAmb	53	183 RidBIC			
4 (A04)	51	182 Ride C	51	182 Ride C	51	182 Ride C	51	182 Ride C			
5 (A05)	50	154 Rim T1	50	146 LiteT1	50	70 ElecS1	50	146 LiteT1			
6 (A06)	48	155 Rim T2	48	147 LiteT2	48	70 ElecS1	48	147 LiteT2			
7 (A07)	45	156 Rim T3	45	148 LiteT3	45	70 ElecS1	45	148 LiteT3			
8 (A08)	41	157 Rim T4	41	149 LiteT4	41	70 ElecS1	41	149 LiteT4			
9 (A09)	37	123 AmbStk	37	125 MlISik	37	126 Sticks	37	123 AmbStk			
10 (A10)	40	105 ReggS2	40	86 LiteS2	39	232 VrbClp	39	219 808Cip			
11 (A11)	42	169 RealCH	42	167 PopCHH	42	167 PopCHH	42	169 RealCH			
12 (A12)	46	170 RealOH	46	168 PopOHH	46	168 PopOHH	46	170 RealOH			
13 (A13)	36	18 Hard K	36	18 Hard K	36	9 Door K	36	43 TR909K			
14 (A14)	38	104 ReggS1	38	85 LiteS1	38	73 FX S	38	118 TR909S			
15 (A15)	44	171 RealPH	44	171 RealPH	27	229 FXnoiz	44	171 RealPH			
16 (A16)	56	185 Cowbel	56	208 Agogo	56	188 Casta	56	211 78Cow			
17 (B01)	69	204 CabaUp	69	204 CabaUp	69	214 78Tamb	69	204 CabaUp			
18 (B02)	75	198 Claves	75	198 Claves	75	211 78Cow	75	217 808Civ			
19 (B03)	70	202 Marcas	70	202 Marcas	70	213 78Guir	70	218 808Mrc			
20 (B04)	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp			
21 (B05)	67	208 Agogo	67	208 Agogo	29	221 Scrch1	67	208 Agogo			
22 (B06)	68	208 Agogo	68	208 Agogo	30	222 Scrch2	68	208 Agogo			
23 (B07)	73	200 GuiroS	73	200 GuiroS	73	200 GuiroS	73	213 78Guir			
24 (B08)	74	201 GuiroL	74	201 GuiroL	74	201 GuiroL	74	213 78Guir			
25 (B09)	60	191 BongoH	60	191 BongoH	71	206 WhislS	60	191 BongoH			
26 (B10)	61	192 BongoL	61	192 BongoL	72	207 WhislL	61	192 BongoL			
27 (B11)	66	197 Timbal	66	197 Timbal	66	223 Scrch3	66	197 Timbal			
28 (B12)	65	197 Timbal	65	197 Timbal	65	224 Scrch4	65	197 Timbal			
29 (B13)	54	186 Tambrn	54	186 Tambrn	54	186 Tambrn	54	186 Tambrn			
30 (B14)	62	193 CngHMT	62	193 CngHMT	62	230 Chink	62	216 808Cng			
31 (B15)	63	195 CngHOp	63	195 CngHOp	63	234 LtShot	63	216 808Cng			
32 (B16)	64	196 CngLOp	64	196 CngLOp	64	236 GlSht	64	216 808Cng			
33 (-01)	27	225 HiQ	27	225 HiQ	31	126 Sticks	27	225 HiQ			
34 (-02)	28	231 DncClp	28	231 DncClp	32	210 55Clav	28	231 DncClp			
35 (-03)	29	221 Scrch1	29	221 Scrch1	33	212 78Beat	29	221 Scrch1			
36 (-04)	30	222 Scrch2	30	222 Scrch2	34	212 78Beat	30	222 Scrch2			
37 (-05)	31	126 Sticks	31	126 Sticks	35	13 Dull K	31	126 Sticks			
38 (-06)	32	210 55Clav	32	210 55Clav	40	74 GlassS	32	210 55Clav			
39 (-07)	33	212 78Beat	33	212 78Beat	43	70 ElecS1	33	212 78Beat			
40 (-08)	34	212 78Beat	34	212 78Beat	44	171 RealPH	34	212 78Beat			
41 (-09)	35	2 BBallK	35	12 Dry K2	47	70 ElecS1	35	50 909HdK			
42 (-10)	39	219 808Cip	39	219 808Cip	52	181 ChinaC	40	122 909RnS			
43 (-11)	43	156 Rim T3	43	148 LiteT3	53	183 RidBIC	43	148 LiteT3			
44 (-12)	47	155 Rim T2	47	147 LiteT2	55	180 SplshC	47	147 LiteT2			
45 (-13)	52	181 ChinaC	52	181 ChinaC	59	182 Ride C	52	181 ChinaC			
46 (-14)	55	180 SplshC	55	180 SplshC	60	191 BongoH	55	180 SplshC			
47 (-15)	59	182 Ride C	59	182 Ride C	61	192 BongoL	59	182 Ride C			
48 (-16)	71	206 WhislS	71	206 WhislS	67	208 Agogo	71	206 WhislS			
49 (-17)	72	207 WhislL	72	207 WhislL	68	208 Agogo	72	207 WhislL			
50 (-18)	76	190 Wodblk	76	190 Wodblk	76	190 Wodblk	76	190 Wodblk			
51 (-19)	77	190 Wodblk	77	190 Wodblk	77	190 Wodblk	77	190 Wodblk			
52 (-20)	78	209 Cuica	78	209 Cuica	78	209 Cuica	78	209 Cuica			
53 (-21)	79	209 Cuica	79	209 Cuica	79	209 Cuica	79	209 Cuica			
54 (-22)	80	189 Triang	80	189 Triang	80	189 Triang	80	189 Triang			
55 (-23)	81	189 Triang	81	189 Triang	81	189 Triang	81	189 Triang			

**No. 24
Jazz 2**

**No. 25
Brush 2**

**No. 26
SlapBs**

**No. 27
Syn Bs**

Pad #	Note #	Instrument
1 (A01)	49	178 CrshC1
2 (A02)	57	179 CrshC2
3 (A03)	53	183 RidBIC
4 (A04)	51	182 Ride C
5 (A05)	50	138 Dry T1
6 (A06)	48	139 Dry T2
7 (A07)	45	140 Dry T3
8 (A08)	41	141 Dry T4
9 (A09)	37	123 AmbStk
10 (A10)	40	91 PiccS2
11 (A11)	42	167 PopCHH
12 (A12)	46	168 PopOHH
13 (A13)	36	46 Wood K
14 (A14)	38	92 PiccS3
15 (A15)	44	171 RealPH
16 (A16)	56	185 Cowbel
17 (B01)	69	204 CabaUp
18 (B02)	75	198 Claves
19 (B03)	70	202 Marcas
20 (B04)	58	199 Vibslp
21 (B05)	67	208 Agogo
22 (B06)	68	208 Agogo
23 (B07)	73	200 GuiroS
24 (B08)	74	201 GuiroL
25 (B09)	60	191 BongoH
26 (B10)	61	192 BongoL
27 (B11)	65	197 Timbal
28 (B12)	66	197 Timbal
29 (B13)	54	186 Tambrn
30 (B14)	62	193 CngHMT
31 (B15)	63	195 CngHOP
32 (B16)	64	196 CngLOp
33 (-01)	27	225 HiQ
34 (-02)	28	231 DncClp
35 (-03)	29	221 Scrch1
36 (-04)	30	222 Scrch2
37 (-05)	32	210 55Clav
38 (-06)	31	126 Sticks
39 (-07)	33	212 78Beat
40 (-08)	34	212 78Beat
41 (-09)	35	34 Soft K
42 (-10)	39	219 808Clp
43 (-11)	43	140 Dry T3
44 (-12)	47	139 Dry T2
45 (-13)	52	181 ChinaC
46 (-14)	55	180 SplshC
47 (-15)	59	182 Ride C
48 (-16)	71	206 WhisLS
49 (-17)	72	207 WhisLL
50 (-18)	76	190 Wodblk
51 (-19)	77	190 Wodblk
52 (-20)	78	209 Cuica
53 (-21)	79	209 Cuica
54 (-22)	80	189 Triang
55 (-23)	81	189E Triang

Note #	Instrument
49	58 BrSIS2
57	59 BrSIS3
53	184 BrRidC
51	184 BrRidC
50	134 BrshT1
48	135 BrshT2
45	136 BrshT3
41	137 BrshT4
37	56 BrRIS2
39	57 BrRIS1
42	172 BrsCHH
46	173 BrsOHH
36	34 Soft K
38	60 BrSwiS
44	55 BrRIS1
56	185 Cowbel
69	204 CabaUp
75	198 Claves
70	202 Marcas
58	199 Vibslp
67	208 Agogo
68	208 Agogo
73	200 GuiroS
74	201 GuiroL
60	191 BongoH
61	192 BongoL
66	197 Timbal
65	197 Timbal
54	186 Tambrn
62	193 CngHMT
63	195 CngHOP
64	196 CngLOp
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	27 Real K
40	56 BrRIS2
43	136 BrshT3
47	135 BrshT2
52	181 ChinaC
55	180 SplshC
59	184 BrRidC
71	206 WhisLS
72	207 WhisLL
76	190 Wodblk
77	190 Wodblk
78	209 Cuica
79	209 Cuica
80	189 Triang
81	189 Triang

Note #	Instrument
64	253 SlapBs
65	253 SlapBs
66	253 SlapBs
67	253 SlapBs
68	253 SlapBs
69	253 SlapBs
70	253 SlapBs
71	253 SlapBs
72	253 SlapBs
73	253 SlapBs
74	253 SlapBs
75	253 SlapBs
76	253 SlapBs
77	253 SlapBs
78	253 SlapBs
79	253 SlapBs
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	158 RockT1
48	159 RockT2
45	160 RockT3
41	161 RockT4
37	123 AmbStk
39	232 VrbClp
42	167 PopCHH
46	168 PopOHH
36	35 SolidK
38	88 NastyS
44	171 RealPH
56	185 Cowbel
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	40 TightK
40	100 RckRmS
43	160 RockT3
47	159 RockT2
52	181 ChinaC
54	186 Tambrn
55	180 SplshC
58	199 Vibslp
59	182 Ride C
60	191 BqngoH
61	192 BongoL
62	193 CngHMT
63	195 CngHOP
80	189 Triang
81	189 Triang

Note #	Instrument
64	254 Syn Bs
65	254 Syn Bs
66	254 Syn Bs
67	254 Syn Bs
68	254 Syn Bs
69	254 Syn Bs
70	254 Syn Bs
71	254 Syn Bs
72	254 Syn Bs
73	254 Syn Bs
74	254 Syn Bs
75	254 Syn Bs
76	254 Syn Bs
77	254 Syn Bs
78	254 Syn Bs
79	254 Syn Bs
49	178 CrshC1
57	179 CrshC2
53	183 RidBIC
51	182 Ride C
50	128 AmboT1
48	129 AmboT2
45	130 AmboT3
41	131 AmboT4
39	232 VrbClp
40	120 90's S
42	169 RealCH
46	170 RealOH
36	50 909HdK
38	118 TR909S
44	171 RealPH
54	186 Tambrn
27	225 HiQ
28	231 DncClp
29	221 Scrch1
30	222 Scrch2
31	126 Sticks
32	210 55Clav
33	212 78Beat
34	212 78Beat
35	39 Thud K
37	234 LtShot
43	130 AmboT3
47	129 AmboT2
52	181 ChinaC
55	180 SplshC
56	220 808Cow
58	199 Vibslp
59	182 Ride C
60	191 BongoH
61	192 BongoL
62	193 CngHMT
63	195 CngHOP
80	189 Triang
81	189 Triang

No. 28 X fade			No. 29 Chorus			No. 30 Delay			No. 31 Vrb & Dly		
Pad #	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument	Note #	Instrument	
1 (A01)	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1	49	178 CrshC1	
2 (A02)	57	179 CrshC2	57	179 CrshC2	57	179 CrshC2	57	179 CrshC2	57	179 CrshC2	
3 (A03)	53	182 Ride C	53	183 RidBIC	53	183 RidBIC	53	183 RidBIC	53	183 RidBIC	
4 (A04)	51	182 Ride C	51	182 Ride C	51	182 Ride C	51	182 Ride C	51	182 Ride C	
5 (A05)	50	146 LiteT1	50	142 ElecT1	50	146 LiteT1	50	146 LiteT1	50	166 808Tom	
6 (A06)	48	147 LiteT2	48	143 ElecT2	48	147 LiteT2	48	147 LiteT2	48	166 808Tom	
7 (A07)	45	148 LiteT3	45	144 ElecT3	45	148 LiteT3	45	148 LiteT3	45	166 808Tom	
8 (A08)	41	149 LiteT4	41	145 ElecT4	41	149 LiteT4	41	149 LiteT4	41	166 808Tom	
9 (A09)	37	123 AmbStk	37	125 MtlStk	37	125 MtlStk	37	125 MtlStk	37	127 808Stk	
10 (A10)	40	220 808Cow	39	235 FXShot	40	86 LiteS2	39	219 808Clp	39	219 808Clp	
11 (A11)	42	169 RealCH	42	169 RealCH	42	167 PopCHH	42	174 808CHH	42	174 808CHH	
12 (A12)	46	170 RealOH	46	170 RealOH	46	168 PopOHH	46	175 808OHH	46	175 808OHH	
13 (A13)	36	43 TR909K	36	14 ElecK1	36	18 Hard K	36	42 TR808K	36	42 TR808K	
14 (A14)	38	117 TR808S	38	70 ElecS1	38	85 LiteS1	38	117 TR808S	38	117 TR808S	
15 (A15)	44	171 RealPH	44	171 RealPH	44	171 RealPH	44	174 808CHH	44	174 808CHH	
16 (A16)	56	230 Chink	56	185 Cowbel	56	208 Agogo	56	220 808Cow	56	220 808Cow	
17 (B01)	69	180 SplshC	69	204 CabaUp	69	204 CabaUp	69	204 CabaUp	69	204 CabaUp	
18 (B02)	75	181 ChinaC	75	198 Claves	75	198 Claves	75	217 808Clv	75	217 808Clv	
19 (B03)	70	183 RidBIC	70	202 Marcas	70	202 Marcas	70	218 808Mrc	70	218 808Mrc	
20 (B04)	58	182 Ride C	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp	58	199 Vibslp	
21 (B05)	67	146 LiteT1	67	208 Agogo	67	208 Agogo	67	208 Agogo	67	208 Agogo	
22 (B06)	68	147 LiteT2	68	208 Agogo	68	208 Agogo	68	208 Agogo	68	208 Agogo	
23 (B07)	73	148 LiteT3	73	200 GuiroS	73	200 GuiroS	73	213 78Guir	73	213 78Guir	
24 (B08)	74	149 LiteT4	74	201 GuiroL	74	201 GuiroL	74	213 78Guir	74	213 78Guir	
25 (B09)	60	124 HalStk	60	191 BongoH	60	191 BongoH	60	191 BongoH	60	191 BongoH	
26 (B10)	61	220 808Cow	61	192 BongoL	61	192 BongoL	61	192 BongoL	61	192 BongoL	
27 (B11)	66	125 MtlStk	66	197 Timbal	66	197 Timbal	66	197 Timbal	66	197 Timbal	
28 (B12)	65	170 RealOH	65	197 Timbal	65	197 Timbal	65	197 Timbal	65	197 Timbal	
29 (B13)	54	46 Wood K	54	186 Tambrn	54	186 Tambrn	54	186 Tambrn	54	186 Tambrn	
30 (B14)	62	105 ReggS2	62	193 CngHMI	62	193 CngHMI	62	216 808Cng	62	216 808Cng	
31 (B15)	63	186 Tambrn	63	195 CngHOp	63	195 CngHOp	63	216 808Cng	63	216 808Cng	
32 (B16)	64	230 Chink	64	196 CngLOp	64	196 CngLOp	64	216 808Cng	64	216 808Cng	
33 (-01)	27	225 HiQ	27	225 HiQ	27	225 HiQ	27	225 HiQ	27	225 HiQ	
34 (-02)	28	231 DncClp	28	231 DncClp	28	231 DncClp	28	231 DncClp	28	231 DncClp	
35 (-03)	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1	29	221 Scrch1	
36 (-04)	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2	30	222 Scrch2	
37 (-05)	31	126 Sticks	31	126 Sticks	31	126 Sticks	31	126 Sticks	31	126 Sticks	
38 (-06)	32	210 55Clav	32	210 55Clav	32	210 55Clav	32	210 55Clav	32	210 55Clav	
39 (-07)	33	212 78Beat	33	212 78Beat	33	212 78Beat	33	212 78Beat	33	212 78Beat	
40 (-08)	34	212 78Beat	34	212 78Beat	34	212 78Beat	34	212 78Beat	34	212 78Beat	
41 (-09)	35	47 808Ack	35	15 ElecK2	35	12 Dry K2	35	48 808EIK	35	48 808EIK	
42 (-10)	39	219 808Clp	40	71 ElecS2	39	219 808Clp	40	121 909LIS	40	121 909LIS	
43 (-11)	43	148 LiteT3	43	144 ElecT3	43	148 LiteT3	43	166 808Tom	43	166 808Tom	
44 (-12)	47	147 LiteT2	47	143 ElecT2	47	147 LiteT2	47	166 808Tom	47	166 808Tom	
45 (-13)	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	52	181 ChinaC	
46 (-14)	55	180 SplshC	55	180 SplshC	55	180 SplshC	55	180 SplshC	55	180 SplshC	
47 (-15)	59	182 Ride C	59	182 Ride C	59	182 Ride C	59	182 Ride C	59	182 Ride C	
48 (-16)	71	206 WhisLS	71	206 WhisLS	71	206 WhisLS	71	206 WhisLS	71	206 WhisLS	
49 (-17)	72	207 WhisL	72	207 WhisL	72	207 WhisL	72	207 WhisL	72	207 WhisL	
50 (-18)	76	190 Wodblk	76	190 Wodblk	76	190 Wodblk	76	190 Wodblk	76	190 Wodblk	
51 (-19)	77	190 Wodblk	77	190 Wodblk	77	190 Wodblk	77	190 Wodblk	77	190 Wodblk	
52 (-20)	78	209 Cuica	78	209 Cuica	78	209 Cuica	78	209 Cuica	78	209 Cuica	
53 (-21)	79	209 Cuica	79	209 Cuica	79	209 Cuica	79	209 Cuica	79	209 Cuica	
54 (-22)	80	189 Triang	80	189 Triang	80	189 Triang	80	189 Triang	80	189 Triang	
55 (-23)	81	189 Triang	81	189 Triang	81	189 Triang	81	189 Triang	81	189 Triang	

[5] Preset Pattern Table

0	8beat Original
1	8beat Fill in to Variation
2	8beat Variation
3	8beat Fill in to Original

4	PopRock Original
5	PopRock Fill in to Variation
6	PopRock Variation
7	PopRock Fill in to Original

8	HardRock1 Original
9	HardRock1 Fill in to Variation
10	HardRock1 Variation
11	HardRock1 Fill in to Original

12	HardRock2 Original
13	HardRock2 Fill in to Variation
14	HardRock2 Variation
15	HardRock2 Fill in to Original

16	Rock N Roll Original
17	Rock N Roll Fill in to Variation
18	Rock N Roll Variation
19	Rock N Roll Fill in to Original

20	SlowRock Original
21	SlowRock Fill in to Variation
22	SlowRock Variation
23	SlowRock Fill in to Original

24	16beat Original
25	16beat Fill in to Variation
26	16beat Variation
27	16beat Fill in to Original

28	R & B Original
29	R & B Fill in to Variation
30	R & B Variation
31	R & B Fill in to Original

32	Oldies Original
33	Oldies Fill in to Variation
34	Oldies Variation
35	Oldies Fill in to Original

36	Disco Original
37	Disco Fill in to Variation
38	Disco Variation
39	Disco Fill in to Original

40	Funk Original
41	Funk Fill in to Variation
42	Funk Variation
43	Funk Fill in to Original

44	Swing1 Original
45	Swing1 Fill in to Variation
46	Swing1 Variation
47	Swing1 Fill in to Original

48	Swing2 Original
49	Swing2 Fill in to Variation
50	Swing2 Variation
51	Swing2 Fill in to Original

52	BrushSwing Original
53	BrushSwing Fill in to Variation
54	BrushSwing Variation
55	BrushSwing Fill in to Original

56	Country Original
57	Country Fill in to Variation
58	Country Variation
59	Country Fill in to Original

60	Dance Original
61	Dance Fill in to Variation
62	Dance Variation
63	Dance Fill in to Original

64	House Original
65	House Fill in to Variation
66	House Variation
67	House Fill in to Original

68	Rap1 Original
69	Rap1 Fill in to Variation
70	Rap1 Variation
71	Rap1 Fill in to Original

72	Rap2 Original
73	Rap2 Fill in to Variation
74	Rap2 Variation
75	Rap2 Fill in to Original

76	Samba Original
77	Samba Fill in to Variation
78	Samba Variation
79	Samba Fill in to Original

80	Salsa Original
81	Salsa Fill in to Variation
82	Salsa Variation
83	Salsa Fill in to Original

84	Bossanova Original
85	Bossanova Fill in to Variation
86	Bossanova Variation
87	Bossanova Fill in to Original

88	Reggae Original
89	Reggae Fill in to Variation
90	Reggae Variation
91	Reggae Fill in to Original

92	Mambo Original
93	Mambo Fill in to Variation
94	Mambo Variation
95	Mambo Fill in to Original

96	Beguine Original
97	Beguine Fill in to Variation
98	Beguine Variation
99	Beguine Fill in to Original

[Effect Parameter]

Drum Kit	R. TYPE	R. TIME	R. LPF	D. FDBK	C. TYPE	C. DPTH	C. RATE	C. FDBK	C. DLY
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									

[Pad Parameter]

Drum Kit Name : _____

Pad #	Note #	Instrument	Level	Pitch	Decay	Nuance	Pan	Assign Type	Sense Curve
1 (A01)									
2 (A02)									
3 (A03)									
4 (A04)									
5 (A05)									
6 (A06)									
7 (A07)									
8 (A08)									
9 (A09)									
10 (A10)									
11 (A11)									
12 (A12)									
13 (A13)									
14 (A14)									
15 (A15)									
16 (A16)									
17 (B01)									
18 (B02)									
19 (B03)									
20 (B04)									
21 (B05)									
22 (B06)									
23 (B07)									
24 (B08)									
25 (B09)									
26 (B10)									
27 (B11)									
28 (B12)									
29 (B13)									
30 (B14)									
31 (B15)									
32 (B16)									
33 (-01)									
34 (-02)									
35 (-03)									
36 (-04)									
37 (-05)									
38 (-06)									
39 (-07)									
40 (-08)									
41 (-09)									
42 (-10)									
43 (-11)									
44 (-12)									
45 (-13)									
46 (-14)									
47 (-15)									
48 (-16)									
49 (-17)									
50 (-18)									
51 (-19)									
52 (-20)									
53 (-21)									
54 (-22)									
55 (-23)									

Roland Exclusive Messages

Data Format for Exclusive Messages

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

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

= MIDI status: F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version 1.0).

= Manufacturer-ID: 41H

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

= Device-ID: DEV

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

= Model-ID: MDL

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

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

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

= Command-ID: CMD

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

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

= Main data: BODY

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

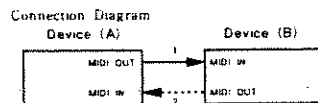
Address-mapped Data Transfer

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

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

One-way transfer procedure (See Section 3 for details.)

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

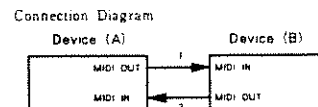


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

Handshake-transfer procedure

(This device does not cover this procedure)

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



Connection at points 1 and 2 is essential.

Notes on the above two procedures

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

One-way Transfer Procedure

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

Types of Messages

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

Request data #1: RQ1 (11H)

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

On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

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

Roland Exclusive Messages

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

= Data set 1: DTI (12H)

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

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

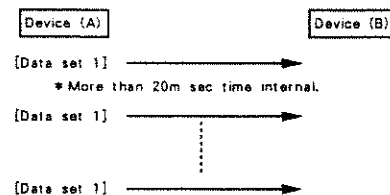
Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

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

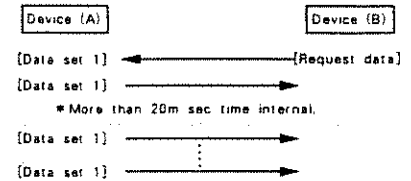
= Example of Message Transactions

- Device A sending data to Device B

Transfer of a DTI message is all that takes place.



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



1. TRANSMITTED DATA

■ Channel Voice Message

Channel Voice Messages are transmitted on the channel which is set at MIDlch in MIDI mode.

● Note Event

○ Note Off

Status Second Third
9nH kkH 00H

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
kk = Note Number : 1BH - 51H (27 - 81)

○ Note On

Status Second Third
9nH kkH vvH

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
kk = Note Number : 1BH - 51H (27 - 81)
vv = Velocity : 01H - 7FH (1 - 127)

Note number assigned to each instrument at current drum set is used. If note number is set to 'OFF', then note events for that instrument cannot be transmitted.

Gate time (the interval from 'Note On' to 'Note Off') is about 50msec usually. It may be shortened when same instrument is sounded repeatedly in short interval.

● Control Change

○ Volume

Status Second Third
EnH 07H vvH

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
vv = Volume : 00H - 7FH (0 - 127)

Transmitted when MIDI volume is changed in MIDI mode.

● Program Change

Status Second
CnH ppH

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
pp = Program Number : 00H - 7FH (0 - 127)

The following messages are transmitted when Drum Kit is changed.

Drum Kit	pp	Drum Kit	pp
Standard	00H (0)	User14	4DH (77)
Room	08H (8)	User15	4EH (78)
Power	10H (16)	User16	4FH (79)
Electronic	18H (24)	User17	50H (80)
TR-808	19H (25)	User18	51H (81)
Jazz	20H (32)	User19	52H (82)
Brush	28H (40)	User20	53H (83)
User 1	40H (64)	User21	54H (84)
User 2	41H (65)	User22	55H (85)
User 3	42H (66)	User23	56H (86)
User 4	43H (67)	User24	57H (87)
User 5	44H (68)	User25	58H (88)
User 6	45H (69)	User26	59H (89)
User 7	46H (70)	User27	5AH (90)
User 8	47H (71)	User28	5BH (91)
User 9	48H (72)	User29	5CH (92)
User10	49H (73)	User30	5DH (93)
User11	4AH (74)	User31	5EH (94)
User12	4BH (75)	User32	5FH (95)
User13	4CH (76)		

■ System Exclusive Message

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

With the DR - 660 the System Exclusive Message can be used to Bulk Dump /Load of Sequence data, Drum Kit set-up and Global data. For details refer to Exclusive Communications and 'Roland Exclusive Message'.

■ System Common Message

Not transmitted when Sync is set to 'MIDI' in MIDI mode.

● Song Position Pointer

Status Second Third
F2H mmH HH

llmm = value : 00H,00H - 7FH,7FH (0 - 16383)

Transmitted when SONG mode is selected, new song is selected in SONG mode, or the PART is specified by pressing BWD or FWD in SONG mode.

● Song Select

Status Second
F3H ssH

ss = Song Number : 00H - 63H (0 - 99)

Transmitted when SONG mode is selected, or new song is selected in SONG mode.

■ System Real Time Message

Not transmitted when Sync is set to 'MIDI' in MIDI mode. Timing Clocks are always transmitted even if the rhythm is not running. When RESET is pressed with the DR - 660 is in playing, Stop and Start messages are transmitted continuously.

● Timing Clock

Status
FBH

● Start

Status
FAH

● Continue

Status
FBH

● Stop

Status
FCH

● Active Sensing

Status
FEH

Transmitted for checking MIDI connection between DR - 660 and external equipment.

2. RECOGNIZED RECEIVE DATA

■ Channel Voice Message

Only the Channel Voice Messages on the channel which is set at MIDIch in MIDI mode are recognized.

● Note Event

○ Note Off

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

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
 kk = Note Number : 1BH - 51H (27 - 81)
 vv = Velocity : 00H - 7FH (0 - 127)

Velocity is ignored.

○ Note On

Status	Second	Third
9nH	kkH	vvH

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
 kk = Note Number : 1BH - 51H (27 - 81)
 vv = Velocity : 01H - 7FH (1 - 127)

● Control Change

○ Volume

Status	Second	Third
BnH	07H	vvH

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
 vv = Volume : 00H - 7FH (0 - 127)

Controls total volume. Memorized.

○ Expression

Status	Second	Third
BnH	11H	vvH

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
 vv = Expression : 00H - 7FH (0 - 127)

Controls total volume. Set to 127 when turn the DR - 660 on.

● Program Change

Status	Second
CnH	ppH

n = MIDI Channel : 0H - FH (ch.1 - ch.16)
 pp = Program Number : 00H - 7FH (0 - 127)

Changes Drum Kits.

pp	Drum Kit	pp	Drum Kit
00H - 07H (0 - 7)	Standard	4CH (76)	User13
08H - 0FH (8 - 15)	Room	4DH (77)	User14
10H - 17H (16 - 23)	Power	4EH (78)	User15
18H (24)	Electronic	4FH (79)	User16
19H (25)	TR-808	50H (80)	User17
1AH - 1FH (26 - 31)	Electronic	51H (81)	User18
20H - 27H (32 - 39)	Jazz	52H (82)	User19
28H - 2FH (40 - 47)	Brush	53H (83)	User20
		54H (84)	User21
30H - 3FH (48 - 63)	Standard	55H (85)	User22
		56H (86)	User23
40H (64)	User 1	57H (87)	User24
41H (65)	User 2	58H (88)	User25
42H (66)	User 3	59H (89)	User26
43H (67)	User 4	5AH (90)	User27
44H (68)	User 5	5BH (91)	User28
45H (69)	User 6	5CH (92)	User29
46H (70)	User 7	5DH (93)	User30
47H (71)	User 8	5EH (94)	User31
48H (72)	User 9	5FH (95)	User32
49H (73)	User10		
4AH (74)	User11	60H - 7FH (96 - 127)	Standard
4BH (75)	User12		

■ System Exclusive Message

Recognized only when the DR - 660 is in stop with RxEXC is set to 'ON' in MIDI mode.

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

With the DR - 660 the Sysytem Exclusive Message can be used to Bulk Dump /Load of Sequence data, Drum Kit set-up and Global data. For details refer to para. 3.Exclusive Communications and 'Roland Exclusive Message'.

■ System Common Message

Recognized only when the DR - 660 is in stop with Sync is set to 'MIDI' in MIDI mode.

● Song Position Pointer

Status	Second	Third
F2H	mmH	hhH

ll,mm = value : 00H,00H - 7FH,7FH (0 - 16383)

When the DR - 660 receives Song Position Pointer in SONG mode it calls the position in the song and when in PATTERN mode the position in the pattern.

● Song Select

Status	Second
F3H	ssH

ss = Song Number : 00H - 03H (0 - 3)

Changes songs if received in SONG mode.

■ System Realtime message

Recognized only when Sync is set to 'MIDI' in MIDI mode.

● Timing Clock

Status
F8H

● Start

Status
FAH

● Continue

Status
FBH

● Stop

Status
FCH

3. EXCLUSIVE COMMUNICATIONS

With the DR-660, Exclusive One Way Messages can be used for transferring of Sequence data, Drum Kit set-up and Global data.

In Exclusive message, the model ID is expressed by 52H and device ID is smaller the basic channel number by 1.

■ One - Way Communications

● Request Data1 RQ1 (11H)

byte	Description
FOH	Exclusive status
41H	Manufactures ID (Roland)
dev	Device ID (dev: 00H - 0FH)
mdl	Model ID (mdl: 52H)
11H	Command ID (RQ1)
aaH	Address MSB
bbH	Address
ccH	Address
ddH	address LSB
ssH	Size MSB
rrH	Size
uuH	Size
vvH	Size LSB
sum	Check sum
F7H	EOX (End of exclusive)

● Data Set1 DT1 (12H)

byte	Description
FOH	Exclusive status
41H	Manufactures ID (Roland)
dev	Device ID (dev: 00H - 0FH)
mdl	Model ID (mdl: 52H)
12H	Command ID (DT1)
aaH	Address MSB
bbH	Address
ccH	Address
ddH	Address LSB
ddH	Data
:	:
ddH	Data
sum	Check sum
F7H	EOX (End of exclusive)

4. PARAMETER ADDRESS MAP

Address are shown in 7-bit hexadecimal

Address	MSB			LSB
Binary	0aaa aaaa	0bbb bbbb	0ccc cccc	0ddd dddd
7-bit hex.	AA	BB	CC	DD

Address	MSB			LSB
Binary	0sss ssss	0ttt tttt	0uuu uuuu	0vvv vvvv
7-bit hex.	AA	BB	CC	DD

■ Parameter base address

With the DR-660, the parameters can be transferred either by bulk dump or by individual parameter control.

Address	Block	Note
00 00 00 00	----- -----	Individual
	Current Drumkit	
01 00 00 00	----- -----	Individual
	Global parameters	
02 00 00 00	----- -----	Bulk
	Drumkit	
03 00 00 00	----- -----	Bulk
	Song	
04 00 00 00	----- -----	Bulk
	Pattern	

● Current Drumkit (Individual parameter)

○ Pad

Address(H)	Size(H)	Data(D)	Parameter
00 00 pp 00	00 00 00 01	0 - 63	Inst# upper 4bits (0 - 255)
00 00 pp 01	00 00 00 01	0 - 63	Inst# lower 4bits
00 00 pp 02	00 00 00 01	0 - 15	LEVEL
00 00 pp 03	00 00 00 01	0 - 14	NUANCE (-7 - +7)
00 00 pp 04	00 00 00 01	0 - 3	PITCH upper 2bits (-2400 - +2400)
00 00 pp 05	00 00 00 01	0 - 127	PITCH lower 7bits
00 00 pp 06	00 00 00 01	0 - 62	DECAY (-31 - +31)
00 00 pp 07	00 00 00 01	0 - 15	PAN (L7 - C - R7, INDIV)
00 00 pp 08	00 00 00 01	0 - 1	Polyphony (Mono, Poly)
00 00 pp 09	00 00 00 01	0 - 7	Assign Group (OFF, EXC1-7)
00 00 pp 0A	00 00 00 01	0 - 9	Reverb Send Level
00 00 pp 0B	00 00 00 01	0 - 9	Chorus Send Level

* pp = Pad number 0 - 54 (A01 - A16, B01 - B16, -01 - -23)

* Inst# is transferred by dividing value 0 - 255 into 4-bit MSB and 4bit LSB.

* PITCH is transferred by dividing value 0 - 480 into 2-bit MSB and 7bit LSB.

* With combination of Polyphony and Assign Group, A.TYPE is defined as follows.

Polyphony	Assign Group	A.Type
0 (Mono)	0 (OFF)	MONO
0 (Mono)	1 (EXC1)	M EXC1
0 (Mono)	2 (EXC2)	M EXC2
0 (Mono)	3 (EXC3)	M EXC3
0 (Mono)	4 (EXC4)	M EXC4
0 (Mono)	5 (EXC5)	M EXC5
0 (Mono)	6 (EXC6)	M EXC6
0 (Mono)	7 (EXC7)	M EXC7
1 (Poly)	0 (OFF)	POLY
1 (Poly)	1 (EXC1)	P EXC1
1 (Poly)	2 (EXC2)	P EXC2
1 (Poly)	3 (EXC3)	P EXC3
1 (Poly)	4 (EXC4)	P EXC4
1 (Poly)	5 (EXC5)	P EXC5
1 (Poly)	6 (EXC6)	P EXC6
1 (Poly)	7 (EXC7)	P EXC7

○ Note Number Assign

Address(H)	Size(H)	Data(D)	Parameter
00 01 00 pp	00 00 00 01	27 - 61	Note# of Pad pp

* pp = Pad number 0 - 54 (A01 - A16, B01 - B16, -0) - - 23)

○ Effect

Address(H)	Size(H)	Data(D)	Parameter
00 02 00 00	00 00 00 01	0 - 4	R. TYPE (HALL, ROOM, PLATE, DELAY, PAN-DLY)
00 02 00 01	00 00 00 01	0 - 31	R. TIME
00 02 00 02	00 00 00 01	0 - 7	R. LPF
00 02 00 03	00 00 00 01	0 - 15	D. FDBK
00 02 00 04	00 00 00 01	0 - 9	Reverb Output Level
00 02 00 05	00 00 00 01	0 - 1	Reverb Output SW
00 02 00 06	00 00 00 01	0 - 1	C. TYPE (CHORUS, FLANGER)
00 02 00 07	00 00 00 01	0 - 31	C. DLY
00 02 00 08	00 00 00 01	0 - 15	C. DPTH
00 02 00 09	00 00 00 01	0 - 15	C. RATE
00 02 00 0A	00 00 00 01	0 - 15	C. FDBK
00 02 00 0B	00 00 00 01	0 - 9	Chorus Output Level
00 02 00 0C	00 00 00 01	0 - 1	Chorus Output SW

* When R. TYPE is set to DELAY or PAN-DLY, R. TIME become the parameter which set delay time. At this time, delay time is shown as follows.

R. TIME	0	1	2	3	4	5	6	7	8	9
delay time(ms)	5	10	20	30	45	60	75	90	105	120
R. TIME	10	11	12	13	14	15	16	17	18	19
delay time(ms)	135	150	165	180	195	210	225	240	255	270
R. TIME	20	21	22	23	24	25	26	27	28	29
delay time(ms)	285	300	315	330	345	360	375	390	405	420
R. TIME	30	31								
delay time(ms)	435	450								

○ Pad Bank

Address(H)	Size(H)	Data(D)	Parameter
00 03 00 00	00 00 00 01	0 - 7	Sense Curve for Pad Bank-A (EXP1, LIN1, EXP2, LIN2, XFDO, XFD1, FIX1, FIX2)
00 03 00 01	00 00 00 01	0 - 7	Sense Curve for Pad Bank-B (EXP1, LIN1, EXP2, LIN2, XFDO, XFD1, FIX1, FIX2)
00 03 00 02	00 00 00 01	0 - 1	Pad Bank Layer SW (OFF, ON)

○ Drumkit Name

Address(H)	Size(H)	Data(D)	Parameter
00 04 00 00	00 00 00 07	32 - 127	ASCII Character

● Global (Individual parameter)

○ MIDI SW

Address(H)	Size(H)	Data(D)	Parameter
01 00 00 00	00 00 00 01	0 - 1	SYNC (INT, MIDI)
01 00 00 01	00 00 00 01	0 - 1	PRG (OFF, ON)
01 00 00 02	00 00 00 01	0 - 1	REXVOL (OFF, ON)
01 00 00 03	00 00 00 01	0 - 1	REXPR (OFF, ON)
01 00 00 04	00 00 00 01	0 - 1	THRU (OFF, ON)

○ Roll, Flam, Metronome

Address(H)	Size(H)	Data(D)	Parameter
01 01 00 00	00 00 00 01	1 - 8	ROLL INT (1/32, 1/16(3), 1/16, 1/8(3), 1/8, 1/4(3), 1/4, 1/2)
01 01 00 01	00 00 00 01	0 - 31	FLAM INT
01 01 00 02	00 00 00 01	0 - 7	FLAM RATIO
01 01 00 03	00 00 00 01	0 - 7	CLICK LEVEL
01 01 00 04	00 00 00 01	3 - 7	CLICK SEL (1/16, 1/8(3), 1/8, 1/4(3), 1/4)

● Drumkit (Bulk)

Size of all User Drumkit parameters = 12800 bytes
12800 bytes * 2 (nibbleize) = 01 48 00 (MIDI)

Address(H)	Size(H)	Data(D)	Parameter
02 00 00 00	00 01 48 00		Drumkit parameters

● Song (Bulk)

Size of All User Song data = 2000 bytes
2000 bytes * 2 (nibbleize) = 1F 20 (MIDI)

Address(H)	Size(H)	Data(D)	Parameter
03 00 00 00	00 00 1F 20		Song data

● Pattern (Bulk)

Size of All User Pattern data = 14010 bytes
14010 bytes * 2 (nibbleize) = 01 5A 74 (MIDI)

Address(H)	Size(H)	Data(D)	Parameter
04 00 00 00	00 01 5A 74		Pattern data

DR. RHYTHM

Date : Feb. 15 1992

Model DR -660

MIDI Implementation Chart

Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	* 1
Mode	Default Messages Altered	Mode 3 X *****	Mode 3 X	
Note Number	True Voice	27-81 * 2 *****	27-81 * 2	
Velocity	Note ON Note OFF	<input type="radio"/> 9n V=1-127 <input checked="" type="radio"/> 9n v=0	<input type="radio"/> <input checked="" type="radio"/>	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change		7 <input type="radio"/> 11 X	* 3 * 3	Volume * 1 Expression
Prog Change	True #	<input type="radio"/> *****	* 3	Used for 'Drum Kit change'
System Exclusive		<input type="radio"/>	* 3	
System Common	Song Pos Song Sel Tune	<input type="radio"/> Sync=INT <input type="radio"/> Sync=INT X	<input type="radio"/> Sync=MIDI <input type="radio"/> Sync=MIDI X	
System Real Time	Clock Commands	<input type="radio"/> Sync=INT <input type="radio"/> Sync=INT	<input type="radio"/> Sync=MIDI <input type="radio"/> Sync=MIDI	
Aux Messages	Local ON/OFF All Notes OFF Active Sense Reset	X X <input type="radio"/> X	X X X X	
<p>Notes</p> <p>* 1 Memorized (Non-volatile)</p> <p>* 2 Note Number assignment for each instrument is commonly use for transmitting and receiving. Preset or user setting can be selected.</p> <p>* 3 Can be set to <input type="radio"/> or <input checked="" type="radio"/> manually, and memorized.</p>				

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

: Yes
 : No

Specifications

DR-660: Dr.RHYTHM

- **Maximum Polyphony**
12 voices
- **Instruments**
255
- **Effect**
Reverb
Choru
- **Rhythm Patterns**
Programmable Patterns: 150
Preset Patterns: 100
- **Song**
Songs: 100
Song Length
Maximum Parts for a song: 250
Total parts for songs: 900
- **Resolution**
per quarter note: 96
- **Tempo**
Quarter note: 20 — 260
- **Display**
Custom LCD [3 - 1/8(W) × 1 - 7/16(D) inches]
- **Data Input Method**
Realtime/Step
- **Pads**
Dynamics Pads: 16
- **Synchronization**
MIDI
- **Connectors**
Stereo Output Jacks (L, R)
Individual Output Jacks (1, 2)
Headphone Jack
MIDI Connectors (In, Out)
AC Adaptor Jack (AC12V)
- **Power Supply**
AC Adaptor
- **Current Draw**
440mA
- **Dimensions**
215(W) × 165(D) × 57(H) mm
8 - 1/2(W) × 6 - 1/2(D) × 2 - 1/4(H) inches
- **Weight**
720g / 1 lbs 10oz
- **Accessories**
AC Adaptor (BOSS BRA series)
Owner's Manual

※The specifications for this product are subject to change without prior notice.

Information

When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

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Liestal, SWITZERLAND
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