KORG
DRM-1
Users Manual

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MAJOR FEATURES OF THE DRM-1

1 The DRM-1 digital rhythm module incorporates advanced sound generation capabilities in a compact body which fits into a 1U rack. It comes with a wireless controller that allows the remote player to control most of the functions——a feature which is very handy for a drummer playing a series of digital drum pads.

2 Along with a PCM-quality 23-timbre sound source, the DRM-1 is fully compatible with the timbre library for the DDD-1/5. For extended sound module capabilities, it holds up to four memory cards in its slots: one for a ROM or RAM card and three for ROM cards only.

3 Internal data for the bass drum, toms, and other sounds use 12-bit format, which improves the sound quality and signal-to-noise ratio.

4 This enhanced interface is fully compatible with MIDI sound sources. Not only does it serve as an add-on sound module for other rhythm machines, but the DRM-1 also accepts program change commands for switching voice settings, responds to real-time message inputs, and handles system exclusive messages for data exchange with external equipment. It also has a MIDI driver which converts audio signals into MIDI data.

5 The multiple output port lets you fine-tune the output by feeding different timbres to separate effectors. The pan-pot function can set the independent sounds in up to seven positions across the stereo range.

6 A full-featured dynamics function allows output volume control to match the velocity in use. To make rhythm expression control highly versatile, velocity and key numbers are used to change the tuning, decay, dynamics response and pan settings for the individual sound sources.

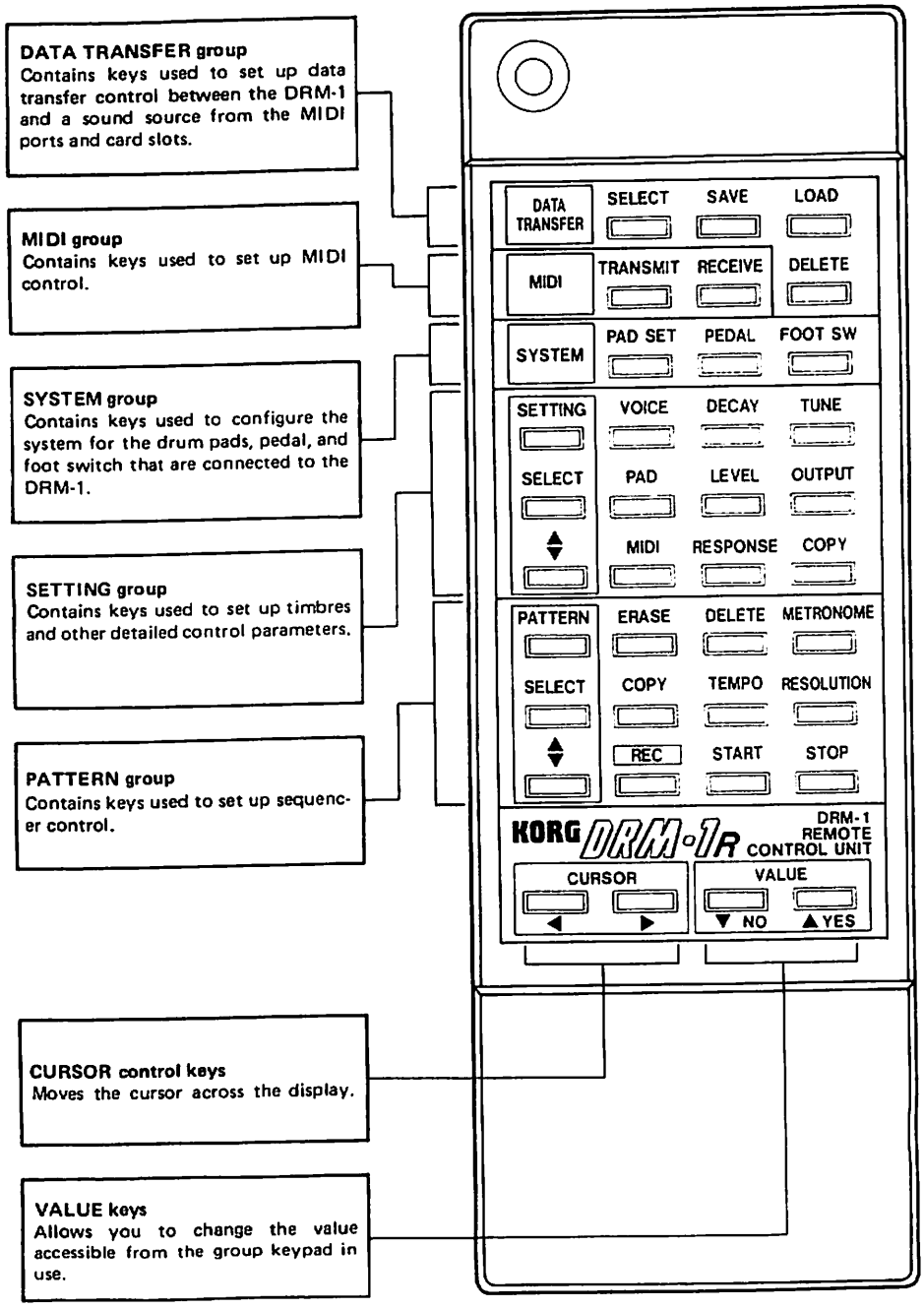
7 The DRM-1 has a dedicated rhythm module sequencer for real-time input and real-time editing. This feature not only provides responsive control for twin drums, one-touch fill-ins, drums plus percussion and other live performance techniques, but also allows quick recording and playback in rehearsals.

8 The DRM-1 is highly flexible in handling input from digital drum pads, audio equipment, and any other MIDI-compatible sound sources, while generating sound quality that is characteristic of the source.

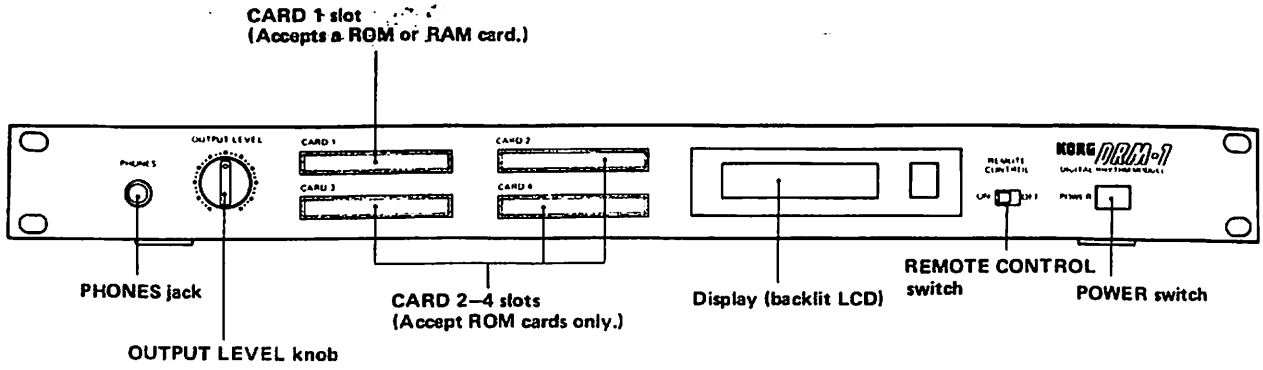
PARTS AND FUNCTIONS

1. Remote Control Unit

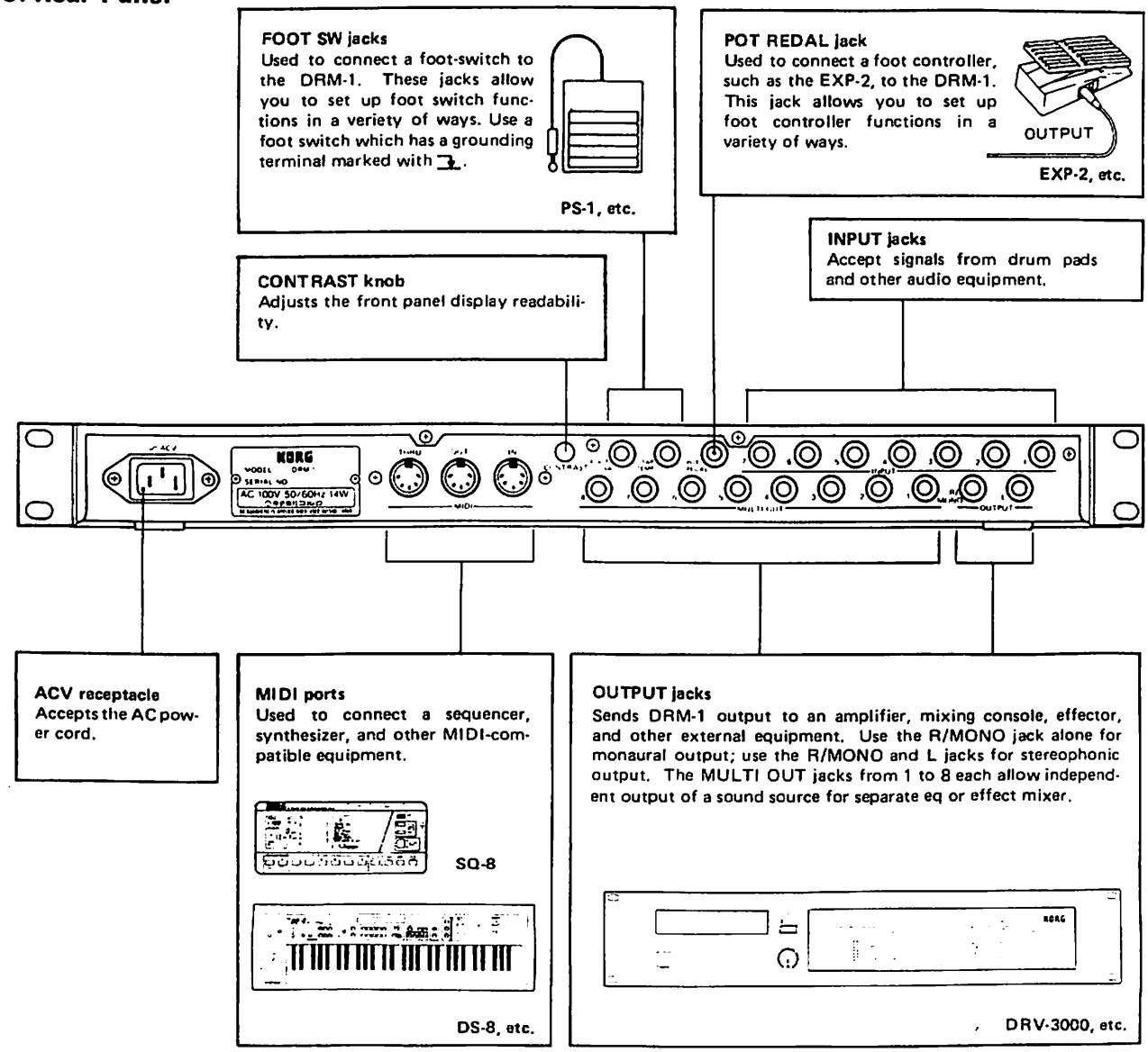
Load the two batteries in place before starting. (The batteries are located in the shipping pad.)
The remote control range gets shorter when the batteries run low on power. If this haapens, replace both batteries together.



2. Front Panel



3. Rear Panel



Playing Back the Sample Rhythm Patterns

The DRM-1 comes with sample rhythm patterns stored in its memory to demonstrate its capabilities. Before playing back the data, go through the following setup procedure:

① Load the batteries (contained in the shipping pad) into the remote control unit. When you press a key, the LED on top of the remote control unit should light, indicating that the wireless signals are on.

② Connect the DRM-1 to a power output with the power cord.

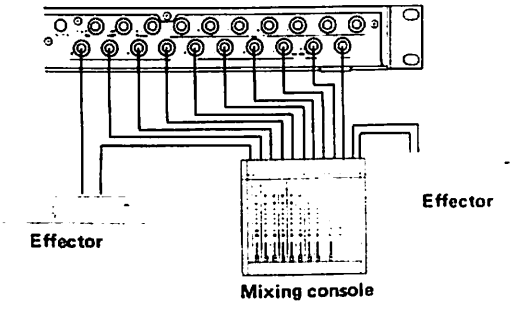
③ Turn on the REMOTE CONTROL switch on the DRM-1.

④ Connect your amplifier or mixing console to the R/MONO and L jacks. For monaural output, use the R/MONO jack. When using a headphone set such as the KH-1000, plug it into the PHONES jack.

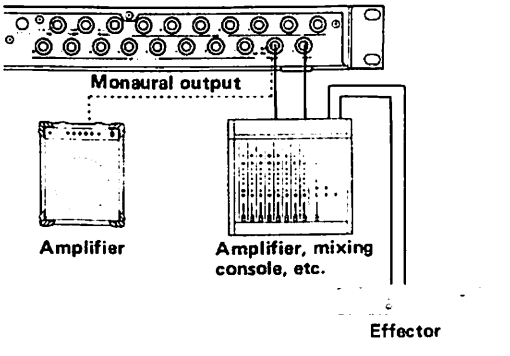
⑤ Turn on the POWER switch. If an amplifier is connected to the DRM-1, turn it on.

⑥ Turn the OUTPUT LEVEL knob to set the output volume. (The appropriate level ranges between 5 and 10.)

Example 1



Example 2



When all connections are complete, use the following procedure to play back the sample rhythm patterns.

★ Always set the amplifier volume to zero when connecting cables or turning on the power. Otherwise, the amplifier may unexpectedly generate a large output, causing damage to the speakers.

① Check that the LCD display shows the following message. If the readout is too faint, adjust it with the CONTRAST knob on the rear panel.

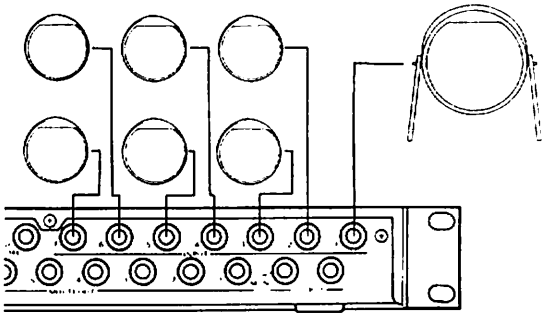
```
SELECT PATTERN00
DRM1DEMO 0000
```

② Press the START key on the remote control unit. The DRM-1 will start playing back the sample rhythm patterns.

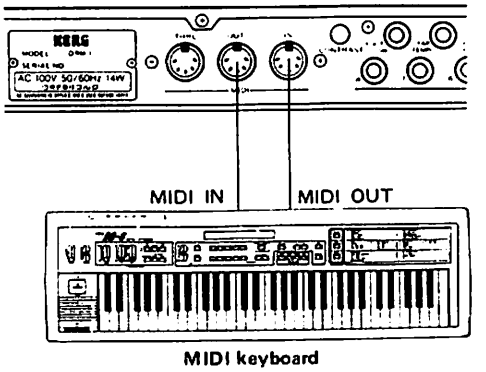
Playing on the DRM-1 Manually

Connect digital drum pads or a MIDI-compatible keyboard to play on the DRM-1 in manual mode.

Connection to drum pads



Connection to a MIDI Keyboard



The DRM-1 allows you to specify the pads and keynote numbers you will use when playing the individual sound sources. Such user-defined settings may be returned to the power-up defaults (factory-calibrated settings) by initiating a system reset.
The sections that follow assume that the default voice settings are in effect throughout the manual-mode operation. Initialing a system reset deletes all data for the samples. If you wish to retain the data, save it on a RAM card sold separately. (See page 26 for details.)

System Reset

① Press the SELECT key on the DATA TRANSFER keypad. The reading on the display will change from the demonstration message to the following:

```
DATA TRANSFER
CARD : *SETTING*
```
(Data transfer setup screen)

↑ Data source ↑ Data transfer mode

② Press the SELECT key a second time. The source reading on the display will change to MIDI".

```
CARD : *SETTING*
   ↕ Use the SELECT key to change.
MIDI : *SETTING*
```

★ The setting for data transfer may be set up for the voice settings or rhythm patterns prior to a system reset.

③ Press the DELETE key to bring up the system reset screen. Initiating a system reset erases all data currently held in memory. The DRM-1 will ask for user verification twice. Press the ▲ YES (VALUE keypad) key at each prompt.

```
SYSTEM RESET
Are you sure ?
```
(System reset screen)

↓ Press the ▲ YES key.

```
SYSTEM RESET
      Really ?
```

↓ Press the ▲ YES key.

```
SELECT SETTINGOO
   *SET-00*_
```
Press the ▲YES key. to start a system reset.

★ Pressing the ▼ NO key at either prompt sends control back to Step (2) where you pressed the SELECT key while in the data transfer screen.

Default Settings

After a system reset, the DRM-1 sets the voice settings to the power-up defaults, which vary depending on whether you selected a MIDI keyboard or drum pads. Pad No. 1 or D2 on a MIDI keyboard, for example, is assigned the SNARE1 sound.

Drum Pad Defaults

PAD NO.	VOICE NO.	SOUND NAME
1	00	SNARE1
2	01	BASS1
3	02/03	OP HH/CL HH
4	04/05	CRASH/RIDE
5	06	HI TOM
6	07	MID TOM
7	08	LO TOM

MIDI Keyboard Defaults

NOTE NO.	VOICE NO.	SOUND NAME
D2	00	SNARE1
C2	01	BASS1
A♯2	02	OP HH
F♯2	03	CL HH
C♯3	04	CRASH
D♯3	05	RIDE
C3	06	HI TOM
A2	07	MID TOM
F2	08	LO TOM
C4	09	HI TIMB
B3	10	LO TIMB
G3	11	HI CONGA
F3	12	LO CONGA
F♯3	13	MU CONGA
G♯3	14	COW BELL
D♯2	15	CLAPS

BEFORE EDITING PARAMETERS

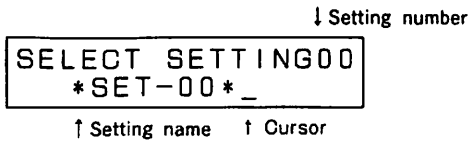
The DRM-1 operates in conjunction with the remote control unit that allows access to all programmable functions. Once the necessary parameters are set, the remote player has full control over the DRM-1 functions except for the power switch and volume control.
On the front panel of the DRM-1 is the REMOTE CONTROL switch used to disable remote control to prevent wireless signal interference when there is more than one DRM-1 unit positioned side by side. Always check that the switch is on before starting operation.

Outline of Remote Parameter Control

A number of DRM-1 functions are roughly broken down into the following three categories, which represent the corresponding remote control unit keypads: the SETTING group to set up sound data for a drum set, the PATTERN group to record and play back rhythm patterns (sequencer), and other group of keypads used to control the SETTING, PATTERN, and all other DRM-1 parameters.
The third group consists of three keypads: the SYSTEM group to determine the way the DRM-1 controls externally connected equipment, the MIDI group to control input/output operations, and the DATA TRANSFER group to allow data exchange across the DRM-1 interface.
These keypads allow instant access to values, parameters, and other current settings, which can be changed with the CURSOR control and VALUE keys.

Message Format and Basic Edit Commands

The liquid crystal display (LCD) is sixteen columns by two lines wide. Use the rear panel CONTRAST knob to adjust the character legibility.



When the POWER switch is turned on, the DRM-1 displays information in this format after a sign-on message. (The exact setting number and name may be different, depending on the settings in effect the last time the power was turned off.)
Every parameter is set to whatever value is stored in memory. The parameters are, for example, set for demonstration at time of shipment. The process of changing or correcting parameters is referred to as "editing".
Usually, the upper half of the display shows the parameter selected; the lower half, the values currently assigned to that parameter. (Some messages display the value assigned to a parameter in the upper half of the display.)
The underscore appearing immediately below a character is called a "cursor", which indicates the data field which may be changed. The CURSOR control keys move the cursor across the display. Place the cursor under the parameter you wish to edit, then press the VALUE keys to enter a new value. The new value specified in this manner may be set to default with the system reset command. (See page 6 for details.)

EDITING THE PARAMETERS 1

⟨SETTING GROUP⟩

Voice is a parameter segment that defines sound generation, for which the DRM-1 allows access to sixteen such segments. (The voicing capacity for simultaneous output is twelve notes.) Along with the built-in timbre data, each voice segment is fully compatible with any of the ROM cards for the DDD-1/5.
The SETTING group specifies the instrument type, pitch, volume, MIDI transmit/receive channels, and other settings which each voice segment will control. The DRM-1 alone can store up to sixteen such settings, each consisting of sixteen voice segments with or without a user-defined name.

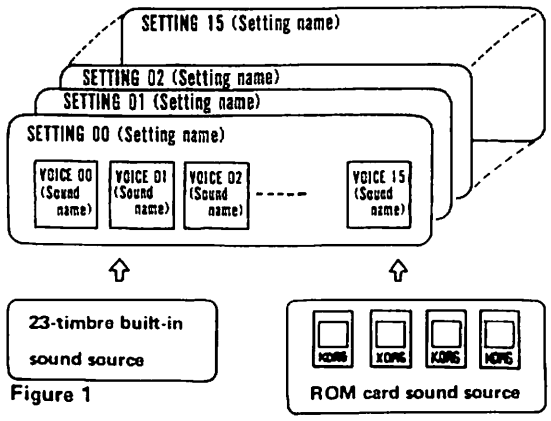


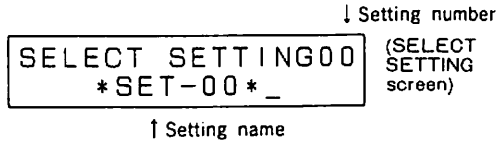
Figure 1

SETTING

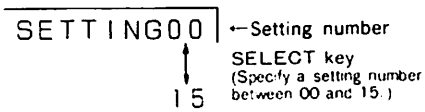
The SETTING key selects the setting number that identifies one of the sixteen settings. It also allows the change of a setting name. Subsequent edit commands are valid only for data specified with the setting number.

[1] Selecting a Setting Number

① Press the SETTING key to bring up the SELECT SETTING screen.



② Press the SELECT key to specify the setting number.



[2] Creating a Setting Name

The DRM-1 allows creation of a setting name consisting of up to eight alphanumeric characters including symbols. If not necessary, this entire step becomes optional.

① Place the cursor under the character to be changed, using the CURSOR control keys.

② Use the VALUE keys to select the new character.

```
*SET-00*
   ↓ Use the CURSOR control and VALUE keys.
MY-DRUMS
```

<Characters Valid in a Setting Name>

```
!"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNOPQRSTUVWXYZ[¥]^_`
abcdefghijklmnopqrstuvwxyz{|}~ SP
                              Space
```

★ The SELECT key, intended for selecting the voice number, allows access to setting numbers only for the SELECT SETTING screen. All edit commands discussed hereafter are valid only for parameters selected with the SELECT key.

VOICE

The VOICE SETTING screen timbres to be assigned to any of the voice settings numbered from 00 to 15. It also determines the settings for the PHASE effect.
When the VOICE key is pressed, the upper half of the display reads VOICE SETTING ## (where ## is the current setting number); the lower half shows the current voice number, the name of the timbre assigned to that voice, and the sound mode. Pressing the VOICE key a second time switches the lower half of the display to the PHASE setup screen.

[1] Selecting a Sound Name

① Press the VOICE key to bring up the VOICE SETTING screen.

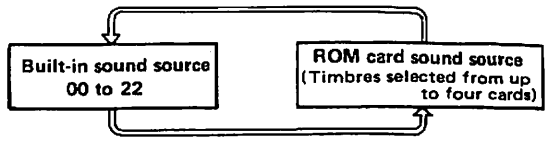
```
VOICE  SETTING00
00= SNARE 1:100M   (VOICE SETTING screen)
↑ Voice number  ↑ Sound name  ↑ Sound mode
                              Sound number
```

② Select the voice number of the data to be changed, using the SELECT key.

```
00= SNARE 1:100M
   ↕ Press the SELECT keys.
     (Select a voice number from 00 to 15.)
15
```

③ Select the sound number of a timbre to be assigned to the current voice, using the VALUE keys.

```
00= SNARE 1:100M
        ↕ Use the VALUE keys.
        C48
```



(The sound source alternates each time a key is pressed.)

Figure 2

< Sound Number and Sound Mode >

The DRM-1 has built-in data for timbres which are parameter compatible with the ROM cards for the DDD-1/5. Each timbre is assigned a unique code called the sound number, which appears on the display when a voice parameter assignment is changed.

Built-in sound source — **Figure 3**

1 . . . Built-in sound source selected
12 . . . Twelfth sound from the built-in sound source

ROM card sound source

C . . . Memory card sound source selected
2 . . . Memory card in the CARD 2 slot selected
1 . . . First sound from the memory card

Note 1: This procedure overrides the previous setting and sets the PHASE to 000.
Note 2: When using a ROM card, be sure to set it in place before pressing the VOICE key, which instructs the DRM-1 to check the slots for a missing card before loading data.

[2] Selecting a Sound Mode

The POLY, MONO, and EXCLUSIVE sound modes each provide independent control over the voice settings defining the way the DRM-1 will generates sounds consisting of up to twelve notes at a time.

① Press the VOICE key to select VOICE SETTING screen.

② Move the cursor to the sound mode field, using the CURSOR control keys.

```
VOICE  SETTING00
00= SNARE 1:100M   (VOICE SETTING screen)
                ↑ Current sound mode
```

③ The display cycles through the POLY, MONO, and EXCLUSIVE modes each time the VALUE key is pressed. Select the sound mode to match the application.

```
00= SNARE  1 : 100P : (POLY mode)
                  ↕ Press the VALUE key.
                  M   (MONO mode)
                  ↕ Press the VALUE key.
                  E   (EXCLUSIVE mode)
```

POLY mode:

When continually repeating the same voice, the POLY mode ensures that new tones do not disrupt the previous ones part way through, causing one voice to overlap with the next. To produce long, repeated decrescendos like the cymbals, the POLY mode allows trailing notes to overlap so that there is no disruption resulting in unnatural output.

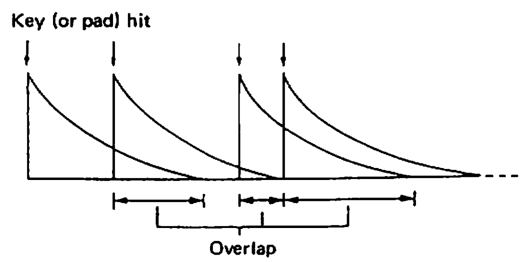


Figure 4

MONO Mode:

As opposed to the POLY mode, the MONO mode cuts trailing notes off before the new notes when repeating the same voice. Tom sounds, for example, may sound unnatural unless they are set to the MONO mode.

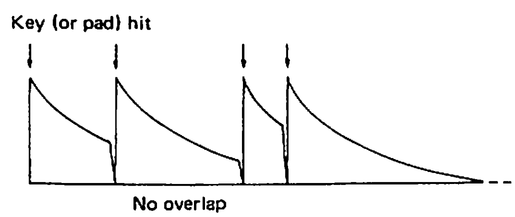


Figure 5

EXCLUSIVE Mode:

Repeatedly playing more than one voice in the EXCLUSIVE mode cuts the trailing notes off when the new ones start. Use the EXCLUSIVE mode when closed hi-hat follows open hi-hat, mute conga follows open conga, and other sequences that will sound unnatural when overlapped.

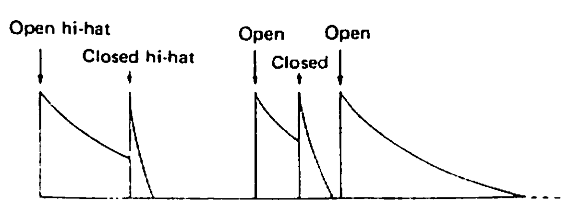


Figure 6

3 Selecting the PHASE Parameter

The DRM-1 is capable of assigning the same timbre to multiple voices. This function allows a single drum pad or a key (MIDI message) to simultaneously use two or more timbres.
The DRM-1 also allows the start-up phase shift to be varied in 128 steps per voice. Mixing timbres with different phase shifts adds the effects of a phaser or flanger to the output. This technique is extremely useful when defining the sounds of the cymbal, snare drum, and similar instruments.

① Press the VOICE key a second time to display the PHASE setup screen.

```
VOICE   SETTING00   (VOICE SETTING
00= SNARE  1 : 100M  screen)
        ↕ Press the VOICE key to switch
          the cursor between the screen.
VOICE   SETTING00   (PHASE setup
00 : PHASE=000       screen)
```

② Select the PHASE value, using the VALUE key.

```
15 : PHASE=000
           ↕ Use the VALUE keys to select
             a value between 000 and 127.
          127
```

★ CRASH is one effect that makes the phaser sound highly noticeable. Make sure that the pan, sound mode, tune, and decay settings are identical among the voices. As a special technique using the PHASE parameter, setting the tune of either voice one to three levels higher generates the effect of a flanger.

MIDI

The voice settings are an essential part that defines the quality of sounds the DRM-1 generates. Setting up the voice parameters for the desired sounds requires assigning drum pad or keyboard signals to the keynote numbers. To this end, the MIDI SETTING screen allows difinition of the keynote number range and MIDI transmit/receive channels per voice.

1 Setting the Keynote Number

① Press the MIDI key to select the MIDI SETTING screen.

```
MIDI    SETTING00   (MIDI SETTING
00 : C♯1 -C 2  CH=01  screen)
 ↑    ↑      └Top note      ↑
 │    └Origial note      MIDI Channel
 Voice number
```

2 Set up the voice parameters for the keynote number to be changed, using the SELECT key.

③ Specify the keynote number range with pitch names in octave scales, using the CURSOR control and VALUE keys. Incrementing the octave value by one shifts a note towards a higher pitch, starting from the lowerst C–1 to the highest G9.

```
00:C♯1-C♯2 CH=01
```

↑ Octave (Adjustable between −1 and 9)
Pitch name(C, C♯, D, D♯, E, F, F♯, G, G♯, A, A♯, B)

★ The original and top notes must stay within an octave. (See page 11 for details.)

[2] Setting the MIDI Channels

The following procedure selects the MIDI channels the DRM-1 will use when sending and receiving the note numbers assigned to each voice.

① Press the MIDI key to select the MIDI SETTING screen.

② Move the cursor to the MIDI channel field, using the CURSOR control keys.

```
MIDI    SETTING00
00:C♯1-C 2 CH=01
```
(MIDI SETTING screen)

↑ MIDI Channel

③ Select the MIDI channel to be used, using the VALUE keys. Use the VALUE keys to select a value between 01 to 16.

```
00:C♯1-C♯2 CH=01
```
Use the VALUE keys to select a value between 01 to 16 ↕ 16

PAD

The PAD SETTING screen assigns an individual voice to the drum pads connected to the DRM-1. When a pad is assigned multiple voices, the DRM-1 allows selective assignment, using the MAIN and SUB pad settings. Switching between the two settings allows doubling the sound variations as the touch on the drum pad or foot switch varies.

See pages 20 and 22 for additional information on switching between the MAIN and SUB pad settings.

① Press the PAD key to select the PAD SETTING screen.

```
PAD     SETTING00
00=PAD 1 : MAIN
```
(PAD SETTING screen)

↑ Voice number
↑ Pad number
↑ Main or Sub

2 Select the voice number to be assigned to the drum pad, using the SELECT key.

3 Select the pad number, using the VALUE keys. Setting the pad number to "NO SELECT" assigns no pad to the current voice number.

```
15=PAD 1 : MAIN
```
↕ Use the VALUE keys to select a value between 1 and 7.
↕ Press the VALUE key.
NO SELECT

④ Move the cursor to the next field, then use the VALUE keys to switch between the MAIN and SUB pad fields.

```
00=PAD 1 : MAIN
```
↕ Press the VALUE key to change.
SUB

Editing the Timbre Data

Besides defining the sixteen voice settings, the SETTING group also allows detailed control of the timbre assigned to each voice. When two voices are assigned the same timbre, for example, changing the tuning or decay parameter of either will produce the effect of two different instruments.

Setting Up the Control Parameters

The DRM-1 allows velocity or keynote numbers to vary the settings for tune, decay, output, and dynamics response parameters within the corresponding predefined ranges. Such parameters are called "control parameters" when controlled by the velocity or keynote numbers. When a setting screen is on the display after pressing a SETTING group key, pressing the same key a second time allows access to the control parameter. Pressing the same key returns the display to the previous screen.

A control parameter may be set to "Velocity" or "Note/PDL". When playing the drum pads, setting the control parameter to the "Velocity" produces the effects of an acoustic instrument.

When using the drum pads with the DRM-1, you may wish to add a foot controller (EXP-2) to vary the control parameters because the drum pads themselves do not send out keynote numbers. The POT jack on the rear panel accepts the foot controller input.

Velocity

Velocity indicates the intensity of sound produced when you hit the drum pad or a key. Changing the touch on the drum pad or a key therefore varies the values for tuning, decay, output, and dynamics response. As an example for tuning, an increase in velocity produces an effect which makes the pitch sound higher (or lower).

Keynote Number

Keynote numbers indicate the positions on a keyboard. In other words, the values for tuning, decay, output, and dynamics response vary from one key to another.

On a MIDI keybaord, the control parameters function within the predefined note number range. For the value of tune, for example, the higher the keynote number, the higher (or lower) the resulting pitch. A foot controller also produces a similar effect: The pitch becomes higher (or lower) as the pedal approaches the end of its stroke.

Original and Top Notes

Each voice handles MIDI notes within an octave starting from an original note specified by the user. A top note, which indicates the upper limit of the note number

range, must stay within the octave (twelve-step chromatic scale) starting from the original note.
The voice does not respond to any notes outside the prescribed note number range. The control parameters, tuning, decay, output, and dynamic response values, charge according to pitch or keynote number played within the selected range.

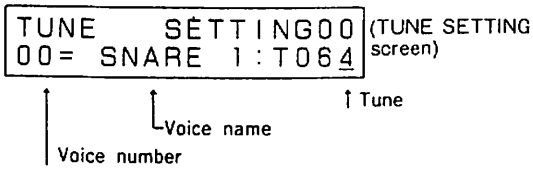
★ If the original and stop notes are at an identical pitch, the DRM-1 cannot produce any note number but the one defined by that pitch. Setting up the control parameters for this single MIDI note number therefore will not produce any noticeable effect.

TUNE

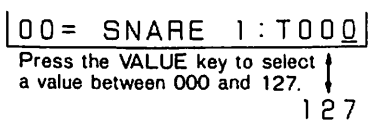
The TUNE key is used to control the tuning (pitch) of the timbre assigned to each voice. The timbre for toms ranges between 000 and 127 with a middle level at 064. It is variable in increments of 063 and in decrements of 064, starting from the middle level (approximately 9.45-cent changed per step).
Cymbal sounds starts from an original tuning at 000, which is the lowermost pitch. The upper limit of the variable range is 127.
The control parameters can vary the original tunes in up to twelve steps, using velocity or keynote numbers.

[1] Setting the TUNE Parameter

① Press the TUNE key to select the TUNE SETTING screen.

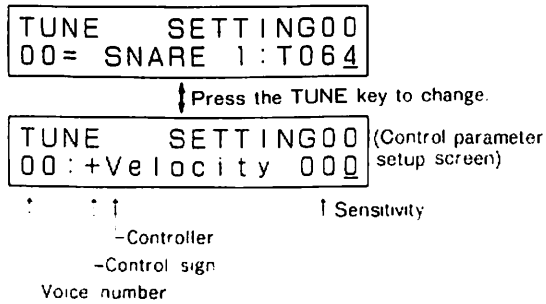


② Select the voice number, using the SELECT key.
③ Specify the value for the TUNE parameter, using the VALUE keys.

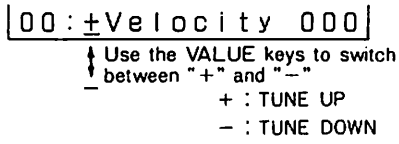


[2] Setting the TUNE Control Paramter

① Press the TUNE key a second time to access the control parameter.

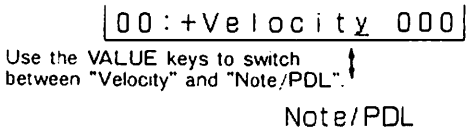


② Move the cursor to the control sign field, then specify whether the control parameter will increase or decrease the tuning, using the VALUE key. If the plus sign is selected, the pitch will increase beyond that defined by the TUNE parameter as the key note number or velocity value increases. Selecting the minus sign will cause the pitch to decrease.

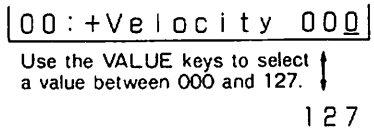


★ If the TUNE parameter is set to 127, selecting the plus sign will not allow the control parameter to increase preset tuning any further. Likewise, selecting minus sign when tuning is 000 does not allow any lower value.

③ Move the cursor to the controller field, then set it to velocity or keynote number, using the VALUE keys. Use the VALUE keys to switch between "Velocity" and "Note/PDL".



④ Move the cursor to the sensitivity field, then specify the control parameter sensitivity within the 000 to 127 range, using the VALUE keys (disabled when set to 000).



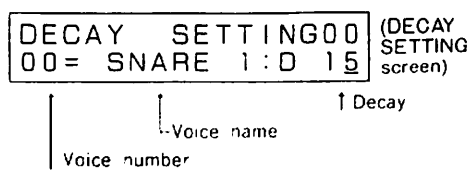
★ For the optimum effect, set the TUNE parameter to 000. Set it to 127 if the control sign is set to "−".

DECAY

The DECAY parameter determines the sound attenuation RATE (or length) of each voice.
The control parameter uses velocity or keynote number to vary DECAY intensity (in up to fifteen steps).

[1] Setting the DECAY Parameter

① Press the DECAY key to select the DECAY SETTING screen.



② Select the voice number, using the SELECT key.
③ Set the DECAY value, using the VALUE keys.

```
00= SNARE 1:D 00
```

Use the VALUE keys to select a value between 00 and 15.

15

[2] Setting the Decay Control Parameter

① Press the DECAY key a second time to access the control parameter.
② Move the cursor to the control sign field, then specify whether the control parameter will increase or decrease decay, using the VALUE key. If you select the plus sign, decay will enhance the effect beyond that defined by the DECAY parameter as the key note number or velocity value increases. Selecting the minus sign sets the value control the other way round.
★ If the DECAY parameter is set to 15, selecting the plus sign will not allow the control parameter to increase preset decay any further. Similarly, selecting the minus sign when decay is 00 does not allow any lower value.
③ Move the cursor to the controller field, then set it to velocity or keynote number, using the VALUE keys. Use the VALUE keys to switch between "Velocity" and "Note/PDL".
④ Move the cursor to the sensitivity field, then specify the control parameter sensitivity within the 000 to 015 range, using the VALUE keys (disabled when set to 000).
★ For the optimum effect, make sure that the DECAY parameter is set to 000. Set it to 015 if the control sign is set to "–".

LEVEL

The LEVEL parameter controls the output volume per voice.
① Press the LEVEL key to select the LEVEL SETTING screen.

```
LEVEL SETTING00
00= SNARE 1:L 15
```

(LEVEL SETTING screen)

↑ Level

↑ Voice name

↑ Voice number

② Select the voice number, using the SELECT key.
③ Set the LEVEL value, using the VALVE keys.

```
00= SNARE 1:L 15
```

Use the VALUE keys to select a value between 00 and 15.

00

OUTPUT

The OUTPUT parameters assign the independent voice output to separate output jacks, which come in two types –the OUTPUT jacks for stereophonic output and the MULTI OUT jacks. The pan-pot parameters allow putting the individual voice output in up to seven positions across the stereo range, which extends from C at the center towards the leftmost L3 and the rightmost R3.
The MULTI OUT jacks (M1 through M8) handle output which you do not want to channel through the stereo jacks. Such output may be fed into an external effector or equalizer to handle reverb and other effects.
The pan-pot parameters allow stereo range control in much the same way as other sound parameters are edited. It is therefore possible to pan output with velocity and keynote numbers. After output setup, pressing the OUTPUT key a second time switches the lower half of the display to a control parameter screen.

[1] Setting the OUTPUT Parameter

① Press the OUTPUT key to select the OUTPUT SETTING screen.

```
OUTPUT SETTING00
00= SNARE 1:O L1
```

(OUTPUT SETTING screen)

↑ Output assign

↑ Sound name

↑ Voice number

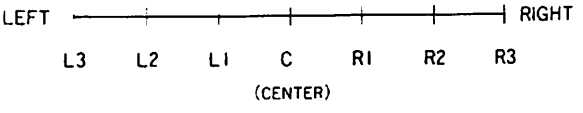
② Select the voice number with the SELECT key.
③ Specify the pan-pot and MULTI OUT parameters, using the VALUE keys.

```
00= SNARE 1:O L1
```

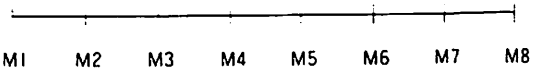
↕ Use the VALUE keys to change.

L3~R3, M1~M8

Stereo range



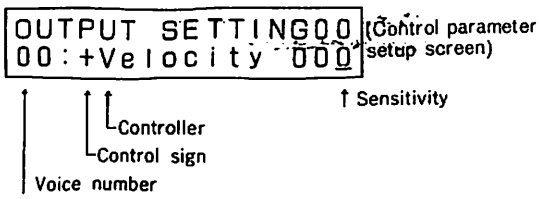
MULTI OUT jack



★ Setting the output for MULTI OUT automatically switches the sound mode to MONO. Note, however, that the display reading retains the setting for the PLOY mode, which is cleared once MULTI OUT is selected. For a well-balanced output, assign cymbal and other POLY-mode sounds to stereophonic output and bass drum, tom, and other non-polyphonic sounds to MULTI OUT.

[2] Setting the Pan-pot Control Parameter

① Press the OUTPUT key a second time to access the control parameters.



② Move the cursor to the control sign field, then specify whether the control parameter will pan the output towards the left or right, using the VALUE key. If the plus sign is selected, the output will shift from L3 to R3 as the key note number or velocity value increases. Selecting the minus sign sets the pan control the other play round.

★ If the pan-pot parameter is set to L3, setting the control sign to minus will not shift output towards the left any further. If the parameter is set to R3, the control sign set to plus is incapable of shifting output towards the right any further.

③ Move the cursor to the controller filed, then set it to velocity or keynote number, using the VALUE keys. Use the VALUE keys to switch between "Velocity" and "Note/PDL".

④ Move the cursor to the sensitivity field, then specify the control parameter sensitivity within the 000 to 006 range, using the VALUE keys.

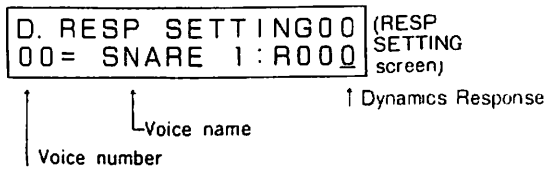
RESPONSE

In addition to velocity data from drum pads or keyboard, the DRM-1 recognizes foot controller action and MIDI keynote numbers to change the output volume. Unlike the OUTPUT level parameters which make the individual voice output well-balanced, the RESPONSE parameter sets up the dynamic response which varies the output in accordance with foot controller action and MIDI keynote numbers.

[1] Setting the RESPONSE Parameter

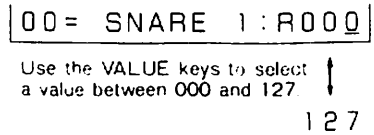
The RESPONSE parameter specifies the level on which changes will be based.

① Press the RESPONSE key to select the RESP SETTING screen.



② Select the voice number, using the SELECT key.

③ Specify a value for the dynamic response, using the VALUE keys.



[2] Setting the RESPONSE Control Parameter

① Press the RESPONSE key a second time to access the control parameter.

② Move the cursor to the control sign field, then specify whether the control parameter will increase or decrease the dynamics response, using the VALUE keys. Selecting the plus sign increases the dynamics response output beyond that defined by the LEVEL parameter as the key not number or velocity value increases. Selecting the minus sign decreases the dynamic response as velocity increases.

★ When the control sign field is set to "-", increasing velocity reduces the output level. If the dynamics response is set to 127, using the "+" control sign causes the output to start from the highest level before the control parameter can cause changes.

③ Move the cursor to the controller field, then set it to velocity or keynote number, using the VALUE keys. Coarse level changes will result by selecting "Note/PDL", which uses only 12 steps as opposed to "Velocity", using 128 steps.

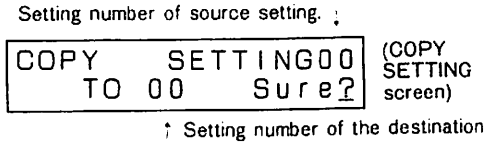
④ Move the cursor to the sensitivity field, then specify the control parameter sensitivity within the 000 to 015 range, using the VALUE keys. If the sensitivity setting is 000, the control parameter will completely suppress velocity-dependent changes. If the dynamic response is set to 000, no sound will be generated. Otherwise, increasing the sensitivity expands the range of velocity-controlled changes.

COPY

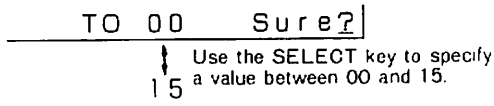
The COPY function allows a complete backup copy to be made of the sound parameters in a setting. It does this by copying the entire setting to an area allocated to an unused setting number. This function is useful in situations where the original setting is to be saved, but another version is to be made based on this original setting. Edited parameters may also be returned to the default values (standard settings used by KORG).

[1] Copying a Parameter Setting

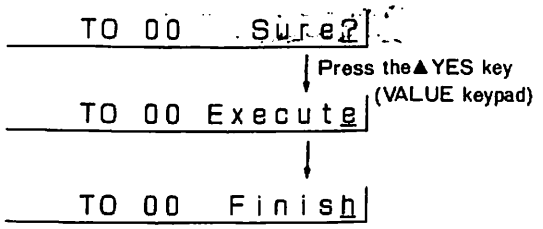
① Press the COPY key to select the COPY SETTING screen.



② Select the setting number of the destination. Do not select the setting number for data which is to be retained. New data will overwrite any data at the destination.



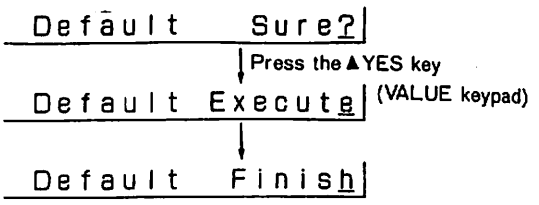
③ Press the ▲YES key (VALUE keypad) to start copying. Pressing the ▼NO key (VALUE keypad) instead cancels copying and sends control back to Step (2) where the SELECT key was pressed.



2 Restoring the Default Parameter Setting

① Press the COPY key a second time to select the "Default" prompt.

② Press the ▲YES key (VALUE keypad) to restore the default values. Pressing the ▼NO key (VALUE keypad) instead cancels the command. Pressing the ▲YES key will replace the selected setting with the default values.



★ When copying is complete, the display remains inactive with the "Finish" message, which indicates that the next operation may follow.

EDITING THE PARAMETERS 2

⟨PATTERN GROUP⟩

Outline of Operation

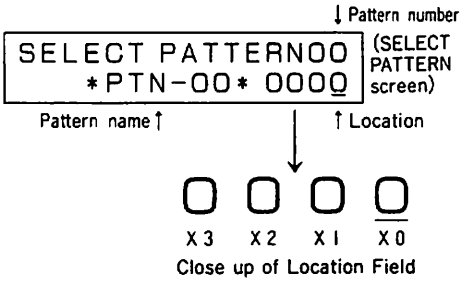
In addition to the capabilities for a drum sound source module, the DRM-1 incorporates the functions of a digital sequencer. While the SETTING group provides editing facilities for sound parameters, the PATTERN group allows access to all sequencer functions.
The built-in sequencer accepts data from drum pads or a MIDI keybaord. It employs a real-time input system which allows saving rhythm pattern data with the ease of a tape recorder. Any changes may be made to pattern data in memory by means of punch-in, punch-out, or overdubbing.
The DRM-1 stores pattern data for up to sixteen songs, together with user-defined titles. RAM cards are available as external storage options.

Location Display

The location field of the display shows the progress of a tune being recorded or played back. The reading appears in a four-digit value starting from 0000, which corresponds to the beginning of a tune. Unlike the tape counter on a tape recorder, the readout pace varies with the tempo of a tune because it always advances in increments of a quarter note.
In a quarter-measure tune, for example, the reading advances in increments of four (0004) per measure, which is equivalent in value to four quarter notes.

Changing the Location

When rhythm pattern data is inactive, the SELECT PATTERN screen allows changing from one location to the other as long as the readout remains on the display. The following section explains how to change the location with the PATTERN key.



Close up of Location Field

When the cursor is in the location field, the ▲ and ▼ keys on the VALUE keypad move the current location back and forth, respectively. The rate of increment or decrement in reading varies with the cursor position (X0, X1, X2, or X3).

1. Cursor in the X0 position
   Holding down the ▲ key continues changing the location in increments of one; holding down the ▼ key, in decrements of one. The DRM-1 plays back the tune as the value is changed. Decrementing the value plays the data backwards, but timbres do not reverse. A location lower than 0000 is used for recording an introduction.
2. Cursor in the X1 position
   The value changes in the manner just described, except that reverse playback is not available.
3. Cursor in the X2 position
   Holding down the ▲ key continues changing the location in increments of four; holding down the ▼ key, in decrements of four. For a quarter-measure tune, the reading changes per bar line. Playback is not available.

4. Cursor in the X3 position
   Holding down the ▲ key continues changing the location in increments of three; holding down the ▼ key, in decrements of three. For a three-quarter measure, the reading changes per bar line. Playback is not available.

★ The location cannot be set beyond 0000 if there is no rhythm pattern data in memory.

Setting Up the Tempo

The PATTERN group allows four different approaches for determining the tempo:

1. Using the TEMPO key to change or set the numerical value defining the initial tempo (See page 17.)
2. Varying the REC TEMPO value.
3. Controlling the pedal stroke of a foot controller (EXP-2, etc.) connected to the POT PEDAL jack (See page 21.)
4. Controlling the foot switch connected to the TAP TEMPO jack for use as a tap tempo switch (See page 16.)

START

The START key is used to start playback of a preset rhythm pattern. Press this key before entering or editing a rhythm pattern because the DRM-1 is designed for a real-time write operation. The START key always starts playback from the location displayed.

STOP

The function of the STOP key is two-fold: inserting a pause during the recording or playback process of the built-in sequencer or initializing the location count to 0000.
Pressing the STOP key during sequencer operation causes a pause in the current location. Because this does not cause a reset, pressing the START key starts the sequencer operation from the point where it was interrupted. (Continue, Start)
Pressing the STOP key when the sequencer is idling resets the location to 0000.

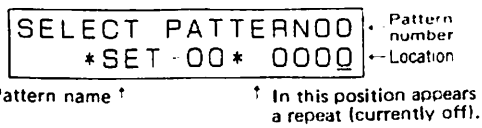
PATTERN

The PATTERN key is used to specify the pattern number, create a pattern name, turn repeat control on and off, and initiate a regular playback process.
Pressing the START key while in the SELECT PATTERN screen starts playback from the location displayed.

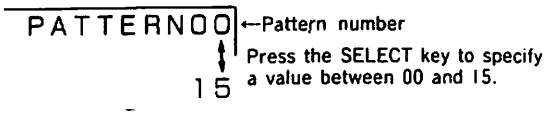
1 Selecting a Pattern Number

① Press the PATTERN key to select the SELECT PATTERN screen. If the repeat control is on, the display will show a repeat (:‖).

(SELECT PATTERN screen)



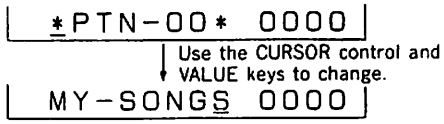
② Select the pattern number, using the SELECT key.



2 Creating a Pattern Name

The selected rhythm pattern may be assigned a name consisting of up to eight alphanumeric characters including symbols. If not necessary, this entire step becomes optional.

① Place the cursor under the character to be changed.
② Select the new character, using the VALUE keys.

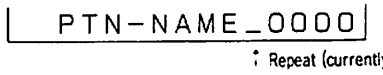


★ See page 7 for the list of characters valid in a setting name.

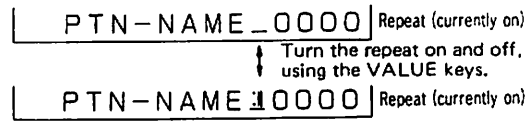
3 Turning On and Off the Repeat Control

Turning on the repeat control sets up an endless loop, in which the same passage is continuously repeated from location 0000 until the STOP key is pressed.

① Set the cursor between the pattern name and location fields.



② Turn the repeat on an off, using the VALUE keys.

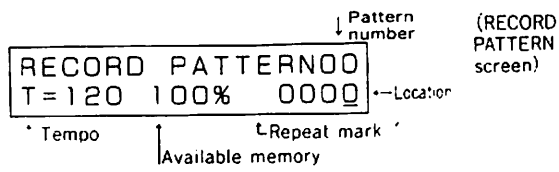


REC

The REC key allows access to parameters for recording rhythm patterns. When pressed, the REC key brings up a screen for specifying the tempo, introduction count, and other parameters used during recording. Pressing the START key terminates the parameter setting screen and starts recording, during which the DRM-1 continues recording rhythm patterns exactly as they are played on drum pads or a MIDI keyboard. The DRM-1 also allows use of a foot switch for sound generation. See the sections for the SYSTEM proup (page 20) and MIDI group (page 24) before starting.

1 Recording Rhythm Patterns

① Press the REC key to select the RECORD PATTERN screen.



The tempo field indicates the playback tempo, which is adjustable within the 040 to 250 range. The available memory indicates the amount of free space left in memory. A readout of 100% indicates very samll memory consumption. If the repeat control is enabled, the display will also show a repeat (:‖).

★ Pressing the REC key automatically sets the location to 0000 independent of the amount of data in memory. Because a location reset sets the value to 0000, make sure that you do not inadvertently overwrite important data.

② Move the cursor to the tempo field, then specify the value to be used during recording. If the tempo has already been set (with the TEMPO key, tap-tempo switch, etc.), this step becomes optional.

```
T=040 100%  0000
```

↕ Use the VALUE keys to specity a value between 040 and 250.

250

③ If the location is set below 0000 (−16 at the lower limit), recording will start after an introduction. Setting the location to −4, for example, starts recording after a count of four beats. (If not necessary, this step becomes optional.)

```
T=040 100%  0000
```

Use the VALUE keys to specify a value between −16 and 0000. ↕

−16

④ Press the START key to start recording. If the location is set to below 0000, recording will follow an introduction. If a foot switch (tap tempo switch) is used, depressing it as many times as the number of beats in the specified introduction count automatically sets the tempo and starts recording.

⑤ Once recording starts, the DRM-1 records rhythm patterns exactly as they are played on the MIDI keyboard or drum pads.

To terminate recording, press the STOP key.

Pressing the STOP key also interrupts recording in midstream. When restarting from the beginning, the rhythm patterns just recorded remain in memory until you erase them. Make sure that you do not dub the new patterns over the old ones. (See the COPY section on page 22 for details.)

To run playback, press the STOP key a second time to reset the location, then press the PATTERN and START keys. Playback is possible immediately after recording, but pressing the PATTERN switch disables the overdubbing mode, which remains in effect after recording.

★ Once rhythm patterns are recorded, they may be overdubbed so the playback sequence may become longer.

This is true only if a repeat sign was not selected before overdubbing.

<Using a Tap Tempo Switch>

A foot switch connected to the TAP TEMPO jack functions as a tap tempo switch. Depressing the switch as many times as the number of beats assigned to the introduction automatically sets the tempo, then starts the rhythm pattern.

The DRM-1 checks the last two strokes of the foot switch to determine the length of a quarter tone it will use independent of the specified introduction count. Depressing the foot switch will not change the tempo outside the 040 to 250 range.

② Overdubbing

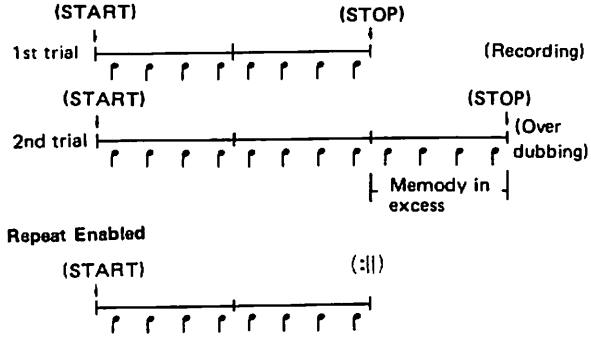
Overdubbing is a technique that allows addition of new rhythm patterns in time to the previous ones being played back. It is used for correcting rhythm pattern errors, adding snare and cymbal sounds to prerecorded bass drum patterns, and other such possibilities. The operating procedure is essentially the same as that for recording.

Set the location to the part where overdubbing will start, set up, if necessary, the tempo, resolution, and other parameters, then press the START key.

To interrupt overdubbing, press the STOP key. If the repeat control is on, playback will be repeated until the STOP key is pressed.

Setting the location one or to bars before makes it easier to start overdubbing in time.

Recording and Overdubbing **Figure 7**



ERASE

The ERASE function erases part of the recorded rhythm patterns in units of quarter notes. Typically, this function fixes errors in prerecorded rhythm patterns in overdubbing mode.

Data can be erased from a particular voice or every voice, whichever is in the location specified by the user.

The ERASE function can also remove preset parameters for changing the tempo. (See page 17 for more information.)

① Press the ERASE key to select the ERASE PATTERN screen.

↓ Pattern number

```
ERASE  PATTERN00
00= SNARE 1 0000
```

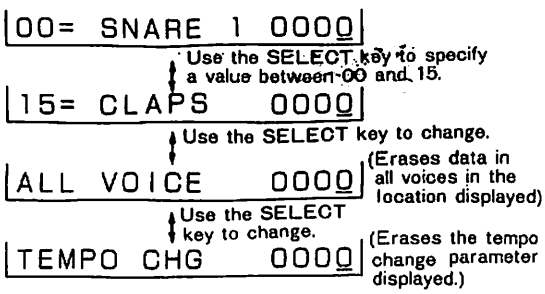
(ERASE PATTERN screen)

Sound name ↑ ↑ Location

② Use the CURSOR control and VALUE keys to move towards the targeted location. Select a location one to two bars before the point where erasure should start to provide a sufficiently long interval to keep time with the playback.

This does not erase any data in the specified location. (If necessary, it is possible to set up an introduction in a manner similar to that used for recording.)

③ Specify the voice number of the data to be erased, using the SELECT key.



④ Press the START key. Playback will start from the specified location. Keep time by listening to the playback before you reach the location containing the rhythm pattern to be erased.

⑤ The YES key(▲ key on the VALUE keypad) starts erasing data from the point where it is pressed. Pressing the NO key(▼ key) stops erasing the data, but playback will continue until the STOP key is pressed. Pressing the STOP key in midstream terminates the erase function and playback at the same time.
To erase data from the beginning of a tune, press the YES key before an introduction ends. Unless it is terminated during playback, the erase function will not stop until it reaches the end of the rhythm patterns. Press the STOP key to terminate the playback if the repeat control has been enabled while in the SELECT PATTERN screen.

★ Once the ERASE key is pressed, the VALUE key response changes depending on whether rhythm patterns are run or not. The VALUE keys turn the erase function on and off when rhythm pattern playback is on, or combine with the CURSOR control keys to select a location when playback is off.

DELETE

The DELETE function removes part of the rhythm pattern data in units of quarter notes. Typically, this function removes part of a tune in excess of the cadence. It is also used to adjust playback timings before and after a repeat.

> The DELETE function does not replace data with a rest of the corresponding length, but removes the duration containing that data. When deleting data, make sure that the entire duration of a tune does not change.

① Press the DELETE key to select the DELETE PATTERN screen.

② Use the CURSOR control and VALUE keys to move towards the targeted location. Select a location one to two bars before the point where deletion should start to provide a sufficiently long interval to keep time with the playback. If necessary, it is possible to set up an introduction in a manner similar to that used for recording.

③ Press the START key. Playback will start from the specified location. Keep time by listening to the playback before you reach the data to be deleted.

④ The YES key(▲key on the VALUE keypad) starts deleting data from the point where it is pressed. Pressing the NO key (▼key) stops deleting the data, but playback will continue until the STOP key is pressed. Pressing the STOP key in midstream terminates the delete function and playback at the same time.
Unless it is terminated during playback, the delete function remains in effect until the end of a tune is reached. A repeat at the end of the tune will be ignored.

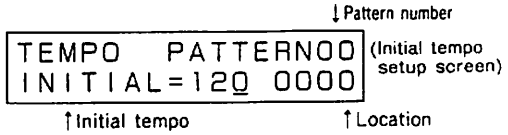
★ Once the DELETE key is pressed, the VALUE key response changes depending on whether rhythm patterns are run or not. The VALUE keys turn the delete function on and off when rhythm pattern playback is on, or combine with the CURSOR control keys to select a location when playback is off.

TEMPO

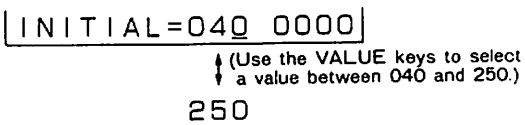
The TEMPO key provides principle control for setting the initial tempo among the four available on the DRM-1. The key also enables the tempo change parameter which redefines the tempo parameter in units of quarter notes.

[1] Setting the Tempo

① Press the TEMPO key to select the TEMPO PATTERN screen.



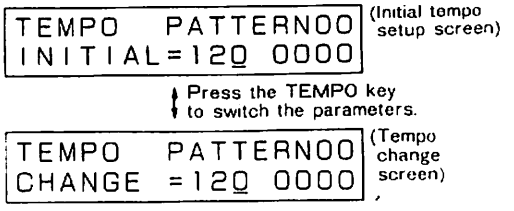
② Set the tempo, using the VALUE keys.



[2] Using the Tempo Change Parameter

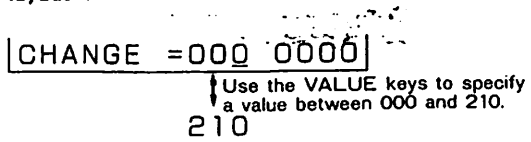
The tempo change is a parameter that indicates the increase or decrease in tempo during a playback. It writes new values in memory where the tempo will change while in the overdubbing mode.

① Press the TEMPO key a second time after selecting the TEMPO PATTERN screen.



② Specify the amount of tempo changes, using the VALUE keys. The tempo change indicates the in-

crease or decrease relative to the initial playback tempo. It corresponds to the sum of the initial and tempo change values when it accelerates playback and to the drop in the initial tempo when it slows playback.

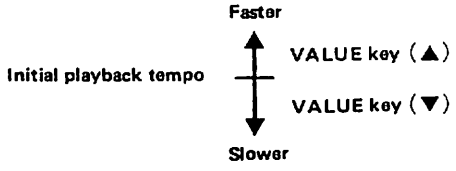


③ Use the CURSOR control and VALUE keys to move towards the targeted location. Select a location one to two bars before the point where the tempo will be changed to provide an interval long enough to keep time with the playback. (If necessary, it is possible to set up an introduction in a manner similar to that used for recording.)

④ Press the START key. Playback will start from the specified location. Keep time by listening to the playback before you reach the location where the tempo should change.

⑤ To increase the tempo, press the ▲ key (on the VALUE keypad); to slow down the tempo, press the ▼ key. These keys allow tempo changes in as many locations as possible during the playback. Pressing the TEMPO key returns you to the initial tempo.
Making a series of small tempo changes allow delicate expressions such as *retardando*. Pressing the STOP key in midstream terminates the tempo change function.

If the repeat control is enabled, always use the STOP key to exit the endless loop after tempo changes.



The following example sets the initial tempo to 120 and the tempo change to 30.

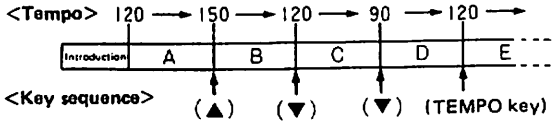


Figure 8

To remove tempo change data from memory, use the ERASE function in a manner similar to that for erasing voice data. Figure 8 shows erasure starting from location A up to location B. The tempo change data in memory after erasure appears in Figure 9.

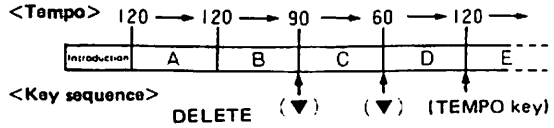


Figure 9

Playing a tune backwards and restarting it only within locations where a tempo change is in effect will not produce the expected result because playback always starts with the initial tempo. Such a situation will also arise if you change the location without playback sound. After fast playback forward, however, playback always uses the tempo as expected.

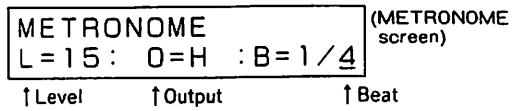
★ The DRM-1 does not allow tempo settings outside the 040 to 250 range. Setting the tempo change to 120 at an initial tempo of 150 will therefore not speed up playback to 270, but set it to 250. When slowed down by 120, playback will not run at −30, but stay at 040.

METRONOME

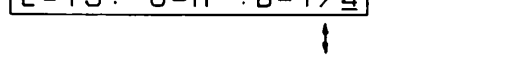
The METRONOME key sepecifies the time signature, output level, and output destination of metronome beats.

[1] Setting the Time Signature

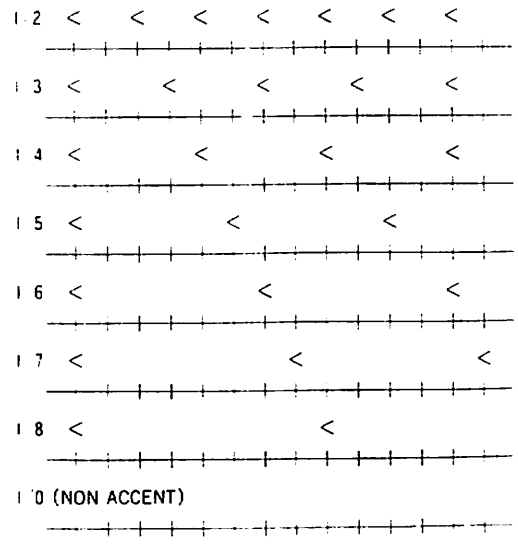
① Press the METRONOME key to select the METRONOME screen.



② Move the cursor to the beat field, then specify how many beats will occur per measure, using the VALUE keys.



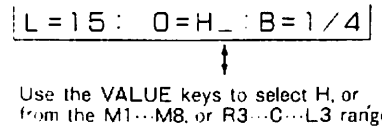
< = ACCENT



[2] Setting the Output Destination

① Press the METRONOME key to select the METRONOME screen.

② Move the cursor to the output field, then specify the metronome output level, using the VALUE keys.



Where H specifies output only to the PHONES jack.
M1 to M8 select output to MULTI OUT jacks 1 to 8, and
R3 to L3 pan output across the left-to-right stereo range. (C selects the center.)

3 Setting the Output Level

① Press the METRONOME key to select the METRONOME screen.
② Move the cursor to the level field, then specify the output level, using the VALUE keys.

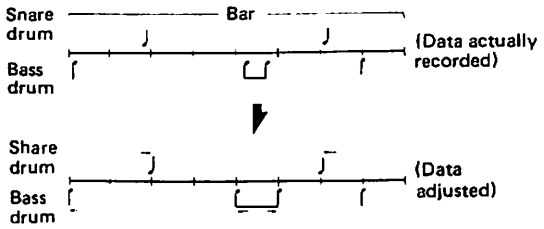
```
L=15: 0=H :B=1/4
```
↕ Use the VALUE keys to select a value between 15 and 00.
00

RESOLUTION

On the DRM-1, resolution indicates the number of rhythm segments definable per increment in location count, which is equivalent in duration to a quarter note. A resolution of 1/2, for example, indicates half the duration of a quarter note so that the minimum definable timing is equivalent to an eighth note.
When resolution is changed, the DRM-1 automatically adjusts timing control for all prerecorded rhythm patterns. This feature, for example, allows separate recording control for each part using low resolution (1/2 to 1/4) for simple patterns of the bass drum, and high resolution (1/12 to 1/48) for intricate patterns of the snare drum and cymbals. At a low resultion, the DRM-1 automatically compensates for instability introduced during recording. Keeping the resolution near 1/48 allows the most accurate playback of rhythm patterns.

<Automatic Adjustment of Resolution>

Example: Resolution at 1/2 **Figure 10**



Setting resolution to match the recorded data causes the DRM-1 to automatically adjust the rhythm pattern resolution, which would otherwise be extremely difficult to enter in time at the precise timing of a metronome.

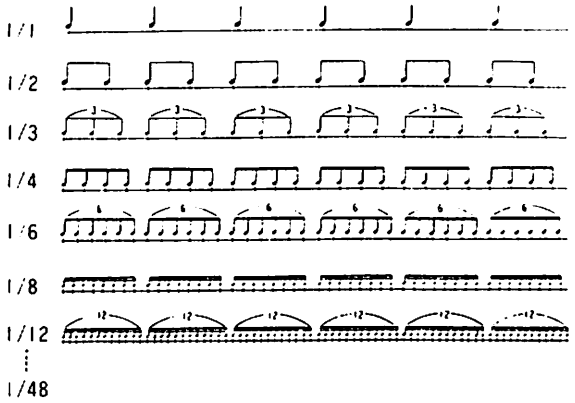
① Press the RESOLUTION key to select the RESOLUTION screen.

```
RESOLUTION
  PTN NAME 1/16
```
(RESOLUTION screen)
↑ Resolution

② Select the resoultion, using the VALUE keys.

```
PTN NAME 1/16
```
↕
Use the VALUE keys to select 1/1, 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/16, 1/24 or 1/48.

<Resolution>



COPY

The COPY function allows a complete backup copy of the rhythm pattern being edited. It does this by copying the entire pattern to an area allocated to an unused pattern number.
This function is useful in situations where the original pattern is to be saved, but another version is to be made based on this original pattern. It is also used to clear an edited rhythm pattern assigned to a pattern number.

1 Copying a Rhythm Pattern

① Press the COPY key to select the COPY PATTERN screen.

Source pattern number ↓

```
COPY   PATTERN00
  TO 00   Sure?
```
(COPY PATTERN screen)
↑ Destination pattern number.

② Select the destination pattern number, using the SELECT key. Do not select the number for data which is to be retained. New data will overwrite any data at the destination.

```
TO 00   Sure?
```
↕ Use the SELECT key to specify a value between 00 and 15.
15

③ Press the ▲YES key (VALUE keypad) to start copying. Pressing the ▼ NO key instead cancels copying and sends control back to Step (2) where the SELECT key was pressed.

```
TO 01   Sure?
```
↓ Press the ▲ key (VALUE keypad)

```
TO 01 Execute
        ↓
TO 01 Finish
```

[2] Clearing a Rhythm Pattern

① Press the COPY key twice in a row to select the CLEAR screen.

```
COPY    PATTERN00
  CLEAR    Sure?
```
(CLEAR screen)

② Press the ▲ YES key (VALUE keypad) to restore the default values. Pressing the ▼ NO key (VALUE keypad) instead cancels the command and returns you to the COPY PATTERN prompt. A push on the ▲ (YES) key clears all data recorded in the pattern group.

```
CLEAR    Sure?
          ↓ PRESS the ▲ key (VALUE keypad).
CLEAR Execute
        ↓
CLEAR Finish
```

★ Subsequent operation is not allowed until the display reads the "Finish" message, which indicates that the next operation may follow.

EDITING THE PARAMETERS 3

⟨SYSTEM GROUP⟩

Besides a MIDI keyboard, the DRM-1 accepts input from drum pads, a foot controller, and a foot switch, which are controlled by the system parameters. The DRM-1 also provides internal storage facilities for such parameters, some of which require frequent user control. This section explains how to control the system parameters to help exploit the full capabilties of the DRM-1.

PAD SET

The PAD SET key allows access to parameters for corresponding drum pad. The display cycles through the following three settings each time the PAD SET key is pressed:

```
PAD1 S=12 V=000          (PAD sense screen)
        ↕ PAD SET KEY
PAD1        INH=01
CHG=16      TRG=01       (PAD parameter screen)
        ↕ PAD SET KEY
PAD1  Function
Nothing                  (PAD function screen)
```

[1] Setting the Pad Sensitivity

① Press the PAD SET key to select the PAD sense screen.

```
PAD number
   Sensitivity
      Velocity
PAD1 S=12 V=000          (PAD sense screen)
```
* Input Level

② Select the pad number, using the VALUE keys. A tap on a drum pad automatically selects the corresponding pad number, regardless of the cursor position on the display.

```
PAD1 S=12 V=000
   ↕ Press the VALUE key or hit a drum pad.
   7
```

③ Move the cursor to the sensitivity field, then specify the pad sensitivity within the 01 to 16 range, using the VALUE keys. Adjust the value while playing on the selected drum pad. A tap on the pad changes the velocity reading beyond 000 and brings up a graphic intensity indicator on the screen. Adjust the sensitivity so that velocity ranges between 006 and 015 (one indicator scale) at pianissimo and between 120 and 127 (full indicator reading) at fortissimo.

```
PAD1 S=01 V=000
   ↕ Use the VALUE keys to select a value between 01 and 16.
   16
```

Display reading at pianissimo (minimum input)

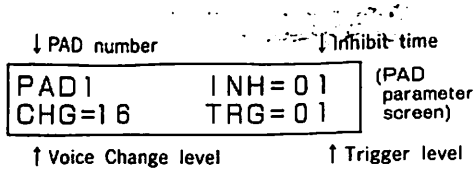
```
PAD1 S=12 V=007
■
```

Display reading at fortissimo (maximum input)

```
PAD1 S=12 V=127
■■■■■■■■■■■■■■■■
```

[2] Setting the Pad Parameters

The pad parameters include the trigger level, voice change level, and inhibit time, each controlling the independent drum pad input.



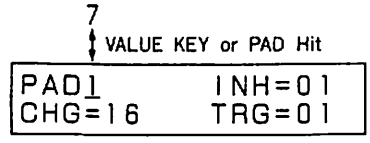
Trigger Level (TRG):
The TRG parameter determines the minimum input level that allows DRM-1 to respond to input when driven by an audio signal or drum pads.

Voice Change Level (CHG):
The DRM-1 is capable of switching between the MAIN and SUB voice settings, depending on the input level of drum pad or audio signals. The voice change level indicates the level of the drum pad or audio signal input at which the voice setting changeover will take place. The MAIN setting is selected when input falls short of the preset CHG level; it switches to the SUB setting when input exceeds the CHG level.

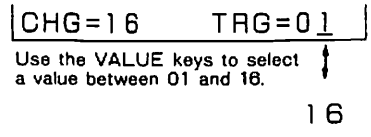
Inhibit Time (INH):
The inhibit time is the duration in which the DRM-1 will not respond to any audio signal or drum pad input. When driven by audio signals, the DRM-1 can fail to operate properly when it receives input with an extreme quantity of trailing notes, delay, or reverb effects. The INH parameter prevents such problems when it is assigned an inhibit time long enough to avert such input.

A. Setting the Trigger Level

① Press the PAD SET key a second time to select the pad parameter screen, then select the pad number.



② Move the cursor to the TRG field, then set the trigger level, using the VALUE keys.

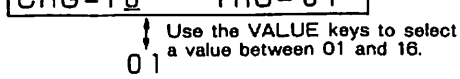


★ Once the TRG parameter is set, the DRM-1 will not respond to input below the specified trigger level, but cuts it off as noise. Increase the trigger level if proper input fails.

B. Setting the Voice Change Level

① Select the pad parameter screen and select the pad number.

② Move the cursor to the CHG field, then set the voice change level, using the VALUE keys. The MAIN voice setting is selected when input falls short of the preset CHG level; it switches to the SUB setting when input exceeds the CHG level. (See page 10 for details on the MAIN and SUB voice settings.)

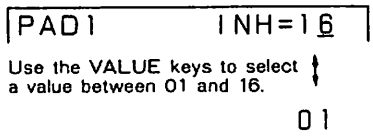


★ Setting the voice change level to 01 enables output using the MAIN and SUB settings; setting it to 16 enables output using the MAIN setting alone.

C. Setting the Inhibit Time

① Select the pad parameter screen and select the pad number.

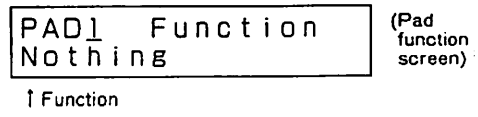
② Move the cursor to the INH field, then set the inhibit time, using the VALUE keys.



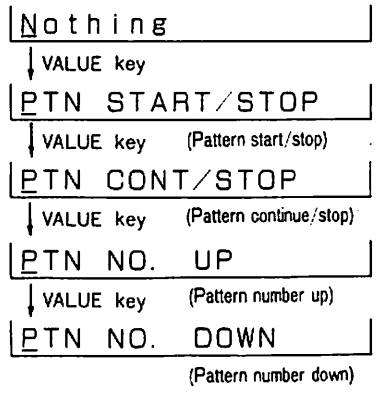
[3] Setting Up the Pad Functions

Tapping on the drum pads not only feeds rhythm sources to the DRM-1, but also conrtrols five pad functions: PTN START/STOP, PTN CONT/STOP, PIN NO. UP, and PTN NO. DOWN. Each drum pad can be set up for any one of these functions.

① Press the PAD SET key a second time to select the pad function screen.



② Select the necessary function, using the VALUE keys.



Nothing
When set to "Nothing", the pad function does not allow any user control except for generating sounds.

PTN START/STOP
This function controls rhythm pattern playback. When playback is off, tapping a drum pad starts a recorded rhythm pattern; tapping it a second time stops the playback and resets the location count.
If the rhythm pattern contains a repeat, the playback will continue in an endless loop until stopped by the user.

PTN CONT/STOP
This function controls rhythm pattern playback. Tapping a drum pad starts playback; tapping it a second

time stops the playback but does not reset the location count. Playback will continue from the last location reached the next time it is started.
If the rhythm pattern contains a repeat, the playback will continue in an endless loop until stopped by the user.

PTN NO. UP
This function selects a pattern number one step below the current number each time the drum pad is tapped.

PTN NO. DOWN
This function selects a pattern number one step above the current number each time the drum pad is tapped.

PEDAL

The PEDAL key selects one of the two functions assignable to the foot controller—the EXP-2, for example—which is connected to the POT PEDAL jack: one function determines the voice control range defined by control parameters and the other controls the parameter for varying the tempo with the pedal stroke of a foot controller.
When the cursor is in the lower left corner of the display, pressing the VALUE key alternates the display between the voice and tempo control screens. Select one of these foot controller functions.

```
PEDAL Function
VOICE:V=00 U=12
```
(Voice control screen)

↕ Use the VALUE key to switch the screens.

```
PEDAL Function
TEMPO:R=040-250
```
(tempo control screen)

1 Setting the Voice Control Range

① Press the PEDAL key to select the voice control screen.

```
PEDAL Function
VOICE:V=00 U=12
```
(Voice control screen)

↑ Voice no. ↑ Upper range

② Move the cursor to the voice no. field, then select the voice number, using the VALUE keys.

```
VOICE:V=00 U=12
```
↕ Use the VALUE keys to select between 00 and 15.
15

③ Move the cursor to the upper range field, then specify a value between 00 and 12 to define the controllable range. Setting the range to 00 disables the voice control function.

```
PEDAL Function
VOICE:V=01 U=12
```
(Voice control screen)

Use the VALUE keys to select between 00 and 12. ↕
00

2 Setting the Tempo Control Function

① Press the VALUE key to switch the display from the voice control to tempo control screen.

```
PEDAL Function
TEMPO:R=040-250
```
(Tempo control screen)

↑ TEMPO A ↑ TEMPO B

② Specify the tempo control range, using the CURSOR control and VALUE keys. The above screen shows a tempo control range starting from 040, at which the foot controller pedal remains fully raised. Depressing the pedal increases the tempo towards the upper limit of 250 as the pedal approaches the end of its stroke.
If the value for Tempo B is greater than that of Tempo A, depressing the foot controller pedal continues increasing the tempo. Reversing the Tempo A and Tempo B settings produces the opposite effect.

```
TEMPO=040-250
```
↕ ↕ Use the VALUE keys to select between 040 and 250 for each field.
250 040

★ If Tempo A and Tempo B have the same value, the foot controller is incapable of changing the tempo.

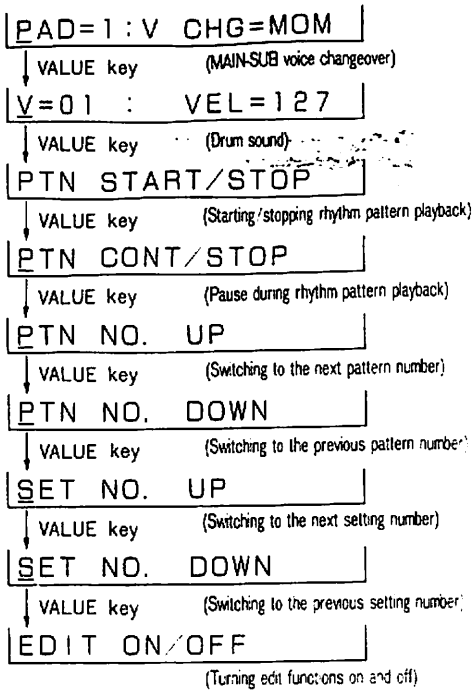
FOOT SW

On the rear panel of the DRM-1 are two foot switch jacks, one of which is for tempo control only. (See page 17 for more information.)
The function of the foot switch connected to the non-dedicated jack may be set up in a variety of ways. This section explains how to use the FOOT SW key, which controls the operation of the foot switch.
The foot switch can be set up for one function at a time. Assignable functions include: generating drum pad sound on a foot switch; switching a drum pad between the MAIN and SUB voice settings; starting and stopping rhythm pattern playback (PTN START/STOP); inserting a pause during rhythm pattern playback (PTN START/STOP); inserting a pause during rhythm pattern playback (PTN CONT/STOP); shifting a pattern number back and forth (PTN NO. UP and DOWN); shifting a setting number back and forth (SET NO. UP and DOWN); and turning the edit functions on and off.

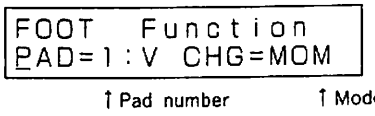
① Press the FOOT SW key to select the foot switch function screen.

```
FOOT Function
PAD=1:V CHG=MOM
```
(Foot switch function screen)

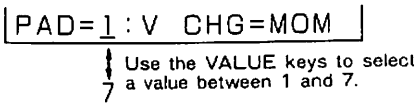
② When the cursor is in the lower left corner of the screen, pressing a VALUE key cycles the display through the following function screens:



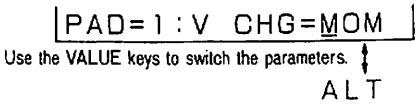
MAIN-SUB Voice Changeover
This function causes the foot switch to alternate a drum pad between the MAIN and SUB voice settings.



① Select a pad number, using the CURSOR control and VALUE keys.

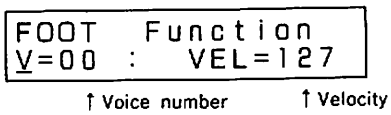


② Move the cursor to the mode field, then select the MOM or ALT paramter, using the VALUE keys.

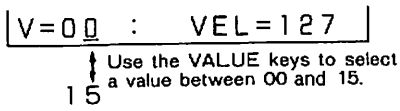


MOM: Momentary
This parameter enables the SUB voice setting while the foot switch stays on.
ALT: Alternate
This parameter switches between the MAIN and SUB voice settings each time the foot switch is pressed.

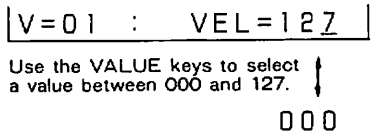
Drum Sound
This function allows the foot switch to trigger a sound generator, which usually generates sounds on receiving drum pad input. The DRM-1 will produce drum pad sounds each time the foot switch is depressed.



① Select a voice number, using the CURSOR control and VALUE keys.



② Move the cursor to the velocity field, then specify velocity, using the VALUE keys.



PTN START/STOP
This function allows a foot switch to control rhythm pattern playback. Depressing the foot switch starts playback; depressing it a second time stops the playback and resets the location count.
If the rhythm pattern contains a repeat, the playback will continue in an endless loop until stopped by the user.

PTN CONT/STOP
This function allows the foot switch to control rhythm pattern playback. Depressing the foot switch starts playback; depressing it a second time stops the playback, but does not reset the location count. Playback will continue from the last location reached the next time it is started. If the rhythm pattern contains a repeat, the playback will continue in an endless loop until stopped by the user.

PTN NO. UP
This function allows the foot switch to advance the pattern number by one each time the switch is depressed.

PTN NO. DOWN
This function allows the foot switch to access the previous pattern number each time the switch is depressed.

SET NO. UP
This function allows the foot switch to advance the setting number by one each time the switch is depressed.

SET NO. DOWN
This function allows a foot switch to access the previous setting number each time the switch is depressed.

EDIT ON/OFF
This function allows the foot switch to start or stop deletion of rhythm pattern data on pressing the switch. See pages 16 – 17 for the ERASE and DELETE functions of the PATTERN group.
In addition to the ▲(YES) and ▼(NO) keys on the VALUE keypad, the EDIT ON/OFF function allows the foot switch to start and stop the ERASE or DELETE function, whichever is in use. Depressing the foot switch starts the ERASE or DELETE function from the current playback location; depressing it a second time stops the function.

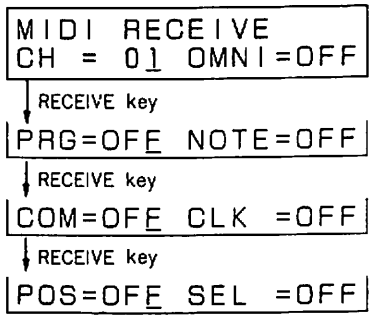
EDITING THE PARAMETERS 4

⟨MIDI GROUP⟩

RECEIVE

The RECEIVE key allows access to functions which selectively enable and disable a series of control parameters for receiving external MIDI messages. It is also used to determine the channel configuration for receiving MIDI messages.

The RECEIVE key cycles through the following parameter setup screens, each containing unique control parameters for receiving MIDI messages. To select a parameter, move the cursor to the corresponding field, using the CURSOR control and VALUE keys.



CH (MIDI Channel)
The CH parameter accepts a two-digit value between 01 and 16 for selecting the basic channel for receiving MIDI messages. This basic channel also accepts MIDI messages other than NOTE ON or NOTE OFF, which travels over the MIDI channel defined by the SETTING-group parameters.

ONMI (OMNI Mode On/Off)
This parameter turns the OMNI mode on and off. When on, the OMNI mode causes the DRM-1 to accept messages sent on all MIDI channels. The DRM-1 receives messages assigned to the channel only went set to OMNI off.

PRG (Program Change On/Off)
This parameter determines whether the DRM-1 will accept a program change, which is a MIDI message for switching the timbres. When on, the parameter allows the message to alter the current voice setting number. When the parameter is set to off, program change messages are ignored.

NOTE (NOTE On/Off)
When on, the NOTE parameter allows an incoming NOTE ON message (keystroke data) to trigger sound generation. When off, the parameter prevents the MIDI keyboard from triggering any notes, causing the DRM-1 will ignore the NOTE ON message.

COM (Command On/Off)
When on, this parameter allows message input for starting or stopping rhythm pattern playback (PTN START/STOP), or starting playback after a pause (PTN CONT/STOP). Setting this parameter off causes the DRM-1 to ignore such messages to inhibit synchronized start-stop control of playback.

CLK (Clock On/Off)
When on, this parameter allows use of external MIDI clock signals to run a rhythm pattern. The tempo control will depend on the equipment supplying the clock signals to the DRM-1. When the parameter is off, the DRM-1 uses its internal clock to determine the tempo.

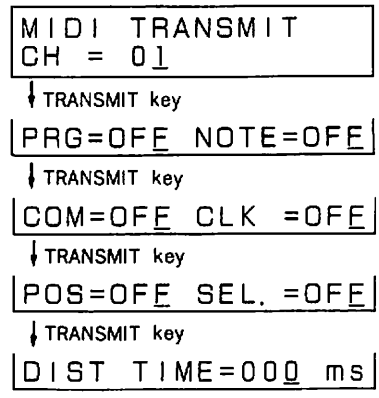
POS (Song Position Pointer On/Off)
When set to on, this parameter allows a song position pointer message from external MIDI equipment to select the playback location. (For details, see the "Location Display" section of the PATTERN-group functions on page 14.) When the POS parameter is off, the DRM-1 ignores any such messages and refers to the internally controlled location.

SEL (Song Select On/Off)
When set to on, this parameter allows a song select message from external MIDI equipment to select the pattern number. (For details, see the "PATTERN" section of the PATTERN group functions on page 15.) When the SEL parameter is off, the DRM-1 ignores any such messages and uses the internal pattern number.

TRANSMIT

The TRANSMIT key allows access to functions which selectively enable and disable a series of control parameters for sending MIDI messages to external equipment. It is also used to determine the channel configuration for receiving MIDI messages.

The TRANSMIT key cycles through all parameter setup screens, each containing unique control parameters for receiving MIDI messages. To select a parameter, move the cursor to the corresponding field, using the CURSOR control and VALUE keys.



CH (MIDI Channel)
The CH parameter accepts a two-digit value between 01 and 16 for selecting the basic channel for sending MIDI messages to external equipment. This basic channel also sends out MIDI messages other than NOTE ON or NOTE OFF, which travels over the MIDI channel defined by the SETTING-group parameters.

PRG (Program Change On/Off)
This parameter determines whether the DRM-1 will send a program change message to external equipment. When on, the parameter causes the DRM-1 to send the message once the voice number changes. When off, the parameter prevents transmission of program change messages.

NOTE (NOTE On/Off)
When on, this parameter causes drum pad or other input to trigger NOTE ON and OFF messages to be sent to external MIDI equipment.

COM (Command On/Off)
When on, this parameter allows the DRM-1 to send a message to external MIDI equipment when starting or stopping rhythm pattern playback (PTN START/STOP), or starting playback after a pause (PTN CONT/STOP). Setting this parameter to off causes the DRM-1 to suppress message transmission.

CLK (Clock On/Off)
When on, this parameter allows the DRM-1 to send internal clock signals to external MIDI equipment during rhythm pattern playback. When the parameter is off, the DRM-1 suppresses transmission of clock signals.

POS (Song Position Pointer On/Off)
When set to on, this parameter causes the DRM-1 to transmit a song position pointer message when selecting a new playback location. (For details, see the "Location Display" section of the PATTERN-group functions on page 14.) The message will not be transmitted when the cursor is in the XO position of the location field. (See the "Changing the Location" section for details.)

SEL (Song Select On/Off)
When set to on, this parameter causes the DRM-1 to transmit a song select message when selecting a pattern number. (For details, see the "PATTERN" section of the PATTERN-group functions on page 15.)

DIST TIME (Distance Time)
This parameter controls the duration between NOTE ON and NOTE OFF messages the DRM-1 sends to an external sound source. The duration may be changed in increments of 16 between 00 and 512 milliseconds (approximately 0 to 0.5 seconds). This parameter delays the NOTE OFF message to allow sound generation from an external sound source to have a longer gate or decay time.

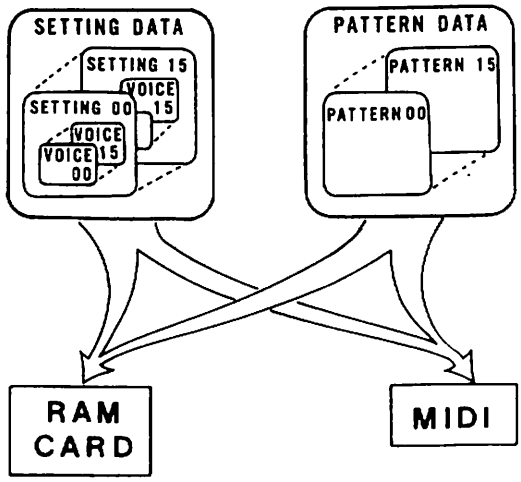
```
DIST TIME=000 ms
```
↕ Use the VALUE keys to set with in the 000 to 512 range.

512

EDITING THE PARAMETERS 5

⟨DATA TRANSFER GROUP⟩

The DATA TRANSFER group allows the DRM-1 to exchange memory contents such as rhythm patterns and parameter settings with a RAM card and other external MIDI equipment.
The Figure below shows how the DRM-1 transfers data, which is always sent in units of data assigned to pattern or setting number 00 to 15.
The DATA TRANSFER group also provides a function for a system reset, which returns the memory-resident settings to the default values. Initiating a system reset deletes all data for rhythm patterns or parameter settings. Be sure to back up the necessary data before a system reset.



The data stored on RAM and ROM cards is susceptible to loss due to static electricity. Before loading or removing a memory card, touch any one of the metal connectors on the back of the DRM-1. This procedure dischatges any static electricity that may be on your body.

SELECT

The SELECT key specifies whether the DRM-1 will exchange data with a memory card or external MIDI equipment. This key is also used to specify whether the data to be transferred contains rhythm patterns or settings.
① Press the SELECT key to bring up the DATA TRANSFER screen.

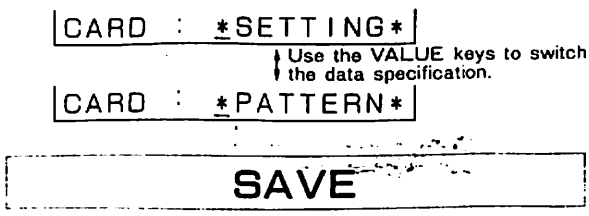
```
DATA TRANSFER
CARD : *SETTING*
```
(DATA TRANSFER screen)

↑ Data source ↑ Data specification

② Specify whether the DRM-1 will exchange data with a memory card or MIDI equipment, using the SELECT key.

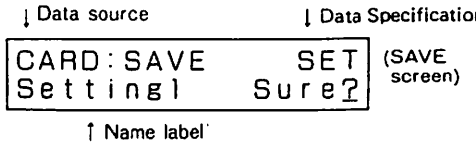
```
CARD : *SETTING*
MIDI
```
↕ Use the SELECT key to switch the data destinations.

③ Specify the contents of data, using the VALUE keys.



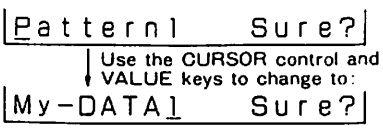
SAVE

If the DRM-1 has been set up for data exchange with a memory card, the pattern or setting data, whichever was specified with the SELECT key, must be assigned a name, then saved on the RAM card. For data exchange with MIDI equipment, the display does not prompt for a name label, but simply indicates the MIDI OUT channel in use.

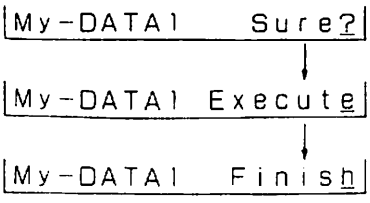


Once the SAVE key is pressed, the SELECT key does not allow any changes in the data specification or destination. Be sure to select these data transfer parameters before pressing the SAVE key.
The above screen sets the data specification to setting data and the destination to the memory card. If the pattern data is selected, the data specification parameter will switch to "PAT", rather than to "SET".
The following is a screen for which the data destination is set to MIDI. The screen shows the transmission channel as selected with the TRANSMIT key on the MIDI group keypad. The MIDI channel is unalterable on this screen. (See page 24.)

① The screen accepts a name consisting of up to eight alphanumeric characters or symbols. Place the cursor under the character to be changed, then select the new character with the VALUE keys. (See page 8 for the list of characters valid in a name label.)



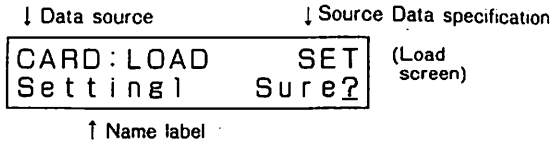
② Move the cursor to the end of the "Sure?" prompt. Press the ▲YES key (VALUE keypad) to save new data. Pressing the ▼NO key instead sends control back to the screen where the SELECT key was pressed.



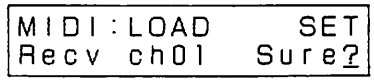
★ When the data destination is set to a memory card, the DRM-1 will displays a "ReRW?" prompt, which indicates that data of the same name exists on the card. Pressing the ▲YES key at this prompt replaces the existing data with the new one; Pressing the ▼NO key cancels the save operation. (See the list of major error messages on page 28.)

LOAD

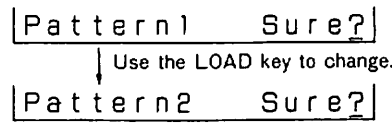
When the source of data is set to a memory card, the LOAD key starts transferring pattern or setting data, whichever was specified with the SELECT key, from the card to memory.



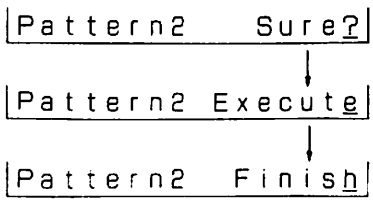
Once the LOAD key is pressed, the SELECT key does not allow any changes in the data specification or source. Be sure to select these data transfer parameters before pressing the LOAD key.
The following is a screen for which the source of data is set to MIDI. The screen shows the receive channel selected with the RECEIVE key on the MIDI group keypad. The channel is unalterable on this screen. (See page 24.)



① The LOAD key cycles through the list of names assigned to the data stored on the memory card. Press the LOAD key to select the name of the data to be loaded into memory. If the data specification is set to pattern data, the display does not list the names of setting data. Conversely, when the setting data is set, the display omits the pattern data names.



② Press the ▲YES key (VALUE keypad) to load the data into memory. Pressing the ▼NO key instead sends control back to the screen where the SELECT was pressed.



★ Loading new data overwrites any data existing in memory. To prevent inadvertent data loss, be sure to back up the necessary data beforehand.

DELETE

When the data destination is set to a memory card, the DELETE key removes pattern or setting data, whichever was specified with the SELECT key, from the card. It is also possible to delete all setting or pattern data on the card.

```
CARD:DELETE SET
Setting1    Sure?
```

Once the DELETE key is pressed, the SELECT key does not allow any changes in the data specification or destination. Be sure to select these data transfer parameters before pressing the DELETE key.
When the data destination is set to MIDI, the DELETE key allows a system reset, which returns the user-defined settings to the default values. (See the "System Reset" section on page 6 for details.)

① The DELETE key cycles through the list of names assigned to the data stored on the memory card. Press the LOAD key to select the name of data to be loaded into memory. If the data specification is set to pattern data, the display does not list the names of setting data.

To delete all data, select the "ALL-DATA" option. This option causes the DRM-1 to select all setting or pattern data, whichever was specified with the SELECT key.

```
Pattern1    Sure?
    ↓ Use the DELETE key to change.
Pattern2    Sure?
    ↓ Use the DELETE key to change.
ALL-DATA    Sure?
```

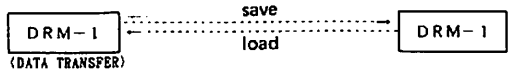
Pressing the DELETE key at this prompt erases all of the specified data.

② Press the ▲YES key (VALUE keypad) to delete the data. Pressing the ▼NO key instead sends control back to the screen where the SELECT was pressed.

```
Pattern2    Sure?
    ↓
Pattern2 Execute
    ↓
Pattern2  Finish
```

● **Exclusive Data Transfer using DRM-1.**

①When data is transferred, using two DRM-1s:
Operate only one DRM-1. The other DRM-1 does not necessitate providing a data transfer function.



② When communicating with a unit provided with MDR function:

(1) When saving DRM-1 data in MDR:

The DRM-1 initiates the SAVE function. Use "IN" function for MDR.

(2) When loading data to DRM-1 from MDR:

Set the DRM-1 to other than the data transfer function. Use "OUT" function for MDR.

● Exclusive data of DRM-1 does not have compatibility with SQD-1.

MAJOR ERROR MESSAGES

Memory card errors during SAVE	Err * No Card	① The SAVE key was pressed with no card in place. ② The YES key was pressed at the "Sure?" prompt with no card in place.
	Err * Card Error	The card was removed while the display was reading the "EXECUTE" message, which indicates a save process under way.
	Err * Verify Error	The slot contains a write-protected card.
	Err * Other Card	The SAVE key was pressed with a ROM card set in place.
	Err * Shortage	The card does not contain enough free space to save the data being written.
Memory card errors during LOAD	Err * No Card	① The LOAD key was pressed with no card in place. ② The YES key was pressed at the "Sure?" prompt with no card in place.
	Err * Card Error	The card was removed while the display was reading the "EXECUTE" message, which indicates a load process under way.
	Err * Other Card	The LOAD key was pressed when the shot in use contains a memory card which is non-standard or empty.
Memory card errors during DELETE	Err * No Card	① The DELETE key was pressed with no card in place. ② The YES key was pressed at the "Sure?" prompt with no card in place.
	Err * Card Error	The card was removed while the display was reading the "EXECUTE" message, which indicates a delete process under way.
	Err * Other Card	① The DELETE key was pressed when the slot in use contains a memory card which is non-standard or empty. ② The DELETE key was pressed when the slot in use contains a ROM card.
Memory error during MIDI LOAD	Err * No Reaction	The DRM-1 has failed to receive MIDI data due to an unplugged receive-channel cord, an open circuit, or other problems related to an external MIDI source.
Memory card error during LOAD, SAVE, or DELETE	Err * Battery	The RAM card contains a low backup battery. This message, however, is not indicative of a battery level so low that data may be lost.
Memory error during COPY	Err * Shortage	The DRM-1 does not have enough free space to handle data to be copied.

* Pressing the SAVE, LOAD, or SELECT key (or one of the SETTING or PATTERN keys) clears the error and sends control to the next screen.

MIDI IMPLEMENTATION

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

STATUS	SECOND	THIRD	DESCRIPTION
1000 nnnn	0kkk kkkk	0100 0000	NOTE OFF kkk kkkk = 0-127
1001 nnnn	0kkk kkkk	0vvv vvvv	NOTE ON kkk kkkk = 0-127 vvv vvvv = 1-127
1100 nnnn	0ppp pppp	- - - - - - - -	PROGRAM CHANGE ppp pppp = 0-15

NOTES: nnnn = MIDI Channel Number (0000 - 1111)

1-2 SYSTEM MESSAGES

STATUS	SECOND	THIRD	DESCRIPTION
1111 0010	0ggg gggg	0hhh hhhh	SONG POSITION POINTER ggg gggg = 0-127 hhh hhhh = 0-127
1111 0011	0sss ssss	- - - - - - - -	SONG SELECT sss ssss = 0-15
1111 1000	- - - - - - - -	- - - - - - - -	TIMING CLOCK
1111 1010	- - - - - - - -	- - - - - - - -	START
1111 1011	- - - - - - - -	- - - - - - - -	CONTINUE
1111 1100	- - - - - - - -	- - - - - - - -	STOP

2. RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

STATUS	SECOND	THIRD	DESCRIPTION
1000 nnnn	0kkk kkkk	0xxx xxxx	NOTE OFF kkk kkkk = 0-127 xxx xxxx = ignored
1001 nnnn	0kkk kkkk	0000 0000	NOTE OFF kkk kkkk = 0-127
1001 nnnn	0kkk kkkk	0vvv vvvv	NOTE ON kkk kkkk = 0-127 vvv vvvv = 1-127
1100 nnnn	0ppp pppp	- - - - - - - -	PROGRAM CHANGE ppp pppp = 0-15
1011 nnnn	0111 1100	0000 0000	OMNI MODE OFF
1011 nnnn	0111 1101	0000 0000	OMNI MODE ON

NOTES: nnnn = MIDI Channel Number (0000 - 1111)

2-2 SYSTEM MESSAGES

STATUS	SECOND	THIRD	DESCRIPTION
1111 0010	0ggg gggg	0hhh hhhh	SONG POSITION POINTER ggg gggg = 0-127 hhh hhhh = 0-127
1111 0011	0sss ssss	- - - - - - - -	SONG SELECT sss ssss = 0-15
1111 1000	- - - - - - - -	- - - - - - - -	TIMING CLOCK
1111 1010	- - - - - - - -	- - - - - - - -	START
1111 1011	- - - - - - - -	- - - - - - - -	CONTINUE
1111 1100	- - - - - - - -	- - - - - - - -	STOP

3. SYSTEM EXCLUSIVE DATA

3-1 PATTERN DATA DUMP

BYTE	DESCRIPTION	
1111 0000	EXCLUSIVE STATUS	
0100 0010	KORG ID	42H
0011 0000	FORMAT ID	3nH (n=CH)
0001 0111	DRM-1 ID	17H
0100 1000	PATTERN DATA DUMP	48H
0vvv vvvv	DATA	
.		
.	Variable Bytes Data	
.	(Data depends on pattern length.)	
.		
0vvv vvvv	DATA	
1111 0111	EOX	

3-2 PATTERN DATA DUMP REQUEST

BYTE	DESCRIPTION	
1111 0000	EXCLUSIVE STATUS	
0100 0010	KORG ID	42H
0011 0000	FORMAT ID	3nH (n=CH)
0001 0111	DRM-1 ID	17H
0001 0000	PATTERN DATA DUMP REQUEST	10H
1111 0111	EOX	

3-3 SETTING DATA DUMP

BYTE	DESCRIPTION	
1111 0000	EXCLUSIVE STATUS	
0100 0010	KORG ID	42H
0011 0000	FORMAT ID	3nH (n=CH)
0001 0111	DRM-1 ID	17H
0100 1100	SETTING DATA DUMP	4CH
0vvv vvvv	DATA	
.		
.	Data 3136 bytes	
.		
0vvv vvvv	DATA	
1111 0111	EOX	

3-4 SETTING DATA DUMP REQUEST

BYTE	DESCRIPTION	
1111 0000	EXCLUSIVE STATUS	
0100 0010	KORG ID	42H
0011 0000	FORMAT ID	3nH (n=CH)
0001 0111	DRM-1 ID	17H
0001 1100	SETTING DATA DUMP REQUEST	1CH
1111 0111	EOX	

3-5 PARAMETER CHANGE (RECEIVE ONLY)

BYTE	DESCRIPTION	
1111 0000	EXCLUSIVE STATUS	
0100 0010	KORG ID	42H
0011 0000	FORMAT ID	3nH (n=CH)
0001 0111	DRM-1 ID	17H
0100 0001	PARAMETER CHANGE	41H
0kkk kkkk	voice number offset	kkk kkkk = 0-15
0vvv vvvv	parameter offset	See DRM-1 BIT MAP
0vvv vvvv	parameter value	See DRM-1 BIT MAP
1111 0111	EOX	

3-6 DEVICE ID (TRANSMIT ONLY)

BYTE	DESCRIPTION	
1111 0000	EXCLUSIVE STATUS	
0100 0010	KORG ID	42H
0011 0000	FORMAT ID	3nH (n=CH)
0001 0111	DRM-1 ID	17H
1111 0111	EOX	

3-8 DEVICE ID REQUEST (RECEIVE ONLY)

BYTE	DESCRIPTION	
1111 0000	EXCLUSIVE STATUS	
0100 0010	KORG ID	42H
0100 0000	FORMAT ID	4nH (n=CH)
1111 0111	EOX	

4. BIT MAP FOR PARAMETER CHARGE

Parameter Offset	Parameter Value bit 7	bit 6 ~ bit 0		
0	0	Sound Assign No.	00H - 36H	*4-1
1	0	Sound Assign Mode	00H - 02H	*4-2
2	0	MIDI Original Note	00H - 7FH	
3	0	MIDI Top Note	00H - 7FH	
4	0	MIDI Channel	00H - 0FH	
5	0	Tune (Value)	00H - 7FH	
6	0	Tune (Sensitivity)	00H - 7FH	
7	0	Tune (Velocity or Note/Pedal)	00H - 01H	*4-5
8	0	Decay (Value)	00H - 0FH	
9	0	Decay (Sensitivity)	00H - 0FH	
10	0	Decay (Velocity or Note/Pedal)	00H - 01H	*4-5
11	0	Response (Value)	00H - 7FH	
12	0	Response (Sensitivity)	00H - 0FH	
13	0	Response (Velocity or Note/Pedal)	00H - 01H	*4-5
14	0	Output Assign	00H - 0FH	*4-3
15	0	Output: Pan (Sensitivity)	00H - 06H	
16	0	Output: Pan (Velocity or Note/Pedal)	00H - 01H	*4-5
17	0	Level	00H - 0FH	
18	0	Pad Assign No.	00H - 0FH	*4-6
19	0	Layer Phase	00H - 7FH	
20	0	Flags		*4-4

*4-1 OFFSET 0 : sound assign number
value = 00H - 16H : internal sound
value = 17H - 36H : card sound

*4-2 OFFSET 1 : sound assign mode

bit 1	bit 0	mode
0	0	mono
0	1	poly
1	0	exclusive

*4-3 OFFSET 14 : output assign

value	assign	value	assign
0	L3	8	Multi 1
1	L2	9	Multi 2
2	L1	10	Multi 3
3	C	11	Multi 4
4	R1	12	Multi 5
5	R2	13	Multi 6
6	R3	14	Multi 7
7	Don't use	15	Multi 8

*4-4 OFFSET 20 : flags
bit 0 : tune control sign (0 = +, 1 = −)
bit 1 : decay control sign (0 = +, 1 = −)
bit 2 : response control sign (0 = +, 1 = −)
bit 3 : pan control sign (0 = +, 1 = −)

*4-5 OFFSET 7, 10, 13, 16 : velocity or note/pedal

bit 0	mode
0	velocity
1	note/pedal

*4-6 OFFSET 18: Pad Assign No.
bit 0 ~ 2 Pad Assign No (0 ~ 6H)
bit 3 0 MAIN
1 SUB

MIDI Implementation Chart

Function.....	Transmitted	Recognized	Remarks
Basic Channel — Default	1–16	1–16	memorized
Basic Channel — Changed	1–16	1–16	
Mode — Default	Mode 3	Mode 1,3	memorized
Mode — Messages	×	OMNI ON/OFF	
Mode — Altered	**********		
Note Number : True voice	0–127 **********	0–127 **********	
Velocity — Note ON	○ 9nH, v=1–127	○ 9nH, v=1–127	
Velocity — Note OFF	× 8nH, v=64	×	
After Touch — Key's	×	×	
After Touch — Ch's	×	×	
Pitch Bender	×	×	
Control Change	×	×	
Prog Change : True #	○ 0–15 **********	○ 0–15	
System Exclusive	○	○	
System Common : Song Pos	○	○	
System Common : Song Sel	○ 0–15	○ 0–15	
System Common : Tune	×	×	
System Real Time : Clock	○	○	
System Real Time : Commands	○	○	
Aux : Local ON OFF	×	×	
Aux : All Notes OFF	×	×	
Mes- : Active Sense	×	×	
sages : Reset	×	×	
Notes			

Mode 1 : OMNI ON POLY Mode 2 : OMNI ON MONO ○ : Yes
Mode 3 : OMNI OFF POLY Mode 4 : OMNI OFF MONO × : No

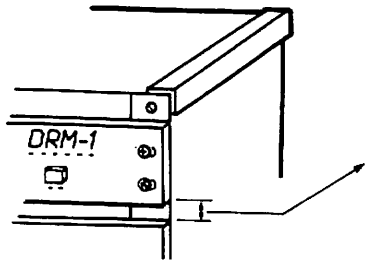
BEFORE CALLING FOR HELP

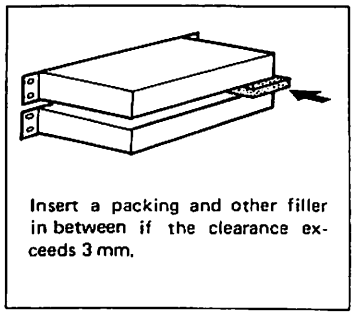
In the event of a problem, check the DRM-1 and associated equipment for the following items. If the corresponding procedure fails to correct the problem, contact your nearest service representative.

Condition	Cause of Problem	Action
Unable to turn on power	The DRM-1 is unplugged.	⇨ Connect the power cord.
Unable to produce sound	1. The master volume control is set to 0.	⇨ Turn the OUTPUT LEVEL knob until the volume reaches the appropriate level.
	2. The MIDI clock is set to on.	⇨ Set the MIDI RECEIVE clock to off. (Set it to on to receive clock.)
	3. The amplifier, speaker, or other equipment connected to the DRM-1 is turned off.	⇨ Turn the POWER switch off, turn on the power switches on the other equipment, then turn the POWER switch back on.
	4. Cable connection is faulty.	⇨ Connect the cables to the correct jacks.
	5. There is a mismatch in the output assign mode setting.	⇨ Correct the setting.
Unable to receive MIDI notes	1. The receive note mode is set to off.	⇨ Set the receive note mode to on.
	2. The OMNI mode is set to off, causing a mismatch in the MIDI receive channels.	⇨ Turn the OMNI mode on or set up the channels correctly.
Error message during data transfer	See the list of user error messages on the page 28.	⇨ Check for the fault indicated by the error message.
Unable to remote-control	1. The batteries are low or not loaded correctly.	⇨ Set the batteries in the correct positions or replace them.
	2. The DRM-1 is out of the range of remote control.	⇨ Use the remote control unit within 3 m from the DRM-1. Make sure that the remote control unit emitter stays within 60° of the DRM-1.
	3. The front panel REMOTE CONTROL switch is set to off (remote control disabled).	⇨ Turn the switch on.

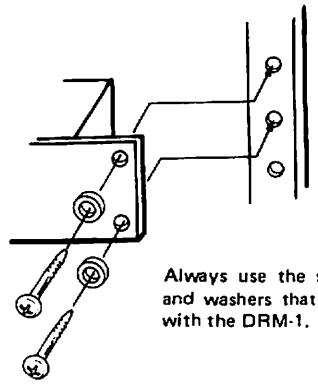
MOUNTING THE DRM-1 ON A RACK

The DRM-1 is compatible with the standard EIA rack.





Insert a packing and other filler in between if the clearance exceeds 3 mm.



Always use the screws and washers that come with the DRM-1.

SPECIFICATIONS

SOUND SOURCES

23 internal sound series

SNARE 1, SNARE 2, SNARE 3, SNARE 4,
SIDE STICK
BASS DR.1, BASS DR.2, BASS DR.3, BASS DR.4
CLOSED HIHAT, OPEN HIHAT.
CRASH CYMBAL, RIDE CYMBAL.
HIGH TOM, MID TOM, LOW TOM
COWBELL, HANDCLAPS
HIGH CONGA, LOW CONGA, MUTED CONGA
HIGH TIMBALE, LOW TIMBALE.

INDICATOR

2 line 16-character LCD with backlight/LED.

CARD SLOT 4

CARD1 for ROM/RAM, CARD2~4 for ROM

INPUT

PAD INPUT 1~7, MIDI IN, TAP TEMPO,
FOOT SW, POT PEDAL

OUTPUT

PHONES, OUTPUT LEFT, OUTPUT
RIGHT/MONO, MULTI OUT 1~8,
MIDI OUT, MIDI THRU.

DIMENSIONS

EIA-19"1U RACK(W482×D315×H44)

WEIGHT

4.3kg

POWER CONSUMPTION

14W

CONTROLS

MAIN BODY

VOLUME, LCD CONTRAST VR.
REMOTE CONTROL ON. OFF
SLIDE SW. POWER SW

REMOTE CONTROL UNIT

〈DATA TRANSFER GROUP〉
SELECT KEY, SAVE KEY, LOAD KEY, DELETE KEY
〈MIDI GROUP〉
TRANSMIT KEY, RECEIVE KEY
〈SYSTEM GROUP〉
PAD SET KEY, PEDAL KEY, FOOT SW KEY
〈SETTING GROUP〉
SETTING KEY, SELECT KEY▲, SELECT KEY▼, VOICE KEY, PAD KEY, MIDI KEY, DECAY KEY, LEVEL KEY, RESPONSE KEY, TUNE KEY, OUTPUT KEY, COPY KEY
〈PATTERN GROUP〉
PATTERN KEY, SELECT KEY▲, SELECT KEY▼, ERASE KEY, DELETE KEY, METRONOME KEY, COPY KEY, TEMPO KEY, RESOLUTION KEY, REC KEY, START KEY, STOP KEY
〈SETTING KEY GROUP〉
CURSOR KEY◀, CURSOR KEY▶, VALUE KEY▲, VALUE KEY▼

SUPPLIED ACCESSORIES

Remote control unit
Battery (SUM-3DG, 1.5V)×2
AC power cord
Rack mount fittings
Tapping screws, Washeres

OPTION

ROM card, VOICE card
(available for DDD-1/5
RAM card, 128 K bits
(not available)

Design and specifications are subject to change without notice.