Roland

JV-1000
MUSIC WORKSTATION

INTRODUCTORY MANUAL

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

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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

1. Read all the instructions before using the product.

2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.

3. This product should be used only with a cart or stand that is recommended by the manufacturer.

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

5. The product should be located so that its location or position does not interfere with its proper ventilation.

6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.

7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

8. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.

9. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

10. The product should be serviced by qualified service personnel when:

    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled onto the product; or
    C. The product has been exposed to rain; or
    D. The product does not appear to operate normally or exhibits a marked change in performance; or
    E. The product has been dropped, or the enclosure damaged.

11. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

Introduction

Thank you for purchasing the Roland JV-1000 Music Workstation. The JV-1000 combines a powerful synthesizer sound source with a versatile, full-function sequencer. The JV-1000 provides the functionality you need for stage, studio or desktop music applications.

In order to take full advantage of the JV-1000's functions, and to enjoy years of trouble-free service, please read this manual carefully.

How to use this manual

This manual explains the basic functions of the JV-1000, and takes you through the procedure for actually recording a sample song. For more details on the synthesizer sound source and the sequencer section, refer to the "JV-1000 SYNTHESIZER MANUAL" and the "JV-1000 SEQUENCER MANUAL." This manual also explains connections with external MIDI and non-MIDI devices (such as video decks).

The JV-1000's documentation consists of four manuals: "QUICK START," "INTRODUCTORY MANUAL," "SYNTHESIZER MANUAL," and "SEQUENCER MANUAL." In order to understand the JV-1000, please read the "QUICK START" and the "INTRODUCTORY MANUAL" first.

Conventions used in this manual

In this manual, buttons and switches used to operate the JV-1000 will be indicated by the words or symbols printed on the upper (or lower) part of each button.

The following graphics have the following meanings:
The button itself or the button indicator is lit.

The button itself or the button indicator is dark.

The button itself or the button indicator is blinking.
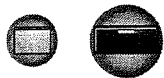
Features

Synthesizer Section

• Lead and Solo play modes

• A wide variety of waveforms for virtually unlimited sound creation possibilities

• Expandable voice architecture

• On-board digital effects

• Real-time parameter control

• 76-note velocity/aftertouch-sensitive keyboard

Sequencer Section

• On-board SUPER-MRC and SUPER-MRP (sequencer software)

• High-capacity memory

• Two independent MIDI OUT connectors

• Standard MIDI File (SMF) compatibility

IMPORTANT NOTES

In addition to the items listed under Safety Precautions on page 2, please read and adhere to the following:

[Power Supply]

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.

[Placement]

- Do not subject the unit to temperature extremes (e.g. direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.

[Maintenance]

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

[Additional Precautions]

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

[Memory Backup]

- The unit contains a battery which maintains the contents of memory while the main power is off. The expected life of this battery is 5 years or more. However, to avoid the unexpected loss of memory data, it is strongly recommended that you change the battery every 5 years.
Please be aware that the actual life of the battery will depend on the physical environment (especially temperature) in which the unit is used. When it is time to change the battery, consult with qualified service personnel.
- The unit's battery functions during normal operation as well as maintaining the contents of memory when the main power supply is turned off. When the battery becomes weak, there is a risk of losing the contents of the memory. To avoid the unexpected loss of memory data, replace the battery before it becomes weak.
- When the battery becomes weak, the following message will appear in the display: "Internal Battery Low". Please change battery as soon as possible to avoid the loss of memory data.

- Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored on a RAM card or disk, or written down on paper. During repairs, due care is taken to avoid the loss of data. However, in certain cases, (such as when circuitry related to memory itself is out of order) we regret that it may be impossible to restore the data.

Before Using Disks
[Handling of the drive]

- Install the unit on a solid, level surface in an area free from vibration. If the unit must be installed at an angle, be sure that the angle of installation falls within the tolerance range (upward; 2°: downward; 18°).
- Avoid using the drive in areas of high humidity (e.g. condensation). High levels of moisture can adversely affect the operation of the drive and/or damage disks. When the unit has been transported, allow it to warm to room temperature before operating.
- To insert a disk, push it firmly into the drive. To remove a disk, press the eject button firmly. Do not use excessive force to remove a disk which is lodged in the drive.
- The disk drive indicator will light while the drive is in operation. Never attempt to remove a disk when the indicator is lit. Doing so may damage the disk or the data stored on it.
- Before powering up or powering down, remove any disk from the drive.

[Handling Disks]

- Disks contain a plastic disk coated with magnetic particles. Observe the following when handling disks:
    - Never touch the magnetic surface of the disk.
    - Do not subject disks to temperature extremes (e.g. direct sunlight in an enclosed vehicle). Recommended temperature range: 10 to 50 °C.
    - Do not expose disks to strong magnetic fields such as those generated by loudspeakers.
- Floppy disks contain a 'write protect' switch which can protect a disk from accidental erasure. It is recommended that the switch be kept in the 'protect' position and moved only when you wish to write new data onto the disk.

Rear side of the disk

Write (can write new data onto disk)

Protect (prevents writing to disk)

Write Protect Tab
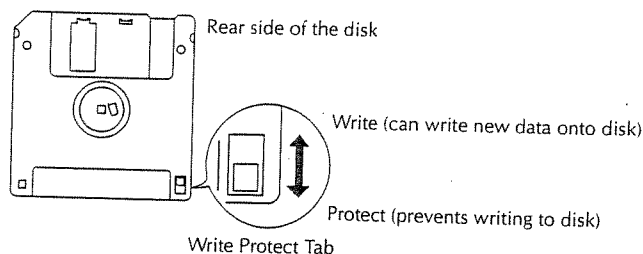
- All important data should be copied onto backup disks. This provides a complete duplicate of the data should the original disk be lost or damaged.
- Identification labels should be firmly fixed to the disks. Should a label come loose while the disk is in the drive, it may be difficult to remove the disk.

Contents

Chapter 4. Sequencer editing function

Chapter 5. The JV-1000 and MIDI

Chapter 6. Reference

Chapter 1
Playing the JV-1000

This chapter will explain the basic preparations necessary before playing the JV-1000; how to make connections with external equipment, and how to adjust the LCD displays. Then you'll want to play the sounds to hear them for yourself!

* Included with the JV-1000 is a demo disk that demonstrates its sounds and capabilities. To play the songs on the demo disk, refer to the "JV-1000 QUICK START."

1. Making connections

The JV-1000 has four output jacks; two each for MIX (INT) and V-EXP.

• MIX (INT) R, L (MONO)

These jacks output the sound of the synthesizer sound source and the voice expansion board (sold separately) mixed together. If cables are plugged into the V-EXP outputs, these jacks will output only the sound of the synthesizer sound source.

• V-EXP R, L (MONO)

These jacks output the sound of the voice expansion board.

For both the MIX (INT) and the V-EXP jack pairs, output will be mono if you use only the L (MONO) jack.

To take full advantage of the JV-1000's sound, we recommend that you use a stereo output. If you wish to output the sound in mono, however, connect a cable to MIX (INT) L (MONO) or V-EXP L (MONO).

* *By using cables with a phone plug on one end on RCA plug on the other, you can connect the JV-1000 to the RCA inputs of a stereo set.*

Refer to the following diagram and make connections to your amp/speaker system. Before making any connections, be sure that the power to all equipment is turned off. (This will help prevent damage or malfunction.)

Stereo Headphones

Powered Speaker, etc.

Stereo set, etc.

Multi-track recorder

Powered Speaker, etc.

Expression Pedal
(EV-5, etc)

Pedal Switch
(DP-2, DP-6, etc)

External MIDI Device
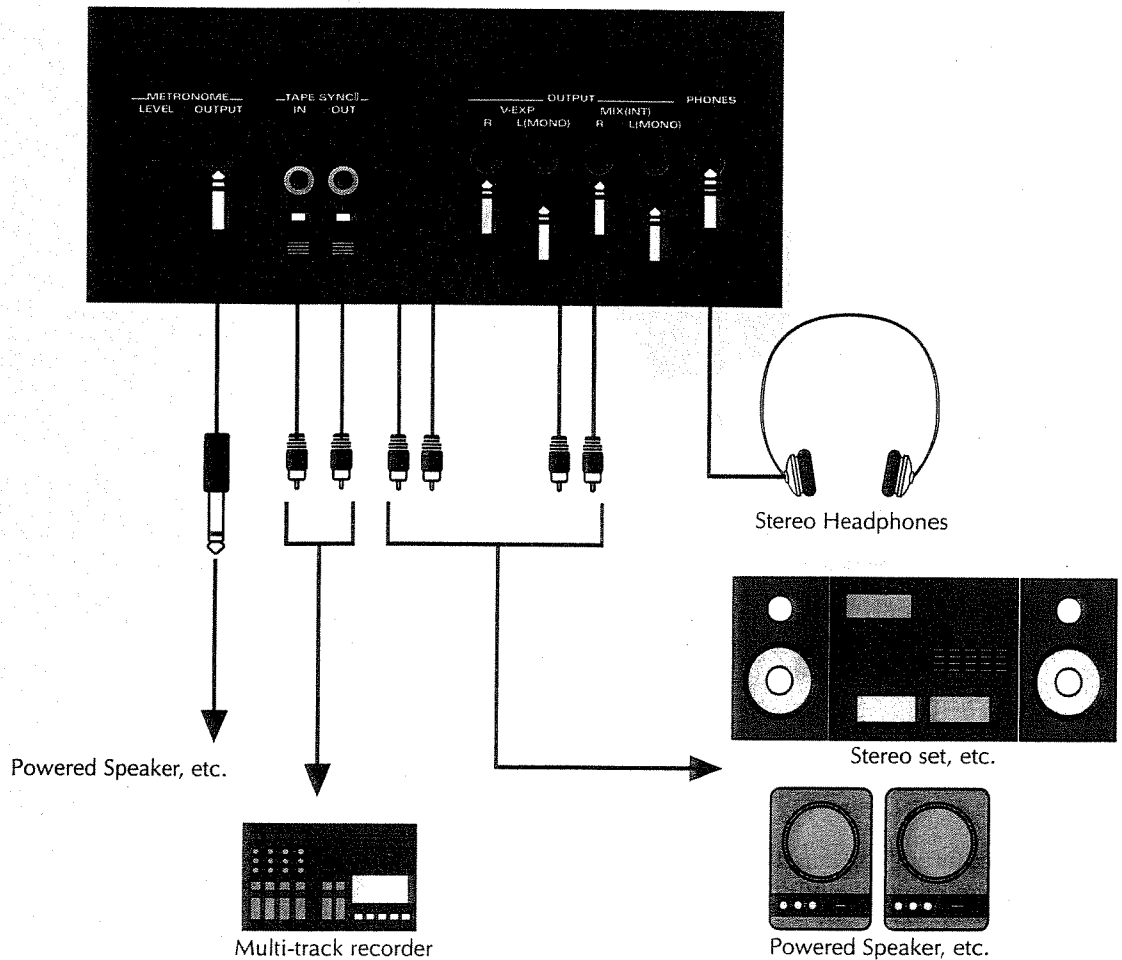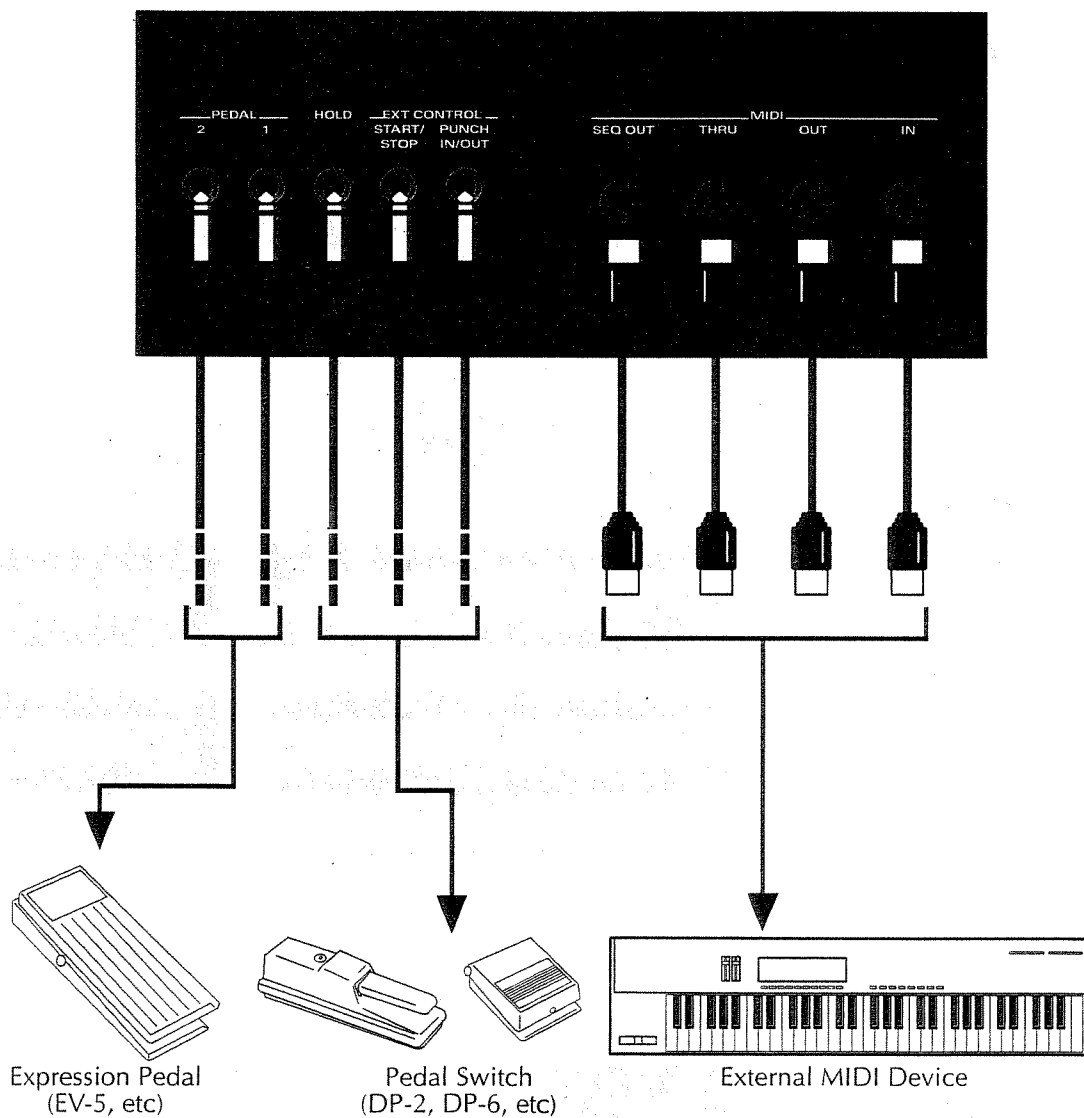
Pedal jacks 1 and 2 can accommodate either pedal switches or expression pedals.

2. Turn the power on

Power-on procedure

1. Before you turn the power on, check that...

...all equipment is connected correctly.
...volume controls of the amp/mixer are set at 'zero.'
...the JV-1000 volume is set to the minimum position.
...there is nothing in the floppy disk drive.

2. Turn on the JV-1000.

The following display will appear:

Synthesizer section   Sequencer section

```
MUSIC WORK STATION
     JV-1000
```

```
CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT —
TRK  SUPER-MRC                                         THRU 1 —
     Recording System                                 THRU 2 —
     MIDI CH   NOTE/STATUS   VELOCITY GATE TIME        DISK —
```

```
PERFORM ↑Jazz Split ⁄:    Internal Level
A01<SEQ>♯127|127|127|127|127|127|127|127
```

```
CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT —
TRK  SONG 1                                            THRU 1 —
     M=   1   ♩=120R REAL                              THRU 2 —
     MIDI CH   NOTE/STATUS   VELOCITY GATE TIME        DISK —
```

The JV-1000 contains a protection circuit which mutes output for a second or two after power up. No sound will be heard during this time.

3. Turn on your amp/mixer, and adjust the volumes.

4. Adjust the JV-1000's volume using the INT VOLUME slider.

Increase

Decrease
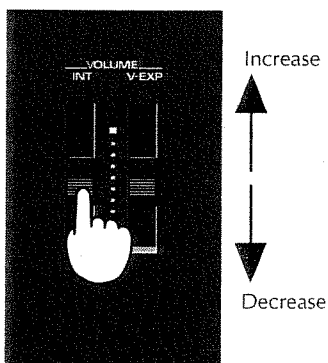
The V-EXP slider will have no effect unless a voice expansion board (sold separately) is installed.
If you have connected the JV-1000 directly to your stereo system, be careful of the output level. Excessive volumes can damage your speakers.

Power-off procedure

1. Before turning the power off, check that...

...you have saved important data to a floppy disk or DATA card.
...there is no floppy disk in the floppy disk drive.

2. Turn off the amp/mixer system, and then the JV-1000.

Adjust the LCD display contrast

Depending on the location, lighting conditions or your viewing angle, the JV-1000's LCD may be difficult to read at times. In such cases, use the following procedure to adjust the display contrast.

1. **Press the synthesizer section function select button TUNE.**

2. **Use parameter slider 4 to adjust the setting for LCD(L) (the synthesizer section LCD) and parameter slider 5 to adjust the setting for LCD(R) (the sequencer section LCD).**
   Each setting can be adjusted over a range of 0—10.
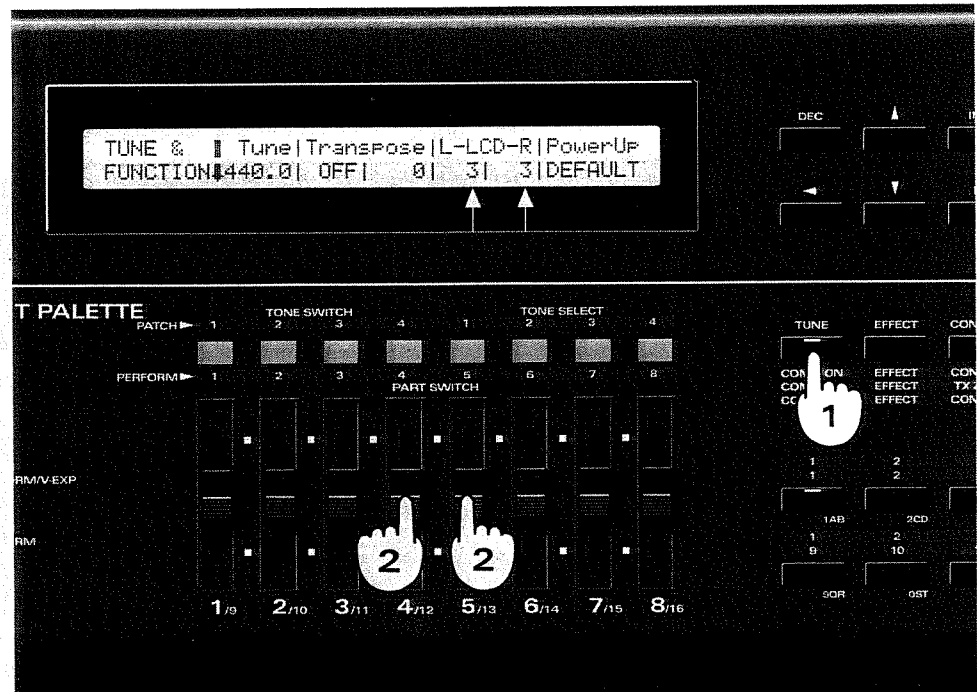
3. Play the JV-1000

The JV-1000 contains sounds ("patches") ready for you to play. Select various patches and play the sounds.

After turning the power on, press PATCH (the indicator will light). Now you can play the keyboard.

Select patches

Use the BANK (1—8) and NUMBER buttons (1—8) to select patches.
The combination of BANK and NUMBER allow you to select patches 1-1 — 8-8. You can also use the patch group buttons to access other patches.

Use these buttons to select and play the patches.

Select patch groups
Select banks 1—8
Select numbers 1—8
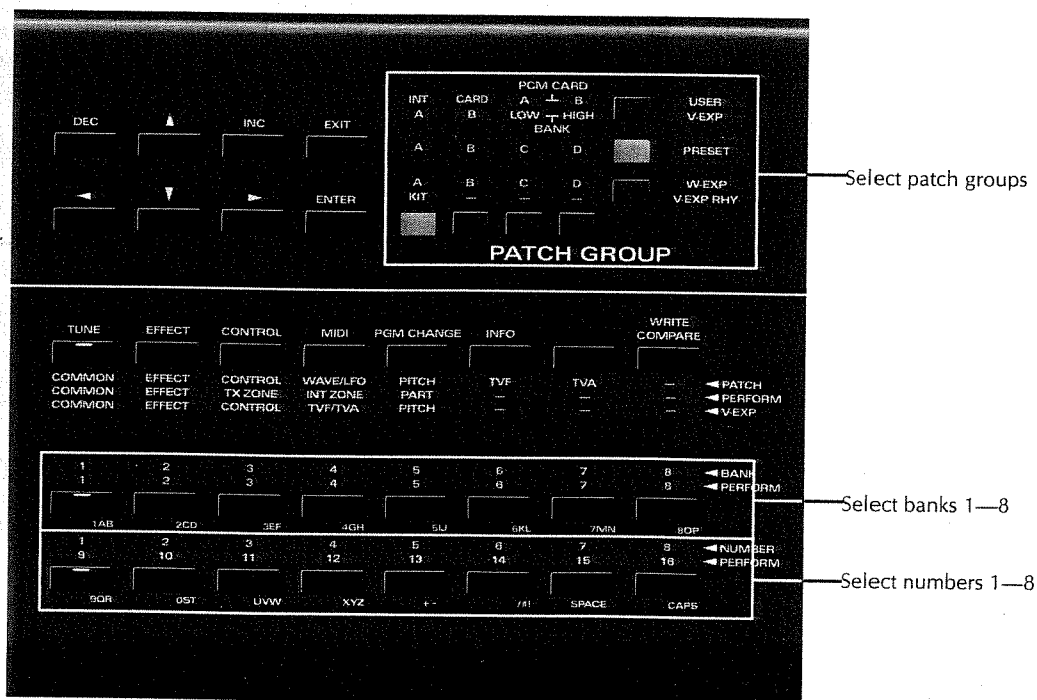
If a DATA card is not inserted, pressing the patch group button CARD will have no effect; the display will not change and you will not be able to select card patches.

Try out the performance functions

The JV-1000 provides various controllers that allow you to modify the sound as you play. Play the keyboard and try out the controllers.

• Velocity/aftertouch

Your playing dynamics (velocity) will affect the volume or tone. Aftertouch (additional pressure on the keyboard after playing a note) can simultaneously affect various aspects of the sound, such as pitch, tone and volume.

Play softly   Play strongly   Press down

Presence controller

C1 slider

Bender/modulation Lever
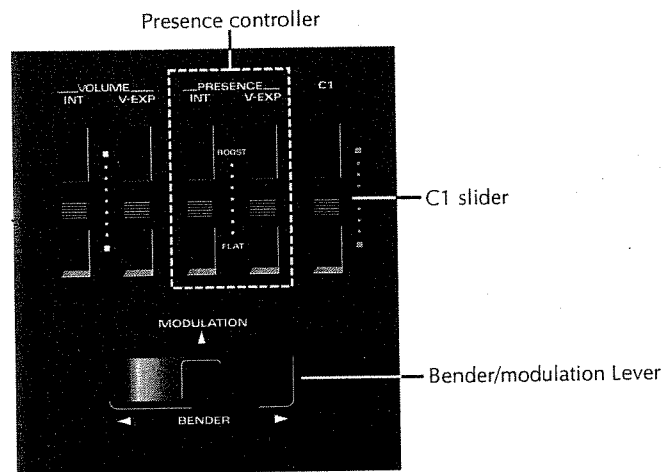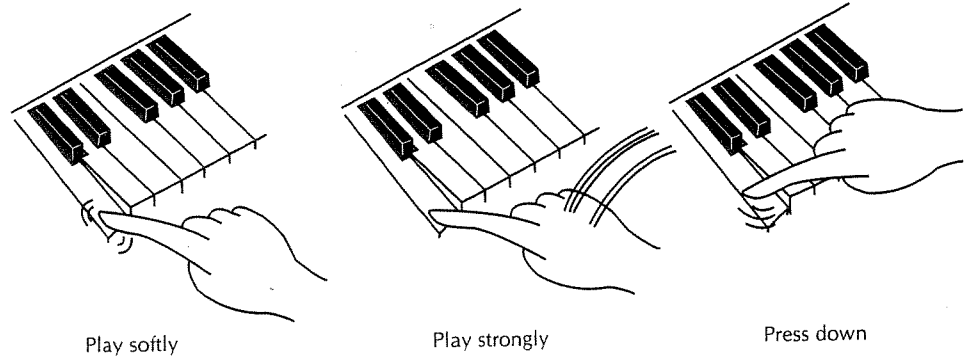
• Bender/modulation lever

While you play, you can move the bender/modulation lever to the left to lower the pitch, or to the right to raise the pitch. This effect is called "pitch bend."
By pressing the lever away from you, you can add a modulation effect (such as vibrato). By moving the lever left or right while you press it away from you, you can simultaneously apply both pitch bend and modulation effects.

• C1 slider

While you play, you can move the slider up or down to modify the volume or tone color. The effect of the C1 slider will depend on its settings.

• Presence controller

This controller adjusts the 'brightness' of the sound. The effect will become more evident as you raise the slider.

* The V-EXP presence controller will have no effect unless a voice expansion board (sold separately) is installed.
* By connecting a pedal switch (FS-1/DP-2 etc.; sold separately) to a rear panel HOLD jack, you can sustain (hold) the sound even after taking your hand off the keyboard. By connecting an expression pedal (EV-5/EV-10; sold separately) to a rear panel pedal jack, you can control volume or tone.
* You can also use the parameter sliders to modify the sound.

Chapter 2
About the JV-1000
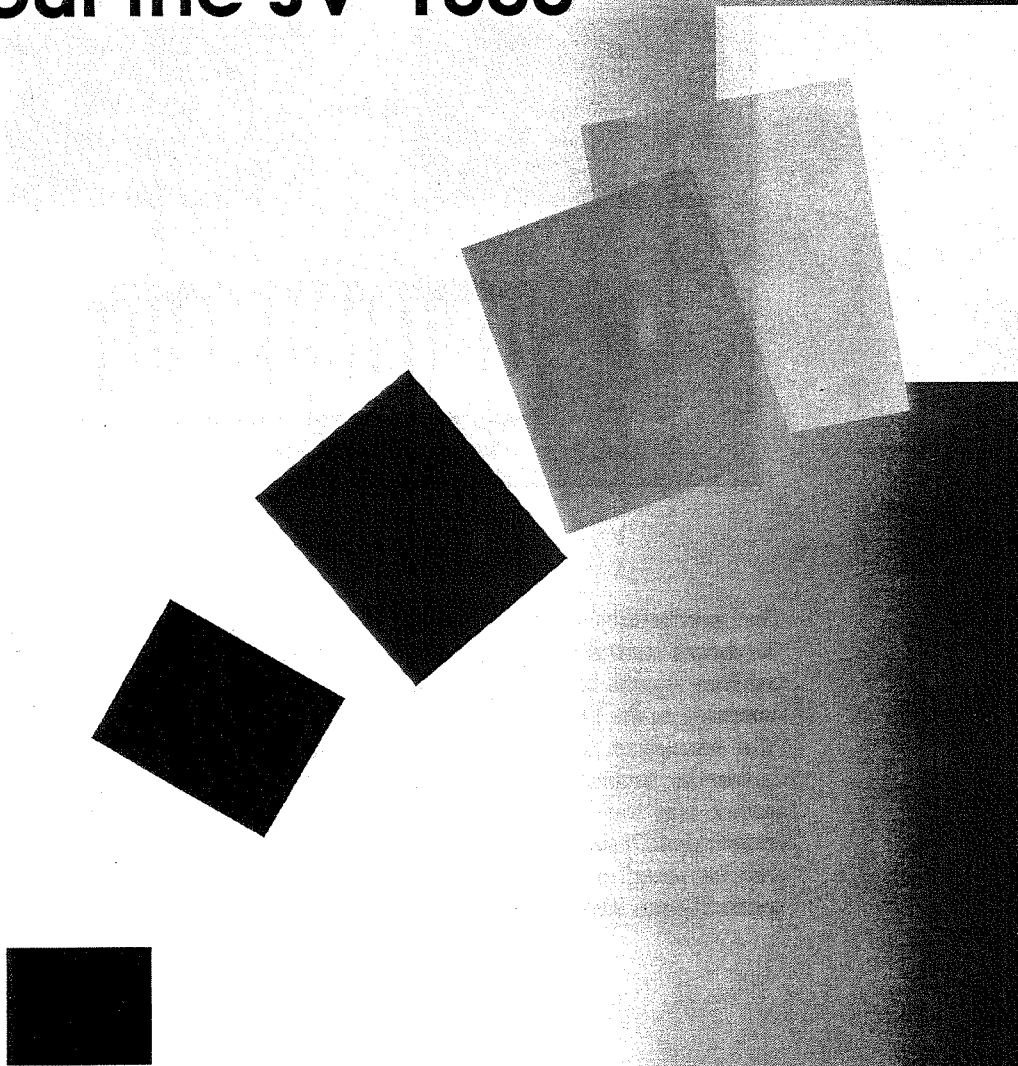
This chapter will explain how the JV-1000 is organized, so that you can take full advantage of the possibilities it has to offer.

1. How the JV-1000 is organized

The JV-1000 consists of a synthesizer section and a sequencer section.

DATA card
(M-256E)

Floppy disk
(3.5 inch, 2DD)

Synthesizer section ◄──► Sequencer section

Keyboard controller

◀────── : Playing data
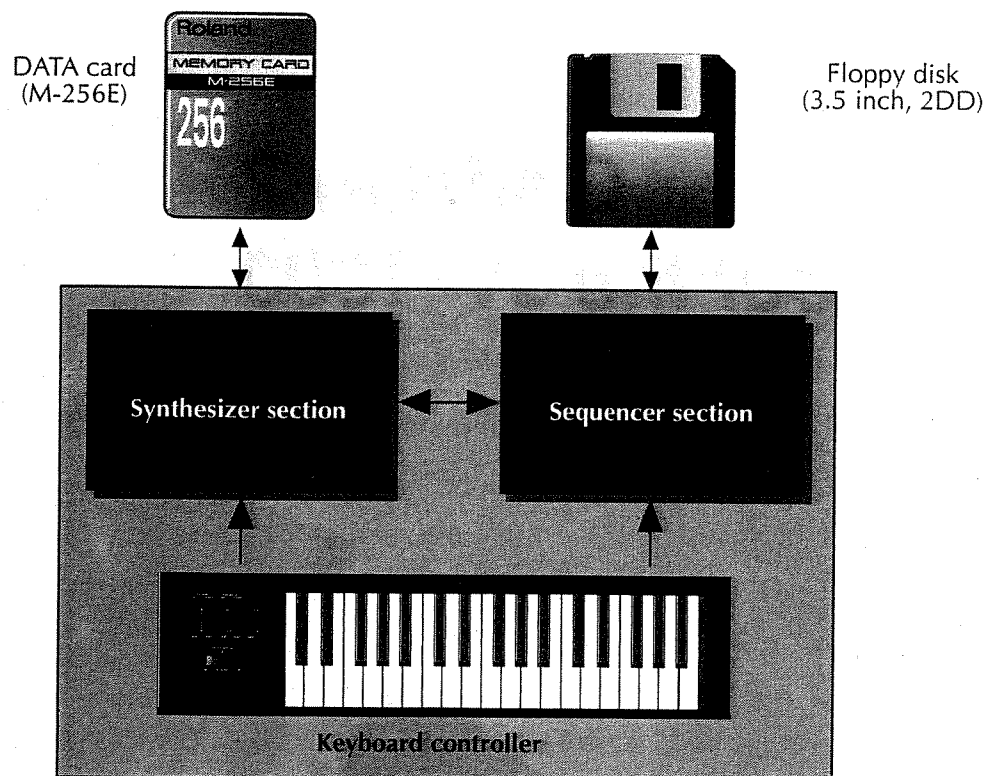
The synthesizer section is played with the performance information sent from the keyboard controller or sequencer section. The synthesizer section allows you to create various sounds by editing the sound parameters then to write them into the internal memory or the DATA card (optional).

The sequencer section records and edits the performance data from the keyboard controller section and the song data entered in step write method from the control panel, and then automatically plays the internal synthesizer sound module or the external MIDI sound module. The performance data recorded in the sequencer section can be saved onto a floppy disk (3.5 inch 2DD type) so that you can increase the performance library of your own.

2. About the synthesizer sound source

The synthesizer section consists of the circuitry that produces the sound, an effects unit that adds reverb and chorus, memory that stores sound data, and the controller section (keyboard, switches, sliders, etc.).

Sounds you select will be played according to the musical data received from the JV-1000's keyboard and built-in sequencer, and from messages received from the MIDI IN connector. The sound is then sent through the effects unit, and finally sent to the output jacks and the headphone jack.

Internal sound source

Preset D		Preset C		Preset B		Preset A		Internal		DATA card		PCM card		W-EXP board
						Performance 16		Performance 16		Performance 16		Patch		Patch
						Patch 64		Patch 64		Patch 64		Rhythm set		Rhythm set
						Rhythm set 1		Rhythm set 1		Rhythm set 1				

Effector
Chorus
Reverb

Temporary area
Data of performance, patch and rhythm

28 voices sound according to the data received.

Performance (play) data

L(MONO)
OUTPUT
MIX (INT)
R

Data is called up.

PATCH GROUP

11

Performances and Patches

There are three categories of sounds you will play on the JV-1000: Patches, Rhythm Sets, and Performances.

• Patch

A patch is the basic unit of sound.

• Rhythm set

A rhythm set is a collection of drum and percussion sounds used for rhythm.

• Performance

A performance consists of eight "Parts." Parts 1—7 each have a Patch assigned to them, and Part 8 has a Rhythm Set assigned to it. You can independently adjust the volume and tuning etc. of each part to balance the various instruments of your ensemble.

Performance

Patch	→	Part 1
Patch	→	Part 2
Patch	→	Part 3
Patch	→	Part 4
Patch	→	Part 5
Patch	→	Part 6
Patch	→	Part 7
Rhythm set	→	Part 8 (Rhythm part)
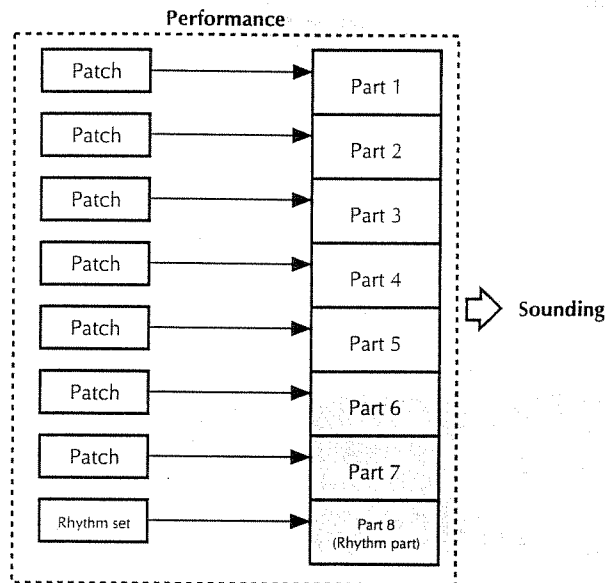
⇨ Sounding

About key modes

The JV-1000 synthesizer section is able to produce sound in three different ways ("Key Modes") in response to notes played on its keyboard.

• Single mode

In this mode, musical data from the keyboard will be sent only to the Part which is selected by the cursor.

Part 1   Part 2
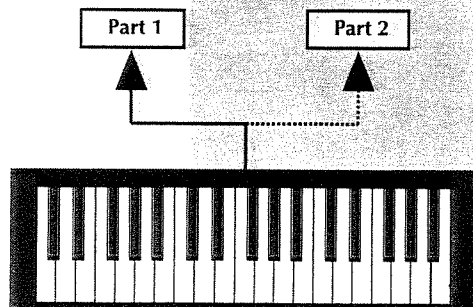
Playing the keyboard sounds the patch of the part at the cursor position.

● **Layer mode**
In this mode, musical data from the keyboard will be sent to all Parts.
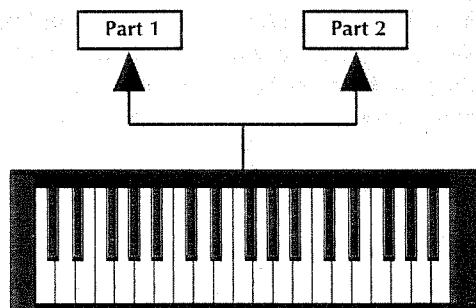
All key board performance data is send
to the eignt parts.

● **Zone mode**
In this mode, musical data from different areas of the keyboard will be sent to different Parts.
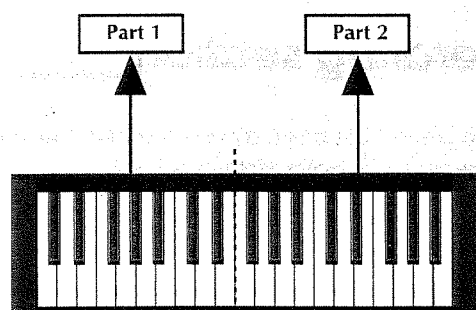
The performance data within the key
range is sent to the eight parts.

* The key mode can be set independently for each Performance.

Layer mode and zone mode are especially suitable for creating thick textures, or for realtime performance. Single mode, on the other hand, is especially suitable when you wish to play many instrumental parts from a sequencer.
For details on key modes, see SYNTHESIZER MANUAL/p.72.

Memory

Settings for patches and performances are stored in memory. The JV-1000 synthesizer section contains the following memory areas.

● **User memory**
The data in this memory can be modified (edited) by the user. Each of the user memories — Internal and DATA card (sold separately) — hold 16 Performances, 64 Patches, and 1 Rhythm Set.

● **Preset memory (A/B/C/D)**
Each memory (A, B, C and D) contains 16 Performances, 64 Patches, and 1 Rhythm Set. The data in these memories cannot be modified, but you can edit this data and then store your edited settings in the user memory.

* The JV-1000's preset memory also includes the JV-80 compatible preset. (See "Reference" in the SYNTHESIZER MANUAL.)
* Patches or Performances in the preset memory may include data of the DATA cards (PN-JV80-05). (See "Reference" in the SYNTHESIZER MANUAL.)

• Temporary area

When you select a performance or patch from user memory or preset memory, the data is copied into this temporary area. This data tells the synthesizer section how to produce sound. When you edit the data, your modifications affect only the data in the temporary area; the original data will not be affected. However, unless you use the Write command to write (store) the modified data into a user memory, your modifications will be lost when you turn the power off or select a different patch.

For information about the Write command, see SYNTHESIZER MANUAL/p.100.

• PCM card/Wave Expansion Board

PCM cards and wave expansion boards contain a wide variety of "waveforms" (basic sound data used by the sound source) and sound-related data. By inserting a PCM card or installing a wave expansion board in your JV-1000, you can expand the variety of available sounds. The number of waveforms or patches contained in a PCM card or wave expansion board will depend on its type.

DATA cards, PCM cards, and wave expansion boards are sold separately.

The sound-generating section

This section creates the basic sounds (voices) that make up a patch or a rhythm set. It can produce up to 28 notes simultaneously.

Effect unit

The on-board effects unit provides stereo chorus and reverb. The two effects can be used simultaneously to enrich and broaden the sound.

3. The sequencer

Sequencers record musical data received from MIDI devices. Sequencers do not record the "sound" of a musical performance, but rather "the musical performance itself"; i.e., data describing which notes were pressed and how hard, and how pedals or controllers were used.

Sequencer tracks

The on-board sequencer of the JV-1000 has a total of ten tracks; eight phrase tracks, one rhythm track, and one tempo track. Each track records musical "data" from a MIDI instrument.
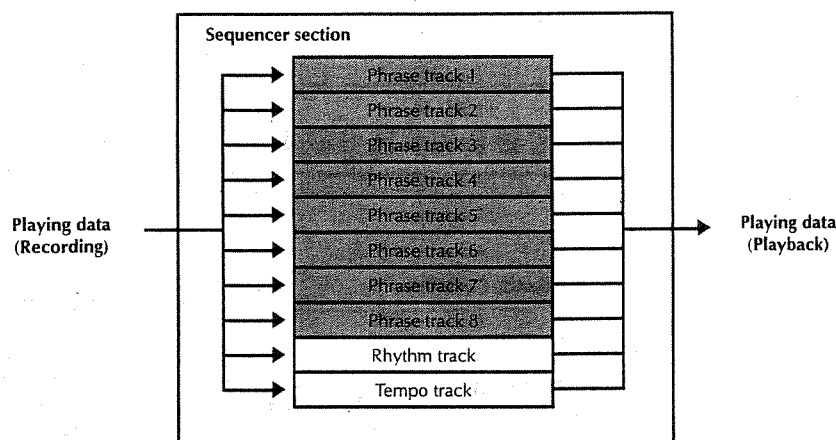
• Phrase tracks

The phrase tracks record musical data that describes which sound (instrument) was played when, at what pitch, at what volume, held for how long, etc. There are eight such phrase tracks, and each can record 16 independent musical parts (MIDI channels 1—16). This means that when using all eight of the tracks, you can create songs which use 128 musical parts (16 parts x 8 tracks).

• The rhythm track

The rhythm track records musical data for drums and percussion instruments (a Rhythm Set). In the JV-1000's sequencer, you create the rhythm part by arranging Rhythm Patterns in the rhythm track. (Each rhythm pattern is one measure long.)
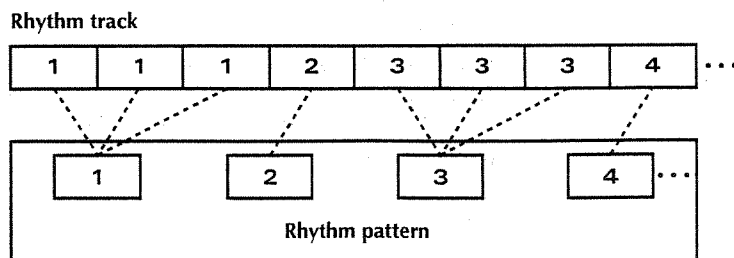
• The tempo track

The tempo track records changes in tempo. This track does not contain data that plays instrumental parts.

About songs

A set of data in the ten tracks of the sequencer is called a "Song." Each song can be given a title and saved on a floppy disk. A song saved on a disk is called a "Song File," and one disk can accommodate a maximum of 108 such files.

Memory

The sequencer memory can accommodate up to eight songs. However, if the songs are long or contain a lot of data, fewer than eight songs can be stored.

When the JV-1000 is turned off, all musical data in sequencer memory will be lost, so be sure to save important data to disk (p.40).

Sequencers and MTRs (multi-track recorders)

MTRs allow you to play back previously recorded sound while recording additional musical performances. The eight phrase tracks of the JV-1000's sequencer also allow you to do "multi-track" recording. The difference is that while an MTR records the sound of a performance, a sequencer digitally records the musical data (performance information).

Keyboard Controller   **Sequencer section**

MIDI ch1

Record on Track 1 with listening to metronome.

| Track 1 |
| Recording ch1 |

Keyboard Controller   **Sequencer section**

MIDI ch2

Record on Track 2 with listening to Track 1.

Track 1	Track 2
Part 1	
Playback ch1	Recording ch2

Keyboard Controller   **Sequencer section**

MIDI ch3

Record on Track 3 with listening to Track 1 and 2.

Track 1	Track 2	Track 3
Part 1	Part 2	
Playback ch1	Playback ch2	Recording ch3

Recording musical data with a sequencer offers the following advantages:
- The sound quality will not diminish, regardless of how many times you 'overdub.'
- You can jump instantly to the beginning or end of the song.
- The playback tempo can be changed without affecting the pitch.
- The musical data can be freely edited after recording.

The JV-1000's TAPE SYNC II IN/OUT jacks can be connected to an MTR to synchronize it with the JV-1000's on-board sequencer. By synchronizing an MTR with the sequencer, you can add vocals and other acoustic instruments to your MIDI ensemble (SEQUENCER MANUAL/p.62).

Chapter 3
How to record a song

The JV-1000 is a complete composition tool and is all you need to create songs for a demo tape, stage use or whatever you have in mind.
This chapter will explain the procedure and the various steps involved in creating a song.

1. The sample song

In this chapter we will explain basic operation of the JV-1000 while recording the following song:

2. Preparations for recording

Initialize a floppy disk

The song we are about to record will be erased from memory if the JV-1000 is turned off. If you wish to keep the recording, you must save it on a floppy disk.

New floppy disks you purchase cannot be used just as they are. You must first "initialize" the disk. This prepares the disk for use by the JV-1000. Before recording our song, we will first initialize a floppy disk.

1. Make sure you have the correct type of floppy disk.

The JV-1000 uses 3.5 inch, 2DD floppy disks. It cannot use 5 inch floppy disks, or 3.5 inch 2HD floppy disks.

When you initialize a floppy disk (new or used), any data which may have been on that disk will be erased. If the disk you wish to initialize has been used before in a personal computer or other device, make sure that it does not contain any important data.

2. Check the protect tab.

If the 'protect tab' of the floppy disk is in the PROTECT (ON) position, it cannot be initialized. If the protect tab is in the PROTECT (ON) position, move it to the WRITE (OFF) position.
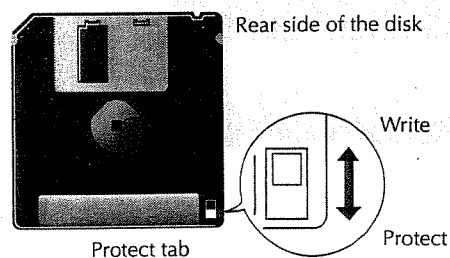
3. Press SHIFT+MODE to get the mode select display.
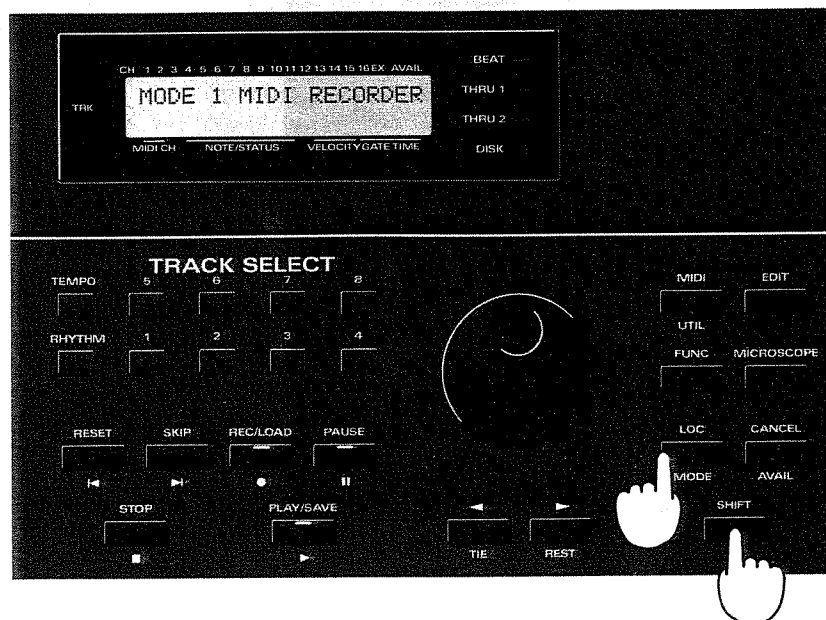
4. Use the alpha-dial to select mode 4, and press ENTER.

The LCD display of the sequencer section will be as follows.
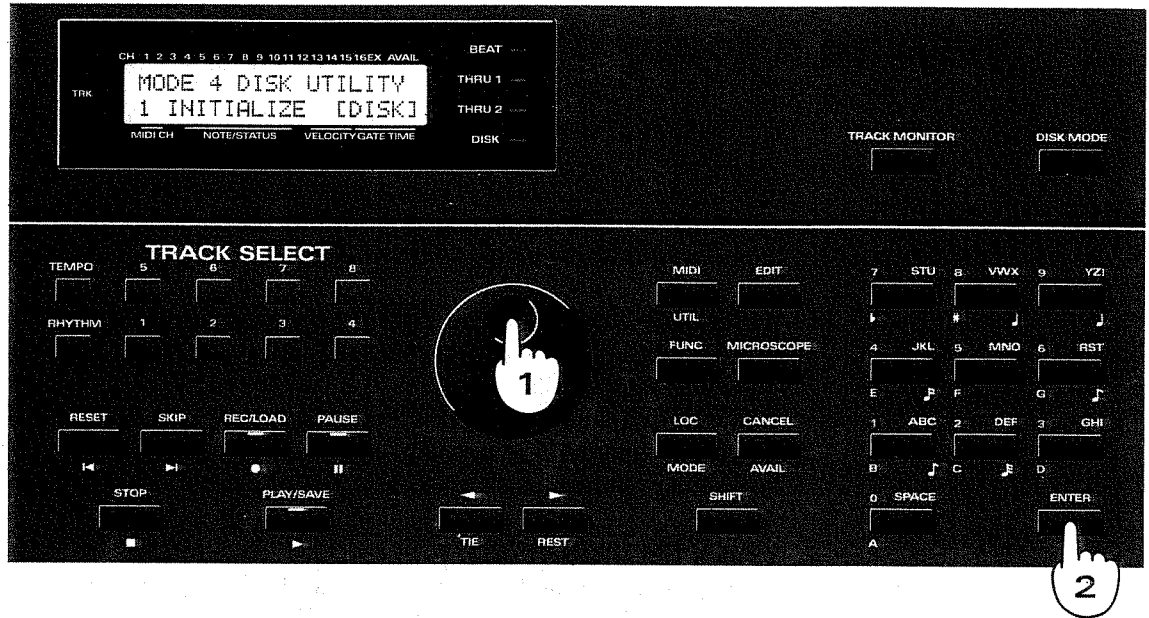
Press ENTER once again to get the following display.

Insert the floppy disk into the floppy disk drive with the label facing up. Push it gently in until it clicks into place and the eject button pops out.
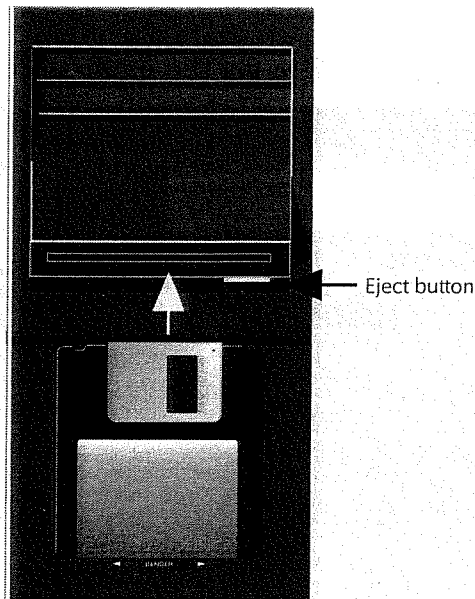
Eject button

5. If you are sure you wish to initialize the floppy disk, press ENTER.

While the disk is being initialized, the DISK indicator beside the LCD display will light. The TRACK SELECT button indicators will flash in the following sequence: 8 →TEMPO → 4 → RHYTHM.

When initialization is complete, the DISK indicator and TRACK SELECT indicators will go out, and the following display will appear.
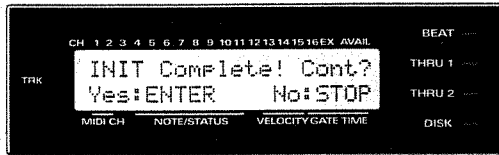
If you wish to initialize another floppy disk, press ENTER and follow the instructions in the display.

6. After you have initialized enough floppy disks, press STOP. Then press SHIFT+MODE → ENTER to return to standby mode.
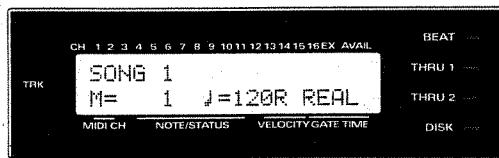
Select a performance

In order to play a song containing two or more parts, you must set the synthesizer section to performance play mode so that it will be able to produce two or more parts at once. Then either select a Performance which contains the sounds and rhythm set that you suit your song, or modify the Performance settings to select the sounds you want.

In this example we will create our song using the performance in preset memory A16.

Press PERFORMANCE to enter performance play mode, and use the patch group buttons to select preset memory performance group 'A.' Then use BANK and NUMBER to select '16.'
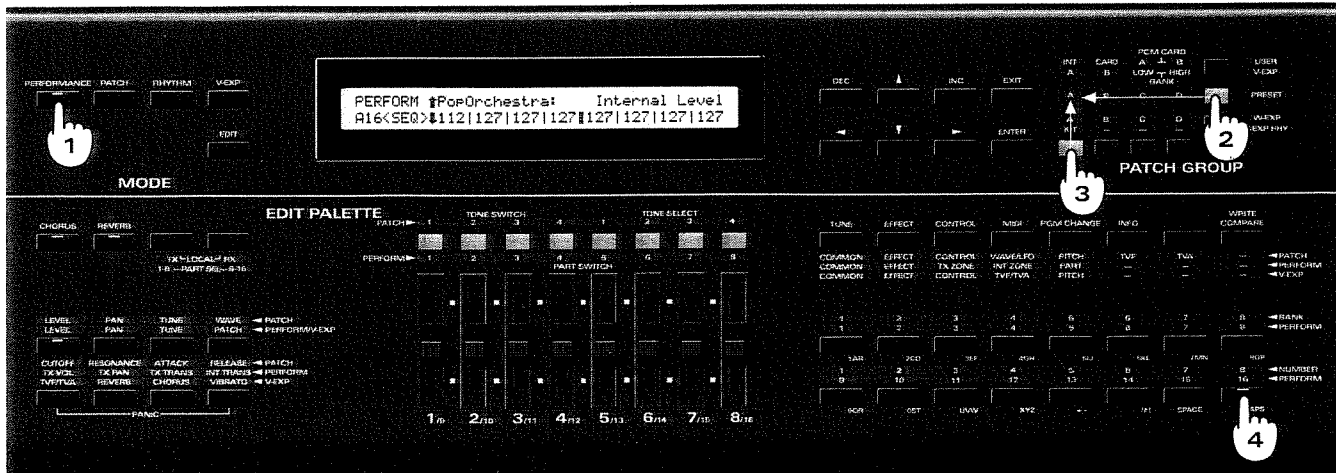
The performance we have selected is a single mode performance (see SYNTHESIZER MANUAL/p.72).

* Here, you should record Parts 1—7 in the synthesizer section into the Phrase Tracks 1—7 in the sequencer section and the Part 8 (Rhythm Part) in the synthesizer section into the Rhythm Track in the sequencer section.

Synthesizer section   **Sequencer section**

Part 1 ————————————— Track 1

Part 2 ————————————— Track 2

Part 3 ————————————— Track 3

Part 8 ————————————— Rythm track
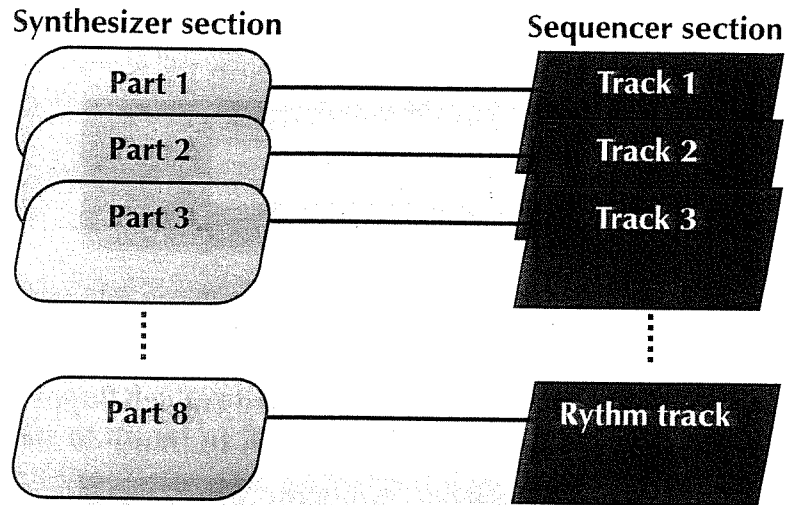
Check the sound of each part

When you play the keyboard, a single mode performance will sound only the part indicated by the cursor. Use ◄/► to move the cursor. Then play the keyboard to hear the sound of each part.

```
PERFORM ↑PopOrchestra:      Internal Level
A16<SEQ>↓122|127|120|115|110| 95|115|120
```

Cursor
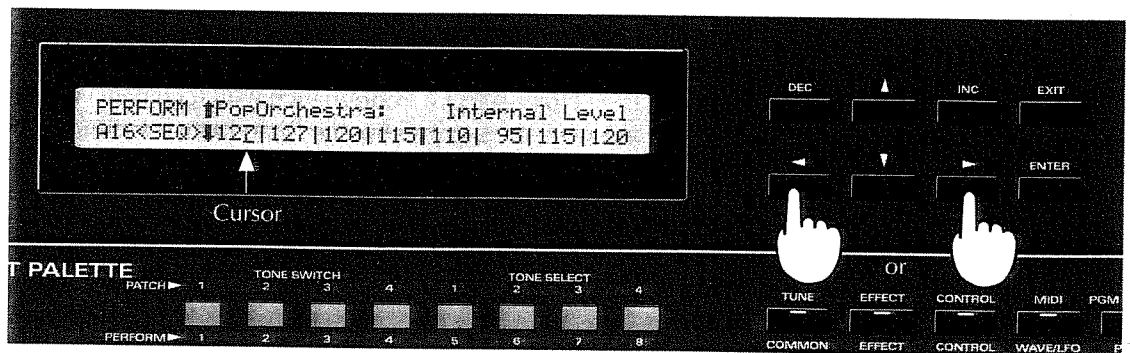
* Using the Part Switch, you can set whether to play each Part. The parts where the indicators are lit will be played while the parts where the indicators are dark will be muted. (SYNTHESIZER MANUAL / p.25)

In this sample song, we will use the following sounds.

Performance: Preset memory A16 (PopOrchestra)

Part no.	Part name	Patch	Track no.
1	melody	A41 WarmVibe	1
2	bass	B14 Rock Bass	2
3	backing	B31 St Strings	3
8	rhythm	Preset A	R

* In this sample song, we will not use parts 4—7.

3. Realtime recording

Realtime recording is the process of recording musical data as you play it on the keyboard. This method of recording is best for parts that need to be played freely or expressively.

Now we will record the melody part 'in realtime' on sequencer track 1.
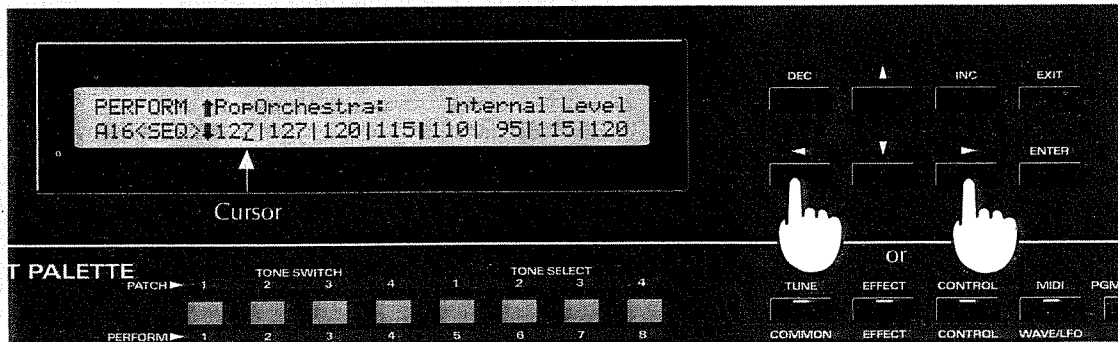
Select the part you wish to play _____

Here we will use part 1 of the sequencer section for the melody part. To play part 1 from the keyboard, use ◄/► to move the cursor to part 1. If PART SWITCH 1 is dark, press the button again (so the indicator lights).
Play the keyboard to check the sound of the part.

Record the melody part_____

Make sure that the sequencer is in standby mode.
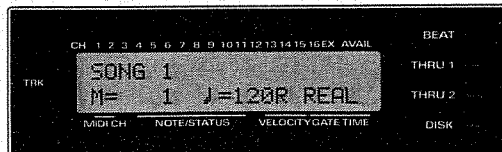
Standby mode

1. **Select the song number you wish to record in.**
   The JV-1000's sequencer can hold more than one song at once. Each song has a number; the Song Number.
   Press ◄/► to get the song number to flash. While holding SHIFT, use the alpha-dial to select the song number (1—8). In this example we will use song number 1.

Song number

1 or 1 or 2
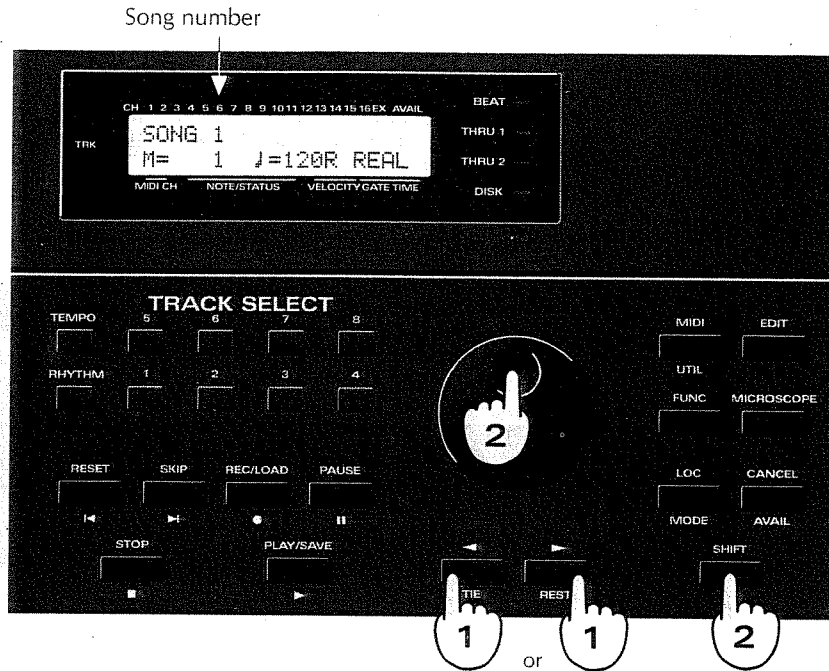
2. Press ◄/► to get the recording mode to flash. Use the alpha-dial to select "REAL". "REAL" indicates that you are in realtime recording mode.

Recording mode

1 or 1 or 2
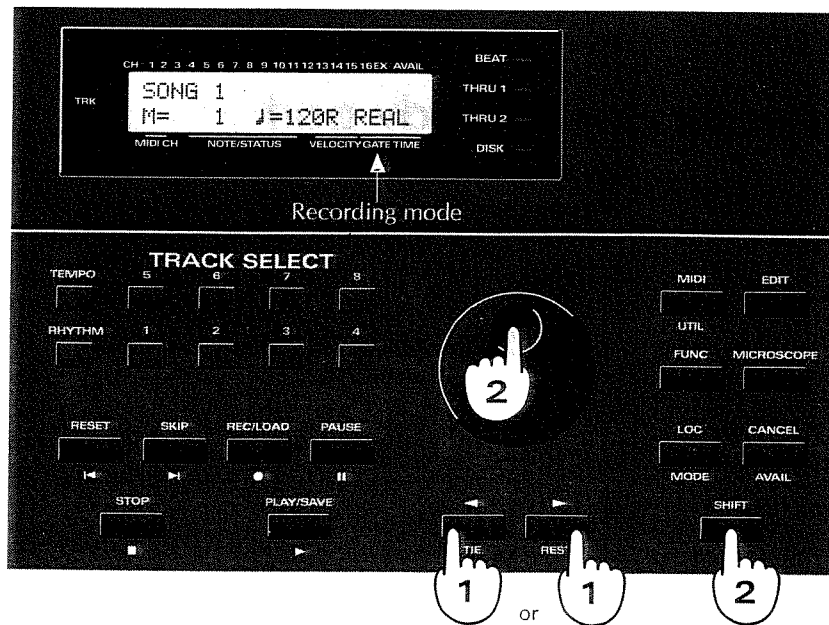
3. **Press REC/LOAD to select the recording standby display.**
The REC/LOAD indicator and the track 1 indicator will begin to flash (red), and the metronome will begin sounding. The metronome volume can be adjusted by the metronome volume knob located on the rear panel.

4. **Press REC/LOAD once again to select the recording setting display.**

Recording Method   Track

Time signature   MIDI channel
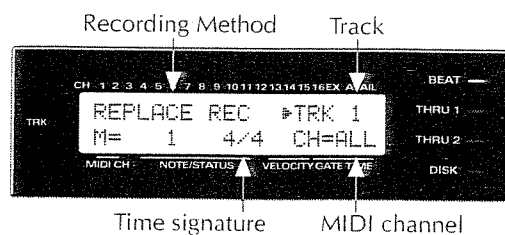
In this example we will not modify any of these settings, so continue pressing ENTER until the following display appears.

5. **Use the alpha-dial to set an appropriate tempo.**

6. **Press PLAY/SAVE, and after a two-measure count-in recording will begin (count-in recording).**

Current measure
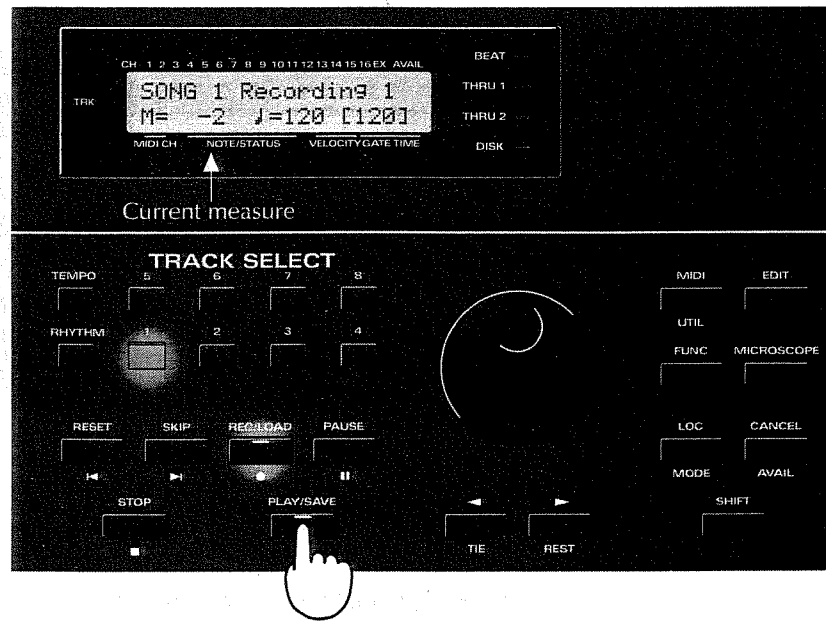
When the measure number display reaches 1, begin playing the melody part.

* *From the recording standby condition, you can press PAUSE and then begin playing to automatically start recording (key-on start).*

7. **When you finish playing ,press STOP.**
When the musical data has been recorded in track 1, the track button and rhythm track indicators will light.

8. **Listen to the part you just recorded.**
Press RESET to return to the beginning of the song, and then press PLAY/SAVE to hear the part you just recorded. As you listen, you can use the alpha-dial to adjust the tempo.

* *If you start playback by pressing SHIFT+PLAY/SAVE, the track you recorded will play back repeatedly until you press STOP.*
* *If your performance contained errors in timing, you can later use the Quantize function (p.52) to correct them.*

4. Overdubbing

Overdubbing refers to the process of recording new parts on a different track while listening to the previously recorded track(s). When you finish recording the melody part, let's use realtime recording to record the backing part on track 3.

Select the part you wish to play

For the backing part we will use Part 3 of the synthesizer section. Use ◀/▶ to move the cursor to part 3. If PART SWITCH 3 is dark, press the switch (so the indicator lights). Play the keyboard to check the sound of part 3.
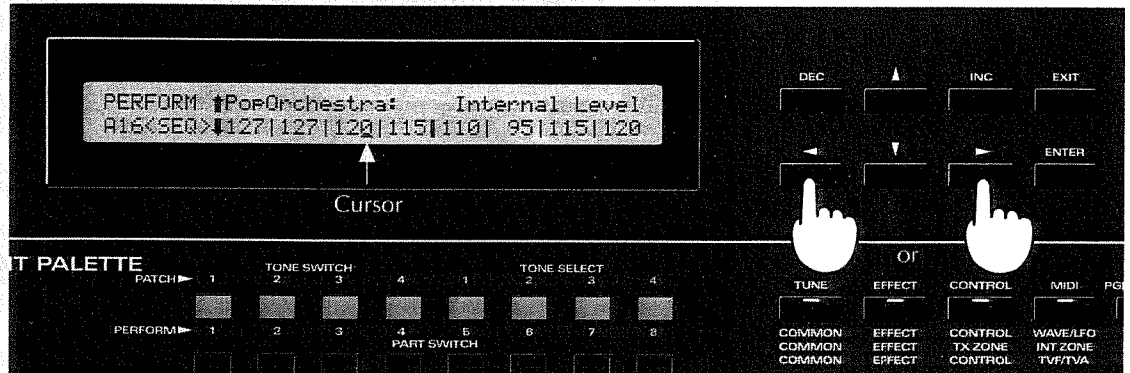
Overdub the backing part

1. **Press RESET to return to the beginning of the song.**

2. **Press REC/LOAD to select the recording standby display, and press track key 3 (so the indicator flashes).**

3. **Record the backing part on track 3 in the same way as you did for the melody part.**

   * If you wish to record track 3 without playing back track 1, press track 1 to turn off the indicator before you press REC/LOAD. The track 1 indicator will remain dark, and the indicator for track 3 will flash.

5. Step recording

Step recording refers to the process by which notes and rests can entered into a track (using the numeric keypad or the keyboard) one at a time.
This method of recording is suitable for musical parts which must be played back with precise timing. Step recording also makes it possible to record very intricate or difficult passages that would be impossible to play in realtime.
We will use step recording to record the bass part in track 2.

Select the part you wish to record

We will use part 2 for the bass part. Use ◄/► to move the cursor part 2. Play the keyboard to check the sound.

1. **Press RESET to return to the beginning of the song.**

2. **Use ◄/► to get the recording mode to flash, and use the alpha-dial to select "STEP."**
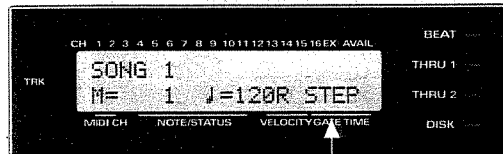
Recording mode

3. **Press REC/LOAD to select the recording standby display. Then press track button 2 to get the indicator to flash.**

The track to be recorded

4. Press ENTER several times to select the following display.

Track number

Current position Step time

MIDI channel
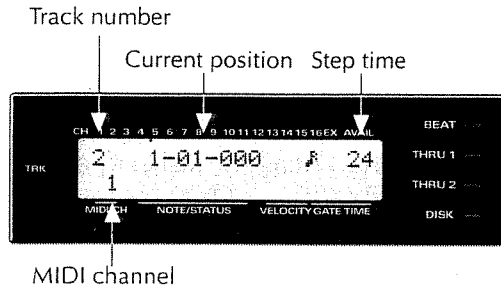
5. Specify the note value (step time) of the note you wish to input.

Since the first note is a quarter note, use the alpha-dial to set the step time to "♩ 96".
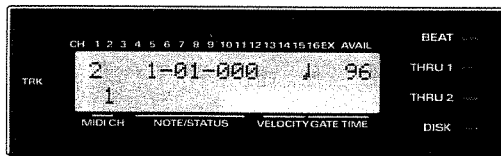
* You can also set the step time using SHIFT + numeric keys (1—9). In this case, hold the SHIFT button and press the numeric key corresponding to the note value you wish to enter.

6. Input the note 'G' (G2).

Track number Corrent position Note length

When you press the key,
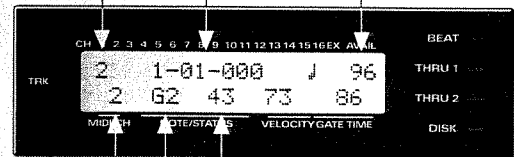
MIDI channel
Note name
Note number

The current position has moved to the second beat

When you release the key,
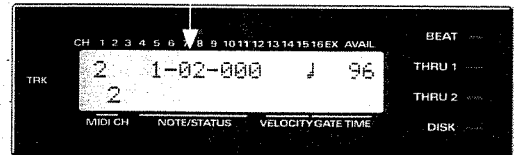
7. Next enter an 8th note rest.

Use the alpha-dial to select a step time of "♪ 48".

Next hold SHIFT and press "▶" once to enter a rest of the specified step time.
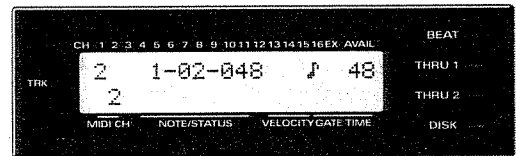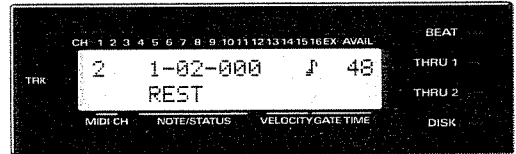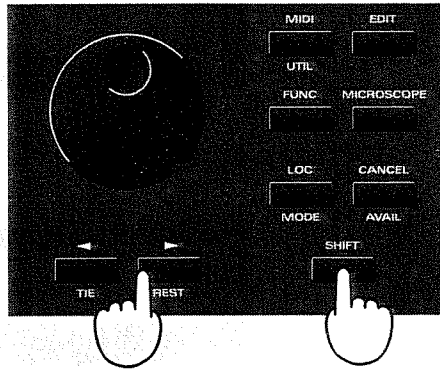
8. Input the note 'G' (G2).

Since this is a 16th note, use the alpha-dial to select a step time of "♪ 24".
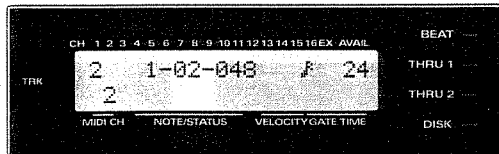
Press the 'G' key (G2).
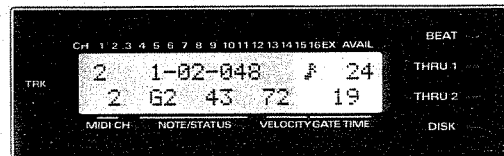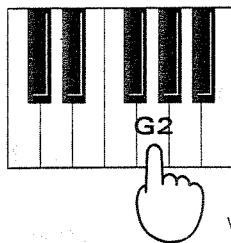
When you press the key,
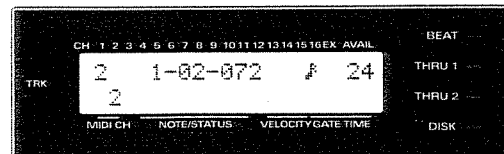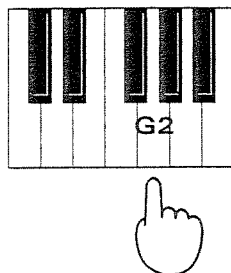
When you release the key,

9. Input the note 'G' (G2).

As before, this is a 16th note, so press the 'G' key (G2) without changing the step time.
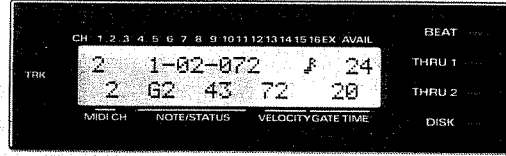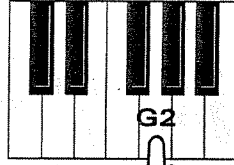
When you press the key,
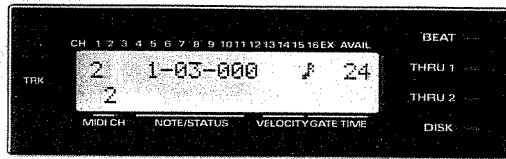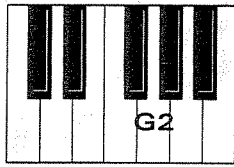
When you release the key,

10. Finally, enter a half-note rest.

Since this is a half-note rest, use the alpha-dial to select a step time of "♩ 192."

While holding SHIFT, press "▶" once to enter a rest of the specified step time.

The current posiotn has moved to the second measure.
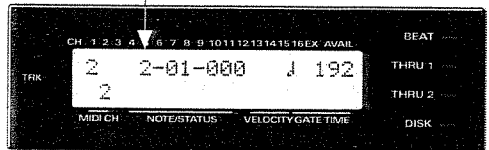
We have now finished entering the first measure.

Use the same procedure to create measures 2, 3 and 4.
When you finish, press STOP. Press RESET to return to the beginning of the song, and press PLAY/SAVE to hear the part you just recorded.

* If you wish to correct your input, press RESET.
  Each time you press RESET you will return to the immediately previous data (or 'event'), and the data you backed up over will be erased. Now you can enter a new value.

* To enter a whole note or dotted note, use TIE (SEQUENCER MANUAL / p.42).
* If you will be entering the same phrase many times, it is convenient to use the Copy function (p.52).
* In step recording, it is also possible to input note number (pitch) data from the numeric keypad without using the keyboard (SEQUENCER MANUAL/p.41).

6. Recording the rhythm pattern

In order to record the rhythm part in the rhythm track, we must first make some one-measure rhythm patterns. We will then create the rhythm part by arranging these rhythm patterns in the rhythm track.

The rhythm part of the sample song consists of a combination of the following four patterns.

Rhythm pattern 1

Rhythm pattern 2

Rhythm pattern 3

Rhythm pattern 4

< Example drum score >

Select the part you wish to record

To record the rhythm part we will use part 8 of the synthesizer section. Use ◄/► to move the cursor to part 8. If PART SWITCH 8 is dark, press the button once again (so the indicator lights).
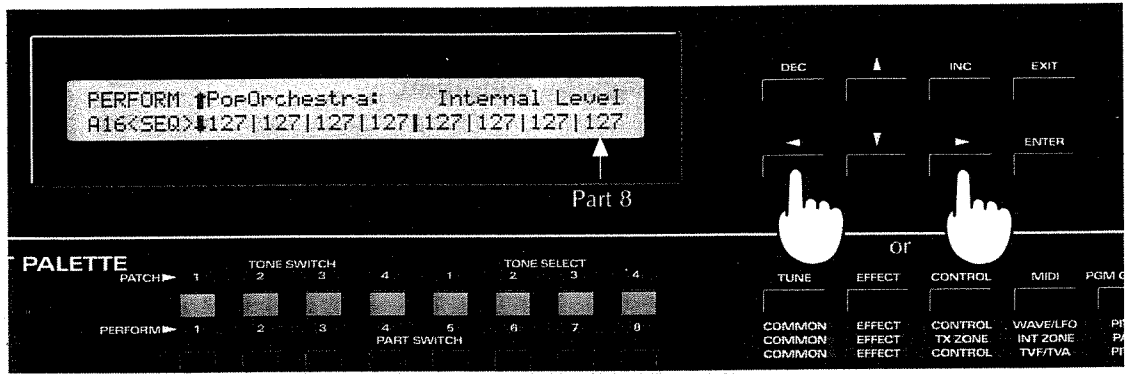
The rhythm sounds are arranged across the keyboard as shown below.

* In the rhythm set, the B1 key "BassDrum1" (BD1) cannot be used. Also, depending on the keyboard, the displayed rhythm sound names may not match the actual sound names ("Reference" in the SYNTHESIZER MANUAL).

* Where the rhythm sound name is blank, you can use the keyboard to play the note but this will not be recorded by the Rhythm track. To record these, you will need to modify the drum sound assignments in the sequencer section (SEQUENCER MANUAL/p.98).

Recording pattern 1 _____

From the standby condition,

1. **Use ◄/► to get the recording mode to flash, and then use the alpha-dial to select "RHYTHM."**
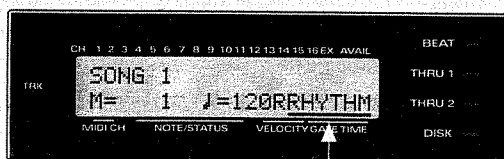
2. **Press REC/LOAD and use the alpha-dial to select "R-PATTERN."**
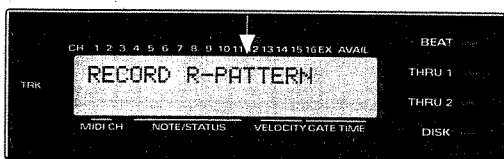
After selecting R-PATTERN, press ENTER.
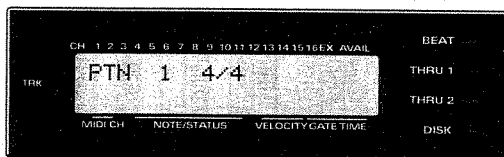
3. **Without modifying the setting, press ENTER to select pattern 1.**

4. **Press ENTER twice more to select 4/4 time, and the recording setting display will appear.**

Rhythm pattern number
Time signature

Rhythm instrument   Resolution
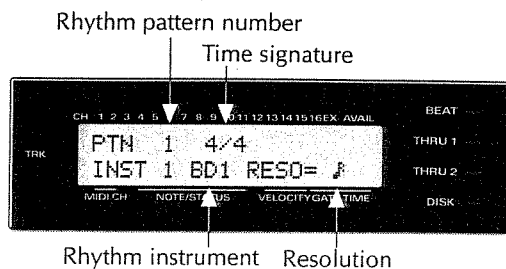
5. **Press ENTER.**

   If you wish to use the keyboard to record the rhythm pattern, there is no need to specify the rhythm sound to be recorded. If you wish to record patterns without using the keyboard, refer to page 44 in the SEQUENCER MANUAL.

6. **Specify the resolution (the shortest note value that will be recorded).**

Since the shortest note value in pattern 1 is a 16th note, use the alpha-dial to select "♪" and then press ENTER. The recording display will appear.

Time signature

Rhythm instrument | Resolution

Grid | Current position of the cursor
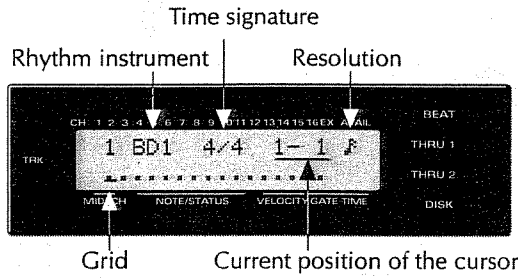
The grid indicates the locations at which rhythm notes can be entered. The grid number will depend on the specified time signature and the resolution.

* *You can also use the numeric keys to specify the resolution.*
* *The record setting display and the recording display can be switched by pressing SHIFT+ENTER.*

7. **Press SHIFT+PLAY/SAVE. The metronome will begin sounding and you can begin entering notes.**

Play the keyboard in time with the metronome to record rhythm sounds.

C2   C3

└─ Hi-tom (HT)
└─ Closed hi-hat (CHH)
└─ Low-tom (LT)
└─ Sunare drum (SD2)
└─ Bass drum (BD2)
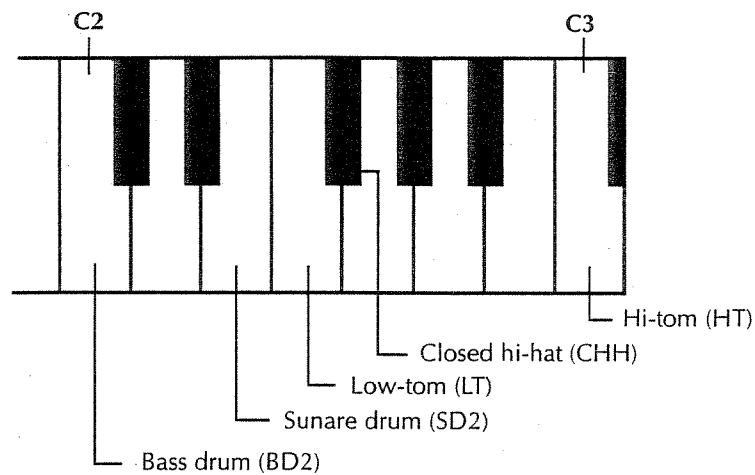
The recorded notes will be repeated over and over, allowing you to listen to the previously-entered notes as you build up a rhythm pattern.

Press SKIP once to view the musical data for the bass drum (BD2).

Corrent position
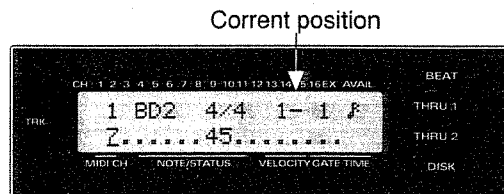
When you play the keyboard, a velocity code of 1—8 will be entered on the grid to indicate the 'volume' with which you played the note. Press SKIP or RESET to select different instruments, and check the data that you input for each one. Pressing SKIP will move to the rhythm sound of the next higher note number, and pressing RESET will move to the rhythm sound of the next lower note number.

Snare drum 2

Closed hi-hat
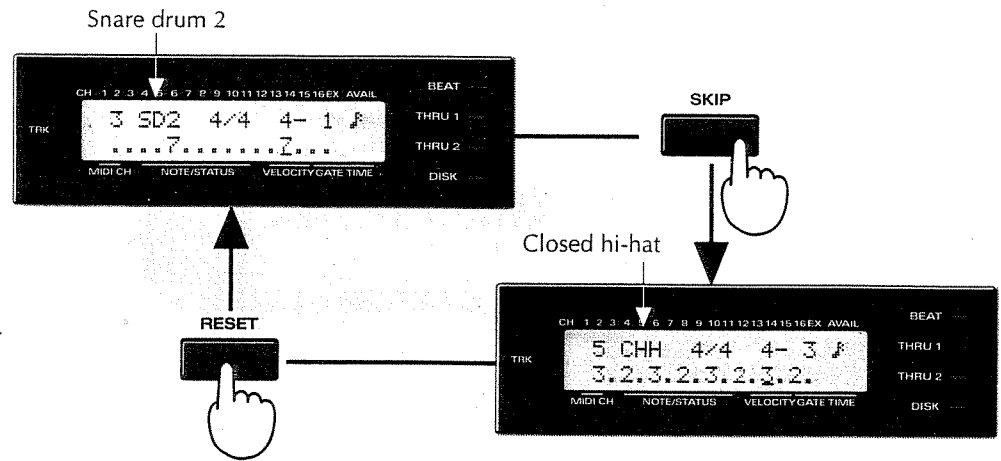
When you finish recording pattern 1, press PAUSE to stop playback (while remaining in recording mode). To stop recording, press STOP.

Record patterns 2—4

Now let's record patterns 2—4.

< Example of velocity code input for pattern 2 >
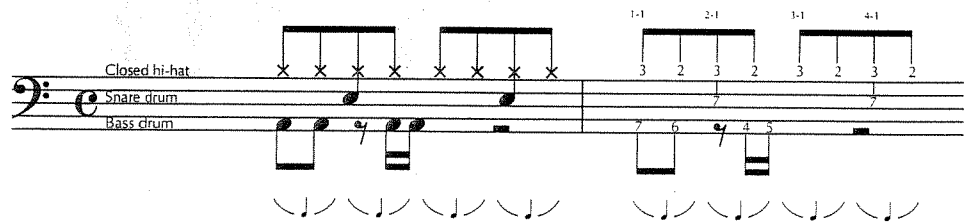
< Example of velocity code input for pattern 3 >
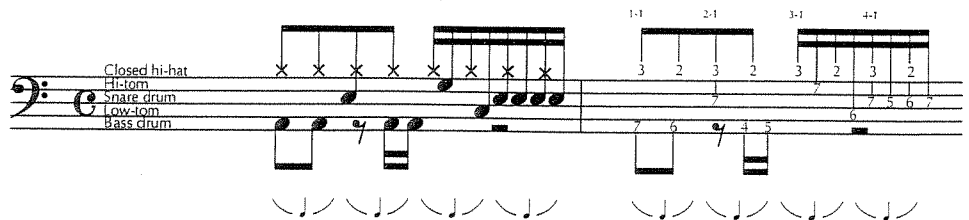
< Example of velocity code input for pattern 4 >
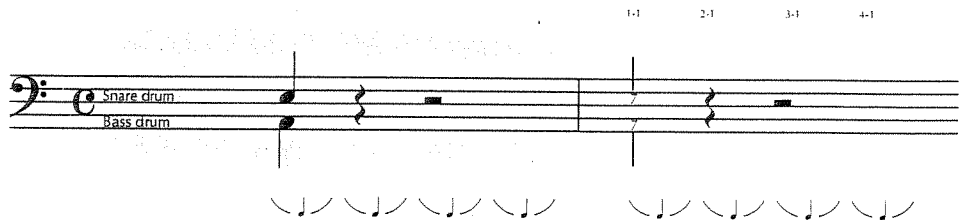
1. **Press SHIFT+ENTER to select the recording setting display.**

2. **Use ◀/▶ to get the pattern number to flash, and use the alpha-dial to set the pattern number to 2 (or 3, 4) and press ENTER.**

   The rest of the procedure is the same as for step 4 and following "Recording pattern 1." In this way, create patterns 2—4.

3. **When you have finished making all the rhythm patterns, press STOP to return to standby mode.**

> * It is also possible to input note data from the numeric keys without using the keyboard.
> * Pattern 2 is similar to pattern 1. In such cases, it is convenient to use the Copy function (SEQUENCER MANUAL/p.47).

Modifying the velocity codes

Here's how you can modify the playing dynamic of a note you entered, or correct any input errors.

1. **Make sure that you are in recording mode (the REC/LOAD indicator is lit).**
   If you have already pressed STOP, the REC/LOAD indicator will be dark and you will be in standby mode. If so, refer to "Recording pattern 1" (p.32) and select the rhythm pattern you wish to correct. A display like the following should appear.
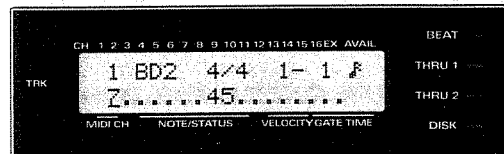
> * If you wish to edit data as you listen to it, keep playing the data repeatedly using SHIFT+PLAY/SAVE.

2. **Press SKIP or RESET to select a rhythm instrument.**

3. **Use ◄/► to move the cursor to the desired location in the grid, and use the numeric keys (1—8) to enter a velocity code.**
   If you have mistakenly entered an undesired note, move the cursor to that location of the grid and enter '0.'
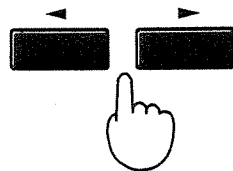
Move the cursor...
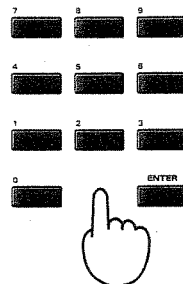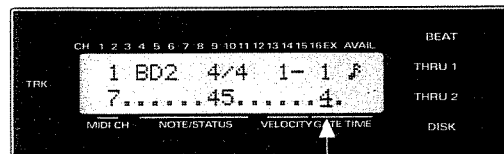
Modify the velocity code.
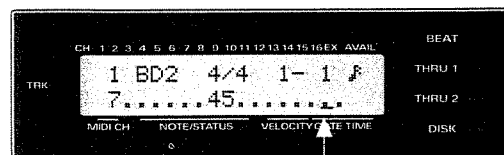
Erasing a rhythm pattern

You can also erase the rhythm pattern currently being recorded, and start over from the beginning.

1. From recording mode, press SHIFT+ENTER, and use ◄/► to get the pattern number to flash.
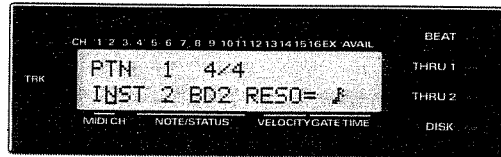
2. Press SHIFT+4.
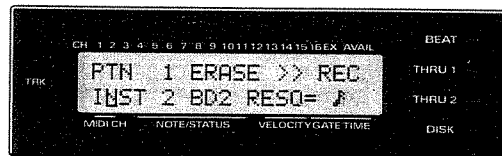
If you wish to erase the rhythm pattern, press REC/LOAD.

If you wish to quit without erasing, press "◄." You will return to the previous display.

When erasure is complete, press SHIFT+ENTER to return to the recording display, and enter the pattern once again.

7. Recording the rhythm track

Next we will place the four rhythm patterns we created in "6. Recording the rhythm pattern" in the rhythm track. In the JV-1000 sequencer, the rhythm part is recorded by arranging rhythm patterns in the rhythm track.

If we replace the drum part measures of the sample song with pattern numbers, we'll get the following.

Rhythm pattern number
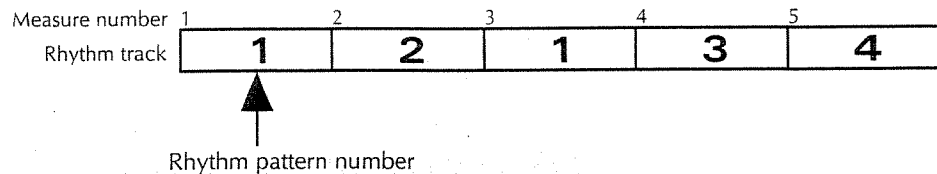
The following procedure shows you how to arrange rhythm patterns in the rhythm track (in the desired order of playback).

1. **Press RESET to return to the first measure of the song, and make sure that you are in standby mode.**

2. **Make sure that the recording mode is "RHYTHM."**
   If another mode is selected, use ◀/▶ to move the cursor to the recording mode and use the alpha-dial to select "RHYTHM."

3. **Press REC/LOAD, use the alpha-dial to select "R-TRACK," and press ENTER.**

Measure number   Beat
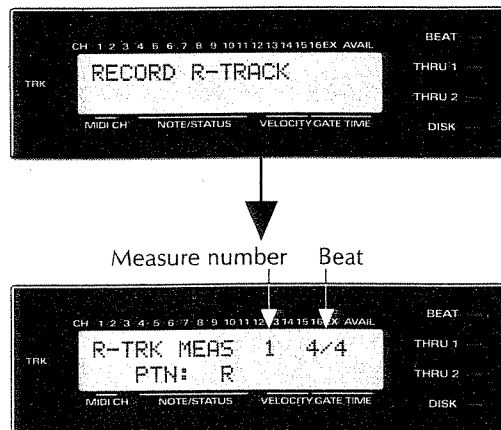
4. **Since we will be starting with measure 1, press ENTER (without making any changes).**

5. **Specify the pattern number to be placed in measure 1 of the rhythm track.**
   Since pattern number 1 goes in measure 1, press 1 → ENTER.
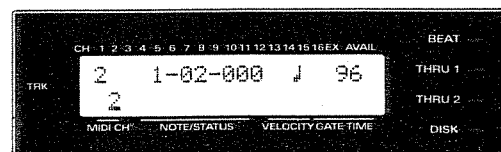
6. **We will not be adding velocity bias (SEQUENCER MANUAL/p.48), so without any further changes, press ENTER to move to the next measure.**

7. **Pattern number 2 goes in measure 2, so press 2 → ENTER.**

```
CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16EX AVAIL    BEAT
                                                     THRU 1
TRK      R-TRK MEAS    2  4/4                         THRU 2
           PTN:   2  BIAS: 0
       MIDI CH   NOTE/STATUS  VELOCITY GATE TIME      DISK
```
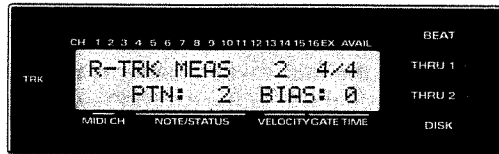
8. **We will not be adding velocity bias so without any further changes, press ENTER.**

   In this way, repeat the above steps to place rhythm patterns in measures 3, 4 and 5.

9. **When you finish, press STOP.**

```
CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16EX AVAIL    BEAT
                                                     THRU 1
TRK      SONG 1                                       THRU 2
         M=  5   ♩=120RRHYTHM
       MIDI CH   NOTE/STATUS  VELOCITY GATE TIME      DISK
```
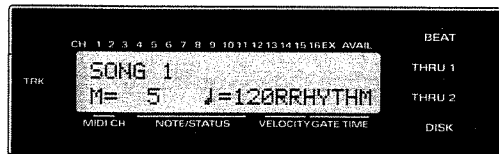
   This completes our sample song. Press RESET → PLAY/SAVE to hear the song we recorded.

3

8. Save the song data to disk

Any recorded song data will be automatically erased when the JV-1000 is switched off. To retain a song, save it onto a disk.

From standby mode:

1. **Insert a floppy disk (with the protect tab in the OFF (WRITE) position) that has been initialized for the JV-1000 into the floppy disk drive.**

2. **Press DISK MODE, use the alpha-dial to select "2 SAVE [SONG FILE]" and press ENTER.**

3. **Specify the song number you wish to save.**
   The display will indicate the status of each song 1—8 from left to right. The display characters have the following meaning.

Display	Meaning
1—8	save
*	don't save (song data exists in JV-1000 memory)
▪	don't save (song data does not exist in JV-1000 memory)

   Use the numeric keys (1—8) to specify the song number to be saved. (Each time you press a numeric key, the number will alternate with the symbol.) Here we want to save song number 1, so press ENTER without changing the display.

4. **Enter a song title (13 characters or less)**
   In this example we will entitle our song "Spring Song"
   Use ◄/► to move the cursor to the location where you wish to input a character, and use the numeric keys to select numerals/characters. You can enter the numerals, characters and symbols printed on each key. For example, if you repeatedly press 1, the display will change to read: 1→ A → B → C → 1... To enter lowercase letters, press a key while holding SHIFT.
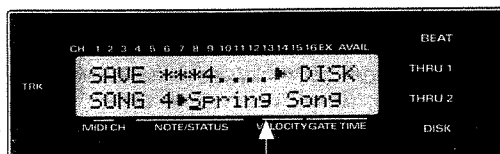
   Song title

   * *You can also use the alpha-dial to select characters.*

   When you finish entering the song title, press ENTER.

5. **Press PLAY/SAVE to execute the Save operation.**

6. **Press DISK MODE to return to standby mode.**

9. Load song data from disk

In order to play or modify song data that has been saved on a floppy disk, you must first load the song data into the JV-1000. This is done using the "Load" operation.

1. Insert a floppy disk (protect tab in the ON (PROTECT) position) containing song data into the floppy disk drive.

2. Press DISK MODE, use the alpha-dial to select "1 LOAD [SONG FILE]" and press ENTER.

CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16EX AVAIL   BEAT

TRK   MODE 2 DISK   THRU 1

1 LOAD. [SONG FILE]   THRU 2

MIDI CH   NOTE/STATUS   VELOCITY GATE TIME   DISK

Load function

CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16EX AVAIL   BEAT

TRK   LOAD SONG FROM DISK   THRU 1

SELECT SONG*****5...   THRU 2

MIDI CH   NOTE/STATUS   VELOCITY GATE TIME   DISK

Song numbers to be loaded
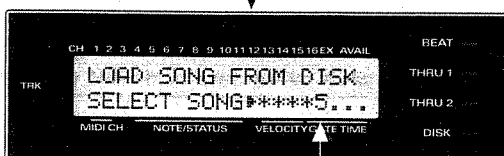
3. Specify the song number into which the song will be loaded.
The display will indicate the status of each song 1—8 from left to right. The display characters have the following meaning.

Display	Meaning
1—8	load
*	don't load (song data exists in JV-1000 memory)
"	don't load (song data does not exist in JV-1000 memory)

Use the numeric keys (1—8) to specify the song number you wish to load, and then press ENTER.

Song numbers to be loaded

CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16EX AVAIL   BEAT

TRK   LOAD *****5...* DISK   THRU 1

SONG 5*Spring Song   THRU 2

MIDI CH   NOTE/STATUS   VELOCITY GATE TIME   DISK

Song number   Song file
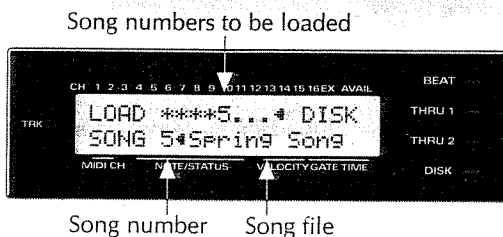
4. Use the alpha-dial to specify the song file you wish to load, and then press ENTER.
If you have specified two or more song numbers, repeat this step for each song number.

5. Press REC/LOAD to execute the Load operation.

6. Press DISK MODE to return to standby mode.

10. Create a Performance suitable for the song

When recording the sample song, we used one of the JV-1000's preset performances. You can modify this performance to change the patch assigned to each part, or modify the volume balance or pan settings to create a performance that is to your liking.
As an example, we will modify the settings of the performance "PopOrchestra" from preset memory A16 to create "My Perform," and then store it in user memory.

Modify the performance settings

Change the patches

Press PATCH to select the patch select page.
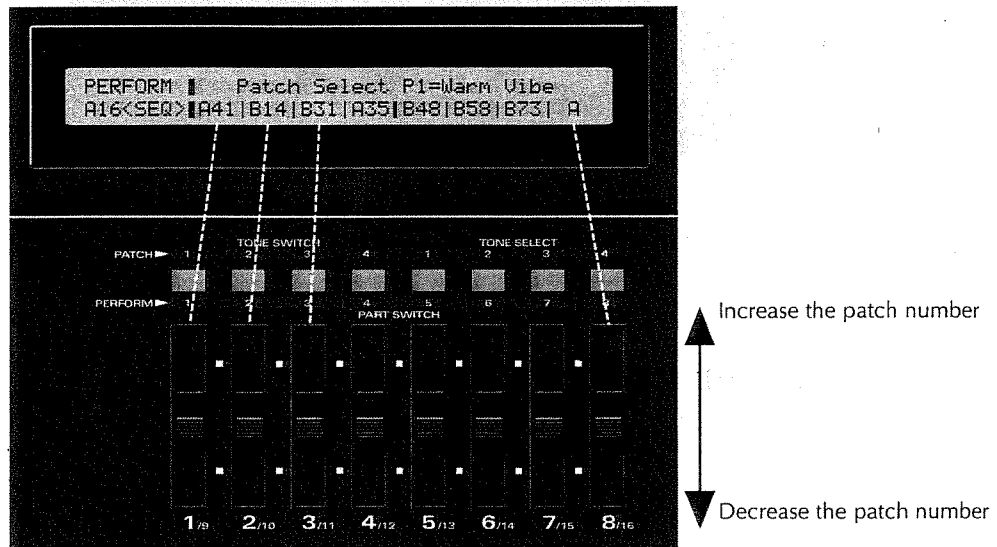
Move the slider corresponding to each part to change the patch assigned to each. The cursor will move to the part whose slider you move, allowing you to play the keyboard to hear the sound.

Modify the volume balance and pan

Press the LEVEL (or PAN) → "▲" of the synthesizer section. The display will indicate the settings of each part.

Increase the part level

Decrease the part level
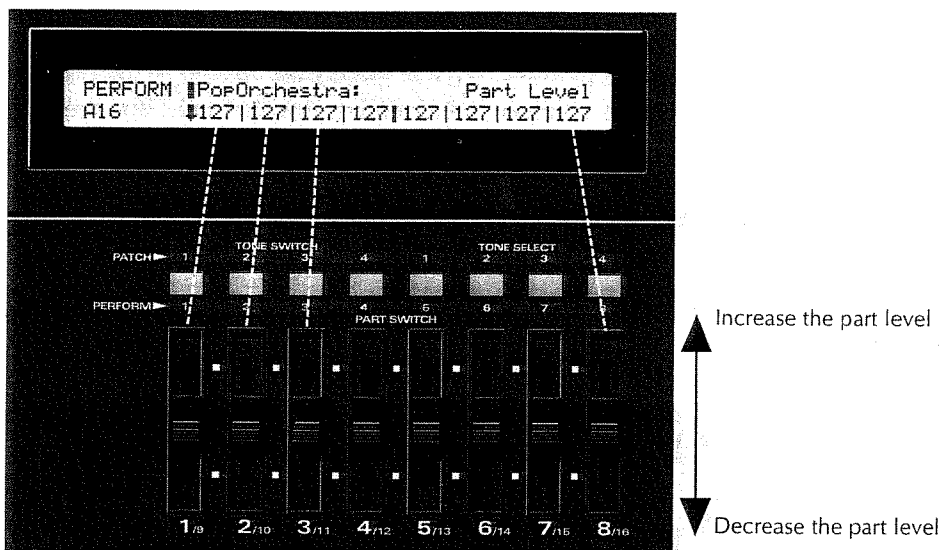
Either play the keyboard, or press SHIFT+PLAY/SAVE to playback the sample song you just recorded. Move the slider for each part to set an appropriate volume balance (or pan balance).

Save the performance

The changes you just made to the performance will be lost if you turn the JV-1000 off or select another performance. If you wish to save the modified data, you must save it into the synthesizer user memory (internal memory or a DATA card).

1. Set the performance name.

Press EDIT → COMMON to select the "PERFORM NAME" page.
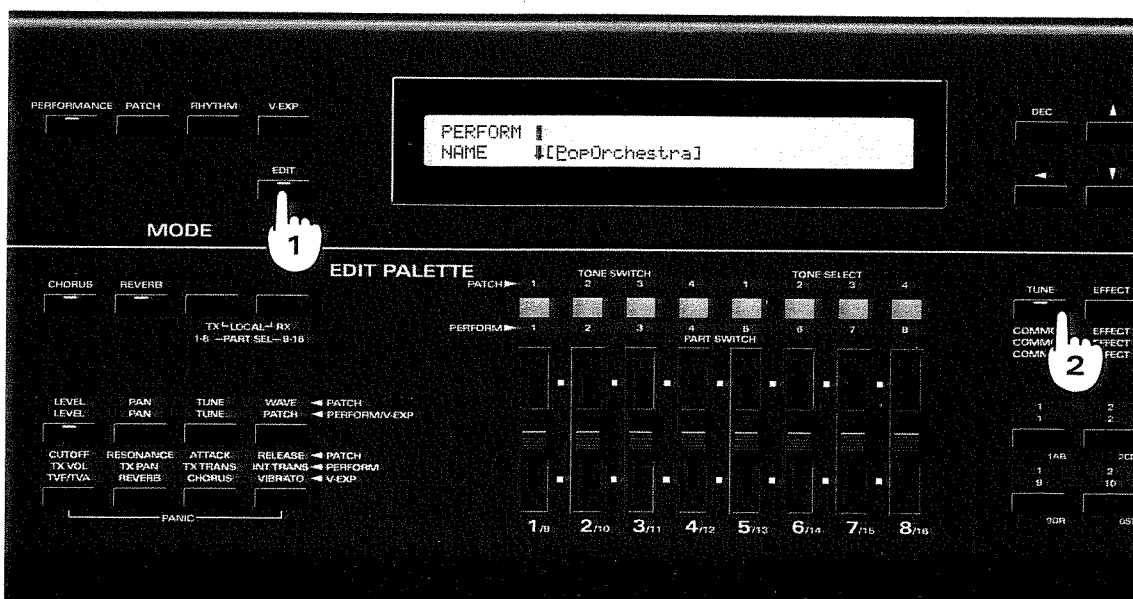
Use ◄/► to move the cursor, and use parameter slider 1 or INC/DEC to select characters to enter the name "My Perform."

* You can also use the BANK/NUMBER buttons to input characters. To switch between uppercase/lower characters, press CAPS to turn the indicator on/off. When the indicator is lit, uppercase characters will be entered.

2. Save the performance into internal memory.

```
WRITE MODE
Write Copy Initialize Card Bulk Protect
```
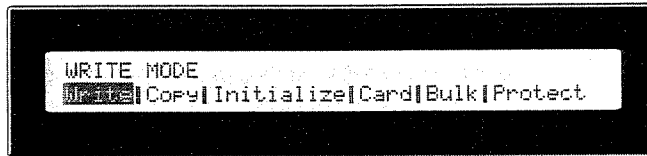
Press WRITE, use ◄/► so "Write" begins to flash, and then press ENTER.

```
PERFORM  from TEMP         [Press ENTER]
WRITE    to   UI16 Chaos
```
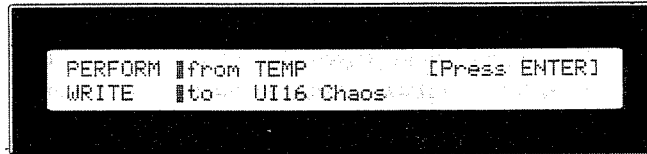
Specify the saving destination memory and number using the patch group / PERFORM buttons.
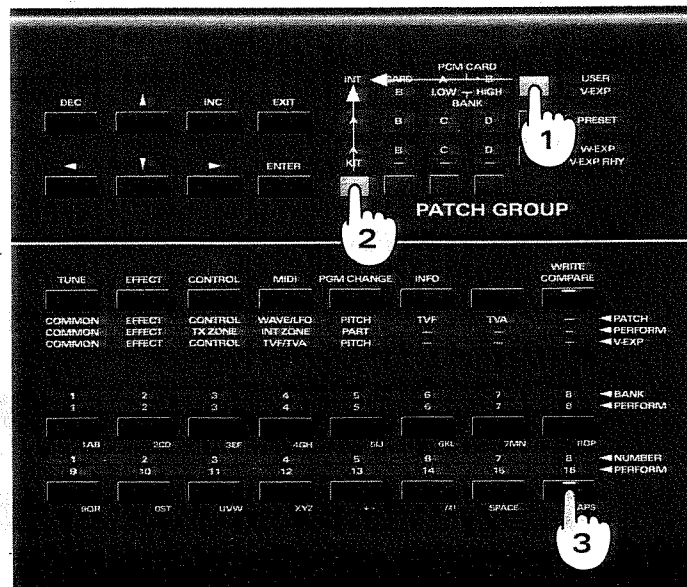
3. Press ENTER to execute the Save command.

If memory protect is on, the message will appear, and the protect on/off switch display will then appear.

```
WRITE    Internal Exclusive
PROTECT       ON      OFF
```
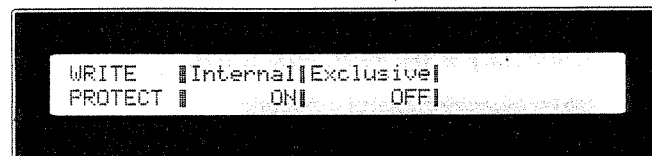
Press DEC → ENTER to turn protect off, and then press ENTER. The modified performance has now been stored in internal user memory (UI16).

4. To retain the previous display, press ENTER.

* If during the procedure you wish to quit without saving, press EXIT. Each time you press the button you will return to the previous display.
* To save sound data on the disk, use the Bulk Dump command (SYNTHESIZER MANUAL/p.109).
* It is also possible to record sound source settings at the beginning of song data (p.66).
* To restore the JV-1000's internal memory to the factory default settings, first turn its power off. Then while holding down the PERFORM 16 button, turn power back ON again. You can then follow the messages that appear in the display for the synthesizer section, and press ENTER then WRITE.

11. Mixing with the parameter sliders

Commercial recordings of popular music are created by separately recording each instrument on a separate track, and then during mixdown (the process of transferring the multi-track recording to a two-channel stereo 'mix') adjustments such as pan and volume are made that would have been difficult to accomplish accurately while the music was actually being recorded.

The JV-1000 allows you to use the parameter sliders while playing back a recorded song to make realtime adjustments to each part for volume and pan etc. or even change the patches for each part. The changes you make over the course of the song can be recorded in a phrase track, so that the final balance can be adjusted as easily as if you were using a mixer.

Before you record mixing data, let's select "I16 My Perform" which you saved a moment ago.

Recording the mixing data

Let's use the parameter sliders to record volume and pan mixing data in an unused phrase track of the sample song.

From standby mode,

1. **Press the synthesizer section LEVEL (or PAN) button so that the parameter sliders will control the volume of each part.**

```
PERFORM ↑My Perform :     Internal Level
↓16<SEQ>↕127|127|127|127|127|127|127|127
```
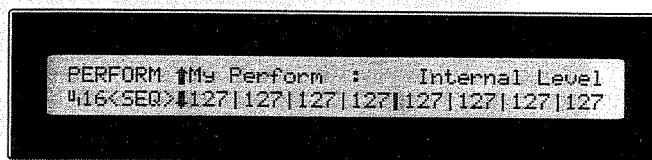
* *The parameters that belong to the page where <SEQ> is shown in the display will be sent to the internal sequencer if the values of each Part are edited with the parameter slider.*

2. **Press REC to enter recording standby mode, and press the track key of the track into which you wish to record volume (pan) data. The selected track key indicator will flash.**
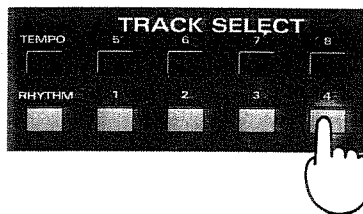
3. **Press PLAY to begin recording.**
   When you wish to change the volume or pan in realtime, move the parameter sliders of each part as the song progresses. The volume (pan) changes will be recorded.

Adjust the volume balance

Press the synthesizer section LEVEL button. The display will indicate the volume setting value for each part as a number 0—127 (higher numbers indicate a greater volume).

Move the sliders for each part to adjust the volume balance. The volume will increase as the sliders are raised.
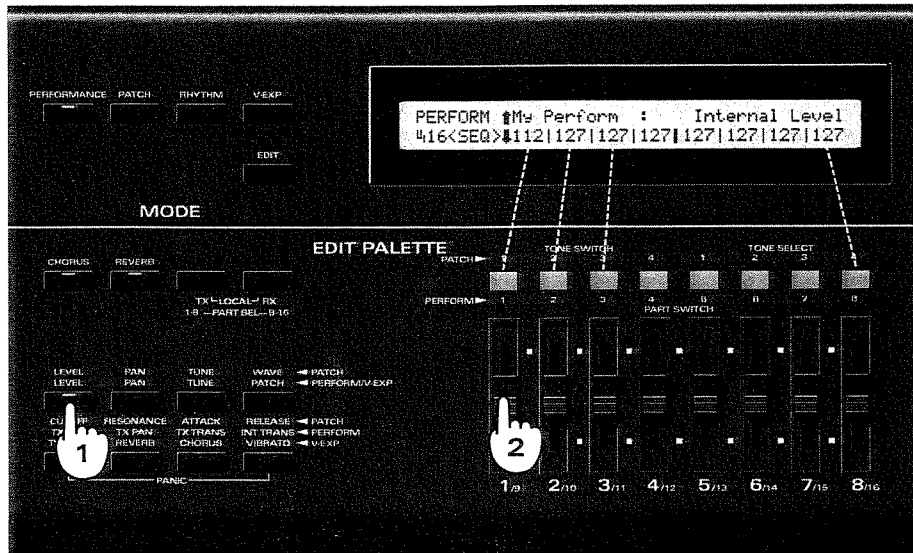
Adjust the pan

Press the synthesizer section PAN button. The display will indicate the pan setting value for each part between L64—0—63R.

Move the sliders for each part to adjust the pan. The stereo position of the sound will move to the right as a slider is raised.
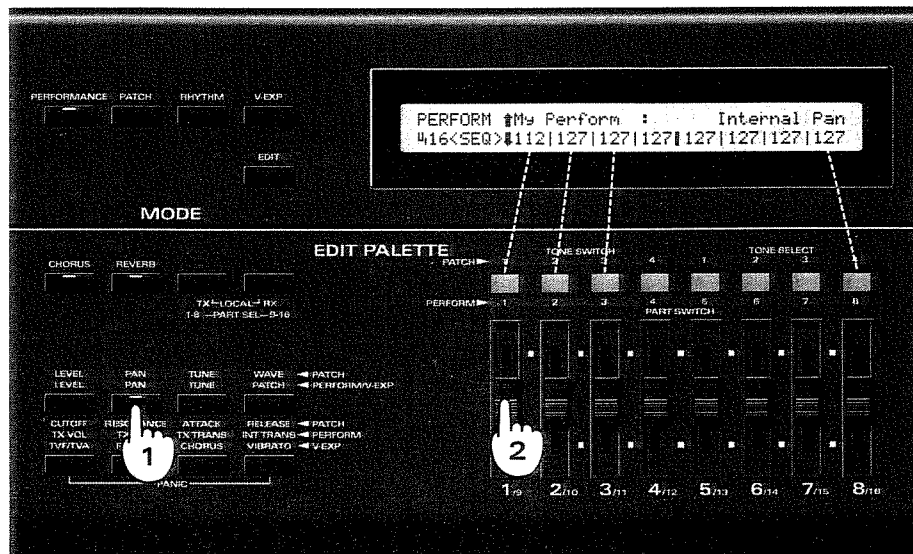
4. **When you finish, press STOP.**

   Press RESET → PLAY/SAVE to check the mixing data you just recorded.

   * *If while recording you select patches using the procedure of "Select patch (p.6),"
   program change messages will be recorded in the recording track. This allows you to
   make patches change while the song is being played back.*
   * *If you were not able to make all the desired changes in volume and pan, or patch
   selections, you can record again on another track.*
   The Merge function (SEQUENCER MANUAL/p.84) can be used to combine these tracks into one track.

3

Chapter 4
Sequencer editing function
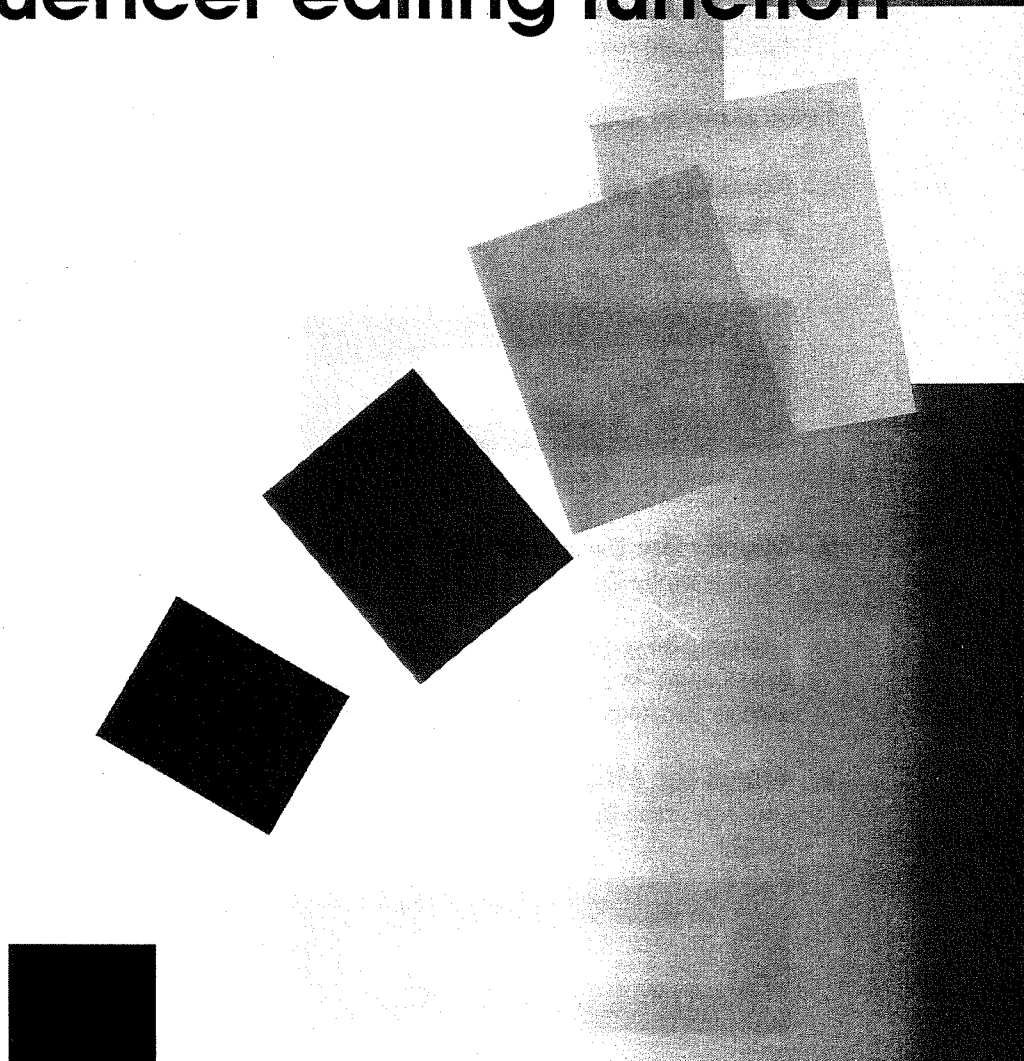
The JV-1000 sequencer provides a wide variety of functions that help you create song data efficiently. This chapter will explain some of the main functions.

1. Editing the song data

Erase

This function erases a specified area of song data, creating a blank in that area.
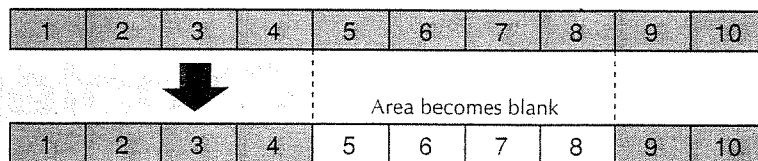
* If you wish to quit without executing a function, press STOP. You will exit the Erase function and return to standby mode.

From standby mode:

1. Press EDIT and use the alpha-dial to select "EDIT 1 ERASE," and then press ENTER.

Edit number

Track and MIDI channel to be erased
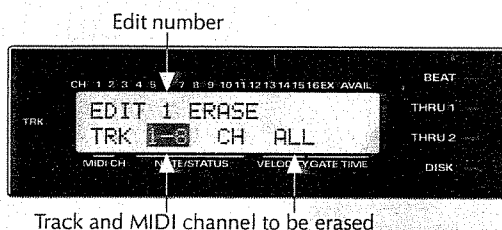
2. Specify the track you wish to erase.
Use the alpha-dial to specify the track you wish to erase, and then press ENTER.

* You can also specify the track using the track keys or numeric keys. However, the track keys cannot be used to specify "TRK1-8" (all tracks). If you use the numeric keys to specify the track, be sure to press ENTER to finalize the value.

3. Select the MIDI channel to erase.
Use the alpha-dial to specify the MIDI channel you wish to erase, and then press ENTER.

* If you specify ALL, the data of all MIDI channels will be selected.

4. Select the MIDI status you wish to erase.
Eight different types of MIDI status can be selected for erasure.

MIDI status	Range
ALL (all MIDI status)	———
NOTE (note)	Note number (0—127)
PAf (Polyphonic aftertouch)	Note number (0—127)
CC (Control change)	Control number (0—127)
PG (Program change)	Control number (0—127)
CAf (Channel aftertouch)	———
PB (Pitch bend)	———
EX (Exclusive)	ID number
TU (Tune request)	———

Use the alpha-dial to select the MIDI status you wish to erase and then press ENTER. If the selected status allows you to specify a range, use the alpha-dial and ENTER to specify it.

MIDI status
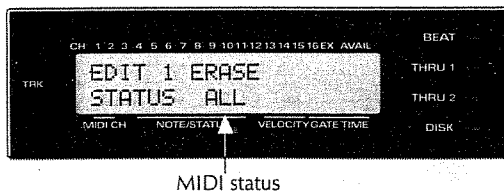
5. Select the measure at which to begin erasing, and the number of measures to be erased.

Use the alpha-dial and ENTER to specify the values.

Biginning measure   Number of measures to erase
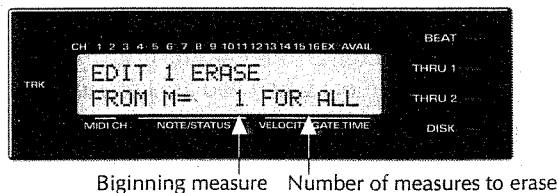
* *"FOR" indicates the number of measures to be erased. For example, if you wish to erase measures 2 through 5 (that is, 2, 3, 4, and 5), make this setting: "FROM M=2 FOR 4."*

If you wish to modify an existing value, use ◀/▶ to move the cursor to the item you wish to edit. If you use the numeric keys to modify the value, be sure to press ENTER to finalize it.

6. To execute the Erase operation, press REC/LOAD.

When you press REC/LOAD, all the specified data will be erased. Be sure that you have specified only data that you really wish to erase. If you change your mind, press STOP before you press REC/LOAD, and you will return to standby mode.
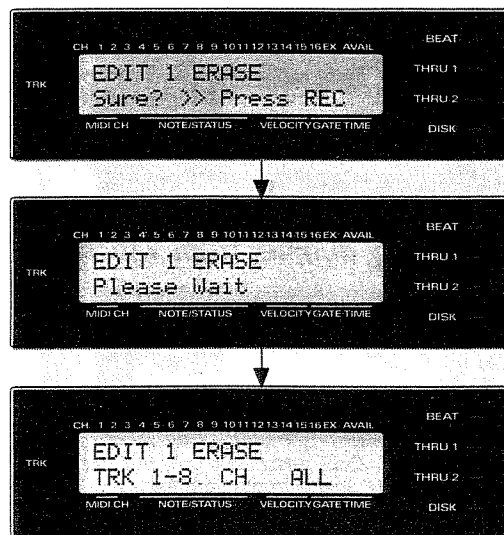
7. Press STOP to end the operation.

For details, see SEQUENCER MANUAL/p.80.

The Delete function (SEQUENCER MANUAL/p.82)

In addition to the Erase function, the Delete function provides a different way of getting rid of data. The Delete function deletes song data in the specified area, and also deletes the previously-occupied space.

Measures 5—8 of the original data are deleted, and measures 9 and 10 are moved forward.
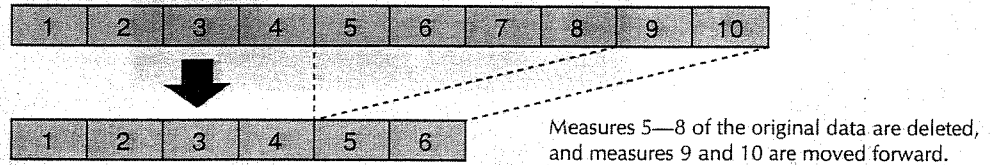
Copy

The Copy function copies musical data from the specified area to another location. This is especially convenient when you are creating a song in which phrases are repeated. The copy function can be used in various ways; for example to copy a specified track to another track, or to another song number.
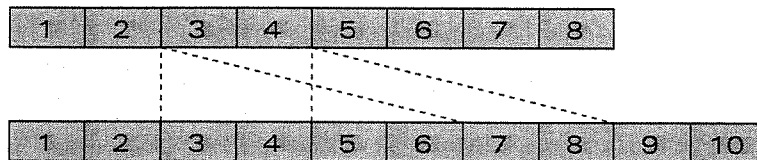
To exit the procedure without executing, press STOP. You will return to standby mode.

From standby mode:

1. **Press EDIT and use the alpha-dial to select "EDIT 10 COPY," and then press ENTER.**

   Edit number   Edit name

   ```
   EDIT 10 COPY
   SONG 1 ▶ SONG 1
   ```
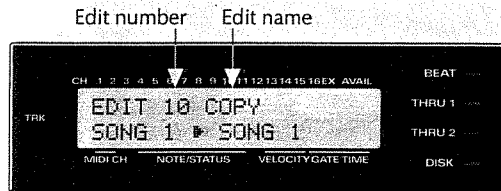
2. **Specify the song number from which you wish to copy.**

   ```
   EDIT 10 COPY
   SONG 1 ▶ SONG 1
   ```

   Song number   Copy destination song number
   to be copy   (the currently selected song)
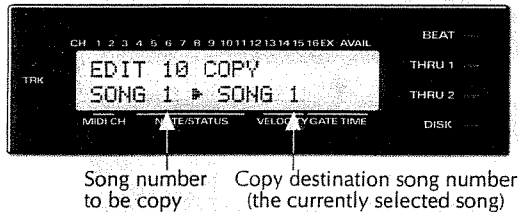
3. **Specify the track from you wish to copy (the copy source track), and the copy destination track.**
   (Alpha-dial → ENTER → Alpha-dial → ENTER)

   ```
   EDIT 10 COPY
   TRK ALL ▶ TRK ALL
   ```

   Track to be copied   Copy destination track
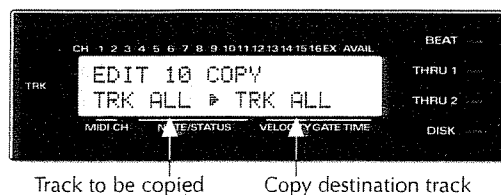
You can also specify the tracks using the track keys or numeric keys. However, the track keys cannot be used to specify "TRK ALL" (all tracks). If you use the numeric keys to specify the track, be sure to press ENTER to finalize the value.

4. If you wish to copy one of the phrase tracks, specify the copy method and the MIDI channel.
(Alpha-dial → ENTER → Alpha-dial → ENTER)


```
EDIT 10 COPY
REPLACE CH ALL
```

Copy method   MIDI channel
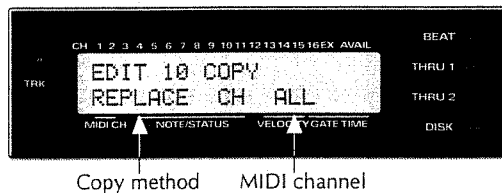
5. Specify the measure at which to begin copying and the number of measures to be copied.
(Alpha-dial → ENTER → Alpha-dial → ENTER)


```
EDIT 10 COPY
FROM M=   1 FOR ALL
```

Starting measure   Number of measures
                    from starting measure
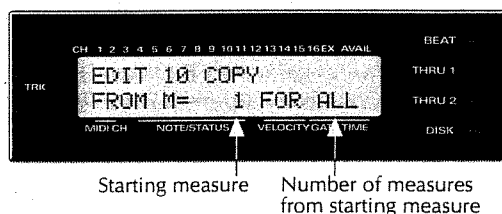
"FOR" indicates the number of measures to be copied. For example, if you wish to copy measures 2 through 5 (that is, 2, 3, 4, and 5), make this setting: "FROM M=2 FOR 4."

6. Specify the measure number of the copy destination. (Alpha-dial → ENTER)


```
EDIT 10 COPY
▶ M= END
```

Copy destination measure
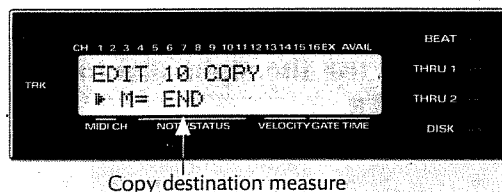
If you select "M=END," the data will be copied onto the end of the song.

7. Specify the number of times the data is to be copied. (Alpha-dial → ENTER)


```
EDIT 10 COPY
COPY   1 TIME(S)
```

Number of copies
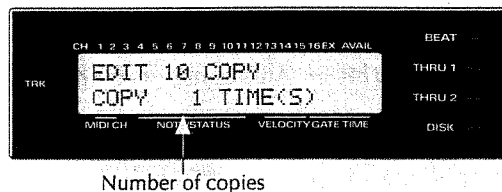
8. Press REC/LOAD to execute the copy operation.

9. Press stop to end the procedure.

For details, refer to SEQUENCER MANUAL/p.96.

Quantize

Musical data that was recorded in realtime often contains inconsistencies in note timing. The Quantize function can be used to correct such errors.

Resolution

Actual notes

Quantize at Rate 1.0

Quantized notes
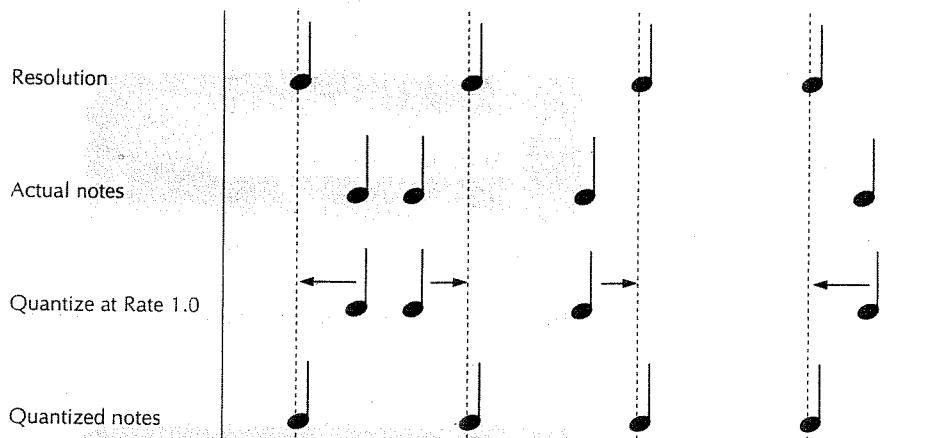
* The Quantize function is valid only for note data. It does not affect the timing of bender/ modulation data, program change data, etc. Record only note data in a track you wish to quantize (SEQUENCER MANUAL/p.94).

Caution

It is not possible to restore quantized data to its original state. As a safety measure, it is a good idea to copy the data to another track (SEQUENCER MANUAL/p.96) or save it to disk before using the quantize function.

From standby mode:

1. **Press EDIT and use the alpha-dial to select "EDIT QUANTIZE," and then press ENTER.**

```
CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL      BEAT
TRK                                                      THRU 1
      EDIT 9 QUANTIZE
      TRK 1-8 ▶ TRK 1-8                                  THRU 2
      MIDI CH   NOTE/STATUS   VELOCITY GATE TIME         DISK
```
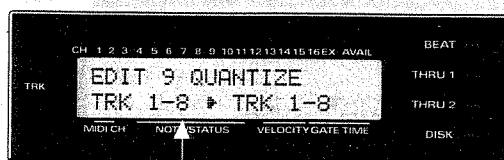
Track to be quantized

2. **Specify the track you wish to quantize, and the track in which the quantized data will be placed.**
(Alpha-dial → ENTER → Alpha-dial → ENTER)

```
CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL      BEAT
TRK                                                      THRU 1
      EDIT 9 QUANTIZE
      TRK 1-8 ▶ TRK 1-8                                  THRU 2
      MIDI CH   NOTE/STATUS   VELOCITY GATE TIME         DISK
```
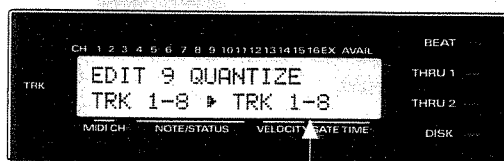
Track after being quantized

* You can also use the track keys or the numeric keys to specify the tracks. However, it is not possible to use the track keys to specify "TRK1—8" (all tracks). If you use the numeric keys, be sure to press ENTER to finalize the value.

3. **Specify the MIDI channel of the song data you wish to quantize.**
(Alpha-dial → ENTER)

```
                CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT ___
          TRK   EDIT 9 QUANTIZE                                       THRU 1 ___
                CH  ALL    RESO= ♪                                    THRU 2 ___
                MIDI CH    NOTE/STATUS    VELOCITY GATE TIME          DISK ___
```

MIDI channel
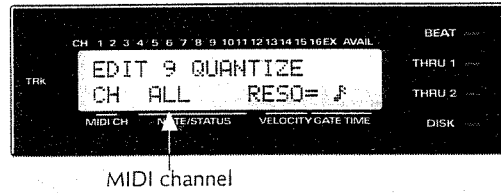
4. **Specify the shortest note length (resolution) to which the data will be quantized.**
(Alpha-dial → ENTER)

```
                CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT ___
          TRK   EDIT 9 QUANTIZE                                       THRU 1 ___
                CH  ALL    RESO= ♪                                    THRU 2 ___
                MIDI CH    NOTE/STATUS    VELOCITY GATE TIME          DISK ___
```
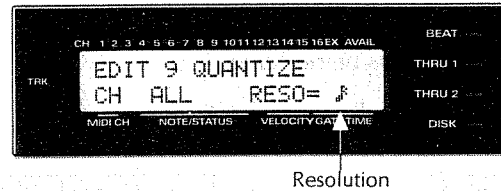
Resolution

The resolution can also be specified using SHIFT + numeric keys. Be sure to press ENTER to finalize the value.

5. **Specify how much the data is to be quantized (the quantize rate).**
(Alpha-dial → ENTER)

If you set the rate to '1.0,' a mechanical-sounding performance will result. If you wish to tighten up the timing while maintaining a "human" feel, set a rate of approximately "0.8."

```
                CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT ___
          TRK   EDIT 9 QUANTIZE                                       THRU 1 ___
                RATE 0.8                                              THRU 2 ___
                MIDI CH    NOTE/STATUS    VELOCITY GATE TIME          DISK ___
```
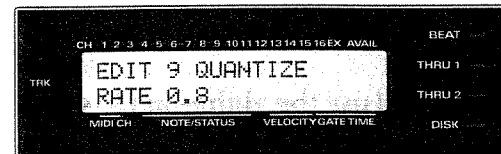
6. **Specify the first measure to be quantized, and the number of measures to be quantized.**
(Alpha-dial → ENTER → Alpha-dial → ENTER)

"FOR" indicates the number of measures to be quantized. For example, if you wish to quantize measures 2 through 5 (that is, 2, 3, 4, and 5), make this setting: "FROM M=2 FOR 4."

7. **Press REC/LOAD to execute the quantize operation.**

```
                CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT ___
          TRK   EDIT 9 QUANTIZE                                       THRU 1 ___
                Sure? >> Press REC                                    THRU 2 ___
                MIDI CH    NOTE/STATUS    VELOCITY GATE TIME          DISK ___
```

↓

```
                CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT ___
          TRK   EDIT 9 QUANTIZE                                       THRU 1 ___
                Please Wait                                           THRU 2 ___
                MIDI CH    NOTE/STATUS    VELOCITY GATE TIME          DISK ___
```

↓

```
                CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT ___
          TRK   EDIT 9 QUANTIZE                                       THRU 1 ___
                TRK 1-8  CH   1-8                                     THRU 2 ___
                MIDI CH    NOTE/STATUS    VELOCITY GATE TIME          DISK ___
```

8. **Press STOP to end the procedure.**

For details, see SEQUENCER MANUAL/p.94.

Auto punch-in recording

Auto punch-in recording is a technique in which recording takes place only in a specified area of the song data which is being played back. To begin recording at the desired location is called "punch-in," and to stop recording is called "punch-out." FUNC6 Punch Point allows you to set the measures at which punch-in and punch-out will occur.

There are several types of punch-in recording, but in this example we will explain auto punch-in recording; the type of punch-in recording in which you specify the punch-in/punch-out points beforehand.

Punch in   Punch out
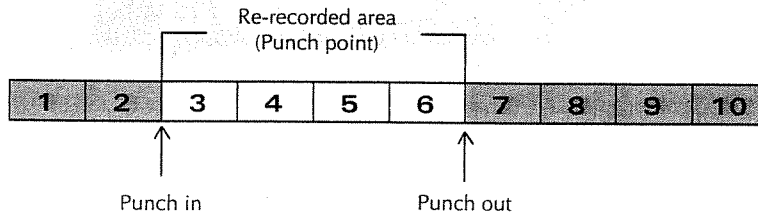
For punch-in recording you must play in realtime. It is not possible to use step recording when punch-in recording.

Specify the punch points

From standby mode:

1. **Press FUNC and use the alpha-dial to select "FUNC 6 PUNCH POINT," and then press ENTER.**


```
CH 1 2 3 4 5 6 7 8 9 10111213141516EX AVAIL      BEAT
                                                 THRU 1
TRK   FUNK 6 PUNCH POINT
      FROM M=     ▉ FOR ALL                       THRU 2
    MIDI CH    NOTE/STATUS    VELOCITY GATE TIME   DISK
```
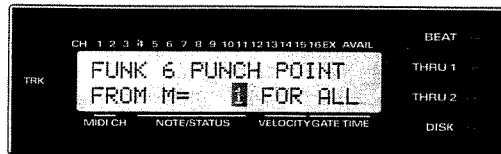
2. **Specify the desired location (punch points).**
(Alpha-dial → ENTER → Alpha-dial → ENTER)


```
CH 1 2 3 4 5 6 7 8 9 10111213141516EX AVAIL      BEAT
                                                 THRU 1
TRK   FUNC 6 PUNCH POINT
      FROM M=    3 FOR    4                        THRU 2
    MIDI CH    NOTE/STATUS    VELOCITY GATE TIME   DISK
```

Starting measure   Number of measures to re-record
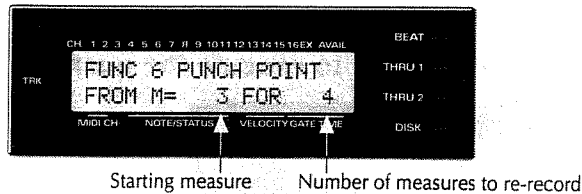
The punch points are now set.

3. **Press STOP to return to standby mode.**

Realtime record between the punch points _____

1. **Move to a measure location before the area you wish to re-record.**

   ```
   CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT
          SONG 1 Spring Song                   THRU 1
   TRK    M=    2  ♩=120  REAL                 THRU 2
          MIDI CH   NOTE/STATUS  VELOCITY GATE TIME   DISK
   ```
   Starting measure
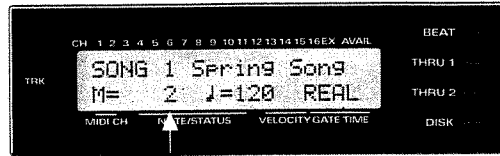
2. **Set the recording mode to "AUTO PUNCH IN."**
   (REC/LOAD → REC/LOAD → use the alpha-dial to select "AUTOPUNCHIN"
   → ENTER)

   ```
   CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVAIL    BEAT
          AUTO PUNCH IN▶TRK 1                  THRU 1
   TRK    M=    2     4/4  CH=ALL              THRU 2
          MIDI CH   NOTE/STATUS  VELOCITY GATE TIME   DISK
   ```
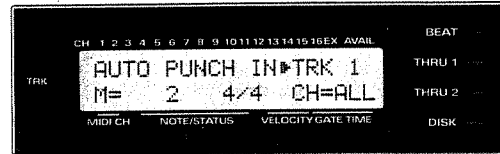
3. **Select the track you wish to modify. (Alpha-dial → ENTER)**

   Track to be corrected
   ```
   CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 EX AVA    BEAT
          AUTO PUNCH IN▶TRAK 1                 THRU 1
   TRK    M=    2     4/4  CH=ALL              THRU 2
          MIDI CH   NOTE/STATUS  VELOCITY GATE TIME   DISK
   ```
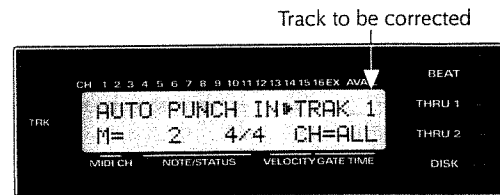
4. **Press PLAY to begin auto punch-in recording.**
   After a two-measure count-in, playback will begin.
   When the punch-in point arrives, begin playing. When you begin playing, the indicator
   will light steadily (instead of flashing).

5. **When the punch-out point passes, press STOP to stop recording.**

6. **When you finish auto punch-in recording, change the recording mode
   from "AUTO PUNCH IN" back to "REPLACE."**
   (REC/LOAD → REC/LOAD → use the alpha-dial to select "REPLACE" → STOP)

   For details, see SEQUENCER MANUAL/p.34, 68.

VARIOUS USEFUL PROCEDURES
MICROSCOPE

Set/select a sound on the sound module

For example, if you input a Program number 20 on channel 1 into the third measure of track 1, the sound module will switch at that point.

```
        1           3           5
TRK  ████████████████████████████------
                   ▲
                 PG20
                 ├───────────------
```

```
          Standby condition
                  ↓
         Move to the measure at which
        you want to set/select a sound.
                  ↓
              MICROSCOPE
                  ↓*1
            EDIT → 3 → ENTER
                  ↓
        Specify the MIDI message to input
       (in this example, "PG") *2 → ENTER
                  ↓
   Specify the MIDI channel for which to select a sound.
        (in this example, CH=1) → ENTER
                  ↓
           Specify the Program number
         (in this example, "20") *3
                  ↓
                 STOP
                  ↓
               PLAY *4
```
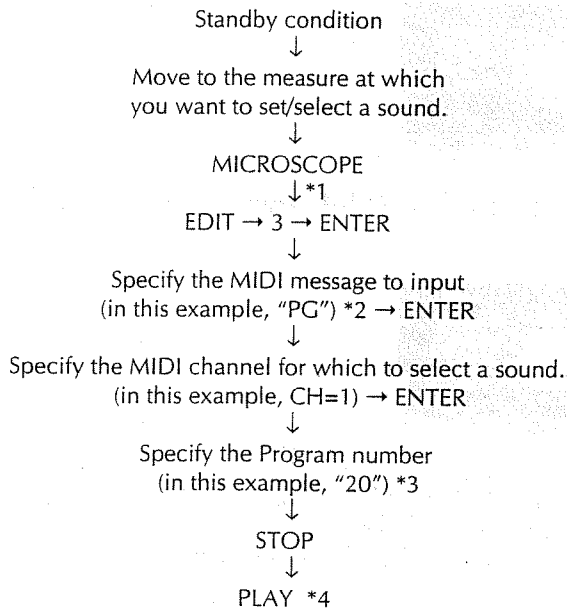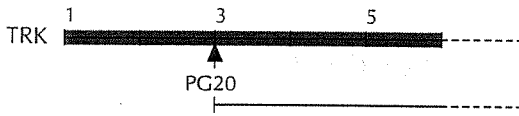
Set/select the volume or pan of each part

```
             Standby condition
                    ↓
      Move to the measure at which you want to
           set/modify the volume or pan.
                    ↓
               MICROSCOPE
                    ↓ *1
              EDIT → 3 → ENTER
                    ↓
      Specify the MIDI message you wish to input
        (in this example, "CC") *2 → ENTER
                    ↓
 Specify the MIDI channel for which you want to set/modify.
         (in this example, CH=1) → ENTER
                    ↓
           Specify the Control number
              Specify Volume : 7
              Specify Pan : 10
                  → ENTER
                    ↓
  Set the value (the range of settings is 0 to 127) *5
                  → ENTER
                    ↓
                  STOP
                    ↓
               PLAY  *4
```

These MIDI messages can be...

```
                    1           3           5
• Deleted    TRK  ████████████████████████████------Microscope    Erase Event
                               ▲                                   (See SEQUENCER MANUAL)
                             PG20
```

```
                    1           3           5
• Moved      TRK  ████████████████████████████------Microscope    Move Event
                  ▲            ▲                                   (See SEQUENCER MANUAL)
                PG20  ◄───  PG20
```

```
                    1           3           5
• Modified   TRK  ████████████████████████████------Microscope    Change Event
                               ▲                                   (See SEQUENCER MANUAL)
                           CC7 120 ──► Modify to 50
```

---
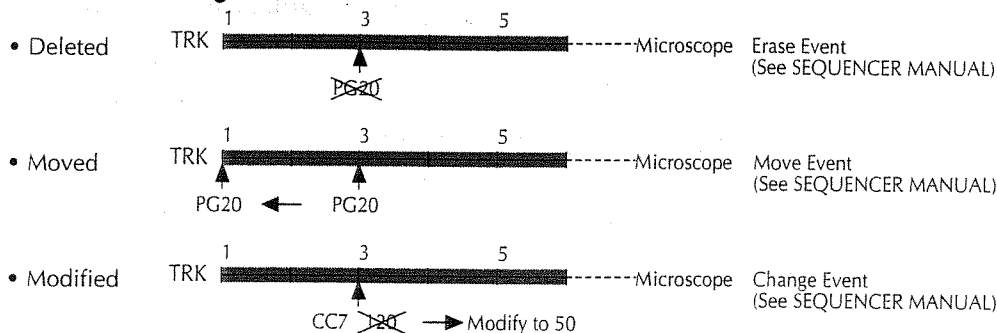
*1 : If you wish to input the message at a location other than the first beat of a measure, or at a specific clock, specify the location here (using the Alpha-dial, numeric keys, and cursor).

*2 : PG = Program Change Message
     CC = Control Change Message

*3 : The SYNTHESIZER MANUAL will explain which sound will be selected by each incoming Program number.

*4 : For the newly input message to have an effect, you must begin playback from a measure preceding the message.

*5 : Value :   0   ─>   63   ─>   127
     Volume : low   ─>   high
     Pan :   left   <─   center ─>   right

DISK

Display the remaining amount of memory

Remaining internal memory

Standby condition
↓
SHIFT + AVAIL
↓
Remaining internal memory,
number of songs, and size of
current song.
↓
STOP

Remaining disk memory

Standby condition
↓
Insert disk
↓
SHIFT + AVAIL
↓
MICROSCOPE
↓
Remaining disk memory and
number of songs (use the Al-
pha-dial).
↓
STOP

Combine song files from two disks into one disk

SHIFT + MODE → 4 → ENTER
↓
3 → ENTER
↓
(ENTER)
↓
Insert the copy source disk (Protect Slider "PROTECT").
→ ENTER
↓
Insert the copy destination disk (Protect Slider "WRITE").
→ ENTER
↓
:
Exchange disks as many times as necessary
:
↓
STOP
↓
SHIFT + MODE → (1) → ENTER

Make a copy of a floppy disk

SHIFT + MODE → 4 → ENTER
↓
2 → ENTER
↓
(ENTER)
↓
Insert the copy source disk (Protect Slider "PROTECT").
→ ENTER
↓
Insert the copy destination disk (Protect Slider "WRITE").
→ ENTER
↓
ENTER
↓
Insert the copy source disk → ENTER
↓
Insert the copy destination disk → ENTER
↓
:
Exchange disks as many times as necessary
:
↓
STOP
↓
SHIFT + MODE → 1 → ENTER

Delete song files from a floppy disk

Insert the disk (Protect Slider "WRITE").
↓
DISK MODE
↓
3 → ENTER
↓
Display the song you wish to delete (use the Alpha-dial).
→ ENTER
↓
SAVE
↓
SHIFT + MODE → (1) → ENTER

RHYTHM

Use a MIDI keyboard to create a Rhythm Pattern

\<Creating a Rhythm Pattern\>

Standby condition
↓
Set the recording mode to "RHYTHM"
↓
REC → Select "R-PATTERN" → ENTER
↓
Specify the Rhythm Pattern number to create → ENTER
Specify the Time Signature → ENTER
↓
Select the instrument number → ENTER
↓
Specify the Resolution → ENTER
↓
SHIFT+PLAY
↓
\<Input Pattern\>
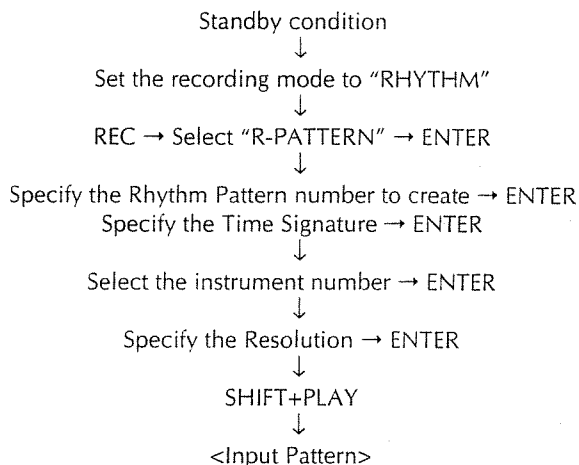
Complex patterns can be input in several passes, adding new notes to the previously recorded notes.

If the tempo is too fast, press STOP to return to the standby display, and adjust the tempo.

You will be able to input any instrument, regardless of the instrument number shown in the display.
Use SKIP/RESET to view the Velocity Code of the instrument you are inputting.
↓
PAUSE
↓
(ENTER to move to the next Pattern)
↓
STOP

\<If you made a mistake\>
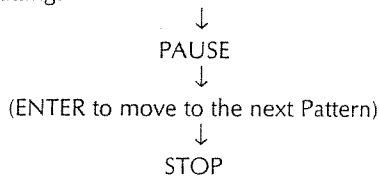
If you have a damper pedal

Connect the damper pedal to the JV-1000.
↓
Press the pedal while SHIFT + PLAY
↓
Press the key assigned to the instrument you wish to delete.
↓
Release the pedal.
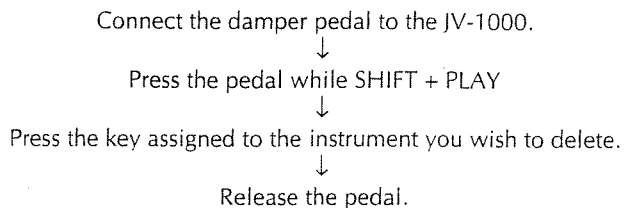
If you don't have damper pedal

• Delete while monitoring   • Delete without monitoring
from SHIFT + PLAY   PAUSE
↓   ↓
Press SKIP/RESET to display the Velocity Code
you wish to delete.
↓
Input "0" (use the numeric keys)
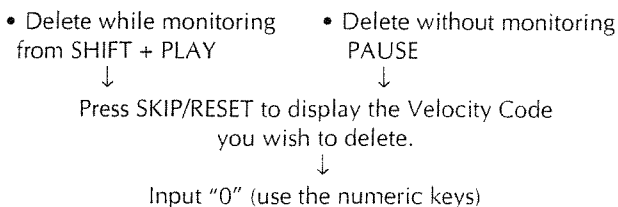
After creating a Pattern, follow the procedure for recording the Rhythm Track. This completes the Rhythm Track.

Set the instruments to the key numbers you wish to play

\<For example if you wish to play the "Triangle" instrument\>

Set the instrument of the note number 100 to Triangle.
(Change the instrument name to "TRI.")

Standby condition
↓
FUNC → 5 → ENTER
↓
Specify the note number to be altered → ENTER
Set the instrument name to "TRI" (three characters)
→ ENTER
↓
Set the MIDI channel → ENTER
Set the note number to "100" → ENTER
↓
STOP
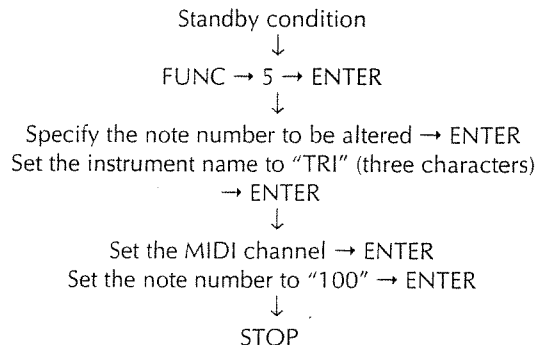
RHYTHM

Modify the Resolution in the middle of a pattern for a single instrument

Tambourine (Tmb)
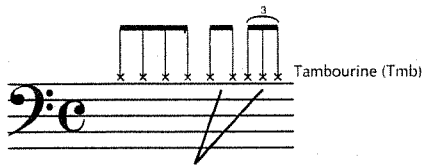
The sounds are the same, but the timing resolution is different

<Input the Tambourine pattern shown in the example>

The resolution of the first three beat is "♪", but the fourth beat uses a resolution of "♪₃."

Since it is not possible to use different Resolutions inside the same pattern, set the key number of an unused instrument to the key number of the tambourine, and change the instrument name to tambourine (Tmb).

Instrument number	Instrument name	CH	Key number
1	SD1	10	35
:	:	:	:
17	Tmb	10	54
18	Hbg	10	60
:	:	:	:
32	Chm	10	74

1. Modify the setting for instrument number 18 (for example)

Standby condition
↓
FUNC → 5 → ENTER
↓
Specify the Instrument number to "18" → ENTER
↓
Modify the instrument name to "Tmb" → ENTER
↓
Set the MIDI channel ("10") → ENTER
↓
Set the key number "54" → ENTER
↓
STOP

This will result in the following settings

Instrument number	Instrument name	CH	Key number
17	Tmb	10	54
18	Tmb	10	54

2. Input the tambourine pattern

Standby condition
↓
Change the recording mode to "RHYTHM"
↓
REC → Select "R-PATTERN" → ENTER
↓
Specify the Rhythm Pattern number to create → ENTER
Specify the Time Signature → ENTER
↓
Select instrument number "17" → ENTER
Select "♪" resolution → ENTER
↓
Input the first three beats (eighth notes) → ENTER
↓
Select instrument number "18" → ENTER
Select "♪₃" resolution → ENTER
↓
Input the fourth beat (eighth note triplet) → ENTER
↓
(playback to check)
↓
STOP

Copy a Rhythm Pattern

From the same song

From the Rhythm Pattern recording display
↓
Move the cursor to the copy destination pattern number
↓
SHIFT + 2
↓
Specify the copy source pattern number. → ENTER
↓
REC
↓
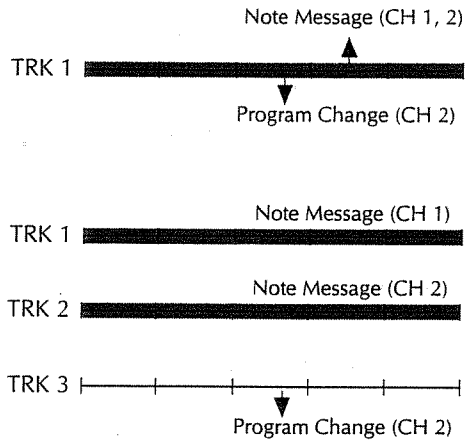(PLAY)
↓
STOP

From another song

Move to the copy source song number
↓
Standby condition
↓
SHIFT + UTIL → 4 → ENTER
↓
Specify the copy source song number. → ENTER
↓
REC
↓
STOP

*If you wish to edit the copied pattern, see SEQUENCER MANUAL P. 43.

SONG DATA

Extract Song Data

Note Message (CH 1, 2)

TRK 1 ▬▬▬▬▬▬▬▬▬▬▬

Program Change (CH 2)

Note Message (CH 1)

TRK 1 ▬▬▬▬▬▬▬▬▬▬▬

Note Message (CH 2)

TRK 2 ▬▬▬▬▬▬▬▬▬▬▬

TRK 3 ├──┼──┼──┼──┼──┤

Program Change (CH 2)

Standby condition
↓
EDIT → 5 → ENTER
↓
Specify the source track from which to extract → ENTER
Specify the destination track for the extracted data → ENTER
↓
Specify the transfer method → ENTER → Specify the MIDI
channel to extract → ENTER
↓
Specify the type of message to extract → ENTER
↓
Specify the area from which to extract → ENTER
↓
REC
↓
STOP

Exchange data between Phrase Tracks

TRK 1 ▬▬▬▬▬▬▬▬

TRK 2 ▬▬▬▬▬▬▬▬

Standby condition
↓
EDIT → 1 → 4 → ENTER
↓
Specify the tracks to exchange → ENTER
↓
REC
↓
STOP

Assign a Song Title

Standby condition
↓
FUNC → 3 → ENTER
↓
Assign a name → ENTER
↓
STOP

Copy song data

Copy within the same song   **Copy from another song**

SONG 1   SONG 1

TRK 1 ▬▬▬▬▬ Copy   TRK 1 ▬▬▬▬▬

TRK 2 ▬▬▬▬▬   SONG 2   Copy

                                  TRK 3 ▬▬▬▬▬
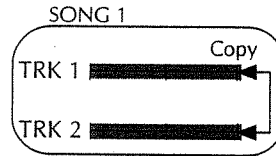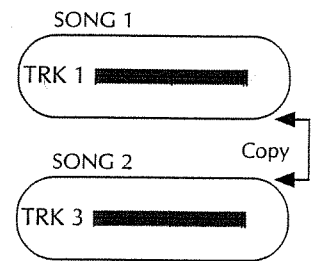
Standby condition
↓
EDIT → 1 → 0 → ENTER
↓   ↓
ENTER   Specify the song number of the
                   copy source → ENTER
↓   ↓
Specify the copy source track → ENTER
Specify the copy destination track → ENTER
↓
Specify the copy method → ENTER
Specify the MIDI channels to copy → ENTER
↓
Specify the area to copy → ENTER
↓
*Specify the position to copy into → ENTER
↓
Specify the number of times to copy → ENTER
↓
REC
↓
STOP

* If you specify "M=END", the data will be copied onto the end
of the current data.

Copy Source   ▬▬▬▬──┼──┤
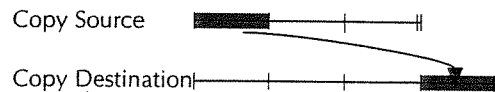
Copy Destination├──┼──┼─▬▬▬

SONG DATA

Combine two Phrase Tracks into one Phrase Track

TRK 1 ▬▬▬▬▬ ➔ TRK 1 ▬▬▬▬▬▬▬
Marge
TRK 2 ▬▬▬▬▬ ┘
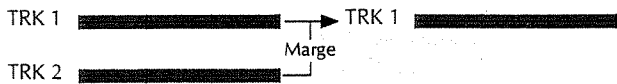
Standby condition
↓
EDIT → 4 → ENTER
↓
Specify the merge destination track (TRK 1) → ENTER
Specify the merge source track (TRK 2) → ENTER
↓
REC
↓
STOP

Using the Merge operation, you can create a Rhythm Part in the Phrase Track in real-time recording.

Bass Drum : TRK 1 ▬▬▬▬▬ ➔ ▬▬▬▬▬ ➔

Snare Drum : TRK 2 ▬▬▬▬

Rim Shot : TRK 3 ├────┤ ├────┤ ┘

TRK 1 ▬▬▬▬▬ Bass Drum
Snare Drum
Rim Shot
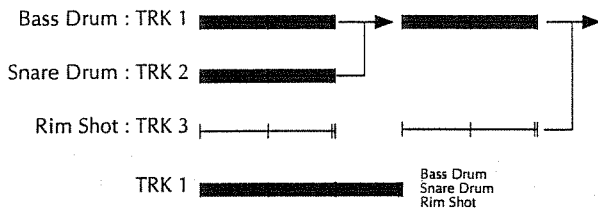
The Phrase Track allows you to create a Rhythm Part using 128 gradations of velocity. (The Rhythm Track provides only 8 gradations.)

Transpose the Note messages in a Phrase Track

Standby condition
↓
EDIT → 6 → ENTER
↓
Specify the track to transpose → ENTER
Specify the MIDI channel to transpose → ENTER
↓
Specify the range of Note messages to transpose → ENTER
↓
Specify the amount (Bias) of transposition → ENTER
↓
Specify the area to transpose → ENTER
↓
REC
↓
STOP

## Slide the timing of Phrase Track data behind/ahead of the beat

├──▬▬──┤ ╢
←─ Shft
├─▬▬──┤ ╢
Shift ─➔
├──▬▬──┤ ╢
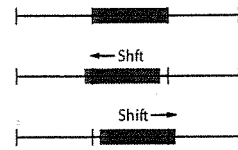
Standby condition
↓
EDIT → 1 → 2 → ENTER
↓
Specify the track to Shift Clock → ENTER
Specify the MIDI channel of the data to Shift Clock
→ ENTER
↓
Specify the MIDI status to Shift Clock → ENTER
↓
Specify the amount of Shift Clock → ENTER
↓
Specify the area in which to Shift Clock → ENTER
↓
REC
↓
STOP

Movement towards the beginning is limited to the beginning of the song. If you wish to adjust the timing to be ahead of the beginning of the song, insert blank measure in measure 1 of all tracks.

├──▬▬──┤ ╢
↓
├──▬▬──┤ ╢
└─Insert─┘ ↓
├──▬▬──┤ ╢
←─ Shift
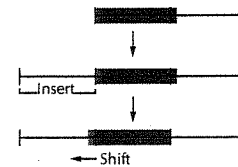
Data that has been shifted beyond the end of the song will not be played. You will have to lengthen the Rhythm Track.

R-TRK ├────┤ ╢

TRK ├─▬▬──┤

↓

R-TRK ├──────┤ ╢
Lengthen

TRK ├─▬▬──┤ ╢
Shift ─➔

4
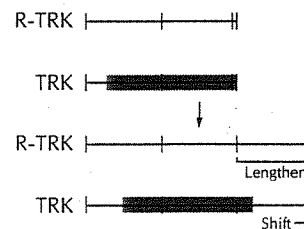
SONG DATA

Modify the MIDI channel of a desired Part in the Phrase Track

Standby condition
↓
EDIT → 8 → ENTER
↓
Specify the track in which to convert a MIDI channel
→ ENTER
↓
Specify the original MIDI channel from which to convert
→ ENTER
↓
Specify the resulting MIDI channel into
which the data will be converted → ENTER
↓
Specify the MIDI status for which to convert
the MIDI channel → ENTER
↓
REC
↓
STOP

Rewrite program numbers

Change the program number of a Program message already existing in a Phrase Track.

TRK 1

| 1 | 2 | 3 | 4 | 5 |

PG5   PG6   PG5   PG2   PG5
↓   ↓   ↓
PG10   PG10   PG10

Standby condition
↓
EDIT → 1 → 5 → ENTER
↓
Specify the track to rewrite → ENTER
→ Specify the MIDI channel to rewrite → ENTER
↓
Specify the mode "SHIFT #" → ENTER
→ Specify the MIDI status "PG" → ENTER
↓
Specify the current program number → ENTER
→ Specify the new program number → ENTER
↓
Specify the area → ENTER
↓
REC
↓
STOP

Insert blank measures into song data

TRK 1

| 1 | 2 | 3 |

↓

TRK 2

| 1 | 2 | 3 | 4 |

Standby condition
↓
EDIT → 3 → ENTER
↓
Specify the track into which to insert blank measures
→ ENTER
↓
Specify the time signature → ENTER
↓
Specify the location and number of measures to insert
→ ENTER
↓
REC
↓
STOP

*If you have recorded a Program Change or Control Change at the beginning of the song in a location which overlaps other musical data (such as a note), the sound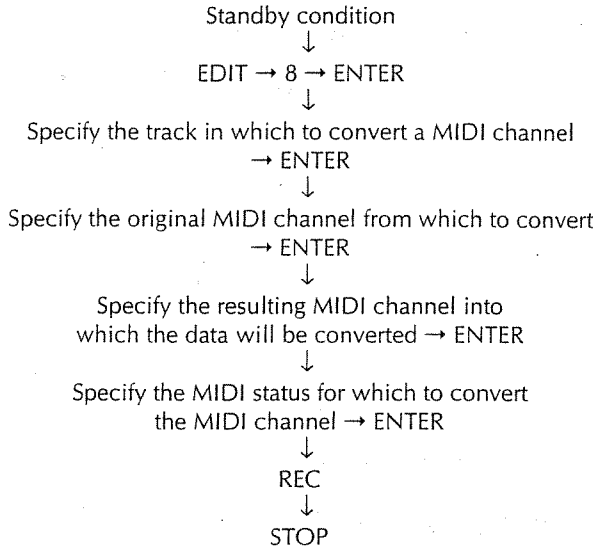 module may not be able to perform the change at the correct time. In such cases, insert a blank measure at the beginning of the song to accommodate the Program Change and Control Change messages.

Programe Change
Control Change etc.
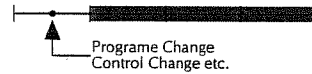
*If you insert blank measures only into the Phrase Tracks, the Phrase Tracks will become longer than the Rhythm Track. Since the Phrase Track data that lies beyond the end of the Rhythm Track cannot be played back, be sure to insert blank measures into the Rhythm Track as well.

Cannot be played back

TRK 2   Insert

R-TRK

Lengthen
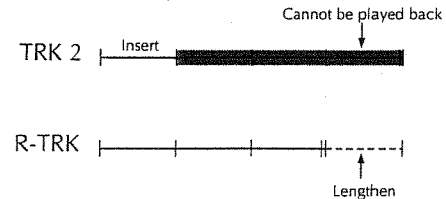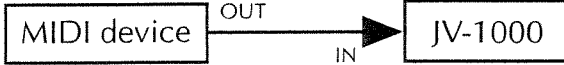
MIDI

Receive Channel settings	**Active Sensing settings**	**Soft Thru On/Off settings**	**Specify the Output Assign for each track**
Standby condition ↓ MIDI → 1 → ENTER ↓ Specify MIDI channel to receive → ENTER ↓ STOP	Standby condition ↓ MIDI → 3 → ENTER ↓ Press ▶ to move to "ActS" ↓ Specify whether or not to transmit ↓ STOP	Standby condition ↓ MIDI → 3 → ENTER ↓ Set Soft Thru On/Off ↓ STOP	Standby condition ↓ FUNC → 1 → 1 → ENTER ↓ Specify the MIDI OUT from which to transmit → ENTER ↓ STOP

PLAY

Repeat playback

Standby condition
↓
FUNC → 7 → ENTER
↓
Specify the area to repeat → ENTER
↓
STOP
↓
SHIFT+PLAY

Adjust the tempo

During playback

Rotate the Alpha-dial

While stopped

Standby condition
↓
♩=120 blinking (use ◀/▶)
↓
Alpha-dial
(numeric keys → ENTER)

Specify the tempo that will be used each time the song data is read from disk

Standby condition
↓
FUNC → 9 → ENTER
↓
Specify the tempo → ENTER
↓
STOP
↓
Save procedure (save to disk)

SYNC CLOCK

Synchronized playback with a rhythm machine

| JV-1000 | SEQ OUT ▶ IN | Rhythm Machine |

Set the sync clock of your rhythm machine to synchronize to an external device
↓
PLAY
↓
Restore the Sync Clock of the rhythm machine to its previous setting.

Using an external MIDI clock to synchronize the JV-1000

| MIDI device | OUT ▶ IN | JV-1000 |

Standby condition
↓
FUNC → 1 → ENTER
↓
Set the JV-1000 Sync Clock to "MIDI" → ENTER
↓
STOP
↓
Start playback on the external MIDI device
↓
Stop playback on the external MIDI device
↓
Restore the JV-1000 Sync Clock setting to "Internal"

OTHER

Set the metronome	Restart the system	Display the playing time of the song data	Delete Internal memory data
Standby condition ↓ FUNC → 2 → ENTER ↓ Specify beat → ENTER ↓ Specify the Beep mode → ENTER ↓ STOP * If the rear panel Metronome knob is set too low, you will not hear the metronome.	Standby condition ↓ SHIFT+MODE → 4 → ENTER ↓ 6 → ENTER ↓ (ENTER) ↓ Select the system to restart → ENTER * It is also possible to restart from SUPER-MRP. (See SEQUEN-CER MANUAL/ p.177)	Standby condition ↓ SHIFT+UTIL → 2 → ENTER ↓ Specify the area for which to calculate playing time → ENTER ↓ Playing time is displayed ↓ STOP	Standby condition ↓ SHIFT+UTIL → 1 → ENTER ↓ Specify the song number to delete (indecated by number) → ENTER ↓ REC ↓ STOP

View the data contents of each track

\<Track monitor\>

Check which channels are present in each track

    TRACKMONITOR (tracks 1—4)
    ↕
    TRACKMONITOR (tracks 5—8)

Check which types of MIDI status are present in each track

    TRACKMONITOR → numeric key (tracks 1—4)

    TRACKMONITOR → numeric key → numeric key (tracks 5—8)

\<MIDI monitor\>

Check which types of MIDI status are being received at MIDI IN

    TRACKMONITOR → MIDI

Check each type of MIDI status being received at MIDI IN

    TRACKMONITOR → MIDI → numeric key

* Enter this function from the standby condition. Press STOP to return to the standby condition.

Use Microscope mode to change the note display from ♯ to ♭

For example, if the song is in F major (one flat) and you enter "B♭4", the display will be as follows.

From the standby condition MICROSCOPE
↓

JV-1000 display
A♯4 = B♭4 (enharmonic)

When editing in Microscope mode,
change the inappropriate ♯ display to ♭.
↓
STOP
↓
FUNC → 1 → 3 → ENTER
↓
Modify the enharmonic note display as appropriate
for the key of the song (use the Alpha-dial).
↓
STOP   Example: B flat major
↓   (two flats)
MICROSCOPE A♯4 → B♭4
↓   D♯4 → E♭4
STOP

3. JV-1000 application guide

Here we will explain some of the possibilities available when recording on the JV-1000. Refer to this section when you want to take advantage of some more advanced recording techniques.

Record a song with more parts than available sound sources

If you wish to record a song that uses many instrumental parts, such as an orchestral ensemble, you may wish to use more patches than a single performance has parts. In such cases, use a single part to play two or more non-overlapping parts, and use program change messages to switch that part between the appropriate patches.

If certain instrumental parts appear only in part of the song (such as only in the introduction or end) and do not overlap with each other, these parts can be combined into one part. In this way you can make best use of the available number of parts.

Track 1	Piano		Strings	
Track 2	Bass			
Track 3	1st. Violin			Electric Piano
Track 4	2nd. Violin			E. Guitar
Track 5	Cello			
Track 6	Oboe			Sax
Track 7	Timpani			Orchestra Hit
Track 8	Harp	Chenbaro	Organ	Marimba

Record program change, pitch bend, or modulation messages

The JV-1000 sequencer records not only note messages from the keyboard, but also the program change messages that are transmitted when you select a sound. However, it is not always possible to select and change the appropriate sounds as you play. In such cases, you can record the program changes later. The quantize function of the sequencer affects the timing of note data only, meaning that in some cases note data may be shifted away from the program change or bender/modulation messages which are meant to apply to those notes. In this case, first use realtime recording to input the notes from the keyboard, and quantize the tracks you recorded. Then while listening to these tracks playback, record program change messages and pitch bend / modulation messages on another track.

1. **Use only the keyboard to record a musical performance.**

2. **If necessary, use quantization to correct the timing.**

3. **On a different track, record program change data or bender/modulation data. As you listen to the previously recorded tracks, press patch select buttons or move the bender/modulation lever at the appropriate times.**

4. **If there are no timing problems, merge (SEQUENCER MANUAL/p.84) the two tracks into one track.**

Record sound source settings at the beginning of a song

Unless musical data recorded in a sequencer is played back using the sounds for which it was intended, the musical result will not be as expected. In order to ensure that the data is played back with the correct sounds, you can record sound source settings such as program change messages, exclusive messages, or control change messages.

In this way, each time you playback the song, it will use the specified sounds and part settings. Even if you stop playback in the middle of the song and start playback again from the beginning, the sounds will be correct.

• Program change messages

Program change messages select the number of the sound in the sound source (the Program Change number). If the sound has been edited and is different than the sound with which you recorded the song, the musical result will not be as expected.

• Exclusive messages

One way in which exclusive messages can be used is to modify the sound data being used by the sound source. For example, if you send data directly to the sound source to determine how it produces sound, it will always produce the sound you specify, even if the data in memory has been modified.

If you wish to play back your song data on another synthesizer of the same model, the sound data in memory will likely be different from the sound data in the memory of your synthesizer. In such cases, you can include the appropriate sound data as an exclusive message in the beginning of your song, so that the appropriate sound data will always be loaded into the sound source before the song begins. For details on recording exclusive messages, see SEQUENCER MANUAL.

• Control change messages

These messages specify sound source settings for volume, pan, portamento, etc.

If you need more sound sources and decide to borrow another synthesizer, remember that the exclusive messages recorded at the beginning of the song will only be received by an identical instrument. Also, since the other synthesizer will likely have different sounds in its memory, program change messages may not select the same sounds as they do on your JV-1000.

1. Record the musical data starting at measure number 2.

Since we will be placing program change messages etc. in measure 1, it is best to begin recording the musical data (the notes) from measure 2. If there is only a small amount of data to be transmitted at the beginning of the song (i.e., no large exclusive messages) and if the song begins gradually, it is probably OK to start with measure 1.

If you have already recorded musical data in measure 1, insert a blank measure in the beginning of the song.

2. Record program change messages and other settings in the first measure.

If you are not able to record all the necessary data in one pass, it can be convenient to use mix recording. For details on mix recording, see the "SEQUENCER MANUAL/ p.32."

*If you wish to record very large exclusive messages at the beginning of the song, they may require more than one measure. In such cases, create a song which contains only the exclusive messages. Playback the song containing only the exclusive messages in order to set up the tone generator with the appropriate data. Then playback the song containing the musical data. SUPER-MRP is useful when playing back multi-song data.*

Storing sound data on a floppy disk

The JV-1000 sequencer is usually used to record and playback musical performances (i.e., notes), but is also able to record sound data (exclusive messages). Therefore, a floppy disk can be used to store the same data as a synthesizer section RAM card.

Saving sound data to disk

1. **Press the sequencer button MIDI, use the alpha-dial to select "MIDI 2 RCV STATUS," and then press ENTER.**

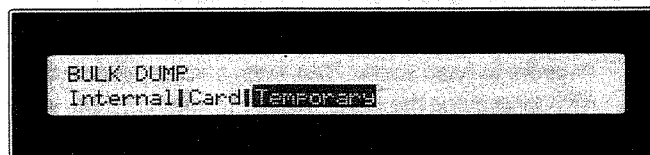   MIDI 2 RCV STATUS
   EX = ON 1111111
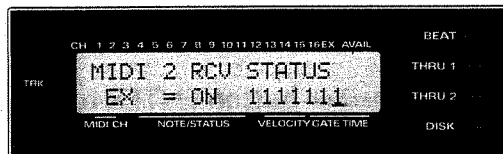
   The reception status for seven types of MIDI message are displayed as On (1) or Off (0). Make sure that the reception status for exclusive data (at the far right) is On. If it is off, use ◀/▶ to move the cursor and use the alpha-dial to turn it On. When you finish, press STOP to return to standby mode.

2. **Press the synthesizer button WRITE, use ◀/▶ to get "Bulk" to flash, and then press ENTER.**

   WRITE MODE
   Write|Copy|Initialize|Card|Bulk|Protect
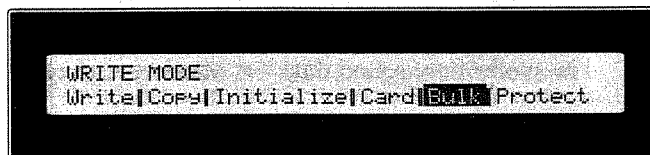
3. **Use ◀/▶ to specify which memory you wish to save, and then press ENTER.**

   BULK DUMP
   Internal|Card|Temporary

   * By selecting "Temporary," you can save the performance/patch/rhythm set data you are currently playing or editing. If you select "Temporary," use ◀/▶ to select the type of data you wish to save, and then press ENTER.

   BULK DUMP TEMPORARY
   Performance|Patch|Rhythm|All
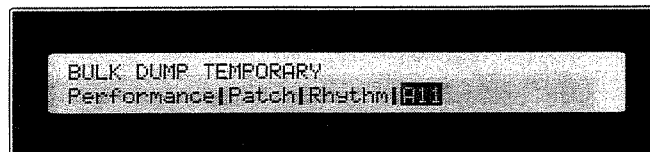
4. **Press the sequencer button REC, and press the track button of the track in which you wish to record the sound data (the track indicator will flash). Then press PAUSE.**

Unless you press PAUSE, sound data cannot be saved. Be sure to press PAUSE.
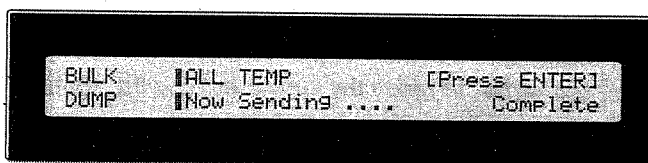
5. Press the synthesizer button ENTER to transmit the exclusive message.

When transmission is complete, the display will read "Complete." (The sequencer section will automatically start/stop recording.)

6. Using the same procedure as when naming song data, assign a name to the sound data recorded by the sequencer, and save it on the disk.

The synthesizer sound data has now been saved on the disk.

If you wish to stop the procedure without saving, press EXIT to return to the previous display.

Loading sound data from disk

In order to load sound data from a floppy disk into the JV-1000 synthesizer section, the file containing the data must be loaded into the sequencer, and then transmitted to the synthesizer section as an exclusive message. The synthesizer sound source Exclusive Receive switch must be On.

1. Press the synthesizer button MIDI, use ▲/▼ to get the exclusive reception setting display, and use INC/DEC to set the receive switch On.

When you finish, press MIDI once again.
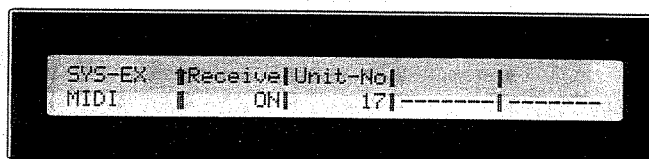
2. Load the disk containing the sound data into the sequencer section, and play it.

The sound data from disk has now been transmitted to the sequencer section.

The JV-1000 can also record exclusive data from an external MIDI device onto a floppy disk.
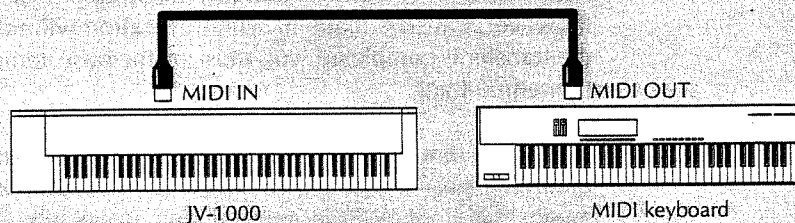If you wish to do this, use a MIDI cable to connect the external MIDI device's MIDI OUT to the JV-1000's MIDI IN.

This method is known as a "one way" connection. The JV-1000 does not support "two way" or "hand-shake" protocols.

MIDI IN — MIDI OUT

JV-1000   MIDI keyboard

If you wish to transmit exclusive data from the JV-1000 to an external MIDI device, use a MIDI cable to connect the JV-1000's SEQ OUT to the external MIDI device's MIDI IN.

SEQ OUT — MIDI IN

JV-1000   MIDI keyboard
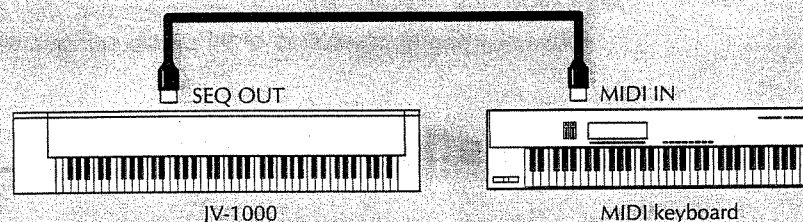
However, remember that exclusive data can in general be received only by another device of the same model. For details, refer to the manual of your MIDI device.

The amount of data transmitted by some devices may be too large to be recorded in its entirety.

Recording musical data
from another sequencer

It is possible to record musical data from another sequencer into the JV-1000's sequencer. Make connections as shown below.

MIDI IN   MIDI OUT
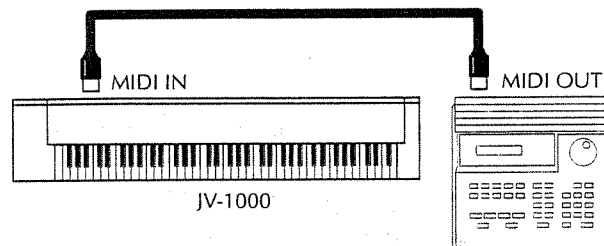
JV-1000

Put the JV-1000 sequencer in recording mode, and playback the external sequencer which contains the musical data. If that sequencer allows you to playback only specified tracks or MIDI channels, you can record each part on independent tracks of the JV-1000's sequencer.

This is an easy way to transfer musical data, but unless the JV-1000 and the external sequencer are synchronized, the measure numbers of the original sequencer data and the JV-1000 sequencer data will be different. The following procedure allows you to preserve the measure positions of the data during the transfer.

In order to transmit musical data in synchronization, the transmitting sequencer (the master) must be transmitting MIDI Clock messages, and the receiving JV-1000 sequencer (the slave) must regulate its time according to the incoming MIDI Clock messages. (By reversing the position of the two sequencers, you can transfer musical data from the JV-1000 sequencer to the other sequencer.)

If you synchronize the two device in this way, the master's tempo will determine the slave's tempo, so you can increase the tempo to speed up the transfer time.
However, transfers made in synchronization will not specify the tempo setting. After the transfer is completed, you must set the basic tempo, or record tempo changes into the tempo track.

If the data timing resolution of the two sequencers is different, the timing of the incoming musical data will be shifted to the resolution of the receiving sequencer. This means that if you transfer musical data (especially data recorded in realtime) from a sequencer that has a high timing resolution to a sequencer with a low resolution, during playback the note timings may sound like they have been quantized, and modulation and bender effects may not be smooth.

* The JV-1000 and other Roland sequencers (MC-50/300/500/500mkII, MT-100, PR-100) use a timing resolution of 96 clocks per quarter note.

Adding sound effects to video

If you have a video deck that allows you to re-record the audio track independently, you can synchronize the video deck to the JV-1000 for recording and playback.
By recording the JV-1000 tape sync signal onto the audio track of a previously recorded video tape, you can playback the video tape (with the video deck as the master) and have the JV-1000 synchronize (slave) to it.

1. **In the JV-1000 sequencer, set the FUNC1 SYNC CLOCK setting to "INTERNAL," and use an audio cable (RCA pin ↔ RCA pin) to connect the JV-1000 TAPE SYNC II OUT with the video deck's audio input.**

Audio IN   TAPE SYNC II OUT
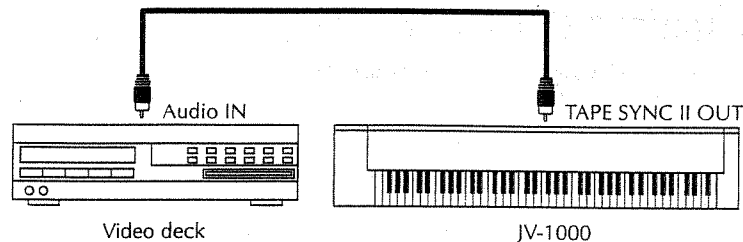
Video deck   JV-1000

2. **Record the tape sync signal from the JV-1000 TAPE SYNC II OUT onto an audio track (either channel) of the video tape.**

3. **Set the JV-1000's FUNC 1 SYNC CLOCK setting to "TAPE," and connect the video deck's audio output to the JV-1000's TAPE SYNC II IN.**

Audio OUT   TAPE SYNC II IN
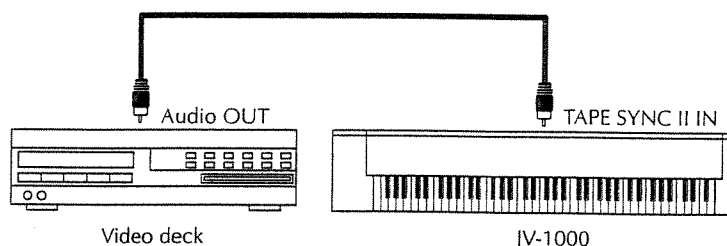
Video deck   JV-1000

4. Put the JV-1000 in recording standby. When you start the video deck, the JV-1000 will begin recording in synchronization with the video playback. At the appropriate times in the video, select various sounds on the JV-1000 and play them to produce sound effects.

When the tape sync signal stops, the JV-1000 sequencer will stop recording.

Your recording is now complete. To play it back in synchronization with the video, make the same settings as you did when recording. Press PLAY to begin playback, and start the video.

For details on the tape sync signal and synchronized recording, refer to SEQUENCER MANUAL/p.22.

4. Various types of MIDI message

There are various types of MIDI messages, and the JV-1000's sequencer is able to handle them all. Each message includes a "status" byte that tells what type of message it is. Following is an explanation of the main types of MIDI message.

• Note messages (NOTE)

These messages convey musical data. When you play a note on a MIDI keyboard instrument, a note message is transmitted indicating which note (Note Number) was played (Note On status) and how strongly (Velocity). When you release the note, a similar message is transmitted indicating that a note was released (Note Off status). When a sound source receives such messages, it responds by producing sound at the appropriate pitch indicated by the note number, with higher note numbers resulting in higher pitches. A rhythm sound source, however, would receive such messages and play a different percussive sound for each different note number.

• Program change messages (PG)

Program change messages instruct a sound source to select a particular sound. When the sequencer transmits a program change message, the internal sound source or an external sound source will automatically select the specified sound. External effects devices that are able to receive MIDI messages might switch to a new set of effect settings in response.

• Pitch bend messages (PB)

When you move the pitch bend lever, pitch bend messages are transmitted to indicate the moment-by-moment position of the lever. Usually the sound source will smoothly modify the pitch of a sound in response to these messages, but the actual result will depend on the settings of the sound source.

Pitch is lowered   Pitch is raised

BENDER
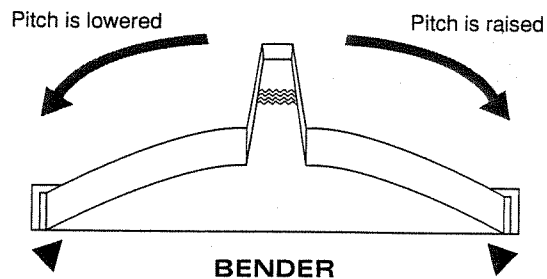
• Aftertouch messages (CAf/PAf)

Some synthesizers are able to transmit aftertouch messages, indicating that further pressure has been applied to the keyboard after a note has been pressed. The result of receiving such data will depend on the settings of the sound source.

Pressing more strongly causes greater effect (change)
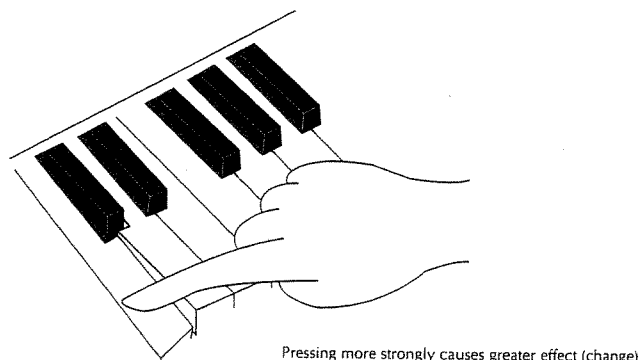
There are two types of aftertouch messages: Channel aftertouch and Polyphonic aftertouch.

Channel aftertouch (CAf) applies to all the notes receiving a given MIDI channel.

Modulation applies to all nootes
"C E G"
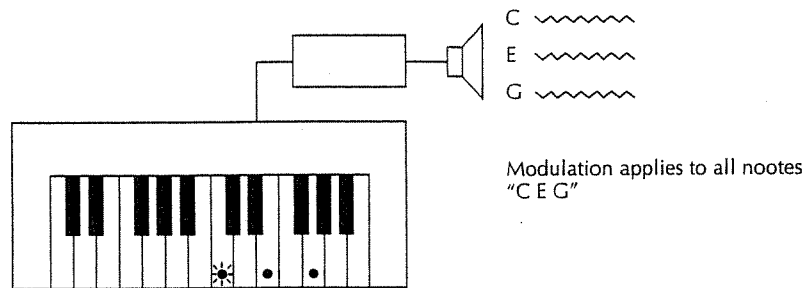
Press strongly on only the "C" note of the chord

Polyphonic aftertouch (PAf) applies to individual notes (keys).

Moduration applies only to the "C" note

Press strongly on only the "C" note of the chord

• Control change messages (CC)

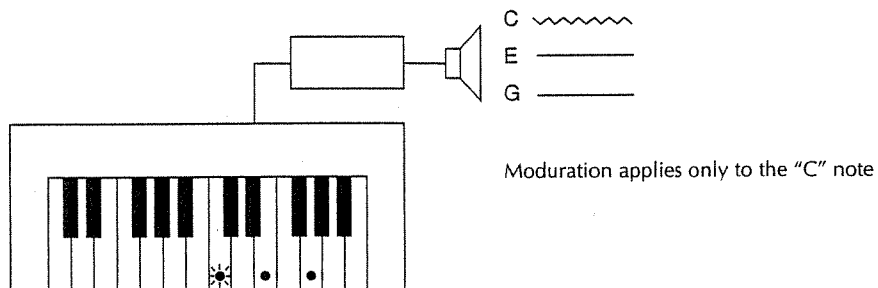Control change messages are transmitted when you move various sliders, pedals, and switches on a MIDI keyboard. Such messages are usually used to apply musically expressive effects such as vibrato, tremolo, hold (damper pedal), or pan. However, not all MIDI devices respond to all control change messages. Each control change contains a number (0—120; some unused) indicating the function it applies to, but the result of receiving these messages will depend on the manufacturer and model of the device, and on its settings.

• Exclusive messages (EX)

Exclusive messages are used mainly to transfer data specific to a certain model or type of device (such as synthesizer parameter data or sampler sound data). Exclusive data is unique to each manufacturer and device, and in general can be exchanged only between identical models made by the same manufacturer. Each exclusive message contains an ID number which identifies the manufacturer, and only a device which recognizes this number will receive the message. For details refer to SYNTHESIZER MANUAL/p.175, "Roland exclusive messages."

• Tune request message (TU)

This message requests analog synthesizers to perform their self-tuning function to set themselves to standard pitch. Most recent synthesizers produce their sound digitally, meaning that there is no possibility of pitch drift, and therefore do not respond to this message.

4

# Chapter 5
The JV-1000 and MIDI

By using MIDI to connect the JV-1000 with external MIDI devices, it can be used in an even wider variety of ways. This chapter will explain various ways to use the JV-1000 and MIDI.
This chapter will also explain how to use standard MIDI files and the voice expansion mode.

1. MIDI connectors

By using MIDI cables to connect the JV-1000 with external MIDI devices, it can control such devices, or be controlled by them.

The rear panel of the JV-1000 has four MIDI connectors: IN, OUT, THRU and SEQ OUT. This allows nearly any type of MIDI device to be connected to the JV-1000.

* *Some audio devices and some rhythm machines have a similar-looking "5 pin DIN" terminal. This has no relation to MIDI. Do not connect the JV-1000 to such jacks. Doing so would prevent either device from working, and could result in damage.*
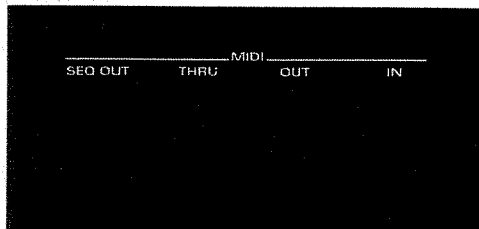
• MIDI IN

MIDI IN receives MIDI messages from other MIDI devices.

• MIDI OUT

MIDI OUT transmits MIDI messages from the JV-1000's keyboard controller section to other MIDI devices.

• MIDI THRU

All MIDI messages received at MIDI IN are re-transmitted from MIDI THRU.

• SEQ OUT

SEQ OUT transmits musical data played back by the sequencer to other MIDI devices.

2. Internal MIDI handling

Musical data (in MIDI format) is transmitted between the synthesizer section and the sequencer section according to the following table.

TZ: Transmit zone
IZ: Internal zone
Rx Switch: MIDI receive switch
V-EXP: Voice expansion board
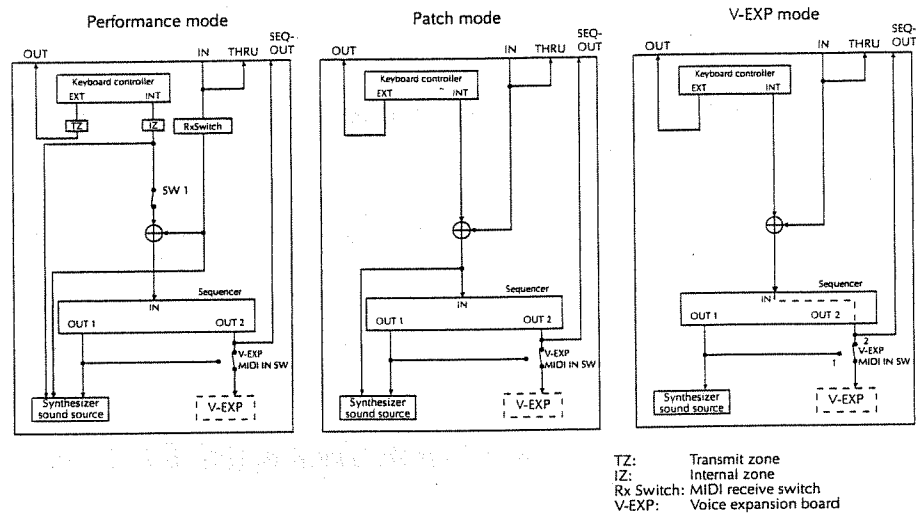
• Performance mode

In performance mode, the musical data from the keyboard controller is processed by the Internal Zone and the Transmit Zone, and is then transmitted to the synthesizer sound source, to the sequencer, and to the rear panel MIDI OUT. Data coming from the rear panel MIDI IN will play only those parts whose Receive Switch is On.

* When the key mode of a performance is zone or layer, SW1 turns transmission of musical data to the on-board sequencer on/off (SYNTHESIZER MANUAL/p.73).

• Patch mode / Rhythm mode

In patch mode or rhythm mode, the sequencer and the synthesizer sound source are controlled by the keyboard controller and by musical data received at MIDI IN from external devices. Notes played on the JV-1000 keyboard (and controller movements) are transmitted from MIDI OUT to external devices.
Musical data played back by the sequencer is transmitted from the sequencer's OUT 1 or OUT 2. Musical data from OUT 1 plays the JV-1000's synthesizer sound source, and musical data from OUT 2 is transmitted from the rear panel SEQ OUT to control external MIDI devices.

* Whether musical data is transmitted from OUT 1 or OUT 2 is determined by the Output Assign setting (SEQUENCER MANUAL/p.74).

• Voice expansion mode

If a voice expansion board (sold separately) has been installed in the JV-1000, the sound source of the board can be controlled from the keyboard controller, the on-board sequencer, and the rear panel MIDI IN. In voice expansion mode, the OUT 2 of the on-board sequencer is automatically set to Soft Thru, so that the keyboard controller can be used to directly play the voice expansion board. (The V-EXP MIDI IN switch must be set to "2.")

* If you select the V-EXP mode, the synthesizer section will be automatically set to the Performance mode.
* The V-EXP MIDI IN switch determines whether the expansion sound source will be played by OUT 1 or OUT 2 of the on-board sequencer.
* "Soft Thru" refers to a setting in which musical data received from the keyboard or from MIDI IN by the on-board sequencer is immediately passed on through OUT 1 or OUT 2 (SEQUENCER MANUAL/p.58).

3. Connections with external MIDI devices

By connecting the JV-1000 with other MIDI devices, additional expressive possibilities become available. This section will explain how you can connect the JV-1000 to other MIDI devices depending on your application.
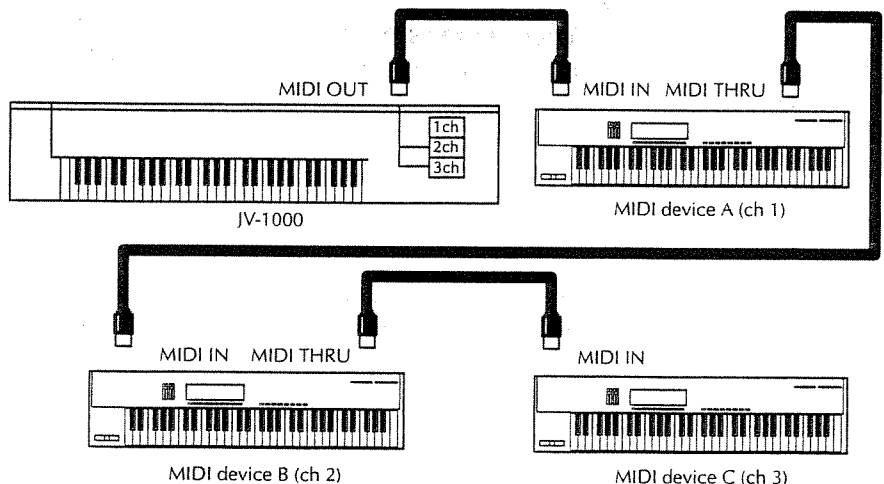
Using the JV-1000 as a master keyboard

The JV-1000's 76-note keyboard and eight parameter sliders make it an especially powerful MIDI master keyboard. If you wish to use the JV-1000 to control external MIDI devices, connect the JV-1000 MIDI OUT to the external device's MIDI IN.

MIDI OUT   MIDI IN

JV-1000   MIDI device
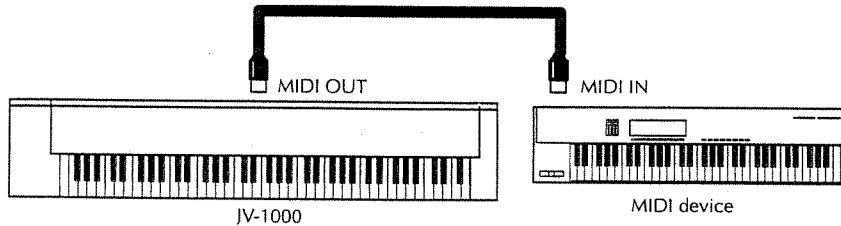
If you wish to control two or more devices, you can use the THRU connectors of the external devices.

MIDI OUT   MIDI IN   MIDI THRU

JV-1000   MIDI device A

MIDI IN   MIDI THRU   MIDI IN

MIDI device B   MIDI device C
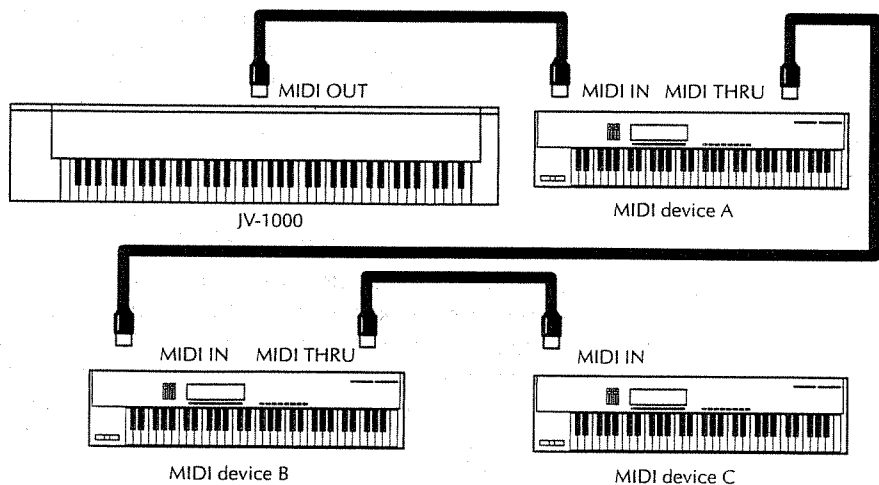
Simply connecting the devices may not be enough. You will need to set the MIDI channels of the sound sources you wish to play to match the JV-1000's transmit channel.

MIDI OUT   MIDI IN   MIDI THRU

1ch
2ch
3ch

JV-1000   MIDI device A (ch 1)

MIDI IN   MIDI THRU   MIDI IN

MIDI device B (ch 2)   MIDI device C (ch 3)

If you "daisy-chain" three or more MIDI devices using IN → THRU → IN → THRU ..., transmission errors may develop in the MIDI signal. In such cases, use a MIDI Thru Box. A MIDI Thru Box can "branch" the MIDI data stream to many devices while avoiding data transmission errors.

In a performance where the key mode is set to zone, the key range settings (SYNTHESIZER MANUAL/p.76) for each part allow musical data from the keyboard to be transmitted on independent MIDI channels. This allows you to independently play up to eight external sound sources from different areas of the keyboard.
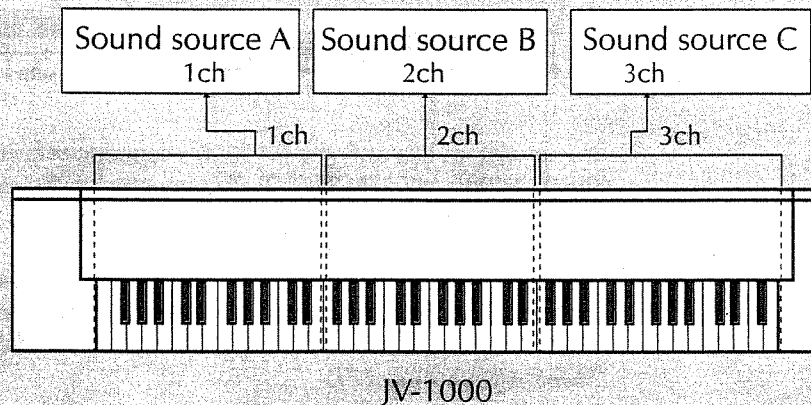

In this situation, you can use the part switches and parameter sliders to control the volume, pan, transpose, etc. for each of the connected external sound sources (SYNTHESIZER MANUAL/p.25).

Play the JV-1000 synthesizer sound source from an external master keyboard

If you wish to use an external MIDI master keyboard to control the JV-1000's synthesizer sound source, connect the external master keyboard's MIDI OUT to the JV-1000's MIDI IN.
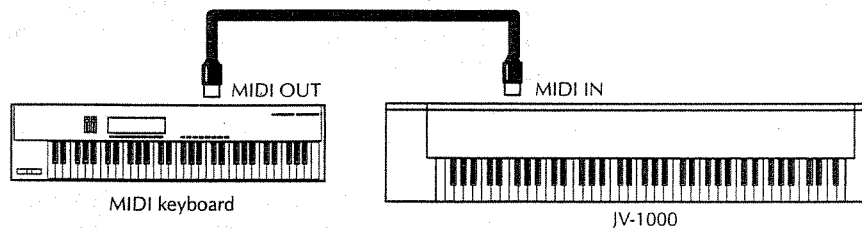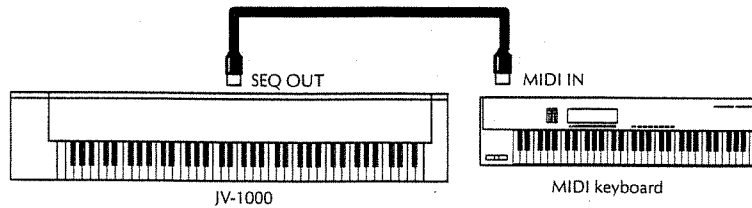

The JV-1000's synthesizer sound source is "multi-timbral." Since a single JV-1000 can act as eight independent sound modules, your setup can be simplified.


JV-1000's synthesizer sound source
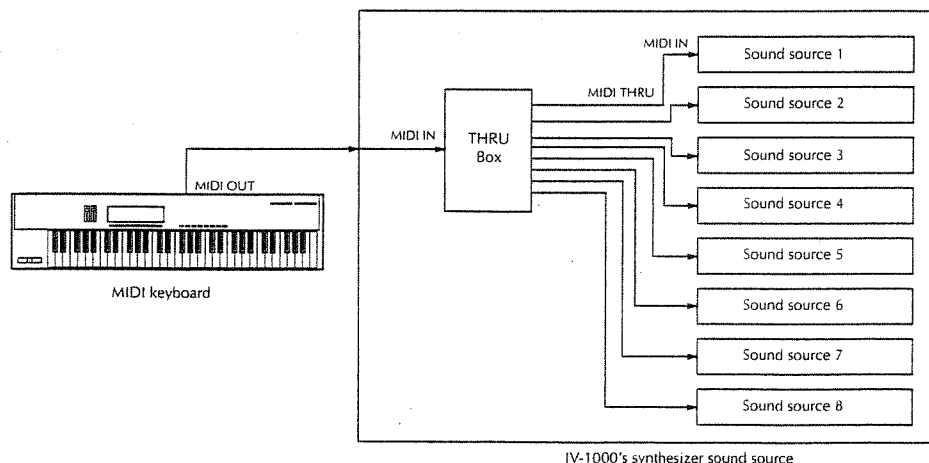
Use the JV-1000's sequencer to control external MIDI devices

If you wish to use the JV-1000's sequencer to control external MIDI devices, use the SEQ OUT connector.

If you wish to use only the JV-1000's sequencer from an external keyboard, connect the JV-1000's MIDI IN/SEQ OUT connectors to the external keyboard's MIDI OUT/IN connectors respectively.

* Set the JV-1000 to the V-EXP mode by pressing the V-EXP button in the Function Selector Buttons. If the voice expansion board has been installed to the JV-1000, set the MIDI Receive Switch on the expansion sound module to the OFF position. (SYNTHE-SIZER MANUAL/p.121)
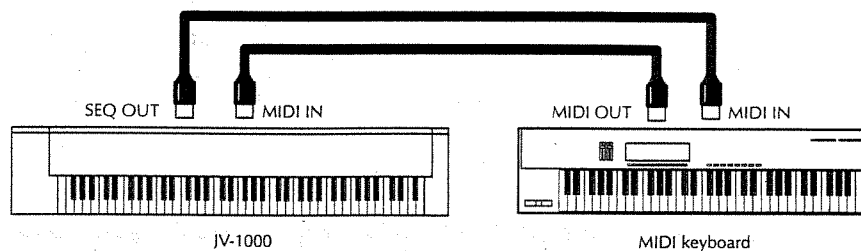
In this situation, set the Output Assign to OUT 2 for sequencer tracks which contain musical data for the external sound sources (SEQUENCER MANUAL/p.74).

• MIDI Output Assign

The phrase tracks and rhythm track of the sequencer can be assigned individually to transmit their musical data from either OUT 1 or OUT 2. This is determined by the Output Assign setting.

Tracks which you want to play the internal synthesizer sound source must be set to OUT 1, and tracks which you want to play external MIDI sound sources must be set to OUT 2.

If a voice expansion board has been installed, the V-EXP MIDI IN switch (p.??), in conjunction with the output assign settings, allows you to control up to 8 synthesizer sound source parts — 8 expansion board sound source parts — 16 channels of external sound sources for a total of 32 sound sources.

< Example >

Part 1 (ch.1/OUT1)	internal synthesizer sound source (performance part 1)
I	I
Part 8 (ch.8/OUT1)	internal synthesizer sound source (performance part 8)
Part 9 (ch.9/OUT1)	expansion sound source (part 9)
I	I
Part 16 (ch.16/OUT1)	expansion sound source (part 16)
Part 17 (ch.1/OUT2)	external sound source (ch.1)
I	I
Part 32 (ch.16/OUT2)	external sound source (ch.1)

* Turn the Receive setting Off for parts 1—8 of the expansion sound source (SYNTHE-SIZER MANUAL/p.121).

Using the JV-1000 on stage

In performance play mode, the parameter sliders and other controllers can be used to control the sound of each part. The additional control is especially important in live performances.

Here we will use as an example the internal memory performance "A01 JazzSprit /," and illustrate how various settings could be made.

Specify key ranges

"A01 JazzSprit /" is a zone mode performance. Zone mode performances allow you to set the key ranges for each internal zone so that different areas of the keyboard will play different parts.
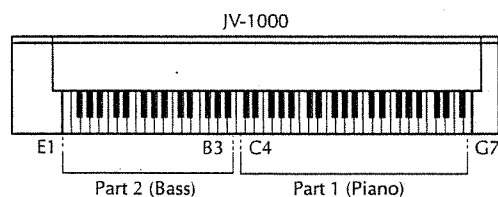
In this performance, part 1 has been assigned a piano sound and part 2 has been assigned a bass sound. The key ranges have been set so that you can play bass with your left hand and piano with your right hand.

* For parts 3—8, the Local switch (SYNTHESIZER MANUAL/p.25) has been turned off so that they will not sound.

• Local switch

The Local switch is a setting that determines whether each part of the synthesizer sound source will or will not receive musical data from the keyboard controller. If the Local switch of a part is OFF, that part will not sound in response to the keyboard.

* To make Local on/off settings, simultaneously press TX and RX (so both indicators light), and use the part switches to make settings. A part is ON when the corresponding indicator is lit.

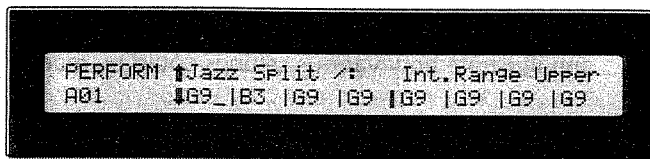## • How to make key range settings

1. Press INT TRANS and use ▲/▼ to select the "Int. Range Lower" and "Int. Range Upper" pages.
In this performance, part 1 has been given a range of C4—G9 and part 2 has been given a range of C-1—B3, so that the two parts are split at B3 and C4.

2. Use parameter sliders 1 and 2 to adjust the key ranges.
For example, if you set the key range to C-1—G9 for both parts, you can play both sounds simultaneously.

* Some sounds have a restricted range over which they can be played. If you set a key range that exceeds this limit, notes outside the limit will not sound.

```
PERFORM ↑Jazz Split ↗:    Int.Range Lower
A01       |C4_|C-1 |C-1 |C-1 |C-1 |C-1 |C-1 |C-1
```

```
PERFORM ↑Jazz Split ↗:    Int.Range Upper
A01       |G9_|B3 |G9 |G9 |G9 |G9 |G9 |G9
```
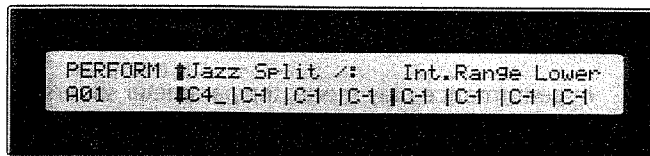
Adjust the transposition of each part_____

By adjusting the Transpose setting (SYNTHESIZER MANUAL/p.29) of each part, you can play notes which are outside the physical range of the keyboard. Another possibility, when playing a zone mode performance that includes instruments with widely varying pitch ranges, is to use the transpose setting to move each instrument into a convenient pitch range for each zone of the keyboard.

• How to adjust the transpose setting

1. Press INT TRANS and use ▲/▼ to select the "Int. Transpose" page.

2. Use parameter sliders 1 and 2 to adjust the internal transpose settings.
Transpose can be adjusted in semitone units. To transpose the sound 1 octave up (down), set the Transpose setting to 12 (-12).

```
PERFORM ↑Jazz Split ↗:      Int.Transpose
A01     ↓   0|+12|  0|  0|  0|  0|  0|  0
```
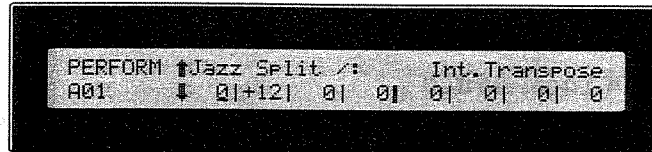
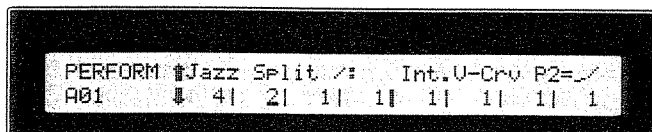## Modify the dynamic response_____

By modifying the velocity-related parameters (SYNTHESIZER MANUAL/p.82) you can adjust the dynamic response of each part. In this example we will adjust the "Int. Velo Sense" parameter to keep an even volume for notes played on the bass, and to allow wider dynamic variation for notes played by the piano.

• How to adjust the dynamic response

1. Press INT TRANS and use ▲/▼ to select the "Int. Velo Sense" page. Use parameter slider 2 to set a value of '10' for part 2.

```
PERFORM ↑Jazz Split ↗:    Int. Vel Sense
A01     ↓+32|+10|+32|+32|+32|+32|+32|+32
```
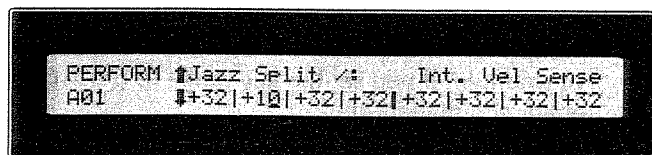
2. Use ▲/▼ to select the "Int. V-Crv" page, and use parameter sliders 1 and 2 to set a value of '4' for part 1, and a value of '2' for part 2.

```
PERFORM ↑Jazz Split ↗:    Int.V-Crv P2=↗
A01     ↓  4|  2|  1|  1|  1|  1|  1|  1
```

3. **Use ▲/▼ to select the "Int. Max Velocity" page, and use parameter slider 2 to set a value of '64' for part 2.**

```
PERFORM ↑Jazz Split ╱:  Int.Max Velocity
A01       ↓127| 64|127|127|127|127|127|127
```
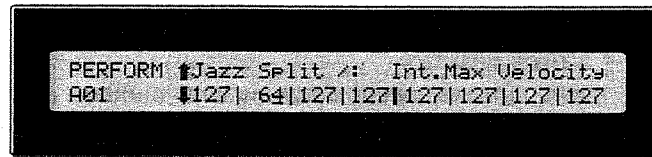
By adjusting these parameters, the dynamic response of parts 1 and 2 will be as shown in the diagram. The range of volume change is narrow for part 1 and wide for part 2.

The range over which the sounding Part changes
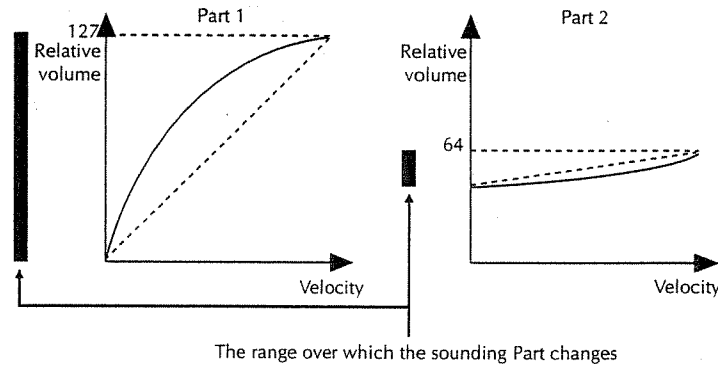
By making similar adjustments for all eight parts, you can create a wide variety of expressive possibilities.

* See SYNTHESIZER MANUAL/p.84 for setting the level or pan of each Part.

One-man band

With appropriate settings for the key range and local switch of each part, you can be a "one-man band" in which the JV-1000's sequencer provides the backing while you play the melody!
Specify a different receive channel for each part you want the sequencer to play. For parts you are to play (i.e., not by the sequencer), set the part switch (or track switch) off.

The following chart shows an example of how you might use a zone mode performance to play parts 1, 2 and 8 from the on-board sequencer, and parts 3 and 4 in realtime on the keyboard.

No.	Sound	Range	Local SW	Rx.ch	TRK	Played by
1	Brass	—	off	ch.1	1	sequencer
2	Bass	—	off	ch.2	2	sequencer
3	Lead 1	C-1—B3	on	—	-	hand
4	Lead 2	C4—G9	on	—	-	hand
5-7	not used	—	off	—	-	-
8	Drums	—	off	ch.10	R	sequencer

* Items marked — do not need to be set.
* The receive channel is the channel on which each part of the synthesizer sound source will receive musical data (SYNTHESIZER MANUAL/p.85). Set this to the same channel as was used for recording.

For parts to be played manually on the keyboard, set the Local switch (SYNTHESIZER MANUAL/p.25) on, and specify the key range. For parts that will be played by the sequencer, set the Local switch off.
For parts to be played by the sequencer, set a different receive channel for each part.

For parts that will be played on the keyboard, set the Track switch off. If you wish, you may also set the sequencer section part switch off.

• Voice reserve
When the sequencer is playing large numbers of notes at one time, the number of voices that need to be sounded may exceed the limit of 28. If this happens, previously-sounding parts will be turned off so that the more recent notes can be played. To prevent notes from being "stolen" from musically important parts, you can use the Voice Reserve setting (SYNTHESIZER MANUAL/p.85) to reserve a minimum number of notes that a given part will be guaranteed. This allows you to preserve important parts or parts which you will be playing from the keyboard.

4. Playing Standard MIDI Files

The JV-1000 is able to playback commercially available Standard MIDI Files (SMFs). However, since the data format of commercial SMF data differs from that of the JV-1000's sequencer, they must be loaded using the following procedure (so that the data can be converted into a usable format).

From standby mode:

1. **Insert the floppy disk (protect tab ON (PROTECT)).**

2. **Press DISK MODE, use the alpha-dial to select "6 LOAD [MIDI FILE]," and then press ENTER.**

Load function
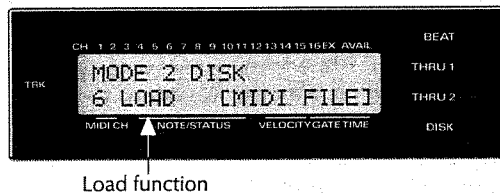
3. **Use the numeric keys to select the song number into which you wish to load the data, and then press ENTER.**

Song numbers to be loaded
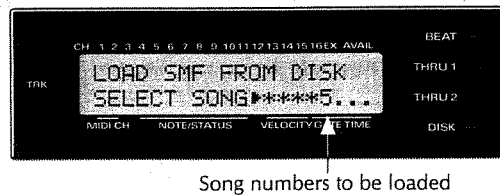
The display will show the status of each song 1—8 from left to right. The meaning of the display is as follows.

Display	Meaning
1—8	load
*	don't load (song data exists in the sequencer)
▪	don't load (song data does not exist in the sequencer)

* Only one song number can be selected.

4. **Use the alpha-dial to select the SMF you wish to load, and then press LOAD to execute the load operation.**

Song numbers to be loaded

Song number   SMF's file name
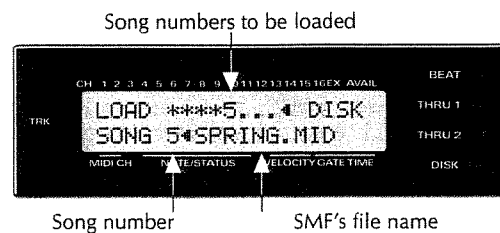
5. **When loading is complete, press DISK MODE to return to standby mode.**
   The SMF has been loaded from disk into the JV-1000. Now the song can be played in the same way as a normal song file.

* There are several conditions that an SMF must meet for the JV-1000 to be able to use it. For details see SEQUENCER MANUAL/p.148.
* If you wish to use a voice expansion board to play an SMF disk, set the Output Assign to OUT 2 for all tracks of the on-board sequencer (SEQUENCER MANUAL/p.74).

Minus-one playing

When using the on-board sequencer to play musical data such as an SMF, you can use the PART SWITCH buttons to turn on/off reception of the data from the sequencer for each part (SYNTHESIZER MANUAL/p.25). Using these switches you can, for example, mute the lead instrument, and play that part on the keyboard yourself while the other parts are played by the sequencer.

* If you wish to play an SMF or other song data on the expansion sound source while you play the synthesizer sound source in realtime, you must first set the JV-1000 to V-EXP mode, then turn off the RX switch (SYNTHESIZER MANUAL/p.121) for the part you wish to play, and then play the keyboard in patch or performance mode.

* If the song data you are using for minus-one play contains exclusive data, the sound may change mid-way through the song.

• Standard MIDI Files

Song data used by computers and sequencers have different data formats (depending on the device or the software). The Standard MIDI File (SMF) format is now widely-used and allows song data to be exchanged between different types of devices.
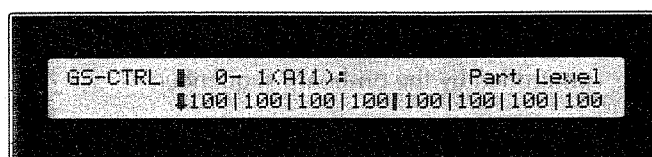
5. About the voice expansion board

The voice expansion board (sold separately) consists of an expansion sound source and sound memory. By installing a voice expansion board, the following functions are added.

- Up to 56 simultaneous notes (28 synthesizer sound source voices — 28 expansion sound source voices)
- Up to 24 parts (8 synthesizer sound source parts — 16 expansion sound source parts)
- Additional sounds and rhythm sets are available

By combining the internal synthesizer sound source with the expansion sound source, a high level of musical complexity can be achieved.

When you press the V-EXP mode select button, the JV-1000 will be in voice expansion mode. In this mode, the on-board sequencer OUT 2 will be set to Soft Thru, and you can play the expansion sound source from the keyboard or use it for recording.

* If the voice expansion board has not been installed to the JV-1000, pressing V-EXP will cause the display to respond with the following:

```
GS-CTRL   0-  1(A11):              Part Level
         100|100|100|100|100|100|100|100
```

You can control the external sound module (GS Format compatible) which is connected to the SEQ OUT with the sliders and the button on the panel.

• V-EXP MIDI IN switch

When the voice expansion board is installed, the V-EXP MIDI IN switch determines how MIDI is received by the voice expansion board.

When V-EXP MIDI IN is set to 1, the expansion board sound source will receive musical data from OUT 1.
When V-EXP MIDI IN is set to 2, the expansion board sound source will receive musical data from OUT 2.

* If you wish to play the expansion sound source from the keyboard, set the V-EXP MIDI IN switch to 2. (This is the factory setting.)
* To set the V-EXP MIDI IN switch, see p.96.

Playing the synthesizer sound source and the expansion sound source from the sequencer

You can use the JV-1000 sequencer to simultaneously play both the synthesizer sound source and the expansion board sound source.
In the example given below, musical data for the synthesizer sound source is recorded in tracks 1—4, and musical data for the expansion board sound source is recorded in tracks 5—8. Depending on the setting of the V-EXP MIDI IN switch, the Receive Channel of each part of the two sound sources and the Output Assign of each sequencer track should be set as follows.

• When the V-EXP MIDI IN switch is set to 2

In each sound source, set a different Receive Channel (SYNTHESIZER MANUAL/p.85) for each part. Record the musical data for the synthesizer sound source in Performance mode, and record the musical data for the expansion sound source in V-EXP mode.

Sound source	Track	Receive channel	Output assign
Synthesizer	1	1	OUT1
	2	2	OUT1
	3	3	OUT1
	4	4	OUT1
V-EXP board	5	1	OUT2
	6	2	OUT2
	7	3	OUT2
	8	4	OUT2

When the V-EXP MIDI IN switch is set to 2, the synthesizer sound source will be controlled by musical data from the on-board sequencer OUT 1, and the expansion sound source from OUT 2. This means that tracks 1—4 (which play the synthesizer sound source) must have an output assign setting of OUT 1, and tracks 5—8 (which play the expansion sound source) must have an output assign setting of OUT 2.

With this method, the musical data from OUT 1 will control the 8 parts of the synthesizer sound source, and the musical data from OUT 2 will control the 16 parts of the expansion sound source or external sound sources, for a total of 24 parts being controlled by the on-board sequencer.

If you use external MIDI devices, set the output assign to 2 for tracks containing musical data, and make sure that the receive channels of the external MIDI sound sources do not overlap with the receive channels set for each part of the expansion sound source.

• When the V-EXP MIDI IN switch is set to 1

Music produced by the synthesizer's sound source can be recorded in the Performance mode.

What is played by the expansion sound generator can be recorded in the V-EXP mode after the internal sequencer's Soft Thru has been set to OUT 1.

As Parts to be played by the expansion sound generator, select ones which have a reception channel that is different from that of any of the Parts being used by the synthesizer's sound source. You will also need to turn OFF the Receive Switch (p. 121, Synthesizer Manual) for any Parts which have reception channels that are being shared (in this case, Parts 1-4).

| Sound source	Track	Receive channel	Output assign
Synthesizer	1	1	OUT1
	2	2	OUT1
	3	3	OUT1
	4	4	OUT1
V-EXP board	5	9	OUT1
	6	10	OUT1
	7	11	OUT1
	8	12	OUT1

When the V-EXP MIDI IN switch is set to 1, both the synthesizer sound source and the expansion sound source will be controlled by the musical data from OUT 1, so set Output Assign to OUT 1 for tracks 1—8.

With this method, the musical data from OUT 1 will control the synthesizer sound source or the expansion sound source (16 parts), and the musical data from OUT 2 will control external MIDI sound sources (16 parts) for a total of 32 parts being controlled from the on-board sequencer.

If you use external MIDI sound sources, set the Output Assign to OUT 2 for tracks which contain musical data for them, and set the various sound sources to MIDI channels 1—16.

Chapter 6
Reference
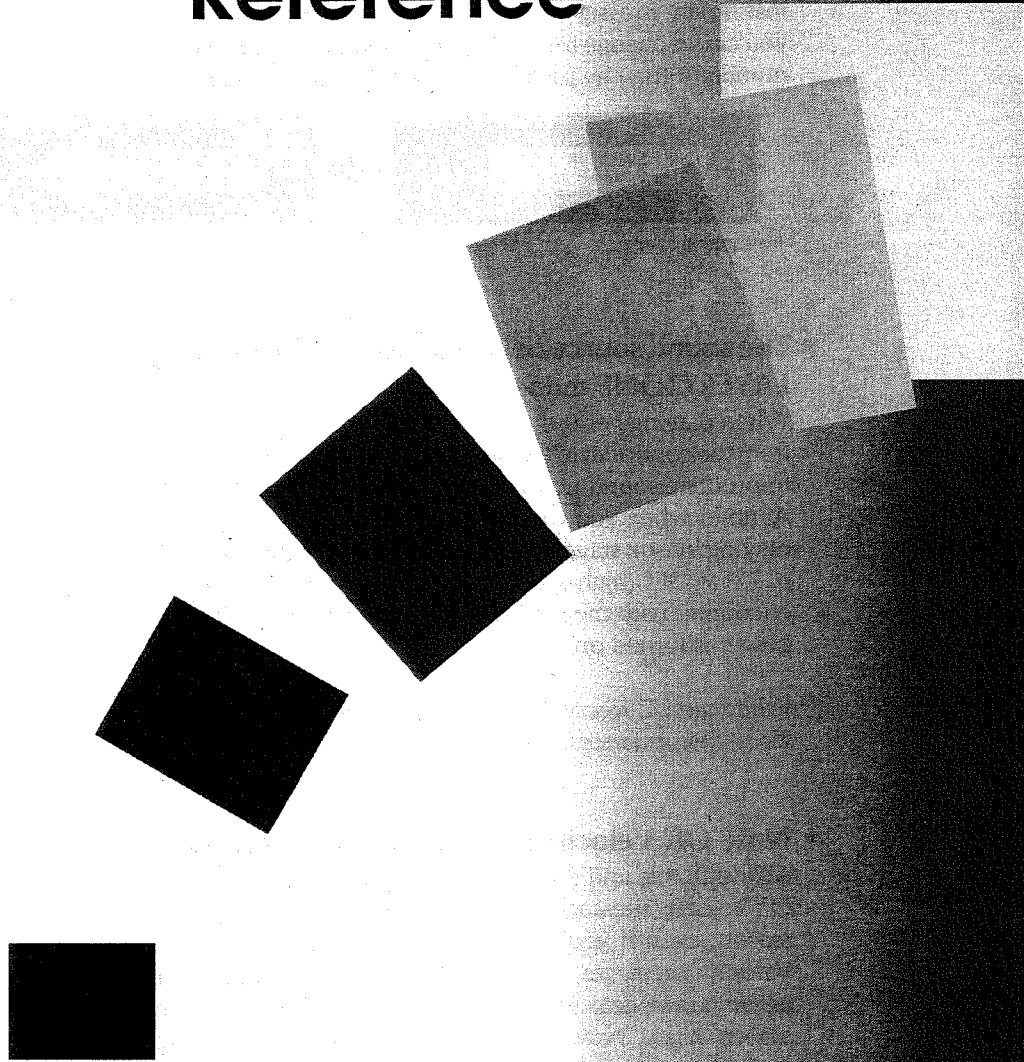
1. Troubleshooting

• Although all sounds play normally on the keyboard, some of the rhythm sounds cannot be recorded into the rhythm track...

For the synthesizer sound source's Rhythm Part, there is a rhythm instrument assigned to every key from C2 through C7 on the keyboard. However, only 32 different rhythm instruments can be assigned to the internal sequencer's rhythm track. This is why there are rhythm instruments that can be produced on the keyboard, but they cannot be recorded into the rhythm track.

In order to be able to record certain rhythm instruments, you will need to alter the settings for the internal sequencer's "FUNC 5 RHYTHM INST" (SEQUENCER MANUAL/ p.66), and reassign the number on the keyboard to which the desired rhythm instrument is assigned to a number 1-32. For example, with the Preset A rhythm set, you could change the ride cymbal sound at the F3 key (key number 53) to instrument number 9 (rcy) by performing the following settings:

Instrument number   Key number
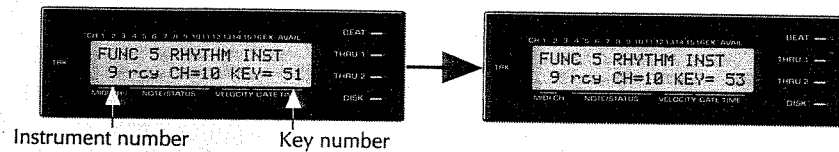
• The sound source behaves strangely while playing Performances in the LAYER/ZONE mode...

When playing Performances in the LAYER/ZONE mode a large amount of data is sent from the controller to the synthesizer's sound source. The sound source may not be able to produce sound normally if this data becomes excessive.

At times when you won't need to record anything into the sequencer (such as when playing live on stage), you should set the L/Z Record switch (SYNTHESIZER MANUAL/ p. 73) to OFF (high-speed mode). This way, you can prevent any problems you might encounter with the synthesizer's sound source. (The setting will be at ON each time power is turned on.)

When the L/Z Record switch is set to OFF, recording cannot be carried out for Layer/ Zone Performances. Turn the switch ON to be able to record.

• Note Off Velocity messages are not recorded into the sequencer...

Although this unit's keyboard controller and synthesized sound source support Note Off Velocity messages, its sequencer does not recognize this type of message. For this reason, even if you have specifically made parameter settings relative to Note Off Velocity messages for sounds, you still may not obtain the expected results after performance data using such sounds has been recorded into the sequencer and is played back. Note also that Note Off Velocity messages will be missing from performance data that has been routed through the internal sequencer (Soft Thru) and is output from SEQ OUT. If you are using an external sound module that recognizes Note Off Velocity, it should be connected to MIDI OUT.

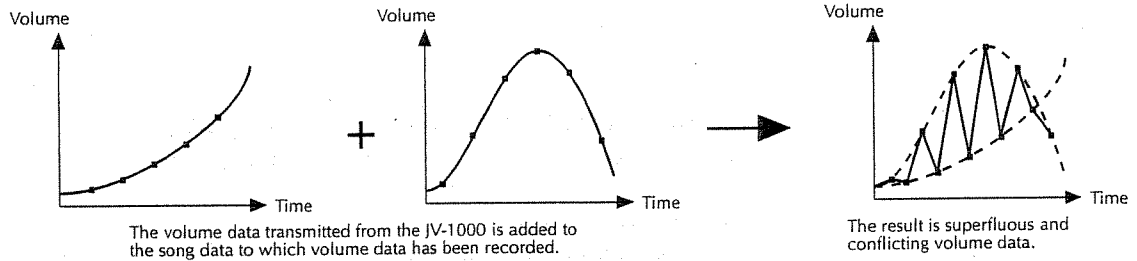## • During a Bulk Dump the sequencer starts playing...

If you carry out a Bulk Dump from the Remote ON mode while the sequencer contains current performance data (without pressing REC/LOAD), the sequencer will start playing.

To avoid this, you can either set the mode used with the Bulk Dump to Remote OFF (SYNTHESIZER MANUAL/p. 109); or you can select a song number that contains no data on the sequencer. Note also that if you set "FUNC 1 SYNC CLOCK" for the sequencer to INTERNAL, the sequencer will not automatically Start/Stop when you carry out a Bulk Dump from the Remote ON mode (SEQUENCER MANUAL/p. 62).

- ## When two tracks are merged, changes in volume and pan become erratic...

When tracks containing recorded volume and pan information are merged (procedure whereby performance data contained in a multiple number of tracks is placed together on a single track → SEQUENCER MANUAL, p. 84), the recorded volume and pan information is mixed on top of similar data already in the track at the destination for the merge. When this combination of volume and pan data is sent to the sound source, the resulting music can sound strange. In addition, the total amount of performance data will have grown larger.

We recommend that you try to target a track for the merge destination that does not already contain any volume or pan data when merging tracks that do contain such data.

The volume data transmitted from the JV-1000 is added to the song data to which volume data has been recorded.

The result is superfluous and conflicting volume data.

- ## When the synthesizer's sound source is recorded/played back using the internal sequencer, the synthesizer's sound source and the expansion sound source both sound...

When what is played by the synthesizer's sound source is recorded using the internal sequencer, from the Patch/Performance/Rhythm modes, when a voice expansion board is installed, the synthesizer's sound source and the expansion sound source may both sound. If you wish to have only the synthesizer's sound source produce sound, carry out one of the procedures explained below:

(1) With the V-EXP MIDI IN Switch at '1'

In this case, both the synthesizer's sound source and the expansion sound source produce sound because the same channel is being used for reception by both of these sound generating devices. To correct this, turn OFF the MIDI Receive switch for all unneeded Parts on the expansion sound module in the V-EXP mode (press the PART SWITCH and confirm that indicators have gone out).

(2) With the V-EXP MIDI IN Switch at '2'

In this case, both of the sound sources produce sound because Output Assign for each of the tracks is set so that output takes place using both OUT1 and OUT2 at the default power up state.

To correct this, set the Output Assign for the tracks in which the synthesizer's performance data is recorded to OUT1 (internal sequencer settings).

* Note that alterations you make in Output Assign settings are saved as part of the song file when you save songs onto disk. The next time you load that song file for playback, the settings for Output Assign will automatically be placed in effect.
* The procedure explained in (1) is also effective when the V-EXP MIDI IN Switch is at '2.'

- ## When the expansion sound module is recorded/played back using the internal sequencer, the synthesizer's sound source and the expansion sound module both sound...

As explained above, when what is played by the expansion sound module in the V-EXP mode is recorded/played back using the internal sequencer, the synthesizer's sound source and the expansion sound module will both sound if left at the normal settings. If you wish to have only the expansion sound module produce sound, perform either of the procedures below:

(1) With the V-EXP MIDI IN Switch at '1'
You can turn OFF the Sequencer Mute switch for all unneeded Parts in the Performance mode (with both TX and RX not lighted, use a PART SWITCH (1-8) to perform the selection). Alternately, you can redo settings for the Receive Channel for each of the Parts so they do not use the same channels that the expansion sound module Parts use for performance (SYNTHESIZER MANUAL/p. 85).

(2) With the V-EXP MIDI IN Switch at '2'
Redo the settings for Output Assign for the tracks in which the expansion sound module's performance data is recorded so they are set to OUT2 (internal sequencer settings).

* *The procedure explained in (1) is also effective when the V-EXP MIDI IN Switch is at '2.'*

• Setting for Soft Thru cannot be changed...
When the sequencer portion of the unit is being operated under SUPER-MRP, you are not permitted to change the setting for Soft Thru. Note also that what is shown by the Soft Thru indicator may not always reflect the true status of the setting in effect for Soft Thru. To alter the setting, start up SUPER-MRC and make the setting.

• The Sound Generator Sounds Everything Twice
The sound generator will sound everything twice if Soft Thru has been set to OUT 1, and the synthesizer's sound source is played by means of the keyboard or as a result of data arriving at MIDI IN. To avoid this, set Soft Thru to OFF or OUT 2.

2. Installing the expansion board

The JV-1000 can accommodate one wave expansion board and one voice expansion board. When installing these boards, be careful to observe the following points.

- Turn off the JV-1000 and all peripheral devices, and disconnect the power cables.
- When installing the boards, do not touch the circuit boards, ICs or other parts inside the JV-1000. Do not touch the parts on the boards you are installing.

1. **The rear panel has two covers. To install the wave expansion board, remove the cover on the right as you face the rear panel. To install the voice expansion board, remove the cover on the left as you face the rear panel. Each cover is held in place by four screws.**

2. **Follow the procedure given in the manual for each expansion board. Insert the expansion board into the JV-1000 connector and secure it with the circuit board holder.**
   Finally, replace the cover.

3. **Make sure if the expansion board is correctly attached.**
   Set the unit to the Patch Play or V-EXP Play mode, then press INFO. If the expansion board is correctly connected, the display will show the messages regarding the expansion board connected to the JV-1000. If "----" appears instead of the messages, disconnect the expansion board any carefully connect it again.

3. Setting the V-EXP MIDI IN switch

The V-EXP MIDI IN switch determines whether the expansion board sound source will be played by the sequencer OUT 1 or OUT 2. Before you set this switch, be careful to observe the following points.

- Turn off the JV-1000 and all peripheral devices, and disconnect the power cables.
- When installing the boards, do not touch the circuit boards, ICs or other parts inside the JV-1000. Do not touch the parts on the boards you are installing.

1. **Turn the JV-1000 around so that the rear panel is facing you, and remove the left cover.**

2. **The V-EXP MIDI IN switch is located at the lower right of the voice expansion board connector.**
   The switch is set to '1' when in the right position (data is received from the on-board sequencer OUT 1) and to '2' when in the left position (data is received from the on-board sequencer OUT 2).
   After setting the switch, replace the cover.

   * *When shipped from the factory, the V-EXP MIDI IN switch is set to '2.'*

Rear panel
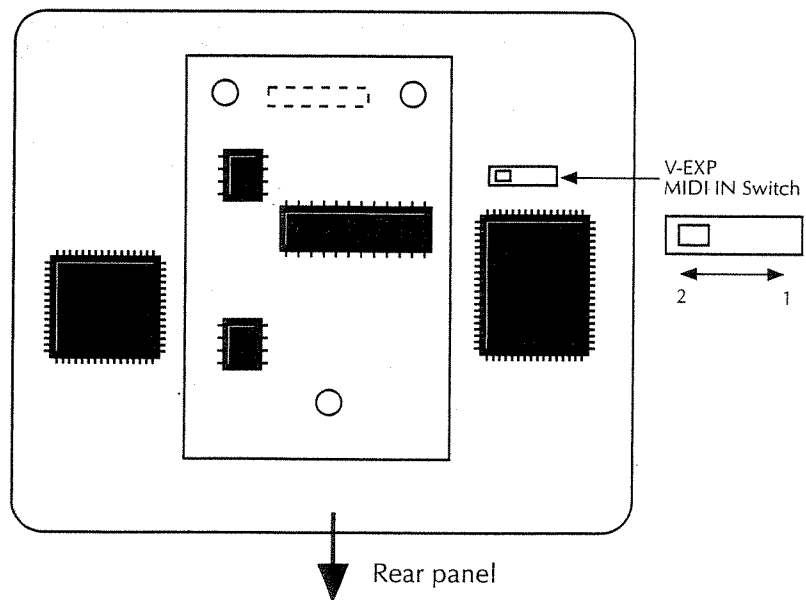
3. **If you have set the V-EXP MIDI IN switch to 1, set the on-board sequencer Soft Thru to OUT 1. If you have set the V-EXP MIDI IN switch to 2, set the on-board sequencer Soft Thru to OUT 2. Then check that the keyboard will play the expansion sound source. The volume of the expansion sound source can be adjusted using the VOLUME (V-EXP) slider on the side panel.**

   * *If the V-EXP MIDI IN switch is set to 1, the keyboard will not directly play the expansion sound source, even if V-EXP has been pressed. If you wish to play the expansion sound source from the keyboard, you must set the on-board sequencer Soft Thru to OUT 1.*
   If the synthesizer sound source is in performance mode, the synthesizer sound source parts may play in unison with the expansion sound source parts. If this happens, use the PART SWITCH buttons to mute the synthesizer sound source parts.

Specifications

JV-1000:Music Workstation

Synthesizer Section

- Keyboard:
  76 keys(with Velocity and Channel Aftertouch)
- Maximum Polyphony :28voices
- Memory
  Factory
Patches	:256
Performances	:64
Rhythm Sets	:4

  Internal
Patches	:64
Performances	:16
Rhythm Set	:1

  DATA Card
Patches	:64
Performances	:16
Rhythm Set	:1

  Wave Expansion Board
Patches	:255 (Maximum)

  PCM Card
Patches	:128 (Maximum)
- Effects
Chorus	:3 types
Reverb	:8 types
- Display
  40 characters, 2 lines (Backlit LCD)

Sequencer Part

- Internal Memory
  256K bytes(RAM)
  512K bytes(ROM)
- Disk Drive: 3.5 inch Micro Floppy Disk Drive(2DD)
- Display: 20 characters, 2 lines (Backlit LCD)
- Tracks
Phrase Tracks(16 MIDI Channels per track)	:8
Rhythm Track(Rhythm Pattern combination type)	:1
Tempo Track	:1
- Song Data(Internal Memory)
  Songs :8
- Note Capacity : approx. 40,000 notes (*)
  Song Length :9999 mesures, or quarter note x 87381
  Rhythm Instruments: 32 (independent MIDI Channels)
  Rhythm Patterns :240 (per song)
- Resolution
Phrase Tracks	:96 clocks/quarter note
Rhythm Pattern	:32nd notes(for each Instrument)
- Recording Method :Realtime/Step
- Maximum Simultaneous Input Notes
  (during realtime recording) : 64 notes
- Maximum Simultaneous Output Notes: 64 notes/track
- Tempo
  ♩=10—250 (Basic Tempo)
  ♩=5—500 (Tempo Track)

- Time Signatures
  1—32/16, 1—32/8, A1—32/4, A1, 32/2
- Sequence Data
Bank	:26 (A to Z)
Song Files	:99/(32 per Bank)
- Accesories
  Disk
Disk Capacity	:720K bytes
Song Files	:108
Note Storage	:approx. 150,000 notes
Configuration File	:1
Sequence File	:1
Format	:S-MRC, SMF (Format 0,1), etc.

  Connectors
  Output jacks :Mix L(Mono)/R, V-Exp L(Mono)/R
  Headphone jack
  Hold jack
  Pedal jacks(1,2)
  MIDI Connectors(In, Out, Thru, Sequencer Out)
  Card Slots(PCM Card, DATA Card)
  Start/Stop Jack
  Punch In/Out Jack
  Metoronome Output Jack
  Tape Sync II Jack(RCA phono)
Input Level	:-20—0 dBm
Input Impedance	:50kΩ
Output Level	:-10 dBm
Output Impedance	:1kΩ or less
	(0dBm=0.775Vrms)
- Dimensions
  1232 x 348 x 97mm
  48-1/2 x 13-11/16 x 3-13/16inches
- Weight
  13.5kg/29lbs 12oz
- Power Consumption
  29W
  29W(AC117V),29W(AC230V),29W(AC240V)
- Accessories
  Owner's Manual (QUICK START,
  INTRODUCTORY MANUAL,
  SYNTHESIZER MANUAL,
  SEQUENCER MANUAL)
  Demo Disk
  Power cord (230V, 240V only)
- Options
DATA card	:M-256E
Stereo headphone	:RH-20/80/120
Pedal switch	:DP-2/6,BOSS FS-5U
Expression pedal	:EV-5
Connecting cable	:PJ-1M/2/3
MIDI/SYNC cable	:MSC07/15/25/50/100
PCM card	:SO-PCM1 series
DATA (ROM) card	:PN-JV80 series
Wave expansion board	:SR-JV80 series
Voice expansion board	:VE series
Micro floppy drive	:MF-2DD

(*) Actual capacity will vary depending on how phrase tracks and rhythm tracks are used.

Specifications are subject to change without notice.

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