KORG®

Music Workstation

T1
T2
T3

Operation Guide

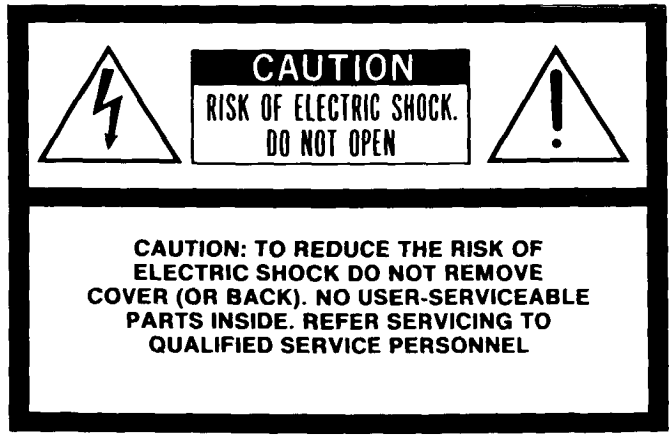
AI Synthesis System

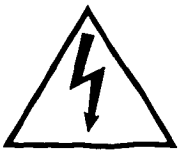
IMPORTANT SAFETY INSTRUCTIONS

WARNING — When using electric products, basic precautions should always be followed, including the following.

1. Read all the instructions before using the product.
2. To reduce the risk of injury, close supervision is necessary when a product is used near children.
3. 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.
4. This product should be used only with a cart or stand that is recommended by the manufacturer.
5. 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 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.
6. The product should be located so that its location or position does not interfere with its proper ventilation.
7. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
11. 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 into 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.
12. 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.

SAVE THESE INSTRUCTIONS





The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER — Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product — if it will not fit the outlet, have a proper outlet installed by a qualified electrician

LITIUMPARISTO Pariston saa vaihtaa ainoastaan huoltohenkilöstö saman valmistajan vastaavalla tyypillä. Virheellisestä käsittelystä syntyy räjähdysvaara.	***ADVARSEL*** Dette produktet inneholder lithium batteri som bare må skiftes ut av kvalifisert per sonell. Ukyndig behandling kan forårsake eksplosjon. Batteriet må erstattes av samme type fra samme produsent.
VARNING Denna apparat har LITHIUM BATTERI. Byte av batteri får endast ske av fackman. Felaktig hantering kan förorsaka explosion. Vid byte får endast batteri av samma typ och fabrikat monteras.	***ADVARSEL*** Lithiumbatteri. Eksplosionsfare. Udskiftning må kun foretages af en sagkyndig, og som beskrevet i servicemanualen.

Thank you for purchasing the Korg T1/T2/T3 Total Workstation. To ensure long, trouble-free operation, please read this manual carefully.

PRECAUTIONS

■ENVIRONMENT

Avoid using this unit in environments where it will be exposed to the following conditions:

•Direct sunlight
•High temperature or humidity
•Dust or sand
•Excessive vibration

Using your unit in the following kinds of locations may generate noise or cause erroneous operation, so please be careful.

•Near fluorescent lights or CRTs (in TVs, etc.)

■POWER SUPPLY

Use this unit only with the rated AC voltage. If you intend to use this unit in areas where the voltage is different from the rated AC voltage, consult your KORG dealer about a suitable voltage transformer unit.

Do not plug the unit into the same outlet used for devices which generate noise or which have a large power consumption, such as motors or dimmers.

■INTERFERENCE WITH OTHER APPLIANCES

This unit uses microprocessor circuitry that may cause interference with nearby radio or TV receivers. If problems occur, use at a greater distance from the radio or TV.

■HANDLE GENTLY

Although this unit is designed and constructed to KORG's high standards, the use of excessive force may cause damage to its keys and knobs.

■FLOPPY DISK DRIVE

This unit contains a 3.5" floppy disk drive. While a disk is inserted into the drive, do not turn the power on/off or allow the unit to be subjected to shocks or vibration. Failure to observe these measures could result in the disk being damaged.

■CLEANING

Use only a soft, dry cloth to clean the exterior of this unit. Never use benzene, volatile cleaners or solvents, polish or cleaning compounds.

■OWNER'S MANUAL

The T1/T2/T3 is a sophisticated digital music device with many functions. Therefore, we suggest that you keep this manual handy at all times, for reference.

HOW TO USE THIS MANUAL

(1)First, read the "Basic operation" section while actually operating the T1/T2/T3. This will help you to understand the basics of operating the T1/T2/T3. Follow the directions to learn the function of each key and display.

(2)Next, glance through the "Reference" section. This will give you an idea of the possibilities of the T1/T2/T3, and points to remember.

(3)When necessary, refer to the explanations for each function you need to use.

THE BACKUP BATTERY

The T1/T2/T3 contains a battery that preserves its memory settings when the power is turned off. When the display indicates "Battery Low", please contact your dealer or a nearby Korg service center.

Note: Sequence memory is not backed up.

CAUTION !!

- When the "busy" indicator at the lower left of the disk drive is lit, do not remove the disk or turn the power off. (Doing so could damage the disk or the disk drive.)
- After turning the main unit on, be sure to load all disk data (see page 10.)
- When the T1 is turned on, the PCM RAM is blank. So be sure to load the auxiliary PCM data for Piano 2 16' of the pre-loaded data-PROGRAM NO. B01. (Refer to page 123 of the Reference Guide. The loading is not necessary, however, with T2 or T3 since they use the PCM ROM multisound.)

TABLE OF CONTENTS

Front panel 6
Rear panel 7
Connections 8
Playing a combination 9
Playing a program 9
Listening to the demo songs 10
Key and slider functions 11
T1/T2/T3 memory 14
Disk drive and floppy disks 17
MIDI setup 20
How the T1/T2/T3 is organized 22
How to create your own sounds 23

SOUND-CREATING PROCEDURE 25
Backing up the pre-loaded settings 25
Creating a program 27
Creating a combination 42

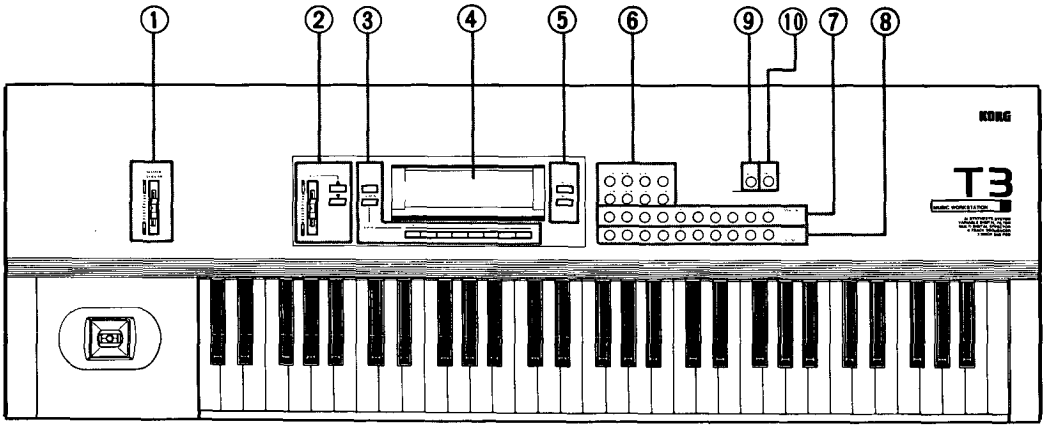
BASIC SEQUENCER OPERATION 55
Procedure for creating a song 55
Sequencer recording 57
Creating a song 58
Formatting and saving procedure 72
Loading data 73
Diagram of editing functions 74
Sequencer mode 75

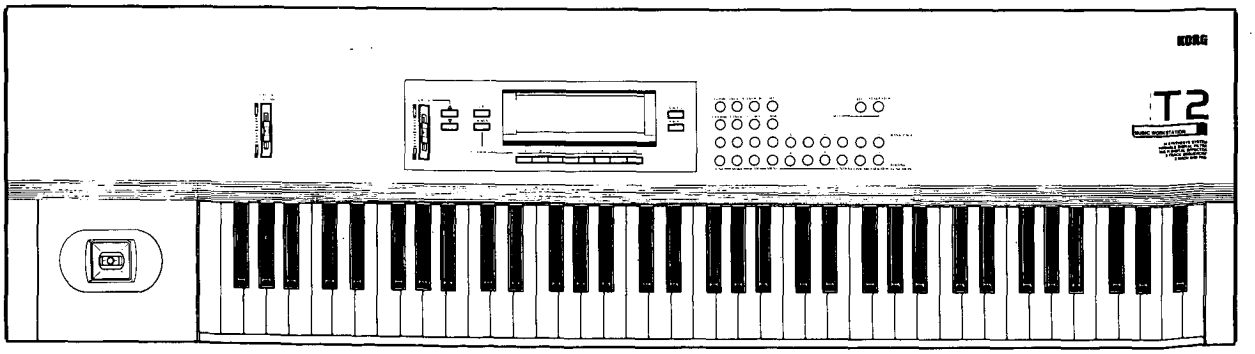
FRONT PANEL

For the function of each key and slider, refer to page 11.

① **MASTER VOLUME slider**
② **VALUE slider, △/▽ keys**
③ **CURSOR POSITION keys ([A] ~ [H]), UP/**
④ **Display**
⑤ **PAGE+/- keys**
⑥ **Mode select keys**
COMBI = Combination mode
PROG A = Program mode (A)
PROG B = Program mode (B)
SEQ = Sequencer mode
EDIT COMBI = Edit Combination mode
EDIT PROG = Edit Program mode
GLOBAL = Global mode
DISK = Disk mode

⑦ **BANK/PAGE keys (0 – 9)**
⑧ **NUMBER keys (0 – 9)**
EDIT FUNCTION keys
FINE / MARK / JUMP / MENU
UNDO / COMPARE / WRITE
⑨ **REC key**
⑩ **START/STOP key**





REAR PANEL

① **PCM DATA slot**
A card containing PCM (Multisound) data can be inserted here. Cards containing voice and sequence data should be inserted into the PROG/SEQ DATA slot, not into this slot.

② **PROG/SEQ DATA slot**
A card containing (or into which you will store) voice and sequence data can be inserted into this slot. PCM (Multisound) data cards should be inserted into the PCM DATA slot, not into this slot.

③ **MIDI THRU jack**

④ **MIDI OUT B jack**

⑤ **MIDI OUT A jack**

⑥ **MIDI IN jack**

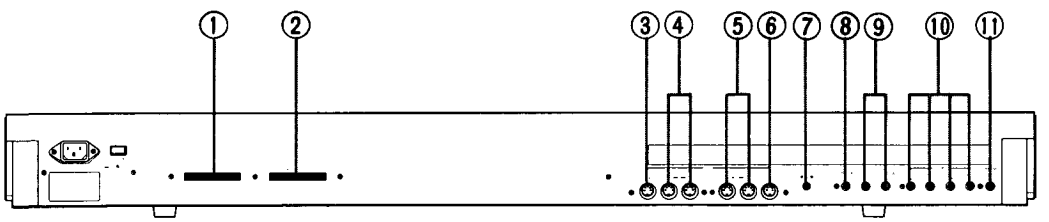
⑦ **LCD CONTRAST control**
This control adjusts the brightness of the front panel display. Turning it to the right will darken the display, and turning it to the left will lighten the display.

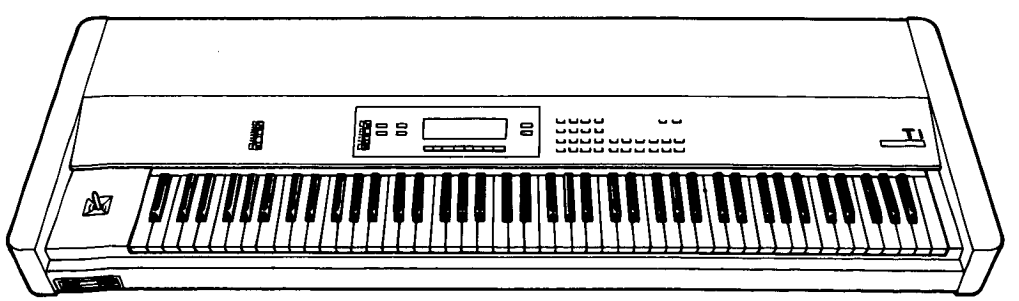
⑧ **DAMPER jack**
A footswitch can be connected here and used as a damper pedal.

⑨ **ASS. PEDAL/SW jacks (1, 2)**
Pedals or footswitches can be connected to these jacks. They will function as assigned in Global mode.

⑩ **OUTPUT jacks (1/L, 2/R, 3, 4)**
These are the audio outputs of the T1/T2/T3. The output to each jack is determined by various parameters.

⑪ **PHONES jack**
A pair of headphones can be connected to this jack to monitor the sound of the OUTPUT 1/L and 2/R jacks.





CONNECTIONS

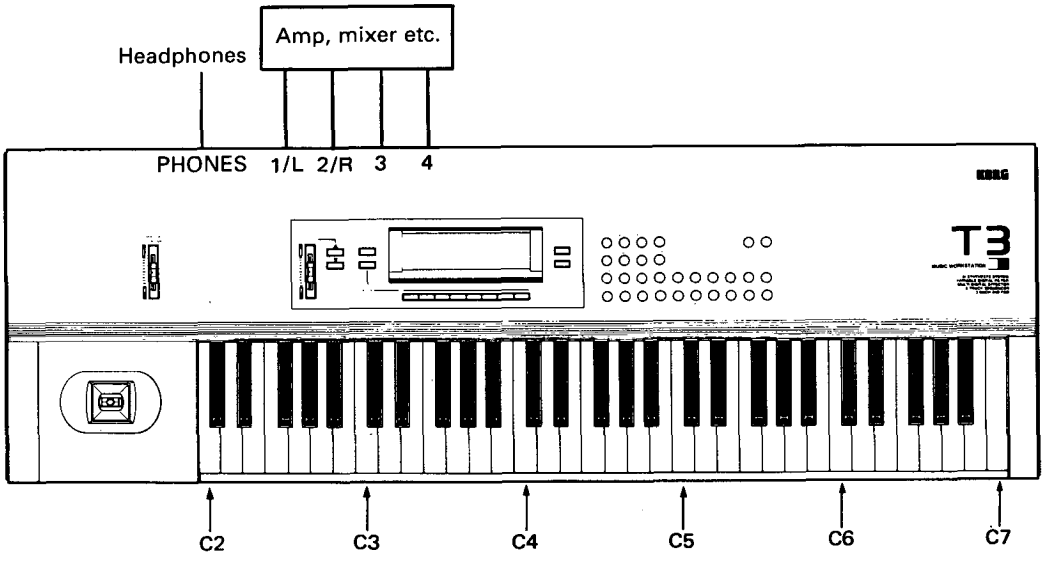
(1)First, make sure that the T1/T2/T3 power switch (rear panel) is turned OFF. Also make sure that the power of all connected equipment (amps, mixers, etc.) is turned OFF. Set the volume controls of all equipment to their lowest position.

(2)Insert the included power cable into the rear panel power connector input, and connect the other end to an AC outlet.

(3)Turn the T1/T2/T3 power ON.

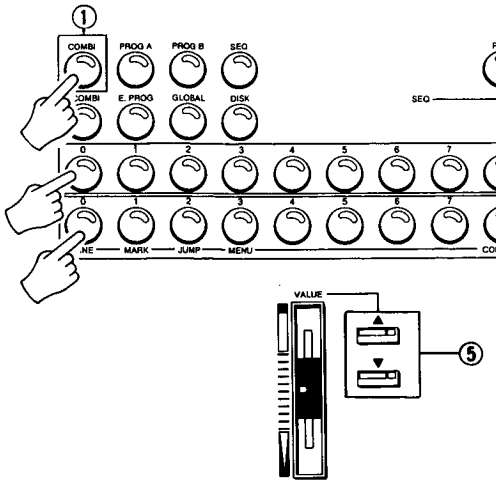
(4)Turn the power of all connected equipment ON, and gradually raise the volume controls to an appropriate level.

* For setups with other equipment, refer to page 20.



- The range of the T1 keyboard is A0 – C8 without using the Key Transpose function. (If key transpose is used, it covers the 7 octaves and 4 notes of A-1 – C9.)
- The range of the T2 keyboard is E1 — G7 without using the Key Transpose function. If key transpose is used, it covers the 6 octaves and 4 notes of E0 — G8.
- The range of the T3 keyboard is C2 – C7 without using the Key Transpose function. (If key transpose is used, it covers the 5 octaves of C1 – C8.)
- All notes C-1 – G9 (notes numbers 0 – 127) from MIDI IN are received. (Not all programs are able to sound all notes.)

PLAYING A COMBINATION (A COMBINATION OF SEVERAL SOUNDS)



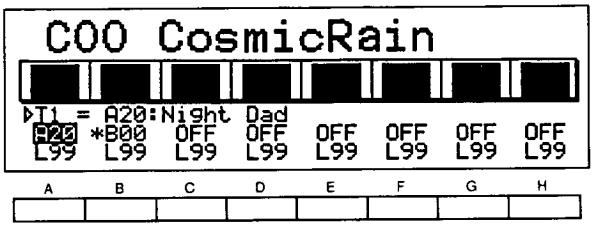
(1)Press the COMBI mode select key. (Combination mode)

(2) Use the BANK/PAGE keys to select the "tens" place of the Combination number.

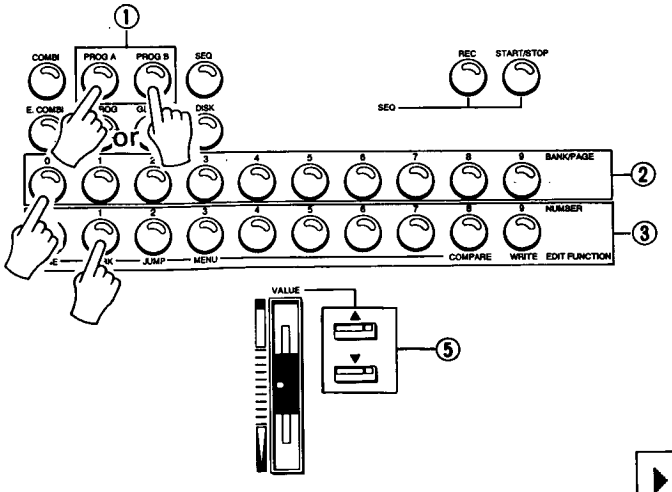
(3)Use the NUMBER keys to select the "ones" place of the Combination number.

(4)Play the keyboard to hear the selected Combination.

(5)In addition to the BANK/PAGE and NUMBER keys, you can use the △/▽ keys at the left of the display to step through Combinations one by one.



PLAYING A PROGRAM (A SINGLE SOUND)



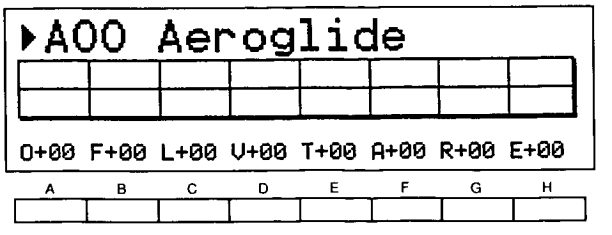
(1)Press the PROG A or PROG B mode select key. (Program mode)

(2)Use the BANK/PAGE keys to select the "tens" place of the Program number.

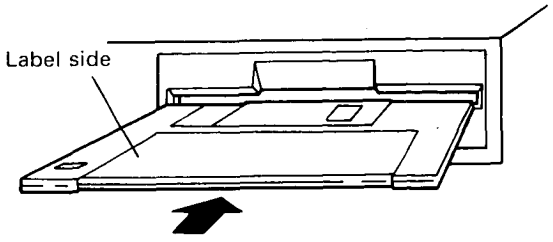
(3)Use the NUMBER keys to select the "ones" place of the Program number.

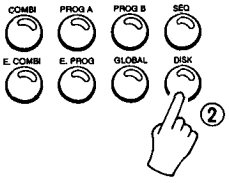
(4)Play the keyboard to hear the selected Program.

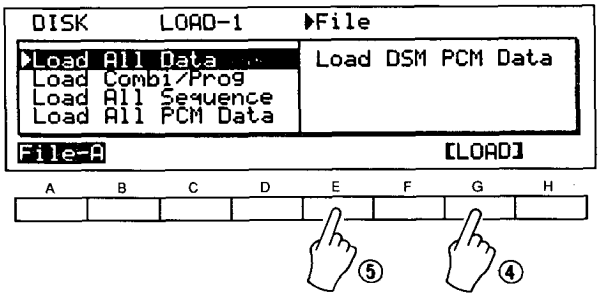
(5)In addition to the BANK/PAGE key and NUMBER keys, you can use the △/▽ keys at the left of the display to step through Programs one by one.

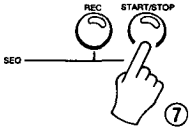


LISTENING TO THE DEMO SONGS









A demo disk containing demonstration data is included with the T1/T2/T3. Here's how to hear the demo songs.

(1) Insert the disk containing the preload data into the disk drive. (Press it firmly in until it clicks into place.)

(2) Press the DISK mode select key. In this example we will be loading all program / combination / global / sequencer data into the T1/T2/T3. Make sure that "Load All Data" is displayed in reverse. If not, press the UP key to select "Load All Data".

(3) Press the CURSOR POSITION key [A]. Make sure that the "FILE—" section in the margin shows A. If not, press the ▽ key to make it read A.

(4) Press the CURSOR POSITION key [G].

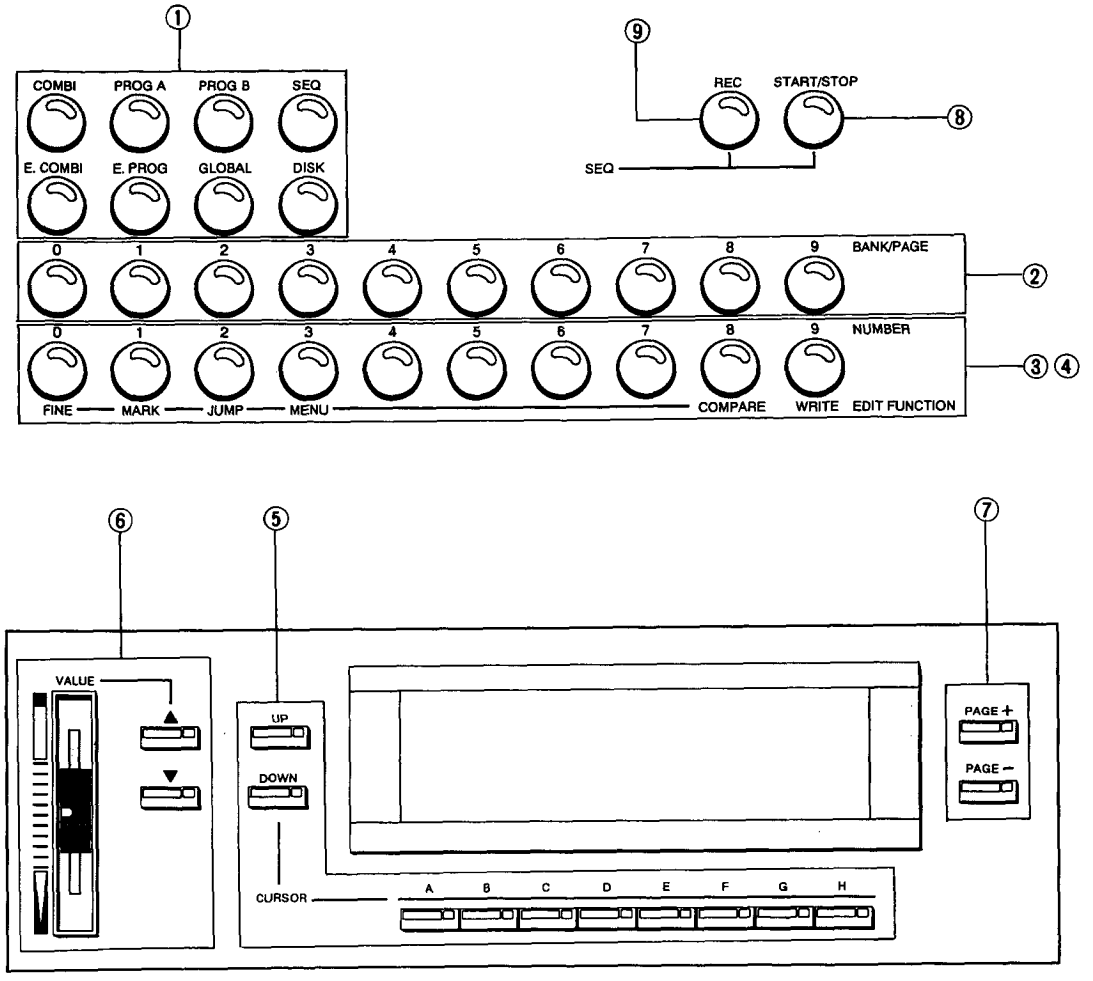
(5)The display will ask [YES][NO], so press the [E] key below YES.

(6) The display will show "Completed". Note: If the power is turned off now, the sequence data in memory will be lost.

(7) Press the START/STOP key to hear the demo performance.

Note:
When you load all data, the Program/Combination data which has not been saved on a disk will be lost. Save it to a different file first.

KEY AND SLIDER FUNCTIONS



① Mode selector keys

The indicators will light to show the current mode.

② BANK/PAGE keys

- In Combination mode (COMBI) and Program mode (PROG A / PROG B), these keys specify the tens place of the Combination or Program number.
- In other modes (SEQ / E.COMBI / E.PROG / GLOBAL / DISK), they are used to specify display pages.

• Combinations and Programs will change when you specify the ones place. (If you press a BANK key and then press any key other than a NUMBER key, your bank selection will be canceled.)

③ NUMBER keys

(effective in COMBI / PROG A / PROG B)

Use these keys to specify the ones place of a Program or Combination. (If you want to change only the ones place of a Program or Combination, there is no need to press a BANK/PAGE key.)

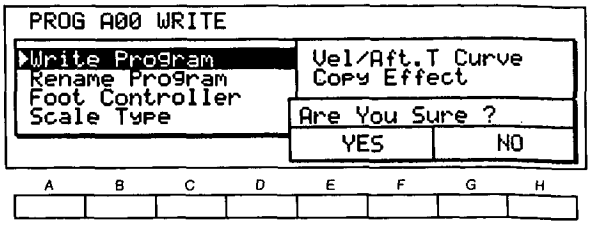
• Outside Combination mode and Program mode, the NUMBER keys act as EDIT FUNCTION keys. For details, see the following item.

④ EDIT FUNCTION keys (effective in SEQ / E.COMBI / E.PROG / GLOBAL / DISK)

- **FINE key:** This narrows the range of the VALUE slider, allowing you to make detailed adjustments more easily. Press FINE once again to return to the normal slider range. When Fine is On, a [F] will appear in the upper right of the display.

- **MARK key:** When this key is pressed, the currently edited parameter (page and cursor position) will be marked, and even after you have moved to another parameter, pressing JUMP will return to the marked parameter.
- **JUMP key:** Press this key to jump to the page and cursor position where you pressed MARK. If you press JUMP when the cursor is already at the marked location, you will move to the page and cursor position where you last pressed JUMP.

  When alternately editing two parameters, mark the parameter you are now editing, and later when editing another parameter you can press JUMP to return to the previously-edited parameter. Each press of the JUMP key will move back and forth between the two parameters.
- **MENU key:** This key displays a list of the page titles in each mode. To select a page, press a BANK/PAGE key.
- **COMPARE key (effective in E.COMBI/ E.PROG/SEQ):** In Edit Combination mode and Edit Program mode, pressing this key will bring back the unedited Program or Combination data. Press COMPARE once again to return to the data you were editing. You can edit the compared data (the data which has been restored to its unedited state), but the data before Compare will be lost.
  - While comparing, a [C] will be shown in the upper right of the display.
  - In Sequencer mode, pressing COMPARE will cancel the previous edit (i.e., return the data to the condition before the edit). This allows you to restore data which was accidentally re-written. (This is possible only before you perform the next edit.) The Compare function has a limited range, so we recommend that you save important data to disk before editing it.
- **WRITE key (effective in E.COMBI / E.PROG / SEQ):**
  - In Edit Combination mode and Edit Program mode, pressing this key will write the edited data into the same Combination or Program number of the internal memory. (You can also do this using the P7-1 WRITE page of E.COMBI/E.PROG mode.) When you press WRITE, the display will show as follows.

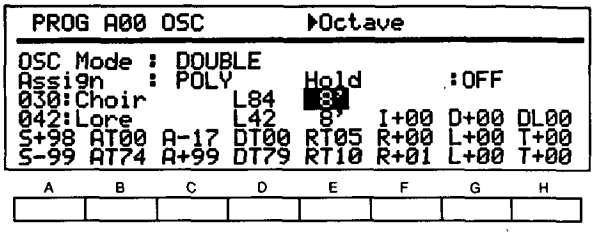


Press Yes ([E], [F]) to execute writing, or press No ([G], [H]) to cancel.

- When you press the WRITE key in the Sequencer mode P0 REC/PLAY page, the current program volume/tempo settings will be stored as song parameters. (For details, see the Reference section page 78.)

⑤ CURSOR position keys, UP/DOWN keys

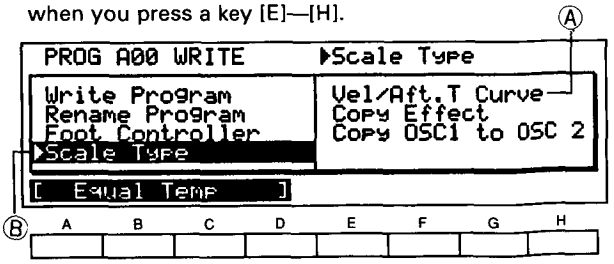
Use these keys when selecting the parameter to edit.



When the display is as shown, use the UP/DOWN keys to select the row of the parameter, and then press [A] – [H] to select the parameter displayed above the key.

- When the cursor is on the top line, pressing the UP key will move to the bottom line. When the cursor is on the bottom line, pressing the DOWN key will move to the top line.

When the cursor (the area of reversed video) is on a line where the right side is blank, the cursor will not move when you press a key [E]—[H].



(A) When located at the top right, pressing the UP key will select the bottom left function.

(B) When located at the bottom left, pressing the DOWN key will select the top right function.

When the display is as shown, use the UP/DOWN keys to select the function, and press [A] – [H] to select the parameter to edit. Pressing a key located below a function marked by a [ ] or [ ] will execute that function.

⑥ VALUE slider, △ / ▽ keys

- Use this slider and these keys to modify the value of the parameter where the cursor is located. Use the slider to set the approximate value, and use the △/▽ keys to make fine adjustments.
- When the cursor is at the first line in Combination mode (COMBI) or Program mode (PROG), a ▶ will be displayed at the left of the Combination or Program number, and you can use the △/▽keys to select Combinations or Programs. (The VALUE slider cannot be used in this way.)

⑦ PAGE+/- keys

The functions of the T1/T2/T3 are organized in display pages. These keys move to the next (PAGE+) or previous (PAGE-) page.

⑧ START/STOP key

This key starts or stops the sequencer. When this key is pressed in any mode other than Sequencer mode, you will enter Sequencer mode and playback will begin. While playing, the indicator will blink red for first beat of each measure, and green for the other beats.

⑨ REC key

This key is used when recording in Sequencer mode. When you press START/STOP while the REC key is lit, recording will begin. If you press REC again without pressing START/STOP, recording will be canceled. (The key lights to indicate that recording is taking place.)

T1/T2/T3 MEMORY

How a disk (file) is organized

There are two formats of T1/T2/T3 disk.

Program / Sequence disk	100 Combinations, 200 Programs, 1 Global parameter	x 4 files	
	20 Songs, 200 patterns (up to 50,000 steps total)		
	1 MIDI bulk data (up to 64 Kbytes)		
PCM disk	100 Combinations, 200 Programs, 1 Global parameter	x 1 file	PCM data (512 Kword) x 1 file
	20 Songs, 200 patterns (up to 50,000 steps total)		
	1 MIDI bulk data (up to 64 Kbytes)		

*For the T2/T3, separately sold RAM is required in order to use PCM disks.

PROG DATA cards

The T1/T2/T3's PROG DATA card slot allows it to save and load PROG DATA cards for the M1/M1R.

It is not possible to store all the T1/T2/T3's parameters in a RAM card. Unless you are creating a RAM card to be used by a M1/M1R, save data to disk, not card.

Program ROM cards for the M1/M1R and Program cards saved by the M1/M1R can be directly used by the T1/T2/T3.

Combinations / Programs created on the T1/T2/T3 can be saved to a RAM card and used by the M1/M1R. (By using MIDI Overflow Mode, a M1/M1R can be connected to the T1/T2/T3 to increase the number of simultaneously playable notes.)

However, due to differences in the parameters of the T1/T2/T3 and the M1/M1R, some parameters are converted when saving and loading. Please keep this in mind when using the T1/T2/T3 to create data for the M1/M1R. (For details, see page 15 and 16.)

The T1/T2/T3 can use three types of M1/M1R card format.

Program cards	100 Combinations, 100 Programs, 1 set of Global parameters	The T1/T2/T3 can load or save this data. (Select either PROG A or PROG B.)
Sequence cards	10 Songs, 100 Patterns (less than 7700 steps total)	The T1/T2/T3 can only load this data.
Program / Sequence cards	50 Combinations, 50 Programs, 1 set of Global parameters, 10 Songs, 100 Patterns (less than 4200 steps total)	The T1/T2/T3 can only load this data. (Select either A00–A49 or B00–B49.)

* Please use the Korg MCR-03 RAM card.

To use Combinations or Programs from a card, they must be loaded into the T1/T2/T3. (It is not possible to directly select Combinations or Programs from a card.)

*When sequence data on the optional PROG DATA card (for use with M1/M1R) is loaded, some cards will cause the programs used by tracks to be B, so please take care with regard to this point.

Mode	Parameter			M1/M1R → T1/T2/T3	T1/T2/T3 → M1/M1R	T1/T2/T3 → T1/T2/T3
COMBI		F0-1	Combination Type	all converted to MULTI	set to MULTI	no change
	P0-1	F1-1	Internal Program	I00 – I99 → A00 – A99 C00 – C99 → B00 – B99 (*1)	A00 – A99 → I00 – I99 (*2) B00 – B99 → C00 – C99	A00 – A99 → A00 – A99 B00 – B99 → B00 – B99 (*3)
	P0-3		Int Vel Curve	set to 4	ignored (corresponds to T1/T2/T3 setting of 4)	set to 4
	P0-4		Int Aft.T Curve	set to 4	ignored (corresponds to T1/T2/T3 setting of 4)	set to 4
	P2-1		External Program	Set to the same number as the Internal Program (0 – 99)	ignored	Set to the same number as the Internal Program
	P2-2		Ext Volume	set to 127	ignored	set to 127
	P2-3		Ext Vel Curve	set to 4	ignored (corresponds to T1/T2/T3 setting of 4)	set to 4
	P2-4		Ext Aft. T Curve	set to 4	ignored (corresponds to T1/T2/T3 setting of 4)	set to 4
	P3-1	F2-1	MIDI Channel	1 – 16 → A1 – A16 when keyboard is played, all channels will sound	A1 – A16 → 1 – 16 B1 – B16 → 1 – 16 when keyboard is played, Timbres matching the Global MIDI channel will sound	no change
	P3-2 P3-3 P3-4 P3-5	F3-1 F3-2 F3-3 F3-4	Vel Window Top Bottom Key Window Top Bottom	For the T1/T2/T3, Window settings determine which notes are transmitted from MIDI OUT.	For the M1, all notes are transmitted, regardless of Window settings.	no change
	P5-1 P5-2 P5-3		Joy Stick X Joy Stick +Y Joy Stick -Y	set to Pitch Bend set to 001 set to 002	ignored (fixed at Pitch Bend) (001) (002)	set to Pitch Bend set to 001 set to 002
	P5-4 P5-5 P5-6		Foot Cont 1 Foot Cont 2 Scale Type	M1/M1R Global mode settings are copied	ignored	settings of Program A00/B00 are copied

(*1) A00 – A99 when PROG A is specified in card loading.
(*2) C00 – C99 when PROG A is specified in card saving.
(*3) A00 – A99 when PROG A is specified in card saving or loading.

Mode	Parameter			M1/M1R → T1/T2/T3	T1/T2/T3 → M1/M1R	T1/T2/T3 → T1/T2/T3
PROG	P0-3 P0-4	F0-2 F0-3	OSC1 Multisound OSC2 Multisound	00 – 99 → 000 – 099 C00 – C27 → C00 – C27	000 – 099 → 00 – 99 100 – 189 → 00 – 89 (*4) C00 – C27 → C00 – C27 D00 – D27 → C00 – C27(*5)	no change
	P7-3 P7-4		Foot Controller Scale Type	M1/M1R Global mode settings are copied	ignored (Global mode settings are used)	settings of Program A00/B00 are copied
SEQ	P0-3	F4-1	Track Program	I00 – I99 → A00 – A99 C00 – C99 → B00 – B99		
	P2-1	F1-4	MIDI Channel	1 – 16 → A1 – A16		
	P2-2 P2-3 P2-4 P2-5		Vel Window Top Bottom Key Window Top Bottom	set to 127 set to 1 set to G9 set to C-1		
	P7-1	F3-1	Next Song Play/Stop	0 – 9 → 00 – 09 C0 – C9 → 00 – 09 Set to Play		
GLOBAL	P1 P2 P3 P4	F4-1 F4-2 F4-3 F4-4	Drum Kit 1 Inst. Drum Kit 2 Inst. Drum Kit 3 Inst. Drum Kit 4 Inst.	Index #00 – #29: 01 – 44 → 01 – 44 C01 – C30 → C01 – C30 Index #30 – #59: set to No Assign	Index #00 – #29: 01 – 44 → 01 – 44 45 – 85 → 01 – 41 (*4) C00 – C30 → C00 – C30 D00 – D99 → C00 – C99(*5) Index #30 – #59: ignored	Index #30 – #59 set to No Assign
		F2-1 F3-1	Pedal Assign Scale Type	settings of each Combination / Program / Song are used	settings of T1/T2/T3 Program A00/B00 are copied	

(*4) This replacement is not made if the PCM ROM option has been installed in the M1/M1R.

(*5) In order to select T2/T3 Multisounds D00 – D27 or Drum sounds D00 – D99, the PCM RAM option must be installed.

PCM DATA cards

A PCM DATA card can be used to add Multisounds and Drum sounds to the T1/T2/T3.

- PCM DATA cards for the M1/M1R can be used.
- PCM DATA cards for the M3R can also be used, but PROG DATA cards for the M3R cannot be used.

* When playing a Program that uses a Multisound or Drum sound from a PCM card, be sure that the appropriate PCM card is inserted.

* Insert or remove PCM cards only when the power is Off, or when no sound is being produced.

*Some PCM cards for the M1/M1R/M3R contain Multisound / Drum Sound data identical to that of the T1/T2/T3 internal Multisounds / Drum Sounds.

The PCM RAM option

The T1 contains 512K words of PCM data RAM, and optional RAM for PCM data can be installed inside the T2 and T3. In addition to T1/T2/T3 Sound Library disks, performance disks saved by the DSM-1 can be loaded into this PCM RAM.

PCM data from samplers conforming to the MIDI Sample Dump Standard can also be transmitted to the T1/T2/T3, and used as a Drum sound. Using MIDI System Exclusive messages, it is also possible to transmit Multisounds from a personal computer, etc.

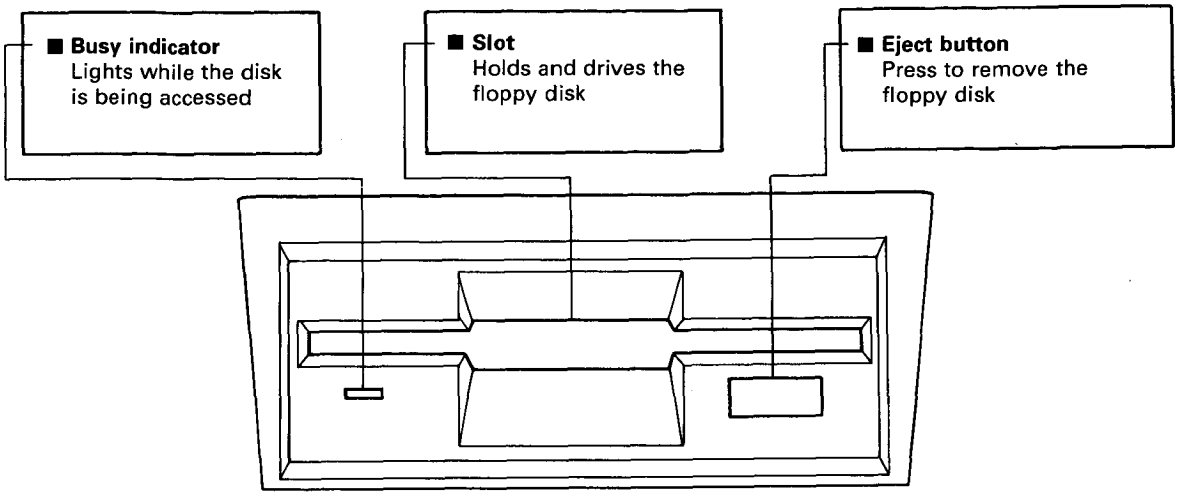
- The personal computer software must be compatible with the T1/T2/T3 if System Exclusive messages are to be used.

* Installing the PCM RAM in the T2 or T3 requires internal modification. For details, consult your dealer, or nearby Korg service center.

* If exclusive data is transmitted from a T1 (or a T2/T3 with the optional RAM installed) to a T2/T3 without the optional RAM, Multisounds D00—D27 used by OSC1/2 of a Program will be converted to 000-027.

DISK DRIVE AND FLOPPY DISKS

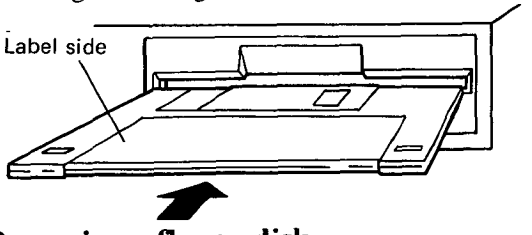
Disk Drive



■ Inserting a floppy disk

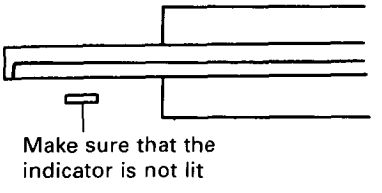
With the label facing up, insert the floppy disk into the drive, and push it gently in until it clicks into position.

*Disks must be inserted gently and carefully, without bending or twisting them.

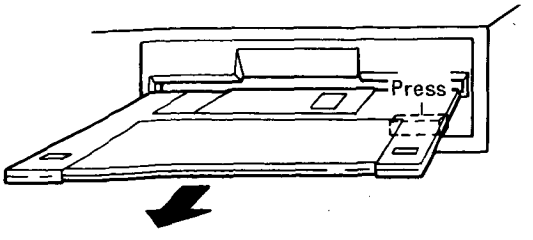


Removing a floppy disk

(1) Make sure that the busy indicator is off.

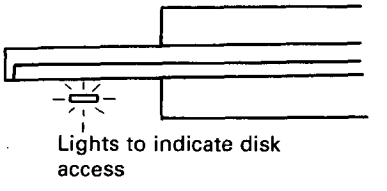


(2) Press the eject button, and remove the floppy disk.



■ Floppy disk drive precautions

Do not remove the disk or turn the power off while the busy indicator is lit, indicating that the disk is being accessed (read or written). Doing so can damage the disk, or destroy the data on the disk.



■ Cleaning the disk drive heads

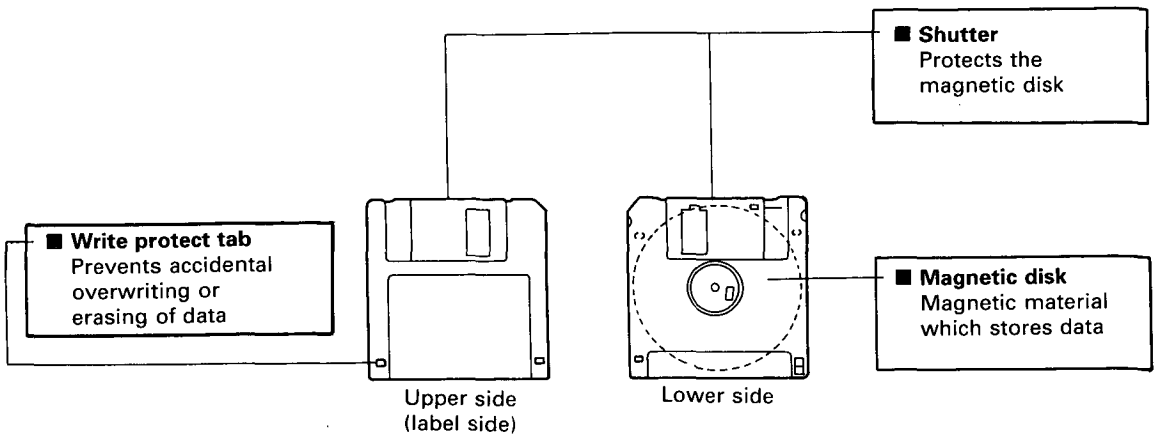
If the disk drive heads become dirty, data errors and disk damage can result. To prevent this, it is important to clean the disk drive heads regularly.

Use a commercially available moist-type dual-sided head cleaning disk to clean the heads. Using a single-sided cleaning disk can damage the disk drive.

Cleaning procedure:

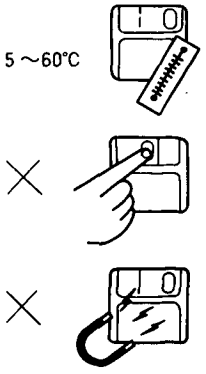
(1) Moisten the cleaning disk with cleaning solution.
(2) Immediately insert the cleaning disk into the disk drive, and execute loading. (Any loading operation can be used.) An error message will appear.
(3) After about 10 seconds, press the eject button, and remove the cleaning disk.
(4) After cleaning, wait approximately 5 minutes before using the disk drive.
(Using the disk drive before the cleaning solution has evaporated may cause malfunctions.)

Floppy disks



■ Floppy disk precautions

- Avoid use or storage in locations of high temperature, high humidity, direct sunlight, or excessive dirt or dust.
- Do not open the shutter. Doing so could allow dirt to contact and damage the disk, resulting in loss of data.
- Do not allow a disk to come near a magnet, television, speaker, or power transformer. Contact with magnetic fields can erase data from a disk.
- Never leave a disk inserted in the disk drive when transporting the T1/T2/T3. Vibration can cause the disk drive heads to scratch the magnetic disk, resulting in loss of data.
- Do not place objects on top of a disk. Doing so may cause the disk to become deformed and unusable.

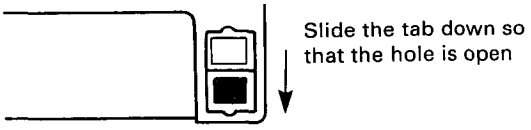


■ The write protect tab

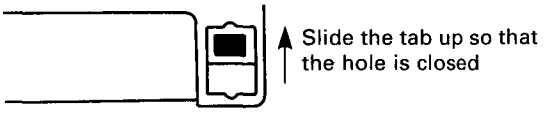
Every disk has a small sliding "Write protect tab", which can be used to prevent accidental erasure of data.

- When the hole is closed, data can be written.
- When the hole is open, data cannot be written

* Write protect



* Write permit



Note :

To avoid accidentally erasing important data, be sure to set the write protect tab to the "protect" position (open) after saving data. (Slide the write protect tab until it clicks into place.)

■ Backup copies

As insurance against accidental data erasure or disk damage, it is a good idea to keep a copy of important data on another disk.

■ Before using a newly purchased floppy disk

- Only 3.5 inch disks marked "High density, double sided, double track" can be used. These disks are usually called "MF2HD", "MFD-2HD", "MF2-256HD", etc.
- We suggest that you use Korg MF-2HD floppy disks.
- A newly purchased disk must be "formatted" before it can be used to store data. For details, see the Format Disk function (Reference Guide page 121) of DISK / CARD mode.
- 2HD disks used by another device must also be formatted before they can be used to store T1/T2/T3 data.

MIDI SETUP

This section will explain several ways to use the T1/T2/T3 as part of your MIDI setup.

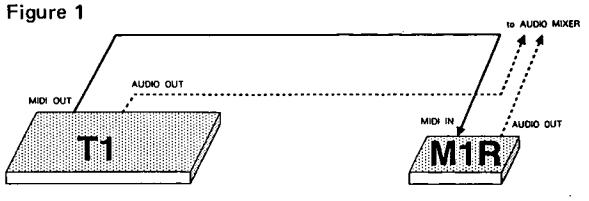
◎Instruments like the Korg M1 or DSM-1 are capable of receiving MIDI data on two or more MIDI channels and simultaneously playing two or more independent musical parts. Korg calls each of these independent musical parts a Timbre, and calls a combination of several timbres a Combination. For instruments such as these, it is important to specify whether incoming program change messages will be program changes for a Timbre or program changes for a Combination.

◎Multi-timbral instruments such as the T1/T2/T3 have a Global MIDI channel setting. When a program change message is received on this channel, the entire Combination will change. When a program change message is received on any other channel, the Timbre assigned to that channel will change.

●To transmit program change messages from the T1/T2/T3 to external devices, use the External Program Change (Combination mode). This allows the T1/T2/T3 to remember program changes for an external device.

●External program changes are also used when you want to transmit program changes from the T1/T2/T3 to each timbre of a multi-timbral instrument such as the M1/M1R. To avoid confusion in this case, do not use the channel that is specified as the global (system) channel of the T1/T2/T3 or the external multi-timbral instrument.

Figure 1



* The T1/T2/T3 can be extended to a 32 voice system by connecting an M1/M1R. (Figure. 1)
- When you use the MIDI Overflow function, (Global mode MIDI overflow on), notes which exceed the simultaneous note capacity of the T1/T2/T3 will be sounded by the M1/M1R. Connect the T1/T2/T3 MIDI OUT A to the M1/M1R MIDI IN, and set the two instruments to the same global channel.
- Set the M1/M1R overflow Off, use MIDI Data Dump (Program/Combination) to load the M1/M1R with the same sounds as the T1/T2/T3, and insert a Prog Data card containing the same data as the T1/T2/T3 program B into the M1/M1R.
- Note that in this case, any parameters and multi-sounds found on the T1/T2/T3 but not on the M1/M1R will be converted. (page 15) When the internal 16-note capacity is exceeded, the T1/T2/T3 will transmit the extra notes via MIDI. When programs or combinations are selected on the T1/T2/T3, the same mode or number will also be selected on the M1/M1R.

* Using a T1/T2/T3 and an M1/M1R in Combination mode to layer different sounds. (Figure. 1)
- Set the T1/T2/T3 and the M1/M1R to different global channels.
- Set both devices to Combination mode.
- Set the MIDI channels of the T1/T2/T3 timbres to the M1/M1R global channel, and set the External Program change of any timbre to select the M1/M1R combination.

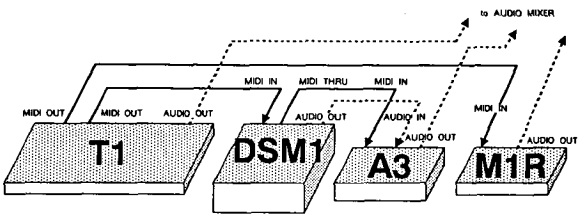
* Using a T1/T2/T3 and an M1/M1R as completely independent sound sources (Figure. 1)
- Set both instruments to the same global channel (1 in this example).
- Set the T1/T2/T3 timbres to eight different MIDI channels (9—16 in this example).
- Create an M1/M1R combination consisting of timbres receiving MIDI channels 9—16, and write it into memory.
- When you change combinations on the T1/T2/T3, a program change message will be transmitted on MIDI channel 1 and the M1/M1R combination will change. Program change messages transmitted on channels 9—16 will select the program for individual timbres inside the M1/M1R combination.

* Using a T1/T21/T3 with a variety of different instruments

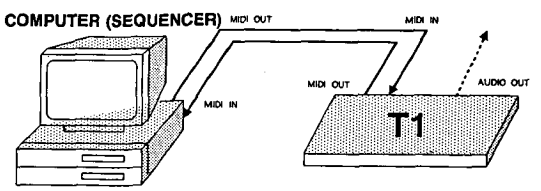
(Example) Set up the following system.

DSM-1 : system channel = 8,
combination type = Multi
M1R : global channel = 13
DSM-1 : timbre channels = 9—12
M1R : set all timbres to channel 13
A3 : global channel = 16

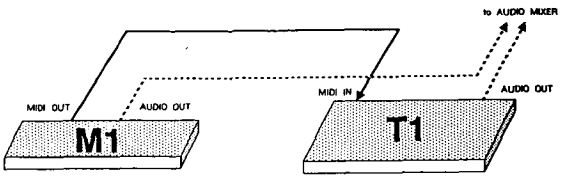
- Set the T1/T2/T3 to Combination mode.
- Program changes transmitted on channels 9—12 will select individual timbres of the DSM-1. Program changes transmitted on channel 13 will select combinations on the M1R. Program changes on channel 16 will select effects programs on the A3. If you set the T1/T2/T3 external program change Off, data from that timbre will not be transmitted from MIDI OUT.



* Playing the T1/T2/T3 from an external sequencer (when not using the T1/T2/T3 internal sequencer)
- Set the T1/T2/T3 to Sequencer mode.
- Set the MIDI channels of the T1/T2/T3 track parameters to match the MIDI channels of the external sequencer tracks you wish to record on.
- Make level adjustments for each track on the T1/T2/T3, and store the settings with each song. (page 71)

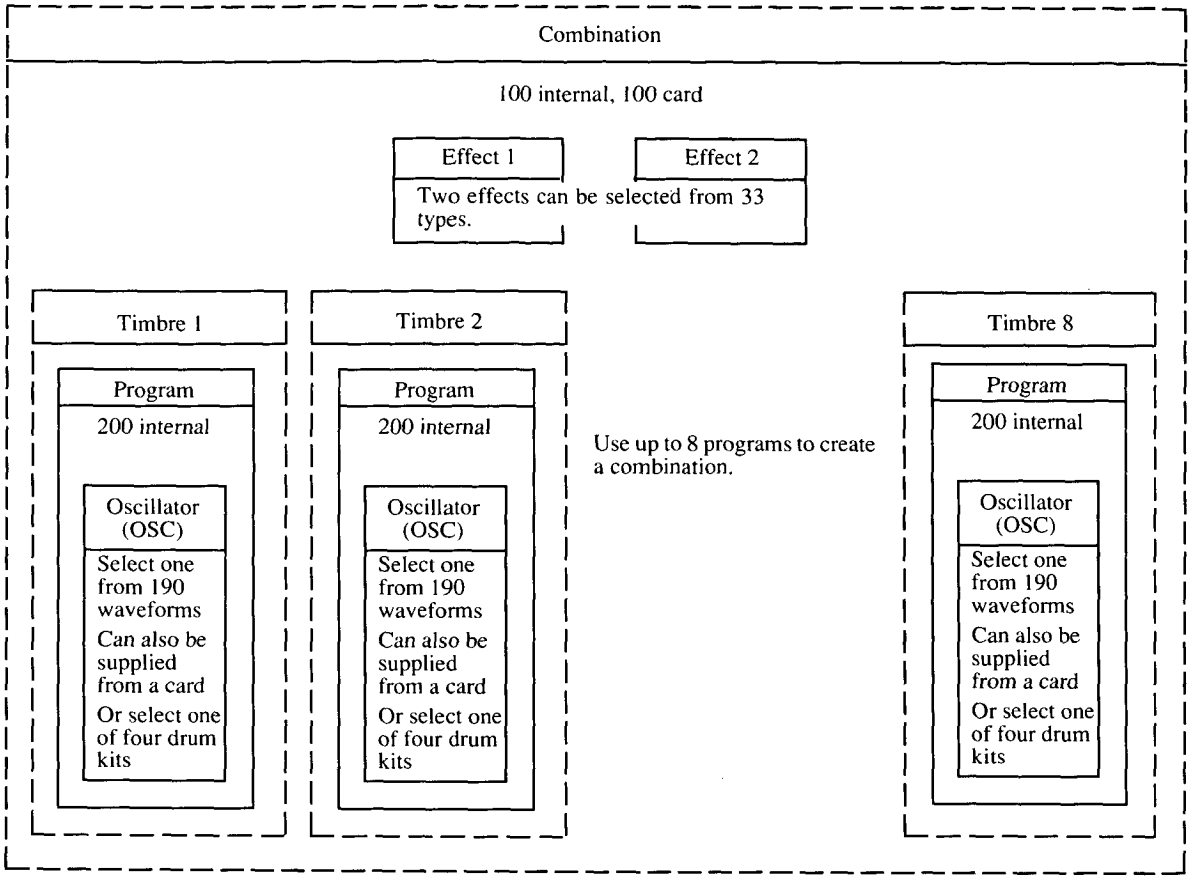


* Using an external keyboard
- Set the T1/T2/T3 to Combination mode or Program mode.
- When using the T1/T2/T3 in Combination mode, select the same MIDI channel for all timbres.



As we have explained, the T1/T2/T3 can be used in a variety of systems. For example one combination could be set up so that the T1/T2/T3 will act as a slave played by an external keyboard, while another combination could be set up so that the T1/T2/T3 acts as the master keyboard controller for an entire rack of MIDI equipment.

HOW THE T1/T2/T3 IS ORGANIZED



HOW TO CREATE YOUR OWN SOUNDS

1. In Edit Program mode, select the "Multisound" which you will use as the basis for your new sound.

- The most basic element (waveform) of a T1/T2/T3 sound is the Multisound. This is selected by the Oscillator parameter.
- The Oscillator (OSC) is the section in a synthesizer that produces the original sound.

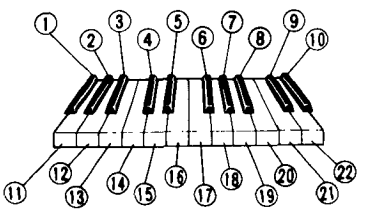
2. In Edit Program mode, you will specify how the Multisound selected in (step 1) is to be processed.

- The tone is determined by the VDF (Variable Digital Filter) settings. This allows you to make the tone softer, or change the tone over time. For example, you might make the tone bright when first played, gradually become softer as you continue pressing the key, and then become bright again when you release the key.
- The volume is determined by the VDA (Variable Digital Amplifier). This specifies how the volume will change over time. For example when you play a note using a violin sound, the volume becomes gradually louder as you continue pressing the key, but an organ sound reaches full volume almost immediately and continues at that volume for as long as the key is pressed. This type of change is determined by the VDA settings.

- An effect can be applied to each Program. (Effect parameters)
  - If a Program is used as part of a Combination, the effect settings you make here will be ignored, and the effect settings of the Combination will be used instead.

- In the Drum Kit page of Global mode, you can assign the drum sound to be played by each note.
  - You can play the drum sounds from the keyboard.
  - Panpot (the stereo position) and pitch can also be adjusted.
  - The assignments for up to 60 drum sounds are stored as a "Drum Kit".
  - 4 Drum Kit memories can be stored in the T1/T2/T3.
  - By setting the oscillator mode to "DRUMS", a Drum Kit can be used in the same way as a Multisound. This allows you to use Edit Program and Edit Combination to process the sound of an entire Drum Kit.

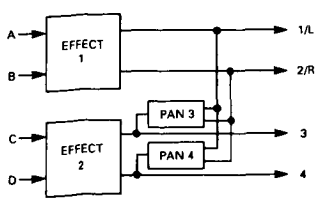
☆ Example



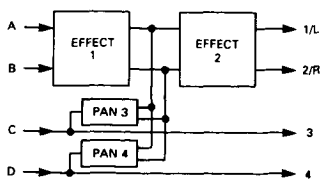
1 Kick 1	8 Claps	15 Closed HH2
2 Snare 1	9 Conga 1	16 Snare 3
3 Tom 1	10 Bongo	17 Snare 4
4 Closed HH1	11 Kick 2	18 Whip
5 Open HH1	12 Snare 2	19 Block
6 Crash	13 Tom 2	20 Vibe Hit
7 Ride	14 E. Tom	21 Metal Hit
		22 Bell Ring

- Except for Drum Kit Programs, the output of the effect signal will be sent from A,B.
- The pan settings (left/right balance) for a Drum Kit are made in Global mode.
- The pan settings of Global mode will take priority for a Drum Kit. (These settings cannot be made in Edit Program mode.)

• Parallel Effect Placement



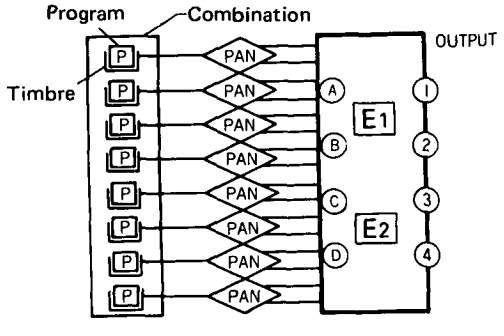
• Serial Effect Placement



- A sound created in this way is called a "Program". The T1/T2/T3 holds 200 programs; A00—B99. Programs from internal memory can also be stored on a disk or card.
  - When the T1/T2/T3 is in Program mode, incoming MIDI program change messages will select Programs on the MIDI channel specified in Global mode.

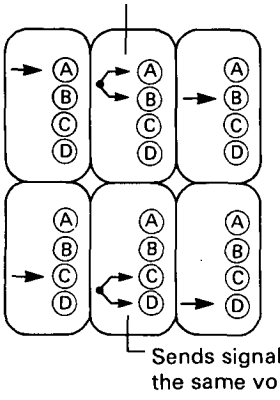
3. In Edit Combination mode, you can combine the programs you created in step 2.
- The T1/T2/T3 allows you to use up to 8 Programs to combine two or more sounds (layer), assign different sounds to different ranges of the keyboard (split), or play different sounds in response to strongly or softly played notes (velocity switch). Each Timbre (an independently played Program) can also receive data on its own MIDI channel.

- A combination of Programs created in this way is called a "Combination". The T1/T2/T3 holds 100 combinations; 00—99. Combinations from internal memory can also be stored on a disk or card.
  - When the T1/T2/T3 is in Combination mode, incoming MIDI program change messages on the MIDI channel specified in Global mode will select Combinations.
  - For multi-type Combinations in which each Timbre is receiving a different MIDI channel, program changes will be received on the channel specified for each Timbre in Edit Combination mode.
- An effect can be applied to each Combination. (Effect parameter)
  - Settings in Edit Combination mode determine how each Combination will be panned to the effects unit and panned to the outputs 1—4.
  - Drum Kit panning is set in Global mode. (These settings cannot be made in Sequence mode or Edit Combination mode.)
- How Programs in a Combination are panned



- Panpot determines the output to A—D. A:B allows you to adjust the volume balance. C+D outputs the sound from C and D at equal volumes.

Example: The volume difference between the two outputs can be changed over a range of ratios from 1:9 ~ 9:1.



- In addition to Drum Kit settings, Global mode allows you to adjust the overall pitch of the T1/T2/T3, make settings related to MIDI, and transmit and receive data.

- In Disk mode, you can save and load data to/from disk, and format a disk.

SOUND-CREATING PROCEDURE

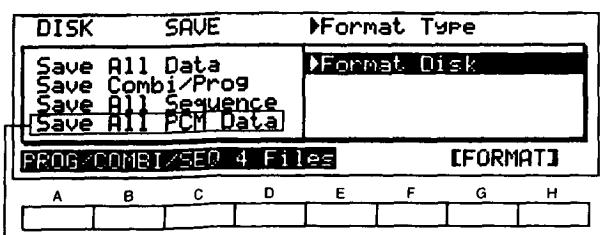
BACKING UP THE PRE-LOADED SETTINGS

The programs and combinations of the T1/T2/T3 are stored in internal RAM (rewritable memory), and the process of storing your own newly created programs or combinations is known as "writing". When you write data into memory, the program or combination which previously occupied that memory location will be lost. The pre-loaded data (factory settings) are stored on the preloaded data disk in file A. As a safeguard in case that disk becomes unreadable, it may be a good idea to save the preloaded data on another disk before you create your own settings.

Before you save the data to disk, you must format (initialize) a new disk so that it can be used by the T1/T2/T3. Disks which have already been formatted for another device such as a word processor have a different format, and cannot be used as they are by the T1/T2/T3. If it is all right to lose the data on such disks, you can re-format them and use them for the T1/T2/T3. When a disk is formatted, any data it may have previously contained will be lost. The write protect slider on all 3.5" disks helps you to avoid losing important data. As explained on the disk label, formatting or saving is not possible when the slider is exposing the write protect hole. The T1/T2/T3 uses 3.5" 2HD disks. (We recommend using Korg MF-2HD disks.)

(1) Press the mode select key [DISK] to enter disk mode.

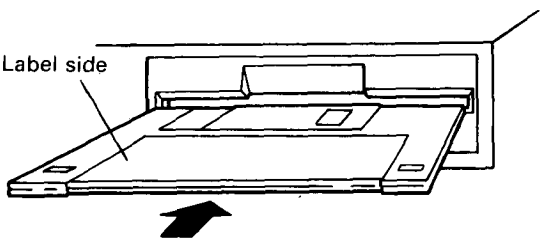
(2) Press the BANK/PAGE key [2], and press [DOWN] several times to get the Format Disk page (2-5).



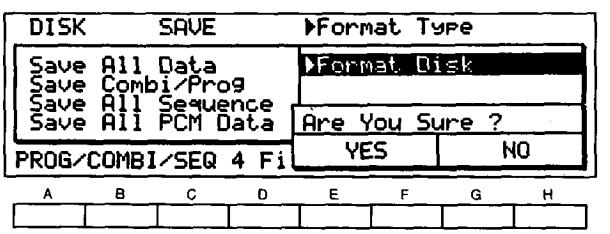
This will not be displayed for a T2/T3 without the optional RAM.

(3) Press [A] (Format Type), and press ▽ to select PROG/COMBI/SEQ 4 FILES.
This procedure is not required for the T2/T3 without expanded PCM RAM.

(4) With the label facing up, insert the disk into the disk drive until it clicks into place.



(5) Press [G] to get the following display. If you press [E] (YES), formatting will begin. Press [G] (NO) to exit without formatting.

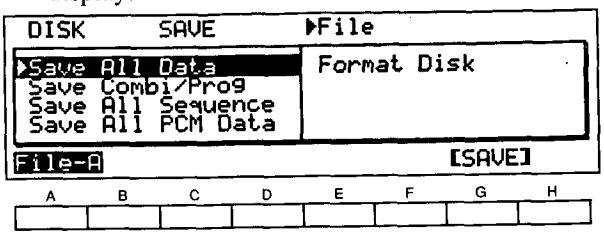


(6) If you press [YES] in step (5), formatting will begin, and the display will indicate "Now Formatting". During this time, no other operations are possible. Never attempt to remove a disk while it is being formatted.

(7) When formatting ends, the display will show "Completed". If any other message appears, an error has occurred during formatting. Insert the disk into the drive once again, and try the formatting operation once more. If an error still occurs, try formatting another disk.

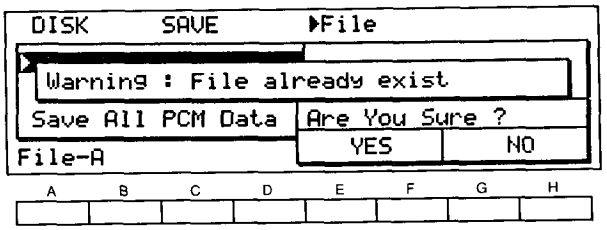
(8) If you want to continue formatting other disks, repeat steps (2)—(7).

(9) Now we will save the internal data to disk. From step (7), press [DOWN] once to get the following display.



(10)Press [A] (FILE) and use the VALUE slider and △/▽ keys to select the file to save. Four files (A, B, C, and D) can be saved on a single disk. If the disk has just been formatted, it does not matter which file you select (A, B, C, or D). However, be sure to remember which file the data was saved in.

(11)Press [G] (SAVE). If the specified file has already been saved to this disk, the following display will appear. If it is ok to overwrite the file, press [E] (YES).



(12)Saving will begin and the display will show "Now Saving". During this time, no other operations are possible. Never attempt to remove a disk from the disk drive while data is being saved.

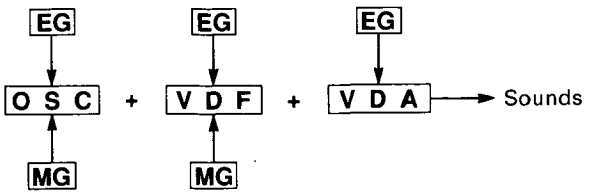
(13)When saving ends, the display will show "Completed". If any other message appears, an error has occurred while saving. Insert the disk into the disk drive once again, and try the saving operation once again. If an error still occurs, consult the error message list (Reference Guide page152) and take appropriate action (exchanging disks, formatting the disk, etc.).

(14)Press the eject button located at the lower right of the disk drive, and remove the disk. Labeling the disk as "Preload Data: file A" or some similar name will help you remember the contents of the disk.

CREATING A PROGRAM

What is a Program?

First we will explain how a Program is organized.



As the above figure shows, a Program can be divided into three main blocks. By setting various parameters to specify how each block functions, we can create a variety of sounds.

The blocks are named as follows; OSC (oscillator), VDF (variable digital filter), VDA (variable digital amplifier), EG (envelope generator), and MG (modulation generator).

The first block, OSC, determines the basic character of the sound. The EG that affects this block is called the pitch EG, and together with the MG, dynamically changes the pitch you play on the keyboard. The next block, VDF, modifies the tonal character determined by the OSC.

The VDF filter modifies the tone determined by the OSC. For example, vocalizing with a wide-open mouth produces the sound "aah". As the mouth is narrowed, this sound changes to "ooh". In the T1/T2/T3, the equivalent process is performed digitally. The EG and MG that affect this block determine the nuances of tonal change over the time from when the key is pressed to when the key is released and the sound disappears.

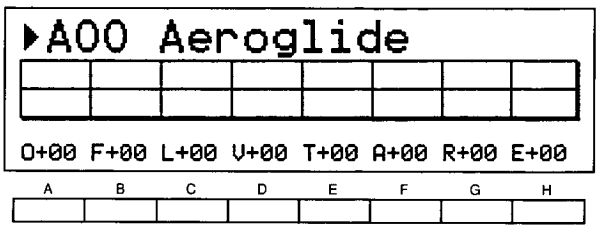
Finally, the VDA determines the volume of the sound. Regardless of the tonal character of a sound, the sound cannot be heard if the volume is lowered. This EG determines the volume change which takes place over the time from when the key is pressed to when the key is released and the volume decreases to silence; i.e., the way in which the sound begins and ends.

In the T1/T2/T3, two sets of these three blocks can be used as a Program. A Program which uses a single set of OSC/VDF/VDA is called a "single mode" Program, and a Program which uses two sets of OSC/VDF/VDA is called a "double mode" Program.

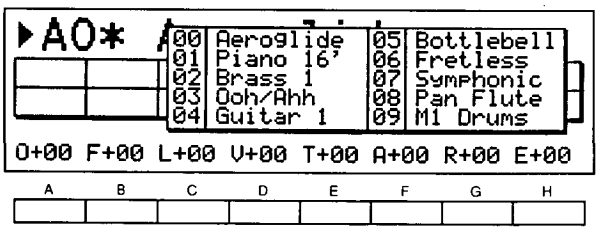
Let's try creating a program. In this example we will be editing one of the preloaded (factory setting) programs.

1. Select a program and prepare to edit it

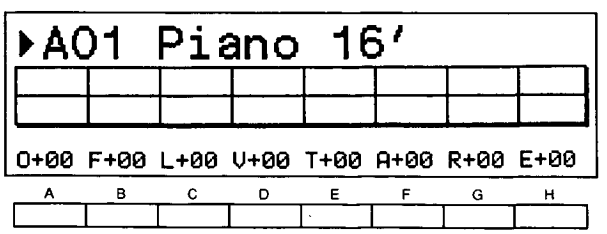
(1) To select programs, press a mode select key PROG A or PROG B. In this example, press PROG A. You are now in Program mode. (Pressing PROG B also enters program mode.)



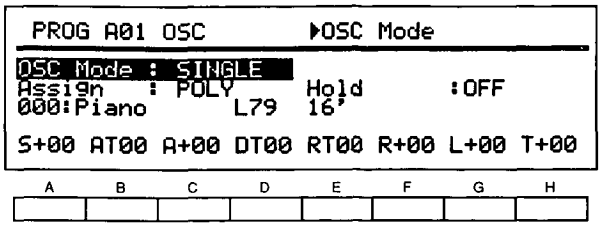
(2) Use the BANK/PAGE key to select the ten's place of the program number. In this example, select 0. The display will show a list of the ten programs 00 to 09.



(3) Use the NUMBER keys to select the one's place of the program number. In this example, select 1. This selects program A01 Piano 16'.

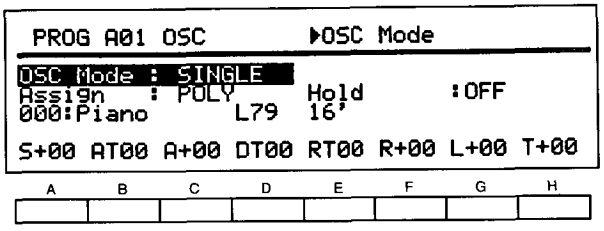


(4) Press the mode select key E.PROG. You are now in Edit Program mode. Now you can edit program number A01 Piano 16'.



2. Page 0

The top line indicates that this page allows you to edit the OSC (oscillator) of PROG A program number 01. At the right is indicated which of the parameters displayed below the thick line can now be edited. Currently, the reversed area is located at the very top, at OSC Mode, indicating that OSC Mode can now be edited.



(1) OSC Mode is currently [SINGLE], indicating that the sound has been created using a single oscillator. Press the △/▽ keys several times to move through the choices; [SINGLE] (the program uses only oscillator 1), [DOUBLE] (the program uses both oscillators 1 and 2), and [DRUM] (the program uses a drum kit). We will first edit oscillator 1 and then return to this parameter and edit oscillator 2, so set this to [SINGLE].

(2) Press the DOWN key once (located at the left of the display). The reversed area will move down one line, to the area displaying Assign. Use the △/▽ keys to make the display switch between [POLY]/[MONO]. When POLY is selected, chords played on the keyboard will be sounded with as many simultaneous notes as are available. The T1/T2/T3 has 16 notes of polyphony, so when a single oscillator is used, chords of up 16 notes can be played in program mode. When double oscillators are used, chords of up to 8 notes can be played. When MONO is selected, only one note will sound at once no matter how many keys are being pressed. This is used when simulating instruments such as saxophones that are naturally incapable of producing chords. In this example set this to POLY.

(3) Press the CURSOR POSITION key [E] and the reversed area will move to the right. Now use the △/▽ keys to turn hold on/off. When this is on, notes will continue sounding even after you release the key, and for sounds such as strings or organ, the sound will not stop. This is turned on mainly for programs using drum sounds that need a full decay to sound natural. In this example turn it off.

(4) Press the DOWN key once, and press [A]. The reversed area will move to 000:Piano.
Press the △ key once and the display will change to 001:E.Piano 1. Play the keyboard and notice that the sound has changed. Continue to press △ and you will be able to play each of the T1/T2/T3's multisounds. To restore the original multisound, press ▽. You can also raise and lower the VALUE slider to select a general range of multisounds. After listening to each of the multisounds, set this back to the original 000:Piano.

(5) Press [D] and the reversed area will move to L79. This indicates the volume level of oscillator 1. Try raising and lowering the VALUE slider, and notice that the volume becomes louder and softer. Set this at 89. Detailed adjustment is not possible when using only the VALUE slider, so make general settings with the VALUE slider and detailed adjustments using the △/▽ keys.

(6) Press [E] and the reversed area will move to 16'. Press △ and play the keyboard. The display indicates 8' and the sounded pitch is one octave higher than before. Press △ once again and the display changes to 4', for an even higher sound. This determines the basic pitch of oscillator 1. Set this to 16'.

(7) Press the DOWN key once. The reversed area will move to S+00 (start level), and a diagram will appear in the upper right of the display. This diagram visually shows the result of the numerical settings, and will help you in your sound editing. Use the VALUE slider to set this to +99. You will notice that the piano sound begins with a slight "catch".

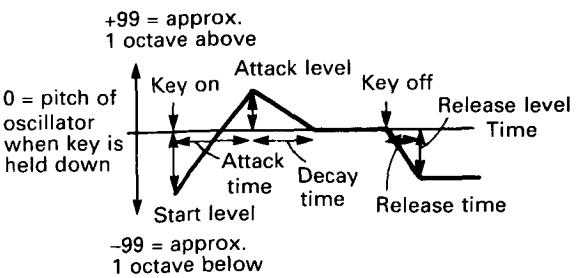
Press [B] to move the reversed area to AT00 (attack time), and play the keyboard while using the VALUE slider to raise and lower the value. A

setting of 99 will result in an extreme effect where the pitch appears to have risen an octave, but at a setting of 70 you will be able to notice the falling effect. Set this to 35. Next press [A] to return to the parameter you previously set to +99, and use the VALUE slider to gradually modify this value. This time you will be notice the initial pitch changing. Set this to -99.

Press [C] to move to the A+00 (attack level) parameter, and make various settings as before. Notice how the pitch changes. The start level determines the beginning pitch of the sound, and the attack level determines the next pitch level. Attack time determines the time over which the pitch changes from the start level to the attack level. If you hold a note for a period of time, you will notice that the pitch always returns to the true pitch of the key you are playing. This is because the Level parameter at right is set to 00.

Press [D] to move to DT00 (decay time), and move the VALUE slider. Notice that this adjusts the time over which the pitch returns to the true pitch of the key. Set this to 20.

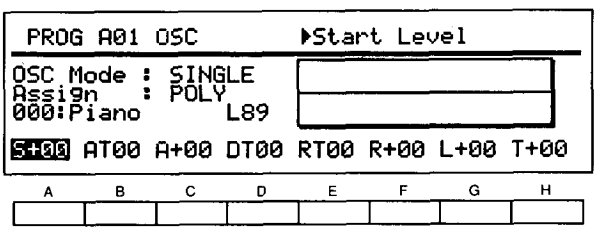
Press [E] to move to RT00 (release time). The results of modifying this parameter or the R+00 (release level) located at the right will not be very noticeable. This is because other parameters (i.e., tone and volume release times and release levels) are set to short values. Later, we will be setting these to longer values, so you may want to return to this parameter and try various settings, noticing how the sound changes after you release the key.



Press [G] to move to L+00 (EG level velocity sensitivity), and move the VALUE slider while playing notes of varying strengths. As the value approaches +99, strongly played notes will have a more extreme pitch than you set in the previous parameters, and softly played notes will have a narrower range of change. As the value approaches -99, the opposite effect will occur.

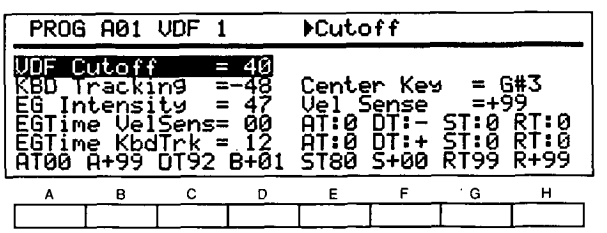
"Velocity sensitivity" parameters determine how changes in tone or pitch are affected by how strongly you play a note.

Press [H] to move to T+00 (EG time velocity sensitivity). This parameter also affects velocity sensitivity, but while the previous EG level parameter affected the range of the pitch change, this parameter determines how key velocity will affect the attack time or decay time. Set this to +99, and play various notes strongly and softly. Notice that strongly played notes are shorter, and softly played notes are longer. Negative (-) settings will have the opposite effect. The eight parameters in this line are known as the Pitch EG (envelope generator). An envelope generator determines how pitch etc. will change over time. In addition to this pitch EG, the T1/T2/T3 has a VDF EG that determines how tone will change over time, and a VDA EG that determines how volume will change over time. After trying out various settings, set each of these eight parameters back to 0.



3. Page 1

(1) Move to the next page by pressing the PAGE+ key located at the right of the display.



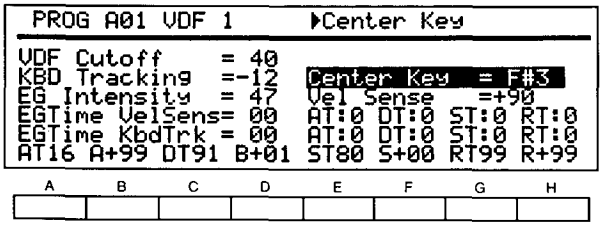
The reversed area is located at VDF Cutoff. This page contains settings that determine the tone. The VDF Cutoff which we mentioned earlier determines the basic tonal brightness. Use the VALUE slider to change this value, and notice that as the setting approaches 99 the tone becomes brighter, and as it approaches 0 the tone becomes softer. A higher setting opens the filter, resulting in a brighter sound. A lower setting closes the filter, resulting in

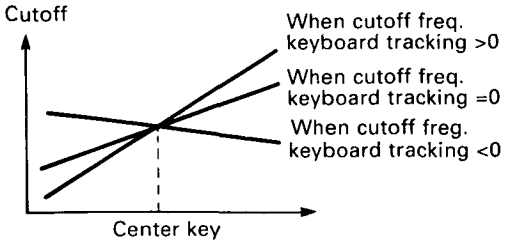
a softer sound. (VDF stands for Variable Digital Filter.) Set this to 90.

(2) Press the DOWN key once to move to the next parameter. KBD Track (keyboard tracking) determines how the keyboard position of the note will affect the tone. For example on most acoustic instruments, higher notes have a brighter sound and lower notes have a softer sound. Keyboard tracking can be used to simulate this, or can be used to make all notes have the same tone. Move the VALUE slider up and down while comparing high and low notes.

Set this to -12.

Press [E] to move to the right. Center Key determines the center key used by the keyboard tracking setting. High and low notes are divided around the key specified here. Set this to F#3.





(3) Press the DOWN key once and press [A] to move to the next parameter. EG Intensity sets the overall range of change produced by the VDF EG. Raise and lower the VALUE slider, noticing how the tone changes. Unlike the tonal change caused by the cutoff, this parameter determines the sensitivity of the cutoff value. Set this to 29.

Press [E] to move to the next parameter. As previously explained for the oscillator, Vel Sense determines how playing strength will affect the sound.

Positive (+) settings for this parameter will result in a greater tonal change for strongly played notes. Set this to 00.

(4) Press the DOWN key, and press [A] to move to the next parameter. EG Time Vel Sense determines how velocity will affect the VDF EG time. (VDF1 EG is explained below.) This allows key velocity to affect the time of the tonal change. If all parameters are set to 0, the EG Time Vel Sense setting will have no effect.

Press [E] to move to AT (attack time). When this is set to plus (+), strongly played notes will have a faster attack than specified by the attack time setting. A setting of minus (-) will have the opposite effect.

Press [F] to move to DT (decay time). As with attack time, a setting of plus (+) will result in a faster change than specified by the VDF 1 EG. The ST (slope time) and RT (release time) settings work in a similar way. Set all these parameters to 0.

(5) Press the DOWN key, and press [A] to move to the next parameter. EG Time Kbd Trk (EG time keyboard tracking) determines how the time-related parameters of the VDF (the VDF1 EG will be explained later) are affected by key position.

Settings are the same as for velocity sensitivity, but instead of determining the effect of key velocity, this parameter determines how key position (high or low note on the keyboard) will affect the VDF. Set all these parameters to 0.

(6) Press the DOWN key, and press [A] to move to the bottom line. As explained in the Page 0 pitch EG, a diagram will appear in the upper right of the display. First is AT (attack time). Use the VALUE slider to set this to about 25, and play the keyboard. From a fairly soft sound (the value specified by Cutoff) the sound will gradually become brighter. The time over which the sound changes from the Cutoff setting is the attack time.

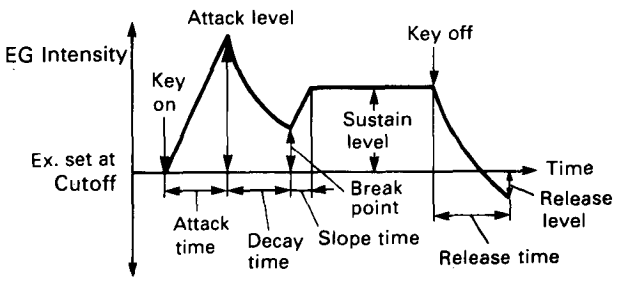
Press [B] to move to A (attack level). Try various settings, and notice that with a setting of -99 the sound ends immediately, and with a setting of +99 the sound dramatically increases in brightness. A setting of 00 results in the sound specified by the Cutoff setting. A setting of 99 results in the sensitivity value specified for EG Intensity.

Press [C] to move to DT (decay time). This determines the time over which the break point (explained next page) is reached.

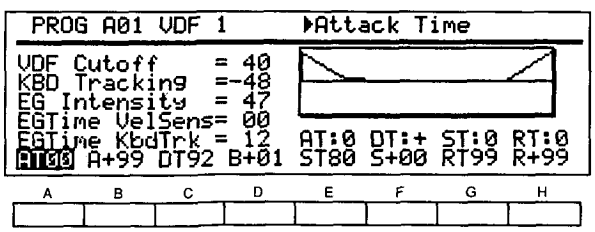
Press [D] to move to B (break point). This sets the level (the degree to which the filter is open) of the point following the attack level. If this is set to a

lower value than the attack level, the sound will first become bright, and then gradually (for a long decay time) or quickly (for a short decay time) become softer. Next is S (slope time). This determines the time until the sustain level (explained below). SL (sustain level) determines the level following the break point. Attack level and break point are the levels of momentary points, but sustain level determines the brightness of the sound that is maintained from when the slope time ends to when you release the key.

RT (release time) determines the time from when you release the key to when the sound ends. R (release level) determines the tone at the end of the release time (normally when the sound disappears). Appropriate settings of the VDF can simulate various tonal contours such as brass instruments (initially very bright, and decaying to a more mellow tone) or organs (approximately the same tone from beginning to end).

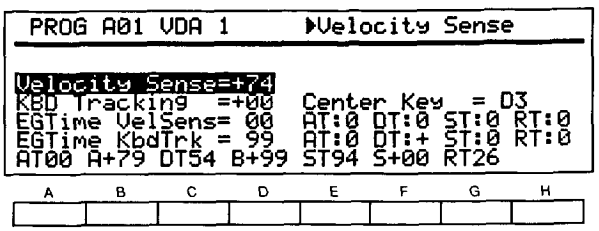


In this example, set these parameters as follows; AT00, A+99, DT76, B+73, ST81, S+75, RT43, R+00.



4. Page 3

(1) Press PAGE+ to move to the next page. (Since the oscillator mode is set to [SINGLE], Page 2 which contains settings for oscillator 2 is skipped.)



The reversed area is located in the top row at Velocity Sense. Velocity sensitivity determines how key velocity (the force with which a note is played) will affect the volume. For positive "+" settings, stronger playing will increase the volume. For negative "-" settings, stronger playing will decrease the volume. When set to 0, velocity will have no effect on the volume. When simulating instruments that are not velocity sensitive (such as organs), set this parameter to 0. Move the VALUE slider while playing softly and strongly, and observe the result. In this example, set this parameter to +54.

(2) Press the DOWN key to move to the next parameter. KBD Tracking determines how key position will affect the volume. For positive "+" settings, higher notes will be louder and lower notes will be quieter. Negative "-" settings will have the opposite effect.

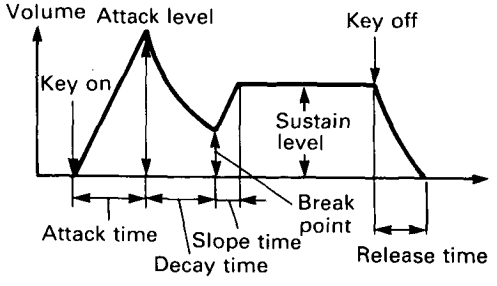
Press [E] to move to Center Key, and specify the center key for the KBD Tracking setting. In this example, set KBD Tracking =+00 and Center Key =A#3.

(The center key setting actually does not matter, since keyboard tracking is set to 0.)

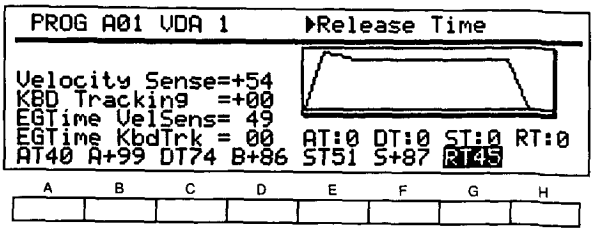
(3) Press the DOWN key, and press [A] to move to the next parameter. EG Time Vel Sens determines how velocity will affect the time-related parameters (attack time, etc.) of the VDA 1 EG in the bottom line (explained below). Higher values will make velocity have a greater effect. When AT (attack time), DT (decay time), ST (slope time), and RT (release time) are set to "+", times such as attack time etc. will become shorter as you play more strongly. This is often used when simulating instruments such as strings. In this example set EG Time Vel Sens =49, and all other parameters to "+".

(4) Press the DOWN key, and press [A]. EG Time Kbd Trk determines how key position will affect the time-related parameters of the VDA 1 EG. Higher values will make key position have a greater effect. When AT, DT, ST, and RT are set to "+", attack time etc. will become shorter as you play higher above the center key (specified in the right side of the second row). In this example, set all parameters to 0.

(5) Press the DOWN key, and press [A]. A diagram of the EG will appear in the upper right of the display. The far left is AT (attack time). Use the VALUE slider to set this to about 50, and play the keyboard. The sound will be very unlike a piano: somewhat like a piano played using a violin bow. This is because while a piano has a short attack time, a violin has a long attack time. The next parameter A (attack level) determines the level of the first peak as the volume changes over time. DT (decay time) is the time until the B (break point) which follows. Break point determines the level (volume) reached after the attack time. ST (slope time) is the time from the break point to the following S (sustain level). Sustain level is the volume which will be maintained until the key is released. Finally, RT (release time) determines the time from when the key is released to when the sound decays to silence. Long settings of release time will make the sound linger after the key is released, but since some effects such as reverb (explained later) will also make the sound linger, you may need to adjust this parameter after choosing an effect, to avoid an overly long feeling of reverberation.

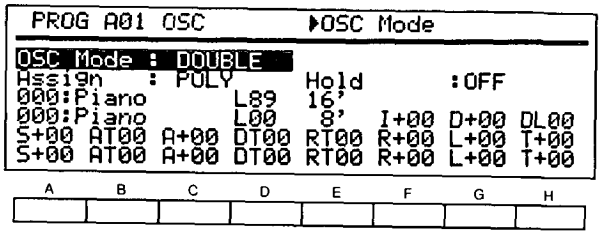


In this example, set these parameters to AT=40, A=+99, DT=74, B=+86, ST=51, S=+87, RT=45. As you experiment with various settings, it is possible that some notes may not stop sounding. This is due to excessively long release time settings. Press the COMPARE key (the NUMBER key 8) twice.



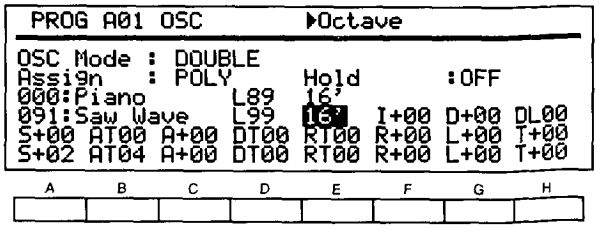
5. OSCILLATOR 2

(6) Press the BANK/PAGE key [0] to return to the first display, and press the UP key and [A] to select OSC Mode. Press △ to change [SINGLE] to [DOUBLE]. Now oscillator 2 will produce sound as well.

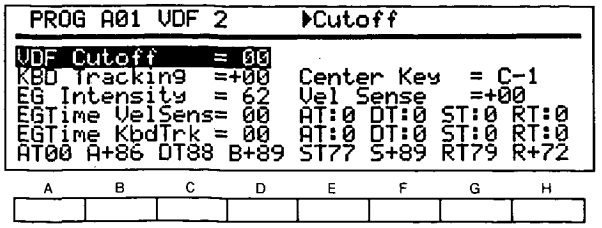


(7) Press the DOWN key three times and move to OSC 2 Multisound / OSC 2 Level on the fourth line. Use the VALUE slider and the △/▽ keys to select multisound 91:Saw Wave. Press [D] to move to the next parameter, and set the level to 99. Press [E] to move to the next parameter, and press ▽ to set this to 16'. Finally, set the other parameters to the values shown in the following diagram. Use the BANK/PAGE keys to select the various screens. Play various notes while you make the settings, so that you can hear the effect of each parameter. (The sound may stop occasionally.)

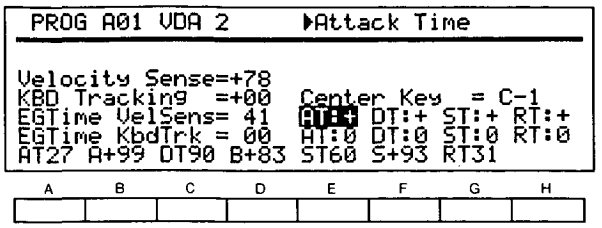
BANK/PAGE key 0



BANK/PAGE key 2



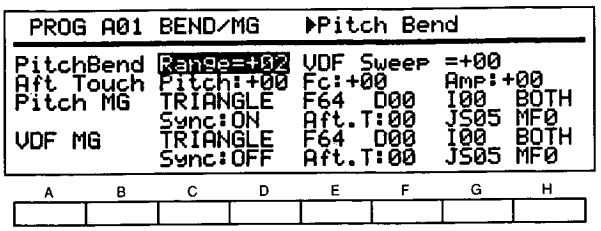
BANK/PAGE key 4



(8) Press the BANK/PAGE key 0 once again to return to the first display, and move to the Multisound of oscillator 2. Press [F] to move to Interval. While playing the keyboard, raise and lower the VALUE slider, noticing how the pitch of the two sounds change. This setting determines the pitch difference between oscillator 1 and oscillator 2. Set this parameter to 0, and press [G] to move to the following parameter. D (detune) is a fine pitch adjustment of less than a chromatic step. Raise and lower the VALUE slider to hear the result. Interval is used mainly to create a chordal effect from a single note. Detune is used to slightly vary the pitch of the two oscillators, creating a thick and rich sound. Set detune to 13, and press [H] to select the last parameter, DL (delay start). As you raise the value of this parameter, you will notice that the sound of the two oscillators will spread further apart in time. This setting delays the onset of oscillator 2 after oscillator 1 begins to sound. For this example, set this parameter to 0.

6. Page 5

These parameters are common to oscillators 1 and 2, and determine the function of the joystick, vibrato, and wah-wah effects.



(1) Press the BANK/PAGE key 5 to get the BEND/MG display. The top line shows settings related to pitch bend. Range is the pitch difference from the normal pitch that occurs when the joystick is moved fully left or right. Experiment with various settings while playing a single note and moving the joystick fully left or right. A setting of ±12 corresponds to ±1 octave. When set to 0, there will be no effect.

Press [F] to move to VDF Sweep. This determines how left/right movement of the joystick will affect the cutoff setting of Pages 1 and 2. When this setting is "+" and the joystick is moved to the right, the cutoff will rise; i.e., the filter opens (the tone becomes brighter). When the joystick is moved to the left, the cutoff will go down; i.e., the filter closes (the tone becomes darker). Try out various settings while moving the joystick and playing the keyboard.

For this example, set Range=+02 and VDF Sweep =+00.

(2) Press the DOWN key to move to the next line, and press [A]. These parameters determine how aftertouch will affect the sound. Aftertouch allows you to modify the sound (pitch or tone) by pressing down on the keyboard after playing a note. When pitch is set to a value other than 0, aftertouch will raise or lower the pitch. Try setting this to +12 (one octave), and press firmly down on the keyboard. The pitch will rise one octave.

The Fc parameter to the right determines how aftertouch will affect the tone (cutoff frequency). For positive settings, aftertouch will make the tone brighter; for negative settings, aftertouch will make the tone darker.

Press [G] to move to Amp. This determines how aftertouch will affect the volume. For positive settings, aftertouch will increase the volume; for

negative settings, aftertouch will decrease the volume.

For this example, set Pitch=+00, Fc=+00, Amp=+00.

(3) Press the DOWN key to move to the next line, and press [A]. The Pitch MG is used to create a vibrato effect. The first parameter selects the vibrato waveform. In order to listen to the sound while selecting various waveforms, set the parameters at right to F=50 ([E] key), D=00 ([F] key), I=99 ([G] key), and use △/▽ to set the rightmost parameter to BOTH. Now press [C] to return to the previous parameter, and use △/▽ to select various waveforms while listening to the sound.

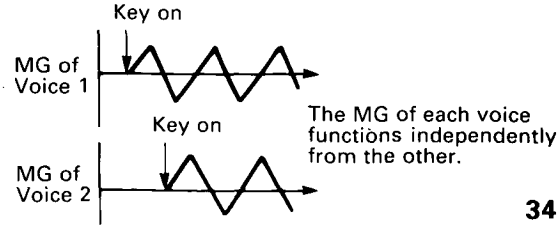
TRIANGLE
SAW UP
SAW DOWN
SQUARE

Notice that the pitch is changing according to the shape of the waveform. Now modify the F (frequency) parameter. This determines the speed of vibrato.

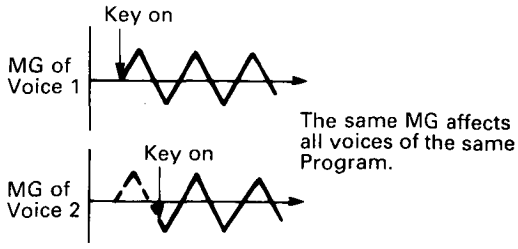
Next modify the D (delay) parameter. Higher settings will result in a longer delay before the vibrato gradually begins. The I (intensity) parameter determines the width of the vibrato effect. The rightmost parameter specifies the oscillators to which vibrato is applied. When set OFF, vibrato will be applied to neither oscillator; OSC1 applies it only to oscillator 1, OSC2 only to oscillator 2, and BOTH applies vibrato to both oscillators. For this example, set the parameters to TRIANGLE, F=71, D=63, I=01, BOTH.

Press the DOWN key to move to the next line, and press [A]. These parameters are also related to the Pitch MG. The first parameter, Sync, determines whether to start the vibrato each time a key is pressed, or to continue the vibrato waveform of the previous note. With the parameters in the upper line set as shown, turn this ON and OFF, playing slow arpeggios and chords to hear the effect.

• Key Sync ON



• Key Sync OFF



Next is Aft.T, which determines how aftertouch will affect the range of the vibrato effect. Press down on the keyboard while changing the value. For a setting of 0, there will be no effect. Next is JS (joystick), which determines how the joystick controls vibrato (often called pitch modulation). Move the joystick while changing the value. Finally, MG (modulation frequency) determines how moving the joystick away from you will speed up the modulation. In this example, set the parameters to Sync:OFF, Aft.T=02, JS=06, MF=00.

(4) Press the DOWN key to move to the next line, and press [A]. These settings affect wah-wah (an effect of cyclic change in tone). While the Pitch MG parameters in the previous line affected the pitch, this VDF MG affects the VDF (tone). The only difference is that the tone, not the pitch, will change.

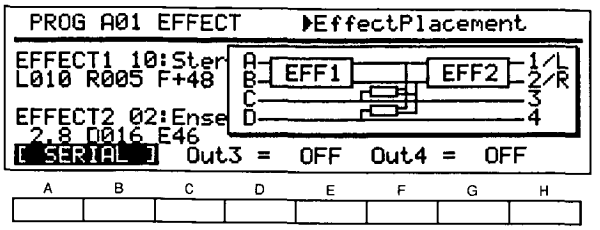
(Push the joystick away from you to affect the Pitch MG, and pull it towards you to affect the VDF MG.) As explained in step (3), experiment with various settings and listen to the results. In this example, set the parameters to TRIANGLE, F71, D00, I00, BOTH, Sync:OFF, Aft.T:00, JS09, MF00.

7. EFFECT (Page 6)

Effects add the finishing touch to the sound. The T1/T2/T3 has many types of effects built in, and selecting and using an effect is an important part of creating a sound. Here we will explain how the effects can be combined, and also explain the various types of effects. As with the previously explained parameters, experiment with various effect settings and listen to the results.

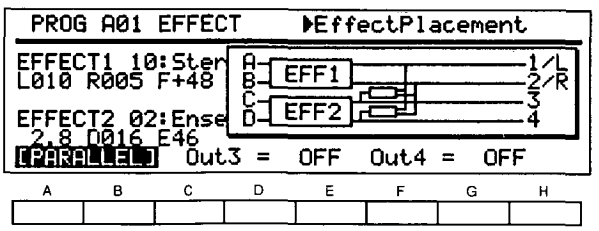
Two ways to connect the effects

Serial: Serial placement connects the two effects one after the other; i.e., in series. The sound you created so far will be sent through effect 1, and the resulting output will be sent through effect 2. The sound from both oscillators 1 and 2 will be output from A:B at equal volume levels.



Parallel: Parallel placement connects the two effects side by side; i.e., in parallel. Except for Drum Kits, Programs will be output from A:B. If parallel effect placement is selected when the oscillator is set to Single or Double, this means that effect 2 will not be used.

The PAN 3/4 that follows effect 2 will determine the output assignment (which of the T1/T2/T3's rear panel outputs) and volume. For example if PAN3 is set to L (Left) and PAN4 is R (Right), the sound from effect 2 will be output from 1/L and 2/R. On the other hand, if PAN 3/4 are both OFF, the sound from effect 2 will not appear at outputs 1/L and 2/R, but appear only at outputs 3/4.



Effect settings

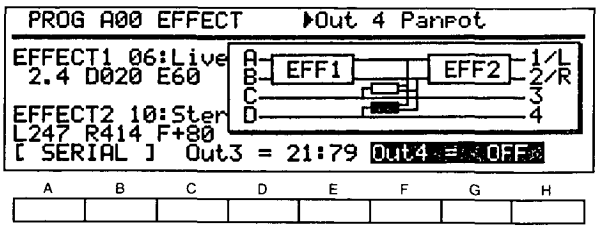
(1) Press the BANK/PAGE key 6. The first parameter determines which effect will be used for effect 1, and turns it on/off. Use the VALUE slider and △/▽ keys to change the effect, and notice how the sound changes. A single effect can cause major changes in the sound. We will be covering each type of effect in the following explanation.

(2) After selecting an effect in line 1, edit the effect parameters in line 2. For the parameters of each effect, refer to the chapter on effect parameters in the reference guide.

(3) In the third line, select the type of effect for effect 2, and turn it on/off.

(4) In the same way as for line 2, the fourth line contains parameter settings for the effect selected for effect 2.

(5) The fifth line determines effect placement. When adjusting this parameter, a diagram will appear in the upper right of the display. Press the [C] key to move to Out3, and the portion of the diagram corresponding to Out3 will turn black. In the same way, pressing the [F] key to move to Out4 will make the diagram Out4 turn black.



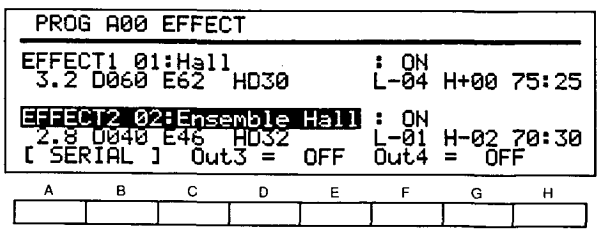
For the parameters in this line, refer to the previous explanation of effect placement.

Try out the effects

Raise and lower the VALUE slider to set effect 2 to "No Effect" so that we will hear only effect 1. This will allow us to listen to each effect by itself.

<Reverb>

This effect simulates the acoustics of various rooms to create a feeling of spaciousness and reverberation.



• Hall

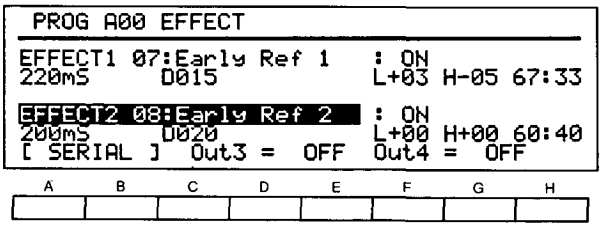
This reverb simulates the acoustics of a large area such as a hall. The parameter at the far left of the display, reverb time, determines the time over which the reverb will decay to silence. D (pre delay) simulates the time delay before the first reverberation is heard. Especially when simulating a large hall, rather than setting a long reverb time, it is more effective to increase the pre delay. HD (high damp) simulates the wall materials of the acoustic environment. If the walls are made of smooth wood, the room will sound "live". If the

walls are hung with curtains, the room will sound "dead". Raising this high damp parameter will increase the deadness. EQ Low boosts or cuts the low frequencies of the reverb, and EG High adjusts the high frequencies. Dry/effect balance sets the balance of the unprocessed sound and the processed sound. In the case of reverb, excessive amounts of processed sound will result in decreased impact and clarity.

- Ensemble hall
  Simulates a somewhat smaller area than "Hall".
- Concert hall
  Simulates a somewhat larger area than "Hall".
- Room
  Simulates a fairly small room.
- Large room
  Simulates a fairly large room. This is especially good for thickening the sound.
- Live stage
  A room-type reverb with greater width.

<Early reflection>

This effect isolates the early reflections from the reverberation, resulting in an effect different than reverb.



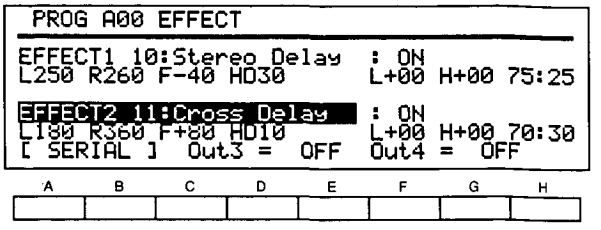
- Early reflection 1
  With short settings of E/R Time (early reflection time), this produces a gated effect when used on drums etc. This is also effective for thickening the sound.
- Early reflection 2
  The decay envelope is somewhat different than for early reflection 1.

  Compare these two, and use whichever is appropriate for a particular sound.
- Early reflection 3
  This reflection III gives a reverse envelope to the early reflections.

  (Normally the levels of the reflection diminish, but with this effect they increase.) This can be used to create a reversed effect when applied to cymbals, etc.

<Delay>

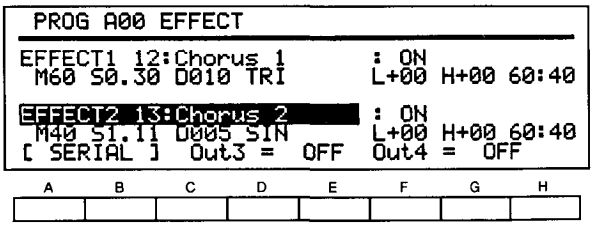
This effect reproduces the incoming sound with a slight delay. Delay Time determines the delay from when the original sound is received to when the delayed sound is produced. This can be set independently for left and right channels. F (feedback) determines the number of times that the delay will repeat.



- Stereo delay
  This delay uses feedback in the same channel.
- Cross delay
  In this effect, the two channels feedback to each other, alternating the delayed sound from left to right.

<Chorus>

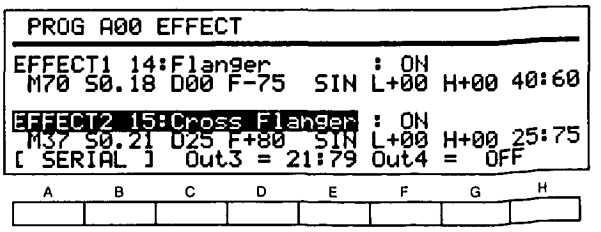
This effect modulates the delay time, creating a feeling of spaciousness and depth. It is especially effective for electric piano, strings, or brass.



- Stereo chorus 1
  This chorus modulates the two channels in opposite phase. When monitoring in stereo, you will hear the sound swirl between left and right.
- Stereo chorus 2
  This chorus modulates the two channels in the same phase.

<Flanger>

The flanger effect uses a shorter delay time than the chorus effect, and applies modulation of opposite phase to the two channels. It is useful when you need an effect stronger than chorus. This is especially effective on guitar solo sounds.



• Stereo flanger

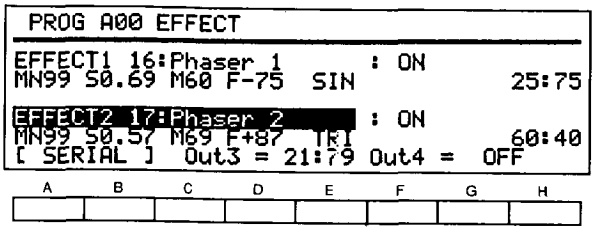
When monitoring in stereo, you will hear the sound swirl between left and right.

• Cross flanger

The two channels of this flanger apply feedback to each other.

<Phase shifter>

The chorus and flanger effects modulate the delay time to create an effect, but the phase shifter effect modulates the phase of the original sound.



• Phaser 1

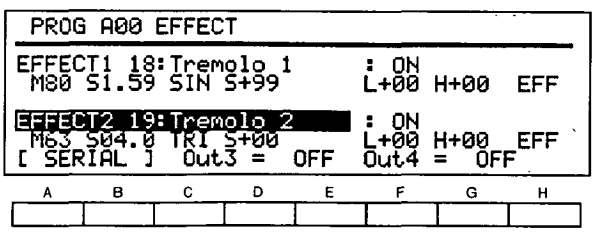
The two channels of this phaser are modulated in opposite phase. When monitoring in stereo, you will hear the sound swirl between left and right channels.

• Phaser 2

The two channels of this phaser are modulated in the same phase.

<Tremolo>

The tremolo effect cyclically modifies the volume of the sound.



• Stereo tremolo 1

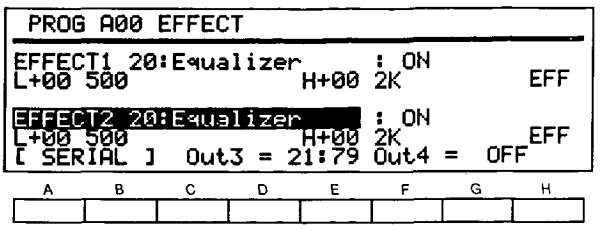
The two channels of the tremolo effect are modulated in opposite phase.

When monitoring in stereo, you will hear the sound image shift between left and right channels.

• Stereo tremolo 2

The two channels of the tremolo effect are modulated in the same phase.

<Equalizer>

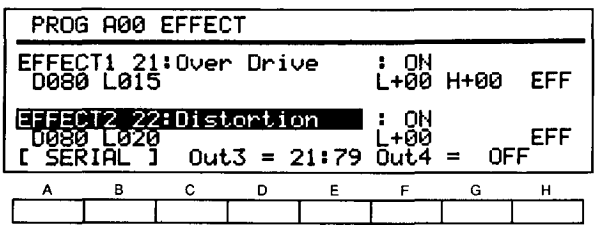


• Equalizer

Most other effects also have High/Low equalizer parameters, but this equalizer allows you to adjust the cutoff frequencies for more detailed control.

<Overdrive>

These effects distort the input sound, and are effective when used for guitars and organs.



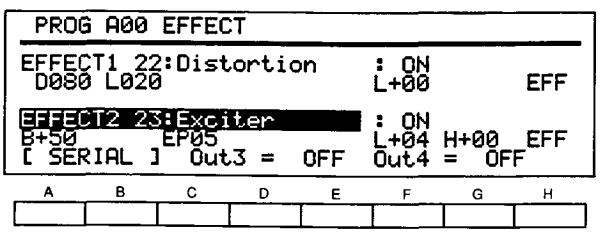
• Overdrive

Higher settings of D (drive) will result in a more distorted sound.

• Distortion

An even more distorted effect than overdrive. Higher settings of D (drive) will result in a more distorted sound.

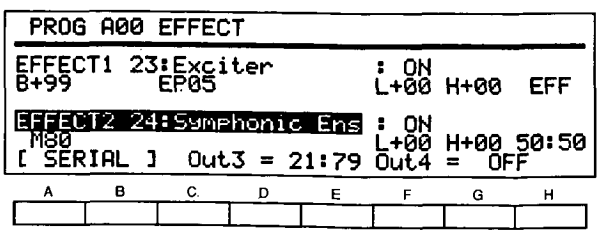
<Exciter>



• Exciter

This effect gives brilliance to the sound. When used on a single sound in a song, it will make the sound stand out more clearly.

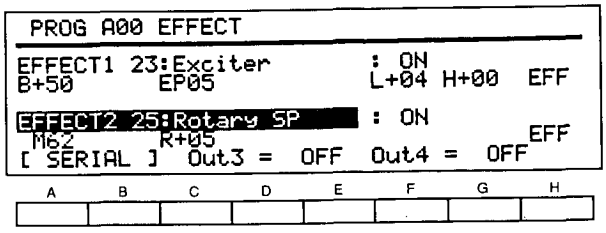
<Ensemble>



• Ensemble

This effect gives even more richness than the chorus-type effects. It is especially effective when used on strings or brass.

<Rotary effect>

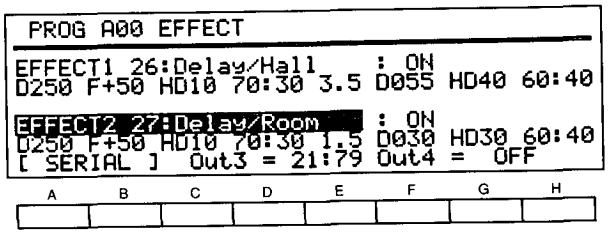


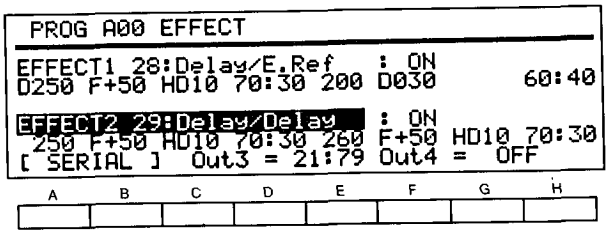
• Rotary speaker

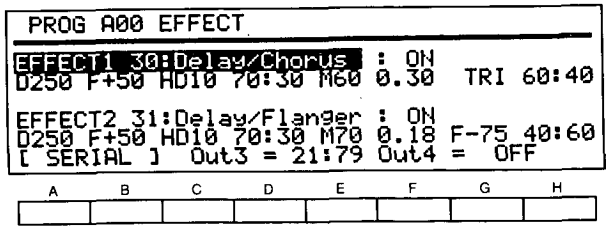
This effect simulates a rotary speaker. It is often used for organ and electric piano sounds.

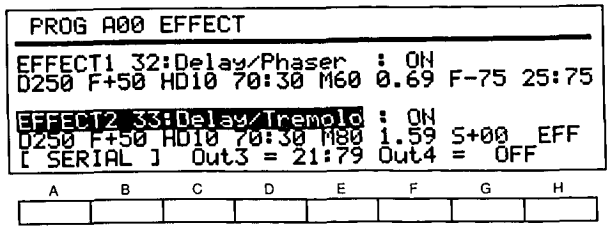
<Combination-type effects>

There are 8 types of combination-type effects.



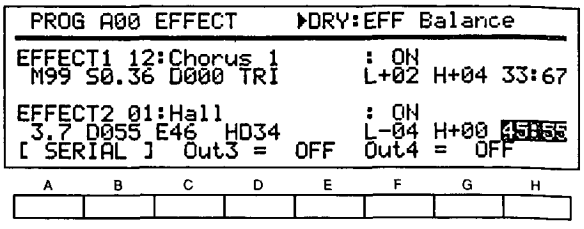






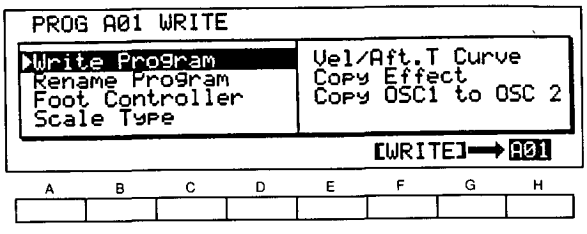
The sounds of each individual effect in a combination-type effect are the same as the effects explained above. Combination-type effects are used when applying a different effect to each output A, B, C, and D.

In this example, make effect settings as shown below.



8. Page 7

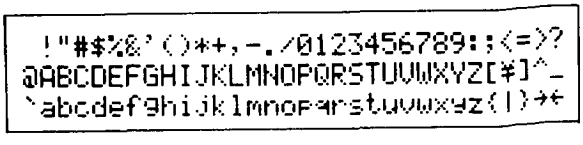
(1) Press the PAGE+ key to move to the last page.



The reversed area is located at Write. The margin displays "[WRITE] —> A01".

If you press the [F] key, the sound of program A01 Piano 16' will be overwritten by the sound we have just created. In this example, we will preserve Piano 16', and write our newly created sound into program A99 after giving it a name. Press the DOWN key to move to Rename.

(2) The margin displays "A01:Piano 16' ◁ ▷ . Press the [G] key to move the reversed area to the left, and press the [H] key to move the reversed area to the right. Now let's change the name to "1st TRIAL". Raise and lower the VALUE slider, and notice how the first character changes. Characters are arranged as shown in the table, so use the VALUE slider and the △/▽ keys to make the first character read "1". Press the [H] key to move to the next character. In the same way, use the VALUE slider and the △/▽ keys to make the next character read "s". In this way, change each character. Moving the VALUE slider all the way down will select a space (blank character).



(3) Press the UP key to move to the line above. Use the VALUE slider and the △/▽ keys to change this to A99, and then press the [F] key. The display will ask "Are You Sure?". If you are sure you want to write the data, press [YES] (the [E] key). (To quit without writing, press the [G] key for [NO].) In a real situation you might make settings for foot controller, scale type, etc. before writing, but in our example we will not be changing these, so go ahead and write the data.

(4) Press the DOWN key twice to move to Foot Controller. These settings determine the function of the foot switch or foot controller (be sure to use a Korg EXP-2) connected to the rear panel ASS.PEDAL/SW 1 jack. Functions assignable to a foot controller are common to 1 and 2. Switch-type functions are program up/down, on/off switching for effect 1/2. Foot controller-type functions are volume, VDF Cutoff, EFFECT 1/2 balance, and data entry.

For example, if foot controller 1 is set to Program Up, foot controller 2 is set to Program Down, and foot switches are connected to each jack, the two foot switches would let you select programs using your feet; useful in many live situations. (Program Up increases the program number, and Program Down decreases the program number.) If you arrange programs in the order you will be using them in concert, assign foot controller 1 to Program Up and connect a foot switch to the ASS.PEDAL/SW 1 jack, and assign foot controller 2 to VDF Cutoff and connect an EXP-2 to the ASS.PEDAL/SW 2 jack, you will be able to select programs using only the foot switch, and control VDF Cutoff (tonal brightness) with the pedal.

(5) Press the DOWN key to move to the next parameter. Scale Type selects the temperament used by this program. There are many types of temperament.

Equal temperament (Equal Temp.) divides the octave into 12 equally spaced pitches, and is the temperament normally used. Equal Temp.2 is based on equal temperament, but with slight random deviations in pitch. This is useful when simulating acoustic instruments that have naturally unstable pitch.

Pure temperament (Pure Major/Minor) is designed to make chords sound good.

Equal temperament divides the octave into 12 equal steps, which means that chords will always be slightly out of tune. Pure temperament tunes the thirds (E) and fifths (G) to be at exactly the right pitch for the chord. For example, in equal temperament, a major third is 400 cents and a fifth is 700 cents. However in pure temperament, a major third is 386 cents and a fifth is 702 cents.

User Programmable temperament allows this program to use the original temperament you created in Global mode.

To select these temperaments, press [B] and use the VALUE slider or △/▽ keys. When a pure temperament has been selected, press [G] and select the key (tonic) of the temperament.

(6) Press the DOWN key to move to the top of the next column. These settings determine how key velocity and aftertouch will affect tone and volume. Select from 8 types of curves. Press [A] to select the velocity curve, and press [E] to select the aftertouch curve. Select various curves and play the keyboard, noticing how response differs for each curve.

(7) Press the DOWN key to move to Copy Effect. This function allows you to copy the effect settings from another program, combination, or song (sequencer) memory. Press [B] and specify whether you are copying from a program, combination, or song. Then press [E] and select the number of the program, combination, or song from which to copy the data. To execute the copy operation, press [G] ([COPY]).

(8) Press the DOWN key to move to the last function in Program Edit mode.

This allows you to copy the parameter settings from oscillator 1 to oscillator 2; convenient when you are setting oscillators 1 and 2 to the same envelopes, etc. When you execute the copy operation, the two oscillators will have identical settings, but later you can easily modify the sound by selecting different multisounds, or detuning or delaying oscillator 2.

		A	B	C	D	E	F	G	H
0 OSC	OSC Mode	OSC Mode							
		DOUBLE							
	Assign/Hold	Assign				Hold			
		POLY				OFF			
	OSC1	Multisound			Level	Octave			
		000 : Piano			89	16'			
	OSC2	Multisound			Level	Octave	Interval	Detune	Delay Start
		091 : Saw Wave			99	16'	00	13	00
	OSC1 Pitch EG	Start Level	Attack Time	Attack Level	Decay	Release Time	Release Level	L Vel.	T Vel. Sens
		00	00	00	00	00	00	00	00
	OSC2 Pitch EG	Start Level	Attack Time	Attack Level	Decay	Release Time	Release Level	L Vel. Sens	T Vel. Sens
		02	04	00	00	00	00	00	00
1 VDF 1	Cutoff	Cutoff							
		90							
	KBD TRK	KBD Tracking				Center Key			
		−12				F#3			
	EG Int	EG Intensity				Vel. Sense			
		29				00			
	EG Time V. Sens	Vel. Sense				Attack Time	Decay Time	Slope Time	Release Time
		00				0	0	0	0
	EG Time K. TRK	KBD Tracking				Attack Time	Decay Time	Release Time	Release Time
		00				0	0	0	0
	VDF EG	Attack Time	Attack Level	Decay Time	Break Point	Slope Time	Sustain Level	Release Time	Release Level
		00	+99	76	+73	81	+75	43	+00
2 VDF 2	Cutoff	Cutoff							
		00							
	KBD TRK	KBD Tracking				Center Key			
		00				C − 1			
	EG Int	EG Intensity				Vel. Sense			
		62				00			
	EG Time V. Sens	Vel. Sense				Attack Time	Decay Time	Slope Time	Release Time
		00				0	0	0	0
	EG Time K. TRK	KBD Tracking				Attack Time	Decay Time	Slope Time	Release Time
		00				0	0	0	0
	VDF EG	Attack Time	Attack Level	Decay Time	Break Point	Slope Time	Sustain Level	Release Time	Release Level
		00	+86	88	+89	77	+89	79	+72
3 VDA 1	Velocity Sense	Vel. Sense							
		54							
	KBD Tracking	KBD Tracking				Center Key			
		00				A#3			
	EG Time V. Sens	Vel. Sense				Attack Time	Decay Time	Slope Time	Release Time
		49				+	+	+	+
	EG Time K. TRK	KBD Tracking				Attack Time	Decay Time	Slope Time	Release Time
		00				0	0	0	0
	VDA EG	Attack Time	Attack Level	Decay Time	Break Point	Slope Time	Sustain Level	Release Time	
		40	99	74	86	51	87	45	
4 VDA 2	Velocity Sense	Vel. Sense							
		78							
	KBD Tracking	KBD Tracking				Center Key			
		00				C − 1			
	EG Time V. Sens	Vel. Sense				Attack Time	Decay Time	Slope Time	Release Time
		41				+	+	+	+
	EG Time K. TRK	KBD Tracking				Attack Time	Decay Time	Slope Time	Release Time
		00				0	0	0	0
	VDA EG	Attack Time	Attack Level	Decay Time	Break Point	Slope Time	Sustain Level	Release Time	
		27	99	90	83	60	93	31	

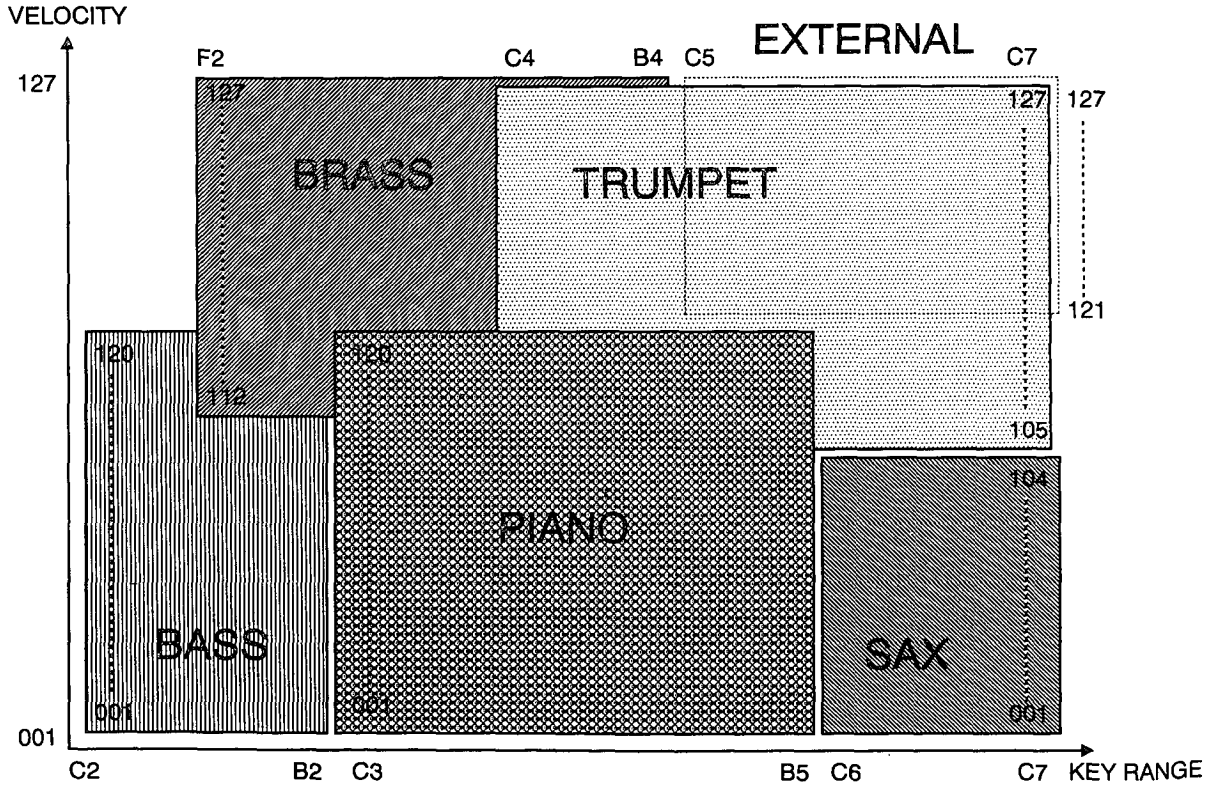
		A	B	C	D	E	F	G	H
5	Pitch Bend			Range 02		VDF Sweep 00			
	After Touch			Pitch 00		Fc 00		Amp 00	
	Pitch MG1			Waveform Triangle		Frequency 71	Delay 63	Intensity 01	OSC Select BOTH
	Pitch MG2			Key Sync OFF		After Touch 02		Joy Stick 06	MG Frequency 0
	VDF MG1			Waveform Triangle		Frequency 71	Delay 00	Intensity 00	OSC Select BOTH
	VDF MG2			Key Sync OFF		After Touch 00		Joy Stick 09	MG Frequency 0
6	Effect1 Type	Effect 12 : Chorus1				ON/OFF ON			
E	1 Parameter	99	0.36	000	TRI		+02	+04	33 : 67
F	Effect2 Type	Effect 01 : Hall				ON/OFF ON			
E	2 Parameter	3.7	055	46	34		– 04	00	45 : 55
C	Effect Placement	Placement SERIAL		Out3 OFF			Out4 OFF		
T									
7	Foot Controller	FC1 Program Up				FC2 Program Down			
	Scale Type	Equal Temp.							
	Vel/Aft T Curve	Vel. Curve 4				Aft. T Curve 4			

CREATING A COMBINATION

What is a Combination?

Two or more Programs can be played together as a "Combination". To understand this, it may be helpful to visualize a tray with several glasses of juice. Each glass represents a "Timbre", and up to eight Timbres can be used. The juice represents a "Program", and each glass (Timbre) can contain a different type of juice; i.e., each Timbre can use a different Program. The entire tray represents a Combination. The keyboard range and velocity range of each Timbre can be set independently. Appropriate settings of these parameters allow you to create Combinations that use two or more Timbres as layers, keyboard splits, or velocity splits. Since the MIDI channel transmitted from MIDI OUT by each Timbre can also be set independently, a single T1/T2/T3 can independently control up to 8 different MIDI tone generators.

Now let's try creating a combination. In the same way as when creating a program, we will edit one of the preloaded combinations to create a new combination.

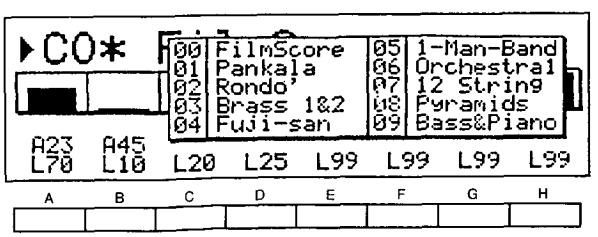


The combination we will be creating in this example will use the C2—C7 of the T1/T2/T3 keyboard, and use key window settings (p.44 – 45, 4. Page 3 steps (4)(5)) to place a bass sound over the lower range, a sax solo over the high range and a piano sound over the middle range. We will use velocity window settings (p.43 – 44, 4. Page 3 steps (2)(3)) to add a trumpet sound to strongly played notes in the high range and add a brass sound to strongly played notes in the lower range. (Key window settings for the trumpet and brass sounds will make them both sound for notes in the middle range.) For effects, we will add a delay to the solo sax and trumpet, and then add overall reverb. We will use the stereo outputs, with the piano and brass in the center, bass from left (L), and sax and trumpet towards the right (R). So that an external MIDI tone generator can be connected to the MIDI OUT A of the T1/T2/T3 (for you to play a solo), we will make settings so that keys in the C4—C7 range will play and control the tone generator voice which is receiving MIDI channel 16. The program number, volume, etc. of the connected tone generator will be set from the T1/T2/T3 (see p.48, 7. Page 2).

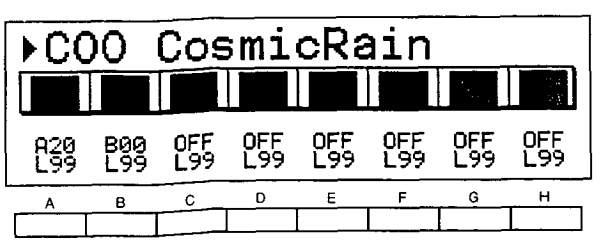
1. Select a combination and prepare for editing

(1) Press the mode select key COMBI to select combinations. You are now in Combination mode.

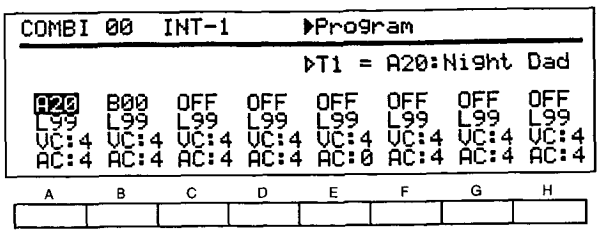
(2) Use the BANK/PAGE keys to specify the ten's place of the combination number. In this example, select 0.



(3) Use the NUMBER keys to specify the one's place of the combination number. In this example, select 0. This will select combination number 00.



(4) Press the mode select key E.COMBI. You are now in Edit Combination mode, ready to edit combination number 00.



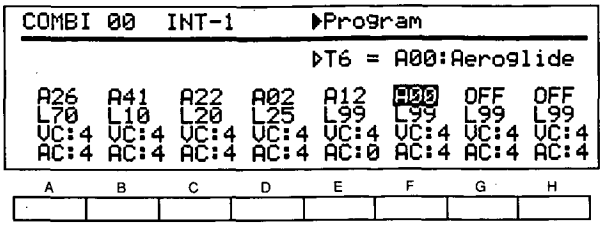
2. Page 0

The top line indicates that in this page you are editing the timbres of combination number 00. The ▶ indicates which of the parameters shown in the lower four lines of the display (in this page, Program, Level, Velocity Curve, and After Touch Curve) is being edited. The line below the thick line indicates which timbre is being edited. Currently, the reversed area is at the far right of the top line, indicating that ▶ Program, T1=A20:Night Dad can be edited. In this page, the cursor position keys [A] [B] [C] [D] [E] [F] [G] and [H] correspond to timbres 1, 2, 3, 4, 5, 6, 7, and 8.

(1) T1 is currently A20, indicating that PROG A20 has been assigned to timbre 1. Here you can specify the program assigned to each timbre. Use the VALUE slider and the △/▽ keys to select from the total of 200 programs in PROG A 00—99 and PROG B 00—99. In this example, select program A26. The display will show T1=A26:A.Bass. Next, press (B) and the reversed area will move to the right, specifying the program assigned to timbre 2. As before, use the VALUE slider and the △/▽ keys to set this to program A41. The display will show T2=A41:Piano 8'. In this way, press a CURSOR POSITION key to specify the timbre, and select the following programs for each timbre.

T1 = A26:A.Bass T2 = A41:Piano 8'
T3 = A22:Solo Sax T4 = A02:Brass
T5 = A12:Trumpet

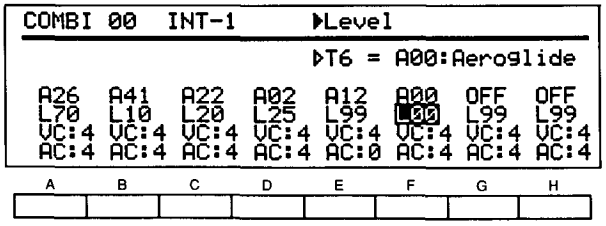
In this example, timbre 6 will be used only for an external tone generator, so the program selected for it does not matter. We will not use timbre 7, so use the VALUE slider to set it OFF. Instead of a program name, the display will show T7=Timbre OFF. Timbre 8 is also unused, so turn it off in the same way.



(2) Press DOWN once. The reversed area will move down one line, indicating Level. This indicates the volume level of the timbre. Raise and lower the VALUE slider while playing the keyboard, and notice that only the program you previously selected for the timbre becomes louder and softer. As in step (1), press a CURSOR POSITION key to specify the timbre, and make volume settings for each timbre as follows.

T1=L72 T2=L76 T3=L42 T4=L48 T5=L36 T6=L00

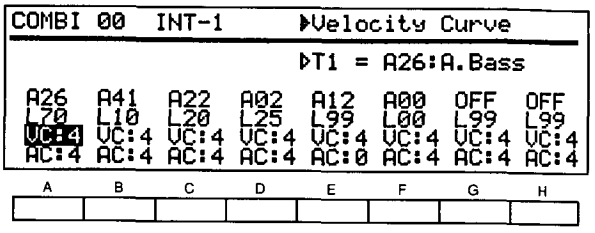
Timbre 6 will be used only for an external tone generator, so set it to L00 as shown. With this setting, timbre 6 will not produce sound. Timbres 7 and 8 are not used, so their settings do not matter.



(3) Press DOWN once. The reversed area will move down one row, indicating Velocity Curve. The velocity curve determines how the force with which a key is played (i.e., key velocity) will affect the volume or tone of the timbre. Use the △/▽ keys to change the setting to VC:1, and play the keyboard. Play softly at first, and gradually increase the force of your playing. Notice how the volume and tone of the timbre change in response to your playing. For softly played notes the change will be gradual, but for strongly played notes the change will be rapid. Next, change the setting to VC:8, and play the keyboard again. As before, notice how the volume and tone change in response to the force of your playing. This time the opposite effect will occur. For softly played notes, the change will be rapid, but for strongly played notes the change will be gradual. In this way, the velocity curve allows you to select from 8 different types of response patterns (1—8) that determine how key velocity will affect the volume and tone of each timbre. Press a CURSOR POSITION key to specify the timbre, and set each timbre to the following velocity curves.

T1=VC:8 T2=VC:8 T3=VC:8 T4=VC:1 T5=VC:1 T6=VC:1

For timbres 1, 2, and 3, the velocity switch will make strongly played notes disappear, so set them to VC:8 to maximize the response for softly played notes. On the other hand, timbres 4, 5, and 6 will be heard only for strongly played notes, so set them to VC:1 to maximize the response for strongly played notes. Timbres 7 and 8 are not used, so their settings do not matter.

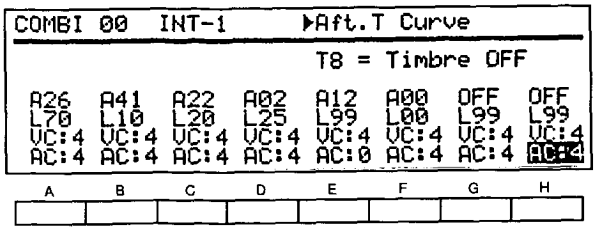


In this way, different velocity curves can be specified for each timbre in a combination. This means that when programs are used in a combination, the velocity curves specified for the individual programs will be ignored, and the curves specified for each program by the combination will take priority.

(4) Press DOWN once. The reversed area will move down a line, indicating the After Touch Curve. The after touch curve determines how pressure on the keyboard after playing a note (i.e., after-touch) will affect the pitch or tone of the timbre. Use the △/▽ keys to set this to AC:1, and press down on the keyboard. Press softly at first, and gradually increase the pressure. Notice how the volume and tone change as you press more strongly. For light pressure the change is gradual, but for strong pressure the change is rapid. Next set AC:8 and press down on the keyboard again. As before, notice how the volume and tone are affected by keyboard pressure. This time the effect is the opposite. For light pressure the change is rapid, but for strong pressure the change is gradual. In this way, an aftertouch curve can be selected from one of eight different response patterns (1—8) to determine how aftertouch will affect volume and tone. Press a CURSOR position key to select a timbre, and select an aftertouch curve for each timbre as follows.

Timbres 7 and 8 are not used, so their settings do not matter.

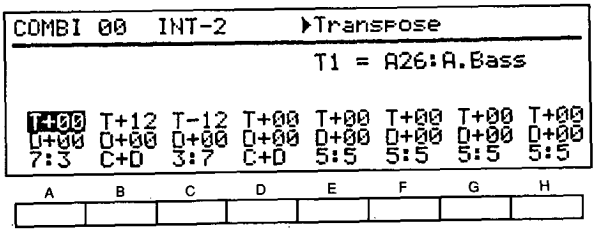
T1=AC:8 T2=AC:8 T3=AC:8 T4=AC:1 T5=AC:1 T6=AC:1



As with the velocity curve, an aftertouch curve can be selected for each timbre. This means that when a program is used in a combination, the aftertouch curve specified by the program will be ignored, and the curve specified in Edit Combination mode will be used.

3. Page 1

(1) To move to the next page, press the PAGE+ key located at the right of the display.



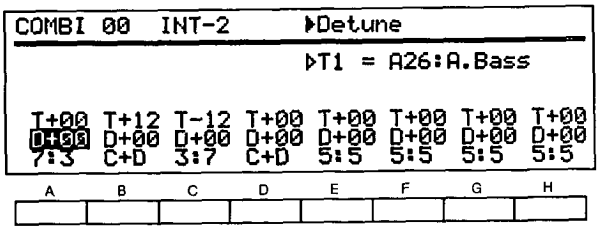
The reversed area is located at Transpose of timbre 1. Settings in this page will determine the pitch and output of each timbre. Transpose determines the basic pitch of each timbre, in chromatic steps. Play the keyboard to hear the pitch of timbre 1, and then press △ once. The display will change to T+01. Now play the keyboard again, and you will notice that the pitch of timbre 1 has risen by one chromatic step. Continue to press △, and the pitch will rise in chromatic steps. T+12 will be one octave higher than normal, and the maximum of T+24 will be two octaves higher than normal. Pressing ▽ will lower the pitch. Return the pitch to T+00, and press ▽ once more make the display read T-01, where the pitch will be one chromatic step lower than normal. T-12 is one octave lower, and T-24 is two octaves lower than normal. You can also raise and lower the VALUE slider to make general pitch settings. In this page, the CURSOR POSITION keys [A] [B] [C] [D] [E] [F] [G] and [H] correspond to timbres 1, 2, 3, 4, 5, 6, 7, and 8. Press a CURSOR POSITION key to specify the timbre, and make the following transpose settings for each timbre.

T1= T+00 T2= T+00 T3= T–24 T4=T+00
T5= T–12 T6= T+00

Timbre 6 is used only for an external tone generator. Since the transpose setting has no effect on an external tone generator, the value of this setting does not matter. In this example, set it to T+00. Timbres 7 and 8 are not used, so their settings do not matter.

(2) Press DOWN once, and the reversed area will move down one line to indicate Detune. This is a fine adjustment for the pitch of each timbre, in steps of one cent (1/100th of a chromatic step) from the pitch specified by the transpose setting (D+00). Each press of △ will raise the pitch by one cent (D+01, D+02, ...), and each press of ▽ will lower the pitch by one cent. You can also raise or lower the VALUE slider to make general pitch settings. The pitch can be adjusted over a range of D-50 to D+50. For a multi-type Combination such as in this example, the Detune settings are not so important, but when two or more Timbres are set to the same Program, detuned slightly and played simultaneously, the resulting chorus effect will result in a richer sound. In this example, set each Timbre to 00.

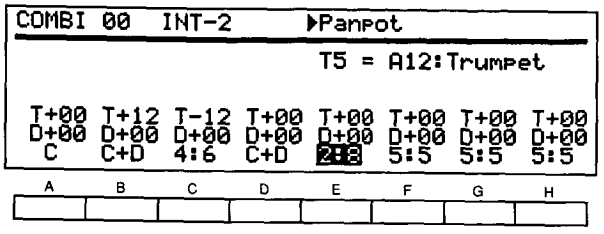
T1=D+00 T2=D+00 T3=D+00 T4=D+00 T5=D+00



(3) Press DOWN once, and the reversed area will move down one line to indicate Panpot. This determines how each the sound of each timbre will be assigned to the four effect inputs A, B, C, and D. A and B are the inputs for effect 1. The sound from each timbre can be sent to A only, B only, or A and B (adjustable over 9 steps from 1:9 to 9:1). C and D are the inputs to effect 2. The sound from each timbre can be sent to C only, D only, or both C and D (at equal levels). In this example, we will send timbre 3 (A22:Solo Sax) and timbre 5 (A12:Trumpet) through a delay,

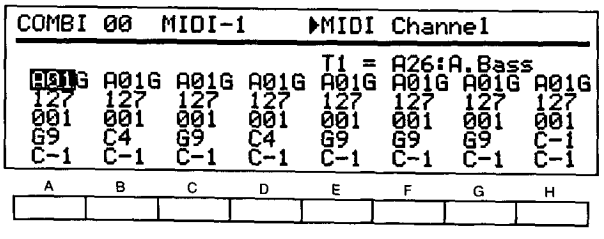
and then apply overall reverb to all timbres. Use the CURSOR POSITION keys to specify timbres, and assign each timbre as follows. For details, refer to Page 6 EFFECT. Timbres 7 and 8 are not used, so their settings do not matter.

T1=C T2=C+D T3=4:6 T4=C+D T5=2:8

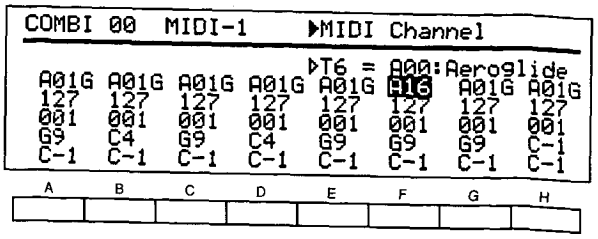


4. Page 3

(1) To move to the next page, press the PAGE+ key located at the right of the display. The parameters in this Page 2 determine how external MIDI devices are controlled, but in this example we will first finish our settings for internal timbres and controllers. Press the MARK key. This will memorize the current page and cursor position, so that later when we are editing another page, we can press JUMP to instantly return to the marked page and position. Now that we have marked Page 2, press PAGE+ once again to continue to the next page.

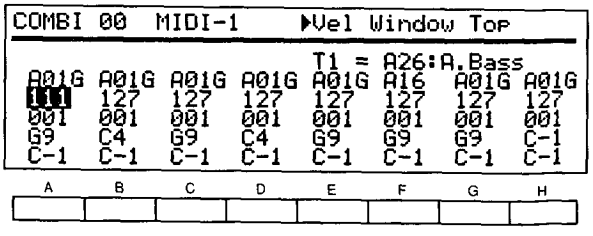


The reversed area is located at MIDI Channel of timbre __. This page contains settings for the MIDI transmission channel of each timbre. The T1/T3 has two MIDI OUT jacks; A and B. MIDI data for each timbre can be transmitted from either jack A or B. Select from A1—16 (MIDI OUT A channels 1—16) and B1—16 (MIDI OUT B channels 1—16). In this page, the CURSOR POSITION keys [A] [B] [C] [D] [E] [F] [G] and [H] correspond to timbres 1, 2, 3, 4, 5, 6, 7, and 8. Press a CURSOR POSITION key to select a timbre, and use the △/▽ keys and the VALUE slider to set MIDI channels as follows.

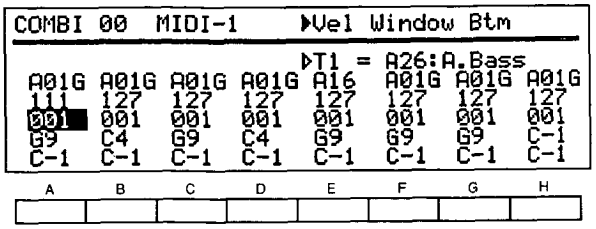


In this example we will be connecting an external tone generator to MIDI OUT A and controlling it from timbre 6, so set only timbre 6 to A16, and set all other timbres to match the global channel. When the specified channel matches the global channel, a "G" will be displayed after the channel number, and the External parameters (see 5. Page 2) of all timbres set to the same channel will have the same settings.

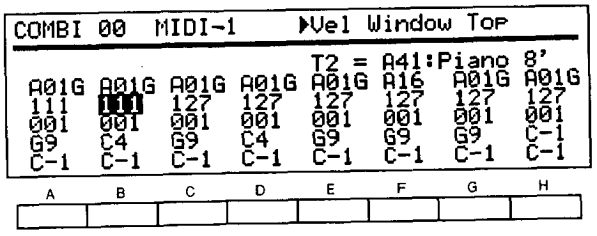
(2) Press DOWN once, and the reversed area will move down one line, indicating Vel Window Top. This determines the strongest note that will make each timbre sound, over a range of 1—127. The reversed area indicates that the velocity window top of the timbre is set to 127. If this setting is less than 127, notes played more strongly (i.e., with a higher velocity) than the specified value will not make this timbre sound. As this value is decreased, you will have to play more and more softly to make this timbre sound. Press the CURSOR POSITION key A to select timbre 1, and use △/▽ and the VALUE slider to set the velocity window top to T1=111.



(3) Press DOWN once, and the reversed area will move down one line, indicating Vel Window Bottom. This determines the softest note that will play each timbre, over a range of 1—127. The reversed area indicates that the velocity window bottom of timbre 1 is set to 1. If this value is greater than 1, notes played more softly (i.e., at a lower velocity) than the specified value will not be sounded by this timbre. Use the ▽ key and the VALUE slider to set the velocity window bottom to T1=111.



(4) Press UP once, and the reversed area will move up one line to indicate Vel Window Top again. Press CURSOR POSITION key B to specify timbre 2, and use the △ key and VALUE slider to set the velocity window top to T2=111.

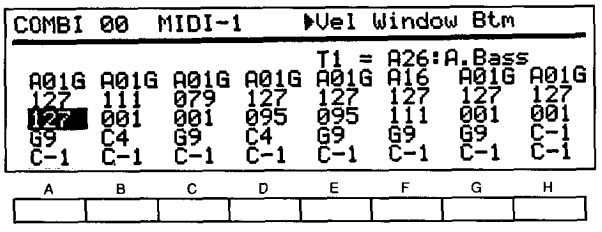


Press DOWN once again, and as before, use ▽ and the VALUE slider to set the velocity window bottom to T2=001. Then use the same procedure to set the velocity window top and bottom for each timbre as follows.

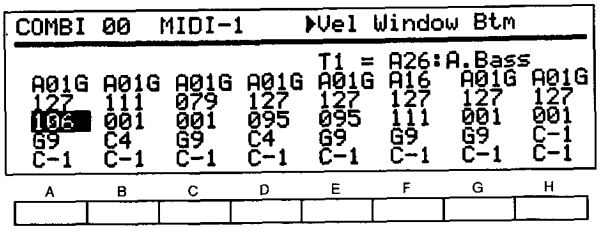
Vel Window Top T1=120 T2=120 T3=104 T4=127 T5=127 T6=127
Vel Window Bottom T1=001 T2=001 T3=001 T4=112 T5=105 T6=121

The velocity window allows you to specify which of the 127 velocity values (1—127) will play each timbre; just as though you were opening a "window" to allow a certain range of velocity values through. Only the notes whose velocity fits through this window will be allowed to play the timbre. If you want the same keys to play either a piano or a sax depending on the force of your playing, set the velocity window bottom of the strongly played timbre to a high value, and the velocity window top of the softly played timbre to a low value. If the window bottom of one timbre exactly matches the window top of the other timbre, the two sounds will be switched without ever being mixed. These window settings allow you to play the trumpet and brass sounds at the same time by changing your playing strength in the keyboard area which plays the piano and bass timbres.

It is not possible to set the velocity window top of a timbre lower than its velocity window bottom. Nor it is possible to set the bottom velocity above the top. The top is always the same as or above the bottom. To try this out, use the VALUE slider to gradually change the T1 velocity window bottom up to 127 while watching the display. When the bottom velocity increases beyond 111, the top velocity rises with it, and the two parameters reach the maximum of 127 together.

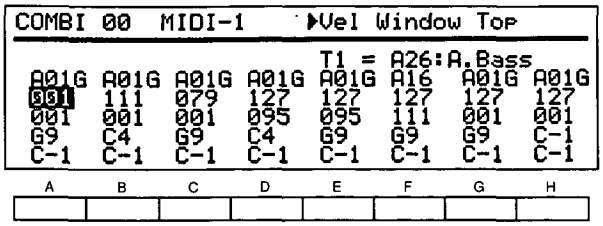


Next, gradually lower the VALUE slider, and notice that the top velocity remains at 127 while the bottom velocity decreases.

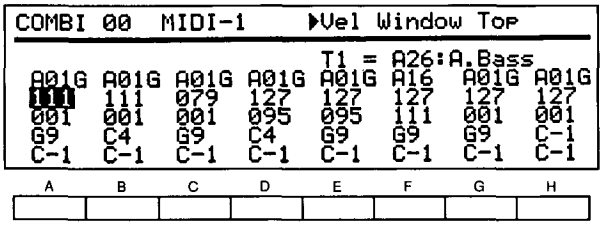


In this way, when the bottom velocity is increased above the currently set top velocity, the top velocity is adjusted upwards, modifying the previous window settings. The same occurs when the top is changed; when the top velocity is decreased below the currently set bottom velocity, the bottom velocity will be adjusted downwards, modifying the previous window settings. This can be useful, since it allows you to modify an already set top or bottom value by adjusting only a single parameter. For example if you want to adjust a velocity window to an overall lower setting, use CURSOR UP and CURSOR DOWN to select the Vel Window Top, and then use ▽ and the VALUE slider to first set

a bottom value of 001. If this value is lower than the previously set value, the bottom velocity will move down with the top, and be set to a new value.



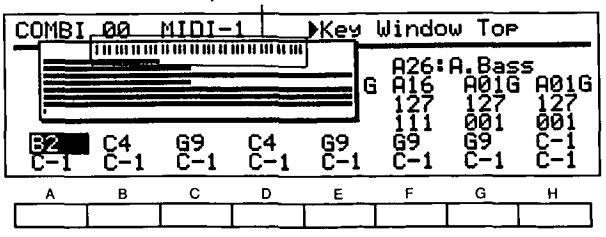
When the bottom value is set, stay at the Vel Window Top and use △ and the VALUE slider to set a top value of 111. The new velocity window is now set.



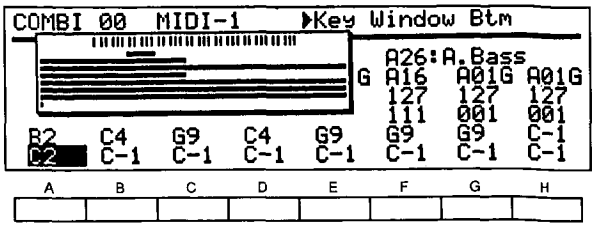
You can move the velocity window to a higher location in the same way. In this case, use the CURSOR UP and DOWN keys to select Vel Window Bottom, and first use △ and the VALUE slider to set the top. Then stay at the Vel Window Bottom and use ▽ and the VALUE slider to set the bottom. This method can also be used to set the key window which we will be learning about next.

(5) Press DOWN once, and the reversed area will move one line down to indicate Key Window Top. Eight bar graphs will appear in the display. These indicate the upper limit of the note range (C-1 — G9) which will play each timbre. Press CURSOR POSITION key A to specify timbre 1, and use △/▽ and the VALUE slider to set the key window top to T1=B2.

This part differs from model to model.



(6) Press DOWN once, and the reversed area will move down one line to indicate Key Window Bottom. This specifies the lower limit of the note range (C-1 — G9) that will play each timbre. Use ▽ and the VALUE slider to set the key window bottom of timbre 1 to T1=C2.

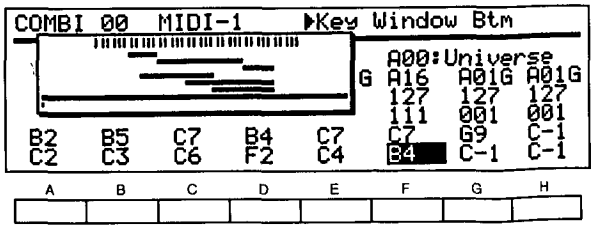


(7) Press UP once, and the reversed area will move up one line to indicate Key Window Top again. Press CURSOR POSITION key B to specify timbre 2, and use △/▽ and the VALUE slider to set the key window top to T2=B5. Then, use the same procedure to set the key window top and bottom of each timbre to the following values.

Key Window Top T1=B2 T2=B5 T3=C7 T4=B4 T5=C7 T6=C7

Key Window Bottom T1=C2 T2=C3 T3=C6 T4=F2 T5=C4 T6=B4

The key window settings allow you to specify a given range of the 128 MIDI notes that will play each timbre; just as though you were opening a "window" to allow a certain range of note values through. From the top down, the eight bar graphs correspond to timbres 1—8, and indicate the range of notes for which the timbre will sound. The upper part of the bar graph shows the position of the black keys (this will be different for the T1, T2, and T3) as a helpful reference. In this example, the windows for the trumpet and brass timbres are set to overlap in the area of C4—B4, so notes played in this area will sound both timbres.



As we mentioned when explaining velocity window settings, a timbre's key window top cannot be set lower than the window bottom. Nor can the window bottom be set higher than the window top. If you attempt to set the top key below the bottom key, the bottom key will automatically be adjusted to be the same as the top key. This allows you to adjust either the Key Window Top or Bottom parameter to reset the range of a window, just as explained for the velocity window. To summarize the procedure,

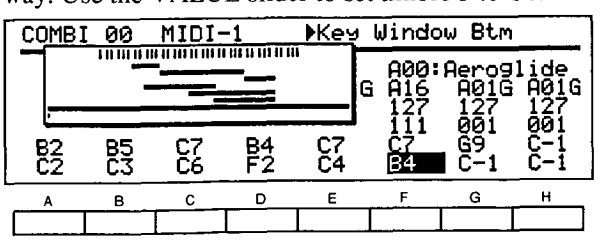
When you want to move the window range higher, ...

1. Use UP/DOWN to select Window Bottom.
2. Use △ and the VALUE slider to set the window top.
3. Use ▽ and the VALUE slider to set the window bottom.

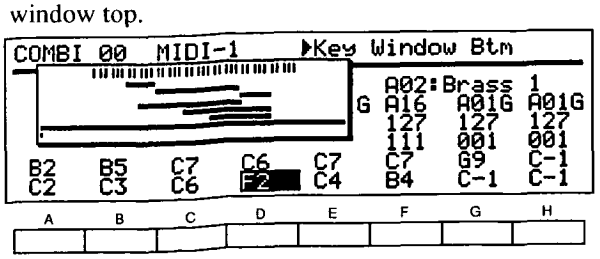
When you want to move the window range lower, ...

1. Use UP/DOWN to select Window Top.
2. Use ▽ and the VALUE slider to set the window bottom.
3. Use △ and the VALUE slider to set the window top.

When making settings for several windows in Edit Combination mode, be aware of how the VALUE slider operates. Take another look at steps (2)—(7) and notice that after specifying a timbre, you then made settings for its window top and window bottom before continuing to the next timbre. Notice what would happen if you slightly modified this procedure to first set the window tops for all six timbres and then began to set the window bottoms. The key window tops for the six timbres have been set as shown in the diagram. Next we press the DOWN key to specify Key Window Bottom. We press the CURSOR POSITION key A to select timbre 1, and use △/▽ and the VALUE slider to set this to C2. Next we press B to select timbre 2 and set it to C3 in the same way. Use the VALUE slider to set timbre 3 to C6.



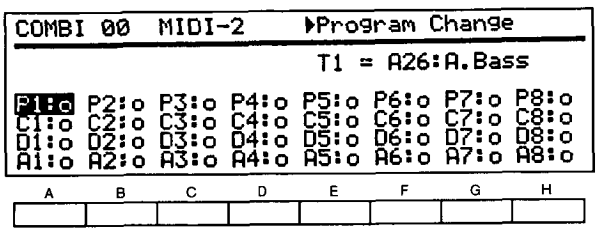
Next is timbre 4. If we lower the VALUE slider to set this to F2 as we did for the other timbres ..., the previously set window top of B4 is raised. This is because the window bottom of timbre 3 which we just finished setting was higher than the window top of timbre 4, and the VALUE slider was at this location when we switched to timbre 4, thus bringing up the low window top.



This means that we must press UP once again and reset the window top. If we had used only the △/▽ keys, this would not have occurred, but when using the VALUE slider, it is possible that the starting point of the slider will cause a different value change unexpectedly. To avoid wasting time when setting velocity windows and key windows, it is best to set the top and bottom for one timbre at a time.

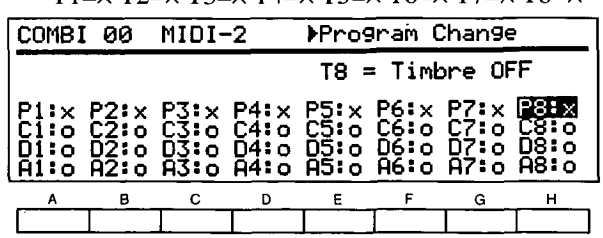
5. Page 4

(1) To move to the next page, press the PAGE+ key located at the right of the display.



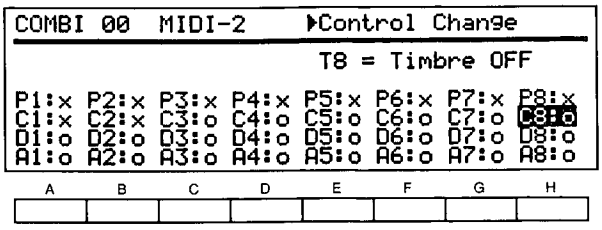
The reversed area is located at the Program Change filter of timbre 1. Settings in this page determine how MIDI program changes, control changes, aftertouch, damper switch, etc. from external devices will affect each timbre. When set to "○" the data will be received, and when set to "×" the data will be ignored. In this page, the CURSOR POSITION keys [A] [B] [C] [D] [E] [F] [G] and [H] correspond to timbres 1, 2, 3, 4, 5, 6, 7, and 8. First we will set the program change filter. Since in this example we do not expect to control the T1/T3 from an external device, these settings do not really matter, but we will set them all to "×" anyway.

T1=× T2=× T3=× T4=× T5=× T6=× T7=× T8=×



(2) Press DOWN once, and the reversed area will move down one line to indicate Control Change. This ○ / × setting determines whether or not each timbre will be affected by controllers such as joystick or foot controller. Press a CURSOR POSITION key to specify each timbre, and use △/▽ and the VALUE slider to set the control change filter for each timbre as follows.

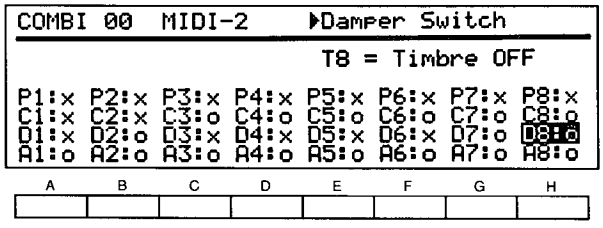
T1=× T2=× T3=○ T4=○ T5=○ T6=○ T7=○ T8=○



Since effects such as pitch bend will be used mainly for the solo, we will set the piano timbres so that they will not receive control change data.

(3) Press DOWN once, and the reversed area will move down one line to indicate Damper. This ○/× setting determines whether or not each timbre will be affected by the damper pedal. Press a CURSOR POSITION key to specify each timbre, and use △/▽ and the VALUE slider to set the damper switch filter for each timbre as follows.

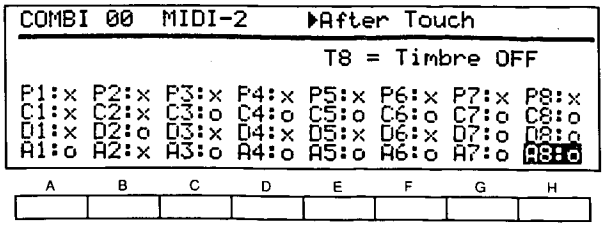
T1=× T2=○ T3=× T4=× T5=× T6=× T7=○ T8=○



Unlike control change or aftertouch, damper pedal effects are not usual for instruments other than piano. If the damper pedal simultaneously affected multiple instruments (i.e., timbres) in a combination, the effect would be rather difficult to use when playing in realtime. In this example we will make settings so that the damper pedal affects only the piano.

(4) Press DOWN once, and the reversed area will move down one line to indicate After Touch. This ○/× setting determines whether or not each timbre will be affected by the aftertouch. Press a CURSOR POSITION key to specify each timbre, and use △/▽ and the VALUE slider to set the aftertouch filter for each timbre as follows.

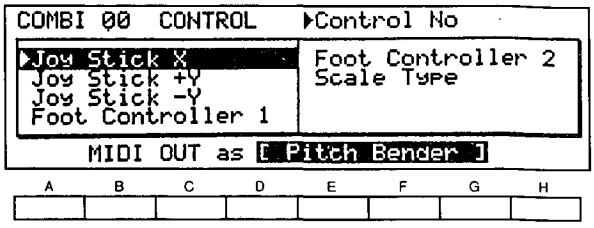
T1=○ T2=× T3=○ T4=○ T5=○ T6=○ T7=○ T8=○



As with control changes, aftertouch is not usually used by a piano. In this example we will set timbre 2 to ignore aftertouch.

6. Page 5

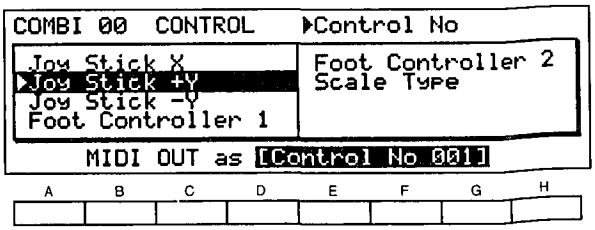
(1) To move to the next page, press the PAGE+ key located at the right of the display.



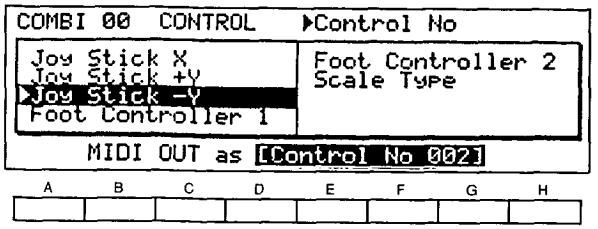
The reversed area is located at Joy Stick X andPitch Bend or Control No. Settings in this page determine the functions assigned to the joystick and the foot controller. The control number determines how each controller such as joystick or foot pedal is related to each function (pitch bend, modulation, etc.). A controller assigned to a control number can transmit control data to external MIDI devices. Different MIDI devices are able to receive different controller numbers, and the result will also be different for each device. The MIDI implementation chart for each device will tell you which control messages it receives, and how it responds to each control message.

First we will specify the control number (000—101) which will be transmitted when the joystick is moved. Joy Stick X determines the control number transmitted for horizontal movement. This is normally set to pitch bend, so use △/▽ and the VALUE slider to set it to Pitch Bend.

(2) Press DOWN once, and the reversed area will move one line down to indicate Joy Stick +Y. This determines the control number transmitted when the joystick is moved in the +Y (up) direction.

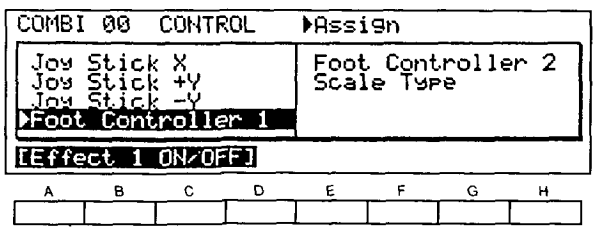


(3) Press DOWN once, and the reversed area will move one line down to indicate Joy Stick -Y. This determines the control number transmitted when the joystick is moved in the -Y (down) direction.

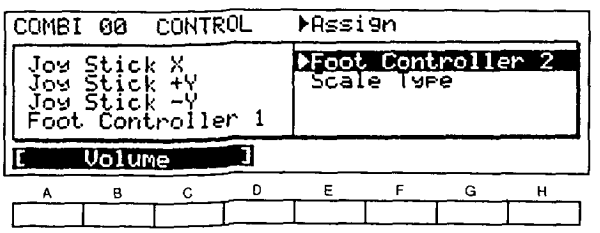


Normally, +Y is used for pitch modulation and -Y is used for VDF modulation, so set these to 001 and 002.

(4) Press DOWN once, and the reversed area will move down one line to indicate Foot Controller 1. This determines the function assigned to foot controller 1. Either a pedal switch (Korg PS-1, PS2) or a volume pedal (Korg EXP-2) can be used here. A pedal switch can be used to move up/down through combination numbers, or turn effects 1 and 2 on/off. A volume pedal can be used to control volume, VDF cutoff, effect balance, or data entry. In addition to controlling the T1/T3 itself, control numbers can be specified as for the joystick to control external MIDI devices. Press the CURSOR POSITION key (A) and use △/▽ and the VALUE slider to select the function. In this example we will assign foot controller 1 to Effect 1 ON/OFF.

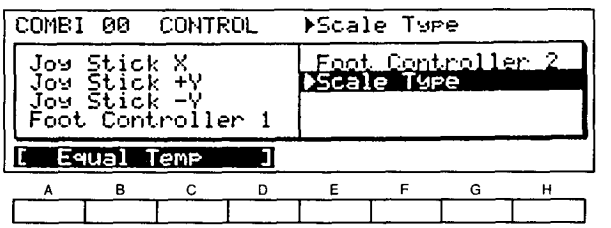


(5) Press DOWN once, and the reversed area will move to the top line of the next column to indicate Foot Controller 2. This setting determines the function assigned to foot controller 2. You can select from the same functions as for foot controller 1. In this example, we will assign foot controller 2 to Volume.



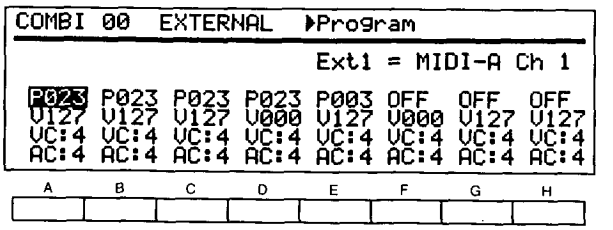
Connect a PS-1 pedal switch to Foot Controller 1, and a EXP-2 pedal controller to Foot Controller 2. The pedal switch will switch the delay on/off for the trumpet and sax, and the foot controller will regulate the overall volume.

(6) Press DOWN once, and the reversed area will move one line down to indicate Scale Type. This specifies a scale which will be used by all timbres, allowing you to use temperaments other than the conventional equal temperament. Press the CURSOR POSITION key [B], and use △/▽ and the VALUE slider to select the scale. For each scale type, try playing various octaves and chords on the keyboard to see how the scale types differ. This scale type setting is very effective in bringing out the characteristics of individual instruments. However since it applies in the same way to all timbres in the combination, combinations which use several different instruments (as in our example) may not be able to take advantage of this. For this example, set the scale type to Equal Temperament.



7. Page 2

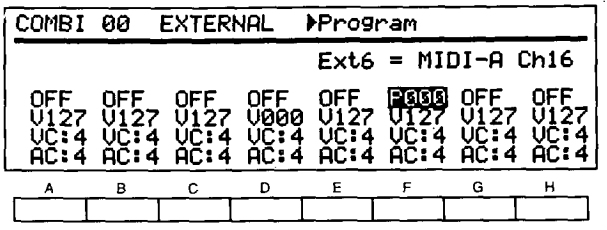
(1) Now let's return to page 2. Press the JUMP key once.



The reversed area is located at External Program of timbre 1. Settings in this page determine how external MIDI devices such as tone generators or sequencers will be controlled from the T1/T2/T3. The first parameter external program determines the program number (000—127) transmitted to the external MIDI device being controlled by each timbre. In this page, the CURSOR POSITION keys

[A] [B] [C] [D] [E] [F] [G] and [H] correspond to timbres T1, T2, T3, T4, T5, T6, T7, and T8. Press a CURSOR POSITION key to specify a timbre, and use △/▽ and the VALUE slider to set the following external programs for each timbre.

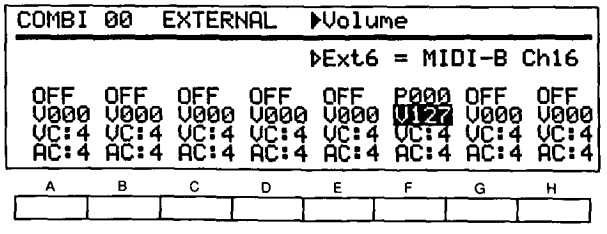
T1=OFF T2=OFF T3=OFF T4=OFF T5=OFF T6=P000



In this example, only timbre 6 will be controlling an external tone generator, so set the external program for all other timbres OFF. With these settings, timbres other than 6 will not transmit MIDI data. Timbres 7 and 8 are not used, so their settings do not matter.

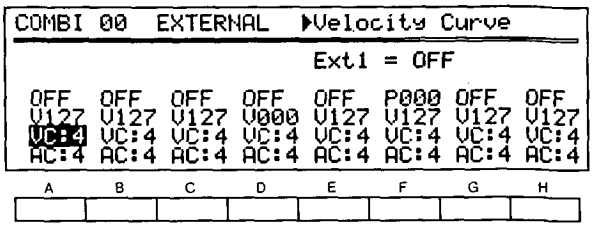
(2) Press DOWN once, and the reversed area will move one line down to indicate External Volume. This determines the MIDI volume message (000—127) transmitted to the external MIDI device being controlled by each timbre. In this example, volume settings for other than Timbre 6 do not matter. Incidentally, all Timbres other than 6 are set to the same MIDI channel, so modifying a parameter for one Timbre will affect the corresponding parameter for the other Timbres. Settings for Timbre 6 will depend on the type of MIDI device which is connected, but in this example set V=127.

T1=V000 T2=V000 T3=V000 T4=V000 T5=V000 T6=V127



(3) Press DOWN once, and the reversed area will move one line down to indicate External Vel Curve. This setting determines how your playing strength will determine the velocity of the transmitted MIDI note data. For each timbre, select one of 8 different patterns of change (1—8). Details of the velocity curve are explained in 2.Page 0 (3). Press a CURSOR POSITION key to specify a timbre, and use △/▽ and the VALUE slider to specify the following external velocity curves for each timbre.

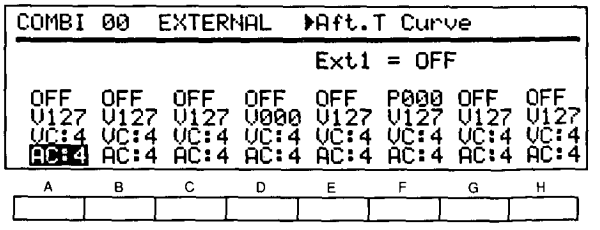
T1=VC:8 T2=VC:8 T3=VC:8 T4=VC:1 T5=VC:1 T6=VC:1



In this example, only timbre 6 will be controlling an external tone generator, so the other settings do not matter.

(4) Press DOWN once, and the reversed area will move one line down to indicate External Aft Touch Curve. This setting determines how aftertouch will be transmitted to the external MIDI device being controlled by each timbre. For each timbre, select one of 8 different patterns of change (1—8). For details of the aftertouch curve, refer to 2.Page 0 (4). Press a CURSOR POSITION key to specify a timbre, and use △/▽ and the VALUE slider to specify the following external aftertouch curves for each timbre.

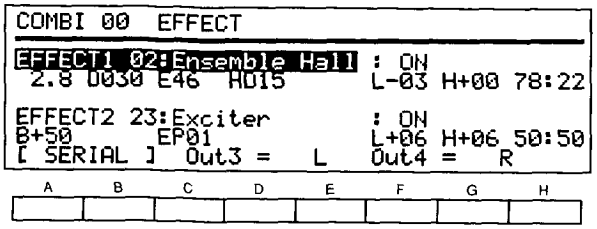
T1=AC:8 T2=AC:8 T3=AC:8 T4=AC:1 T5=AC:1 T6=AC:1



In this example, only timbre 6 will be controlling an external tone generator, so the other settings do not matter.

8. Page 6

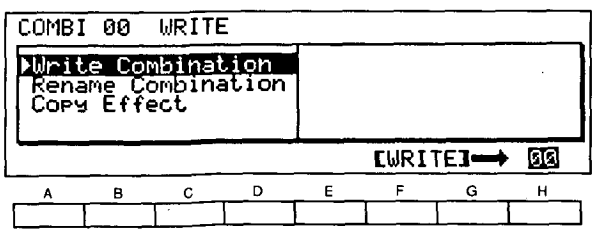
(1) Press the BANK/PAGE key 6 to move to Page 6.



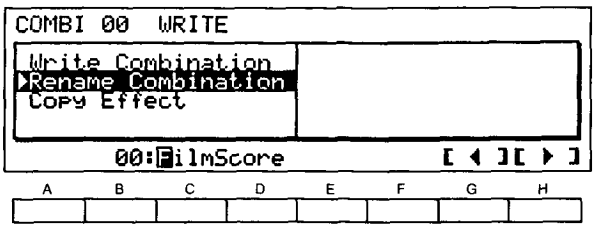
Settings in this page determine the effect that applies to the entire combination. The details of the effect are the same as in the effect page of Edit Program mode. Remember that the effect is not set for individual combinations, but for all the programs (=timbres) in the entire combination. In other words, in the same way as for Scale Type, the effect settings of each individual program will be ignored by the combination. Also, in Edit Program mode, the oscillator level being sent to the effect is fixed (just like the effect placement setting); but in a combination you can make settings to specify the input and level of each timbre. These settings are determined by panpot parameters of Page 1. In this example we will not not make effect settings in this page, but will use the Effect Copy function explained below.

9. Page 7

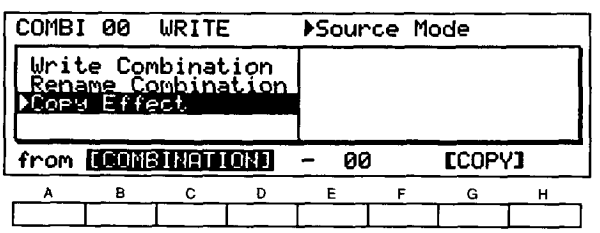
(1) To enter this last page, press the PAGE+ key located at the right of the display.



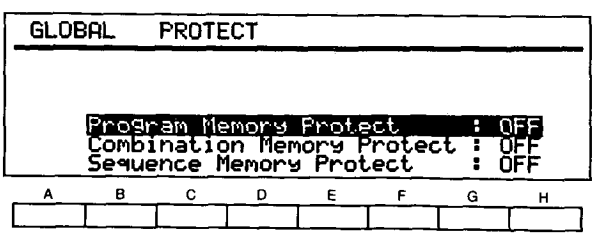
The reversed area is located at Write. This function writes an edited combination into internal memory. Unless you write your newly edited combination into memory, all settings will be returned to their initial values when you select another combination, and your edits will be lost. Before we write, let's give a new name to our edited combination. Press DOWN once, and the reversed area will move one line down, indicating Rename. Here you can give a combination a 10-character name using alphabetical characters and symbols. The cursor is now located at the first character, indicating that this character can now be modified. Use ◀/▶ (CURSOR POSITION keys [G] and [H]) to move to the character you want to modify, and use the VALUE slider and △/▽ keys to select a character.



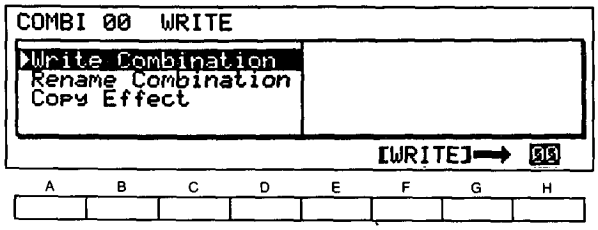
(2) Press DOWN once, and the reversed area will move to the last line, indicating Copy Effect. This function lets you copy the effect parameters from a combination, program, or song in internal memory to the combination you are now editing. This lets you use a previously created effect for the combination now being edited. In this example we will apply a delay only to the solo instruments, and then add overall reverb. To accomplish this we will use effects in serial placement, with effect 1 as delay and effect 2 as reverb. Let's copy the effect parameters from internal Combination memory 15. Press CURSOR POSITION key [B] and select whether to copy effect parameters from a program, from a combination, or from a song. Next press CURSOR POSITION key [E] and use △/▽ and the VALUE slider to specify the number of the setting you want to copy. When you press CURSOR POSITION [G] the specified effect parameters will be copied into the combination you are now editing.



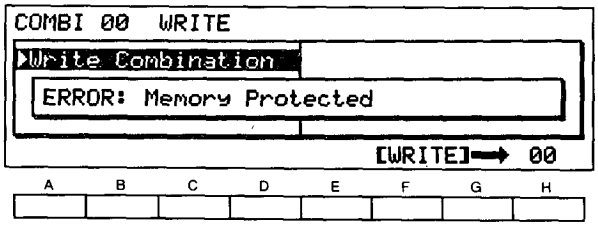
(3) There is one more important step before writing your new combination into memory; to turn protect off. Exit Edit Combination mode and enter Global mode. Press the mode selector key GLOBAL, and press BANK/PAGE key 6.



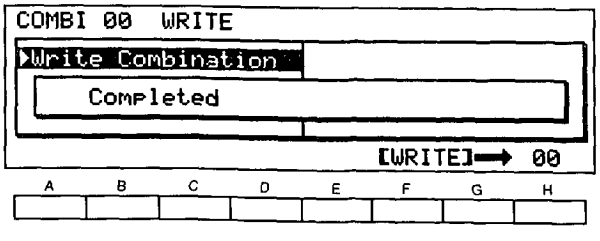
Press DOWN once. The reversed area will move down one line, indicating Combination Memory Protect. Check whether the display at right is ON. If it is OFF, use △/▽ to set this ON. Then return to Edit Combination mode. Press the mode select key E.COMBI, and press BANK/PAGE key 7 to return to Write Combination. Press the CURSOR POSITION key [H], and use △/▽ and the VALUE slider to specify the number into which to write your newly created combination. For this example, select 00.



Next press the CURSOR POSITION key [F] to execute writing. The display will ask "Are You Sure?", so press [YES] (CURSOR POSITION key [G]). If the display show, ERROR, combination memory protect is on, and writing is not possible. The protect function is provided so that valuable data is not unintentionally written over.



Return to Global mode, and turn off combination memory protect. As before, press the mode selector key GLOBAL and press BANK/PAGE key 6. Press DOWN once. The reversed area indicates Combination Memory Protect. This time, use the ▽ to turn this OFF. Now return again to Edit Combination mode, press the mode select key E.COMBI, and press BANK/PAGE key 7. As before, return to Write Combination, and specify combination number 00 to be written into. This time the display will show "Write Completed". The combination data previously in 00 has been replaced by your newly created combination.



Now turn combination protect on again, so that you do not accidentally overwrite your new combination.

BASIC SEQUENCER OPERATION

Unlike sound data such as Program/Combination data, sequence data (musical performance data) created on the T1/T2/T3 is forgotten when the power is turned off, and will be lost unless you have saved it to disk. To avoid losing hours of work, we suggest that you save your work to disk at regular intervals while creating it. In addition, it is a good idea to make a backup copy of important data on another disk.

Before actually creating sequence data, format a disk on which to save the data. If memory already contains sequence data that you want to keep, remember to save it to disk. The section "Sound creating procedure — Backing up the pre-loaded settings" (page 25) explains how to format a disk and save data to disk.

When you have finished these preliminaries, clear the contents of sequence memory by turning the power off and then on again.

PROCEDURE FOR CREATING A SONG

The procedure for creating a song is shown in figure 1. First, select a song number 0—19, and determine the time signature and tempo for that song.

Next, select a track to record, and record on that track. You can choose sounds from the 200 internal Programs. If desired, you can change the sound to another Program after recording. There are two ways to create a song; the first is to record directly onto a track, and the second is to create a Pattern of 1—99 measures and place it into a track. Both track recording and pattern recording can be done either in realtime (your playing will be recorded just as you play it) or in step recording (entering notes and chords one by one, specifying the length and velocity of individual notes). When realtime recording onto a track, you can also use punch recording, which will record only over specified measures of a track. This is especially handy when an otherwise correctly-recorded track contains mistakes in only a few measures.

From the above recording methods, select the method most appropriate for the music and song structure you want to create. In addition, the T1/T2/T3 provides various editing functions that help you to create songs quickly and efficiently. Track edit functions allow you to erase the musical data from specified measures in a track, or copy musical data from one track to another track. Pattern edit functions allow you to copy musical data from a pattern to another pattern, or copy musical data from specified measures of a track into a pattern. Event edit functions allow you to modify the timing and pitch of individual notes.

In addition, pan settings for each track and overall effect settings can be made for each song.

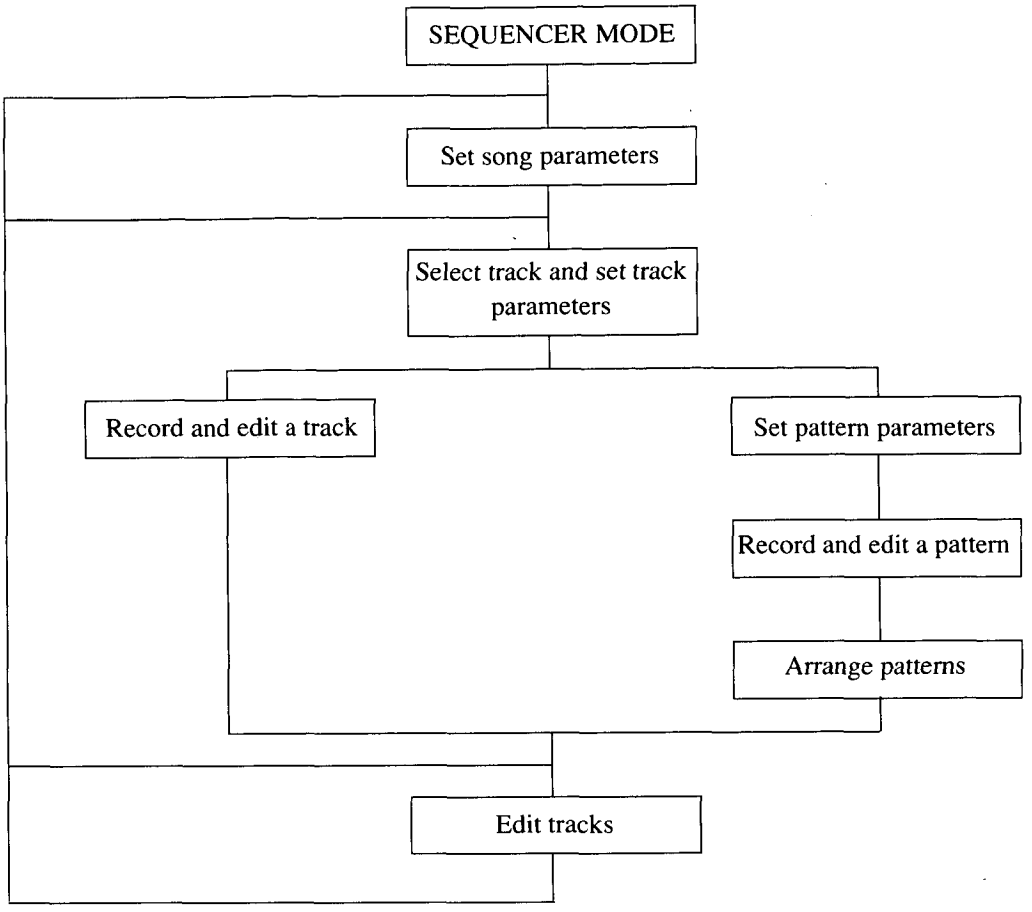


Figure 1 Procedure for creating a song

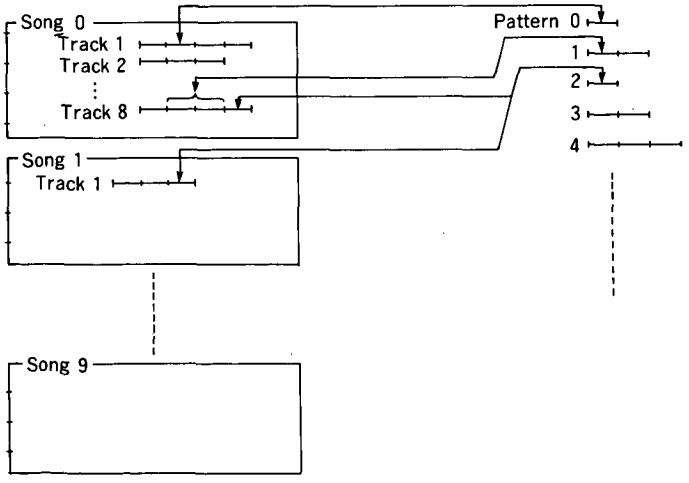


Figure 2 How songs, tracks, and patterns are related

SEQUENCER RECORDING

Let's go ahead and try recording into the sequencer. In this example we will be recording tracks 1 and 2 in realtime. Operate your T1/T2/T3 as explained below.

(1) Press the mode select key [SEQ]. You are now in sequencer mode.

(2) Press the BANK/PAGE key [0] to get the REC/PLAY (see page 59).

(3) Use the [DOWN] key to move the cursor to the bottom line.

(4) Press [A] (Song), and use the VALUE slider and ▽ key to select song 0 (S00).

(5) Press [C] (Track), and use the VALUE slider and ▽ key to select track 1 (Trk 1).

(6) Press [UP] three times, and press [A]. Select a program for track 1 using the VALUE slider and △/▽ keys.

(7) Make sure that the metronome is on. (The second line from the bottom should read MM:ON.) If not, use the [UP][DOWN] keys to move the cursor to the second line from the bottom, press [D], and press △ to make it read MM:ON.

We are now ready to begin recording.

(8) Press [REC].

The START/STOP key will begin blinking, and the metronome will begin sounding. This key will blink and the metronome will sound at the beginning of each beat. Use the DOWN key to move the cursor to the bottom row, and press [B]. Use the VALUE slider to adjust the tempo.

(9) Press the START/STOP key.

After a two-measure countdown, recording will begin, and all your playing will be recorded. To indicate the beginning of each measure, the metronome will beep louder and the key will blink red.

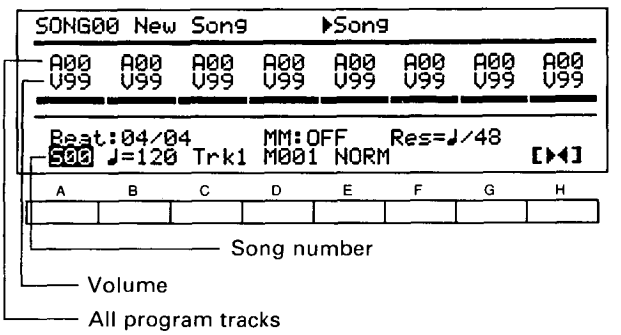
(10) When you have played enough, press START/STOP once again.

Recording will end. Now you can listen to what was recorded.

(11) Press START/STOP.

Playback will begin. When the last measure has been played back, playback will end automatically. If you press START/STOP once again, playback will begin from the beginning of the song. If you press START/STOP in the middle of the song, playback will pause. Pressing START/STOP again will continue playback from where you paused. While pausing, press the DOWN key to move the cursor to the middle of the lower two rows, and press [H] (▶◀ song reset) to return to the beginning of the song.

Now let's record on track 2. Select track 2 for recording, and specify a Program.



(12) Use [DOWN] to move the cursor to the bottom line.

(13) Press [C] (Track), and use the VALUE slider and △/▽ keys to select track 2 (Trk 2).

(14) Use [UP] to move the cursor to the top line, press [B], and use the VALUE slider and △/▽ keys to select a program for track 2.

(15) Press [REC], and press [START/STOP].

After a two-measure countdown, recording will begin. The data that you recorded on track 1 will playback. (While recording on a track, other tracks containing data will also playback.)

CREATING A SONG

Now let's input the music shown in the following figure.




FM7
Gb7
FM7
7
G7
Gm7
Gb7
11
12
13
14

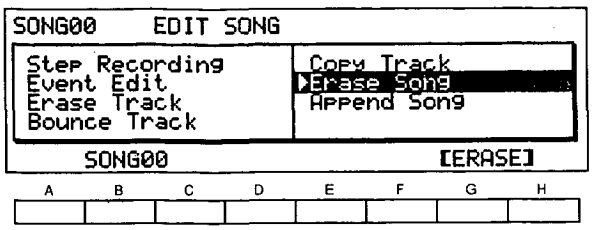

FM7
BbM7
Bb6
15
16
17
18
Am7
Dm7
Gm7
Gb7
19
20
21
22


FM7
F6
BbM7
Bb6
23
24
25
26
Am7
D7
Gm7
Gb7
27
28
29
30


FM7
31
32

(1) First we will erase the data we just recorded (Erase Song). Press the BANK/PAGE key [3] to get the Edit Song page.

(2) Press [DOWN] five times and move the cursor to Erase Song.



(3) Press [G] ([ERASE]) to erase the data.

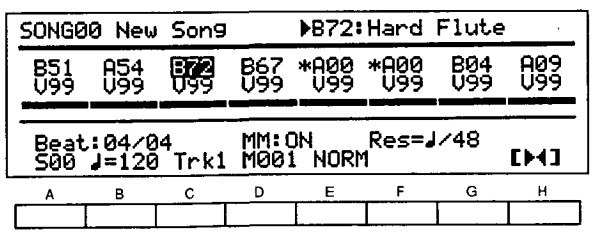
The data you previously recorded has been erased.

(4) Press the BANK/PAGE key [0]. The musical score indicates the program number to use for each track.

(5) Use [UP] to move the cursor to the top row, and press [H]. Use the VALUE slider and △/▽ keys to select program A09 for track 8.

This line indicates the programs for tracks 1—8 from left to right.

(6) As in step (5), press a key [A]—[G] and use the VALUE slider and △/▽ keys to select a program for each track.



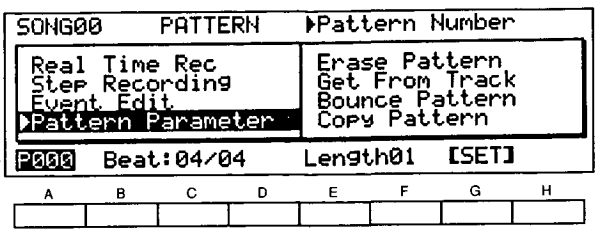
(7) Press the WRITE key (numeric key 9), and press [E] to write the selected program numbers. For realtime recording, the track programs and volumes will be automatically written, but in other cases resetting the song will return the settings to their previously written values, so be sure to write any modifications you make.

1. Inputting a drum part

We will begin by inputting the drum part. As you can see from the score, the drum part consists of the same pattern for measures 1 and 2, measures 3 and 4, and measures 5 and 6. In this example we will create a pattern for measures 1 and 2, and place it in track 8 at measures 1 and 2, measures 3 and 4, and measures 5 and 6.

(8) Press the BANK/PAGE key [0] to move the cursor to Trk, and use the VALUE slider and the △/▽ keys to select track 8.

(9) Press the BANK/PAGE key [5] to get the Edit Pattern page. Use [UP] [DOWN] to move the cursor to Pattern Parameter. The current settings of the pattern parameters will be displayed.
Specify the time signature and number of measures for the pattern you will use. In this example we will be using pattern 0.



(10) Press [A] (Pattern Number) and use the VALUE slider and the ▽ key to select pattern 0 (P000).

(11) Press [B] (Beat) and use the VALUE slider and the △/▽ keys to specify 4/4 (time signature).

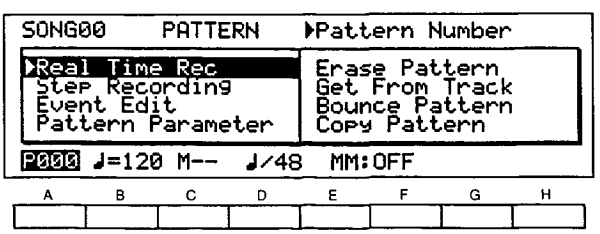
(12) Press [E] (Pattern Length) and use the VALUE slider and the △/▽ keys to select 2 (measures).

(13) Press [G] ([SET]), and pattern 0 will be set to two measures of 4/4 time.

Now we can begin recording. In this example we will be using realtime recording to record a pattern.

(14) Use [UP][DOWN] to move the cursor to Real Time Recording.

The recording settings will be displayed in the bottom line. Check the settings from left to right, and modify the values using the VALUE slider and △/▽ keys.

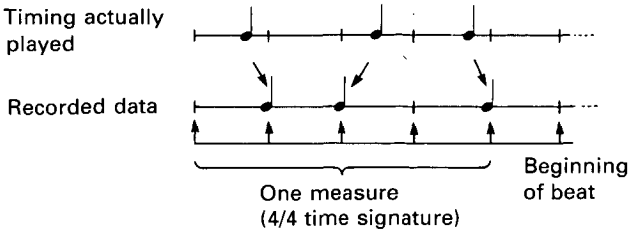


(15) The pattern number is displayed above the [A] key. Select pattern 0 (P000).

(16) The tempo for recording is displayed above the [B] key. Set this to ♩ = 122 as indicated in the score.

(17) The measure is displayed above the [C] key. Currently this is "--", but when recording begins, the current measure number will be displayed.

(18)The resolution is displayed above the [D] key. This determines the precision to which the timing of each note will be corrected. For example if this is set to ♩ /1, notes will be corrected to the beginning of each beat as shown in the diagram. Since the smallest rhythmic division of the drum part is an eighth note, you will set this to ♩/2.



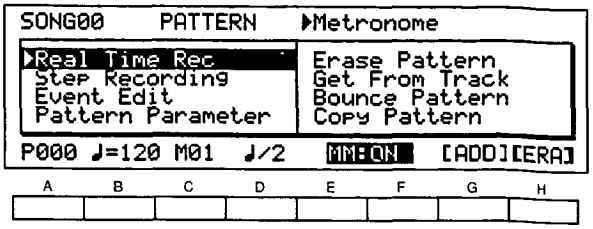
(19)The metronome on/off setting is displayed above the [E]. Set this on (MM:ON).

(20)Press the [REC] key to enter recording standby.

The metronome will begin sounding. Recording has not begun yet, so try playing the hi-hat along with the metronome. If the tempo is too fast, press [B] (Tempo), and use the VALUE slider and the △/▽ keys to adjust it.

Now we will begin recording.

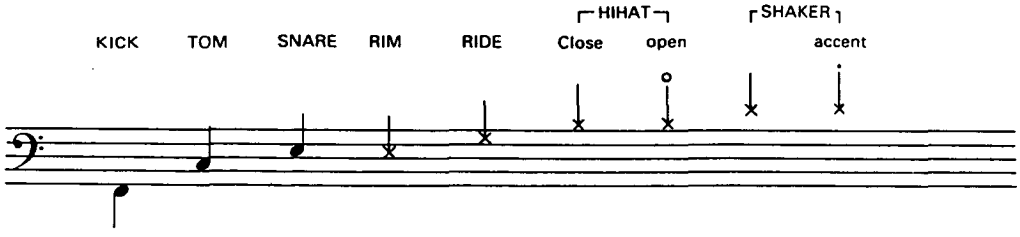
(21)Press [START/STOP].

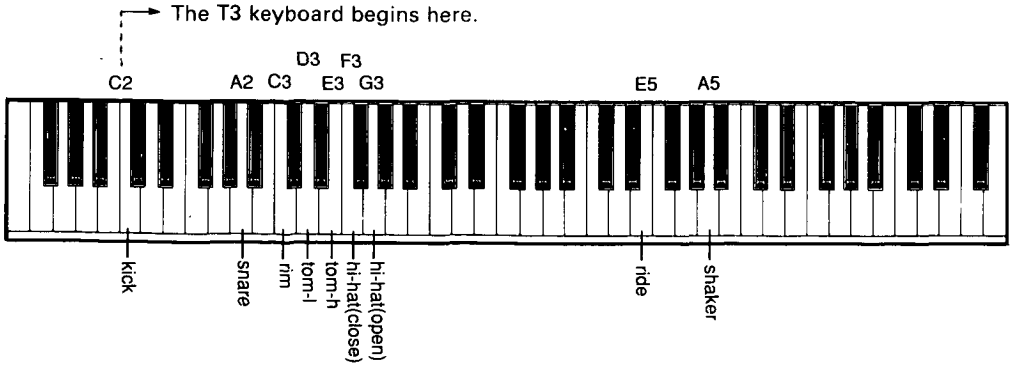


After a two-measure countdown, recording will begin. The display above the [C] key (Measure) indicates the measure. Notice that even though the specified pattern has only two measures, the metronome continues sounding and the measure indicator continues repeating 1 → 2 → 1 → 2 → ... In pattern recording mode, recording will continue repeating over the length of the pattern, and the notes played on each pass will be added to the previously recorded data. This allows you to easily build up complex rhythm patterns. For example you might first enter the hi-hat notes for two measures, then enter the rim shots for two measures etc., just as when using a conventional drum machine. In this example, enter the notes as shown in the score.

Note:

In this example, the countdown is two measures long, but the P7-3 Lead In setting allows you to change the countdown length.





■ If you make a mistake

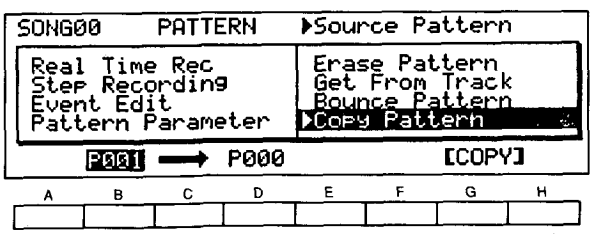
If you make a mistake while recording notes, erase the data as follows. There is no need to press [START/STOP] to exit recording. Use one of the following procedures while in recording mode.

Method 1: Using the ADD/RMV key.
Notice that the display above the [G] key shows ADD. This means that notes input from the keyboard will be recorded. Press [G] and press △ to change this to RMV. Now if you press and hold a note on the keyboard, recorded notes of that pitch will be removed from the recorded data as long as you continue pressing the note. To begin recording again, press ▽ to change the display to ADD.

Method 2: Using the ERA key.
The [H] key (ERA) is used to erase recorded data. While recording, press [G] and data of all pitches will be erased as long as you continue pressing [H]. When you release [G], recording will continue.

Create pattern 1 for measures 7 and 8 using the same procedure explained in steps (9)—(21). Measures 9 to 16 are the same as pattern 0, so there is no need to record them. Next come measures 17 to 26. We will copy pattern 0 (measures 1 and 2) to pattern 2, and add shaker notes.

(22)Use the [UP][DOWN] keys to move the cursor to Copy Pattern.



(23)Press [B] (Source Pattern), and use the VALUE slider and ▽ key to select pattern 0 (P000).

(24)Press [C] (Dest Pattern), and use the VALUE slider and △/▽ keys to select pattern 2 (P002).

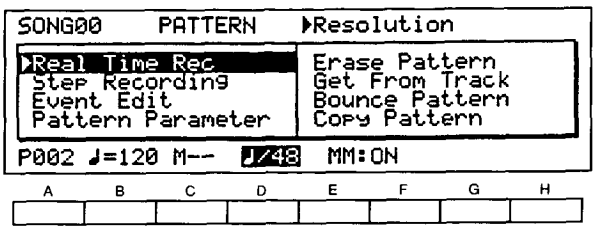
(25)Press [G] ([COPY]).

Pattern 0 will be copied to pattern 2. Now we will add a shaker to pattern 2. The procedure for real-time recording a pattern is the same as explained when creating pattern 0. To reproduce the rhythmic groove, we will set the resolution to ♩/48.

(26)Use the [UP][DOWN] keys to move the cursor to Real Time Recording.

(27)Press [A] (Pattern Number), and use the VALUE slider and △/▽ keys to select pattern 2.

(28)Press [D] (Resolution) and use the VALUE slider and ▽ key to select ♩/48.



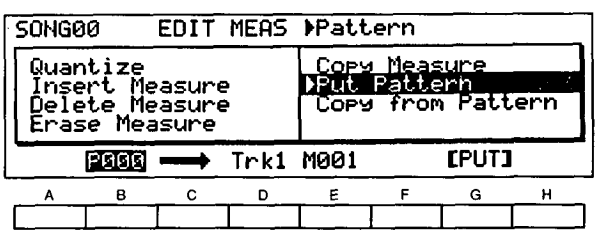
(29)Record the new part as already explained.

Was the shaker correctly recorded? Next create pattern 3 for measures 27 and 28, and pattern 4 for measures 31 and 32. The procedure is the same as explained in steps (8)—(21). From measure 17 to measures 29 and 30 (except for measures 27 and 28), existing patterns can be used as they are.

After creating the drum patterns in this way, remember to arrange the patterns in a track. There are two ways to arrange patterns in a track. One is to Copy from a pattern, and the other is to Put a pattern. In this example we will be showing how to Put a pattern.

First we will put pattern 0 into track 1 at measures 1/2, 3/4, and 5/6. Then we will put pattern 1 into measures 7/8 of track 8.

(30)Press the BANK/PAGE key [4] to get the Edit Measure page.



(31)Use the [UP], [DOWN] keys to move the cursor to Put Pattern.

(32)Press [B] (Pattern) and use the VALUE slider and ▽ key to select pattern 0 (P000).

(33)Press [D] (Dest Track) and use the VALUE slider and △/▽ keys to select track 8 (Trk 8).

(34)Press [E] (Dest Measure) and use the VALUE slider and ▽ key to select the first measure (M001).

A length of two measures has been specified for the newly created pattern 0. When you select the first measure you wish to copy (measure 1 in this ex-

ample), measures 1 and 2 of that track will automatically be placed in pattern 0.

(35)Press [G] ([PUT]) to put pattern 0 into track 8 at the first measure.

When Put is executed, the display at the [E] key (Dest Measure) will automatically advance by the number of measures in the pattern.

(36)Press [G] ([PUT]) twice, and pattern 0 will be put into track 1 at measures 3/4 and 5/6.

(37)Press [B] (Pattern) and use the VALUE slider and △/▽ keys to select pattern 1.

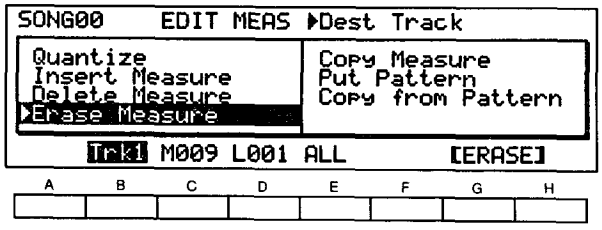
(38)Press [G] ([PUT]) to put pattern 1 into track 8 at measures 7/8.

To playback the track, press [PLAY/STOP].

If you make a mistake while Putting, re-input the correct pattern. If you have mistakenly put a pattern into measure 9 or beyond, delete the measure.

Here we will suppose that a pattern has been mistakenly put into measure 9 of track 8.

(39)Use the [UP][DOWN] keys to move the cursor to Erase Measure.



(40)Press [B] (Dest Track) and use the VALUE slider and △/▽ keys to select track 8 (Trk 8).

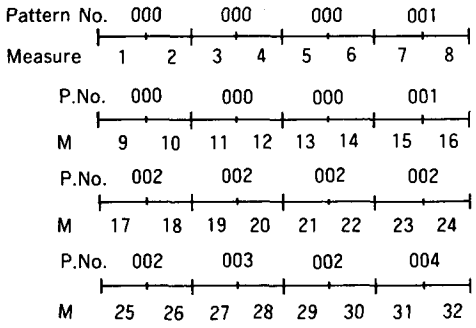
(41)Press [C] (Dest Measure) and use the VALUE slider and △/▽ keys to specify the measure to be deleted; in this example, measure 9.

(42)Press [D] (Measure Length) and use the VALUE slider and △/▽ keys to specify the number of measures to be deleted; in this example, 2 measures.

(43)Press [E] (Data) and use the VALUE slider and △/▽ keys to specify ALL.

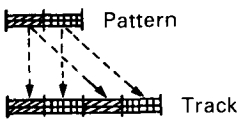
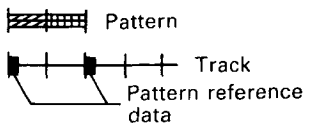
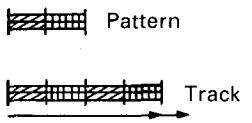
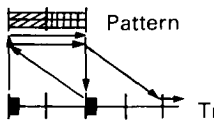
(44)Press [G] ([ERASE]) to erase the data.

This should give you an idea of the procedure. Now go ahead and put the patterns into the track as shown in the diagram.



The difference between Put Pattern and Copy From Pattern

There are two ways to arrange patterns in a track; the Put Pattern operation we have just explained, and the Copy From Pattern operation. The two operations are similar in that they are used to arrange patterns in a track, but the actual methods are different.

	COPY	PUT
Internal memory consumption	Uses much memory	Uses little memory
A measure in a track which uses a pattern, ...	can be edited. The original pattern is unaffected.	cannot be edited.
When a pattern is edited ...	the track playback is not affected.	the track playback is also affected.
When COPY or PUT are executed		
Playback		

"Copy From Pattern" actually copies the data from a pattern into the track. "Put Pattern" does not create a copy of the data, but places data into the track which tells the track to "refer to the pattern" when playback reaches that point. This conserves memory, but means that when you edit the pattern, all the locations which use that pattern will also be affected. If you want to use slightly different phrases in various parts of a song, "Copy From Pattern" and edit the data in the track.

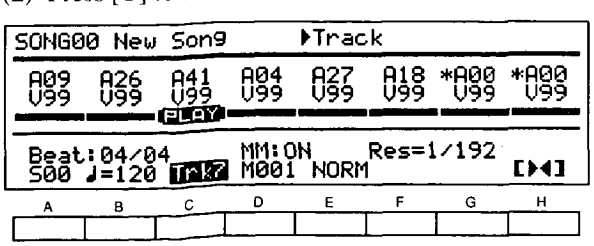
Inputting the bass part

Next we will input the bass part. Some of the phrases are a bit difficult, but go ahead and record it without paying much attention to mistakes. We will record the track in realtime.

(1) Press the BANK/PAGE key [0].

You should already be familiar with this page. Change the selection from track 8 to track 7.

(2) Press [C] to select track 7.



When you play the keyboard, the program B04 you selected for track 7 will sound. If the selection in step (2) is changed, the keyboard will play the program specified for the selected track. Even if you move to the previously explained pattern recording page, the keyboard will still play program B04.

When recording a pattern, change the setting in step (2) to select the track into which you will copy or put the pattern later.

Before recording, make sure that the resolution is set to ♩/48 so we will be able to create an effect of rhythmic "groove" as we did for the drum fill-in. If you modified the tempo when recording a pattern, press [H] (▶◀) and the tempo will be reset to the value first set for the song (♩=120).

(3) Press [REC].

You are now in recording standby. Practice the phrase by playing along with the metronome.

(4) Press [START/STOP].

After a two-measure countdown, recording will begin. Play the part to the end without worrying about mistakes. (If the P7-3 setting has been modified, the number of measures in the countdown will differ.)

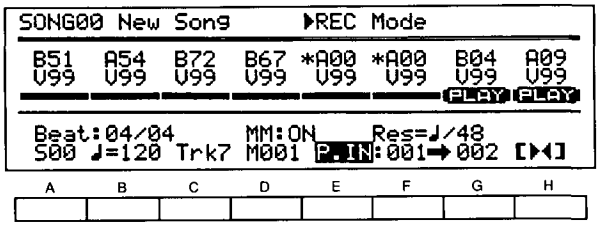
(5) Press [START/STOP].

This ends recording.

(6) Press [START/STOP].

The recording will play back. Do you notice any mistakes? Even if you made a few mistakes, there is no need to re-record the entire part from beginning to end. The Punch-in function will let you re-record only the measures which contained mistakes. In this example we will assume that there was a mistake in measure 3. If you follow the steps below and start recording from measure 1, measures 1 and 2 will play back, measure 3 will be re-recorded, and measures 4 and following will play back again.

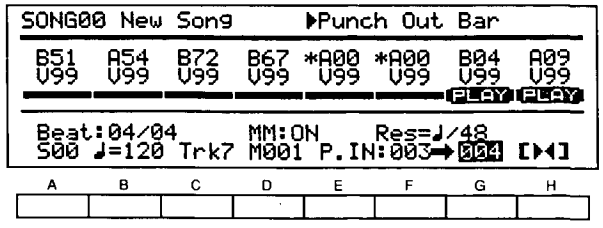
(7) Move the cursor to the bottom line, press [E] (Rec Mode), and press △ .



The display will change from NORM to P.IN, indicating Punch-In recording.

Specify the beginning and ending measure of the section to punch-in.

(8) Press [F] (Punch In Bar) and specify 3 (the third measure), and press [G] and specify 4 (the fourth measure).



Pressing [D] will allow you to set the measure from which to start playing back, but in this example we are punching in on measure 3, so we will begin playing back from measure 1.

(9) Press [REC], and press [START/STOP].

After a two measure countdown, the first measure will begin playing back, and only the third measure will be recorded. By repeating step (9) you can continue this as many times as you like. To hear what you have recorded, press [START/STOP] without pressing [REC].

If the timing of the punch-in recorded section is not right no matter how many times you try, use the Quantize function. Up to this point, you have specified the resolution before recording, but it is also possible to correct the timing of data in a track after it has been recorded. This is known as "quantization".

■ Quantize

Now let's try out the Quantize function. In this example we will quantize measure 3. As the musical score indicates, we will use a resolution of ♩ /4 to correct the timing.

(1) Press the BANK/PAGE key [4].

(2) Move the cursor to Quantize.

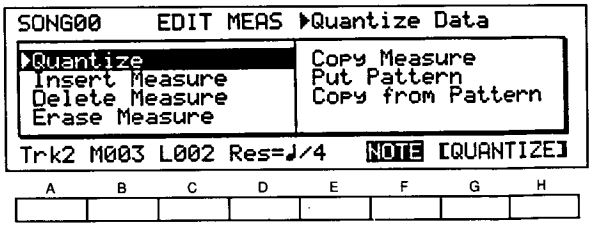
(3) Press [A] (Track) and select track 7 which contains the bass part.

(4) Press [B] (Measure) and specify the first measure to be quantized (measure 3).

(5) Press [C] (Length) and specify the length of the section to be quantized (1 measure).

(6) Press [D] (Resolution) and specify ♩ /4.

(7) Press [F] (Quantize Data) and specify NOTE.



This Quantize Data setting determines the type of data which will be quantized. When NOTE is selected, the timing of only the note data will be corrected.

(8) Press [G] ([QUANTIZE]).

The quantize function will be executed. Playback the result. If you don't like it, press [COMPARE] (bottom row numeric key 8) to return to the unquantized data.

3. Input the melody

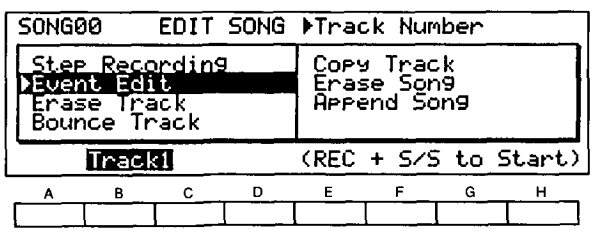
We will use a piano for the melody, and record the melody into track 1 in realtime. Press the BANK/PAGE key [0] and select track 1. Then input the melody as explained for the bass part. In order to preserve the natural timing of your playing, set the resolution to ♩/48.

■ Using event edit to insert program changes

Here we will explain how to make the program change while the melody is playing. At present we are using A41 Piano' 8. We will use event editing to insert program changes so that the first sixteen measures are played by A51 Piano2 8', and the last four measures are played by A71 Hard E.P. When using event edit to insert program changes, we must be careful to insert the program change in an appropriate location, so that the program will change smoothly without interrupting the melody. In this example, insert the program change at a location of about 4:36.

(1) Press the BANK/PAGE key [3] and move the cursor to Event Edit.

(2) Use the VALUE slider and the ▽ key to select track 1 which contains the melody part.

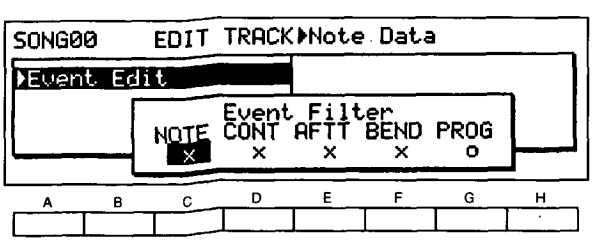


(3) Press [REC] and the Event Filter will be displayed.

The Event Filter determines which type of events will be displayed and edited in event editing. For example if only the Note item is set to "o", only the data indicating notes will be displayed and edited. In this example we want to edit program changes, so change the Prog setting to "o".

(4) Move the cursor to Prog and select "o".

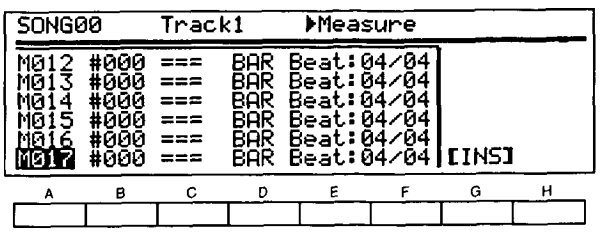
(5) Set all other event types to "×".



(6) Press the [START/STOP] key and event editing will begin.

The track does not yet contain any program change events, so we will create a new event.

(7) Move the cursor to measure 17, into which we will insert a program change.



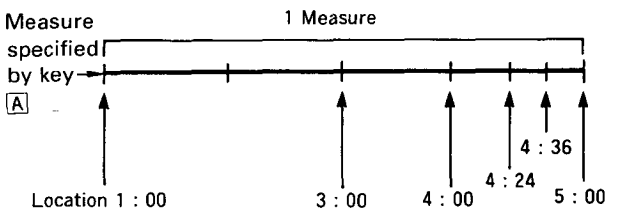
(8) Press [G] ([INS]).

This creates an event. In this way, [INS] inserts an event in front of the currently displayed measure.

(9) Press [C] (Location) and specify a location of 4:47.

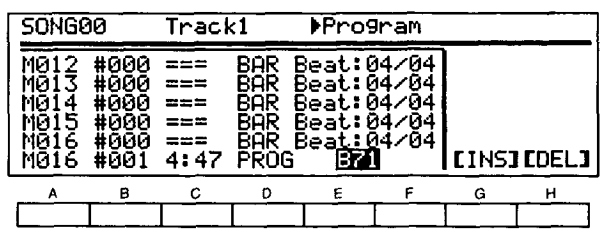
The T1/T2/T3 handles timing by dividing a quarter note into 48 parts.

Location indicates the position in a measure as follows.



(10) Press [D] (Event) and use △/▽ to select PROG.

(11) Press [E] (Program) and use △/▽ to specify program number B71 for Hard E.P.



The display above the [E] [F] keys will depend on the type of event specified by the [D] key. In this example, program change has been selected, so the [E] key is used to specify the program number.

This inserts a program change into the track.

(12) Press [START/STOP].

We are finished with event edit. Now let's playback the results.

(13) Press the BANK/PAGE key [0] and press [START/STOP].

4. Inputting the accompaniment

Input the rest of the parts using realtime recording; guitar → track 2, strings → track 3, and flute → track 4. If it is difficult to play the guitar with precise timing, use a resolution of ♩/4. As we will mention on the next page, it is also possible to use step recording. Also, sounds require a bit of time before they build up to the point of maximum volume (i.e., they have a slow attack), so be careful when using quantization. Also, each sound will have a slightly different tone and volume depending on the velocity. You can adjust the individual volumes of each track later, so for now, play each track in a musically appropriate way without worrying about the volume balance.

■ Adjusting the volume balance

If after listening to the playback you decide that the volume balance of the tracks is not what you want,

(1) In Page 0 press the [UP] key to move the cursor to the line which indicates the track volume (the Vxx display).

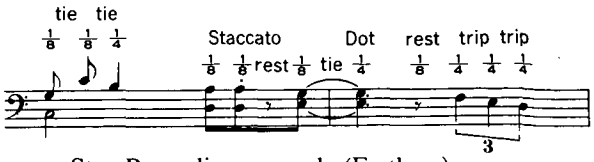
(2) While playing press a key [A]—[H] and move the VALUE slider to adjust the volume of each track.

(3) When you have finished adjusting the volume, press the WRITE key and then the [E] key to write the settings into memory.

When you want to change track volumes while recording, record volume changes along with the other musical data.

5. Phrases too difficult to play (STEP RECORDING)

In contrast to realtime recording, step recording is where you input notes and chords one by one. Step recording can be used to record tracks or patterns.
However unlike realtime recording, step-recording over a pattern will erase the previous data.
Let's try step-recording the bass part shown in the musical example. Set the program of track 5 to A06 Fretless, and input the data into pattern 4.



Step Recording example (Fretless)

(1) Press the BANK/PAGE key [0] and select track 5, set the program of track 5 to A06, and write the settings into memory.

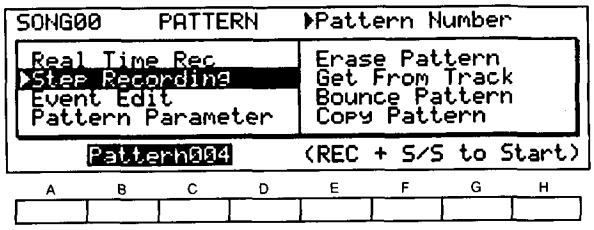
(2) Press the BANK/PAGE key [5] and move the cursor to Pattern Parameter.

(3) Press [A] (Pattern Number) and select 4. Press [B] (Beat) and set a time signature of 4/4, and press [E] (Pattern Length) and set a length of 2 measures.

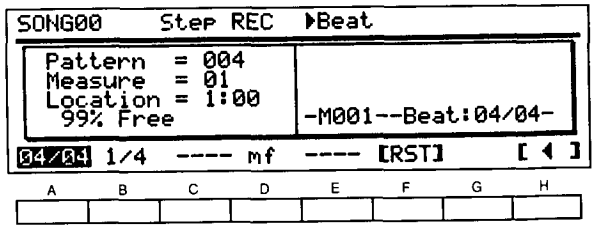
(4) Press [G] ([SET]).

(5) Move the cursor to Step Recording.

(6) Use the VALUE slider and the △/▽ keys to select pattern 4 to record.



Press [REC] and then [START/STOP] to begin step recording.



Notice that the musical example begins with a chord of eighth notes and a half note. We will select a step of eighth notes (1/8) and input the half note using the TIE key.

(7) Press [B] (Step) and select 1/8. If you make a mistake, press the [H] key ◀. You will move back one step of the specified length (1/8 in this example).

(8) Simultaneously press the notes C and G.

(9) Release only the note G.

(10) Press [G] ([TIE]).

Continue pressing C. The position has advanced a half-beat.

(11) While continuing to press C, press and release the C an octave above.

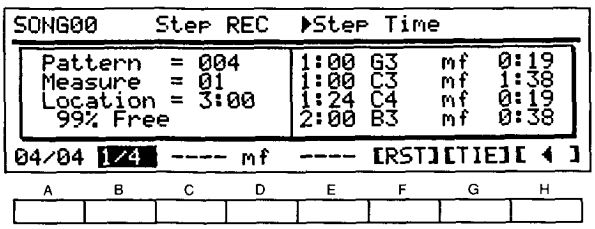
(12)Continuing to press the lower C, press [G] ([TIE]).

We are now one beat from the beginning of the measure. Continue holding the lower C.

(13)Press [B] (Step) and select 1/4.

(14)Continuing to press the lower C, press B and release both C and B.

We are now two beats from the beginning of the measure. (If we consider the beginning of the measure as 1, this is the third beat.)



Next we input the chord of D and A.

(15)Press [B] (Step) and select 1/8.

(16)Press notes D and A, and release them.

Next is also a chord of D and A, but with a stacatto marking.

(17)Press [E] (Stacc/Tenuto) and select Stac.

(18)Press D and A, and release them.

Next comes an eighth rest, so we will leave Step at 1/8.

(19)Press [F] ([RST]).

Next we change from eighth notes to a tie into a dotted quarter note.

(20)Press [E] (Stacc/Tenuto) and select---- .

(21)Press [B] (Step) and select 1/8.

(22)Press and hold notes E and G, and press [TIE].

(23)Continuing to press the chord, press [B] (Step) and select 1/4, and press [C] (Triplet/Dot) and select Dot.

(24)Release the E and G notes.

Next is an eighth note rest, but we must first defeat the Dot setting.

(25)Press [C] (Triplet/Dot), and select---- .

(26)Press [B] (Step) and select 1/8.

(27)Press [F] ([RST]).

Next is a quarter note triplet.

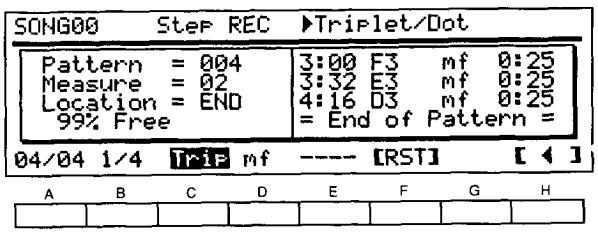
(28)Press [B] (Step) and select 1/4.

(29)Press [C] (Triplet/Dot) and select Trip.

(30)Separately press and release the notes F, E, and D.

Be sure to release each note completely before pressing the next one.

This completes our recording.

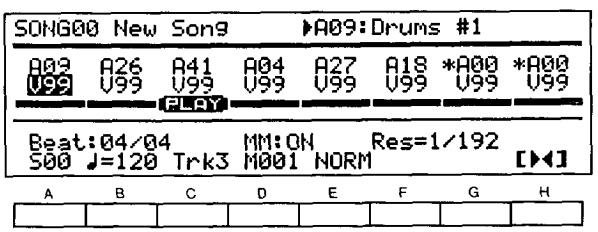


If you press [START/STOP] you will exit step recording, so move the cursor to Real Time Recording and press [START/STOP]. The data you have just recorded will be played back. In this example we did not use [D] (Key Dynamics), but it is possible to determine the loudness of a note by pressing this key before entering a note.

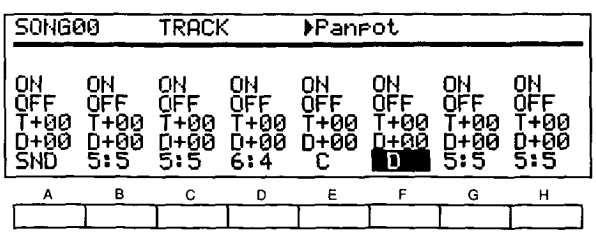
Now you can try step recording the musical example without referring to the procedure.

This completes our example of basic procedures of keyboard recording.

Finally, let's adjust the volume of each track, make pan settings, and add an effect. Press the BANK/PAGE key [0] (Page 0) and these settings will be displayed below the program for each track.



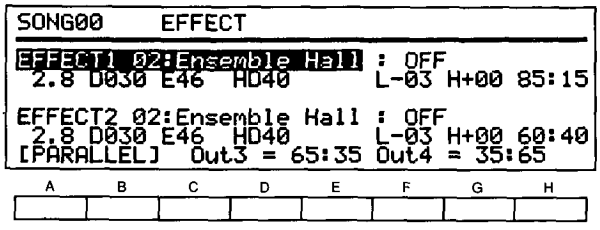
Move the cursor to the display for the track whose volume you want to change, use the VALUE slider and △/▽ keys to change the value, and press [WRITE]. Press the BANK/PAGE key [1] (Page 1) and the bottom line will show the pan settings for each track.

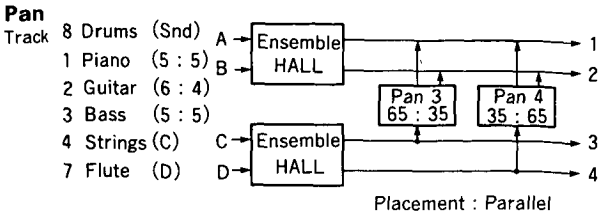


Move the cursor to the value you want to change, and use the VALUE slider and the △/▽ keys to change the value.

An effect can be specified for each song. Press the BANK/PAGE key [6] to get the effect edit page. Make settings as explained for program/combination editing. It is also possible to copy effect settings from a program or combination.

In this example, set pan and effect settings as follows.





This completes our song. If you now turn the power off, all the data will be lost, so use the following procedure to save it to disk.

FORMATTING AND SAVING PROCEDURE

Before data can be saved on a disk, the disk must be formatted. Even if the disk has already been used by the T1/T2/T3, you can save the data by overwriting an unneeded file. In this example, we will save the data in file B of the included disk.

(1) Insert the disk into the disk drive. (Be sure that the write protect slider is in the write permit position.)

(2) Press [DISK] to enter Disk/Card mode.

(3) Press the BANK/PAGE key 2.

(4) The cursor will be located at All Data.

(5) Use △/▽ to select File B.

(6) Press [G] ([SAVE]). If another file already exists on the disk, the display will ask for confirmation, so press [E] (YES).

Note:

The indicator at the left side of the disk drive will light. While this indicator is lit, never remove the disk or turn the power off.

LOADING DATA

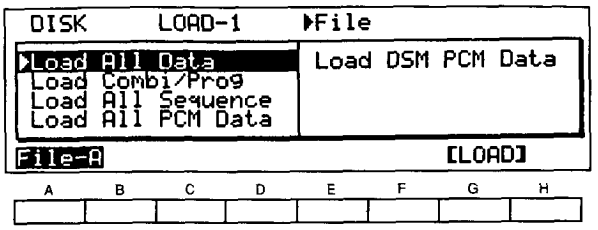
Next, load the data.

(1) Turn the power off, and then on again.

(2) Insert the disk (on which you saved the recorded data) into the disk drive, and press the mode select key [DISK].

(3) Press the BANK/PAGE key 0 to get the disk load page 1.

(4) Move the cursor to All Data.



(5) Use the VALUE slider and the △/▽ keys to specify file B which contains the data you previously saved.

(6) Press [G] ([LOAD]). You will be asked for confirmation, so press [E] ([YES]).

When loading ends, the display will show "Completed".

(7) Press [START/STOP].

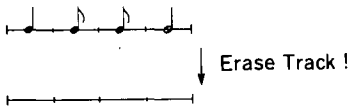
You will automatically enter sequence play mode.

DIAGRAM OF EDITING FUNCTIONS

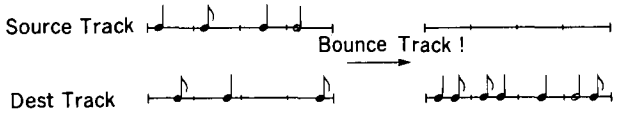
Track editing

All data in a Track can be ...

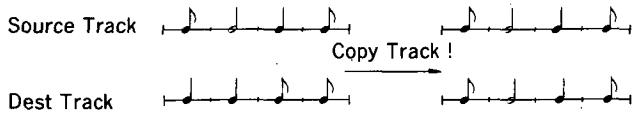
- Erased
  Page3-3 Erase Track



- Combined with the data of another Track
  Page3-4 Bounce Track

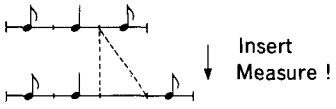


- Copied to another Track
  Page3-5 Copy Track

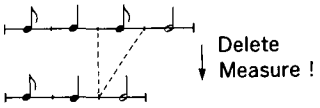


For specified measures in a track, you can ...

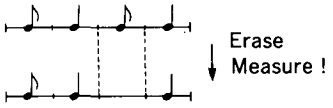
- Insert blank measures
  Page4-2 Insert Measure



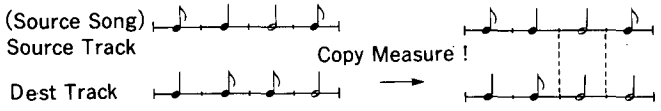
- Delete measures
  Page4-3 Delete Measure



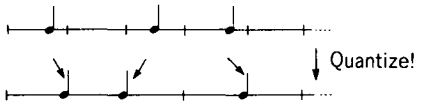
- Erase measures
  Page4-4 Erase Measure



- Copy measures (from another song)
  Page4-5 Copy Measure



- Quantize the data
  Page4-1 Quantize



Pattern editing

All data in a Pattern can be ...

- Erased
  Page5-5 Erase Pattern
- Combined with the data of another Pattern
  Page5-7 Bounce Pattern
- Copied to another pattern
  Page5-8 Copy Pattern

Editing between tracks and patterns

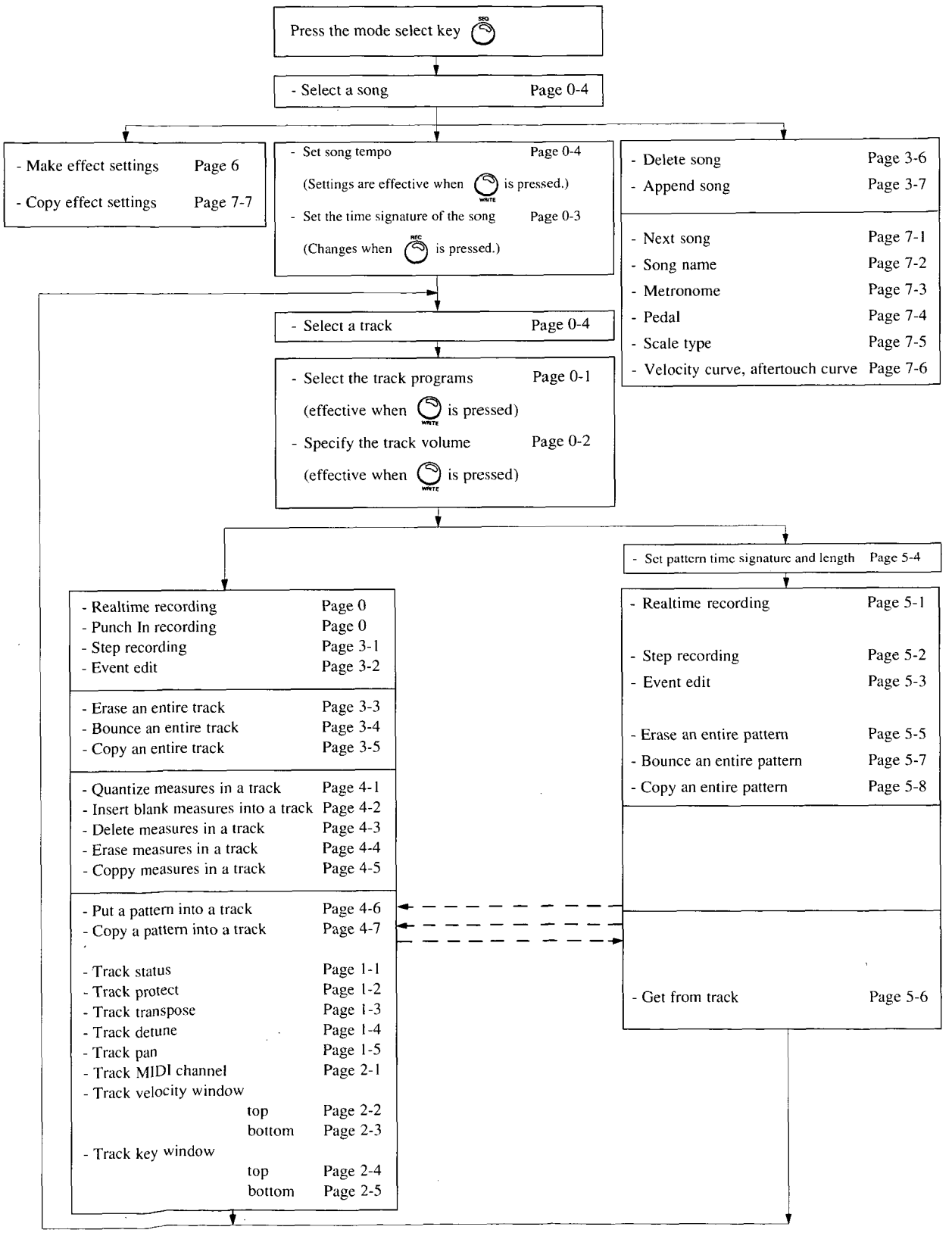
A Pattern can be ...

- Put into a Track
  Page4-6 Put Pattern
- Copied into a Track
  Page4-7 Copy from Pattern

Specified measures of a Track can be ...

- Copied into a Pattern
  Page5-6 Get from Track

SEQUENCER MODE



NOTICE

KORG products are manufactured under strict specifications and voltages required by each country. These products are warranted by the KORG distributor only in each country. Any KORG product not sold with a warranty card or carrying a serial number disqualifies the product sold from the manufacturer's/distributor's warranty and liability. This requirement is for your own protection and safety.

KORG®
KORG INC.
15-12, Shimotakaido 1-chome, Suginami-ku, Tokyo, Japan.

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