YAMAHA ELECTONE®

CHX-1

USER'S GUIDE

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
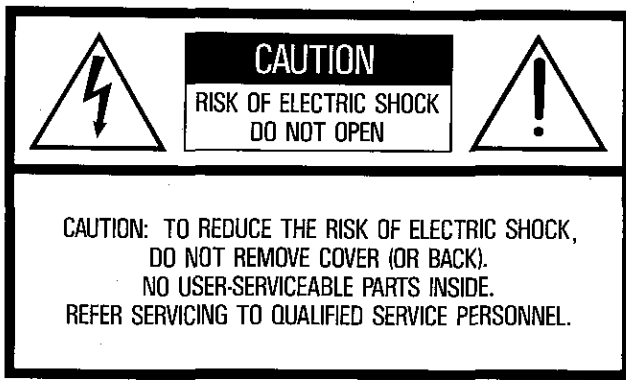NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Explanation of Graphical Symbols

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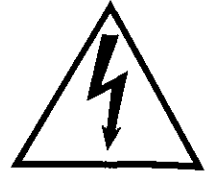
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY AND INSTALLATION INSTRUCTIONS

INFORMATION RELATING TO POSSIBLE PERSONAL INJURY, ELECTRIC SHOCK, AND FIRE HAZARD POSSIBILITIES HAS BEEN INCLUDED IN THIS LIST.

WARNING—When using electronic products, basic precautions should always be followed, including the following:

1. Read all Safety and Installation Instructions, Supplemental Marking and Special Message Section data, and assembly instructions (where applicable) BEFORE using your Yamaha electronic product. Check unit weight specifications before you attempt to move this instrument!

2. Main Power Supply Verification: Your Yamaha electronic product has been manufactured specifically for the main supply voltage used in your area. If you should move, or if any doubt exists, please contact your dealer for instructions. The main supply voltage required by your electronic product is printed on the name plate. For name plate location, see graphic in Special Message Section.

3. This product may be equipped with a polarized line plug (one blade wider than the other). If you are unable to insert the plug into the outlet, contact an electrician to have your obsolete outlet replaced. Do NOT defeat the safety purpose of the plug. Yamaha products not having polarized plugs incorporate construction methods and designs that do not require line plug polarization.

4. WARNING—Do NOT place objects on your electronic product's power cord or place the unit in a position where anyone could trip over, walk over, or roll anything over cords of any kind. Do NOT allow your electronic product or its bench to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

5. Environment: Your electronic product should be installed away from heat sources such as a radiator, heat registers and/or other products that produce heat. Additionally, the unit should not be located in a position that exposes the cabinet to direct sunlight, or air currents having high humidity or heat levels.

6. Your Yamaha electronic product should be placed so that its location or position does not interfere with its proper ventilation.

7. Some Yamaha electronic products may have benches that are either a part of the product or supplied as an optional accessory. Some of these benches are designed to be dealer assembled. Please make sure that the bench is stable before using it. The bench supplied by Yamaha was designed for seating only. No other uses are recommended.

8. Some Yamaha electronic products can be made to operate with or without the side panels or other components that constitute a stand. These products should be used only with the components supplied or a cart or stand that is recommended by the manufacturer.

9. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

10. Do not use your Yamaha electronic product near water or in wet environments. For example, near a swimming pool, spa, or in a wet basement.

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

12. Your Yamaha electronic product should be serviced by a qualified service person when:
a. The power-supply cord or 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 operate, exhibits a marked change in performance: or
e. The product has been dropped, or the enclosure of the product has been damaged.

13. When not in use, always turn your Yamaha electronic product "OFF". The power-supply cord of the product should be unplugged from the outlet when it is to be left unused for a long period of time. Notes: In this case, some units may lose some user programmed data. Factory programmed memories will not be affected.

14. 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.

15. Electromagnetic Interference (RFI).This series of Yamaha electronic products utilizes digital (high frequency pulse) technology that may adversely affect Radio/TV reception or the operation of other devices that utilize digital technology. Please read FCC Information (Page 86) for additional information.
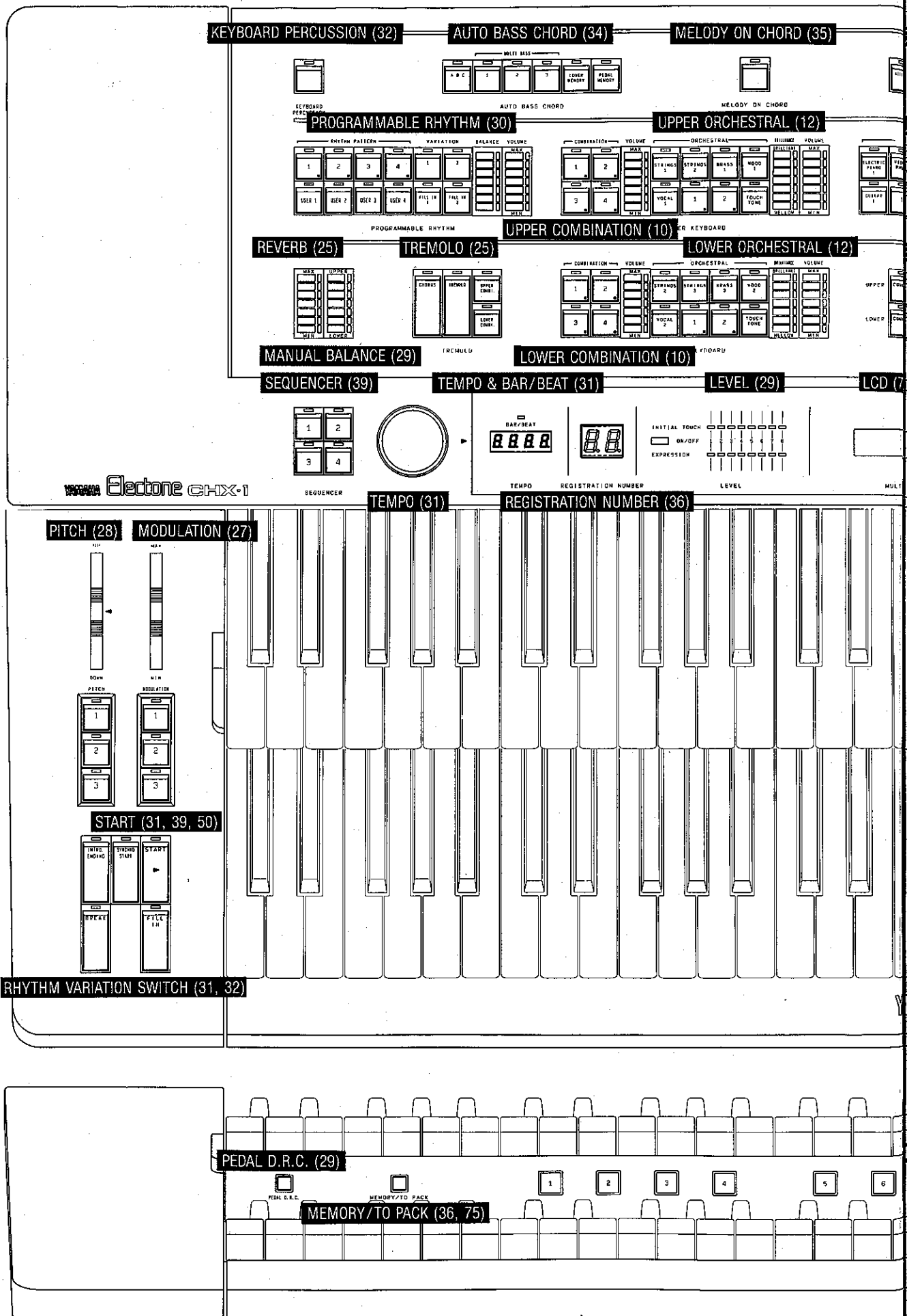
PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE!

CONTENTS

NAME OF PARTS

*The numbers in brackets indicate the pages in this manual where you will find an explanation of these parts and features.
*See Pg. 81 for details on the accessory jacks.

KEYBOARD PERCUSSION (32) — AUTO BASS CHORD (34) — MELODY ON CHORD (35)

PROGRAMMABLE RHYTHM (30) — UPPER ORCHESTRAL (12)

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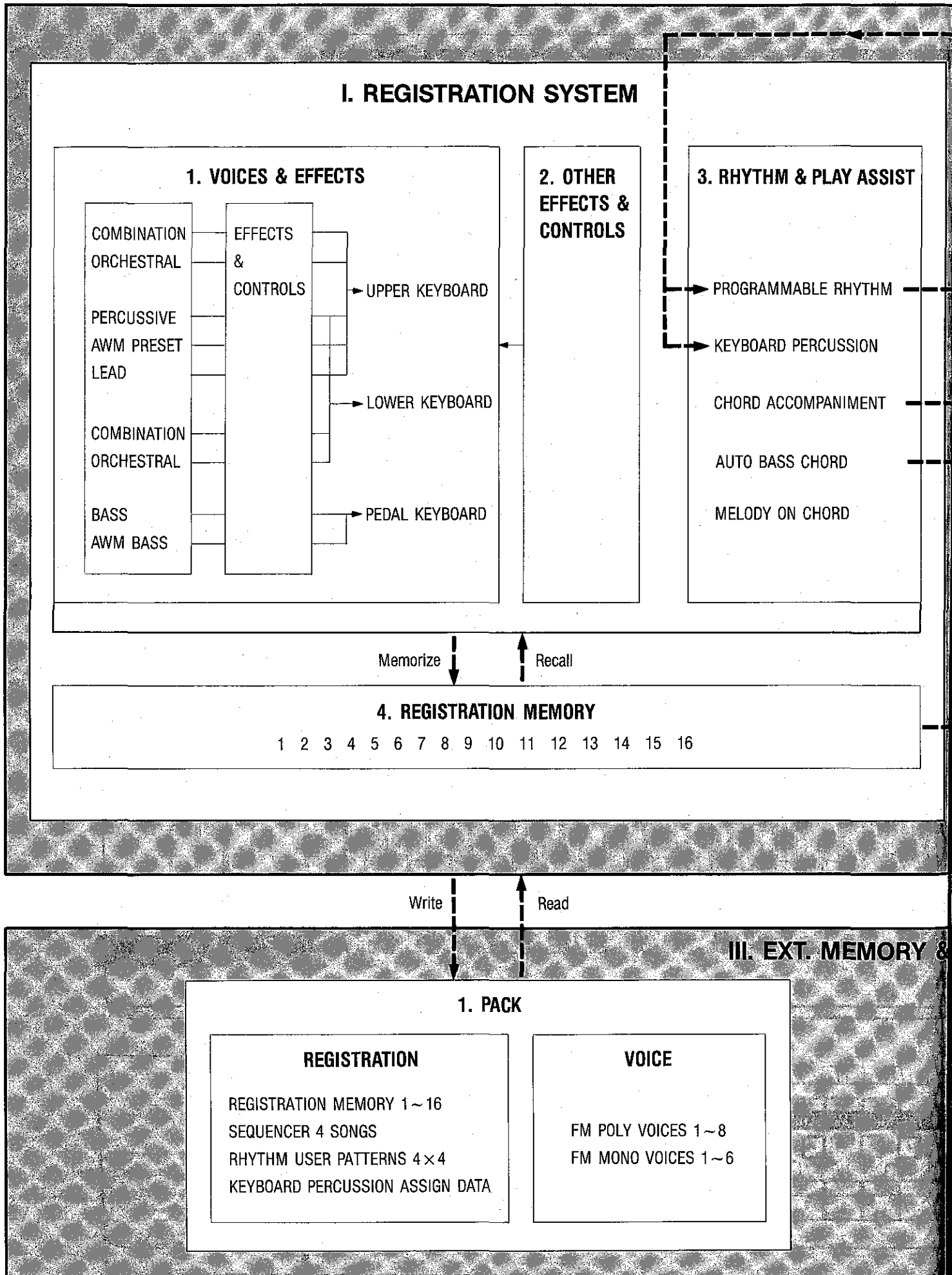ENTER (7) ——————— EXT. CONTROL (73)

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MASTER VOLUME (29)

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| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

3

HX-SERIES SYSTEM CONFIGURATION

I. REGISTRATION SYSTEM

1. VOICES & EFFECTS

COMBINATION	EFFECTS & CONTROLS
ORCHESTRAL	
PERCUSSIVE	
AWM PRESET	→ UPPER KEYBOARD
LEAD	
COMBINATION	
ORCHESTRAL	→ LOWER KEYBOARD
BASS	→ PEDAL KEYBOARD
AWM BASS	

2. OTHER EFFECTS & CONTROLS

3. RHYTHM & PLAY ASSIST

→ PROGRAMMABLE RHYTHM

→ KEYBOARD PERCUSSION

CHORD ACCOMPANIMENT

AUTO BASS CHORD

MELODY ON CHORD

Memorize ↓   ↑ Recall

4. REGISTRATION MEMORY

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

Write ↓   ↑ Read

III. EXT. MEMORY &

1. PACK

REGISTRATION	VOICE
REGISTRATION MEMORY 1～16	
SEQUENCER 4 SONGS	FM POLY VOICES 1～8
RHYTHM USER PATTERNS 4×4	FM MONO VOICES 1～6
KEYBOARD PERCUSSION ASSIGN DATA	

II. MULTI MENU

1. SEQUENCER

RECORD ——————→ ┌──────────┐ ——→ (PLAY)
EDIT ←————————→ │ SEQUENCER │
PLAY MODE CHANGE —→ └──────────┘

2. RHYTHM

RHYTHM PATTERN EDIT ——→ ┌──────────────┐
RHYTHM INSTRUMENT LEVEL   │ USER PATTERNS │
RHYTHM INSTRUMENT PAN   └──────────────┘
KEYBOARD PERCUSSION ASSIGN

3. EXTRA FUNCTION

CHORD DISPLAY   MIDI CONTROL   2nd EXP. PEDAL

4. EXTERNAL CONTROL

PERFORMANCE

UPPER KEYBOARD
(TOUCH CONTROL)

LOWER KEYBOARD
(TOUCH CONTROL)

PEDAL KEYBOARD
(TOUCH CONTROL)

EXPRESSION PEDAL
2nd EXPRESSION PEDAL

FOOT SWITCH (LEFT/RIGHT)

RHYTHM VARIATIONS

WHEEL CONTROLS
(MODULATION/PITCH)

KNEE LEVER
FOOT PEDAL

BREATH CONTROL

Transmit   Recognize

&DEVICES

2. EXTERNAL DEVICES

TONE GENERATORS
MUSIC DISK RECORDER (MDR-2)
OTHER INSTRUMENTS/DEVICES

*This chart outlines the system configuration of the HX-Series Electone. A few of its functions are incapable of storage and writing as shown in the chart.
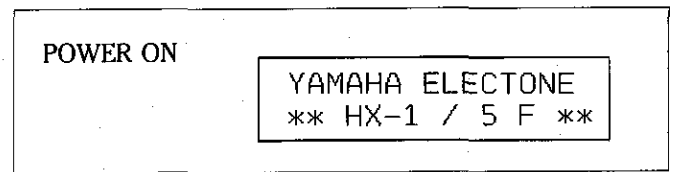
OPERATIONAL OVERVIEW OF THE PROGRAMMING FUNCTIONS
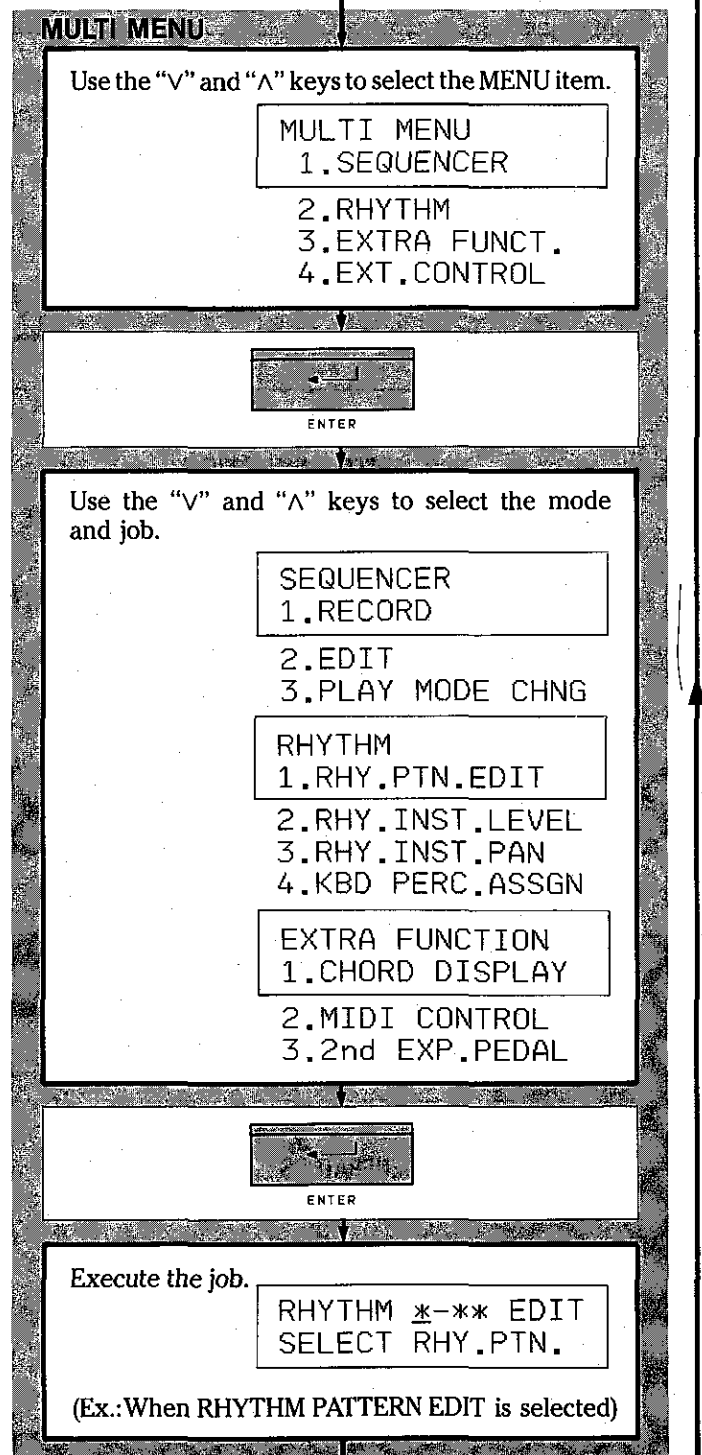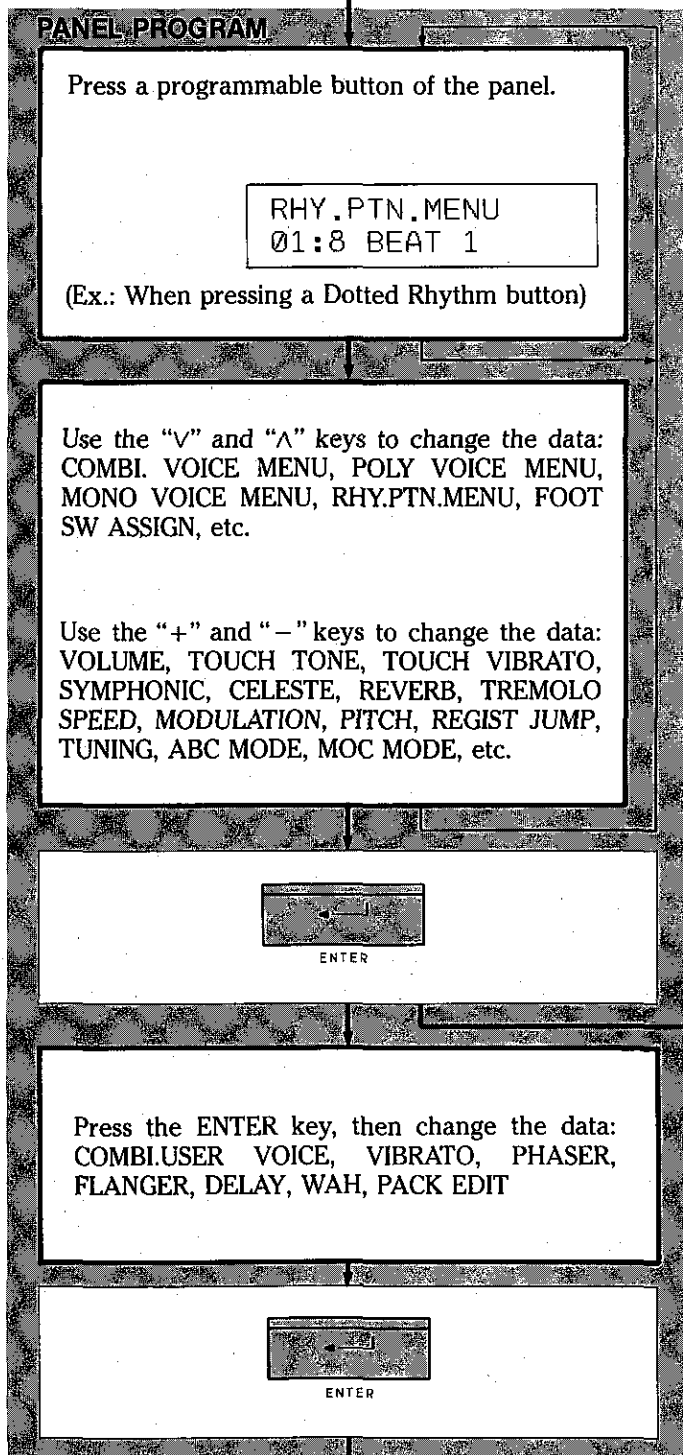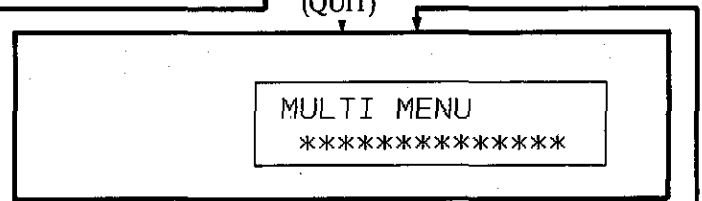
■ PANEL PROGRAM & MULTI MENU

As shown below, the programming functions of HX Electones can be broadly grouped into PANEL PROGRAM functions and MULTI MENU functions.

PANEL PROGRAM: By merely pressing a programmable button of the panel, its currently set data is displayed on the LCD (Liquid Crystal Display) so that you can change the setting. By pressing the ENTER key next, you can perform more complex programming.
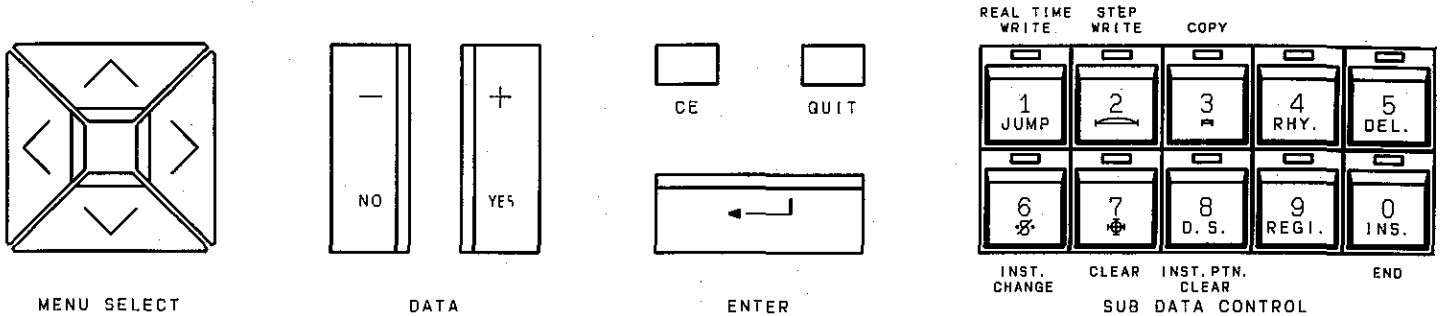
MULTI MENU: When the ENTER key is pressed while "MULTI MENU" is displayed on the LCD top line, programming of the MULTI MENU becomes possible. The LCD will return to its initial display when the pertinent job is terminated or when the QUIT key is pressed during job execution.

POWER ON

```
YAMAHA ELECTONE
** HX-1 / 5 F **
```

(QUIT)

```
MULTI MENU
*************
```

PANEL PROGRAM

Press a programmable button of the panel.

```
RHY.PTN.MENU
01:8 BEAT 1
```

(Ex.: When pressing a Dotted Rhythm button)

Use the "∨" and "∧" keys to change the data:
COMBI. VOICE MENU, POLY VOICE MENU, MONO VOICE MENU, RHY.PTN.MENU, FOOT SW ASSIGN, etc.

Use the "+" and "−" keys to change the data:
VOLUME, TOUCH TONE, TOUCH VIBRATO, SYMPHONIC, CELESTE, REVERB, TREMOLO SPEED, MODULATION, PITCH, REGIST JUMP, TUNING, ABC MODE, MOC MODE, etc.

ENTER

Press the ENTER key, then change the data:
COMBI.USER VOICE, VIBRATO, PHASER, FLANGER, DELAY, WAH, PACK EDIT

ENTER

MULTI MENU

Use the "∨" and "∧" keys to select the MENU item.

```
MULTI MENU
1.SEQUENCER
```

```
2.RHYTHM
3.EXTRA FUNCT.
4.EXT.CONTROL
```

ENTER

Use the "∨" and "∧" keys to select the mode and job.

```
SEQUENCER
1.RECORD
```

```
2.EDIT
3.PLAY MODE CHNG
```

```
RHYTHM
1.RHY.PTN.EDIT
```

```
2.RHY.INST.LEVEL
3.RHY.INST.PAN
4.KBD PERC.ASSGN
```

```
EXTRA FUNCTION
1.CHORD DISPLAY
```

```
2.MIDI CONTROL
3.2nd EXP.PEDAL
```

ENTER

Execute the job.

```
RHYTHM *-** EDIT
SELECT RHY.PTN.
```

(Ex.:When RHYTHM PATTERN EDIT is selected)

6

■ Keys and Buttons Used for Programming

MENU SELECT "∨" "∧" keys	Used for selecting the various MENU items displayed on the LCD bottom line. Pressing the "∨" key displays the following item, and pressing the "∧" key displays the previous item.
MENU SELECT ">" "<" keys	Used to shift the cursor to the right or left (excluding the "Y/N" cursor).
DATA "+/YES", "−/NO" keys	Used to increase or decrease the numeric value of the various types of data and to select the Mode number. Also used to shift the cursor below "Y/N".
ENTER key	Used either to enter the status where programming can be performed or to save the programmed data and terminate the job.
QUIT key	Used to cancel input when the ENTER key is pressed by mistake or to exit from a mode during programming. In both cases, the programmed data will not be saved.
CE key	Used to cancel a numeric value entered by the SUB DATA numeric buttons before pressing the ENTER key.
SUB DATA CONTROL buttons (hereafter referred to as SUB DATA numeric buttons when used for numeric input)	Used in place of the "∨" "∧" keys to enter the numerals of each MENU and select a MENU item from the LCD bottom line. Press the ENTER key after input to change the item. Used in the RECORD or EDIT mode of the SEQUENCER to input Sequence data (the corresponding functions are indicated on the lower half of each button). Used in RHYTHM PATTERN EDIT mode to select the job to be executed (the corresponding jobs are indicated on the outside of the buttons concerned).

■ Reset Operation

Set the POWER switch to OFF. Next, switch it to ON again while depressing the BREAK switch, keeping the BREAK switch depressed for about 5 seconds after setting POWER to ON.
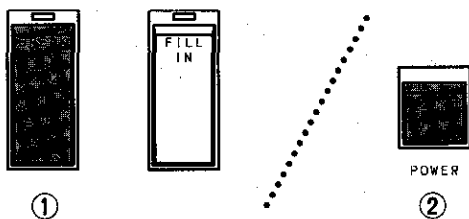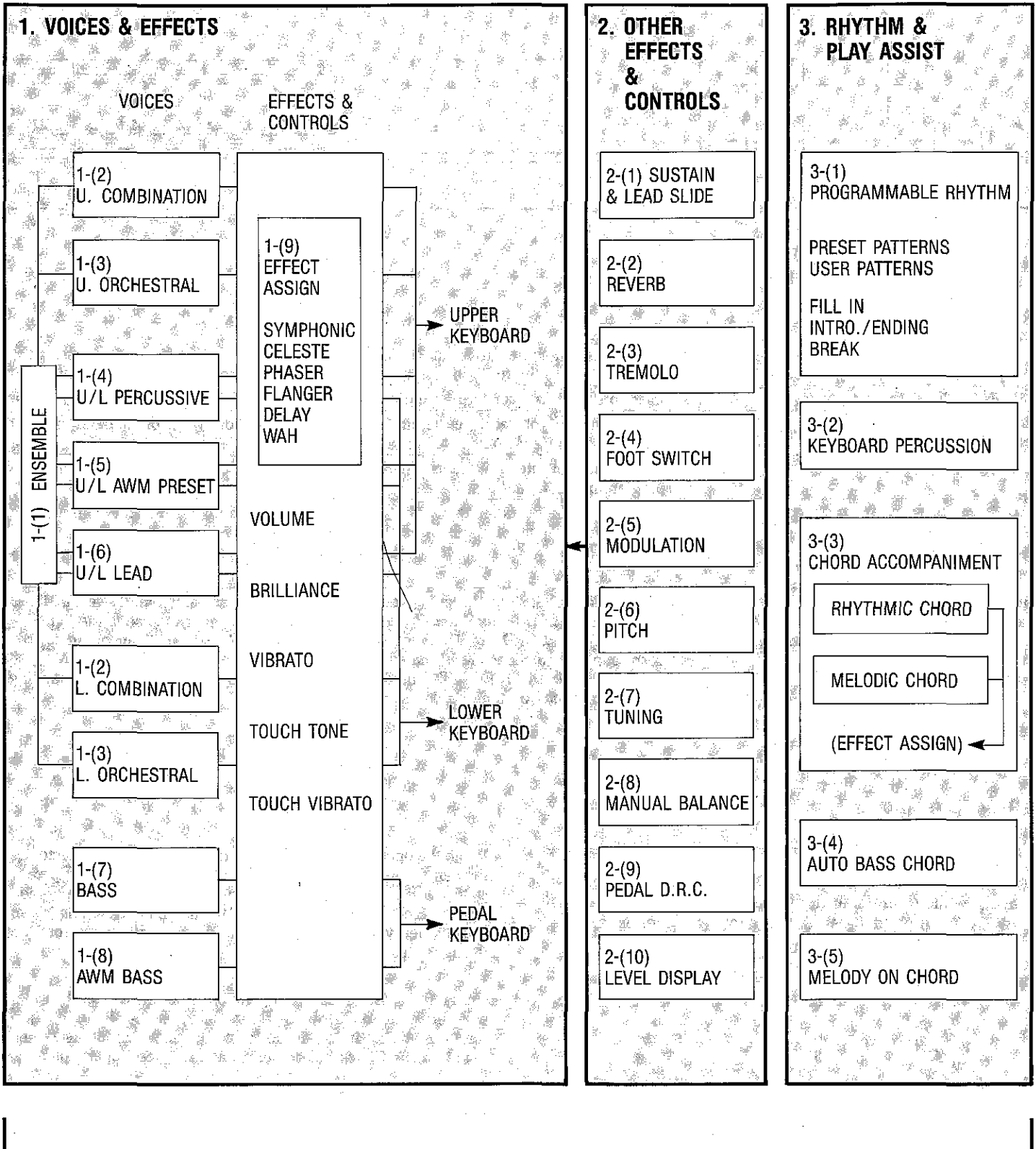

♦ When the operation on the left is performed, all of your Electone's functions will be reset to their default values (the factory pre-set status). It is recommended that you perform this Reset operation on your Electone before using it for the first time. Resetting is also useful when you wish to re-program various data anew from the default status.

♦ CAUTION: When the Reset operation is performed, all data that have been recorded by the programming functions into the Electone are erased. If you do not wish to delete the data, save the data in a RAM Pack before performing the Reset operation.

I. REGISTRATION SYSTEM

*A number of the functions listed below cannot be memorized in REGISTRATION MEMORY.

1. VOICES & EFFECTS

VOICES

1-(2) U. COMBINATION

1-(3) U. ORCHESTRAL

1-(4) U/L PERCUSSIVE

1-(5) U/L AWM PRESET

1-(6) U/L LEAD

1-(1) ENSEMBLE

1-(2) L. COMBINATION

1-(3) L. ORCHESTRAL

1-(7) BASS

1-(8) AWM BASS

EFFECTS & CONTROLS

1-(9)
EFFECT ASSIGN

SYMPHONIC
CELESTE
PHASER
FLANGER
DELAY
WAH

VOLUME

BRILLIANCE

VIBRATO

TOUCH TONE

TOUCH VIBRATO

→ UPPER KEYBOARD

→ LOWER KEYBOARD

→ PEDAL KEYBOARD

2. OTHER EFFECTS & CONTROLS

2-(1) SUSTAIN & LEAD SLIDE

2-(2) REVERB

2-(3) TREMOLO

2-(4) FOOT SWITCH

2-(5) MODULATION

2-(6) PITCH

2-(7) TUNING

2-(8) MANUAL BALANCE

2-(9) PEDAL D.R.C.

2-(10) LEVEL DISPLAY

3. RHYTHM & PLAY ASSIST

3-(1) PROGRAMMABLE RHYTHM

PRESET PATTERNS
USER PATTERNS

FILL IN
INTRO./ENDING
BREAK

3-(2) KEYBOARD PERCUSSION

3-(3) CHORD ACCOMPANIMENT

RHYTHMIC CHORD

MELODIC CHORD

(EFFECT ASSIGN) ◄

3-(4) AUTO BASS CHORD

3-(5) MELODY ON CHORD

Memorize ↓   Recall ↑

4. REGISTRATION MEMORY

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

I-1 VOICES & EFFECTS

1- (1) ENSEMBLE

This function selects the voice sections that you wish to produce from the upper and lower keyboards, and allows you to collectively control the ON/OFF status of multiple voice sections.
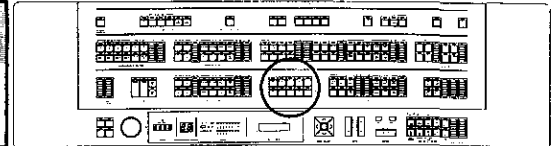
### Correspondence between ENSEMBLE and Voice Sections

---
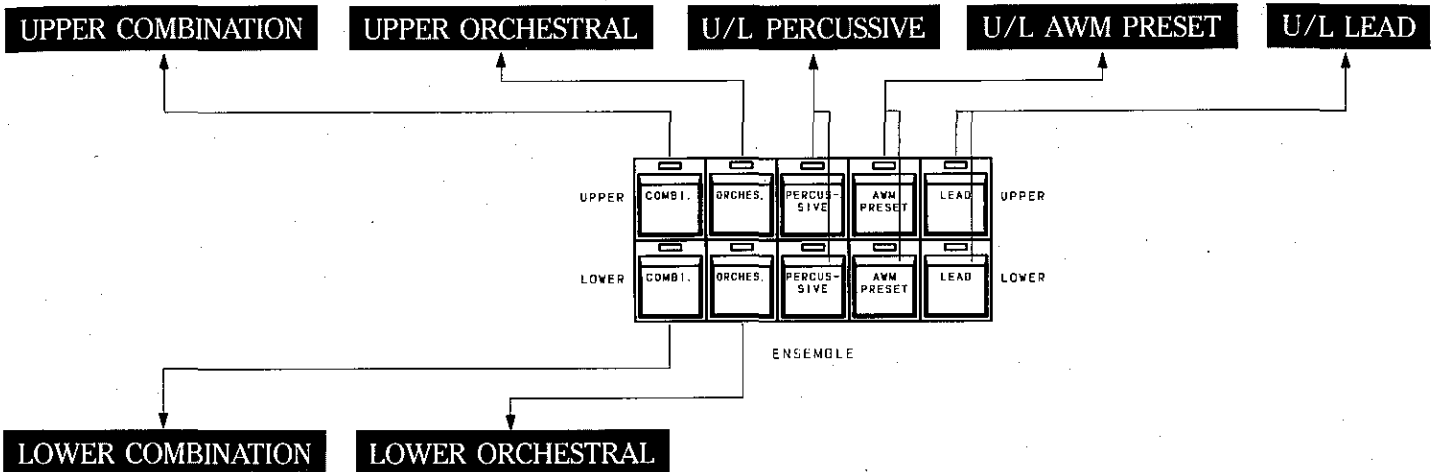
NOTES:
- At the ENSEMBLE section, you can select whether to produce the three voice sections of PERCUSSIVE, AWM PRESET, and LEAD from the upper or lower keyboard. A voice section cannot be concurrently set to ON for both keyboards.

- Setting the ON/OFF status for the voice sections of the pedal keyboard (BASS and AWM BASS) and CHORD ACCOMPANIMENT of the lower keyboard (RHYTHMIC and MELODIC) is performed using the respective VOLUME controls. Each of the above functions is switched OFF by pressing the lowermost button (MIN) of the associated VOLUME control.

LIST OF VOICE SECTIONS

| KEYBOARDS	VOICE SECTIONS	TONE GENERATION	POLY/MONO	VOICES
Upper and Lower Keyboards (ON/OFF is selected by ENSEMBLE)	UPPER COMBINATION	WM (Wave Memory)	Poly (8 notes)	16 preset voices (assignment possible) 16 USER voices (editing possible) (Refer to the separate HX VOICE LIST)
	LOWER COMBINATION		Poly (8 notes)	
	UPPER ORCHESTRAL	FM (Frequency Modulation)	Poly (8 notes)	90 preset voices (assignment possible) 8 USER voices (read/write possible) (Refer to the separate HX VOICE LIST)
	LOWER ORCHESTRAL		Poly (8 notes)	
	U/L PERCUSSIVE	FM	Poly (8 notes)	
	U/L AWM PRESET	AWM (Advanced W.M.)	Poly (8 notes)	5 Preset Voices
	U/L LEAD	FM	Mono (1 note)	54 preset voices (assignment possible) 6 USER voices (read/write possible) (Refer to the separate HX VOICE LIST)
Pedal Keyboard	BASS	FM	Mono (1 note)	
	AWM BASS	AWM	Mono (1 note)	5 Preset Voices
Lower Keyboard (Chord Accompaniment)	RHYTHMIC	FM	Poly (5 notes)	Preset voices (corresponding to rhythm)
	MELODIC		Poly (4 notes)	Preset voices (corresponding to rhythm)

These voice sections produce the organ sounds. Four voices can be freely selected out of a possible 16 voices for assignment to the respective buttons of these sections, and the voices can also be edited.
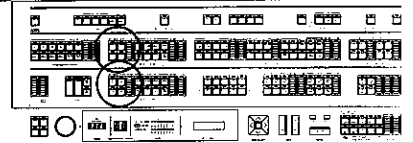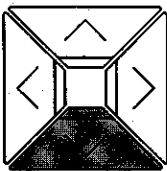

Switch COMBI. of ENSEMBLE to ON. [→Page 9]

↓

Press a button of the COMBINATION Buttons 1 to 4.

┌── COMBINATION ── VOLUME
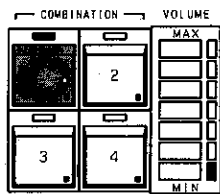
```
COMBI.VOICE
01:CHURCH 1
```

↓

Use the "∨" or "∧" key to display the voice you wish to assign on the LCD.

MENU SELECT

```
COMBI.VOICE
02:CHURCH 2

03:CHURCH 3
   :        :
   :        :
16:THEAT.ORG.4
17:USER  1
   :        :
   :        :
32:USER  16
01:CHURCH 1
```

→ If you wish to edit a USER voice [→Next Page]

↓

Set the volume level.

┌── COMBINATION ── VOLUME

→ To set the volume to a finer level [→Page 15]

↓
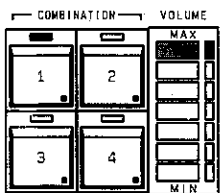
Set the TREMOLO, as required. → [→Page 25]

↓

Set the Digital Effectors, as required. → [→Page 20]

◆ The assignment and editing of voices described below are performed using Buttons 1-4 of either UPPER COMBINATION or LOWER COMBINATION.

◆ When a button is pressed, the liquid crystal display (LCD) will change to the display shown on the left. The bottom line of the LCD display indicates the number and name of the voice currently assigned to the pressed button. Therefore, the initially displayed voice will not always be "01: CHURCH 1".

◆ When the Reset operation is performed, the following Preset voices will be assigned to Buttons 1-4:
UPPER COMBINATION 1→[01: CHURCH 1]   2→[06: JAZZ ORG. 2]
                   3→[09: JAZZ ORG. 5] 4→[13: THEAT. ORG. 1]
LOWER COMBINATION 1→[03: CHURCH 3]   2→[11: JAZZ ORG. 7]
                   3→[12: JAZZ ORG. 8] 4→[15: THEAT. ORG. 3]

◆ One of Buttons 1-4 is always switched ON. To assign a voice to a button that is already ON, press that button once more.

◆ Each time the "∨" key is pressed, the voice number displayed on the LCD is incremented by one and the voice is correspondingly changed, so play the sound for confirmation. You can also return to the voice of the preceding number by pressing the "∧" key.

◆ The voice to be assigned can also be selected using the numeric buttons of the SUB DATA CONTROL section at the bottom left of the panel (hereafter referred to as SUB DATA numeric buttons). Enter the voice number using the appropriate SUB DATA numeric buttons, then press the ENTER key. If you enter the wrong number by mistake, press the CE key before pressing the ENTER key so you can enter the correct voice number.

◆ The COMBINATION voices displayed on the LCD are broadly divided into two groups:
Preset Voices [01-16]: These voices are preset with 16 organ sounds, such as Church Organ, Jazz Organ, etc. [→HX VOICE LIST]
USER VOICES [17-32]: These voices are your own original creations and can be edited and stored. [→Next Page]

◆ After displaying the voice you wish to assign on the LCD, either proceed to the operation of another function (another voice selector, Volume, Effect, etc.) or press the ENTER key. The voice that is displayed last will be assigned.

◆ Setting the volume to the top MAX position produces the maximum volume, and setting it to the lowest MIN position produces zero volume and no sound.

◆ Since the VOLUME buttons enable the volume to be set to seven different levels, you can also set the volume to a finer level while viewing the LCD.

Editing of USER Voices ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬

Press a button of the COMBINATION Buttons 1 to 4, then press the "∨" and "∧" keys to display the USER voice on the LCD.

```
COMBI.VOICE
17:USER 1
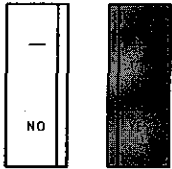```
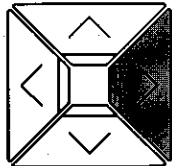
↓

Press the ENTER key.
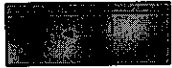
ENTER

```
_8'4'2' 1'A4'2'L
```

↓

· Use the "+" and " − " keys to set the volume level of the footage where the cursor is positioned.
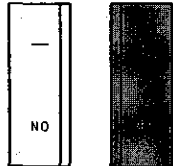
NO

DATA

```
≣
_8'4'2' 1'A4'2'L
```

↓

Press the ">" key to shift the cursor, then set the volume of each footage using the "+" and " − " keys.

MENU SELECT   DATA

```
≣≣
8'4'2' 1'A4'2'L
```

↓

Change the LCD by using the "∨" key, then set RESPONSE, CLICK, and TIMBRE VARIATION.

NO   YES
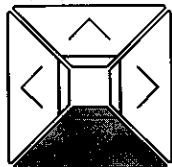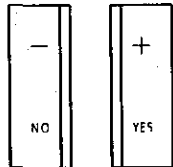
MENU SELECT   DATA

```
RESP.CLICK TIMB.
01   OFF   A
```

↓

When the ENTER key is pressed, the edited data will be stored.

◆ Performing the Reset operation will clear all data contained in USER 1 to USER 16.

◆ When the ENTER key is pressed, the LCD will change to the display shown on the left. The bottom line of the LCD indicates the footage of sound, which is a component of the COMBINATION voice; the top line represents the volume of each currently set footage value in line units.

Footage	16′, 8′, 5⅓′, 4′, 2⅔′, 2′, 1⅗′, 1⅓′, 1′
Attack	4′, 2⅔′, 2′, Attack Length

◆ At the time the ENTER key is pressed, the cursor will be positioned below the lowermost 16′. Pressing the "+" key at such time will increase the number of lines displayed in the upper row and increase the 16′ volume. Pressing the " − " key will reduce the number of lines and reduce the volume. Be sure to play the sound while setting the volume level for confirmation.

◆ The volume of each footage can be set to seven different levels, with [≣] indicating the maximum level and [__] indicating the minimum level. In case of the Attack length, [≣] indicates the maximum length and [__] indicates the minimum length.

◆ Each time the ">" key is pressed, the cursor is shifted one space to the right. Press the "<" key to return the cursor to the left.

◆ Determine the balance of each footage by repeating the operation of the ">" and "<" keys to shift the cursor and the "+" and " − " keys to set the volume, and create your own original organ sounds.

◆ Pressing the "∨" key causes the LCD to change to the display shown on the left to enable setting of RESPONSE, CLICK, and TIMBRE VARIATION. Shift the cursor below the item you wish to set using the ">" or "<" key, then perform the operation below. (Pressing the "∧" key will return you to the previous display.)

RESPONSE	Use the "+" and " − " keys to increase or decrease the numeric value. The larger the value, the later the rise of the USER voice. (Variable width: 0-15)
CLICK	Use the "+" and " − " keys to select the ON/OFF status of the click sound.
TIMBRE VARIATION	Use the "+" and " − " keys to select "A" (soft timbre) or "B" (brilliant timbre).

NOTES:
● The data informing you of which voices have been assigned to the Upper and Lower Buttons 1-4 can be stored in Registration Memory.

● The Voice assignment data and USER voice edit data are retained in back-up memory even if the system power is switched off. Such data can also be written to a RAM pack (Random Access Memory).

These voice sections are for obtaining instrument sounds (sustained sounds) from the FM sound source. In addition to the Panel Preset voices, 90 voices can be freely assigned to the Dotted buttons of these sections.
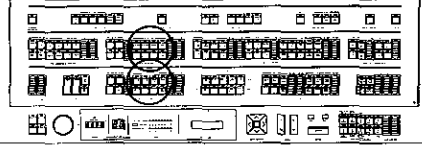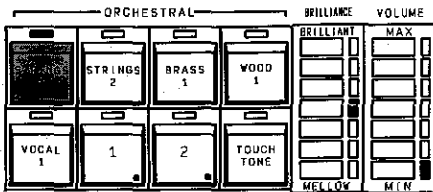

Switch ORCHES. of ENSEMBLE to ON. [→Page 9]

[ENTER]

◆ The operation described below can be performed for UPPER or LOWER ORCHESTRAL in a similar manner.

To assign a voice after setting Dotted Buttons 1 and 2 to ON [→Page 14]

◆ When a button inscribed with a voice name is pressed (or when the ENTER key is pressed after assigning a voice to a Dotted button), the LCD changes to the display shown on the left to enable the editing of VIBRATO data for the selected data. First, play the sound to determine whether the Vibrato effect requires changing.
If no change is required: Proceed to another operation, such as volume setting.
If change is required: Perform the following editing operation for Vibrato data.

Press one of the Voice Select buttons.

```
VIBRATO POLY: 1
DEFAULT ? Y/N
```

(YES)   (NO)

If the VIBRATO effect does not require changing, proceed to another operation.

Editing of VIBRATO Data
◆ The bottom line of the LCD prior to pressing of the ENTER key allows you to choose whether to change the current Vibrato data or to change the characteristic Vibrato data (Default data) of each voice.
[Y/N]: Pressing the ENTER key without shifting the cursor lets you change the current setting of the Vibrato data. (When the Reset operation is performed, the default data will be stored at all voices.)
[Y/N]: Pressing the ENTER key after shifting the cursor lets you recall the Default data and edit it.

Press the "+" key to shift the cursor.

DATA
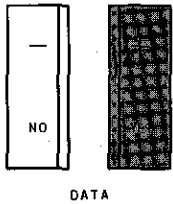
```
VIBRATO POLY: 1
DEFAULT ? Y/N
```

◆ When the ENTER key is pressed, the bottom line of the LCD changes to the display shown on the left to enable changing of the DELAY, SPEED, and DEPTH parameters. Use the "∨" and "∧" keys to change the items of the LCD lower line, then use the "+" and "−" keys to increase/reduce the value of the respective parameters. Besides using the "+" and "−" keys, the parameters can also be set by typing the numeric values using the SUB DATA numeric buttons and then pressing the ENTER key.

Press the ENTER key, then change the VIBRATO parameters.

ENTER

```
VIBRATO POLY: 1
1.DELAY        20
2.SPEED        60
3.DEPTH        17
```

[ENTER]

| Parameters		Variable Width
DELAY	Sets the delay from the pressing of the keyboard until the Vibrato begins to take effect.	0-100
SPEED	Sets the speed of vibration.	0-100
DEPTH	Sets the depth of vibration.	0-100

◆ After setting of each parameter is completed, press the ENTER key so that the Edit data is stored and you can proceed to another operation.

◆ One Voice Select button is always ON at each voice section. After proceeding to another operation, if you wish to re-edit the Vibrato data of a button that is already ON, press that button once more.

◆ The timbre is controlled by BRILLIANCE. The central position is normal timbre. The timbre becomes more brilliant with a high-position setting, and becomes more mellow with a low-position setting.

Set the VOLUME and BRILLIANCE.
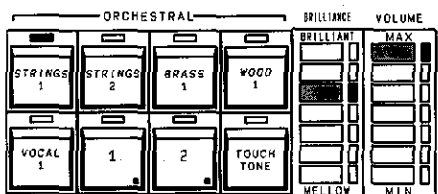
To set the VOLUME to a finer level [→Page 15]
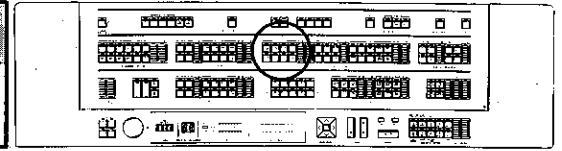
Switch TOUCH TONE to ON, as required. [→Next Page]

To change the sensitivity of Touch Control [→Page 15]

Set the Digital Effectors, as required.

[→Page 20]

This voice section is for obtaining the instrument sounds (attenuated sounds) from the FM sound source. In addition to the Panel Preset voices, 90 voices can be freely assigned to the Dotted buttons.

Switch PERCUSSIVE of ENSEMBLE to ON.
[→Page 9]

To assign voices after switching Dotted Buttons 1 and 2 to ON [→Page 14]

**Press one of the buttons inscribed with a voice name (Panel Preset Voices).**
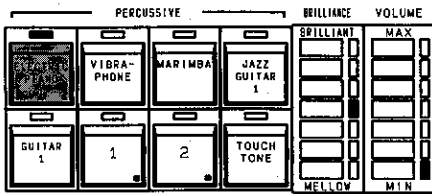
◆ The voice sections of PERCUSSIVE, UPPER ORCHESTRAL, and LOWER ORCHESTRAL each have seven Voice Select buttons, and each of these voice sections can be used to obtain eight-note polyphonic voices from the FM sound source.
Buttons inscribed with voice name (Panel Preset Voices): The voice inscribed on a button can be selected by merely pressing that button.
Buttons inscribed with "1" or "2" (Dotted buttons): Assignment can be freely made from a selection of the 90 Preset voices stored in the built-in memory of the Electone (hereafter referred to as "Main Memory") and the eight USER voices written to that Main Memory from a RAM Pack, etc.

—[ENTER]—

Set VOLUME and BRILLIANCE.
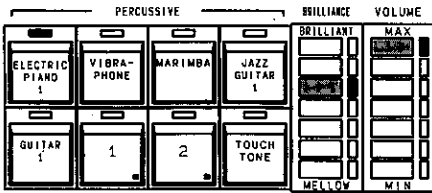
To set the VOLUME to a finer level [→Page 15]

Switch TOUCH TONE to ON, as required.
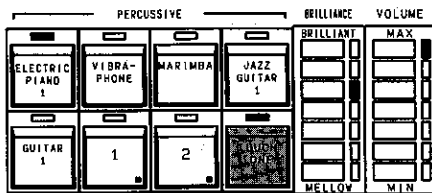
◆ When the TOUCH TONE button is pressed, the LCD changes to the display shown on the left to enable setting of the sensitivity of TOUCH TONE. Determine whether or not to change the current RANGE by producing sounds.
If no change is required: Proceed to another operation such as setting of Digital Effectors.
If change is required: Perform the TOUCH TONE Program (Page 15).
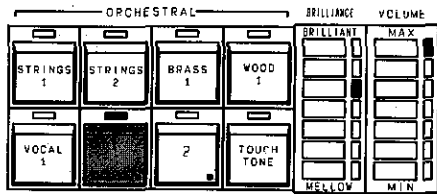
```
T.TONE U/L PER.
RANGE = 10
```

To change the sensitivity of Touch Control [→Page 15]
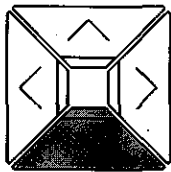
Set the Digital Effectors, as required.

[→Page 20]

Assignment of FM POLY Voices ━━━━━━━━━━━━━━━━━━━━━━━━━━━━

Press a Dotted button of the ORCHESTRAL or PERCUSSIVE section.


```
POLY VOICE
01:STRINGS 1
```

↓

Press the "∨" key to advance the LCD display to the voice you wish to assign.

MENU SELECT

```
POLY VOICE
02:STRINGS 2

03:STRINGS 3
  :      :
  :      :
49:COSMIC 6
50:E.PIANO 1
  :      :
  :      :
90:COSMIC 9
91:USER 1
  :      :
98:USER 8
01:STRINGS 1
```

↓

The selected voice is assigned by either proceeding to another operation or pressing the ENTER key.

♦ When a Dotted button is pressed, the LCD changes to the display shown on the left. The bottom line of the LCD indicates the number and name of the voice assigned to the pressed button.

♦ When a button is pressed, the initially displayed voice will not always be [01: STRINGS 1]. If another voice has been previously assigned at such time, the number and name of that voice will be displayed.
UPPER ORCHESTRAL: 1→[11:BRASS 2], 2→[44:COSMIC 1]
LOWER ORCHESTRAL: 1→[13:BRASS 4], 2→[45:COSMIC 2]
U/L PERCUSSIVE: 1→[69:HARPSICHORD], 2→[46:COSMIC 3]

♦ One Voice Select button of each voice section is always ON. If you wish to assign a voice to a button which is already on, press that button once more.

♦ Each time the "∨" key is pressed, the voice number displayed on the LCD is incremented by one and the voice changes correspondingly. Play the sound for confirmation.

♦ By pressing the "∧" key, you can return to the voice of the previous number.

♦ Besides using the "∨" and "∧" keys, you can select the voice to be assigned using the SUB DATA numeric buttons by entering the number of the voice you wish to assign and then pressing the ENTER key.

♦ The FM POLY Voices displayed on the LCD are grouped as follows: [→HX VOICE LIST]
ORCHESTRAL Voices [01-49]: This group consists of the sustained sounds, which are best suited for assignment to UPPER and LOWER ORCHESTRAL but can also be assigned to PERCUSSIVE.
PERCUSSIVE Voices [50-90]: This group consists of the attenuated sounds, which are best suited for assignment to PERCUSSIVE but can also be assigned to UPPER and LOWER ORCHESTRAL.
USER Voices [91-98]: These voices let you save either the Pack (VOICE) data or the voice data created using external devices [→ Pages 74, 80]. Note that, when a Reset operation is performed, all Voice data saved at USER 1 to USER 8 will be erased.

♦ The FM POLY Voices displayed on the LCD include some voices that are identical to the Panel Preset voices of each voice section. For example, if STRINGS 1 is selected at UPPER ORCHESTRAL and STRINGS 1 is also assigned to a Dotted button of LOWER ORCHESTRAL, you can produce the same STRINGS 1 from the upper and lower keyboards.

♦ After displaying the voice you wish to assign on the LCD, either proceed to another operation (another voice selector, Volume, Effect, etc.) or press the ENTER key. The voice displayed last will be assigned.

NOTE:
● The data informing you of which voice is assigned to each Dotted button can be stored in the Registration Memory and that data can also be written to the RAM Pack (REGIST). Furthermore, this assignment data will be retained in back-up memory even if the system power is switched OFF.
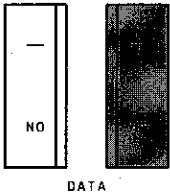
VOLUME Program ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

Press one of the VOLUME buttons, which are located at each voice section.

```
VOLUME U.COMBI
VALUE = 12
```

↓

Use the "+" and "−" keys to increase/decrease the numeric value of VALUE.

```
VOLUME U.COMBI
VALUE = 22
```
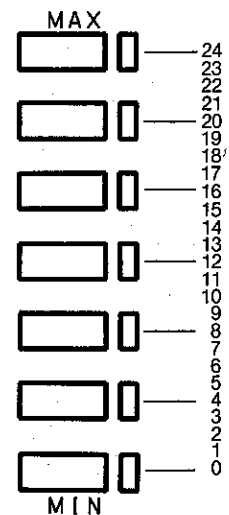
↓

The VOLUME data is stored in the pertinent voice section by either proceeding to another operation or pressing the ENTER key.

◆ When a VOLUME button is pressed, the LCD changes to the display shown on the left. The top line of the LCD indicates the corresponding voice section of the VOLUME to be set. Besides the voice sections, the VOLUME of RHYTHM, RHYTHMIC, and MELODIC can also be set.

◆ The bottom line of the LCD indicates the currently set VOLUME value. The volume can be set to seven levels (0, 4, 8, 12, 16, 20, and 24) using the panel VOLUME buttons; this VOLUME Program enables the VOLUME value to be set to 25 levels from 0 to 24.

◆ Pressing the "+" key increments the numeric value by one, and pressing the "−" key decreases it by one. Besides using the "+" and "−" keys, the VALUE can also be set by typing the numeric value using the SUB DATA numeric buttons and then pressing the ENTER key.

◆ When a numeric value that cannot be set using the panel VOLUME buttons has been programmed, two VOLUME LEDs of the panel will light up. For example, when VALUE=22, the uppermost LED and the second LED from the top will light up.

```
MAX
□ 0 ── 24
      23
      22
□ 0 ── 21
      20
      19
      18
□ 0 ── 17
      16
      15
      14
□ 0 ── 13
      12
      11
      10
□ 0 ── 9
      8
      7
□ 0 ── 6
      5
      4
□ 0 ── 3
      2
      1
□ 0 ── 0
MIN
```

TOUCH TONE Program ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

Switch the TOUCH TONE button of each voice section to ON.

```
T.TONE U.ORC.
RANGE = 10
```

↓

Use the "+" and "−" keys to increase/decrease the numeric value of RANGE.
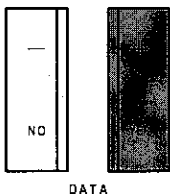
```
T.TONE U.ORC.
RANGE = 15
```

↓

The RANGE data is stored in the pertinent voice section by either proceeding to another operation or pressing the ENTER key.

◆ Each voice section has a TOUCH TONE button which, when switched to ON, enables fine control of the volume and timbre using the two types of keyboard touch below:
Initial Touch: Control is determined by the amount of pressure (speed) with which the keyboard is pressed.
After Touch: Control is determined by the amount of subsequent pressure on the keyboard after being pressed (not applicable for PERCUSSIVE voices).

◆ When a TOUCH TONE button is pressed, the LCD changes to the display shown on the left. The top line of the LCD indicates the corresponding voice section of the TOUCH TONE to be set. Its bottom line indicates by numeric value the currently set RANGE (sensitivity) of Touch Control. The larger the numeric value, the larger the variation in volume and timbre using Touch Control. Note that, when Reset is performed, RANGE=10 will be set at each voice section.

◆ Pressing the "+" key increments the numeric value by one; pressing the "−" key decreases it by one (variable width: 0-15).
Besides using the "+" and "−" keys, RANGE can also be set by entering the numeric value using the SUB DATA numeric buttons and then pressing the ENTER key.

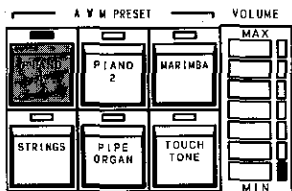◆ When TOUCH TONE is switched OFF, "OFF" will be displayed at the LCD bottom line.

1-(5) U/L AWM PRESET

This voice section is for obtaining realistic instrument sounds from YAMAHA's exclusive Advanced Wave Memory (AWM) sound source.
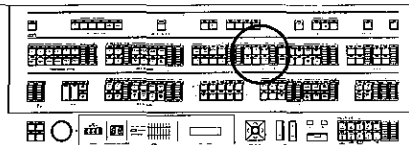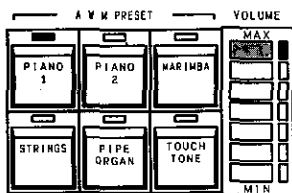
Switch AWM PRESET of ENSEMBLE to ON.
[→Page 9]

Press one of the buttons inscribed with a voice name.

Set the VOLUME.

To set the VOLUME to a finer level [→Page 15]
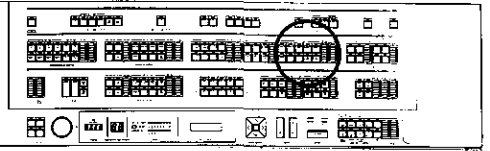
Switch TOUCH TONE to ON, as required.

To change the sensitivity of Touch Control [→Page 15]

Set the Digital Effectors, as required.

[→Page 20]

This voice section is for obtaining the monophonic instrument sounds from the FM sound source. Besides the Panel Preset voices, 54 voices can be freely assigned to the Dotted buttons.

Switch LEAD of ENSEMBLE to ON. [→Page 9]

◆ Though LEAD voices can be achieved in monophonic sound, setting a LEAD voice together with other voice sections enables high-note priority; whereas setting a LEAD voice alone results in last note priority.

—[ENTER]—

To assign a voice after switching Dotted Buttons 1 and 2 to ON [→Page 18]

Press one of the buttons inscribed with a voice name (Panel Preset voices).


```
VIBRATO MONO 1
DEFAULT ? Y/N
```

◆ The LEAD voice section can produce high-quality monophonic sounds from the FM sound source.
Buttons inscribed with voice names (Panel Preset voices): A voice can be selected by merely pressing a button.
Buttons inscribed with 1 or 2 (Dotted buttons): Each of these buttons can be freely assigned with one out of the 54 Preset Voices stored in Main Memory or one of six USER voices.
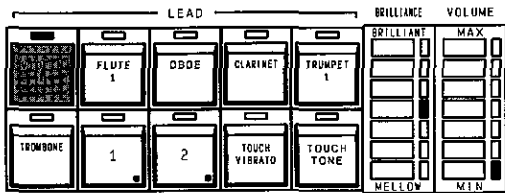
◆ When a Panel Preset Voice button is pressed (or when the ENTER key is pressed after assigning a voice to a Dotted button), the LCD changes to the display shown on the left so that the Vibrato data can be changed.
If no change is required: Proceed to another operation such a VOLUME setting.
If change is required: Perform editing of Vibrato data (Page 12).

—[ENTER]—
—[ENTER]—

To change the vibrato effect [→Page 12]

Set the VOLUME and BRILLIANCE.

To set the VOLUME to a finer level [→Page 15]

Switch TOUCH TONE to ON, as required.

To change the sensitivity of Touch Control [→Page 15]

Switch TOUCH VIBRATO to ON, as required.

```
TOUCH VIBRATO
MIN= 10 MAX= 50
```

◆ When TOUCH VIBRATO is switched to ON, the After Touch of the keyboard enables you to control the VIBRATO Depth applied to the LEAD voices. The stronger you press the keyboard, the deeper the VIBRATO effect (with constant speed). Note that, while TOUCH VIBRATO is ON, the VIBRATO depth data stored in the LEAD voices will be disregarded.

◆ When the TOUCH VIBRATO button is pressed, the LCD changes to the display shown on the left so that the sensitivity of TOUCH VIBRATO can be changed.
If no change is required: Proceed to another operation such as setting the Digital Effectors.
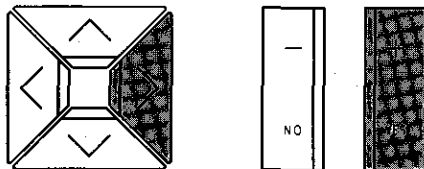**If change is required:** Perform the TOUCH VIBRATO Program described below:

TOUCH VIBRATO Program
◆ The LCD bottom line displays the minimum and maximum values of the currently set range of TOUCH VIBRATO. The greater the numeric value, the deeper the Vibrato Depth; the greater the difference between the MIN and MAX values, the greater the touch sensitivity.

Change the RANGE of TOUCH VIBRATO.

MENU SELECT   DATA

```
TOUCH VIBRATO
MIN= 20 MAX= 70
```

◆ First, use the "+" and "−" keys to increase or decrease the numeric value of MIN. Next, use the ">" key to shift the cursor, then increase or decrease the numeric value of MAX. (The variable width is 0-100, and the MIN value must always be smaller than the MAX value.)
Besides the "+" and "−" keys, the numeric value for the TOUCH VIBRATO range can be set by entering the numeric value using the SUB DATA numeric buttons, then pressing the ENTER key.

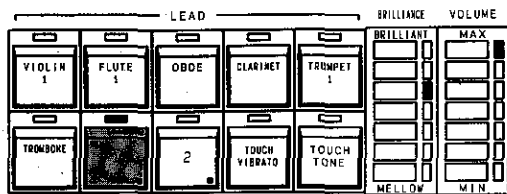◆ When TOUCH VIBRATO is switched to OFF, "OFF" is displayed at the LCD bottom line.

Set the Digital Effectors, as required.

[→Page 20]

Assignment of FM MONO Voices ──────────────────────

```
┌─────────────────────────────────────────┐
│ Press a Dotted button of LEAD or BASS.   │
│                                          │
│  ┌─────LEAD─────────┐  BRILLIANCE VOLUME  │
│  ┌────┬────┬────┬────┬────┐ ┌──┬──┐      │
│  │VIOLIN│FLUTE│OBOE│CLARINET│TRUMPET│     │
│  │  1  │  1 │    │     │  1   │     │      │
│  └────┴────┴────┴────┴────┘             │
│  ┌────┬────┬────┬────┬────┐             │
│  │TROMBONE│   │ 2  │TOUCH │TOUCH │        │
│  │     │   │    │VIBRATO│TONE │           │
│  └────┴────┴────┴────┴────┘ MELLOW  MIN   │
│                                          │
│            │                             │
│            ▼                             │
│        ┌─────────────────┐               │
│        │ MONO VOICE      │               │
│        │ 01:VIOLIN 1     │               │
│        └─────────────────┘               │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐
│ Press the "V" key to advance the LCD to  │
│ the voice you wish to assign.            │
│                                          │
│              ┌───────┐                   │
│              │   ∧   │                   │
│              │ ◁   ▷ │                   │
│              │       │                   │
│              └───────┘                   │
│             MENU SELECT                  │
│                                          │
│        ┌─────────────────┐               │
│        │ MONO VOICE      │               │
│        │ 02:VIOLIN 2     │               │
│        └─────────────────┘               │
│          03:CELLO                        │
│            :     :                       │
│            :     :                       │
│          34:COSMIC 5                     │
│          35:CON.BASS 1                   │
│            :     :                       │
│            :     :                       │
│          54:COSMIC 9                     │
│          55:USER 1                       │
│            :     :                       │
│            :     :                       │
│          60:USER 6                       │
│          01:VIOLIN 1                     │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐
│ The selected voice is assigned by either │
│ proceeding to another operation or       │
│ pressing the ENTER key.                  │
└─────────────────────────────────────────┘
```
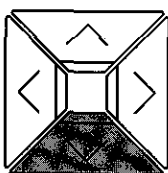
◆ When a Dotted button is pressed, the LCD changes to the display shown on the left. The LCD bottom line indicates the number and name of the voice assigned to the pressed button.

◆ When the button is pressed, the initially displayed voice will not always be [01: VIOLIN 1]. If another voice has already been assigned to the pressed button, the number and name of that voice will be displayed. When Reset is performed, the following assignments are made:

LEAD   1→[07:HORN],   2→[28:D.GUITAR]
BASS   1→[39:TUBA 1],   2→[41:VOCAL 3]

◆ One Voice Select button is always ON at each voice section. If you wish to assign a voice to a button that is already ON, press that button once more.

◆ Each time the "V" key is pressed, the voice number on the LCD is incremented by one and the voice changes correspondingly. Play the sound for confirmation.

◆ By pressing the "∧" key, you can return to the voice of the previous number.

◆ Besides using the "V" and "∧" keys, you can select the voice to be assigned by entering the number of the voice you wish to assign using the SUB DATA numeric buttons and then pressing the ENTER key.

◆ The FM MONO Voices displayed on the LCD are grouped as follows:
[→HX VOICE LIST]
LEAD Voices [01-34]: This group consists of the lead (solo) instruments, which are best suited for assignment to U/L LEAD but can also be assigned to BASS.
BASS Voices [35-54]: This group consists of the bass instruments, which are best suited for assignment to BASS but can also be assigned to U/L LEAD.
USER Voices [55-60]: This group allows the storage of data from the RAM Pack (VOICE) or the voice data created using external devices [→Pages 74, 80].Note that, when a Reset operation is performed, all Voice data saved at USER 1 to USER 6 will be erased.

◆ The FM MONO Voices displayed on the LCD include some voices that are identical to the Panel Preset voices of each voice section.

◆ After displaying the voice you wish to assign on the LCD, either proceed to another operation (another voice selector, Volume, Effect, etc.) or press the ENTER key. The voice displayed last will be assigned.

NOTE:
● The data informing you of which voice is assigned to each Dotted button can be stored in the Registration Memory and that data can also be written to the RAM Pack (REGIST). Furthermore, this assignment data will be retained in a back-up memory even if the system power is switched OFF.
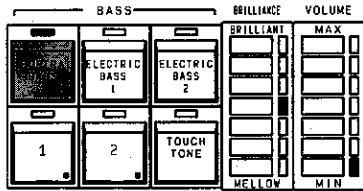
1-(7) BASS

This voice section is for obtaining the sounds of bass instruments from the FM sound source. Besides the Panel Preset voices, voices can be freely assigned to the Dotted buttons.
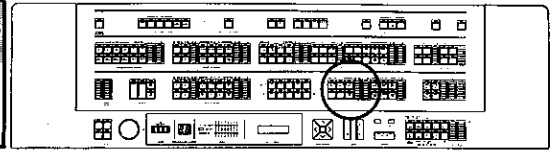
[ENTER] ──→ To assign a voice after switching a Dotted button to ON [→ Page 18]

Press a button inscribed with a voice name (Panel Preset voice).

```
┌──── BASS ────┐  BRILLIANCE  VOLUME
                  BRILLIANT    MAX

  ELECTRIC  ELECTRIC
  BASS      BASS
  1         2

  1         2       TOUCH
                    TONE
                  MELLOW       MIN
```

```
VIBRATO   MONO 35
DEFAULT ? Y/N
```

♦ The BASS voice section can produce high-quality monophonic sounds from the FM sound source, in a similar manner as LEAD.
Buttons inscribed with a voice name (Panel Preset voices): A voice can be selected by merely pressing a button.
Buttons inscribed with a numeral (Dotted buttons): Each of these buttons can be freely assigned with one out of the 54 Preset Voices stored in Main Memory or one of six USER voices.

♦ When a Panel Preset Voice button is pressed (or when the ENTER key is pressed after assigning a voice to a Dotted button), the LCD changes to the display shown on the left to enable changing of the Vibrato data.
If no change is required: Proceed to another operation such as VOLUME setting.
If change is required: Perform editing of Vibrato data (Page 12).

──[ENTER]──→ To change the Vibrato effect [→Page 12]
──[ENTER]──

Set VOLUME and BRILLIANCE. ──→ To set the VOLUME to a finer level [→Page 15]

Switch TOUCH TONE to ON, as required. ──→ To change the sensitivity of TOUCH TONE [→Page 15]

Set the Digital Effectors, as required. ──→ [→Page 20]

1-(8) AWM BASS

This voice section is for obtaining realistic bass sounds from the Advanced Wave Memory (AWM) sound source.

Press a Voice Select button.
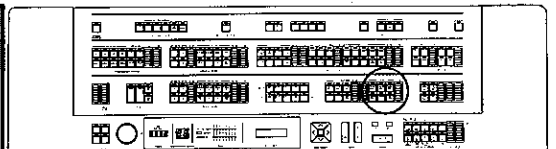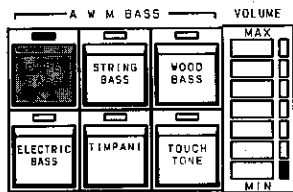
```
┌──── A W M BASS ────┐  VOLUME
                        MAX

  STRING    WOOD
  BASS      BASS

  ELECTRIC  TIMPANI  TOUCH
  BASS               TONE
                        MIN
```

Set the VOLUME. ──→ To set the VOLUME to a finer level [→Page 15]

Switch TOUCH TONE to ON, as required. ──→ To change the sensitivity of TOUCH TONE [→Page 15]

Set the Digital Effectors, as required. ──→ [→Page 20]

This section allows the Digital Effectors, such as SYMPHONIC, CELESTE, PHASER, and FLANGER, to be assigned to each of the voices.
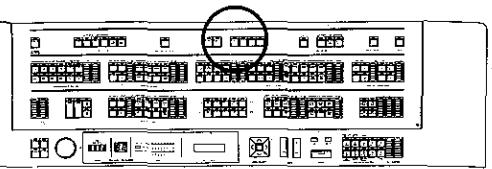
Overview of EFFECT ASSIGN Section

Press the Voice button (or Dotted button) of the voice to which you wish to assign a Digital Effector, then perform setting of VOLUME, BRILLIANCE, VIBRATO, TOUCH TONE, etc.

↓

Switch a button of the EFFECT ASSIGN section to ON.

EFFECT ASSIGN

↓

Name of Digital Effector

Name of voice section

```
* * * * * *        * * * * * * *
* * * * * * * * * * * * * *
```

The display changes according to the selected Digital Effector

♦ The Digital Effectors of the EFFECT ASSIGN section can be assigned to all voice sections of the upper, lower, and pedal keyboards as well as to the voices of the RHYTHMIC and MELODIC sections of CHORD ACCOMPANIMENT.

♦ When a button is switched to ON, the left side of the LCD top line indicates the name of the Digital Effector and its right side indicates the name of the voice section to which the effect will be assigned.

♦ **CAUTION:** Multiple Digital Effectors cannot be concurrently assigned to one voice.

♦ **CAUTION:** The ON/OFF status of the Digital Effectors can be assigned to each voice. Upon assigning the Effector ON status to a voice, therefore, the assignment of the ON status for another voice in the same section will be canceled.

♦ **CAUTION:** After assigning an Effector, the illuminated LED of EFFECT ASSIGN will go out when you proceed to operation of another voice section. To confirm which Effector you have assigned, press the assigned Voice Select button once more.

♦ **To cancel the ON status of a Digital Effector,** press the Voice Select button of the assigned voice, then press the illuminated Effector button. "OFF" will be displayed at the LCD bottom line, indicating cancellation of the Effector assignment.

When SYMPHONIC or CELESTE is selected:

(Change) | (No change)

MODE is changed using the "+" and "−" keys.

When PHASER, FLANGER, DELAY or WAH is selected

To apply the effect of the Preset Mode (PRESET MODE Program) [→Page 22]

(Change MODE) | (No change)

Press the ENTER key, then change to another MODE.

[ENTER]

To apply the effect of the parameters set by yourself (USER Program) [→Page 23]

(Change parameters) | (No change)

Press the ENTER key, then change the parameters.

[ENTER]

Press the Voice Select button of another voice section, then select a Digital Effector at the EFFECT ASSIGN section.

NOTES:

● The assignment data of a Digital Effector can be stored in Registration Memory. Registration memory can also store the registration of a particular Effector assigned to other voices or the registrations of other Effectors assigned to a particular voice.
However, the contents of modes and parameters of each Effector, as described from Page 21 onward, cannot be stored.

● The assignment data of Effectors and their data on modes and parameters are retained in back-up memory even when the system power is switched OFF, and such data can also be written to the RAM Pack.

● When a registration stored in Registration Memory is recalled, the LED of the EFFECT ASSIGN section that corresponds to the Effector assigned to an UPPER ORCHESTRAL voice will light up.

● When a Digital Effector is assigned to a LEAD voice, LEAD PAN of the MODULATION section will cease to function. [→Page 27]

● CAUTION: In the case the same Effect is assigned to multiple voice sections, certain voices may become distorted depending on the volume level, quantity of voice sections involved, or the setting of Effect parameters; however, such distortion does not indicate malfunctioning. In this case, the distortion may be remedied by such means as reducing the volume, reducing the number of the assigned voice sections, or changing the parameter settings.

SYMPHONIC•CELESTE _____

Press a Voice Select button (of UPPER ORCHES-
TRAL in this example), then switch SYMPHONIC
or CELESTE to ON.
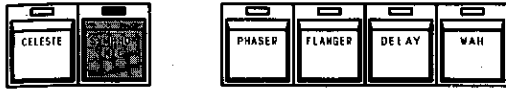
EFFECT ASSIGN

```
SYMPHO. U ORC.
MODE = 1
```

Using the "+" or "−" key, select the mode.
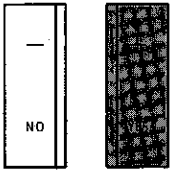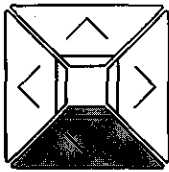
DATA

```
SYMPHO. U ORC.
MODE = 2
```

```
MODE = 1
```

♦ When SYMPHONIC is switched ON, the LCD changes to the display shown
on the left and the LCD top line indicates the names of the Effector and
voice section. In the case CELESTE is switched ON, "CELESTE" is dis-
played on the top line in place of "SYMPHONIC".

♦ The LCD bottom line indicates the currently set mode. The "mode" of
Digital Effectors refers to the presetting of a combination of various para-
meters for an effect. First, play the sound to determine whether or not to
change the currently set mode.
If no change is required: Proceed to operation of another function.
If change is required: Perform the mode change operation described
below.

> If the current mode will not be changed, proceed
> to operation of another function.

♦ The mode displayed at the LCD bottom line is changed using the "+" and
"−" keys. When the mode is changed, the effect is applied with a different
feeling. Play the sound to confirm that difference.

	SYMPHONIC	CELESTE
MODE 1	○	○
MODE 2	○	○

♦ After mode selection, either proceed to operation of another function or
press the ENTER key. The mode last displayed on the LCD will be assigned.

♦ **CAUTION:** For some of the voices, SYMPHONIC or CELESTE has been
pre-assigned as the default data. When such a voice is selected, the assigned
Effector will automatically assume ON status.

Press a Voice Select button (of PERCUSSIVE in this example), then switch one Effector on the left (PHASER in this example) to ON.

EFFECT ASSIGN

```
PHASER   U/L PER.
1.USER
```

(PRESET) ┃ └─────(USER)────────────→

Press the "∨" key to change the LCD bottom line to "2. PRESET".

MENU SELECT

```
PHASER   U/L PER.
2.PRESET
```

Press the ENTER key.

ENTER

```
PHASER   PRESET
MODE = 1
```

Use the "+" and "−" keys to select a mode, then press the ENTER key.

NO
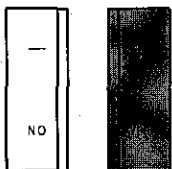
DATA

```
MODE = 1
```
```
PHASER   PRESET
MODE = 2
```
```
MODE = 3
MODE = 4
```

ENTER

◆ When PHASER is switched ON, the LCD changes to the display shown on the left, with the LCD top line indicating the name of the Effector and voice section. In the case FLANGER, DELAY or WAH is switched ON, the name of the Effector that was switched ON will be displayed in place of "PHASER".

◆ The LCD bottom line will display either "1. USER" or "2. PRESET", whichever is currently set.

```
To apply the effect of parameters set by yourself
[→Page 23]
```

◆ In case "1. USER" is initially displayed upon pressing an Effector button, change to display to "2. PRESET" using the "∨" or "∧" key.

◆ When the LCD displays "2. PRESET", effects can be applied to the modes (i.e., the combination of parameters for an effect) preset for each Effector. First, play the sound to determine whether or not to change the currently set mode.
If no change is required: Proceed to operation of another function.
If change is required: Press the ENTER key, then perform the mode change operation.

```
If the current mode will not be changed, proceed
to operation of another function.
```

◆ When the ENTER key is pressed, the LCD changes to the display shown on the left to enable changing of the mode. The LCD bottom line indicates the currently set mode.

◆ The mode displayed on the LCD bottom line is changed using the "+" and "−" keys. Play the sound for confirmation. Moreover, the number of preset modes varies with each Effector. Try switching other Effectors to ON and confirm each mode.

	PHASER	FLANGER	DELAY	WAH
MODE 1	O	O	O	O
MODE 2	O	O	O	O
MODE 3	O	O	O	—
MODE 4	O	O	O	—
MODE 5	—	—	O	—
MODE 6	—	—	O	—

◆ After mode selection, press the ENTER key. The mode last displayed on the LCD will be assigned.

◆ **CAUTION:** For some of the voices, PHASER, FLANGER, DELAY or WAH has been pre-assigned as the default data. When such a voice is selected, the assigned Effector will automatically assume ON status.

PHASER•FLANGER•DELAY•WAH (USER Program) _____

Press a Voice Select button (of PERCUSSIVE in this example), then switch an Effector on the left (PHASER in this example) to ON.

```
PHASER   U/L PER.
1.USER
```

◆ If the LCD bottom line displays "2. PRESET", change it to "1. USER" using the "∨" or "∧" key.

◆ Play the sound to determine whether or not to change the currently set parameters.
If no change is required: Proceed to operation of another function.
If change is required: Press the ENTER key, then perform the operations to change the parameters.

If the parameters will not be changed, proceed to operation of another function.

Press the ENTER key.

ENTER

```
PHASER     USER
COPY ?        Y/N
```

(YES)   (NO)

Press the "+/YES" key, then press the ENTER key.

NO

DATA   ENTER
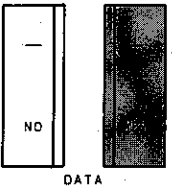
```
PHASER   COPY +/-
MODE=1 → USER  ⌐
```

```
MODE=2 → USER  ⌐
MODE=3 → USER  ⌐
MODE=4 → USER  ⌐
```

Use the "+" and "−" keys to select the mode to be edited.

◆ When the ENTER key is pressed, the LCD changes to the display shown on the left. The display of the LCD bottom line lets you choose whether to change the currently set parameters as they are or to change the parameters of the PRESET mode.
[Y/N]: Pressing the ENTER key without shifting the cursor enables the status where the currently set parameters can be changed. (When Reset is performed, the parameters of MODE 1 will be stored in all Effectors.)
[Y/N]: Pressing the ENTER key after shifting the cursor will copy the parameters of PRESET mode to "USER" and enable the status where those parameters can be changed.

◆ When the cursor is shifted to "Y" and then the ENTER key is pressed, the LCD changes to the display shown on the left and the status where the PRESET mode to be copied to "USER" is enabled.

◆ Use the "+" and "−" keys to change the display of the LCD bottom line for selection of the PRESET mode to be copied.

◆ When the ENTER key is pressed, the LCD changes to the display shown on the left to enable the changing of each of the parameters. The LCD bottom line displays the parameters of each Effector and the numeric values of the currently stored parameters.

◆ To determine the values of each parameter, repeatedly perform the increase/decrease of numeric values using the "+" and "−" keys followed by the change of the parameter display using the "∨" and "∧" keys. Note that the parameters vary with each Effector.

Press the ENTER key.

ENTER

```
PHASER     USER
1.STAGE        1
```

Change the values of each parameter, then press the ENTER key.

∧
< >
∨

NO

MENU SELECT   DATA

```
PHASER     USER
2.FREQUENCY   50
```

```
3.DEPTH        30
4.FEEDBACK     45
1.STAGE         1
```

EFFECTORS	PARAMETERS	VARIABLE WIDTH
PHASER	1. STAGE (No. of phase shifter stages)	1-3
	2. FREQUENCY (Modulation frequency)	0-100
	3. DEPTH (Modulation depth)	0-100
	4. FEEDBACK (Amount of resonance)	0-100
FLANGER	1. DELAY TIME (Length of delay time)	0-100
	2. DEPTH (Modulation depth)	0-100
	3. FREQUENCY (Modulation frequency)	0-100
	4. FEEDBACK (Amount of regeneration)	0-100
	5. DIRECT LEVEL (Direct sound level)	0-100
	6. DELAY LEVEL (Delay sound level)	0-100
DELAY	1. DELAY TIME (Length of delay time)	0-100
	2. DEPTH (Modulation depth)	0-100
	3. FREQUENCY (Modulation frequency)	0-100
	4. FEEDBACK (Amount of regeneration)	0-100
	5. DIRECT LEVEL (Direct sound level)	0-100
	6. DELAY LEVEL (Delay sound level)	0-100
	7. MODULATION WAVE (modulation waveform)	1-2
WAH	1. AUTO SPEED (Modulation frequency of auto wah)	1-100
	2. CENTER FREQUENCY (Center frequency of wah)	0-100
	3. DEPTH (Range of auto wah)	0-100

◆ After setting the values of each parameter, press the ENTER key to store the edit data so you can proceed to operation of another function.

I-2 OTHER EFFECTS & CONTROLS

2-(1) SUSTAIN & LEAD SLIDE

This section is for setting the SUSTAIN effect to be applied to voices of each keyboard and the SLIDE (portamento) effect to be applied to LEAD voices. This section can also be controlled using the Knee Lever.
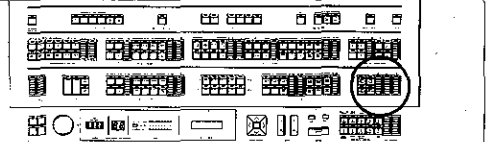
Set the voice sections of the upper, lower and pedal keyboards.	Set the U/L LEAD section.

(SUSTAIN)   (LEAD SLIDE)

Switch the buttons corresponding to the effects you wish to apply to ON.

UPPER   LOWER   PEDAL

SUSTAIN

(SUSTAIN)   (LEAD SLIDE)

Set the Sustain Length of each keyboard.

UPPER   LOWER   PEDAL

UPPER SUSTAIN (KNEE)	LEAD SLIDE (KNEE)
LOWER SUSTAIN (KNEE)	PEDAL SUSTAIN

SUSTAIN

(UPPER, LOWER)

Use the Knee Lever to control the ON/OFF status of the set effect.

(ON)

(OFF)   (ON)

◆ Set each voice section, then switch the buttons of the ENSEMBLE section to ON.

◆ The voice sections which can be assigned SUSTAIN and LEAD SLIDE are as follows:

UPPER and LOWER SUSTAIN	U&L COMBINATION, U&L ORCHESTRAL, U/L PERCUSSIVE, U/L AWM PRESET
PEDAL SUSTAIN	BASS, AWM BASS
LEAD SLIDE	U/L LEAD

◆ The Sustain Length is longest when set to LONG at the top position, and is shortest when set to SHORT at the bottom position. According to the voice, the aftersound may be shorter when Sustain Length is set to SHORT than when switched OFF.

◆ Regardless of the Sustain length setting, the Sustain effect is applied to PIANO 1, PIANO 2 or MARIMBA of AWM PRESET at a fixed length.

◆ LEAD SLIDE can also be controlled using the MODULATION Wheel. [→Page 27]

◆ The ON/OFF status of SUSTAIN and LEAD SLIDE for the upper and lower keyboards can be controlled using the Knee Lever (multiple effects can also be simultaneously controlled).
When the Knee Lever is straight down: The effect will not function though the LED is lit.
When the Knee Lever is pressed to the right: The effect with the illuminated LED will function.
When the Knee Lever is folded up: The effect with the illuminated LED will function continuously.

◆ Besides the Knee Lever, the ON/OFF status of the effects can also be controlled using the Foot Pedal (option).

NOTE:
● When the Knee Lever is operated after switching the LEAD SLIDE (KNEE) button to ON, the Lead Slide effect will be applied in the range characteristic to each voice. Furthermore, when the Modulation Wheel is operated after switching the Modulation 1 button to ON, the effect will be applied in the range set by panel programming.

LEAD SLIDE (KNEE)	MODULA- TION 1	Knee Lever Control	Wheel Control
ON	ON	○	○
ON	OFF	○	—
OFF	ON	—	○

24

2-(2) REVERB

This section allows the setting of a digital-type reverberation (REVERB) effect so that you can choose a REVERB effect from six types of modes.
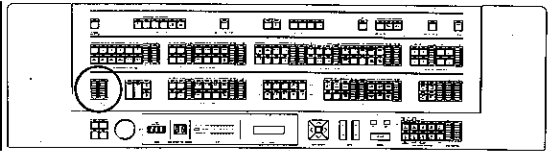
Press one of the REVERB buttons to set the depth of reverberation.

```
REVERB
MODE = 1
```

◆ The depth of reverberation can be set to seven different lengths. When set to MAX at the top position, the depth is longest; when set to MIN at the bottom position, it is switched OFF.

◆ When one of the REVERB buttons is pressed, the LCD displays the REVERB mode that is currently set. First, play the sound to determine whether or not to change the currently set mode.
If no change is required: Proceed to operation of another function.
If change is required: Perform the mode change operation described below.

> If the current mode will not be changed, proceed to operation of another function.

Use the "+" and "−" keys to select the mode.

```
REVERB
MODE = 2

MODE = 3
MODE = 4
MODE = 5
MODE = 6
MODE = 1
```

◆ The mode displayed on the LCD bottom line is changed using the "+" and "−" keys (or the SUB DATA numeric buttons + ENTER key), and each mode gives a different feeling to the effect. Play the sound to confirm the difference.

◆ REVERB functions for all voice sections as well as the voices of the RHYTHMIC and MELODIC sections.

◆ After mode selection, either proceed to operation of another function or press the ENTER key. The mode last displayed on the LCD will be assigned.

2-(3) TREMOLO

This section is for setting the digital-type TREMOLO effect (TREMOLO or CHORUS) for UPPER and LOWER COMBINATION, and also allows setting of Tremolo Speed.
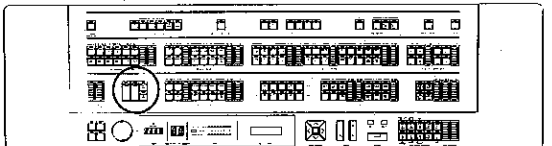
Set UPPER and LOWER COMBINATION (Page 10), then switch the UPPER COMBI. and LOWER COMBI. buttons to ON.
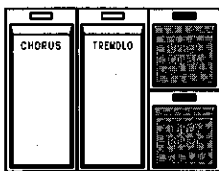
(TREMOLO)   (CHORUS)

◆ Each of the buttons functions as follows:

UPPER COMBI.	Switch for applying an effect to UPPER COMBINATION
LOWER COMBI.	Switch for applying an effect to LOWER COMBINATION
TREMOLO	Achieves an effect whereby the sound seems to rapidly rotate and turn
CHORUS	Achieves an effect whereby the sound slowly rotates and expands

◆ When both TREMOLO and CHORUS are switched OFF, the effect gives a sensation of only expansion without rotation.

> If the CHORUS effect is selected, proceed to another function.

Switch TREMOLO to ON.

```
TREMOLO
SPEED = 12
```

◆ When TREMOLO is switched to ON, the LCD displays the currently set Tremolo Speed. First, play the sound to determine whether or not to change the Tremolo Speed.
If no change is required: Proceed to operation of another function.
If change is required: Change the speed using the following operation.

◆ By switching TREMOLO from ON to OFF while a COMBINATION voice is being sounded, the Tremolo Speed will become gradually slower and the rotating sensation will decrease.

> If the Tremolo Speed data will not be changed, proceed to another operation.

Use the "+" and "−" keys to change the Tremolo Speed.

```
TREMOLO
SPEED = 15
```

◆ Use the "+" and "−" keys (or the SUB DATA numeric buttons + ENTER key) to change the value of the Tremolo Speed displayed on the LCD bottom line. (Variable width: 0-100)

◆ After setting the Tremolo Speed value, either proceed to operation of another function or press the ENTER key. The value last displayed on the LCD will be assigned.

25

2-(4) FOOT SWITCH

This section assigns or selects the operation of the two Foot Switches, located on each side of the Expression Pedal.
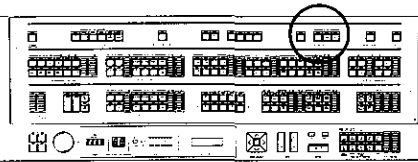
LEFT (GLIDE effects or Control functions of the RHYTHM section can be assigned.)

Switch the LEFT button to ON.
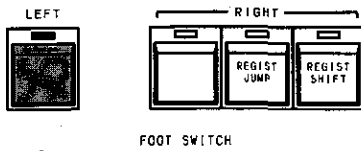
FOOT SWITCH

```
L FOOT SW ASSIGN
4:RHY.STOP
```

♦ When the LEFT button is switched to ON, the LCD bottom line displays the currently assigned function and enables control of that function using the Foot Switch on the left side of the Expression Pedal. First, determine whether or not to change the currently assigned function.
If no change is required: Proceed to operation of another function.
If change is required: Change the assignment to another function using the procedure described below.

♦ When the LEFT button is pressed once more to switch it to OFF, "OFF" is displayed on the LCD bottom line.

> If the current function will not be changed, proceed to operation of another function.

Use the "∨" and "∧" keys to select the function to be assigned.

```
L FOOT SW ASSIGN
5:RHY.ENDING

6:RHY.FILL IN
7:RHY.BREAK
1:LEAD   GLIDE
2:UPPER  GLIDE
3:U & L GLIDE
4:RHY.STOP
```

♦ The function displayed on the LCD bottom line can be changed using the "∨" and "∧" keys (or the SUB DATA numeric buttons + ENTER key).
GLIDE: When the Foot Switch is pressed, the pitch drops approximately a half step; when the Foot Switch is released, the original pitch is gradually restored.

1: LEAD GLIDE	GLIDE is applied only to the LEAD voice.
2: UPPER GLIDE	GLIDE is applied to all UPPER voices except for COMBINATION.
3: U & L GLIDE	GLIDE is applied to all UPPER and LOWER voices.

RHYTHM Controls: The Rhythm section is controlled by pressing the Foot Switch.

4: RHY. STOP	The rhythm stops when the Foot Switch is pressed, then recommences when pressed once more.
5: RHY. ENDING	Each time the Foot Switch is pressed, the rhythm functions similarly to when the switches on the left of the lower keyboard are pressed. [→Page 31, 32]
6: RHY. FILL IN	
7: RHY. BREAK	

RIGHT (GLIDE effects or Control functions of REGISTRATION MEMORY section can be selected.)

Switch the blank button of RIGHT to ON.

```
R FOOT SW ASSIGN
1.LEAD   GLIDE
```

Switch the REGIST JUMP button of RIGHT to ON.

```
R FOOT SW JUMP
REGIST = 1
```

Switch the REGIST SHIFT button of RIGHT to ON.

```
R FOOT SW SHIFT
ON
```

> If the current function will not be changed, proceed to another operation.

> If the current number will not be changed, proceed to another operation.

♦ When the button on the right is switched to ON and the Foot Switch is pressed, the button to the right of the currently illuminated button of the REGISTRATION MEMORY section is switched to ON. Each time the Foot Switch is pressed, the ON status is shifted to the button on the right; when Button 16 is ON, the shift will be to Button 1.

Use the "∨" and "∧" keys to select a function.

```
R FOOT SW ASSIGN
2.UPPER GLIDE

3.U & L GLIDE
1.LEAD   GLIDE
```

♦ Switching the button on the left to ON enables control of the GLIDE effects using the Foot Switch on the right of the Expression Pedal. The effects obtained and the operating procedure are identical to those for LEFT. For example, use the LEFT Foot Switch for Rhythm Control and the RIGHT Foot Switch for GLIDE effects.

Use the "+" and "−" keys to change the number.

```
R FOOT SW JUMP
REGIST = 2

REGIST = 3
     :
REGIST = 16
REGIST = 1
```

♦ When the center button is switched to ON and the Foot Switch is pressed, a specific button of the Registration Memory will be switched to ON. Set a Registration number that you frequently use within a melody at this button.

NOTES:
● When the RIGHT buttons are pressed once more and switched to OFF, "OFF" is displayed at the LCD bottom line.
● The ON/OFF data of the LEFT button can be stored in Registration Memory.

2-(5) MODULATION (Wheel Control)

The MODULATION Wheel located to the left of the upper keyboard can be used for real-time control of the application of the LEAD SLIDE, WAH, and LEAD PAN effects.
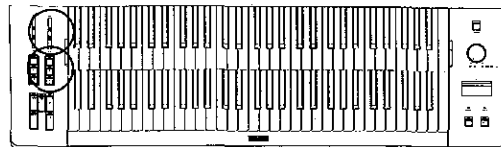
Switch either Button 1, 2 or 3 to ON (Button 1 in this example).
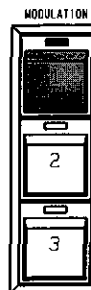
MODULATION

→LEAD SLIDE ----┐
→LEAD PAN |
→WAH |
                 ↓
```
MODULATION
LEAD SLIDE = 28
```

└─── No change ───┐

Use the "+" and "−" keys to change the MAX value.
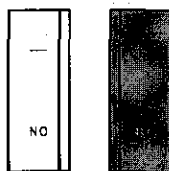
DATA

```
MODULATION
LEAD SLIDE = 20
```

Operate the MODULATION Wheel while producing sounds to control the application of the effects.

MAX

MIN

♦ When one of the MODULATION buttons is switched to ON, the application of the effect corresponding to the pressed button can be controlled using the Wheel (RIGHT).

1 LEAD SLIDE	Controls the Portamento Speed applied to the LEAD voice.
2 LEAD PAN	Controls the direction (orientation) of the LEAD voice produced from the speakers. (When this button is switched to ON, the Digital Effector assignments for the LEAD voice are cancelled.)
3 WAH	Controls the WAH effect of the voice section to which WAH has been assigned at the EFFECT ASSIGN section.

♦ When one of the MODULATION buttons is switched to ON, the LCD changes to the display shown on the left. The bottom line displays the currently set variable width (the value when the Wheel is set to MAX) of the effect that is switched to ON. Operate the Wheel while producing sounds to determine whether or not to change the current value.
If no change is required: Proceed to operation of another function.
If change is required: Change the value using the "+" and "−" keys (or SUB DATA numeric buttons + ENTER key).
[Variable Width] LEAD SLIDE: 0-100
                 LEAD PAN: 0-100
                 WAH: 0-100

♦ Each effect will change as follows due to Wheel operation:
LEAD SLIDE: The more the Wheel is turned towards MAX, the slower the Portamento Speed becomes.
LEAD PAN: The more the Wheel is turned towards MAX, the more the LEAD voice orientation shifts toward the right; the more it is turned toward MIN, the more the LEAD voice orientation shifts towards the left.
WAH: The more the Wheel is turned towards MAX, the sharper the WAH effect becomes.

NOTE
● In place of the MODULATION Wheel, the modulation can also be controlled using the Breath Controller (option).

● The application of these effects can also be controlled by operating the 2nd Expression Pedal, instead of the MODULATION Wheel or PITCH Wheel. [→Page 72]

2-(6) PITCH (Wheel Control)

The PITCH Wheel located to the left of the upper keyboard can be used for real-time control of the application of the PITCH BEND effect for LEAD, UPPER ORCHESTRAL, and PEDAL voices.

Switch either Button 1, 2 or 3 to ON (Button 1 in this example).

→LEAD PITCH

→U.ORC.PITCH

→PEDALS PITCH

```
PITCH BEND
LEAD PITCH = 12
```

— No change —

Use the "+" and "−" keys to change the variable width.

```
PITCH BEND
LEAD PITCH = 6
```

Operate the PITCH Wheel while producing sounds to control the application of the PITCH BEND effect.

UP

DOWN
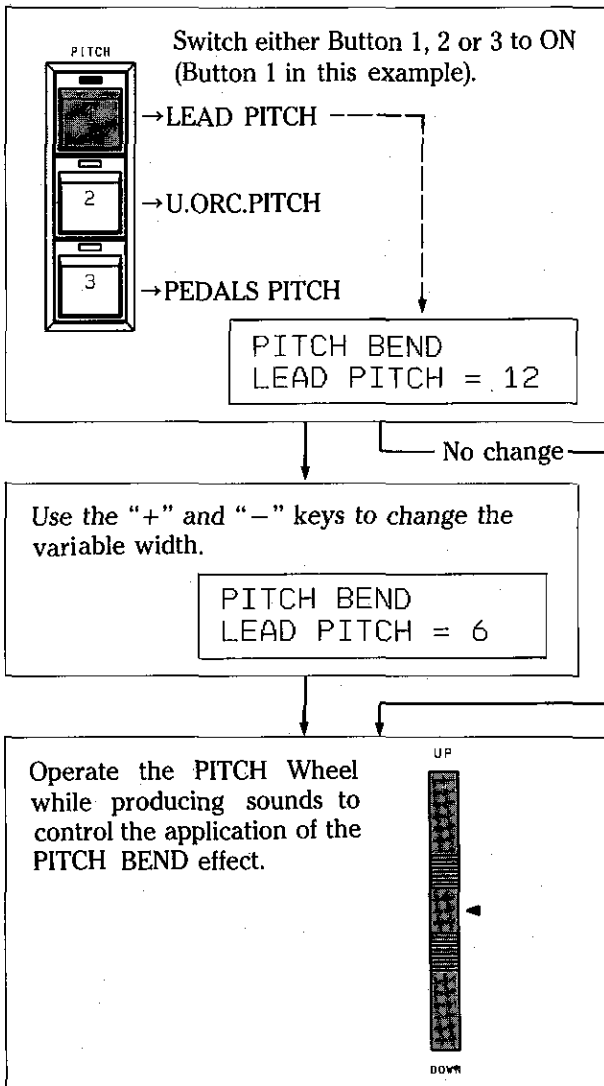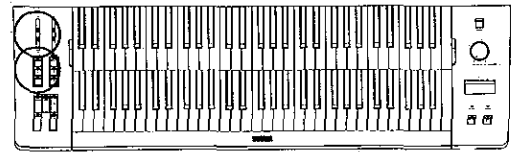
◆ When the PITCH buttons are switched to ON (multiple buttons can be ON concurrently), application of the PITCH BEND effect corresponding to the respective buttons can be controlled using the Wheel.

1	LEAD PITCH	Controls the application of PITCH BEND to the LEAD voices.
2	U. ORC. PITCH	Controls the application of PITCH BEND to UPPER ORCHESTRAL voices.
3	PEDALS PITCH	Controls the application of PITCH BEND to the pedal keyboard voices.

◆ When one of the PITCH buttons is switched to ON, the LCD changes to the display shown on the left. The bottom line displays the currently set variable width (the value when the Wheel is set to MAX) of the PITCH for the button that is switched to ON. Operate the Wheel while producing sounds to determine whether or not to change the current value.
If no change is required: Proceed to operation of another function.
If change is required: Change the value using the "+" and "−" keys (or SUB DATA numeric buttons + ENTER key). The numeric value is changed in half steps.
[Variable Width: 1-12]

◆ Turning the Wheel towards UP will bend the pitch upward, whereas turning it towards DOWN will bend it downward. When you release the Wheel, it will automatically return to its center position and the pitch will return to normal.

2-(7) TUNING

This function can perform fine tuning of the pitch for all the instruments.

Switch TUNING to ON.

TUNING

```
TUNING
A=440.0Hz
```

— No change —

Use the "+" and "−" keys to change the pitch.

```
TUNING
A=442.1Hz
```

When the keyboard is played, the set pitch is sounded.
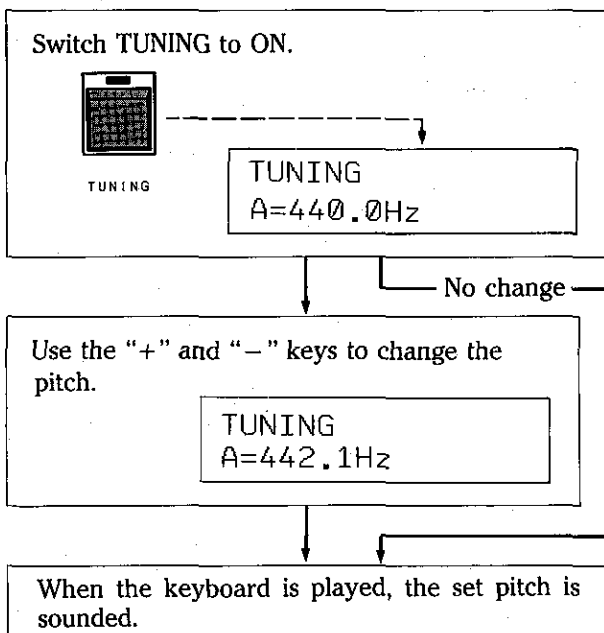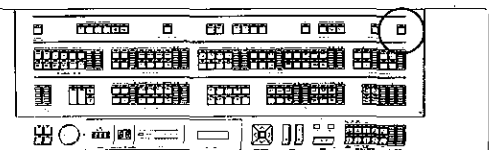
◆ When TUNING is switched to ON, the LCD changes to the display shown on the left. The LCD bottom line displays the currently set pitch. (When Reset is performed, the setting becomes "A=440Hz".) First, determine whether or not to change the currently set pitch.

◆ Each time the "+" key is pressed, the pitch is raised one step. (1 step = 0.3 Hz; maximum: 23 steps)
Each time the "−" key is pressed, the pitch is lowered one step. (1 step=0.3 Hz; maximum: 7 steps)

[−] ←	(normal)	→ [+]
437.9 Hz…439.7 Hz	440.0 Hz	440.3 Hz…446.9 Hz

◆ When TUNING is switched to OFF, "OFF" is displayed on the LCD bottom line and the setting returns to "A=440 Hz" (normal).

2-(8) MANUAL BALANCE

This control sets the balance between the volumes of the upper and lower keyboards.
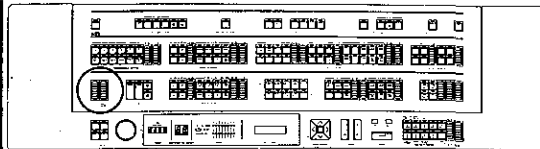
Set MANUAL BALANCE.

UPPER

LOWER

MANUAL
BALANCE

◆ When MANUAL BALANCE is set towards UPPER, the volume of the upper keyboard is greater than that of the lower keyboard. When it is set towards LOWER, the volume of the lower keyboard is greater than that of the upper keyboard.

2-(9) PEDAL D.R.C.

The variable width of the volume that can be controlled by the Expression Pedal can be narrowed only for the Pedal Keyboard sounds.
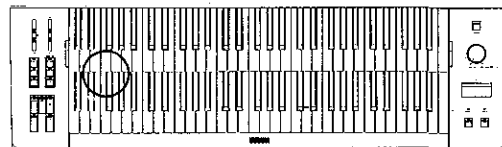
Switch PEDAL D.R.C. (Dynamic Range Control) to ON.

PEDAL D.R.C.

◆ When this button is switched to ON, the variable width of the volume of the Pedal Keyboard becomes narrower and will not vary more than the volume of other keyboards though the volume is changed by the Expression Pedal.

2-(10) LEVEL Displays

The LEVEL Displays located to the left of the LCD indicate the intensity of keyboard touch and the Expression Pedal status by the number of illuminated LEDs.

Press the ON/OFF button.

INITIAL TOUCH

ON/OFF   1 2 3 4 5 6 7 8

EXPRESSION

LEVEL
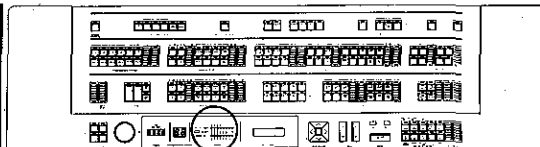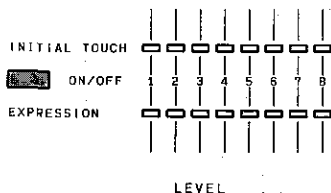
◆ At the INITIAL TOUCH Display at the top row, the more strongly each keyboard is pressed, the more LEDs are illuminated.

◆ At the EXPRESSION Display at the bottom row, the more strongly the Expression Pedal is depressed, the more LEDs are illuminated.

Other Controls ——————————————————————————

■ MASTER VOLUME

It is possible to control the overall volume. When the Music Disk Recorder (MDR-2) is connected and in use, the REMOTE LED located on the side will light up when the volume is adjusted by remote control.

■ POWER Switch

When the POWER switch is switched to ON, the status of the Panel at the moment it was last switched to OFF will be reproduced (with the exception of the status of the SEQUENCER and PACK buttons, the Rhythm START switch, etc.) At the moment it is switched to OFF, the various data that had been stored in Main Memory is also retained in back-up memory. When POWER is switched to ON while depressing the BREAK button, each function will be reset. [→Page 7] Note that when POWER is switched to ON, the model name is displayed on the LCD as shown below.

YAMAHA ELECTONE
** HX-1 / 5 F **

I-3 RHYTHM & PLAY ASSIST

3-(1) PROGRAMMABLE RHYTHM

This section is for obtaining realistic percussion sounds from the AWM sound source, allowing you to assign 22 Preset patterns as well as to create your own original patterns.
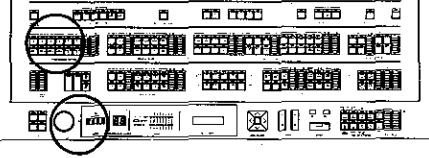
(Preset Patterns)

Press a Dotted Button.
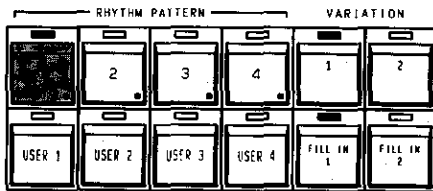
```
RHY.PTN.MENU
01:8 BEAT 1
```

↓

Use the "∨" and "∧" keys to select the pattern to be assigned.
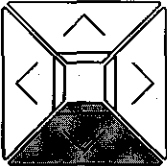
MENU SELECT

```
RHY.PTN.MENU
02:8 BEAT 2

03:8 BEAT 3
  :    :
  :    :
22:WALTZ 1
01:8 BEAT 1
```

↓

Also assign patterns respectively to the other Dotted buttons.

↓

Select either VARIATION 1 or 2.
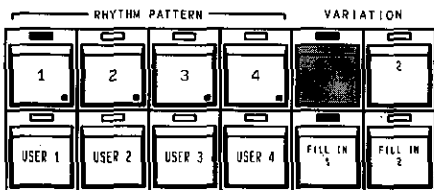
PROGRAMMABLE RHYTHM

(USER Patterns)

Use the RHYTHM PATTERN EDIT of MULTI MENU to program an original pattern, then press one of the USER buttons. [→Page 50]

◆ When a Dotted button is pressed, the LCD changes to the display shown on the left. The LCD bottom line displays the number and name of the Rhythm pattern currently assigned to the pressed button. Note that, when Reset is performed, the following are assigned:
1→[01: 8 BEAT 1], 2→[03: 8 BEAT 3],
3→[13: LATIN], 4→[16: SAMBA]

◆ One of the Pattern Select buttons is always ON. To assign a pattern to a Dotted button that is already ON (or to confirm the assigned pattern), press the button once more.

◆ When the "∨" key is pressed, the number displayed on the LCD is incremented by one and the pattern changes correspondingly. Start the rhythm to confirm the pattern.

◆ In place of the "∨" and "∧" keys, the pattern can also be selected using the SUB DATA numeric buttons. Enter the number of the pattern to be assigned using the SUB DATA numeric buttons, then press the ENTER key.

◆ The Preset Rhythm patterns consist of the 22 types below. [→HX RHYTHM LIST]

01: 8 BEAT 1	07: BOUNCE 1	13: LATIN	19: MARCH 1
02: 8 BEAT 2	08: BOUNCE 2	14: SALSA	20: MARCH 2
03: 8 BEAT 3	09: SLOW ROCK	15: BOSSANOVA	21: WALTZ 1
04: 16 BEAT 1	10: BALLAD	16: SAMBA	22: WALTZ 2
05: 16 BEAT 2	11: 4 BEAT 1	17: TANGO	
06: DISCO	12: 4 BEAT 2	18: COUNTRY	

◆ Each pattern consists of eight measures forming a single unit: [A]→[B]→[A] →[C]→[A]→[B]→[A]→[D] (Each pair of brackets represents one measure.)
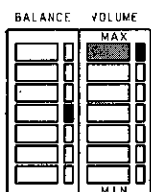
◆ After displaying the pattern to be assigned on the LCD, either proceed to operation of other Dotted buttons, etc., or press the ENTER key. The pattern last displayed will be assigned. Moreover, the assignment data can be stored in Registration Memory.

◆ Each Preset pattern also consists of two types of patterns. After pattern assignment, select the button of VARIATION 1 or 2.

◆ It is also possible to copy the Preset patterns (22 × 2 patterns) to the USER buttons for editing. [→Page 58]

RHYTHM CONTROLS
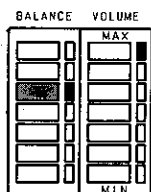
Set the VOLUME.

♦ The volume is maximum when set to MAX at the top position, and no sound is produced when set to MIN at the bottom position.
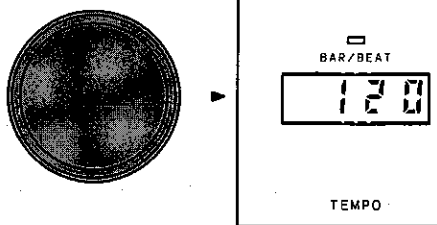
To set VOLUME to a finer level [→Page 15]

Set the BALANCE.

♦ BALANCE can be used to control the volume balance of the percussion sounds comprising a Rhythm pattern.
Toward top: The cymbal sounds become louder, and no drum sounds are produced when set to the top position.
Toward bottom: The drum sounds become louder, and no cymbal sounds are produced when set to the bottom position.
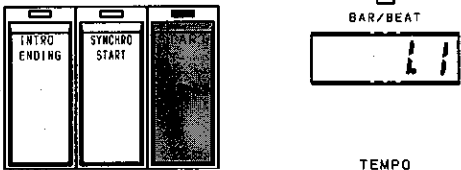
Set the TEMPO.

♦ When POWER is switched to ON, the currently set tempo is indicated on the Display. Use the knob at the left of the Display to adjust the tempo.
Clockwise rotation: The numeric value on the display is incremented one step at a time, and the tempo is increased. (Max: 240)
Counter-clockwise rotation: The numeric value on the display is decreased one step at a time, and the tempo is decreased. (Min: 40)

To control TEMPO using the 2nd Expression Pedal [→Page 72]
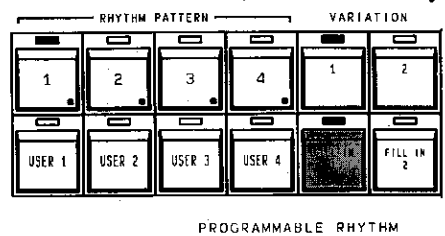
Start the rhythm.

♦ When the START switch at the left of the lower keyboard is pressed, the rhythm is started; when it is pressed once more, the rhythm is stopped.

♦ When the SYNCHRO START switch is pressed in place of the START switch, the rhythm does not start immediately but starts concurrently with the pressing of the lower or pedal keyboard.

♦ When the rhythm is started, the Display that was indicating the tempo will change to indicate "Bar/Beat." (Max: 256 bars)

♦ The indicator above the Display lights up at the first beat (down beat) of each measure after the rhythm is started. From the time SYNCHRO START is pressed until the rhythm is started, the indicator lights up at each quarter note.
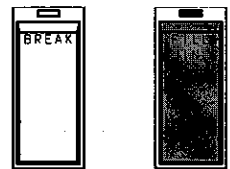
FILL IN

Select either FILL IN 1 or 2, then start the rhythm.

♦ Each Preset Rhythm pattern consists of two types of Fill In patterns. After completing pattern assignment, select the Fill In pattern by pressing FILL IN 1 or 2.

♦ Using RHYTHM PATTERN EDIT of MULTI MENU, you can also create and program your own original Fill In patterns. [→Page 50]
It is also possible to copy and edit the Preset Fill In patterns (22 × 2 patterns). [→Page 58]

Switch the FILL IN switch to ON.

♦ When the switch is pressed, the Fill In pattern will sound until the end of that measure and the original Rhythm pattern will start again from the next measure. If you wish to play the Fill In pattern for two or more measures, depress the FILL IN switch continuously.

♦ When the Rhythm pattern switches over to the Fill In pattern, the CHORD ACCOMPANIMENT pattern and the bass pattern of AUTO BASS CHORD also change.

♦ The Fill In pattern can also be used as an introduction by pressing the FILL IN switch prior to starting the rhythm.

31

INTRO./ENDING

Press the INTRO./ENDING switch to start the rhythm.

↓
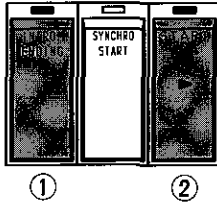
When you are almost finished with a song, press the INTRO./ENDING switch.
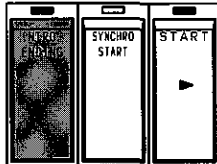
◆ When the INTRO./ENDING switch is pressed before starting the rhythm, the Intro. pattern suited to the currently selected Rhythm pattern will play for two measures after which the rhythm will start automatically.

◆ When the INTRO./ENDING switch is pressed after starting the rhythm, a maximum-length two-measure Ending pattern will play after which the rhythm will stop automatically.

◆ When switching over to the Ending pattern, the CHORD ACCOMPANI-MENT pattern and the bass pattern of AUTO BASS CHORD also change.

BREAK

Start the rhythm, then switch BREAK to ON.
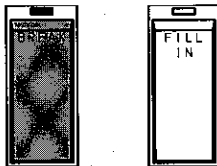
◆ When the BREAK switch is pressed, the rhythm sounds (and CHORD ACCOMPANIMENT and AUTO BASS CHORD sounds) are temporarily stopped until the end of that measure, then recommence from the following measure. If you wish to insert a break of two measures or more, depress the BREAK switch continuously.

◆ If you wish to insert a break that is shorter than one measure, press the BREAK switch once and stop the rhythm, then press it once more prior to the point where the rhythm should start again.

◆ If the BREAK switch is switched to ON prior to starting the rhythm, a one-measure "silent" introduction can be achieved.

3-(2) KEYBOARD PERCUSSION

This function enables the percussion sounds to be produced by pressing the keyboards. The various percussion sounds can also be assigned to any keys among the three keyboards.
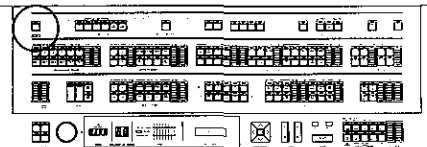
——— [ENTER] ———

Assign the percussion sounds to the keyboards in advance, using KEYBOARD PERCUSSION ASSIGN of MULTI MENU. [→Page 64]

Switch KEYBOARD PERCUSSION to ON.

KEYBOARD
PERCUSSION

↓

When the assigned keys are played, the percussion sounds are produced.

◆ The data assigned by MULTI MENU can be saved together with the registration data in the RAM Pack. [→Page 74]

◆ When the assigned keys are played, the percussion sounds are produced together with the currently set voices. It is also possible to produce a drum solo by setting the temporary cancellation of the voices. The volume and timbre of percussion can be controlled by the intensity (Initial Touch) with which the keys are pressed.

This function automatically produces an accompaniment synchronized with the rhythm on the basis of the chords played on the lower keyboard, and consists of two groups: RHYTHMIC CHORD and MELODIC CHORD.
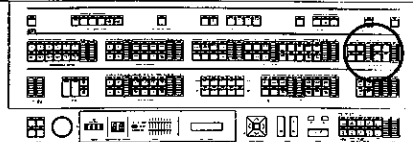
Select one pattern each for RHYTHMIC CHORD and MELODIC CHORD.

RHYTHMIC   VOLUME   MELODIC   VOLUME
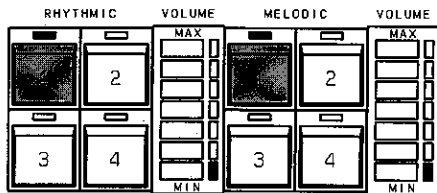
CHORD ACCOMPANIMENT

↓

Select the Rhythm pattern, Variation pattern, and Fill In pattern. [→Page 30]

RHYTHM PATTERN   VARIATION
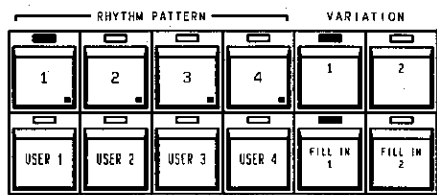
PROGRAMMABLE RHYTHM

↓

Set their respective VOLUME controls.

RHYTHMIC   VOLUME   MELODIC   VOLUME

CHORD ACCOMPANIMENT

→ To set VOLUME to a finer level [→Page 15]

↓

Set the Digital Effectors, as required.

→ [→Page 20]

↓
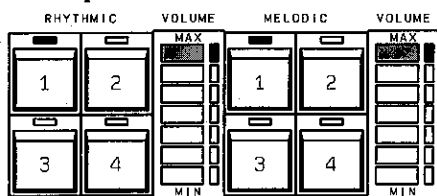
When the rhythm is started and the lower keyboard is played, auto accompaniment will be produced.

◆ At the CHORD ACCOMPANIMENT section, two types of auto accompaniment that are synchronized with the rhythm can be obtained. You can produce either one type alone or both types simultaneously.

| RHYTHMIC CHORD | Produces a strumming chord pattern synchronized with the rhythm, using the notes played on the lower keyboard. |
| MELODIC CHORD | Produces an arpeggio pattern synchronized with the rhythm, based on the notes played on the lower keyboard. |

◆ The RHYTHMIC CHORD and MELODIC CHORD patterns and voices are as follows:

	Pattern (A)	Pattern (B)
Voice (a)	1	—
Voice (b)	—	2
Voice (c)	3	—
Voice (d)	—	4

◆ The patterns and voices of RHYTHMIC CHORD and MELODIC CHORD are determined according to the Rhythm pattern selected. [→HX RHYTHM LIST]

◆ When FILL IN is switched to ON, the patterns of RHYTHMIC CHORD and MELODIC CHORD change. Even from the same Rhythm pattern, however, you can obtain different patterns using FILL IN 1 and 2.

◆ CAUTION: If the Rhythm pattern is changed after assigning a Digital Effector, the assigned Effector will assume the OFF status.

◆ If RHYTHMIC CHORD and MELODIC CHORD will not be used, set VOLUME to MIN at the bottom position.

◆ If the LOWER MEMORY of AUTO BASS CHORD is switched to ON, the sounds of RHYTHMIC CHORD and MELODIC CHORD will continue even if you release your fingers from the lower keyboard. Moreover, when the rhythm is stopped at such time, the RHYTHMIC CHORD and MELODIC CHORD sounds will also stop.

NOTES:
● The RHYTHMIC CHORD and MELODIC CHORD patterns and the bass patterns of AUTO BASS CHORD are also designed to change according to the type of chords played on the lower and pedal keyboards.

RHYTHMIC CHORD: Two types, consisting of the 7th chords and other chords

MELODIC CHORD: Four types, consisting of Major chords, Minor chords, 7th chords, and other chords

AUTO BASS CHORD: Three types, consisting of Major and Minor chords, 7th chords (and unformed chords), and Minor 7th chords

● Sound range of RHYTHMIC CHORD: G3 to F#4
Sound range of MELODIC CHORD : D#2 or higher

● With the HX Electones, the RHYTHMIC CHORD and MELODIC CHORD patterns and the bass patterns of AUTO BASS CHORD are referred generically as the "ABC pattern." This ABC pattern is determined according to which Preset Rhythm pattern (22×2 patterns) is selected. [→HX RHYTHM LIST]

● While the USER button of RHYTHM is ON, the ABC pattern assumes the ABC pattern assigned to that USER button at the moment the RHYTHM PATTERN EDIT operation is started.
To change the ABC pattern using the RHYTHM PATTERN EDIT operation, recall another ABC pattern using the RHYTHM PATTERN COPY function. [→Page 58]

3-(4) AUTO BASS CHORD

This function automatically produces the chord and bass accompaniment, and consists of three different modes. With MULTI BASS, you can obtain the Bass pattern suited to your selected Rhythm pattern.
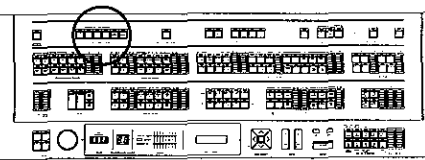
Switch the ABC button to ON.

```
┌──── MULTI BASS ────┐
[   ] [ 1 ] [ 2 ] [ 3 ] [LOWER  ] [PEDAL  ]
                        [MEMORY ] [MEMORY ]

        AUTO BASS CHORD
```
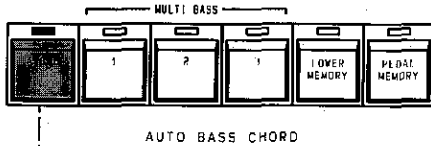
```
AUTO BASS CHORD
MODE  =    CUSTOM
```

(Change mode) ↓ └── (No change) ──

Use the "+" and "−" keys to select the mode.
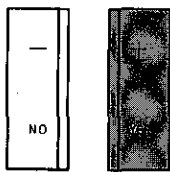
```
[ − ]  [ + ]
 NO     YES

DATA

AUTO BASS CHORD
MODE  =      S.F.

MODE  =      F.C.
MODE  =    CUSTOM
```

Switch either MULTI BASS 1, 2 or 3 to ON.
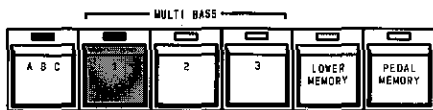
```
┌──── MULTI BASS ────┐
[ABC] [ 1 ] [ 2 ] [ 3 ] [LOWER  ] [PEDAL  ]
                        [MEMORY ] [MEMORY ]

        AUTO BASS CHORD
```

Switch LOWER MEMORY and/or PEDAL MEMORY to ON, as required.

```
┌──── MULTI BASS ────┐
[ABC] [ 1 ] [ 2 ] [ 3 ] [LOWER  ] [PEDAL  ]
                        [MEMORY ] [MEMORY ]

        AUTO BASS CHORD
```

Select the Rhythm pattern, Variation pattern, and Fill In pattern.
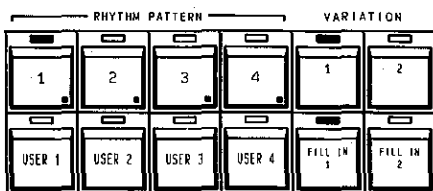
```
┌──── RHYTHM PATTERN ────┐   VARIATION
[ 1 ][ 2 ][ 3 ][ 4 ]    [ 1 ][ 2 ]

[USER 1][USER 2][USER 3][USER 4][FILL IN][FILL IN]
                                  1        2

        PROGRAMMABLE RHYTHM
```

Start the rhythm, then play the lower keyboard (and the pedal keyboard, in case of CUSTOM ABC).

♦ When the ABC button is switched to ON, the LCD bottom line indicates the currently assigned mode for auto accompaniment. To change the mode, follow the procedure described below.

♦ When the ABC button is pressed once more and switched to OFF, "OFF" is displayed at the LCD bottom line.

♦ Use the "+" and "−" keys to select the auto accompaniment mode. The accompaniment method of each mode is as follows:

S.F. (SINGLE FINGER)	By pressing the lower keyboard as follows, four chord types are detected and automatic chord and bass accompaniment are produced. Maj chords: Press the root of the chord. Min chords: Press the root of the chord together with the black key on its left. 7th chords: Press the root of the chord together with the white key on its left. Min 7th chords: Press the root of the chord together with the black and white keys on its left.
F.C. (FINGERED CHORD)	The chords pressed on the lower keyboard are detected to produce auto bass accompaniment.
CUSTOM (CUSTOM ABC)	The chords pressed on the lower keyboard plus the note pressed on the pedal keyboard are detected to produce auto bass accompaniment.

♦ Use the MULTI BASS buttons to select the Bass pattern for auto accompaniment. You can choose from three Bass patterns with respect to one Rhythm pattern.

♦ **LOWER MEMORY**: Even after releasing your fingers from the lower keyboard, the notes played up to such time will continue.
PEDAL MEMORY: Even after releasing your foot from the pedal keyboard, the note played up to such time will continue.

♦ If the rhythm has been started, the LOWER MEMORY and PEDAL MEMORY will function even if the ABC button is switched to OFF.

♦ The Bass patterns of AUTO BASS CHORD are determined according to the Rhythm pattern selected.

♦ When FILL IN is switched to ON, the Bass pattern of AUTO BASS CHORD will change. Even from the same Rhythm pattern, however, you can obtain different patterns using FILL IN 1 and 2.

♦ With FINGERED CHORD or CUSTOM ABC, the following 15 types of chords can be detected as the chords for auto bass accompaniment: major, minor, 7th, minor 7th, major 7th, minor major 7th, aug (+5), aug 7th (7+5), dim, 7th sus4, min 7th-5, major-5, 7th-5, 6th, and minor 6th.

3-(5) MELODY ON CHORD

This function enables the automatic addition of harmony to the melody you play on the upper keyboard, and consists of three different modes.
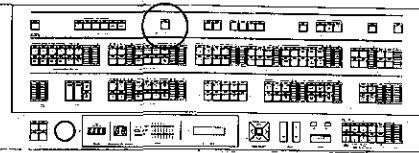
Switch MELODY ON CHORD to ON.

MELODY ON CHORD

```
MELODY ON CHORD
MODE =        1
```

(Change mode) ↓ └──(No change)──┐

Use the "+" and "−" keys to select the mode.

–

NO
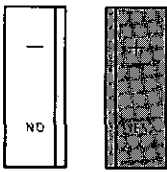
DATA

```
MELODY ON CHORD
MODE =        2

MODE =        3
MODE =        1
```

Set the voices of the upper keyboard, then switch the buttons of the ENSEMBLE section to ON.
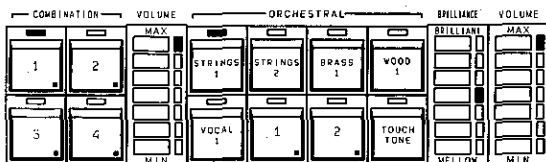
UPPER KEYBOARD

When chords are pressed on the lower keyboard and the melody is played on the upper keyboard, harmony is added.

♦ When MELODY ON CHORD is switched to ON, the LCD bottom line indicates the currently assigned mode (harmony application method) of MELODY ON CHORD. To change the mode, follow the procedure described below.

♦ When MELODY ON CHORD is pressed once more and switched to OFF, "OFF" is displayed at the LCD bottom line.

♦ Select the mode using the "+" and "−" keys. The method of applying harmony in each mode is as follows:

1	Harmony up to the two highest notes can be achieved within a range close to the melody.
2	Harmony up to the three highest notes can be achieved within a range close to the melody.
3	Harmony up to the four highest notes can be achieved within a range somewhat apart from the melody.

♦ The voices of the upper keyboard, excluding the LEAD section voices, are produced as the harmony of the MELODY ON CHORD.

♦ The harmony will be added only during the period wherein chords are pressed on the lower keyboard and the melody is played on the upper keyboard. Note that, while LOWER MEMORY of AUTO BASS CHORD is ON, the harmony will be added even if you release your fingers from the lower keyboard.

I-4 REGISTRATION MEMORY

REGISTRATION MEMORY

This function allows the storage of 16 types of registrations so that a stored registration can be recalled by pressing a single button.
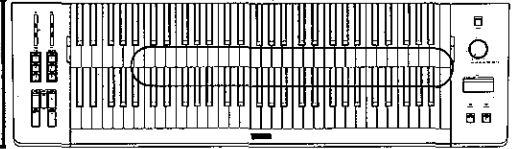
Set the registration to be used for performance at each section of the panel. [→Pages 9-35]

↓

While pressing the MEMORY/TO PACK button, press one of the numbered buttons (1-16).

■ ■ □ □ □
MEMORY/TO PACK

↓

Set the other registrations at the panel.

↓

While pressing the MEMORY/TO PACK button, press another numbered button.

└── (Repeat) ──┘

↓

To control the Registration Memory using the Foot Switch (RIGHT), switch REGIST JUMP or REGIST SHIFT to ON. [→Page 26]

↓

After recalling the registration to be used at the beginning of the song, start the music, then switch another numbered button to ON at the point you wish to change the registration.

■ □ □ □   □ □ □ □   □ □ □ □   □ □ □ □
  2 3 4   5 6 7 8   9 10 11 12 13 14 15 16

♦ It is possible to store the ON/OFF data and assignment data of the voice sections, effects, rhythm section, and so on. [→Page 37]

♦ When one of the numbered buttons is pressed while pressing the MEMORY/TO PACK button, the pressed numbered button will flash to indicate memorization has been performed.

♦ One of the 16 numbered buttons is always ON. The memorization operation can be performed any time for any button, regardless of the illumination status of the button.
Memorization done for a lit button: The data stored in the lit button will be replaced by the registration data currently set at the panel. After the button flashes, it will remain lit.
Memorization done for an unlit button: The data of the lit button will remain unchanged, and only the data of the memorized button will be replaced. After the memorized button flashes, it will remain unlit (lighting up if pressed once more).

To program the playback sequence to SEQUENCER [→Page 39]

NOTES:
● The data stored in the 16 numbered buttons are retained in back-up memory even after the system power is switched OFF. This data can also be saved in the RAM Pack. [→Page 74]

● When one of the buttons from 1 to 16 has been pressed and the stored registration has been reproduced at the panel, the registration can be changed by operating the panel. At such time, the pressed numbered button will remain lit; if it is pressed once more, the registration prior to editing at the panel will be restored.

● The REGISTRATION NUMBER display on the right of the TEMPO display indicates the number of the currently selected button.

Functions and Data that can be stored in Registration Memory

The ON/OFF data and assignment data corresponding to the shaded section of the figure below can be stored in Registration Memory.
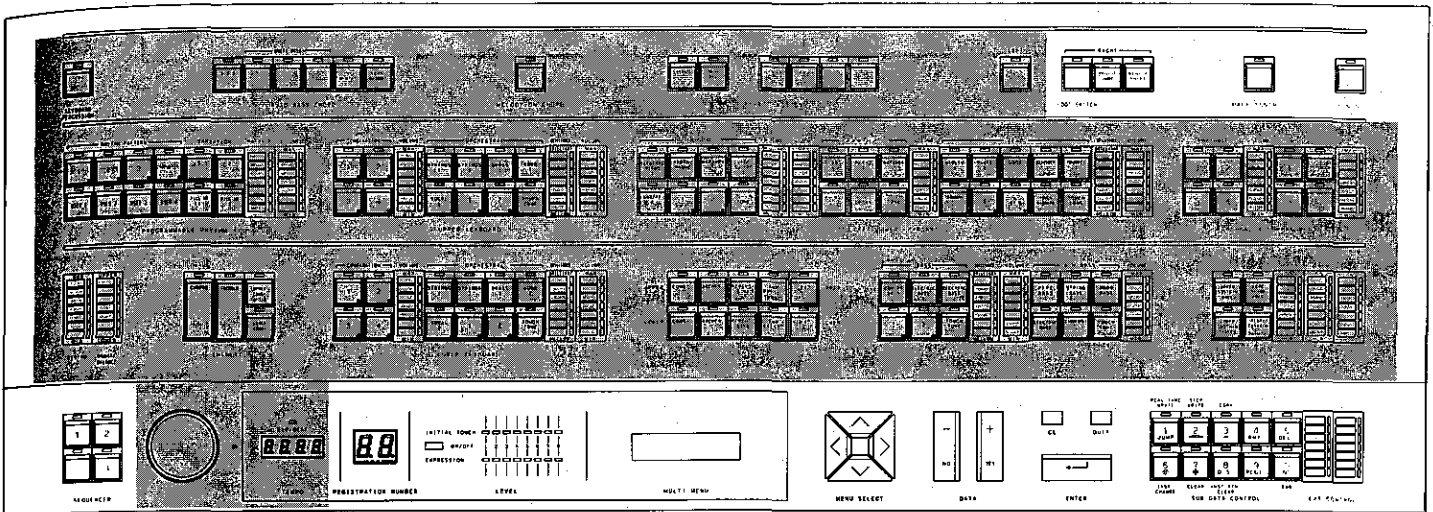
Functions	Data Capable of Storage	Data Incapable of Storage
ENSEMBLE	On/Off data	
U&L COMBINATION	Voice select data, Voice assign data, Volume Value data	User Voice edit data
U&L ORCHESTRAL U/L PERCUSSIVE U/L LEAD BASS	Voice select data, Voice assign data, Volume Value data, Brilliance position data, Touch Tone On/Off data & Range data, Touch Vibrato On/Off data & Range data (LEAD)	Vibrato parameters data, User voice data
U/L AWM PRESET AWM BASS	Voice select data, Volume Value data, Touch Tone On/Off data & Range data	
EFFECT ASSIGN	Effect assign data	Mode assign data, Parameters assign data
SUSTAIN, LEAD SLIDE	On/Off data, Length position data	
REVERB	Position data	Mode assign data
TREMOLO	On/Off data, Tremolo/Chorus select data	Tremolo Speed data
FOOT SWITCH	On/Off data	Regist. Jump On/Off & Number data, Regist. Shift On/Off data
MODULATION PITCH	On/Off data	Range data, Wheel position data
TUNING	—	On/Off data, Shift Range data
MANUAL BALANCE	Position data	
PEDAL D.R.C.	On/Off data	
PROGRAMMABLE RHYTHM	Pattern select data, Pattern assign data, Variation select data, Fill In select data, Volume Value data, Balance position data	User Pattern edit data, Instrument Level data, Instrument Pan data
TEMPO	Speed data	
KEYBOARD PERCUSSION	On/Off data	Instrument assign data
CHORD ACCOMPANIMENT	Pattern select data, Volume Value data	
AUTO BASS CHORD	On/Off data, Mode assign data	
MELODY ON CHORD	On/Off data, Mode assign data	
SEQUENCER	—	On/Off data, Program data
EXPRESSION PEDAL	2nd Expression Pedal assign data	Position data
START, SYNCHRO START, INTRO./ENDING, FILL IN, BREAK	—	On/Off data
OTHER BUTTONS & CONTROLS	—	On/Off data, Position data

II. MULTI MENU

1. SEQUENCER

PROGRAMMABLE RHYTHM →
CHORD ACCOMPANIMENT AUTO BASS CHORD →
REGISTRATION MEMORY →

1-(1) RECORD

STEP WRITE
(RHYTHM/CHORD/REGISTRATION SEQUENCE)

REAL TIME WRITE (CHORD SEQUENCE)

1-(2) EDIT
(RHYTHM/CHORD/REGISTRATION SEQUENCE)

1-(3) PLAY MODE CHANGE

→ SEQUENCER (4 SONGS)

2. RHYTHM

PRESET PATTERNS →

2-(1) RHYTHM PATTERN EDIT

RHYTHM REAL TIME WRITE   RHYTHM INSTRUMENT CHANGE
RHYTHM STEP WRITE   RHYTHM CLEAR
RHYTHM PATTERN COPY   RHYTHM INSTRUMENT PATTERN CLEAR

→ USER PATTERNS (4 × 4)

2-(2) RHYTHM INSTRUMENT LEVEL

2-(3) RHYTHM INSTRUMENT PAN

2-(4) KEYBOARD PERCUSSION ASSIGN

→ KEYBOARD PERCUSSION

3. EXTRA FUNCTION

3-(1) CHORD DISPLAY

3-(2) MIDI CONTROL

3-(3) 2nd EXP. PEDAL

→ EXTERNAL DEVICE

4. EXTERNAL CONTROL

II-1 SEQUENCER

Press the QUIT key to display "MULTI MENU" at the top line of the LCD.

CE   QUIT

ENTER

```
MULTI MENU
2.RHYTHM

3.EXTRA FUNCT.
4.EXT.CONTROL
1.SEQUENCER
```

♦ SEQUENCER is the first function of the MULTI MENU and its operation is outlined on the left. In case you mistakenly press the ENTER key before having operated SEQUENCER, press the QUIT key to escape from the mode.

♦ In SEQUENCER mode of MULTI MENU, the three jobs below can be performed in correspondence with the respective SEQUENCER buttons of the panel.

RECORD	Programs the playback sequences of Rhythm, Chords, and Registration Memory.
EDIT	Performs editing of the programmed sequence.
PLAY MODE CHANGE	Sets the mode at the time of playback of the SEQUENCER buttons 1—4.

Use the "∨" and "∧" keys to display "1. SEQUENCER" at the LCD bottom line.
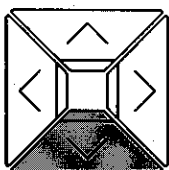
MENU SELECT

```
MULTI MENU
  1.SEQUENCER
```

Press the ENTER key.

ENTER

```
SEQUENCER
1.RECORD
```

————— [QUIT] —————

Use the "∨" and "∧" keys to select a Sequencer job, then press the ENTER key.
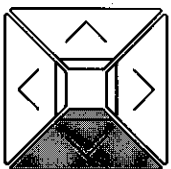
MENU SELECT

```
SEQUENCER
2.EDIT

3.PLAY MODE CHNG
1.RECORD
```

ENTER

1-(1) RECORD
[→Next Page]

1-(2) EDIT
[→Page 47]

1-(3) PLAY MODE CHANGE
[→Page 49]

EDIT

PLAY MODE CHANGE

PLAY MODE CHANGE

When the START switch [▶] is pressed, the data programmed into the Sequencer is played back.

1 2

3 4

INTRO. ENDING   SYNCHRO START
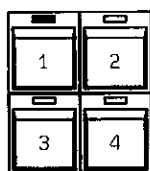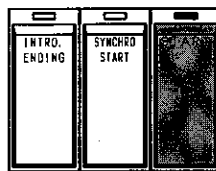
SEQUENCER

Start the melody in time with the playback of the Sequencer.

To save the data in the RAM Pack [→Page 74]

1-(1) RECORD

In accordance with the melodies (maximum: four melodies) to be played, this function respectively pre-programs a Rhythm, Chord or Registration sequence.
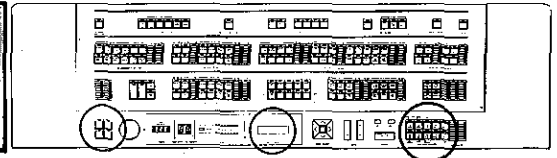
First of all, perform the setting of the contents (PROGRAMMABLE RHYTHM and REGISTRATION MEMORY) to be programmed into the Sequencer.

Display "1. SEQUENCER" at the LCD bottom line, then press the ENTER key. [→Previous Page]

```
MULTI MENU
 1.SEQUENCER
```
----→ ENTER ----→
```
SEQUENCER
1.RECORD
```

Press the ENTER key. (The two messages below are alternately displayed at the LCD.)

ENTER ----→
```
SEQ.RECORD
QUIT FOR ESCAPE
```
↓ ↑
```
DATA WILL BE
        CLEARED!
```
──[QUIT]──←──

Enter a RECORD job ↓

◆ Pressing the ENTER key causes the two messages on the left to be alternately displayed at the LCD and the SEQUENCER 1 - 4 buttons on the panel to start flashing.
First, decide whether or not to perform a RECORD operation.
When RECORD is not required: Press the QUIT key.
When RECORD is required: Press one of the four flashing SEQUENCER buttons.

◆ **CAUTION**: When one of the flashing SEQUENCER buttons is pressed, all data that was programmed to that button will be cleared.

◆ When one of the SEQUENCER buttons on the panel is pressed, only the pressed button will continue flashing. The data entry methods are displayed at the LCD bottom line, allowing you to use the "∨" and "∧" keys to select "STEP WRITE" or "REAL TIME WRITE".

Press one of the four flashing SEQUENCER buttons.
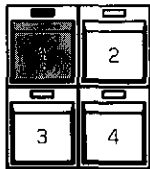
[SEQUENCER 1 2 3 4] ----→
```
RECORD MODE
1.STEP WRITE
2.REAL T.WRITE
```

STEP WRITE

ENTER ----→
```
SEQ.STEP WRITE
R.149
```

RHYTHM SEQUENCE PROGRAMMING	CHORD SEQUENCE PROGRAMMING	REGIST. SEQUENCE PROGRAMMING
[→Page 42]	[→Page 44]	[→Page 45]

RHYTHM/CHORD/REGIST. SEQUENCE PROGRAMMING
[→Next Page]

REAL TIME WRITE
(CHORD SEQUENCE PROGRAMMING)

ENTER ----→
```
SEQ.REAL T.WRITE
R.149
```
[→Page 46]

◆ With STEP WRITE, you can respectively input a Rhythm, Chord or Registration Memory sequence one step at a time. All three sequences can be concurrently input or you may also input only one sequence.

◆ With REAL TIME WRITE, you can input a Chord sequence by playing it in the same timing desired for playback.

40

STEP WRITE ————————————————————————————

RHYTHM/CHORD/REGIST. SEQUENCE PROGRAMMING

Select STEP WRITE mode, then press the ENTER key.
[→Previous Page]

```
SEQ.STEP WRITE
R.149
```

Program a rhythm INTRO., as required. [→Next Page]

CHORD SEQUENCE PROGRAMMING [→Page 44]
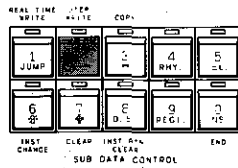
RHYTHM SEQUENCE PROGRAMMING [→Next Page]
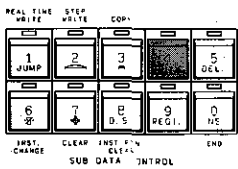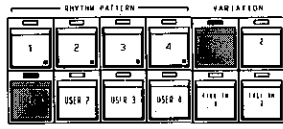
(Repeat)

REGISTRATION SEQUENCE PROGRAMMING [→Page 45]
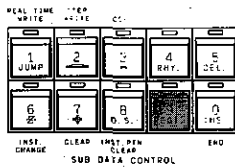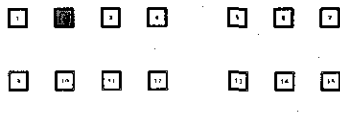
(Repeat)

Program a rhythm FILL IN (or BREAK), as required. [→Page 43]

Program a rhythm ENDING, as required. [→Page 43]

When the programming is completed, press the ENTER key.

ENTER

SEQUENCER

When the START switch [▶] is pressed, the programmed Rhythm, Chord, and Registration sequences are played back.

♦ The "R." displayed at the LCD bottom line is an abbreviation for "Remain," and indicates by numeric value the remaining memory capacity of the Sequencer. This value will decrease as you continue programming. (The value will be 149 when no data is programmed into SEQUENCER buttons 1-4.)
When the SEQUENCER memory becomes full (Remain=0), an alarm is sounded three times, and "F" is displayed on the BAR/BEAT display.

♦ Data that can be programmed into SEQUENCER

Rhythm Sequence	Selection data of the Rhythm patterns (Dotted buttons 1-4, USER buttons 1-4, VARIATION buttons, and FILL IN buttons) and the respective ON data of the INTRO./ENDING, FILL IN, and BREAK switches.
Chord Sequence	Type and duration of the chords to be sounded from the lower and pedal keyboards and the Repetition Symbol data.
Registration Sequence	Selection data of REGISTRATION MEMORY buttons 1-16 (the registration data stored at Buttons 1-16, however, are not programmed).

Perform an EDIT operation, as required. [→Page 47]

Perform PLAY MODE CHANGE, as required. [→Page 49]

♦ When the ENTER key is pressed at the end of programming, the SEQUENCER button that was flashing changes to a lit status and playback becomes possible. Though playback is begun if the START switch is pressed in such status, perform EDIT or PLAY MODE CHANGE, as required.

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RHYTHM SEQUENCE PROGRAMMING (STEP WRITE)

Set the Rhythm pattern to be programmed at the beginning of the song. Next, select STEP WRITE mode, then press the ENTER key. [→Page 40]

```
SEQ.STEP WRITE
R.149
```

INTRO. PROGRAMMING

While depressing the INTRO./ENDING switch, press the SUB DATA "4/RHY." button.
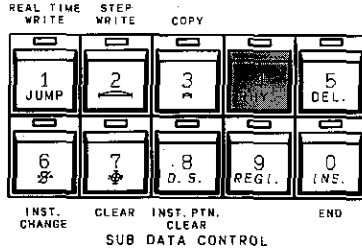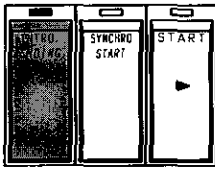
Press the "2/⊢═⊣" button twice.
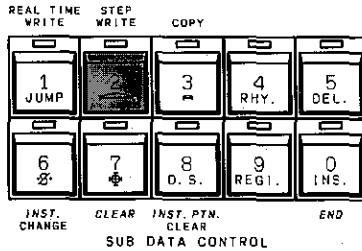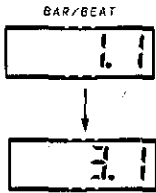
RHYTHM PATTERN PROGRAMMING

Press the "2/⊢═⊣" button once for each bar you wish to program.
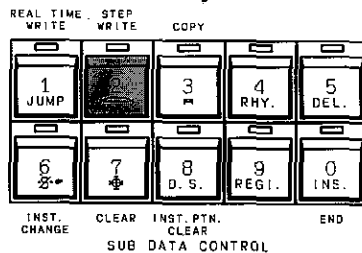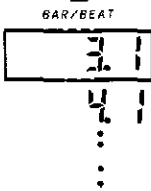
Change the Rhythm pattern, then press the "4/RHY." button.
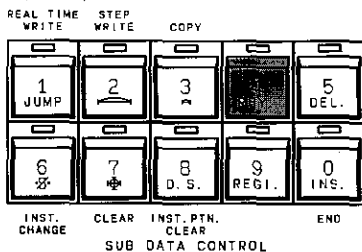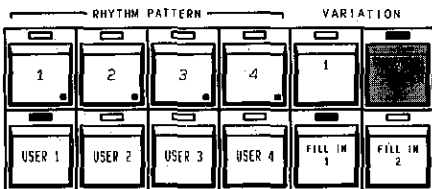
─(Repeat)─

♦ **CAUTION:** When the ENTER key is pressed and STEP WRITE mode is assumed, it becomes impossible to change the patterns currently assigned to the Dotted buttons and USER buttons 1-4. Before starting a RECORD operation, assign the patterns to be programmed to the Dotted buttons [→Page 30], then store the edited patterns at USER buttons [→Page 50].

♦ Since the INTRO. is a two-bar pattern, after pressing the "4/RHY." button and inputting the ON data, be sure to press the "2/⊢═⊣" button and input the duration data.

♦ **CAUTION:** When an INTRO. is programmed, the numeric value of the bar at the BAR/BEAT display is incremented by two. If you are counting and recording the number of bars, therefore, be sure to include the two-bar INTRO. section in the count. In contrast to the BAR display during a RECORD operation, the BAR display during INTRO. playback becomes "0".

♦ First, press the "2/⊢═⊣" button the required number of times, while viewing the BAR/BEAT display to program the currently set Rhythm pattern. The BAR/BEAT display shows which beat of which bar is to be programmed next.

♦ **CAUTION:** If the "3/ ⊢ " button is pressed in place of the "2/⊢═⊣" button, you can input a Rhythm pattern in one-beat units. If the Rhythm pattern is changed during a bar, however, the timing may not synchronize well, so try to perform input in bar units insofar as possible.

♦ Rhythm pattern data that can be programmed:

Dotted buttons	Selection data and Pattern Assign data (the data at the point where RECORD mode is entered)
USER buttons	Selection data (excluding Pattern Edit data)
VARIATION or FILL IN buttons	Selection data (excluding Pattern Edit data)

♦ When another Dotted button is pressed to change the Rhythm pattern, the name of the Rhythm pattern currently assigned to that button is displayed at the LCD bottom line.

♦ When the "2/⊢═⊣" button is pressed and the duration data is programmed, you can record the Repetition Symbol data using the "6/ ✦ ", "7/ ⊕ ", and "8/D.S." buttons. [→Page 44]

CHORD SEQUENCE PROGRAMMING (STEP WRITE)

First, preset the registrations to be used for the performance in REGISTRATION MEMORY. Next, select the STEP WRITE mode, then press the ENTER key.

```
SEQ.STEP WRITE
R.149
```

CHORD PROGRAMMING

While depressing a chord on the lower keyboard, press the "2/⊨⊨" (or "3/⊨ ") button.

While depressing the next chord, press the "2/⊨⊨" (or "3/ ⊨ ") button.

(Repeat)

REPETITION SYMBOL PROGRAMMING

Press the "6/ ⅋ " button at the point where " ⅋ " or "⊩—" should appear.

Press the "7/ ⊕ " button at the point where "to ⊕ ", "⊓———" or "Fine" should appear.

Press the "8/D.S." button at the point where "D.S.", "D.C." or "——⫴" should appear.
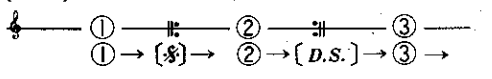
(Repeat) ——— ——— (To Next Page) ———
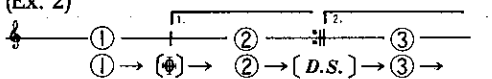
◆ When the ENTER key is pressed and the STEP WRITE Mode is entered, the number of the REGISTRATION MEMORY button that is lit at that time is automatically memorized.

◆ When a chord is pressed on the lower keyboard, the chord name is displayed at the LCD bottom line so you can program while visually checking the chords.

◆ The method of detecting chords during recording conforms to the AUTO BASS CHORD mode (CUSTOM ABC, FINGERED CHORD, and SINGLE FINGER) that is set upon entering a RECORD operation. While AUTO BASS CHORD is switched to OFF, the above chord detection will conform to the same status as when FINGERED CHORD is set.

◆ Check the bar to be programmed at the BAR/BEAT display, then press the "2/⊨⊨" or "3/ ⊨ " button the required number of times while depressing chords on the lower keyboard. The data on chord type and the duration data will be programmed.
"2/⊨⊨": Programs a one-bar duration.
"3/ ⊨ ": Programs a one-beat duration.

◆ **Chordless program**: When the "2/⊨⊨" or "3/ ⊨ " button is pressed without depressing any chords on the lower keyboard, only the duration data is programmed without chord programming. When programming the INTRO., BREAK, etc., of the rhythm together, be sure to program a chordless measure.
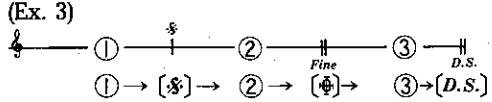
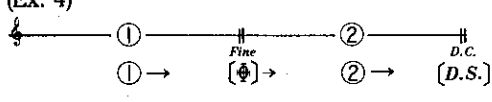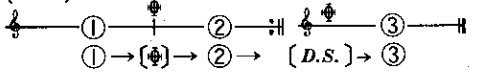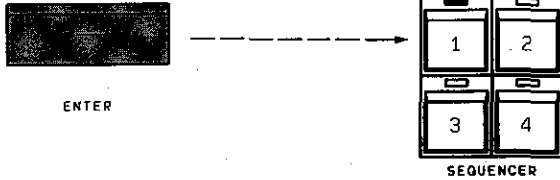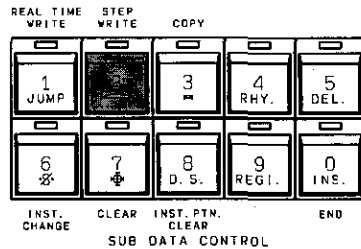◆ **Sample Usage of Repetition Buttons:**

(Ex. 1)

(Ex. 2)

(Ex. 3)

(Ex. 4)

(Ex. 5)

When the programming is completed, press the ENTER key.

ENTER

1 2
3 4

SEQUENCER

Perform an EDIT operation, as required. [→Page 47]

Perform a PLAY MODE CHANGE operation, as required. [→Page 49]

When the START switch is pressed, the programmed Chord sequence is played back together with the rhythm.

REGISTRATION SEQUENCE PROGRAMMING (STEP WRITE)

In advance, store the registrations to be used for playback at REGISTRATION MEMORY buttons 1-16. Next, select the STEP WRITE mode, then press the ENTER key.

SEQ.STEP WRITE
R.149

REGISTRATION PROGRAMMING

Press the "2/⊨⊣" (or "3/ ⊨ ") button once for each bar you wish to program, then program the duration data of the REGISTRATION MEMORY button which is currently ON.

REAL TIME WRITE   STEP WRITE   COPY

1 JUMP   2   3 ♩   4 RHY.   5 DEL.
6 ⊹   7 ⊕   8 D.S.   9 REGI.   0 INS.

INST. CHANGE   CLEAR   INST. PTN. CLEAR   END
SUB DATA CONTROL

1 2 3 4   5 6 7 8

REAL TIME WRITE   STEP WRITE   COPY

Press another REGISTRA-TION MEMORY button, then press the "9/REGI." button.

1 JUMP   2   3 ♩   4 RHY.   5 DEL.
6 ⊹   7 ⊕   8 D.S.   9   0 INS.

INST. CHANGE   CLEAR   INST. PTN. CLEAR   END
SUB DATA CONTROL

(Repeat)

♦ **CAUTION**: The Registration Memory data that can be programmed to the SEQUENCER consists only of its selection data; the registration data stored at Buttons 1-16 cannot be memorized. At SEQUENCER playback, therefore, when data differing from that of RECORD operations has been stored in Registration Memory, the RECORD registrations cannot be played back. If you wish to store the RECORD registration data, be sure to save it in the RAM Pack. [→Page 74]

♦ While checking the bar to be programmed at the BAR/BEAT display, press the "2/⊨⊣" or "3/ ⊨ " button the required number of times. If chords are simultaneously pressed on the lower keyboard at this time, you can program a Chord sequence together with the Registration sequence. [→Previous Page]

♦ When another REGISTRATION MEMORY button is pressed, then the "9/REGI." button is pressed, the selection button of the most recently pressed REGISTRATION MEMORY button is programmed.
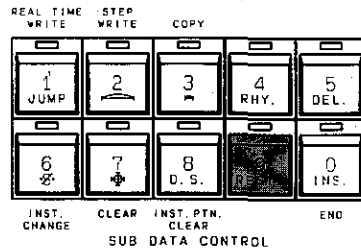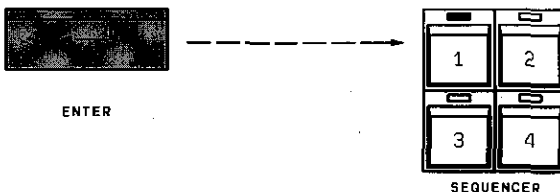
♦ When programming the duration data using the "2/⊨⊣" or "3/ ⊨ " button, you can record the Repetition Symbol data using the "6/ ♦ ", "7/ ⊕ " and "8/D.S." buttons. [→Previous Page]

When the programming is completed, press the ENTER key.
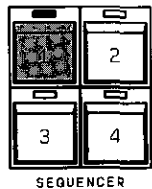
ENTER

1 2
3 4

SEQUENCER

Perform an EDIT operation, as required. [→Page 47]

Perform a PLAY MODE CHANGE operation, as required. [→Page 49]

When the START switch is pressed, the programmed Registration sequence is played back together with the rhythm.
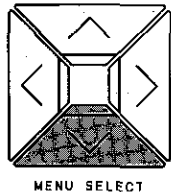
REAL TIME WRITE (CHORD SEQUENCE) _____

Display "SEQUENCER 1. RECORD" at the LCD, then press the ENTER key. Next, press one of the four flashing SEQUENCER buttons.
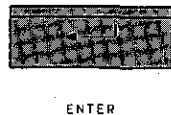[→Page 40]

```
RECORD MODE
1.STEP WRITE
```
```
2.REAL T.WRITE
```

SEQUENCER

♦ When one of the SEQUENCER buttons is pressed, only the pressed button continues flashing. The data entry methods are displayed at the LCD bottom line, so press the "∨" key to display "2. REAL T. WRITE".

Use the "∨" key to display "2. REAL T. WRITE" at the LCD bottom line.

MENU SELECT

```
RECORD MODE
2.REAL T.WRITE
```

♦ **CAUTION**: The data to be programmed using REAL TIME WRITE consists only of the Chord sequence data and the registration data set at RECORD Start. Rhythm sequence data and Registration sequence data will not be memorized.

Press the ENTER key.

ENTER

```
SEQ.REAL T.WRITE
R.149
```

BAR/BEAT

```
1. 1
```

♦ When the ENTER key is pressed, the remaining memory capacity is displayed at the LCD bottom line, and the bar number and beat number to be memorized are displayed at the BAR/BEAT display.

Press the START switch [▶] to start the rhythm, then play chords on the lower keyboard in real time.

INTRO. ENDING   SYNCHRO START

♦ Recording is begun at the point where the START switch is pressed and the rhythm is started (the RECORD Start status). The interval up to the time when you begin playing chords, therefore, will also be memorized as a blank interval.
If you do not want a blank interval inserted, start the rhythm while pressing the first chord.
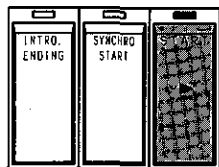
After playing chords until the end of the song, press the START switch [▶] to stop the rhythm and terminate programming.

INTRO. ENDING   SYNCHRO START

```
1   2
3   4
```

SEQUENCER

♦ **CAUTION**: With REAL TIME WRITE, chords are memorized in one-beat units. Data for durations shorter than one beat will not be memorized.

Perform an EDIT operation, as required. [→Next Page]

Perform a PLAY MODE CHANGE operation, as required. [→Page 49]

When the START switch [▶] is pressed, the programmed Chord sequence is played back together with the rhythm.

INTRO. ENDING   SYNCHRO START

♦ When a Chord sequence is programmed using REAL TIME WRITE, the CHORD SEQUENCE of PLAY MODE CHANGE automatically assumes the ON status. [→Page 49]

46

1-(2) EDIT

This mode allows you to retrieve the data programmed to the SEQUENCER to perform data correction, deletion, addition, and other editing operations.
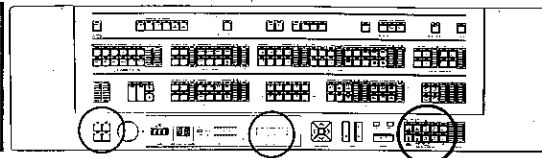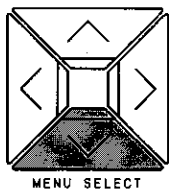

In RECORD mode, program the sequence data to the SEQUENCER buttons. [→Page 40]

↓

Display "MULTI MENU 1. SEQUENCER" at the LCD, then press the ENTER key. [→Page 39]

```
MULTI MENU
 1.SEQUENCER
```
----→ ENTER ----→
```
SEQUENCER
1.RECORD
```

Use the "∨" and "∧" keys to display "2. EDIT" at the LCD bottom line.

MENU SELECT

```
SEQUENCER
2.EDIT
```
```
3.PLAY MODE CHNG
1.RECORD
```

Press the ENTER key.

ENTER ----→
```
SEQ.EDIT
SELECT BUTTON
```

Press one of the four flashing SEQUENCER buttons.

SEQUENCER

----→
```
SEQ.EDIT    +/- ↵
R.123
```
BAR/BEAT
```
 I. I
```

Data Retrieval

Use the "+"and "−"keys to shift the data pointer and check the data.

NO YES
DATA

```
SEQ.EDIT    +/- ↵
R.123    C
```
Check of Chord sequence data

┌─Check of Duration data
│ ┌─Check of Rhythm sequence data

REAL TIME WRITE / STEP WRITE / COPY

| 1 JUMP | 2 | 3 | 4 RHY. | 5 DEL. |
| 6 | 7 | 8 D.S. | 9 REGI. | 0 INS. |

INST. CHANGE CLEAR INST. PTN. CLEAR END
SUB DATA CONTROL
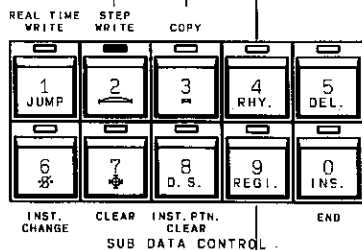
Check of Registration sequence data

Check of Repetition data

(From Next Page)   (To Next Page)

NOTE:

● Even when data has been programmed in STEP WRITE mode, data can be retrieved or edited by the EDIT mode operations described below. Any editing performed after leaving the RECORD mode, however, must be performed in EDIT mode.
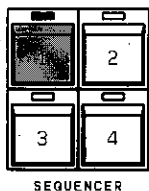

◆ When the ENTER key is pressed, SEQUENCER Buttons 1-4 begin flashing. Press the button programmed with the data you wish to edit.

◆ When one of the SEQUENCER buttons is pressed, the registration at the time of RECORD Start reappears at the panel and the sequence data memorized at the beginning of the sequence is played back.

◆ **Method of Shifting the Data Pointer:**

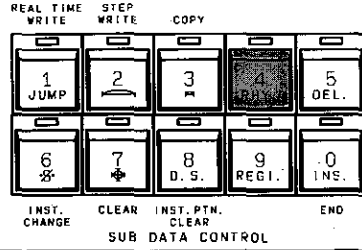| "+" key	Each time it is pressed, the data pointer advances once.
"−" key	Each time it is pressed, the data pointer moves backward once.
"1/JUMP" button + "+" key	In one operation, the data pointer is advanced to its final position.
"1/JUMP" button + "−" key	In one operation, the data pointer is returned to its leading position.

◆ **Methods of Checking Data:**

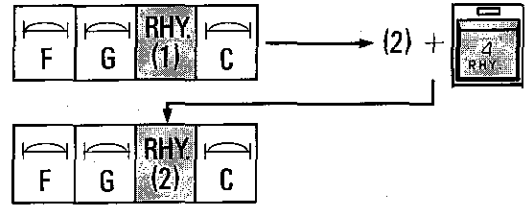| Rhythm Sequence	At the position where the pattern is changed, "4/RHY." lights up and the recently pressed Pattern Select buttons light up. At the point where INTRO./ENDING, FILL IN, and BREAK are input, "4/RHY." lights up and the respective switches light up.
Chord Sequence	The input chords are sounded from the lower keyboard, and chord names are displayed at the LCD bottom line.
Registration Sequence	At the position where a registration is changed, "9/REGI." lights up and the recently pressed REGISTRATION MEMORY button lights up.
Duration and Repetition data	During data input, the pressed button lights up.

47

Data EDIT Operation

Correcting the rhythm: While the "4/RHY." button is lit, set the correct Rhythm pattern and press the "4/RHY." button.
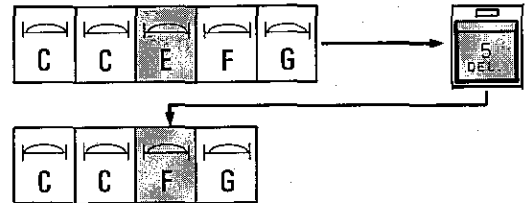
Correcting a chord: While the "2/⊢╾" (or "3/ ╾ ") button is lit, press the "2/⊢╾" (or "3/ ╾ ") button while depressing the correct chord.
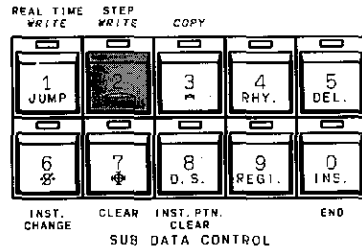
Correcting a registration: While the "9/REGI." button is lit, press the correct REGISTRATION MEMORY button, then press "9/REGI." button.
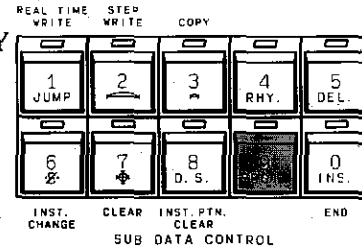
Deletion: Advance (or reverse) the data pointer to the position of the data to be deleted, then press the "5/DEL." button.

Insertion: Advance the data pointer to the position following the position where the data is to be inserted, then press the "0/INS." button. Next, program the data to be inserted.

After editing is completed, press the ENTER key.

When the START switch is pressed, the edited program is played back.

♦ **EDIT Examples**:
(Ex. 1) Changing Rhythm Pattern "1" to "2".

Shift the data pointer to the position where "4/RHY." lights up. Next, set Pattern "2", then press the "4/RHY." button.

(Ex. 2) Deleting the unnecessary chord "E"

Shift the data pointer to the "E" position, then press the "5/DEL." button.

(Ex. 3) Inserting a FILL IN pattern

Shift the data pointer to data "G", located at the position which will later follow the inserted data, then press the "0/INS." button. Next, press the "4/RHY." button while depressing the FILL IN switch.
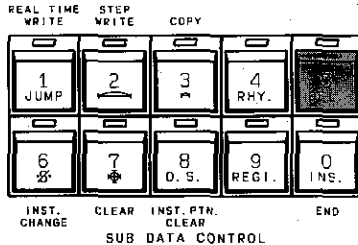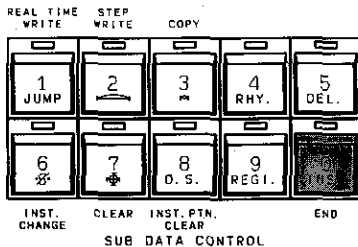
♦ The registration memorized at the beginning of the sequence can also be changed. First, shift the data pointer to the beginning of the sequence, switch ON the REGISTRATION MEMORY button corresponding to the registration you wish to change, then press the "9/REGI." button.

♦ When the data pointer is shifted behind the final Sequence data, "E" is displayed on the BAR/BEAT display.
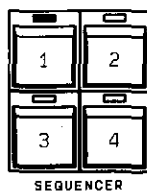
NOTE:
● Besides pressing the "+" and "−" keys, data can also be retrieved by starting the rhythm. While in EDIT mode, press the START switch. The programmed Sequence data will be played back exactly as it will sound during playback (the repetition symbol data will not be played back). During playback, if you find data you would like to edit, stop the rhythm then perform the EDIT operation.

Perform a PLAY MODE CHANGE operation, as required. [→Next Page]

1- (3) PLAY MODE CHANGE

This mode allows you to set the conditions for playback of the programmed SEQUENCER, memorizing such conditions at each of the four SEQUENCER buttons.
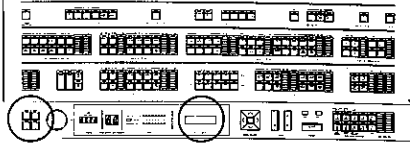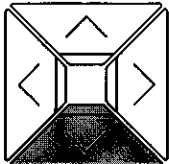

In RECORD mode, program the sequence data to the SEQUENCER buttons. [→Page 40]

↓

Display "MULTI MENU 1. SEQUENCER" on the LCD, then press the ENTER key. [→Page 39]

```
MULTI MENU          SEQUENCER
1.SEQUENCER   ---→   ---→   1.RECORD
              ENTER
```

Use the "∨" and "∧" keys to display "3. PLAY MODE CHNG" at the LCD bottom line.

```
SEQUENCER
3.PLAY MODE CHNG
```
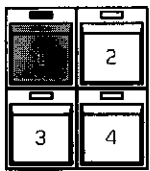
MENU SELECT

Press the ENTER key.

```
---→   SEQ.PLAY MODE
       SELECT BUTTON
ENTER
```

♦ When the ENTER key is pressed, SEQUENCER buttons 1-4 begin flashing. Press the button for which you wish to change the PLAY mode.

Press one of the four flashing SEQUENCER buttons.

```
----→   SEQ.PLAY MODE
        1.CHORD SEQ. ON
```
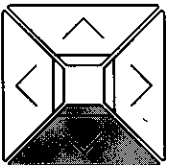
SEQUENCER

♦ When a SEQUENCER button is pressed, the ON/OFF status of the currently set PLAY mode is displayed on the LCD bottom line. Use the "∨" and "∧" keys to change the display and check how the five items have been set.
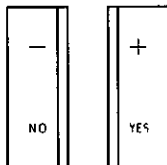
♦ **Operations in PLAY Mode:**

Use the "∨" and "∧" keys to change the display of the LCD bottom line, then use the "+" and "−" keys to select the ON/OFF status.

MENU SELECT   DATA

```
SEQ.PLAY MODE
2.REGIST SEQ.ON

3.REPEAT        OFF
4.LK ENABLE     ON
5.INTRO.TACT    OFF
1.CHORD SEQ.    ON
```

	ON	OFF
CHORD SEQUENCE	The programmed Chord sequence is played back. (Default)	The programmed Chord sequence is not played back.
REGIST SEQUENCE	The programmed Registration sequence is played back. (Default)	The programmed Registration sequence is not played back.
REPEAT	After playback is ended, it is repeated from the beginning.	After playback is ended, playback is stopped. (Default)
LK ENABLE	During playback, the notes played on the lower keyboard are sounded. (Default)	During playback, the notes played on the lower keyboard are not sounded.
INTRO. TACT	The leading count of one bar is sounded at the start of playback.	The leading count is not sounded. (Default)

♦ One PLAY mode setting is memorized for each set of SEQUENCE data, so a different PLAY mode can be set at each of the SEQUENCER Buttons 1-4. Note that, at the point a RECORD operation is performed, the PLAY mode setting is initialized to its default value.

After setting of the PLAY mode is completed, press the ENTER key.

```
----→
ENTER
```
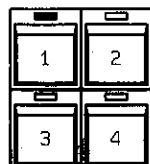
SEQUENCER

When the START switch is pressed, the sequences are played back in the set mode.

NOTE:
● If playback is started after setting multiple SEQUENCER buttons to ON status, multiple sequences can be consecutively played back. In such case, the playback order begins from the sequence of the button with the lowest number.

II-2 RHYTHM

Press the QUIT key to display "MULTI MENU" on the LCD top line.

CE   QUIT

ENTER

```
MULTI MENU
 1.SEQUENCER

 2.RHYTHM
 3.EXTRA FUNCT.
 4.EXT.CONTROL
```

Use the "∨" and "∧" keys to display "2. RHYTHM" at the LCD bottom line.

MENU SELECT

```
MULTI MENU
 2.RHYTHM
```

Press the ENTER key.

ENTER

```
RHYTHM
1.RHY.PTN.EDIT
```

[QUIT]

Use the "∨" and "∧" keys to select a job, then press the ENTER key.

MENU SELECT

```
RHYTHM
2.RHY.INST.LEVEL

3.RHY.INST.PAN
4.KBD PERC.ASSGN
1.RHY.PTN.EDIT
```

ENTER

♦ The second MULTI MENU function is "RHYTHM" and its operation is outlined on the left. If you mistakenly press the ENTER key without operating "RHYTHM", press the QUIT key to exit the mode.

♦ In RHYTHM mode of MULTI MENU, the four jobs below can be performed:

RHYTHM PATTERN EDIT	Allows you to write the Rhythm patterns in real time or by step input, using the keys of the upper and lower keyboards.
RHYTHM INSTRUMENT LEVEL	Allows you to control the volume of all built-in rhythm instruments.
RHYTHM INSTRUMENT PAN	Allows you to control the orientation (direction from the speakers) of all built-in rhythm instruments.
KEYBOARD PERCUSSION ASSIGN	Allows you to assign the rhythm instruments to the keys of the three keyboards.

2-(1) RHYTHM PATTERN EDIT

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2-(2) RHYTHM INSTRUMENT LEVEL

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2-(3) RHYTHM INSTRUMENT PAN

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2-(4) KEYBOARD PERCUSSION ASSIGN

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When the START switch [▶] is pressed, the rhythm is started according to the executed job.

INTRO. ENDING   SYNCHRO START

Switch KEYBOARD PERCUSSION to ON, then play the assigned keys.

KEYBOARD PERCUSSION

To save the data in the RAM Pack   [→Page 74]