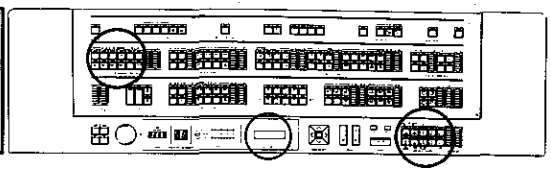
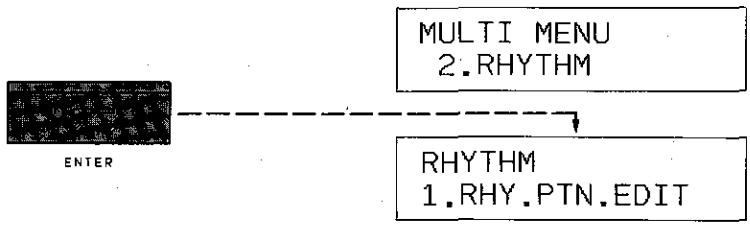
2-(1) RHYTHM PATTERN EDIT

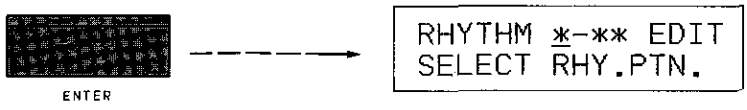
This function allows you to create the desired Rhythm patterns and Fill In patterns, using a combination of six different jobs, including REAL TIME WRITE, STEP WRITE, and so on.



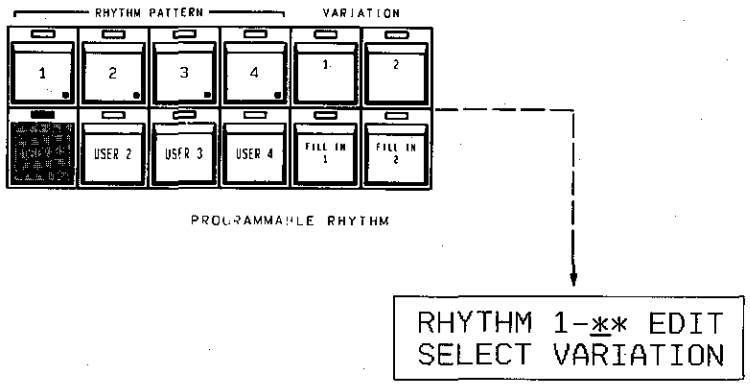
Display "2. RHYTHM" at the LCD bottom line, then press the ENTER key. [→Previous Page]



Press the ENTER key.



Press one of the four flashing USER buttons.



◆ When "1.RHY.PTN.EDIT" is displayed at the LCD bottom line, then the ENTER key is pressed, "*-**" is displayed at the LCD top line and the four USER buttons begin flashing. First press one of the flashing USER buttons to select the pattern to be edited.

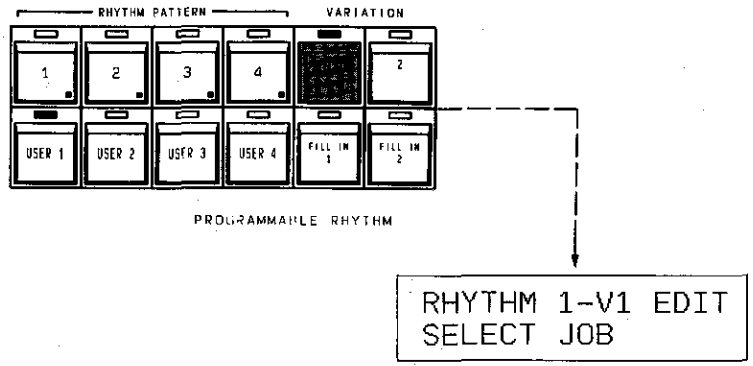
◆ When a Reset operation is performed, the below patterns are copied to the USER buttons as pre-edit patterns:
USER 1→[04:16 BEAT 1]
USER 2→[07: BOUNCE 1]
USER 3→[11: 4 BEAT 1]
USER 4→[21: WALTZ 1]

◆ When a USER button is pressed, the four buttons of VARIATION 1, 2, FILL IN 1, and 2 begin flashing.
VARIATION 1, 2: Press one of these buttons to edit a Rhythm pattern.
FILL IN 1, 2: Press one of these buttons to edit a Fill In pattern.

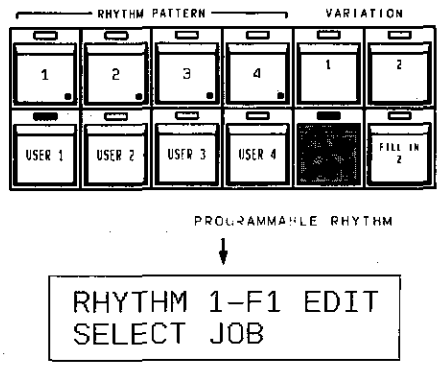
◆ RHYTHM PATTERN EDIT allows you to edit and memorize two Rhythm patterns and two Fill In patterns per USER button.

	USER 1		USER 2		USER 3		USER 4	
VARIATION	1	2	1	2	1	2	1	2
FILL IN	1	2	1	2	1	2	1	2

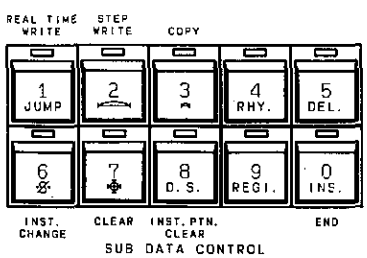
To edit a Rhythm pattern, press either VARIATION 1 or 2.



To edit a Fill In pattern, press either FILL IN 1 or 2.



Press one of the SUB DATA numeric buttons to select the job to be executed.



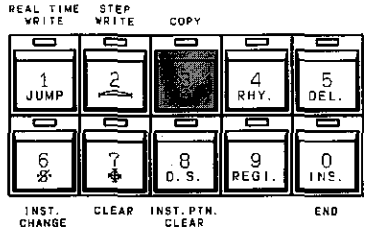
◆ The jobs that are executed by RHYTHM PATTERN EDIT are displayed on the outside of the SUB DATA CONTROL section.

RHYTHM PATTERN EDIT JOBS

Decide whether or not to edit the currently set pattern or to copy and edit another pattern.

To edit the currently set pattern: No job is required.

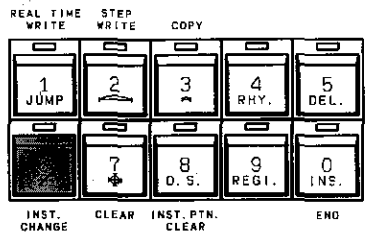
To copy and edit a Preset pattern: [RHYTHM PATTERN COPY] [→Page 58]



Decide whether or not to change the currently set instruments.

If the instruments will not be changed: No job is required.

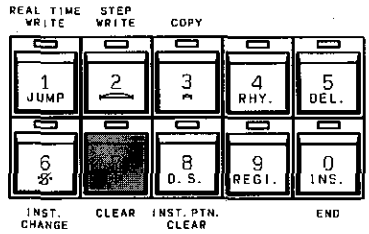
If the instruments will be changed: [RHYTHM INSTRUMENT CHANGE] [→Page 59]



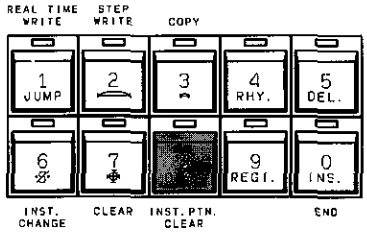
Before writing a pattern, decide whether or not to erase the currently written pattern.

To write without erasing the Rhythm pattern: No job is required.

To entirely erase the currently written Rhythm pattern: [RHYTHM CLEAR] [→Page 60]

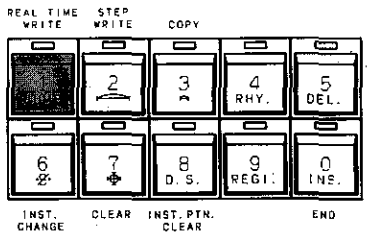


To partially erase the currently written Rhythm pattern: [RHYTHM INSTRUMENT PATTERN CLEAR] [→Page 61]

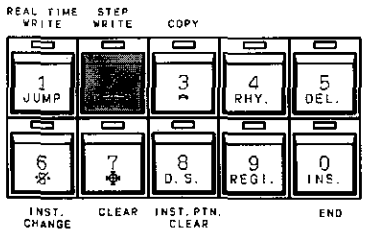


Select the method for pattern writing.

For input in real time: [RHYTHM REAL TIME WRITE] [→Next Page]

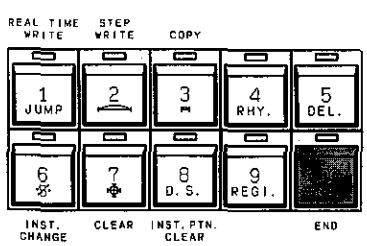


For sequential input: [RHYTHM STEP WRITE] [→Page 56]



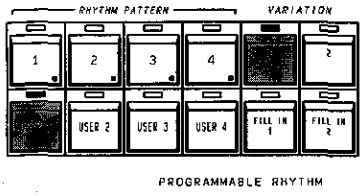
If no pattern will be written: No job required.

After completing the required jobs, press the "END" button to terminate RHYTHM PATTERN EDIT.



RHYTHM REAL TIME WRITE

Enter the RHYTHM PATTERN EDIT mode, then press the buttons of the pattern to be edited (in this example, USER 1 and VARIATION 1). [→Page 51]



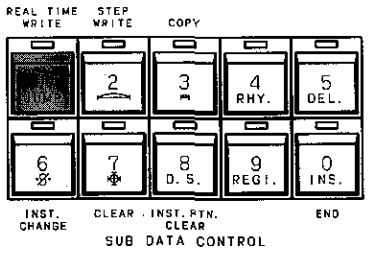

```
RHYTHM 1-V1 EDIT
SELECT JOB
```

Perform a RHYTHM PATTERN COPY job, as required.

Perform a RHYTHM INSTRUMENT CHANGE job, as required.

Perform a RHYTHM CLEAR or INST. PATTERN CLEAR job, as required.

Press the REAL TIME WRITE Button (1).



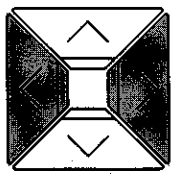
Operation following a RHYTHM CLEAR Job

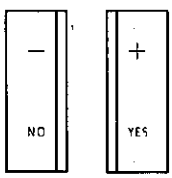
Confirm the number of bars and the beat to be edited.

```
RHY.REAL T.WRITE
BAR=2 BEAT=4/4
```

(Change) (No Change)

Use the ">"and"<" keys to shift the cursor, then use the "+" and "−" keys to change the numeric values.

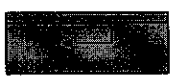





```
RHY.REAL T.WRITE
BAR=2 BEAT=3/4
```

```
BAR=1 BEAT=4/4
      BEAT=5/4
      BEAT=1/4
      BEAT=2/4
```

Press the ENTER key.



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(To Next Page)

◆ In the case USER 1 and VARIATION 1 are pressed, the pressed buttons continue flashing and "1-V1" is displayed on the LCD top line. (The following explanation is based on the example using USER 1 and VARIATION 1.)

◆ Referring to the previous page, before writing a Rhythm pattern, execute the jobs you think are necessary. You can also enter the RHYTHM REAL TIME WRITE job directly without performing other jobs.

	Pattern	Instruments
No job required	Currently set pattern	Currently set instruments
PATTERN COPY	Pattern is changed after copying	Instruments are changed after copying
INSTRUMENT CHANGE	Currently set pattern	Change of currently set instruments
CLEAR	Entirely erases the currently set pattern	Currently set instruments
INSTRUMENT PATTERN CLEAR	Partially erases the currently set pattern	Currently set instruments

◆ By pressing REAL TIME WRITE Button (1), it is automatically determined whether or not a RHYTHM CLEAR job has already been performed, then the LCD changes to one of two types of displays:
When CLEAR was performed: The LCD display becomes as shown on the left.
When CLEAR was not performed: The LCD display becomes as shown on the next page.

◆ When a REAL TIME WRITE job is entered after entirely erasing the pattern by a RHYTHM CLEAR job, it becomes possible to set the number of bars and the beat for the pattern to be written. First, decide whether or not to change the bar number and beat.
When change is not required: Only press the ENTER key.
When change is required: Use the ">" and "<" keys to shift the cursor, then use the "+" and "−" keys to change the numeric values.

◆ When writing a Rhythm pattern (when the VARIATION button is pressed), the "BAR" can be set to "2" or "1". When writing a Fill In pattern (when the FILL IN button is pressed), the "BAR" is fixed at "1". In either case, the "BEAT" setting can be selected from a range of 1/4 to 5/4.

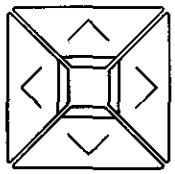
◆ Once the ENTER key is pressed after completing the BAR and BEAT settings, the set BAR and BEAT values cannot be changed. If you wish to change them, do the REAL TIME WRITE operation again from the very beginning.

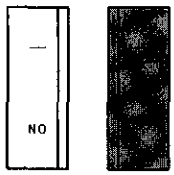
(From Previous Page)

Confirm the Quantize status and Click ON/OFF status.

```
▶ [piano]  CLICK=ON
Q=1/4 CLICK=1/4
```

Shift the cursor using the "<" and ">" (left/right) keys and the "∧" and "∨" (up/down) keys, then change the numeric value (or ON/OFF status) using the "+" and "−" keys.



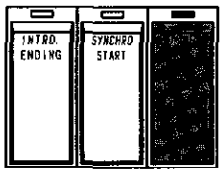


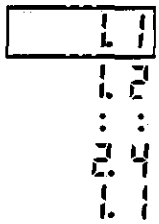
OFF

```
▶ [piano]  CLICK=ON
Q=1/6 CLICK=1/4
```

```
Q=1/8 CLICK=1/6
  1/12        1/8
  1/16        1/12
   :          1/16
  1/96
  1/4
```

Press the START switch [▶], then begin writing the pattern.

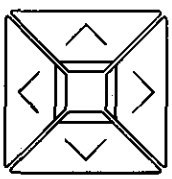


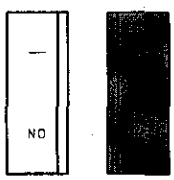


PATTERN WRITE

Referring to the [HX RHYTHM LIST], confirm the correspondence between the keys and instruments, then play a key on the upper (or lower) keyboard.

Change the Quantize value, then write the pattern of other instruments.






```
▶ [piano]  CLICK=ON
Q=1/8 CLICK=1/4
```

(Repeat)

(From Next Page)

(To Next Page)

◆ When the ENTER key is pressed after setting BAR and BEAT (or when a REAL TIME WRITE job is entered without performing RHYTHM CLEAR), the LCD display becomes as shown on the left. Before starting to write, perform the setting of Quantize and Click.

Q (Quantize)	The length (units) of the notes to be written are set using the "+" and "−" keys. The nine unit types that can be set are: $^1/_4$, $^1/_6$, $^1/_8$, $^1/_{12}$, $^1/_{16}$, $^1/_{24}$, $^1/_{32}$, $^1/_{48}$, and $^1/_{96}$. The larger the denominator of the numeric value, the shorter the note. (See "NOTES" on the next page.)
CLICK ON/OFF	Shift the cursor to the LCD top line using the "∧" key, then select the ON/OFF status using the "+" and "−" keys. When CLICK ON is set, a clicking (metronome) sound is produced during writing.
CLICK Quantize	Shift the cursor to the LCD bottom line using the ">" key, then set the Quantize value (clicking units) of Click using the "+" and "−" keys. The five unit types that can be set are: $^1/_4$, $^1/_6$, $^1/_8$, $^1/_{12}$, and $^1/_{16}$.

◆ Pressing the START switch enables the status wherein a pattern can be written. In the "CLICK=ON" status, a clicking sound is produced and, if *RHYTHM CLEAR was not performed, a pre-edit* Rhythm pattern is also sounded.

◆ When the bar number and beat are displayed on the BAR/BEAT display and you reach the end of the last bar that can be written, the BAR/BEAT display returns to "1•1". This operation can be *repeated any number of times. Be sure to perform* pattern writing viewing this display. In addition, the tempo while writing can be controlled using the TEMPO knob.

◆ When a key that sounds a rhythm instrument is played, a pattern is written in the timing within which that key is played. The patterns of multiple rhythm instruments can also be concurrently written. Refer to the [HX RHYTHM LIST] to confirm which instrument corresponds to which key.

◆ **CAUTION**: The instruments that can be written are limited to the eight-instrument group that was set before the *REAL TIME WRITE* job was entered. You can check the types of instruments which have been set by pressing the keys before pressing the START switch. Regarding the instrument groups that comprise the Preset patterns, see the [HX RHYTHM LIST].

◆ The general procedure for writing a pattern from scratch after performing RHYTHM CLEAR is as follows:

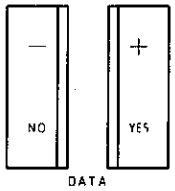
1) First, using a rough Quantize value, write the patterns of the basic instruments (e.g., bass drum, hi-hats, etc.).
2) Change to a finer Quantize value, then write the patterns of other instruments while listening to the patterns already written.

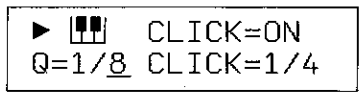
(To Previous Page)

(From Previous Page)

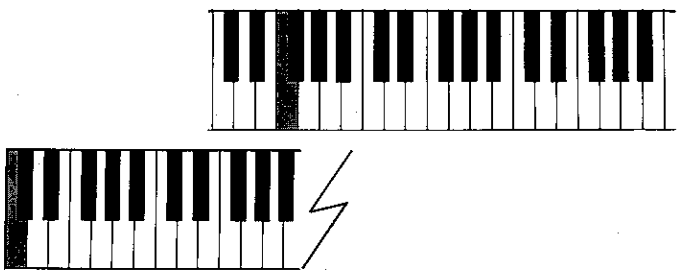
PATTERN DELETION

Set the Quantize value of the pattern to be deleted to the same value used during writing.



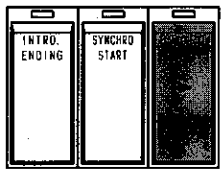


While depressing the leftmost key of the lower keyboard, press the key(s) of the instrument(s) to be deleted.

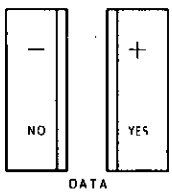


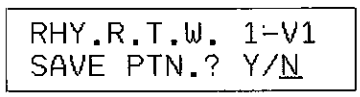
When the Memory is FULL

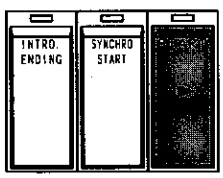
Press the START switch to stop the rhythm.



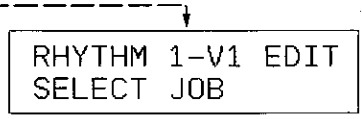
Using the "+" and "–" keys, decide whether or not to save the pattern, then press the ENTER key.



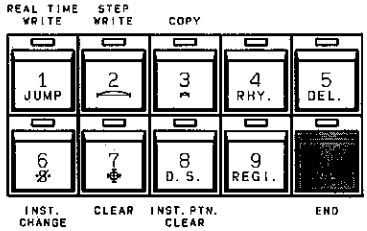




Press the START switch [▶] to terminate writing.



Press the END button (0) to terminate RHYTHM PATTERN EDIT. When the rhythm is started, the edited pattern is produced.

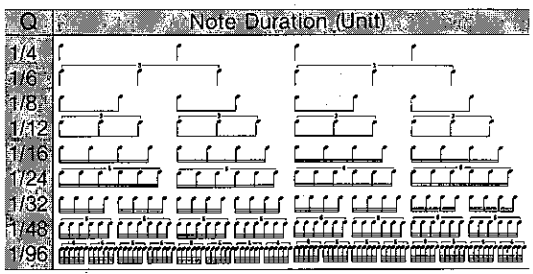


◆ If you could not write a pattern with the desired timing, the pattern can be erased using the procedure shown on the left. While depressing the leftmost key of the lower keyboard, continuously press the key of the instruments to be deleted for the desired length of deletion. After the pattern is deleted, you can rewrite it.

◆ **CAUTION**: Patterns cannot be deleted unless the same Quantize value is set to the same value used for writing such patterns. Moreover, if the patterns of multiple instruments share the same Quantize value, they can be simultaneously deleted.

NOTES:

● The relationship between Quantize values and notes is shown below. Be sure to refer to this table during input.



● The Quantize value becomes the note unit when writing patterns. REAL TIME WRITE, however, also functions to automatically correct the positions where the notes are written according to the set Quantize value. When keys are played to write a pattern, any deviation (forward or backward) in the played timing that is within ±50% of the note duration set by the Quantize value will be corrected so that the correct timing will be written.

◆ When "MEMORY FULL" is displayed, if a PATTERN DELETE operation is performed without stopping the rhythm, it becomes possible to rewrite the pattern.

◆ When the ENTER key is pressed in the "NO" status, the pattern is restored to its status prior to the performance of the WRITE operation. When the ENTER key is pressed after selecting "YES", the current pattern is saved.

◆ Except when writing numerous notes using a fine Quantize value, the memory will not become full during usual input.

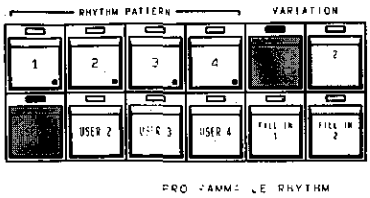
◆ After completing the required WRITE operations, press the START switch and stop the rhythm. The written pattern is saved at the buttons that were pressed upon entering the RHYTHM PATTERN EDIT mode (in the left example, USER 1 and VARIATION 1).

Perform the WRITE operations again, as required.

Patterns can be written to the other USER buttons using the same procedure.

RHYTHM STEP WRITE

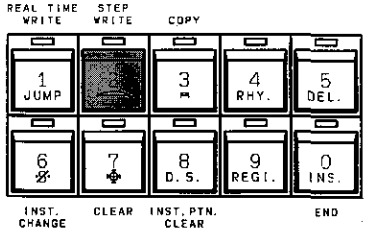
Enter the RHYTHM PATTERN EDIT mode, then press the buttons of the pattern to be edited. [→Page 51]




```
RHYTHM 1-V1 EDIT
SELECT JOB
```

Perform a RHYTHM PATTERN COPY, INSTRUMENT CHANGE, CLEAR and/or INSTRUMENT PATTERN CLEAR job, as required.

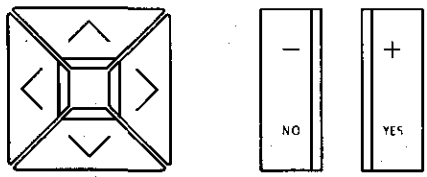
Press the STEP WRITE (2) button.



Operation following a RHYTHM CLEAR Job

Set the number of bars and the beat to be edited. [→PAGE 53]

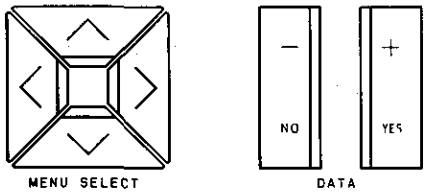
```
RHY.STEP WRITE
BAR=2 BEAT=4/4
```

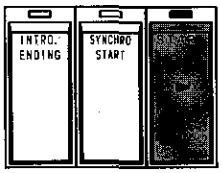


Press the ENTER key.

Set the Quantize and Click values.

```
▶       CLICK=ON
Q=1/4 CLICK=1/4
```





Press the START switch [▶], then begin writing the pattern.

```
BAR BEAT +/-
 1   1   1/4
```

(To Next Page)

◆ When USER 1 and VARIATION 1 are pressed, the pressed buttons continue flashing and "1-V1" is displayed at the LCD top line.

◆ Before writing a Rhythm pattern, refer to Page 52 and 53, then perform the jobs you think are necessary. You can also directly start with the RHYTHM STEP WRITE job without performing other jobs.

◆ By pressing STEP WRITE Button (2), similar to the case of REAL TIME WRITE, it is automatically determined whether or not a RHYTHM CLEAR job has already been performed.
When CLEAR was performed: The LCD display becomes as shown on the left so that the number of bars and the beat can be set. The operating method and so on are similar to the case of REAL TIME WRITE. [→Page 53]
When CLEAR was not performed: "Q" and "CLICK" are displayed on the LCD so that the Quantize and Click values can be set.

◆ Once the ENTER key is pressed after completing the BAR and BEAT settings, the set BAR and BEAT values cannot be changed.

◆ When the ENTER key is pressed after setting BAR and BEAT (or when STEP WRITE is entered directly without performing RHYTHM CLEAR), the LCD displays changes as shown on the left so that the Quantize and Click values can be set. The operating method and so on are similar to the case of REAL TIME WRITE. [→Page 54]

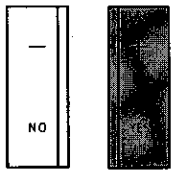
◆ When the START switch is pressed, you enter the status wherein a pattern can be written, but the rhythm is not started.

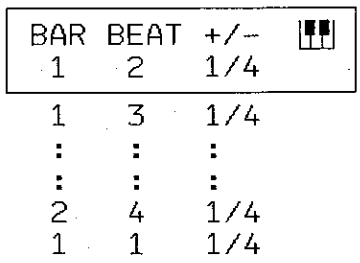
◆ The LCD display changes as shown on the left to indicate the position where writing will begin. The value below "BAR" indicates the bar number, the value below "BEAT" indicates the beat number, and the numerical value below "+/-" indicates your position within the beat according to the currently set Quantize value.

(From Previous Page)

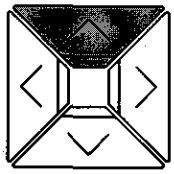
PATTERN WRITING

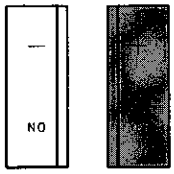
Use the "+" and "−" keys to determine the position to begin writing, then press the keys of the upper (or lower) keyboard to write a pattern.

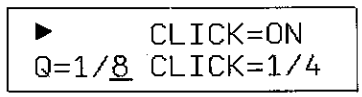




To write other Instrument patterns, use the "∧" key to change the LCD display then use the "+" and "−" keys to change the Quantize value.

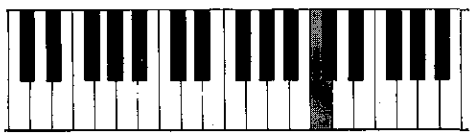


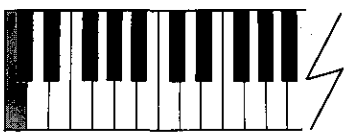




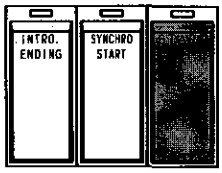
(Repeat)

PATTERN DELETION While depressing the leftmost key of the lower keyboard, press the key(s) of the instrument(s) to be deleted. [→Page 55]

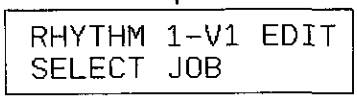




When the Memory becomes full [→Page 55]



Press the START switch to terminate writing.



Perform a WRITE operation again, as required.

Press the END button (0) to terminate RHYTHM PATTERN EDIT. When the rhythm is started, the edited pattern is produced.

Patterns can be written to the other USER buttons using the same procedure.

◆ The general procedure for writing a pattern with RHYTHM STEP WRITE is as follows:
1) Set the Quantize value(s) of the instrument(s) to be written first. (In the left example, Q=1/4)
2) Press the "+" key to advance the LCD display to the position where you will begin writing. By pressing the "−" key, you can return the LCD display to previously displayed values. (In the left example, the display advances in the order of 1/4→1/4→1/4 and so on. When the Quantize value is set to "1/8", however, it will advance in the order of 1/8→2/8→1/8→2/8→1/8 and so on.)
3) Press the key corresponding to the instrument to be written, then write one note. Next, use the "+" key to advance the LCD display to the next position to be written and repeat the WRITE operation. You can also press multiple keys to concurrently write multiple Instrument patterns. (See the [HX RHYTHM LIST] for the relationship between the instruments and keys.)
4) Press the "∧" key to return the LCD display to "Q" and "CLICK", then set the Quantize value(s) for the instrument(s) to be written next.
5) Press the "∨" key to change the LCD display, then perform Steps 2) and 3) above.
6) Perform Steps 4) and 5) the required number of times.

◆ **CAUTION**: The instruments that can be written are limited to the eight-instrument group that was set before the STEP WRITE job was entered. You can check the types of instruments which have been set by pressing the keys before pressing the START switch.

◆ When the "+" key is continuously depressed, the written pattern is sounded at the currently set tempo so you can check if it is correctly written.

◆ The written pattern can be deleted by the same operation used for REAL TIME WRITE. When performing deletion, be sure to use the same Quantize value used for writing.

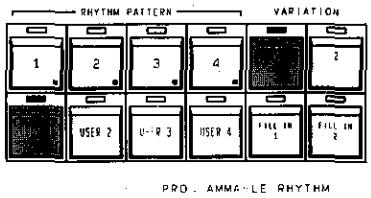
NOTE:
● Even the detailed notes that are hard to input in REAL TIME WRITE mode can be input without error in STEP WRITE mode. To perform writing efficiently, first input the basic Instrument patterns in REAL TIME WRITE mode, then input the detailed notes in STEP WRITE mode.

◆ The operation in case "MEMORY FULL" is displayed on the LCD is similar to the case of REAL TIME WRITE.

◆ When the required writing is completed, press the START switch. The written pattern is saved in the buttons that were pressed upon entering the RHYTHM PATTERN EDIT mode (in the left example, USER 1 and VARIATION 1).

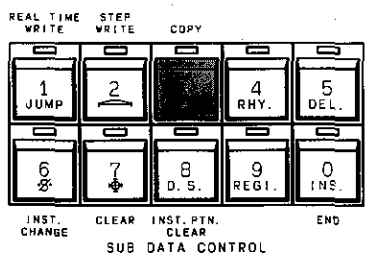
RHYTHM PATTERN COPY

Enter the RHYTHM PATTERN EDIT mode, then press the buttons of the pattern to be edited. [→Page 51]



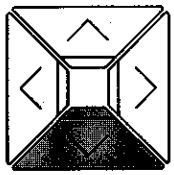

```
RHYTHM 1-V1 EDIT
SELECT JOB
```

Press the COPY button (3).




```
RHY.PTN.COPY ∧V
45:USER 1    V1┘
```

Use the "∨" and "∧" keys to select the Rhythm pattern to be copied.

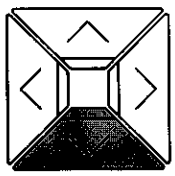



```
RHY.PTN.COPY ∧V
01:8 BEAT 1  V1┘
02:8 BEAT 1  V2
 :    :       :
43:WALTZ 2   V1
44:WALTZ 2   V2
45:USER 1    V1
 :    :       :
52:USER 4    V2
```

Press the ENTER key.


```
ABC.PTN.COPY ∧V
45:USER      V1┘
```

Use the "∨" and "∧" keys to select the Accompaniment pattern to be copied.




```
ABC.PTN.COPY ∧V
01:8 BEAT 1  V1┘
02:8 BEAT 1  V2
 :    :       :
43:WALTZ 2   V1
44:WALTZ 2   V2
45:USER 1    V1
 :    :       :
52:USER 4    V2
```

Press the ENTER key.


```
RHYTHM 1-V1 EDIT
SELECT JOB
```

Press the END button (0) to terminate RHYTHM PATTERN EDIT. When the rhythm is started, the copied pattern is produced.

◆ Though the USER 1 and VARIATION 1 buttons were pressed for the left example, the procedure below can also be performed by pressing the FILL IN button in place of the VARIATION button.

◆ When the COPY button is pressed, the LCD display changes as shown on the left. The source Rhythm pattern to be copied is shown on the LCD bottom line. At the moment the COPY button is pressed, the pattern shown on the LCD bottom line becomes the destination pattern of the COPY operation.

◆ When a VARIATION button is pressed upon entering the RHYTHM PATTERN EDIT mode, "V1" or "V2" is displayed at the right of the LCD bottom line so that the Rhythm pattern can be copied. When a FILL IN button is pressed at such time, "F1" or "F2" is displayed so that a Fill In pattern can be copied.

◆ Each time the "∨" key is pressed, the pattern number displayed on the LCD bottom line is advanced by one and the source pattern changes in correspondence. By pressing the "∧" key, you can return to the preceding pattern number.

◆ The source pattern to be copied can be selected using the SUB DATA numeric buttons in place of the "∨" and "∧" keys. Input the pattern number using the SUB DATA numeric buttons, then press the ENTER key. The pattern numbers are as follows:
01-44: The numbers corresponding to the Preset patterns. "01" and "02" correspond to "V1" and "V2" (or "F1" and "F2") of 8 BEAT 1, and "43" and "44" correspond to "V1" and "V2" (or "F1" and "F2") of WALTZ 2.
45-52: The numbers corresponding to the four USER patterns.

◆ When the pattern to be copied is displayed, then the ENTER key is pressed, that pattern is saved.

◆ When the ENTER key is pressed, then the COPY operation of the Rhythm (or Fill In) pattern is terminated, the LCD displays changes as shown on the left so that the Auto Accompaniment pattern (ABC pattern) synchronized with the Rhythm can be copied.
When the ABC pattern is copied, the patterns of RHYTHMIC CHORD and MELODIC CHORD that correspond to the source pattern as well as the Bass pattern of AUTO BASS CHORD are saved at the USER button.

◆ The operating method is similar to that for copying a Rhythm pattern and such pattern can also be selected using the SUB DATA numeric buttons.

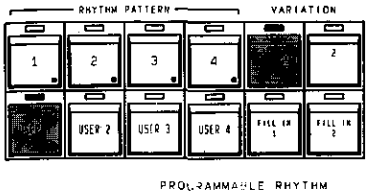
◆ When the ENTER key is pressed, the ABC pattern is saved, the LCD returns to its initial display, and other jobs can be selected.

To perform other RHYTHM PATTERN EDIT jobs [→Pages 53, 56, 59, 60, and 61]

◆ **CAUTION**: When a pattern is copied, the instruments (an eight-instrument group) of that pattern are also saved at the destination pattern. [→HX RHYTHM LIST]

RHYTHM INSTRUMENT CHANGE

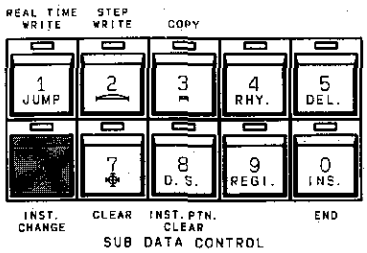
Enter the RHYTHM PATTERN EDIT mode, then press the buttons of the pattern to be edited. [→Page 51]




```
RHYTHM 1-V1 EDIT
SELECT JOB
```

◆ Though the USER 1 and VARIATION 1 buttons were pressed for the left example, the procedure below can also be performed by pressing the FILL IN button in place of the VARIATION button.

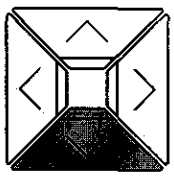
Press the INST. CHANGE button (6).




```
INST.CHANGE    ∧V
1.Ride
```

◆ When the INST. CHANGE button is pressed, the LCD display changes as shown on the left. The LCD bottom line displays the names of the eight instruments currently assigned to the pattern to be edited. [→*HX RHYTHM LIST*]

Use the "V" and "∧" keys to display the instrument to be changed on the LCD bottom line.



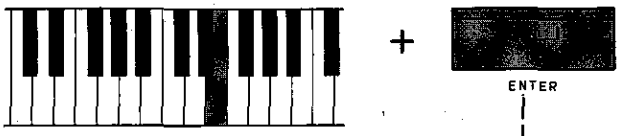

```
INST.CHANGE    ∧V
2.HH
```

```
3.SD-1
4.Tom
5.Syn-drum
6.BD
7.Hand-Claps
8.Crash
1.Ride
```

◆ Each time the "V" key is pressed, the instrument name displayed at the LCD bottom line is advanced by one. By pressing the "∧" key, you can return to the preceding instrument name. Display the name of instrument to be changed.

◆ After displaying the instrument to be changed on the LCD bottom line, press the key corresponding to the instrument you wish to newly assign while referring to the [HX RHYTHM LIST]. While the instrument is being sounded and its key is being pressed, its name is displayed on the LCD bottom line so that the assigned instrument can be checked.

While depressing the key corresponding to the instrument to be newly assigned, press the ENTER key.



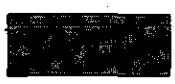

```
INST.CHANGE    ∧V
7.SD-2
```

(Repeat)

◆ When the ENTER key is pressed while depressing the key (of the upper or lower keyboard) corresponding to the instrument, the display of the LCD bottom line changes to display the new instrument.

◆ Using the same operation, try replacing several other instruments with new instruments, as required.

Press the ENTER key.




```
RHYTHM 1-V1 EDIT
SELECT JOB
```

◆ When the ENTER key is pressed, the changed instruments are saved, and the LCD returns to its initial display so that other jobs can be selected.

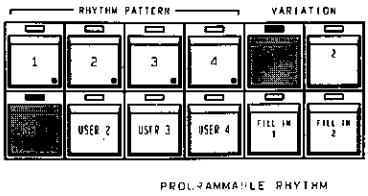
To perform other RHYTHM PATTERN EDIT jobs [→Pages 53, 56, 60, and 61]

Press the END button (0) to terminate RHYTHM PATTERN EDIT. When the rhythm is started, the pattern containing the changed instrument(s) is produced.

Patterns can be written to the other USER buttons using the same procedure, as required.

RHYTHM CLEAR

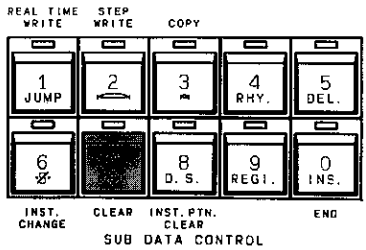
Enter the RHYTHM PATTERN EDIT mode, then press the buttons of the pattern to be edited. [→Page 51]




```
RHYTHM 1-V1 EDIT
SELECT JOB
```

◆Though the USER 1 and VARIATION 1 buttons were pressed for the left example, the procedure below can also be performed by pressing the FILL IN button in place of the VARIATION button.

Press the CLEAR button (7).

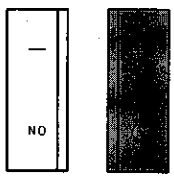



```
RHY.PTN. 1-V1
CLEAR PTN.?  Y/N
```

◆When the CLEAR button is pressed, the LCD display changes as shown on the left, prompting you to decide whether or not to perform a RHYTHM CLEAR job.
When RHYTHM CLEAR is not required: Only press the ENTER key.
When RHYTHM CLEAR is required: Perform the operation described below.

(YES) (NO)

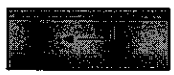
Press the "+/YES" key.




```
RHY.PTN. 1-V1
CLEAR PTN.?  Y/N
```

◆Press the "+/YES" key, shift the cursor below "Y", then press the ENTER key. All instrument patterns of the pattern to be edited will be erased.

Press the ENTER key.



(YES) (NO)

"CLEARED!" is displayed on the LCD bottom line for about two seconds.

```
RHY.PTN. 1-V1
  CLEARED!
```

The LCD returns to its initial display so that other jobs can be selected.

```
RHYTHM 1-V1 EDIT
SELECT JOB
```

Select the Rhythm REAL TIME WRITE job or STEP WRITE job, then write a pattern. [→Pages 53 and 56]

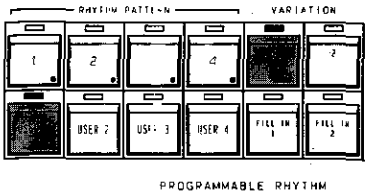
NOTE:

- When the RHYTHM CLEAR job is executed, the pattern (sounding of its instruments) is completely erased, but the data on the eight instruments assigned to that pattern remains saved. To change the instruments, perform a RHYTHM INSTRUMENT CHANGE job. [→Previous Page]
  Moreover, by performing a RHYTHM PATTERN COPY job before performing RHYTHM CLEAR, you can copy the instrument data together with the pattern. [→Page 58]

- **CAUTION:** Even when RHYTHM CLEAR is executed, the ABC pattern saved in the Rhythm pattern to be edited will remain without being erased. When a completely new Rhythm pattern is written after executing RHYTHM CLEAR, therefore, the new pattern may not synchronize well with the Auto Accompaniment patterns. In case you write a completely new Rhythm pattern, enter the RHYTHM PATTERN COPY job before executing RHYTHM CLEAR, and copy the ABC pattern of the Rhythm pattern closest to the pattern you plan to write. [→Page 58]

RHYTHM INSTRUMENT PATTERN CLEAR

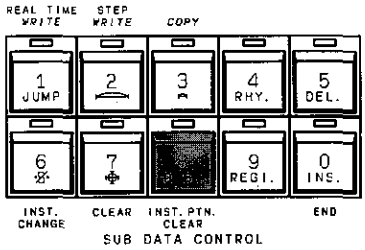
Enter the RHYTHM PATTERN EDIT mode, then press the buttons of the pattern to be edited. [→Page 51]




```
RHYTHM 1-V1 EDIT
SELECT JOB
```

◆ Though the USER 1 and VARIATION 1 buttons were pressed for the left example, the procedure below can also be performed by pressing the FILL IN button in place of the VARIATION button.

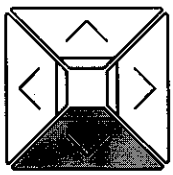
Press the INST. PTN. CLEAR button (8).




```
INST.PTN.CLEAR
1.Ride          Y/N
```

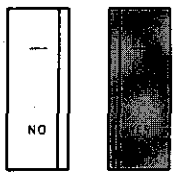
◆ When the INST. PTN. CLEAR button is pressed, the LCD display changes as shown on the left. The LCD bottom line displays the names of the eight instruments currently assigned to the pattern to be edited.

Use the "∨" and "∧" keys to display the name of the Instrument you wish to delete on the LCD bottom line.




```
INST.PTN.CLEAR
2.HH            Y/N
3.SD-1          Y/N
4.Tom           Y/N
5.Syn-drum      Y/N
6.BD            Y/N
7.Hand-Claps    Y/N
8.Crash         Y/N
1.Ride          Y/N
```

◆ *Each time the "∨" keys is pressed, the instrument* display on the LCD bottom line is advanced by one. By pressing the "∧" key, you can return to the preceding instrument. Display the name of the instrument to be deleted.



Press the "+/YES" key.

```
INST.PTN.CLEAR
2.HH            Y/N
```

◆ After displaying the name of the instrument to be deleted on the LCD, press the "+/YES" key to shift the cursor below "Y". Next, when the ENTER key is pressed, the pattern of the instrument displayed on the LCD is deleted.

When the ENTER key is pressed,the Instrument pattern is deleted. The LCD returns to its initial display so that a RHYTHM PATTERN EDIT job can be selected.


```
2.HH
      CLEARED!
```

```
RHYTHM 1-V1 EDIT
SELECT JOB
```

◆ When one RHYTHM INSTRUMENT PATTERN CLEAR job is executed, only one Instrument pattern can be deleted. To delete multiple Instrument patterns, repeat the same job the required number of times.

◆ A RHYTHM INSTRUMENT PATTERN CLEAR job only deletes the pattern of an instrument but does not delete the data assigned to that instrument. It is convenient to execute this job if you wish to rewrite only a specific Instrument pattern.

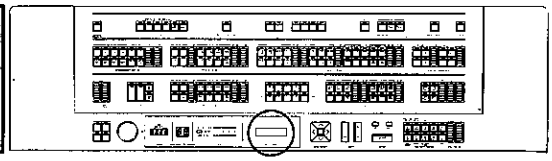
(Repeat)

Enter a REAL TIME WRITE job or STEP WRITE job, then rewrite the deleted Instrument pattern. [→Pages 53 and 56]

When the END button (0) is pressed and the rhythm is started, the rhythm pattern consisting of the instruments that were not deleted is produced.

2-(2) RHYTHM INSTRUMENT LEVEL

This function allows you to change the respective volume levels of any of the built-in rhythm instruments.



Display "2. RHYTHM" on the LCD bottom line, then press the ENTER key. [→Page 50]

ENTER

```
MULTI MENU
 2.RHYTHM
```

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

Use the "∨" and "∧" keys to display "2. RHY. INST. LEVEL" on the LCD bottom line.

MENU SELECT

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

Press the ENTER key.

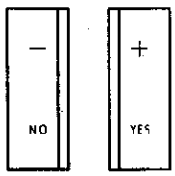
ENTER

```
RHY.INST.LVL
PRESS ANY KEY
```

Press the key corresponding to the instrument for which you wish to change the volume.

```
RHY.INST.LVL
HH closed     =12
```

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



DATA

```
RHY.INST.LVL
HH closed     =15
```

(Repeat)

Press the ENTER (or QUIT) key to exit the mode.

ENTER

```
MULTI MENU
 2.RHYTHM
```

◆ The respective volume levels of the instruments comprising each Rhythm pattern have been preset so they will produce a well-balanced sound. RHYTHM INSTRUMENT LEVEL allows you to change the volume data for each instrument, as required. (When a Reset operation is performed, the volume data is restored to its default status.)

◆ When "2. RHY. INST. LEVEL" is selected and the ENTER key is pressed, the "PRESS ANY KEY" message is displayed on the LCD bottom line. Press the key corresponding to the instrument for which you wish to change the volume. [→HX RHYTHM LIST]

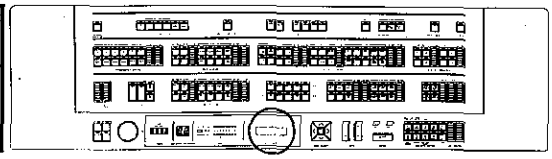
◆ When a key of the upper or lower keyboard is pressed, the name of the instrument corresponding to that key is displayed. The currently set volume level is displayed on the right of the instrument name.

◆ After displaying the instrument for which you wish to change the volume on the LCD bottom line, use the "+" and "−" keys to increase or decrease the volume level. (Variable width: 0-15)

◆ If you wish to change the volume data for multiple instruments, repeat the above operation once for each instrument.

◆ If the START switch is pressed before pressing the ENTER key, the rhythm is started so you can check the changed volume level.

2-(3) RHYTHM INSTRUMENT PAN



This function allows you to change the respective orientation (direction of sound from the speakers) of any of the built-in rhythm instruments.

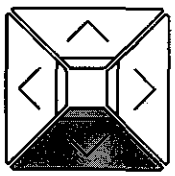
Display "2. RHYTHM" on the LCD bottom line, then press the ENTER key. [→Page 50]

```
MULTI MENU
 2.RHYTHM
```

ENTER

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

Use the "∨" and "∧" keys to display "2. RHY. INST. PAN" on the LCD bottom line.



MENU SELECT

```
RHYTHM
3.RHY.INST.PAN
```

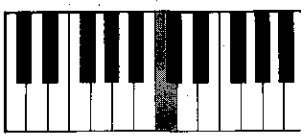
```
4.KBD PERC.ASSGN
1.RHY.PTN.EDIT
2.RHY.INST.LEVEL
```

Press the ENTER key.

ENTER

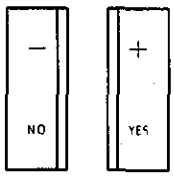
```
RHY.INST.PAN
PRESS ANY KEY
```

Press the key corresponding to the instrument for which you wish to change the panning.



```
RHY.INST.PAN
HH closed     =R2
```

Use the "+" and "−" keys to change the panning value.



DATA

```
RHY.INST.PAN
HH closed     =R3
```

(Repeat)

Press the ENTER (or QUIT) key to exit the mode.

ENTER

```
MULTI MENU
 2.RHYTHM
```

◆ The respective panning levels of the instruments comprising each Rhythm pattern have been preset so they will produce a well-balanced sound. RHYTHM INSTRUMENT PAN allows you to change the panning data for each instrument, as required. (When a Reset operation is performed, the panning data is restored to its default status.)

◆ When "3. RHY. INST. PAN" is selected and the ENTER key is pressed, the "PRESS ANY KEY" message is displayed on the LCD bottom line. Press the key corresponding to the instrument for which you wish to change the panning. [→HX RHYTHM LIST]

◆ When a key of the upper or lower keyboard is pressed, the name of the instrument corresponding to that key is displayed. The currently set panning value is displayed on the right of the instrument name. The displayed panning values consist of seven types:

(Left)←—(Center)—→(Right)
L3 • L2 • L1 • C • R1 • R2 • R3

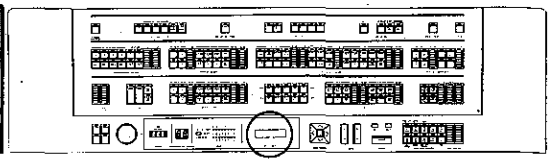
◆ After displaying the instrument for which you wish to change the panning value on the LCD bottom line, use the "+" and "−"keys to shift the panning.
"+" key: The sound is panned rightward each time this key is pressed.
"−" key: The sound is panned leftward each time this key is pressed.

◆ If you wish to change the panning for multiple instruments, repeat the above operation once for each instrument.

◆ If the START switch is pressed before pressing the ENTER key, the rhythm is started so you can check the changed panning value.

2-(4) KEYBOARD PERCUSSION ASSIGN

This function assigns the rhythm instruments to be sounded, when the KEYBOARD PERCUSSION switch at the top left of the panel is switched to ON, to the keys of the three keyboards.



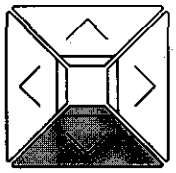
Display "2. RHYTHM" on the LCD bottom line, then press the ENTER key. [→Page 50]

```
MULTI MENU
 2.RHYTHM
```

→ ENTER →

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

Use the "∨" and "∧" keys to display "4. KBD PERC. ASSGN" on the LCD bottom line.




```
RHYTHM
4.KBD PERC.ASSGN
```

```
1.RHY.PTN.EDIT
2.RHY.INST.LEVEL
3.RHY.INST.PAN
```

Press the ENTER key.

→

```
KBD PERC. ASSIGN
01:Ride cym
```

◆ When the ENTER key is pressed, the LCD display changes as on the left. The LCD bottom line displays the instrument number and name.

Press any key to confirm the currently assigned instrument.

```
KBD PERC. ASSIGN
01:Ride cym
```

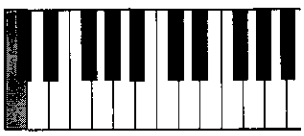
↓ ↑

```
KBD PERC. ASSIGN
07:SD-1 light G3
```

◆ If you wish to confirm which instrument is currently assigned to which key before starting a new assignment operation, just press any key. If an instrument was assigned to the pressed key, that instrument will be sounded, and the instrument name and the key position will be displayed on the LCD bottom line while that key is being pressed. If no instrument was assigned, no sound is produced and the LCD display remains unchanged.

Operation for Deleting All Currently Assigned Data

While depressing the leftmost white key on the lower keyboard, press the ENTER key.



+

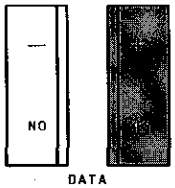
↓

```
KBD PERC. ASSIGN
ALL CLEAR ?  Y/N
```

◆ When a Reset operation is performed, all instruments are assigned to the respective keys of the upper and lower keyboards as the default status. Performing the operation on the left lets you delete all such assignment data in one stroke and eliminates the time required for disassigning unnecessary instruments. In addition, the operation on the left should also be performed when you wish to change all of the previously assigned data.

◆ When the ENTER key is pressed while depressing the leftmost white key of the lower keyboard, "ALL CLEAR?" is displayed on the LCD bottom line. To execute "ALL CLEAR", shift the cursor below "Y", using the "+/YES" key, then press the ENTER key.

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




```
KBD PERC. ASSIGN
ALL CLEAR ?  Y/N
```

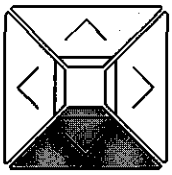
↓

(To Next Page)

(From Previous Page)

ASSIGNMENT

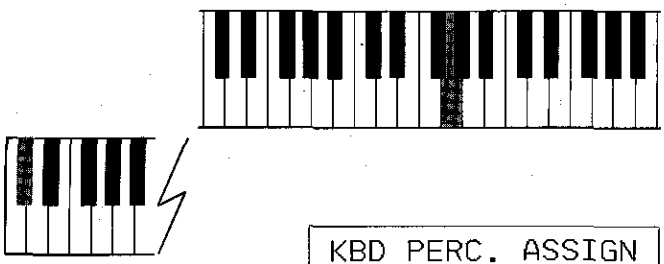
Use the "∨" and "∧" keys to display the instrument to be assigned on the LCD bottom line.



MENU SELECT

```
KBD PERC. ASSIGN
02:Ride cup
03:Crash cym
04:HH closed
 :    :
 :    :
60:Castanets
01:Ride cym
```

While depressing the leftmost black key of the lower keyboard, press the key to be assigned.

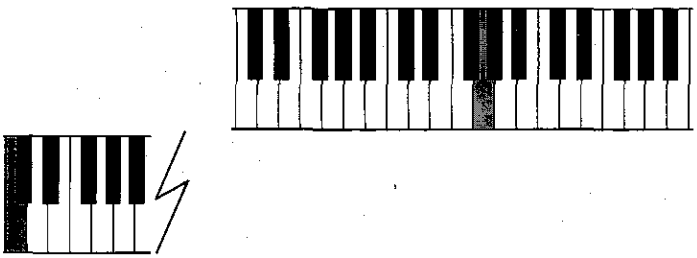


```
KBD PERC. ASSIGN
02.Ride cup   G3
```

(Repeat) (Repeat)

DISASSIGNMENT

Press the key(s) to be disassigned while depressing the leftmost white key of the lower keyboard.



Press the ENTER key to exit the mode.

ENTER

```
MULTI MENU
 2.RHYTHM
```

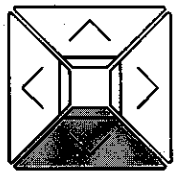
When the KEYBOARD PERCUSSION switch, located at the top left of the panel, is switched to ON and the assigned keys are played, the rhythm instruments are sounded.

KEYBOARD PERCUSSION

- Each time the "∨" key is pressed, the instrument display on the LCD bottom line is advanced by one. By pressing the "∧" key, you can return to the preceding instrument. Display the instrument that you wish to assign.
- *The instrument to be assigned can also be selected* using the SUB DATA numeric buttons in place of the "∨" and "∧" keys. Enter the instrument number using the SUB DATA numeric buttons, then press the ENTER key. See the [HX RHYTHM LIST] regarding the instrument numbers.
- When a key is pressed while depressing the leftmost black key of the lower keyboard, the instrument displayed on the LCD at that time is assigned to the pressed key. The position of the assigned key is displayed on the right of the LCD bottom line.
- Instrument assignment can be performed for all keys of the upper, lower, and pedal keyboards (excluding the leftmost white and black keys of the lower keyboard).
- If you wish to assign the same instrument to multiple keys, press the keys to be assigned while depressing the leftmost black key of the lower keyboard.
- To assign other instruments to other key(s), change the LCD instrument display, then repeat the ASSIGN operation. Note, however, that multiple instruments cannot be assigned to a single key.
- To delete the assigned data for individual keys, press the key to be disassigned while depressing the leftmost white key of the lower keyboard, as shown on the left. If multiple keys are pressed, multiple sets of data can be simultaneously disassigned.

II-3 EXTRA FUNCTION

Display "3. EXTRA FUNCT." on the LCD bottom line.




```
MULTI MENU
 2.RHYTHM
```

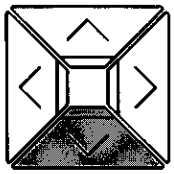
↓

```
MULTI MENU
 3.EXTRA FUNCT.
```

Press the ENTER key.


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

Select a job using the "∨" and "∧" keys, then press the ENTER key.




```
EXTRA FUNCTION
2.MIDI CONTROL
3.2nd EXP.PEDAL
1.CHORD DISPLAY
```

3-(1) CHORD DISPLAY [↓]

3-(2) MIDI CONTROL [→Next Page]

3-(3) 2nd EXPRESSION PEDAL [→Page 72]

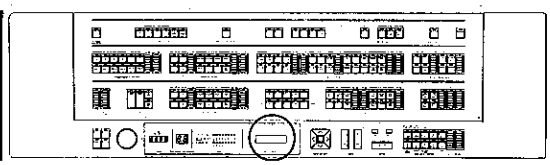
◆ The operation of "EXTRA FUNCTION", the third item of the MULTI MENU, is outlined on the left. In case you press the ENTER key by mistake before completing the "EXTRA FUNCTION" operation, press the QUIT key to exit the mode.

◆ The three jobs that can be performed in EXTRA FUNCTION mode are as follows:

CHORD DISPLAY	Displays the name of the chords played on the lower and pedal keyboards.
MIDI CONTROL	Sets the various conditions for data transfer via MIDI.
2nd EXPRESSION PEDAL	Assigns the function of the Expression Pedal.

3-(1) CHORD DISPLAY

On the LCD, this function displays the names of the chords played on the lower and pedal keyboards.



Display "2. CHORD DISPLAY" on the LCD bottom line, then press the ENTER key.

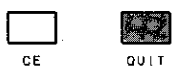
```
EXTRA FUNCTION
1.CHORD DISPLAY
```


```
CHORD DISPLAY
```

When a chord is played on the lower or pedal keyboard, its name is displayed.

```
CHORD DISPLAY
  C
```

Press the QUIT (or ENTER) key to exit this mode.

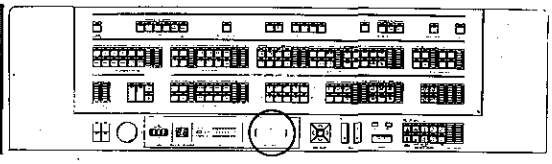



```
MULTI MENU
 3.EXTRA FUNCT.
```

◆ The CHORD DISPLAY function displays chord names according to the ABC mode set at the AUTO BASS CHORD section. Before using CHORD DISPLAY, first select the ABC mode. [→Page 34]
CUSTOM ABC: The chords played on the lower and pedal keyboards are detected and displayed.
FINGERED CHORD: The chords played on the lower keyboard are detected and displayed.
SINGLE FINGER: When a chord is pressed on the lower keyboard, it is automatically detected and displayed.
In ABC OFF status: Operation is identical to that when FINGERED CHORD is set.

3-(2) MIDI CONTROL

This function sets the various conditions related to data transfer with external devices via MIDI.



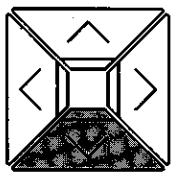
Display "3. EXTRA FUNCT." on the LCD bottom line, then press the ENTER key. [→Previous Page]

```
MULTI MENU
 3.EXTRA FUNCT.
```

ENTER

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

Using the "∨" and "∧" keys, display "2. MIDI CONTROL" on the LCD bottom line.



MENU SELECT

```
EXTRA FUNCTION
2.MIDI CONTROL
```

```
3.2nd EXP.PEDAL
1.CHORD DISPLAY
```

Press the ENTER key.

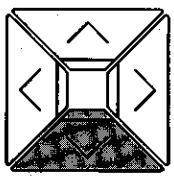
ENTER

```
MIDI CONTROL
1.RHY.SYNC.SEL.
```

◆The MIDI CONTROL function enables you to perform the four jobs below:

1. RHY. SYNC. SEL.	Selects the Rhythm Synchronous mode as "Internal" or "External".
2. BASIC CHANNEL	Changes the channels of the channel messages during data transmission and reception.
3. BULK DATA SEL.	Selects "Bulk Dump" data (Exclusive message) for data transmission.
4. LOCAL CONTROL	Selects the channel(s) that will not be sounded from the Electone for data transmission.
5. AFTER TOUCH	Selects whether or not to send After Touch data according to the individual channel.

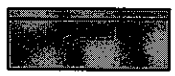
Select the job to be executed using the "∨" and "∧" keys, then press the ENTER key.



MENU SELECT

```
MIDI CONTROL
2.BASIC CHANNEL
```

```
3.BULK DATA SEL.
4.LOCAL CONTROL
5.AFTER TOUCH
1.RHY.SYNC.SEL.
```



ENTER

RHYTHM SYNCHRONOUS MODE SELECT [→Next Page]

BASIC CHANNEL CHANGE [→Page 69]

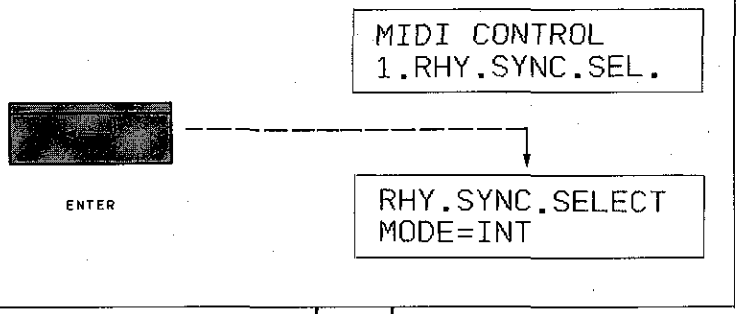
BULK DATA SELECT [→Page 70]

LOCAL CONTROL ON/OFF SELECT [→Page 70]

AFTER TOUCH [→Page 71]

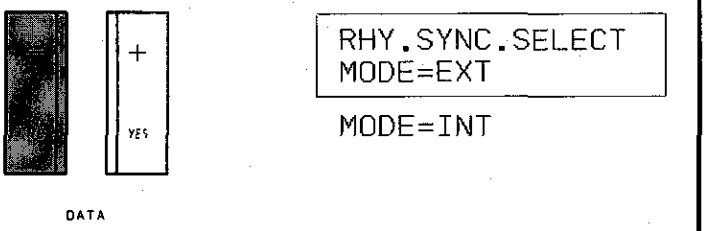
RHYTHM SYNCHRONOUS MODE SELECT

Enter the MIDI CONTROL mode (see previous page) and display "1. RHY.SYNC.SEL." on the LCD bottom line. Next, press the ENTER key.

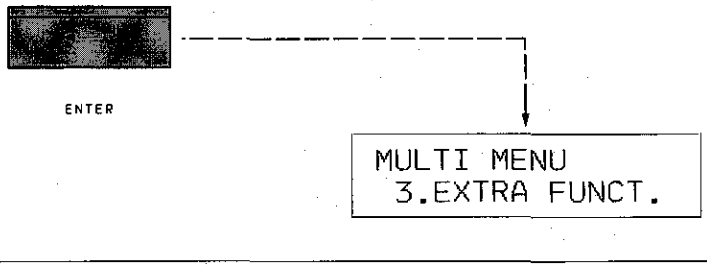


(Change) (No change)

Select the Rhythm Synchronous mode using the "+" or "−" key.



Press the ENTER key to exit this mode.



◆ When "1. RHY.SYNC.SEL." is displayed on the LCD bottom line and the ENTER key is pressed, the LCD changes to the display on the left. The LCD bottom line indicates the currently set Rhythm Synchronous mode.
INT (Internal Synchronous mode): The Electone rhythm is sounded according to the tempo set at the Electone. Select this mode to send MIDI signals from the Electone.
EXT (External Synchronous mode): The Electone rhythm is synchronized with the MIDI clock signals that are sent by an external device. The tempo set at the Electone is disregarded and the Rhythm section cannot be controlled by the Electone. Select this mode to receive MIDI signals from an external device with Rhythm functions.

◆ When the "+" key is pressed, the Internal mode is selected. When the "−" key is pressed, the External mode is selected.

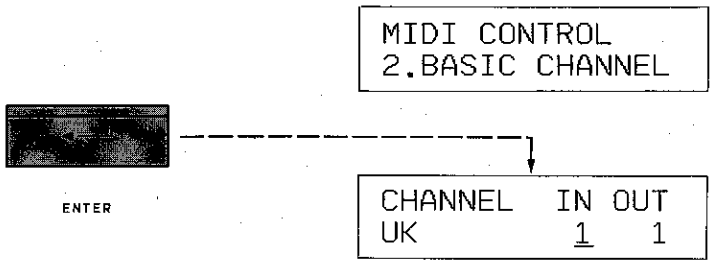
◆ **CAUTION**: The setting of the Rhythm Synchronous mode is retained in back-up memory even when the Electone power is switched to OFF. If normal playing or MIDI signal transmission is performed in External mode, satisfactory results will not be obtained. In case External mode is selected, be sure to later change the setting back to Internal mode.

NOTES:

- *In case Electone performances are recorded and played back* using the Music Disk Recorder (MDR-2), the Rhythm Synchronous mode of the Electone is automatically selected and does not require selection for recording or playback.
  During playback, however, switching OFF the power or disconnecting the MIDI cable will cause the Rhythm Synchronous mode to remain set to External mode.
- *When transferring data with external devices via MIDI, be sure to* set the Rhythm Synchronous mode to "Internal" except in the case of special applications. The mode must be switched to "External" only in the below cases:
  1) When another Electone (or keyboard with Rhythm functions) is played and its MIDI signals are to be transferred.
  2) When MIDI signals of ordinary Sequencers, excluding MDR-2, are to be transferred.

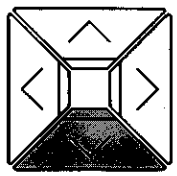
BASIC CHANNEL CHANGE

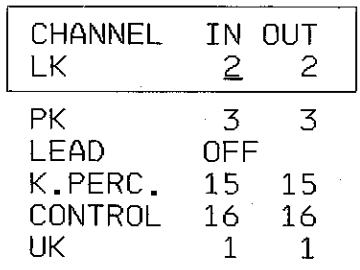
Enter the MIDI CONTROL mode (Page 67), then display "2. BASIC CHANNEL" on the LCD bottom line. Next, press the ENTER key.



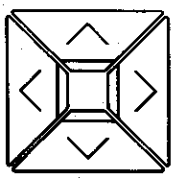
(Change) (No change)

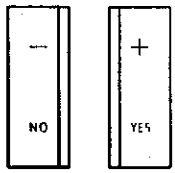
Using the "∨" and "∧" keys, display the item for which you wish to change the Basic Channel on the LCD bottom line.

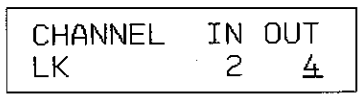




Using the ">" and "<" keys, select "IN" or "OUT" and change the Channel number using the "+" and "−" keys.

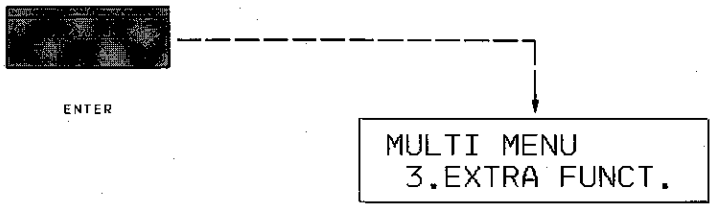






(Repeat)

Press the ENTER key to exit this mode.



◆ When "2. BASIC CHANNEL" is displayed on the LCD bottom line and the ENTER key is pressed, the LCD changes to the display on the left. The LCD bottom line indicates the Basic Channel item and the currently set Channel numbers for reception (IN) and transmission (OUT) for that item.
The MIDI Channel Messages of the HX Electone are assigned to the eleven channels below for data reception and/or transmission. [→Page 87]
UK: Channel for sending/receiving performance data of the upper keyboard.
LK: Channel for sending/receiving performance data of the lower keyboard.
PK: Channel for sending/receiving performance data of the pedal keyboard.
LEAD: Channel for the independent reception of performance data of LEAD voices (the transmission channel is ignored).
K.PERC.: Channel for the independent transmission/reception of the performance data of KEYBOARD PERCUSSION (ON/OFF status of the assigned keys).
CONTROL: Channel for sending/receiving the various Control data (Expression Pedal, MODULATION Wheel, REGISTRATION MEMORY, PITCH BEND Wheel, etc.) that are common to all keyboards.

◆ The default values of each Basic Channel (the channel numbers set by a Reset operation) are listed below and do not require changing for usual applications.

	IN (Recognized)	OUT (Transmitted)
UK	1	1
LK	2	2
PK	3	3
LEAD	OFF	—
K.PERC.	15	15
CONTROL	16	16

◆ Each time the "+" key is pressed, the value is incremented by one up to the maximum value of "16". Each time the "−" key is pressed, the value is decreased by one, changing to "OFF" following "1". Note that, when a channel is set to "OFF", its data can be neither sent nor received.

◆ The settings of the Basic Channels are retained in back-up memory even if the Electone power is switched to OFF.

◆ The transmission and reception of the performance data of LEAD voices are performed as follows:
Transmission: The data is sent by the channel of the upper or lower keyboard. Selection of the upper or lower keyboard is performed using the UPPER LEAD and LOWER LEAD buttons of the ENSEMBLE section.
Reception: If data is received in the "OFF" status, it is received and sounded as the performance data of the channel of the upper or lower keyboard, depending on whether UPPER LEAD or LOWER LEAD of the ENSEMBLE section is "ON" at such time.
If any channel from 4 to 14 is changed, the performance data of a LEAD voice is received on a separate channel. (See the note below.)

NOTE:

● In case MDR-2 or other external devices are used to record/play back a performance, the performance data of individual LEAD voices (last-in first-out monophonic) can be sent and received in addition to that of the upper and lower keyboards.
Transmission: Set only the LEAD voice at the upper or lower keyboard, then change one "OUT" channel from 4 to 14 of "UK" or "LK".
Reception: Change the "IN" channel of "LEAD" to the same channel (one channel from 4 to 14) used for transmission.

BULK DATA SELECT

Enter the MIDI CONTROL mode (Page 67), then display "3. BULK DATA SEL." on the LCD bottom line. Next, press the ENTER key.

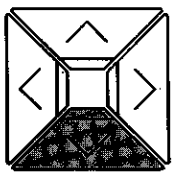
ENTER

```
MIDI CONTROL
3.BULK DATA SEL.
```

```
BULK DATA SELECT
2.REGIST
```

(Change) (No change)

Using the "∨" and "∧" keys, select the Bulk Dump data to be sent.



MENU SELECT

```
BULK DATA SELECT
3.VOICE
```

```
4.REGIST & VOICE
1.OFF
2.REGIST
```

Press the ENTER key to exit this mode.

◆When "3. BULK DATA SEL." is displayed on the LCD bottom line and the ENTER key is pressed, the LCD changes to the display on the left. The LCD bottom line indicates the currently set Bulk Dump data to be sent from the HX Electone to the external device. [→Page 88]
1. OFF: Bulk Dump data is not sent.
2. REGIST: All Bulk Dump data except the FM USER VOICE data is sent (see the notes below).
3. VOICE: The FM USER VOICE data (FM POLY 91-98 and FM MONO 55-60) is sent.
4. REGIST & VOICE: All Bulk Dump data is sent.

◆When the display of the LCD bottom line is changed using the "∨" and "∧" keys and the ENTER key is pressed, the Bulk Dump data to be sent is set.

◆The Bulk Data Select setting is retained in back-up memory even if the Electone power is switched to OFF.

NOTES:

● Regardless of the "BULK DATA SELECT" setting shown above, the reception of Bulk Dump data is performed according to the "Request-to-Receive Bulk Dump data" signal sent from an external device.

● In case "REGIST" is selected, the Bulk Dump data to be sent consists of the following:
•The data stored in REGISTRATION MEMORY 1-16.
•The various data that are not stored in REGISTRATION MEMORY (COMBINATION USER voices data; USER Vibrato data; data on Digital Effector parameters, MODULATION parameters, and PITCH BEND parameters; REGIST JUMP data, RHYTHM LEVEL data, RHYTHM PAN data, and MIDI CONTROL data).
•The Sequence data programmed to SEQUENCER 1-4.
•The Rhythm pattern data stored in RHYTHM USER 1-4.
•Assignment data of KEYBOARD PERCUSSION.

LOCAL CONTROL ON/OFF SELECT

Enter the MIDI CONTROL mode (Page 67), then display "4. LOCAL CONTROL" on the LCD bottom line. Next, press the ENTER key.

ENTER

```
MIDI CONTROL
4.LOCAL CONTROL
```

```
LOCAL CONTROL
UK          ON
```

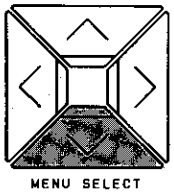
(To Next Page)

◆When "4. LOCAL CONTROL" is displayed on the LCD bottom line and the ENTER key is pressed, the LCD changes to the display on the left. The LCD bottom line indicates the MIDI Channel item and the currently set Local Control ON/OFF status of that item.
The items and contents of each channel conform to the six Basic Channels. [→Page 69]

(From Previous Page)

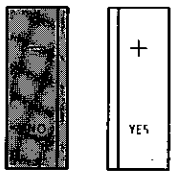
(Change) (No change)

Using the "∨" and "∧" keys, display the channel for which the Local Control ON/OFF status is to be changed on the LCD bottom line.




```
LOCAL CONTROL
LK          ON
PK          ON
LEAD        ON
K.PERC.     ON
CONTROL     ON
UK          ON
```

Press the "–/NO" key.




```
LOCAL CONTROL
LK          OFF
```

(Repeat)

Press the ENTER key to exit this mode.

- In the Local Control default status (the status after a Reset operation), all of the channels are set to "ON". For usual applications, they need not be set to "OFF".
- Switching of the Local Control ON/OFF results in the below:
  "ON": The signals of the pertinent channel are sent to both an external device and the Electone sound source, and are sounded from the Keyboard Amplifiers connected to the Electone.
  "OFF": The signals of the pertinent channel are sent only to an external device and not to the Electone sound source. The sounds of a channel set to "OFF", therefore, are not produced from the Keyboard Amplifiers connected to the Electone. (When Local Control is set to "OFF", the control of the Expression Pedal, MODULATION Wheel, REGISTRATION MEMORY, and PITCH Wheel is only performed for external devices.)
- When the "–" key is pressed, Local Control is switched to "OFF" status. When the "+" key is pressed, it is switched back to "ON".
- **CAUTION**: The Local Control ON/OFF settings are retained in back-up memory even if the Electone power is switched to "OFF". If a usual performance is done with a channel set to "OFF", the sounds of that channel will not be sounded. If Local Control is set to "OFF", be sure to later change the setting back to "ON".

AFTER TOUCH ON/OFF SELECT

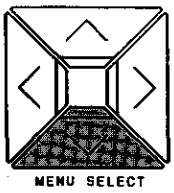
Enter the MIDI CONTROL mode (Page 67), then display "5. AFTER TOUCH" on the LCD bottom line. Next, press the ENTER key.

```
MIDI CONTROL
5.AFTER TOUCH
```


```
AFTER TOUCH
1.UK        ON
```

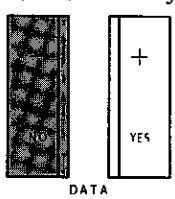
(Change) (No change)

Using the "∨" and "∧" keys, display the channel for which the After Touch ON/OFF status is to be changed on the LCD bottom line.




```
AFTER TOUCH
2.LK        ON
3.PK        ON
1.UK        ON
```

Press the "–/NO" key.




```
AFTER TOUCH
2.LK        OFF
```

(Repeat)

Press the ENTER key to exit this mode.

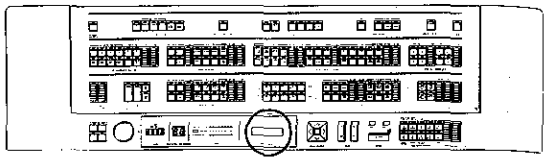
- When "5. AFTER TOUCH" is displayed on the LCD bottom line and the ENTER key is pressed, the LCD changes to the display on the left. The LCD bottom line indicates the MIDI Channel item and the currently set After Touch ON/OFF status of that item.
- In the After Touch default status (the status after a Reset operation), all of the channels are set to "ON". For usual applications, they need not be set to "OFF".
- Switching of the After Touch ON/OFF results in the below:
  "ON": The After Touch (channel pressure) signal of the pertinent channel is sent to the connected external device.
  "OFF": The After Touch (channel pressure) signal of the pertinent channel is not sent to the connected external device.
- When the "–" key is pressed, After Touch is switched to "OFF" status. When the "+" key is pressed, it is switched back to "ON".
- **CAUTION**: The After Touch ON/OFF settings are retained in back-up memory even if the Electone power is switched to "OFF".
  In After Touch is set to "OFF", be sure to later change the setting back to "ON".

NOTE:

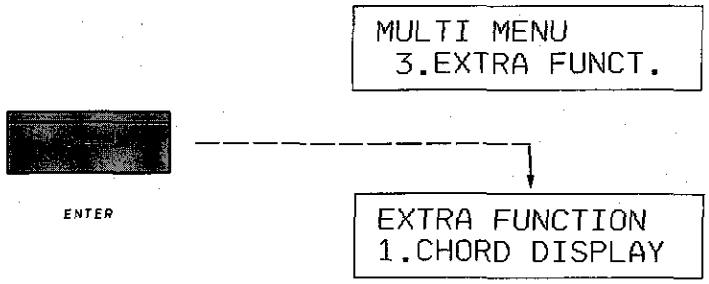
- If overdubbing is performed during the recording of a performance onto a Sequencer, such as MDR-2, the existing After Touch data will clash and lead to unsatisfactory recording results. As a counter-measure against such clashing, be sure to switch OFF the pertinent After Touch channel prior to performing overdubbing.

3-(3) 2nd EXPRESSION PEDAL

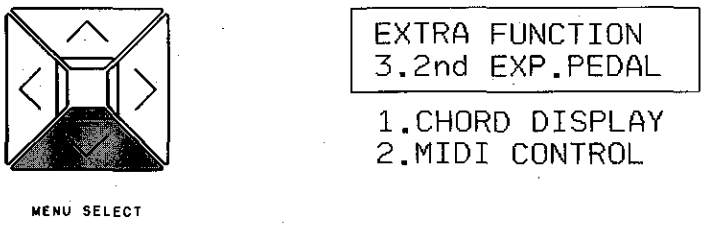
This function assigns the function of the 2nd Expression Pedal.



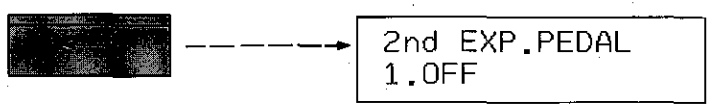
Display "3. EXTRA FUNCT." on the LCD bottom line, then press the ENTER key. [→Page 66]



Using the "∨" and "∧" keys, display "3. 2nd EXP. PEDAL" on the LCD bottom line.

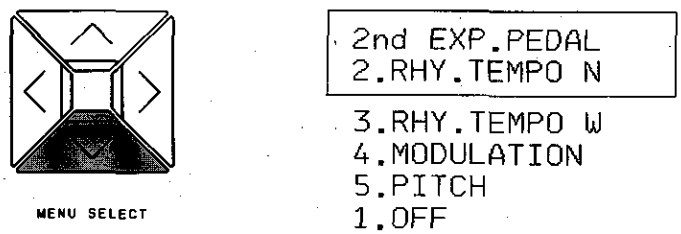


Press the ENTER key.

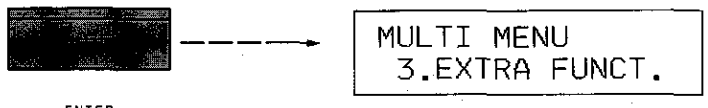


(Change) (No change)

Using the "∨" and "∧" keys, change the display on the LCD bottom line to select the function to be assigned.



Press the ENTER key to exit this mode.



When you step on the 2nd Expression Pedal, the assigned function will operate. When you release the Pedal, it will automatically return to its center position.

◆ When the ENTER key is pressed, the LCD changes to the display on the left. The LCD bottom line indicates the function that is currently assigned to the 2nd Expression Pedal.

◆ The functions that can be assigned to the 2nd Expression Pedal are as follows:

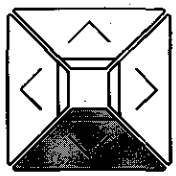
1. OFF	The 2nd Expression Pedal does not function, even when stepped on. (Default)
2. RHY. TEMPO N (narrow)	Pushing forward on the pedal with your toes increases the rhythm's tempo and pushing back the pedal with your heel slows it down. The variable width of the tempo is narrower than that of "W" below.
3. RHY. TEMPO W (wide)	As with 2. above, this function can control the rhythm's tempo. The variable width of the tempo is wider than that of "N".
4. MODULATION	This function can control, by pedal, the selected effect of the MODULATION section. [→Page 27]
5. PITCH	This function can control, by pedal, the selected effect of the PITCH section. [→Page 28]

◆ The assignment data of the 2nd Expression Pedal can be respectively stored in REGISTRATION MEMORY Buttons 1-16.

II-4 EXTERNAL CONTROL

Connect an external device to the HX Electone, such as a Tone Generator. [→Page 80]

Display "4. EXT. CONTROL" on the LCD bottom line.



MENU SELECT

MULTI MENU
2.RHYTHM

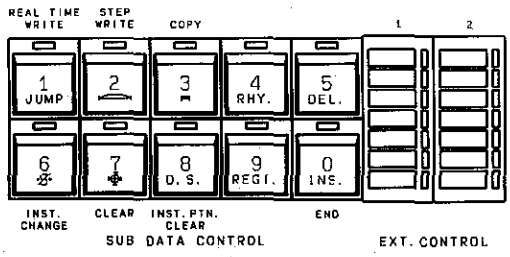
MULTI MENU
4.EXT.CONTROL

Press the ENTER key.

ENTER

EXTERNAL CONTROL

Use the SUB DATA CONTROL buttons and the two EXT. CONTROL buttons to control the connected external device.



Press the QUIT (or ENTER) key to exit this mode.

CE QUIT

MULTI MENU
4.EXT.CONTROL

◆ The fourth MULTI MENU function is "EXTERNAL CONTROL". This function is used for transferring data with an external device via MIDI.

◆ In case you mistakenly press the ENTER key but have not performed the "EXTERNAL CONTROL" operation, press the QUIT key and exit the mode.

◆ When the ENTER key is pressed, the LCD changes to the display on the left and the EXTERNAL CONTROL functions are enabled.

◆ When the EXTERNAL CONTROL mode is entered, the SUB DATA CONTROL buttons and EXT. CONTROL buttons 1 and 2 operate as follows:
Transmission: When one of the above buttons is pressed, the MIDI Exclusive Message corresponding to the pressed button is sent to the external device so that it can be remote-controlled. (Regarding the type of remote control possible, refer to the operating manual of the external device concerned.)
Reception: The LED of the button corresponding to the MIDI Exclusive Message sent from an external device lights up so you can confirm the status of that external device.

◆ While in EXTERNAL CONTROL mode, the SUB DATA CONTROL buttons do not function with respect to the Electone itself.

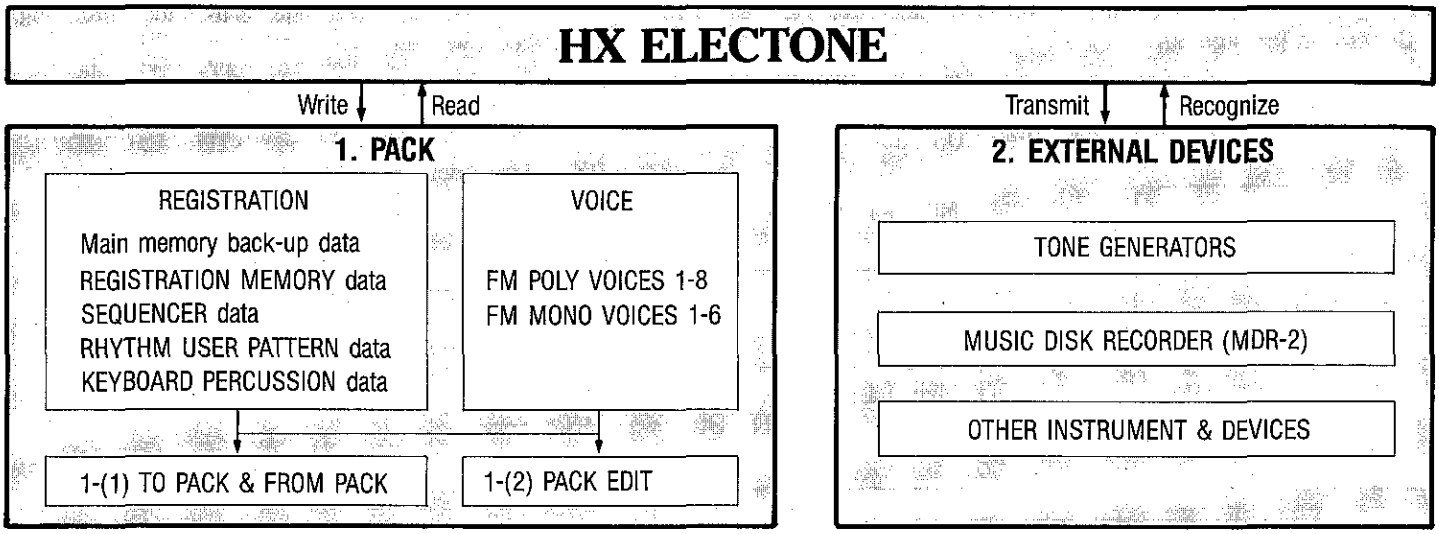
NOTE:

● The codes of the MIDI Exclusive Messages (a kind of switch event data) that correspond to the SUB DATA CONTROL and EXT. CONTROL 1, 2 buttons are as follows:
[→Page 89]

SUB DATA CONTROL (ON):	F0H, 43H, 70H, 70H, 72H, *0nH, 7FH, F7H
SUB DATA CONTROL (OFF):	F0H, 43H, 70H, 70H, 72H, *0nH, 00H, F7H
EXT. CONTROL 1:	F0H, 43H, 70H, 70H, 71H, 00H, **nnH, F7H
EXT. CONTROL 2:	F0H, 43H, 70H, 70H, 71H, 01H, **nnH, F7H

*= 00,01,02,03,04,05,06,07,08,09
**= 01,02,04,08,10,20,40

III. EXTERNAL MEMORY & DEVICES



III-1 PACK

Insert the Pack in the Electone.

When an initialized Pack is inserted: The number and type of the Pack are displayed.

```
PACK RP-3
   -REGIST-
```

When a non-initialized Pack is inserted: [→Page 78]

```
* Memory Pack  *
 Unknown Type !!
```

To perform a PACK EDIT operation (or to select a Bank), press the CONFIRM button.

```
-REGIST-   HX-1
BANK       NO.=01
```

Press the ENTER key.

◆ **CAUTION**: Before using a RAM Pack for the first time, be sure to format the Pack using the "INITIALIZE" procedure. [→Page 78]

◆ Using a RAM Pack, the HX Electone can perform the two jobs listed below:

TO PACK & FROM PACK	Saves the data stored at the Electone into a RAM Pack (TO PACK) or loads the RAM Pack data into the Electone (FROM PACK).
PACK EDIT	Sets the various conditions for using RAM Packs.

1-(1) TO PACK & FROM PACK

[→Next page]

1-(2) PACK EDIT

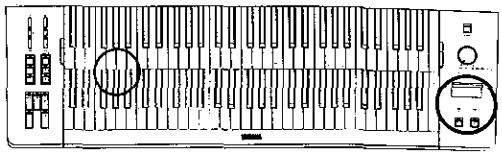
[→Page 76]

Remove the Pack from the Electone.

```
* Memory Pack  *
 Removed
```

1-(1) TO PACK & FROM PACK

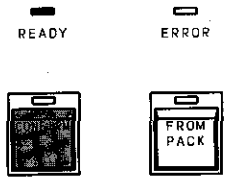
These functions allow you to save the various data stored in the Electone into a RAM Pack and, conversely, load the data saved in a RAM Pack into the Electone.



Insert a RAM PACK in the Electone.

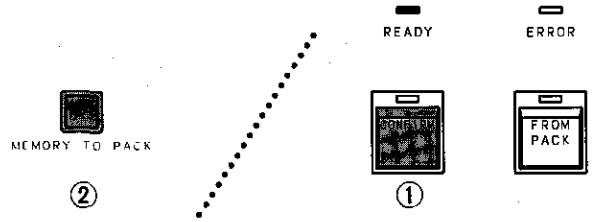
```
PACK RP-3
   -REGIST-
```

If the Pack has multiple Banks: Press the CONFIRM button.




```
-REGIST-   HX-1
BANK       NO.= 1
```

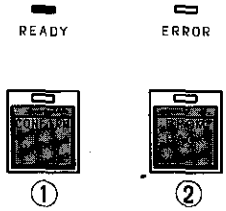
TO PACK: While depressing the CONFIRM button, press the MEMORY/TO PACK button.




```
* Memory Pack *
 Write Start
```

```
* Memory Pack *
 Write Completed
```

FROM PACK: While depressing the CONFIRM button, press the FROM PACK button.




```
* Memory Pack *
 Read Start
```

```
* Memory Pack *
 Read Completed
```

◆ When an intialized RAM Pack is inserted in the Electone, the LCD changes to the display on the left. The LCD top line indicates the Pack's product number, and its bottom line indicates the Pack type (format). The RAM PACK RP-3 can be set to one of two types (formats) for use. [→Page 78]
REGIST: Saves all of the various data, excluding the FM USER VOICE data, that can be stored at the Electone. (See the notes below.)
VOICE: Saves the FM USER VOICE data (FM POLY 91-98 and FM MONO 55-60).

◆ When the CONFIRM button is pressed after RAM Pack insertion, the LCD changes to the display on the left. As the LCD bottom line is for specifying the Bank to be saved or loaded, this display will be provided in the near future to enable compatibility with Packs having a capacity greater than that of RP-3.
With RP-3 (8K bytes), the Bank No. is fixed to "01" and cannot be changed.

◆ For a Pack with a capacity greater than that of RP-3, use the "+" and "−" keys or the SUB DATA numeric buttons to select the Bank No.

◆ **CAUTION:** While MDR-2 is in operation, data cannot be transfered using a To Pack or From Pack operation.

NOTES:

● The RAM Pack is equipped with a MEMORY PROTECT switch. If you wish to protect the data saved in the RAM Pack from being erased, set this switch to ON. Even if you perform a TO PACK operation improperly, the Pack data will be protected without being written over with Electone data.
If you wish to re-write new data, set the switch to OFF.

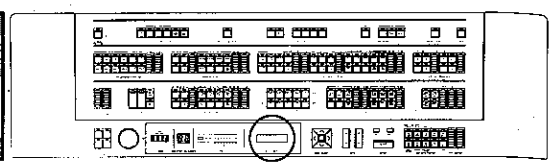
● When a PACK operation is improperly performed, the following messages are displayed on the LCD bottom line:

"* Memory Pack * Not Ready !! "	When a TO PACK or FROM PACK operation is performed without a RAM Pack inserted.
"* Memory Pack * CONFIRM first "	When a FROM PACK operation is performed without pressing the CONFIRM button.
"* Memory Pack * Write Protected "	When TO PACK operation is performed with the RAM Pack's MEMORY PROTECT switch set to ON.

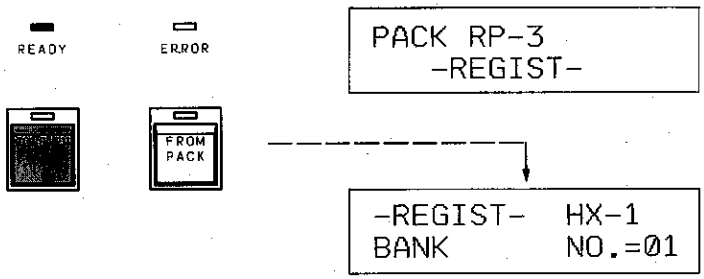
● In a RAM Pack that has been formatted as a REGIST type Pack, the data below can be saved:
- The data stored in REGISTRATION MEMORY 1-16.
- The data that cannot be stored in REGISTRATION MEMORY (COMBINATION USER voices data; USER Vibrato data; data on Digital Effector parameters, MODULATION parameters, and PITCH BEND parameters; REGIST JUMP data; RHYTHM LEVEL data; RHYTHM PAN data; and MIDI CONTROL data).
- The Sequence data programmed to SEQUENCER 1-4.
- The Rhythm pattern data stored in RHYTHM USER 1-4.
- Assignment data of KEYBOARD PERCUSSION.

1-(2) PACK EDIT

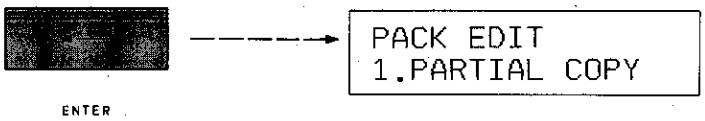
This function lets you set the various conditions for using the RAM Packs.



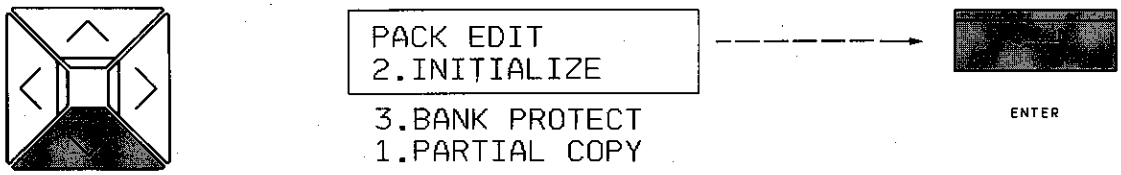
Insert a RAM Pack in the Electone, then press the CONFIRM button.



Press the ENTER key.



Use the "V" and "Λ" keys to select the job to be executed, then press the ENTER key.



◆ The procedure for entering the PACK EDIT mode is as shown on the left. When the CONFIRM button is pressed, the Bank setting will be displayed. With RP-3, however, just press the ENTER key.

◆ The three jobs of PACK EDIT are as follows:

PARTIAL COPY	Saves or loads only specific data.
PACK INITIALIZE	Initializes (formats) a RAM Pack.
BANK PROTECT	Protects a specific Bank of the RAM Pack from being written on.

PARTIAL COPY

[→Page 77]

PACK INITIALIZE

[→Page 78]

BANK PROTECT

[→Page 79]

NOTE:

- In the case some error occurs in the data of the Electone or RAM Pack when a TO PACK, FROM PACK or PARTIAL COPY operation is performed, the following error messages are displayed on the LCD. In such case, either replace the RAM Pack or reset the Electone and try storing the data once more.

[Display of LCD Top Line]

"Pack Write Error"	When there is an error in the Electone data (displayed during the SAVE operation).
"Pack Data Error"	When there is an error in the RAM Pack data (displayed during the LOAD operation).

[Display of LCD Bottom Line] (Common to both SAVE and LOAD operations)

"Regist Data"	When there is an error in the REGISTRATION MEMORY data or other Registration-related data.
"Sequencer Data"	When there is an error in the SEQUENCER data.
"Rhythm Pattern"	When there is an error in the data of the RHYTHM USER Pattern.
"KB Perc Assign"	When there is an error in the assignment data of KEYBOARD PERCUSSION.
"User Voice Data"	When there is an error in the FM USER VOICE data.

PARTIAL COPY

After pressing the CONFIRM button, press the ENTER key. [→Page 76]

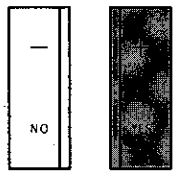

```
-REGIST-   HX-1
BANK       NO.=01
```

```
PACK EDIT
1.PARTIAL COPY
```

Display "1. PARTIAL COPY" on the LCD bottom line, then press the ENTER key.


```
PARTIAL COPY
REGIST          Y/N
```

Press the "+/YES" key only if you wish to copy the item displayed on the LCD bottom line.



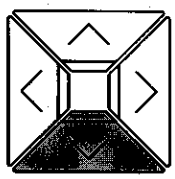

```
PARTIAL COPY
REGIST          Y/N
SEQUENCE        Y/N
RHY.PTN.        Y/N
K.PERC.ASSGN    Y/N
```

Press the ENTER key to display the next item on the LCD bottom line.

(Repeat)

Use the "∨" and "∧" keys to select the direction for copying (LOAD or SAVE).

```
PARTIAL COPY
1.PACK→EL
2.EL→PACK
```



LOAD: Display "1.PACK→EL", then press the ENTER key.


```
PARTIAL COPY
PACK EL OK? Y/N
```

(YES) ↓ (NO) → MULTI MENU

Press the ENTER key to load the data.


```
* Memory Pack *
 Read Start
```

↓

```
* Memory Pack *
 Read Completed
```

SAVE: Display "2.EL→PACK", then press the ENTER key.


```
PARTIAL COPY
EL PACK OK? Y/N
```

(YES) ↓ (NO) → MULTI MENU

Press the ENTER key to save the data.


```
* Memory Pack *
 Write Start
```

↓

```
* Memory Pack *
 Write Completed
```

◆ Press the ENTER key and enter the PACK EDIT mode, then display "1. PARTIAL COPY" on the LCD bottom line and press the ENTER key again. The LCD bottom line indicates the item for which PARTIAL COPY will be performed.

REGIST	REGISTRATION MEMORY data and other Registration-related data
SEQUENCE	SEQUENCER data
RHY.PTN.	RHYTHM USER Pattern data
K.PERC. ASSGN	Assignment data of KEYBOARD PERCUSSION

◆ In case a Pack with a capacity greater than that of RP-3 is formatted as a REGIST & VOICE type Pack, and PARTIAL COPY is performed, "VOICE" will be displayed after "K.PERC.ASSGN" so that a PARTIAL COPY operation can be performed for the FM USER VOICE data.

◆ Perform the operation below to select whether or not to copy (SAVE or LOAD) the item displayed on the LCD bottom line.
When copying is not required: Leave the cursor below the "N" position and press the ENTER key.
When copying is required: Shift the cursor below "Y", then press the ENTER key.

◆ When YES or NO is selected for the last item and the ENTER key is pressed, the LCD changes to the display on the left. Use the "∨" and "∧" keys to change the LCD bottom line and select the direction of the PARTIAL COPY operation (SAVE or LOAD).

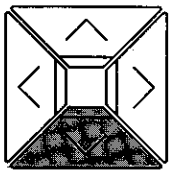
PACK INITIALIZE

After pressing the CONFIRM button, press the ENTER key. [→Page 76]


```
-REGIST-   HX-1
BANK       NO.=01
```

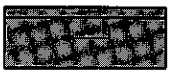
```
PACK EDIT
1.PARTIAL COPY
```

Use the "∨" and "∧" keys to display "2. INITIALIZE" on the LCD bottom line.



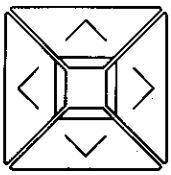

```
PACK EDIT
2.INITIALIZE
3.BANK PROTECT
1.PARTIAL COPY
```

Press the ENTER key.




```
PACK INIT.    ∧∨┘
1.REGIST
```

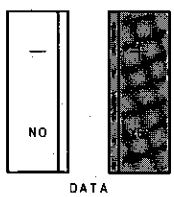
Use the "∨" and "∧" keys to select the RAM Pack format.




```
PACK INIT.    ∧∨┘
1.REGIST
2.VOICE
3.REGIST & VOICE
```

Press the ENTER key, then shift the cursor using the "+/YES" key.


```
PACK INITIALIZE
OK ?          Y/N
```




```
PACK INITIALIZE
OK ?          Y/N
```

Press the ENTER key.


```
RP-3 INITIALIZE
Start
```

```
RP-3 INITIALIZE
Completed
```

Perform a TO PACK or FROM PACK operation. [→Page 75]

If a non-initialized RAM Pack is inserted:

```
* Memory Pack   *
 Unknown Type !!
```

◆ **For an initialized RAM Pack**: Press the ENTER key and enter the PACK EDIT mode, display "2. INITIALIZE" on the LCD bottom line, then press the ENTER key again.
For a non-initialized RAM Pack: Press the ENTER key immediately after inserting the Pack. (If another operation has been performed after Pack insertion, press the CONFIRM button to return the LCD to the "Unknown Type!!" display, then press the ENTER key.)

◆ When the ENTER key is pressed, the LCD changes to the display on the left. The LCD bottom line indicates the RAM Pack type (format). Use the "∨" and "∧" keys to select the format to be initialized.

1. REGIST	This format can save all data that can be stored at the Electone, excluding the FM USER VOICE data.
2. VOICE	This format can save the FM USER VOICE data.
3. REGIST & VOICE	This format can save the data of both 1. and 2. above. (Exclusively for use with Packs with a capacity greater than that of RP-3)

◆ **CAUTION**: If you attempt to perform "3. REGIST & VOICE" formatting on RP-3, an error will occur. (See the note below.)

◆ When the ENTER key is pressed without shifting the cursor, the display returns to "PACK INIT." and you can re-select the desired format. If you wish to exit the PACK INITIALIZE job before completing the entire procedure, press the QUIT key to exit the PACK INITIALIZE mode.

NOTE:

● During initialization, in the case where some abnormality occurs or you make a mistake in the operating procedure, the following error message is displayed on the LCD. In such case, either replace the RAM Pack or repeat the procedure once more.

"RP-3 INITIALIZE Failed!!"	When initialization could not be successfully performed.

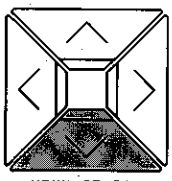
BANK PROTECT

After pressing the CONFIRM button, press the ENTER key. [→Page 76]

```
-REGIST-   HX-1
BANK       NO.= 1
```


```
PACK EDIT
1.PARTIAL COPY
```

Using the "∨" and "∧" keys, display "3. BANK PROTECT" on the LCD bottom line.



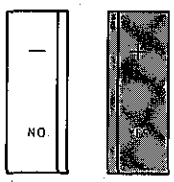

```
PACK EDIT
3.BANK PROTECT
1.PARTIAL COPY
2.INITIALIZE
```

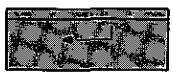
Press the ENTER key.


```
BANK PROTECT
BANK NO. Ø1 Y/N?
```

◆ When the ENTER key is pressed, the LCD changes to the display on the left. When a PACK having a capacity greater than that of RP-3 is used, the Bank No. selected before entering PACK EDIT mode is displayed on the LCD bottom line. (With RP-3, the Bank No. is fixed to "01".) Use the "+" and "−" keys to select the protection of the displayed Bank or the cancellation of its protect status.

To set the protect status: Use the "+/YES" key to shift the cursor to "Y", then press the ENTER key.






```
* Memory Pack  *
Bank Protected
```

If a TO PACK operation is improperly performed, that operation will be regarded as an error and the data of the pertinent Bank of the RAM Pack will be protected.

To cancel the protect status: Press the ENTER key with the cursor left positioned at "N".


```
* Memory Pack  *
Protect Clear
```

When a TO PACK operation is performed, the Electone data can be saved once more in the pertinent Bank of the RAM Pack.

◆ The BANK PROTECT function will be provided in the near future to enable compatibility with RAM Packs having a capacity greater than RP-3. It is also possible to perform bank protection with RP-3; since RP-3 only has one Bank, however, if you wish to protect the saved data, be sure to set MEMORY PROTECT of the Pack to ON.

NOTE:

● Other error messages are as follows:

"* Memory Pack * Bank Protected"	When a TO PACK operation is performed for a Bank with a Bank Protect setting.
"* Memory Pack * Not for HX !! "	When a Pack that cannot be used with the HX Electone is inserted.

PACK CONTROL

Switch the PACK CONTROL button to ON. (When using a Pack with a capacity greater than that of RP-3)


```
[FROM PACK] BANK
 AUTO INC. MODE
```

When the FROM PACK operation is performed, the Bank No. of the Pack is automatically incremented by one.

◆ The PACK CONTROL function will be provided in the near future to allow compatibility with Packs with a capacity greater than RP-3.

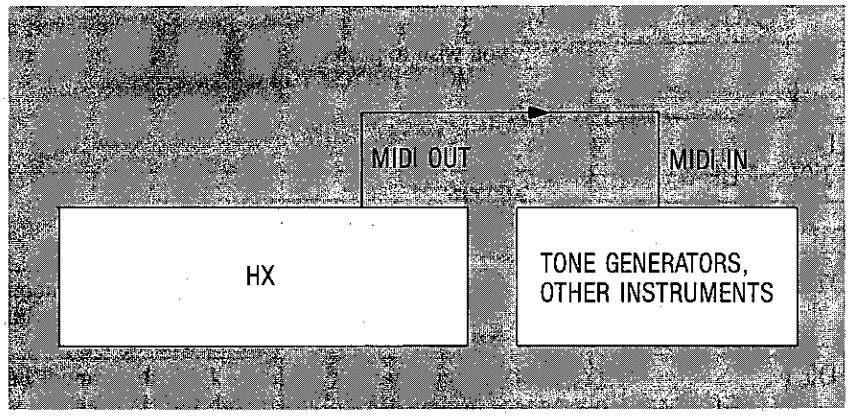
◆ Switching the PACK CONTROL ON/OFF status allows you to select the below:

ON: Each time a FROM PACK operation is performed, the Bank No. of the Pack is automatically incremented by one. After the data of the last bank is read, the Bank No. returns to "1". (With RP-3, it is fixed to "01").

OFF: The Bank No. of the Pack remains unchanged, even if a FROM PACK operation is performed.

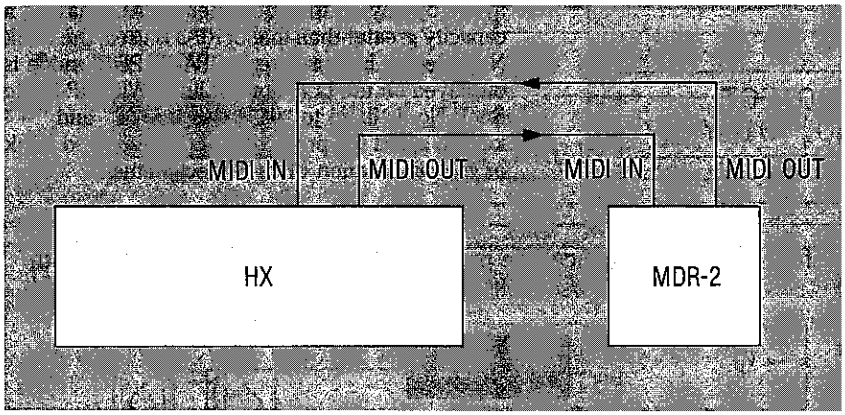
III-2 EXTERNAL DEVICES

2-(1) For control of an external Tone Generator



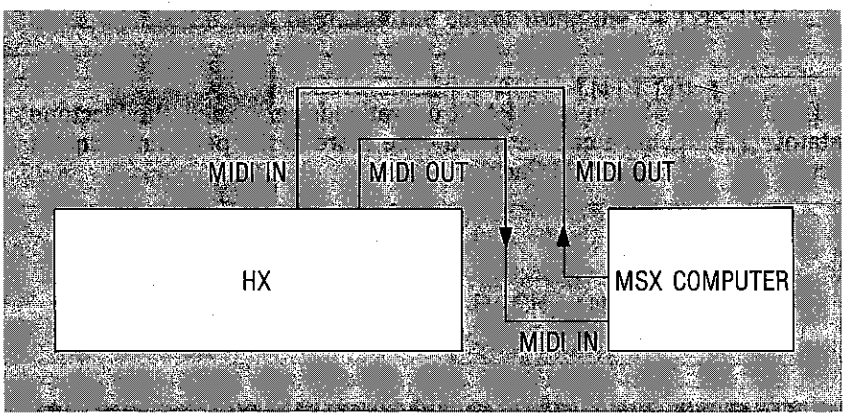
- In case you wish to send the performance data of an HX Electone to an external Tone Generator or a MIDI-compatible instrument, perform connection as shown on the left. When your HX Electone is played, voices will also be sounded from the external device.
- To perform transmission, the HX's Basic Channel (OUT) and the external device's Basic Channel (IN) are required to match. Depending on which keyboard the data will be sent to, set the external device's reception channel to match the pertinent Default Channel (UK=CH 1, LK=CH 2, PK=CH 3).
- When you are performing with multiple Tone Generators connected to your HX electone, switching between the Tone Generators may cause them to not sound or to malfunction (because the MIDI Status byte is omitted from data transmission).

2-(2) For recording/playback of an HX performance using MDR-2, etc.



- In case an external Sequencer, such as a Music Disk Recorder (MDR-2), is used, connect the MIDI IN and OUT jacks together as shown on the left to enable the recording and playback of an HX performance.
- Besides performance data, MDR-2 can also record and play back various types of Bulk Dump data, data on panel operation during a performance, and so on. (For details, refer to the "MDR-2/2P USER'S GUIDE".)
- The Synchronous mode of HX is automatically entered when performing recording or playback by MDR-2, so mode selection is not required.

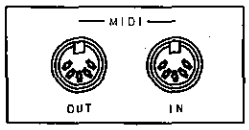
2-(3) To control HX by computer



- The voice parameter data created (or edited) using an MSX Computer or other device can be saved at the HX Electone's FM USER Voices (POLY: 91-98, MONO: 55-60). Just connect the MIDI jack of the FM Sound Synthesizer Unit mounted on the MSX Computer with the MIDI jack of your HX Electone. (Special software for such applications is being planned for release in the near future.)
- While using a computer to input automatic-performance programs and other data into your HX Electone, be sure to refer to the tables of the various data codes that are listed in the section "MIDI SPECIFICATIONS" at the back of this Guide. [→Page 87]

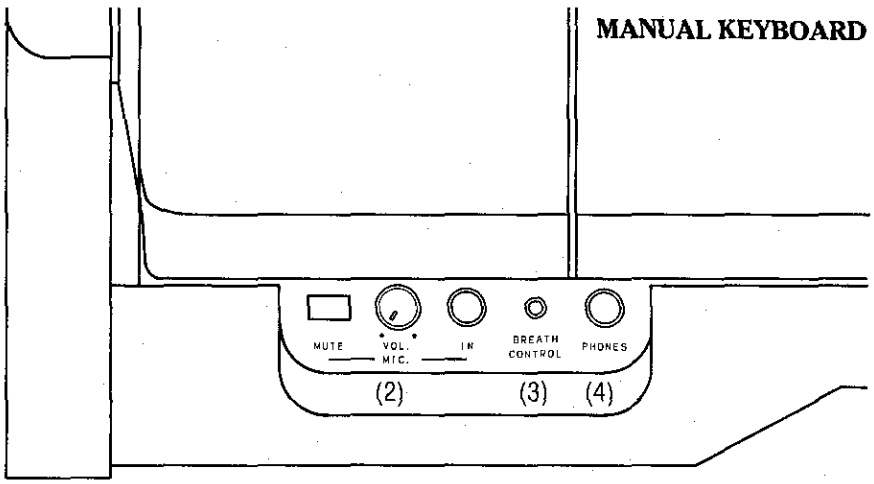
IV. OTHER INFORMATION

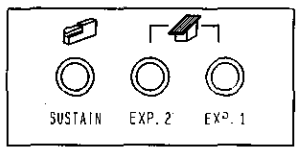
ACCESSORY JACKS



(1)

(1) MIDI OUT/IN
The MIDI (Musical Instrument Digital Interface) jacks conform to the MIDI standard for digital electronic instruments and enable you to connect your Electone to MIDI-compatible electronic instruments (or devices) for data communication.





(2) MIC.
IN : For connection with the microphone.
VOL.: For volume control of the connected microphone.
MUTE: For muting output of the microphone sounds.

(3) BREATH CONTROL
This jack is used to connect the Breath Controller (optional) for controlling the Modulation effect. When the Breath Controller is connected, modulation cannot be controlled using the Wheel.

(4) PHONES
This jack is used to connect headphones (optional) and must not be used for any other purpose.

(5) SUSTAIN
This jack is used to connect the Foot Pedal (optional) for controlling UPPER SUSTAIN, LOWER SUSTAIN, and LEAD SLIDE.

(6) EXP.2 (7) EXP.1
Connecting an external Control Pedal to either of these jacks enables the connected Control Pedal to operate similarly to an Expression Pedal of the Electone.

SPECIFICATIONS

TONE GENERATION	UPPER	COMBINATION	WM	POLY (8 notes)
		ORCHESTRAL	FM (8 OP.)	POLY (8 notes)
	UPPER/LOWER	PERCUSSIVE	FM (8 OP.)	POLY (8 notes)
		AWM PRESET	AWM	POLY (8 notes)
		LEAD	FM (16 OP.)	MONO (1 note)
	LOWER	COMBINATION	WM	POLY (8 notes)
		ORCHESTRAL	FM (8 OP.)	POLY (8 notes)
	PEDALS	BASS	FM (16 OP.)	MONO (1 note)
		AWM BASS	AWM	MONO (1 note)
	RHYTHM		AWM	POLY (8 notes)
	CHORD ACCOMPANIMENT	RHYTHMIC	FM (4 OP.)	POLY (5 notes)
		MELODIC	FM (4 OP.)	POLY (4 notes)
ENSEMBLE	UPPER		COMBI., ORCHES, PERCUSSIVE, AWM, LEAD	
	LOWER		COMBI. ORCHES., PERCUSSIVE, AWM, LEAD	
VOICE SELECTORS	UPPER	COMBINATION	1., 2., 3., 4.	
		ORCHESTRAL	STRINGS 1, STRINGS 2, BRASS 1, WOOD 1, VOCAL 1, 1., 2.,	
	UPPER/LOWER	PERCUSSIVE	ELECTRIC PIANO, VIBRAPHONE, MARIMBA, JAZZ GUITAR 1, GUITAR 1, 1., 2.	
		AWM PRESET	PIANO 1, PIANO 2, MARIMBA, STRINGS, PIPE ORGAN	
		LEAD	VIOLIN 1, FLUTE 1, OBOE, CLARINET, TRUMPET 1, TROMBONE, 1., 2.	
	LOWER	COMBINATION	1., 2., 3., 4.	
		ORCHESTRAL	STRINGS 2, STRINGS 3, BRASS 3, WOOD 2, VOCAL 2, 1., 2.	
	PEDALS	BASS	CONTRABASS 1, ELECTRIC BASS 1, ELECTRIC BASS 2, 1., 2.	
		AWM BASS	PIPE BASS, STRING BASS, WOOD BASS, ELECTRIC BASS, TIMPANI	
EFFECTS & CONTROLS	VOLUME	UPPER UPPER/LOWER LOWER PEDALS	COMBINATION, ORCHESTRAL PERCUSSIVE, AWM PRESET, LEAD COMBINATION, ORCHESTRAL BASS, AWM BASS	
	MANUAL BALANCE		MANUAL BALANCE	
	BRILLIANCE	UPPER UPPER/LOWER LOWER PEDALS	ORCHESTRAL PERCUSSIVE, LEAD ORCHESTRAL BASS	
	TOUCH TONE	UPPER UPPER/LOWER LOWER PEDALS	ORCHESTRAL PERCUSSIVE, AWM PRESET, LEAD ORCHESTRAL BASS, AWM BASS	
	TOUCH VIBRATO	UPPER/LOWER	LEAD	
	EFFECT ASSIGN		SYMPHONIC, CELESTE, PHASER, FLANGER, DELAY, WAH	
	SUSTAIN		UPPER (KNEE), LOWER (KNEE), PEDAL, LENGTH=UPPER, LOWER, PEDAL	
	LEAD SLIDE		LEAD SLIDE (KNEE)	
	REVERB		REVERB	
	TREMOLO		CHORUS, TREMOLO, UPPER COMBI., LOWER COMBI.	
	FOOT SWITCH		LEFT, RIGHT, REGIST JUMP, REGIST SHIFT	
	TUNING		TUNING	
	PACK CONTROL		PACK CONTROL	
RHYTHM	RHYTHM PATTERN		1., 2., 3., 4., USER 1, USER 2, USER 3, USER 4	
	VARIATION		1, 2	
	FILL IN		1, 2	
	CONTROLS		VOLUME, BALANCE, TEMPO	
KEYBOARD PERCUSSION			KEYBOARD PERCUSSION	
CHORD ACCOMPANIMENT	RHYTHMIC		1, 2, 3, 4	
	MELODIC		1, 2, 3, 4	
AUTO BASS CHORD	MODE MULTI BASS MEMORY		ABC 1, 2, 3 LOWER, PEDAL	
MELODY ON CHORD			MELODY ON CHORD	
PROGRAM OPERATORS			MENU SELECT (∧ ∨ < >), DATA (− +), ENTER, QUIT, CE; SUB DATA CONTROL (1-0)	

PANEL PROGRAM	COMBI. VOICE		CHURCH ORGAN 1, 2, 3, 4, JAZZ ORGAN 1, 2, 3, 4, 5, 6, 7, 8, THEAT. ORGAN 1, 2, 3, 4, USER 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
	COMBI. USER VOICE		16′, 8′, $5^1/_3$′, 4′, $2^2/_3$′, 2′, $1^3/_5$′, $1^1/_3$′, 1′, ATTACK 4′, $2^2/_3$′, 2′, LENGTH, RESPONSE, CLICK, TIMBRE VARIATION
	POLY VOICE		STRINGS 1, 2, 3, 4, 5, PIZZ. STRINGS, VIOLIN 1, 2, CELLO, BRASS 1, 2, 3, 4, 5, TRUMPET 1, 2, 3, TROMBONE 1, 2, 3, HORN, WOOD 1, 2, 3, PICCOLO, FLUTE 1, 2, OBOE 1, 2, ENGLISH HORN, BASSOON, CLARINET 1, 2, BASS CLARINET, ALTO SAX, TENOR SAX, ACCORDION, BANDONEON, HARMONICA, VOCAL 1, 2, 3, 4, COSMIC 1, 2, 3, 4, 5, 6, ELECTRIC PIANO 1, 2, 3, 4, PIANO 1, 2, 3, GUITAR 1, 2, JAZZ GUITAR 1, 2, ELECTRIC GUITAR 1, 2, 3, VIBRAPHONE, MARIMBA, XYLOPHONE, GLOCKEN SPIEL, CELESTA, HARPSICHORD, HARP 1, 2, BANJO, MANDOLIN, SHAMISEN, KOTO, TAISHOGOTO, CHIME 1, 2, CARILLON, STEEL DRUM 1, 2, ELECTRIC BASS 1, 2, 3, 4, COSMIC 7, 8, 9, USER 1, 2, 3, 4, 5, 6, 7, 8
	MONO VOICE		VIOLIN 1, 2, CELLO, TRUMPET 1, 2, TROMBONE, HORN, PICCOLO, FLUTE 1, 2, OBOE, ENGLISH HORN, BASSOON, CLARINET, BASS CLARINET, ALTO SAX, TENOR SAX, HARMONICA, PAN FLUTE, SHAKUHATI, VOCAL 1, 2, GUITAR, JAZZ GUITAR 1, 2, ELECTRIC GUITAR 1, 2, DISTORTION GUITAR, HAWAIIAN GUITAR, COSMIC 1, 2, 3, 4, 5, CONTRABASS 1, 2, PIZZ. BASS 1, 2, TUBA 1, 2, VOCAL 3, ELECTRIC BASS 1, 2, 3, 4, 5, COMBI. BASS 1, 2, 3, 4, COSMIC 6, 7, 8, 9, USER 1, 2, 3, 4, 5, 6
	VIBRATO		DEFAULT, USER (DELAY, SPEED, DEPTH)
	VOLUME		VALUE 0-24
	TOUCH TONE		RANGE 0-15
	TOUCH VIBRATO		RANGE 0-100
	EFFECT ASSIGN	SYMPHONIC	MODE 1-2
		CELESTE	MODE 1-2
		PHASER	MODE 1-4 USER (STAGE, FREQUENCY, DEPTH, FEEDBACK)
		FLANGER	MODE 1-4 USER (DELAY TIME, DEPTH, FREQUENCY, FEEDBACK, DIRCT. LEVEL, DELAY LEVEL)
		DELAY	MODE 1-6 USER (DELAY TIME, DEPTH, FREQUENCY, FEEDBACK, DIRCT. LEVEL, DELAY LEVEL, MOD. WAVE)
		WAH	MODE 1-2 USER (AUTO SPEED, CENTER FREQUENCY, DEPTH)
	REVERB		MODE 1-6
	TREMOLO SPEED		SPEED 0-100
	FOOT SWITCH	LEFT	LEAD GLIDE, UPPER GLIDE, U & L GLIDE, RHYTHM STOP, RHYTHM ENDING, RHYTHM FILL IN, RHYTHM BREAK
		RIGHT	LEAD GLIDE, UPPER GLIDE, U & L GLIDE
		REGIST	JUMP 1-16, SHIFT ON/OFF
	MODULATION		LEAD SLIDE 0-100 LEAD PAN 0-100 WAH 0-100
	PITCH		LEAD PITCH 1-12 U. ORC. PITCH 1-12 PEDALS PITCH 1-12
	TUNING		+23 STEP, −7 STEP
	RHYTHM PATTERN MENU		8 BEAT 1, 2, 3, 16 BEAT 1, 2, DISCO, BOUNCE 1, 2, SLOW ROCK, BALLAD, 4 BEAT 1, 2, LATIN, SALSA, BOSSANOVA, SAMBA, TANGO, COUNTRY, MARCH 1, 2, WALTZ 1, 2
	ABC MODE		SINGLE FINGER, FINGERED CHORD, CUSTOM ABC
	MOC MODE		1, 2, 3
	PACK EDIT		PARTIAL COPY, PACK INITIALIZE, BANK PROTECT
MULTI MENU	SEQUENCER	RECORD	STEP WRITE: RHYTHM, CHORD, REGIST SEQUENCE REAL TIME WRITE: CHORD SEQUENCE
		EDIT	RHYTHM, CHORD, REGIST SEQUENCE
		RECORD/EDIT CONTROL	JUMP, 𝄇 , 𝄋 , 𝄉 , 𝄎 , D.S., RHY., REGI., DEL., INS.

MULTI MENU	SEQUENCER	PLAY MODE CHANGE	CHORD SEQUENCE, REGIST SEQUENCE, REPEAT, LK ENABLE, INTRO. TACT
	RHYTHM	RHYTHM PATTERN EDIT	REAL TIME WRITE, STEP WRITE, PATTERN COPY, INSTRUMENT CHANGE, PATTERN CLEAR, INSTRUMENT PATTERN CLEAR
		RHYTHM INSTRUMENT LEVEL	60 INSTRUMENTS RANGE: 0-15
		RHYTHM INSTRUMENT PAN	60 INSTRUMENTS RANGE: L3, L2, L1, C, R1, R2, R3
		KEYBOARD PERCUSSION ASSIGN	60 INSTRUMENTS UPPER KEYBOARD, LOWER KEYBOARD, PEDALS
	EXTRA FUNCTION	CHORD DISPLAY	CHORD DISPLAY
		MIDI CONTROL	RHYTHM SYNCHRONOUS MODE SELECT, BASIC CHANNEL, BULK DATA SELECT, LOCAL CONTROL, AFTER TOUCH
		2nd EXPRESSION PEDAL	OFF, RHYTHM TEMPO NARROW, RHYTHM TEMPO WIDE, MODULATION, PITCH
	EXTERNAL CONTROL		SUB DATA CONTROL (1-0) EXT. CONTROL (1, 2)
DISPLAY			MULTI MENU (LCD), TEMPO & BAR/BEAT, DOWN BEAT, REGISTRATION NUMBER, INITIAL TOUCH, EXPRESSION PEDAL, ON/OFF
CONNECTORS			MIDI OUT, IN

KEYBOARDS

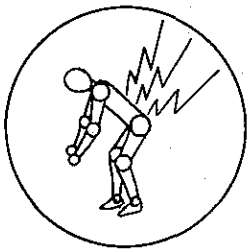
KEYBOARDS	UPPER KEYBOARD	61 keys C-c4 (5 oct.)
	LOWER KEYBOARD	61 keys C-c4 (5 oct.)
	PEDAL KEYBOARD	25 keys C-c1 (2 oct.)
TOUCH RESPONSE	INITIAL TOUCH	UPPER KEYBOARD (each key), LOWER KEYBOARD (each key), PEDAL KEYBOARD
	AFTER TOUCH	UPPER KEYBOARD, LOWER KEYBOARD, PEDAL KEYBOARD
REGISTRATION MEMORY	BANK	1-16
	CONTROL	MEMORY
PACK	I/O	34 pins
	CONTROL	CONFIRM, FROM PACK, TO PACK
CONTROLS	MODULATION	WHEEL, 1 (LEAD SLIDE), 2 (LEAD PAN), 3 (WAH)
	PITCH	WHEEL, 1 (LEAD), 2 (U. ORC.), 3 (PEDALS)
	KNEE LEVER	(UPPER SUSTAIN, LOWER SUSTAIN, LEAD SLIDE)
	RHYTHM CONTROLS	START, SYNCHRO START, INTRO./ENDING, FILL IN, BREAK
	PEDAL D.R.C.	PEDAL D.R.C.
	FOOT SWITCH	LEFT, RIGHT
	2nd EXPRESSION PEDAL	(OFF, RHYTHM TEMPO NARROW, RHYTHM TEMPO WIDE, MODULATION, PITCH)
MAIN CONTROLS		EXPRESSION PEDAL, MASTER VOLUME, REMOTE LED, POWER
CONNECTORS		PHONES, BREATH CONTROL, MIC. (IN, VOLUME, MUTE), EXP. 1, EXP. 2, SUSTAIN

OTHERS

SOUND SYSTEM	POWER AMPLIFIERS	LEFT CHANNEL	100 W (RMS)
		RIGHT CHANNEL	100 W (RMS)
	SPEAKERS	LEFT CHANNEL	30 cm (12 inch)×1, 11 cm ($4^1/_8$ inch)×3
		RIGHT CHANNEL	30 cm (12 inch)×1, 11 cm ($4^1/_8$ inch)×3
DIMENSIONS	WIDTH		$47^7/_{16}$"
	DEPTH		$42^7/_{32}$"
	HEIGHT		$41^5/_{16}$"
WEIGHT	ELECTONE		456 lbs.
	PEDAL KEYBOARD		61 lbs.
	BENCH		39 lbs.
	MUSIC REST		3 lbs.
CABINETRY			Real American Walnut Veneer with Selected Solid Hardwood Components
FINISH			American Walnut

■ HANDLING THE PEDAL KEYBOARD/EXPRESSION PEDAL ASSEMBLY

The pedal keyboard (sometimes referred to as the pedal clavier) and the two expression pedals have been assembled together to form a detachable unit. This assembly can be removed to make it possible to clean the area that is normally covered by the pedal keyboard and to make it easier to move the instrument from one location to another. The pedal keyboard is attached to the console by a short cable with the cable connector being held in place by two knob bolts.



IMPORTANT!
GET HELP! Two people should be involved when attempting to install or remove the pedal keyboard assembly to prevent the possibility of personal injury!

INSTALLATION!
When installing the pedal keyboard assembly, place the unit on the floor with the front edge of the assembly approximately six inches away from the console.

Locate the cable and connector assembly (see figure for location). This connector is designed to fit one way only. The name embossed on the connector should face UP. NO UNDUE FORCE SHOULD BE REQUIRED!

The connector has elongated knobs on each side of the cable. Turn these knobs clockwise to make sure that the connectors remain well connected. DO NOT OVER TIGHTEN! ONLY A LIGHT PRESSURE IS NEEDED.

The pedal keyboard can now be moved forward. With one person on either side of the pedal keyboard assembly, lift the front of the pedal keyboard slightly to permit the metal brackets mounted in the sides of the assembly to pass over the mounting brackets in the console as you slide the pedal keyboard assembly forward. When properly seated, the wood portions of the console toe pieces and the pedal keyboard assembly should be reasonably even. Exercise caution to prevent damage to the finish of the console or the pedal keyboard assembly.

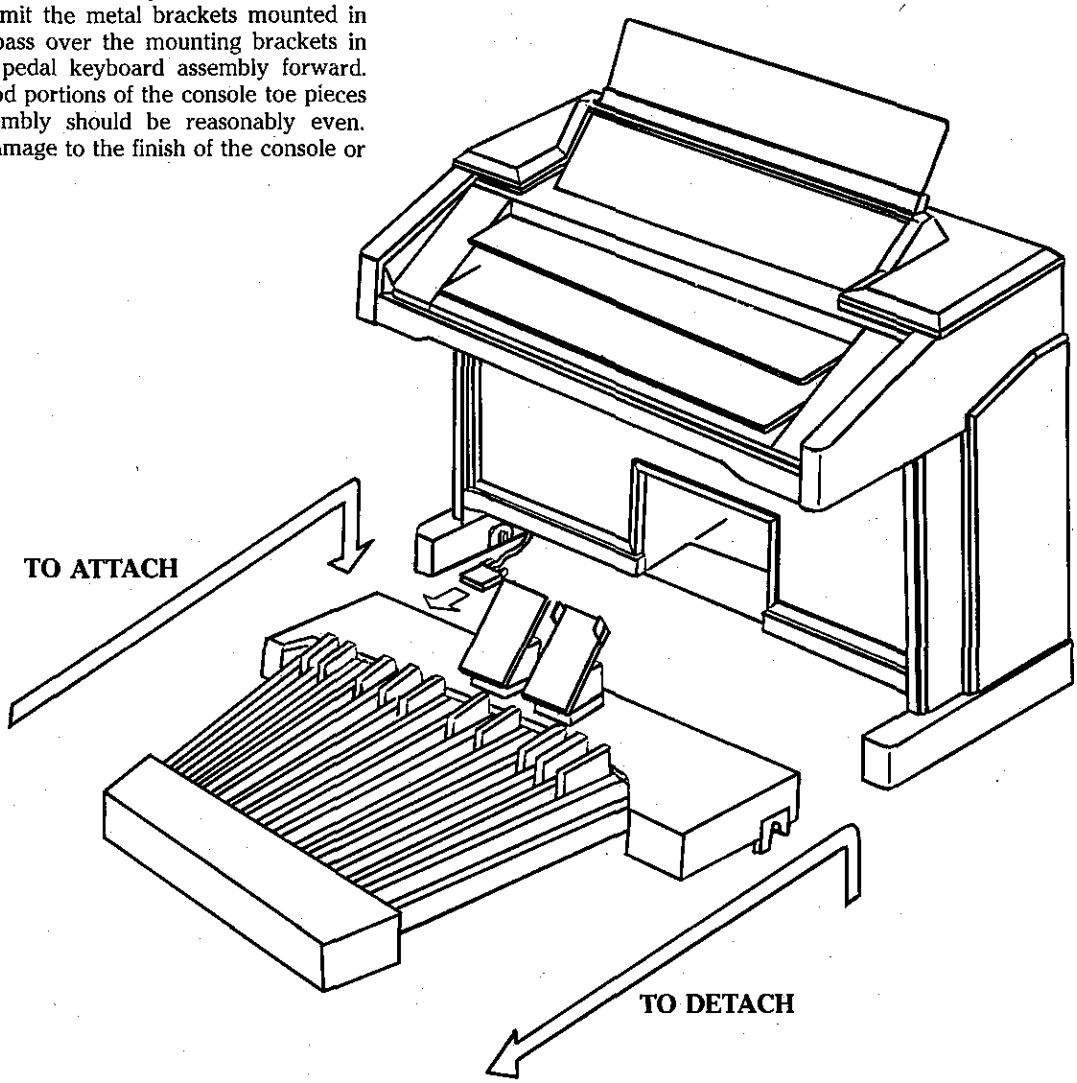
DISASSEMBLY
With one person on either side, lift the front of the pedal keyboard assembly slightly to allow the mounting brackets to clear each other as you slide the assembly away from the console. IMPORTANT! Do not pull the pedal keyboard away from the console more than 7 inches before you remove the connector.

To remove the connector, turn the elongated knobs found on either side of the cable counter clockwise applying a gentle outward pressure to the knobs as you turn them. When the bolt is free of the threaded part of the mating connector, the bolt will slip out approximately $^1/_4$ inch indicating that the bolt is now free. It is not necessary to remove the knob bolt completely from the connector. You should now be able to disconnect the cable. DO NOT PULL ON THE CABLE ITSELF OR APPLY DOWNWARD PRESSURE TO THE CONNECTOR.

The pedal keyboard assembly can now be removed. This is a heavy, unbalanced assembly. TWO PEOPLE SHOULD BE USED!

CAUTION!
DO NOT STAND THE PEDAL KEYBOARD ASSEMBLY ON EITHER END AS THIS CAN CREATE THE POSSIBILITY OF PERSONAL INJURY AND PROPERTY DAMAGE!

If it should become absolutely necessary to place the pedal keyboard assembly on end, place the rear (narrow) end down. Use a pad to protect the finish. Make sure that the assembly is leaning against something substantial (use a pad to protect the item the assembly is being leaned against). Placing the Expression pedal end down is not recommended. DO NOT LEAVE THIS ASSEMBLY UNATTENDED WHEN IT IS IN A VERTICAL POSITION!



■ MAINTENANCE

1. **SERVICE:** Your Electone contains no user serviceable components. Refer all service to qualified service technicians only.
2. **BENCH STRUCTURAL INTEGRITY:** If any motion or an "unsteady" sensation is noted in the bench, please check its structural integrity immediately. Discontinue use until any and all discrepancies are resolved.
3. **CLEANING/CARE**
   - **A) GENERAL:** DO NOT use chemically harsh (i.e., alcohol, paint thinners, etc.) or abrasive cleaners on any portion of your Electone.
   - **B) KEYS/CONTROL PANEL:** When cleaning the keys and control panels of your Electone, please use a soft absorbent-type cloth that has been dampened with a very mild solution of liquid soap and lukewarm water.
   - **C) CABINET/BENCH:** Clean the cabinet portions of your Electone with a slightly dampened cloth containing a neutral cleaning agent. The cleaning agent selected should not contain a high wax content or any other substance that would have a tendency to form a "build-up" on the cabinet.
4. **Vinyl Products:** Do not set vinyl items, (i.e., headphones vinyl doilies, etc.) on the finished surfaces of your Electone or use polyvinyl material to cover the unit for any extended period of time. A chemical reaction many occur between the finish chemical and those contained in the polyvinyl products, resulting in a permanent marring of the finish.

IMPORTANT NOTICE: This product has been tested and approved by independent safety testing laboratories in order that you may be sure that, when it is properly installed and used in its normal and customary manner, all foreseeable risks have been eliminated. DO NOT modify this unit or commission others to do so unless specifically authorized by the manufacturer. Product performance and/or safety standards may be diminished. Claims filed under the expressed warranty terms may be denied if the unit is/has been modified. The warranty of title (patent infringement, etc.) will not be defended by the manufacturer in the area(s) that relate to the modification. Implied warranties may also be affected.

ELECTROMAGNETIC INTERFERENCE

"Interference" can be a two way street; something you are operating can interfere with others or, something someone else has may interfere with something of yours.
Naturally, it is also possible that two or more of your own electronic (electric) devices may interfere with each other. Your Electone has been designed to minimize all these possibilities and meets all applicable standards worldwide.

Electromagnetic interference with your Electone can show itself in a variety of ways. You may hear speech, music, "beeps", static, or a buzzing sounds. Yamaha Electones are designed to reject RF (radio frequency) signals that are many times the levels found in any normal environment. If, however, you are in the immediate proximity of a very high power transmitter, some interference may still occur. If this should happen, please try to identify the radio (TV) station and record the time of day that the interference occurs. Station identification is essential in order that the offending frequencies can be established and the authorized (legal) operating power level of the transmitter causing the interference can be verified. If the interference continues, please follow the corrective measure suggestions provided later in this section.

If the interference is in the form of occasional buzzing or static, it is highly probable that the cause can be traced to the turning on or off of some household appliance. The offending appliance can also be outside your own residence. Usually a "time" pattern (i.e., evenings only, etc.) will be involved. Noises of this type rarely orginate in the Electone itself. If the condition continues, please contact your local authorized Yamaha Electone dealer for assistance.

Main power line disturbances and electrical storms (lightning) can also be the source of static interference. Generally speaking, problems generated by these two sources will also be present in your other audio or video equipment. Lightning can also be very destructive. The following special warning also applies to virtually all electronic products.

IMPORTANT NOTICE
Modern electronic products, (i.e., computers, video games, electronic organs, etc.), contain components that, under normal conditions, extend the service free life of the products they make up an almost unbelievable period of time. This is especially true when you consider the vast number of equivalent components incorporated within one given part. These "parts," called "integrated circuits," are however, subject to destruction by high voltage discharges, such as a close lightning strike. This can occur even if the unit is turned off.

IN PERIODS OF ELECTRICAL STORM PROBABILITY, IT IS ADVISABLE THAT YOU DISCONNECT ANY ELECTRONIC DEVICE NOT ACTUALLY IN USE, FROM ITS WALL SOCKET.

FCC INFORMATION (USA)

While the following statements are provided to comply with FCC Regulations in the United States, the corrective measures listed are applicable worldwide.

The digital series of Yamaha Electones™ use frequencies that appear in the radio frequency range, and if installed in the immediate proximity of some types of audio or video devices within three meters (approximately ten feet) interference may occur.

This series of Yamaha Electones™ has been type-tested and found to comply with the specifications set for a class B computer in accordance with those specifications listed in sub-part J part 15 of the FCC rules. These rules are designed to provide a reasonable measure of protection against such interference. However, this does not guarantee that interference will not occur.

If your Electone™ should be suspected of causing interference with other electronic devices, verification can be made by turning your Electone™ off and on. If the interference continues when your Electone™ is off, the Electone™ is not the source of the interference. If your Electone™ does appear to be the source of the interference, you should try to correct the situation by using one or more of the following measures.

- Relocate either the Electone™ or the electronic device that is being affected by the interference.
- Utilize power outlets for the Electone™ and the device being affected that are on different branch (circuit breaker or fuse) circuits, or install AC line filters.
- In the case of radio/TV interference, relocate the antenna or if the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact an authorized Yamaha Electone™ dealer for suggestions and/or corrective measures.
If you can not locate an authorized Yamaha Electone™ dealer in your general area, please contact the Electone™ Service Department, YAMAHA MUSIC CORPORATION, U.S.A. 6600 Orangethorpe Ave., Buena Park, CA 90620, U.S.A.

If for any reason you should need additional information relating to radio or TV interference, you may find a booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet, Stock #004-000-00345-4, is available from the US. Government Printing Office, Washington, DC 20402.

■CHANNEL MESSAGES

Messages			Status byte	Sub Status bytes		Remarks
Note ON/OFF	Upper keyboard	(1ch)	90H (144)	24H-60H (36-96)	ON : 01H-7FH (1-127) OFF: 00H (0)	
	Lower Keyboard	(2ch)	91H (145)	24H-60H (36-96)		
	Pedals	(3ch)	92H (146)	24H-3CH (36-60)		
	Lead	(OFF)	9nH	24H-60H (36-96)		Recognize only
	Keyboard Percussion	(15ch)	9EH (158)	00H-7FH (0-127)		
Control Change	Modulation Wheel	(16ch)	BFH (191)	01H (1)	00H-7FH (0-127)	
	2nd Expression Pedal	(16ch)		04H (4)		
	Expression Pedal	(16ch)		0BH (11)		
	UPPER SUSTAIN	(1ch)	B0H (176)	40H (64)	OFF: 00H (0) ON : 7FH (127)	
	LOWER SUSTAIN	(2ch)	B1H (177)			
	PEDAL SUSTAIN	(3ch)	B2H (178)			
	All Note OFF	(16ch)	BFH (191)	7BH (123)	00H (0)	Recognize only
Program Change	Registration Memory	(16ch)	CFH (207)	00H-0FH (0-15)	—	
After Touch	Upper Keyboard	(1ch)	D0H (208)	00H-7FH (0-127)	—	
	Lower Keyboard	(2ch)	D1H (209)			
	Pedals	(3ch)	D2H (210)			
	Lead	(OFF)	DnH			Recognize only
Pitch Bender	Pitch Wheel	(16ch)	EFH (239)	00H-7FH (0-127)	00H-7FH (0-127)	7 bit resolution

*It is possible to assign the channel of each message using "BASIC CHANNEL" of MULTI MENU.
*The codes above indicate the case wherein data transfer is performed using the default channel settings.

■SYSTEM MESSAGES

Messages		Status byte	Sub Status bytes	Remarks
Exclusive		F0H (240)	43H (67).....F7H (247)	Refer to next page
Real Time	Clock	F8H (248)	F8H	Recognize = Ext. mode
	Start	FAH (250)	—	
	Stop	FCH (252)		
	Active Sensing	FEH (254)		Recognize = Ext. mode
	Reset	FFH (255)		Recognize only

[SYSTEM EXCLUSIVE MESSAGES]

	Status byte	2nd byte	3rd byte	4th byte	5th byte	Final byte
	Message type	Manufacturer ID Code	Device ID code	Model ID code	Function code, Data code, etc.	End of Message
1. Electone common messages	F0H (240) "Exclusive"	43H (67) "Yamaha"	70H (112) "Electone"	70H (112) "Electone"	**[→Page 88-89]**	F7H (247)
2. HX-Series common messages				71H (113) "HX Series"	**[→Page 90-91]**	
3. Model-Specific messages				*nnH "Model"	**[→Page 92]**	
4. Electone/Yamaha Single Keyboard common messages			73H (115) "EL & SK"	**[→Page 92]**		

*CHX-1=03H (11)

1. Electone common messages

[F0H, 43H, 70H, 70H, **5th byte .....**, F7H]

Messages		5th byte.....		Transmitted	Recognized	Remarks
BULK DUMP Related Messages	Request-to-Send FM Voice data	01H (1), *ID1 (Voice section No.), **ID2 (Voice No.), SPI, SPh, (Data Offset) DCI, DCh (Data Count)		×	○	* U.ORC.=10H (16) PERC. =20H (32) LEAD =30H (48) L.ORC.=18H (24) BASS =38H (56)
	Request-to-Receive FM Voice data	02H (2), *ID1 (Voice section No.), ***ID2 (Voice No.), SPI, SPh, (Data Offset) DCI, DCh (Data Count)		×	○	** POLY=01H-62H(1-98) ** MONO=01H-3CH(1-60) ***POLY=5BH-62H(91-98) ***MONO=37H-3CH(55-60)
	Request-to-Send all RAM Data	10H (16)		×	○	
	Request-to-Send Registration data	11H (17)		×	○	
	Request-to-Send Sequence data	12H (18)		×	○	
	Request-to-Send Rhythm USER PTN. data	14H (20)		×	○	
	Request-to-Send all FM USER Voice data	16H (22)		×	○	
	Request-to-Send K.PERC. assignment data	17H (23)		×	○	
	Request-to-Receive all RAM data	20H (32)		×	○	
	Request-to-Receive Registration data	21H (33)		×	○	
	Request-to-Receive Sequence data	22H (34)		×	○	
	Request-to-Receive Rhythm USER PTN. data	24H (36)		×	○	
	Request-to-Receive all FM USER Voice data	26H (38)		×	○	
	Request-to-Receive K.PERC. assignment data	27H (39)		×	○	
	Request-to-Send Model ID data	30H (48)		×	○	
	Request-to-Send MIDI CH assignment data	31H (49)		×	○	
	Bulk Dump Acknowledge	38H (56)	7FH (127)	○	×	
	Bulk Dump Unacknowledge		00H (0)	○	×	

[F0H, 43H, 70H, 70H, **5th byte .....**, F7H]

Messages			5th byte			Transmitted	Recognized	Remarks
CONTROL CHANGE	LEFT FOOT SW	ON	40H (64)	45H (69)	7FH (127)	○	○	
		OFF			00H (0)			
	RIGHT FOOT SW	ON		46H (70)	7FH (127)	○	○	
		OFF			00H (0)			
	KNEE LEVER	ON		47H (71)	7FH (127)	○	○	
		OFF			00H (0)			
	FILL IN	ON		48H (72)	7FH (127)	○	○	
		OFF			00H (0)			
	BREAK	ON		4AH (74)	7FH (127)	○	○	
		OFF			00H (0)			
	INTRO./ENDING	ON		4BH (75)	7FH (127)	○	○	
		OFF			00H (0)			
	MASTER VOLUME			4FH (79)	00H-7FH (0-127)	○	○	
	TEMPO			50H (80)	TI, Th (40-240)	○	○	TI=2 bit resolution Th=7 bit resolution
MDR-2 STATUS	PLAY	Start	70H (112)	01H (1)		×	○	
		Stop		02H (2)		×	○	
	RECORD	Start		03H (3)		×	○	
		Stop		04H (4)		×	○	
	FF ▷▷	Start		05H (5)		×	○	
		Stop		06H (6)		×	○	
	REW ◁◁ *1	Start		07H (7)		×	○	
		Stop		08H (8)		×	○	
	Rhythm Pointer Reset			09H (9)		×	○	
	Master Volume	Increment		10H (15)	nnH *2	×	○	
		Decrement		11H (16)		×	○	
OTHERS	EXT. CONTROL (Volume)	1	71H (113)	00H (0)	nnH *3	○	○	
		2		01H (1)				
	EXT. CONTROL (SUB DATA CONTROL buttons)	ON	72H (114)	nnH	7FH (127)	○	○	nnH=00H-09H
		OFF			00H (0)			
	Bar signal		78H (120)	SC (Beat count)	NC (Synchro count)	○	○	SC=00H-04H NC=00H-07H

*1 When the rewind button ◁◁ on the MDR-2 is depressed, the rhythm pointer reset and fast forward ▷▷ signals are sent.
*2 From MDR-2, only 01 H (1) is sent.
*3 Transmitted: nnH=01H, 02H, 04H, 08H, 10H, 20H, 40H
Recognized: nnH=00H—7FH

2. HX-Series common messages

[F0H, 43H, 70H, 71H, **5th byte .....**, F7H]

Messages	5th byte		Transmitted	Recognized	Remarks
Panel Switch Event data	41H (65)	***REGBUF**	○	○	* Refer to the table below **Refer to page 92
All data of panel	42H (66)	****DATBUF, *REGBUF**	○	○	All data of panel is send when MDR-2 assumes the RECORD START status.

●*Table of REGBUF codes*

Function	Switch	SW code	SW data
U.COMBINATION	1 2. 3. 4.	01H (1)	00H (0) 01H (1) 02H (2) 03H (3)
	VOLUME	02H (2)	*1
U.ORCHESTRAL	STRINGS 1 STRINGS 2 BRASS 1 WOOD 1 VOCAL 1 1. 2.	03H (3)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4) 05H (5) 06H (6)
	BRILLIANCE	04H (4)	*
	VOLUME	05H (5)	*1
MELODY ON CHORD		06H (6)	**B0
UPPER SUSTAIN	(VOLUME)	07H (7)	*
L.COMBINATION	1 2. 3. 4.	08H (8)	00H (0) 01H (1) 02H (2) 03H (3)
	VOLUME	09H (9)	*1
L.ORCHESTRAL	STRINGS 2 STRINGS 3 BRASS 3 WOOD 2 VOCAL 2 1. 2.	0AH (10)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4) 05H (5) 06H (6)
	BRILLIANCE	0BH (11)	*
	VOLUME	0CH (12)	*1
LOWER SUSTAIN	(VOLUME)	0DH (13)	*
ENSEMBLE	U.COMBI. L.COMBI. U.ORCHES. L.ORCHES.	0FH (15)	**B0 B1 B2 B3

Function	Switch	SW code	SW data
PERCUSSIVE	E.PIANO 1 VIBRAPHONE MARIMBA JAZZ GUITAR 1 GUITAR 1 1. 2.	10H (16)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4) 05H (5) 06H (6)
	BRILLIANCE	11H (17)	*
	VOLUME	12H (18)	*1
ENSEMBLE	U.PERCUSSIVE L.PERCUSSIVE	13H (19)	**B0 B1
AWM PRESET	PIANO 1 PIANO 2 MARIMBA STRINGS PIPE ORGAN	14H (20)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4)
	VOLUME	15H (21)	*1
ENSEMBLE	U.AWM PRESET L.AWM PRESET	16H (22)	**B0 B1
LEAD	VIOLIN 1 FLUTE 1 OBOE CLARINET TRUMPET 1 TROMBONE 1. 2.	18H (24)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4) 05H (5) 06H (6) 07H (7)
	TOUCH VIBRATO	1AH (26)	**B0
	BRILLIANCE	1BH (27)	*
	VOLUME	1CH (28)	*1
ENSEMBLE	U.LEAD L.LEAD	1DH (29)	**B0 B1
MANUAL BALANCE		1EH (30)	*

*00H (0), 04H (4), 08H (8), 0CH (12), 10H (16), 14H (20), 18H (24)

*1 00H (0)–18H (24)

**Data allocating one or multiple switches to each bit within one byte. In Switch ON status, the corresponding bit is "0"; in Switch OFF status, the corresponding bit is "1".

B7	B6	B5	B4	B3	B2	B1	B0	
0	0	0	0	0	0	0	0	B0: OFF (00H)
0	0	0	0	0	0	0	1	B0: ON (01H)

Function	Switch	SW code	SW data
BASS	CONTRABASS 1 E.BASS 1 E.BASS 2 1. 2.	20H (32)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4)
	BRILLIANCE	21H (33)	*
	VOLUME	22H (34)	*1
AWM BASS	PIPE BASS STRING BASS WOOD BASS E.BASS TIMPANI	23H (35)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4)
	VOLUME	24H (36)	*1
PEDAL SUSTAIN	(VOLUME)	25H (37)	*
SUSTAIN & LEAD SLIDE (KNEE LEVER SW)	LEAD SLIDE PEDAL SUSTAIN UPPER SUSTAIN LOWER SUSTAIN	26H (38)	**B0 B1 B2 B3
TOUCH TONE	U.ORCHESTRAL L.ORCHESTRAL PERCUSSIVE AWM PRESET LEAD BASS AWM BASS	27H (39)	**B0 B1 B2 B3 B4 B5 B6
PEDAL D.R.C.		28H (40)	**B0
REVERB		29H (41)	*
EFFECT ASSIGN	SYMPHONIC CELESTE PHASER FLANGER DELAY WAH	2AH (42)	**B0 B1 B2 B3 B4 B5
TREMOLO	CHORUS TREMOLO	2BH (43)	**B0 B1
	U.COMBI. L.COMBI.	2CH (44)	**B0 B1
MODULATION	3. (WAH) 2. (LEAD PAN) 1. (LEAD SLIDE)	2DH (45)	**B0 B1 B2
PITCH	1. (LEAD) 3. (PEDALS) 2. (U.ORC.)	2EH (46)	**B0 B1 B2

Function	Switch	SW code	SW data
RHYTHM	1. 2. 3. 4. USER 1 USER 2 USER 3 USER 4	30H (48)	00H (0) 01H (1) 02H (2) 03H (3) 04H (4) 05H (5) 06H (6) 07H (7)
	VARIATION 1 VARIATION 2	31H (49)	00H (0) 01H (1)
	FILL IN 1 FILL IN 2	32H (50)	00H (0) 01H (1)
	VOLUME	33H (51)	*1
	BALANCE	34H (52)	*
RHYTHMIC	1 2 3 4	36H (54)	00H (0) 01H (1) 02H (2) 03H (3)
	VOLUME	37H (55)	*1
MELODIC	1 2 3 4	38H (56)	00H (0) 01H (1) 02H (2) 03H (3)
	VOLUME	39H (57)	*1
AUTO BASS CHORD	MULTI BASS 1 MULTI BASS 2 MULTI BASS 3	3AH (58)	00H (0) 01H (1) 02H (2)
	ABC	3BH (59)	**B0
	LOWER MEMORY PEDAL MEMORY	3CH (60)	**B0 B1
KEYBOARD PERCUSSION		3DH (61)	**B0
FOOT SWITCH	LEFT	3EH (62)	**B0
TUNING		40H (64)	**B0
RHYTHM START SW	START SYNCHRO START	41H (65)	**B0 B1
SEQUENCE	1 2 3 4	49H (73)	**B0 B1 B2 B3
BREATH CONTROL		4EH (78)	**B0
REGIST MEMORY	MEMORY/TO PACK	51H (81)	**B0
RIGHT FOOT SW	RIGHT (GLIDE) REGIST JUMP REGIST SHIFT	54H (84)	**B0 B1 B2

●*Table of DATBUF codes (Assignment data)*

Function	Switch	SW code	Data
POLY VOICE MENU	U.ORCHESTRAL 1.	00H (0)	00H-61H (0-97)
	2.	01H (1)	
	L.ORCHESTRAL 1.	02H (2)	
	2.	03H (3)	
	PERCUSSIVE 1.	04H (4)	
	2.	05H (5)	
MONO VOICE MENU	LEAD 1.	06H (6)	00H-3BH (0-59)
	2.	07H (7)	
	BASS 1.	08H (8)	
	2.	09H (9)	
COMBI. VOICE MENU	U.COMBI. 1.	0AH (10)	00H-1FH (0-31)
	2.	0BH (11)	
	3.	0CH (12)	
	4.	0DH (13)	
	L.COMBI. 1.	0EH (14)	
	2.	0FH (15)	
	3.	10H (16)	
	4.	11H (17)	
RHYTHM PATTERN MENU	1.	12H (18)	00H-15H (0-21)
	2.	13H (19)	
	3.	14H (20)	
	4.	15H (21)	

Function	Switch	SW code	Data
EFFECT ASSIGN	U.COMBINATION	1AH (26)	00H-06H (0-6)
	L.COMBINATION	1BH (27)	
	U.ORCHESTRAL	1CH (28)	OFF :00H
	L.ORCHESTRAL	1DH (29)	SYMPHONIC:01H
	PERCUSSIVE	1EH (30)	CELESTE :02H
	AWM PRESET	1FH (31)	PHASER :03H
	LEAD	20H (32)	FLANGER :04H
	BASS	21H (33)	DELAY :05H
	AWM BASS	22H (34)	WAH 06H
	RHYTHMIC	23H (35)	
	MELODIC	24H (36)	
TOUCH TONE	U.ORCHESTRAL	28H (40)	00H-0FH (0-15)
	L.ORCHESTRAL	29H (41)	
	PERCUSSIVE	2AH (42)	
	AWM PRESET	2BH (43)	
	LEAD	2CH (44)	
	BASS	2DH (45)	
	AWM BASS	2EH (46)	
OTHERS	2nd EXP. PEDAL	32H (50)	00H-04H (0-4)
	ABC MODE	33H (51)	01H-03H (1-3)
	MOC MODE	34H (52)	01H-03H (1-3)
	LEFT FOOT SW	35H (53)	01H-07H (1-7)
	SYM/CEL	36H (54)	00H-01H (0-1)

3. Model-Specific messages

[F0H, 43H, 70H, 0nH, **5th byte**....., F7H]

Messages	5th byte		Transmitted	Recognized	Remarks
Various types of Bulk Damp data	00H (0)	*XXH, :..... ....., XXH, check sum	○	○	*The pertiment data is sent/ received according to the Request data
Model ID data		—	○	×	
MIDI CH assignment data		**UKi, UKo, LKi, LKo, PKi, PKo, LEADi, 00H, KPi, KPo, CTLi, CTLo	○	×	**00H-0FH (0-15)

4. Electone/Single Keyboard common messages

[F0H, 43H, 73H, **4th byte**....., F7H]

Messages	4th byte		Transmitted	Recognized	Remarks
Request for Internal Synchronous mode	01H (1)	02H (2)	×	○	
Request for External Synchronous mode		03H (3)	×	○	

Electone CHX-1

MIDI Implementation Chart

Date: 6/1, 1986
Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	UK
		2	2	LK
		3	3	PK
		×	*OFF	LEAD
		15	15	KEYBOARD PERC.
		16	16	CONTROL
	Changes	1-16, *OFF	1-16, *OFF	UK
		1-16, *OFF	1-16, *OFF	LK
		1-16, *OFF	1-16, *OFF	PK
		×	1-16, *OFF	LEAD
		1-16, *OFF	1-16, *OFF	KEYBOARD PERC.
		1-16, *OFF	1-16, *OFF	CONTROL
Mode	Default	Mode 3	Mode 3	
	Messages	×	×	
	Altered	**********	×	
Note Number		36-96	36-96	UK
		36-96	36-96	LK
		36-60	36-60	PK
		×	36-96	LEAD
		0-127	0-127	KEYBOARD PERC.
	True Voice	**********	36-96	UK, LK, PK
Velocity	Note ON	○ 9nH, v=1-127	○ 9nH, v=1-127	
	Note OFF	○ 9nH, v=0	○ 9nH, v=0, 8nH	
After Touch	Key's	×	×	
	Ch's	○	○	
Pitch Bender		○	○ 0-12 semi	7 bit resolution
Control Change	1	○	○	Modulation wheel (Breath control)
	4	○	○	2nd Expression pedal
	11	○	○	Expression pedal
	64	○	○	Knee lever (Foot pedal)
Program Change		0-15	0-15	Regist. Memory
	True #	**********	0-15	
System Exclusive		○ **	○ **	
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	○	○ ***	
	Commands	○	○	(FA, FC)
Aux Messages	Local ON/OFF	×	×	
	All Notes OFF	×	○ ****	(123)
	Active Sense	○	○	
	Reset	×	○	
Notes		* Transmission/recognition not possible ** Refer to Exclusive message list *** Recognize only when External mode ****Recognize only Control channel		

Mode 1: OMNI ON, POLY
Mode 2: OMNI ON, MONO
Mode 3: OMNI OFF, POLY
Mode 4: OMNI OFF, MONO

○: YES
×: NO

SINCE 1887 YAMAHA

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