AKAI professional

EWI 3000m

EWI SOUND MODULE

WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

Operator's Manual

Congratulations!

We greatly appreciate your purchase of the AKAI EWI Sound Module EWI3000m.
The EWI3000m is a sound module exclusively for use with the EWI3000 wind instrument type controller.
This manual includes detailed explanations of operations, etc. designed to show you how to use the many functions of the EWI3000m to their fullest extent. Read this manual carefully before using your EWI 3000m and put it in a convenient location which can be referred to as necessary. Your patronage is highly valued, and we hope the AKAI EWI3000m will give you many years of musical enjoyment.

Features

- The EWI3000m is an analog synthesizer module with 4 VCOs, 2 VCFs, 2 VCAs, and 4 EGs. 2 system of synthesizers makes it possible to create a variety of sounds and play in a variety of ways, for example by simply mixing 2 kinds of sounds, or assigning different wave form to each VCO and modifying them using various parameters.

- The EWI3000m can produce a rich variety of expressions with the breath sensor, lip sensor, and touch sensor of the EWI3000 wind instrument type controller, including rise and fall of the tone, strength and weakness of the tone, pulse width modulation, clarity of timbre, vibration effects, and glide effects. Also included is a monitoring function, which allows you to take the current status of these sensors at a glance.

- The EWI3000m is equipped with 50 preset sounds covering a wide range of qualities from dense to delicate, which are ready playable, plus a built-in user's bank, where up to 50 original sounds of yours can be stored with their respective names.

- These 100 kinds of sounds can be managed in two types of modes: Sound and Program. The Program mode is specially designed to allow easy arrangement of the order of desired sounds to suit your needs.

- Remote control by use of an optional foot switch gives the ability to change sounds from the sound bank smoothly and conveniently.

- With MIDI IN/OUT jacks on the EWI3000m, an external MIDI sound source or sampler can be played from the EWI3000. The EWI3000m can be controlled by an external MIDI Master device.

- Audio signals, for example a sampled sounds, can be input from an external component to the EXT IN terminal, and mixed with the EWI3000m's synthesized sound. It enables you to create new voices and expressions.

- Programmed chord patterns can be played with up to 4 Polyphonic sounds using an external MIDI-compatible sound source.

- 16 character back-lit LCD offers dialog type operability and carries out easy operation and verification for sound editing.

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Before Starting Operations

To promote safe use
EWI3000/3000m is supplied with power using the AC Adapter. Please use the included adapter for safe use, and do not use it for any other machine.

Power requirements
Power requirements for electrical equipment differ from area to area.
Please ensure that your machine meets the power requirements in your area.
If in doubt, consult a qualified electrican.
220~230V, 50Hz for Europe except UK
240V, 50Hz for UK and Australia
120V, 60Hz for U.S.A. and Canada

Turn off the power after use
Turn the power off after use to be safe and to conserve energy.
Pull the AC Adapter from the socket if the EWI3000/3000m is not going to be used for a while.

How to handle the AC Adapter
Never pull the cord of AC Adapter, it may result in disconnections. Always hold the AC adapter to remove it from the socket for safety purposes and to prevent electrocutions. Do not touch the AC Adapter with wet hands.

Prevent from spilling water or dropping metal objects in the EWI3000m
Watch carefully especially for mischievous acts by children. Do not drop needles hairpins, coins, metal objects, or flammable objects such as paper into the machine. Furthermore, do not put vases or cups filled with water on or around the machine.

Reconstruction is dangerous and may result in the EWI3000/3000m malfunctioing.

About the location
To promote optimal use of the EWI3000m, be conscious of where it is placed.
The following locations are not advisable:

1. Arond heaters, heat releasing machines or in the sun.
2. Humid and dusty places.
3. Locations easily affected by vibrations.
4. Locations with no sir circulation.
5. Sloped or slanted locations.
6. Extramely cold places.

The EWI3000/3000m's affect on other electrical equipment
The EWI3000/3000m may cause TV and radio noise and interference when used close to TVs and radios. In such cases move the EWI3000/3000m away from those units.

Sound volume manners
When enjoying the EWI3000/3000m, please have consideration for your neighbors, especially be keeping the volume down at night.

Be careful of aerosol sprays insecticides
Please be careful since insecticides may damage the surface of the panel.

How to take care of the cabinet and panel surface
Wipe dust off with a dry cloth, and if it is heavily solled, use a small amount of dish washing soap or a neutral detergent and wipe it with a soft cloth. Refrain from using thinner, benzene or other chemicals that may damage the finish and key pads.

About relocating the EWI3000/3000m
Always disconnect the AC adapter and connections before moving the EWI3000/3000m.

About backup batteries
To maintain the data while the power is off, the EWI3000m has a built-in backup battery. The battery life is about 3 years. However, in case the voltage of this backup lithium battery is lowered, the following message will be shown when powering up the EWI3000m.

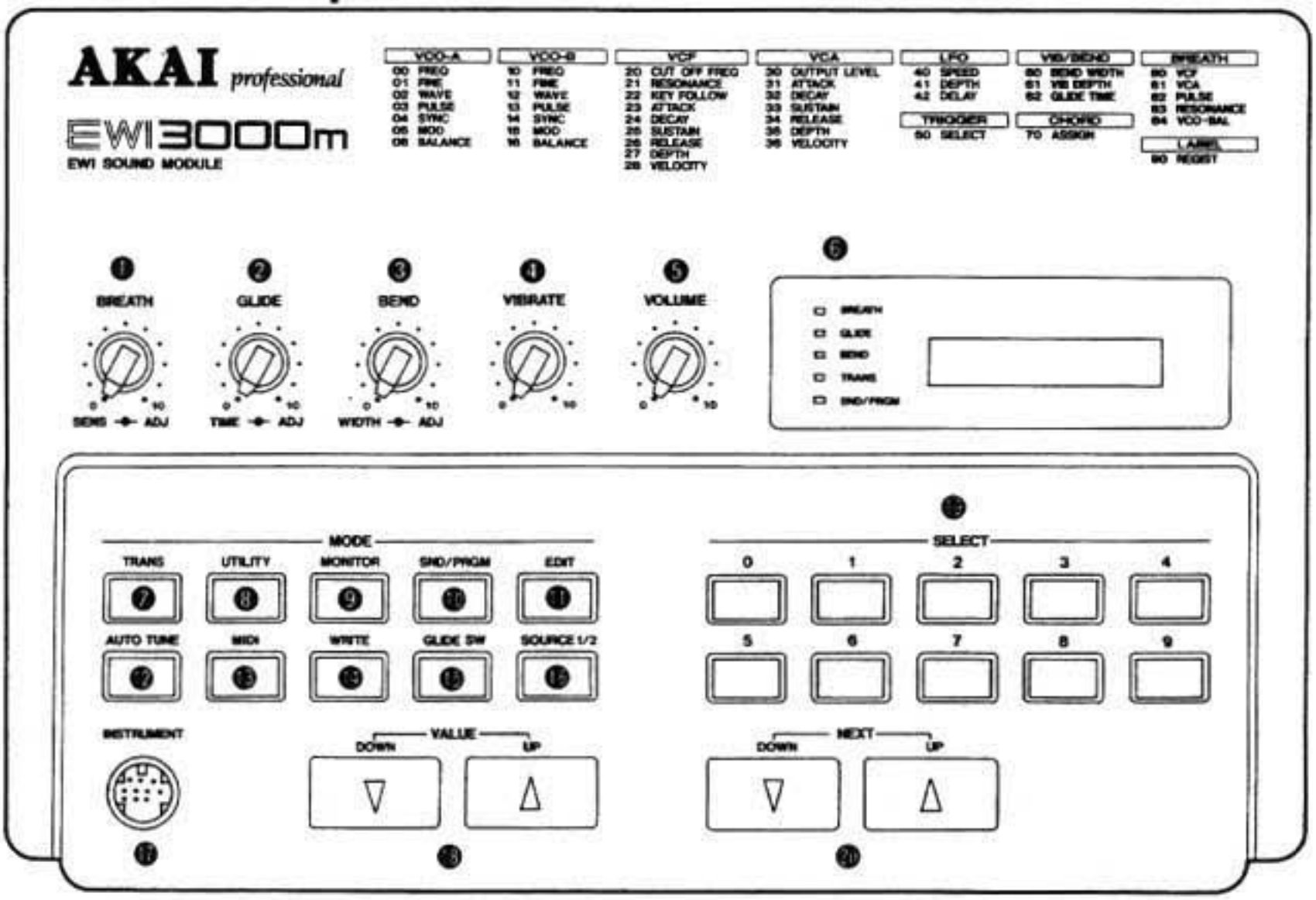
```
CHANGE BATTERY
```

In this case, the EWI3000m may malfunction due to the voltage lowered. When this message is displayed, contact the Akai professional dealer to have the battery replaced with a new one.

After-Sales Service
Please consult the after-sales service department of the dealer where you purchased the EWI3000/3000m for details concerning repairs during the warranty period and other after-sales servicing. If you are traveling or unable to reach that dealer, contact the nearest AKAI professional dealer.

Panel Description

Control Panel <Front Panel>



❶ **Breath Control Knob (BREATH)**
Adjust this knob so that the EWI3000m's VCO, VCF, and VCA, etc. function smoothly according to the strength of the breath blown into the mouthpiece on the EWI3000. The outer, large knob is the adjuster for properly operating the breath sensor. The inside knob is for adjusting the sensitivity of the sensor.

❷ **Glide Control Knob (GLIDE)**
Use this knob to obtain a glide effect (soft rising or falling of the pitch) with the glide plate on the EWI3000. The outside knob is the adjuster for properly operating the glide touch sensor. Use the inside knob to adjust the duration of the pitch change.

❸ **Bend Control Knob (BEND)**
This knob is used to obtain a pitch bend effect by using the bend UP/DOWN plate of the EWI3000. Use it to move the pitch up or down. The outer, large knob is the adjuster for properly operating the bender's touch sensor. The inside knob is for adjusting the range of how much the pitch is bent.

❹ **Vibrato Control Knob (VIBRATO)**
This knob is used to obtain a vibrato effect, by exerting pressure on the mouthpiece of EWI3000. It adjusts the sensitivity of the lip sensor.

❺ **Volume Knob (VOLUME)**
Adjusts the ouput level for LINE OUT and PHONES OUT.

❻ **Display Section (DISPLAY)**
The Liquid Crystal Display (LCD) indicates various messages, sound names, and parameters for the EWI3000 in 16 characters. The display is equipped with a backlight, so it can be seen even in dark places.

BREATH LED: It will light up when breath sensor is working.

GLIDE LED: It will light up when the Glide touch sensor is working.

BEND LED: It will light up when the Bend touch sensor is working.

TRANS LED: It will light up when the Transpose function is working.

SOUND/
PROGRAM LED: When in the Sound mode lights red, In the Program mode, green.

❼ **Transpose Button (TRANS)**
This button is used for changing the key. It is possible to transpose the pitch within the range -D# thru C thru +D#. In the Program mode it is possible to assign transposition to each banked sound which can be turned On or Off.

❽ **Utility Button (UTILITY)**
This is used to enter the Utility mode. In this mode you can control MEMORY PROTECT On/Off, priority set up, Bulk Dump, and Chord Programming, etc.

❾ **Monitor Button (MONITOR)**
This is the button used to enter the Monitor mode. In this mode, current status of the Gliss, Glide, Bend, and Vibrato effects by the EWI3000 will be displayed for monitoring purposes.

❿ **Sound/Program Button (SND/PRGM)**
This button is used to select either the Sound or Program Mode.

⓫ **Edit Mode Button (EDIT)**
Use this button to enter the Edit mode. In this mode you can create or edit voices using the various parameters.

⓬ **Auto Tune Button (AUTO TUNE)**
When this button is pressed, the VCOs and VCFs of the EWI3000m are automatically set to the optimum tuning.
Make a habit of pressing this button before performances and before editing or creating new sounds.

⓭ **MIDI Button (MIDI)**
This button is used to enter the MIDI set- up mode. In this this mode , you can assign the MIDI Transmit/Receive channels, program changes, transmit velocity, and select the breath control transmit mode.

⓮ **Write Button (WRITE)**
This button is used to store voices that you created or edited into the user bank. It is also used to copy preset sounds to the user bank, or for changing the order of the sounds in the Program mode.

⓯ **Glide Switch (GLIDE SW)**
This is an On/Off switch of the Glide effect while the EWI3000m played by the MIDI data from the MIDI IN. Available when in the Program mode; if you turn this switch to the Off setting, the Glide LED in the Display section will go off.

⓰ **Source 1/ Source 2 (SOURCE1/2)**
Select button for sources 1 & 2 while editing.

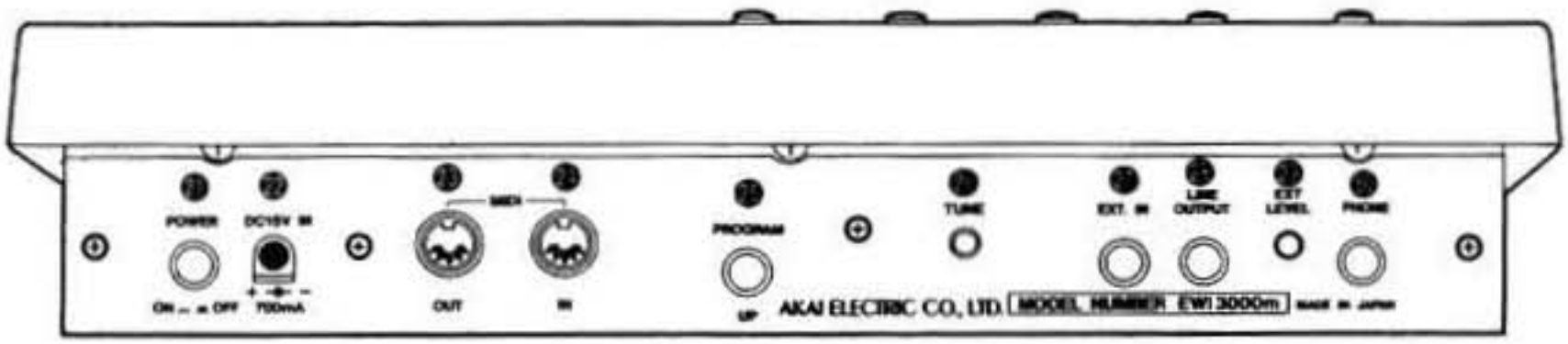
⓱ **Instrument Jack (INSTRUMENT)**
This is the connection terminal for the EWI3000 wind instrument type controller.

⓲ **Value Up/Down Button (VALUE UP/DOWN)**
This button is used to assign values to the various parameters.

⓳ **Select Keys <0> - <9> (SELECT)**
They are used for selecting the parameters when choosing each voice , or when you're in the Edit mode.

⓴ **NEXT UP/DOWN Button (NEXT UP/DOWN)**
This button is used to move the parameters up or down in order, for each sound or each mode. If you press and hold this button it will proceed more rapidly.

<Rear Panel>



㉑ **Power Switch (POWER)**
Use this switch to turn the power of the EWI3000m On and Off.

㉒ **Adaptor Jack (DC 15V IN)**
This is the jack to connect the authorized AC adaptor.

㉓ **MIDI OUT Jack**
This is the Output jack of MIDI data including Bulk Dump data.

㉔ **MIDI IN Jack**
This is the the Input jack for receiving data of each MIDI channel or Bulk Dump data.

㉕ **Foot Switch Jack (PROGRAM UP)**
Use this jack to connect a foot switch. The program No. can be changed successively upward when in the Program mode, and the sound No.'s likewise in the Sound mode.

㉖ **Tuning Knob (TUNE)**
This button is used to tune the pitch of the EWI3000m to match that of other instruments. Tuning is possible within a range of +/-100 cents.

㉗ **External Sound Source Input Jack (EXT IN)**
The Input jack is a standard phone plug jack. Connect it to the line Output jack on an external synthesizer or digital sampler.

㉘ **Line Output Jack (LINE OUTPUT)**
The Output jack is a standard phone plug jack. Connect it to the line Input jack on a mixer or amplifier. Adjust the Output level by using the ❾ Volume Knob.

㉙ **External Sound Source Input Level Knob (EXT LEVEL)**
This is used for adjusting the Input level from the ㉗ External Sound Source Input Jack.

㉚ **Headphone Jack (PHONES)**
Use this jack to connect the headphones Adjust the volume using the ❾ Volume knob.

Connections

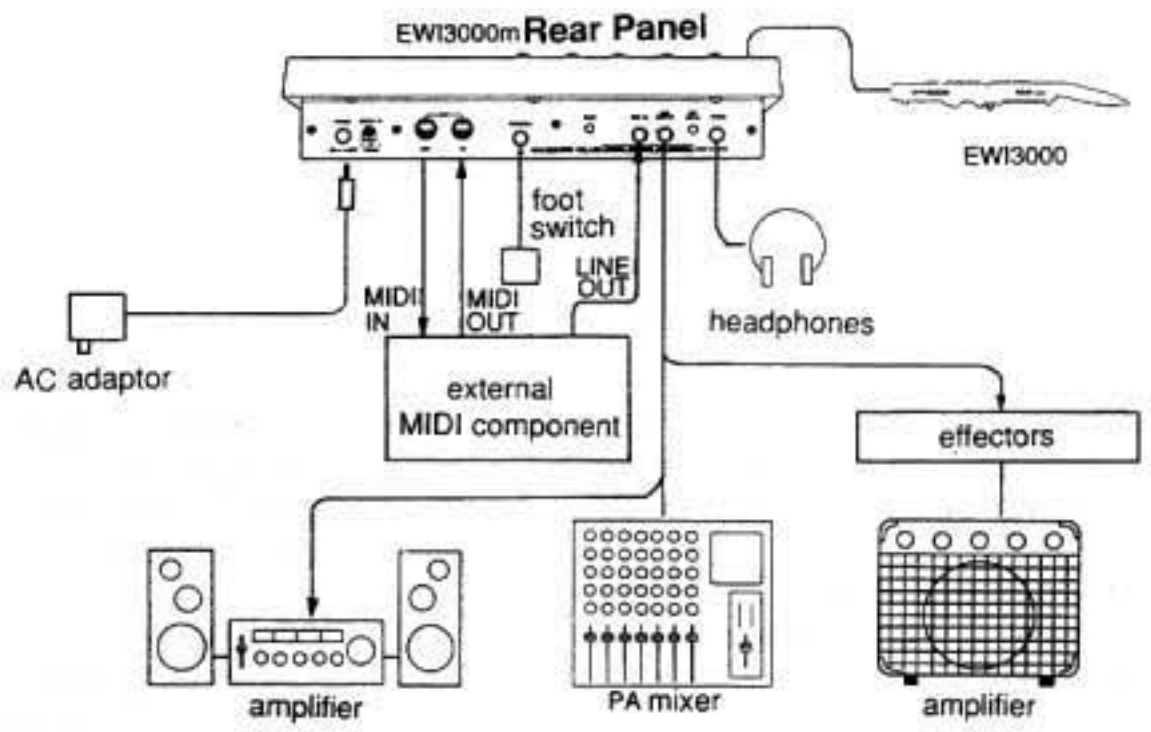
Connecting the EWI3000 to the EWI3000m



Step 1: Insert the connector plug securely using the authorized cord included with the EWI3000.

Note: Make sure both machines are turned off when you make a connecting as shown in the illustration below. The authorized connection cord is a multi pin cable so that pulling strongly on the cord or handling it roughly may damage it.

Connecting to External Components and/or Sound Source



- A power amplifier is necessary to output the sound from the EWI3000m through speakers. Use standard phone plug cords to connect the amplifier or mixer to the LINE OUT jack of the EWI3000m as shown in the illustration above.
  Using effectors, such as echo machines, reverberators, or equalizers, gives even richer expression to the EWI3000m sound.

- It is possible to control an external MIDI component with the EWI3000m by using its MIDI IN/OUT and EXT IN jacks. Or, you can control the EWI3000m using the external MIDI component or sound source.

- Connect the MIDI IN/OUT terminal with an authorized MIDI connection cable.

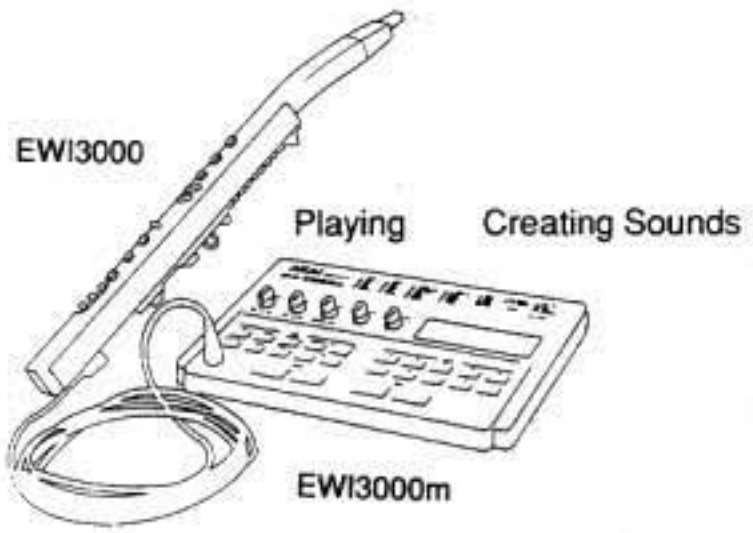
- Connect the EXT IN jack with a standard phone plug cord.

  * Make sure the power is turned off when you are connecting your component with the EWI3000m. Also remember to turn the volume of the amplifier and mixer to a minimum level when you turn the EWI3000m on/off, to prevent the speaker from damage.

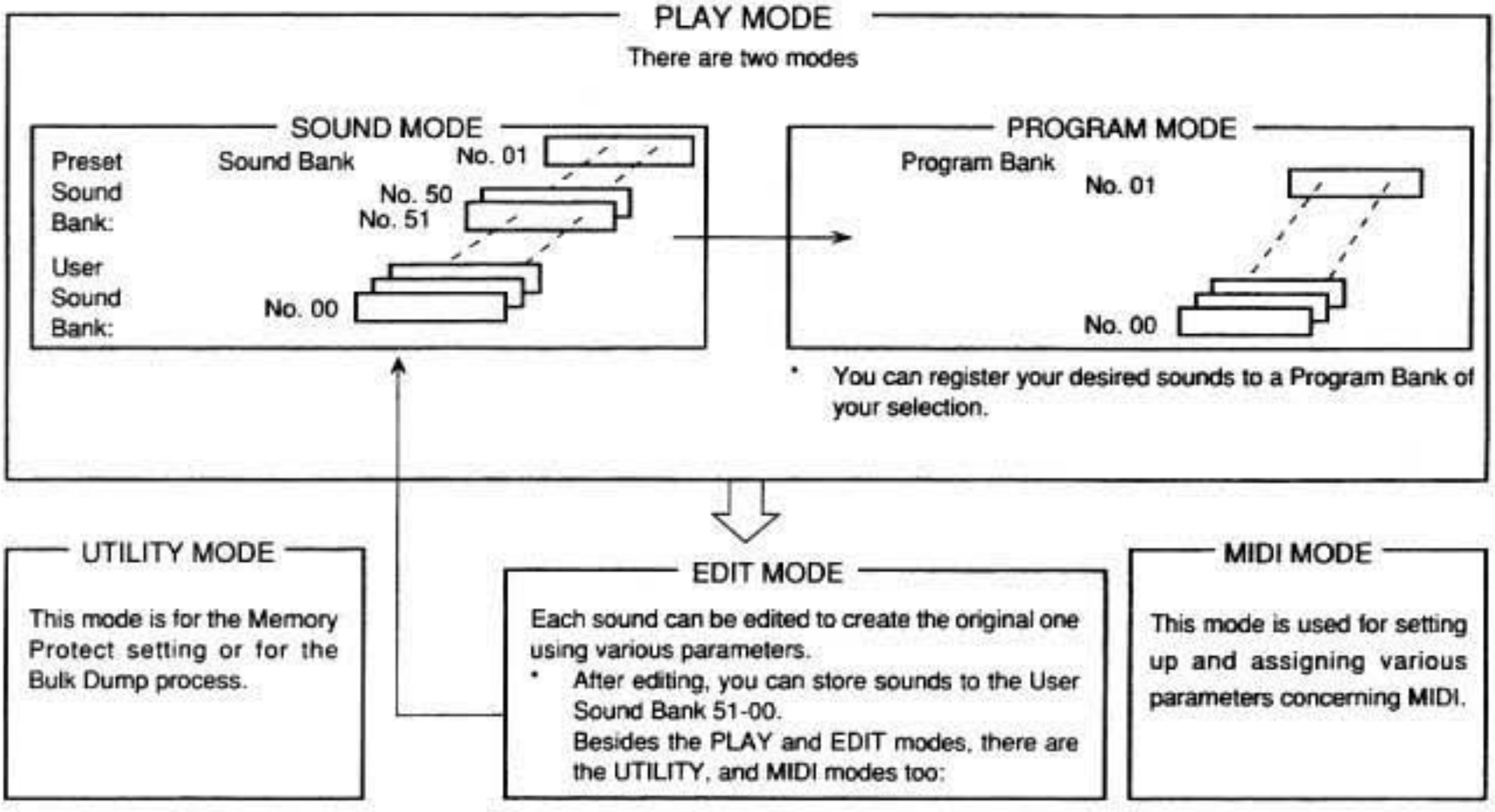
  * Each country has their own voltage system, so be sure to use the authorized AC adaptor which corresponds to the voltage used in the country or area.

Basics of the EWI3000m

The EWI3000m is a synthesizer sound module which can be played with the EWI3000 wind instrument type controller, and has a variety of musical abilities. The EWI3000m's representation is as rich as an acoustic musical instrument, but with much more possibility for expanded expression when performing.
The EWI3000m has many functions and operations, but in order to simplify things, it can be basically divided into 2 sections in this manual which are: "Playing" and "Creating Sounds".



The modes used for these basic sections are the "PLAY" mode (when playing), and the "EDIT" mode (when creating sounds), plus "UTILITY and MIDI" modes for exchanging data with other MIDI instruments and sound sources, etc.. But, before actually trying to operate the EWI3000m, learn about the total structure outlined in the following illustration and the specific procedures for playing and editing which follow.



Basic Procedure for Playing

Step 1: Connect the controller/EWI3000 with the EWI3000m and other components.

Step 2: Adjust Volume, Breath, Glide, Bend, and Vibrato of the EWI3000m. (Use the monitoring function.)

- You can set up the details of these effects in the Edit mode.

Step 3: Select the PLAY mode (Sound or Program mode).

Step 4: Select the Sound Bank or Program Bank, then play. (Bank selection with the foot switch is available.)

Basic Procedure for Editing

Step 1: Turn off the Memory Protection in the Utility mode.

Step 2: Select the Sound Bank which you wish to Edit. (when in the PLAY mode.)

Step 3: Refer to the Parameter Table on the Front Panel, and choose the desired parameter, and then Edit.

Step 4: Store the sound you have just Edited to the User Bank. (Sound Bank 51-00.)

- If you need to, you can store into Program Bank 01-00.

Step 5: Return to the Utility mode and turn the Memory Protect back on.

[1] Let's Play!

Now, let's try playing using the 50 preset sounds of the EWI3000m. You will also need to refer to the Manual of the EWI3000 controller.

1. Basic Operation of EWI3000 Controller

<Holding Position>

Use the included neck sling to allow free use of your hands and hold as you would a saxophone or clarinet; or while sitting down, you can set the controller on your knee or lap. Just a light touch of the keys is all that is necessary for sound production. The EWI3000 employs touch sensors so there is no key action, unlike a usual wind instrument.

* You will surely find it very useful to play with touch sensors when playing fast passages after you have learned to play with this method.

<Octave Shift Rollers and Earth Plate>

Place your left thumb on the back side of the EWI3000, between any two rollers. During playing, you must keep your left thumb touching the position between two rollers at all times. The position between special two rollers with rough touch gives the standard pitch. Also, the right hand thumb must always be touching the Earth Plate.

<Mouthpiece>

Place the mouthpiece in your mouth and blow. However, you cannot blow down the center of tube due to a certain method for controlling the airflow has been adopted. Biting the mouthpiece lightly, blow out as a little air flows from either side of the mouthpiece. As you blow out, the pressure to the internal breath sensor will be deteced as the volume.
If you want to play a long tone, blow out as air does not flow from either side of the mouthpiece. Also to obtain vibrato effect, put pressure on the lip sensor as you blow by lightly biting and releasing it.

<Tonguing>

You can play by tounging while blowing by controlling the air stream in small bursts.

* Adjust the **BREATH** knob to make different nuances of the tonguing.

<Bend>

By touching the right thumb to the Bend Up/Down plate (with the Earth plate also touched), you can obtain a Pitch Bend effect (Up/Down of pitch). Adjust the Pitch Bend range on the EWI3000m. Before you get used to touching the variously located plates, you may touch upon the Bend Up/Down plate by accident. Take care for this.

<Glide>

By touching the Earth plate, and placing your left thumb to the Glide plate, and then changing the pitch, you can achieve a Glide effect (which will smoothly and continuously slide the pitch up or down: Portament effect). Adjust the Glide time on the EWI3000m.

- Some of the preset sounds of the EWI3000m are pre-fixed not to perform the Glide effect.

2. Playing with Preset Sounds

Basically you have to set up the EWI3000m to adjust the parameters, Breath, Glide, Bend, Vibrato, and Volume to suit for your performing manner. However, first we should start with the most simple setting and try playing the factory preset sounds.

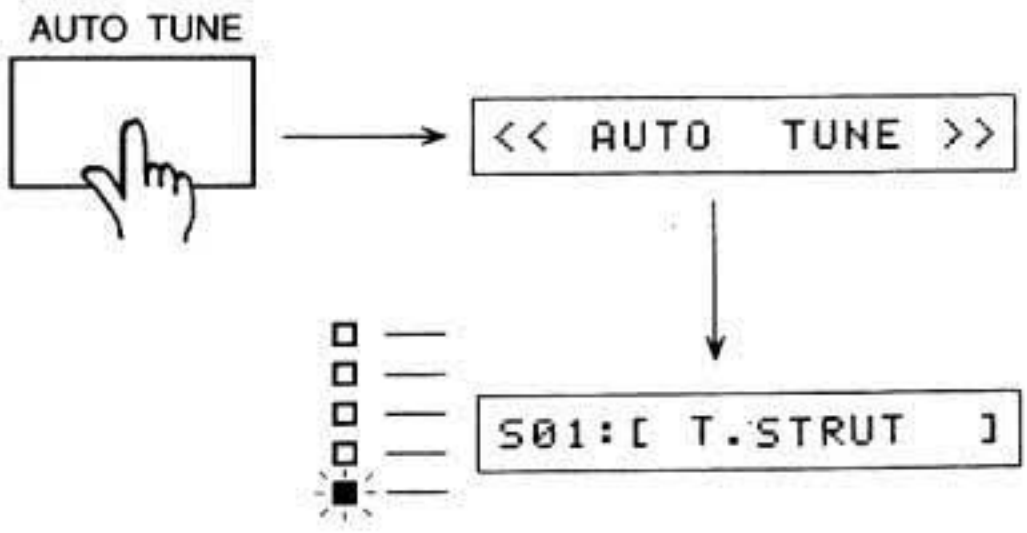
a. Make sure the EWI3000m is turned off.

b. Referring to "Connections" section, connect the EWI3000 controller correctly to the EWI3000m, and mixer, power amplifier, etc. At this time, mixer or amplifiers power should be off, or volume at a minimum to protect the speakers. Also check the EWI3000m's **VOLUME** knob to set to the minimum position.

c. With your finger on the controller's Earth Plate, turn the EWI3000m on.
Then press the **AUTO TUNE** button. The EWI3000m's VCO will be automatically adjusted to the optimum tuning. After a little while, the tuning will be finished and the display will show Sound Bank No.01 T.STRUT and the left side Sound/Program LED will light up in red (Sound mode display).

- You repeat Step3 several times (in order to put the unit's tuning inbest condition).

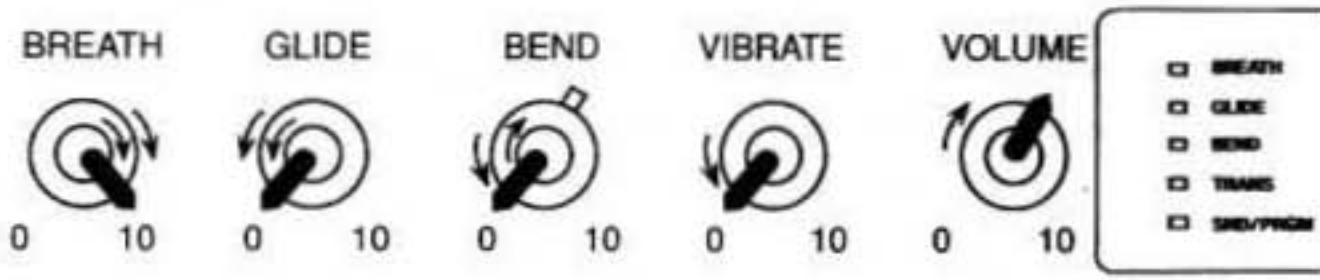
d. Adjusting the Volume (During this Operation Do NOT Touch the EWI3000 Controller)



Step 1: First, adjust the **BREATH** control knob. Turn both the outer (ADJ) and inner (SENS) knobs to the right until you see the Breath LED on the left light up.

Step 2: Next, turn the **VOLUME** knob slowly to the right, Sound Bank No.01 T.STRUT which is shown on the display, will be heard. Adjust the volume accordingly. And the volume of the amplifier or mixer which you may be using should now be adjusted.

Step 3: Turn both the inner and outer knobs of the **GLIDE, BEND,** and **VIBRATE** all the way to the left. And outer (ADJ) knob of the **BEND**, slowly to the right, and set to the position where the Bend LED goes off(this is the status of Glide, Bend, and Vibrato:OFF).



e. Adjusting the Breath

Step 1: Turn the **BREATH** outer (ADJ) knob slowly to the left, and set to where the Breath LED goes off. At this point the sound will go off too.

Step 2: Now, with your thumbs placed over the Earth Plate and Octave Shift Rollers, breathe into the mouthpiece of the EWI3000. Because the breath has been adjusted, the sound will be produced easily. Try moving your fingers to change the pitches.

Step 3: Next, try turning the inner (SENS) knob slowly to the left, and then check how the expression of the sound changes. The further you turn the knob to the left, the stronger you need to blow to produce the sound.

- If you use the monitoring function, (explained later) you can confirm the amount of breath visually.
- If your lung power is strong you can turn the SENS knob to the left for more breath resistance, or to the right for the opposite effect. Adjust this knob to find the position most comfortable for your maximum playing expression.

SENSE knob



The further turned to the left, the stronger you need to blow.

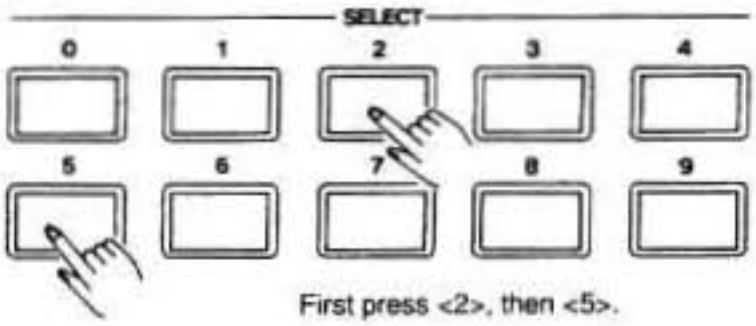
The further turned to the right, the more easily you can produce the sound.

f. Selecting a sound

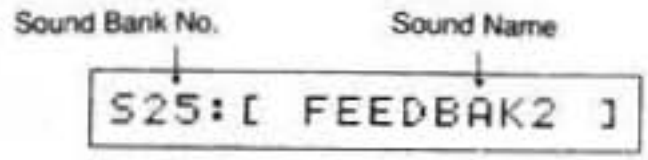
Let's try playing with the various sounds by choosing a Sound Bank No.. When the EWI3000m is provided with 50 factory preset sounds: No.01-30 for general performance by the EWI3000 controller, No.31-40 for solo performance by the EWI3000 controller, and No.41-50 for bass sounds. For the Sound Bank No.51-00, assigned are the same sounds as No.01-50.

Step 1: Assign a Sound Bank No. by using the Select keys 0-9. For instance if you want to assign the Sound Bank No.25 FEEDBAK2, push key 2, then 5. The display will show the Sound Bank No. and Sound Name assigned.

Ex. Selecting Sound Bank No.25 FEEDBAK2:

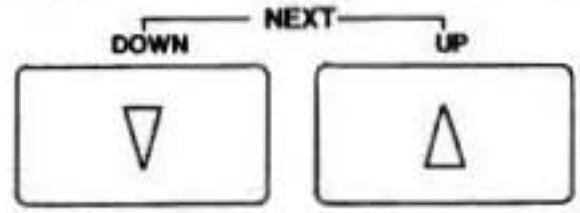


First press <2>, then <5>.



- You always assign the Sound Bank No. by two digits.

Step 2: You can move the Sound Bank No.s up or down by single increment, by pushing the **NEXT UP/DOWN** buttons. For example, if you pressed the UP button once, the Sound Bank NO. would now be No.26 PANPIPES. To press and holding down the UP/DOWN button will increase/decrease with rapid speed.



To decrease the No.. To incease the No..

- The operation for selecting the Program No. when in the Program mode is exactly the same.
- For selecting the sound, refer to the Sound List on page 75.

At this point, you should get accustomed to the EWI3000 controller's fingerings and breath control. Also, the various sounds which can be produced by the EWI3000m, and how to make breath adjustments.
So far, the settings for the Glide, Bend, or Vibrato effects have not been in use, just get used to the fingering and breath first, and then you can think about adding these effects later.

3. Variety of Playing Functions

Now that you have become used to the EWI3000 controller's fingerings and breath control, and sounds of the EWI3000m, we will delve deeper into the more advanced playing techniques, settings, and the functions related to them.

<Sound mode & Program mode>

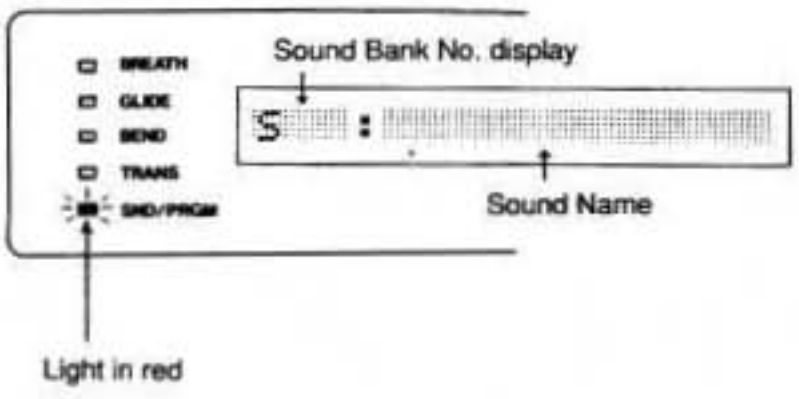
There are two modes Sound and Program provided in the EWI3000m. When you play, you can select either mode.

"Sound mode" has 50 preset banks (Sound Banks No.s 01-50) and 50 User Banks (Sound Banks 51-00) for a total of 100 banks. When you turn the power on, it will automatically be set to the Sound mode. So you were playing in this mode, in the previous section regarding Playing preset sounds.
The original sounds you edit can be stored to these Sound Banks 51-00 in the "Sound mode".

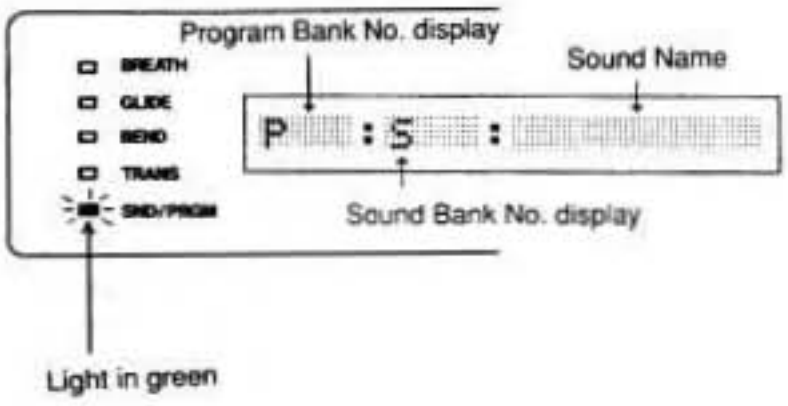
"Program mode" contains 100 Program Banks (Program Banks No.s 01-00). This allows you to freely assign a sound from the Sound mode to each Program Bank and make it possible to arrange the sounds in the order you want to play with. So, after you select a Program Bank, you can concentrate on performance without looking for the sound you need at that time.

You can select the Sound or Program mode using the **SND/PRGM** button. Each time you press this button, you can alternate it.
When you are in the Sound mode **SND/PRGM** LED on the left side of display, will light in red, when in the "Program Mode" it will light up in green.
You can select the Bank No. of either mode by the using the **SELECT** keys 0-9 or using the **NEXT UP/DOWN** button.

Display when in Sound mode



Display when in Program mode



* For how to save or copy each sound, refer to page 29 & 70.

<Setting the Glide, Bend, and Vibrato Effects>

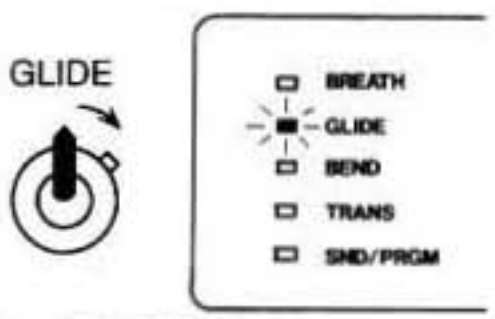
Up to this point, we have explained how to set the Volume and Breath controls. When we checked the preset sounds in the previous section, we only used these and left the other effects off. But, actually you also need to set up the other effects - Glide, Bend, and Vibrato. After completing all of these settings, you can hear the EWI's potentiality. Do the following Steps after completing the procedure in "2.Playing with Preset Sounds".

a. Adjusting the Glide Effect

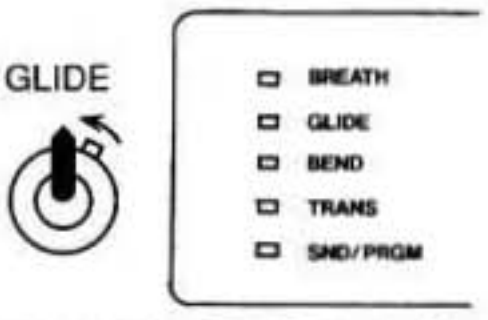
Step 1: Turn the inner (TIME) knob of the **GLIDE** to the position between half way and 80 percent.



Step 2: Next, without touching the EWI3000 Controller's Glide Plate, adjust the outside (ADJ) knob until the **GLIDE LED** lights up. After that turn it back just slightly until the LED goes off. Then check to make sure every time you touch the Glide Plate the Glide LED lights up.



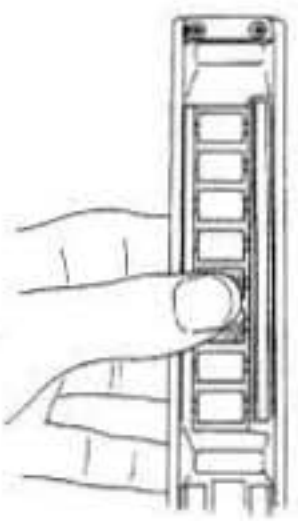
Turn the inner knob until the LED light up.



Turn it slightly back until the LED goes off.

Step 3: Now, as you blow into the EWI3000 controller, while still touching the Glide Plate and Octave Shift Rollers. Try to shift the Octave Rollers. With this effect, you can express the qualities of a trombone, for example. Of course you could get the same effect by the pitch change by ordinary fingerings.

- With some preset sounds, you cannot get the Glide effect soon. This comes from the Trigger type assigned to the sound. In this case, so you need to enter the Edit mode and adjust the Glide Time, to acheive the effect. For details of Triggers, see page 50.



Step 4: When you become used to this technique, you will be able to have a variety of subtle expressions by the touch of the Glide Plate. If you won't be needing this effect, you can turn off the Glide effect by turning both knobs all the way to the left.

- The assignment for each sound's Glide Time will be explained later.
- If the LED remains lit, even after adjusting the inner knob (TIME), set up the outer knob (ADJ) again.



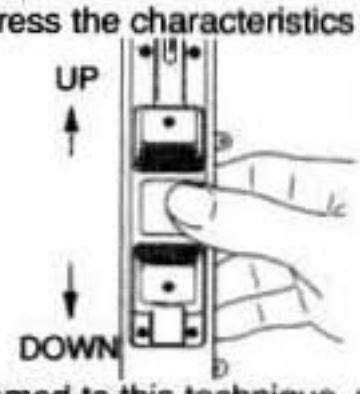
b. Adjusting the Bend Effect

Step 1: Turn the inner (WIDTH) knob of the BEND to the position between half way and 80 percent.



Step 2: Next, again without touching the EWI3000 Controller's Bend Up/Down Plate, adjust the outside (ADJ) knob to the right until the Bend LED lights up. After that turn it back just slightly until the LED goes off. Then making sure every time you touch the Bend Up/Down Plate, the Bend LED lights up.

Step 3: Now, as you blow into the EWI3000 controller, while touching the Bend Up/Down Plate, to get the Pitch Bend effect (sliding the pitch up/down like bending a string of the guitar). Depending on the preset sound, the width (range) of the bend will differ. This effect allows you to express the characteristics of a guitar.



Step 4: After you've become accustomed to this technique, you can have many exciting expressions of the wind instrument used in sensitive collaboration with breath control to really sound great. But, if you prefer not to use this effect, you can leave it off by turning the inner knob (WIDTH) all the way to the left, while setting the outer (ADJ) knob to the position where the Bend LED turns off.

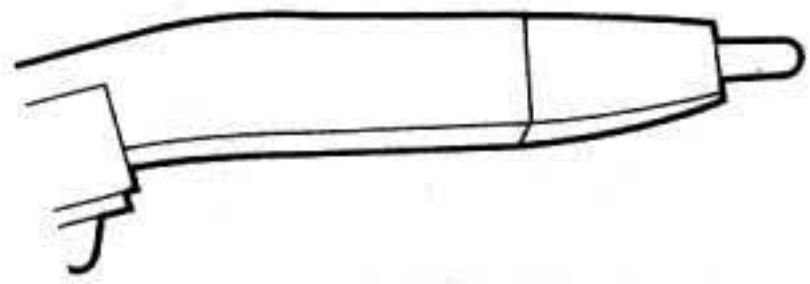
- Assignment for each sound's Bend Width will be explained later.
- If the LED remains lit, even after adjusting the inner knob (WIDTH), set up the outer knob (ADJ) again.

c. Adjusting the Vibrato Effect

Step 1: Turn the **VIBRATE** knob to the position between half way and 80 percent.



Step 2: Now, while blowing into the EWI3000 controller, lightly bite the mouthpiece (exert pressure around the mouthpiece) to produce the Vibrato effect (it will waver the pitch at regular intervals). Some of the preset sounds have different types of Vibrato assigned.



Step 3: After you become accustomed to this technique, you can add charm and depth of emotion to the sound you're playing with. Of course if you prefer not to use this effect, you can turn off the Virato effect by turning the **VIBRATE** knob all the way to the left.

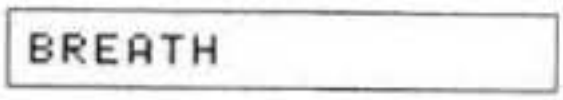
- The assignment for the amount of each sound's Vibrato will be explained later.

<Monitoring Function>

The Monitor Function is very useful for setting various effects, because when you use it you can confirm visually the amount of Bend, Glide, and Vibrato that has been applied.

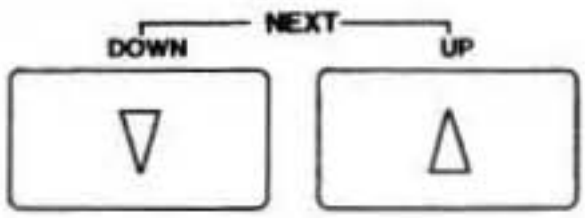
Step 1: If you press the **MONITOR** button while you're in the Sound/Program mode (This function is also available in the Edit/Utility/MIDI modes), the display will change to the Monitoring screen concerning the settings for amount of breath.





Step 2: Every time you press the **NEXT UP** button, the display will change in succession from the Breath Amount screen to the Glide Amount, Bend Amount, Vibrato Amount. Also, you can change back to the previous effect by pressing the **NEXT DOWN** button.

- You can change screens successively by pressing the **MONITOR** button, but can not move backwards.



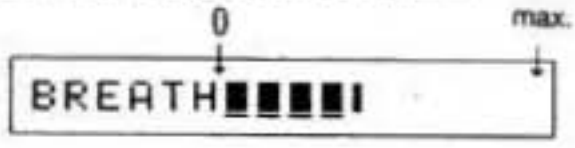
Step 3: Choose the screen which you need, then as you play the EWI3000 Controller, the quantities of effects currently applied will be shown on the screen. Each effects screen display is shown as follows:

- **Monitoring Screen for Breath Amount**

When not breathing into the mouthpiece

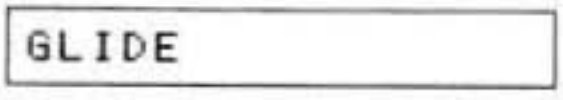


When breathing into mouthpiece

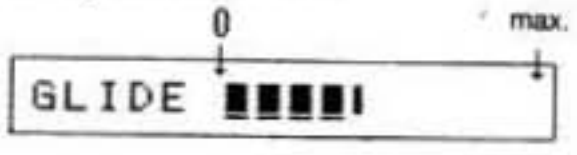


- **Monitoring Screen for Glide Amount**

When not touching the Glide Plate

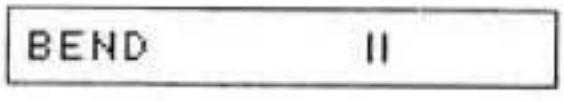


When touching the Glide Plate

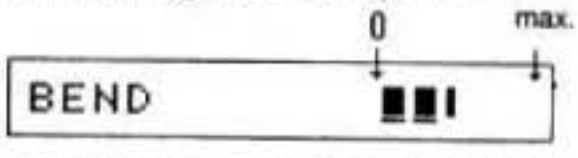


- **Monitoring Screen for Bend Amount**

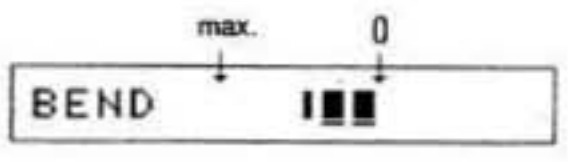
When not touching the Bend Up/Down Plate



When touching the Bend Up Plate



When touching the Bend Down Plate

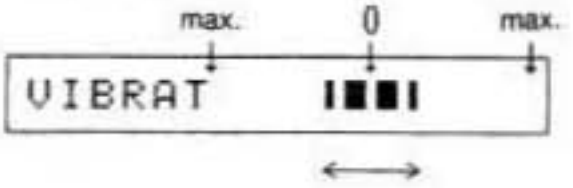


• **Monitoring Screen for Vibrato Amount**

Without applying pressure to the mouthpiece



When applying pressure to the mouthpiece



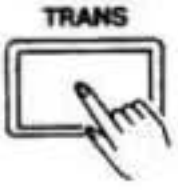
Step 4: When you want to return to the previous screen after completing the monitoring process, just press the Sound/Program button again (if you switched to the Monitor screen from the Sound/Program mode). If you have switched from the other mode (Edit, Utility, or MIDI), just press the button corresponding to the mode.

<Transpose Function>

Use this function to transpose into another key. When in the Sound mode, it will transpose All sounds into that key, when in the Program mode you can transpose sounds individually as desired. The transpositions that have been assigned will be memorized, and you can turn it on and off as needed.

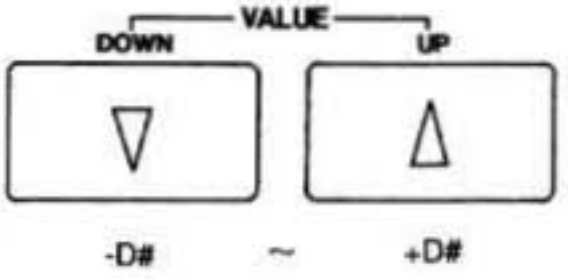
Step 1: If you press and hold the **TRANS** button for a while, when you're in the Sound or Program mode, the display will change to the Transpose screen.

* If you press the **TRANS** button again, it will return to previous screen.





Step 2: Using the **VALUE UP/DOWN** button set to the desired point, on the left side of display, Transpose LED will light in green (Transpose On status).
The possible range for Transposition is: -D# thru +D#, C: Standard pitch.



Step 3: If you press the **TRANS** button once again, it will return to the previous screen, however, you will still be in the Transpose On status (Transpose LED will remain lit).

Step 4: You can turn the transposition on or off easily by pressing the **TRANS** button, which will be indicated by the Transpose LED being lit or not.

* In this case, just press the **TRANS** button once, not pressing and holding as in Step 1, which will bring on the Transpose screen.

When you perform the Transpose function in the Sound mode, the Transposition which you set up will be memorized, unless you change to the Program mode or turn the power off. This transpostion will cover All sounds in the Sound mode. When you Transpose in the Program mode, the Transposition you could assign individually, will be memorized even you change to the Sound mode, or turn the power off.

<Foot Switches>

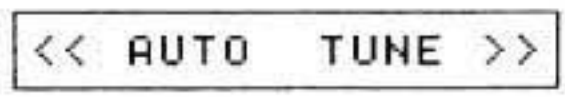
By using the optional Foot Switch, you can easily and orderlily change the Sound Bank No. when in the Sound mode, or the Program Bank No. when in the Program mode, by the single increment. Connect the Foot Switch to the **PROGRAM UP** Jack located on the Rear Panel of the EWI3000m.
The Foot switch is especially convenient during live performing situations when changing from one voice to another in the Program mode.

<Tuning>

When you play with other instruments or CD, etc., and find the pitch is slightly off, you can use this function to tune the EWI3000m to match them.

Step 1: Press the **AUTO TUNE** button which will set the EWI3000m's VCOs and VCFs to the optimum tuning.

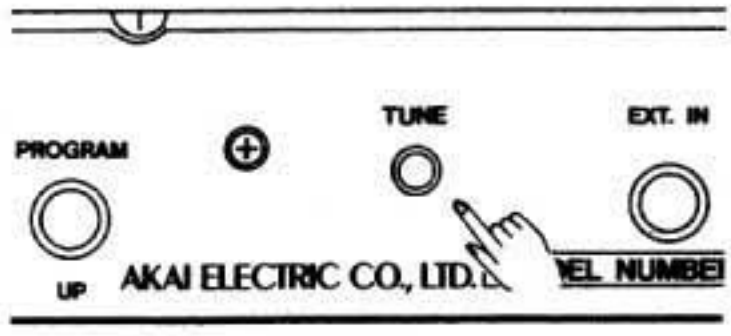




Auto Tuning will be completed in a while.

* The Auto Tuning operation has been outlined previously. Remember to tune up the EWI3000m especially before performing or before Editing sounds.

Step 2: Adjust the **TUNE** knob carefully, which is located on the Rear Panel of the EWI3000m to match to whatever instrument you are playing with.



[2] Sound Editing

The EWI3000m is basically four monophonic synthesizers combined into one unit, and can produce four different sounds simultaneously. Also, it can process or mix the sound from another synthesizer or digital sampler, etc., which is input to the Module thru External Input jack (EXT IN) on the Rear Panel. But, before getting into the actual creation of sounds, learn about the basic concepts of the synthesizer and the EWI3000m.

1. What is a Synthesizer?

Sounds consist of three factors: pitch, tone, and volume.

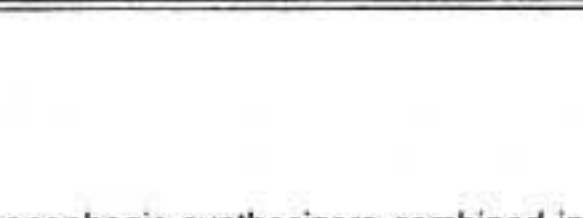
Pitch: the height of the sound

Tone: the amount of harmonics incorporated into the sound

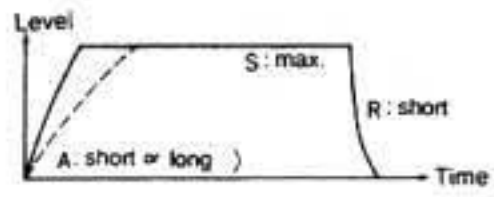
Volume: the loudness of the sound

Sounds peculiar to acoustic instruments such as piano, violin, guitar, or flute are formed by envelopes, which indicate the time variance of these three factors. Especially, the envelopes of Tone and Volume determine the character of a sound. For example, we distinguish a piano sound from guitar sound unconsciously by each sound's envelopes.
The envelopes for acoustic instruments can be classified into four distinctive types:

#1 Percussion/struck



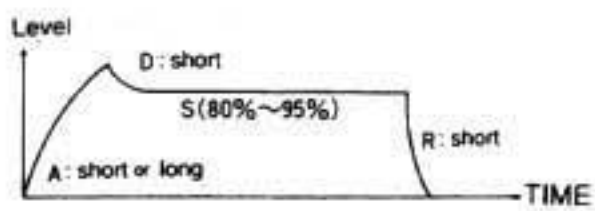
#2 Strings/bowed



#3 Strings/pizzicato



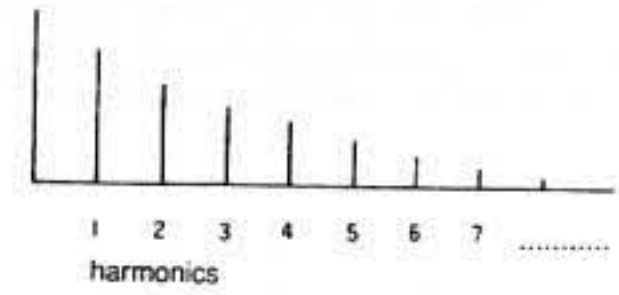
#4 Winds/blown



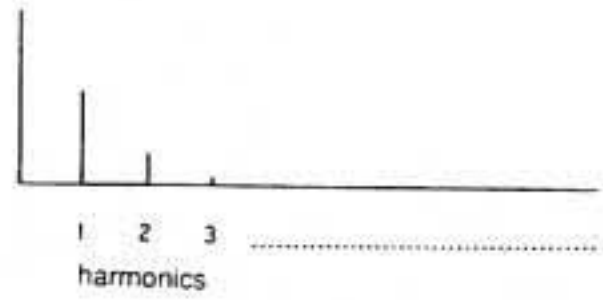
A=Attack time, D=Decay time, S=Sustain level, R=Release time

These envelopes are mainly for the loudness of the sound. The harmonics also change in the same way:

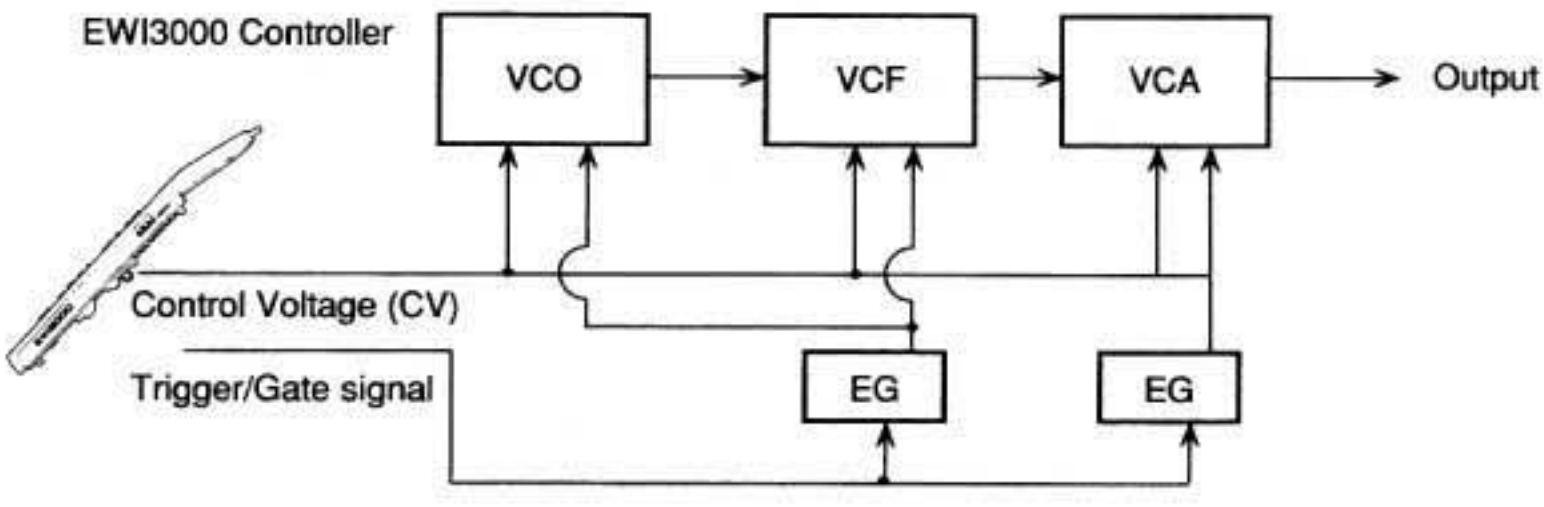
When the level is high, there are more harmonics



When the level is low, there are less harmonics

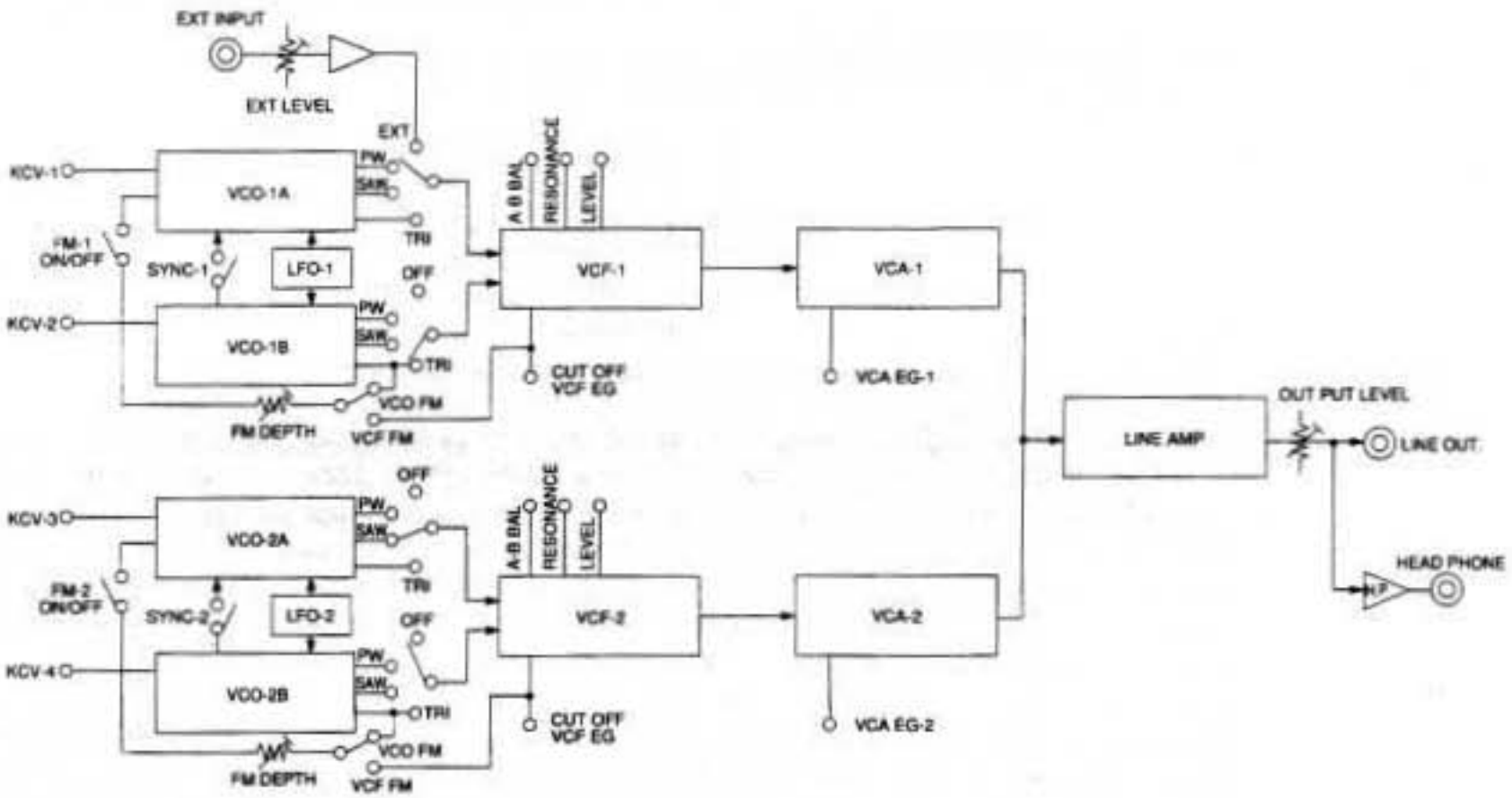


Synthesizer is a machine that enables to create a variety of sounds with Oscillator, Filter, and Amplifier which correspond to three factors of a sound - Pitch, Tone, and Volume respectively, plus Envelope Generator (EG) which determines.the time variance of them. That is, to speak about the EWI3000m, Audio signal output from Voltage Controlled Oscillator (VCO) will be processed in its harmonic configuration, by Voltage Controlled Filter (VCF) and EG, then determined in its volume, by Voltage Controlled Amplifier (VCA) and EG. This is a process for a basic sound to be created.
Furthermore, for the synthesizer to be called an "instrument", it must have a controller to make it possible to play in any key scale and pitch. Many synthesizers are adopted with keyboard type controllers, however, the EWI3000m uses a wind instrument type controller (EWI3000). Additionally, a key scale and pitch will be obtained by Control Voltage (CV) from the controller, which is actually used to control the VCO ,VCF, and VCA.

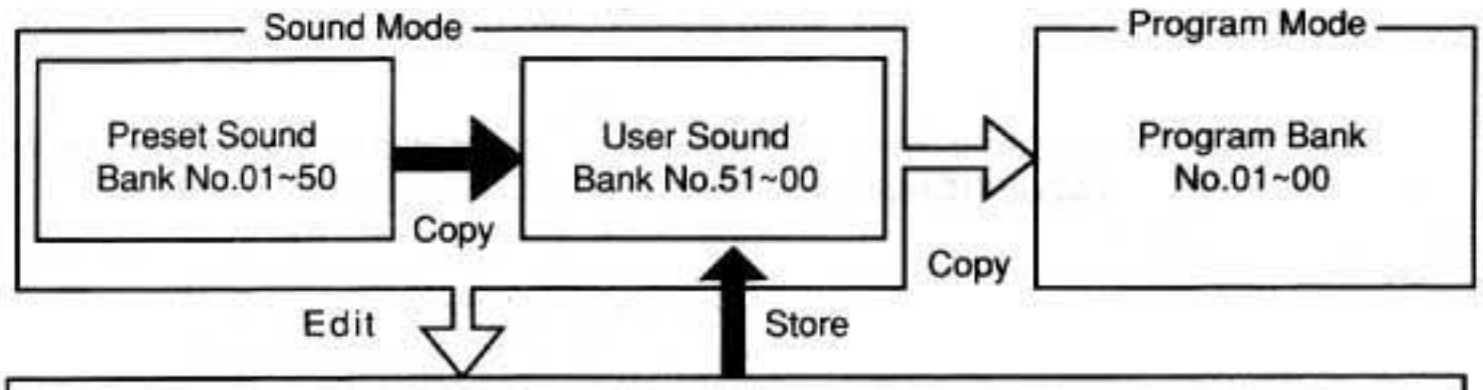


2. Signal Flow in EWI3000m

The EWI3000m has 2 routing of Sources, and 2 VCOs, 1 VCF and 1 VCA plus various parameters: 2 EGs, several effects, etc., are provided to each Source. Therefore, it offers many possibilities for creating sounds. For example, you can mix four different sounds, whose attack, decay, sustain, release, etc., can each be varied.



With the EWI3000m, you can edit and create a sound by recalling each parameter on the 16 character LCD and setting its value.
New sounds created from preset sounds or so in the Sound Banks can be saved in the User Banks (NO.51-00) and can be used as your own original sound.

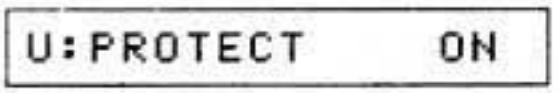


Edit Parameter	
(Source 1)	(Source 2)
VCO-A E. NO. 00~06	VCO-A E. NO. 00~06
VCO-B E. NO. 10~16	VCO-B E. NO. 10~16
VCF E. No. 20~28	VCF E. No. 20~28
VCA E. No. 30~36	VCA E. No. 30~36
LFO E. No. 40~42	LFO E. No. 40~42
TRIGGER E.No.50	TRIGGER E.No.50
VIB/BEND E. No. 60~62	
CHORD E. No. 70	
BREATH E. No. 80~84	BREATH E. No. 80~84
LABEL E. No. 90	

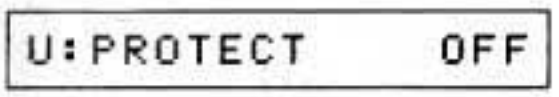
3. Procedure of Editing

You can easily edit and create a new sound on the EWI3000m once you know how each parameter is concerned with the sound you want. Actual procedure of sound editing is as follows:

a. Press the **UTILITY** button to enter the Utility mode.



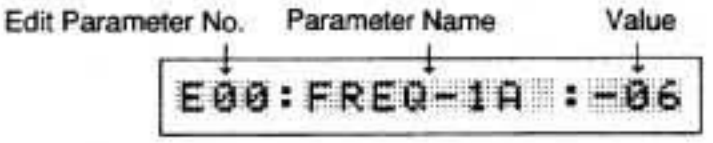
b. The first screen in the Utility mode is concerned with the Memory Protection. Using the **VALUE DOWN** button, turn the Memory Protection "OFF".



- Editing or writing of all data in the EW3000m cannot be done with the Memory Protection "ON". Whenever powering up the EWI3000m, the Memory Protection is automatically set to the "ON" position so that you need to cancel this to start editing or writing.

c. Press the **SND/PRGM** button to enter the Play mode (Sound mode).

d. Choose a sound you want to Edit. Then press the **EDIT** button, and you will enter the Edit mode.

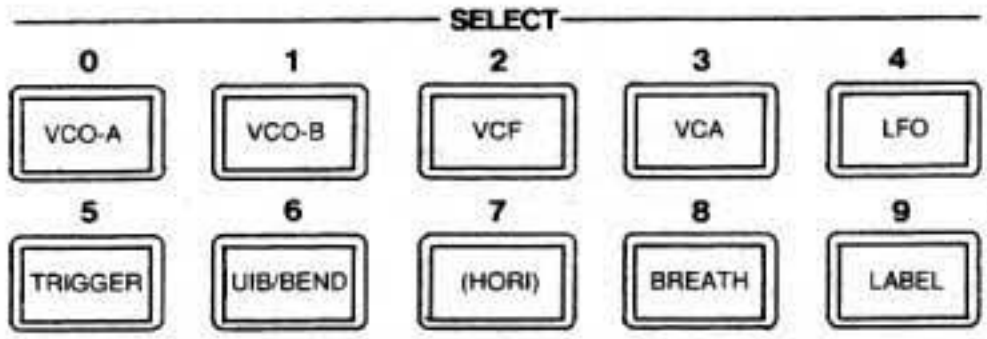


- Screen display is different depending on the parameter.

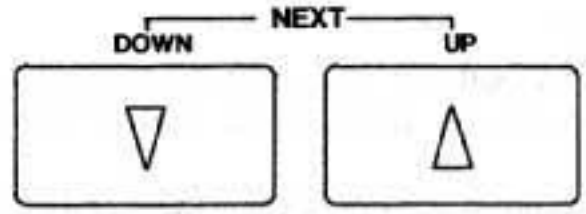
e. Refer to the Parameter List on the Front Panel, and select the Edit parameter No. you wish.

<How to Select the Parameters>

Consulting the Parameter List on the Front Panel, you see the parameters are classified into 10 groups: **VCO-A, VCO-B, VCF, VCA, LFO, TRRIGGER, VIB/BEND, CHORD, BREATH,** and **LABEL**. These groups correspond to the **SELECT** keys 0-9. Every time you press one of the **SELECT** keys, you can recall the parameter of that group in order (forward). Also, after pressing the Select key chosen, you could press the **NEXT UP/DOWN** button to recall the parameters in that group forward or backward. And if the **NEXT UP/DOWN** button pressed and held, parameters will be changed rapidly.



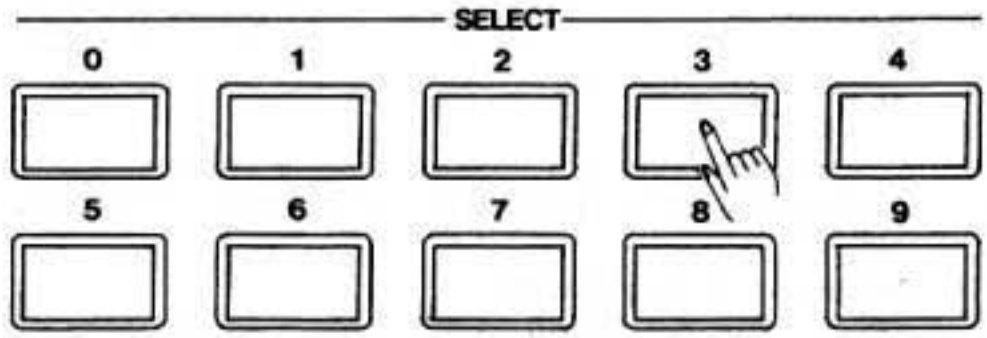
Select keys 0-9 correspond to 10 groups and recall the parameters in that group in order.



NEXT UP/DOWN button recall the parameters in that group forward/backward.

For example, If you want to recall the Edit Parameter No.35 (DEPTH of VCA group), press Select key 3, six times. Of course after you pressed the **SELECT** key <3> once, you could continue with the **NEXT UP/DOWN** button.

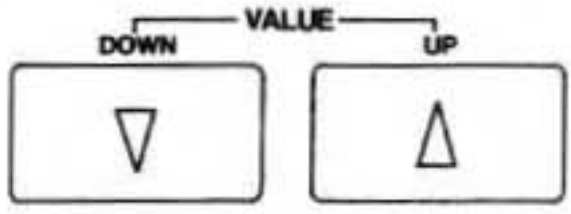
Ex. When you want to recall Edit Parameter No.35 (DEPTH of VCA group)



Press 6 times.

* Remember the way you operate the **SELECT** keys and **NEXT UP/DOWN** button for recalling an Edit Parameter, is different from when selecting a sound from Sound/Program Banks.

f. Assign the value of the parameter you recalled, using the **VALUE UP/DOWN** button.



g. Selecting the Source

Press the **SOURCE 1/2** button when switching the source while editing. The display will show 1 or 2 with the parameter name to indicate which source you are working on.

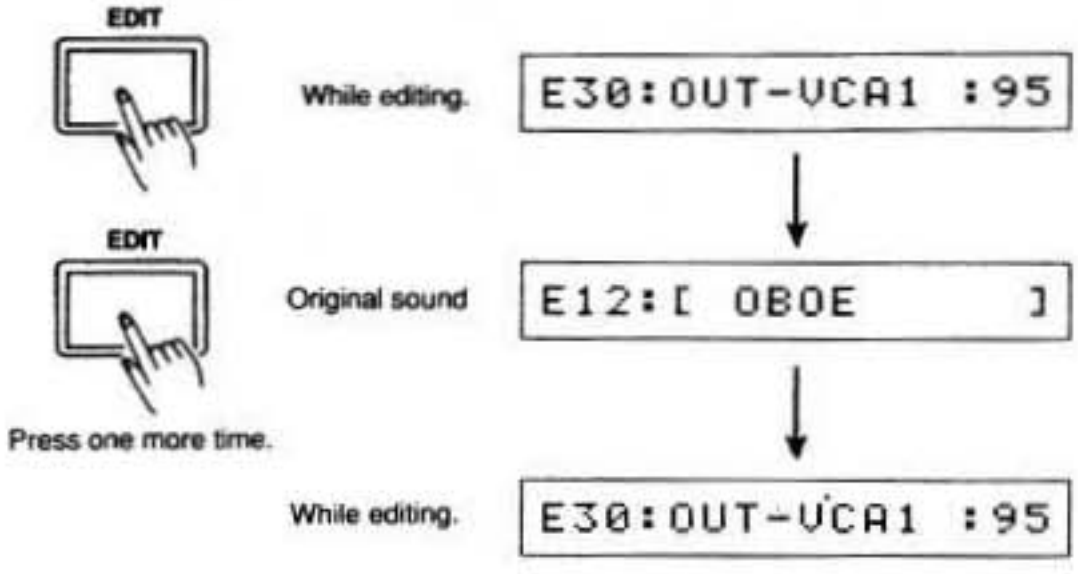
Ex. Changing the source of Edit Parameter No.01 (FINE of the VCO-A group) from <1> to <2>.



* If a parameter has no relationship with the source, even though you press the **SOURCE 1/2** button, there will be no change. Also, remember that each parameter's display is different.

h. Use of Compare Function

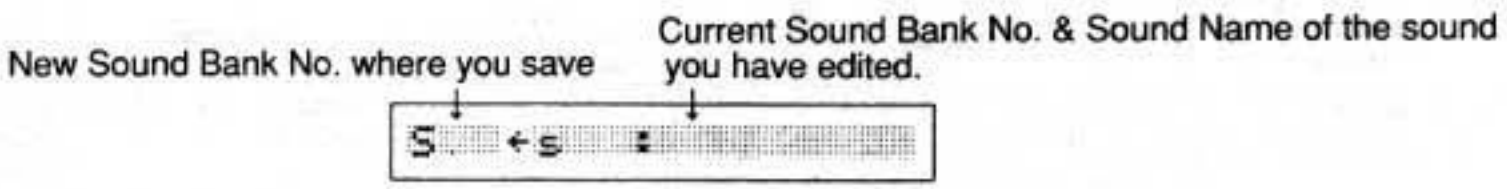
While editing, if you press the **EDIT** button, you can hear the original sound you started with, to compare with the one you are currently editing. If you press the **EDIT** button again, the parameter and sound will return to the one which you were working on. This allows you to create sounds while referring back to the original sound for comparison. Also, this function allows you to check the Bank No. and sound name in the display, so it is helpful for you to ensure the original sound name when renaming it using the Edit Parameter No.90 (REGIST of LABEL group).



i. How to Save a Sound

After completion of editing, you can save the sound data which you have created, to Sound Bank No.51-00 (up to 50 sounds totally). Do the following procedure:

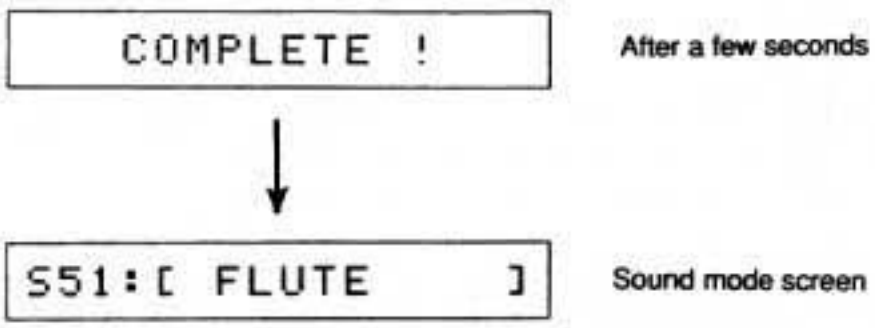
Step 1: After editing, press the **WRITE** button, then the display will change as follows:



Step 2: Choose one of the Sound Banks No.51-00, where you wish to store the edited sound using the **VALUE UP/DOWN** button. The Bank No. chosen will be shown on the left side of the display.

* If you want to interrupt the saving procedure, press the **EDIT** button again. Then the screen will return to the parameter screen where you were editing.

Step 3: When you press the **WRITE** button again, the display will show "COMPLETE ! " for a few seconds as shown below. After saving procedure is completed, it will automatically return to the Play mode (Sound mode), and the display will show the sound name you just saved. At this time, the Memory Protection in Utility mode, will automatically be set to "ON".



* If you press the **SND/PRGM** button while editing, it will return to the Play mode. However, all value of the parameters you set will be lost and return to their original value, so be careful of this.

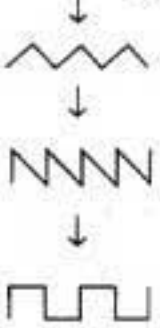
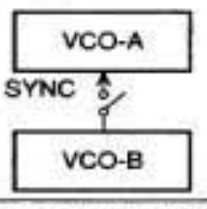
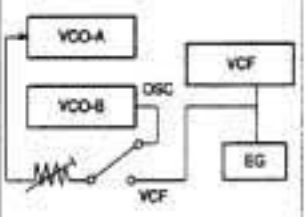
This completes the explanation for sound editing.

4. Parameter Table

Here you have detailed explanation of each parameter's function.

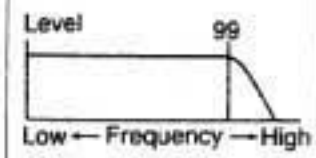
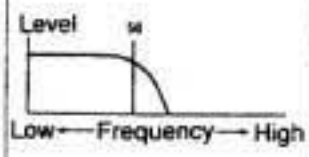
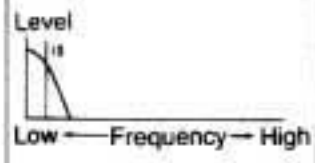
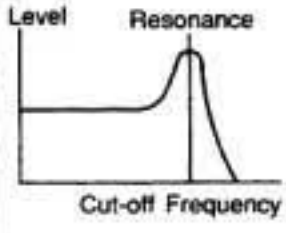
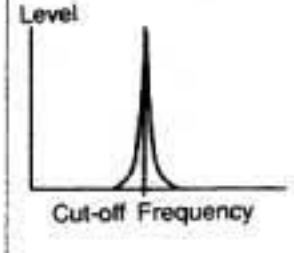
<VCO-A/B> (Common to Source 1 & 2)

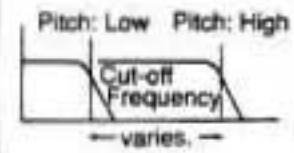
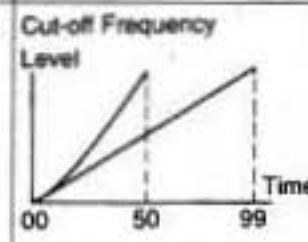
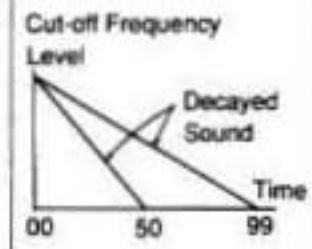
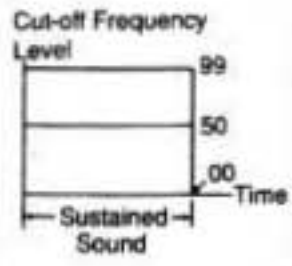
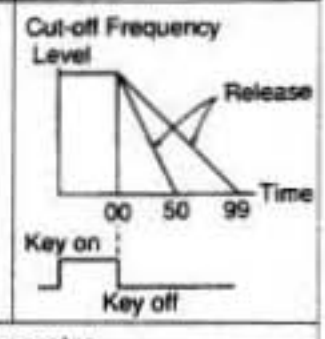
* Functions of the VCO-A and VCO-B are the same. The only difference is the display of the Edit No. So you can use the same table (except for those marked with an asterisk).

Parameter Name	Display	Value DOWN	Value UP	Function	Change of Sound
00 FREQ (10 FREQ)	E00:FREQ-1A : 00	-12	+24	Setting the basic range for VCO: -12=16' +12=4' 00=8' +24=2'	Basic range will be changed within 4 octaves (by a half step).
01 FINE (11 FINE)	E01:FINE-1A : 00	-50	+50	Fine adjustments of the VCO pitch within a range of +/- 50 cents.	
02 WAVE (12 WAVE)	E02:WAVE-1A EXT.	* EXT. or ↓ 	OFF	Selecting the waveform for VCO. 3 basic waveforms provided. * Only VCO-A of Source1 has EXT. Select this when you use an input signal from the EXT IN terminal, as a sound source. When thereis is no display, that means "OFF".	Basic sound will be changed depending on the waveform.
03 PULSE (13 PLUSE)	E03:PULSE-1A: 00	00	99	Changing the Pulse Width of the waveform (Square wave) for VCO.	Tone will be changed according to Pulse Width change.
04 SYNC (14 SYNC)	E04:SYNC-1 :OFF	OFF	ON	Synchronized operation between VCO-A and VCO-B. 	Effective tone will be obtained. VCO-A will be affected by the pitch of VCO-B.
05 MOD (15 MOD)	E05:FM1=> OSC:00	OSC	VCF 00-99	When selecting "OSC": VCO-A is modulated by VCO-B's waveform (Triangle wave). This can produce non-integeral harmonics. When selecting "VCF": VCO-A is modulated by changes in waveform and envelope of VCF.	Tone will be changed. Depending on the depth of modulation, the pitch becomes inaccurate. 

Parameter Name	Display	Value DOWN	Value UP	Function	Change of Sound
06 BALANCE (16 BALANCE)	E06:BAL1:A50-50B	A0 - 100B A50 - 50B A100 - 0B		Setting up the level balance between VCO-A and VCO-B, which is input to VCF.	

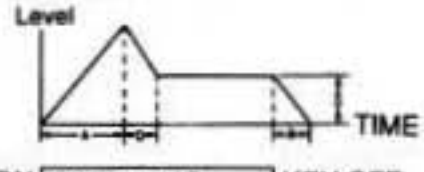
<VCF> (Common to Source 1 & 2)

Parameter Name	Display	Value DOWN	Value UP	Function	Change of Sound
20 CUT OFF FREQ	E20:FREQ-VCF1:00	01	99	Setting the cut-off frequency of VCF. This is one of the most important set-ups involved in creating sounds. When the value is set at 50 or above, the sound changes is little. When the value at 99, the filter is not used. When the value at 0, if the VCF EG, BREATH VCF, and VIB DEPTH are shallow, it may happen that no sound is produced.	When cut-off frequency is lowered, harmonics included in the filtered waveform decrease and the tone changes.   
21 RESONANCE	E21:RESO-VCF1:00	01	99	Emphasizes the harmonics in the band near the cut-off frequency thereby obtaining changes in the tone. When the cut-off frequency value is 99, there is no effect. Also, a strident sound is produced (by VCF's self-oscillation) when the value is increased.	This makes it possible to create distinctive sounds. Also, with VCF's self-oscillation, special effect sounds can be made.  

Parameter Name	Display	Value DOWN	Value UP	Function	Change of Sound
22 KEY FOLLOW	E22:FLOW-VCF1:00	00	99	Setting the cut-off frequency to vary following the changes in the pitch.For example, if the sound is not clear when you play a high pitch of a certain sound whose cut-off frequency is set lowered, then bring up the value of this parameter. You will hear the sound become progressively more clear as you play higher notes, because the cut-off frequency will follow the pitch change.	
23 ATTACK	E23:ATTK-VCF1:00	00	99	Setting the Attack Time of VCF EG.	
24 DECAY	E24:DECY-VCF1:00	00	99	Setting the Decay Time of VCF EG.	
25 SUSTAIN	E25:SUS-VCF1 :00	00	99	Setting the Sustain Level of VCF EG.	
26 RELEASE	E26:RELS-VCF1:00	00	99	Setting the Release Time of VCF EG.	

Outline of Envelope Generator

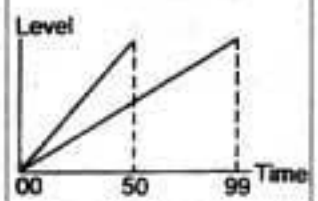
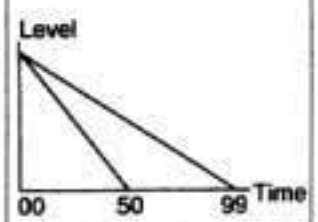
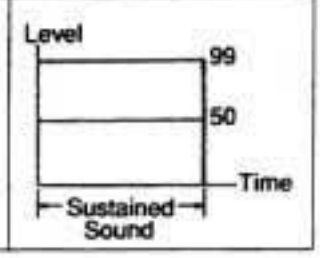
Sound editing depends on skillful setting of Envelope Generator.

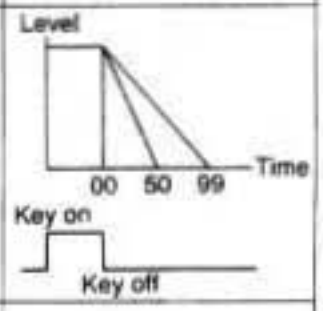


A=ATTACK TIME
D=DECAY TIME
S=SUSTAIN LEVEL
R= RELEASE TIME

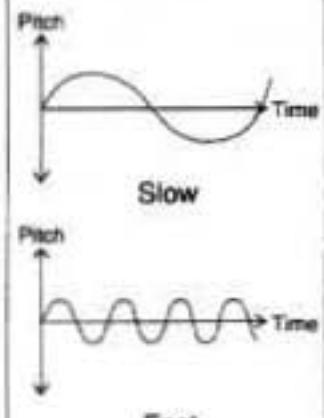
Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
27 DEPTH	E27:DPTH-VCF1:00	00	99	Setting the intensity of the VCF EG. It will be most effective when the cut-off frequency is set at 00, and the VCF EG value is set at 99.	One of the important parameter for creating sounds. Also, to obtain changes according to the breath intensity without VCF EG, set the value to 00.
28 VELOCITY	E28:VERO-VCF1:00	00	99	Changing VCF envelope according to the velocity data from MIDI IN. When the value is 00, it can receive only Note On/Off data. The larger value is set, the better the unit will respond to velocity.	

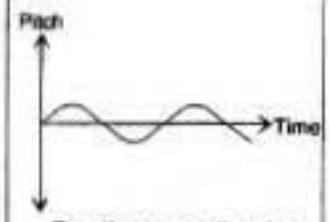
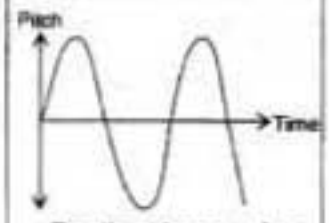
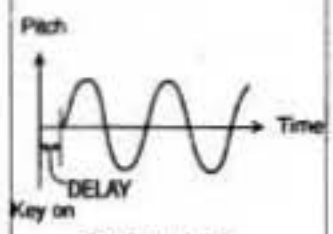
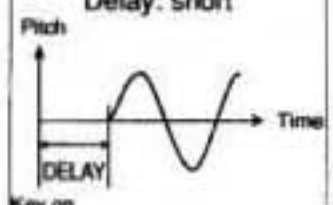
<VCA> (Common to Source 1 & 2)

Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
30 OUT PUT LEVEL	E30:OUT-VCA1 :00	00	99	Setting the output level from VCA. With the value at 00, no sound is produced, at 99 the output level is the maximum. When adjusting the volume balance between 2 VCAs (of Source 1 and 2), adjust each value to between 50 and 99.	
31 ATTACK	E31:ATTK-VCA1:00	00	99	Setting the Attack Time for the VCA EG.	
32 DECAY	E32:DECY-VCA1:00	00	99	Setting the Decay Time for the VCA EG.	
33 SUSTAIN	E33:SUS-VCA1 :00	00	99	Setting the Sustain Level for the VCA EG.	

Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
34 RELEASE	E34:RELS-VCA1:00	00	99	Setting the Release Time for the VCA EG.	
35 DEPTH	E35:DPTH-VCA1:00	00	99	Setting the intensity of the VCA EG. It will be most effective when the value is set at 99. When producing sound with the breath, always set the value to 00.	
36 VELOCITY	E36:VELO-VCA1:00			Changing VCA envelope according to the velocity data from MIDI IN. When the value is 00, it can receive only Note On/Off data. The larger value is set, the better the unit will respond to velocity.	

<LFO> (Common to Source 1 & 2)

Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
40 SPEED	E40:SPED-LF01:00	00	99	Setting the speed of the low frequency output from the LFO (Low Frequency Oscillator). The larger value set , the faster the speed becomes. 	(Controlling the LFO speed, you can modulate the waveform of the VCO-A and VCO-B, and produce a Vibrato effect. Assigned LFO speed equals the Vibrato speed.

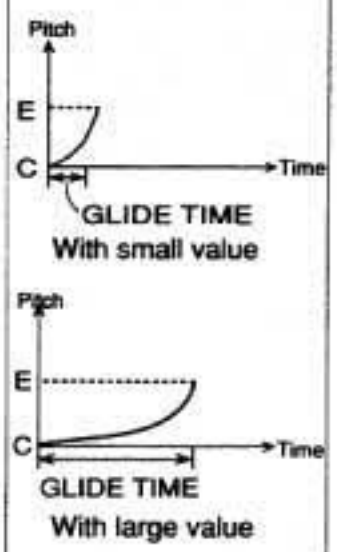
Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
41 DEPTH	E41:DPTH-LF01:00	00	99	Setting the depth of the LFO modulation. The larger value set, the wider the fluctuation of the pitch, and the modulation to the VCO-A and VCO-B will increase.  Depth at small value  Depth at large value	The larger value is set, more Vibrato effect is obtained.
42 DELAY	E42:DELY-LF01:00	00	99	Setting the delay time until the LFO starts modulating VCO-A and VCO-B. The larger value is set, the longer the time will be.  Delay: short  Delay: long	If you set up the delay time skillfully, there will be a slight period before the Vibrato comes in, which gives the expression of an acoustic instrument.

<TRIGGER> (Common to Source 1 & 2)

Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
50 SELECT	E50:TRG1:SINGLE	SINGLE	MULTI	Selecting a trigger signal type to activate the VCF EG and VCA EG. Usually use at "SINGLE". At "MULTI", a new trigger signal is generated each time a Note Key is touched on the EWI3000 Controller.	"SINGLE" is better for playing non-legato or legato music. Use "MULTI" for staccato and non-legato music. For details of Trigger, see page 50. * Glide effect will be obtained only when selecting MULTI trigger.

<VIB/BEND>

* The following parameters of Vibrato and Bend effects have a good concern with the EWI3000 Controller or another external controller, of course depending on the sounds and effect settings on the Front Panel.

Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
60 BEND WIDTH	E60:BEND UP0 DW0	0~7	0~7	Setting the Pitch Bend range of the 4 VCOs. 2 Pitch Bend ranges for both upwards and downwards can be set individually, within a range from 0 to 7.	Use the EWI3000 Controller to obtain the Pitch Bend effect within the range set up with this parameter.
61 VIB DEPTH	E61:VIB DEPTH:00	00	99	Setting the depth of Modulation to the 4 VCOs. The larger value is set, the more modulated sound will be obtained.	Use the EWI3000 Controller to obtain the Vibrato effect, which corresponds to the depth set up with this parameter.
62 GLIDE TIME	E62:GLIDE :00	00	99	Setting the Glide time. The larger value is set, the longer the Glide time will be. 	Use the External MIDI Controller to obtain the Glide effect in the Glide time set up with this parameter. * Glide effect itself will be switched on/off on the Front Panel. * Glide effect will be obtained only when selecting MULTI trigger for the parameter E.No.50 SELECT.

<CHORD>

Parameter Name	Display	Value		Function
		DOWN	UP	
70 ASSIGN	E70:CHORD :OFF	OFF	ON	Setting the MIDI Chord. This is not related to sound editing. For details, refer to page 65.

<BREATH> (Common to Source 1 & 2)

* The following parameters have a great concern with the breath settings or effects by breath control when playing on the EWI3000 Controller.

Parameter Name	Display	Value		Function	Change of Sound
		DOWN	UP		
80 VCF	E80:BRTH VCF1:00	00	99	Use when controlling the cut-off frequency of VCF by the intensity of the breath. It is most effective when the value is set to 99 with the VCF cut-off frequency set to 00.	This enables you to change the tone according to the intensity of the breath. One trick to editing is to adjust the value skillfully to achieve better balance when the VCF EG depth is set at a large value.
81 VCA	E81:BRTH VCA1:00	00	99	Use when controlling the level of the VCA by the intensity of the breath. It is most effective when the value is set to 99 with the VCA EG depth set to 00.	This enables you to express dynamics of the volume according to the intensity of the breath. One trick to editing is to adjust the value skillfully to achieve beter balance when the VCF EG depth is set at a large value.
82 PULSE	E82:BRTH PW1 :00	00	99	Use when controlling the Pulse Width of the VCO waveform according to the intensity of the breath.	Slight changes in the tone is obtained according to the intensity of the breath.
83 RESONANCE	E83:BRTH RES1:00	00	99	Use when controlling the resonance of VCF by the intensity of the breath. It is most effective when the value is set to 99 with the VCF resonance set to 00.	Greater changes in the tone is obtained. When the resonance of VCF is strong, strident sounds may be produced unless the value is well adjusted.
84 VCO BAL	E84:BRTH BAL1:00	00	99	Setting the level balance between VCO-A and VCO-B, by the intensity of the breath. With a larger value, VCO-A level will be higher. Otherwise, VCO-B level higher.	Tone change effect will be obtained according to the intensity of the breath. You can hear the effect to set the value <A00-B99>.

<LABEL>

Parameter Name	Display	Function
90 REGIST	E90:[_]	Placing a "Label" (sound name) on the sound you have edited. Up to 10 characters can be used for a name. For details, refer to page 53.

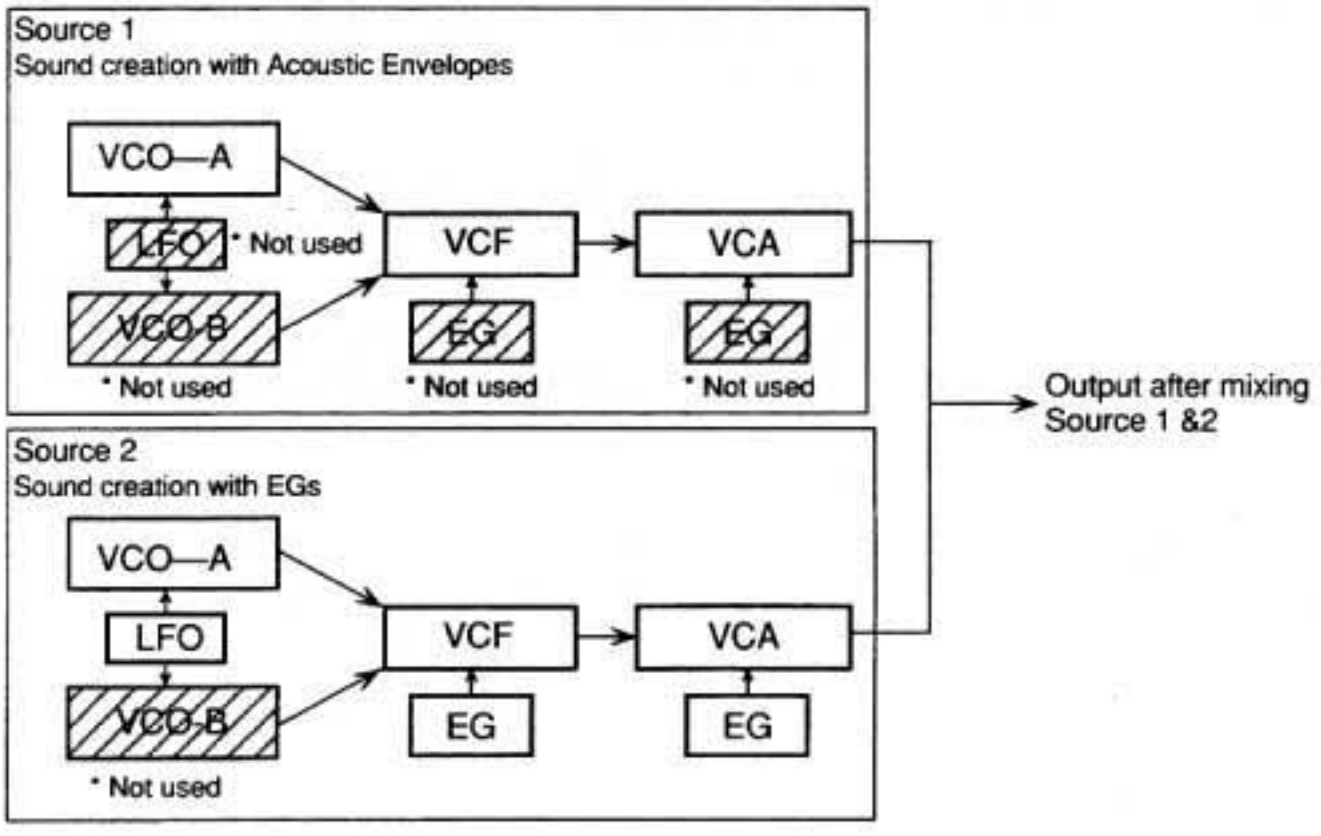
5. Sound Creation

Now, we will delve into the actual editing of sounds. However, if you can do it well in details, the edited sound will be called an original sound of yours. Let's see the two basic methods of sound editing on the EWI3000m as the following:

Method 1: This is by Acoustic Envelopes using the breath. This is the method best suited for playing the EWI3000 Controller. The Acoustic Envelopes output from the breath sensor, will control the VCF cut-off frequency, resonance, VCA level, and the VCO pitch, (by the breath of the player without VCF EG and VCA EG). This allows you to create a rich acoustic sound and variety of expressions.

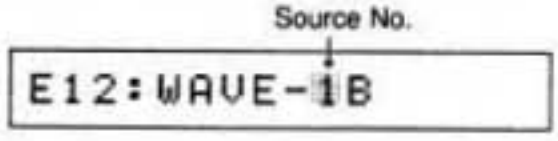
Method 2: This is by setting the VCF EG and VCA EG with skill to create a wide variety of sounds. This method is the same as with regular analog synthesizers. Percussive sounds or special effect sounds can also be produced. By using the breath with skill, it is possible to create a rich variety of dynamics and expressions.

The EWI3000m has two Sources, so that there can be a sound creation that is applying the above 2 methods to each Source and mixing Sources later. Or, another can be that assigning different waveforms to each Source's two oscillators (VCO-A and VCO-B) mixing them later. Of course, you can control the sound with various parameters and your breath at the same time to construct even more types of sounds. By utilizing these methods, you will be able to create a virtually endless array of sounds, effects and expressions.
See the following illustration. With Source 1, you will create sounds with Acoustic Envelopes using the VCO-A. With Source 2, you create sounds with VCF-EG and VCA-EG, using VCO-A. Both Sources can be mixed afterwards. Now, let's experience the actual process of sound creation using this example.

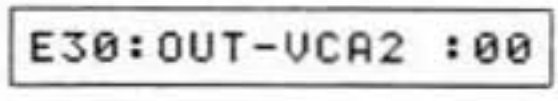


<Example Procedure for Creating Sounds with Acoustic Envelopes>

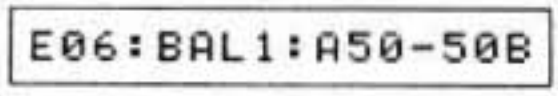
Step 1: To use only VCO-A of Source1, turn off the output of VCO-B, and total output of Source 2. To do this, select Edit Parameter No.12 WAVE (Note: All Edit Parameter No. will now be referred to as "E.No." in the following pages), and assign the value: "No display". At this time, make sure the screen is showing Source 1. If it is showing Source 2, you must change it to Source 1 using the **SOURCE 1/2** button, before proceeding with your set-ups. Now the VCO-B output of Source1 is turned off.

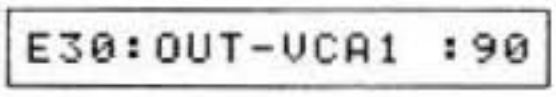


Next, change to Source 2 by the **SOURCE 1/2** button. Then select the E.No.30 OUTPUT LEVEL and change the value to 00 by the **VALVE UP/DOWN** button. Now the output of Source 2 has been turned offf.



- There is another way to turn off the output of Source 2, which is done by turning off the output of both VCO-A and VCO-B of Source 2.
- Also at this point, make sure the VCO-A level by E.No.06 BALANCE (Source 1) and output level by E.No.30 OUTPUT LEVEL (Source 1) are not too low. For now, let's set up as shown below:





Step 2: Next, Assign the values of E.No.80-84 (Source 1) for Breath Control as follows:

```
E80:BRTH VCF1:99
```

```
E81:BRTH VCA1:99
```

```
E82:BRTH PW1 :00
```

```
E83:BRTH RES1:00
```

```
E84:BRTH BAL1:00
```

With these settings, the Source 1 VCF and VCA operate according to the Acoustic Envelopes.

Step 3: Then, you need to turn off the VCF EG and VCA EG of Source 1. To do this, first, set up the value of E.No.27 DEPTH (Source 1) to "00", and the value of E.No.35 DEPTH (Source 1) to "00". Now, VCF EG and VCA EG are turned of. And with all these settings, VCF EG and VCA EG will operate according to the Acoustic Envelopes.

```
E27:DPTH-VCF1:00
```

```
E35:DPTH-VCA1:00
```

- There is another way to turn off the VCF EG and VCA EG. Set all the values of Attack Time (E.No.23 & 31), Decay Time (E.No.24 & 32), Sustain Level (E.No.25 & 33), and Release Time (E.No.26 & 34) to "00".

Step 4: Select the waveform. With E.No.02 WAVE, you can select one of three kinds of waveforms: Triangle, Saw Tooth, Square. At this time, try playing with these three waveforms, and assign the one you prefer to use. Also, "EXT" should be selected when the External MIDI sound source is in use. If "EXT" is chosen here, it will be the same as the "OFF" setting.

EXT: Waveform from external sound source.

Triangle: 

Saw Tooth: 

Square: 

```
E02:WAVE-1A ^^^^
```

- "EXT" selection is available with only VCO-A of Source 1. So nothing will be displayed with the other VCOs (VCO-B of Source 1, VCO-A and VCO-B of Source 2).

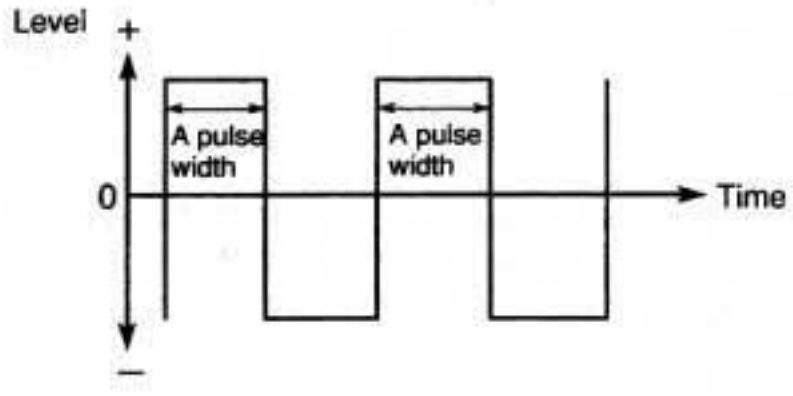
Note: **On Selecting the Square Wave**

When you select the Square wave, you need to set up E.No.03 PULSE. This parameter is for setting up the pulse width of the Square wave. This allows you to vary the Square wave and finally change the tone of the sound.

If you set this value at 00, Square wave itself won't be generated. When you select the Square wave, never fail to adjust the pulse width as you wish.

```
E03:PULSE-1A: 50
```

The larger value is set, the wider pulse width will be obtained. Additionally with the value "50", all pulse widths will be even.



Step 5: Next, set up the cut-off frequency. Recall E.No.20 CUT OFF FREQ and set the value. If you set it at 00, no sound will be produced unless you blow very strongly into the mouthpiece. But at 99, there is no variance in the sound character even when blowing lightly, or strongly.
So, set the value between 00 and 50, with which you can easily produce a good tone and expression. For now, let's set the value between 10 and 20, and go on to the settings for the resonance.

```
E20:FREQ-VCF1:20
```

Step 6: The resonance emphasizes the harmonics near the cut-off frequency. You can produce a synthesizer-like sound. Recall E.No.21 RESONANCE, and set the value. As the value increases, more amount of feedback will be added until the sound reaches a point that is quite strident or harsh (VCF's self-oscillated status). If you adjust the resonance skillfully, an effective sound will be obtained.

```
E21:RESO-VCF1:50
```

Step 7: Now, we need to set up the key follower. This parameter will dynamically move the cut-off frequency to follow the pitch and equalizes the differences in proportions of harmonic elements throughout the range of the instrument. Recall E.No.22 KEY FOLLOW and set the value. Try playing the EWI3000 Controller, and listen to the effect at different levels, then set at the point where the tone and volume will be equally balanced for all sounds from the bass through treble. Setting to 00 is no effect.

```
E22:FLOW-VCF1:50
```

These are the basic procedure for Sound Creation with Acoustic Envelopes. You have tried setting various parameters by trial and error. However, by repeating this process, and gaining more experience in producing desired effects, you will soon be able to have the sounds and style of your own image. Here, we used only VCO-A,but, you can also use VCO-B, and then you can combine them to create even more sounds. Your world of sound production will continue to expand by making advanced use of parameters, LFO, and modulation, which we will explain now.

<Example Procedure for Creating Sounds with EGs>

Step 1: To use only VCO-A of Source 2, turn off the output of VCO-B, and the total output of Source 1. To do this, select E.No.12 WAVE of Source 2, and assign the value: "No display". Then set the value of E.No.30 OUTPUT LEVEL of Source 1 to 00. Now, only the VCO-A of Source 2 will be generated.

```
E12:WAVE-2B
E30:OUT-VCA1  :00
```

* Also at this point, make sure the VCO-A level by E.No.06 BALANCE (Source 2), and E.No.30 OUTPUT LEVEL (Source 2), are not too low. For now, let's set up as shown below:

fig.71 (Source 2) E.No.0

```
E06:BAL2:A50-50B
```

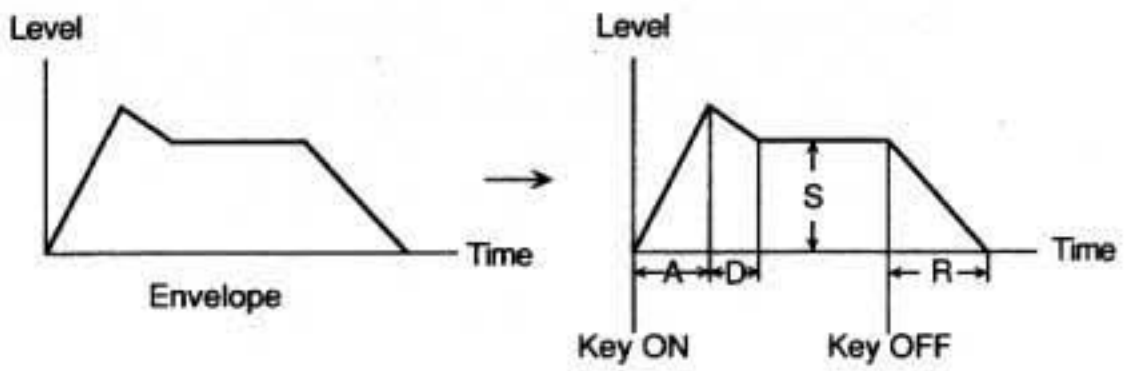
fig.72 (Source 2) E.No.3

```
E30:OUT-VCA1  :90
```

Step 2: Next, turn all values of E.No.80-84 (Source 2) for Breath Control, to 00.

```
E80:BRTH VCF2:50
E81:BRTH VCA2:70
E82:BRTH PW2  :00
E83:BRTH RES2:00
E84:BRTH BAL2:99
```

Step 3: Set up the Attack Time, Decay Time, Sustain Level, and Release Time of the VCF EG and VCA EG. With EG (Envelope Generator), you can simulate the time variance of the tone and volume of the sound, and these assignments are primary to the sound production on the synthesizer.



A: Attack Time, D: Decay Time, S: Sustain Level,
R: Release Time

For now, set the values of E.No.23-27, and E.No.31-35, which are concerned for VCF EG and VCA EG as follows:

```
E23:ATTK-VCF2:07
E24:DECY-VCF2:40
E25:SUS-VCF2 :85
E26:RELS-VCF2:07
E27:DPTH-VCF2:24
E31:ATTK-VCA2:09
E32:DECY-ACA2:50
E33:SUS-VCA2 :90
E34:RELS-VCA2:11
E35:DPTH-VCA2:64
```

Step 4: Next, recall E.No.02 to select the waveform, and E.No.03 to set the Pulse Width as shown below:

```
E02:WAVE-2A ▯▯▯▯
E03:PULSE-2A: 40
```

Step 5: Then, let's set the cut-off frequency, resonance, and key follow, of the VCF as shown below:

```
E20:FREQ-VCF2:02
E21:RESO-VCF2:03
E22:FROW-VCF2:42
```

In these settings let's try to play the EWI3000 Controller. You will be able to hear a certain familiar sound like a clarinet.
Also, by setting the VIB/BEND and BREATH parameters, it is possible to obtain dynamic expression according to the intensity of the breath.

When the EWI3000 Controller is blown strongly, the sound will be loud and bright. The brightness will change depending on the setting of E.No.80 VCF, and the volume depends on the setting of E.No.81 VCA. Set these values according to the phrase and mood to enlarge your capabilities for enhanced expression.

<Example Procedure for Mixing Source 1 and Source 2>

With the EWI3000, it is possible to mix and play two different sounds created with Source 1 and Source 2.

Step 1: First, recall Source1 E.No.30 OUTPUT LEVEL and set the value for volume between 00-99, as you feel appropriate.

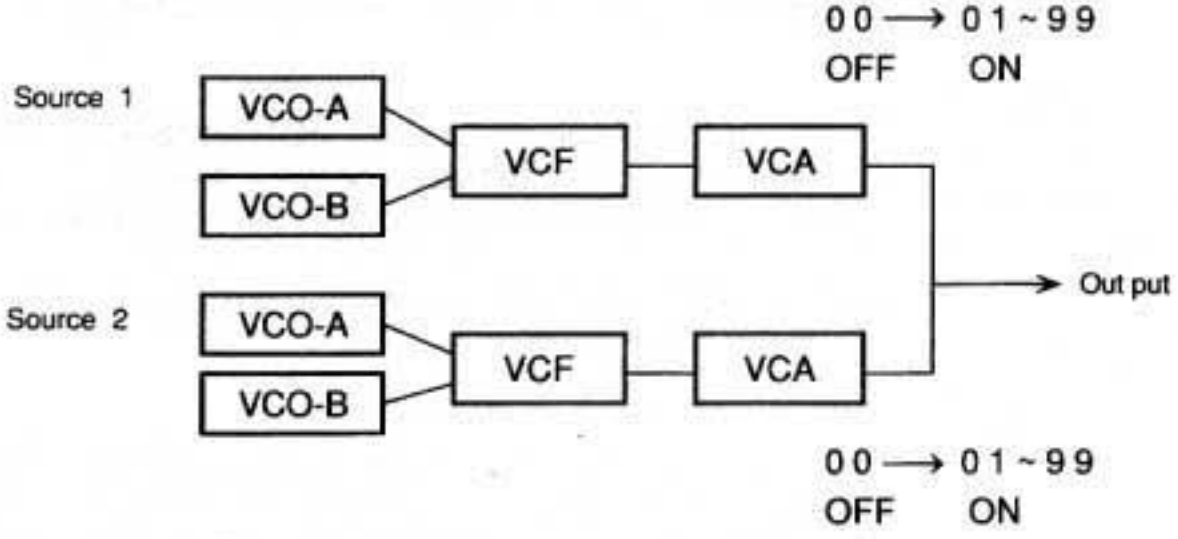
```
E30:OUT-VCA1  :90
```

Step 2: Next, press the **SOURCE 1/2** button, and recall Source 2 E.No.30 OUTPUT LEVEL and set the value for volume as you feel appropriate.

```
E30:OUT-VCA2  :85
```

* Because of the different settings in sound parameter between two Sources, the tone and volume of the two Sources will not always be equally balanced even though both OUTPUT LEVEL are set at the exact same value.

* If you set the value at 00, the Source will not be generated. Therefore, you can use this parameter as an "On/Off" switch for the Source output.



Step 3: Then, recall either Sources' E.No.00 FREQ and E.No.01 FINE and set a pitch to match the other Source's sound.

```
E00:FREQ-1A  :  00
```

```
E01:FINE-1A  :  00
```

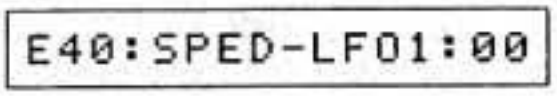
At this time, if detuning between two Sources is performed, it is possible to produce discordant sounds or consonant sounds such as 3rds or 5ths.

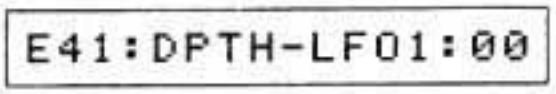
* In this example, only VCO-A of each Source was used. So when you want to create a heavier sound, you can also combine sounds from VCO-B of both Sources and detune among a total of 4 sounds.

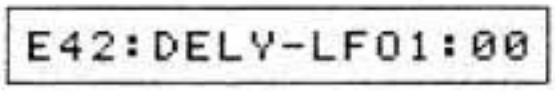
6. Other Functions

<LFO>

Using LFO, you can make a modulation of the waveform of the VCO-A and VCO-B and produce a Vibrato effect. So, you can apply the Vibrato to the sound itself without using the lip sensor of the EWI3000 Controller. And if setting it up skillfully, you can play a variety of sounds for a wider range of expression.
You can set up the speed of the Vibrato using E.No.40 SPEED, and the depth using E.No.41 DEPTH, and delay time by using E.No.42 DELAY. Now, try adjusting the values, and check the differences produced.







* Modulation with LFO is available on both Sources 1 and 2.

<Modulation Effect>

Besides Modulation using LFO, there are two Modulation functions.

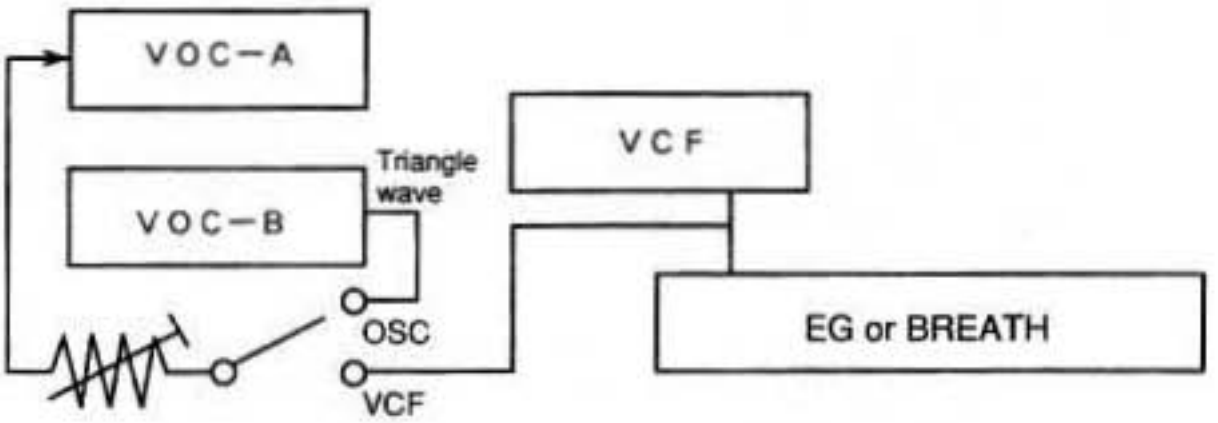
• OSC

This is a modulation to VCO-A by the Triangle wave of VCO-B.With OSC you can make more complicated variance in the sound, so a warbled pitch, trill effect or, special effect, etc., is possible with VCO-A waveform selected.

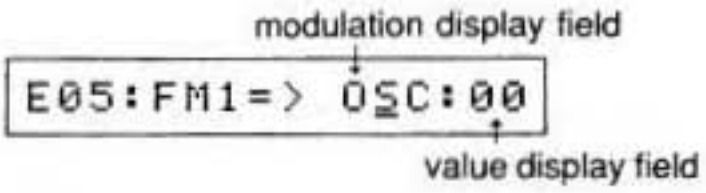
* Actually, this modulation can be performed with any other waveform assigned to VCO-B (even with VCO-B output "Off": No display).

• VCF

This is a modulation to VCO-A by the variance in waveform output from VCF (waveform filtered by VCF with EG). This will produce a pitch change in VCO-A. If you use this function with E.No.80 VCF or E.No.83 RESONANCE for Breath Control, you can acheive many creative effects.



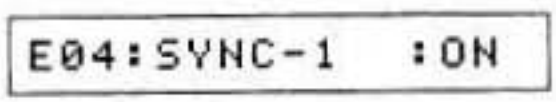
To make these modulations, first recall E.No.05 (or E.No.15) MOD. Then, using the **SELECT** keys or **NEXT UP/DOWN** button, move the cursor to the modulation display field, and then, select either OSC or VCF using the **VALUE UP/DOWN** button. Then, move the cursor to the value display field, and set the value in the same way. The higher value is set, the more modulation effect is produced.



- E.No.05 and E.No.15 are exactly the same parameter. So, you can assign the value in either screen, and the given effect will be the same.
- These two modulations, OSC and VCF are available on both Sources 1 and 2.

<Oscillator Sync>

The two VCOs (VCO-A & VCO-B) in the EWI3000m can be operated synchronously by turning the Sync switch On. This function makes the pitch of VCO-A synchronizing to the one of VCO-B. So, by choosing a different type of waveform for each VCO, or by using them together with other modulation functions, you are able to create a wide range of various sounds.
For example, if you change the pitch of VCO-B by Breath Control on the EWI3000 Controller (in this case you need to set up E.No.84 VCO BAL), the pitch of VCO-A will change simultaneously. Firtst recall E.No.04 (or 14), and turn on the switch by using the **VALUE UP/DOWN** button, and try to change each VCO's waveform, and check the resulting effects for yourself.



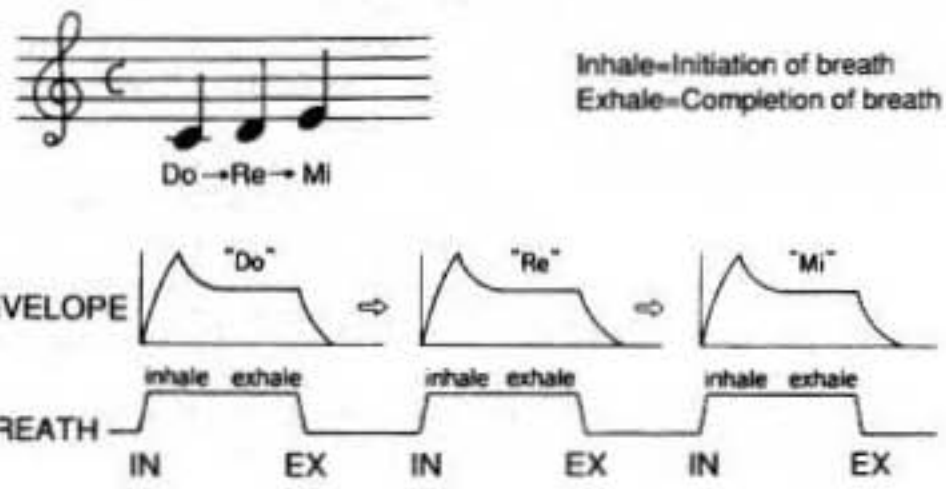
- E.No.04 and E.No.14 are exactly the same parameter. And Oscillator Sync function is available on both Sources 1 and 2.

<Triggers>

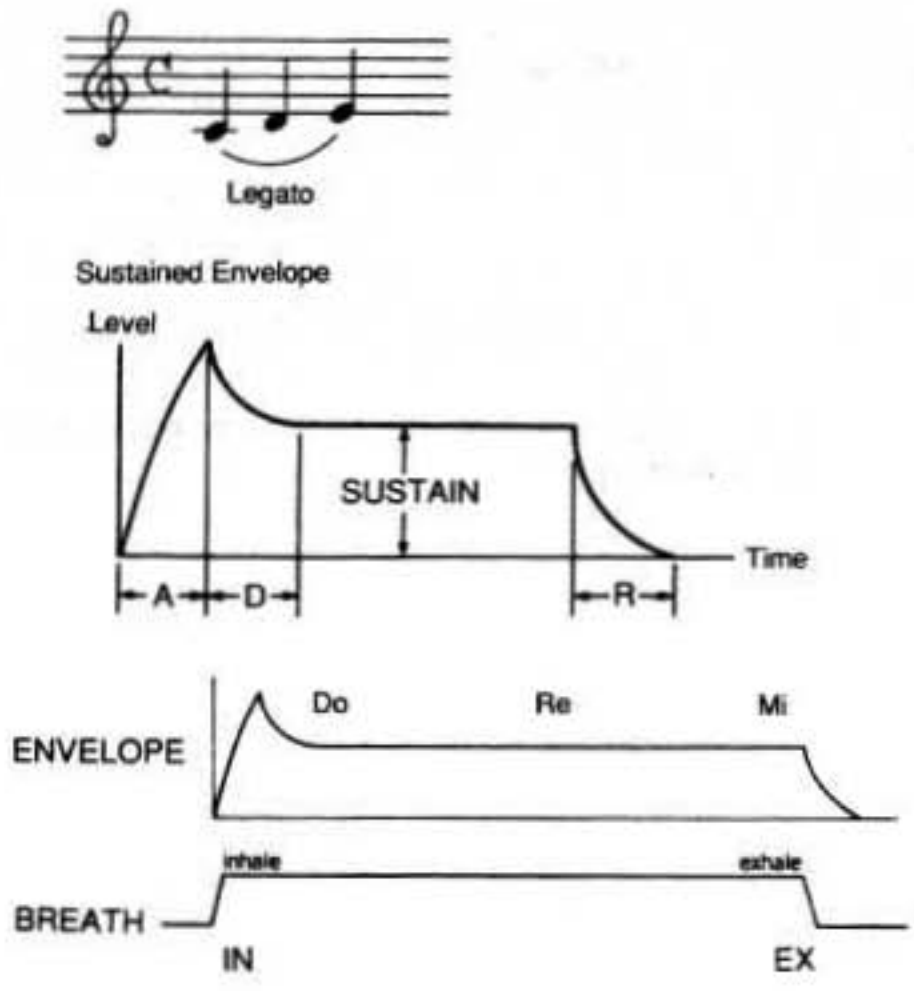
Each Envelope Generators (EGs) on the EWI3000m are equipped with two Trigger types: SINGLE and MULTI. Usually SINGLE trigger is used, but for non-legato and staccato pieces try using the MULTI trigger. For this setting, first recall E.No.50 SELECT, and choose either SINGLE or MULTI using the **VALUE UP/DOWN** button.

- **Single Trigger**

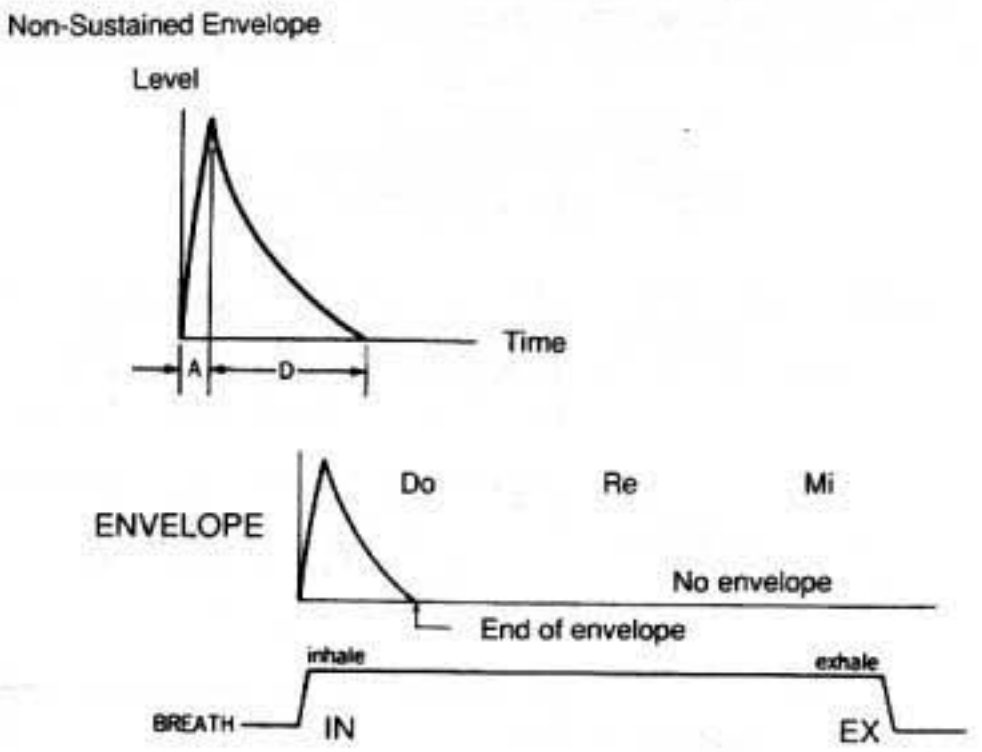
  The envelope curve which has been set, is generated each time you blow into the mouthpiece when playing non-legato. Selecting this trigger type, an envelope curve is generated for each note played.



If you blow continuously into the mouthpiece, that is if you play legato, the envelope curve will be held at the Sustain Level.



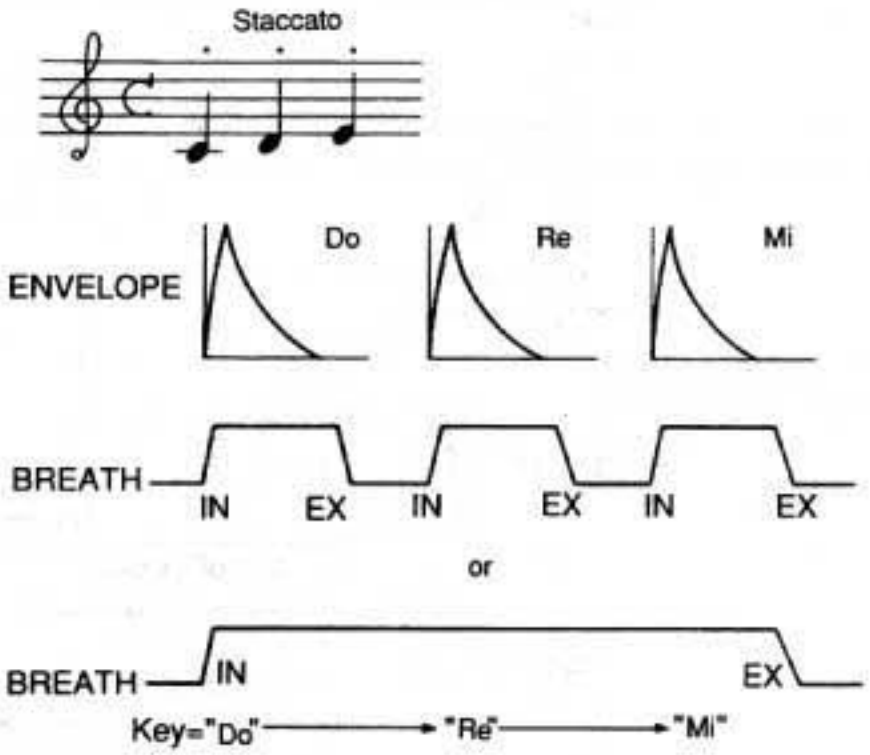
For a non-sustained envelope curve (sustain level=00), there is no envelope curve for the succeeding notes to be played, and these notes may not be produced.



Thus, it is difficult to play legato with a non-sustained envelope curve.
However, this is easily rectifiable by selecting MULTI trigger, which will be described next.

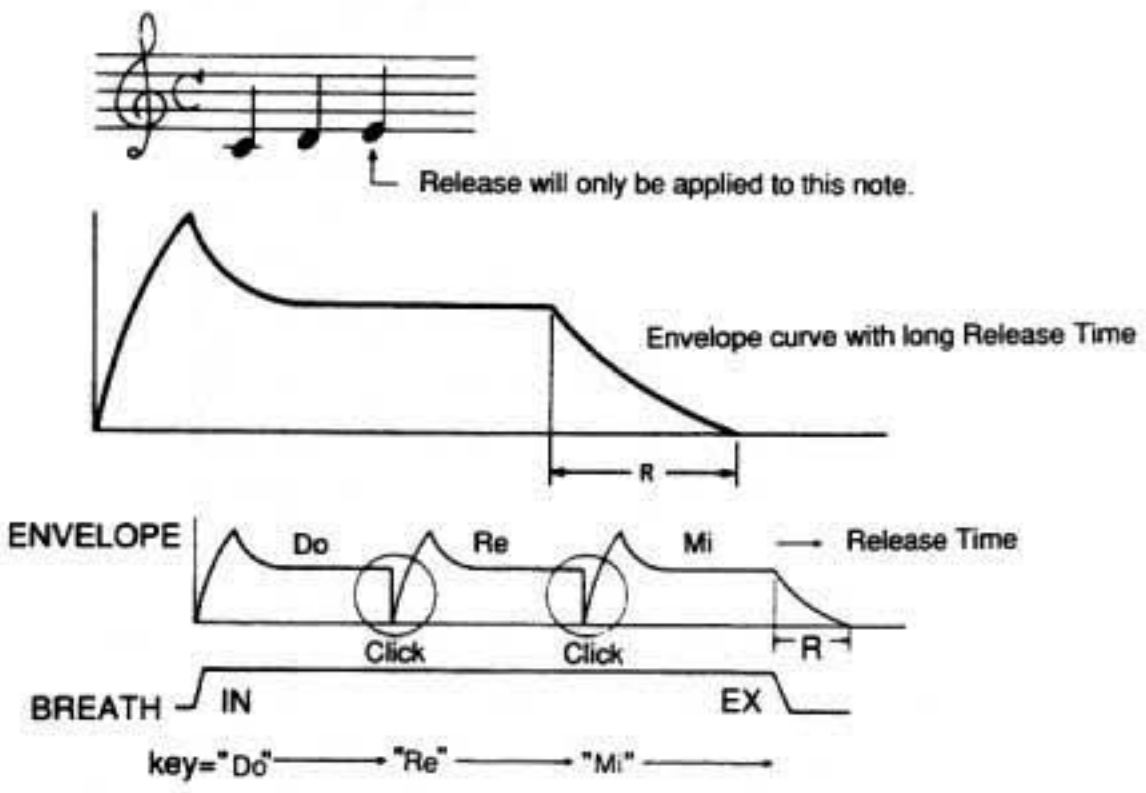
- **Multi Trigger**

The envelope curve which has been set is generated each time you blow into the mouthpiece or each time the pitch is changed by touching another note key or touching the same note key again. Thus, this trigger type is appropriate for playing non-legato or staccato, and for non-sustained envelope curves.



Notes are played staccato by changing pitches even while blowing continuously into the mouthpiece.

However, be careful of when the envelope curve is sustained or the Release Time is set long. For every time you play a note, release of the note is cancelled out by attack of next note, and this results in unnatural clicking sound. If "Do", "Re" and "Mi" are played as in the example, the release (set by Release Time of EG) will only be applied to the final "Mi". The clicking sound can be suppressed by changing the values of the Sustain Level and Attack Time. That is, If the Attack Time is short and the Sustain Level is high, there will be no clicking sound. However, this limits your sound creation, so that you had better use Multi Trigger for non-sustained percussive sounds.



<Labeling>

After setting the various parameters, you can make a Label (sound name) for the sound you have created. To do this, first recall E.No.90 REGIST. Then move the cursor to the desired position using the **SELECT** key <9> or **NEXT UP/DOWN** button and enter a letter, number, or sign you want using the **VALUE UP/DOWN** button. By repeating this step, you can enter up to 10 characters.



Move the cursor (under bar) using the **SELECT** key <9>, or **NEXT UP/DOWN** button.

Available characters: Letters; A-Z (upper case), Numbers; 0-9, Signs; 28 types.

[3] MIDI Applications

The EWI3000m is equipped with MIDI IN/OUT terminals, making it possible to play an external MIDI-compatible sound source using the EWI3000 Controller. And also, the EWI3000m can be controlled by an external MIDI instrument. The use of MIDI can remarkably extend your capabilities in playing the EWI3000m.

1. Transmitted and Received Data

<Transmitted Data from MIDI OUT Terminal>

- Transmit Channels (Ch.1-16)
- Note Number (22-111; standard. When transposition is made, the range is changed accordingly.)
- Velocity (Transmits the fixed value between 64-127.)
- Program Change (1-100, "00" indication means "100".)
- Control Change (Transmits selected one of the following: After Touch, Breath Controller, Main Volume, Modulation Depth, according to Breath.)
- Portament Time (Transmits Glide Time as a Control Change message)
- Hold (Transmits as a Control Change message.)
- Chord (Note Numbers of programmed Polyphonic Chord.)
- Pitch Bend Change
- System Exclusive (Bulk Dump)

<Received Data from MIDI IN Terminal>

- Receive Channel (Ch.1-16, OMNI)
- Note Number (22-111)
- Velocity
- Program Change (1-100, "00" indication means "100".)
- Control Change (Transmits selected one of the following: After Touch, Breath Controller, Main Volume, Modulation Depth .)
- Pitch Bend Change
- Portament Time (Transmits Glide Time as a Control Change message.)
- Hold (Receives as a Control Change message.)
- System Exclusive (Bulk Load)

* When you use the MIDI IN terminal, you need to unplug the authorized connection cable of the EWI3000 Controller from the INSTRUMENT jack of the EWI3000m.

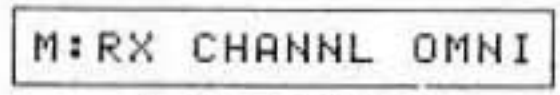
2. MIDI Parameters and Their Assignments

Parameters concerning MIDI are available in MIDI mode, UTILITY mode, and EDIT mode. Now, we will explain the Parameters and their settings in each mode.

<MIDI mode>

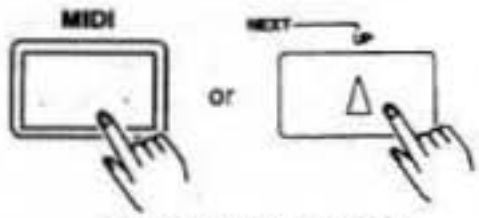
Step 1: By pressing the MIDI button, you will enter the MIDI mode. The display will show the set-up screen of the MIDI Receive Channel which is the first parameter.



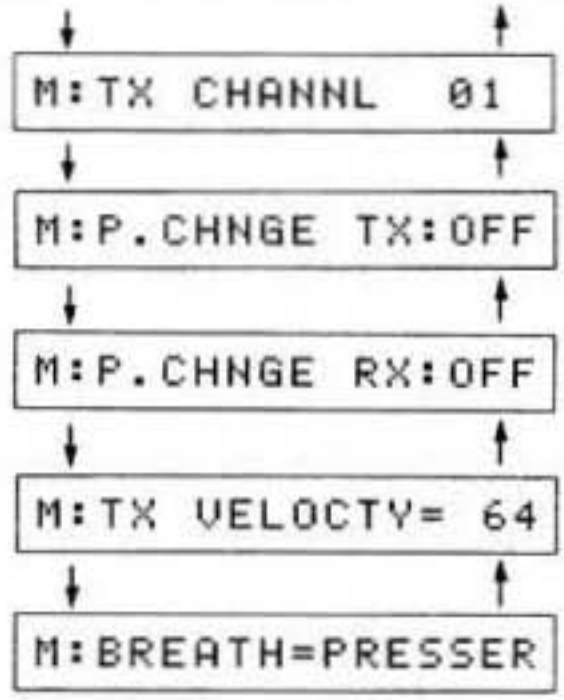


MIDI Receive Channel

Step 2: Then, each time you press the MIDI buttton or the **NEXT UP** button, the parameters set-up screens are recalled in order as shown below. Also, by pressing the **NEXT DOWN** button, you can move backwards.



Each time you press



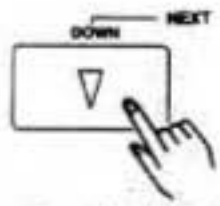
MIDI Transmit Channel

Program Change (transmission)

Program Change (reception)

Velocity (transmission)

Breath



Press to go backward.

Step 3: After you recall the parameter which you need, assign the value or status using the **VALUE UP/DOWN** button.

MIDI mode

Parameter	Display	Value	Function
MIDI Receive Channel	M:RX CHANNL OMNI	1~16, OMNI	For setting up the MIDI Receive Channel. By matching this channel with the Transmit Channel on the external MIDI component or instrument, the EWI3000m can receive MIDI data. Also, "OMNI" is the mode which can receive MIDI data on all Channels .
MIDI Transmit Channel	M:TX CHANNL 01	1~16	For setting up the MIDI Transmit Channel. The EWI3000m transmits MIDI data on this channel.
Program Change (transmission)	M:P.CHNGE TX:OFF	OFF, ON	For setting up whether to transmit Program Changes (ON) or not (OFF). When in the "ON" position, Program Changes can be transmitted by selecting the sounds (in Sound/Program mode). This is how you can change sounds of the external MIDI sound source. The Program Change Numbers correspond to Sound/Program Bank No.s 01-00.
Program Change (reception)	M:P.CHNGE RX:OFF	OFF, ON	For setting up whether to receive Program Changes (ON) or not (OFF). When in the "ON" position, you can select the sounds on the EWI3000m from the external MIDI device or instrument. The Program Change Numbers correspond to Sound/Program Bank No.s 01-00. If you match the Program Change No. on the external MIDI instrument with Sound/Program Bank No. of the EWI3000m, to combine sounds on both units, it will be very useful.
Velocity (transmission)	M:TX VELOCTY= 64	64~127	MIDI Notes Numbers can be transmitted with the fixed Velocity value set up with this parameter. The higher value is set, the more Volume of sound will be produced on the external MIDI component or instrument.

Breath	M:BREATH=PRESSER	PRESSER (PRESSURE)	Enables to transmit Channel Pressure (After Touch) data by the Breath Control on the EWI3000 Controller, or to receive Channel Pressure from the external MIDI component or instrument. For example, if the external MIDI keyboard has After Touch control, and if you press the keys harder than usual, you can get a modulation effect of the sound on the EWI3000m.
		BREATH	Enables to transmit Breath Contoller data by the Breath Control on the EWI3000 Controller, or to receive Breath Controller data from the external MIDI component or instrument. For example, using the Breath Controller on the external component or instruments, you can get a modulation effect of the sound on the EWI3000m.
		VOLUME	Enables to transmit Main Volume data by the Breath Control on the EWI3000 Controller, or to receive the Main Volume data from the external MIDI component or instrument.
		MOD.W	Enables to transmit Modulation Wheel data by the Breath Control on the EWI3000 Controller, or to receive Modulation Wheel data from the external MIDI component or instrument. For example, using the Modulation Wheel on the external component or instruments, you can get a modulation effect of the sound on the EWI3000m.
		OFF	If setting the value to OFF, the EWI3000m does not transmit/receive any of Channel Pressure, Breath Controller, Main Volume. In the ordinary use with EWI3000 Controller and EWI3000m, set to this position.

<Utility mode>

Step 1: By pressing the **UTILITY** button, you will enter the Utility mode, and the display shows MEMORY PROTECT ON/OFF screen which is the first parameter set-up screeen.

```
U:PROTECT      ON
```

Step 2: Recall the parameter which you want, using the **UTILITY** button or the **NEXT UP/DOWN** button, and then set up the value by the **VALUE UP/DOWN** button (same as in the MIDI mode).

Utility mode

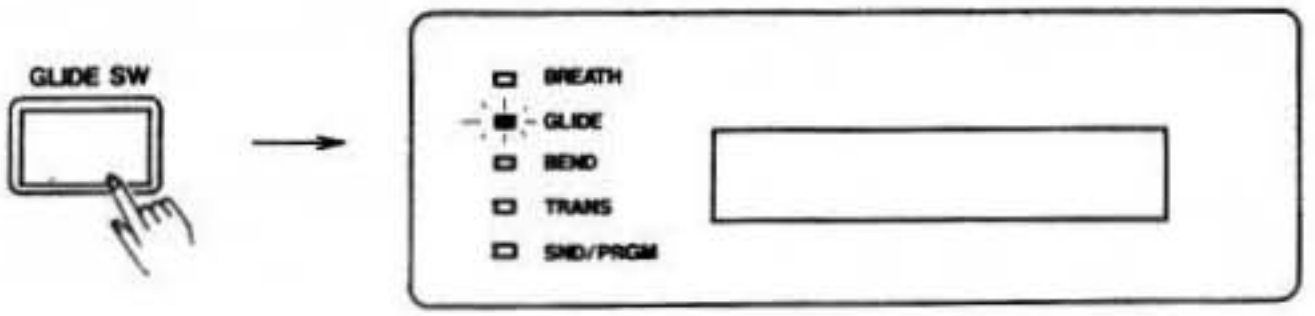
Parameter	Display	Value	Function
Memory Protection On/Off	U:PROTECT ON	OFF, ON	Switching the Memory Protection On/Off. Set to OFF position when you edit or write.
Priority	U:PRIORITY:LAST	UPPER, LOWER, LAST	The EWI3000m is a monophonic sound source. So, even if multiple Key Note data is transmitted simultaneously from the other MIDI component or instrument, (strictly, not transmitted at a time) only one note can be produced on the EWI3000m. Using this parameter you can determine which note will be given priority. For example, when the chord: Do, Mi, So is played by the other MIDI keyboard, if the Priority is set at UPPER, the highest note: So, will be played, if the Priority is set at LOWER, the lowest note: Do, will be played, or if set at LAST, the last note played will be produced on the EWI3000m.

Bulk Dump (transmission)	U:BULK DUMP TX ?		Use this parameter to transmit or receive the sound data, etc. between the EWI3000m and MIDI sequencers, etc. by using the MIDI System Exclusive message. Refer to page 71 for further information.
Bulk Load (reception)	U:BULK DUMP RX		
Bulk Verify	U:BULK VERIFY RX		Use this parameter to verify that the Bulk Dump data was correctly received by the EWI3000m. Refer to page 71 for further information.
Chord Program	CD01:--:--:--:--		Enables to make an external MIDI instrument play in polyphony, with Chord Patterns programmed on the EWI3000m. Refer to page 65 for further information.

<Edit mode>

We have already explained about the Edit Parameters in the previous section. Some of them concern MIDI, such as E.No.28 & 36 VELOCITY, or E.No.62 GLIDE TIME. They are used when controlling the EWI3000m by an external MIDI controller. Also, E.No.70 ASSIGN, is the parameter used when producing polyphonic sounds on the external MIDI sound source by the EWI3000 Controller via EWI3000m. For details about E.No.70 ASSIGN, you can refer to the explanation in "Chord Play Function", as explained later. The information on E.No.28 & 36 VELOCITY and E.No.62 GLIDE TIME, can be found in the previous section " 4. Parameter Table".

Note: **Use of Glide Switch**
Each sound's Glide Time set with E.No.62 GLIDE TIME is available while the EWI3000m is controlled by the external MIDI controller, and can be turned on/off with the GLIDE SW on the Front Panel of the EWI3000m. So, each time you press the switch, you can alternate the Glide effect's activation with the inactivation. Also, this will be indicated with the Glide LED lit up(ON) or turned down (OFF).



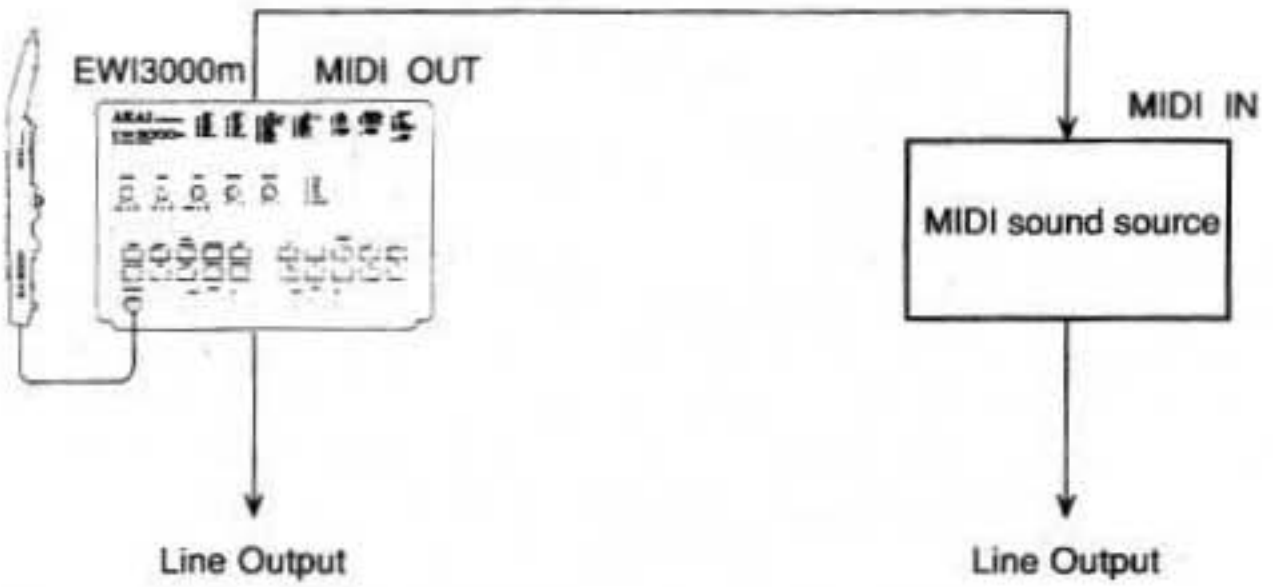
- In case you control the EWI3000m from the external MIDI controller, you have to disconnect the EWI3000m and EWI3000 Controller. Or you cannot control the unit from the MIDI controller.

3. Practical Examples

So far we have just explained the MIDI functions of the EWI3000m. Here you have some practical examples for putting those MIDI functions to use.

<Ex.1: Playing the External MIDI Sound Source Using the EWI3000 Controller>

Use a MIDI cable to connect the MIDI OUT terminal on the EWI3000m to the MIDI IN terminal on the external MIDI sound source.
Expression can be widened by the skillful mix of the Line Outputs of the two units.



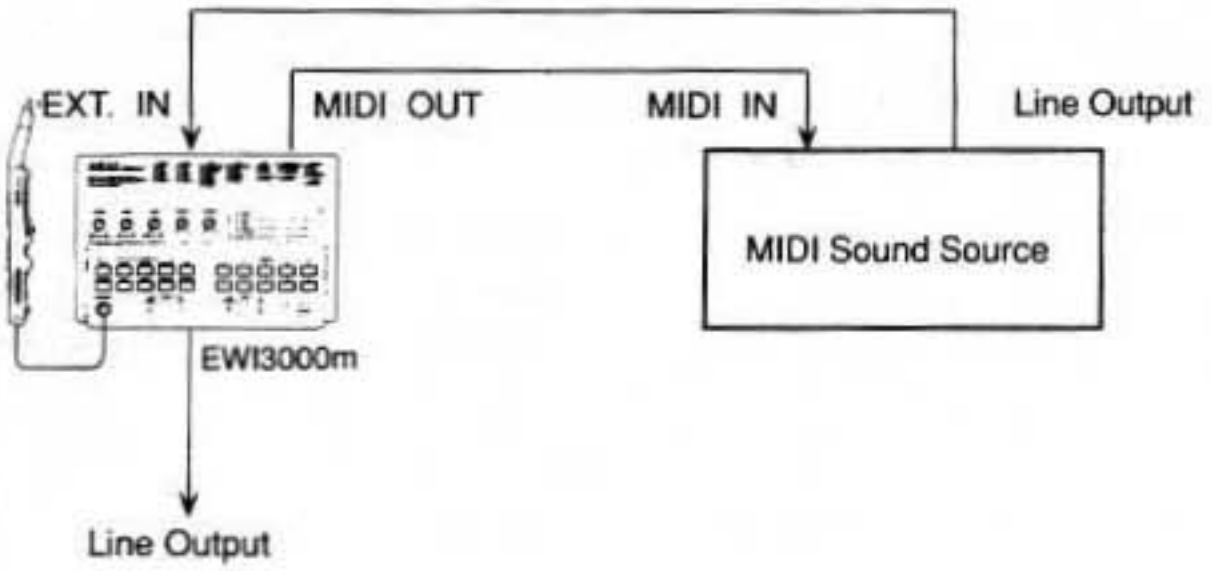
When you use both units in this connection, first match up the Transmit Channnel on the EWI3000m and the Receive Channel on the external MIDI sound source, and appropriate MIDI set-ups in need. For example, If you match the Program Change No.s on both units beforehand, when you select the sounds on EWI3000m, you can change the sounds on the external MIDI sound source as well, which can prove very useful. Additionally, when you wish to mix the Line Outputs, sound combination with both units will be considered for each sound to be well mixed. Also, you can further meet the challenge of sound creation to add a variety of effects to the external MIDI sound source by controlling the BREATH, PITCH BEND, GLIDE, etc., with the EWI3000 Controller.

* In this case, remember to match the Pitch Bend Range or the Tuning on the EWI3000m, to the external MIDI sound source.

<Ex.2: Using the EXT IN Terminal to Enhance Expression>

As seen in Ex.1, the Velocity transmitted from the MIDI OUT terminal, is fixed any one value between 64-127. So dynamics cannot be achieved using Breath Control. Hiowever, when using the EXT IN terminal equipped to the EWI3000m, to which inputting the Line Output signal of the external MIDI sound source, you can add expression - dynamics or modulation to the sounds of the external MIDI sound source. At this time, input signal can be processed via VCFs and VCAs by the Breath Control of EWI3000 Controller.

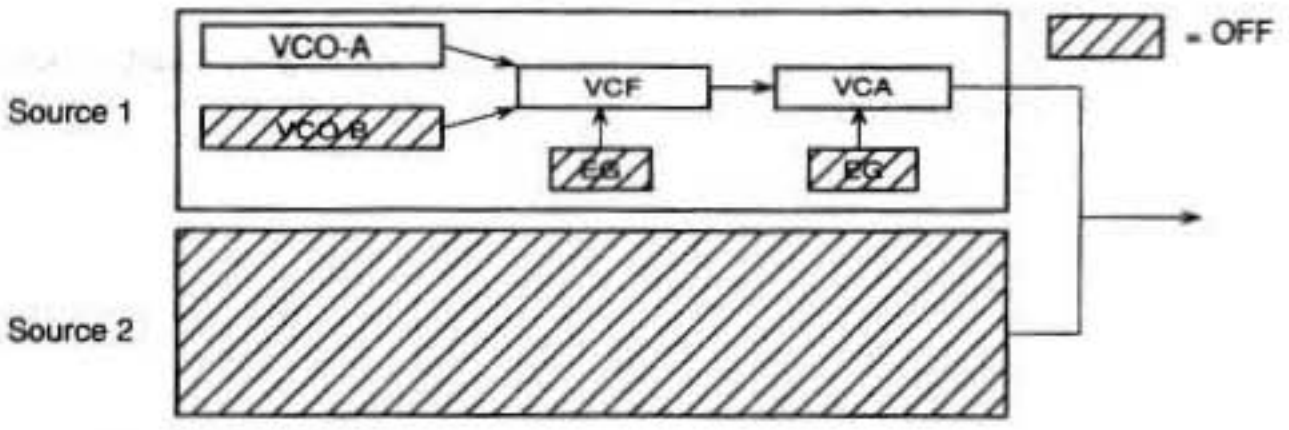
Step 1: Connect the units with a MIDI cable and an audio cable with standard phone plugs.



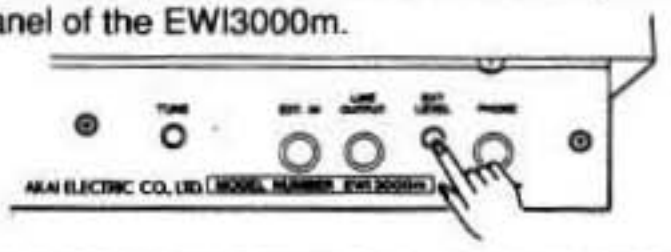
Step 2: Match the Transmit Channel of EWI3000m and the Receive Channel of the external MIDI sound source.

Step 3: Select Sound Bank No.30. This sound contains factory parameter set-ups for use of the input signal to the EXT IN terminal so that you can try using it in a brief time. Now the Line Output signal from the external MIDI sound source will pass VCF and VCA of Source 1.

- Parameter set-ups in Sound Bank No.30: Source 1 VCO-B; Off, Source 2 OUTPUT LEVEL Off, Source 1 2 EGs (for VCF & VCA); Off.



You can adjust the input level of EXT IN terminal by the **EXT LEVEL** knob located on the Rear Panel of the EWI3000m.



Step 4: Try playing on the EWI3000 Controller. In Sound Bank No.30, both values for E.No.80 VCF and E.No.81 VCA of Breath are pre-assigned to 99 so that you can vary the sound of external MIDI sound source by the intensity with which you blow into the Controller (Acoustic Envelopes). E.No.20 CUT OFF FREQ's value is assigned to 20, however, change it as you wish. Additionally, E.No.83 RESONANCE will allow for a variety of tone variance.

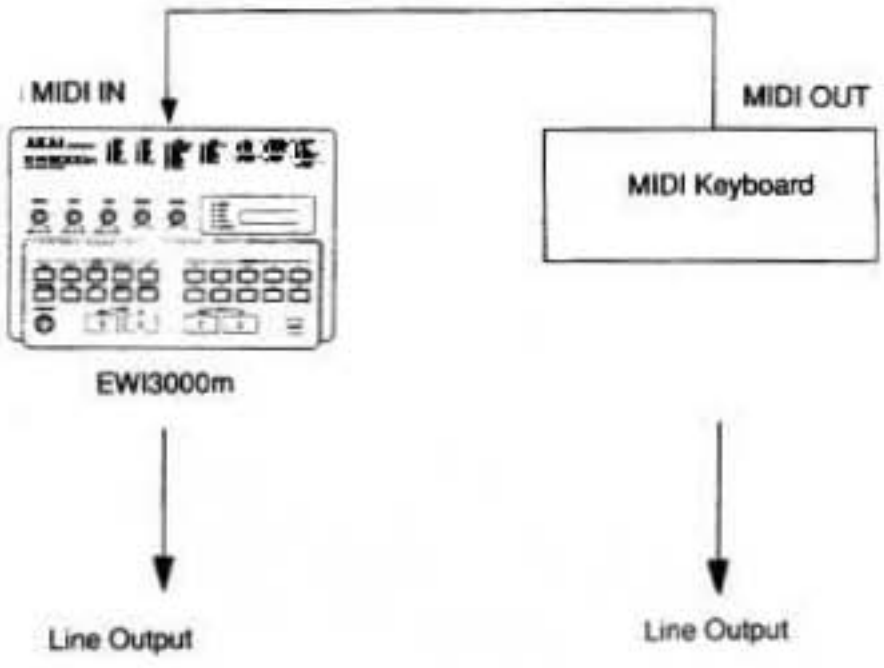
Use the "EXT IN" terminal skillfully to play voices from external MIDI-compatible synthesizers or digital samplers with rich expression.
Furthermore, you can mix the sound with the OUTPUT of VCO-B, or Source 2 which had previously been turned to the "Off" setting, for a more sophisticated technique of sound creation. Then go on to try other possible MIDI settings (explained in Ex.1) to build your own world of EWI.

<Ex.3: Using the EWI3000m as a Sound Source>

The EWI3000m is basically designed for exclusive use with the EWI3000 Controller. But because it is equipped with the MIDI IN terminal, the unit is possible to also be played with an external MIDI controller. Especially by using an external MIDI keyboard, you can obtain the heavy, thick types of Synth Bass sounds or Synth Lead sounds which are the highlight characteristics of an analog synthesizer. The EWI3000m has prepared sounds suitable for Melody (Sound Bank No.s 31-40), or the Bass (Sound Bank No.s 41-50) in the preset sounds, so refer to the procedure below and let's try them out.

Step 1: Use a MIDI cable to connect the MIDI OUT terminal on the external MIDI keyboard, and the MIDI IN terminal on the EWI3000m, and also connect with the mixer or amplifier.

* In this case, remember not to connect the cable for the EWI3000 Controller to the INSTRUMENT Jack of the EWI3000m.



Step 2: Match the Receive Channel of the EWI3000m and the Transmit Channel of the external MIDI keyboard.

Step 3: Assign the parameter PRIORITY in the Utility mode which was explained on page 58.

Step 4: Then, set up the parameter E.No.28 & 30 VELOCITY in the Edit mode.
When you play the MIDI keyboard with strength and weakness (velocity), EWI3000m's sounds will be produced accordingly.

Step 5: Set up the desired parameters for other MIDI data such as Program Change On/Off, Pitch Bend, etc., and then try playing.

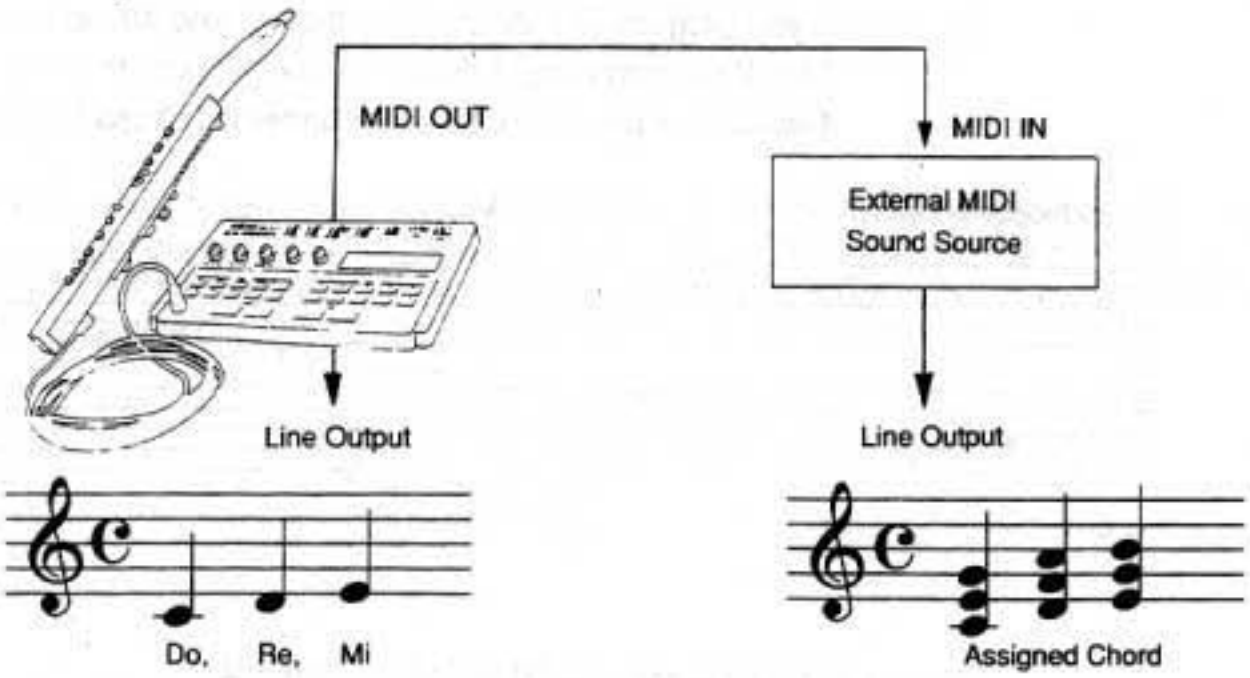
So, when you use the EWI3000m as a sound source, depending on the functions of the MIDI instrument which has been connected, skillful set up of the parameters concerned with MIDI of the EWI3000m can produce effective results. For example, if the MIDI keyboard has a modulation wheel or after touch function, and you set the value for Breath parameter to MOD.W, or PRESSER (PRESSURE), in the MIDI mode, it will give you dynamic solo potential for your playing. If the MIDI keyboard has a digital sound source, and mix its output with the EWI3000m's output effectively, you can get a new approach to your sound creation.

These three examples are typical applications for the EWI3000m and EWI3000 Controller with other MIDI-compatible instruments, etc. in MIDI connection. Furthermore, if you connect a MIDI sequencer to the EWI3000m's MIDI OUT terminal, you can record your real time performance with EWI3000 Controller onto it. So, possible applications are still to be found. It is you to find your own way and make the most of EWI system.

4. Other Functions

<Chord Play Function>

This is one of the major functions on the EWI3000m. Polyphonic chord patterns which you have programmed yourself can be played polyphonically on an external MIDI-compatible sound source from the EWI3000 Controller. For example, as you play "Do", "Re", "Mi" using the EWI Controller, the chords :"Do, Mi, So" (for "Do"), "Re, Fa, La" (for Re), etc., will be played polyphonically on the external sound source.



The following set-ups will be necessary before you use this Chord Play function:

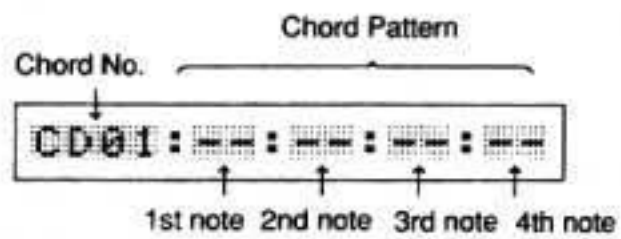
- Programming of Chord Patterns
  (Up to 16 chord patterns can be programmed.)

- Programmed chord patterns can be assigned freely to the each key note among 12 notes (1 octave).
  (Both chord pattern assigning and On/Off setting are available for each sound.)

  * Your EWI3000m has been provided with 16 factory preset chord patterns, and each sound is pre-assigned with one of these patterns (For details see page 69).

a. Chord pattern programming

Step 1: Programming is done in the Utility mode. First, recall the Chord Program set-up screen (refer to page 59).

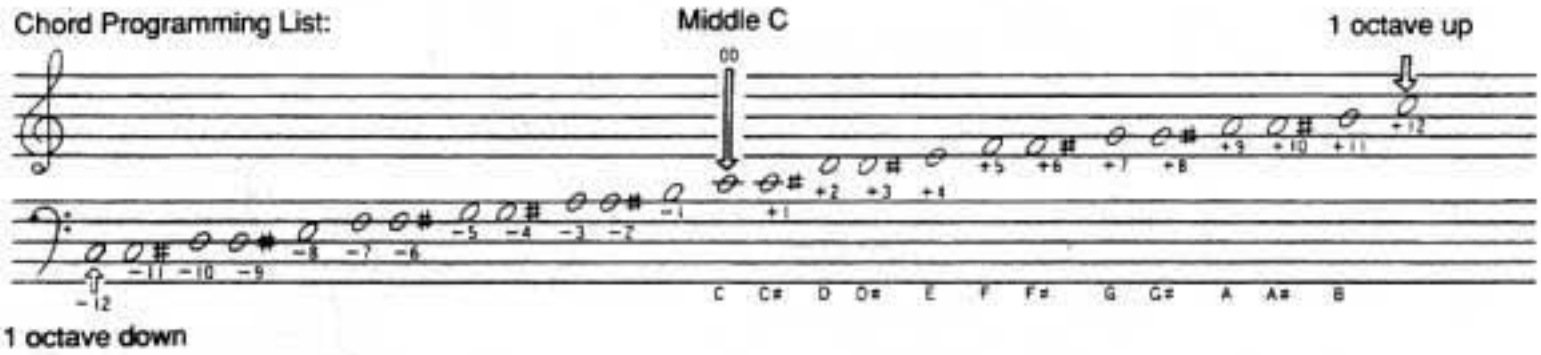


Step 2: Move the cursor using the **UTILITY** button or **NEXT UP/DOWN** button, and then enter the Chord No., and the notes consisting of the Chord Pattern, using the **VALUE UP/DOWN** button. Chord No. can be selected 01-16, the notes can be set at the maximum of 4 notes. They are to be assigned within the range between -12 and +12 (00: Standard pitch=Middle C). +12 means one octave up, and -12 one octave down. Refer to the following list when assigning the chord pattern.

>> First, just move the cursor to the Chord No. field and enter the number, then move one to the right, and assign the 1st note of the chord, then one to the right again, and enter the 2nd note... Repeat this step as you wish.

If you program just 2 notes, set the 3rd and 4th notes as <- -> display (means Off). If programming 3 notes, set the 4th note to <- ->.

Repeat this procedure for other patterns (Chord No.s).



Programming Examples for typical chord patterns

CD01:00:00:--:-- [2 note Unison]

CD02:00:+4:+7:-- [3 note Harmony]

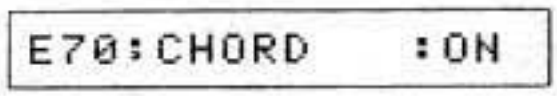
CD03:-12:-5:00:+4 [4 note Harmony]

CD04:-12:00:+12:-- [3 note Unison]

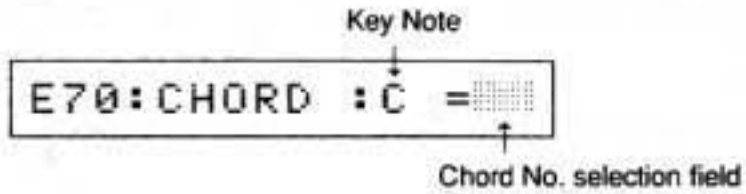
b. Assign the chord patterns just programmed, to each of the 12 key notes. You can assign the patterns to each sound.

Step 1: First, select the sound you want, in Play mode.

Step 2: Turn the Memory Protection to Off, in Utility mode. Then, recall the E.No.70 ASSIGN set-up screen in Edit mode. This is for ON/OFF setting of the Chord Play function so that set the value to On using the **VALUE UP/DOWN** button.



Step 3: Each time you press the **SELECT** key or the **NEXT UP** button, each key note will be displayed in a looped fashion: ON (or OFF)→C→C#→D→D#→E→F→F#→G→G#→A→A#→B→ON (or OFF). Then, assign the Chord No. (between 01-16) to each key note.



Step 4: After completing the assignments of Chord No.s to each key note, save them. Afterwards, you can play the chord patterns.just selecting the sounds to make the Chord Play function operate.

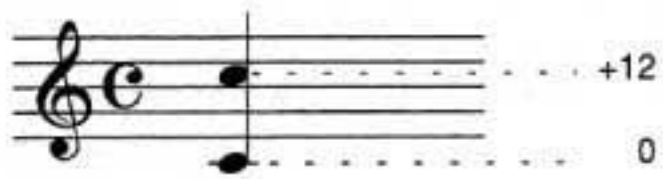
* If you set the Chord Play function to OFF in Step 2 of Operation (b) above and save the chord pattern assignments, you can store them as the Chord Play function will not work.

Note: When the same Chord No. is assigned to all key notes, the chord pattern shifts in parallel as you play key notes of different pitches (Ex.1).
When different Chord No.s are assigned to each key note, the chord patterns vary according to key note you play (Ex.2).

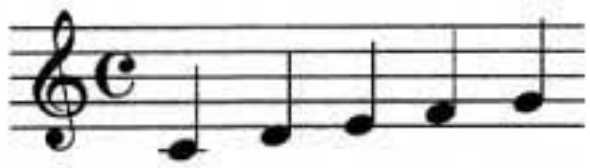
Ex.1: When the same Chord No. is assigned to All key notes

Assigned Chord Pattern

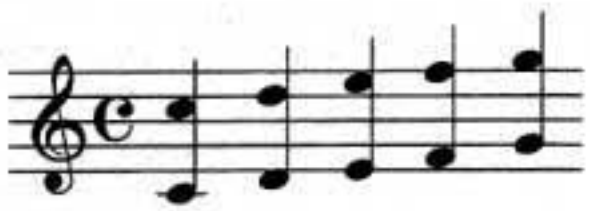
CD01:00:+12:--:--



Notes output
from EWI3000m



Notes output
from External
MIDI Sound Source



Ex.2: When different Chord No.s are assigned to each key note

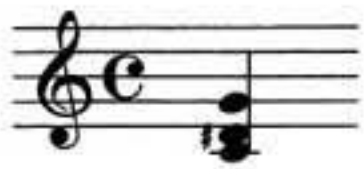
- Assigned chord pattern to key note "C"

CD01:00:+4:--:--



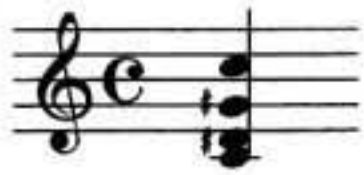
- Assigned chord pattern to key note "D"

CD02:00:+3:+7:--



- Assigned chord pattern to key note "E"

CD03:00:+3:+8:+12



Notes output
from EWI3000m



Notes output from
External MIDI
Sound Source



Factory Preset Chord Patterns

CD01:00:+4:+7:+12

C



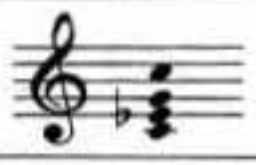
CD02:00:+4:+7:+10

C7



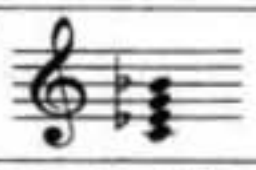
CD03:00:+3:+7:+12

Cm



CD04:00:+3:+7:+10

Cm7



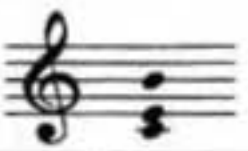
CD05:00:+4:+7:+11

Cmaj7



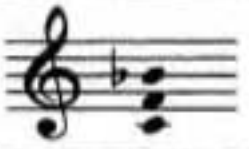
CD06:00:+4:+9:

C6



CD07:00:+5:+10:

Csus4



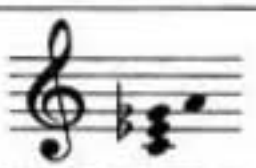
CD08:00:+4:+8:

Caug



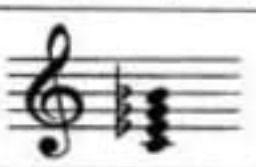
CD09:00:+3:+6:+9

Cdim



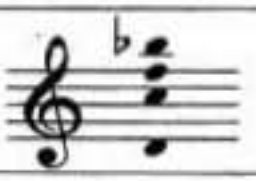
CD10:00:+3:+6:+10

Cm7-5



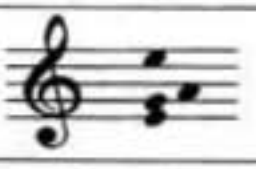
CD11:00:+5:+10:-10

C9



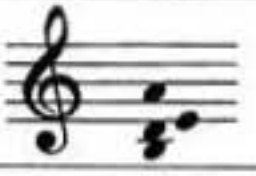
CD12:-8:-5:-3:+2

C69



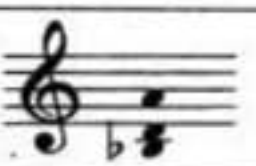
CD13:-1:+2:+4:+9

Cm11



CD14:-2:+2:+9:

C13



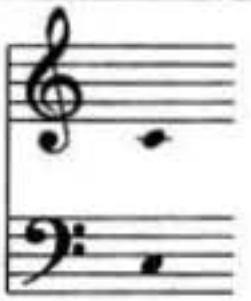
CD15:00:+12: :

octave (+)



CD16:00:-12: :

octave (-)

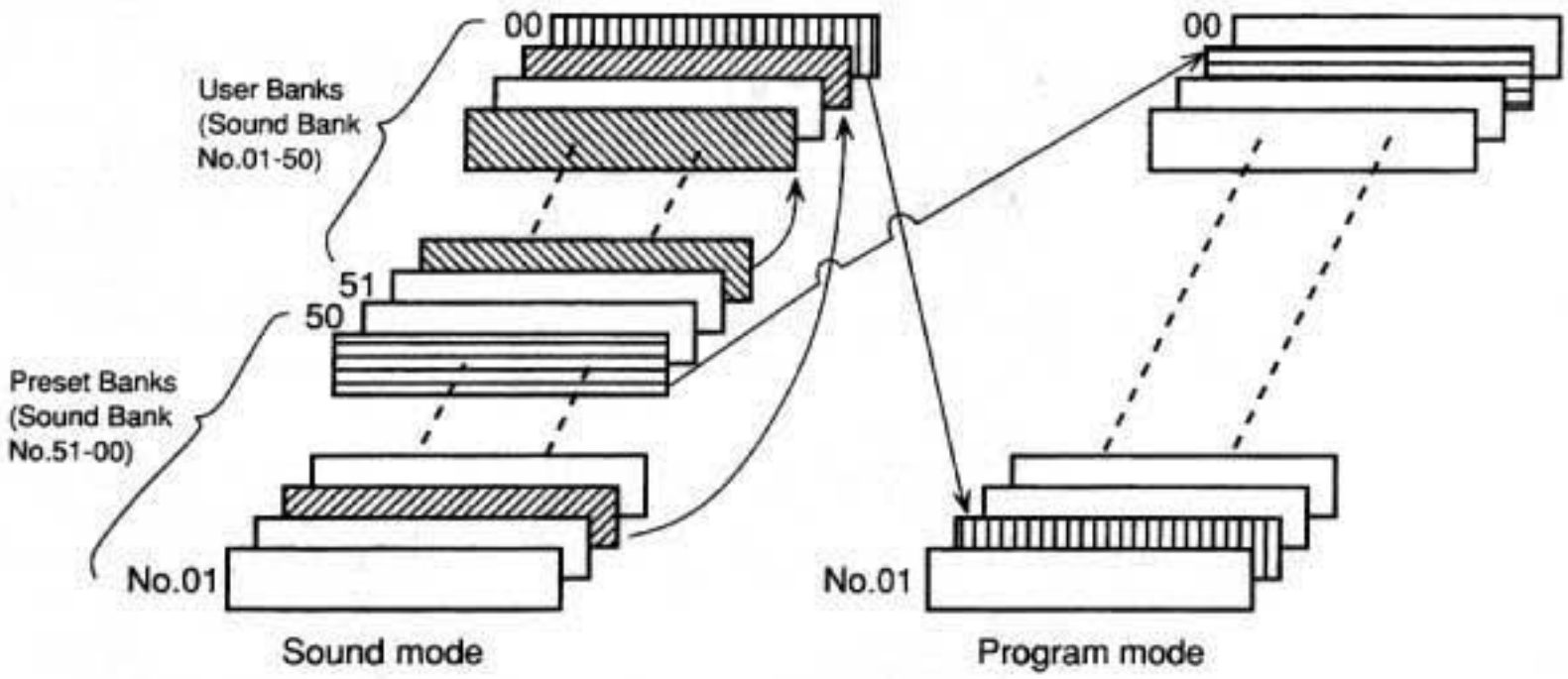


Each of these 16 chord patterns is pre-assigned to 100 respective sounds:

Sound Bank No.01 with Chord Pattern 01 (CD01)
|
Sound Bank No.16 with Chord Pattern 16 (CD16)
Sound Bank No.17 with Chord Pattern 01 (CD01)
|
Sound Bank No.32 with Chord Pattern 16 (CD16)
|
Sound Bank No.48 with Chord Pattern 16 (CD16)
Sound Bank No.49 with Chord Pattern 15 (CD15)
Sound Bank No.50 with Chord Pattern 16 (CD16)
Sound Bank No.51-00 Same as assigned to Sound Bank No.01-50.

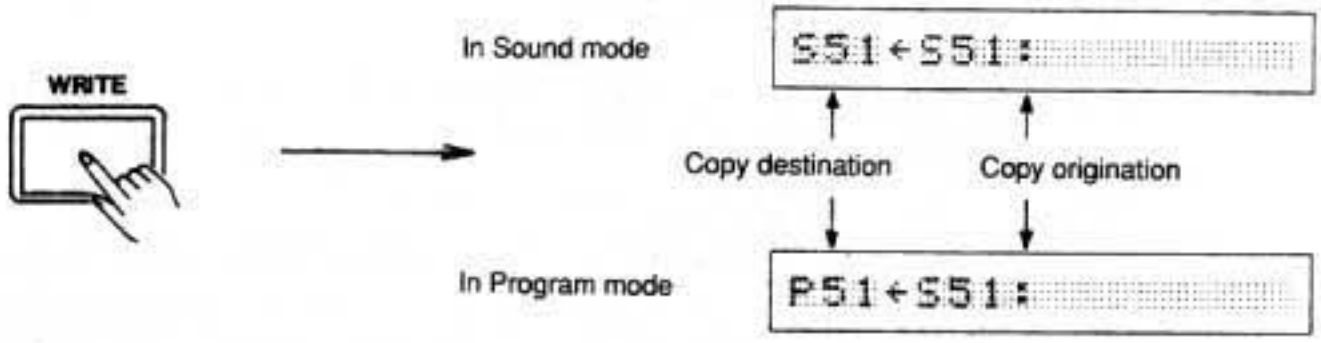
<Sound Copy Function>

This function allows for copying each sound (in Sound mode) into the User Banks (Sound Bank No.s 51-00) in Sound mode, or into any Program Banks (No.s 01-00) in Program mode.



With this function you can arrange the sounds in any order you like, so it's great for easy access at your fingertips when playing on the EWI3000 Controller.

Step 1: After setting the Memory Protection to Off in Utility mode, press the **WRITE** button of the SND/PRGM mode.



Step 2: Using the **NEXT UP/DOWN** button or the **SELECT** keys, select the sound you wish to copy (copy origination), which will be shown on the display. Then, select the Sound /Program Bank No. you want to store it to (copy destination), using the **VALUE UP/ DOWN** button.
In this case, if the copy destination is a Program Bank, press **SND/PRGM** button after this operation. You will return to Play mode, and the Memory Protection will be automatically turned to On. Then the copy process will be completed. If the copy destination is a Sound Bank, go to Step 3.

* You cannot select Sound Bank No.s 01-50 as a storage location.

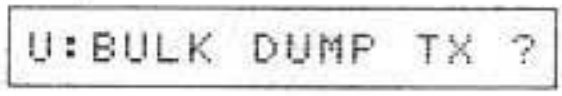
Step 3: Press the **WRITE** button again, and the display will show: <COMPLETE!> for a few seconds indicating copy process has been completed.
(At this time, the Memory Protection will be automatically turned to On.)

<Bulk Dump & Bulk Load>

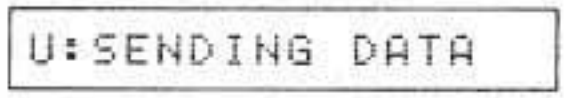
This function allows for the transmission or reception of all the sound parameters' values in the EWI3000m, to or from another EWI3000m or MIDI sequencers, etc. as MIDI system exclusive messages.

• Bulk Dump (Transmission)

Step 1: First, on the EWI3000m, recall the Bulk Dump transmission screen in Utility mode, and set up the receiver of Bulk data.



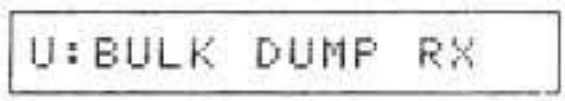
Step 2: When the receiver is ready, press the **VALUE UP** button. The display will turn as the following screen, and when the bulk dump process is completed, it will be changed back to the previous screen.



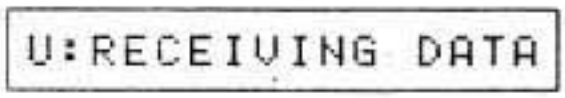
* At this time, you need a MIDI connection from the transmitter to receiver, with a single MIDI cable.

• Bulk Load (Reception)

Step 1: First, set up on the transmitter (another EWI3000m or MIDI sequencer, etc.), then recall the Bulk Dump reception screen in Utility mode, and set up the receiver of Bulk data.



Step 2: Start the bulk data transmission from the transmitter. When the EWI3000m receives the data, its display will turn to the following screen, and after the reception, the display will show <COMPLETE>. After a few seconds, it will show the Play mode screen as the EWI3000m is turned on.



* In case the bulk load process is failed, the display will show <Error> for an error indication. First ensure if the MIDI connection is correctly made or not, and next turn the EWI3000m off once. Then turn the EWI3000m on again and retry it.



• Verification

This function allows you to make sure the bulk dump process has been successfully completed. Make a MIDI connection from the external MIDI device (another EWI3000m or MIDI sequencers on which you have stored the bulk data) to the EWI3000m, and recall the Bulk Verify screen in Utility mode.



When the EWI3000m is ready, do the data transmission (of bulk data you have stored) from the external MIDI device. The EWI3000m starts the verification as soon as it receives the data. After the verification is completed, if no problem takes place, the display will turn to the previous screen. In case an error indication <Error> is shown, first ensure if the MIDI connection is correctly made or not. In case the error indication is shown again, try the bulk dump process from the beginning.



Specifications

Model:	Authorized Sound Module for EWI3000 Wind Instrument Type Controller	
Type:	Special Sensor-compatible Programmable Analog Synthesizer	
Voices:	Monophonic/Dual	
Sound Source:	4 VCOs (Wave Forms: ∿, ⋀⋀⋀, ⊓⊓, FM On/Off, Sync On/Off, EXT)	
Sound Capacity:	100 (including 50 user programmable sounds)	
Display:	16 character Liquid Crystal Display with back light	
Volume Functions:	BREATH	(SENSE/ADJUST)
	GLIDE	(TIME/ADJUST)
	BEND	(WIDTH/ADJUST)
	VIBRATE	
	VOLUME	
	TUNE (+/-50 cents)	Rear Panel
	EXT LEVEL	
Function Keys:	TRANSPOSE	(12 steps -D# - C - +D#)
	AUTO TUNE	(VCO/VCF)
	UTILITY	(Memory Protect ON/OFF, Key Priority, Bulk Dump, Verify, Chord, Demo Song)
	MIDI	(Transmit/Recieve Channel, Program Channel, Transmit Velocity, Breath Control)
	MONITOR	(each level of BREATH, GLIDE, BEND, VIBRATO)
	WRITE	
	SOUND/PRGM	
	GLIDE SW	(GLIDE ON/OFF)
	EDIT	
	SOURCE 1/2	
	VALUE	(UP/DOWN)
	SELECT	(0-9)
	NEXT	(UP/DOWN)

Parameters (common to Source1 and 2)

VCO-A	FREQUENCY FINE TUNE WAVE (∿, ⊓, ⊓⊔, EXT) PULSE WIDTH SYNCHRONIZE (ON/OFF) MODULATION BALANCE
VCO-B	FREQUENCY FINE TUNE WAVE (∿, ⊓, ⊓⊔, OFF) PULSE WIDTH SYNCHRONIZE (ON/OFF) MODULATION BALANCE
VCF	CUT OFF FREQUENCY RESONANCE KEY FOLLOW ATTACK TIME DECAY TIME SUSTAIN LEVEL RELEASE TIME DEPTH VELOCITY
VCA	OUTPUT LEVEL ATTACK TIME DECAY TIME SUSTAIN LEVEL RELEASE TIME DEPTH VELOCITY
LFO	SPEED DEPTH DELAY
VIB/BEND	BEND WIDTH VIB DEPTH GLIDE TIME

} Common to Source 1 and 2

BREATH INTENSITY	BREATH VCF BREATH VCA BREATH PWM BREATH RESONANCE BREATH VCO BALANCE
TRIGGER	SINGLE/MULTI
CHORD	16 Chord Patterns comprized of maximally 4 notes, 12 key Chord assignment, 100 Programs
LABEL	Maximally 8 Characters Enterable, (Alphabet; upper case, Numbers, Space, 28 Symbols)
LED:	BREATH, GLIDE, BEND, TRANS, SND/PRGM
Terminals:	INSTRUMENT (Authorized Multi-Connector for EWI3000 Controller) PROGRAM UP (6.3 mm Standard Phone Jack) HEAD PHONES (6.3 mm Standard Mono/Stereo Phone Jack) LINE OUT (6.3 mm Standard Phone Jack) EXT IN (6.3 mm Standard Phone Jack) MIDI IN/OUT (DIN 5P) DC IN (3.5 mm Mini Plug + —◉— -)
Power Consumption:	DC 15V 700mA (supplied by the exclusive AC Adaptor)
Dimensions:	351(W) x 78(H) x 241(D) (Unit: mm)
Weight :	2 kg
Accessories:	Authorized AC Adaptor, Instruction Manual

* Above specifications and appearance subject to change without notice.

EWI3000m Sound List

	01/51	02/52	03/53	04/54	05/55	06/56	07/57	08/58	09/59	10/60
E	T.STRUT	CAT WALK	FEEDBACK	PRICKLY	PASSION	FANTASIA	BRUTE	QUACK	SILKY	ILLUSION
	11/61	12/62	13/63	14/64	15/65	16/66	17/67	18/68	19/69	20/70
W	FLUTE	OBOE	TRUMPET1	TRUMPET2	HARMONIC	STRING	MUTE TP	SAXES	CLARINET	BRASSENS
	21/71	22/72	23/73	24/74	25/75	26/76	27/77	28/78	29/79	30/80
I	GENTLY	FOG SET	SPARKLE	JANGLE	FEEDBAK2	PANPIPES	SMASH	AIR WAVE	WINDY	EXT.IN
Melody	31/81	32/82	33/83	34/84	35/85	36/86	37/87	38/88	39/89	40/90
	DUCKY	HOT WAVE	BIG SHOT	COSMOS	HIP SKIP	SOFT PAD	AIR PAD	MIST PAD	CLOUDY	ELFIN
Bass	41/91	42/92	43/93	44/94	45/95	46/96	47/97	48/98	49/99	50/00
	KNOCKBASS	DISTBASS	PLSFMBASS	SLAPBASS	FAT BASS	WOW BASS	MAD BASS	NET BASS	RESOBASS	FUNKBASS

Note: Sound Bank No.01-50; Any Sound Parameters cannot be edited except for E.No.60, 70, and 80-84.
Sound Bank No.51-00; Any Sound Parameters can be edited.

Above sounds are designed to be played in the following uses:

Sound Bank No.01-30: To be played with the EWI3000 Controller.
Sound Bank No.31-40: For solo performance by an external MIDI controller, via MIDI IN terminal.
Sound Bank No.41-50: For bass play by an external MIDI controller, via MIDI IN terminal.
Sound Bank No.51-80: Enveloped sounds with EGs. (Sounds themselves are same as Sound Bank No.01-30.) To be played with an external MIDI controller, via MIDI IN terminal.
Sound Bank No.81-90: Same as with Sound Bank No.31-40.
Sound Bank No.91-00: Same as with Sound Bank No.41-50.

* The Note On/Off messages from MIDI IN terminal cannot directly reproduce the sounds assigned to Sound Bank No.01-30. You need to set the value "MOD.W" for Breath parameter in MIDI mode at that time. This operation will set the EWI3000m to recognize the Modulation Depth message, from MIDI IN terminal, as Breath Controller message and reproduce sounds according to the modulation wheel movement on the external MIDI instrument.
* Do Not connect the EWI3000 Controller to the EWI3000m in use of the MIDI IN terminal. Additionally, both inner and outer knobs of BREATH, turn them fully to the left.

AKAI ELECTRIC CO,LTD.
Model [EWI3000m]

MIDI Implementation Chart

Date : 1990.7.25
Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic	Default	1-16	1-16	
Channel	Changed	1-16	1-16	Memorized
Mode	Default	3	2	
	Messages	x	x	
	Altered	**********	x	
Note Number		22-111(*1)	22-111	
	True voice	**********	0-127	
Velocity	Note on	9nH, v=64-127(*2)	9nH, v=1-127	
	Note off	9nH, v=0	9nH, v=0 / 8nH	
After Touch	Key's	x	x	
	Ch's	o	o	(*3)
Pitch Bender		o	o(*4)	
Control Change	1	o	o	MODULATION (*3)
	2	o	o	BREATH CONTROLLER (*3)
	7	o	o	VOLUME (*3)
	64	x	o	
	65	x	o(*5)	
Program Change		o 1-100	o 1-100	
	True #	**********		
System Exclusive		o	o	SOUND PARAMETER VALUES
System Common	Song pos	x	x	
	Song Sel	x	x	
	Tune	x	x	
System Real Time	Clock	x	x	
	Commands	x	x	
Aux	Local ON/OFF	x	x	
	All Notes OFF	o	o	
Mes-sages	Active Sense	x	x	
	Reset	x	x	

Notes :
(*1) Automatically moved within the range between -9 and +3 according to the Transposition value.
(*2) Transmitts the fixed value set within the range between 64 and 127.
(*3) Transmitts and Receives one of four items marked. However, during reception, it is recognized as the BREATH CONTROLLER message (of Control Changes).
(*4) Receives within the range of +/-700 cents. 0: Standard pitch.
(*5) Received only in Single mode.

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO o: YES
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO x: No