

MUSIC WORKSTATION

01/W_{FD}·01/W

Quick Guide

KORG [®] ②

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A sample MIDI system around 01WFD •01/W

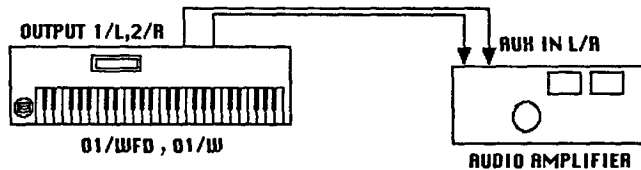
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I : Setting Up

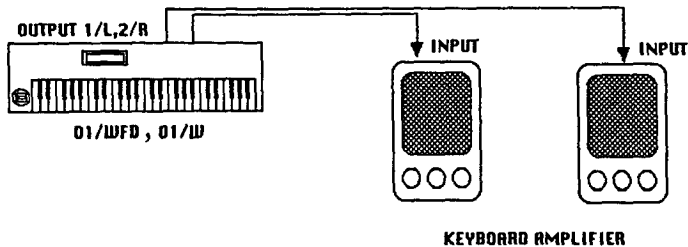
Connecting the 01/WFD-01/W to External Devices

Make sure that all cables are securely connected to the input terminals of external devices.

① Connecting with a stereo audio amplifier

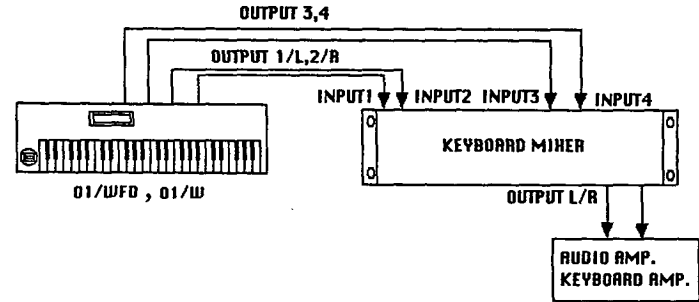


② Connecting with a keyboard amplifier



NOTE

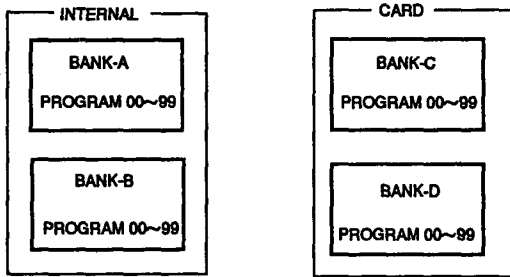
Connecting with a keyboard mixer can most effectively utilize the output functions of the 01/WFD-01/W.



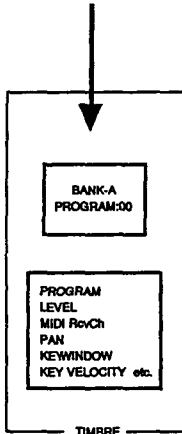
BASIC OPERATION

The mode keys on the front panel provide access to various operation modes of the 01/WFD-01/W. To change modes, simply press the corresponding key.

The sound making process on the 01/WFD-01/W is primarily done in the program mode and the combination mode. These modes are related to each other as in the diagram below.

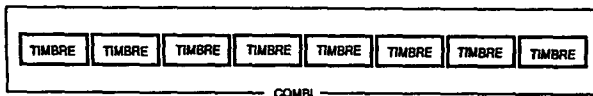


PROGRAM..... Up to 100 programs can be stored into each of 2 Internal Banks and 2 Card banks.



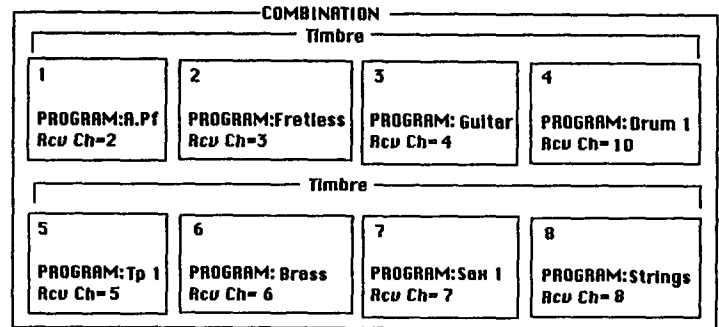
Timbre can be made by setting parameters (Level, MIDI Rcv ch, and so on) of any program.

A combination can be made by up to 8 different timbres.



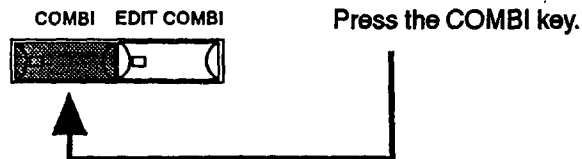
Each individual sound is selected and played as a Program, two or more Programs are combined into a Combination.

For example, strings and brass sounds can be layered as a combination. Up to 8 programs can be assigned in Combination and independently controlled to provide a multi - timbral sound source for use with an external sequencer.



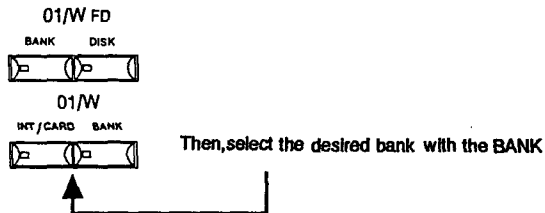
① Selecting a Combination

Press the COMBI key to enter the Combination mode.

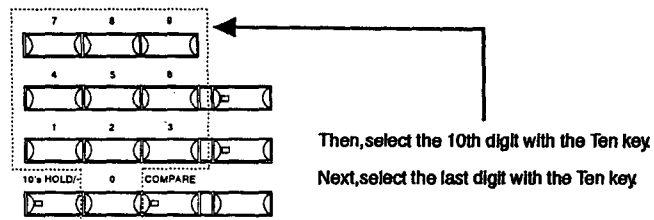


Press the BANK key to select the bank number of the desired combination.

(For 01/W , press the INT/CARD Key and the BANK key.)

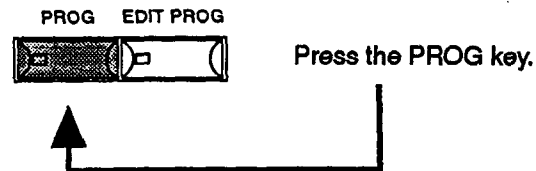


Press the Number key to select the desired combination number.



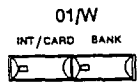
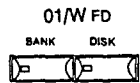
② Selecting a Program

Press the PROG key first.



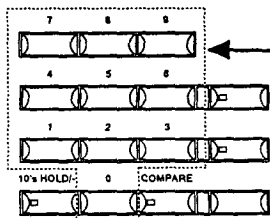
Press the **BANK** key to select the bank number (0 – 9) of the desired program.

(For 01/W , press the INT/CARD Key and the BANK key .)



Then, select the desired bank with the **BANK** key.

Press the **Number** key to select the desired program number.

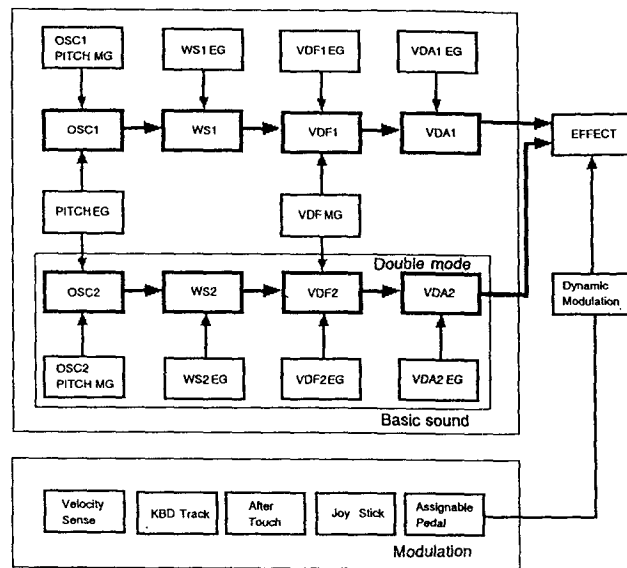


Then, select the 10th digit with the **Ten** key.
Next, select the last digit with the **Ten** key.

Sound Making Process

Here is a summary of the 01/WFD·01/W's sound making process.

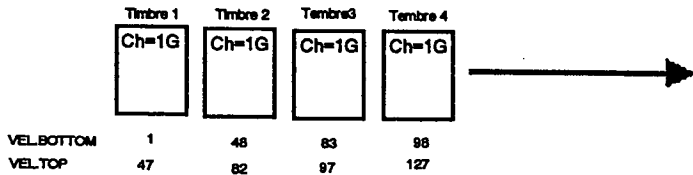
- ① A program, which is the basic sound block in the 01/WFD·01/W, consists of a number of parameters which control the sound.



②Two or more programs can be combined to make up a Combination

Separate MIDI channel, keyboard range and velocity range can be assigned to each of up to 8 programs and controlled independently.

Programs are assigned to Timbres 1 – 8 in this setting.



In the above combination, MIDI channels of timbres 1 through 4 are assigned to the Global setting so that these timbres can be actually played by the keyboard and further controlled by the touch depending on the setting of the top and bottom.

Making full use of Multi playing

The advantage of multi – timbral instrumentation is that each program can be assigned to an individual Timbre, for independent control. This setting is especially useful for use with an external sequencer. Furthermore, assigning 2 (or more) timbres' MIDI channel to that of the Global MIDI channel allows you to play these programs simultaneously (same as the Layer combination). This function can be used to play thick layered sounds. Since the 01/WFD•01/W is 32 voice polyphonic, a layer with 2 programs provides 16 polyphonic voices, a layer with 4 programs provides 8 polyphonic voices, etc.

II : Creating a program (EDIT PROGRAM)

The basic sound block in the 01/WFD•01/W is a Program. Therefore, creating a new sound means that you are actually building a new Program.

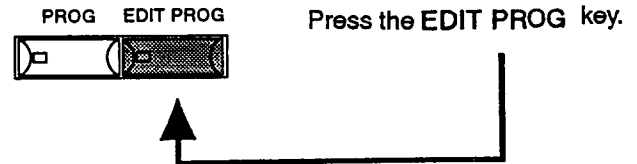
As in the following diagram, the 01/WFD•01/W is equipped with internal waveforms which are called Multisounds. The multisounds are a collection of acoustic sounds and synth sounds that are sampled for each sound range and assigned to the keyboard.

These Multisounds serve as the starting point for creating a new program, "EDIT PROGRAM". Thus, the "EDIT PROGRAM" starts with selecting the most suitable waveform from the Multisounds.

Unlike the previous M and T series, the 01/WFD•01/W is capable of editing components of each waveform so that any waveform can be changed in envelope or reshaped in a number of ways.

Selecting "EDIT PROGRAM"

Press the EDIT PROG key to select the Edit Program mode. Each Program has its editing parameters in several display pages. The PAGE +/- keys allow you to access succeeding and preceding pages, respectively.



PAGE 0:OSC(Oscillator)

The 01/WP•01/W contains 2 oscillators; OSC 1 and OSC2. This page controls the setting of each oscillator depending on the current Oscillator mode. In SINGLE, one OSC1 → Emphasis1 → Wave Shaping1 → VDF1 → VDA1 system is used. In Double, a second system (OSC2 → Emphasis2 → Wave Shaping2 → VDF2 → VDA2) is added to allow greater in sound making.

This page contains the following parameters to be edited.

- Oscillator Mode

SINGLE or DOUBLE

- Number of Voices and Hold.

The number of voices varies according to the Oscillator mode.

The 01/WP•01/W is a 32 polyphonic Music Workstation. When POLY is assigned, the maximum number of voices available is 32 in SINGLE Oscillator mode, but decreased to 16 in Double mode. When MONO is assigned, only a monophonic voice is available. POLY is recommended for chord oriented sounds such as Piano or Strings while MONO best fits single note playing for sounds such as Bass and Synth Lead.

When the Hold parameter is set to ON, notes played will continue to sound even after releasing the key. This parameter is mainly used for obtaining natural sustain out of transient sounds such as the Drum Kit. This is not always desirable on continuous sounds such as Organ or Strings.

•Selection and Volume of Oscillator 1 and 2

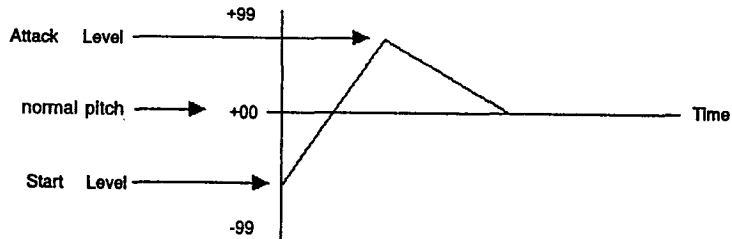
When DOUBLE is selected, OSC1 and OSC2 have Independent levels.

•Pitch Adjustment of Oscillator 1 and 2

Slightly detuning the pitch of two oscillators will create an ensemble effect between the oscillators or build effective timbres such as honky – tonk piano.

•Selection of Envelope to Pitch

Natural brass sounds tend to have unstable pitch at the initial attack. This unique character of instruments can be simulated by adjusting the Pitch with Envelope.



PAGE1:Emphasis, Wave Shape

This page controls the processing of waveform, which is the O1/WFD•O1/W's own unique function.

The Emphasis increases the clarity of the sound by giving greater definition. The degree of the Emphasis can be velocity controlled so that delicate color changes such as those of acoustic piano can be easily expressed by touch.

The Wave Shape transforms the waveform and generates new harmonic overtones that are not included in the original waveform. This function can be used for simulating the resonant filter sweep effect of analog synthesizers or adding a distortion effect to the basic sound. For more details, refer to waveforms 0 – 59 in the Wave Shape Table.

PAGE2:VDF1 (PAGE 3:VDF 2)

This page controls the tonal quality of the sound by cutting off the high frequency components of the waveform.

Cutoff controls how bright or soft the sound will be. This page also determines the degree to which the EG and velocity will affect the cutoff frequency.

Keyboard Tracking is normally used for adjusting the sound color uniformly over the keyboard. This is effective for all keyboard ranges as well as specific high and low ranges.

[About VDF EG]

The 01/WF0-01/W is equipped with an EG for each VDF and the VDA. In the VDF EG, the speed of each parameter (Attack Time/ Decay Time/ Slope Time/ Release Time) can be changed by velocity or the keyboard position.

This feature is especially useful for simulating delicate articulation of playing acoustic instruments. This freedom of touch control over the sound color widely expands the area of artistic expression.

PAGE4:VDA1 (PAGE5:VDA2)

This page controls the volume of the basic waveform sound.

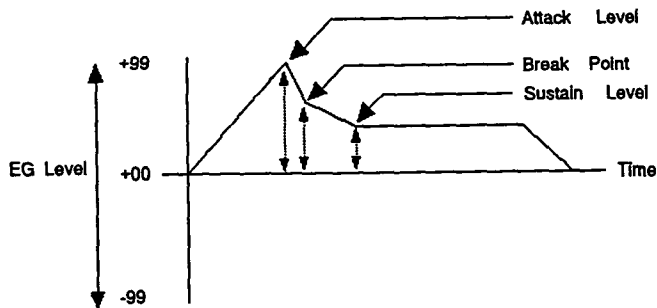
The VDA mainly includes the velocity, EG and Keyboard Tracking. Among others, the VDA EG is especially important for constructing a distinctive character of each sound.

★Using VDA EG and VDF EG properly★

Any sound has the universal tendency to change in tone as the volume changes. You can find out that tone becomes softer as the sound decays by closely listening to any instrument such as piano or guitar.

This character of acoustic sound can be simulated with the VDA in volume change and with the VDF in tone change. The EG INTENSITY parameter in the VDF determines the range for the tone to change over time.

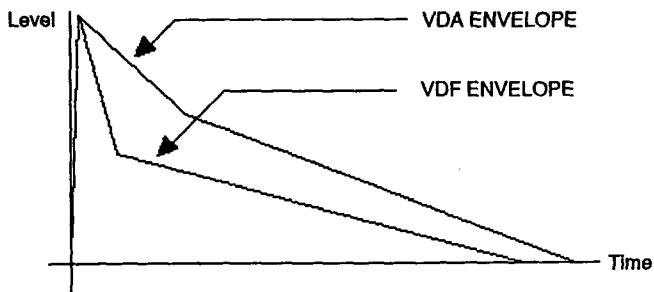
These volume and tone changes over time usually play major roles in sound making. Making a good or bad sound depends on how carefully you program this EG parameter.



[Typical EG Set - up]

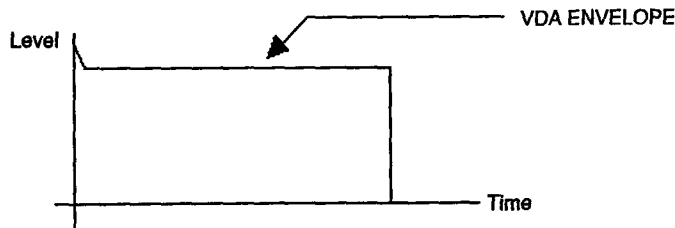
Piano

To simulate the decaying sound of piano, set the Sustain level at 0 and create the decay with Slope time. You may set the Break point at 80 and make up an attack feel with Decay time.



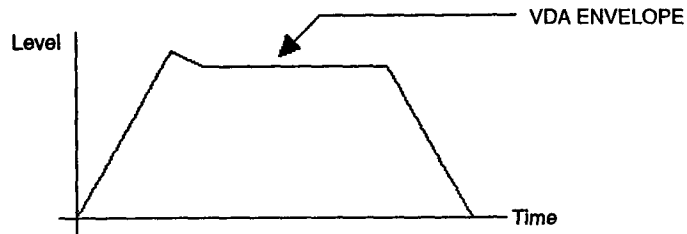
Organ

The organ sound is characterized by a click noise at the initial attack and quick response to releasing the key. Set the Break point as the Sustain level and create a click in Sustain time.



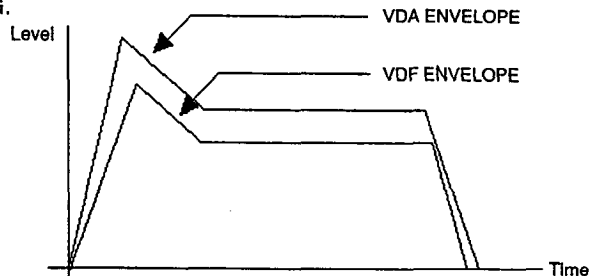
Strings

The basic Strings sound can be simulated by slowing down the Attack time for the bowing effect and adding the Release time for trailing notes. An actual string instrument sounds different with subtle differences in touch. Try to create a variety of string sounds with different touch, and play them in Combination mode.



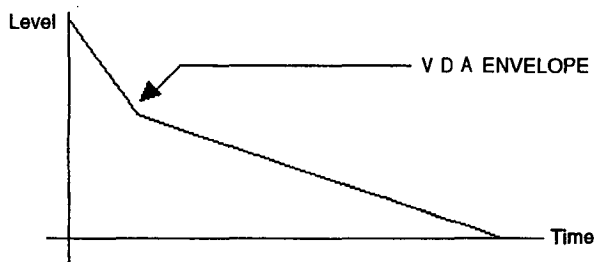
Brass

The key to a good brass sound is how well the VDF is combined with the EG, because real brass instruments sound different depending on playing technique or the player's mood. Construct the outline envelope with the VDA first. Then create the actual tonal quality with the VDF EG.



Guitar and Bass

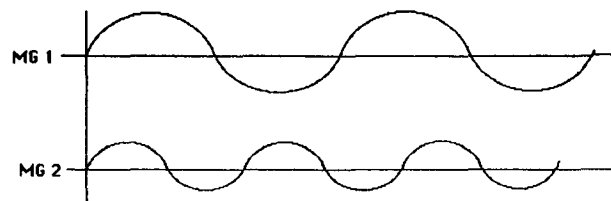
Guitar and Bass have decaying sounds similar to that of the piano. Construct the outline envelope with the VDA first. Then set the VDF EG such that the tone becomes softer as the sound decays.



PAGE6:Pitch Modulation

This page is for modulating the pitch. The modulation set here is mainly the vibrato controlled by the MG, but the pitch can be also modulated by joystick or aftertouch.

In DOUBLE, MG1 and MG2 can be used separately. In SINGLE, only MG1 can be used.



[Separate use of MG in Double Oscillator Mode]

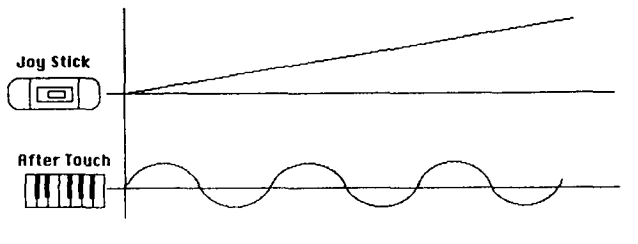
The 01/WP*01/W contains 2 independent MG systems that are available for each of the 2 oscillators in DOUBLE mode. If the MG's are used as in the Fig.2 - 9. a slight difference in pitch can create an ensemble space. This will sound even wider when used with a Chorus Effect.

PAGE7:VDF/VDA Modulation

This page determines the degree to which the joystick, aftertouch and MG modulates the VDF and the VDA.

— How Aftertouch works —

Aftertouch is an effect that can be used to control the depth of modulation or other parameters by pressing down hard after playing the keys. Since any of the available controllers can be assigned to a modulation source, different modulations can be arranged to be played simultaneously during playing. For example, assigning aftertouch to vibrato and joystick to pitch bend will allow you to play both modulations at the same time. Assigning aftertouch to pitch bend may be sometimes effective for expressing certain instruments such as Koto. Aftertouch is often assigned to control the cutoff frequency so that the brightness of a sound can be controlled by pressing down hard on the keys.



PAGE8:EFFECTS

The 01/WFD-01/W includes a self – contained Multi Effects unit that consists of two independent and identical effect processors. These processors can be arranged in three configurations: one serial configuration and two parallel configurations.

① Important relationship between Inputs and Outputs

Before selecting an effect configuration, choose the Inputs you wish to use. (Inputs at A and B go through FX 1, Inputs at C and D go through FX 2.) In Serial routing, Inputs at A and B go through FX 1 and FX2 but Inputs at C and D only go through FX2.

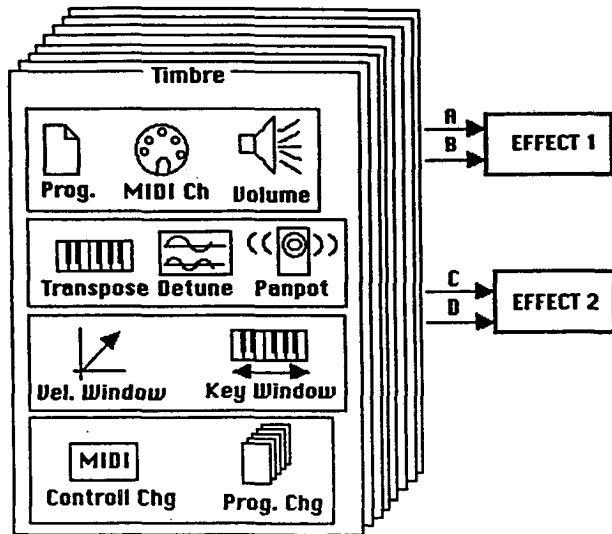
② **Effect Selection in EDIT PROGRAM is disabled**

When 2 sounds are made with 2 effects each in EDIT PROGRAM (for example, a guitar sound with Distortion and Chorus, and a strings sound with Flanger and Reverb), an attempt to combine these sounds into a Combination will require 4 effects while the 01/WP•01/W contains only 2 effect processors. In this case, the 01/WP•01/W ignores the effect selection made in EDIT PROGRAM and instead uses the effect selection in Combination.

The best way to avoid this inconvenience is to program a sound in two modes during EDIT PROGRAM: Prepare a SINGLE sound with all parameters including effects. Prepare a MULTI sound without assigning any effects.

III : EDIT COMBINATION

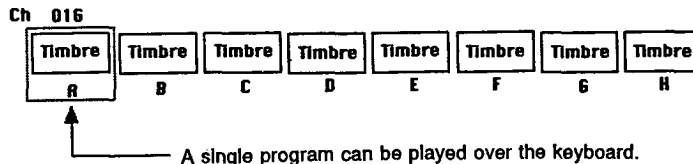
A combination can consist of up to 8 Timbres. Each Timbre is like a box where a Program is assigned with its MIDI channel, Volume, Pan and other parameters. With 8 Timbres altogether, the 01/W/01/W can be played as if there were 8 different synthesizers being played simultaneously.



① Playing a single sound in Combination

Only one single Timbre is used. This is the same as directly using a single program made in EDIT PROGRAM. This setting is useful for featuring the acoustic character of one sound such as acoustic piano, guitar or wind instrument and expressing it without being mixed with other sounds.

Since only one particular Timbre can be played on the keyboard by matching its MIDI channel to the Global channel, this setting has the same function as the Program play.

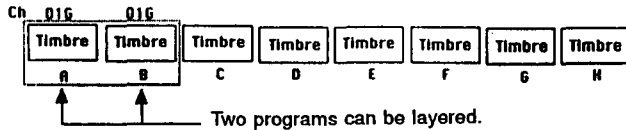


②Playing two or more sounds in Combination

One of the ways to utilize the 01/WFD-01/W's great capability is to play two or more sounds simultaneously in Combination.

[Building up a thick sound by layering Timbres : Layer]

This type of Combination is especially useful for building up a thick string or brass ensemble sound. It is also used to create a new sound with an unusual combination of two unmatching sounds such as Bell+Strings.



[Switching tone color with velocity : Velocity Switch]

The tone color of an acoustic instrument changes with different touch on the instrument. The 01/WFD-01/W is designed to simulate this character of an acoustic instrument by controlling the degree of velocity in Combination. Velocity is used to control the VDF Cutoff in Program but this is not effective enough for controlling slap bass or other sounds that require drastic tone changes.

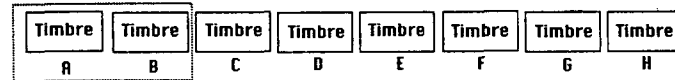
In this case, program a soft touch sound for the low velocity range and a hard touch sound for the high velocity range, and assign them to the same MIDI channel so that these two sounds can be switched by the degree of your playing touch. Follow the sample procedure below.

Assign a soft touch sound to Timbre 1, and a hard touch sound to Timbre 2. Set the Velocity Window Top for Timbre1 to 87, and the Velocity Window Bottom to 0. Set the Velocity Top for Timbre2 to 127, and the Velocity Window Bottom to 88.

This procedure can further apply to switching the tone color up to 8 different steps.

Velocity Window

TOP 87 127
BOTTOM 1 88



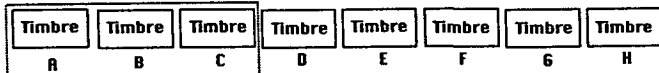
The sound switches between Timbre A and Timbre B at the Velocity value 87.

[Assigning different sounds for different sound ranges : SPLIT]

The 01/WFD•01/W's keyboard can be split into desired sound ranges to assign different sounds. For example, you can assign a bass sound to the low range and a piano sound for the middle and high ranges.

Assigning a drum set to the low range and a bass sound for the middle and high ranges will create a simple rhythm section over the keyboard. Assigning a trombone to the low range and a trumpet sound for the middle and high ranges will create a strong brass section over the keyboard. The major advantage of this SPLIT is that this uses up only one MIDI channel with one Combination.

Key Window
TOP C3 C5 67
BOTTOM C-1 C#3 C#5



[Using the 01WFD•01W as a Multi Sound Source : Multi 1]

The 01/WFD•01/W can be used as multi sound source by assigning separate MIDI channels to 8 Timbres. If you have a MIDI sequencer, you can program the MIDI channels so that you can manually play the melody on the keyboard and have the sequencer accompany you.

To select the Timbre for your manual play, set its MIDI channel to the Global channel.

Prog.	R.Piano	E.Bass	E.Guitar	Strings	Brass	Flute	Harp	Drums
RcvCh	016	02	03	04	05	06	07	10
Volume	92	123	83	78	87	110	68	127
Panpot	5:5	5:5	7:3	5:5	5:5	6:4	3:7	5:5
	Timbre	Timbre	Timbre	Timbre	Timbre	Timbre	Timbre	Timbre
	A	B	C	D	E	F	G	H

[Using the 01WFD•01W as a Multi Sound Source : Multi 2]

Up to 8 Timbres can be separately played or mixed in any combination under your choice. For example, select a piano for Timbre 1, a bass for Timbre 2, a drum set for Timbre 3, and a strings ensemble for both Timbre 4 and 5. Assign Timbre 4 and 5 to the same MIDI channel. In this setting, each of Timbres 1 – 3 is routed on a separate MIDI channel thus independently controllable, but Timbres 4 and 5 sound together because they are assigned on the same MIDI channel.

This programming technique actually combines Multi and Layer modes. Adding Split, Velocity Control or other techniques will further expand the possibility of this Multi playing.

① **Building a Multi Combination with several Timbres**

For example, you can create an entire rhythm section with Velocity Switch piano (soft to hard) in Timbres 1 – 3, a Velocity Switch guitar (normal and distortion) in Timbres 4 – 5, a Velocity Switch bass (normal and slap) in Timbres 6 – 7, and a drum set in Timbre 8.

Timbre	MIDI Ch	Velocity	
		Window Top	Window Bottom
1:Soft Piano	2	64	1
2:Normal Piano	2	110	65
3:Hard Piano	2	127	111
4:Normal Gt.	3	87	1
5:Distortion Gt.	3	127	88
6:Normal Bass	4	92	1
7:Chopper Bass	4	127	93
8:Drum Set1	10	127	1

This combination builds up an ensemble of 4 instruments allowing fine nuance on each instrument.

Layer is added on to this setting in the example below.

Timbre	MIDI Ch	Velocity	
		Window Top	Window Bottom
1:Normal Piano	2	110	1
2:Hard Piano	2	127	111
3:Normal Gt.	3	87	1
4:Normal Bass	4	92	1
5:Chopper Bass	4	127	93
6:Strings1	5	127	1
7:Strings2	5	127	1
8:Drum Set1	10	127	1

The examples only illustrate the outlines of this operation. The actual sounds in this example may not be included in the 01/WFD•01/W.

In this example, string sounds are layered by assigning both sounds(Timbre 6 & 7) to the same MIDI channel (Channel 5) with the same Velocity value.

② Building a Single sound with several Timbres

This setting uses up several Timbres for making only one sound, but the more Timbres that are used up, the higher the quality of the sound will be.

This is especially useful for simulating the unique character of an acoustic instrument where the tone color changes in different sound ranges. For example, divide the 01/WP•01/W's keyboard into 8 separate sound ranges and assign Timbres with different Key Window values to each of the sound ranges. In other words, each of 8 Timbres is assigned to 8 consecutive sound ranges.

Stack sound used of Key Window function

Timbre A.....is a Organ sound used a slow frequency of MG.
Timbre B.....is a Organ sound used a little slow frequency of MG.
Timbre C.....is a Organ sound used a little fast frequency of MG.
Timbre D.....is a Organ sound used a fast frequency of MG.
Timbre E.....is a normal Organ sound unused MG.

	Timbre A	Timbre B	Timbre C	Timbre D	Timbre E	Timbre F	Timbre G	Timbre H
Top	B2	B3	B4	C6	C6			
Bottom	C1	C3	C4	C5	C1			

In this setting, Organ sounds used a different frequency of MG was stacked with a normal Organ sound (Timbre E) assigned on all register. By the way, a rotation of speaker goes fast as a upper register.

IV : Using the Effects

To get the best out of the built – in effect system, you need to fully understand the 3 types of effect placement and to be able to select the most suitable effect for the current Combination.

SERIAL

Effect 1 and Effect 2 are serially routed. Inputs A and B send signals to both Effect 1 and Effect 2 and become stereo outputs at 1/L and 2/R. Inputs at C and D only go through Effect 2 and directly out to outputs 3 and 4.

PARALLEL 1

Besides being able to use Effect 1 and Effect 2 as separate effect processors, this setting is capable of sending signals from Effect 2 to Outputs 1/L and 2/R as well as sending Inputs A and B to Outputs 1/L and 2/R and sending Inputs C and D to Outputs 3 and 4.

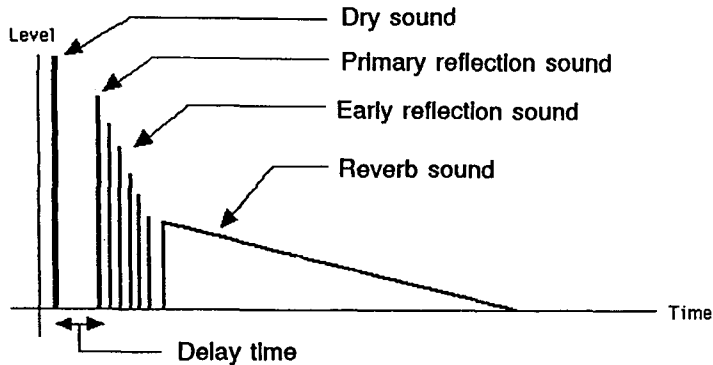
PARALLEL 2

In addition to sending parallel outputs as in PARALLEL 1, this setting is capable of sending signals from Effect 2 to Effect 1 and making mixed outputs at Outputs 1/L and 2/R. For example, a strings sound at Inputs A and B goes through a Reverb at Effect 1 only, but a guitar sound at Inputs C and D goes through a Chorus at Effect 2 and then goes through the Reverb at Effect 1. This operation can be done in SERIAL placement but the major difference between SERIAL and this PARALLEL 2 is that this setting is also capable of separately sending outputs from Effect 2 to Outputs 3 and 4.

TYPES AND OPERATION OF EFFECTS

(1) Reverb Group

Reverb group effects are used for adding ambience characteristics onto the sound, thus indispensable to any synthesizers. Built into the 01/WFD•01/W are a collection of effects that simulate various room sizes and reverb systems such as Hall, Room, Stage, Plate and Spring Reverb.



① The most frequently used Reverb effects : Hall, Room and Wet Plate

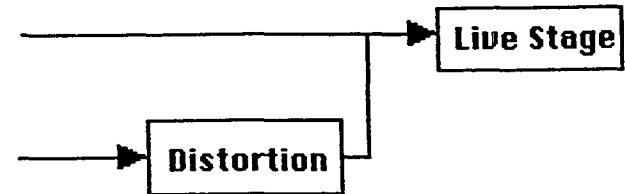
If you are not sure about choosing the right effect, use one of these 3 Reverb effects. Too much reverberation will cover up and ruin your sound. Make sure you set a proper balance between dry and wet sounds and try to use the least necessary Reverb time. Refer to the diagram below.



In the above diagram, Hall Reverb is used after Enhancer.

② Simulating live performance at live stage or concert hall

Allow longer reverb time for simulating larger rooms such as concert halls. Refer to the diagram below.



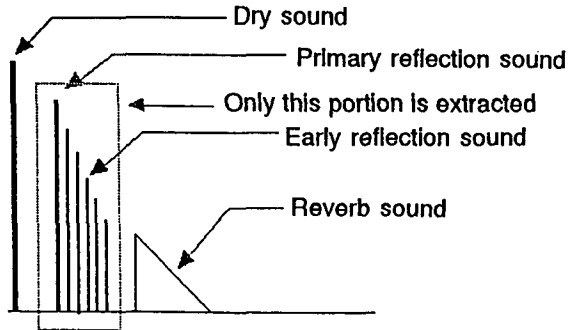
In the diagram, Distortion is used only for guitar, and Live Stage is used for all sounds.

[A Key to editing Reverb Group Effects]

Reverb effects work very differently by adjusting Reverb time and pre – delay parameters, and the way of editing parameters also differs in each type of Reverb effect. After adjusting these parameters the next step is to improve the Reverb sound with the equalizer. When the Reverb sound at high frequencies stands out, you may adjust the value of High Damp as well as changing the equalizer setting.

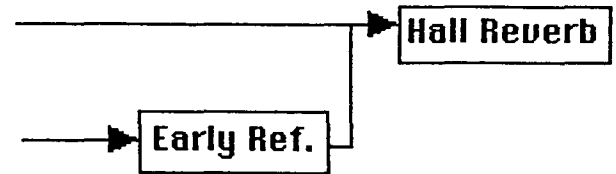
(2) Early Reflection Group

Early Reflection is an effect that allows you to adjust only the early reflections which are crucial in determining the realism of the Reverb sounds.



① Using Early Reflection for reinforcing low frequency range

Early Reflection can be used as a gating effect on drum sounds. The 01/WFD-01/W includes 3 types of Early Reflections that differ in the responding level to the early reflection time. Refer to the diagram below.



In the above diagram, Early Reflection is used for drum sound, and Hall Reverb is used for all sounds.

② Creating a cymbal sound with a reverse effect

Early Reflection III uses a reverse envelope on the early reflections. This effect creates an interesting reverse effect (similar to a tape recorder being played backwards) when applied to cymbals or other sounds that have strong attack characteristics. Refer to the diagram below.

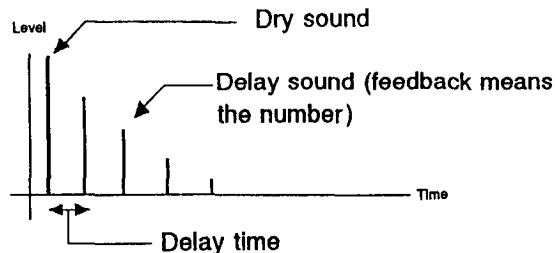


[A Key to editing Early Reflection]

Early Reflection time and Pre - delay parameters are usually the major points of editing in Early Reflection, but try to improve the sound by adjusting the Equalizer setting also.

(3) Delay Group

Delay is another popular group of effects and it is almost as frequently used as Reverb group. A collection of both stereo and manual delay effects are built into the 01/WFD-01/W.



① Panning Delay Sound with Cross Delay

Since the feedback signal of each delay crosses over and is routed to the other delay, the delay sound repeats, panning across the stereo field. This creates exciting sound results when used for playing a solo or any other fast passages. Refer to the diagram below.



In the above diagram, Hall Reverb is used after Cross Delay to add proper reberveration.

② Using Stereo Delay for Strings sounds

For Strings or other sounds that require spacially spreading effects, Stereo Delay will not only open up the sound space but also enrich the tone color. Refer to the diagram below.



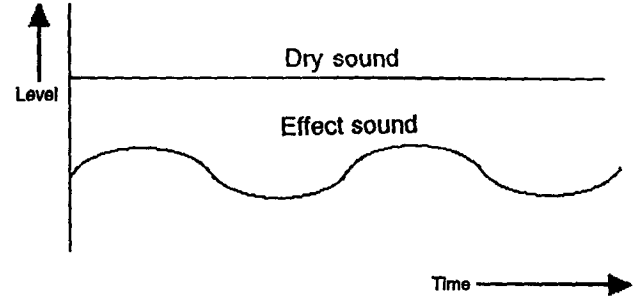
In the above diagram, Hall Reverb is used after Stereo Delay to add proper reverberation.

[A Key to editing Delay Group Effects]

Editing delay effects is not a very difficult operation. However, the Delay Time needs to be sometimes adjusted when the current delay setting sounds like it conflicts with the tempo of the tune. Remember, the length of a quarter note is 1 second when the tempo is set to 60. ($\text{♩} = 60$) When the tempo of a tune is set to 120 ($\text{♩} = 120$) for example, selecting the Delay Time at 500ms will produce each delay sound synchronized to the speed of the quarter note.

(4) Chorus, Flanger, Phaser Group

Chorus effects provide a warm ensemble sound by mixing the modulated effect sound with the dry sound. Flanger effects are achieved by the addition of feedback to the Chorus effect and are used for adding color and motion to the sound. Phaser effects use both time delay and phase shifting to create a more pronounced swirling and swishing sound than either Chorus or Flanger. All of these effects are essential to basic sound making on synthesizers.



An ensemble effect can be created by mixing a modulated effect sound into the dry sound.

① Using Chorus effect for guitar

Using a Chorus effect has become a standard practice for almost all contemporary guitar players. Try a Chorus effect on the 01/WP-01/W's internal guitar sound. Refer to the diagram below.



In the above diagram, Chorus is used over an equalized sound.

② Using Harmonic Chorus for bass

Chorus effects have been frequently used by contemporary bass players but this Harmonic Chorus is also useful since it applies the chorus effect only to the high frequency range. With this Harmonic Chorus, you can affect the high range sound with a warm Chorus while leaving the heavy tone of the low frequency range as it is. Refer to the diagram below.



In the above diagram, Chorus is used over the sound thickened by Enhancer.

③ Adding motion to Strings with the Flanger

The Flanger effect provides swirling effect to the Strings sound. This sounds most effective when playing back – ground chords for soft tunes. Refer to the diagram below.



④ Phaser is best suited for rhythm cutting on guitar

When Phaser is used for rhythm cutting on guitar, the rhythm cutting notes on guitar pick up the phase shifted sound which blends into an extremely funky sound. Refer to the diagram below.



In the above diagram, Phaser is used after high range is emphasized by Equalizer.

(5) Other Effects

① Using Tremolo for electric piano

This setting is not as popular as it used to be, but Tremolo can be used on electric piano to come up with vibraphone – like sound effects.

② Making a careful decision to use Enhancer

Enhancer is a very useful effect for bringing drum, piano or other sounds to the forefront. However, you should not always rely on Enhancer especially for Multi play because using this effect will automatically limit the possibility of using other effects. (Remember, up to 8 Timbres can be used for Multi but only 2 common effects can be used for the entire system.) For example, other effects can be no longer available once Enhancer is selected on top of the Reverb assigned to the entire sound range. When Distortion and Chorus are both desired for a guitar sound, improve the original guitar sound in EDIT PROGRAM so that it does not require Enhancer.

③ Trying Rotary Speaker on other instruments

Rotary speaker is usually used for, but not limited to, organ sounds.

Using Effects in Multi Play

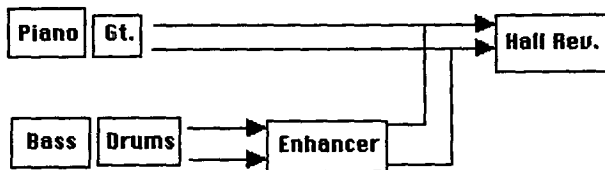
In Multi, up to 8 different programs can be combined as Timbres. If you have selected enough effects for each of programs however, you may not be able to enjoy the advantage of this effect system. The effect unit is, though a two – channel system, limited to each of the Programs or Combinations. In other words, you cannot select different effects to each of the Timbres in Multi.

The best way to avoid the lack of effects in Multi is to decide on how you wish to assign the effects while you are in EDIT PROGRAM.

You may wish to create the same programs for Single and Multi settings and store them in two separate banks.

① Effect Setting for Rhythm Section

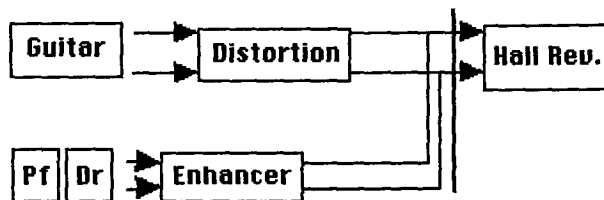
Effect selections are made for a rhythm section that includes bass, drums and guitar. Refer to the diagram below.



The point here is that Enhancer is assigned only to the bass and drum set in order to increase the presence of the sound. The rest of this section is programmed with Hall Reverb but Live Stage Reverb can be also selected to simulate the excitement of live performances.

② Making a careful decision to use Reverb

Reverb is such an important effect and it is used in almost all cases of sound making. If one of the two Effect units is reserved for Reverb to provide an overall reverberation, the other Effect unit must be rather used for specific sound making, for example with Chorus or Distortion. However, one Effect unit is sometimes not enough for complex programming process. In this case, if a Reverb effect is needed to just provide an overall reverberation, an external Reverb unit can be connected to the 01/WP•01/W instead of using up one of the two built – in Effect units. With an external Reverb unit, the 01/WP•01/W's two Effect units can be used for two specific Timbres. For example, Enhancer is selected for both acoustic piano and drum set and Distortion is selected for guitar, and all of these sounds can go through a Reverb outside the 01/WP•01/W.



V : Creating Sounds

This section describes the actual sound making process on the 01/WFD•01/W by referring to sample procedures and Program Charts for each of typical instrument sounds. The following popular sounds are illustrated in the sample procedures.

- Piano Group
- Organ Group
- Strings Group
- Brass Group
- Guitar/Bass Group

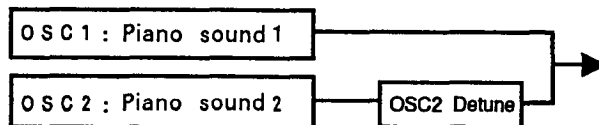
Most of the above programs are made with a Single Oscillator and are useful for saving the number of voices when used in Multi.

Combining two programs

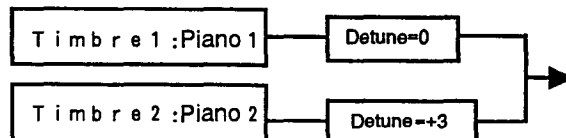
A dual sound can be achieved by creating a program with Double Oscillators but it can also be achieved by layering two Single programs into the same Combination.

For example, a Honky – Tonk piano can be created by layering two Single Oscillator piano programs at a slightly detuned pitch. Once you have prepared Single Oscillator programs, you can easily create other sophisticated sounds by just layering them into the Combination.

Making a dual sound with Programs



Making a dual sound with Combination



Be Creative with Multisounds

Some of the Multisounds are named with specific instrument names such as Piano or Brass but these sounds are not limited to the use suggested by their names. You should use any programs rather freely whenever the sound inspires you to play in a specific playing situation.

About Program Charts

The following sample Program Charts include only the basic parameters to construct the sound for each program. Joystick, aftertouch, effects and other controlling parameters are up to each player's artistic concept or performing style, thus not listed in the Charts.

Acoustic Piano

OSC		VDF1		VDA1		P.Mod	
OSC MODE	SINGLE	Cutoff	34	Vel.sens	57	Int	0
Assign	POLY	KBD Tr	+12	KBD Tr	0	VDF Mod	
Hold	OFF	EG Int	62	EGTime VS	0		
OSC1 MS	000:	Vel.sens	42	EG Time KT	0	Int	0
OSC1 Lvl	99	EG Time	5				
Octave	8'	Vel.sens	48				
		KBD Tr	0				
[Pitch EG]		[EG]		[EG]			
EG Int	0	AT	0	AT	0		
		A	99	A	87		
Emp,WS		DT	43	DT	24		
Int	0	BP	68	BP	99		
Vel.sens	0	ST	97	ST	64		
WS 1	OFF	S	0	S	0		
		RT	32	RT	0		
		R	0				
Effect	Placement	Effect 1		Effect 2			
	Serial	Enhancer		Hall			

Since most of the basic parameters are already set in the Chart up to the VDF and VDA, try to adjust the Velocity under your choice. You may use Enhancer to strengthen the sound. A Honky – Tonk piano may be also created by layering the same programs at a slightly detuned pitch in the Combination mode.

While an acoustic piano program is programmed, the sound becomes much more natural by simply editing the envelope to a gradually decaying curve. You can further create a more simulated sound by properly setting the VDF envelope so that tone becomes softer as the sound decays. You may also create a hammer sound in OSC2 and blend it with OSC1 in Double Oscillator mode.

Electric piano tends to have a longer decaying curve than that of an acoustic piano. To set this curve on the VDF envelope, set the EG Int around +50 and decrease the Cutoff value. The key to making a good envelope is to prepare a longer VDA envelope so that it sounds a little longer than expected, and then improve the shape of the VDF envelope.

Electric Piano

A spacial chorus – like effect can be created in Combination by layering the same electric piano programs at a slightly detuned pitch.

OSC		VDF1		VDA1		P.Mod	
OSC MODE	SINGLE	Cutoff	80	Vel.sens	53	Int	0
Assign	POLY	KBD Tr	0	KBD Tr	0		
Hold	OFF	EG int	99	EGTime VS	0	VDF Mod	
OSC1 MS	001:	Vel.sens	0	EG Time KT	0	Int	0
OSC1 Lvl	99	EG Time	0				
Octave	8'	Vel.sens	+99				
		KBD Tr	0				
[Pitch EG]		[EG]		[EG]			
EG Int	0	AT	+99	AT	2		
		A	0	A	83		
Emp,WS		DT	10	DT	26		
Int	0	BP	0	BP	99		
Vel.sens	0	ST	0	ST	73		
WS 1	OFF	S	0	S	0		
		RT	0	RT	8		
		R	0				

Effect	Placement	Effect 1	Effect 2
	Serial	Chorus	Hall

Electric Organ

OSC		VDF1		VDA1		P.Mod	
OSC MODE	SINGLE	Cutoff	80	Vel.sens	0	Int	0
Assign	POLY	KBD Tr	0	KBD Tr	0	VDF Mod	
Hold	OFF	EG int	0	EGTime VS	0		
OSC1 MS	012:	Vel.sens	0	EG Time KT	0	Int	0
OSC1 Lvl	70	EG Time	0				
Octave	8'	Vel.sens	0				
[Pitch EG]		[EG]		[EG]			
EG Int	0	AT	0	AT	0		
		A	0	A	99		
Emp,WS		DT	0	DT	0		
Int	0	BP	0	BP	99		
Vel.sens	0	ST	0	ST	0		
WS 1	OFF	S	0	S	99		
		RT	0	RT	0		
		R	0				

Effect	Placement	Effect 1	Effect 2
	Serial	Rotary Speaker	Hall

This initial organ sound only contains basic sound parameters and does not include other editing parameters such as the EG, MG, aftertouch, or the values for the VDA and VDF. To obtain a variety of organ sounds, this organ sound may be layered in Combination, or create another organ sound with Double Oscillator.

The most suitable effect for organ is, of course, Rotary Speaker. However, using Rotary Speaker in Multi limits the

possibility of using other effects. Try to use this effect only for organ sounds in the Program mode.

Strings

OSC		VDF1		VDA1		P.Mod	
OSC MODE	SINGLE	Cutoff	78	Vel.sens	48	Int	0
Assign	POLY	KBD Tr	+17	KBD Tr	0	VDF Mod	
Hold	OFF	EG int	0	EGTime VS	0		
OSC1 MS	091:	Vel.sens	0	EG Time KT	0	Int	0
OSC1 Lvl	99	EG Time	0				
Octave	8'	Vel.sens	0				
[Pitch EG]		[EG]		[EG]			
EG Int	0	AT	0	AT	30		
		A	0	A	99		
Emp,WS		DT	0	DT	0		
Int	0	BP	0	BP	99		
Vel.sens	0	ST	0	ST	99		
WS 1	OFF	S	0	S	0		
		RT	0	RT	32		
		R	0				

Effect	Placement	Effect 1	Effect 2
	Serial	Chorus	Hall

Already selected parameters in the Chart are only the VDA envelope, the VDF Cutoff and the KBD Track. If this setting is not enough for realizing your image, create a dual sound in Double Oscillator mode. While in Double Oscillator mode, shifting the values for the parameters of frequency and intensity MG 1 and MG 2 will expand the tone color in various ways.

After the basic sound is determined, it is also necessary to select effects with a proper routing. Selecting Chorus and Reverb in Serial placement is one of many ways to add natural reverberation with spacious expansion.

Making a Strings sound itself is rather simple operation but many other functions will be needed in actual performances such as a Velocity controlled envelope length.

Brass Ensemble

OSC		VDF1		VDA1		P.Mod	
OSC MODE	SINGLE	Cutoff	52	Vel.sens	48	MG1	TRI
Assign	POLY	KBD Tr	0	KBD Tr	0	Freq	42
Hold	OFF	EG int	93	EGTime VS	0	Int	12
OSC1 MS	086:	Vel.sens	0	EG Time KT	0	DL	15
OSC1 Lvl	99	EG Time	0				
Octave	8'	Vel.sens	0				
		KBD Tr	0				
[Pitch EG]		[EG]		[EG]			
EG Int	0	AT	8	AT	3		
		A	99	A	99		
Emp.WS		DT	17	DT	38		
Int	0	BP	62	BP	87		
Vel.sens	0	ST	62	ST	97		
WS 1	OFF	S	0	S	78		
		RT	15	RT	17		
		R	21				

Effect	Placement	Effect 1	Effect 2
	Serial	Early Ref.	Hall

The Brass instruments' unique characteristics at initial attack involves the delicate sound change. This is simulated by the VDF envelope in the above Chart since the Brass sound depends on this initial attack. When trying various settings for the VDF parameter, you may change the Cutoff and EG settings without changing the EG Int setting. Changing the EG Int values results in altering the range of sound change at initial attack.

To obtain an ensemble impact to the sound, two of this Brass sound may be used programmed in Double Oscillator mode. This sound is often layered with Strings in actual performances.

Electric Guitar

OSC		VDF1		VDA1		P.Mod	
OSC MODE	SINGLE	Cutoff	75	Vel.sens	48	Int	0
Assign	POLY	KBD Tr	0	KBD Tr	0		
Hold	OFF	EG int	99	EGTime VS	0	VDF Mod	
OSC1 MS	032:	Vel.sens	0	EG Time KT	0	Int	0
OSC1 Lvl	99	EG Time	0				
Octave	8'	Vel.sens	0				
		KBD Tr	0				
[Pitch EG]		[EG]		[EG]			
EG Int	0	AT	+99	AT	0		
		A	0	A	99		
Emp,WS		DT	40	DT	28		
Int	0	BP	0	BP	87		
Vel.sens	0	ST	0	ST	73		
WS 1	OFF	S	0	S	0		
		RT	0	RT	12		
		R	0				

Effect	Placement	Effect 1	Effect 2
	Serial	Distortion	Hall

The above Chart indicates a typical parameter setting for a guitar sound. This contains shorter decaying envelopes than that of the electric piano and its tone color can be controlled by the VDF.

Since the guitar sound is characterized by its initial attack, this can be simulated by setting a faster decay time or adding a picking noise in Double mode. To create a picking noise, choose the closest sound from the Multi sound list and edit it with a short envelope.

Also a twelve – string guitar sound can be achieved by adding an octave raised sound in Double Oscillator mode. Try various effects such as Chorus and Distortion since the image of the original sound can be easily improved or changed by effects.

Electric Bass

OSC		VDF1		VDA1		P.Mod	
OSC MODE	SINGLE	Cutoff	75	Vel.sens	48	Int	0
Assign	POLY	KBD Tr	0	KBD Tr	0		
Hold	OFF	EG int	99	EGTime VS	0	VDF Mod	
OSC1 MS	032:	Vel.sens	0	EG Time KT	0	Int	0
OSC1 Lvl	99	EG Time	0				
Octave	16'	Vel.sens	0				
		KBD Tr	0				
[Pitch EG]		[EG]		[EG]			
EG Int	0	AT	+99	AT	0		
		A	0	A	99		
Emp,WS		DT	40	DT	28		
Int	0	BP	0	BP	87		
Vel.sens	0	ST	0	ST	73		
WS 1	OFF	S	0	S	0		
		RT	0	RT	12		
		R	0				

Effect	Placement	Effect 1	Effect 2
	Serial	Enhancer	Hall

This Program Chart includes identical parameter settings to that of electric guitar. However, too much editing of the VDF will lose the presence of the bass sound in ensemble situations. Try to stick to Single Oscillator mode and make as simple a sound as possible because layering bass sounds will do nothing but evasing the presence of the sound unless a chorus effect is desired.

For example, you may use Enhancer to give greater definition to the sound. You may also create a bass drum sound with a short envelope and blend it with the attack part of the bass in Double Oscillator mode.

VI : Recording with a Sequencer

The 01/WP01/W is built in with a 16 – track sequencer to allow complete self – production of your original songs with multi – timbral instrumentation. This section describes some of the easy and effective ways to enjoy sequencer recording. Before starting a recording, you should decide on the following important points.

①Choosing a Recording Mode

In the 01/WP01/W one of the following three modes can be selected for making each track of a song.

•Real Time Recording

This mode is good for preserving musical feel or for those who are used to playing the keyboard.

•Step Recording

Since data for each note can be specified mostly by numeric value, this is useful for recording phrases that are difficult to play by hand.

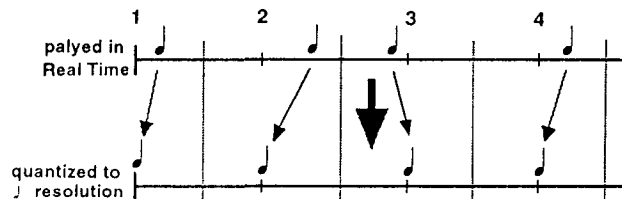
•Pattern Method

Each track of a song can be made by combining several patterns that are separately recorded. This is especially useful for repeating patterns such as a drum part.

Select the best recording method for the nature of each part.

②Determining a Quantizing Resolution

The quantizing function automatically corrects the timing of all notes played in Real Time recording to a selected beat length. When the resolution is set to Hi, all notes will be recorded at the selected basic resolution for each song (a quarter – note = 96 or 48).



③ Selecting Programs for each Track

The 01/WP•01/W can provide a maximum of 16 programs by assigning a separate program to each of 16 tracks (within the maximum number of voices, 32). Be sure to make an advance plan for track structure.

④ Selecting Panpot and Volume for each Track

This is important for mixing each track. While you are selecting panpot and volume, you may want to plan for effect settings also.

The points discussed above will provide easy and effective recording with the least time and effort. Now you can make any kind of songs up to your creativity because you now know all the basics of the sequencer's operation.

Recording a Rhythm and Melody

On the next few pages are guide procedures for recording a song with keyboard, guitar, bass and drum tracks. A sample song chart is illustrated as below.

※Make sure you number each of drum patterns (P00~P02), beforehand.

Sample Song

The musical score is titled "Sample Song" and consists of four staves. The top staff is for Keyboard (Kb) and shows chords: Am, Am7onG, D7onF#, F, and E7. The second staff is for Guitar (Gl) and is marked "With Distortion". The third staff is for Bass and shows a rhythmic line. The fourth staff is for Drum and shows four patterns labeled Pattern00, Pattern02, Pattern00, and Pattern02, with a "Fill in" at the end. The score is in 4/4 time and includes a piano (p) dynamic marking.

① Selecting Song Tracks and Programs

Page "0" is used for selection of programs to Tracks 1 – 16. Quantize works after recording each track. For the sample song keyboard, guitar, bass and drums are recorded for Tracks 1 – 4, respectively. Select programs by shifting the cursor to each track on the screen.

※Before recording, call up the Song parameter on page "0" and select a song to be recorded. If data already exists in the selected song, call up the Erase Song parameter on page "5" to erase the data.

SONG1 P5:EDIT SONG

Step Recording	Bounce Track
Create CTRL Data	Copy Track
Event Edit	Erase Song
Erase Track	Append Song

SONG1

[ERASE]

②Checking Programs on Each Track

When the program for each track is selected, check the sound on each track by playing the keys.

SONG1 New Song

▶Track

A01 A14 A16 A98 A00 A00 A00 A00

A00 A00 A00 A00 A00 A00 A00 A00

SONG1 **Tr 04** M001 4/4 QUWR
J=120:MAN Q:HI M:OFF Edit:PRG

③Recording a Drum Part with Patterns

Since the drums part in the sample song consists of 3 patterns, create patterns 1 – 3 by the Pattern method and combine them. To create each pattern, use Pattern Real Time Recording and Pattern Step Recording on page 7. The figure below illustrates making P00 – P02 by Real Time Recording.

SONG1 P7:PATTERN

▶Pattern Number

Real Time Rec	Erase Pattern
Step Recording	Get From Track
Event Edit	Bounce Pattern
Pattern Parameter	Copy Pattern

P00 J=120 M-- Hi MM:OFF

Arrange the created patterns on Track 4 by using Put/Copy Pattern.

SONG1 P6:EDIT MEAS

▶Dest Track

Quantize	Erase Measure
Shift Note	Copy Measure
Modify Velocity	Insert Measure
Delete Measure	Put/Copy Pattern

Pat00 → **Tr 04** M001 [PUT][CPY]

④Recording a Bass Part by Real Time Recording

Check the following parameters before recording

•Setting a Lead – in measure

Call up the Metronome L.in parameter on page 9 and set the number of lead – in measures to either 1 or 2.

•Setting a Quantize Resolution

Set a resolution at Q: on page 9.

When the above parameters are set properly with Track 3 selected, go back to page 0 and start recording. Select Overwrite for the recording mode.

SONG1 New Song				▶REC Mode			
A01	A14	A16	A98	A00	A00	A00	A00
A00	A00	A00	PLAY	A00	A00	A00	A00
SNG1 Tr03 M005 4/4				DUWR			
J=120:MAN Q:HI M:ON				Edit:PRG			

Press the START/STOP key after pressing the REC/WRITE key. Recording starts after the selected number of lead – in measures. Pressing the START/STOP key again stops the recording.

SONG1 New Song				▶ 99% Free			
A01	A14	A16	A98	A00	A00	A00	A00
A00	A00	A00	REC PLAY	A00	A00	A00	A00
SNG1 Tr03 M002 4/4				DUWR			
J=120:MAN Q:HI M:ON				Edit:PRG			

A recorded song can be played back immediately by pressing the START/STOP key.

SONG1 New Song				▶ 99% Free			
A01	A14	A16	A98	A00	A00	A00	A00
A00	A00	A00	PLAY PLAY	A00	A00	A00	A00
SNG1 Tr03 M003 4/4				DUWR			
J=120:MAN Q:HI M:ON				Edit:PRG			

Next, record the keyboard and melody parts by Real Time Recording.

⑤Setting Monitor Tracks ON/OFF

While recording is continued, any of the song data can be monitored whenever necessary by setting PLAY/MUTE on page 0.

SONG1 New Song				▶A14:E Guitar &			
A01	A14	A16	A98	A00	A00	A00	A00
PLAY	PLAY	PLAY	PLAY	A00	A00	A00	A00
SNG1 Tr02 M001 4/4				DUWR			
J=120:MAN Q:HI M:ON				Edit:PRG			

⑥Correcting track data by Auto Punch IN/OUT

If the 3rd through the 4th measure of the keyboard track needs to be corrected for example, Auto Punch IN/OUT can be used to re – record only the specified measures in stead of recording from the beginning again. This can be done by selecting Auto Punch IN for the recording mode.

Set the recording mode as AOTP first and select Track 1, then set both the punch in measure and the punch – out measure.

SONG1 New Song				▶Punch Out Bar			
A01	A14	A16	A98	A00	A00	A00	A00
PLAY	PLAY	PLAY	PLAY	A00	A00	A00	A00
SNG1 Tr01 M003 4/4				AOTP:003 → 004			
J=120:MAN Q:HI M:ON				Edit:PRG			

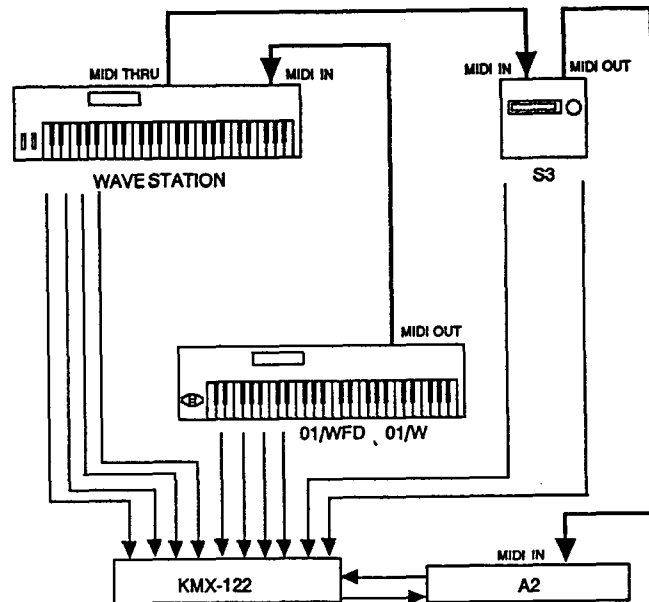
Select the number of measure(s) between the starting measure for play – back and the punch – in measure by setting the Location Measure.

SONG1 New Song								▶Measure
A01	A14	A16	A98	A00	A00	A00	A00	
PLAY	PLAY	PLAY	PLAY					
A00	A00	A00	A00	A00	A00	A00	A00	
SONG1 Tr01 0000 4/4				AUTP:003 → 004				
J=120:MAN Q:HI M:ON				Edit:PRG				

Start recording and play along with the monitoring tracks, then only the specified measure will be re – recorded.

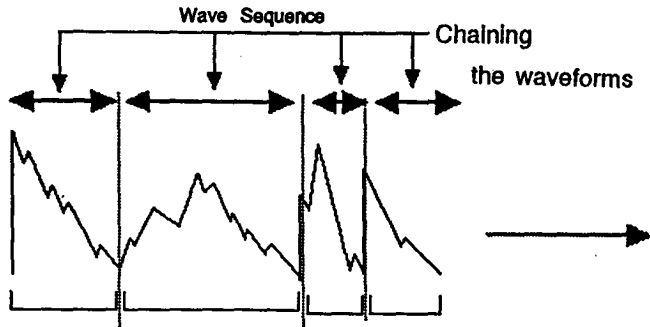
A sample MIDI system around 01WFD • 01/W

The 01/WFD•01/W is built in with a complete MIDI system architecture. However, this can be further expanded to more sophisticated MIDI system by adding external MIDI sound sources such as the Wavestation and the S3.



① Making full use of each instrument's features

One of the main features of the Wavestation is the advanced vector synthesis that allows you to select up to 4 of the many waveforms + 32 wave sequences and mix them in any desired manner with the vector joystick. The Wavestation is also the first synthesizer to make the wave sequencing possible. Since the Wavestation is also 32 voices polyphonic, combining this with the 01/WFD•01/W will allow the maximum of 64 voices.



The S3 is a complete rhythm workstation where all operations pertinent to rhythm parts are done in one unit. Therefore, in a MIDI system with the S3, you can let the S3 control all drum and percussion parts while you play other sound oriented parts on the 01/WFD•01/W and the Wave - station.

② Use of sequencer

Since the 01/WFD•01/W is equipped with 16 track sequencer while the Wavestation is without a sequencer, it is a good idea to control the sequencer operation on the 01/WFD•01/W. (The S3 also contains an 8 track sequencer, but all data controlling operation should be integrated into a single unit such as, in this case, the 01W•01WFD.) Refer to the table below for sample assignment of track. In this example, track 1 through 9 and 11 through 16 are assigned so that up to 4 voices can become available for use in each track. Some tracks that use monophonic instruments (such as bass) can increase the number of other tracks' voices to, in this case, over 4 voices.

1	01/WFD•01/W(PIANO)
2	01/WFD•01/W(BASS)
3	01/WFD•01/W(GUITAR)
4	01/WFD•01/W(FLUTE)
5	01/WFD•01/W(OBOE)
6	01/WFD•01/W(CLARINET)
7	01/WFD•01/W(VLN)
8	01/WFD•01/W(VCL)
9	WAVESTATION(BRASS)
10	S3(Rythm)
11	WAVESTATION(SAX)
12	WAVESTATION(SYN-CHORD)
13	WAVESTATION(SYN-LEAD)
14	WAVESTATION(SEQ1)
15	WAVESTATION(SEQ2)
16	WAVESTATION(SE)

③ Wave sequence the Wavestation

Wavestation's wave sequence can be synchronized with the MIDI clock. This will easily allow making of rhythm combinations with the S3.

④ Setting of effects

Since each of the 01/WFD•01/W, the Wavestation and the S3 is equipped with two – channel digital effect processors, you can now use 6 effect processors altogether. In this example, the 01/WFD•01/W and the Wavestation are connected with an external reverb effect while the S3 uses its built – in effects for itself. In this setting up to 4 separate effects can be assigned to each timbre on the 01/WFD•01/W and the Wavestation. For example, after assigning Distortion to guitar, Enhancer to piano, Stereo Chorus to strings and stereo Delay to the Wave sequence part, you can use a reverb of the external effect to the rest of the parts. It is always smart to use an external effect for improving overall sound and save the built – in effects for coloring the individual sounds.

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