

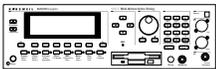
## Chapter 7

# Setup Mode and the Setup Editor

## Setup Mode

In Setup Mode, the K2500 can take on the identity of eight distinct instruments and eight distinct MIDI transmitters, each of which can use the same set of physical controllers, or any subset of those controllers. For example, you can create a keyboard which is split into eight different regions, each of which has its own instrument (say, drums, bass, piano, sax, guitar, percussion, violin, and organ), and each of which also transmits on its own MIDI channel, so that eight different internal programs and external MIDI instruments can be played individually on different parts of the K2500 keyboard.

Selecting setups in Setup mode is much like selecting programs in Program mode—just use one of the normal data entry methods to scroll through the list of setups. Standard program changes select the correspondingly numbered setups while the K2500 is in Setup mode.



If you're using a K2500R, or any K2500 receiving MIDI program changes, you must set the LocalKbdCh parameter on the MIDI RECV page to match the transmit channel of your MIDI controller.

There are some important differences between a *program* and a *setup*. A program comprises several layers, but plays on only one keyboard region, called a "Zone", and only one MIDI channel. A setup enables you to use up to eight keyboard (or MIDI controller) Zones, each of which can have its own program, MIDI channel, and control assignments. The parameters you define for each setup only affect programs *while you are in Setup Mode*. The only exception to this is the Control Setup, which we'll cover shortly.

Setup Mode	MPOSE: 051
Chan/Program Info	221 Friday Gig
1 9 Cool Traps	222 Bop Rock Reggae
2 18 Sly Acoust	301 Jazz Trio
3 22 Izit Jimmy	302 All Percussion
	303 Heavy Metal
	304 To Sequencer
Octav- Octav+ Panic Sample	

Press the Setup mode button to enter Setup mode. You'll see a list of setups that you can select with any data entry method. For setups containing three or fewer Zones, the box at the left side of the display shows you the programs assigned to each Zone in the currently selected setup, and the MIDI channels on which they're being transmitted. An "L" or an "M" next to the channel number indicates that the Zone transmits only to Local or MIDI programs, respectively. "Off" indicates that the Zone has been turned off completely.

The lines beneath the program names represent the approximate key range of each Zone, and let you know whether any of the Zones overlap. For setups with four or more Zones, the box displays only the lines representing key range information.

You can transpose the entire setup up or down with the two **Octav** soft buttons. Press them simultaneously to set the transposition back to zero. When you transpose a setup, the split points between Zones remain in place; each program is transposed within its respective Zone.

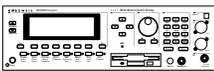
The **Panic** soft button sends “all notes off” and “reset all Controllers” messages to all Zones. The **Sample** soft button provides convenient access to the K2500’s sampler. Refer to Chapter 15 for complete information on the sampler.

When you select a setup in Setup mode, the K2500 sends a number of MIDI messages, on each of the MIDI channels used by the setup. Some of these include: Program Change commands, MIDI Bank Select messages, Pan and Volume messages, and Entry Values for physical controllers. The values of all these messages depend on the parameters you define in the Setup Editor.

### Loading Older Setup Versions

You can load K2000 setups, or setups which used a previous version of the K2500’s software, into the Version 2 Setup mode. You can then edit your older setups to take advantage of the K2500’s expanded features. Keep in mind though that once you save these setups in the new version of Setup mode, you won’t be able to play them on a K2000, or on a K2500 with pre-Version 2 software.

## K2500 Rack Models Only



With software version 2.0 or higher installed, the rack version of the K2500 offers the same splitting and layering capabilities as the keyboard version. Even if your MIDI controller can transmit on only one MIDI channel at a time, you can use the K2500’s setups by setting the Local Keyboard Channel parameter on the MIDI mode RECV page to match the channel you’re using to transmit from your MIDI controller. This will enable you to play the setup’s eight Zones, and send the MIDI information from your MIDI controller to the K2500R’s MIDI Out port, on the channels used by the current setup.

Once you have properly set the Local Keyboard Channel, the K2500R will remap Controller messages from your MIDI controller. Some examples of these Controller messages include: Modulation (01), Foot (04), Data (06), Mono Pressure (32), Sustain (64), and Sostenuato (66). By sending preset controller numbers, you can remap them to the controllers assigned within the Setup Editor. For these preset numbers, along with more on using a MIDI controller with the K2500R, see the discussion of the Local Keyboard Channel in Chapter 10.

If you send data on a channel other than the Local Keyboard Channel, no remapping will occur. You will only hear the program assigned to the channel your MIDI controller is transmitting on.

For the remainder of the chapter, we’ll cover topics that apply to both the rack and keyboard versions of the K2500. However, any references to the sliders, ribbons, wheels, buttons, or other physical controllers are intended primarily for K2500 keyboard owners.

## The Control Setup

In addition to Zone splitting and layering, Setup Mode is a powerful way to take advantage of the K2500’s programmable sliders, ribbon controllers, and assignable buttons. However, you may wish to modify the behavior of those controllers in Program mode as well. The Control Setup defines the controller assignments for programs in Program Mode.

In previous versions of the K2500 operating system, the MIDI mode XMIT page contained several parameters for controller assignments. However, with the large number of features newly available on the K2500, it has been necessary to put physical controller parameters in the Control Setup.

The default Control Setup is “97 Control Setup”, but you can choose any Control Setup you want. To do this, enter the MIDI mode XMIT page and use any normal data entry method to change the CtlSetup parameter. When you re-enter Program Mode, all programs will now

respond to the controller assignments defined in Zone 1 of the Control Setup (Zones 2–8 are not relevant in Program mode, because a Program can only occupy one MIDI channel).

To edit the Control Setup, press the EDIT button while the CtlSetup parameter is highlighted on the MIDI XMIT page. This brings you to the Setup Editor, which is described in the following sections. The table below shows which Control Setup Parameters will affect programs in Program mode.

Control Setup–Setup Editor Page, Zone 1	Parameters Affecting Program Mode	Parameters <i>Not</i> Affecting Program Mode
CH/PROG	ZoneArpeg	LocalPrg, Channel, MIDIBank, MIDIProg, Status, Destination, MIDIBankMode, EntryProgChg,
KEY/VEL	VelScale, VelOffset, VelCurve	LoKey/HiKey, Transpose, NoteMap, LoVel/HiVel
PAN/VOL	None	
BEND	All	
COMMON	None	
ARPEG	All	
RIBCFG	All	
Continuous Controller assignment pages (SLIDER, SLID/2, CPEDAL, RIBBON, WHEEL, PRESS)	Dest, Scale, Add, Curv	Ent and Exit
Switch Controller assignment Pages (FOOTSW, SWITCH)	SwType, Dest, On, Off	Ent and Exit

In summary, physical controller destinations, their curves and states, and the Arpeggiator parameters all define controller assignments for programs in Program Mode. The other parameters have no effect; this keeps Program mode from being too complex. Program mode lets you change values for transposition, MIDI Channels, and programs independently of the Control Setup.

Once you save changes to the Control Setup, those changes will affect all programs when you are in Program mode. For example, programming the Large Ribbon in the Control Setup to have three sections will mean that in every program in Program mode, you will have a three-section Large Ribbon.

You may find that it's a good idea to program several different Control Setups, and switch among them for different applications.

## The Setup Editor

From Setup mode, press the EDIT button to enter the Setup Editor, and you can make changes to the currently selected setup. The Setup Editor consists of pages that you access by using the K2500's soft buttons. The upper line of each page displays the usual mode reminder, the current Setup Editor page, and the current Zone. Use the CHAN/BANK buttons to select one of up to eight different Zones, each having its own Setup Editor page.

The parameters on the Setup Editor's pages define what each of a setup's Zones sends, both to internal programs and to the MIDI Out port. They also determine how the K2500 responds to MIDI signals received from a MIDI controller connected to the K2500's MIDI In port (when the Local Keyboard Channel matches the transmit channel of your MIDI controller).

## The Channel/Program (CH/PROG) Page

This is the first page you see when you enter the Setup Editor. Here, you can select programs, MIDI channels, and MIDI bank numbers for each of the setup's eight Zones. You can also solo or mute each Zone, and assign Zones to be controlled by the K2500's Arpeggiator.

```

editsetup:CH/PROG          <>zone1/1

LocalPrg:1 Acoustic Piano
Channel :1      Destination :Local+MIDI
MIDIBank:0     MIDIBankMode:Ctl 32
MIDIProg:1     EntryProgChg:On
Status :Active  Arpeggiator:Off
<more> CH/PRG KEYVEL PANVOL BEND >more>
    
```

PARAMETER	RANGE OF VALUES	DEFAULT
LOCAL PROGRAM	Program list	1 Acoustic Piano
CHANNEL	1-16	1
DESTINATION	Destination list	Local+MIDI
MIDI BANK	None, 0-127	0
MIDI BANK MODE	MIDI Bank Mode list	Ctl 32
MIDI PROGRAM	None, 0-127	1
ENTRY PROGRAM CHANGE	On/Off	On
STATUS	Status list	Active
ZONE ARPEGGIATION	On/Off	On

### Local Program (LocalPrg)

This selects an internal program to play on each Zone. As you change the Local Program, notice that MIDI Program and MIDI Bank match the Local Program and Bank numbers. If you want to transmit different program and bank numbers over MIDI, highlight either MIDI Program or MIDI Bank and select a new value. Note that changing the Local Program parameter again will reset both the MIDI Program *and* MIDI Bank parameters to match the local program and bank numbers.

### Channel

The Channel parameter defines the MIDI transmit channel for the currently selected Zone. You can set it to any of the 16 MIDI channels. Normally, you will want each Zone on a separate MIDI channel. This is necessary if you want to combine different programs in the setup.

If two Zones have the same MIDI channel (and destination), but they have different Program settings, there will be conflicts: no MIDI device, including the K2500, can respond correctly to two different simultaneous Program Change commands on one channel. The result will be that only one Program Change will be recognized, and every note played will sound double (if Note Maps are on). This can create unpredictable odd timing effects, and will reduce polyphony by 50%.

There will, however, be occasions when "stacking" Zones on the same MIDI channel might come in handy. Suppose you want a physical controller on the K2500 to send data out for two *different* numbered MIDI Controllers on the *same channel*. In this case, you must create two Zones assigned to the same channel, but with different controller assignments.

Here's one example: if a receiving synth is using Controller #1 for modulation depth and Controller #13 for modulation speed, you can increase both the depth and the speed with Slider A. Start by assigning that slider in Zone 1 to MWheel and in Zone 2 to MIDI 13; then assign both Zones to the same MIDI channel. (You may want to make sure you aren't sending doubled notes. Use the Note Map parameter on the KEY / VEL page to set one Zone's Note Map to "Linear" and the other Zone's Note Map to "Off").

Another example: create two or more Zones that are identical except for their transposition settings. Now you can play parallel intervals (or chords) with single keystrokes.

### **MIDI Bank**

The K2500's programs are divided into ten MIDI banks, numbered 0-9. Program 22 in Bank 1, for example, is 122 "Treble Flute". The MIDI Bank parameter displays which Bank the current program is assigned to, and automatically changes to match the Local Program value you set.

You can send Bank Select messages to external MIDI devices as well, by setting Destination to MIDI or Local + MIDI, then changing MIDI Bank. Some instruments may have more than ten banks; the MIDI Specification says a device can have up to 16,384(!) banks, and the K2500 gives you access to every single one of them. Bank switching over MIDI makes it easy for the K2500 user to select sounds on external instruments, no matter how many banks they might have.

If you select an empty Bank (like Bank 16, 383), the Zone will still produce sound on the K2500, provided that Destination is set to Local or Local + MIDI. The LocalPrg parameter will display whatever internal program you set, but the bank number transmitted over the MIDI Out port will be different from the internal program's bank number.

### **MIDI Program (MIDIProg)**

MIDI Program defines which program number is transmitted out the MIDI Out port on the current Zone's MIDI channel.

### **Status**

This parameter defines whether the current Zone is Active (sends and receives normally over MIDI), Muted (sends and receives program changes but doesn't play notes), Soloed (all other Zones are muted, but the current Zone plays), or Solo/M (the current Zone is both soloed and muted; when the Zone isn't soloed, it won't produce sound).

The K2500 features a set of eight buttons, located above the programmable sliders. Each button mutes, un-mutes, or solos its correspondingly numbered Zone. A green light means the Zone is active; press a Zone's button once to mute it, and the light turns orange. Unlighted buttons indicate empty Zones.

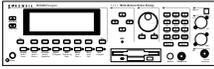
To solo the current Zone, first press the "SOLO" button, located to the left of the eight sliders. The SOLO button will turn red and the current Zone's button will turn red, indicating that the Zone is soloed; all other Zone buttons will remain green. While the SOLO button is lighted, you

## Setup Mode and the Setup Editor

### The Channel/Program (CH/PROG) Page

can solo any other Zone by pressing its button. Press the SOLO button again to un-mute all Zones.

You can change Status by using any normal data entry method; buttons 1–8 will light to correspond with the values you select.



K2500R owners can mute and un-mute Zones by using the first three mode select buttons: PROGRAM (Mute 1), SETUP (Mute 2), and QACCESS (Mute 3). For setups containing up to three Zones, pressing each button mutes or un-mutes Zone 1, 2, or 3. For setups containing four or more Zones, pressing Mute 1 will mute the current Zone; pressing Mute 2 or Mute 3 will solo the current Zone. You can then press the CHAN/BANK buttons to solo each Zone.

On the K2500R, each button turns only one color (red); a system of lighted/unlighted buttons lets you know that certain Zones are soloed or muted. When you use the CHAN/BANK buttons to scroll to other Zones, the buttons will light according to each Zone's status. The illustration below explains how to interpret this system.

### Setups containing 3 or fewer Zones

<p>All Zones Active.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>	<p>Press Mute 1, Mute 2, or Mute 3 to Mute each Zone.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>
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### Setups containing 4 or more Zones

<p>Press Mute 1, and the current Zone is Muted.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>	<p>Press Mute 2 or Mute 3, and the current Zone is Soloed; press CHAN/BANK buttons to solo each Zone.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>
<p>Current Zone Active—some other Zones Muted.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>	<p>Some Zones Muted, including Current Zone.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>
<p>All Zones Active.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>	<p>All Zones Muted.</p> <p><i>Program</i>     <i>Setup</i>     <i>Q Access</i> Mute 1     Mute 2     Mute 3 Zoom -     Zoom +     Samp/Sec</p>

The K2500 keyboard's mode select buttons also light as shown above. However, buttons 1–8 provide a more convenient and useful way to mute, un-mute, and solo Zones.

### I Don't Hear a Zone: Is It Active (But Not Soloed), Muted, or Empty?

There are important differences between a Zone that is silent because a different Zone has been soloed (green light, when another Zone is red); a Zone that is muted (orange light); and one that is empty (no light).

A Zone *not soloed* (but otherwise active) doesn't send notes or controllers, but will send exit and entry values for its programs and controllers when you enter or leave the Setup.

A Zone that is *muted* behaves just like a Zone that is not soloed; notes and controllers are not sent to internal programs or to MIDI. A muted Zone does have a program number and a MIDI channel, as well as a complete set of other parameters, all of which come into play when the Zone is un-muted.

A Zone that is *empty* has no MIDI channel. It generates no data until you create it by pressing the **NewZn** soft button (see the New Zone section on page 7-41).

<b>Color:</b>	Green	Green (but another is Red)	Red	Orange	None
<b>State:</b>	Active	Active (not Soloed)	Soloed	Muted	Empty (no Zone Present)
<b>Data Generated:</b>					
Notes	√		√		
Controllers	√		√		
Program number	√	√	√	√	
Entry and Exit values	√	√	√	√	

You can quickly disable and enable an individual sound or a MIDI instrument by changing a Zone's status from active to muted. This can be very useful for live performance, to bring layers of sound in and out quickly. When you save a Setup, the mute and solo statuses of the Zones are stored along with the rest of the parameters, and when you recall the Setup, those statuses are automatically enabled. So, you could call up a Setup that has one Zone Soloed, and instantly add instruments by turning off Solo. Or you can select a Setup that has one or more muted Zones, and un-mute them as you play.

### Destination

This determines whether the currently selected Zone transmits only to the K2500 (Local), gets sent only via MIDI (MIDI), controls both the K2500 and connected MIDI instruments (Local+MIDI), or is disabled (Off). Setting Destination to "Off" turns the Zone off completely; no MIDI data will be sent and no local program will sound.

### MIDI Bank Mode

The MIDI Bank Mode you choose determines how bank numbers will be sent over MIDI when the Setup is selected, and in what format. It also affects how many MIDI banks you can choose.

**None** means no bank number is sent, just the program number. **Ctl 0** means that the bank number is sent as a MIDI Controller #0 message. **Ctl 32** means it is sent as MIDI Controller #32. **Ctl 0/32** means it is sent as a dual-controller (two-byte) message, with the MSB of the bank number sent as Controller #0 and the LSB as Controller #32. Single-byte Bank Select messages (either 0 or 32) allow you to specify banks numbered 0-127. Two-byte messages allow you to specify banks numbered 0-

16,383. With 128 programs per bank, this allows you to access 2,097,152 different programs on one instrument.

The MIDI Specification is a little ambiguous when it comes to Bank Select messages, as to whether they should be only Controller 0, only Controller 32, or both Controllers sent as a pair. Different manufacturers design their instruments to respond to different schemes, and if you send Bank Select in a form an instrument doesn't like, it may ignore it or interpret it incorrectly. This K2500 parameter is designed to allow the greatest flexibility in addressing other MIDI instruments. Usually you can look on the MIDI Implementation chart in the user's manual of an instrument to determine how it likes to receive Bank Select messages, and then set this parameter for each Zone to suit the instrument that is receiving data from it. The default setting, which will work with the largest number of other instruments, is **Ctl 32**.

There are two other options, which will be of special interest to owners of other Kurzweil instruments. The **K2000** Bank mode is designed to work with the K2000 or the K2500. The Bank Select message is sent as Controller #32, with a value between 0 and 9. Remember, the K2000 and K2500 only support 10 banks and 99 programs per bank, so Program Changes 100 or higher are sent as Bank Select 1, followed by the last two digits as a Program Change. For example, if Program 124 is assigned to the Zone, this will be sent out the MIDI jack as Bank Select (Controller #32) 1, and then Program Change 24.

**K1000** is used with any of the 1200-series keyboards or modules, or any of the 1000-series instruments that have version 5 software installed. Those instruments pre-date the adoption of standard Bank Select messages; instead, they use Program Changes 100-109 as Bank Selects. If you select Bank 5: Program 42 for a K2500 Zone, for example, it will send out Program Change 105 followed by Program Change 42. K2500 program numbers over 99 are not sent.

### **Entry Program Change (EntryProgChg)**

This enables or disables bank and program change commands sent to internal programs or to the MIDI Out jack when you select setups. If it's set to On, then the program numbers for the programs in the eight Zones will be sent via MIDI when a setup is selected. By setting this parameter to Off, you can select a setup on the K2500, without changing the internal programs or those on MIDI devices receiving from the K2500. This is useful if you want to send only controller data to the K2500 or to MIDI devices, without changing program assignments.

### **Zone Arpeggiation (ZoneArpeg)**

Zone Arpeggiation determines whether the Arpeggiator will play notes in the selected Zone. Turning some Zones **On** and not others means that some programs will be Arpeggiated and some will not. If all Zone Enables are **Off**, then the Arpeggiator won't transmit to the current Zone.

The notes that are generated by the Arpeggiator are restricted in each Zone to that Zone's Key Range. If the Arpeggiator, for example, tries to play a C#4 in a Zone, but that Zone's Key Range ends at C4, the note will not sound. However, another Zone whose Key Range ends at C5 *will* be able to play the C#4 from the Arpeggiator. Therefore, setting a Zone's Key Range can be important in deciding how it will respond to the Arpeggiator. (A separate Key Range, found on the ARPEG page, defines which notes the Arpeggiator will recognize.)

## The Key/Velocity (KEY/VEL) Page

The Key/Velocity page allows you to set key range, velocity range, transposition, and Note Maps for each Zone.

```

editsetup:KEY/VEL <>zone1/1
LoKey:C -1 Transpose:0ST
HiKey:G 9 Notemap :Linear
VelScale :100%
LoVel:1 VelOffset:0
HiVel:127 VelCurve :Linear
<more CH/PRG KEYVEL PANVOL BEND more>
  
```

PARAMETER	RANGE OF VALUES	DEFAULT
LOW KEY	C -1 to G9	C -1
HIGH KEY	C -1 to G9	G9
TRANPOSE	-128 to +127 semitones	0 semitones
NOTE MAP	Note Map list	Linear
LOW VELOCITY	1-127	1
HIGH VELOCITY	1-127	127
VELOCITY SCALE	±300%	100%
VELOCITY OFFSET	-128 to +127	0
VELOCITY CURVE	Velocity Curve List	Linear

### Low Key (LoKey), High Key (HiKey)

The LoKey and HiKey parameters define the note range of the currently selected Zone. The easiest way to change these values is to press the **SetRng** soft button, which you can access by pressing either of the **more** soft buttons. You'll be prompted to trigger the notes you want to be the lowest and highest notes for the Zone. When you do, you'll return to the Setup Editor page, and the notes you triggered will be reflected in the values for LoKey and HiKey. They'll also be represented by the lines beneath the program names in the box at the left of the Setup mode page. You can set these values with normal data entry methods as well.

You can create "negative" ranges as well. To do this, select the HiKey parameter and set its limit *lower* than the LoKey limit. This results in the Zone being active at the top and bottom of the keyboard, but being silent in the range between the two limits. This lets you create a layer with a "hole" in the middle, which you can then fill with a different sound on another Zone (either an internal or on an external program).

Note that using the **SetRng** soft button won't allow you to create a negative range, since it always defines the higher keystroke as the HiKey value. If you want to set HiKey lower than LoKey (or vice versa), use a normal data entry method. Unfortunately Intuitive Entry is not a good way to set note ranges (see the discussion on Intuitive Entry in Chapter 3).

The limits of MIDI are C-1 to G9. The untransposed 88-key range is A0 to C8. The untransposed 76-key range is E1 to G7.

### Transpose

This changes the pitch of the Zone, without changing its position on the keyboard. It changes the MIDI note numbers generated by the keys in the Zone, without physically shifting the Zone. The range is ±127 semitones. Since there are 12 semitones (or half steps) to an octave, you can transpose up or down over ten octaves. If you transpose out of the range of the active voice, however, no notes will sound; MIDI note numbers will transmit, but notes will not.

### Note Map

Note Map lets you change the way notes are sent from the K2500. The default setting is **Linear**: all notes go out as played. Moving decrementally takes you to **Off**: no notes are sent, but controllers and other non-note data are.

Next comes **Inverse**, which turns the keyboard upside-down, with the highest key being A 0 and the lowest C 9. If you set Note Map to **Constant**, all of the keys on the keyboard will play the same note. The note defaults to C4, but you can change this with the **Transpose** parameter. This comes in handy when you're laying a ride cymbal over a bass, or a wood block over a flute.

Next are the alternating Note Maps, which let you divide the keyboard up in some unique ways. If you are using two or more MIDI devices (including the K2500), you can expand polyphony by assigning each Zone to a different alternating Note Map. For example, if you have two K2500s, you can assign two Zones to each play the same program on a different K2500, thereby doubling polyphony.

To split a Zone into one of two alternating Note Maps, set Note Map to "1 of 2"; now the Zone plays on every second key, starting on C, but won't play on any other keys. Set another Zone to "2 of 2", and this Zone will play on every second key, starting on C#, thus covering the remaining keys.

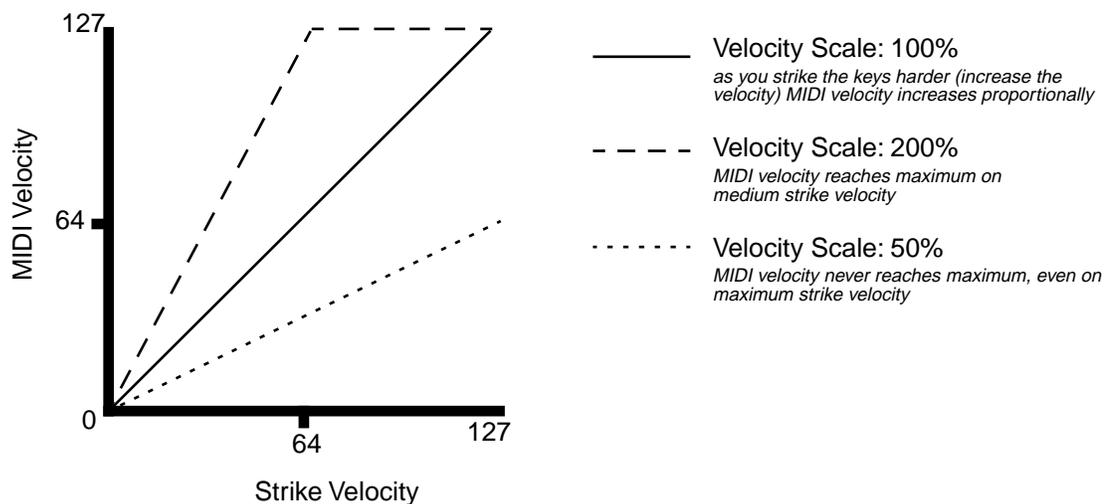
Three- and four-zone alternating Note Maps work the same way, but cause each Zone to play only on every third and every fourth key, respectively.

**White** and **Black** allow you to compensate for the differing velocity responses of white versus black keys on some keyboards. By choosing White for one Zone and Black for another, you can modify velocity curves and limits independently for the white and black keys.

## Velocity Scale (VelScale)

This lets you amplify or diminish velocity response. Normal response is “100%”. Higher values make the keyboard more sensitive (you don’t need to play as hard to get higher MIDI velocities) while lower values make it less sensitive (playing harder doesn’t change MIDI velocity as much). You can also set the scale to a negative number, in which case the velocity response is turned upside-down: playing harder produces a softer sound and vice versa. See the following section on Velocity Offset for ideas about negative scaling. A neat thing to try is to set up two Zones with opposite scale factors so that key velocity acts as a crossfade between the two sounds. Maximum scale values are +300% and -300%.

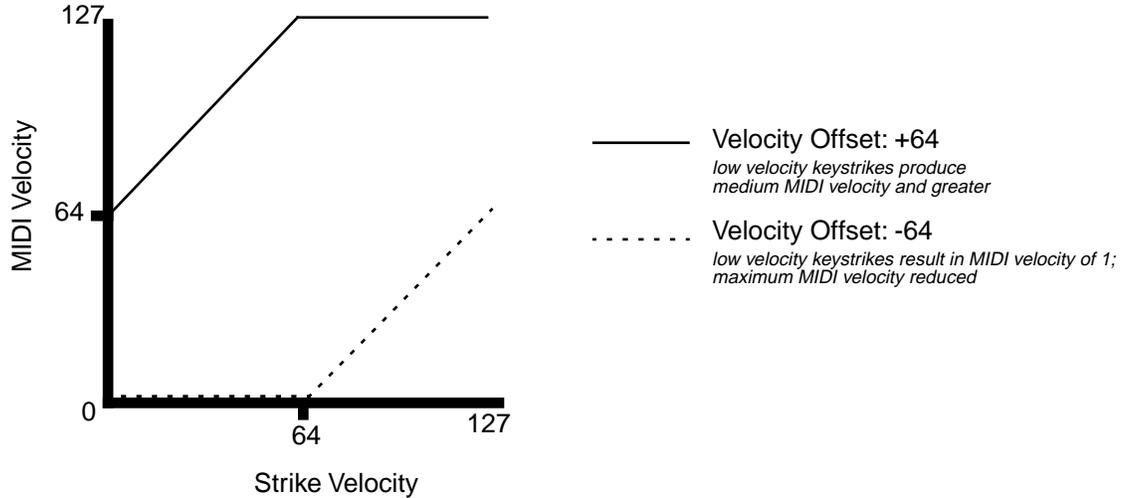
The illustration that follows shows what happens when you change Velocity Scale. Note that Velocity Scale is the only parameter changed in this example; the other parameters are set to their defaults (offset = 0, curve = linear, min = 1, max = 127).



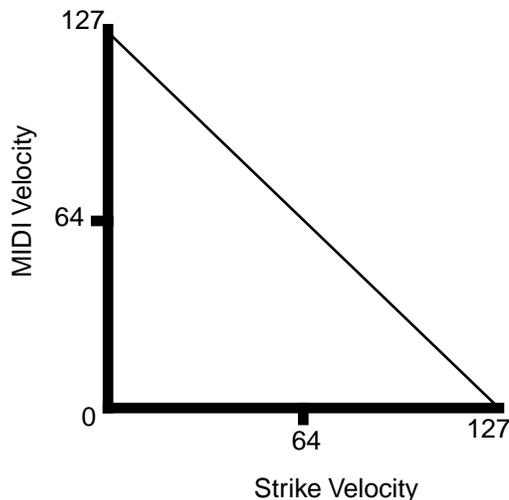
## Velocity Offset

**VelOffset** also changes the response, but in a more direct way, by adding or subtracting a constant to the key velocity. For example, if this is set to 25 (assuming a scale of 100%), then 25 is added to the velocity of every keystroke, usually making the sound that much louder. The softest possible keystroke will have a value of 25, while a keystroke with velocity of 102 will produce the same sound as a note with velocity 127 ( $102+25=127$ ). Negative values diminish the response: a setting of -25 means the loudest velocity available will be 102, while any keystroke 25 or below will produce a velocity of 1 (a velocity value of zero has a special meaning in MIDI and cannot be used for note-ons).

You can think of Scale as being a proportional change to the velocity, while Offset is a linear change. The maximum values for Offset are  $\pm 127$ . The illustration below shows the effects of Velocity Offset. Note that Velocity Offset is the only parameter changed in this example; the other parameters are set to their defaults (scale = 100%, curve = linear, min = 1, max = 127).



Offset and Scale work together. If scaling takes the velocity out of the ballpark — for example, you want to set it to 300% but that puts *all* of your notes at maximum velocity — using a negative offset, say around -60, can make it possible to still play at different volumes, although your curve will still be a lot steeper than normal. If you use a negative scaling, then you must use an offset: otherwise all of your velocities will end up as zeroes (well, ones actually, since a MIDI note-on with velocity zero is something else). So to get true inverse scaling (that is, minus 100%), you must set an offset of 127 to get the full range of velocities. Setting the offset to 127 and the scale to -100% produces a slope like this:



Note that Offset and Scale only affect MIDI velocities; that is, these parameters don't change Velocity Tracking in the programs themselves. Therefore, some programs (such as organ sounds, which often have low VelTrk values) may respond only subtly to Offset and Scale, or not at all.

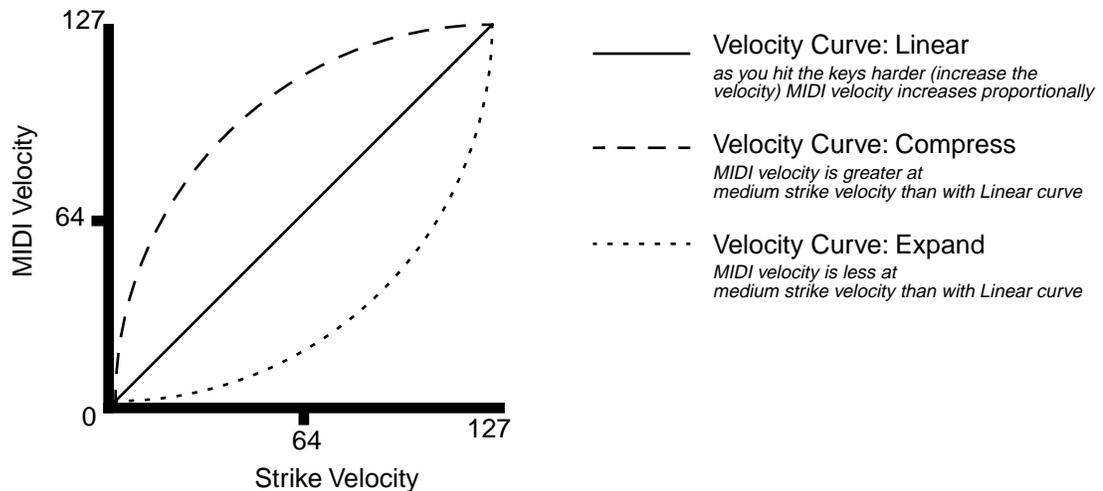
## Velocity Curve (VelCurve)

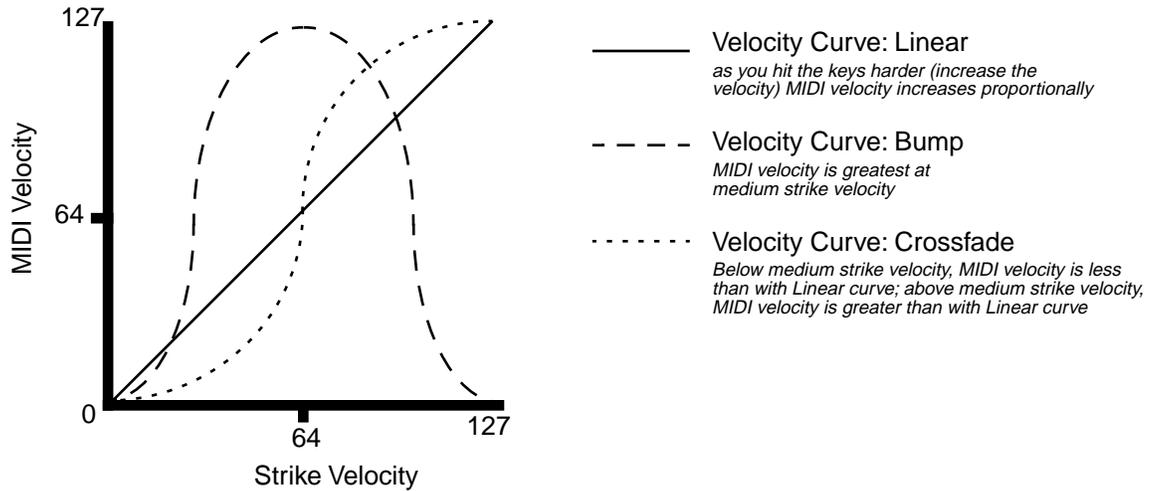
**VelCurve** lets you taper the velocity response. The default setting is **Linear**, which means that the output velocity changes directly proportionally to the played velocity. **Expand** sets the taper such that a “dip” occurs as the velocity increases from 1 to 64: the change in response is *slower* than normal as you approach the velocity midpoint, and then increases faster than normal as you play harder.

**Compress** sets the taper such that there is a “bulge” as the velocity increases from 1 to 64. If you start playing softly, and then progressively louder, the response will increase more quickly than normal until you reach the middle of the velocity range. If you keep playing harder, the sound will continue to get louder, but the increase will be less than it would be normally.

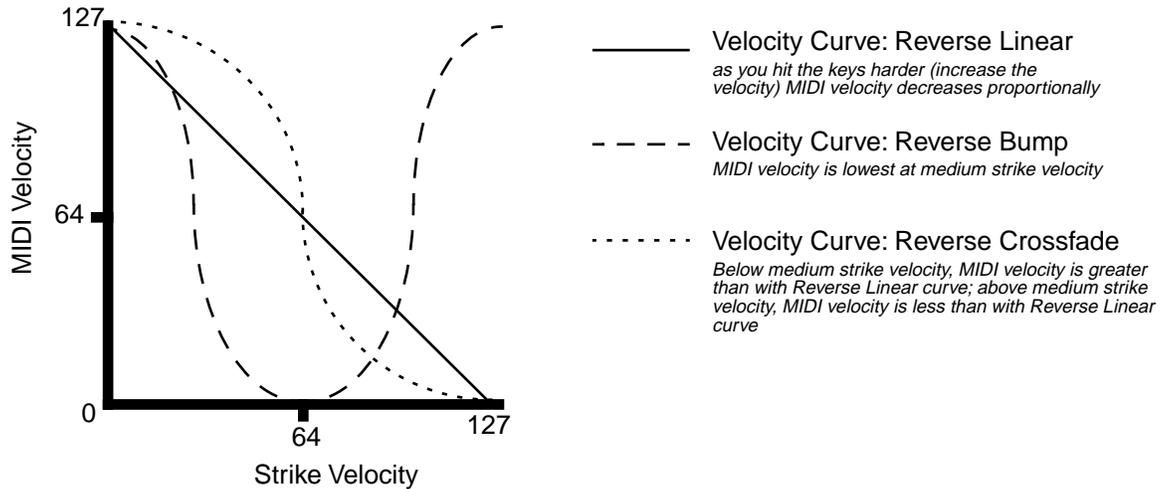
**Crossfade (Xfade)** is designed to be used in tandem with the Reverse Crossfade curve, enabling you to perform smooth crossfades between different programs.

**Bump** tapers velocity response to resemble a bell-curve, making its response greatest at medium strike velocity, and progressively weaker as strike velocity increases or diminishes. If you start playing softly, then progressively louder, the response will increase from 1 to 64; if you keep playing harder, the sound will get softer.





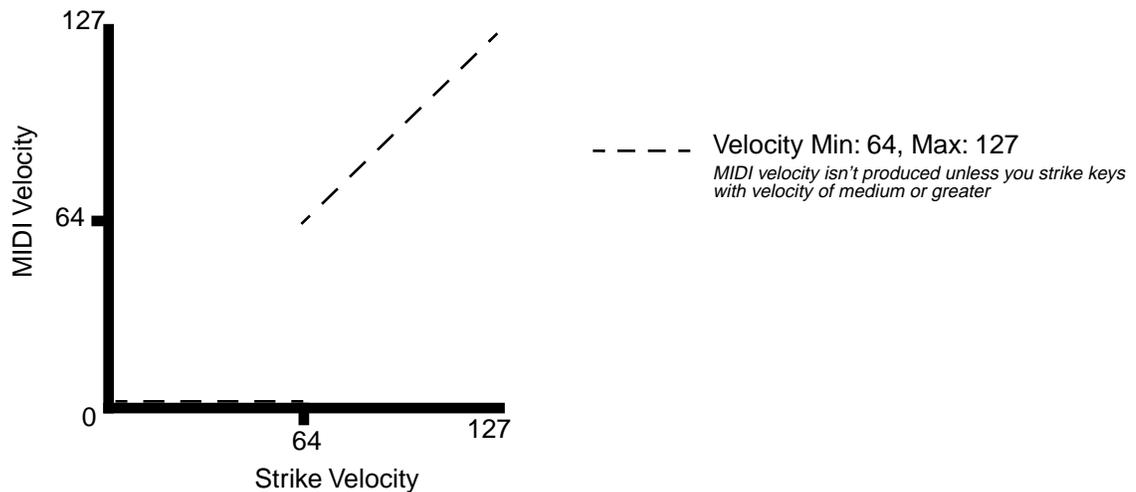
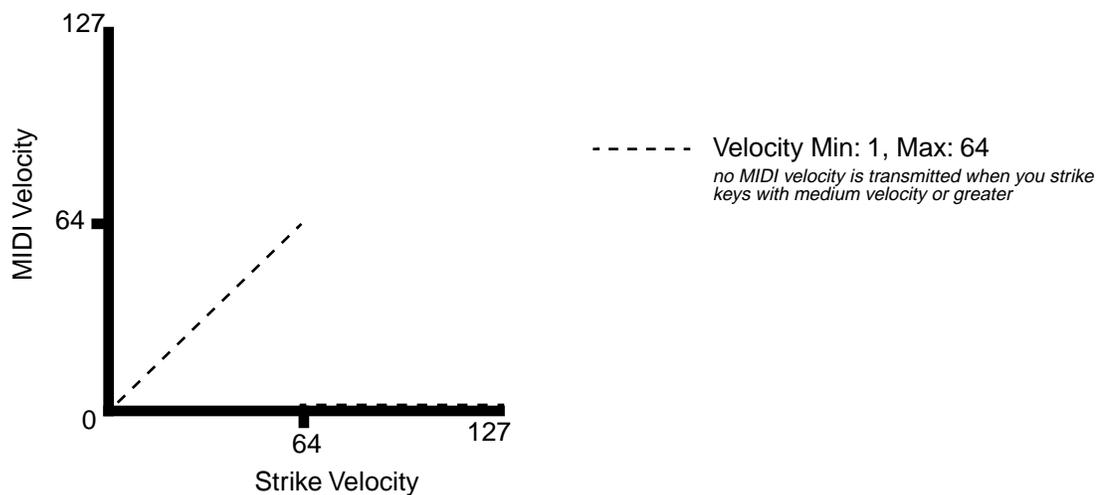
The next five velocity curves are **Reverse Linear (revrsLin)**, **Reverse Expand (revrsExp)**, **Reverse Compress (revrsCmp)**, **Reverse Crossfade (revrsXfd)**, and **Reverse Bump (revrsBmp)**. These taper velocity in reverse of the five curves we just covered. For example, Reverse Linear's response is such that striking a key harder will produce a lower volume, striking it softer will produce a higher volume, and so on. This provides a convenient way to achieve negative scaling, by letting you set one parameter instead of two.



### Low Velocity (LoVel), HighVelocity (HiVel)

**LoVel** and **HiVel** set minimum and maximum velocity limits that the Zone will transmit. A keystroke whose velocity — *after* it has been scaled and offset — is below the minimum will not make a sound in the Zone. Similarly, a keystroke whose velocity after processing is above the maximum will not play the Zone. These parameters are useful for “velocity switching” — having a note play different sounds depending on how hard you strike it.

The values can be anywhere from 1 to 127. As with other parameters, Zones can overlap or be totally discrete, or be identical. Usually, LoVel will have a smaller value than HiVel, but as with LoKey and HiKey, you may also create a gap in velocity response, by setting negative ranges for velocity.



## The Pan/Volume (PAN/VOL) Page

By changing the parameters on this page, you can define how each Zone sends MIDI volume and pan messages.

```
editsetup*PAN/VOL <>zone1/1
```

```
EntryVolume:127 EntryPan:None
ExitVolume :None ExitPan :64
```

```
<more CH/PRG KEYVEL PANVOL BEND more>
```

PARAMETER	RANGE OF VALUES	DEFAULT
ENTRY VOLUME	None, 0-127	127
EXIT VOLUME	None, 0-127	None
ENTRY PAN	None, 0-127	None
EXIT PAN	None, 0-127	64

### Entry Volume, Exit Volume

Entry Volume enables you to control the initial MIDI volume setting for each Zone of the current setup. When you select a setup in Setup mode, the K2500 sends MIDI volume control (MIDI Controller 07) messages on each of the setup's MIDI channels, according to the value of Entry Volume. This sets the starting volume level for each Zone, for any value other than "None". Subsequent MIDI volume control signals sent to the setup's MIDI channels will affect the volume normally.

When you exit the current setup, Exit Volume sends another MIDI Controller 07 message.

The setting of the "Volume Lock" parameter on the MIDI mode CHANNELS page (see Chapter 10) determines whether this parameter will have any effect.

### Entry Pan, Exit Pan

You can set entry and exit values for Pan as well. When you select a setup, the K2500 sends a MIDI pan control (MIDI Controller 10) message on each MIDI Channel in each Zone; another MIDI pan control message is sent when you exit the setup. The Entry and Exit values for Pan are the same as those for Volume. There is also a "Pan Lock" parameter on the MIDI mode CHANNELS page, which overrides the Setup Editor's Pan settings.

If you are trying to set the Pan and the program doesn't seem to be responding, you should check the Mode parameter, found on the Output page in the Program editor. If it is set to Fixed, then it is ignoring the MIDI Pan message; setting Mode to "+MIDI" will allow you to control the program's panning from the Setup Editor.

Most programs will respond to pan messages on the next keystroke. This means that if you hold a note and change the pan, the note will stay at its current position until you strike it again. However, a K2500 program that uses the PANNER algorithm will respond to real-time pan adjustments as well.

## The BEND Page

The parameters on the BEND page define the bend ranges for each of the three types of pitch bend messages the K2500 can respond to.

```

editsetup:BEND                                <>zone1/8
BendRange(ST):0ST                            AuxBend1Up  :12ST
BendRange(ct):0ct                            AuxBend1Dwn:12ST
                                              AuxBend2Rng:2ST

<more>  CHORD  KEYWE  PANWDL  BEND  >more>
  
```

PARAMETER	RANGE OF VALUES	DEFAULT
<b>BEND RANGE (semitones)</b>	Prog, 0–60 semitones	Prog
<b>BEND RANGE (cents)</b>	±100 cents	0 cents
<b>AUX BEND 1 UP</b>	0–60 semitones	12 semitones
<b>AUX BEND 1 DOWN</b>	0–60 semitones	12 semitones
<b>AUX BEND 2 RANGE</b>	0–60 semitones	2 semitones

### Bend Range (semitones) and Bend Range (cents)

**Bend Range (semitones)** sends a bend range message to an internal program or a MIDI device, telling it how to define subsequent pitch bend messages. Some programs may behave strangely when you change the Bend Range value, because they use FUNs (see Chapter 16) or DSP Functions (see Chapter 14) to affect the pitch wheel. You should either set the value of Bend Range to "Prog", or edit the program itself.

**Bend Range (cents)** lets you fine-tune the value for Bend Range (semitones). 100 cents equals one semitone, or one half-step; you can set this parameter anywhere between ±100 cents.

Bend Range, in both semitones and cents, affects the "BendUp" Destination for physical controllers. Physical controllers assigned to "BendDwn" will use the same range, but will bend notes in the opposite direction. You can assign the Destination of any physical controller to BendUp or BendDwn. To keep things simple though, you will normally want to use BendUp as a Pitch Wheel destination and use Aux Bend 1 and Aux Bend 2 for other controllers, such as the Large and Small Ribbons.

Keep in mind that not all MIDI devices respond to Bend Range messages. The K2500 and the PC88 do support these messages, but with many older MIDI instruments (like the K2000 and K1000), you must set bend ranges on the devices themselves.

### Aux Bend 1Up and Aux Bend 1 Down

Like Bend Range, Aux Bend 1 defines the range for Pitch Bend messages, but does so for those physical controllers sent to MIDI Controller 21. You define both an upward value (Aux Bend 1 Up) and a downward value (Aux Bend 1 Down). This means that you can set different values for upward and downward pitch-shifting. For example, by setting AuxBend1 Up to 2ST and AuxBend1Dwn to -12ST, you can assign the Pitch Wheel in a guitar sound to Aux Bend 1, then use the wheel to create both vibrato and whammy bar effects, depending on the Pitch Wheel's position.

In most factory setups, Aux Bend 1 is assigned to the Large Ribbon.

#### **Aux Bend 2 Range**

The K2500 allows you to specify a third pitch bend range; this is called Aux Bend 2, and it defines the range for MIDI Controller 15 messages. You can only set one range for both upward and downward pitch bending.

In most factory setups, Aux Bend 2 is assigned to the Small Ribbon.

## Controllers

Controller editing is one of the strongest aspects of the K2500's usefulness as the main controller for a sophisticated MIDI studio. In this section, we'll talk about two different types of "controllers" as they apply to the K2500. One is the *physical* controllers: the wheels, buttons, pedals, etc. that you move with your fingers or feet. The other is *MIDI* Controllers, which are MIDI commands sent by the K2500. For our purposes, "MIDI Controllers" includes the complete set of Controllers defined by the MIDI Specification, as well as pitchbend, aftertouch, and a few other useful MIDI commands. To fend off confusion, we'll refer to the K2500's physical controllers with a lower-case "c", and MIDI Controllers with an upper-case "C".

Any of the *physical* controllers, in any of the Zones, can take on the identity of any *MIDI* Controllers. In addition, each controller in each Zone can be tweaked just like keyboard velocity (or any other Setup Mode parameter). You see that controller editing on the K2500 can be very complex, but also very rewarding.

To get an idea of the expressive capabilities of Setup Mode, explore the preset setups that come with the K2500. Refer to the list of setups in Chapter 2 of the *Reference Guide* to see how the various sliders, wheels, buttons and ribbons function in each setup. You will discover many powerful ways to change your sounds in real time.

The K2500's physical controllers include:

- the eight sliders (**A, B, C, D, E, F, G, H**) in the **Assignable Controllers** section
- the two Continuous Control Pedal jacks (**CC Pedal 1** and **CC Pedal 2**)
- the Large Ribbon, which you can define as a one- or three-section controller
- the Small Ribbon, which responds to both finger position and pressure
- the pitch wheel
- the modulation wheel (**Mod Wheel**)
- keyboard aftertouch, or Mono Pressure (**MPress**)
- the **Breath Controller** jack. Connecting a Breath Controller to this disables CC Pedal 2
- the two Panel Switches, located above the Pitch and Mod Wheels
- the four Footswitch pedal jacks (**1, 2, 3, and 4**)

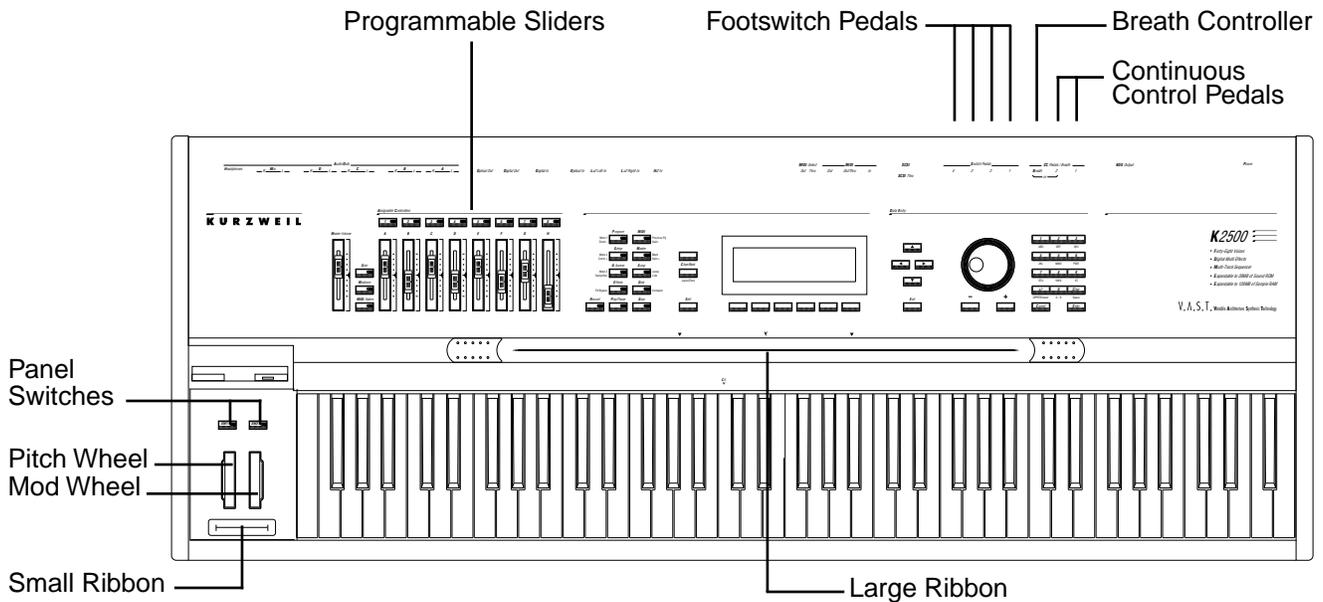
The tables and illustration which follow provide an overview of the physical controllers and their parameters.

**Continuous Controllers**

Physical Controller	Setup Editor Page	Parameter:Values
Sliders A, B, C, D, E, F, G, H	SLID, SLID/2	Destination: None, 0 - 127, Pitch Up/Down, Pressure, Tempo, special functions
		Scale: -300% to 300%
		Add: -128 to 127
		Curve: Linear, Expand, Compress, Crossfade, Bump, Reverse Linear, Reverse Expand, Reverse Compress, Reverse Crossfade, Reverse Bump
		Entry Value: None, 0 - 127
		Exit Value: None, 0 - 127
CPedals 1 & 2	CPEDAL	<i>(same as Sliders)</i>
Small Ribbon and Large Ribbon	RIBBON	<i>(same as Sliders)</i>
Pitch Wheel and Mod Wheel	WHEEL	<i>(same as Sliders)</i>
MPressure	PRESS	<i>(same as Sliders)</i>

**Switch Controllers**

Physical Controller	Setup Editor Page	Parameter:Values
Footswitches 1, 2, 3, and 4	FOOTSW	SwType: Toggle, Momentary, Note Toggle, Note Momentary
		Destination: None, 0 - 127, Pitch Up/Down, Pressure, Tempo, special functions
		On Value: None, 0 - 127
		Off Value: None, 0 - 127
		Entry Value: None, Off, On
		Exit Value: None, Off, On
Panel Switches 1 and 2	SWITCH	<i>(same as Footswitches)</i>



After you’ve selected which Zone and which physical controller to work with, use the **Destination** parameter to choose what this controller will do. Some of the controllers have default settings that are pre-programmed in all of the factory Setups (of course, you can change them). You can select from the entire list of numbered MIDI controllers, as well as other MIDI commands and some “special functions”. To move through the list, you can use the Alpha wheel, or Intuitive Entry with any continuous controller, or call up the Controller’s number with the numeric keypad.

### The MIDI Control Source List

Here are the common Destinations, or “targets” for each controller, in scrolling order:

MIDI Controller Number	Destination	Description
0	Off	Turns physical controller off
1	MWheel	Default Assignment for Mod Wheel
2	Breath	Default Assignment for CC Pedal 2
3	MIDI 03	
4	Foot	Default Assignment for CC Pedal 1
5	PortTim	Monophonic K2500 programs respond to this controller if portamento is turned on
6	Data	Many K2500 programs respond to this controller with DSP sweeps and effects
7	Volume	MIDI Volume

## Setup Mode and the Setup Editor

### Controllers

MIDI Controller Number	Destination	Description
8	Balance	MIDI Balance
9	MIDI 09	
10	Pan	MIDI Pan—programs which use the PANNER algorithm will respond to real-time pan adjustments; all other programs will respond on the next note start
11	Express	MIDI Expression—an attenuator for fading in and out
12–14	MIDI 12–14	MIDI Controls #12–14
15	Aux Bend 2	Default Destination for Small Ribbon
16	Ctl A	
17	Ctl B	
18	Ctl C	
19	Ctl D	
20	MIDI 20	
21	Aux Bend 1	Default Destination for Large Ribbon
22–31	MIDI 22–31	MIDI Controls #22-31
<b>Special Function Controllers</b>		
When you enter numbers 32–38 on the numeric keypad, you select one of the K2500's Special Functions. Entering 39–63 sets a physical controller's Destination to Off.		
32	MPress	Default Destination for Press and Small Ribbon Pressure (SmPrs)
33	BendUp	Default Destination for Pitch Wheel
34	BendDwn	Physical controllers bend in opposite direction of BendUp
35	Tempo	MIDI Clock tempo
36	MuteZn	Mute current Zone
37	KeyNum	Key Number—sends a MIDI note with a velocity defined by the last value for KeyVel
38	KeyVel	Key Velocity
39–63	Off	Turns physical controllers off
64	Sustain	Default Destination for Footswitch 1
65	PortSw	Monophonic K2500 programs respond to this controller if portamento is turned on
66	SostPd	Default Destination for Footswitch 2—holds notes that are currently down, but not notes played subsequently
67	SoftPd	Default Destination for Footswitch 3—lowers the volume by a pre-set amount and may soften the timbre as well
68	LegatoSw	Forces mono playback
69	FrezPd	Envelopes freeze at current state

<b>MIDI Controller Number</b>	<b>Destination</b>	<b>Description</b>
70–79	MIDI 70–79	MIDI Controls #70–79
80	Ctl E	
81	Ctl F	
82	Ctl G	
83	Ctl H	
84–90	MIDI 84–90	MIDI Controls #84–90
91	FX Depth	Controls wet/dry mix of effects
92–95	MIDI 92–95	MIDI Controls #92–95
96	DataInc	Data Increment
97	DataDec	Data Decrement
98–101	MIDI 98–101	MIDI Controls #98–101
102	Play/Stp	Alternately starts and stops sequencer playback
103	Rec/Stop	Alternately starts and stops sequencer recording
104–115	MIDI 104–115	MIDI Controls #104–115
116	ArpSw	Arpeggiator On/Off
117	ArpVel	Arpeggiator Velocity
118	Latch2	Arpeggiator Latch 2
119	ArpLatch	Arpeggiator Latch
120	Panic2	Sends “all notes off”/“reset all controllers” message
121	MIDI 121	Resets all controllers
122	Off	Turns physical controller off
123	Panic	Sends “all notes off” message
124, 125	MIDI 124, 125	MIDI Controls #124 and #125
126	Mono On	
127	Poly On	

## Continuous Controller Parameters

The continuous (physical) controllers are those that have a *range* of values: the two wheels, two ribbons, eight sliders, two Continuous Control pedals, and mono pressure (aftertouch). As the table on page 7-20 shows, all of them use the same parameters. Each parameter's function is described below.

### Destination (Dest)

Use this parameter to select a Destination from the MIDI Control Source List (see page 7-21).

### Scale

After you've selected a continuous physical controller, you can modify the controller's response similarly to the ways you can modify velocity response. Refer to the graphs beginning on page 7-11 for illustrations of the velocity scaling parameters.

**Scale** lets you amplify or diminish the action of the controller. Full scale is 100%. Higher values will make the controller more sensitive, and lower values will make it less so. Setting the scale to a negative number makes the controller action work in reverse. As with velocity, you can use a controller to crossfade between two Zones by setting the scaling for one Zone positive and the other negative. Maximum scale values are +300% and -300%.

### Offset (Add)

This adds or subtracts a constant to the controller, and at the same time sets minimum or maximum values (there's no need for separate Max and Min parameters). If the offset is 25, the minimum value of the controller will be 25. If it is -25 (and scale is 100%) the first one-fifth of the controller's movement ( $25/127 = \text{about } 1/5$ ) will send value of 0, and the maximum value of the controller will be 102 ( $= 127-25$ ). As with velocity, Scale is a proportional change to the controller, while Offset is a linear change. The maximum values for Offset are  $\pm 127$ .

### Curve (Curv)

This lets you taper the controller response. The default setting is **Linear**, which means that the response follows a straight line as you move the controller. **Expand** tapers the curve such that a "dip" occurs as the response increases from 1 to 64: the response is less than normal as you approach the controller's midpoint, and then increases faster than normal as you move higher.

**Compress** sets the taper such that a "bulge" occurs as the response increases. As you move the controller up from the bottom of its travel, the output will increase faster than normal until you reach its midpoint, at which point it will start to increase slower than it would normally.

**Crossfade (Xfade)** is designed to be used in tandem with the Reverse Crossfade curve, enabling you to perform smooth crossfades between different programs.

**Bump** resembles a bell-curve; controller response will be greatest (127) at its midpoint, and will decrease as you approach the top or bottom of the controller's travel.

The next five curves are **Reverse Linear (rLin)**, **Reverse Expand (rExp)**, **Reverse Compress (rCmp)**, **Reverse Crossfade (rXfd)**, and **Reverse Bump (rBmp)**. These taper controller response in reverse of the first five curves. For example, Reverse Linear's response is such that moving the pitch wheel forward decrease pitch, moving it back will increase pitch, and so on. As with velocity, the reverse curves for offer you a quick way to achieve negative scaling of physical controller response.

To get an idea of how these curves affect controller response, refer to the Velocity Curve charts, which begin on page 7-14.

## Entry (Ent) and Exit Values

**Entry value** allows you to specify an initial value for a controller in a Setup that will be sent whenever you select that Setup. For example, if you want to make sure that all of the modulation in a Zone is turned off when you select a Setup, assign MIDI Controller 1 to a physical controller and set its Entry Value to 0.

Entry values ignore the current position of the physical controller when the Setup is selected. In fact, if the physical controller is above or below the Entry Value when the Setup is selected (which it often is), moving the controller will have no effect until it is past its entry value. In the modulation example, moving the assigned controller won't turn on any modulation until it's pushed all the way *down*, and then up again.

An Entry Value of **None** is quite different from a value of "0". "None" means that there will be no initial controller command when the Setup is selected, and any subsequent movement of the physical controller will be effective. (The *position* of the physical controller when the Setup is first selected, however, is still ignored.)

**Exit Value** tells the K2500 to send a value for that controller whenever you leave the Setup, either by selecting another Setup or by selecting a different mode altogether. It can be very useful when a controller is doing something special to the sound which you don't want to continue after you leave the Setup. For example, if you want to make sure a Zone's pitch returns to normal whenever you leave a Setup, you would give an Exit Value of 64 to any controller whose Destination is BendUp. Again, "None" means no command is sent.

## The SLIDER and SLID/2 Pages

You can assign each of the K2500's eight programmable sliders to a destination on each of the eight Zones. Or, you can assign any combination of sliders to the same Zone, allowing you tremendous flexibility. For example, you can assign Sliders A and B to modulate pitch and volume on Zone 1, then assign Slider C to control panning on Zones 2, 3, and 4.

The Slider button gives you access to sliders A–D. If you want to use the other four sliders, you will find them on the Slider 2 page.

Take a look at the various parameters. Since all the continuous controllers work in a similar manner, you will find these same parameters on the CPEDAL, RIBBON, WHEEL, and PRESS pages.

```

EditSetup3:SLIDER <>zone1/8
Dest: Scale: Add: Curv: Ent: Exit:
SlidA: Data 100% 0 Lin None None
SlidB: MIDI22 100% 0 Lin None None
SlidC: MIDI23 100% 0 Lin None None
SlidD: MIDI24 100% 0 Lin None None
<more> SLIDER SLID/2 FOOTST CPEDAL >more>
    
```

```

EditSetup3:SLID/2 <>zone1/8
Dest: Scale: Add: Curv: Ent: Exit:
SlidE: Off 100% 0 Lin None None
SlidF: Off 100% 0 Lin None None
SlidG: Off 100% 0 Lin None None
SlidH: Off 100% 0 Lin None None
<more> SLIDER SLID/2 FOOTST CPEDAL >more>
    
```

PARAMETER	RANGE OF VALUES	DEFAULT
DESTINATION	MIDI Control Source List	Off
SCALE	±300%	100%
ADD	-128 to +127	0
CURVE	Curve List (See Text)	Lin
ENTRY VALUE	None, 0–127	None
EXIT VALUE	None, 0–127	None

## The Continuous Control Pedal (CPEDAL) Page

If you look at the back of the instrument, you will see that there are jacks for plugging in 2 CC (Continuous Control) pedals. There is also a jack labeled "Breath Controller"; plugging a Breath Controller into this will disable CCPedal 2.

```

EditSetup3:CPEDAL <>zone1/8
Dest: Scale: Add: Curv: Ent: Exit:
CPed1: Off 100% 0 Lin None None
CPed2: Breath 100% 0 Lin None None
<more> SLIDER SLID/2 FOOTST CPEDAL >more>
    
```

PARAMETER	RANGE OF VALUES	DEFAULT
DESTINATION–CPed1	MIDI Control Source List	Off
DESTINATION–CPed2	MIDI Control Source List	Breath
SCALE	±300%	100%
ADD	-128 to +127	0
CURVE	Curve List (See Text)	Lin
ENTRY VALUE	None, 0–127	None
EXIT VALUE	None, 0–127	None

## The RIBBON Page

The Ribbon page lets you define controller assignments for the K2500's two ribbon controllers. Each ribbon senses movement when you press on it and move your finger left or right; this creates numerous possibilities for controlling pitch, volume, panning, crossfades between zones, and other uses you might imagine.

As we mentioned earlier, the Large Ribbon can be used as a single long controller, or it can be divided into three separate sections, each with its own controller assignments. These sections are indicated by the two smaller arrows above the strip. There is also a larger arrow directly in the center to give you a visual indication of the center point when you are using the ribbon as one long strip.

The Small Ribbon, located below the wheels, is both pressure and movement sensitive, so it will respond to both finger position and pressure. You can program the Small Ribbon to send the same controller message for both pressure and movement, or different messages for each. To see how this works, set the Destination of SmRib to control pitch, while SmPrs controls volume or filtering.

To modify other ribbon parameters, go to the RIBCFG page, which is described on page 7-39.

```

EditSetupP**RIBCFG                                <>zone1/3
Dest:      Scale: Add: Curv: Ent:  Exit:
SmRib:    AuxBend2  100% 0   Lin  None None
SmPrs:    MPress    100% 0   Lin  None None
LgRib:    AuxBend1  100% 0   Lin  None None
    
```

```

<more> RIBCFG WHEEL SOURCE PRESS >more>
    
```

```

EditSetupP**RIBCFG                                <>zone1/3
Dest:      Scale: Add: Curv: Ent:  Exit:
SmRib:    AuxBend2  100% 0   Lin  None None
SmPrs:    MPress    100% 0   Lin  None None
Sect1:    AuxBend1  100% 0   Lin  None None
Sect2:    Ct1D      100% 0   Lin  None None
Sect3:    MIDI20    100% 0   Lin  None None
<more> RIBCFG WHEEL SOURCE PRESS >more>
    
```

PARAMETER	RANGE OF VALUES	DEFAULT
DESTINATION	MIDI Control Source List	Off
SCALE	±300%	100%
ADD	-128 to +127	0
CURVE	Curve List (See Text)	Lin
ENTRY VALUE	None, 0–127	None
EXIT VALUE	None, 0–127	None

## The WHEEL Page

The two wheels are typical of what is found on many keyboards. The left one is normally used for pitch bend and springs back to center, while the right wheel is normally used as a standard mod wheel.

```

EditSetupP**WHEEL                                  <>zone1/3
Dest:      Scale: Add: Curv: Ent:  Exit:
PWhl :    BendUp    100% 0   Exp  None None
MWhl :    MWheel    100% 0   Lin  None None
    
```

```

<more> RIBCFG WHEEL SOURCE PRESS >more>
    
```

PARAMETER	RANGE OF VALUES	DEFAULT
DESTINATION	MIDI Control Source List	Off
SCALE	±300%	100%
ADD	-128 to +127	0
CURVE	Curve list	Lin
ENTRY VALUE	None, 0–127	None
EXIT VALUE	None, 0–127	None

## The Pressure (PRESS) Page

The K2500 features mono pressure, commonly called "aftertouch" on some other keyboards.

A word about pressure. Key Range in a Zone does *not* define which notes will generate pressure in that Zone. If pressure is enabled in a Zone, playing with aftertouch *anywhere* on the keyboard will produce data. For example, if Zone 1's Key Range is C3-C5 and you play C2 and push down on the note, pressure messages will be sent from Zone 1. As with any other physical controller, however, you can disable pressure in any Zone, or scale it or offset it differently in the various Zones. It might help to think of pressure as an "extra wheel" — wheels operate in a Zone regardless of Key Range, and so does pressure.

```
editsetup:press <>zone1/8
```

```
Press: Dest: Scale: Add: Curv: Ent: Exit:
       Volume 100% 0 Exp None None
```

```
<more RUBBER WHEEL SLIDE PRESS more>
```

PARAMETER	RANGE OF VALUES	DEFAULT
DESTINATION	MIDI Control Source List	Off
SCALE	±300%	100%
ADD	-128 to +127	0
CURVE	Curve List (See Text)	Lin
ENTRY VALUE	None, 0–127	None
EXIT VALUE	None, 0–127	None

## Switch Controller Parameters

Switch (physical) controllers have only two states: on and off. The K2500 switch controllers are:

- Panel Switches 1 and 2 (PSw1 and PSw2)
- Footswitch Pedals 1, 2, 3, and 4 (FtSw1, FtSw2, FtSw3, and FtSw4)

Note that buttons 1–8 above the sliders are dedicated to Zone status and muting, as well as sequencer muting, and are *not* assignable controllers.

### Switch Type (SwType)

The parameters for Switch controllers are slightly different from those for continuous controllers. The first parameter is Switch Type (**SwType**). The choices available are **Momentary** in which a switch's action lasts only as long as you are pushing it, and **Toggle**, in which the switch's action lasts until you press it again. You can also assign the switch controller to send a note, using **Note Momentary** and **Note Toggle**.

The Momentary mode is used for functions like sustain or portamento, while the Toggle mode is used for functions such as arpeggiator on/off. The buttons show which mode they are in by the behavior of their lights: if a button is in Momentary mode, its light glows only as long as you are holding it, while if it is in Toggle mode, the light stays on until you press it again. Bear in mind that button assignments are independent per zone, and since there's just a single light per button, the light only shows the state of the button for the current zone. When you press the button, however, it executes its assignments for all Zones which use that button.

### Destination

**Destination** determines what MIDI Controller or other message will be sent when the switch is "on" — either pressed or toggled the first time. The list of available controllers on page 7-21 is the same as for the continuous controllers, and can be accessed the same way.

If you set SwType to Note Momentary or Note Toggle, the values for Destination change to display MIDI note values. This can be pretty interesting if you want to do some unusual things with the switch controllers. For example, choose a drum program for the current Zone, then set the destination of Footswitch 1 to Note Momentary. Now set the value of Destination to a key with a kick drum or a closed hi-hat sound, and impress your drummer friends. Or, you could set SwType to Note Toggle and use the Footswitch to start and stop a sampled groove, freeing up your hands to play a different program.

### On Value

**On Value** sets the value of the Controller when the switch is on. In the case of conventionally-switched functions, such as sustain, the On Value will be 127. (For example, the default for Switch Pedal 1 is Controller #64 — Sustain — with an On Value of 127.) However, you might want to use a button or pedal as a "soft" switch, in which case you might set Destination to 7 (Volume) and On Value to 50. Destination can also be set to "Off", so that turning on the switch has no effect at all in this Zone. This can be useful when you are using one switch for multiple functions in different Zones.

If Switch Type is set to Note Momentary or Note Toggle, the On Value will define the velocity of the note message that is being sent.

## Off Value

**Off Value** is the value of the Controller when the switch is off. The default value is 0. You might want to change this, as in the “soft switch” example above: in order to bring the Zone up to full volume when you release the pedal, set Off Value to 127.

If Switch Type is set to Note Momentary or Note Toggle, be sure to leave the Off value at 0; this will send a note off message when you turn the switch off, preventing stuck notes from occurring.

## Entry (Ent) and Exit States

**Entry State** determines whether an initial setting for the switch will be sent when the Setup is selected. There are three choices: None (no change), Off (the Off value), and On (the On value). With a Panel Switch button, if the Entry State is “On”, the button will light as soon as you select the Setup.

**Exit State** similarly determines whether a setting for the switch will be sent when you leave the Setup, either for another Setup or for the Program mode. The same three choices (On, Off, and None) are available. This is very useful for turning off Sustains when changing Setups.

## The Footswitch (FOOTSW) Page

On the back of the instrument, there are four jacks for Footswitch pedals.

Notice in the graphic below that FtSw4 is set to Note M, so the Destination for that parameter has a MIDI note number for its value.

```

EditSetup:FOOTSW          <>Zone1/6
FtSw1: SwType:Dest:      On: Off:Ent: Ex:
      Moment. Sustain  127 0  None None
FtSw2: Toggle  SostPd   127 0  None None
FtSw3: Moment. SoftPd   127 0  None None
FtSw4: Note M  C 4     127 0  Off  Off
<more> SLIDER SLID/2 FOOTSW PEDAL >more>
  
```

PARAMETER	RANGE OF VALUES	DEFAULT
SWITCH TYPE	Momentary, Toggle, Note Momentary, Note Toggle	Moment
DESTINATION	MIDI Control Source List or C -1 to G9	FtSw1: Sustain FtSw2: SostPd FtSw3: SoftPd FtSw4: Off
ON	0-127	127
OFF	0-127	0
ENTRY VALUE	None, 0-127	None
EXIT VALUE	None, 0-127	None

## The SWITCH Page

The K2500 keyboard offers two Panel switches, located above the pitch and mod wheels. Each of these functions exactly like the Footswitches; you can choose between momentary and toggle switches, or you can use each one to trigger a note.

```
editsetup*SWITCH <>Zone1/E
```

```

SwType: Dest:      On: Off: Ent: Ex:
PSw1 : Toggle Off  127 0   Off Off
PSw2 : Toggle Off 100% 127 0   Off Off
    
```

```
<more RIBBON WHEEL SWITCH PRESS more>
```

PARAMETER	RANGE OF VALUES	DEFAULT
SWITCH TYPE	Momentary, Toggle, Note Momentary, Note Toggle	Toggle
DESTINATION	MIDI Control Source List or C -1 to G9	Off
ON	0-127	127
OFF	0-127	0
ENTRY VALUE	None, 0-127	Off
EXIT VALUE	None, 0-127	Off

## The COMMON Page

Effect and Song selection for all Zones takes place on the COMMON page. Here, you choose any one of the K2500's preset or user-programmed effects. You also choose a song to be current when you select a setup.

```
editsetup:COMMON All zones
```

```

Effect: 21 Room & Delay FXMix: 42%Wet
Song : 1 NewSong
    
```

```
<more COMMON ARPEG RIBBON more>
```

PARAMETER	RANGE OF VALUES	DEFAULT
EFFECT	Preset Effects list	1 Sweet Hall
EFFECTS MIX	0% to 100%wet	
SONG	Song list	0 (None)

### EFFECT

This tells the global effects processor which effect to use for the current setup. The values available for this parameter are the 47 factory preset effects, and any that you program yourself. It's not possible to use more than one preset effect per setup (the effects processor can apply

only one preset effect at a time, even though that preset can combine up to four digital effects). Changing the effect for one Zone will change it for all Zones.

Note that this parameter will automatically select effects only if the FX Mode parameter on the Effects mode page is set to "Auto" or "Setup".

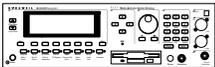
### Effects Mix (FXMix)

The FXMix parameter lets you set the level of effect from 0% Wet (no effect) to 100% Wet (maximum). This also affects all Zones. Remember that the programs in the setup must have their audio output groups set to A (either on the OUTPUT page in the Program Editor or on the CHANLS page in MIDI mode), and you must use the MIX audio outputs if you want effects applied to the programs.

Press EDIT while either the Effect or FXMix parameter is highlighted, and you will enter the Effect editor. Here, you can make and save changes to the current effect. Once you have finished, press EXIT to return to the Setup Editor.

### SONG

You can link each setup to a different song in the K2500's sequencer. Scroll through the songs in memory until you find the one you want. If there are no songs in memory, the parameter will have a value of "0 None". Changing this value will automatically create a song called "1 NewSong". Press EDIT while the SONG parameter is highlighted to use the Song Editor. See Chapter 12 for more information on the Song Editor's functions.



Once you select a song, you can save the Setup, and the song is "tied", or linked, with that setup. Every time you select this setup, pressing the Stop, Play or Record buttons will allow you to start and stop both Recording and Playback of the current song. For K2500 rack owners, pressing the cursor up/down buttons toggles between Play and Pause, without resetting the Locate point. Pressing the left/right buttons toggles between Start and Stop, resetting Locate to 1:1. These double-button presses will work in Setup mode or in any other mode.

If you are planning to use a particular song with a setup, there are some important things to keep in mind. First, you should assign the tracks of your song to different MIDI channels than the Zones of the setup. As we mentioned earlier, no MIDI channel can handle two simultaneous program changes. Second, set the FX Mode to "Auto" and the FX Channel to "Current" on the Effects mode page; this way, when you play a song from within Setup mode, you will hear the effect you chose for that song.

Once you've chosen a song on the COMMON page (and worked out any possible MIDI problems), you can use Setup mode to do some pretty cool things. If you want to start the song with a Footswitch, for instance, you can assign the Destination of any Footswitch to the Song Start Controller (MIDI 102). Because of the nature of this Special Function Controller, set SwType to Momentary rather than Toggle.

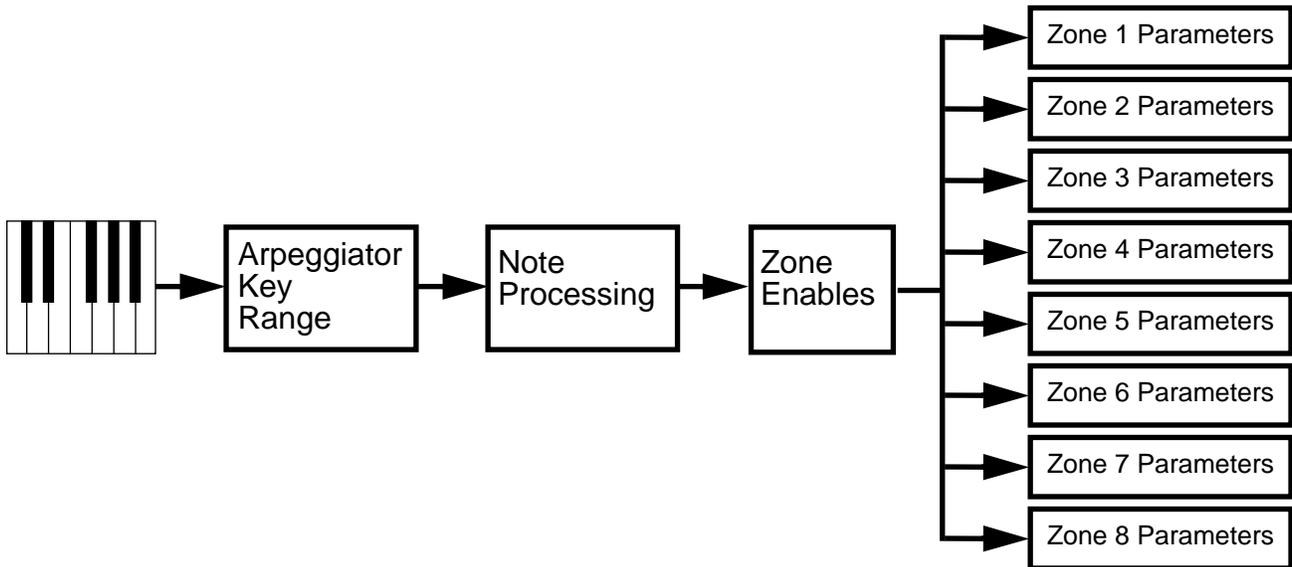
Here's another great feature: by linking songs with setups, you can select songs from Quick Access Mode. By assigning different songs to different setups, and then assigning those setups in one quick access bank, you can select one of up to ten songs with only a single button press.

## The Arpeggiator (ARPEG) Page

The Arpeggiator takes input from the K2500 keyboard and turns it into a constant rhythmic pattern. The speed and nature of the pattern is controllable in real time. It recalls old-time analog "sequencers" which played a finite series of notes over and over, with changes in the series dictated by the musician as the instrument played. The power of the Arpeggiator is not limited to the K2500: it also can control MIDI instruments. The notes produced by the Arpeggiator in a Zone will go to all of that Zone's destinations: local, MIDI, or both.

The concept behind the K2500's Arpeggiator is fairly simple, although the options are extensive. You might think of it as a "note processor", generating complex output from relatively modest input. You can select any number of notes for the input, and tell the Arpeggiator to recognize and remember them. This is called "latching" the notes. The Arpeggiator will then process them by playing them repeatedly, and/or having them fly up and down the keyboard. You have control over a number of processing parameters: tempo, velocity, order, duration, transposition, orchestration, and whether the intervals between notes will be filled in chromatically. You can also tell the Arpeggiator how to deal with new information coming from the keyboard.

The illustration below shows the processing order the K2500 uses to create arpeggios from your keyboard input:



```
editSetup*ARPEG All zones
Active:Off          Noteshift :0ST
LoKey:C 0 HiKey:G#8  ShiftLimit:0
Latch:Auto         LimitOption:Reset
Order:Played       Glissando :Off
Beats:1/16         Velocity :Played
Tempo:120BPM      Duration :75%
<more COMMON ARPEG RIBCCE more>
```

PARAMETER	RANGE OF VALUES	DEFAULT
ACTIVE	On/Off	Off
LOW KEY	C -1 to G9	C0
HIGH KEY	C -1 to G9	C#8
LATCH	Latch list (Auto, Keys, etc.)	Auto
ORDER	Order list (Played, Up, etc.)	Played
BEATS	1/1 to 1/384	1/16
TEMPO	1 to 255 Beats/Minute	120 Beats/Minute
NOTE SHIFT	±88 semitones	0 semitones
SHIFT LIMIT	0 to 88	0
LIMIT OPTION	List	Reset
GLISSANDO	On/Off	Off
VELOCITY	List	Played
DURATION	1% to 100%	75%

### Active

The first parameter on the Arpeggiator menu is **Active** — is the Arpeggiator **On** or **Off**? This can be switched from here, or for convenience in live performance, it can be switched using MIDI Controller number 116. This can either be assigned to a K2500 physical controller, or come from an external MIDI source.

Turning Active On will affect Zones whose ZoneArpeg values are also set to "On". By setting the ZoneArpeg parameter to Off or On in the individual Zones of a setup, you can choose which Zones will be controlled by the Arpeggiator when it is on.

### Low Key (LoKey) and High Key (HiKey)

The Arpeggiator will process notes played on the keyboard within the range of these parameters. Notes played outside the specified range will not respond to the Arpeggiator's settings, but will play normally. Set the LoKey and HiKey parameters using the data entry wheel or buttons, or by using the **SetRng** soft button.

### Latch

**Latch** determines how the Arpeggiator will respond to notes played on the keyboard.

**Keys** means that the Arpeggiator will only play while you are holding down one or more keys. As you play different notes, they get added to the Arpeggiator, and as you release notes, they get taken out. The Arpeggiator has a consistent tempo, which is adhered to no matter how fast or slow you play the keyboard, so some notes may take a little while to speak after you play them, until the Arpeggiator's clock catches up. This clock stays constant as long as you are playing any key, but if you let go of *all* the keys, then the clock "resyncs" itself, and the Arpeggiator starts immediately when you play the next key.

In the next three modes, the Arpeggiator is listening to a switch to latch notes on and off. That switch happens to be MIDI Controller 119, which you can assign to any physical controller.

In **Overplay** mode, the Arpeggiator will grab ("latch") any notes that are being held when the switch goes on, and will continue playing them, even after you let them go, until the switch is turned off. Any new notes you play on the keyboard will sound normally, and will not be arpeggiated.

**Arpeggiation** mode ("Arpeg") is similar: any notes held when the switch goes on will be latched and arpeggiated, and keep going until the switch is turned off. Subsequent played notes will join in the arpeggiation, but will not latch: when you let go of such a note, it will no longer play in the arpeggiation.

**Add** mode means that any note played after the switch goes on will be added to the Arpeggiator, and will *keep* playing after you let go of the key, until you shut the switch off. Any notes you are holding down when you turn the switch on will also be added.

**Auto** mode doesn't listen to the switch: the Arpeggiator goes on whenever you play a note. The note is latched on. Play more notes, and they get latched on, too. You don't have to be holding notes for them to stay on: as long as you hold down at least *one* key, every note played is added to the Arpeggiator. You could have up to 88 notes going at once, if you were so inclined, in effect giving you a kind of "mini-sequencer".

**Pedals** mode is a combination of Keys, Add, and Overplay modes. If neither latch controller is on, notes will arpeggiate only while you are holding down keys (similar to **Keys** mode). If you activate Controller 119, the keys currently held down will latch, and any additional keys played while Controller 119 is on will also latch (similar to **Add** mode). When Controller 119 is off, any keys that are not currently held down will be removed from the arpeggiation. If you activate Controller 118, keys currently held down will latch, and any additional keys played while Controller 118 is on will play normally (similar to **Overplay** mode). This mode is called **Pedals** mode because you might want to assign Switch Pedal 1 to Controller 119 (Latch 1) and Switch Pedal 2 to Controller 118 (Latch 2) to make the pedals function similarly to sustain and sostenuto pedals.

### Order

This parameter determines the play order: how the notes will come out of the Arpeggiator. **Played** means they will play back in the order they were entered. **Up** means they will play in ascending order of pitch, regardless of their original order. **Down** means (you guessed it!) descending order of pitch. **Up/Down** means they will play up, then turn around and play down, and keep cycling like that until the Arpeggiator stops. The notes at the very top and very bottom only play once. **Up/Down Repeat** is the same thing, except the notes at the top and bottom play *twice* (repeat) before the Arpeggiator turns around.

**Random** picks the notes out from the currently-latched ones totally at random. **Shuffle** picks the notes out at random, but keeps track of the notes so that no note repeats until all of the others have played (Schoenberg would have approved). **Walk** is "random walk": each successive note is either the next highest or the next lowest pitch in the cycle. For example, if the latched notes were (in ascending order) C, D, E, F, and G, and the first note was an E, the next note could be an F or a D. If it's an F, the next note will be an E or a G, but if it's a D, the next note will be a C or an E; and so on.

**Simultaneous** means that each note you play repeats in time with the Tempo value, sort of like a digital delay with no decay. If you play a C and hold it while you play an E and a G, the Arpeggiator will play all three notes at the same time and at the same tempo. This is the only Order setting which allows two or more notes to sound simultaneously as intervals or chords. Note that Simultaneous works well with Note Shift and Shift limit.

### Beats

The **Beats** parameter sets the number of notes per beat. The tempo is based on quarter notes. Therefore, if you set it to 1/4, you will get one note per beat of the clock. At 1/16, you will get 4 notes per beat. There are a large number of beats you can choose, from a whole note all the way to 1/384th of a note. Keep in mind that the Arpeggiator can't play 384th notes very accurately—we just thought it sounded cool trying.

### Tempo

This sets the tempo, in beats per minute (bpm), at which the Arpeggiator will play when first turned on. **Tempo** is tied to the K2500's internal MIDI clock, so if a song is playing, and you play a note, the song will override the Tempo setting and define the tempo of the Arpeggiated

notes. However, if you are hold a note first, *then* start a song, the Arpeggiator's Tempo setting will define the song's tempo.

You can change Tempo in real time by assigning any of the K2500's physical controllers in the setup to "Tempo". The range is 1 to 255 bpm.

### Note Shift

You can tell the Arpeggiator to transpose all of the currently-latched notes each time it plays through them. **Note Shift** determines how much transposition will occur. The transposition is cumulative from one cycle to the next: if you choose 2 as the value then after the initial cycle, the next cycle will be up a whole step, the one after that will be up two whole steps (a major third), the following one will be up three whole steps (an augmented fourth), and so forth. The values can be from -88 to 88, with 0 (the default) being no transposition.

### Shift Limit

What happens when you transpose so far that the resulting notes are out of range? That's where the **Shift Limit** parameter comes in. This number determines how far up *or* down the Arpeggiator will play from the original note. The minimum value is 0 (which is, admittedly, not of much use), and the maximum is 88. When the Arpeggiator reaches the limit, one of several things will happen, as determined by the **Limit Option** parameter.

### Limit Option

If **Limit Option** is set to **Stop**, then when the Arpeggiator has shifted notes up or down to the limit, it stops playing. If it is set to **Reset**, then when it reaches the limit, the Arpeggiator goes back to its original pitch and starts over again, continuing to transpose as it plays. If the limit allows the notes to go out of MIDI range (for example, if you set Shift to 12, set the limit to 80, and play C4), then those "ghost" notes will not sound, but they will take up rhythmic space: the Arpeggiator will wait for the cycle to play itself out before starting over.

**Unipolar** means the Arpeggiator will play the last note before it reaches the limit and then start shifting notes in the *opposite* direction, using the same interval. When it gets back to its starting point, it reverses again, and so keeps bouncing back and forth between the original pitch and the limit, until you pull the plug.

**Bipolar** starts out the same way as Unipolar, but as the cycle bounces its way back to the original pitch, it keeps going *past* the original pitch, and continues to shift until it hits the Shift Limit in the *opposite* direction. Then it reverses and heads back to the original pitch, going past it until it hits the Shift Limit again, and thus bouncing back and forth between the Shift Limit and its negative counterpart ("evil twin", if you will) for all of eternity.

**Flt Reset** adds a bit of apparent randomness to the process. "Flt" stands for "Float", and it means that when the Arpeggiator reaches the Shift Limit, it doesn't necessarily reset to the original pitch. Instead, it looks at the first note that would exceed the Shift Limit, and calculates the interval between it and the Shift Limit. It then starts the cycle over again, but instead of starting with the first original pitch, it *transposes* that pitch by the interval it just calculated, and continues from there. Here's a very simple example. The only note in the Arpeggiator cycle is C3, the Note Shift is 7 (a perfect fifth), and the Note Limit is 26. The Arpeggiator plays C3, then G3, then D4, then A4. The next note, E5, would be above the Limit, D5 (26 semitones above C3). With a normal Reset, the Arpeggiator would start over again at C3. With the Float turned on, however, the Arpeggiator (clever little devil!) looks at the difference between E5 and D5 — a whole step — and applies it to the starting note, raising *it* by a whole step from C3 to D3. Subsequent notes will then be A3, E4, and B4. Then it will see that the next note — F#5 — would be a major third above the limit, and so it applies *that* interval to the starting point — and you get E3, and the beat goes on.

**Flt Uni** uses the same concept and applies it to the Unipolar mode: when it reaches the limit, the Arpeggiator calculates the difference between the next note and the limit, and transposes all

subsequent notes by that interval, even though they're now going in the opposite direction. **Flt Bipl** does the same thing with the Bipolar mode: after the limit is exceeded in one direction, notes are transposed by the usual interval, and when the cycle goes back and reaches the opposite end, another calculation is done, and subsequent notes are transposed according to that interval — which is going to be in the opposite direction of the first transposing interval, and not necessarily the same distance.

The Arpeggiator can be a lot of fun, even if you don't always understand exactly what it's doing. Keep in mind that the stranger the algorithm you set up, the more unlikely the notes will stay close to one key, so if you want to create something that's going to sound at all diatonic, keep it simple.

### Glissando

When the **Glissando** parameter is **On**, then the Arpeggiator chromatically fills in between notes as it cycles through them. Example: If the Arpeggiator is supposed to play a D and an F, with Glissando on it will play **D, D#, E, F, E, D#, D**.

### Velocity

**Velocity** sets the velocity of the played notes. **Played** means each note repeats with the same velocity you played it at. **Last** means all notes play at the velocity of the most-recently played note. **Pressure** means the velocities are controlled by keyboard pressure: as you push down on any key, the velocities get higher, and as you ease up they get lower. **Ctrl 117** means the velocity is controlled by MIDI Controller number 117, which can be assigned to any K2500 physical controller or can come from an external MIDI source.

There is also a range of fixed values, from **Vel 1** to **Vel 127**. Selecting one of these determines a fixed velocity setting, which you can use to set a constant volume for the arpeggiated portion of all Zones. The value you choose from this range defines the velocity level for the Arpeggiator, and will take effect no matter how hard you strike a key.

### Duration

**Duration** determines how long the notes will play within the rhythm—i.e., the articulation. 100% means that a note will sustain until the next one sounds—very legato. 50% means that the note will fill half the space between itself and the next note. The lowest value is 1%—*staccatissimo*. This parameter has no effect on percussion sounds or other sounds whose duration is fixed.

## The Ribbon Configuration (RIBCFG) Page

Once you've selected a Destination for the Large and Small Ribbons, you can use the parameters on the Ribbon Configuration page to define how the ribbons respond to finger position and pressure.

```

editSetup>RIBCFG All Zones
LargeRibbonConfig:One Section
                PosMode:  Spring:  Center:
SmallRib:  Relative  On      64
LargeRib:  Relative  On      64

```

```

<more COMMON ARPAGE RIBCFG more>

```

```

editSetup>RIBCFG All Zones
LargeRibbonConfig:Three Sections
                PosMode:  Spring:  Center:
SmallRib:  Relative  On      64
Section1:  Relative  On      64
Section2:  Relative  Off     0
Section3:  Relative  Off     0
<more COMMON ARPAGE RIBCFG more>

```

PARAMETER	RANGE OF VALUES	DEFAULT
LARGE RIBBON CONFIGURATION	One Section/Three Sections	One Section
POSITION MODE	Relative/Absolute	Relative
SPRING	On/Off	On
CENTER	0-127	64

### Large Ribbon Configuration

This selects a one- or three-section configuration of the Large Ribbon. You can use the Large Ribbon as one controller, or divide it up into three smaller sections, each with its own controller assignments.

Notice the three white arrows directly above the Large Ribbon. The largest arrow (in the middle) points to the Large Ribbon's center. The two smaller arrows on either side show how the Large Ribbon divides when you choose a three-section configuration.

### Position Mode (PosMode)

The ribbons can interpret your finger's position as a relative or an absolute value.

**Relative** means that the ribbon's travel will begin from wherever you put your finger. Therefore, if you set the ribbon to bend pitch, and PosMode is Relative, putting your finger on the ribbon will mark a starting place. Subsequently moving your finger left or right will bend pitch *relative to* your initial finger position, until you lift your finger away. You can press down at any other place on the ribbon, and get the same results by moving your finger the same distance.

Setting PosMode to **Absolute** means that the ribbon's travel will start from its center, no matter where you put your finger. Every point on the ribbon marks a set value, and putting your finger at various points on the ribbon will give you the same values each time. For example, if

the Small Ribbon's Destination is Volume and PosMode is Absolute, pressing on the left-most end of the ribbon will always change the Zone's volume by the same amount.

### **Spring**

You can set each ribbon's Spring to "On", so that when you lift your finger, the ribbon returns to its original value automatically. If PosMode is Relative, the ribbon will return to the point where you initially placed your finger. If PosMode is Absolute, the ribbon will return to its center.

By setting Spring to "Off", the ribbon will "freeze" when you lift your finger. Be aware that if Spring is Off and you leave the setup, the ribbon remembers its current position; when you select the setup again, the ribbon's travel will begin where you last pressed down. If you want to avoid being surprised by unexpected controller assignment values (such as unruly pitch changes), go to the RIBBON page, and select an entry value other than "None" for each ribbon and ribbon section.

### **Center**

Here you define the "center", or starting point of travel, for each section on the ribbon. You can choose any point between 0 and 127. A value of 64 puts the center physically in the middle of each ribbon section. Values of 0 or 127 place the center at the section's extreme left or extreme right, respectively. Note that as long as Spring is set to Off, the value you set for Center will have no meaning.

## The Utility Soft Buttons

In addition to the Setup Editor's pages, there are basic library and editing soft buttons. Their functions are described below.

### Name

This allows you to rename the current setup. Use any data entry method to do this, including the letters on the numeric keypad.

### Save

Pressing **Save** calls up the standard Save Dialog. Simultaneously pressing the  $-/+$  data entry buttons toggles between saving the setup to the first available empty location, or replacing a currently existing setup.

### Delete

This erases a Setup from RAM, thus freeing up more space to store Setups in other locations. (You can check the free memory in the K2500 at any time, on the top line of the Master mode page). Press **Delete**, and use a data entry method to choose which setup you want deleted. Press **Delete** again, and an "Are You Sure?" message will appear. Press **Yes** to delete the setup, or **No** to cancel.

As with programs, setups can only be saved to and deleted from RAM. The names of all setups in RAM have an asterisk (\*) next to them. If you try delete a setup from ROM, the K2500 will ignore the delete command, and the setup will remain in memory.

### Dump

This sends a MIDI System Exclusive dump of the current setup's settings. There is also a function for dumping *all* Setups. To use this, exit Setup Mode and press the Master button to enter Master mode. Now select the OBJECT page, and you are presented with several functions. Press the **Dump** soft button to select which objects to dump via SysEx.

For more on Object Utilities, see Chapter 11, "Master Mode". For more about System Exclusive messages, see the *Reference Guide*.

### New Zone (NewZn)

Press **NewZn** to create a new Zone with default parameters. The K2500 imports this Zone from Zone 1 of "99 Default Setup". If there are parameters or entire pages you use often, you can create your own Default Setup and save it to location 99; pressing **NewZn** will then import Zones from your custom Default Setup.

### Duplicate Zone (DupZn)

This adds a new Zone with the same parameters as the current Zone.

### Import Zone (ImpZn)

You can import, or "bring in", any Zone from any setup in memory. Press **ImpZn**, and use any data entry method to choose a setup to import from. Then use the CHAN/BANK buttons to select one of that setup's Zones. As you do this, you can audition each Zone to hear how it will sound in the current setup. Now press **Import**, and the Zone you selected will be added to the current setup.

Note: If you are using all eight Zones in a setup and you try to add, duplicate, or import a Zone, a "No More Zones" message will appear. You must delete an existing Zone before you can add, duplicate, or import any new ones.

### Delete Zone (DelZn)

This deletes the current Zone from the setup you are editing. Use **DelZn** to free up Zones so you can add or import new ones.

### Copy and Paste

These functions are handy if you've spent some time tweaking a page or line of parameters, and you want to quickly copy them to other Zones. Start by highlighting a parameter and pressing the **Copy** soft button. Then use the CHAN/BANK buttons to select the Zone you want to copy that value to. Now press the **Paste** soft button, and the values you copied will replace the values in the current Zone.

You can also paste the value into any Zone of any other setup. Just copy a parameter's value, press EXIT to leave the current setup, and select a different setup. Then press EDIT, select the same page or physical controller type as in the last setup, and paste the new value. The values you copy each remain in one of nine paste buffers, so you can keep pasting these values to different Zones in any setup. When you press **Copy** on a new page or line of parameters, you replace the contents of the current paste buffer with the new values.

The table below shows where you can paste copied parameters to. Note that the first seven paste buffers each store an entire page, while the last two each store only one line of parameters.

You have copied:	You can paste it to (in any Zone of any setup):
CH/PROG page	Same page
KEY/VEL page	Same page
PAN/VOL page	Same page
BEND page	Same page
COMMON page	Same page
ARPEG page	Same page
RIBCFG page	Same page
Parameters for one continuous controller (on SLIDER, SLID/2, CPEDAL, RIBBON, WHEEL, or PRESS pages)	Any continuous controller
Parameters for one switch controller (on FOOTSW and SWITCH pages)	Any switch controller

### Clear

Pressing **Clear** resets the selected page or line of parameters to its default value, as defined in 99 Default Setup. You can edit the Default Setup, and alter the values that are called up for each page when you press Clear. The only exceptions to this are on continuous and switch controller assignment pages, where pressing Clear resets the current line to a factory-defined set of values.

You can't undo **Clear** without exiting the setup entirely, so be sure you really want to clear the selected parameters.

### Set Range (SetRng)

As we mentioned earlier in this chapter, **SetRng** gives you a quick way to set the values for the LoKey and HiKey parameters in the currently selected Zone. Press this button, and the K2500 will prompt you to strike the low and high keys. When you've done so, the Setup Editor page returns, and the notes you triggered are the new values for the LoKey and HiKey parameters. Notice that the higher of the two notes you played is the HiKey value, regardless of the order in which you triggered the two notes. The ranges you set are now represented by lines under the program names in the box at the left on the Setup mode page.

## Editing Hints and Suggestions

### Do These Parameters Always Mean Something?

Be careful not to set up parameters that will do crazy things. When in doubt, leave things off, or at the factory default settings. On some of the higher-numbered MIDI controllers and Special Function controllers, the On and/or Off values don't have any meaning, because the controllers have very limited functionality. The following list shows these. ">0" means you can use any value that's greater than zero. "=0" means the value should be 0. "x" means you can use any value. "√" means the value does count for something:

	On Value	Off Value
102 Play / Stop	>0	=0
103 Record / Stop	>0	=0
120 All Sound Off	>0	x
121 Reset All Controllers	>0	x
122 Local Control Off	>0	=0
123 All Notes Off	>0	x
124 Omni mode Off	>0	x
125 Omni mode On	>0	x
126 Mono mode On	√	x
	<i>(the On value, in some synths, specifies the number of MIDI channels to respond to, with one voice on each)</i>	
127 Poly mode On	>0	x

### Do I Need All Those Pedals?

It's important to realize that you don't have to have an actual pedal plugged into every Pedal and Switch Pedal jack in order to take advantage of all of them. Entry and Exit Values can be assigned to a Zone and a physical controller even if the controller isn't there, and they will behave as if the controller were in fact plugged in. So if you want a specific group of Controller commands to be sent out whenever you choose a Setup, and you know they're not going to change while you're playing, you can assign them to physical controllers that aren't in use.

### Multiple Controllers

Sometimes you will want to assign the same Controller number to more than one physical controller. For example, you might want to be able to control modulation depth both with Wheel 2 and pressure. The K2500 has no restrictions on assigning multiple controllers to a particular MIDI message.

### Editing Programs

Remember, except for Control Setup parameters, everything you define in a setup affects programs *only while you are in Setup Mode*. To edit the programs themselves while you are in the Setup Editor, go to the Channel/Program page and press EDIT. This gives you access to the other editors nested within the Program Editor as well. When you have finished editing your program, press EXIT to save it and return to the Setup Editor.