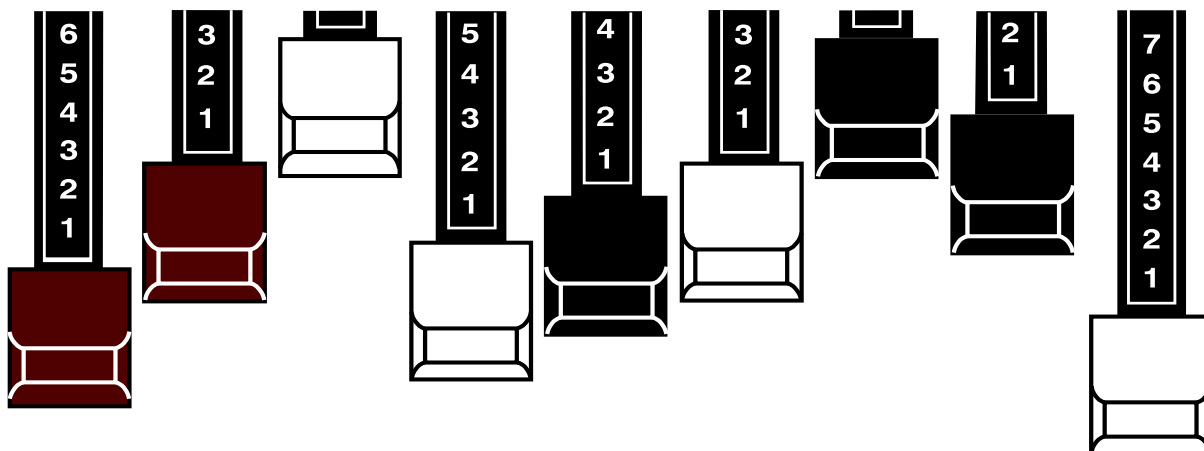




Sk1
Sk2
Sk1-73
Sk1-88



OWNER'S REFERENCE GUIDE

IMPORTANT SAFETY INSTRUCTIONS

- ◆ Before using this unit, please read the following Safety instructions, and adhere to them.
- ◆ Keep this manual close by for easy reference.
- ◆ In this manual, the degrees of danger are classified and explained as follows:

	WARNING	This sign shows there is a risk of death or severe injury if this unit is not properly used as instructed.
	CAUTION	This sign shows there is a risk of injury or material damage if this unit is not properly used as instructed.
*Material damage here means a damage to the room, furniture or animals or pets.		

WARNING



- ◆ Do not open (or modify in any way) the unit or its AC adaptor.



- ◆ Do not attempt to repair the unit, or replace parts in it. Refer all servicing to your retailer, the nearest Hammond Dealer, or an authorized Hammond distributor, as listed on the "Service" page.



- ◆ Never use or store the unit in places that are:
 - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat generating equipment)
 - Damp (e.g., baths, washrooms, on wet floors)
 - Humid
 - Exposed to rain
 - Dusty
 - Subject to high levels of vibration.



- ◆ Be sure to use only the AC adaptor supplied with the unit. And, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's case. Other AC adaptors may use a different polarity, or be designed for a different voltage, their use could result in damage, malfunction, or electric shock.



- ◆ Do not excessively twist or bend the power cord, or place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!



- ◆ This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for extended periods of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult a physician.



- ◆ Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.



- ◆ Immediately turn the power off, remove the AC adaptor from the outlet, and request servicing by your retailer, the nearest Hammond Dealer, or an authorized Hammond distributor, as listed on the "Service" page when:

- The AC adaptor, the power-supply cord, or the plug has been damaged; or
- If smoke or unusual odor occurs
- Objects have fallen into, or liquid has been spilled onto the unit; or
- The unit has been exposed to rain (or otherwise has become wet); or
- The unit does not appear to operate normally or exhibits a marked change in performance.



- ◆ In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.



- ◆ Protect the unit from strong impact. (Do not drop it!)



- ◆ Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords - the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.



- ◆ Before using the unit in a foreign country, consult with your retailer, the nearest Hammond Dealer, or an authorized Hammond distributor, as listed on the "Service" page.



- ◆ Do not put anything that contains water (e.g., flower vases) on this unit. Also, avoid the use of insecticides, perfumes, alcohol, nail polish, spray cans, etc., near the unit. Swiftly wipe away any liquid that spills on the unit using a dry, soft cloth.



CAUTION



- ◆ The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.



- ◆ Always handle the AC adaptor by the plug when plugging into, or unplugging from an outlet or this unit.



- ◆ At regular intervals, you should unplug the AC adaptor and clean it by using a dry cloth to wipe all dust and other accumulations away from its prongs. Also, disconnect the power plug from the power outlet whenever the unit is to remain unused for an extended period of time. Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire.



- ◆ Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.



- ◆ Never climb on top of, nor place heavy objects on the unit



- ◆ Never handle the AC adaptor or its plugs with wet hands when plugging into, or unplugging from, an outlet of this unit.



- ◆ Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.



- ◆ Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet.



- ◆ Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet.



In the unlikely event that you need to dispose of this unit, be sure to contact your dealer or your nearest town or municipal office for its proper disposal.

IMPORTANT - BEFORE YOU BEGIN

Your Hammond SK-series keyboard is designed to give you the true and authentic sound of Hammond Harmonic Drawbars, as well as provide you a large variety of other sounds and features to allow great flexibility in how you want to play. This Guide is designed to explain the operating features of your Hammond SK-series keyboard as simply and graphically as possible.

Because we want to make this keyboard, as well as the keyboard itself, as easy to understand as possible, the explanations in this keyboard are grouped by subject matter, and not in the order in which they necessarily appear in the Information Center Display (the screen in the center of the front panel). For example, all functions pertaining to Drawbars are grouped together, all Percussion features are treated as a group, and so on.

Also, each feature is treated as an explanation unto itself, and does not require you to already have prior working knowledge of some other feature. The explanations are presented such that, if you follow the steps outlined, the message you see in the Information Center Display screen will be identical to that shown in the keyboard at that stage of the explanation.

Do not be daunted by the number of steps required to perform each operation. Each step is simple. Simply bear these things in mind:

1. Read each step carefully.
2. Don't skip any of the steps.
3. Don't perform the steps out of sequence.

With these guidelines, you are well on your way to mastering all of the many sounds and features of your Hammond SK-series keyboard.

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HAMMOND



Sk1

Sk2

Sk1 -73

Sk1 -88

INTRODUCTION

INTRODUCTION

◆ Basic Hook-Up

All connections except the Headphone Jack are found on the Accessory Panel on the back of the SK-series keyboard. The Headphone Jack is located on the front of the instrument.

◆ A.C. Power

Your Hammond SK-series keyboard is shipped from the factory set for 120 V.A.C. power. To connect the SK-series keyboard to A.C. power:

- a. Locate the A.C. Power Cord and A.C. Power Adapter that came with your SK-series keyboard.
- b. Plug the A.C. Power Cord into the Adapter
- c. Plug the female end of the Adapter into the receptacle on the SK-series keyboard marked, "AC IN."
- d. Plug the 3-pronged Power Cord into an A.C. power outlet.

◆ Audio Connections

You can either:

1. Connect the SK-series keyboard to an amplifier, or;
2. Connect the SK-series keyboard to a Leslie Speaker cabinet.

Connecting to an Amplifier

1. Use two audio cables with $\frac{1}{4}$ " plugs on both ends of each cable.
2. Connect one end of each of the audio cables to the audio output connectors (marked LINE OUT) on the Accessory Panel.
3. Connect the other ends of each cable to the female $\frac{1}{4}$ " audio input connectors of your amplifier.

If your amplifier has only a single (1) female $\frac{1}{4}$ " phono plug audio input, you can connect one end of one cable to the L/MONO audio output connector on the SK-series keyboard, and the other end to the female $\frac{1}{4}$ " audio input connector of your amplifier.

Connecting a Leslie Speaker

The 8-pin Leslie DIN socket on your SK-series keyboard allows you to plug directly into any Leslie speaker having an 8-pin DIN interface. If you wish to use a Leslie Speaker with your SK-series keyboard, the Leslie Speaker should be connected before turning the power "ON." To do this:

1. Locate the 8-pin Leslie Connector Cable that is supplied with the speaker cabinet.
2. Plug one end of the Connector Cable into the receptacle on the Leslie Speaker.
3. Plug the other end of the Connector Cable into the 8-pin Leslie socket found on the Accessory Panel of the SK-series keyboard.

Both the Leslie connections are "keyed," that is, each connection contains a notch which insures that the pins properly match up.

NOTE: The 8-pin Leslie DIN socket on your SK-series keyboard allows you to plug directly into any Leslie speaker having an 8-pin DIN interface. Current models include the 2101 and 3300. However, it should be noted that when plugging the SK-series keyboard into a single-channel Leslie cabinet such as a 3300, only the Drawbars will sound through the Leslie.

NOTE: To connect the SK-series keyboard to a Leslie Speaker having a different pin configuration such as an older 6-pin 122 or 147, a 9-pin cabinet such as the 900 series, 760 or 770 cabinets, or a Leslie cabinet having an 11-pin socket such as a 122XB, 971, etc., you will require an adapter kit and/or Connector Cable. Contact your Hammond Dealer for more information regarding which adapter kit and/or cable you may need.

◆ Connecting a Foot Switch

You can connect an optional foot switch such as the Hammond model FS-9H foot switch to your SK-series keyboard. Connect the foot switch plug to the jack marked "FOOT SW" on the back of the SK-series keyboard.

NOTE: In order to insure proper operation of the Foot Switch, be sure to connect it when the power to the SK-series keyboard is "OFF."

◆ Connecting a Damper Pedal

To connect a Damper (piano sustain) Pedal, connect the plug from the pedal into the jack marked "DAMPER" on the back of the SK-series keyboard.

◆ Connecting an EXP-50 Series Expression Pedal

If you wish to use a Hammond EXP-50 Series Expression Pedal, connect the plug from the EXP-50 into the EXP.PEDAL jack.

◆ Connecting a MIDI Pedalboard

If you wish to use a Hammond MIDI Pedalboard, use a MIDI cable to connect the MIDI OUT port from the Pedalboard to the MIDI IN 1 port of the SK-series keyboard.

NOTE: If you are using a model XPK-100 Pedalboard, for best results, its Control Channel should be set to "16." Please consult your XPK-100 Quick Features Guide for instructions on how to do this.

◆ Other MIDI Connections

Your SK-series keyboard can interface with a great number of MIDI-compatible devices. See the MIDI section starting on page 54 for more information about MIDI connections and your Hammond SK-series keyboard.

◆ Connecting a Set of Headphones

A stereo headphone jack is provided on the Accessory Panel next to the LINE OUT jacks so that you may play or practice in privacy. Connect the plug from a set of stereo Headphones into the Headphone jack.

NOTE: Be sure that your headphone set has either a ¼" plug or an adapter for a ¼" plug.

◆ Basic Controls

The panel controls on the SK-series keyboard include Drawbars, Rotary Controls, Touch Tabs and Touch Buttons. These controls allow you to make adjustments and changes on the instrument.

◆ ON / OFF Power Switch

The ON / OFF Power Switch is located at the rear of the instrument on the left side of the Accessory Panel (the right side if you're in front of the keyboard(s)). When this switch is in the "ON" (pushed in at the top) position, the Information Center Display as well as some LED's (Light Emitting Diodes) will light up showing that the instrument is "ON".



◆ MASTER VOLUME Rotary Control

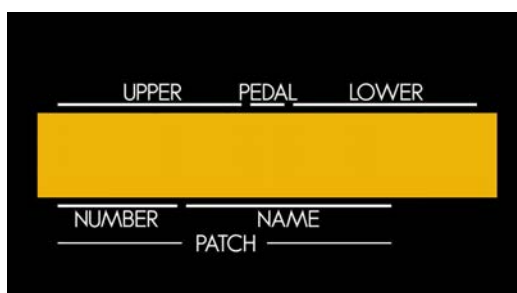
The MASTER VOLUME Rotary Control is located on the Control Panel to the left of the Drawbars. With this Rotary Control, you can control the total or maximum volume of the entire instrument. Turn this control to the right to increase the total volume, and to the left to decrease the total volume.



NOTE: If you have an Expression Pedal connected to the SK, it will express up to the amount determined by the setting of the MASTER VOLUME Rotary Control.

◆ Information Center Display

The Information Center Display is located in the upper center of the instrument.



The Information Center Display has two modes: (1) the PLAY mode and (2) the MENU MODE. The PLAY Mode allows you to graphically see the Drawbar settings, Voice settings, and Transpose settings. The MENU Mode allows you to change and edit the SK-series keyboard's software parameters such as Drawbar Voicing, MIDI parameters and other advanced functions.

NOTE: The PLAY and MENU Modes are covered in the Information Center Display section of this Guide starting on page 21.

◆ Drawbars

The Drawbars are the heart and soul of the Hammond Sound. There are two sets of nine Drawbars, sometimes referred to as Tonebars, for Upper and Lower Keyboard functions, and two Drawbars for Pedal tones, located between the Upper and Lower Keyboard Drawbar sets.

Pulling a Drawbar out (towards you) will increase the volume from 0 (no sound) to 8 (maximum volume). Pushing the Drawbar in (away from you) decreases the volume of that Drawbar.

Please refer to the DRAWBARS & PERCUSSION section of this Owner's Playing Guide for a complete explanation of Hammond Drawbars.



◆ Touch Tabs

Touch Tabs have red LED's or lights them that will light up indicating "ON".

"OFF"

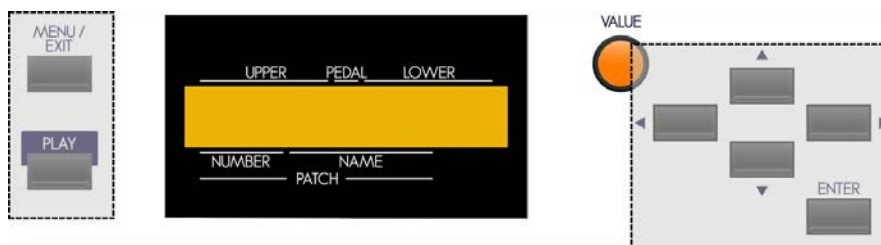
"ON"



NOTE: The Touch Tabs in the FAVORITES and EXTRA VOICE Sections do not all turn off, at least one LED in each of these five Sections will always remain lighted.

◆ Touch Buttons

Touch Buttons are the buttons found in the Information Center Display.



Touch Buttons have two different functions.

1. Select Touch Buttons will allow you to select among multiple functions such as selecting a Menu Page.
2. Touch ON / Touch OFF Touch Buttons turn "ON" or "OFF" specific functions such as SUSTAIN.

NOTE: More detail about each of these sections is covered later in this Owner's Playing Guide. Refer to the Table of Contents for the page numbers.

◆ USB Port



The USB Port is located in the middle of the Accessory Panel. It is designed to accept a USB Flash Drive, which allows you to:

1. Play MP3-format files,
2. Play .WAV-format files,
3. Save Setups,
4. Load previously stored Setups from a USB Flash Drive into the SK-series keyboard,
5. Install software upgrades into the SK's operating system,
6. Load new Extra Voices into the SK-series Voice Library.

For more information about the USB port, see USING THE USB PORT starting on page ?.

◆ Important - Read This

◆ If you have the SK1:



Although the SK1 keyboard is a single-keyboard instrument, it can be made to function in a manner similar to an instrument with two keyboards and a pedal keyboard, such as an organ. This is the reason for the references to UPPER, LOWER and PEDAL on the instrument.

On an organ, the UPPER Keyboard is usually used for the melody, and is played with the right hand. The LOWER Keyboard is usually used to provide accompaniment, or harmonic support for the melody and is played by the left hand. The PEDAL Keyboard, or clavier, is used to play the bass notes and is most commonly played by the left foot.

On the SK1, this playing style is replicated by partitioning or “splitting” the single 61-note keyboard into two parts. The part played by the right hand is referred to as the UPPER Keyboard, while the part played by the left hand is referred to as the LOWER Keyboard.

The SPLIT Touch Tab, located on the right of the control panel, is used to divide the keyboard into Upper and Lower Keyboards. Normally, the third “C” key counting from the left on the keyboard marks the dividing point between the Upper and Lower Keyboard.



IMPORTANT NOTE: “C3” is the default Split point; however, you can relocate the Split point elsewhere on the keyboard. This is explained later in this Guide.

♦ If you have the SK2:



The SK2 keyboard is a double-manual instrument which functions in a manner similar to a conventional two-keyboard organ.

On an organ, the UPPER Keyboard is usually used for the melody, and is played with the right hand. The LOWER Keyboard is usually used to provide accompaniment, or harmonic support for the melody and is played by the left hand. The PEDAL Keyboard, or clavier, is used to play the bass notes and is most commonly played by the left foot.

On the SK2, this playing style can be faithfully replicated by playing the Upper and Lower Manuals in much the same fashion as you would a conventional two-manual organ, although it is recommended that for maximum flexibility you register one manual with Drawbar sounds and the other manual with an Extra Voice registration such as Piano, Strings, etc.

The LOWER TO PEDAL Touch Tab, located on the right of the control panel, is used to enhance the tones played from the Pedals. When the LOWER TO PEDAL Touch Tab is “ON,” (LED lit), the registration set for the Lower Manual will play from the Pedals.



HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

INFORMATION
CENTER
DISPLAY

INFORMATION CENTER DISPLAY

The Touch Tabs, Touch Buttons, Drawbars, etc., used to control the operations necessary for Registration set-ups, settings for each voice, rhythm tempo, as well as MIDI information. The Information Center Display allows you to see and regulate these changes.



◆ Touch Buttons

◆ MENU/EXIT, PLAY, and ENTER Touch Buttons

These 3 Touch Buttons allow you to choose from among the various options for using the Information Center Display. The following is a very brief explanation of each of these Touch Buttons.

MENU/EXIT - This Touch Button allows you to place the Information Center Display into the MENU display mode, allowing you to access the Advanced Feature Menu pages.

PLAY - This Touch Button allows you to place the Information Center Display into the PLAY display mode.

ENTER - This Touch Button allows you to save an Advanced Feature parameter that you have edited.

◆ PAGE NAVIGATION Touch Buttons

To the right of the display window itself are 4 gray Touch Buttons marked with arrows for UP (“▲”), DOWN (“▼”),

LEFT (“◀”) and RIGHT (“▶”). These buttons allow you to find the Advanced Feature Menus and features within each Menu quickly.

NOTE: More information regarding how to use the PAGE NAVIGATION Touch Buttons will be covered later in this section of the Guide.

IMPORTANT: It is assumed at this point that you have just turned the SK-series instrument "ON" and have not touched either the PLAY or MENU/EXIT Touch Button. If you have, simply touch the PLAY Touch Button once. Also the Drawbars should be "OFF" (pushed "in").

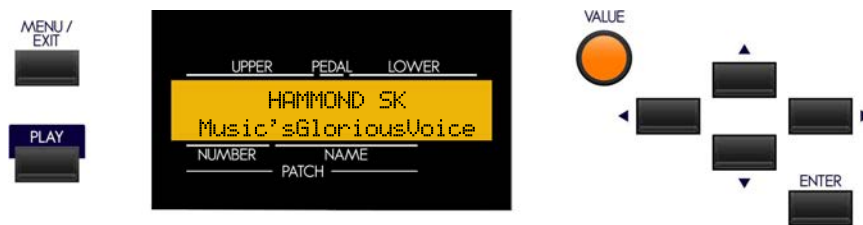
◆ Display Modes

As stated in the INTRODUCTION, there are two Display Modes - PLAY Mode and MENU Mode.

Within the PLAY Mode are three screens - Graphic Display, EXTRA VOICE Display and Numeric Display. These will be explained below.

◆ PLAY Mode - Graphic Display

After the instrument is first turned "ON," the Information Center Display should show a screen similar to this:



After approximately 5 seconds, the Information Center Display will show a screen similar to this:



This screen will show:

1. Drawbar registrations for Upper Keyboard, Lower Keyboard and Pedal represented graphically (i.e., by solid bars of different lengths depending on the position of each Drawbar),
2. The selected Patch Bank and Number,
3. The name of the selected Patch.

NOTE: A "Patch" is a preregistered combination of sounds and effects. More information about Patches is covered in the Patches section of this Guide starting on page ?.

◆ PLAY Mode - EXTRA VOICE Display

To see the EXTRA VOICE Display screen, touch the PLAY Touch button once from the Graphic Display screen. The Information Center Display will look similar to this:



This screen will show:

1. The sound registered for the EXTRA VOICE Section,
2. The selected Patch Bank and Number,
3. The name of the selected Patch.

◆ PLAY Mode - Numeric Display

To see the Numeric Display screen, touch the PLAY Touch button once from the EXTRA VOICE Display screen. The Information Center Display will look similar to this:



This screen will show:

1. Drawbar registrations for Upper Keyboard, Lower Keyboard and Pedal represented numerically (i.e., by the numerical setting for each Upper and Lower Manual Drawbar),
2. The selected Patch Bank and Number,
3. The name of the selected Patch.

Touch the PLAY Touch Button once from the above screen to show the Graphic Display screen once again.

These are the PLAY Screens. See the following pages for an explanation of the MENU Mode.

◆ MENU Mode

The MENU Mode has 5 Screens.

MENU Mode - A Screen

If you touch the MENU/EXIT Touch Button once from any of the Play Mode screens, the Information Center Display should look like this:



Four (4) choices should now appear in the display window.

Using the PAGE NAVIGATION and ENTER Touch Buttons will allow you to select the Advanced Feature you want to change.

DRAWBAR - Allows you to modify the characteristics of the Drawbars, and set the amount of Key Click for Upper and Lower Keyboards and Pedal Keyboard, as well as Normal or Slow Attack for Upper and Lower Keyboards and Pedal Keyboard.

EXVOICE - Allows you to modify the characteristics of the Extra Voices.

PATCH - Allows you to name Patches and choose the characteristics of Patches and Favorites

CONTROL - Allows you to change how the various controls, such as Foot Switch, Expression Pedal, etc., will function.

MENU Mode - B Screen

From the A Screen, touch the PAGE UP Touch Button once. The Information Center Display should look like this for the B Screen of the Menu Mode:



Four (4) choices should now appear in the display window.

Using the PAGE NAVIGATION and ENTER Touch Buttons will allow you to select the Advanced Feature you want to change.

CUST. TW - Allows you to customize the sound of the Drawbars.

PERCUSS - Allows you to change the characteristics of the Percussion.

VIB&CHO - Allows you to change the characteristics of the Vibrato & Chorus effects.

LESLIE - Allows you to change the characteristics of the built-in digital Leslie.

MENU Mode - C Screen

From the B Screen, touch the PAGE UP Touch Button once. The Information Center Display should look like this for the C Screen of the Menu Mode:



Four (4) choices should now appear in the display window.

Using the PAGE NAVIGATION and ENTER Touch Buttons will allow you to select the Advanced Feature you want to change.

OD\EFF - Allows you to change the characteristics of the Overdrive effect as well as other Effects for the different voices.

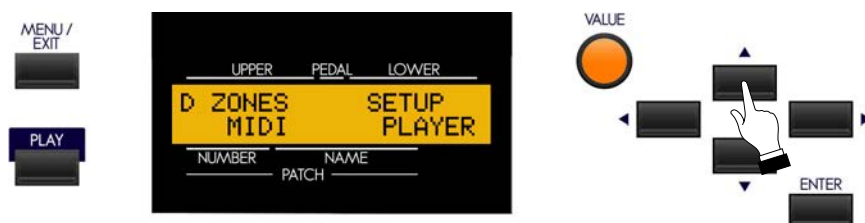
EQUALIZ - Allows you to set the characteristics of the built-in Equalizer.

REVERB - Allows you to select the amount and type of Reverb that you prefer.

TUNE - Allows you to fine-tune the entire pitch of the SK-series instrument up or down.

MENU Mode - D Screen

From the C Screen, touch the PAGE UP “▲” Touch Button once. The Information Center Display should look like this for the D Screen of the Menu Mode:



Four (4) choices should now appear in the display window.

Using the PAGE NAVIGATION and ENTER Touch Buttons will allow you to select the Advanced Feature you want to change.

ZONES - Allows you to select the range that each voice category will sound within the keyboard(s).

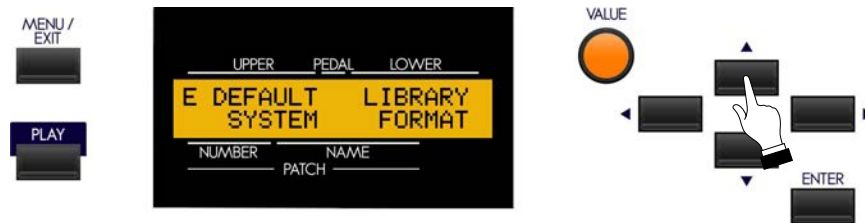
MIDI - Allows you to set the overall MIDI parameters for the instrument, and allows you to perform a MIDI Data Dump to a MIDI data recorder or to another SK-series instrument.

SETUP - Allows you to save, name and delete Setups.

PLAYER - Allows you to utilize the MP3 Player to play audio files on the SK.

MENU Mode - E Screen

From the D Screen, touch the PAGE UP Touch Button once. The Information Center Display should look like this for the E Screen of the Menu Mode:



Four (4) choices should now appear in the display window.

Using the PAGE NAVIGATION and ENTER Touch Buttons will allow you to select the Advanced Feature you want to change.

DEFAULT - Allows you to restore the instrument to its default settings.

SYSTEM - Allows you to select the Audio Mode and to display Software Versions.

LIBRARY - Allows you to load a Voice Library from a USB Drive into the Extra Voice section.

FORMAT - Allows you to format a USB Drive for use with your SK-series instrument.

MENU Mode - F Screen

From the E Screen, touch the PAGE UP Touch Button once. The Information Center Display should look like this for the F Screen of the Menu Mode:



One (1) choice should now appear in the display window.

PIPE - Allows you to change the characteristics of the Drawbar Pipe Voices.

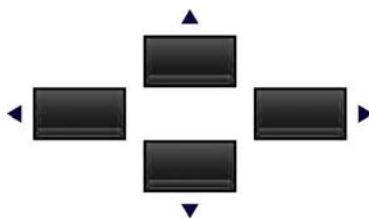
NOTE: The Drawbar Pipe Voices are controlled by the same group of Harmonic Drawbars as control the regular Drawbar tones. This is explained fully in the DRAWBARS & PERCUSSION Section of this Guide.

◆ “Shortcuts”

Sometimes it may be desirable to access an Advanced Feature more quickly than can be done by using the Touch Buttons on the Information Center Display. Because of this, your Hammond SK-series instrument has what are called “Shortcuts” to many Advanced Feature Menus. You can “shortcut” to an Advanced Feature associated with a particular function by pressing and holding a Touch Tab controlling that function.

Many, but not all, of the Advanced Features can be accessed via Shortcuts. In addition, a few Advanced Feature Menus can be accessed only via a Shortcut. The different methods you can use to access a particular Advanced Feature Menu will be explained in each section before explaining the Advanced Feature Menu itself.

◆ Using the PAGE NAVIGATION Touch Buttons



As stated earlier, the four Touch Buttons marked with arrows - PAGE UP (“▲”), PAGE DOWN (“▼”), PAGE LEFT (“◀”) and PAGE RIGHT (“▶”). allow you to find the Advanced Feature Menus and features within each Menu quickly.

The following is designed to help you acclimate to using the PAGE NAVIGATION Touch Buttons to find your way to the Advanced Feature Menu you want to edit.

◆ Selecting Advanced Feature Menus

Use the PAGE UP and PAGE DOWN Touch Buttons to select the A through E Menus.

TRY THIS:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



This is the A Menu, which will be the first one displayed. The word “DRAWBAR” should now be blinking.

2. Touch the PAGE UP Touch Button once. The Information Center Display should now look like this:



The B Menu will now display. (The word “CUST.TW” should now be blinking.)

3. Now touch the PAGE UP Touch Button once. The Information Center Display should now look like this:



The C Menu will now display. (The word “OD/EFF” should now be blinking.)

Each time you touch the PAGE UP Touch Button, the Information Center Display will advance to the next menu until the E Menu is reached.

TRY THIS: To scroll down through the Advanced Feature Menus;

1. From the above screen, touch the PAGE DOWN Touch Button once. The Information Center Display should now look like this:



You have now gone from the C Menu back to the B Menu.

2. Now touch the PAGE DOWN Touch Button once. The Information Center Display should now look like this:



You are now back to the A Menu.

◆ Selecting Advanced Feature Menu Pages

Once you have selected the Advanced Feature Menu you want, use the PAGE RIGHT and PAGE LEFT Touch Buttons to select the specific Menu Page you want to edit. This is explained starting below.

TRY THIS:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



This is the A Menu, which will be the first one displayed. The word “DRAWBAR” should now be blinking.

2. Touch the PAGE RIGHT Touch Button once. The word “EXVOICE” should now be blinking.



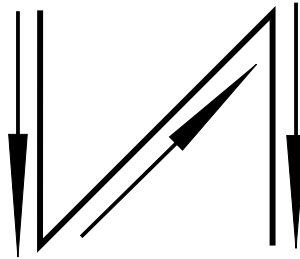
3. From the above screen, touch the PAGE RIGHT Touch Button once. The word “PATCH” should now be blinking.



4. From the above screen, touch the PAGE RIGHT Touch Button once. The word “CONTROL” should now be blinking.



In the previous examples, you can see that the Advanced Feature Menu Pages follow a backward “N” pattern in the order in which they display:



The pattern is also identical to the shift pattern of a “four-on-the-floor” manual transmission found in automobiles and trucks.

To scroll backward through the Advanced Feature Menu pages, simply reverse the previous procedure.

To return to PLAY Mode, touch either the PLAY or the MENU/EXIT Touch Button.

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HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

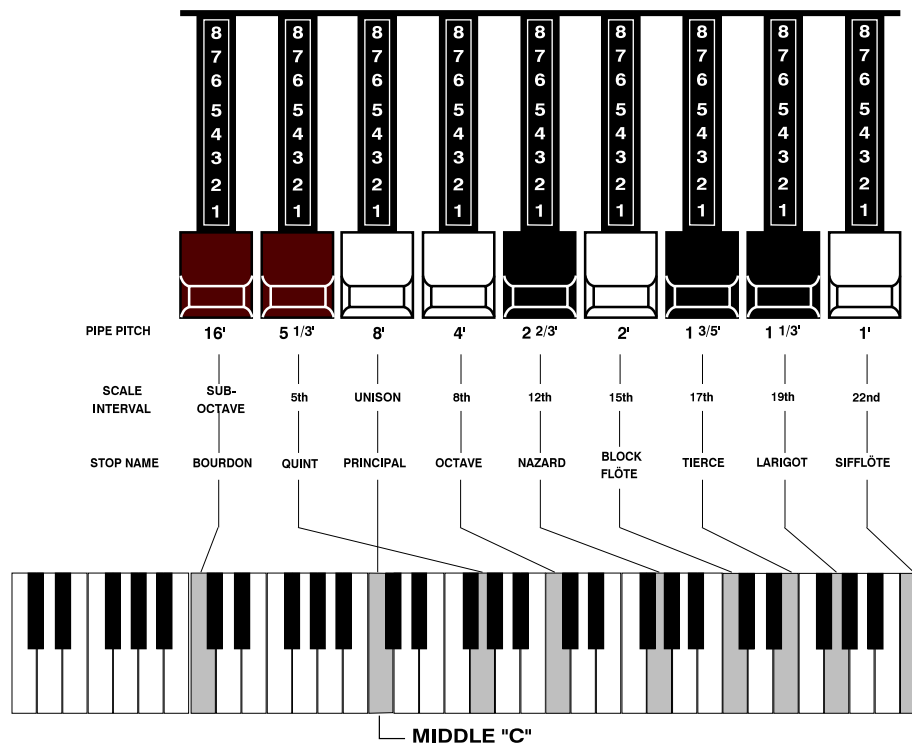
DRAWBARS
&
PERCUSSION

DRAWBARS & PERCUSSION

◆ Manual Drawbars

Your Hammond SK-series instrument has one set of nine Drawbars. Drawbars, often called Tonebars, are the heart and the basis of the renowned Hammond Sound and have been used since the first Hammond Organ Model A introduced in 1935.

There are approximately 253,000,000 possible sound combinations that can be produced by these Drawbars. Each Drawbar consists of sine waves of different pitches (which means tone depth). The illustration below shows how each Drawbar relates to the keyboard when middle "C" is pressed.

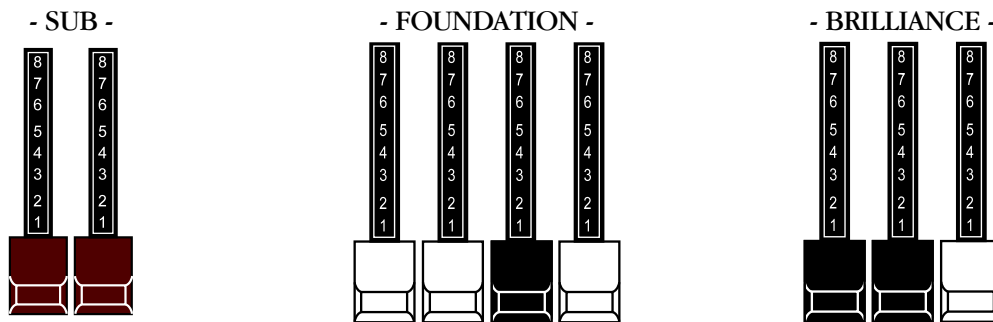


Each Drawbar is marked with a number followed by a footage mark. For example, the first white Drawbar is marked "8'". This is pipe organ terminology indicating that the pipe used to produce the lowest note on the keyboard on a pipe organ is actually eight feet long. The numbers from "1" to "8" on each Drawbar represent degrees of loudness - number 1 being the softest, and number 8 being the loudest.

Drawbars are divided into 3 groups of sound as well as 3 groups of color. We will first look at the 3 sound groups.

◆ Sound Groups

You may think of these sound groups in terms of the three levels - The Sub being the deep pitches, the Foundation being the mid range of pitches and the Brilliance being the high pitches.



TRY THIS:

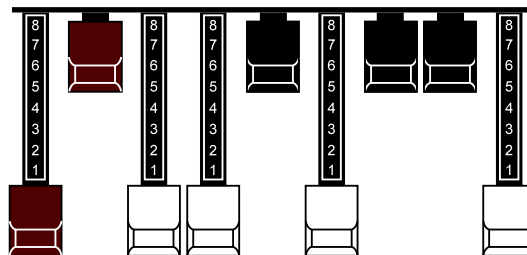
1. Make sure all Drawbars are "IN" (off).
2. Hold down a "C" chord, starting with "E" above middle "C", ("E", "G" & "C" notes) with your right hand on the manual (or the Upper Manual of the SK-2).
3. Starting with the first white Drawbar, pull out and push in each of the Foundation Drawbars one group at a time until you have a sound that you like.
4. While still holding the "C" chord down, pull each of the brown Sub Drawbars out until you like the sound.
5. Now do the same with the Brilliance Drawbars.

It's that easy to create your own custom Drawbar settings.

◆ Color Groups

◆ White Drawbars

The first white Drawbar represents the “fundamental” or “8’ base” tone. All of the other white Drawbars are octave intervals or harmonics of the fundamental tone. The tonal brilliance is greatly increased by adding white Drawbars, but the harmonics added are always in “consonance” or harmony.



- CONSONANT HARMONICS -

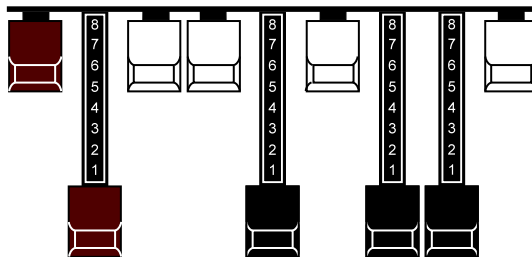
TRY THIS:

1. Make sure all Drawbars are “IN” (off).
2. Hold down middle “C” on the manual (or the Upper Manual on the SK2).
3. Pull the first white Drawbar all the way out.
4. Now, one by one, pull the other white Drawbars out in sequence.

As you add each Drawbar, you will hear the addition of the same note an octave higher in each case.

◆ Black Drawbars

The Black Drawbars on the Hammond Organ represent the dissonant (discordant) harmonics which are also necessary in building rich tone colors. The mellowness of a horn, the pungency of strings, and the brilliance of reed voices owe much of their character to the presence of these harmonics in different degrees.



- DISSONANT HARMONICS -

TRY THIS:

1. Make sure all Drawbars are “IN” (off).
2. Hold down middle “C” on the manual (or the Upper Manual on the SK2).
3. Pull the first white Drawbar in the second group of Drawbars for the Swell Manual, marked 8’, all the way out.
4. Now pull the 3 Black Drawbars in the second group of Drawbars for the Swell Manual all the way out.

The sound produced by the Drawbars is that of a clarinet.



◆ Brown Drawbars

In addition to the white and black Drawbars, there are two brown Drawbars in the group. These two Drawbars produce “sub-octave” effects. The first brown Drawbar is the sub-octave of the fundamental Drawbar. It is “one octave” lower in sound.

TRY THIS:

1. Make sure all Drawbars are “IN” (off).
2. Hold down middle “C” on the manual (or the Upper Manual on the SK2).
3. Pull the first white Drawbar all the way out.
4. While continuing to hold middle “C” down, pull the first brown Drawbar all the way out.

You will now hear the sound of “C” one octave lower being added.

The second brown Drawbar is the “sub-octave” of the third harmonic. Both of these Drawbars are used to add depth and richness to many combinations. They also increase the range of the manual by one octave since a solo registration of the “8 foot,” or normal pitch, can be set up using the first brown Drawbar as the fundamental and played one octave higher.

TRY THIS:

1. Make sure all Drawbars are “IN” (off).
2. Hold down middle “C” on the manual (or the Upper Manual on the SK2).
3. Pull the first white Drawbar all the way out.
4. While continuing to hold middle “C” down, pull the first brown Drawbar all the way out. You will now hear the sound of “C” one octave lower being added.
5. Now pull the second brown Drawbar in the same group out, and you will hear it add a richness to the sound of the “C” note that you are holding down.

◆ **Tone Families By Shape**

Regardless of the size of a pipe organ or its number of stops, all of its voices are related to four basic families of tone. The four basic families - Flute, Reed, String and Diapason - can be quickly set up on the Drawbars by relating a pattern or shape to each family.

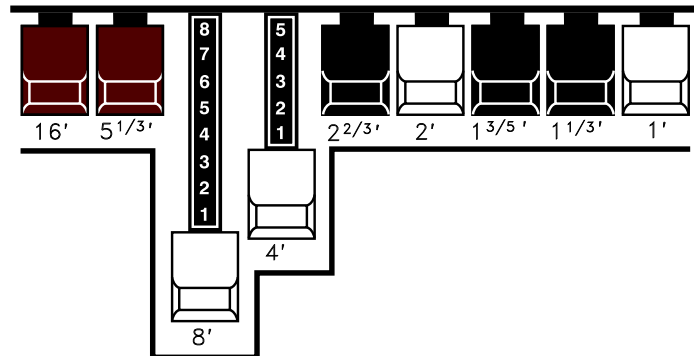
These are the generalities which apply to the tonal resources of the organ, and in themselves produce pleasant and usable effects. However, real beauty of tone is secured in two ways. The first way is to use registrations which have been devised by organists. The second way, and eventually the one that best expresses your own feeling for the music, is to create your own tonal effects, experimenting with and perfecting tones which you use to play your favorite selections.

The Hammond Organ Drawbars allow you not only to set up any tonal effect you want, but also to make many fine variations of the tone. Only with the Hammond Drawbars can you play exactly the shade of tone you want for every selection and, perhaps even more important, for every size and type of room in which you play.

With the Hammond Organ Drawbars, a touch of a finger is all that is needed to make the tone quality softer or more brilliant, richer in one harmonic or another.

Typical Drawbar Registration Patterns For The Four Families Of Organ Sound

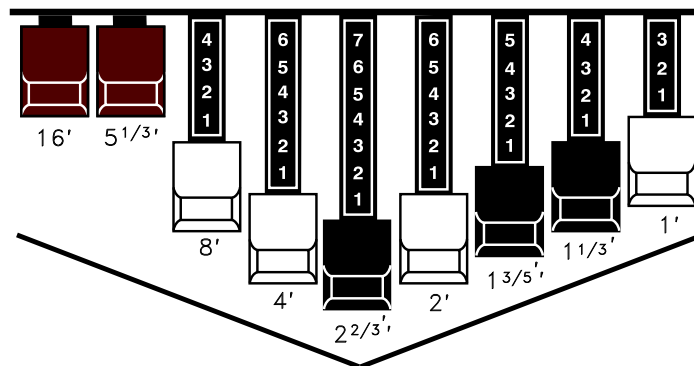
Flute family (2 step pattern)



Flute Tones

Accompaniment Flute 8' I	00 8460 000
Accompaniment Flute 8' II	00 3220 000
Accompaniment Flute 8' III	00 8600 000
Chorus of Flutes 16'	80 8605 002
Orchestral Flute 8'	00 3831 000
Piccolo 2'	00 0006 003
Stopped Flute 8'	00 5020 000
Tibia 8'	00 7030 000
Tibia 4'	00 0700 030
Tibia (Theater) 16'	80 8605 004
Wooden Open Flute 8'	00 8840 000

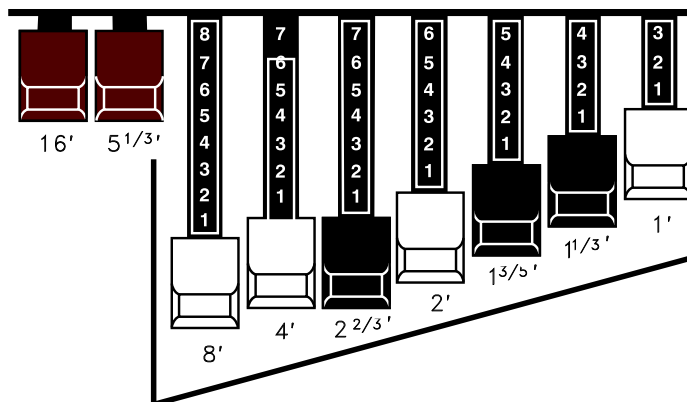
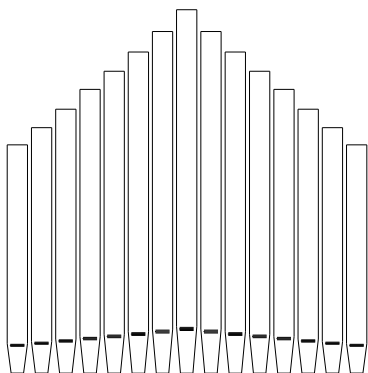
Reed family (triangle pattern)



Reed Tones

Bassoon 16'	44 7000 000
Clarinet 8'	00 6070 540
English Horn 8'	00 3682 210
Flugel Horn 8'	00 5777 530
French Horn	00 7654 321
Kinura 8'	00 0172 786
Oboe 8"	00 4764 210
Trombone 8'	01 8777 530
Trumpet 8'	00 6788 650
Tuba Sonora 8'	02 7788 640
Vox Humana 8'	00 4720 123

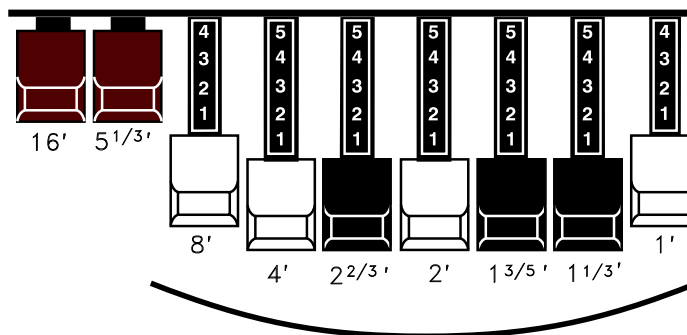
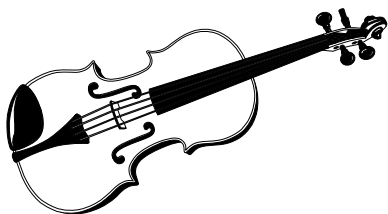
Diapason family (check mark pattern)



Diapason Tones

Accompaniment Diapason 8'	00 8874 210
Chorus Diapason 8'	00 8686 310
Diapason 8'	00 7785 321
Echo Diapason 8'	00 4434 210
Harmonic Diapason 16'	85 8524 100
Harmonic Diapason 8'	00 8877 760
Harmonic Diapason 4'	00 0606 045
Horn Diapason 8'	00 8887 480
Open Diapason 8'	01 8866 430
Solo Diapason	01 8855 331
Wood Diapason 8'	00 7754 321

String family (bow pattern)

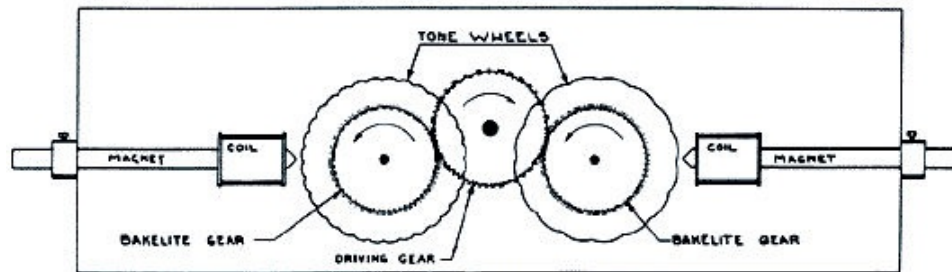


String Tones

Cello 8'	00 3564 534
Dulciana 8'	00 7770 000
Gamba 8' I	00 3484 443
Gemshorn 8'	00 4741 321
Orchestral String 8'	00 1464 321
Salicional 8'	00 2453 321
Solo Viola 8'	00 2474 341
Solo Violin 8'	00 3654 324
Viola da Gamba 8'	00 2465 432
Violina 4'	00 0103 064
Violone 16	26 3431 000

◆ What Are “Tone Wheels?”

Tone Wheels are the method by which vintage Hammond Organs generate tone. A Tone Wheel is a steel disk $1\frac{7}{8}$ " in diameter and containing a number of high and low points, called teeth on its outer edge. (See the illustration below.) The most common tone-wheel generator has a total of 96 tone wheels. In order to generate all the different frequencies, the tone wheels have different numbers of teeth - some wheels have 2 teeth, others have 4 teeth, others have 8, 16, 32, 64, 128, up to 192 teeth. On a B-3-type organ, only 91 of the 96 wheels generate musical notes - five of the wheels are blanks, or wheels having no teeth, to maintain balance. On later Hammond models such as the H-100 and X-77-series, the last 5 tone wheels are cut with 256 teeth, allowing them to play frequencies 91 through 96.



Notice in the drawing above that the tone wheels are placed so that they rotate next to magnetized rods. Each rod has a small coil of wire wrapped around one end. The tip of the magnet at the coil end is ground to a sharp edge and mounted near the edge of the tone wheel. Every tone wheel that produces a note has a magnet associated with it.

Notice also that the tone wheels are geared together. A constant-speed motor drives the gears which in turn cause the tone wheels to rotate. As the wheels rotate they do not touch the magnets, but pass very close to them. Each time a high spot passes the magnet, it generates a very small electrical current in the coil.

The number of high spots or teeth passing the magnet each second determines the musical note produced. If, for example, 440 high spots pass the magnet each second, 440 electrical impulses will be generated which, when converted into sound with a speaker, will sound the note, “A-440.”

After going through a number of other processes, the electrical impulses finally reach the amplifier, which strengthens them enough to drive a speaker system, which in turn converts the electrical signal into audible tone. It is this audible tone which is heard as the “Hammond Sound.”

◆ What is “Leakage?”

As explained above, each tone wheel rotates next to a magnet, making a total of 91 or 96 magnets, one for each tone wheel. The tone wheels are mounted in separate bins in order to isolate them from each other and prevent the magnets from intercepting frequencies from neighboring wheels; however, a small amount of current may still “leak” through, producing a phenomenon called Leakage. Leakage is usually heard as a “hash” type sound consisting of many frequencies sounding at once. The phenomenon can be thought of as similar to white noise but with somewhat more definition, with individual pitches more discernable. A properly calibrated B-3 will have a minimum of this effect; however, an instrument which has been subjected to hard use over a period of time may exhibit more leakage noise.

◆ What Is “Motor Noise?”

The tone-wheel generator is secured to the console by means of four bolts. These bolts have reversible sleeves which can be positioned so that the entire tone-wheel generator can be suspended inside the console to keep vibration to a minimum and to prevent the console from amplifying the noise made by the synchronous motor. However, when moving the organ, these bolts can be reversed to secure the generator directly to the console shelf to prevent damage. The organ can be operated with the generator either suspended or bolted down; however, when the generator is bolted down, more motor noise will be heard.

◆ DRAWBAR SELECT Touch Tabs



These Touch Tabs allow you to use the SK Drawbar set to control sounds for Upper Manual, Lower Manual and Pedal. If an LED above a Touch Tab is lit, the Drawbars will control the tones represented by that Touch Tab.

One of the Touch Tabs in the DRAWBAR SELECT section is always “ON” (red LED lit).

◆ SK1, SK1-73, SK1-88 - Please Read:

Drawbar parameter changes for the Lower Manual (“L”) will not be heard unless the SPLIT Touch Tab is “ON” and notes are played below the Split point.

On ALL SK-series instruments, Drawbar parameter changes for the Pedal department (“P”) will not be heard unless the MAN. BASS Touch Tab is “ON” or a MIDI Pedal clavier is connected.

Notice that only two (2) Drawbar settings are shown for the Pedals in the Information Center Display. On most Hammond Organs with two manuals and pedals, there are two Drawbars for controlling the Pedal tones - one at “16” pitch and the other at “8” pitch. The SK-series recreates this by using the Sub-Fundamental Drawbar (marked “16”) and the Fundamental Drawbar (marked “8”) to control the Pedal sounds.

◆ DRAWBAR Edit Menu

This Advanced Feature Menu allows you to make various changes to the characteristics of the Drawbars.

Accessing the DRAWBAR Edit Menu using the Touch Buttons:

1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see “A” displayed in the extreme upper left corner of the Information Center Display. You will also notice that the word “DRAWBAR” is blinking.
2. Touch the ENTER Touch Button once.

Accessing the DRAWBAR Edit Menu using a Shortcut:

Touch the UPPER and PEDAL DRAWBAR SELECT Touch Tabs together.



You are now in the DRAWBAR Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make various changes to the characteristics of the Drawbars. These changes are explained starting on the next page.

◆ Keyboard Selection

Use the PAGE UP and PAGE DOWN Touch Button to scroll up through the Keyboard choices. You can select “L&U” “Lower and Upper) or “PED” (Pedal) The current choice will blink.

The following paragraphs will show how to change the Drawbar parameters for “L&U” (Lower and Upper Manuals)

◆ DRAWBAR Edit Menu L&U - Page 1

If you followed the instructions on the previous page, Page 1 of the DRAWBAR Edit Menu displays. The legend underneath “L&U” should now be blinking.



Drawbar Voice Mode

This Advanced Feature allows you to change the overall sound of the Drawbars. You can select, “BType1”, which reproduces the sound of the B-3 tone-wheel generator, “BType2,” which is similar to BType1, but with more leakage noise and “flutter,” “Mellow,” which produces a very pure sine-wave tone quality, “Vx,” which reproduces the sound of a vintage British combo organ, “Farf,” which reproduces the sound of a vintage Italian combo organ, or “Pipe,” which produces authentic pipe organ tones.

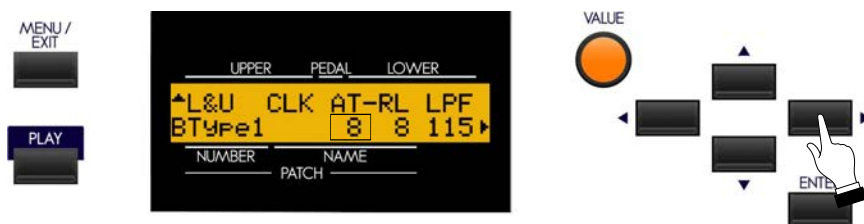
Turn the VALUE Rotary Control to the right to go forward through the choices.

Turn the VALUE Rotary Control to the left to go backward through the choices.

NOTE: The first three Drawbar Voice Modes are traditional Tone Wheel settings. You can customize each one of these Drawbar Voice Modes to your liking. This is explained in the **CUSTOM TONE WHEEL** section of this Guide.

IMPORTANT NOTE: The “Vx.” “Farf.” and “Pipe” Voice Modes change the operation of the Drawbars from the traditional Hammond Harmonic Drawbar functions. This is explained starting on page 54 of this Guide.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “AT” should now blink.



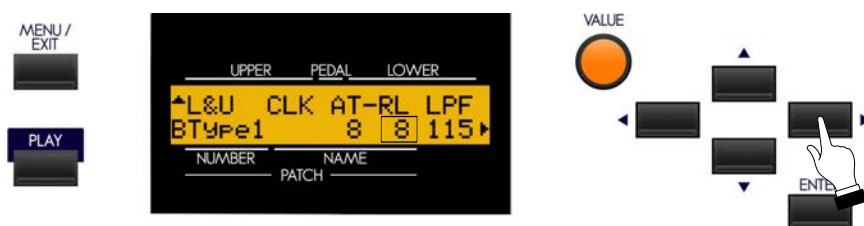
Attack - Key Click

Each time a key was depressed on a tone-wheel Hammond Organ, a key-pop or click was produced. With this Advanced Feature, you can change the amount of key click.

Turn the VALUE Rotary Control to the right to increase the amount of Attack Key Click.

Turn the VALUE Rotary Control to the left to decrease the amount of Attack Key Click.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “RL” should now blink.



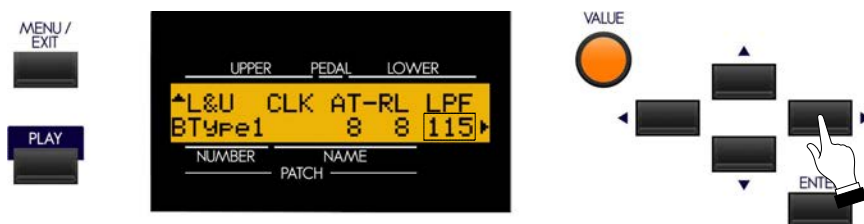
Release - Key Click

Each time a key was released on a tone-wheel Hammond Organ, a key-pop or click was produced. With this Advanced Feature, you can change the amount of key click.

Turn the VALUE Rotary Control to the right to increase the amount of Release Key Click.

Turn the VALUE Rotary Control to the left to decrease the amount of Release Key Click.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “LPF” should now blink.



Low-Pass Filter (LPF)

This Advanced Feature allows you to adjust the tone quality of both the Attack and Release Key Click tones.

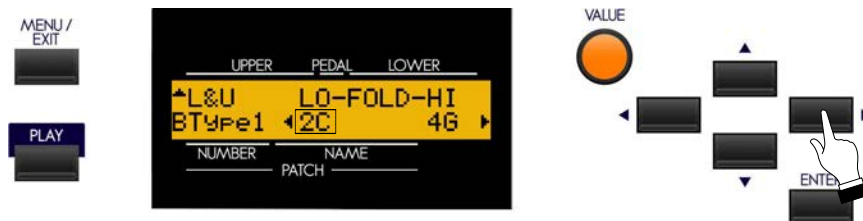
Turn the VALUE Rotary Control to the right to make the Key Click brighter.

Turn the VALUE Rotary Control to the left to make the Key Click mellower.

NOTE: The legend “LPF” is an abbreviation for Low-Pass Filter, or a circuit which allows only low frequencies to pass through or be heard. The more filtering is applied, the duller the sound, while less filtering will allow more high frequencies through, resulting in a brighter sound.

◆ DRAWBAR Edit Menu L&U - Page 2 - FOLDBACK

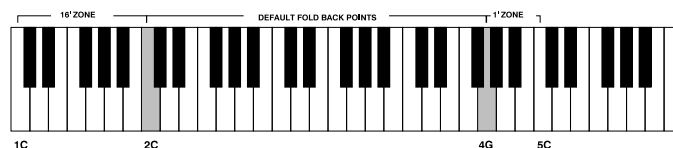
From the previous screen, touch the PAGE RIGHT Touch Button once. Page 2 of the DRAWBAR Edit Menu should now display. The Information Center Display should now look like this:



Drawbar Fold Back

There are two function selections to the Drawbar Fold Back Advanced Feature Menu of the SK-series: (1) Select how low the Sub-Fundamental Drawbar will play on each manual (from “2C” down to “1C”). (2) Set the upper frequency limit for each manual (from “4G” to “5C”).

On the earliest model Hammond Organs, the Sub-Fundamental Drawbar (the one marked, “16”) would continue to play all the way down to the lowest “C” (“1C”). Newer models such as the Hammond Models X-66, X-77 and Concorde do the same, however, the 8th harmonic Drawbar (the one marked “1”) continues to play up the manual to the next to highest “C” (“5C”) on the manual. On a B-3, the lowest note produced by the Sub-Fundamental Drawbar is the 2nd “C” (“2C”) from the left end of the manual, while the highest note that can be played by the 8th harmonic Drawbar is the 4th “F#” from the left end of the manual. The lower and higher keys on the manual “Fold Back,” in that they repeat the pitches played by other notes.



On tone-wheel Hammond Organs such as the B-3, the lower and higher-pitched Drawbars “folded back,” or repeated the notes of other keys. This Advanced Feature allows you to set the upper and lower frequency limits of the Drawbars.

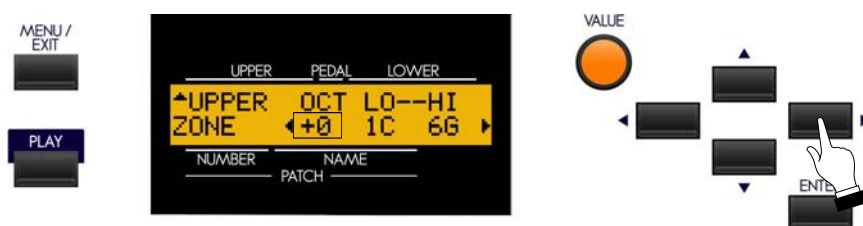
Use the PAGE LEFT and PAGE RIGHT Touch Buttons to select either “LO” or “HI.” “LO” refers to the lower limit of the Sub-Fundamental or first brown Drawbar while “HI” refers to the upper limit of the pitches called up by the high-pitched Drawbars (the last four Drawbars). The selected parameter will blink “on” and “off.”

Turn the VALUE Rotary Control to the right to move the Foldback point higher.

Turn the VALUE Rotary Control to the left to move the Foldback point lower.

◆ DRAWBAR Edit Menu L&U - Page 3 - UPPER

From the previous screen, touch the **PAGE RIGHT Touch Button** once. Page 3 of the DRAWBAR Edit Menu should now display. The Information Center Display should now look like this:



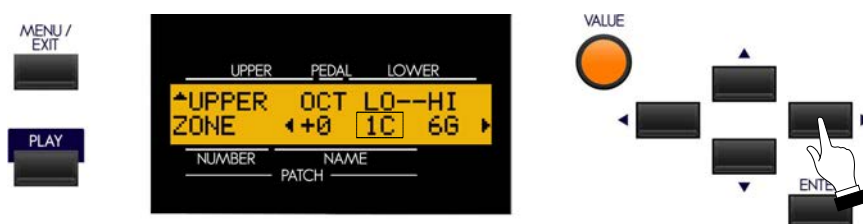
Upper Manual Octave

This Advanced Feature allows you to select the Octave range in which the Upper Manual will play. You can select “-2” (up to two octaves down) through “+2” (up to two octaves up).

Turn the VALUE Rotary Knob to the right to move the Upper Manual Octave up.

Turn the VALUE Rotary Knob to the left to move the Upper Manual Octave down.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “LO” should now blink.



Drawbar Zone - Lower Limit - Upper Manual

This Advanced Feature allows you to set the lowest note the Upper Manual Drawbars will play. The data chart below shows the options you may select for your particular SK-series instrument.

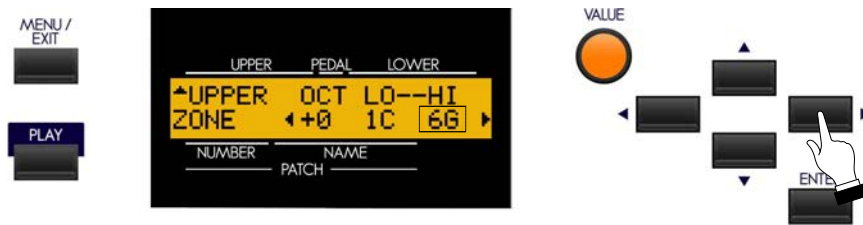
EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

Turn the VALUE Rotary Control to the right to increase the number and move the lower limit farther to the right.

Turn the VALUE Rotary Control to the left to decrease the number and move the lower limit farther to the left.

NOTE: The Upper Limit number can not be lower than the Lower Limit number.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “HI” should now blink.



Drawbar Zone - Upper Limit - Upper Manual

This Advanced Feature allows you to set the lowest note the Upper Manual Drawbars will play. The data chart below shows the options you may select for your particular SK-series instrument.

EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

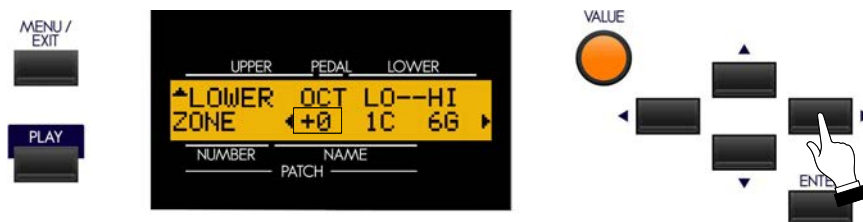
Turn the VALUE Rotary Control to the right to increase the number and move the lower limit farther to the right.

Turn the VALUE Rotary Control to the left to decrease the number and move the lower limit farther to the left.

NOTE: The Upper Limit number can not be lower than the Lower Limit number.

◆ DRAWBAR Edit Menu L&U - Page 4 - LOWER

From the previous screen, touch the **PAGE RIGHT Touch Button** once. Page 3 of the DRAWBAR Edit Menu should now display. The Information Center Display should now look like this:



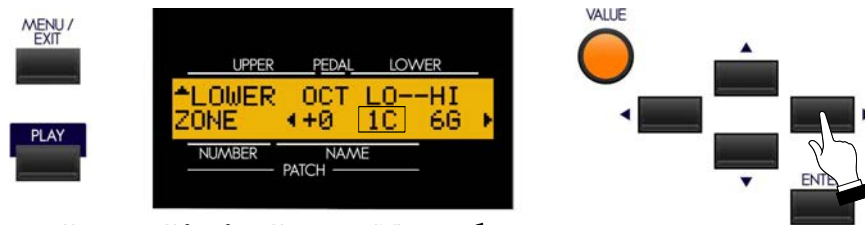
Drawbar Octave - Lower

This Advanced Feature allows you to select the Octave range in which the Lower Manual Drawbars will play. You can select “-2” (the sound is two octaves below the regular pitch), “-1” (the sound is one octave below the regular pitch), “+0” (the sound is at normal pitch), “+1” (the sound is one octave above the regular pitch) or “+2” (the sound is two octaves above the regular pitch),

Turn the VALUE Rotary Control to the right to raise the Octave.

Turn the VALUE Rotary Control to the left to lower the Octave.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “LO” should now blink.



Drawbar Zone - Lower Limit - Lower Manual

This Advanced Feature allows you to set the lowest note the Lower Manual Drawbars will play. The data chart below shows the options you may select for your particular SK-series instrument.

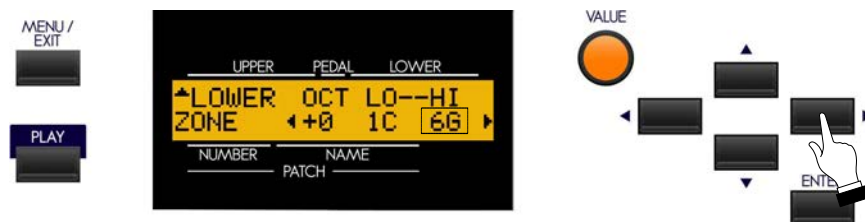
EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

Turn the VALUE Rotary Control to the right to increase the number and move the lower limit farther to the right.

Turn the VALUE Rotary Control to the left to decrease the number and move the lower limit farther to the left.

NOTE: The Upper Limit number **can not** be lower than the Lower Limit number.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “HI” should now blink.



Drawbar Zone - Upper Limit - Lower Manual

This Advanced Feature allows you to set the lowest note the Lower Manual Drawbars will play. The data chart below shows the options you may select for your particular SK-series instrument.

EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

Turn the VALUE Rotary Control to the right to increase the number and move the lower limit farther to the right.

Turn the VALUE Rotary Control to the left to decrease the number and the lower limit farther to the left.

NOTE: The Upper Limit number **can not** be lower than the Lower Limit number.

◆ DRAWBAR Edit Menu PEDAL

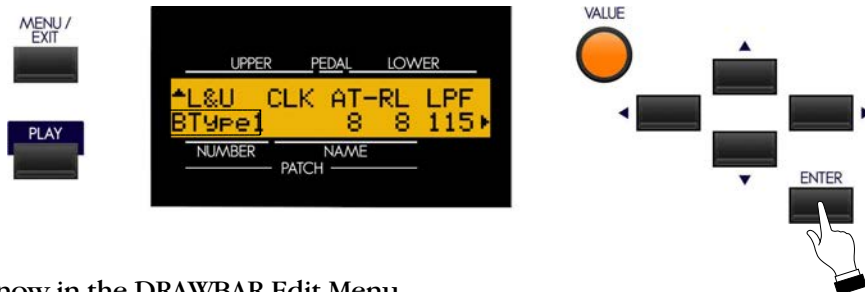
To access the Drawbar Edit Menu for the PEDAL Drawbar sounds, do the following:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



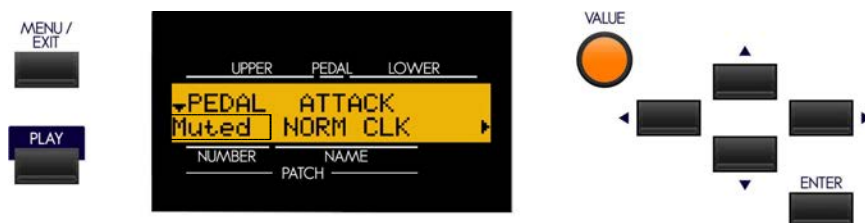
The word “DRAWBAR” should now be blinking.

2. Touch the ENTER Touch Button once. The Information Center Display should now look like this:



You are now in the DRAWBAR Edit Menu.

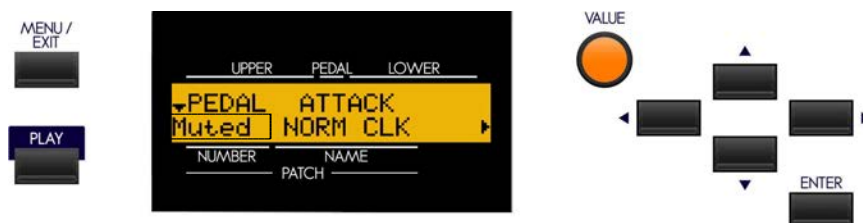
3. Now touch the PAGE UP Touch Button once. The Information Center Display should now look like this:



You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make changes to the characteristics of the Pedal Drawbars. These changes are explained starting on the next page.

If you followed the steps described on the previous page to get to the screen shown below, the word underneath the word “PEDAL” should be blinking. If it is not, touch the PAGE LEFT Touch Button repeatedly until it is.

◆ DRAWBAR Edit Menu PEDAL - Page 1 - Pedal Voicing



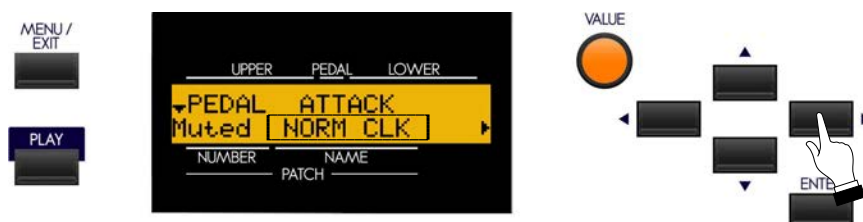
This Advanced Feature allows you to change the overall sound of the Pedal Drawbar tones. The data chart below shows the options you may select.

PEDAL DRAWBAR VOICING Options	
Description	Function
Norm	The Pedal voicing of a vintage Hammond Organ.
Muted	Very mellow Pedal tones.
Synth1	A sawtooth waveform with a “wow” type filter envelope.
Synth2	A dull square wave, or “clarinet” type sound.

Turn the VALUE Rotary Control to select the Pedal Voicing that you prefer.

◆ DRAWBAR Edit Menu PEDAL - Page 1 - Pedal Attack/Key Click

From the previous screen, touch the PAGE RIGHT Touch Button once. The words just underneath the word “ATTACK” should now be blinking.



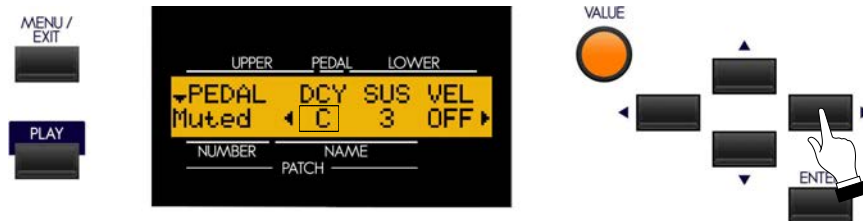
This Advanced Feature allows you to change the type of Attack for the Pedal tones that you prefer. The data chart below shows the options you may select.

DRAWBAR PEDAL ATTACK Options	
Description	Function
SLOW ATTK	No click and a slow attack.
NO CLK	An instant attack but no click.
SOFT CLK	An instant attack and a soft click.
NORM CLK	An instant attack and a normal amount of click.
MAX CLK	An instant attack and the maximum amount of click.

Turn the VALUE Rotary Control to select the Pedal Attack that you prefer.

◆ DRAWBAR Edit Menu PEDAL - Page 3

From the previous screen, touch the PAGE RIGHT Touch Button once. Page 3 of the DRAWBAR PEDAL Edit Menu should now display. The legend just underneath the word “DCY” should now blink.

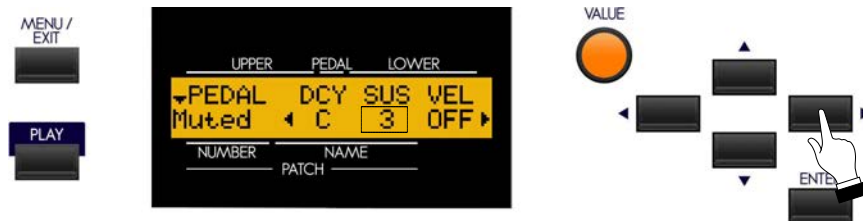


Pedal Decay

Using this Advanced Feature, you can select whether the Pedal note sounds continually or fades away while you are holding a Pedal down. You can select “C” (no decay - pedal sounds at the same volume for as long as it is held) or various lengths of Decay from “1” (shortest) to “5” (longest).

Turn the VALUE Rotary Control to select the Pedal Decay amount that you prefer.

From the previous screen, touch the PAGE RIGHT Touch Button once. The legend just underneath the word “SUS” should now blink.



Pedal Sustain

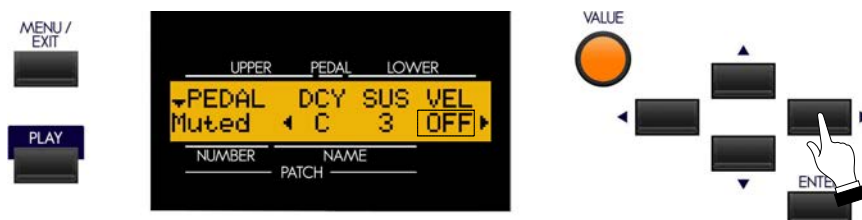
This Advanced Feature allows you to change the amount of Pedal Sustain, or length of time the Pedal note will continue to sound after the pedal is released. You can select from “1” (shortest) to “5” (longest).

Turn the VALUE Rotary Control to select the amount of Pedal Sustain that you prefer.

NOTE: The P.SUS Touch Tab must be “ON” (LED lit) in order to enable this feature.

NOTE: You can access this Advanced Feature Menu Page directly by touching and holding the P.SUS Touch Tab.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The legend just underneath the word “**VEL**” should now strobe.



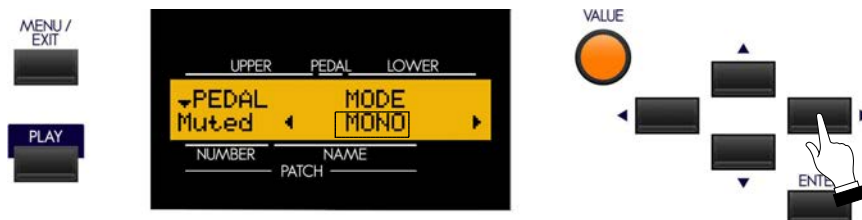
Pedal Velocity

This Advanced Feature allows you to determine how the notes will respond to key velocity. You can select “OF” or “off” (standard organ touch - the notes sound at the same volume regardless of a light or heavy key pressure) and “1 ~ 4”. “1” is the most exaggerated velocity curve while “4” is a gentler curve. “2” and “3” are curves in between.

Turn the VALUE Rotary Control to select the setting that you prefer.

◆ DRAWBAR Edit Menu PEDAL - Page 3

From the previous screen, touch the **PAGE RIGHT Touch Button** once. Page 3 of the **DRAWBAR PEDAL Edit Menu** should now display. The legend just underneath the word “**DCY**” should now blink.



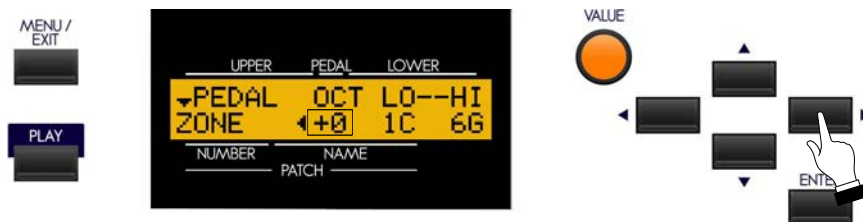
Pedal Mode - Polyphony

This Advanced Feature allows you to select whether the Pedals play only one note at a time or several notes at once.

Turn the VALUE Rotary Control to select POLY (polyphonic - several notes at once) or MONO (monophonic - only one note).

◆ DRAWBAR Edit Menu PEDAL - Page 4

From the previous screen, touch the **PAGE RIGHT** Touch Button once. Page 4 of the DRAWBAR PEDAL Edit Menu should now display. The legend just underneath the word “OCT” should now blink.



Drawbar Octave - Pedals

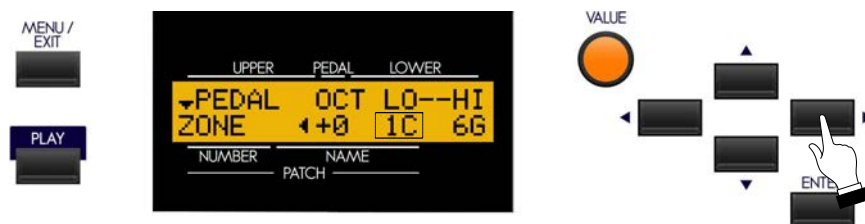
This Advanced Feature allows you to select the Octave range in which the Pedal Drawbars will play. The data chart below shows the options you may select.

Octave Options	
Description	Function
-2	The sound is two octaves below the regular pitch.
-1	The sound is one octave below the regular pitch.
0	The sound is at normal pitch.
+1	The sound is one octave above the regular pitch.
+2	The sound is two octaves above the regular pitch.

Turn the VALUE Rotary Control to the right to raise the Octave.

Turn the VALUE Rotary Control to the left to lower the Octave.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “LO” should now blink.



Drawbar Zone - Lower Limit - Pedals

This Advanced Feature allows you to set the lowest note the Pedal Drawbars will play. The data chart below shows the options you may select for your particular SK-series instrument.

EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

Turn the VALUE Rotary Control to the right to increase the number and move the lower limit farther to the right.

Turn the VALUE Rotary Control to the left to decrease the number and move the lower limit farther to the left.

NOTE: The Upper Limit number can not be lower than the Lower Limit number.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “HI” should now blink.



Drawbar Zone - Upper Limit - Pedals

This Advanced Feature allows you to set the lowest note the Pedal Drawbars will play. The data chart below shows the options you may select for your particular SK-series instrument.

EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

Turn the VALUE Rotary Control to the right to increase the number and move the lower limit farther to the right.

Turn the VALUE Rotary Control to the left to decrease the number and move the lower limit farther to the left.

NOTE: The Upper Limit number can not be lower than the Lower Limit number.

◆ Creating your own Custom Tone Wheels

As stated on page 22, the first three Drawbar Voice Modes - “B-type1,” “B-type2,” and “Mellow” - are designed to reproduce the sound of traditional Hammond Organs. Within each of these three Voice Modes are four different settings designed to reproduce specific characteristics of vintage Hammond Organs.

During the time the vintage Hammonds - B-models, C-models, A-100, etc. - were being manufactured, each individual organ was subjected to a very rigorous series of checks and tests to insure the quality of each unit, and to insure that all the units representing a particular model series, such as the B-3, all sounded alike. However, since the very newest B-3-type organ is at least 37 years old - production of tone-wheel organs having ceased in 1975 - and since the vintage instruments long antedate digital technology, they are dependent for their sound on analog components. Several factors such as the rate at which different components age, the fact that similar components used different materials throughout the lifespan of the model series, etc. may affect the sound of a particular unit. Thus, a B-3 manufactured in 1959 may well have a slightly different tone than one made in 1969, not necessarily because of the year but because of slight differences in component values among other factors.

Over the years, a great deal of folklore, much of it very arcane and most of it falling into a category best described as “old wives’ fables,” has sprung up regarding such topics as the superiority or inferiority of this or that period of time during which vintage Hammonds were manufactured, the superiority or inferiority of types of materials for certain components, etc. Some of these differences do exist, but as noted above, they are more likely to be the result of factors not necessarily having anything to do with the age of the instrument. Many characteristics of the Hammond Organ, especially as heard in much jazz and rock music, have to do with the overall condition of the instrument - whether it has been in a home for the bulk of its life and played only rarely, whether it has been used by a touring musical ensemble and been moved frequently, perhaps even dropped occasionally, or even whether it has sat in a recording studio with sporadic or no maintenance, etc.

Because of these many factors - again, some real, some contrived - and because different people therefore mean different things when they say “Hammond Sound” or “B-3 Sound,” the Custom Tone Wheel feature is included to allow you to find the nearest approximation of what you want your “Hammond Sound” to be. The following pages will explain the feature in more depth.

SPECIAL NOTE: The characteristics of Drawbar Voice Types “Btype1” and “Btype2” apply equally to all Hammond Organ based on the B-3 design, which includes models B-3, C-3, A-100 series, RT-3 and D-100 series. Contrary to popular myth, there is NO inherent difference between a B-3 and a C-3 - they were manufactured to the identical specification except for the cabinet design. The A-100 and D-100 had slightly different circuitry due to the need to drive self-contained speakers; however, they were calibrated the same as the B-3 and C-3 so that they sounded identical when connected to either an external Hammond speaker or an external Leslie Speaker. For the sake of brevity, “B-3” will be used to refer to all models based on the same platform.

◆ CUSTOM TONE WHEEL Edit Menu

This Advanced Feature Menu allows you to select from among a library of different Tone Wheel settings so that each of the three Tone Wheel Drawbar Voicings - “Btype1,” “Btype2,” and “Mellow” - will have the sound you want, as well as create your own Custom Tone Wheels.

To access the CUSTOM TONE WHEEL Edit Menu, do the following:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



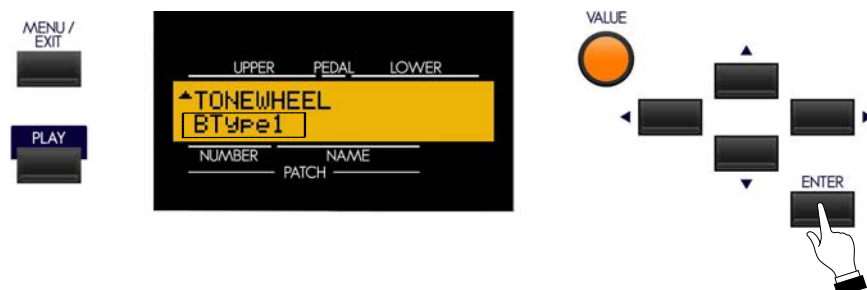
The word “DRAWBAR” should now be blinking.

2. From the A Screen, touch the PAGE UP “▶” Touch Button once. The Information Center Display should look like this for the B Screen of the Menu Mode:



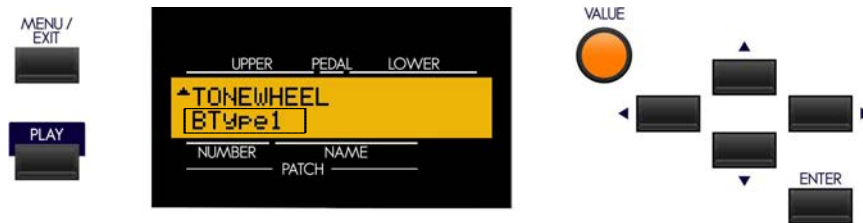
The word “CUST.TW” should now be blinking.

3. Touch the ENTER Touch Button once. The Information Center Display should now look like this:



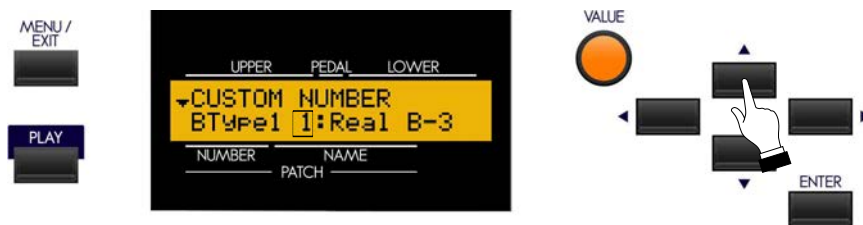
You are now in the CUSTOM TONE WHEEL Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to create Custom Tone Wheels. These changes are explained starting on the next page.

If you followed the above instructions, you should now see Page 1 of the CUSTOM TONE WHEEL Edit Menu. The legend underneath the word “TONEWHEEL” should now be blinking.



Use the VALUE Rotary Control to select “Btyp1,” “Btype2” or “Mellow.”

4. After you have made your selection, touch the PAGE UP Touch Button to access the choices for the selected Drawbar Voicing Type:



There are four choices available for “Btype1” and “Btype2:”

- “Real B-3” - Replicates a B-3 in good condition. Contains moderate motor hum and leakage noise.
- “80's Clean” - Based upon a very “clean”-sounding B-3. The motor hum or leakage noise has been removed, the “vibration” caused by the wow-flutter of the motor remains.
- “Noisy” - Similar to “Real B-3, but with more motor hum and leakage noise.
- “Noisy 60” - Similar to “Noisy,” but with more leakage noise.

There are also four choices of sound for the “Mellow” setting:

- “Full Flats” - Pure sine waves, with all frequencies sounding at the same volume.
- “Husky” - Pure sine waves, but with a slight bass and mid-frequency boost.
- “Flute Lead” - Pure sine waves, but with reduced bass and treble, the opposite of “Husky”.
- “Cheap Tr.s” - Reduced bass response, producing a sound similar to low-grade AM radio.

From the previous screen, touch the PAGE UP Touch Button once. Page 2 of the CUSTOM TONE WHEEL Edit Menu should now display. The Information Center Display should look similar to this:



◆ CUSTOM TONE WHEEL Edit Menu - Page 2 - Custom Name

This Advanced Feature allows you to name a Custom Tone Wheel setting. This would normally be the final step after you have made the rest of your parameter settings and are satisfied with the results. You should have also saved your settings.

NOTE: Naming a Custom Tone Wheel is covered in more detail on page 53

Use the PAGE LEFT and PAGE RIGHT Select Touch Buttons to select the character to be edited.

Turn the VALUE Rotary Control to the right to scroll forward through the characters.

Turn the VALUE Rotary Control to the left to scroll backward through the characters.

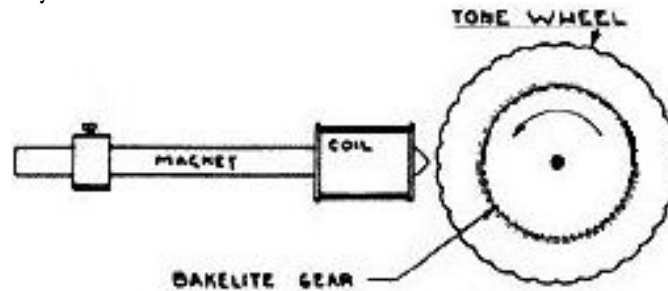
The available characters include: Punctuation Marks (space - . ' &), Numeric Characters (0 ~ 9), Upper-case Letters ("A ~ Z"), and Lower-case Letters ("a ~ z").

◆ CUSTOM TONE WHEEL Edit Menu - Page 3 WHEEL

This Advanced Feature Menu Page allows you to change of the characteristics of all 96 tone wheels individually.

What Is “Generator Calibration?”

Because each frequency on a Hammond Organ is generated independently and the circuitry and hardware necessary to generate each tone is quite complex, there is the potential for a great deal of variation in sound from one frequency to another.



The above diagram shows how a single frequency is generated. As explained on page 25, there is one tone wheel for each frequency. The number of tone wheels which generate actual frequencies varies with the model - organs based on the original Hammond design - the model A and its derivatives (B-3, C-3, etc.) had 91 tone wheels that sound, while later models such as the “H” series and the X-77 had 96 (the extra five tone wheels being used to generate higher frequencies).

As explained previously, each tone has a magnetized rod associated with it. When the tone wheels rotate, a very small electrical current is generated in the coil each time a high spot passes the magnet. The strength of the current determines the loudness of the resulting musical note.

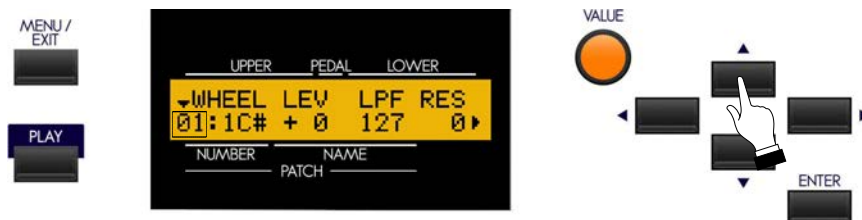
At the Hammond tone-wheel factory, the distance of each magnet to each tone wheel - as well as the number of windings for each coil - was very carefully controlled to insure that each frequency would play at the correct volume. In other words, the generator on each tone-wheel organ was very carefully calibrated. However, a number of third-party technicians would re-calibrate generators to change the sound in various ways - make the sound brighter, etc. The CUSTOM TONE WHEEL Advanced Feature Menu allows you to “re-calibrate” the digital tone wheels of your instrument to create exactly the tone quality you desire.

NOTE: In order to use this Advanced Feature, you should already have some idea of the type of sound you want. Also, you should be prepared that getting the results you want may require some “trial-and-error” before you are satisfied with the results.

Selecting a Tone Wheel to Edit

TRY THIS:

- From the previous screen (page 41), touch the PAGE UP Touch Button once. The Information Center Display should now look like this:



Shown above is Screen 3 of the CUSTOM TONE WHEEL Edit Menu.

Notice that the number on the extreme left of the lower line is blinking. This number represents the currently selected Tone Wheel.

Using the VALUE Rotary Control to select Tone Wheels

Turning the VALUE Rotary Control will allow you to scroll through the Tone Wheels. You can select from "1" ("1C") through "96" ("8B"). Simply turn the control until you find the number you want.

Using the Drawbars and Keyboard to select Tone Wheels

If you want to find a certain Tone Wheel quickly, you can use the Drawbars and the playing keys to select it.

Each individual Drawbar will play a different portion of the Tone Wheels. The data chart below shows how the Tone Wheels are allocated to each Drawbar

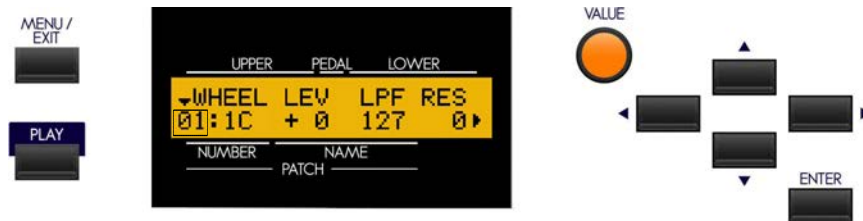
Drawbar Voice Options	
Drawbar	Tone Wheels
16'	+Wheels 1 ~ 61
5 C'	Wheels 20 ~ 80
8'	Wheels 13 ~ 73
4'	Wheels 25 ~ 85
2 D'	*Wheels 32 ~ 92
2'	*Wheels 37 ~ 96
1 L'	*Wheels 41 ~ 96
1 C'	*Wheels 44 ~ 96
1'	*Wheels 49 ~ 96

+ - The lower note limit of this Drawbar is determined by the Drawbar Foldback setting.

* - The upper note limit of this Drawbar is determined by the Drawbar Foldback setting.

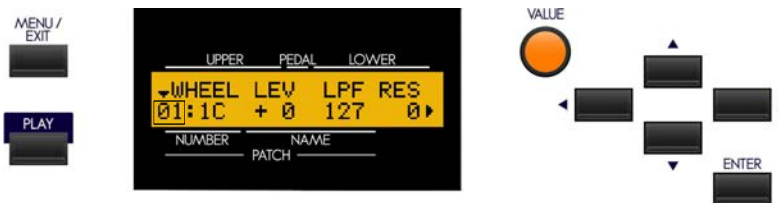
TRY THIS:

1. Make sure all the Drawbars are “OFF” (pushed in).
2. Make sure the Information Center Display shows Screen 3 of the CUSTOM TONE WHEEL Edit Menu. The Information Center Display should look similar to this:



Notice that the number on the extreme left of the lower line is blinking. This number represents the currently selected Tone Wheel.

3. Pull out a Drawbar - for example, the first white (“8”) Drawbar. The Information Center Display should now look like this:



Notice that the number on the extreme left of the lower line has now changed, as has the note name.

When you pull out a Drawbar without touching any playing keys, the lowest note represented by that Drawbar will display.

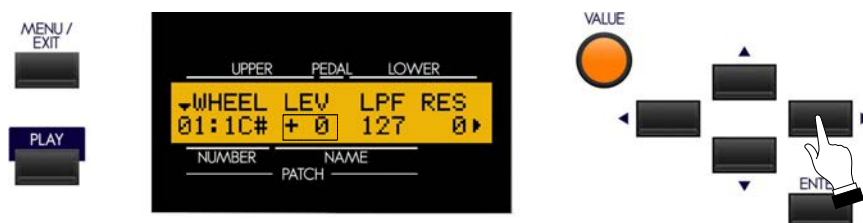
Now, suppose you want to select a specific Tone Wheel to edit. To do this:

4. Press and hold a note on the manual.
- NOTE: If you have the SK-2, press and hold a note on the Upper Manual.
5. While holding down a key, move a Drawbar - for example, the first black (2 2/3') Drawbar.

The number shown in the Information Center Display will be the number of the Tone Wheel associated with that key and that Drawbar. You can now edit the selected Tone Wheel.

After you have selected a Tone Wheel to edit, you can change the characteristics of that Tone Wheel. This is explained starting on the next page.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The legend underneath the word “**LEV**” should be blinking.



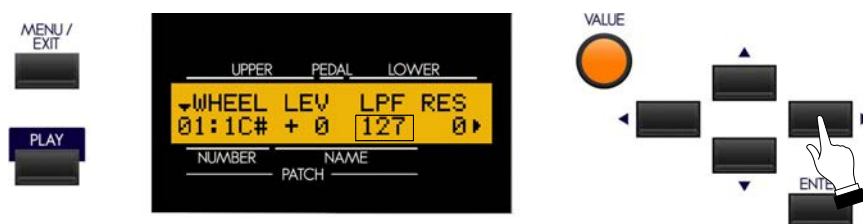
LEV - Tone Wheel Level

This Advanced Feature allows you to adjust the volume or level of the selected Tone Wheel. You can select from “-20” (lowest level) through “+2” (loudest level). The numbers represent decibels, or units of volume.

Turn the VALUE Rotary Control to the right to increase the level of the selected Tone Wheel.

Turn the VALUE Rotary Control to the left to increase the level of the selected Tone Wheel.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The legend underneath the word “**LPF**” should be blinking.



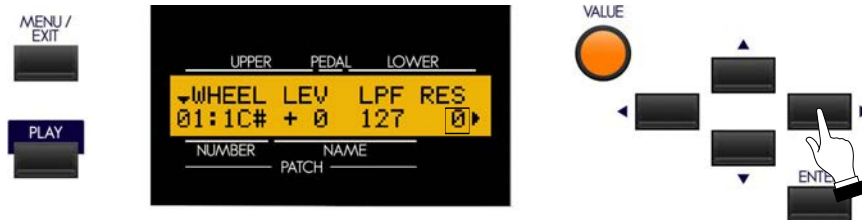
LPF - Low-Pass Filter

This Advanced Feature allows you to control the high-frequency content, including Leakage Noise, of the selected Tone Wheel. You can select from “0” (minimum number of high frequencies and only the fundamental of the Tone Wheel is heard) through “127” (maximum high-frequency content and Leakage).

Turn the VALUE Rotary Control to the right to increase the highs of the selected Tone Wheel.

Turn the VALUE Rotary Control to the left to increase the highs of the selected Tone Wheel.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The legend underneath the word “RES” should be blinking.



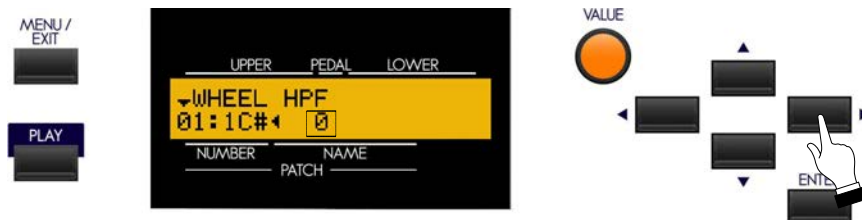
RES - Tone Wheel Resonance

This Advanced Feature allows you to adjust the level of the Low-Pass Filter (LPF). You can select from “0” (high frequencies at their lowest level) through “127” (high frequencies at their highest level).

Turn the VALUE Rotary Control to the right to boost the high frequencies.

Turn the VALUE Rotary Control to the left to reduce the high frequencies.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The legend underneath the word “HPF” should be blinking.



HPF - High-Pass Filter

This Advanced Feature allows you to adjust the level of the High-Pass Filter (HPF). You can select from “0” (low frequencies at their lowest level) through “127” (low frequencies at their highest level).

Turn the VALUE Rotary Control to the right to boost the low frequencies.

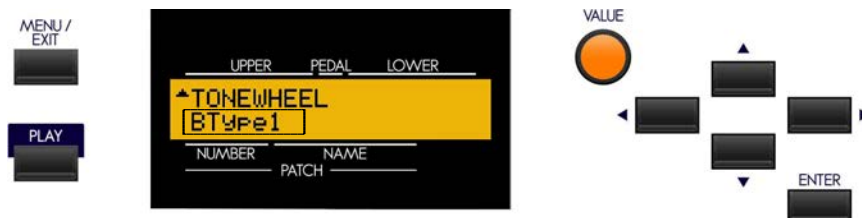
Turn the VALUE Rotary Control to the left to reduce the low frequencies.

IMPORTANT NOTE: If you change any of the Custom Tone Wheel settings, you **must** save them in order for them to be remembered. If the changes are not saved, they will be lost when power to the instrument is switched “OFF.”

◆ Saving a Custom Tone Wheel

TRY THIS:

1. Access the CUSTOM TONE WHEEL Edit Menu using the procedure described on page 44. You should now see Page 1 of the CUSTOM TONE WHEEL Edit Menu.



2. Use the VALUE Rotary Control to select the Custom Tone Wheel you want to modify.

SPECIAL NOTE: If you want to create a new Custom Tone Wheel, you can do so by using the VALUE Rotary Control to scroll past number “4.” If you do this you will see the number “5” and a blank name. In this way, you can create a Custom Tone Wheel without disturbing any of the preprogrammed Custom Tone Wheels. If, on the other hand, you want to make changes or modifications to the preset Custom Tone Wheels, select one of them before proceeding to step 3 below.

3. Make whatever changes you want to the editable parameters - Level, Resonance, etc.
4. After you have made all your edits and you have the sound you want, Touch and Release the RECORD Touch Button.



The Information Center Display should now look similar to this:



5. If you DO NOT wish to save the parameters you have changed, touch the MENU/EXIT or PLAY Touch Button.

If you want to overwrite the Custom Tone Wheel with your new edited settings, touch the ENTER Touch Button. The bottom line of the Information Center Display will scroll the following:

Recording...

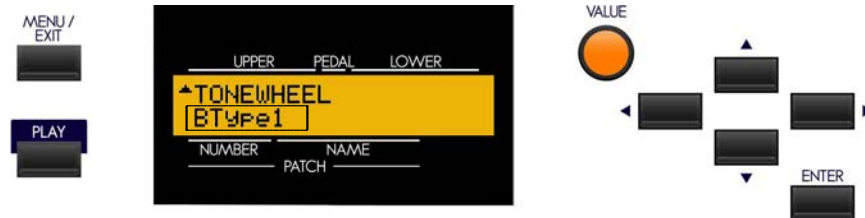
After the above stops scrolling, your edits have been saved.

IMPORTANT: It is recommended that you create and then save a Custom Tone Wheel before re-naming it. It is also recommended that you rename your Custom Tone Wheel after saving it.

◆ Naming a Custom Tone Wheel

TRY THIS:

1. Access the CUSTOM TONE WHEEL Edit Menu using the procedure described on page 44. You should now see Page 1 of the CUSTOM TONE WHEEL Edit Menu.



2. Use the PAGE UP and DOWN Touch Buttons to select the Custom Tone Wheel you want to rename.
3. Now name your Custom Tone Wheel by doing the following:

Use the PAGE LEFT and PAGE RIGHT Select Touch Buttons to select the character to be edited.

Turn the VALUE Rotary Control to the right to scroll forward through the characters.

Turn the VALUE Rotary Control to the left to scroll backward through the characters.

The available characters include: Punctuation Marks (space - . ' &), Numeric Characters (0 ~ 9), Upper-case Letters ("A ~ Z"), and Lower-case Letters ("a ~ z").

4. After you have finished editing, Touch and Release the RECORD Touch Button.



The Information Center Display should now look similar to this:



5. If you DO NOT wish to save the parameters you have changed, touch the MENU/EXIT or PLAY Touch Button.

If you want to overwrite the Custom Tone Wheel with your new edited settings, touch the ENTER Touch Button. The bottom line of the Information Center Display will scroll the following:

Recording...

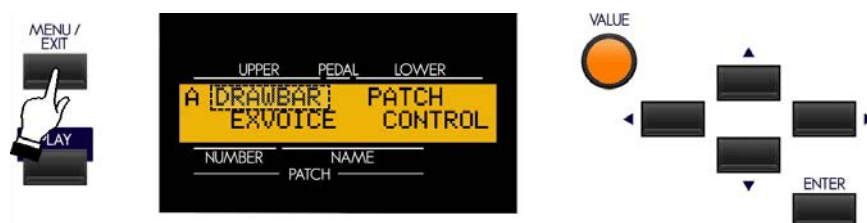
After the above stops scrolling, your Custom Tone Wheel has been renamed.

◆ Drawbar Organ Type

The Drawbars on the SK1 and SK2 can be made to sound with other organ sounds other than traditional Hammond Drawbars. Several makes of combo organs, for example, also used Drawbar-type slider controls to register the sounds, which were actual organ voices rather than individual harmonics as with Hammond Drawbars. This Advanced Feature allows you to use the Drawbars to control other types of organ sounds.

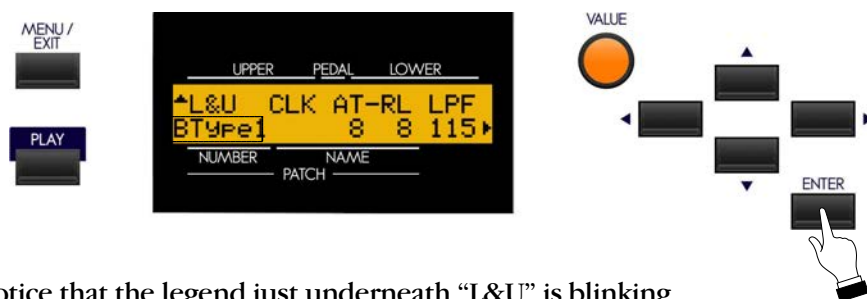
TRY THIS:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



The word “DRAWBAR” should now be blinking.

2. Touch the ENTER Touch Button once. You will then be in the DRAWBAR Edit Menu, and the Information Center Display should now look like this:



Notice that the legend just underneath “L&U” is blinking.

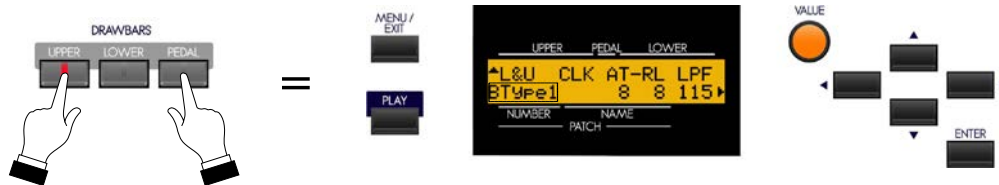
As explained on page 22, you can now Turn the VALUE Rotary Control to select what type of organ sound will be associated with the Drawbars. The first three Drawbar Organ Types are traditional vintage Hammond, or “tone-wheel” settings. However, the last three organ types allow you to use the Drawbars to register other types of organ sounds. This is explained starting on the next page.

◆ Drawbar Organ Type - “Vx”

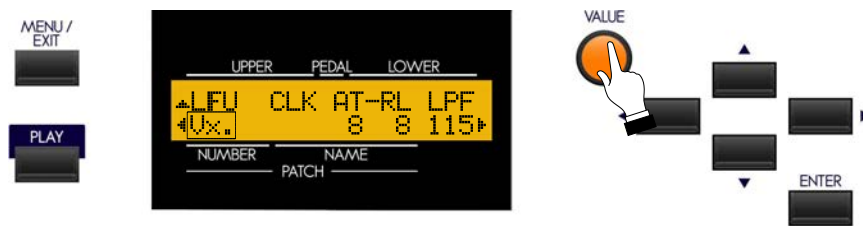
The “Vx” Drawbar Organ Type allows you to use the Drawbars to register the sound of a vintage British combo organ.

TRY THIS:

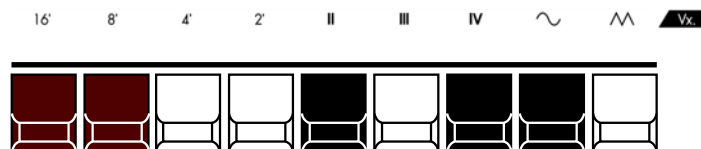
1. If you have not already done so, access the DRAWBAR Edit Menu. The quickest way to do this is to use the Shortcut shown below:



2. Turn the VALUE Rotary Control until the Information Center Display shows the following:



You may now use the Drawbars to control vintage combo organ tones. The figure below shows how the Drawbars are allocated in “Vx” mode.



The type of combo organ replicated by “Vx” mode had drawbar-type controls, but they functioned differently from Hammond Harmonic Drawbars. Organ. The first four Drawbars control individual pitches, while the next three are “Mixture” Drawbars which cause multiple pitches to sound. “II,” “III” and “IV” refer to the number of pitches represented by that Drawbar.

The last two Drawbars control the type of tone produced by the first seven Drawbars. The eighth Drawbar causes pure tones to sound while the last Drawbar causes brighter and more harmonically complex tones to sound.

NOTE: The first seven Drawbars WILL NOT sound unless one or both of the last two Drawbars are also “out.” These two Drawbars regulate the overall volume as well as timbre of the total Drawbar registration, and can be used separately or together.

◆ Drawbar Organ Type - “Farf”

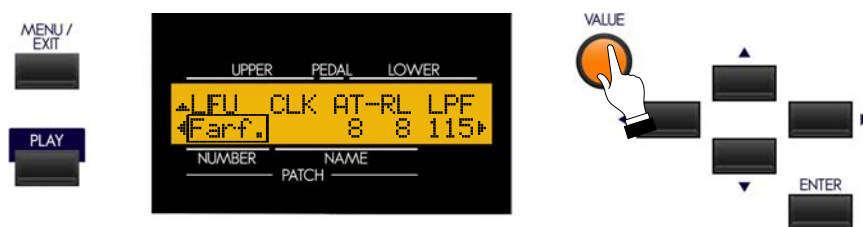
The “Vx” Drawbar Organ Type allows you to use the Drawbars to register the sound of a vintage Italian combo organ.

TRY THIS:

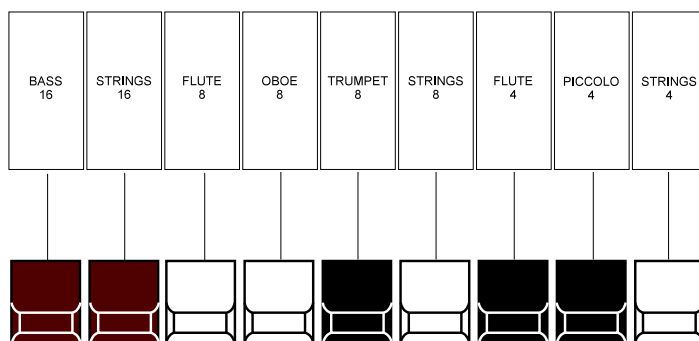
1. If you have not already done so, access the DRAWBAR Edit Menu. The quickest way to do this is to use the Shortcut shown below:



2. Turn the VALUE Rotary Control until the Information Center Display shows the following:



You may now use the Drawbars to control vintage combo organ tones. The figure below shows how the Drawbars are allocated in “Farf” mode.



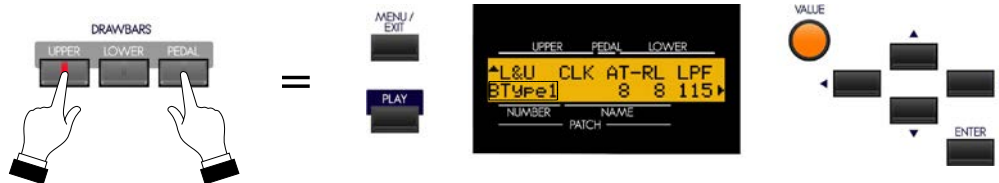
The above configuration follows the layout of the “Combo Compact” series of combo organ, which used rocker-type tilt tablets rather than Drawbars to turn voices “on” and “off.” On the SK-series instruments, the Drawbars are used to control the same sounds. To replicate the effect of tablets, simply pull the Drawbar(s) representing the tone(s) you want “out” all the way. Or, you can create shadings of tones by using the Drawbars in the more traditional fashion.

◆ Drawbar Organ Type - “Pipe”

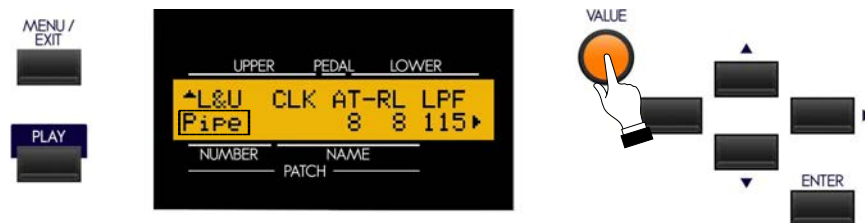
The “Pipe” Drawbar Organ Type allows you to use the Drawbars to register authentic pipe organ tones.

TRY THIS:

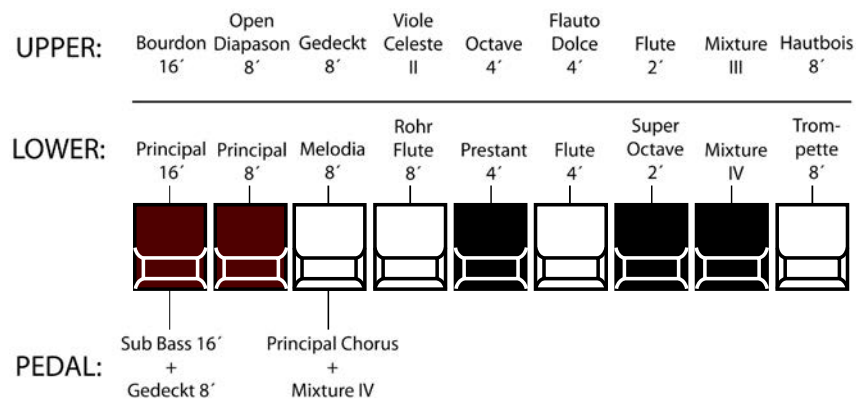
1. If you have not already done so, access the DRAWBAR Edit Menu. The quickest way to do this is to use the Shortcut shown below:



2. Turn the VALUE Rotary Control until the Information Center Display shows the following:



You may now use the Drawbars to control the voices of a classical pipe organ. The figure below shows how the Drawbars are allocated in “Pipe” mode.



IMPORTANT NOTE: When “Pipe” mode is activated, the Drawbars will function similar to drawstops on a traditional pipe organ - pulling a Drawbar “out” will turn the associated Pipe Voice “ON” while pushing the Drawbar “in” will turn the Pipe Voice “OFF.” The Pipe Voices **do not** have gradations of volume - they are either “ON” or “OFF.”

◆ PIPE Edit Menu

This Advanced Feature allows you to change the characteristics of the Drawbar Pipe Voices.

To edit the Drawbar Pipe Voices, it is recommended that the Drawbar Voice Mode be set to “Pipe” so you can preview the changes you make. To do this:

Follow steps 1 and 2 from the preceding page. The Drawbars will now control the Pipe tones.

To access the PIPE Edit Menu, do the following:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



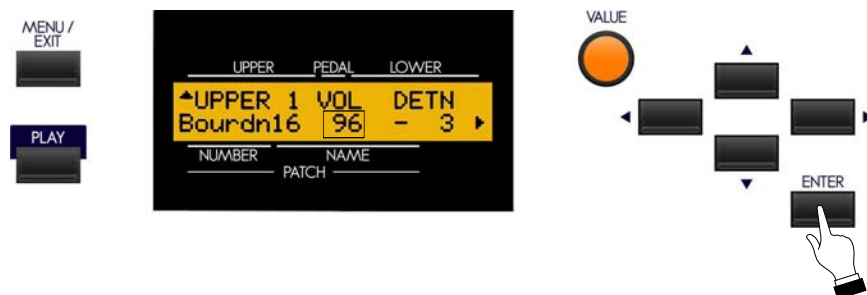
The word “DRAWBAR” should now be blinking.

2. From the A Screen, touch the PAGE UP “▶” Touch Button five times. The Information Center Display should look like this for the B Screen of the Menu Mode:



The word “PIPE” should now be blinking.

3. Touch the ENTER Touch Button once. The Information Center Display should now look like this:



You are now in the PIPE Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to change the characteristics of the Pipe voices. These are explained starting on the next page.

◆ Selecting a Pipe Voice to Edit

Your SK-series instrument has a total of 20 Pipe voices - nine (9) for the Upper Manual, nine (9) for the Lower Manual and two (2) for the Pedals. Below is a list of the voices and the screen abbreviations:

UPPER

Bourdon 16' ("Bourdn16")
 Open Diapason 8' ("OpnDiap8")
 Gedeckt 8' ("Gedeckt8")
 Voix Celeste 8' ("VnCelst8")
 Octave 4' ("Octave 4")
 Flute Dolce 4' ("FLDolce4")
 Flute 2' ("Flute 2")
 Mixture 3 ranks ("Mixt.III")
 Hautbois 8' ("Hautboi8")

LOWER

Principal 16' ("Princi16")
 Principal 8' ("Princi 8")
 Melodia 8' ("Melodia8")
 Rohr Flute 8' ("RohrFl.8")
 Prestant 4' ("Prestnt4")
 Flute 4' ("Flute 4")
 Super Octave 2' ("SupOct 2")
 Mixture 4 ranks ("Mixt. IV")
 Trompette 8' ("Trompet8")

PEDAL

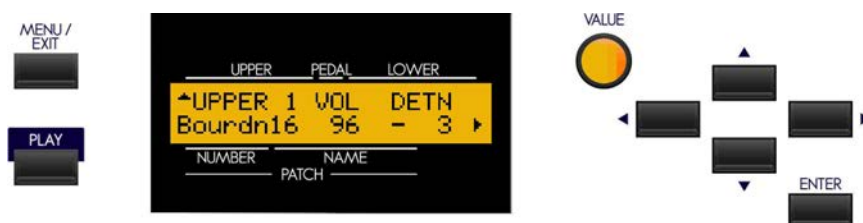
Sub Bass 16' & Bourdon 8' ("Bass16+8")
 Principal Chorus 8' & Mixture IV' ("")

You may consult the figure shown at the bottom of page 46 to see how the Pipe Voices are distributed among the individual Drawbars.

Use the PAGE UP and PAGE DOWN Touch Buttons to select the Pipe voice you wish to edit.

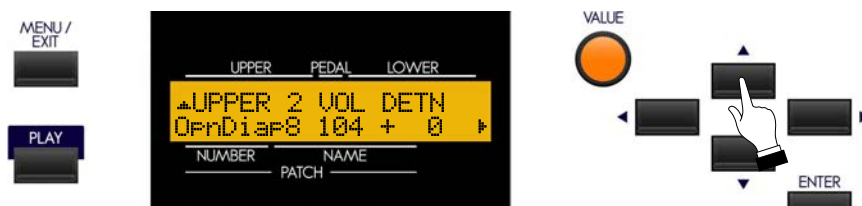
TRY THIS:

1. Follow the instructions on the previous page to see Page 1 of the PIPE Edit Menu:



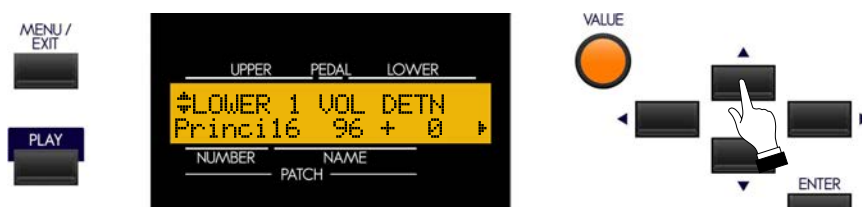
Notice that "Bourdn16" is displayed on the lower line. This means that the characteristics of the "Bourdon 16" Upper Manual Pipe Voice can be changed.

2. Touch the PAGE UP Touch Button once. The Information Center Display should now look similar to this:



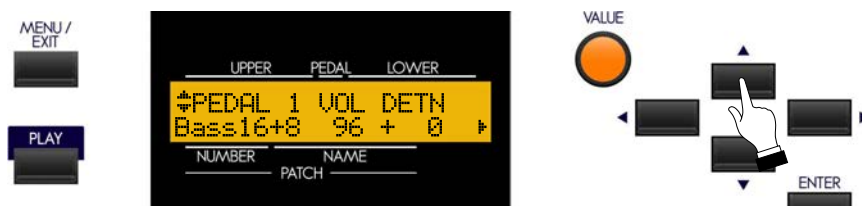
Now you will see "UPPER 2" on the top line of the Information Center Display and "OpnDiap8" on the lower line directly below it. This means that you can now edit the parameters for the "Open Diapason 8" pipe voice.

3. Now touch the PAGE UP Touch Button repeatedly until the Information Center Display looks similar to this:



Now you will see "LOWER 2" on the top line of the Information Center Display and "Princi16" on the lower line directly below it. This means that you can now edit the parameters for the "Principal 16" pipe voice.

4. Now touch the PAGE UP Touch Button repeatedly until the Information Center Display looks similar to this:



Now you will see "PEDAL 1" on the top line of the Information Center Display and "Bass16+8" on the lower line directly below it. This means that you can now edit the parameters for the "Bass16+8" pipe voice.

After you have selected which Pipe Voice you want to edit you can make the following changes:

PIPE VOICE EDIT Options	
Description	Function
VOLUME	Allows you to set the Volume for the selected Pipe Voice
DETUNE	Allows you to detune the selected Pipe Voice
CHIFF	Allows you to set the amount of Chiff or attack for the selected Pipe Voice
CUTOFF	Allows you to set the brightness of the selected Pipe Voice by setting its Filter Cutoff point
PAN L-R	Allows you to set the directionality of the selected Pipe Voice
IMAGING	Allows you to simulate pipe chest configurations for the selected Pipe Voice

The following pages give a more detailed explanation of how these Advanced Features work.

◆ Pipe Voice Volume

This Advanced Feature allows you to set the Volume of each Pipe Voice. You can select from “0” through “127.”

TRY THIS:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



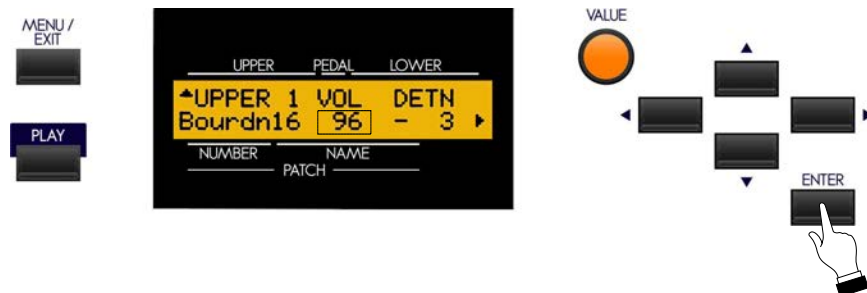
The word “DRAWBAR” should now be blinking.

2. From the A Screen, touch the PAGE UP “▶” Touch Button five times. The Information Center Display should look like this for the F Screen of the Menu Mode:



The word “PIPE” should now be blinking.

3. Touch the ENTER Touch Button once. The Information Center Display should now look like this:



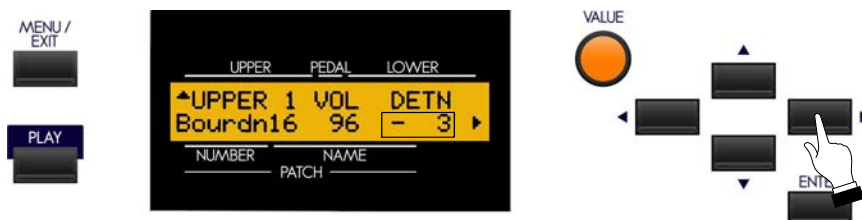
4. Now select the Volume setting you want by doing the following:

Use the PAGE UP and PAGE DOWN Touch Buttons to select the Pipe Voice you want to change.

Turn the VALUE Rotary Control to the right to increase the volume of the selected Pipe Voice..

Turn the VALUE Rotary Control to the left to decrease the volume of the selected Pipe Voice.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend below the word “DETN” (Detune) should now be blinking.

◆ Pipe Voice Detune

This Advanced Feature allows you to detune each individual Pipe Voice. You can select from”

Select the Detune setting you want by doing the following:

Use the PAGE UP and PAGE DOWN Touch Buttons to select the Pipe Voice you want to change.

Turn the VALUE Rotary Control to the right to make the pitch of the selected Pipe Voice flat.

Turn the VALUE Rotary Control to the left to make the pitch of the selected Pipe Voice sharp.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend below the word “CHIF” (Chiff) should now be blinking.

◆ Pipe Voice Chiff

This Advanced Feature allows you to set the amount of Chiff or attack for each individual Pipe Voice.

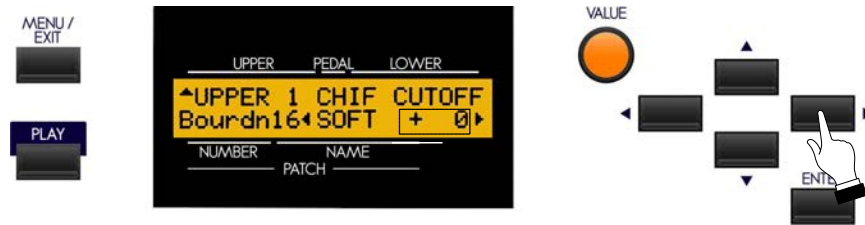
Select the Chiff setting you want by doing the following:

Use the PAGE UP and PAGE DOWN Touch Buttons to select the Pipe Voice you want to change.

Turn the VALUE Rotary Control to the right to add more Chiff to the selected Pipe Voice.

Turn the VALUE Rotary Control to the left to add less Chiff to the selected Pipe Voice.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend below the word “CUTOFF” should now be blinking.

◆ Pipe Voice Cutoff

This Advanced Feature allows you to set the brightness of each individual Pipe Voice by setting its Filter Cutoff point.

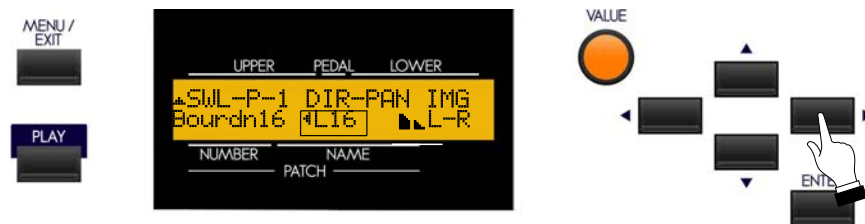
Select the Cutoff setting you want by doing the following:

Use the PAGE UP and DOWN Touch Buttons to select the Pipe Voice you want to change.

Turn the VALUE Rotary Control to the right to make the pitch of the selected Pipe Voice flat.

Turn the VALUE Rotary Control to the left to make the pitch of the selected Pipe Voice sharp.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend below the word “DIR” (Direction) should now be blinking.

◆ Pipe Voice Pan

This Advanced Feature allows you to set the directionality of the selected Pipe Voice.

Select the directionality you want by doing the following:

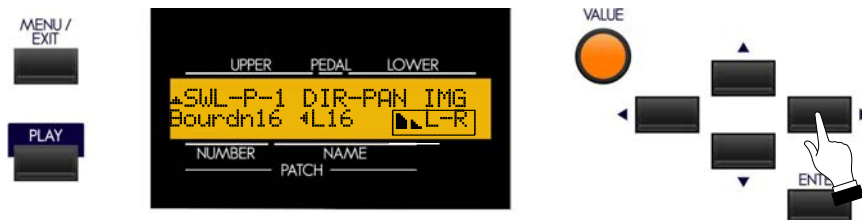
Use the PAGE UP and DOWN Touch Buttons to select the Pipe Voice you want to change.

Turn the VALUE Rotary Control to the right to move the sound of the selected Pipe Voice left.

Turn the VALUE Rotary Control to the left to move the sound of the selected Pipe Voice right.

NOTE: Setting this parameter to “-C-” will locate the sound in the center.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The legend below the word “IMG” (Image) should now be blinking.



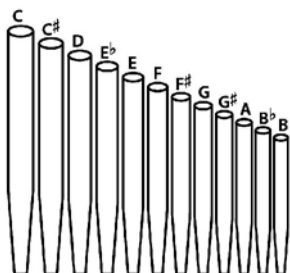
◆ Pipe Voice Imaging

This Advanced Feature allows you to simulate different arrangements of pipes.

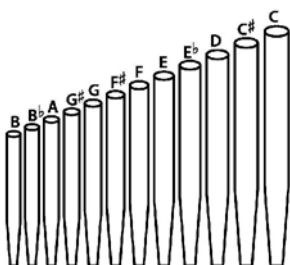
What Is “Pipe Imaging?”

The pipes of a pipe organ are arranged into sets called ranks. Each rank consists of pipes representing a specific sound on the organ - Open Diapason, Trompette, etc. (In keeping with the different philosophies of organ sound, many organ stop names are of European origin; hence the use of French, German, Dutch, etc.)

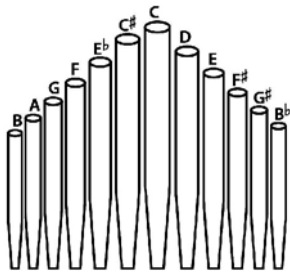
The pipes of each rank are supported by an assembly called a chest. The pipes can be arranged in many different ways on the chest. The pipe arrangement chosen by the maker depends on several things - aesthetics, musical, etc. - but the four most common ones are shown below and on the next page:



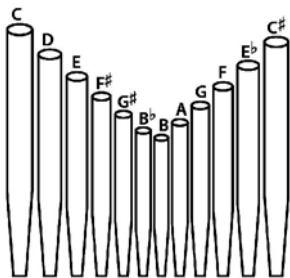
Left to Right - the pipes producing lower pitches are on the left. Playing notes chromatically going up on the keyboard will cause the pipes on the left to sound first.



Right to Left - the pipes producing higher pitches are on the right. Playing notes chromatically going up on the keyboard will cause the pipes on the left to sound first.



Pyramid - when notes are played chromatically going up on the keyboard, the notes start in the center and alternate between left and right.



Inverted Pyramid - when notes are played chromatically going up on the keyboard, the notes start at one end and alternate between left and right until they meet in the center.

The above two pipe placement schemes are sometimes referred to as “C-C#” placement due to chromatic notes being separated.

The SK-series instruments give you five different Pipe Imaging choices. The data chart below explains them.

Pipe Image Settings	
Description	Function
L-R	Left to Right (see drawing)
R-L	Right to Left (see drawing)
PYR	Pyramid (see drawing)
IVR	Inverted pyramid (see drawing)
- FIX -	No imaging

Use the PAGE UP and PAGE DOWN Touch Buttons to select the Pipe Voice you want to change.

Turn the VALUE Rotary Control to make your selection for each Pipe Voice.

◆ PERCUSSION - Touch-Response Percussion



The PERCUSSION controls consist of four separate Touch Tabs, located immediately to the right of the Drawbars, which control harmonic Percussion tones playable from the Upper Keyboard.

IMPORTANT NOTE: To hear the tones produced by the Percussion Voice Touch Tabs, the keys of the Upper Keyboard normally must be played in a detached (non-Legato) manner. If you play a single note and then hold it down while playing other keys, the Percussion voice will not play again until you release all keys and again play detached notes.

◆ SECOND HARMONIC

The tone for this harmonic is the same as the sound derived from the 4¹ Drawbar. Combining this Percussion tone with the Drawbars will produce bright and clear sounds.



◆ THIRD HARMONIC

This harmonic tone is the same one produced by the 2 ²/₃' Drawbar. Combining this Percussion tone with the Drawbars will produce powerful and heavy sounds.



◆ FAST DECAY

When this Touch Tab is in its normal state (LED not lighted), the Percussion tone will decay (die away) slowly like a chime. When FAST DECAY is "ON" (LED lighted), the Percussion effect will decay rapidly like a xylophone or glockenspiel.



◆ SOFT

This control regulates the volume of the Percussion tone. When it is in its normal state (LED not lighted), the Percussion effect will be very prominent compared to the tones produced by the Drawbars. When this Touch Tab is "ON" (LED lighted) the Percussion effect is lower in volume or much less prominent.



◆ PERCUSSION Edit Menu

This Advanced Feature Menu allows you to make various changes to the characteristics of the Percussion.

Accessing the PERCUSSION Edit Menu Using the MENU/EXIT Touch Button:

1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display. This indicates that the MENU Mode has 4 Pages and that Page 1 is displaying.
2. Touch the PAGE UP Touch Button once. The "B" screen of the MENU Mode will now display. You will now see "CUST.TW" in the upper left corner of the Information Center Display, and it will be blinking.
3. Touch the PAGE RIGHT Touch Button. The word, "PERCUSS" will now blink.
4. Touch the ENTER Touch Button.

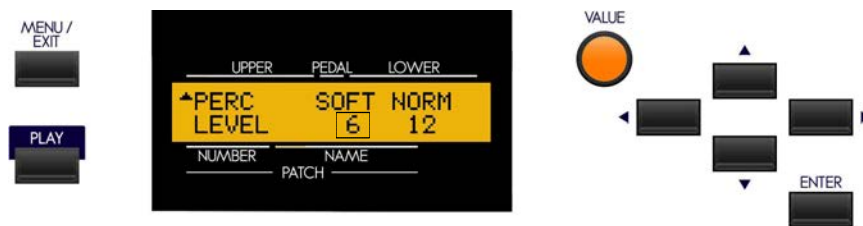
Accessing the PERCUSSION Edit Menu Using the Shortcut:

Touch and hold any of the four PERCUSSION Touch Tabs. After approximately 1 second, you will see the screen shown below on this page.

You are now in the PERCUSSION Edit Page. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make various changes to the Percussion. These changes are explained starting below.

If you followed the above instructions, you should now see Page 1 of the PERCUSSION Edit Menu. The number underneath the word "SOFT" should now be blinking.

◆ Percussion Edit Page 1 - Percussion Level



This Advanced Feature allows you to set the overall volume level of the Percussion tones. This will allow you to balance the amount of "normal" and "soft" Percussion sound (the choices provided by the Touch Tabs) with the sound produced by the Drawbars. You can set the levels separately for the "SOFT" and "NORM" (normal) Percussion Touch Tab settings.

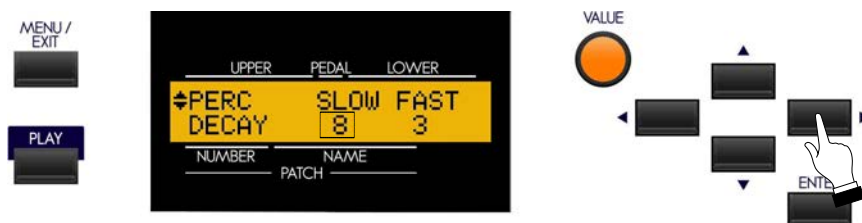
Use the PAGE LEFT and PAGE RIGHT Touch Buttons to select either "SOFT" or "NORM" (Normal). When you have made your selection:

Turn the VALUE Rotary Control to the right to increase the level.

Turn the VALUE Rotary Control to the left to decrease the level.

◆ Percussion Edit Page 2 - Percussion Decay

From the previous screen, touch the PAGE RIGHT Touch Button once. Page 2 of the Percussion Edit Menu should now display. The Information Center Display should now look like this:



This Advanced Feature allows you to set the overall decay (the rate at which the Percussion tone dies away while a key is held) of the Percussion tones. You can adjust the “SLOW” and “FAST” decay amounts separately so as to customize the Percussion Decay to your liking.

IMPORTANT NOTE: This Advanced Feature replicates the PERCUSSION CUTOFF control found on the preamp of a vintage Hammond Organ.

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to select either “SLOW” or “FAST.” When you have made your selection:

Turn the VALUE Rotary Control to the right to lengthen the Decay.

Turn the VALUE Rotary Control to the left to shorten the Decay.

◆ Percussion Edit Page 3

From the previous screen, touch the PAGE RIGHT Touch Button once. Page 3 of the PERCUSSION Edit Menu should now display. The Information Center Display should now look like this:



The letters underneath the word “TOUCH” should now blink.

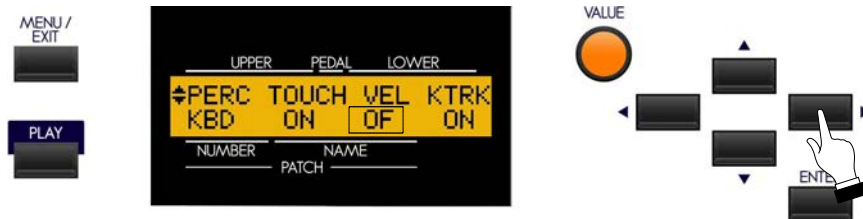
Percussion Touch

This Advanced Feature allows you to turn "ON" or "OFF" the Percussion Touch-Response. When turned “ON” Percussion tones will sound only if you play the keys in a detached manner (non-legato). Any degree of detachment is sufficient. This replicates the Touch-Response Percussion function on the original models B-3, C-3, RT-3 or A-100. When turned “OFF,” each key will sound when played regardless of whether other keys are being held. This replicates the Percussion function on the X-66, Concorde and later model Hammond Organs.

Turn the VALUE Rotary Control to turn Percussion Touch "ON" or “OFF.”

Percussion Velocity Sensitivity

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The letters underneath the word “VEL” should now blink.

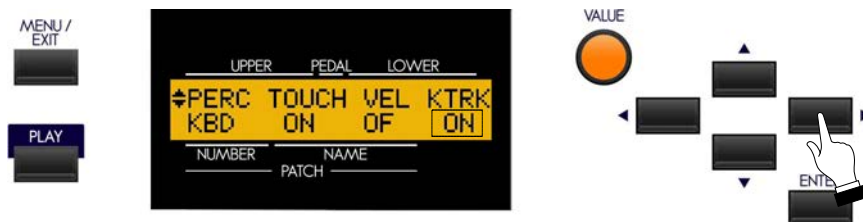


When turned “ON,” the volume of the Percussion tone is controlled by how fast keys are played. The faster keys are played, the louder the Percussion sounds. The more slowly keys are played, the softer the Percussion sounds. When turned “OFF,” each key will sound at the same volume level when played.

Turn the **VALUE** Rotary Control to turn Percussion Velocity Sensitivity “ON” or “OFF.”

Percussion Key Tracking

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The letters underneath the word “KTRK” should now blink.



On the original Hammond Organs with Touch-Response Percussion Control, such as the B-3, C-3, RT-3 and A-100, the Percussion sounds would taper off slightly at higher frequencies. This Advanced Feature is designed to replicate this characteristic of the Percussion.

Turn the **VALUE** Rotary Control to turn Percussion Velocity Key Tracking “ON” or “OFF.”

◆ Percussion Edit Page 4

From the previous screen, touch the PAGE RIGHT Touch Button repeatedly until Page 4 of the PERCUSSION Edit Menu displays. The Information Center Display should now look like this:



The letters underneath the word "1' CANC" should now blink.

Percussion Drawbar Cancel

When Percussion Drawbar Cancel is turned "ON," the 8th harmonic Drawbar will be canceled when Percussion is "ON". This replicates the original Hammond Organs with Touch-Response Percussion Control, such as the B-3, C-3, RT-3 and A-100 series. When this feature is turned "OFF," the 8th harmonic Drawbar (1') will continue to sound while Percussion is "ON". This replicates later Hammond Organs with Percussion.

Turn the VALUE Rotary Control to turn Percussion Drawbar Cancel "ON" or "OFF."

Percussion Drawbar Level

From the previous screen, touch the PAGE RIGHT Touch Button once. The letters underneath the word "LEVEL" should now blink.



This Advanced Feature allows you to set the Drawbar Level when Percussion is "ON" at normal volume (SOFT Touch Tab "OFF"). When "-3db" is chosen, the Drawbars will be reduced by -3db (-3 decibels) in loudness when Percussion is "ON" at normal volume. This replicates the original Hammond Organs with Touch-Response Percussion Control. When "0db" is chosen, the volume of the Drawbars will stay at the same level, or "0db," when Percussion is "ON" at normal volume.

Turn the VALUE Rotary Control to select either "-3db" or "0db."

NOTE: A "decibel" is a unit of measurement for the loudness of a sound wave.

HAMMOND



Sk1

Sk2

Sk1-73

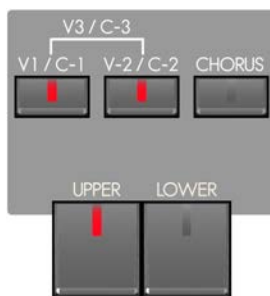
Sk1-88

DRAWBAR
EFFECTS

◆ DRAWBAR EFFECTS

You can add Vibrato/Chorus, Leslie, Sustain and Overdrive to the Drawbar sounds of your SK-series instrument. In the following section, each effect is explained in detail.

◆ VIBRATO & CHORUS



Your Hammond SK-series instrument has five Touch Tabs which control the degrees of Vibrato and Chorus for the Drawbars.

◆ Vibrato/Chorus ON / OFF

To turn the Vibrato or Chorus effect "ON," touch the appropriate Touch Tab "ON" (LED lit).

V1 - (Small Vibrato) - This produces the vibrato equivalent of most orchestral solo instruments.

V2 - (Wide Vibrato) - This is the standard depth vibrato to produce the effect of a theater organ.

V3 - (Full Vibrato) - By pressing both the V1/C1 and the V2/C2 Touch Tabs at the same time, you turn "ON" Vibrato 3. Vibrato 3 gives the fullest amount of vibrato, adding much warmth and enhancing your music.

◆ Chorus

When the CHORUS Touch Tab is used, half of the tone is heard without Vibrato, and half contains the vibrato amount selected by the first two Touch Tabs.

C1 - (Small Chorus) - This produces the light chorus effect.

C2 - (Wide Chorus) - This is the standard depth of the chorus effect.

C3 - (Full Chorus) - By pressing both the V1/C1 and the V2/C2 Touch Tabs at the same time along with the CHORUS Touch Tab, you get the fullest amount of Chorus, adding warmth that enhances your Drawbar settings.

◆ VIBRATO Edit Menu (VIB&CHO Menu)

This Advanced Feature Menu allows you to make changes to the Vibrato/Chorus effect.

Accessing the VIBRATO Edit Page using the MENU/EXIT Touch Button:

1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see “A” displayed in the extreme upper left corner of the Information Center Display. This indicates that the MENU Mode has 4 Pages and that Page 1 is displaying.
2. Touch the PAGE UP Touch Button once. The “B” screen of the MENU Mode will now display. You will now see “CUST.TW” in the upper left corner of the Information Center Display, and it will be blinking.
3. Touch the PAGE RIGHT Touch Button twice. The letters “VIB&CHO” will now blink.
4. Touch the ENTER Touch Button.

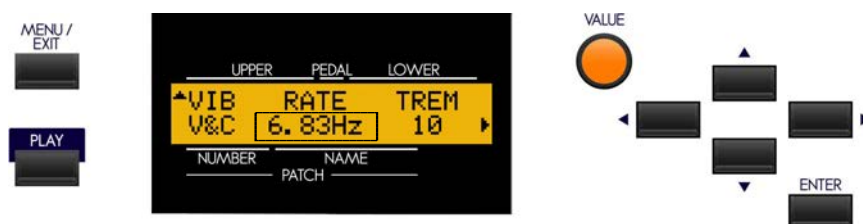
Accessing the VIBRATO Edit Page Using the Shortcut:

Touch and hold any of the three VIBRATO/CHORUS Touch Tabs. After approximately 1 second, you will see the screen shown at the top of this page.

You are now in the VIBRATO Edit Page. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make various changes to the Vibrato and Chorus. These changes are explained starting below.

VIBRATO Edit Menu - Page 1

If you followed the above instructions, you should now see Page 1 of the VIBRATO Edit Menu. The legend underneath the word “RATE” should now be blinking.



Vibrato Rate

This Advanced Feature allows you to select the Vibrato/Chorus Rate that you prefer. The data chart below shows the options you may select.

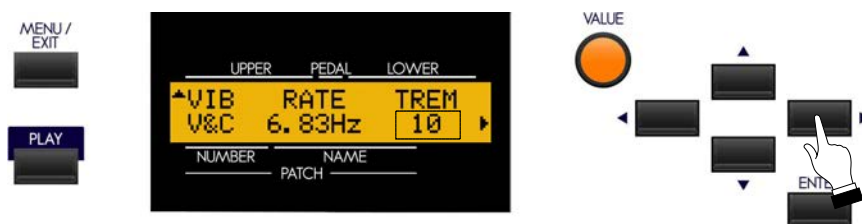
VIBRATO RATE Options
6.10
6.50
*6.83
7.00
7.25

*default setting

Turn the VALUE Rotary Control to the right to make the Vibrato Rate faster.

Turn the VALUE Rotary Control to the left to make the Vibrato rate slower.

From the previous screen, touch the PAGE RIGHT Touch Button once. The numbers underneath the word “TREM” should now be blinking.



Tremulant Amount

On an organ, a periodic raising and lowering of the pitch is called Vibrato, while a periodic raising and lowering of volume is sometimes known as a Tremulant. In a vintage Hammond Organ, the Vibrato effect contains not only a periodic shift in pitch, but also a slight amplitude, or volume, change, particularly in the higher frequencies. This Advanced Feature allows you to set the Tremulant amount of the Vibrato for each setting.

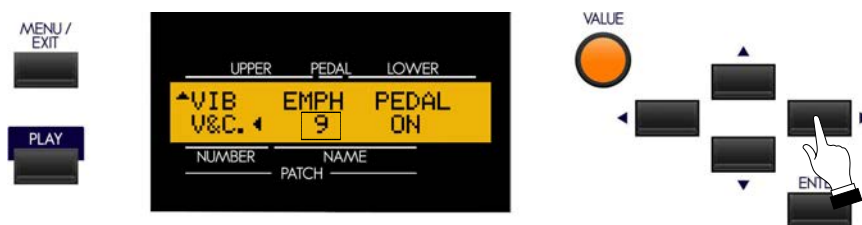
Use the PAGE LEFT and PAGE RIGHT Touch Buttons to navigate among “V1,” “V2,” and “V3.”

Turn the VALUE Rotary Control to the right to increase the amount of Tremulant.

Turn the VALUE Rotary Control to the left to decrease the amount of Tremulant.

VIBRATO Edit Menu - Page 2

From the previous screen, touch the PAGE RIGHT Touch Button once. Page 2 of the VIBRATO Edit Menu should now display. The Information Center Display should now look like this:



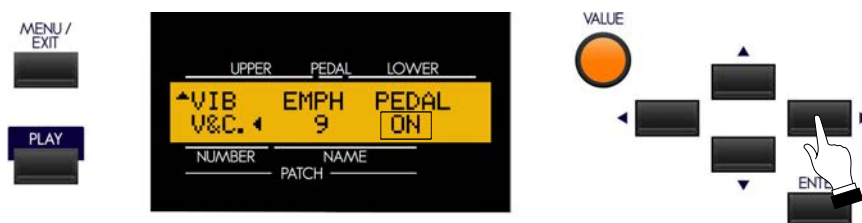
Vibrato Chorus High Frequency Emphasis (EMPH)

This Advanced Feature Menu Page allows you to set the amount that the higher frequencies are emphasized when Vibrato Chorus (C1, C2 or C3) is selected. You can select from “0” (mellow) to “9” (bright).

Turn the VALUE Rotary Control to the right to emphasize the higher frequencies

Turn the VALUE Rotary Control to the left to de-emphasize or roll off the higher frequencies.

From the previous screen, touch the PAGE RIGHT Touch Button once. The word underneath the word “PEDAL” should now blink:



Vibrato On Pedal (PEDAL)

This Advanced Feature Menu Page allows you to select whether you want Vibrato to also affect the Pedal Drawbar tones when the VIBRATO LOWER Touch Tab is “ON.” This replicates the Vibrato function on a vintage Hammond Organ.

Turn the VALUE Rotary Control to turn Vibrato on or off for the Pedal Drawbar tones.

◆ LESLIE®

Your Hammond SK-series instrument has a built-in digital Leslie effect that replicates the sound of a twin-rotor Leslie Speaker cabinet. In addition, the SK-series instrument can also be used with a variety of different Leslie Speaker cabinets. There is a full explanation of how to use the SK-series instrument with a Leslie Speaker cabinet starting on page [49](#).

◆ What Is A “Leslie Speaker?”

When the Hammond Organ was first introduced in the mid 30's, it was not “self-contained;” that is, the sound-producing apparatus was not contained within the console. In order to hear the sounds produced by the organ's tone generators, a separate “tone cabinet” containing an amplifier and speaker system had to be connected to the organ console via a special cable. The Hammond Organ Company for many years manufactured many different models of tone cabinets specifically for use with Hammond Organs. The best known of these is probably the PR-40 model, which used a 40-watt tube amplifier to drive a set of speakers.



Hammond PR-40 Tone Cabinet



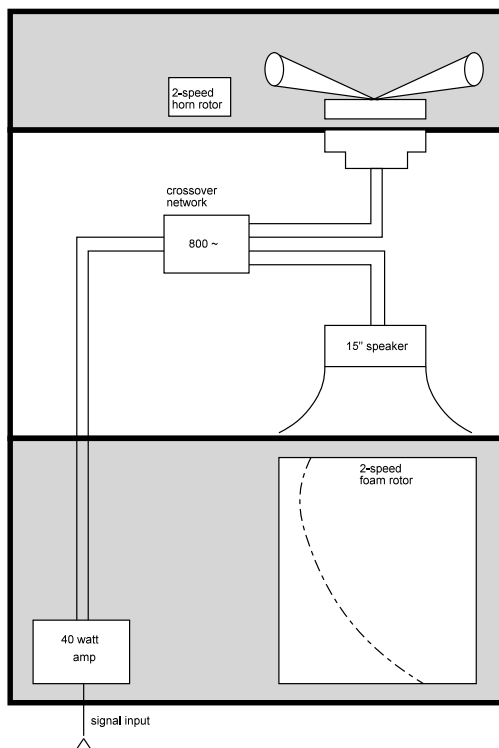
A typical Leslie Speaker cabinet.

The Hammond engineers had very definite ideas about what a Hammond Organ should sound like and the Hammond speakers were designed to deliver that sound. In the late 30's, however, an independent engineer and organ enthusiast named Donald J. Leslie wanted a sound from a Hammond Organ more nearly approximating the sound of a theatre organ, particularly a realistic theatre organ tremulant. He found that rotating a baffle in front of a stationary speaker created the effect of a tremulant (the well-known “Doppler effect”) and called the subsequent speaker the “Vibratone.” (The “Vibratone” designation was eventually dropped and subsequent models would be known simply as Leslie Speakers.) Over a hundred models of Leslie Speakers have been made over the years; probably the best known being the models 122, 142, 145 and 147, all of which have 40-watt vacuum-tube amplifiers. The 122 and 147 are both 41" tall (see above photo), while the 142 and 145 are 33" tall. The 122 and 142 have the same electronics, as do the 145 and 147.

Although the 122 and 147, as well as the 142 and 145, share identical cabinet designs, they are electrically dissimilar - the 122/142 is designed specifically for use with a Hammond Organ whose preamplifier has “GG” terminals (a “balanced” signal output), whereas the 147/145 has an “unbalanced” input more suitable for use with self-contained organs - other brands as well as Hammond. Additionally, the 122 and 147 have different high-frequency responses - the 122 rolls off the treble at 6K to reduce key click, while the 147 does so at 8K, resulting in a slightly brighter overall sound.

◆ What Are “Horn” and “Bass?”

The basic Leslie Speaker design, as represented by the 122 and 147 families of cabinets, divides the sound between “treble” (above 800Hz) and “bass” (below 800Hz). The treble frequencies are routed to a treble speaker or “driver,” while the bass tones sound through a bass speaker (typically 15"). In the classic design, the speakers themselves do not move - a baffle is rotated in front of each speaker to produce animation. The shape of the baffle for the high frequencies is similar to the bell of a horn, hence the popular designation “horn.” The figure below illustrates this.



The Leslie cabinet type shown above connects to the organ console by means of a special connector kit which allows proper routing of both the audio signal and the electrical voltage necessary to operate the rotors.

The first Leslie speakers used two motors to rotate the baffles at a speed suitable for recreating theatre-organ-type tremulant which was controlled by a toggle switch on the side of the speaker cabinet itself. In the mid-60's an additional motor was added to both Horn and Bass which spun the rotors much more slowly in an effort to suggest the sound of a “celeste,” or a compound organ stop with two or more ranks slightly detuned. Also added were switches which could be mounted to the front of an organ console to allow the organist to control the speed of the rotors, and therefore the sound, while playing- “Chorale” described the effect produced by the Slow motors, while “Tremolo” was the designation used when the Fast motors were engaged. In more recent years there have been two important additions to the classic Leslie design:

1. The introduction of an 11-pin interface to allow current Hammond Organs to connect directly to a classic Leslie cabinet without having to use a connector kit.
2. The replacement of separate Fast and Slow motors with variable speed motors for both Horn and Bass. The newer motor design reduces the total number of motors from four to two, and also allows for “Brake” mode, or the ability to shut the rotors completely off (previously a special “brake kit” had to be added to the cabinet to permit this feature).

New digital technology has now made it possible to recreate the Doppler effect with no moving parts. This technology has been incorporated into the SK-series instruments. The following pages explain how the internal digital Leslie of your Hammond SK-series instrument works.

◆ LESLIE Touch Tabs



These two Touch Tabs allow you to control either the internal digital Leslie or the rotors of a connected Leslie Speaker cabinet.

LESLIE BYPASS

When this Touch Tab is "OFF" (LED not lit), the Drawbars will sound through the internal Leslie channel. Touching the BYPASS Touch Tab "ON" (LED lit) will change the sounds produced by the Drawbars from the Leslie channel to the stationary channel. The speed of the rotors of either the internal digital Leslie or a connected Leslie Speaker depends upon the position of the LESLIE FAST Touch Tab.

LESLIE STOP

When this Touch Tab is "OFF" (LED not lit), the Leslie effect is that of an acoustic Leslie Speaker Cabinet with the rotors turning either slowly (Chorale) or Fast (Tremolo). Touching the LESLIE STOP Touch Tab "ON" (LED lit) will cause the Leslie rotors to stop turning.

LESLIE FAST

When this Touch Tab is "OFF" (LED not lit), the Leslie effect is that of an acoustic Leslie Speaker Cabinet with the rotors turning slowly (Chorale). Touching the LESLIE FAST Touch Tab "ON" (LED lit) will cause the Leslie effect to speed up and rotate fast (Tremolo) to produce a rich, full sound.

◆ LESLIE Edit Menu

These Advanced Feature Menu Pages allow you to make various changes to the characteristics of the inbuilt digital Leslie.

Accessing the LESLIE Edit Pages Using the MENU/EXIT Touch Button:

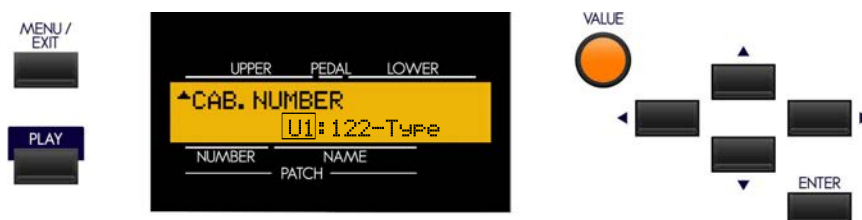
1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.
2. Touch the PAGE UP Touch Button once. The "B" screen of the MENU Mode will now display. You will now see "CUST.TW" in the upper left corner of the Information Center Display, and it will be blinking.
3. Touch the PAGE RIGHT Touch Button three times. The word, "LESLIE" will now blink.
4. Touch the ENTER Touch Button.

Accessing the LESLIE Edit Pages Using the Shortcut:

Touch and hold any of the three LESLIE Touch Tabs. After approximately 1 second, you will see the screen shown at the top of this page.

You are now in the LESLIE Edit Pages. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make various changes to the parameters of the digital Leslie. These changes are explained below.

If you followed the above instructions, you should now see Page 1 of the LESLIE Edit Menu.



Leslie Parameters

Your Hammond SK has a special group of Leslie Parameters. Using these special Leslie features, you can define different characteristics of how the built-in digital Leslie effect will perform. The Leslie Parameters are:

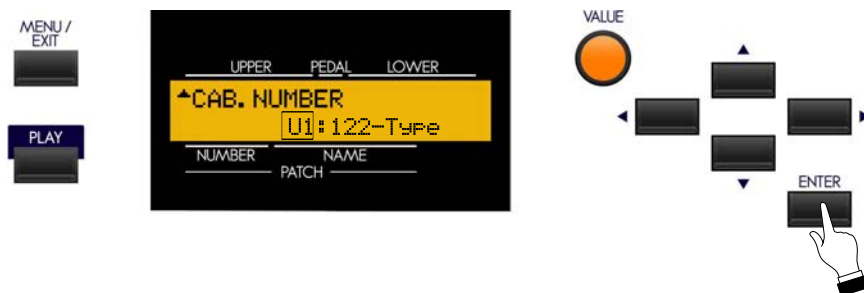
1. Slow Speed for both Horn and Bass Rotor.
2. Fast Speed for both Horn and Bass Rotor.
3. Rise Time for both Horn and Bass Rotor.
4. Fall Time for both Horn and Bass Rotor.
5. Brake Time for both Horn and Bass Rotor.
6. Level or Volume for both Horn and Bass Rotor.
7. Microphone Settings (Angle and Distance)

The following pages explain how to set various characteristics of the digital Leslie, including speed settings and levels for the Horn and Bass Rotors, settings for emulating various ways Leslies are “miked” either for recording or live performance, etc. All of these parameters can be saved as a Leslie Cabinet.

The SK-series instruments have 16 different Leslie Cabinets. Eight (8) of these are User Cabinets (indicated by a “U”) while the other eight (8) are Preset Cabinets (indicated by a “P”). The Preset Cabinets are permanently written in memory, but the User Cabinets can be overwritten with your own settings. You can even re-name them if you wish.

The first two pages of the Leslie Edit Menu allow you to select the Leslie Cabinet you wish to use or modify, as well as name a custom Leslie cabinet you have created. The remaining pages allow you to modify the sonic characteristics of the selected Leslie Cabinet. After you have made all of your changes, you can save them as a User Cabinet.

◆ LESLIE Edit Menu - Page 1 - Leslie Cabinet Type



This Advanced Feature allows you either to select the Leslie Cabinet Type that you prefer, or to select a User Cabinet to modify.

Turn the VALUE Rotary Control to the right to scroll forward through the choices.

Turn the VALUE Rotary Control to the left to scroll backward through the choices.

From the previous screen, touch the PAGE UP Touch Button once. The Information Center Display should now look similar to this:



◆ LESLIE Edit Menu - Page 2 - Leslie Cabinet Name

This Advanced Feature allows you to name a Leslie User Cabinet. This would normally be the final step after you have made the rest of your parameter settings and are satisfied with the results. You should have also saved your settings.

NOTE: Naming a Leslie User Cabinet is covered in more detail on page 92

Use the PAGE LEFT and PAGE RIGHT Select Touch Buttons to select the character to be edited.

Turn the VALUE Rotary Control to the right to scroll forward through the characters.

Turn the VALUE Rotary Control to the left to scroll backward through the characters.

The available characters include: Punctuation Marks (space - . ' &), Numeric Characters (0 ~ 9), Upper-case Letters ("A ~ Z"), and Lower-case Letters ("a ~ z").

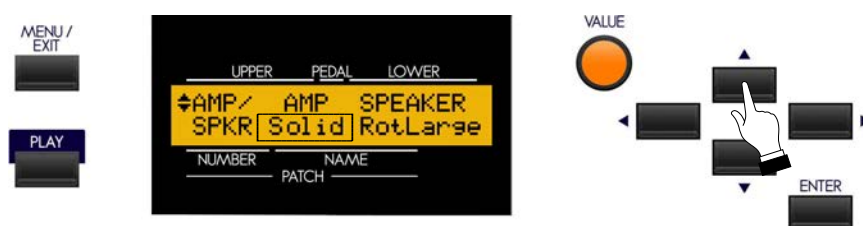
The following pages describe how to change the various Leslie Parameters.

NOTE: For a complete listing of all parameters that can be saved as a Leslie Cabinet, consult the Leslie Parameters page of the Appendix at the back of this Guide.

SPECIAL NOTE: These Advanced Features DO NOT affect a connected external Leslie Speaker.

◆ LESLIE Edit Menu - Page 3

From the previous screen, touch the PAGE UP Touch Button once. You should now see Page 3 of the LESLIE Edit Menu. The legend underneath the word “AMP” should now be blinking.



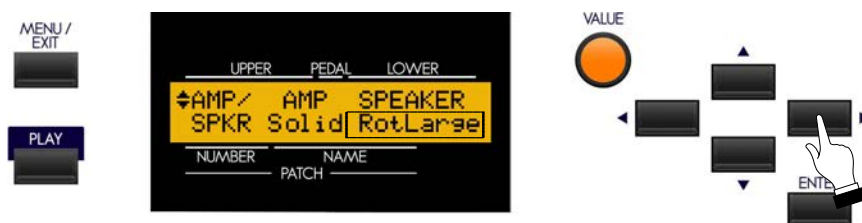
Leslie Amplifier Type

This Advanced Feature allows you to select the Amplifier characteristics. The data chart below shows the options you may select.

LESLIE AMPLIFIER TYPES	
Description	Function
Solid	A “solid-state” or transistorized amplifier with a flat frequency response.
Tube	Frequency curves and peaks more typical of a vacuum-tube amplifier

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The legend underneath the word “**SPEAKER**” should now be blinking.



Leslie Speaker Type

This Advanced Feature allows you to select the overall sonic characteristics of the selected Cabinet Type. The data chart below shows the options you may select.

LESLIE SPEAKER TYPES	
Description	Function
RotSmall	A small (33" tall) cabinet such as a model 142 or 145.
RotLarge	A standard-size (41" tall) speaker such as a 122 or 147.
Station	A stationary cabinet with no rotors such as a traditional Hammond speaker (PR-40, PR-20, QR-40, etc.).

Turn the **VALUE Rotary Control** to make your selection.

NOTE: For more information about Leslie Speaker types as well as Hammond speakers, please consult page 55.

From the previous screen, touch the PAGE UP Touch Button once. The Information Center Display should now look like this:



◆ LESLIE Edit Menu - Page 4 - Leslie Horn Settings

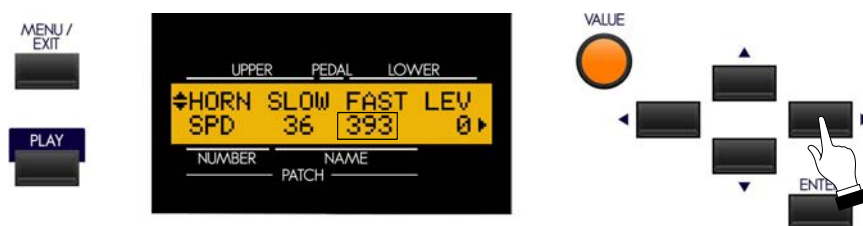
This Advanced Feature allows you to select the settings for the digital Leslie Horn that you prefer. You can change the Slow and Fast speed settings as well as the Level or volume setting.

Leslie Slow Speed - Horn

This Advanced Feature allows you to set the rate for the Slow Speed of the digital Leslie Horn. The default setting is "36." You can select "0rpm," which will cause the Horn Rotor to stop, or from "24" through "318rpm."

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

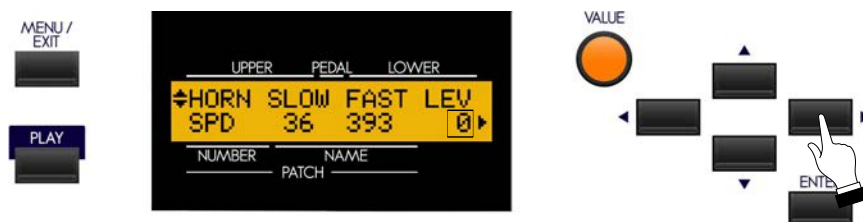


Leslie Fast Speed - Horn

This Advanced Feature allows you to set the rate for the Fast Speed of the digital Leslie Horn. The default setting is "393." You can select from "0rpm," which will cause the Horn Rotor to stop, or from "372rpm" through "393rpm."

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

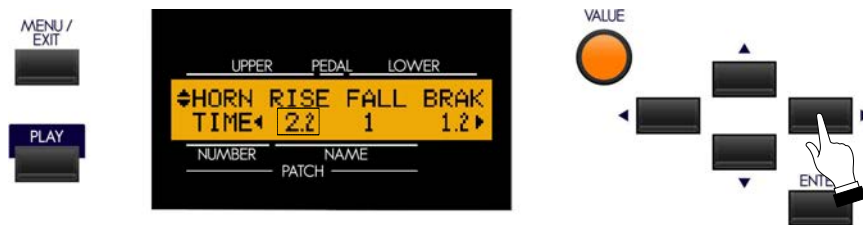


Leslie Level - Horn

This Advanced Feature allows you to adjust the volume level of the digital Horn. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

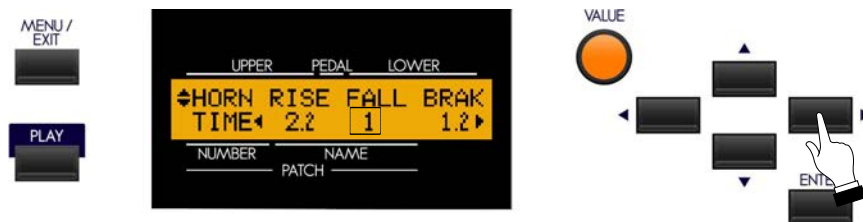


Leslie Rise Time - Horn

This Advanced Feature allows you to adjust the amount of time the Horn Rotor will take to accelerate to Fast (Tremolo) speed. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

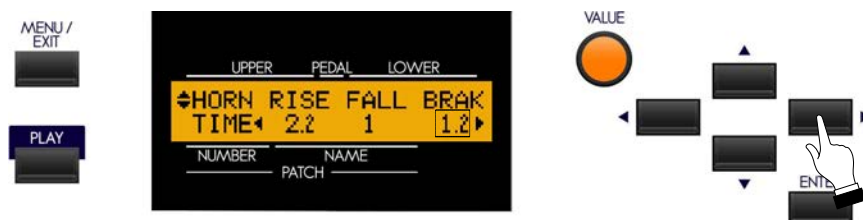


Leslie Fall Time - Horn

This Advanced Feature allows you to adjust the amount of time the Horn Rotor will take to accelerate to Fast (Tremolo) speed. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

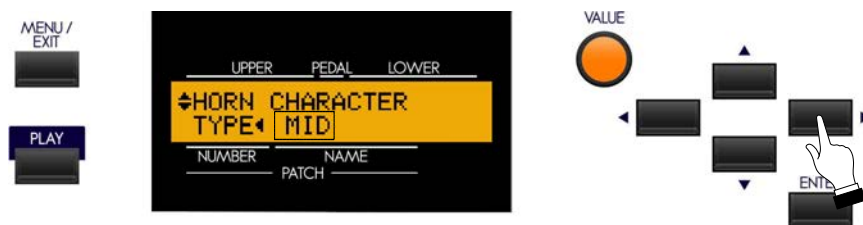


Leslie Brake Time - Horn

This Advanced Feature allows you to adjust the amount of time the Horn Rotor will take to accelerate to Fast (Tremolo) speed. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



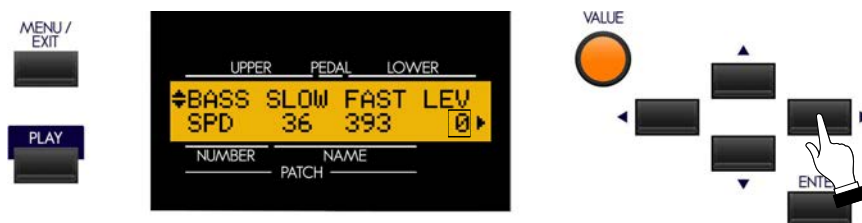
Leslie Sound Character - Horn

This Advanced Feature allows you to adjust the amount of time the Horn Rotor will take to accelerate to Fast (Tremolo) speed. Sets the tone of the Horn Rotor.

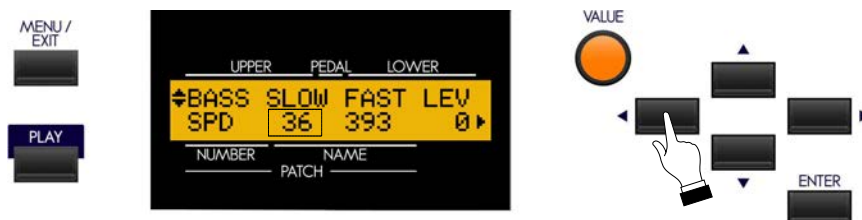
“FLAT” has no boost or cut in frequencies, and the “MID” or “DEEP” have “peaks” in various tonal ranges, to mimic the particular characteristics of the horns. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE UP** Touch Button once. The Information Center Display should now look like this:



From the above screen, touch the **PAGE LEFT** Touch Button two times. The Information Center Display should now look like this:



◆ LESLIE Edit Menu - Page 5 - Leslie Bass Settings

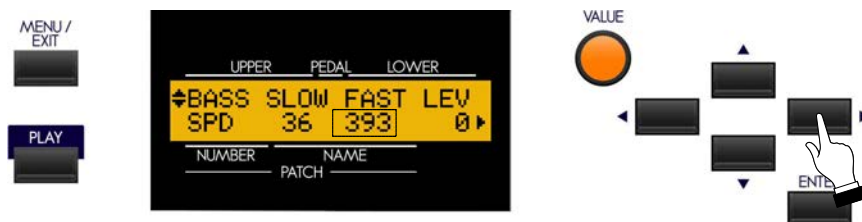
This Advanced Feature Menu allows you to select the settings for the digital Leslie Bass that you prefer. You can change the Slow and Fast speed settings as well as the Level or volume setting.

Leslie Slow Speed - Bass

This Advanced Feature allows you to set the rate for the Slow Speed of the digital Leslie Bass frequencies. The default setting is "36." You can select "0rpm," which will cause the Horn Rotor to stop, or from "24rpm" through "48rpm."

Turn the **VALUE** Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:

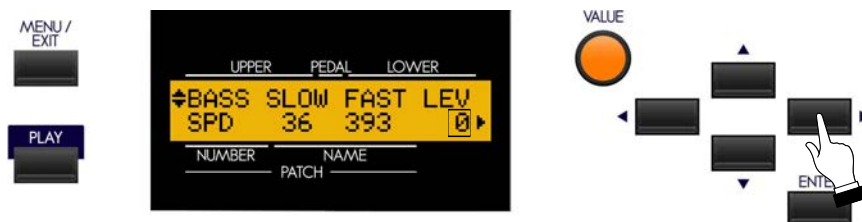


Leslie Fast Speed - Bass

This Advanced Feature allows you to set the rate for the Fast Speed of the digital Leslie Bass frequencies. The default setting is "393." You can select "0rpm," which will cause the Horn Rotor to stop, or from "372rpm" through "393rpm."

Turn the **VALUE** Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

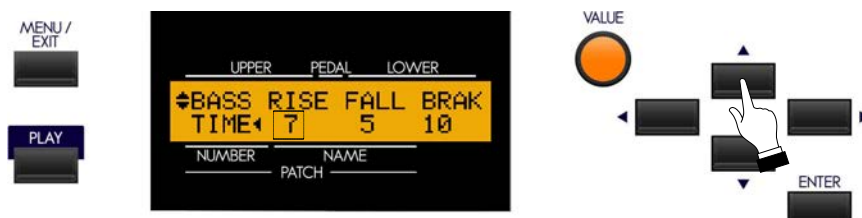


Leslie Level - Bass

This Advanced Feature allows you to adjust the volume level of the digital Leslie Bass frequencies. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE UP Touch Button once. The Information Center Display should now look like this:

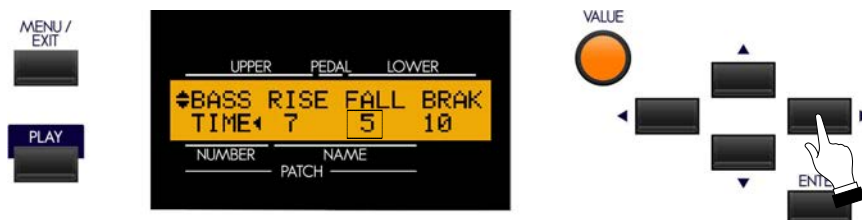


Leslie Rise Time - Bass

This Advanced Feature allows you to adjust the amount of time the Horn Rotor will take to accelerate to Fast (Tremolo) speed. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

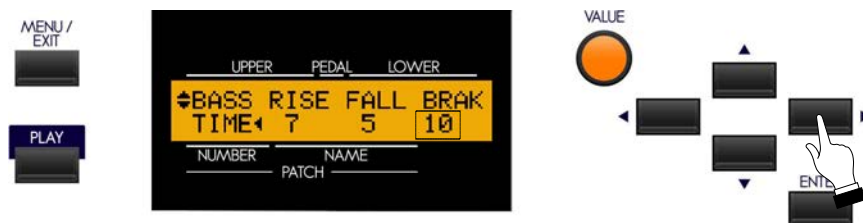


Leslie Fall Time - Bass

This Advanced Feature allows you to adjust the amount of time the Horn Rotor will take to accelerate to Fast (Tremolo) speed. You can select from “0” through “-12db.”

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

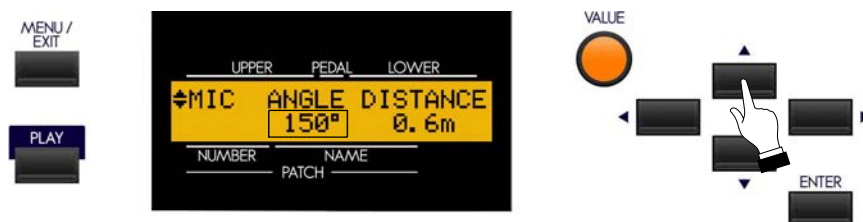


Leslie Brake Time - Bass

This Advanced Feature allows you to adjust the amount of time the Horn Rotor will take to accelerate to Fast (Tremolo) speed. You can select from “0” through “-12db.”

Turn the **VALUE Rotary Control** to make your selection.

From the previous screen, touch the **PAGE UP Touch Button** once. You should now see **Page 6 of the LESLIE Edit Menu**. The Information Center Display should now look like this:



◆ LESLIE Edit Menu - Page 6 - Leslie Microphone Settings

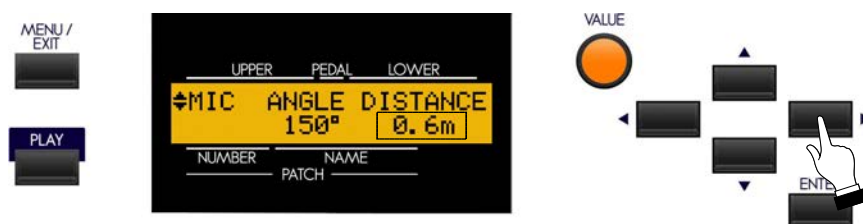
When a Leslie Speaker cabinet or combination of cabinets is used in a large facility such as an auditorium or outdoor arena, the Leslie(s) are frequently "miked" to insure that the sound carries adequately. Sound technicians have discovered that the placement of the microphones greatly affects the character of the sound heard by the audience from the Leslie Speaker(s). Additionally, This Advanced Feature allows you to simulate various microphone settings using the built-in digital Leslie effect. The two settings you can adjust are “ANGLE” and “DISTANCE”.

Leslie Microphone Setting - ANGLE

The ANGLE setting recreates the effect of two microphones. "0" setting is monaural, or both microphones placed in the center. Each higher number has the effect of moving the microphones further apart from each other, resulting in greater stereo separation.

Turn the **VALUE Rotary Control** to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button repeatedly until Page 3 of the DRAWBAR Edit Menu displays. The Information Center Display should now look like this:



Leslie Microphone Setting - DISTANCE

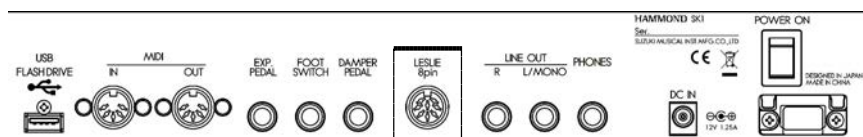
The DISTANCE setting recreates the effect of setting the microphones at different distances from a Leslie Speaker cabinet, since distance has an effect on how the Leslie Speaker reproduces through a sound system. The choices are given in metric measurements (meters or fractions).

Turn the VALUE Rotary Control to make your selection.

NOTE: Both the ANGLE and DISTANCE settings are subtle effects and may require careful listening to detect the differences among the various settings.

◆ Connecting a Leslie Speaker Cabinet

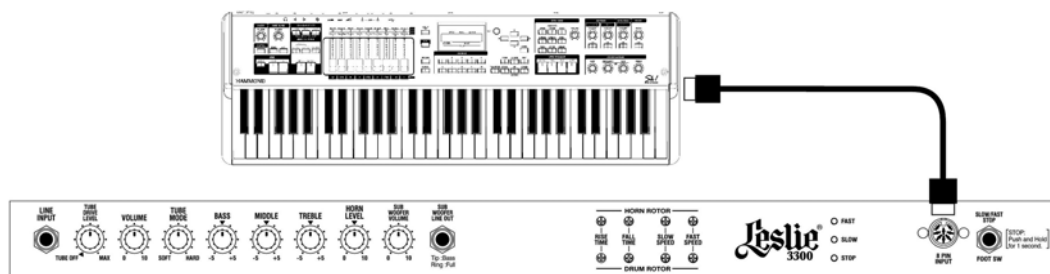
Your Hammond SK-series instrument has a special 8-pin DIN jack located on the Accessory Panel designed to make it possible to connect a Leslie Speaker cabinet or speaker system.



The connection is made by means of a special 8-pin DIN cable supplied with each applicable Leslie Speaker.

◆ Connecting the SK-series to an 8-pin Leslie Speaker

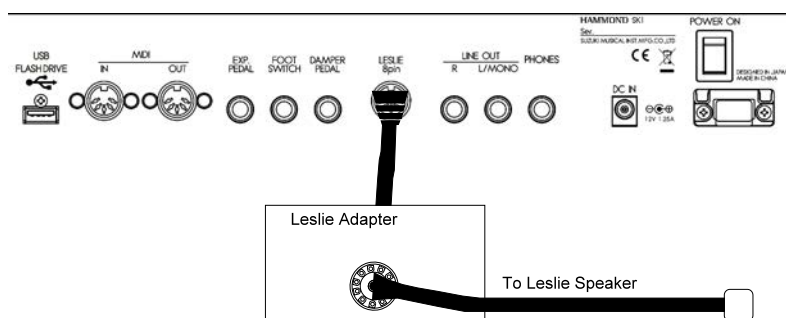
Some Leslie Speakers such as the 21 System and the model 3300 have an 8-pin connection built in. Your SK-series instrument will connect directly to these cabinets via the special 8-pin DIN cable supplied with the speaker or speaker system. Connect one end of the cable to the 8-pin jack on the cabinet and the other end to the corresponding jack on the SK, as shown below.



◆ Connecting the SK-series to a classic Leslie Speaker

The majority of Leslie Speakers available do not have an 8-pin connection, but have a large multi-pin socket for the audio connection as well as motor control. You can connect your SK-series instrument to one of these cabinets via a special adapter kit available from Hammond. To do this:

1. Connect one end of the Adapter Kit to the multi-pin plug on the back of your Leslie Speaker cabinet.
2. Connect the other end of the Adapter Kit to the Leslie 8-pin jack on the back of the SK.



NOTE: Since different models of Leslie Speakers have different pin configurations, you will need to know the model number of your Leslie Speaker to determine whether it is compatible. Contact your Hammond Organ Dealer for more information regarding which adapter kit and/or cable you may need.

◆ Creating your own Leslie Cabinets

As stated on page 58, the SK-series instruments have 16 different Leslie Cabinets. Eight (8) of these are User Cabinets (indicated by a “U”) while the other eight (8) are Preset Cabinets (indicated by a “P”). The Preset Cabinets are permanently written in memory, but the User Cabinets can be overwritten with your own settings. You can even re-name them if you wish.

There are 8 Preset cabinets, each designed to duplicate the sound of a particular model Leslie Speaker:

The data chart below shows the options you may select.

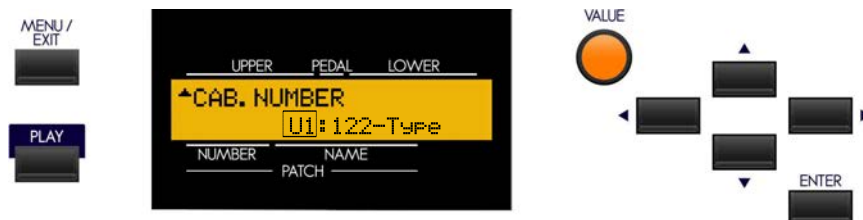
Leslie Cabinet Types	
Name	Description
<u>122-Type</u>	Duplicates the characteristics of a 122-type Leslie Speaker, which is the most common Leslie Speaker used on a vintage Hammond Organ.
<u>147-Type</u>	Duplicates the characteristics of a 147-type Leslie Speaker - tube sound but with slightly more high frequencies, etc.
<u>31H-Type</u>	Duplicates the characteristics of a 60" "tall boy" Leslie Speaker such as the model 31H - tube sound with slightly more bass, etc.
<u>760-Type</u>	Duplicates the characteristics of a single-channel solid-state-type Leslie Speaker, such as the model 760, which was designed to be a solid-state counterpart to the model 122.
<u>722-Type</u>	Duplicates the characteristics of a two-channel solid-state-type Leslie Speaker such as the model HL 722, which was the Leslie model designed for the model B-3000 Hammond Organ manufactured in the late 70's.
<u>825-Type</u>	Duplicates the characteristics of a solid-state-type Leslie Speaker with a single 12" speaker and a single rotating baffle, such as a model 825 (9-pin interface), or 820 (later version of 825 with 11-pin interface).
<u>Rock Type</u>	Duplicates the characteristics of a tube-type Leslie Speaker which has been subjected to hard use.
<u>PR-40-Type</u>	Duplicates the tonal characteristics of a Hammond PR-40 Tone Cabinet.

The factory settings for the User cabinets are identical to those for the Preset cabinets. To edit and save your own Leslie Cabinets, it is recommended that you first select the cabinet which already contains most of the characteristics you desire. In this way, fewer changes will be necessary to achieve the desired result.

◆ Saving a custom User Cabinet

TRY THIS:

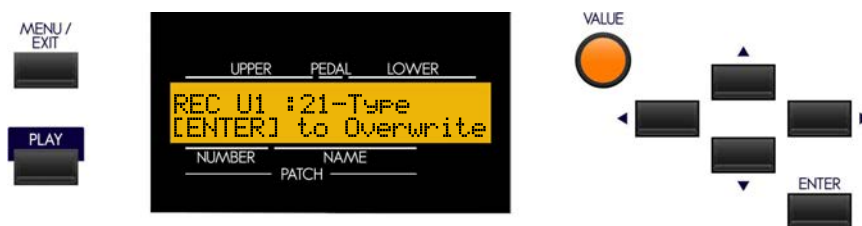
1. Access the LESLIE Edit Menu using one of the two procedures described on page 58. You should now see Page 1 of the LESLIE Edit Menu. The legend underneath the word “RATE” should now be blinking.



2. Use the VALUE Rotary Control to select the Leslie Cabinet you want to modify. Be sure to select one of the "U" or User cabinets.
3. Make whatever changes you want to the editable parameters - Slow and Fast Speeds, Rise and Fall Times, etc.
4. After you have made all your edits and you have the sound you want, Touch and Release the RECORD Touch Button.



The Information Center Display should now look similar to this:



5. If you DO NOT wish to save the parameters you have changed, touch the MENU/EXIT or PLAY Touch Button.

If you want to overwrite the Leslie Parameters with your new edited settings, touch the ENTER Touch Button. The bottom line of the Information Center Display will scroll the following:

Recording Cabinet...

After the above stops scrolling, your edits have been saved as a User Cabinet.

IMPORTANT: It is recommended that you create and then save a Leslie User Cabinet before re-naming it. It is also recommended that you rename your User Cabinet after saving it.

◆ Naming a custom User Cabinet

TRY THIS:

1. After creating and saving a User Cabinet, bring up Page 2 of the LESLIE Edit Menu. You should be able to do this by touching the PAGE UP Touch Button repeatedly until Page 2 displays since you are already in the LESLIE Edit Menu. The Information Center Display should look similar to this:



2. Now name your User Cabinet by doing the following:

Use the PAGE LEFT and PAGE RIGHT Select Touch Buttons to select the character to be edited.

Turn the VALUE Rotary Control to the right to scroll forward through the characters.

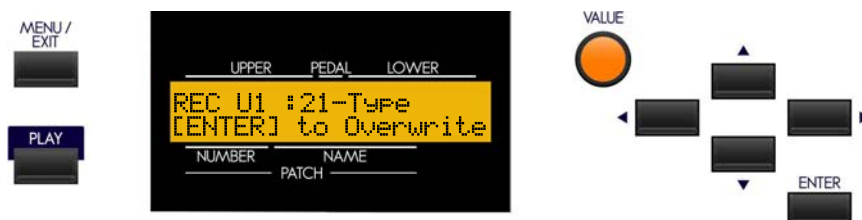
Turn the VALUE Rotary Control to the left to scroll backward through the characters.

The available characters include: Punctuation Marks (space - . ' &), Numeric Characters (0 ~ 9), Upper-case Letters ("A ~ Z"), and Lower-case Letters ("a ~ z").

3. After you have finished editing, Touch and Release the RECORD Touch Button.



The Information Center Display should now look similar to this:



4. If you DO NOT wish to save the name, touch the MENU/EXIT or PLAY Touch Button.

If you want to overwrite the Leslie Cabinet Name, touch the ENTER Touch Button. The bottom line of the Information Center Display will scroll the following:

Recording Cabinet...

After the above stops scrolling, your User Cabinet has been renamed.

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HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

KEYBOARD

SPLIT

KEYBOARD SPLIT (SK1, SK1-73, SK1-88)

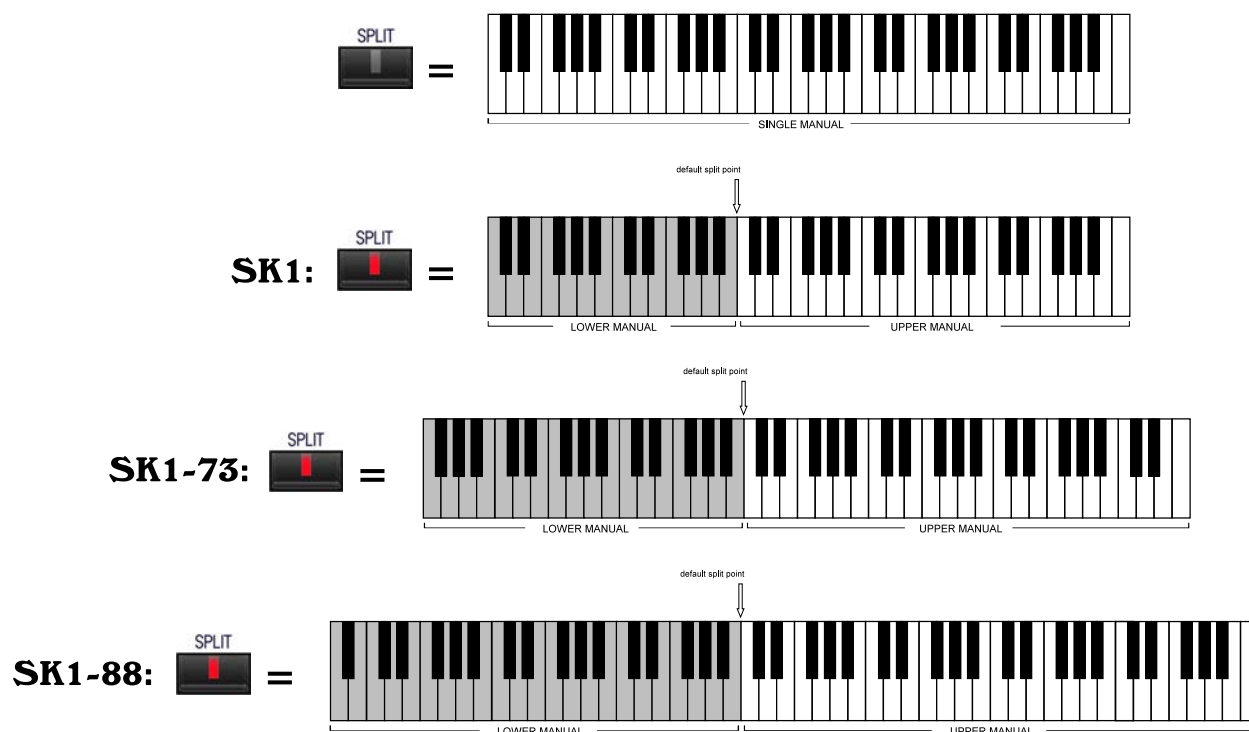
Although the SK1 has a single keyboard, the keyboard can be Split so that one sound can be played on one part of the keyboard and a different sound can be played on another part of the keyboard.

◆ Upper and Lower Manuals on the SK-series instruments

When the keyboard is split, the effect is that of a conventional two-keyboard organ on which the Upper Manual would be played by the right hand and the Lower Manual would be played by the left hand. Therefore, when Split is “ON,” the area to the right of the Split Point is referred to on the SK-series instrument as the Upper Manual and is abbreviated, “UM.” The area to the left of the Split Point is designated as the Lower Manual and bears the abbreviation, “LM.” You will notice both of these abbreviations in the Information Center Display. This is important to keep in mind because if you are making any changes to parameters affecting the Lower Manual, such as Drawbar Registration, you will not hear any change unless Split is “ON.”

◆ SPLIT Touch Tab

Touch this Touch Tab “ON” (LED lit) to activate the Split Point. Touch it “OFF” (LED not lit) to play the SK-series instrument as a single-keyboard instrument.



◆ Changing the Split Point

Page 1 of the ZONES Edit Menu allows you to change the Split Point.

Accessing the ZONES Edit Menu using the Touch Buttons:

1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see “A” displayed in the extreme upper left corner of the Information Center Display.
2. Touch the PAGE UP Touch Button three times. You will now see “D” displayed in the extreme upper left corner of the Information Center Display. The word, “ZONES” in the upper left corner of the Information Center Display will be blinking (flashing “on” and “off”).
3. Touch the ENTER Touch Button.

Accessing the ZONES Edit Menu using the Shortcut:

Touch and Hold the SPLIT Touch Button. After approximately 1 second, the Information Center Display will look like this:



Notice that the legend just underneath the word, “SPLIT” is blinking. This means that you can now change the Split point. You can select from “1C” (the lowest note on the manual) to “6C” (the highest note on the manual).

Turn the VALUE Rotary Control to the right to locate the Split Point higher on the manual.

Turn the VALUE Rotary Control to the left to locate the Split Point lower on the manual.

LOWER TO PEDAL (SK2 only)

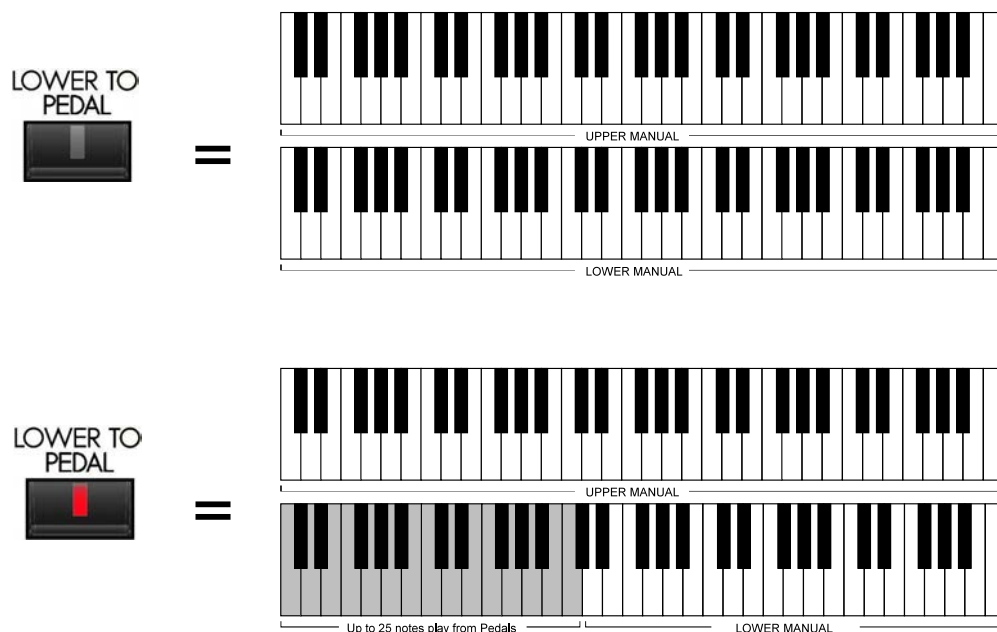
The SK2 is designed to be played as a two-keyboard organ so that separate registrations can be had on separate manuals instead of having to split a single manual to achieve the same effect.

◆ LOWER TO PEDAL Touch Tab

This Touch Tab allows a connected MIDI pedalboard to play the sounds registered for the Lower Manual in addition to whatever Pedal registration may be selected.



Touch this Touch Tab “ON” (LED lit) to enable the LOWER TO PEDAL function. Touch it “OFF” (LED not lit) to play the pedals normally.



NOTE: The number of pedal notes depends on the number of pedals on the MIDI pedalboard - if, for example, the pedalboard has 13 pedals, 13 notes will play the Pedal voices as well as the LOWER TO PEDAL registration.

◆ Changing the LOWER TO PEDAL Note Limit

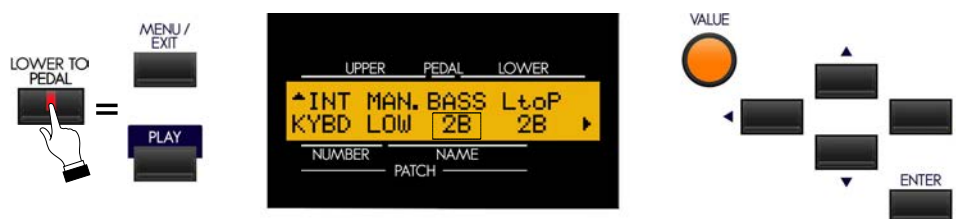
Page 1 of the ZONES Edit Menu allows you to set the highest note that will sound the Lower Manual registration when the LOWER TO PEDAL Touch Tab is “ON.”

Accessing the ZONES Edit Menu using the Touch Buttons:

1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see “A” displayed in the extreme upper left corner of the Information Center Display.
2. Touch the PAGE UP Touch Button three times. You will now see “D” displayed in the extreme upper left corner of the Information Center Display. The word, “ZONES” in the upper left corner of the Information Center Display will be blinking (flashing “on” and “off”).
3. Touch the ENTER Touch Button.

Accessing the ZONES Edit Menu using the Shortcut:

Touch and Hold the SPLIT Touch Button. After approximately 1 second, the Information Center Display will look like this:



Notice that the legend just underneath the word, “BASS” is blinking. This means that you can now change the upper note limit of the LOWER TO PEDAL Coupler. You can select from “1C” (the lowest note on the manual) to “3C” (the third “C” on the manual, which also is Middle “C.”

Turn the VALUE Rotary Control to the right to locate the note range higher.

Turn the VALUE Rotary Control to the left to locate the note range lower.

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HAMMOND



Sk 1

Sk 2

Sk 1-73

Sk 1-88

EXTRA VOICE
SECTION

EXTRA VOICE Section

Your SK-series instrument contains high-quality digital voices which are accessible using the EXTRA VOICE Touch Tabs.

◆ EXTRA VOICE Touch Tab group

The VOICE Touch Tab group is located to the right side of the Information Center Display.



◆ EXTRA VOICE ALLOCATE Touch Tabs



These allow you to control which division of the instrument will play the Voice you select.

UPPER

This Touch Tab allows the selected Voice to be played from the Upper Manual.



LOWER

This Touch Tab allows the selected Voice to be played from the Lower Manual (left of split).



SOLO

This Touch Tab cancels the Drawbars, allowing only the selected Extra Voice to play from the selected Manual.



NOTE: This Touch Tab will cancel all Drawbar sounds, including "Vx" "Farf," and "Pipe."

◆ EXTRA VOICE VOICE Touch Tabs



The VOICE Touch Tabs allow you to access various categories of voices. The categories represent voices which have been arranged into groups combining instruments of similar characteristics to make voice selection easier.

A.PIANO

This category contains Acoustic Pianos, Electric Grands, etc.

E.PIANO

This category contains Electric Pianos.

KYBD

This category contains other keyboard instruments such as Harpsichord, Accordions, Clavs, etc.

WIND

This category contains Wind instruments such as Trumpets, Saxes, etc.

OTHER

This category contains Strings, Synth sounds, etc.

LIBRARY

This category, in addition to having pre-loaded sounds, can contain custom sounds which you can download and install using the USB Port. For complete instructions on how to do this, see page 258.

These voices can be used in combination with the Drawbars or by themselves in Solo mode.

◆ EXTRA VOICE EDIT Menu

This Advanced Feature Menu allows you to modify the characteristics of the voices in the Voice Section according to your preference.

Accessing the EXTRA VOICE EDIT Menu using the Touch Buttons:

1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.
2. Touch the PAGE RIGHT Touch Button once. The legend, "EXVOICE" in the lower left corner of the Information Center Display will be blinking.
3. Touch the ENTER Touch Button.

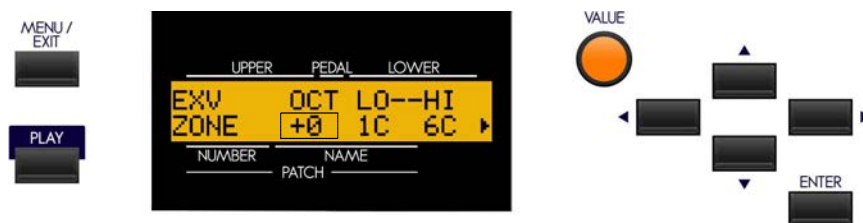
Accessing the EXTRA VOICE EDIT Menu using the Shortcut:

Touch any of the EXTRA VOICE CATEGORY Touch Buttons. The Information Center Display should now display the selected Extra Voice for the Category you selected.

IMPORTANT NOTE: If you used the Shortcut to access the EXTRA VOICE EDIT Menu, the first screen you will see is actually **Page 2** of the Menu. For information about Page 2 of the EXTRA VOICE EDIT Menu, please consult the next page.

You are now in the VOICE EDIT Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make various changes to the Voices. These changes are explained below.

◆ EXTRA VOICE EDIT Menu - Page 1



Extra Voice Octave

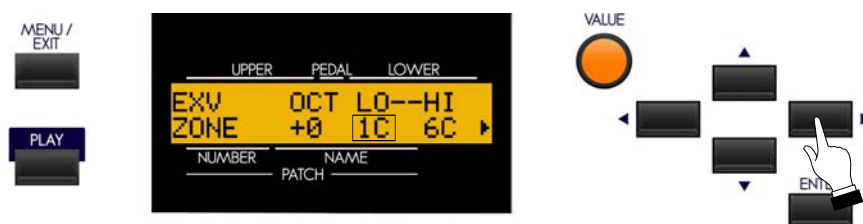
This Advanced Feature allows you to select the Octave range in which the Extra Voices will play. The data chart below shows the options you may select.

Octave Options	
Description	Function
-2	The sound is two octaves below the regular pitch.
-1	The sound is one octave below the regular pitch.
0	The sound is at normal pitch.
+1	The sound is one octave above the regular pitch.
+2	The sound is two octaves above the regular pitch.

Turn the VALUE Rotary Control to the right to raise the Octave.

Turn the VALUE Rotary Control to the left to lower the Octave.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “LO” should now blink.



Extra Voice Zone - Lower Limit

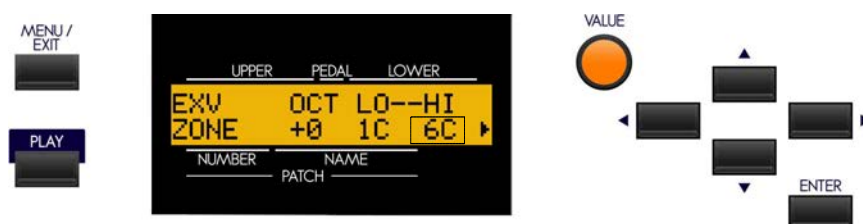
This Advanced Feature allows you to set the lowest note the Extra Voices will play. The data chart below shows the options you may select for your particular SK-series instrument.

EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

Turn the VALUE Rotary Control to the right to move the Lower Limit farther to the right on the keyboard.

Turn the VALUE Rotary Control to the left to move the Lower Limit farther to the left on the keyboard.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The number underneath the letters “RL” should now blink.



Extra Voice Zone - Upper Limit

This Advanced Feature allows you to set the highest note the Extra Voices will play. The data chart below shows the options you may select for your particular SK-series instrument.

EXTRA VOICE ZONE - Lower Limit Options	
Model	Options
SK1, SK2	1C ~ 6C
SK1-73	0F ~ 6F
SK1-88	0C ~ 8C

Turn the VALUE Rotary Control to the right to move the Upper Limit farther to the right.

Turn the VALUE Rotary Control to the left to move the Upper Limit farther to the left.

NOTE: The Upper Limit number can not be lower than the Lower Limit number.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look similar to this:



The lower line of the screen should now blink.

Extra Voice Category - Voice Selection

This Advanced Feature allows you to select the Extra Voices which will play for each Voice Category.

Touch the appropriate Touch Button for each Voice Category.

Turn the VALUE Rotary Control to the right to advance forward through the choices.

Turn the VALUE Rotary Control to the left to advance backward through the choices.

◆ Selecting Extra Voices

Touching any of the VOICE SELECT Touch Tabs will show the different Voice selections in each category in the Information Center Display.

Turn the VALUE Rotary Control to make your Voice selection.

NOTE: The number of Voices listed will vary from category to category. For a complete listing of built-in Extra Voices, consult the EXTRA VOICE Instrument List in the Appendix starting on page 148.

NOTE: The message, "1/1," indicates only one page for that particular Voice category. In the case of Voice categories having only one Page, touching the PAGE UP or PAGE DOWN Touch Buttons will have no effect.

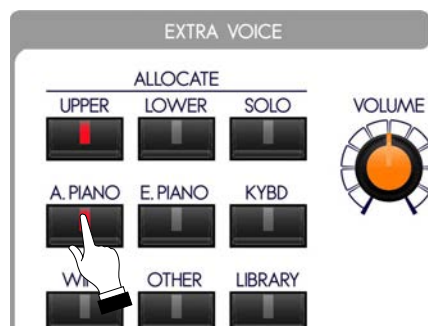
Making Voice Selections For Each Category

TRY THIS:

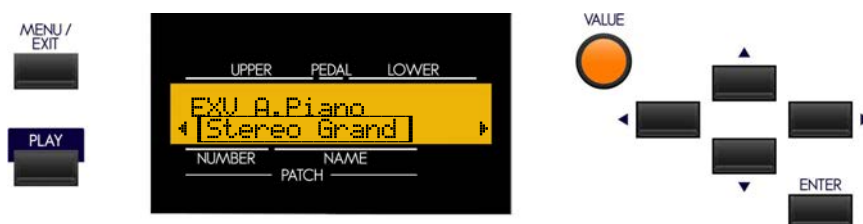
1. Touch the UPPER Touch Button. The red LED will light.



2. If the A.PIANO (Acoustic Piano LED is not lit, touch the A.PIANO Touch Tab.



The Information Center Display should now look similar to this:



The lower line of the display should now be blinking.

3. Play some notes. You will now hear the sound of an acoustic grand piano.

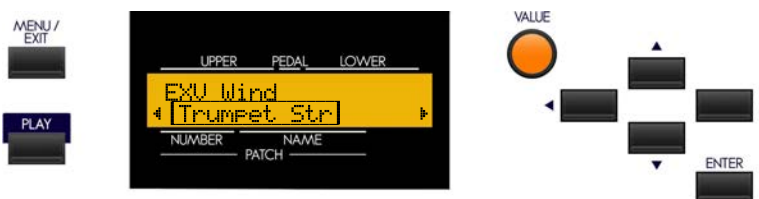
4. Now turn the VALUE Rotary Control until the Information Center Display shows the following:



5. Play some notes. You will now hear the sound of an electric grand piano.
6. Now touch the WIND Touch Tab.



The Information Center Display should now look similar to this:



The lower line of the display should now be blinking.

7. Play some notes. You will now hear the sound of a trumpet.

◆ SPECIAL NOTE - ProChord™

When you scroll through the Extra Voices in each Voice Category, you may have noticed the legend, “Pcd”



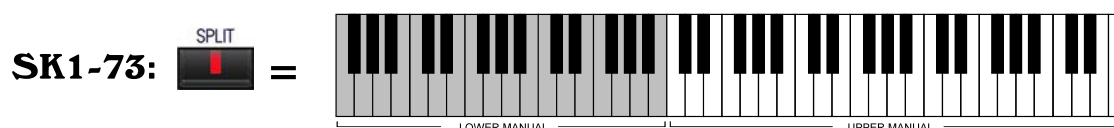
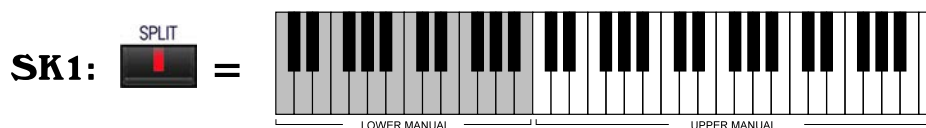
You will see “Pcd” in several of the Voice Names in the A.PIANO, WIND and OTHER Voice Categories.

“PCD” is an abbreviation for ProChord.™ The next paragraphs will explain in detail how to use the ProChord™ feature.

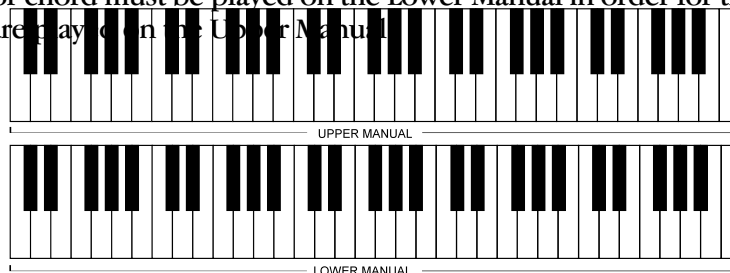
◆ What Is “ProChord™” - PLEASE READ

ProChord™ is a unique feature of certain Hammond Organ models, including the SK-series, which allows you to play professional right-hand harmony while playing a single-note melody. The harmonization applied to the melody is determined by which chord is played by the left hand.

On the SK1, the SPLIT feature must be enabled (SPLIT Touch Tab “ON”) and a note or chord played to the left of the Split point in order for the harmony to sound when notes are played to the right of the Split point.



On the SK2, a note or chord must be played on the Lower Manual in order for the ProChord harmony to sound when notes are played on the Upper Manual.

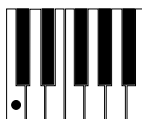


ProChord works like this: When notes or chords are played on a Lower Manual and a note is played on an Upper Manual, the note represented by the key played on the Upper Manual is heard along with a scored harmony pattern which sounds according to the Chord Root and Chord Type selected by the notes played on the Lower Manual. The Chord Root is the letter name of the chord (F, A, B^b, etc) while the Chord Type is the denomination of the chord (Major, Minor, Augmented, etc.). The ProChord feature on the SK-series instruments will recognize 26 different Chord Types in response to notes played on a Lower Manual. The following page will show how to play the five basic Chord Types using a minimum number of notes.

◆ ProChord™ Chords

Major Chords

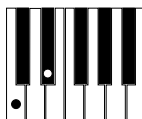
To play a Major chord, play the key that is the name of the chord you are playing. For example, to play a C Major chord, Play a "C" key on the Lower Manual.



Minor Chords

Minor Chords are formed by touching and holding two keys. To play a "C" Minor Chord, first touch and hold the key that is the NAME of the chord. Second, determine the note which is a minor third above the key you are holding by counting three (3) keys to the right not including the key you are holding. For a C Minor Chord, this note is "E^b":

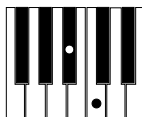
1. C
2. E^b



Seventh Chords

Forming a Seventh Chord requires touching and holding two keys. To play a "C" Seventh Chord, play the key that is the NAME of the chord. To determine the second key, count two (2) keys to the left of the first key (B^b if you are playing a C Seventh Chord). Do not include the first key in your count.

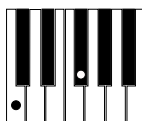
1. C
2. B^b



Diminished Chords

Forming a Diminished Chord requires touching and holding two keys. To play a "C" Diminished Chord, play the key that is the NAME of the chord. To determine the second key, count six (6) keys either to the left or the right of the first key (G^b if you are playing a C Diminished Chord). Do not include the first key in your count.

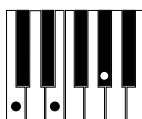
1. C
2. G^b



Augmented Chords

Forming an Augmented Chord requires touching and holding three keys. To play a "C" Augmented Chord, play the key that is the NAME of the chord. Next, count three (3) keys to the right. Finally, count three (3) more notes to the right of the key you just added. For a C Augmented Chord, these three notes are:

1. C
2. E
3. G[#]



NOTE: In addition to the above method, the entire chord can also be played to produce the same result.

◆ Using ProChord

TRY THIS:

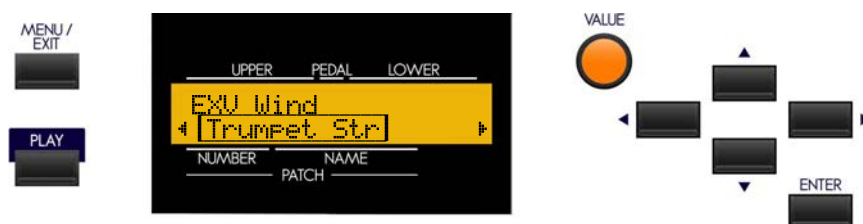
1. Touch the UPPER Touch Button in the EXTRA VOICE . The red LED will light.



2. If the WIND Touch Tab LED is not lit, touch the WIND Touch Tab.

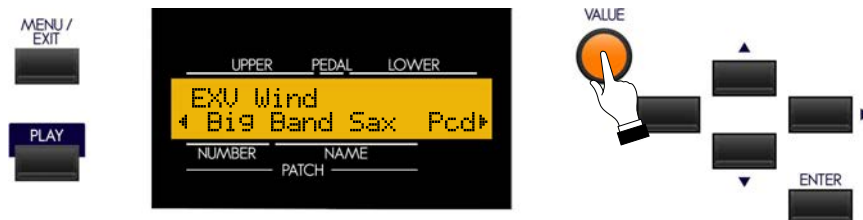


The Information Center Display should now look similar to this:



The lower line of the display should now be blinking.

- From the current screen, turn the VALUE Rotary Control until the Information Center Display looks similar to this:.



- For this example, touch the SOLO Touch Button so that only the Extra Voice will sound:



- Follow the directions below which apply to your instrument.
SK1, SK1-73, SK1-88 - Touch the SPLIT Touch button to enable Keyboard Split.
SK2 - Proceed to the next step.
- SK1 - Play a chord on the manual to the left of the Split point. Hold the keys down.
SK2 - Play a chord on the Lower Manual. Hold the keys down.
- While holding the keys down,
SK1 - Play a single-note melody to the right of the Split point.
SK2 - Play a single-note melody on the Upper Manual.

You will hear the melody note plus harmony notes underneath the melody.

The above instructions apply to all of the Extra Voices with ProChord. Each ProChord Extra Voice will be a melody note plus a different harmony pattern. The Big Band Sax pattern has a 5-part open-harmony pattern, for example, while the Old Time Pno pattern has a 4-part closed harmony pattern. There are also 2- and 3-part patterns. Feel free to experiment with the different ProChord choices; however, remember that the harmony will ONLY sound if Lower Manual notes are pressed and held while the melody is played.

NOTE: When a ProChord Extra Voice is selected, the Upper Manual becomes monophonic - if a chord is played with the right hand only one key will play. Therefore, when using Prochord play a single-note melody.

HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

PATCHES

&

FAVORITES

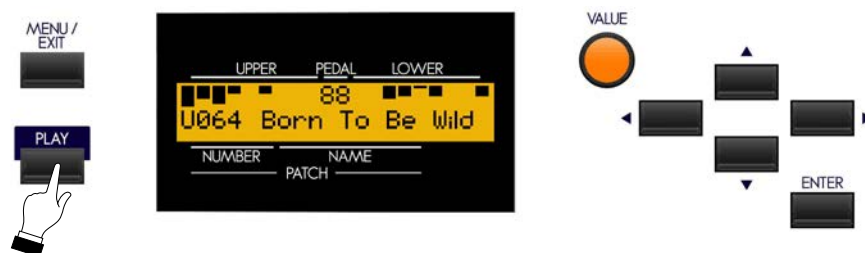
PATCHES & FAVORITES

Your SK-series instrument contains a large number of different types of sounds and a large number of ways to customize and tailor those sounds. In addition, many of the different types of sounds can be blended or mixed with each other to produce many unique tone colors. In the organ world, this mixing, blending and tailoring of sounds is called Registration. In the keyboard and synth world, a sound or group of sounds and effects is colloquially known as a Patch.. This term derives from old-style synthesizers which used patch cords (originally telephone switchboard-type cords) to connect the various components together to produce specific types of sounds. Although modern technology has rendered this technique unnecessary, the term “Patch” has remained. Each time a Patch is selected it will register a particular setting of the sounds and controls on the SK-series instrument.

◆ Selecting a Patch

TRY THIS:

1. Make sure the Information Center Display is in PLAY Mode. If it is not, touch the PLAY Touch Button once. The Information Center Display should now look similar to this:

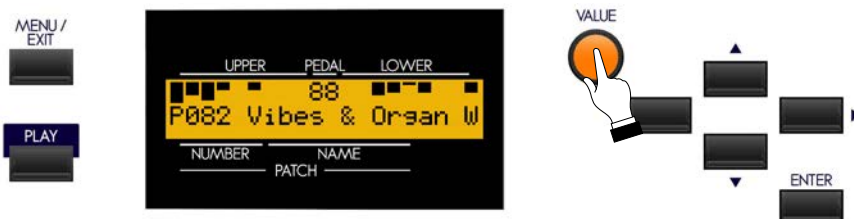


Notice that the bottom line displays a letter (“U” or “P”), a number and a name. The following paragraphs explain each portion of the bottom line of the display.

There are two categories of Patches on the SK - Preset and User. The Preset Patches are factory-programmed and cannot be changed. The User Patches are also factory-programmed; however, you can make changes to them or even overwrite them entirely in order to create your own custom Patches. In the Information Center Display, User Patches are designated by the letter “U,” and Preset Patches are designated by the letter “P.” Each category contains 100 Patches for a total of 200.

The three-digit number following the letter “U” or “P” refers to the currently selected Patch Number. The Patch Name appears to the right of the Patch Number.

2. From the above display, turn the VALUE Rotary Control to the right. You will see the numbers increase and the Patch Name change:

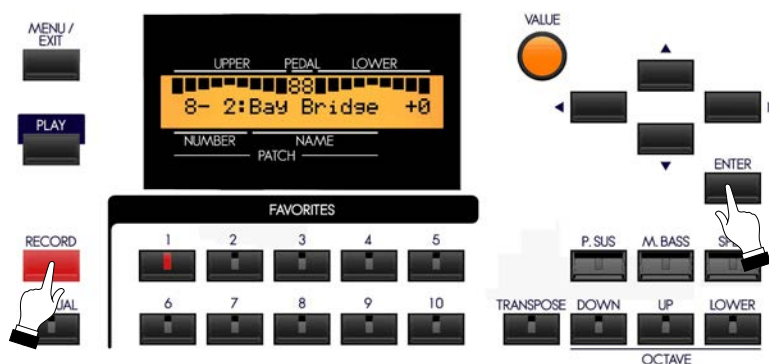


◆ Creating Your Own Patches

You can program the Patches with your own settings.

TRY THIS:

- 1 Set up a registration. For this example, use Drawbars, Voices or both together.
- 2 With your left hand, Touch and Hold the RECORD Touch Button.
- 3 Continue to hold the RECORD Touch Tab with your left hand. With your right hand, Touch the ENTER Touch Button.



The LED of the Preset that you touched will flash several times, indicating that the information is being stored. Once the LED stops blinking, the Recording process is complete.

After Patches have been saved, they can then be stored to a USB Flash Drive. This is covered in the USING THE USB PORT section of this Guide.

◆ PATCH Edit Menu

This Advanced Feature Menu allows you to customize the characteristics of the Patches.

To access the PATCH Edit Menu, do the following:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



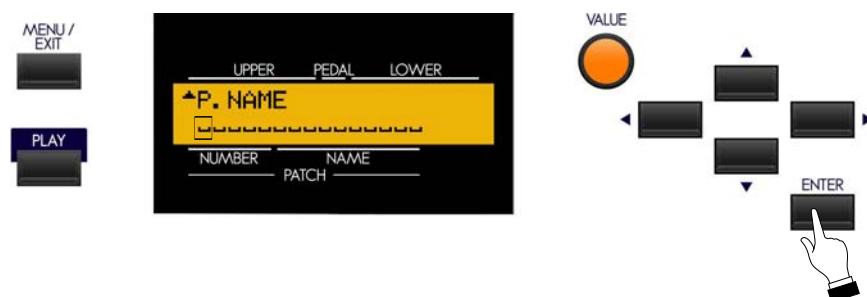
The word “DRAWBAR” should now be blinking.

2. Touch the PAGE RIGHT Touch Button twice. The Information Center Display should now look like this:



The word “PATCH” should now be blinking.

3. Now touch the ENTER Touch Button once. The Information Center Display should now look like this:



You are now in the PATCH Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make changes to the Patches. These changes are explained starting on the next page.

◆ Patch Name



This Advanced Feature allows you to name or re-name your User Patches.

Use the PAGE LEFT and PAGE RIGHT Select Touch Buttons move the cursor to select the character to be edited.

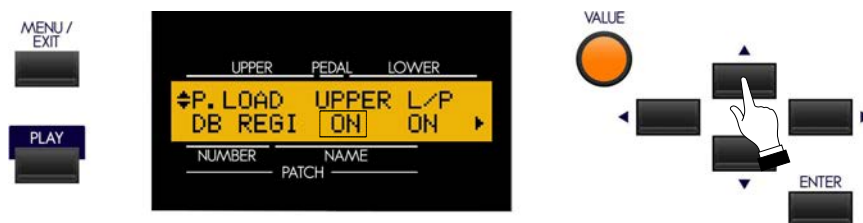
Turn the VALUE Rotary Control to the right to scroll forward through the characters.

Turn the VALUE Rotary Control to the left to scroll backward through the characters.

The available characters include: Punctuation Marks (space - . ' &), Numeric Characters (0 ~ 9), Upper-case Letters ("A ~ Z"), and Lower-case Letters ("a ~ z").

From the previous screen, touch the PAGE UP Touch Button once. The Information Center Display should now look like this:

◆ PATCH LOAD Menu Pages



The PATCH LOAD Menu Pages allow you to select which components of the instrument will be saved as part of a Patch. The next few pages will explain this in detail.

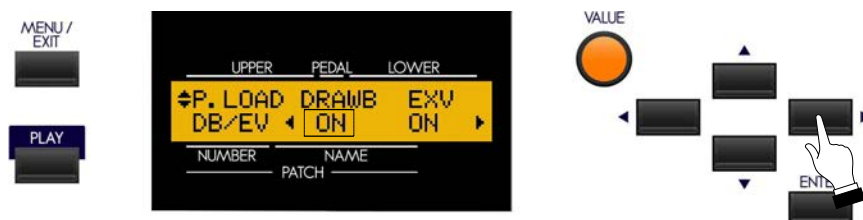
Patch Load - Drawbar Registration

This Advanced Feature allows you to select how the Drawbar Registration will be saved to a Patch. You can select whether you want to save the Upper Drawbar settings ("UPPER") or the Lower and Pedal Drawbar settings ("L/P").

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth between "UPPER" and "L/P."

Turn the VALUE Rotary Control to turn the selected function "ON" or "OFF."

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



PATCH LOAD - Voice Parameters

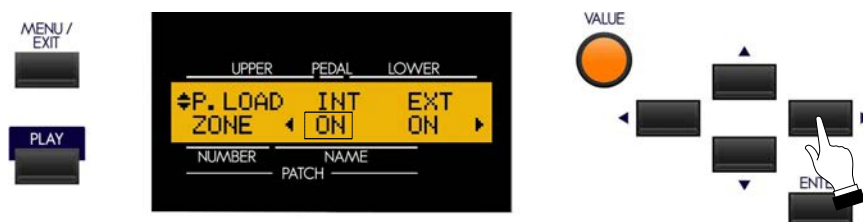
This Advanced Feature allows you to select whether Drawbar (“DRAWB”) and/or Extra Voice (“EXV”) parameters are saved to a Patch.

The Drawbar parameters include organ types (“Btype1,” “Farf,” “Pipe,” etc.) as well as Percussion settings. The Extra Voice parameters include Octave settings, Velocity settings, etc.

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth between “DRAWB” and “EXV.”

Turn the VALUE Rotary Control to turn the selected function “ON” or “OFF.”

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



PATCH LOAD - Zones

This Advanced Feature allows you to select whether the Internal (“INT”) or External (“EXT”) Zone information will be saved to a Patch.

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth between “INT” and “EXT.”

Turn the VALUE Rotary Control to turn the selected function “ON” or “OFF.”

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



PATCH LOAD - Effects

This Advanced Feature allows you to select whether Drawbar (“DRAWB”) and/or Extra Voice (“EXV”) Effects are saved to a Patch.

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth between “DRAWB” and “EXV.”

Turn the VALUE Rotary Control to turn the selected function “ON” or “OFF.”

◆ FAVORITES



In order to make the 200 inbuilt Patches easier to use in real-time performance, the SK-series gives you the ability to use the FAVORITES Touch Tabs to instantly access the Patches you use most frequently. The principle is similar to the buttons on the radio in an automobile which allow you to instantly find your most frequently listened-to stations.

The FAVORITES Touch Tabs are used one at a time. Touching a FAVORITES Touch Tab while another is active cancels the previous combination and selects the new one.

When the Information Center Display is in the PLAY Mode and a FAVORITE is activated, the Drawbar settings will change together with the names and volume settings of the Voices shown in the Information Center Display.

The Drawbar settings, Leslie, Vibrato, Percussion, Sustain and Volumes can be changed as you wish. However, if you touch another FAVORITES Touch Tab or the CANCEL Touch Tab, the settings you have changed will not be remembered. If you first Save the changes you have made, your changes will be remembered the next time you select that Preset.

NOTE: For a complete listing of Patch Parameters, consult the APPENDIX located at the back of this Guide.

◆ Advanced Features - FAVORITE

You can customize the way the FAVORITES work in several ways. These are explained starting below.

NOTE: Because the FAVORITES section works with the Patches, the Advanced Features which control the FAVORITES are located in the PATCH Edit Menu.

TRY THIS:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



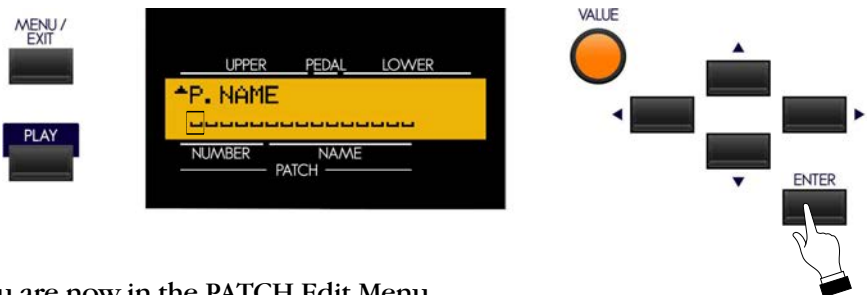
The word “DRAWBAR” should now be blinking.

2. Touch the PAGE RIGHT Touch Button twice. The Information Center Display should now look like this:



The word “PATCH” should now be blinking.

3. Touch the ENTER Touch Button once. The Information Center Display should now look like this:



You are now in the PATCH Edit Menu.

4. Touch the PAGE UP Touch Button once. The Information Center Display should now look like this:



Notice that the left side of the Information Center Display now shows, “FAVORITE,” and that the word just underneath the word “ACCESS” is blinking “on” and “off.” This means you are now in the portion of the PATCH Edit Menu that allows you to change certain features of the FAVORITES.

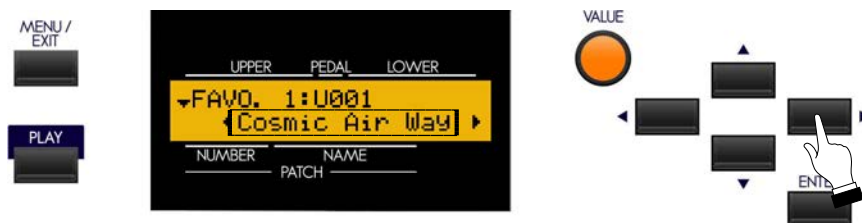
◆ Favorite - Access

This Advanced Feature allows you to determine the method by which Patches are accessed and saved to Favorites. The data chart below explains each of the settings.

FAVORITES Access Options	
Description	Function
ASSOCIATE	Allows you to associate a numbered Touch Button with a particular Patch. If you select a Patch, touch and hold the RECORD Touch Button and then touch a numbered FAVORITE Touch Button, the selected Patch will be stored as a Favorite. The Patch data is not changed.
OVERWRITE	Similar to ASSOCIATE except that if you select a Patch, touch and hold the RECORD Touch Button and then touch a numbered FAVORITE Touch Button, the selected Patch will be stored as a Favorite and the Patch data is also overwritten if you have made any changes after selecting a Patch.
LOCKED 1~10	The Patches currently stored in Favorites 1 through 10 are “locked” and cannot be overwritten or changed.
DIRECT	Allows you to use the numbered Touch Buttons as a numeric keypad. For example, if you want to play patch 78, simply touch “7,” “8” and the ENTER Touch Button.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



The legend on the lower line should be blinking.

◆ Favorite - Patch Load

This Advanced Feature allows you to determine which Patches are loaded into the Favorites. This is explained further in the next section.

◆ Loading a Patch Into a Favorite

You can customize the Favorites either with inbuilt Patches or with your own settings in three ways:

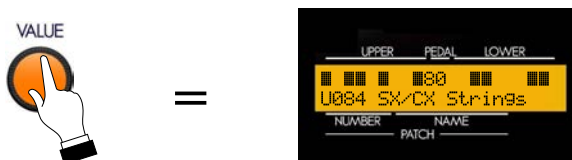
◆ Using the VALUE Rotary Control

TRY THIS:

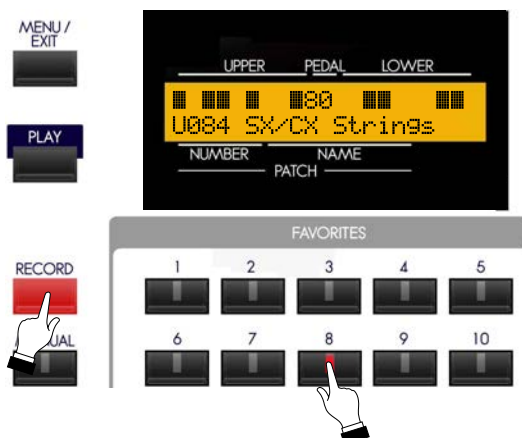
1. Touch the **PLAY Touch Button** so that the Information Center Display is in **PLAY Mode**.



2. Turn the **VALUE Rotary Control** to select the Patch you want to save as a Favorite.



4. Touch and Hold the RECORD Touch Button and touch the numbered Touch Button which represents the FAVORITE you want to update.



The lower line of the Information Center Display will briefly show:

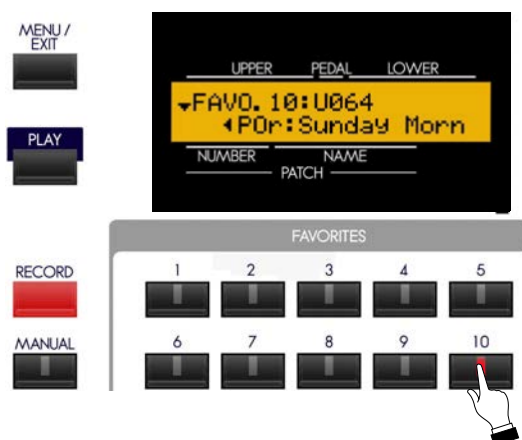
Recording Favorite...

When the above message disappears, the FAVORITE is updated with your selected Patch.

◆ Using the Shortcut from the FAVORITE Touch Buttons

TRY THIS:

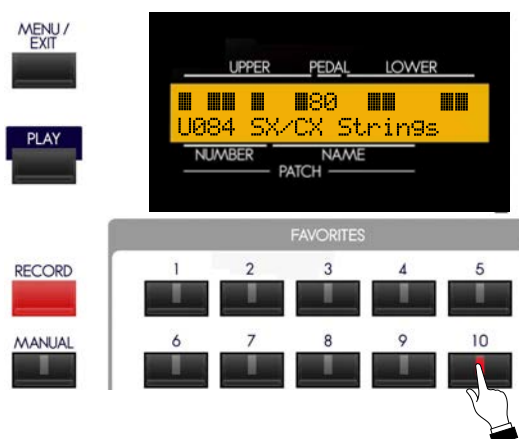
1. Touch and Hold a FAVORITE Touch Button - for example, number 10. After approximately 2 seconds, the Information Center Display should look like this:



2. Turn the VALUE Rotary Control to select the Patch you want to save as a Favorite.



3. Touch the numbered FAVORITE Touch Button you touched previously. It will now be updated with the new Patch.



◆ Using the MENU Touch Buttons

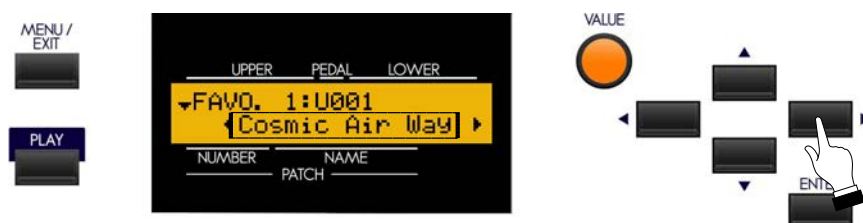
TRY THIS:

1. Follow the instructions starting on page 121 until the Information Center Display looks like this:



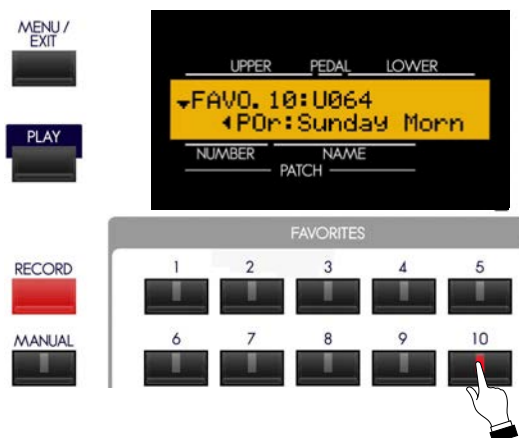
You are now in the FAVORITE portion of the PATCH Edit Menu. The legend underneath the word “ACCESS” should be blinking.

2. Touch the PAGE RIGHT Touch Button once to display Page 2 of the FAVORITE Advanced Feature Menu. The Information Center Display should now look like this:



When the Information Center Display is in this mode, touching any of the numbered FAVORITE Touch Buttons will show which Patch is loaded into that particular Favorite.

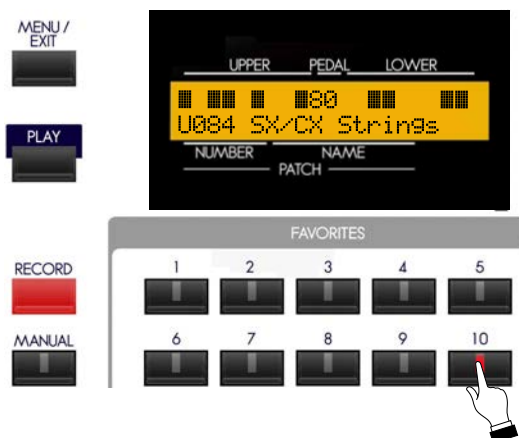
3. Touch one of the ten numbered FAVORITE Touch Buttons. The Information Center Display will show which Patch is currently loaded in that Favorite.



4. Turn the VALUE Rotary Control to select the Patch you want to save as a Favorite.



5. Touch the numbered FAVORITE Touch Button you touched previously. It will now be updated with the new Patch.



HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

EFFECTS

EFFECTS

You can add a number of effects to the different voices divisions of your SK-series instrument, such as Digital Multi-Effects Reverb.

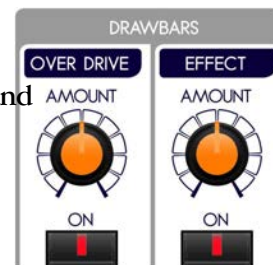
◆ EFFECTS Controls



The Effects Controls are located in the upper right portion of the Control Panel, and consist of four Touch Tabs and a Rotary Control associated with each Touch Tab.

◆ DRAWBAR Effects

These controls allow you to add Overdrive as well as Multi-Effects to the Drawbars, and to control the amount of the added effects.



◆ EXTRA VOICE Effects

These controls allow you to add Overdrive as well as Multi-Effects to the Extra Voices, and to control the amount of the added effects.



◆ OVERDRIVE\EFFECTS (OD\EFF) Edit Menu

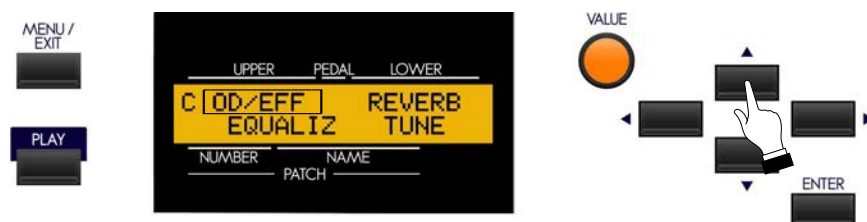
This Advanced Feature Menu allows you to add different effects to the Drawbar and Extra Voice sections.

Accessing the OD\EFF Edit Menu using the Touch Buttons:

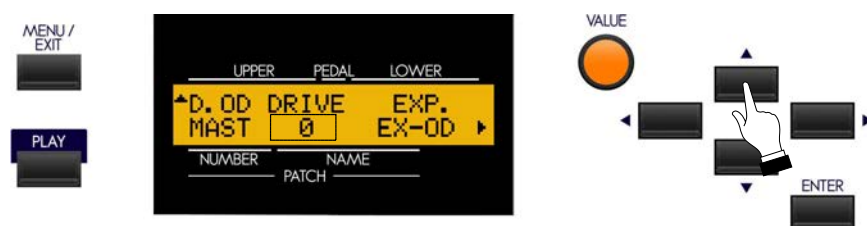
1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.



2. Touch the PAGE UP Touch Button two times. The legend "OD\EFF" in the upper left corner of the Information Center Display will be blinking.



3. Touch the ENTER Touch Button. The Information Center Display should now look like this:



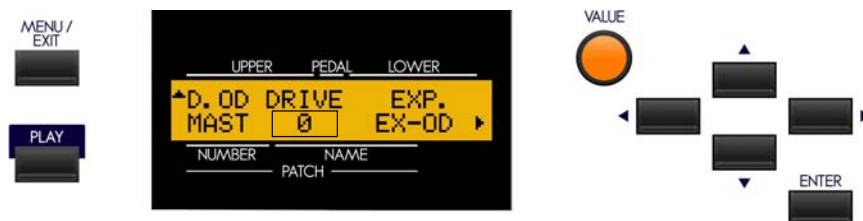
You are now in the OD\EFF Edit Menu.

The OD\EFF Edit Menu consists of four pages:

1. Drawbar Overdrive,
2. Drawbar Effects,
3. Extra Voice Overdrive,
4. Extra Voice Effects.

The next few pages will explain the Overdrive and Effects in the order in which they appear in the Information Center Display.

◆ Page 1 -DRAWBAR OVERDRIVE



When used with Drawbars, Overdrive adds the fuzzy, raspy, "dirty" sound created by the vacuum tubes of a tube-style Leslie Speaker when its volume is pushed past its sound limit.

NOTE: Drawbar Overdrive is available on organ types "BType1," "BType2," "Mellow," "Vx" and "Farf." It is not available for the "Pipe" organ type.

Drawbar Overdrive Amount

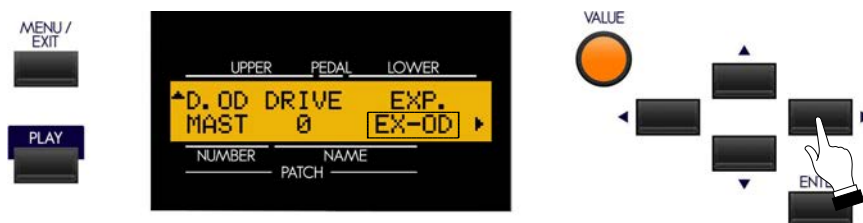
This Advanced Feature allows you to adjust the amount of Overdrive that you prefer. You can select a value from "0" (no Overdrive) to "127" (maximum Overdrive).

Turn either the VALUE or the DRAWBAR OVERDRIVE Rotary Control to the right to increase the Overdrive effect.

Turn either the VALUE or the DRAWBAR OVERDRIVE Rotary Control to the left to decrease the Overdrive effect.

NOTE: You can use the DRAWBAR OVERDRIVE Rotary Control to increase or decrease Overdrive while playing.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

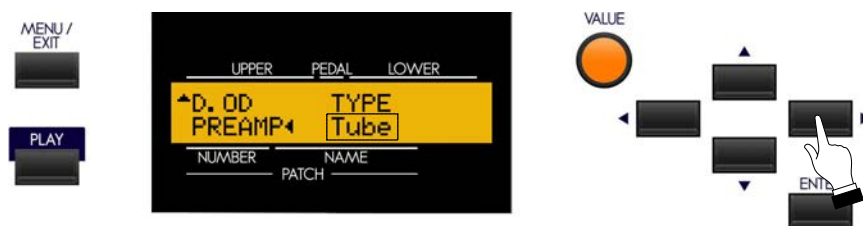


Drawbar Overdrive Expression Control

This Advanced Feature allows you to select whether you want to use a connected Expression Pedal to control overall Volume, the amount of Overdrive, or both. You can select "EX-OD" (the Expression Pedal will control both Volume and Overdrive), "OD-EX" (the Expression Pedal will control only the Volume), "OD ONLY" (the Expression Pedal will control only the amount of Overdrive), or "INPUT" (the Expression Pedal will control both Volume and Overdrive, but by a lesser amount than "EX-OD").

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

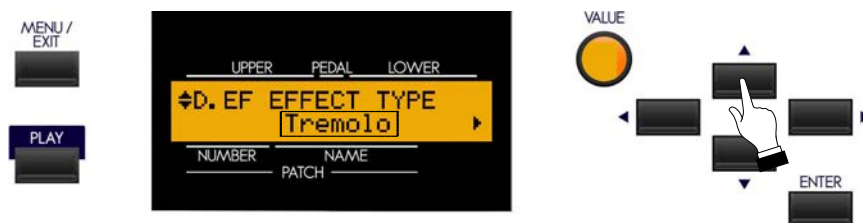


Drawbar Overdrive Type

This Advanced Feature allows you to select the type of Overdrive that will be applied to the Drawbars. Each different Overdrive type is intended to simulate a particular type of pre-amplifier or amplifier. You can select “Tube” (replicates the overdrive of a tube-driven amp), “Stomp” (replicates the overdrive of a Leslie combo preamp or “stomp box”), “Clip” (replicates the sound of an amplifier driven into “clipping” or distorting), or “EPamp” (replicates the pre-amplifier of an electric piano).

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE UP Touch Button** once. The Information Center Display should now look like this:



◆ Page 2 -DRAWBAR MULTI-EFFECTS

This Advanced Feature Menu Page allows you to select the Effects that will be added to the Drawbars when the **EFFECTS Touch Button** is “ON” (red LED lit). Turn the VALUE Rotary Control to make your selection.

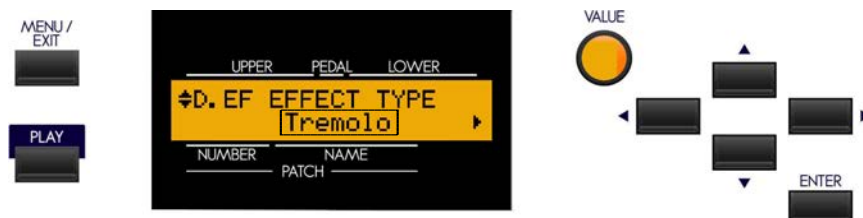
DRAWBAR MULTI-EFFECTS	
Description	Function
Tremolo	Raises and lowers the amplitude or volume.
Auto Pan	Moves the sound back and forth between Left and Right channels.
Wah-Wah	Adds and subtracts high frequencies.
Ring Modulation	Merges two frequencies together to produce a bell-like sound.
Phaser	Varies the phase relationship of two audio signals to each other.
Flanger	Mixes two identical signals together, and one of the signals is time-delayed by a very small amount.
Chorus	An enhancement to the sound similar to several instruments sounding in unison
Delay	Recycling the tone to create an echo effect.

NOTE: Drawbar Effects are available on all organ types except the “Pipe” organ type.

The next pages will describe the various Effects and the choices possible within each Effect.

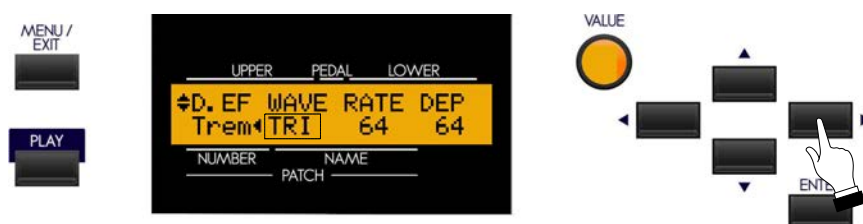
Drawbar Effects - Tremolo

If you followed the instructions on the previous page, the Information Center Display should look like this. If it does not, turn the VALUE Rotary Control until the word “Tremolo” appears on the bottom line of the display.



The word “Tremolo” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

You can now select the characteristics for the Tremolo.

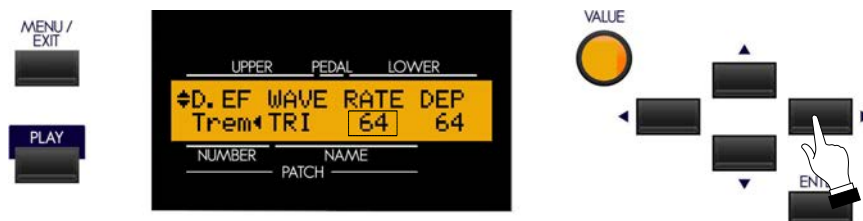
WAVE - Tremolo Waveform

This Advanced Feature allows you to select which waveform will be used to modulate the volume. The data chart below shows the options you may select.

Tremolo Wave Options	
Description	Function
TRI	Triangle wave, which will change the volume smoothly from loud to soft to loud
SQR	Square wave, which will cause the volume to rise and fall suddenly
SAW	Ascending Sawtooth wave, which will cause the volume to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the volume to rise and fall randomly.
DSQR	Dull Square wave - similar to SQR, but with a smoother rising and falling of the volume.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



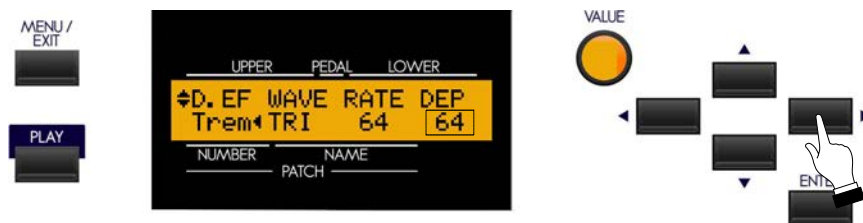
The legend underneath the word “WAVE” should be blinking.

RATE - Tremolo Rate

This Advanced Feature allows you to adjust the speed of the tremolo cycle. You can select from “0” (slowest rate) through “127” (fastest rate)

Turn either the **VALUE** or the **EFFECTS AMOUNT** Rotary Control to make your selection.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

DEP - Tremolo Depth

This Advanced Feature allows you to adjust the intensity or depth of the tremolo effect. You can select from “0” (no modulation) through “127” (maximum modulation).

Turn the **VALUE** Rotary Control to make your selection.

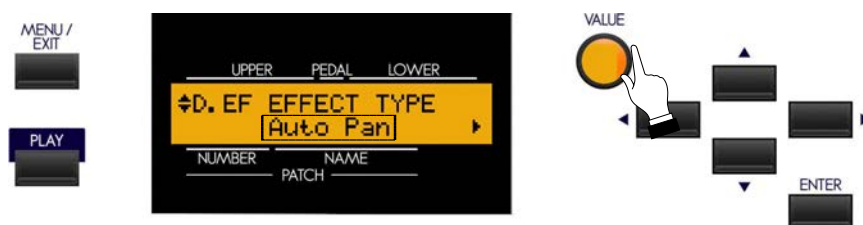
Drawbar Effects - Auto Pan

This Advanced Feature will smoothly shift or “pan” the sound back and forth between Left and Right channels.

NOTE: This Advanced Feature requires that both Left and Right channels be connected via the LINE OUT jacks on the Accessory Panel.

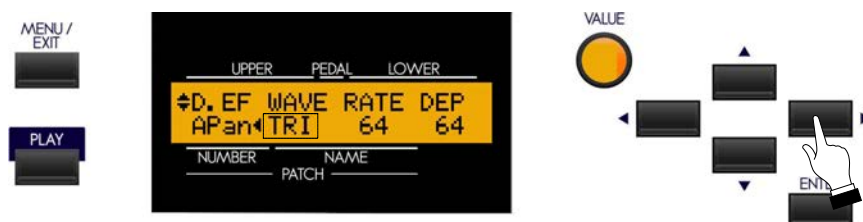
NOTE: This Advanced Feature does not affect the digital Leslie.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Auto Pan” does not display on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this:



The word “Auto Pan” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

You can now select the characteristics for the Auto Pan.

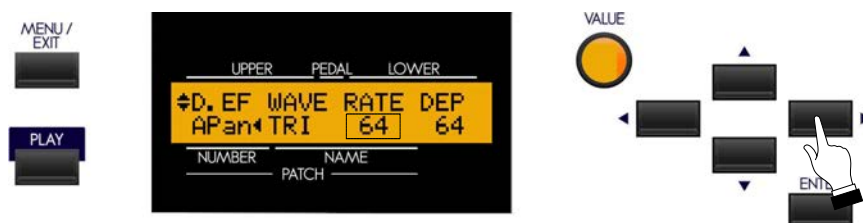
WAVE - Auto Pan Waveform

This Advanced Feature allows you to select which waveform will be used to modulate the panning effect. The data chart below shows the options you may select.

Auto Pan Wave Options	
Description	Function
TRI	Triangle wave, which will change the volume smoothly from loud to soft to loud
SQR	Square wave, which will cause the volume to rise and fall suddenly
SAW	Ascending Sawtooth wave, which will cause the volume to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the volume to rise and fall randomly.
DSQR	Dull Square wave - similar to SQR, but with a smoother rising and falling of the volume.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



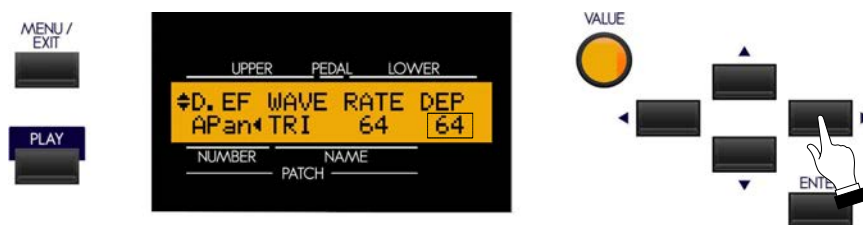
The legend underneath the word “RATE” should be blinking.

RATE - Auto Pan Rate

This Advanced Feature allows you to adjust the rate at which the sound moves from channel to channel. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn either the VALUE or the EFFECTS AMOUNT Rotary Control to make your selection.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

DEP - Auto Pan Depth

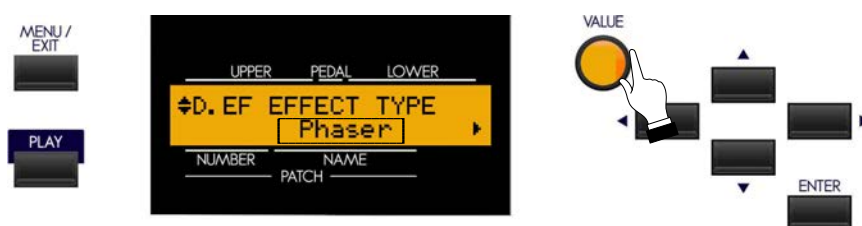
This Advanced Feature allows you to adjust the intensity or depth of the panning effect. You can select from “0” (no modulation) through “127” (maximum modulation).

Turn the VALUE Rotary Control to make your selection.

Drawbar Effects - Phaser

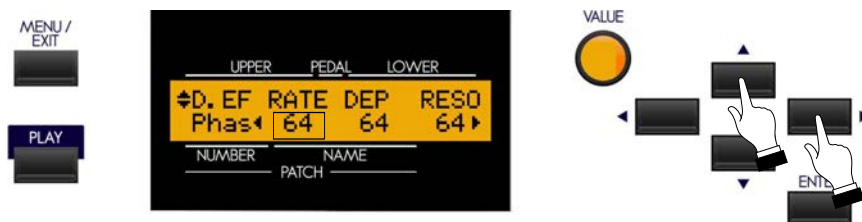
“Phaser” will create the effect of splitting an audio signal into two paths and varying their phase relationship to each other, resulting in an alternately hollow and full-bodied sound. It can be described as a “swooshing” or “twisting” effect.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Phaser” does not display on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Phaser” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “RATE” should be blinking.

You can now select the characteristics for the Phaser effect.

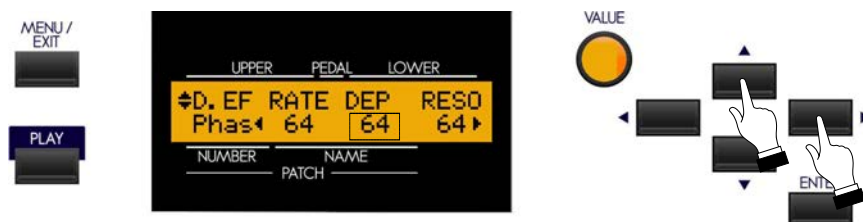
RATE - Phaser Rate

This Advanced Feature allows you to adjust the rate at which the sound moves in and out of phase. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn the VALUE Rotary Control to the right to make the rate faster.

Turn the VALUE Rotary Control to the left to make the rate slower.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “DEP” should be blinking.

DEP - Phaser Depth

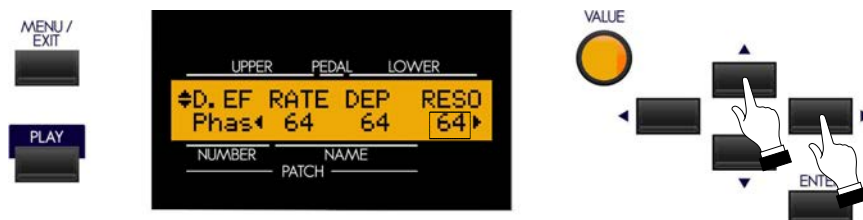
This Advanced Feature allows you to adjust the intensity or depth of the phasing effect. You can select from “0” (no phasing) through “127” (maximum phasing).

Turn either the VALUE or the DRAWBAR EFFECTS Rotary Control to the right to increase the amount of Phasing.

Turn either the VALUE or the DRAWBAR EFFECTS Rotary Control to the left to decrease the amount of Phasing.

NOTE: If you want to use the DRAWBAR EFFECTS Rotary Control, make sure to touch the “ON” Touch Button so that the red LED is lit, then use the Rotary Control to make your adjustments.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “RESO” should be blinking.

RESO - Phaser Resonance

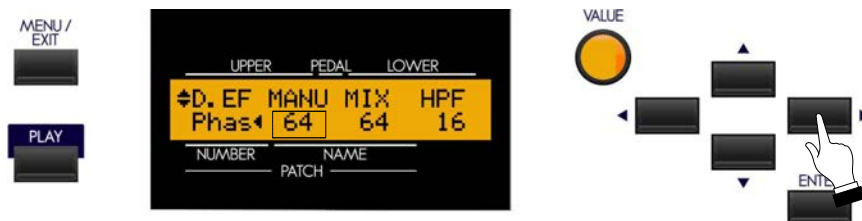
This Advanced Feature allows you to adjust the amount of feedback or “resonance” of the Phaser effect. You can select from “0” (minimum resonance) through “127” (maximum resonance).

NOTE: At the maximum setting, the feedback will be so pronounced that individual notes will no longer be recognizable as musical pitches.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “MANU” should be blinking.

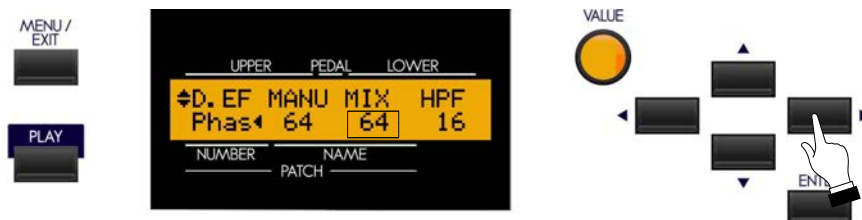
MANU - Phaser Center Frequency Manual Adjustment

This Advanced Feature allows you to adjust the central frequency of the Phaser effect. You can select from “0” (lowest frequency) through “127” (highest frequency).

Turn the VALUE Rotary Control to the right to increase the frequency.

Turn the VALUE Rotary Control to the left to decrease the frequency.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “MIX” should be blinking.

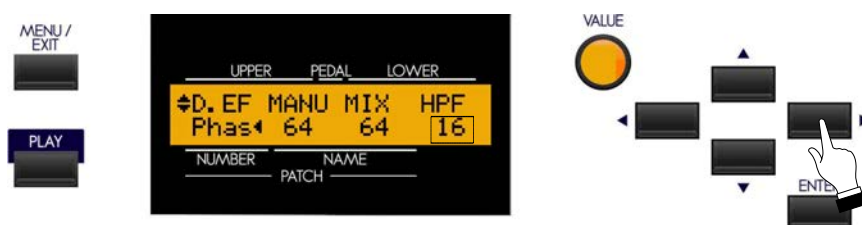
MIX - Phaser Mix

This Advanced Feature allows you to adjust the balance between the phased sound and “dry” (no phaser effect) sound. You can select from “0” (only the “dry” or unmodulated sound with no Phaser effect at all) through “127” (the Phaser effect and the dry signal are at equal volumes)

Turn the VALUE Rotary Control to the right to increase the amount of Phaser effect.

Turn the VALUE Rotary Control to the left to decrease the amount of Phaser effect.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “HPF” should be blinking.

HPF - Phaser High Pass Filter

This Advanced Feature allows you to adjust the frequency limit beyond which the Phaser effect is applied. You can select from “0” (the effect is added to all frequencies) through “127” (the effect is added to the upper frequencies only).

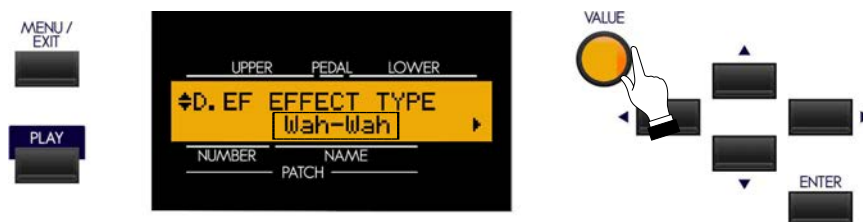
Turn the VALUE Rotary Control to the right to make the frequency limit higher .

Turn the VALUE Rotary Control to the left to make the frequency limit lower..

Drawbar Effects - Wah-Wah

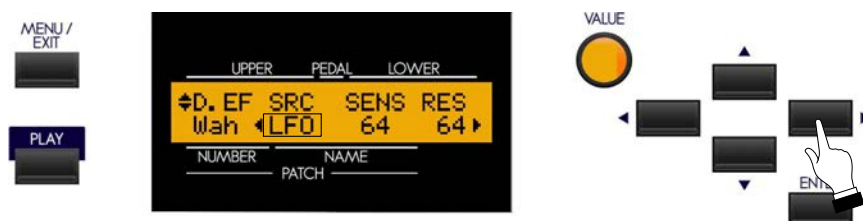
“Wah-Wah” is a periodic emphasis and de-emphasis of upper frequencies by means of a frequency filter to impart a speech-like quality to the sound. The term itself is descriptive of the sound produced (what grammaticians call an “onomatopoeia.”)

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Wah-Wah” does not display on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Wah Wah” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “SRC” should be blinking.

You can now select the characteristics for the Wah-Wah effect.

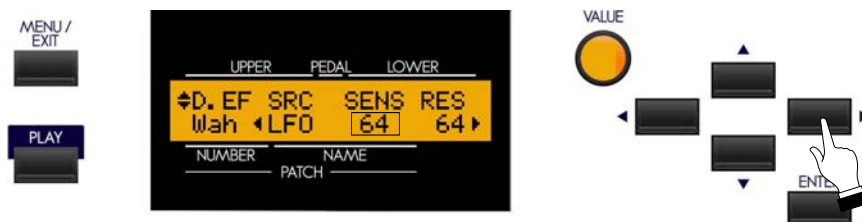
SRC - Wah-Wah Source

This Advanced Feature allows you to select how the Wah-Wah effect is controlled. The data chart below shows the options you may select.

Wah-Wah Source Options	
Description	Function
MAN	The effect is controlled by the DRAWBAR EFFECT Rotary Control
EXP	The effect is controlled by the Expression Pedal (the “Cry-Baby” effect)
LFO	The effect is controlled by the inbuilt Low-Frequency Oscillator

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



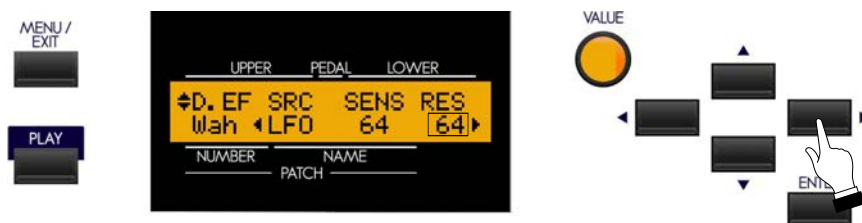
The legend underneath the word “SENS” should be blinking.

SENS - Wah-Wah Sensitivity

This Advanced Feature allows you to set the High and Low ranges of the Wah-Wah effect. You can select from “0” (minimum range) through “127” (maximum range).

NOTE: The effect of this Advanced Feature depends on the “SRC” (Source) setting. When “LFO” is selected, either the VALUE or the DRAWBAR EFFECT Rotary Control can be used to control the excursion of the Wah-Wah effect. When “EXP” is selected, either the Expression Pedal or the DRAWBAR EFFECT Rotary Control can be used to control the Wah-Wah sensitivity.

From the above screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



The legend underneath the word “RES” should be blinking.

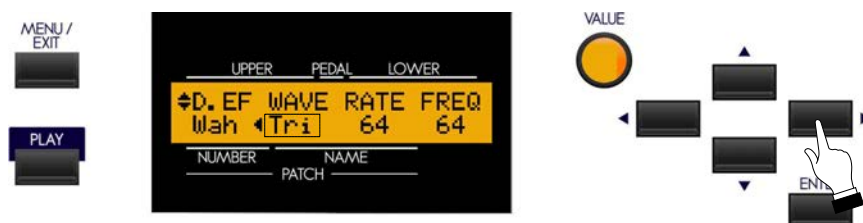
RES - Wah-Wah Resonance

This Advanced Feature allows you to set the resonance frequency of the Low-Pass Filter used to control the Wah-Wah effect. You can select from “0” (minimum resonance) through “127” (maximum resonance). At higher number settings the Wah-Wah effect becomes more pronounced and articulated.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

WAVE - Wah-Wah Waveform

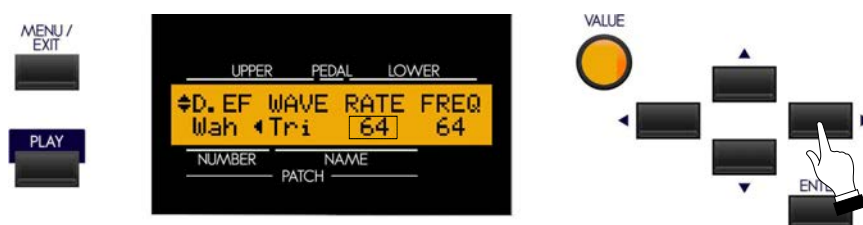
This Advanced Feature allows you to select which waveform will be used to modulate the Wah-Wah effect. The data chart below shows the options you may select.

Wah-Wah Wave Options	
Description	Function
TRI	Triangle wave, which will change the sound smoothly from high to low to high.
SQR	Square wave, which will cause the filter to rise and fall suddenly.
SAW	Ascending Sawtooth wave, which will cause the filter to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the filter to rise and fall randomly.

NOTE: The SOURCE must be set to “LFO” in order for this Advanced Feature to function.

Turn the VALUE Rotary Control to make your selection.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

RATE - Wah-Wah Rate

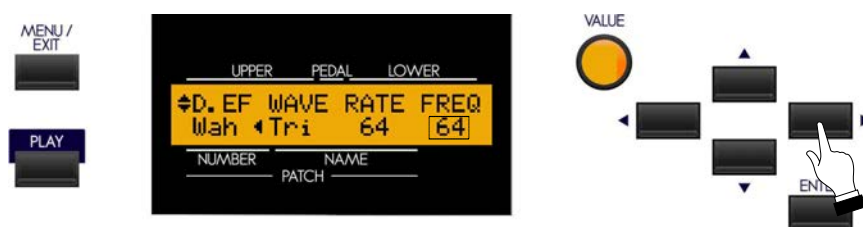
This Advanced Feature allows you to adjust the rate of the Wah-Wah effect. You can select from “0” (slowest rate) through “127” (fastest rate).

NOTE: The SOURCE must be set to “LFO” in order for this Advanced Feature to function.

Turn the VALUE Rotary Control to the right to make the rate faster.

Turn the VALUE Rotary Control to the left to make the rate slower.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “**FREQ**” should be *blinking*.

FREQ - Wah-Wah Frequency

This Advanced Feature allows you to adjust the central frequency of the Wah-Wah effect. You can select from “0” (lowest frequency) through “127” (highest frequency).

Turn the **VALUE** Rotary Control to the right to increase the frequency.

Turn the **VALUE** Rotary Control to the left to decrease the frequency.

NOTE: You can also use the **DRAWBAR EFFECT** Rotary Control to adjust this Advanced Feature; however, the **SOURCE** must be set to “MAN” in order to do this.

Drawbar Effects - Ring Modulation

“Ring modulation” is a signal-processing effect whereby two different frequencies are mixed together in such a way as to eliminate, as much as possible, the individual frequencies themselves, leaving only the sum and the difference of the two frequencies. In analog circuits, this is accomplished by arranging diodes in a circle or ring, giving rise to the term, “ring modulator.” The result is a sound rich in overtones and typically having somewhat of a bell-like or metallic quality. Because of this, the sound is sometimes called a “Klang tone.”

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Ring Mod.” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The words “Ring Mod” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “SRC” should be blinking.

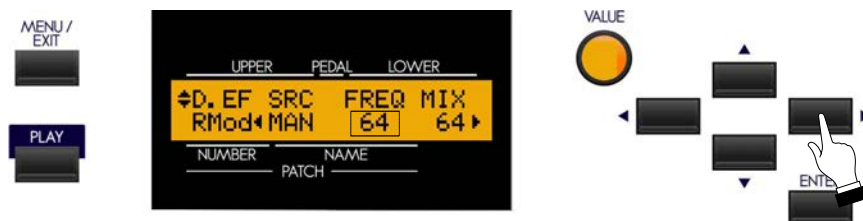
SRC - Source

Because a Ring Modulator requires two frequencies, there needs to be some way to control the “ring” frequency, or the frequency the sound produced by the playing keys will interface with. This Advanced Feature allows you to select how the ring frequency will be controlled. The data chart below shows the options you may select.

Ring Modulation Source Options	
Description	Function
MAN	Uses the DRAWBAR EFFECT Rotary Control to control the ring frequency.
EXP	Uses the Expression Pedal to control the ring frequency.
LFO	Uses the inbuilt Low-Frequency Oscillator to control the ring frequency.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



The legend underneath the word “FREQ” should be blinking.

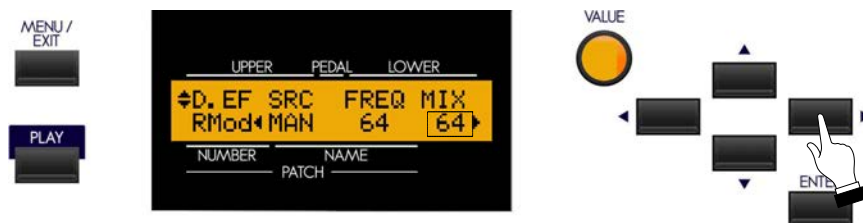
FREQ - Frequency

This Advanced Feature allows you to adjust the central ring frequency. You can select from “0” (lowest frequency) through “127” (highest frequency).

Turn either the VALUE or the DRAWBAR EFFECTS Rotary Control to the right to make the ring frequency higher.

Turn either the VALUE or the DRAWBAR EFFECTS Rotary Control to the left to make the ring frequency lower.

From the above screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



The legend underneath the word “MIX” should be blinking.

MIX

This Advanced Feature allows you to adjust the balance between the “dry” signal and the ring frequency. You can select from “0” (dry signal only) through “127” (ring frequency only).

Turn the VALUE Rotary Control to the right to increase the amount of the ring frequency.

Turn the VALUE Rotary Control to the left to decrease the amount of the ring frequency.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

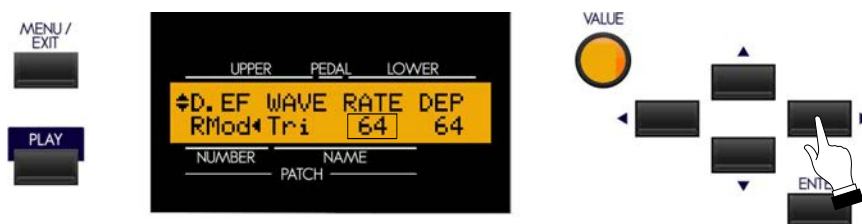
WAVE - Waveform

This Advanced Feature allows you to select which waveform will be used to modulate the ring frequency. The data chart below shows the options you may select.

Ring Modulation Wave Options	
Description	Function
TRI	Triangle wave, which will cause the ring frequency to rise and fall gradually.
SQR	Square wave, which will cause the ring frequency to rise and fall suddenly
SAW	Descending Sawtooth wave, which causes the ring frequency to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the ring frequency to rise and fall randomly.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

RATE

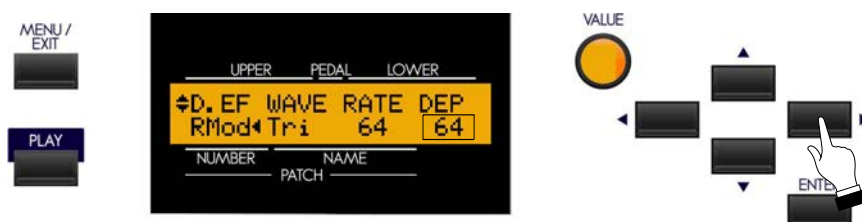
This Advanced Feature allows you to set the rate of the Low-Frequency Oscillator which can be used to modulate the ring frequency. You can select from “0” (slowest rate) through “127” (fastest rate).

NOTE: The SOURCE must be set to “LFO” for this Advanced Feature to work.

Turn the VALUE Rotary Control to the right to make the rate faster.

Turn the VALUE Rotary Control to the left to make the rate slower.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

DEP - Depth

This Advanced Feature Menu Page allows you to adjust the range of the excursion of the ring frequency. You can select from “0” (narrow range) through “127” (wide range).

NOTE: The SOURCE must be set to “LFO” or “EXP” for this Advanced Feature to work.

Turn the VALUE Rotary Control to the right to make the range wider.

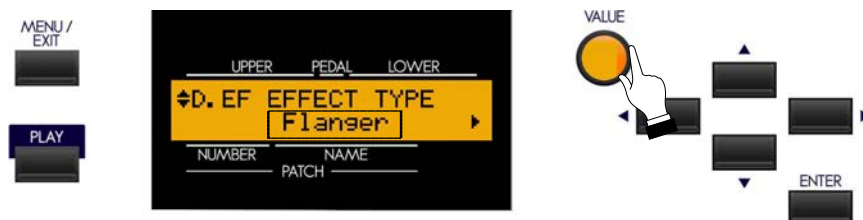
Turn the VALUE Rotary Control to the left to make the range narrower.

Drawbar Effects - Flanger

“Flanging” occurs when two identical signals are mixed together, and one of the signals is time-delayed by a very small amount. The small time delay produces peaks and valleys in the harmonic structure of the sound, resulting in a sweeping effect sometimes referred to colloquially as a “Jet Airplane” sound.

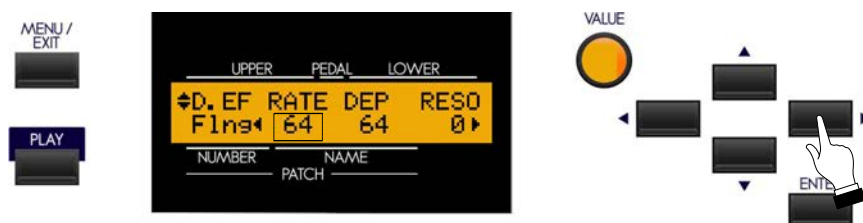
The term, “Flanger” derives from the means originally used to produce this effect. Two tape machines turning at exactly the same speed would play the same material into a third machine, and an engineer would drag his finger along the flange or outer edge of the tape reel, thereby causing the small time delay and creating the sweeping effect.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Flanger” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Flanger” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

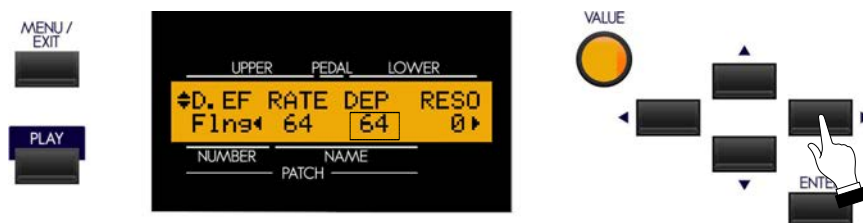
RATE - Flanger Rate

This Advanced Feature allows you to set the rate of the Flange effect. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn either the VALUE or the DRAWBAR EFFECT Rotary Control to the right to make the rate faster.

Turn either the VALUE or the DRAWBAR EFFECT Rotary Control to the left to make the rate slower.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

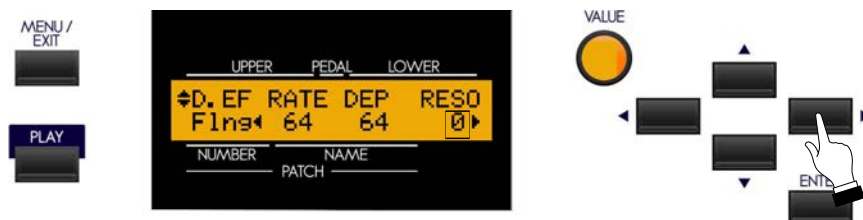
DEP - Flanger Depth

This Advanced Feature allows you to set the depth of the Flange effect. You can select from “0” (minimum depth) through “127” (maximum depth).

Turn the VALUE Rotary Control to the right to increase the depth.

Turn the VALUE Rotary Control to the left to decrease the depth.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RESO” should be blinking.

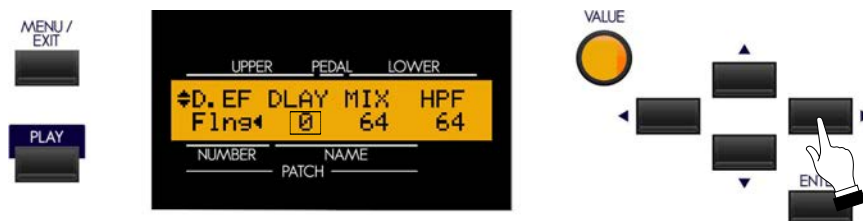
RESO - Flanger Resonance

This Advanced Feature allows you to adjust the amount of resonance or “feed-back.” of the Flange effect. You can select from “0” (minimum resonance) through “127” (maximum resonance). At higher values, the sound becomes increasingly distorted.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DLAY” should be blinking.

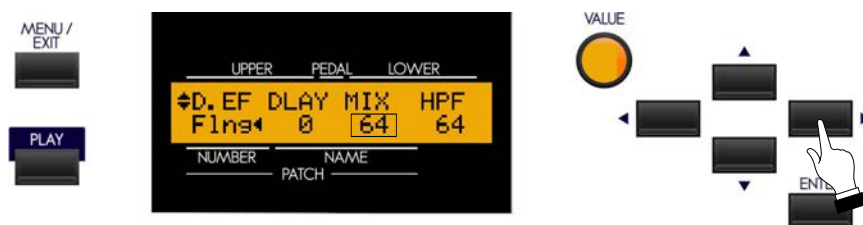
DLAY - Flanger Delay

This Advanced Feature allows you to set the delay of the Flange effect. You can select from “0” (minimum delay) through “127” (maximum delay).

Turn the VALUE Rotary Control to the right to lengthen the Delay.

Turn the VALUE Rotary Control to the left to shorten the Delay.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “MIX” should be blinking.

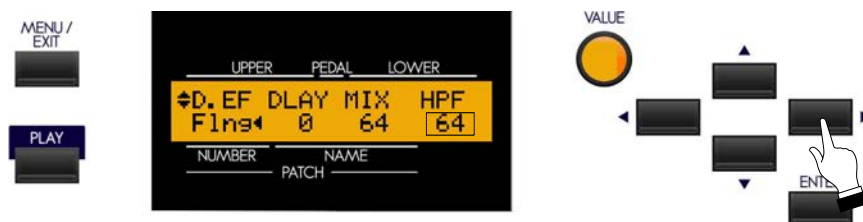
MIX - Flanger Mix

This Advanced Feature allows you to adjust the balance between the “dry” sound and the Flange effect. You can select from “0” (“dry” sound only - no Flange effect) through “127” (the dry sound and the Flanged sound are at equal levels).

Turn the VALUE Rotary Control to the right to increase the amount of Flanged signal.

Turn the VALUE Rotary Control to the left to decrease the amount of Flanged signal.

*From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:*



The legend underneath the word “HPF” should be blinking.

HPF - Flanger High-Pass Filter

This Advanced Feature allows you to adjust the frequency limit beyond which the Flange effect is applied. You can select from “0” (the effect is added to all frequencies) through “127” (the effect is added to the upper frequencies only).

Turn the VALUE Rotary Control to the right to make the frequency limit higher .

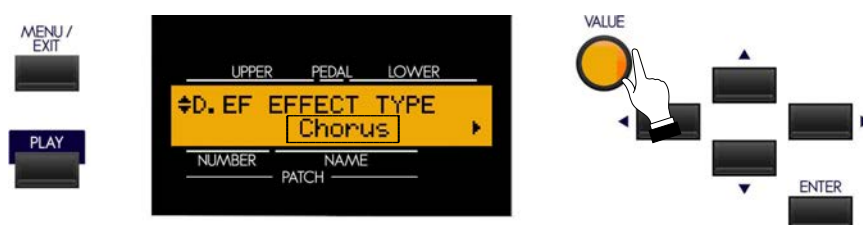
Turn the VALUE Rotary Control to the left to make the frequency limit lower.

Drawbar Effects - Chorus

“Chorus” refers to a shimmering, non-periodic enhancement of the sound. It is intended to be similar to several instruments sounding in unison, and is helpful when a thicker tonal texture is desired.

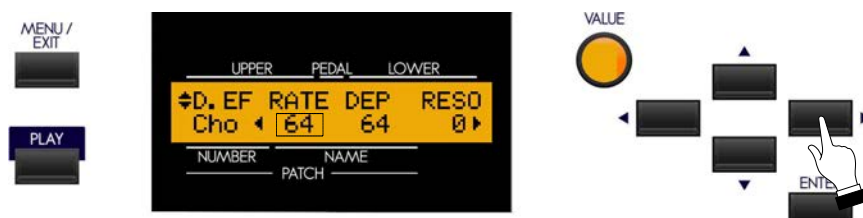
NOTE: Do not confuse this Chorus with the regular Vibrato/Chorus effect. The Chorus Advanced Feature, as mentioned, is non-periodic or “random” sounding. With the Vibrato Chorus, a “cycle” is clearly audible.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Chorus” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Chorus” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

You can now select the characteristics for the Chorus.

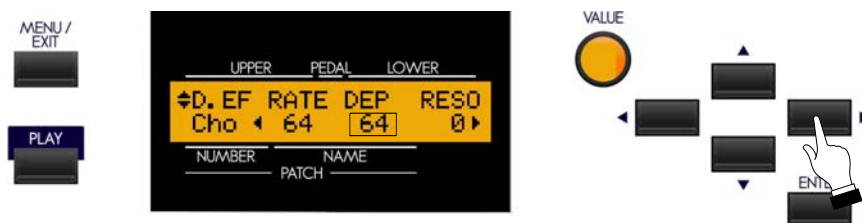
RATE - Chorus Rate

This Advanced Feature allows you to adjust the rate of the Chorus effect. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn either the VALUE or the DRAWBAR EFFECT Rotary Control to the right to make the rate faster.

Turn either the VALUE or the DRAWBAR EFFECT Rotary Control to the left to make the rate slower.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

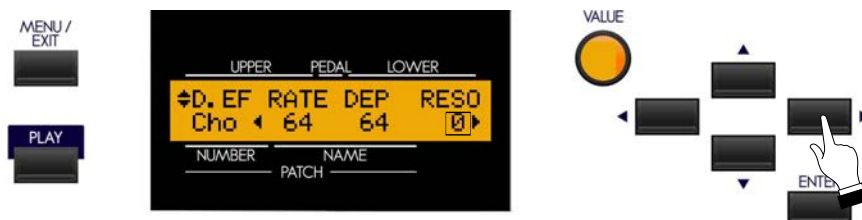
DEP - Chorus Depth

This Advanced Feature allows you to adjust the intensity or depth of the Chorus effect. You can select from “0” (minimum Chorus) through “127” (maximum Chorus).

Turn the VALUE Rotary Control to the right to increase the amount of Phasing.

Turn the VALUE Rotary Control to the left to decrease the amount of Phasing.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

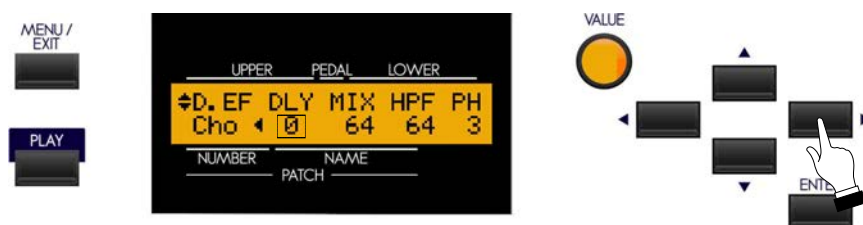
RESO - Chorus Resonance

This Advanced Feature allows you to adjust the amount of resonance or “feed-back.” You can select from “0” (minimum resonance) through “127” (maximum resonance). At higher number settings the sound is modulated to an extreme amount.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

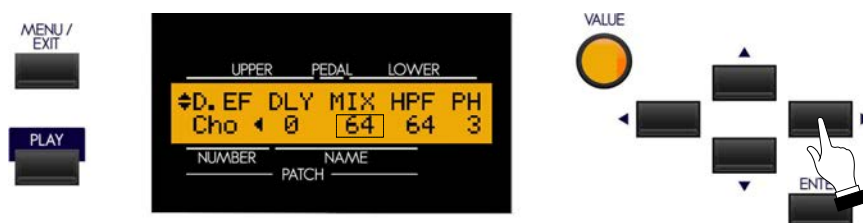


The legend underneath the word “RATE” should be blinking.

DLY - Chorus Delay

Controls the delay of the effect sound. The setting range is 0 to 127. The delay becomes greater as the value increases.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

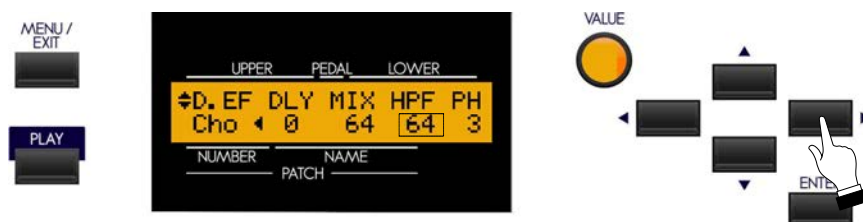


The legend underneath the word “MIX” should be blinking.

MIX - Chorus Rate

Adjusts the volume balance between the “dry” and the effect sound. The setting range is 0 to 127. At 0, only the “dry” is heard. The effect level becomes greater as the value increases. At 127 the ratio between the “dry” and the effect sounds becomes 1:1.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

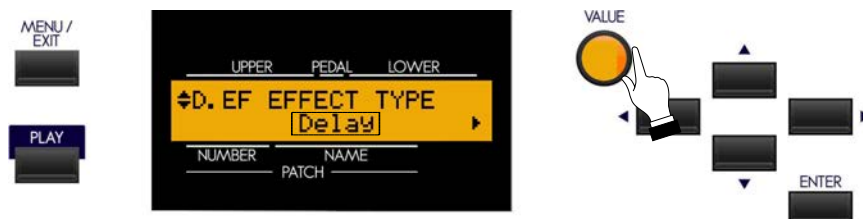
HPF - Chorus High-Pass Filter

Controls the frequency range of the effect. The setting range is 0 to 127. At 0, the effect is added to all frequencies. The effect is added to the higher frequencies as the value increases.

Drawbar Effects - Delay

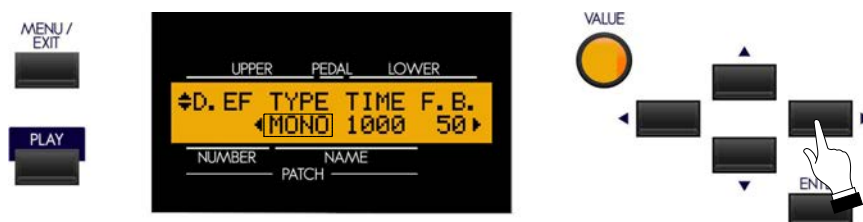
“Delay” allows you to add echo effects to the Drawbar tones.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Delay” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Delay” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “TYPE” should be blinking.

You can now select the characteristics for the Delay.

TYPE - Delay Type

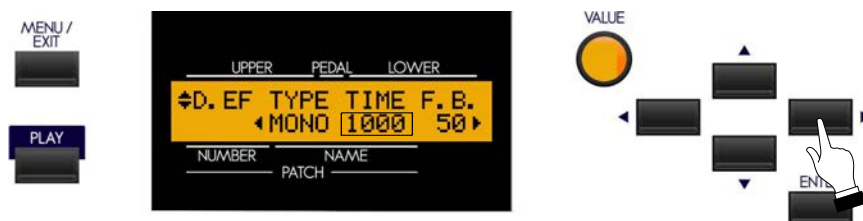
This Advanced Feature allows you to select which waveform will be used to modulate the panning effect. Turn the VALUE Rotary Control to make your selection.

The data chart below shows the options you may select.

Delay Type Options	
Description	Function
MONO	A simple, non-directional echo.
*RtoL	The echo repeats gradually pan from Right to Left.
*LtoR	The echo repeats gradually pan from Left to Right.

* - This effect will not be heard if only one of the LINE OUT jacks is connected, or if a Leslie Speaker is connected.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “TIME” should be blinking.

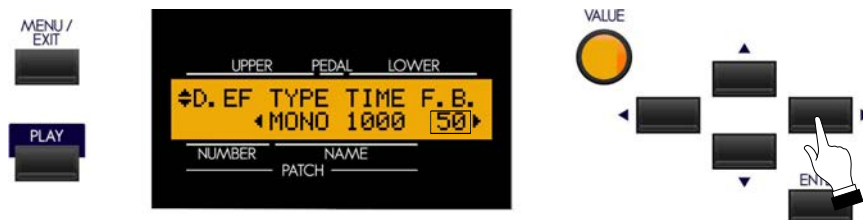
TIME - Delay Time

This Advanced Feature allows you to adjust the amount of time between the original sound and the first echo repeat, as well as the amount of time between each successive repetition. You can select from “10” to “1000” milliseconds.

Turn either the VALUE or the DRAWBAR EFFECT Rotary Control to the right to increase the Delay Time.

Turn either the VALUE or the DRAWBAR EFFECT Rotary Control to the left to decrease the Delay Time.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

F.B. - Delay Feedback

This Advanced Feature allows you to control the number of repetitions added to the original sound. You can select from “0” (minimum number of echo repeats) through “127” (maximum number of echo repeats).

Turn the VALUE Rotary Control to the right to increase the number of echo repetitions.

Turn the VALUE Rotary Control to the left to decrease the number of echo repetitions.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

MIX - Delay Mix

This Advanced Feature allows you to adjust the balance between the echo repeats and the “dry” (no Delay) sound. You can select from “0” (only the “dry” sound with no Delay effect at all) through “127” (only the echo repeats are heard with no dry sound).

NOTE: At a setting of “64,” the “dry” or original sound and the echo repetitions are equally balanced.

Turn the VALUE Rotary Control to the right to increase the Delay amount.

Turn the VALUE Rotary Control to the left to decrease the Delay amount.

◆ Page 3 -EXTRA VOICE OVERDRIVE



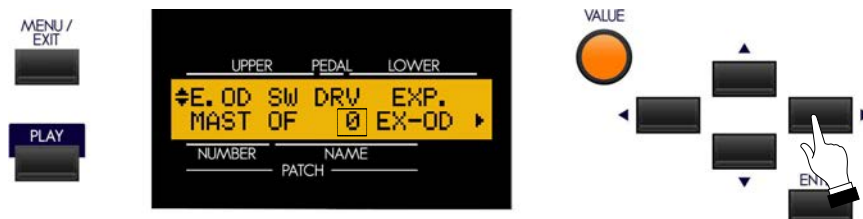
When used with Drawbars, Overdrive adds the fuzzy, raspy, "dirty" sound created by the vacuum tubes of a tube-style Leslie Speaker when its volume is pushed past its sound limit.

Extra Voice Overdrive ON/OFF

This Advanced Feature turns the Overdrive effect “ON” or “OFF” for the Extra Voices.

Turn the VALUE Rotary Control to select either “ON” or “OFF.”

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

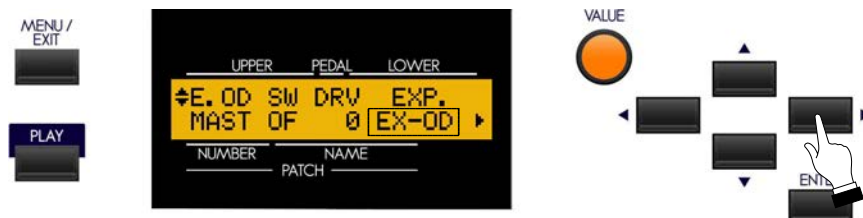
Extra Voice Overdrive Amount

This Advanced Feature allows you to adjust the amount of Overdrive that you prefer. You can select a value from “0” (no Overdrive) to “127” (maximum Overdrive).

Turn the VALUE Rotary Control to the right to increase the Overdrive effect.

Turn the VALUE Rotary Control to the left to decrease the Overdrive effect.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

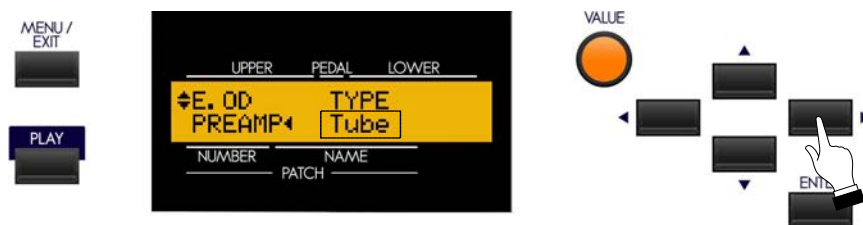


Extra Voice Overdrive Expression Control

This Advanced Feature allows you to select whether you want to use a connected Expression Pedal to control overall Volume, the amount of Overdrive, or both. You can select “EX-OD” (the Expression Pedal will control both Volume and Overdrive), “OD-EX” (the Expression Pedal will control only the Volume), “OD ONLY” (the Expression Pedal will control only the amount of Overdrive), or “INPUT” (the Expression Pedal will control both Volume and Overdrive, but by a lesser amount than “EX-OD”).

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:

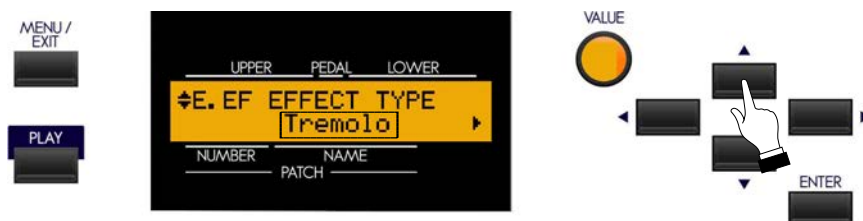


EXTRA VOICE Overdrive Type

This Advanced Feature allows you to select the type of Overdrive that will be applied to the EXTRA VOICES. Each different Overdrive type is intended to simulate a particular type of pre-amplifier or amplifier. You can select “Tube” (replicates the overdrive of a tube-driven amp), “Stomp” (replicates the overdrive of a Leslie combo preamp or “stomp box”), “Clip” (replicates the sound of an amplifier driven into “clipping” or distorting), or “EPamp” (replicates the pre-amplifier of an electric piano).

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE UP** Touch Button once. The Information Center Display should now look similar to this:



◆ Page 4 -EXTRA VOICE MULTI-EFFECTS

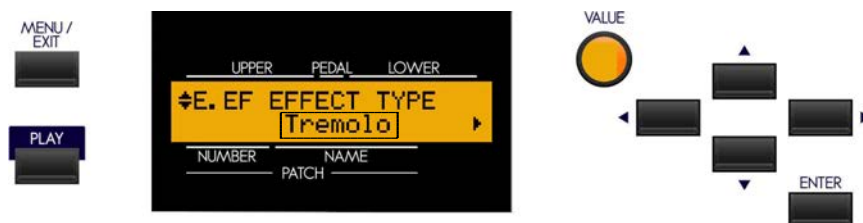
This Advanced Feature Menu Page allows you to select the Effects that will be added to the EXTRA VOICES when the EFFECTS Touch Button is “ON” (red LED lit). Turn the VALUE Rotary Control to make your selection.

EXTRA VOICE MULTI-EFFECTS	
Description	Function
Tremolo	Raises and lowers the amplitude or volume.
Auto Pan	Moves the sound back and forth between Left and Right channels.
Wah-Wah	Adds and subtracts high frequencies.
Ring Modulation	Merges two frequencies together to produce a bell-like sound.
Phaser	Varies the phase relationship of two audio signals to each other.
Flanger	Mixes two identical signals together, and one of the signals is time-delayed by a very small amount.
Chorus	An enhancement to the sound similar to several instruments sounding in unison
Delay	Recycling the tone to create an echo effect

The next pages will describe the various Effects and the choices possible within each Effect.

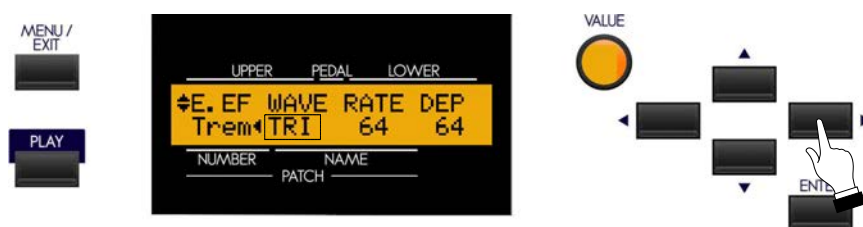
Extra Voice Effects - Tremolo

If you followed the above instructions, the Information Center display should look like this. If it does not, turn the VALUE Rotary Control until the word “Tremolo” appears on the bottom line of the display.



The word “Tremolo” should be blinking.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

You can now select the characteristics for the Tremolo.

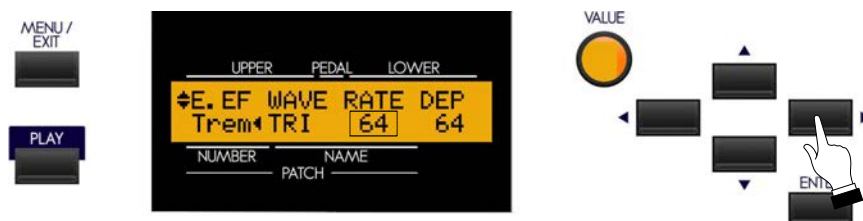
WAVE - Tremolo Waveform

This Advanced Feature allows you to select which waveform will be used to modulate the volume. Turn the VALUE Rotary Control to make your selection.

The data chart below shows the options you may select.

Tremolo Wave Options	
Description	Function
TRI	Triangle wave, which will change the volume smoothly from loud to soft to loud
SQR	Square wave, which will cause the volume to rise and fall suddenly
SAW	Ascending Sawtooth wave, which will cause the volume to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the volume to rise and fall randomly.
DSQR	Dull Square wave - similar to SQR, but with a smoother rising and falling of the volume.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



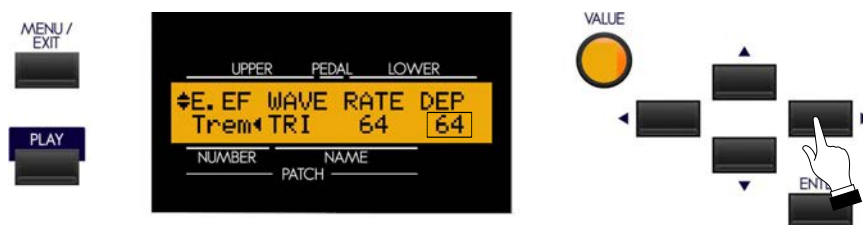
The legend underneath the word “WAVE” should be blinking.

RATE - Tremolo Rate

This Advanced Feature allows you to adjust the speed of the tremolo cycle. You can select from “0” (slowest rate) through “127” (fastest rate)

Turn either the VALUE or the EFFECTS AMOUNT Rotary Control to make your selection.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

DEP - Tremolo Depth

This Advanced Feature allows you to adjust the intensity or depth of the tremolo effect. You can select from “0” (no modulation) through “127” (maximum modulation).

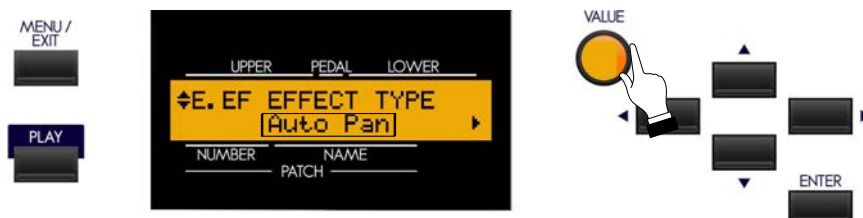
Turn the VALUE Rotary Control to make your selection.

Extra Voice Effects - Auto Pan

This Advanced Feature will smoothly shift or “pan” the sound back and forth between Left and Right channels.

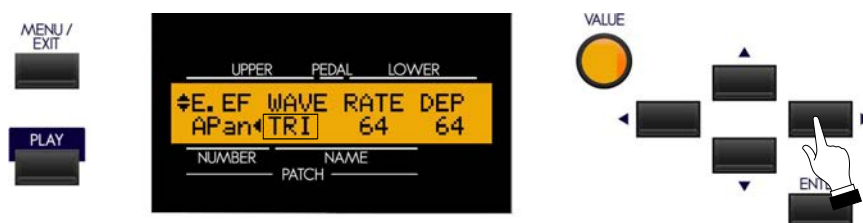
NOTE: This Advanced Feature requires that both Left and Right channels be connected via the LINE OUT jacks on the Accessory Panel.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Auto Pan” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Auto Pan” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

You can now select the characteristics for the Auto Pan.

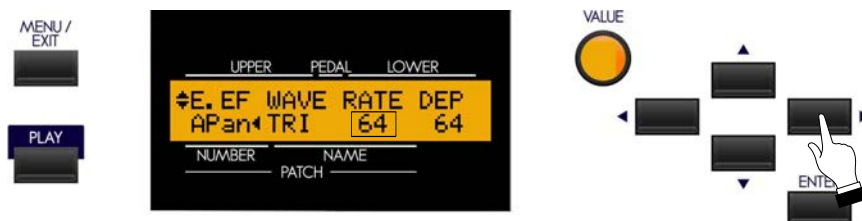
WAVE - Auto Pan Waveform

This Advanced Feature allows you to select which waveform will be used to modulate the panning effect. Turn the VALUE Rotary Control to make your selection.

The data chart below shows the options you may select.

Auto Pan Wave Options	
Description	Function
TRI	Triangle wave, which will change the volume smoothly from loud to soft to loud
SQR	Square wave, which will cause the volume to rise and fall suddenly
SAW	Ascending Sawtooth wave, which will cause the volume to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the volume to rise and fall randomly.
DSQR	Dull Square wave - similar to SQR, but with a smoother rising and falling of the volume.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



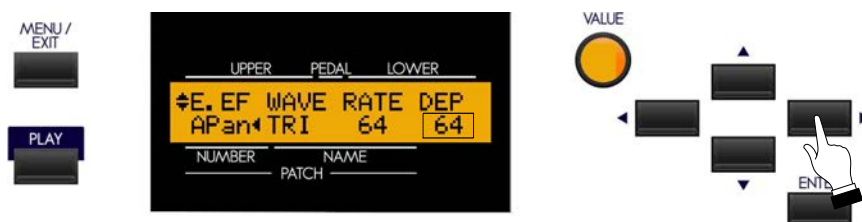
The legend underneath the word “RATE” should be blinking.

RATE - Auto Pan Rate

This Advanced Feature allows you to adjust the rate at which the sound moves from channel to channel. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn either the VALUE or the EFFECTS AMOUNT Rotary Control to make your selection.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

DEP - Auto Pan Depth

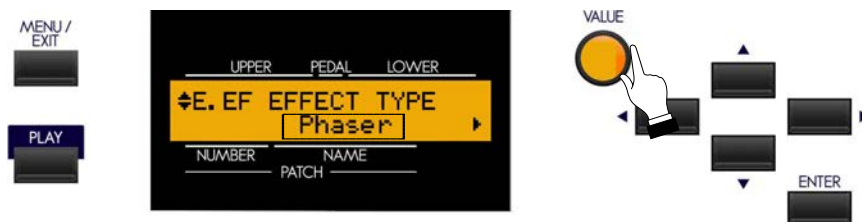
This Advanced Feature allows you to adjust the intensity or depth of the panning effect. You can select from “0” (no modulation) through “127” (maximum modulation).

Turn the VALUE Rotary Control to make your selection.

Extra Voice Effects - Phaser

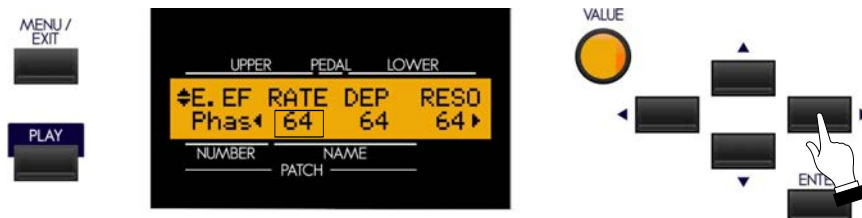
“Phaser” will create the effect of splitting an audio signal into two paths and varying their phase relationship to each other, resulting in an alternately hollow and full-bodied sound. It can be described as a “swooshing” or “twisting” effect.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Phaser” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Phaser” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “RATE” should be blinking.

You can now select the characteristics for the Phaser effect.

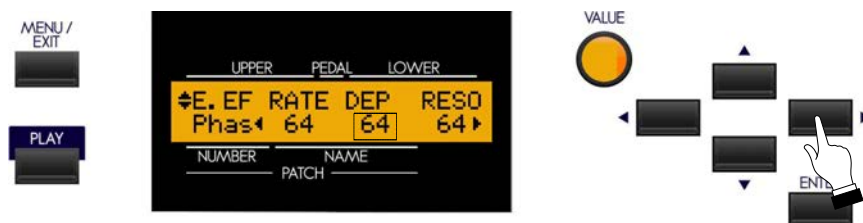
RATE - Phaser Rate

This Advanced Feature allows you to adjust the rate at which the sound moves in and out of phase. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn the VALUE Rotary Control to the right to make the rate faster.

Turn the VALUE Rotary Control to the left to make the rate slower.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “DEP” should be blinking.

DEP - Phaser Depth

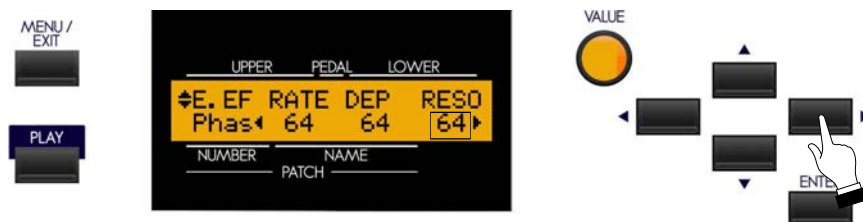
This Advanced Feature allows you to adjust the intensity or depth of the phasing effect. You can select from “0” (no phasing) through “127” (maximum phasing).

Turn either the VALUE or the EXTRA VOICE EFFECTS Rotary Control to the right to increase the amount of Phasing.

Turn either the VALUE or the EXTRA VOICE EFFECTS Rotary Control to the left to decrease the amount of Phasing.

NOTE: If you want to use the EXTRA VOICE EFFECTS Rotary Control, make sure to touch the “ON” Touch Button so that the red LED is lit, then use the Rotary Control to make your adjustments.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “RESO” should be blinking.

RESO - Phaser Resonance

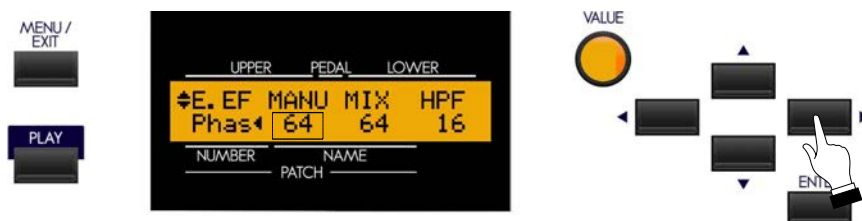
This Advanced Feature allows you to adjust the amount of feedback or “resonance” of the Phaser effect. You can select from “0” (minimum resonance) through “127” (maximum resonance).

NOTE: At the maximum setting, the feedback will be so pronounced that individual notes will no longer be recognizable as musical pitches.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “MANU” should be blinking.

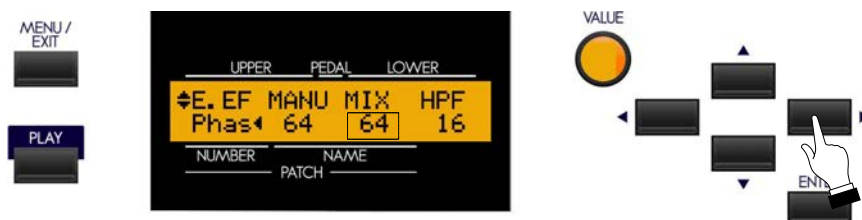
MANU - Phaser Center Frequency Manual Adjustment

This Advanced Feature allows you to adjust the central frequency of the Phaser effect. You can select from “0” (lowest frequency) through “127” (highest frequency).

Turn the VALUE Rotary Control to the right to increase the frequency.

Turn the VALUE Rotary Control to the left to decrease the frequency.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The numbers underneath the word “MIX” should be blinking.

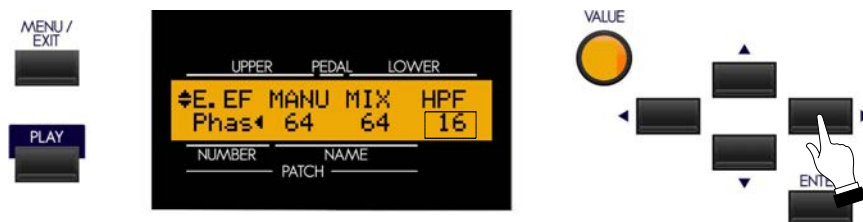
MIX - Phaser Mix

This Advanced Feature allows you to adjust the balance between the phased sound and “dry” (no phaser effect) sound. You can select from “0” (only the “dry” or unmodulated sound with no Phaser effect at all) through “127” (the Phaser effect and the dry signal are at equal volumes)

Turn the VALUE Rotary Control to the right to increase the amount of Phaser effect.

Turn the VALUE Rotary Control to the left to decrease the amount of Phaser effect.

*From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:*



The numbers underneath the word “HPF” should be blinking.

HPF - Phaser High Pass Filter

This Advanced Feature allows you to adjust the frequency limit beyond which the Phaser effect is applied. You can select from “0” (the effect is added to all frequencies) through “127” (the effect is added to the upper frequencies only).

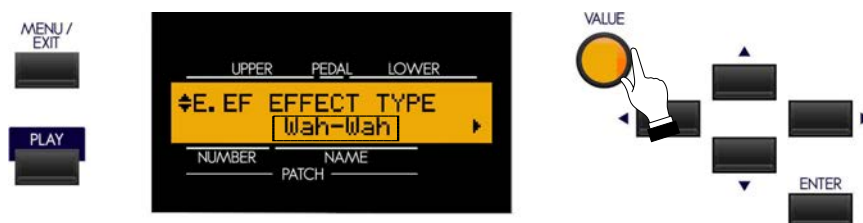
Turn the VALUE Rotary Control to the right to make the frequency limit higher .

Turn the VALUE Rotary Control to the left to make the frequency limit lower..

Extra Voice Effects - Wah-Wah

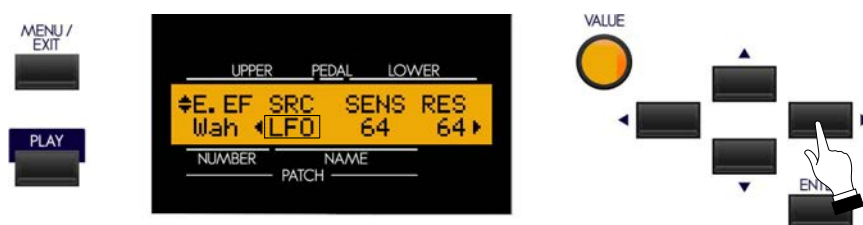
“Wah-Wah” is a periodic emphasis and de-emphasis of upper frequencies by means of a frequency filter to impart a speech-like quality to the sound. The term itself is descriptive of the sound produced (what grammaticians call an “onomatopoeia.”)

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Wah-Wah” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Wah Wah” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “SRC” should be blinking.

You can now select the characteristics for the Wah-Wah effect.

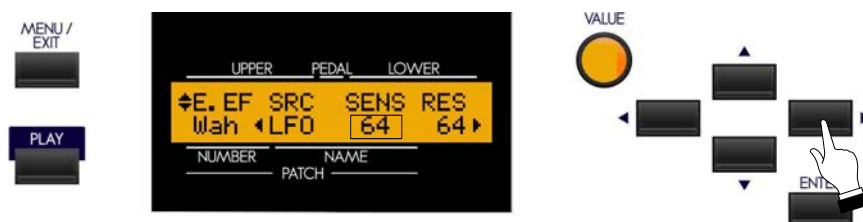
SRC - Wah-Wah Source

This Advanced Feature allows you to select how the Wah-Wah effect is controlled. Turn the VALUE Rotary Control to make your selection.

The data chart below shows the options you may select.

Wah-Wah Source Options	
Description	Function
MAN	The effect is controlled by the EXTRA VOICE EFFECT Rotary Control
EXP	The effect is controlled by the Expression Pedal (the “Cry-Baby” effect)
LFO	The effect is controlled by the inbuilt Low-Frequency Oscillator

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



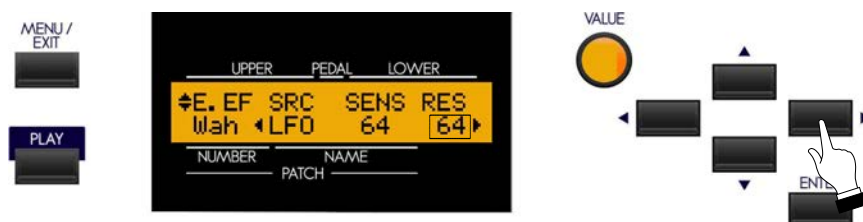
The legend underneath the word “SENS” should be blinking.

SENS - Wah-Wah Sensitivity

This Advanced Feature allows you to set the High and Low ranges of the Wah-Wah effect. You can select from “0” (minimum range) through “127” (maximum range).

NOTE: The effect of this Advanced Feature depends on the “SRC” (Source) setting. When “LFO” is selected, either the VALUE or the EXTRA VOICE EFFECT Rotary Control can be used to control the excursion of the Wah-Wah effect. When “EXP” is selected, either the Expression Pedal or the EXTRA VOICE EFFECT Rotary Control can be used to control the Wah-Wah sensitivity.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RES” should be blinking.

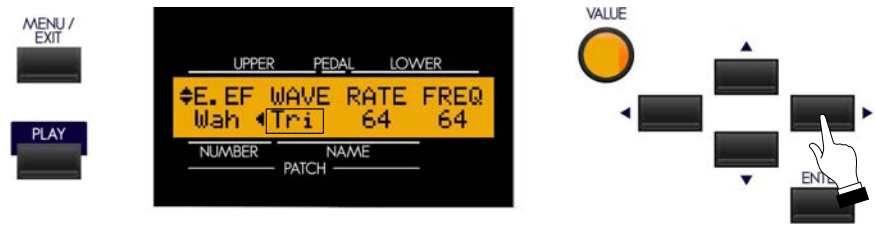
RES - Wah-Wah Resonance

This Advanced Feature allows you to set the resonance frequency of the Low-Pass Filter used to control the Wah-Wah effect. You can select from “0” (minimum resonance) through “127” (maximum resonance). At higher number settings the Wah-Wah effect becomes more pronounced and articulated.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

WAVE - Wah-Wah Waveform

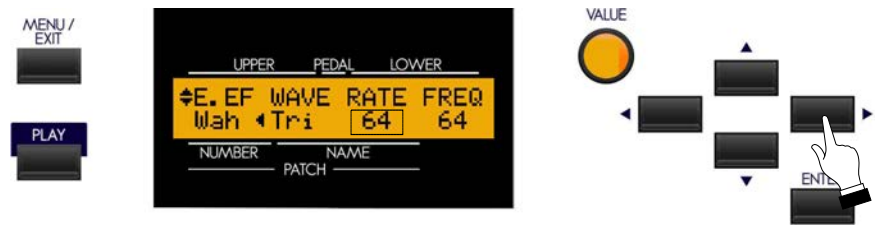
This Advanced Feature allows you to select which waveform will be used to modulate the Wah-Wah effect. Turn the VALUE Rotary Control to make your selection.

NOTE: The SOURCE must be set to “LFO” in order for this Advanced Feature to function.

The data chart below shows the options you may select.

Wah-Wah Wave Options	
Description	Function
TRI	Triangle wave, which will change the sound smoothly from high to low to high
SQR	Square wave, which will cause the filter to rise and fall suddenly
SAW	Ascending Sawtooth wave, which will cause the filter to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the filter to rise and fall randomly.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

RATE - Wah-Wah Rate

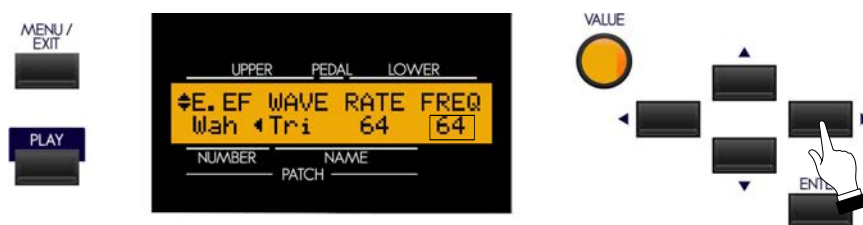
This Advanced Feature allows you to adjust the rate of the Wah-Wah effect. You can select from “0” (slowest rate) through “127” (fastest rate).

NOTE: The SOURCE must be set to “LFO” in order for this Advanced Feature to function.

Turn the VALUE Rotary Control to the right to make the rate faster.

Turn the VALUE Rotary Control to the left to make the rate slower.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “FREQ” should be blinking.

FREQ - Wah-Wah Frequency

This Advanced Feature allows you to adjust the central frequency of the Wah-Wah effect. You can select from “0” (lowest frequency) through “127” (highest frequency).

Turn the VALUE Rotary Control to the right to increase the frequency.

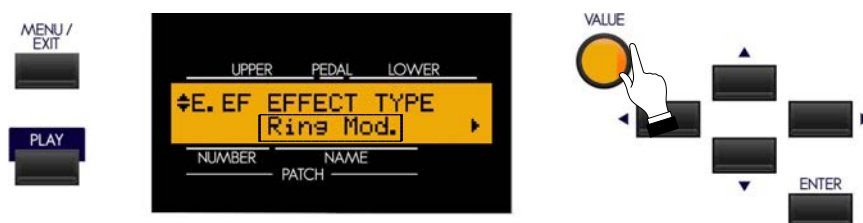
Turn the VALUE Rotary Control to the left to decrease the frequency.

NOTE: You can also use the EXTRA VOICE EFFECT Rotary Control to adjust this Advanced Feature; however, the SOURCE must be set to “MAN” in order to do this.

Extra Voice Effects - Ring Modulation

“Ring modulation” is a signal-processing effect whereby two different frequencies are mixed together in such a way as to eliminate, as much as possible, the individual frequencies themselves, leaving only the sum and the difference of the two frequencies. In analog circuits, this is accomplished by arranging diodes in a circle or ring, giving rise to the term, “ring modulator.” The result is a sound rich in overtones and typically having somewhat of a bell-like or metallic quality. Because of this, the sound is sometimes called a “Klang tone.”

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Ring Mod.” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Ring Mod.” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “SRC” should be blinking.

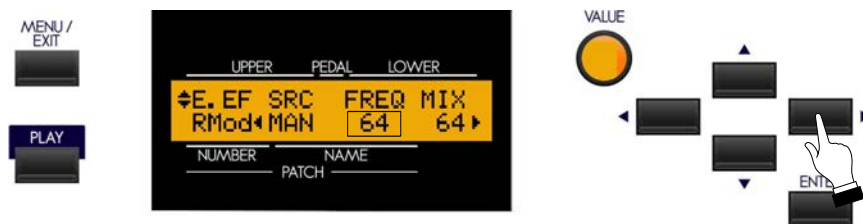
SRC - Source

Because a Ring Modulator requires two frequencies, there needs to be some way to control the “ring” frequency, or the frequency the sound produced by the playing keys will interface with. This Advanced Feature allows you to select how the ring frequency will be controlled. Turn the VALUE Rotary Control to make your selection.

The data chart below shows the options you may select.

Ring Modulation Source Options	
Description	Function
MAN	Uses the EXTRA VOICE EFFECT Rotary Control to control the ring frequency.
EXP	Uses the Expression Pedal to control the ring frequency.
LFO	Uses the inbuilt Low-Frequency Oscillator to control the ring frequency.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “FREQ” should be blinking.

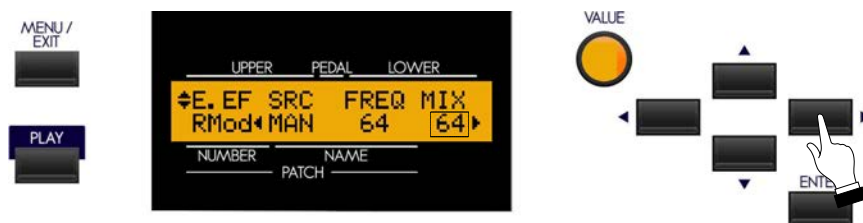
FREQ - Frequency

This Advanced Feature allows you to adjust the central ring frequency. You can select from “0” (lowest frequency) through “127” (highest frequency).

Turn either the VALUE or the EXTRA VOICE EFFECTS Rotary Control to the right to make the ring frequency higher.

Turn either the VALUE or the EXTRA VOICE EFFECTS Rotary Control to the left to make the ring frequency lower.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “MIX” should be blinking.

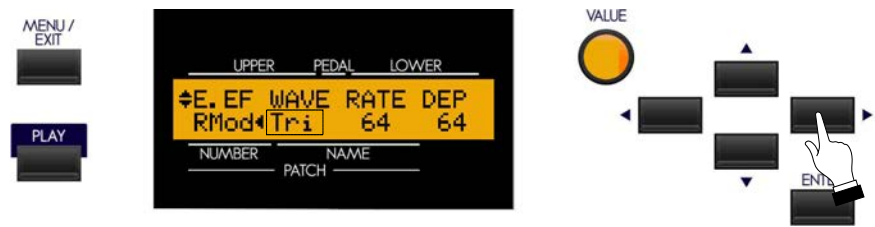
MIX - Ring Frequency Mix

This Advanced Feature allows you to adjust the balance between the “dry” signal and the ring frequency. You can select from “0” (dry signal only) through “127” (ring frequency only).

Turn the VALUE Rotary Control to the right to increase the amount of the ring frequency.

Turn the VALUE Rotary Control to the left to decrease the amount of the ring frequency.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “WAVE” should be blinking.

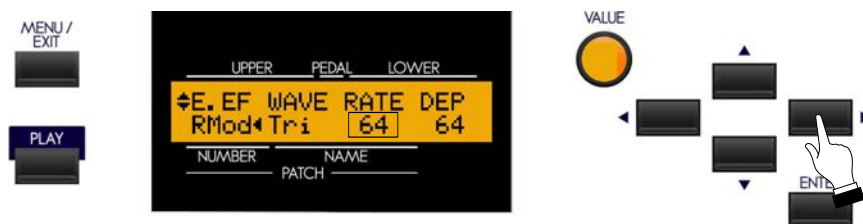
WAVE - Waveform

This Advanced Feature allows you to select which waveform will be used to modulate the ring frequency. The data chart below shows the options you may select.

Ring Modulation Wave Options	
Description	Function
TRI	Triangle wave, which will cause the ring frequency to rise and fall gradually.
SQR	Square wave, which will cause the ring frequency to rise and fall suddenly
SAW	Descending Sawtooth wave, which causes the ring frequency to rise suddenly and fall gradually.
S&H	Sample & Hold, which will cause the ring frequency to rise and fall randomly.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “**RATE**” should be blinking.

RATE

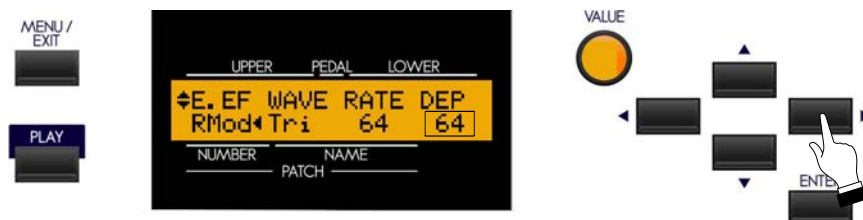
This Advanced Feature allows you to set the rate of the Low-Frequency Oscillator which can be used to modulate the ring frequency. You can select from “0” (slowest rate) through “127” (fastest rate).

NOTE: The SOURCE must be set to “LFO” for this Advanced Feature to work.

Turn the VALUE Rotary Control to the right to make the rate faster.

Turn the VALUE Rotary Control to the left to make the rate slower.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “**DEP**” should be blinking.

DEP - Depth

This Advanced Feature Menu Page allows you to adjust the range of the excursion of the ring frequency. You can select from “0” (narrow range) through “127” (wide range).

NOTE: The SOURCE must be set to “LFO” or “EXP” for this Advanced Feature to work.

Turn the VALUE Rotary Control to the right to make the range wider.

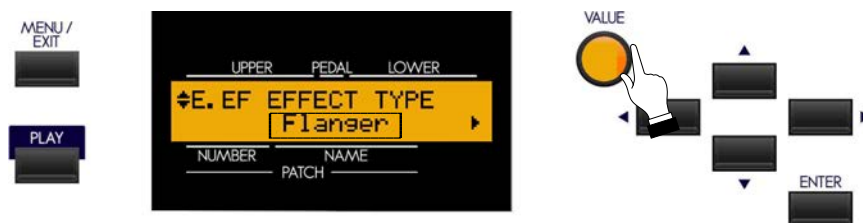
Turn the VALUE Rotary Control to the left to make the range narrower.

Extra Voice Effects - Flanger

“Flanging” occurs when two identical signals are mixed together, and one of the signals is time-delayed by a very small amount. The small time delay produces peaks and valleys in the harmonic structure of the sound, resulting in a sweeping effect sometimes referred to colloquially as a “Jet Airplane” sound.

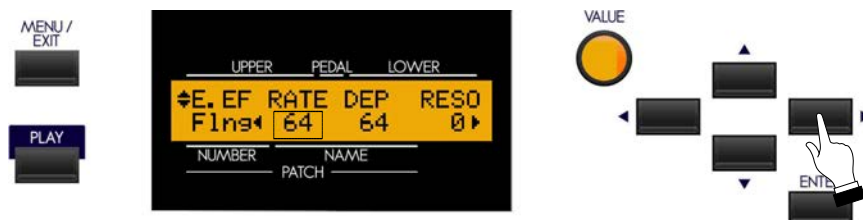
The term, “Flanger” derives from the means originally used to produce this effect. Two tape machines turning at exactly the same speed would play the same material into a third machine, and an engineer would drag his finger along the flange or outer edge of the tape reel, thereby causing the small time delay and creating the sweeping effect.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Flanger.” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Flanger” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

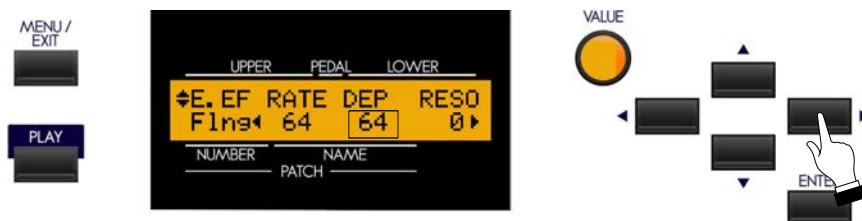
RATE - Flanger Rate

This Advanced Feature allows you to set the rate of the Flange effect. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the right to make the rate faster.

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the left to make the rate slower.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

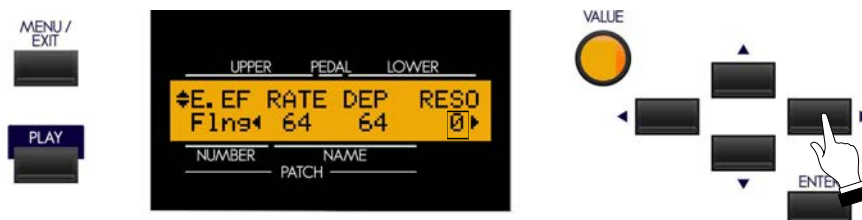
DEP - Flanger Depth

This Advanced Feature allows you to set the depth of the Flange effect. You can select from “0” (minimum depth) through “127” (maximum depth).

Turn the VALUE Rotary Control to the right to increase the depth.

Turn the VALUE Rotary Control to the left to decrease the depth.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RESO” should be blinking.

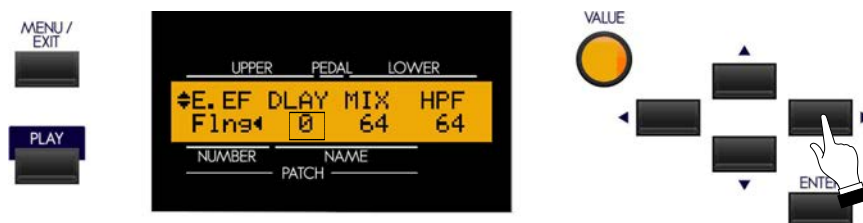
RESO - Flanger Resonance

This Advanced Feature allows you to adjust the amount of resonance or “feed-back.” of the Flange effect. You can select from “0” (minimum resonance) through “127” (maximum resonance). At higher values, the sound becomes increasingly distorted.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DLAY” should be blinking.

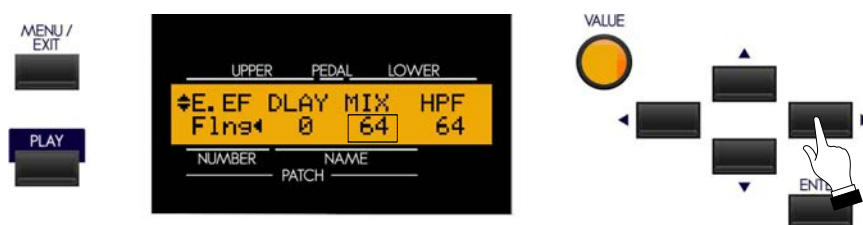
DLAY - Flanger Delay

This Advanced Feature allows you to set the delay of the Flange effect. You can select from “0” (minimum delay) through “127” (maximum delay).

Turn the VALUE Rotary Control to the right to lengthen the Delay.

Turn the VALUE Rotary Control to the left to shorten the Delay.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “MIX” should be blinking.

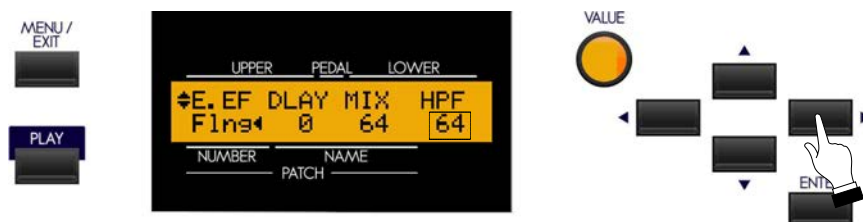
MIX - Flanger Mix

This Advanced Feature allows you to adjust the balance between the “dry” sound and the Flange effect. You can select from “0” (“dry” sound only - no Flange effect) through “127” (the dry sound and the Flanged sound are at equal levels).

Turn the VALUE Rotary Control to the right to increase the amount of Flanged signal.

Turn the VALUE Rotary Control to the left to decrease the amount of Flanged signal.

*From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:*



The legend underneath the word “HPF” should be blinking.

HPF - Flanger High-Pass Filter

This Advanced Feature allows you to adjust the frequency limit beyond which the Flange effect is applied. You can select from “0” (the effect is added to all frequencies) through “127” (the effect is added to the upper frequencies only).

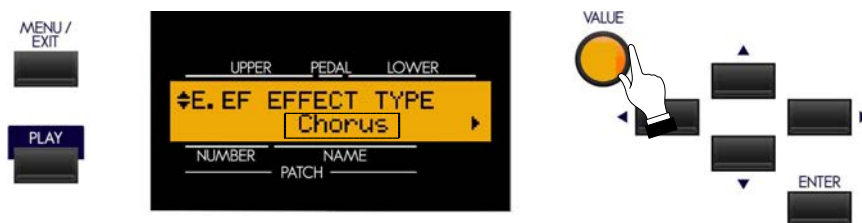
Turn the VALUE Rotary Control to the right to make the frequency limit higher .

Turn the VALUE Rotary Control to the left to make the frequency limit lower.

Extra Voice Effects - Chorus

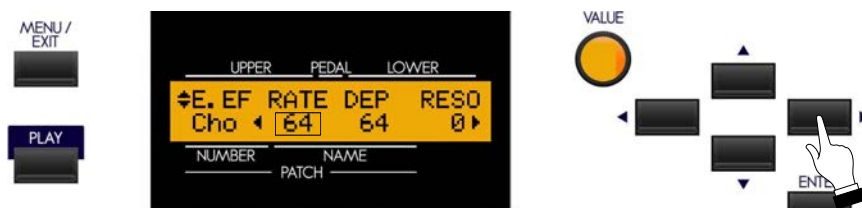
“Chorus” refers to a shimmering, non-periodic enhancement of the sound. It is intended to be similar to several instruments sounding in unison, and is helpful when a thicker tonal texture is desired.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Chorus” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Chorus” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

You can now select the characteristics for the Chorus.

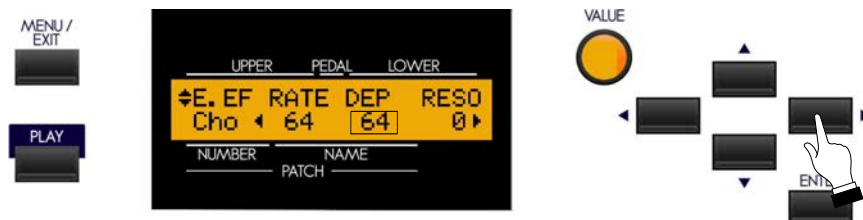
RATE - Chorus Rate

This Advanced Feature allows you to adjust the rate of the Chorus effect. You can select from “0” (slowest rate) through “127” (fastest rate).

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the right to make the rate faster.

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the left to make the rate slower.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DEP” should be blinking.

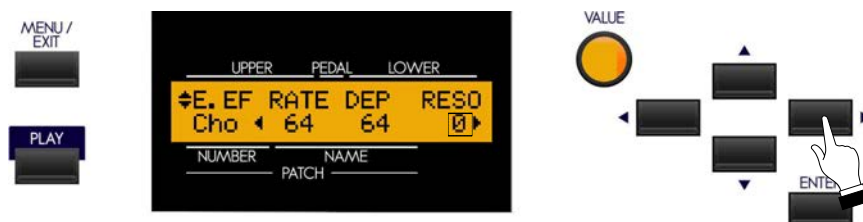
DEP - Chorus Depth

This Advanced Feature allows you to adjust the intensity or depth of the Chorus effect. You can select from “0” (minimum Chorus) through “127” (maximum Chorus).

Turn the VALUE Rotary Control to the right to increase the amount of Phasing.

Turn the VALUE Rotary Control to the left to decrease the amount of Phasing.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RESO” should be blinking.

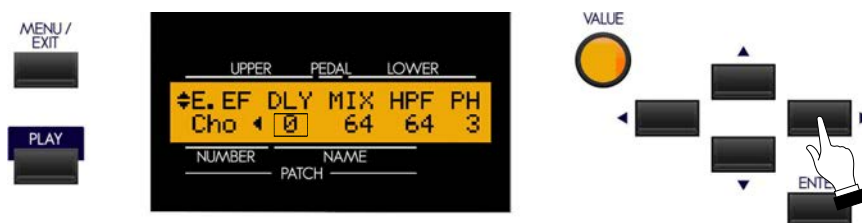
RESO - Chorus Resonance

This Advanced Feature allows you to adjust the amount of resonance or “feed-back.” You can select from “0” (minimum resonance) through “127” (maximum resonance). At higher number settings the sound is modulated to an extreme amount.

Turn the VALUE Rotary Control to the right to increase the amount of Resonance.

Turn the VALUE Rotary Control to the left to decrease the amount of Resonance.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

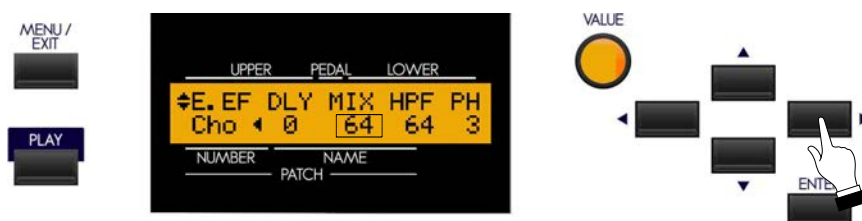


The legend underneath the word “DLY” should be blinking.

DLY - Chorus Delay

Controls the delay of the effect sound. The setting range is 0 to 127. The delay becomes greater as the value increases.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

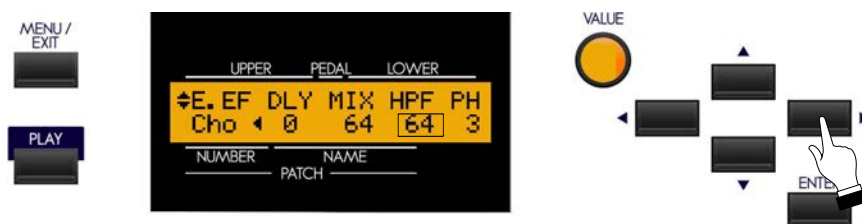


The legend underneath the word “MIX” should be blinking.

MIX - Chorus Mix

Adjusts the volume balance between the “dry” and the effect sound. The setting range is 0 to 127. At 0, only the “dry” is heard. The effect level becomes greater as the value increases. At 127 the ratio between the “dry” and the effect sounds becomes 1:1.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

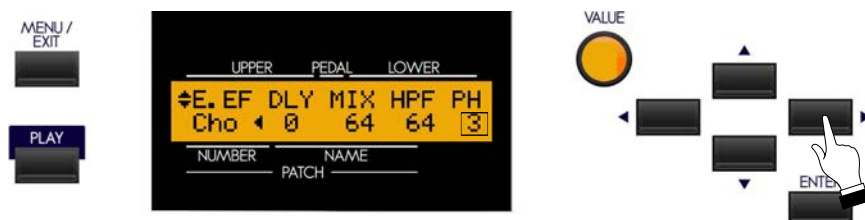


The legend underneath the word “HPF” should be blinking.

HPF - Chorus High-Pass Filter

Controls the frequency range of the effect. The setting range is 0 to 127. At 0, the effect is added to all frequencies. The effect is added to the higher frequencies as the value increases.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “PH” should be blinking.

PH - Chorus Phase

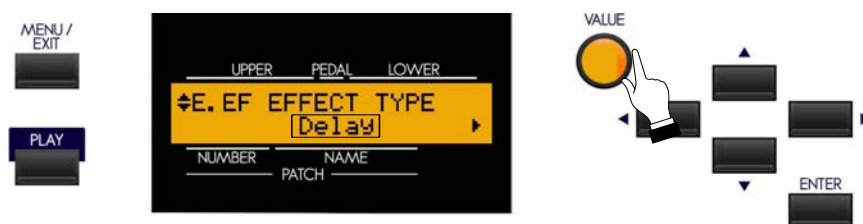
Selects the type of the chorus effect available: “2” (normal) or “3” (rich) phase effect type.

NOTE: This Advanced Feature is not available for the Drawbars. The Drawbar Chorus Phase is fixed at “2.”

Extra Voice Effects - Delay

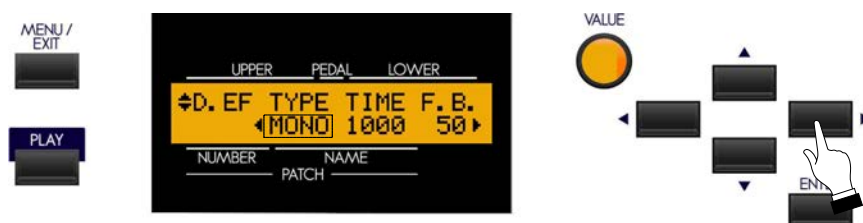
“Delay” allows you to add echo effects to the Extra Voice tones.

From the previous screen, touch the PAGE LEFT Touch Button repeatedly until the words, “EFFECT TYPE” appear on the top line of the display. If “Delay” does not appear on the bottom line, turn the VALUE Rotary Control until the Information Center Display looks like this



The word “Delay” should be blinking.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “TYPE” should be blinking.

You can now select the characteristics for the Delay.

TYPE - Delay Type

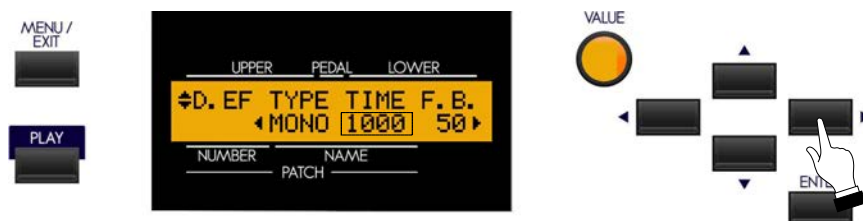
This Advanced Feature allows you to select which waveform will be used to modulate the panning effect. Turn the VALUE Rotary Control to make your selection.

The data chart below shows the options you may select.

Delay Type Options	
Description	Function
MONO	A simple, non-directional echo.
*RtoL	The echo repeats gradually pan from Right to Left.
*LtoR	The echo repeats gradually pan from Left to Right.

* - This effect will not be heard if only one of the LINE OUT jacks is connected, or if a Leslie Speaker is connected.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “TIME” should be blinking.

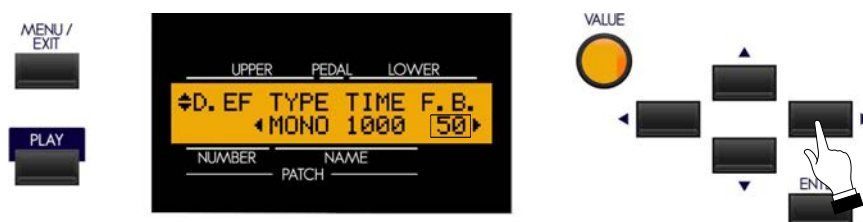
TIME - Delay Time

This Advanced Feature allows you to adjust the amount of time between the original sound and the first echo repeat, as well as the amount of time between each successive repetition. You can select from “10” to “1000” milliseconds.

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the right to increase the Delay Time.

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the left to decrease the Delay Time.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

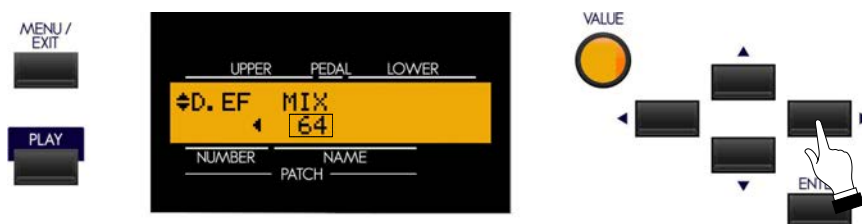
F.B. - Delay Feedback

This Advanced Feature allows you to control the number of repetitions added to the original sound. You can select from “0” (minimum number of echo repeats) through “127 (maximum number of echo repeats).

Turn the VALUE Rotary Control to the right to increase the number of echo repetitions.

Turn the VALUE Rotary Control to the left to decrease the number of echo repetitions.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

MIX - Delay Mix

This Advanced Feature allows you to adjust the balance between the echo repeats and the “dry” (no Delay) sound. You can select from “0” (only the “dry” sound with no Delay effect at all) through “127” (only the echo repeats are heard with no dry sound).

NOTE: At a setting of “64,” the “dry” or original sound and the echo repetitions are equally balanced.

Turn the VALUE Rotary Control to the right to increase the Delay amount.

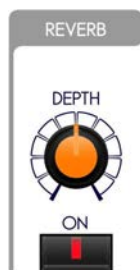
Turn the VALUE Rotary Control to the left to decrease the Delay amount.

◆ REVERB

Using REVERB adds the beautiful concert hall effect to all voices when you are playing and counteracts the "deadening" effect of the carpets, drapes and the furniture in your home.

◆ REVERB Controls

The REVERB Controls are located on the extreme right side on the Control Panel.



REVERB Touch Tab

Touching this Touch Tab "ON" (red LED lit) will turn on the Reverb effect.

REVERB Rotary Control

This control allows you to adjust the Depth, or amount, of the Reverb effect.

The length and type of REVERB are determined by the settings in the REVERB Edit Menu, which is explained below.

◆ REVERB Edit Menu

This Advanced Feature Menu allows you to select how the REVERB performs.

Accessing the REVERB Edit Menu using the MENU/EXIT Touch Button:

1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.
2. Touch the PAGE UP Touch Button twice. You will now see the letter "C" displayed in the upper left corner of the display, and the legend "OD/EX" will be blinking.
3. Touch the PAGE RIGHT Touch Button twice. The word "REVERB" will be blinking.
4. Touch the ENTER Touch Button.

Accessing the REVERB Edit Menu using the Shortcut:

Touch and hold the REVERB Touch Tab. After approximately 1 second, the word, "REVERB," will display at the top of the screen.

You are now in the REVERB Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make various changes to the Reverb. This is explained starting on the next page.

◆ REVERB Edit Menu - Page 1

If you followed the above instructions, you should now see Page 1 of the REVERB Edit Menu. The numbers underneath the word “DEPTH” should now be blinking.



Reverb Depth

This Advanced Feature allows you to adjust the amount of Reverb that you prefer. You can select from “0” (no Reverb) through “127” (maximum Reverb).

Turn either the VALUE or the REVERB Rotary Control to the right to increase the amount of Reverb.

Turn either the VALUE or the REVERB Rotary Control to the left to decrease the amount of Reverb.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



Reverb Type

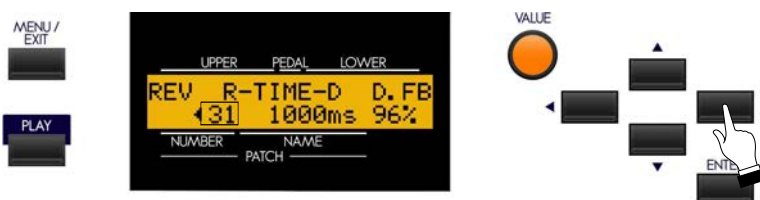
This Advanced Feature allows you to adjust the type of Reverb that you prefer. The data chart below shows the options you may select.

REVERB Options	
Description	Function
Room 1	Small room
Room 2	Large room
Live	Ambient rom
Hall 1	Large hall
Hall 2	Small hall
Church	Large church or auditorium
Plate	Iron-plate reverb
Spring	Hammond Type 4 spring reverb
Delay	Panning Delay
PanDly	Panning Delay
RevDly	Reverb + Delay

Turn the VALUE Rotary Control to make your selection.

◆ REVERB Edit Menu - Page 2

From the previous screen, touch the PAGE RIGHT Touch Button repeatedly until Page 2 of the REVERB Edit Menu displays. The Information Center Display should now look like this:



This Advanced Feature Menu Page contains three (3) parameters that affect different Reverb Types. The first one, Reverb Decay, affects the Reverb programs that approximate actual live reverberation ("Room1," "Room2," "Live," "Hall1," "Hall2," "Church," "Plate" and "Spring,") while the last two, Delay Time and Delay Feedback, affect the "Delay," "PanDly" and RevDly." programs.

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth among these three parameters. The parameter that is blinking will be the one affected when you turn the VALUE Rotary Control.

Reverb Time

This Advanced Feature increases the decay of the Reverb. You can select from "0" (minimum decay time) to "127" (maximum decay time).

Turn the VALUE Rotary Control to the right to increase the Decay Time.

Turn the VALUE Rotary Control to the left to decrease the Decay Time.

Delay Time

This Advanced Feature allows you to set the recirculation rate; i.e., the amount of time that elapses between the original sound, the first repeat and subsequent repeats. You can select from "4.7ms" (4.7 milliseconds - very short Delay Time) to "2000ms" (2000 milliseconds - long Delay Time).

Turn the VALUE Rotary Control to the right to increase the Delay Time.

Turn the VALUE Rotary Control to the left to decrease the Delay Time.

NOTE: You can also set the delay time with the foot switch.

Delay Feedback

This Advanced Feature allows you to adjust the number of times the Delay will recirculate. You can select from "0" (no repetitions) to "96%" (maximum number of repetitions).

Turn the VALUE Rotary Control to the right to increase the Decay Feedback.

Turn the VALUE Rotary Control to the left to decrease the Decay Feedback.

EQUALIZER

You can customize the tone quality of your Hammond SK-series instrument by:

1. Using the MASTER EQUALIZER to tailor the sound of the Drawbars and Extra Voices simultaneously, or;
2. Using the EQUALIZER Advanced Feature Menu if you wish to adjust the frequency curves of the Drawbars and Extra Voices separately.

◆ What Is “Equalization?”

“Equalization” is a term used by sound engineers to describe changes or alterations they make to the character of sound. For example, if a piano is being “miked,” (its sound output being picked up by a microphone) and the tone needs to sound brighter or to have more bass, a sound engineer can increase or decrease the level of individual “frequency bands,” as they are called, to achieve just the desired effect. The “BASS” and “TREBLE” tone controls on a home stereo amplifier can be said to be a very elementary type of equalization. However, a true equalizer allows you control over more area of the frequency range than just “highs” and “lows.” The Equalizer functions of your SK-series instrument have this capability.

◆ MASTER EQUALIZER



The MASTER EQUALIZER is located on the lower extreme right of the Control Panel. It allows you to adjust the overall frequency response of the entire instrument in real time.

◆ BASS

This Rotary Control allows you to adjust the Bass (below 100Hz) frequencies by $\pm 9\text{dB}$.



◆ MID FREQUENCY

This Rotary Control allows you to adjust which Mid-range frequency will be adjusted by the MID GAIN knob. The range is between 250Hz and 3.1kHz.



◆ MID GAIN

This Rotary Control allows you to adjust the gain of the frequency set by the MID FREQUENCY knob.



◆ TREBLE

This Rotary Control allows you to adjust the treble (above 8000Hz) frequencies.



◆ EQUALIZER Edit Menu

This Advanced Feature Menu allows you to adjust the tone quality of the Drawbars and Extra Voices individually.

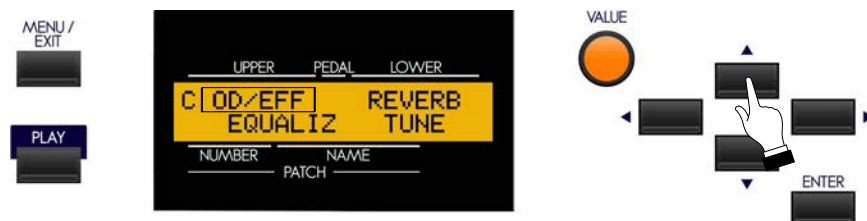
◆ Drawbar Equalizer

To use the EQUALIZER Edit Menu to adjust the Drawbar sounds, do the following:

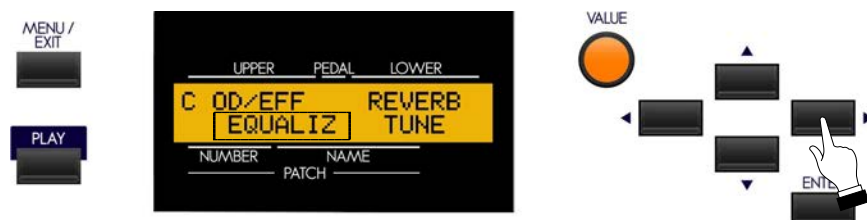
1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.



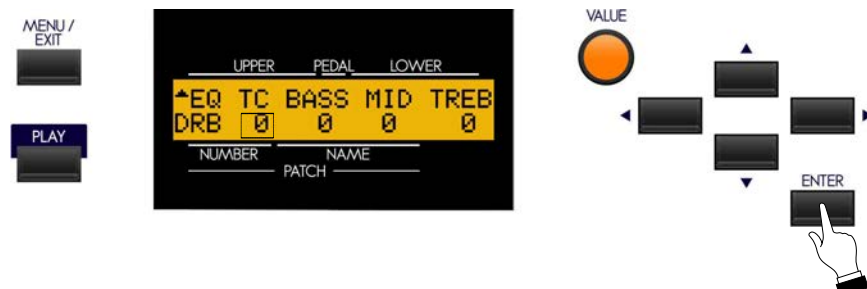
2. Touch the PAGE UP Touch Button twice. The legend, "OD/EFF" in the upper left corner of the Information Center Display will be blinking.



3. Touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



4. Touch the ENTER Touch Button. The Information Center Display should now look like this:



You are now in the first page of the EQUALIZER Edit Menu. You may now make various changes to the tonal quality of the Drawbars. These changes are explained starting on the next page.

EQUALIZER Edit Menu - Page 1

If you followed the above instructions, you should now see Page 1 of the EQUALIZER Edit Menu. The numbers underneath the word “TC” should now be blinking.



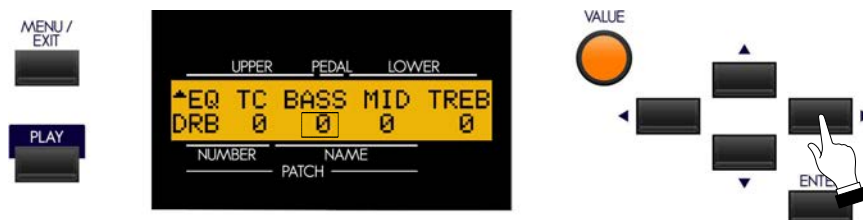
Drawbar Tone Control

This Advanced Feature simulates the tone control on the AO-28 preamp found in vintage B-3's, C-3's and A-100's. On vintage organs, this control adjusts the treble response above 200Hz. You can select from “-9” (minimum treble) to “+9” (maximum treble). “-1” corresponds to the maximum of the original B-3 tone control, “-5”, the middle, “-9”, the minimum. The AO-28 tone control would only “cut” or attenuate the treble frequencies, but this Advanced Feature allows you to increase the treble as well.

Turn the VALUE Rotary Control to the right to increase the treble frequencies.

Turn the VALUE Rotary Control to the left to decrease the treble frequencies.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



Drawbar Equalize

This Advanced Feature allows you to adjust the amount of Bass, Mid-range and Treble frequencies. **You can select from “-9” (minimum amount) to “+9.” (Maximum amount). At “0,” the level is “flat.”**

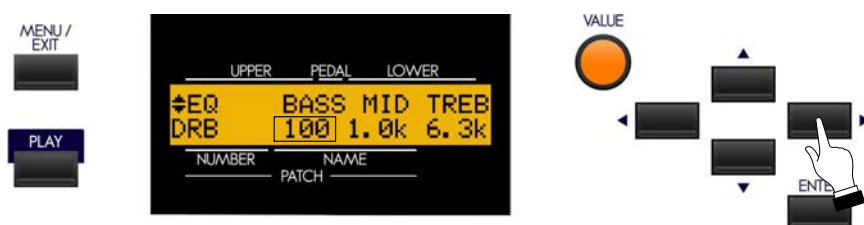
Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth among “BASS,” “MID” and “TREB.”

Turn the VALUE Rotary Control to the right to increase the selected frequency range.

Turn the VALUE Rotary Control to the left to decrease the selected frequency range.

EQUALIZER Edit Menu - Page 2

From the previous screen, touch the **PAGE RIGHT** Touch Button ONCE. The Information Center Display should now look like this:



Extra Voice Central Frequency Adjust

This Advanced Feature allows you to adjust the central frequency of the Bass, Mid-range and Treble frequency bands. The data chart below shows the options you may select.

EQUALIZER Central Frequency Options	
Description	Function
BASS	20Hz ~ 200Hz
MID	250Hz ~ 3.1kHz
TREB	4.0kHz ~ 8.0kHz

Use the **PAGE LEFT** and **PAGE RIGHT** Touch Buttons to move back and forth among “BASS,” “MID” and “TREB.”

Turn the **VALUE** Rotary Control to the right to increase the selected frequency.

Turn the **VALUE** Rotary Control to the left to decrease the selected frequency.

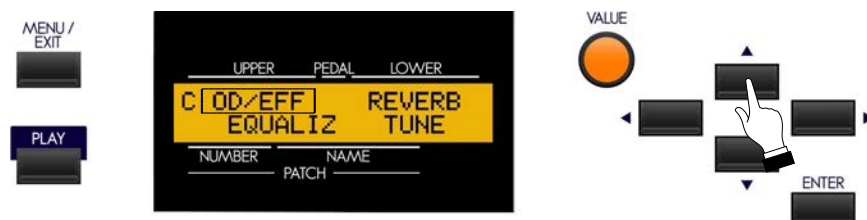
◆ Extra Voice Equalizer

To use the EQUALIZER Edit Menu to adjust the Extra Voices, do the following:

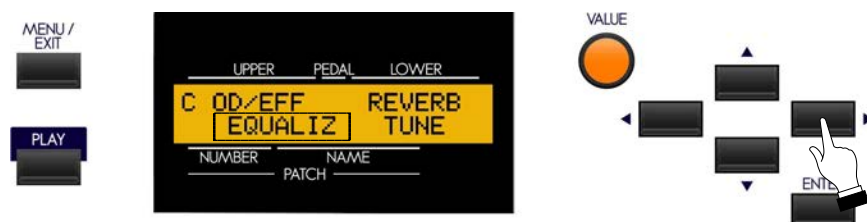
1. From the PLAY Screen, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.



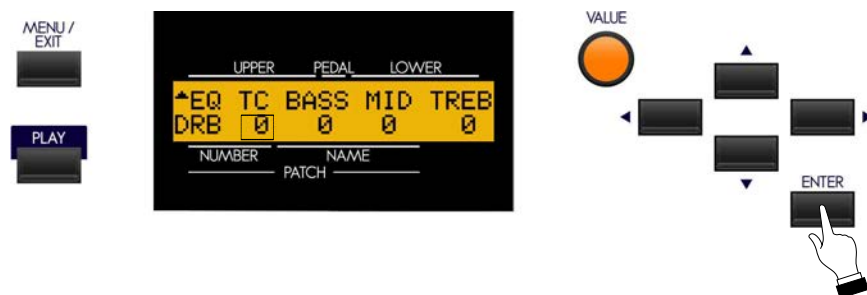
2. Touch the PAGE UP Touch Button twice. The legend, "OD/EFF" in the upper left corner of the Information Center Display will be blinking.



3. Touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



4. Touch the ENTER Touch Button. The Information Center Display should now look like this:



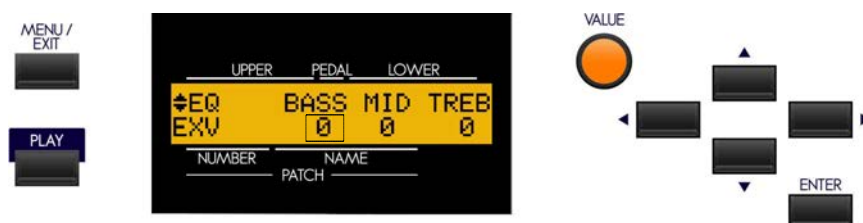
5. Touch the PAGE UP Touch Button once. The Information Center Display should now look like this:



You are now in Page 3 of the EQUALIZER Edit Menu. You may now make various changes to the tonal quality of the Extra Voices. These changes are explained starting below.

EQUALIZER Edit Menu - Page 3

If you followed the above instructions, you should now see Page 3 of the EQUALIZER Edit Menu. The numbers underneath the word “BASS” should now be blinking.



Extra Voice Equalize

This Advanced Feature allows you to adjust the amount of Bass, Mid-range and Treble frequencies. You can select from “-9” (minimum amount) to “+9.” (Maximum amount). At “0,” the level is “flat.”

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth among “BASS,” “MID” and “TREB.”

Turn the VALUE Rotary Control to the right to increase the selected frequency range.

Turn the VALUE Rotary Control to the left to decrease the selected frequency range.

EQUALIZER Edit Menu - Page 4

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



Extra Voice Central Frequency Adjust

This Advanced Feature allows you to adjust the central frequency of the Bass, Mid-range and Treble frequency bands. The data chart below shows the options you may select.

EQUALIZER Central Frequency Options	
Description	Function
BASS	20Hz ~ 200Hz
MID	250Hz ~ 3.1kHz
TREB	4.0kHz ~ 8.0kHz

Use the **PAGE LEFT** and **PAGE RIGHT** Touch Buttons to move back and forth among “BASS,” “MID” and “TREB.”

Turn the **VALUE** Rotary Control to the right to increase the selected frequency.

Turn the **VALUE** Rotary Control to the left to decrease the selected frequency.

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HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

SPECIAL
PERFORMANCE
FEATURES

SPECIAL PERFORMANCE FEATURES

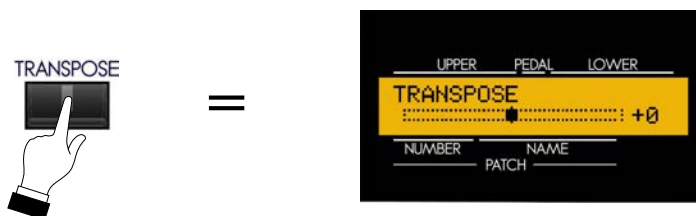
◆ TRANSPOSE (Key Select)

This feature allows you to shift the musical key of the entire instrument. This is useful if you have a piece of music written in one key but which needs to sound in another key; for example, a song written and played in C Major, could sound in G Major. TRANSPOSE will step either up or down six (6) semitones or half-steps from the center position. The TRANSPOSE feature consists the TRANSPOSE Touch Tab, plus the DOWN and UP Touch Tabs immediately to the right of the TRANSPOSE Touch Tab. The DOWN Touch Tab allows you to transpose lower and the UP Touch Tab allows you to transpose higher

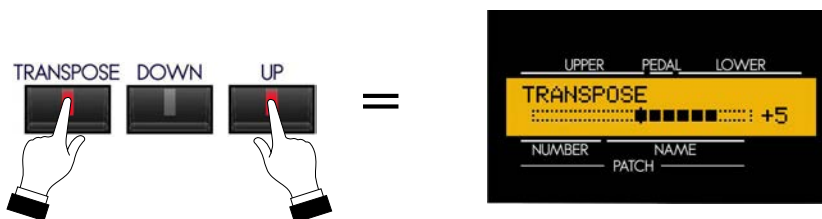


TRY THIS:

1. Make sure the instrument is un-transposed or playing in “concert” pitch (TRANSPOSE Touch Tab LED not lit).
2. Touch and Hold the TRANSPOSE Touch Tab and look at the Information Center Display to make sure it shows “+0.”



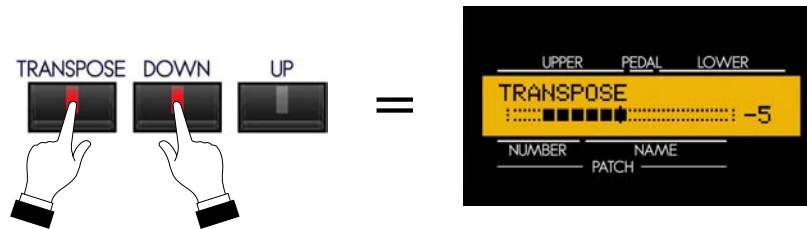
3. While continuing to hold the TRANSPOSE Touch Tab, touch the UP Touch Tab five times. The Information Center Display should show the following:



You have now transposed the entire instrument up five half-steps - when you touch a “C” note you will hear the note “F” above it.

4. Now Touch and Hold the TRANSPOSE Touch Tab and touch the DOWN Touch Tab repeatedly until the TRANSPOSE Touch Tab LED turns “OFF” and the Information Center Display shows “+0.” The instrument is now back to concert pitch.

- While continuing to hold the TRANSPOSE Touch Tab, touch the DOWN Touch Tab five times. The Information Center Display should show the following:



You have now transposed the entire instrument down five half-steps - when you touch a “C” note you will hear the note “G” below it.

To return the instrument to concert pitch, Touch and Hold the TRANSPOSE Touch Tab and touch the UP Touch Tab repeatedly until the TRANSPOSE Touch Tab LED turns “OFF” and the Information Center Display shows “+0.”

◆ CONTROL Edit Menu

This Advanced Feature Menu allows you to select the parameters for the various Controls that you prefer.

To access the CONTROL Edit Menu, do the following:

- From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



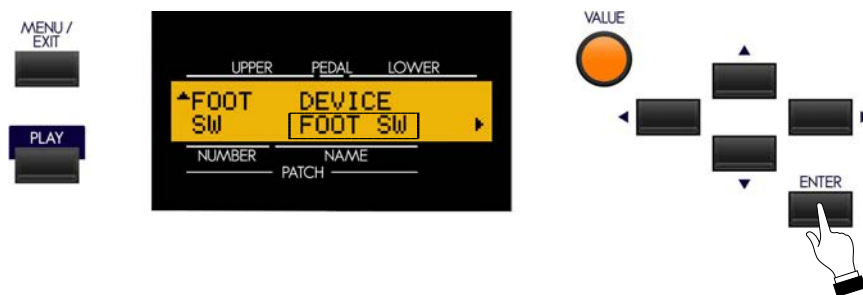
The word “DRAWBAR” should now be blinking.

- Touch the PAGE RIGHT Touch Button three times. The Information Center Display should now look like this:



The word “CONTROL” should now be blinking.

3. Now touch the ENTER Touch Button once. The Information Center Display should now look like this:



You are now in the CONTROL Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make changes to the characteristics of the various Controls. These changes are explained starting below.

◆ Navigating the CONTROL Edit Menu

The CONTROL Edit Menu consists of seven (7) Pages, each of which allows you to set the characteristics of a particular control.

Use the PAGE UP Touch Button to scroll forward through the Controls.

Use the PAGE DOWN Touch Button to scroll backward through the Controls.

The data chart below lists the pages in the order in which they appear in the Information Center Display scrolling forward using the PAGE UP Touch Button.

The data chart below shows the options you may select.

CONTROL Edit Menu Pages	
Description	Function
FOOT SW	The operation of a device connected to the FOOT SW jack on the Accessory Panel
EXPR	The operation of a device connected to the EXP jack on the Accessory Panel
GLIDE	Portamento, or bending of pitch
DAMPER	The operation of a device connected to the DAMPER jack on the Accessory Panel
OCT.BTN	The operation of the OCTAVE Touch Tab
DISP	The settings for the Information Center Display
KEYBOARD	The overall setting for the Keyboard(s)

Once you have made your CONTROL selection using the PAGE UP and PAGE DOWN Touch Buttons, use the PAGE LEFT and PAGE RIGHT Touch Buttons to select the individual parameters of each Control.

The following pages will describe each of the Advanced Features in the CONTROL Edit Menu. Each control will be described separately.

To display the FOOT SW Page of the CONTROL Edit Menu, follow the instructions shown on page 90. You should see the screen shown below and the word “FOOT SW” should be blinking.

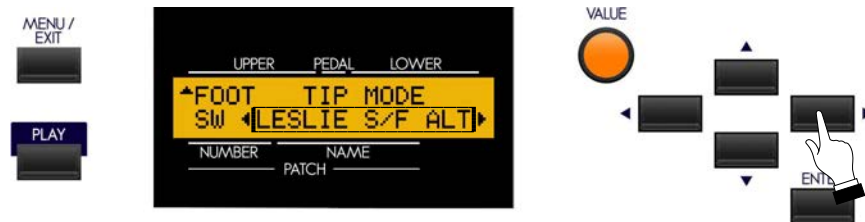
◆ FOOT SW - Screen 1 - Foot Switch Device Select



The Foot Switch (FOOT SW) jack on the SK-series instruments is set up to accept different types of devices. This Advanced Feature allows you to select either “FOOT SW” (a conventional foot switch) or “CU-1” (Control Unit 1, the “half-moon” style speed switch which allows you to select the Leslie Speeds.)

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



You will now see Screen 2 of the FOOT SW Edit Menu.

◆ What Is “TRS?”

A typical accessory Foot Switch will connect to an instrument such as the SK by means of a plug similar to the one shown below.



TRS is an acronym for Tip-Ring-Sleeve, and refers to the fact that a connecting plug can have more than one connector. This means that more than one Foot Switch can be connected to the SK instrument, thereby allowing you to control more than one function using the same Foot Switch jack.

If you wish to do this, you will need a Stereo Adapter which has a Stereo plug and two (2) Mono jacks.



Simply insert the Stereo plug into the FOOT SW jack on the SK instrument and connect a Foot Switch to each of the Mono input jacks. In most cases, the Left (L) input jack will access the Tip function while the Right ® will access the Ring function.

◆ Foot Switch Functions

There are 14 settings for the Foot Switch Menu. The data chart below explains each one.

Foot Switch Options	
Description	Function
OFF	Pressing the Foot Switch will have no effect.
LESLIE S/F ALT	Allows you to use the Foot Switch to switch back and forth between Leslie Slow and Fast Rotor Speeds. Each time the Foot Switch is pressed and released, the Leslie Rotors will change speeds.
LESLIE S/F MOM	Allows you to use the Foot Switch to switch Leslie Rotor Speeds. When the Foot Switch is pressed and held, the Leslie Rotors will go at Fast speed. When the Foot Switch is not engaged, the Leslie Rotors go at Slow speed.
LESLIE S/F TRI	Allows you to use the Foot Switch to switch back and forth between Leslie Slow and Fast Rotor Speeds similar to the ALT mode. Additionally, if the Foot Switch is pressed and held for longer than 1 second, the Leslie Rotors will go to the Off or Stop position.
*GLIDE	Allows you to use the Foot Switch to bend the pitch.
PATCH FWD	Allows you to use the Foot Switch to move forward through the Patches.
PATCH REV	Allows you to use the Foot Switch to move backward through the Patches.
FAVORITE FWD	Allows you to use the Foot Switch to move forward through the Favorites.
FAVORITE REV	Allows you to use the Foot Switch to move backward through the Favorites.
SPRING	Allows you to use the Foot Switch to add the sound of a Spring Reverb unit being jostled.
+DELAY TIME	Allows you to use the Foot Switch to add the Delay effect.
MUSIC START	Allows you to use the Foot Switch to start or stop the Music Player.
MANUAL BASS	Allows you to use the Foot Switch to Triggers the Manual Bass note of Pedal part
BASS 1C ~ BASS 3C	Allows you to use the Foot Switch to Triggers the specified note of Pedal part.

* - You can adjust the parameters of the Glide function by accessing the GLIDE Page of the EFFECTS Advanced Feature Menu. This is explained starting on page .

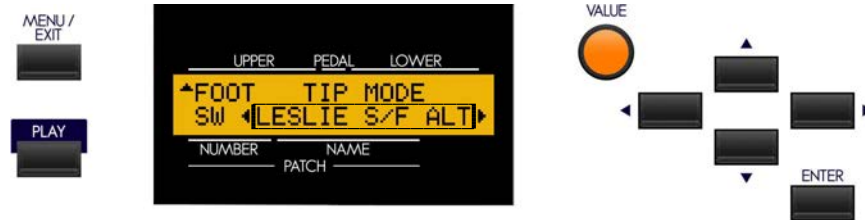
+ - You can adjust the parameters of the Delay effect by accessing the Delay portion of the EFFECTS Advanced Feature Menu. This is explained starting on page .

All of the above functions can be set for either Tip or Ring Mode. However, Ring Mode will have no effect if only one Foot Switch is connected to the FOOT SW jack. You can then use Tip Mode to select the function you want.

As explained on the previous page, a Stereo Adaptor must be plugged into the FOOT SW jack in order to use a Foot Switch in Ring Mode. The Foot Switch plugged into the Right receptacle will respond to functions set for Ring Mode.

NOTE: The plug-in receptacles on some commercially available adaptors may be marked TIP and RING for easier identification. Follow these markings when setting up your Foot Switches.

If you followed the instructions starting on page 181, you should now see Screen 2 of the Foot Switch portion of the CONTROL Edit Menu. The legend underneath the words “TIP MODE” should now be blinking.

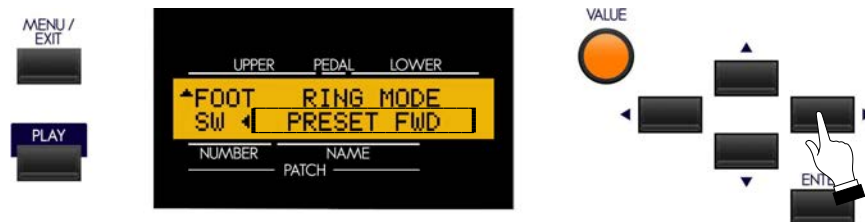


◆ FOOT SW - Screen 2 - Foot Switch Tip Mode

This Advanced Feature allows you to select the function of the “Tip Mode” of a connected Foot Switch.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



◆ FOOT SW - Screen 3 - Foot Switch Ring Mode

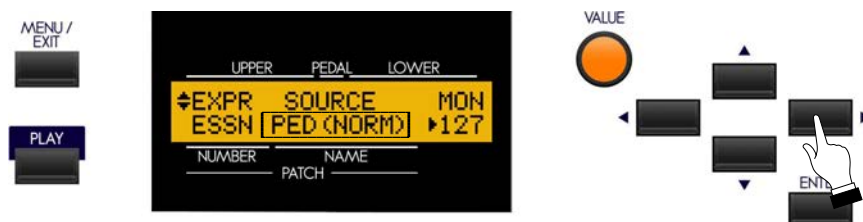
This Advanced Feature allows you to select the function of the “Ring Mode” of a connected Foot Switch.

Turn the VALUE Rotary Control to make your selection.

♦ CONTROL Edit Menu - Page 2 - Expression Parameters

This Advanced Feature Menu allows you to control how a connected Expression Pedal will function.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “SOURCE” should be blinking.

You are now in the portion of the CONTROL Edit Menu which pertains to Expression settings.

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to scroll forward or backward through the various parameters.

The following pages will explain how to set the Expression parameters the way you want.

EXPR - Screen 1

Expression Source

This Advanced Feature allows you to select the source of expression control. The data chart below shows the options you may select.

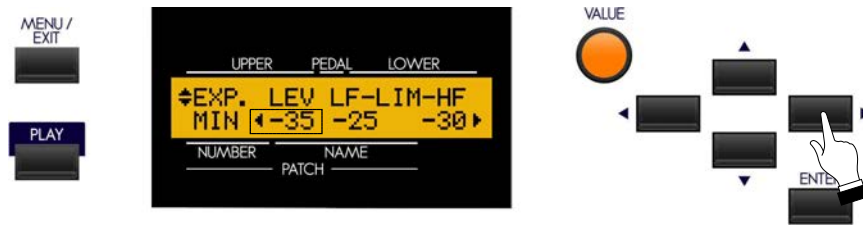
Expression Source Options	
Description	Function
PED (NORM)	Hammond EXP-50 Expression Pedal or compatible equivalent.
PED (REV)	Expression pedal having reversed polarity.
MIDI	MIDI Expression Data (controller #11) will be received at the UPPER keyboard channel.

Turn the VALUE Rotary Control to make your selection.

Expression Monitor

This is not really an Advanced Feature but is merely a way to display the current Expression Value, with “0” being minimum Expression (no audible sound) and “127” being maximum Expression. The Expression Monitor can be useful as a troubleshooting aid if you either don’t hear any sound or can’t change the volume using a connected Expression Pedal.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



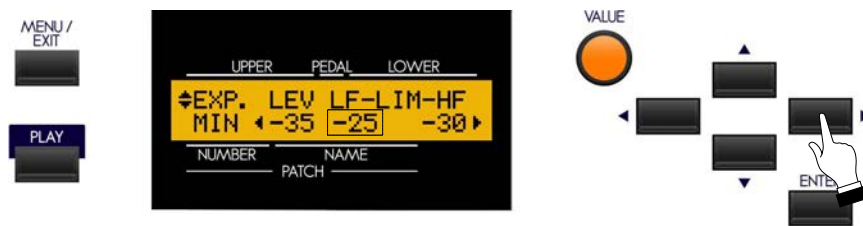
EXPR - Screen 2

Expression Minimum Level

This Advanced Feature allows you to set the amount of volume when the Expression Pedal is “closed,” or all the way back. You can select “OFF” (no sound when the pedal is closed) or from “-40dB” to “0dB.” The higher the number, the greater the volume will be.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The numbers just underneath “LF” should now be blinking:

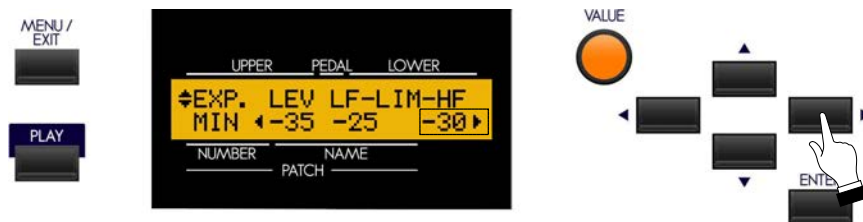


Expression Low Frequency Limit

This Advanced Feature allows you to adjust the amount of Low Frequencies (below 800Hz) that will be heard when the Expression Pedal is set at minimum. You can select “OFF,” (no sound), or from “0db” to “-40db” (minus 40 decibels).

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



Expression High Frequency Limit

This Advanced Feature Menu Page allows you to adjust the amount of High Frequencies (above 800Hz) that will be heard when the Expression Pedal is set at minimum. You can select “OFF,” (no sound), or from “0db” to “-40db” (minus 40 decibels).

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:

EXPR - Screen 3

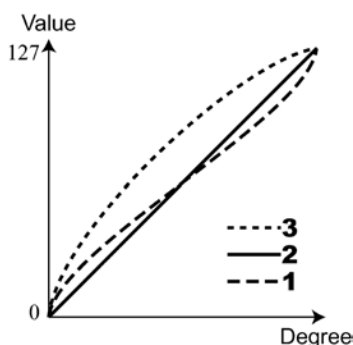


Expression Gain

This Advanced Feature allows you to adjust the range of a connected Expression Pedal. You can select from “0” through “100%,” however, the amount of actual audible change may differ depending on the specific Expression Pedal used. Use this Advanced Feature to obtain the desired response from your particular pedal.

Expression Curve

This Advanced Feature allows you to set the “curve,” or change of expression value corresponding to the angle of the depressed expression pedal. The illustration below shows the options you may select.



Turn the VALUE Rotary Control to make your selection.

NOTE: You will also see “MON” on the extreme right side of the display. This is the Expression Monitor which, as explained on page 206, is not an Advanced Feature but merely displays the current Expression Value, with “0” being minimum Expression (no audible sound) and “127” being maximum Expression.

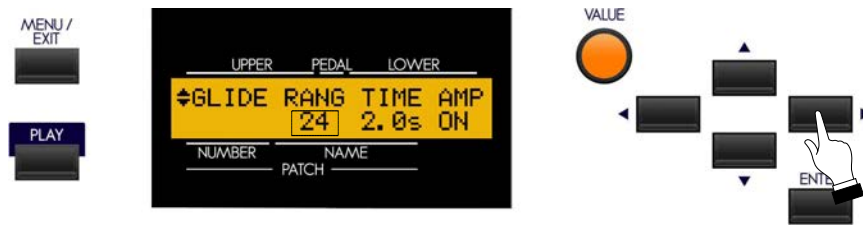
◆ CONTROL Edit Menu - Page 3

GLIDE Functions

The word, “Glide,” is a term used to designate the ability to bend the pitch using a Foot Switch, either on the side of an Expression Pedal, or a separate Foot Switch. It is called “Glide” in order to differentiate it from “Pitch Bend,” which is bending the pitch by means of a wheel control.

IMPORTANT NOTE: You will hear the effects of these settings **ONLY** if you have GLIDE selected as a Foot Switch function.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RANG” should be blinking.

You are now in the portion of the CONTROL Edit Menu which allows you to select the characteristics of the Glide function.

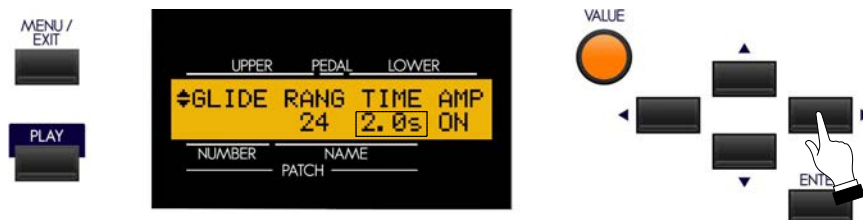
RANG - Glide Range

This Advanced Feature Menu Page allows you to set the pitch range of the Glide. You can select from “-24” (down two octaves) through “+12” (up one octave).

Turn the VALUE Rotary Control to the right to cause the Glide to bend up.

Turn the VALUE Rotary Control to the left to cause the Glide to bend down.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “TIME” should be blinking.

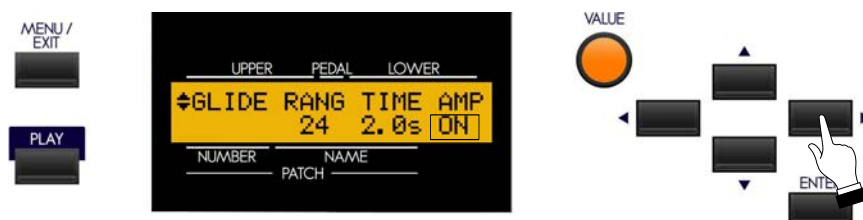
TIME - Glide Time

This Advanced Feature Menu Page allows you to set the amount of time for the Glide effect. You can select from “0.1” (one-tenth of a second) to “5.0” (5 seconds).

Turn the VALUE Rotary Control to the right to increase the Glide Time.

Turn the VALUE Rotary Control to the left to decrease the Glide Time.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “RATE” should be blinking.

AMP - Glide Amplitude

This Advanced Feature Menu Page allows you to add a change in volume or Amplitude to the Glide effect. The data chart below shows the options you may select.

GLIDE AMPLITUDE Options	
Description	Function
ON	When the Glide effect is used, the volume will gradually decrease until no sound is heard at the completion of the pitch excursion.
OFF	The Glide effect works normally - there is no change in volume.

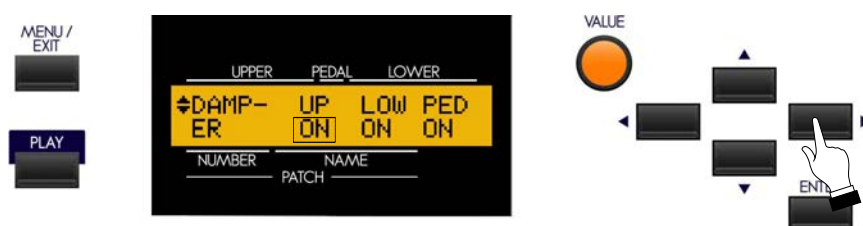
Turn the VALUE Rotary Control to make your selection.

◆ CONTROL Edit Menu - Page 4

DAMPER Functions

As explained on page 3, you can connect a foot switch to use as a Damper or piano-type Sustain pedal. This Advanced Feature Menu Page allows you to select which Voice Sections of the instrument will be affected when a Damper pedal is used.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



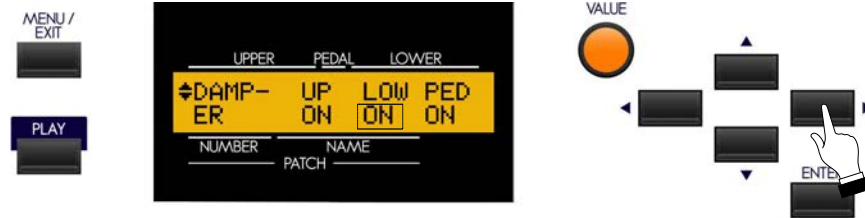
The legend underneath the word “UP” should be blinking.

DAMPER - Upper Manual Drawbars

This Advanced Feature allows you to turn the Damper function “ON” or “OFF” for the Upper Manual Drawbars.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



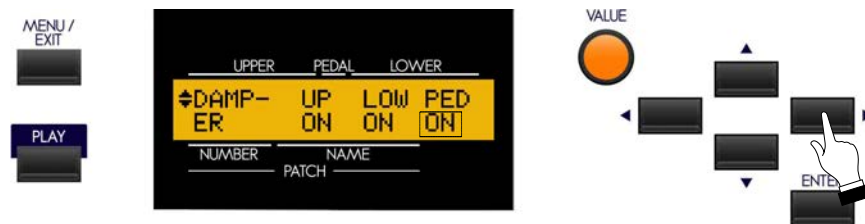
The legend underneath the word “LOW” should be blinking.

DAMPER - Lower Manual Drawbars

This Advanced Feature allows you to turn the Damper function “ON” or “OFF” for the Lower Manual Drawbars.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



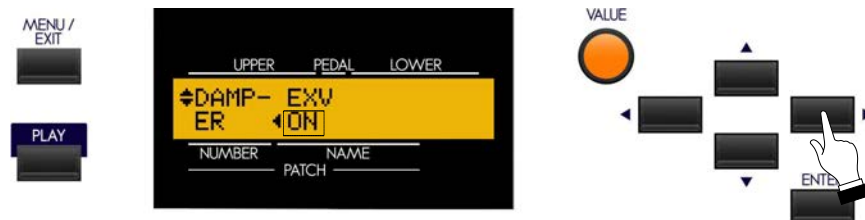
The legend underneath the word “PED” should be blinking.

DAMPER - Pedal Drawbars

This Advanced Feature allows you to turn the Damper function “ON” or “OFF” for the Pedal Drawbars.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



The legend underneath the word “EXV” should be blinking.

DAMPER - Extra Voice

This Advanced Feature allows you to turn the Damper function “ON” or “OFF” for the Extra Voice section.

Turn the VALUE Rotary Control to make your selection.

◆ CONTROL Edit Menu - Page 4

OCTAVE Touch Button Functions

This Advanced Feature Menu Page allows you to select different functions for the OCTAVE Touch Buttons.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “DOWN” should be blinking.

You can now select different functions for the OCTAVE DOWN, OCTAVE UP and LOWER Touch Buttons.



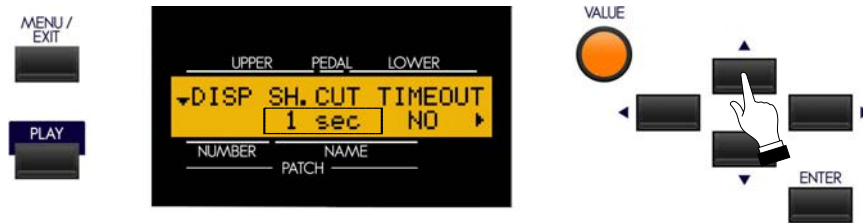
The data chart below shows the options you may select.

OCTAVE Touch Buttons Functions	
Description	Function
ORIGIN	The selected Touch Button will perform its original function
LES STOP	The selected Touch Button will stop the Leslie rotors.
LES FAST	The selected Touch Button will switch the Leslie rotors to FAST.
VIB UPPER	The selected Touch Button will turn the Vibrato effect “ON” for the Upper Manual.
VIB LOWER	The selected Touch Button will turn the Vibrato effect “ON” for the Lower Manual.
GLIDE	The selected Touch Button will activate the Glide effect
SPRING	The selected Touch Button will produce the effect of jostling a spring-type Reverb unit.
DELAY TIME	The selected Touch Button will allow you to program the Delay Time by touching it repeatedly at the desired rate. Touching and Holding the button will turn the Delay effect “OFF.”

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to select “DOWN,” “UP,” or “LOWER.”

Turn the VALUE Rotary Control to select the function once you have selected the Touch Button you want to change.

From the previous screen, touch the **PAGE UP** Touch Button once. The Information Center Display should now look like this:



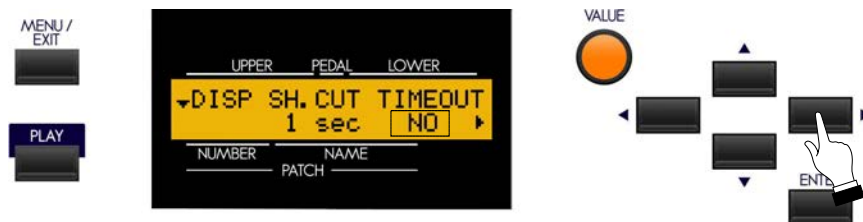
The word underneath “TIMEOUT” should be blinking.

Display Shortcut Time

This Advanced Feature allows you to select how long a Touch Tab must be held before the Advanced Feature Menu Page controlled by that Touch Tab appears. You can select from “0” to “2” seconds or “NO” (the Shortcut feature is disabled).

Turn the VALUE Rotary Control to make your selection.

From the above screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



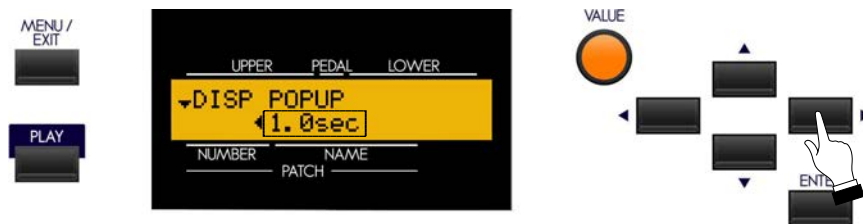
The word underneath “TIMEOUT” should be blinking.

DISPLAY TIMEOUT

This Advanced Feature allows you to select how long the Information Center Display will continue to display an Advanced Feature Menu Page before reverting to PLAY or MIXER Modes. You can select “4,” “8,” or “16” seconds or “NEVER” (a Menu will continue to display until another page is selected). You can select the time for Advanced Feature Menu Pages or Voice & Style displays separately.

Turn the VALUE Rotary Control to make your selection.

From the above screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



The word underneath “POPUP” should be blinking.

DISPLAY TIMEOUT

This Advanced Feature allows you to select how long the Information Center Display will continue to display an Advanced Feature Menu Page before reverting to PLAY or MIXER Modes. You can select “4,” “8,” or “16” seconds or “NEVER” (a Menu will continue to display until another page is selected). You can select the time for Advanced Feature Menu Pages or Voice & Style displays separately.

Turn the VALUE Rotary Control to make your selection.

HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

MIDI

MIDI

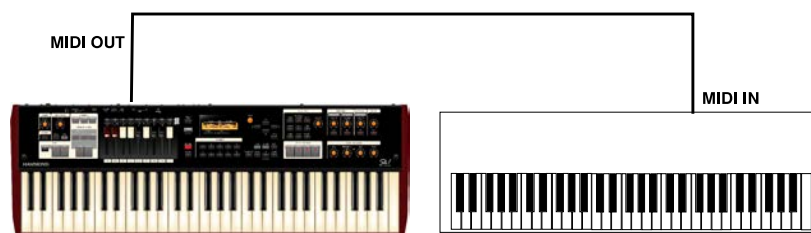
◆ A Word About What MIDI Can Do

The letters MIDI stand for Musical Instrument Digital Interface. MIDI is an international standard for allowing electronic musical instruments equipped with MIDI capability to exchange performance information. For example, a synthesizer can be used to communicate with a drum machine, an electronic piano can interface with a computer, and so forth. Additionally, since MIDI is an international standard recognized and implemented by all musical instrument manufacturers worldwide, instruments made by different manufacturers can communicate with each other via MIDI.

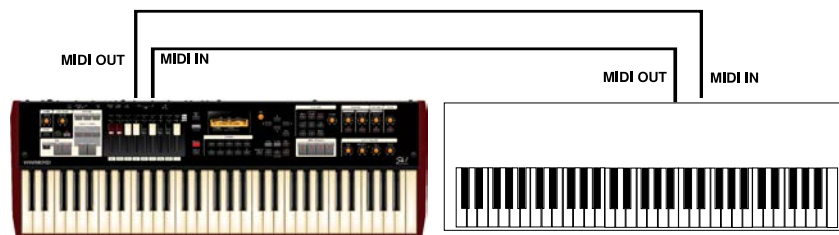
◆ MIDI Connections

◆ MIDI IN and MIDI OUT

In order to allow communication to take place, all MIDI-equipped instruments have at least two MIDI jacks - MIDI IN and MIDI OUT. MIDI IN is for receiving MIDI data from another instrument, while MIDI OUT is for sending MIDI data out to another instrument.



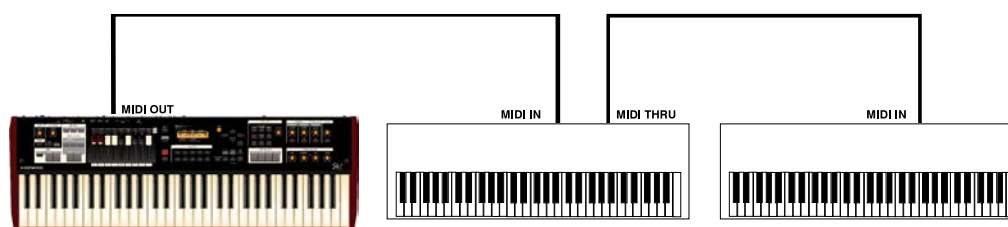
In the example above, the keyboard(s) of the sending or transmitting instrument (MIDI OUT) are being used to control the sound generators of the receiving instrument (MIDI IN). When a key is played on the sending instrument, the corresponding note will play on the receiving instrument as though the appropriate key had been pressed on the receiving instrument's keyboard. When the key is released on the sending instrument, the tone being played by the receiving instrument will stop. (This is called "Note On / Note Off" data.) The sending instrument is referred to as the master, while the receiving instrument is called the slave. This is the most basic MIDI hookup.



The above is an example of two-way communication between two MIDI-equipped devices. In this example, the keyboard(s) of either instrument can be used to control the sound generators of the other.

◆ MIDI THRU

Many MIDI instruments also have an additional MIDI connection called MIDI THRU. MIDI THRU allows more than one instrument to be controlled by the same transmitting instrument - in other words, the data being sent from MIDI OUT goes to the MIDI IN, where it can be passed on to another instrument via MIDI THRU. The picture shown below shows how this is done.

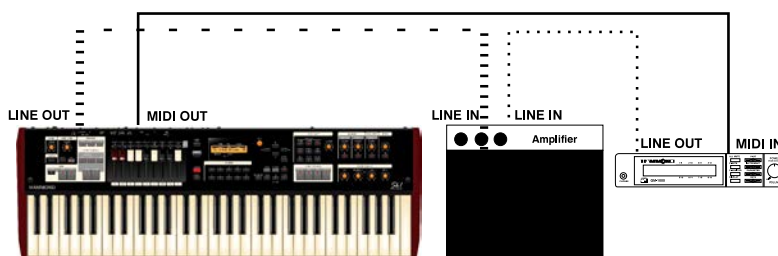


In the above example, the MIDI data goes from the master instrument (MIDI OUT) to the slave instrument (MIDI IN), which receives the data and passes it along to a third instrument via the MIDI THRU connection.

IMPORTANT NOTE: If you reverse the MIDI IN and MIDI OUT connections, you can play the other instrument from the synthesizer just as easily.

◆ Audio and MIDI Connections

◆ Example: A sound module



Note that the LINE OUT or AUDIO OUT signal connection is made to an external amplifier. The LINE OUT audio connection from the module, of course, could also be connected to the LINE IN of the SK-series instrument.

◆ MIDI Edit Menu

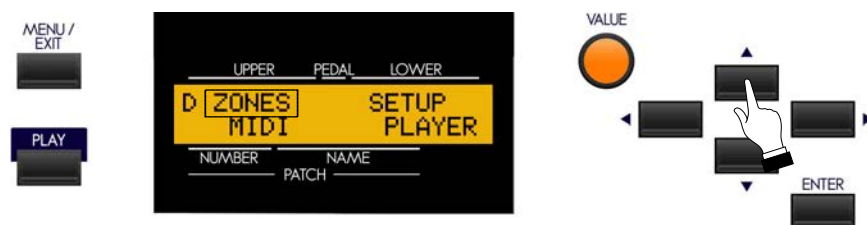
This Advanced Feature Menu allows you to set the overall MIDI parameters for the instrument.

TRY THIS:

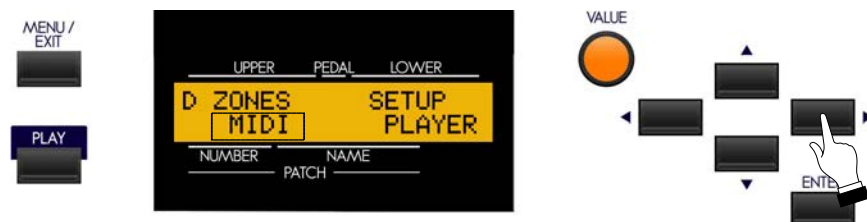
1. From either of the PLAY Screens, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.



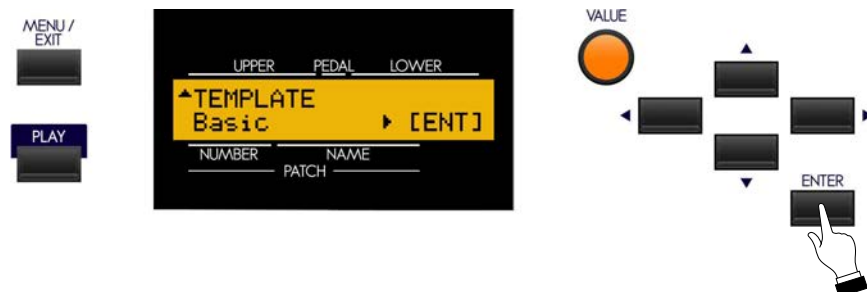
2. Touch the PAGE UP Touch Button three times. You will see "D" displayed in the extreme upper left corner of the Information Center Display. The word "ZONES" in the upper left corner of the Information Center Display will be blinking.



3. Touch the PAGE RIGHT Touch Button once. The word, "MIDI" in the lower left corner of the display will now blink.

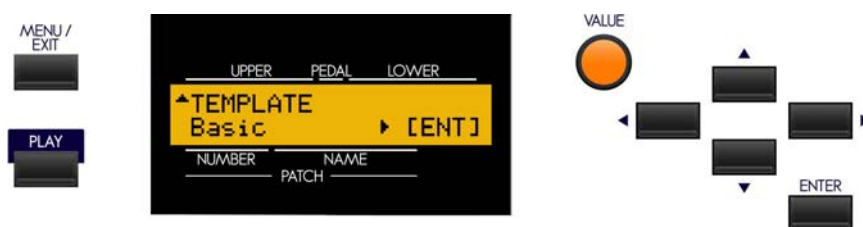


3. Touch the ENTER Touch Button.



You are now in the MIDI Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to change the MIDI performance of your SK-series instrument. This is explained starting on the next page.

◆ MIDI Edit Menu - Page 1 - MIDI Template



What Is a “MIDI Template?”

Because MIDI can be used with such a wide variety of devices - such as synthesizers, sound modules, sequencers, etc. - there are a number of features associated with MIDI, such as Program Change, Controller Change, etc., that allow each MIDI setup to be optimized for the best results in each application. However, making all of these settings manually can be quite time-consuming and error-prone.

Therefore, your SK-series instrument contains a number of pre-formatted settings for the various MIDI parameters which represent the most ideal settings for each MIDI environment. A group of these settings is called a MIDI Template.

This Advanced Feature Menu Page allows you to select the MIDI Template you want to use.

Use the PAGE RIGHT and PAGE LEFT Touch Buttons to see the various Template settings.

When you have made your selection, touch the ENTER Touch Button. The MIDI parameters will be set according to the Template you selected.

IMPORTANT NOTE: The SK1 and SK2 have different Template settings. For a complete listing of the MIDI Templates for your SK-series instrument, consult the following pages.

MIDI Templates - SK1

Template		Basic	Two Manual	Pedal KBD
Messages	MIDI IN	Sequence	Lower	Pedal
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
Transmit Channel	Tx. Upper	1	1	1
	Tx. Lower	2	2	2
	Tx. Pedal	3	3	3
	Rx. Upper	1	1 (disregarded, off)	1 (disregarded, off)
	Rx. Lower	2	2 (disregarded, omni)	2 (disregarded, off)
	Rx. Pedal	3	3 (disregarded, off)	3 (disregarded, omni)
	External Zone	Off	Off	Off
Comments		Use this template to record/play the performance only on this unit with the external sequencer.	Use this template to play the LOWER keyboard connecting to the MIDI IN jack.	Use this template to play the PEDAL keyboard connecting to the MIDI IN jack.

Template		3KBD	Use Ex. Zone	Use Ex. w/2Man
Messages	MIDI IN	Low + Ped	Sequence	Lower
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
Transmit Channel	Tx. Upper	1	Off	Off
	Tx. Lower	2	Off	Off
	Tx. Pedal	3	Off	Off
	Rx. Upper	1	1	1 (disregarded, off)
	Rx. Lower	2	2	2 (disregarded, omni)
	Rx. Pedal	3	3	3 (disregarded, off)
	External Zone	Off	On	On
Comments		Use this template to play the LOWER and PEDAL keyboards merging and connecting to the MIDI IN jack.	Use this template to play only this keyboard and control the MIDI equipment connected to the MIDI OUT jack with the External Zones.	Use this template to play this keyboard and the LOWER keyboard connected to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.

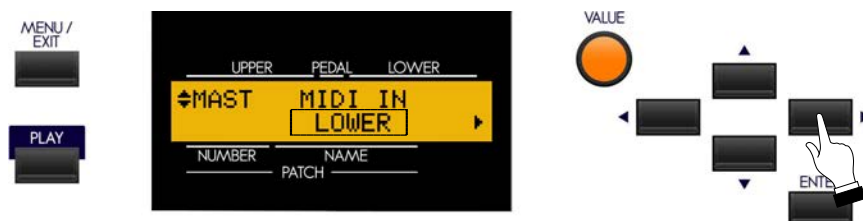
Template		Use Ex. w/PK	Use Ex. w/3KBD	Extra Voice
Messages	MIDI IN	Pedal	Low + Ped	ExVoice
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
Transmit Channel	Tx. Upper	Off	Off	1
	Tx. Lower	Off	Off	2
	Tx. Pedal	Off	Off	3
	Rx. Upper	1 (disregarded, off)	1	1 (disregarded, off)
	Rx. Lower	2 (disregarded, off)	2	2 (disregarded, off)
	Rx. Pedal	3 (disregarded, omni)	3	3 (disregarded, off)
	External Zone	On	On	Off
Comments		Use this template to play this keyboard and the Pedal keyboard connected to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.	Use this template to play the merged LOWER and PEDAL keyboards connecting to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.	Use this template to play only the Extra Voices on the MIDI keyboard connected to the MIDI IN jack.

MIDI Templates - SK2

Template		Basic	Pedal KBD	Use Ex. Zone
Messages	MIDI IN	Sequence	Pedal	Sequence
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
Transmit Channel	Tx. Upper	1	1	Off
	Tx. Lower	2	2	Off
	Tx. Pedal	3	3	Off
	Rx. Upper	1	1 (disregarded, off)	Off
	Rx. Lower	2	2 (disregarded, off)	Off
	Rx. Pedal	3	3 (disregarded, omni)	Off
	External Zone	Off	Off	On
Comments		Use this template to record/playback the performance of only this keyboard to the external sequencer.	Use this template to play on the Pedal keyboard connecting to the MIDI IN jack.	Use this template to play only on this keyboard and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.

Template		Use Ex. w/PK	Extra Voice
Messages	MIDI IN	Pedal	ExVoice
	Local Control	On	On
	NRPN	On	On
	Program Change	On	On
	Drawbar Registration	On	On
Transmit Channel	Tx. Upper	Off	1
	Tx. Lower	Off	2
	Tx. Pedal	Off	3
	Rx. Upper	1 (disregarded, off)	1 (disregarded, off)
	Rx. Lower	2 (disregarded, off)	2 (disregarded, off)
	Rx. Pedal	3 (disregarded, omni)	3 (disregarded, off)
	External Zone	On	Off
Comments		Use this template to play on this keyboard and the Pedal-board connected to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.	Use this template to use MIDI IN jack for play only the Extra Voices with external MIDI keyboard.

From the previous screen, touch the **PAGE UP** Touch Button once. Page 2 of the MIDI Edit Menu should display. The Information Center Display should now look like this:



◆ MIDI Edit Menu - Page 2 - Master MIDI Settings

This Advanced Feature Menu allows you to set the MIDI parameters which affect how the entire instrument will function in a MIDI environment. It consists of several screens.

Use the **PAGE LEFT** and **PAGE RIGHT** Touch Buttons to move back and forth among the various screens.

Screen 1 - MIDI IN jack

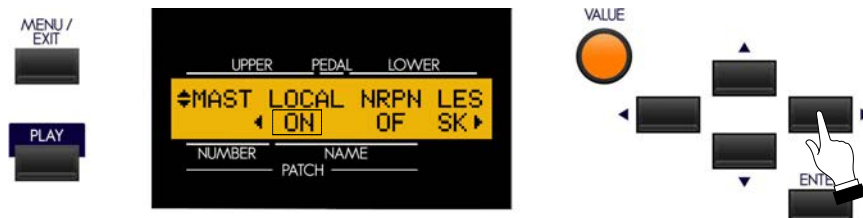
This Advanced Feature allows you to set how incoming MIDI data (external MIDI device connected via the MIDI IN port) is handled. The options are:

The data chart below shows the options you may select.

MIDI IN jack options	
Description	Function
LOWER	Incoming MIDI data plays the LOWER part and is retransmitted on MIDI Channel 13.
PEDAL	Incoming MIDI data plays the PEDAL part and is retransmitted on MIDI Channel 14.
LOW + PED	Incoming MIDI data plays both LOWER and PEDAL parts and is retransmitted on MIDI Channels 13 and 14.
SEQUENCE	Incoming MIDI data plays UPPER, LOWER and PEDAL parts, but is not retransmitted.
EXVOICE	Incoming MIDI data plays the EXTRA VOICE setting. Data is not retransmitted.

Turn the **VALUE** Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



Screen 2 - MIDI Local Control, NRPN & Leslie MIDI Parameters

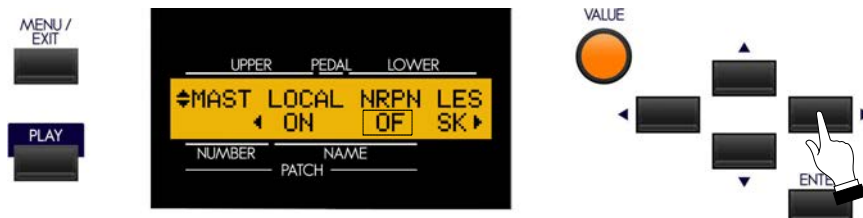
This Advanced Feature Menu screen contains 3 different functions. Use the **PAGE LEFT** and **PAGE RIGHT** Touch Buttons to move back and forth among the functions

MIDI Local Control.

This Advanced Feature allows you to turn Local Control "ON" or "OFF." When Local Control is "ON," the SK-series instrument will play both its internal sounds and the sounds from a connected MIDI device. When Local Control is "OFF," the SK-series instrument will play only the sounds from a connected MIDI device and the SK-series instrument's internal sounds are silenced.

Turn the **VALUE** Rotary Control to turn Local Control on or off.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



MIDI NRPN

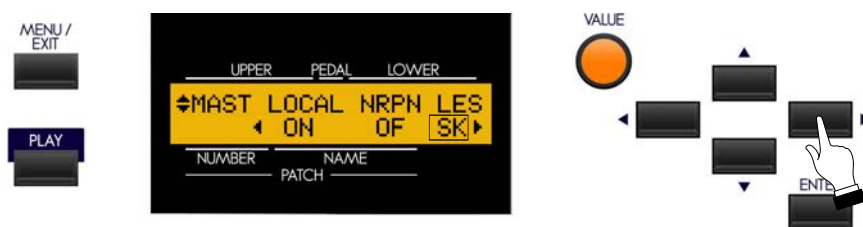
This Advanced Feature allows you to turn "ON" or "OFF" NRPN. "NRPN," or Non-Registered Parameter Number, is an expanded control change message, each function of which is implemented differently by different manufacturers. The Hammond SK-series instrument uses NRPN to allow you to control such parameters as Percussion 2nd and 3rd Harmonic ON/OFF, Vibrato or Chorus ON/OFF, Leslie ON/OFF and Leslie Slow/Fast. When NRPN is "ON," NRPN codes are transmitted along with the other MIDI data. When NRPN is "OFF," NRPN codes will not be transmitted but other MIDI data such as Note On/Note Off, etc. will continue to be transmitted..

NOTE: Most of the Touch Tabs on the SK-series instrument have NRPN Controller numbers assigned to them. To see a complete list of all NRPN codes transmitted and recognized by the SK-series instrument, consult the APPENDIX located at the back of this Guide.

NOTE: When this Advanced Feature is "ON," the SK-series instrument will both **transmit** and **receive** NRPN codes.

Turn the **VALUE** Rotary Control to turn NRPN ON or OFF.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



Leslie MIDI Parameters

Many of the Leslie Parameters, such as Slow and Fast Speeds, Rise and Fall Times, etc. are sent out as MIDI NRPN codes. The rotors on the Leslie 21 system can receive these codes and respond accordingly. This Advanced Feature allows you to control how to send Leslie Parameters. The choices are:

- “SK” - The Leslie Parameters will be sent out on the normal NRPN address and data.
- “21” - The Leslie Parameters will be sent out as Leslie 21 series NRPN address and data.

Turn the VALUE Rotary Control to make your selection.

NOTE: When a Cabinet Number is selected (i.e. by Patch), the Leslie Parameters are sent out also.

NOTE: The Leslie Parameters are sent out **only** on the UPPER Channel.

NOTE: This Advanced Feature will change automatically when a Leslie speaker is connected or disconnected via the 8-pin LESLIE Jack.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



Screen 3 - MIDI Transmit & Receive - Program Change, Drawbar Data & External Zone

This Advanced Feature Menu screen contains 3 different functions. Use the **PAGE LEFT** and **PAGE RIGHT** Touch Buttons to move back and forth among the functions

MIDI Program Change

Program is the MIDI term for a particular sound or effect, such as Piano, Trumpet, Thunder, etc. Each MIDI program is assigned a number from 1 through 127, and these numbers are transmitted to a connected MIDI device such as a sound module. In this way, changes in sound, or what organists refer to as registration, can be made.

This Advanced Feature allows you to turn Program Change "ON" or "OFF." When Program Change is "ON," the SK-series instrument will send Program Changes out to a connected MIDI device. When Program Change is "OFF," Program Changes are not transmitted.

◆ What Is "General MIDI?"

With the advent of the newer General MIDI (GM) standard it is now easier for someone to connect two or more brands of MIDI devices and use them. As an example, before General MIDI different manufacturers assigned different program numbers to different sounds. If, for example, Program Number 4 is Strings on a "brand X" MIDI device and Program Number 4 is Trumpet on a "brand Y" device, and you sent MIDI Program Number 4 from a keyboard you were playing to each device, you would hear Strings from one and Trumpet from the other. However, you wanted both units to play Strings.

The General MIDI addition to the original MIDI specification was created so that generic Standard MIDI Files created on a sequencer or notation application may be played back on another device while preserving the integrity of the original selection. It follows a standard that assigns 128 instrument sounds to specific numbers. There are sixteen specific families or types of instruments and eight instruments within each group. A separate group of percussion sounds is usually available on MIDI channel 10, and they are assigned to specific notes on a MIDI keyboard.

GENERAL MIDI VOICE GROUPS			
Piano	Chromatic Percussion	Organ	Guitar
Bass	Strings	Ensemble	Brass
Reed	Pipe	Synth Lead	Synth Pad
Synth F/X	Ethnic	Percussive	Sound F/X

Here is the list of General MIDI voices followed by their program numbers.

General MIDI Instrument Chart

Program	Instrument	Program	Instrument	Program	Instrument	Program	Instrument
1	Grand Piano	33	Wood Bass	65	Soprano Sax	97	Ice Rain
2	Bright Piano	34	Fingered	66	Alto Sax	98	Soundtrack
3	Electric Grand	35	Pick Bass	67	Tenor Sax	99	Crystal
4	Honky Tonk	36	Fretless	68	Baritone Sax	100	Atmosphere
5	Electric Piano	37	Slap Bass 1	69	Oboe	101	Brightness
6	Electric Piano	38	Slap Bass 2	70	English Horn	102	Goblin
7	Harpsichord	39	Synth Bass 1	71	Bassoon	103	Echo Drops
8	Clavi	40	Synth Bass	72	Clarinet	104	Sci-Fi
9	Celesta	41	Violin	73	Piccolo	105	Sitar
10	Glockenspiel	42	Viola	74	Flute	106	Banjo
11	Music Box	43	Cello	75	Recorder	107	Samisen
12	Vibraphone	44	Double Bass	76	Pan Flute	108	Koto
13	Marimba	45	Tremolo	77	Blown Bottle	109	Kalimba
14	Xylophone	46	Pizzicato	78	Shakahachi	110	Bagpipe
15	Tubular Bells	47	Harp	79	Whistle	111	Fiddle
16	Dulcimer	48	Timpani	80	Ocarina	112	Shanai
17	Drawbar	49	Strings 1	81	Square Lead	113	Tinkle Bell
18	Percussive	50	Strings 2	82	Sawtooth	114	Agogo Bells
19	Rock Organ	51	Synth Strings	83	Calliope	115	Steel Drum
20	Church Organ	52	Synth Strings	84	Chiff Lead	116	Wood Block
21	Reed Organ	53	Choir Aahs	85	Charanga	117	Taiko Drum
22	French	54	Choir Oohs	86	Voice Lead	118	Melodic Tom
23	Harmonica	55	Synth Choir	87	Fifth Lead	119	Synth Tom
24	Tango	56	Orchestral	88	Bass & Lead	129	Reverse
25	Nylon String	57	Trumpet	89	New Age	121	Guitar Fret
26	Steel String	58	Trombone	90	Warm Pad	122	Breath Noise
27	Jazz Guitar	59	Tuba	91	Poly Synth	123	Seashore
28	Clean Guitar	60	Muted	92	Choir Pad	124	Bird Tweet
29	Muted Guitar	61	French Horn	93	Bowed Pad	125	Telephone
30	Overdriven	62	Brass	94	Metal Pad	126	Helicopter
31	Distortion	63	Synth Brass	95	Halo Pad	127	Applause
32	Guitar	64	Synth Brass	96	Sweep Pad	128	Gunshot

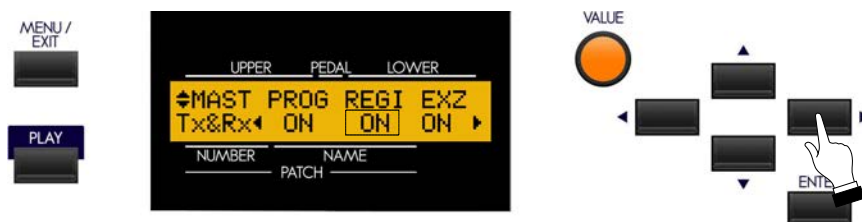
The General MIDI logo looks like this:



Any MIDI device with this logo will conform to the General MIDI Standard.

Any MIDI device that conforms to the General MIDI Standard will assign each instrument to a specific number and will allocate at least a 24-note polyphonic capability.

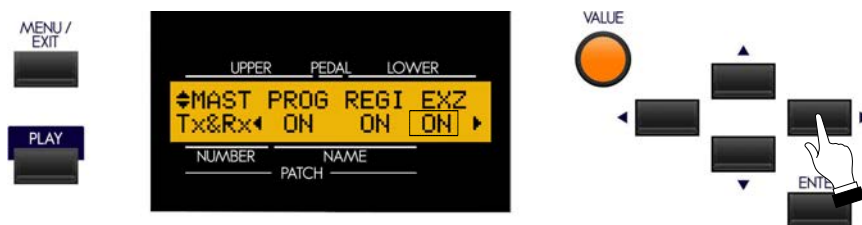
From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



MIDI Drawbar Registration

This Advanced Feature allows you to decide whether you want to transmit the current Drawbar registration to a connected MIDI device such as a sequencer, another Hammond Organ, etc. When this switch is "ON," the SK-series instrument will send Drawbar Data out to a connected MIDI device. When this switch is "OFF," Drawbar Data will not be transmitted.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



MIDI External Zone

This Advanced Feature allows you to decide whether you want to transmit External Zone data to a connected MIDI device. When this switch is "ON," the SK-series instrument will send External Zone data out to a connected MIDI device. When this switch is "OFF," External Zone data will not be transmitted.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



Screen 4 - MIDI Instrument ID & MIDI Dump

This Advanced Feature Menu screen contains 2 different functions. Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth among the functions

MIDI Instrument ID

This Advanced Feature allows you to set the Device ID when transmitting System Exclusive messages.

What Is a “Device ID?”

In order to facilitate communication between MIDI devices from different manufacturers, the MIDI Manufacturer’s Association (MMA) assigns each maker of MIDI devices a unique ID number. This ID number is treated as part of the System Exclusive information and is embedded in the firmware of each device from a particular manufacturer. This allows different MIDI instruments to identify each other and to transmit and receive MIDI information which may be unique to a particular maker.

Turn the VALUE Rotary Control to select the Device ID.

NOTE: Hammond's Device ID number is “17.”

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



MIDI Receive Dump ON/OFF

The MIDI Dump Advanced Features are for use when you want to record and save a musical performance to a connected MIDI Data recorder.

On the SK-series instruments, the total onboard memory can be transmitted and received as a Memory Dump, as system exclusive messages. This Advanced Feature allows you to select whether or not you want System Exclusive (SysEx) messages received as part of a Sequence. When this Advanced Feature is "ON," SysEx data will be received. When it is "OFF," SysEx data will not be received.

Turn the VALUE Rotary Control to make your selection.

IMPORTANT NOTE: If you attempt a Data Dump to the SK-series instrument when "OFF" is displayed, the Information Center Display will flash, "Data Protect !" This ensures that you do not accidentally overwrite data.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



Temporary Dump Send

This Advanced Feature allows you to transmit the current registration to a connected MIDI recorder.

NOTE: It is recommended that you perform this operation prior to recording a sequence to ensure that your sequence will play back with the correct settings.

1. Make sure that the MIDI recorder is ready to receive data (RECORD).
2. Touch the ENTER Touch Button to start the data dump to the MIDI Data recorder. The Information Center Display will show, "Transmitting...." When all information has been sent, the Information Center Display will flash, "Data completed!."

*From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:*



This Advanced Feature allows you to transmit all of the settings to a connected MIDI recorder. This is called doing a “MIDI Dump.”

To transmit your settings, do the following

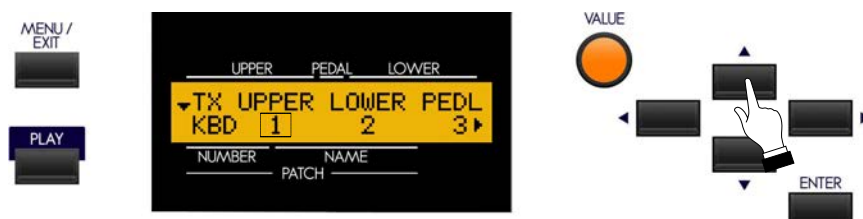
1. Make sure that the MIDI recorder is ready to receive data (RECORD).
2. Touch the ENTER Touch Button to start the data dump to the MIDI Data recorder. The Information Center Display will show:

Transmitting....

When all information has been sent, the Information Center Display will flash:

Data completed!

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



Screen 5 - MIDI Transmit - Keyboard Channels

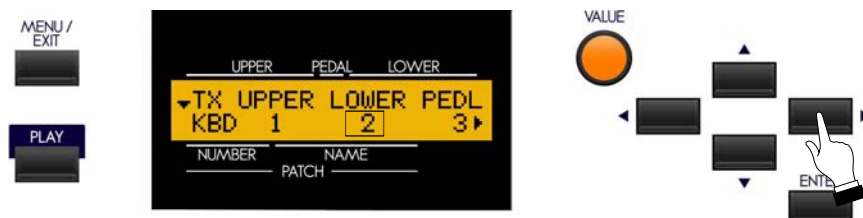
This Advanced Feature Menu screen contains 3 different functions. Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth among the functions.

UPPER Transmit

This Advanced Feature Menu Page allows you to select ON which MIDI Channel the UPPER Keyboard Channel will transmit. You can select from "1" through "16" as well as "OFF."

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

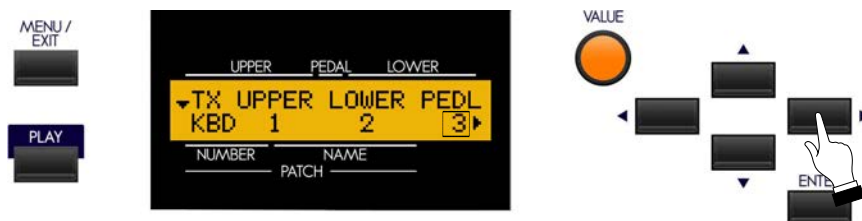


LOWER Transmit

This Advanced Feature Menu Page allows you to select ON which MIDI Channel the LOWER Keyboard Channel will transmit. You can select from "1" through "16" as well as "OFF."

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

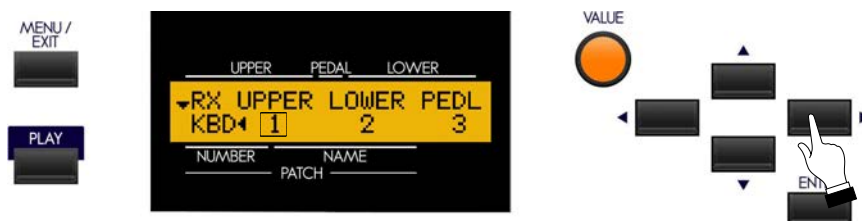


PEDAL Transmit

This Advanced Feature Menu Page allows you to select on which MIDI Channel the PEDAL Keyboard Channel will transmit. You can select from "1" through "16" as well as "OFF."

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



Screen 6 - MIDI Receive - Keyboard Channels

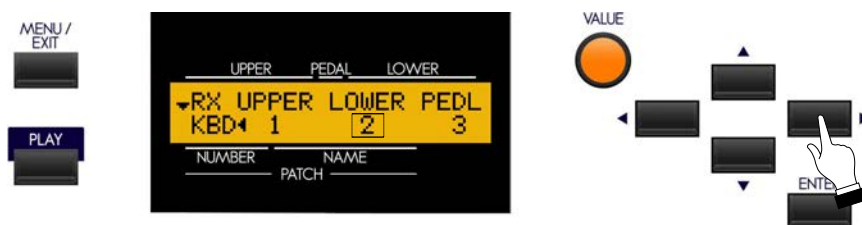
This Advanced Feature Menu screen contains 3 different functions. Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth among the functions.

UPPER Receive

This Advanced Feature Menu Page allows you to select on which MIDI Channel the UPPER Keyboard Channel will receive. You can select from "1" through "16" as well as "OFF."

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:

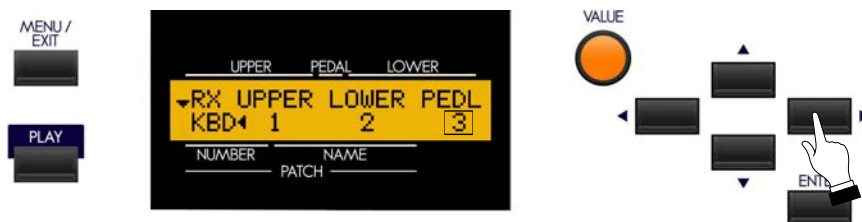


LOWER Receive

This Advanced Feature Menu Page allows you to select on which MIDI Channel the LOWER Keyboard Channel will receive. You can select from "1" through "16" as well as "OFF."

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



PEDAL Receive

This Advanced Feature Menu Page allows you to select on which MIDI Channel the PEDAL Keyboard Channel will receive. You can select from "1" through "16" as well as "OFF."

Turn the VALUE Rotary Control to make your selection.

◆ How MIDI Works on the SK-series:

The SK-series instruments can function in a large variety of MIDI environments. In addition to transmitting basic MIDI information such as Note On/Note Off and Note Velocity, the SK also can transmit Program Changes, Control Changes, NRPN and System Exclusive (SyxEx) codes.

It is also possible to use the SK as a MIDI Master Keyboard for layering or multi-timbral (playing more than one sound at the same time) applications. The following paragraphs explain this in more detail.

◆ KEYBOARD (INTERNAL) CHANNELS

The internal sounds of the instrument - both Drawbars and Extra Voices - will play on what are called the Keyboard or Internal Channels. The Keyboard Channels transmit Note On/Note Off and Velocity data from the Upper, Lower and Pedal divisions. These channels will both send (MIDI OUT) and receive (MIDI IN) data, and are therefore used when recording and playing back sequences.

NOTE: The Upper Keyboard Channel, in addition to Note On/Note Off and Velocity, also is used for transmitting Controller data.

◆ EXTERNAL ZONE CHANNELS

The External Zone Channels allow you to use the SK as a MIDI Master Keyboard. These allow you to play additional sounds from another MIDI instrument such as a sound module. The External Zones transmit but do not receive MIDI data - in other words, they are MIDI OUT only.

There are three (3) External Zone Channels which can be assigned to the Upper Manual, Lower Manual or Pedals. In addition, different configurations can be saved to different Patches - for example, one Patch can have all three External Zones assigned to the Upper Manual, another Patch can have one External Zone each for Upper, Lower and Pedals, etc.

The Internal and External Channels of the instrument are referred to as Zones. The features available for the Zones are found in the ZONE Edit Menu. The next few pages will explain in detail how each of the Zone Advanced Features work.

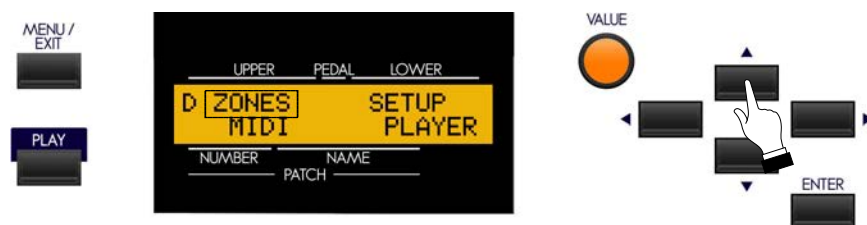
◆ ZONE Edit Menu

TRY THIS:

1. From either of the PLAY Screens, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see "A" displayed in the extreme upper left corner of the Information Center Display.

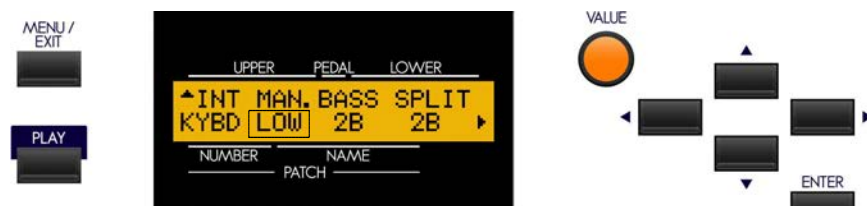


2. Touch the PAGE UP Touch Button three times. You will see "D" displayed in the extreme upper left corner of the Information Center Display. The word "ZONES" in the upper left corner of the Information Center Display will be blinking.



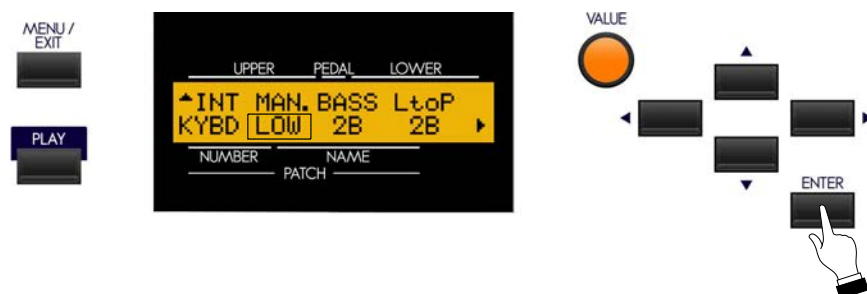
◆ SK1, SK1-73, SK1-88:

3. Touch the ENTER Touch Button once. The Information Center Display should now look like this:



◆ SK2:

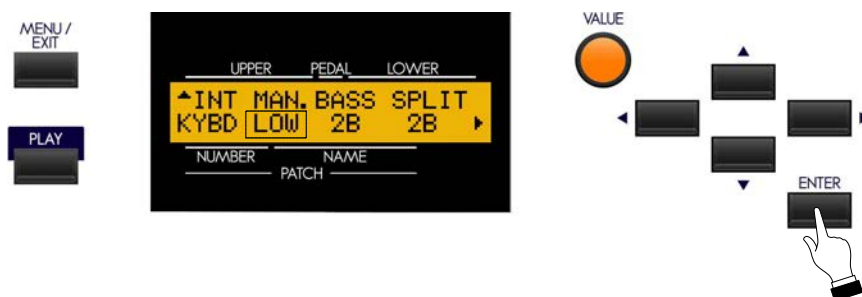
3. Touch the ENTER Touch Button once. The Information Center Display should now look like this:



You are now in the ZONE Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to make changes to the Internal and External Keyboard Zones of your SK-series instrument. These changes are explained starting on the next page.

◆ Internal Zone Page 1 - Manual Bass

If you followed the above instructions, you should now see Page 1 of the ZONE Edit Menu. The legend underneath the word “MAN” should now be blinking.



Manual Bass Mode

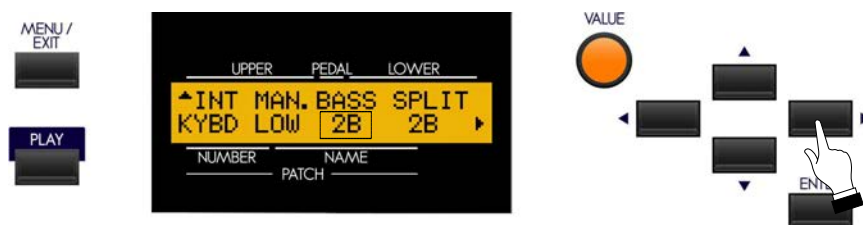
This Advanced Feature Menu Page allows you to select how the Manual Bass feature works. The data chart below shows the options you may select.

Manual Bass Options	
Description	Function
LOW	The bass note will play the lowest note selected if multiple notes are played.
CHRD	The keyboard is scanned for Chord Root and Chord Type and plays an appropriate bass note. For example, if the notes “G,” “C” and “E” are played, it will be interpreted as a C major chord and the bass note will sound the note “C.”
POLY	The bass tone will sound on all notes.

NOTE: On the SK1, SK1-73 and SK1-88, both the MANUAL BASS and SPLIT features must be enabled to hear the effects of this setting. On the SK2, playing keys on the Lower Manual with the MANUAL BASS feature enabled will allow you to hear the Mode setting.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “BASS” should be blinking.

Manual Bass Split Point

This Advanced Feature Menu Page allows you to set the range of the Manual Bass on the keyboard. You can select from “1C” (the lowest note on the manual) to “3C” (the third “C” on the manual).

Turn the VALUE Rotary Control to the right to locate the Manual Bass Split Point higher on the manual.

Turn the VALUE Rotary Control to the left to locate the Manual Bass Split Point lower on the manual.

SPECIAL NOTE: The next paragraph applies to the SK1-series only. If you have the SK2, please skip this Advanced Feature description and proceed to the next page.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “SPLIT” should be blinking.

SK1, SK1-73, SK1-88 - Keyboard Split Point

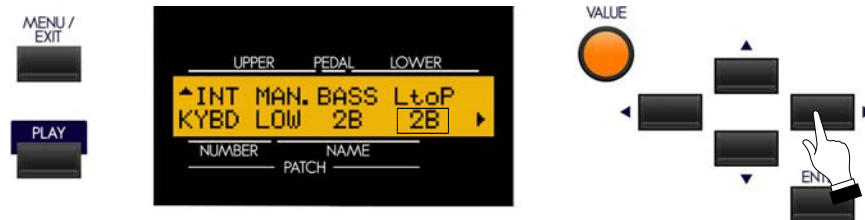
This Advanced Feature Menu allows you to change the Split point. You can select from “1C” (the lowest note on the manual) to “6C” (the highest note on the manual).

Turn the VALUE Rotary Control to the right to locate the Split Point higher on the manual.

Turn the VALUE Rotary Control to the left to locate the Split Point lower on the manual.

SPECIAL NOTE: The next paragraph applies to the SK2 only.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “LtoP” should be blinking.

SK2 - Lower to Pedal Split Point

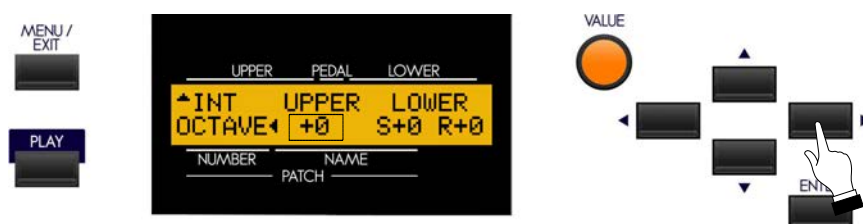
This Advanced Feature Menu allows you to set the highest note that will sound the Lower Manual registration when the LOWER TO PEDAL Touch Tab is “ON.” You can select from “1C” (the lowest note on the manual) to “3C” (the third “C” on the manual, which also is Middle “C.”

Turn the VALUE Rotary Control to the right to locate the note range higher.

Turn the VALUE Rotary Control to the left to locate the note range lower.

◆ Internal Zone Page 2 - Octave

From the previous screen, touch the **PAGE RIGHT** Touch Button once. Page 2 of the Internal Zone Edit Menu should now display. The legend just underneath the word “UPPER” should now blink.



Upper Octave Setting

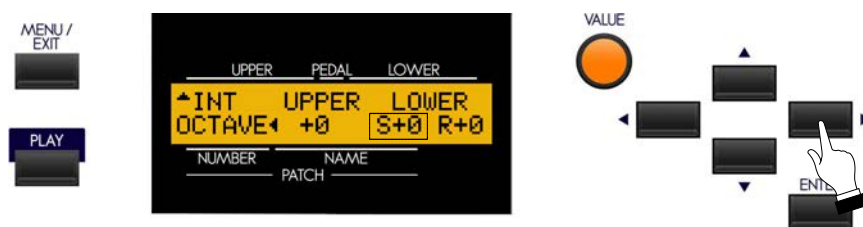
This Advanced Feature Menu Page allows you to select the Octave range in which the Extra Voices will play. The data chart below shows the options you may select.

Octave Options	
Description	Function
-2	The sound is two octaves below the regular pitch.
-1	The sound is one octave below the regular pitch.
0	The sound is at normal pitch.
+1	The sound is one octave above the regular pitch.
+2	The sound is two octaves above the regular pitch.

Turn the VALUE Rotary Control to the right to raise the Octave.

Turn the VALUE Rotary Control to the left to lower the Octave. It is linked with the [OCTAVE UP], [OCTAVE DOWN] buttons on the top panel.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



Lower Octave Setting (SK1, SK1-73, SK1-88)

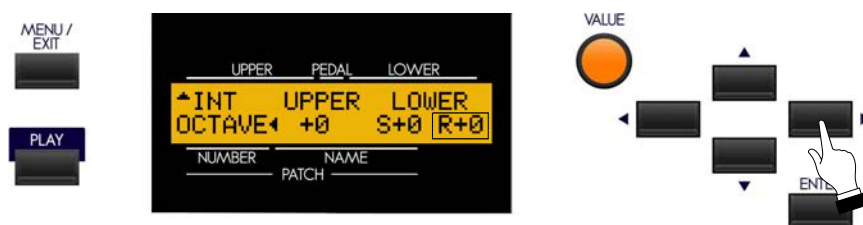
This Advanced Feature allows you to set the octave for the Lower portion of the manual when the **SPLIT** Touch Button is "ON." The data chart below shows the options you may select.

Octave Options	
Description	Function
-2	The sound is two octaves below the regular pitch.
-1	The sound is one octave below the regular pitch.
0	The sound is at normal pitch.
+1	The sound is one octave above the regular pitch.
+2	The sound is two octaves above the regular pitch.

Turn the **VALUE** Rotary Control to the right to raise the Octave.

Turn the **VALUE** Rotary Control to the left to lower the Octave.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



Lower Octave Setting (SK2 - "Real")

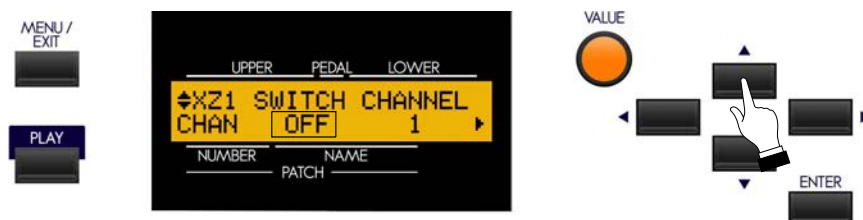
This Advanced Feature allows you to set the octave for the Lower Manual of the SK2. The data chart below shows the options you may select.

Octave Options	
Description	Function
-2	The sound is two octaves below the regular pitch.
-1	The sound is one octave below the regular pitch.
0	The sound is at normal pitch.
+1	The sound is one octave above the regular pitch.
+2	The sound is two octaves above the regular pitch.

Turn the **VALUE** Rotary Control to the right to raise the Octave.

Turn the **VALUE** Rotary Control to the left to lower the Octave.

From the previous screen, touch the **PAGE UP** Touch Button once. The Information Center Display should now look like this:



The legend underneath the word “SWITCH” should be blinking.

You are now in the section of the ZONE Edit Menu which allows you to control the operation of the External Zones.

Use the PAGE UP and PAGE DOWN Touch Buttons to move back and forth among the three External Zones, identified as “XZ1,” “XZ2” and “XZ3.” The Advanced Feature selections are identical for all three External Zones; therefore for the sake of brevity only “XZ1” screens will be shown and described.

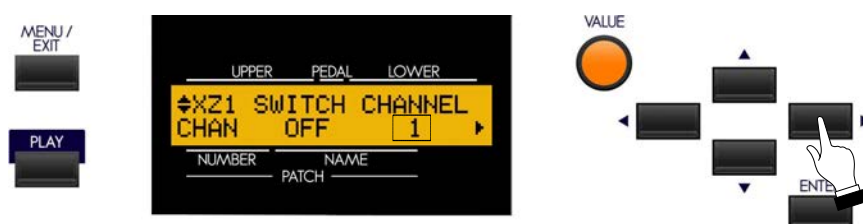
◆ External Zone Page 1 - ON/OFF and Channel Selection

External Zone Switch

This Advanced Feature allows you to turn the selected External Zone “ON” (MIDI information will be transmitted) or “OFF” (no MIDI information will be sent).

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



The number underneath the word “CHANNEL” should be blinking.

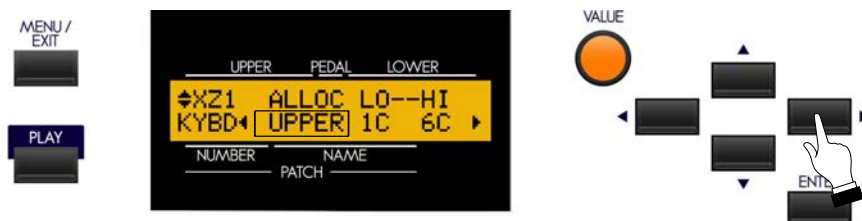
External Zone Channel

This Advanced Feature allows you to select the MIDI Channel on which MIDI data from the selected External Zone will be transmitted. You can select from “1” through “16.”

Turn the VALUE Rotary Control to make your selection.

◆ External Zone Page 2 - Manual Allocation & Note Limits

From the previous screen, touch the PAGE RIGHT Touch Button once. Page 2 of the External Zone Edit Menu should now display. The legend just underneath the word “ALLOC” should now blink.

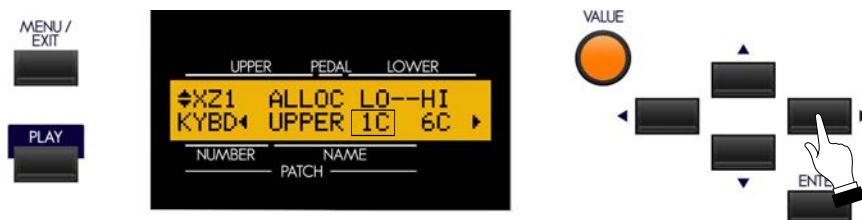


External Zone Allocate

This Advanced Feature allows you to select which Manual will control the selected External Zone. Sets which keyboard to allocate this zone. Set to the UPPER if it is only the SK1. If on SK2 or there is an expanded keyboard, you can control the external zone using the Lower keyboard or the Pedalboard. In this time, set at LOWER or PEDAL. Set at OFF if an external synthesizer is connected, to change the Program or volume only, and no sending the note (playing) messages.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



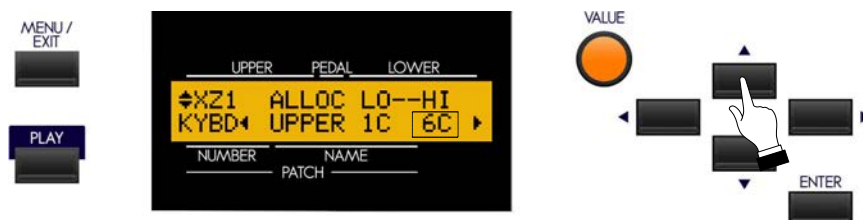
External Zone Lower Note Limit

This Advanced Feature allows you to set the lower note limit for the External Zone. You can select from “1C” (the lowest note on the manual) to “3C” (the third “C” on the manual, which also is Middle “C.”

Turn the VALUE Rotary Control to the right to locate the note range higher.

Turn the VALUE Rotary Control to the left to locate the note range lower.

From the previous screen, touch the **PAGE RIGHT** Touch Button once. The Information Center Display should now look like this:



External Zone Upper Note Limit

This Advanced Feature allows you to You can select from “1C” (the lowest note on the keyboard) to “6C” (the highest note on the keyboard).

Turn the VALUE Rotary Control to the right to increase the number which will move the lower limit farther to the right.

Turn the VALUE Rotary Control to the left to decrease the number which will move the lower limit farther to the left.

NOTE: The Upper Limit number can not be lower than the Lower Limit number.

Setting the External Zone Note Limits Using the Shortcut

You can also set the Upper and Lower Note Limits for the selected External Zone by touching the **RECORD** Touch Button while pressing and holding the Key you want to set as either the highest or lowest note.



From the previous screen, touch the PAGE RIGHT Touch Button once. Page 3 of the External Zone Edit Menu should now display. The legend just underneath the word “M-BNK” should now blink.



◆ External Zone Page 3 - Program Change and Bank Select

What Is “Bank Select?”

“Bank Select” is closely related to “Program Change.” If you go to page 225, you will find a complete explanation of MIDI Programs, particularly as they relate to General MIDI. As explained there, General MIDI provides for a variety of different sounds, called Programs and grouped by instrument type. However, General MIDI only allows 128 separate Programs and does not allow for variations of instruments. Thus, if you want, say, an Acoustic Piano, you would have no choice but to use the one Acoustic Piano sound provided for by General MIDI, whereas actual acoustic pianos differ greatly in sound and timbral character.

In order to satisfy the requirement for different variations in tone quality within a specific sound category, several methods have been devised to allow one Program Number to represent multiple varieties or Variations of a basic sound such as Piano, Vibes, Trumpet, etc. The most common of these is the “GS” (General Standard or General Sound) extension of the General MIDI specification.

The GS standard is fully compatible with General MIDI; however, instead of only 128 sounds, it provides the means to have up to 16,384 different sounds. This is accomplished by providing up to 128 banks of voices for each of the 128 Program Numbers in General MIDI ($128 \times 128 = 16,384$). It should be noted that this is a theoretical limit - the actual number is typically much less (anywhere from 300 ~ 900 sounds and/or drum samples).

GS uses a method called Bank Switching to select the different sound banks. It does this by sending two additional Controller Numbers ahead of the Program Number so that the instrument will know which sound to play. Controller #32 (Bank Select LSB - Least Significant Bit) is used to select a particular bank scheme or “family,” while Controller #0 (Bank Select MSB - Most Significant Bit) is used to set a particular voice variation within that bank.

SPECIAL NOTE: The number of available voices will depend on the particular MIDI instrument you are using. Please consult the documentation provided with the MIDI instrument you are using to find which additional voices are available. This information will usually be found in either the Owner’s Manual or an additional Reference Guide.

The next few paragraphs will show you how to use this feature on your SK-series instrument.

External Zone Bank Select MSB

This Advanced Feature allows you to set the value for Controller #0 - Most Significant Bit.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



External Zone Bank Select LSB

This Advanced Feature allows you to set the value for Controller #32 - Least Significant Bit.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



External Zone Program Number

This Advanced Feature allows you to select from which Manual will control the selected External Zone.

Turn the VALUE Rotary Control to make your selection.

◆ External Zone Page 4 - Octave, Volume, Pan and Velocity Settings

From the previous screen, touch the **PAGE RIGHT Touch Button** once. Page 4 of the External Zone Edit Menu should now display. The legend just underneath the word “OCT” should now blink.



External Zone Octave

This Advanced Feature allows you to determine the Octave or pitch at which the External Zone will sound. Use this Advanced Feature if an external sound plays in a pitch range other than the one you find desirable.

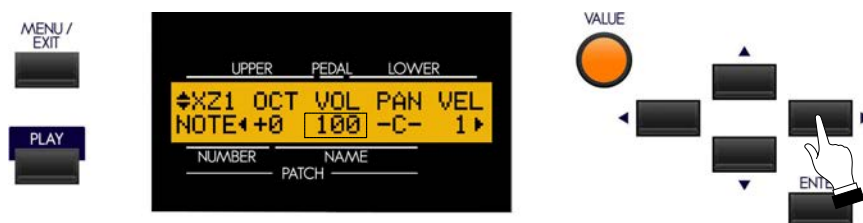
The data chart below shows the options you may select.

Octave Options	
Description	Function
-2	The sound is two octaves below the regular pitch.
-1	The sound is one octave below the regular pitch.
0	The sound is at normal pitch.
+1	The sound is one octave above the regular pitch.
+2	The sound is two octaves above the regular pitch.

Turn the VALUE Rotary Control to the right to raise the Octave.

Turn the VALUE Rotary Control to the left to lower the Octave.

From the previous screen, touch the **PAGE RIGHT Touch Button** once. The Information Center Display should now look like this:



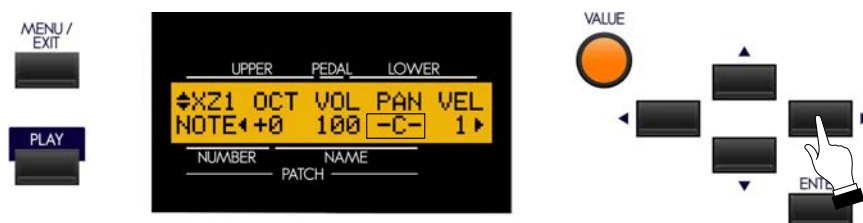
◆ External Zone Volume

This Advanced Feature allows you to control the volume (Controller #7) of the sound controlled by the selected External Zone. You can select from “0” (no volume) through “127” (maximum volume).

Turn the VALUE Rotary Control to make your selection.

NOTE: In order for this Advanced Feature to work, the Expression Control Number must be set to “7:VOL.” If the Expression Control Number is set to “11:EXP,” changing this parameter will have no effect.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



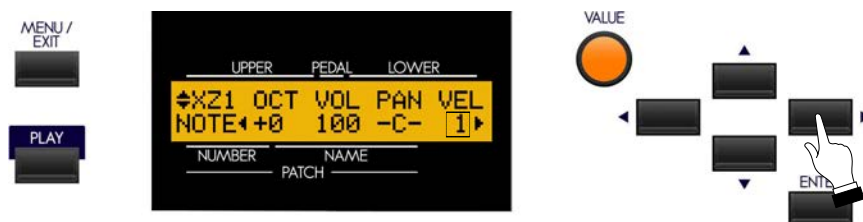
External Zone Pan

This Advanced Feature allows you to set the directionality or Pan setting (Controller #10). You can select from “L63” (the sound plays entirely through the Left channel), through to “0” (the sound is heard equally through both channels) and on through “R63” (the sound plays entirely through the Right channel).

Turn the VALUE Rotary Control to make your selection.

NOTE: In order to hear the effect of this Advanced Feature, the sound controlled from the External Zone must be connected via Stereo (both Left and Right channel) outputs.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



External Zone Velocity

This Advanced Feature allows you to set the character of the velocity to send to this zone. The setting range is OF and 1 to 4. At OF, the velocity is fixed at 100. The “touch” (velocity response) of the keyboard progresses from 1 (heavier) through 4 (lighter).

Turn the VALUE Rotary Control to make your selection.

◆ External Zone Page 5 - Minimum & Maximum Volume and Controller Number Settings

From the previous screen, touch the PAGE RIGHT Touch Button once. Page 5 of the External Zone Edit Menu should now display. The legend just underneath the word “MIN” should now blink.

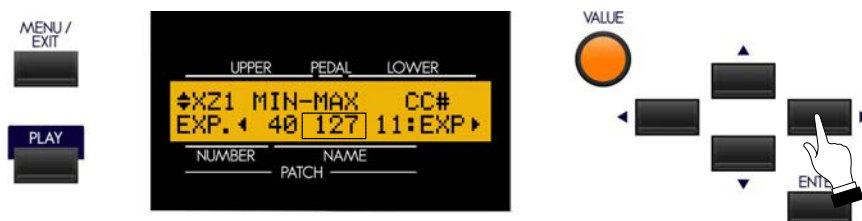


External Zone Minimum Volume

This Advanced Feature allows you to adjust the volume level when the Expression Pedal is “closed,” or set at minimum. You can select from “0” through “63.” At “0” no sound will be heard.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



External Zone Maximum Volume

This Advanced Feature allows you to adjust the volume level when the Expression Pedal is all the way “open,” or set at maximum. You can select from “64” through “127.” At “0” no sound will be heard.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



External Zone Expression Control Number

This Advanced Feature allows you to select how you want to control the level of the selected External Zone. You can select either “VOL” (Volume or Controller #7) or “EXP” (Expression or Controller #11).

Turn the VALUE Rotary Control to make your selection.

What Is the Difference Between “Volume” and “Expression?”

In purely technical terms, Volume and Expression are identical - both control loudness or sound level. The difference lies with how they are customarily used in MIDI applications, particularly in creating and playing back MIDI sequences.

The generally accepted protocol is to use Controller #7 (Volume) to set the overall or absolute level of a voice or sound, and use Controller #11 (Expression) to make variations (such as crescendi or diminuendi) against the overall level set by Controller #7. This is recommended particularly if you want to use your SK-series instrument as a MIDI input device to record a sequence.

NOTE: In order for the External Zone Volume feature to work, the Expression Control Number must be set to “VOL.” If this parameter is set to “EXP,” changing the External Zone Volume setting will have no effect.

◆ External Zone Page 6 - Damper ON/OFF

From the previous screen, touch the PAGE RIGHT Touch Button once. Page 6 of the External Zone Edit Menu should now display. The legend just underneath the word “DAMPER” should now blink.



◆ External Zone Damper

This Advanced Feature allows you to select whether you want to send Damper (Controller #64) information as part of the selected External Zone.

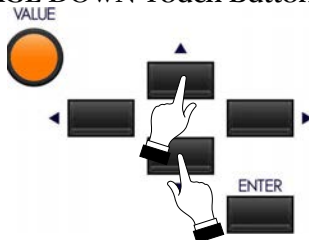
Turn the VALUE Rotary Control to make your selection.

MIDI All Notes Off and Parameter Reload (“MIDI Panic”)

MIDI plays notes from an external instrument by sending two commands - “Note On” which starts the note playing, and “Note Off” which releases the note and stops it from playing. These two commands are always sent in pairs.

Once in a while, a Note Off command may not follow a Note On, command, causing a note or notes to cipher, or sound continuously (the phenomenon popularly referred to a “stuck notes”). In this case, you need to send a MIDI command to the receiving instrument to clear the ciphering notes.

To do this, touch the PAGE UP and PAGE DOWN Touch Buttons simultaneously.



Doing this will send a “MIDI All Notes Off” as well as a “MIDI Reset All Controllers” command to the receiving instruments. The stuck notes will be turned off and the settings for the External Zones will be reset, then the External Zone settings will be re-sent. Normal playing can then be resumed.

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HAMMOND



Sk1

Sk2

Sk1-73

Sk1-88

USING
THE
USB PORT

USING THE USB PORT

Your Hammond SK-series instrument is equipped with a USB Port.

“USB” is an acronym for Universal Serial Bus), which is a method developed in the mid-1990s for allowing connection, communication and power supply between computers and electronic devices. There have been several revisions to the USB protocol since it was first introduced which are distinguished from one another by version numbers. As with software version numbers, the higher the number the more recent the revision. The most common is USB 2.0, which is the version supported by the SK-series instruments.

Many different USB-compatible electronic devices - digital cameras, GPS navigation systems, etc. - are now available; however, the USB Port on the SK-series is designed for use with a USB Flash Drive (example pictured below actual size):



A USB Flash Drive is so-called because it includes what is called flash memory with an integrated Universal Serial Bus (USB) interface. USB Flash Drives are available in many different memory capacities; however, 1 or 2 Gigabytes (Gb) will be enough for the applications unique to the SK-series instruments.

The term, “drive” is not technically accurate since no moving parts are involved; however, since the same types of operations are used with a USB Flash Drive as for an old-style floppy disk drive, the “drive” terminology is still used - much in the same manner as the term “Patch” is used even though modern-day synthesizer- type instruments do not utilize patch cords.

On the SK-series instruments, a USB Flash Drive allows you to:

1. Play MP3-format files,
2. Play .WAV-format files,
3. Save Setups,
4. Load previously stored Setups from a USB Flash Drive into the SK-series keyboard,
5. Install software upgrades into the SK’s operating system,
6. Load new Extra Voices into the SK-series Voice Library.

The following pages will explain how to do each operation.

IMPORTANT NOTE: Due to the great variety of USB Flash Drives available, be sure to select one which is compatible with the SK-series instruments. The following have been tested and confirmed to be compatible:

Kingston
Lexar
PNY
SanDisk

◆ Preparing a USB Flash Drive for use with the SK

In order to use a USB Flash Drive with the SK-series instrument, several special directories or Folders have to be created on the Flash Drive itself. All SK-series instruments have a facility that Formats the drive and automatically creates these directories for you. This is the recommended way to prepare a Flash Drive so that you can use it with your instrument. The following paragraphs will explain this in detail.

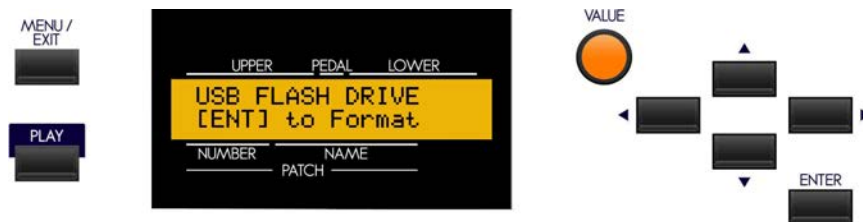
◆ Formatting a USB Flash Drive using the SK USB Port

To format a USB Flash Drive for the SK, do the following:

1. Locate a USB Flash Drive which either is empty or which does not have data you want to save. The Formatting procedure will erase any data which may already be on the drive.
2. When you have located a suitable Flash Drive, insert it into the USB port. The bottom line of the Information Center Display will scroll the following:

Confirming USB. Please wait...

3. After the above message stops scrolling, the Information Center Display should now look like this:



4. Now touch the ENTER Touch Button once. The Information Center Display should now look like this:



If there is any data on the USB Flash Drive, formatting the drive will erase it. Therefore if you DO NOT wish to format the USB Flash Drive, simply touch either the MENU/EXIT or PLAY Touch Buttons.

If you wish to proceed with the formatting operation, from the above screen touch the ENTER Touch Button once. The Information Center Display should now look like this:



The bottom line of the Information Center Display will scroll the following:

Formatting USB. Please wait...

After approximately 3 seconds, the USB Flash Drive will be formatted and ready for use.

◆ Upgrading the SK-series software using a USB Flash Drive

The different components of the software of your SK-series instrument can be upgraded to new versions. To do this, you must first download the software update from the Hammond website and install it to your USB Flash Drive.

◆ Installing a software upgrade to a USB Flash Drive

1. Go to the Hammond website (<http://hammondorganco.com>) and left-click on Support
2. When the Support page finishes loading, left-click on Downloads from either of the two links on the page.
3. When the Downloads page finishes loading, left-click on System Downloads from either of the two links on the page.
4. On the left side of the System Downloads page you will see information about the latest system software upgrade and a link to a file named "Sk12Release?.zip." The number of the release will be the latest software available.
5. Right-click on the link and select "Save Link As..." A dialog box will appear asking to what location you want to save the .ZIP file. It is recommended that you save the .ZIP file to your hard drive.

What Is A "ZIP" File?

When working with computer operations which involve several files, such as software installations or upgrades, it is frequently necessary to combine the individual files into one file, called an archive, and to compress the files so that the resulting archive file is smaller in size. Originally this was done so that all the necessary data would fit onto a storage medium such as a floppy disk or installation CD; in recent years it is done so that if it is necessary to download data from the Internet, the download will take a shorter amount of time.

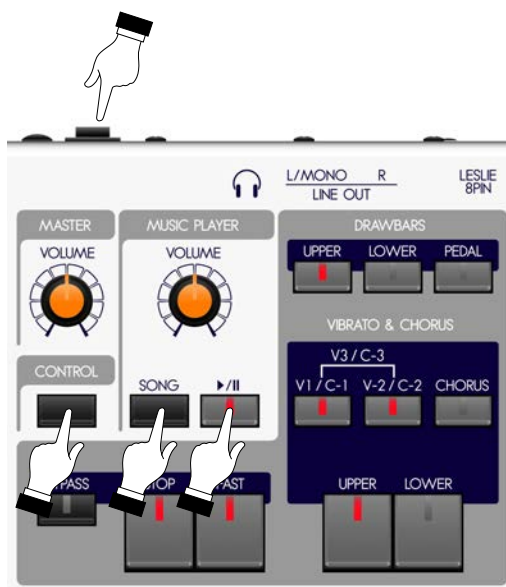
There are several methods of compressing files; however, the most common is the .ZIP format, support for which is built into both PC and Mac operating systems. On a PC, the name "compressed folders" is given to .ZIP files, while Mac OS X 10.3 includes .ZIP file support under the name "Archive Utility."

6. After the .ZIP file has finished downloading, go to the directory on your hard drive which contains the .ZIP file and extract the contents of the file. It is recommended that you allow the extraction utility to determine the folder which will contain the extracted files.
7. After the .ZIP file is finished extracting, open the folder which contains the extracted files. You should see a number of files with the extension, ".SYS."
8. Insert a USB Flash Drive that has been formatted for use with the SK instrument into an open USB port on your computer.
9. Open the "hammond" directory on the USB Drive, then the "sk" sub-directory. You will see five (5) folders - "audio" "lib," "patch," "setup" and "system." The "system" folder is the one to which you will copy the system software files.
10. From the folder on your hard drive containing the extracted files select the files with a .SYS extension and copy them to the "system" folder on your USB Drive.

You have now prepared the USB Flash Drive with all the necessary information for upgrading your SK-series instrument with the latest system software. The following pages will explain in detail how to upgrade the SK with the new software.

◆ Installing a software upgrade to the SK:

1. Make sure the power to the SK instrument is "OFF."
2. Turn the instrument "ON" while pressing and holding the three Touch Buttons shown:



The Information Center Display will show the following:



3. Insert the USB Flash Drive containing the system upgrade software into the USB Port of the SK instrument. The bottom line of the Information Center Display will scroll the following:

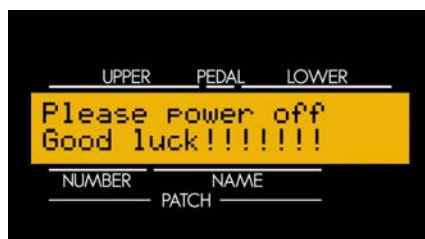
Confirming USB. Please wait...

After approximately 3 seconds, the Information Center Display will show the following:



The amount of time necessary to upgrade the system software will depend upon the software modules to be updated. The range is from 15 to as much as 45 minutes.

When the system software has finished upgrading, the Information Center Display will show the following:



4. Turn the power to the SK "OFF," but DO NOT remove the USB Flash Drive from the USB Port yet.

◆ Installing the "sload" Boot Program to the SK (if needed):

After the system software is updated, there may be an additional "boot" program called "sload" that must be loaded and installed. To find out if this is the case:

1. Make sure the USB Flash Drive is still in the USB Port.
2. After you have performed the previous procedure to update the system software, turn the power to the SK instrument "ON." The bottom line of the Information Center Display will scroll the following:

Confirming USB. Please wait...

Wait approximately 3 seconds. If an additional boot program needs to be loaded, the Information Center Display will show the following:



If you see this screen, the "sload" boot program is being installed. It will take about 1 ~ 2 minutes for this procedure to complete.

3. When this procedure is completed, the Information Center Display will show the following:



4. Now remove the USB Flash Drive from the USB Port.
5. Turn the power to the SK "OFF," then "ON." Your SK instrument is now updated and ready to play.

IMPORTANT NOTE: If there is no additional "boot" program, the Information Center Display will show a normal PLAY screen after performing steps 1 and 2 on the preceding page. In this case, the software update is completed and the USB Flash Drive may safely be removed from the USB Port.

◆ Voice Libraries

The EXTRA VOICE Section has six (6) categories of voices, one of which is called Library.



This category has several pre-loaded sounds; however you can add more voices using the USB Flash Drive. The following pages will explain this in detail.

What Is A “Voice Library?”

A Voice Library is a collection of sounds grouped together by type (Strings, Vocal, Jazz Guitar, etc). The number of voices in each group will vary - some will have only three or four while others may contain many more. These Voice Libraries, can be downloaded from the Hammond website and made a part of your SK's Extra Voice complement.

Loading a Voice Library to the SK-series instrument

The Hammond SK series instruments can be enhanced with additional sounds and voices. To do this, you must first download the Voice Libraries from the Hammond website and install them to your USB Flash Drive. This is described starting on the next page.

Downloading and Extracting Voice Libraries

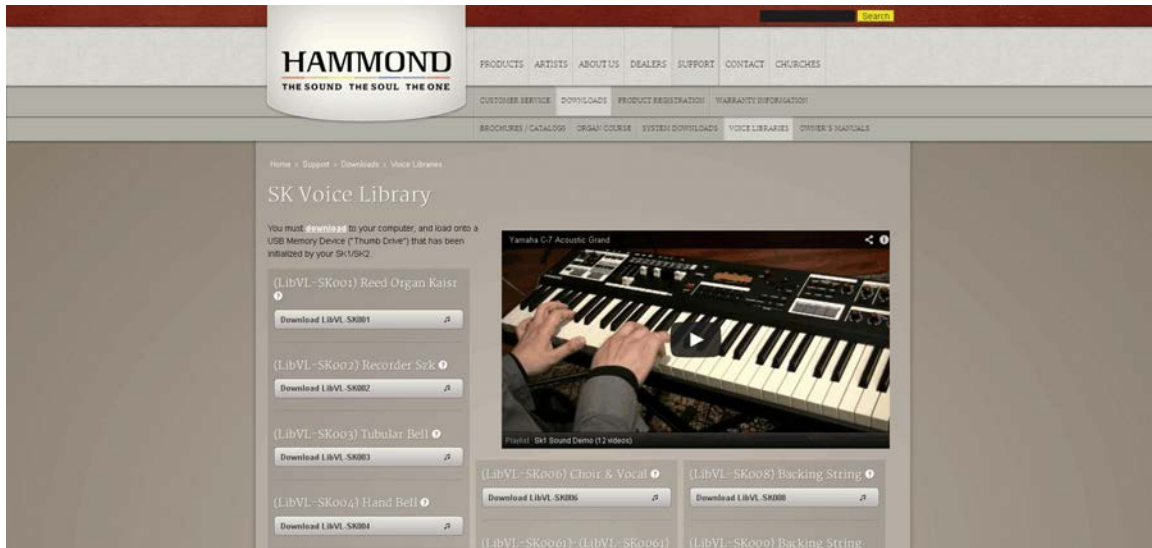
If you want to add additional sounds to your SK instrument, the first step will be to select the Voice Libraries you want from the Hammond website.

TRY THIS:

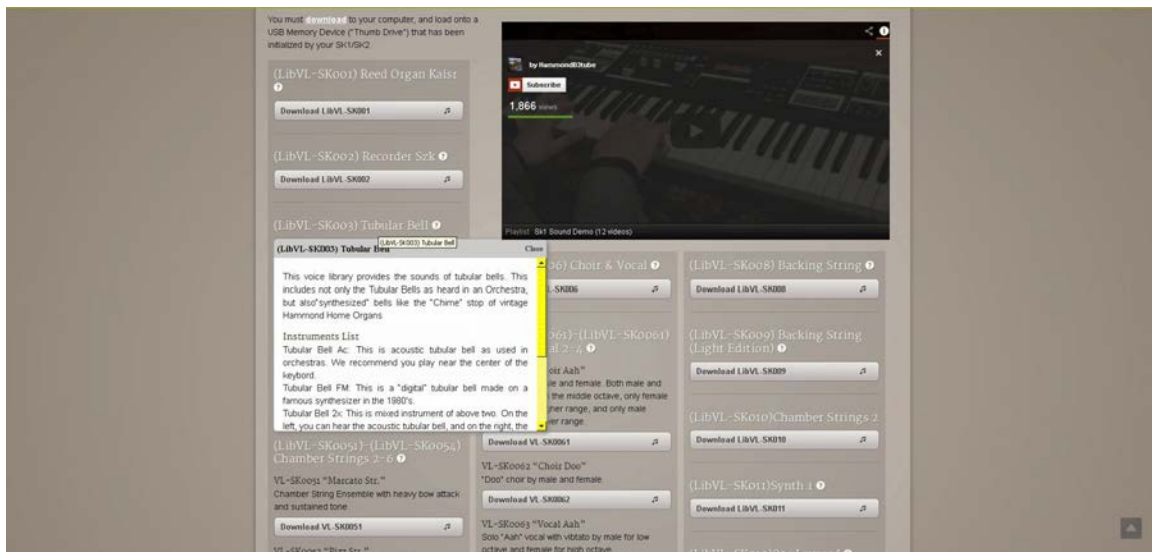
1. Go to the page on the Hammond website which contains the Voice Library downloads:

<http://hammondorganco.com/support/downloads/voice-libraries/>

The page will look similar to this:



On this page you will see names of different Voice Libraries. The links to each library appear as long gray boxes below the titles. If you move your screen pointer over a title, a popup box will appear describing that particular Voice Library.



In this way you can decide which Voice Libraries you want to download.

2. After you have selected a Voice Library, move your screen pointer over the link to the library file and click. When a dialog box appears, select "Save File As..."
3. Select the location where you want to save the file and select "Save." It is recommended that you save the file to the hard drive on your computer.
4. Because the saved file is in .ZIP format, you will need to extract its contents before the file is usable. Therefore, after the file is saved, open the folder contained the downloaded file, and right-click. When a dialog box appears, select "Extract."
5. After the .ZIP file has finished downloading, go to the directory on your hard drive which contains the .ZIP file and extract the contents of the file. It is recommended that you allow the extraction utility to determine the folder which will contain the extracted files. Do this same procedure for each Voice Library file you want to extract.
6. After you are finished extracting .ZIP files, open the folder which contains the extracted file. The file name(s) will be similar to this:

LibVLxxx.sys.

The numbers in the file name will be the same for the extracted .SYS file as for the host .ZIP file.

NOTE: The "x's" indicate numbers. These will vary with each file name ("LibVL-SK001," LibVL-SK0051," etc.).

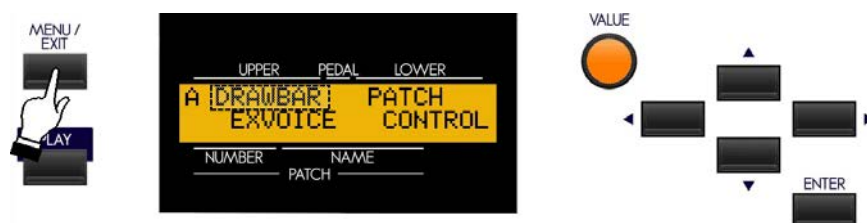
6. Insert a USB Flash Drive that has been formatted for use with the SK instrument into an open USB port on your computer.
- NOTE: If the USB Drive is not yet formatted for use with the SK, follow the instructions starting on page 162 for preparing the USB Drive for use with your instrument.
7. Open the "hammond" directory on the USB Drive, then the "sk" sub-directory. You will see a number of folders, one of will be "lib." This folder is the one which will contain extracted Voice Library files.
 8. From the folder on your hard drive containing the extracted Voice Library file(s), files select the file or files you want to copy, then copy them to the "lib" folder on your USB Drive.

You have now prepared the USB Flash Drive with all the necessary information for upgrading your SK-series instrument with new voices. The following pages will explain in detail how to add these voices to your SK instrument.

LIBRARY Edit Menu

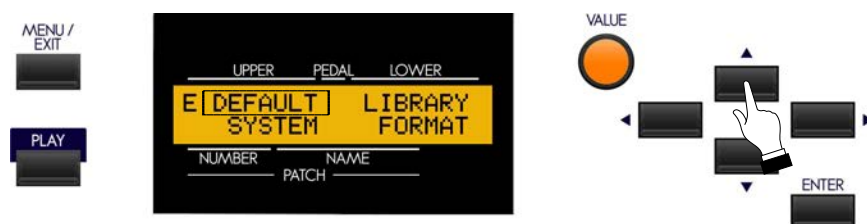
To use the LIBRARY Edit Menu, do the following:

1. Turn the power to the SK instrument “ON.”
2. Insert a USB Flash Drive that has been formatted for the SK instruments and containing Voice Libraries into the USB Port.
3. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



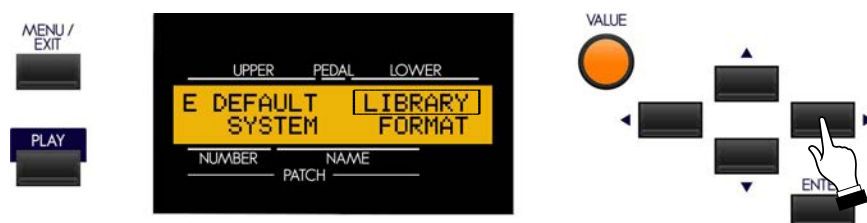
The word “DRAWBAR” should now be blinking.

4. Touch the PAGE UP Touch Button four times. The Information Center Display should now look like this:



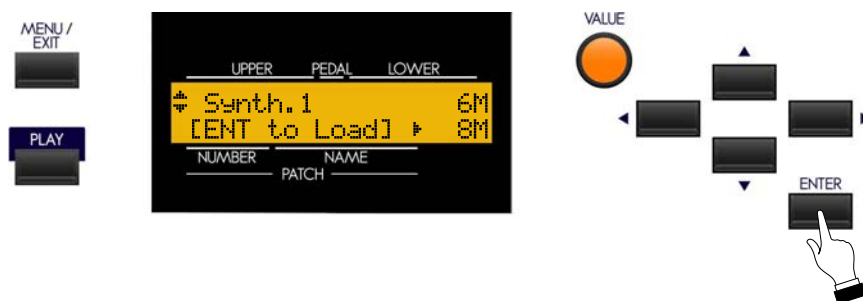
The word “DEFAULT” should now be blinking.

5. Touch the PAGE RIGHT Touch Button two times. The Information Center Display should now look like this:



The word “LIBRARY” should now be blinking.

6. Touch the ENTER Touch Button once. The Information Center Display should now look similar to this:



You are now in the LIBRARY Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to Load, Save or Delete Sound Libraries. These changes are explained starting below.

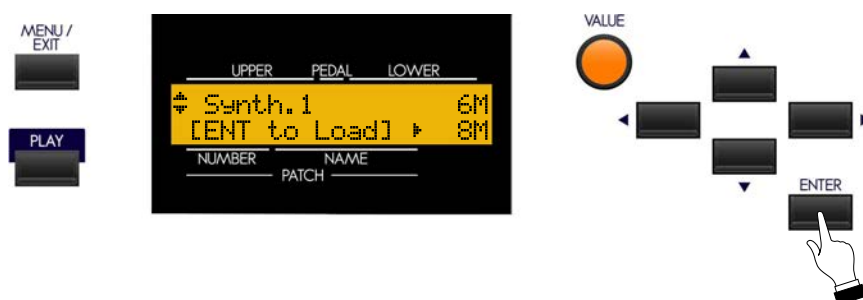
NOTE: If the Flash Drive is not formatted, or if there is no Flash Drive inserted, the Information Center Display will read:

USB is not ready.

If you see this message, you will be prompted to touch the ENTER Touch Button to return to the previous screen.

Installing a Voice Library from a USB Flash Drive to the SK

1. If you are not in the LIBRARY Edit Menu, follow the instructions on the previous page to display it. Otherwise, go to the next step. The Information Center Display should look similar to this:



If more than one Voice Library is loaded on the USB Drive, the Information Center Display will show an arrow symbol. Use the PAGE UP and PAGE DOWN Touch Buttons to select the Voice Library you want to load.

You will also see numbers on the right side of the display followed by the letter “M.” The number on the top line shows the amount of memory the selected Voice Library will require. The number on the bottom line shows the amount of available memory in the SK’s hardware. In this way, you can determine whether you have enough memory to load each Library.

7. When you have selected the Voice Library you want to download, touch the ENTER Touch Button. . The bottom line of the Information Center Display will scroll the following:

Loading LIBRARY. Please wait...

After the library has finished loading, the opening screen shown at the bottom of the preceding page will again display.

Notice that the number on the bottom line has now changed to reflect the amount of available memory. You can use this number to keep track of how much memory each Library uses.

◆ Setups

Your Hammond SK-series instrument gives you the ability to save Setups to a USB Flash Drive for later use.

◆ What Is A “Setup?”

As explained in previous sections of this Guide, your SK instrument can be customized in a number of different ways - you can create Custom Tone Wheel settings and custom Leslie Cabinets, create your own Patches, etc. After you have made your changes, you can save your edits and custom settings as one “bundle” or Setup. In this way you can customize the instrument in several different ways and save each series of edits as a separate Setup. This makes it easy to configure the instrument the way you want without having to manually re-create all your custom settings each time you play.

◆ What Is A “Whole?”

Normally, a Setup consists of Global parameter settings, Patch parameter settings, Patches, Leslie Cabinet settings, Custom Tone Wheel settings, and all other panel settings (except Expression Source setting and Device ID number). If you have downloaded and installed Voice Libraries and want to include those in your Setup, you can save them as a special kind of Setup called a Whole. Since a Whole contains much more data to be saved than a Setup, the time required to save a Whole is much greater than that required to save a Setup - it may take several hours depending on the amount of data.

◆ SETUP Edit Menu

This Advanced Feature Menu allows you to Load, Save, Name or Delete Setups.

To see the SETUP Edit Menu, do the following:

1. Insert a USB Flash Drive into the USB Port of the SK instrument. The bottom line of the Information Center Display will scroll the following:

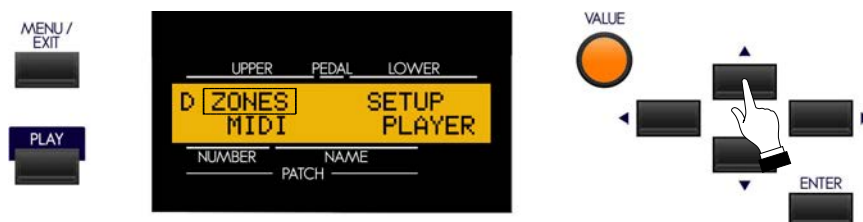
Confirming USB. Please wait...

After approximately 3 seconds, the Information Center Display will show the normal PLAY screen.

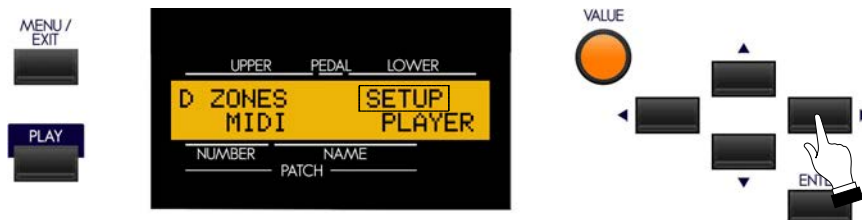
2. From either of the PLAY Screens, touch the MENU/EXIT Touch Button to see the first screen of the MENU Mode. You will see “A” displayed in the extreme upper left corner of the Information Center Display.



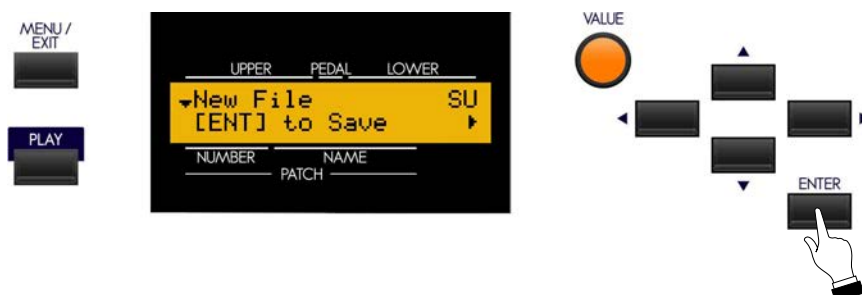
3. Touch the PAGE UP Touch Button three times. You will see “D” displayed in the extreme upper left corner of the Information Center Display. The word “ZONES” will be blinking.



4. Touch the PAGE RIGHT Touch Button two times. The word, “SETUP” in the upper right corner of the display will now blink.



5. Touch the ENTER Touch Button.



You are now in the SETUP Edit Menu. You may now use the PAGE NAVIGATION Touch Buttons in conjunction with the VALUE Rotary Control to change the MIDI performance of your SK-series instrument. This is explained starting below.

◆ Saving a Setup

After you have customized your SK instrument, you can save your settings as a Setup. To do this:

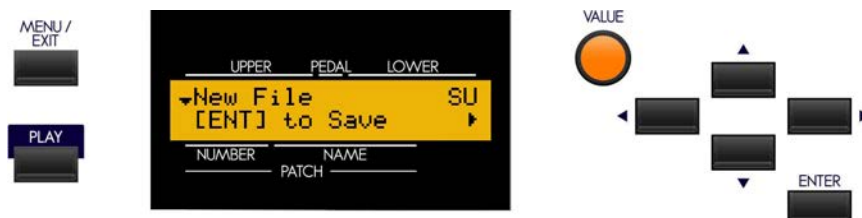
1. If you are not in the SETUP Edit Menu, follow the instructions starting on the previous page to display it. Otherwise go to the next step.

NOTE: If you enter the SETUP Edit Menu with no USB Flash Drive inserted, the Information Center Display will show:

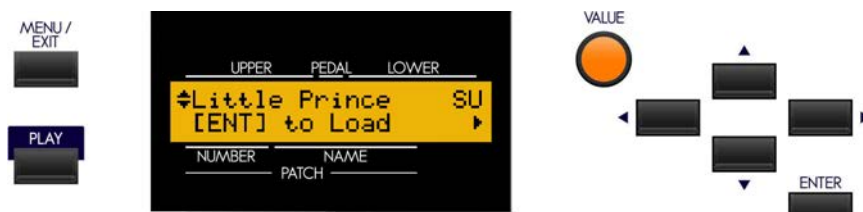
USB is not ready.

If you see this message, you will be prompted to touch the ENTER Touch Button to return to the previous screen.

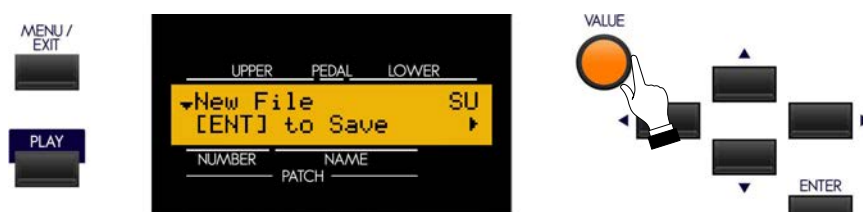
3. At this point it is assumed that the USB Flash Drive contains no previous Setup information. If this is the case, the Information Center Display will look like this:



If there are Setups already stored on the USB Flash Drive, the Information Center Display will look similar to this:



If more than one Setup is loaded on the USB Drive, the Information Center Display will show an arrow symbol. Turn the VALUE Rotary Control to the right until the Information Center Display looks like this:



When you see “New File,” you can now save a new Setup to the USB Flash Drive. You will also see a “down” arrow on the left side of the display which also indicates you have reached the end of previously stored Setups.

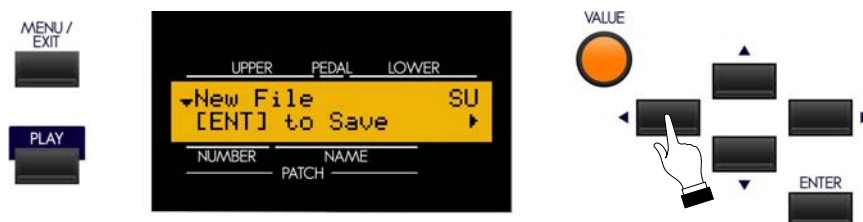
4. At this point you should decide whether you want to save your settings as a Setup or as a Whole. If any of your Patches are using Voice Libraries you have installed, you will need to save your settings as a Whole - otherwise some of your Patches will not have the correct sound.

To select either Setup or Whole, touch the PAGE RIGHT Touch Button once. The Information Center Display should now look like this:



Turn the VALUE Rotary Control to make your selection.

5. After you have made your selection, touch the PAGE LEFT Touch Button once. The Information Center Display should now look similar to this:



NOTE: If you have selected “WHOLE,” the two letters on the extreme right of the upper line of the display will show “WH.”

SPECIAL NOTE: If you are merely updating Setup registrations or if all your Setups contain the same Voice Library data, you DO NOT need to save each Setup as a WHOLE. In this case saving one Whole will be sufficient.

- Touch the ENTER Touch Button once. The bottom line of the Information Center Display will scroll the following:

Saving SETUP. Please wait...

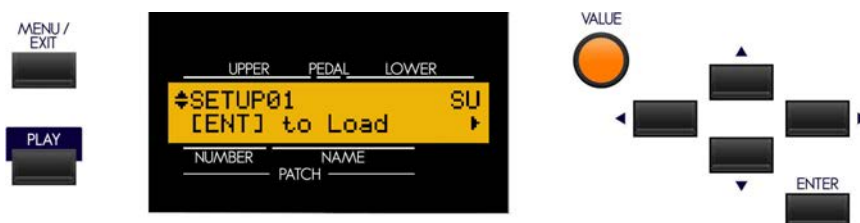
When the above message stops scrolling, your Setup has been saved.

◆ Naming a Setup

Each time you save a new Setup or Whole, it will automatically be assigned a name (SETUP01, WHOLE01, etc) However, it is recommended that you give each of your Setups a name which helps you to remember what each Setup consists of. This is particularly important if you have a number of different Setups with different settings.

You can name your Setup at any time after you have saved it, but it is strongly recommended that you name it immediately after the Save procedure is complete. To do this:

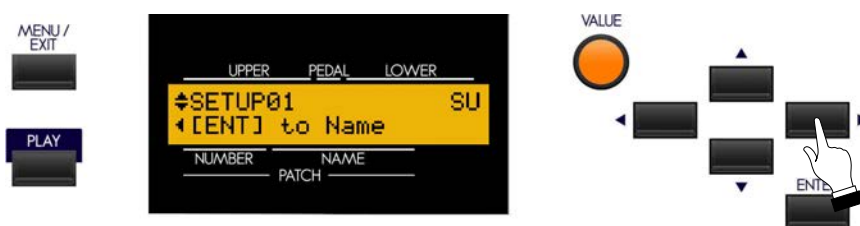
- Wait until the Setup has finished saving to the USB Flash Drive. The Information Center Display should show a screen similar to this:



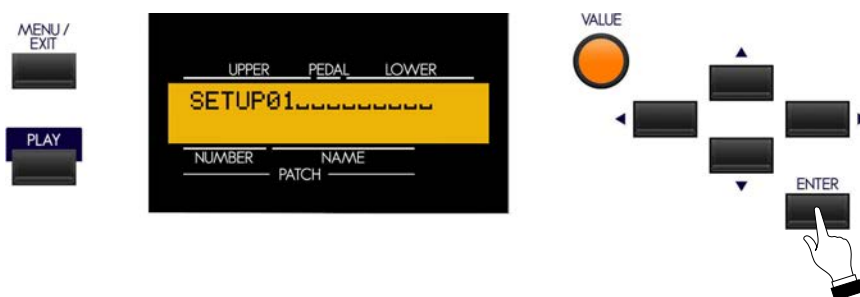
NOTE: The last two digits will vary with each file name ("SETUP02," "SETUP03," etc., through to "SETUP99," which is the upper limit).

If you have saved a WHOLE, the screen will show "WHOLExx" and "WH" will display in the upper right corner of the screen.

- Touch the PAGE RIGHT Touch Button once. The Information Center Display should now look similar to this:



- Touch the ENTER Touch Button. The Information Center Display should now look similar to this:



4. Now name your Setup or Whole by doing the following:

Use the PAGE LEFT and PAGE RIGHT Select Touch Buttons to select the character to be edited.

Turn the VALUE Rotary Control to the right to scroll forward through the characters.

Turn the VALUE Rotary Control to the left to scroll backward through the characters.

The available characters include: Punctuation Marks (space - . ‘ &), Numeric Characters (0 ~ 9), Upper-case Letters (“A ~ Z”), and Lower-case Letters (“a ~ z”).

5. After you have finished editing, Touch and Release the ENTER Touch Button.



The bottom line of the Information Center Display will show the following:

Saving Name. Please wait...

When the above message stops displaying, your Setup has been renamed and your new name will appear on the top line of the display.

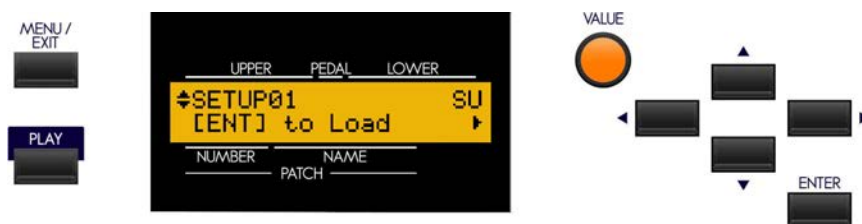
◆ Loading a Setup

1. Insert a USB Flash Drive containing Setups into the USB Port of the SK instrument. The bottom line of the Information Center Display will scroll the following:

Confirming USB. Please wait...

After approximately 3 seconds, the Information Center Display will show the normal PLAY screen.

- Follow the instructions starting on page 12 to enter the SETUP Edit Menu until the Information Center Display shows a screen similar to this:



If more than one Setup is loaded on the USB Drive, the Information Center Display will show an arrow symbol. Use the PAGE UP and PAGE DOWN Touch Buttons to select the Setup you want to load.

NOTE: The two letters on the extreme right of the upper line of the display will show "SU" or "WH" depending on whether you select a SETUP or a WHOLE

- When you have selected the Setup or Whole you want to Load, touch the ENTER Touch Button. The bottom line of the Information Center Display will scroll the following:

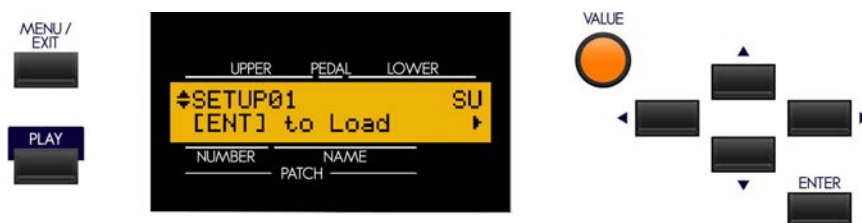
Loading SETUP. Please wait...

After the Setup has finished loading, the opening screen shown above will again display.

NOTE: The Information Center Display will show, "Loading Setup" for either a Setup or a Whole.

◆ Deleting a Setup

- With the USB Flash Drive inserted into the USB Port of the SK, follow the instructions starting on page 263 to enter the SETUP Edit Menu until the Information Center Display shows a screen similar to this:



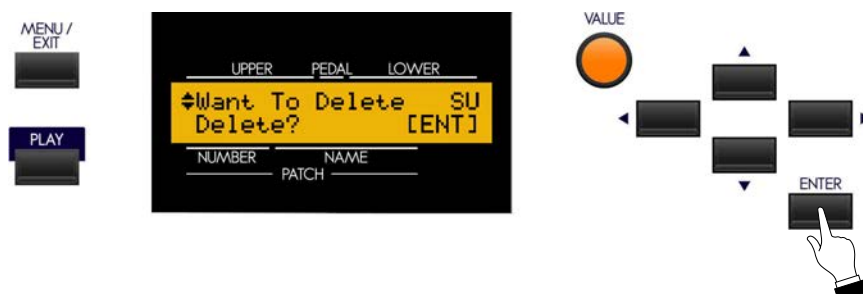
- If more than one Setup is loaded on the USB Drive, the Information Center Display will show an arrow symbol. Use the VALUE Rotary Control or the PAGE UP and PAGE DOWN Touch Buttons to scroll through the Setups contained on the USB Flash Drive until you find the one you want to delete.



3. Now touch the Touch the PAGE RIGHT Touch Button two times. The Information Center Display should now look similar to this:



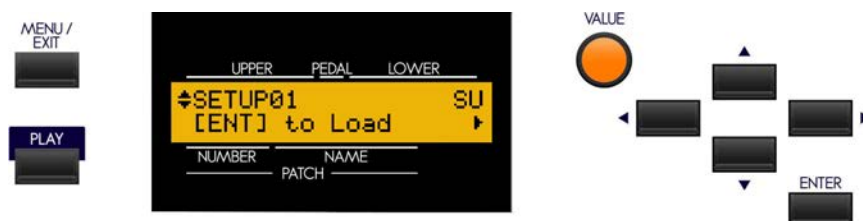
4. Touch the ENTER Touch Button. The Information Center Display should now look similar to this:



5. If you DO NOT wish to Delete the selected Setup, touch either the MENU/EXIT or PLAY Touch Button to exit the SETUP Edit Menu. If you want to Delete the Setup, touch the ENTER Touch Button. . The bottom line of the Information Center Display will scroll the following:

Deleting SETUP. Please wait...

After the Setup has been deleted, the opening screen of the Setup menu will again display:



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HAMMOND



Sk1

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Sk1 -88

MUSIC
PLAYER

MUSIC PLAYER

Your Hammond SK-series instrument has the ability to play Music Files in one of two formats:

1. .WAV 44.1kHz 16-bit
2. .MP3 44.1kHz 64 ~ 192kbps

You can listen to the Music Files (or “Songs”) as they play, add vocals or other instruments to them live (“karaoke”), or play the SK along with them.

NOTE: If you wish simply to play a Song, the .MP3 format will be adequate; however, if you wish to play along on the SK with the Song, the .WAV format is recommended, as .MP3 files may “stutter” or play intermittently if keys or Touch Tabs are pressed during playback.

◆ MUSIC PLAYER Controls

The controls for the Music Player are located on the left side of the Control Panel next to the MASTER VOLUME Rotary Control.



◆ VOLUME Rotary Control

This Rotary Control allows you to control the volume of the Song being played by the Music Player. Use this control in conjunction with the MASTER VOLUME Rotary Control, particularly if you wish to play the SK along with the sound file.



◆ SONG Touch Tab

This Touch Tab allows you to select the Song you wish to play if multiple song files are stored on your USB Flash Drive.



◆ PLAY/PAUSE Touch Tab

This Touch Tab allows you to start playback of a Song as well as to pause the Song in the midst of playback.



◆ Using the Music Player

In order to play Song files using the Music Player, a USB Flash Drive containing compatible Song data must be inserted into the USB Port on your SK-series instrument. The next few pages will explain more about this.

◆ Copying a Music File to a USB drive

1. Insert a USB Flash Drive that has been previously formatted for use with the SK-series instruments into an open USB Port on your computer.
2. Find any audio files with either the “.wav” or “.mp3” extension you wish to copy.
3. Copy the files from your source location (usually a hard drive) to the following folder on the USB Flash Drive:

\hammond\sk\audio\

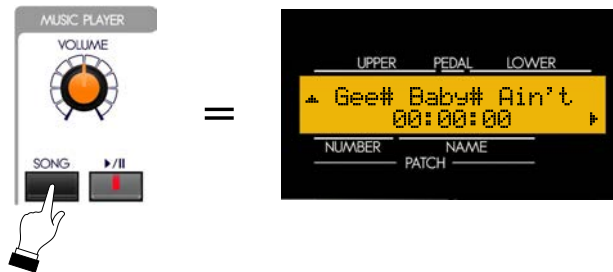
NOTE: The number of files may vary according to the size of the files. Numerically, up to 99 files can be stored.

◆ Playing a Music File

1. Insert a USB Flash Drive to which you have copied audio files using the procedure described above into the USB Port. The bottom line of the Information Center Display will scroll the following:

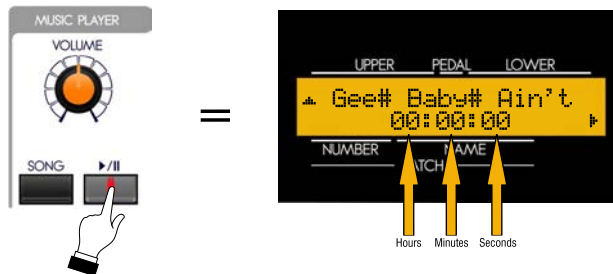
Confirming USB. Please wait...

2. After the above message stops scrolling, touch the SONG Touch Button in the MUSIC PLAYER Section of the Control Panel. The Information Center Display should now look similar to this:



A Song Name will now display.

3. If you wish to play the Song whose name is currently displaying, touch the PLAY Touch Button.



The currently selected Song will start playing. As the song plays, the bottom line OF THE DISPLAY WILL FUNCTION AS A Time Counter displaying hours, minutes and seconds.

4. To pause the Song during playback, touch the PLAY Touch Button while the Song is playing.



The Time Counter on the bottom line of the display will stop its count and the Song will be paused.

5. To start the song playing from the currently selected time, touch the PLAY Touch button again.

To start the Song playing from the beginning, touch the SONG Touch Button, then touch the PLAY Touch Button. The Song will start playing again from the beginning.

◆ Playing Multiple Songs

When the Information Center Display is showing Song names, you may see an “UP” arrow (“▲”) on the extreme left of the upper line of the display. This indicates multiple songs on the USB Flash Drive (see the figure above).

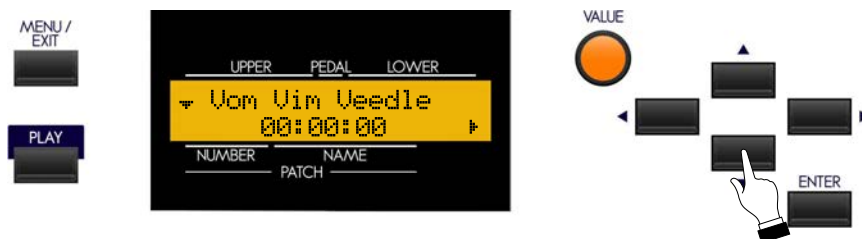
NOTE: If no arrow appears, only one Song is available for playback on the MUSIC PLAYER.

To scroll up through the Song names, touch the PAGE UP Touch Button to display each Song.



The symbol displayed in the upper left corner will depend on the number of songs available. If only two Song files are available, a DOWN arrow (“▼”) will show. If there are three or more Songs, you will see an UP/DOWN arrow (⬆) in the upper left corner of the display. When you have reached the end of the Song list, a DOWN arrow will display.

To scroll down through the song names, touch the PAGE DOWN Touch Button to display each Song.



The UP arrow will show in the upper left corner when you have reached the start of the Song list.

The MUSIC PLAYER allows you to “chain” multiple Music files in several ways. The data chart below shows the options you may select.

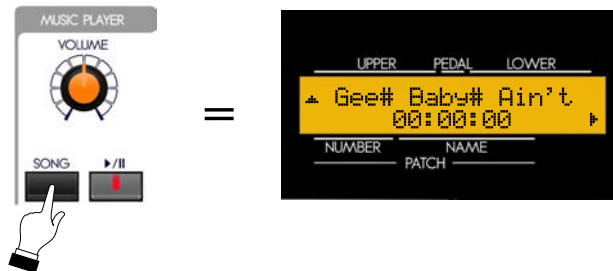
MUSIC PLAYER CHAIN Options	
Description	Function
ALL	Plays all Songs on the USB Flash Drive in alphabetical order.
ONE	Plays the currently selected Song, then stops.
SHUF	The order of the Songs is “shuffled” - the Songs are played in random order.

To select one of the above options, do the following:

1. Insert a USB Flash Drive to which you have copied audio files using the procedure described above into the USB Port. The bottom line of the Information Center Display will scroll the following:

Confirming USB. Please wait...

2. After the above message stops scrolling, touch the SONG Touch Button in the MUSIC PLAYER Section of the Control Panel. The Information Center Display should now look similar to this:



A Song Name will now display.

3. Touch the PAGE RIGHT Touch Button once. The Information Center Display should now look similar to this



Turn the VALUE Rotary Control to make your selection.

◆ Determining Song Order

On the SK-series MUSIC PLAYER, the order in which the Songs play is determined by the first character of the File name. Numbers have priority over letters - for example, if a file is named "2002" and another file is named "A Tisket A Tasket," the file "2002" will be listed ahead of the other file and will play first if the Songs are played in order (if the CHAIN Advanced Feature is set to "ALL.")

If you have a selection of Songs that you want to play in a particular order, it is recommended that you manually rename the files using the File Rename feature of your computer. It is further recommended that you use numbers in front of the Song name so that the Songs will play in the order you want if the titles are not in alphabetical order. Here is an example:

- 00-Them Changes.mp3
- 01-Keep Rockin'.mp3
- 02-Bein' Green.mp3
- 03-In the Heat of the Night.mp3
- 04-Calling Me Home, Chicago.mp3
- 05-September Moan.mp3

In the above example, the numbers are separated from the song names by a hyphen (-); but this is not necessary - an underscore or space can also be used, or you may prefer not to separate the numbers and names at all. It is recommended, however, that you preface each number with "0" as shown above so that songs with two numbers in the file name ("12," "32," etc.) will play in the correct order.

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SPECIAL
UTILITY
FEATURES

SPECIAL UTILITY FEATURES

◆ TUNE Edit Menu



This Advanced Feature Menu allows you to change the overall tuning pitch of the entire instrument. The reference pitch is "A-440". The selectable range is from "A-430" through "A-450."

To access the TUNE Edit Menu, do the following:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:



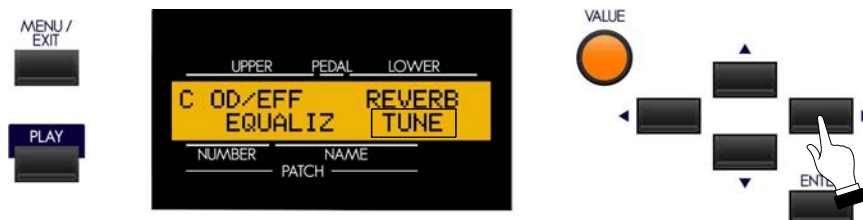
The word "DRAWBAR" should now be blinking.

2. Touch the PAGE UP Touch Button two times. The Information Center Display should now look like this:

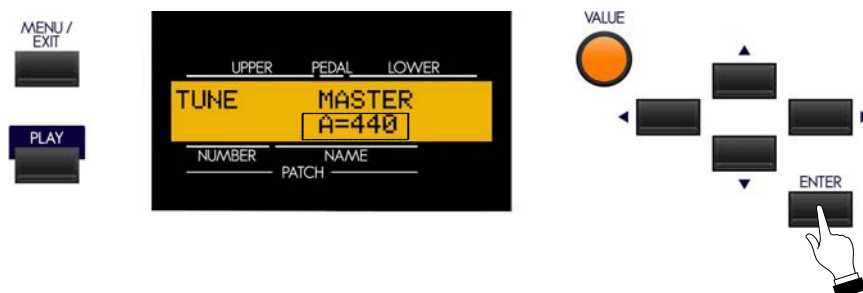


You are now in the C screen.

3. Touch the PAGE RIGHT Touch Button three times. The Information Center Display should now look like this:



4. Now touch the ENTER Touch Button once. The Information Center Display should now look like this:



You are now in the TUNE Edit Menu.

Turn the VALUE Rotary Control to the right to raise the pitch.

Turn the VALUE Rotary Control to the left to lower the pitch.

◆ DEFAULT Edit Menu - Reset Procedure

This Advanced Feature Menu allows you to reset the SK-series instrument to factory-default settings.

To access the DEFAULT Edit Menu, do the following:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:

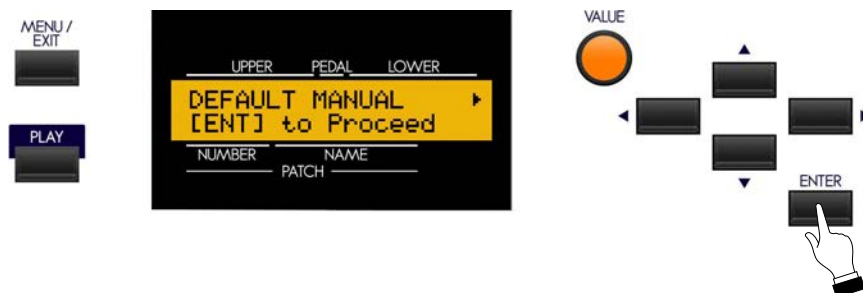


The word “DRAWBAR” should now be blinking.

2. Touch the PAGE UP Touch Button four times. The Information Center Display should now look like this:



3. Now touch the ENTER Touch Button once. The Information Center Display should now look like this:



WARNING!: Doing any of the following procedures will erase all parameters, settings and registrations, returning the instrument to the original Hammond factory default settings.

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to select which portions of the instrument will be reset with factory-default settings. The data chart below shows the options you may select.

DEFAULT Options	
Description	Function
MANUAL	Resets the contents of the MANUAL Touch Tab. You can use this feature to create a “clean slate” for new Patch settings.
PATCH	Resets the User Patches. Use the VALUE Rotary Control to select the Patch you want to initialize. You can select from “U001” to “U100” and “ALL” (all user patches).
GLOBAL	Resets the Global Parameters (Master Tune, Foot Switch assignments, etc.)
LESLIE	Resets the contents of the internal Leslie cabinets. Use the VALUE Rotary Control to select the Leslie Cabinet you want to initialize. You can select from “U1” through “U8” and “ALL” (all User cabinets).
LIBRARY	Deletes all of the Extra Voice Library voices, leaving only the onboard voices.
ALL	Resets the entire instrument.

NOTE: You can also perform a DEFAULT ALL by turning the Power “ON” while pressing and holding the RECORD Touch Button.

After you have made your selection, touch the ENTER Touch Button to reset the instrument to the default settings you have chosen. If you DO NOT wish to Reset, touch either the PLAY or the MENU/EXIT Touch Button.

◆ SYSTEM Menu

This Advanced Feature Menu allows you to select the Audio Mode of the instrument, and to see which version of software is installed in your SK-series instrument.

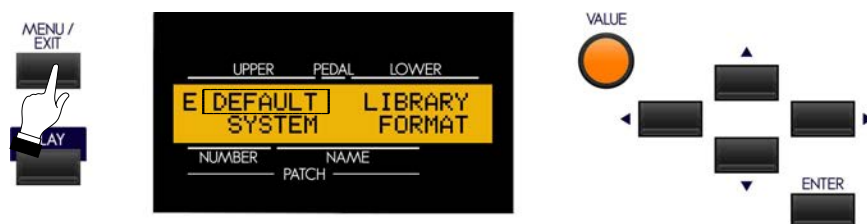
To access the SYSTEM Edit Menu, do the following:

1. From any of the PLAY Mode screens, touch the MENU/EXIT Touch Button once. The Information Center Display should now look like this:

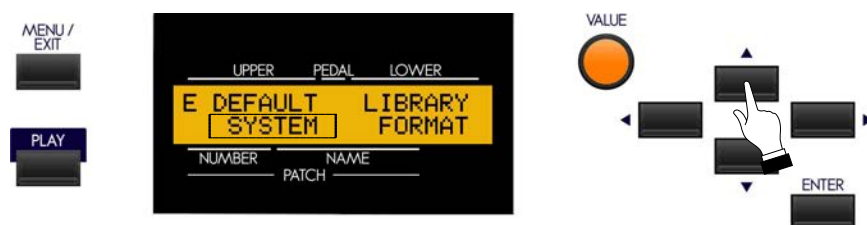


The word “DRAWBAR” should now be blinking.

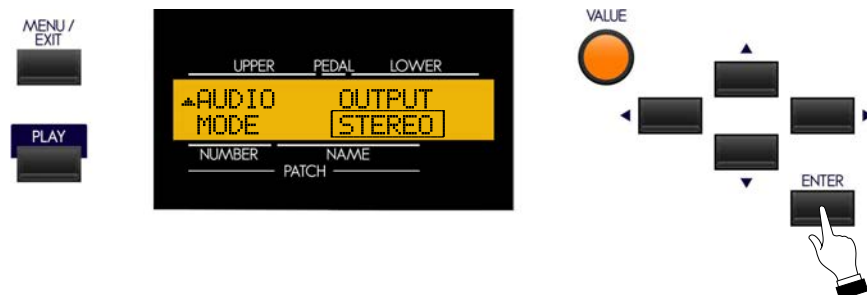
2. Touch the PAGE UP Touch Button four times. The Information Center Display should now look like this:



3. Touch the PAGE RIGHT Touch Button once. The word “SYSTEM” should now blink.



4. Now touch the ENTER Touch Button. The Information Center Display should now look like this:



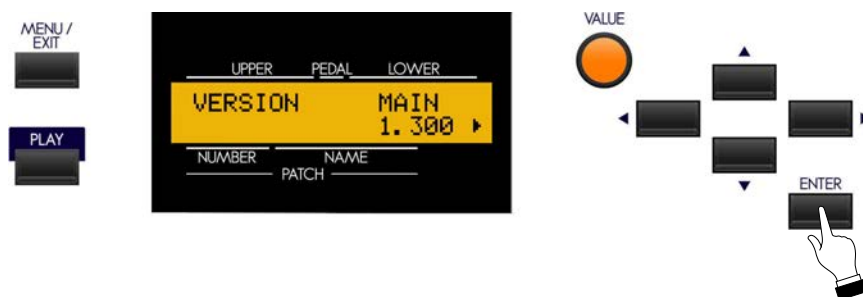
You are now in the SYSTEM Edit Menu. The word “STEREO” should now be blinking.

◆ Page 1 - Audio Output

This Advanced Feature allows you to select the type of audio signal from the LINE OUT jacks. You can select either “MONO” (the signal is identical from both the “L” and “R” LINE OUT jacks) or “STEREO” (separate Left and Right audio signals for Stereo directionality).

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE UP Touch Button to display Page 2 of the SYSTEM Edit Menu. The Information Center Display should now look like this:



◆ Page 2 - Software Version

This Advanced Feature Menu Page allows you to see the software version of your SK-series instrument. The system software is in seven sections, which are shown in the data chart below.

The data chart below shows the options you may select.

Software Modules	
Name	Description
MAIN	Main system program
SUB	Sub-program
INFORMATION	Voice Information
DSP	Digital Signal Processor software
BOOT	Software for locating and initializing the main system program
PRESET	Factory Patches
PANEL	Control Panel interface

In addition, the Extra Voice sound file versions can be displayed. There are seven categories: “A.PIANO1,” “A.PIANO2,” “E.PIANO,” “KYBD,” “WIND,” “OTHER” and “VXJ” (the default voices for the Library).

Use the PAGE LEFT and PAGE RIGHT Touch Buttons to move back and forth among the various screens.

This page has no editing features. It is simply a series of information screens to show the version of your software.

HAMMOND



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APPENDIX

APPENDIX

◆ EXTRA VOICE Instrument List

Group	Number	Description
0 A. Piano	0 Stereo Grand Pf.	Concert grand piano. The maximum sound effect is obtained when connected stereo.
0 A. Piano	1 Bright Stereo Grand Pf.	
0 A. Piano	2 Mono Grand Pf.	The mono version of above. Use this if connection is monaural. The clumsy
0 A. Piano	3 Bright Mono Grand Pf.	"omission" due to the interfering right and left channels is avoided.
0 A. Piano	4 Electric Grand Pf.	Electric grand piano which picks up the string vibration by hammer action. The
0 A. Piano	5 Electric Grand Pf. EQ	following "EQ" means equalized edition.
0 A. Piano	6 Stereo Grand Pf. Pad	The mellow "Pad" sound added on Stereo Grand Pf.
0 A. Piano	7 Electric Grand Pf. Pad	The mellow "Pad" sound added on Electric Grand Pf.
2 E. Piano	0 E. Piano Rd1	Tone-bar electric piano (first edition). The following "Pan", "Phase", "OD" are
2 E. Piano	1 EP Rd1 Pan	using each effect.
2 E. Piano	2 EP Rd1 Phase	
2 E. Piano	3 EP Rd1 OD	
2 E. Piano	4 E. Piano Rd2	Tone-bar electric piano (second edition). The following "Pan", "Phase", "OD" are
2 E. Piano	5 EP Rd2 Pan	using each effect.
2 E. Piano	6 EP Rd2 Phase	
2 E. Piano	7 EP Rd2 OD	
2 E. Piano	8 E. Piano FM	FM synth electric piano. The following "Chorus" is using chorus effect.
2 E. Piano	9 EP FM Chorus	
2 E. Piano	10 E. Piano Wur	Reed-driven electric piano. The following "OD" is using overdrive effect.
2 E. Piano	11 EP Wur OD	
3 Keyboard	0 Harpsi 8'	Harpsichord. "8'" is normal, "8' 4'" is in octave unison, "Lute" means treble
3 Keyboard	1 Harpsi 8' 4'	damped.
3 Keyboard	2 Harpsi 8' Lute	
3 Keyboard	3 Clav. AC	Electric clavichord. The following "AC", "AD", "BC", "BD" means each pick-up
3 Keyboard	4 Clav. AD	selector.
3 Keyboard	5 Clav. BC	
3 Keyboard	6 Clav. BD	
3 Keyboard	7 Clav. AC Wah	The sound "Clav. AC" - "Clav BD" with "Touch-Wah" effect. Playing harder, the
3 Keyboard	8 Clav. AD Wah	filter opens wider.
3 Keyboard	9 Clav. BC Wah	
3 Keyboard	10 Clav. BD Wah	
3 Keyboard	11 Clav. AC Cry	The sound "Clav. AC" - "Clav BD" with "Pedal Wah" effect. If the expression
3 Keyboard	12 Clav. AD Cry	pedal is connected, you can get the wah effect with pedal operation.
3 Keyboard	13 Clav. BC Cry	
3 Keyboard	14 Clav. BD Cry	
3 Keyboard	15 Lucy	Simulates an electronic organ, that heard intro. of "Lucy In The...". The follow-
3 Keyboard	16 Lucy Tremolo	ing "Tremolo" is added its effect. The effective method is playing arpeggio with
3 Keyboard		slowly and staccato.
3 Keyboard	17 Clavn.	Simulates the electronic violin clavier in 1950's.
3 Keyboard	18 Don't Run	The reed sound like "Walk, Don't...".
3 Keyboard	19 Telstar	Simulates the lead sound what used in "Telstar".
3 Keyboard	20 Blue Star	Simulates an electronic organ, like "Blue Star".
3 Keyboard	21 Accordion A120 1/0/0	Variations of Suzuki accordion A-120.
3 Keyboard	22 Accordion A120 1/1/0	
3 Keyboard	23 Accordion A120 1/0/1	
3 Keyboard	24 Accordion A120 1/1/1	
3 Keyboard	25 Accordion A120 1/2/0	
3 Keyboard	26 Accordion A120 1/2/1	
3 Keyboard	27 Accordion A120 0/1/0	
3 Keyboard	28 Accordion A120 0/2/0	
3 Keyboard	29 Accordion A120 0/1/1	
3 Keyboard	30 Accordion A120 0/2/1	
3 Keyboard	31 Accordion A120 0/0/1	
3 Keyboard	32 Accordion A120 OD	Overdriven accordion.
3 Keyboard	33 Acdn Mellow 0/1/0	Mellow accordion. On "MMM", you can adjust the beating by the Chorus -
3 Keyboard	34 Acdn Mellow 0/2/0	Depth of the Extra Voice effects.
3 Keyboard	35 Acdn Mellow MMM	
3 Keyboard	36 Acdn Bright 0/1/0	Bright accordion. On "MMM", you can adjust the beating by the Chorus -
3 Keyboard	37 Acdn Bright 0/2/0	Depth of the Extra Voice effects.
3 Keyboard	38 Acdn Bright MMM	
4 Wind	0 Trumpet Straight	The instruments following "Wind" group sounds simply. They does not work
4 Wind	1 Trumpet Vibrato	Prochord function.
4 Wind	2 Trumpet Muted	Trumpet. The following "Straight", "Vibrato", "Muted" means each playing
		method.
4 Wind	3 Trombone Straight	Trombone. The following "Straight", "Muted" means each playing method.
4 Wind	4 Trombone Muted	

◆ EXTRA VOICE Instrument List (cont.)

Group	Number	Description
4 Wind	5 Flute Vibrato	Flute with vibrato playing method. The "attack" will heard by hard-strike.
4 Wind	6 Al. Sax Straight	Alto Saxophone. The following "Straight", "Vibrato" means each method.
4 Wind	7 Al. Sax Vibrato	
4 Wind	8 Tn. Sax Straight	Tenor Saxophone. The following "Straight", "Vibrato" means each method.
4 Wind	9 Tn. Sax Vibrato	
4 Wind	10 Ba. Sax Straight	Baritone Saxophone.
4 Wind	11 Tp + Tb Straight	Trumpet and trombone plays in octave unison. The following "Straight", "Vibrato" means each method.
4 Wind	12 Tp + Tb Vibrato	
4 Wind	13 Tp + Tb Muted	
4 Wind	14 Flute Pcd	The Flute section. A melody with harmony is obtained if a single note is played on the UPPER keyboard holding down the chord on the LOWER keyboard.
4 Wind	15 BigBand Sax Pcd	Only the Saxophone family formation. Alto sax as the top note, tenor sax, baritone sax as the harmony sound if a single note is played on the UPPER keyboard holding down the chord on the LOWER keyboard.
4 Wind	16 BigBand Pcd	The typical big brass band formation. Trumpet as the top note, alto sax, trombone and tenor sax as the harmony sound if a single note is played on the UPPER keyboard holding down the chord on the LOWER keyboard.
4 Wind	17 BigBand FD Pcd	
4 Wind	18 Quartet 1 Pcd	The instrumentation is same as "Big Band Pcd", but the voicing of harmony is different.
4 Wind	19 Quartet 2 Pcd	The instrumentation is same as "Big Band Pcd", but the voicing of harmony is different.
4 Wind	20 Jazz Brass Pcd	Only the brass instruments' formation. Trumpet as the top note, trumpet, trombone as the harmony sound if a single note is played on the UPPER keyboard holding down the chord on the LOWER keyboard. "FD" means fall-down when the played with fortissimo and released.
4 Wind	21 Jazz Brass FD Pcd	
4 Wind	22 Mute Combo 1 Pcd	The brass combo with muted trumpets and straight trombone. Play single note on the UPPER with playing chord on the LOWER.
4 Wind	23 Mute Combo 2 Pcd	The brass combo with muted trumpets and muted trombone. Play single note on the UPPER with playing chord on the LOWER.
5 Other	0 Glockenspiel	Orchestra bells or glockenspiel, effective if mixed with the Drawbar sounds.
5 Other	1 Vibraphone	Hard hit vibraphone. Also effective if mixed with the Drawbar sounds.
5 Other	2 Solly Strings	Strings keyboard usually later 1970's. The following "o" means in octave unison, "Long" means longer release rate.
5 Other	3 Solly Strings o	
5 Other	4 Solly Strings Long	
5 Other	5 Solly Strings o Long	
5 Other	6 Syn. Strings 1	Simulates the strings keyboard via multi-effects. The following "o" means in octave unison.
5 Other	7 Syn. Strings 1 o	
5 Other	8 Syn. Strings 2	Strings sounds by synthesizer. They simulates that Hammond SX/CX series.
5 Other	9 Syn. Strings 2 o	
5 Other	10 Syn. Strings 3	Strings sound by synthesizer. It is used 3 sawtooth waveform.
5 Other	11 Sweep Pad	Synth pad with slowly filter sweep. In addition, "Slice" affects the deep tremolo effect.
5 Other	12 Slice Pad	
5 Other	13 H. Bell Pad	Synth pad with hand bells.
5 Other	14 Glock. Pad	Synth pad with glockenspiel.
5 Other	15 Square Lead	Synth lead made of square waveform.
5 Other	16 Square Mellow	Synth lead, mellower than "Square Lead".
5 Other	17 Saw Lead	Synth lead made of sawtooth waveform. The following "Duo Pcd" adds Prochord function, you can get the "twin-lead" effect by playing single note on the Upper with playing chord on the Lower.
5 Other	18 Saw Duo Pcd	
5 Other	19 P. O. Love	In octave unison of above "Saw Lead". It is usually used not only single note but also on chord like intro. of "The Power Of..."
5 Other	20 Funny Lead	Simulates the "green button" of an Japanese electronic organ in later 1970's. The following "Duo Pcd" adds Prochord function, you can get the "twin-lead" effect by playing single note on the Upper with playing chord on the Lower.
5 Other	21 Funny Duo Pcd	
5 Other	22 Syn. Harp	Synth orchestral harp.
6 Library	0 VxJ Bright	A transistor organ in 1960's, usually used together with "Vx" type in Organ section. This model has tablet switches instead of Drawbars, and they only changes the brightness of its tone. At "Bright" brightest, the tone becomes mellower along "Brass", "Mellow", and "Flute".
6 Library	1 VxJ Brass	
6 Library	2 VxJ Mellow	
6 Library	3 VxJ Flute	
6 Library	4 VxJV Bright	"VxJ" with vibrato.
6 Library	5 VxJV Brass	
6 Library	6 VxJV Mellow	
6 Library	7 VxJV Flute	

Example Select Group 2, Number 3 via NRPNBx 63 06 62 50 06 02 26 00 63 07 62 50 06 03 26 00 (x = Control channel)

◆ Patch Parameter List

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Name	15 Characters	--	--	01	00	00	0F	7 bit ASCII	always
Internal Zone	Manual Bass	07	00	00	07	00	01	00, 01 (Off/On)	INT
	Manual Bass Mode	07	01	00	07	01	01	00 - 02 (Lower, Chord, Poly)	
	Manual Bass Range Hi	07	02	00	07	02	01	24 - 60 (MIDI note number)	
	Great To Pedal	07	03	00	07	03	01	00, 01 (Off/On)	
	G to P Range Hi	07	04	00	07	04	01	24 - 3C (MIDI note number)	
	Split	07	05	00	07	05	01	00, 01 (Off/On)	
	Split Point	07	06	00	07	06	01	24 - 60 (MIDI note number)	
	Key Octave Upper 1	07	07	00	07	07	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Octave Lower 1	07	08	00	07	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Glide Length	07	09	00	07	09	01	00 - 18 (0 - 24 semitones)	
	Glide Time	07	0A	00	07	0A	01	00 - 31 (0.1 - 5.0 seconds)	
	Glide Amp	07	0B	00	07	0B	01	00, 01 (Off/On)	
	Key Octave Upper 2	07	0C	00	07	0C	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Octave Lower 2	07	0D	00	07	0D	01	3E - 40 - 42 (-2 - 0 - +2)	
External Zone	MIDI Channel	4n	00	00	4n	00	01	00 - 0F (1 - 16)	EXT
	Switch	4n	01	00	4n	01	01	00, 01 (Off/On)	
	Allocate	4n	02	00	4n	02	01	00 - 03 00: Off 01: Upper 02: Lower 03: Pedal	
	Key Range Lo	4n	03	00	4n	03	01	24 - 60 (MIDI note number)	
	Key Range Hi	4n	04	00	4n	04	01	24 - 60 (MIDI note number)	
	Bank Select MSB	4n	05	00	4n	05	01	00 - 7F	
	Bank Select LSB	4n	06	00	4n	06	01	00 - 7F	
	Program Change	4n	07	00	4n	07	01	00 - 7F	
	Octave Shift	4n	08	00	4n	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Volume	4n	09	00	4n	09	01	00 - 7F	
	Pan	4n	0A	00	4n	0A	01	00 - 40 - 7F (L64 - C - R63)	
	Velocity	4n	0B	00	4n	0B	01	00 - 04 (Off, Normal - Easy)	
	Expression Minimum	4n	0C	00	4n	0C	01	00 - 3F (0 - 63)	
	Expression Maximum	4n	0D	00	4n	0D	01	40 - 7F (64 - 127)	
Expression CC#	4n	0E	00	4n	0E	01	00, 01 (7, 11)		
Tx. Damper On	4n	0F	00	4n	0F	01	00, 01 (Off/On)		
Extra Voice	Switch Upper	50	00	00	50	00	01	00, 01 (Off/On)	EXV
	Switch Lower	50	01	00	50	01	01	00, 01 (Off/On)	
	Switch Solo	50	02	00	50	02	01	00, 01 (Off/On)	
	Octerve Shift	50	03	00	50	03	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo	50	04	00	50	04	01	24 - 60 (MIDI note number)	
	Key Range Hi	50	05	00	50	05	01	24 - 60 (MIDI note number)	
	Inst. Group	50	06	00	50	06	01	00 - 06 (1 - 7)	
	Inst. Number	50	07	00	50	07	01	00 - 7F (1 - 128)	
	Volume	50	08	00	50	08	01	00 - 7F (0 - 127)	
	Velocity	50	09	00	50	09	01	00 - 04 (Off, Normal - Easy)	
	Expression	50	0A	00	50	0A	01	00, 01 (Off/On)	

Example "n" means Zone number. 1=0, 2=1, 3=2

Turn Extra Voice On via NRPNBx 62 50 63 00 06 01 (x = Upper channel)

Turn Extra Voice On via System ExclusiveF0 55 dd 10 1F 13 00 50 00 01 F7 (dd = Device ID)

◆ Patch Parameter List (cont.)

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Percussion	Second On	08	00	00	08	00	01	00, 01 (Off/On)	DRAWB
	Third On	08	01	00	08	01	01	00, 01 (Off/On)	
	Decay Fast	08	02	00	08	02	01	00, 01 (Off/On)	
	Volume Soft	08	03	00	08	03	01	00, 01 (Off/On)	
	Level On Soft	08	04	00	08	04	01	00 - 0F (1 - 16)	
	Level On Normal	08	05	00	08	05	01	00 - 0F (1 - 16)	
	Decay Fast	08	06	00	08	06	01	00 - 09 (1 - 9, Cont)	
	Decay Slow	08	07	00	08	07	01	00 - 09 (1 - 9, Cont)	
	Touch	08	08	00	08	08	01	00, 01 (Off/On)	
	Velocity	08	09	00	08	09	01	00, 01 (Off/On)	
	Key Track	08	0A	00	08	0A	01	00, 01 (Off/On)	
	Drawbar 1' Cancel	08	0B	00	08	0B	01	00, 01 (Off/On)	
	Drawbar Level	08	0C	00	08	0C	01	00, 01 (0, -3dB)	
Lower & Upper Organ section	Organ Type	20	00	00	20	00	01	00 - 05 00: B-Type 1 01: B-Type 2 02: Mellow 03: Vx 04: Farf 05: Pipe	DRAWB
	Key Click Attack	20	01	00	20	01	01	00 - 0F (0 - 15)	
	Key Click Release	20	02	00	20	02	01	00 - 0F (0 - 15)	
	Fold Back Lo	20	03	00	20	03	01	00 - 0C (C1 - C2)	
	Fold Back Hi	20	04	00	20	04	01	2B - 30 (G4 - C5)	
	Key Click LPF	20	05	00	20	05	01	00 - 7F (0 - 127)	
	Custom TW B-Type 1	20	06	00	20	06	01	00 - 04 (1 - 5)	
	Custom TW B-Type 2	20	07	00	20	07	01	00 - 04 (1 - 5)	
	Custom TW Mellow	20	08	00	20	08	01	00 - 04 (1 - 5)	
	Octerve Shift Upper	20	09	00	20	09	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Upper	20	0A	00	20	0A	01	24 - 60 (MIDI note number)	
	Key Range Hi Upper	20	0B	00	20	0B	01	24 - 60 (MIDI note number)	
	Octerve Shift Lower	20	0C	00	20	0C	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Lower	20	0D	00	20	0D	01	24 - 60 (MIDI note number)	
	Key Range Hi Lower	20	0E	00	20	0E	01	24 - 60 (MIDI note number)	
Upper Registration	16'	--	--	01	01	00	01	00 - 08 (0 - 8)	UPPER
	5 1/3'	--	--	01	01	01	01	00 - 08 (0 - 8)	
	8'	--	--	01	01	02	01	00 - 08 (0 - 8)	
	4'	--	--	01	01	03	01	00 - 08 (0 - 8)	
	2 2/3'	--	--	01	01	04	01	00 - 08 (0 - 8)	
	2'	--	--	01	01	05	01	00 - 08 (0 - 8)	
	1 3/5'	--	--	01	01	06	01	00 - 08 (0 - 8)	
	1 1/3'	--	--	01	01	07	01	00 - 08 (0 - 8)	
	1'	--	--	01	01	08	01	00 - 08 (0 - 8)	
Lower Registration	16	--	--	01	02	00	01	00 - 08 (0 - 8)	L/P
	5 1/3'	--	--	01	02	01	01	00 - 08 (0 - 8)	
	8'	--	--	01	02	02	01	00 - 08 (0 - 8)	
	4'	--	--	01	02	03	01	00 - 08 (0 - 8)	
	2 2/3'	--	--	01	02	04	01	00 - 08 (0 - 8)	
	2'	--	--	01	02	05	01	00 - 08 (0 - 8)	
	1 3/5'	--	--	01	02	06	01	00 - 08 (0 - 8)	
	1 1/3'	--	--	01	02	07	01	00 - 08 (0 - 8)	
	1'	--	--	01	02	08	01	00 - 08 (0 - 8)	

◆ Global Parameter List

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Default	Description
		LSB (62)	MSB (63)	MSB to LSB						
Tune	Transpose	01	00	00	01	00	01	3A - 40 - 46 (-6 - 0 - 6)	40	0
	Master Tune	01	02	00	01	02	02	032E - 0338 - 0342 (430 - 440 - 450)	0338	440
Expression	Source	02	00	00	02	00	01	00 - 01 00: Pedal (normal) 01: Pedal (reverse) 02: MIDI	00	Pedal (normal)
	Min. Level	02	08	00	02	08	01	00 - 09 (Off, -40dB - 0dB)	06	-35dB
	Min. Limit LF	02	09	00	02	09	01	00 - 08	05	-20dB
	Min. Limit HF	02	0A	00	02	0A	01	(Off, -40dB - -5dB)	03	-30dB
Foot Switch	FS Device	03	00	00	03	00	01	00 - 01 (Foot Sw., Leslie Sw.)	00	Foot Sw.
	FS Tip Mode	03	01	00	03	01	01	00 - 0B 00: Off 01: Leslie Fast (alternate) 02: Leslie Fast (momentarily) 03: Leslie Fast (tri-state) 04: Glide 05: Patch Fwd. 06: Patch Back 07: Favorite Fwd. 08: Favorite Back 09: Spring Shock 0A: Delay Time 0B: Music Start 0C: Manual Bass 0D - 25: Bass 1C - 3C	01	Leslie Fast (alternate)
	FS Ring Mode	03	02	00	03	02	01	same as FS Tip mode	01	Leslie Fast (alternate)
	Damper Org. Upper	03	03	00	03	03	01	00, 01 (Off/On)	01	On
	Damper Org. Lower	03	04	00	03	04	01	00, 01 (Off/On)	01	On
	Damper Org. Pedal	03	05	00	03	05	01	00, 01 (Off/On)	01	On
	Damper Extra Voice	03	06	00	03	06	01	00, 01 (Off/On)	01	On
	Octave Down Mode	03	07	00	03	07	01	00 - 05 00: Origin 01: Leslie Stop 02: Leslie Fast 03: Vibrato Upper 04: Vibrato Lower 05: Glide 06: Spring Shock 07: Delay Time	00	Origin
Octave Up Mode	03	08	00	03	08	01	same as above	00	Origin	
Panel Switch	Octave Lower Mode	03	09	00	03	09	01	same as above	00	Origin
	Drawbar Regist. Upper	60	00	00	60	00	01	00, 01 (Off/On)	01	On
Patch Load	Drawbar Regist. L/P	60	01	00	60	01	01	00, 01 (Off/On)	01	On
	Drawbar Parameters (DRAWB)	60	02	00	60	02	01	00, 01 (Off/On)	01	On
	Extra Voice (EXV)	60	03	00	60	03	01	00, 01 (Off/On)	01	On
	Internal Zone (INT)	60	04	00	60	04	01	00, 01 (Off/On)	01	On
	External Zone (EXT)	60	05	00	60	05	01	00, 01 (Off/On)	01	On
	Organ Effect (DRAWB)	60	06	00	60	06	01	00, 01 (Off/On)	01	On
	Extra Voice Effect (EXV)	60	07	00	60	07	01	00, 01 (Off/On)	01	On
	Reverb (REV)	60	08	00	60	08	01	00, 01 (Off/On)	01	On
Favorites	Overwrite Patch	04	00	00	04	00	01	00, 01 (Off/On)	00	Off
Display	Short Cut	--	--	--	--	--	--	0, 1, 2s, No		
	Time Out	--	--	--	--	--	--	4, 8, 16s, No		
	Pop Up	--	--	--	--	--	--	No, 0.5, 1, 2s		
Master EQ	Bass Freq.	02	0F	00	02	0F	01	00 - 0A (20 - 200Hz)	07	100Hz
	Treble Freq.	02	10	00	02	10	01	00 - 03 (4.0k - 8.0kHz)	03	8.0kHz

Example Set Transpose at 0 via NRPN.....Bx 62 01 63 00 06 40 (x = Upper channel)
Set Transpose at 0 via System Exclusive.....F0 55 dd 10 1D 13 00 01 00 40 F7 (dd = Device ID)

◆ Leslie Parameter List

Category	Parameter	NRPN (OR)		NRPN (21)		SysEx Address			SysEx Length	Data
		LSB (62)	MSB (63)	LSB (62)	MSB (63)	MSB to LSB				
Cabinet	Name	--	--	--	--	03	00	00	0A	(10 Characters)
	Slow Speed Horn	06	00	7F	00	00	06	00	01	
	Slow Speed Bass	06	01	7F	01	00	06	01	01	
	Fast Speed Horn	06	02	7F	02	00	06	02	01	
	Fast Speed Bass	06	03	7F	03	00	06	03	01	
	Rise Time Horn	06	04	7F	04	00	06	04	01	
	Rise Time Bass	06	05	7F	05	00	06	05	01	
	Fall Time Horn	06	06	7F	06	00	06	06	01	
	Fall Time Bass	06	07	7F	07	00	06	07	01	
	Brake Time Horn	06	08	7F	08	00	06	08	01	
	Brake Time Bass	06	09	7F	09	00	06	09	01	
	Level Horn	06	0A	--	--	00	06	0A	01	
	Level Bass	06	0B	--	--	00	06	0B	01	
	Mic. Angle	06	0C	7F	0A	00	06	0C	01	
	Mic. Distance	06	0D	7F	0B	00	06	0D	01	
	Horn Character	06	0E	7F	0D	00	06	0E	01	
	Amplifier	06	0F	--	--	00	06	0F	01	
	Speaker	06	10	--	--	00	06	10	01	

NRPN OR/21 is switched automatically by Leslie speaker is disconnected/connected.

◆ System Parameter List

Category	Parameter	Data Range	Default Value
MIDI	MIDI IN	Lower, Pedal, Low+Ped, Sequence, ExVoice	Sequence
	Local Control	Off/On	On
	TRx. NRPN	Off/On	On
	Tx. Leslie Param.	OR/21	SK
	Rx. Dump	Off/On	On
	TRx. Prog. Change	Off/On	On
	TRx. Drawbar Regi.	Off/On	On
	Tx. Ext. Zone	Off/On	Off
	TRx. Channel Upper	1 - 16, Off	1
	TRx. Channel Lower	1 - 16, Off	2
	TRx. Channel Pedal	1 - 16, Off	3
	Device ID	1 - 32	1
Ext. Leslie	Channel(s)	1, 3	3

◆ Drawbar Data List 1

Control Number**Upper:** 50H(80)**Lower:** 51H(81)**Pedal:** 52H(82)

Level	Upper / Lower									Pedal	
	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'	16'	8'
0	00H(0)	09H(9)	12H(18)	1BH(27)	24H(36)	2DH(45)	36H(54)	3FH(63)	48H(72)	00H(0)	09H(9)
1	01H(1)	0AH(10)	13H(19)	1CH(28)	25H(37)	2EH(46)	37H(55)	40H(64)	49H(73)	01H(1)	0AH(10)
2	02H(2)	0BH(11)	14H(20)	1DH(29)	26H(38)	2FH(47)	38H(56)	41H(65)	4AH(74)	02H(2)	0BH(11)
3	03H(3)	0CH(12)	15H(21)	1EH(30)	27H(39)	30H(48)	39H(57)	42H(66)	4BH(75)	03H(3)	0CH(12)
4	04H(4)	0DH(13)	16H(22)	1FH(31)	28H(40)	31H(49)	3AH(58)	43H(67)	4CH(76)	04H(4)	0DH(13)
5	05H(5)	0EH(14)	17H(23)	20H(32)	29H(41)	32H(50)	3BH(59)	44H(68)	4DH(77)	05H(5)	0EH(14)
6	06H(6)	0FH(15)	18H(24)	21H(33)	2AH(42)	33H(51)	3CH(60)	45H(69)	4EH(78)	06H(6)	0FH(15)
7	07H(7)	10H(16)	19H(25)	22H(34)	2BH(43)	34H(52)	3DH(61)	46H(70)	4FH(79)	07H(7)	10H(16)
8	08H(8)	11H(17)	1AH(26)	23H(35)	2CH(44)	35H(53)	3EH(62)	47H(71)	50H(80)	08H(8)	11H(17)

ex: Set Lower 8' to level 7 via MIDI... Bx 51 19 (x=Lower Channel)

◆ Drawbar Data List 2

Part	Control Number								
	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
Upper	0CH(12)	0DH(13)	0EH(14)	0FH(15)	10H(16)	11H(17)	12H(18)	13H(19)	14H(20)
Lower	15H(21)	16H(22)	17H(23)	18H(24)	19H(25)	1AH(26)	1BH(27)	1CH(28)	1DH(29)
Pedal	21H(33)	-	23H(35)	-	-	-	-	-	-

Value	Level								
	0	1	2	3	4	5	6	7	8
00 - 0FH	10 - 1FH	20 - 2FH	30 - 3FH	40 - 4FH	50 - 5FH	60 - 6FH	70 - 7EH	7FH	
(0 - 15)	(16 - 31)	(32 - 47)	(48 - 63)	(64 - 79)	(80 - 95)	(96 - 111)	(112-126)	(127)	

ex: Set Lower 8' to level 7 via MIDI... Bx 17 70 (x=Upper Channel)

◆ MIDI Implementation Chart

Stage Keyboard

Model: SK1, SK2

Date: 8-Jul-2010

Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	*1 1 - 16	*1 1 - 16	*1: Upper = 1, Lower = 2, Pedal = 3
Mode	Default Messages Altered	3 X *****	3 X X	
Note Number	: True Voice	12 - 120 *****	36 - 96 36 - 96	
Velocity	Note ON Note OFF	O X	O X	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change	0, 32	O	O	Bank Select MSB, LSB
	1	X	X	Modulation
	6, 38	O	O	Data Entry MSB, LSB
	7	O	X	Volume
	10	O	X	Pan
	11	O	O	Expression
	12 - 20, 80	O	O	Drawbar Reg. Upper
	21 - 29, 81	O	O	Drawbar Reg. Lower
	33, 35, 82	O	O	Drawbar Reg. Pedal
	48	O	O	Spring Shock
	49	O	O	Glide
	64	O	O	Damper
	98, 99	O	O	NRPN MSB, LSB
Program Change	: True #	O 0 - 127	O 0 - 81	
System Exclusive		O	O	
System Common	: Song Position : Song Select : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Messages	: All Sounds Off	X	O	(120)
	: Reset All Controllers	O	O	(121)
	: Local On/Off	X	X	
	: All Notes Off	O	O	
	: Active Sense	O	O	
	: Reset	X	X	

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

O: Yes
 X: No

◆ MIDI Implementation

Channel Voice Message

Note Off

Status	2nd Byte	3rd Byte
8nH	kkH	vvH, or
9nH	kkH	00H
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
kk=Note Number: 00H - 7FH (0 - 127)		
vv=Velocity(disregard): 00H - 7FH (0 - 127)		

Note On

Status	2nd Byte	3rd Byte
9nH	kkH	vvH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
kk=Note Number: 00H - 7FH (0 - 127)		
vv=Velocity: 00H - 7FH (0 - 127)		

Control Change

The value set by the Control Change is not reset even when Program Change messages etc. are received.

Bank Select (CC#0, 20)

Status	2nd Byte	3rd Byte
BnH	00H	mmH
BnH	20H	llH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
mm,ll=Bank Number: 00 00H=User		
01 00H=Preset		

Until you send the Program Change, the Bank Select process is reserved.

Expression (CC#11)

Status	2nd Byte	3rd Byte
BnH	0BH	vvH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
vv=Expression: 00H - 7FH (0 - 127)		

Spring Shock (CC#48)

Status	2nd Byte	3rd Byte
BnH	30H	vvH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
vv=Velocity: 00H - 7FH (0 - 127)		

Glide (CC#49)

Status	2nd Byte	3rd Byte
BnH	31H	vvH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
vv=Control Value: 00H - 7FH (0 - 127)		
0 - 63=Off, 64 - 127=On		

Damper (CC#64)

Status	2nd Byte	3rd Byte
BnH	40H	vvH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
vv=Control Value: 00H - 7FH (0 - 127)		
0 - 63=Off, 64 - 127=On		

NRPN MSB/LSB (CC#98, 99)

Status	2nd Byte	3rd Byte
BnH	63H	mmH
BnH	62H	llH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
mm=upper byte of the parameter number specified by NRPN		
ll=lower byte of the parameter number specified by NRPN		

Data Entry (CC#6, 38)

Status	2nd Byte	3rd Byte
BnH	06H	mmH
BnH	26H	llH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
mm,ll=the value of the parameter specified by NRPN		

Program Change

Status	2nd Byte
CnH	ppH
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)	
pp=Program Number: 00H - 63H, 7FH	
(Patch #1 - 100, Manual)	

Example of Patch operation

```
ex: select Patch U016
Bx 00 00 20 00 Cx 0F (x=Upper Channel)
ex: select Patch P100
Bx 00 01 20 00 Cx 63 (x=Upper Channel)
ex: select [Manual]
Bx 00 00 20 00 Cx 7F (x=Upper Channel)
```

Channel Mode Message

All Sounds Off (CC#120)

Status	2nd Byte	3rd Byte
BnH	78H	00H
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
<i>When this message is received, all currently-sounding notes on the corresponding channel will be turned off immediately.</i>		

Reset All Controllers (CC#121)

Status	2nd Byte	3rd Byte
BnH	79H	00H
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
<i>When this message is received, the following controllers will be set to their reset values.</i>		
Expression:	127	
Glide:	0	
Damper:	0	
NRPN: unset; previously set data will not change		

All Sounds Off (CC#123)

Status	2nd Byte	3rd Byte
BnH	7BH	00H
n=MIDI Channel Number: 0H - FH (Ch. 1 - 16)		
<i>When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuato is ON, the sound will be continued until these are turned off.</i>		

◆ MIDI Information

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Preset Load
		LSB (62)	MSB (63)	MSB to LSB					
Pedal	Tonewheel Set	22	00	00	22	00	01	00 - 03 00: Normal 01: Muted 02: Synth 1 03: Synth 2	DRAWB
	Attack	22	01	00	22	01	01	00 - 04 00: Slow Attack 01: No Click 02: Soft Click 03: Normal Click 04: Max Click	
	Sustain On	22	03	00	22	03	01	00, 01 (Off/On)	
	Sustain Length	22	04	00	22	04	01	00 - 04 (1 - 5)	
	Decay Length	22	05	00	22	05	01	00 - 05 (1 - 5, Cont)	
	Velocity	22	06	00	22	06	01	00 - 04 (Off, Normal - Easy)	
	Key Mode	22	07	00	22	07	01	00, 01 (Mono/Poly)	
	Octerve Shift	22	08	00	22	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo	22	09	00	22	09	01	24 - 60 (MIDI note number)	
Key Range Hi	22	0A	00	22	0A	01	24 - 60 (MIDI note number)		
Pedal	16´	--	--	01	03	00	01	00 - 08 (0 - 8)	L/P
Registration	8´	--	--	01	03	01	01	00 - 08 (0 - 8)	
Organ Effect	Leslie Bypass	09	00	00	09	00	01	00, 01 (Enable / Bypass)	EFFECT DRAWB
	Leslie Fast	09	01	00	09	01	01	00, 01 (Slow / Fast)	
	Leslie Stop	09	07	00	09	07	01	00, 01 (Turn / Stop)	
	Leslie Cabinet Number	09	08	00	09	08	01	00 - 07 (1 - 8)	
	Vibrato On Swell	09	04	00	09	02	01	00, 01 (Off/On)	
	Vibrato On Great	09	03	00	09	03	01	00, 01 (Off/On)	
	Vibrato Mode	09	04	00	09	04	01	00 - 05 (V1 - C3)	
	Vibrato Rate	09	05	00	09	05	01	00 - 04 (6.1 - 7.25Hz)	
	Vibrato V1 Depth	09	0D	00	09	0D	01	00 - 0F (1 - 16)	
	Vibrato V2 Depth	09	0E	00	09	0E	01	00 - 0F (1 - 16)	
	Vibrato V3 Depth	09	0F	00	09	0F	01	00 - 0F (1 - 16)	
	Vibrato C1 Depth	09	10	00	09	10	01	00 - 0F (1 - 16)	
	Vibrato C2 Depth	09	11	00	09	11	01	00 - 0F (1 - 16)	
	Vibrato C3 Depth	09	12	00	09	12	01	00 - 0F (1 - 16)	
	Vibrato Tremolo	09	13	00	09	13	01	00 - 0F (0 - 15)	
	Vibrato Cho. Emphasis	09	14	00	09	14	01	00 - 09 (0 - 9)	
	Vibrato On Pedal	09	15	00	09	15	01	00, 01 (Off/On)	

◆ MIDI Information (cont.)

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Preset Load
		LSB (62)	MSB (63)	MSB to LSB					
Pedal	Tonewheel Set	22	00	00	22	00	01	00 - 03 00: Normal 01: Muted 02: Synth 1 03: Synth 2	DRAWB
	Attack	22	01	00	22	01	01	00 - 04 00: Slow Attack 01: No Click 02: Soft Click 03: Normal Click 04: Max Click	
	Sustain On	22	03	00	22	03	01	00, 01 (Off/On)	
	Sustain Length	22	04	00	22	04	01	00 - 04 (1 - 5)	
	Decay Length	22	05	00	22	05	01	00 - 05 (1 - 5, Cont)	
	Velocity	22	06	00	22	06	01	00 - 04 (Off, Normal - Easy)	
	Key Mode	22	07	00	22	07	01	00, 01 (Mono/Poly)	
	Octerve Shift	22	08	00	22	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo	22	09	00	22	09	01	24 - 60 (MIDI note number)	
	Key Range Hi	22	0A	00	22	0A	01	24 - 60 (MIDI note number)	
Pedal	16'	--	--	01	03	00	01	00 - 08 (0 - 8)	L/P
Registration	8'	--	--	01	03	01	01	00 - 08 (0 - 8)	
Organ Effect	Leslie Bypass	09	00	00	09	00	01	00, 01 (Enable / Bypass)	EFFECT DRAWB
	Leslie Fast	09	01	00	09	01	01	00, 01 (Slow / Fast)	
	Leslie Stop	09	07	00	09	07	01	00, 01 (Turn / Stop)	
	Leslie Cabinet Number	09	08	00	09	08	01	00 - 07 (1 - 8)	
	Vibrato On Swell	09	04	00	09	02	01	00, 01 (Off/On)	
	Vibrato On Great	09	03	00	09	03	01	00, 01 (Off/On)	
	Vibrato Mode	09	04	00	09	04	01	00 - 05 (V1 - C3)	
	Vibrato Rate	09	05	00	09	05	01	00 - 04 (6.1 - 7.25Hz)	
	Vibrato V1 Depth	09	0D	00	09	0D	01	00 - 0F (1 - 16)	
	Vibrato V2 Depth	09	0E	00	09	0E	01	00 - 0F (1 - 16)	
	Vibrato V3 Depth	09	0F	00	09	0F	01	00 - 0F (1 - 16)	
	Vibrato C1 Depth	09	10	00	09	10	01	00 - 0F (1 - 16)	
	Vibrato C2 Depth	09	11	00	09	11	01	00 - 0F (1 - 16)	
	Vibrato C3 Depth	09	12	00	09	12	01	00 - 0F (1 - 16)	
	Vibrato Tremolo	09	13	00	09	13	01	00 - 0F (0 - 15)	
	Vibrato Cho. Emphasis	09	14	00	09	14	01	00 - 09 (0 - 9)	
	Vibrato On Pedal	09	15	00	09	15	01	00, 01 (Off/On)	

◆ MIDI Information (cont.)

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Preset Load
		LSB (62)	MSB (63)	MSB to LSB					
Effects	Overdrive On	3p	00	00	3p	00	01	00, 01 (Off/On)	EFFECT p=0: DRAWB p=1: EXV
	Overdrive Type	3p	01	00	3p	01	01	00 - 03 00: Tube 01: Stomp Box 02: Clip 03: E. Pf. Amp	
	Overdrive Drive Level	3p	02	00	3p	02	01	00 - 7F	
	Overdrive Controlled Exp.	3p	03	00	3p	03	01	00-03 00: EX-OD 01: OD-EX 02: OD Only 03: Input	
	Multi Effect On	3p	04	00	3p	04	01	00, 01 (Off/On)	
	Multi Effect Type	3p	05	00	3p	05	01	00-07 00: Tremolo 01: Auto Pan 02: Wah-Wah 03: Ring Mod. 04: Phaser 05: Flanger 06: Chorus 07: Delay	
	Multi Effect Parameter 0	3p	06	00	3p	06	01	00-03	
	Multi Effect Parameter 1	3p	07	00	3p	07	01	00-03	
	Multi Effect Parameter 2	3p	08	00	3p	08	01	00-7F	
	Multi Effect Parameter 3	3p	09	00	3p	09	01	00-7F	
	Multi Effect Parameter 4	3p	0A	00	3p	0A	01	00-7F	
	Multi Effect Parameter 5	3p	0B	00	3p	0B	01	00-7F	
	Multi Effect Parameter 6	3p	0C	00	3p	0C	01	00-7F	
	Multi Effect Parameter 7	3p	0D	00	3p	0D	01	00-7F	
	EQ Bass Gain	3p	0E	00	3p	0E	01	00 - 09 - 12 (-9 - 0 - +9)	
	EQ Bass Frequency	3p	0F	00	3p	0F	01	00 - 0A (20 - 200Hz)	
	EQ Mid Gain	3p	10	00	3p	10	01	00 - 09 - 12 (-9 - 0 - +9)	
	EQ Mid Frequency	3p	11	00	3p	11	01	00 - 0A (250 - 3.1kHz)	
	EQ Treble Gain	3p	12	00	3p	12	01	00 - 09 - 12 (-9 - 0 - +9)	
	EQ Treble Frequency	3p	13	00	3p	13	01	00 - 03 (4.0 - 8.0 kHz)	
	EQ Tone Control	30	14	00	3p	14	01	00 - 09 - 12 (-9 - 0 - +9)	
	Reverb On	0A	00	00	0A	00	01	00, 01 (Off/On)	REV
	Reverb Type	0A	01	00	0A	01	01	00 - 0A 00: Room 1 01: Room 2 02: Live House 03: Hall 1 04: Hall 2 05: Church 06: Plate 07: Spring 08: Delay 09: Panning Delay 0A: Reverb + Delay	
	Reverb Level	0A	02	00	0A	02	01	00 - 7F (0 - 127)	
	Reverb Time	0A	03	00	0A	03	01	00 - 7F (0 - 127)	
	Reverb Delay Feedback	0A	04	00	0A	04	01	00 - 1F (0 - 96%)	
	Reverb Delay Time	0A	05	00	0A	05	01	00 - 44 (4.7 - 2000ms)	

Example: "p" means Section number. Organ=0, Extra Voice=1

Set Multi-Effect EXV at Phaser via NRPNBx 63 05 62 31 06 04 26 00 (x = Upper channel)

Set Multi-Effect EXV at Phaser via SysExF0 55 dd 10 1F 13 00 31 05 04 F7 (dd = Device ID)

◆ System Exclusive Messages

◆ Memory Dump

1. Each Packet

F0	System Exclusive
55	SUZUKI ID
dd	Device ID (refer to P. 110 #8)
10	Model ID MSB
1F	Model ID LSB
11	Command: Data Packet
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump 09H = Global Dump 0AH = System Dump
[PNH]	Packet Number MSB
[PNL]	Packet Number LSB
[DATA]	128 Bytes Data 256 Bytes nibblized ASCII ex: 7EH = 37H, 45H
[CHD]	Check Digit Lower 7 bits of XOR [DATA]
F7	End Of Exclusive

2. Acknowledge

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
1F	Model ID LSB
14	Command: Acknowledge
[TYPE]	Data Type
[AK]	Result 00H = OK 05H = Check Digit Error 06H = Receive Protected
[PNH]	Packet Number MSB
[PNL]	Packet Number LSB
F7	End Of Exclusive

3. # of Packets

All Data Dump: 466
Combi. Temp Dump: 27
Global Dump: 6
System Dump: 1

◆ Dump Request (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
1F	Model ID LSB
12	Command: Dump Request
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump 09H = Global Dump 0AH = System Dump
F7	End Of Exclusive

Mode Setting Exclusive Message

Full Parameters Reset (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
42	Mode ID for DT1
12	Command: DT1
40	Address MSB
00	Address
7F	Address LSB
7F	Reset
42	Check Sum
F7	End Of Exclusive

NRPN Switch

F0	Suzuki Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
1F	Model ID LSB
02	Command: NRPN Sw.
[DATA]	00H = Off, 7FH = On
F7	End Of Exclusive

When this device receives this message, switch Tx & Rx NRPN in Control channel.

Data Set (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
1F	Model ID LSB
13	Command: Data Set
aa	Address MSB
bb	Address
cc	Address LSB
[DATA]	Data (Flexible bytes)
F7	End Of Exclusive

Identity Request (Rx. only)

F0	System Exclusive
7E	Universal non real-time
dd	Device ID
06	Sub ID #1
01	Sub ID #2
F7	End Of Exclusive

Identity Reply (Tx. only)

F0	System Exclusive
7E	Universal non real-time
dd	Device ID
06	Sub ID #1
02	Sub ID #2
55	SUZUKI ID
00 10	Device Family code
00 1F	Device Family number
00 00	
00 00	
F7	End Of Exclusive

When Identity Request is received, Identity Reply will be transmitted.

INSTRUMENT CARE

◆ AC Power

Be sure to turn the instrument “OFF” after use, and do not turn the unit “ON” and “OFF” in quick succession, as this places an undue load on the electronic components.

◆ Cabinet

Use a soft dry cloth for dusting. To remove fingerprints or dulling film, use a soft cloth slightly moisten with water and a little mild soap. Immediately wipe dry with a soft dry cloth.

◆ Keys And Buttons

To clean keys and buttons, use a clean soft cloth moistened with water. Do not use any solvents, thinners or dryers such as alcohol, gasoline, lighter fluid, carbon tetrachloride, etc. These solutions may affect the letters and/or finish on the buttons and keys.

◆ Moving Your Instrument

It is not necessary to bolt or fasten any parts of the instrument when moving. Careful consultation with your mover will assure you of a satisfactory moving job.

CAUTION

Danger of explosion if lithium battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVARSELL

Lithiumbatteri. Eksplosjonsfare ved feilagtig håndtering. Utskiftning må kun ske med batteri af samme fabrikat og type. Leber det brugte batteri tilbage til leverandøren.

Norge:

ADVARSEL

Lithiumbatteri - Eksplosjonsfare. Ved utskiftning benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

Sverige:

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller et ekvivalent typ som rekommenderes av apparattillverkaren, Kassera använt batteri enligt fabrikantens instruktion.

Finland:

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin, Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Manufacturer assumes no responsibility for loss of memory caused by damage to the unit after purchase, such as power surges, battery replacement, repair, etc.
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Hammond maintains a policy of continuously improving and upgrading its instruments and therefore reserves the right to change specifications without notice. Although every attempt has been made to insure the accuracy of the descriptive contents of this Guide, total accuracy cannot be guaranteed. Should the player require further assistance, inquiries should first be made to your Authorized Hammond Dealer. If you still need further assistance, contact Hammond at the following addresses:

In the United States contact:	In Europe and the U.K. contact:	All other countries contact:
HAMMOND SUZUKI USA, Inc. 743 Annoreno Dr. Addison, IL 60101 UNITED STATES	HAMMOND SUZUKI EUROPE B.V Ir. D.S. Tuynmanweg 4A 4131 PN Vianen THE NETHERLANDS	HAMMOND SUZUKI Ltd. 25-12, Ryoke 2 Chome Hamamatsu 430-0852 (Shizuoka) JAPAN

Technical materials are available and can be obtained by mailing a request to the appropriate address listed above marked ATTENTION: SERVICE DEPARTMENT.

Manufacturer:
SUZUKI MUSICAL INSTRUMENT MFG. CO., Ltd
 25-12, Ryoke 2 Chome
 Hamamatsu 430-0852 (Shizuoka)
 JAPAN

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