HAMMOND®

Sk1

Sk2

Sk1-73

Sk1-88

OVERALL
EFFECTS

OVERALL EFFECTS

You can add a number of effects to the different voice divisions of your Sk-series instrument. This section will explain these in detail.

♦ 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 OVER DRIVE and EFFECT

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 EFFECT

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.

REVERB

These controls allow you to add Reverberation to the Drawbars and Extra Voices, and to control the amount and type of Reverb.

♦ OVERDRIVE\EFFECTS (OD\EFF) Edit Menu

This Advanced Feature Menu allows you to add different effects to the Drawbar and Extra Voice sections.

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.

Accessing the DRAWBAR OVERDRIVE Menu using the Touch Buttons:

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 **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:

The number just below the word "DRIVE" should be blinking.

Accessing the DRAWBAR OVERDRIVE Menu using the Shortcut:

Touch and hold the DRAWBAR OVERDRIVE Touch Tab. After approximately 1 second, the screen shown below will display.

Notice that "EX-OD" is blinking. This occurs if you use the Shortcut to access the DRAWBAR OVERDRIVE Menu Page. The instructions which follow assume that you have used the Touch Buttons to access the DRAWBAR OVERDRIVE Menu Page. If you have used the Shortcut, touch the PAGE LEFT Touch Button to cause the number underneath the word "DRIVE" to blink. You can then follow the instructions below.

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 Rotary Control to the **right** to **increase** the Overdrive effect.

Turn either the VALUE 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:
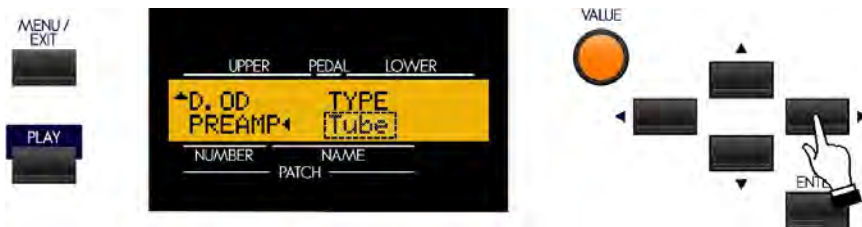

The legend underneath "EXP." should be blinking.

Drawbar Overdrive Expression Control

This Advanced Feature allows you to select whether you want to use a connected Expression Pedal to control overall Volume, amount of Overdrive, or both. The data chart below shows the options you may select.

Drawbar Overdrive Expression Control Options	
Description	**Function**
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.
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:

The word underneath "TYPE" should be blinking.

Drawbar Overdrive Type

This Advanced Feature allows you to select the type of Overdrive applied to the Drawbars. Each different Overdrive type simulates a particular type of pre-amplifier or amplifier. The data chart below shows the options you may select.

Drawbar Overdrive Type Options	
Description	**Function**
Tube	Replicates the overdrive of a tube-driven amp.
Stomp	Replicates the overdrive of a "stomp box".
Clip	Adds a precise flattening or "clipping" to the audio signal
EPAmp	Replicates the pre-amplifier of an electric piano.

Turn the VALUE Rotary Control to make your selection.

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 Tab is "ON" (red LED lit).

Accessing the DRAWBAR MULTI-EFFECTS Menu Page using the Touch Buttons:

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.
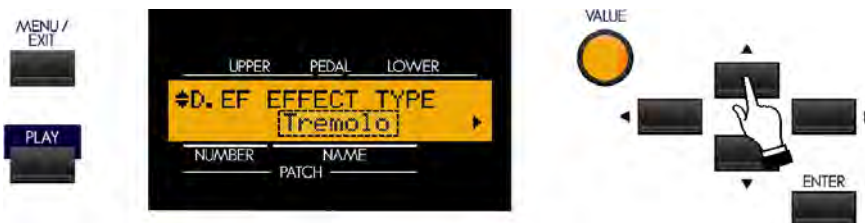

2.   Touch the PAGE UP Touch Button **two** times. The legend "OD\EFF" in the upper left corner of the Information Center Display will be blinking.

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

4.   Touch the PAGE UP Touch Button **two** times. The Information Center Display should now look like this:

You are now in the first page of the DRAWBAR EFFECT Menu.

Accessing the DRAWBAR MULTI-EFFECTS Menu Page using the Shortcut:

Touch and hold the DRAWBAR EFFECTS Touch Tab. After approximately 1 second, you will see a screen similar to the one below:

When accessing this Menu Page using the Shortcut, the Drawbar Effect shown in the Information Center Display will be the one selected by the particular Patch that is active. This means that the Effect may be different for different Patches.

The data chart shown below describes the different Drawbar Multi-Effects in the order in which they appear in the Information Center Display.

DRAWBAR MULTI-EFFECTS	
Description	**Function**
Tremolo	Raises and lowers the amplitude or volume at a determined rate.
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, with one of them time-delayed by a small amount.
Chorus	An enhancement to the sound similar to several instruments sounding in unison
Delay	Recycles the tone to create an echo effect.

NOTE: Drawbar Effects are available on all organ types except the "Pipe" organ type.

Whether accessing this Menu Page using the Touch Buttons or the Shortcut, you can turn the VALUE Rotary Control to select the effect you want to edit.

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.

Drawbar 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 <u>once</u>. The Information Center Display should now look like this:

The legend underneath the word "RATE" 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 <u>once</u>. 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.

Drawbar Auto Pan Wave Options	
Description	**Function**
TRI	Triangle wave, which will move the sound smoothly back and forth from Left to Right.
SQR	Square wave, which will cause the sound to move suddenly from Left to Right.
SAW	Ascending Sawtooth wave, which will cause the sound to move one direction suddenly and move backl gradually.
S&H	Sample & Hold, which will cause the sound to move from Left to Right randomly.
DSQR	Dull Square wave - similar to SQR, but with a smoother transition from Left to Right.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 <u>once</u>. 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 - 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:
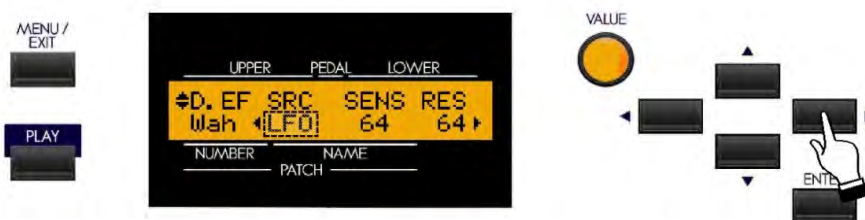
The legend underneath the word "SRC" should be blinking.

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.

Drawbar 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:
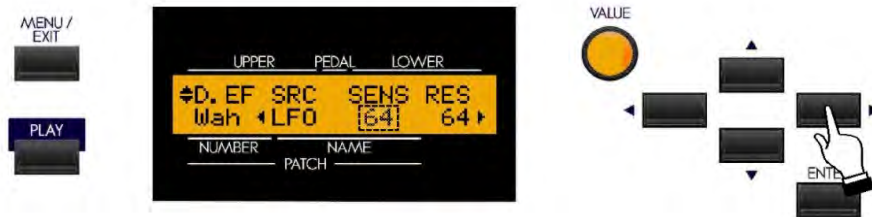
The legend underneath the word "SENS" should be blinking.
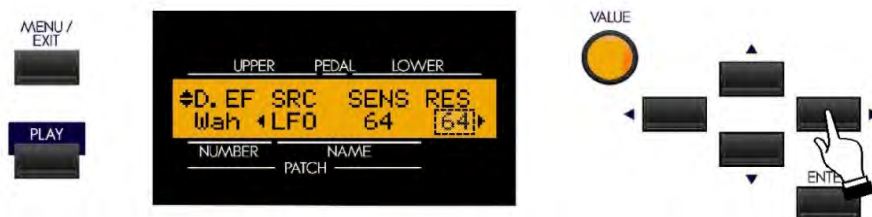
SENS - Wah-Wah Sensitivity

This Advanced Feature allows you to sets the High and Low ranges of the Wah-Wah effect. You can select from "0" (minimum range) through "127" (maximum range).

Turn the VALUE Rotary Control to the **right** to **increase** the range.

Turn the VALUE Rotary Control to the **left** to **decrease** the 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 <u>once</u>. 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.

Drawbar 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. See page 13 for information on how to select the SOURCE.

Turn the VALUE Rotary Control to make your selection.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to make the rate **<u>faster</u>**.

Turn the VALUE Rotary Control to the **<u>left</u>** to make the rate **<u>slower</u>**.

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.

Drawbar 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 <u>once</u>. 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 **<u>right</u>** to make the ring frequency **<u>higher</u>**.

> Turn either the VALUE or the DRAWBAR EFFECTS Rotary Control to the **<u>left</u>** to make the ring frequency **<u>lower</u>**.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the amount of the ring frequency.

> Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the amount of the ring frequency.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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.

Drawbar 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 <u>once</u>. 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 **<u>right</u>** to make the rate **<u>faster</u>**.

Turn the VALUE Rotary Control to the **<u>left</u>** to make the rate **<u>slower</u>**.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to make the range **<u>wider</u>**.

Turn the VALUE Rotary Control to the **<u>left</u>** to make the range **<u>narrower</u>**.

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 <u>once</u>. 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 Tab 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 <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the frequency.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the frequency.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. The Information Center Display should now look like this:

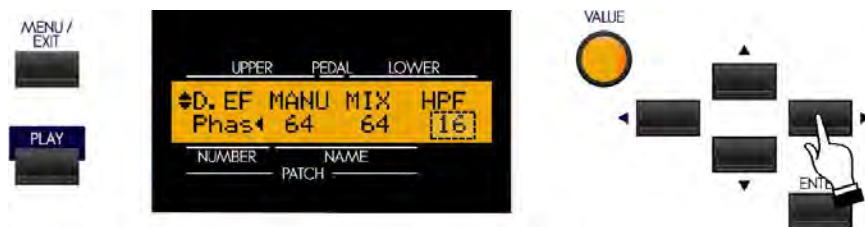*The numbers underneath the word "MIX" should be blinking.*

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 **<u>right</u>** to **<u>increase</u>** the amount of Phaser effect.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** 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 - 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 running 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 on one of the machines, 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 <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the depth.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the depth.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the amount of Resonance.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the amount of Resonance.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 <u>once</u>. 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 Hammond Vibrato/Chorus effect. The Chorus Advanced Feature, as mentioned, is non-periodic or "random" sounding. With the Vibrato Chorus, a "cycle" is clearly audible. The parameters described below DO NOT affect the Vibrato Chorus.

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 number 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 <u>once</u>. The Information Center Display should now look like this:

The number underneath "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 Chorus.

> Turn the VALUE Rotary Control to the **left** to **decrease** the amount of Chorus.

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

The number 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 <u>once</u>. The Information Center Display should now look like this:

The number underneath "DLY" should be blinking.

DLY - Chorus Delay

This Advanced Feature allows you to control the delay of the effect sound. The setting range is 0 to 127. The delay becomes greater as the value increases.

Turn the VALUE Rotary Control to the **<u>right</u>** to **<u>increase</u>** the amount of Delay.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the amount of Delay

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

The number underneath the word "MIX" should be blinking.

MIX - Chorus Rate

This Advanced Feature allows you to adjust 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.

Turn the VALUE Rotary Control to the **<u>right</u>** to **<u>increase</u>** the amount of Phasing.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the amount of Phasing.

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

The number underneath "HPF" should be blinking.

HPF - Chorus High-Pass Filter

Controls the frequency range of the effect. You can select from "0" (the effect is added to all frequencies) to "127." (the effect is the effect is added only to the high frequencies). As the value is increased, the effect is added to the higher frequencies.

Turn the VALUE Rotary Control to the **<u>right</u>** to **<u>narrow</u>** the frequency range to the high frequencies only.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>broaden</u>** the frequency range to include lower frequencies.

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 <u>once</u>. The Information Center Display should now look like this:

The legend underneath the word "TYPE" should be blinking.

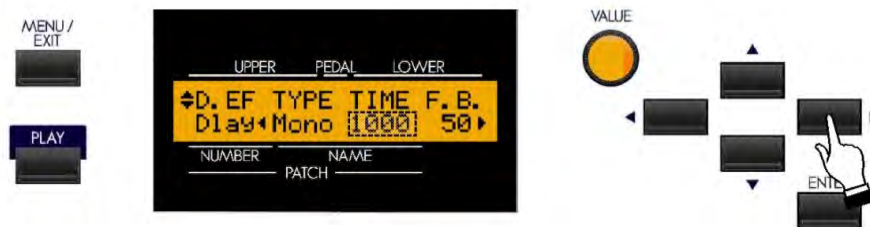You can now select the characteristics for the Delay.

TYPE - Delay Type

This Advanced Feature allows you to select which waveform will be used to modulate the panning effect. The data chart below shows the options you may select.

Drawbar 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.

Turn the VALUE Rotary Control to make your selection.

* - 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 <u>once</u>. The Information Center Display should now look like this:

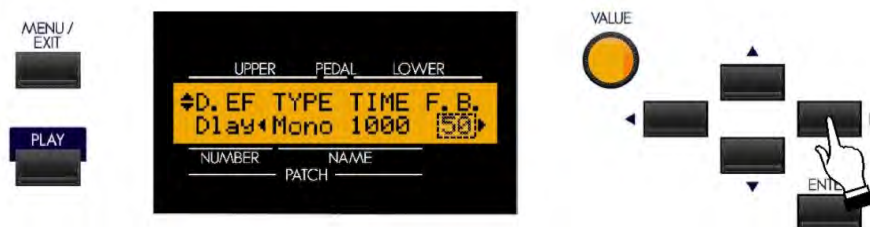*The number underneath the word "TIME" should be blinking.*

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 **<u>right</u>** to **<u>increase</u>** the Delay Time.

Turn either the VALUE or the DRAWBAR EFFECT Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the Delay Time.

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

The number underneath "F.B." 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 **<u>right</u>** to **<u>increase</u>** the number of echo repetitions.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** 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 numjber underneath the word "MIX" should be blinking.

MIX - Delay Mix

This Advanced Feature allows you to adjusts 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 emphasize the Delay repeats.

Turn the VALUE Rotary Control to the **left** to emphasize the "dry" sound..

Page 3 -EXTRA VOICE OVERDRIVE

Overdrive adds the fuzzy, raspy, "dirty" sound created by the vacuum tubes of a tube-style amplifier when its volume is pushed past its sound limit.

### Accessing the EXTRA VOICE OVERDRIVE Menu Page 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:
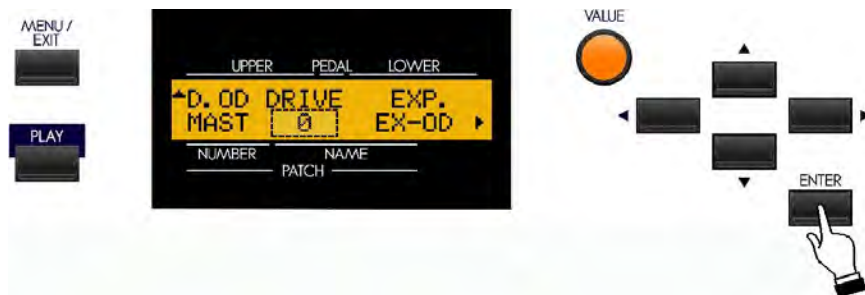
You are now in the OD\EFF Edit Menu. The number just below the word "DRIVE" should be blinking.

4.   Touch the PAGE UP Touch Button **two** times. The Information Center Display should now look like this:

You are now in that portion of the OD/EFF Advanced Feature Menu that affects the Extra Voices.

Accessing the EXTRA VOICE OVERDRIVE Menu Page using the Shortcut:

1.   Touch and hold the EXTRA VOICE EFFECTS Touch Tab. After approximately 1 second, you will see a screen similar to the one below:

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

You are now in that portion of the OD/EFF Advanced Feature Menu that affects the Extra Voices. These are explained starting on the next page.

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 <u>once</u>. 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:
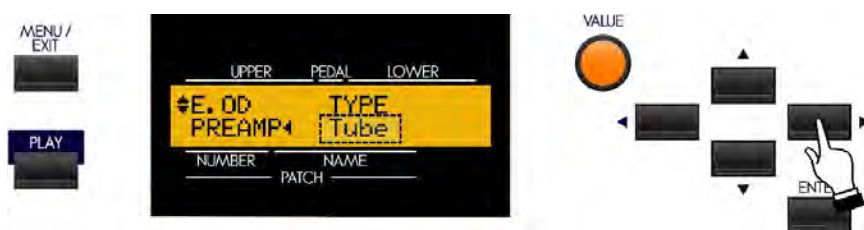

Extra Voice Overdrive Expression Control

This Advanced Feature allows you to select whether you want to use a connected Expression Pedal to control overall Volume, te amount of Overdrive, or both. The data chart below shows the options you may select.

Extra Voice Overdrive Expression Control Options	
Description	**Function**
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.
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. The data chart below shows the options you may select.

Extra Voice Overdrive Type Options	
Description	**Function**
Tube	Replicates the overdrive of a tube-driven amp.
Stomp	Replicates the overdrive of a Leslie combo preamp or "stomp box").
EPAmp	Replicates the pre-amplifier of an electric piano.

Turn the VALUE Rotary Control to make your selection.

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).

Accessing the EXTRA VOICE MULTI-EFFECTS Menu Page 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:

4. Touch the PAGE UP Touch Button **two** times. The Information Center Display should now look similar to this:

Accessing the EXTRA VOICE MULTI-EFFECTS Menu Page using the Shortcut:

Touch and hold the EXTRA VOICE EFFECTS Touch Tab. After approximately 1 second, you will see a screen similar to the one below:

When accessing this Menu Page using the Shortcut, the Drawbar Effect shown in the Information Center Display will be the one selected by the particular Patch that is active. This means that the Effect may be different for different Patches.

The data chart shown below describes the different Drawbar Multi-Effects in the order in which they appear in the Information Center Display.

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, with one of them time-delayed by a 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.
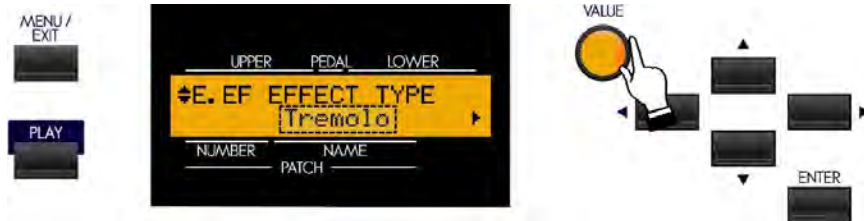
The word "Tremolo" should be blinking.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. The Information Center Display should now look like this:
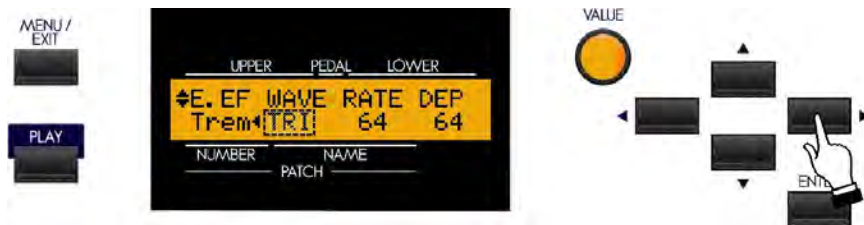
The legend underneath the word "WAVE" should be blinking.

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.

Extra Voice 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 <u>once</u>. 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 <u>once</u>. 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).
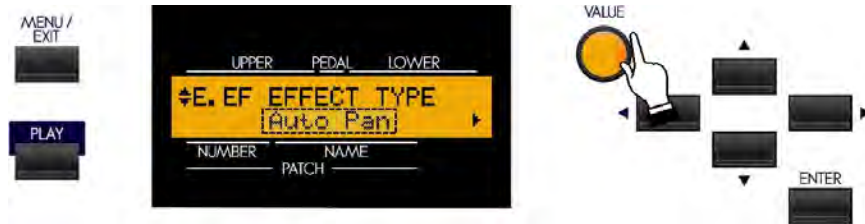
   Turn the VALUE Rotary Control to make your selection.

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. The data chart below shows the options you may select.

Extra Voice 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 <u>once</u>. 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 <u>once</u>. 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 - 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 <u>once</u>. 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.

Extra Voice 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.

Turn the VALUE Rotary Control to make your selection.

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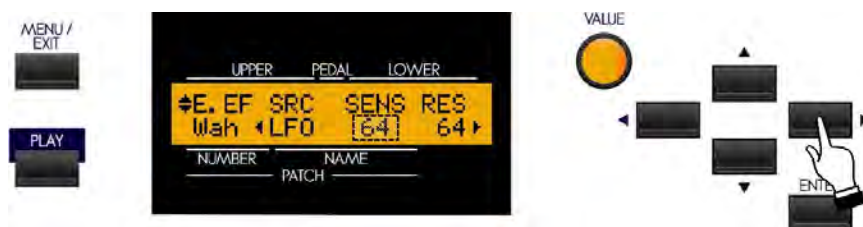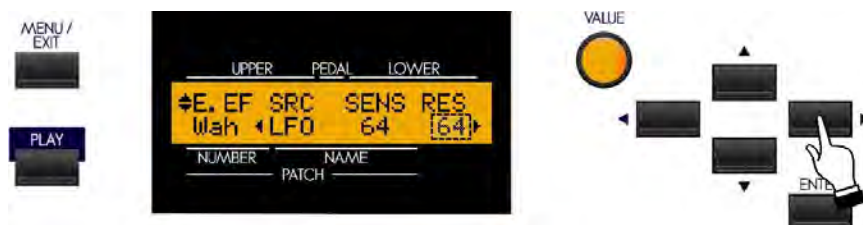

The legend underneath the word "SENS" should be blinking.

SENS - Wah-Wah Sensitivity

This Advanced Feature allows you to sets 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 <u>once</u>. 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.

Extra Voice 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.

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 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 <u>once</u>. 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.

Extra Voice 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.

Turn the VALUE Rotary Control to make your selection.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to make the ring frequency **<u>higher</u>**.

Turn either the VALUE or the EXTRA VOICE EFFECTS Rotary Control to the **<u>left</u>** to make the ring frequency **<u>lower</u>**.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the amount of the ring frequency.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the amount of the ring frequency.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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.

Extra Voice 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 <u>once</u>. 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 **<u>right</u>** to make the rate **<u>faster</u>**.

Turn the VALUE Rotary Control to the **<u>left</u>** to make the rate **<u>slower</u>**.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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.
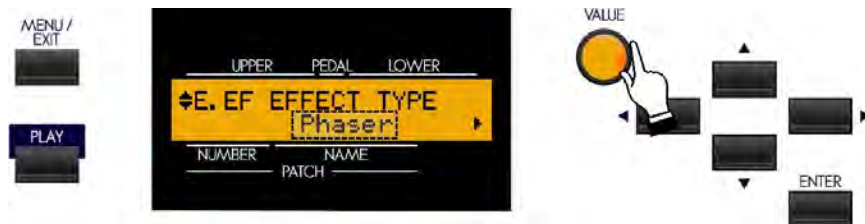
Turn the VALUE Rotary Control to the **<u>right</u>** to make the range **<u>wider</u>**.

Turn the VALUE Rotary Control to the **<u>left</u>** to make the range **<u>narrower</u>**.

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 <u>once</u>. 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 <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the amount of Phasing.

> Turn either the VALUE or the EXTRA VOICE EFFECTS Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the amount of Phasing.

NOTE: If you want to use the EXTRA VOICE EFFECTS Rotary Control, make sure to touch the "ON" Touch Tab 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 <u>once</u>. The Information Center Display should now look like this:

The numbers underneath the word "RESO" should be blinking.
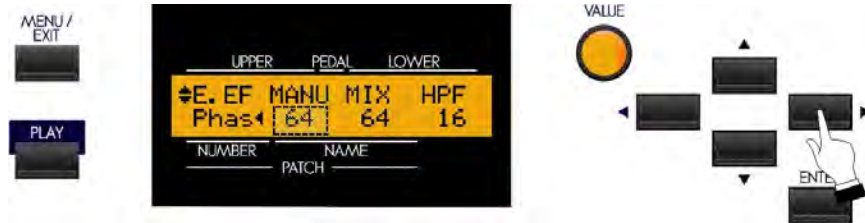
RESO - Phaser Resonance

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 **<u>right</u>** to **<u>increase</u>** the amount of Resonance.

> Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** 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 adjusts 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 <u>once</u>. 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 **<u>right</u>** to make the frequency limit **<u>higher</u>** .

    Turn the VALUE Rotary Control to the **<u>left</u>** to make the frequency limit **<u>lower</u>**..

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 <u>once</u>. 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 **<u>right</u>** to make the rate **<u>faster</u>**.

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the **<u>left</u>** to make the rate **<u>slower</u>**.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the depth.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the depth.

From the above screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 **<u>right</u>** to **<u>increase</u>** the amount of Resonance.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the amount of Resonance.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 <u>once</u>. 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 <u>once</u>. 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).
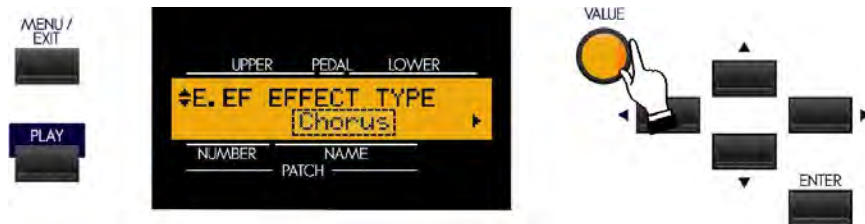
Turn the VALUE Rotary Control to the **<u>right</u>** to make the frequency limit **<u>higher</u>** .

Turn the VALUE Rotary Control to the **<u>left</u>** to make the frequency limit **<u>lower</u>**.

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 <u>once</u>. 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 <u>once</u>. 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 <u>once</u>. 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. You can select from "0" (the effect is added to all frequencies) to "127." (the effect is the effect is added only to the high frequencies). As the value is increased, the effect is added to the higher frequencies.

> Turn the VALUE Rotary Control to the **right** to **narrow** the frequency range to the high frequencies only.

> Turn the VALUE Rotary Control to the **left** to **broaden** the frequency range to include lower frequencies.

From the previous screen, touch the PAGE RIGHT Touch Button <u>once</u>. 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 <u>not</u> 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.
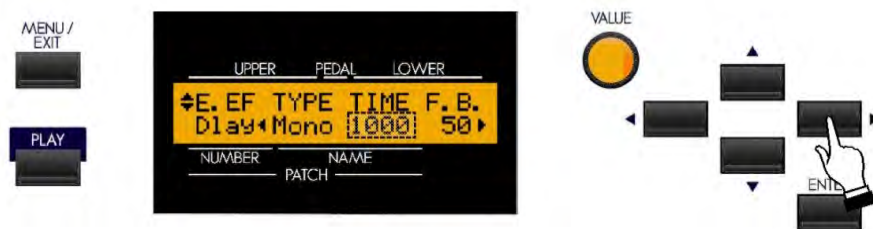
TYPE - Delay Type

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.

Extra Voice 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 <u>once</u>. The Information Center Display should now look like this:

UPPER   PEDAL   LOWER

‡E.EF TYPE TIME F.B.
Dlay‹Mono [1000] 50›

NUMBER   NAME
— PATCH —

VALUE

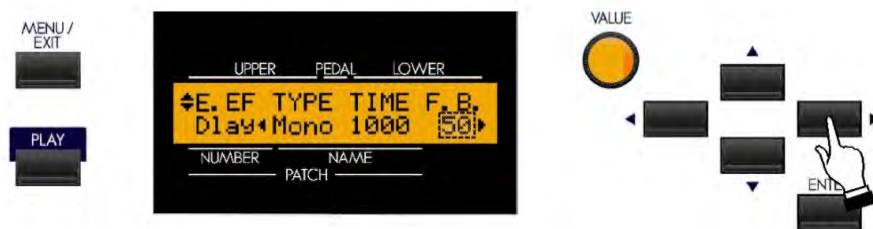*The number underneath the word "TIME" should be blinking.*

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 **<u>right</u>** to **<u>increase</u>** the Delay Time.

Turn either the VALUE or the EXTRA VOICE EFFECT Rotary Control to the **<u>left</u>** to **<u>decrease</u>** the Delay Time.

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

UPPER   PEDAL   LOWER

‡E.EF TYPE TIME F.B.
Dlay‹Mono 1000 [50]›

NUMBER   NAME
— PATCH —

VALUE

The number underneath the word "MIX" 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 **<u>right</u>** to **<u>increase</u>** the number of echo repetitions.

Turn the VALUE Rotary Control to the **<u>left</u>** to **<u>decrease</u>** 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 number underneath the word "MIX" should be blinking.

MIX - Delay Mix

This Advanced Feature allows you to adjusts 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 first page of the REVERB Edit Menu will display.

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 instructions on the previous page, you should now see Page 1 of the REVERB Edit Menu. Now touch the PAGE LEFT Touch Button <u>once</u> so that the number underneath the word "DEPTH" will blink.

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 <u>once</u>. The Information Center Display should now look like this:

Reverb Type

This Advanced Feature allows you to adjust the type of Reverb. 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	Echo Delay
PanDly	Panning Delay
RevDly	Reverb + Delay

Turn the VALUE Rotary Control to make your selection.

NOTE: This will be the first Menu choice that will blink when the REVERB Touch Tab is used to access the REVERB Edit Menu.

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:
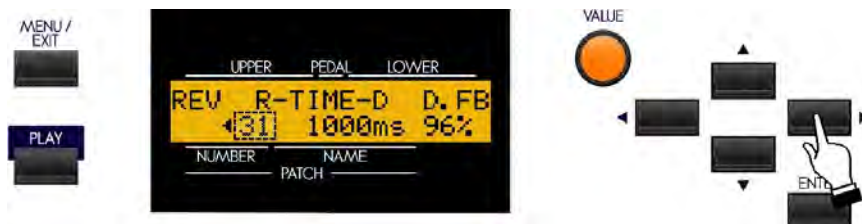
This Advanced Feature Menu Page contains three (3) parameters that affect different Reverb Types. The first one , **Reverb Decay**, affects the Reverb programs that approximate actual live reverberation ("Room1," "Room2," "Live," "Hall1," "Hall2," "Church," "Plate" and "Spring,") while the last two, **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.